# DATA ACQUISITION SUPERVISION REPORT

For the

# MOLSON 2D MARINE SEISMIC SURVEY

Conducted by

# TAP OIL LIMITED

In The Exploration Licence Area

## BLOCK T/47P OFFSHORE TASMANIA

SURVEY START DATE 12th March 2008
SURVEY COMPLETION DATE 17th March 2008

## VOLUME 2 FAUNA OBSERVATIONS

Compiled by Carol Sutherland

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# 1. Introduction

The Tap Oil Limited Marine Seismic Survey T/47P was a 2D survey conducted in Commonwealth waters the Bass Strait off shore of northern Tasmania.

For this survey Tap Oil entered into a contract with CGGVeritas to undertake the 2D survey using the survey vessel 'Pacific Titan'.

The seismic survey area covered approximately 530km and was conducted from the 12th March to the early hours of the 17th March.

There was 5 days of marine mammal observations carried out.
There were 11 sightings of *Otariidae* seals.
No whales were sighted.
Mitigation measures, as set out by the DEWR Marine Mammal guidelines, were not required.

## *1.1 Marine Mammal Monitoring Program*

Tap Oil Limited employed the services of an experienced Marine Mammal Observer from Enquest Pty Ltd to observe and report on marine mammals for the Molson T/47 2D survey, and to work in accordance with the Tap Oil Environmental Plan.

Carol Sutherland has deep sea international Fisheries Observer experience for over 15 years, and marine mammal observer work over the last 2 years. C. Sutherland is JNCC registered. The marine mammal plotting system and methodology utilised by her was one developed by Dr Chris Lalas in consultation with C. Sutherland.

