



BLACKMOUNTAIN
ENERGY

CANNING BASIN – TECHNICAL DISCUSSION EPA ESD

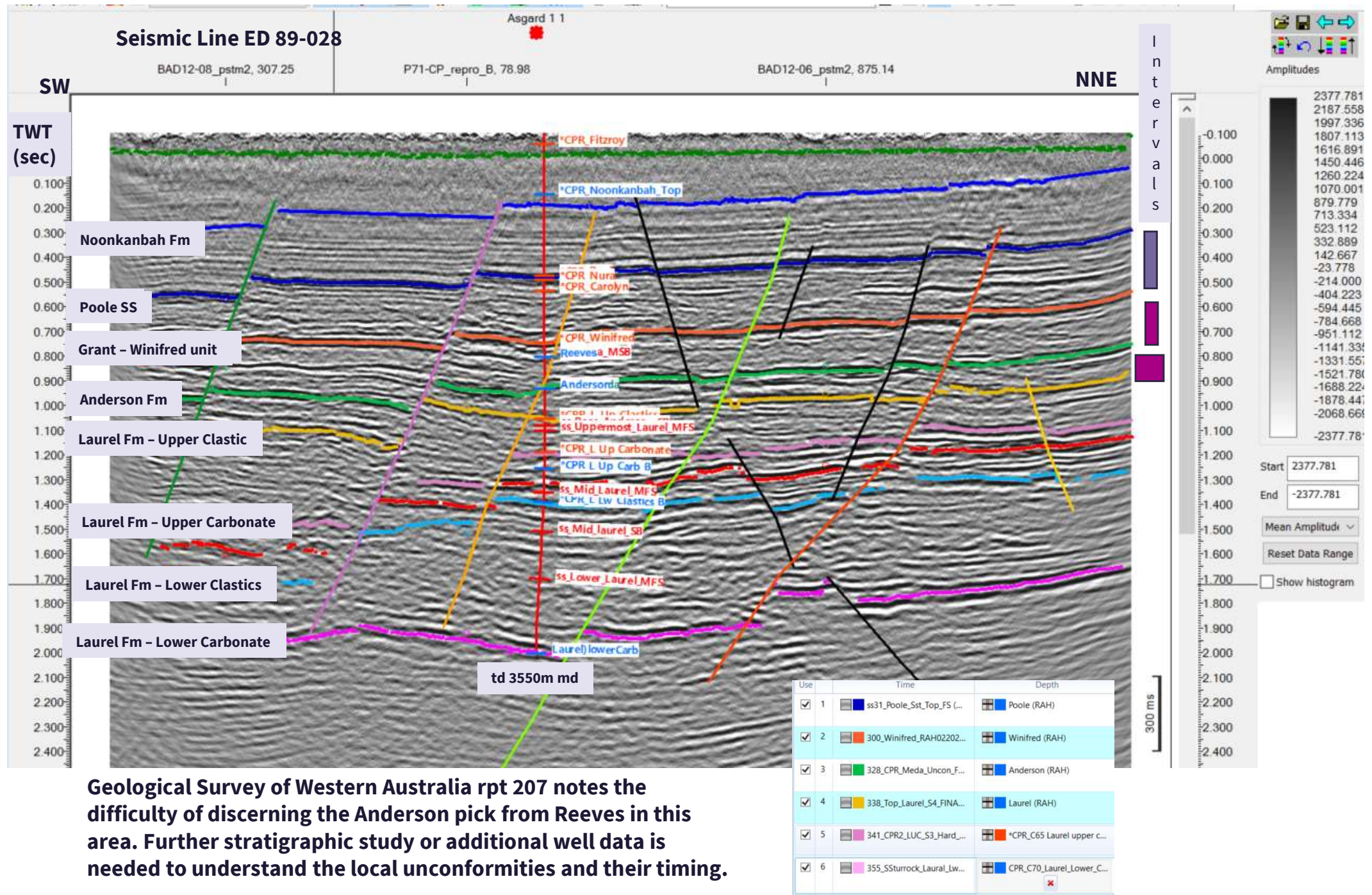
November 1, 2023

Strictly Private and Confidential



INTRODUCTION

Figure 1a, 2D Seismic time section showing key geological intervals for Anderson, Grant/Winfred and Poole Formations



Geological Survey of Western Australia rpt 207 notes the difficulty of discerning the Anderson pick from Reeves in this area. Further stratigraphic study or additional well data is needed to understand the local unconformities and their timing.

Figure 1b, 2D seismic depth section showing key intervals of Anderson, Grant/Winfred and Poole Formations

