

**Senate Standing Committees on Environment and Communications
Oil or Gas Production in the Great Australian Bight**

Leith Packer

Leith Packer
Email:
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Dear Committee Members,

Submission from Leith Packer

I welcome the opportunity to make a submission to the Committee.

Before I continue I would like to give you some background on myself, I am an independent Mechanical Engineering consultant to the Oil and Gas Industry with around 20 years' experience onshore, offshore, conventional and unconventional. I am fortunate enough to have worked for many of the majors in Australia and throughout the world including Santos, Woodside, Total, Chevron, ConocoPhillips, British Gas (QGC) and a few of the minors such as Oil Search, Dubai Petroleum, BHP Petroleum and Maersk FPSO's. I have also had the opportunity work in 6 different countries such as Indonesia, East Timor, PNG, Australia, Dubai and South Korea at various levels. I do not pretend to be an expert in oil and gas exploration although I have certainly be exposed to it over the years as my experience is focused on production, operations and commissioning, based on my experience and qualifications I feel I am qualified to comment. For me personally I have nothing to gain if the GAB is explored or not, I certainly have no financial gain as the majority of my work is carried out overseas, I only believe that any decision should be based on scientific facts and peer reviewed literature rather than baseless opinions and innuendos particularly from individuals and Non-Government Environmental Organizations with little or no experience within the industry. Another important point is that I am not associated with or a member of any organization for or against drilling in the GAB or any other pro fossil fuels group.

Although I am currently engaged on a project in South Korea with my family, Encounter Bay SA (Victor Harbor) is our home and we love the area and I still have business interests in the area.

I note that the terms of reference for this Inquiry are as follows:

“The potential environmental, social and economic impacts of BP’s planned exploratory oil drilling project, and any future oil or gas production in the Great Australian Bight, with particular reference to:

- a. the effect of a potential drilling accident on marine and coastal ecosystems, including:
 - i. impacts on existing marine reserves within the Bight,*
 - ii. impacts on whale and other cetacean populations, and*
 - iii. impacts on the marine environment,**
- b. social and economic impacts, including effects on tourism, commercial fishing activities and other regional industries;*
- c. current research and scientific knowledge;*
- d. the capacity, or lack thereof, of government or private interests to mitigate the effect of an oil spill; and*
- e. any other related matters.”*

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Prior to addressing each of the above specific items, I note that this inquiry again appears to have been driven by the scaremongering and misinformation spread by a minority of ideological environmental groups supported by a few equally ideological politicians/parties who have aligned themselves with Non-Government Environmental Organization information rather than basing their policies and views on science and verifiable facts. I am however pleased that the inquiry was re-opened and welcome the opportunity to present verifiable facts to the Senate Committee. I would also like to point out that this submission is only focuses on what Australia has achieved within the oil and gas industry. I have only focused on the GAB and Victoria as the conditions comparable to each other, although I am well aware of the success of Western Australia Oil and Gas Industry to operate safely in my opinion they are less comparable in regards to the environmental challenges.

- f. the effect of a potential drilling accident on marine and coastal ecosystems, including:*
- i. impacts on existing marine reserves within the Bight,*
 - ii. impacts on whale and other cetacean populations, and*
 - iii. impacts on the marine environment,*

History of Oil and Gas Exploration Great Australian Bight ([Link](#))

Petroleum exploration in the Great Australian Bight (GAB) region has been undertaken without reported or identified environmental harm since the late 1960s. A range of major oil and gas companies have investigated the petroleum prospectively of the GAB since the late 1960s, including Woodside, Shell, BP and BHP Petroleum. The first seismic survey in offshore South Australia was undertaken by Shell in 1966. Prior to 2011, 126 seismic surveys have been conducted safely in offshore South Australian waters, with 92,297 km of two-dimensional (2D) and 1,700 square kilometers (km²) of three dimensional (3D) seismic data collected. Each of these seismic surveys was undertaken without environmental incident, including any negative impacts to marine species.

To date dozens exploration wells have been drilled without incident in the GAB between 1972 and 2003. A total of 6 wells have been drilled in the Duntroon Sub-basin of the Bight Basin, 3 in the Ceduna Sub-basin. The last well drilled was Woodside's Gnarlyknots 1 (Spudded 15-APR-2003, Water Depth 1316m, [Link](#)) and Gnarlyknots 1A (Spudded 10-MAY-2003, Water Depth 1316m) in 2003, which were both safely drilled to a total depth of 4,736m. This well indicated that petroleum targets are expected to be in water depths of 1200 to 2200 metres.

