



914255 001

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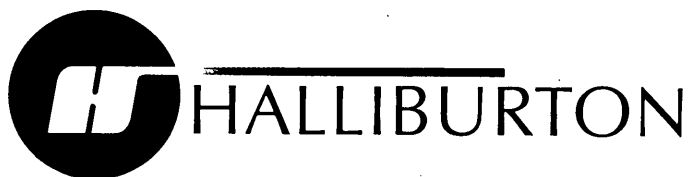
End of Well Report

Compiled for

Esso Australia Ltd

Dolphin A-3

17 - 21 September 1997



The Future Is Working Together.

- 5 JAN 1998

PETROLEUM DIVISION

914255 002



END OF WELL REPORT

ESSO AUSTRALIA LIMITED

DOLPHIN A-3

17 SEPTEMBER 1997 - 21 SEPTEMBER 1997



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ENCLOSURES:

- 1. Formation Evaluation Log
- 2. Drilling Evaluation Log
- 3. 3 1/2" Disc with ASCII Data



SECTION 1: INTRODUCTION AND SUMMARIES

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1.1 Introduction

1.2 Well Profile

1.3 Stratigraphic Summary



1.1 INTRODUCTION

Halliburton SDL provided mud logging and data acquisition services for DOLPHIN A-3. This service commenced from the base of the 20" conductor shoe at 140.5m to a total depth of 1373.5m (1329.8m TVD). The well was spudded on the 17th of September 1997 and reached total depth at 22:40 hrs on the 21st of September 1997.

The service was performed with an SDL 9000 pressurised laboratory housing the DataDril system connected to an array of external sensors. DataDril is Halliburton's latest and most advanced Surface Data-Logging computer system. Built from industry standard hardware and software, it is both powerful and flexible. It is made up of two subsystems; the data acquisition system (or "frontEnd"), and the data storage system (or "backEnd"). Terminals distributed around the rig allow users to log into the backEnd and access the data via a suite of on-line and off-line applications. The PC based data acquisition system, "PC-DAS" gathers data from external inputs, and converts the signals to rig units. The processed data is then transmitted via ethernet to the DataDril workstation using TCP/IP socket based communication for storage, analysis and interpretation.

The crew present for the drilling of DOLPHIN A-3 was comprised of:

Data Engineers

Tim Geddes
Gareth Braund

WELL OBJECTIVES

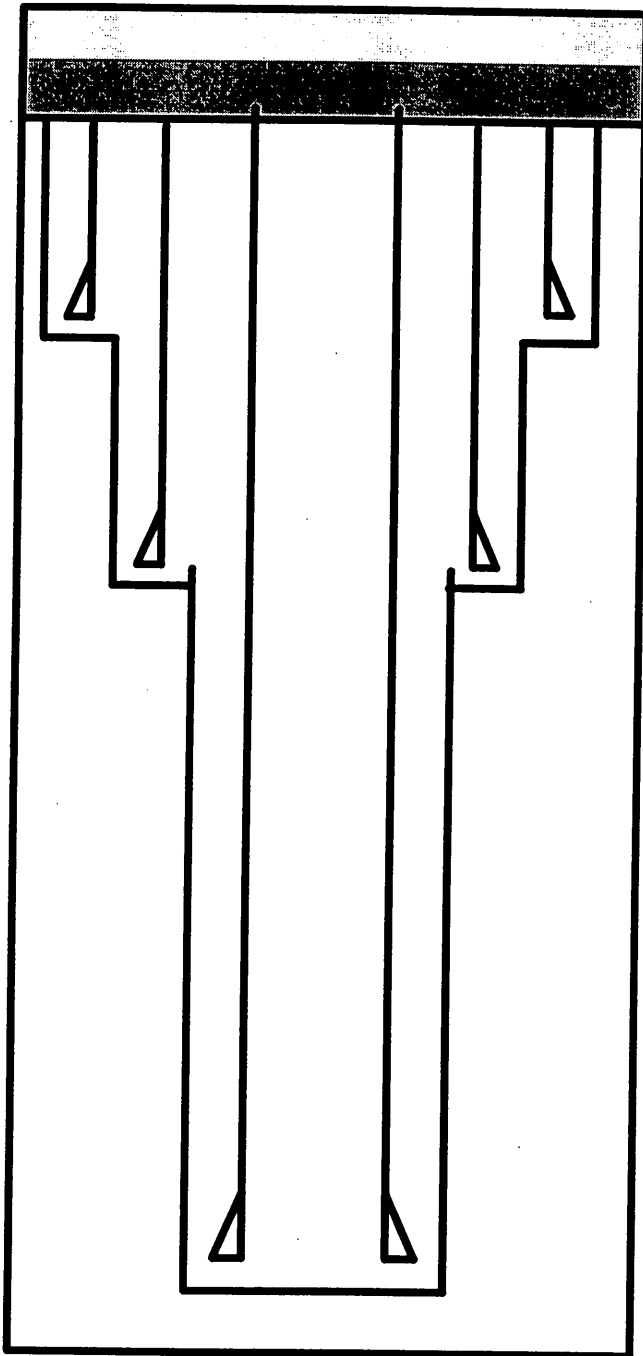
DOLPHIN A-3, was the second well to be drilled from the Dolphin monotower. The well was drilled to the South-East of the monotower, and was designed to produce oil from the N-1 sandstone reservoir.