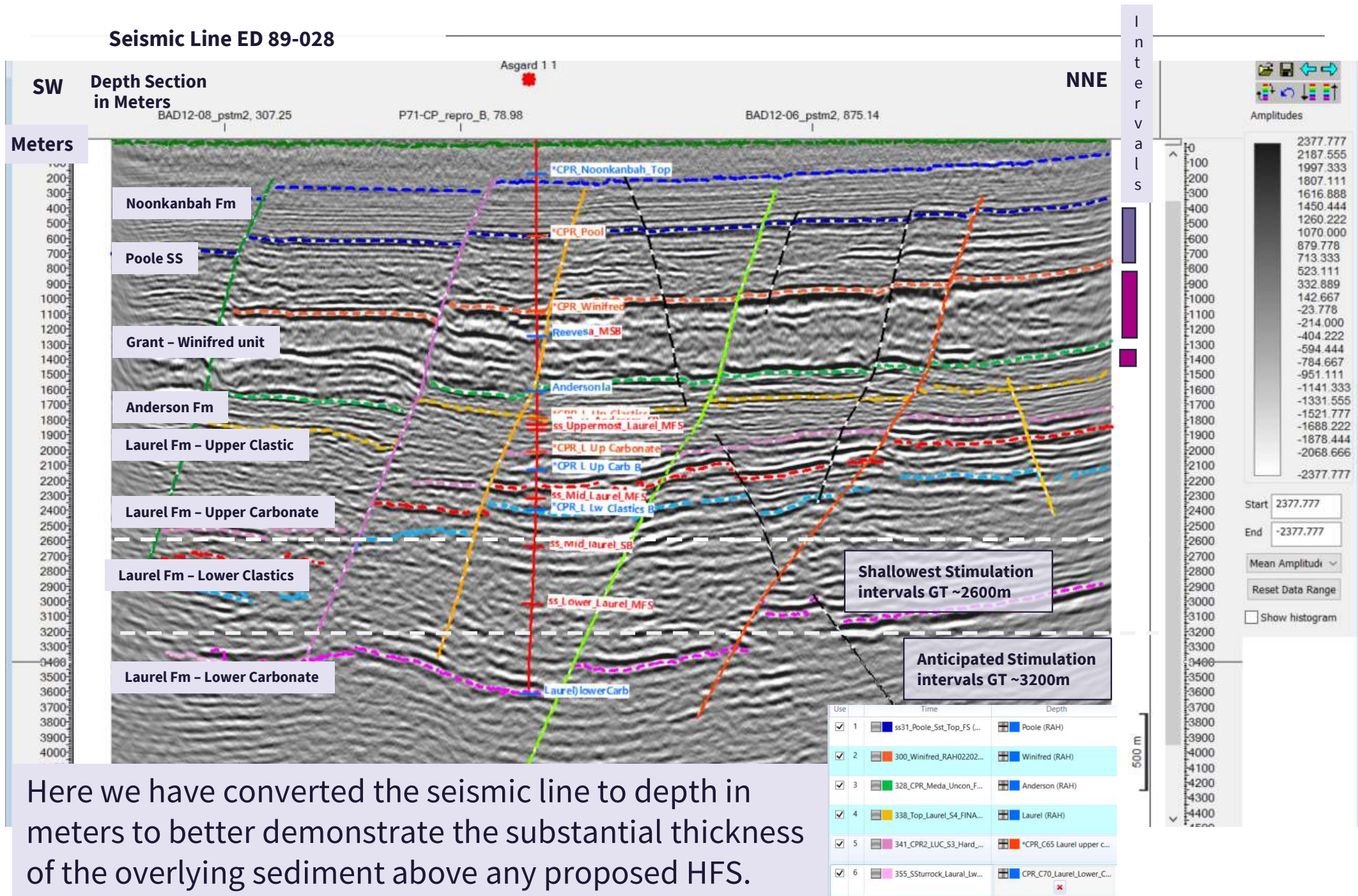
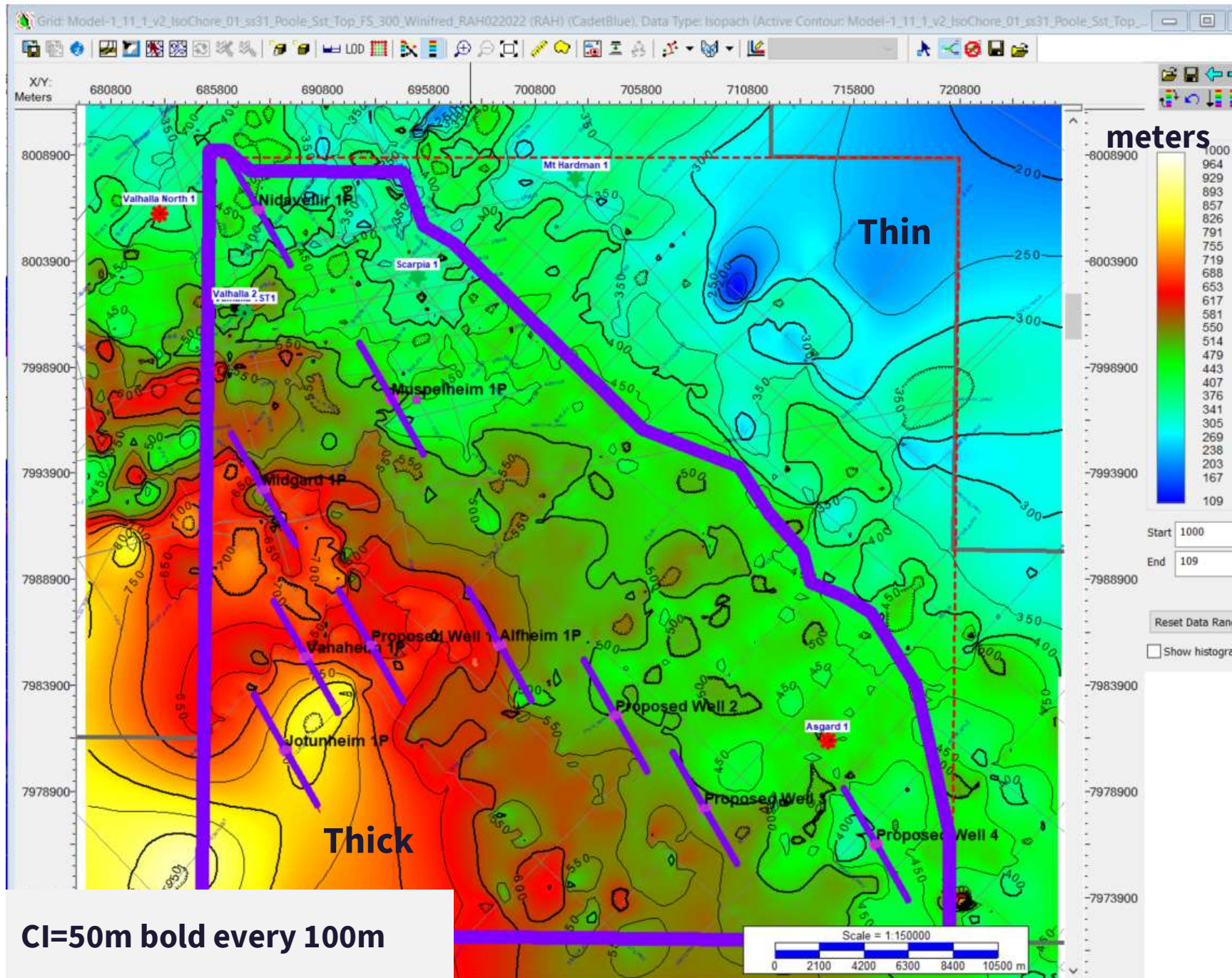
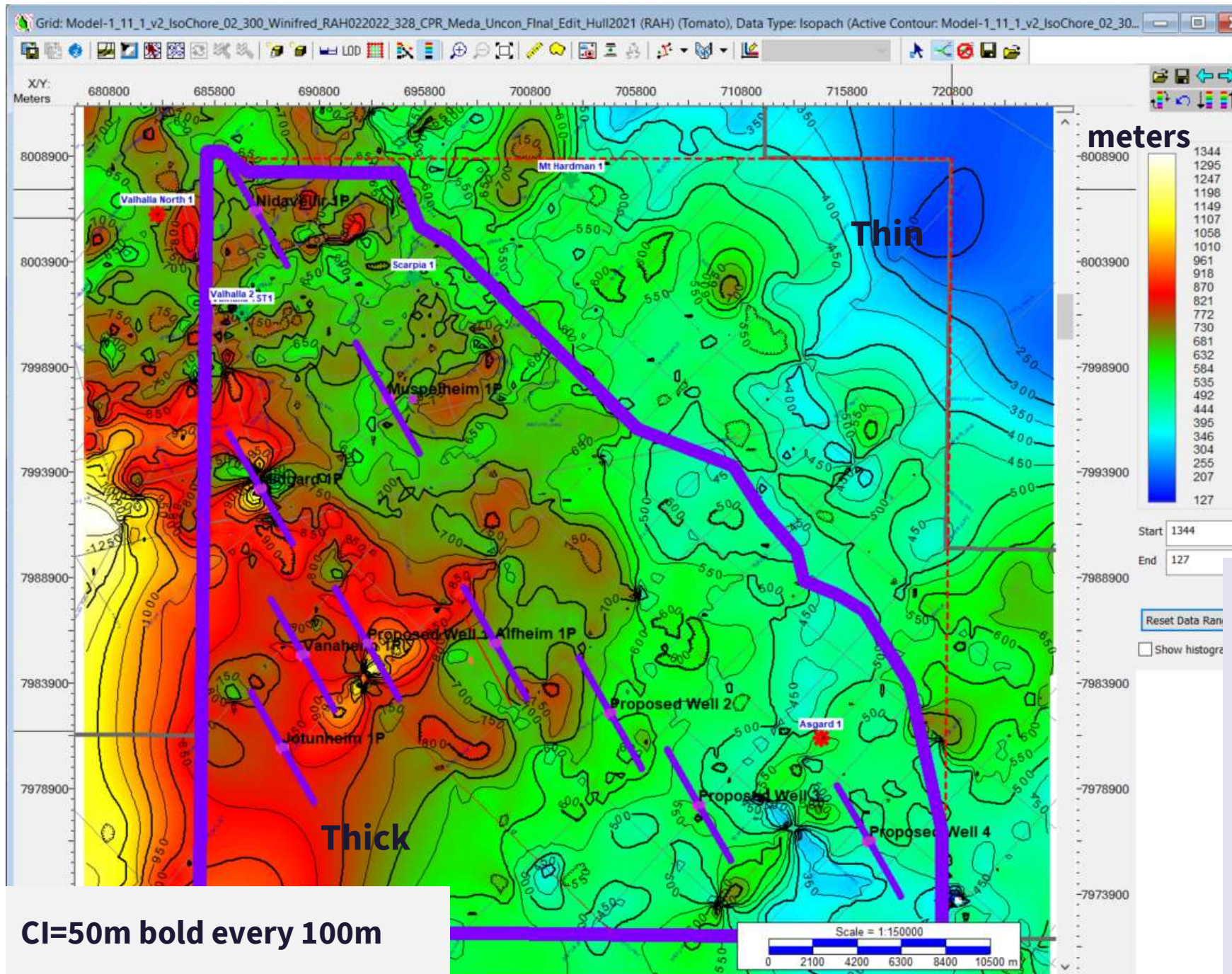


