



**Elixir Energy**

**ASX ANNOUNCEMENT**

**ASX : EXR**

**3 July 2023**

## **DAYDREAM-2 WELL TO SPUD IN OCTOBER**

### **HIGHLIGHTS**

- Daydream-2 well due to spud in October 2023
- A key aim of the well is to significantly expand upon existing large contingent resource
- Rig contract executed with global oil field services contractor SLB
- All approvals received to commence civil works

Elixir Energy Limited (“Elixir” or the “Company”) is pleased to provide an update on its 100% owned Grandis Gas Project located in the Taroom Trough very close to the Wallumbilla gas hub in Queensland.

The planned spud date for the Daydream-2 appraisal well is now set for late October this year. The attached presentation provides the background on this.

The Grandis Gas Project has already booked a very material and independently certified 2C contingent resource of 395 billion cubic feet of gas (see ASX announcement of 10 November 2022). A key objective of the Daydream-2 appraisal well is to materially expand this contingent resource.

Elixir has executed a Rig Services Contract with a subsidiary of global oil field services SLB (previously known as Schlumberger). The contract is for the provision of SLB 185, which has recently drilled two highly successful wells in the Taroom Trough for a neighbouring Operator. These were drilled with great efficiency, demonstrating both the well understood nature of the local geology as well as SLB’s world class capabilities.

Elixir has received the necessary landholder and regulatory approvals to commence preparatory civil works in the field. Initial work is expected to commence in late July with water bore drilling. Thereafter the well pad site preparation and upgrading of the access to the well pad will commence in August.

The well will drill to a total depth of ~4,200m, and target the gas saturated Permian section that was proven at Daydream-1, drilled ~5 kilometres to the west of Daydream-2. The well will focus not only on the sandstones in this gas saturated Permian section, but also the gassy coal-seams therein (as per the presentation made at the APPEA Conference and released to the ASX on 17 May 2023).



## ASX ANNOUNCEMENT

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As noted in Elixir's ASX announcement of 17 May 2023, the Federal Government will pay for 43.5% of the total cost of the Daydream-2 well through its R&D Tax Incentive mechanism. Project debt finance is readily available to Elixir, secured only on this R&D grant, if considered advantageous.

Elixir's Managing Director, Mr Neil Young, said: *"We are very pleased to have locked in a rig and a time slot for the drilling of the Daydream-2 appraisal well – and in particular with a rig that has very recently demonstrated its capabilities in the Taroom Trough. I consider this as potentially the most impactful well in Elixir's history – as in the success case it will materially increase the Company's contingent resources - in a great location which can readily access both domestic and international gas markets".*

By authority of the Board:

**Neil Young** - Managing Director

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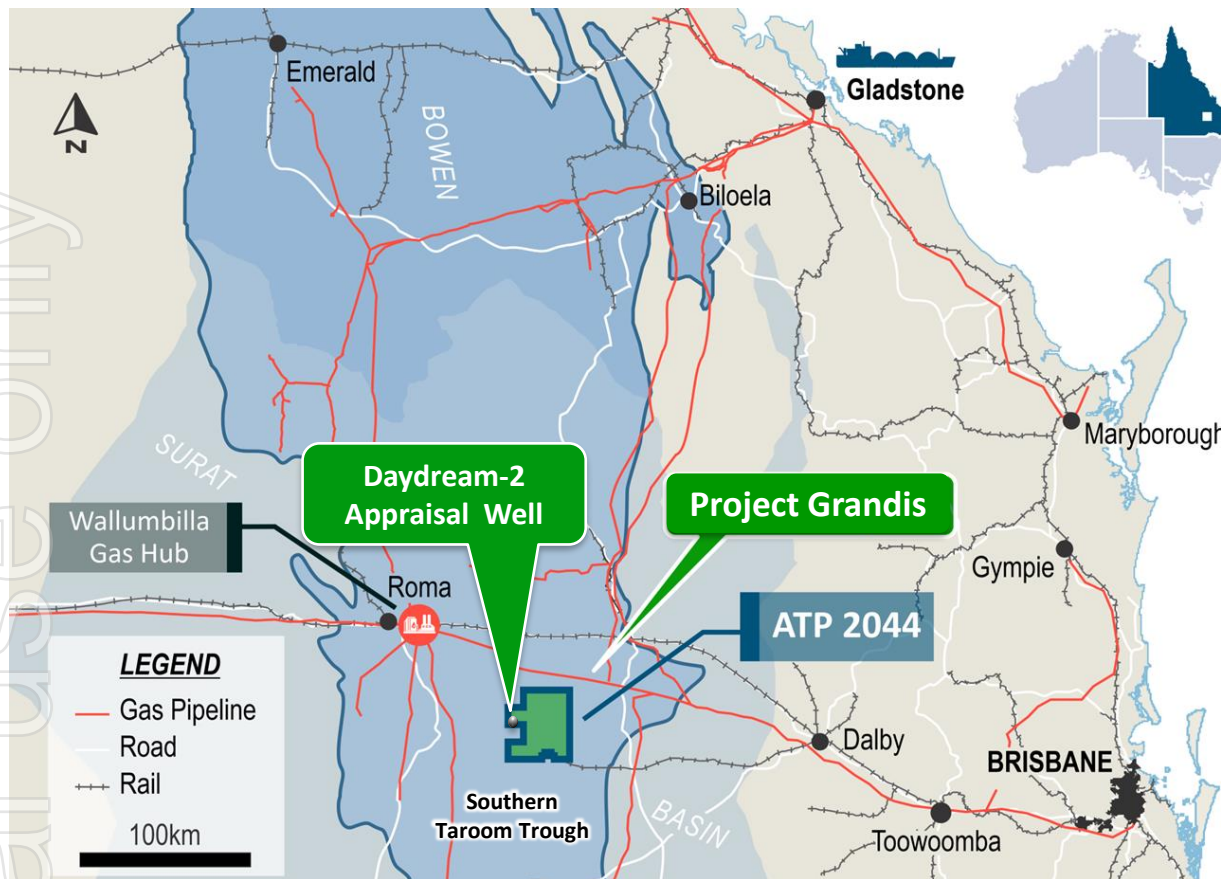


# Project Grandis Update

3 July 2023

ASX:EXR

# Location Map – Grandis Gas Project and Daydream-2



- The Grandis Gas Project is appraising the Basin Centred Gas Play (BCG) of the southern Taroom Trough
- The Daydream-2 well appraises the discovery of gas made at Daydream-1 by BG (now Shell) in 2012
- Daydream-2 has two Permian-aged primary targets:
  1. Tight Gas Sandstones (TGS)
  2. Fractured Thermally Mature Coals (FTMC)

# Fractured Thermally Mature Coals, Tight Gas Sands & Basin-Centred Gas Plays



## FTMC

- Can contain significant free gas in fractures and cleats
- High gas readings in all wells nearby
- Coals are the mature source rock, self-sourcing ( $R_o > 1\%$ )
- Mechanical Earth Modelling shows coals are normally stressed - obvious target for stimulation
- Free gas (not adsorbed)



## TGS

- Sandstone  $< 7\%$  porosity that trap gas via stratigraphic or unknown mechanisms
- Corresponding low permeability means stimulation is essential
- Conventional play utilising unconventional completion



