APPENDIX 2

Power point presentation of paper:-

The Hydrocarbon Potential of the unexplored Wiso Basin, onshore Northern Territory, Australia

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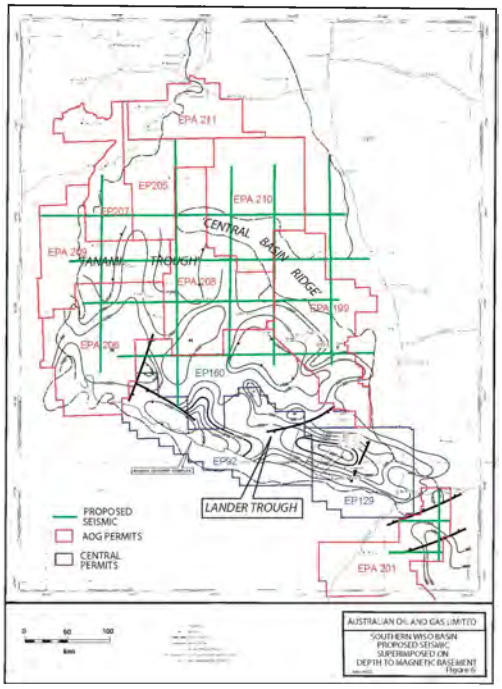
Australian Oil and Gas
Darwin

Delivered at the Central Australian Basins Symposium

Alice Springs, July 2012



Wiso Basin

- No play has been tested within the basin. The following plays should be definitively tested:-
- Simple structural plays
- Marginward traps, to assess Gussow's Theoem
- Stratigraphic traps, amongst others.
- A proposed indicative program has been laid out to evalute the extensive acreage position of AOG in the Wiso Basin.
- ***The Wiso Basin appears to have all the pre-requisites for hydrocarbon generation and entrapment***

Wiso Basin

- The fine grained basal units of the Cretaceous Mullaman Beds should seal the potential clastics reservoirs of the Mt Surprise Sandstone.
- Appropriate traps should be present within the basin sequence, due to tectonics of the Petermann, more precisely the Yuendumu Stage 1 and 2 Movements and the Djagamarra Event Alice Springs Orogeny. Erosional episodes could also have produced trapping geometries.

Wiso Basin

- Appropriate seal/reservoir couplets appear to be present within the Wiso Basin sequence, namely:-
- Shallow water micritic limestones and shales of the of the Point Wakefield Beds should seal the potential clastics reservoirs of the Lothari Hills Sandstones.
- The carbonate and shales of the basal Hanson River Beds should seal the potential clastics reservoirs of the upper Hanson River Beds

Wiso Basin

- Ordovician aged Hanson River Beds which are sub-divided into 4 sub-units the lower two of which contain possible reservoir units whilst the two upper units are possible seals and source units.
- One of these sub-units is an equivalent of the Stokes Siltstone and Stairway Sandstone of the Amadeus Basin.
- The second most possible source unit is thought to be an equivalent of the major source interval of the Amadeus Basin. This interval appears to be oil prone.

Wiso Basin

- The three main postulated source rock intervals are recognized in the Wiso Basin sequence, namely;-
- Montejinni Limestone, with TOC'S of up to 10%, with Hydrogen Indices which are thought to be early mature for oil generation
- The Hooker Creek Formation a unit of marine and lagoonal genesis. Recent work by Central Petroleum indicates that this unit is in the early oil matuity window in the Lander Trough.Earlier work by Gorter et al found a shallow sample from Green Swamp 1 to be organically lean and immature.

Wiso Basin

- The presence of rich mature source rocks
- The burial of such rock to depths sufficient to generate hydrocarbons, thought to be oil.
- The presence of porous and permeable carrier and reservoir rocks.
- The presence of competent sealing units.
- The formation of trapping geometry, both structural and stratigraphic, before the main phase of hydrocarbon generation and migration.