Figure 1c Poole to Grant/Winifred Isochore (Aquifer)



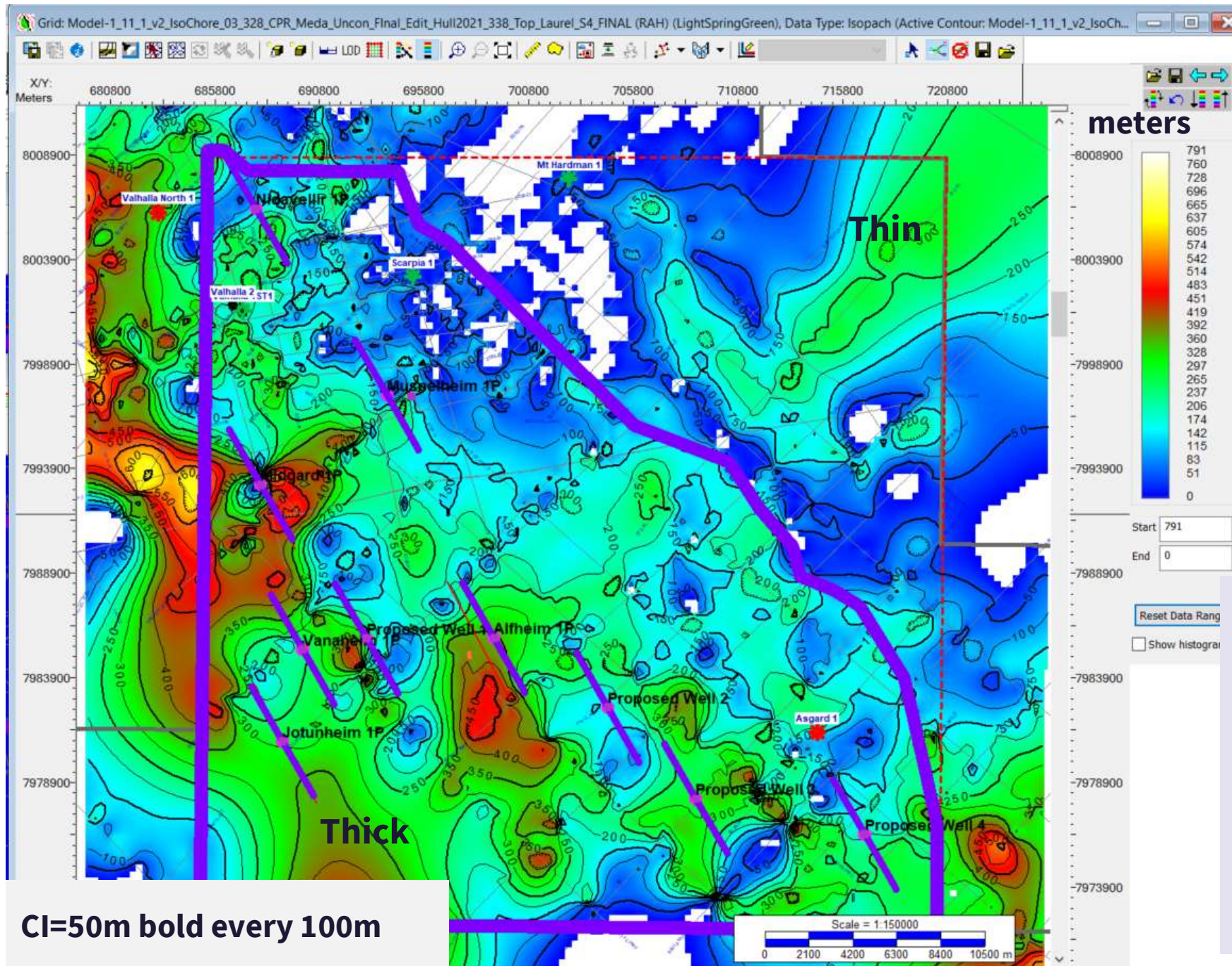
A substantial thick section from 400 m to over 900m is noted for this interval in the development area.

Figure 1d Winifred To Anderson Isochore (Non-Aquifer)



A substantial thick section from 500m to over 900m is noted for this non aquifer interval in the development area.