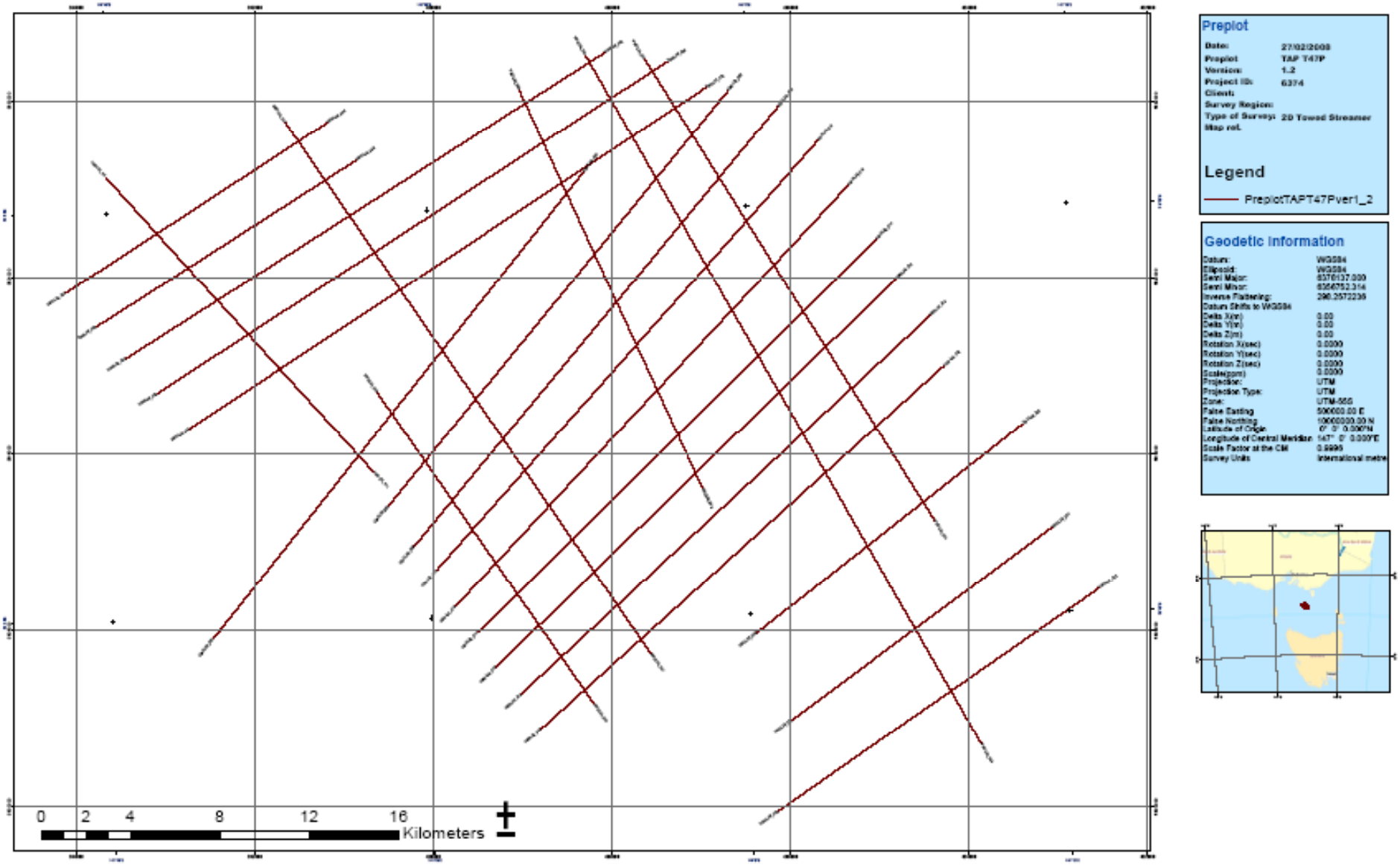
## *1.2 Vessel specifications*

The MV 'Pacific Titan' has a Length overall of 64.5m and GRT of 3211 tonnes.
It was built as a supply ship in Japan 1982. The ship is owned by Swire Pacific and is flagged in Singapore.

## *1.3 Seismic specifications and observation measurements*

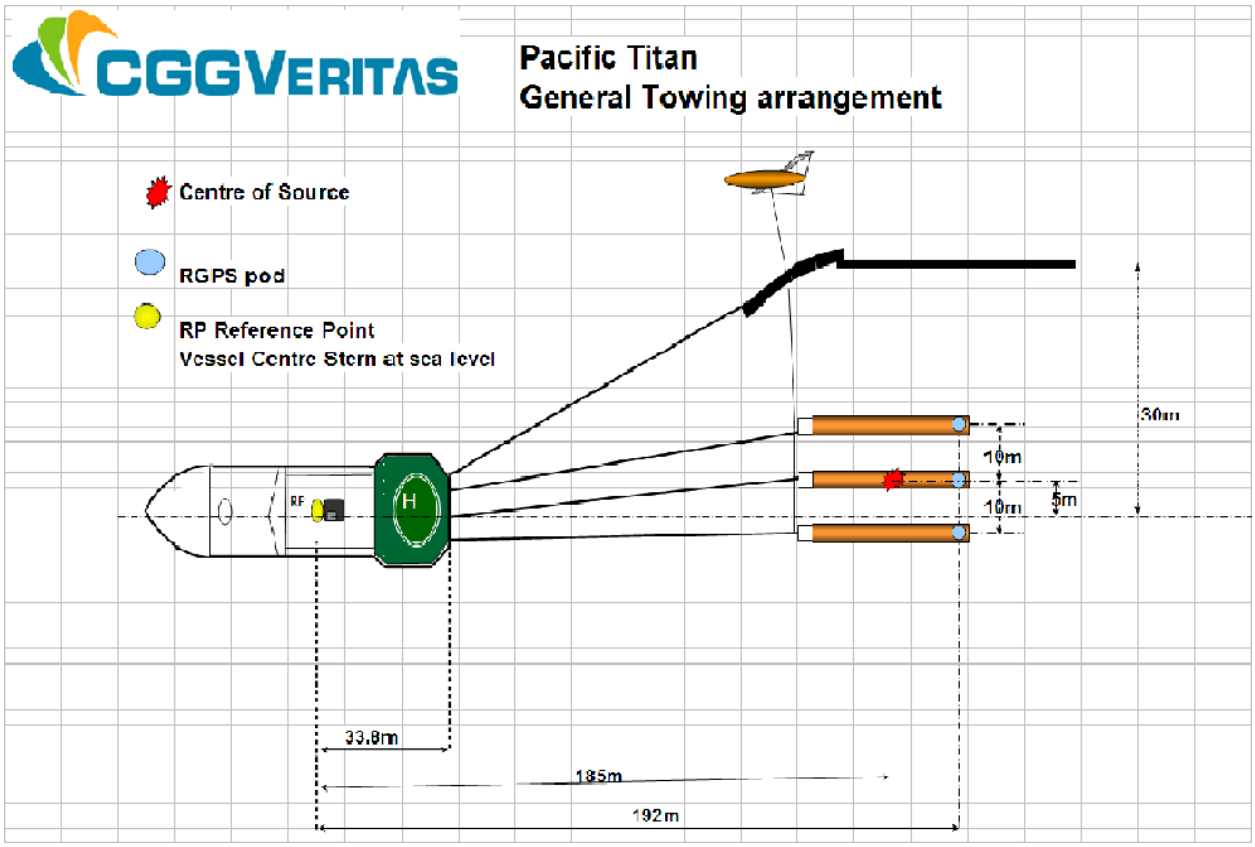
| | |
|---|---|
| Streamer length | 6000m |
| Streamer depth | 7-8m |
| Number of arrays | 1 |
| Number of sub arrays (strings) | 3 |
| Array maximum volume | 4140 cubic inch |
| Acquisition volume | 3040 cubic inch |
| Low power/Line change volume | 40 cubic inch |
| Source interval | 25m |
| Operating pressure | 2000 psi |
| Distance center of seismic source astern of ship | 151m |
| Distance bridge observation points from source | 205m |