## BCG

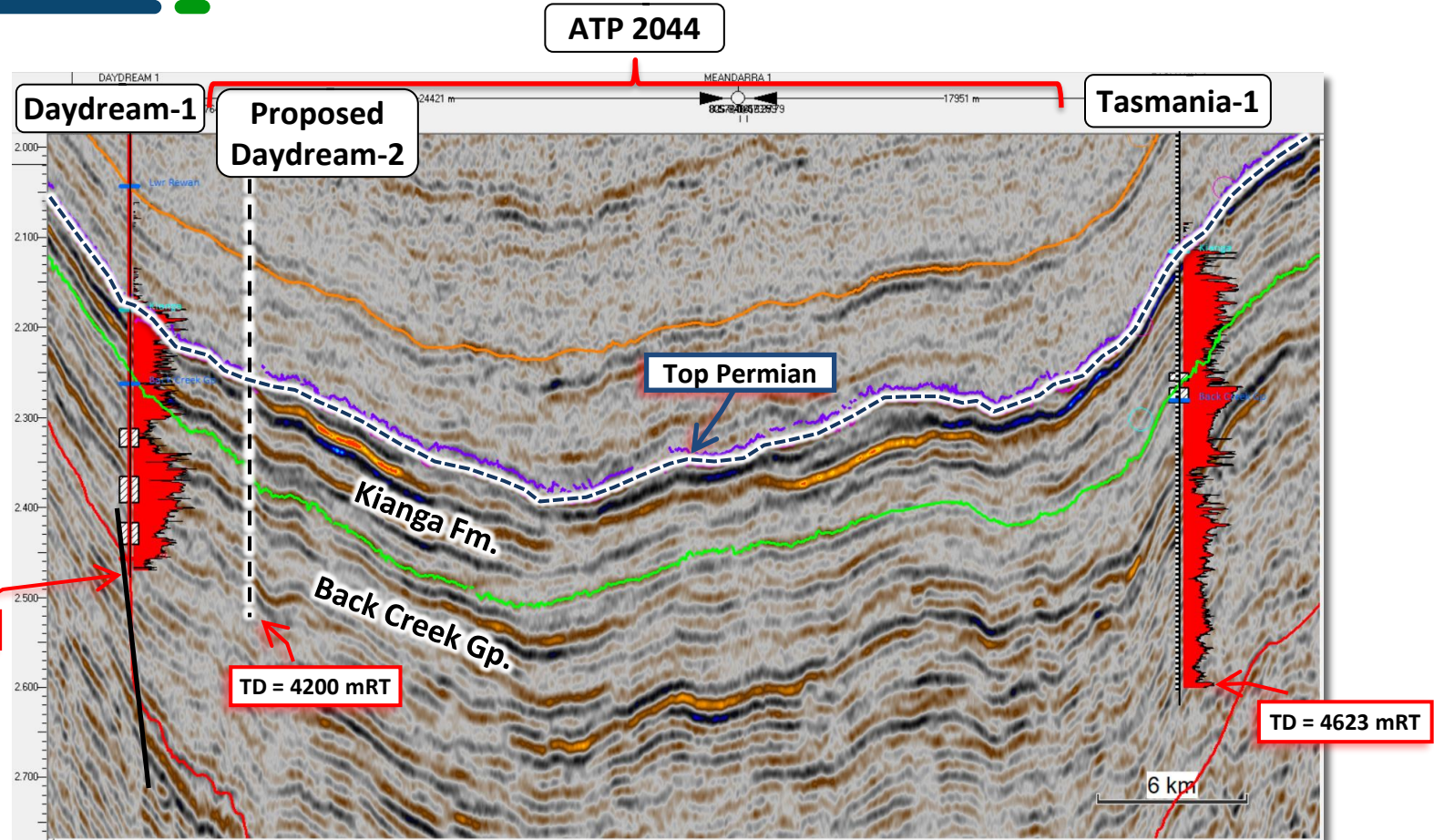
- Regionally pervasive unconventional gas resources that requires stimulation for commercial production
- Generally abnormally pressured
- Trap requires a “permeability gaol”
- Regionally extensive
- Perms  $< 0.2\text{mD}$  and low porosity
- Imperative to stimulate as many reservoirs as possible to attain commercial rates of gas production

# Key Metric Comparison for Previously Explored BCG Plays in Australia

Key Metric	ATP 2044 (2023) Southern Taroom	BG (2012) Southern Taroom	Cooper Basin (2010-2015)
Play Type	FTMC/TGS/BCG	TGS	BCG
Depth to target	3700m	4650m (max)	3600-4000m
Heat flow (average)	75 mW/m2	75 mW/m2	130-190 mW/m2
Max temperature at target depth	127 C	140 C	215-246 C
Stress regime of target	Normal/Strike-slip	Strike-slip	Reverse
Frac gradient (Shmin)	0.65-0.80 psi/ft	0.80-0.90 psi/ft	1.1-1.60 psi/ft
Overpressure	0.51-0.66 psi/ft	0.66-0.83 psi/ft	0.73 psi/ft
CO <sub>2</sub>	<5%	<5%	~30%
Source/reservoir maturity Ro%	1.0-1.4 Ro%	1.0-1.5 Ro%	2.7-6.4 Ro%
Source/reservoir window	Gas-condensate	Gas	Late Gas-Thermally exhausted
Permeability	<0.2 mD	<0.2 mD	0.1 mD
Porosity	5-7 %	5-7 %	4-6 %
Stimulation and Production Techniques	State of the Art R&D techniques	10 years out of date	10 years out of date