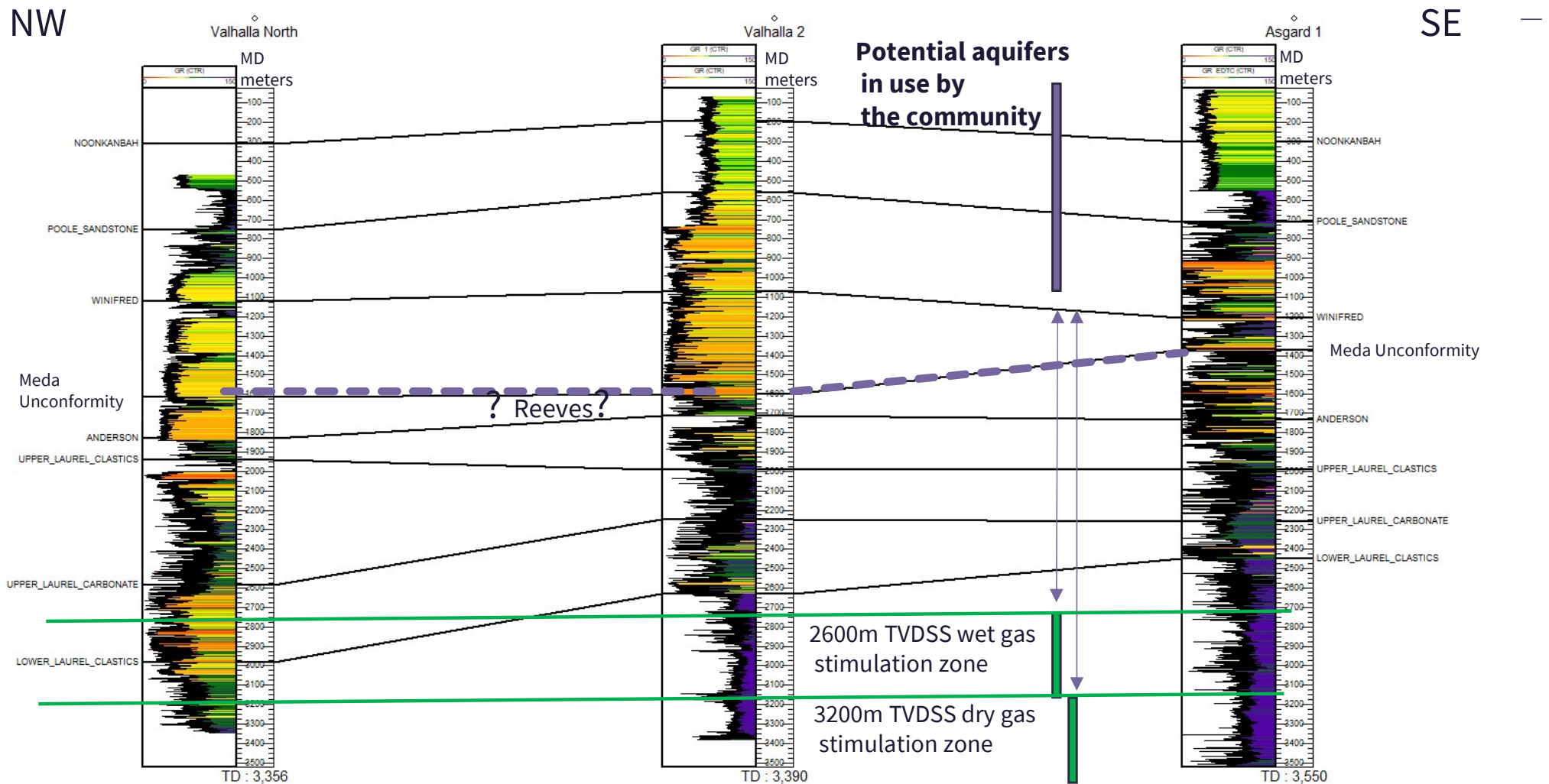
Figure 1e Anderson to Laurel Isochore (Non-Aquifer)



CI=50m bold every 100m

A thinner section from 0m to over 450 m is noted for this non aquifer interval in the development area.

Figure 2 Regional Cross Section illustrating regional lithostratigraphy



Shallowest stimulation depths in excess of 1,550 m from aquifers in use at Asgard -1.
Deeper dry gas in excess of 2,150m from aquifer at Asgard-1.

Figure 3a map showing the lateral variability of offset between the shallowest HFS interval that is likely (3200m) and the base of the deepest aquifer (Poole)/ Top Grant Winifred

