



Northern
Territory
Government

PETROLEUM OPPORTUNITIES

energyNT|2014

Energy activities for the Northern Territory, Australia

AUSTRALIA'S
Northern Territory



energyNT|2014

Department of Mines and Energy, Energy Directorate
Darwin, January 2015

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EXECUTIVE SUMMARY

The 2014 field season has seen good progress made in unlocking the potential of shale gas opportunities in the Northern Territory. In the onshore McArthur Basin in the Territory, Santos QNT Pty Ltd drilled the Tanumbirini-1 exploration well in EP161 to a depth of 3,945 metres. The primary target, the Middle Velkerri yielded multiple thick intervals of organic-rich rocks accompanied by significant mud gas shows. Elevated gas readings were encountered over a total gross interval in excess of 500 metres. The well has been suspended for potential re-entry in 2015. We also look forward to further exploration activities from Pangaea (NT) Pty Ltd in the western part of the McArthur/Beetaloo Basin.

On 2 May 2014, Falcon Oil & Gas Australia Ltd announced a joint venture over its Beetaloo Sub-basin Permits with Origin Energy Resources Limited and Sasol Petroleum Australia Limited. The partnership brings great capacity to unlock the hydrocarbon potential of the Beetaloo Sub-basin, presenting an exciting four years exploration program, beginning in 2015. With an estimated 162 Tcf of gas resources in the Beetaloo Sub-basin alone, exploration success will bring real value to the Territory, increasing investment potential.

The past year has been a busy time with a number of ‘firsts’ for the Energy Directorate. This year saw implementation of a policy to accommodate the treatment of shale gas permits as a ‘project’ with Falcon Oil and Gas’ assets as the test case.

- The first acreage release under the 1 January 2014 provisions in the *Petroleum Act* that allows for a competitive bidding attracted several bids. The Energy Directorate assessment of those bids is now underway.
- The Energy Directorate has also facilitated negotiations leading to the first Exploration Permits to be offered over Aboriginal freehold land under the *Aboriginal Land Rights Act* in the northern region areas of the Territory managed by the Northern Land Council. The Department of Mines and Energy and the Northern Territory Government continues to actively engage with the Land Councils to create opportunities for economic development on Aboriginal lands.
- Lying 300 km south west of Alice Springs, the 2011 discovery of oil in the Surprise Field was the first in the Territory (Amadeus basin) for over 30 years. Production License 6 was awarded in April 2014 in conjunction with an agreement with Native Title holders. The Surprise Field Permanent Production Facilities are now constructed with the well producing at a weekly average of 160 bopd.
- If realised, another exciting development proposal is the North East Gas Interconnector (NEGI) pipeline. Capable of generating substantial economic activity by its own development and operation, the NEGI will also facilitate investment in exploration of the estimated 200 tcf plus of shale gas resources in six onshore basins by creating access to national and international markets. The project has the support of the Australian Government with the Federal Minister for Industry the Hon. Ian McFarlane MP declaring the project is "more than a vision". The Federal, Territory, New South Wales and South Australian governments are in ongoing dialogue about this possibility, with 14 expressions of interest received to participate in a Request for a Proposal.

A milestone for the \$US34B Ichthys LNG project was the completion of the gas export pipeline within the three nautical miles Territory waters, with regulatory oversight and guidance from the pipeline team that also managed the approvals for the Dingo Gas Pipeline construction in the Amadeus Basin.

The Department has also embarked on an accelerated program to take our strong regulatory systems to a new contemporary level. This will ensure the community will have full confidence that industry is well regulated and create a risk/outcome based framework to remove prescriptive aspects, shift the onus onto companies to demonstrate how sound environmental and resource management goals will be achieved. With the removal of the more prescriptive parts of our legislation, approvals will become less onerous, be achieved faster and encourage innovation in industry leading practice.

The level of confidence in the potential offered in the Territory remains high, with 2015 work programs projecting no fewer than 24 exploration wells will be drilled within the next 12 months. Projected expenditure on oil and gas exploration on granted tenements is stable, remaining around the \$200 million mark for the next five years. It is anticipated that this will increase as more tenements are granted.

We look forward to the challenges of the coming year and to providing an efficient and effective regulatory service to industry and for the community.

Victoria Jackson

Executive Director
Energy Directorate, Department of Mines and Energy

Activities in NT Onshore and Coastal Waters

The Ichthys LNG Project will include two LNG trains (with room to expand to six trains), a liquefied petroleum gas processing facility and a condensate separation plant located at Bladin Point in Darwin Harbour. Gas from the Ichthys Field in the Browse Basin west of Darwin will be supplied through an 890 km, 1065 mm diameter gas pipeline. The plant is expected to be operational with shipment of LNG commencing by the end of 2016.

Petroleum

In 2014 there was continuous increase in level of exploration, appraisal, development and production activities. The main highlights are:

- Santos QNT Pty Ltd
 - Drilling, Hydraulic Fracture Stimulation, Testing and Completion of four new wells as part of Santos' Mereenie Appraisal and Development Drilling (MADD) Project in the Mereenie Field.
 - Workover and Hydraulic Fracture Stimulation of four existing wells in the Mereenie Field
 - Drilling of Mt Kitty 1 in EP125. A discovery announcement was made after the well flowed helium and natural gas to surface. The well is suspended.
 - Drilling of Tanumbirini 1 in EP161. The well is suspended.
- Statoil Australia Theta B.V.
 - Drilling of five exploration wells in the Southern Georgina Basin. Two out of five wells were hydraulically fracture stimulated and tested. All the wells have been plugged and abandoned.
 - Plug and abandonment of Baldwin 2HST1, MacIntyre 2H and Owen 3H wells that were drilled previously by PetroFrontier.
- Central Petroleum Limited
 - Workover of Surprise 1 REH ST1.
 - Extended Production Testing of Surprise 1 after well workover.
 - Construction and commissioning of its Surprise Field Permanent Production Facilities in L6.
 - Commenced the Dingo Field Development Project. The field is expected to be brought online in 2015.
- Beach Petroleum (NT) Pty Ltd
 - Drilling of Cullen 1 in EP126. The well is suspended.
- Pangaea (NT) Pty Ltd
 - Drilling of three stratigraphic core holes in EP167 and EP168. The stratigraphic core holes were plugged and abandoned after formation evaluation and coring had been completed.
- Tri-Star Energy Company
 - Drilling of New Crown 1 in EP134. The well is suspended.
- Imperial Oil & Gas Pty Ltd
 - Drilling of four shallow stratigraphic core holes in EP184. The wells have been plugged and abandoned.
- Armour Energy Pty Ltd
 - Conducted 3D DCIP Survey within EP171 and EP190.
- Mosman Oil and Gas Ltd
 - Conducted a Gamma Ray Survey within EP156.
- Tom Oates
 - Conducted two helicopter-supported ground gravity surveys within EP300 and EP301.