TARGET DETAILS

Shape, size and orientation	:	Circle, 25m radius.
Hard boundaries	:	Hard boundary to the North East (fault).
Horizontal Displacement (centre)	:	273.5m (from conductor #1)
Closure line bearing centre, (relative to grid north) from platform #1 conductor.	:	129.2°
Depth	:	1242 m TVDRT
Local co-ordinates	:	X= 211.95 m E Y = -172.95 m N
AMG co-ordinates	:	X= 533 021 m E Y = 5 739 685 m N



1.2 WELL PROFILE - DOLPHIN A-3



Airgap 42m

Water depth 38m

20" Conductor at 140.5m (140.5m)

17 1/2" hole to 885m (848.98m)

13 3/8" Casing at 877.5m (841.74m)

F.I.T = 11.45 ppg EMW

12 1/4" Hole to 1373.5m (1329.8m)

9 5/8" Casing at 1369.4m



1.3 STRATIGRAPHIC SUMMARY

FORMATION	PROGNOSED MD (m)	PROGNOSED TVDRT m	ACTUAL DEPTH MD	ACTUAL DEPTH TVD	DIFF TVT
Top of Lakes Entrance	1020.5	972	1027	986.9	14.9 Low
Top of Latrobe	1270.6	1222	1263.6	1220.8	1.8 High
Top Coarse Clastics	1288.6	1240	1285.2	1242.2	2.2 Low
Top N-1.1 ((Target))	1290.6	1242	1288.5	1245.5	3.5 Low
Top N-1.2	1298.6	1250	1295.2	1252.2	2.2 Low
Top N-1 Coal	1319.6	1271	1317.2	1274.0	3.0 Low
Total Depth	1359.6	1311	1373.5	1329.8	-



SECTION 2: SAMPLING SERVICES

2.1 Sampling Program

2.2 Sample Manifest



2.1 SAMPLING PROGRAM

From the base of the 20" conductor at 140.5, 30m samples were taken for descriptive purposes only. From 1170m, (approximately 100m above the top of Latrobe Group), samples were collected at 10m intervals. The sample interval was then decreased to 5m intervals from 1275m until total depth at 1373.5m. Spot samples coinciding with gas peaks were taken as required.

Washed and Dried Samples

Split into three components of at least a 100 grams and marked as follows;

Set A: 100g ESSO AUSTRALIA.
Set B: 100g BUREAU OF RESOURCE SCIENCES
Set C: 100g VIC DEM

Sets were placed in sealed paper envelopes and packed in cardboard cartons:(85x135x390mm). These cartons were placed in a sea container for transport ashore.

2.2 SAMPLE MANIFEST.

WASHED AND DRIED CUTTINGS

Three identical sets as follows:

SET A: ESSO AUSTRALIA
SET B: BUREAU OF RESOURCE SCIENCES
SET C: VIC DEM

Each set contains the intervals:

BOX # 1 : 1150m - 1373m (Total Depth)

Samples were dispatched to:

ATTENTION: ERIC JOHNSTONE
ESSO CORE STORE
UNIT 10, 11 SPERRY DRIVE
FLIGHTPATH BUSINESS CENTRE
TULLAMARINE VICTORIA



SECTION 3: LOG FORMATS AND FORMATION DESCRIPTIONS

3.1 Formation Evaluation Log Format

3.2 Drilling Evaluation Log Format

3.3 Gas Ratio Log Format

3.4 Formation Descriptions



3.1 FORMATION EVALUATION LOG FORMAT

- Track (1) ROP m/hr range 0.5-500 from right to left, logarithmic scale.
- Track (2) DEPTH and CASING SHOES.
- Track (3) LITHOLOGY in %.
- | | | | |
|-----------|--------------------------------|----------|---------------------|
| Track (4) | TOTAL GAS in units range | 0.5-500 | from left to right. |
| | CHROMATOGRAPHIC ANALYSIS range | 0.01-10% | from left to right. |
- Track (5) SURVEY DATA including Inclination, Drift and TVD.
- | | | | |
|--------------------|----------|--------|---------------------|
| CALCIMETER RESULTS | Calcite | 0-100% | from left to right, |
| | Dolomite | 0-100% | from right to left. |
- Track (6) OIL SHOWS three divisions, weak, fair, good from right to left.
- Track (7) LITHOLOGY DESCRIPTIONS.