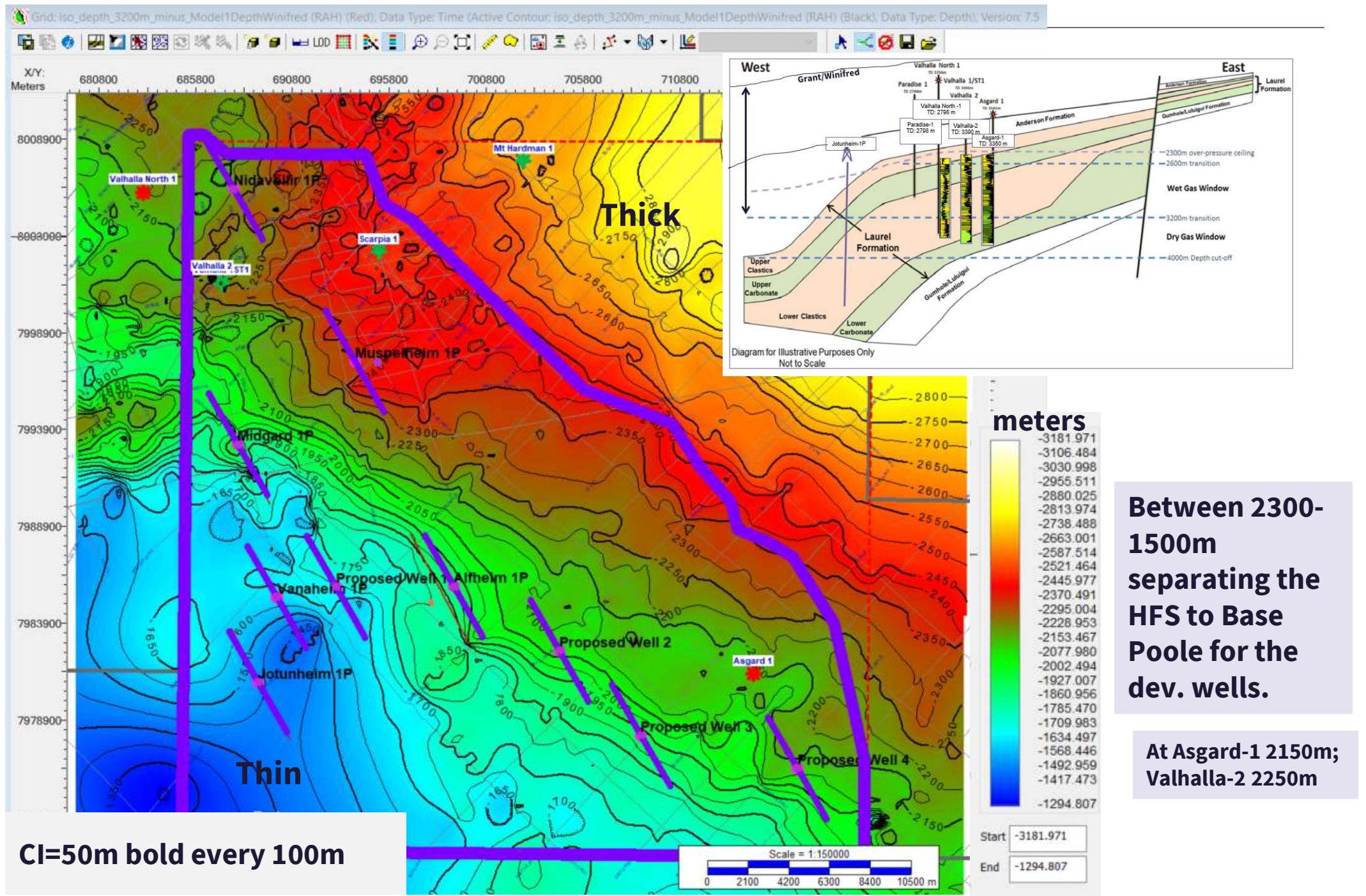
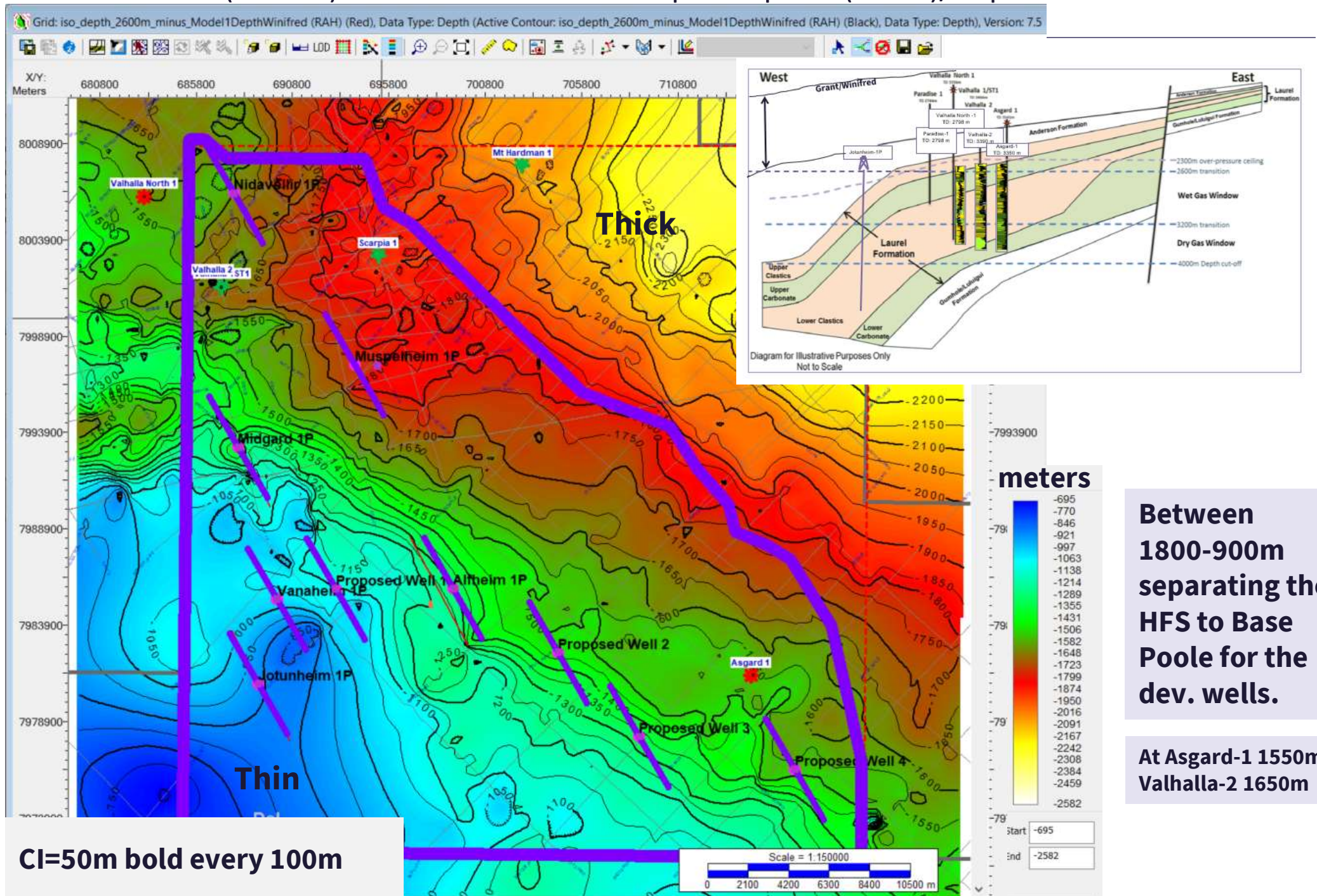


Figure 3b map showing the lateral variability of offset between the shallowest potential HFS interval (2600m) and the base of the deepest aquifer (Poole)/ top Grant Winifred



LAUREL STRATIGRAPHIC BENCH MODEL

- Prograding Laurel marine siliciclastics and carbonates were deposited in a transitional ramp setting.
- Key updip vertical have tested producible quantities of thermogenic gas.
- A future well is envisioned targeting downdip upper Laurel reservoirs that are optimal in reservoir quality as well in a dry gas window of higher pressure.

