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# DRY HOLE ANALYSIS: What I have learnt about the upstream petroleum industry from my failures!

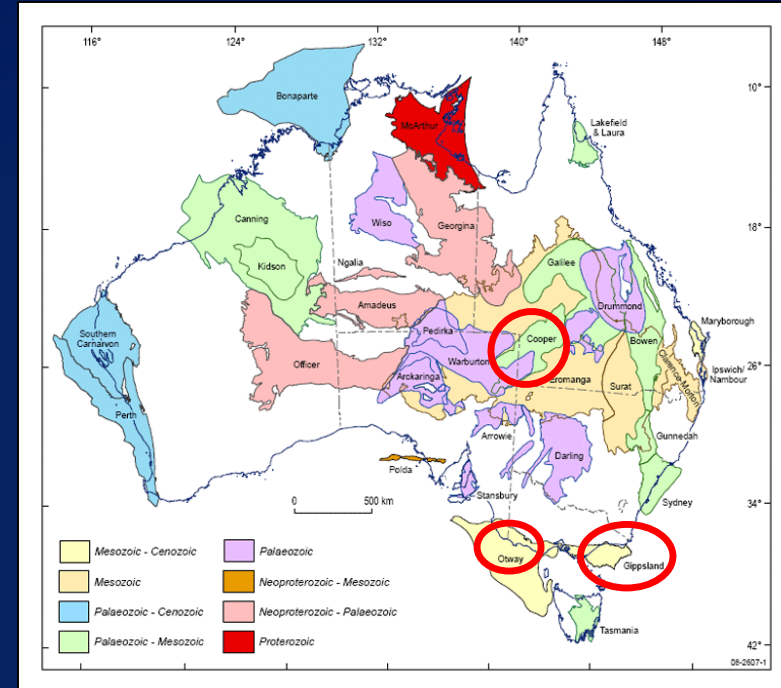
**Dr Steve Mackie**  
**Geosim Consulting Pty Ltd**



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# Outline

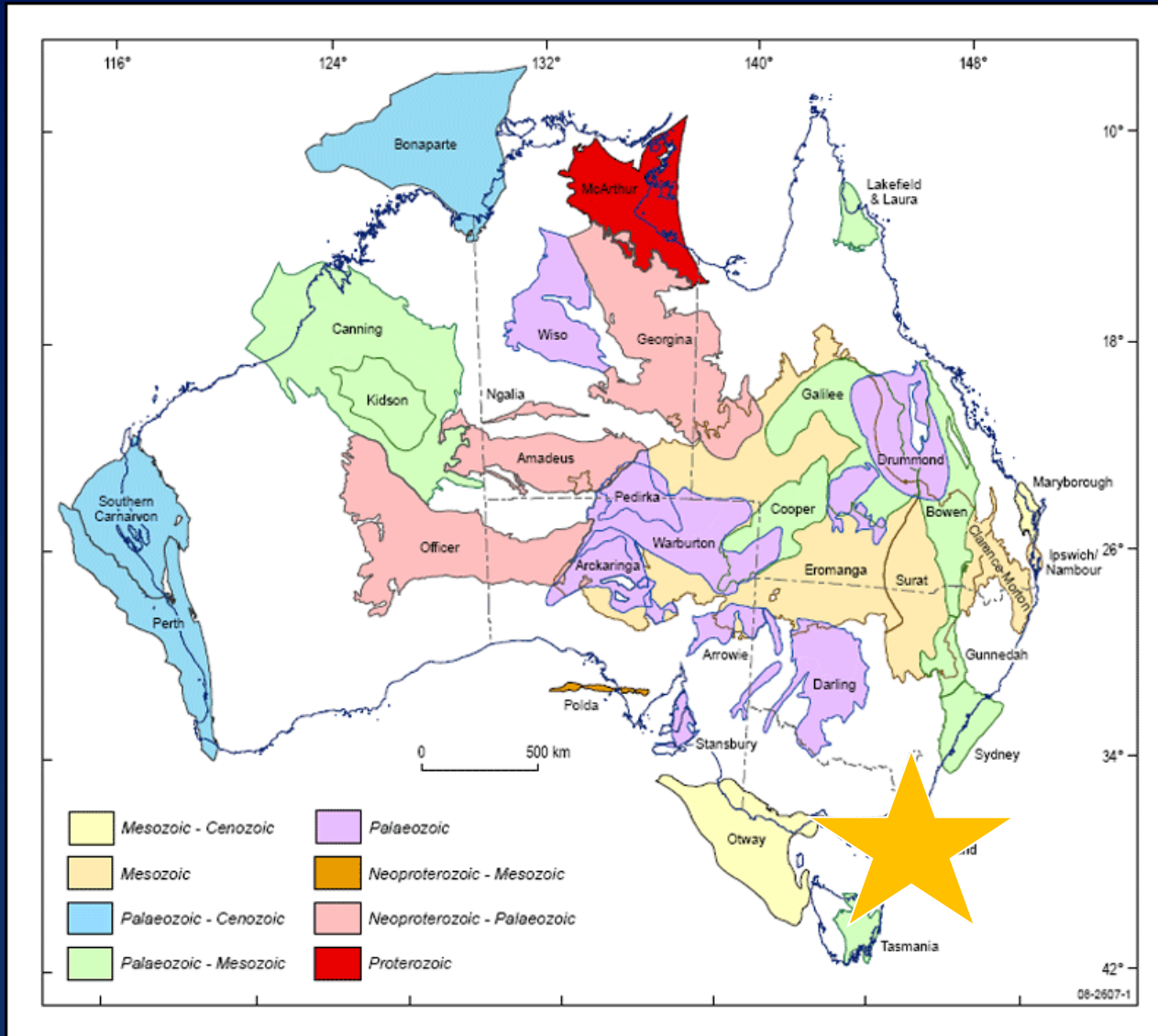
- Fortescue (Gippsland Basin)
- Accounting
- Raven (Cooper Basin)
- SW Queensland (Cooper Basin)
- Kiana vs Western Flank Discovery (Cooper Basin)
- Windermere (Otway Basin)