Preplot
Date: 27/02/2008
Preplot: TAP T47P
Version: 1.2
Project ID: 6374
Client:
Survey Region:
Type of Survey: 2D Towed Streamer
Map ref.
Legend
PreplotTAPT47Pver1_2
Geodetic Information
Datum: WGS84
Ellipsoid: WGS84
Semi Major: 6378137.000
Semi Minor: 6356752.314
Inverse Flattening: 298.2572236
Datum Shifts to WGS84
Delta X(m): 0.00
Delta Y(m): 0.00
Delta Z(m): 0.00
Rotation X(sec): 0.0000
Rotation Y(sec): 0.0000
Rotation Z(sec): 0.0000
Scale(ppm): 0.0000
Projection: UTM
Projection Type: UTM
Zone: UTM-55S
False Easting: 500000.00 E
False Northing: 10000000.00 N
Latitude of Origin: 0° 0' 0.000"N
Longitude of Central Meridian: 147° 0' 0.000"E
Scale Factor at the CM: 0.9996
Survey Units: International metre
0 2 4 8 12 16
Kilometers

SURVEY MAP

The following diagram is from the ship's offset files and shows the towing arrangement.




Vessel offset diagrams

# 2.0 Methodology

## *2.1 Visual observations*

The MMO scanned the sea surface during daylight hours using the naked eye and binoculars. A visual check was made from the outside of the bridge and from the bridge wings. During soft starts the area immediately astern was viewed from the helicopter deck.

The MMO was equipped with 7x50 binoculars with reticules and compass.
The reticule measures were used to gain approximate distances from the observation point to the cetacean.

The MMO was also equipped with a handheld Garmin GPS to record the time and position of sightings.

Although the binoculars were equipped with a magnetic compass, the gyro compass on the bridge wings was used to obtain bearings.

A sextant is utilised by the MMO to measure distances as a more accurate method, but is only used when cetaceans were present over several minutes. For seals that briefly appeared close to the vessel, an estimation of distance was done by eye.

A sextant is used to gauge the angle, thus distance of the cetaceans from the ship.
Height of eye was measured for the observations positions and by using a excel program designed for sextant shots, generate a distance table for minutes below the horizon. These measurements

gives the MMO a clear measure as to the distance of the whale should mitigation measures be required.
However, this and the Excel generated plotting system were not used because no cetaceans were seen during the Tap Oil survey.

