



MINERALS AND PETROLEUM
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DUNBAR 1 DW1

RESERVOIR MANAGEMENT PLAN

RATE OF RECOVERY OF PETROELUM

POTENTIAL FOR RETROGRADE CONDENSATION

April 2001

**DUNBAR 1 DW1
RESERVOIR MANAGEMENT PLAN**

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INTRODUCTION

Dunbar 1

Dunbar 1 was drilled as an exploration well with its primary objective in the Waarre Sandstone, and is located to the north of the commercial gas discovery at Wallaby Creek 1 (Figure 1). The well was spudded on 9 March 1995 and was drilled to a total depth of 1758.0 mKB. Dunbar 1 is located in the Victorian Otway Basin within production permit PPL 1 (Figure 2). Open hole logs and RFT results indicated the presence of two separate gas columns within the Waarre Sandstone (Figure 3).

A gas zone was intersected in the Waarre "C" sand between 1478.0 to 1490.0 mKB and a second gas zone encountered within the Waarre "A" sand between 1532.0 to 1544.0 mKB (Figure 4).

Two drill stem tests were conducted over the same interval, 1526.0 – 1557.0 mKB, within the Waarre "A" sand. DST 1 failed due to plugging. DST 2 also partially failed due to plugging, but flowed gas at a rate of 0.75 MMscf/day and recovered 40 m of mud with condensate.

An attempt was made to run 7" casing down to the gas zones, but casing became stuck and Dunbar 1 had to be suspended with casing cemented down to 1209.8 mKB.

Dunbar-1 DW1

Dunbar 1 was re-entered on 19 March 2001 to drill the Dunbar 1 DW1 sidetrack well with the objective of testing the updip potential of the Dunbar structure. After polishing the cement plug set across the 178 mm casing shoe to 1215 mRT a steerable 152 mm drilling assembly was run and a directional hole reaching a maximum of 28.8 degrees inclination was drilled to a total depth of 1636 mRT. Approximately 100 metres offset was achieved at the top of the Waarre "C" sand.

The hydrocarbon indicators such as gas shows, mud logs and open hole logs confirmed the extension of the gas columns encountered in Dunbar-1 within the Waarre "A" and "C" units. The first gas zone was intersected in the Waarre "C" sand between 1500.0 to 1514.5 mKB and the second gas zone encountered within the Waarre "A" sand between 1557.5 to 1569.5 mKB (Figure 5).

Figure 6 shows the field depth structure map.

The well was completed with a 63 mm (2 7/8") tubing string which was run in a mono-bore configuration and cemented in place. Figure 7 shows the well completion diagram while Figure 8 illustrates the wellhead schematic.

The following intervals were perforated using wire line unit after the rig was released.

<u>Units</u>	<u>Perforation Interval (MD)</u>
Waarre "A"	1559 - 1562 MKB 1564 - 1569 MKB

The Waarre "C" unit will be perforated once the "A" sand is depleted.

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The well will be connected to Santos Mylor-1 well through a 80mm X 2.9 KM flowline. Installation of the flowline is expected to be completed by mid April 2001.

Dunbar gas will be delivered to Mylor 1 to be mixed and processed with Santos gas at the Heytesbury and Iona plants before being sold to Energy 21 to supply the Melbourne market.

DUNBAR STRUCTURE

The Dunbar structure is an elongate fault dependent closure. The main northern bounding fault of the prospect throws to the north thus juxtaposing the primary objective, the Waarre Sandstone, against the Belfast Mudstone (sealing formation) on the downthrown side of the fault. The closure to the south, east, and the west is by structural dip.

Following the drilling of North Paaratte 1 and 2 and peripheral wells, a 3D seismic survey was carried out over an area including most of PPL 1 and part of PEP 108. The total area of the Waarre 3D survey is 108 km² with in-line and cross-line spacing of 12.5m x 12.5 m.

The Waarre 3D seismic data were interpreted on a Sun workstation using IESX software from Geoquest, and picked horizons were mapped using the Petrosys software mapping package. The top Waarre 'C' horizon (Figure 6) was picked and mapped over the whole PPL1 area at 1:20,000 scale. The Top Waarre "A" sandstone (figure 6A) was picked and mapped locally over the Dunbar structure. A new Variance Cube technique from Geoquest was used to refine the location of the main Dunbar fault. The top Belfast Mudstone was picked locally over the structure, together with other marker horizons.

Depth conversion for the Waarre "A" and "C" sandstone units in Dunbar structure were performed using an average velocity map based on Dunbar 1 and Dunbar 1/DW1 data. These average velocities to the Top Waarre "A" and "C" Sandstone units were hand contoured, and then digitized using the Petrosys mapping package where they were gridded and applied to the depth conversion.

Figure 6 and 6A show the depth structure map at the Waarre "C" and "A" sandstone levels respectively. Dunbar 1/DW1 was accessed from the Dunbar 1 well and then deviated to the northwest to intersect an updip subsurface location at about 125 m offset from the surface location.

DUNBAR-1 RFT RESULTS

Figure 9 shows a hydrodynamic profile for the Waarre Sandstone, which has been prepared using data from the PPL1, PPL2 and PEL108 wells. As shown in this figure the points representing water zones lie on a 0.43 psi/ft gradient, which is equivalent to a water salinity of about 17000-18000 ppm. This line represents the regional water line for the Waarre Sandstone.

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WAARRE "C" Unit

Figure 10 shows a plot of the RFT formation pressure versus depth for Dunbar 1. The Waarre Sandstone regional water line fits closely with the pressure points taken in the "B" and "C" units (within the water zone). A gas line with a 0.04 psi/ft gradient was also drawn through the RFT points within the gas zone. The intersection of these two lines indicates a gas-water contact at 1407.6 mSS. This level is in very good agreement with the log derived gas-water contact.

WAARRE "A" Unit

Dunbar 1 did not intersect a gas-water contact in the Waarre "A" unit. As shown in Figure 10 the RFT pressure points taken in this unit are scattered and it appears to be mostly supercharged. A gas line with a 0.04 psi/ft gradient has been drawn from the most permeable point. The intersection of these two lines indicates a gas-water contact at 1470.0 mSS. As most of the pressure points are supercharged there is some uncertainty with the estimated gas-water contact.

The lowest known gas level in the "A" unit was detected (from open hole logs) in Dunbar 1 at 1461.0 mSS.

DUNBAR 1 DW1 - NET PAY SUMMARY

Table 1 shows a Petrophysical Summary for each defined stratigraphic interval in Dunbar1 DW1 (see Figure 5 for intervals). Net Pay was calculated in the hydrocarbon zone (Figure 5 - Fluid Zone 3) using a permeability cutoff of 0.3mD in combination with a Vsh cutoff of 50%.

C Sand

Net Pay of 12.8m is present in the Waarre "C Sand" with an average Sw of 28%. The Reservoir properties of the "C Sand" are excellent with Permeabilities of 700mD and Porosities of 22%.

A Sand

Net Pay of 10.3m was intersected in the Waarre "A Sand" with an average Sw of 51%. Permeabilities, whilst significantly lower than the "C Sand", are excellent (10mD). The "A Sand" has an average porosity of 20% and a shale content of 35%.

Table 1

DUNBAR 1 DW 1 - PETROPHYSICAL SUMMARY											
INTERVAL	TOP	BASE	TOP	BASE	INCR	PAY INCR	Vsh	Sw	Por	K	N/G
	TVDSS	TVDSS	MDKB	MDKB							
TOP C1-TOPC2	-1393.3	-1396.21	1496.7	1500	2.91	1.15	0.33	0.75	0.13	28.82	0.39
TOP C2-GWC	-1396.21	-1408.98	1500	1514.5	12.77	12.77	0.06	0.28	0.22	709.42	1.00
GWC-TOPB	-1408.98	-1415.65	1514.5	1522.1	6.69	6.43	0.09	0.87	0.24	447.55	0.96
TOPB1-BASEB1	-1423	-1433.02	1530.5	1541.9	10.03	10.03	0.11	0.94	0.24	266.47	1.00
TOPA-BASEA	-1446.9	-1457.25	1557.6	1569.3	10.32	9.44	0.35	0.51	0.20	100.30	0.91

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DUNBAR 1 GAS COMPOSITION

A gas sample was collected from Dunbar 1 during DST#2. This DST partially failed due to plugging, but flowed gas at a rate of 0.75 MMscf/day .

