

# 3D OIL LIMITED

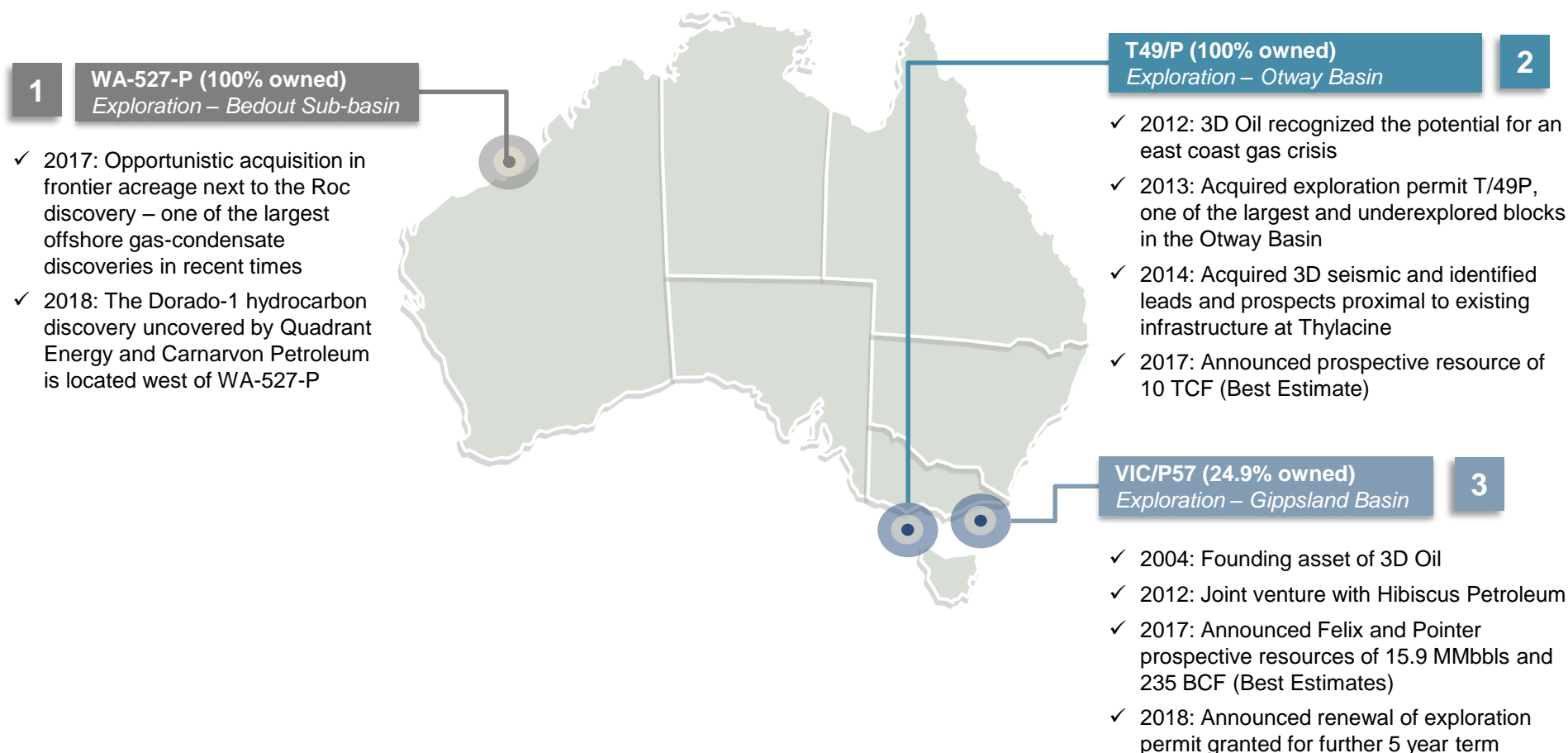
Taylor Collison 2019 East Coast Gas Day



April 2019  
ASX: TDO



3D Oil has opportunistically built a portfolio of significant positions in some of Australia's most prospective offshore exploration basins





**3D Oil has built a portfolio of high potential, frontier exploration permits in offshore Western Australia (Bedout Sub-basin), Tasmania (Otway Basin) and Victoria (Gippsland Basin)**

## Corporate overview

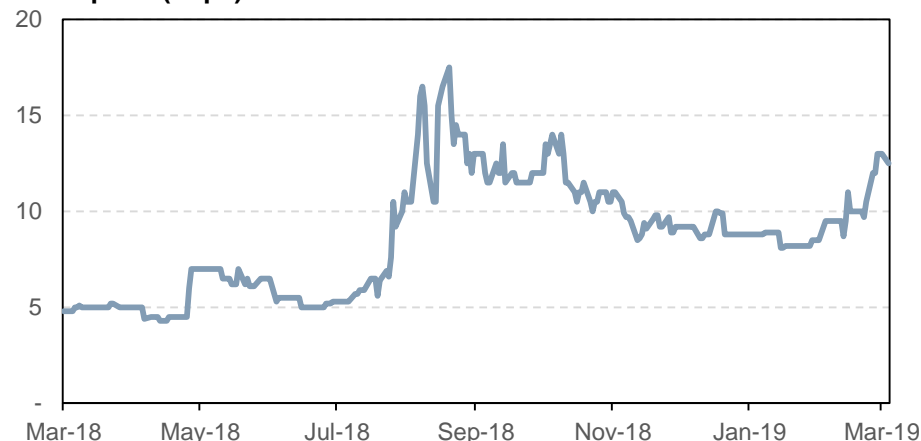
- Portfolio of high potential, exploration offshore permits in the Bedout Sub-basin, Otway Basin and the Gippsland Basin
- 100% ownership of WA-527-P, located adjacent to the significant Carnarvon/Quadrant oil discoveries (Dorado-1)
- T/49P contains one of the largest conventional prospective gas resources on the east coast (10TCF Best Estimate<sup>1</sup>)
- VIC/P57 contains Felix (15.9 MMbbls Best Estimate<sup>2</sup>) and Pointer prospects (235 BCF Best Estimate<sup>2</sup>)
- 3D Oil is financially prudent and continues to maintain a highly efficient capital structure

## Financial information

Share price (9-Apr-2019)	A\$0.12
Number of shares	265.2m
<b>Market capitalisation</b>	<b>A\$31.8m</b>
Cash (31-Dec-2018) <sup>3</sup>	A\$2.9m
Debt (31-Dec-2018)	Nil
<b>Enterprise value</b>	<b>A\$28.9m</b>

## Share price performance (last 12 months)

Share price (Acps)



## Top shareholders

Noel Newell ( <i>Executive Chairman</i> )	16.6%
Oceania Hibiscus ( <i>joint venture partner</i> )	11.7%
<b>Top 20 holders</b>	<b>~56%</b>

Source: IRESS

Notes:

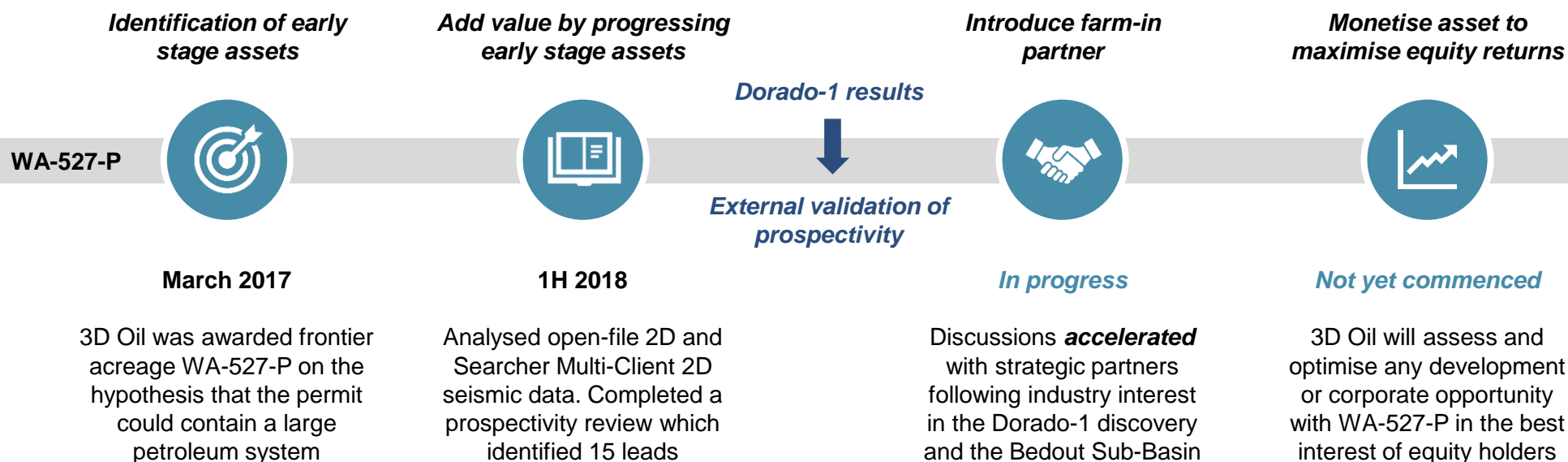
- 1 Refer to ASX announcement dated 27 July 2017 for details on T/49P Prospective Resource estimate
- 2 Refer to ASX announcement dated 27 July 2017 for details on VIC/P57 Prospective Resource estimate
- 3 The cash balance above includes A\$1.5 million of cash on deposit with a maturity date greater than 3 months



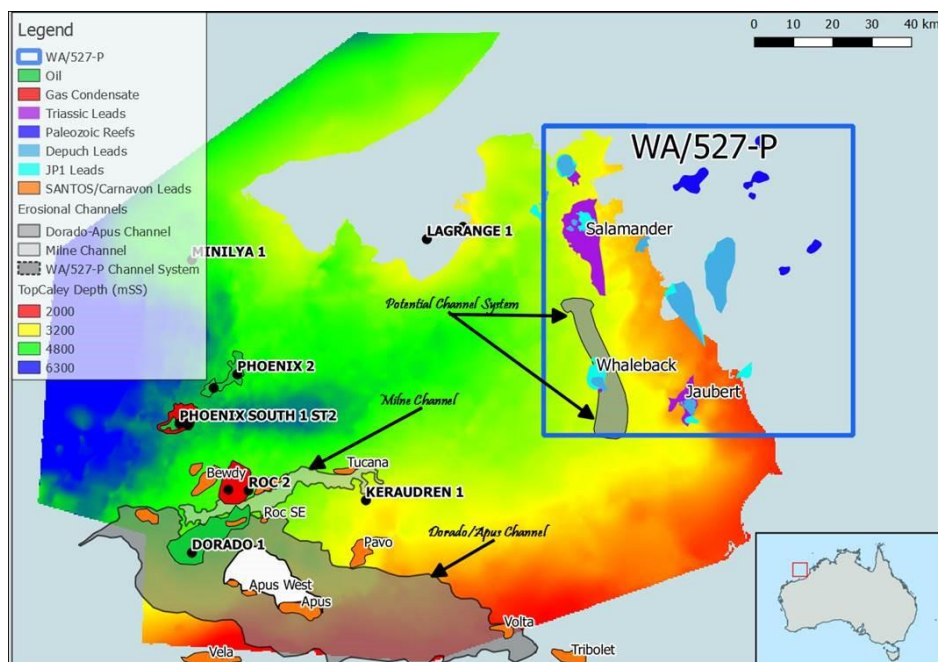


## The acquisition of WA-527-P demonstrates 3D Oil's ability to recognise and act on opportunities ahead of its potential competitors

