Norwest Energy NL

Company Highlights
Spotlight : The Xanadu Story

SHELLEY ROBERTSON
Managing Director & CEO

JUNE / JULY 2018

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Norwest Energy N.L.

A Junior Listed Exploration Company with Perth Basin focus

ASX:NWE

About Norwest

- Listed on the ASX for 20 years (ASX:NWE)
- Project portfolio focus on the northern Perth Basin with the objective to mature drillable prospects
- Permits strategically located close to pipelines, infrastructure and markets meaning projects can be rapidly fast-tracked to commercialisation
- Ongoing review of opportunities to expand the portfolio, create company growth and increase shareholder value
- The Xanadu Discovery will drive an intensive exploration program planned for 2018 and beyond

Board & Management

Michael Fry, Non-Executive Chairman

- Extensive experience in capital markets and corporate treasury, specialising in risk management.
- Non-Executive Chairman of Brookside Energy and Challenger Energy Limited.

David Kennedy, Non-Executive Director

- Founding Shareholder & Director of NWE.
- Long association with Australian and New Zealand resource companies.
- Established several successful listed companies (Pan Pacific Petroleum, NZ Oil & Gas, Mineral Resources and Otter Exploration). Chairman of Pancontinental Oil and Gas NL.

Jim Tarlton, Board Advisor

- 30+ years of oil and gas experience in drilling, production, reservoir engineering and asset management.
- Technical Director, Tamarind Resources.
- Previous VP Operations, Talisman Energy Malaysia.
- Co-Founder and Director of Well Experts Services
- BA Science (Honours) in Chemical Engineering from Queen's University, Canada.

Shelley Robertson, Managing Director & CEO

- Significant senior management experience in the resources industry with 25+ years experience in O&G, mining, infrastructure and renewables.
- On the senior management team since 2010.
- Director Telethon T1D Family Centre
- Order of Australia Bravery Medal 2006

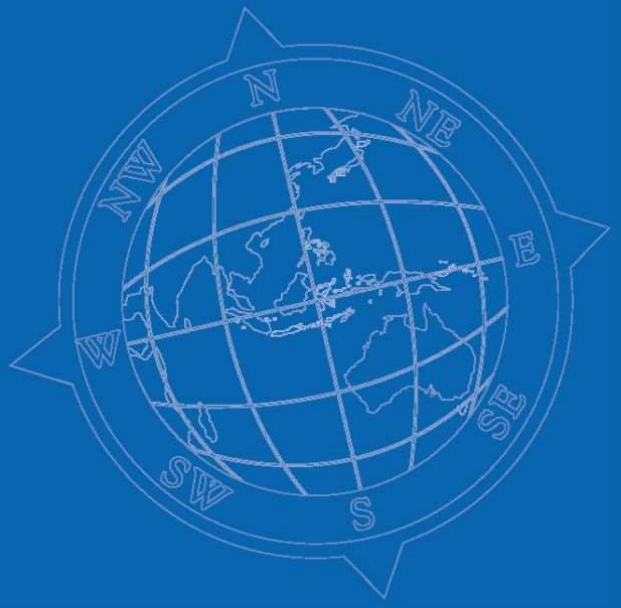
Jo-Ann Long, CFO & Company Secretary

- Corporate Finance Executive and CA with over 25 years of experience in building, leading and advising corporations on financial management, restructures, international expansion, acquisitions and risk management
- Strong expertise in JV management, tax strategies and governance.
- Member of the Australian Institute of Company Directors

Corporate Details

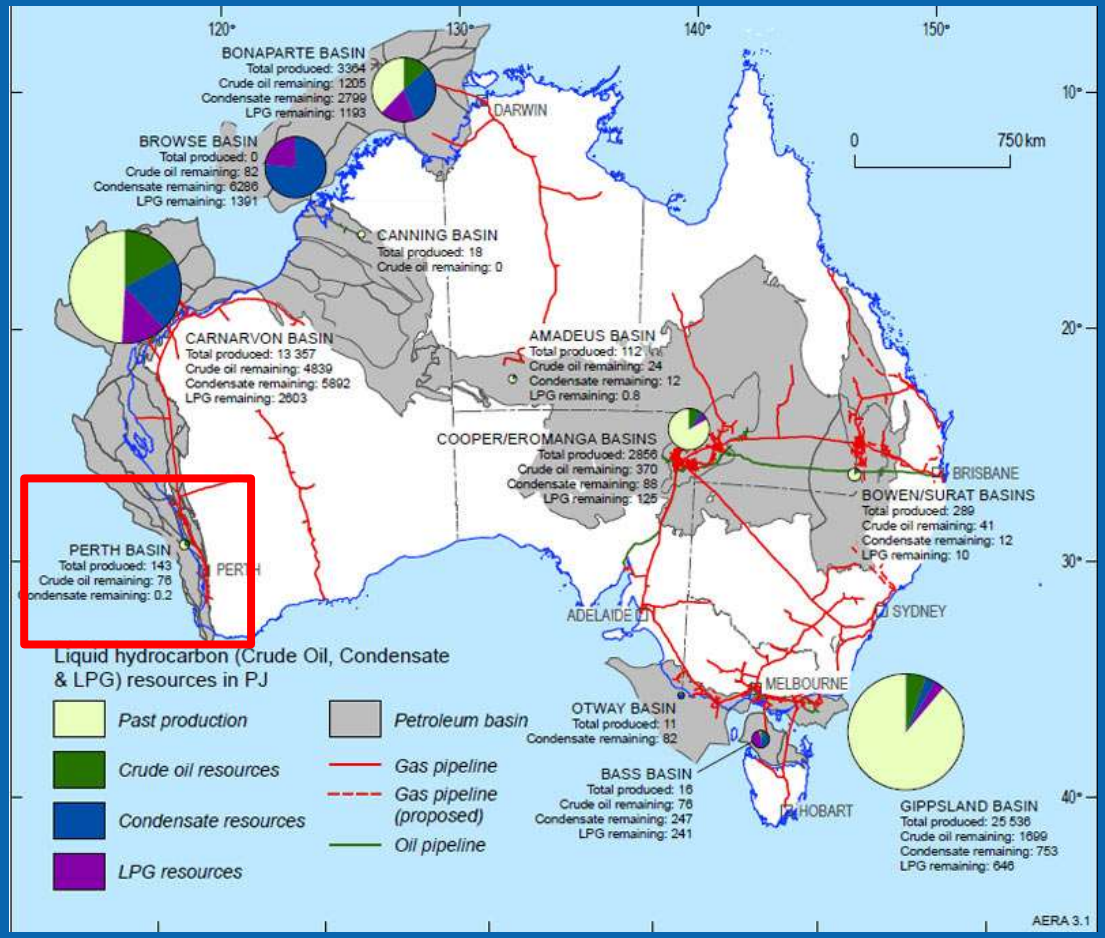
ASX code	NWE
Share price (as at 12/07/2018)	0.3 cents
Ordinary shares	3,382,092,727
Market capitalisation	A$10 million
Cash (as at 31 Mar 2018)	A$1.865 million
Debt	Nil

Norwest project focus : The Perth Basin



Perth Basin Location

- The Perth Basin is a N-NNW trending onshore and offshore sedimentary basin, extending 1300km along the SW margin of the Australian continent.
- The first successful well Yaradino-1 was drilled by WAPET in 1964, and since that time, 366 additional wells have been drilled, with 42 conventional and 6 unconventional fields being discovered.
- Huge potential remains in this vastly underexplored region of Western Australia.



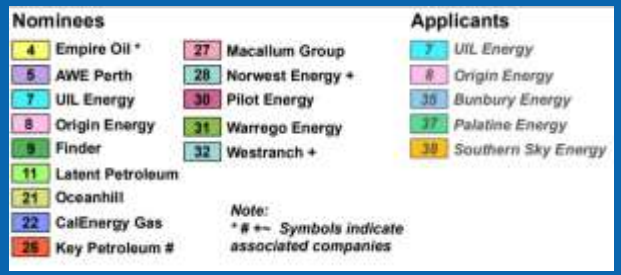
http://www.ga.gov.au/scientific-topics/energy/resources/petroleum-resources/gas

Activity in the Perth Basin

- Recent increase in corporate activity brings heightened focus to the basin:
  - Mineral Resources acquires Empire Oil & Gas
  - successful Mitsui takeover of AWE Limited
  - Strike Energy acquire 50% and operatorship EP469

- Activity poised to increase over the next 12 months with Perth Basin operators planning a multi-well drilling campaign commencing early 2019

- Norwest set to capitalise on cost-savings presented by this campaign with the planning for Lockyer-Deep and Xanadu wells in 2019 (subject to regulatory approvals, JV agreements and funding)

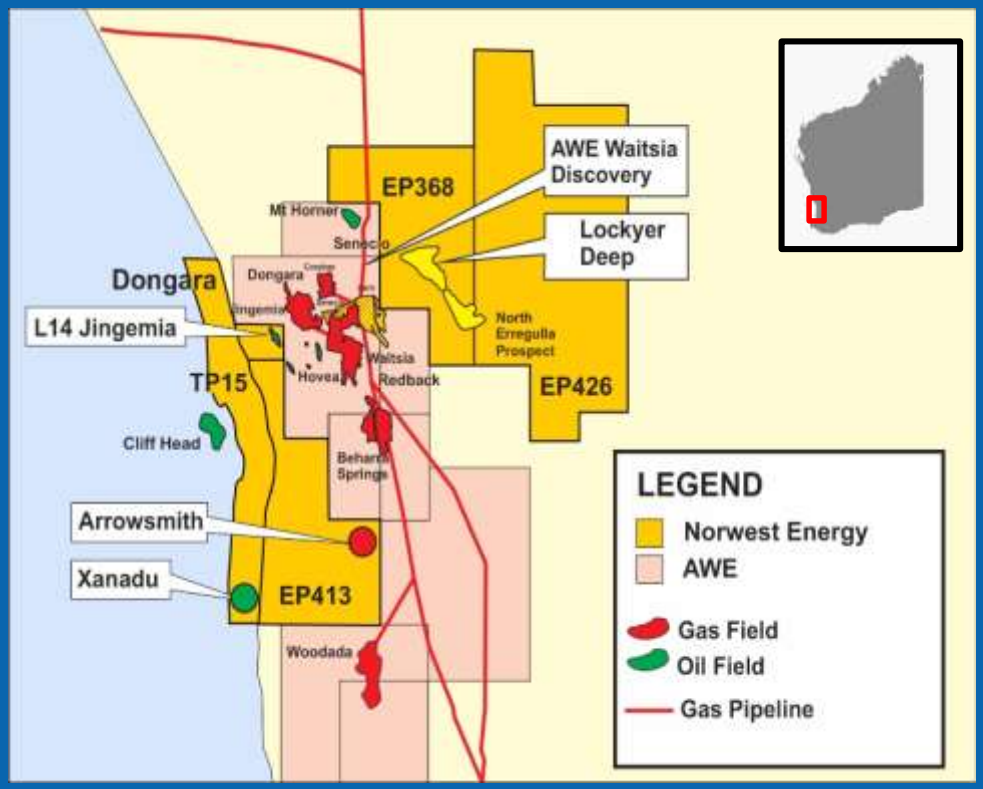


http://www.dmp.wa.gov.au/Documents/Petroleum/PD-SBD-GEO-104D.pdf

Norwest Portfolio

Norwest participates in five permits in the northern Perth Basin:

- EP368 and EP426 in partnership with Mineral Resources;
- EP413 in partnership with AWE Limited (Mitsui) and Bharat Petro Resources;
- L14 hosts the producing Jingemia Oil Field where Norwest partners with RCMA and Cyclone Energy.; and
- Lying within state waters is the TP/15 permit hosting the Xanadu discovery.



The recent onshore Waitsia gas discovery, regarded as the largest onshore conventional gas discovery in Australia for 30 years sits immediately adjacent to Norwest acreage.

Permit Summary

TP/15	OIL	NWE 25% OPERATOR	SEISMIC H2 2018 (Pending regulatory approvals) **FOLLOW UP WELL 2019 PENDING RESULTS FROM SEISMIC**
L14	OIL PRODUCTION, OIL & GAS EXPLORATION UPSIDE	NWE 6.278%	WORKOVERS SCHEDULED TO **ENHANCE PRODUCTION** PLUS EVALUATION OF EXPLORATION UPSIDE
EP368	GAS WAITSIA ANALOGUE	NWE 20%	WELL CURRENTLY PLANNED 2019 **DUAL PROSPECTS LOCKYER-DEEP AND NORTH ERREGULLA**
EP413	OIL, GAS & CONDENSATE	NWE 27.945% OPERATOR	ON HOLD PENDING STATE GOVERNMENT INQUIRY INTO HYDRAULIC FRACTURE STIMULATION
EP426	OIL & GAS	NWE 22.22%	CURRENT G&G FOCUS WITH SEISMIC COMMITMENT DUE 2020/21

TP/15
Xanadu Discovery

The potential for a company-maker…..

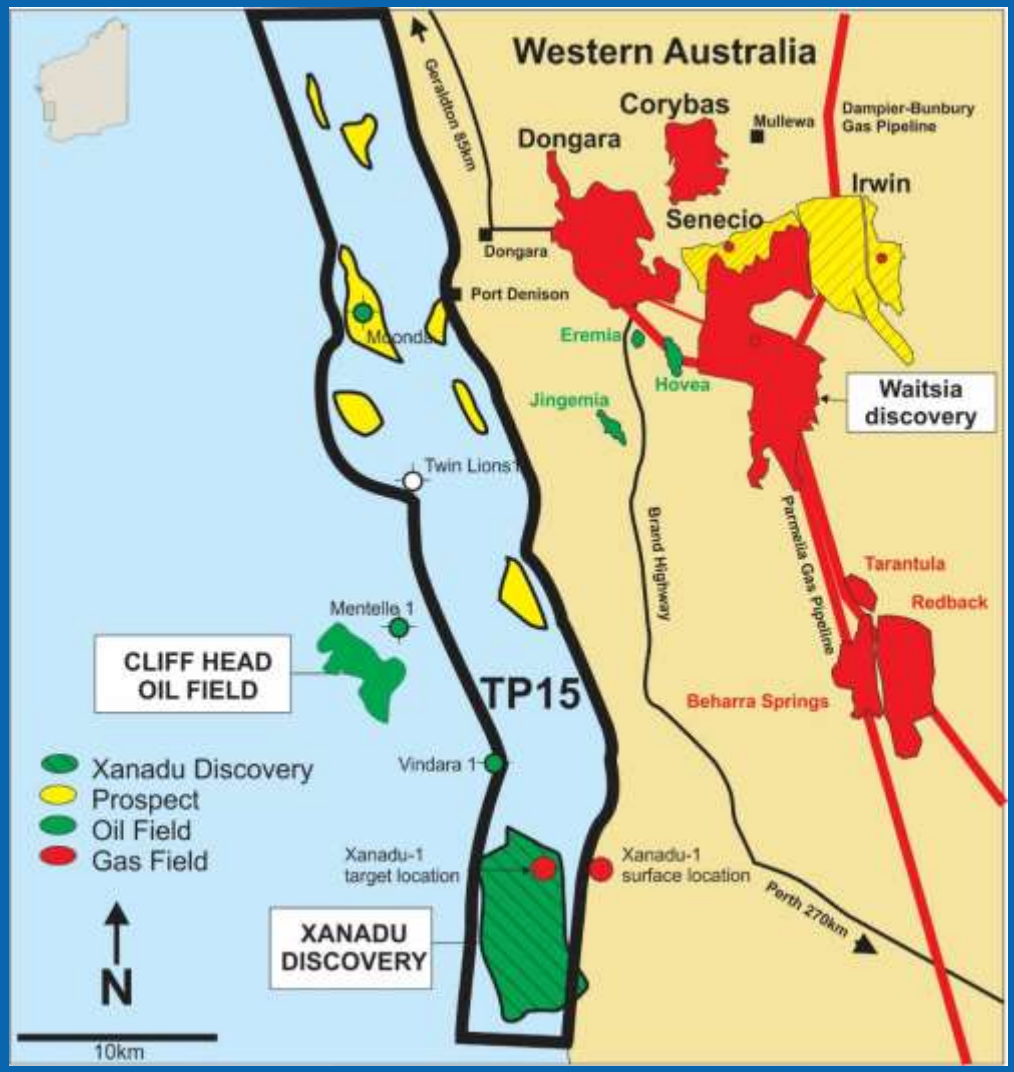
Xanadu-1 Drilling Location, 11 September 2017

Joint Venture

Norwest Energy Operator	25%
3C Group	30%
Triangle (Global) Energy	30%
Whitebark Energy	15%

Xanadu Location

- TP/15 is located in the Perth Basin, Western Australia.
- The permit occupies the 3 nautical mile wide state territorial waters of Western Australia.
- The **Xanadu Discovery** is located at the southern end of TP/15, and is situated approximately 250 km north of Perth.
- Xanadu is located 12km SE of producing Cliff Head Oil Field and onshore processing facility.



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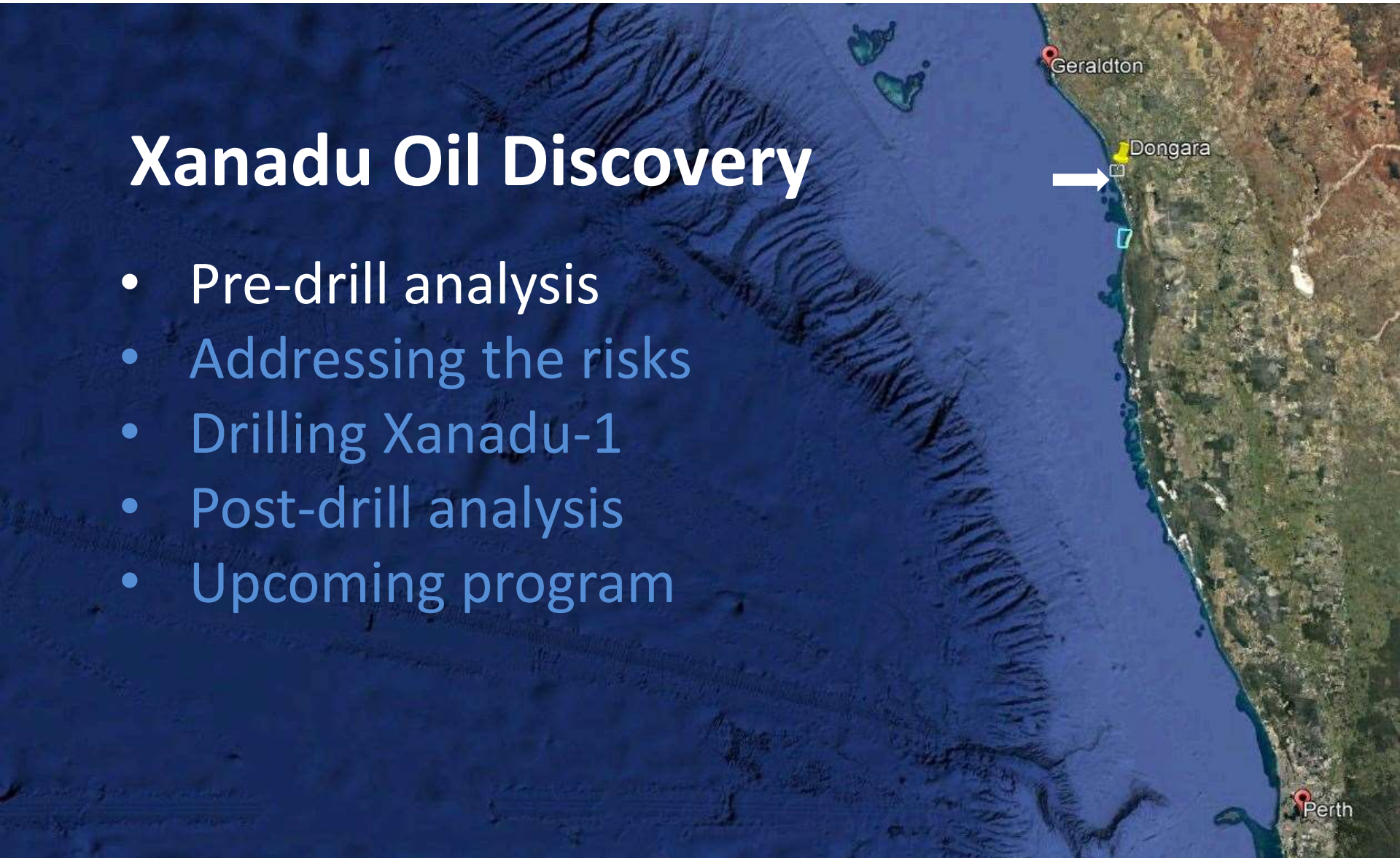
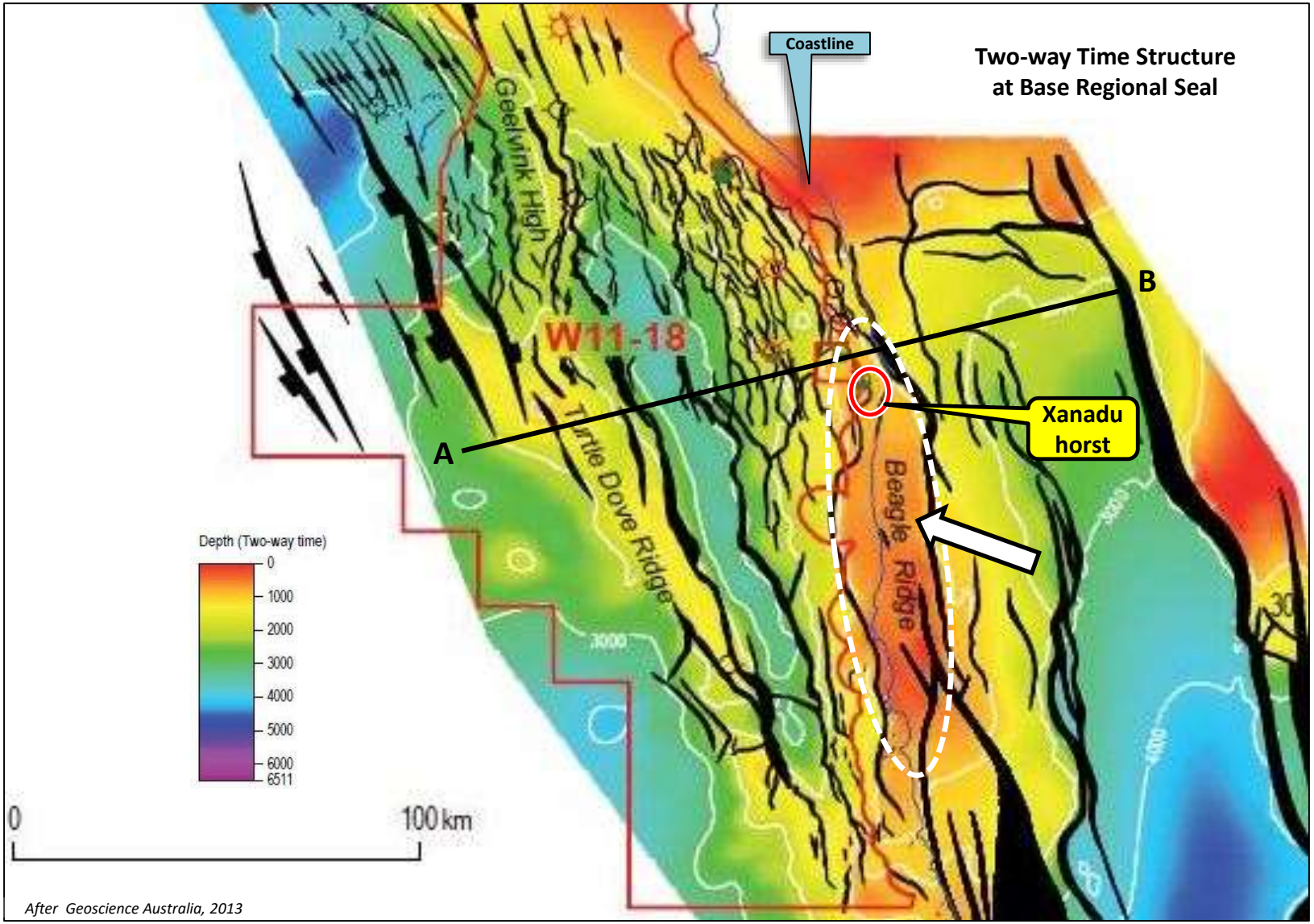
Xanadu Oil Discovery

