



Shell Development (Australia) Pty Ltd
(ACN 14 009 663 576)

Environment Plan Prelude Drilling

Summary



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1. Shell as Operator

Shell's Australian exploration and production business has been operating for more than 75 years and holds an interest in about 20% of the offshore gas resources in Australian waters. Shell is involved in a number of major Australian gas projects, including the Shell operated Prelude project, which will be the first deployment of Shell's Floating Liquefied Natural Gas (FLNG) technology. Shell is also a non-operating partner in the North West Shelf project, the Gorgon joint venture and the Wheatstone joint venture. Shell maintains an extensive exploration portfolio, with approximately 10% of the company's global exploration budget spent in Australia. Shell has safely drilled 17 exploration wells in the Browse Basin since 2006. Shell's exploration and production business is based in Perth and employs more than 400 people.

In response to the Montara incident in August 2009 and the Deepwater Horizon incident in April 2010, Shell undertook another rigorous review of its drilling processes to incorporate key findings. In March 2011, Shell became the first oil and gas company to be awarded a permit to drill a new exploration well in the Gulf of Mexico following the Deepwater Horizon incident. This was based on Shell's rigorous global standards and practices, and demonstrates the credibility of Shell's robust approach to safety and responsible operations.

2. Activity Description

Shell Australia proposes to drill the seven gas production wells in the Petroleum Permit Area WA-44-L as part of the Prelude FLNG Project (Figure 1). Prelude will be located in Commonwealth marine waters in the northern Browse Basin, 200 km offshore northwest Australia and 475 km north-north east of Broome (Figure 2) at 237 m water depth. Drilling is scheduled to commence in Q1 2013 and is planned to finish towards the end of 2014.

The planned drill centre location for the Prelude wells is:

Longitude: 123°19' 35.84" E

Latitude: 13°49'82" S

The Prelude FLNG Project will extract gas and condensate and process them on board a floating LNG facility. Infrastructure for the project includes the FLNG vessel and subsea facilities. Drilling is the first stage of this Project and will be carried out by the Noble *Clyde Boudreaux* Mobile Offshore Drilling Unit (drilling rig), which is managed by Noble Corporation (Noble). The seven Prelude wells will be drilled as deviated wells, fanning out radially from a single drill centre.

The drilling rig will be supported by between two and four offshore vessels working from the supply base in Broome, using the Port of Broome wharf. At least one vessel will remain near the drilling rig at all times, while other vessels will travel to and from the supply base to support drilling operations.

Aviation support and crew changes to the Noble *Clyde Boudreaux* will be conducted through Broome International Airport.

Environmental management for the Prelude drilling activity will be undertaken in compliance with the Environment Plan, which is prepared in accordance with the requirements of the Prelude FLNG Project Conditions of Approval under the *Environment Protection Biodiversity Conservation Act 1999* and the *Offshore Petroleum and Greenhouse Gas Storage (Environment) (OPGGS (E)) Regulations 2009*.


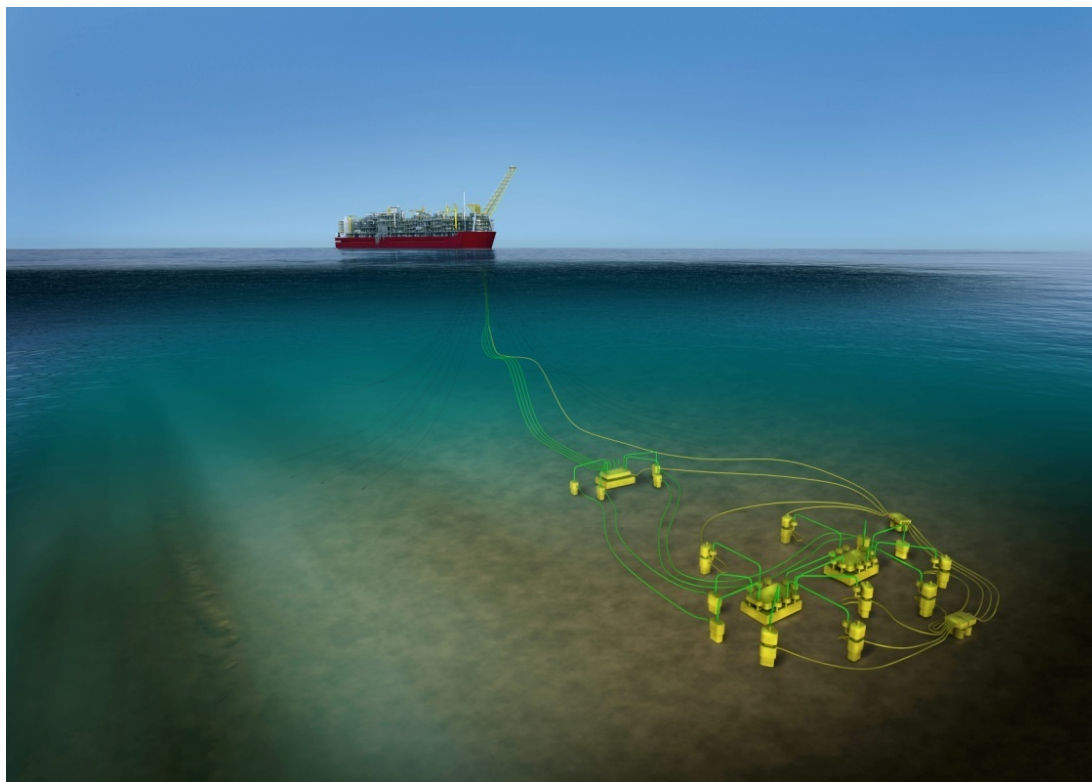
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Figure 1: Prelude Floating Liquefied Natural Gas Project