Wiso Basin

- The final tectonostratigraphic unit of the Wiso Basin sequence consists of the Devonian aged Lake Surprise Sandstone, overlain by the Cretaceous aged fluvial Mullaman Beds.
- Again potential trapping geometry appears to be present in this tectostratigraphic interval.
- The four necessary and sufficient conditions for hydrocarbon generation and entrapment appear to be present in the Wiso Basin, namely:-

Wiso Basin

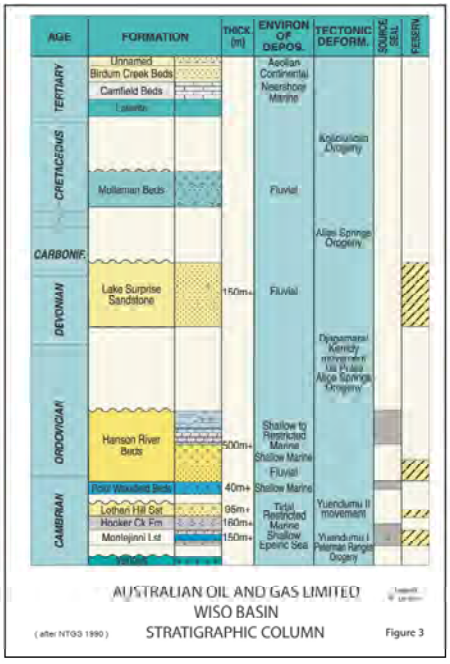
- The overlaying Hanson River Beds are further sub-divided into four sub-units, some of which are potential source intervals, some are possible reservoir units and some are considered to be competent seals. This lithological juxtaposition appears to be favourable for hydrocarbon entrapment.
- The Point Wakefield Beds and the overlying Hanson River Beds constitute the second tectostratigraphic unit of the Wiso Basin.

Wiso Basin

- The Montejinni Limestone, Hooker Creek Formation and Lothari Hills Sandstone constitute the basal tectonostratigraphy unit of the Wiso Basin sequence.
- The Early Cambrian aged Point Wakefield Beds seem to have possible reservoir units in the base of the unit and probable reservoir units in the upper portion which are thought to be sealed by competent sealing units.

Wiso Basin

- Basal unit, the Montejinni Limestone, is thought to be a good, oil prone source rock with a restricted depositional environment.
- The Hooker Creek Formation is a probable source and reservoir unit in the southern sector of the basin.
- The Lothari Hills Sandstone is expected to contain reservoir intervals.



Wiso Basin

- The Wiso Basin contains a prospective sedimentary section ranging in age Cambrian to Devonian in age.
- Three tectonostratigraphic sequences are recognized.
- The sedimentary section is of a shallow marine and coastal genesis.
- The lithology is mainly carbonate and clastic.
- Two fluvial intervals are recognized.

Wiso Basin

- The third event was the Djagamara Movement of the Alice Springs Orogeny in the Silurian, which uplifted the entire Centralian Craton.
- The last tectonic event magnified the amplitude of the Lander Trough and southern sector of the basin.
- This event resulted in the erosion of most of the section in the northern portion of the basin

Wiso Basin

- ❖ Three episodes of structuring, which are conducive of the formation of trapping geometry, are recorded in the basin.
- The first is the Yuenduma(Stage 1) Movement of the Early Cambrian Petermann Orgeny
- The second is the Yuendumu (Stage 2).
- Both of these episodes occurred in the Cambrian aged Petermann Orgeny.
- .