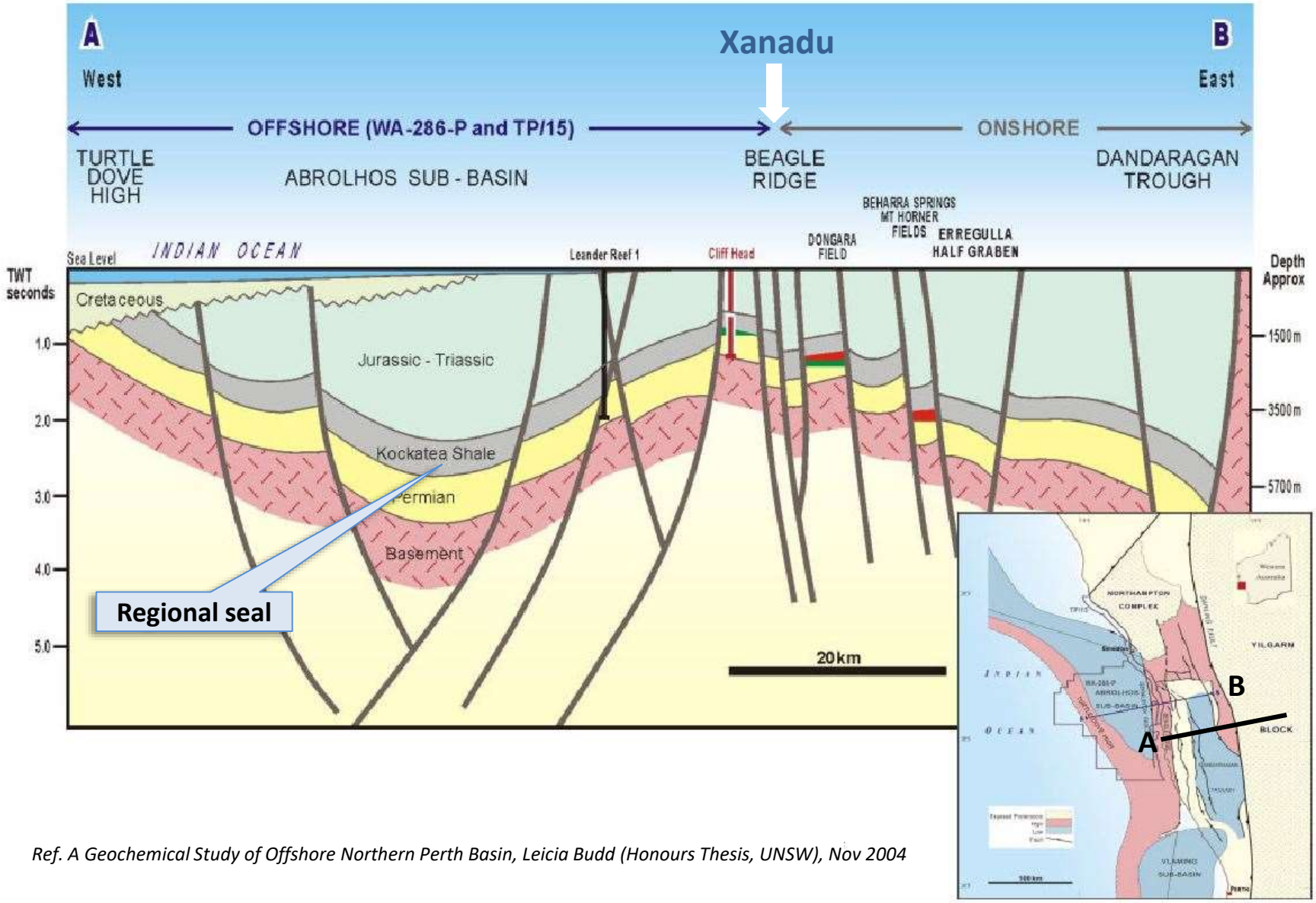
- Pre-drill analysis
- Addressing the risks
- Drilling Xanadu-1
- Post-drill analysis
- Upcoming program



Regional Structure

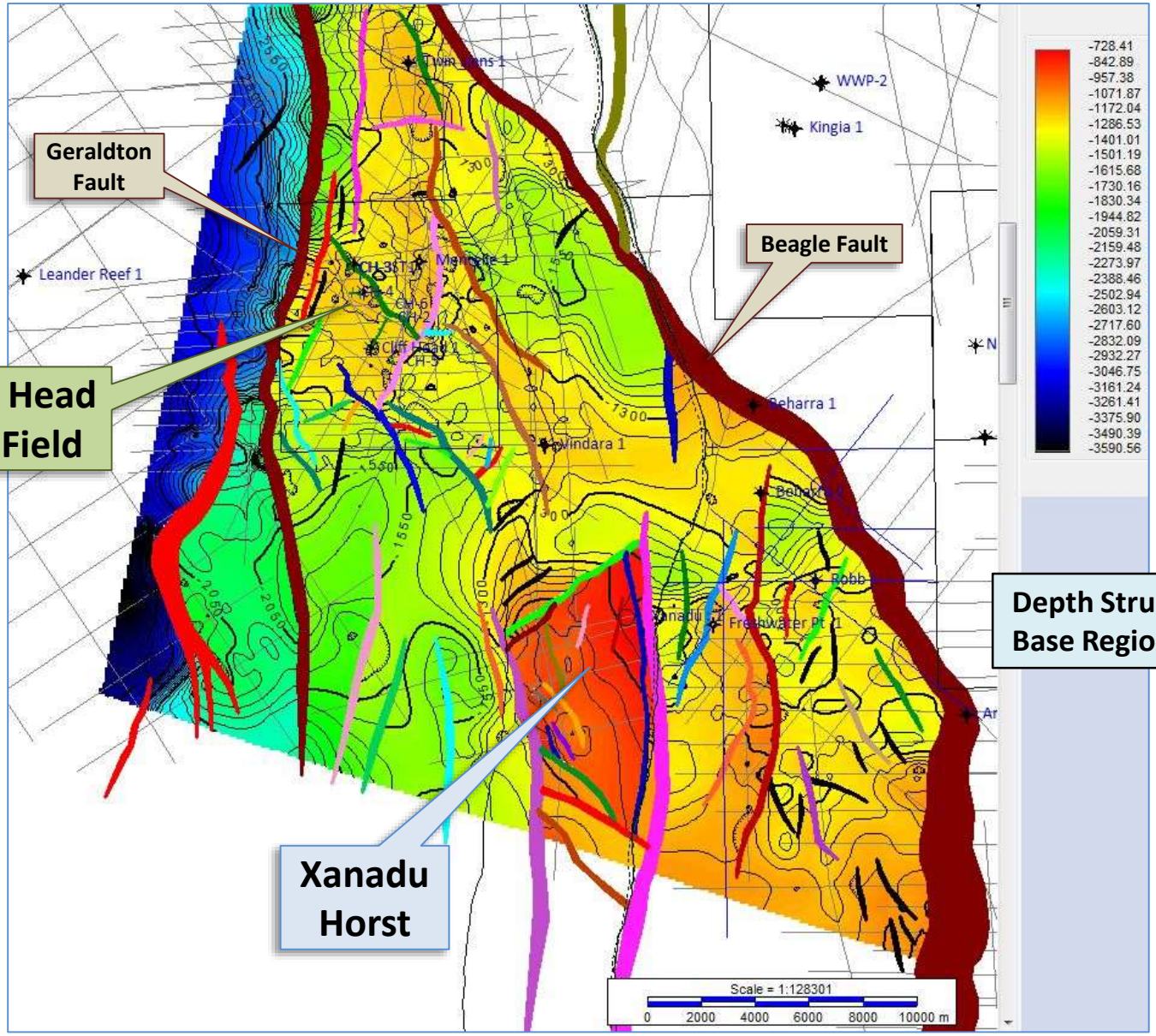


Structural Setting

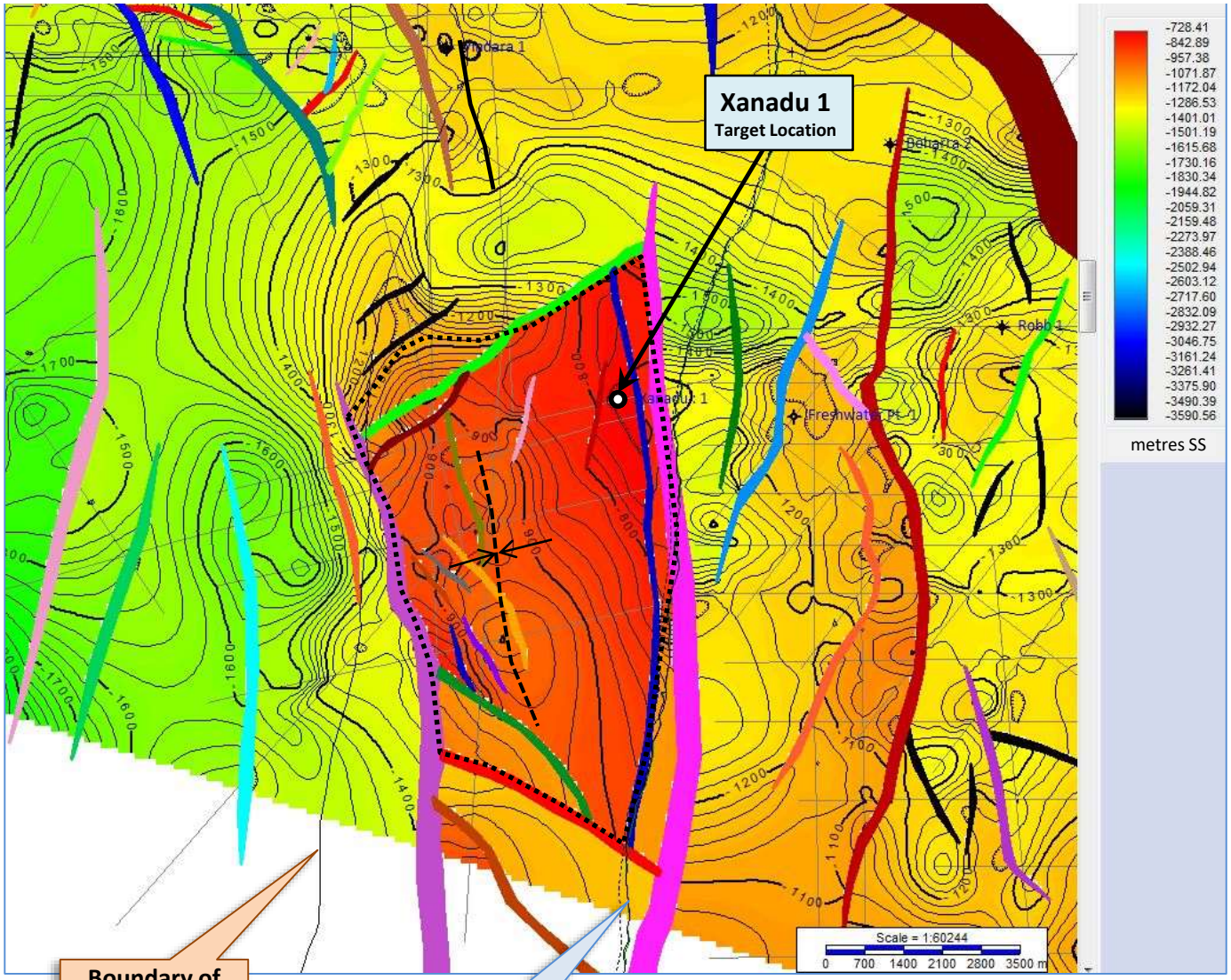


Ref. A Geochemical Study of Offshore Northern Perth Basin, Leicia Budd (Honours Thesis, UNSW), Nov 2004