3. Description of the Environment

3.1. Physical

The permit area is located in waters on the continental slope between 200 and 300 m depth. Extensive studies confirm that there are no significant topographical features, reefs or extensive areas of rocky substrate in close proximity to the permit area. Sediments at Prelude are described as very soft siliceous carbonate silts to a depth of about 10 m. The most sensitive seabed features in the broader Browse Basin are the coral reefs and islands that occur in the region. Browse Island is the closest island, approximately 40 km south-southeast of the proposed drilling location. Browse Island is a sand and limestone cay situated on limestone and coral reef, and covers an area of 13 ha. The remnants of historical phosphate mining on the island have left a significantly disturbed surface. Other reefs in the region include Ashmore Reef, Cartier Island, Seringapatam Reef and Scott Reef, all of which are more than 140 km from the drilling location.


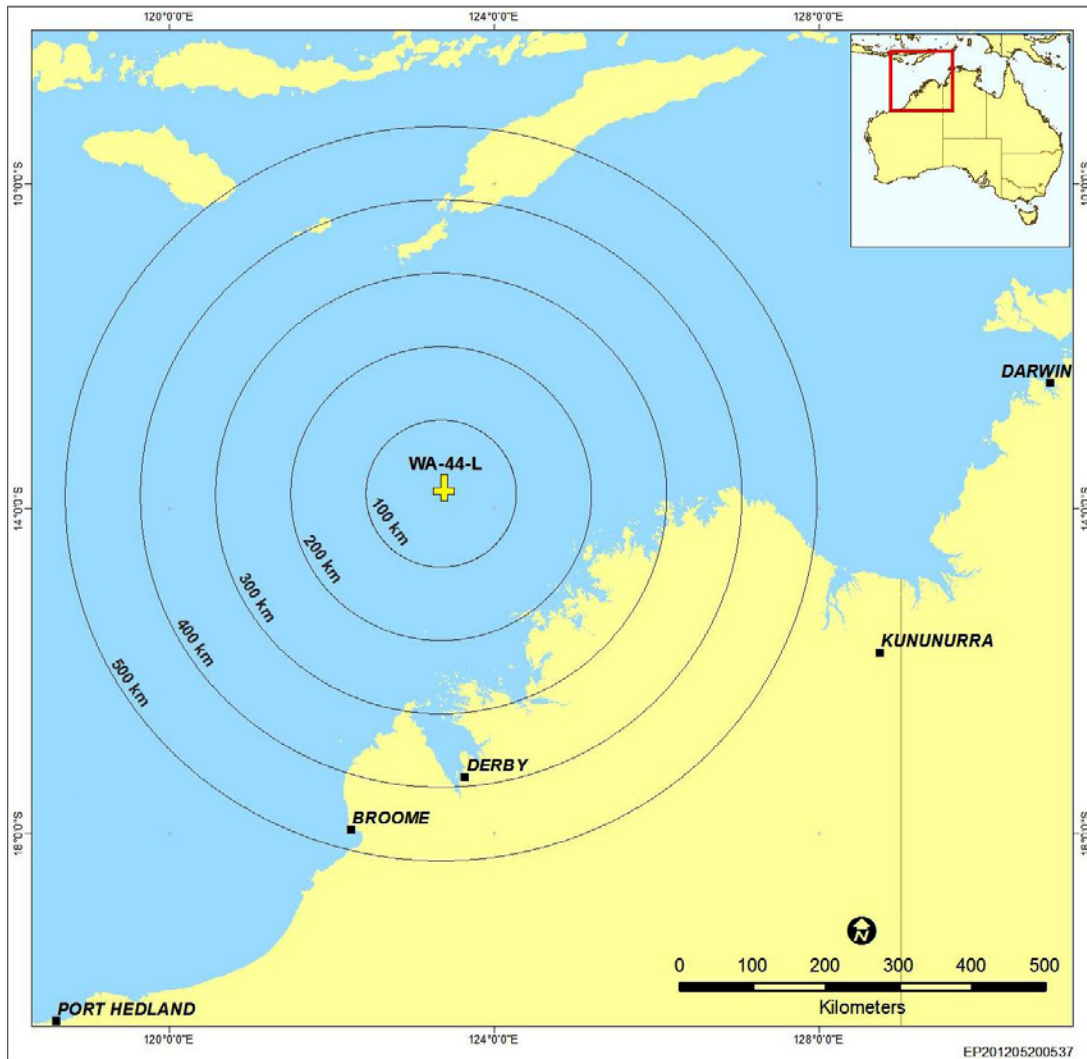

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Figure 2: Location of Prelude (Permit Area WA-44-L)



The permit area is situated in the tropics and experiences a monsoonal climate with two predominant seasons. The Australian Northern monsoon generally occurs between December and March. It is associated with the inflow of moist west to northwesterly winds into the monsoon trough, producing convective cloud and heavy rainfall over northern Australia. During the cooler months, the subtropical ridge that lies over continental Australia drives stable and persistent easterly quadrant winds over the region. The Australian cyclone season officially runs from November to April, although very few storms have occurred in November. The chance of an intense category 4 or 5 cyclone occurring is highest in March and April. The large-scale ocean circulation on the North West Shelf is linked with major Southeast Indian Ocean and Indo-Pacific current regimes, such as the Indonesian Pacific Through Flow, which contributes to the westward flowing South Equatorial Current (between 8°S and 15°S) and floods the North West Shelf with relatively warm, low-salinity water.

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3.2. Biological

