Basker-6 Drilling

Summary Environment Plan

AGR Asia Pacific Controlled Document

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1 Activity Description

Anzon Australia Limited ('Anzon') holds 40% interest and is the operator of the Basker, Manta and Gummy (BMG) field development in eastern Bass Strait. Beach Petroleum holds 40% interest and Itochu Corporation (Japan) holds the remaining 20% interest in the development.

The development and production activities relating to the Anzon Australia BMG project have been contracted to AGR Asia Pacific (AGR-AP), formerly Upstream Petroleum Pty Ltd.

1.1 Scope of Work

Anzon Australia is proposing to drill Basker-6 to appraise the structure and reservoir distribution at the SE flank of Basker structure to firm up future development plan. The well is located in the Production Licence VIC/L26 in eastern Bass Strait.

The Basker-6 well will be drilled by the Diamond Offshore Drilling Incorporated (DODI) operated "*Ocean Patriot*" semi-submersible rig to Total Depth (TD) of 3363 m MDRT (Measured Depth from the Rotary Table). The well will be drilled using a combination of seawater and pre-hydrated bentonite sweeps and KCl / PHPA / glycol water based drilling fluids. Upon completion of drilling, the well will be logged with a logging suite including vertical seismic profiling. No extended production testing is planned for Basker-6, although a short clean up (and its associated flaring) will be undertaken prior to suspending the well. Should reserves be proven at this location, the Basker-6 well will be completed with a wellhead and a subsea tree left in-situ.

Drilling of Basker-6 well is expected to commence at the end of February 2008. Depending upon the results of the drilling, the ensuing initial phase (drilling and completion) program should range from 30 (dry hole) to 45 days (completed).

1.2 Location

The Basker, Manta and Gummy oil and gas fields are situated in the Commonwealth waters of Bass Strait approximately 50 km from the Victorian Coast and 15 km east of the Flounder oil and gas field. The Basker-6 well is located approximately 4.5km south of the *Crystal Ocean* FPSO mooring location and 3km south of the existing Basker manifold. The coordinate of the Basker-6 location is shown in Table 1.

Table 1 Basker-6 location coordinate

MGA Coordinates (GDA94) UTM 80 Zone 55			
Locations	**Longitude**	**Latitude**	**Water Depth**
Basker-6	148° 43' 54.76''	-38° 19' 17.47''	272m

2 Receiving Environment

The closest landfall to the Basker-6 well is Cape Conran, located 53km north, on the Ninety Mile Beach (Victoria), an extensive continuous NE-SW oriented sandy beach and dune system. This beach and dune system provides a buffer zone to the wetlands and heathlands located around the 400km^2 Gippsland Lakes waterways.

The well is located in 272 m water depth over the edge of the Bass Canyon. Geophysical survey of the well site showed that the seabed at and around the proposed Basker-6 is featureless and undisturbed with gradients no greater than 2^{o} (1:30). The seabed consists of silty sand with slight undulation. Species found at depths of between 200 – 500 m of Eastern Bass Strait include *ophiuroids, holothurians, decapods and pycnogonids*.

Both resident and migratory fauna, including fish, sharks, seals, sea lions, and cetaceans have been observed in the vicinity of the BMG field. Up to 10 migratory species, including 2 endangered species (Blue Whale and Southern Right Whale) and 3 threatened species (Great White Shark, Whale Shark and Humpback Whale) may potentially migrate or temporarily forage in the permit area during certain periods. However, the area is not recognized as an aggregation area for the species and there are no threatened ecological communities listed under the EPBC Act in the vicinity of the drilling site. Commercial species of fish (shark, ling, perch, and whiting) and shellfish (scallop and squid) also occur in the area.

Migratory seabirds listed under the EPBC Act are known to occupy the islands of Bass Strait, the nearby coastline, and may pass through BMG fields during the drilling of Basker-6. However due to the lack of suitable roosting and breeding habitats or important habitats for these species in BMG areas, they are not expected to be present for extended periods of time.

A wide range of human activities occurs in Bass Strait including fishing, production of oil and gas fields, shipping as well as recreational pursuits, heritage, research and tourism.

3 Major Environmental Hazards and Controls

A risk analysis has been undertaken for all aspects of the proposed drilling activities in accordance with the requirements of AS/NZ4360:2004 (Risk Management) and AS14001. The analysis indicates that, with the proposed management/mitigation measures implemented, no significant environmental impacts are expected and the activities carry a low to medium residual environmental risk. Further details of key environmental aspects of the drilling activities are provided in Table 2.