Since 2011, four seismic surveys have been undertaken in the GAB in current Exploration Petroleum Permits (EPPs) without environmental incident or identified harm. The first in May 2012 by BP was Australia's largest proprietary offshore 3D seismic survey, with an acquisition of 12,418 km² of 3D seismic data. The second and third undertaken by TGS on behalf of Chevron in 2014-2015 resulted in the collection of 8,917 km² and 13,137 km² of seismic data. The fourth was completed by PGS on April 2015 with 8,867 km² of seismic data collected, again without environmental incident.

The proposed exploration activities by BP and others are the same type of activities which have previously occurred within the South Australian portion of the GAB with no impact on the environment. One substantial difference between the proposed activities and previous activities is the improved safety processes, environmental management and technology which form part of current proposals.

Maps showing previous Oil and Gas Exploration in the GAB Region:

- http://www.nopta.gov.au/spatial-data/maps/BasinsMap_4.pdf
- http://www.nopta.gov.au/spatial-data/maps/BasinsMap_5.pdf
- http://www.nopta.gov.au/spatial-data/maps/BasinsMap_6.pdf

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Snapshot of Previous Drilling Well Data in the Region:

- 1972 Echidna 1 is located offshore South Australia, 105km south of Port Lincoln [Link](#)
- 1972 Platypus 1 is located offshore South Australia, 126km SW of Port Lincoln and 74km WNW of Echidna 1 [Link](#)
- 1986 Duntroon 1 approximately 180km South of Port Lincoln [Link](#)
- 1993 Vivonne 1 is located approx. 150km South of Port Lincoln and 60km West of Kangaroo Island [Link](#)
- 1993 Borda 1 was drilled in EPP25 in the Duntroon Basin approximately 110km west of Kangaroo Island in South Australia [Link](#)
- 1993 Greenly 1 is located in the SE part of EPP26 in the offshore Duntroon Basin, South Australia; 110km SSW of Port Lincoln [Link](#)
- 2003 Gnarlyknots 1 & 1A, [Link](#)

History of Oil and Gas Exploration and Production in Victoria ([Link](#))

Victoria's petroleum (oil and gas) exploration and production is concentrated in the offshore Commonwealth waters of the Otway and Gippsland basins.

The offshore Gippsland Basin covers approximately 46,000km². It is one of Australia's most prolific systems, having historically generated approximately two thirds of Australia's cumulative oil production and one third of its gas.

Crude oil production in offshore Victoria peaked in 1985 with an annual production of 178 million barrels (Mbbbl), or 90% of the total Australian crude oil output that year, compared with annual production of 11.7 Mbbbl in 2014. Victorian gas production in 2014 was 11,729,792 million cubic feet (Liquid Petroleum Gas and Sales Gas).

Gas production in the onshore Otway Basin (Port Campbell region) commenced with the North Paaratte Field in June 1986 in old PPL-1/(PPL-8) and the Iona Field in July 1992 (PPL-2) respectively. Gas production has gradually increased in response to demand and the main gas producing fields are North Paaratte, Wallaby Creek and Iona in the Port Campbell region.

Otway Basin – Onshore (Production Commenced in 1986) ([Link](#))

17 gas fields in Victoria and five in production: Wallaby Creek (19.8 BCF GIP (billion cubic feet of gas-in-place)), Skull Creek (2.2 BCF GIP), North Paaratte (18.2 BCF GIP) and Mylor (11.8 BCF GIP) and Fenton Creek (4.8 BCF GIP) (Mehin and Kamel, 2002).

Otway Basin – Onshore (Production Commenced in 1993) ([Link](#))

La Bella 1 (217 BCF GIP), Minerva 1 (558 BCF GIP) in 1993, Geographe 1 (500 BCF GIP) and Thylacine 1 (600 BCF) in 2001. Casino 3, successful production test (2003). First gas production from the Minerva field occurred in January 2005 with the Casino and Thylacine/Geographe gas fields due to begin production in 2006.