Macrobenthos are organisms which live within (infauna) or on (epifauna) the seabed sediments. In shallower coastal waters of the continental shelf, and on reefs and shoals in less than 50 m water depth, epibenthic communities are abundant and diverse. However epibenthic communities in deeper waters are generally less abundant and diverse due to the lack of hard substrates, minimal habitat diversity and minimal niches to occupy. In the general region of the permit area, at approximately 237 m depth, there is little evidence of hard substrates and extensive epibenthic communities.

Across the northern continental shelf, the predominant infaunal animals living within sea floor sediments are polychaetes and crustaceans. These two groups comprise the majority of the total species present in sediment samples, with a high diversity of species but a low abundance of each individual species. They are an important component of the benthic community, serving as food sources for many demersal fish species. The remaining species include echinoderms, molluscs, nemerteans, sponges and fish. Phytoplankton in the wider North West Shelf region is similar to that in the project area, with relatively high diversity in certain groups such as diatoms, dinoflagellates and coccolithophorids.


The Department of Sustainability, Environment, Water, Population and Communities Protected Matters Database does not list any Threatened Ecological Communities occurring in the marine environment. The Protected Matters Database lists nine Threatened Species that potentially traverse the permit area (containing the Prelude FLNG drilling location) and seven additional migratory species. These include six cetacean species, one bird species, six turtle species and three shark species. The permit area does not contain any recognised feeding, breeding or aggregation areas for these species, hence large numbers of these species are not anticipated to be present.

A range of species in addition to those listed as threatened and migratory were identified comprising syngathids; seasnakes; and cetaceans. Whilst these species are possibly present in the area in general, dolphins and sea snakes prefer shallow waters, and so they are not expected to be found in large numbers within the vicinity of the drilling site, in deep oceanic waters and whilst they may be present in the vicinity of the drilling site; they are not expected in large numbers at any one location.

