



Environment Plan Summary
Torosa South-1 Pilot Appraisal Well

Woodside Energy Ltd.

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This summary of the Torosa South-1 Pilot Appraisal Well Environment Plan has been submitted to comply with Regulation 11(7)(8) of the *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999*. It may not be used for any other purpose without Woodside's prior approval.

1. Background

Woodside Energy Ltd. (Woodside) proposes to drill one pilot appraisal well, "Torosa South-1" (TS-1) to assess the southern portion of the Torosa gas field. The drill location is within the Commonwealth waters of Scott Reef which is situated in the Browse Basin offshore of northern Western Australia, approximately 430 kilometres north of Broome (Figure 1).

The Environment Plan (EP) for the survey has been prepared in accordance with Commonwealth regulatory requirements and guidelines for preparation of an EP and conforms to Woodside's Environment, and Health & Safety policies.

2. Description of the Action

Woodside propose to drill the TS-1 well using the Wilcraft jack-up rig. The well is located on the northern edge of the southern lagoon of Scott Reef and will take 65 days to drill and profile. Drilling is planned to commence in April 2008 and will be completed before 20 July 2008.

The well will be drilled using water-based mud. All cuttings and drilling fluids from the drilling of the well will be recovered to the rig and transported via a vessel to be discharged at a deep-water location 12 km to the east of Scott Reef (Figure 2). This may require up to two vessels to transport the cuttings.

The jack-up rig, which can accommodate approximately 110 people, will be supported by two oilfield support vessels. Thus, up to four vessels maybe required for the activity.

3. Coordinates of Activity

The coordinates of the TS-1 pilot appraisal well are:

Easting	381 260	Latitude	014° 02' 30.46" S
Northing	8 447 375	Longitude	121° 54' 01.16" E
Horizontal Datum	GDA94	CM	123° E : UTM Zone 51S

4. Description of the Receiving Environment

Scott Reef is a large emergent shelf atoll situated along the outer edge of the continental shelf, and is characterised by a combination of physical environmental conditions that result from its position at the edge of one of the widest continental shelves in the world. These conditions include clear deep oceanic water and a large tidal range. The diversity of habitats within the Scott Reef complex, together with its size and location in a coral rich province, is reflected in the diversity of corals reported from the area. A total of 258 species of scleractinian corals have been identified, which is similar to that reported for Ashmore Reef (255 species). Benthic habitats at Scott Reef were extensively mapped and described in 2006 by the Australian institute of Marine Science. Ten distinct benthic habitats were described from the lagoon at south Scott Reef and eight from north Scott Reef.

Listed threatened and migratory species that may potentially occur within Scott Reef or within the vicinity of Scott Reef are presented in Table 1.

Figure 1: Location of the Torosa gas field in relation to the Western Australian coastline



Figure 2: Location of Scott Reef and the Torosa South-1 pilot appraisal well and cuttings disposal location

