

ASX Release

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PETRATHERM LIMITED
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Paralana project presentation to the Australian Geothermal Energy Conference

Petratherm's Exploration Manager, Peter Reid, will today present to the annual Australian Geothermal Energy Conference in Melbourne.

The attached presentation provides an overview of the company's flagship Paralana engineered geothermal system project with a particular emphasis on the recent fracture stimulation of the Paralana 2 deep well.

The presentation provides the most up to date analysis of the recent successful fracture stimulation of the Paralana 2 deep well and forms part of a technical session discussion at the conference entitled "Towards demonstrating flow".

Yours faithfully

Terry Kallis
Managing Director

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Paralana EGS Project - Findings from the Fracture Stimulation

Reid P.W., Messeiller, M and Llanos, E.M., *Australian Geothermal Energy Conference* , November 2011



Disclaimer and competent persons statement

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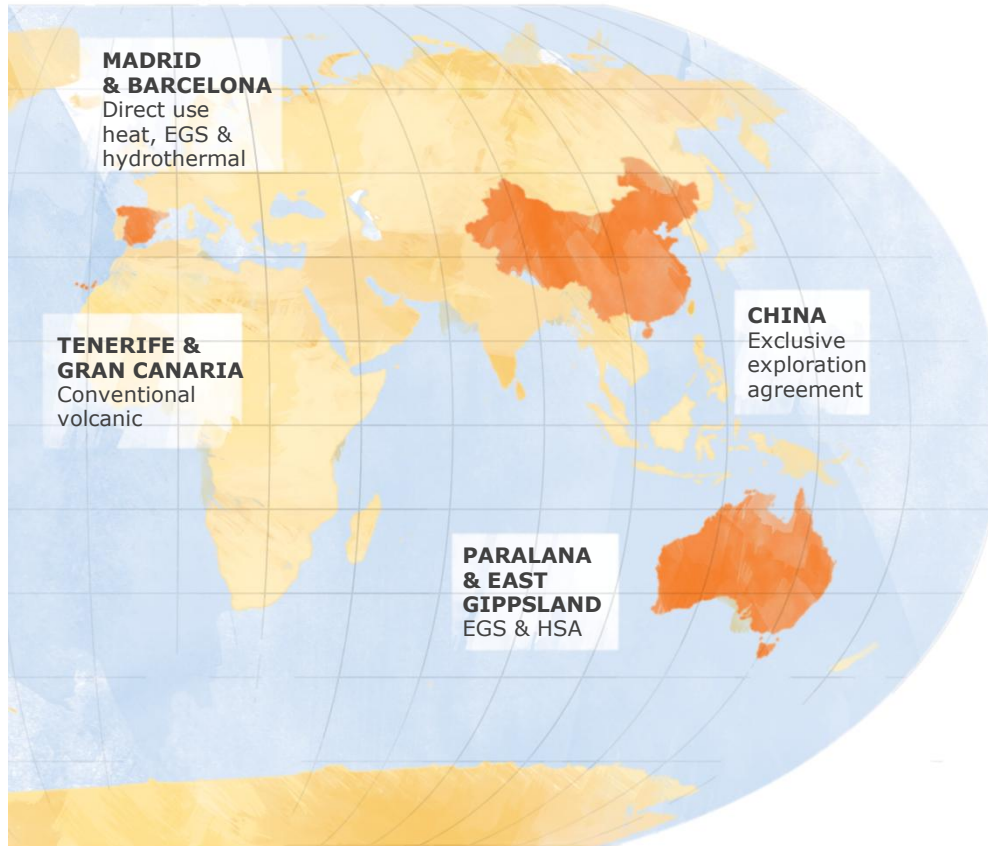
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Competent Persons Statement

The information in this report that relates to Exploration Results, Geothermal Resources or Geothermal Reserves is based on information compiled by Peter Reid, who appears on the Register of Practising Geothermal Professionals maintained by the Australian Geothermal Energy Group Incorporated at the time of the publication of this report. Peter Reid is a full time employee of the Company. Peter Reid has sufficient experience which is relevant to the style and type of geothermal play under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the Second Edition (2010) of the Australian Code for Reporting Exploration Results, Geothermal Resources and Geothermal Reserves. Peter Reid has consented in writing to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Petratherm overview