Wiso Basin

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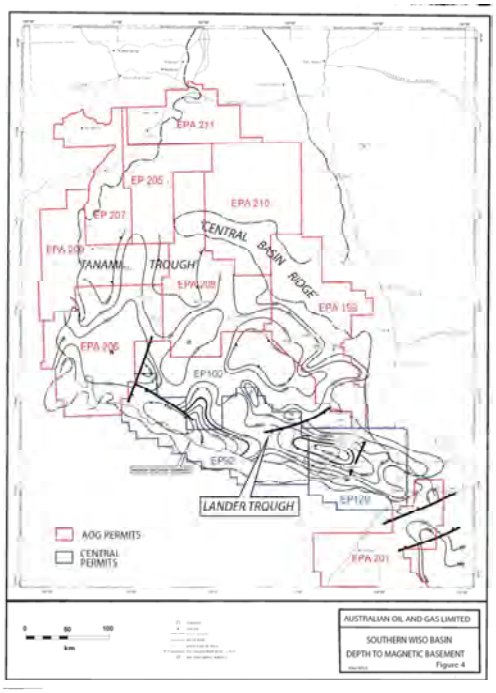
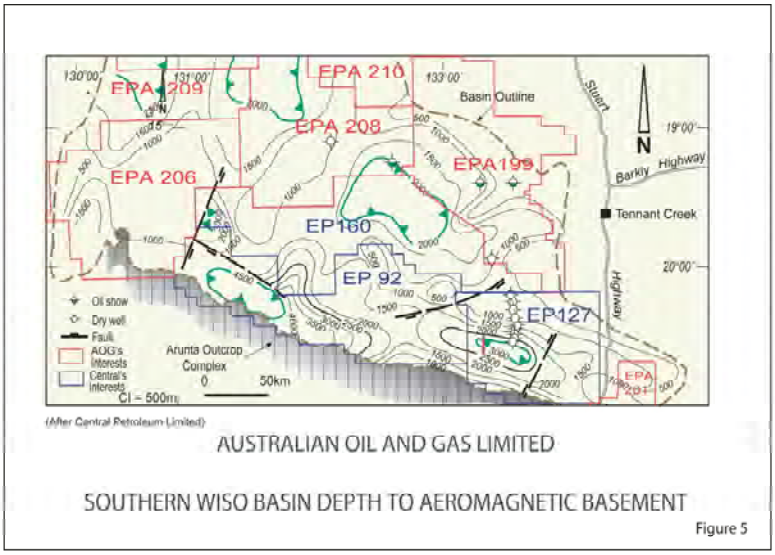
- .

Wiso Basin

The Wiso Basin is:-

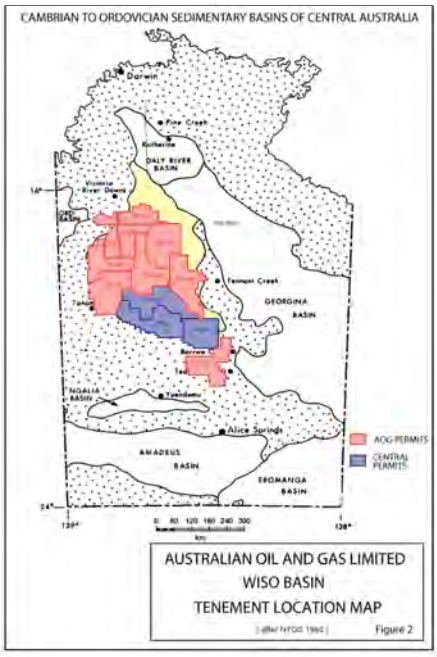
- Essentially an intra-cratonic basin generally surronded by crystalline basement to the south, south east and west.
- It is bound by both older and younger indurated but un-metamorphosed sedimentary basins to the north.
- Adjoined across a shallow basement ridge from the adjacent and prospective Georgina Basin.





Wiso Basin

- The prospective sector of the basin may be deeper and more widespread than is generally thought.
- Magnetic depth to basement mapping prepare by the BMR indicates the possible presence of likely depocentres to the northwest of the Lander Trough, one of which is informally called the Tanami Trough.



Wiso Basin

- Thought likely to have been affected by Gussow's Theorem, whereby early generated oil has been displaced up-dip and marginward by later generated hot, dry gas.
- The far south of the basin, the Lander Trough in particular, with its deeper and thicker section is considered to be the most prospective area of the basin.
- Much of the basin is controlled by AOG.

Wiso Basin

- Sparsely explored with limited surface mapping and shallow scout and stratigraphic drilling.
- Prospective as indicated by analytical studies and empirical data.
- Thought to contain rich, mature, oil prone source rocks.
- Thought to contain porous and permeable carrier and reservoir beds.
- Is considered likely to contain structural trapping geometry, as well as stratigraphic trapping geometry

Wiso Basin

The Wiso Basin is:-

- A large intra-cratonic basin of Cambrian-Ordovician age covering some 160,000 km^2 in the west central sector of the NT
- A time equivalent of the nearby hydrocarbon producing Amadeus Basin, the adjacent and adjoining highly prospective Georgina Basin and the sparsely explored nearby Ngalia Basin.
- Undrilled , with no deep exploration wells.
- Sparsely explored with limited surface mapping and shallow scout and stratigraphic drilling.

