



● ● ● **Cooper Basin Western Flank**

Senex Energy

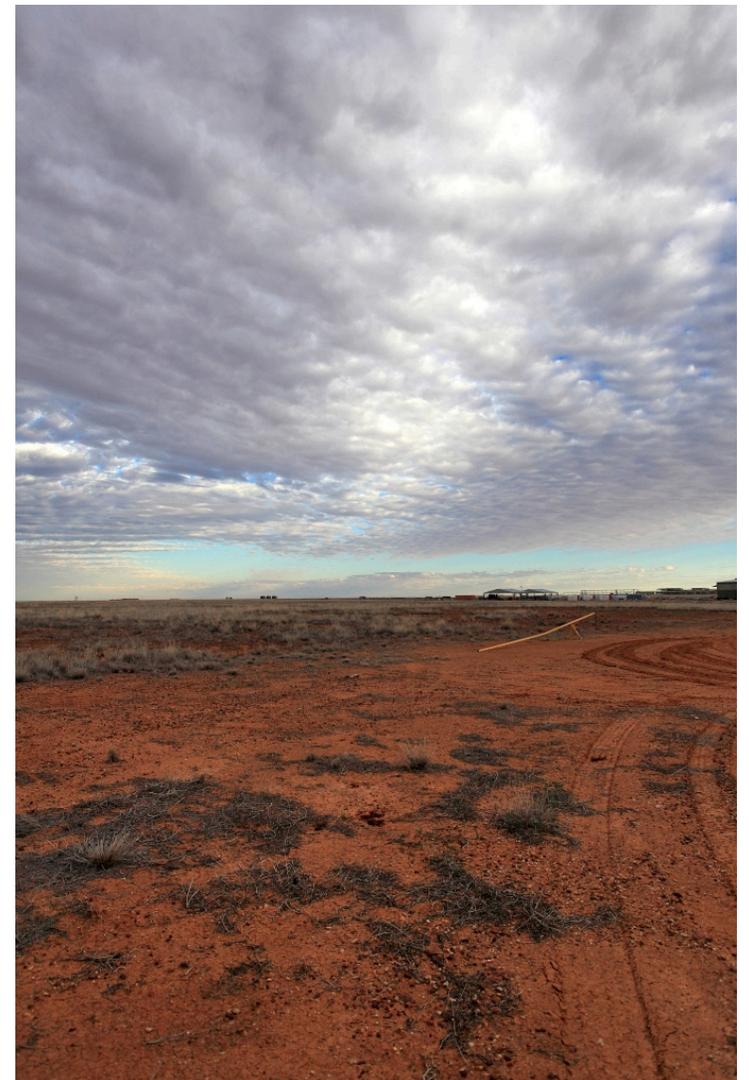
David Spring, 30 November 2017



Presentation Highlights

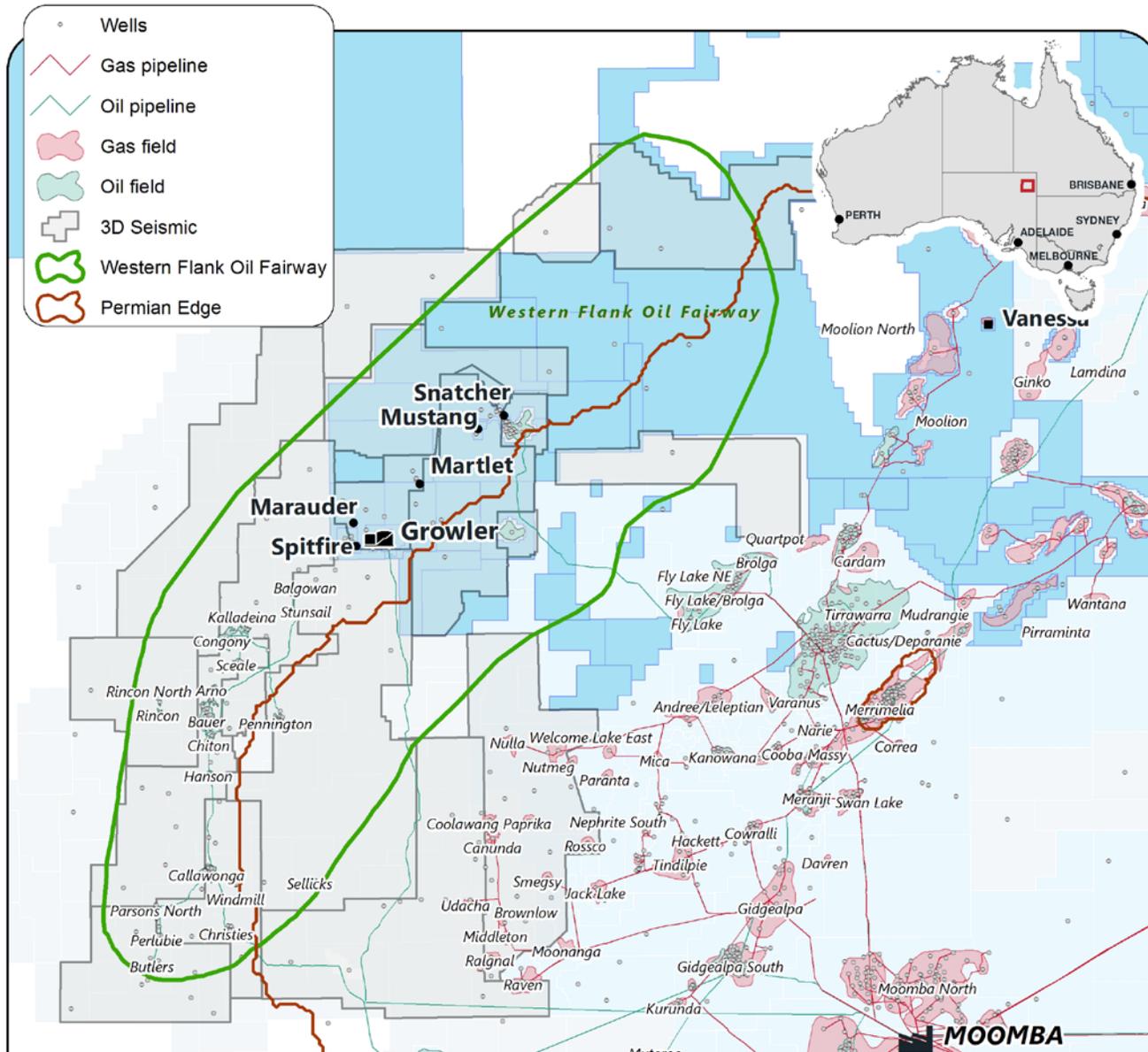
- What is the Western Flank and Why it is Important
- The Hydrocarbon Plays and Recent Insights
- Operational Efficiency and Cooperation is Critical
- Senex in the Community
- Summary

