10 August 2020

Companies Announcements Office
Australian Securities Exchange Limited
10th Floor, 20 Bridge Street
SYDNEY NSW 2000

PEP11, Offshore Sydney Basin

BPH Energy Ltd (ASX: BPH) is pleased to provide the attached presentation summarising the geological and geophysical basis for the exploration well at Baleen within PEP11, in the offshore Sydney Basin.
The report identifies a revised drill target on the Baleen prospect on seismic data line B4-18 with total depth of 2150 metres. Conclusions of the presentation are provided below:

PEP11 has been pursued since 1981 with the first offshore 2D seismic survey. The nearest equivalent depth/age/commercial gas-condensate fields are west of Brisbane in the Bowen Basin. 2D seismic data (2D) shows that the Permian aged section of the Bowen Basin has conventional gas fields at similar time and depth to PEP11 at the Triassic/Permian age boundary that look similar in seismic amplitude strength on regional 2D to PEP11. These fields have interbedded coal and gas sands in the Late Permian that are probably correlative to the PEP11 Late Permian target.

A 40 BCF gas field called Churchie/Myall Creek south of Roma, Queensland, produces from gas sands between the Late Permian coal seams. The coals appear to be the local source for conventional gas with flow rates up to 10 mmcf/d & 115 bcpd. The presentation shows the lateral continuity of the local facies. Since these facies appear to be similar in depth and age to the PEP11 target, log ascii files were downloaded to create a forward AVO model for comparison to PEP 11 AVO. The forward model presents strong coal impedance and weak, minor amplitude change with offset.

A similar AVO anomaly was found on the PEP 11 anticline on 2D arbitrary line B4-18 to B4-03. The position of this anomaly on the south west side of the Newcastle syncline sedimentary sink / source kitchen may be favourable for permeable sands locally sourced by coals similar to those at the Churchie/Myall Creek fields. Further, the PEP 11 anticline appears to be structured by an eastward dipping thrust fault. Intersecting 2D lines suggests an extrapolated 6000 acre (24.3 km^2) amplitude anomaly area could be associated with Late Permian interbedded coal and gas facies. AVO angle gathers at the "DM1" location on line B4-18 suggests that the amplitudes could be related to coal and gas interbeds with a similarity in response to the Myall Creek forward AVO model.

Correlation risk that the anomaly location is at the Triassic/Permian boundary is reduced by jump correlating the 2D PEP11 seismic data to nearby onshore Late Permian well log control using RMS velocities and conversions adapted after a Fugro Geophysical report. Integrating a 1991 Santos/Ampolex offshore report, onshore well result summaries, and a cross-section obtained from http://digsopen.minerals.nsw.gov.au with the 2D data suggests that the probable 2D amplitude target is the onshore equivalent of the Permian Mulbring Siltstones and/or Muree Sandstones.

Interbedded coal beds may be the basis for the dominant amplitudes which are roughly equivalent to the overlying Late Permian coal measures. The extrapolated 6000 acre (24.3 km^2) 2D amplitude anomaly has a finite extent at or about 4400' (1342m) measured depth. It should be noted that few

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other amplitude anomalies like this event are present across PEP11 making this location more equivalent to the Bowen basin.

It is postulated that a wellbore at the "DM" location would probably encounter thin, anticlinal Triassic Narrabeen sands below the seabed, a normal section of Permian coal measures, then enter the Mulbring/Muree with interbedded gas sands and coal measures.

The strong petroleum potential of the northern Sydney Basin is indicated by the result of the Strevens Terrigal 1 well drilled in 1961 just onshore from PEP 11. The online records from http://digsopen.minerals.nsw.gov.au state that oil entered the wellbore at 338' (103m) (Narrabeen Formation) and 2-3" (5 – 7.6cm) oil fractures were noted at 5000' (1525m) (~Mulbring Siltstone). This oil stayed in the mud throughout the drilling. The wellbore had to be abandoned as the operator left "drilling rods downhole" in the wellbore at 6186' (1887m) TD. Their chief geologist suggested that another 10-15000 feet (3.05 to 4.6 km) of Permian facies lay below the TD of this wellbore. More integration of this available drill log and seismic data will be used to refine a drill location.

As Santos Ltd stated in 1991, "there is presently no commercial production or known commercial size accumulations of oil or gas in the Sydney Basin. However, ...The abundant shows indicate that the Basin is indeed capable of yielding oil and gas."

Although there are a number of risks associated with the new PEP 11 target the encouraging

1) the Terrigal #1 well is only 47 km from the proposed location and reported oil above and in the target PEP11 equivalent section
2) this thrusted anticline has overlying surface oil and gas seeps above a finite target amplitude, and
3) most historical reports put the hydrocarbon source kitchen in the Newcastle Syncline adjacent to and downdip to this proposed drilling location.

Correlation from this 2D seismic section west to the onshore Sydney Basin with the very sparse well control suggests a Late Permian target below the Tomago coal Measures. Additionally, Advent drilled and found "Permian" aged-sands in the New Seaclem 1 well well at TD which also provides a relative fit for the formation target versus 2D seismic. The Late Permian section drilled onshore from 0-3050m is dominantly sand of the Upper and Middle Permian so the thrust fault model appears to suggest that the target at the proposed drilling location may be at the Triassic/Permian boundary.

Furthermore, a stratigraphic chart demonstrating the comparison between geological units across the Bowen, Gunnedah and Sydney basins is provided overleaf.

PEP11 is held 85% and operated by Asset Energy Pty Ltd. Asset Energy Pty Ltd is a wholly owned subsidiary of Advent Energy Ltd, an investee entity of BPH Energy Ltd. Bounty Oil & Gas NL (ASX: BUY) holds the remaining 15% of PEP11.
David Breeze (Director) authorised the release of this announcement to the market.

David Breeze
Chairman

Notes:

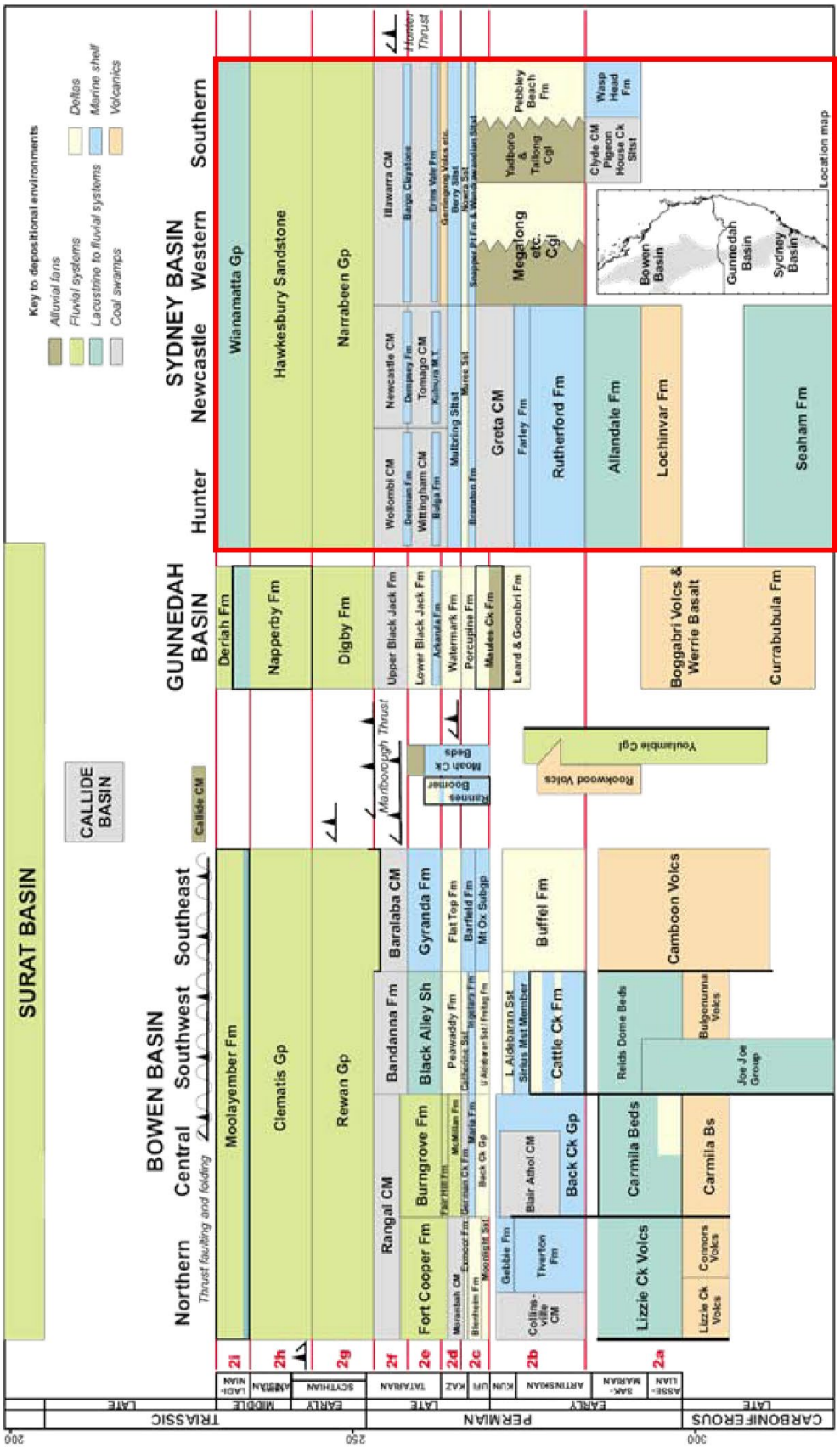
In accordance with ASX listing requirements, the geological information supplied in this report has been based on information provided by geologists who have had in excess of five years' experience in their field of activity.
All Mineral Resource and Reserve Statements have been previously published by the companies concerned. Summary data has been used. Please refer to relevant ASX releases for details and attribution. Unless otherwise stated all resource and reserve reporting complies with the relevant standards. Resources quoted in this report equal 100% of the resource and may not represent BPH 's investees' equity share.

About Advent Energy

. Advent holds a strong portfolio of near term development and exploration assets spanning highly prospective acreage onshore and offshore Australia in proven petroleum basins. Advent Energy's asset base also incorporates both conventional and unconventional petroleum targets.

