

LEGISLATIVE ASSEMBLY OF THE NORTHERN TERRITORY

WRITTEN QUESTION

Ms Purick to the Minister for Mines and Energy:

Petroleum Exploration and Production

1. How many on shore unconventional wells have been drilled from January to August 2015 and in what geological basin?
 2. How many on shore drill holes have failed and in that geological basins?
 3. How many Australian Stock Exchange companies have either on shore petroleum exploration permits and how many have on shore petroleum production permits? Name of the companies?
 4. How many off shore companies' hold either petroleum exploration permits and how many hold on shore petroleum production permits? Name the companies and from what countries?
 5. How many drilling companies are utilized in the on shore petroleum exploration industry? How many people are employed in the drilling sector of on shore petroleum industry?
 6. How many people are employed in the on shore petroleum production sector?
 7. What are the total environmental bonds or securities held by the Government in regards to both on shore petroleum exploration and production activities?
 8. How many companies have environmental bonds with the Government?
 9. How many companies are in discussions with the government as to paying an environmental bond?
 10. In the period from January to August 2015, what is the level of waste from drill cuttings and how is the waste disposed of?
 11. How much potable water is used per drill hole and where is the water used sourced from?
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1. Six exploration wells were drilled between June and October 2015. Four wells were drilled in the McArthur Basin and two in the Beetaloo sub-basin. The number of wells drilled were much less than anticipated (24 wells) due to the collapse of oil prices and general economic downturn in the oil and gas industry.

2. There were no drill holes that failed in the McArthur and Beetaloo sub-basin. One casing failure was reported to the department in 2012 which occurred in the Georgina Basin.
3. Companies listed on the Australian Stock Exchange (ASX) that have onshore petroleum exploration permits in the Northern Territory(NT) include:

- Baraka Energy Resources
- Armour Energy Pty Ltd
- Beach Energy Ltd
- Origin Energy Resources Ltd
- Santos Ltd.

Santos and Central Petroleum are listed on the ASX and are the only companies that have an NT onshore production licence.

Please note - the following companies are subsidiaries of ASX listed Central Petroleum, but are of themselves not listed.

- Frontier Oil & Gas Pty Ltd – 2 EP applications, 2 granted EPs and one production licence
- Helium Australia Pty Ltd – 1 granted EP, 2 granted retention licences
- Merlin Energy Pty Ltd – 12 EP applications, 5 granted EPs
- Ordovician Petroleum Pty Ltd – 1 EP application, 1 granted EP

4. The question has been interpreted to mean international companies that are not ASX listed.

Overseas companies that have petroleum exploration interests onshore in the Northern Territory:

- Inpex Oil and Gas -Japan
- SASOL Petroleum- South Africa
- Statoil -Norway
- Trident Energy - USA
- EMG Pangaea Holdings Pty Ltd is the Energy & Minerals Group – Dallas, Texas
- Falcon Oil & Gas Australia Limited – Parent company Falcon Oil & Gas Ltd headquarters located in Dublin, Ireland, incorporated in British Columbia, Canada.
- Petrofrontier (Australia) Pty Ltd – Parent company Petrofrontier Corp headquarters located in Calgary Canada
- Sweetpea Petroleum Pty Ltd – Denver Colorado
- Tri-Star Energy Company – Texas USA

The above companies have the following granted Petroleum Exploration Permits and or Applications.

- EMG Pangaea Holdings Pty Ltd have 5 granted EPs
- Falcon Oil & Gas Australia Limited has 3 granted EPs

- Petrofrontier have 2 granted EPs and 2 EP applications
- Sweetpea 2 granted EPs and 1 in application
- Tri-Star 1 granted EP

There are no international companies that hold an NT onshore production licence.

5. This depends on the level of activity in a given year because it is not a continuous operation. A “drilling company” is typically a company that owns and operates drilling rigs. Those companies are contracted and managed by oil and gas companies holding an exploration or production permit. The drilling operation typically is supported by other services that may be offered by third party contractors such as specialized drilling services, logistics and catering. So far in 2015, six wells have been drilled by two Oil and Gas companies with three drilling rigs operating concurrently (supplied by two drilling contractors). During the project term (about 30 days) about 80 to 100 people gain direct employment for the drilling of one well.
6. About 50 people are directly employed in the NT’s onshore petroleum production sector by Santos and Central Petroleum near Alice Springs which is small compared to the thousands of people employed in the NT related to the offshore oil and gas industry in Darwin through projects such as Ichthys (Inpex), Bayu-Undan (ConocoPhillips), Blacktip (ENI) and the upcoming Prelude Project (Shell). The figure of 50 direct employees does not include the 15 people permanently employed in the Energy Directorate of the Department of Mines and Energy (DME).
7. A total of \$7,046,389 is currently held by DME in environmental bonds or securities for both onshore petroleum exploration and production activities. At the completion of these activities, the DME returns these bonds to companies when it is satisfied that appropriate remediation in accordance with the Environment Plan is complete. This may be quite some time after the activity is complete to allow for the environment to recover and it is evident that all environmental issues are resolved.
8. A total of 31 companies currently have environmental bonds with DME for petroleum activities only.
9. Every oil and gas company seeking approval to carry out a petroleum activity will be required to pay an environmental bond. At this point in time for 2015, DME has only one further activity in assessment, which if approved, will require payment of an environmental bond.
10. From the six wells drilled in 2015, about 150m³ of cuttings have been removed. All waste, including drill cuttings, must be disposed of in accordance with the approved Environment Management Plan. However, since the drilling muds used are not harmful to the environment, any cuttings not deemed of further scientific value are mixed with soil onsite and left in the mudpit, which will be levelled during rehabilitation. Test samples confirm the composition of the drill cuttings, including for levels of naturally occurring radioactive materials (NORMS), to ensure this can be done safely. If necessary cuttings are treated and returned to landfill at a designated, licensed disposal site. So far though, no issues with NORMs have occurred in the NT associated with onshore gas development.
11. The amount of water required for drilling depends on the depth of the well and particular geological characteristics. However, for a typical well of 3,000m, about 500 (±100) kilolitres are required.

For hydraulic fracturing the amount of water required depends on the particular geomechanical properties of the formation being fractured and the number of stages of fracturing being applied. Each stage of hydraulic fracturing may use up to 1 megalitre of water. Wells that are currently being drilled for exploration and testing purposes typically only receive one stage of hydraulic fracturing treatment.

Currently, and for short term exploration activities, the water is sourced from nearby water bores in agreement with the Pastoralist. Typically, the oil and gas company will drill a new water bore, which is usually transferred to the pastoralist after the activity has been completed. The DME engages with the Department of Land Resource Management to ensure sustainable water use.

While, currently fresh water aquifers are being used there will be a focus to reduce fresh water use in future. This can be done through the use of deeper saline aquifers for the sourcing of water that is not suitable for human or agricultural consumption. There are also technologies available that allow for the recycling of water which may reduce overall water requirements by 30-40 percent.

Please note that most of the information sought is publicly available through the Department's website: http://www.nt.gov.au/d/Minerals_Energy/index.cfm?header=Energy%20-%20Oil,%20Gas,%20Geothermal