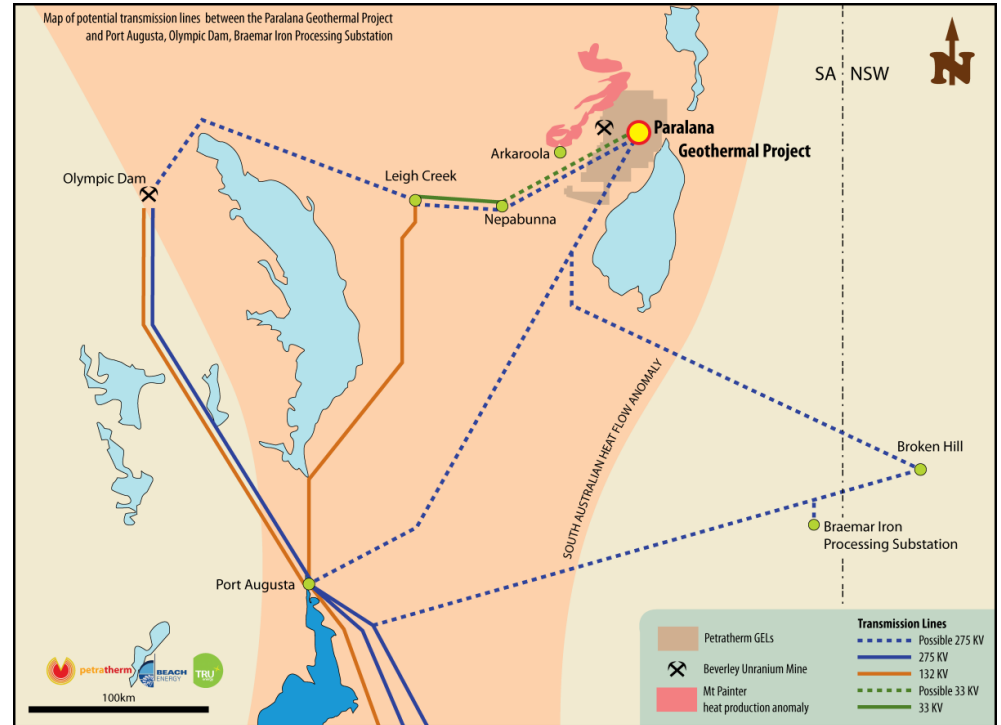


Our company

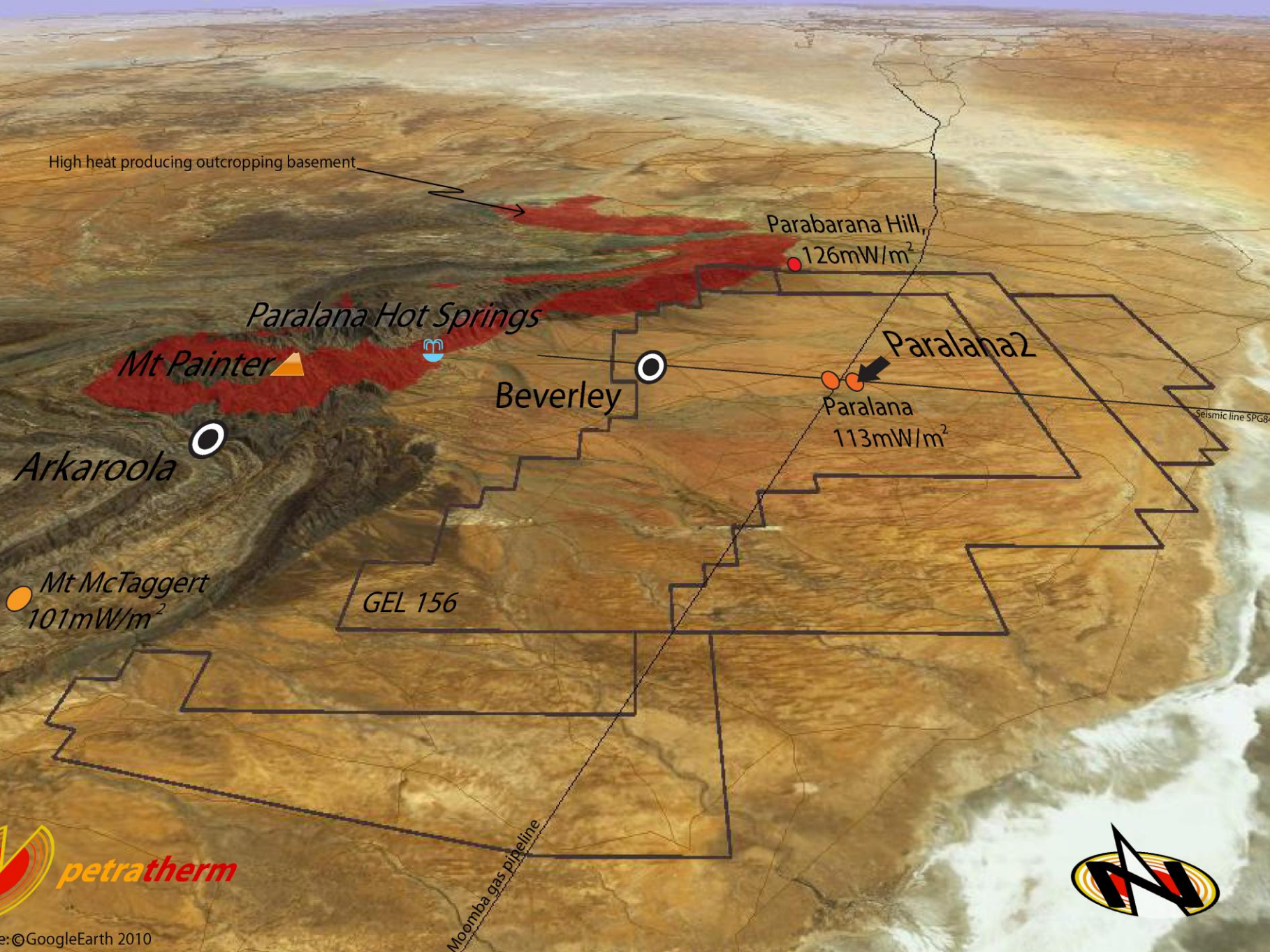
- ❑ Projects spanning Australia, Spain and China
- ❑ Projects across the spectrum of geothermal technology
- ❑ Flagship project – Paralana in SA's northern Flinders Ranges

Paralana Project – commercial / market overview

- ❑ Small off grid market (5-30MWe)
- ❑ Potential large on grid development (260 MWe+)
- ❑ Expenditure well leveraged for proof of concept, then potentially fully funded to initial commercial demonstration scale 30MWe plant
- ❑ Funding and expertise from JV:
Beach Energy (up to 36% for \$30m)
TRUenergy (up to 30% for \$57m)
- ❑ Federal Government grants support:
\$7 million geothermal drilling fund
\$62.8 million REDP grant