4 Summary of Management Approach

As the project manager of the BMG development, AGR-AP has taken a systematic approach in identifying and assessing operational activities (aspects) and their associated environmental risk and establishing objectives, performance standards and criteria to manage and measure environmental performance. AGR-AP has activated its Integrated Management System (IMS) to fulfil the company's environmental policy and objectives and act in an environmentally responsible manner. AGR-AP's IMS is certified to ISO 14001 and provides a framework for the management of environment during both operational and drilling activities. The IMS applies to all employees, contractors and other third parties.

5 Consultation Process

Anzon/AGR-AP has consulted with fishery groups, fishing industry groups and regulatory agencies associated with the proposed Basker-South development, including Victorian Department of Primary Industries (DPI), Australian Fisheries Management Authority (AFMA), Seafood Industries Victoria (SIV), Lakes Entrance Fisherman Co-op (LEFCOL),

South-east Trawl Fishing Industry Association (SETFIA), South-East Fishing Association (SEFA), Twofold Bay Fishing Co-op and VR Fishing (Peak Body for Recreational Fishing).

Anzon/AGR-AP will continue to maintain regular communications with identified stakeholders and other interested parties to ensure that they are informed of any changes to the drilling program affecting their activities. Continued liaison with the fishery groups will occur throughout the continued BMG development phases.

6 Contact Details

Further information associated with the environmental aspects of the Basker-6 drilling activities may be obtained from AGR Asia Pacific by writing to:

Phil Harrick
AGR Asia Pacific Petroleum Services HSE Manager
3/342 Flinders Street
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Table 2 Summary of Risk Assessment