- The success of the Dorado-1 well (Carnarvon 20% : Santos 80%) was seen as a key value inflection point for 3D Oil at the time of permit acquisition in March 2017
- As a small operator, 3D Oil has created value through being opportunistic, counter-cyclical and importantly lucky enough to identify 3 “hot” areas for exploration (Bedout Sub-basin, Otway Basin, Gippsland Basin) ahead of larger strategies



**Significant exploration activity planned in Bedout Sub basin given the success of Dorado-1 and strong strategic interest**



## Upcoming activity in the Sub-Basin

- April 2019**
  - Dorado-2 appraisal well drilling
  - Roc South-1 exploration well drilling
- 2H 2019**
  - Dorado-3 appraisal well drilling
- Late 2019**
  - Large 3D seismic to be acquired over the Pavo and Apus prospects
- Late 2019 / Early 2020**
  - 3D Oil to commence 3D seismic planning and acquisition

One of the most active offshore basins in Australia with 3 major wells and several seismic programmes potentially in 2019

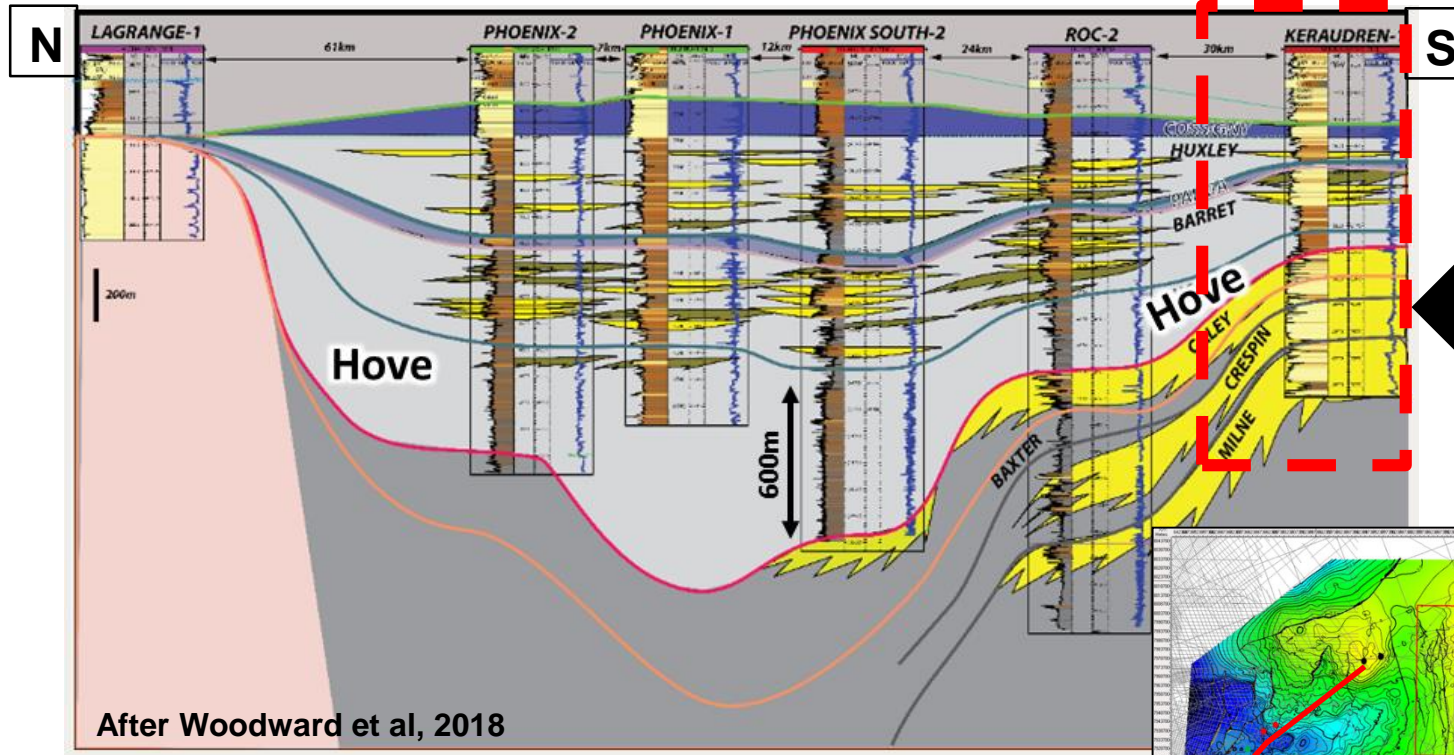
# 1 BEDOUT BASIN GEOLOGICAL INTERPRETATION



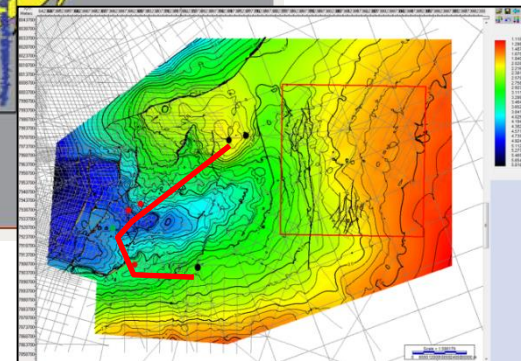
Results from the Dorado-1 has reshaped the hydrocarbon bearing interpretation of the Bedout Basin with the Caley, Crespin and Milne sands now being targeted for significant oil

## Geological interpretation of Bedout Basin

Section analogous  
to WA-527-P

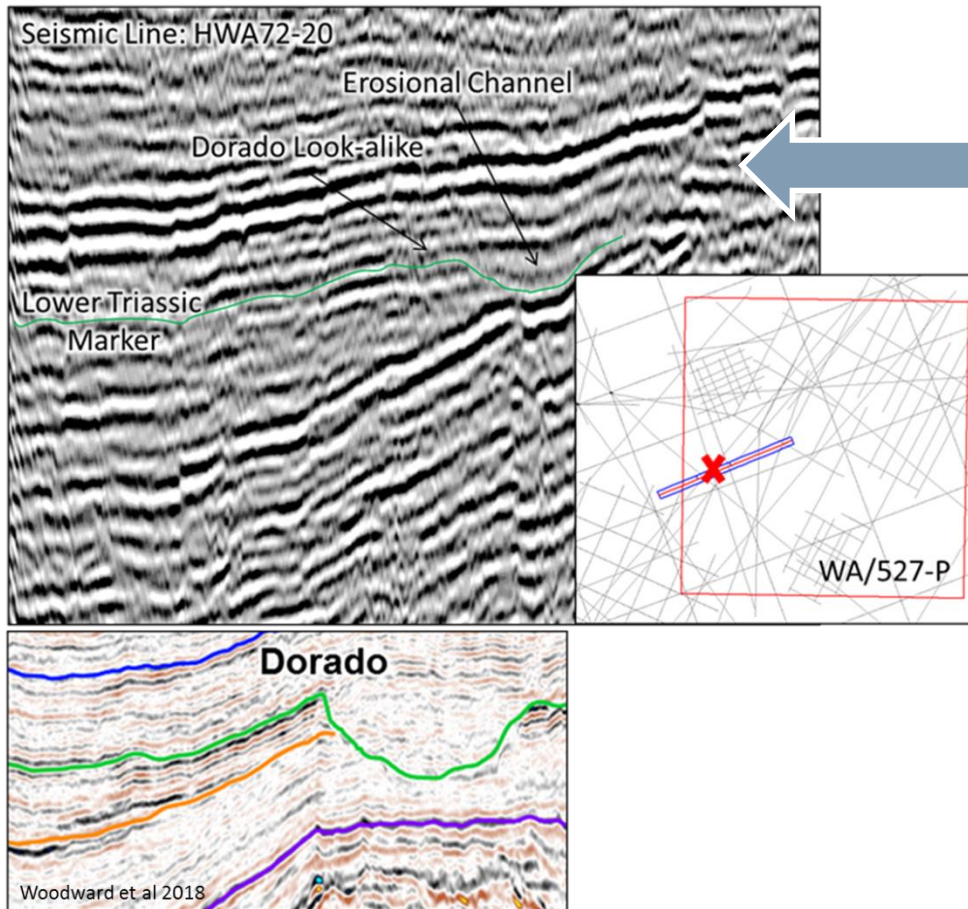


Hydrocarbon bearing sands as proven by Dorado-1 are thick at nearby Keraudren-1, where they are capped by the Hove Member sealing unit.