Northern end of Beagle Ridge

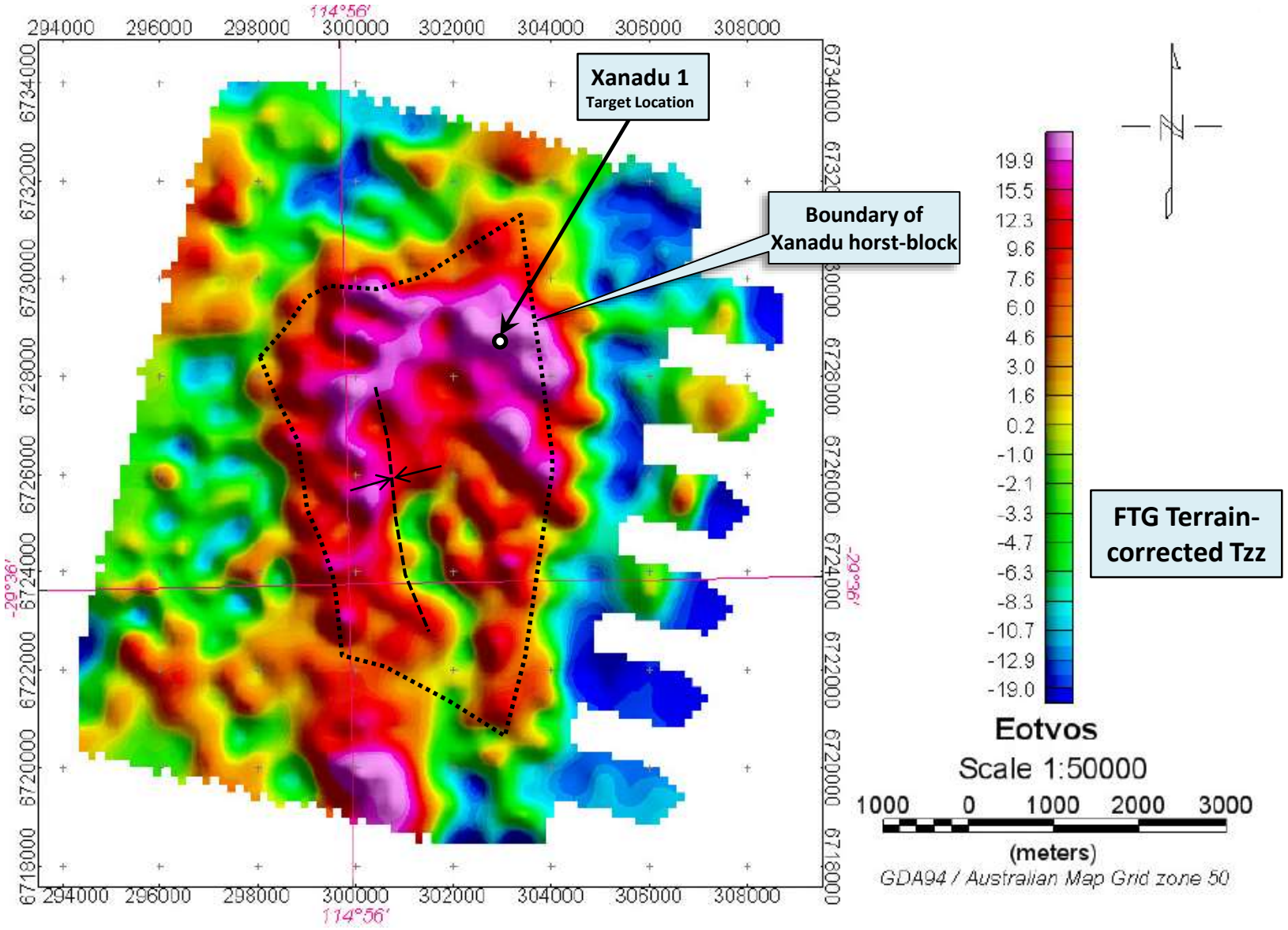


Xanadu Pre-drill Structure

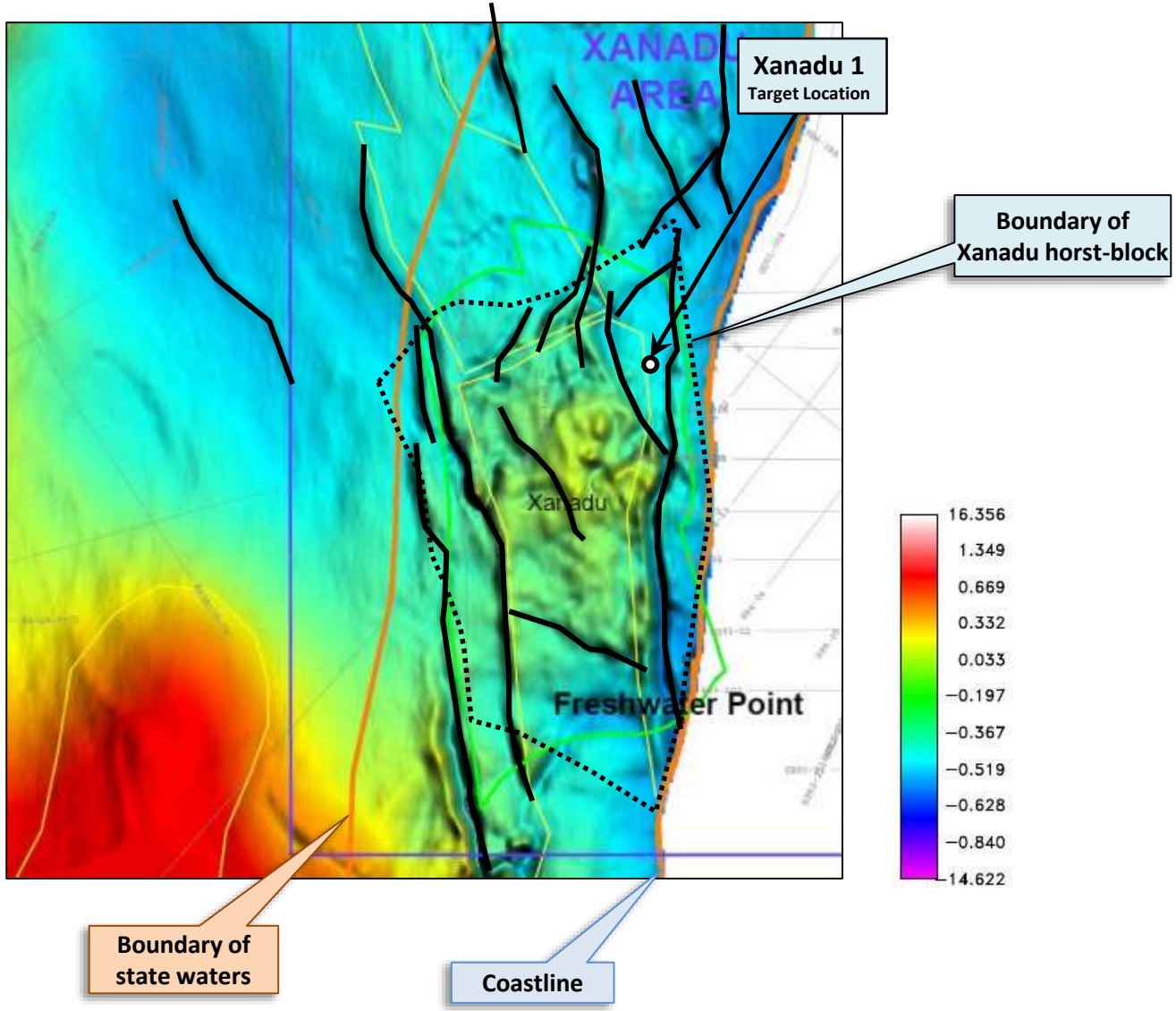


Depth Structure at Base Regional Seal

Gravity Expression

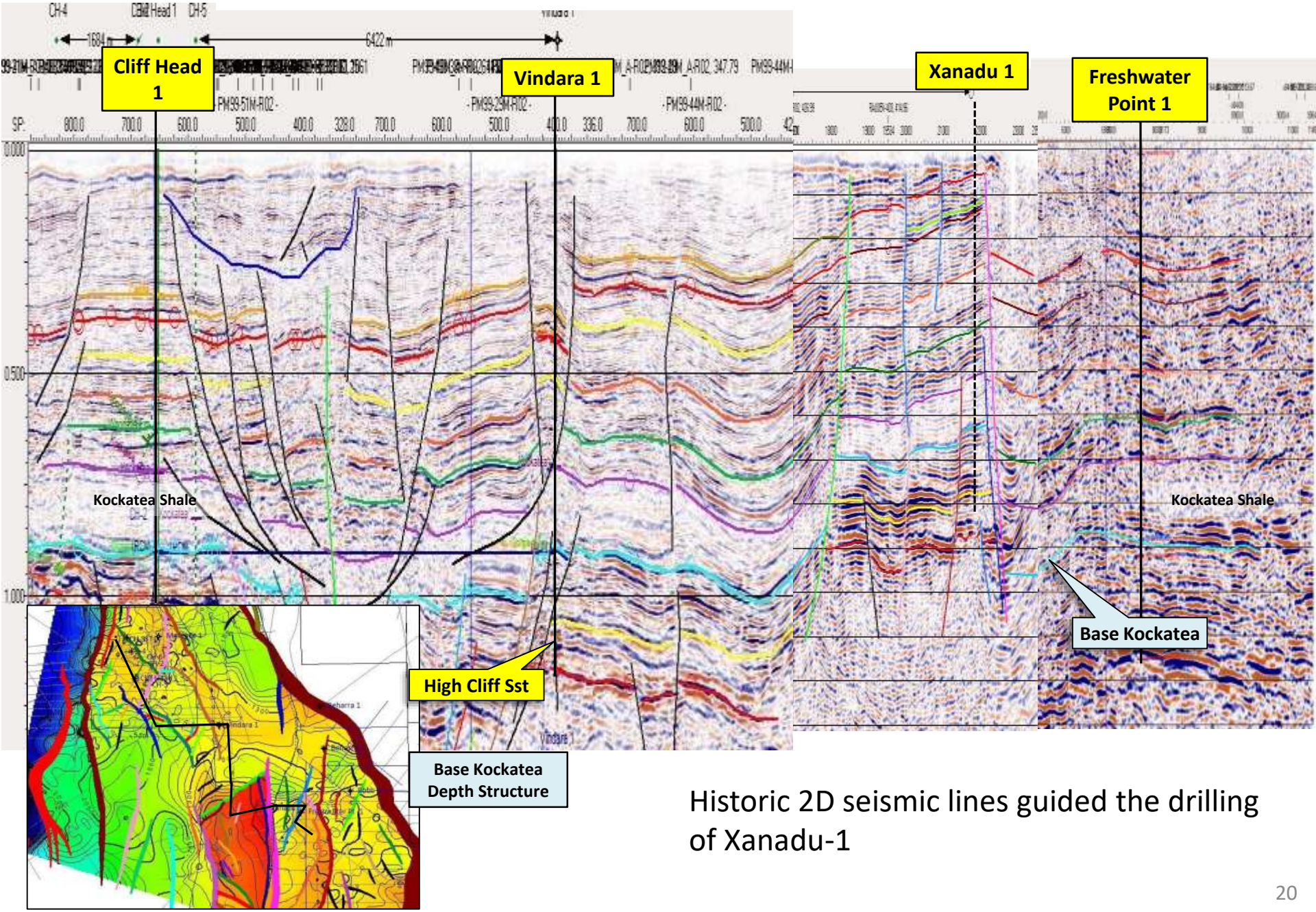


Total Magnetic Intensity



0.5 x Vertical Derivative of Total Magnetic Intensity

Cliff Head – Vindara 1 – Xanadu - Freshwater Point 1



Historic 2D seismic lines guided the drilling of Xanadu-1

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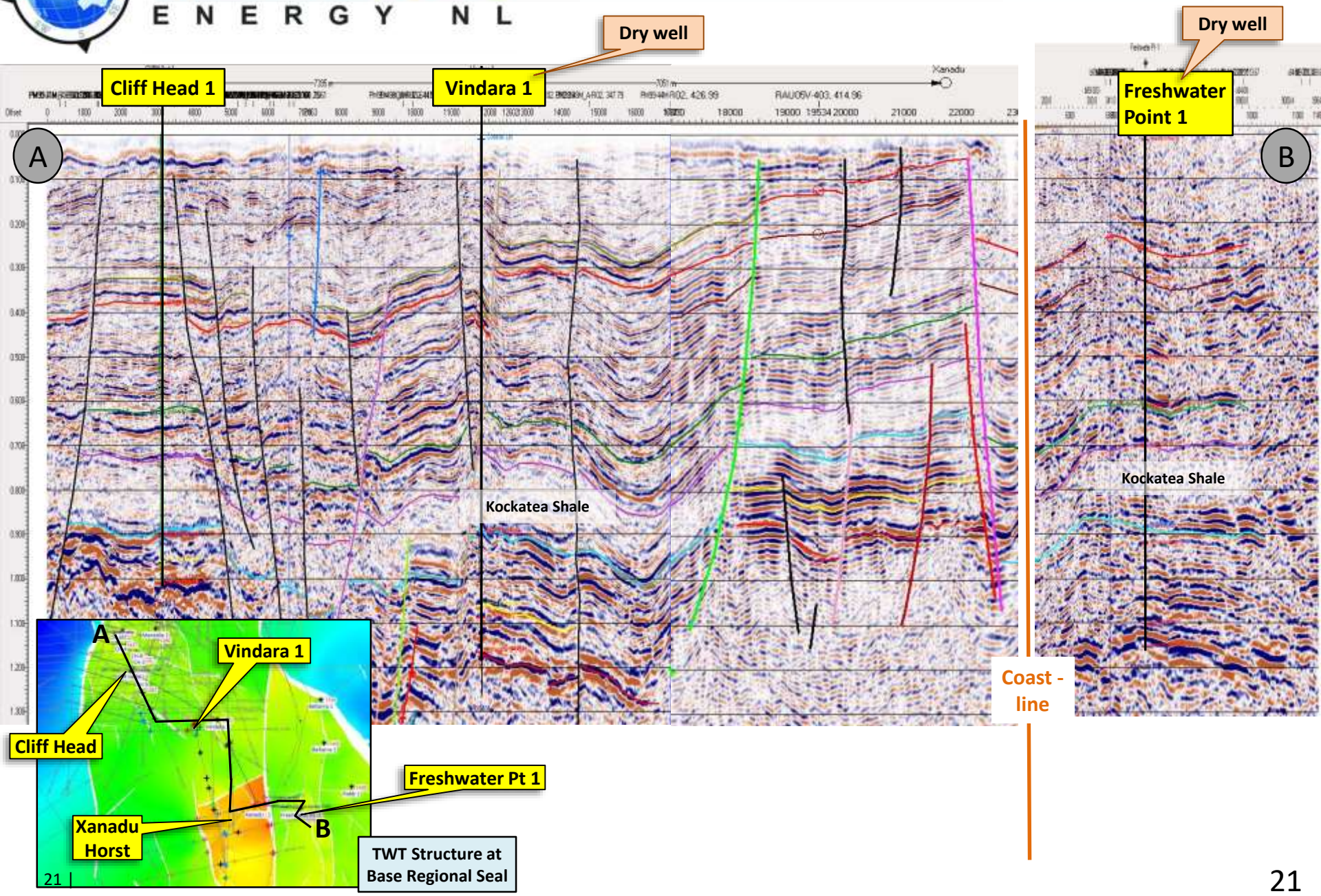
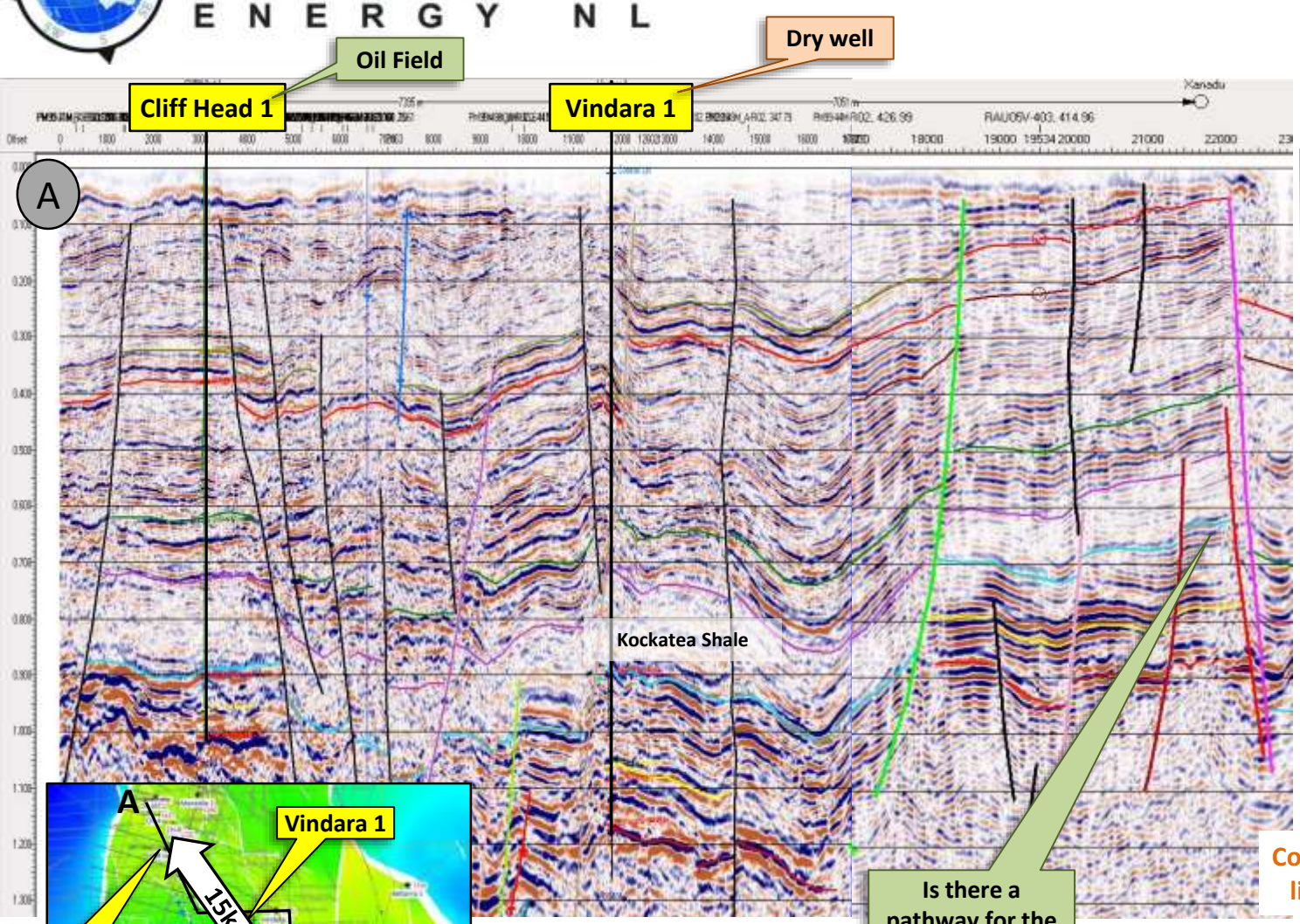
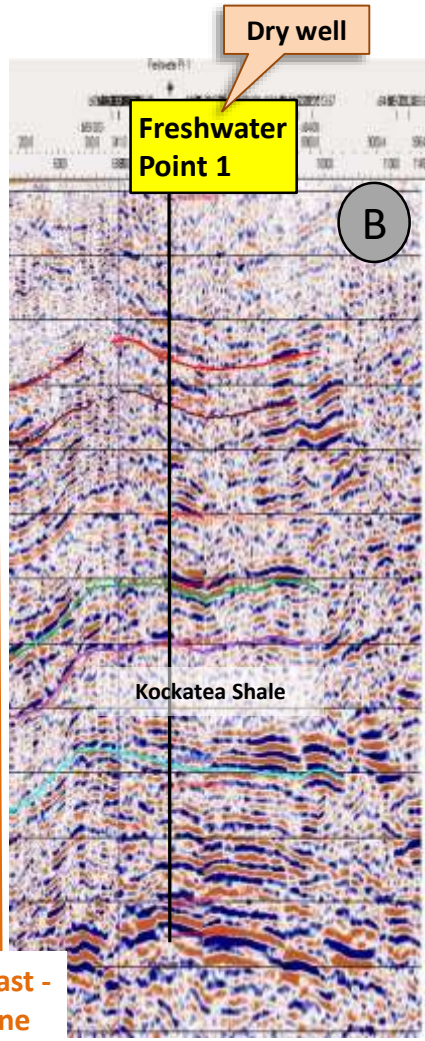
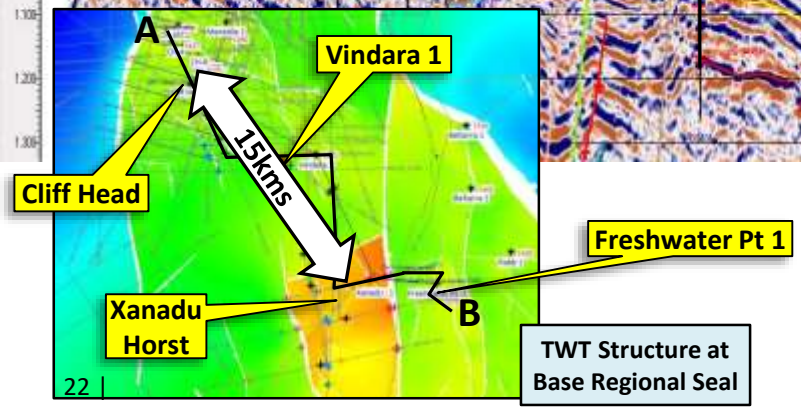
Adjacent wells were dry!



Nearby oil – did it reach Xanadu?







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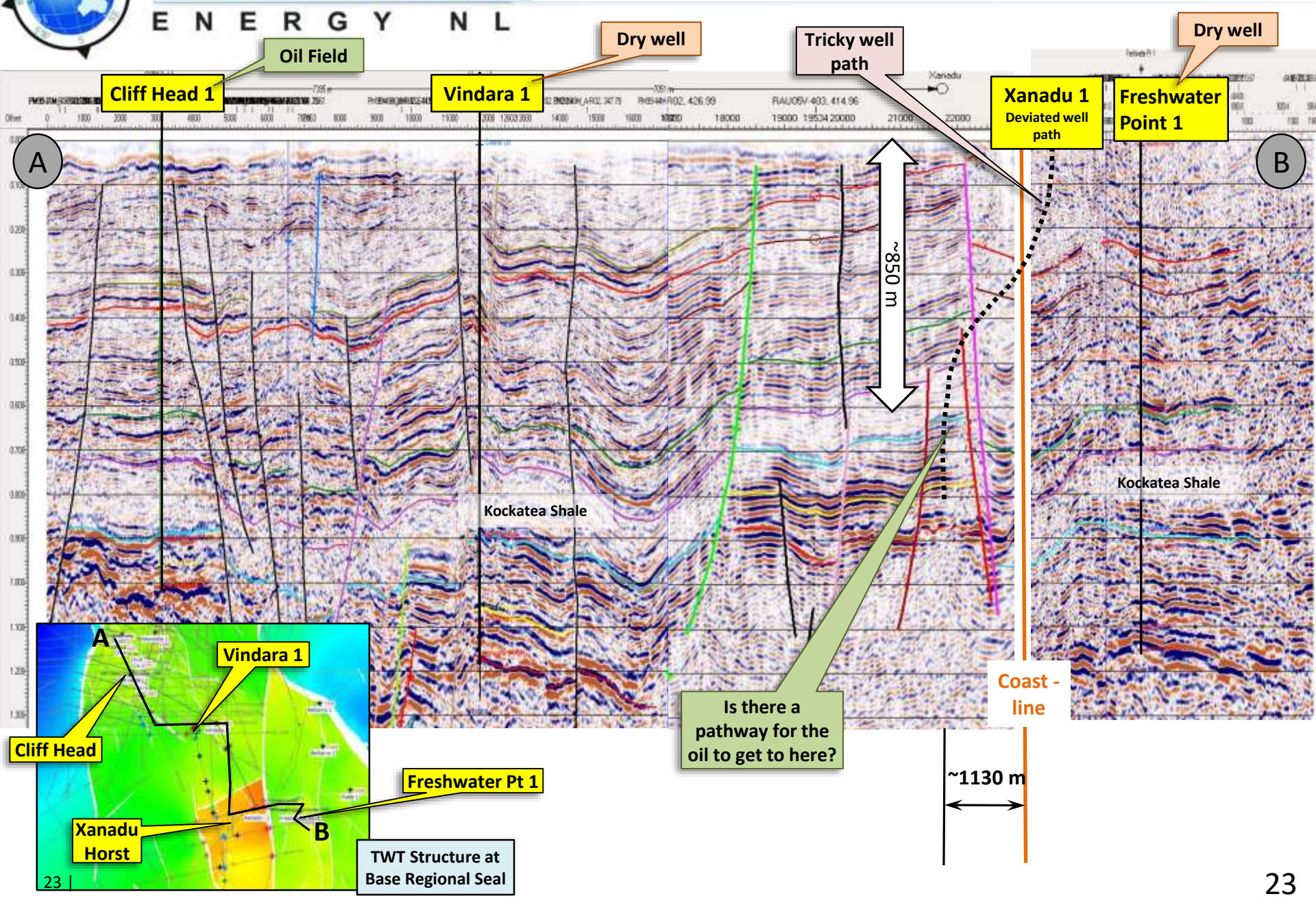
Shallow target – challenging drill!