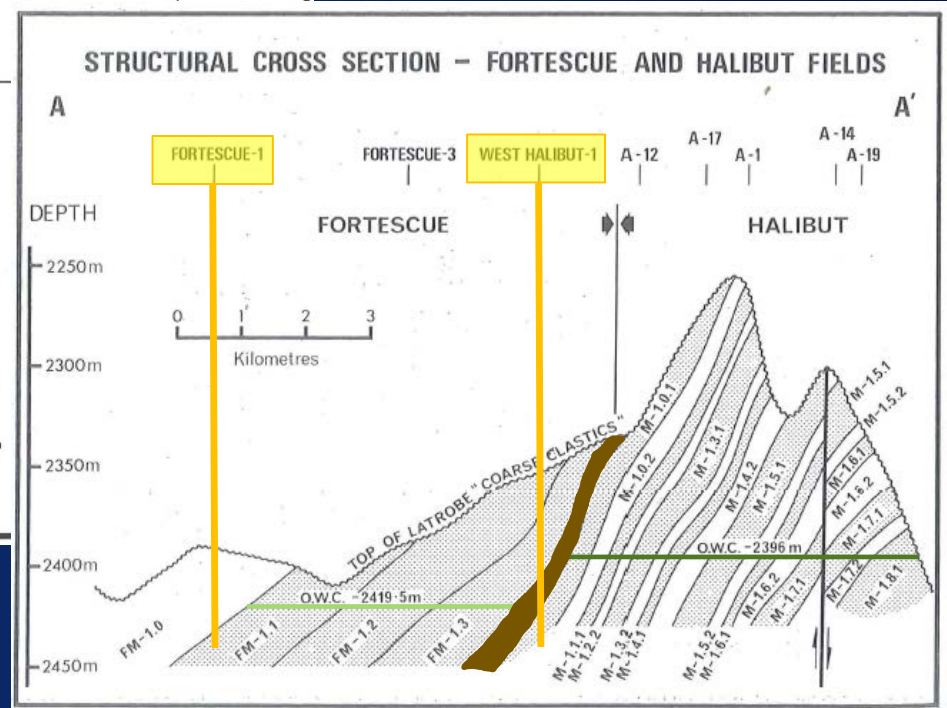
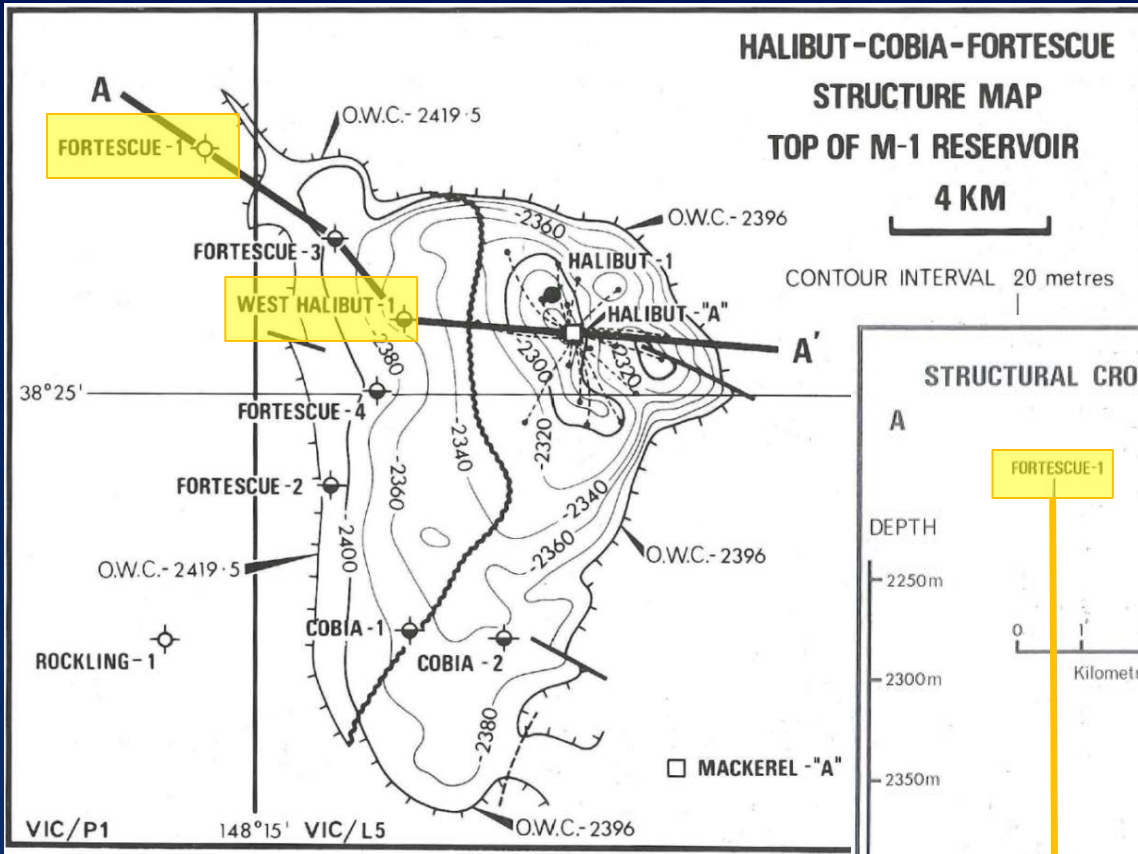
# Fortescue



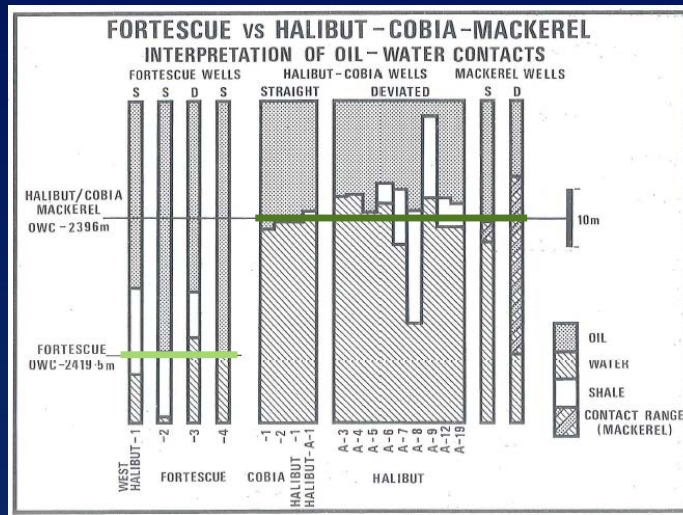
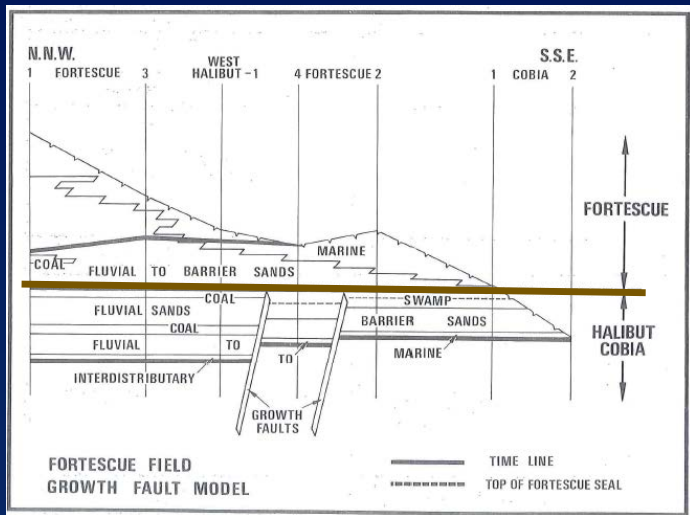
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# Fortescue

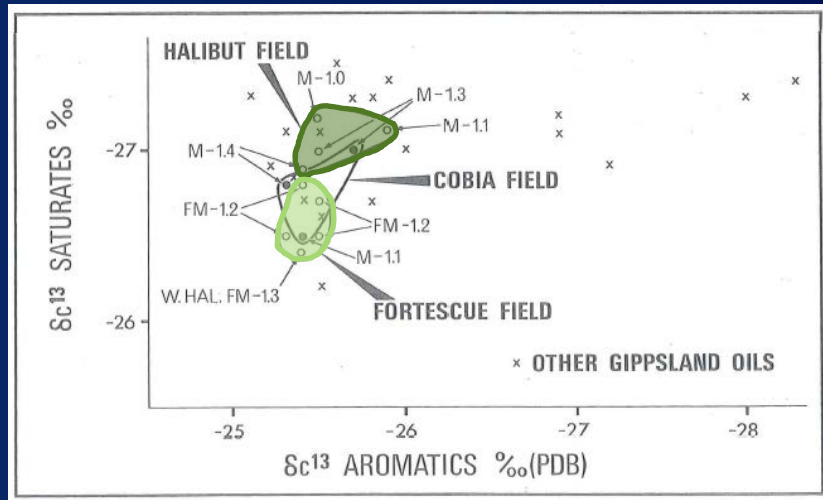
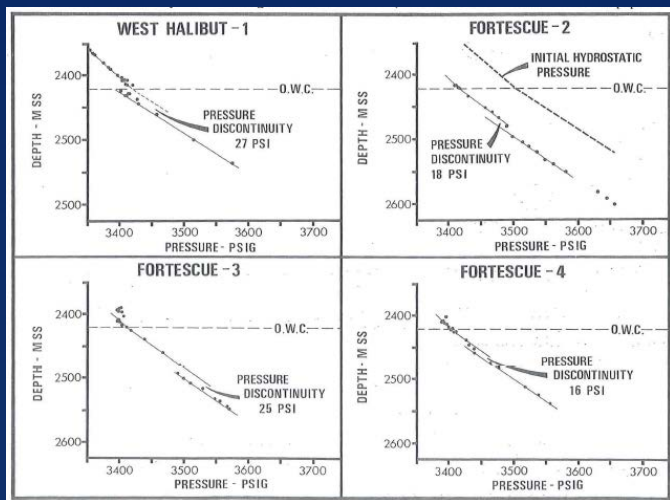