The gas sample was analysed by Amdel and the results of the gas composition are presented in the following table.

<u>GAS COMPONENTS</u>	<u>Mole%</u>
Nitrogen	1.98
Carbon Dioxide	0.85
Methane	87.75
Ethane	5.11
Propane	2.37
I-Butane	0.52
N-Butane	0.65
I-Pentane	0.20
N-Pentane	0.16
Hexanes	0.18
Heptanes	0.15
Octanes Plus	0.08

Several gas samples were also collected from Dunbar 1 DW1 which have been sent for compositional analysis.

POST-PERFORATION FLOW TEST

After the well completion and perforation operations, Dunbar 1 DW1 was opened for cleaning up on a 3/4" choke. During the clean-up flow, the well produced gas at a rate of 17.6 MMscf/day with a wellhead flowing pressure of 1132 psig. The wellhead shut-in pressure was 1806.0 psig.

The following table shows a comparison of well performance, during the clean-up flow, between Dunbar 1 DW1 and North Paaratte 4, North Paaratte 5 and Wild Dog Road 1.

Well	Clean-up Flow		
	Choke Size Inches	Gas Flow Rate MMscf/day	FWHP psig
Dunbar 1 DW1 ("A" sand)	48/64"	17.6	1132.0
Wild Dog Road 1	40/64"	15.05	1495.0
North Paaratte 4	40/64"	15.0	1545.0
North Paaratte 5	40/64"	15.0	1490.0

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DUNBAR1 DW1 POSTDRILL VOLUMETRICS

The Dunbar structure was remapped at "C Sand" (Figure 6) and "A Sand" (Figure 6A) levels following the drilling of Dunbar1 DW1.

Volumetrics were rerun and volume updip of the Dunbar DW1 was excluded. Table 2 shows post drill GRV (Gross Rock Volume) for the "A" and "C" Sand.

TABLE 2

DUNBAR 1 DW1 POST DRILL VOLUMETRICS	
SAND	GRV (MM m³)
C SAND	1.905925
A SAND	2.384556

C SAND RESERVES

An average Porosity of 22% was derived from the petrophysical evaluation of Dunbar1 DW1. A P10 and P90 of 18% and 26% respectively were used. The distribution was based on the reservoir characteristics of the C Sand as seen in adjacent wells.

A mean water saturation of 28% was used with a P10 and P90 of 34% and 21.5%.

A Net/Gross of 100% was used. Both Dunbar-1 and Dunbar1 DW1 intersected thick, blocky "C Sand" reservoir. This is typical of the "C Sand" in PPL1

A Recovery Factor of 60% was used based on production experience from North Paaratte and Wallaby Creek Gasfields. A FVF of 142 was calculated.

Recoverable reserves for the "C Sand" are 0.905 bcf (Figure 11).

A SAND RESERVES

An average Porosity of 20% was used based on the petrophysical evaluation. P10 and P90 of 15% and 25% respectively were input.

A mean Sw of 50% with P10 and P90 of 70% and 40% were input.

Dunbar 1 DW 1 and Dunbar 1 intersected N/G of ~90%. P10 and P90 of 85% and 96% were used.

A Recovery Factor of 60% was used based on production experience from the Wallaby Creek Gasfield. A FVF of 142 was calculated.

Recoverable reserves for the "A Sand" are 0.584 bcf (Figure 12)

DUNBAR 1 DW1 POST DRILL RESERVES	
SAND	Rec bcf
C SAND	0.905
A SAND	0.584
TOTAL	1.489

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RESERVOIR MANAGEMENT

Production management of the Dunbar 1 WD1 Field has been planned on the basis of the following considerations.

- Safety and environmental considerations.
- Maximising gas recovery from the field.
- Aquifer support and other reservoir considerations.
- Contractual obligations and market requirements.
- Well deliverability and constraints.
- Data acquisition and field monitoring.
- Plant constraints and operational considerations.
- Well configuration and wellbore considerations.

The Waarre Sandstone in PPL1 has a permeability of the order of a few hundred milli-darcies. Dunbar 1 DW1 is also interpreted to have good permeability, particularly in the Waarre "C" sand, similar to the Wallaby Creek and North Paaratte wells.

Dunbar 1 DW1 permeability has been estimated using a correlation approach. Core permeability from Braeside-1, Skull Creek-1, Wallaby Creek-2, and North Paaratte-2 was cross plotted against log porosity. Sw and Vsh. Permeability was predicted from weighted average of individual predictions found to influence permeability ie. porosity, Vsh and Sw. The following correlation takes into account the influence of the porosity, water saturation and shale volume. The weighting was determined by the correlation coefficients of the linear regression in each case.

$$K = 0.6 \times \text{poro-K} + 0.3 \text{ Vsh-K} + 0.1 \text{ Sw-K}$$

Based on the above methodology the estimated permeability for the "C" and "A" sands are 709.0 and 100.0 md respectively .

The gas wells in PPL1 generally have a high flow capacity and deliverability and, as mentioned above, Dunbar 1 DW1 performance during the clean-up flow is comparable with the North Paaratte and Wallaby Creek wells. On that basis, Dunbar 1 DW1 is expected to have deliverability similar to the North Paaratte wells. The following table shows a summary of the AOF (absolute open flow potential) calculated for the North Paaratte wells.

WELL	NORTH PAARATTE WELLS AOF (MMscf/day)
Dunbar 1 DW1	350.0 (estimated)
North Paaratte 1	87.0
North Paaratte 2	95.0
North Paaratte 4	300.0
North Paaratte 5	400.0

The gas fields in PPL 1 have moderate pressure (around 1900-2200 psia) and are generally connected to a very strong and active aquifer which provides good pressure support for maintaining well deliverability during production. Dunbar 1 DW1 is also expected to be in communication with a strong and active aquifer similar to the other PPL1 fields.

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Water coning is not believed to be a threat since there will only be a small draw-down pressure on the formation, especially at the proposed production rate of 5.0 TJ/day. The well is also perforated significantly above the estimated gas water contact to delay water production and increase recoverable reserves.

In summary a combination of favourable reservoir parameters such as good permeability, moderate pressure, strong aquifer support and excellent well deliverability creates a favourable condition for Dunbar 1 DW1 to be connected as a gas producer.

With respect to the market requirement, in accordance with an agreement with Santos, Dunbar gas will be delivered to Mylor 1 to be mixed and processed with Santos gas at the Heytesbury and Iona plants before being sold to Energy 21 to supply the Melbourne market.

With respect to down-hole considerations, Dunbar gas has a very low carbon dioxide (less than 1%) and the well will be produced at a very low rate (5.0 TJ/Day), therefore any corrosive damage or erosion of the tubing are highly unlikely.

FIELD MONITORING AND DATA ACQUISITION

It is planned to collect reliable data from the wells in order to improve knowledge about the reservoir and refine the field depletion plan and reserve estimates. Acquiring production data and monitoring the wellhead pressure during the flow and shut-in conditions is essential for updating field deliverability forecasts and reservoir evaluation.

Dunbar 1 DW1 will be closely monitored for production and wellhead pressure performance during the flow and shut-in conditions. It is also planned to conduct a production test when the well comes on production.

Any other changes in well performance will be promptly investigated. Produced gas will also be routinely analysed, and water production monitored.