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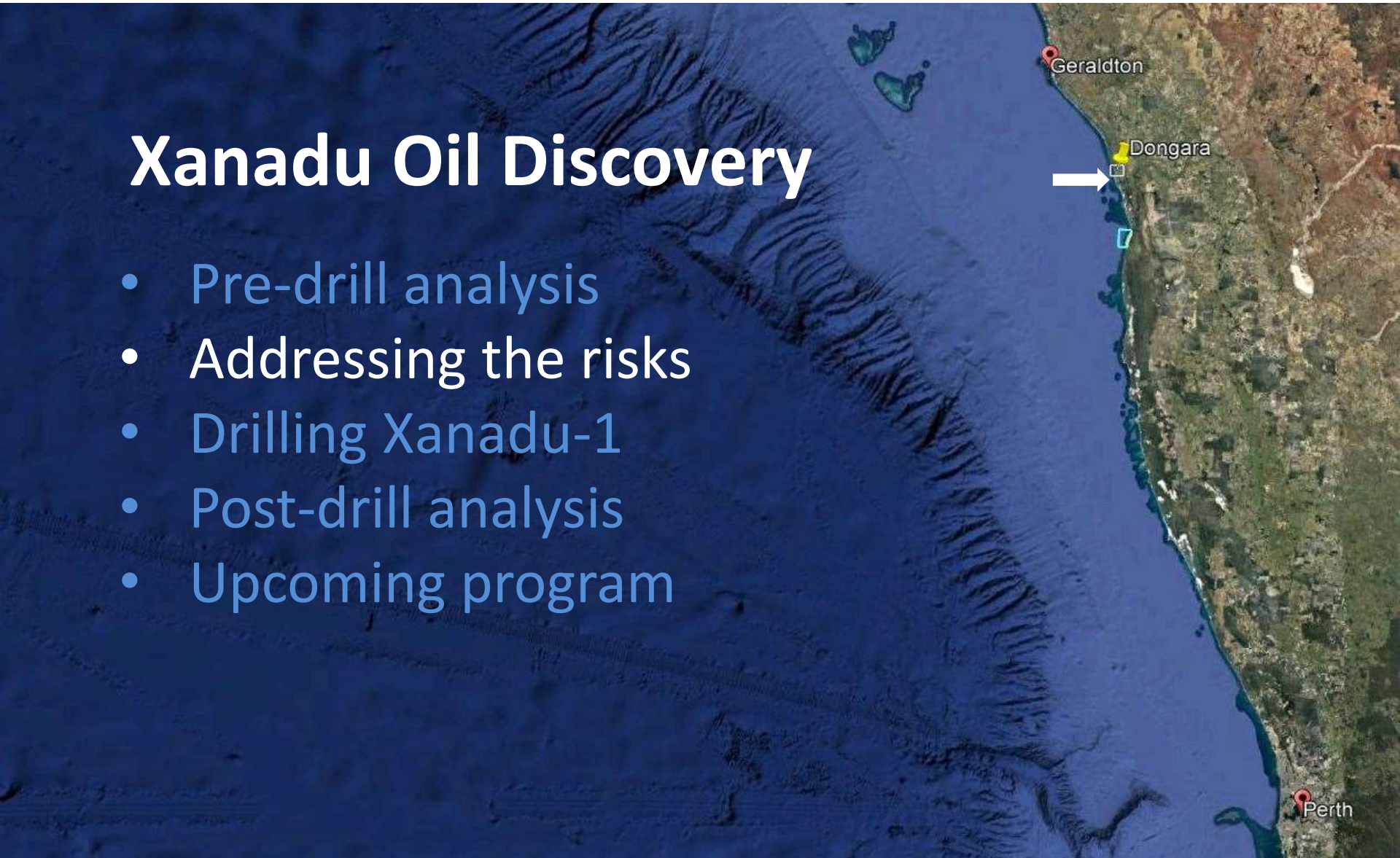
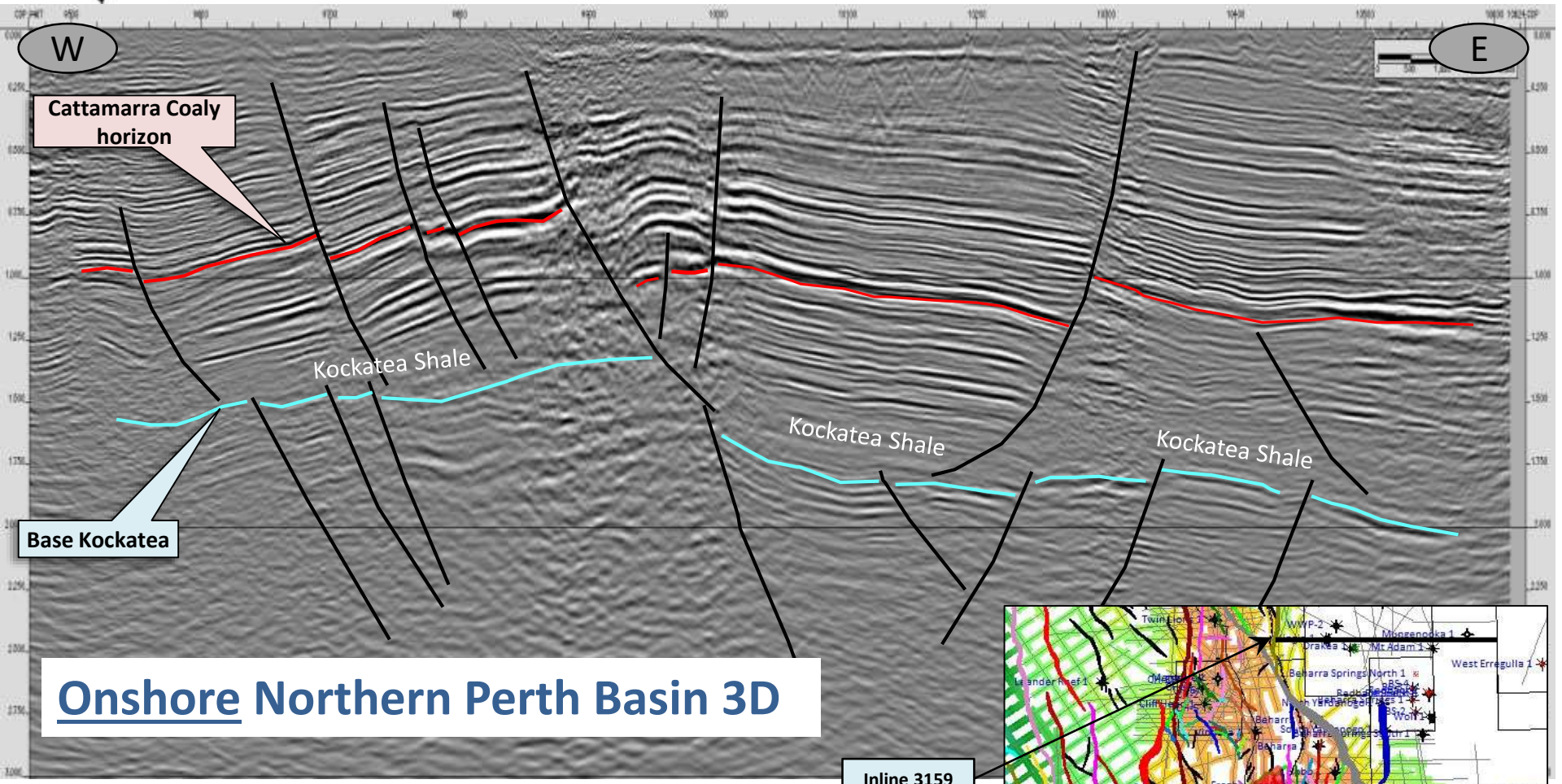
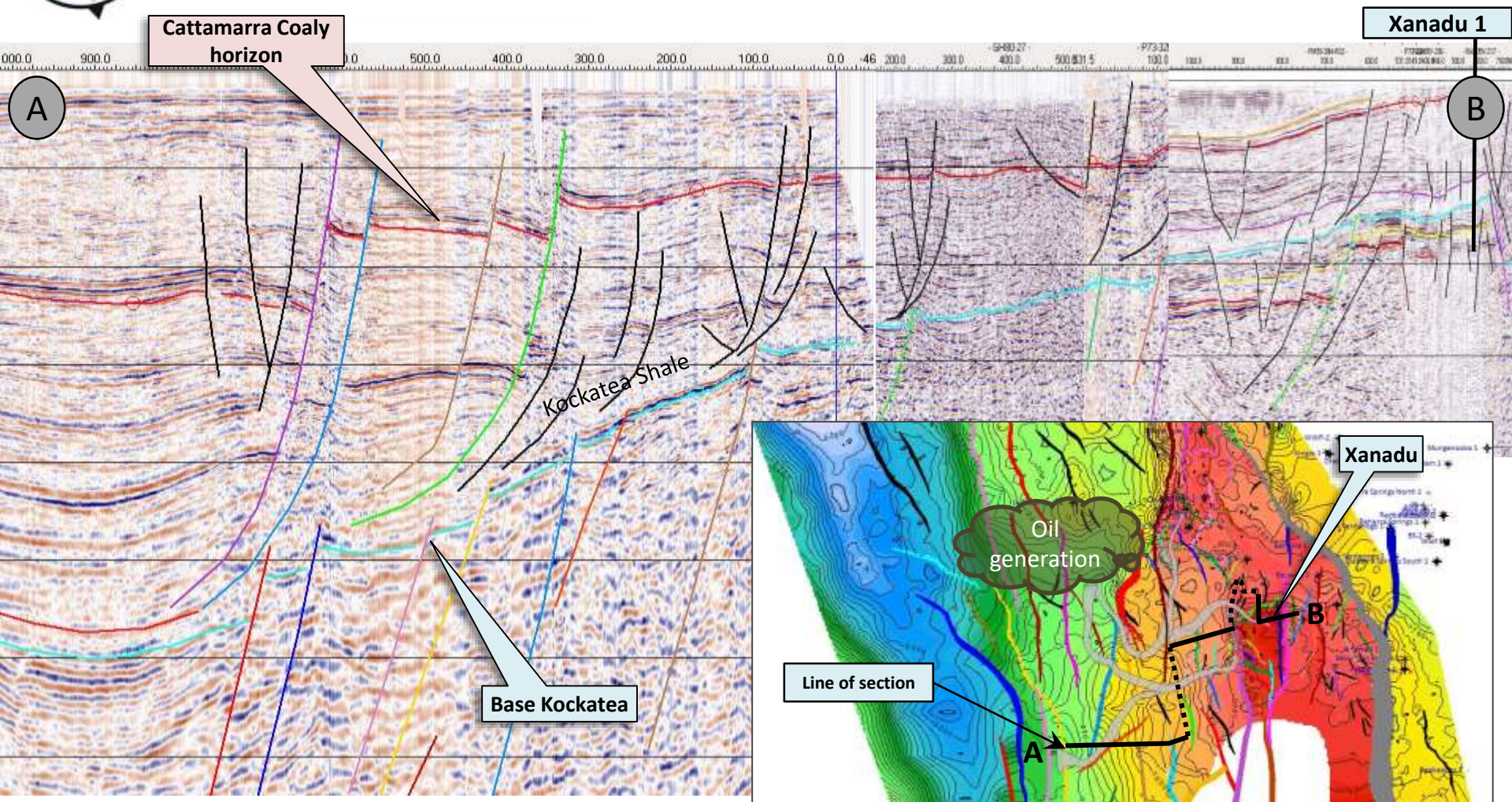


Kockatea Shale > fault detachment



Kockatea Shale acts as a detachment zone, isolating much of the younger fault movement from the older, deeper fault planes

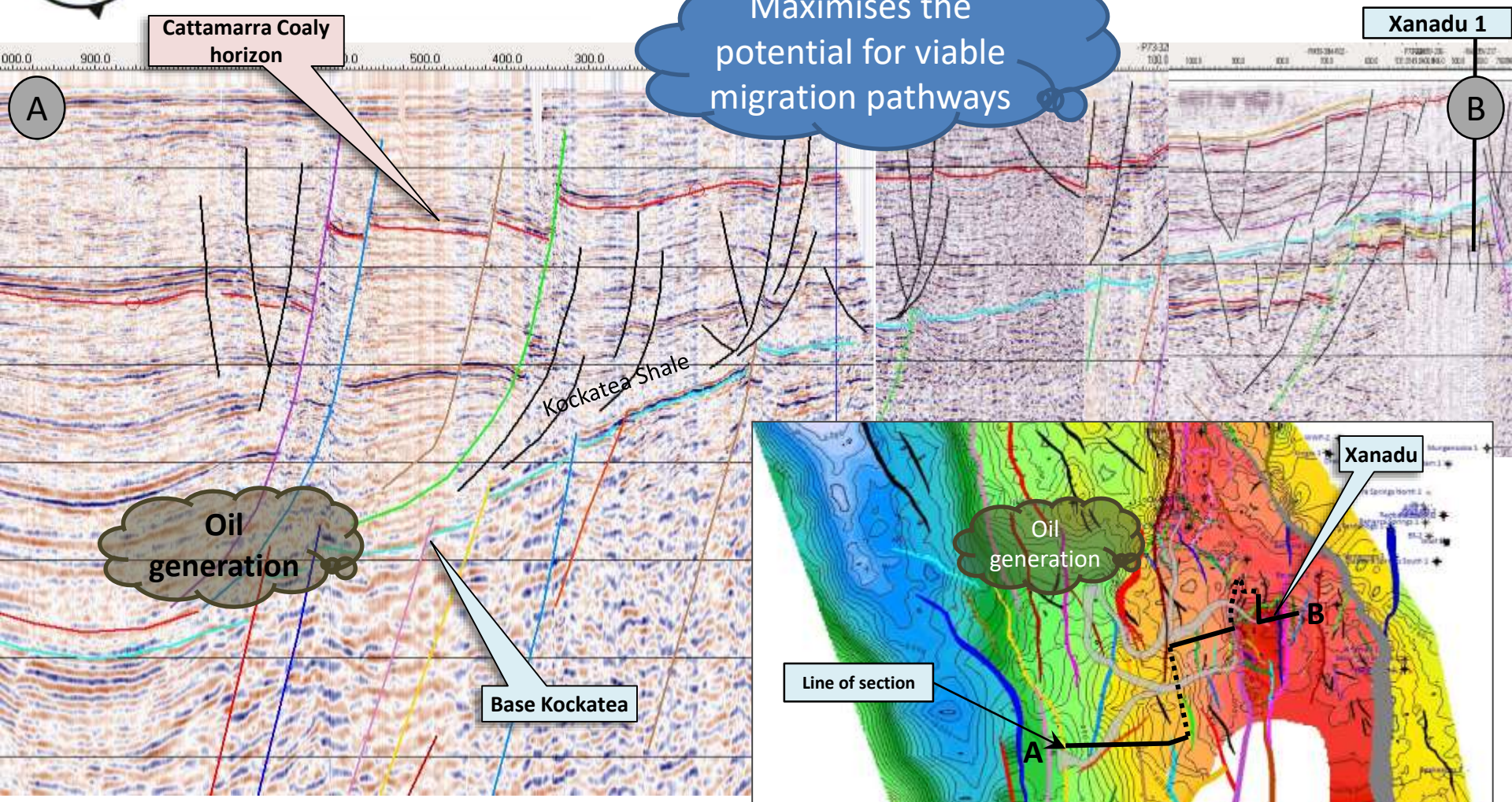
Kockatea Shale > fault detachment

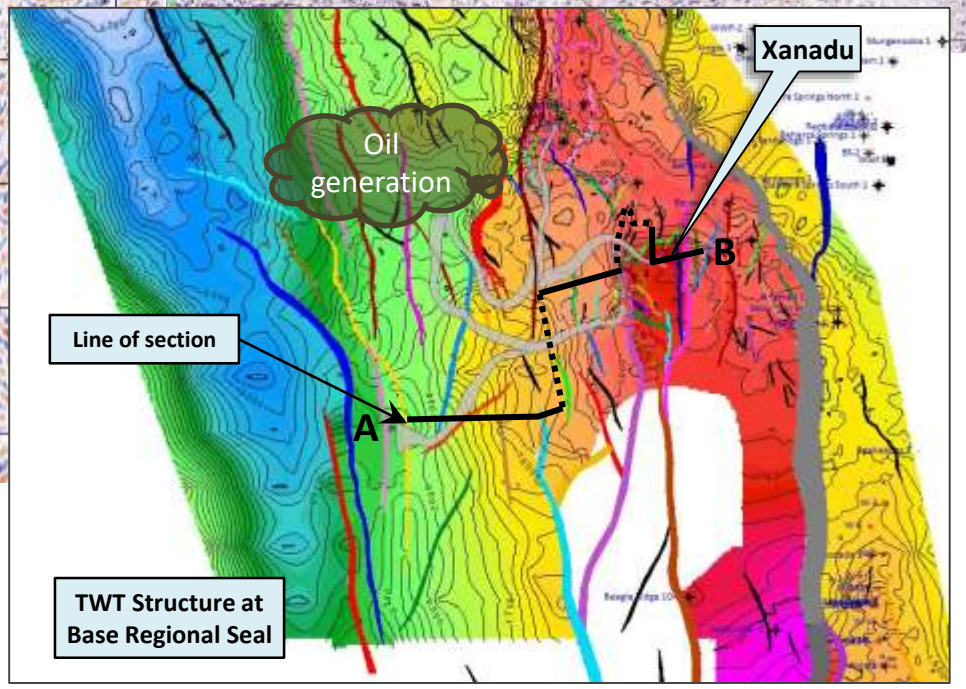


Kockatea Shale acts as a detachment zone, isolating much of the younger fault movement from the older, deeper fault planes

Credible migration pathways

Maximises the potential for viable migration pathways





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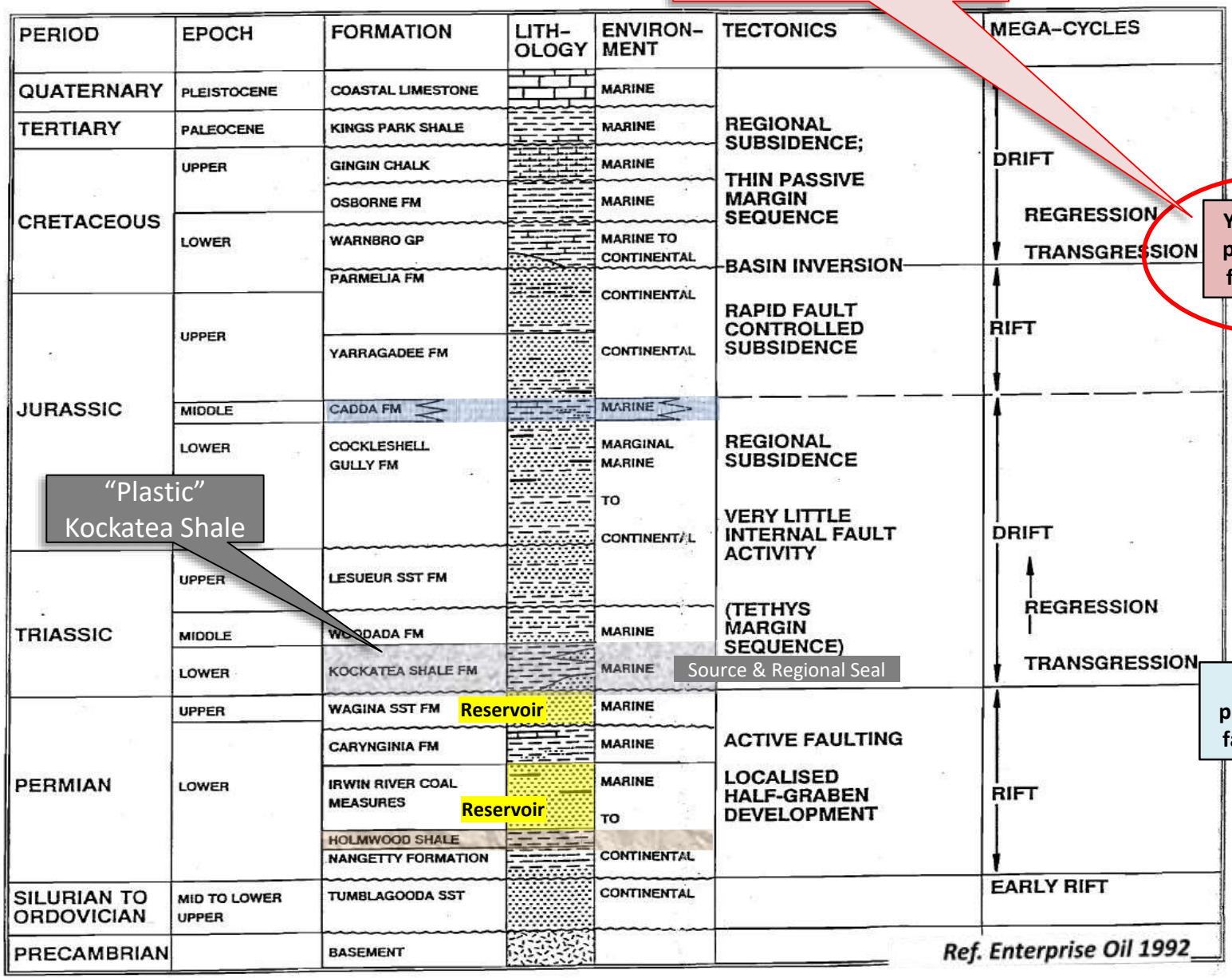
Tectonic and Depositional History

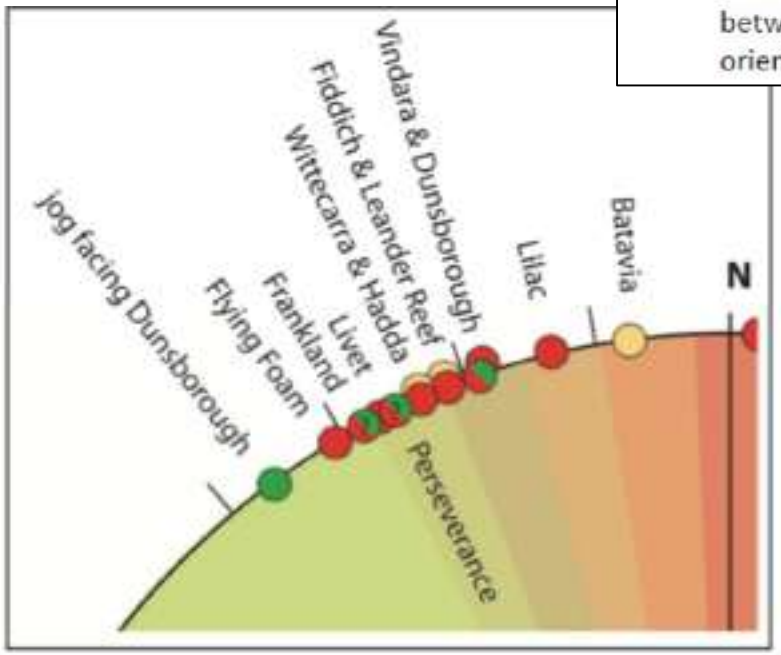
Will this later movement compromise fault seal?



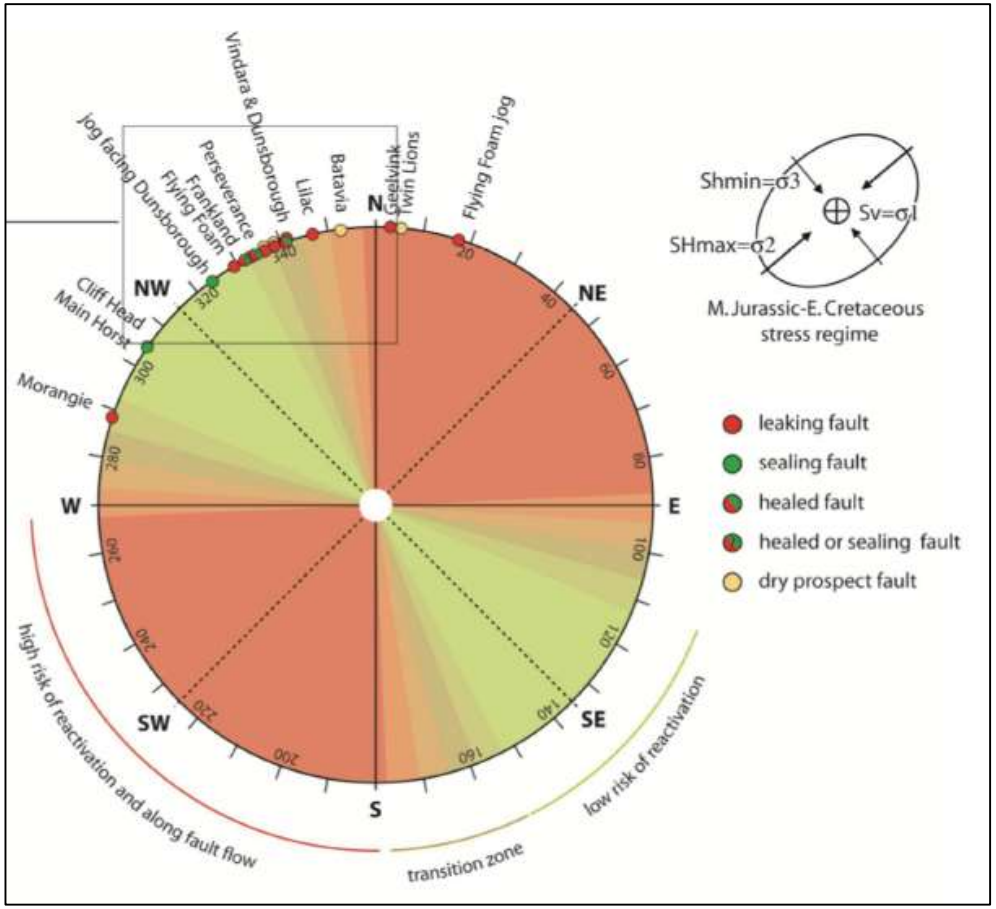
Ref. Enterprise Oil 1992

Is fault orientation critical?

