

5 November 2010

Chris Auchinvole  
Chair, Local Government and Environment Select Committee  
Parliament Buildings  
Wellington

Dear Chris

## **Petroleum Exploration History and Potential of the West Coast, North Island Marine Mammal Sanctuary**

### **Introduction**

1. Please find below a brief submission on behalf of the petroleum exploration and production industry with respect to a petition by Forest and Bird to have gazetted marine mammal sanctuaries, administered under the Marine Mammals Protection Act, closed to petroleum exploration and mining.
2. A Marine Mammal Sanctuary exists along the West Coast, North Island from Oakura Beach, North Taranaki north to Maunganui Bluff, Northland, and extending out as far as the 12 nautical mile Territorial Sea boundary. Included within this Marine Mammal Sanctuary are 2 and 4 nautical mile mineral (only) mining exclusion areas (See Figure 1). Petroleum mining is still permitted in these areas and throughout the reserve in general.
3. This submission details the history of petroleum exploration in the area, and highlights the importance of this whole area for petroleum exploration.

### **Executive Summary**

4. The Association opposes the proposals by NGOs to have this area closed to mining by adding the Sanctuary to Schedule 4 of the Crown Minerals Act.
5. The area contains some of New Zealand's most important petroleum assets and has significant potential for new discoveries.
6. There is no evidence that the activities of petroleum exploration and development has had, nor will have in the future, any impact on the protection of Maui's Dolphin.
7. The Association requests that the committee recommend to Parliament that no further action be taken on this petition.

### **Exploration History**

8. The Taranaki Basin is the only region within New Zealand with commercially producing oil and gas fields and the associated infrastructure. Exploration for oil stretches back to 1865 with the first well (Alpha) being drilled on Nga Motu Beach, New Plymouth. Over 130 years more than 65 wells have been drilled in the immediate area with varying degrees of success and over 220,000 barrels of oil produced in this area alone.

9. The discovery of the Kapuni Gas field in 1959 launched the modern era of hydrocarbon exploration within the Taranaki Basin. Recent production figures for both onshore and offshore Taranaki fields total more than 385 million barrels of oil and condensate produced.
10. The main targets for oil within the Taranaki Basin have been the Late Cretaceous, non marine Pakawau Group and the terrestrial-marginal marine Paleogene Kapuni Group which have proven reservoir sands. The recent completion of offshore drilling at the Pohokura Field has raised recoverable oil and gas reserves to 61.1 million barrels and nearly 980 billion cubic feet of gas, making it the largest known reserve of oil and gas in New Zealand. Other economically significant fields have been discovered both onshore and offshore Taranaki Basin and exploration is ongoing.
11. The West Coast, North Island area covering the Marine Mammal Sanctuary, was explored under Petroleum Prospecting Licenses held by Petroleum Resources (NZOG) (38083) in the early 1980's and by Petrocorp (38459) in the mid 1990's. Conoco held a large Exploration Permit off the West Coast of Northland (38604) during the mid – late 1990's.
12. NZOG, NZ Aquitaine, and Shell BP Todd have all undertaken seismic surveys within the north Taranaki coastline region while Conoco undertook extensive 2D seismic surveys west of Northland and drilled the first offshore well in the Northland region, Waka Nui-1 in 1999.
13. A number of current Petroleum Exploration Permits (PEP's) intersect with the Marine Mammal Sanctuary including PEP51558 (Todd Exploration Ltd & others), PEP38459 (OMV, Todd Pohokura Ltd & Shell Exploration Ltd), PMP38154 (OMV, Todd Pohokura Ltd & Shell Exploration Ltd), PEP38775 (Greymouth Gas Exploration Ltd, Greymouth Gas Taranaki Ltd), PEP 38479 (and submitted Mining License PMP5223, STP Energy Ltd), PEP 38491 Westech Energy and others), PEP38619 (Origin Energy Resources Ltd) and Block 6 of the now closed Northland Blocks Offer.
14. PMP38154 contains New Zealand's largest Gas Resource – Pohokura. Pohokura was discovered by Fletcher Challenge Energy in 2000 and is approximately 4.5 km off the north Taranaki coastline in 30 m of water. Pohokura is now owned by a joint venture comprising of Shell Exploration NZ Ltd, Todd Pohokura Ltd, and OMV NZ Ltd. The field contains 3 onshore and 6 offshore wells and contributes 42% of New Zealand's gas production.
15. In 2008, STP Energy acquired PEP38479 from Discovery Geo and drilled Awakino South-1 about 7 km from Awakino (North Taranaki coast) targeting a sub-thrust Mangahewa sandstone play to test shows found in Awakino-1 drilled by Petrocorp in 1985. Awakino South-1 showed encouraging gas indicators but no further appraisal wells have been drilled.
16. Karewa-1 (PEP38602) was drilled 40 km off the Raglan Coast by Todd Petroleum Mining Ltd in 2003 and discovered hydrocarbons in the Miocene - Pliocene aged sands of the Mangaa Formation. The gas discovery has estimated P50 reserves of 60 – 150 bcf. In 2009, Todd undertook a small 3D seismic survey across the discovery which has resulted in an application for a Mining License.
17. Off the Waikato coast in approx 100m of water Origin Energy Resources Ltd (PEP38619) have just spudded Korimako-1 (18 October 2010) as part of a two well program targeting the Korimako and Kokako prospects. The primary objectives of both wells are the Miocene aged sandstones of the Mangaa Formation.

