DEPT. NAT. RES & ENV
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W929

BEACH PETROLEUM N.L.

(Incorporated in South Australia)

WCR
Westgate-1A
(W929)

WESTGATE-1 W.C.R.

BEACH PETROLEUM N.L.

WESTGATE NO. 1A

PEP 108 - OTWAY BASIN

WELL COMPLETION REPORT

BY:

B.L. RAYNER.
OCTOBER, 1986.

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SUMMARY

Westgate No. 1A was drilled as a wildcat exploration well in PEP 108, Otway Basin, Victoria, approximately 12 km northwest of the Paaratte gas field.

Participants in the well were Beach Petroleum N.L. (Operator) and Bridge Oil Ltd.

The structure is a fault controlled culmination with laterally offset Waarre and Pebble Point Formations as the primary targets. The borehole was deviated to intersect these targets at their highest structural points.

Drilling commenced on the 23rd February 1986 and reached a total measured depth of 1918m. At 972m MD mechanical problems necessitated the hole being plugged back to 554m MD and redrilled. At 1414m the drill string became stuck, but was freed after displacing the drilling mud with water.

A total of three wireline logging suites were performed as follows; at 456m, Induction/Sonic; at 1144m Induction/Sonic, at 1918m Dual Laterolog/Micro-spherically focused, Litho Density/Compensated Neutron, Sonic, Stratigraphic High Resolution Dipmeter, Natural Gamma Ray Spectrometry, Microlog, Well Velocity Survey (standard and offset), Sidewall Cores (29 recovered) and a Repeat Formation Tester. No conventional cores were cut.

All the prognosed target formations were intersected but proved to be water saturated. A good gas show was however, recorded within the Flaxmans Formation.

A cased hole test was performed over the most promising zone and produced a small amount of gas cut water.

Westgate No. 1A was plugged and abandoned as a dry hole on the 24th March 1986.

1. INTRODUCTION

Westgate No. 1A was drilled in the Port Campbell Embayment of the Otway Basin.

The Otway Basin is an east-west trending trough, extending from Cape Jaffa in South Australia, east to the King Island - Mornington Peninsula Ridge. The basin contains up to 8000 metres of Lower Cretaceous to recent sediments and has an areal extent of some 105,000 square kms.

The trough was initiated in the late Jurassic in response to a major tensional regime associated with the separation of Australia and Antartica. By Upper Cretaceous times a series of north trending, sub-parallel embayments had developed. Within each embayment the structural framework is dominated by a few major down-to-basin normal faults which form large tilted fault blocks. The platform areas are generally heavily modified by many smaller "compensating" fault systems, some of which have a reverse component.

In the central region of PEP 108, a major down-to-basin normal fault, the Timboon Fault, splinters into two prominent faults separated by a fault dissected platform. Westgate No. 1 was drilled on this platform, close to the bifurcation point of the Timboon Fault.

The prospect was delineated by the 1984 Beach/Bridge Timboon (TM) Seismic Survey and refined by the 1985 Beach/Bridge Timboon Extension (TME) Seismic Survey.

The primary targets were the basal Upper Cretaceous Waarre Formation and the basal Tertiary Pebble Point Formation.

At Waarre Formation level the structure is an asymmetric horst block bounded by northeast - southwest trending normal faults. The south bounding fault terminates within the Upper Cretaceous but closure is inferred against the north bounding fault up to the basal Tertiary.

As the highest points of the Waarre Formation and the Pebble Point Formation over this structure are laterally offset by some 390m (the Waarre Formation being further north) the borehole was deviated by the appropriate amount in order to maximise the potential of this exploration well.

2. WELL HISTORY

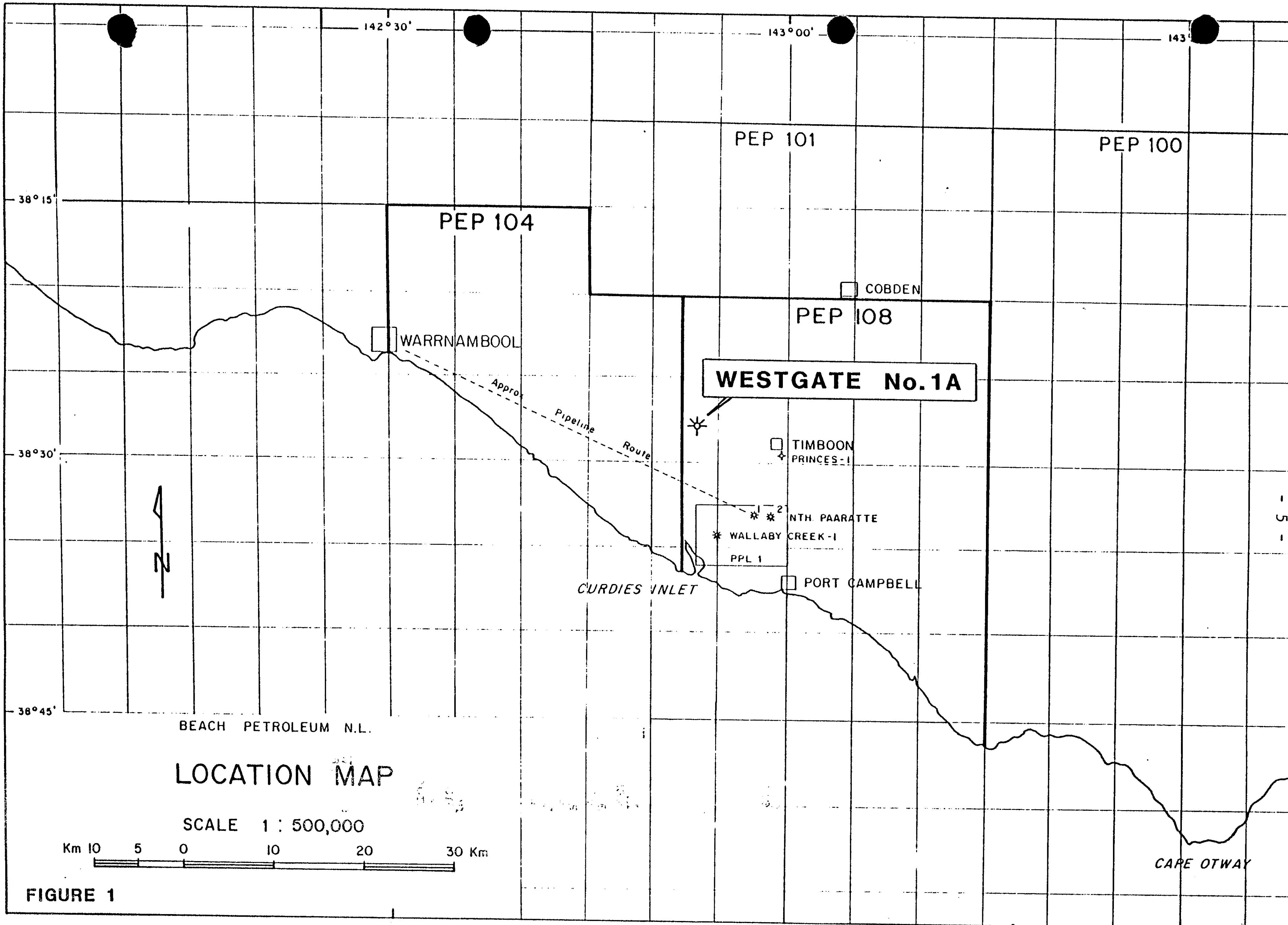
2.1 Location (see Figure 1)

Rig Co-ordinates:	Latitude: 38° 28' 1.02" S Longitude: 142° 53' 12.34" E
Real Property Description:	County of Heytesbury Parish of Brucknell
Property Owner:	I. & C. Cashmore
Shire:	Heytesbury

Westgate No. 1A was a directional hole designed to test two targets. Firstly the Pebble Point Formation at Shot Point 172 on Seismic Line TME400, 38° 27' 53.84" S, 142° 53' 17.60" E; and secondly the Waarre Formation at Shot Point 185 on Seismic Line TME400, 38° 27' 43.86" S, 142° 53' 27.47" E.

2.2 General Data (see Figure 2)

Well Name and Number:	Westgate No. 1 and 1A
Tenement:	PEP 108
Operator:	Beach Petroleum N.L. 685 Burke Road, CAMBERWELL, VIC., 3124.
Participants:	Beach Petroleum N.L. Bridge Oil Limited, Level 33, CBA Centre, 60 Margaret Street, SYDNEY, N.S.W., 2000.



BEACH PETROLEUM N.L.

LOCATION MAP

SCALE 1 : 500,000

FIGURE 1

OT 3385

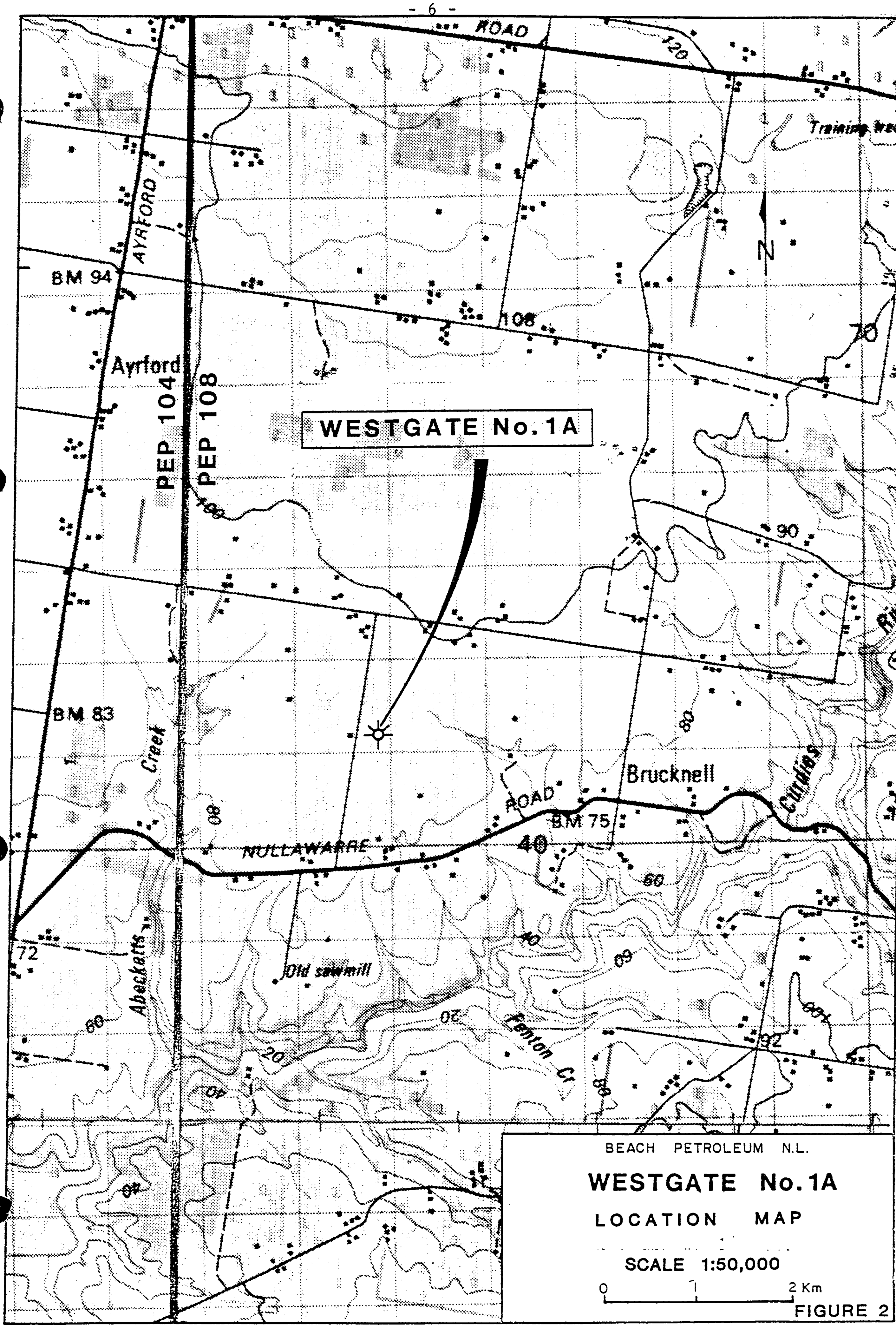

ROAD
120
Training trac
N
AYRFORD
BM 94
106
70
Ayrford
PEP 104
PEP 108
WESTGATE No. 1A
100
90
BM 83
Creek
80
Brucknell
Curdies
ROAD
BM 75
40
NULLAWARRE
60
72
Abecketts
40
60
Old sawmill
60
20
Fenton Ct
20
92
80
40
40
BEACH PETROLEUM N.L.
WESTGATE No. 1A
LOCATION MAP
SCALE 1:50,000
0
1
2 Km

FIGURE 2

Rig Elevation:	Ground Level 88.1m ASL Kelly Bushing 94.3m ASL (Unless otherwise stated all depths refer to measured or along hole depth (MD) relative to the kelly bushing.)
Total Depth:	Driller: 1918m MD Wireline Logger: 1917m MD
Date Drilling Commenced:	23rd February 1986 @ 03:30 hrs
Date Total Depth Reached:	12th March 1986 @ 12:15 hrs
Date Rig Released:	24th March 1986 @ 02:00 hrs
Drilling Time to TD:	20 days
Status:	Plugged and abandoned.

2.3 Drilling Data (see also Appendix 1 and 2)

2.3.1 Drilling Contractor

Richter Drilling Pty. Ltd.,
V.A.C.C. Building,
1st Floor, 14 Cribb Street,
MILTON, QLD., 4064.

2.3.2 Drilling Rig

Richter Rig No. 8 - National 80B

2.3.3 Casing and Cementing Details

A 20" conductor pipe was set at 9m.

Surface Casing

Size:	9-5/8"
Weight and Grade:	38 joints 36 lb/ft J55 BTC
Centralizer:	At 444m, 435m, 426m.
Float Collar:	440m
Shoe:	453m
Cement:	441 sacks Class "A" with 2.5% prehydrated gel. 161 sacks Class "A" neat.
Cemented to:	Surface
Method:	Single plug displacement (top plug only).
Equipment:	Halliburton truck mounted unit.

Production Casing

Size:	5½"
Weight:	15 joints 15.5 lb/ft, 147 joints 17.0 lb/ft.
Centralizer:	At 1700m, 1711.5m, 1723.7m, 1735.5m, 1747.4m, 1759.3m, 1771.5m, 1781.3m, 1791.0m, 1801.1m, 1810.8m, 1820.6m, 1830.3m, 1840.4m, 1850.1m, 1859.9m, 1870.0m, 1879.7m, 1189.5m, 1899.2m, 1909.3m.
Float Collar:	1903.2m
Shoe:	1914m
Cement:	490 sacks Class "A" cement.
Cemented to:	1410m.

Method:	Single plug displacement (top plug only).
Equipment:	Halliburton truck mounted unit.

Cement Plugs

- Plug No. 1

Interval:	1763.5 - 1713.5m
Cement:	86 sacks Class "A".
Method:	Balanced
Tested:	1000 psi for 5 minutes.

- Plug No. 2

Interval:	896 - 846m
Cement:	89 sacks Class "A".
Method:	Squeezed.
Tested:	No

- Plug No. 3

Interval:	423 - 377.3m
Cement:	51 sacks Class "A"
Method:	Balanced
Tested:	1000 psi for 5 minutes

- Plug No. 4

20 sacks hand mixed at surface.

2.3.4 Drilling Fluid (see Appendix 3 for details)

- 12¼" Hole, 9m to 456m MD

The well was spudded using a fresh water/native clay mud system with occasional high viscosity pills to aid in hole cleaning.

This portion of the hole was logged, cased and cemented without incident.

. $8\frac{1}{2}$" Hole, 456m to 1819m MD

The $8\frac{1}{2}$" hole was drilled using a KCl-Polymer mud system. The mud properties were held fairly constantly at:

Weight:	8.8 - 9.0 ppg
Viscosity:	38 - 45 seconds
Fluid Loss:	< 9 cc
KCl:	3.3 - 4.4%

2.3.5 Water Supply

Water was trucked into the location by Timboon Plumbing Service of Timboon.

2.4 Formation Sampling and Testing

2.4.1 Cuttings

Cuttings samples were collected at 10 metre intervals from the surface to 860m, and at 5 metre intervals from 860m to TD. Each sample was washed, oven dried, divided into 4 splits and stored in labelled polythene bags. One complete sample set was distributed to each of the following; Beach Petroleum N.L, Bridge Oil Pty. Ltd. and the Victorian Department of Industry, Technology and Resources. One spare set has been retained by Beach Petroleum N.L.

In addition, from surface to TD, unwashed samples were collected at 10 metre intervals. These samples were stored in labelled calico bags and allowed to dry in the sun. This set of unwashed samples has been retained by Beach Petroleum N.L. and may be used for any special analysis in the future.

2.4.2 Cores

(i) No conventional coring operations were performed.

(ii) Thirty sidewall cores were attempted, twenty-nine were recovered, one was left in the hole. Listed below are the depths and recovery of the sidewall cores (see Appendix 4 for description).

SWC No.	Depth (m)	Recovery (cm)
1 A	1909.0	4.0
2 V	1894.0	4.5
3 V A	1867.0	4.0
4	1860.5	Nil
5 V	1851.5	6.0
6 A	1848.5	5.0
7	1842.5	3.5
8 V A	1832.5	3.8
9	1816.5	2.5
10 P	1814.5	3.5
11	1809.5	5.5
12	1808.0	5.5
13	1793.0	3.5
14	1787.0	4.0
15	1777.0	4.5
16 P	1765.5	4.0
17	1763.0	1.3
18 V	1759.0	3.5
19 A	1754.0	4.0
20	1752.0	4.0
21 P	1749.5	3.0
22	1748.0	3.0
23 P	1746.0	3.5
24 V	1744.0	3.3
25	1731.0	5.3
26	1456.0	5.0
27	1443.0	5.8
28	896.5	5.4
29	889.5	5.3
30 V	881.5	3.8

<u>Note:</u>

V - Vitrinite Reflectance Data Available (see Appendix 8).

P - Petrologial Data Available (see Appendix 9).

A - Age Dating Available (see Appendix 7).

2.4.3 Tests

One Schlumberger Repeat Formation Test was run, followed by a cased hole drill stem test.

RFT NO. 1

The tool was set at a number of levels in order to gain pressure data. Only at 1814.5m (Waarre Formation) and at 1745.5, (Flaxman Formation) did the tool successfully seat against the formation wall. At 1814.5m the RFT chamber was opened and 2 litres of mud filtate was recovered.

At 1745.5,m the RFT chamber was opened but the flowline within the tool immediately plugged so that no samples were recovered.

The RFT results are tabulated below. See also Enclosure 3 for the RFT log.

		HYDROSTATIC		FORMATION		
DEPTH	TEN	SG	HPG	SG	HPG	TEST
1814.5	3300	2479	2479.7	2230	2250	GOOD
1765.2	3300	2405	2419.7	2250	2226.5	TIGHT
1765.5						TIGHT
1765.0		2458	2473.15			TIGHT
1765.8		2460	2474.5	2245	2260.5	TIGHT
1749.5		2437	2452.2			NO SEAL
1749.4		2436	2451.7			NO SEAL

1748.5	2435	2450.1			NO SEAL
1745.0	2430	2445.1			BAD SEAL
1744.0	2428	2433.8			NO SEAL
1745.4	2432	2446			BAD SEAL
1744.5	2430	2444.7			NO SEAL
1745.2	2430	2444.7			NO SEAL
1745.1	2430	2444.9			NO SEAL
1745.0	2431	2445.5			NO SEAL
1746.0	2433	2448.0			NO SEAL
1745.0	2430	2445.9			NO SEAL
1745.5	2433	2446			NO SEAL
1744.7	2433	2446.7			NO SEAL
1747.5	2438	2448.8			NO SEAL
1745.4	2433	2447.2			POOR SEAL
1745.0	2433	2446.34			NO SEAL
1746.0	2433	2447.39			NO SEAL
1745.5	2433	2447.2	2155	2166	GOOD

Note: Pressures in P.S.l., Depth in metres, Ten=Tension.
SG = strain gauge, HPG = high precision guage.

DST No.1

$5\frac{1}{2}$" RTTS packer set at	:	1721, with 1207m water cushion.
Perforated interval	:	1743m to 1758.5m with four perforations per foot.
Formation	:	Flaxmans.
Sequence of events	:	Perforating gun fired. Wellhead shut-in pressure steady at 10 psi after 20 min. Halliburton test head nippled down and Otis lubricator nippled up. Amerada guages run in hole. Well opened to flare through 3/4" choke. Well head pressure 0 psi, no air blow. Pull out of hole with Otis guages. Wire on spool tangled. Slip and cut Otis slick line. Retrieve drop bar. Pull packer free. Reverse circulate.
Recovery	:	Recovered water cushion and gas cut filtrate. No condensate, emulsion or oil recovered.
Samples	:	The following reverse circulated samples were retained. Depths are estimated from pump strokes.

(i) Top of water column resistivity 10.8 ohm.m @ 69°F.

(ii) 610.5m, water, resistivity 10.3 ohm.m @ 69°F.

(iii) 1078m, gas cut water, resistivity 0.307 ohm.m. @ 69°F.

(iv) 1221m,. gas cut muddy water, resistivity 0.338 ohm.m. @ 69°F.

Note : Water cushion resistivity 9.07 ohm.m @ 67°F. Mud resistivity 0.250 ohm.m. @ 71.6°F.

Assessment : The Flaxmans Formation contains gas but has a very low permeability.

See also, Appendix 2 and 10.

2.5 Logging and Surveys (see Enclosure 1)

2.5.1 Mud Logging

A standard skid - mounted Exploration Logging Unit was used to provide penetration rate, continuous mud gas monitoring, intermittent mud and cuttings gas analysis, pump rate and mud volume data. The Masterlog is included as Enclosure 2.

2.5.2 Wireline Logging

Wireline logging was performed by Schlumberger Seaco Inc. using a truck-mounted Cyber Service Unit. Three logging suites were performed and the details are listed below. An analysis of these logs is included in Section 4.2.

- Suite No. 1

Induction spherically focused/sonic log (ISF/Sonic/SP/GR/Cal)	Surface to 453m

- Suite No. 2

Induction spherically focused/sonic (ISF/MSFL/Sonic/SP/GR/Cal)	453m to 1135m

Suite No. 3

Dual Laterolog (DLL/SP/GR/Cal)	453m to 1914m
Micro spherically focused log	453m to 1914m
Lithodensity/Compensated Neuton Log (LDL/CNL)	500m to 1150m 1425m to 1914m
Sonic Log (SLS)	1125m to 1914m
Natural Gamma Ray Spectroscopy Log (NGT)	850m to 970m 1425m to 1515m 1665m to 1910m
Stratigraphic High Resolution Dipmeter Tool (SHDT) (Mean Square Dip Processing)	850m to 1916m
Microlog (ML)	850m to 970m 1425m to 1515m 1665m to 1910m

In addition the following CSU products were generated:

Cyberdip	1350m to 1914m
Cyberlook	1430m to 1900m
TVD - Playback	
(DLL-DIL-MSFL-LDL-CNL-BHC-GR)	453m to 1910m

These logs are included as Enclosure 3.

2.5.3 Deviation Surveys

Regular magnetic single shot directional surveys were performed by Hofco Oilfield Services Pty. Ltd. A summary is included as Appendix 11. In addition, a well trajectory plot was generated from the dipmeter tool. See Appendix 12.

2.5.4 Velocity Survey

Both standard and offset velocity surveys were performed by Schlumberger Seaco Incorporated. See Appendix 5.

3. RESULTS OF DRILLING

3.1 Stratigraphy

The following stratigraphic intervals have been delineated using penetration rate, cuttings and sidewall core analysis, and wireline log interpretation. All formation tops were present as predicted, although some formations were marginally deeper than prognosed (see also Figure 3 and Figure 4).

Group	Formation	Depth MD	Depth TVD	Depth Subsea	Thickness TVD
Heytesbury	Port Campbell Limestone	Surface	Surface	+ 88.1	135
	Gellibrand Marl	135.0	135	40.7	260
	Clifton	409.0	395	300.7	18
Nirranda	Narrawaturk Marl	430.0	413	318.7	43
	Mepunga	478.0	456	361.7	79
Wangerrip	Dilwyn	553.5	535	440.7	240
	Pember Mudstone Member	836.0	775	680.7	34
	Pebble Point	885.0	809	714.7	77
Sherbrook	Paaratte	962.0	886	791.7	348
	Skull Creek Member	1359.0	1234	1139.7	72
	Nullawarre Greensand Member	1441.0	1306	1211.7	231
	Belfast Mudstone	1699.0	1537	1442.7	40
	Flaxmans	1743.0	1577	1482.7	65
	Waarre	1813.0	1642	1547.7	35
Otway	Eumeralla	1852.0	1677	1582.7	+ 59
	TD	1918.0	1736	1641.7	-

BEACH PETROLEUM N.L.

WESTGATE No. 1A

PROGNOSED AND ACTUAL STRATIGRAPHY

PROGNOSED ACTUAL

G.L. 88·1 amsl. K.B. 94·3 amsl

DEPTHS ARE 'MEASURED DEPTHS' BELOW K.B.

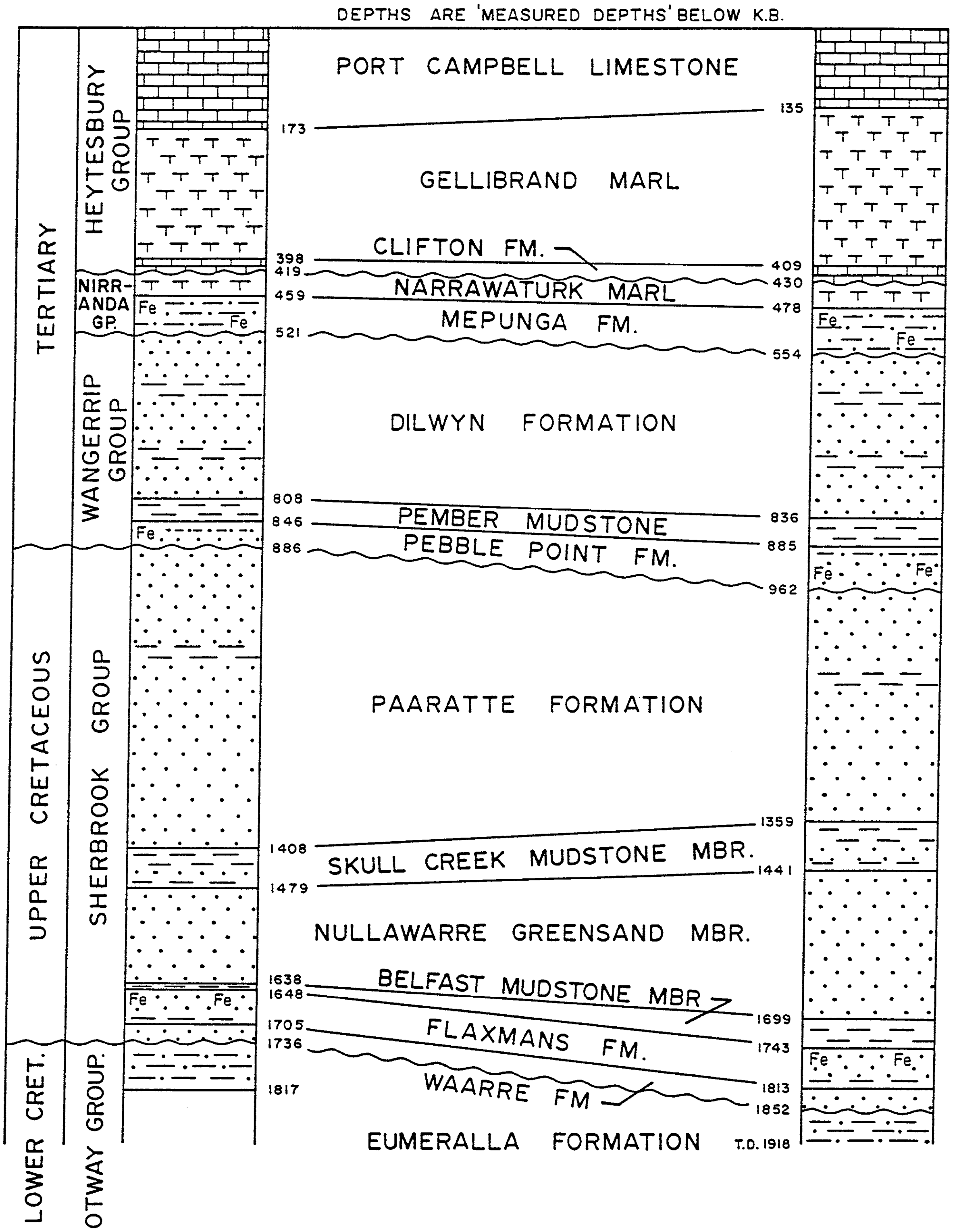


FIGURE 3

DRG. No. OT. 3525

BEACH PETROLEUM N.L.

OTWAY BASIN STRATIGRAPHIC TABLE

GENERAL TIME SCALE: Period	GENERAL TIME SCALE: Age	GROUP	FORMATION	MEMBER	GENERAL LITHOLOGY	OIL/GAS
Q.		POST-HEYTESBURY	NEWER VOLCANIC WHALERS BLUFF FM., ETC.		NEWER VOLCANIC	
TERTIARY	Pliocene	POST-HEYTESBURY	NEWER VOLCANIC WHALERS BLUFF FM., ETC.			
TERTIARY	Miocene	HEYTESBURY	PORT CAMPBELL			
TERTIARY	Oligocene	HEYTESBURY	GELLIBRAND			
TERTIARY	Oligocene	HEYTESBURY	CLIFTON		Fe	
TERTIARY	Eocene	NIRRANDA	NARRAWATURK			
TERTIARY	Eocene	NIRRANDA	MEPUNGA		Fe	
TERTIARY	Eocene	WANGERRIP	DILWYN	Burrungule	OLDER VOLCANIC	
TERTIARY	Palaeocene	WANGERRIP	DILWYN	Pember		
TERTIARY	Palaeocene	WANGERRIP	? PEBBLE POINT	?	? Fe	LINDON-1
CRETACEOUS UPPER	Maastrichtian	SHERBROOK	PAARATTE	Timboon Sand		
CRETACEOUS UPPER	Companian	SHERBROOK	PAARATTE	Undifferentiated part		
CRETACEOUS UPPER	Santonian	SHERBROOK	PAARATTE	Skull Creek Mudstone and Nullawarre Greensand		
CRETACEOUS UPPER	Coniacian	SHERBROOK	PAARATTE	Belfast		
CRETACEOUS UPPER	Turonian	SHERBROOK	FLAXMAN		L Fe	
CRETACEOUS UPPER	Cenomanian	SHERBROOK	WAARRE		Fe	North Paaratte Wallaby Creek Grumby
CRETACEOUS LOWER	Albian	OTWAY	EUMERALLA	Heathfield		Port Campbell No.4
CRETACEOUS LOWER	Aptian	OTWAY	?	?		
CRETACEOUS LOWER	Neocamian	OTWAY	CRAYFISH	Geltwood Beach; Pretty Hill		
JURASSIC	Late	? —	? CASTERTON	?	? BASAL VOLCANIC	
JURASSIC	Middle	—	CASTERTON		BASAL VOLCANIC	
PALAEOZOIC		BASEMENT				

BASE MAP OT.2088.

OT.3188

FIGURE 4

3.2 Lithological Descriptions

3.2.1 HEYTESBURY GROUP (surface to 430m)

Port Campbell Limestone:

Surface to 135m

CALCARENITE, light brown, off white, yellow - orange in part; friable; fine to occasionally medium grained; subrounded; moderately argillaceous matrix in part; very fossiliferous, abundant bryozoa, shell fragments, echinoid spines, foraminifera, sponge spicules, with trace to common glauconite pellets and infilling of fossil fragments; trace to common, clear, loose, coarse grained quartz; trace dark brown to black lithics, very rare pyrite towards the base.

Gellibrand Marl

135m to 409m

MARL, medium olive grey, medium grey in part, medium green grey in part; soft; sticky, moderately dispersive in part; common fossil fragments, pyritized in part, trace glauconite.

Clifton Formation

409m to 430m

CALCARENITE, off white, medium brown, light to medium orange brown; friable to firm; medium to very coarse, dominantly coarse grained; rounded, common to abundant iron oxide stained quartz; iron carbonate matrix; abundant fine to very coarse, well rounded iron oxide pellets; abundant fossil fragments, occasionally iron oxide replaced.

3.2.2 NIRRANDA GROUP (430m to 553.5m)

Narrawaturk Marl — 430m to 478m

MARL, medium grey, light grey in part; very soft; very dispersive; very fossiliferous, bryozoa, foraminifera, shell fragments, gastropods, echinoid spines, trace pyrite, trace glauconite.

Mepunga Formation — 478m to 553.5m

SANDSTONE, medium to light brown; loose; very fine to medium, dominantly fine grained; subangular to rounded, dominantly subangular; moderate to well sorted; iron oxide stained quartz; trace medium brown argillaceous matrix, very weak siliceous cement in part; trace medium brown lithics, trace glauconite pellets, trace pyrite, good visual porosity. Interbedded with CLAYSTONE which becomes the dominant lithology at the base, light to medium brown grey, very soft, very dispersive, slightly calcareous.