Low densities of migratory shorebirds and seabirds protected under the Japanese-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA) and Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA) bilateral agreements may pass through the project area. Ashmore Reef, approximately 100 km away, in particular, is an important site for both migratory birds and seabirds.

The Timor Sea supports a variety of bony and cartilaginous fish species that are of high conservation value as well as being important for commercial and recreational fishing. Most demersal shark and ray species, with the exception of deepwater skates, are unlikely to occur within the project area due to the lack of suitable habitat (e.g. reef); however, some pelagic species may occasionally transit the project area during seasonal migrations.

A wide variety of commercial and recreational finfish exist in the north-west marine region however, it is unlikely that any large or significant populations of these species reside within the project area as these species are strongly associated with shallow environments such as nearshore shelf systems and off-shore reefs and atolls.

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3.3. Conservation areas

The permit area is not located within any Marine Protected Areas. The closest Commonwealth Marine Protected Areas are the Ashmore Reef National Nature Reserve and Cartier Island Marine Reserve, which are located ~140 km from the project area at its closest point. In 2003, the Ashmore Reef National Nature Reserve was declared a Ramsar Wetland of International Importance, because its islands provide a resting place for migratory shorebirds and support large seabird breeding colonies. Ashmore and Cartier reefs have a high diversity of reef building and non reef building corals. These islands also support a population of approximately 11,000 green, loggerhead, hawksbill and other marine turtles.

The nearest boundary of the proposed Kimberley Commonwealth marine reserve is more than 100 km from the drilling site. The proposed reserve covers an area of 62,791 km² over an approximate depth of 15 to 800 m. The area identified for the reserve is important for foraging dugongs, dolphins (snubfin, indo-pacific humpback, indo-pacific bottlenose), migratory seabirds; and marine turtles (green, olive ridley and flatback). The reserve area is part of the migration pathway for humpback whales, is adjacent to significant nesting sites for green turtles, and includes important foraging and pupping areas for sawfish. The Reserve supports or is adjacent to recreational and commercial fishing, tourism activities and areas of Native Title claims and determinations.


Mermaid Reef Marine National Nature Reserve is another reserve in the region, however it is approximately 550 km away from the drilling site. State marine protected areas in the outer Browse region include Scott Reef, Browse Island and Adele Island.

3.4. Socio-Economic Environment

In 1974, Australia recognised access rights for traditional Indonesian fishers in shared waters to the north of Australia, granting long-term fishing rights in recognition of the long history of traditional Indonesian fishing in the area. Given the shallow water target species, traditional Indonesian fishermen are likely to be found in deepwater areas only during transit to and from the reef locations. They are therefore not expected to experience any significant impact from the drilling activity. During activities conducted by Shell in the permit area since 2006, there have been no observations of Indonesian fishing activity or traffic in the permit area.

There are no known sites of Aboriginal cultural significance within the permit area. A search of the National Shipwrecks Database revealed nine shipwrecks within a distance of 50 km of the project area. All of the identified shipwrecks were located at or near Browse Island, and none occurred in the permit area.

The project area overlaps with a variety of commercial fishing management areas. Commercial fisheries include tuna and tropical finfish, particularly high-value emperors, snappers and cods. Within the northwest region there are also significant commercial fisheries for Spanish mackerel, barramundi, threadfin salmon and shark. State managed fisheries overlapping the permit area include the Northern Demersal Scale Fishery, the North Coast Bioregion Fishery, the Beche-de-mer Fishery, the Mackerel Fishery, the North Coast Nearshore and Estuarine Fishery, Northern Shark Fisheries. Commonwealth managed fisheries overlapping the permit area include the Southern Blue Fin Tuna Fishery, the Western Skipjack Fishery, the Western Tuna and Billfish Fishery, and the North West Slope Trawl Fishery. The expected impact of the drilling program on commercial fishing is expected to be slight to none because of the very low fishing effort in the region.

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Currently, there are no known recreational fishing activities in the project area because the site is too far from shore to be accessed by recreational fishermen in small boats. Even at relatively high speed, it would take at least fifteen hours for a recreational boat to reach the project area from the nearest port of Broome. Whilst charter fishing companies frequent the broader region, there are no known tourist attractions or destinations within the project area.

Petroleum exploration has been active in the Browse Basin since the 1980s, with several commercial discoveries since that time. The Ichthys gas field, immediately to the south of the permit area, is the closest known field located approximately 20 km away, however the Ichthys project has not yet started production.