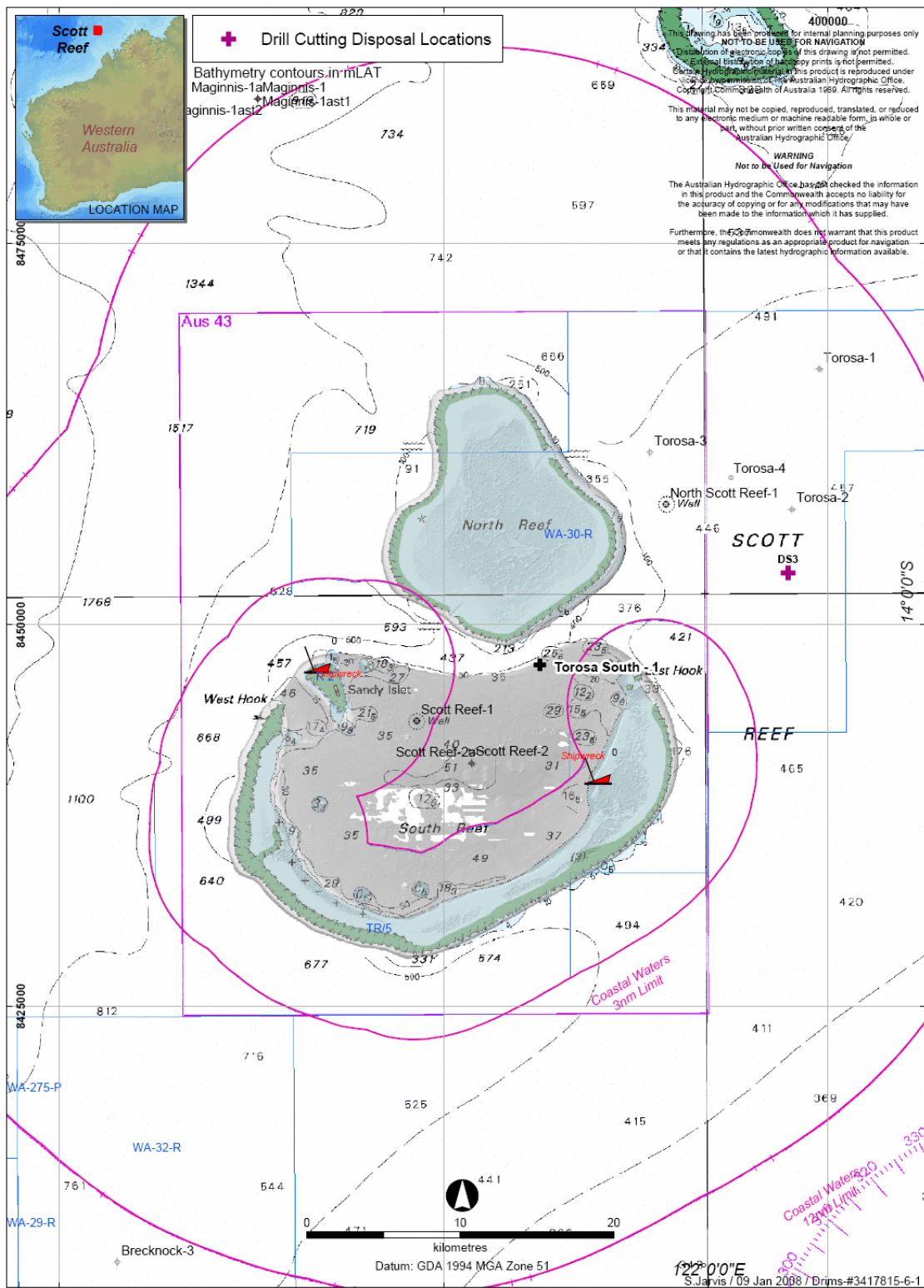


Table 1: Threatened and migratory species and specially protected marine fauna potentially occurring in the vicinity of Scott Reef

Species	Threatened Species Status (EPBC Act)	Listed Migratory Species (EPBC Act)	Specially Protected Fauna (WA Wildlife Conservation Act)
Cetaceans			
Blue Whale	Endangered	Yes	Yes
Southern Right Whale	Endangered	Yes	Yes
Humpback Whale	Vulnerable	Yes	Yes
Minke Whale	Vulnerable	Yes	Yes
Bryde's Whale	No	Yes	No
Killer Whale	No	Yes	No
Sperm Whale	No	Yes	No
Fraser's Dolphin	No	Yes	No
Spotted Dolphin	No	Yes	No
Spinner Dolphin	No	Yes	No
Bottlenose Dolphin	No	Yes	No
Turtles			
Green Turtle	Vulnerable	Yes	Yes
Leathery Turtle	Vulnerable	Yes	Yes
Hawksbill Turtle	Vulnerable	No	Yes
Flatback Turtle	Vulnerable	Yes	Yes
Fishes			
Great White Shark	Vulnerable	Yes	Yes
Whale Shark	Vulnerable	Yes	Yes (WA Fish Resources Management Act)

There are no known Australian indigenous sites at Scott Reef. The Yarra, a 482 tonne iron barque lost at Scott Reef in 1884, is listed on the Australian National Shipwreck Database.

Traditional Indonesian fishing activities are permitted within an area covered by a Memorandum of Understanding (MOU) between the Government of Australia and the Government of Indonesia. The MOU area includes Scott Reef.

Scott Reef may receive occasional visits from vessels, but little tourism or recreational activities are expected to occur in the vicinity of the offshore survey locations.

5. Major Environmental Hazards

An environmental risk assessment was conducted to identify potential environmental risks from the activities associated with the appraisal drilling. The risk assessment process indicated that the appraisal drilling activities have a range of potential impacts prior to the consideration of mitigation and management measures. There were no potential impacts identified as having a severe risk level. The majority of impacts were identified as having a low or medium risk level, apart from one potential impact, which was identified as having a high potential risk impact level:

- Physical disturbance to coral assemblages from the jack-up legs, well infrastructure and installation of cuttings recovery equipment.

The relatively low proportion of habitat impacted (< 0.0005% of the deep water coral assemblages) from the direct impact of drilling the well, combined with significant mitigation measures to not discharge drill cuttings at the Scott Reef location will ensure that residual risks will be negligible or of minor significance. The damage to benthic habitats will be insignificant and will not result in any significant population level effects or impacts on the functioning of the ecosystem.

6. Summary of Management Approach

Woodside’s environmental management strategies and procedures to be used for the drilling of the TS-1 well include responsibilities, training, reporting frameworks, mitigation and response activities and monitoring and auditing procedures. Commitments associated with these will be used to reduce environmental risk to As Low As Reasonably Practicable (ALARP).

The key management objectives and commitments to be applied to the TS-1 well are shown in Table 2. These are consistent with Woodside Corporate and the Browse LNG Development’s specific objectives, standards and criteria. This is not a comprehensive list of all commitments.