I would like to acknowledge the traditional owners of the areas described in my presentation today, the Dieri, the YY and the WY people. Senex acknowledges their historical and ongoing connection to country and community.





What is the Cooper Basin Western Flank

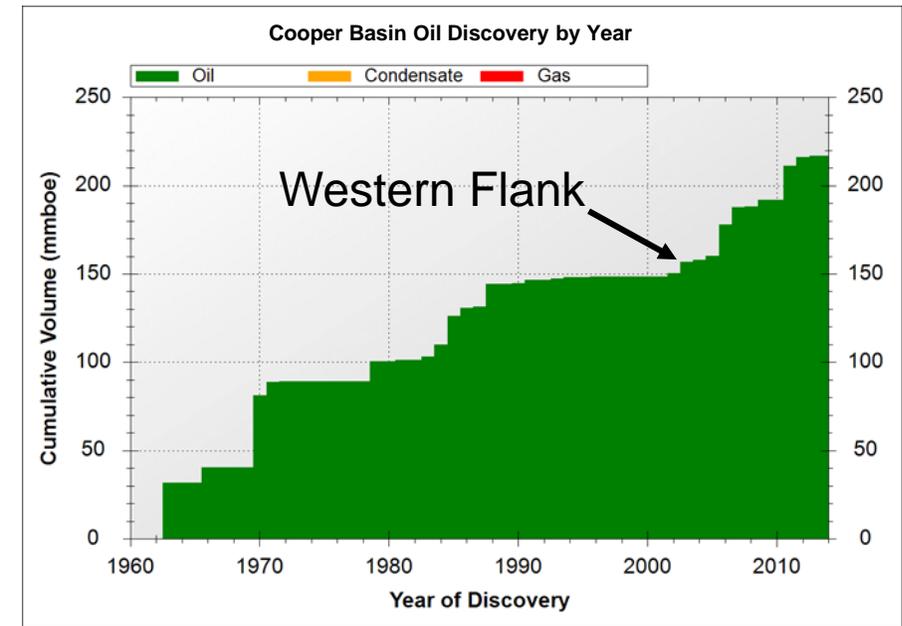
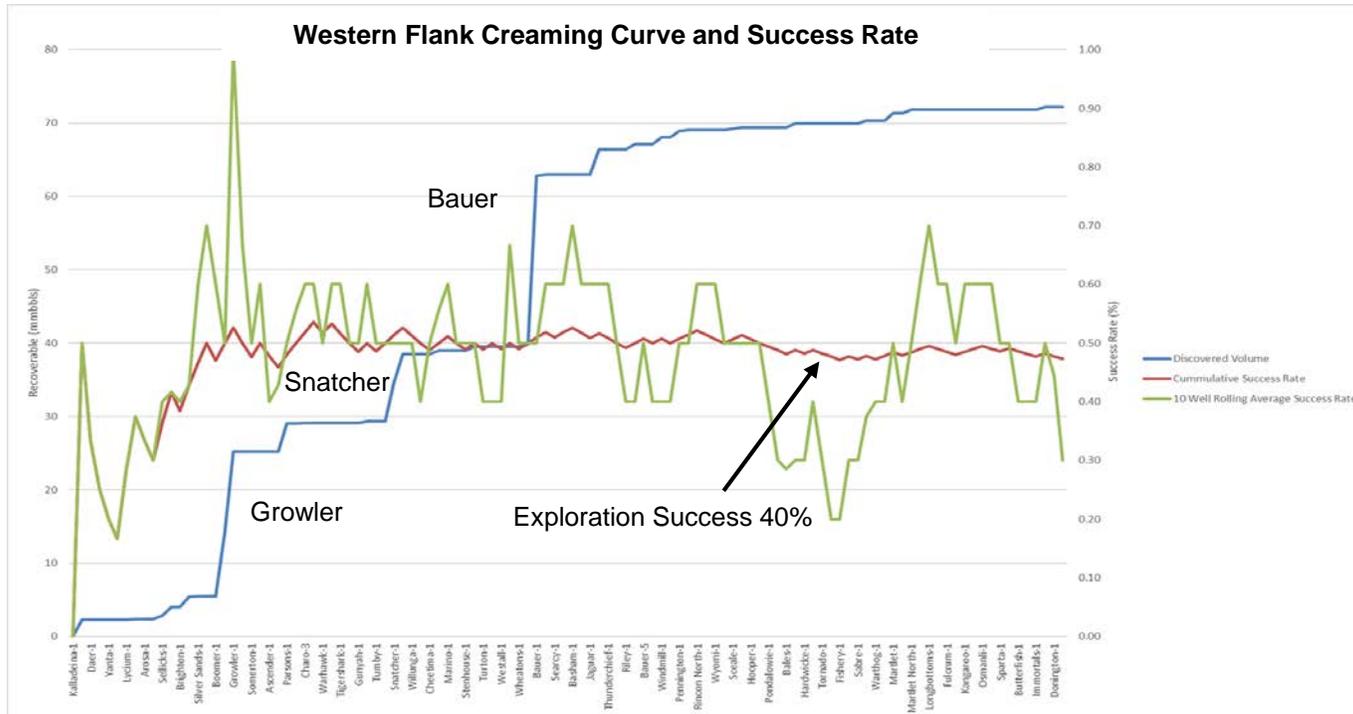
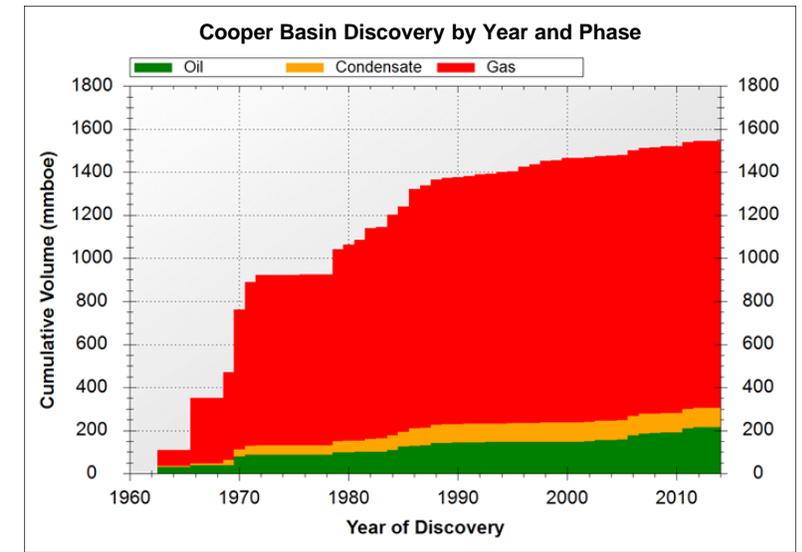
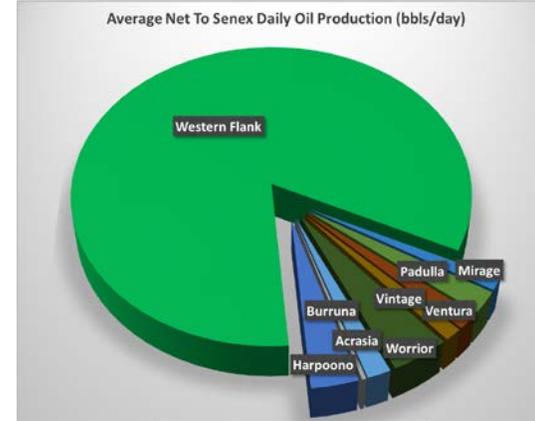