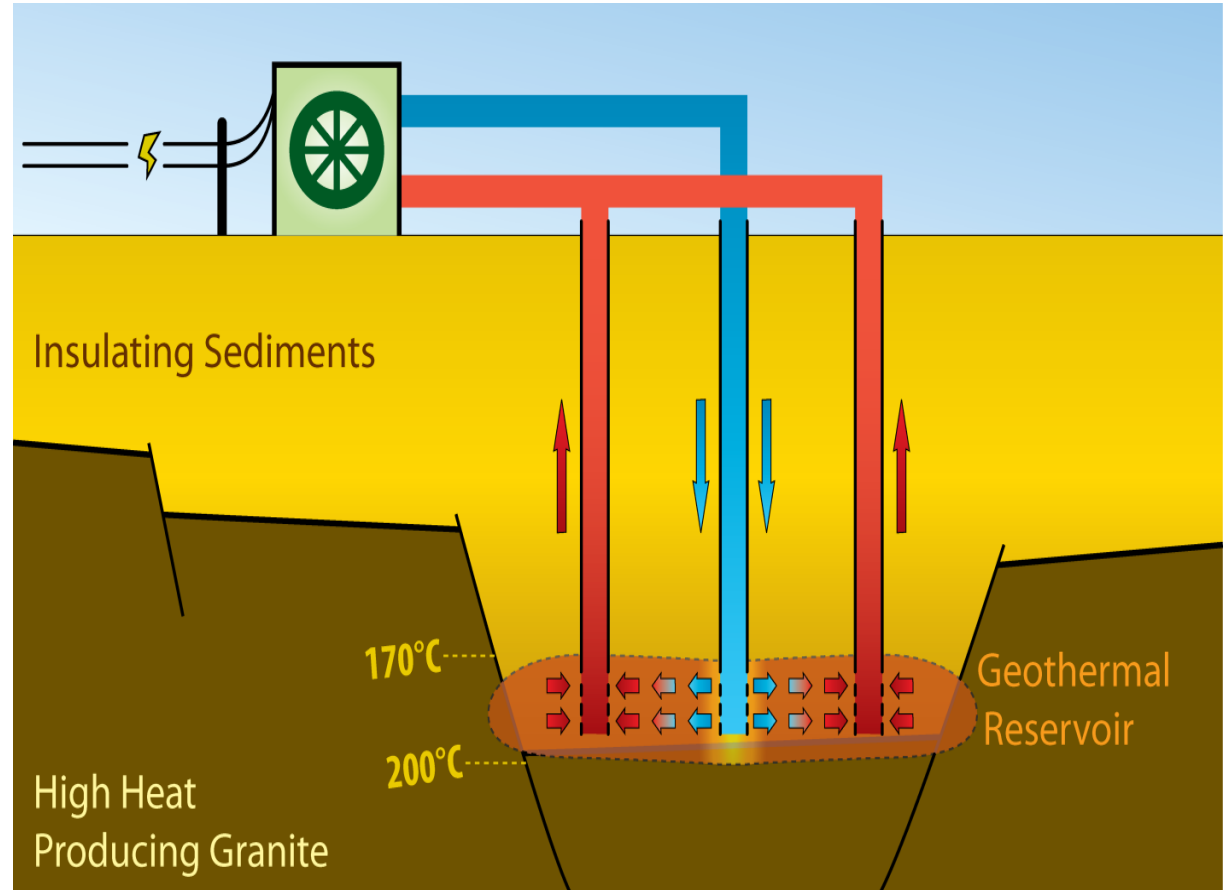
Paralana Project – Regional Picture



Development Model – Heat Exchanger within Insulator

Targeting Fracture Permeability in

- > Mesoproterozoic metasediments - bedding / joint surfaces
- > Fracture Permeability at Basin / Basement Interface (FABBI)



SPG84

Paralana 1B

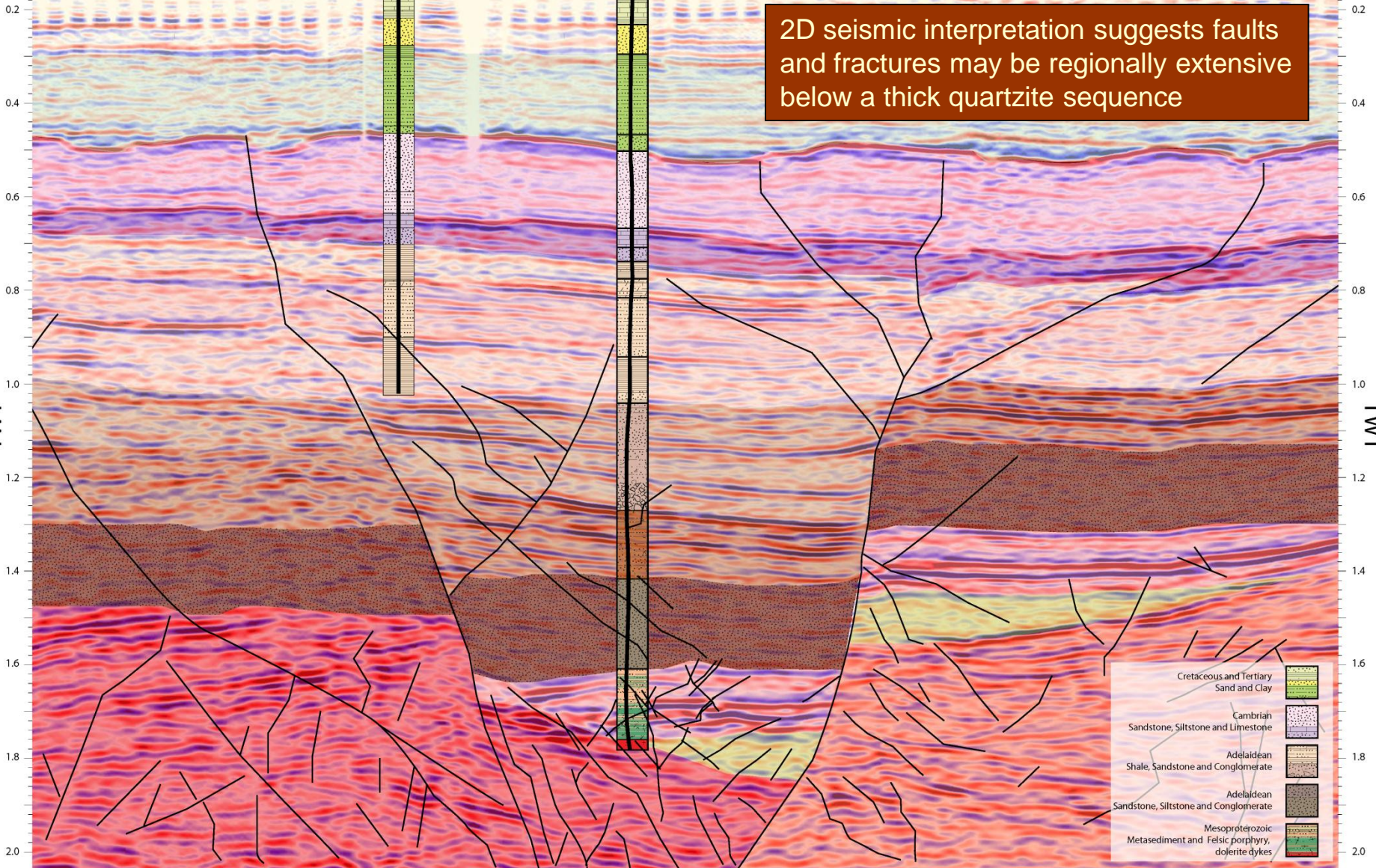
Paralana 2

0 0.5 1 2 km

2D seismic interpretation suggests faults and fractures may be regionally extensive below a thick quartzite sequence