- The orientation of trap-bounding faults is the main factor controlling the distribution of strain and the likelihood of fault reactivation and growth. Fault segments oriented between NNW (~340°) and ESE (~100°) are more likely to fail, while fault segments oriented to the NW are more prone to seal.



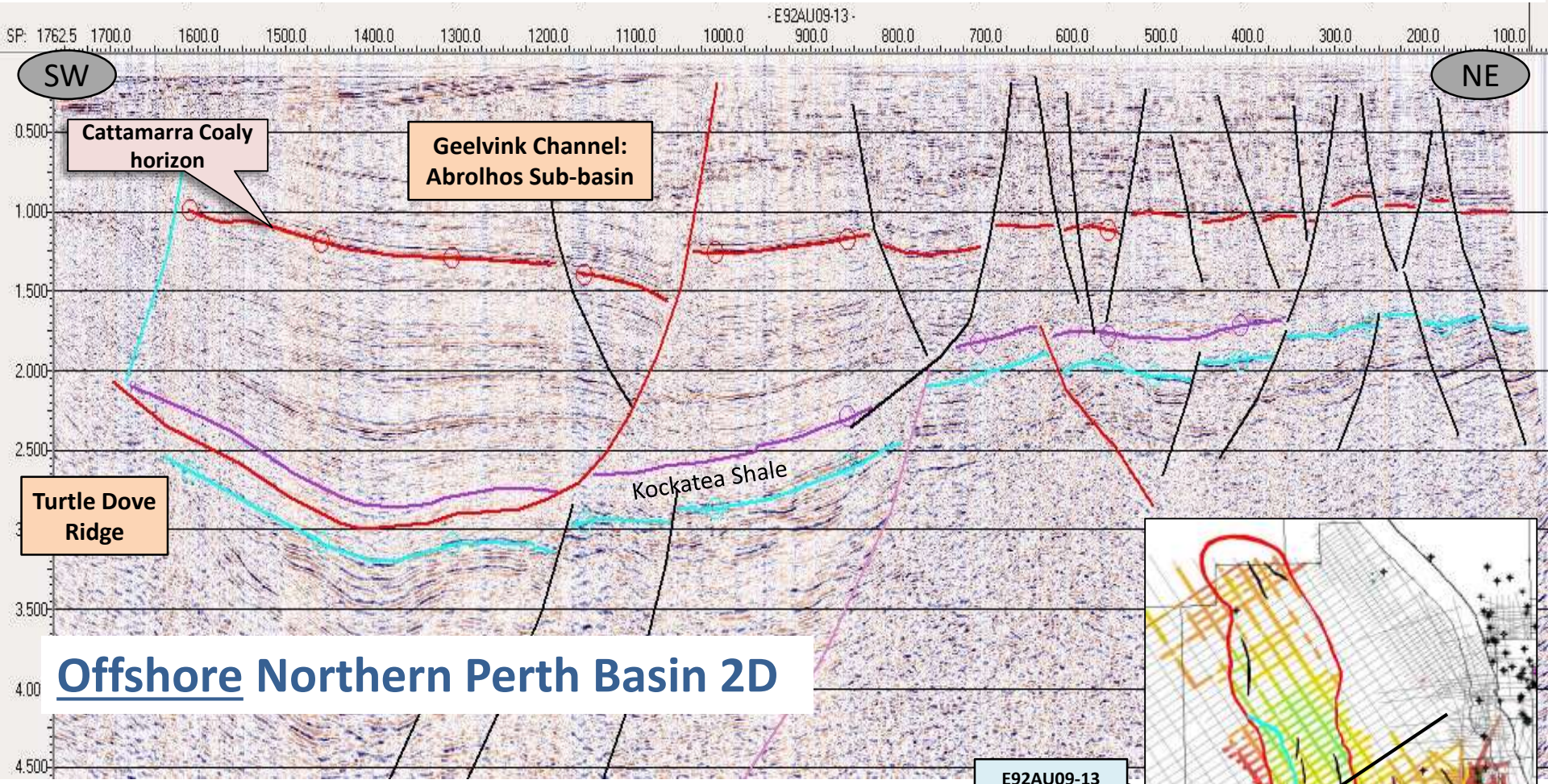
Geomechanical Modeling by CSIRO & GA in 2012

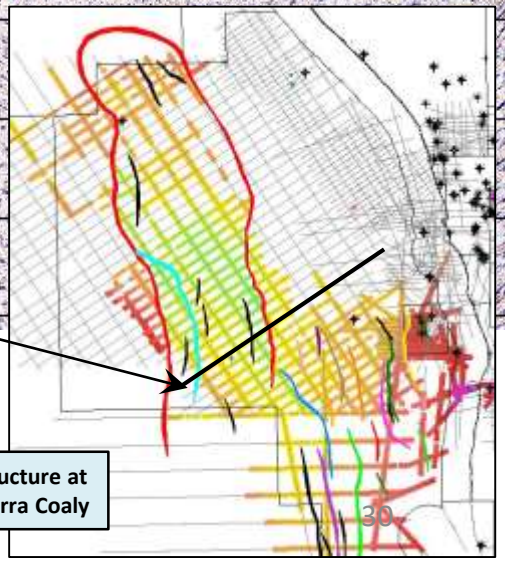


Geomechanical fault seal prediction model relies on the assessment of the impact of the regional stress field on the fault planes.

The critical factor is the nature of the linkage between the Permian & Jurassic fault planes. **The interpretation of these linkages from the seismic is locally ambiguous**

Kockatea Shale > fault detachment





Kockatea Shale acts as a detachment zone, isolating much of the younger fault movement from the older, deeper fault planes

Detachment zone preserves seal

Minimises the risk of seal breach due to younger faulting

SW

NE

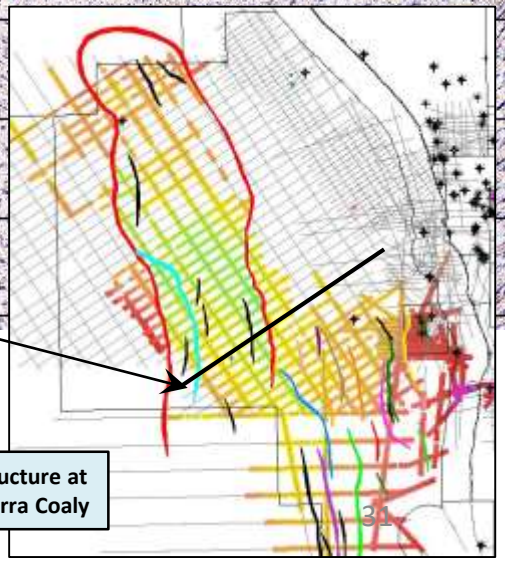
Cattamarra Coaly horizon

Geelvink Channel: Abrolhos Sub-basin

Turtle Dove Ridge

Kockatea Shale

Offshore Northern Perth Basin 2D



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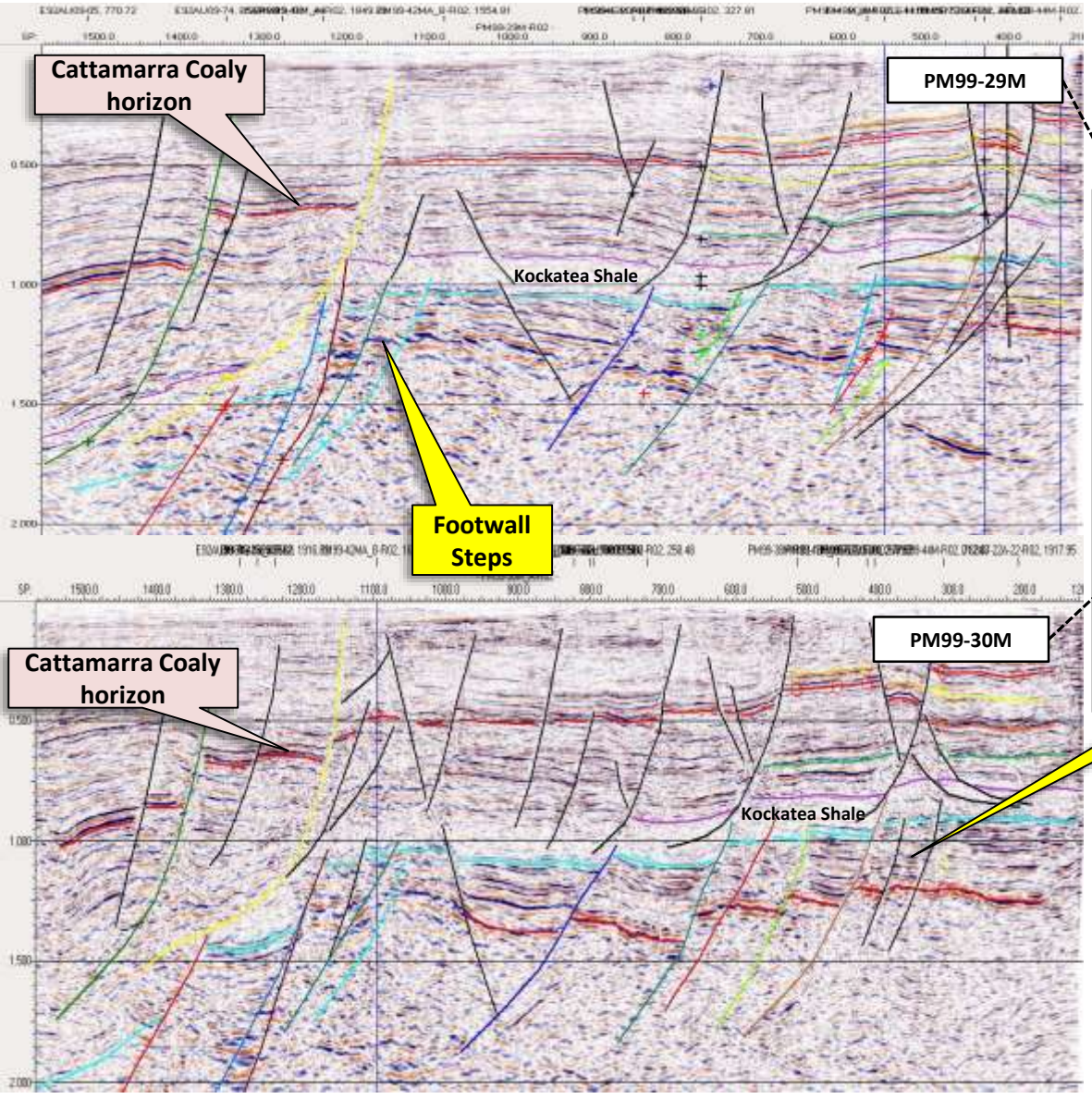
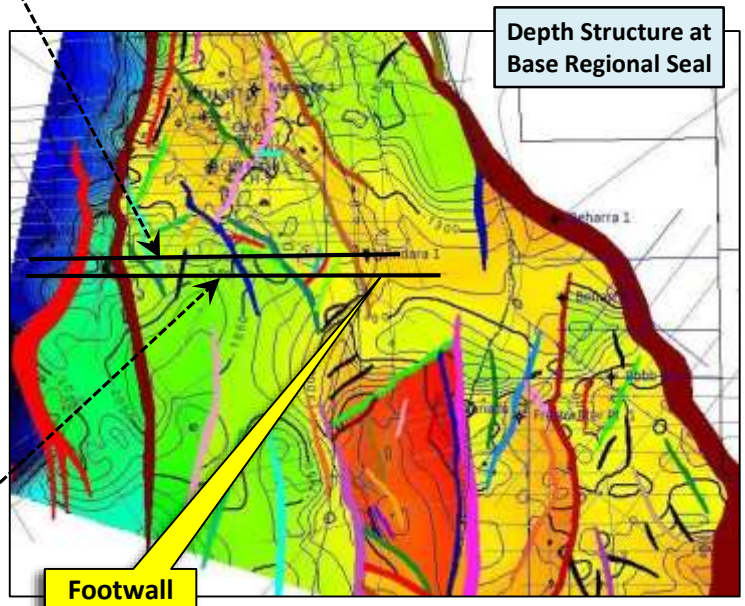
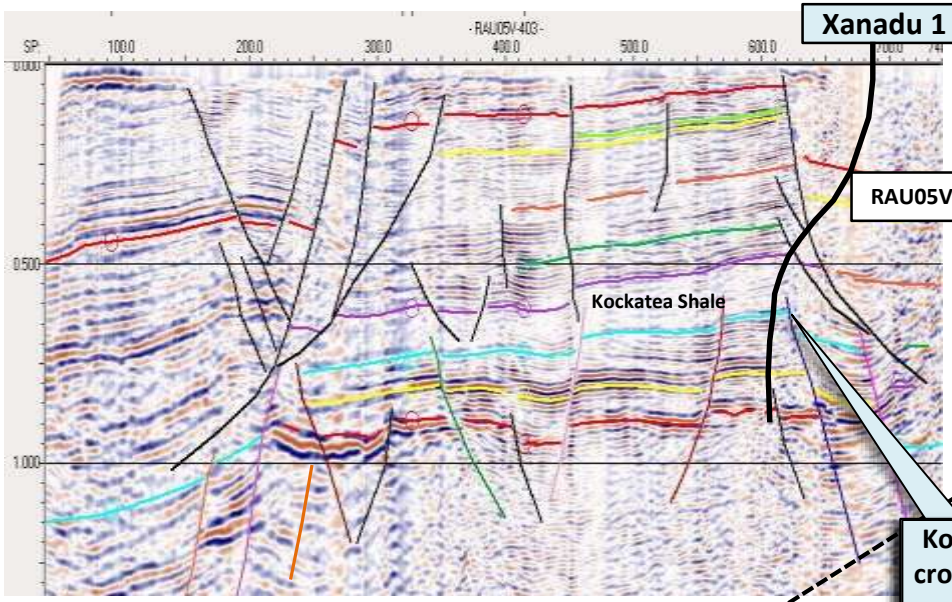
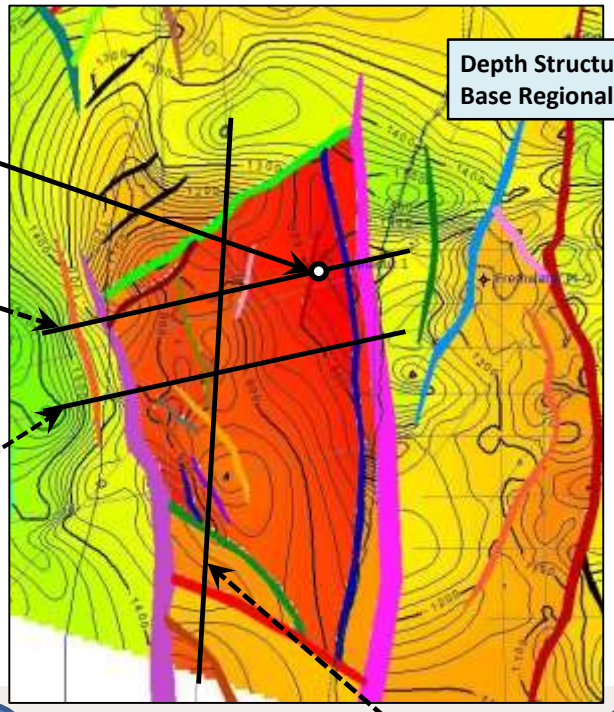
Footwall Steps