Bass Strait (First Exploration 1965, First Production 1969)

In 1965, after overcoming the many technical challenges of the deep water and extremely hostile weather conditions, BHP and Esso drilled Australia's first offshore well in the Bass Strait. The well successfully encountered hydrocarbons and discovered the Barracouta gas field. Additional gas bearing reservoirs were located in 1966 and oil was discovered in 1967. ([Link](#))

There are now 23 offshore platforms and installations in Bass Strait ([Link](#)), including the new Marlin B platform and Kipper subsea wells, which feed a network of 600km of underwater pipelines and keep the oil and gas flowing, 24 hours a day. To date, more than four billion barrels of crude oil and around eight trillion cubic feet of gas have been produced with no significant impact on the environment.

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Claims of increased shipping in the Great Australian Bight is a threat to Marine Life.

The Guardian along with other Non-Government Environmental Organization claim the following – *“Plans to drill for oil in the pristine Great Australian Bight marine park will significantly increase the risk of oil spills, both from the oil rigs and the increased shipping traffic, according to a report by the South Australian planning department.”* [Link](#)

As stated in the SOUTH AUSTRALIAN MARINE SPILL CONTINGENCY ACTION PLAN, Department of Planning, Transport and Infrastructure, VERSION 7.1 – APRIL 2016 *“Offshore exploratory drilling is expected to commence in the Great Australian Bight during 2016. The intended drilling activities increases both the South Australian and West Australian risk profile with respect to possible spills from the rig itself as well as an increase in shipping movements to and from the rig.”*

*“If all **four** install rigs, it will significantly increase the risk to South Australia not only through the presence of oil rigs, but also in the increase in marine traffic this will cause.”*

To put this in perspective for the planned BP Exploration program, BP will be utilizing three Offshore Support Vessels (OSV's), please refer to [Link](#)

Further to this in my experience, once a facility has reach a steady state of operations, most facilities utilize one possibly two Offshore Support Vessels depending on the risk assessment made for operations and the facilities safety case.

If all four install rigs (drilling) where operating simultaneously, this would mean an increase of vessels transiting the area to the total of 12 for a short period. If four production facilities where installed you would see an increase of marine traffic between 4 and 8 vessels in the area. These increases in marine traffic would hardly be considered a significant increase to risk as claimed by Non-Government Environmental Organizations.

Claims of Oil and Gas Exploration Affecting Marine Life in the Great Australian Bight.

I would like you to refer to an article in the ABC on the 24th of September 2016 [Link](#) where Lead Researcher Claire Charlton, from Western Australia's Curtin University has observed an increase of whales in the region. This would lead to the conclusion that the claims made by Non-Government Environmental Organizations are misleading and false as over 43,000Kms of Seismic Surveys have been carried out since 2011 and exploration drilling has been carried out in the region since 1972.

- g. social and economic impacts, including effects on tourism, commercial fishing activities and other regional industries;*

Tourism in Regional Coastal South Australia & Coastal Victoria

Tourism in 2013-2014 South Australia Coastal Regions was valued at \$1,282,000,000 [Link](#) and directly employed 6,800 people regionally. (Yorke Peninsula, Eyre Peninsula, Kangaroo Island, Fleurieu Peninsula and Limestone Coast)

Tourism in 2013-2014 Victoria Coastal Regions was valued at \$4,739,000,000 [Link](#) and [Link](#) and directly employed 49,348 people regionally. (King Island, Gippsland & Lakes, Phillip Island, Great Ocean Road and Mornington Peninsula)

Commercial Fishing

The South Australian fishing industry significantly contributes to the regional economy with a total value of seafood production in 2012-2013 estimated around \$442 million, of which aquaculture contributed nearly 55 % with Tuna being the largest sector in the state's aquaculture industry. [Link](#)

It's an interesting point that the Tuna Industry does not oppose exploration in the Great Australian Bight. Australian Southern Bluefin Tuna Industry Association chief executive Brian Jeffriess, said the industry had no major problem with the exploration because the majority view was that the oil industry was good for the state and generated jobs. [Link](#)

I understand that the Oyster Growers Association of South Australia now oppose exploration in the GAB, however they feel it is because of a lack of transparency and consultation and not based on evidence.