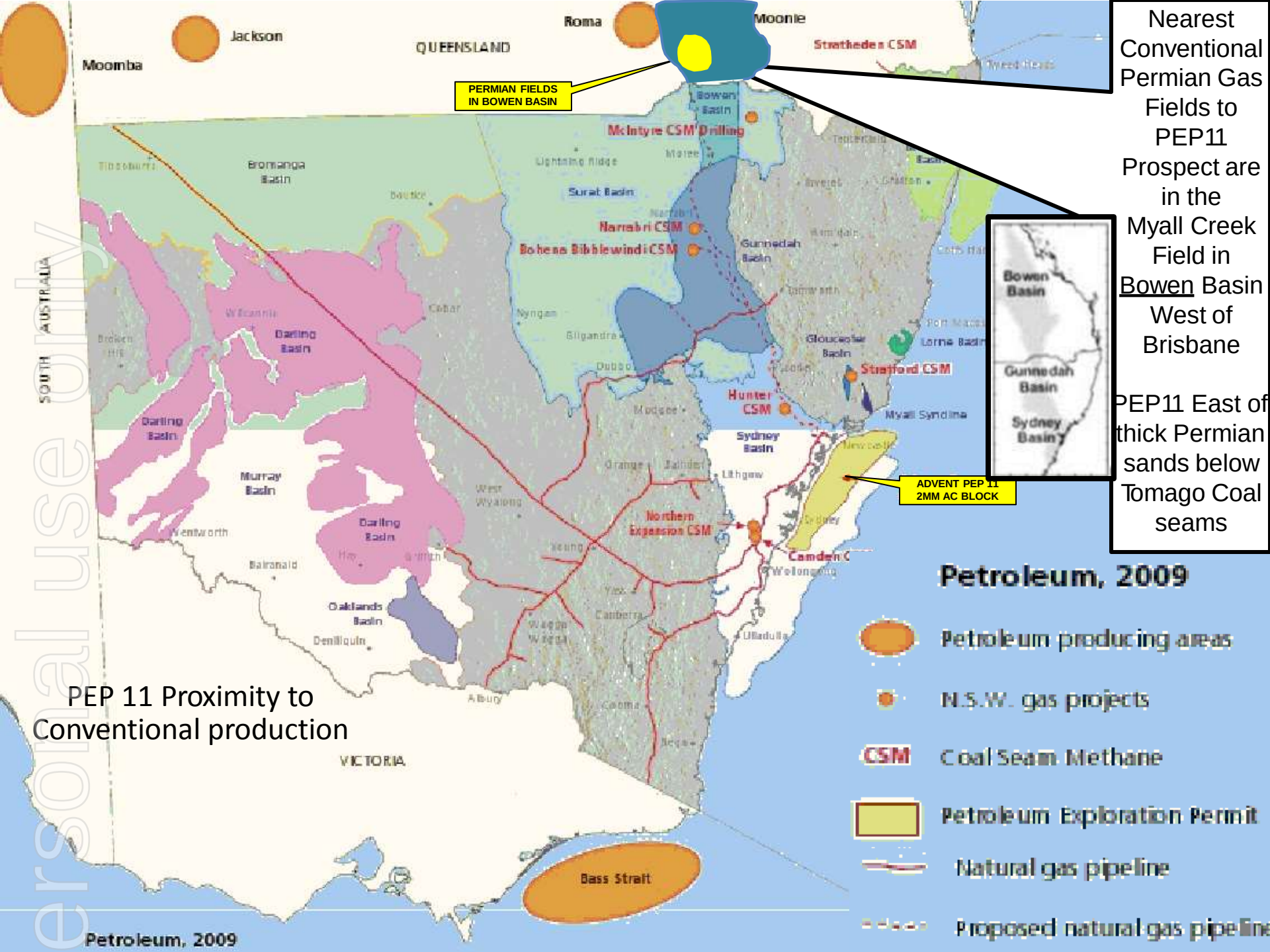
Correlative Stratigraphy in the Bowen and Gunnedah Basins

A chronostratigraphic comparison of the Sydney Basin succession with equivalent age rocks of the Bowen and Gunnedah basins is shown in Figure 51 (Fielding et al., 2004).

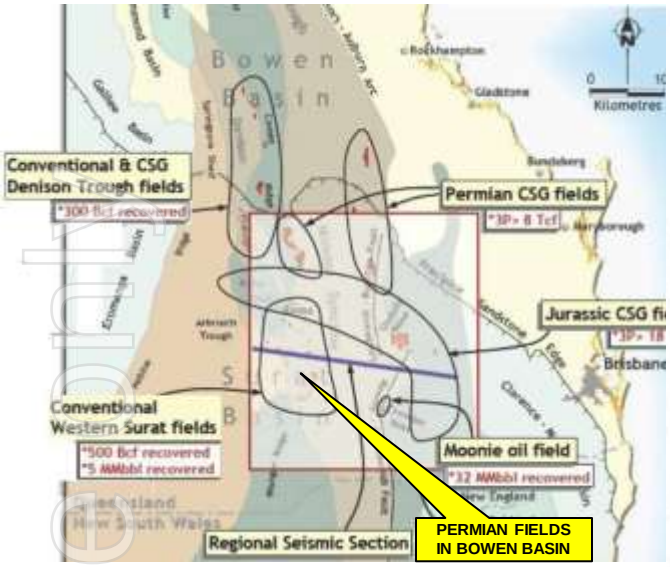


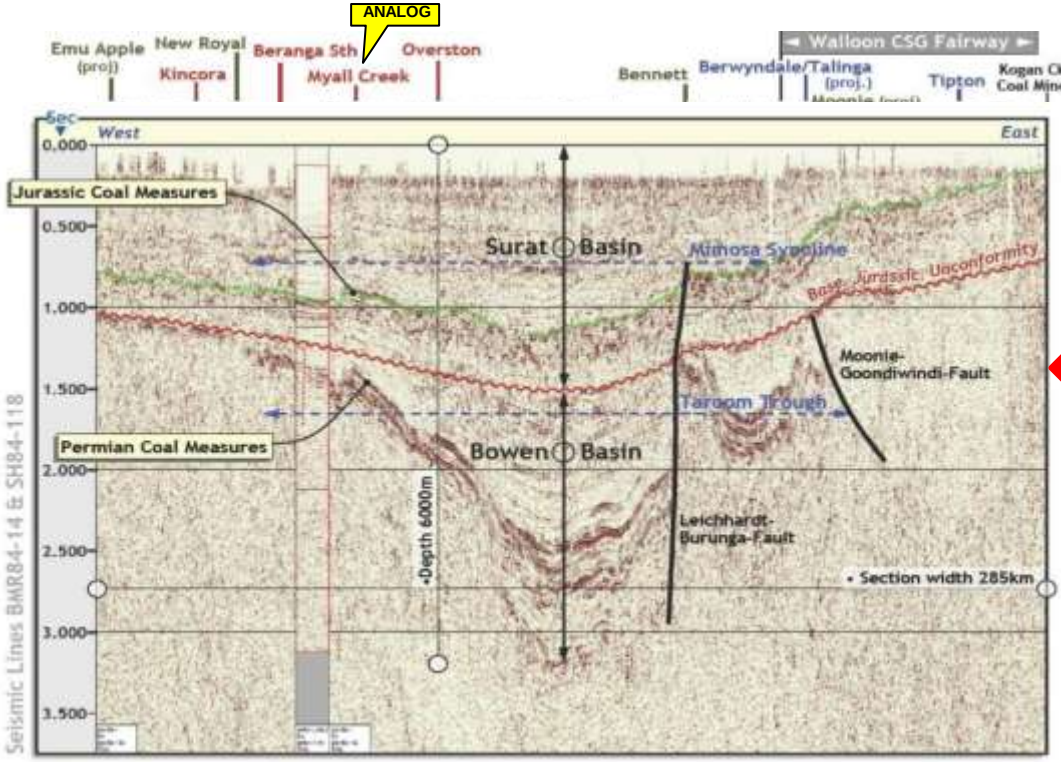
Correlative stratigraphy in the Bowen, Gunnedah and Sydney basins (from Blevin, J., et al, 2007, Sydney Basin Reservoir Prediction Study, FrOG Tech).

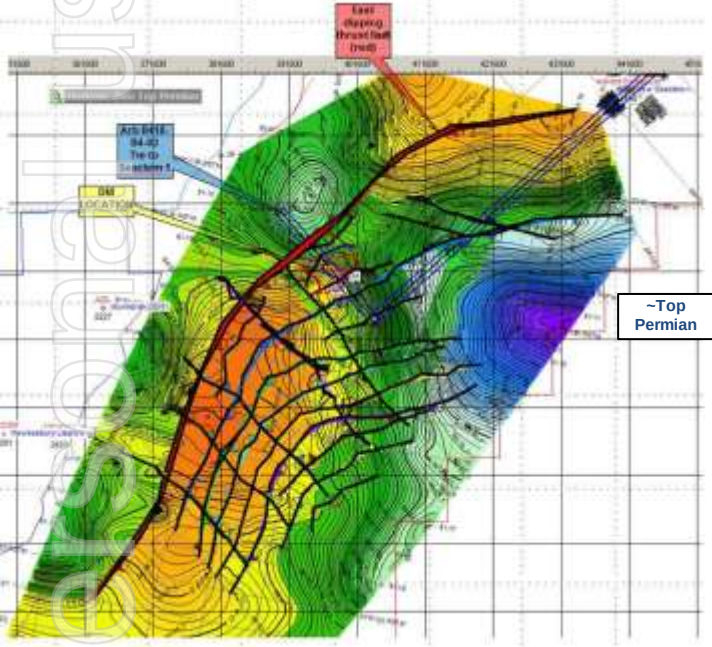
AVO	Specialised analysis of seismic data comparing amplitude of sound waves versus collection point offsets
Basin	A segment of the earth's crust which has down warped and in which sediments have accumulated, such areas may contain hydrocarbons.
BCF/Bcf	Billion cubic feet, i.e. 1,000 million cubic feet (equivalent to approximately 28.3 million cubic metres) of gas.
GIIP	Gas initially in place
Lead	A structural or stratigraphic feature which has the potential to contain hydrocarbons
License	An agreement in which a national or state government gives an oil Company the rights to explore for and produce oil and/or gas in a designated area.
MCF/Mcf	Thousand cubic feet – the standard measure for natural gas.
MDRT	Measured depth below Rotary Table
MMB/mmb, MMBO/mmbo	Million barrels, million barrels of oil.
MMCF/mmcf, MMCFG/mmcfg, MMCFGPD/mmcfgpd	Million cubic feet, million cubic feet of gas, million cubic feet of gas per day
Permeability	The degree to which fluids such as oil, gas and water can move through the pore spaces of a reservoir rock.
Permit	A petroleum tenement, lease, licence or block.
Play	A geological concept which, if proved correct, could result in the discovery of hydrocarbons.
Porosity	The void space in a rock created by cavities between the constituent mineral grains. Liquids are contained in the void space.
Prospect (petroleum)	A geological or geophysical anomaly that has been surveyed and defined, usually by seismic data, to the degree that its configuration is fairly well established and on which further exploration such as drilling can be recommended.
Reserves	Quantities of economically recoverable hydrocarbons estimated to be present within a trap, classified as prove, probably or possible.
Reservoir	A subsurface volume of rock of sufficient porosity and permeability to permit the accumulation of crude oil and natural gas under adequate trap conditions.
RMS	Root Mean Squared. A statistical measure also known as the quadratic mean.
Seal, Sealing Formation	A geological formation that does not permit the passage of fluids. Refer also to Cap Rock.
Seismic Survey	A type of geophysical survey where the travel times of artificially created seismic waves are measured as they are reflected in a near vertical sense back to the surface from subsurface boundaries. This data is typically used to determine the depths to the tops of stratigraphic units and in making subsurface structural contour maps and ultimately in delineating prospective structures.
Stratigraphic Trap	A type of petroleum trap which results from variations in the lithology of the reservoir rock, which cause a termination of the reservoir, usually on the up dip extension.
Structure	A discrete area of deformed sedimentary rocks, in which the resultant bed configuration is such as to form a potential trap for migrating hydrocarbons.
Anticline/Syncline	A localised fold or depression within a Basin.
TD	Total drilled depth for a petroleum well
TCF/Tcf	Trillion cubic feet.
TVDS	Total vertical depth below Sea Level
Up-dip	At a structurally higher elevation within dipping strata.