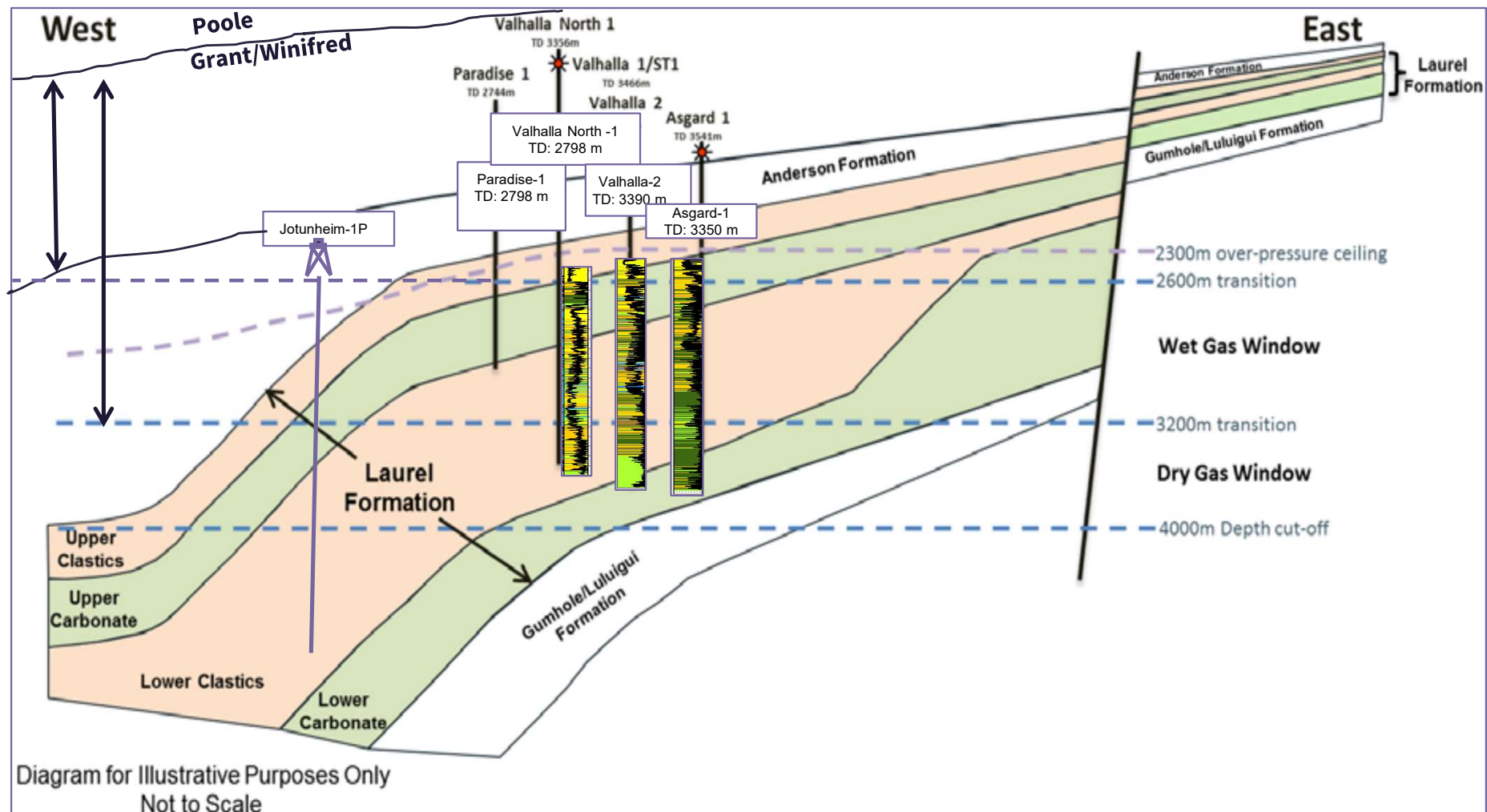
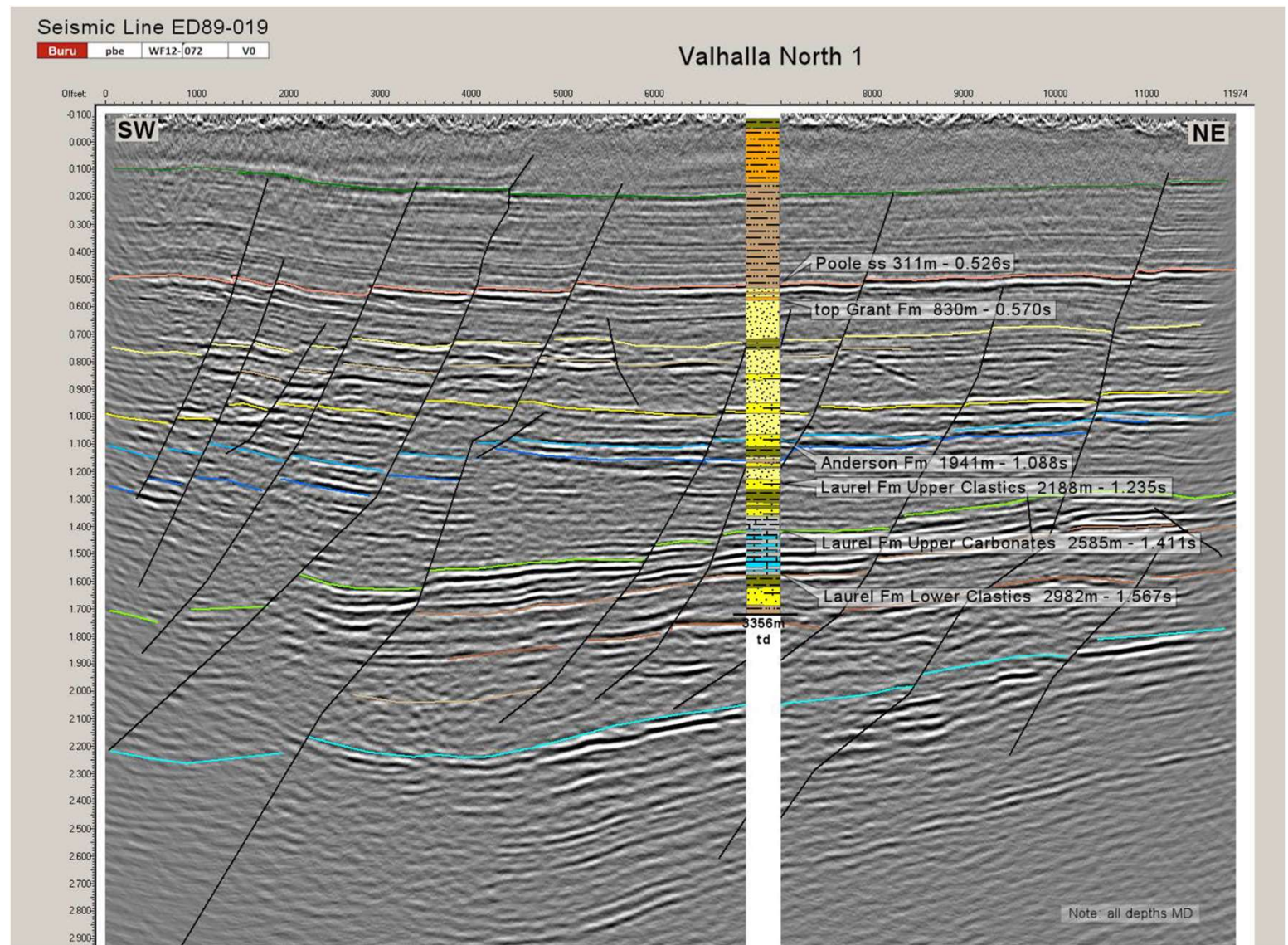


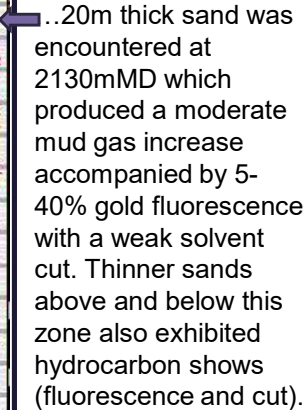
Figure 4

Faults here typically place older units up dip against younger units downdip.

We do not anticipate given the current data any significant juxtaposition against younger (Poole) units updip



Seismic section ED89-019 with Valhalla North 1.