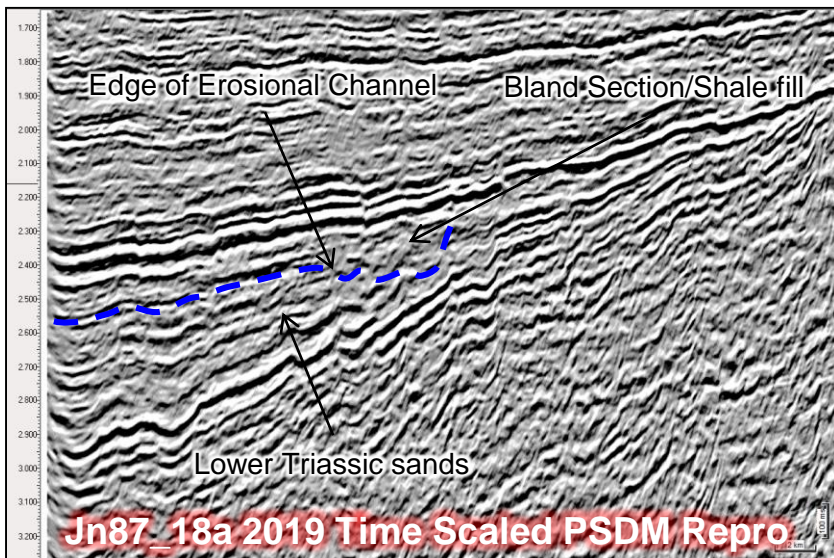
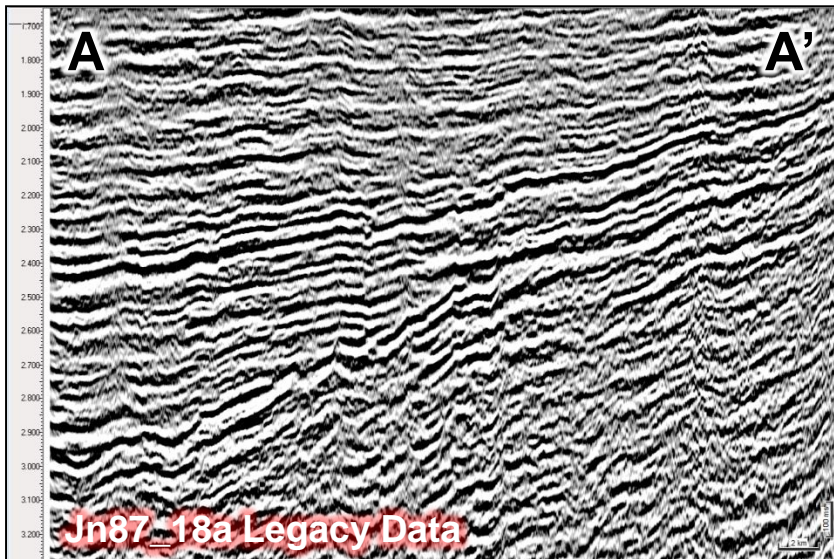


**3D Oil has identified a potential erosional channel system within the western side of WA-527-P, similar to that which set up the Dorado oil discovery**

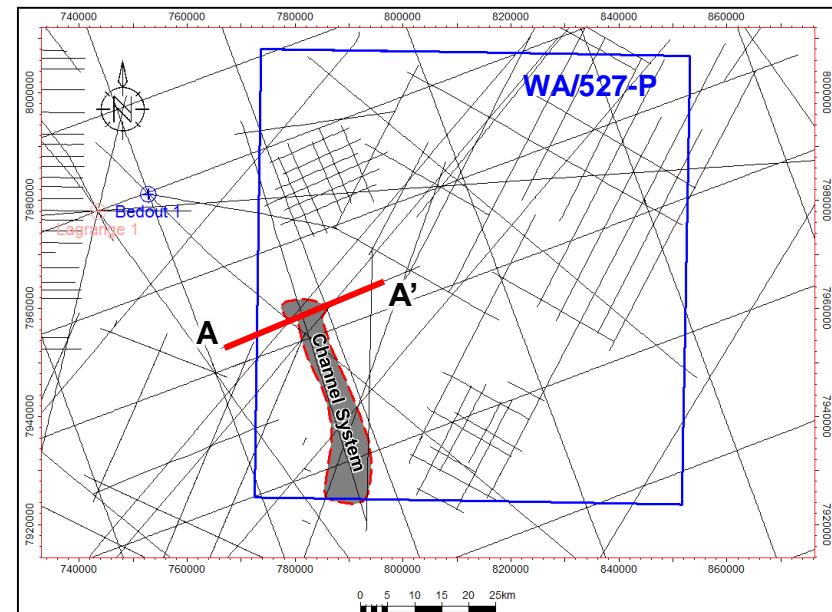


**Erosional channel system identified on open-file 2D seismic data with a comparison the the Dorado structure**

- An erosional channel system has been identified on open-file 2D seismic data
- The channel system is similar to that which provides the trapping mechanism at Dorado and could host a number of similar structures within the western side of WA-527-P
- 3D Oil is currently reprocessing key open-file 2D seismic lines in order to obtain a more clear image of the features



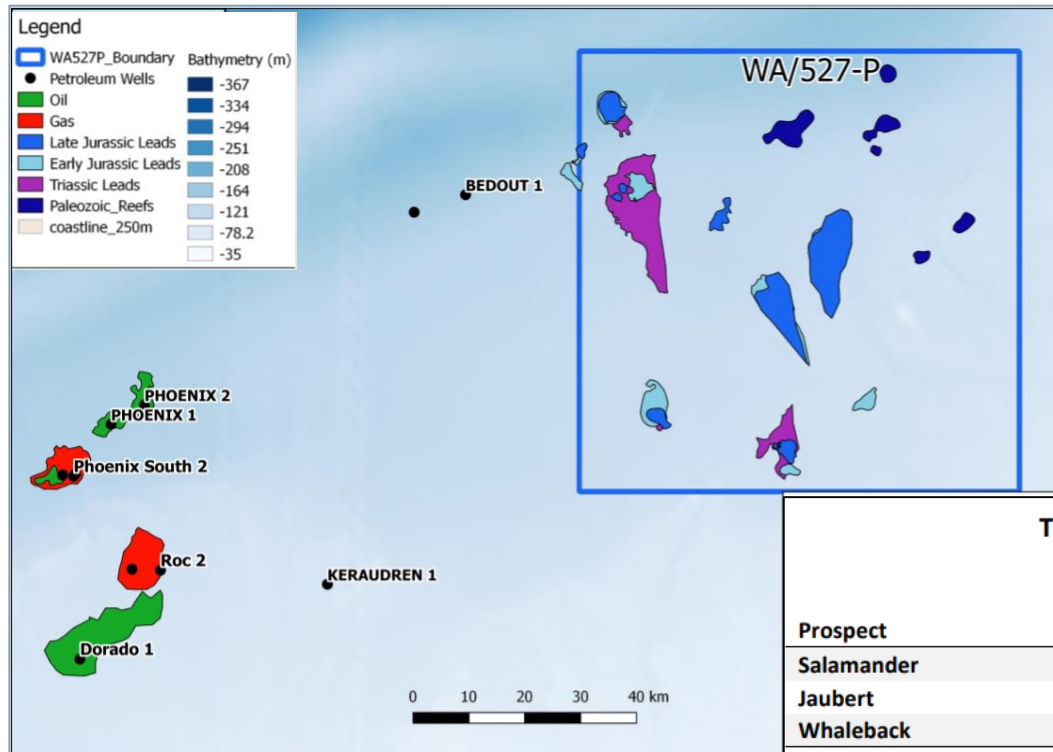
- 3D Oil has reprocessed a number of open-file 2D seismic lines in the acreage
- The new data has confirmed the presence of the erosional channel system
- An interpretation of the reprocessed seismic data will be conducted in order to determine whether the channel system sets up any Dorado look-alike traps.





Prospectivity of WA-527-P has been significantly upgraded as neighbouring Dorado-1 demonstrates a high quality reservoir, competent seal and a prolific, working petroleum system

## Leads identified in prospectivity optimisation



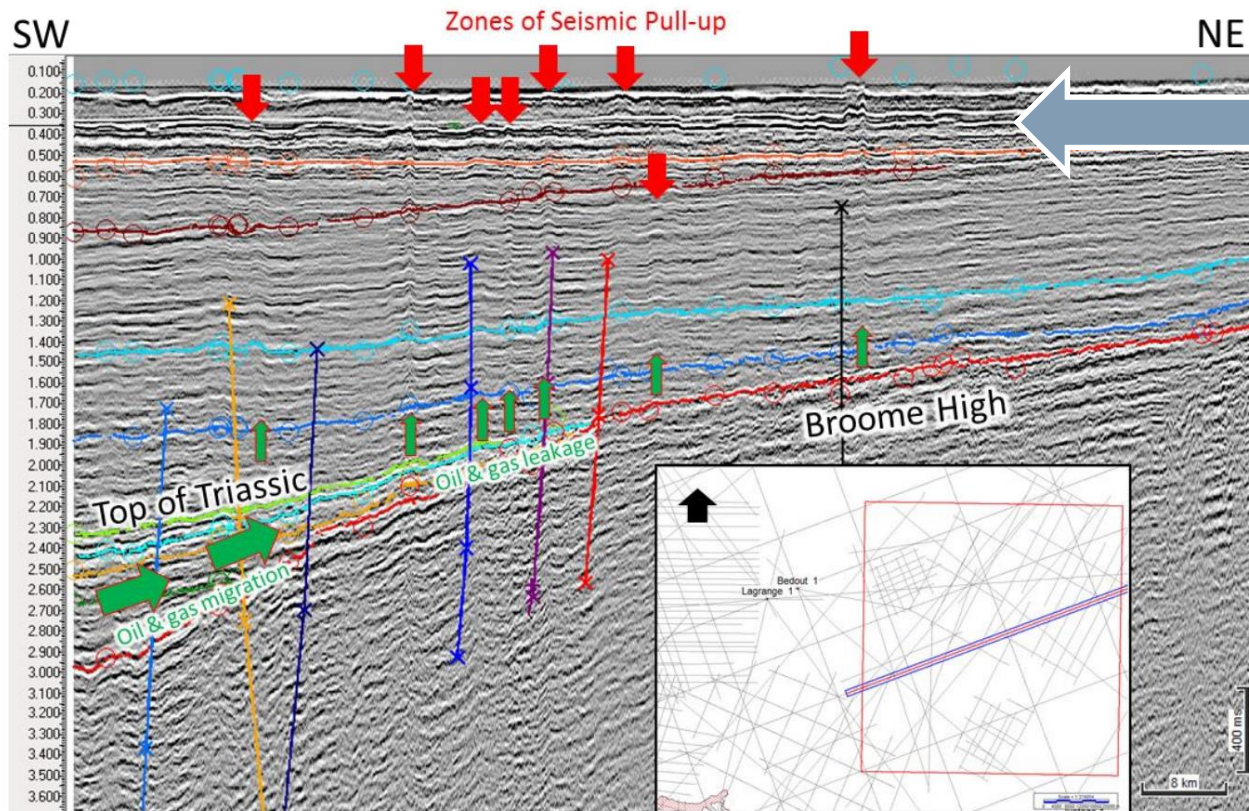
- In February 2018, 3D Oil completed a thorough prospectivity review
- Multiple leads have been generated across the permit;
  - All are considered prospective for oil
- The generation of oil leads and detailed analysis provides the platform for 3D Oil to launch a targeted farm-out campaign
- Subsequent Dorado-1 discovery greatly upgraded the prospectivity of the leads