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
1	Presence of *Ocean Patriot* MODU	• Interference with shipping and fishing vessels increasing the risk of collisions • Restricting access to drilling area, causing disruption to fishing activities	• Minimise interference with commercial fishing vessels • Minimise interference with shipping traffic and avoid shipping collisions	• Drilling activities is short duration (30 - 45 days); • A 500 m safety exclusion zone around the *Ocean Patriot* drilling rig will be declared; • Safety zone will be gazetted, will appear on Australia Navigational Chart & marine notice issued; • Lighting while the *Ocean Patriot* is on location; • Guard vessel on stand by to ward off errant vessels; • Consultation with fishing industry group undertaken and to continue.	Low
		• Possible collision with marine mammals causing injury or death • Disturbance of marine mammals/fauna (altered behaviour)	• Minimise disruption to marine life	• Drilling activities is short duration (30 - 45 days) outside of peak cetacean migratory period; • Environmental induction for crews; • Whale & dolphin sighting reports to be completed and submitted to Department of Environment, Water, Heritage and Art (DEWHA); • *Ocean Patriot* is stationary in open ocean, whales and dolphin will have no problem avoiding it; • An emergency response/oil spill contingency plan will be specifically established, implemented and tested for the drilling of Basker-6 well.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
2	Presence of attendant vessels	• Interference with shipping and fishing vessels increasing the risk of collisions	• Minimise interference with commercial fishing vessels • Minimise interference with shipping traffic and avoid shipping collisions	• Drilling activities is short duration (30 - 45 days); • Attendant vessels will standby inside the safety zone; • Safety zone will be gazetted, will appear on Australia Navigational Chart & marine notice issued; • Continuous radar and radio monitoring while on location; • Consultation with fishing industry group undertaken and to continue. • In accordance to MARPOL, the vessels will operate under Shipboard Oil Pollution Emergency Plan (SOPEP).	Low
		• Possible collision with marine mammals causing injury or death • Disturbance of marine mammals/fauna (altered behaviour)	• Minimise disruption to marine life	• Drilling activities is short duration (30 - 45 days) outside of peak cetacean migratory period; • Environmental induction for crews; • Whale & dolphin sighting reports to be completed and submitted to Department of Environment, Water, Heritage and Art (DEWHA); • Adherence to proximity distance as per the 2005 Australia National guideline for whales and dolphin watching; • The attendant vessel will operates in relatively low speed, whales and dolphin will have no problem avoiding it;	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
3	Seabed disturbance from anchoring activities	• Disturbance to seafloor resulting in loss of seabed fauna	• Minimise disturbance to the seabed and benthic habitats	• Seabed survey of the area prior to *Ocean Patriot* mobilisation and anchoring; • Seabed disturbance temporary with impacts by other marine users (outside 500m) negating temporary impacts • Anchoring activities are undertaken in accordance with approved procedures which minimise benthic impacts.	Low
4	Presence of Sub-sea Infrastructure (if well is successful)	• Disruption to fishing activities	• Minimise interference with commercial fishing vessels	• A revised facility protection philosophy has minimised impacts to fisheries by limiting safety zones to the subsea infrastructure at Basker 6; • Fishing Plotter information to be provided to fishing vessels to ensure infrastructure presence is identifiable; • Subsea completion will be removed at the end of field life (anticipated to be 15years) and plugged & abandoned in accordance with PSLA requirements (i.e. no permanent fishing impacts).	Medium
5	Introduction of exotic organism (ballast water and fouling organisms)	• Potential to discharge of exotic organisms from ballast water which may cause ecological disruption	• Maintain indigenous biodiversity	• Vessel to comply with the AQIS Australian Ballast Water Management Requirements.	Low
		• Introduction of exotic marine species as a result of hull and vessel niches fouling		• Inspection by suitably qualified divers prior to leaving New Zealand waters; • Removal of exotic marine species prior to entering Australian waters.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
6	Discharge of drilling Fluid/cuttings	• Fluid may contain chemicals that are harmful for the environment	• Minimise impact of drilling fluids and cuttings on marine environment.	• Basker-6 well will be drilled with Water Based Mud (WBM). No Synthetic Based Mud or Oil Based Mud will be used; • Drilling mud discharges to be minimised through closed drilling system; • Mud losses on cuttings minimised through the use of shale shakers in the closed mud system; • During the drilling of the lower section, drill cutting will be discharged overboard at sea-level, dispersing the cuttings and associated mud over a wider area (with trawl activity assisting in this dispersion); and • Drilling fluid and additives used are monitored and recorded.	Low
		• Water turbidity affecting sunlight to phytoplankton			Low
		• Smothering of benthic communities on seabed			Low
		• Temporary alteration to sediment characteristics			Low
7	Discharge of cooling Water	• Thermal impacts to marine flora/fauna near the discharge point • Seal oil contamination of cooling waters	• Minimise impact of on marine environment.	• Warm cooling water is expected to disperse near the sea surface very rapidly within a few tens of metres from the discharge point; • Seals on cooling water pumps are routinely maintained and regularly checked.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
8	Discharge of deck Drainage from the *Ocean Patriot*	• Toxicity impacts to marine flora & fauna • Reduction of water quality	• Minimise impact of on marine environment.	• Chemicals, oils and wastes shall be stored in the designated storage areas where appropriate spill cleanup materials (e.g. absorbents, containers) are maintained in accessible locations; • In the event of a chemical or oil spill, absorbents are used to remove spill material prior to any washing activities; • Absorbent material, used for cleanup, is containerised and sent to shore as hazardous waste; • Bunding (temporary or permanent) is provided for those areas/activities where there is an increased risk of oil/chemical spill (e.g. fuel transfer); • Material Safety Data Sheets are available for all chemicals used on the *Ocean Patriot* (which includes spill response requirements); • Chemicals used are assessed for environmental impact prior to purchase (e.g. fully biodegradable detergent); and • Slops water will be discharged via an IMO approved Oil-in-water (OIW) meter as per MARPOL Annex 1 at <15ppm.	Low