TWT

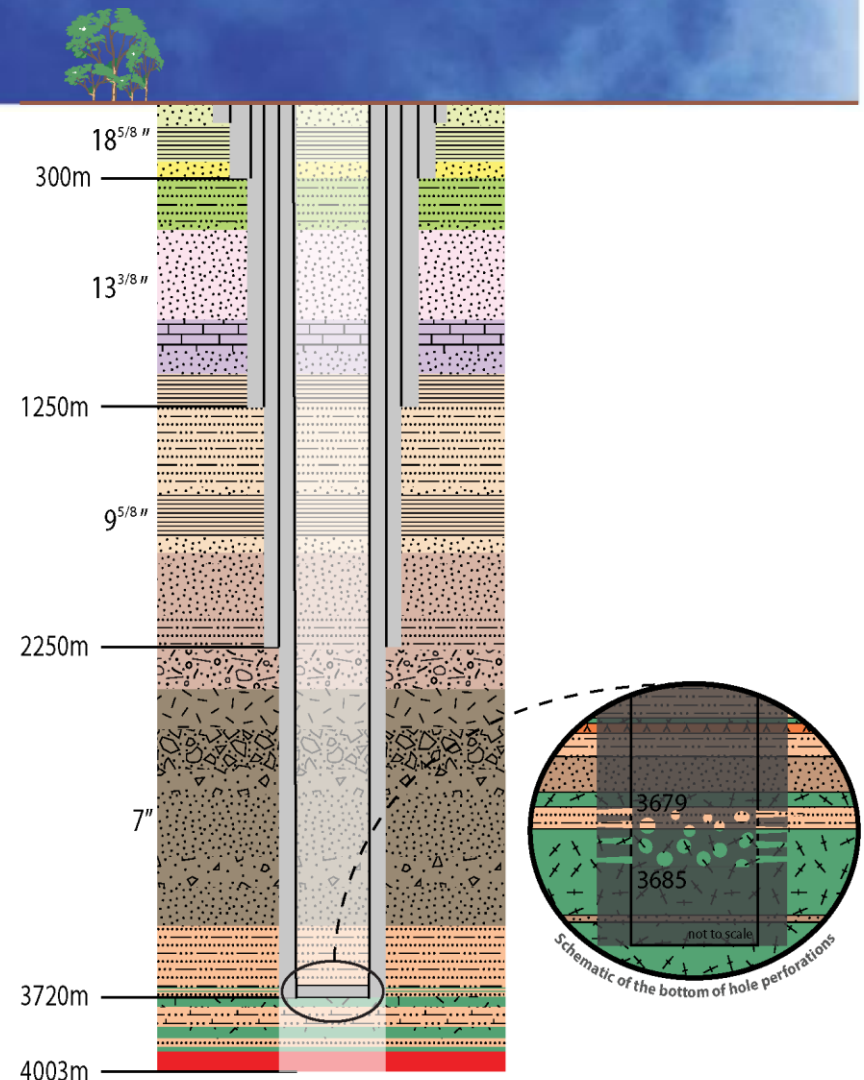
TWT



- Cretaceous and Tertiary Sand and Clay
- Cambrian Sandstone, Siltstone and Limestone
- Adelaidean Shale, Sandstone and Conglomerate
- Adelaidean Sandstone, Siltstone and Conglomerate
- Mesoproterozoic Metasediment and Felsic porphyry, dolerite dykes

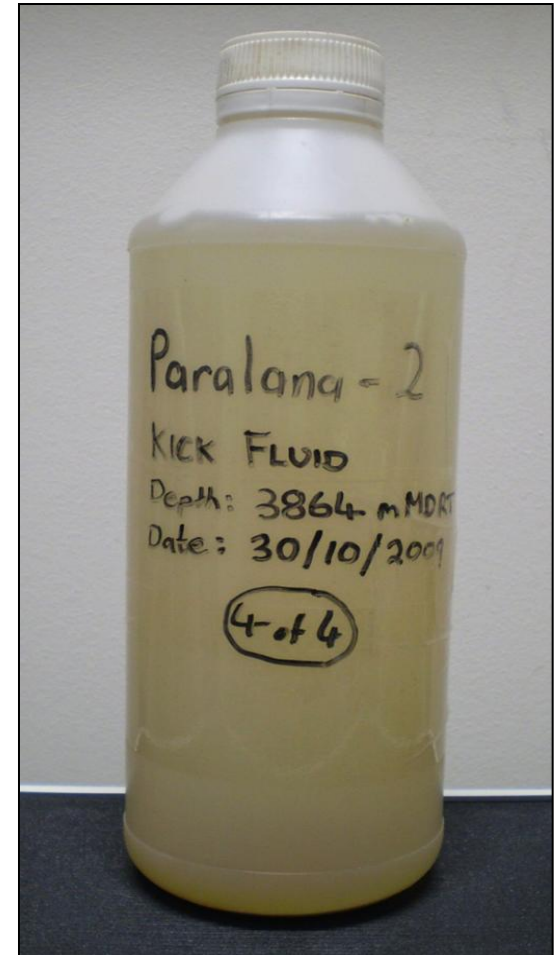
Paralana 2 well summary

- > Depth 4003m (G.L. A.H.D.)
- > Well cased and cemented to 3725m
- > Extrapolated bottom hole temperature ~ 190°C
- > High pressure geothermal brines intersected from 3680m
- > Zircon dating confirms 1585 ± 11 Ma Reservoir Sequence
- > Contains numerous fractures and faults
- > 6m perforated interval between 3679 and 3685m