Proposed and upcoming onshore activities for 2015 are expected to include the following:

- Pangaea (NT) Pty Ltd to drill four to five exploration wells or stratigraphic core holes within EP167 and EP168.
- Santos QNT Pty Ltd to conduct 2D Seismic Survey within the Southern Amadeus Basin.
- Armour Energy Pty Ltd to conduct 2D Seismic Survey within the McArthur Basin. This was planned for 2014 but was deferred to 2015.
- Central Petroleum Limited to conduct appraisal drilling within the Surprise Field.
- Central Petroleum Limited to complete development of the Dingo Gas Field in L7 and bring the field online.
- Santos QNT Pty Ltd to continue its Mereenie Appraisal and Development Drilling (MADD) Project in 2015 at Mereenie field.
- Beach Petroleum (NT) Pty Ltd to conduct further evaluation of Cullen-1 well in EP126.
- Santos QNT Pty Ltd to conduct further evaluation of Mt Kitty 1 discovery in EP125.

Licensed pipelines

Ichthys Gas Export Pipeline (Pipeline Licenses 26 and 27)

- Laying of the pipeline from the Ichthys Gas Field in the Browse Basin to the Ichthys LNG Plant at Bladin Point in Darwin Harbour commenced mid 2014 with construction of the onshore portion starting soon after.

Geothermal

There are no geothermal permits in the Northern Territory at the time of producing this report. The last permit was surrendered earlier this year.

About energyNT

energyNT focuses on petroleum, pipeline and geothermal energy activities in the NT's onshore and coastal waters (up to the 3 nautical mile limit) areas only. Enquiries on petroleum activities in Commonwealth offshore areas previously administered by the Northern Territory should be directed to NOPTA and NOPSEMA.

2014 ACTIVITIES

PETROLEUM

Permits/Titles/Work Programs

Onshore

The NT onshore area is over 1.35 million km² (Figure 1) and as of 31 December 2014, there were fifty seven active exploration permits, three retention licenses and five production licenses where hydrocarbons have been produced since the early 1980s. Table 1 contains a list of Onshore Titles, Title holders and Title operators.

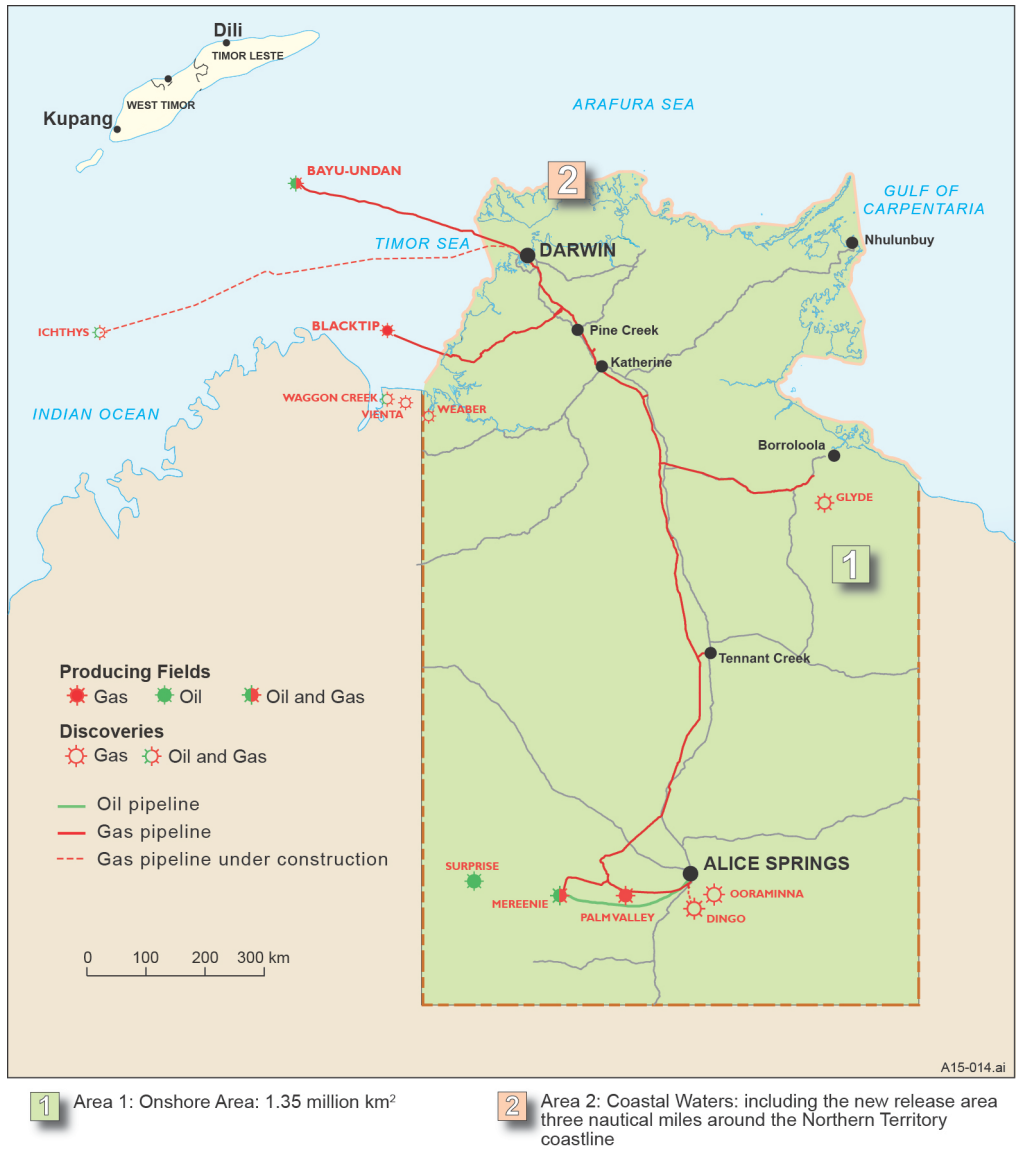


Figure 1. Areas administered by Northern Territory Department of Mines and Energy in 2014