RATE OF RECOVERY OF PETROLEUM

Dunbar 1 DW1 is scheduled to supply gas to Energy 21 at a maximum production rate of 5.0 TJ/Day. The proposed MDQ (maximum daily quantity) of 5.0 TJ/Day is believed to be considerably below the wells potential gas deliverability.

Dunbar 1 DW1 gas will be delivered through a 80 mm X 2.9 KM flow line to Mylor 1. The gas will be mixed with Mylor gas and will be processed at Santos Heytesbury plant before being sold to Energy 21 through WUGS facilities and Iona plant.

Dunbar 1 DW1 ("A" sand) produced gas at a rate 17.6 MMscf/day with a wellhead flowing pressure of 1132 psig during a clean-up flow. The estimated flowing bottom hole pressure during the clean-up period is 2080.0 psia using the above data. The initial reservoir pressure for Waarre "A" is 2133.5 psia at 1470.0 mss (Waarre "C" reservoir pressure is 2045.0 psia at 1407.6 mss) based on the Dunbar 1 RFT information. On this basis, the estimated pressure drawdown on the reservoir for a

gas rate of 5.0 MMscf/day is approximately 17.0 psi which is only a fraction of the reservoir pressure.

POTENTIAL FOR RETROGRADE CONDENSATION

The composition of the Dunbar 1 gas based on the analysis of gas sample taken during DST#2 is shown above. The gas composition is similar to other PPL1 reservoirs and is expected to have condensate yields of about 2 bbls per MMscf.

The Dunbar 1 gas is very lean in liquids and is classified dry gas. Consequently, as with other PPL 1 fields, retrograde condensation is not expected to be a problem for this well during the production.