9	Discharge of deck drainage from the attendant vessels	• Toxicity impacts to marine flora & fauna • Reduction of water quality	• Minimise impact of on marine environment.	• Vessels comply to the International Maritime Dangerous Goods (IMDG) Code; • Slops water will be discharged via an IMO approved Oil-in-water (OIW) meter as per MARPOL Annex 1 at <15ppm.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
10	Disposal of sewage, greywater and foodscraps from the *Ocean Patriot*	• Nutrient enrichment of surrounding water • Visual amenity impacts	• Minimise impact of on marine environment.	• Sewage will be treated in a sewage treatment unit prior to discharge to the marine environment; • Foodscraps are macerated to a particulate size of less than 25mm before being discharged to the marine environment below the water line; • Cleaning agents used in the accommodation block are fully biodegradable; • Inspection of treatment system on regular basis to confirm operability and performance.	Low
11	Disposal of sewage, greywater and foodscraps from attendant vessels	• Nutrient enrichment of surrounding water • Visual amenity impacts	• Minimise impact of on marine environment.	• Sewage will be treated in a sewage treatment unit prior to discharge to the marine environment; • Foodscraps are macerated to a particulate size of less than 25mm before being discharged to the marine environment below the water line; • Cleaning agents used in the accommodation block are fully biodegradable; • Inspection of treatment system on regular basis to confirm operability and performance.	Low
12	Atmospheric emissions of combustion products	• Reduction in air quality • Aesthetic impacts of smoke	• Minimise impacts of atmospheric emissions	• Regular equipment condition monitoring and maintenance undertaken to ensure maximum efficiencies; • Rigorously monitored fuel usage; • All emissions from marine utilities are in accordance with the guidelines in MARPOL Annex 6 Prevention of Air Pollution from Ships.	Low
		• Contribution of greenhouse gases to atmosphere contributing to global climate change			Low
13	Emissions of Ozone depleting Substances	• Releases of Freon result in reduction in ozone and protection from UV	• Minimise impacts of atmospheric emissions	• Regular maintenance of the system to prevent leakages; • Systems serviced by accredited personnel.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
14	Noise	• Disturbance to marine mammals, seabirds and other marine fauna (note activity is being undertaken outside of migratory cetacean window)	• Minimise risks of adverse impacts of noise on marine fauna	• All mobile vessels will adhere to 2005 Australian National Guidelines for Whale & Dolphin Watching; • Adherence to 'soft start' procedure during VSP survey; • Cessation of VSP survey if marine mammals are observed; • Cetacean sighting data will be collected during Basker-6 drilling campaign and will be forwarded to DEWHA.	Low
15	Disposal of hazardous and general wastes	• Toxicity and physical impacts to marine flora and fauna • Visual Pollution to the marine environment	• Minimise potential impacts of solid and hazardous wastes on the environment	• Clear waste identification, segregation, containment (in skips or sealed drums) and labelling; • Opportunities for recycling and reuse will be explored where possible depending upon onshore receptors and real-estate on the rig; • Oily wastes are separated into individual 55 gallon drums including oily rags, oil filters, along with oily sludge and shipped in these containers to land to be taken to nearest recycling plant; • Waste storage areas are routinely inspected; and • Training and reinforcement to all drilling *Ocean Patriot* (& other) personnel of waste management requirements.	Low
16	Diesel spillage - Fuel transfer	• Impacts on water quality and marine life	• Minimise occurrence and effects of spills	• Fuel transfers in accordance with Bunkering Procedures with equipment routinely maintained and inspected; • Monitoring fuel level in tank and flow rates; • Hose couplings used are dry-break; • Suitable absorbent material is held on the attendant vessels and MODU to cleanup small diesel spills.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
17	Diesel spillage - Rupture of support vessel fuel tank	• Impacts on water quality and marine life • Shoreline Pollution (very low probability) • Disruption to fishing activities	• Minimise occurrence and effects of spills	• A 500m safety exclusion zone around the *Ocean Patriot* drilling rig will be declared and gazetted on Australia Navigational Chart; • Navigational aids on the *Ocean Patriot* and supply vessels including light and radars to avoid collisions.	Low
18	Crude spillage – Well cleanup testing fall out	• Oiling of Seabirds & fish Tainting • Shoreline Pollution • Disruption to fishing activities	• Minimise occurrence and effects of spills	• Installation of a system suitably sized to handle expected hydrocarbon flowrates during clean up operations; • Suitable control and shutdown systems to ensure well flow is suitably controlled and stopped in the event of an extinguished burner; • In the unlikely event of produced formation water (PFW) production during well cleanup, the PFW stream will be directed to the burners for vaporisation.	Low
19	Crude spillage - Well blowout	• Oiling of Seabirds & fish Tainting • Shoreline Pollution • Disruption to fishing activities	• Minimise occurrence and effects of spills	• Well locations are surveyed and assessed for potential shallow occurrences of hydrocarbon prior to drilling; • The composition of the drilling fluids is constantly monitored to ensure sufficient density to control subsurface pressures; • Blow-out Preventers (BOP) and related well control equipment are installed, operated, maintained and tested in accordance with manufacturer's recommendations as per P(SL)A Directions 505 & 506; • The well is designed and constructed in accordance with regulated international standard.	Low

No	Environmental Aspect	Description of Potential Impact (Consequence)	Environmental Objective	Management Measures / Actions	Residual Risk
20	Chemicals spills	• Impact on water quality and marine life	• Minimise occurrence and effects of spills	• Chemicals are handled according to the Hazardous Substances Procedure; • Chemical storage and handling areas are bunded and routinely inspected for leaks and spills; • Training is provided for personnel handling chemicals; • MSDSs are to be made available for all chemicals; • Spill kits to be provided in appropriate locations.	Low