Table 1. NT Petroleum Titles 2014

NT Onshore Title	Title Holders	Title Operators	Date Awarded
EP76 (R1)	Falcon Oil & Gas Australia Limited Sasol Petroleum Australia Limited Origin Energy Resources Limited	Origin Energy Resources Limited	1-Jan-14
EP82 (R1)	Helium Australia Pty Ltd [<i>Central Petroleum Limited</i>] Santos QNT Pty Ltd	Santos QNT Pty Ltd	31-Jan-13
EP93 (R1)	Merlin Energy Pty Ltd [<i>Central Petroleum Limited</i>]	Central Petroleum Limited	30-Jan-13
EP97 (R1)	Merlin Energy Pty Ltd [<i>Central Petroleum Limited</i>]	Central Petroleum Limited	23-May-11
EP98 (R1)	Falcon Oil & Gas Australia Pty Ltd	Origin Energy Resources Limited	1-Jan-14
EP103	Statoil Australia Theta B.V Texalta Australia Pty Ltd Petrofrontier (Australia) Pty Ltd	Statoil Australia Theta B.V	21-Nov-06
EP104	Statoil Australia Theta B.V Texalta Australia Pty Ltd Petrofrontier (Australia) Pty Ltd	Statoil Australia Theta B.V	21-Nov-06
EP105	Merlin Energy Pty Ltd [<i>Central Petroleum Limited</i>] Santos QNT Pty Ltd	Santos QNT Pty Ltd	28-Sep-07
EP106	Merlin Energy Pty Ltd [<i>Central Petroleum Limited</i>] Santos QNT Pty Ltd	Santos QNT Pty Ltd	28-Sep-07
EP107 (R1)	Merlin Energy Pty Ltd [<i>Central Petroleum Limited</i>] Santos QNT Pty Ltd	Santos QNT Pty Ltd	21-May-14
EP112	Frontier Oil & Gas Pty Ltd [<i>Central Petroleum Limited</i>] Santos QNT Pty Ltd	Santos QNT Pty Ltd	21-Jul-05
EP115	Frontier Oil & Gas Pty Ltd [<i>Central Petroleum Limited</i>]	Central Petroleum Limited	17-Aug-07
EP117 (R1)	Falcon Oil & Gas Australia Pty Ltd	Origin Energy Resources Limited	1-Jan-14
EP125	Ordiv Petroleum Pty Ltd [<i>Central Petroleum Limited</i>] Santos QNT Pty Ltd	Santos QNT Pty Ltd	7-Dec-05
EP126	Territory Oil and Gas Pty Limited Beach Petroleum (NT) Pty Ltd	Beach Petroleum (NT) Pty Ltd	15-Jun-11
EP127	Statoil Australia Theta B.V Baraka Petroleum Limited Petrofrontier (Australia) Pty Ltd	Statoil Australia Theta B.V	14-Dec-07
EP128	Statoil Australia Theta B.V Baraka Petroleum Limited Petrofrontier (Australia) Pty Ltd	Statoil Australia Theta B.V	14-Dec-07
EP134	Tri-star Energy Company	Tri-star Energy Company	26-Feb-08
EP136	Sweetpea Petroleum Pty Ltd Paltar Petroleum Limited	Paltar Petroleum Limited	28-Aug-12
EP138	Territory Oil and Gas Pty Limited Beach Petroleum (NT) Pty Ltd	Beach Petroleum (NT) Pty Ltd	23-Aug-12
EP143	Sweetpea Petroleum Pty Ltd Paltar Petroleum Limited	Paltar Petroleum Limited	28-Aug-12
EP144	Mineral Australia Pty Ltd Jacaranda Minerals Limited	Hancock Prospecting Pty Ltd	21-May-13
EP145	Trident Energy Limited	Trident Energy Limited	22-Aug-14
EP153	Mineral Australia Pty Ltd Jacaranda Minerals Limited	Hancock Prospecting Pty Ltd	1-Jul-13
EP156	Oilco Pty Ltd	Mosman Oil and Gas Ltd	7-Nov-11
EP161	Tamboran Resources Pty Ltd Santos QNT Pty Ltd	Santos QNT Pty Ltd	21-May-12
EP162	Tamboran Resources Pty Ltd Santos QNT Pty Ltd	Santos QNT Pty Ltd	21-Aug-12
EP163	Tamboran Resources Pty Ltd	Tamboran Resources Pty Ltd	14-May-10

Table 1. NT Petroleum Titles 2014

NT Onshore Title	Title Holders	Title Operators	Date Awarded
EP164	Tamboran Resources Pty Ltd	Tamboran Resources Pty Ltd	23-Aug-13
EP165	Tamboran Resources Pty Ltd	Tamboran Resources Pty Ltd	15-Jul-13
EP166	Tamboran Resources Pty Ltd	Tamboran Resources Pty Ltd	28-Aug-13
EP167	Pangaea (NT) Pty Ltd	Pangaea (NT) Pty Ltd	10-Jan-13
EP168	Pangaea (NT) Pty Ltd	Pangaea (NT) Pty Ltd	10-Jan-13
EP169	Pangaea (NT) Pty Ltd	Pangaea (NT) Pty Ltd	4-Apr-13
EP171	Armour Energy Pty Ltd	Armour Energy Pty Ltd	29-Jun-11
EP174	Armour Energy Pty Ltd	Armour Energy Pty Ltd	11-Dec-12
EP176	Amour Energy Pty Ltd	Amour Energy Pty Ltd	29-Jun-11
EP184	Imperial Oil & Gas Pty Ltd	Imperial Oil & Gas Pty Ltd	21-Aug-13
EP189	Tamboran Resources Pty Ltd Santos QNT Pty Ltd	Santos QNT Pty Ltd	21-Aug-12
EP190	Armour Energy Pty Ltd	Armour Energy Pty Ltd	11-Dec-12
EP191	Armour Energy Pty Ltd	Armour Energy Pty Ltd	3-Oct-13
EP192	Armour Energy Pty Ltd	Armour Energy Pty Ltd	3-Oct-13
EP198	Pangaea (NT) Pty Ltd	Pangaea (NT) Pty Ltd	10-Jan-13
EP200	Wiso Oil Pty Ltd	Wiso Oil Pty Ltd	16-Feb-12
EP205	Wiso Oil Pty Ltd	Wiso Oil Pty Ltd	16-Feb-12
EP207	Wiso Oil Pty Ltd	Wiso Oil Pty Ltd	16-Feb-12
EP222	Wiso Oil Pty Ltd	Wiso Oil Pty Ltd	22-Aug-12
EP231	Paltar Petroleum Limited	Paltar Petroleum Limited	5-Sep-12
EP232	Paltar Petroleum Limited	Paltar Petroleum Limited	3-Oct-13
EP234	Paltar Petroleum Limited	Paltar Petroleum Limited	5-Sep-12
EP237	Paltar Petroleum Limited	Paltar Petroleum Limited	5-Sep-12
EP300	Tom Oates	Tom Oates	17-Apr-13
EP301	Tom Oates	Tom Oates	15-May-13
EP304	Tom Oates	Tom Oates	26-Nov-14
EP305	Pangaea (NT) Pty Ltd	Pangaea (NT) Pty Ltd	8-Aug-14
EP307	Tom Oates	Tom Oates	26-Nov-14
EP309	Tamboran Resources Pty Ltd	Tamboran Resources Pty Ltd	15-Jul-13
RL1	Onshore Energy Pty Ltd	Onshore Energy Pty Ltd	9-Jul-13
RL3	Helium Australia Pty Ltd [Central Petroleum Limited] Santos QNT Pty Ltd	Santos QNT Pty Ltd	6-Mar-13
RL4	Helium Australia Pty Ltd [Central Petroleum Limited] Santos QNT Pty Ltd	Santos QNT Pty Ltd	6-Mar-13
OL3	Central Petroleum (NT) Pty Ltd	Central Petroleum Limited	6-Nov-03
OL4	Santos QNT Pty Ltd Santos Limited	Santos QNT Pty Ltd	6-Nov-02
OL5	Santos QNT Pty Ltd Santos Limited	Santos QNT Pty Ltd	6-Nov-02
L6	Frontier Oil & Gas Pty Ltd	Central Petroleum Limited	25-Feb-14
L7	Central Petroleum (NT) Pty Ltd	Central Petroleum Limited	7-Jul-14

Note: R1 is the first renewal of the title

The total nominated exploration expenditure work program for onshore titles for the period 2014–2019 is estimated at A\$378.6M for petroleum exploration. The work commitment for the period includes the drilling of 106 wells and the acquisition of 3960 line km of 2D seismic data.