# Fortescue



Stratigraphic Separation

Pool Separation



- **Learning:** The upstream oil and gas industry is aimed at making money from rocks, fluids and ALL the available data – it's a BUSINESS not academic research

# Accounting



- Company had ***several major cost overruns*** whilst drilling exploration wells over ***the previous 10 years***
- ***Head office*** sent out ***investigation team*** to do a review to determine why
- After ***2 weeks of investigation*** they found that the majority of wells fell into ***two categories***;
  - ***“on cost” and “over cost”***
  - and recommended that we do more of what made up the “on cost” group
- Called all explorers together to determine the makeup of each category



# Accounting



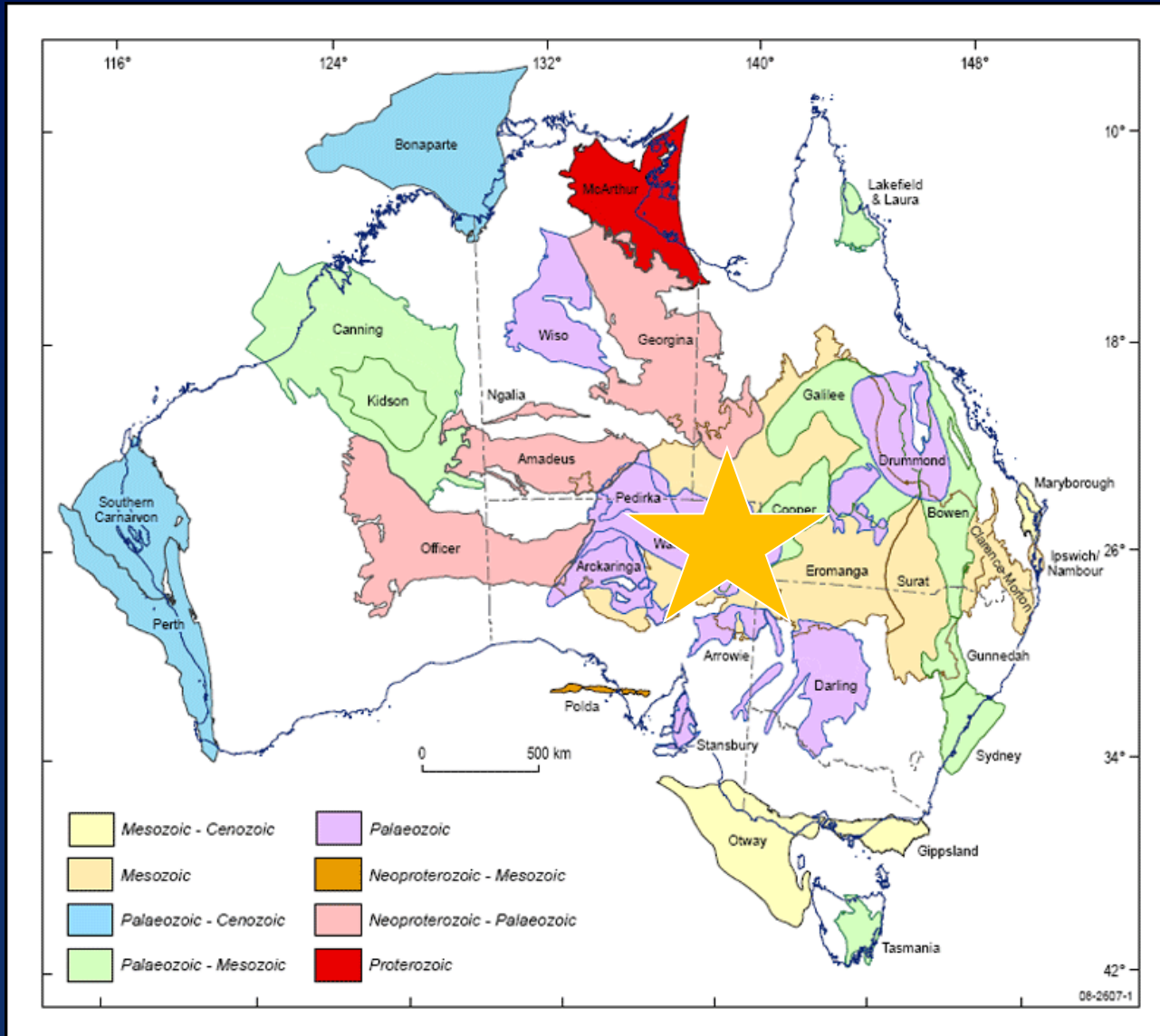
- The difference?
  - *“On cost” wells were all P&A’d.*
  - *“Over cost” wells were all discoveries!*
- Reason: Accounting budgeted drilling exploration wells on a P&A basis. Any testing or completion was, therefore, over budget
- *We suggested that instead of drilling only P&A wells that Accounting change their budgeting process!*

# Accounting



- **Learning:** Don't let accountants run the business!