18. The offshore Northland Basin is contiguous with the hydrocarbon-producing Taranaki Basin. The drilling of Waka Nui-1 changed the understanding of the region with Jurassic sediments being intersected. Karewa-1 to the south intersected significant biogenic methane within Neogene sediments. During the first half of 2010, Crown Minerals offered six blocks equating to 50,000 km offshore, Northland Basin with three on the immediate shelf and three in deepwater. This blocks offer closed in August 2010. Block six covers the Northern part of the Marine Mammal Sanctuary.
19. The geologic sequence of the offshore Northland Basin is similar to that of the Taranaki Basin but underlain by the Jurassic sediments that were identified in Waka Nui-1. Potential source rocks include: coaly Jurassic sediments of the Murihiku Supergroup, coaly sediments of Early Cretaceous Tainwha Formation, Late Cretaceous coals of the Rakopi and North Cape formations and Paleocene marine shales of the Turi and Waipawa formations. Potential reservoir facies include Late Cretaceous transgressive coastal sands and Paleogene conglomerates and turbidites.
20. Future New Zealand gas supply is arguably dependent on continued access to all areas of the West Coast of the North Island for environmentally responsible exploration and production. In particular, the security of New Zealand's present gas supply is directly dependent on the ongoing operation, maintenance and development of the Pohokura Field.

