WHEATSTONE / IAGO APPRAISAL CAMPAIGN ENVIRONMENT PLAN: PUBLIC SUMMARY

Coordinates of the Petroleum Activity

The drilling area is in Commonwealth marine waters of north-western Australia, approximately 85 km north of Barrow Island and 140 km north-west of the mainland. Drilling will occur within petroleum leases WA-253-P(R1), WA-17-R and WA-16-R.

Table 1. Coordinates of Survey Area

Well Name	GDA1994 Latitude	GDA1994 Longitude
Wheatstone-2	19° 48’ 49.36’’ S	115° 18’ 26.46’’ E
Wheatstone-3	19° 53’ 24.9’’ S	115° 16’ 45.71’’ E
Iago-2	TBD	TBD
Exploration Well (unnamed)	TBD	TBD

Note: Location of Iago-2 well will be in close proximity to the existing Iago-1 well.

Description of the Receiving Environment

Physical
The proposed wells are located on the edge of the continental slope in water depths of 100 to 300m. The majority of the seabed dips towards the north-west with an average gradient of less than 1°. Geophysical surveys of the well sites suggest that the majority of the seabed is homogenous in nature, with few significant seabed features. Seafloor habitats predominantly consist of clayey, silty, fine to medium grained sands with shell fragments, areas of irregular sand waves / sand ribbons and regions of occasional to minor seabed depressions.

Biological
As water depths at the well locations are beyond the photic zone, primary producers such as corals and seagrasses will not be present. ROV surveys undertaken at shallower locations on the North West Shelf have indicated that sediments are variously bioturbated, supporting a diverse burrowing infauna and sparse epifauna mainly sea pens. However, benthic communities are generally sparse with low densities of molluscs, crustaceans and worms (polychaete, sipunculid and platyhelminth) encountered. Any areas of exposed substrate are expected to be colonised by deep-water filter feeding organisms such as hydroids and sponges.

A number of sharks and pelagic finfish, including mackerels, tunas and billfishes, occur in the waters of the North West Shelf and would be expected in the vicinity of the project area. The deep offshore environment of the drilling area is typical of broad expanses of the continental slope and is not expected to represent habitat of particular significance to sharks and finfish.

Six species of sea turtle occur in north-western Australian waters including the green, hawksbill, leatherback, flatback, loggerhead and olive ridley turtles. The nearest areas known to support turtle nesting are the beaches of the Barrow-Montebello Islands complex, approximately 60 km south-east of the drilling area at its closest point. The deep waters, distance offshore and lack of emergent land indicate the drilling area is unlikely to represent critical habitat for these species.

Several species of whale and dolphin are known to frequent the waters of the North West Shelf. The humpback is the most common whale species in the Pilbara region. Humpbacks migrate between Antarctic waters and the Kimberley each winter to mate and breed. The main migration path is centred along the 200 m bathymetric contour although sightings have been made as far offshore as the 1000 m contour. The migration period in the vicinity of the Montebello Islands is between mid-late July (northward) and early-mid September (southward). Drilling of the wells is scheduled to occur in January 2007 and in June 2007, extending as late as mid-August in the event that the fourth (exploration) well is drilled. Therefore, drilling operations may occur during the peak northward migration period for this species and humpback whales may be relatively common in the vicinity of the project area during the latter stages of the drilling program.

Blue whale migration patterns are similar to those of humpback whales with northward migrations from the Antarctic occurring during winter. Their migration pathways do not seem to follow coastlines or oceanographic features and the project area does not intersect any known blue whale migratory routes or aggregation areas.

The distribution and abundance of other cetaceans that may occur in the region is not well established. Whales with widespread or tropical deep water distributions that may occur in the region, including Antarctic minke, Bryde's, killer, sperm, fin, sei and false killer whales are not expected to occur in significant numbers in the project area. Deep water dolphin species likely to occur in the area include the spinner, striped, Risso's, spotted and rough toothed. The project area does not represent any recognised breeding, feeding or migratory areas for any cetacean species.