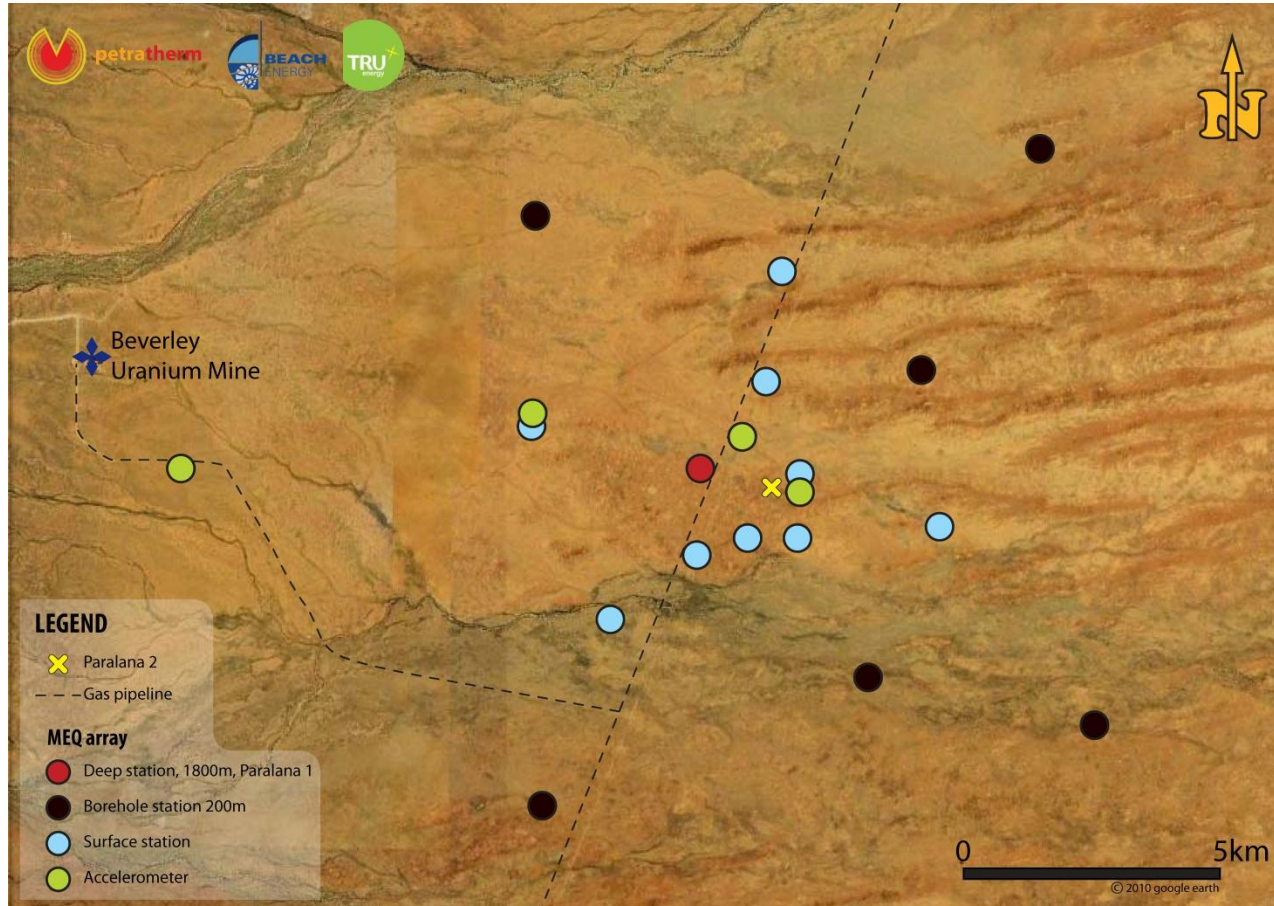
Paralana 2 – Brine Intersected

- ❑ High torque, intervals of high ROP's, drilling breaks and increase in well bore deviation
- ❑ Inflow of over-pressured geothermal brines between 3670 - 3864 m
- ❑ Shut in pressure indicated ~ 3,300 psi, of overpressure and mud system weighted up to 13.2ppg to stop flow.
- ❑ Well bore stability problems limited wire line logging to LWD measurements to 3725 m



Numerous large Fractures/Faults Intersected!

Passive seismic array



- ✓ MEQ - Array
Managed by IESE
- ✓ 1 deep borehole sonde at 1800m in Paralana 1b
- ✓ 6 borehole sondes ~ 200m
- ✓ 10 surface seismometers
- ✓ 4 accelerometers

Injectivity test – January 2011



- > 15000 litres injected
- > Pressure \sim 8700 psi
- > Rates \sim 1.3 and 5.3 l/sec
- > WHP \sim 4000 psi
- > $>$ 140 MEQ
- > Magnitude -1 to 1 (RS)

The fracture array cloud measured by the array indicated that it extended 300m by 200m and was approximately 130m thick.