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Being that Victoria Oil and Gas first exploration was in 1965 with first production 1969 in challenging and hostile conditions, and a reported coastal tourist income of \$4,739,000,000, it should be noted that oil and gas exploration and production in the Victorian Region has had no adverse economic impact of region. Likewise in South Australia as in the GAB which started exploration in 1966 has had no adverse economic impact of region with a reported tourist value of \$1,282,000,000 and a Commercial Fishing value of \$442,000,000 – meaning the risk to fisheries or the economics to the regions is minimal.

h. current research and scientific knowledge;

I assume that this refers to current research and scientific knowledge with in the context of exploration technologies used in drilling, oil spill modeling and oil spill mitigation. As I mentioned in my opening statement, I do not pretend to be an expert in oil and gas exploration and I cannot comment on the current research and scientific knowledge in this field. I would like to point out that neither do many of the Non-Government Environmental Organizations or individuals who will no doubt make comment without any experience or knowledge within the industry and many of who educate themselves on Social Media.

i. the capacity, or lack thereof, of government or private interests to mitigate the effect of an oil spill

I would like point out that Australia has an excellent independent regulator in place that I have had the pleasure and sometimes displeasure to work with in the past; based on experience I can say that only NOPSEMA has the knowledge to asses any exploration or operating application in Australia.

It has been stated by a prominent Non-Government Environmental Organization that “NOPSEMA has little expertise in environmental matters of national and international significance” however I would like to point out that NOPSEMA is in collaboration with the International Offshore Petroleum Environment Regulators (IOPER) and International Regulators’ Forum (IRF) which consist of 11 National Regulators of Health and Safety in the Offshore Upstream Oil and Gas industry throughout the world.

j. any other related matters.

Reports of Integrity Issues claiming that Exploration in the GAB should be halted

Over recent weeks there have been numerous media reports and media release by various Non-Government Environmental Organizations about bolt failures on BOP’s (Blow Out Preventers) which called for an immediate halt to exploration in the Great Australian Bight.

As a Mechanical Engineer, bolt failures not only concern me but also interest me as they are rare. Although my expertise does not include exploration or drilling I can generally learn something, so I took the time to do some research. Various groups have claimed that these particular bolts that have failed come from 3 manufacturers, this is false, the bolts in question come from one being GE Oil and Gas (formerly Vetco-Gray). Generally in my experience, most bolt failures are as a result of incorrect installation, environmental factors and material (incorrect selection or manufacturing issues) or a combination.

The US Bureau of Safety and Environmental Enforcement first raised concerns in 2013/2014 over a number of failures (beginning over a decade ago around 2003) of bolts that are used to connect blowout preventers, risers, and other subsea equipment so this is nothing new. As a robust regulator they took it upon themselves to investigate further not only to find out the root cause but to inform other operators of the issue, which is exactly what NOPSEMA have done in Australia once they were made aware of the issue.

There was a minor release reported on December the 18th 2012 approximately 432 barrels of synthetic-based drilling fluids into the Gulf of Mexico, all other failures have occurred during testing on the actual rig itself before being deployed, again this shows that processes and procedures that are in place work.

A RCA which was carried out by an independent consultant company Stork Testing & Metallurgical Consulting Inc. in March 2010 from an incident that occurred on January 4th 2010 found in summary that there where material issues and environmental issues based on the required engineering specifications – essentially this means quality issues from the manufacturer.

Again GE Oil and Gas issued and Engineering Bulletin in January 2013 to notify customers of possible failures and to carry out various checks, additionally 10982 bolts where supplied by GE and have been replaced throughout the world. Other RCA reports find that the environment and manufacturing (quality control) where. the issues

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QC-FIT (Quality Control-Failure Incident Team) on behalf of BSEE (Bureau of Safety and Environmental Enforcement) Report in August 2014 found these areas of concern – Hardness, Quality Control, Coating, Cathodic Protection, Absence of Paint or Coating, Jarring, Installation and Counterfeit Bolts.

Although there is a potential here but at this stage there have been no significant issues while in service and certainly no hydrocarbon releases. The US Bureau of Safety and Environmental Enforcement are satisfied that the investigation and subsequent actions are adequate, although there have been gaps identified and these will be addressed. However Non-Government Environmental Organizations are not satisfied, although I doubt they have read any of the information available meaning their claims are baseless. I have read all of the reports and recommendations, if you are not educated or experienced in mechanical engineering it would almost be impossible to understand.