3.2 DRILLING EVALUATION LOG FORMAT

- Track (1) DEPTH and CASING SHOES.
- Track (2) RATE OF PENETRATION 0.5-500 m/hr from right to left, logarithmic scale.
SURVEY DATA including Inclination, Drift and TVD.
- | | | | |
|-----------|------------------------|--------------|----------------|
| Track (3) | REVOLUTIONS PER MINUTE | 0-400 | left to right. |
| | WEIGHT ON BIT | 0-100 Klbs | left to right. |
| | TORQUE | 0-50 Klbs/ft | left to right. |
- | | | |
|-----------|---------------------|-------------|
| Track (4) | MUD FLOW IN | 0-1200 gpm. |
| | STAND PIPE PRESSURE | 0-4000 psi. |
- Track (5) LITHOLOGY in %.

3.3 GAS RATIO LOG FORMAT

- Track (1) RATE OF PENETRATION 0.5-500 m/hr from right to left, logarithmic scale, and SURVEY data.
- Track (2) DEPTH and CASING SHOES.
- Track (3) LITHOLOGY in %.
- Track (4) GAS WETNESS RATIO, range 1 to 100, left to right.
- Track (5) GAS BALANCE RATIO, range 1 to 100, left to right.
- Track (6) GAS CHARACTER RATIO, range 0.005 to 50, left to right.
- Track (7) OIL SHOWS three divisions, weak, fair and good , from right to left.



3.4 FORMATION DESCRIPTIONS

GIPPSLAND LIMESTONE

Limestone: light grey to light yellow grey, Calcarenite, occasionally grading to Calcilutite. Common to abundant fossils, trace glauconite and pyrite, firm to friable, massive.

Sandstone: clear, white to milky, pale yellow, medium to coarse, sub round to rounded grains, moderately well sorted, minor multicoloured lithic grains, loose, good inferred porosity, no fluorescence.

LAKES ENTRANCE FORMATION

Claystone: medium light grey to light and olive grey, slight to moderately calcareous, slightly silty, trace disseminated and nodular pyrite, trace glauconite, occasional microfossils, firm, sub blocky.

LATROBE GROUP:

Siltstone: Medium brown to grey brown, very argillaceous, common to abundant greenish black glauconite pellets, micromicaceous, firm, sub blocky to sub fissile.

Sandstone: clear to translucent, medium to very coarse, occasionally very coarse to granular. Subangular to subrounded, poor to moderately sorted, silica cemented in part, trace argillaceous matrix, trace nodular pyrite, loose in sample, fair to good to inferred porosity. No fluorescence detected.

Coal: brownish black, dull lustre, silty, micaceous, brittle, massive to blocky.



SECTION 4: DRILLING AND ENGINEERING DATA

- 4.1 Drilling summary
- 4.2 Bit record
- 4.3 BHA record
- 4.4 Mud record
- 4.5 Survey data listing



4.1 DRILLING SUMMARY

DOLPHIN A-3 was drilled from the base of 20" conductor at 140.5m, on the 17 th of September 1997. The well reached a total depth of 1373.5m (1329.8m TVD) at 22:45 hrs on the 21st of September 1997.

17.5" HOLE SECTION**Bit Run 1** (140 - 885m)

Bit 1, REED MS11G, Milled Tooth, JETS : 3x28, 1x16.

This bit was run on the Halliburton F2000MX motor with 1.0 degree bend . Washed out conductor to 125m with seawater, and displaced hole with Gel/Spud mud. Drill, steer and survey from 140 to 885m. Circulate hole clean and made wiper trip back to 20" conductor shoe - maximum overpull was 25 klbs. POOH to run 13 3/8" surface casing. Bit 1 made 745m in 19 rotating hours on bottom.

	ROP (m/hr)	WOB (klbs)	RPM	SPP (psi)	FR (gpm)
Average	39	10	170	1600	786

- SURVEY: Gyro within 20" conductor, MWD thereafter.
- HOLE PROBLEMS: None.
- OBJECTIVE OF BIT RUN: Drill 17 1/2" hole to casing point, building hole angle to 23 degrees and then drop to 17 degrees at 130 degree azimuth.
- REASON FOR POOH: Reached 13 3/8" surface casing point.

12.25" HOLE SECTION**Bit Run 2** (885 - 1373.5 m)

Bit 2RR, Geodiamond M75P, PDC, JETS : 7x15

This bit was run on the Halliburton F2000MX motor with 1.0 degree bend. RIH and tagged top of cement at 849.5m. Drilled out shoe at 877m and displaced hole with KCl / Polymer mud. Drilled new formation to 888m. Performed F.I.T. to 11.45 ppg EMW. Drilled, steered and surveyed 12.25" hole to 1373.5m. Circulate two times Latrobe open hole volume, perform wiper trip, and POOH for electric logs. Bit 2RR made 488m in 18.3 rotating hours on bottom.

	ROP (m/hr)	WOB (klbs)	RPM	SPP (psi)	FR (gpm)
Average	27	14	204	2100	923

- SURVEY: MWD.
- HOLE PROBLEMS: None
- OBJECTIVE OF BIT RUN: To drill 12.25" hole , dropping hole angle to 0 degrees to target.
- REASON FOR POOH: Reached total depth.