Fracturing, Faulting, and Stress

Figure 6: Valhalla 2 Sonic Log

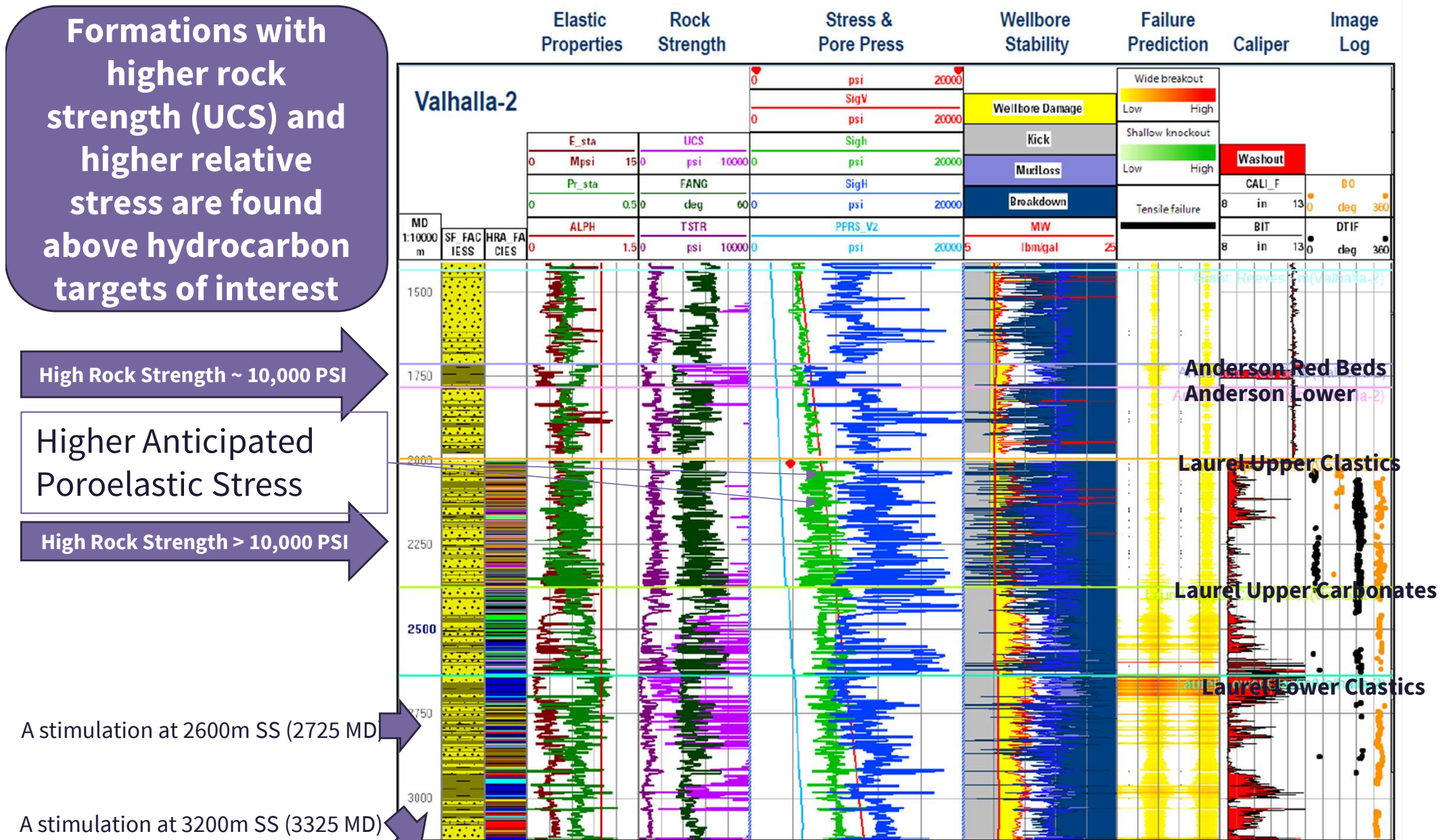
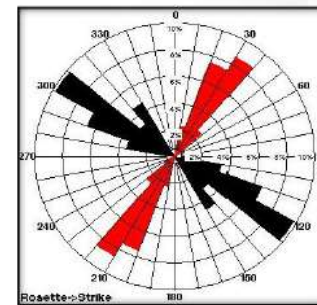
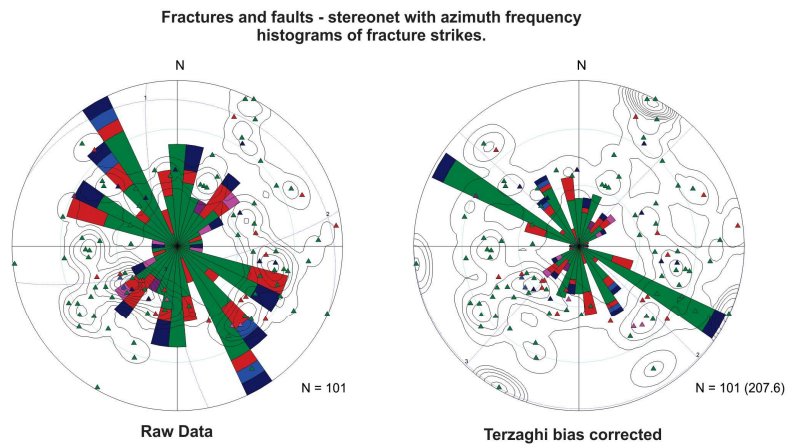
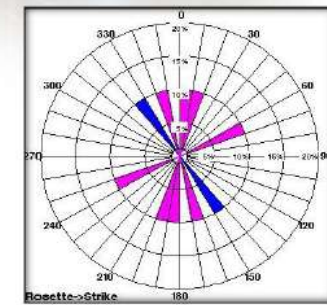


Figure 7: Fracturing/Faulting vs. Stress Direction

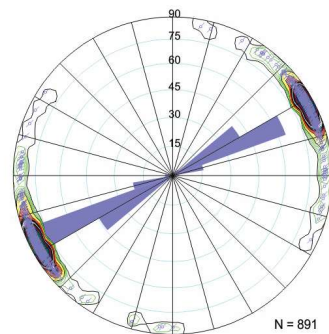
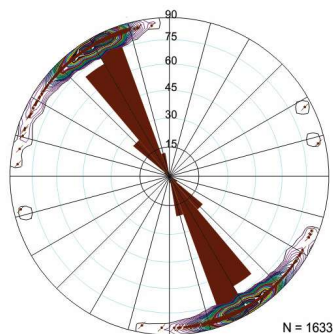
- Intense and frequent fracturing and faulting situated 60-90 degrees from SH_{max}
- Implications:
 - Ideal orientation to create fracture enhanced system permeability feed-in through crossing fractures
 - Difficulty opening the fractures in tension (mode I), restricting or eliminating the ability to dilate and prop