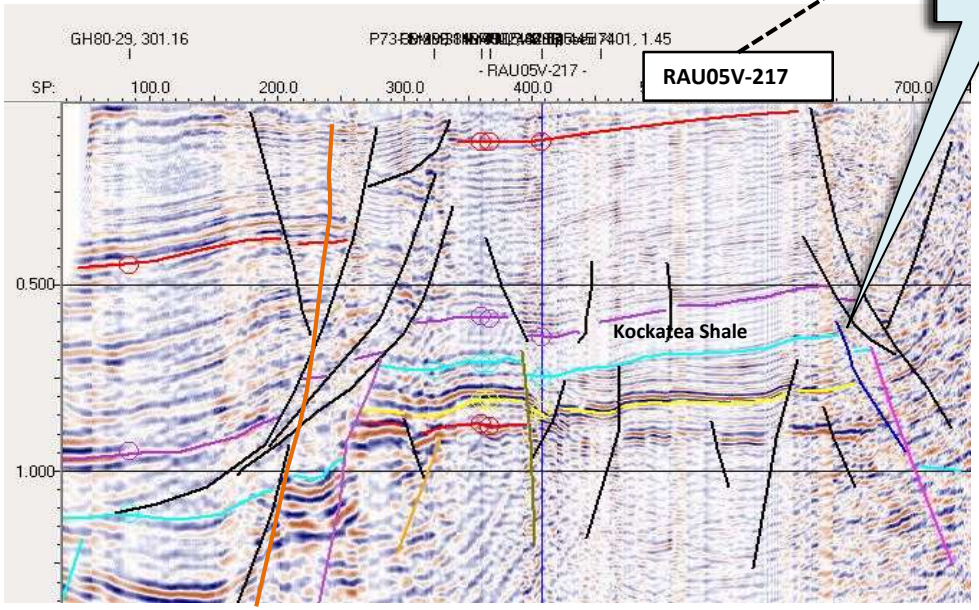


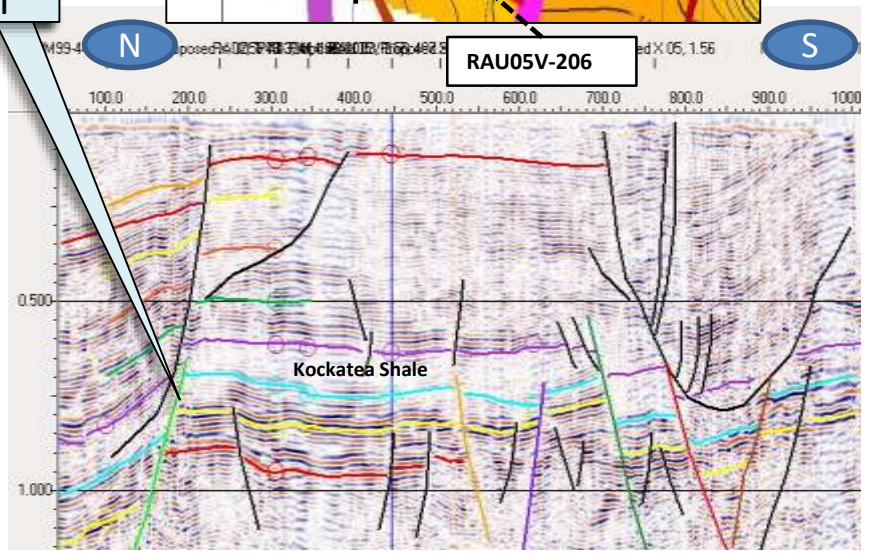
Cross-fault Sealing



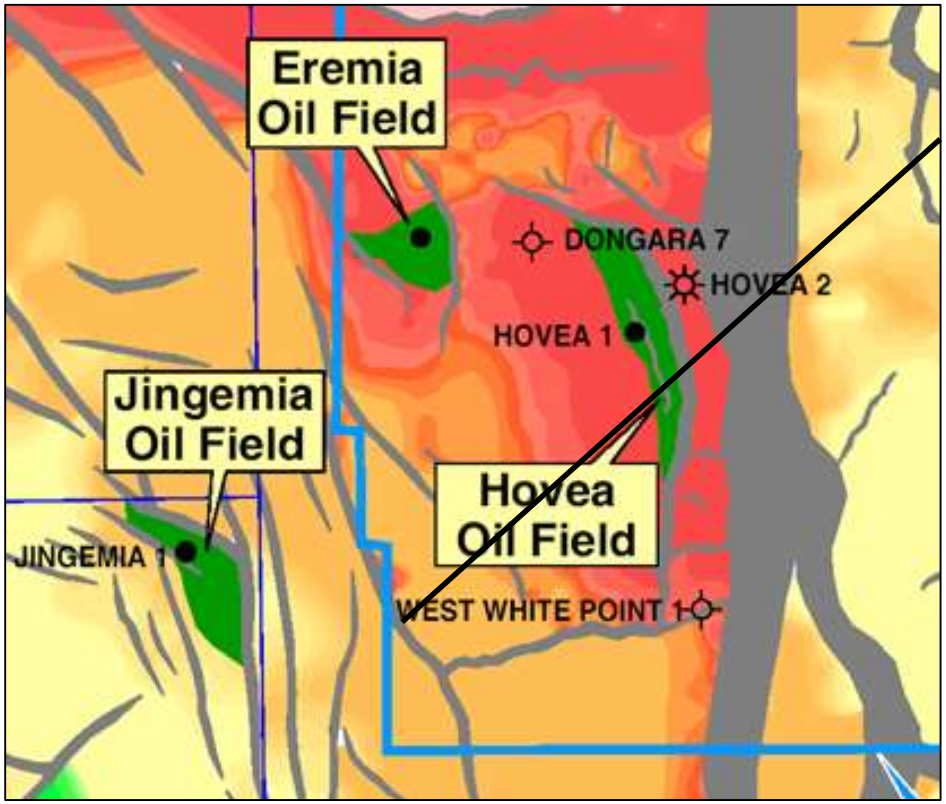


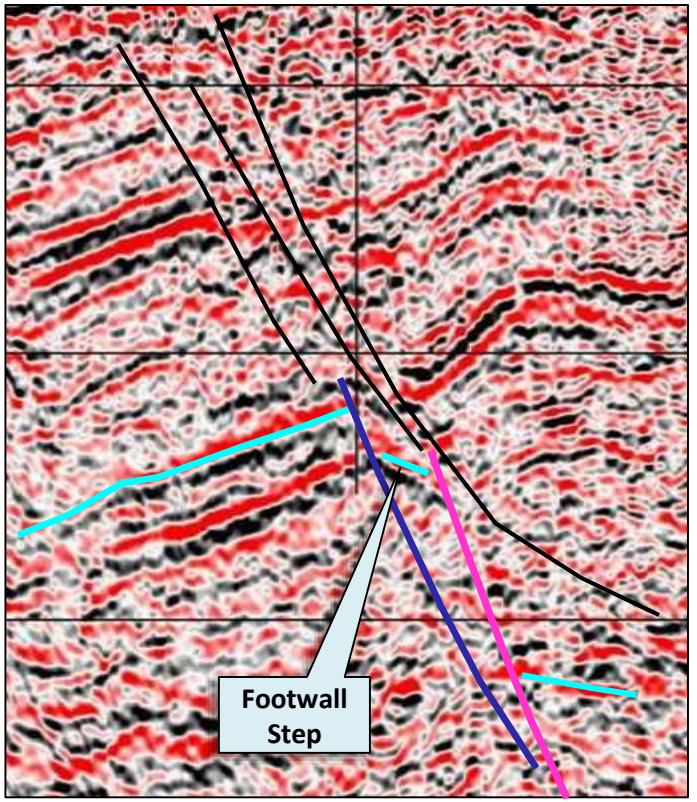
Kockatea cross-fault seal





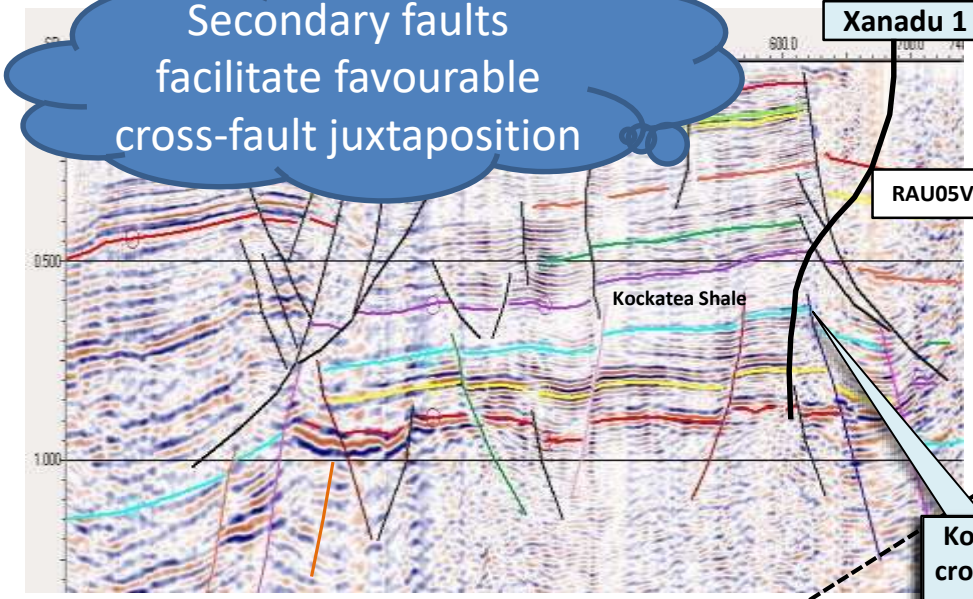
Hovea – Xanadu Comparison

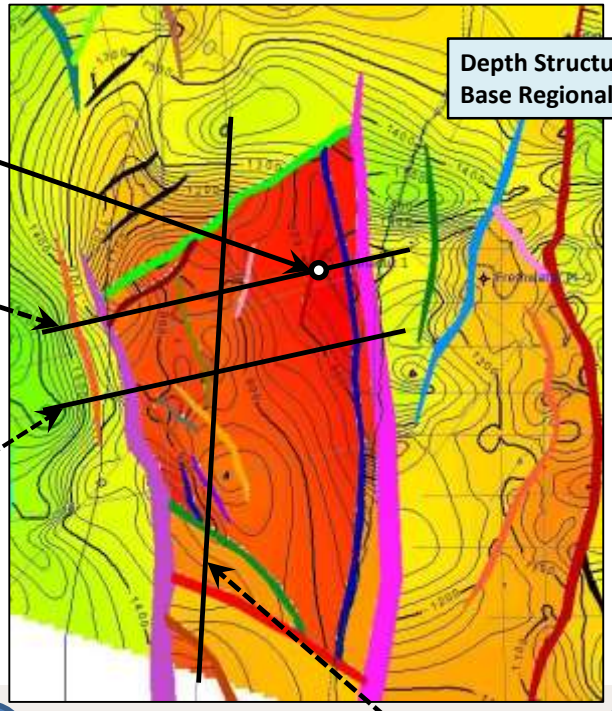




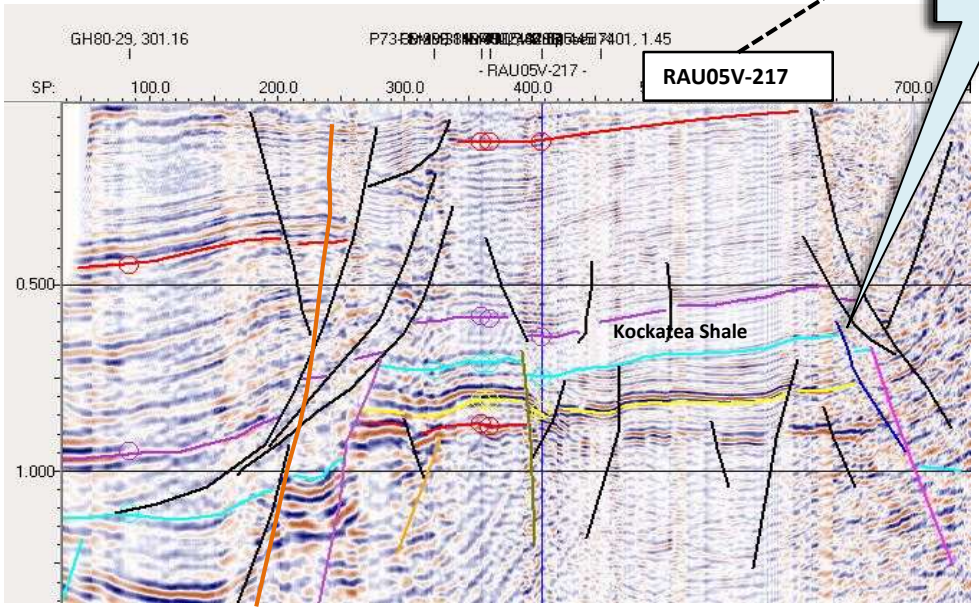
Cross-fault Sealing

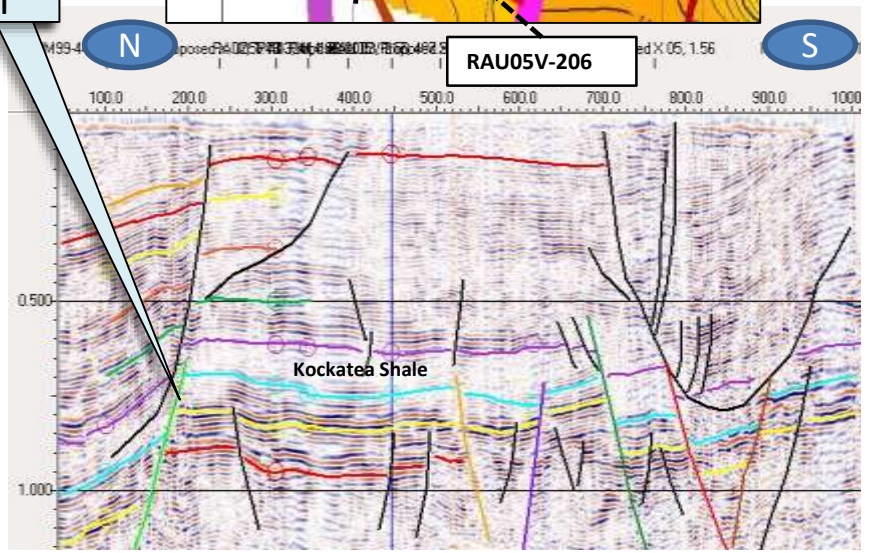
Secondary faults facilitate favourable cross-fault juxtaposition





Kockatea cross-fault seal





Play and Drilling Risks Mitigated

Risk Response 1: The relatively small throws on Permian faulting and larger throws on the Listric Jurassic faults maximise the potential for viable migration pathways.

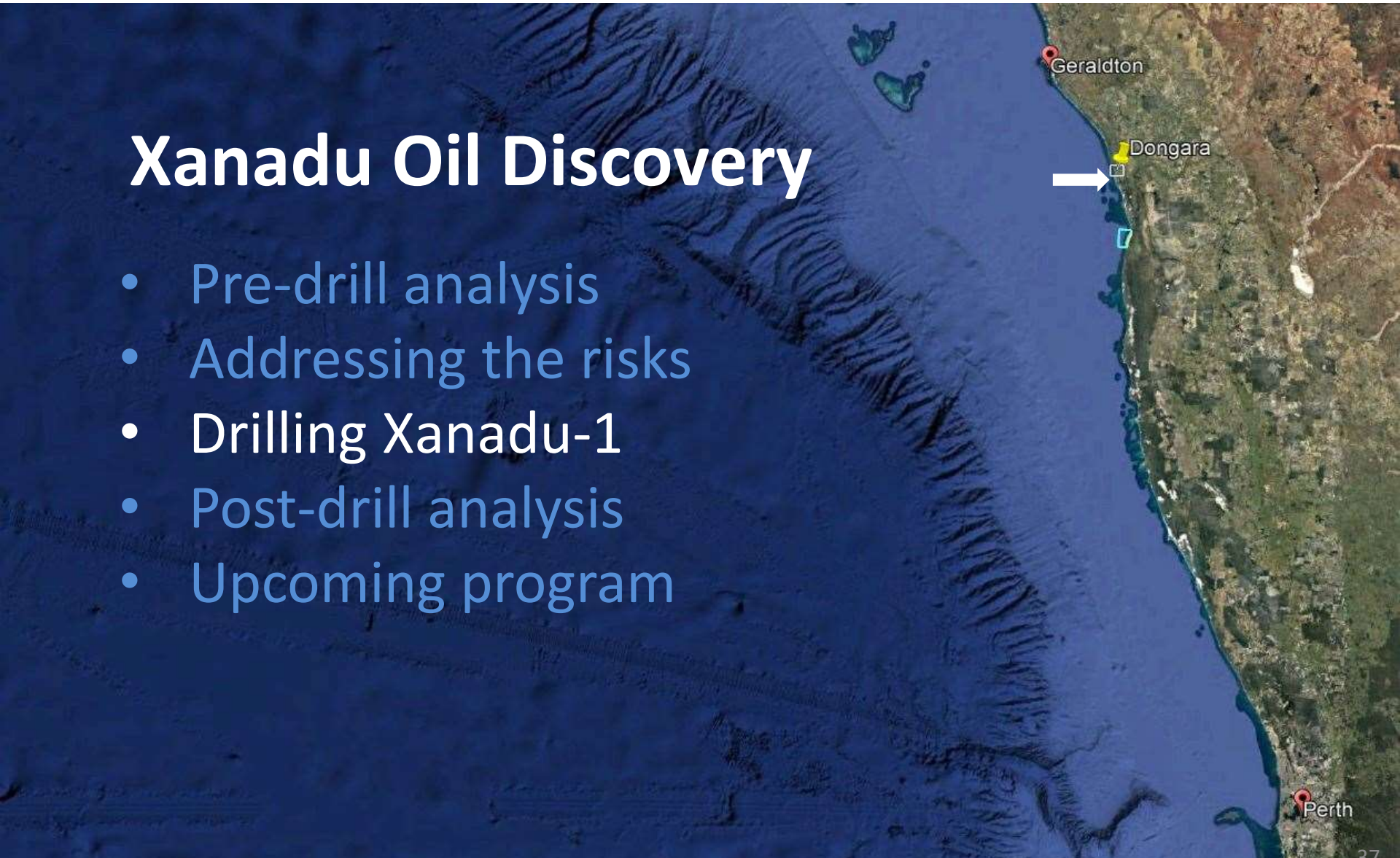
Risk Response 2: The fault detachment in the Kockatea reduces the opportunity for leakage from pre-Kockatea traps due to post-Kockatea faulting, minimising the risk of seal breach due to younger faulting.

Risk Response 3: The small step-faults reduce the risk of breach of fault seal.

Risk Response 4: With the Xanadu prospect being located in very shallow water adjacent to the coast, the well is drillable from onshore, with the horizontal distance from surface to target only 1200m.

Xanadu Oil Discovery

- Pre-drill analysis
- Addressing the risks
- Drilling Xanadu-1
- Post-drill analysis
- Upcoming program



Deviated well profile

Surface Location:

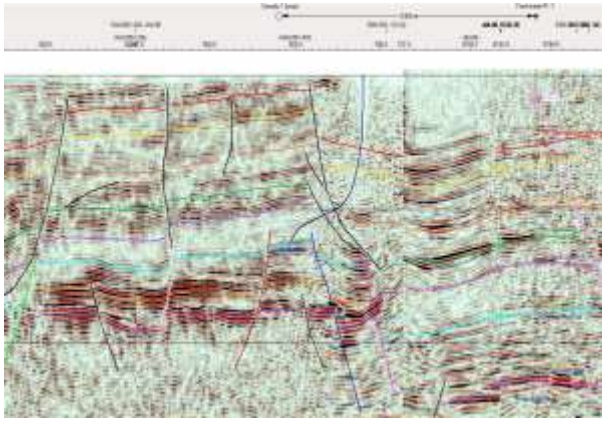
Northing 6,728,478 mN
Easting 304,059 mE

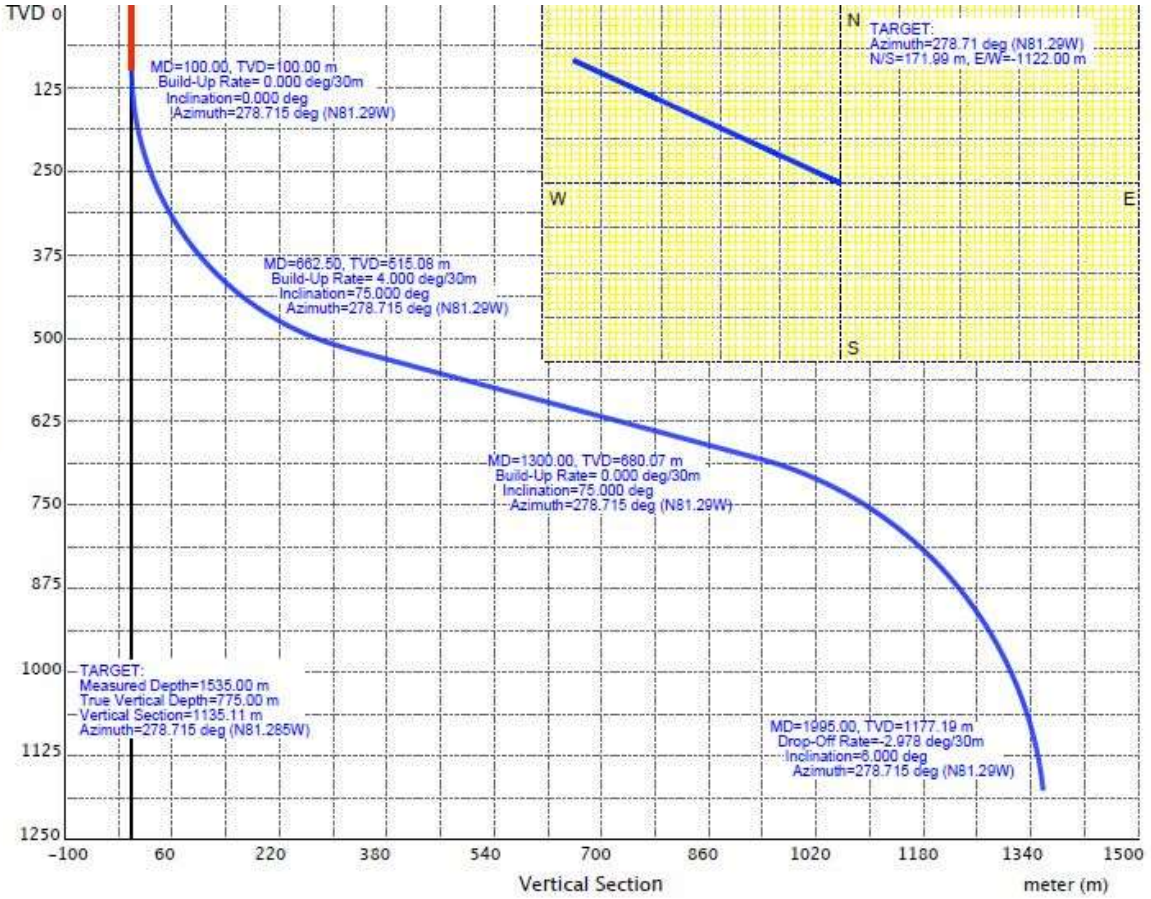
Primary Target:

Northing 6,728,650 mN
Easting 302,937 mE
Testing Dongara Formation @ 775m TVD ss

Secondary Target:

Inclination dropping @ 3 degrees / 30m
to test High Cliff Formation at 1130m TVD ss
maintaining an azimuth of 278.715 degrees





Draft Well Plan

Section	MD m	Incl deg	Azimuth deg	Bearing deg	TVD m	Cl Dist m	Vert Sect m
Tie-In	0.00	0.00	278.71	N81.29W	0.00	0.00	0.00
1	100.00	0.00	278.71	N81.29W	100.00	0.00	0.00
2	662.50	75.00	278.71	N81.29W	515.08	318.50	318.50
3	1300.00	75.00	278.71	N81.29W	680.07	934.28	934.28
4	1995.00	6.00	278.71	N81.29W	1177.19	1358.86	1358.86
Target	1535.00	-	278.71	N81.29W	775.00	-	1135.11

The Drilling Program

- Xanadu-1 was spudded on 4 September at 1500 hrs and reached TD at 1730 hrs on 17 September 2017.
- The primary target reservoir for the prospect was the Dongara Sandstone. Sands within the Irwin River Coal Measures and High Cliff Sandstone represented secondary targets.
- However the Dongara Sandstone was not encountered, with the Irwin River Coal Measures (IRCM) found directly below the base of the Kockatea Shale at 854m TVDss.
- Reservoir quality sand intervals were encountered throughout the IRCM with porosities consistent around 16%.

Xanadu Discovery

- Three discrete sand intervals at the top of the IRCM had log-derived hydrocarbon saturations in excess of 40%.

- Fluorescence in rock cuttings observed while drilling and log-derived hydrocarbon saturations were encountered over 120m in sands below these upper zones, however the lower intervals were water-bearing.

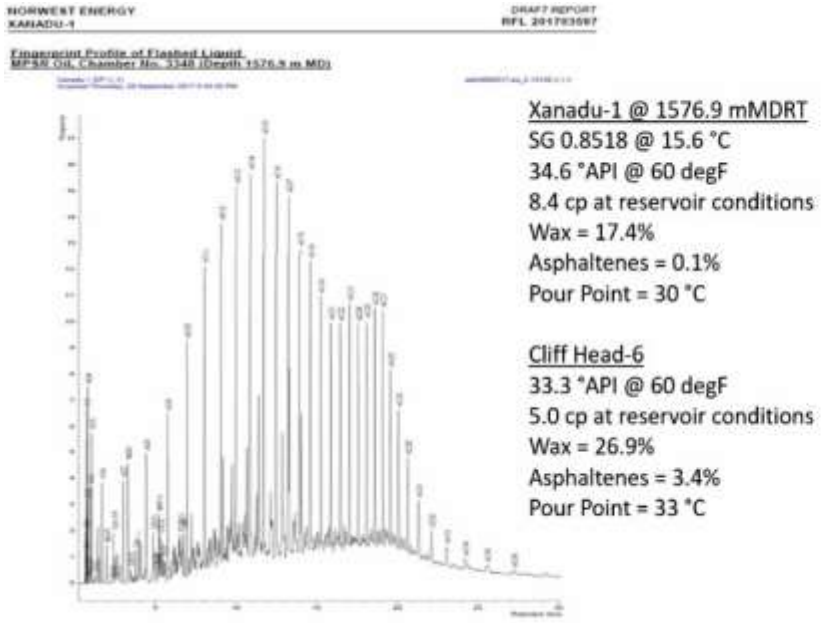
- Oil was pumped through from the top sand utilising the Schlumberger Saturn pressure and fluid sampling tool and three downhole samples collected.