For the Pinniped encounters that occurred close to the vessel, and involved fast moving animals, an estimation of the animal's distance to the vessel was taken, and the bearing of the animal from the vessel was taken directly from the gyro compass or by sketching the angle and using the ship's bridge as a reference point.

All marine mammal sightings were recorded on the Australian Government Reporting forms and are provided in an electronic form using Microsoft Excel.

There were no night time observations undertaken.

## 2.2 Species identification

Marine mammals were identified to species wherever possible but there are difficulties when distinguishing the different species of eared seals.

The Pinnipeds recorded in Tasmania include the *Otariidae* seals:
Australian Fur seal *Arctocephalus pusillus doriferus*
New Zealand Fur seal *Arctocephalus fosteri*
Australian Sea lion *Neophoca cinerea*
Distinguishing these three species is difficult to do at sea unless extremely close.
Therefore the pinniped sightings were recorded as 'Fur seal' if no sea lion features were seen and the animals displayed some Fur seal features such as pointed snouts and a sleeker profile. This is not an accurate method given the similarities, but in the Bass Strait the *Otariidaes* seen would most likely be Australian Fur seals.
Where distinctions could not be made, and reasonable doubt existed, the eared seal was recorded as 'Pinniped'.

## 2.3 Records kept

The MMO kept field notes, a diary of events and a hard copy of the Navigator's daily log.
Records maintained electronically were:

- Seismic array times.
- Observer Effort form
- Cetacean Sighting Report –Seismic
- Whale and Dolphin Sighting Report Summary

All these records were recorded in Excel with the later two attached to this report.

The Observer Effort is summarised in a table in this report.

The MMO recorded marine mammal sightings on the Australian Cetacean Sighting Report in both hard copy and on an excel spreadsheet.
There are a total of 11 recorded sightings.

The Whale and Dolphin Sighting Report Summary is a summary of all the sightings on a format designed by the Department of the Environment and Heritage and is included in the Australian Cetacean Sighting Report file.

# 3.0 Results

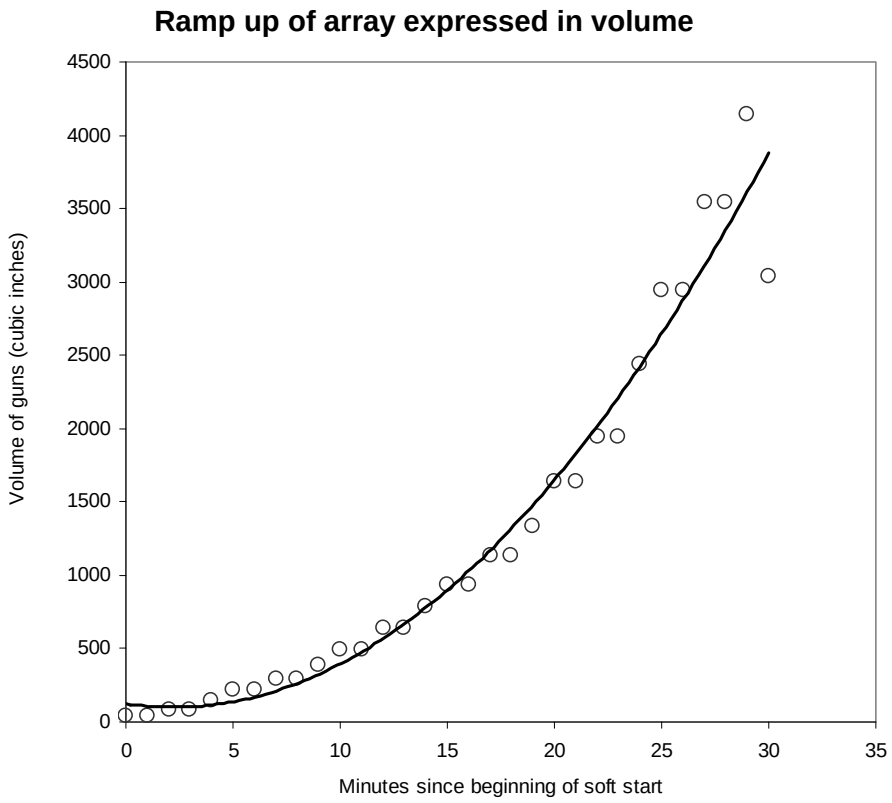
## *3.1 Pre-start observations*

DEWR Guidelines requires that observations be carried out 30 minutes prior to the start of ramp up and be a 360 degree arc around the vessel.