663,633 mE

670,000 mE

675,000 mE

5,730,000 mN

5,724,078 mN

38°35'00"S

142°55'00"E

143°00'00"E

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Dunbar 1 DW1

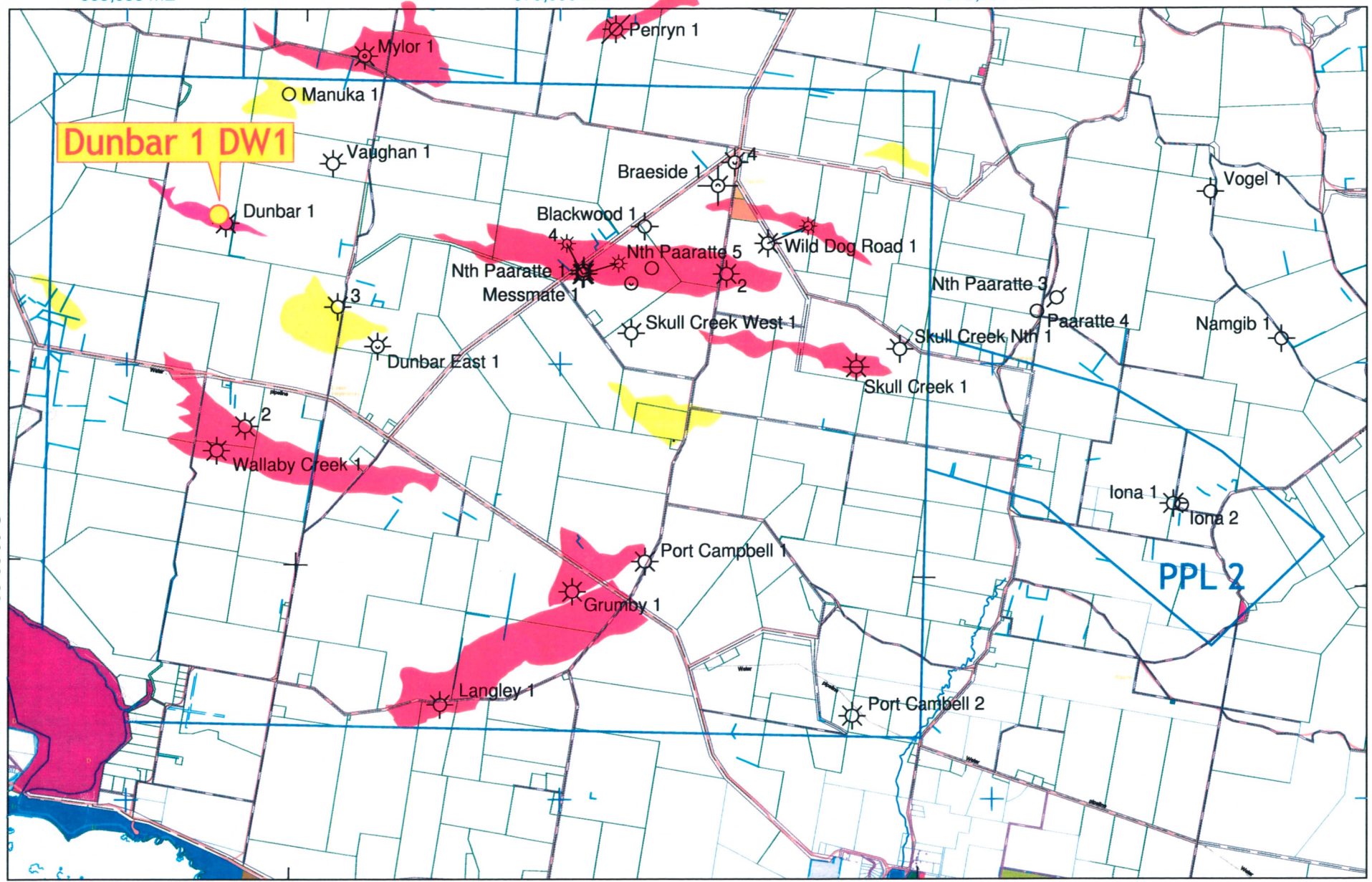
PPL 2

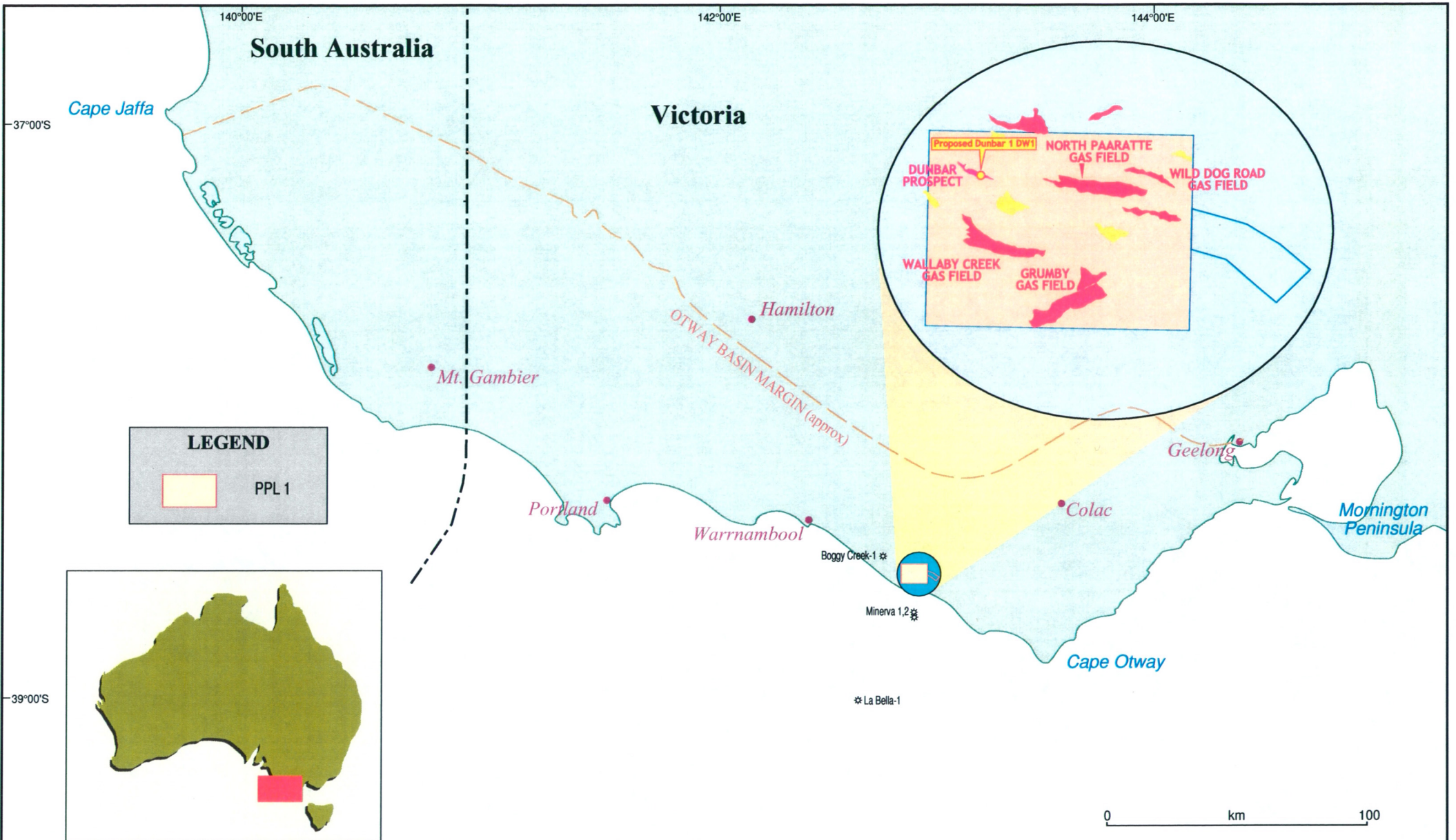
LOCATION MAP - Proposed Dunbar 1 DW1



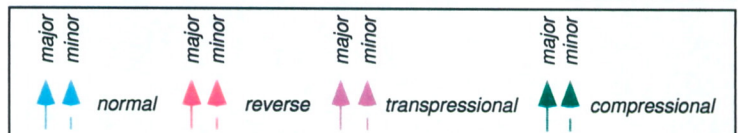
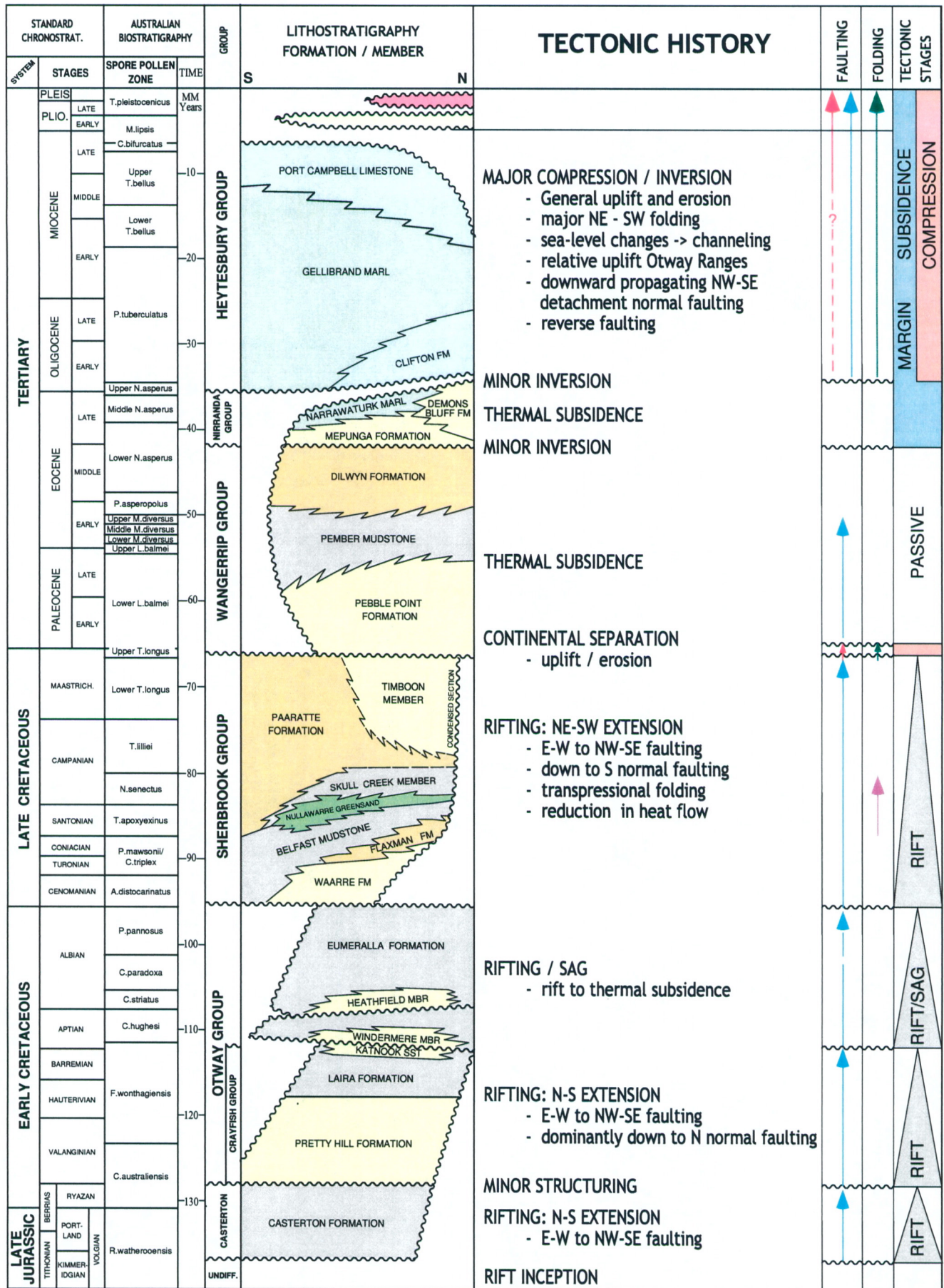
16277.072000 Fig.1

CPK





OTWAY BASIN - PPL1 - LOCATION MAP



VICTORIAN OTWAY BASIN - STRATIGRAPHIC TABLE

Figure 4

DUNBAR 1

Operator	GFE Resources	Spud Date	9/3/1995
Area	Port Campbell Embayment	TD Logger - MD	1754 mKB
Block	PPL1	KB to GL/MSL	82.9m ASL