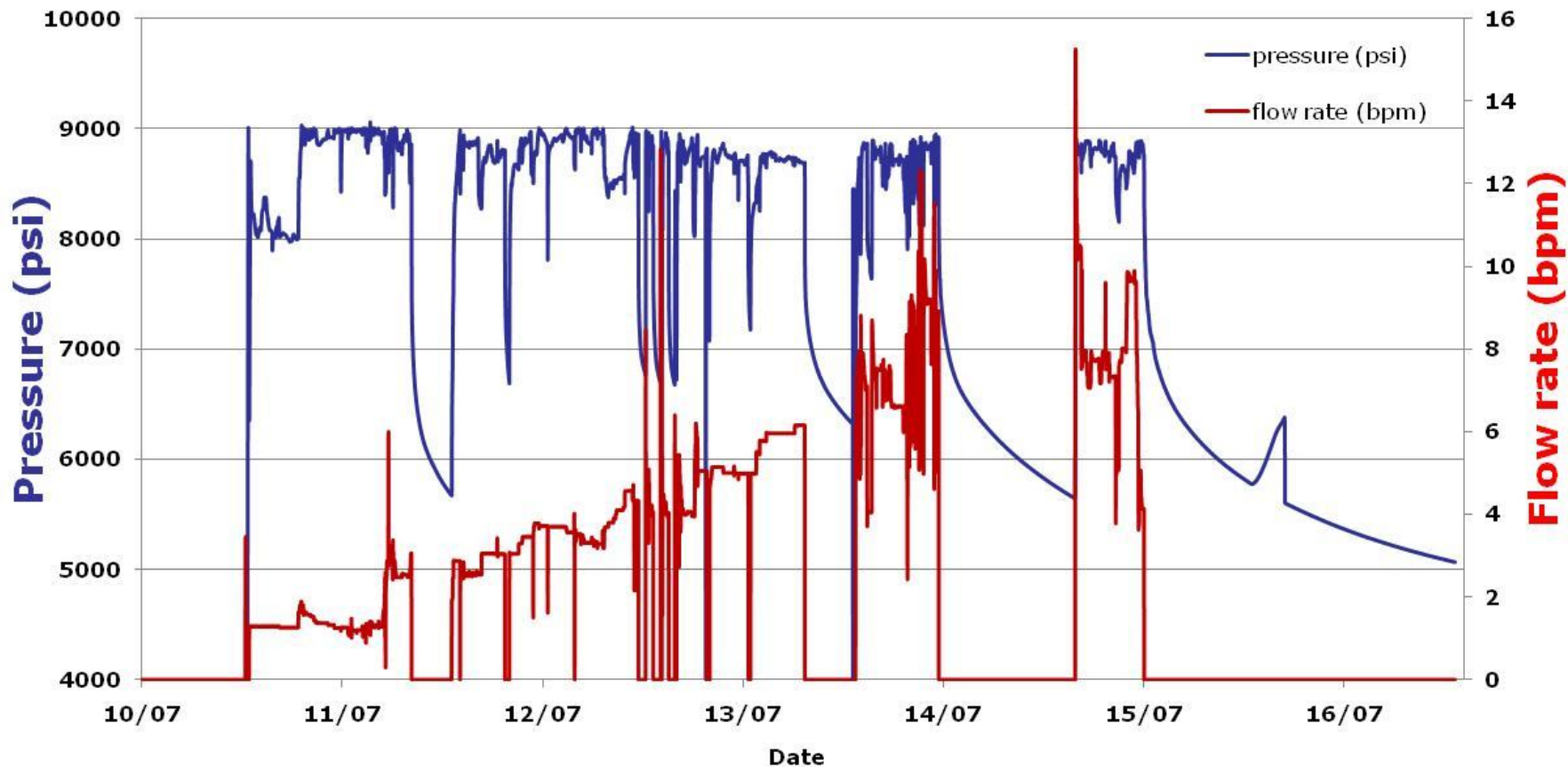
Fracture Stimulation – Key Statistics

- > 3.1 million litres injected
- > Injection rates: 3.2 - 27 l/sec
- > Equilibrium WHP prior and post operation 3940 psi.
- > Acid treatments allow higher pumping rates.
- > Sand proppant successfully placed at end of the treatment.



Photo: courtesy Advertiser, July 2011

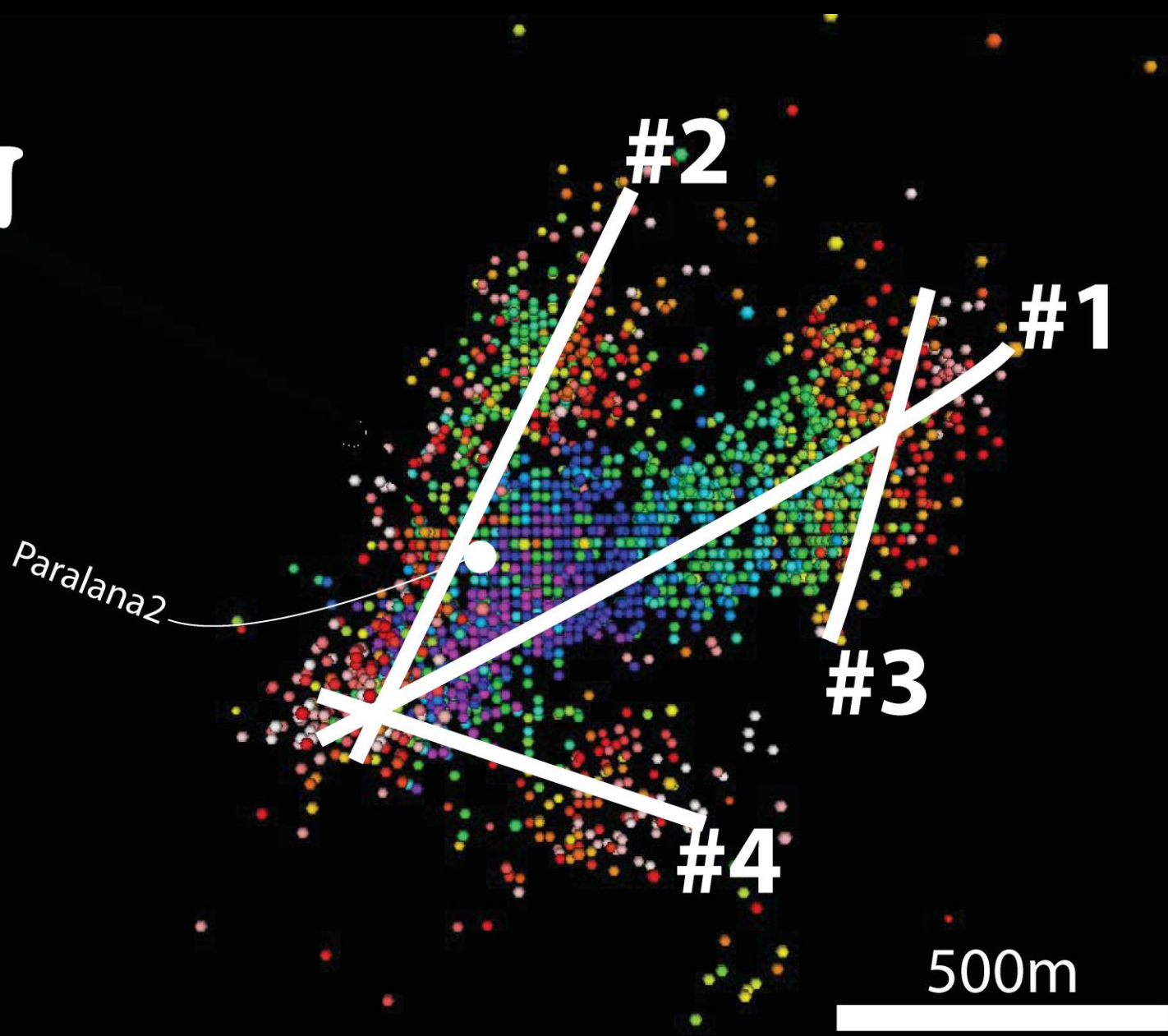
Fracture Stimulation – Pressure and flow rate



