



UNLOCKING AUSTRALIA'S ENERGY FUTURE

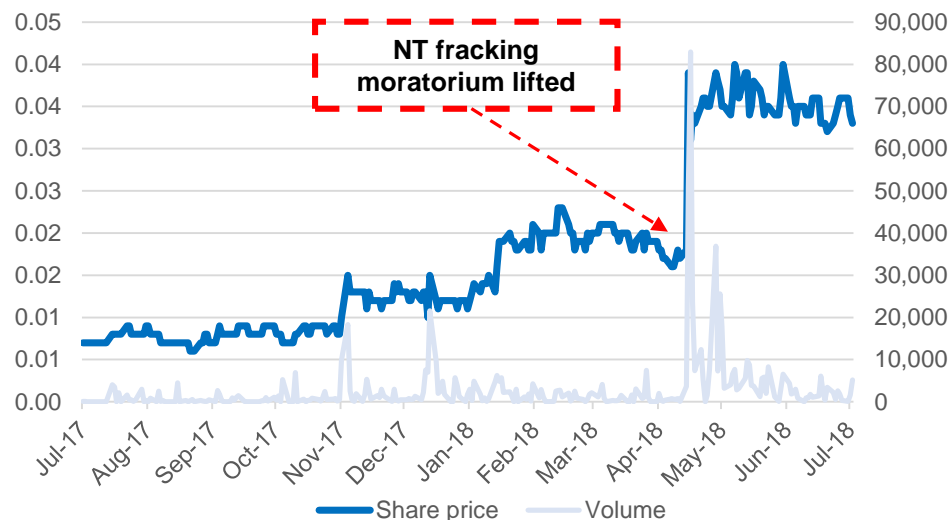
CORPORATE PRESENTATION

JULY 2018

Capital Structure

Shares on issue	1,265m
Share price	A\$0.031
Market cap	A\$39.2m
Net debt	A\$50m
Enterprise value	A\$89.2m

Share Price¹



Corporate Structure



Top 5 Shareholders

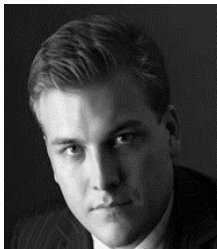
Global Energy and Resources Development	14.8%
Macquarie Bank	4.2%
Kooi Chye	3.7%
HSBC Nominees (Australia)	3.0%
Fanchel Pty Ltd	2.2%



Bruce McLeod

Executive Chairman and CEO
Empire Energy Group

- 25 years experience in managing and financing resource and property projects in Australasia & USA
- Founded Empire Energy US operations in 2006 and Imperial Oil & Gas in 2009
- Non-Executive Chairman of Anson Resources



Alex Underwood

CEO and Director
Imperial Oil & Gas

- 12 years Energy Markets Division of Macquarie Bank (Sydney and Singapore) and Natural Resources Division of Commonwealth Bank of Australia (Singapore)
- Extensive experience investing debt and equity in the upstream oil and gas sector and the identification of value creation opportunities for upstream oil and gas development / production assets

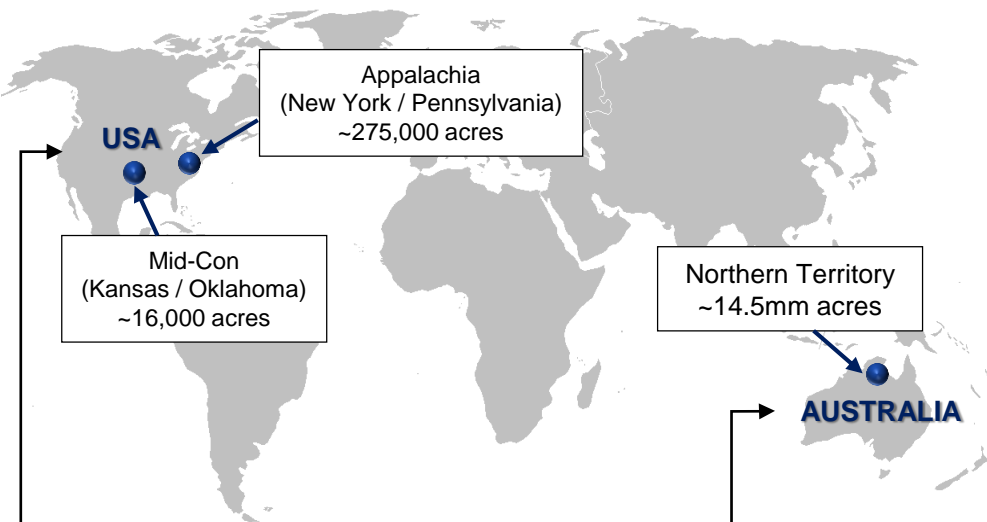


Prof John Warburton

Director
Imperial Oil & Gas

- 30 years technical & leadership experience in leading E&P companies including BP, LASMO-Eni and Oil Search
- Previously Chief of Geoscience & Exploration Excellence for Oil Search
- Non-Executive Director of Senex Energy

Asset Location and Acreage



NT Shale exploration & appraisal

Conventional oil & gas

- >11.5 mmboc 2P reserves
- ~1,200 boe per day

Potential NY shale

- > 500 mmboc Prospective Resource P(50)¹

- >14.5mm acres
- >13,000 Pj eq Prospective Resource P(50)

Commentary

USA

- Operator of all Mid-Con and Appalachia assets
- 350 barrels oil per day net and 5.5 mmcf gas per day net production
- Budgeted US FY18 EBITDAX of ~US\$4m
- Positive stable cash flow with over 2,000 long life oil & gas wells
 - PDP reserves² NPV10 US\$32m
 - 1P reserves³ NPV10 US\$46m
 - 2P reserves⁴ NPV10 US\$60m
- Refinancing process underway - US\$38m Macquarie Bank facility maturing in February 2019
- Oil price continuing to strengthen increasing US oil production margins
- Significant Marcellus / Utica Shale landholding in NY State provides US shale optionality at no cost to hold. NY State fracking ban prevents development at current time

Australia

- Very large footprint in a world class emerging petroleum shale play in Northern Territory
 - Over 14.5 million acres across the Beetaloo sub-Basin and McArthur Basin
- 100% working interest and operatorship in all tenements
- Independent Prospective Resource Estimate P(50) >13,000Pj eq
- Shales in the basin up to 3km thick
- Strategically located near pipeline infrastructure
- Recent approaches from potential new joint venture partners
- Strong market dynamics - tight East Coast gas and LNG markets
- Significant expenditure by Santos, Origin, Hancock Prospecting and others to drive acreage values

¹: Prospective Resource P(50) – unrisked, is the estimated quantities of petroleum that may potentially be recovered by the application of future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons

²: PDP reserves – Proved Developed Producing Reserves. See Appendix "US Reserves and Resources" on slide 28

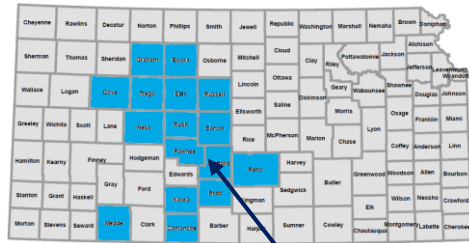
³: 1P reserves – Total Proved Reserves. See Appendix "US Reserves and Resources" on slide 28

⁴: 2P reserves – Total Proved plus Probable Reserves. See Appendix "US Reserves and Resources" on slide 28

USA OPERATIONS OVERVIEW

The US operations are conventional, long-life, high cash flow and predictable assets

Kansas



Appalachia



Commentary

- Empire is the operator of all of the company's Mid-Con and Appalachia assets
 - Daily production of 350 bbls oil per day (net) in Kansas
 - 5.5 mmcf gas per day (net) in New York and Pennsylvania
 - Forecast US FY18 Revenue of ~US\$17m and budgeted US EBITDAX of ~US\$4m
 - 1P reserves – 3.3m barrels + 30.2 BCF gas
 - 1P PV10 – US\$46.2m

The strategy going forward will continue to incorporate the below 3 strategic objectives

1 Deleveraging

- Deleveraging plan underway
- Refinancing process well advanced
- Provide flexibility towards asset growth through acquisitions and drilling programs

2 Strategic capital deployment

- Stable production base of 1,200 boe per day benefiting from improving oil prices
- Focus towards 'bolt-on' acquisitions in core areas with initial target of 2,000 boe / day
- Develop existing PUD locations which are economic at current oil prices
- Seek opportunities to form JVs and drilling programs for 3rd party funding

3 Value Creation

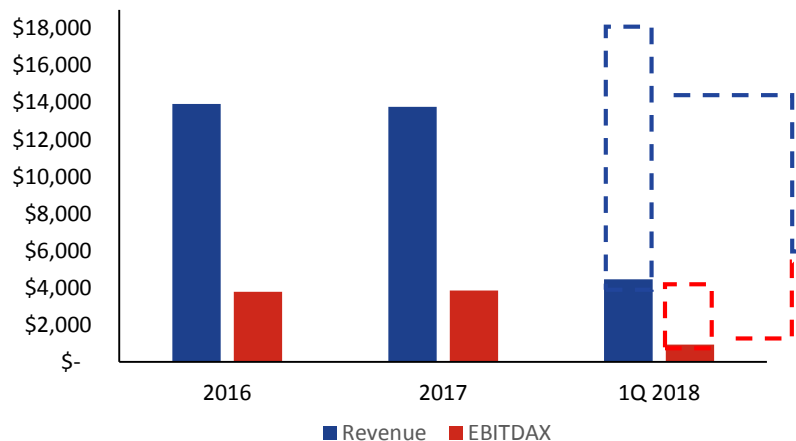
- Bolt-on acquisitions at attractive prices being reviewed
- Scalable operations to leverage existing management and infrastructure
- Future significant upside potential from Marcellus / Utica Shale acreage at no cost to hold

US Operations – Key Metrics



Despite a period of restricted activity due to low oil prices from 2015 - 2017, Empire has maintained stable levels of production and cash flows