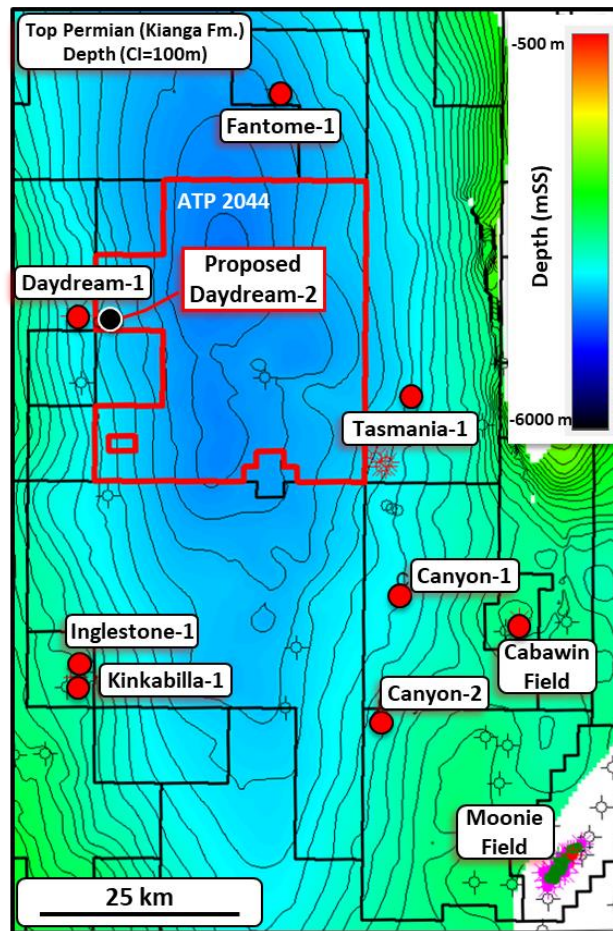
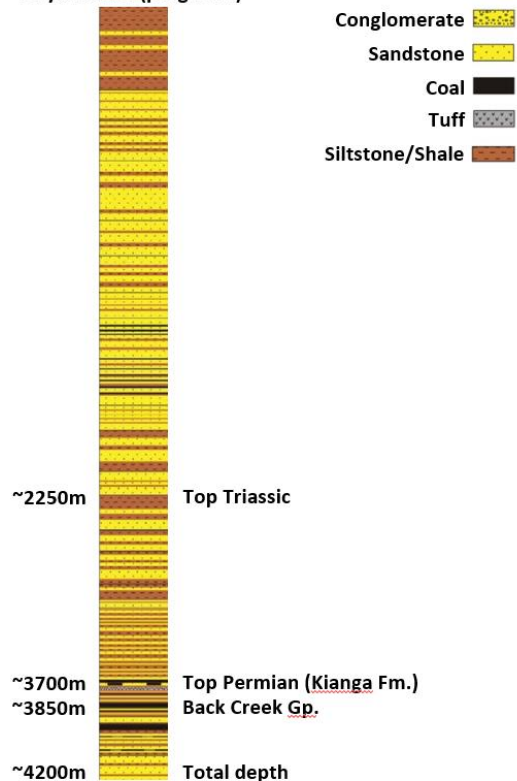


# Seismic Line across Grandis Gas Project – Shows Gas Saturated Permian Rocks



# Daydream 2 Location and Prognosis

Daydream-2 (prognosis)





## Contingent Resources (Sandstones Only) – ERCE Certification

- In October 2022 ERC Equipoise Pte Ltd (ERCE) prepared a Competent Person's Report (CPR)
- ERCE has attributed Contingent Resources to the ATP 2044 permit as shown below;
  - Note: Only the sandstone reservoirs' hydrocarbon volumes were attributed Contingent Resources

ATP 2044 - GRANDIS GAS PROJECT				
Contingent Resources (100%)				
	Units	1C	2C	3C
Gas Initially In Place (GIIP)	Bcf	2,128	7,007	22,699
Recoverable Gas	Bcf	93	395	1,493
Recoverable Condensate	MMbbl	0.7	3.6	17.3

Note - Tight Sandstone Reservoirs Only

**Note:** These are un-risked contingent resources that have not been risked for the chance of development, and that there is no certainty that it will be economically viable to produce any portion of the contingent resources.