**Table 1: WA/527-P Prospective Resource Estimate (MMbbls)  
Recoverable Oil**

Prospect	Status	Low	Best	High
<b>Salamander</b>	Lead	57	191	713
<b>Jaubert</b>	Lead	17	72	205
<b>Whaleback</b>	Lead	16	87	219
<b>WA/527-P Arithmetic Total</b>		<b>90</b>	<b>349</b>	<b>1,138</b>

3D Oil has identified possible hydrocarbon leakage in the area in the form of possible Hydrocarbon Related Diagenetic Zones (HRDZs)

Example of geophysical expressions of possible hydrocarbon leakage



Seismic 'pull-up' is interpreted to be caused by HRDZs

- HRDZs are sediments that have been chemically altered by vertically migrating hydrocarbons
- Most of these interpreted leakage areas are observed where the Triassic system (which hosts the Dorado, Roc and Phoenix South discoveries) onlaps the Broome high
- This implies abundant hydrocarbon available to the identified erosional channels that may provide trapping mechanisms



### Acquisitions highlights the strategic interest in the Otway Basin assets and around T49/P

#### Recent market transactions

##### October 2018:

O.G. Energy, a member of the Offer Global group, acquired 40% of Beach Energy's (ASX: BPT) Otway assets for **A\$344m**



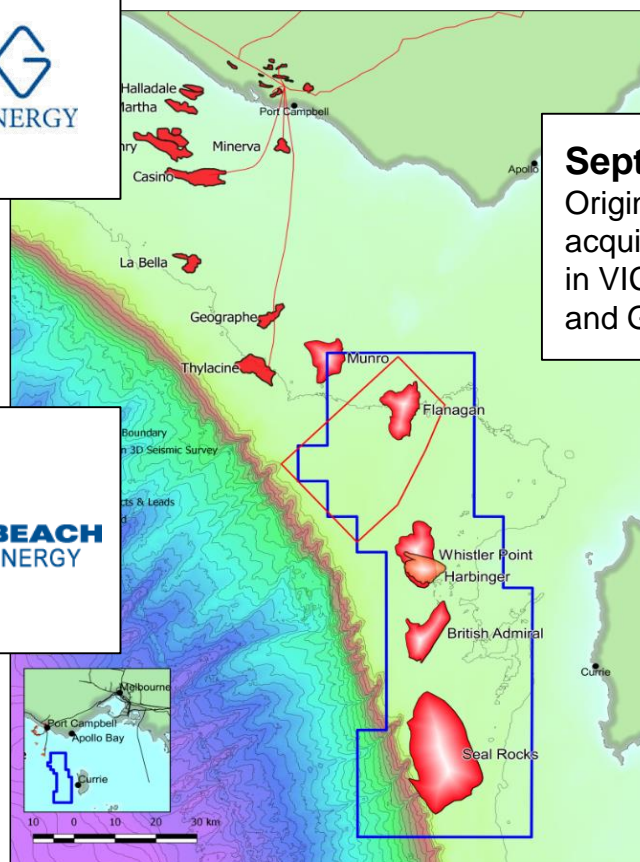
##### September 2017:

Beach Energy (ASX: BPT) acquired Lattice Energy, a wholly owned subsidiary of Origin Energy (ASX: ORG) for **A\$1,585m**



##### September 2017:

Origin Energy (ASX: ORG) acquired the remaining 30% interest in VIC/P43 and T/30P (Thylacine and Geographe) for **A\$190m**

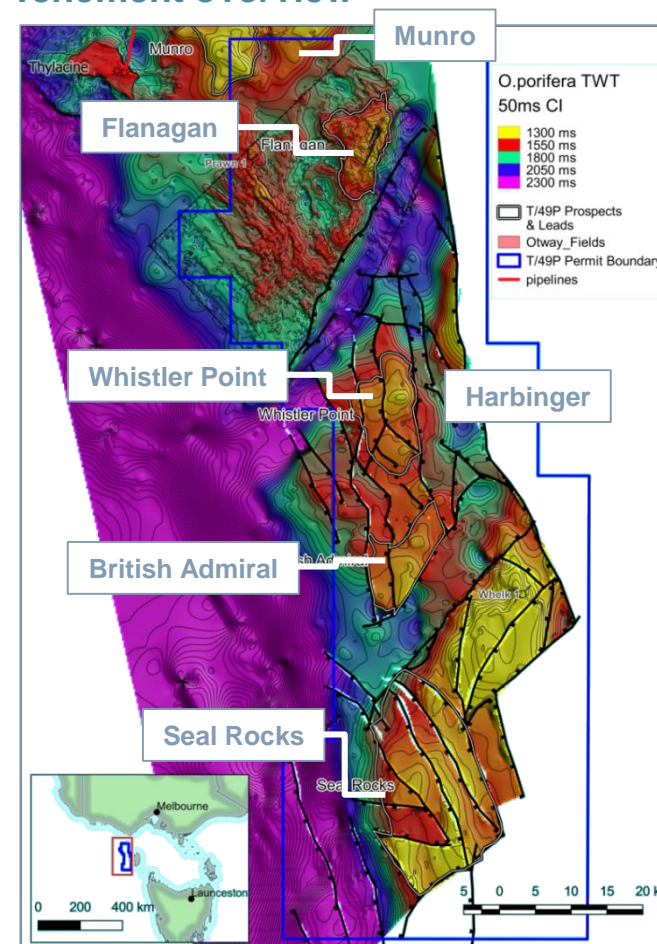


### Vast frontier acreage with 10TCF Prospective Resource (Best Estimate)<sup>1</sup> in shallow water in the Otway Basin

#### Asset overview

- T/49P was acquired by 3D Oil in 2013 through its bid in the 2012 Australian Offshore Gazettal round
  - **Large frontier permit** (4,960 km<sup>2</sup>) and **relatively shallow water** (primarily ~100m)
  - **Opportunistic acquisition by 3D Oil** at the time
  - Permit contains 1 prospect and 5 leads
- 3D Oil has 100%-ownership of exploration permit
  - **Currently in active discussions with potential major farm-in partners** to support and de-risk exploration
- Prospects are interpreted to contain **all the geological elements required for economic accumulations** of hydrocarbons
- Located adjacent to significant infrastructure and major production wells including Thylacine-1 and Geographe-1 (Beach Energy)
  - **Beach Energy announced a regional program** to extend the field lives with potential for up to five wells
- Otway Basin has been a **prolific gas-producing province** since the late 1980s
  - The latest fields developed in the early 2000s include Thylacine, Casino, Minerva and Henry

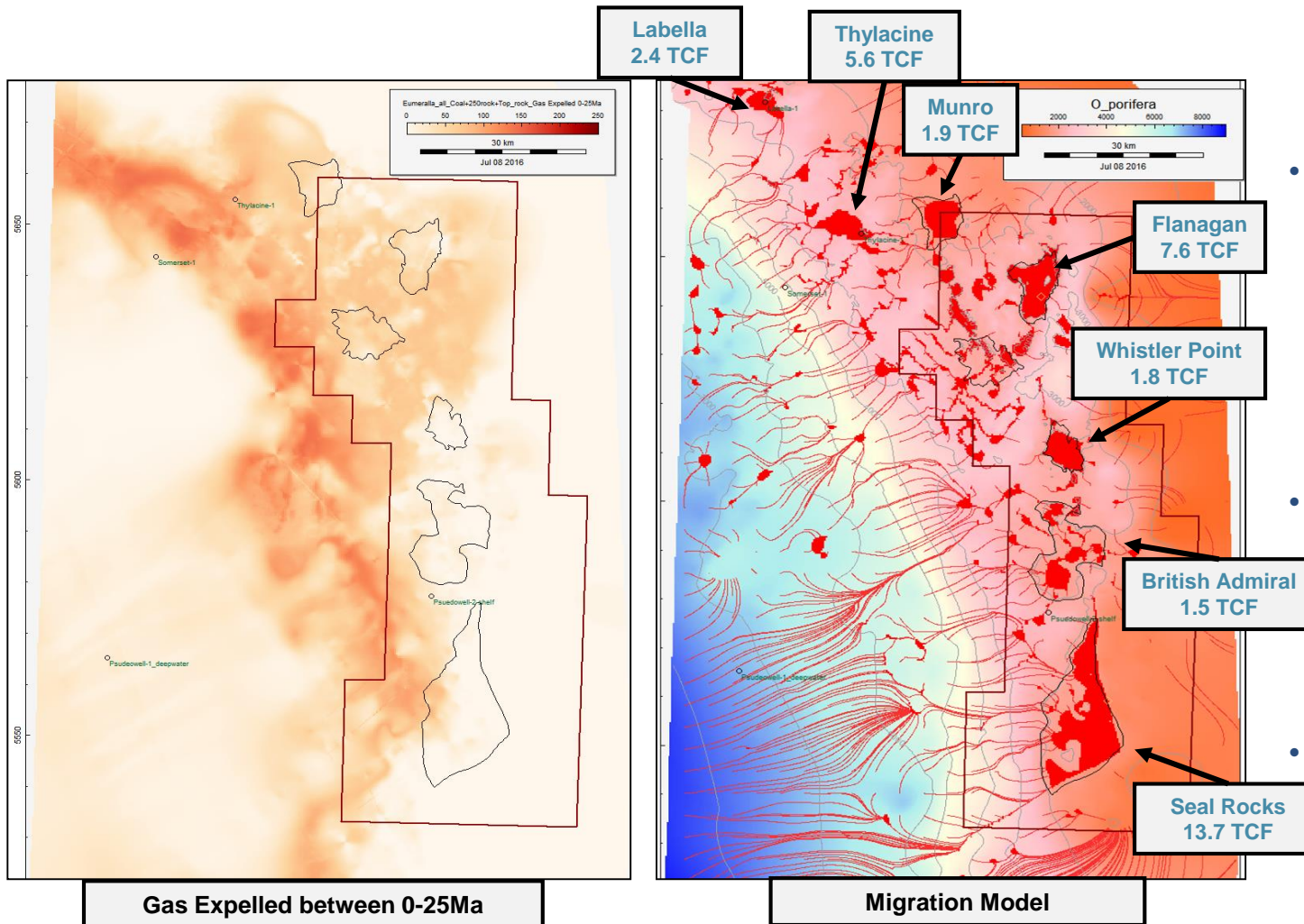
#### Tenement overview



#### Notes:

- 1 Refer to ASX announcement dated 27 July 2017 for details on T/49P Prospective Resource estimate



