



**Tap Oil Limited**  
ABN 89 068 572 341

Summary  
Environment Plan  
Molson 2D Seismic Survey  
Central Bass Strait  
T/47P

04 March 2008

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# Summary

## Introduction

Tap Oil, is proposing to undertake a 2-dimensional (2D) seismic acquisition survey in permit T/47P which is in Commonwealth waters located within central Bass Strait. This summarises the Environmental Plan which was submitted to facilitate the seismic approval process as required under the Petroleum (Submerged Lands) Act 1967, and Schedule of Directions (as amended).

It is expected that the planned activities will commence in mid March 2008 for a period of 7 days depending on weather conditions and vessel availability.

## Location

T/47P is located in central Bass Strait as shown in Figure 1. It is located approximately 120 km and 50 km from the nearest Tasmanian and Victorian coastlines respectively. The permit boundaries are listed in Table 1 below.

Figure 1: Location Map for Seismic Survey Area in T/47P

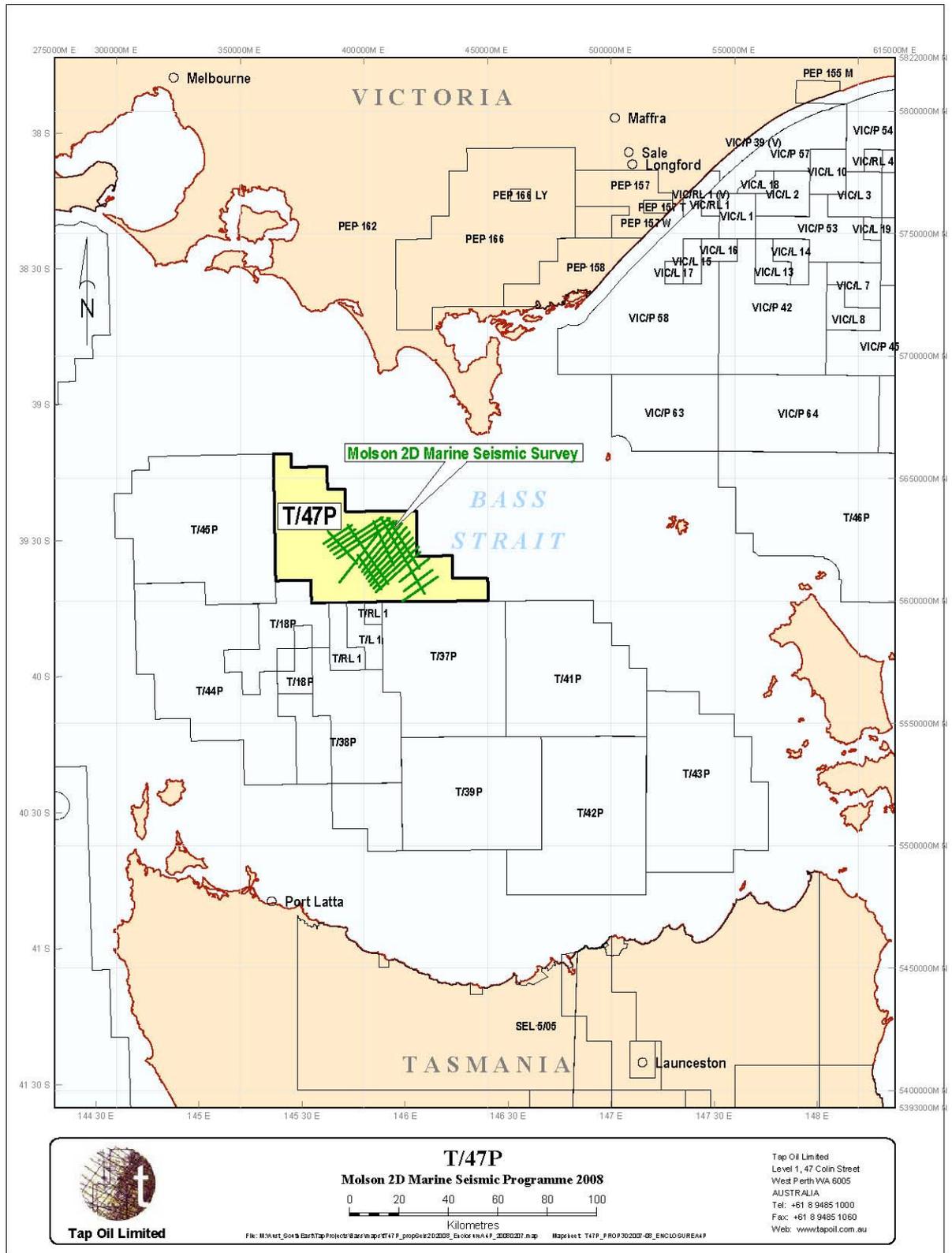


Table 1: Latitude and Longitude of T-47P Permit Boundaries

LONGITUDE	LATITUDE
145.4180145	-39.6651649
145.4179993	-39.1984978
145.4436340	-39.1984978
145.5013275	-39.1984940
145.5013275	-39.1984940
145.5013275	-39.2484932
145.6679993	-39.2484932
145.6679993	-39.3318253
145.7513275	-39.3318253
145.7513275	-39.4151611
146.0846558	-39.4151573
146.0846558	-39.5818214
146.2513275	-39.5818214
146.2513275	-39.6651573
146.4179993	-39.6651535
146.4179993	-39.7484894
145.5846710	-39.7484970
145.5846710	-39.6651649
145.4180145	-39.6651649

## Description of Action

The *Pacific Titan* is a specialist seismic acquisition vessel operated by CGGVeritas who have been contracted for the survey. The vessel is flagged in Singapore and was built in Japan in 1982 with a further rebuild in 2000.