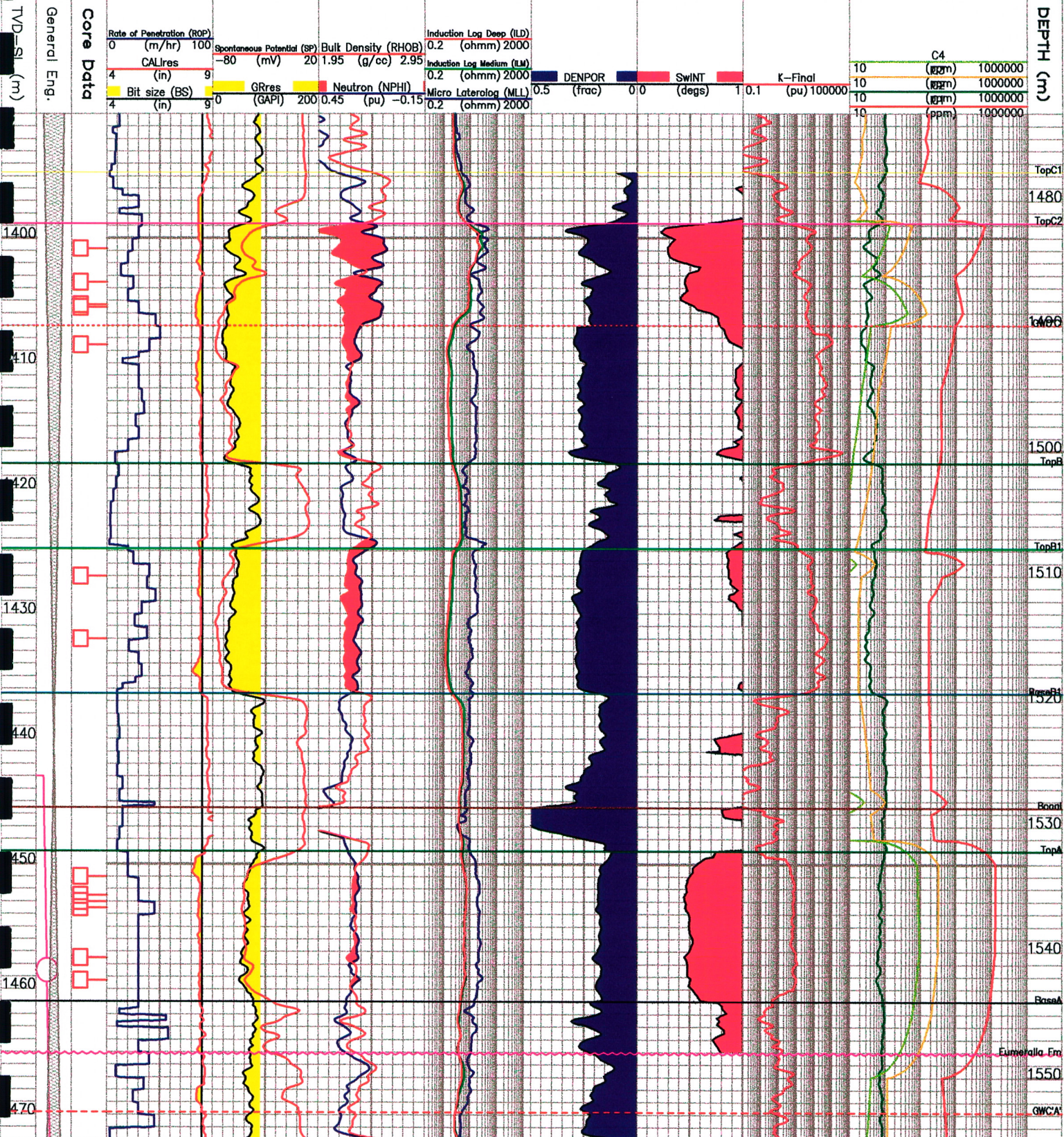


Figure 6: Dunbar Structure – Top Waarre C Sandstone – Depth Structure Map

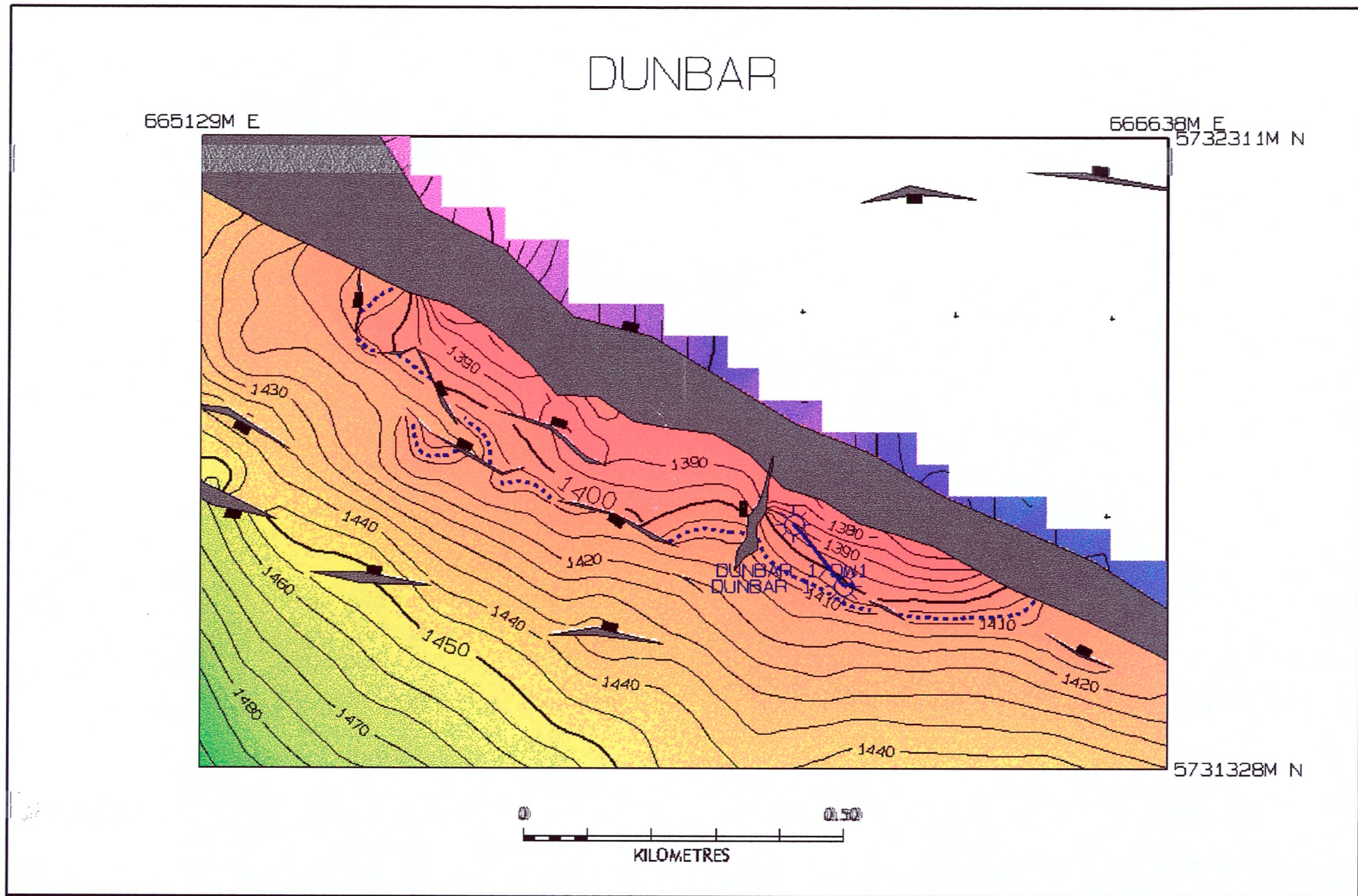
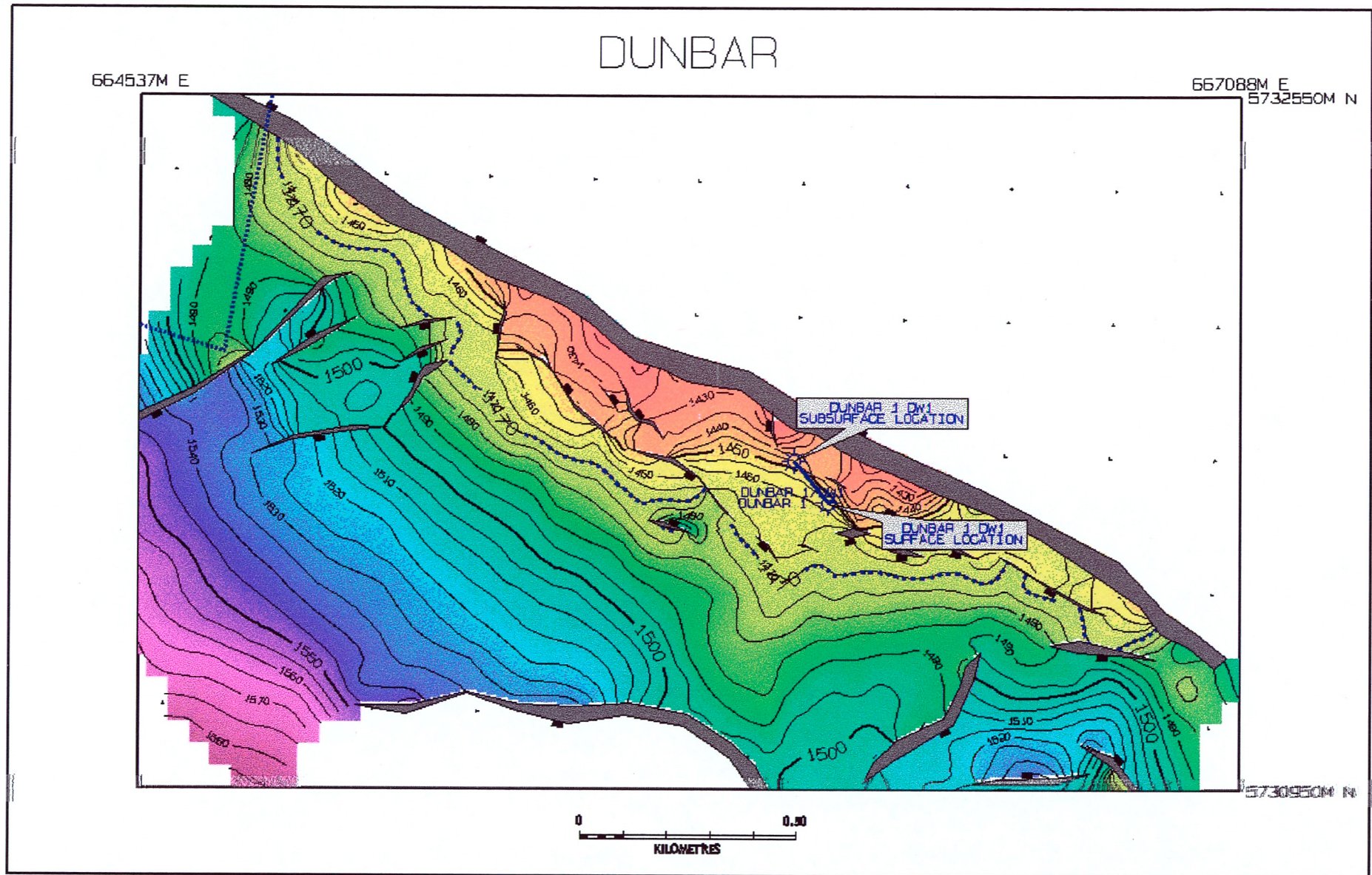