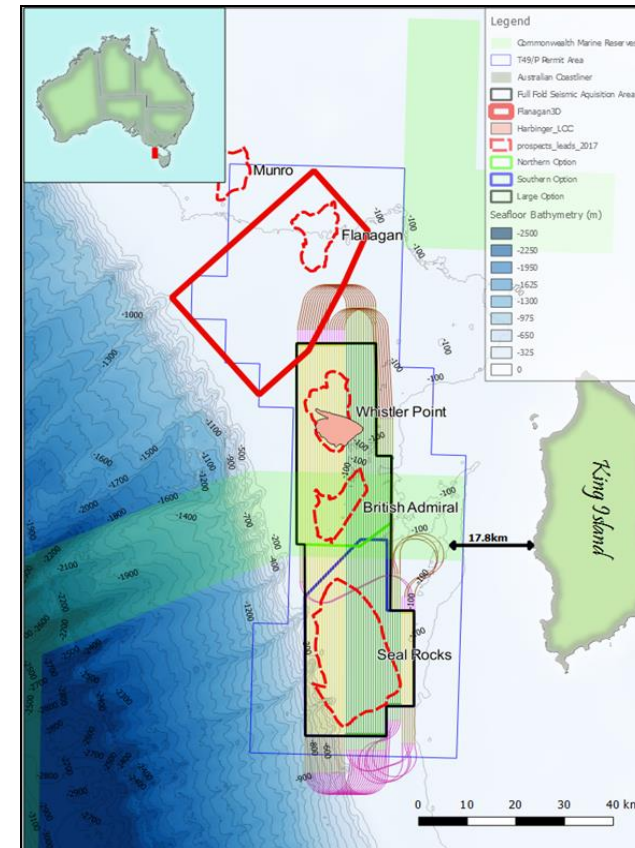


- This migration scenario aimed to test a likely case that hydrocarbons generated from a mixture of clastic and coal source rocks throughout the upper 500m of the Eumeralla.
- These SRs have provided hydrocarbons to the existing fields and mapped leads/prospects within T/49P.
- In this model, all structures are full to either structural spill or top-seal capacity (set at 500m).

**3D Oil continues to make progress towards shooting a new 3D seismic survey, Dorrigo, with the intention of maturing several of these leads to prospect status**

- 3D Oil continues to **plan for 3D seismic acquisition** in T/49P
  - Currently engaging with community stakeholders, as per government regulatory requirements
  - Recently lodged **Environmental Plan**, awaiting approval
  - **12-month extension of permit** granted
- Survey is intended to cover the central and southern part of the sizeable acreage
- 3D Oil are **proposing to acquire 1,580 km<sup>2</sup> of 3D seismic** during September and October 2019
- **Strongly committed to an open and thorough stakeholder consultation process**
  - Process has been on-going since March 2018
  - Will continue until regulatory requirements are fully satisfied
- The forthcoming 3D seismic survey, named **Dorrigo**, will target a **series of significant leads** across the central and southern portion of T/49P
- 3D Oil's intention is to **mature several of these to prospect status**

**Proposed Dorrigo 3D Seismic Location**



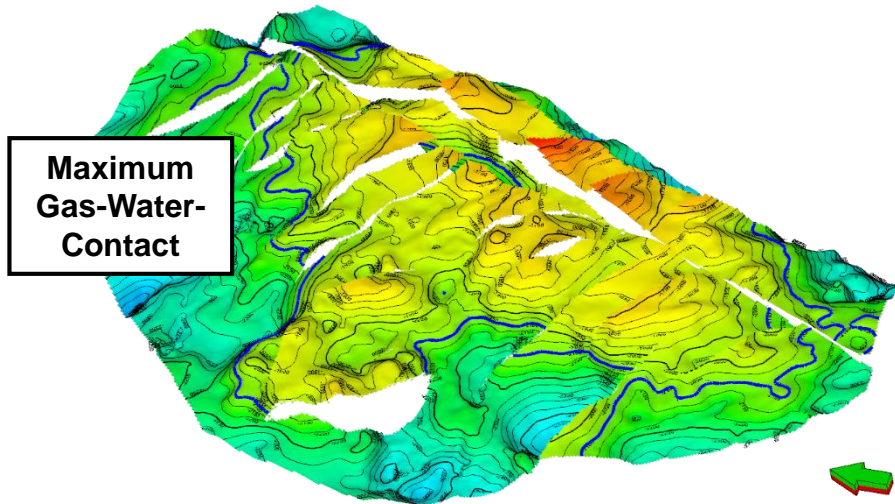


The Flanagan prospect is an exciting gas prospect adjacent to infrastructure

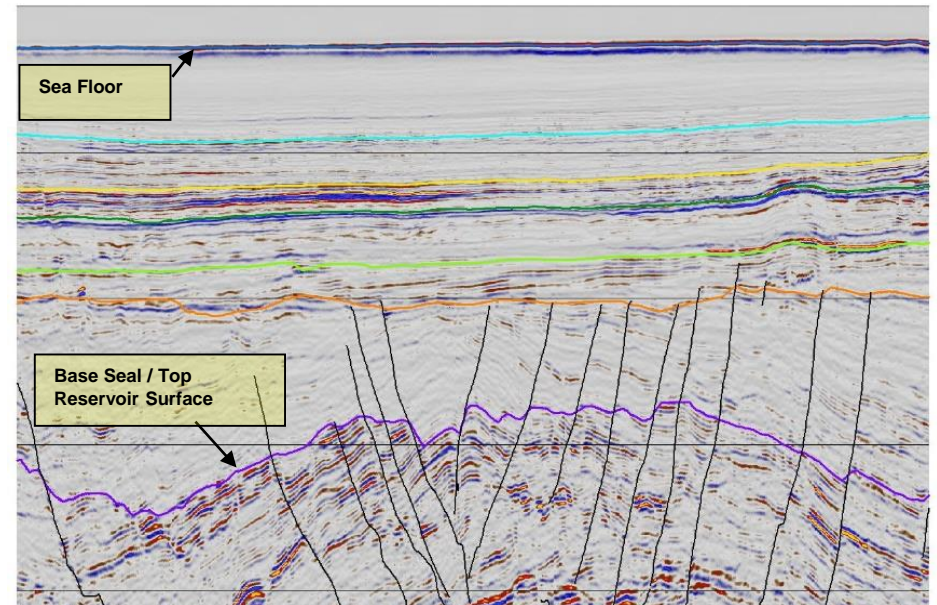
### Flanagan prospect overview

- Flanagan is now a ready to drill prospect
- 3D seismic strongly indicative of good seal over the prospect
- Amplitude anomalies conformable with structure
- Analogous to nearby Thylacine Field albeit larger

### 3D visualization of Flanagan



### 3D seismic through Flanagan



Prospect resource	Low	Best	High
Flanagan Prospect (Recoverable TCF)	0.41	1.38	2.68



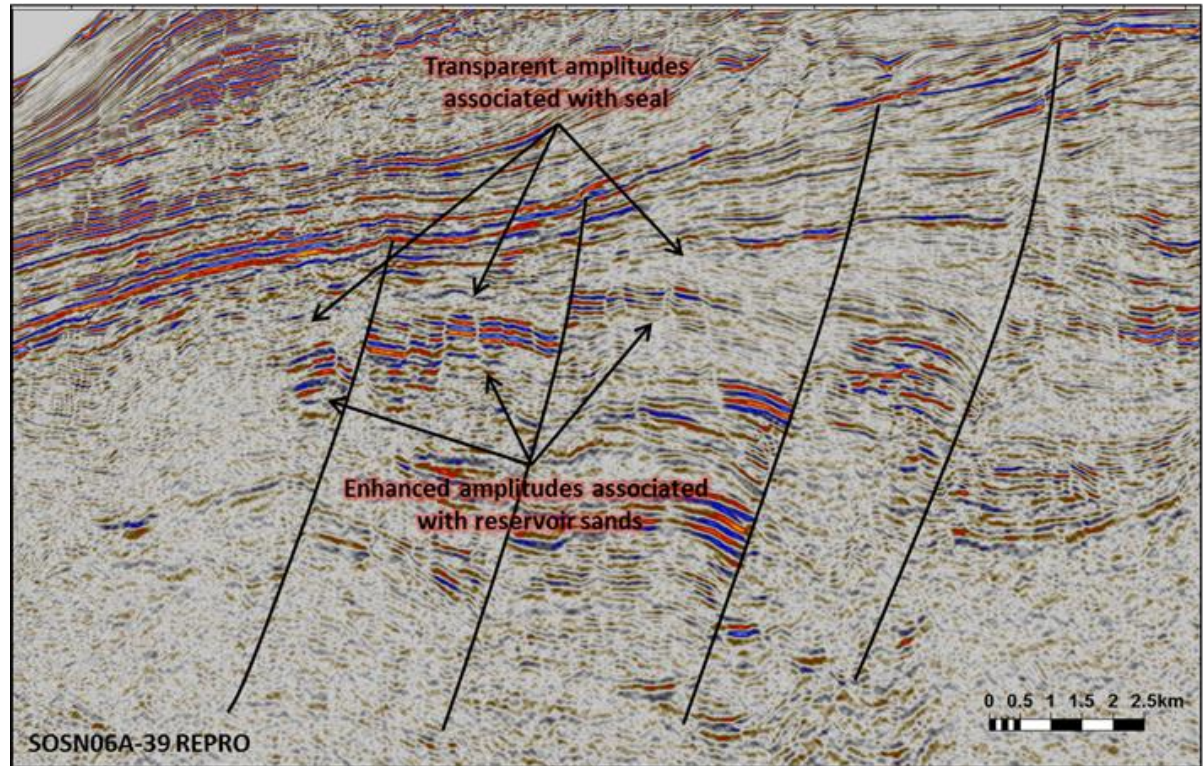
The Seal Rocks is one of the key leads in the T/49P permit given scale and prospectivity

### Seal Rocks lead overview

- Seal Rocks is a key candidate for 3D seismic acquisition
- Best estimate prospective resource of over 4 TCF
- Imaging is currently constrained by a widely spaced grid of vintage 2D seismic, but will be significantly upgraded by modern 3D data.
- Currently reprocessing open-file 2D data at the Seal Rocks lead, with preliminary results revealing enhanced amplitude response.