Four new exploration permits and four renewals were granted in 2014 (**Table 1**). There are now fifty seven active exploration permits (EP), three retention leases (RL) and five operating licenses (OL/L).

Expenditure for onshore petroleum exploration activities in the Northern Territory in 2014 was approximately \$65.32M. The estimated value of five year work programs for the new permits and renewals granted in 2014 is \$198.37M.

Coastal Waters

Coastal Waters include all waters between the mean low water mark and a line 3 nautical miles seaward of the Australian Territorial Sea Baseline (**Figures 1, 2**). This area was first released for applications in 2009 and is approximately 15 000 km². Unlike Commonwealth Waters, acreage in Coastal Waters is not released for competitive tender but is available for application at any time.

New Acreage Release

The amendments to the *Petroleum Act* came into effect on 1 January 2014. These amendments now allow for the controlled release of vacant land and the government to accept multiple applications for exploration permits on the same acreage, providing for a more competitive assessment process.

The release areas vary in size and the level of existing geological knowledge, and may be covered by the *Aboriginal Land Rights (NT) Act 1976* or *Native Titles Act 1993*. All release areas are supported by existing well and seismic data together with regional geological data.

There were two acreage releases in in 2014 as shown in *Figure 2*.

- **Acreage Release - Round 1 – Released 16 June 2014**
 - EPNT14-1
50 blocks within the Beetaloo Sub-basin of the McArthur Basin
 - EPNT14-2
29 blocks within the Amadeus Basin
- **Acreage Release - Round 2 – Released 3 July 2014**
 - EPNT14-3
70 Blocks within the Beetaloo Sub-Basin of the McArthur Basin

The applications for Round 1 and 2 closed on 12 December 2014. All applications received are now under assessment.

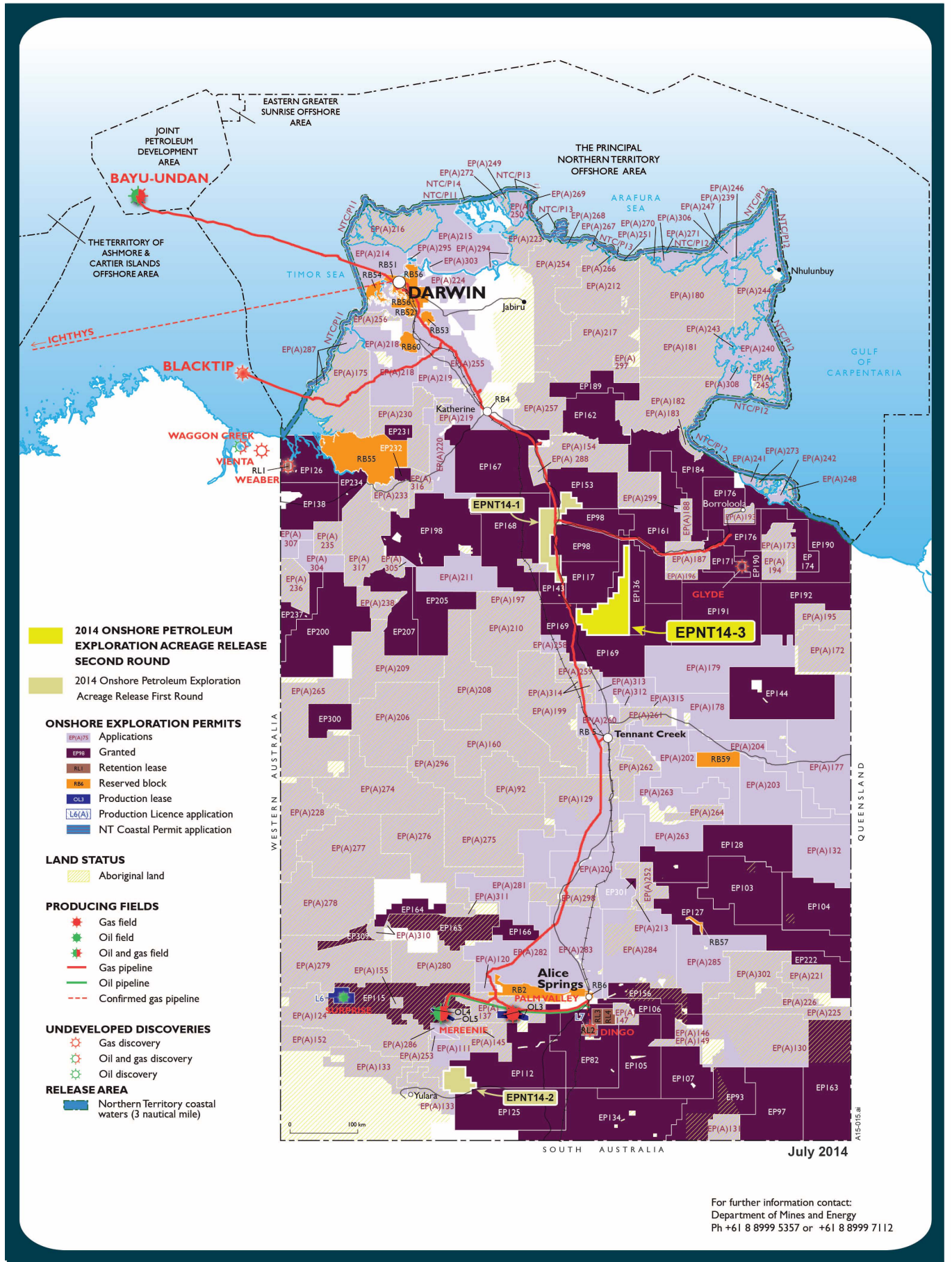


Figure 2. Onshore Petroleum Exploration Acreage Release Areas in 2014

Exploration Operations

Geological and Geophysical surveys

In 2014, there were four surveys undertaken within the Northern Territory.