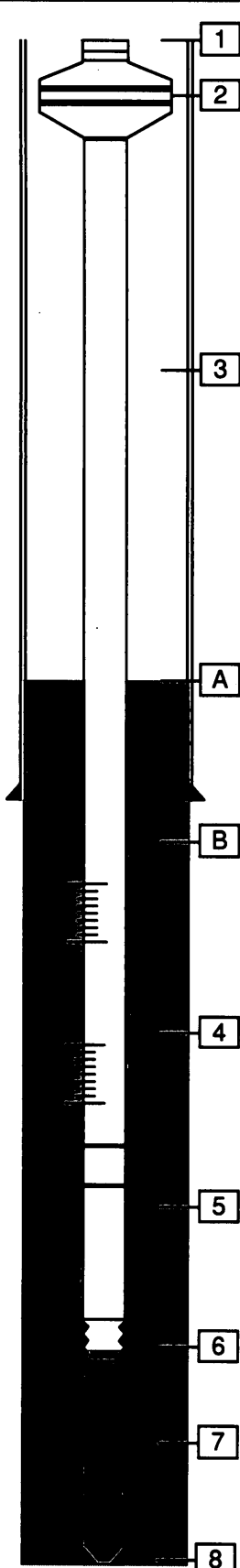
Figure 6A: Dunbar Structure – Top Waarre A Sandstone – Depth Structure Map





Downhole Installation Diagram

Well: Dunbar 1 DW1



Item No.	Description	Length (m)	Depth (m RT)	
			MD	Min ID
1	RT to top of tubing spool flange	4.20		
2	Hanger, CIW FBB-EN 6" x 2-7/8" EUE w/ 2.5" Type 'H' BPV thread prep	0.30	4.20	
			4.50	
3	158 joints 2-7/8" EUE J55 6.5 ppf tubing	1521.41	4.50	
4	6' x 2-7/8" EUE tubing pup joint - 'marker'	1.90	1525.91	
5	10 joints 2-7/8" EUE J55 6.5 ppf tubing	96.29	1527.81	
6	2-7/8" EUE TOPCO float collar	0.36	1624.10	
7	1 joint 2-7/8" EUE J55 6.5 ppf tubing	9.62	1624.46	
8	2-7/8" EUE TOPCO float shoe	0.38	1634.08	
	End of Tubing		1634.46	
A	Estimated top of cement		~1075	
B	Kick off point		~1215	
	Max dog leg 7 degrees/30 metres			
	Max inclination 28.8 degrees			

PERFORATIONS		Gun		Charges			
Formation	Interval (m RT)	Size	Type	SPF	Type	Ph	gm
Waarre 'A'	1559-1562 & 1564-1569	2.1/8"	HSD	6	NTX	60	6.5
Waarre 'C' - Contingent	1501 -1505	2.1/8"	HSD	6	NTX	60	6.5

Surface Casing	9-5/8" / 36-43.5 ppf / N80 / BTC shoe at 312 m KB
Intermediate Casing	7" / 23-26 ppf / J55-N80 / LTC shoe at 1210 m KB
Production casing	2-7/8" / 6.5 ppf / J55 / EUE shoe at 1624 m RT
Cementing Details	300 sacks class G + 1% Halad 322
Remarks	2-7/8" tubing cemented to create mono bore
String Weight Calculated	Actual

Wellsite Supervisor	B Beetson	Not to Scale	
Date of Installation	25/03/2001	Proposed	
Drafted by		Date:	16/11/00
Checked by		Date:	Completion
			X