The vessel will tow 1 streamer, 6.0 km in length, at a depth of ~8 m. The individual source volume will be 3040 cubic inch. The seismic signals reflected back are recorded by hydrophones towed behind the vessel located in the streamer. A total of ~530 km of full fold 2D seismic data will be acquired within the permit area.

The boat will cruise at speed of about 4.5 knots through the water and therefore the vessel and its passive trailing gear will transit over any one spot in about 45 minutes. The seismic vessel can accommodate up to 78 persons but the crew and geotechnical staff is more likely to number about 40 persons.

The seismic vessel is unlikely to require a support vessel.

Summary specifications of the *Pacific Titan* are listed below, a more detailed description of the vessel and its equipment will be provided to the DA with the Application to conduct the Geophysical Survey and in the Project Specific HSE Plan.

Table 2: Vessel Specification

Aspect	Pacific Titan
Dimensions	
Length overall	64.5 m
Breadth	18.5 m
Draft	5.2 m
Gross Registered Tonnage	3211 tonnes

Aspect	Pacific Titan
Capacities	
Vessel Speed (cruising)	10 knots
Fuel- diesel	1300 m <sup>3</sup>
Accommodation	78 persons
Seismic Equipment	
Number of Streamers	1
Maximum streamer length	6 km
Maximum source volume	3040 cubic inches

Mobilisation to the area will be directly from permits located elsewhere in Bass Strait. Once on site the nearest major port for operational supplies is likely to be Portland or Melbourne. Re-fuelling will not expected to be undertaken at sea.

## Description of Receiving Environment

### **Physical Environment**

As part of the interim marine and coastal regionalisation for Australia, the IMCRA Technical Group (1998) has classified the area where the survey is located as part of the meso-scale region defined as 'Central Bass Strait'. The details of this region are provided in Table 3 below.