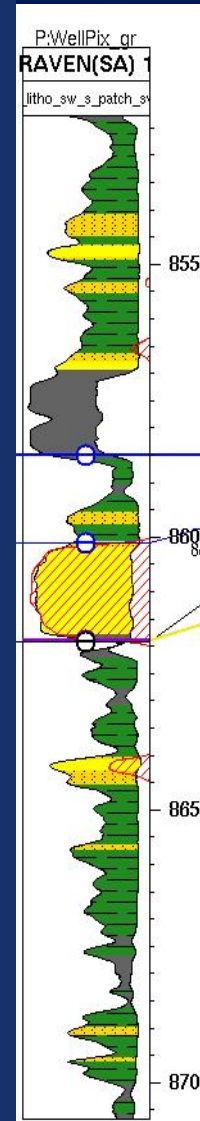
# Raven



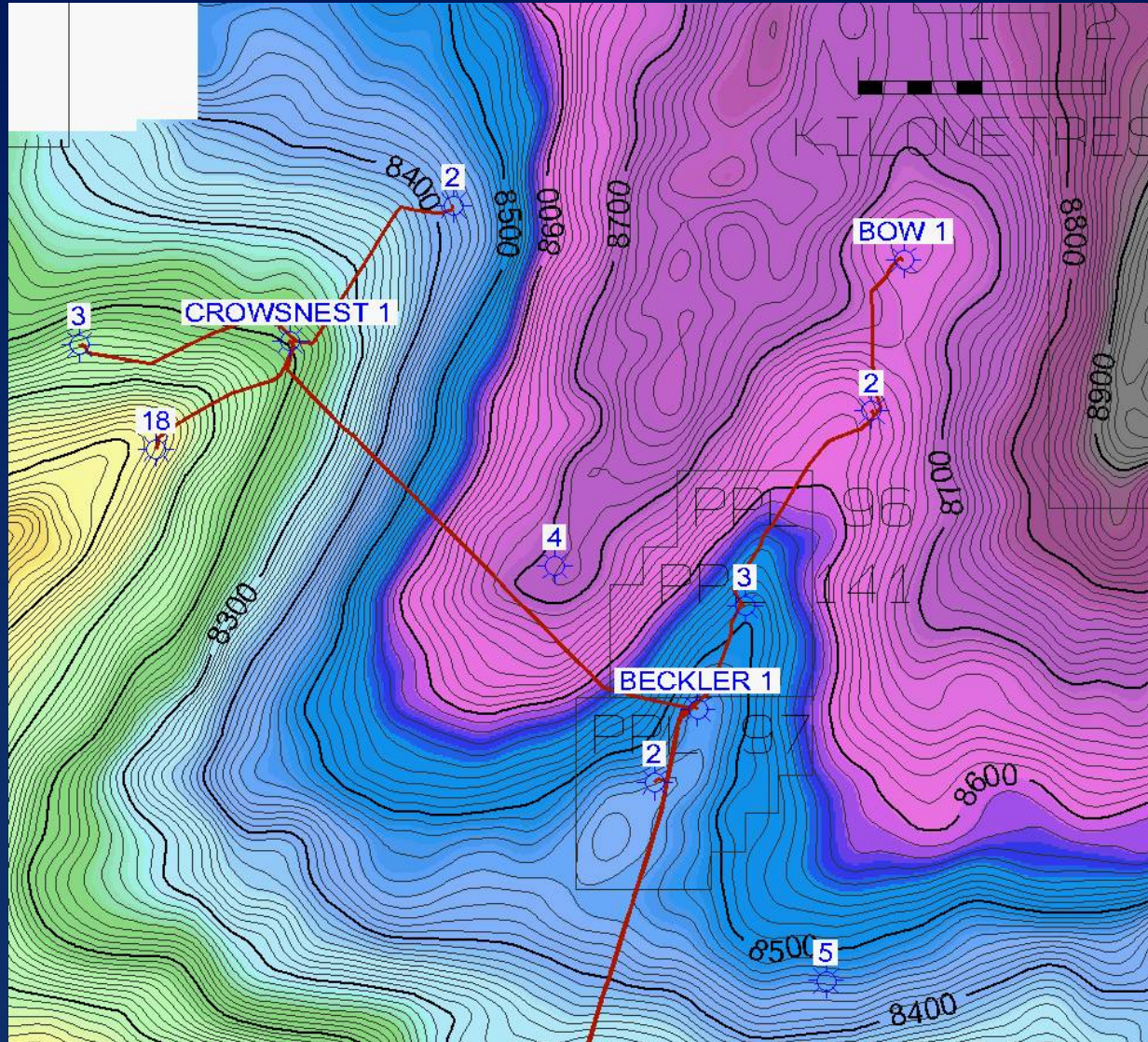
# Raven



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# Beckler / Bow / CrowsNest



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# Raven

## Beckler / Bow / CrowsNest



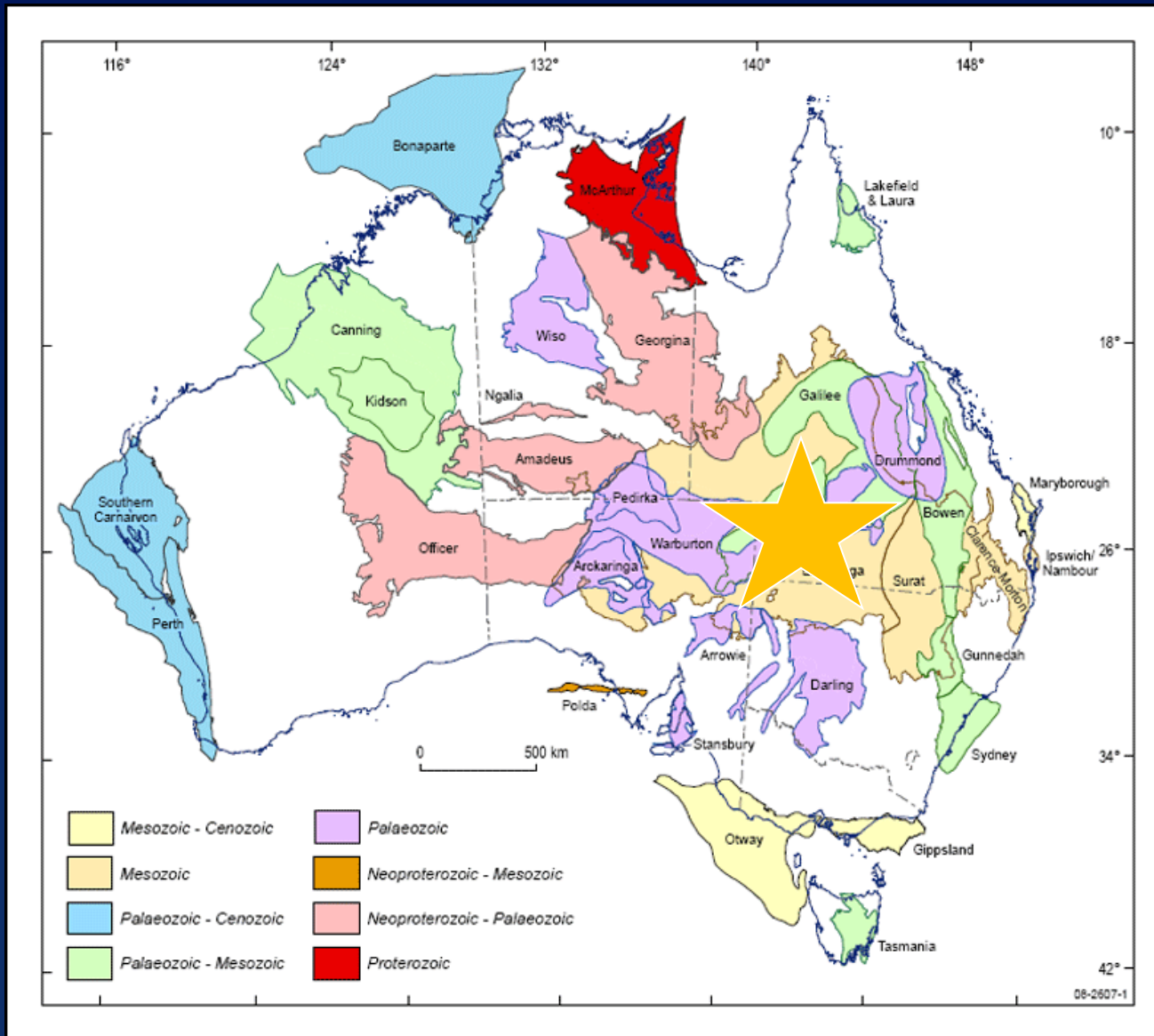
- **Learning:** “. . . oil is first found . . . in the minds of men ” – IDEAS!

Wallace Pratt, 1952, Towards a philosophy of oil finding: Bulletin of the American Association of Petroleum Geologists, v. 36, no. 12, p. 2231-2236.

# South West Queensland



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# South West Queensland



## 1996-1997 SWQ ACCELERATED GAS PROGRAMME

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**Steve Mackie**

Presented in recognition for your significant contribution to the most successful onshore gas exploration programme undertaken by Santos Ltd in the last 25 years.

This success was the result of hard work, creative and critical thinking; the introduction of new technologies and integrated teamwork.