3.2.3 WANGERRIP GROUP (553.5m to 962m)

Dilwyn Formation 553.5m to 836m

SANDSTONE, medium to dark brown grading to off white, light grey, light brown grey at the base; loose to friable; very fine to medium, dominantly fine grained; subangular to rounded, dominantly subrounded; abundant argillaceous matrix, medium to dark brown, dark green grey in part weak siliceous cement in part; occasionally strong calcareous cement, trace to common glauconite pellets, trace pyrite; poor to good visual porosity. Interbedded with, and grading to CLAYSTONE, medium to dark brown, dark brown grey, dark green grey; soft to very soft; sticky, dispersive in part; massive in part, trace to common glauconite pellets, trace to occasional quartz grains, carbonaceous in part, rare to common pyrite, trace micromicaceous.

Pember Mudstone Member	836m to 885m CLAYSTONE, dark brown grey, dark green grey; very soft; sticky, dispersive, massive in part, slightly calcareous in part, trace very fine, subangular quartz grains, trace carbonaceous detritus.
Pebble Point Formation	885m to 962m SANDSTONE, light brown to light green brown, medium red brown; loose; very fine to medium, dominantly fine grained; subangular to subrounded; poorly sorted; iron oxide stained quartz; abundant argillaceous matrix, medium brownish green; trace pyrite, trace glauconite; poor visual porosity. Interbedded with, and grading from CLAYSTONE, dark green grey; dispersive, firm in part; massive in part; moderately silty; trace to common micromicaceous; very abundant, very fine to coarse, dominantly fine grained, subangular to subrounded quartz grains

and glauconite pellets, trace pyrite.

3.2.4 SHERBROOK GROUP (962m to 1852m)

Paaratte Formation	962m to 1359m SANDSTONE, light grey, off white; friable; very fine to very coarse, dominantly medium grained; angular to subrounded, dominantly subangular; poor to moderate sorted quartz; common to abundant argillaceous matrix, medium brown grey, moderate siliceous cement in part, rare calcareous cement in part; common carbonaceous detritus, trace pyrite, trace light to medium grey lithics, rare mica flakes, rare glauconite pellets, poor to good visual porosity. Interbedded with minor CLAYSTONE, medium grey, medium grey brown; soft to very soft; sticky, dispersive; massive; subfissile in part, trace carbonaceous detritus, trace pyrite, trace micromicaceous, rare dolomite; with rare COAL, black, firm, sub conchoidal fracture, clayey.

Skull Creek Member	1359m to 1441m CLAYSTONE, medium to dark brown grey, medium to dark grey, medium to dark green grey in part, soft, very dispersive, massive, subfissile, calcareous in part, trace pyrite, trace mica, trace fossil fragments, trace medium brown dolomite, interbedded with SANDSTONE, off white; hard; very fine grained; subangular to subrounded; moderately sorted quartz, moderate calcareous and siliceous cement; trace carbonaceous detritus, trace multicoloured lithics; poor visual porosity.
Nullawarre Greensand Member	1441m to 1699m SANDSTONE, medium to dark brown, medium red brown in part; very fine to occasionally coarse, dominantly fine grained; subangular to subrounded; moderately sorted, iron oxide stained quartz; trace to common argillaceous matrix, medium brown; trace to common fine grained iron oxide pellets, trace glauconite, trace pyrite, poor to good visual porosity.

Belfast Mudstone Member	1699m to 1743m SANDY CLAYSTONE, medium to dark green grey; moderately soft to firm; sticky; subfissile; massive, laminated in part, trace micromicaceous, trace carbonaceous detritus, slightly silty in part, trace pyrite, with up to 10% glauconitic clay pellets and trace very fine to medium grained, green stained quartz.
Flaxmans Formation	1743m to 1813m FERRUGINOUS SANDSTONE, medium to dark yellow orange brown, mottled in part; very fine to very coarse, dominantly medium to coarse grained; rounded; poorly sorted lithics; dominantly (up to 65% of total rock volume) iron oxide pellets with minor (average 15%) quartz grains; abundant (up to 80%) white, brown, grey, yellow - orange, brick red argillaceous matrix, silty in part, slightly calcareous in part, trace glauconite pellets, trace pyrite, very poor to poor visual porosity. Grades to CLAYSTONE at base, medium orange brown, mottled in part; massive, common to abundant medium to dark

brown iron oxide pellets, trace pale yellow - red, fine to medium grained quartz grains, rare pyrite, rare calite.

Waarre Formation

1813m to 1852m

SANDSTONE, off white to very light grey; hard; very fine to coarse, dominantly medium grained, subangular to subrounded; moderate sorted quartz; common white clay matrix in part, trace medium brown argillaceous matrix, weak siliceous cement in part, moderate calcareous cement in part, trace pyrite, trace carbonaceous detritus, trace to common mica flakes, trace black and green lithics, trace altered feldspar, poor to good visual porosity. Interbedded and interlaminated with SILTY CLAYSTONE, medium to dark grey; firm; subfissile; massive in part; occasional very fine, clear, angular quartz grains; common micromica; common carbonaceous detritus; trace to common pyrite.

3.2.5 OTWAY GROUP (1852m to 1918m)

Eumeralla Formation 1852m to 1918m

SANDSTONE, light grey, light green grey; friable; very fine to medium, dominantly fine grained; subangular to subrounded, moderately sorted; pale green stained quartz, abundant white clay matrix, weak siliceous cement in part, calcareous cement in part, abundant multicoloured lithics, common partly altered feldspar, trace carbonaceous detritus, trace pyrite, poor visual porosity. Interbedded with minor CLAYSTONE, light to medium green, light to medium grey, subfissile, firm, massive, common micromica, slightly silty, rare carbonaceous detritus.

3.3. Hydrocarbon

3.3.1 Mud Gas Readings

The gas detection equipment was operated from surface to TD.

A background gas of nil to 20 ppm C1 was relatively stable in the drilling mud until the 9-5/8" casing point at 453m.

From 453m to 700m hydrogen contamination associated with the 9-5/8" casing and cementing gave anomalous mud gas readings.

From 700m to 1256m the background mud gas stabilised at half a unit (100 ppm C1). This level of mud gas can be attributed to the action of the drilling bit on low levels of thermally immature carbonaceous detritus within the rock sequence.

From 1256m to 1414m the addition to paraformaldehyde to the mud system gave anomalous mud gas readings. While the cause of these high gas readings was quickly established and the practice of adding paraformaldehyde stopped soon after, the effect of the contaminant was, unfortunately, quite long lasting. It is impossible to say that all the high gas readings in this interval were due to the mud contaminant, but none of the primary targets were penetrated in this interval.

The background mud gas readings stabilized at 1 to 2½ units C1 (200 - 500 ppm C1) from 1414m to 1709m, again reflecting the age and depth of carbonaceous detritus in the sediment and the action of the bit on that sediment.

From 1709m to 1741m the total gas levels in the mud steadily rose from 2½ units to 10 units. In addition the levels of C2 and C3 rose to an appreciable level for the first time in the well. The maximum recorded levels in this interval were 1850 ppm C1, 105 ppm C2 and 35 ppm C3 at 1741m. The amounts of C4 and C5 were negligible. The rock lithology was a sandy claystone with only a small percentage of carbonaceous detritus. It is believed that these high gas levels were largely due to leakage of gas from the interval below.

From 1741m to 1764m the mud gas attained the highest level for the entire well. Over the zone 1741m to 1760m the total gas reached a maximum of 550 units, the chromatographic breakdown of which was 101,350 ppm C1 (94.29%), 4,620 ppm C2 (4.30%), 1,210 ppm C3 (1.13%), 145 ppm iC4 (0.13%), 130 ppm nC4 (0.12%) and 27 ppm C4 (0.03%). No fluorescence was observed in this interval. Over the zone 1760m to 1764m the total gas levels dropped to 330 units, but the percentage of heavier gases increased 53,000 ppm C1 (86.42%), 4,740 ppm C2 (7.73%), 2,350 pm C3 (3.83%), 460 ppm iC4 (0.75%), 540 ppm nC4 (0.88%) and 240 ppm C4 (0.39%). This interval was also associated with up to 2% patchy oil fluorescence (see Section 3.3.2).

A cased hole drill stem test was performed over the interval 1743.5m to 1758.5m and a small amount of gas was recovered (See Section 2.4.3 and Appendix 10).

From 1764m to 1918m (TD) the mud gas levels were high but erratic. The average total gas for this zone was 30 units, largely C1 but with minor amounts of C2, C3 and C4.

3.3.2 Sample Fluorescence

Minor oil fluorescence was observed in cuttings from the interval 1760m to 1764m. The rock lithology was a Ferruginous Sandstone, medium to dark brown, medium to dark yellow orange, mottled in part;

very fine to very coarse, dominantly medium grained; rounded; poorly sorted lithics; dominantly iron oxide pellets with minor quartz grains, abundant argillaceous and silty matrix, trace glauconite, trace pyrite, very poor visual porosity. These samples had between 0-2% patchy, dull, orange fluorescence with a very rare, very weak, dull yellow cut fluoescence. A number of sidewall cores were taken over this interval, some of which also showed oil fluorescence (see Appendix 4).

Oil fluorescence was not observed in any other portion of the well.

Oil staining and significant odour was not observed in any portion of the well.

4. GEOLOGY

4.1 Structure

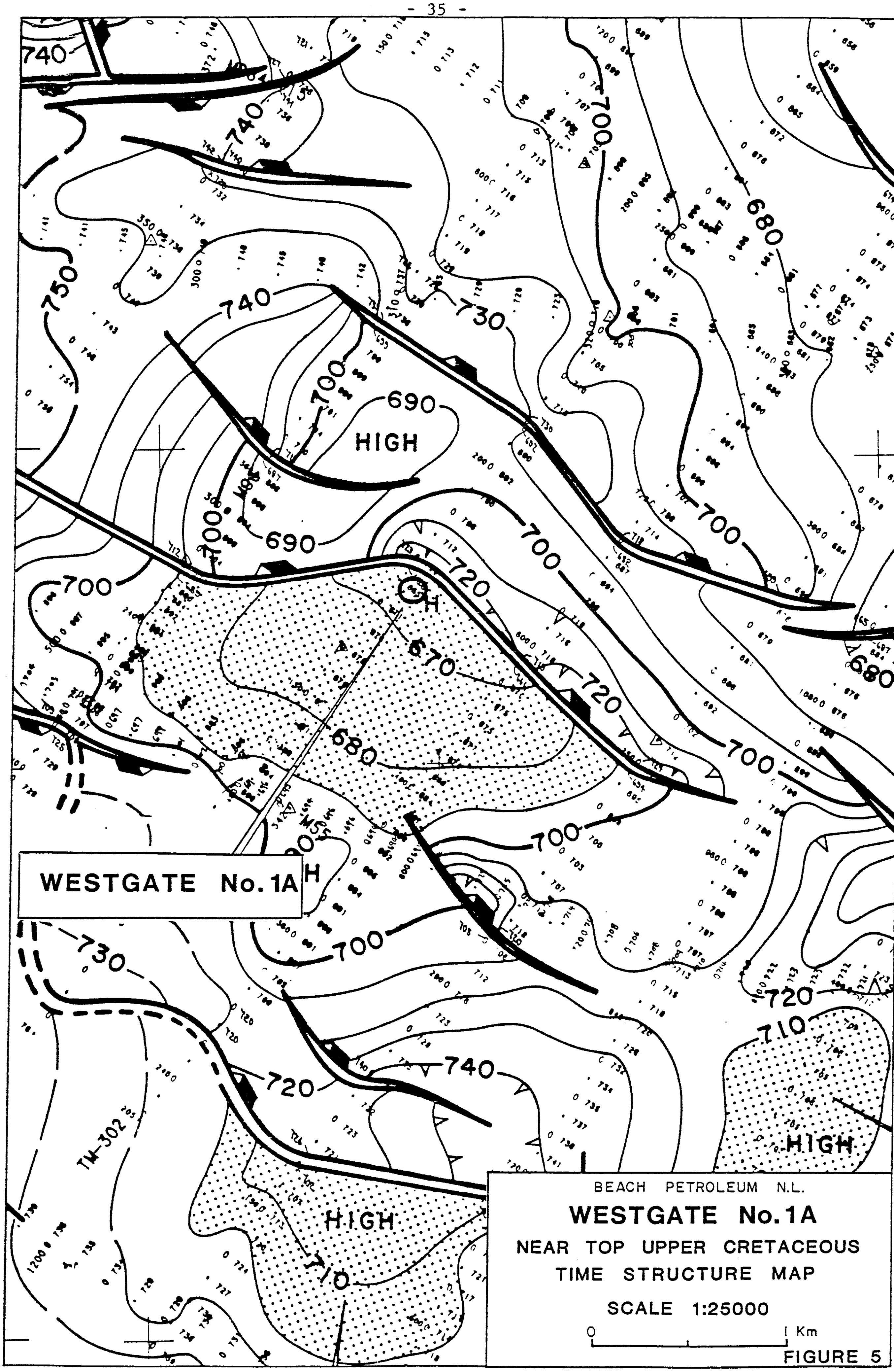
4.1.1 Seismic

The Westgate prospect was defined by the 1984 Beach/Bridge Timboon (TM) Seismic Survey and the 1985 Beach/Bridge Timboon Extension (TME) Seismic Survey.

At depth the feature is an asymmetric horst block bound by NW-SE trending normal faults. The south bounding fault terminates in the Upper Cretaceous but closure is observed against the north bounding fault up to the basal Tertiary level (see Figure 5 and Figure 6).

This type of structural style is not uncommon in the Otway Basin but has rarely been tested by the bit because the highest points of the traditional primary targets are usually offset by a significant horizontal distance. In this case the Waarre Formation is offset by some 390m to the north of the Pebble Point Formation.

In order to maximise the potential of this exploration well the borehole was deviated by the appropriate amount to intersect the Pebble Point Formation and the Waarre Formation at their highest structural points. At Westgate, the nature of the structure suggests that any porous interval (with a suitable cap rock and lateral seal) between the primary targets, would also be within structural closure. Westgate No. 1A was spudded 40 metres SE of shotpoint 163 on seismic line TME85-400. The borehole was deviated to intersect the Pebble Point Formation at shotpoint 172 on TME85-400 and the Waarre Formation at shotpoint 185 on the same line (see Figures 7 & 8).



BEACH PETROLEUM N.L.

WESTGATE No. 1A

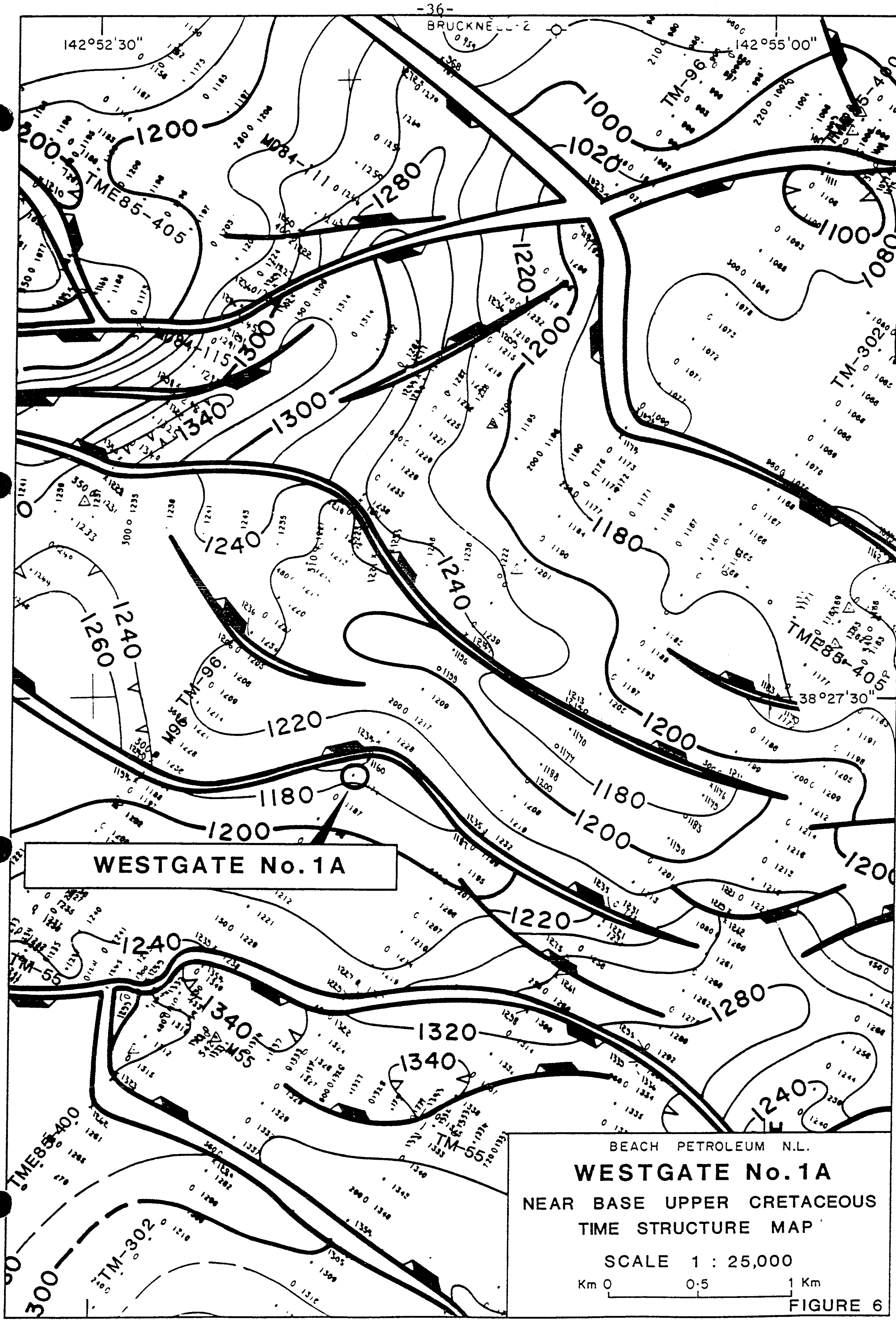
NEAR TOP UPPER CRETACEOUS

TIME STRUCTURE MAP

SCALE 1:25000

0 1 Km

FIGURE 5


142°52'30"
142°55'00"
BRUCKNELL-2
WESTGATE No.1A
38°27'30"
TME85-405
TM-96
TM-302
TM-55
TME85-400
MD84-111
MD84-115
BEACH PETROLEUM N.L.
WESTGATE No.1A
NEAR BASE UPPER CRETACEOUS
TIME STRUCTURE MAP
SCALE 1 : 25,000
Km 0 0·5 1 Km
FIGURE 6

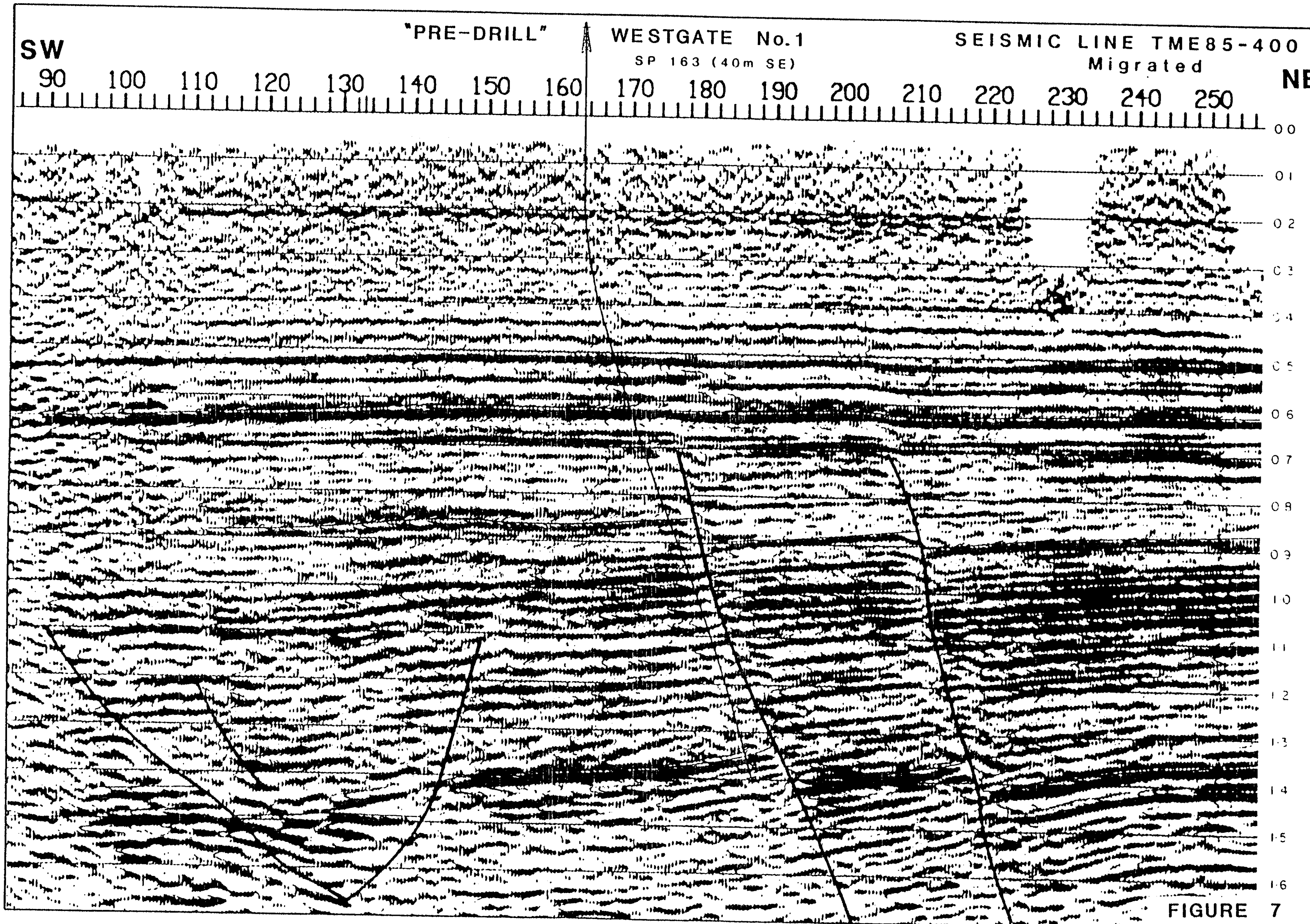
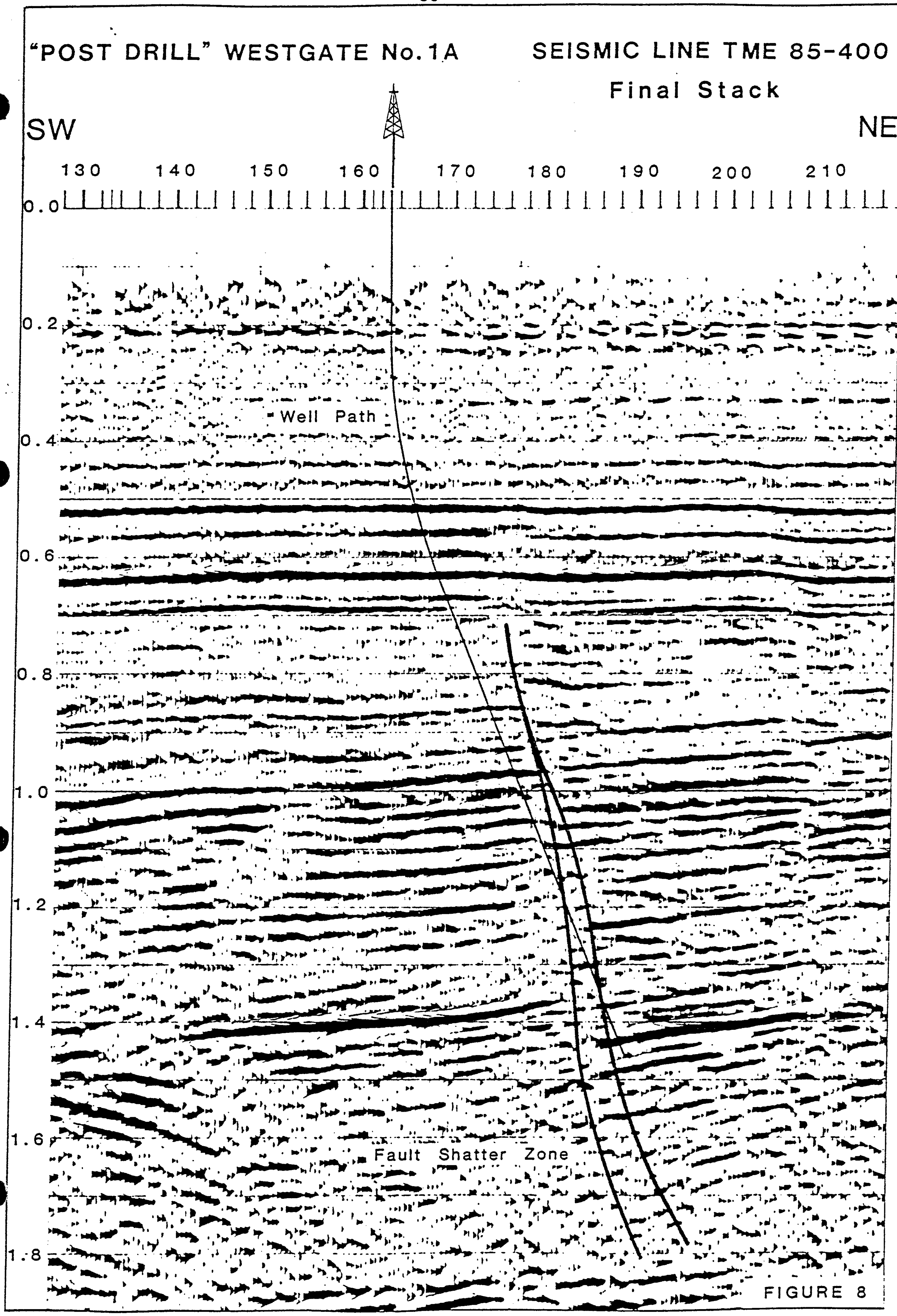

"PRE-DRILL"
WESTGATE No.1
SP 163 (40m SE)
SEISMIC LINE TME85-400
Migrated
SW
NE
90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
0·0 0·1 0·2 0·3 0·4 0·5 0·6 0·7 0·8 0·9 1·0 1·1 1·2 1·3 1·4 1·5 1·6

FIGURE 7


"POST DRILL" WESTGATE No.1A
SEISMIC LINE TME 85-400
Final Stack
SW
NE
130
140
150
160
170
180
190
200
210
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
Well Path
Fault Shatter Zone
FIGURE 8

The velocity survey at Westgate No. 1A suggests that at Pebble Point Formation level the original interpretation of the 1984 TM and 1985 TME seismic surveys was largely correct and that the difference between prognosed and actual formation tops (see Figure 3) can be explained by a slightly different velocity gradient at Westgate No. 1A than at nearby wells.

Figure 8 shows the well path on TME85-400 (unmigrated). It is clear that the bore hole passed through the north bounding fault shatter zone and terminated on the downthrown side of this fault. This explains the depth discrepancy between prognosed and actual Waarre Formation and the extra Nullawarre Greensand, Belfast Mudstone and Flaxmans Formation penetrated by the bit. The Flaxmans Formation gas is contained within the seismically unresolvable shatter zone. This interpretation suggests that Westgate 1A was not a valid test of the Waarre Formation structure.

4.1.2 Dipmeter

A Schlumberger Stratigraphic High Resolution Dipmeter Tool was run over the interval 1918m to 847m. Good results were achieved by the Mean Square Dip (MSD) processing technique.

In terms of established formational boundaries, the key MSD elements are as follows:

- Eumeralla Formation (1918m - 1852m)

  The dip pattern is consistent with a variety of sedimentary structures. Structural dip is difficult to determine because thick shale units are absent in this portion of the Eumeralla Formation. The average dip is at 15° to the southwest.

- Waarre Formation (1852m - 1813m)

The Waarre Formation is clearly separated by an unconformity from the Eumeralla Formation. This unconformity has been overprinted by a mega "red" pattern (dip angle decreasing towards the top of an interval) which spans the interval 1790m to +1860m. The average dip is at 10° to the south-west.

- Flaxmans Formation (1813m - 1743m)

The lower 20 metres of the Flaxmans Formation has a dip pattern similar to that of the Waarre Formation (10° SW). From approximately 1790m to 1770m no dips can be recognized. From 1770m to 1743m the dip direction is on average still towards the southwest, but there are significant elements of northwest and southeast dip. The dip angle also shows considerable scatter with a range of 1° to 34° (average 20°).

- Belfast Mudstone (1743m - 1699m)

The Belfast Mudstone proved to have little regular dip trends at this level of investigation. Only 4 "tadpoles" are evident within this zone, all of which are of low confidence.

- Nullawarre Greensand Member (1699m - 1441m)

The Nullawarre Greensand section is the most structurally complex portion of the entire well. The basal 15 metres of the Nullawarre

Greensand has very little regular dip patterns (similar to the Belfast Mudstone of this well). From 1685m to 1635m, three distinct "red" patterns coalesce to form a "mega-red" pattern. The dip at the top of this mega pattern is 5° and at the base 30°. The dip direction is consistently towards the southwest. From 1635m to 1480m the dips are relatively consistently towards the southwest at angles between 20° and 30°. From 1480m to 1460m the dip pattern is generally towards the southwest but dip angles were scattered between 2° and 60°. From 1460m to 1450m dip direction has a strong northeast component with dip angles between 1° and 22°. From 1450m to 1441m the dip direction is west and southwest at an average of 5°.

. <u>Skull Creek Member</u> (1441m - 1359m)

The Skull Creek dip pattern is towards the west and southwest at an average of 5°. These dips appear to have been overprinted by a structural event evident in the Nullawarre Greensand.

. <u>Paaratte Formation</u> (1359m - 962m)

From 1359m to 1230m the dip pattern is consistent with a variety of sedimentary structures and possibly a number of small faults. The dip is towards the west and southwest at an average of 5°. From 1230m to 1200m the dip pattern is more irregular. The dominent trend is still towards the southwest but there are significant elements of north, east and southerly dip. The dip angle is erratic between 1° and 56°. From 1200m to 962m the dip pattern again reflects a variety of sedimentary structures. The dip is on average 5°, but the direction is strongly bipolar with southwesterly and northeasterly trends. The upper 50 metres of this interval shows increased irregularity in dip trend, similar to the 1230m - 1200m zone.

. <u>Pebble Point Formation and Basal Pember Mudstone</u> (962m - 847m)

The Pebble Point Formation and basal Pember Mudstone appear to be conformable. As distinct from the Paaratte Formation, the dip trend in this interval has a very strong northerly component. The magnitude is variable but on average 8°.

Considering the primary data in a more general way, without regard to formational boundaries the key structural elements are as follows:

+1860m to 1790m	Mega-red trend with southwest dip, with an unconformity at 1852m.
1790m to 1770m	No correlation points.
1770m to 1740m	"Bag of nails".
1740m to 1635m	Mega-red trend with southwest dip.
1635m to 1480m	Mega-green trend with southwest dip.
1480m to 1460m	"Bag of nails".
1460m to 1450m	Minor northeast dip.
1450m to 1230m	Variety of sedimentary structures with dominantly southwest dip.

1230m to 1200m	"Bag of nails".
1200m to 1020m	Variety of sedimentary structures with dominantly southwest dip.
1020m to 962m	"Bag of nails".
962m	Unconformity.
962m to 847m	Variety of sedimentary structures with dominantly northerly dip.

Many interpretations can be made on the above primary observations. Given the re-interpretation of TME-400 (Section 4.1.1) the simplest model is that the well bore passed through three down to the north normal faults, as shown in Figure 9.

The first fault is observed in the well path over the zone 1480m to 1460m and is responsible for the "bag of nails" dip pattern and a small amount of roll-over on the upthrown block near the fault zone (1460m to 1450m). Drag on the down thrown block is not observed (1635m to 1480m). The throw of this fault is probably in excess of 10m as indicated by the rollover trend.

The second fault of considerable magnitude is observed at 1635m. No rollover is observed in the upthrown block but drag is indicated by a "mega-red" trend from 1635m to 1740m. The throw of this fault is in the order of 50m.

BEACH PETROLEUM N.L.