Table 3: Mesoscale Region and Description

Mesoscale Region	Data Description	Description
Central Bass Strait	Location	Central Bass Strait (Offshore)
	Climate	Cool temperate climate, with cool wet winters, and cool summers.
	Oceanography	Tidal velocities vary from < 0.05 ms <sup>-1</sup> in the central area to as high as 0.5 ms <sup>-1</sup> at the margins where the islands and promontories form the western and eastern entries to Bass Strait. Water mass characteristics are complex and vary seasonally representing the mixing of the different water masses present on the western and eastern sides of the Strait. Mean water temperature is 19°C in summer and 13°C in winter. Submaximal wave exposure.
	Geology & Geomorphology	Large marine basin contained within the continental shelf, with water depth varying from about 80 m at its centre to 50 m around the margins. Soft sediment substratum consisting of silts and muds.

### **Fauna**

The permit lies within the south east marine region. Broadly the following fauna can be found in the region (NOO, 2001).

- The fish fauna of the region consists of about 600 species, of which 85% are believed to be endemic;
- marine mammals including whales and seals;
- Marine invertebrates include diverse groups such as sponges, crabs, seastars, anemones, octopus, squid and molluscs; and
- More than 20 species of migratory birds spend time in the region.

These are described in more detail below.

### **Fish**

Fish species include recreational (Tuna, Marlin, and Australian Salmon) and commercial species (Orange Roughy, Flathead, Flake, and Trevalla) (National Oceans Office, 2002). Two major groups are present in the area – pelagic (near-surface open ocean dwelling fish) and demersal (fish species dwelling near or close to the sea-floor).

One species of shark, the White Shark (*Carcharodon carcharias*) is listed under the EPBC Act as occurring in the region, and has a threatened status (vulnerable) and listed as a migratory species. An additional 29 species of fish (including pipefish and seahorse species) are listed under the EPBC Act and require a permit to remove from the area (DEW, 2007a).

### **Avifauna**

There are no islands or seabird colonies within the immediate vicinity of the proposed seismic acquisition area. While no roosting grounds, breeding grounds or important/limiting habitats exist for bird species within the area proposed for seismic acquisition, species which may frequent the area are discussed below.

In the EPBC database (DEW, 2007a), 17 bird species are listed as threatened species which includes 12 species of albatross, 4 species of petrel and one parrot. Of the fifteen migratory species listed, 13 are albatross species, and two are Giant-petrels.

Birds also make up 19 of the 32 listed marine species and include the groups previously mentioned above as well as 1 species of Skua.

Bird species are considered to not have a high likelihood of impact due to the nature of the seismic activities, and temporary activities in any one area.

### **Cetaceans**

Based on the EPBC Protected Matters Report (DEW, 2007a), cetaceans that could potentially be in the area are listed in Table 4 below.

Table 4: Cetaceans

Species	Threatened Status	Migratory Status	Listed Marine
<b>Mammals</b>			
Blue Whale	Endangered	✓	
Humpback Whale	Vulnerable	✓	
Southern Right Whale	Endangered	✓	
Pygmy Right Whale		✓	
Dusky Dolphin		✓	
Killer Whale, Orca		✓	
Bryde's whale		✓	
Minke Whale			✓
Common dolphin			✓
Short-finned Pilot Whale			✓
Risso's Dolphin			✓
Bottlenose Dolphin			✓
Curvier's Beaked Whale			✓

The planned seismic program will take place outside the main (peak) migratory periods for the listed threatened species Blue, Humpback and Southern Right Whales. Other listed cetacean species could potentially pass through the seismic area but control measures (e.g. shutdown procedures) will be in place to avoid any significant impacts.

### Seals

There are a number of islands in Bass Strait that host populations of seals. As a consequence the Australian and New Zealand Fur-seals may transit through the area. However, the major breeding areas for Australian Fur Seals are at Lady Julia Percy Island and Seal Rocks in Victoria (Shaughnessy, 1999). These are located more than 100km from the permit area.

### Conservation Areas

The Molson 2D seismic survey is not in proximity to, nor does it impact World/National Heritage properties, RAMSAR wetlands, threatened ecological communities, Commonwealth conservation reserves/parks or critical habitats. The nearest Commonwealth marine reserves are Boags which lies more than 60 km south west from the Permit T/47P and Beagle which lies more than 60 km north east of the permit (DEW, 2007b).