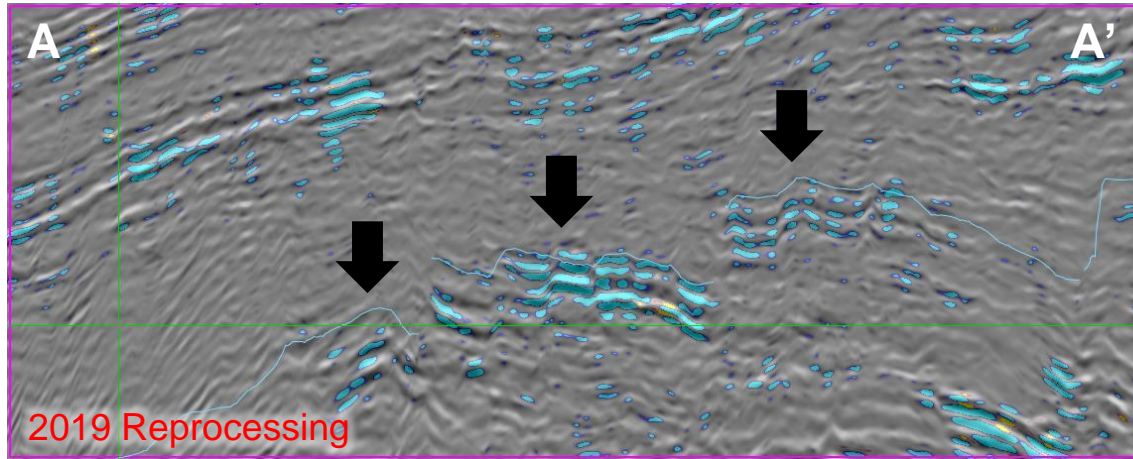
Prospect resource	Low	Best	High
Seal Rocks (Recoverable TCF)	0.95	4.64	10.65

### 2D seismic across Seal Rocks

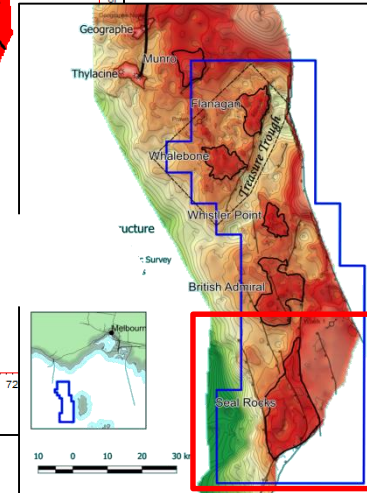
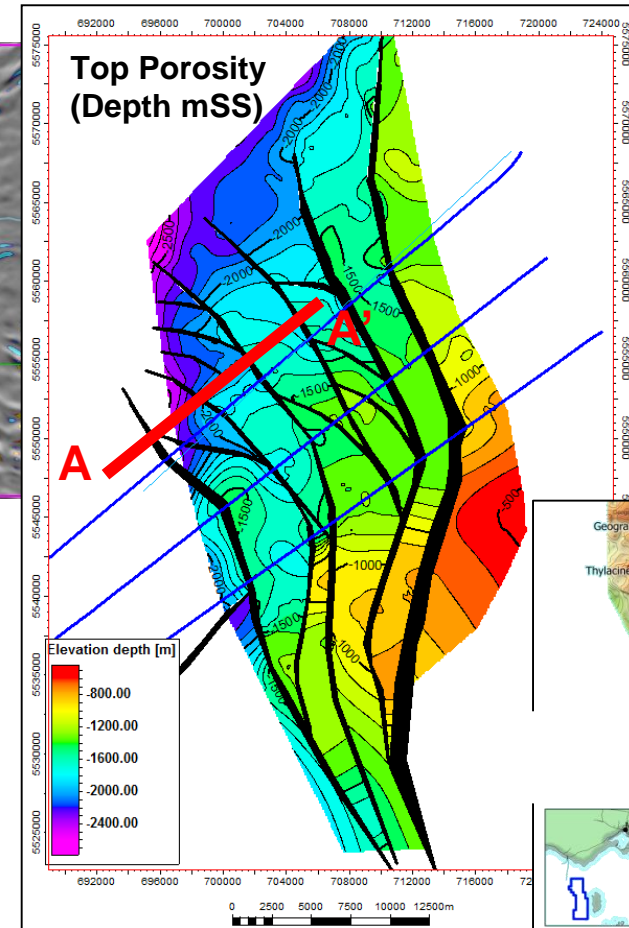




## AVO Attribute Fars\*(Fars-Nears)



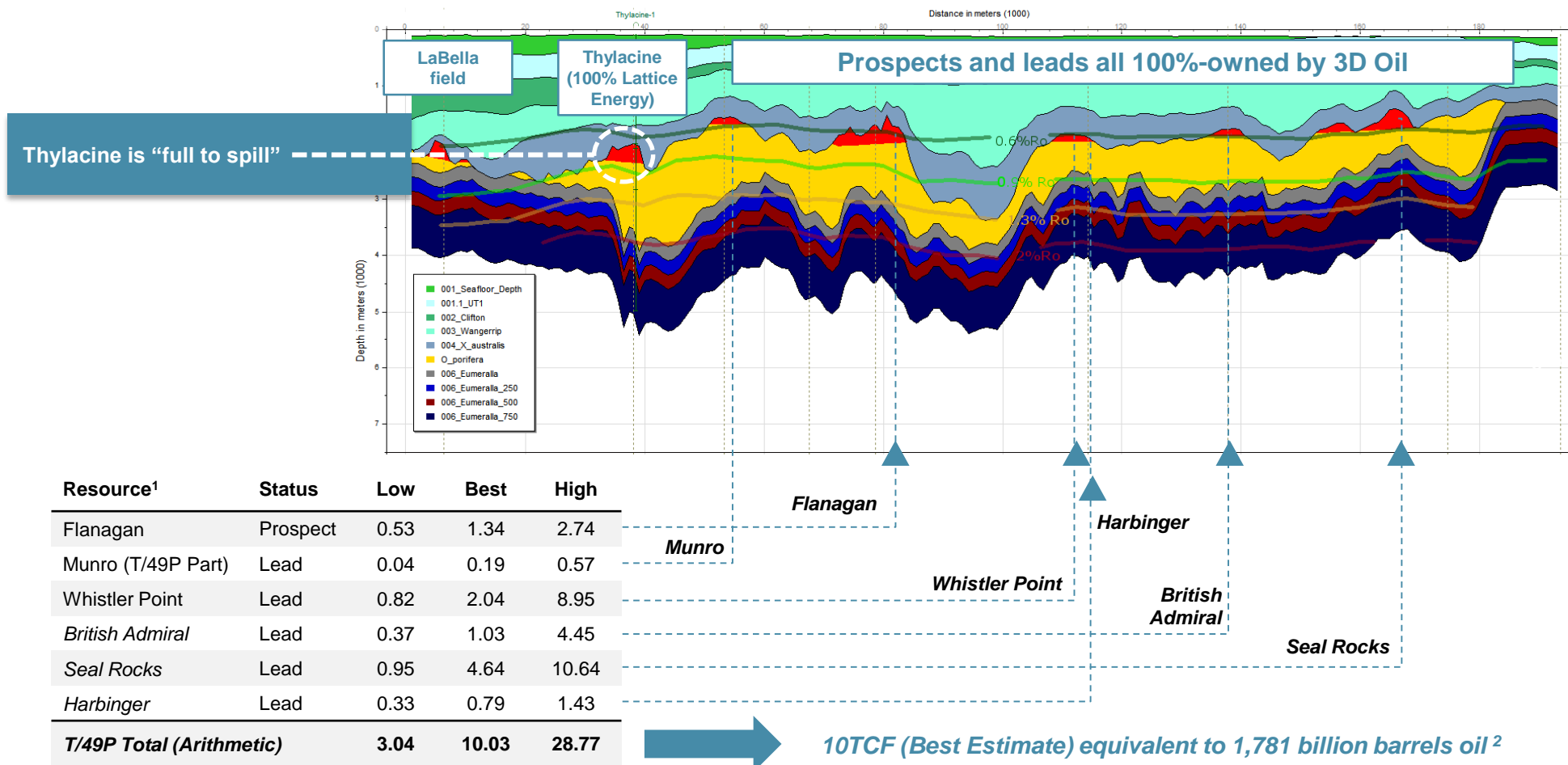
- AVO attribute calculated on the 2019 reprocessing shows clear amplitude anomalies fitting a series of tilted fault block traps,
- These traps occupy an area of over 100km<sup>2</sup>.
- 3D Oil is currently undertaking volumetric calculations in order to provide the market with a more accurate estimate of the Prospective Resource



## 2 T/49P – PROSPECTIVE RESOURCE ESTIMATES



In addition to the Flanagan Prospect at least 5 leads have been identified from a broad grid of 2D seismic data



Notes:

1 Refer to ASX announcement dated 27 July 2017 for details on T/49P Prospective Resource estimate

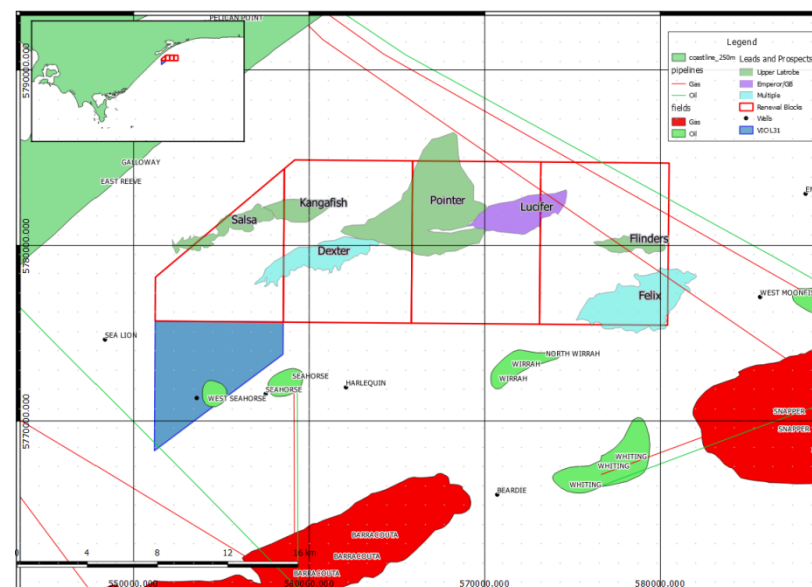
2 Converted from boe to cubic feet using SPE conversion factor of 5.66





**VIC/P57 has 6 prospects and leads located along Australia's most prolific oil and gas producing basin that are defined by state of the art reprocessed 3D seismic data**

- Located in the Gippsland Basin, which had initial reserves estimated at **4 billion barrels of oil** and **11.5 trillion cubic feet of gas**
- 3D Oil has a 24.9% interest in VIC/P57 with Joint Venture partner Hibiscus Petroleum
  - 3D Oil to remain technical advisor to the operator of the permit
  - JV has been awarded the permit for a further 5 year tenure which includes a work programme carefully designed to mature Prospects to drill ready, and potentially identify additional gas targets.
- **6 prospects and leads identified** across the permit
- All prospects and leads defined by **state of the art reprocessed 3D seismic data**