The proposed survey area is outside the usual range of the endangered southern giant petrel, however individuals may occasionally be present. Other seabirds known from the region may be encountered, however there are no important feeding grounds known from the waters of the survey area and, given its distance from land, foraging activity is likely to be low.

Socio-economic
The North-west Shelf region is subject to extensive petroleum exploration and production activities. Other activities in the area include low levels of commercial fishing and shipping.

Description of the Action

Chevron Australia Pty Ltd (Chevron) proposes to drill up to four exploration / appraisal wells in medium depth Commonwealth marine waters. The wells are located within petroleum leases WA-253-P(R1), WA-17-R and WA-16-R on the North West Slope, Western Australia. Drilling operations will involve the specialised semi-submersible drill-rig Songa Mercur and will drill to an approximate depth of 3800 m. The wells will be drilled using a combination of seawater with gel sweeps and water based drilling fluids. Upon completion of drilling each well, the well will be logged with a logging suite including vertical seismic profiling.

Drilling of Wheatstone-2 is expected to commence in January 2007 with Wheatstone-3 to follow. The rig will be then be released to Santos who will drill three wells before releasing the rig back to Chevron to drill Iago-2, which is scheduled to commence in June 2007. The fourth exploration well may be drilled subsequent to the completion of Iago-2. An estimated 35 days is required for the drilling, evaluation and abandonment of each well (approximately 140 days total).

Details of Major Environmental Hazards and Controls

The nearest locations supporting sensitive environmental resources are at the Barrow, Lowendal and Montebello Island groups, located approximately 60 to 85km from the proposed well sites. Humpback whales on their northward migration may be encountered during drilling of the Iago-2 and (potential) fourth well.

Risk analysis has been undertaken for all aspects of the proposed drilling program, in accordance with the procedures outlined in the Australian and New Zealand Standard AS/NZS 4360:1999 (Risk Management). The analysis indicates that the risk of significant adverse environmental effects from the project is low. A summary of the environmental hazards, potential effects and management approaches adopted during the proposed program are indicated in Table 2.

Summary of the Management Approach

The Wheatstone / Iago drilling program will be conducted in accordance with industry best practice and all legislative and regulatory requirements. Chevron's overall environmental objective for the drilling program is to conduct the proposed survey with no, or as low as reasonably practicable, effect on the environment.

Chevron's operations are conducted within a comprehensive corporate HES management framework, supporting the corporate commitment to 'Protecting People and the Environment' (Policy 530). This framework ensures a systematic approach to environmental management, with the environmental aspects of each project addressed from project conception, throughout project planning and as an integral component of implementation. All Chevron operations are managed in accordance with the Chevron Operational Excellence Management System (OEMS), which describes performance standards for each element of operations.

Consultation Details

Consultations with government and industry groups regarding petroleum activities at the proposed location have included:

- Department of Fisheries Western Australia (DoF)
- Recfishwest
- Western Australian Fishing Industry Council (WAFIC)
- Western Australian Game Fishing Association (WAGFA)
- Northwest Game Fishing Association (NWGFA)
- Onslow Professional Fishing Association

These consultations have indicated that: the drilling program will not conflict with commercial or recreational fishing as few operators are active in the offshore waters of the project area; no tourism or game fishing operators utilise the area of the proposed drilling program; and no sensitive environmental resources have been identified as occurring in the project area. Whilst key stakeholders will be advised of the start date of the drilling program, there are no plans for further consultations due to the short duration of the program and the low risk of significant adverse environmental effects from the project.