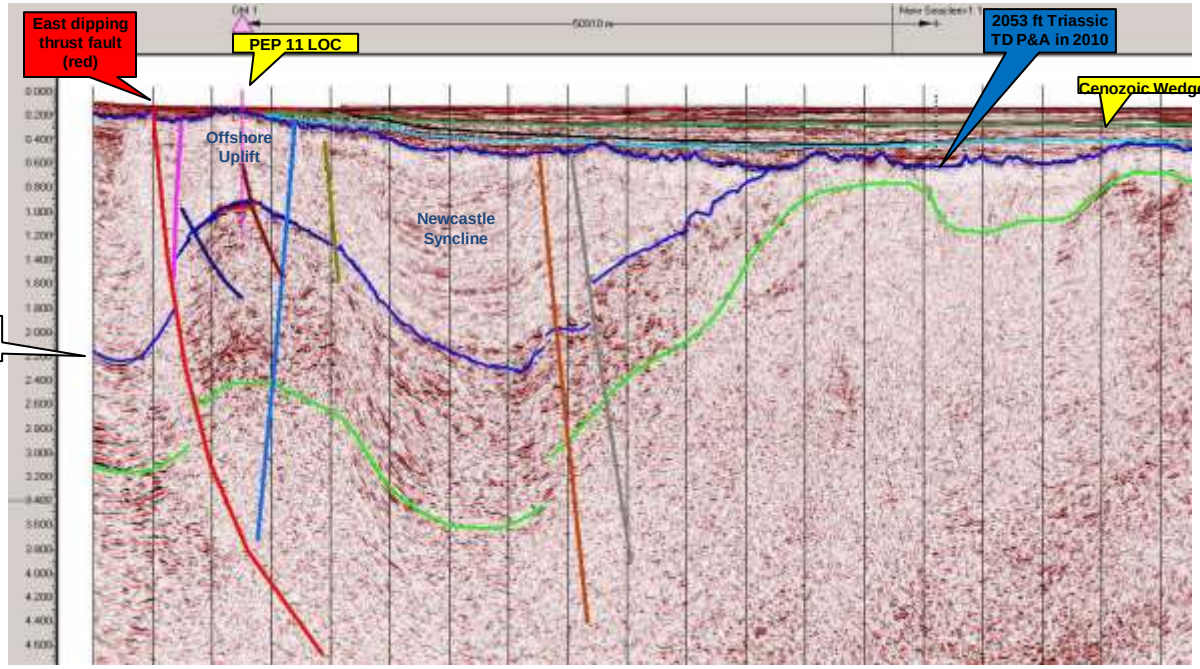

Nearest Conventional Permian Gas Fields to PEP11 Prospect are in the Myall Creek Field in Bowen Basin West of Brisbane
PEP11 East of thick Permian sands below Tomago Coal seams
PERMIAN FIELDS IN BOWEN BASIN
ADVENT PEP 11 2MM AC BLOCK
Bowen Basin
Gunnedah Basin
Sydney Basin
PEP 11 Proximity to Conventional production
Petroleum, 2009
Petroleum producing areas
N.S.W. gas projects
CSM Coal Seam Methane
Petroleum Exploration Permit
Natural gas pipeline
Proposed natural gas pipeline
QUEENSLAND
VICTORIA
Roma
Moonie
Jackson
Moomba
Strathedes CSM
McIntyre CSM Drilling
Narrabri CSM
Bohena Bibblewindi CSM
Stratford CSM
Hunter CSM
Northern Expansion CSM
Camden
Bass Strait
Bowen Basin
Surat Basin
Bromanga Basin
Gunnedah Basin
Darling Basin
Murray Basin
Oaklands Basin
Sydney Basin
Myall Syndina
Gloucester Basin
SOUTH AUSTRALIA
Petroleum, 2009

Bowen Basin West Surat Production Interpreted 2D Line Showing Permian Amps Versus Offshore Sydney PEP11 2D Line West of Brisbane, AU (Queensland)

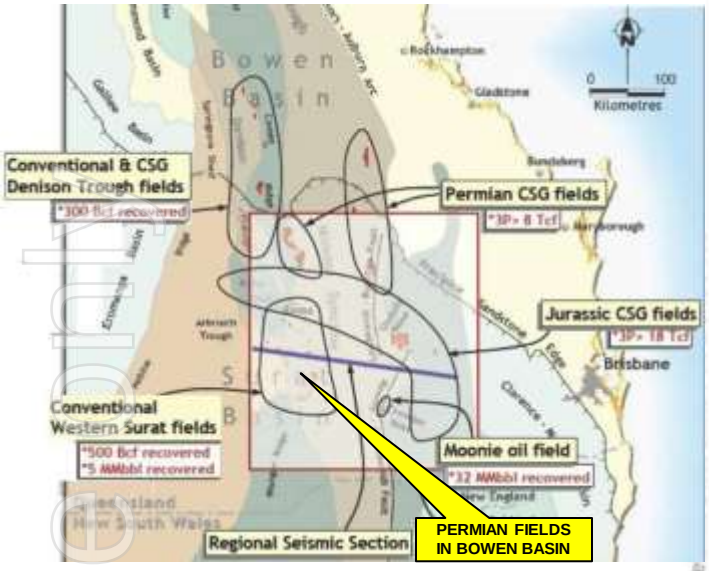


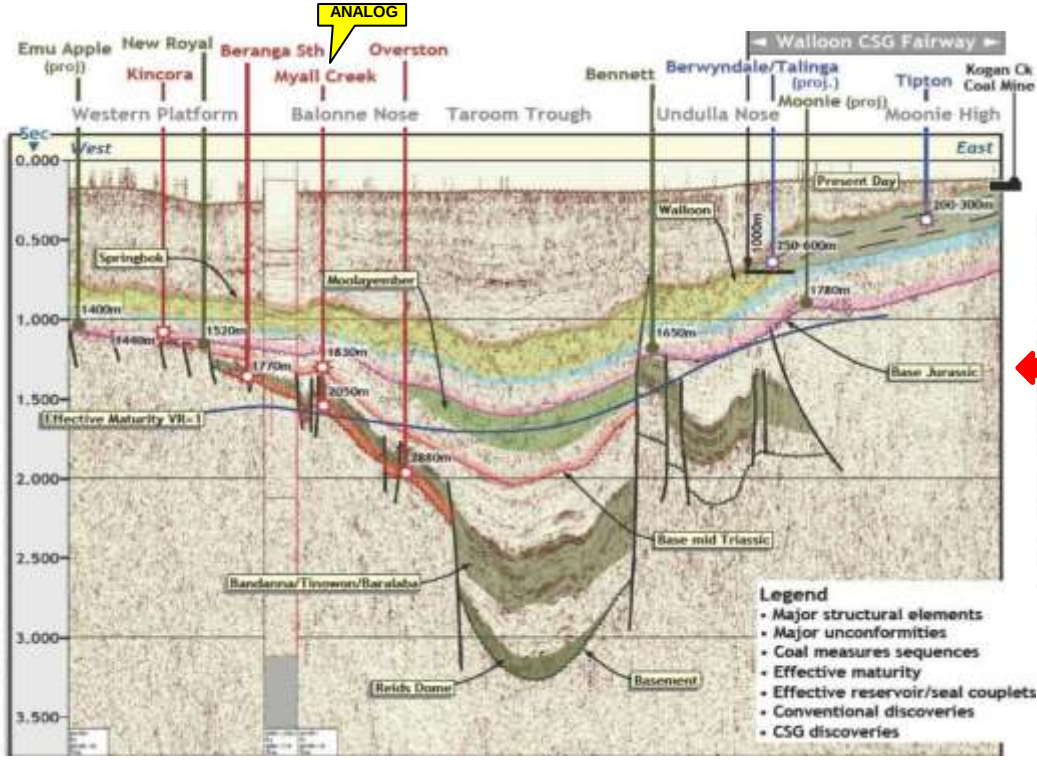


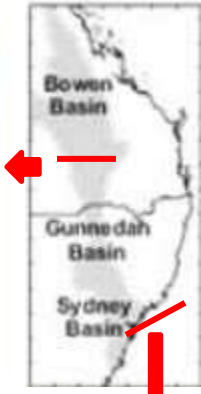


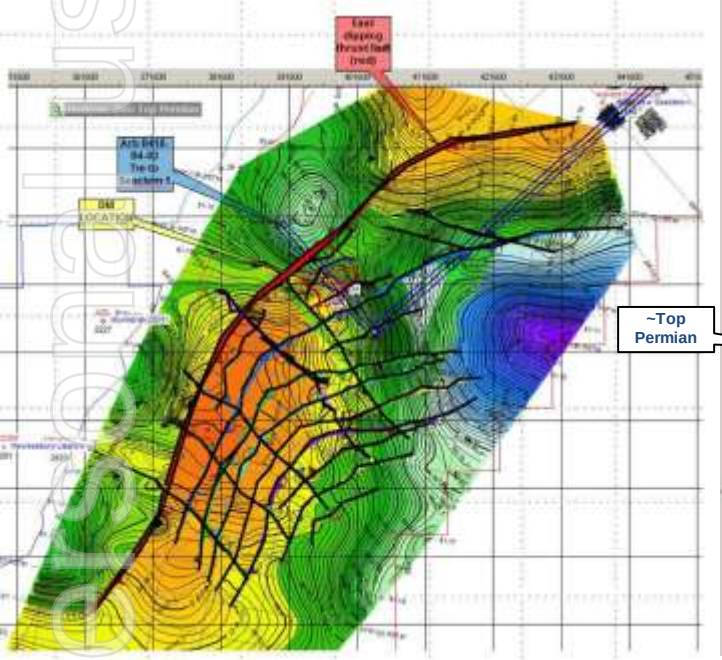


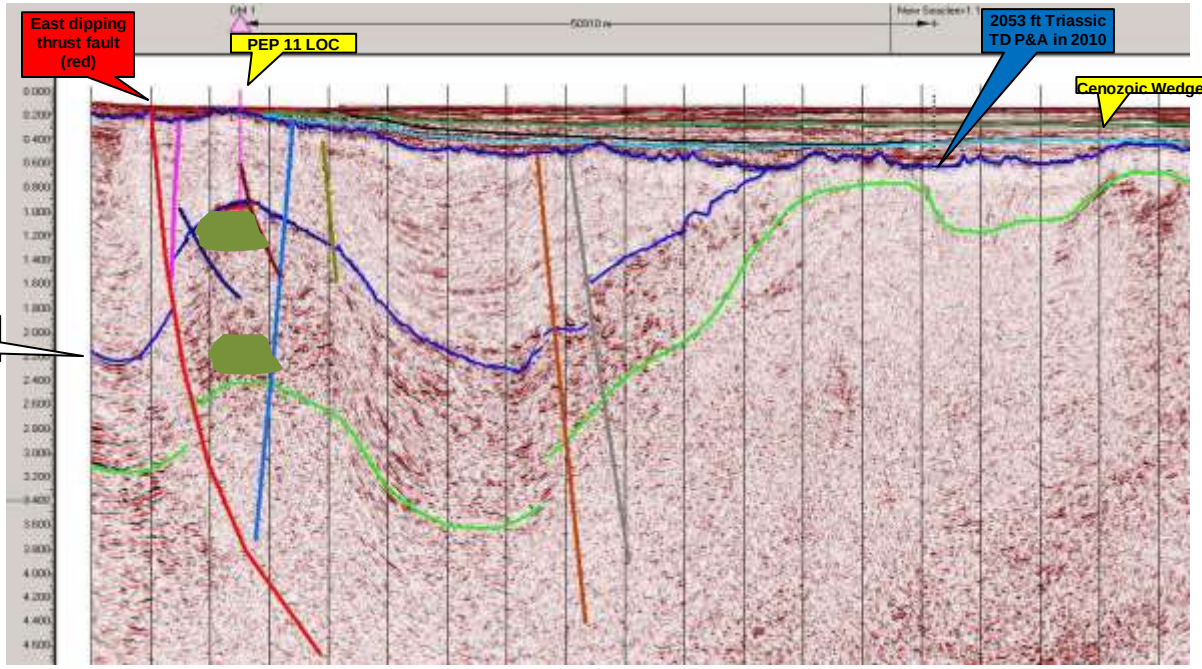
Bowen Basin West Surat Production 500 bcfg / 5 mmbo (Red wells at right) 2D Line Versus Offshore Sydney PEP11 2D Line West of Brisbane, AU (Queensland)