The nearest major shipping lane to the west of the project area is 215 km distant. The nearest shipping lane to the north of the project area is approximately 100 km distant. Given these distances, the drilling activity will pose minimal navigational risk to commercial shipping.

4. Management Approach

The Shell Commitment and Policy on Health, Safety, Security, Environment and Social Performance (HSSE and SP) applies across Shell globally and is designed to protect people and the environment. Key features of the policy are:

- Systematic approach to HSSE and SP management designed to ensure compliance with the law and to achieve continuous performance improvement;
- Targets for improvement and measurement, appraisal and performance reporting;
- Requirement for contractors to manage HSSE and SP in line with this policy; and
- Effective engagement with neighbours and impacted communities.


All of Shell's operations are undertaken in accordance with the Shell HSSE and SP Control Framework, a comprehensive corporate management framework, comprising a simplified set of mandatory standards applicable to every Shell company, contractor and joint venture under Shell's operational control.

The drilling activity will be managed to comply with the relevant State and Commonwealth Acts and Regulations, industry standards and applicable international agreements.

Shell's overall environmental objective for the Prelude drilling activity is to reduce environmental risks to as low as reasonably practicable. Specific objectives, standards and performance criteria for each aspect of the activity that has the potential to cause adverse environmental impact have been identified. Environmental performance will be measured and reported against these standards and criteria as part of Shell's commitment to continuous improvement of environmental, health and safety performance.

An Implementation Strategy has been incorporated into the Environment Plan per the *OPGGS (E) Regulations*. This includes:

- Measures, systems, practices to ensure environmental performance objectives and standards are met;
- Roles and responsibilities;
- Measures to ensure workers are aware of their responsibilities;
- Competency and training;
- Monitoring, auditing and incident investigations;

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- Records and reporting;
- Oil Spill Contingency Plan.

5. Environmental Hazards and Controls

A risk analysis has been undertaken for all aspects of operations, in accordance with the Shell HSSE and SP Control Framework and in line with the principles outlined in the Australian Standard AS/NZS ISO 31000:2009 Risk Management and HB 203:2006 Environmental Risk Management. To demonstrate that risks are as low as reasonably practicable, all mitigation measures have been considered and where these measures reduce risk and are practical, they have been included.


Incidents with a consequence severity equal to or greater than level 3 (i.e. moderate to massive) are considered 'Reportable Incidents' in line with Regulation 26 of the *OPGGS (E) Regulations*. For the Prelude drilling activity, based on the risk assessment, though the probability of occurrence is low. The three possible events, considered to have a moderate or greater consequence, if they occur are:

- Death or injury of a member of a threatened or migratory species as a result of a collision with a vessel;
- A hydrocarbon spill resulting from a vessel to vessel collision; and
- A hydrocarbon spill resulting from a well control incident.

To avoid a potential collision with marine life, during transit support vessels will adhere to the the Australian National Guidelines for Whale and Dolphin Watching 2005, which require that: Vessel Masters shall maintain a watch for whales during transit; Vessel Masters shall not knowingly approach within 300 m of whales; If whales are observed within 300-100 m of a vessel during transit, Vessel Masters will alter course away from the whales if safe to do so; If whales are observed <100 m from a vessel, Vessel Masters will power down to 'no wake speed' and alter course away from the whales if safe to do so.

To avoid a vessel to vessel collision, a 'Notice to Mariners' advising of the presence of the drilling rig will be issued through Australian Maritime Safety Authority prior to the commencement of the activity. Ongoing communication with Australian Fisheries Management Authority and other commercial mariners will also occur such that that presence of vessels is widely communicated. Support vessels will be manned by competent crew and routes to and from the rig will be pre-determined and risk assessed. Vessels will be equipped with sophisticated navigation aids, navigational lighting and competent crew maintaining 24 hour visual, radio and radar watch for other vessels. Should a spill occur, an Oil Spill Contingency Plan is in place, which outlines Shell's oil spill response preparedness for the Prelude drilling activity. Oil Spill Modelling Assessment for all seasons indicates surface spilt hydrocarbons from a loss of containment has a very low probability (1-2%) of contacting the closest environmental sensitivity (Browse Island) for the worst case unmitigated spill associated with a vessel to vessel collision.