Strike orientations of Drilling induced fractures and Borehole Breakouts



Strike orientations of all natural conductive & partially conductive fractures



Fault and candidate fault strike

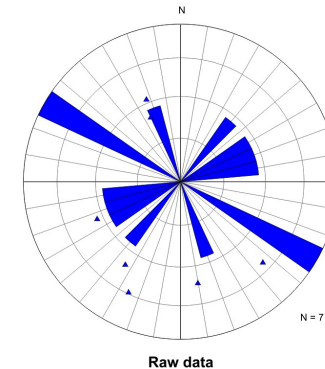


Figure 8: World Stress Map, 2016 Revision

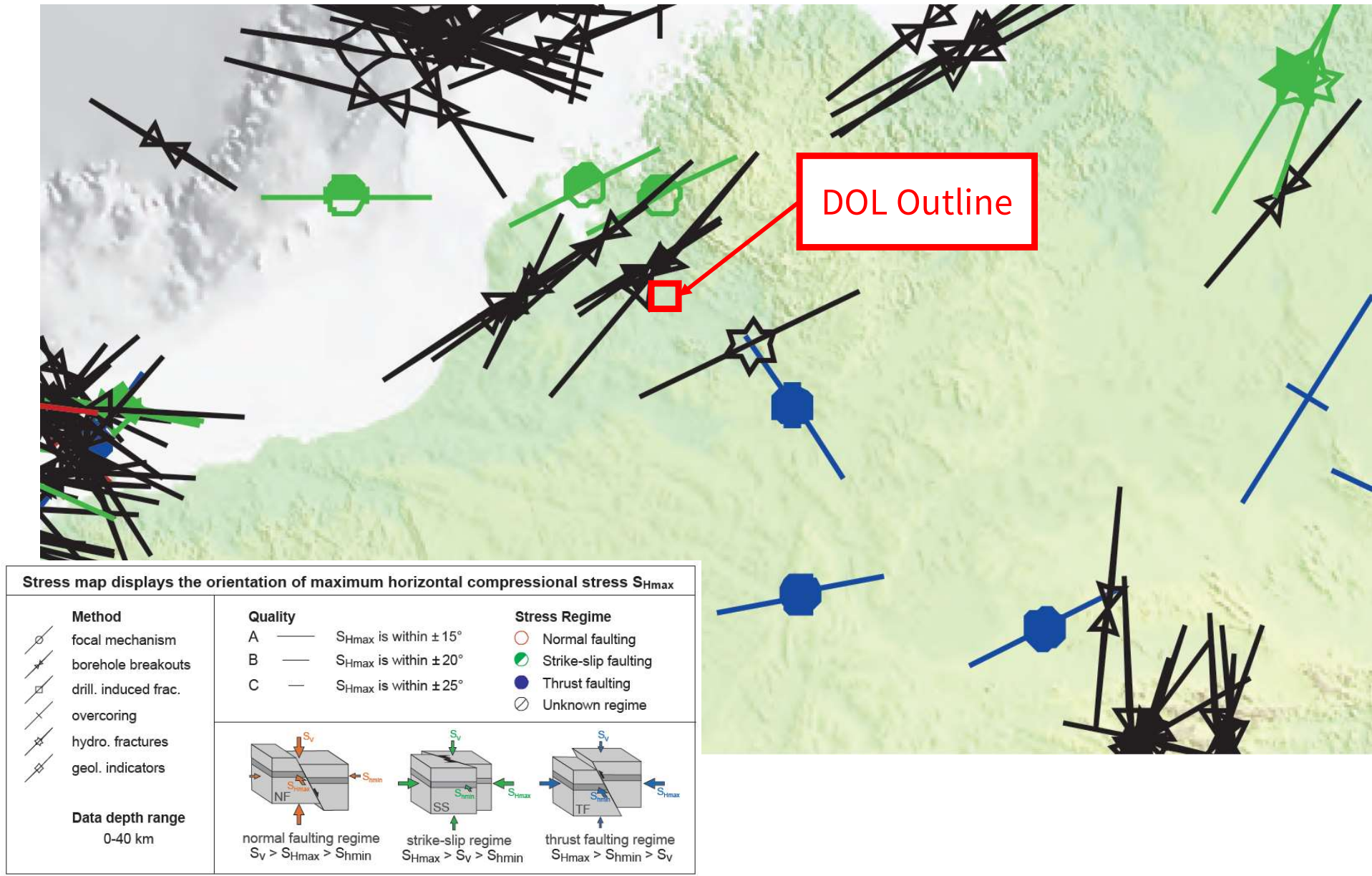


Figure 9: Microseismic Review from Valhalla North 1

- Significant vertical growth, but heights are within range of uncertainties
 - Bulk of microseisms range from 200-300 meters per zone
 - Uncertainty +/- 360 meters

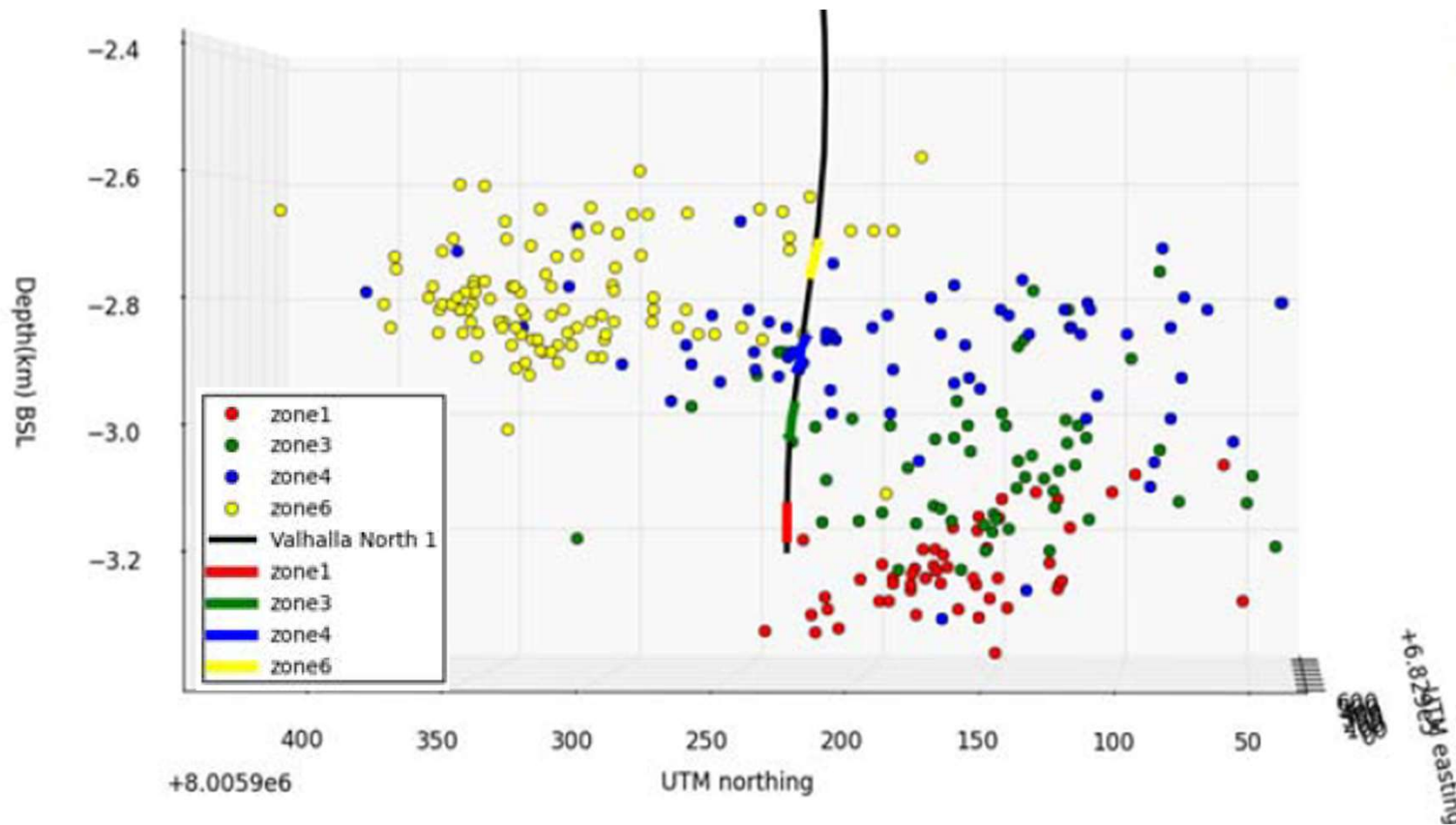


Figure 10: Warpinski 2011: True Vertical Depth in (ft) vs. Aquifer Depth

- 1,000's of feet separate all recorded microseisms and aquifer depths