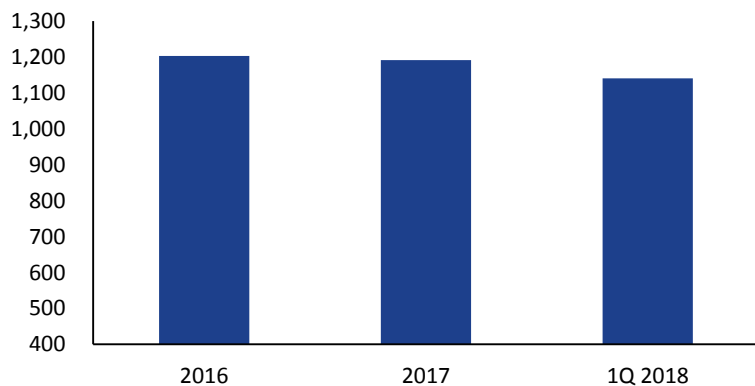
Revenue / EBITDAX (US\$ 000's)



Commentary

- The US operations generate highly predictable cash flows and production with very low PDP decline rates
 - Stable Revenue in 2016 and 2017 of ~US\$13.8m and US EBITDAX of ~US\$4m
 - Q12018 in line with revenue of ~US\$4.5m and ~US\$1m US EBITDAX for the period
 - For illustrative purposes only, annualised revenue for 2018 would be ~US\$17.8m
 - Budgeted US FY18 EBITDAX ~US\$4m
- Production was stable at ~1,200 boe per day over 2016 and 2017 with Q12018 of ~1,140 boe per day
- Recommencement of drilling activities would likely increase production rates

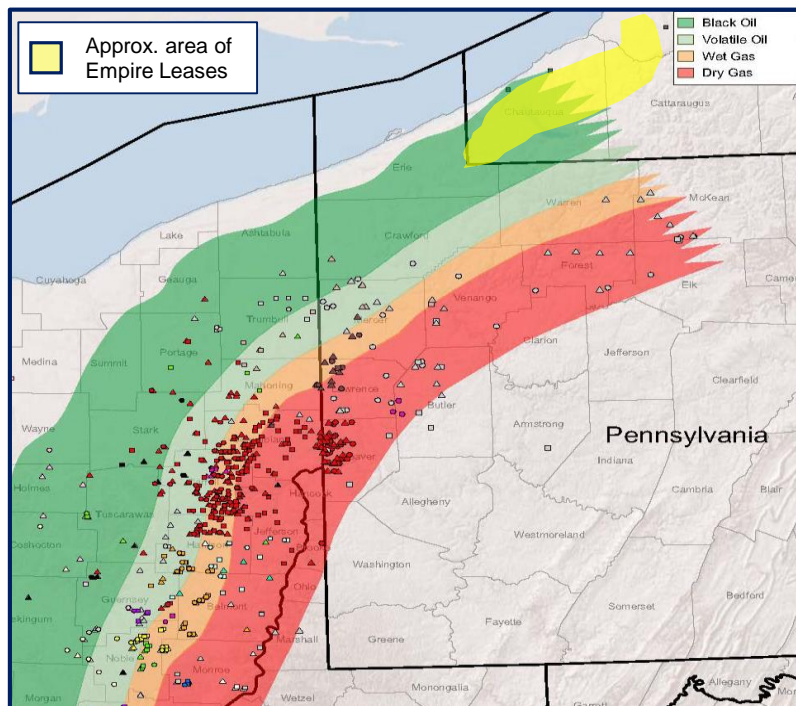
Production (boe per day)



- Empire's US growth potential is considered low risk
 - The proven undeveloped well locations in Kansas are economic at current oil prices
 - The company is able to make bolt acquisitions in existing areas of operation at attractive prices

Empire's has a 330,000 acre Marcellus / Utica Shale holding that is currently subject to a NY State fracking ban

Appalachia Shale Formation Map



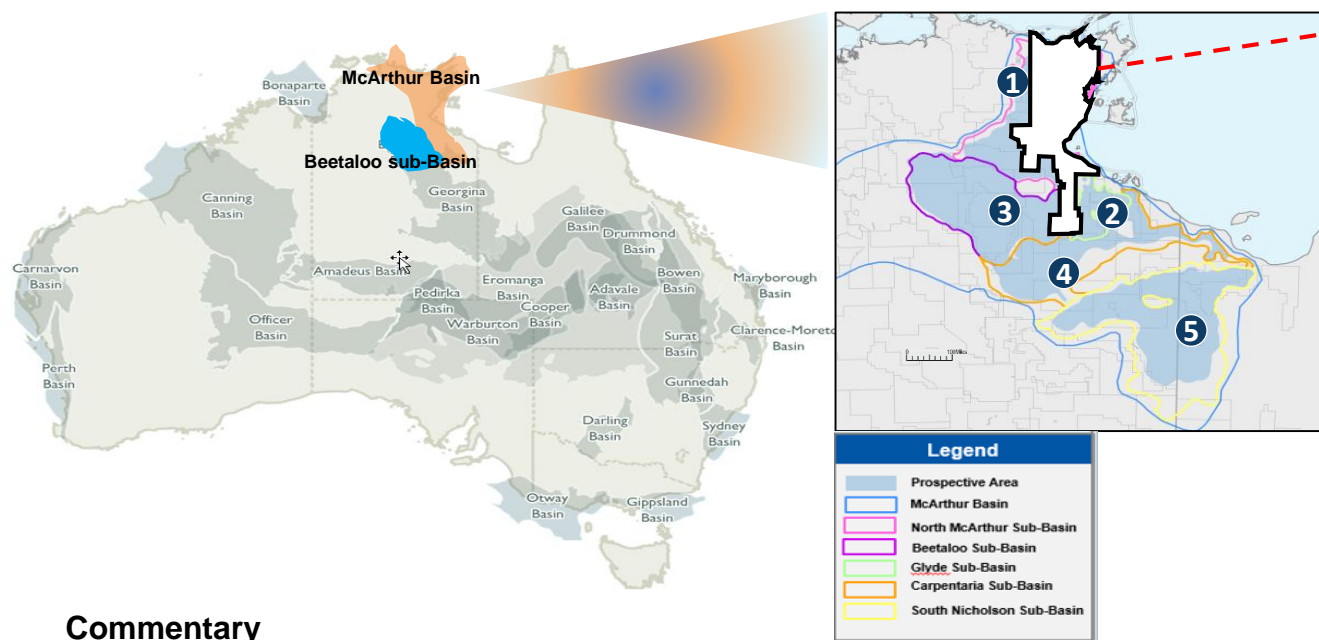
Commentary

- Empire's Appalachian acreage is located in the world-renowned Marcellus and Utica shale basins
- The company has over 330,000 acres of shale rights (Marcellus and Utica)
 - Empire produces 5.5 mmcf gas per day in Appalachia (see yellow lease area) which allows it to hold all shale rights at no cost
 - Acreage values for Marcellus and Utica shale rights in Pennsylvania and Ohio are several thousand dollars per acre in some areas
- New York State legislation has prevented fracture stimulation since 2008
 - **New York state P(50) prospective resource is over 200 million barrels of oil and 1.2 TCF of gas**
 - **In the event New York State removes the fracking ban, Empire can unlock substantial upside potential**

AUSTRALIA OPERATIONS OVERVIEW

McArthur Basin – The Opportunity

The Greater McArthur Basin, which includes the Beetaloo sub-Basin, is Australia's most prospective shale basin



Empire's Northern Territory Acreage

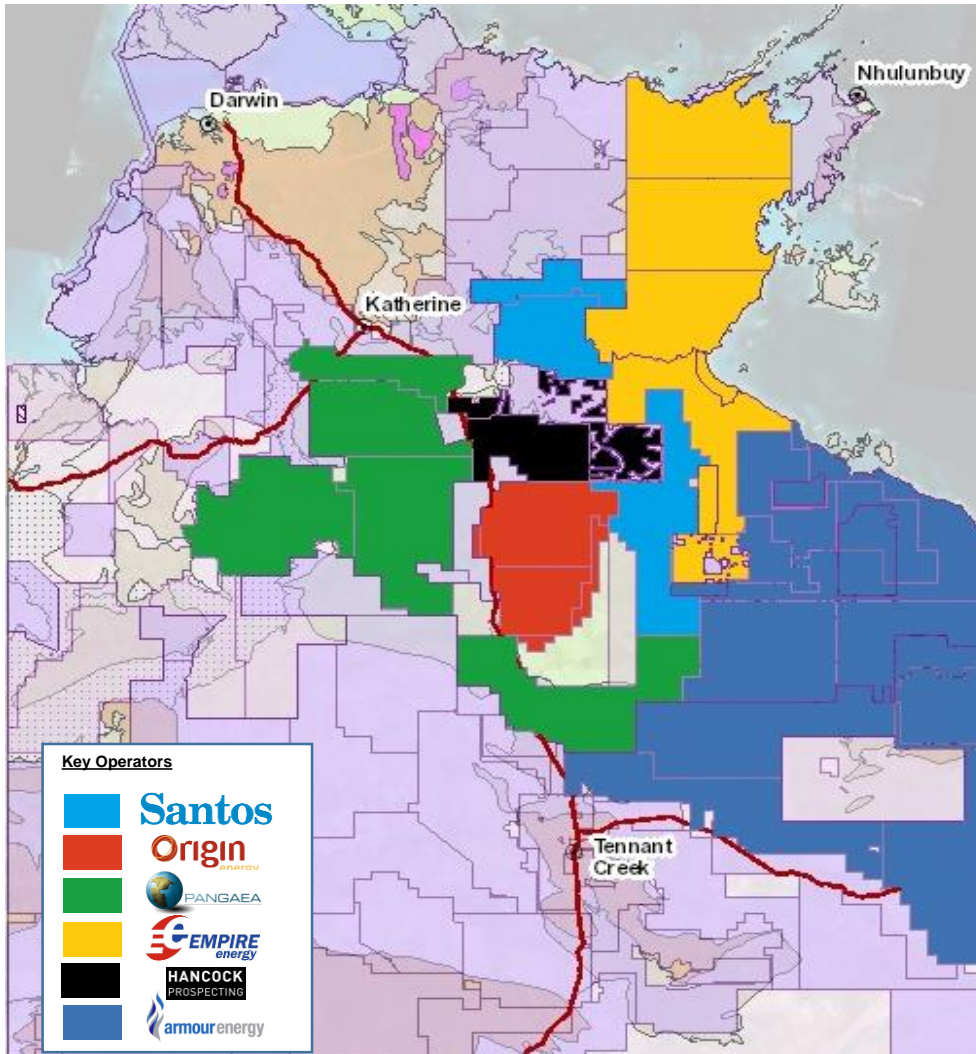
1	North McArthur	Prospective development targets include Primary organic rich unconventional targets -Velkerri, Kyalla, Wollogorang, McDermott and Barney Creek shales
2	Glyde	Primary organic rich unconventional targets would include the Velkerri, Barney Creek and Kyalla shales
3	Beetaloo	Primary organic rich unconventional targets would include the Velkerri, Barney Creek and Kyalla shales
4	Carpentaria/Southern McArthur	The Barney Creek, Velkerri, Wollogorang and McDermott shales are key prospective targets
5	South Nicholson	The Lawn Hill and Riversleigh shales identified as significant development horizons