### Commercial Fisheries

The Commonwealth fisheries include the following (AFMA, 2007):

- the Southern and Eastern Scalefish and Shark fishery;
- Bass Strait Central Zone Scallop Fishery;
- Southern Squid Jig Fishery;
- Southern Bluefin Tuna Fishery;
- Eastern Skip Jack (Tuna) Fishery;

- Eastern Tuna and Billfish; and
- Small Pelagic Fishery.

### **Shipping**

Bass Strait is one of Australia's busiest shipping areas with passengers and freight being transported between the mainland and Tasmania, and other through traffic operating through the area between Australian ports and to and from New Zealand. The highest volumes of traffic travel in an east-west direction with connections to Melbourne and Geelong. Substantial volumes of traffic also occur between Melbourne/Geelong and Tasmania moving in a north-south direction.

### **Petroleum Resources**

The broader Bass Strait region including the Gippsland Basin to the east has been producing significant oil and gas resources since the 1960's. In the 1990's gas was discovered in the Otway Basin to the west of T/47P and is now in production.

### **Ocean Yacht Racing**

The Ocean Racing Club of Victoria organises the following two races with their start times shown:

- 27 Dec 2007 Heemskirk Consolidated Melbourne to Hobart; and
- 27 Dec 2007 Kidder Williams Melbourne to Launceston.

These races occur outside the scheduled survey period in March 2008.

## **Details on Major Environmental Hazards and Control**

A formal assessment of the risk of potential environmental impacts and issues was carried out based upon a standard risk management approach consistent with the Australian/New Zealand Standard AS/NZS 4360:1999 Risk Management and HB 203:2000 Environmental risk management- Principles and process.

The management practices identified are designed to keep risks as low as reasonably practicable (ALARP) and economically achievable. Taking these management practices into consideration the residual risk is calculated.

### **Summary of Residual Risk**

As can be seen from Table 5 below, eight individual risks have been identified, these are tabulated with proposed management measures and risk scores in Table 6 below. No aspects of the operation have been deemed to be of high or extreme risk.

Table 5: Number of Aspects with Residual Risks

Activity	Low	Moderate	High	Extreme
Seismic Acquisition (all activities)	6	2	None	None

Table 6: Risks and Management Measures

<b>Aspects (Activities/ Emissions)</b>	<b>Description of Potential Impacts on the Environment</b>	<b>Management Measures</b>	<b>Residual Risk</b>
Physical presence of vessel-interference with other user activities	potential social impact on other users eg collision, damage to fishing gear etc.	Advise fishing industry of expected timing, and location  Recover lost streamer if practicable	Low
Physical presence of vessel- collision or grounding leading to oil spill	Potential oiling of sea birds, fish tainting, shoreline pollution, disruption of fishing activities.	Ship Collision Avoidance/Grounding Procedures in Place  Oil Spill Contingency and Emergency Response Plans in place  Crew awareness and exercises in OS/E response  Reporting of spills >80L  Incident investigation & monitoring requirements	Moderate
Spillage or liquid discharge (oil and chemicals)	Toxic effects on marine life including fish, plankton, benthos, marine mammals and turtles.	Secure containment areas for oils and chemicals  Use of safe liquid management procedures eg. shore to ship fuel transfer  Use of appropriate materials, eg absorbents, for cleanup  Use of drip trays whilst decanting  Cleanup of spills as soon as practicable	Low
Seismic acquisition	Acoustic disturbance to marine fauna	Comply with DEW Cetacean Guidelines and record sightings  Outside main Humpback/Southern Right whale migration routes and known breeding areas ( Consultation with fishing industry  Distance of permit from sensitive habitat	Low