- Armour Energy Pty Ltd:** From 6 September 2014 to 21 September 2014, Armour acquired approximately 9 km² of 3D DCIP survey within EP171 and EP190 in the Glyde Sub-basin of the McArthur Basin (*Figure 3*).

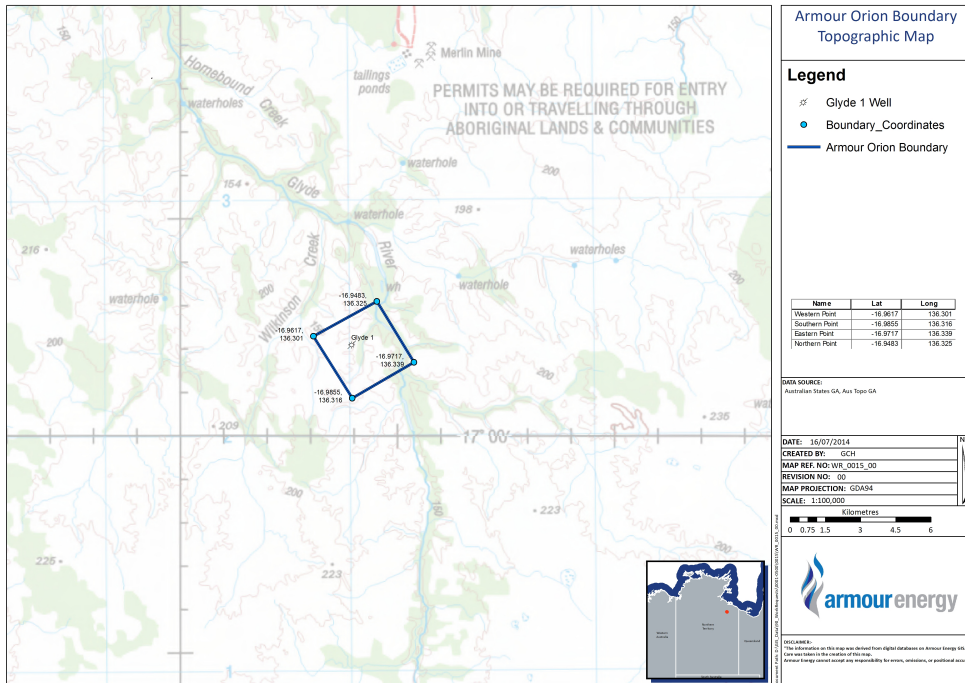


Figure 3. Armour Energy’s Glyde Sub-basin 3D DCIP Survey within EP171 and EP190

- Mosman Oil and Gas Limited:** Mosman Oil and Gas Ltd commenced a Gamma Ray survey on 9 October 2014 to define the petroleum potential within EP156 in the eastern Amadeus Basin (*Figure 4*). The handheld gamma ray spectrometer ground survey was completed on 22 October 2014. A total of 2.56 line km was surveyed.

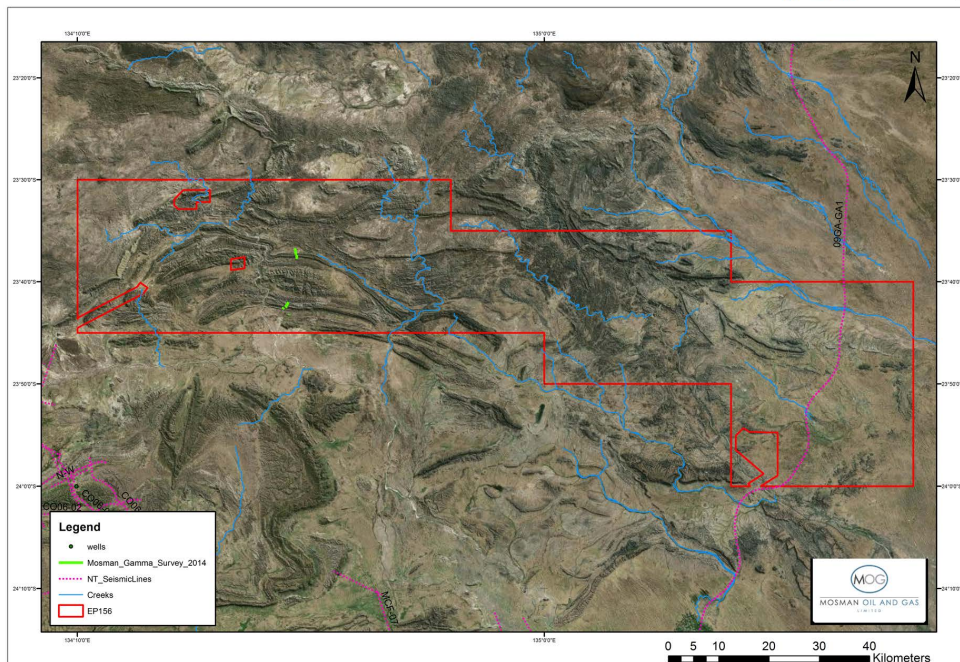


Figure 4. Mosman Oil and Gas’ Gamma Ray Survey within EP156

- Tom Oates:** During November and December of 2014, Tom Oates conducted two helicopter-supported ground gravity surveys within EP300 and EP301.

Drilling

In 2014, a total of nineteen new wells were drilled in the Northern Territory. Sixteen wells were new shallow stratigraphic or deep exploration wells and three wells were drilled as part of the Mereenie Field Appraisal and Development Drilling (MADD) project, which commenced in 2013. Out of the sixteen wells drilled for exploration purpose, thirteen were plugged and abandoned after well evaluation and/or testing were completed and three wells are currently suspended. It is expected that operators will re-enter the suspended wells and conduct further evaluation and testing in 2015.