*presented by*

***Queensland and Northern Territory Business Unit***  
**Santos Ltd**

A handwritten signature in black ink, appearing to read 'Rob Heath', written over a horizontal line.

**Rob Heath**  
Manager, Exploration

A handwritten signature in black ink, appearing to read 'Andrew Mayers', written over a horizontal line.

**Andrew Mayers**  
Manager, Petroleum Engineering and Drilling

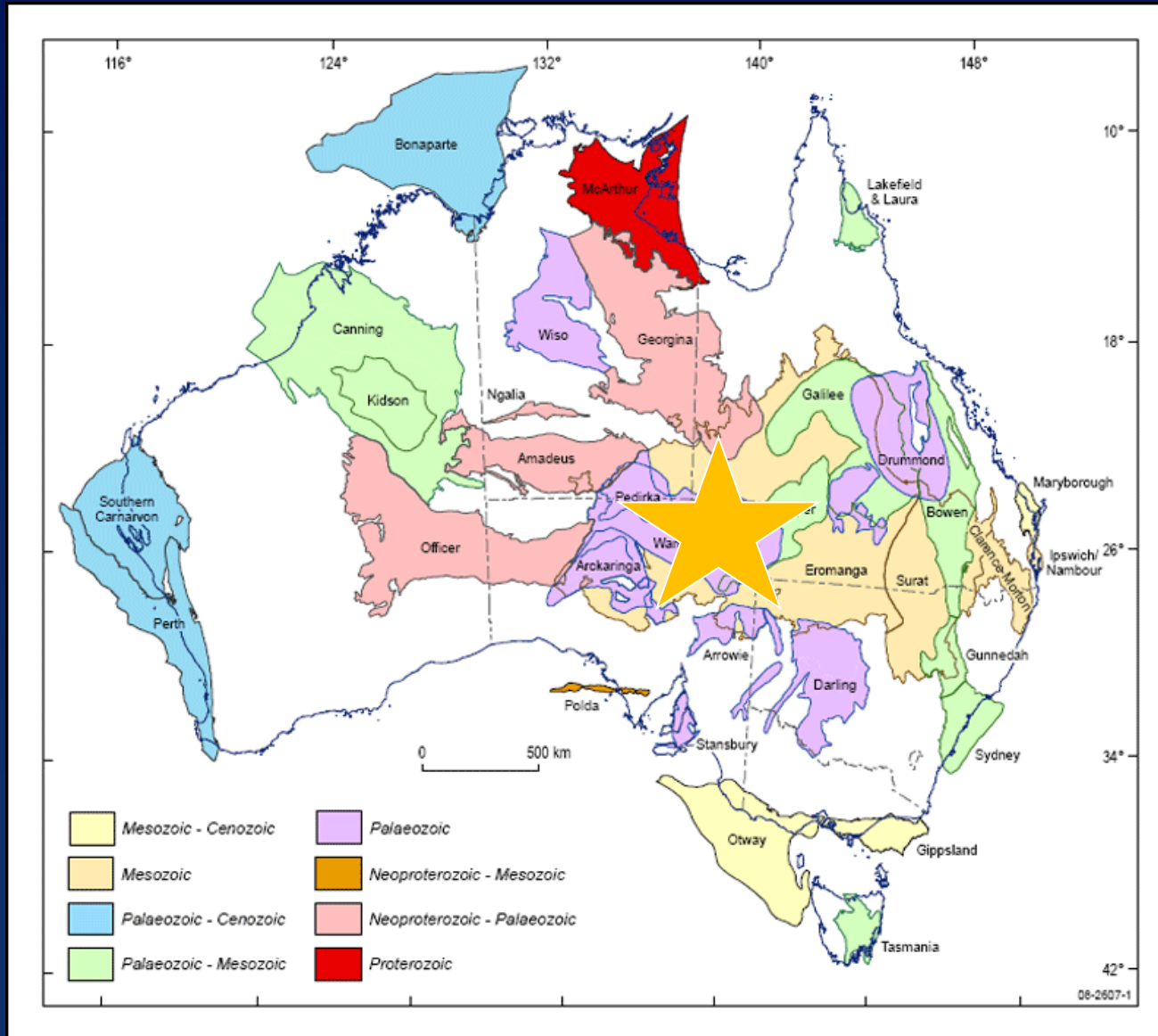


# South West Queensland

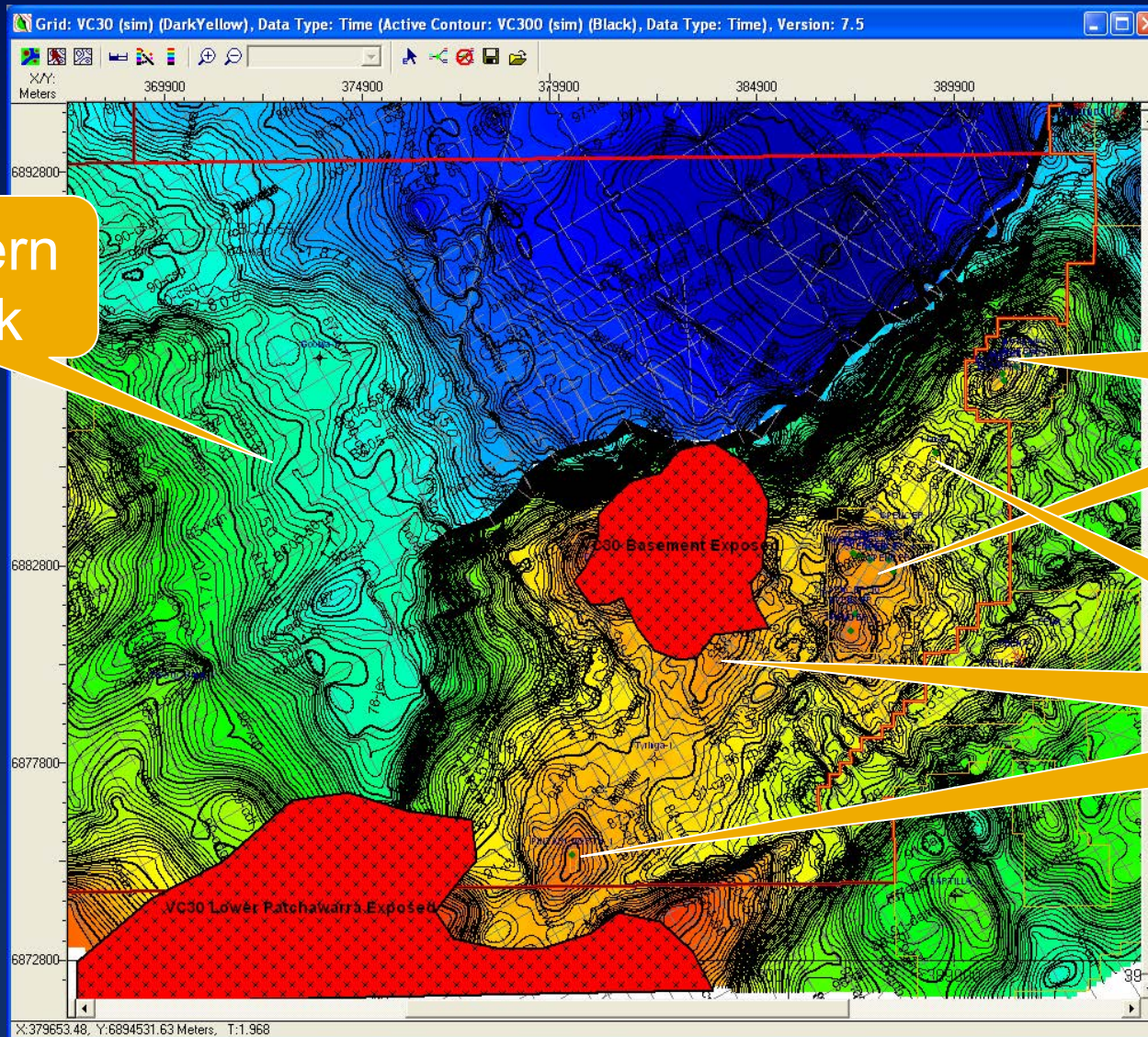


- **Learning:** Political environment effects outcomes

# Kiana versus Western Flank



# Kiana versus Western Flank

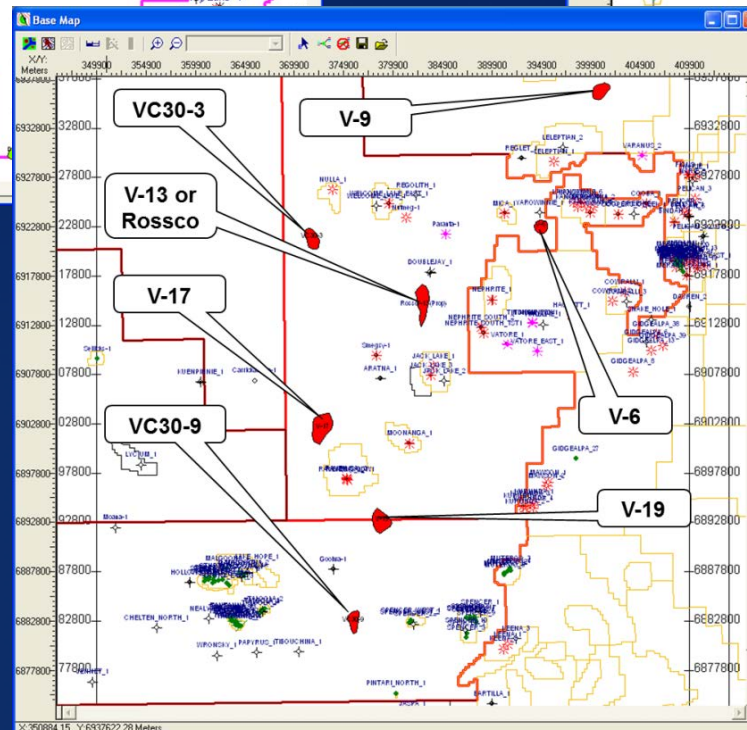
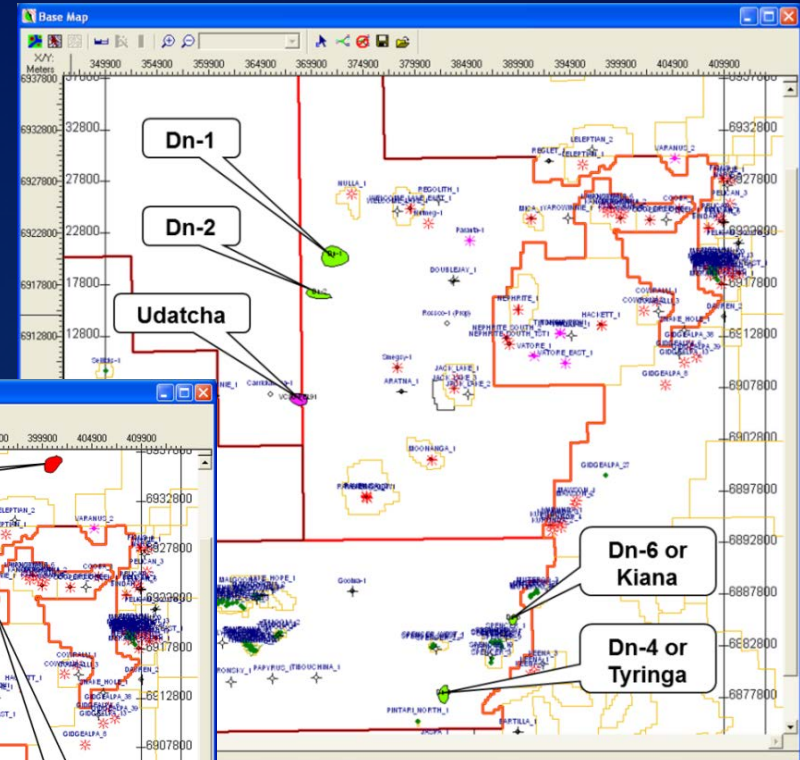
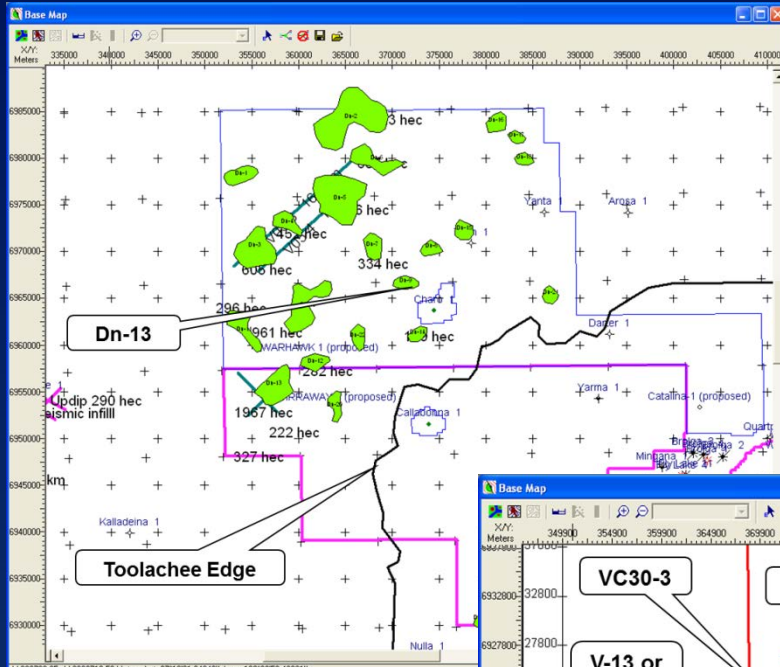