Contact Details

Further information may be obtained by writing to:

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Table 2. Summary of Environmental Hazards, Potential Effects and Management Approach

Environmental Aspect and Incident	Potential Environmental Effect	Management Approach	Risk
ROUTINE OPERATIONS			
Anchoring	Potential localised disturbance to benthic habitat.	Mooring analysis completed and adherence to anchoring procedures will prevent anchor drag.	Moderate
Artificial lighting	Potential attractant to marine life.	No management required.	Low
Drilling Noise	Potential for disturbance to whale migration behaviour.	No management required.	Moderate
Acoustic impulse from air-guns	Potential physiological effects or disruption to behaviour patterns of sensitive marine fauna.	Implementation of management measures to minimise possible disturbance to cetaceans by not firing seismic source if whales within 3km of drill rig. Management measures based upon DEH (2001) guidelines Soft start procedures to deter marine fauna from the project area.	Moderate
Flight Noise (helicopter)	Potential for short term disturbance to birds along flight paths.	Flight paths selected to minimise potential for disturbance; minimal low flying; no flying over nesting areas; shortest route taken over Barrow Island.	Low
BYPRODUCTS OF ROUTINE OPERATIONS			
Discharge of drilling fluid	Potential localised and temporary effects on water quality.	Use of vibrating shale shakers to optimise recovery of fluid. Adherence to EP.	Low-Moderate
Discharge of cuttings	Potential localised burial/smothering of benthos within zone of effect.	Discharge at surface to maximise dispersion.	Moderate

Grey water/ sewage disposal	Potential localised nutrient enrichment or reduction of water quality.	Biodegradable detergents only. Adherence to Clause 222 of P(SL)A	Low
Putrescible galley waste disposal	Potential localised nutrient enrichment.	Maceration to <25mm prior to discharge. Adherence to Clause 222 P(SL)A	Low
Solid wastes discharge	Potential localised disturbance to habitat/water quality.	Mainland disposal of solid wastes in accordance with WMP.	Low
Cooling water discharge	Potential localised elevation in water temperature.	No management required.	Low
Discharge of Oily Water	Potential localised and temporary acute toxic effects.	Water treated to <15ppm oil in water in accordance with Marpol 73/78 Discharge quality automatically monitored with alarm.	Low
Waste oil discharge	Potential localised chronic/acute toxic effects.	All waste oils collected, stored in bunded areas and returned to shore for recycling/disposal.	Low
Drilling material discharge	Potential contamination of marine environment	All substances transported and stored in accordance with relevant legislation and Australian Standards.	Low
Flaring of hydrocarbons	Potential for hydrocarbon loss to sea surface with localised and temporary acute toxic effects.	Follow flaring procedures to ensure efficient flare operations	Low
Atmospheric emissions	Potential increase in greenhouse effect.	Engines tuned to operate at optimum efficiency to minimise emissions.	Low
CONTINGENCY EVENTS			
Navigation hazard - Collision	Potential for hydrocarbon or debris discharge to environment following collision.	500m exclusion zone. Rig and vessels carry navigation lighting and sophisticated equipment. All vessels operated by accredited seamen. Notification of rig presence via Notice to Mariners. Radar and radio monitoring and warnings. ARPA radar on vessels.	Low

Drilling blow out	If gas blow out, little effect to marine environment. Potential acute/chronic toxic effects on marine organisms from liquid hydrocarbons.	Well control certification for wellsite managers and key personnel. Approved well application. Adherence to well integrity standards / best practice. Blow Out Preventers (BOP) as per DoIR requirements. Approved OSCP.	Low
Drilling fluid loss during transfer	Potential localised and temporary effects.	Adhere to bulk transfer procedure.	Low
Diesel fuel loss during transfer	Potential localised and temporary acute toxic effects.	Adhere to refuelling procedure. Approved OSCP supplemented by OSORP. Reinforced hoses with dry break couplings and fail-safe fittings. Absorbent materials kept onboard vessels for immediate spill response.	Low
Chemical spill runoff to sea	Potential localised and temporary acute toxic effects.	Only trained authorised personnel to access store.	Low
Ballast water - Introduction of exotic marine species	Potential competition with indigenous species.	Ballast exchanges conducted outside the Australian 12 nm limit.	Low
Displacement of other users of marine environment.	Potential disruption to commercial fishing/shipping in the area.	Liaise with fishermen and other commercial mariners to minimise conflict.	Low