Table 2. NT Onshore Drilling and Testing Activities 2014

Well Name	Operations	Operator	Permit	Well Status	Drill Rig	Well Spud Date	Rig Release Date	Total Depth (m-MD)
BCF SC 02	Exploration; shallow stratigraphic hole	Imperial Oil & Gas Pty Ltd	EP184	Drilled, plugged and abandoned	Hydco 1200G	27/07/2014	2/08/2014	103
BCF SC 03	Exploration; shallow stratigraphic hole	Imperial Oil & Gas Pty Ltd	EP184	Drilled, plugged and abandoned	Hydco 1200G	22/07/2014	24/07/2014	120
BCF SC 04	Exploration; shallow stratigraphic hole	Imperial Oil & Gas Pty Ltd	EP184	Drilled, plugged and abandoned	Hydco 1200G	18/07/2014	23/07/2014	120
BCF SC 04a	Exploration; shallow stratigraphic hole	Imperial Oil & Gas Pty Ltd	EP184	Re-entry of BCF SC 04; deepened, plugged and abandoned	Hydco 1200G	7/08/2014	17/08/2014	274
BCF SC 05	Exploration; shallow stratigraphic hole	Imperial Oil & Gas Pty Ltd	EP184	Drilled, plugged and abandoned	Hydco 1200G	12/07/2014	16/07/2014	120
Cullen 1	Exploration; focusing on conventional and unconventional hydrocarbons	Beach Petroleum (NT) Pty Ltd	EP126	Drilled; suspended.	Ensign 965	23/05/2014	11/08/2014	3325
Hidden Valley S2	Exploration; focusing on conventional and unconventional hydrocarbons	Pangaea (NT) Pty Ltd	EP168	Drilled, plugged and abandoned	DDH1 Rig 31 (UDR5000)	26/05/2014	6/07/2014	1744
Manbulloo S1	Exploration; focusing on conventional and unconventional hydrocarbons	Pangaea (NT) Pty Ltd	EP167	Drilled, plugged and abandoned	DDH1 Rig 31 (UDR5000)	17/07/2014	19/08/2014	1236
Mt Kitty 1	Exploration; focusing on conventional and unconventional hydrocarbons	Santos QNT Pty Ltd	EP125	Drilled; Suspended.	Ensign 918	28/03/2014	18/04/2014	2295
New Crown 1	Exploration; focusing on conventional and unconventional hydrocarbons	Tri-Star Energy Company	EP134	Drilled; suspended.	1236 - Schramm T130XD	23/02/2014	14/03/2014	960
OzAlpha 1	Exploration; focusing on unconventional hydrocarbons	Statoil Australia Theta B.V	EP104	Drilled, plugged and abandoned	EDA Rig # 2	1/04/2014	22/04/2014	1250
OzBeta 1	Exploration; focusing on unconventional hydrocarbons	Statoil Australia Theta B.V	EP127	Drilled; fracture stimulated; tested; plugged and abandoned	EDA Rig # 2	2/05/2014	19/05/2014	1442
OzDelta 1	Exploration; Focusing on Unconventional Hydrocarbons	Statoil Australia Theta B.V	EP128	Drilled; fracture stimulated; tested; plugged and abandoned	EDA Rig # 2	20/06/2014	29/06/2014	840
OzEpsilon 1	Exploration; focusing on unconventional hydrocarbons	Statoil Australia Theta B.V	EP128	Drilled, plugged and abandoned	EDA Rig # 2	2/07/2014	11/07/2014	665
OzGamma 1	Exploration; focusing on unconventional hydrocarbons	Statoil Australia Theta B.V	EP103	Drilled, plugged and abandoned	EDA Rig # 2	26/05/2014	12/06/2014	1069
Tanumbirini 1	Exploration; focusing on conventional and unconventional hydrocarbons	Santos QNT Pty Ltd	EP161	Drilled; suspended.	Ensign 754	12/06/2014	13/10/2014	3945

Table 2. NT Onshore Drilling and Testing Activities 2014

Well Name	Operations	Operator	Permit	Well Status	Drill Rig	Well Spud Date	Rig Release Date	Total Depth (m-MD)
Tarlee S3	Exploration; focusing on conventional and unconventional hydrocarbons	Pangaea (NT) Pty Ltd	EP167	Drilled, plugged and abandoned	DDH1 Rig 31 (UDR5000)	21/08/2014	22/09/2014	1651
West Mereenie 20	Development; focusing on conventional and unconventional hydrocarbons	Santos QNT Pty Ltd	OL4	Production section hole drilled; completed; fracture stimulated and flowed to the production unit	Ensign 918	8/01/2014	11/02/2014	1527
West Mereenie 23	Development; focusing on conventional and unconventional hydrocarbons	Santos QNT Pty Ltd	OL4	Production section hole drilled; completed; fracture stimulated and flowed to the production unit	Ensign 918	15/12/2013	8/01/2014	1572
West Mereenie 24 ST1	Development; Focusing on Conventional and Unconventional Hydrocarbons	Santos QNT Pty Ltd	OL4	Production section hole drilled; completed; fracture stimulated and flowed to the production unit	Ensign 918	11/02/2014	17/03/2014	1540

Appraisal & Development Operations

Central Petroleum Limited

Central Petroleum Limited was granted a production licence over the Surprise Oil Field within EP115 and commenced field development. The permanent production facility has been completed and the field is now producing from its discovery well, Surprise 1.

In addition to Surprise Oil Field, Central Petroleum Limited was granted a production licence over the Dingo Gas Field, previously under RL2. Development works commenced to have the field producing by 2015.

The Dingo and Palm Valley Fields were both previously owned and operated by Magellan Petroleum (NT) Pty Ltd until this year when Central Petroleum took over and became the operator.

Santos QNT Pty Ltd

Santos QNT Pty Ltd continued the MADD project, which commenced in 2013 to further appraise and develop its conventional and unconventional oil reservoirs in the Mereenie Field (OL4 & OL5) within the Amadeus Basin. The MADD project was suspended due to operational issues and will recommence in 2015.

As part of the MADD project, Santos QNT Pty Ltd also conducted workovers, recompletions and hydraulic fracture stimulations on existing wells in the Mereenie Field.

- East Mereenie 12
 - Workover, hydraulic fracture stimulation and recompletion
- East Mereenie 26
 - Workover, hydraulic fracture stimulation and recompletion
- East Mereenie 35
 - Casing repair, hydraulic fracture stimulation and recompletion
- West Mereenie 8
 - Casing repair and recompletion
- West Mereenie 9
 - Casing repair and recompletion

Production Operations

Oil

The Northern Territory's total onshore oil production comes from the Santos QNT Pty Ltd-owned and operated Mereenie Field and Central Petroleum Limited's Surprise Field, which are both west of Alice Springs. From January to end of November 2014, Mereenie produced 0.266 mmbbl of oil (**Figure 5**), a 24% increase from the 0.203 mmbbl produced in 2013. Surprise Field commenced production in 2014 and produced a total of 0.056 mmbbl (**Figure 5**) at the end of the year.

There was an increase in total onshore oil production when Surprise Field began producing in 2014. Shipment of oil from both Surprise and Mereenie Fields to South Australia continues by truck.