- An area of 3800 km² on the western margin of Cooper/Eromanga Basins in South Australia
- A major oil producing region of Australia with significant remaining exploration potential
- Operators: Senex (Beach JV), Beach and Santos (Beach JV)
- Integrated network of pipelines connected to Moomba
- 3400km² of 3D data in 16 surveys
- 2 significant exploration wells in 2016/17: Marauder and Kangaroo discoveries may be defining larger stratigraphic traps
- Hoplite-1 proved hydrocarbon migration in the north-east



Why the Western Flank is Important

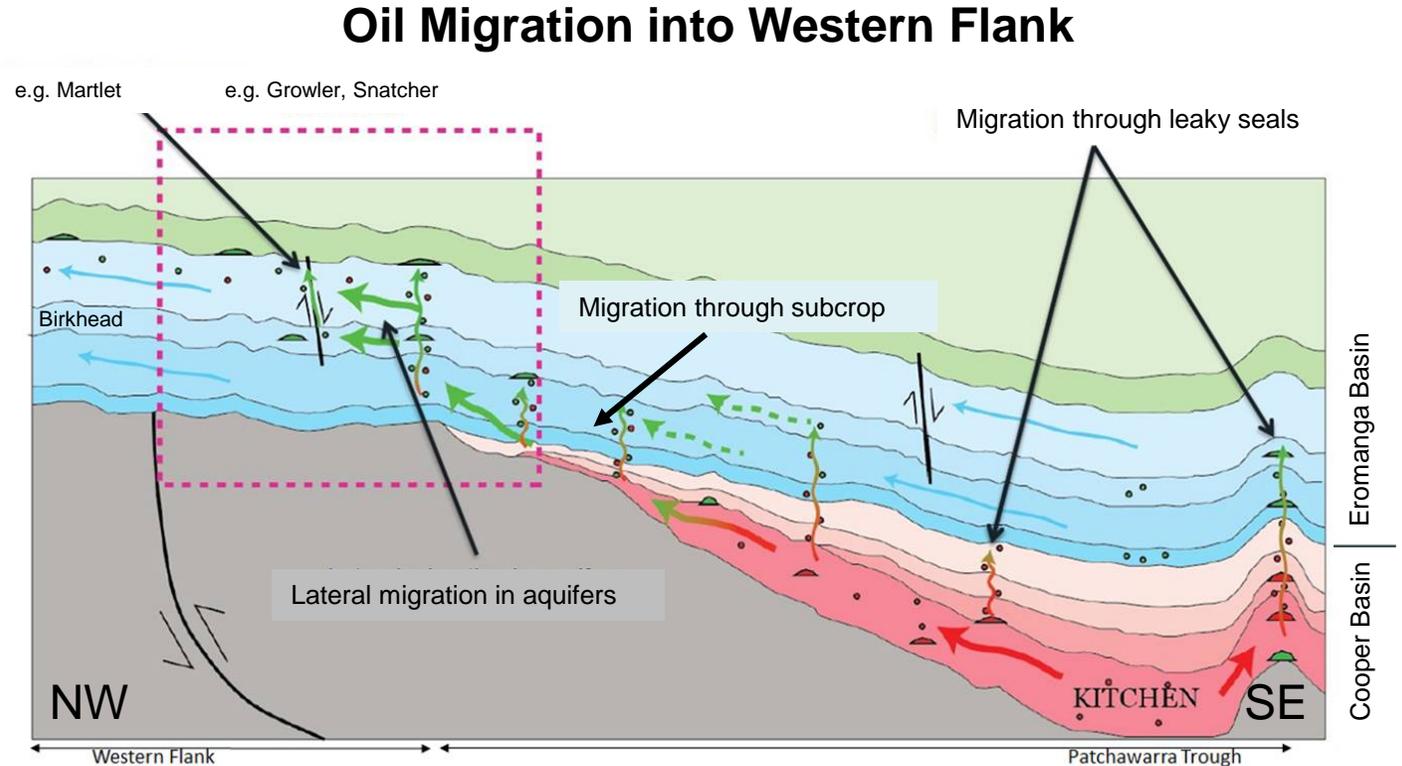
- Arrested 10 year drought in oil replacement in basin
- Over 30% of Cooper Basin oil reserves
- Total production to date 44mmstb
- Current production at 16,000 bopd (5.8 mmbo/year)
- High exploration success rate
- Three significant discoveries and challenge is to identify the next game changer





The Petroleum System and Plays

- Permian coals source rock
- Complex lateral and vertical migration from Permian/Triassic through high permeability Jurassic carriers beds to reservoir/seal pairs
- Reservoirs:
 - Birkhead – channel sands in subtle structural-stratigraphic traps
 - Namur – high permeability pervasive sandstone in low relief structures
- Understanding the nature of reservoir distribution/quality, seals/leakage, structural history and depth conversion critical to reducing exploration risk





Namur vs. Birkhead Reservoirs

• Namur Sst

• Pros

- High initial oil rate
- Long production life
- Low well density
- High recovery factor >50%
- Simple completion – no pump/monobore
- Consistent high quality reservoir
- High facility uptime

• Cons

- Higher facility CAPEX
- Highly sensitive to seismic uncertainty
- Rapid watercut development



• Birkhead Formation

• Pros

- Long term steady production
- Long production life
- Basic facility requirements
- High facility uptime

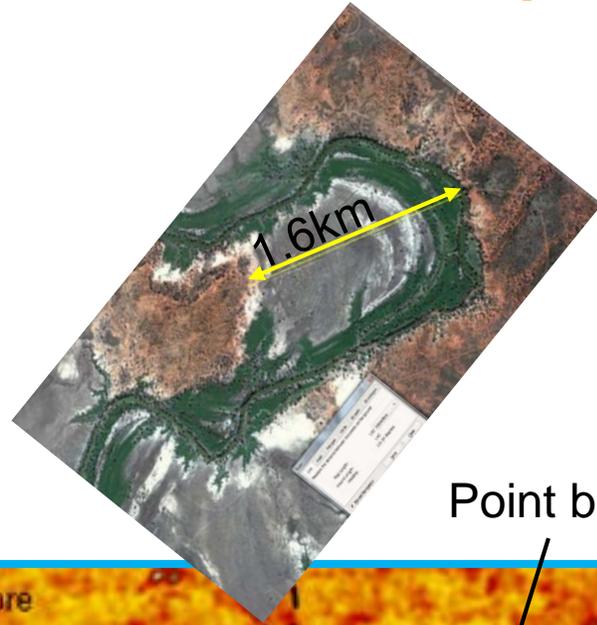
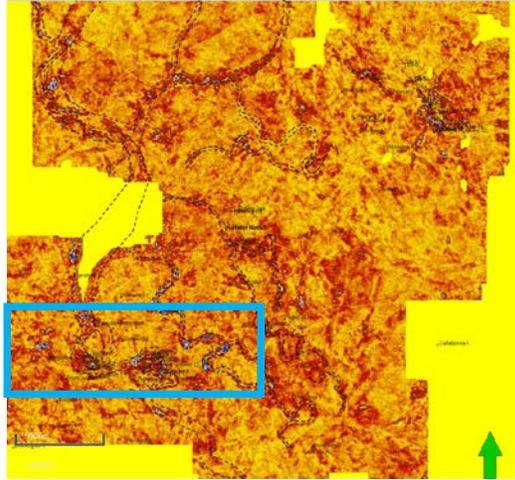