- Excellent reservoir quality was also encountered in the High Cliff and Kingia Sandstone sections, without oil shows. This does provide future exploration upside with evidence that oil has passed through this system.

- Seismic data indicates that drilling an up-dip location could allow the higher quality sand units deeper in the section to be penetrated above the inferred oil-water contact. Erosion of the upper, poor quality sands on a structural high similar to observed at Cliff Head Oil Field would further increase the chance of intersecting the oil column in better quality reservoir.

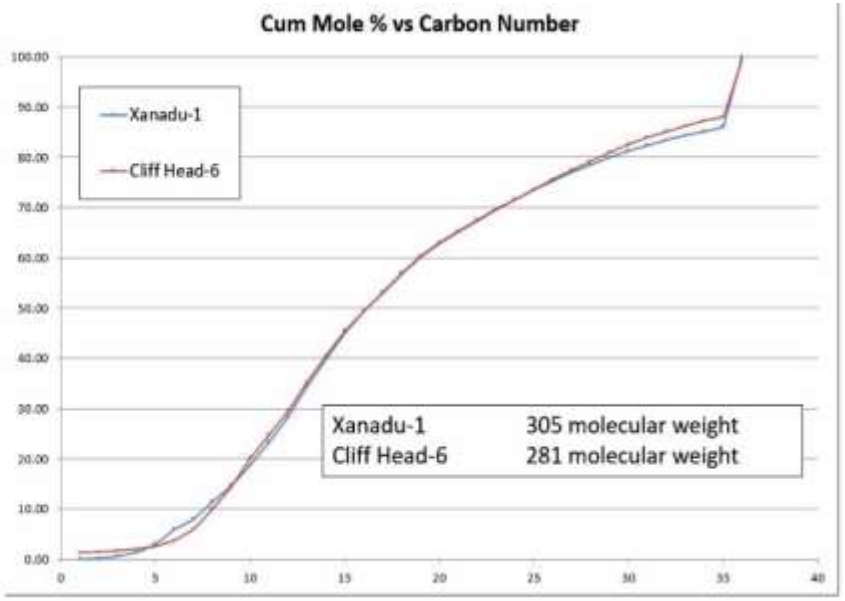
Xanadu Discovery

The oil sample analysis confirmed that Cliff Head Oil Field (located 14km to the NW) is an excellent analogue for Xanadu.



Xanadu-1 @ 1576.9 mMDRT
SG 0.8518 @ 15.6 °C
34.6 °API @ 60 degF
8.4 cp at reservoir conditions
Wax = 17.4%
Asphaltenes = 0.1%
Pour Point = 30 °C

Cliff Head-6
33.3 °API @ 60 degF
5.0 cp at reservoir conditions
Wax = 26.9%
Asphaltenes = 3.4%
Pour Point = 33 °C



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Xanadu Oil Discovery

- Pre-drill analysis
- Addressing the risks
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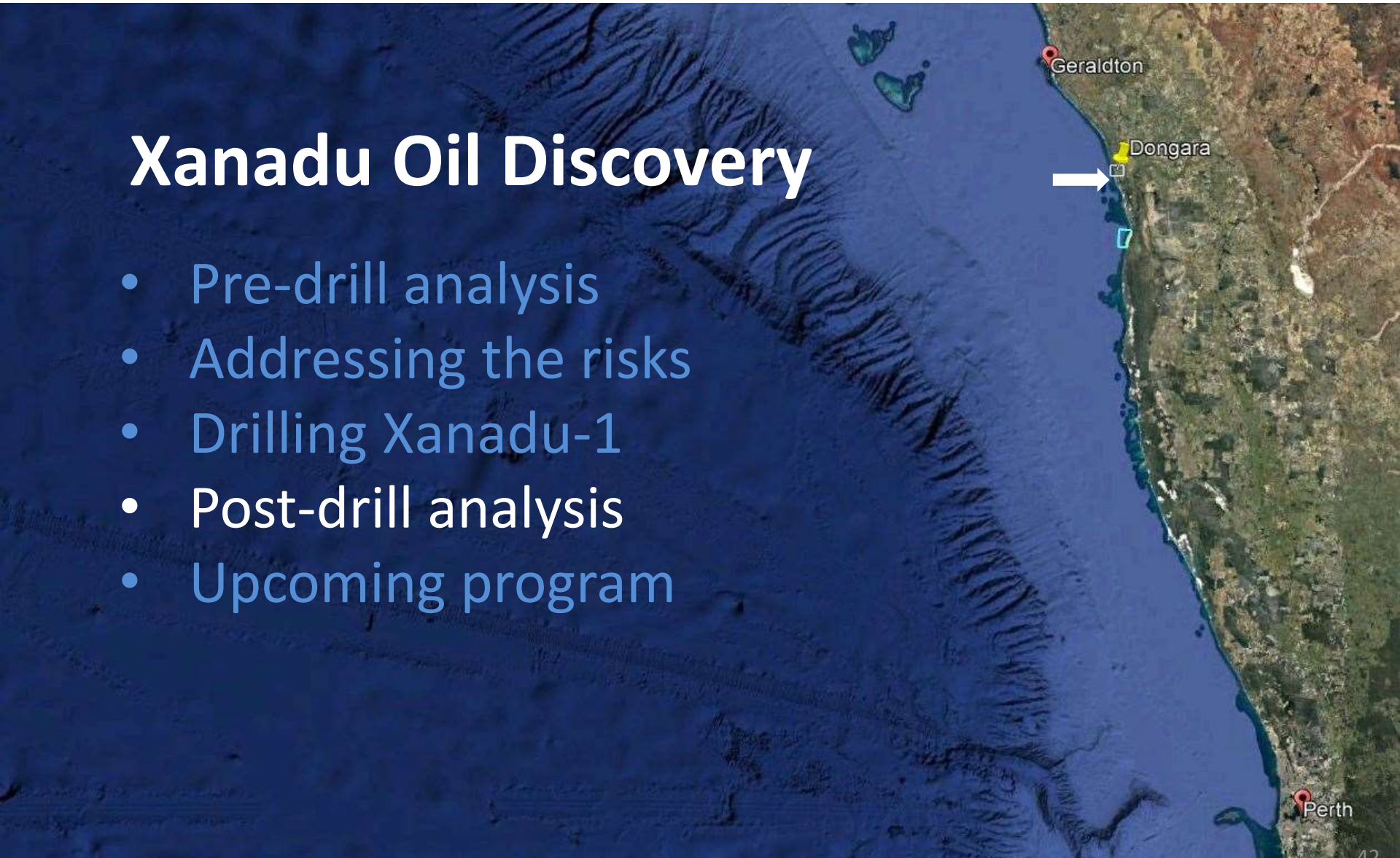
- Post-drill analysis
- Upcoming program



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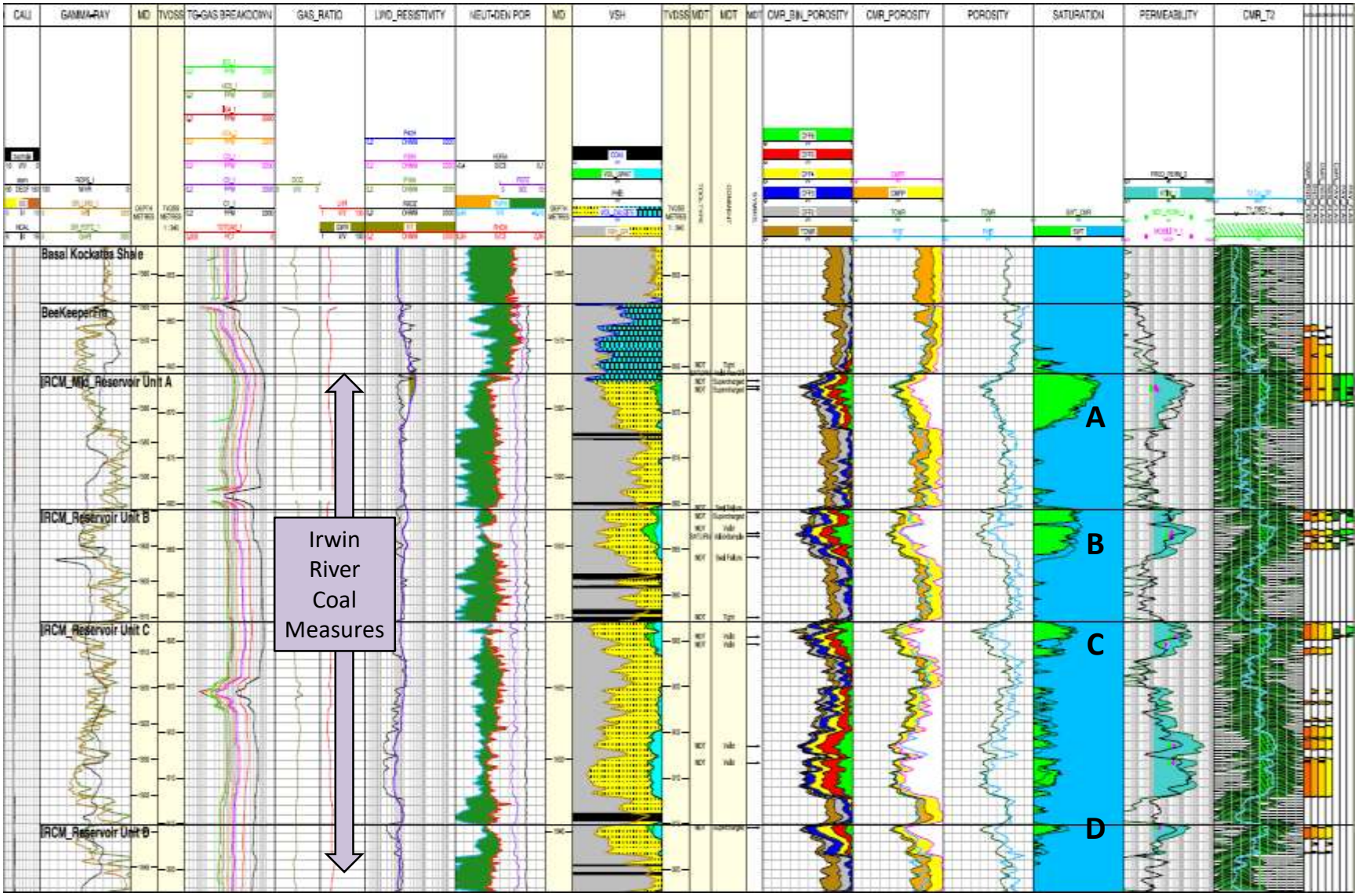
Xanadu 1 Petrophysical Analysis



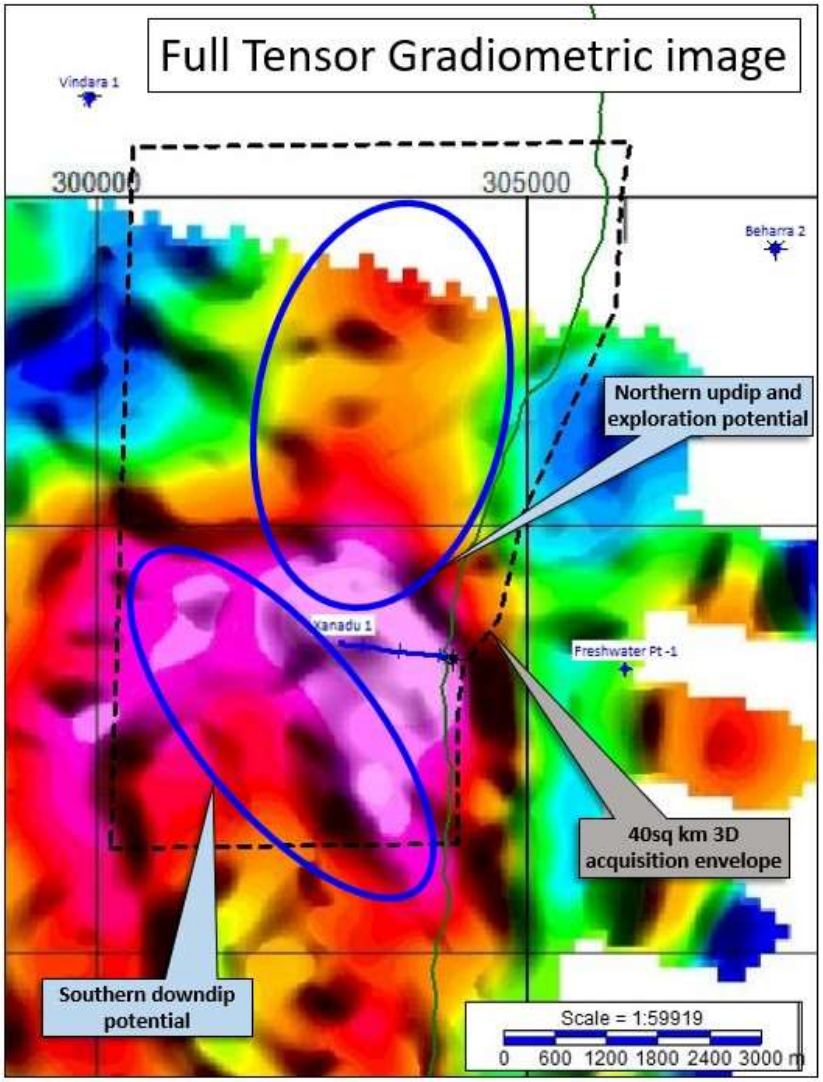
TP/15 – Xanadu Discovery

- New mapping conducted post-drilling suggests the Xanadu structural culmination is north of Xanadu-1 location. However with no seismic available in this area, it is not possible to reliably estimate gross rock volumes. This highlights the need to acquire additional seismic over the Xanadu structure.

- A 42km^2 3D seismic survey is planned for later in 2018.

- The 3D seismic dataset will allow us to calculate OOIP and recoverable volumes, and future drilling locations.

- Two zones being targeted in the seismic program - Northern updip potential can be drilled from onshore. Southern downdip potential would likely require offshore drilling.



40 KM^2 3D Seismic Survey Acquisition area overlying a full tensor gradiometric image, highlighting up-dip and down-dip potential at Xanadu.

Xanadu Discovery

- The Cliff Head discovery well identified a gross 4.8m oil column at the top of the IRCM – the same stratigraphy encountered at Xanadu-1, and was side-tracked to a more favourable up-dip location where a 36m gross oil column was intersected.

- Assuming the Xanadu structure continues to rise to the north of the current seismic coverage, the TP/15 JV would hope to drill a side-track well from the Xanadu-1 location, potentially as a horizontal producer, with the top section down to 971m MDRT already cased and cemented in place.

- Utilising the new seismic data, additional petrophysical data and further fluid contact data, robust volumetric estimates should be available later in 2018. Given positive well results, the development could be fast tracked given the proximity to the Arrowsmith oil production facility which supports Cliff Head.

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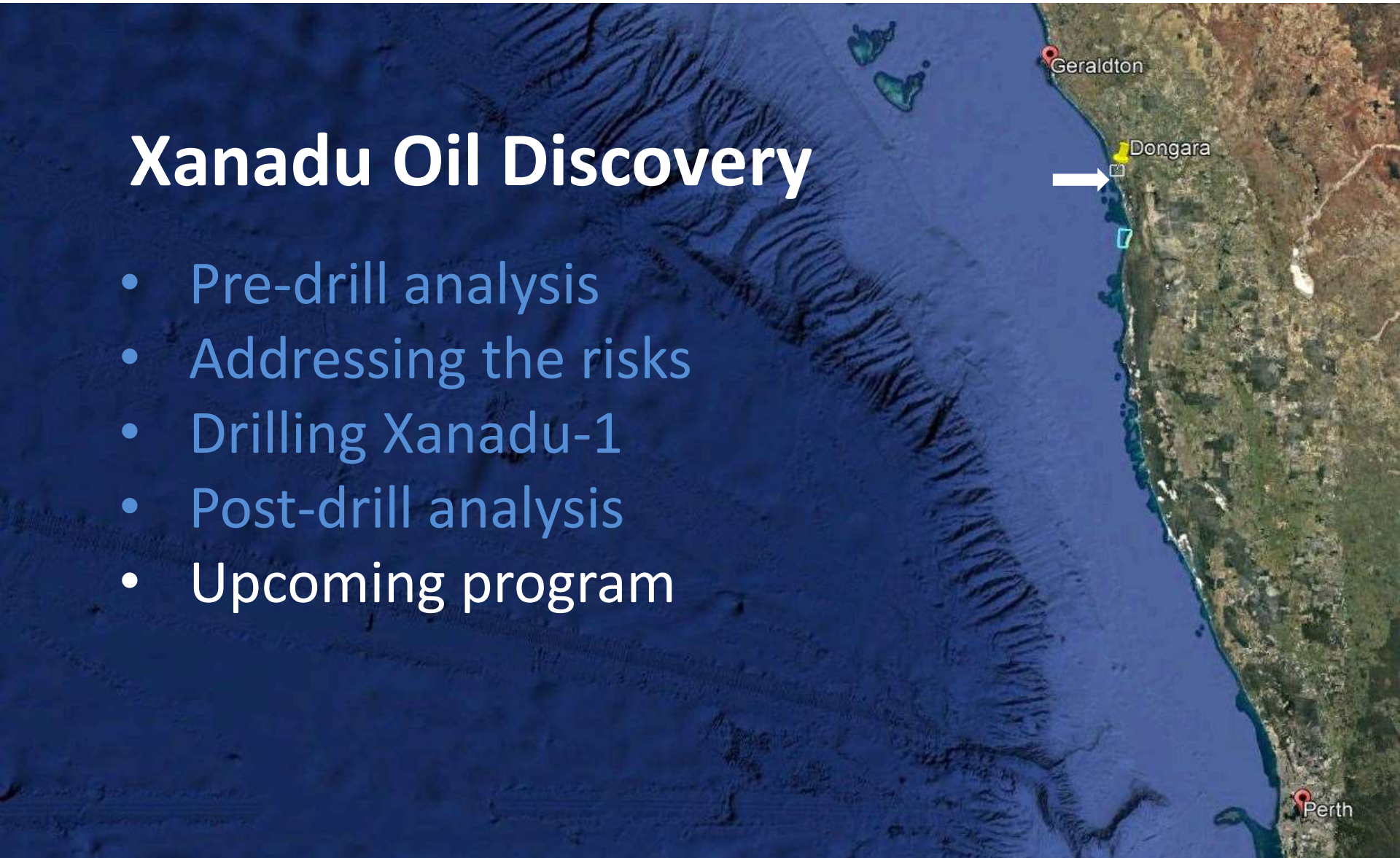
Xanadu Oil Discovery

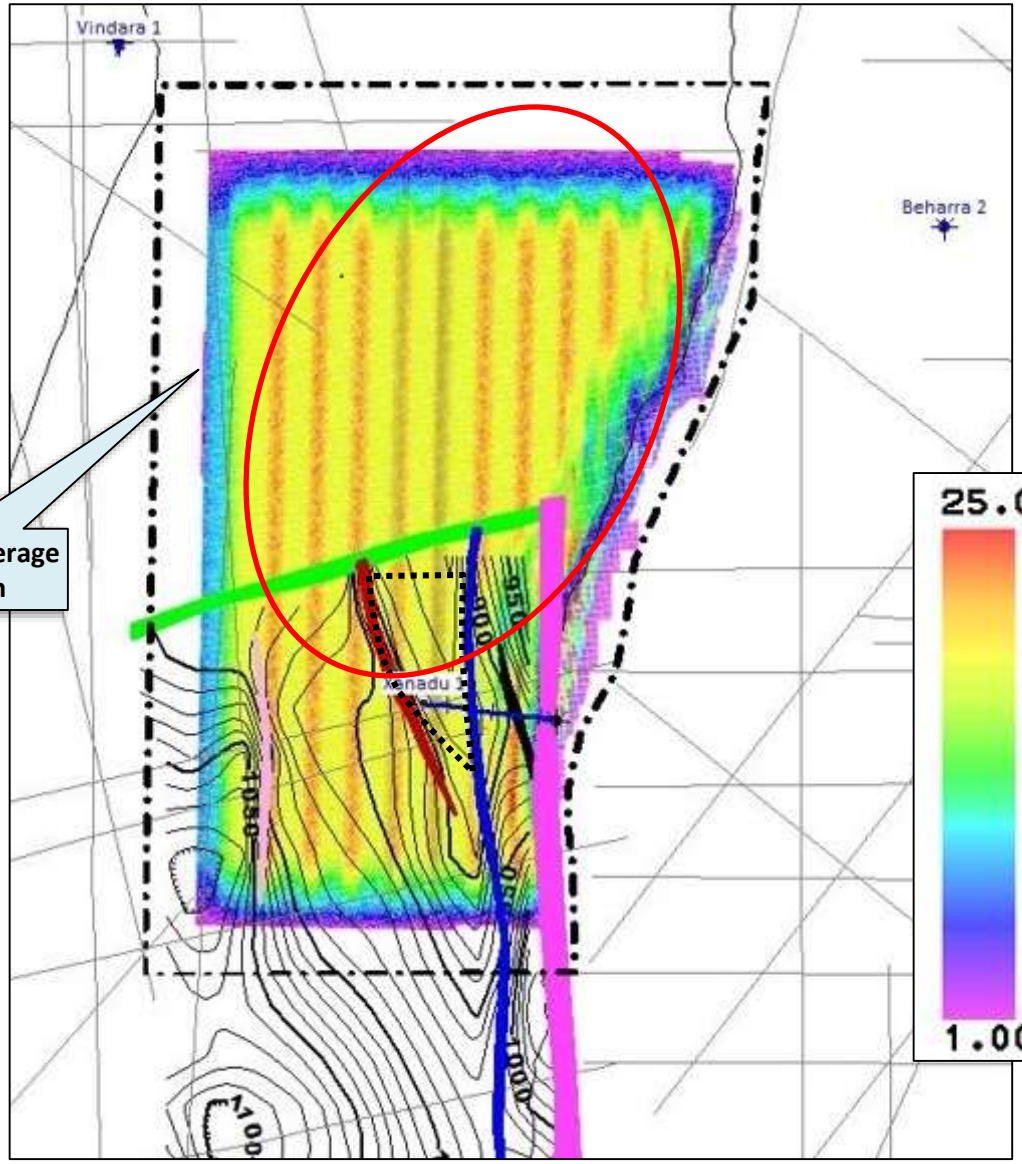


- Pre-drill analysis
- Addressing the risks
- Drilling Xanadu-1
- Post-drill analysis
- Upcoming program