Table 2: Management objectives and commitments for the Torosa South-1 pilot appraisal well

Objective	Commitment
No significant impact to seabed and benthic habitats.	<ul style="list-style-type: none"> • No anchoring of rig. • Support vessels will not use anchors except under circumstances where safety is compromised. • Collection of drill cuttings and muds at the well location for disposal at a deep water location away from Scott Reef. • Use of the riserless mud recovery system to collect drill cuttings and muds from the top-hole section before the riser is in place.
No significant impact on marine environment from drilling fluids and cuttings	<ul style="list-style-type: none"> • Use of low toxicity water-based mud drill fluids approved by the DoIR. • Cuttings disposal location outside of the reef system and selected based on modelling results showing no impact on Scott Reef. • Cuttings Management Measure document implemented.
No significant impact on marine environment from routine discharges	<ul style="list-style-type: none"> • Use of MARPOL approved sewage treatment plant. • Foodscraps collected, contained and sent ashore for disposal. • Daily inspections of the sewage treatment chlorination tanks. • Sewage contained if failure of treatment system. • Bilge water passed through alarmed oil-in-water separator. Oil levels to be below 15 ppm before discharged. • Hydrocarbons and chemicals within bunded areas with no spills permitted to enter the overboard drainage system. • Spill kits readily available with staff trained in their use. • Deck washdown and stormwater containing hydrocarbons and/or chemicals will be captured, and either treated before release or contained and sent ashore for treatment and disposal.
No significant environmental impact from solid and hazardous wastes	<ul style="list-style-type: none"> • No overboard disposal of wastes including food scraps. • Wastes segregated on the rig and vessel for transport to shore. • Implementation of Woodside’s Waste Management Plan—Broome.

Objective	Commitment
No introduction of exotic marine species	<ul style="list-style-type: none"> • Rig and vessels adhere to Australian Quarantine and Inspection Service (AQIS) ballast water management requirements and quarantine requirements. • Risk assessment undertaken as per the Torosa South-1 Pilot Appraisal Well Non-Indigenous Marine Species Management Plan (NIMSMP). • If risk identified as uncertain or high inspection of rig or vessels will be undertaken.
No significant impact to marine fauna	<ul style="list-style-type: none"> • Vessels to maintain a distance of 300m stand off distance to cetaceans. • Helicopters shall not operate lower than 1650ft or within the horizontal radius of 500 m of a known cetacean. • Helicopter flights carried out during daylight hours, except if required for emergencies and/or training purposes. • Vertical seismic-profiling survey procedures followed. • Minimum lighting in place on rig and vessels to meet navigation and safety requirements. • Survey of rig lighting undertaken to identify areas for reduction in light spill.
Minimise emissions to atmosphere	<ul style="list-style-type: none"> • Engines maintained to operate at optimum efficiency to minimise emissions. • Compliance with MARPOL 73/78 Annex VI. • Use of low sulphur fuel, where available.
No hydrocarbon or chemical spills to the marine environment	<ul style="list-style-type: none"> • Shipboard Oil Pollution Emergency Plan (SOPEP) in place for managing spills onboard the rig or vessels. • For spills to the ocean, spill response undertaken as per the Browse oil spill contingency plan. • Adherence to well integrity standards and blow-out preventer in place. • Fuels, oils and chemicals stored within contained or bunded areas. • Adherence to bulk transfer procedures.
Minimise interference with other social and commercial users	<ul style="list-style-type: none"> • Notification to Australian Fisheries Management Authority (AFMA), Department of Fisheries and appropriate commercial fishing operations. • Notification to the Department of Foreign Affairs and Trade and Professor James Fox at the Australian National University, in relation to traditional Indonesian fishers. • Undertake consultation with charter operators and tourism associations in Broome and appropriate research organisations (e.g. Australian Institute of Marine Science and WA Museum). • 500 metre safety exclusion zone around the drill rig. • Standard maritime safety/navigation procedures (lights, beacons, etc). • AusCoast warnings via Australian Maritime Safety Authority.
No impact on heritage and conservation values	<ul style="list-style-type: none"> • Implementation of all criteria detailed in this table.

7. Consultation

Woodside recognises that stakeholders have an interest in its business and aims to listen and respond to them. Consultation aims to inform and educate stakeholders, to identify their views and concerns and to obtain feedback about proposals. This helps Woodside to learn through local knowledge, to evaluate alternatives and resolve / avoid conflicts.

Woodside consulted stakeholders for the broader Torosa South appraisal drilling program before and during the preparation of the TS-1 Environment Plan. Consultation was undertaken with representatives from the following stakeholder groups:

- WA Department of Environment and Conservation
- WA Department of Industry and Resources
- WA Department of Fisheries
- Commonwealth Department of Environment, Water, Heritage and the Arts
- WA Museum
- Commonwealth Department of Environment, Water, Heritage and the Arts
- Australian Institute of Marine Science (AIMS)
- Conservation Council
- World Wildlife Foundation (WWF)
- Save the Kimberley
- Environs Kimberley

8. Contact Details

For further information about the Torosa South-1 Pilot Appraisal Well please contact:

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