This proves that the operators do have a good reporting culture; good communication with the regulator and the regulator will take the required actions and put in place the required mitigations to ensure that the industry remains safe. [Link](#)

NOPSEMA's Response – "...In early 2013 NOPSEMA contacted all drilling rig operators in Australian waters requesting them to inspect the connector bolts used in offshore equipment such as risers and subsea blowout preventers (BOPs). This request related to a recall by the connector bolt manufacturer, General Electric (GE). As a result of this request by NOPSEMA, an inspection program was undertaken by all operators of offshore oil and gas facilities. Any bolts from the batch of GE manufactured bolts subject to the recall were immediately replaced by operators." [Link](#)

Non-Government Environmental Organizations are not open to an informed debate.

On numerous occasions I have responded to various claims made by various Non-Government Environmental Organizations and attempted to respectfully inform them of verifiable facts on their social media pages. At times individuals often get abusive and personal, it is obvious they have very little evidence if any to support their claims. It appears that when these organizations are questioned and informed of information that does not support their agenda, they simply block you, delete comments and do not want you involved as they may be frightened of being exposed for what they truly are which is manipulators of the truth.

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Closing

Thank you for the opportunity to contribute to the Committee's deliberations, and I would be pleased for the opportunity to present to the Committee at public hearing if required although this would be difficult as I am currently based in South Korea.

As I previously mentioned I have no personal or financial gain if the decision was made to continue to explore the GAB or not, however exploration such as this may give me the opportunity to return to Australia to share my knowledge and experience. With appropriate mitigations in place as has been done for decades throughout Australia, the risk is minimal as history has shown us. Although Non-Government Environmental Organizations continue to focus on, BP was the operator of the Deep Water Horizon where 11 lives were lost and a major environmental incident occurred which has since recovered [Link](#), all of which could have been prevented. The industry has learnt from this and as a result operators and regulators have added further mitigations to ensure that an incident such as the one in the Gulf of Mexico does not happen again. In Australia the Montara incident is why NOPSEMA was formed as a robust independent regulator, now Australia has some of the most stringent regulations in the world. Although I fail to see the true relevance of the Deep Water Horizon incident when discussing exploration in the GAB or Australia as a whole, as thousands of exploration activities have happened throughout the world and Australia without incident, but as human nature has it, we only focus on the negatives.

Australia has a fine history of oil and gas exploration/production in often harsh and challenging environments dating back decades and we should be proud of it rather than concentrating on a non-relevant incident overseas and a vocal minority. With the correct mitigations in place along with a robust independent regulator I see no valid reason or evidence why exploration could not continue to be carried out safely in the GAB. I understand that NXT has committed to the introduction of new legislation that would give the Federal Department of the Environment the ability to veto an approval decision made by NOPSEMA for drilling to proceed in the GAB, although I see this as politics and perhaps a positive initiative, I fail to see the necessity given the track record of our independent regulator as they are the experts, with due respect, Politician's are not.

As the Honorable Member for Mayo Ms. Sharkie stated in her maiden speech to Parliament "*I am an avid student of our history...*" In this submission there is more than enough history to suggest supporting exploration in the GAB rather than opposing it as history has shown exploration in the GAB can be done safely and without incident as it has been performed in Bass Strait Safely for decades in similar conditions.

I do however understand various groups and local councils concerns as politicians and Non-Government Environmental Organizations tend to be more vocal and get the media's attention for an interesting story. But I feel, like most things, if you do not understand something you are scared of it. If there was more transparency in the process I feel that this would address these concerns.

I only hope that whatever decision or recommendations are made are based on relevant facts rather than opinions of the vocal minority who have a very different agenda than to potentially secure Australia's future energy requirements and potentially making Australia a net exporter.

I am confident you have found this information useful, if you require any more information or clarification please feel free to contact me.

Yours Sincerely

Leith Packer
Encounter Bay

Interesting Quotes:

- Peter Owen the director of the Wilderness Society SA continually states "BP wants to drill for oil in the pristine waters..." Mr. Owen is correct; the waters are pristine even after decades of oil and gas exploration in the GAB. [Link](#)
- Paul Watson who founded the Sea Shepherd Conservation Society is quoted as saying "If you don't know an answer, a fact, a statistic – make it up on the spot" [Link](#)