Western Flank

Previous Discoveries

Undrilled Structures

# Kiana versus Western Flank



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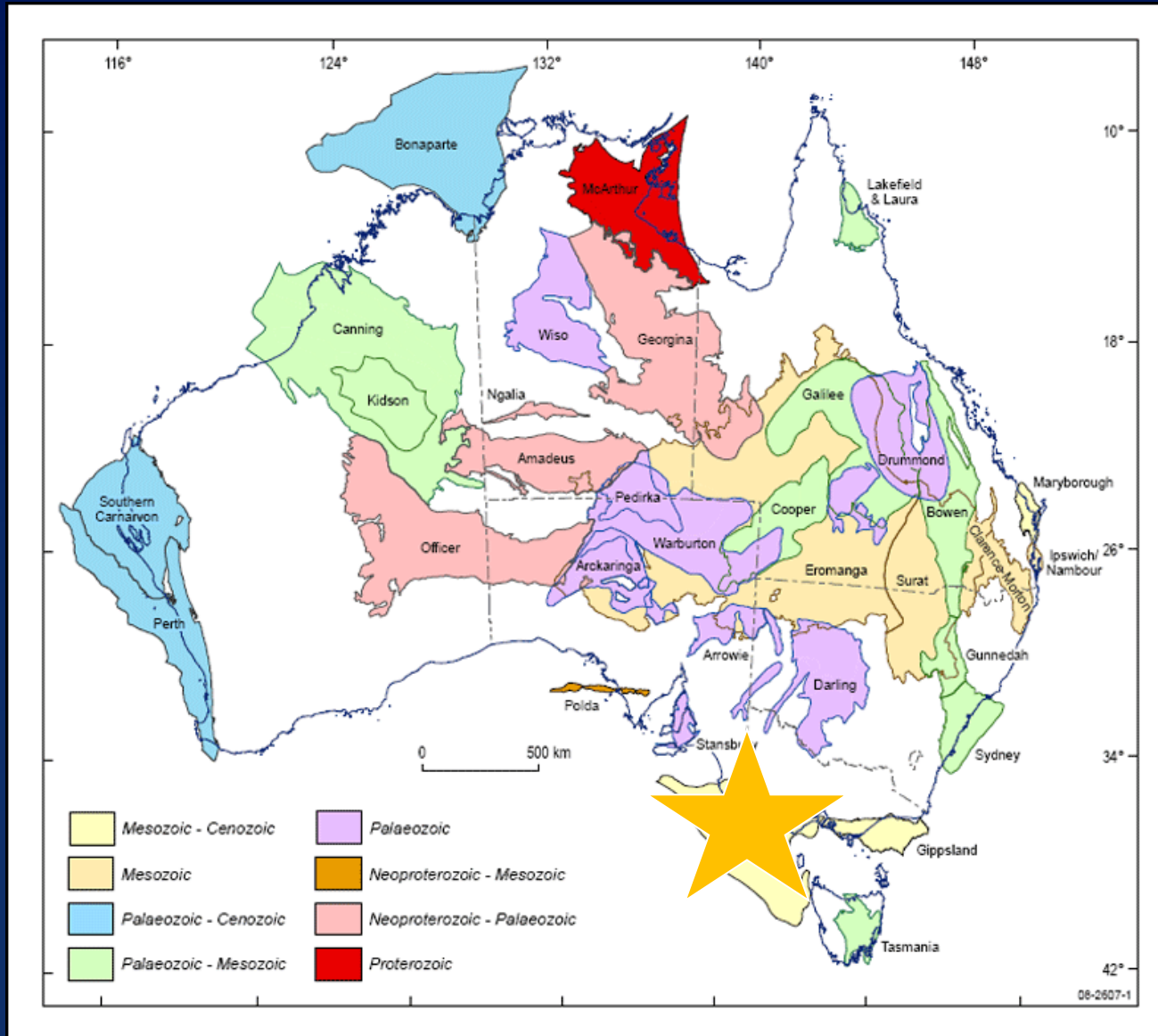
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# Kiana versus Western Flank

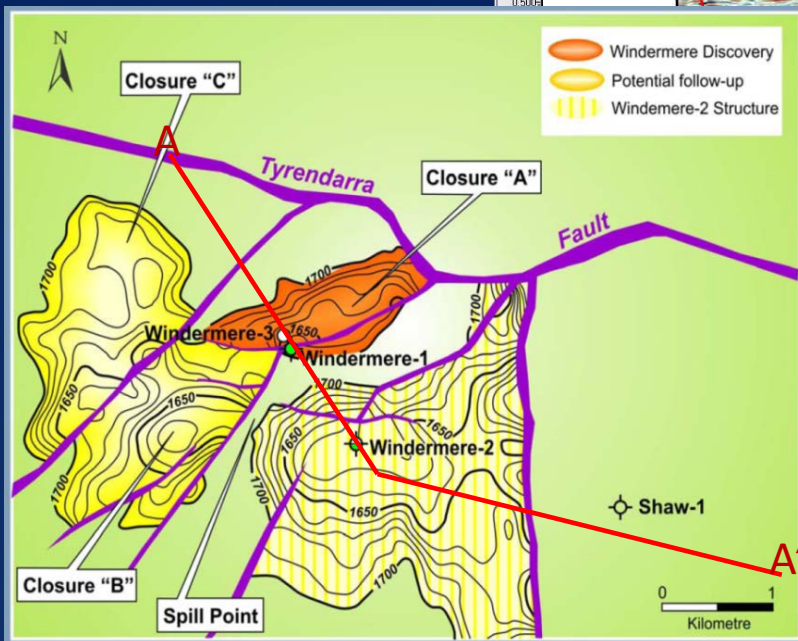
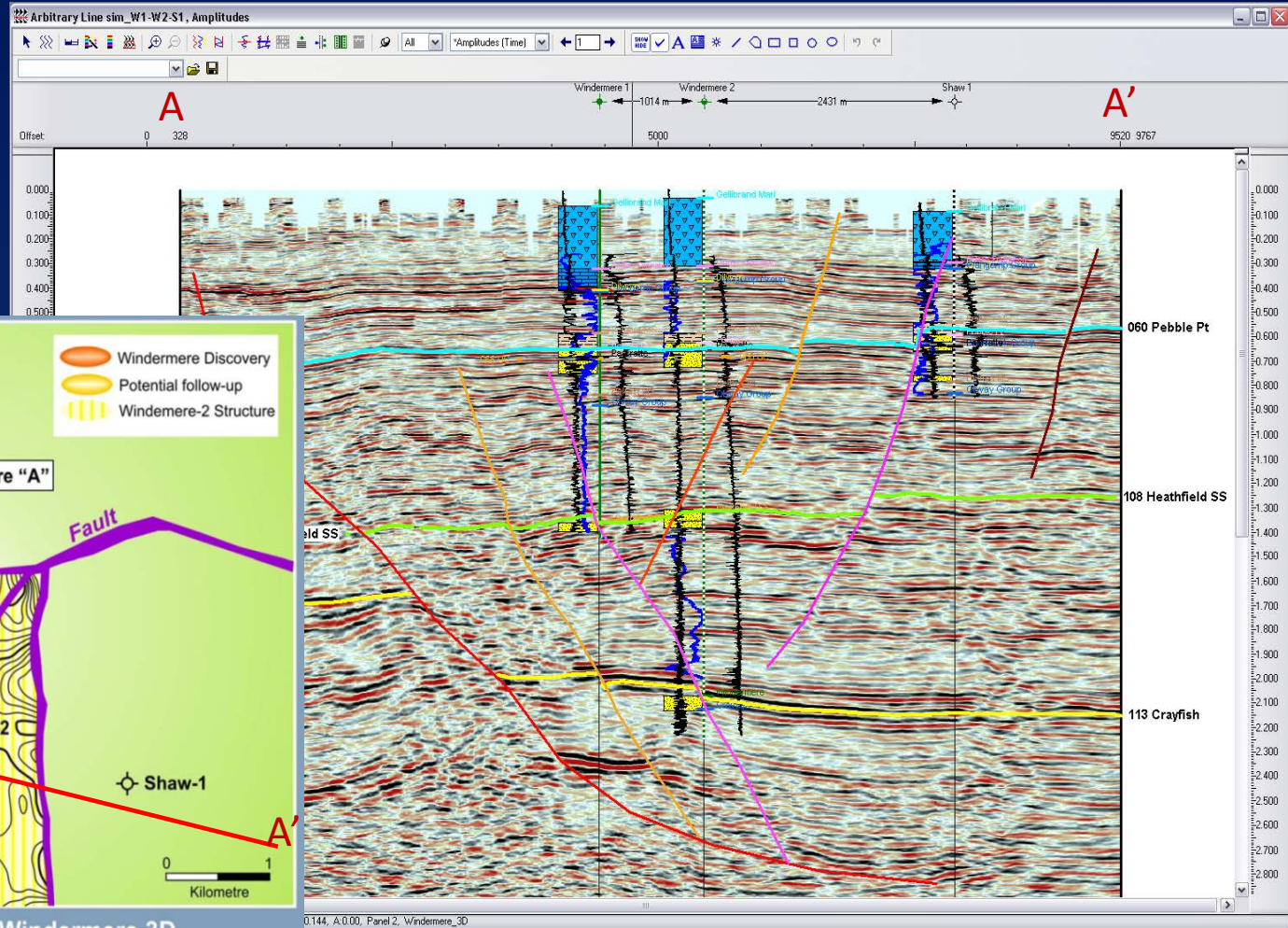