All pre start observations were completed.

## *3.2 Soft Starts*

Soft starts were ramped up to 4140 cubic inches before dropping to 3040 cubic inches.
The extra volume was due to the spare units being deployed briefly.




Record of Soft Start. Automatic firing

All soft starts were observed in full.

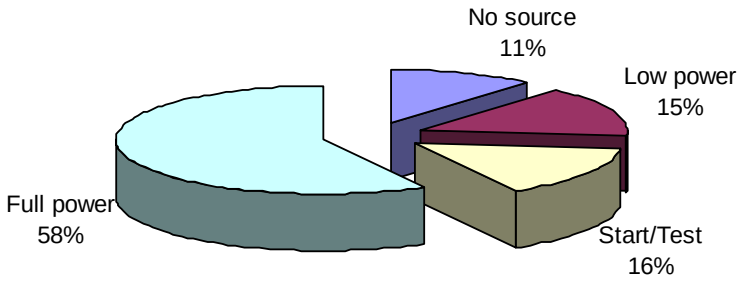
There were no rapid ramp ups noticed by the MMO.

## *3.3 Observation times*

A total of 50:00 hours were observed over 5 days during the survey.

The normal period of observations was between sunrise and sunset.

Total observation hours recorded was the period of observations minus the time taken by the MMO for meals and breaks, and any periods where there was a loss of visibility.




**MMO observations during array operations**

Weather did not restrict the hours observed but the observation zone was restricted on the morning of the 16th March due to sea mist.

**MMO Effort and Observation times**

| Date | Sightings | Vessel activity | Weather (Beaufort) | Observation period | Total observation time |
|---|---|---|---|---|---|
| 12 March | 2 | Deploying gear/Acquisition | 3 | 10:00 – 19:50 | 08:30 |
| 13 March | 2 | Acquisition | 2-5 | 07:15 - 19:25 | 10:15 |
| 14 March | 3 | Acquisition | 3-5 | 07:15 – 19:35 | 10:35 |
| 15 March | 2 | Acquisition | 2-4 | 07:15 – 19:30 | 10:00 |
| 16 March | 2 | Acquisition | 2-3 | 07:15 – 19:25 | 10:40 |

# 4.0 Species Encountered

There were a total of 11 marine mammal sightings.

One sighting by the crew does not have corresponding co-ordinates.

All the marine mammal sightings were of eared seals (*Otariidae*) The majority were able to be identified as Fur seals.

However if the animals could not be clearly identified between a Fur seal, or possible Sea lion they were recorded as a Pinniped.

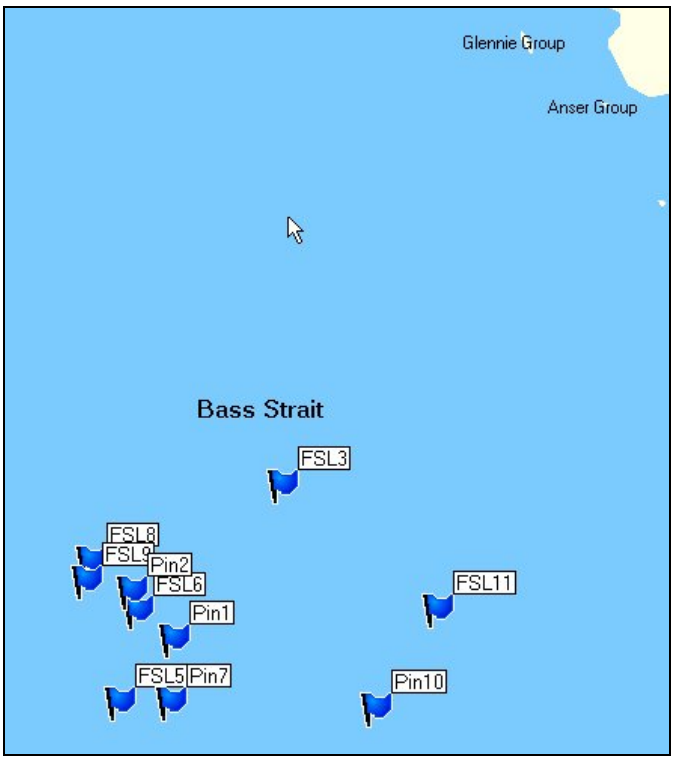
The probability is that they were all Australian Fur seals in the Bass Strait but because separating the similar species is difficult to do at sea, and the MMO felt that identification should have a broader scope to avoid assumptions.