4.2 BIT RECORD

Operator: ESSO AUSTRALIA LTD.

RUN	1	2			
BIT	1	2RR			
MAKE	REED TOOL COMPANY	SMITH GEODIAMOND			
TYPE	MS11G	M75P			
SIZE	17.5"	12.25"			
JETS	3x28,1x16/32nd	7x15/32nd			
SERIAL #	C54558	JR2543			
IADC	MILLED TOOTH	PDC			
MOTOR	F2000MX	F2000MX			
DEPTH IN (m)	140	885			
BIT MTRS	745	488.5			
HRS ON BTM	19	16.7			
AV. ROP(m/hr)	39	27			
DULL CODE	1-1-NO-A-B1- B1-I-NO-TD	1-3-I-WT-A-S X-I-CT-TD			



4.3 BHA RECORD





Job No.: AFE No.:
 Operator: **ESSO AUSTRALIA LTD.** Location: **MELBOURNE, VICTORIA, AUSTRALIA**
 Field: **BASS STRAIT** MWD Operator(s): **T. Ford, E. Sabaluro**
 Well: **DPA A-3 mwd** Dir'l Driller(s): **B. Wood, M. Coates**
 Run No.: **1** BHA No.: **1** Hole Size: **17-1/2"**

BOTTOM HOLE ASSEMBLY

Assembly Type: **Steerable System** Reason Pulled: **<undefined>**
 Objective: **Build to 23deg's then drop to 17deg's on azm of 130.**

Motor Size / Type: **9.625 in / F2000MX** Serial No.: **96103** Circulating : **0.00 hrs**

No.	Serial No.	Tool Description	OD (in)	ID (in)	Length (m)	Total Length (m)	Connections Up	Down	Conn
1	C54558	(BIT) Reed Tool,MS11G,Milled Tooth	17.500		0.43	0.43	6 5/8 Reg		P
2	96103	(MTR) Halliburton,F2000MX, 1.000° Bend	9.625	7.250	9.86	10.29	7 5/8 Reg	7 5/8 Reg	B/B
3	43065	(STA) Non-Mag,Integral Blade,3 Spiral blades, blade OD=17.375	9.250	3.067	2.40	12.69	7 5/8 Reg	7 5/8 Reg	B/P
4	AS7751	(SUB) Cross-Over Sub	9.375	3.125	0.25	12.94	6 5/8 Reg	7 5/8 Reg	B/P
5	S 96116	(DC) Slick Non-Mag Drill Collar	7.813	3.063	3.06	16.00	6 5/8 Reg	6 5/8 Reg	B/P
6	654760	(DC) Slick Non-Mag Drill Collar	8.000	3.000	2.77	18.77	6 5/8 Reg	6 5/8 Reg	B/P
7	FS 97007	(SUB) Non-Mag Float Sub	8.125	4.500	1.01	19.78	5 1/2 IF	6 5/8 Reg	B/P
8	HDC 8013	(MWD) HDS1 HI FLOW pulser, mud operated(mph 8056), das(tcm 0014), directional sensor(hdas 5086), battery(bms 1037)	8.000	4.375	9.17	28.95	5 1/2 IF	5 1/2 IF	B/P
9	GMS 8024	(SUB) Non-Mag MuleShoe Sub	8.000	3.500	1.26	30.21	6 5/8 Reg	5 1/2 IF	B/P
10	S9621	(DC) Slick Non-Mag Drill Collar	8.187	3.500	8.94	39.15	6 5/8 Reg	6 5/8 Reg	B/P
11	13	(SUB) Cross-Over Sub	7.625	2.813	0.82	39.97	4 1/2 IF	6 5/8 Reg	B/P
12	SF-HWDP	(HW) 3 jts, Hevi-Wate Drill Pipe	5.000	3.000	28.22	68.19	4 1/2 IF	4 1/2 IF	B/P
13	1416-1125	(JAR) Dailey Jar	6.500	2.750	9.85	78.04	4 1/2 IF	4 1/2 IF	B/P
14	SF-HWDP	(HW) 17 jts, Hevi-Wate Drill Pipe	5.000	3.000	159.69	237.73	4 1/2 IF	4 1/2 IF	B/P

BIT DATA

Manufacturer: **Reed Tool** IADC: **115M** Length: **0.43 m**
 Bit Type: **Milled Tooth** Depth In: **0.00 - 0.00 (0.00) m** Gage Length: **0.00 mm**
 Serial No.: **C54558** Nozzles: **28(3),16(cj) /32nd** TFA: **2.000 in2**
 Hours On Bit : **0.00** MTG On Bit : **0.00** Dull Code: **1-1-NO-A-B1-B1-B1-I-NO-TD**



Job No.:
Operator: **ESSO AUSTRALIA LTD.**
Field: **BASS STRAIT**
Well: **DPA A-3 mwd**
Run No.: 1