PBSD: 1622 m RT

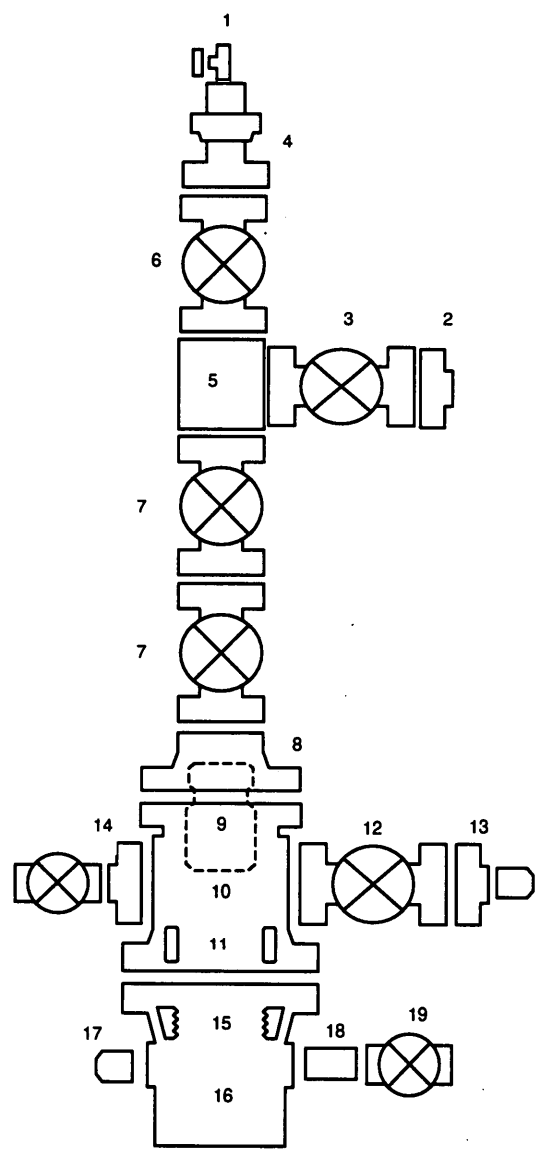
Figure 7



ORIGIN ENERGY
PETROLEUM PTY LTD

Wellhead Diagram

Well: DUNBAR 1 DW1



C - Section

1	Needle valve, 1/2" NPT
2	Companion Flange, 2-1/16" 5M x 2"LP
3	Gate valve, 2-1/16" 5M flanged
4	2-9/16" Tree cap, 5-1/2" Bowen 5M x 2-7/8"EUE
5	Tee, 2 x 2-9/16" 5M x 2-1/16" 5M
6	Gate valve, 2-9/16" 5M flanged (Swab Valve)
7	2 of Gate valve, 2-9/16" 5M flanged (Master valves)

Accessories

A	Studs and nuts - 8 x 7/8" x 6-1/4"
B	Studs and nuts - 8 x 1" x 7"
C	Ring gaskets - 4 x R-27
B	Ring gaskets - 2 x R-24

B - Section

8	CIW Bonnet, 7-1/16" 5M x 2-9/16" 5M with seal pocket studded up suitable for 4-7/8" EN hanger
9	CIW Tubing hanger, 2-7/8" EUE top x bottom, 4-7/8"-EN with 2-1/2" Type 'H' BPV thread
10	Tubing spool, CIW 11" 3M x 7-1/16" 5M with two 2-1/16" studded side outlets
11	Secondary seal, PE 10" x 7"
12	x 2 Gate valves, 2-1/16" 5M flanged
13	Companion flange, 2-1/16" 5M x 2" NPT
14	Companion flange, 2-1/16" 5M x 2" Weld neck

Accessories

A	Studs and nuts - 12 x 1-1/8" x 8-1/2"
B	Studs and nuts - 8 x 7/8" x 6-1/4"
C	Ring gasket - 1 x R-45
D	Ring gaskets - 3 x R-24

A - Section

15	Casing hanger, 11" x 7"
16	Casing head, 9-5/8" x 11" 3M with two 2" NPT side outlets
17	Bull plug, 2" NPT
18	Nipple, 2" NPT
19	Ball valve, 2" NPT box x box

Accessories

A	Studs and nuts - 16 x 1-3/8" x 10"
B	Ring gasket - 1 x R-53

Well Details	Surface	Intermediate	Production
Size (inches)	9-5/8"	7"	2-7/8"
Weight (ppf)	36 - 43.5	23 - 26	6.5
Grade	K55	K55 - N80	J55
Shoe (m KB)	312	1210	

Rig Supervisor	B Beetson		
Date Installed	26/03/01		
Drafted by	BB	Date	
Checked by		Date	