- **Learning:** Management may not always know what is best – trust your analysis

# Windermere

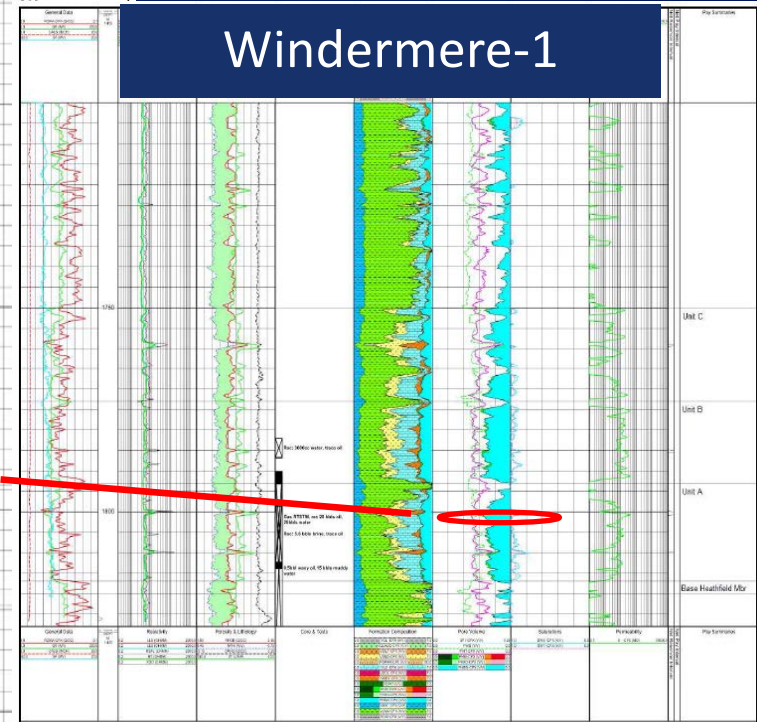
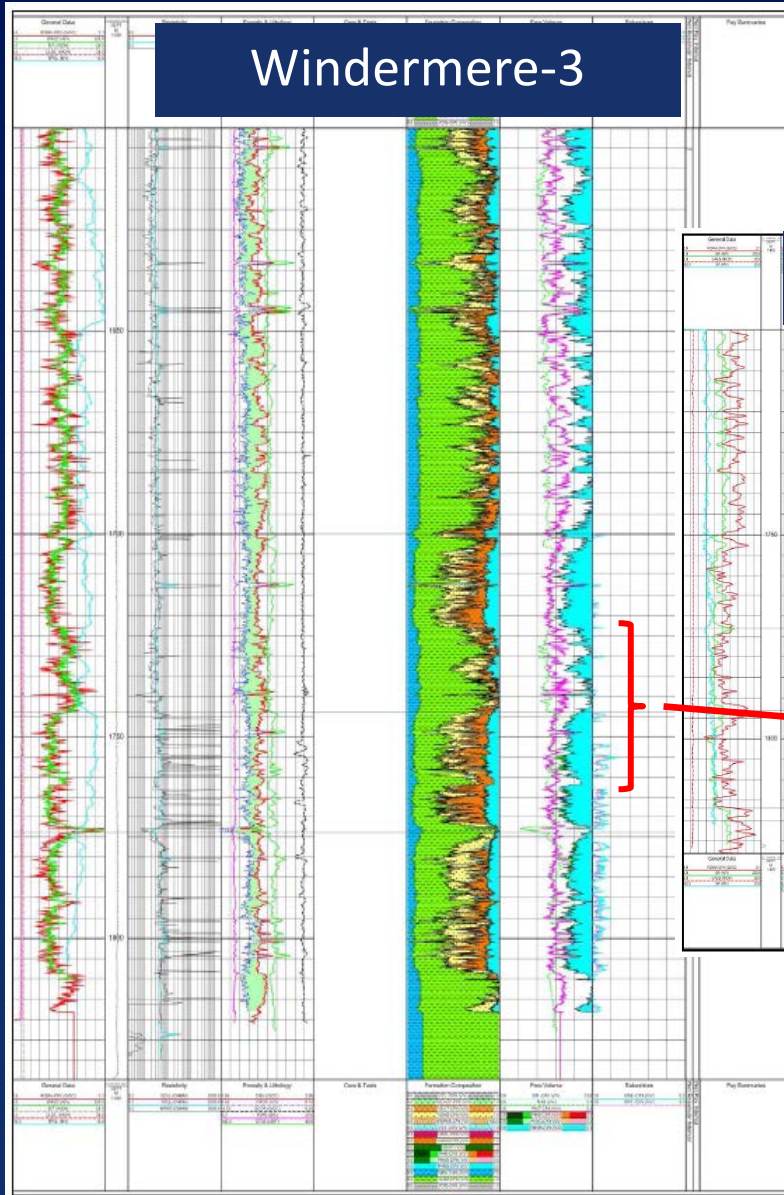


# Windermere



PEP 167 (Onshore Otway) - Windermere 3D  
Top Heathfield Member Depth Structure

# Windermere





# Windermere



- **Learning:** Not all dry holes are failures – think of what new plays can be uncovered from them!

# Summary

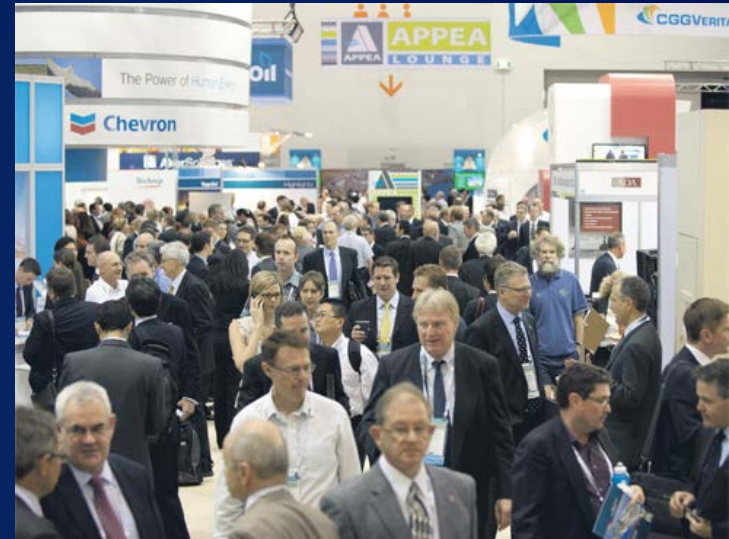


## What I have learnt from my mistakes:

- The upstream oil and gas industry is aimed at making money from rocks, fluids and ALL the available data – it's a BUSINESS not academic research
- Don't let accountants run the business!
- "... oil is first found . . . in the minds of men " – IDEAS
- Political environment effects outcomes
- Management may not always know what is best – trust your analysis
- Not all dry holes are failures – think of what can be uncovered from them!

# Conclusion

- Whenever I have had a change in company the thing I miss the most is the interaction with the people



People are what  
make the  
industry great!



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