WESTGATE No. 1A

PROJECTION OF WELL PATH ON A VERTICAL PLANE SW – NE

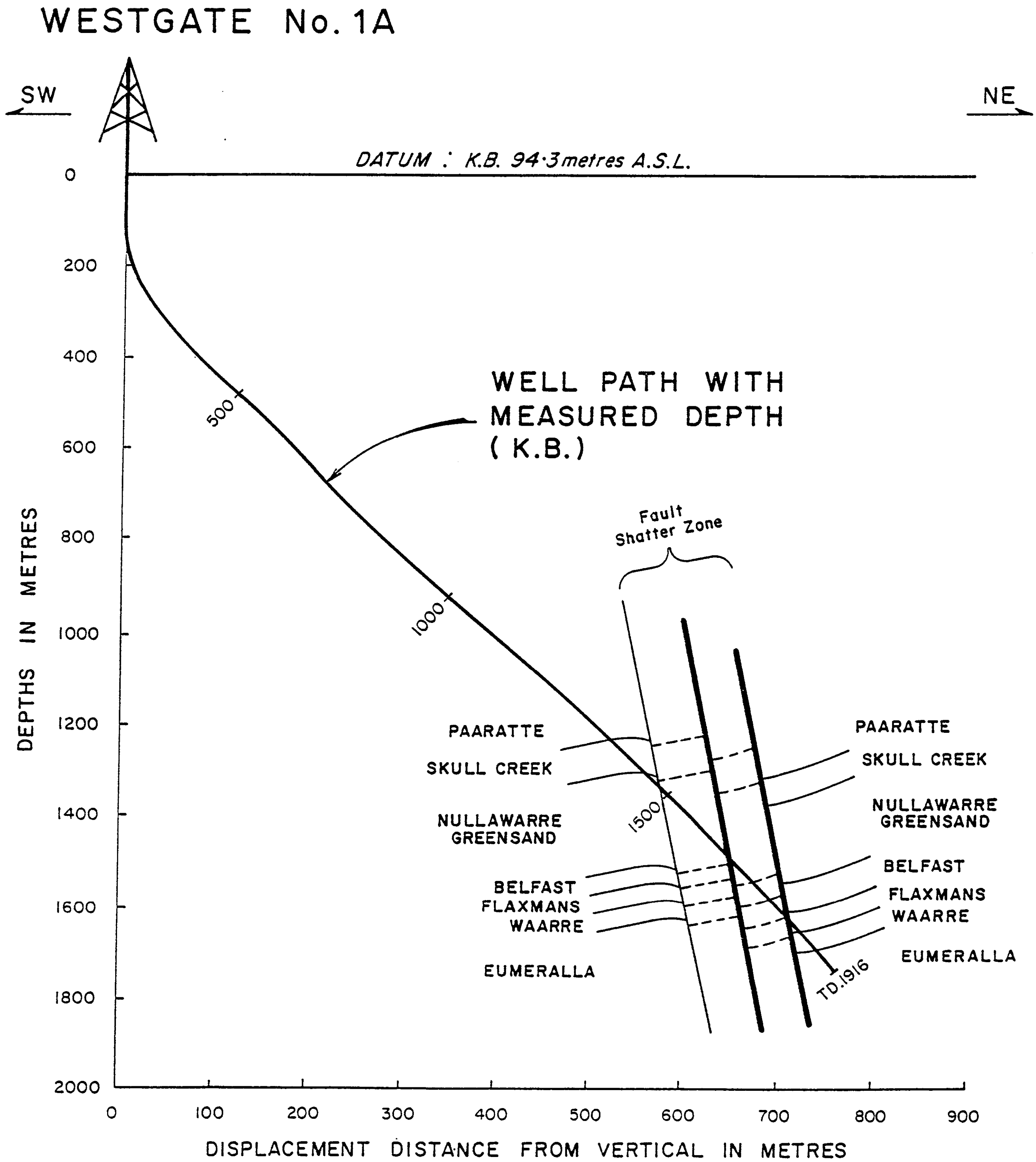


FIGURE No. 9

OT. 3467

The well bore passed through a third large fault in the interval 1790m to 1770m. This fault caused considerable disturbance on the upthrown block (1770m to 1740m) and was responsible for a large amount of drag on the downthrown block (mega-red pattern from 1790m to +1860m). The throw of this third fault is in excess of 70m.

Hence this model predicts that:

(a) The unusually thick Nullawarre Greensand observed in the well is in part due to faulting.

(b) The depth discrepancy between prognosed and actual basal Sherbrook units is largely due to penetrating three faults with a total throw in the order of 130m.

(c) Gas was recorded in the interval 1743m to 1767m was fault controlled with lateral seal provided by the Belfast Mudstone on the downthrown side of the fault.

The problems with this model are:

(a) No dips are recorded in the fault plane of any of these faults, ie. high angle fault planes are not observed, only inferred.

(b) The inconsistency of the nature of drag and rollover between the three fault blocks, ie. some blocks experience edge deformation and some don't.

(c) The absence of hydrocarbons at top Nullawarre Greensand level despite the lateral seal provided by the Skull Creek Member, ie. a similar structural trap to the Flaxmans/Fault/Belfast which contained gas at depth is dry in younger sequences.

(d) The north bounding fault as originally seismically mapped must have some components further south, which the well path intersected. See section 4.1.1.

Variations of the above model include:

(i) The 1480m - 1460m fault is a reverse fault with a diffuse mega-red pattern from 1460m - 1360m. This explains why the Nullawarre Greensand was shallower than prognosed and dry. However this scheme requires considerable shortening of some fault blocks which is not observed in the seismic data.

(ii) The disturbance at 1480m - 1460m and at 1635m is largely due to sedimentary structures, ie. the intervening section represents a prograding sand (barrier bar) sequence. The problem with this approach is that the dip trends are so regular over a long interval that some structural overprinting is indicated.

4.2 Porosity and Water Saturation

Wireline log evaluation was facilitated by a Schlumberger CSU at the wellsite. No conventional cores were cut and no formation fluid was recovered. Therefore all porosity and salinity values are log derived.

4.2.1 Pebble Point Formation (885m to 962m)

The Pebble Point Formation is a relatively argillaceous lithic unit, especially at the upper and lower boundaries of the formation. The best reservoir properties were developed over the interval 910m to 919m where shale corrected porosity approached 26% with approximately 10% clay. The formation is water saturated with salinities in the 1400 ppm NaCl equivalent range.

4.2.2 Paaratte Formation (962m to 1359m)

The Paaratte Formation consists of interbedded clean quartz sandstones and minor claystones. Good reservoir properties are found throughout this formation with shale corrected porosities at an average of 26%. The formation waters appear to be in communication with those of the Pebble Point as they are also in the 1400 ppm NaCl equivalence range. No significant hydrocarbon intervals are observed on the wireline logs.

4.2.3 Nullawarre Greensand Member (1441m to 1699m)

The Nullawarre Greensand is a thick sandy sequence with very little interbedded claystone. Log derived porosity estimates are consistently in the 27% to 30% range with little or no clay effect. It should be noted that cuttings and sidewall cores from this interval proved the presence of significant amounts of dispersive clay matrix in the rock and, as such, these porosity estimates are probably high. This formation is water saturated with salinities in the 1400 ppm NaCl equivalent range.

4.2.4 Flaxmans Formation (1743m to 1813m)

The Flaxmans Formation contains gas, as demonstrated by both gas levels in the drilling mud when the top of this interval was intersected and by a small amount of gas recovered from a cased hole drill stem test.

The rock is composed of a mixture of iron oxide pellets and clay with only secondary amounts of quartz and practically no carbonate or dolomite (see Appendix 9). As such conventional wireline log evaluation (which is calibrated on a quartz - limestone - dolomite system of framework elements) is not applicable to this particular rock system. Therefore a number of assumptions need to be made to get realistic porosity estimates and hence water saturation levels.

As can be seen from the density - neutron and formation cuttings logs, iron oxide pellets and small amounts of glauconite have a dramatic effect on the density, photoelectric effect and neutron traces. If however a density - neutron crossplot is generated over this zone, the picture becomes clearer (Figure 10). It is apparent from the spread of points on this plot that the rock system can indeed be viewed as having only two principle components, one of which plots near RHOB = 2.55 and NPHI = 35, and the other which plots near RHOB = 3.0 and NPHI = 65. The "cloud" of points between these end-points reflects the relative percentage of each component and the porosity. One end-point is probably best considered as a mixture of kaolinite (RHOB = 2.41, NPHI = 37) and glauconite (RHOB = 2.54, NPHI = 38) and is effectively the clay point. The other end-point is approximated by limonite (RHOB = 3.59, NPHI = +60) but because of the wide chemical variation of this mineral (and hence RHOB and NPHI values) it is best to consider this end-point as simply iron oxide. Using these two

BEACH PETROLEUM N.L.

WESTGATE No. 1A

DENSITY - NEUTRON CROSSPLOT
1780·03-1739·97 m (FLAXMANS FORMATION)
Z AXIS IS THE FREQUENCY

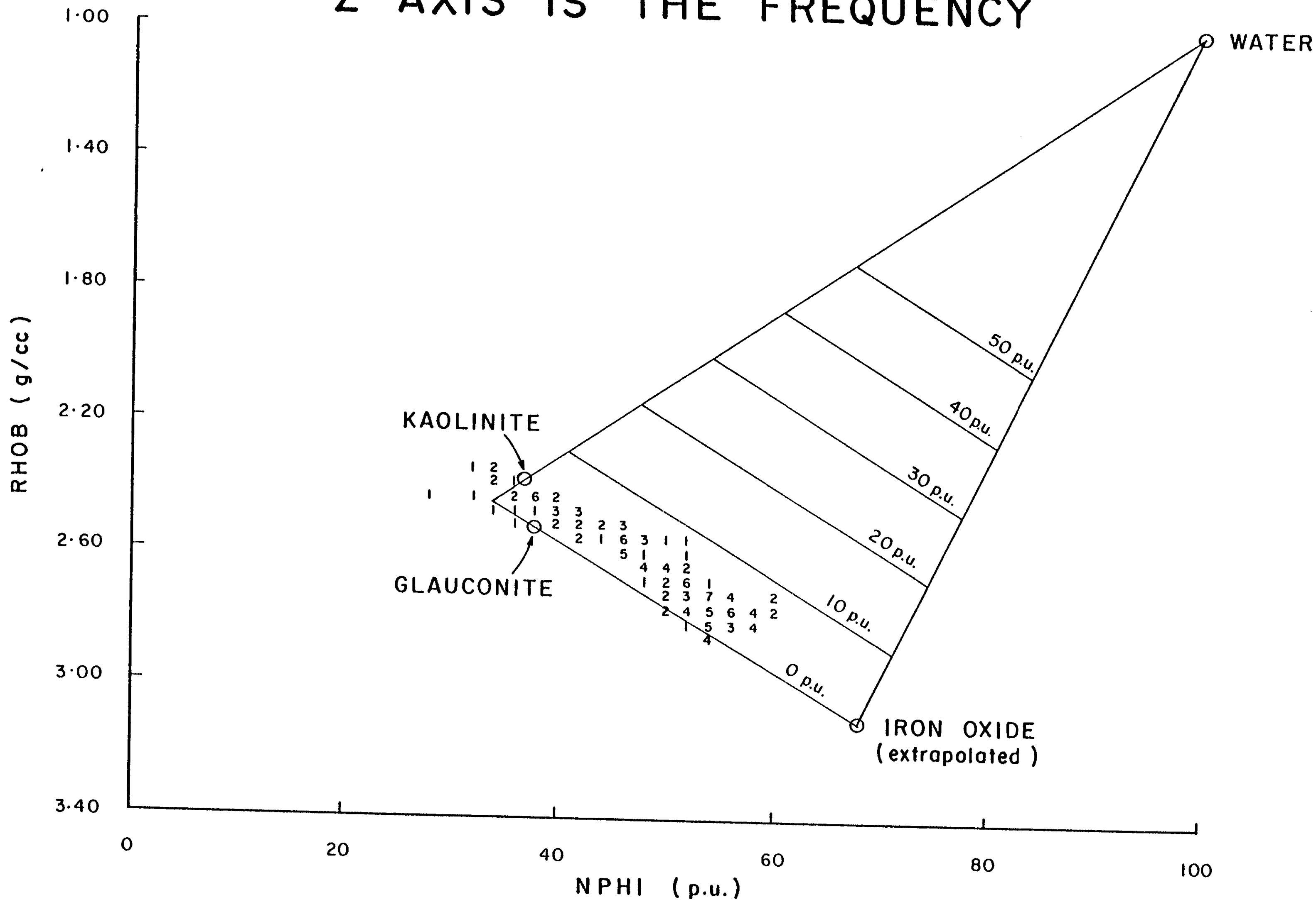


FIGURE No. 10

OT. 3468

end-points and water as the porosity control (and without applying any gas effect correction to the neutron) it can be shown that porosity is at best 9% and more probably less than 7%. This porosity estimate agrees well with visual porosity estimates on sidewall cores.

Another approach to solving for porosity in this unusual rock type is to utilize the sonic response. The key to this approach is finding an acceptable matrix travel time which approaches the expected porosity range from visual examination of the rock. This method was used in the Cyberlook Pass I and II with qualified success. Three values of matrix travel time were used, 60 μs/ft, 55 μs/ft and 48 μs/ft, all of which are in the established range of values for an iron oxide. All three gave very high effective porosity (and therefore erroneous) estimates in the zone of interest. These high estimates are due in part of the difficulty of using the Spontaneous Potential log as a clay indicator. However, using these high porosities, water saturation calculates to be in the 90% range, suggesting that very little hydrocarbon could be "seen" by the logs.

In summary, wireline logs cannot be easily interpreted in the odd rock type of the Flaxmans Formation at Westgate No. 1A. A great number of assumptions have to be made to get "sensible" results or at least an interpretation that is in accord with cuttings and sidewall core descriptions. Given that the assumption of a two principle component rock system is valid, then rock porosity is less than 7% in the zone of interest and water saturation is high.

4.2.5 Waarre Formation (1813m - 1852m)

The Waarre Formation is a sequence of relatively clean, thin, quartz sandstone with interbedded claystone. Effective porosity is between 20% and 25%. This interval is water saturated with salinities in the 18,000 ppm NaCl equivalent range.

4.3 Maturation and Source Rock Analysis

Vitrinite reflectance estimates (Rv max) and total organic carbon analysis (TOC) were carried out on seven sidewall core samples. In addition, five sidewall core samples were palynologically examined to estimate maturation and source potential. (See Appendix 7 and 8.)

These samples were selected from the Eumeralla Formation through to the Pember Mudstone Member, with special emphasis on the basal sequences.

4.3.1 Maturation/Organic Type

Vitrinite reflectance determination results were in general disappointing. Only two samples contained enough dispersed organic matter to yield reliable counts (Waarre Formation at 1832.5m and Pember Mudstone Member at 881.5m). Both samples from the Eumeralla Formation had very low levels of dispersed organic matter and in the samples from the Flaxmans Formation only rare levels of inertinite were present, vitrinite and exinite were absent.

From the few data points that were available it can be suggested that the Waarre and Eumeralla Formations are within the onset of the oil generation zone (Rv maximum 0.5% to 0.7%) and that the Pember Mudstone is immature (Figure 11).

All samples within the oil generation zone were dominated by inertinitic dispersed organic matter with only secondary or absent vitrinite and exinite. Hence these units cannot be considered as having good source potential, although rare green fluorescing ?oil droplets were noted in one Eumeralla Formation sample.

The palynological data supports this finding. Maturation levels over the basal zone are described as early mature to mature and as having only poor or limited oil source potential.

4.3.2 Total Organic Carbon

The sidewall core sample from the Pember Mudstone Member gave a TOC value of 2.35% which suggests good source potential for this rock. However, as the level of exinite in the sediment is low, the potential is mainly for gas.

TOC values for the Waarre Formation also categorise this formation as having good source potential. Again the organic type suggests that this potential is for gas.

The Eumeralla Formation samples had a very low yield of TOC, which suggests only a very poor hydrocarbon potential.

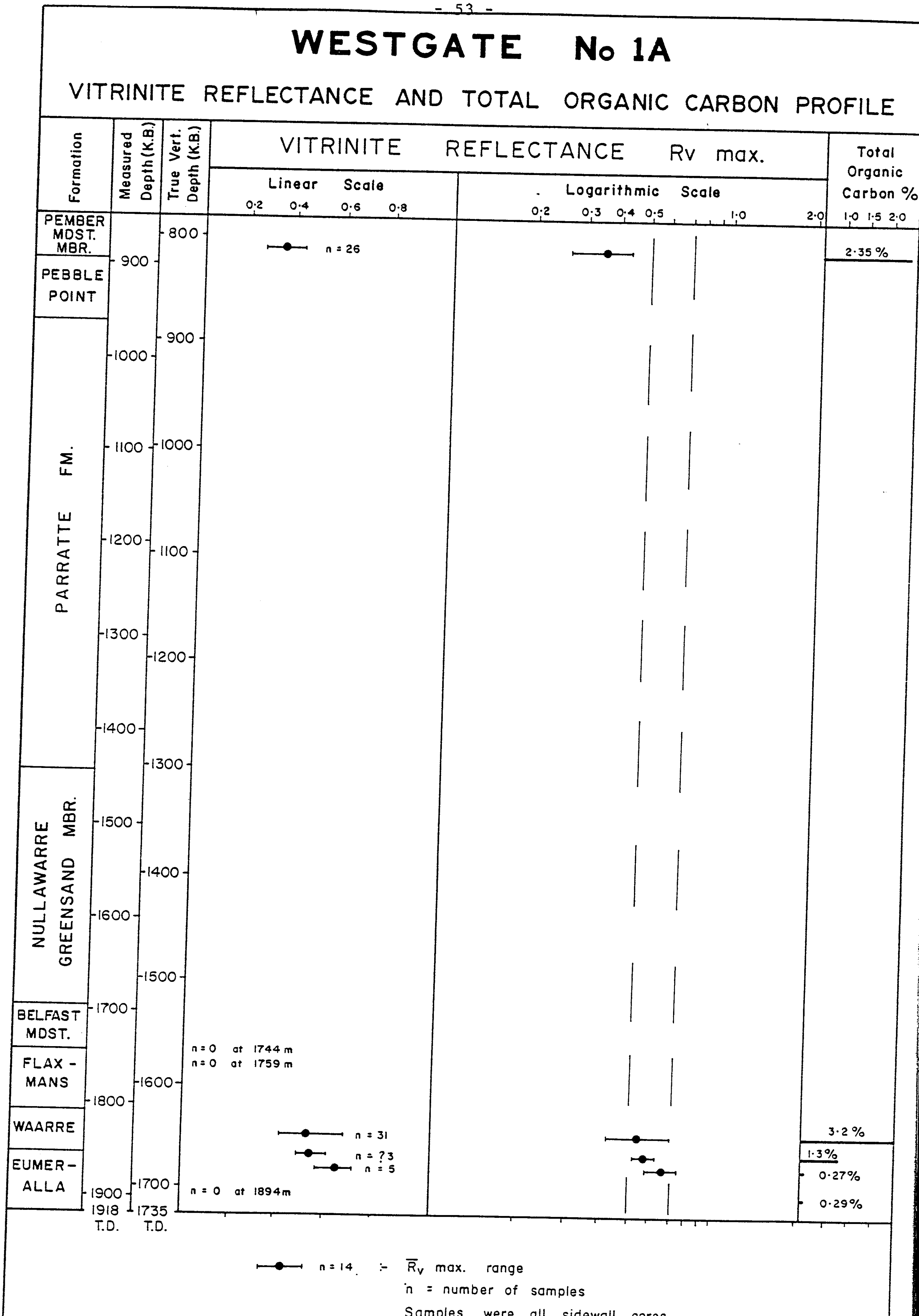


FIGURE No. 11

OT. 3452

4.4 Relevance to Occurrence of Hydrocarbons

The good gas show in the Flaxmans Formation at Westgate No. 1A attests to the effective combination of structures with down to the north normal faults and Belfast Mudstone cap rock.

Source rock and maturation studies suggest that although the basal Sherbrook Group and the top Otway Group intersected at Westgate No. 1A are most probably within the onset of oil generation maturation phase, the potential for hydrocarbons is low. This result was surprising since portions of the Eumeralla Formation from other wells in the basin have proved to have at least 'fair' oil potential. Hence it is reasonable to assume that the observed hydrocarbons at Westgate No. 1A have been sourced from deeper or more distant rocks.

Given that the observed hydrocarbon accumulation at Westgate No. 1A is not derived "in situ' then it follows that adequate migratory pathways for hydrocarbons must exist. Likely pathways are via down to basin faults and/or along the mid-Cretaceous unconformity.

Gas in the Flaxmans Formation presents a hitherto unrecognised potential reservoir. Low porosity and questionable permeability however downgrades the quality of the reservoir at Westgate No. 1A. Structural interpretation suggests the gas lies in a seismically unresolvable fault shatter zone. The dipmeter interpretation presents a more 'typical' structural trap with vertical and lateral seal provided by the Belfast Mudstone, within the fault zone. It is clear that a well further to the south would intersect the Waarre Formation in a structurally higher position.

APPENDIX 1

Details of Drilling Plant

RICHTER DRILLING PTY. LTD.

NATIONAL 80B - RIG NO. 8

DETAILS OF DRILLING PLANT

RICHTER DRILLING PTY. LTD.

NATIONAL 80B - RIG NO. 8

DRAWWORKS:	National 80B, 1¼" Drill Line. National type B1 Catheads, Parmac Hydromatic brake, driven off compound.
POWER:	3 each Superior PTDS6, each rated at 600 HP at 900 RPM.
COMPOUND:	National B24, 3 Section.
MUD PUMPS:	2 each National 9-P-100 Triplex 1000 HP 6-3/4" x 9¼" equipped with 6¼" liners and pistons with hydril K20-5000 pulsation dampeners. Both with independent drive - CAT D399TA industrial engines.
MAST:	Lee C. Moore, 142 ft. 860000 lbs. capacity. 1 x 60" - 5 x 48" sheaves in crown.
SUBSTRUCTURE:	Main substructure 10'6" high, plus pony substructure 11 ft. high for total height of 20'6". Motor substructure, total height 12' high composed of three subs, 5' plus 4'9".
MATTING:	1 set sectionilized hardwood matting.
ROTARY TABLE:	National C275, 27½"
HOOK BLOCK:	National Type G, 350 ton.
SWIVEL:	Ideal RB3
KELLY DRIVE:	Baash Ross, Type 2 RCH 6

Cont'd.

MUD AGITATORS:	2 "Lightnin" Mixers 2 Brandt MA 7.5
MUD TANKS:	Shaker 37' x 8' x 4'6" Intermediate tank 34' x 8' x 5' Suction tank 37' x 8' x 5' 750 BBL capacity
SHALE SHAKER:	Brandt Dual Tandem
DEGASSER:	Drilco Standard Pit
DESILTER:	Pioneer 12 x 4" Cones, with pump
GENERATING PLANT:	2 Cat D3408 Generator sets
CHOKE MANIFOLD:	3" x 5000 psi wt 2" H2 chokes
BOP'S & ACCUMULATOR:	• Annular, Stamco 13-5/8" 5000 psi • 2 - Cameron 13-5/8 x 5000 psi U Type • Accumulator, koomey 35120-35, 12 bottles • Hydril 10000 psi Upper Kelly Cock • Gray inside BOP, 4½" XH • Hydril Lower Kelly Cock
DRILLING RECORDER:	• Martin Decker 6 pen • Pit Volume/Automatic Driller/Flo Sho/Stroke Counter/Rotary RPM/Rotary Torque
RIG LIGHTING:	Hutchinson system of 48" double tube fixtures.
COMPRESSORS:	• 1 x Atlas Copco BT4 (on compound) • Sullair Rotary compressor (elec driven)
WELDING AND CUTTING:	• Lincoln model 400AS electric welding machine. • Oxy and acetylene cutting equipment
MUD LAB:	Baroid model 821
DEVIATION SURVEY:	Totco unit No. 6, 8° double recorder

Cont'd.

KELLY: 5¼" Hex, 4½" IF Pin, 40 ft long, 37 ft working space.

DRILL PIPE:
10000 ft 4½" OD, 20 lb/ft.
Grade E, Range 2
15 joints heavy wate drill pipe 42 lb/ft.

PUP JOINTS: 1 x 5' - 1 x 10' - 1 x 20' GR "G" 4½" OD

DRILL COLLARS:
12 x 8" OD, 6-5/8" API Reg
24 x 6¼" OD, 4½" XH

HANDLING TOOLS:
- Power tongs, Farr 13-3/8
  Jaws for 7", 9-5/8" and 13-3/8"
- Varco SSW10 Spinning Wrench

TONGS:
BJ type B with lug jaws, 3½" to 13-3/8"
BJ type SDD with jaws for 8½" to 12"
BJ/Wilson for 20" casing

ELEVATORS:
BJ type BB 275 ton for 4½ DP
Elevators and single joint elevators for:

5½"	casing
7"	"
9-5/8"	"
13-3/8"	"
20"	"

Varco type HS spider for 20" casing.

SLIPS:
- Varco SDML slips for 3½" & 4½" Drill Pipe
- Drill collar slips, DCS-R
- Casing slips, CMXL

FISHING TOOLS:
Bowen model 150 overshots
- 11-3/4" OD, FS
- 9-5/8" OD, FS
- 8-1/8" OD, FS

Bowen type Z hydraulic jars, 6¼" OD

Bowen reverse circ junk basket, 8-1/8" OD

1 Junk Sub for 8½" hole
1 Junk Sub for 12¼" hole
1 Bowen magnet 7" OD #32300

Cont'd.

GENERATOR HOUSE:	40' x 10' x 9'
MECHANICS WORKSHOP:	36' x 8'6" x 9'
FUEL TANK:	6000 gallons, skid mounted
WATER TANK:	400 barrel
WATER PUMP:	Southern Cross 2 x 1½" powered by Petters diesel.
JUNK BOX:	21' x 7' x 6'4"
TOOL HOUSE:	27' x 9' x 9'
DOGHOUSE:	26' x 9' x 9'
TRANSPORT:	1 Oilfield rig truck 1 Toyota Landcruiser Utility 4WD 1 Toyota Landcruiser Wagon - 4WD (11 seater) 1 Clark 504 Forklift

APPENDIX 2

Summary of Wellsite Operations

SUMMARY OF WELLSITE OPERATIONS

The Westgate -1 and -1A drill site was prepared by the earthmoving contractor Gordon Rudolph of Curdievale Road, Timboon.

Prior to the rig arriving a 26" conductor pipe had been installed to 9.0m KB.

The Richter Rig 8 was rigged up and Westgate -1 was spudded at 0300 hrs on the 23rd February 1986.

A 12¼" hole was drilled to 126m, at which point the hole was deviated to the north east by the use of a Dyna Dril.

At 204m MD, an angle building bottom hole assembly was used to build the deviation to 28-3/4° and maintain the north easterly direction.

At 456m MD Schlumberger ISF/BHC wireline log was run, after which 9-5/8" casing was run and cemented.

The BOP's were installed and all functions were tested to 1000 psi.

An 8½" hole was then drilled to 458m MD at which point a leak-off test established a formation integrity in excess of 14.55 ppg.

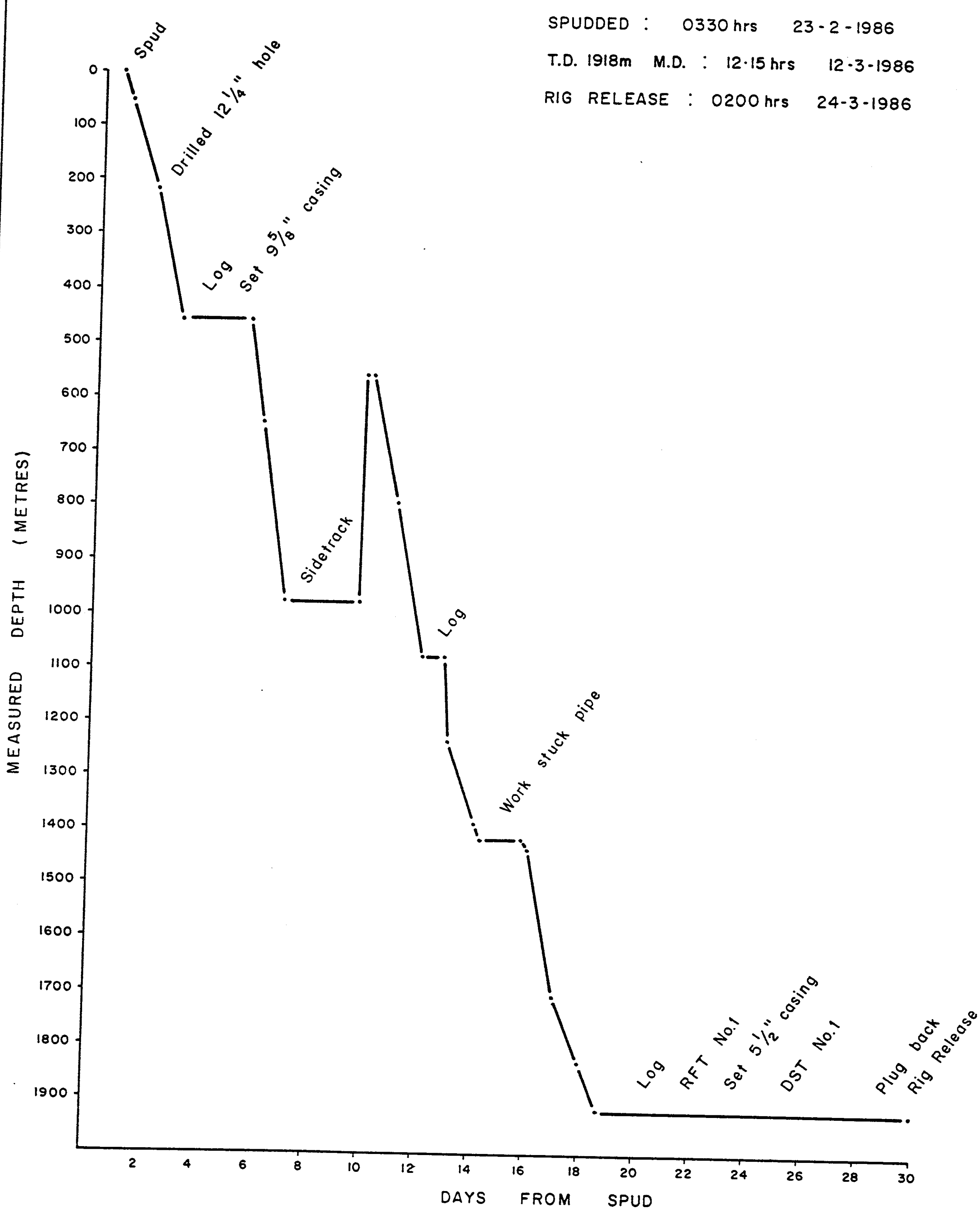
The 8½" hole was then continued to 972m MD when mechanical problems necessitated the hole to be plugged back to 554m MD.

The 8½" hole continued to 1144m MD with a bit change at 924m MD.

Schlumberger ISF/BHC/MSFL wireline logs were then run.

Drilling resumed with 8½" hole to 1414m MD when, tripping in after a wiper trip, the drill string became stuck with the bit at 1291m, MD. Milfree was spotted across the bottom hole assembly and the pipe was unsuccessfully jarred for 16 hrs. The drilling mud was then displaced with water and the drill string became free.

The 8½" hole was then continued to a total depth of 1918m MD with a bit change at 1704m MD.



BEACH PETROLEUM N.L.

WESTGATE No. 1A

ACTUAL PENETRATION PROFILE

Total depth was reached at 1515 hrs on the 12th March 1986.

The following Schlumberger wireline logs were then run; DLL/MSFL, LDL/CNL, SLS, SHDT, NGT, ML, WSS.0, CST and an RFT.

At this point 5½" casing was run and cemented and a cased hole DST was performed.

Cement plugs were then set over the intervals 1763.5 - 1713.5m ML, 896 - 846m MD, 423 - 377.3 m MD and 20 sacks of cement was placed in the casing.

The rig was released at 0200 hrs on the 24th March 1986.

WESTGATE NO. 1.

DST NO. 1: OPERATIONS REPORT

21.3.86.	16:00	Rigged up Halliburton surface equipment.
	18:29	Dropped Gearhart perforating bar.
	18:31	Perforating gun fired. Wellhead closed at Halliburton manifold with guage of range 230 psi.
	18:35	WHSIP : 5 psi
	18:40	: 8 psi
	18:45	: 9 psi
	18:50	: 10 psi
	18:55	: 10 psi
	19:00	Closed in on master valve. Nipple down Halliburton test head and commence nippling up Otis lubricator
	20:12	Completed nippling up Otis lubricator.
	20:14	Start RIH with Amerada gauges.
	20:30	Open well to flare through 3/4" choke. WHP: 0 psi, no air blow.
	20:00	POOH with pressure gauges. Wire on spool tangled. Slip and cut Otis slick line and rig up with overshot for drop bar.

	21:30	Spudded to work detonator. POOH No Bar. RIH to pick-up bar
22.3.86	02.00	Retrieve drop bar. Rig down Otis. Install lift sub.
	03:00	Pull packer free. Reverse circulate tubing to mud.
	03.30	Rig down test head and surface equipment.
	04:00	Circulate.
	08:00	POOH lay out TCP guns and test tools.

APPENDIX 3

Drilling Fluid Recap

Geofluids

DRILLING FLUIDS REPORT

FOR

BEACH PETROLEUM N.L.

WESTGATE #1 & #1A

OTWAY BASIN VICTORIA

PREPARED BY :

ANDRE SKUJINS
JOHN DANIELS

DATE :

APRIL, 1986

Geofluids Pty Ltd Drilling Fluids Milchem
A joint venture company with Milchem in Australia

443 Vincent Street, Leederville, Western Australia. Postal Address: Box T1746, G.P.O., Perth, W.A., 6001.
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Geofluids

C O N T E N T S

1. SUMMARY OF OPERATIONS

Westgate #1 was spudded on the 23rd February, 1986 using Richter Rig #8, and reached a total depth of 1916 m on 12th March, 1986.

12-1/4" surface hole was drilled with water to 126 m, where a high viscosity pill was circulated prior to tripping the bit. A dyna drill was run in the hole and the well was kicked off. After the Gellibrand formation was penetrated, the drilling fluid started to "mud up". Increasing water additions were required to minimise the viscosity.

At 204 m the dyna drill bit was pulled and a tooth bit run back in. Drilling continued to 456 m, where the hole was circulated clean. A three stand wiper trip was made, and the hole circulated clean again. The bit was pulled, and electric logs were run. 9-5/8" casing was then run and cemented, with good returns to surface.

While installing blow out preventers, the mud tanks were dumped, cleaned, and filled with water. The water was pretreated with Soda Bicarb and Paraformaldehyde.