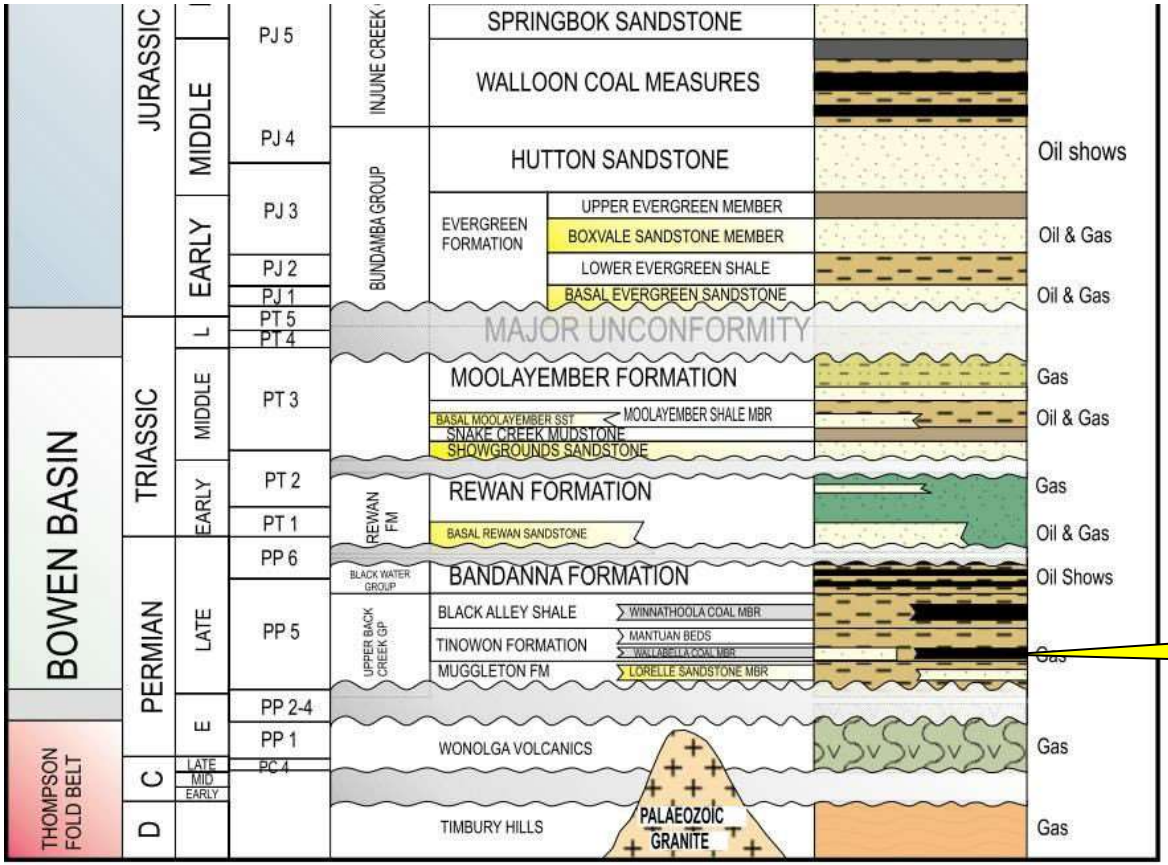






PEP 11 SAND Analog: 1999 Myall Creek Late Permian gas/condensate Queensland

The Myall Creek field was discovered in 1999 with the drilling of Myall Creek 2 which flowed gas on DST from the Tinowon Formation. First production started in early 2001. Subsequent appraisal and development wells were drilled with 6 wells now producing.