# Prospective Resources (Fractured Coals Only) – Elixir Calculation

- In addition to the Contingent Resources calculated by ERCE in the Tight Sandstone Play, the Fractured, Thermally Mature Coals Play provides an additional primary target
- Elixir has attributed Prospective Resources to this play as shown below;

ATP 2044 - GRANDIS GAS PROJECT				
Prospective Resources (100%)				
Log Normal Distribution	Units	1U	2U	3U
Recoverable Gas	Bcf	401	1,287	4,135
Recoverable Condensate	MMbbl	4	25.7	165.4

Note - Fractured, Thermally Mature Coals Only

## Notes to Table:

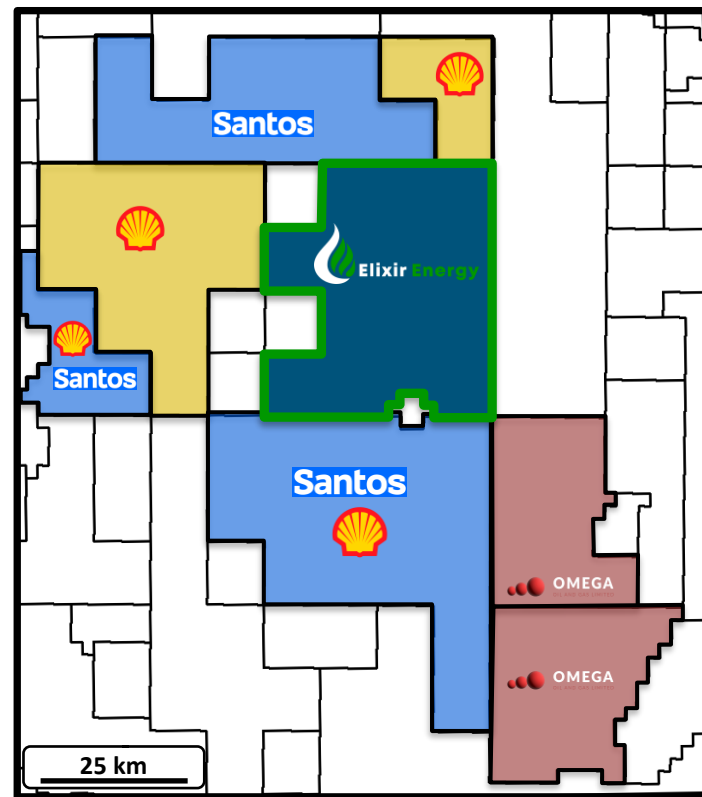
1. *Prospective Resources are those estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further explorations appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.*
2. *At least a 90% probability that the quantities actually recovered will equal or exceed the estimate.*
3. *At least a 50% probability that the quantities actually recovered will equal or exceed the estimate.*
4. *The arithmetic average of the probability distribution.*
5. *At least a 10% probability that the quantities actually recovered will equal or exceed the estimate.*
6. *Prospective Resources have been assessed on the basis that they are unconventional in nature.*
7. *Bcf means billion standard cubic feet of gas.*
8. *MMbbl means million barrels of oil or condensate.*
9. *The resource calculations are probabilistic but each reservoir was added arithmetically*
10. *See appendix for further information.*

# Growing Activity in the Taroom Trough

- The Taroom Trough was last extensively drilled by BG Group (now Shell) around a decade ago
- Market factors are now driving new rounds of drilling, up to and including the local Majors:
  - The rapidly growing demand/supply gap in the East Coast gas market
  - Spare capacity in Queensland's LNG plants – also growing
  - International buyers' requirements for reliable supply – especially given the Ukraine War and other geopolitical factors
- The Taroom Trough is very well placed locationally to meet these needs