After pressure testing, an 8-1/2" bit was run in the hole, the cement drilled out, and 1 m of open hole was drilled. A pressure integrity test was conducted, and drilling continued. While drilling, KCl, Milpac, Milzan and KOH were added to the water to bring the drilling fluid within specifications (ie. yield point 12-18 lb/100 sq.ft, fluid loss <9 mls, and pH 9.0-9.5) prior to penetrating the first zone of interest, the Pebble Point formation, at approximately 846 m.

While drilling, the pipe became stuck at 608 m. It was worked free, and drilling continued. At 972 m the bit was tripped. Tight hole was worked at 920 m, and at 718 m the pipe became stuck in the hole. The pipe was worked, and a Milfree/diesel pill was spotted around the drill collars and stabilizers. The pipe could not be worked free, and the pill was circulated out. A free point was run and the pipe was backed off. Jars and drill collars were picked up and run in the hole, and the fish was tagged at 652 m. The fish was jarred, and then the jars became stuck. The pipe was again backed off and a cement plug set at 584 m.

A new bottom hole assembly was made up and run in the hole and the plug was tagged at 554 m. The hole was sidetracked at this point, and drilling continued. A wiper trip at 764 m and a bit trip at 924 m experienced no hole problems.

At 1144 m a wiper trip was made prior to running a suite of electric logs. No problems were encountered. Drilling resumed, and while running back in the hole after a trip at 1256 m, the pipe became stuck 20 m from bottom. The pipe was worked, and finally came free. Tight hole was reamed to bottom.

1. SUMMARY OF OPERATIONS (Cont'd)

Drilling continued to 1414 m, where a wiper trip was made. The hole was good while pulling out, but while running back in, the pipe became stuck at 1291 m. The pipe was jarred, and a Milfree pill was spotted around the drill collars. Eventually, the mud was circulated out of the hole and displaced with fresh water. The pipe then came free, and the water was circulated out and displaced with mud. A trip out of the hole was then made with no hole problems. When running back in, 70 m of hole was reamed to bottom.

Drilling continued, and a bit trip was made at 1704 m. No problems were experienced while pulling out, but while running in the hole was tight at 1489 m and had to be reamed.

Drilling then continued to a total depth of 1916 m. A wiper trip was made, and pipe had to be pumped out and the hole reamed between 1643 m and 1641 m. No other problems were encountered, and the pipe was pulled out of the hole.

Schlumberger were rigged up and electric logs were run. Two wiper trips were made, and in the second trip, tight hole was reamed from 1843 m to total depth. An RFT tool was then run in the hole, but was unable to pass 497 m. A bit was run in and a bridge was reamed at 497 m, and the hole worked down to 534 m. Two stands were then run in to 589 m and the hole found to be in good condition. The pipe was pulled and the RFT tool was run back in. The tool could not pass a ledge at 533 m, and the bit was run back in the hole. The hole was reamed between 533 m and 599 m prior to running in to bottom. The hole was circulated and the pipe pulled out. The RFT tool was then run in successfully.

After logging was completed, the bit was run back in the hole. Tight hole was reamed between 1631 m and 1671 m. Another twelve stand wiper trip was made and the hole circulated clean. The pipe was then laid down.

5-1/2" casing was then run in the hole and cemented. 2-7/8" tubing was then run in the hole, and after the zone of interest was perforated, a cased hole test was conducted.

The hole was subsequently plugged and abandoned.

2. RECOMMENDATIONS FOR FUTURE WELLS

Westgate #1 was a deviated well and as such is not directly comparable to other wells drilled in the area. Most of the problems experienced in this well are a direct result of the well being deviated and would not be expected to reoccur in vertical wells drilled in the area. The formations drilled appear to present two distinct hazards to drilling directional wells. The interbedded formations have a tendency to enlarge by varying amounts and form ledges. In a deviated hole this has the potential to catch stabiliser blades and to form key seats. The large amount of permeable formations in the section presents a severe differential sticking hazard, even, as was shown in this well, at low mud weights and with a very low solids content fluid with good filter cake properties. Another hazard, difficult to quantify, is the difference in drilling techniques required to successfully drill a deviated well with a drilling crew experienced in drilling only vertical holes.

12-1/4" HOLE

This was drilled cheaply, and trouble free. No changes are recommended to the mud program.

ie: the use of high viscosity pills for hole cleaning while drilling the Port Campbell Limestone formation, and the Gellibrand Marl providing viscosity from native solids for good hole cleaning.

It is still recommended that if mud rings occur, KCl be used at approximately 3% w/v.

8-1/2" HOLE

This section of hole encountered problems with stuck pipe, One B.H.A. was lost, and on a separate occasion the pipe was stuck for approximately 28 hours.

The first occasion the pipe stuck was at 972 m. At the time, the mud properties were well within specifications. (density 8.9+, yield point 16; fluid loss 7.7; KCl 3.2%) The pipe may have stuck due to earlier inadequate hole cleaning resulting in a "beach front" effect. Mud properties were brought into line while drilling ahead, and it is recommended that the KCl polymer mud be premixed prior to drilling out 8-1/2" hole, so as to provide initial hole inhibition with KCl and better hole cleaning with an increased yield point from Milzan. Due to the small quantities of mud required for a reasonable quality premixed mud, the mud engineer can handle this. The yield point specifications were subsequently raised (from 12-18 to 16-20) and no further hole cleaning problems occurred.

2. RECOMMENDATIONS AND CONSLUSIONS (Cont'd)

8-1/2" HOLE (Cont'd)

The second instance of stuck pipe was at 1291 m in the porous Paaratte sandstone. The pipe was eventually freed after displacing the hole with fresh water. This suggests differential sticking. At the time the mud weight was 9.0 ppg, and could not be kept at a lower level without a large increase in water dilution and subsequent increases in mud cost. Rather, it is recommended that extreme care be taken to ensure that the pipe is kept moving.

Another problem encountered at this stage was that only 27 bbls of diesel could be spared to mix a Milfree pill. Of this, only 17 bbls was pumpable, and therefore was not enough to be totally effective, since both the drill collars and heavy weight drill pipe were stuck. Enough diesel should be available to ensure that at least all of the BHA can be exposed to the pill. Weighted spotting pills would also be beneficial in minimising migration of the pill.

Apart from these stuck pipe problems, no other mud related problems were encountered. Sand blinding of the shale shakers occurred, but almost no mud was lost since the shakers were partially bypassed and/or coarser screens were used. The rigs solids control set-up worked well, and this, in conjunction with the centrifuge, meant that the mud weight never exceeded 9.0 ppg.

It is recommended that a centrifuge be used whenever the mud weight is to be kept down. Low weight, low solids muds have many benefits especially keeping differential sticking problems to a minimum, and less mud dilution (together with a decreased product usage) is required with the centrifuge.

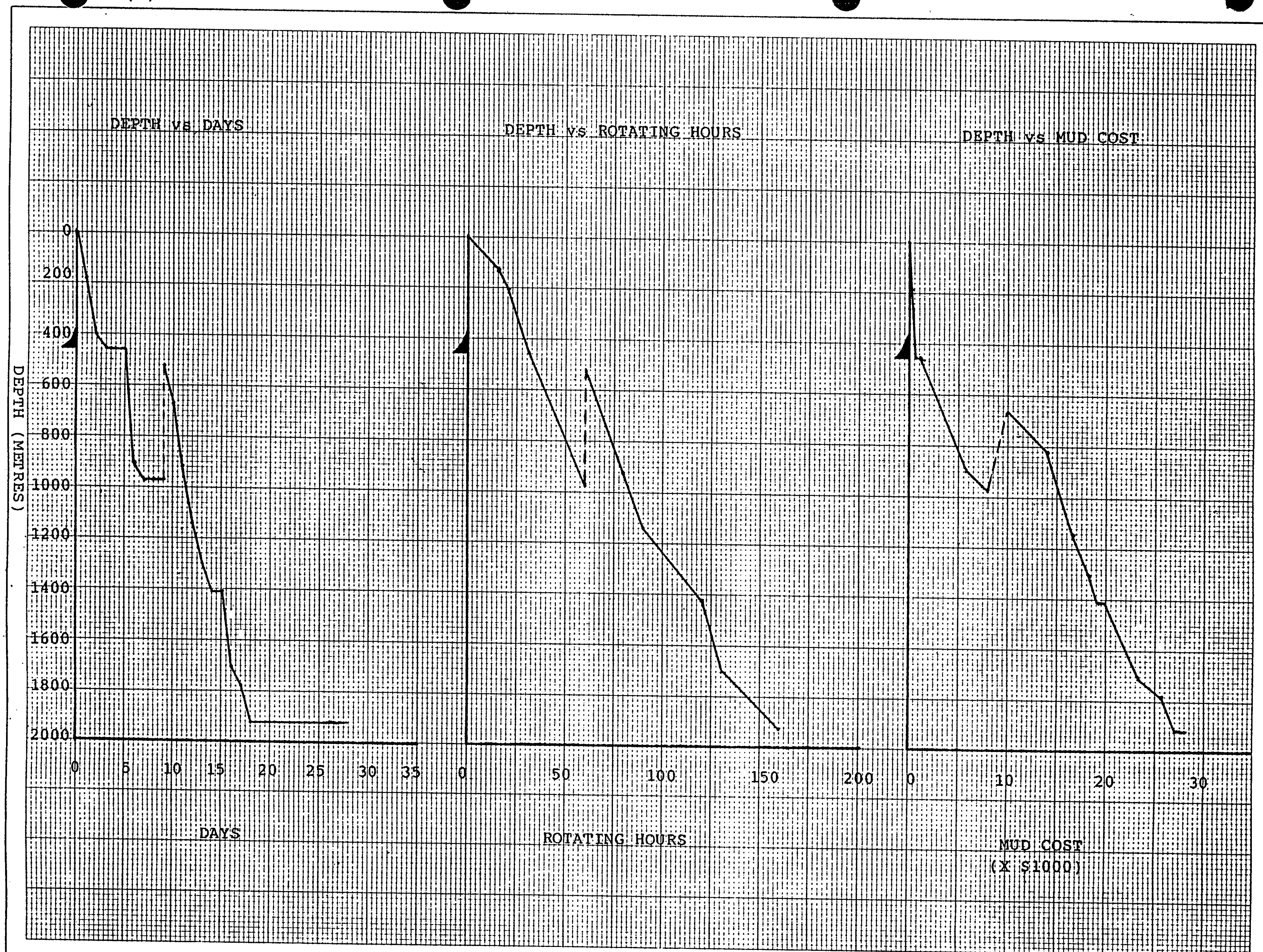
This section of hole was drilled relatively cheaply. 1879 m of 8-1/2" hole was drilled, with an interval mud cost of $27827, or $14.81 per metre. (This includes the plug backed section and sidetrack.) The low mud cost was facilitated by the use of reclaimed sump water when building volume. It had a concentration of about 2% KCl and a water loss of 20-25 mls. Although no problems were noticed with the reclaimed "water", care should be taken to ensure that excess solids are not introduced to the mud, and that a biocide be added to reduce the level of bacteria in the sump.

The level of KCl used in this mud (3-4%) seemed quite adequate due to the mainly inert formations drilled. A higher level does not appear justified for similar wells.

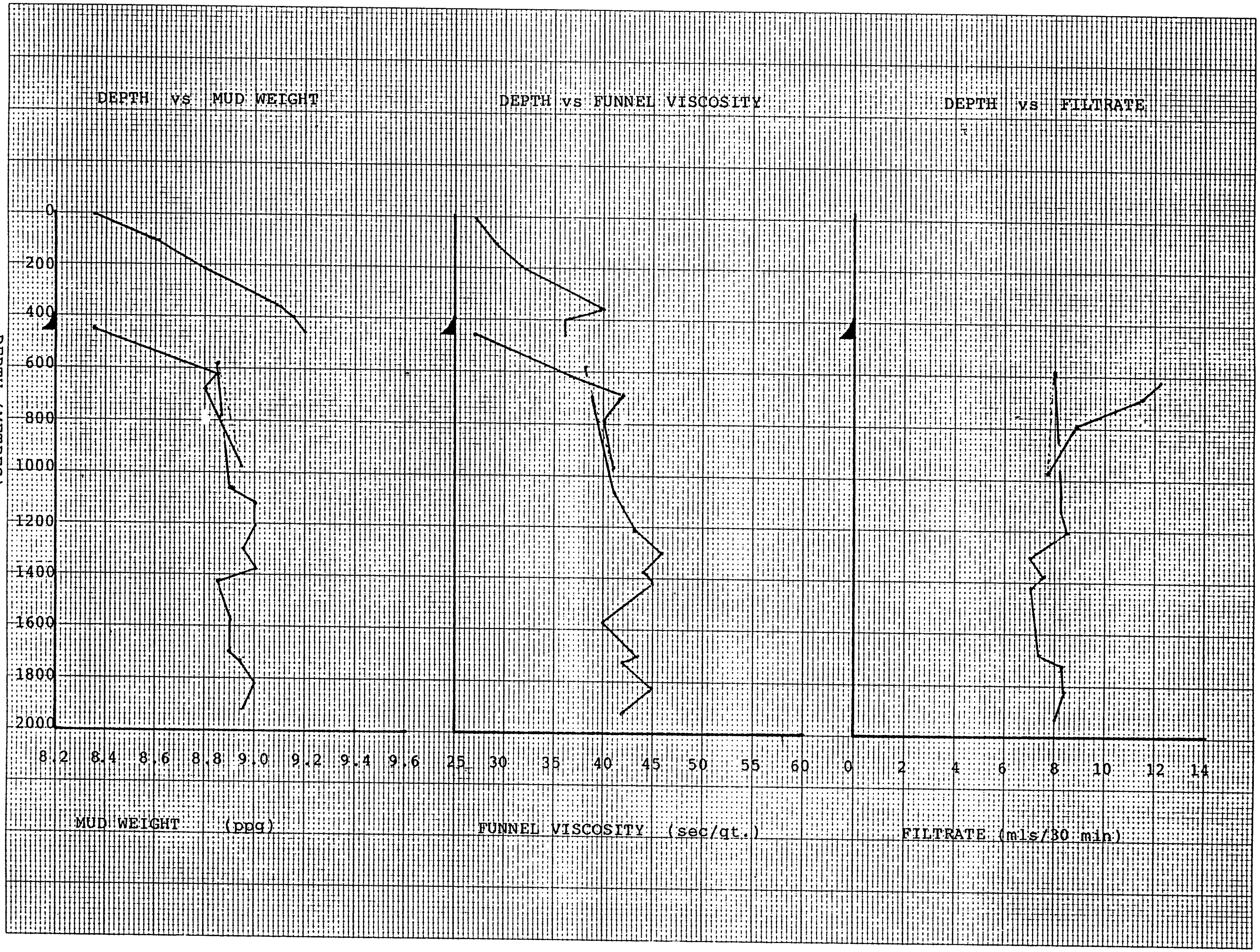
Although no corrosion coupons were being run on this rig, it is recommended that an oxygen scavenger such as Noxygen be used at all times, especially with a KCl based mud.

3. <u>COST ANALYSIS</u>

			12-1/4"			8-1/2"			TOTAL		
			0 m TO 456 m			456 m TO 1916 m			0 m - 1916 m		
PRODUCT	UNIT	UNIT COST	UNITS	COST	%	UNITS	COST	%	UNITS	COST	%
Barytes	50 kg	8.05				3	24.15	0.1	3	24.15	0.1
Caustic Soda	25 kg	22.37				10	223.70	0.8	10	223.70	0.8
KCl	50 kg	15.84				310	4910.40	17.6	310	4910.40	17.3
KOH	25 kg	32.29	1	32.29	6.2	39	1259.31	4.5	40	1291.60	4.6
Milfree	205 lt	721.50				2	1443.00	5.2	2	1443.00	5.0
Milgel	100 lb	14.02	35	490.70	93.8	11	154.22	0.6	46	644.92	2.2
Milpac	25 kg	78.33				107	8381.31	30.1	107	8381.31	29.6
Milzan	25 kg	222.41				48	10675.68	38.4	48	10675.68	37.7
Paraformaldehyde	50 lb	37.05				13	481.65	1.7	13	481.65	1.7
Soda Bicarb	40 kg	23.41				8	187.28	0.7	8	187.28	0.7
WD Defoam	25 lt	85.95				1	85.95	0.3	1	85.95	0.3
TOTAL INTERVAL COSTS $			522.99			27,826.65			28,349.64		
INTERVAL COST PER METRE			1.15			19.06			14.80		


DEPTH vs DAYS
DEPTH vs ROTATING HOURS
DEPTH vs MUD COST
DEPTH (METRES)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0 5 10 15 20 25 30 35
DAYS
0 50 100 150 200
ROTATING HOURS
0 10 20 30
MUD COST
(X $1000)

4 (ii)


DEPTH vs MUD WEIGHT
DEPTH vs FUNNEL VISCOSITY
DEPTH vs FILTRATE
DEPTH (METRES)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
8.2 8.4 8.6 8.8 9.0 9.2 9.4 9.6
25 30 35 40 45 50 55 60
0 2 4 6 8 10 12 14
MUD WEIGHT (ppg)
FUNNEL VISCOSITY (sec/qt.)
FILTRATE (mls/30 min)

5. FLUID PROPERTIES SUMMARY

5. FLUID PROPERTIES SUMMARY

MUD TYPE : F.W. NATIVE SOLIDS SPUD MUD
KCl POLYMER

INTERVAL : 0 - 456 m
456 - 1414 m
1414 - 1916 m

DATE 1986	DEPTH m	M.W. ppg	ECD ppg	VIS sec	PV cp	YP lb/100ft	GELS lb/100ft	pH	W.L. ml	FLOWLINE TEMP(C)	KCl (%)	Pf	Mf	Cl- ppm	Ca/Mg ppm	SAND %	SOL %	WATER %	MBC lb/bbl
23/02	95	8.6		29												.05	2.0	98.0	
23/02	150	8.7+		29										350	80	.25	3.0	97.0	
24/02	214	8.8		32	5	5	3/10							350	60	.25	3.5	96.5	
24/02	360	9.1		40	7	13	7/15							300	40	TR	5.5	94.5	
[illegible]4/02	400	9.1+		36	8	15	11/25							300	40	TR	6.0	94.0	
25/02	456	9.2		36	8	16	10/28							300	40	TR	6.0	94.0	
		NIPPLE UP BOP'S																	
28/02	618	8.8+	9.0	37	9	9	1/ 2	10.0	12.2	29	4.1	.15	.35	19500	140	.05	2.5	97.5	
28/02	674	8.8+	9.0	40	10	12	2/ 3	9.0	11.5		4.0	.08	.25	21000	160	TR	2.0	98.0	5.0
28/02	789	8.8+	9.0	40	10	12	2/ 3	9.5	8.8		3.7	.12	.30	19500	180	TR	2.0	98.0	
01/03	971	8.9+	9.1+	41	12	16	1/ 3	9.0	7.7	41	3.2	TR	.20	16500	280	TR	3.0	97.0	7.5
01/03	972	9.8+		38	11	13	1/ 2	9.0	9.1	40	3.9	TR	.22	21000	200	TR	3.0	97.0	
03/03	PIT	8.9		37	12	12	1/ 2	9.0	8.2		3.6	TR	.18	20500	220	TR	2.5	97.5	
03/03	584	8.8+		38	9	10	1/ 1	8.5	8.0		3.4	TR	.32	18000	240	TR	2.0	98.0	
04/03	648	8.8+		38	10	12	1/ 3	9.5	8.4		3.8	.25	.50	22500	280	TR	2.0	98.0	
05/03	792	8.8+		41	12	16	2/ 5	8.0	8.8	32	3.0	.18	.40	17500	220	TR	2.5	97.5	
05/03	878	8.9	9.1+	41	13	17	2/ 3	9.0	9.1		3.3	TR	.24	17500	260	TR	2.5	97.5	7.5
05/03	952	8.9	9.1+	41	14	16	2/ 6	9.0	9.0		4.2	.08	.25	20000	280	TR	2.5	97.5	
06/03	1058	8.9	9.1+	41	13	17	2/ 5	9.0	8.2	31	3.4	TR	.20	17500	280	TR	2.5	97.5	5.0
06/03	1120	9.0	9.2	42	15	16	2/ 3	9.5	8.2		3.6	.10	.50	18500	220	.25	3.5	96.5	
06/03	1144	9.0	9.3	45	16	21	2/ 5	8.5	8.6		4.4	TR	.32	22000	260	TR	3.0	97.0	5.0
07/03	1208	9.0	9.3	43	15	20	2/ 4	9.5	8.5	35	4.0	.12	.46	20500	200	TR	3.0	97.0	5.0
07/03	1304	8.9+	9.2+	46	17	22	3/ 6	9.0	7.0		4.2	.14	.54	23000	220	TR	3.0	97.0	5.0
[illegible]/03	1375	9.0	9.2+	44	14	18	2/ 4	9.0	7.6	36	4.3	.18	.60	22500	200	.30	97.0		
08/03	1414	9.0	9.2+	44	16	18	2/ 3	9.0	8.2		4.2	.08	.44	21500	180	TR	3.0	97.0	7.5
09/03	1291	8.8+		38	11	11	2/ 3	8.0	7.2		3.2	TR	.26	16500	240	TR	2.5	97.5	
10/03	1414	8.8+	9.1	45	15	18	2/ 4	8.5	7.0	32	3.7	TR	.36	19500	200	TR	2.5	97.5	
10/03	1573	8.9	9.1	40	12	16	2/ 3	9.0	7.2		3.4	.10	.48	17500	180	TR	2.5	97.5	
10/03	1690	8.9	9.1+	43	13	19	2/ 5	9.0	7.4		4.2	.08	.56	21500	180	TR	2.0	98.0	
11/03	1705	8.9+	9.2	44	14	20	3/ 5	9.5	7.8	39	4.2	.14	.68	21000	160	TR	2.5	97.5	5.0
11/03	1723	8.9+	9.1+	42	13	17	2/ 4	9.0	8.3		3.4	.08	.52	16500	160	TR	3.0	97.0	7.5
11/03	1773	8.9+	9.2	43	15	19	2/ 5	9.5	7.7		3.3	.12	.65	16000	160	TR	3.0	97.0	5.0
12/03	1820	9.0	9.2+	45	16	20	3/ 6	9.0	8.4	39	3.5	.08	.58	20000	180	TR	3.0	97.0	
12/03	1874	8.9+	9.2	43	15	18	3/ 5	9.0	8.6		3.8	.10	.55	20000	140	TR	3.0	97.0	
12/03	1916	8.9+	9.2	45	16	20	3/ 6	9.0	8.1	40	3.7	.13	.65	20000	160	TR	3.0	97.0	5.0
14/03	1916	8.9+	9.2	42	14	17	2/ 5	9.5	8.4	37	3.3	.15	.72	18000	160	TR	3.0	97.0	
15/03	PIT	8.9		39	12	15	1/ 3	9.5	9.0		3.2	.10	.55	17000	180	TR	3.0	97.0	
15/03	1916	9.0		45	16	18	3/ 4	9.0	8.0	34	2.9	.10	.58	17500	180	TR	3.5	96.5	
16/03	1916	9.0		46	17	20	3/ 6	8.5	8.2		2.6	TR	.52	16000	200	TR	3.5	96.5	
17/03	1916	9.0		45	17	18	3/ 6	8.5	8.4	41	2.9	TR	.46	17000	180	TR	3.5	96.5	
19/03	PIT	9.0+		46	18	18	3/ 5	10.0	8.5		2.9	.22	.84	17000	140	TR	3.5	96.5	
[illegible]/03	CIRC	9.0		43	15	16	2/ 3	10.5	8.0		2.9	.10	.20	17000	TR	TR	3.5	96.5	
21/03	PIT	9.0		45	15	15	2/ 3	10.5	7.6		2.7	.10	.20	16500	TR	TR	3.5	96.5	

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6. BIT RECORD

Bit Record

Geofluids

Operator BEACH PETROLEUM	Well No. 1	Location WESTGATE	Supervisors VINCE SANTOSTEFANO / JIM HANSON / IAN HOPME
Contractor RICHTER DRILLING	Rig No. 8	Mud Pumps NATIONAL 9-P-100	Drill Pipe 4 1/2" / Drill Collars 8" & 6 1/4"
Spud Date 23RD FEB '86 / TD Date 12TH MARCH '86	Surface Csg 9 5/8" @ 453m	Inter Csg —	Prod Csg 5 1/2" / Mud Type WATER - NATIVE SOLIDS - KCl POLYMER

Run No.	Bit No.	Size	Make	Type	Jets 32nds	Depth Out	Depth Drilled	Hours Drilling	Cumulative Rotating Hours	W.T.	RPM	Vert. Dev.	Pump Press.	Bbl/M ~~Gal/M~~	Ann. Vel.	Mud Weight	Visc.	W.L.	Dull Cond T	Dull Cond B	Dull Cond G	Other	Formation
1	1	12 1/4"	SEC	S33S	3x18	126m	126m	16 1/2	16 1/2	20	120	1/2°	300	8.8	70	WATER			1	1	I		
2	2	12 1/4"	VAREL	13A	OPEN	204m	78m	3 3/4	20 1/4	3	–	[illegible]	400	6.8	54	8.8	32	N.L.	2	3	I		
3	RR1	12 1/4"	SEC	S33S	3x16	456m	252m	12 1/2	32 3/4	20	120	2 3/4°	500	9.6	76	9.2	36	N.L.	2	2	I		
4	3	8 1/2"	SEC	S33S	3x10	972m	516m	25 1/4	58	10-30	120-180	2 1/4°	1000-1050	6.8	135	8.9+	41	7.7	LOST				
5	4	8 1/2"	SEC	S33S	3x11	567m	20m	2 1/4	60 1/4	10-15	120-150		800	6.8	135	8.8+	38	8.4	1	1	I		
6	RR4	8 1/2"	SEC	S33S	3x11	924m	357m	19	79 1/4	15	120		1050	6.8	135	8.9	41	9.1	8	6	3/4		
7	5	8 1/2"	SEC	S44G	3x11	1144m	220m	10 1/2	89 3/4	15	120	2 3/4°	1050	6.8	135	9.0	45	8.6	6	5	1/8		
8	6	8 1/2"	SEC	S82F	3x11	1256m	112m	6 3/4	96 1/2	10-15	100	2 3/4°	1300	6.8	135	9.0	43	8.5	1	1	1/16		
9	RR6	8 1/2"	SEC	S82F	3x11	1414m	158m	21 3/4	118 1/4	10-20	100	2 3/4°	1350	6.8	135	9.0	44	8.2	1	1	1/8		
10	7	8 1/2	SEC	S44G	10.10.12	1704m	290m	18 1/2	136 3/4	15-25	120	2°	1350	6.8	135	8.9+	44	7.8	8	6	1/8		
11	8	8 1/2	SEC	S84F	10.10.12	1916m	212m	22 1/2	159 1/4	25-30	80	2 1/4°	1400	6.8	135	8.9+	45	8.1	2	4	1/16		

Remarks

7. DAILY DRILLING FLUID REPORTS

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 1	DATE 21st FEB 86
RIG NO. 8	SPUD DATE
DEPTH 0'	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE COULSON
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO.	NILDLAS
LOCATION	OTTWAY BASIN	STATE	VICTORIA

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity		Surface at	Hole / Pits	Pump Size x	Annular Vel. (/Min). Opposite DP
Bit Size	No.	Intermediate at	Total Circulating Volume	Pump Make Model	Opposite Collar / Riser
Drill Pipe Size	Type	Production or Liner at	In Storage	/Stroke / Stroke/Min	Circulating Pressure
Drill Collar Size	Length	Mud Type		/Min	Bottoms Up (Min.) / Systems Total (Min.)

Sample from ☐ Flowline ☐ Pit
Flowline Temperature °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at °C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K^+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT	SIZE	Hours		SIZE	Hours
Centrifuge			Desilter		
Degasser			Shaker		
Desander					
DAILY COST			CUMULATIVE COST		

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 21-2-86 @ DEPTH 0'

Product/Package	Units	Unit Cost	Cost
NIL			

OPERATIONS SUMMARY

RIG UP

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER ANDRIE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

Geofluids

Milchem

Geofluids Pty Ltd

Drilling Fluid Report

REPORT NO. 2	DATE 22nd FEB 86
RIG NO. 8	SPUD DATE
DEPTH 0'	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE COULSON
WELL NAME AND NO.	WESTGATE 1	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN — STATE VICTORIA

OPERATION				CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity	RIG UP TO SPUD			Surface at	Hole — Pits 450	Pump Size 6¼" x 9¼"	Annular Vel. (Ft/Min).
Bit Size	12¼"	No.	1	Intermediate at	Total Circulating Volume	Pump Make NAT Model 9-P-100	Opposite DP — Opposite Collar 140/104 Riser
Drill Pipe Size		Type		Production or Liner at	In Storage 60	BBL/Stroke .0877 — Stroke/Min 140	Circulating Pressure
Drill Collar Size	8" 6¼"	Length		Mud Type WATER		BBL/Min 11.7 @ 95%	Bottoms Up (Min.) — Systems Total (Min.)

Sample from ☐ Flowline ☐ Pit
Flowline Temperature ..... °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at ..... °C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	12x4"	0
Degasser	DRILCO	0	Shaker	B40/B80	0
Desander	4x6"	0		B40/B80	0
DAILY COST			CUMULATIVE COST		

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	
WATER			

BY AUTHORITY ☐ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x18			211	

RECOMMENDATIONS

Spud in with Water
Use Hi Vis pills as required to aid hole cleaning.

COST SUMMARY/24 HOURS ENDING 22-2-86 **@ DEPTH**

Product/Package	Units	Unit Cost	Cost
MILGEL	—		

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

OPERATIONS SUMMARY

Rig up to Spud

GEOFLUIDS ENGINEER ANDRE SKUJINS — HOME ADDRESS ADELAIDE — TELEPHONE 08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	3	DATE	23RD FEB '86
RIG NO.	8	SPUD DATE	23RD FEB '86
DEPTH	0M	TO	185M

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASEN
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VICTORIA

OPERATION

- Present Activity: DRILLING
- Bit Size: 12¼" — No. 1/2
- Drill Pipe Size: 4½" — Type
- Drill Collar Size: 5x8" 5x 6¼" — Length 154'/155'

CASING

- Surface at
- Intermediate at
- Production or Liner at
- Mud Type: SPUD MUD

MUD VOLUME

- Hole: 80 — Pits: 540
- Total Circulating Volume: 620
- In Storage: —

CIRCULATION DATA

- Pump Size: 6¼" x 9¼"
- Pump Make: NAT — Model: 9-P-100
- BBL/Stroke: .0877 — Stroke/Min: 100/78
- BBL/Min: 7.8/6.8 @ 100%
- Annular Vel. (Ft/Min). Opposite DP: 54
- Opposite Collar: 63
- Riser: —
- Circulating Pressure
- Bottoms Up (Min.)
- Systems Total (Min.)

Sample from ☒ Flowline ☐ Pit

Flowline Temperature .... °C

MUD PROPERTIES			24/2
Time Sample Taken	15-00	21-30	05-00
Depth (METRES)	45	150	214
Weight ☐ (S.G.) ☒ PPG	8.6	8.7+	8.8
Mud Gradient (psi/ft)	.447	.455	.458
Funnel Viscosity (sec./qt) API at .... °C	29	29	32
Plastic Viscosity cps at			3
Yield Point (lb/100 sq. ft.)			5
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	3/10
pH ☒ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)		350	350
Total Hardness ☐ epm ☐ (mg/l)		80	60
Sand Content (% by Vol.)	.5	.25	.25
Solids Content (% by Vol.)	2	3	3.5
Oil Content (% by Vol.)	—	—	—
Water Content (% by Vol.)	98	97	96.5
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)	—	—	—
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
n/K			.58/.26

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	11 x 4"	10
Degasser	DRILCO	0	Shaker	B40/B80	15
Desander	4x6"	15		B40/B80	15

DAILY COST $263.36 — CUMULATIVE COST $263.36

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	
W A T E R			

BY AUTHORITY ☐ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x16	5	100	201	
VAREL L3 (DYNA DRILL)					

RECOMMENDATIONS

1) If mud ring problems occur, flush hole with fresh water and/or add approx 10 lb/bbl KCl (~3%)

2) KOH added to Gel hi vis pill instead of NaOH.

Desander UF : 12.7 ppg @ 2.1 gal/min.

Desilter UF : 10.3 ppg @ 3.8 gal/min.

COST SUMMARY/24 HOURS ENDING 23-2-86 **@ DEPTH** 185M

Product/Package	Units	Unit Cost	Cost
MILGEL	17	14.08	239.36
CAUSTIC ~~SODA~~ POTASH	1	24.00	24.00
			263.36

OPERATIONS SUMMARY

Spud in @ 03.00 hrs.

Drill 12¼" hole wt Surveys.

Pump Hi Vis pill @ 413' (126m.) and POH

Make up Dyna Drill & 2x 6¼" collars.

RIH.