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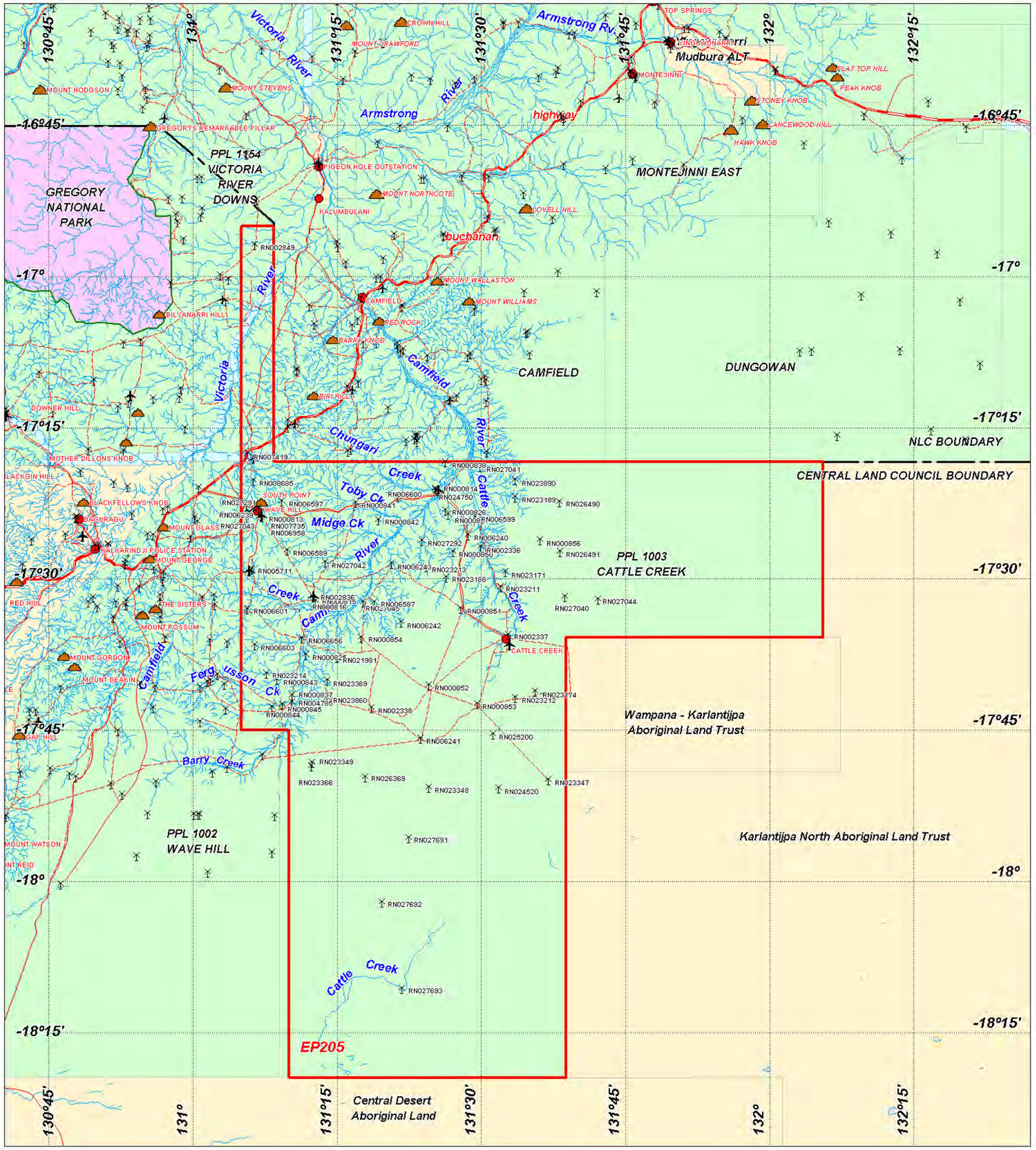


