

# **Application for special lease on Cassini Island**

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**BHP Petroleum Pty Ltd**

**Report and recommendation of the  
Environmental Protection Authority**

**Environmental Protection Authority  
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# 1. Project description

BHP Petroleum Pty Ltd (BHPP) proposes an air transfer base on Cassini Island to shuttle oil platform crews between Darwin and offshore sites in the Timor Sea. Cassini Island lies 15 km off the Kimberley coast. It is currently listed as Vacant Crown Land although there is a proposal by the Department of Conservation and Land Management (CALM) to have it vested as a nature reserve.

Currently BHPP operates a transfer operation from Troughton Island, about 60 km east-north-east of Cassini Island but wishes to transfer its activities to Cassini Island.

BHPP is seeking a Special Lease under the Land Act 1933 (as amended) for the whole island. The development is proposed because expanding operations in the Timor Sea will require more, or larger fixed wing aircraft to transport greater numbers of personnel from Darwin. The Troughton Island airstrip will not accommodate larger aircraft than presently used, and there is no room on the island to lengthen it. As well, the island is frequently flooded during cyclonic weather conditions, requiring evacuation of all staff.

The proposed facilities would contain accommodation and support facilities for 30 people, an 1100 m long runway (the same length as on Troughton Island at this stage) for fixed wing aircraft and helicopters, workshops, two communications towers, one navigation beacon, and a barge ramp and connecting road.

# 2. Evaluation of alternatives

BHPP has surveyed other islands in the region and adjacent mainland areas. The islands were dismissed as being too small, too rugged, or too far away to the south from the company's Timor Sea permits.

The company considered that the mainland options offered no real advantages, and believed that the fact that they were on Aboriginal Reserves would make them difficult to use.

The Environmental Protection Authority asked BHPP for a fuller evaluation of possible alternatives. This was presented in the form of an Addendum to the original Notice of Intent.

In putting its case the proponent outlined its requirements for a base. These can be summarised thus:

- daily movements of three fixed wing aircraft and three helicopters to and from the base amounting to, on average, 1000 people and 25 tonnes of freight to and from the offshore facilities monthly. Proximity to the Timor Sea leases is important for economic and safety aspects. BHPP chose to limit the search for alternatives to a radius of 350 km from the Jabiru venture (1<sup>1/2</sup> hour's flying time by helicopter - see Figure);
- in addition to routine daily activities the base needs to also be able to support emergency operations ranging from single person evacuations to a full scale withdrawal in the event of extreme weather events or a large scale accident, where rapid response is essential;
- fuel, equipment and supplies by barge, or overland, on a monthly basis. The latter option would require an all weather road from Derby or Wyndham, which is considered to be impractical. This reduces the choice of base to those islands accessible by barge, or on the mainland relatively close to the coast;
- satisfying statutory, environmental and community requirements.

BHPP also listed the following as highly desirable features:

- isolated location means that there are no influences with the surrounding communities and the base can be operated on the same roster basis as the offshore facilities;
- personnel can respond immediately to an emergency as they do not need to travel to the site;
- a small island environment provides for a secure operation, focussed on the work at hand.

A total of five offshore alternatives were considered. The data collected led BHPP to the conclusion that there were no suitable locations closer than Troughton or Cassini Islands and that other islands were either too small, too rugged, or further away.