• Cons

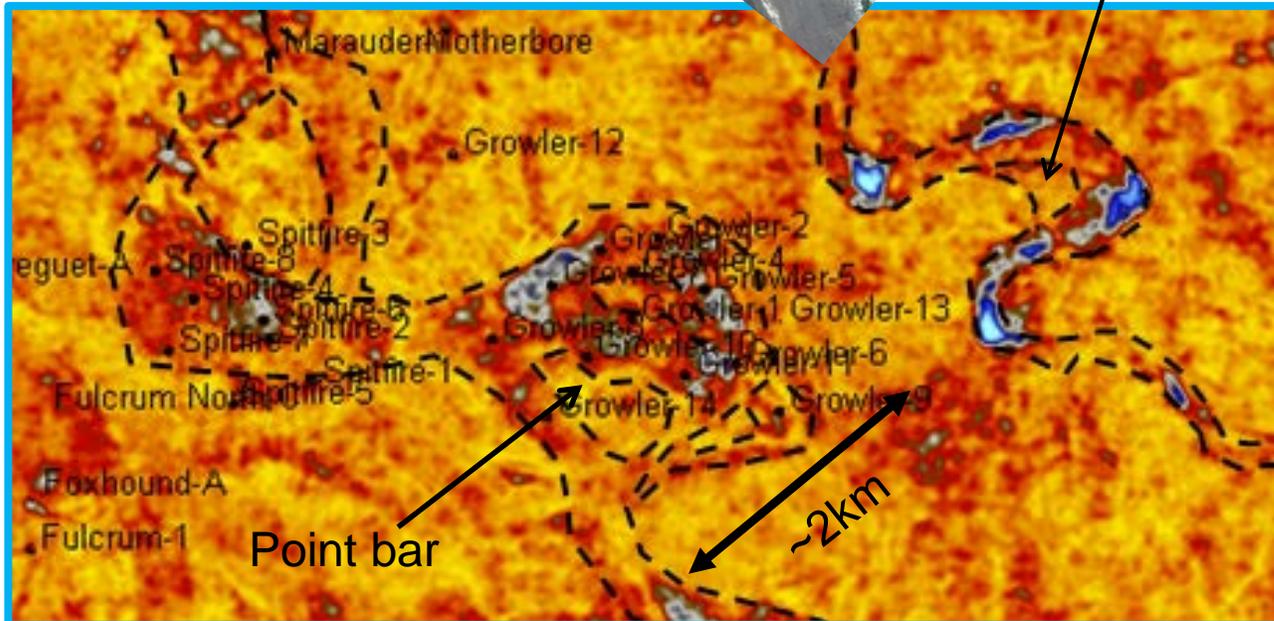
- Requires pump & associated workovers
- Highly heterogeneous reservoir
- Lower recovery per well



Birkhead Formation Deposition



Point bar



- Series of NW-SE orientated channel belts influenced by basement faulting
- On a regional scale Growler is part of a large point bar complex; *similar scale to point bar systems in the Darling River (1.6km)*
- Growler-Spitfire-Marauder is part of same large channel & stratigraphic play?

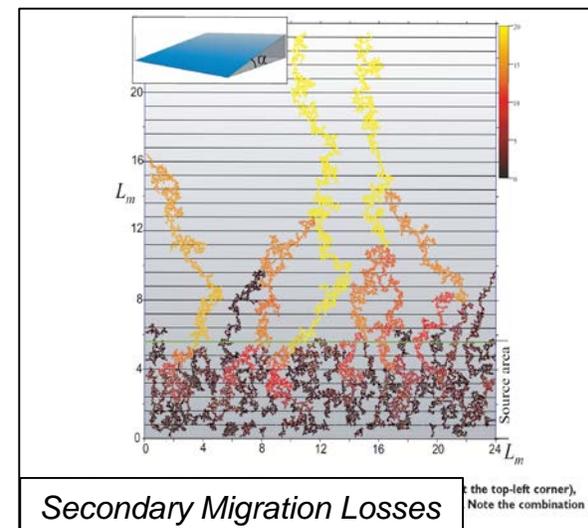
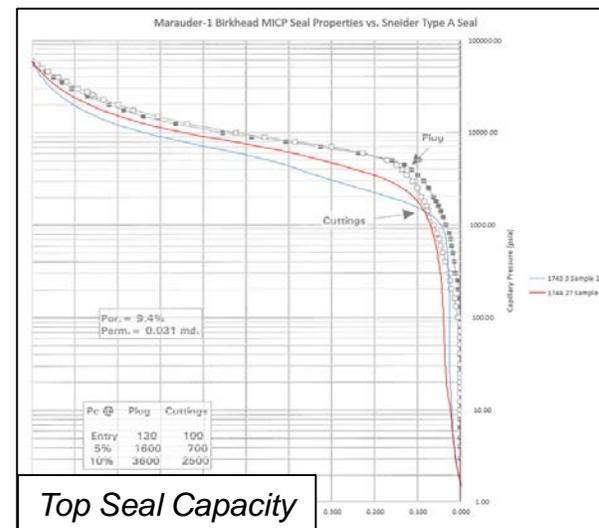
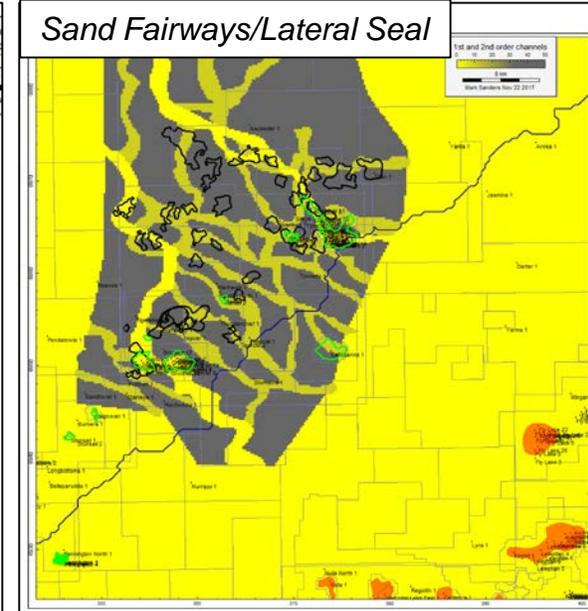
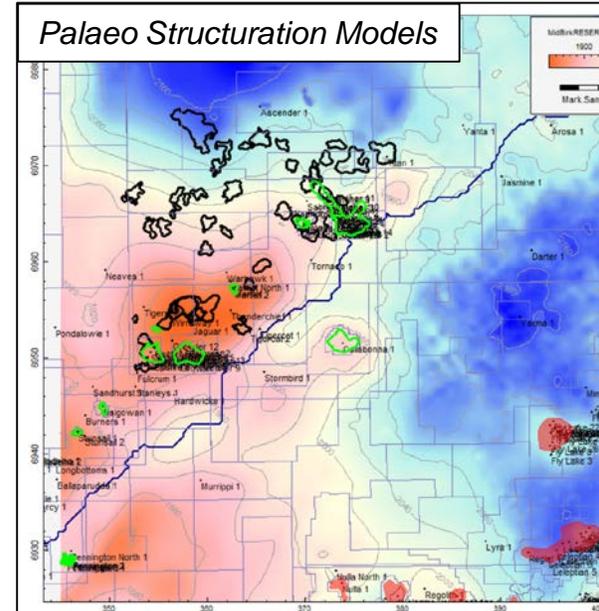