EP Application

PERETUAL / PASTORAL LEASE

ABORIGINAL FREEHOLD LAND

VACANT CROWN LAND

GREGORY NATIONAL PARK

Town / Homestead / Community

Mountain or Hill

Landing Ground

Road / Track

Drainage

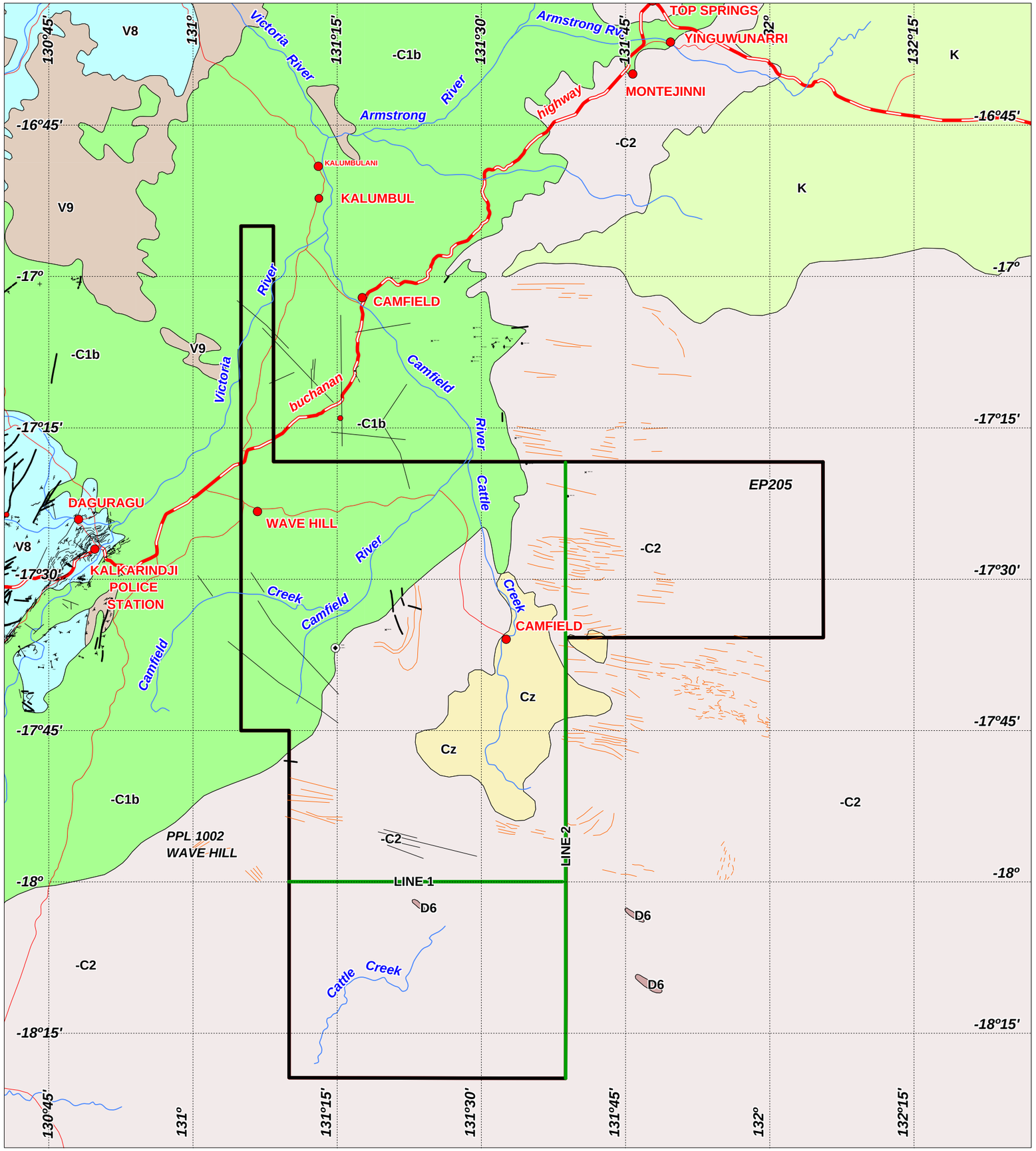
Water Bore

15 0 15 30 45

Kilometers

Figure 1

WISO OIL PTY LTD		
Exploration Permit Application EP205 "WISO BASIN EAST" Cadastre, Topographic & EP Location		
Drawn: CAPRICORN	**Datum:** GDA94	**Ref:** AS ABOVE
Scale: 1:750,000	**Date :** FEB 2013	**Plan No:** WIS047