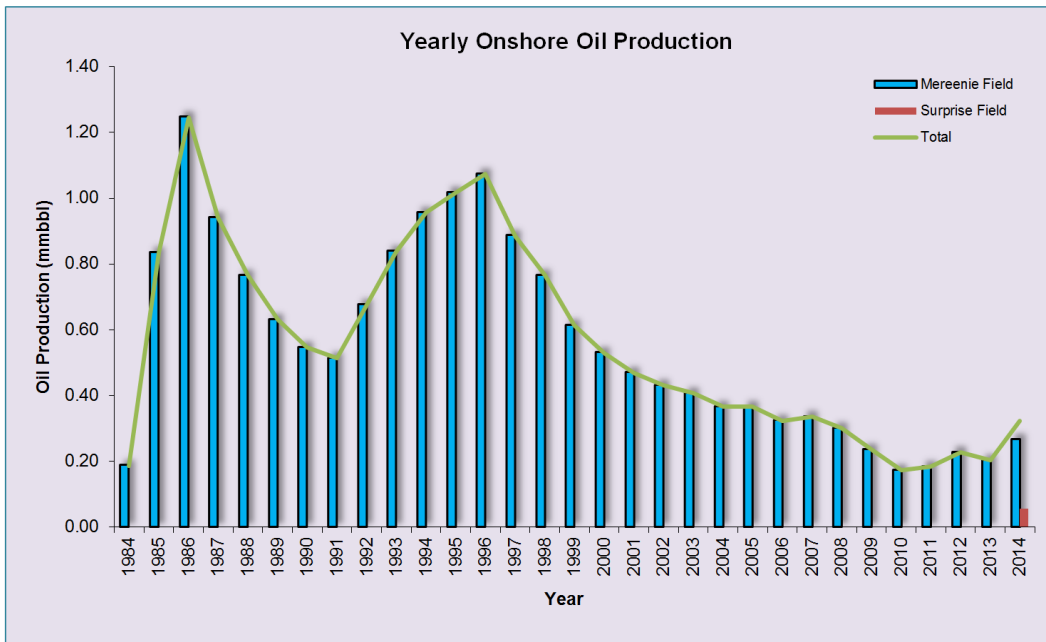


Figure 5. Northern Territory onshore oil production for period 1983-2014

Gas

NT's onshore gas production comes from the Mereenie and Palm Valley Fields in the Amadeus Basin, west of Alice Springs. In 2014, 2.667 bscf of gas was produced from the fields (**Figure 6**). Mereenie produced 1.733 bscf while Palm Valley produced 0.934 bscf at the end of 2014.

Gas produced at Mereenie Field currently consists exclusively of solution gas associated with oil production. At present, the gas is being reprocessed and reinjected into the main oil production reservoir to assist in reservoir pressure maintenance.

Gas from Palm Valley Field was supplied to Power and Water Corporation in Alice Springs for power generation up until 16 January 2012 when the contract ended. However, Magellan Petroleum Australia Ltd, the previous operator, was able to continue with limited production through working arrangements with Santos QNT Pty Ltd.

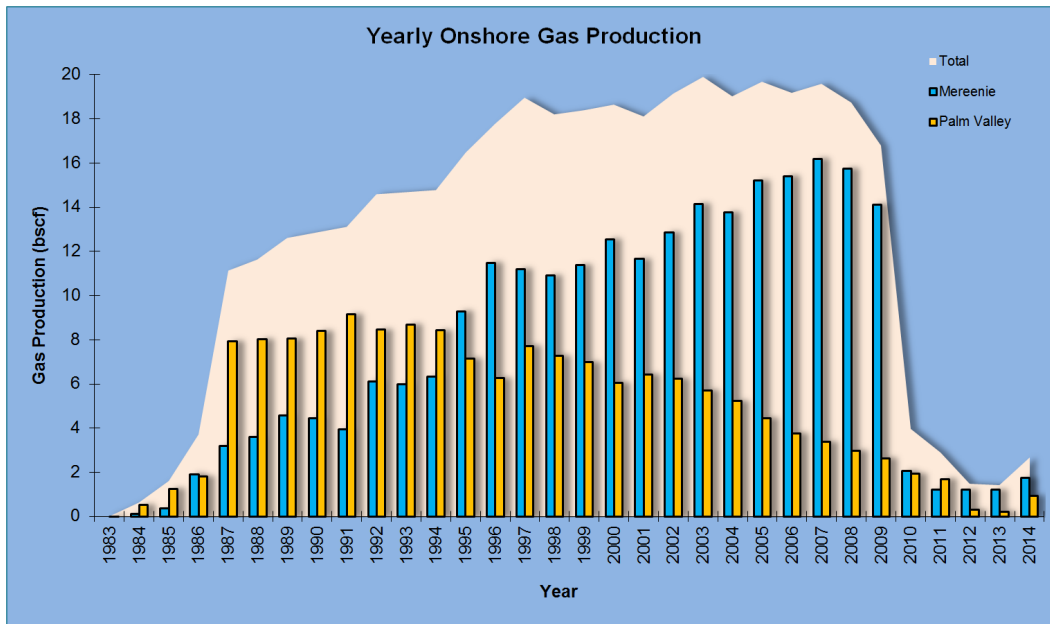


Figure 6. Northern Territory onshore gas production for period 1983-2014

Table 3. NT Oil and Gas Production Data (1983-2014)						
YEAR	OIL PRODUCTION (MMBBL)			GAS PRODUCTION (BSCF)		
	Mereenie Field	Surprise Field	TOTAL	Mereenie Field	Palm Valley Field	TOTAL
1983	0.000		0.000	0.000	0.029	0.029
1984	0.187		0.187	0.125	0.519	0.644
1985	0.835		0.835	0.365	1.259	1.624
1986	1.246		1.246	1.919	1.804	3.723
1987	0.941		0.941	3.207	7.928	11.135
1988	0.765		0.765	3.587	8.023	11.610
1989	0.631		0.631	4.560	8.043	12.603
1990	0.547		0.547	4.453	8.391	12.844
1991	0.514		0.514	3.944	9.147	13.091
1992	0.676		0.676	6.121	8.450	14.571
1993	0.838		0.838	5.972	8.687	14.659
1994	0.956		0.956	6.339	8.424	14.763
1995	1.018		1.018	9.297	7.148	16.445
1996	1.073		1.073	11.491	6.263	17.754
1997	0.886		0.886	11.208	7.724	18.932
1998	0.766		0.766	10.911	7.267	18.178
1999	0.614		0.614	11.387	6.981	18.368
2000	0.530		0.530	12.558	6.053	18.611
2001	0.469		0.469	11.652	6.430	18.082
2002	0.431		0.431	12.867	6.248	19.115
2003	0.407		0.407	14.161	5.718	19.879
2004	0.366		0.366	13.771	5.220	18.991
2005	0.366		0.366	15.209	4.448	19.657
2006	0.324		0.324	15.413	3.754	19.167
2007	0.336		0.336	16.202	3.371	19.573
2008	0.301		0.301	15.759	2.973	18.732
2009	0.236		0.236	14.123	2.639	16.762
2010	0.173		0.173	2.051	1.922	3.973
2011	0.184		0.184	1.212	1.697	2.909
2012	0.228		0.228	1.205	0.294	1.499
2013	0.203		0.203	1.202	0.224	1.426
2014	0.266	0.056	0.322	1.733	0.934	2.667

Reserves and Resources Update

The Northern Territory Onshore oil and gas reserves and resources estimated at the end of 2014 is summarized in the **Table 4** below.