Commentary

- The Northern Territory Fracking Moratorium was lifted in April 2018
- NT Government is very supportive of recommencement of shale gas exploration activities and is proactively implementing industry regulations
- Prior to enactment of the fracking moratorium, over A\$800m has been committed to commercialise the basin
- **Northern Gas Pipeline (“NGP”) is being constructed by Jemena to connect NT shale to East Coast gas market which is critically undersupplied**
- **Jemena has publicly stated it intends to invest \$4b to increase the capacity of the NGP from 90TPj / day to 700 Tj / day to transport NT shale gas**
- **Queensland and Darwin LNG plants are producing below capacity and looking for additional gas supplies**

Greater McArthur Basin Ownership

Key operators in the Greater McArthur Basin are highlighted in the map below



Commentary

- Numerous oil and gas companies hold substantial acreage positions in the Greater McArthur Basin. This includes:
 - Origin Energy/Falcon Oil & Gas JV
 - Santos/Tamboran Resources JV
 - Hancock Prospecting
 - Pangaea Resources
 - Empire Energy
 - Armour Energy
- Following the lifting of the fracking moratorium, drilling activity is expected to ramp up materially
- **Santos plans to focus expenditure on the tenement immediately adjacent to Empire¹**
- **Origin plans to drill 5 additional fracked horizontal wells²**
- **Hancock Prospecting has indicated the potential to invest A\$150m - A\$200m in exploration³**

1: Santos media release 9 November 2017 "Santos 2017 Investor Day"

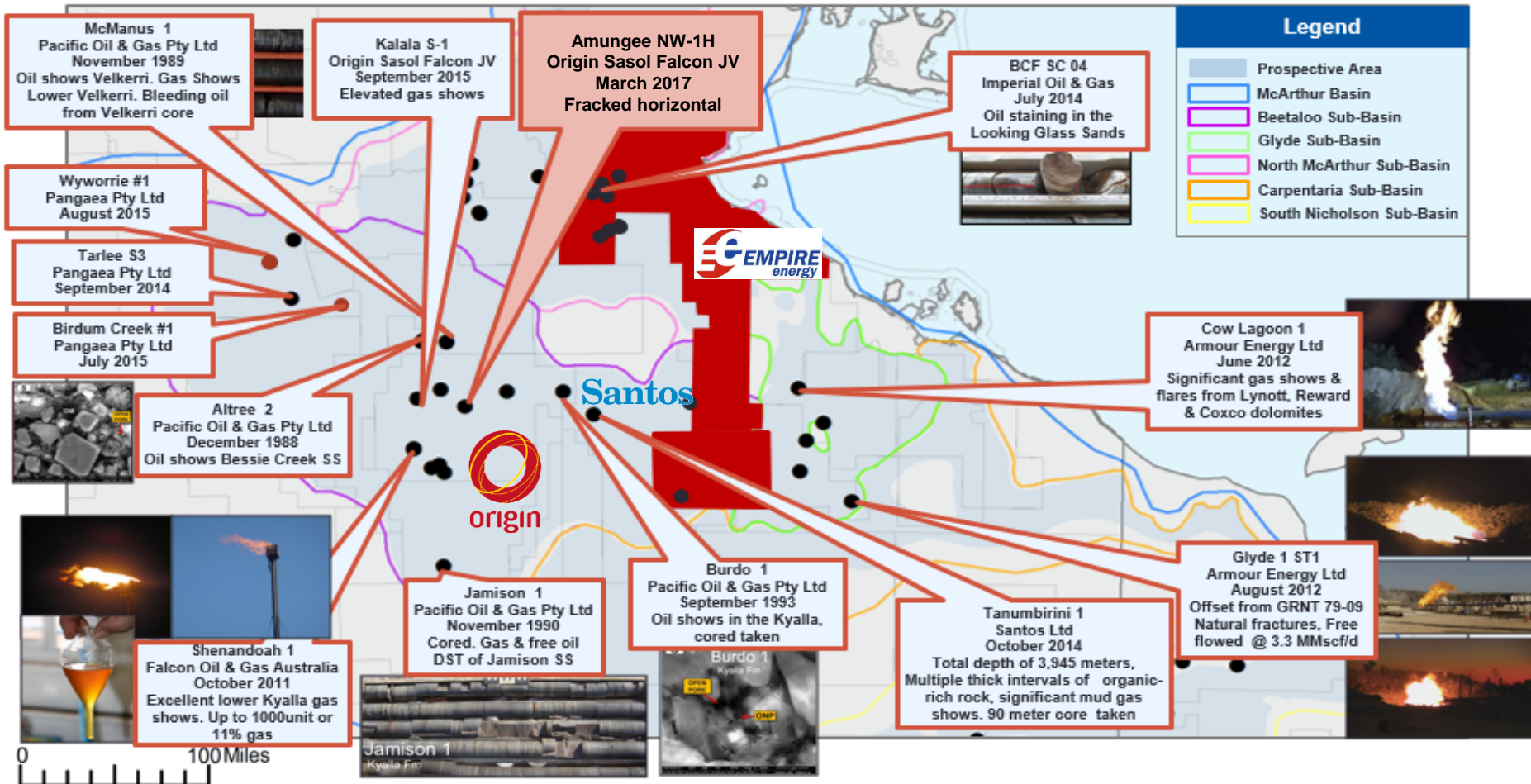
2: Origin Energy ASX Announcement 30 April 2018 "March 2018 Quarterly Production Report"

3: Hancock Prospecting Submission #461 to the Fracking Inquiry (6 September 2017)

McArthur Basin – Vast & Proven Petroleum System



Multiple well tests and core holes have encountered oil, gas and liquids across the basin including in and immediately adjacent to Empire's tenements¹



¹: Company filings / Northern Territory Geological Survey (<http://core.nt.gov.au/resources/nt-geological-survey>)

Beetaloo Basin – Amungee Discovery Well¹

Amungee NW-1H, the first fracked horizontal well in the Beetaloo Basin, flowed at similar rates to the US wells that commercialised shale in 1998 ... Flow rates are almost certain to improve as completion designs are optimised

Key Highlights

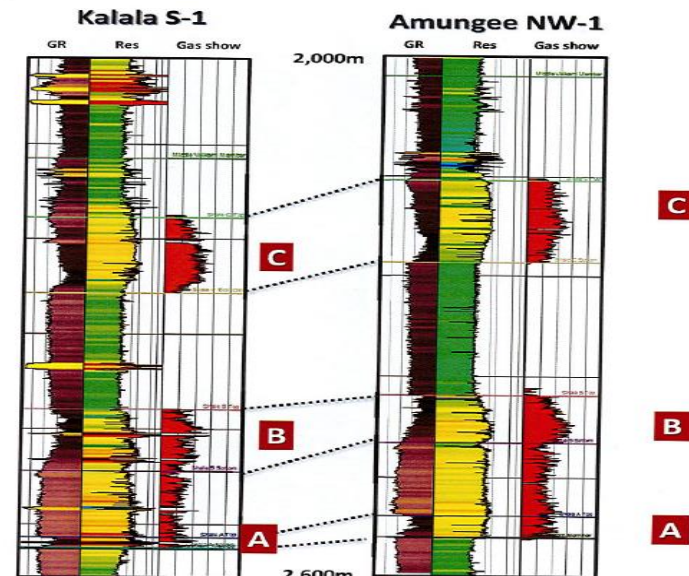
- Drilled in Dec 15 - TD 3,808m, incl. 1,100m horizontal section in the B Shale of the Middle Velkerri formation
- Hydraulically fracture simulated in Nov 2016
- 11 Hydraulic stimulation stages completed across approx. 600m
- 95% of programmed proppant placed
- Successful production test in February 2017
- Av TOC ~4%; Porosity 4% to 7.5%; Permeability 50 to 500 nD
- **IP averaged 1.10MMscf/d over 57 days**
- **Final production rate 1.07mmscfd**
- Cumulative production 63mmscfd
- Estimated dry gas composition of 92% methane, 3% ethane, 5% carbon dioxide
- **2C Contingent Resource Estimate is 6.6TCF (486,000 acres)**

Amungee NW-1H flow rate in relation to 1998 US shale wells²

The S.H. Griffin #4 produced 1.3 million cubic feet of natural gas per day for the first 90 days, an unbelievable amount for the time.³⁶ Steinsberger, in an interview with The Atlantic, said,

“This was the ‘aha moment’ for us, it was our best well ever in the Barnett, and it was a slick water frack. And it was my baby!”³⁷

This was a revolutionary moment, marking the beginning of modern-day fracking in shale as we know it. Since the S.H. Griffin, more than a hundred thousand wells have been fracked in the United States, and most of them use a technique similar to what was first done in the Barnett Shale.³⁸ Steinsberger had finally figured out how to get shale rock formations to give up their natural gas and do so in an economical way.