#### **Is Closure to Petroleum Exploration and Mining Necessary to Protect Marine Mammals?**

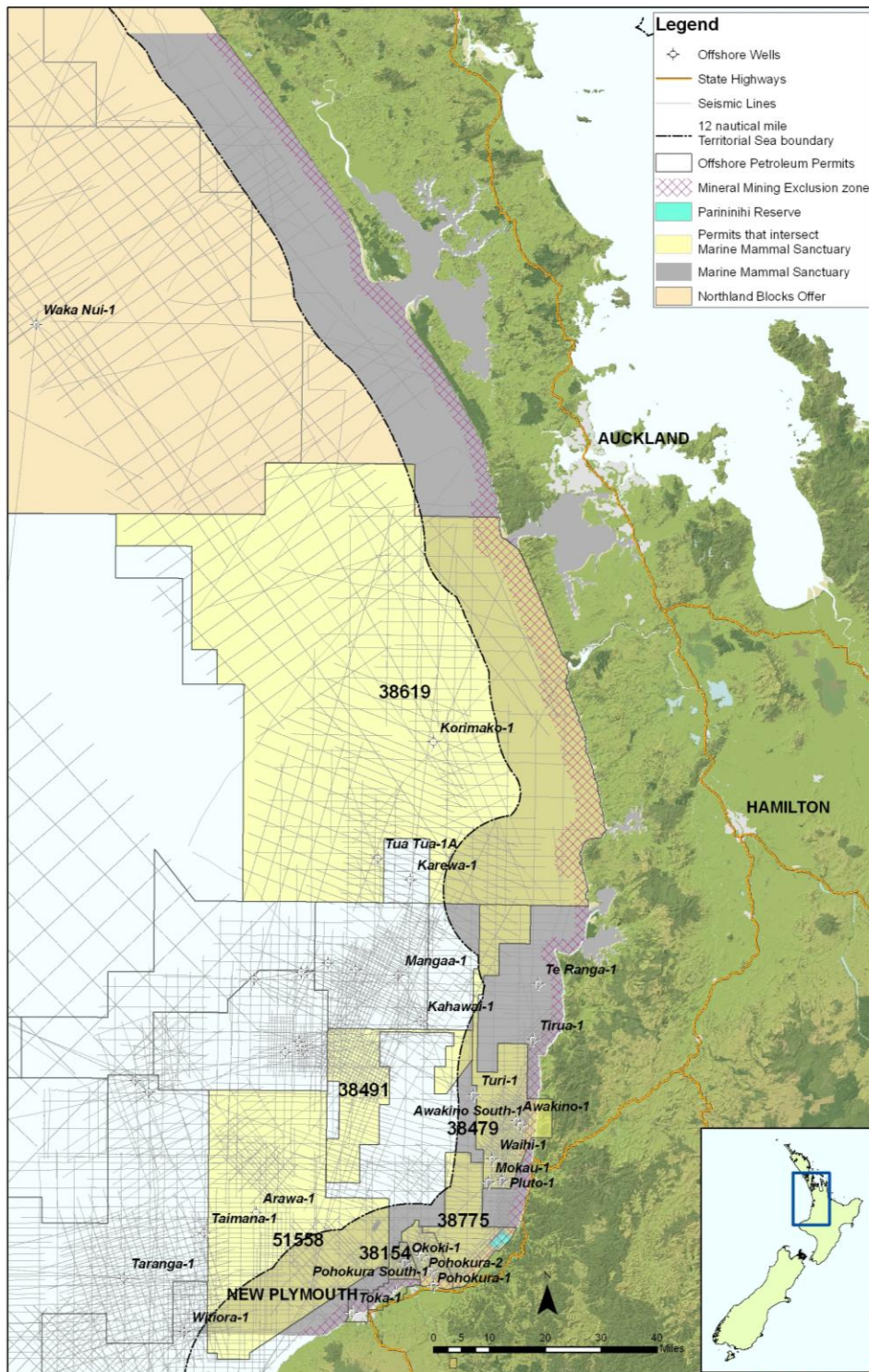
21. The objective of the West Coast North Island Sanctuary is to protect a small population of what is believed to be the world's rarest dolphin, Maui's Dolphin, estimated to be 111 in number. In consultation documents produced by the Department of Conservation in recent years the case for the establishment of the sanctuary was based on the adverse effects of commercial fishing and practices such as recreational set netting on this species. Of all human impacts, these were perceived to have the most significant effects on Maui's Dolphin.
22. In our opinion, oil and gas exploration presents no significant threat to marine ecosystem integrity and viability. Oil and gas exploration operations can be managed to minimize and effectively avoid adverse environmental impacts, including on marine mammals, and it is for this reason that the current Marine Mammal Sanctuary still allows petroleum exploration and mining.
23. The Association has negotiated a formal Code of Practice governing seismic survey operations to manage potential effects of sound pulses resulting from the release of compressed air, on marine mammals. The industry and Department of Conservation recently undertook a formal review of the Guideline and are currently discussing significant improvements to the Guideline to ensure we meet world's best practice in seismic operations when operating near marine mammals. There has been consultation with various NGO's and a number of excellent suggestions have been tabled by conservation NGO's and academic researchers that will significantly improve the final document. The current Regulations establishing the Sanctuary include seismic activity rules pertaining to the industry, specifically aimed at protecting the Maui's Dolphins, the subject of the Sanctuary.
24. Drilling operations are extremely localized and manage to avoid any environmental impacts. Some immediate site impacts may be experienced where the drill bit enters the sea floor, and where the drill rig legs attach to the sea floor. Internationally, it has been shown that oil and gas facilities have been known to enhance local biodiversity in continental shelf settings that may otherwise have been

devoid of fish populations, by providing a substrate for diverse sessile communities which then become a food source for larger organisms.

25. At no time has there ever been any analysis by the Department of Conservation or other researchers on the impacts of petroleum development on Maui's Dolphin, nor any assertion that there are adverse effects occurring. The focus has always been on the impacts of commercial fishing and recreational set netting.
26. The argument by Forest and Bird in their Petition to this Committee is that because there is a low proportion of the marine environment in protected areas relative to terrestrial environments, this creates a strong argument for accelerated marine protection. It does not.
27. Marine scientists in New Zealand have no idea why the population of Maui's Dolphin is declining. Whilst steps have been taken to act in a precautionary manner and limit or restrict the most likely activities which might impact on Maui's Dolphin (via the creation of the Marine Mammal Sanctuary), in fact no one knows whether the measures taken to date will be effective in limiting the species decline.
28. Moving to ban all future petroleum exploration and mining activities in the West Coast Marine Mammal Sanctuary means New Zealand would forgo significant potential income and petroleum security in the decades ahead, without any guarantee that the closure would have the desired effect of assisting the recovery of Maui's Dolphin.
29. In our view the Department of Conservation and the petitioners should be investing in research to determine the actual cause of this species decline, and designing policy measures to ensure its recovery.
- 30. The Association would like to be heard in support of this submission.**
31. Included with this submission is a hard copy A0 sized map which can be displayed at the Committee hearing to assist Members of Parliament understand the extent of petroleum interests in the area covered by the Sanctuary.

Sincerely

John Pfahlert  
Executive Officer



**Figure 1:** Location map showing Marine Mammal Sanctuary (grey) with current offshore exploration permits, seismic lines and well locations.