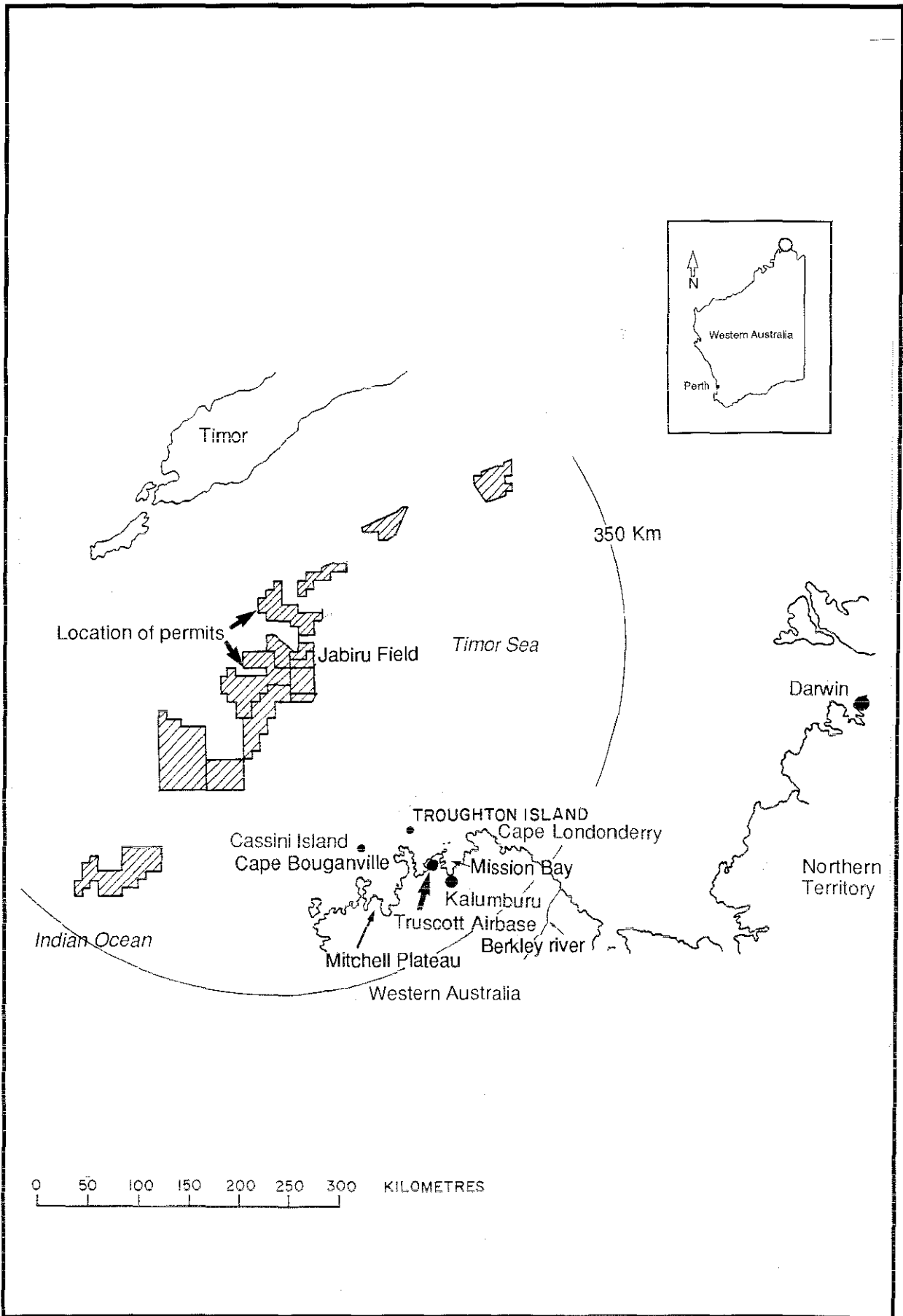


Figure 1: Location of proposal

On the mainland six locations were assessed. These included existing strips at Mitchell Plateau, Kalumburu and Truscott, and sites at Mission Bay, Cape Bougainville and Berkely River.

The base at Mitchell Plateau is serviced by graded roads which can become impassable during the wet season. Coastal access would therefore need to be established at Port Warrender, some 35 km by graded road from the airstrip. This road would need to be upgraded to provide a reliable all-weather link to the coast. BHPP also believe that the base can be shrouded in cloud in the wet season more frequently than other areas due to its altitude.