MEQ events – main fracture

- > MEQ array successfully recorded microseismicity:
 - > 11'000 events triggered and located by MIMO,
 - > 2'635 events handpicked
- > Maximum magnitude on the Richter Scale: 2.6
 - > 98% of the events were less than Mag 1.0
- > Ground motion – acceleration and velocity – always within the safe limits established in the risk management plan.
- > Good correlation between pumping rates and micro seismicity

MEQ events: structures



Paralana2

#2

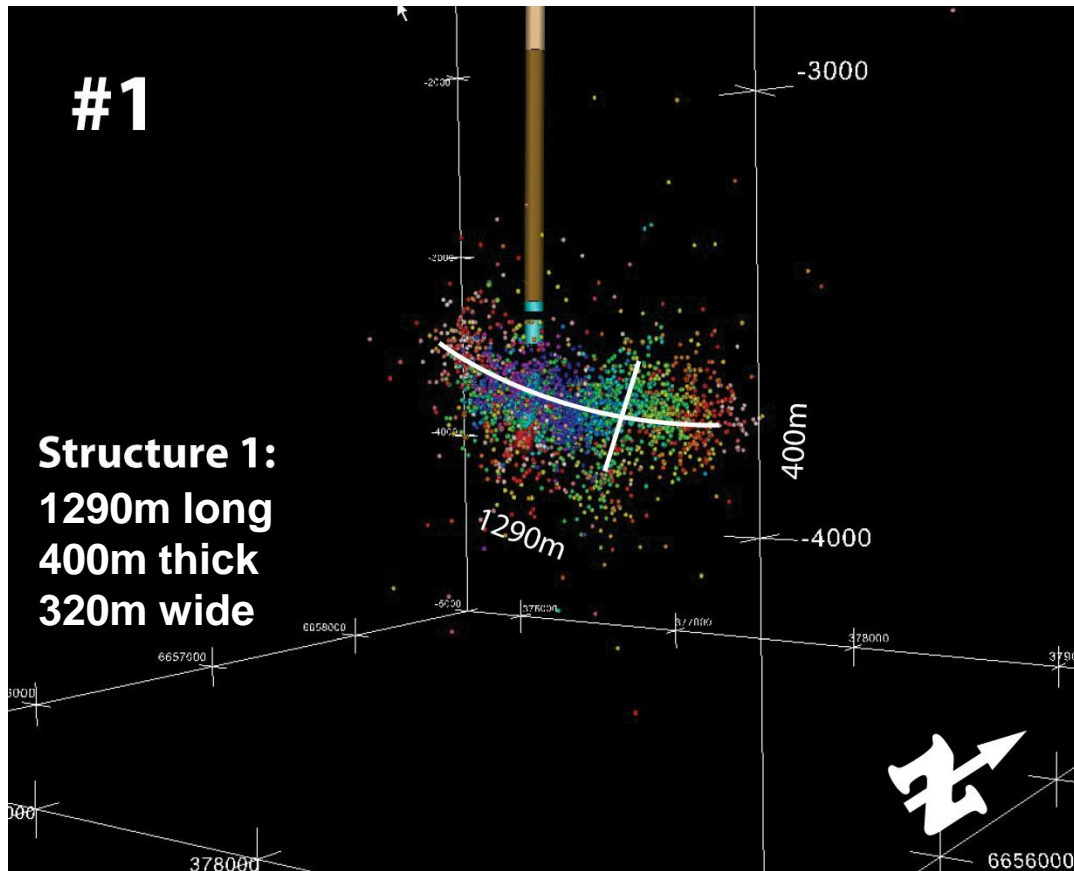
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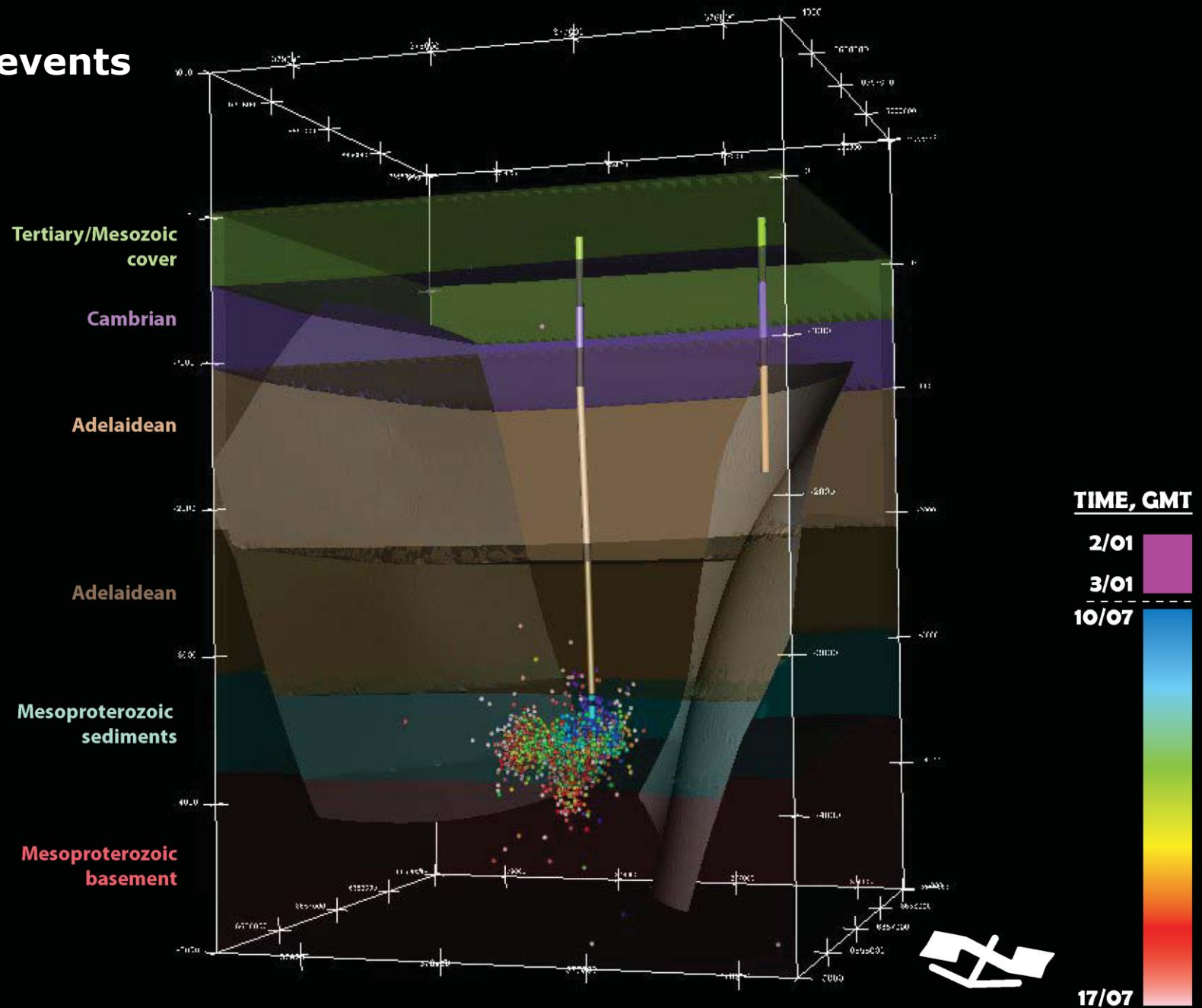
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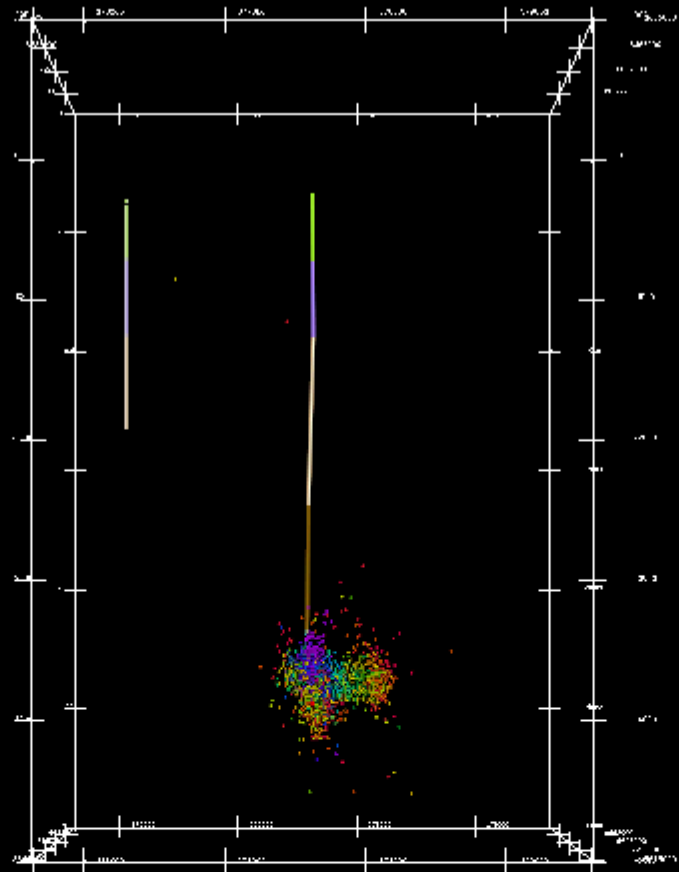
500m