***"If the play works then we believe there is multi-TCF potential"***

Kevin Gallagher (Santos CEO) Australian Financial Review 15 November 2018



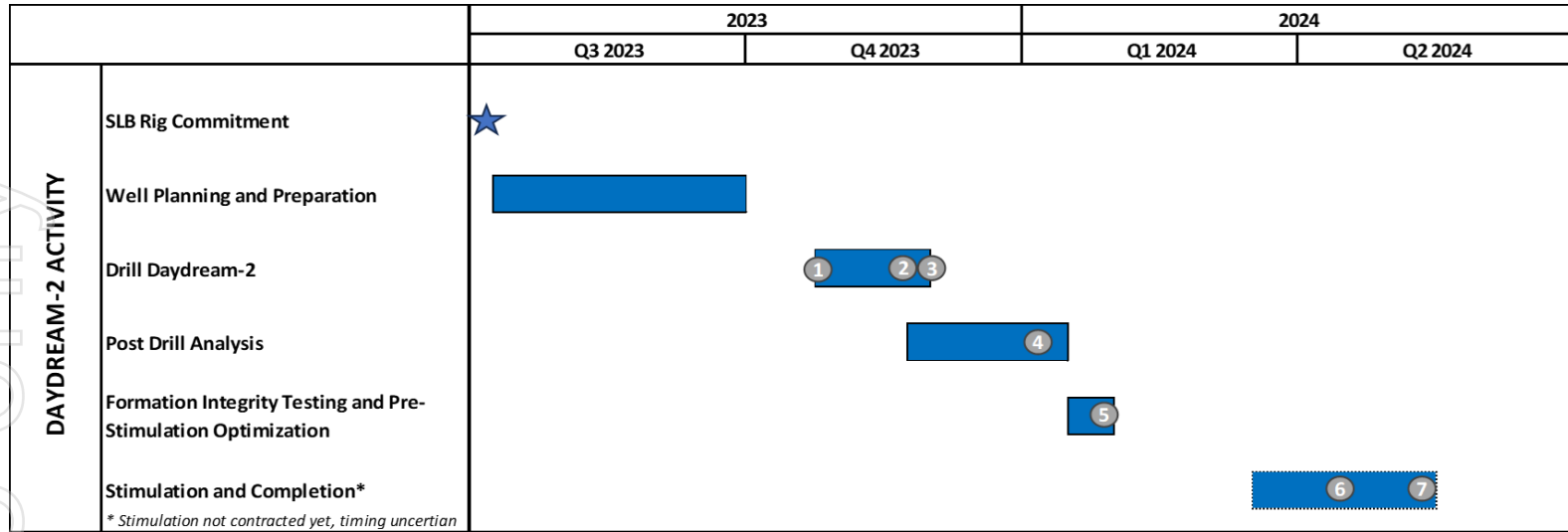
# SLR 185

- An automated Cyber Base Drilling Rig owned by an Australian subsidiary of premier global oil-field services SLB (previously Schlumberger)
- SLR 185 has a high level of automation with integrated control systems being responsible for the safety, reliability, and performance monitoring of drilling
- A 1,250 Horsepower Telescopic Double, SLR 185 has the capability of drilling beyond the planned total depth of Daydream-2 with spare operational capability should it be required
- SLR 195 recently drilled 2 wells in nearby tenements in record time





# Upcoming Activity for Grandis Gas Project



## Significant Events during drilling and completion of Daydream-2

- ① Spud of Daydream-2 appraisal well
- ② Intersection of Permian aged primary target (Kianga Formation)
- ③ Wireline logging of well (eg thickness of gross interval, gas saturation etc)
- ④ Compilation of post well analysis (final pay information and initial production testing plans)
- ⑤ Formation integrity testing and pre-stimulation optimization (delivering specific permeability information)
- ⑥ Results of initial stimulation (Success of R&D operations)
- ⑦ Post stimulation testing (Initial flow rates from specific isolated intervals in coals and sandstones)

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# Appendix

## **Methodology:**

The estimate of Prospective Resource was compiled by Elixir's Chief Geoscientist, Mr Greg Channon, who has completed a detailed and formal report on the prospective resources in ATP 2044. The work was undertaken in accordance with the Society of Petroleum Engineers internationally recognised Petroleum Resources Management System 2018 (PRMS). Mr Channon's methodology was to compile and review all available data and make interpretations of (amongst other things) the wireline logs, seismic data and historical well records relevant to the permit area. An estimate of the gross and net rock volume was determined, and from that, a probabilistic distribution of the prospective resource was compiled. A site visit to the area was conducted.

## **Competent Person:**

Elixir's Competent Person is Mr Greg Channon. Mr Channon is a qualified geoscientist with over 35 years of oil and gas industry experience and is a member of the American Association of Petroleum Geologists and the South East Asian Exploration Society and is a graduate of the Australian Institute of Company Directors. He is qualified as a competent person in accordance with ASX listing rule 5.41. Mr Channon consents to the inclusion of the information in this report in the form and context in which it appears.

## **Reporting Standards:**

Reserves and resources are reported in accordance with the definitions of reserves, contingent resources and prospective resources and guidelines set out in the Petroleum Resources Management System (PRMS) prepared by the Oil and Gas Reserves Committee of the Society of Petroleum Engineers (SPE) and reviewed and jointly sponsored by the American Association of Petroleum Geologists (AAPG), World Petroleum Council (WPC), Society of Petroleum Evaluation Engineers (SPEE), Society of Exploration Geophysicists (SEG), Society of Petrophysicists and Well Log Analysts (SPWLA) and European Association of Geoscientists and Engineers (EAGE), revised June 2018.

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