The Aboriginal Lands Trust advised the proponent that the existing strip at Kalumburu was not available for use as a permanent base of operation.

Use of the Truscott airbase would require consultation with and agreement from SANTOS Ltd, which company has an agreement with the Aboriginal Lands Trust to use the former World War 2 airbase for its offshore oil activities in the Timor Sea. SANTOS advised BHPP that it would be agreeable to third parties operating from the base on a cost - reimbursable basis, with additional fees being payable to the Community for fixed wing aircraft landings. The base has access to a barge landing on the coast via an 8 km long road to West Bay. There are plans to upgrade the landing this year.

The Mission Bay option is located 14 km from the Kalumburu airstrip. It is sandy and relatively flat. However its closeness to Kalumburu was thought to be likely to create conflict with aircraft movements at that base. As well BHPP cited a number of aboriginal sites in the area which would require consideration.

Cape Bougainville is the closest mainland site to the Timor Sea leases. The terrain was reported by BHPP to be undulating, with obstacles to the south eastern approaches, and suffering from severe visibility problems when bush fires are burning.

The last site considered was Berkely River, but it was rejected on the grounds of distance from Jabiru (400 km).

The company concluded that Cassini Island and Truscott base were the only suitable alternatives but thought that it would be possibly difficult to reach an acceptable agreement to share with SANTOS.

### **3. Existing environment**

Cassini island is comprised mainly of a laterite mesa about 15-20 m high, breaking away to cliffs undercut with caves, or with narrow beaches in sheltered areas. The coastline is a mixture of promontories and bays, with sandy beaches backed by vegetated dunes.

A fringing reef is developed on the north and west sides, elsewhere deeper water comes close to shore. The tidal range is up to 5 m on spring tides, consequently there are strong currents off all promontories.

Rainfall is unevenly distributed, with most of the annual average of 787 mm falling from December to March. There is no surface water on the island.

Vegetation on the lateritic plateau is mostly hummock grassland, with emergent Acacia shrubs, but on the eastern side a Eucalyptus woodland is developed on the slightly deeper soil profile. Remnant rainforest as small vine thickets and forests occurs along the cliffs, which are the richest zones on the island for flora and fauna.

A wide range of habitats is available, making the area suitable for many vertebrates, including six species of reptile. The eastern and southern beaches host important rookeries of green turtles, but other species such as the flatback turtle are also recorded in smaller numbers.

During the proponent's survey 49 species of birds were observed, a relatively diverse population, given the size of the island and its distance offshore. The vine thickets and cliffs are the most important habitats, but littoral areas such as the exposed reefs on the west and northern ends of the island are used by many waders and seabirds.

Offshore, corals are abundant on the outer edges of the reef system (due to the clear, oceanic waters) and with them are associated many northern Australian varieties of fish. The consultants to the proponent summarised the reef diversity as intermediate between reefs of true atolls such as Ashmore and Cartier Reefs (very species-rich), and those of reefs closer to the mainland, which are depauperate by comparison.

The traditional owners of the land are based at Kalumburu. In the past they visited the island quite often to gather turtle eggs and meat during the wet season. The island is still visited from time to time, and there are a number of significant sites, which have been documented.

## 4. Environmental impacts

Cassini Island has a high conservation value and has been recommended by CALM as an 'A' Class nature reserve. It is regarded as an important breeding site for turtles. Lighting from the proposed facilities would have the potential to shine out to sea and disorient turtles during egg-laying and hatchling stages. While the proponent has recognised this potential impact and believes that the cliffs would shield turtles on the beaches, it is more difficult to ensure that lights do not shine further out to sea.

There are potential, significant impacts from the risks of importation of exotic species (weeds, seeds and animals), and fire. These would require stringent controls, especially during the construction and rehabilitation phases.