Drill Ahead wt Dyna Drill.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
	CONT.		60	

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 4	DATE 24TH FEB 88	RIG NO. 8	SPUD DATE 23RD FEB 88
DEPTH 185M	TO 407M		

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTO STEFANO	REPORT FOR	LAURIE KLASSEN
WELL NAME AND NO.	WESTGATE 4	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VICTORIA

OPERATION

- Present Activity: DRILLING
- Bit Size: 12¼" — No. 2 RR1
- Drill Pipe Size: 4½" — Type IF
- Drill Collar Size: 6x 8" 4x 6¼" — Length 184/121'

CASING

- Surface at
- Intermediate at
- Production or Liner at
- Mud Type: SPUD MUD

MUD VOLUME

- Hole 185 — Pits 480
- Total Circulating Volume 665
- In Storage —

CIRCULATION DATA

- Pump Size 6¼" x 9¼"
- Pump Make NATIONAL — Model 9-P-100
- BBL/Stroke .0877 — Stroke/Min 78/110
- BBL/Min 6.8/9.6 @ 100%
- Annular Vel. (Ft/Min) Opposite DP 54/76
- Opposite Collar 64/63/89
- Riser 8" 81/115
- Circulating Pressure 400/500
- Bottoms Up (Min.) 21
- Systems Total (Min.) 70

Sample from ☒ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES

	1	2	3
Time Sample Taken	16.30	23.45	04.00
Depth (METRES)	360	400	456
Weight ☐ (S.G.) PPG	9.1	9.1+	9.2
Mud Gradient (psi/ft)	.473	.476	.478
Funnel Viscosity (sec./qt) API at ....°C	40	36	36
Plastic Viscosity cps at	7	8	8
Yield Point (lb/100 sq. ft.)	13	15	16
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	7/15	11/25	10/28
pH ☒ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☒ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)	300	300	300
Total Hardness ☐ epm ☒ (mg/l)	40	40	40
Sand Content (% by Vol.)	TR	TR	TR
Solids Content (% by Vol.) (Calculated)	5.5	6.0	6.0
Oil Content (% by Vol.)	—	—	—
Water Content (% by Vol.)	94.5	94.0	94.0
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)	—	—	—
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
n/K			.41/18

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	11x 4"	12
Degasser	DRILCO	0	Shaker	B40/B80	14
Desander	4x6"	14		B40/B80	14

DAILY COST $87.27 (Cost Correction) — CUMULATIVE COST $5270.63

MUD PROPERTIES SPECIFICATIONS

WEIGHT	~~PV/YP~~ Vis	FILTRATE
MIN	~35	

BY AUTHORITY ☐ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
VAREL L3A	OPEN	3	—		
SEC S33S	3x16	20	120	221	

RECOMMENDATIONS

Maintaining vis at approx 35 sec/qt. to lower probability of mud rings, and aid in hole cleaning.

Desander UF 11.2 ppg @ 1.5 gal/min
Desilter UF 10.5 ppg @ 2.2 gal/min

COST SUMMARY/24 HOURS ENDING 24-2-88 **@ DEPTH** 407M

Product/Package	Units	Unit Cost	Cost
NIL			
NOTE: Cost Correction -			
Milgel $14.02 per sack			
Caustic Potash $32.29 per sack			$87.27

OPERATIONS SUMMARY

Drill to 185m
POH to change bent sub.
RIH.
Drill to 204M
POH to change BHA and Bit.
RIH.
Drill to 381M
POH to change BHA
RIH.
Drill Ahead.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	500		

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE	TELEPHONE	08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	5	DATE	25TH FEB '8[illegible]
RIG NO.	8	SPUD DATE	23RD FEB '[illegible]
DEPTH	407 M	TO	456 m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSEN
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VIC

OPERATION
- Present Activity: WOC
- Bit Size: 12¼" No. RR1
- Drill Pipe Size: 4½" Type: XF
- Drill Collar Size: 6×8" 4×6¼" Length: 180'/121'

CASING
- Surface at
- Intermediate at
- Production or Liner at
- Mud Type: SPUD MUD

MUD VOLUME
- Hole: 195 Pits: 500
- Total Circulating Volume: 695
- In Storage

CIRCULATION DATA
- Pump Size: 6¼" x 9¼"
- Pump Make Model: NAT 9-P-100
- BBL/Stroke: .0877 Stroke/Min: 112
- BBL/Min: 9.8
- Annular Vel. (Ft/Min) Opposite DP: 73
- Opposite Collar: 6¼" 91, 8" 117
- ~~Riser~~
- Circulating Pressure: 600
- Bottoms Up (Min.): 23
- Systems Total (Min.): 70

Sample from ☐ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at ... °C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	11×4"	4
Degasser	DRILLCO	0	Shaker	B40/B80	4
Desander	4×6"	4		B40/B80	4

DAILY COST: $252.36 CUMULATIVE COST: $522.99

MUD PROPERTIES SPECIFICATIONS

WEIGHT	~~PV/YP~~ Vis	FILTRATE
Min	~35	

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEC S33S	3×16	20	120	225	

RECOMMENDATIONS

Dump Spud Mud and Clean tanks.

COST SUMMARY/24 HOURS ENDING 25-2-86 **@ DEPTH** 456m

Product/Package	Units	Unit Cost	Cost
* MILGEL	18	14.02	252.36

* Used for Cement Job.

OPERATIONS SUMMARY

Drill to 456m.
Circ.
3 stand Wiper trip.
RIH.
Circ.
POOH.
Rig up and run Electric Logs.
Rig down.
Rig up & Run 9⅝" Csg.
Circ. Csg.
Cement.
WOC.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE	TELEPHONE	08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	6	DATE	26th FEB 86
RIG NO.	8	SPUD DATE	23rd FEB 8[illegible]
DEPTH	456m	TO	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSEN
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO. WILDCAT / LOCATION OTWAY BASIN	STATE VICTORIA

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: Nipple Up BOPs		9 5/8" Surface at	Hole / Pits	Pump Size x	Annular Vel. (/Min). Opposite DP
Bit Size	No.	Intermediate at	Total Circulating Volume	Pump Make Model	Opposite Collar; Riser
Drill Pipe Size	Type	Production or Liner at	In Storage	/Stroke; Stroke/Min	Circulating Pressure
Drill Collar Size	Length	Mud Type		/Min	Bottoms Up (Min.); Systems Total (Min.)

Sample from ☐ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at .... °C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	11x4"	0
Degasser	Drilco	0	Shaker		
Desander	4x6"	0			
DAILY COST	—		CUMULATIVE COST		

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP

RECOMMENDATIONS

1) Drill out cement etc. with water pretreated w/ Bicarb and Paraformaldehyde.
2) Once water has been pretreated, add KCl and Polymers while drilling until mud specs are attained.
3) Changed shakers to B60/B80 & B80/B100

COST SUMMARY/24 HOURS ENDING 26-2-86 **@ DEPTH** 456

Product/Package	Units	Unit Cost	Cost
NIL			

OPERATIONS SUMMARY

NDL.
Nipple up BOPs.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE	TELEPHONE	08-795W2

Geofluids

Milchem

Geofluids Pty Ltd

Drilling Fluid Report

REPORT NO.	7	DATE	27th FEB 8[illegible]
RIG NO.	8	SPUD DATE	23rd FEB 8[illegible]
DEPTH	456m	TO	457m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSEN
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO.	WILOLAT
LOCATION	OTWAY BASIN	STATE	VICTORIA

OPERATION
- Present Activity: RIH
- Bit Size: 8½" No. 3
- Drill Pipe Size: 4½" Type
- Drill Collar Size: 6¼" Length 180'

CASING
- 9⅝" Surface at 453m
- Intermediate at
- Production or Liner at
- Mud Type: KCl POLYMER

MUD VOLUME
- Hole 115 Pits 500
- Total Circulating Volume 615
- In Storage

CIRCULATION DATA
- Pump Size 5½" x 9¼"
- Pump Make / Model NAT 9-P-100
- BBL/Stroke .0680 Stroke/Min 100
- BBL/Min 6.8 @ 100%
- Annular Vel. (Ft/Min): Opposite DP 133 / 194; Opposite Collar 211 / 296; Riser
- Circulating Pressure
- Bottoms Up (Min.)
- Systems Total (Min.) 90

Sample from ☒ Flowline ☐ Pit

Flowline Temperature 29 °C

MUD PROPERTIES			28/2
Time Sample Taken			06.30
Depth (METRES)			618
Weight ☐ (S.G.) ☒ PPG			8.8+
Mud Gradient (psi/ft)			.460
Funnel Viscosity (sec./qt) API at °C			37
Plastic Viscosity cps at			9
Yield Point (lb/100 sq. ft.)			9
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	1/2
pH ☒ Strip ☐ Meter			10.0
Filtrate API (ml./30 min.)			12.2
API HP-HT Filtrate (ml./30 min.)			–
Cake Thickness (mm) API ☒ HP-HT ☐			1(H)
Alkalinity, Mud (Pm)			–
Alkalinity, Filtrate (Pf/Mf)	/	/	.15/.35
Chloride (mg/l)			19500
Total Hardness ☐ epm ☒ (mg/l)			140
Sand Content (% by Vol.)			.5
Solids Content (% by Vol.) (Calculated)			2.5
Oil Content (% by Vol.)			–
Water Content (% by Vol.)			97.5
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)			–
K+ (mg/l)			21500
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/v)			3.8/4.7
n			.4
K			4.1
ECD			9.0

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	[illegible] 53-D	0	Desilter	11x4"	0
Degasser	DRILCO	0	Shaker	B80/B100	1
Desander	4x6"	1		B60/B80	1

DAILY COST $669.30 CUMULATIVE COST $1192.29

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP		FILTRATE	KCl	pH
9.0 – 9.5	8-12	12-18	8-12	3-4%	9-9.[illegible]

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	25	150	398	209

RECOMMENDATIONS

While drilling add:
KCl @ 1min/sx until 4% is attained
Milpac @ 20min/sx " Waterloss < 9mls.
Milzan @ 20min/sx " Yield Pt. > 12
KOH @ 1hr/sx " pH 9-9.5.

COST SUMMARY/24 HOURS ENDING 27-2-86 @ DEPTH 457m

Product/Package	Units	Unit Cost	Cost
BICARB SODA	4	~~32.61~~ 23.41	93.64
PARAFORMALDEHYDE	4	37.05	148.20
KCl	8	15.84	126.72
CAUSTIC POTASH	–	32.29	–
MILZAN	1	222.41	222.41
MILPAC	1	78.33	78.33
			669.30

OPERATIONS SUMMARY

Nipple up BOPs.
Pressure Test
Lay out Drill Collars (8")
RIH w/ Bit
Drill out Cement, Float & Shoe.
Drill 8½" hole to 457m
Conduct Leak off Test.
POH
Pick up Stabilizers & Jars and Make up BHA.
RIH.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	8	DATE	28th FEB 86
RIG NO.	8	SPUD DATE	23rd FEB 86
DEPTH	457M	TO	911

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON	REPORT FOR	LAURIE KLASSEN
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO. WILDCAT / LOCATION OTWAY BASIN	STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: DRILLING		9⅝" Surface at 453M	Hole 195 / Pits 395	Pump Size 5½" x 9¼"	Annular Vel. (Ft/Min) Opposite DP 135 / 181; Opposite Collar 24 / 343
Bit Size: 8½"	No. 3	Intermediate at —	Total Circulating Volume 590	Pump Make NAT Model 8-P-80	Riser —
Drill Pipe Size: 4½"	Type	Production or Liner at —	In Storage —	BBL/Stroke .0640 / Stroke/Min 100	Circulating Pressure 1025
Drill Collar Size: 6¼"	Length 180	Mud Type: KCl POLYMER		BBL/Min 6.2	Bottoms Up (Min.) 25; Systems Total (Min.) 90

Sample from ☒ Flowline ☒ Pit
Flowline Temperature 41 °C

MUD PROPERTIES			
Time Sample Taken	10-30	18.00	05.30
Depth (Metres)	674	789	971
Weight ☐ (S.G.) ☒ ppg	8.8	8.8+	8.9+
Mud Gradient (psi/ft)	.458	.460	.465
Funnel Viscosity (sec./qt) API at °C	42	40	41
Plastic Viscosity cps at	14	10	12
Yield Point (lb/100 sq. ft.)	19	12	16
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	3/5	2/3	1/3
pH ☒ Strip ☐ Meter	9.0	9.5	9.0
Filtrate API (ml./30 min.)	11.5	8.8	7.7
API HP-HT Filtrate (ml./30 min.)	—	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	1(1)	1(1)	1(1)
Alkalinity, Mud (Pm)	—	—	—
Alkalinity, Filtrate (Pf/Mf)	.08/.25	.12/.30	TR/.20
Chloride (mg/l)	23000	23500	17500
Total Hardness ☐ epm ☒ (mg/l)	160	180	240
Sand Content (% by Vol.) (Suction)	TR	TR	TR
Solids Content (% by Vol.)	2.0	2.0	3.0
Oil Content (% by Vol.)	—	—	—
Water Content (% by Vol.)	98.0	98.0	97.0
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	5	-	7½
K⁺ (mg/l)	21000	19500	16500
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% wt)	4.0	3.7	3.2
n/K	.51/1.4	.54/.76	.51/1.1
ECD	9.1	9.0	9.1+

EQUIPMENT	SIZE	Hours		SIZE	Hours
Centrifuge	DT S-3-D	24	Desilter	4x4"	16
Degasser	Drilco	0	Shaker	B80/B80	24
Desander	4x6"	24		B60/B80	24
DAILY COST	$4565.91		CUMULATIVE COST	$57582.20	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
9.0 - 9.5	8-12 / 12-18	<9cc	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	20-30	130-150	398	212

RECOMMENDATIONS

Bypassing shale shakers partially due to blinding of screens due to sand and polymers in mud. No mud cleaning problems have resulted.

Note: All mud wts taken in Suction tank.

Centrifuge OF 8.8+ ppg 2
Desander UF 12.0 ppg @ .75 gal/min
Desilter UF 10.5 ppg @ 3 gal/min

COST SUMMARY/24 HOURS ENDING 06-00 1st March @ DEPTH 971M

Product/Package	Units	Unit Cost	Cost
KCl	68	15.84	1077.12
CAUSTIC POTASH	2	32.29	64.58
MILPAC	21	78.33	1644.93
MILZAN	8	222.41	1779.28
			4565.91

OPERATIONS SUMMARY

RIH.
Drill 8½" hole to 608M
Work stuck pipe
Drill Ahead w/ surveys.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	55		

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE	TELEPHONE	08 - 795122

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 9		DATE 1st March '86	
RIG NO. 8		SPUD DATE 23rd Feb 86	
DEPTH 911 m		TO 972 m	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON	REPORT FOR	LAWRIE KLASSON
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN — STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: Work Stuck Pipe		9 5/8" Surface at 453m	Hole 220 — Pits 400	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (Ft/Min). Opposite DP 135
Bit Size 8 1/2"	No. 3	Intermediate at	Total Circulating Volume 620	Pump Make NAT Model 9-P-100	Opposite Collar 211; Riser
Drill Pipe Size 4 1/2"	Type	Production or Liner at	In Storage —	Bbl/Stroke .0600 — Stroke/Min 100	Circulating Pressure 1025
Drill Collar Size 6 1/4"	Length 180	Mud Type KCl POLYMER		Bbl/Min 6-8	Bottoms Up (Min.) 30; Systems Total (Min.) 90

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 40 °C

MUD PROPERTIES			
Time Sample Taken		17.00	
Depth (metres)		972m	
Weight ☐ (S.G.) ☒ PPG		8.9+	
Mud Gradient (psi/ft)		.465	
Funnel Viscosity (sec./qt) API at °C		38	
Plastic Viscosity cps at		11	
Yield Point (lb/100 sq. ft.)		13	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	1 /2	/
pH ☒ Strip ☐ Meter		9.0	
Filtrate API (ml./30 min.)		9.1	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(2)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	TR /.22	/
Chloride (mg/l)		2100	
Total Hardness ☐ epm ☒ (mg/l)		200	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.0	
Oil Content (% by Vol.)		—	
Water Content (% by Vol.)		97.0	
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)		—	
K+ (mg/l)		20500	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
		3.9	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	S-3-0	9	Desilter	16x4"	12
Degasser	DRILCO	0	Shaker	B40/B30	12
Desander	4x6"	12		B80/B40	12

DAILY COST $2390.63 — CUMULATIVE COST $8148.83

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
9.0 – 9.5	8-12 / 12-18	< 9	3-4 %

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	20-30	130	328	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 1-3-86 @ DEPTH 972m

Product/Package	Units	Unit Cost	Cost
MILZAN	3	222.41	667.23
MILPAC	9	78.33	704.97
KCl	20	15.84	316.80
PARA FORMALDEHYDE	1	37.05	37.05
CAUSTIC POTASH	2	32.29	64.58
MILFREE	1	600.00	600.00
			2390.63

OPERATIONS SUMMARY

Drill to 972m.
Circ.
POH.
Work tight hole at 920m
POH.
Stuck in hole at 718m
Work stuck pipe.
Spot Pill.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER Andre Skujins — HOME ADDRESS ADELAIDE — TELEPHONE 08-795102.

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 10	DATE 2nd MARCH 86
RIG NO. 8	SPUD DATE 23rd FEB 86
DEPTH 972 M	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN · STATE VIC

OPERATION			CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity	RIH		9 5/8" Surface at 453m	Hole 215 Pits 360	Pump Size 5½" x 9¼"	Annular Vel. (FT/Min). Opposite DP
Bit Size	8½"	No. 3	Intermediate at	Total Circulating Volume 575	Pump Make NAT Model 9-P-100	Opposite Collar Riser
Drill Pipe Size	4½"	Type	Production or Liner at	In Storage —	BBL/Stroke .0680 Stroke/Min	Circulating Pressure
Drill Collar Size	6¼"	Length	Mud Type KCl POLYMER		BBL/Min	Bottoms Up (Min.) Systems Total (Min.)

Sample from ☐ Flowline ☒ Pit
Flowline Temperature .... °C

	MUD PROPERTIES
	3/3
Time Sample Taken	06.00
Depth	PIT CHECK
Weight ☐ (S.G.) ppg	8.9
Mud Gradient (psi/ft)	.463
Funnel Viscosity (sec./qt) API at ....°C	37
Plastic Viscosity cps at	12
Yield Point (lb/100 sq. ft.)	12
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	1 / 2
pH ☒ Strip ☐ Meter	9.0
Filtrate API (ml./30 min.)	8.2
API HP-HT Filtrate (ml./30 min.)	—
Cake Thickness (mm) API ☒ HP-HT ☐	1(1)
Alkalinity, Mud (Pm)	—
Alkalinity, Filtrate (Pf/Mf)	TR / .18
Chloride (mg/l)	20500
Total Hardness ☐ epm ☒ (mg/l)	220
Sand Content (% by Vol.)	TR
Solids Content (% by Vol.)	2.5
Oil Content (% by Vol.)	—
Water Content (% by Vol.)	97.5
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)	—
K+ (mg/l)	19000
Nitrate (mg/l) /Sulphite (mg/l)	/
KCl (% w/v)	3.6

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	S-3-0	0	Desilter	1 x 4"	0
Degasser	DRILCO	0	Shaker	B40/A40	0
Desander	4 x 6"	0		B60/B60	0
DAILY COST			CUMULATIVE COST		

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
9.0 – 9.5	8-12 / 12-18	< 9cc	

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEC S33S	3x10				

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 2-3-86 @ DEPTH 972m

Product/Package	Units	Unit Cost	Cost
Nil			

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

OPERATIONS SUMMARY

Work stuck pipe.
Pump 2 barrels Mixfree Pill per hour.
Circ out Pill.
Rig up Schlumberger.
Back off pipe.
Lang at shot off Heavy wt. Drill pipe and jars.
Pick up jars and Drill collars & RIH.

GEOFLUIDS ENGINEER ANDRE SKUJINS · HOME ADDRESS ADELAIDE · TELEPHONE 08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	11	DATE	3RD MARCH 8[illegible]
RIG NO.	8	SPUD DATE	23RD FEB 8[illegible]
DEPTH	972M	TO	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAWRIE KLASSON
WELL NAME AND NO.	WESTGATE #1	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VICTORIA

OPERATION
- Present Activity: M.U. BHA
- Bit Size: 8½" — No 4
- Drill Pipe Size: 4½" — Type
- Drill Collar Size: 6¼" — Length

CASING
- 9 5/8" Surface at 453M
- Intermediate at —
- Production or Liner at —
- Mud Type: KCl POLYMER

MUD VOLUME
- Hole 130 — Pits 250
- Total Circulating Volume 380
- In Storage 60

CIRCULATION DATA
- Pump Size 5½" x 9¼"
- Pump Make NAT. Model 9-P-100
- BBL/Stroke .0880 — Stroke/Min
- BBL/Min
- Annular Vel. (Ft/Min). Opposite DP ... Opposite Collar ... Riser ...
- Circulating Pressure ...
- Bottoms Up (Min.) ...
- Systems Total (Min.) ...

Sample from ☒ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken		18.00	
Depth (METRES)		Circ Prior to Plug.	
Weight ☐ (S.G.) ☒ PPG		8.8+	
Mud Gradient (psi/ft)		.460	
Funnel Viscosity (sec./qt) API at ....°C		38	
Plastic Viscosity cps at		9	
Yield Point (lb/100 sq. ft.)		10	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	1/1	/
pH ☒ Strip ☐ Meter		8.5	
Filtrate API (ml./30 min.)		8.0	
API HP-HT Filtrate (ml./30 min.)		–	
Cake Thickness (mm) API ☒ HP-HT ☐		1(LH)	
Alkalinity, Mud (Pm)		–	
Alkalinity, Filtrate (Pf/Mf)	/	TR/.52	/
Chloride (mg/l)		18000	
Total Hardness ☐ epm ☒ (mg/l)		240	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		2.0	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		98.0	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		–	
K+ (mg/l)		18000	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% W/V)		3.4	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	SWACO 530	0	Desilter	11x4"	0
Degasser	DRILCO	0	Shaker	B60/B80	1½
Desander	4x6"	0		B80/B100	1½

DAILY COST $162.20 — CUMULATIVE COST $8432.53

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP		FILTRATE	KCl	pH
9.0 – 9.5	8-12	12-18	<9cc	3-4%	9-9.5

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x11				

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 3-3-86 @ DEPTH 972M

Product/Package	Units	Unit Cost	Cost
BICARB SODA	2	23.41	46.82
PARAFORMALDEHYDE	1	37.05	37.05
MILPAC	1	78.33	78.33
			162.20
COST CORRECTION MILFREE PRICE $721.50		+	121.50

OPERATIONS SUMMARY

RIH. Tag Fish at 2140'. (652m)
Screw into fish
Jar fish.
Remove Kelly Hose & Emac pack.
Run Schlumberger & Back off.
POH.
RIH wt Drill Pipe to set Cement plug.
Tag fish at 1916' (584m)
Run Cement Plug back to 521m
POH 4 stds.
Circulate
POH.
Pick up Drill Collars & HWDP.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-795192

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 12	DATE 4th March 86
RIG NO. 8	SPUD DATE 23rd Feb 86
DEPTH 531m (PLUG BACK)	TO 667m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE 1A	FIELD OR BLOCK NO. WILDCAT / LOCATION OTWAY BASIN	STATE VIC

OPERATION			CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity	DRILLING		9 5/8" Surface at 453m	Hole 160 Pits 350	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (Ft/Min.)
Bit Size	8 1/2"	No. 4	Intermediate at —	Total Circulating Volume 510	Pump Make NAT Model 9-P-100	Opposite DP 135 / 383
Drill Pipe Size	4 1/2"	Type XF	Production or Liner at —	In Storage —	BBL/Stroke .0690 Stroke/Min 100	Opposite Collar 211 / 346
Drill Collar Size	6 1/4"	Length 230	Mud Type KCl POLYMER		BBL/Min 6.8 @ 100%	Riser —
						Circulating Pressure 800
						Bottoms Up (Min.)
						Systems Total (Min.)

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 32 °C

MUD PROPERTIES			3/4
Time Sample Taken		23-00	05-30
Depth (METRES)		648	722
Weight ☐ (S.G.) ☒		8.8+	8.8+
Mud Gradient (psi/ft)		.460	.460
Funnel Viscosity (sec./qt) API at °C		38	41
Plastic Viscosity cps at		10	12
Yield Point (lb/100 sq. ft.)		12	16
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	1/3	2/3
pH ☒ Strip ☐ Meter		9.5	9.0
Filtrate API (ml./30 min.)		8.4	8.8
API HP-HT Filtrate (ml./30 min.)		[illegible]	[illegible]
Cake Thickness (mm) API ☒ HP-HT ☐		1(H)	1(H)
Alkalinity, Mud (Pm)		—	—
Alkalinity, Filtrate (Pf/Mf)	/	.25/.50	.18/.40
Chloride (mg/l)		22500	17500
Total Hardness ☐ epm ☒ (mg/l)		280	220
Sand Content (% by Vol.)		TR	TR
Solids Content (% by Vol.)		2.0	2.5
Oil Content (% by Vol.)		TR	TR
Water Content (% by Vol.)		98.0	97.5
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)		—	5
K+ (mg/l)		20500	15500
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% wt)		3.8	3.0
n/k		.54/.76	.51/1.1
ECD		9.1	9.1

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	QUIROS	5	Desilter	11x4"	5
Degasser	DRILCO	0	Shaker	B60/B80	7
Desander	4x6"	7		B30/B80	7

DAILY COST $1417.47 CUMULATIVE COST $9850.00

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP		FILTRATE	KCl	pH
MINIMUM	8-12	16-20	<9cc	3-4%	9-9.5

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEC S33J	3x11	15	125	329	143

RECOMMENDATIONS

Increasing Yield Pt. to approx 18 at Operators Request
Building Volume in Mud Tanks to Approx 430-480 bbls

CENTRIFUGE OF 8.8 ppg
DESANDER UF 13.6 ppg @ 2.2 gal/min
DESILTER UF 10.0 ppg @ 3.8 gal/min

OPERATIONS SUMMARY

WOC
RIH. Tag Cement @ 554m
Dress Plug to 559m
RIH Back 1 stand & ream 525m - 547m
Reream 547m - 553m
Drill 553m - 567m
POH and Lay down Drill Pipe
M.U. New BHA & RIH.
Ream 531m - 567m
Drill 8 1/2" hole 567m - 667m

COST SUMMARY/24 HOURS ENDING 4-3-86 @ DEPTH 667M

Product/Package	Units	Unit Cost	Cost
MILPAC	1	78.33	78.33
MILZAN	4	222.41	889.64
KCl	24	15.84	380.16
PARAFORMALDEHYDE	1	37.05	37.05
CAUSTIC POTASH	1	32.29	32.29
			1417.47

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
	30		110	-

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-745102

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 13	DATE 5TH MARCH 86
RIG NO. 8	SPUD DATE 23RD FEB 86
DEPTH 667M	TO 924M

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAWRIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN · STATE VICTORIA

OPERATION				CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity	RIH			9 5/8" Surface at 453m	Hole 230 Pits 300	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (FT/Min) Opposite DP 135 / 290; Opposite Collar 211 / 360; Riser —
Bit Size	8 1/2"	No.	4/5	Intermediate at —	Total Circulating Volume 530	Pump Make NAT Model 9-P-100	
Drill Pipe Size	4 1/2"	Type	IF	Production or Liner at	In Storage —	BBL/Stroke .060 Stroke/Min 100	Circulating Pressure 800/1050
Drill Collar Size	6 1/4"	Length	220'	Mud Type KCl POLYMER		BBL/Min 6.8	Bottoms Up (Min.) 26; Systems Total (Min.) 80

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 31 °C

MUD PROPERTIES	5/3	6/3	6/3
Time Sample Taken	14:30	1:30	06:30
Depth (METERS)	878	952	1058
Weight ☐ (S.G.) ☒ PPG	8.9	8.9	8.9
Mud Gradient (psi/ft)	.463	.463	.463
Funnel Viscosity (sec./qt) API at °C	41	41	41
Plastic Viscosity cps at	13	14	13
Yield Point (lb/100 sq. ft.)	17	16	17
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/5	2/6	2/5
pH ☒ Strip ☐ Meter	9.0	9.0	9.0
Filtrate API (ml./30 min.)	9.1	9.0	8.2
API HP-HT Filtrate (ml./30 min.)	–	–	–
Cake Thickness (mm) API ☒ HP-HT ☐	1(H)	1(H)	1(H)
Alkalinity, Mud (Pm)	–	–	–
Alkalinity, Filtrate (Pf/Mf)	TR/.24	.08/.25	TR/.20
Chloride (mg/l)	17500	20000	17500
Total Hardness ☐ epm ☒ (mg/l)	260	280	280
Sand Content (% by Vol.)	TR	TR	TR
Solids Content (% by Vol.) (CALL.)	2.5	2.5	2.5
Oil Content (% by Vol.)	TR	TR	TR
Water Content (% by Vol.)	97.5	97.5	97.5
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	7 1/2	–	5
K^+ (mg/l)	17500	22000	18000
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/w)	3.3	4.2	3.4
n/k	.52/1.2	.55/.96	.52/1.2
ECD	9.1+	9.1+	9.1+

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	23	Desilter	11x4"	15
Degasser	DRILCO	0	Shaker	B60/B80	15
Desander	4x6"	15		B80/B80	15

DAILY COST $3954.80 — CUMULATIVE COST $13804.88

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl	pH
MW	8-12 / 16-20	< 9	3-4%	9-9.5

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x11	15	125	329	144
SEC S44G	3x11	20	100	329	144

RECOMMENDATIONS

CENTRIFUGE OF : 8.8 ppg
DESANDER UF : 13.1 ppg @ 1.1 gal/min
DESILTER UF : 9.9 ppg @ 3.1 gal/min

COST SUMMARY/24 HOURS ENDING 5-3-86 @ DEPTH 924m

Product/Package	Units	Unit Cost	Cost
MILPAC	11	78.33	861.63
MILZAN	10	222.41	2224.10
KCl	40	15.84	633.60
PARAFORMALDEHYDE	2	37.05	74.10
CAUSTIC POTASH	5	32.29	161.45
			3954.88

OPERATIONS SUMMARY

Drill to 764m. Circ.
13 stand Wiper trip
Ream 10m to bottom
Drill to 924m. Circ.
Trip Bit

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	50		50

GEOFLUIDS ENGINEER ANDRE SKUJINS — HOME ADDRESS ADELAIDE — TELEPHONE 08-795102

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	14	DATE	6th March 86
RIG NO.	8	SPUD DATE	23rd Feb 86
DEPTH	924M	TO	1144M

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE 1A	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VIC

OPERATION: Present Activity: RIH; Bit Size: 8½"; No.: 5; Drill Pipe Size: 4½"; Type: IF; Drill Collar Size: 6¼"; Length: 220'

CASING: Surface 9⅝" at 453m; Intermediate at —; Production or Liner at —; Mud Type: KCl POLYMER

MUD VOLUME: Hole 280; Pits 350; Total Circulating Volume 630; In Storage —

CIRCULATION DATA: Pump Size 5½" x 9¼"; Pump Make NAT, Model 9-P-100; BBL/Stroke .0680; Stroke/Min 100; BBL/Min 6.8; Annular Vel. (Ft/Min) Opposite DP 135, Opposite Collar 211; Riser —; Circulating Pressure 2000; Bottoms Up (Min.) 31; Systems Total (Min.) 90

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 55 °C

MUD PROPERTIES			7/3
Time Sample Taken	11-00	15-30	06-30
Depth (Metres)	1120	1144	1208
Weight ☐ (S.G.) ☒ ppg	9.0	9.0	9.0
Mud Gradient (psi/ft)	.468	.468	.468
Funnel Viscosity (sec./qt) API at °C	42	45	43
Plastic Viscosity cps at	15	16	15
Yield Point (lb/100 sq. ft.)	16	21	20
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/3	2/5	2/4
pH ☒ Strip ☐ Meter	9.5	8.5	9.5
Filtrate API (ml./30 min.)	8.2	8.6	8.5
API HP-HT Filtrate (ml./30 min.)	—	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	1(H)	1(H)	1(H)
Alkalinity, Mud (Pm)	—	—	—
Alkalinity, Filtrate (Pf/Mf)	.10/.50	TR/.32	.12/.46
Chloride (mg/l)	18500	22000	20500
Total Hardness ☐ epm ☒ (mg/l)	220	260	200
Sand Content (% by Vol.)	.25	TR	TR
Solids Content (% by Vol.)	3.5	3.0	3.0
Oil Content (% by Vol.)	TR	TR	TR
Water Content (% by Vol.)	96.5	97.0	97.0
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	—	5	5
K+ (mg/l)	19000	23000	21000
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% wt)	3.6	4.4	4.0
n/K	.57/.84	.52/1.5	.57/1.4
ECD	9.2	9.3	9.3

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	23	Desilter	4x4"	15
Degasser	DRILCO	0	Shaker	B60/B80	15
Desander	4x6"	15		B80/B80	15

DAILY COST $2716.09 CUMULATIVE COST $16,520.97

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP		FILTRATE	KCl
MIN	8-12	16-20	≤9	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S44G	3x11	20	120	329	145
SEC S82F	3x11			329	145

RECOMMENDATIONS

Settling tanks & Degasser tank dumped & cleaned while logging.