## Oil - Prospective resource (MMbbls)<sup>2</sup>

Location	Status	Low	Best	High
Felix	Prospect	6.84	15.94	26.94
Salsa	Lead	10.65	15.09	20.57
<b>VIC/P57 Total<sup>1</sup></b>		<b>17.51</b>	<b>31.03</b>	<b>47.54</b>

## Gas - Prospective resource (BCF)<sup>2</sup>

Location	Status	Low	Best	High
Pointer	Prospect	140.10	235.26	364.91
Dexter	Lead	36.96	131.98	259.14
<b>VIC/P57 Total<sup>1</sup></b>		<b>177.06</b>	<b>367.24</b>	<b>624.05</b>

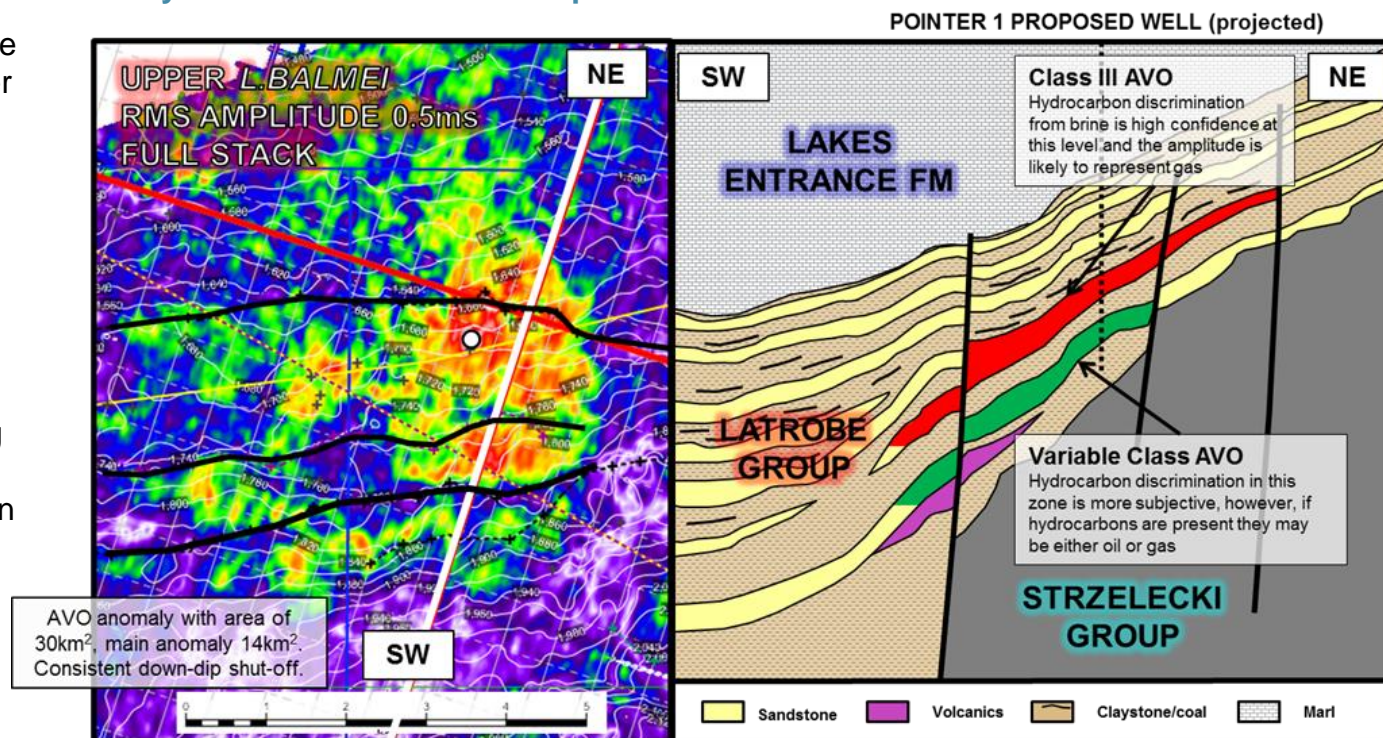
Note:

- 1 Arithmetic total
- 2 Refer to ASX announcement dated 27 July 2017 for details on VIC/P57 Prospective Resource estimate

**Pointer has a best estimate prospective resource of c.235BCF recoverable gas, which represents an attractive target due to a deprived East coast gas market**

#### Analysis of the Pointer AVO response

- Identified gas prospect within the excellent reservoirs of the Upper Latrobe Group
- AVO response is indicative of gas at least at one level, but possibly two
- The Pointer Prospect has been determined as the lowest risk gas target in VIC/P57, with volumetric calculations resulting in a Best Estimate of 250 BCF recoverable gas (235 BCF within VIC/P57)<sup>1</sup>



Note:

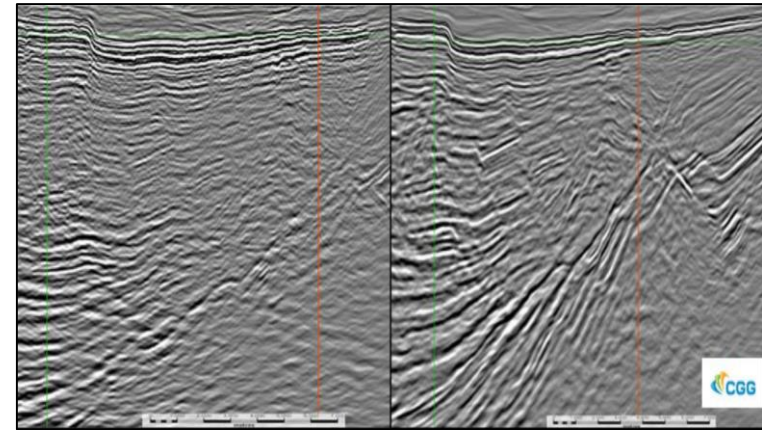
- <sup>1</sup> Refer to ASX announcement dated 27 July 2017 for details on VIC/P57 Prospective Resource estimate



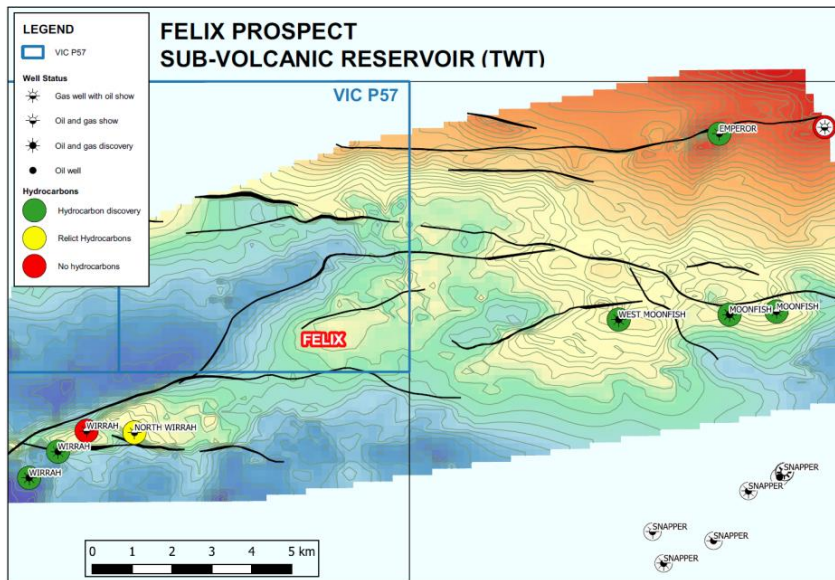
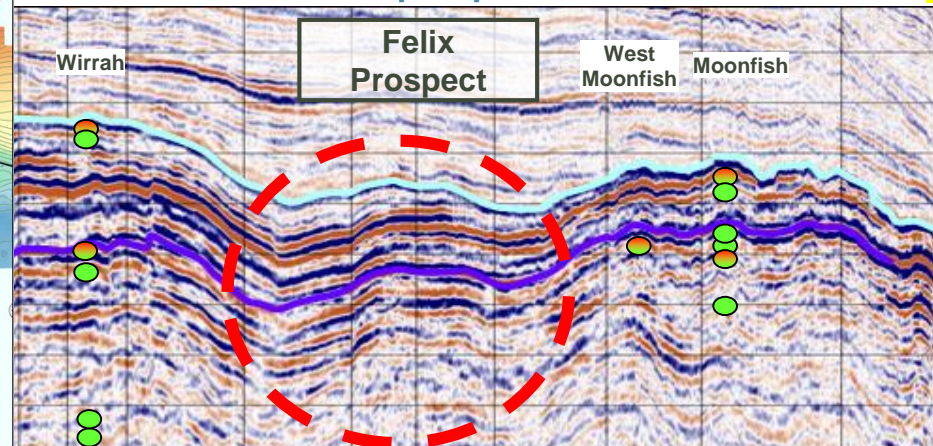
**Exciting feature which has been overlooked in the basin largely due to poor quality seismic; our reprocessed seismic has improved imaging significantly**

- Located between two oil and gas fields (Wirrah and Moonfish) with closure at the sub-volcanic level which contains oil in both fields
  - Rare to uncover such a large prospect in a mature prolific basin between two fields
- Dual targets with potential deep gas prospect together with the shallow oil prospect
- Any potential economics of Felix likely to be significantly leveraged to an increasing oil price environment