Darling River



Hydrocarbon Charge Modelling

- Charge in the Mid-Birkhead level is principally defined by uncertainty.
- Key variables:
 - Carrier bed sand-fairways
 - Top Seal Capacity of carrier beds
 - Secondary migration losses
 - Palaeo-structuration and remigration
- Possible models:
 - Large palaeo traps that have undergone significant gas depletion leaving remnant oil traps in “isolated” pools.
 - Multiple traps along fill-spill pathways





Geophysical Challenges

Structures are Subtle & Stratigraphy Variable

High Quality Seismic Essential

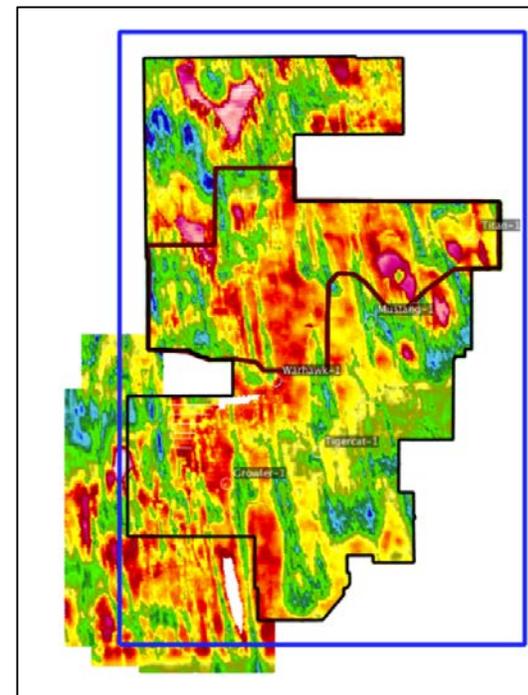
- Seismic acquisition and processing methods play a significant role in the accuracy of data and therefore depth conversion and are being optimised
- Senex Energy has undertaken thorough detailed review of data quality, acquisition, processing techniques, depth conversion methods, and accuracy of each methodology in forward prediction

Depth Conversion

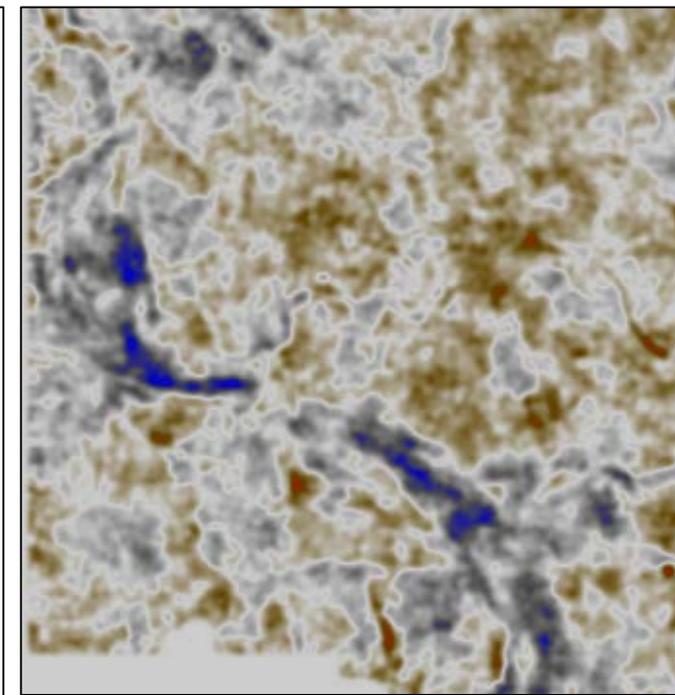
- Senex and JV partner undertake multiple depth conversion techniques with depth errors in the order of 0.4%
- Advanced modelling being undertaken across the entire Western Flank using a comprehensive model incorporating detailed shallow velocities and stratigraphic intervals tied to well control