Most of the development, except for the barge ramp and access road, would take place on the lateritic plateau, where the vegetation consists of low open woodland and spinifex. However, in the southeast of the island where the camp site is proposed, there would be some loss of the eucalypt woodlands, which are restricted to this area. Were the raw materials for construction to come from areas on the island there would be a larger area of disturbance resulting from the creation of gravel and sand borrow pits.

The site chosen for the runway and facilities surrounds one of the significant aboriginal sites (the concentric stone circles). Given that aboriginals wish to continue to visit the island and gather in the vicinity of some of these sites there is the potential for conflict on these occasions.

Recreational impacts from personnel based on the island or in transit would also need to be considered and would require a high degree of self management.

## 5. Conclusion

Whilst this assessment can only determine environmental acceptability on the basis of the proposal described in the proponent's Notice Of Intent documents, it is noted that BHPP has expansionary plans for its Timor Sea developments, with projections of larger personnel movements through the base. This would require more facilities and a larger airstrip, possibly sealed, to accommodate aircraft up to the rating of the Fokker F-28 and BAE-146 jets.

The Authority is also aware of offshore activities by other petroleum companies which need similar transfer bases. Indeed, Troughton Island has been used by some of them under commercial arrangements with BHPP, as required under the terms of their Special Lease. As developments in the Timor Sea area are at an early stage it is probable that other companies will require an upgrading of facilities to meet future needs.

The Authority wishes to ensure that duplication of bases by various companies is only carried out if more suitable alternatives cannot be found. Accordingly the proponent was requested to thoroughly evaluate all such alternatives and to demonstrate that the proposal for Cassini Island was the only feasible option. BHPP prepared supplementary information which stressed the corporate advantages of Cassini Island, and although the Truscott base was mentioned as a possible alternative, there was no apparent attempt made to reach an agreement to share with SANTOS. The Environmental Protection Authority believes that possible options have not been thoroughly pursued and that all the listed sites have some inherent disadvantages - for example Cassini Island has aboriginal sites very close to where the runway is proposed, and the Kalumburu community still make trips to the island from time to time.

Cassini Island is a pristine environment with high conservation values. The proposal would result in significant impacts and risks to the environmental integrity of the island which appear to be unnecessary whilst other options are available.

## 6. Recommendation

**The Environmental Protection Authority concludes that the proposal for an air transport base on Cassini Island is environmentally unacceptable and recommends that it should not proceed.**

**This conclusion is reinforced because more environmentally acceptable alternatives exist on the mainland.**

# **Appendix**

## **Summary of proponent's list of commitments**





## Summary of proponent's list of commitments

1. Septic tank system for sewage disposal would be adopted to eliminate need for discharge to sea.
2. Fuel dumps would be bunded to prevent spills being washed from the immediate area of contamination.
3. Silt traps will be provided to settle sediment in run-off leaving areas of disturbance in any critical areas where the sediment loading was expected to be high.
4. Garbage would be either buried or removed from the island.
5. Fenced walkways would be constructed to ensure access across the dune is limited.
6. Aboriginal relic sites would be protected by fencing.
7. Area lighting would be minimised and located out of the view of beaches where possible.

BHP Petroleum would be committed, in addition to designing into the project the features listed above, to undertaking a management and environmental monitoring programme involving all the items listed below. Monitoring would be carried out by the maintenance officer who would be the designated environmental officer.

8. A fire management programme would be implemented.
9. A conscious effort would be made to prevent the transportation of animals, such as cats, mice, rats, dogs etc to the island.
10. Contingency plans for the containment and clean up of oil spills in the sea would be developed and procedures and responsibilities established so that rapid clean up could be effected if the event occurs.
11. A programme of environmental monitoring to ensure the development has no adverse effects on the environment in the long term would be implemented to cover the following:
  - extent of bush fire fuel build up;
  - the well being of the vine thickets and the bird populations and their nesting success; and
  - the turtle nesting sites to ensure the majority remain undisturbed by human activities.