AFE No.:
Location: **MELBOURNE, VICTORIA, AUSTRALIA**
MWD Operator(s): **E.Sabalburo, T.Ford**
Dir'l Driller(s): **M.Coates, B.Wood**
BHA No.: 2

Company Man: **W.Westman/ T Bassett**
Hole Size: **12-1/4"**

BOTTOM HOLE ASSEMBLY

Assembly Type: **Steerable System**
Objective: **Drop angle back to 0°, then drill to TD.**

Reason Pulled: **TD - Total depth/Casing point**

Motor Size / Type: **9.625 in / F2000MX** Serial No.: **96103** Circulating : **3.42 hrs**
Sliding(36.0%): **84.00 m @ 7.78 hrs => 10.79 m/hr** Bit Press.Drop: **444.75 psi** Flow Rate : **900.00 gpm**
Rotating(64.0%): **404.50 m @ 13.87 hrs => 29.17 m/hr** SPM : **180.00**
Total Drilled: **488.50 m @ 21.65 hrs => 22.56 m/hr**

No.	Serial No.	Tool Description	OD (in)	ID (in)	Length (m)	Total Length (m)	Connections Up	Down	Conn
1	JR2583	(BIT) GEODIAMOND,M75P,PDC	12.250		0.38	0.38	6 5/8 Reg		P
2	AS7751	(SUB) Cross-Over Sub	9.375	3.125	0.25	0.63	6 5/8 Reg	7 5/8 Reg	B/P
3	96103	(MTR) Halliburton,F2000MX, 1.000° Bend	9.625	7.250	9.86	10.49	7 5/8 Reg	7 5/8 Reg	B/B
4	96018	(SUB) Cross-Over Sub	8.065	2.875	1.01	11.50	6 5/8 Reg	7 5/8 Reg	B/P
5	S95061	(STA) Welded Blade,5 Straight blades, blade OD=12.125	8.125		1.72	13.22	6 5/8 Reg	6 5/8 Reg	B/P
6	S 96116	(DC) Slick Non-Mag Drill Collar	7.813	3.063	3.06	16.28	6 5/8 Reg	6 5/8 Reg	B/P
7	654760	(DC) Slick Non-Mag Drill Collar	8.000	3.000	2.77	19.05	6 5/8 Reg	6 5/8 Reg	B/P
8	FS 97007	(SUB) Non-Mag Float Sub	8.125	4.500	1.01	20.06	5 1/2 IF	6 5/8 Reg	B/P
9	HDC 8013	(MWD) HDS1 HI FLOW pulser, mud operated(mph 8056), das(tcm 0014), directional sensor(hdas 5086), battery(bms 1037), gamma(ugs 7165)	8.000	4.375	9.17	29.23	5 1/2 IF	5 1/2 IF	B/P
10	96132	(SUB) Cross-Over Sub	8.000	2.750	0.52	29.75	6 5/8 Reg	5 1/2 IF	B/P
11	AOS12219	(STA) Non-Mag,Sleeve Type,5 Straight blades, blade OD=12.125	8.000	3.000	1.67	31.42	6 5/8 Reg	6 5/8 Reg	B/P
12	S9621	(DC) Slick Non-Mag Drill Collar	8.187	3.500	8.94	40.36	6 5/8 Reg	6 5/8 Reg	B/P
13	13	(SUB) Cross-Over Sub	7.625	2.813	0.82	41.18	4 1/2 IF	6 5/8 Reg	B/P
14	SF-HWDP	(HW) 3 jts, Hevi-Wate Drill Pipe	5.000	3.000	28.22	69.40	4 1/2 IF	4 1/2 IF	B/P
15	1416-1125	(JAR) Dailey Jar	6.500	2.750	9.85	79.25	4 1/2 IF	4 1/2 IF	B/P
16	SF-HWDP	(HW) 16 jts, Hevi-Wate Drill Pipe	5.000	3.000	150.30	229.55	4 1/2 IF	4 1/2 IF	B/P

MUD/PUMP DATA

Mud Type: **KCL/POLY** Wt: **8.70 lb/gal** PV: **13.00 cp** YP: **20.00 lb/100ft2** Oil: **0.00%**
Water Loss: **6.00 cc** Funnel Visc.: **60.00 sec** pH: **9.0** Total Gas: **0 PPM** Sand: **0.00%**
LCM Type: **Type A** LCM Size: **0.00 in** LCM Volume: **0.00 lb/bbl** Solids: **2.10%**
Diesel Grade: **0** Aniline Pt.: **0.00 °C** Chlorides: **32000 PPM** H2S: **0 PPM**
BH(max): **0.00 °C** Flow Line(max): **16.00 °C** Temperature Gradient: **0.00 °C/30m**

Pump Type: **Triplex - T-1600 H.P.** Volume: **0.00 gpm** SPM: **0** Stroke: **304.80 mm** Liner: **6.50 in**
Triplex - T-1600 H.P. **0.00 gpm** **0** **304.80 mm** **6.50 in**