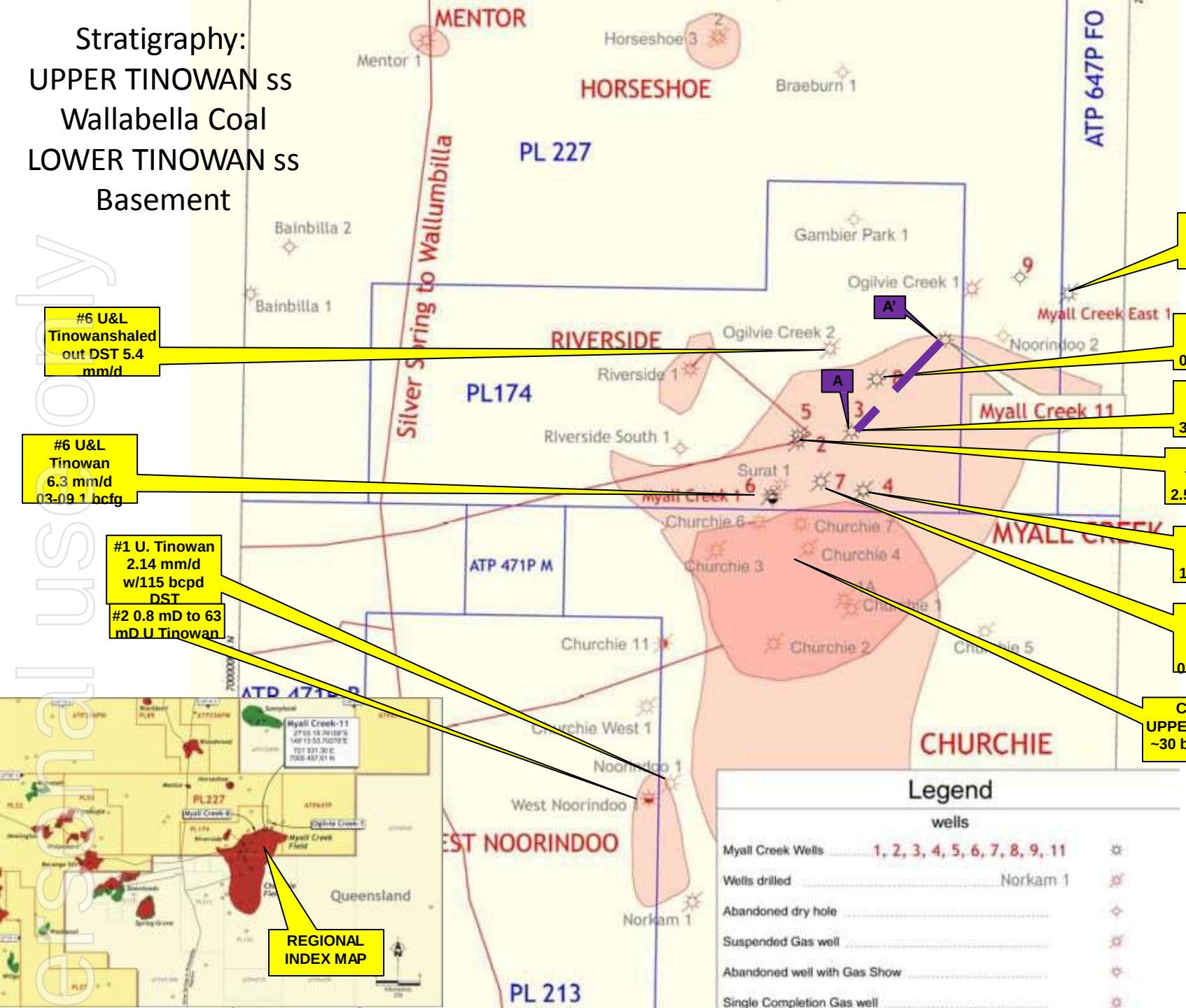


Oil Company of Australia

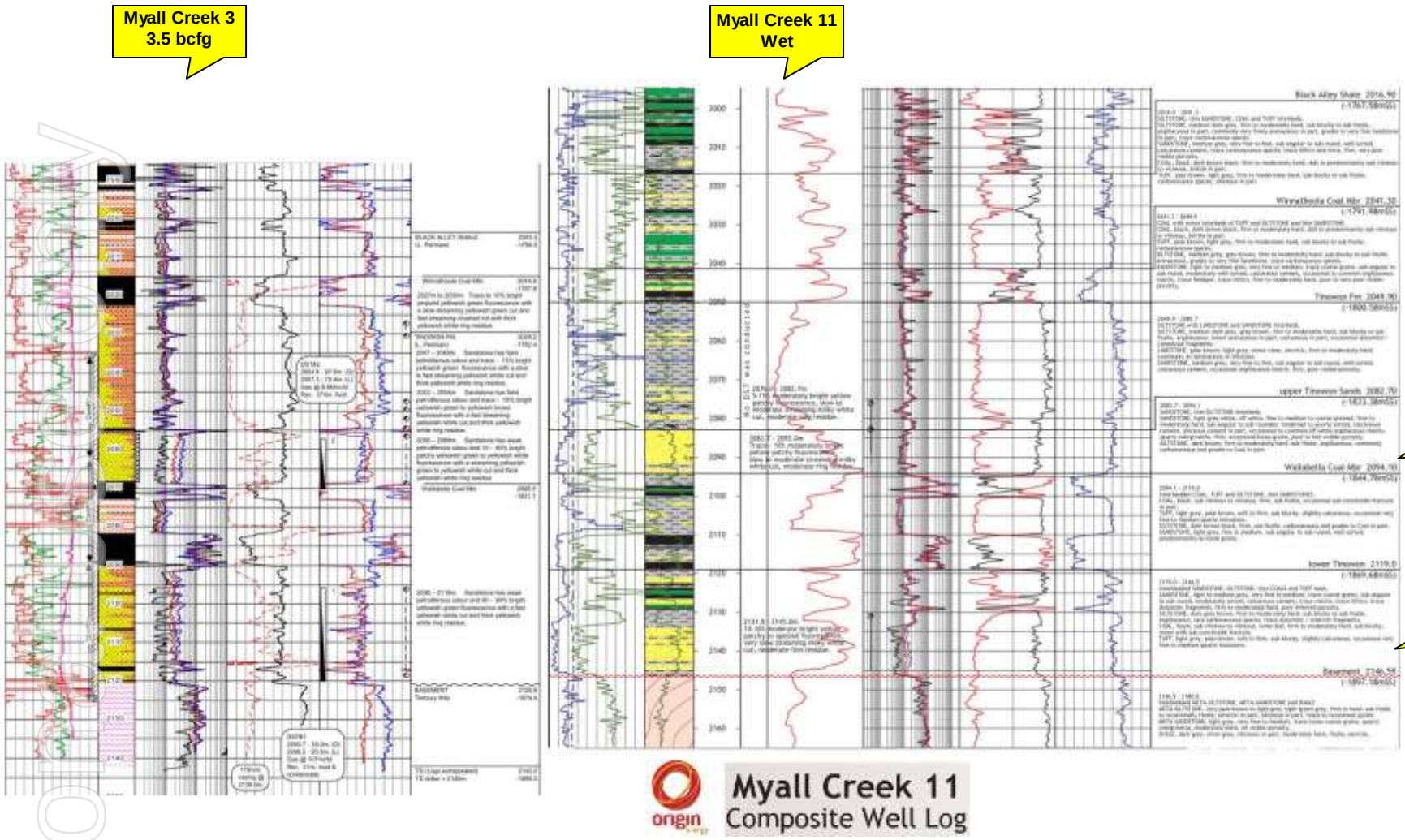
SUR-BOW STRAT.CDR
VER: 1.0 OCT 1997

Figure 4

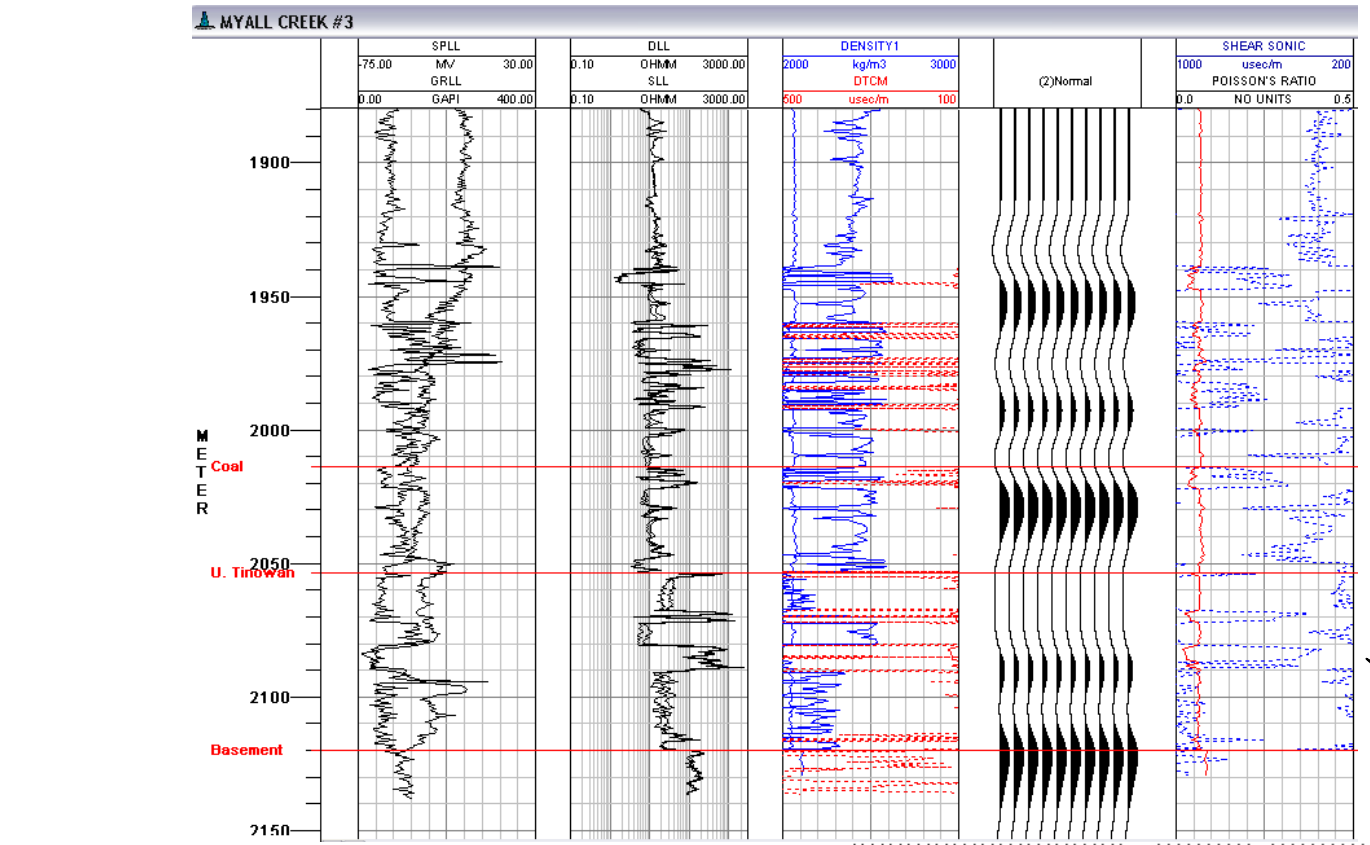
Stratigraphy:
UPPER TINOWAN ss
Wallabella Coal
LOWER TINOWAN ss
Basement

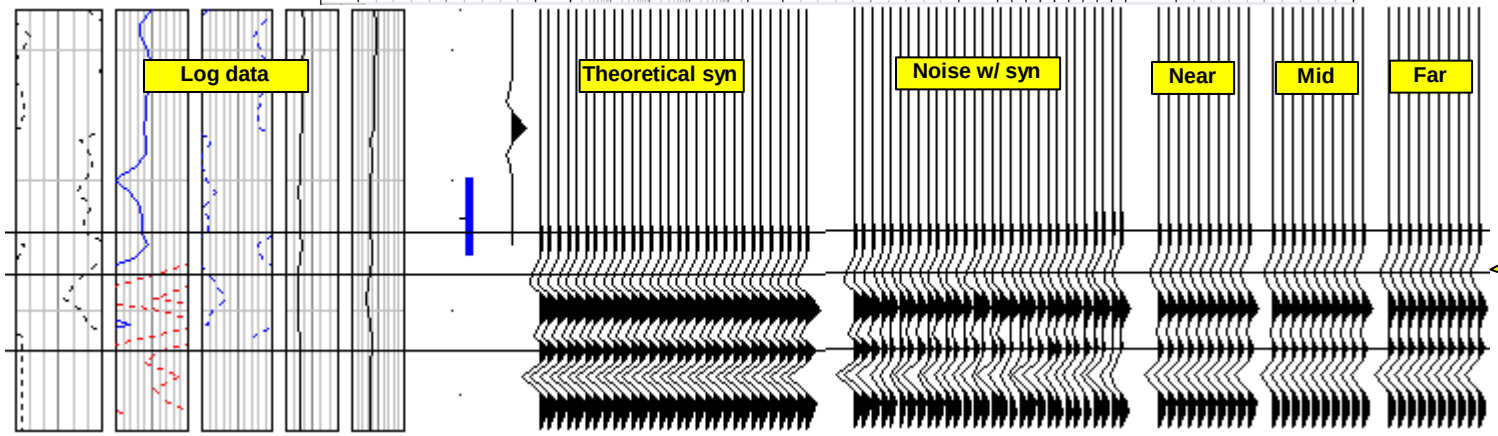


PEP 11 ANALOG: INTERBEDDED LATE PERMIAN COAL AND GAS SANDS

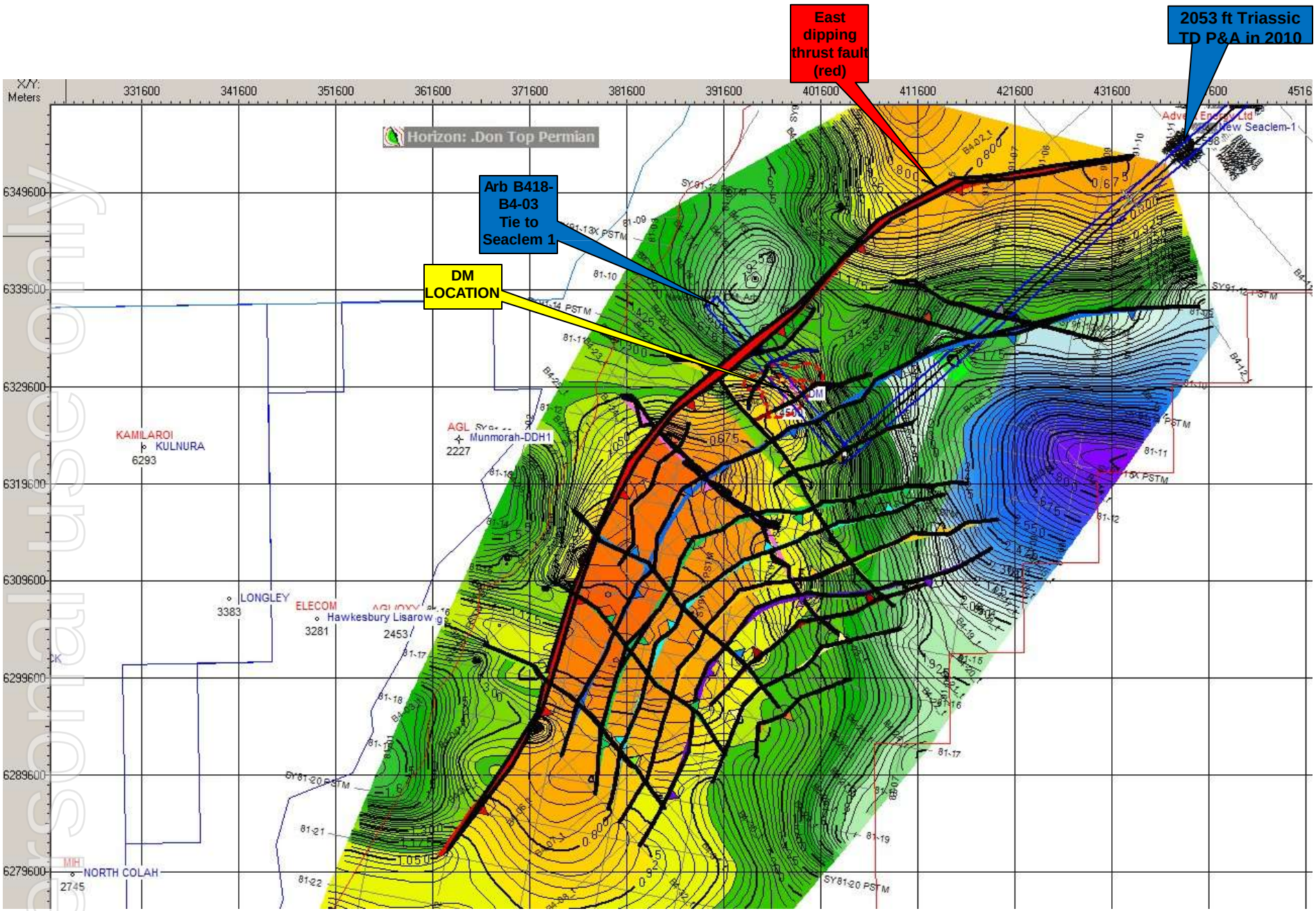


PEP 11 FORWARD AVO ANALOG: MYALL CREEK
INTERBEDDED LATE PERMIAN COAL AND GAS SANDS TBA



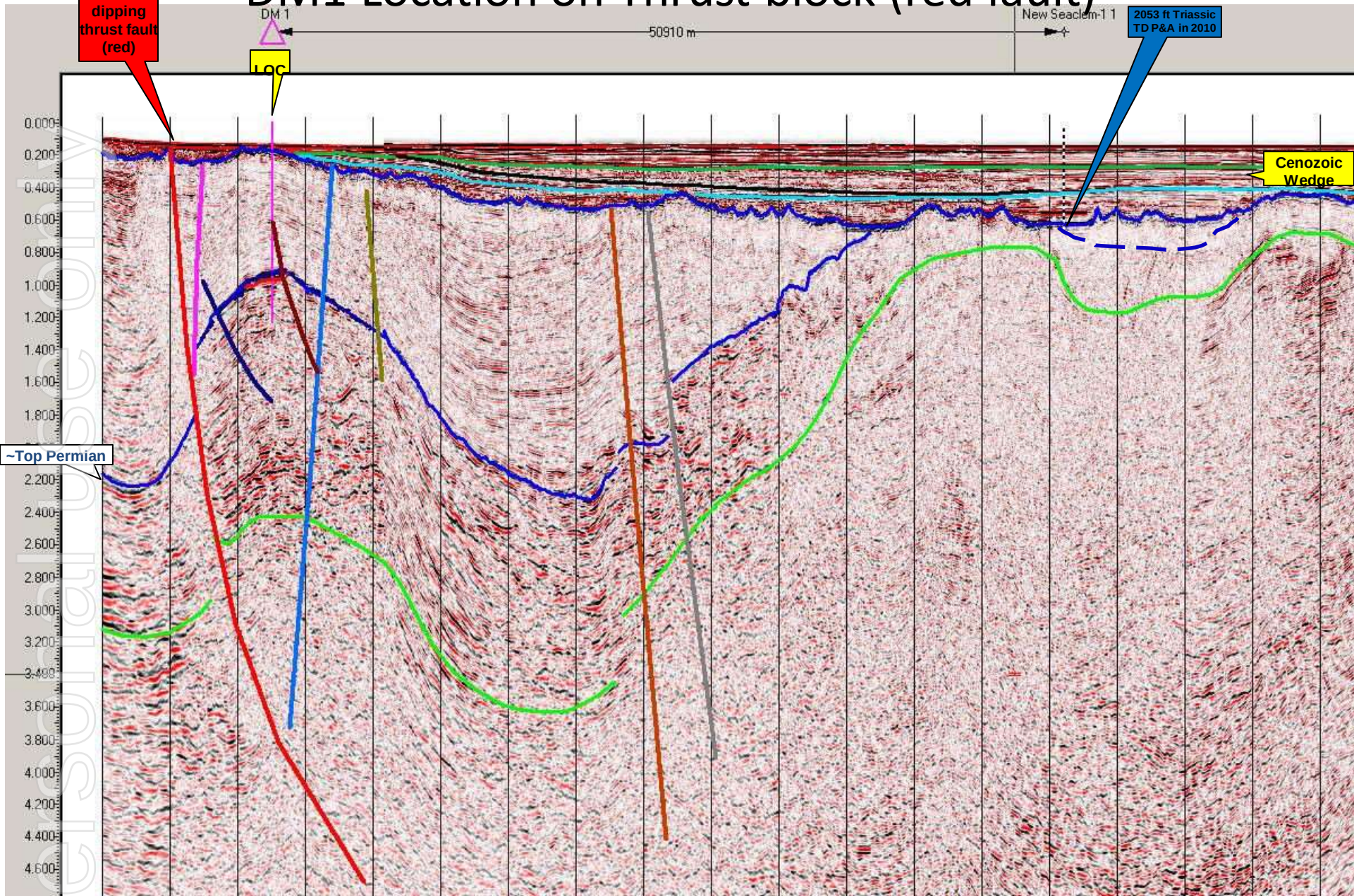


Near Top Permian (Base Narabeen Triassic)