<i>Table 4. NT Onshore Oil and Gas Reserves and Resources 2014</i>				
Basin/Sub-basin	Gas Resource¹ (Tcf)	Oil/Condensate Resource¹ (Bbbl)	Gas Reserves² (Tcf)	Oil/Condensate Reserves² (Bbbl)
Amadeus Basin	26	1.0	1	0.01
Bonaparte Basin (Onshore)	0.0115			
Beetaloo Sub-basin	162	21		
Georgina Basin		28		
McArthur Basin	22	2		
Perdirka and Eromanga Basins	33.7	6		
TOTAL	243.71	58.0	1.0	0.01

¹ For Resources, 2C and Best Estimates are used; ¹ Resources reported are technically recoverable, but not yet proven to be economically viable; ² For Reserves, 2P estimates are used; * Oil/Condensate unit is Bbbl and Gas unit is Tcf; * Reserve and Resource estimates are based on reports provided and published by E&P companies in NT; * Reserve and Resource estimates are for both Unconventional and Conventional Hydrocarbons.

Upcoming and Proposed Exploration, Appraisal and Development Operations

Armour Energy Pty Ltd

Armour Energy Pty Ltd is expected to conduct a 2D seismic survey within the McArthur Basin. This was planned for 2014 but is now deferred to 2015.

Beach Petroleum (NT) Pty Ltd

Beach Petroleum (NT) Pty Ltd is expected to conduct further evaluation of its Cullen-1 well in EP126.

Central Petroleum Limited

Central Petroleum Limited is expected to complete development of the Dingo Gas Field within L7 and bring the field online.

Santos QNT Pty Ltd

Santos QNT Pty Ltd is expected to conduct the following activities:

- Well evaluation and testing of Tanumbirini 1 well in EP161
- Continue the MADD project in the Mereenie Field.

Other Operations

According to the current approved work commitment, the following permit holders are required to drill at least one well each. A total of 24 wells are expected if the following operators and their JV partners complete their 2015 work program as planned.

- *Armour Energy Pty Ltd*
- *Falcon Oil & Gas Australia Limited*
- *Jacaranda Minerals Limited and Mineral Australia Pty Ltd*
- *Oilco Pty Ltd*
- *Pangaea (NT) Pty Ltd*
- *PetroFrontier (Australia) Pty Ltd*
- *Sweetpea Petroleum Pty Ltd*
- *Tamboran Resources Pty Ltd*
- *Territory Oil and Gas Pty Limited.*

In 2015 it is expected that a combined total of approximately 2,100 line km of 2D seismic survey will be acquired by the following operators and their JV partners:

- Merlin Energy Pty Ltd and Rawson Resources Ltd
- Santos QNT Pty Ltd
- Wiso Oil Pty Ltd.

LICENSED PIPELINES

In 2014 there were twenty three current licences under the NT's *Energy Pipelines Act*. These include:

- Fourteen operational pipelines (12 natural gas, 1 LPG and 1 condensate) (*Table 5*)
- Four gas pipelines under construction (*Table 6*)
- One gas pipeline scheduled for construction in 2015
- Two mothballed pipelines (1 oil and 1 gas)
- Two decommissioned gas pipelines.

There are also four current licences under the NT's *Petroleum (Submerged Lands) Act*.

- Three operational pipelines (2 gas and 1 condensate, *Table 5*)
- One gas pipeline under construction (*Table 6*).

The pipelines under construction include:

- The Northern Territory portion of the 890 km Ichthys Gas Export Pipeline from the Ichthys Gas Field in the Browse Basin to the Ichthys LNG Plant at Bladin Point in Darwin Harbour
- The Ichthys Fuel Gas Pipeline within the Ichthys LNG Plant at Bladin Point
- The Dingo Gas Pipeline from the Dingo Gas Field south of Alice Springs to the Owen Springs Power Station at Brewer Estate.

Table 5. NT Operating Pipelines 2014
Operating Petroleum Pipelines Licensed Under the NT Energy Pipelines Act (PLs)
and the NT Petroleum Submerged Lands Act (NTCPs)

License No.	Onshore/Offshore	Name	Product	Length (km)	Nominal Diameter (mm)	Year Constructed
PL1	Onshore	Palm Valley to Alice Springs (incl. laterals)	Gas	156	200/150/50	1983 - 2011
PL4	Onshore	Amadeus Basin Pipeline (incl. laterals)	Gas	1628	350/300/250/100	1986
PL7	Onshore	Central Energy Pipeline	Gas	10	100	1988
PL10	Onshore	Elliot Pipeline	Gas	4	60	1990
PL15	Onshore	Channel Island LPG Pipeline	Gas	<1	150	1992
PL17	Onshore	McArthur River Mine Pipeline	Gas	333	150	1995
PL18	Onshore	Berrimah Pipeline	Gas	19	150	1996
PL20	Offshore	Bayu-Undan to Darwin Pipeline	Gas	92	660	2005
NTCP-1	Offshore	Bayu-Undan to Darwin Pipeline	Gas	7	661	2005
PL21	Onshore	Bonaparte Gas Pipeline	Gas	286	300	2008
PL22	Onshore	Weddell Interconnect Pipeline	Gas	1	300	2007
PL23	Offshore	Blacktip Gas Export Pipeline	Gas	3	450	2008
NTCP-2	Offshore	Blacktip Gas Export Pipeline	Gas	5	451	2008
PL24	Offshore	Blacktip Condensate Pipeline	Condensate	3	300	2008
NTCP-3	Offshore	Blacktip Condensate Pipeline	Condensate	6	301	2008
PL25	Onshore	Wickham Point Interconnect Pipeline	Gas	10	300	2008
PL28	Onshore	Darwin Abattoir Pipeline	Gas	2	50	2014

*Table 6. NT Pipelines under construction 2014***Under Construction - Petroleum Pipelines Licensed Under the NT Energy Pipelines Act (PLs)
and the NT Petroleum Submerged Lands Act (NTCPs)**

License No.	Onshore/Offshore	Name	Product	Length (km)	Nominal Diameter (mm)	Year Constructed
PL26	Offshore	Ichthys Gas Export Pipeline	Gas	82.5	1050	Under construction
NTCP-4	Offshore	Ichthys Gas Export Pipeline	Gas	7	1050	Under construction
PL27	Onshore	Ichthys Gas Export Pipeline	Gas	3.3	1050	Under construction
PL30	Onshore	Dingo Pipeline	Gas	46.8	100	Under construction
PL32	Onshore	Ichthys Fuel Gas Pipeline	Gas	1.3	300	Under construction

USEFUL NORTHERN TERRITORY GOVERNMENT CONTACTS

ENERGY TITLES AND OPERATIONS ADMINISTRATION AND REGULATION

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Administers and regulates petroleum and geothermal tenure and operations and petroleum pipelines in Northern Territory onshore and coastal waters areas.

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ENERGY RESOURCE DEVELOPMENT

Industry Development, NT Department of Business

This group facilitates development of:

- NT's oil and gas resources
- Darwin as a production hub and offshore petroleum supply base
- NT supply and service industries to support the regions oil and gas industry.

Enquiries
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