BIT DATA

Manufacturer: **GEODIAMOND** IADC: **PDC** Length: **0.38 m**
Bit Type: **PDC** Depth In: **885.00 - 1373.50 (488.50) m** Gage Length: **100.00 mm**
Serial No.: **JR2583** Nozzles: **15(7) /32nd** TFA: **1.208 in2**
Hours On Bit : **21.65** MTG On Bit : **488.50** Dull Code: **0-0-NO-C-BX-BX-BX-I-NO-TD**

COMMENTS / RESULTS

Difficult to slide in Gypsland, even just below casing shoe, due to interbedding and hanging up. High motor torque for low bit weights. Sliding much easier in Lakes, but still a problem holding tool face due to high bit torque for low WOB. Unable to get angle to verticle, probably should have run a rock bit.

4.4 MUD RECORD

Contractor: BAROID AUSTRALIA PTY LTD.



OPERATOR - ESSO AUSTRALIA LTD.		WELL No. - DOLPHIN A-3									
17 1/2" HOLE SECTION - SEAWATER GEL SPUD MUD		RIG - Santa-Fe PARAMESWARA									
12 1/4" HOLE SECTION - KCL / POLYMER /GLYCOL MUD (FROM 885m)		MUD CONTRACTOR : BAROID									
DATE	17/09/97	17/09/97	17/09/97	17/09/97	20/09/97	21/09/97	21/09/97	21/09/97	21/09/97	21/09/97	21/09/97
DEPTH (m)	584	695	760	921.0	980.0	1263.0	1373.5				
WEIGHT (PPG)	9.1	9.3	9.2	8.8	9.5	9.7	9.8				
FUNNEL VISCOSITY	41	45	50	58	67	61	63				
PLASTIC VISCOSITY	7	7	8	12	21	18	20				
YIELD POINT lbs/100 ft2	20	36	38	22	35	29	35				
Gels lbs/100 ft2	15/17	21/24	23/26	6/8	9/11	8/10	9/11				
FILTRATE ml / 30 min	0.0	0.0	0.0	5.5	3.5	3.3	3.8				
CAKE API / HTHP 32nd in	2/0	2/0	2/0	1/2	11.4	11.2	1/2				
Corr Solids (% by Vol)	0.0	0.0	0.0	4.2	5.3	6.2	7.3				
Oil/Water (% by Vol)	0/0	0/0	0/0	0.0/94.0	0.0/94.0	0.0/92.0	0.0/91.0				
Sand (% by Vol)	0.05	0.20	0.05	0.05	0.10	0.10	0.10				
MBC (me/ml mud)	0.00	0.00	0.00	0.1	0.3	0.4	0.4				
pH METER @ 25 Deg C	9.5	9.0	9.5	9.0	9.0	8.8	8.8				
ALKALINITY MUD (Pm)	0.00	0.00	0.00	0.2	0.1	0.03	0.1				
CHLORIDES mg/l	0	0	0	31500	30000	32500	31500				
HARDNESS mg/l	0.0	0.0	0.0	160	140	200	280				
Low Gravity Solids ppb	0.00	0.00	0.00	38.22	34.49	38.04	50.05				
KCL Content ppb	0.0	0.0	0.0	20.0	19.0	20.0	19.0				
Glycol Content (% by Vol)	0.0	0.0	0.0	4.0	4.0	4.0	3.5				

4.5 SURVEY DATA LISTINGS



Survey Report

Date: 22/09/97
 Time: 3:27 am
 Wellpath ID: DPA A-3 mwd
 Date Created: 12/09/97
 Last Revision: 22/09/97

Calculated using the Minimum Curvature Method
 Computed using WIN-CADDS REV2.2.2
 Vertical Section Plane: 129.07 deg.

Survey Reference: STRUCTURE ORIGIN
 Reference World Coordinates: Lat. 38.29.20 S - Long. 147.22.34 E
 Reference GRID System: Australian (UTM) Zone: 55, Cent. Merid: 147.00.00 E
 Reference GRID Coordinates: (m): 5739858.00 N 532809.10 E
 North Aligned To: GRID NORTH
 Offset, Reference To WellHead: (m): 0.80 S 0.20 W 0.00 TVD
 Vertical Section Reference: STRUCTURE ORIGIN
 Closure Reference: STRUCTURE ORIGIN
 TVD Reference: STRUCTURE ORIGIN