Proposed		Actual	X
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Figure 8

WAARRE FORMATION RFT PLOT

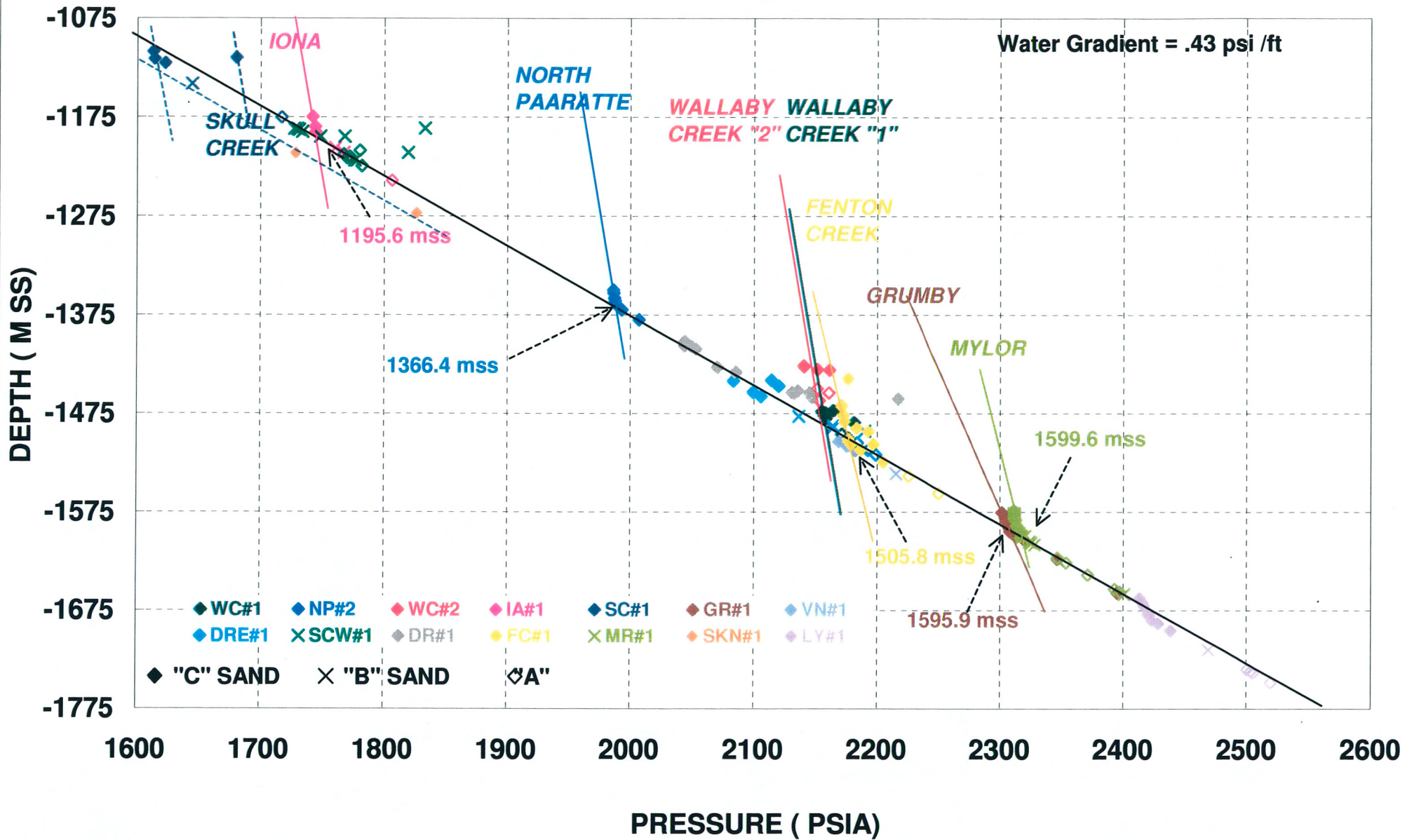


Figure 9

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DUNBAR-1 RFT PLOT

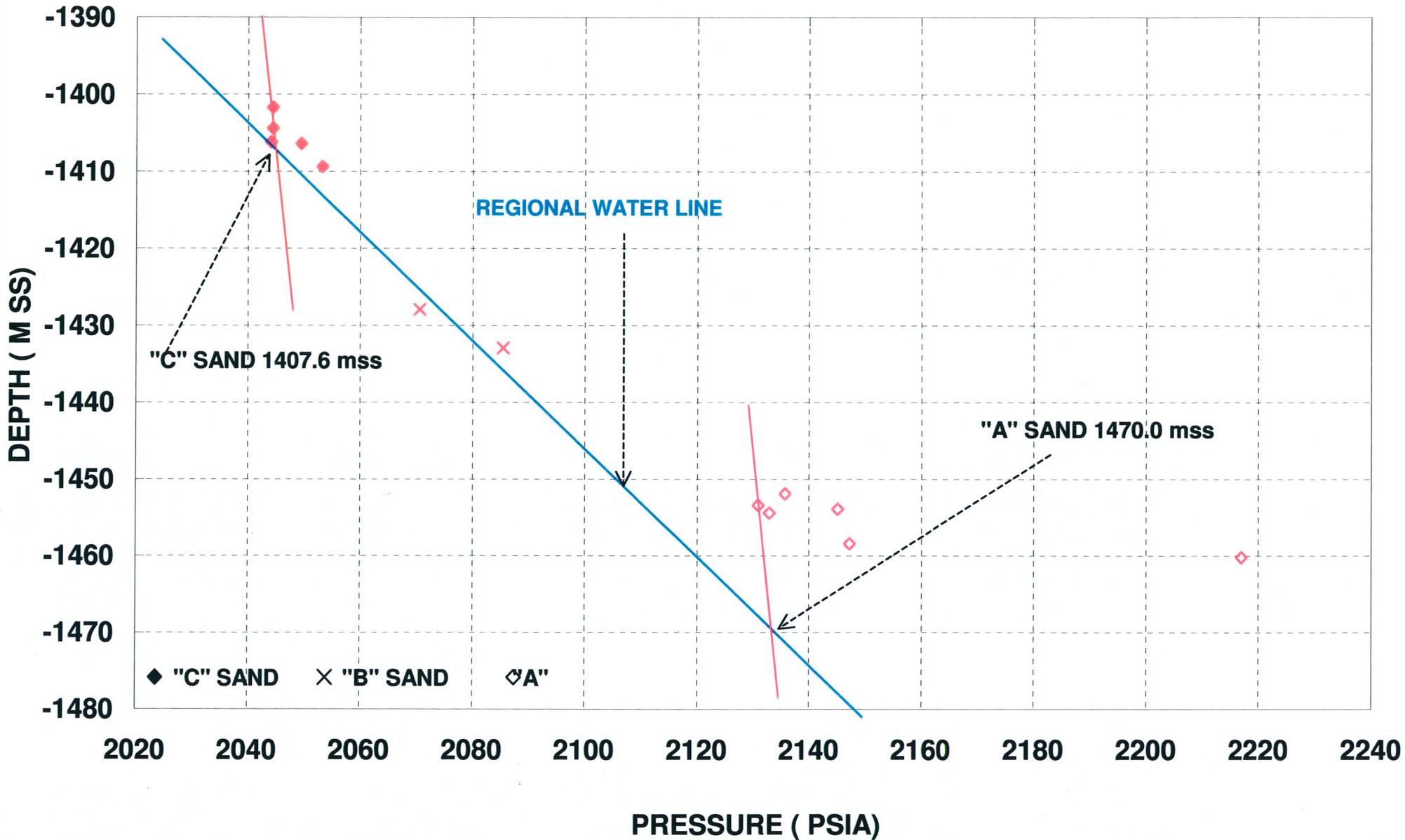


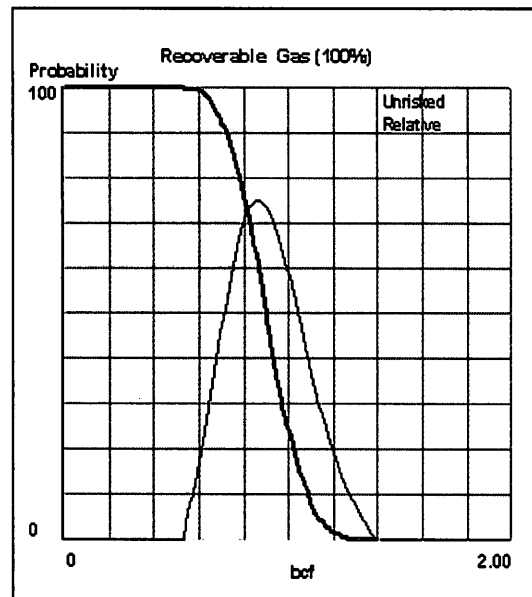
Figure 10

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Figure 11 – "C Sand" REP Sheet

Prospect/Field Recoverable Gas								LOGICOM	
Country:	AUSTRALIA			Name:	DUNBARDWI - C				
State:	Victoria			Segment:					
Block:	PPL1			Classification:	pot. commercial				
Input Data									
Variable	Unit	Shape	min	P90	P50	P10	max	mode	
GRV	mmcm	single	1.91	1.91	1.91	1.91	1.91	1.91	
Deg. of fill	%	single	100	100	100	100	100	100	
Net-to-gross	%	single	100	100	100	100	100	100	
Porosity	%	triang	14.8	18.0	22.0	26.0	29.2	22.0	
Sw	%	triang	16.0	21.4	26.0	34.6	40.0	28.0	
FVF (1/Bg)	vol/vol	single	142	142	142	142	142	142	
Gas rec fac	%	single	60.0	60.0	60.0	60.0	60.0	60.0	
Risk Factors									
Play Chance:			100		Prospect Specific Chance:			100	
Reservoir		100	confident	Trap		100	confident		
Source		100	confident	Reservoir effectiveness		100	confident		
Seal		100	confident	Seal effectiveness		100	confident		
				Source Rock effectiveness		100	confident		
Geological Chance of Success:			100						
Reserves Summary									
Unrisked	Gas-in-Place	Recoverable Gas							
bcf	100%	100%	NRI						
P90:	1.21	0.725	0.725						
P50:	1.50	0.899	0.899						
P10:	1.82	1.09	1.09						
Mean:	1.51	0.905	0.905						
P-level at mean:			47.7						
Fully risked mean:		0.905	0.905						
Overall chance of success:		100							
Production Working Interest:		100.00							
Exploration Working Interest:		100.00							
Production Working Interest is used to calculate net volumes									



min. unrisked. 0.905 max. unrisked. 1.82

Figure 12- Waarre "A Sand" REP Sheet

Prospect/Field Recoverable Gas				LOCUM				
Country:	AUSTRALIA	Name:	DUNBARDWI - A S					
State:	Victoria	Segment:						
Block:	PPL1	Classification:	pot. commercial					
Input Data								
Variable	Unit	Shape	min	P90	P50	P10	max	mode
GRV	mcm	single	2.38	2.38	2.38	2.38	2.38	2.38
Deg. of fill	%	single	100	100	100	100	100	100
Net-to-gross	%	triang	80.0	84.7	90.5	95.8	100	91.0
Porosity	%	triang	11.0	15.0	20.0	25.0	29.0	20.0
Sw	%	triang	29.5	40.0	53.4	70.0	83.4	50.0
FVF (1/Bg)	vol/vol	single	142	142	142	142	142	142
Gas rec fac	%	single	60.0	60.0	60.0	60.0	60.0	60.0
Risk Factors								
Play Chance:		100		Prospect Specific Chance:		100		
Reservoir		100	confident	Trap		100	confident	
Source		100	confident	Reservoir effectiveness		100	confident	
Seal		100	confident	Seal effectiveness		100	confident	
				Source Rock effectiveness		100	confident	
Geological Chance of Success:			100					
Reserves Summary								
Unrisked	Gas-in-Place	Recoverable Gas						
bcf	100%	100%	NRI					
P90:	0.688	0.353	0.353					
P50:	0.950	0.570	0.570					
P10:	1.39	0.835	0.835					
Mean:	0.973	0.584	0.584					
P-level at mean:			47.1					
Fully risked mean:		0.584	0.584					
Overall chance of success:		100						
Production Working Interest:		100.00						
Exploration Working Interest:		100.00						
Production Working Interest is used to calculate net volumes								

Recoverable Gas (100%)

mn. unrisked. 0.184 mn. unrisked. 1.48