TP/15 – 3D Seismic Acquisition

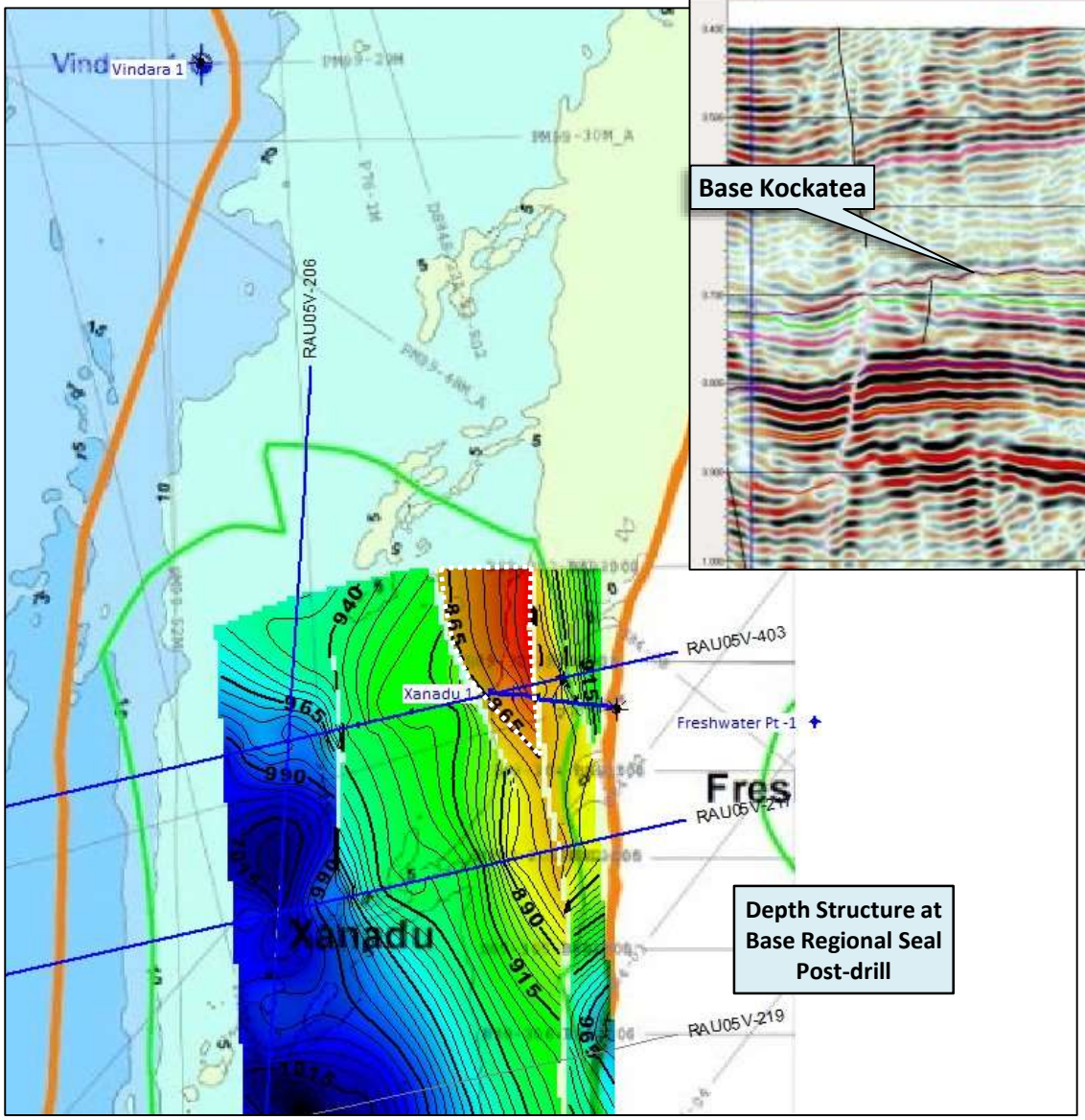
- Synterra Technologies has been engaged to acquire 42km^2 seismic over Xanadu.
- Due to shallow water and reef systems, innovative techniques are being utilitised in the acquisition program.
- Divers will be used to hand place geophones on the ocean seabed.
- An array of 4 x 20cc airguns will be used to minimise impact on marine fauna. Acoustic modelling has been completed and incorporated into regulatory documentation including the Environmental Plan.
- Vibroseis truck will be deployed on existing sand dune tracks for additional source across the transition zone, and geophones hand deployed on land
- An extensive consultation process is continuing with all related parties.
- Acquisition planned for later in 2018, avoiding whale migration, tourism and commercial crayfishing seasons.

3D seismic is the answer

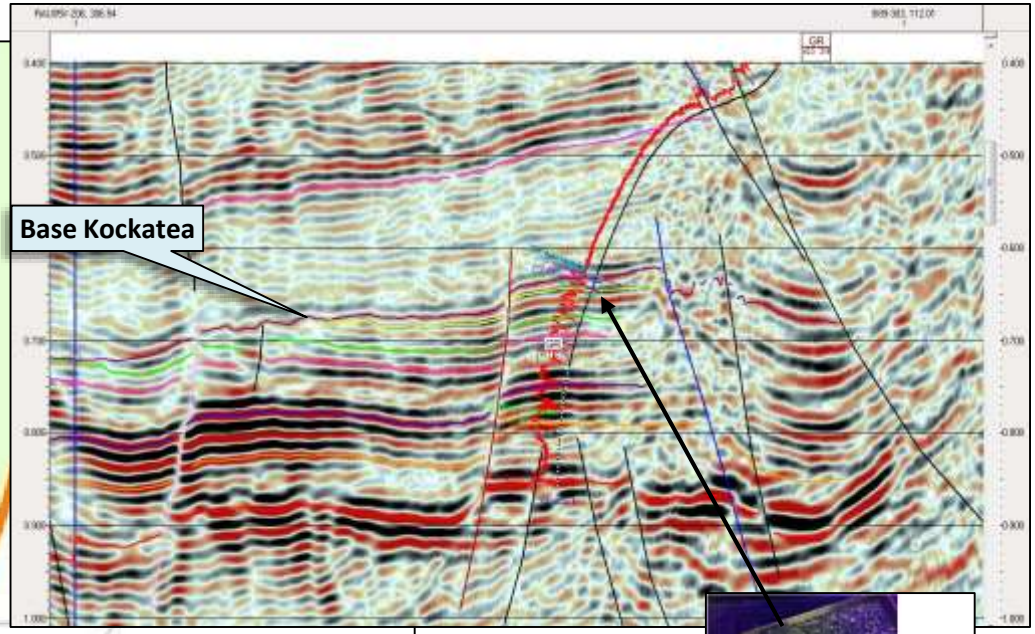


Planned 3D subsurface fold at target horizon

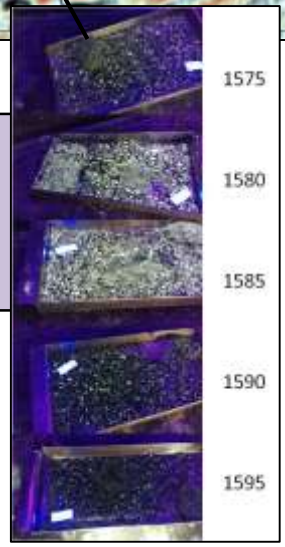
Sparse seismic limits mapping



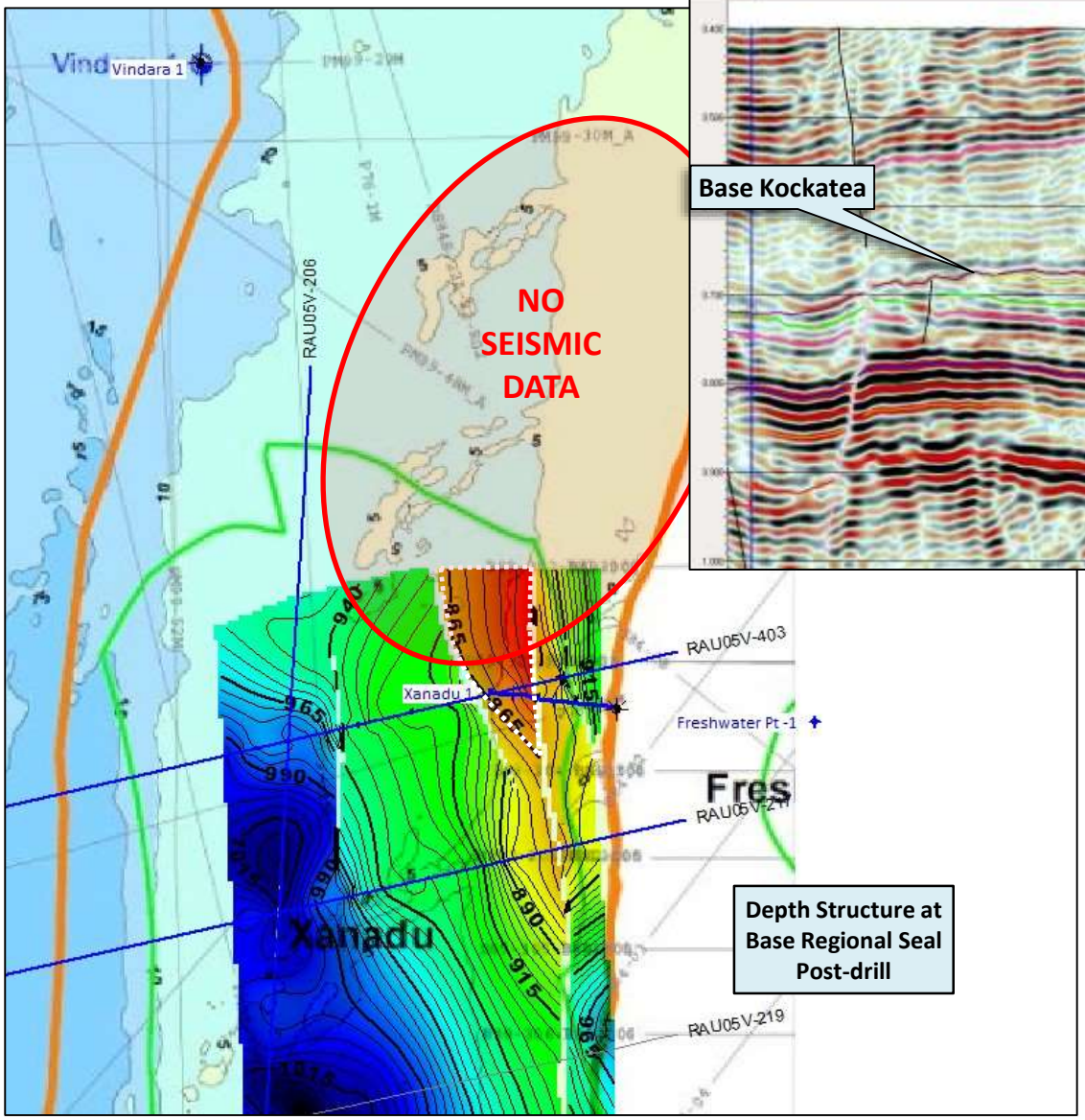
Depth Structure at Base Regional Seal Post-drill

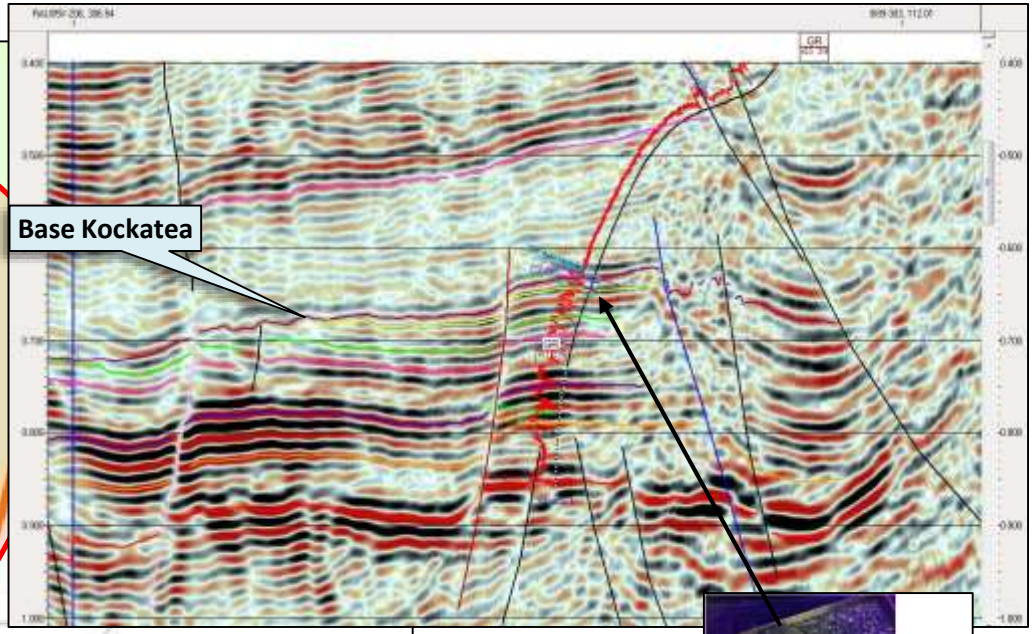


Oil in the Irwin River Coal Measures

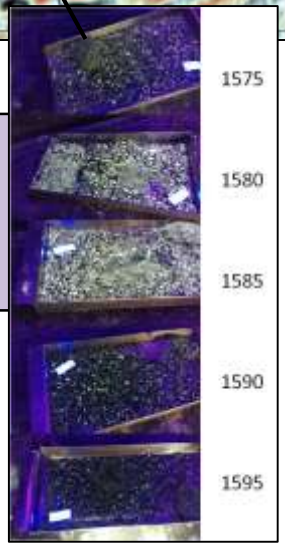


Oil…..but, data-gap to the north

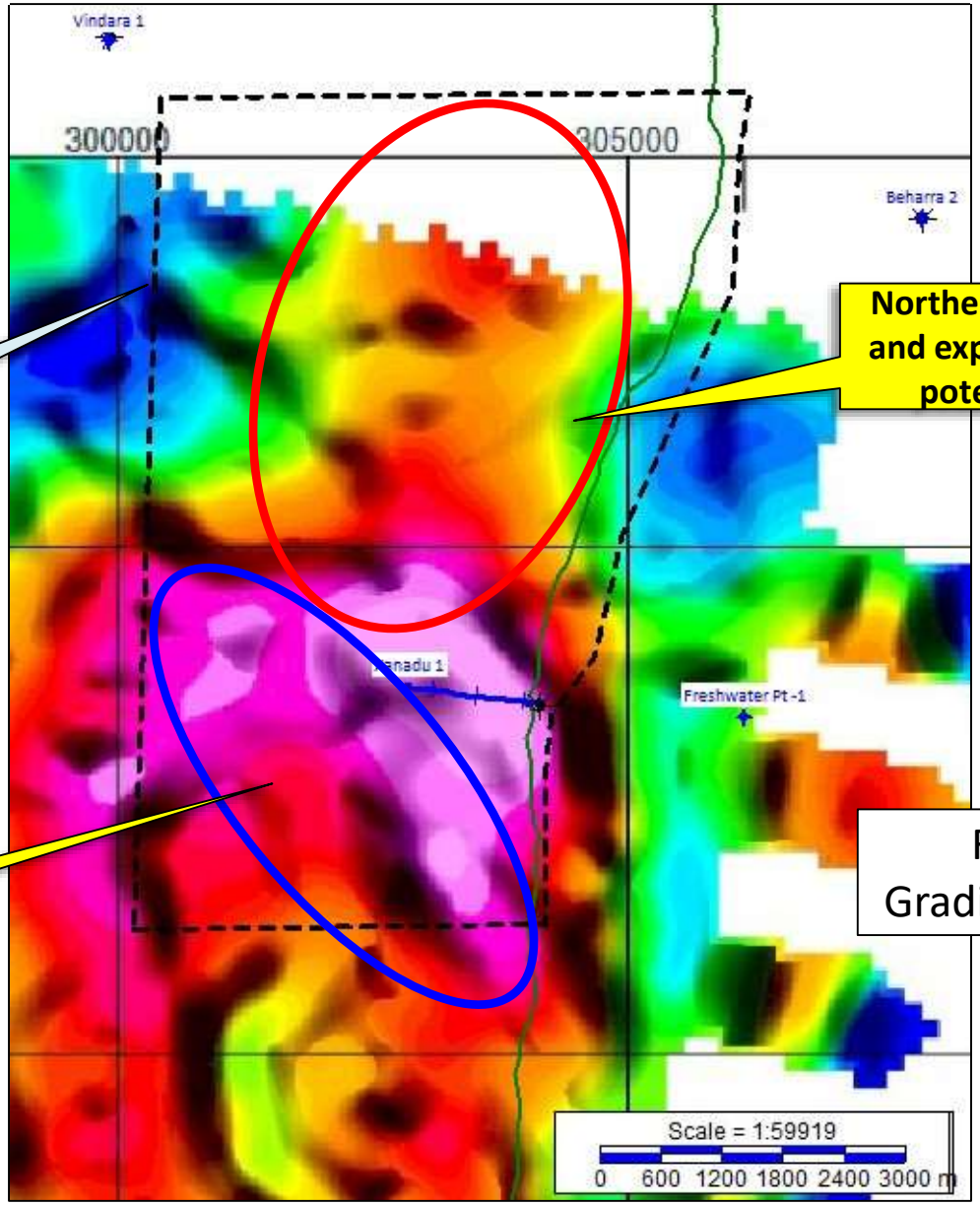




Oil in the Irwin River Coal Measures



Also addressing downdip potential



3D acquisition envelope

Northern updip and exploration potential

Southern downdip potential

Full Tensor Gradiometric image

Challenging seabed conditions

Variably sandy and weedy with irregular limestone outcrops, providing crayfish habitat

Innovative acquisition solution

Floating buoy containing recorder

geophone cable

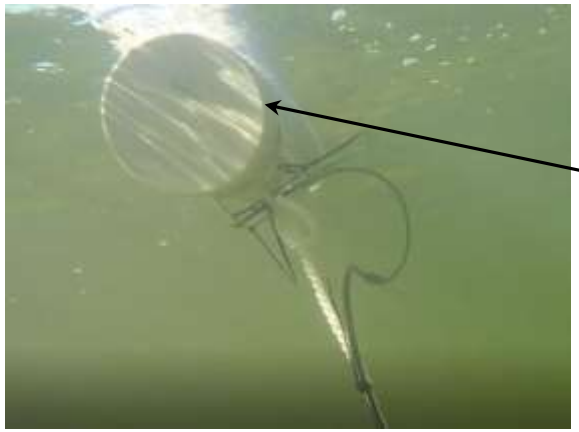
rope tether

weight

geophone

Experimentation required

Buoyancy must be adequate for keeping recorder close to surface (horizontal attitude) to ensure satellite connection for GPS location fixes, but not so buoyant that wind exerts excessive drag on seabed weight



Xanadu Discovery

XANADU DISCOVERY

Steps in the Pathway to Development

- Drill Xanadu-1 Exploration Well (complete)
- Log analysis to target optimal intervals (complete)
- Oil Assays confirm Cliff Head Oil Field Analogue (complete)
- Acquire 42km2 seismic over most prospective area (planning commenced)
- Processing and interpretation of seismic
- Reservoir Engineering Modelling
- Estimate OOIP and Recoverable Resource
- Economic scoping study to assess field economics and commerciality
- Drill & Well Test Appraisal Well to evaluate production rates
- Commence full field development
- Oil to market

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Thank you

Norwest Energy NL is an ASX listed Australian oil and gas exploration company focused on exploring and developing the petroleum resources of the Perth Basin, Western Australia.

Norwest Energy NL is based in Perth, Western Australia with interest in an extensive onshore and offshore portfolio of tenements in the basin. The Company's primary objective is to unlock the vast commercial potential to be realised by developing these assets.

Norwest remains well positioned to develop the potential of its existing portfolio of projects, and will continue to explore all opportunities to enable ongoing wealth creation for shareholders.

ASX SHARE PRICE

NWE 0.004 No Movement

Updated 27/11/17 12:41

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ASX ANNOUNCEMENTS

14/11/2017
TEG: Xanadu Discovery Update

14/11/2017
Xanadu Discovery Update

01/11/2017
Appointment of Managing Director

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18/11/2017
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