Centrifuge OF 8.9+ ppg
Desander UF 13.4 ppg @ 1.3 gal/min
Desilter UF 9.9 ppg @ 1.9 gal/min

OPERATIONS SUMMARY

Ream 10M to bottom.
Drill to 1144 m
Circ.
Wiper trip to shoe
RIH.
Circ.
POH.
Log wt Schlumberger.
RIH wt new Bit

COST SUMMARY/24 HOURS ENDING 6-3-86 @ DEPTH 1144

Product/Package	Units	Unit Cost	Cost
MILPAC	15	78.33	1174.95
MILZAN	3	222.41	667.23
KCl	40	15.84	633.60
PARAFORMALDEHYDE	3	37.05	111.15
CAUSTIC POTASH	4	32.29	129.16
			2716.09

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	120		110

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795122

Geofluids

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Geofluids Pty Ltd

Drilling Fluid Report

REPORT NO. 15	DATE 7th March 86	RIG NO. 8	SPUD DATE 23rd Feb 86
DEPTH 1144m	TO 1306m		

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN; STATE VIC

OPERATION: Present Activity: DRILLING. Bit Size: 8½" No. 6/RR6. Drill Pipe Size: 4½" Type: IF. Drill Collar Size: 6¼" Length: 87

CASING: 9⅝" Surface at 453m. Intermediate at —. Production or Liner at —. Mud Type: KCl POLYMER

MUD VOLUME: Hole 315, Pits 460. Total Circulating Volume 775. In Storage —

CIRCULATION DATA: Pump Size 5½" x 9¼". Pump Make NAT Model 9-P-100. BBL/Stroke .0860. Stroke/Min 100. BBL/Min 6.8. Annular Vel. (Ft/Min) Opposite DP 135 / 304; Opposite Collar 211 / 373; Riser —. Circulating Pressure 1300. Bottoms Up (Min.) 35. Systems Total (Min.) 120

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 36 °c

MUD PROPERTIES 8/3		
Time Sample Taken	22-00	06-30
Depth (Metres)	1304	1375
Weight ☐ (S.G.) ☒ ppg	8.9+	9.0
Mud Gradient (psi/ft)	.465	.468
Funnel Viscosity (sec./qt) API at ....°C	46	44
Plastic Viscosity cps at	17	16
Yield Point (lb/100 sq. ft.)	22	18
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	3/6	2/4
pH ☒ Strip ☐ Meter	9.0	9.0
Filtrate API (ml./30 min.)	7.0	7.6
API HP-HT Filtrate (ml./30 min.)	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	1(H)	1(H)
Alkalinity, Mud (Pm)	—	—
Alkalinity, Filtrate (Pf/Mf)	.14/.54	.18/.60
Chloride (mg/l)	23000	22500
Total Hardness ☐ epm ☒ (mg/l)	220	200
Sand Content (% by Vol.)	TR	TR
Solids Content (% by Vol.)	2.5	3.0
Oil Content (% by Vol.)	TR	TR
Water Content (% by Vol.)	97.5	97.0
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	5	—
K+ (mg/l)	22000	22500
Nitrate (mg/l) /Sulphite (mg/l)	/	/
KCl (% W/V)	4.2	4.3
n / k	.52/1.5	.52/1.2
ECD	9.2+	9.2+

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	24	Desilter	11x4"	15
Degasser	DRILCO	0	Shaker	B60/B80	18
Desander	4x6"	18		B80/B100	18

DAILY COST $1690.25 — CUMULATIVE COST $18,211.22

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MINIMUM	8-12 / 16-20	≤9	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S84F	3x11	10-15	100	329	145

RECOMMENDATIONS

Maintaining Volume w/ "Water" pumped from sump.

Lost approx 60 bbls mud while tripping for new BHA.

Centrifuge O.P. [illegible]
Desander UF 11.0 ppg @ .65 gal/min
Desilter UF 9.5 ppg @ 2.8 gal/min

COST SUMMARY/24 HOURS ENDING 7-3-86 **@ DEPTH** 1306m

Product/Package	Units	Unit Cost	Cost
MILPAC	15	78.33	1174.95
KCl	20	15.84	316.80
CAUSTIC POTASH	5	32.29	161.45
PARAFORMALDEHYDE	1	37.05	37.05
			1690.25

OPERATIONS SUMMARY

RIH
Ream 20m to btm.
Drill Ahead
Sticky hole on Survey (1157m)
Drill to 1256m
POH
Change BHA
RIH
Work stuck pipe 20m from btm.
Ream Tight hole
Drill Ahead.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	0		280

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-795182

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	16	DATE	8TH MARCH 86
RIG NO.	8	SPUD DATE	23RD FEB 8[illegible]
DEPTH	1306m	TO	1414

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: JAR STUCK PIPE		13 3/8" Surface at 453m	Hole 335 Pits 450	Pump Size 5½" x 9¼"	Annular Vel. (Ft/Min.) Opposite DP 133 / 130
Bit Size 8½"	No. RR6	Intermediate at —	Total Circulating Volume 785	Pump Make NAT Model 9-P-100	Opposite Collar 211 / 138; Riser —
Drill Pipe Size 4½"	Type IF	Production or Liner at —	In Storage —	BBL/Stroke .068; Stroke/Min 100	Circulating Pressure 1350
Drill Collar Size 6¼"	Length 220'	Mud Type KCl POLYMER		BBL/Min 6.8	Bottoms Up (Min.) 37; Systems Total (Min.) 120

Sample from ☒ Flowline ☐ Pit

Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken	12-00		
Depth (METRES)	1414		
Weight ☐ (S.G.) ☒	9.0		
Mud Gradient (psi/ft)	.468		
Funnel Viscosity (sec./qt) API at ....°C	44		
Plastic Viscosity cps at	16		
Yield Point (lb/100 sq. ft.)	18		
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/3	/	/
pH ☒ Strip ☐ Meter	9.0		
Filtrate API (ml./30 min.)	8.2		
API HP-HT Filtrate (ml./30 min.)	—		
Cake Thickness (mm) API ☒ HP-HT ☐	1(A)		
Alkalinity, Mud (Pm)	—		
Alkalinity, Filtrate (Pf/Mf)	.08/.44	/	/
Chloride (mg/l)	21500		
Total Hardness ☐ epm ☒ (mg/l)	180		
Sand Content (% by Vol.)	TR		
Solids Content (% by Vol.)	3.0		
Oil Content (% by Vol.)	TR		
Water Content (% by Vol.)	97.0		
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	7½		
K^- (mg/l)	22000		
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% wt)	4.2		
w/k	.5411		
ELO	9.2+		

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	24	Desilter	11x4"	14
Degasser	DRILCO	0	Shaker	B60/B80	18
Desander	4x6"	18		B40/B80	18
DAILY COST	$974.70		CUMULATIVE COST	$19185.92	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	≤ 9	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S84F	3x14	10-15	100	329	145

RECOMMENDATIONS

Changed one set of shaker screens from B40/B80 to B40/B60

COST SUMMARY/24 HOURS ENDING 8-3-86 @ DEPTH 1414m

Product/Package	Units	Unit Cost	Cost
MILPAC	2	78-33	156-33
MILZAN	—	—	—
KCl	—	—	—
CAUSTIC POTASH	3	32.29	96-87
MILFREE	1	721.50	721.50
			974-70

OPERATIONS SUMMARY

Drill to 1414m

Wiper trip to shoe. Hole good.

RIH

Stuck in hole @ 1291m

Work stuck pipe.

Pump 17 bbls Milfree Pill

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
			110

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE
TELEPHONE	08-795102		

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	17	DATE	9th March 8[illegible]
RIG NO.	8	SPUD DATE	23rd Feb [illegible]
DEPTH	1414	TO	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	VINCE SANTOSTEFANO / JIM HANSON	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT / LOCATION OTWAY BASIN	STATE VIC

OPERATION

Present Activity	POH		
Bit Size	8½"	No.	RR6
Drill Pipe Size	4½"	Type	IF
Drill Collar Size	6¼"	Length	220

CASING

9⅝" Surface at	453m
Intermediate at	
Production or Liner at	
Mud Type	KCl POLYMER

MUD VOLUME

Hole	395
Pits	200
Total Circulating Volume	595
In Storage	–

CIRCULATION DATA

Pump Size	5½" x 9¼"
Pump Make / Model	NAT 9P-100
BBL/Stroke	.0680
Stroke/Min	73
BBL/Min	5.0
Annular Vel. (Ft/Min) Opposite DP	99 / .509
Opposite Collar	154 / .383
Riser	–
Circulating Pressure	800
Bottoms Up (Min.)	
Systems Total (Min.)	90

Sample from ☒Flowline ☐Pit

Flowline Temperature 32 °C

MUD PROPERTIES		10/3
Time Sample Taken	22.00	07.00
Depth (Metres)	891	1414
Weight ☐ (S.G.) ☒ ppg	8.8+	8.8+
Mud Gradient (psi/ft)	.460	.460
Funnel Viscosity (sec./qt) API at °C	38	45
Plastic Viscosity cps at	11	15
Yield Point (lb/100 sq. ft.)	11	18
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/3	2/4
pH ☒Strip ☐Meter	8.0	8.5
Filtrate API (ml./30 min.)	7.2	7.0
API HP-HT Filtrate (ml./30 min.)	–	–
Cake Thickness (mm) API☒ HP-HT☐	1(H)	1(H)
Alkalinity, Mud (Pm)	–	–
Alkalinity, Filtrate (Pf/Mf)	0/.26	TR/.36
Chloride (mg/l)	16500	19500
Total Hardness ☐epm ☒(mg/l)	240	200
Sand Content (% by Vol.)	TR	TR
Solids Content (% by Vol.)	2.5	2.5
Oil Content (% by Vol.)	TR	TR
Water Content (% by Vol.)	97.5	97.5
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)	–	–
K+ (mg/l)	17000	19500
Nitrate (mg/l) /Sulphite (mg/l)	/	/
KCl (% wt)	3.2	3.7
n/k		.54/1.1
ELO		9.1

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	22	Desilter	11x4"	3
Degasser	DRILCO	0	Shaker	B60/B60	3
Desander	4x6"	3		BLW/B60	3

DAILY COST $521.98 CUMULATIVE COST $19,707.90

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	≤ 9cc	3-4%

BY AUTHORITY ☒Operator's Written ☒Operator's Representative ☐Drilling Contractor ☐Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEC S84F	3x11				

RECOMMENDATIONS

1) 100 bbls KCl Polymer mud in Flare pit - Will be transferred back ASAP.
2) Keep mud wt at Minimum - Run all solids control continously.
3) Hole volume calculated using strokes needed to displace hole.

COST SUMMARY/24 HOURS ENDING 9-3-86 @ DEPTH [illegible]

Product/Package	Units	Unit Cost	Cost
MILPAC	3	78.33	234.99
MILZAN	1	222.41	222.41
CAUSTIC POTASH	2	32.29	64.58
			521.98

OPERATIONS SUMMARY

Jar on stuck pipe.
Displace 1 BBL Milfree pill Per hour.
Rig up & run Schlumberger to find free point.
Rig down.
Displace out mud from hole with fresh water and then circulate with water. (5430 strokes)
Jar on pipe - Pipe comes free.
Pick up Kelly & circulate and displace hole with mud.
Circulate and work pipe.
POH - No hole problems.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 18		DATE 10th March 86	
RIG NO. 8		SPUD DATE 23 Feb 86	
DEPTH 1414m		TO 1695	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON / IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VICTORIA

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: DRILLING		9 5/8" Surface at 453m	Hole 455 / Pits 460	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (Ft/Min) Opposite DP 135 / 335; Opposite Collar 24 / 583; Riser
Bit Size: 8 1/2"	No 7	Intermediate at	Total Circulating Volume 915	Pump Make NAT Model 9-P-100	
Drill Pipe Size: 4 1/2"	Type IF	Production or Liner at	In Storage 100	BBL/Stroke .068 / Stroke/Min 100	Circulating Pressure 1350
Drill Collar Size: 6 1/4"	Length 131	Mud Type: KCl POLYMER		BBL/Min 6.8	Bottoms Up (Min.) 58; Systems Total (Min.) 130

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 39 °C

MUD PROPERTIES			M3
Time Sample Taken	15-30	22-30	03-00
Depth (METRES)	1573	1690	1705
Weight ☐ (S.G.) ☒ PPG	8.9	8.9	8.9+
Mud Gradient (psi/ft)	.463	.463	.465
Funnel Viscosity (sec./qt) API at °C	40	43	44
Plastic Viscosity cps at	12	13	14
Yield Point (lb/100 sq. ft.)	16	19	20
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/3	2/5	3/5
pH ☒ Strip ☐ Meter	9.0	9.0	9.5
Filtrate API (ml./30 min.)	7.2	7.4	7.8
API HP-HT Filtrate (ml./30 min.)	–	–	–
Cake Thickness (mm) API ☒ HP-HT ☐	1(H)	1(H)	1(H)
Alkalinity, Mud (Pm)	–	–	–
Alkalinity, Filtrate (Pf/Mf)	.10/.48	.08/.56	.14/.68
Chloride (mg/l)	17500	21500	21000
Total Hardness ☐ epm ☒ (mg/l)	180	180	160
Sand Content (% by Vol.)	TR	TR	TR
Solids Content (% by Vol.)	2.5	2.0	2.5
Oil Content (% by Vol.)	TR	TR	TR
Water Content (% by Vol.)	97.5	98.0	97.5
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	5	–	5
K+ (mg/l)	18000	22000	22000
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/w)	3.4	4.2	4.2
n/k	.51/1.1	.49/1.5	.50/1.5
ECD	9.1	9.1+	9.2

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	24	Desilter	11x4"	18
Degasser	DRILCO	0	Shaker	B60/B80	18
Desander	4x6"	18		B40/B60	18

DAILY COST $3665.50 — CUMULATIVE COST $23373.40

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-11 / 16-20	≤ 9	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S44G	10-10-12	25	120	347	161

RECOMMENDATIONS

Centrifuge OF 8.8+
Desander UF 13.5 ppg @ 4.3 gal/min
Desilter UF 9.9 ppg @ 1.4 gal/min

COST SUMMARY/24 HOURS ENDING 10-3-86 @ DEPTH

Product/Package	Units	Unit Cost	Cost
MILPAC	5	78.33	391.65
MILZAN	11	222.41	2446.51
CAUSTIC POTASH	6	32.29	193.74
KCl	40	15.84	633.60
			3665.50

OPERATIONS SUMMARY

POOH.
Change BHA – Lay down 3 D.C.
RIH w/ New Bit
Ream 7 singles to btm.
Drill Ahead

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
			300	

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-795112

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 19	DATE 11th March 8[illegible]
RIG NO. 8	SPUD DATE 23rd FEB'
DEPTH 1695M	TO 1776m

OPERATOR: BEACH PETROLEUM
REPORT FOR: IAN HOFMEIER / JIM HANSON
WELL NAME AND NO.: WESTGATE #1A
CONTRACTOR: RICHTER DRILLING
REPORT FOR: LAURIE KLASSON
FIELD OR BLOCK NO.: WILDCAT
LOCATION: OTWAY BASIN
STATE: VIC

OPERATION
Present Activity: DRILLING
Bit Size: 8½" | No. 9/8
Drill Pipe Size: 4½" | Type: [illegible]
Drill Collar Size: 6¼" | Length: 126'

CASING
9⅝" Surface at 453m
Intermediate at —
Production or Liner at —
Mud Type: KCL POLYMER

MUD VOLUME
Hole: 470 | Pits: 480
Total Circulating Volume: 950
In Storage: —

CIRCULATION DATA
Pump Size: 5½ x 6¼"
Pump Make / Model: NAT 9-P-100
BBL/Stroke: .068 | Stroke/Min: 100
BBL/Min: 6.8
Annular Vel. (Ft/Min): Opposite DP 155 / 329; Opposite Collar 211 / 40[illegible]
Riser: —
Circulating Pressure: 1300
Bottoms Up (Min.): 52
Systems Total (Min.): 140

Sample from ☒ Flowline ☐ Pit
Flowline Temperature: 39 °C

MUD PROPERTIES

	11/3		12/3
Time Sample Taken	16.00	23.30	06.30
Depth (Metre)	1723	1773	1820
Weight ☐ (S.G.) ☒ PPG	8.9+	8.9+	9.0
Mud Gradient (psi/ft)	.465	.465	.468
Funnel Viscosity (sec./qt) API at °C	42	43	45
Plastic Viscosity cps at	13	15	16
Yield Point (lb/100 sq. ft.)	17	19	20
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/4	2/5	3/6
pH ☒ Strip ☐ Meter	9.0	9.5	9.0
Filtrate API (ml./30 min.)	8.3	7.7	8.4
API HP-HT Filtrate (ml./30 min.)	—	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	1(H)	1(H)	1(H)
Alkalinity, Mud (Pm)	—	—	—
Alkalinity, Filtrate (Pf/Mf)	.08/.50	.12/.65	.08/.58
Chloride (mg/l)	16500	16000	20,000
Total Hardness ☐ epm ☒ (mg/l)	160	160	~~160~~ 180
Sand Content (% by Vol.)	TR	TR	TR
Solids Content (% by Vol.)	3.0	3.0	3.0
Oil Content (% by Vol.)	TR	TR	TR
Water Content (% by Vol.)	97.0	97.0	97.0
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	7½	5	—
K+ (mg/l)	18000	17500	18500
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/v)	3.4	3.3	3.5
n/k	.52/1.2	.53/1.3	.53/1.3
ECD	9.1+	9.2	9.2+

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	24	Desilter	11x4"	15½
Degasser	DRILCO	0	Shaker	B60/B60	15½
Desander	4x6"	15½		B60/B60	15½

DAILY COST: $2394.48
CUMULATIVE COST: $25,767.88

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP		FILTRATE	KCl
MINIMUM	8-12	16-20	<9	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S44G	10.10.12	25	120	347	161
SEC S84F	10-10-12	15	95	347	162

COST SUMMARY/24 HOURS ENDING 11-3-86 @ DEPTH 1776m

Product/Package	Units	Unit Cost	Cost
MILPAC	5	78.33	391.65
MILZAN	7	222.41	1556.87
CAUSTIC POTASH	4	32.29	129.16
KCL	20	15.84	316.80
			2394.48

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
			250

RECOMMENDATIONS

Transferred approx ~~80~~ 50 bbls mud into system from Flare Pit.

Centrifuge OF 8.4 ppg
Desander UF 12.8 ppg @ 2.2 gal/min.
Desilter UF 9.7 ppg @ 2.4 gal/min.

OPERATIONS SUMMARY

Drill to 1704m
Circ.
Trip bit — No hole problems
RIH to 1489m — Hole tight.
Wash & ream tight spots.
RIH 4 stds
Wash & ream ~~[illegible]~~ 20m to btm.
Drill Ahead

GEOFLUIDS ENGINEER: ANDRE SKUJINS
HOME ADDRESS: ADELAIDE
TELEPHONE: 08-795102

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 20	DATE 12th March '86
RIG NO. 8	SPUD DATE 23rd Feb '86
DEPTH 1776m	TO 1916m (TD)

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON / IAN HUFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN / STATE VICTORIA

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA
Present Activity: POH TO LOG		9 5/8" Surface at 453m	Hole 500 Pits 440	Pump Size 5 1/2" x 9 1/4" / Annular Vel. (Ft/Min) Opposite DP 135 / 229; Opposite Collar 211 / 404; Riser —
Bit Size: 8 1/2"	No. 8	Intermediate at —	Total Circulating Volume 940	Pump Make NAT Model 9-P-100
Drill Pipe Size: 4 1/2"	Type IF	Production or Liner at	In Storage —	BBL/Stroke .068 Stroke/Min 100 / Circulating Pressure 1400
Drill Collar Size: 6 1/4"	Length 126'	Mud Type KCl POLYMER		BBL/Min 6.8 / Bottoms Up (Min.) 55; Systems Total (Min.) 140

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 40 °C

MUD PROPERTIES			
Time Sample Taken	13:30	20:00	
Depth (Metres)	1874	1916	
Weight ☐ (S.G.) ☒ PPG	8.9+	8.9+	
Mud Gradient (psi/ft)	.465	.465	
Funnel Viscosity (sec./qt) API at ____ °C	43	45	
Plastic Viscosity cps at	15	16	
Yield Point (lb/100 sq. ft.)	18	20	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	3/5	3/6	/
pH ☒ Strip ☐ Meter	9.0	9.0	
Filtrate API (ml./30 min.)	8.6	8.1	
API HP-HT Filtrate (ml./30 min.)	—	—	
Cake Thickness (mm) API ☒ HP-HT ☐	1(1)	1(1)	
Alkalinity, Mud (Pm)	—		
Alkalinity, Filtrate (Pf/Mf)	.10/.55	.13/.65	/
Chloride (mg/l)	20000	20000	
Total Hardness ☐ epm ☒ (mg/l)	140	160	
Sand Content (% by Vol.)	TR	TR	
Solids Content (% by Vol.)	3.0	3.0	
Oil Content (% by Vol.)	TR	TR	
Water Content (% by Vol.)	97.0	97.0	
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	—	5	
K⁻ (mg/l)	20000	19500	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% wt)	3.8	3.7	
n/k	.54/1.1	.53/1.3	
ELD	9.2	9.2	

EQUIPMENT	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	24	Desilter	11x4"	16
Degasser	DRILCO	0	Shaker	B60/B80	16
Desander	4x6"	16		B40/B60	16

DAILY COST $1183.22 CUMULATIVE COST $26951.10

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MINIMUM	8-12 / 16-20	≤ 9cc	3-4%

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEC S84F	10-10-12	20-30	85	347	161

RECOMMENDATIONS

Centrifuge OF 8.9 ppg
Desander UF 13.2 ppg @ 2.5 gal/min
Desilter UF 9.6 ppg @ 2.0 gal/min

OPERATIONS SUMMARY

Drill to 1916m (T.D.)
Circ.
POH 16 stand Wiper trip.
Pick up Kelly and pump out 1643m - 1641m and ream same
RIH.
Circ.
POH - No hole problems.

COST SUMMARY/24 HOURS ENDING 12-3-86 @ DEPTH 1916m

Product/Package	Units	Unit Cost	Cost
MILPAC	9	78.33	704.97
CAUSTIC POTASH	5	32.29	161.45
KCl	20	15.84	316.80
			1183.22

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
			200

GEOFLUIDS ENGINEER ANDREW SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	21	DATE	13th March 86
RIG NO.	8	SPUD DATE	23rd Feb 86
DEPTH	1916m (TD) TO		

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON / IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VIC

OPERATION

- Present Activity: CIRCULATING
- Bit Size: 8½" No.:
- Drill Pipe Size: 4½" Type: IF
- Drill Collar Size: 6¼" Length:

CASING

- 9⅝" Surface at 453m
- Intermediate at
- Production or Liner at
- Mud Type: KCl POLYMER

MUD VOLUME

- Hole 500 Pits 400
- Total Circulating Volume 900
- In Storage —

CIRCULATION DATA

- Pump Size 5½" x 9¼"
- Pump Make NAT Model 9-P-100
- BBL/Stroke .068 Stroke/Min 100
- BBL/Min 6.8
- Annular Vel. (Ft/Min.) Opposite DP 135
- Opposite Collar 211
- Riser —
- Circulating Pressure 1400
- Bottoms Up (Min.) 55
- Systems Total (Min.) 130

Sample from ☒Flowline ☐Pit
Flowline Temperature 37 °C

MUD PROPERTIES			
Time Sample Taken		1413 10:45	
Depth (Metres)		TD	
Weight ☐ (S.G.) ☒ PPG		8.9+	
Mud Gradient (psi/ft)		.465	
Funnel Viscosity (sec./qt) API at °C		42	
Plastic Viscosity cps at		14	
Yield Point (lb/100 sq. ft.)		17	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	2/5	/
pH ☒Strip ☐Meter		9.5	
Filtrate API (ml./30 min.)		8.4	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API☒ HP-HT☐		1(H)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	.15/.72	/
Chloride (mg/l)		18000	
Total Hardness ☐epm ☒(mg/l)		160	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.0	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		97.0	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		—	
K+ (mg/l)		17500	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% W/V)		3.3	
n/K		.54/1.1	
ELD		9.3	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	12	Desilter	11x4"	1
Degasser	DRILCO	0	Shaker	R60/R80	1
Desander	4x6"	1		R40/R60	1

DAILY COST $216.66 CUMULATIVE COST $27,167.76

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	≤9	3-4%

BY AUTHORITY ☒Operator's Written ☒Operator's Representative ☐Drilling Contractor ☐Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEC S84F	10.10.12			347	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 13-3-86 @ DEPTH TD

Product/Package	Units	Unit Cost	Cost
MILPAC	2	78.33	156.66
CAUSTIC SODA	2	30.00	60.00
			216.66

OPERATIONS SUMMARY

Rig up and Log.
Lost 33 bbls mud in initial 4 hrs of logging.
RIH wt Bit for Wiper trip.
Hole good.
Circ hole clean.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
			50	

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	22	DATE	14th March 8[illegible]
RIG NO.	8	SPUD DATE	23rd FEB 8[illegible]
DEPTH	1916 (TD)	TO	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER / JIM HANSON	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE 1A	FIELD OR BLOCK NO.	NILDUNT
LOCATION	OTWAY BASIN	STATE	VIC

OPERATION

Present Activity	LOG		
Bit Size	8½"	No.	RR8
Drill Pipe Size	4½"	Type	DF
Drill Collar Size	6¼"	Length	

CASING

9⅝" Surface at	453m
Intermediate at	
Production or Liner at	
Mud Type	KCl POLYMER

MUD VOLUME

Hole	500
Pits	340
Total Circulating Volume	840
In Storage	—

CIRCULATION DATA

Pump Size	5½" x 9¼"
Pump Make Model	NAT 9-P-100
BBL/Stroke	.068
Stroke/Min	100
BBL/Min	6.8
Annular Vel. (ft/Min). Opposite DP	135
Opposite Collar	211
Riser	—
Circulating Pressure	
Bottoms Up (Min.)	
Systems Total (Min.)	

Sample from ☐ Flowline ☒ Pit

Flowline Temperature .... °C

MUD PROPERTIES

Time Sample Taken		02-30	
Depth		Pit Check	
Weight ☐ (S.G.) ☒ ppg		8-9	
Mud Gradient (psi/ft)		.463	
Funnel Viscosity (sec./qt) API at .... °C		39	
Plastic Viscosity cps at		11	
Yield Point (lb/100 sq. ft.)		15	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	1 / 3	/
pH ☒ Strip ☐ Meter		9.5	
Filtrate API (ml./30 min.)		9.0	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(H)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	.10 / .55	/
Chloride (mg/l)		17000	
Total Hardness ☐ epm ☒ (mg/l)		180	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.0	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		97.0	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		—	
K+ (mg/l)		17000	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/w)		3.2	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	6	Desilter	11x4"	2
Degasser	DRILCO	0	Shaker	40/80	2
Desander	4x10"	2		80/80	2

DAILY COST $203.27 — CUMULATIVE COST $27,371.03

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	< 9	3-4%

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S84F	10.10.12			347	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 14-3-86 **@ DEPTH** TD

Product/Package	Units	Unit Cost	Cost
MILPAC	1	78.33	78.33
* MILGEL	10	14.02	140.20
Cost Correction:			
Caustic Soda Cost $22.37			-15.26
* Used for Previous Beach Job			~~203.27~~

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

OPERATIONS SUMMARY

Circ.
POA - No Problems
Log.

GEOFLUIDS ENGINEER	ANDRE SKUSIND	HOME ADDRESS	ADELAIDE	TELEPHONE	08-295 [illegible]

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	23	DATE	15th March 86
RIG NO.	8	SPUD DATE	23rd Feb 86
DEPTH	1916 (TD)	TO	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER / JIM HANSON	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO.	WILDCAT
LOCATION	OTWAY BASIN	STATE	VICTORIA

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: LOG		9 5/8" Surface at 453m	Hole 500 Pits 320	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (Ft/Min). Opposite DP 135
Bit Size: 8 1/2"	No. RR8	Intermediate at	Total Circulating Volume 820	Pump Make NAT Model 9-P-100	Opposite Collar 211 Riser —
Drill Pipe Size: 4 1/2"	Type: IF	Production or Liner at	In Storage —	BBL/Stroke .068 Stroke/Min 100	Circulating Pressure
Drill Collar Size: 6 1/4"	Length	Mud Type: KCl POLYMER		BBL/Min 6.8	Bottoms Up (Min.) Systems Total (Min.)

Sample from ☒ Flowline ☐ Pit
Flowline Temperature 34 °C

MUD PROPERTIES			
Time Sample Taken	18-00		
Depth	TD		
Weight ☐ (S.G.) PPG	9.0		
Mud Gradient (psi/ft)	.468		
Funnel Viscosity (sec./qt) API at °C	45		
Plastic Viscosity cps at	16		
Yield Point (lb/100 sq. ft.)	18		
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	3/4	/	/
pH ☒ Strip ☐ Meter	9.0		
Filtrate API (ml./30 min.)	8.0		
API HP-HT Filtrate (ml./30 min.)	—		
Cake Thickness (mm) API ☒ HP-HT ☐	1 (L)		
Alkalinity, Mud (Pm)	—		
Alkalinity, Filtrate (Pf/Mf)	.10/.58	/	/
Chloride (mg/l)	17500		
Total Hardness ☐ epm ☒ (mg/l)	180		
Sand Content (% by Vol.)	TR		
Solids Content (% by Vol.)	3.5		
Oil Content (% by Vol.)	TR		
Water Content (% by Vol.)	96.5		
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)	—		
K+ (mg/l)	15500		
Nitrate (mg/l) /Sulphite (mg/l).	/	/	/
KCl (% W/V)	2.9		

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	8	Desilter	11x4"	2
Degasser	DRILCO	0	Shaker	B40/B60	2
Desander	4x6"	2		B60/B80	2

DAILY COST $156.66 CUMULATIVE COST $27527.64

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	< 9	3-4%

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S84F	10-10. 12			347	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 15-3-86 @ DEPTH TD

Product/Package	Units	Unit Cost	Cost
MILPAC	2	78.33	156.66
CAUSTIC SODA	—	22.37	—

OPERATIONS SUMMARY

Log.
RIH.
Ream 1834m - TD
(Stuck and Work Pipe)
Circ Hole Clean.
POH.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
			100	

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

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Drilling Fluid Report

REPORT NO. 24	DATE 16th MARCH 86
RIG NO. 8	SPUD DATE 23rd FEB 86
DEPTH 1916m (TD) TO	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER / JIM HANSON	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN — STATE VIC

OPERATION
- Present Activity: LOG
- Bit Size: 8½" — No.
- Drill Pipe Size: 4½" — Type
- Drill Collar Size: 6¼" — Length

CASING
- 9⅝" Surface at 453m
- Intermediate at —
- Production or Liner at —
- Mud Type: KCl POLYMER

MUD VOLUME
- Hole 500 — Pits 370
- Total Circulating Volume 870
- In Storage

CIRCULATION DATA
- Pump Size 5½" x 9¼"
- Pump Make NM — Model 9-P-100
- BBL/Stroke .068 — Stroke/Min 100
- BBL/Min 6.8
- Annular Vel. (ft/Min). Opposite DP 135
- Opposite Collar 211
- Riser —
- Circulating Pressure
- Bottoms Up (Min.)
- Systems Total (Min.)

Sample from ☒ Flowline ☐ Pit
Flowline Temperature °C

MUD PROPERTIES			
Time Sample Taken		16-15	
Depth		TD	
Weight ☐ (S.G.) ☒ PPG		9.0	
Mud Gradient (psi/ft)		.466	
Funnel Viscosity (sec./qt) API at °C		46	
Plastic Viscosity cps at		17	
Yield Point (lb/100 sq. ft.)		20	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	3/6	/
pH ☒ Strip ☐ Meter		8.5	
Filtrate API (ml./30 min.)		8.2	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(H)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	TR/.5	/
Chloride (mg/l)		~~[illegible]~~ 16000	
Total Hardness ☐ epm ☒ (mg/l)		200	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.5	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		96.5	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		—	
K⁻ (mg/l)		13500	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% W/V)		2.6	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	24	Desilter	11x4"	2
Degasser	DRILCO	0	Shaker	B60/B60	5
Desander	4x6"	5		B40/B60	5

DAILY COST — CUMULATIVE COST

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	≤9	~3

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S84F	10-10-12			347	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 16-3-86 **@ DEPTH** TD

Product/Package	Units	Unit Cost	Cost
MILPAC	3	78.33	234.99
CAUSTIC SODA	2	22.37	44.74
			279.73

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
			140	

OPERATIONS SUMMARY

Log - RFT.
Unable to pass 497m
RIH w/ bit.
Bridge @ 497m
Work pipe 497m - 534m
RIH 2 stds - No problems.
Circ & work pipe @ 584m
POH.
Rig up & run RFT.
Unable to pass 533m.
RIH w/ bit. Ream 533m - 599m
RIH. Circ hole clean.
POH.
Rig up & run RFT.

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE 08-795102

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 25	DATE [illegible] March '86		
RIG NO. 8	SPUD DATE 23rd FEB 86		
DEPTH 1916m (TD) TO			

OPERATOR: BEACH PETROLEUM
CONTRACTOR: RICHTER DRILLING
REPORT FOR: JIM HANSON / IAN HOFMEIER
REPORT FOR: LAURIE KLASSON
WELL NAME AND NO.: WESTGATE #4A
FIELD OR BLOCK NO.: WILDCAT
LOCATION: OTWAY BASIN
STATE: VIC

OPERATION
- Present Activity: POH Sideways.
- Bit Size: 8½" — No. RR8
- Drill Pipe Size: 4½" — Type
- Drill Collar Size: 6¼" — Length

CASING
- 9⅝" Surface at 453m
- Intermediate at —
- Production or Liner at —
- Mud Type: KCl POLYMER

MUD VOLUME
- Hole 500 — Pits 350
- Total Circulating Volume 850
- In Storage —

CIRCULATION DATA
- Pump Size 5½" x 9¼"
- Pump Make NAT Model 9-P-100
- BBL/Stroke .068 — Stroke/Min 100
- BBL/Min 6.8
- Annular Vel. (Ft/Min). Opposite DP 135
- Opposite Collar 211
- Riser —
- Circulating Pressure
- Bottoms Up (Min.)
- Systems Total (Min.)

