

Duyfken 3D Marine Seismic Survey Environment Plan: Public Summary

Coordinates of the Petroleum Activity

Table 1
Survey Area Coordinates

Easting	Northing
270171	7809267
281918	7809430
290682	7805864
290792	7796638
282066	7796532
282144	7790238
279355	7787270
273326	7782311
272245	7782293
266842	7765417
261393	7765341
259105	7759315
250358	7759191
239999	7731345
193201	7730567
195423	7758724

Description of the Receiving Environment

The substrate at the proposed survey location is expected to comprise loose, silty carbonate sands with occasional exposed hard substrate. Geophysical surveys in adjacent areas showed that approximately 95% of surface sediment is comprised of fine sand (less than 1mm diameter), with only a small component (<5%) of shell fragments greater than 1 mm diameter. 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 (*Virgularia* spp). However, benthic communities are generally sparse with low densities of molluscs, crustaceans and worms (polychaete, sipunculid and platyhelminth) encountered.

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 survey area. The deep offshore environment of the proposed survey 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 northwestern 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 island in the Barrow-Montebello Island complex, over 90 km southeast of the proposed survey area. The deep waters and distance offshore indicate the survey 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. Migrating humpbacks pass the Montebello Islands between late July and early September. The eastern boundary of the proposed survey area is located approximately 20 km west of the recognised humpback whale migration pathway near the 900 m bathymetric contour. The proposed survey will be managed to avoid peak migration periods for humpback whales.

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 survey area. The survey area does not represent any recognised breeding, feeding or migratory areas for any cetacean species.

Description of the Action

Chevron Australia Pty Ltd (Chevron) proposes to undertake a 3D marine seismic survey in petroleum titles WA-205-P, WA-253-P, WA-374-P, WA-15-R, WA-19-R, WA-20-R, WA-22-R, WA-24-R, WA-25-R and WA-26-R, in deep (900 to 1300 m) Commonwealth marine waters. The survey will take approximately 90 days and is anticipated to occur between late April 2006 and late July 2006. Seismic data will be acquired using a purpose built seismic survey vessel (M/V Western Trident) towing a conventional array of airguns and hydrophones.

Details of Major Hazards and Controls

Risk analysis has been undertaken for all aspects of the proposed seismic acquisition 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 survey is low. A summary of the environmental hazards, potential effects and management approaches adopted during the proposed programme are indicated in Table 2.

Summary of the Management Approach

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 seismic surveys at the proposed location have included:

- Department of Fisheries Western Australia (DoF)
- Australian Fisheries Management Authority (AFMA)
- Western Australian Fishing Industry Council (WAFIC)
- Western Australian Game Fishing Association (WAGFA)
- Northwest Game Fishing Association (NWGFA)
- Ashburton Fisheries (Onslow)

These consultations have indicated that: the proposed seismic program will not conflict with commercial or recreational fishing as few operators are active in the offshore waters of the proposed survey area; no tourism or game fishing operators utilise the area of the proposed seismic program; and there are no significant environmental sensitivities known for the area at the time of the proposed survey. Whilst key stakeholders will be advised of the start date of the survey prior to commencement, there are no plans for further consultations due to the short duration of the program.

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
Acoustic impulse from air-guns.	Potential physiological effects or disruption to behaviour patterns of marine fauna.	Survey will be managed to avoid peak migration periods of the humpback whale. Comply with DEH guidelines for minimising possible disturbance to cetaceans, including: <ul style="list-style-type: none"> • Visual observations during pre-start procedures and during survey; • Use of soft start procedures; and, • Delay start up procedures/ shut down any operating acoustic source if whales are within 3km of survey vessel (or as amended)	Low risk
Grey water/ sewage disposal.	Potential localised reduction in water quality - nutrient enrichment.	Treat in accordance with P(SL)A clause 222 and MARPOL 73/78 prior to discharge. Offshore discharge (>12 nm from land) only. High dispersal/dilution factor. Approved onboard sewage treatment plant. Biodegradable detergents only.	Low risk.
Discharge of oily water from bilges.	Potential localised and temporary acute toxic effects.	All bilge water passes through an oil/water separator prior to discharge. All bilge discharges treated to <15 ppm hydrocarbons; MARPOL 73/78 standard for oily water discharge. Discharge quality automatically monitored with alarm. Low volumes and rapid dilution/dispersal.	Low risk.
Putrescible galley wastes disposal.	Potential localised reduction in water quality - nutrient enrichment.	Low volumes and rapid dispersal/dilution. Maceration to <25 mm prior to discharge or incineration. Discharge only when >12nm from shore. Discharges in accordance with MARPOL 73/78 and P(SL)A Schedule Clause 222.	Low risk.
Solid wastes disposal.	Potential environmental degradation from incorrect disposal.	Incineration or onshore disposal of solid wastes in accordance with EP, Waste Management Plan and MARPOL 73/78.	Low risk.
Waste oil disposal.	Potential localised chronic/acute toxic effects.	No waste oil disposed at sea. All waste oils collected and returned to shore for recycling/disposal in accordance with EP, WMP and MARPOL 73/78.	Low risk.
Atmospheric emissions.	Potential increase in greenhouse effect.	Engines maintained to operate at optimum efficiency to minimise emissions.	Low risk.
Artificial lighting.	Potential attractant/ disturbance to marine life.	Lighting minimum required for navigation and safety requirements. Extent of lightspill limited. Survey in remote location.	Low risk.

Anchoring activity.	Potential localised disturbance to benthos.	No anchoring on location except in emergency. No sensitive benthos.	Low risk.
Vessel collision.	Potential acute toxic effect on marine organisms from oil spill.	Vessel equipped with sophisticated navigation aids and competent crew maintaining 24 hour visual, radio and radar watch for other vessels. Other vessels made aware of seismic vessel's restricted ability to manoeuvre. Survey vessel carries navigation lighting. OSCP in place. Adhere to maritime standards requiring notification of vessel presence via notice to mariners. Seagoing movements of vessel will comply with maritime standards and AMSA standards.	Low risk.
Fuel loss during transfer	Potential acute toxic effect on marine organisms.	Not expected during survey. Strict adherence to refuelling procedures. OSCP in place. Small volume. Very rapid evaporation.	Low risk.
Displacement of other users of marine environment.	Potential disruption to commercial fishing/vessel operations	Liaise with relevant authorities. Fishermen and other commercial mariners alerted of vessel presence. Notice to Mariners posted.	Low risk.