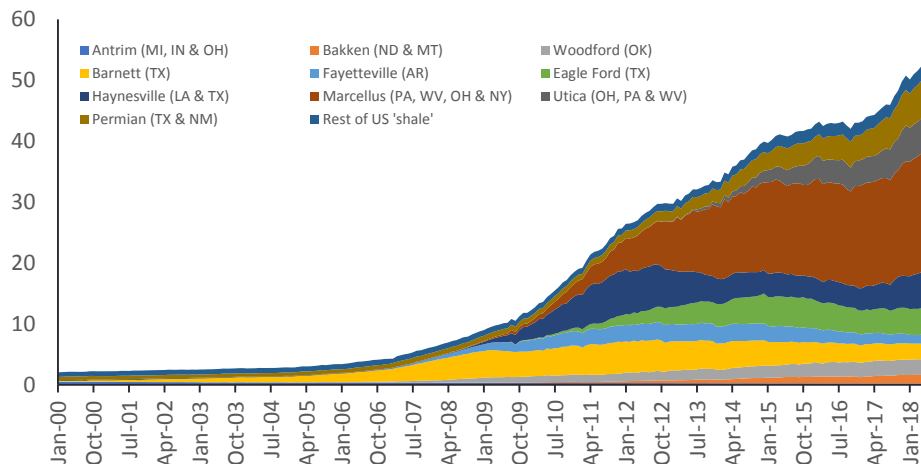
- 3 organic rich shale intervals (A, B & C shales) within the Middle Velkerri Formation
- Gross thickness of mid-Velkerri up to 500m with net pay in B & C shales >30m each
- Average TOC 3% to 4%
- Favorable geo-mechanics for hydraulic stimulation.
- 20% to 25% overpressure, excellent for volumetric and reservoir productivity
- Good porosity and gas storage

Fracking - Transformational Impact on Market

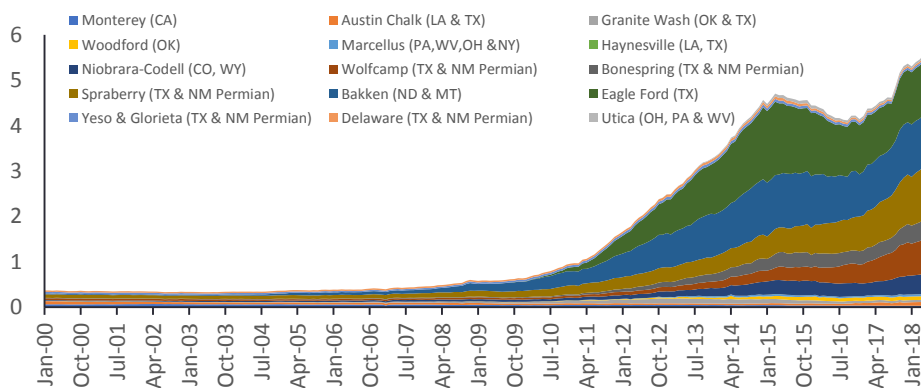


US fracking has changed the oil and gas market forever

Monthly shale gas production since 2000¹



Monthly shale oil production in the US since 2000¹



Commentary

Unconventional gas and oil production in the US

- Over 50 billion cubic feet of gas per day
 - Over 60% of total US gas production from shale in 2017
- Over 5 million barrels of oil per day
 - Over 50% of total US oil production from shale in 2017
- Commercial production is derived from numerous US shale basins
- Technological advancements in hydraulic fracturing and horizontal drilling have opened up a significant number of shale basins in the US

Key Takeaway

- US fracking technology and experience is being used to commercialise other shale basins around the world
- US basins are not the only ones in the world that can be successfully fracked
- New shale basins outside of the US are being developed
- **Empire believes this will be the case with the Northern Territory shales basins**

McArthur Basin – Gas Commercialisation

LNG processing infrastructure available well beyond current gas supply

Strong Gas Demand

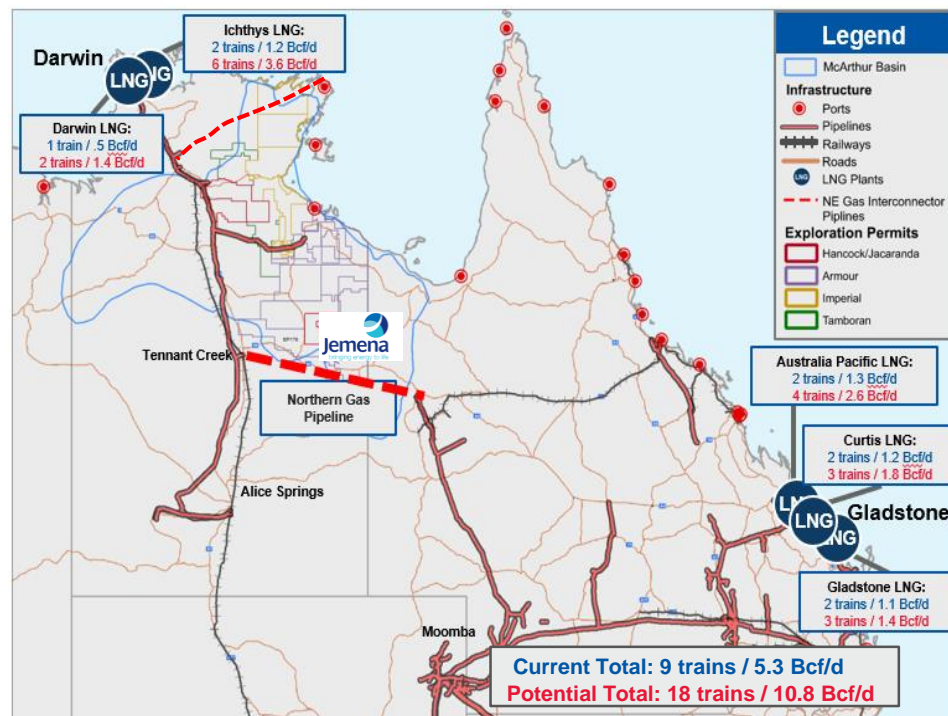
- Massive buildout of East Coast LNG has created substantial domestic gas shortfall
- LNG plant expansions could double installed capacity
- Rapidly increasing Asian demand for LNG with strong prices
- Australia very strategically located to fulfil Asian demand with low sovereign risk

Pipeline Infrastructure

- There is already a pipeline in place going directly through Empire's EP187 tenement which allows for near-term commercialisation. Rights of way in place to build new, larger pipeline alongside existing pipeline.
- A 1.0 Bcf/d pipeline to Darwin would cost ~\$1.5b, and could be expanded to 2 to 3 Bcf/d with compression. This cost could be borne by pipeline operators upon reserve certification by Santos / Origin / Pangaea / Empire

Domestic { Jemena has publicly stated that following lifting of the NT Fracking Moratorium it will increase its \$800m investment in the Northern Gas Pipeline by up to \$4bn to increase installed capacity from 90 Pj / day to 700 Pj / day¹

Export { "Santos is focused on further exploring and appraising the McArthur Basin in the NT, a multi-TCF prospective resource position analogous to US shale plays. Santos' focus for this region is to support Darwin LNG backfill, expand our acreage footprint and explore and appraise the McArthur Basin."²













Plant	Status	Operator	Capacity
Darwin LNG	Online	ConocoPhillips	0.5 Bcf/d
QCLNG	Online		1.2 Bcf/d
GLNG	Online	Santos	1.1 Bcf/d
APLNG	Online		1.3 Bcf/d
Ichthys LNG	Commissioning	INPEX	1.2 Bcf/d
Total			5.3 Bcf/d

1: Jemena Media Release: Jemena welcomes decision to lift fracking moratorium (17 April 2018)
 2: www.santos.com/what-we-do/assets/northern-Australia/

McArthur Basin – Substantial Committed Investment

Numerous farm-out deals have been carried out resulting in capital commitments of hundreds of millions of dollars by major oil and gas companies¹

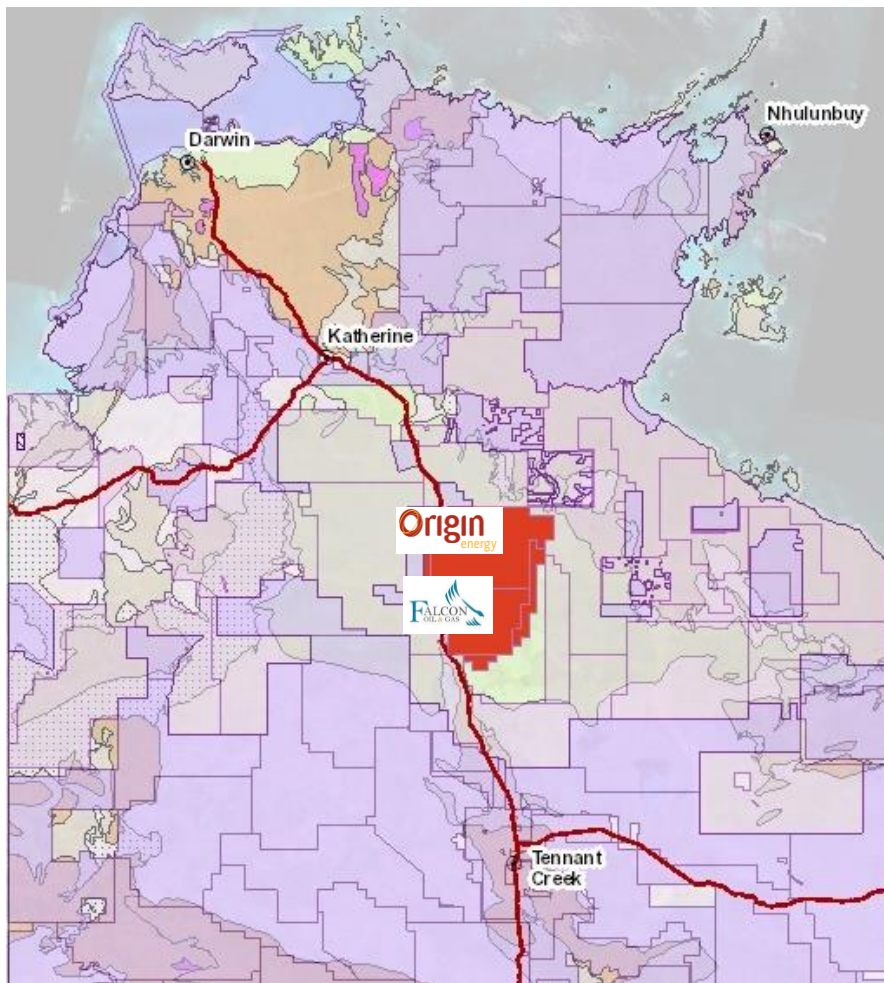
Year	Vendor	Investor	WI	Basin	Cash Upfront	Carried expenditure	Acres (mm)
2011			62.5%	Beetaloo	A\$27m	A\$162m	6.2
2013			75.0%	Beetaloo / McArthur	N / d	N / d	6.4
2014			70.0%	Beetaloo	A\$20m	A\$185m	4.6
2015 ²			80.0%	Beetaloo / McArthur	A\$20m	A\$80m + A\$133m	14.5
2015 ²			75.0%	McArthur / Nicholson	A\$31m	A\$173m + A\$133m	31.3