Aspects (Activities/ Emissions)	Description of Potential Impacts on the Environment	Management Measures	Residual Risk
Waste Disposal (including sewage and food scraps discharge)	Increased nutrient availability, increased BOD, potential toxic effects on marine life.	<p>Compliance with MARPOL and all laws and regulations.</p> <p>Wastes will be segregated, labelled and stored in secure areas prior to removal to the shore for appropriate disposal.</p> <p>Personnel will be trained to ensure compliance with the waste management requirements.</p> <p>Treated effluent and food scraps to be disposed in accordance with MARPOL</p> <p>Dry waste will be managed to prevent contamination of the sea, e.g. skips covered.</p> <p>Wastes disposed to approved sites onshore.</p> <p>Minimize quantities of waste generated.</p> <p>Wastes to be disposed to approved sites onshore.</p>	Low
Storage/handling of hazardous materials	Toxic effects on marine life including fish, plankton, benthos, marine mammals and turtles if inadvertently released to sea.	<p>Areas for storage and use of chemicals and dangerous liquids to be contained.</p> <p>MSDSs available</p> <p>Appropriate materials to be used in the event of a spill eg absorbents.</p> <p>Training of personnel in safe handling procedures.</p>	Low
Transfer of Fuel to Vessel	Potential oiling of sea birds, fish tainting, shoreline pollution, disruption of fishing activities.	<p>Fuel transfer procedures in place.</p> <p>Supervision, Monitor operations during transfer.</p> <p>Instruction of personnel.</p>	Moderate
Seismic acquisition- damage seismic streamer	Potential oiling of sea birds, fish tainting, shoreline pollution, disruption of fishing activities.	<p>Maintenance procedures for streamer.</p> <p>Recover lost segments where practicable.</p>	Low

## Management System Approach

The key responsibilities for Environmental Management are as follows:

- The Tap Managing Director is responsible and accountable to the Tap Board for ensuring that appropriate resources are allocated to meet Tap HSE Management Systems and Policy requirements; and establishing and regularly reviewing the HSE Policy.

- The Operations Geophysicist is responsible and accountable for implementing the Environmental Policy within the operational area, through application of the Environment Plan;
- All Project personnel including TAP personnel and third party contractors are responsible and accountable to adhering to the Environmental Policy and this Plan in all tasks that they undertake.
- The *Pacific Titan* Master and Party Chief are responsible for implementing this plan
- The *Pacific Titan* Master, Party Chief, and the Tap Onboard Representative are responsible for implementing the Cetacean Guidelines.

Responsibilities and accountabilities for each position within the Company are documented to avoid confusion over responsibilities and accountabilities.

All shipboard personnel, including contractors, will be required to attend an environmental induction prior to mobilization. Training and awareness at all levels will aim to outline:

- The importance of conforming with the Tap HSE Management System and Policy, the requirements of the Environmental Plan and regulatory requirements;
- An understanding of the significance and potential of environmental effects associated with their work requirements;
- Personnel roles and responsibilities for environmental performance;
- Reporting;
- An understanding of the relevant objectives and requirements of the EP; and
- An understanding of the emergency response system and their role.
- Any physical contact of any survey equipment with a Cetacean may be a reportable incident under the EPBC Act and is to be reported to Tap Oil within two hours by the Party Manager and Tap Onboard Representative, and;
- A record of any complaints will be submitted to Tap Oil both by the Party Manager and Tap Onboard Representative.

The EP is a controlled document and will be revised from time to time for each seismic acquisition survey. A distribution list ensures that all personnel who have responsibilities to ensure that EP is adhered to do in fact have access to the necessary information.

## Consultation

Tap Oil undertook consultation with the following organisations:

- Commonwealth Fisheries Association;
- Tasmanian Fishing Industry Council;
- Seafood Industry Victoria;
- Lakes Entrance Fishermen's Co-operative Ltd;
- South East Fishery Association;
- South East Trawl Fishing Industry Association; and
- Ocean Racing Club of Victoria.

Consultation was via email.

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## Contact Details

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