Seismic Attributes

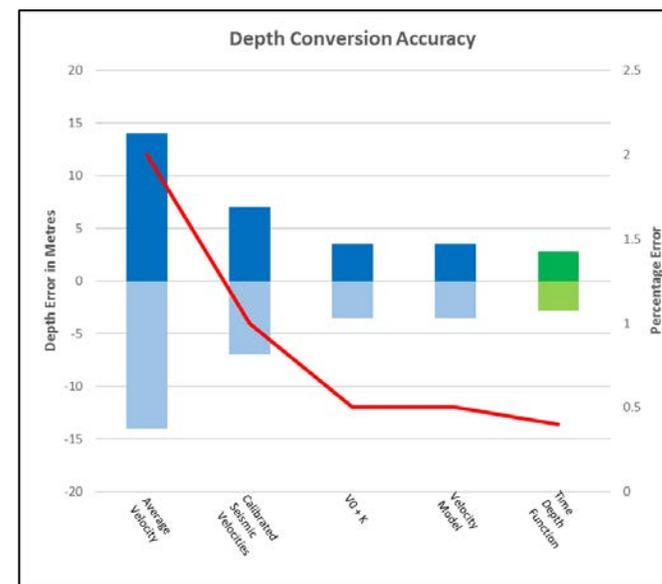
- Only high quality 3D data allows for multiple attributes to be used to develop stratigraphic and structural models that reflect the subsurface complexity



Total statics solution incorporating 7 different 3D's with different acquisition parameters



Quadrature data confirms channel architecture



Comparison of errors in metres and percentage of the depth conversion techniques

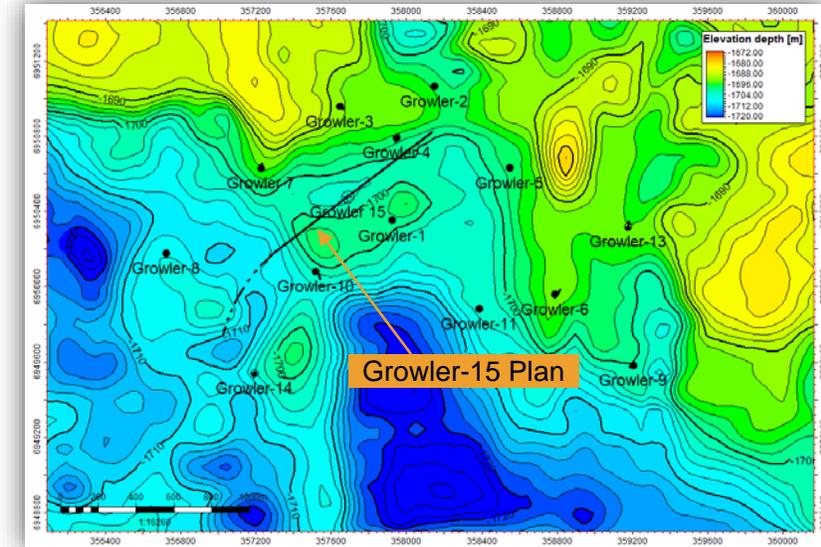


Western Flank Field Development

Senex is addressing additional ways to optimise field recoveries through:

- High quality exploration pipeline to feed into future development opportunities
- Horizontal drilling in the Birkhead Fm
 - Growler-15 planned for Q1 2018 with follow-up potential across the Western Flank
- Integrated holistic Field Development Plans for the larger fields:
 - Seismic interpretations and attributes to optimise well placement
 - Well concepts tailored for each area (including horizontal wells)
 - Future water injection for pressure support and improved sweep efficiency (studies in progress)
- Prudent well, reservoir & facility management:
 - Recent successful workovers to restore productivity and planned future water-shut offs & pump optimisation interventions
 - Growler produced water upgrades to facilitate the next phase of development