- In 2014 one of the world’s most experienced shale groups, American Energy Partners (“AEP”) identified the McArthur Basin as an opportunity for potential shale oil and gas development
- In 2015 Imperial entered into a Farm-out Agreement with AEP, founded and led by Aubrey McClendon, the co-founder of Chesapeake Energy
- On a results driven basis, AEP committed up to US\$560m (US\$60m in the 1st 3 years), however due to the passing of the Founder of AEP, the Farm-out agreement was terminated in 2017
- **Exploration activities since AEP deal have increased understanding of the Beetaloo Basin, so an improved farm out deal is likely to be achievable**

¹: Company filings / press releases

²: Transactions did not proceed due to passing of founder of AEP

“Origin Energy to resume Beetaloo exploration in NT as soon as practical”¹



Commentary

- Origin farmed in to EP 76, EP98 and EP117 in 2014 with a cash investment of A\$20m and exploration expenditure of A\$185m in exchange for a 70% working interest in JV with Falcon Oil & Gas
- 11 wells have been drilled on the tenements including Amungee NW-1H, the first fracture stimulated well drilled in the basin
 - In 2016 Amungee NW-1H flowed at 1.1mmcfpd for 57 days on test resulting in a discovery declaration by Origin
 - **On the basis of the Amungee NW-1H well result, Origin announced a 2C contingent resource estimate of 6.6 tcf of gas**
- In 2017, Origin CEO Integrated Gas, David Baldwin said *“The Beetaloo Basin is the territory’s most prospective onshore basin for unconventional gas and our test results confirm the region’s outstanding shale gas potential.”¹*
- In a 2018 submission to the Fracking Inquiry, Origin stated *“Well testing completed just prior to the moratorium indicated there was a very promising material gas resource in the Beetaloo sub-basin.....we now plan to resume work as soon as practical.....Origin plans to drill and fracture stimulate a further 5 wells to complete existing exploration permit commitments”²*
- **In its March 2018 Quarterly Production Report, Origin announced that it “welcomes the decision [to lift the fracking moratorium] and plans to seek the necessary approvals to drill and fracture stimulate a further five wells.”³**
- Origin’s joint venture partner, Falcon Oil & Gas, has a 30% interest in the tenements and a market capitalisation of >C\$280m (CVE:FO)

1: Origin media release 17 April 2018 “Origin to resume Beetaloo exploration in NT as soon as practical”

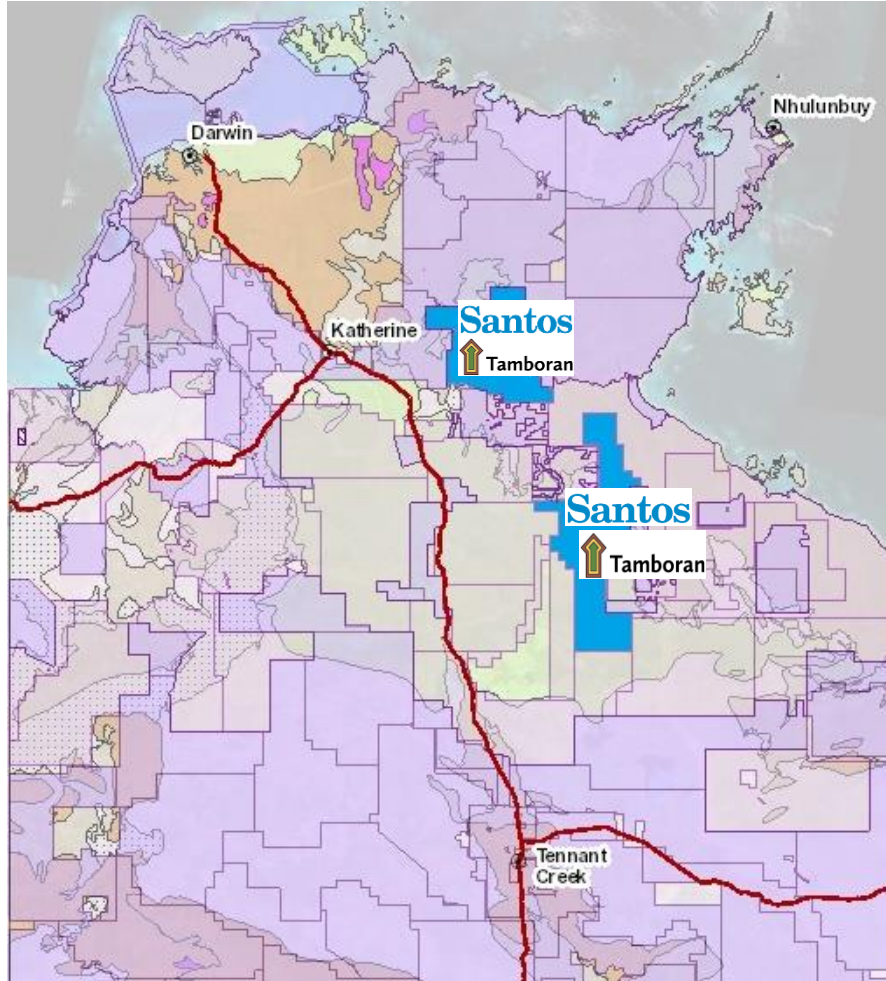
2: Origin media release 15 February 2017 “Beetaloo Basin drilling results indicate material gas resource”

3: Origin Energy ASX Announcement 30 April 2018 “March 2018 Quarterly Production Report”

“NT decision to allow onshore gas exploration to restart in 2019”

Commentary

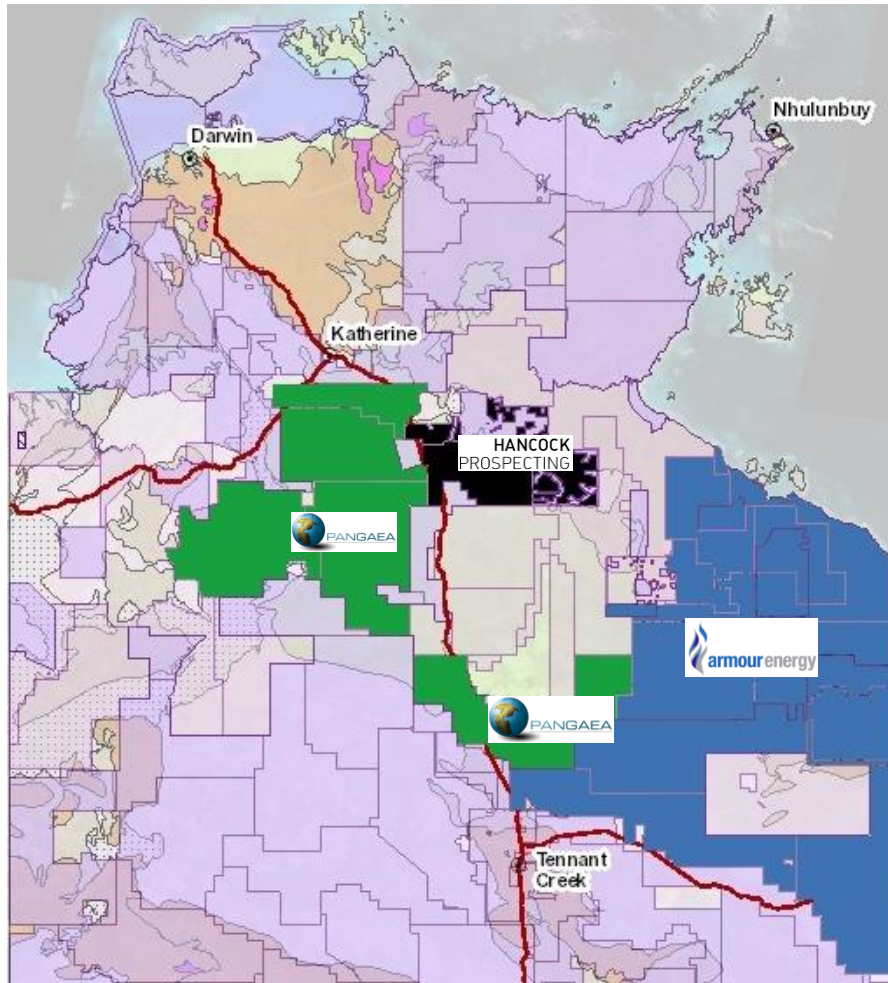
- Santos farmed in to EP161 and EP162 in 2013, funding an exploration program with undisclosed expenditure in exchange for a 75% working interest and an equity interest in JV partner Tamboran Resources
- The company drilled Tanumbirini-1 in EP161, adjacent to Empire’s EP187 in 2014
 - The well encountered over 4,000 feet of Velkerri shale
 - Tanumbirini-1 is located less than 100km from Empire’s EP187 lease
- Santos intends to focus exploration on EP 161 (immediately adjacent to Empire tenements)¹
 - 3D seismic acquisition & processing
 - Stimulate and test Tanumbirini-1 vertical well
 - Drill, stimulate and test two horizontal appraisal wells
- In a recent Santos announcement, CEO Kevin Gallagher stated “*With exploration and appraisal success, **the NT’s McArthur Basin has the potential to do for the NT and Australia what the shale gas revolution has done for America**, providing the competitive advantage to breathe life back in to energy intensive industries and generate wealth for the nation. Opening up access to this clean energy resource is a great outcome for national energy security potentially attracting new energy intensive industries to Darwin and supporting new and expanded pipelines connecting to the east coast domestic gas market. **There is a window of opportunity to also grow LNG exports as global supply gaps open up in the early to mid 2020’s.**”²*