**Comparison of old (left) vs new dataset (right)**



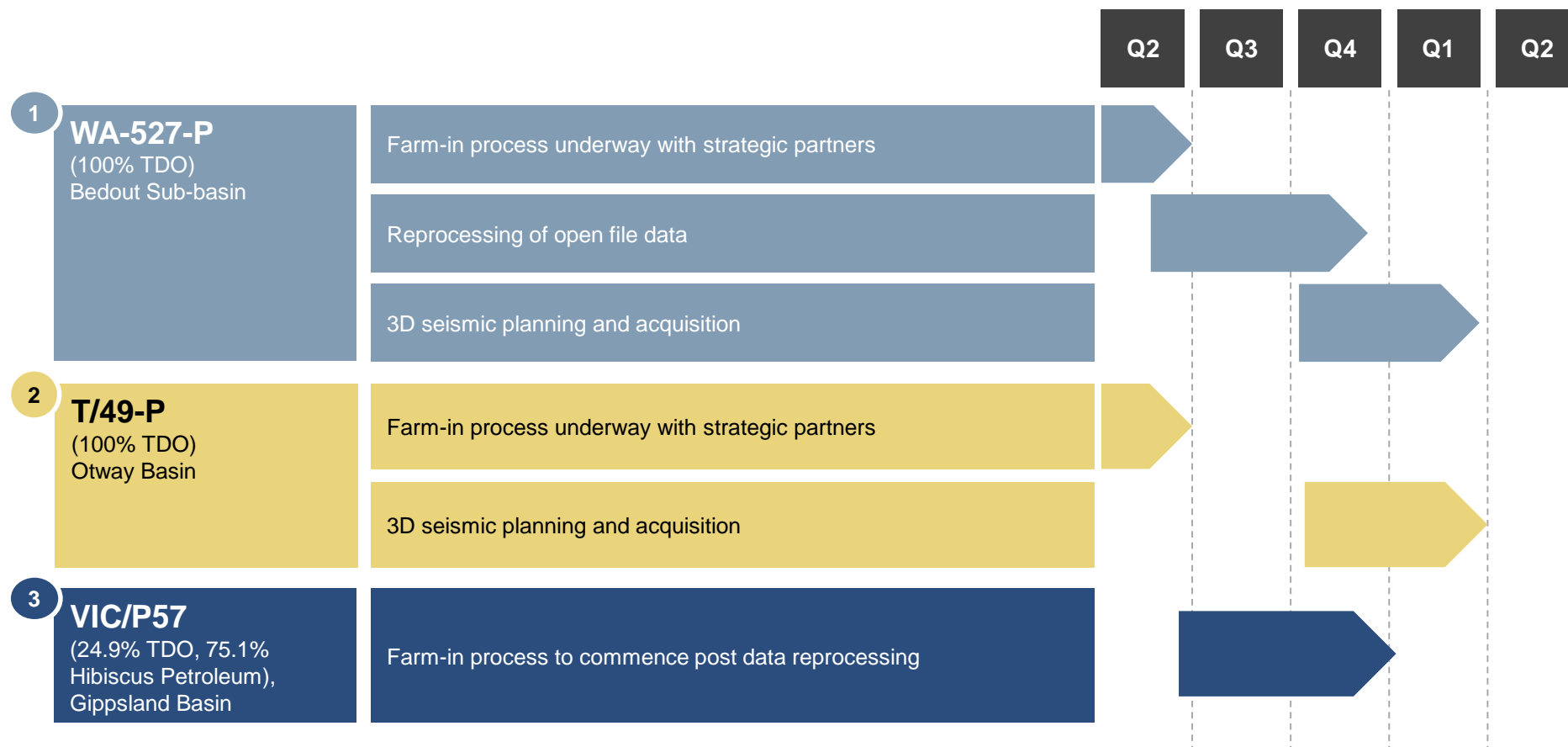
**Felix prospect seismic cross-section**



# FORWARD WORK PROGRAM



3D Oil is pursuing an accelerated exploration program at WA-527-P following the exploration success at Dorado-1 and the industry interest this permit is receiving



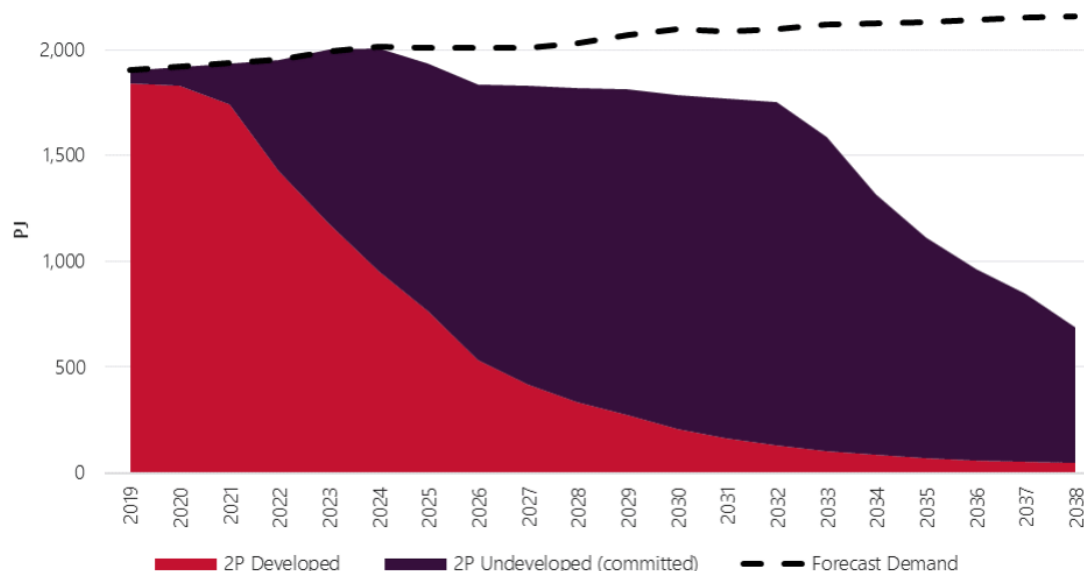


## The long-term supply outlook for the east coast gas market remains uncertain

### Shortfall of supply forecasted

- There is a forecast growing imbalance of gas supply/demand on the east coast
- Whether supply is sufficient to meet demand will rely on the production of undeveloped gas reserves
- The shortfall of supply will continue to result in higher wholesale gas prices
- Expected average 2019 wholesale gas commodity prices in the East coast gas market for producers is \$9.72/GJ <sup>1</sup>

Projected eastern and south-eastern Australia gas production (export LNG and domestic), 2019-38; supply from existing projects and committed developments



Source: AEMO Gas Statements of Opportunities, March 2019

3D Oil are well placed to supply high margin gas production to the east coast gas market

Note:

<sup>1</sup> According to ACCC Gas Inquiry 2017 – 2020 Interim Report December 2018. Based on contracting information provided to ACCC

# EAST COAST GAS MARKET – COMPETITIVE POSITIONING

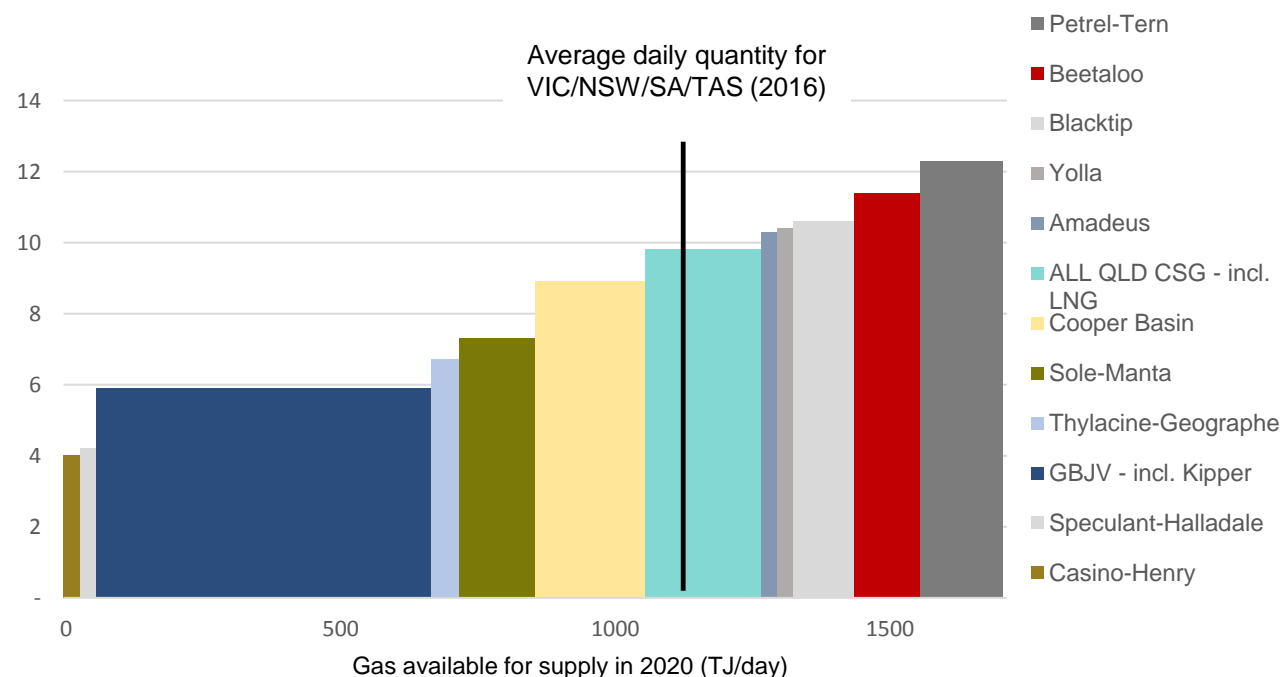


Compared to the upstream gas fields in Queensland and New South Wales, the domestic gas projects in Victoria and Tasmania carry a significant cost advantage to deliver to Melbourne

## Competitive dynamics

- The largest gas supplier to the Melbourne market is the Gippsland Basin Joint Venture with a low delivered cost of c. A\$6/GJ
- Other low cost producers include the Casino-Henry fields and the Sole-Manta fields
- The Thylacine-Geographe fields, located next to 3D Oil's 100%-owned T/49P permit, are also low cost producers
- The QLD coal-seam-gas fields are significantly higher cost suppliers to Melbourne with an delivered cost closer to A\$10/GJ
- **3D Oil's offshore Tasmania and Victoria exploration prospects may benefit from the lower delivered costs and higher margins**

## Delivered Melbourne city gate cost in 2020 (A\$/GJ)<sup>1</sup>



Source: EnergyQuest





## Important Notice

This presentation contains certain statements which may constitute “forward-statements”. Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or project in any forward-looking statements.

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## **Qualified Petroleum Reserves and Resources Evaluator Statement**

The Prospective Resources estimates in this release are based on, and fairly represent, information and supporting documents prepared by, or under the supervision of Dr David Briguglio, who is employed full-time by 3D Oil Limited as Exploration Manager. He holds a BSc.Hons and PhD in Petroleum Geoscience and has been practicing as a Petroleum Geoscientist for 8 years. Dr Briguglio is qualified in accordance with ASX listing rule 5.41 and has consented in writing to the inclusion of the information in the form and context in which it appears.

## **Prospective Resources**

The estimates have been prepared by the company in accordance with the definitions and guidelines set forth in the Petroleum Resources Management System, 2011 approved by the Society of Petroleum Engineer. Prospective Resource estimates are for recoverable volumes and unless otherwise stated this report quotes Best Estimates and gross volumes. The estimates are unrisks and have not been adjusted for both an associated chance of discovery and a chance of development. The Prospective Resources have been estimated probalistically.