Arb B418 to B403 Arb Line Tie to Advent Seaclem #1 P&A

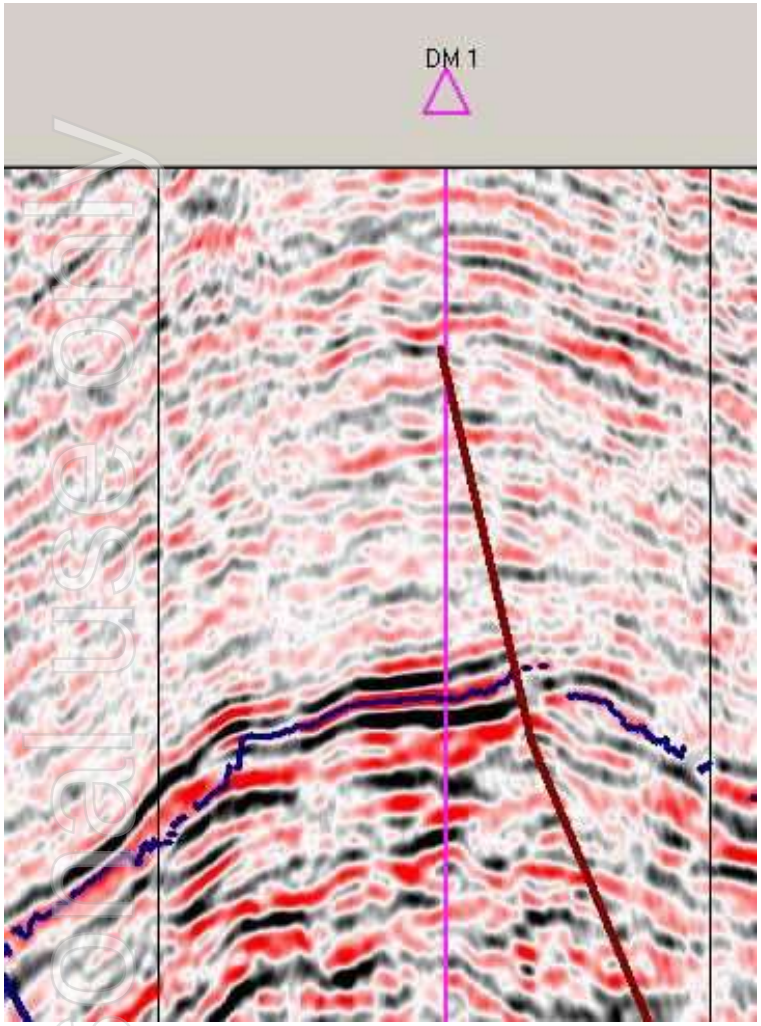
DM1 Location on Thrust block (red fault)

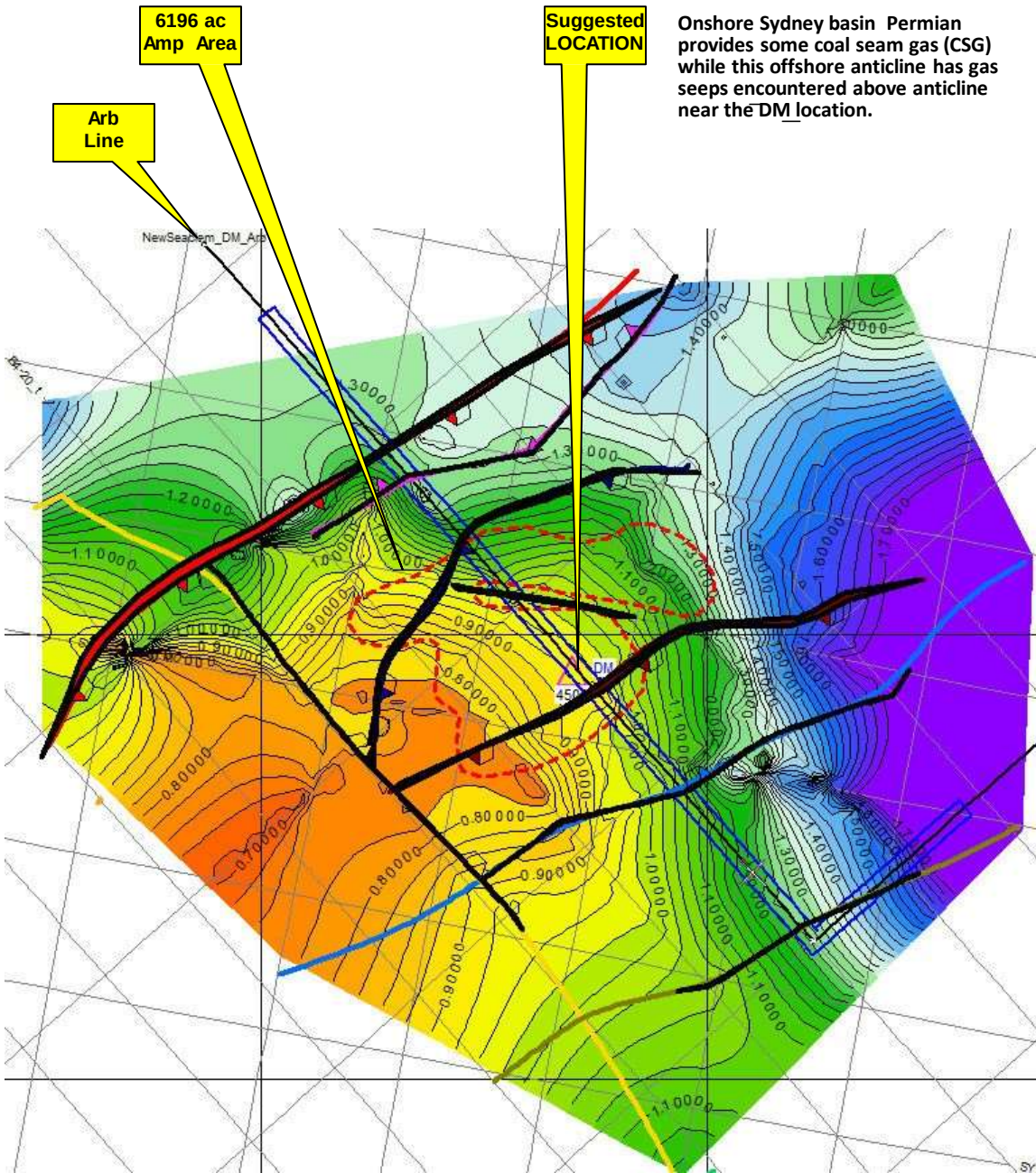


Near Top Permian / Base Triassic

Suggested Target: Test 2D seismic line amplitude anomaly at DM1 on North end of ~Late Permian anticline formed on the upper plate of easterly dipping thrusts fault (red).

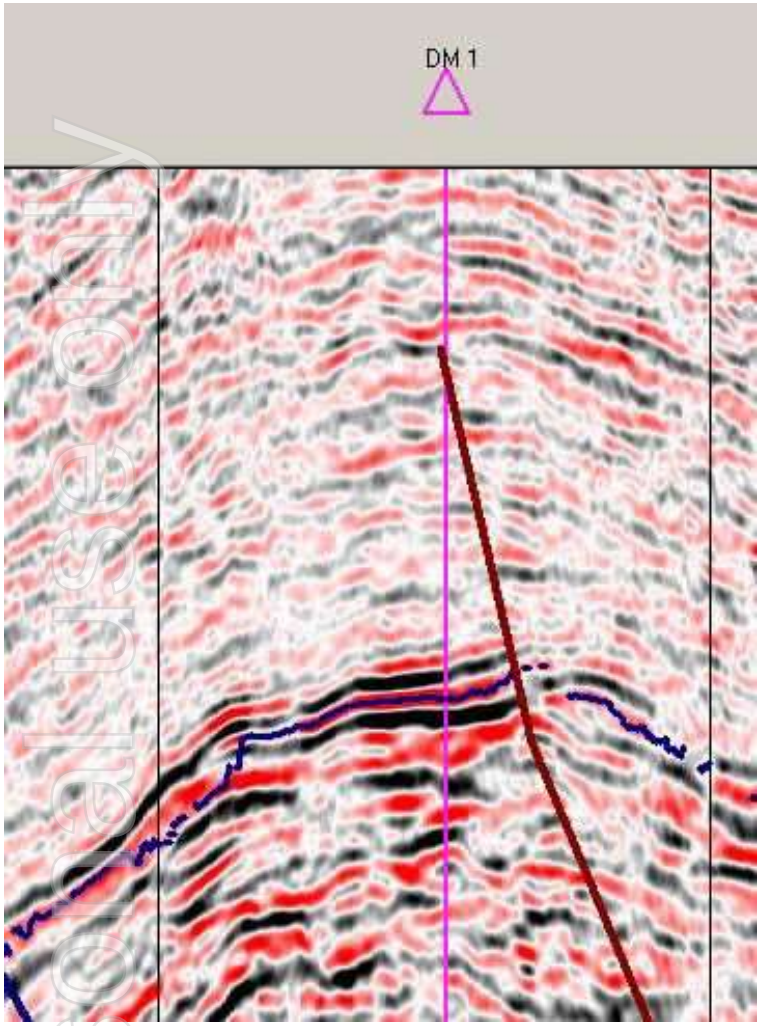
Onshore Sydney basin Permian provides some coal seam gas (CSG) while this offshore anticline has gas seeps encountered above anticline near the DM location.