Sample from ☒Flowline ☐Pit
Flowline Temperature 41 °C

MUD PROPERTIES

Time Sample Taken		2130	
Depth		TD	
Weight ☐ (S.G.) ☒ PPG		9.0+	
Mud Gradient (psi/ft)		.471	
Funnel Viscosity (sec./qt) API at °C		45	
Plastic Viscosity cps at		17	
Yield Point (lb/100 sq. ft.)		18	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	3 / 6	/
pH ☒Strip ☐Meter		8.5	
Filtrate API (ml./30 min.)		8.4	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(1)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	TR/.46	/
Chloride (mg/l)		17000	
Total Hardness ☐epm ☒(mg/l)		180	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.5	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		96.5	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		—	
K+ (mg/l)		15000	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% W/V)		2.9	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	8	Desilter	11x4"	1
Degasser	DRILCO	0	Shaker	B60/B80	4
Desander	4x6"	2		B40/B60	4

DAILY COST $236.73 — CUMULATIVE COST $28,044.15

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	KCl
MIN	8-12 / 16-20	<9	~3%

BY AUTHORITY ☐Operator's Written ☐Operator's Representative ☐Drilling Contractor ☐Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL	BHHP
SEC S84F	10.10.12			347	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 17-3-86 @ DEPTH TD

Product/Package	Units	Unit Cost	Cost
MILPAC	1	78.33	78.33
KCl	10	15.84	158.40
			236.73

OPERATIONS SUMMARY

Run RFT.
RIH w/ Bit
Ream tight hole 1631m – 1671m
RIH.
Circ hole clean
12 std. Wiper trip
Circ hole clean
POH sideways.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
			110	-

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-295[illegible]

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Drilling Fluid Report

REPORT NO. 26	DATE 18th March 8		
RIG NO. 8	SPUD DATE 23rd Feb 8		
DEPTH 1916m (TD)	TO		

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	JIM HANSON / IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE 1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN — STATE VIC

OPERATION			CASING	MUD VOLUME	CIRCULATION DATA
Present Activity: Circ Csg			9 5/8" Surface at 453'	Hole 660 — Pits 250	Pump Size 5 1/2" x 9 1/4" — Annular Vel. (Ft/Min.) Opposite Csg. 167
Bit Size 8 1/2"	No.		Intermediate at	Total Circulating Volume 910	Pump Make Model NAT 9-P100 — Opposite Collar
Drill Pipe Size 4 1/2"	Type		5 1/2" Production or Liner at	In Storage —	BBL/Stroke .068 — Stroke/Min 100 — Riser — Circulating Pressure
Drill Collar Size 6 1/4"	Length		Mud Type: KCl Polymer		BBL/Min 6.8 — Bottoms Up (Min.) — Systems Total (Min.)

Sample from ☒ Flowline ☐ Pit

Flowline Temperature .... °C

MUD PROPERTIES			19/3
Time Sample Taken			01:00
Depth			TD
Weight ☐ (S.G.) ☒ ppg			9.0+
Mud Gradient (psi/ft)			.471
Funnel Viscosity (sec./qt) API at ..... °C			43
Plastic Viscosity cps at			16
Yield Point (lb/100 sq. ft.)			17
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	2/5
pH ☒ Strip ☐ Meter			10.0
Filtrate API (ml./30 min.)			8.0
API HP-HT Filtrate (ml./30 min.)			—
Cake Thickness (mm) API ☒ HP-HT ☐			1(4)
Alkalinity, Mud (Pm)			—
Alkalinity, Filtrate (Pf/Mf)	/	/	.16/.32
Chloride (mg/l)			16000
Total Hardness ☐ ppm ☒ (mg/l)			140
Sand Content (% by Vol.)			TR
Solids Content (% by Vol.)			3.5
Oil Content (% by Vol.)			TR
Water Content (% by Vol.)			96.5
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			—
K^+ (mg/l)			14000
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/w)			2.7

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	8	Desilter	11x4"	2
Degasser	DRILCO	0	Shaker	B40/B60	3
Desander	4x8"	0		B60/B80	3
DAILY COST	$134.22		CUMULATIVE COST	$28,178.37	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE
Min		

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 18-3-86 **@ DEPTH** TD

Product/Package	Units	Unit Cost	Cost
Caustic Soda	6	22.37	134.22

OPERATIONS SUMMARY

POH Sideways.
Rig up and run 5 1/2" csg.
Circ csg on bottom.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-795102

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 27	DATE 19th March '8	RIG NO. 8	SPUD DATE 23rd Feb 8
DEPTH 1916m (TD)	TO		

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN — STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: LOG		9 5/8" Surface at 453m	Hole 145 Pits 400	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (/Min). Opposite DP
Bit Size	No.	Intermediate at	Total Circulating Volume 545	Pump Make NAT Model 9-P-100	Opposite Collar; Riser
Drill Pipe Size	Type	5 1/2 Production or Liner at	In Storage —	BBL/Stroke .068 Stroke/Min	Circulating Pressure
Drill Collar Size	Length	Mud Type KCl POLYMER		/Min	Bottoms Up (Min.); Systems Total (Min.)

Sample from ☐ Flowline ☒ Pit

Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken		22-00	
Depth	PIT	CHECK	
Weight ☐ (S.G.) ☒ PPG		9.0+	
Mud Gradient (psi/ft)		.471	
Funnel Viscosity (sec./qt) API at ..... °C		46	
Plastic Viscosity cps at		18	
Yield Point (lb/100 sq. ft.)		18	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	3/5	/
pH ☒ Strip ☐ Meter		10.0	
Filtrate API (ml./30 min.)		8.5	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(2)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	.22/.84	/
Chloride (mg/l)		17000	
Total Hardness ☐ epm ☒ (mg/l)		140	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.5	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		96.5	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		—	
K+ (mg/l)		15000	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/v)		2.9	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	8	Desilter	11x4"	0
Degasser	DRILCO	0	Shaker	B40/B40	1
Desander	4x6"	0		B80/B80	1
DAILY COST	—		CUMULATIVE COST	$28,178.37	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	pH
MIN		≤9	9-9.5

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

OPERATIONS SUMMARY

Cement Csg.
WOC.
Nipple down BOPs.
Nipple up Tubing Hanger Spool.
Change pipe rams to 2 7/8".

COST SUMMARY/24 HOURS ENDING 19-3-86 @ DEPTH TD

Product/Package	Units	Unit Cost	Cost
NIL			

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER: ANDRE SKUJINS — HOME ADDRESS: ADELAIDE — TELEPHONE: 08-795102

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Drilling Fluid Report

REPORT NO. 28	DATE 20th MARCH
RIG NO. 8	SPUD DATE 23RD FEB
DEPTH 1916 m (TD)	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT / LOCATION OTWAY BASIN	STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity		9 5/8" Surface at 453m	Hole 145 Pits 400	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (Ft/Min.) Opposite DP 255
Bit Size	No.	Intermediate at	Total Circulating Volume 545	Pump Make NM Model 9-P-100	Opposite Collar – Riser –
Drill Pipe Size	Type	5 1/2" Production or Liner at	In Storage –	BBL/Stroke .068 Stroke/Min 57	Circulating Pressure 1400
Drill Collar Size	Length	Mud Type KCl POLYMER		BBL/Min 3.88	Bottoms Up (Min.) 23 Systems Total (Min.) –

Sample from ☒ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken		15:30	
Depth		Circ in Csg.	
Weight ☐ (S.G.) ☒ PPG		9.04	
Mud Gradient (psi/ft)		.471	
Funnel Viscosity (sec./qt) API at ..... °C		43	
Plastic Viscosity cps at		15	
Yield Point (lb/100 sq. ft.)		16	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	2/3	/
pH ☒ Strip ☐ Meter		10.5	
Filtrate API (ml./30 min.)		8.0	
API HP-HT Filtrate (ml./30 min.)		–	
Cake Thickness (mm) API ☒ HP-HT ☐		1(H)	
Alkalinity, Mud (Pm)		–	
Alkalinity, Filtrate (Pf/Mf)	/	.1/.2.1	/
Chloride (mg/l)		17000	
Total Hardness ☐ epm ☒ (mg/l)		TR	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.5	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		96.5	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		–	
K+ (mg/l)		15000	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/v)		2.9	
n/k		.57/.84	

EQUIPMENT	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	6	Desilter	11x4"	2
Degasser	DRILCO	0	Shaker	B80/B80	2
Desander	4x6"	0		B40/B80	2
DAILY COST	$46.82		CUMULATIVE COST	$28,225.19	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 20-3-86 @ DEPTH TD

Product/Package	Units	Unit Cost	Cost
BICARB SODA	2	23.41	46.82

OPERATIONS SUMMARY

~~Rig up and run Tubing to 5800 1768m~~
Run Schlumberger Bond log.
Rig up and run 2 7/8" tubing to 1768 m
Circ and cond mud.
POOH
Pressure test casing.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER ANDRE SKUJINS — HOME ADDRESS ADELAIDE — TELEPHONE 08-795102

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Drilling Fluid Report

REPORT NO. 29	DATE 21st March '8[illegible]
RIG NO. 8	SPUD DATE 23rd Feb '[illegible]
DEPTH 1916m (TD)	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN · STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity TEST		9 5/8" Surface at 453m	Hole 145 · Pits 400	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (Ft/Min). Opposite DP
Bit Size	No.	Intermediate at	Total Circulating Volume 545	Pump Make NAT Model 9-P-100	Opposite Collar · Riser
Drill Pipe Size	Type	5 1/2" Production or Liner at	In Storage —	BBL/Stroke .1068 · Stroke/Min	Circulating Pressure
Drill Collar Size	Length	Mud Type KCl POLYMER		BBL/Min	Bottoms Up (Min.) · Systems Total (Min.)

Sample from ☐ Flowline ☒ Pit

Flowline Temperature °C

MUD PROPERTIES			
Time Sample Taken		23.30	
Depth		Pit Check	
Weight ☐ (S.G.) ppg		9.0	
Mud Gradient (psi/ft)		.468	
Funnel Viscosity (sec./qt) API at °C		45	
Plastic Viscosity cps at		15	
Yield Point (lb/100 sq. ft.)		15	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	2/3	/
pH ☒ Strip ☐ Meter		10.5	
Filtrate API (ml./30 min.)		7.6	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(+)	
Alkalinity, Mud (Pm)		—	
Alkalinity, Filtrate (Pf/Mf)	/	1.0/2.15	/
Chloride (mg/l)		16500	
Total Hardness ☐ epm ☒ (mg/l)		TR	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		3.5	
Oil Content (% by Vol.)		TR	
Water Content (% by Vol.)		96.5	
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)		—	
K^+ (mg/l)		14000	
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
KCl (% w/v)		2.7	

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	12	Desilter	11x4"	0
Degasser	DRILCO	0	Shaker	B40/A80	0
Desander	4x6"	0		B80/B80	0
DAILY COST	—		CUMULATIVE COST	$28,225.1[illegible]	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 21-3-86 @ DEPTH TD

Product/Package	Units	Unit Cost	Cost
NIL			

OPERATIONS SUMMARY

Make up Perforating Gun.
RIH. Fill tubing w/ Water cushion.
Flow back detected
POOH & inspect tools. Repair tool.
RIH & Fill tubing w/ Water cushion.
Rig up & run Schlumberger GR-CCL Log
Rig up Halliburton & set packer
Pressure Test Packer & Manifold
Shoot perforating guns
Observe Well & start test.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER ANDRE SKUJINS	HOME ADDRESS ADELAIDE	TELEPHONE (08-795102	

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Geofluids Pty Ltd

Drilling Fluid Report

REPORT NO. 30	DATE 22nd March 86
RIG NO. 8	SPUD DATE 23rd Feb
DEPTH 1916m (TD)	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	RICHTER DRILLING
REPORT FOR	IAN HOFMEIER	REPORT FOR	LAURIE KLASSON
WELL NAME AND NO.	WESTGATE #1A	FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN · STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity		9 5/8" Surface at 453m	Hole · Pits	Pump Size 5 1/2" x 9 1/4"	Annular Vel. (/Min). Opposite DP
Bit Size	No.	Intermediate ~~at~~	Total Circulating Volume	Pump Make Model NAT 9-P-100	Opposite Collar · Riser
Drill Pipe Size	Type	5 1/2" Production or Liner at 1914m	In Storage	BBL/Stroke .008 · Stroke/Min	Circulating Pressure
Drill Collar Size	Length	Mud Type KCl POLYMER		BBL/Min	Bottoms Up (Min.) · Systems Total (Min.)

Sample from ☐ Flowline ☐ Pit

Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ **(S.G.)** ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at ....°C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT	SIZE	Hours		SIZE	Hours
Centrifuge	OILTOOLS	0	Desilter	1 x 4"	
Degasser	DRILCO	0	Shaker	B40 / B80	
Desander	4 x 6"			B80 / B100	
DAILY COST	$124.45		CUMULATIVE COST	$28,349.64	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

OPERATIONS SUMMARY

POH.
Lay down Test Tools.
Plug and Abandon Hole.

COST SUMMARY/24 HOURS ENDING 22-3-86 **@ DEPTH** TD

Product/Package	Units	Unit Cost	Cost
DAMAGED MUD			
BARITES	3	8.05	24.15
WD. DEFOAM	1	85.95	85.95
MILCEL	1	14.02	14.02
Cost Correction			+0.33
			$124.45

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE	TELEPHONE	08-795102

APPENDIX 4

Sidewall Core Descriptions

WESTGATE NO. 1A

SWC SAMPLE DESCRIPTION

SWC #1 1909m, Rec 4cm	CLAYSTONE, lt gry, mass - sub fiss, mod silty, mod micromic, non calc. No fluorescence.
SWC #2 1894m, Rec 4.5cm	CLAYSTONE, lt - med gry, sl silty, mod micromic, mass - sub fiss, non calc. No fluorescence.
SWC #3 1867m, Rec 4cm	SANDSTONE, lt gry, friab, vfg, SA, well srtd qtz w/ v com gry, grn & red lithics, tr brn mica tr carb det, abund part alt feld & wh clay matrix non calc, v poor vis por. No fluorescence.
SWC #4 1860.5m	NO RECOVERY
SWC #5 1851.5m, Rec 6cm	SILTY CLAYSTONE, dk gry, firm, mass - subfiss v silty, occ vf, cl, A qtz grains, com micromic, mod carb, non calc. No fluorescence.
SWC #6 1848.5m, Rec 5cm	CLAYSTONE, dk gry, firm, mass - subfiss, v silty i/p, occ vf, cl, A, qtz grains, com micromic, non calc. No fluorescence.
SWC #7 1842.5m, Rec 3.5cm	SANDSTONE, lt - med gry, friab, vf, SA mod - well srtd qtz, com blk, grn, red lithics, tr blk pyritic coal det & lam, abund partly alt feld & wh cly matrix, com med - gry argill matrix i/p & lam non calc, v poor vis por. No fluorescence.
SWC #8 1832.5m, Rec 3.8cm	CLAYSTONE, dk gry, firm, mass - subfis, v silty i/p occ vf, cl, a, qtz grains, com micromic, non calc. No fluorescence.
SWC #9 1816.5m, Rec 2.5cm	SANDSTONE, v lt brn - gry, friab, vf - fg, dom fg, SA - SR, mod srtd qtz, tr - com med grn & blk lithics, tr coal det & lam (pyritized i/p), tr pyrite, tr part alt feld & wh clay matrix, weak sil cmt, non calc. Good vis intergranular porosity. No fluorescence (trace contamination).
SWC #10 1814.5m, Rec 3.5cm	SANDSTONE, off wh - v lt brn - gry, friab, vf - fg, dom fg, SA - SR, mod well srtd qtz, tr blk & grn lithics, tr coal det, tr med brn silty & argill matrix i/p, com wh clay matrix i/p, weak sil cmt i/p, mod calc cmt i/p, v poor good dom fair vis porosity. No fluorescence.

Cont'd.

SWC #11 1809.5m, Rec 5.5cm	CLAYSTONE, med - dk gry, mass, mod micromic, sl calc w/ a single ovoid, rnd, lt - yel brn qtz pebble, 1.5 x 2 cm in dia. No fluorescence.
SWC #12 1808m, Rec 5.5cm	CLAYSTONE, dk grn - gry, mass, firm, com micromica, gd tr vfg SA qtz, tr med brn, f-m, clay ovoids, tr wh, f, altd felds, mod silty i/p, non calc. Note: V reactive to water, swells quickly. No fluorescence.
SWC #13 1793m, Rec 3.5cm	CLAYSTONE, dk grn brn gry, mass, firm, com fine - crse med brn iron oxide rich clay inclusions, tr dk grnish blk rnd ellipsoidal iron oxide pellets, tr vf - crse qtz snd grns, tr micromic, mod silty in part. No fluorescence.
SWC #14 1787m, Rec 4cm	SANDY CLAYSTONE, speckled med grn - med or brn, firm, dom grn silty claystone matrix w/ 30% med or. brn claystone ellipsoidal inclusions (prob embrionic/or degraded iron oxide pellets), com vf - v crs ellipsoidal rnd, dk brn iron oxide pellets, rare qtz grns & part alt felds, non calc. Nil vis porosity. No fluorescence.
SWC #15 1777m, Rec 4.5cm	CLAYEY SANDSTONE, mottled brn, grn wh, dom pale grn, friab - hd, vf - fg, dom fg, SA, mod srtd. 10% SA qtz grains, 90% lithics, consisting of wh altd feld, dk grn - gry & brn lithics, minor red & blk lithics, r. m - crs brn mica flakes, abund wh - brn - gry cly matrix, v wk sil cmt, nil vis porosity. No fluorescence.
SWC #16 1765.5m, Rec 4cm	FERRUGINOUS SANDSTONE, mottled dk brn, friab, f - m, dom mg, r, mod srtd. 30% iron oxide pellets, 10% qtz grains, 50% yel - or brn ellipsoidal clay inclusions, 10% wh clay matrix, non calc, v poor vis porosity. 5 - 10% pin-point, med yell nat fluor giving a wk inst followed by slow streaming pale yell cut. No natural cut colour. No odour.
SWC #17 1763m, Rec 1.3cm	FERRUGINOUS SANDSTONE, dk brn, friab, vf - v crs, dom v crs rnd, p - m srtd, 10% qtz grains, 50% dk brn ellipsoidal iron oxide pellets, com w/a brick red clay coating, 40% yell - or, wh, brick red, brn, clay matrix, sl calc. V poor vis porosity. 5% fluorescence as before, sl odour.
SWC #18 1759m, Rec 3.5cm	FERRUGINOUS SANDSTONE, mot dk brn & off wh, vf - v crs, dom crs, friab w rndd, mod - pr srtd, 50% iron oxide pellets, 10% SA fg qtz, 40% yell - or. to med brn, off wh i/p clay matrix, non calc. Trace intergranular vis porosity. Tr pin-point as before, sl odour.

Cont'd.

SWC #19 1754m, Rec 4cm	<u>FERRUGINOUS SANDSTONE</u>, dk brn, friab, vf - v crs dom crs, w rnd, pr srtd, 20% iron oxide pellets, 15% qtz, 65% yell - or, med - dk brn, tr off white, clay matrix, non calc. Tr intergranular vis porosity. No fluorescence, sl odour.
SWC #20 1752m, Rec 4cm	<u>FERRUGINOUS SANDSTONE</u>, as before. Tr intergranular vis porosity. No fluorescence, sl odour.
SWC #21 1749.5m, Rec 3cm	<u>FERRUGINOUS SANDSTONE</u>, med dk yell - or brn, friab, vf - crs, dom crs, rnd pr srtd, 25% iron oxide pellets, 15% f - mg qtz, 60% yell - or, med - dk brn, silty - clay matrix, sl calc i/p. Tr intergranular vis porosity. No fluorescence, sl odour.
SWC #22 1748m, Rec 3cm	<u>FERRUGINOUS SANDSTONE</u>, m - dk brn, friab, vf - v crs, dom crs, rnd, poor srtd, 40% iron oxide pellets, 15% vf - fg qtz, 45% m brn, v silty clay matrix, non calc. Tr intergranular vis porosity. No fluorescence, sl odour.
SWC #23 1746m, Rec 3.5cm	<u>FERRUGINOUS SANDSTONE</u>, m - dk brn, friab, vf - crs, dom mg, SA - r, dom rnd, mod srtd, 50% iron oxide pellets, 30% vf - mg, dom f, SA qtz, 20% silty clay matrix, calc. Fair to good intergranular vis porosity. No fluorescence, sl odour.
SWC #24 1744m, Rec 3.3cm	<u>FERRUGINOUS SANDSTONE</u>, m - dk brn, friab, vf - crs, dom mg, SA - r, pr srtd, 10% iron oxide pellet, 10% qtz grains, 80% med brn to grn gry silty clay matrix, non calc. Trace intergranular vis porosity i/p dom tight. No fluorescence, sl odour.
SWC #25 1731m, Rec 5.3cm	<u>SANDY CLAYSTONE</u>, dk grn - gry, firm, massive, 10% glauc clay matrix pellets, sl silty, tr micromic, tr vf - mg, green stained qtz, v sl calc i/p. No fluorescence, sl odour.
SWC #26 1456m, Rec 5cm	<u>SANDSTONE</u>, med brn - grn, friab, vf - mg dom fg, SA - SR, pr srtd qtz, com stain yell - brn, occ grn - brn, abund med brn argill, silty i/p matrix, no calc. V poor vis porosity. No fluorescence, sl odour.
SWC #27 1443m, Rec 5.8cm	<u>SANDSTONE</u>, dk grn - gry, friab, vf - mg, dom f - g, SA - SR, pr srtd. 50% qtz grains w/yel, dk grn stain, 50% dk grn, occ off wh silty clay matrix, sl calc i/p. V poor vis por. No fluorescence, no odour.

Cont'd.

SWC #28 896.5m, Rec 5.4cm	CLAYSTONE, dk grn - gry, massive, firm, mod silty tr - com micromic, 5% vf - crs, dom fg, SA - r, qtz & glauc grains. No fluorescence, (tr contamination), no odour.
SWC #29 889.5m, Rec 5.3cm	CLAYSTONE as above. No fluorescence, no odour.
SWC #30 881.5m, Rec 3.8cm	CLAYSTONE, med - dk gry, massive, firm, mod srtd, tr micromic, tr vf, SA qtz grains, sl carb. No fluorescence, no odour.

APPENDIX 5

Velocity Survey

CONTENTS

Schlumberger

BEACH PETROLEUM N.L.

GEOGRAM PROCESSING REPORT

WESTGATE - 1

FIELD	:	WILDCAT
PERMIT	:	PEP 108
COUNTRY	:	AUSTRALIA
STATE	:	VICTORIA
LOCATION	:	OTWAY BASIN
COORDINATES	:	038° 28' 01.02" S 142° 53' 12.34" E
DATE OF SURVEY	:	14-MARCH-1986
REFERENCE NO.	:	560311

1.0 INTRODUCTION

A velocity check shot survey was conducted in the Westgate - 1 well on 14 March 1986. Twenty one levels from 99 metres to 1913 metres measured depth (MD) below KB were shot using a dynamite source. At each level, shots were taken from the mudpit and from a position vertically above the downhole geophone. The levels shot from the mudpit have been used in the calibration of the sonic log.

The shot times, correlation logs and calibrated sonic times have been corrected to true vertical depth (TVD) from the seismic reference datum at 150 metres above mean sea level.

2.0 DATA ACQUISITION

Table 1
Field Equipment and Survey Parameters

Elevation SRD	150.0 metres AMSL
Elevation KB	94.3 metres AMSL
Elevation DF	94.2 metres AMSL
Elevation GL	88.1 metres AMSL
No. of Levels	21
Total Depth	1916 metres below KB
Well Deviation	Offset at TD = 762 metres
	Azimuth at TD = 35.5°
Mudpit Shots	
Energy Source	Dynamite
Source Offset	28.2 metres
Source Depth	1.5 metres below GL
Source Azimuth	110°
Surface Sensor	Hydrophone
Sensor Offset	2 metres from source
Offset Shots	
Energy Source	Dynamite
Source Offset	from 22 to 762 metres metres
Source Depth	4.0 metres below local GL
Source Azimuth	approx 35°
Surface Sensor	Hydrophone
Sensor Offset	2 metres from source
Downhole Geophone	Geospace HS-1
	High Temp. (350°F)
	Coil Resist. 225Ω ±10 %
	Natural Freq. 8-12 hertz
	Sensitivity 0.45 V/in/sec
	Maximum tilt angle 60°

Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format.

2.1 Survey Details

The survey was shot using a dynamite source and a hydrophone as the surface sensor. No major problems were noted during the survey.

3.0 WELL DEVIATION DATA

The well deviation data was obtained from the 'directional calculations' compiled by Hofco Drilling Services. The deviation data above 525 metres was computed from the 'Well Velocity Points' table supplied by Beach Petroleum. A summary of the well deviation interpolated to each check shot level is given below in table 2.

Table 2
Interpolated Deviation Data

Meas Depth metres KB	Vert Depth metres KB	Vert Depth metres SRD	EW Coord metres	NS Coord metres
99.0	99.0	154.7	0.0	0.0
135.0	135.0	190.7	0.0	0.0
250.0	247.8	303.5	10.9	19.3
409.0	394.6	450.3	39.5	69.9
450.0	432.0	487.7	49.6	86.4
566.0	532.8	588.5	78.3	133.6
722.0	673.1	728.8	114.5	190.2
835.0	773.8	829.5	141.6	232.6
896.0	827.9	883.6	156.8	256.4
962.0	885.9	941.6	173.7	282.9
1017.0	934.2	989.9	188.0	305.0
1165.0	1063.8	1119.5	228.4	363.9
1298.0	1179.9	1235.6	267.5	415.8
1392.0	1262.5	1318.2	295.7	450.6
1441.0	1305.9	1361.6	310.3	468.0
1680.0	1519.8	1575.5	379.8	548.9
1742.0	1576.2	1631.9	396.9	568.3
1764.0	1596.3	1652.0	402.8	574.9
1809.0	1637.4	1693.1	414.9	588.5
1852.0	1676.8	1732.5	426.4	601.5
1912.0	1731.6	1787.3	442.6	619.7

4.0 CHECK SHOT DATA

4.1 Mudpit Shots

A total of 21 check levels were shot during the survey. The shots from the mudpit have been used to calibrate the sonic log. All transit times are corrected to vertical transit times from SRD. A replacement velocity of 1750 metres/sec was used from source to SRD (150 metres above MSL). The data quality is good and a display of the stacked data is presented in figures 2 and 3.

4.2 Offset Shots

These shots were acquired with the source positioned vertically above each geophone station. The transit times have been corrected to the mudpit source depth and are listed with the calculated vertical transit times from the mudpit shots.

Table 3
Offset Source Transit Times

Meas Depth metres KB	Vert Depth metres KB	Trans Time (vertical)	Correction msecs	Corr TT msecs	Mudpit TT msec	Δ TT msec
99.0	99.0	-	-	-	53	-
135.0	135.0	-	-	-	71	-
250.0	247.8	137	1.6	139	134	5
409.0	394.6	213	1.6	215	209	6
450.0	432.0	233	1.7	235	226	9
566.0	532.8	267	1.7	269	268	1
722.0	673.1	323	1.7	325	325	0
835.0	773.8	362	1.5	364	365	-1
896.0	827.9	383	1.3	384	385	-1
962.0	885.9	401	1.1	402	405	-3
1017.0	934.2	419	1.1	420	423	-3
1165.0	1063.8	469	0.3	469	469	0
1298.0	1179.9	512	0.1	512	509	3
1392.0	1262.5	542	-0.1	542	537	5
1441.0	1305.9	557	-0.1	557	553	4
1680.0	1519.8	618	-0.3	618	617	1
1742.0	1576.2	641	-0.5	641	637	4
1764.0	1596.3	647	-0.5	647	644	3
1809.0	1637.4	662	-0.5	662	656	6
1852.0	1676.8	675	-0.5	675	668	7
1912.0	1731.6	688	-0.5	688	685	3

Trans Time = transit time recorded for offset source position
Correction = time required to adjust the vertical transit times to the depth of the mudpit source (using a surface velocity of 1500 metres/sec)
Corr TT = the offset transit times adjusted to mudpit source depth
Mudpit TT = the vertical transit time calculated from the mudpit source (from column 6 of the 'Geophysical Airgun Report')
Δ TT = difference in offset and mudpit source transit times

Given that the transit times are to accurate to ±1 msec, then Δ TT error criteria is ±2 msec.

The sonic drift calculated from the mudpit TT is low, displaying a maximum deviation of ± 3 msec. The difference between the offset and the mudpit TT's is accounted for by local variations in the velocity profile vertically above the geophone levels

The mudpit transit times have been used for the sonic calibration as raypath geometry dictates these times are recorded along the wellbore in the same manner as the sonic log.

The GEOGRAM output has been positioned in TWT using the offset TT's as these give the best approximation to the stacking velocity function applied during the surface seismic processing.

The low Δ TT values imply an absence of anistropy and small lateral velocity variations.

5.0 SONIC CALIBRATION

A 'drift' curve is obtained using the sonic log and the vertical check level times. The term 'drift' is defined as the seismic time (from check shots) minus the sonic time (from integration of edited sonic). Commonly the word 'drift' is used to identify the above difference, or to identify the gradient of drift verses increasing depth, or to identify a difference of drift between two levels.

The gradient of drift, that is the slope of the drift curve, can be negative or positive.

For a negative drift $\frac{\Delta drift}{\Delta depth} < 0$, the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift $\frac{\Delta drift}{\Delta depth} > 0$, the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is then an indication of the error on the integrated sonic or an indication of the amount of correction required on the sonic to have the TTI of the corrected sonic match the check shot times.

Two methods of correction to the sonic log are used.

1. **Uniform or block shift** This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in μsec/ft.
2. ΔT **Minimum** In the case of negative drift a second method is used, called Δt minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt_{min}. Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min}, Δt - Δt_{min}.

   $\Delta t - \Delta t_{min}$ is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, can be be defined as:

   $$G = 1 + \frac{drift}{\int (\Delta t - \Delta t_{min}) dZ}$$

   Where drift is the drift over the interval to be corrected and the value $\int (\Delta t - \Delta t_{min}) dZ$ is the time difference between the integrals of the two curves Δt and Δt_{min}, only over the intervals where $\Delta t > \Delta t_{min}$.

   Hence the corrected sonic: $\Delta t = G(\Delta t - \Delta t_{min}) + \Delta t_{min}$.

6.0 SONIC CALIBRATION PROCESSING

6.1 Open Hole Logs

Both the sonic and density logs used have been edited and corrected to true vertical depth (TVD) prior to input into the Well Seismic Calibration processing chain.

Density data was available from TD to 1450 metres and from 1150 metres to 700 metres (measured depth). The two intervening zones have been patched at densitys of 2.32 gm/cc (1450-1150 metres) and 2.1 gm/cc (700-450 metres). The overall log quality is good and only minor zones of cycle skipping have been edited from the sonic log.

Density log interval	:	1912 to 1450 metres below KB (MD)
		1150 to 700 metres below KB (MD)
Sonic log interval	:	1912 to 450 metres below KB (MD)

All open hole logs were corrected to TVD after editing. The resulting log intervals are from 1731 to 432 metres TVD.

6.2 Correction to Datum and Velocity Modelling

Seismic reference datum (SRD) is at 150 metres above mean sea level. The dynamite source was positioned 1.5 metres below GL at an offset of 28 metres from the wellhead. A replacement velocity of 1750 metres/sec has been used from SRD to GL.

6.3 Sonic Calibration Results

The top of the sonic log (432 metres TVD below KB) is chosen as the origin for the calibration drift curve. The drift curve indicates a number of corrections to be made to the sonic log. A list of shifts used on the sonic data is given below.

Table 3 Sonic Drift

Depth Interval (TVD) (m below KB)	Block Shift μsec/ft	Δt_{min} μsec/ft	Equiv Block Shift μsec/ft
432-769	0.45	-	0.45
769-1049	-	102.39	-1.2
1049-1731	0.71	-	0.71

The adjusted sonic curve is considered to be the best result using the available data.

7.0 GEOGRAM PROCESSING

GEOGRAM plots were generated using a zero phase butterworth wavelets at frequencies of 12-80 hertz and 10-60 hertz.

The well trajectory has been overlain on the GEOGRAM at a horizontal scale of 1:15000. Two plots of each GEOGRAM are presented with the right and left sides respectively of the well trajectory blanked out. The presentations include both normal and reverse polarity on a time scale of 5 in/sec and a trace density of 10 tr/cm.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the well-bore. The steps in the processing chain are the following:

Depth to time conversion

Reflection coefficients

Attenuation coefficients

Convolution

Output.

7.1 Depth to Time Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and flipped to read from the top to bottom in order to match the seismic section.

7.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 millisecs). Reflection coefficients are then computed using:

$$R = \frac{\rho_2.\nu_2 - \rho_1.\nu_1}{\rho_2.\nu_2 + \rho_1.\nu_1}$$

where

ρ_1	=	density of the layer above the reflection interface
ρ_2	=	density of the layer below the reflection interface
ν_1	=	compressional wave velocity of the layer above the reflection interface
ν_2	=	compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

7.3 Primaries with Transmission Loss

Transmission loss on two-way attenuation coefficients are computed using:

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$Primary_n = R_n.A_{n-1}$$

7.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

7.5 Multiples Only

By subtracting previously calculated primaries from the above result we obtain multiples only.

7.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

Klauder wavelet

Ricker zero phase wavelet

Ricker minimum phase wavelet

Butterworth wavelet

User defined wavelet.

These GEOGRAMS were generated using butterworth wavelets. Polarity conventions are shown in Figure 1.

7.7 Convolution

Standard procedure of convolution of wavelet with reflection coefficients. The output is the synthetic seismogram.

8.0 SUMMARY OF GEOPHYSICAL LISTINGS

Six geophysical data listings are appended to this report. Following is a brief description of the format of each listing.