1: Santos media release 9 November 2017 “Santos 2017 Investor Day”

2: Santos media release 17 April 2018 “NT decision to allow onshore gas exploration to restart in 2019”

“Beetaloo Basin is competitive to global ... and domestic ... markets”



Commentary

Pangaea Resources¹

- Pangaea holds EP 167, EP 168, EP 169, EP 198 and EP 305
- **Significant work undertaken to date including 7 wells, 1,800km 2D seismic, 29,000 km airborne gravity, >3,500m core, 2 DFITs and 2 vertical well fracture stimulations**
- Discovery notice lodged with NT Government in 2016
- Pangaea's view is that the development of the Beetaloo sub-Basin is competitive to global (in the case of LNG) and domestic (in the case of East Coast) markets

Hancock Prospecting²

- Hancock Prospecting holds EP 153 and EP 154
- Hancock had intended to embark on an exploration program prior to the enactment of the moratorium in 2016
- **Hancock has indicated that in a full development scenario, likely expected total investment is in the range of \$150m - \$200m**

Armour Energy^{3, 4}

- Armour has made 5 discoveries from 6 wells
- Glyde 1 discovery well (2012) flowed at 3.3 mmcf / day at a vertical depth of just 600m with no fracture stimulation
- >13 TCF prospective resource in NT tenements

1: Pangea Response to Scientific Inquiry into Hydraulic Fracturing Information Request (23 August 2017)

2: Hancock Prospecting Submission #461 to the Fracking Inquiry (6 September 2017)

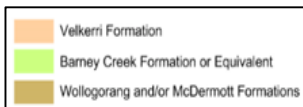
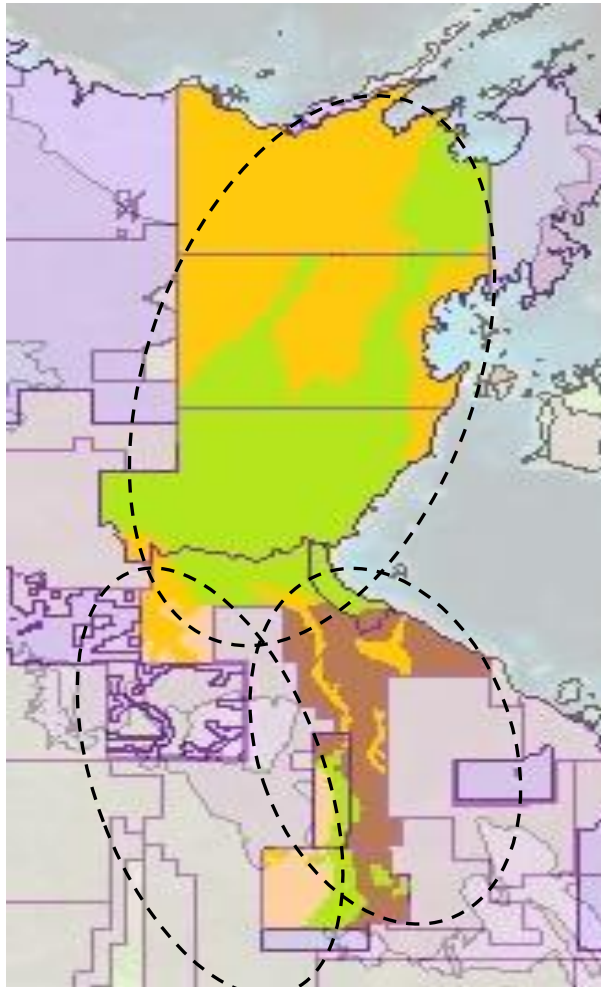
3: Armour Energy ASX release: Brisbane Mines and Money Presentation (21 June 2018)

4: Armour Energy ASX release: Glyde 1 Lateral Well – A Significant Gas Discovery (10 August 2012)

Beetaloo / McArthur Basin – Empire Shale Targets

Empire is targeting significant shale zones

Empire Shale Targets



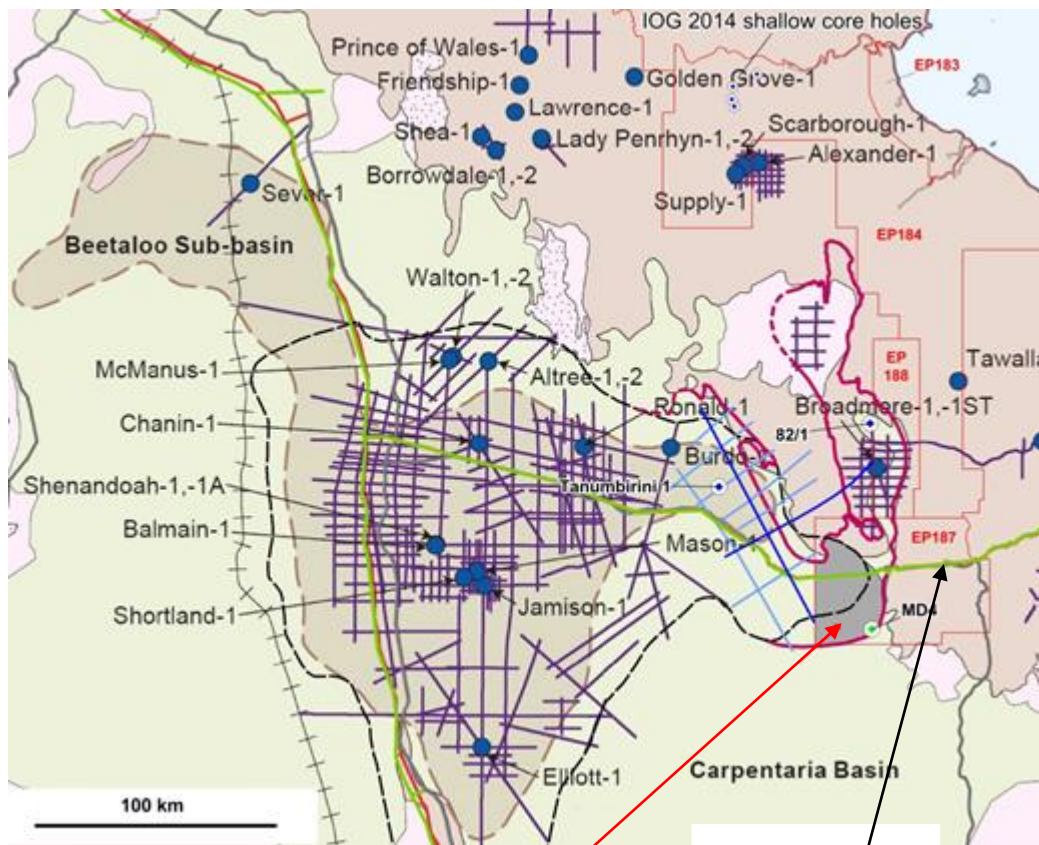
Age Group	Absolute ages	Lithology	Stratigraphy	Thickness	Oil & gas potential			
					Source	HC shows (Sw) Oil	Unconventional reservoir	Conventional reservoir
Mesozo-Proterozoic	Roper	Chambers River Fm		<300 m				
		McArthur Fm	Kyalla Mb	ca 250 m		•	•	
			Shenwin Mb	up to 100 m				
			Moroak Mb	2.5-6 m				
			Velkerri Fm	330-600 m		•	•	
		Bessie Creek Sandstone	23-367 m					
		Corcoran Fm	180-225 m					
		Abner Fm	80-500 m					
		Crawford Fm	0-235 m					
		Mainoru Fm	ca 130->1000 m					
		Limmen Sandstone	20-100 m					
		Dunganinnie Fm	<240 m					
Neoproterozoic	Nathan	Balbirini Fm	<1500 m					
		Smythe Sandstone	<100-250 m					
		Kams Dolomite	100-250 m					
		Amos and Looking Glass Fms	30-140 m					
		Stretton Sandstone	<5-270 m					
		Yalco Fm	<50-250 m					
		Donnegan Mb	0-140 m					
		Hot Spring Mb	50-350 m					
		Caranbirini Mb	0-300 m					
		Reward Dolomite	30-350 m					
		Barney Creek Fm	10-800 m					
		Palaeozoic	McArthur	Coxco Dolomite Mb	15-70 m			
Lower Teena Dolomite	<5-270 m							
Emmerugga Dolomite	ca 620 m							
Myrtle Shale	40-60 m							
Lelia Sandstone	<10-30 m							
Tooganinie Fm	ca 200 m							
Tatoola Sandstone	80-350 m							
Amelia Dolomite	50-180 m							
Mallapurnyah Fm	100-ca 450 m							
Masteron Sandstone	40-650 m							
Echo Sandstone	265-365 m							
Burash Sandstone	<370 m							
Tertiary	Ternoolah	Nyanantu Fm	ca 450 m					
		Tanumbirini Rhyolite	ca 450 m					
		Warramana Sandstone	>250 m					
		Packsaddle Microgranite						
		Hobblechain Rhyolite	70-100 m					
		Gold Creek Volcanics	15-230 m					
		Wollongorang Fm	>350 m					
		Settlement Creek Dolomite	100-200 m					

Target Regions

- Total 33,867 km² (8.4mm acres) of identified shale for Independent Prospective Resource identification
- Velkerri Shale / Kyalla (Beetaloo sub-Basin)**
 - 628,000 acres (>2,500km²)
 - Independent Prospective Resource (P50) 1.2TCF gas + 24 mmbbls oil / condensate
- Barney Creek Formation (McArthur Basin)**
 - 6.2mm acres (>25,000km²)
 - Independent Prospective Resource (P50) 8.7TCF gas + 174 mmbbls oil / condensate
 - Shales up to 3km thick
- Wollongorang Formation (McArthur Basin)**
 - 1.5mm acres (>6,000km²)
 - Independent Prospective Resource (P50) 1.2TCF gas + 24 mmbbls oil / condensate

Beetaloo Sub Basin – Empire Initial Target

Empire's 1.2 TCF target on trend with major Origin discovery and Santos work program