| Species encountered | Total number of sightings |
|---|---|
| Fur seal *Otariidae* | 6 |
| Pinniped *Otariidae* | 5 |
| *Otariidae* totals | 11 |

## *4.1 Vessel activity during marine mammal sightings*

The vessel did not have to take any mitigation measures for marine mammals.

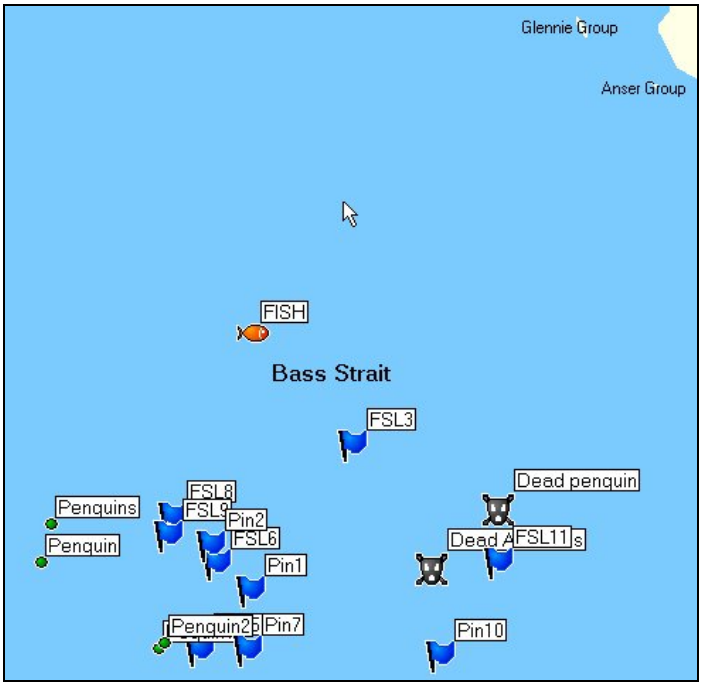
 




## *4.2 Adherence to Australian DEWR Guidelines*

The vessel completed the survey without having to take any mitigation measures. All soft start durations were within the prescribed 30 minutes. The MMO ensured that there was a full 30 minute pre start observation around the vessel before soft starts commenced. This also applied to any testing of the array.

# 5.0 Other Environmental Interactions/Incidents




Blue Penguins were heard everyday on the survey and sighted occasionally. They were more numerous in the western parts of the survey.

Their proximity to the vessel depended to a certain extent to the operation status of the array.

They had a tendency to stay beyond 80m when the array was working at production levels but came within 20m when the array was not working. However this observation is only from a limited number, and is imprecise as a result.

On the 16th March on Line 008-021 a dead penguin and a dead albatross were sighted. Both were bloated and complete. (i.e. Had not been preyed upon.)

The dominant current was from NE which would suggest that the animals came from off the survey area.

Fish schools were sighted, and this was the only area in which there were significant bird numbers during the survey. For the most part of the survey, few seabirds, besides the penguins were seen in the vicinity of the vessel.

# 6.0 Acknowledgements

The MMO would like to thank the crew of the Pacific Titan for their assistance and especially Clement De Lu of the seismic team for the daily voluntary hour of marine mammal observations. An extra pair of eyes is always welcome.

# 7.0 References

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