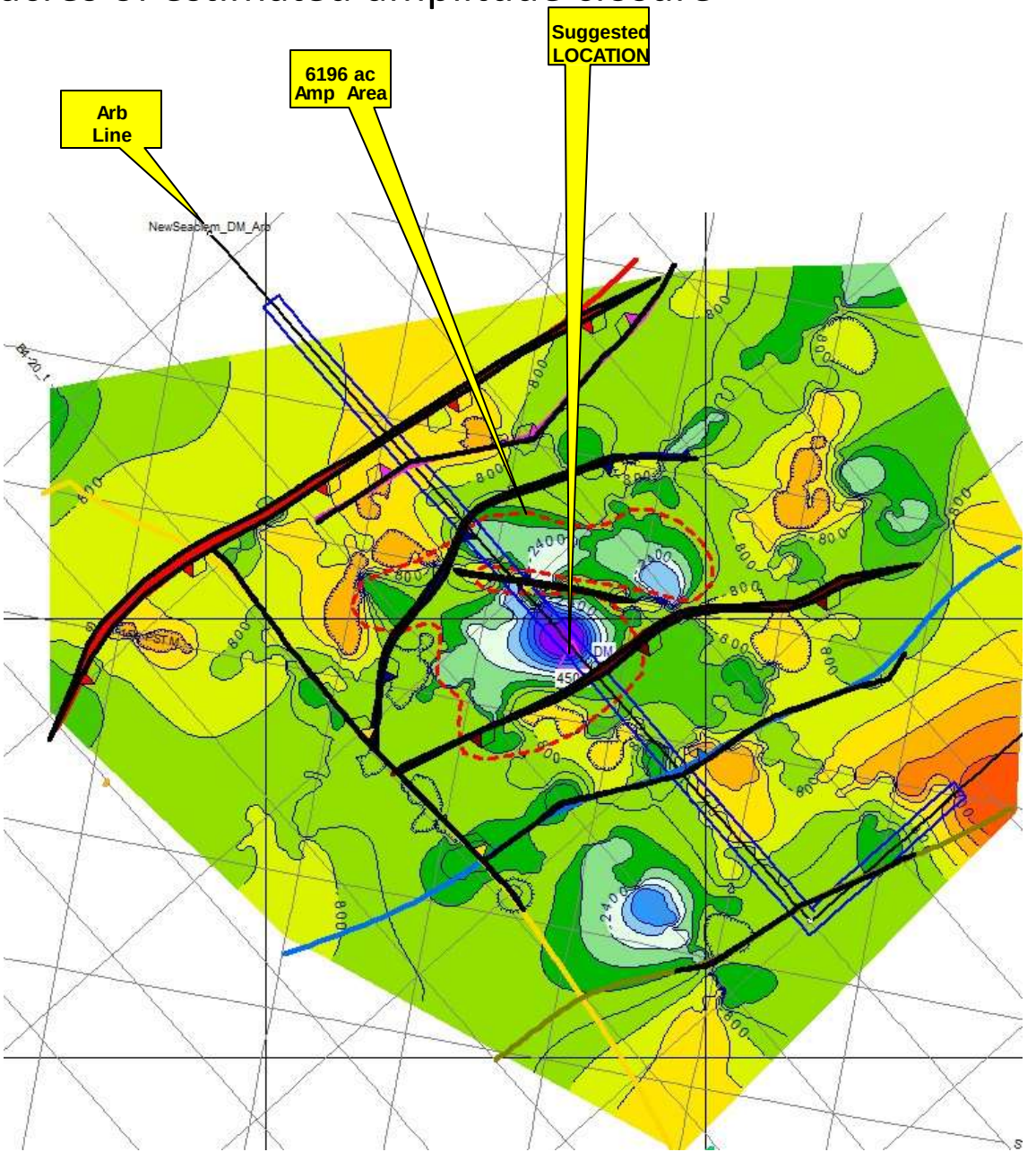




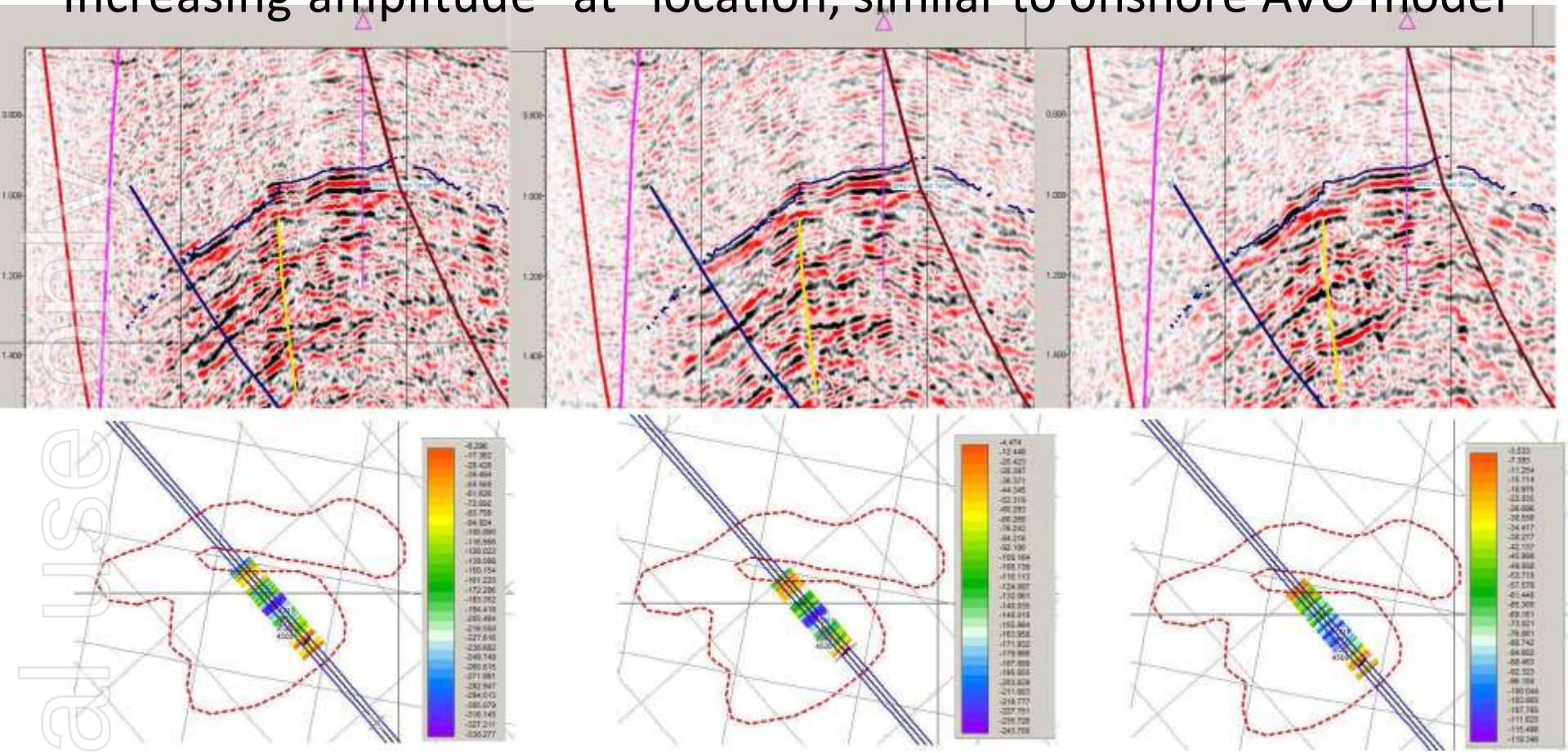
Near Top Permian / Base Triassic amplitude extraction

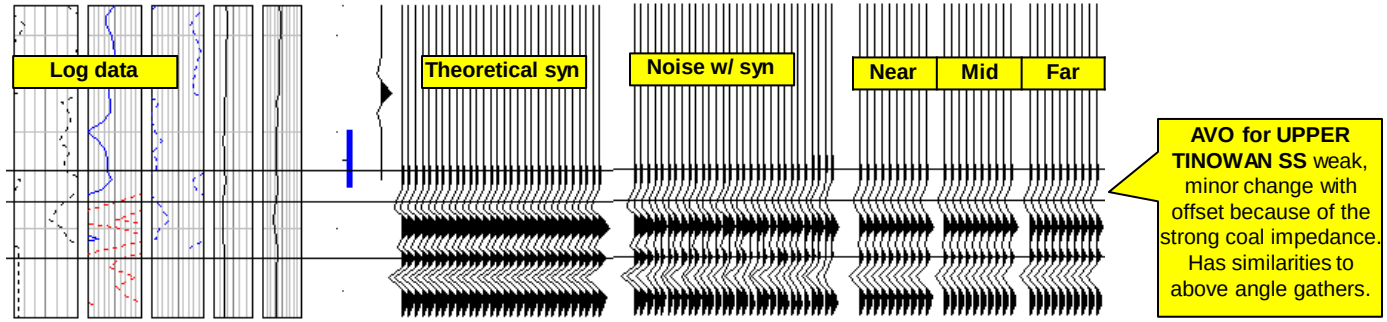
Estimate: 6196 acres of estimated amplitude closure

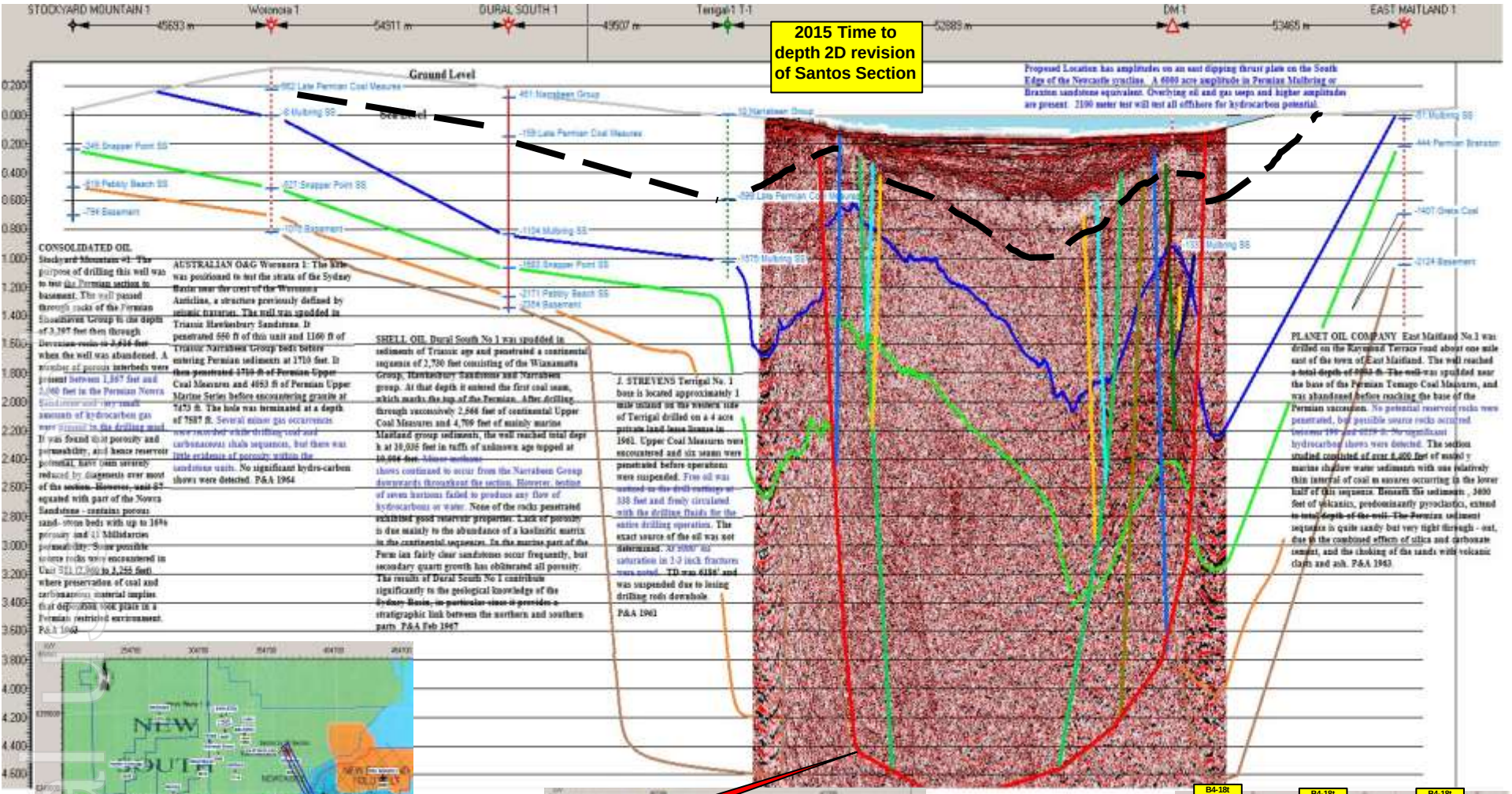


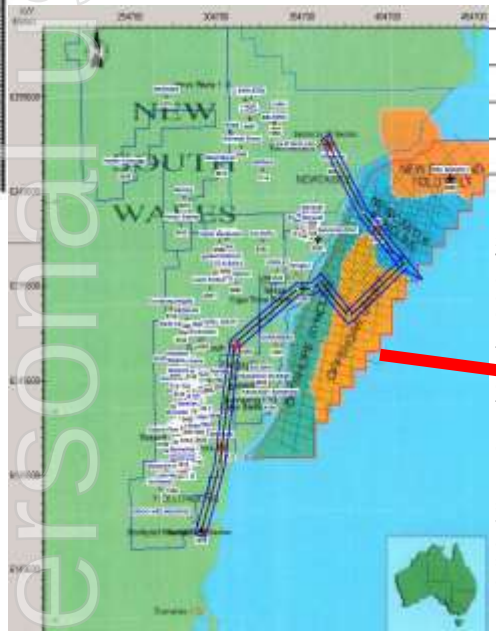


Near2-12, Mid 12-22, Far 22-32 Angles at Location
Increasing amplitude “at” location; similar to onshore AVO model