Blowouts are not common and with existing technology represent a very low risk in drilling programmes. There are elaborate monitoring systems to detect potential blowouts and such events can occur only if all of the monitoring systems fail or if the well barriers or Blowout Preventers fail. The occurrence of such circumstances has been greatly reduced by improved technology. The likelihood of a blow out occurring from exploration and production activities

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across the industry is extremely remote. The blowout frequency for all types of drilling has been estimated at 4.59×10^{-4} (ConocoPhillips EPBC referral 2010/5718) in Australia following the Montara incident.

Shell's first priority in exploration is always the prevention of major incidents and minimisation of any safety or environmental risks. Shell is fully committed to the systematic approach to managing safety and ensuring the integrity of Shell operations and assets. A number of fundamental processes are in place to manage the integrity of the barriers to prevent major incidents or blow-out events during drilling activities. Shell continually develops people, procedures and equipment further in order to keep well operations safe at all times. Safe well operations demand highly competent people, strict safety procedures and rigorous design, construction and maintenance standards for all equipment. Shell applies a multi-layered well control system designed to minimise risks, so if any one system or device fails it should not lead to a loss of containment. In the very unlikely event there were to be a failure of all primary and secondary well control measures, Shell has developed a capping stack that will be available for the Prelude well. This system will allow Shell to safely cap and shut off the well and minimise any potential hydrocarbon release. To permanently secure and control the well, a relief well plan has been developed, relief well equipment has been acquired, potential relief well drilling units suitable for the conditions have been identified, and contracts are in place with global Emergency Well Control companies to facilitate successful capping and relief well drilling operations. Additional response capability is in place via an Oil Spill Contingency Plan, which outlines Shell's oil spill response preparedness for the Prelude drilling activity.

The remainder of possible events, both planned and accidental are assessed as having slight or minor consequences. The risk assessment can be viewed in Appendix A.

6. Consultation

Over a period of several years, Shell has engaged in consultations with a wide range of stakeholders who have an interest in the Prelude FLNG Project, including relevant government agencies, non government organisations, industry bodies, and oil spill response organisations. The consultation to date has comprised face to face meetings, formal and informal correspondence and phone conversations.


Stakeholders have been and are currently able to raise their concerns via direct communication, primarily through Shell's dedicated Communications focal point and dedicated Prelude email address sda-preludflng@shell.com.

Shell has continuously sought feedback from stakeholders on the Prelude drilling program and has provided detailed information on Shell's approach to well integrity, safety, technical capability and oil spill response planning in response to questions around Shell's ability to operate safely in an environmentally responsible manner. Shell has responded to various queries and continues to engage with stakeholders with up to date information on the project.

7. Contact Details


For further information, please contact:

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APPENDIX A: Hazards and Controls


Hazard / Event	Safeguards – Mitigation Methods (control and recovery measures)
<i>Planned Activities</i>	
Physical presence of drilling rig and anchoring.	<p>A 'Notice to Mariners' advising of the presence of the drilling rig will be issued through the Australian Maritime Safety Authority prior to the commencement of the activity.</p> <p>Vessels and the drilling rig will be equipped with sophisticated navigation aids and competent crew maintaining 24 hour visual, radio and radar watch for other vessels and maintaining 500 m exclusion zone.</p> <p>Site survey and positioning of anchor to avoid environmental sensitivities.</p> <p>Prelude wells will be drilled from a single drill centre limiting anchor disturbance to a single location.</p>
Lighting of vessels and drilling rig.	Location of rig in open ocean that lacks environmental sensitivities.
Noise generated by vessels and drilling rig activities.	<p>The Prelude drilling location is in open ocean, well away from coastal environments and fauna migration routes (~200 km from mainland, ~40 km from Browse Island).</p> <p>Routine drilling and vessel noise thoroughly studied and documented - below levels likely to cause physiological damage to marine fauna.</p> <p>Support vessels and helicopters during transit will adhere to the requirements of the Environment Protection Biodiversity Conservation Regulations 2000 Part 8, Australian National Guidelines for Whale and Dolphin Watching, and industry experience, specifically:</p> <ul style="list-style-type: none"> • Vessel Masters shall maintain a watch for whales during transit; • Vessel Masters shall not knowingly approach within 300 m of whales or 50 m of dolphins; • If whales are observed within 300-100 m of a vessel during transit, Vessel Masters will maintain or reduce speed and alter course away from the whales if safe to do so; • If whales are observed <100 m from a vessel, Vessel Masters will power down to 'no wake speed' (< 4 knots) and alter course away from the whales if safe to do so; and • Helicopters must not operate at a height lower than 1,000 feet within a horizontal radius of 300 meters of a cetacean, stay at least 1,650 meters away from a cetacean, and must not hover over a cetacean, except when approaching to land on the drilling rig or take off from the drilling rig.