ESSO AUSTRALIA LTD.
 BASS STRAIT
 Dolphin
 A-3
 DPA A-3 mwd

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL		Vertical Section (m)	Build Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)
					Rectangular Offsets (m)	(m)				
0.00	0.00	0.00	0.00	-42.10	0.80 S	0.20W	0.35	0.00	0.00	0.00
30.00	0.26	221.69	30.00	-12.10	0.85 S	0.25W	0.35	0.26	0.00	0.26
35.00	0.46	259.34	35.00	-7.10	0.86 S	0.27W	0.33	1.20	225.90	1.80
40.00	0.42	230.99	40.00	-2.10	0.88 S	0.31W	0.32	-0.24	-170.10	1.31
45.00	0.43	248.07	45.00	2.90	0.90 S	0.34W	0.30	0.06	102.48	0.76
50.00	0.43	222.54	50.00	7.90	0.92 S	0.37W	0.29	0.00	-153.18	1.14
55.00	0.49	233.91	55.00	12.90	0.94 S	0.40W	0.29	0.36	68.22	0.65
60.00	0.56	225.13	60.00	17.90	0.97 S	0.43W	0.28	0.42	-52.68	0.64
65.00	0.61	231.42	65.00	22.90	1.01 S	0.47W	0.27	0.30	37.74	0.49
70.00	0.39	222.01	70.00	27.90	1.04 S	0.50W	0.26	-1.32	-56.46	1.40
75.00	0.37	193.81	75.00	32.90	1.07 S	0.52W	0.27	-0.12	-169.20	1.12
80.00	0.64	160.30	80.00	37.90	1.11 S	0.51W	0.30	1.62	-201.06	2.34
85.00	1.66	134.19	85.00	42.90	1.18 S	0.45W	0.40	6.12	-156.66	6.73
90.00	2.07	134.46	89.99	47.89	1.30 S	0.34W	0.56	2.46	1.62	2.46
95.00	2.53	130.76	94.99	52.89	1.43 S	0.19W	0.76	2.76	-22.20	2.90
100.00	2.95	133.19	99.98	57.88	1.59 S	0.01W	1.00	2.52	14.58	2.61
105.00	3.71	132.02	104.98	62.88	1.79 S	0.20 E	1.29	4.56	-7.02	4.58
108.20	4.06	131.06	108.17	66.07	1.93 S	0.37 E	1.50	3.28	-9.00	3.34
115.80	4.58	130.72	115.75	73.65	2.31 S	0.80 E	2.08	2.05	-1.34	2.06
125.50	4.07	134.80	125.42	83.32	2.80 S	1.34 E	2.80	-1.58	12.62	1.84
136.20	6.77	131.77	136.07	93.97	3.49 S	2.08 E	3.81	7.57	-8.50	7.61
M.W.D. Surveys										
154.80	8.40	136.60	154.51	112.41	5.21 S	3.83 E	6.26	2.63	7.79	2.82
182.40	10.60	131.65	181.73	139.63	8.36 S	7.11 E	10.79	2.39	-5.38	2.55
211.70	11.20	127.20	210.50	168.40	11.87 S	11.39 E	16.33	0.61	-4.56	1.06
240.60	11.80	129.30	238.82	196.72	15.44 S	15.91 E	22.09	0.62	2.18	0.76
269.50	13.80	130.00	267.00	224.90	19.53 S	20.84 E	28.49	2.08	0.73	2.08
298.40	15.70	129.30	294.95	252.85	24.22 S	26.51 E	35.85	1.97	-0.73	1.98
327.30	17.40	130.10	322.65	280.55	29.48 S	32.84 E	44.08	1.76	0.83	1.78
356.10	19.10	131.60	350.00	307.90	35.38 S	39.66 E	53.09	1.77	1.56	1.84
385.00	20.90	132.50	377.15	335.05	42.01 S	46.99 E	62.96	1.87	0.93	1.90
413.90	22.60	133.00	404.00	361.90	49.28 S	54.86 E	73.65	1.76	0.52	1.78
442.80	22.10	132.90	430.73	388.63	56.76 S	62.90 E	84.61	-0.52	-0.10	0.52
471.60	21.60	133.40	457.46	415.36	64.09 S	70.72 E	95.30	-0.52	0.52	0.56
500.50	21.20	130.70	484.36	442.26	71.16 S	78.55 E	105.83	-0.42	-2.80	1.10
529.40	21.20	126.30	511.31	469.21	77.66 S	86.72 E	116.27	0.00	-4.57	1.65
558.30	20.70	126.20	538.30	496.20	83.77 S	95.05 E	126.60	-0.52	-0.10	0.52
588.90	20.10	125.93	566.98	524.88	90.05 S	103.68 E	137.25	-0.59	-0.26	0.60
617.90	19.80	125.80	594.24	552.14	95.85 S	111.69 E	147.13	-0.31	-0.13	0.31
646.60	19.40	125.10	621.28	579.18	101.43 S	119.54 E	156.73	-0.42	-0.73	0.48