Exploration Permit

Fault

Dune Trends

Lineament

Dip & Strike

Town / Homestead / Community

Highway

Road / Track

Drainage

Proposed Seismic Lines
Line 1. 50.16 km
Line 2. 113.1km
TOTAL = 163.26km

15 0 15 30 45
Kilometers

Figure 2

WISO OIL PTY LTD		
EP205 "WISO BASIN EAST"		
GEOLOGY & PROPOSED SEISMIC LINES		
Drawn: CAPRICORN	**Datum:** GDA94	**Ref:** AS ABOVE
Scale: 1:750,000	**Date :** FEB 2013	**Plan No:** WIS050

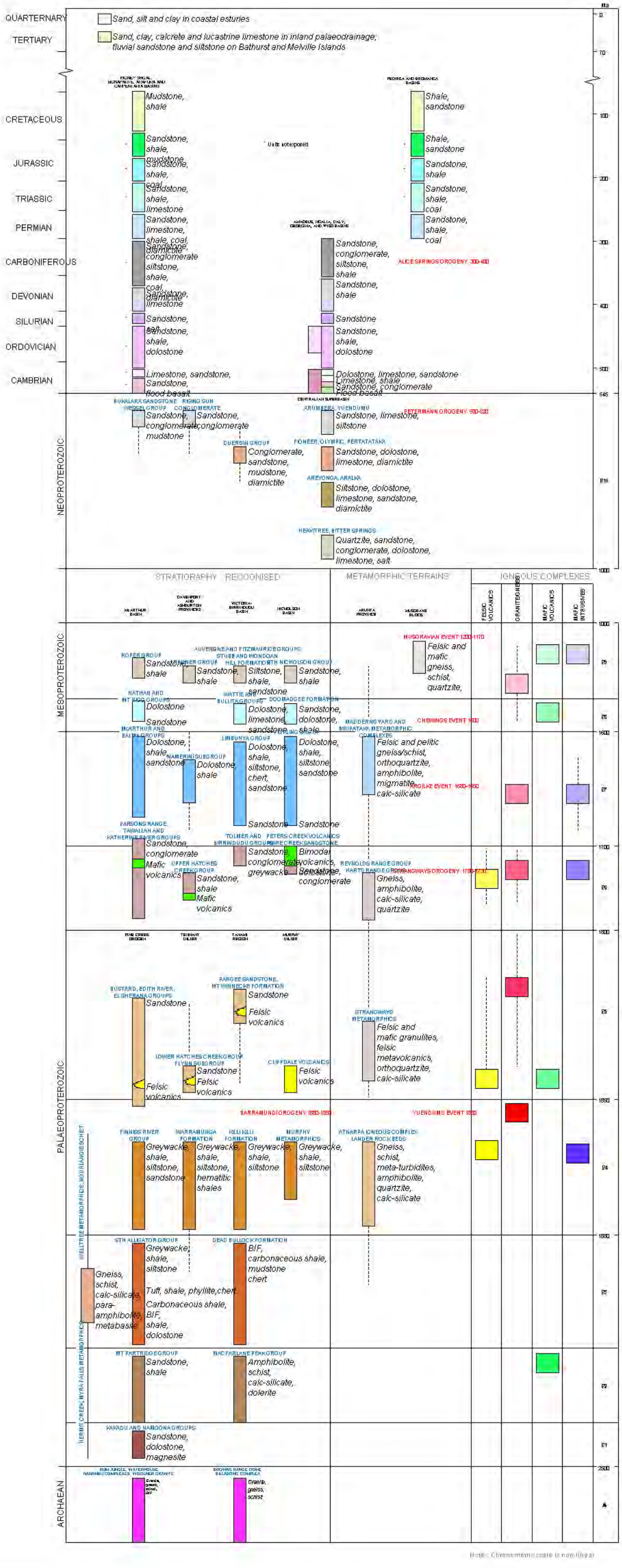


Figure 3

Surface Geology and Proposed Seismic Programme

LEGEND EP205
WIS050