MEQ – Principal Frac Structure

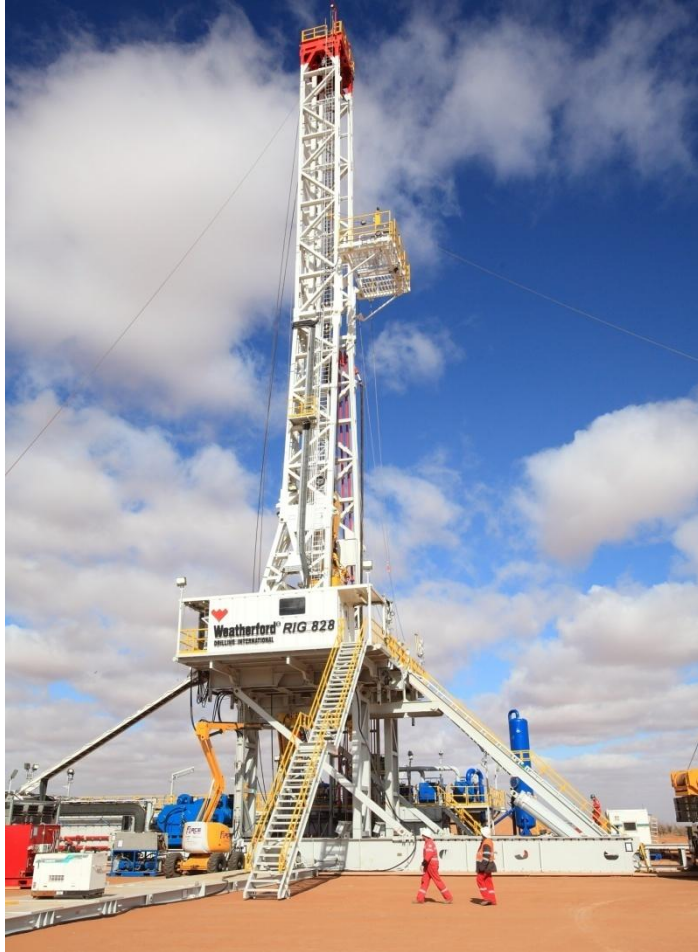


MEQ events





Key milestones for the Paralana geothermal project



Paralana JV project planned milestones

- ❑ 3rd Qtr 2011: Main fracture stimulation ✓
- ❑ 3rd Qtr 2011 : Flow test ✓
- ❑ 1st half 2012: drilling of the Paralana 3 deep producer well
- ❑ Mid-2012: Circulation Test – Demonstration of Flows
- ❑ 2012: Commission first stage 3.75 MW power plant

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