Halliburton Australia Pty Ltd - Drilling Systems

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Date: 22/09/97

Survey Report

Wellpath ID: DPA A-3 mwd

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL		Vertical Section (m)	Build Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)
					Rectangular (m)	Offsets (m)				
675.60	18.90	125.10	648.67	606.57	106.90 S	127.32 E	166.22	-0.52	0.00	0.52
704.20	18.30	125.00	675.78	633.68	112.14 S	134.79 E	175.32	-0.63	-0.10	0.63
732.90	17.60	126.80	703.08	660.98	117.32 S	141.95 E	184.15	-0.73	1.88	0.93
761.70	17.00	128.40	730.58	688.48	122.55 S	148.74 E	192.72	-0.62	1.67	0.80
790.60	16.70	128.20	758.24	716.14	127.74 S	155.31 E	201.09	-0.31	-0.21	0.32
819.13	16.20	128.20	785.60	743.50	132.73 S	161.66 E	209.17	-0.53	0.00	0.53
846.20	16.00	128.00	811.61	769.51	137.37 S	167.57 E	216.68	-0.22	-0.22	0.23
859.00	15.70	128.30	823.92	781.82	139.53 S	170.32 E	220.17	-0.70	0.70	0.73
13 3/8" Casing Shoe										
877.50	15.42	128.72	841.74	799.64	142.62 S	174.20 E	225.13	-0.45	0.68	0.49
885.00	15.30	128.90	848.98	806.88	143.86 S	175.75 E	227.12	-0.48	0.72	0.52
923.10	15.30	127.90	885.73	843.63	150.11 S	183.63 E	237.17	0.00	-0.79	0.21
951.80	14.60	127.30	913.45	871.35	154.62 S	189.49 E	244.57	-0.73	-0.63	0.75
982.20	12.20	128.00	943.02	900.92	158.92 S	195.07 E	251.62	-2.37	0.69	2.37
1011.00	11.00	128.80	971.23	929.13	162.52 S	199.61 E	257.41	-1.25	0.83	1.26
Top Lakes Entrance										
1027.00	10.39	128.11	986.96	944.86	164.37 S	201.94 E	260.38	-1.14	-1.29	1.17
1039.80	9.90	127.50	999.56	957.46	165.75 S	203.72 E	262.63	-1.15	-1.43	1.18
1068.70	9.80	128.00	1028.03	985.93	168.77 S	207.63 E	267.57	-0.10	0.52	0.14
1097.50	9.60	128.10	1056.42	1014.32	171.77 S	211.45 E	272.42	-0.21	0.10	0.21
1126.40	9.50	125.80	1084.92	1042.82	174.65 S	215.28 E	277.21	-0.10	-2.39	0.41
1155.10	7.70	115.30	1113.30	1071.20	176.85 S	218.94 E	281.45	-1.88	-10.98	2.49
1184.00	7.70	115.00	1141.94	1099.84	178.50 S	222.45 E	285.21	0.00	-0.31	0.04
1212.70	7.70	115.30	1170.38	1128.28	180.13 S	225.93 E	288.94	0.00	0.31	0.04
1240.90	7.50	115.04	1198.33	1156.23	181.72 S	229.30 E	292.56	-0.21	-0.28	0.22
Top of Latrobe										
1263.60	7.50	115.17	1220.83	1178.73	182.98 S	231.99 E	295.43	0.00	0.17	0.02
1269.80	7.50	115.20	1226.98	1184.88	183.32 S	232.72 E	296.22	0.00	0.15	0.02
Top of Course Clastics										
1285.20	7.50	114.72	1242.25	1200.15	184.17 S	234.54 E	298.17	0.00	-0.94	0.12
Top of N1.1										
1288.50	7.50	114.61	1245.52	1203.42	184.35 S	234.93 E	298.59	0.00	-1.00	0.13
Base of N1.1										
1294.00	7.50	114.44	1250.97	1208.87	184.65 S	235.58 E	299.28	0.00	-0.93	0.12
Top of N1.2										
1295.20	7.50	114.41	1252.16	1210.06	184.71 S	235.73 E	299.43	0.00	-0.75	0.10
1297.60	7.50	114.33	1254.54	1212.44	184.84 S	236.01 E	299.74	0.00	-1.00	0.13
Base of N1.2										
1297.80	7.50	114.33	1254.74	1212.64	184.85 S	236.04 E	299.76	0.00	0.00	0.00
Top of N1.4										
1306.00	7.47	114.35	1262.87	1220.77	185.29 S	237.01 E	300.79	-0.11	0.07	0.11
Base of N1.4										
1308.00	7.46	114.35	1264.86	1222.76	185.40 S	237.25 E	301.04	-0.15	0.00	0.15
Top of N1 Coal										
1317.20	7.43	114.38	1273.98	1231.88	185.89 S	238.33 E	302.20	-0.10	0.10	0.10
1326.60	7.40	114.40	1283.30	1241.20	186.39 S	239.44 E	303.37	-0.10	0.06	0.10
1347.40	7.50	113.37	1303.92	1261.82	187.49 S	241.90 E	305.97	0.14	-1.49	0.24
1373.50	7.50	113.40	1329.80	1287.70	188.84 S	245.03 E	309.25	0.00	0.03	0.00

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ENCLOSURES:

1. FORMATION EVALUATION LOG 1:500 (0 m - 1250 m)
1:200 (1250 m - 1380 m)
2. DRILLING EVALUATION LOG 1:500 (0 m - 1250 m)
3. ASCII DRILLING DATA on 3 1/2" floppy disk.