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Discharge of deck drainage, sewage, food scraps and grey water from drilling rig and vessels.	<p>Deck spills cleaned up using adsorbents (spill kits) and/ or diverted to slops tanks.</p> <p>Potentially contaminated water drained to slops tanks and passed through the oil/ water separator prior to discharge at <15 ppm or stored for onshore disposal (<i>MARPOL 73/78 Annex I – Regulation for the Prevention of Pollution by Oil from Ships under the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>).</p> <p>Discharge quality of oil/ water separator automatically monitored with diversion.</p> <p>Only biodegradable detergents used on drilling rig and vessels.</p> <p>Daily inspections of work areas/ on deck.</p> <p>Food wastes, grey water, sewage treated in accordance with MARPOL 73/78 Annex V – Regulation for the Prevention of Pollution by Garbage from Ships under the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983), including maceration to <25 mm prior to discharge beyond 3 Nm from land, else >12 Nm from land.</p> <p>Sewage treated in accordance with <i>MARPOL 73/78 Annex IV – Regulation for the Prevention of Pollution by Sewage from Ships under the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>):</p> <ul style="list-style-type: none"> • Approved sewage treatment systems as required. <p>The Prelude drilling location is in open ocean, well away from coastal environments and fauna migration routes (~200 km) and ~40 km from Browse Island.</p>
Drill cuttings and bulk water based muds discharge.	<p>Selection of mud that has the smallest environmental footprint that is technically acceptable.</p> <p>Water based muds returned to surface using a mud recovery system to minimise discharges.</p> <p>Cuttings treated for recovery and mud re-use, where possible.</p>
Synthetic based mud drill cuttings discharge.	<p>Selection of mud that has the smallest environmental footprint that is technically acceptable.</p> <p>No bulk SBM discharged to ocean at any time throughout the duration of the activity.</p> <p>Synthetic Base Fluid on cuttings < 10% (dry weight) maximum.</p>
Excess pipe thread lubricant and cement.	<p>Selection of pipe drill thread lubricants and cement with the lowest environmental footprint that meets technical requirements.</p> <p>Mixing of cement in small batches, greatly limiting the volume of cement that could require disposal.</p> <p>Unused additives returned to shore for reuse or disposal.</p>
Discharge of cooling waters from drilling rig.	<p>The Prelude drilling location is in open ocean, well away from coastal environments and fauna migration routes (~200 km) and ~40 km from Browse island.</p> <p>Cooling water is produced only during winching operations, which occur during mobilisation and demobilisation.</p>

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Atmospheric emissions from fuel combustion on drilling rig and vessels.	Engines (including exhaust systems, generators and incinerators) maintained to operate efficiently and use low sulphur diesel. All emissions will be compliant with <i>MARPOL 73/78 Annex VI – Regulation for the Prevention of Air Pollution from Ships</i> , enforced under the <i>Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> . The Prelude drilling location is in open ocean, well away from coastal environments and human receptors.
Well bore clean up fluids discharge.	Utilise the most environmentally acceptable clean up fluids that meet technical requirements. No bulk SBM discharged to ocean at any time throughout the duration of the activity.
Unplanned Activities	
Vessel collision with marine life.	Support vessels during transit will adhere to the requirements of the Environment Protection Biodiversity Conservation Regulations 2000 Part 8, Australian National Guidelines for Whale and Dolphin Watching; and industry experience, specifically: <ul style="list-style-type: none"> • Vessel Masters shall maintain a watch for whales during transit; • Vessel Masters shall not knowingly approach within 300 m of whales or 50 m of dolphins; • If whales are observed within 300-100 m of a vessel during transit, Vessel Masters will maintain or reduce speed and alter course away from the whales if safe to do so; and • If whales are observed <100 m from a vessel, Vessel Masters will power down to 'no wake speed' (< 4 knots) and alter course away from the whales if safe to do so.
Sourcing of drilling rig and vessels with overseas last port of call that may be carrying non-native marine species.	Rig will be dry towed from Brazil and cleaned of biofouling in South Africa prior to arrival in Australia, with an out of water journey time ~40 days in total. Vessels sourced with an overseas last port of call will have had an anti-foul treatment within 12 months or their hulls inspected and cleaned, if required, before arrival in Australia. Rig and vessels carry little (if any) ballast water and may either 1) not need to discharge ballast in Australian Water or 2) will undertake exchange of high risk ballast outside Australia's territorial sea prior to arrival, satisfying Australian Ballast Water Management Requirements.