EMPIRE VELKERRI SHALE TARGET

Existing sealed all weather road and gas pipeline

Key Highlights

- Empire ~2,543km² (630,000 acres) in eastern Beetaloo sub-basin
- Amungee NW-1H – TD 2,500m considered Beetaloo sub-basin
- Tanumbirini-1 well encountered Velkerri shale from 2,400m to >3,800m
- Santos to undertake major fracked horizontal development program in adjacent block

Empire EP187 Work Program

- Velkerri Shale in EP187 will be Empire's initial exploration, appraisal and development target
- 231 line km 2D seismic will delineate the shape of the basin and identify drilling targets
- Initial drilling program to comprise stratigraphic wells and a core well to confirm hydrocarbon content and rock characteristics
- Thereafter, fracked horizontal production wells will be drilled and put into production
- EP 187 is located on an existing sealed road and gas pipeline which reduces drilling costs and allows for near term commercialisation

Expected volume per typical 10,000 ft Hz – Velkerri producing >10 Bcf/well¹

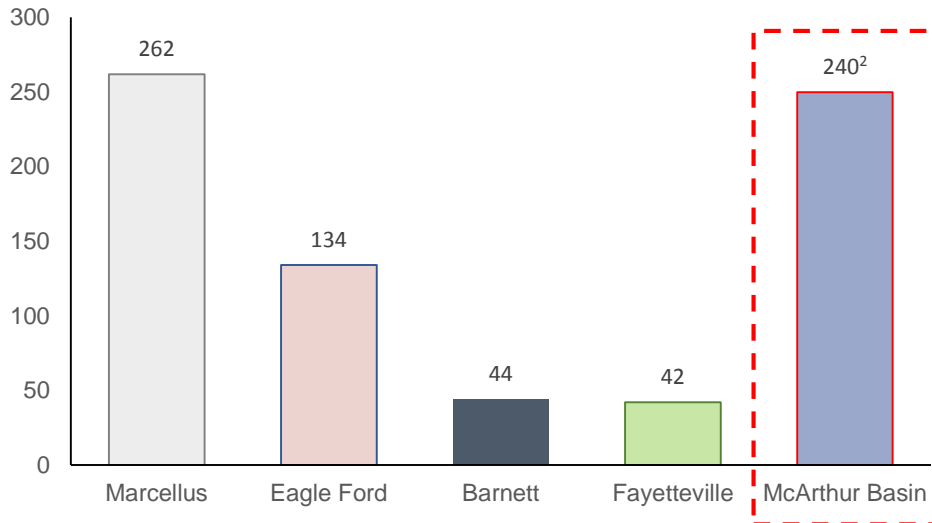
Prospective Resource Overview

The below overlay illustrates the size of Empire's acreage in the McArthur Basin

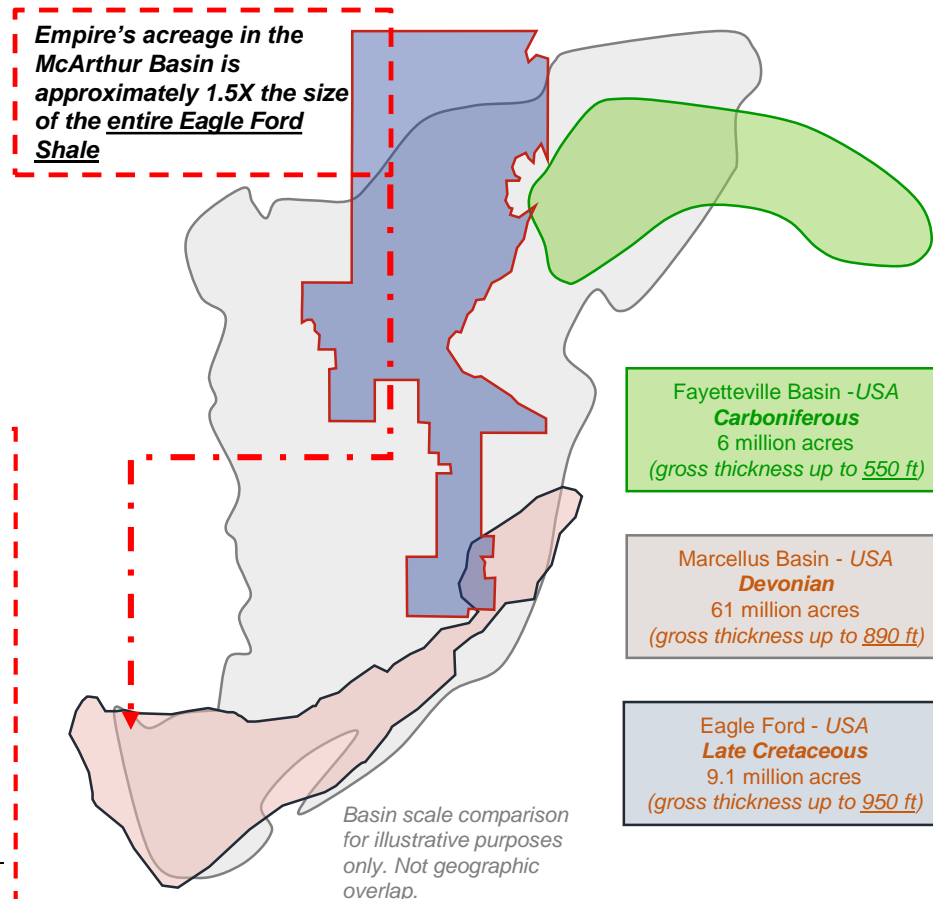
US Prospective Resource Estimates¹

Basin	Prospective Area km ² (million acres)
Marcellus	246,000 (61 mm)
Eagle Ford	36,894 (9.1 mm)
Barnett	12,950 (3.2 mm)
Fayetteville	23,309 (6 mm)

Un-risked Prospective / Technically Recoverable Resource



Basin Overlay Comparison



1: Modern Shale Gas Development in the US: a Primer. US Department of Energy April 2009
2: Deloitte 2015

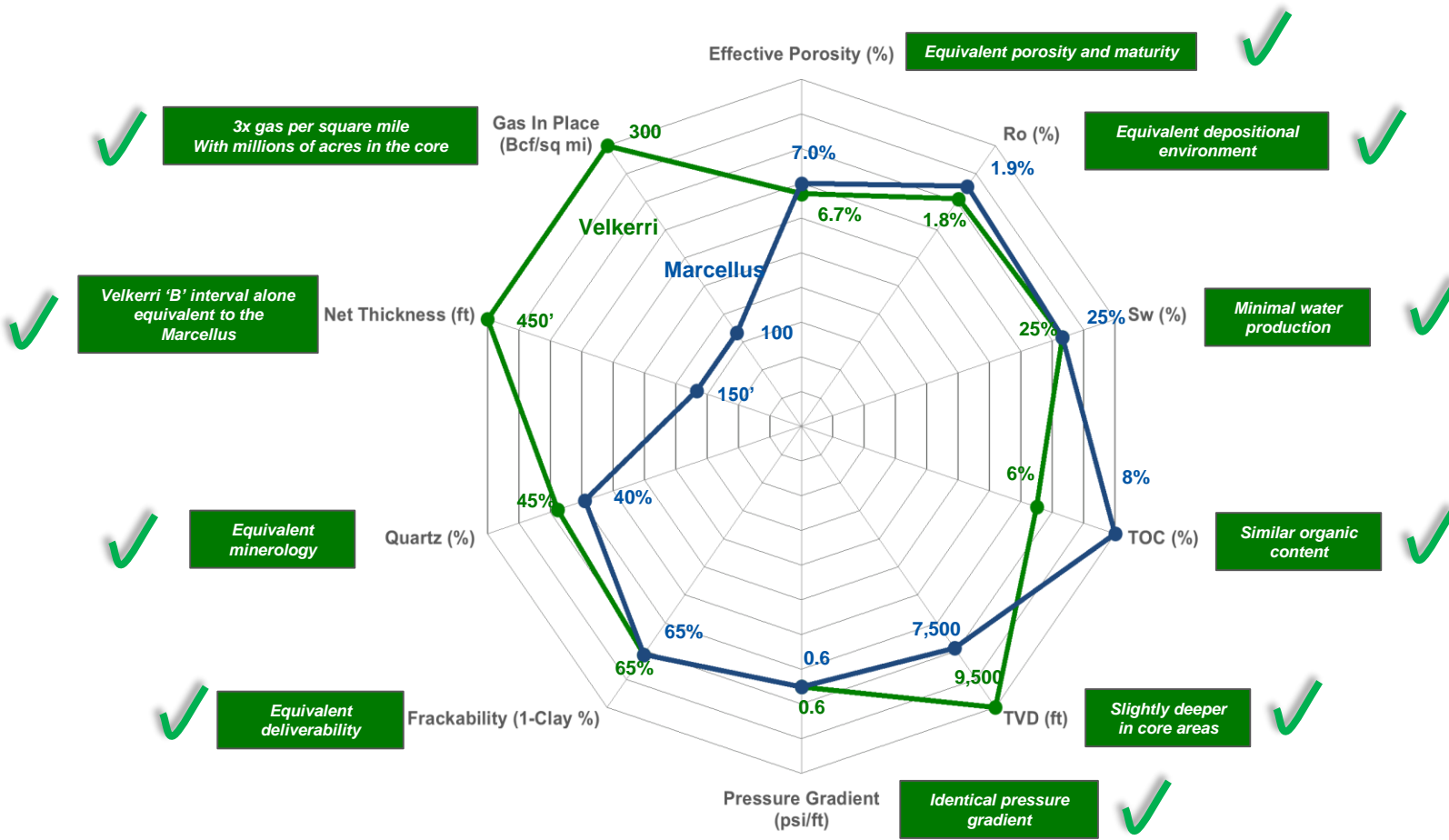
"Prospective Resource" is the estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons

- ✓ Fracking Moratorium has been lifted by Northern Territory Government
- ✓ Government decision paves the way for resumption of industry exploration activities
- ✓ NT Government and most Traditional Owners supportive of renewed activity
- ✓ Huge acreage in the prospective McArthur Basin with investment from industry heavyweights
- ✓ Ongoing discussions with potential new joint venture partners
- ✓ Significant gas resource potential to help solve East Coast gas crisis and LNG plant shortage
- ✓ Opportunity to develop NT downstream industries following resource definition
- ✓ Empire believes the McArthur Basin has the potential to replicate the US shale boom
- ✓ Empire is one of very few remaining independent operators in the Beetaloo basin