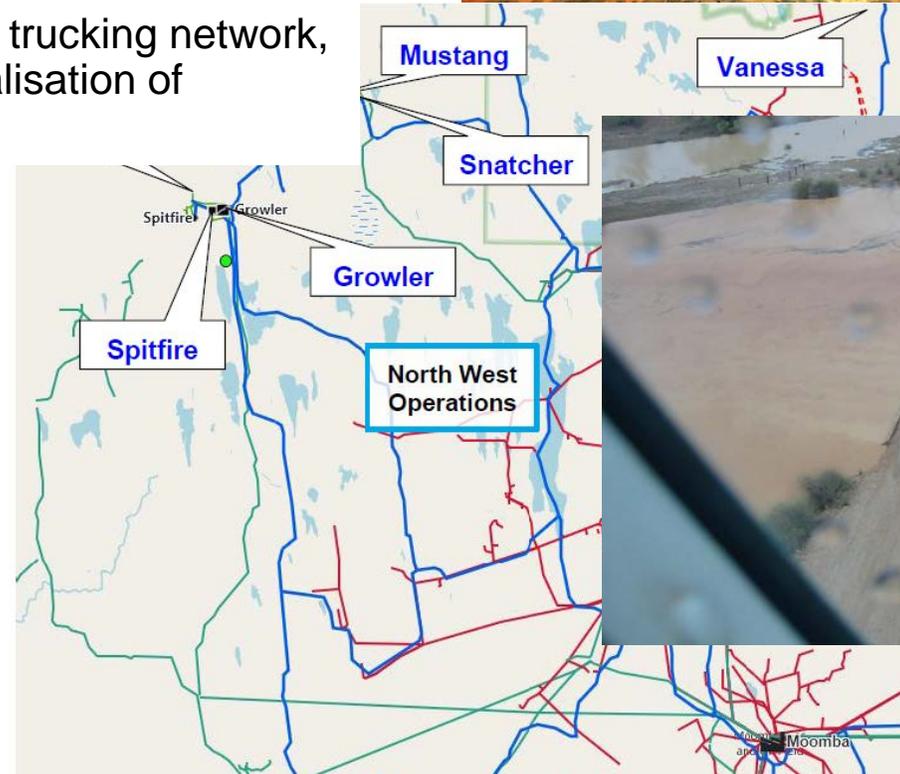
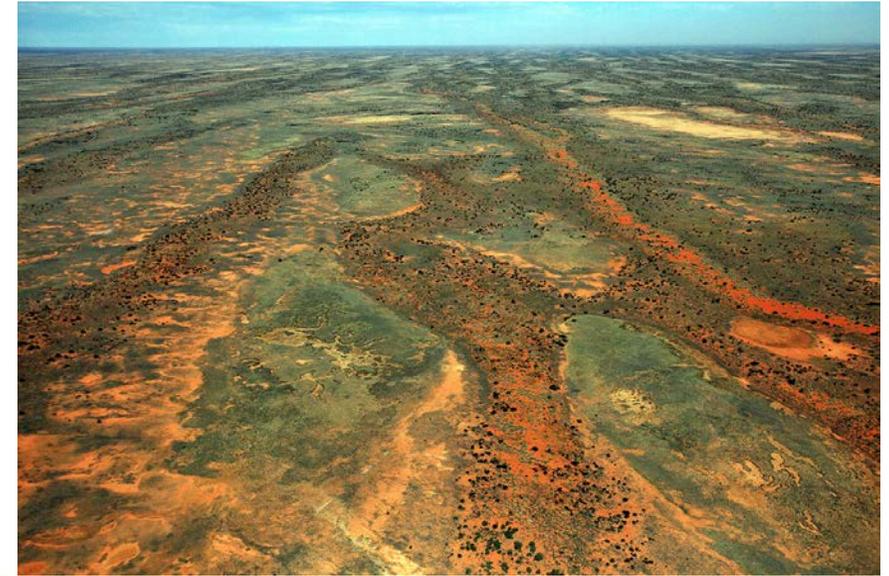
Growler-15 & Top Reservoir Depth Structure Map





Operational Efficiency is Paramount

- Top quartile safety and environmental performance in harsh physical environment with cultural significance
- Minimising UOC is absolutely essential for ongoing commercial viability - Senex reduce UOC annually
- High quality appropriately manned facilities
- Timely approval process and constant improvement in drilling practices without compromising HSE and data gathering
- Operational efficiency, storage facilities, pipeline and trucking network, commercial agreements that allows rapid commercialisation of discoveries
- Wet weather contingencies and facilities



Saving and supporting lives in remote and regional central/south Australia

- Senex-led Cooper Medivac 24 established 2014, now shared funding with Beach
 - 24/7 night capable helicopter
- Major partner of RFDS since 2014
 - Senex-badged aircraft has conducted 2000+ patient transfers



Summary

- The Western Flank is and will continue to be a significant oil province but not without its challenges
- Current subsurface focus on maximising field recovery, exploiting near field exploration opportunities and increasing the footprint through high technology exploration
- Sharing of knowledge, data and innovative ideas is occurring between Joint Venture parties
- Ongoing improvements to Operational efficiency
- Creating strong relationships and positive legacies





 Level 12, 19 Grenfell Street
Adelaide, SA, 5000

 info@senexenergy.com.au

 Level 14, 144 Edward Street
Brisbane, QLD, 4000

 www.senexenergy.com.au



Important information

This presentation has been prepared by Senex Energy Limited (**Senex**). It is current as at the date of this presentation. It contains information in a summary form and should be read in conjunction with Senex's other periodic and continuous disclosure announcements to the Australian Securities Exchange (**ASX**) available at: www.asx.com.au. Distribution of this presentation outside Australia may be restricted by law. Recipients of this document in a jurisdiction other than Australia should observe any restrictions in that jurisdiction. This presentation (or any part of it) may only be reproduced or published with Senex's prior written consent.

Risk and assumptions

An investment in Senex shares is subject to known and unknown risks, many of which are beyond the control of Senex. In considering an investment in Senex shares, investors should have regard to (amongst other things) the risks outlined in this presentation and in other disclosures and announcements made by Senex to the ASX. This presentation contains statements, opinions, projections, forecasts and other material, based on various assumptions. Those assumptions may or may not prove to be correct.

No investment advice

The information contained in this presentation does not take into account the investment objectives, financial situation or particular needs of any recipient and is not financial advice or financial product advice. Before making an investment decision, recipients of this presentation should consider their own needs and situation, satisfy themselves as to the accuracy of all information contained herein and, if necessary, seek independent professional advice.

Disclaimer

To the extent permitted by law, Senex, its directors, officers, employees, agents, advisers and any person named in this presentation:

- give no warranty, representation or guarantee as to the accuracy or likelihood of fulfilment of any assumptions upon which any part of this presentation is based or the accuracy, completeness or reliability of the information contained in this presentation; and
- accept no responsibility for any loss, claim, damages, costs or expenses arising out of, or in connection with, the information contained in this presentation.