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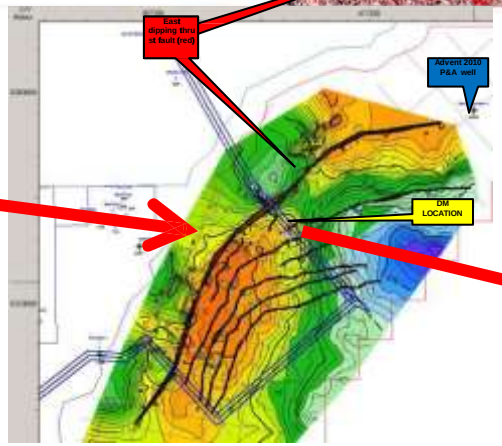
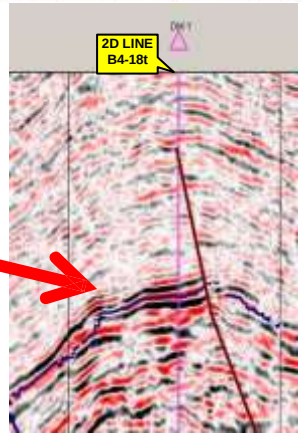
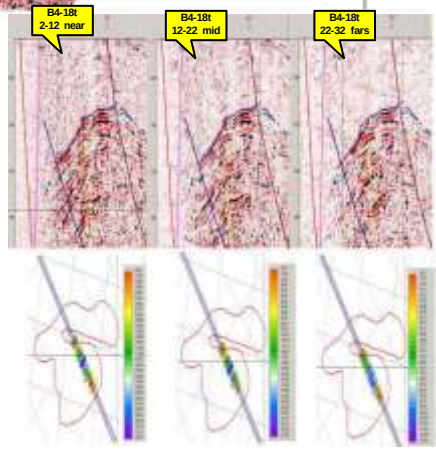
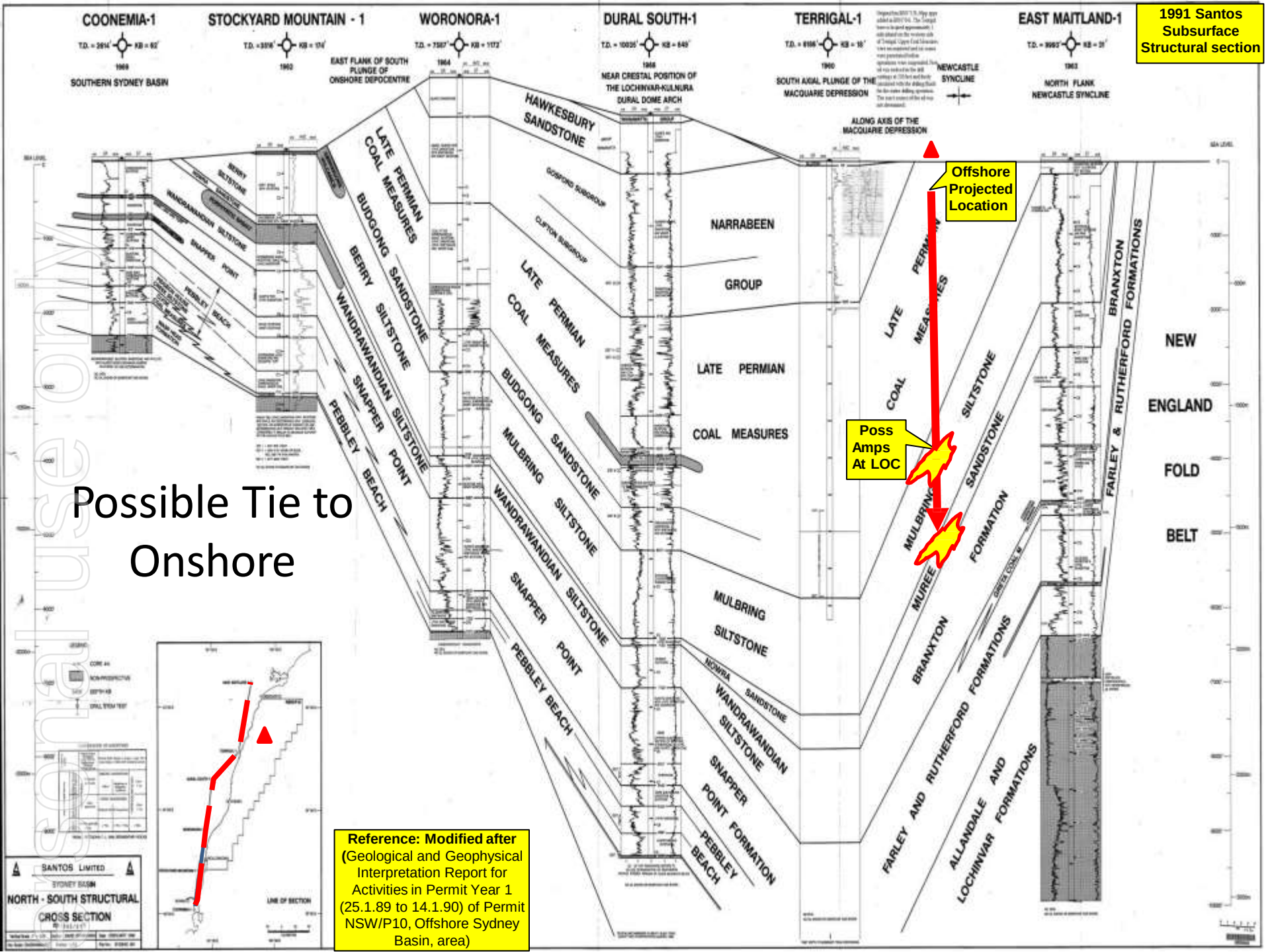
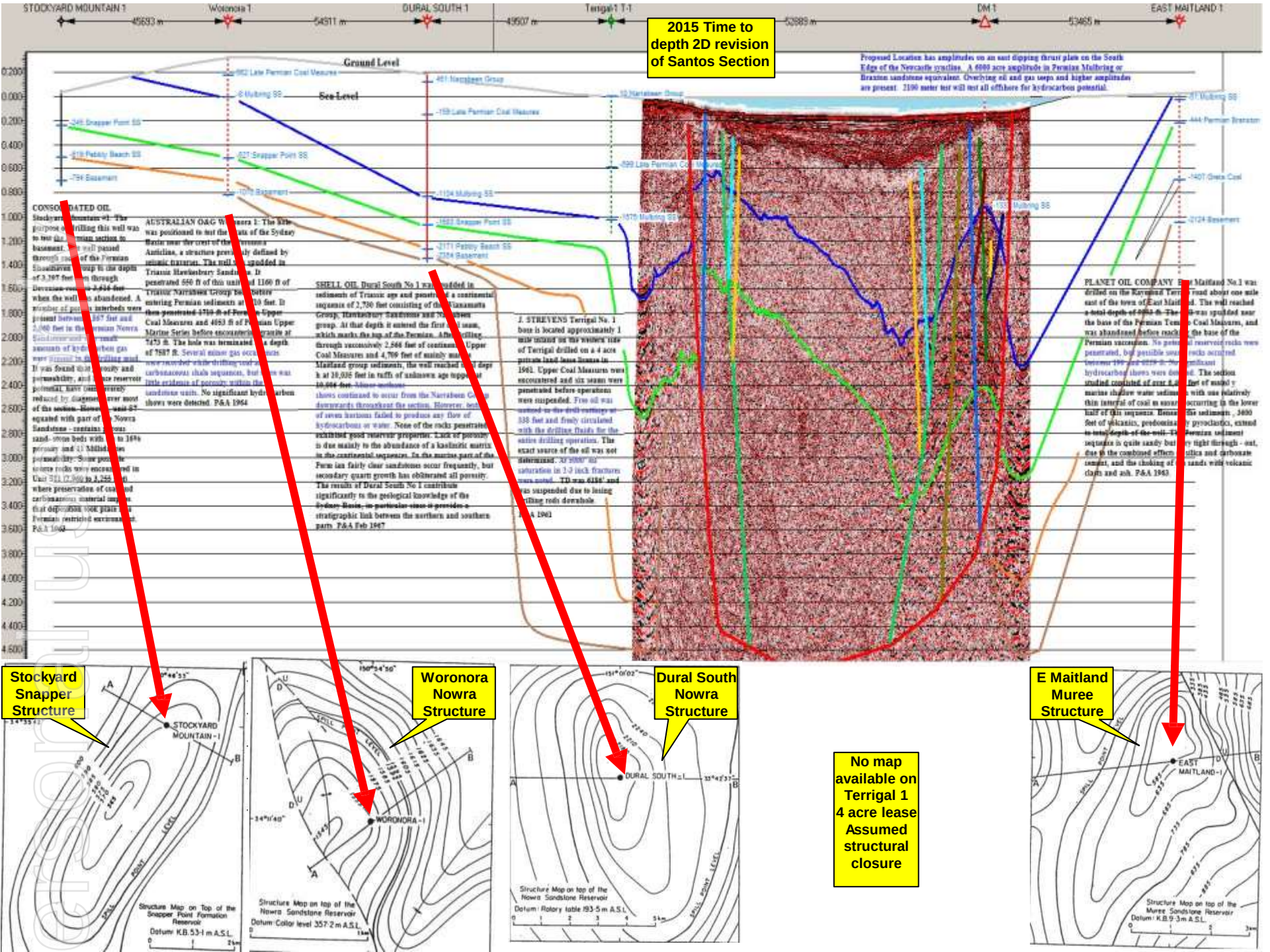
Onshore Sydney basin Permian provides some coal seam gas (CSG) while this offshore anticline has gas seeps encountered above anticline near DM location.








1991 Santos Subsurface Structural section
COONEMIA-1
STOCKYARD MOUNTAIN - 1
WORONORA-1
DURAL SOUTH-1
TERRIGAL-1
EAST MAITLAND-1
SOUTHERN SYDNEY BASIN
EAST FLANK OF SOUTH PLUNGE OF ONSHORE DEPOCENTRE
NEAR CRESTAL POSITION OF THE LOCHINVAR-KULNURA DURAL DOME ARCH
SOUTH AXIAL PLUNGE OF THE MACQUARIE DEPRESSION
NEWCASTLE SYNCLINE
NORTH FLANK NEWCASTLE SYNCLINE
ALONG AXIS OF THE MACQUARIE DEPRESSION
HAWKESBURY SANDSTONE
NARRABEEN GROUP
LATE PERMIAN COAL MEASURES
BUDGONG SANDSTONE
MULBRING SILTSTONE
WANDRAWANDIAN SILTSTONE
SNAPPER POINT FORMATION
PEBBLEY BEACH
BERRY SILTSTONE
WANDRAWANDIAN SILTSTONE
SNAPPER POINT
PEBBLEY BEACH
Offshore Projected Location
Poss Amps At LOC
MULBRING SILTSTONE
MUREE FORMATION
BRANXTON FORMATIONS
FARLEY AND RUTHERFORD FORMATIONS
ALLANDALE AND LOCHINVAR FORMATIONS
NEW ENGLAND FOLD BELT
Possible Tie to Onshore
SANTOS LIMITED
SYDNEY BASIN
NORTH - SOUTH STRUCTURAL CROSS SECTION
LINE OF SECTION
Reference: Modified after (Geological and Geophysical Interpretation Report for Activities in Permit Year 1 (25.1.89 to 14.1.90) of Permit NSW/P10, Offshore Sydney Basin, area)


STOCKYARD MOUNTAIN 1
45693 m
Woronora 1
54911 m
DURAL SOUTH 1
49507 m
Terrigal 1 T-1
52889 m
DM 1
53465 m
EAST MAITLAND 1
2015 Time to depth 2D revision of Santos Section
Ground Level
Sea Level
Proposed Location has amplitudes on an east dipping thrust plate on the South Edge of the Newcastle syncline. A 6000 acre amplitude in Permian Mulbering or Branxton sandstone equivalent. Overlying oil and gas seeps and higher amplitudes are present. 2100 meter test will test all offshore for hydrocarbon potential.
CONSOLIDATED OIL
AUSTRALIAN O&G
SHELL OIL Dural South No 1
J. STREVENS Terrigal No. 1
PLANET OIL COMPANY
Stockyard Snapper Structure
Woronora Nowra Structure
Dural South Nowra Structure
E Maitland Muree Structure
No map available on Terrigal 1 4 acre lease Assumed structural closure