APPENDICES

Velkerri Shale – Marcellus Equivalent

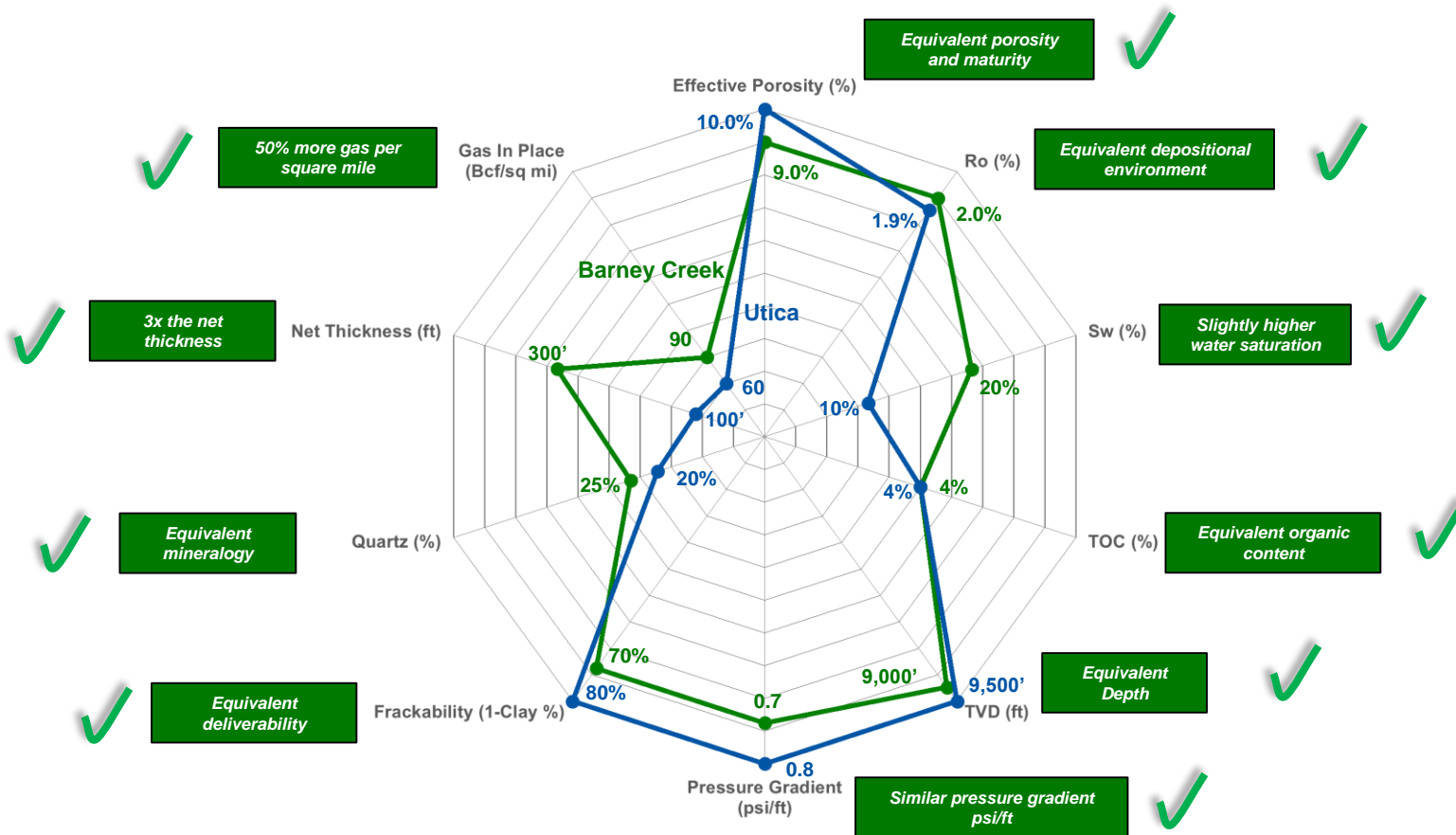
A major unconventional opportunity with the Velkerri/Kyalla shales, with original gas in place equivalent to 3 stacked Marcellus shale plays



Clear USA shale analog of Marcellus shale identified for the Velkerri shale

Velkerri Shale – Marcellus Equivalent

A major unconventional opportunity with the Barney Creek shale, with original gas in place equivalent to 50% more than Utica shale plays



Clear USA shale analog of Utica shale identified for the Barney Creek shale

Imperial Resource Estimate



Independently certified estimated Prospective Resource

Formation	Permits	Geological factor discount	Area m acres	Units	P90	P50	PV10
Barney Creek	EP 184, EPA180, 181, 182, 183, 188	50-90%	3,559	Bcf	3,304	8,699	20,172
		50-90%		MMBO	66	174	403
Velkerri	EP184, 187, EPA 188	50%	315	Bcf	383	1,192	3,086
		50%		MMBO	8	24	62
Wollogorang	EP 184, 187, EPA 188	90%	1,384	Bcf	524	1,185	2,371
		90%		MMBO	10	24	47
Total				MMBOe	851	2,238	5,183

Significant prospective resource – P50 13,000 Pj equivalent

US Reserves and Resources



As at December 31, 2107

Reserves (NYMEX STRIP - DEC 31, 2017)	Gross Wells	Oil (Mbbbls)	Gas (MMcf)	MBoe	Capex US\$M	PV0 US\$M	PV10 US\$M
Region (Reserves) - USA							
Proved Developed Producing	2,211	1,612	26,787	6,077	0	62,697	31,919
Proved Developed Non-producing	21	503	0	503	1,546	10,858	5,361
Proved Behind Pipe	6	148	39	155	532	4,988	1,472
Proved Undeveloped	80	1,027	3,396	1,593	14,542	27,755	7,480
Total 1P	2,318	3,290	30,222	8,327	16,620	106,298	46,232
Probable	83	1,248	12,654	3,357	19,776	47,087	13,519
Total 2P	2,401	4,538	42,876	11,684	36,396	153,385	59,751
Possible	208	1,749	3,772	2,378	24,589	54,735	10,284
Possible - NY Shale		90,740	12,460	92,817			
Total 3P	2,609	97,027	59,108	106,878	60,985	208,120	70,035
Prospective Resource New York Shale P(50)⁽¹⁾		203,500	1,221,000	407,000		0	0
Total Reserves & Resources		300,527	1,280,108	513,878			

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DEFINITIONS & RESERVES INFORMATION



Notes to Reserves

- The scope of the Reserve Studies reviewed basic information to prepare estimates of the reserves and contingent resources.
- The quantities presented are estimated reserves and resources of oil and natural gas that geologic and engineering data demonstrate are “In-Place”, and can be recovered from known reservoirs.
- Oil prices for Reserve calculations are based on NYMEX West Texas Intermediate (WTI) as at June 30, 2017.
- Gas prices for Reserve calculations are based on NYMEX Henry Hub (HH) as at June 30, 2017.
- Prices were adjusted for any pricing differential from field prices due to adjustments for location, quality and gravity, against the NYMEX price. This pricing differential was held constant to the economic limit of the properties.
- All costs are held constant throughout the lives of the properties.
- The probabilistic method was used to calculate P50 reserves.
- The deterministic method was used to calculate 1P, 2P & 3P reserves.
- The reference point used for the purpose of measuring and assessing the estimated petroleum reserves is the wellhead.
- “PV0” Net revenue is calculated net of royalties, production taxes, lease operating expenses, and capital expenditures but before Federal Income Taxes.
- “PV10” is defined as the discounted Net Revenues of the company’s reserves using a 10% discount factor.
- “1P Reserves” or “Proved Reserves” are defined as Reserves which have a 90% probability that the actual quantities recovered will equal or exceed the estimate.
- “Probable Reserves” are defined as Reserves that should have at least a 50% probability that the actual quantities recovered will equal or exceed the estimate.
- “Possible Reserves” are defined as Reserves that should have at least a 10% probability that the actual quantities recovered will equal or exceed the estimate.
- Prospective Resource P(50) - unrisks, is the estimated quantities of petroleum that may potentially be recovered by the application of future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.
- Utica shale gas potential resources have only been calculated for the region where drill data is available. Very few wells have been drilled into the Utica in Western NY and NW Pennsylvania. Estimates for GIP have been made were the few existing wells have been drilled. Empire holds additional acreage outside the current potential resource region. It is expected that as with shale characteristics, the shale formations will continue within the remaining acreage. The potential GIP may increase if more data was available.
- “Bbl” is defined as a barrel of oil.
- “Boe” is defined as a barrel of oil equivalent, using the ratio of 6 Mcf of Natural Gas to 1 Bbl of Crude Oil. This is based on energy conversion and does not reflect the current economic difference between the value of 1 Mcf of Natural Gas and 1 Bbl of Crude Oil.
- “D&C” means drilled and completed and “F&D” means cost of finding and developing a project.
- “EBITDAX” means Earnings Before Interest, Tax, Depreciation/Depletion, Amortization & Exploration.
- “LOE” means lease operating expenses.
- “M” is defined as a thousand.
- “MM” is defined as a million & “MMBoe” is defined as a million barrels of oil equivalent.
- “Mcf” is defined as a thousand cubic feet of gas & “MMcf” is defined as a million cubic feet of gas.
- All volumes presented are net volumes and have had subtracted associated royalty burdens which means the Net revenue interest or “NRI”..

Qualified petroleum reserves and resources evaluators

The information in this report which relates to the Company’s reserves is based on, and fairly represents, information and supporting documentation prepared by or under the supervision of the following qualified petroleum reserves and resources evaluators, all of whom are licensed professional petroleum engineer’s, geologists or other geoscientists with over five years’ experience and are qualified in accordance with the requirements of Listing Rule 5.42:

Name	Organisation	Qualifications	Professional Organisation
Mel Haaney	Graves & Co Consulting, LLC	BPE	SPE*
John P Dick	Pinnacle Energy Services, LLC	BPE	SPE*
Wal Muir	Muir and Associate P/L	BSc, MBA	PESA**

* SPE: Society of Petroleum Engineers *PESA: Petroleum Exploration Society of Australia

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