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<p>Discharge of wastes or chemicals into the ocean.</p>	<p>Waste Management Plans developed to <i>MARPOL 73/78 Annex V – Regulation for the Prevention of Pollution by Garbage from Ships and Annex II– Regulation for the Prevention of Pollution by Noxious Liquid Substances in Bulk from Ships and Annex III– Regulation for the Prevention of Pollution by Harmful Substances Carried by Sea from Ships under the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>, and local requirements including:</p> <ul style="list-style-type: none"> • a list of all hazardous substances planned to be used including material safety data sheets, storage requirements, details of provider, Australian regulatory requirements for disposal and procedures for managing accidental discharges/ spills; • requirement that all wastes be tracked and logged, sent to shore for recycling or disposal in government approved waste disposal site as per Shell's requirements; • drilling rig has dedicated storage area for containers and tanks that contain segregated waste. <p>Proper bunding and drainage plugged to ensure that any surface spillage will be contained onboard the rig.</p>
<p>Diesel or aviation fuel spill during drilling rig refuelling at sea.</p>	<p>At sea refuelling will occur only at the well location (~40 km from Browse Island) and with strict adherence to drilling rig refuelling procedures including:</p> <ul style="list-style-type: none"> • Reinforced hoses with dry break couplings and fail-safe fittings; • Operation will commence in daylight only, and • Favourable wind and sea conditions as determined by the Master of the vessels; and • Refuelling constantly observed by crew member in radio contact with Vessel Masters. <p>Shipboard Oil Pollution Emergency Plans.</p> <p>Regulator accepted Oil Spill Contingency Plan prior to activity commencement.</p> <p>Note that Oil Spill Modelling Assessment for all seasons indicates surface spilt hydrocarbons from a refuelling incident have no probability of reaching the closest environmental sensitivity (Browse Island).</p>

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<p>Spill resulting from a collision.</p>	<p>A 'Notice to Mariners' advising of the presence of the drilling rig will be issued through Australian Maritime Safety Authority prior to the commencement of the activity. Ongoing communication with Australian Fisheries Management Authority and other commercial mariners such that that presence of drilling rig and vessels widely communicated.</p> <p>A safety zone of 500 m radius around the drilling unit will be maintained at the well site. The drilling rig will be located in open waters with no navigation constraints and will be well lit at night and during times of poor visibility.</p> <p>Vessels and drilling rig equipped with sophisticated navigation aids, navigational lighting and competent crew maintaining 24 hour visual, radio and radar watch for other vessels.</p> <p>Shipboard Oil Pollution Emergency Plans.</p> <p>Regulator accepted Oil Spill Contingency Plan prior to activity commencement.</p> <p>Note that Oil Spill Modelling Assessment for all seasons indicates surface spilt hydrocarbons from a loss of containment has a very low probability (1-2%) of contacting the closest environmental sensitivity (Browse Island) for the worst case unmitigated spill associated with a vessel to vessel collision.</p>
<p>Loss of well control/ well blow out.</p>	<p>Regulator accepted Well Operations Management Plan and drilling program meeting Shell's minimum standards and procedures.</p> <p>Prevention barriers:</p> <ul style="list-style-type: none"> • Rigorous training; • Global Standards for Well Design Integrity; • Risk Identification and Mitigation through Safety Cases; • Robust Barriers to prevent against Blowout Prevention (with double redundancy shutoff capability); and • 24/7 real-time monitoring. <p>Regulator accepted Oil Spill Contingency Plan, in place before commencement of activity, linking to the Prelude blow out contingency plan that includes the Prelude capping and containment program. This involves a globally deployable capping and containment system; sufficient casing strings available in country to be able to drill a relief well; selected suitable location for a relief well; a relief well design; potential relief well drilling units suitable for the conditions identified; and contracts are in place with global Emergency Well Control companies.</p>