8.1 Geophysical Airgun Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from KB : *dkb*, the depth in metres from kelly bushing .
3. Vertical depth from SRD : *dsrd*, the depth in metres from seismic reference datum.
4. Vertical depth from GL : *dgl*, the depth in metres from ground level.
5. Observed travel time HYD to GEO : *tim0*, the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.
6. Vertical travel time SRC to GEO : *timv*, is corrected for source to hydrophone distance and for source offset.
7. Vertical travel time SRD to GEO : *shtm*, is *timv* corrected for the vertical distance between source and datum.
8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level, $\frac{dsrd}{shtm}$.
9. Delta depth between shots : $\Delta depth$, the vertical distance between each level.
10. Delta time between shots : $\Delta time$, the difference in vertical travel time (*shtm*) between each level.
11. Interval velocity between shots : the average seismic velocity between each level, $\frac{\Delta depth}{\Delta time}$.

8.2 Drift Computation Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from KB : the depth in metres from kelly bushing .
3. Vertical depth from SRD : the depth in metres from seismic reference datum.
4. Vertical depth from GL : the depth in metres from ground level.
5. Vertical travel time SRD to GEO : the calculated vertical travel time from datum to downhole geophone (see column 7, Geophysical Airgun Report).
6. Integrated raw sonic time : the raw sonic log is integrated from top to bottom and listed at each level. An initial value at the top of the sonic log is set equal to the checkshot time at that level. This may be an imposed shot if a shot was not taken at the top of the sonic.
7. Computed drift at level : the checkshot time minus the integrated raw sonic time.
8. Computed blk-shft correction : the drift gradient between any two checkshot levels ($\frac{\Delta drift}{\Delta depth}$).

8.3 Sonic Adjustment Parameter Report

1. Knee number : the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)
2. Vertical depth from KB : the depth in metres from kelly bushing .
3. Vertical depth from SRD : the depth in metres from seismic reference datum.
4. Vertical depth from GL : the depth in metres from ground level.
5. Drift at knee : the value of drift imposed at each knee.
6. Blockshift used : the change in drift divided by the change in depth between any two levels.
7. Delta-T minimum used : see section 4 of report for an explanation of Δt_{min}.
8. Reduction factor : see section 4 of report.
9. Equivalent blockshift : the gradient of the imposed drift curve.

8.4 Velocity Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from KB : the depth in metres from kelly bushing .
3. Vertical depth from SRD : the depth in metres from seismic reference datum
4. Vertical depth from GL : the depth in metres from ground level
5. Vertical travel time SRD to GEOPH : the vertical travel time from SRD to downhole geophone (see column 7, Geophysical Airgun Report)
6. Integrated adjusted sonic time : the adjusted sonic log is integrated from top to bottom. An initial value at the the top of the sonic is set equal the checkshot time at that level. (The adjusted sonic log is the drift corrected sonic log.)
7. Drift=shot time-raw son : the check shot time minus the raw integrated sonic time.
8. Residual=shot time-adj son : the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.
9. Adjusted interval velocity : the interval velocity calculated from the integrated adjusted sonic time at each level.

8.5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 millisecs) and the sampling rate is 2 millisecs.
2. Measured depth from KB : the depth from KB at each corresponding value of two way time.
3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.
4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.
5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

$$v_{rms} = \sqrt{\Sigma_1^n v_i^2 t_i / \Sigma_1^n t_i}$$

   where v_i is the velocity between each 2 millisecs interval.

6. First normal moveout : the correction time in millisecs to be applied to the two way travel time for a specified moveout distance (default = 3000 feet).

$$\Delta t = \sqrt{t^2 + \left(\frac{X}{v_{rms}}\right)^2} - t$$

   where
   Δt = normal moveout (secs)
   X = moveout distance (metres)
   t = two way time (secs)
   v_{rms} = rms velocity (metres /sec)

7. Second normal moveout : the correction time in millisecs to be applied to the two way travel time for a specified moveout distance (default = 4500 feet).
8. Third normal moveout : the correction time in millisecs to be applied to the two way travel time for a specified moveout distance (default = 6000 feet).
9. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 millisecs two way time, (1 millisec one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

8.6 SYNTHETIC SEISMOGRAM TABLE

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at the top of the sonic. The default sampling rate is 2 millisecs.
2. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.
3. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 millisecs two way time, (1 millisec one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

4. Interval density : the average density between two successive values of two way time.
5. Reflect. coeff. : the difference in acoustic impedance divided by the sum of the acoustic impedance between any two levels. The acoustic impedance is the product of the interval density and the interval velocity.
6. Two way atten. coeff. : is computed from the series

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

7. Sythetic seismo. primary : the product of the reflection coefficient at each depth and the two way attenuation coefficient up to that depth.

$$Primary_n = R_n.A_{n-1}$$

8. Primary + multiple : a transform technique is used to calculate multiples from the input reflection coefficients.
9. Multiples only : (Primary + multiple) - (Synthetic seismo. primary)

FIGURE 2

WESTGATE - 1 MUDPIT SOURCE

LEVEL	DEPTH	TIME
41	99.0	0.054
40	135.0	0.071
39	250.0	0.134
37	409.0	0.212
35	450.0	0.231
33	566.0	0.278
31	722.0	0.341
29	835.0	0.386
27	896.0	0.408
25	962.0	0.431
23	1017.0	0.452
21	1165.0	0.504
19	1298.0	0.550
17	1392.0	0.582
15	1441.0	0.600
13	1680.0	0.672
11	1742.0	0.694
9	1764.0	0.702
7	1809.0	0.715
5	1852.0	0.72
1	1913.0	0.747

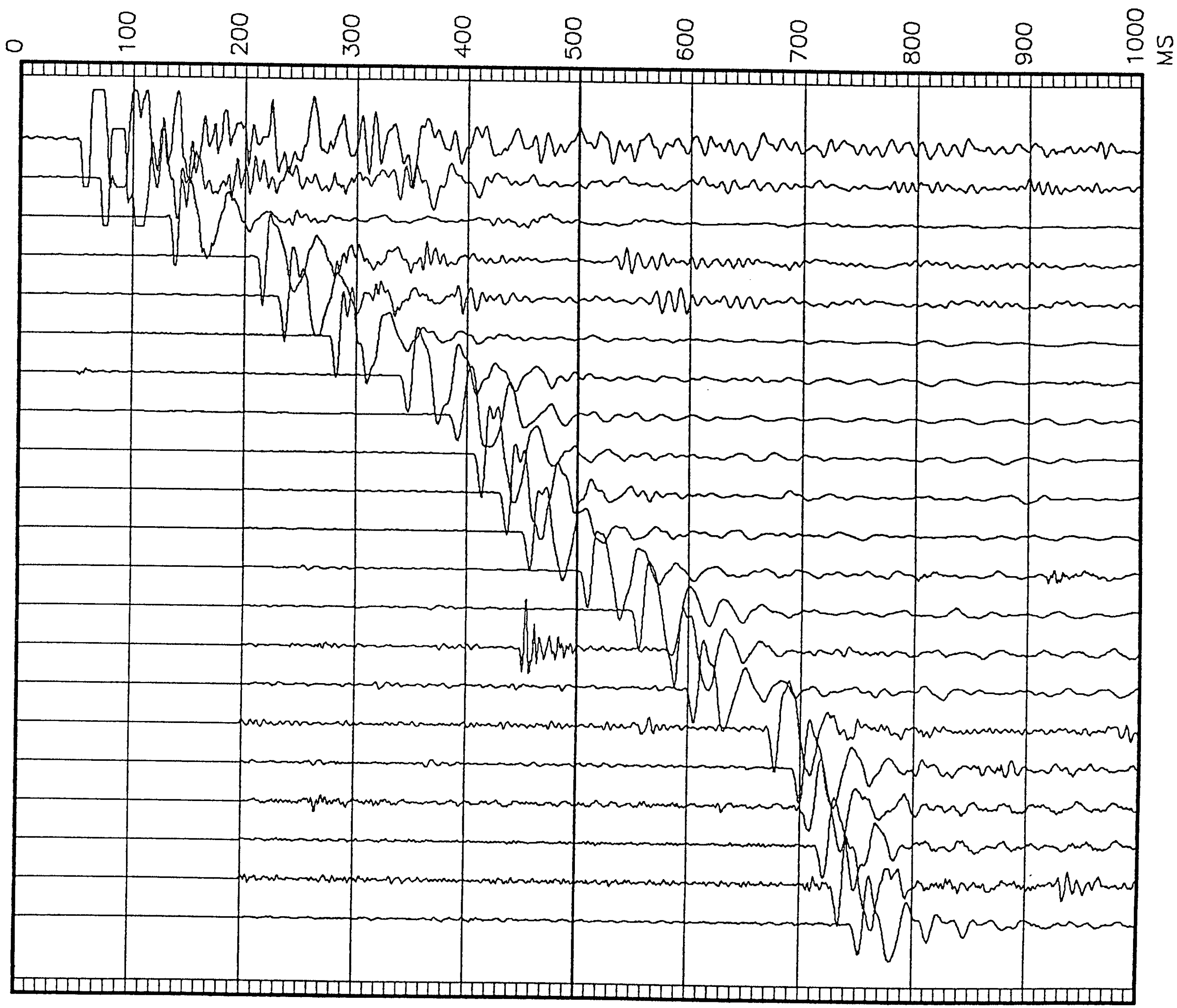
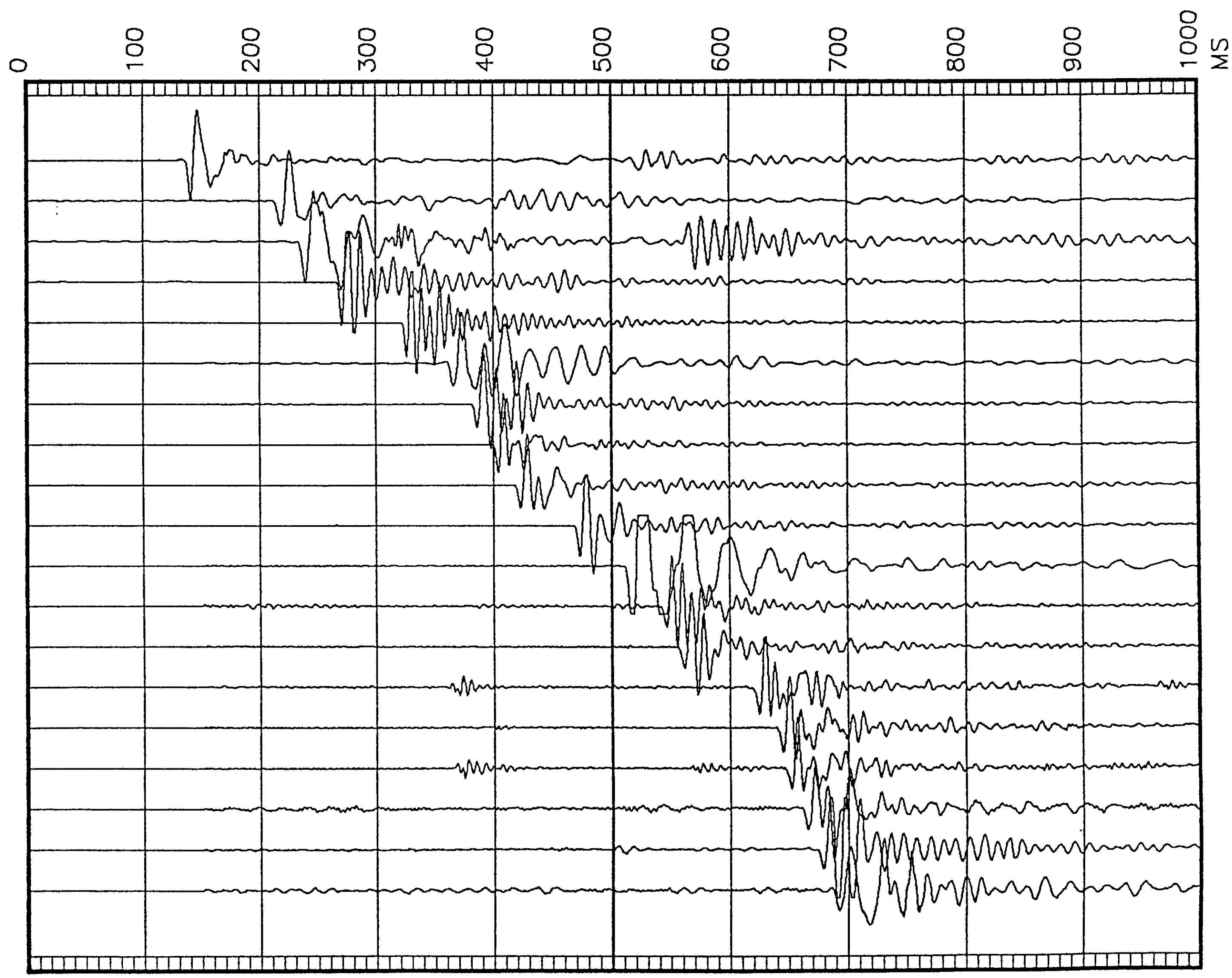


FIGURE 3

WESTGATE - 1 OFFSET SOURCE

LEVEL	DEPTH	TIME
38	250.1	0.137
36	409.1	0.213
34	450.1	0.233
32	566.1	0.267
30	722.1	0.323
28	835.1	0.362
26	896.1	0.383
24	962.1	0.401
22	1017.1	0.419
20	1165.1	0.469
18	1298.1	0.512
16	1392.1	0.542
14	1441.1	0.557
12	1680.1	0.618
10	1742.1	0.641
8	1764.1	0.647
6	1809.1	0.662
4	1852.1	0.675
2	1912.1	0.688



Schlumberger

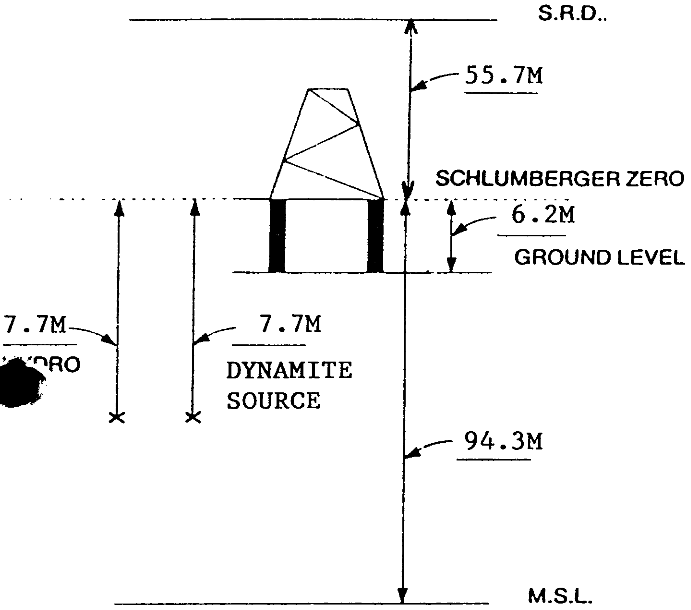
GUN GEOMETRY SKETCH

FIGURE 4

CLIENT: BEACH PETROLEUM NL WELL: WESTGATE-1 DATE: 14.3.86

LAND [X]

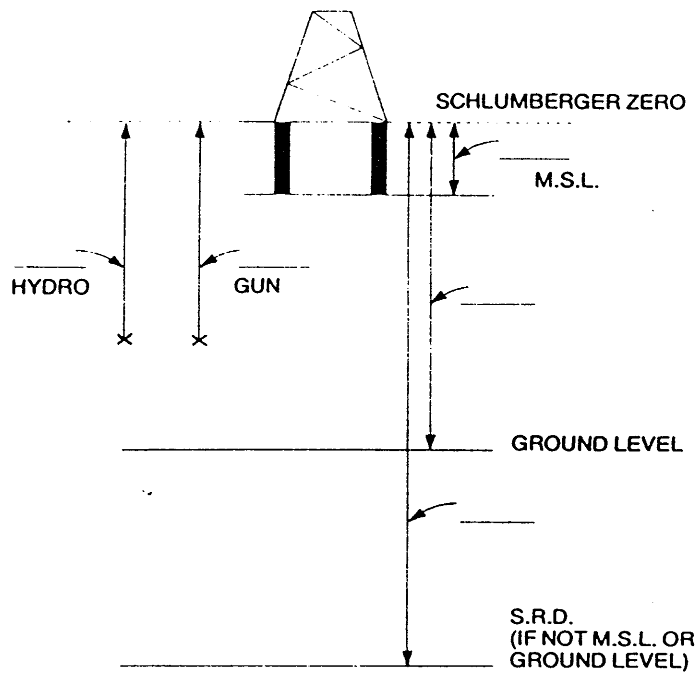
MUDPIT SOURCE



INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

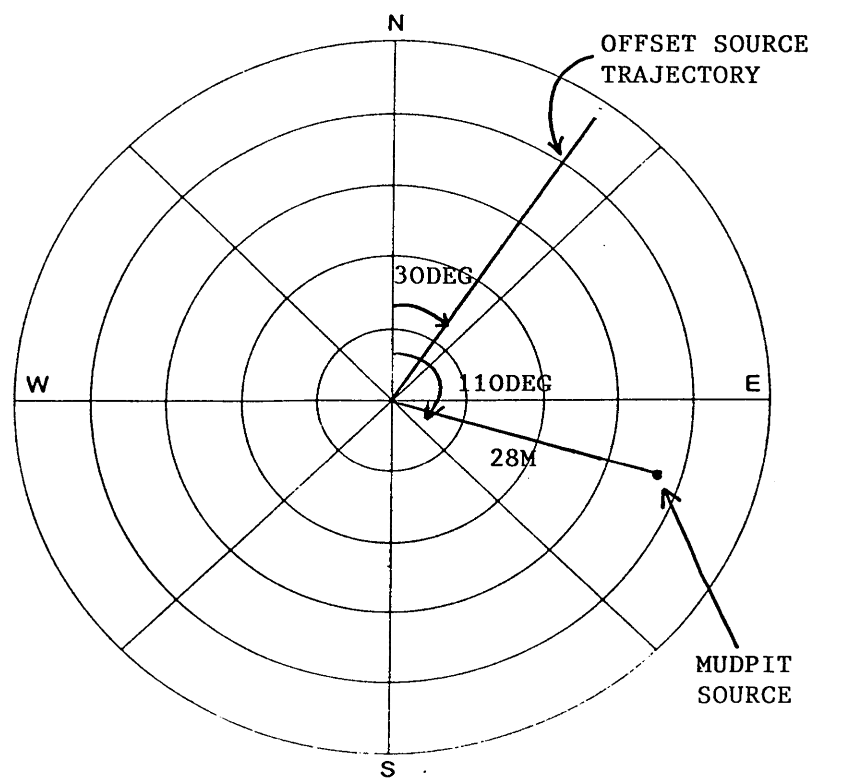
* DELETE AS APPLICABLE

OFFSHORE [ ]



INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

SHOT POS'N	DYNA OFFSET	HYDRO OFFSET	DYNA DEPTH	HYDRO DEPTH
1	28.2M	2M FROM DYNA	1.5M	1.5M
2				
3				
4				
5				
6				
7				

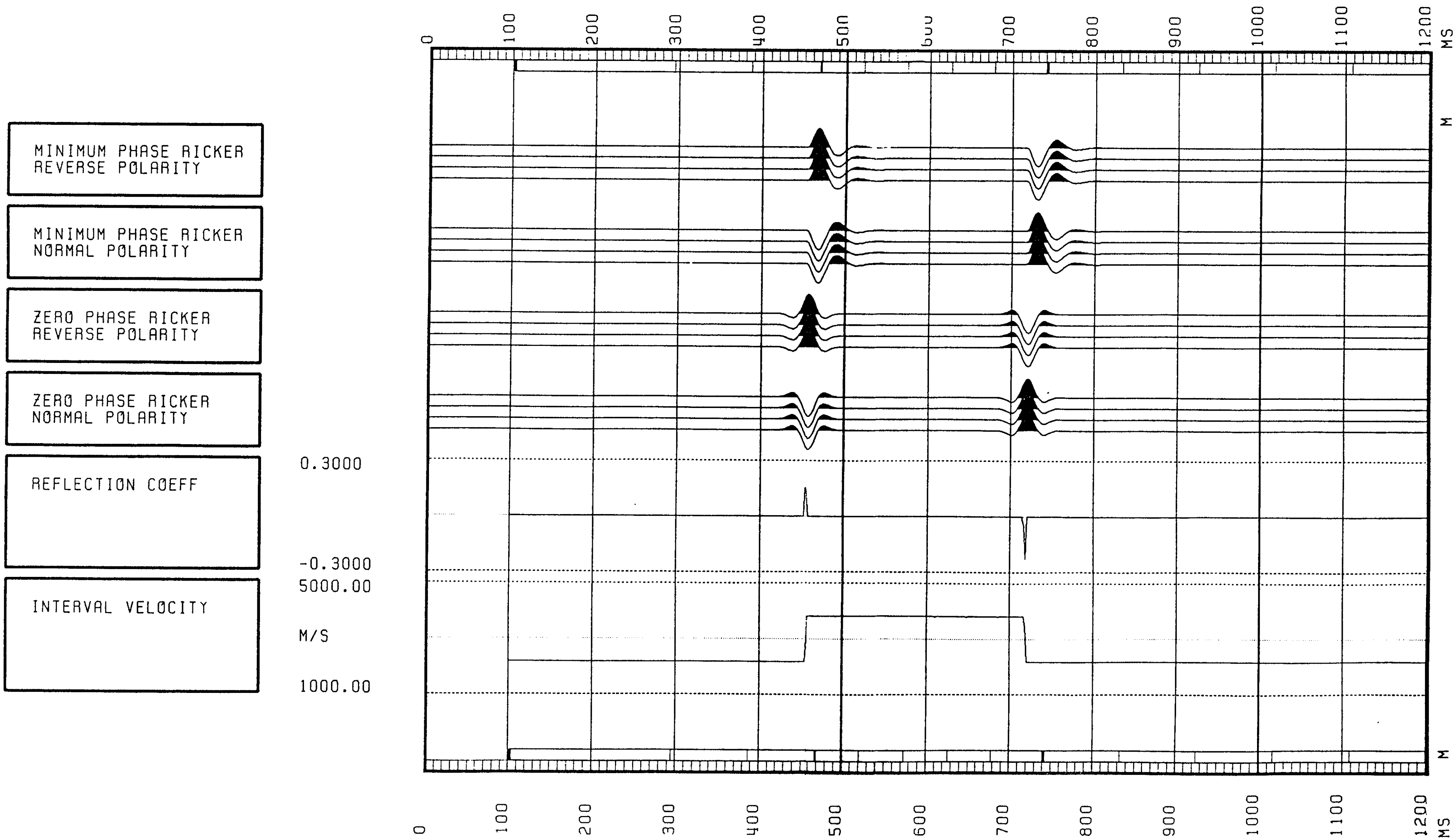


INDICATE GUN/VIBRO AND HYDROPHONE OFFSET AND AZIMUTH RELATIVE TO NORTH

Distribution: White = Client; White = computing centre; Green = District; Pink = location

SCHLUMBERGER (SEG-1976) WAVELET POLARITY CONVENTION

Figure 1



Shots

SHOTS

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GEOPHYSICAL AIRGUN REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

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*   SCHLUMBERGER   *
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GEOPHYSICAL AIRGUN REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

FIELD : WILDCAT

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: 560311

LONG DEFINITIONS

GLOBAL

KB	- ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD	- ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB	- ELEVATION OF KELLY BUSHING
GL	- ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
VELHYD	- VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
VELSUR	- VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ	- SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
GUNEWZ	- SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
GUNNSZ	- SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
HYDELZ	- HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
HYDEWZ	- HYDROPHONE DISTANCE FROM THE BOREH AXIS IN EW DIRECTION (CF GUNELZ)
HYDNSZ	- HYDROPHONE DISTANCE FROM THE BOREH AXIS IN NS DIRECTION (CF GUNELZ)
TRTHYD	- TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
TRTSRD	- TRAVEL TIME FROM THE SOURCE TO THE SRD
DEVWEL	- DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH	- SHOT NUMBER
DKB.GSH	- MEASURED DEPTH FROM KELLY-BUSHING
DSRD.GSH	- DEPTH FROM SRD
DGL.GSH	- VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
TIMO.GSH	- MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
TIMV.GSH	- VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
SHTM.GSH	- SHOT TIME (WST)
AVGV.GSH	- AVERAGE SEISMIC VELOCITY
DELZ.GSH	- DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
DELT.GSH	- TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
INTV.GSH	- INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	94.3000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	150.000	M
ELEVATION OF KELLY BUSHI	EKB	:	-55.7000	M
ELEV OF GL AB. SRD(WST)	GL	:	-61.9000	M
VEL SOURCE-HYDRO(WST)	VELHYD	:	1500.00	M/S
VEL SOURCE-SRD (WST)	VELSUR	:	1750.00	M/S

(MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	-63.40	26.50	-9.64	-63.40	25.58	-11.39

	TRT HYD-SC MS	TRT SC-SRD MS
1	1.31	36.23

	MD @ KB M	VD @ KB M	VD @ SRD M	E-W COORD M	N-S COORD M
1	99.00	99.00	154.70	0	0
2	135.00	135.00	190.70	0	0
3	250.00	247.80	303.50	10.90	19.31
4	409.00	394.60	450.30	39.50	69.90
5	450.00	432.00	487.70	49.60	86.40
6	566.00	532.88	588.58	78.31	133.62
7	722.00	673.16	728.86	114.54	190.25
8	835.00	773.86	829.56	141.68	232.63
9	896.00	827.94	883.64	156.84	256.43
10	962.00	885.95	941.65	173.76	282.98
11	1017.00	934.23	989.93	188.07	305.09
12	1165.00	1063.86	1119.56	228.48	363.98
13	1298.00	1179.94	1235.64	267.55	415.80
14	1392.00	1262.55	1318.25	295.78	450.66
15	1441.00	1305.98	1361.68	310.30	468.08
16	1680.00	1519.88	1575.58	379.82	548.90
17	1742.00	1576.22	1631.92	396.91	568.32
18	1764.00	1596.33	1652.03	402.83	574.97
19	1809.00	1637.48	1693.18	414.93	588.59
20	1852.00	1676.80	1732.50	426.49	601.59
21	1912.00	1731.67	1787.37	442.62	619.75

COMPANY : BEACH PETROLEUM N.L. WELL : WESTGATE - 1

LEVEL NUMBER	MEASUR DEPTH FROM KB M	VERTIC DEPTH FROM SRD M	VERTIC DEPTH FROM GL M	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS M/S
1	99.00	154.70	92.80	54.00	52.85	89.08	1737			
								36.00	17.75	2028
2	135.00	190.70	128.80	71.00	70.60	106.83	1785			
								112.80	63.46	1777
3	250.00	303.50	241.60	134.00	134.06	170.29	1782			
								146.80	74.77	1963
4	409.00	450.30	388.40	212.00	208.83	245.06	1838			
								37.40	17.43	2145
5	450.00	487.70	425.80	231.00	226.26	262.49	1858			
								100.88	41.99	2402
6	566.00	588.58	526.68	278.00	268.26	304.48	1933			
								140.28	56.99	2462
7	722.00	728.86	666.96	341.00	325.24	361.47	2016			
								100.70	40.31	2498
8	835.00	829.56	767.66	386.00	365.55	401.78	2065			
								54.08	19.42	2785
9	896.00	883.64	821.74	408.00	384.97	421.20	2098			
								58.00	20.08	2888
10	962.00	941.65	879.75	431.00	405.05	441.28	2134			
								48.29	18.44	2619
11	1017.00	989.93	928.03	452.00	423.49	459.72	2153			
								129.63	45.33	2859
12	1165.00	1119.56	1057.66	504.00	468.83	505.06	2217			
								116.08	39.99	2903
13	1298.00	1235.64	1173.74	550.00	508.82	545.05	2267			
								82.61	28.03	2947
14	1392.00	1318.25	1256.35	582.00	536.85	573.08	2300			
								43.43	15.96	2721
15	1441.00	1361.68	1299.78	600.00	552.81	589.04	2312			
								213.90	64.15	3334
16	1680.00	1575.58	1513.68	672.00	616.96	653.19	2412			
								56.33	20.02	2814
17	1742.00	1631.92	1570.02	694.00	636.98	673.21	2424			
								20.12	7.33	2744
18	1764.00	1652.03	1590.13	702.00	644.31	680.54	2428			
								41.15	11.91	3455
19	1809.00	1693.18	1631.28	715.00	656.22	692.45	2445			
								39.32	11.91	3302
20	1852.00	1732.50	1670.60	728.00	668.13	704.36	2460			
								54.87	17.40	3153
21	1912.00	1787.37	1725.47	747.00	685.53	721.76	2476			

Drift....

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*  SCHLUMBERGER   *
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DRIFT COMPUTATION REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

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DRIFT COMPUTATION REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

LONG DEFINITIONS

GLOBAL

KB	- ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD	- ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB	- ELEVATION OF KELLY BUSHING
GL	- ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART	- TOP OF ZONE PROCESSED BY WST
XSTOP	- BOTTOM OF ZONE PROCESSED BY WST
GAD001	- RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN	- UNIFORM DENSITY VALUE

ZONE

LOFDEN	- LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN	- USER SUPPLIED DENSITY DATA

SAMPLED

SHOT	- SHOT NUMBER
DKB	- MEASURED DEPTH FROM KELLY-BUSHING
DSRD	- DEPTH FROM SRD
DGL	- VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM	- SHOT TIME (WST)
RAWS	- RAW SONIC (WST)
SHDR	- DRIFT AT SHOT OR KNEE
BLSH	- BLOCK SHIFT BETWEEN SHOTS OR KNEE

(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 94.3000	M
ELEV OF SRD AB. MSL(WST)	SRD	: 150.000	M
ELEVATION OF KELLY BUSHI	EKB	: -55.7000	M
ELEV OF GL AB. SRD(WST)	GL	: -61.9000	M
TOP OF ZONE PROCD (WST)	XSTART	: 0	M
BOT OF ZONE PROCD (WST)	XSTOP	: 0	M
RAW SONIC CH NAME (WST)	GAD001	: DT.005.TVD.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	: 2.30000	G/C3

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	: 1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/F
1	99.00	154.70	92.80	89.08	89.08	0	0
2	135.00	190.70	128.80	106.83	106.83	0	0
3	250.00	303.50	241.60	170.29	170.29	0	0
4	409.00	450.30	388.40	245.06	245.06	0	0
5	450.00	487.70	425.80	262.49	262.49	0	0
6	566.00	588.58	526.68	304.48	305.29	-.80	-2.42
7	722.00	728.86	666.96	361.47	360.77	.70	3.26
8	835.00	829.56	767.66	401.78	400.12	1.66	2.90
9	896.00	883.64	821.74	421.20	420.26	.94	-4.04
10	962.00	941.65	879.75	441.28	440.45	.83	-.58
11	1017.00	989.93	928.03	459.72	458.93	.79	-.24
12	1165.00	1119.56	1057.66	505.06	505.60	-.54	-3.14
13	1298.00	1235.64	1173.74	545.05	545.11	-.07	1.25
14	1392.00	1318.25	1256.35	573.08	572.93	.15	.78
15	1441.00	1361.68	1299.78	589.04	587.57	1.46	9.25
16	1680.00	1575.58	1513.68	653.19	653.56	-.37	-2.61
17	1742.00	1631.92	1570.02	673.21	672.72	.49	4.65
18	1764.00	1652.03	1590.13	680.54	678.84	1.70	18.38
19	1809.00	1693.18	1631.28	692.45	691.62	.83	-6.45
20	1852.00	1732.50	1670.60	704.36	703.97	.39	-3.40
21	1912.00	1787.37	1725.47	721.76	719.59	2.17	9.86

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*  SCHLUMBERGER   *
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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

LONG DEFINITIONS

GLOBAL

SRCDRF - ORIGIN OF ADJUSTMENT DATA
CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.5 US/F
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE
ADJOPZ - TYPE OF ADJUSTMNENT IN THE DRIFT ZONE : 0=DELTA-T MIN, 1=BLOCKSHIFT
ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)			(VALUE)	
ORIG OF ADJ DATA (WST)	SRCDRF	:	2.00000	
CONS SONIC ADJST (WST)	CONADJ	:	7.50000	US/F
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
USER DRIFT ZONE (WST)	ZDRIFT	:	1.000000	MS	1731.67	-	1049.00
			-.6000000		1049.00		769.000
			.5000000		769.000		432.000
			0		432.000		99.0000
			0		99.0000		0
ADJUSMNT MODE (WST)	ADJOPZ	:	-999.2500		30479.7	-	0
USER DELTA-T MIN (WST)	ADJUSZ	:	-999.2500	US/F	30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	:	2145.000	M/S	432.000	-	394.600
			1963.000		394.600		247.800
			1777.000		247.800		135.000
			1730.000		99.0000		7.70000

KNEE NUMBER	VERTICAL DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/F
1	0	55.70	-6.20	0				
					0			0
2	99.00	154.70	92.80	0				
					0			0
3	432.00	487.70	425.80	0				
					.45			.45
4	769.00	824.70	762.80	.50				
						102.39	.87	-1.20
5	1049.00	1104.70	1042.80	-.60				
					.71			.71
6	1731.67	1787.37	1725.47	1.00				

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*   SCHLUMBERGER   *
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VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

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*   SCHLUMBERGER  *
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VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

LONG DEFINITIONS

GLOBAL

KB	- ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD	- ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB	- ELEVATION OF KELLY BUSHING
GL	- ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH	- UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL	- LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL	- USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT	- SHOT NUMBER
DKB	- MEASURED DEPTH FROM KELLY-BUSHING
DSRD	- DEPTH FROM SRD
DGL	- VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM	- SHOT TIME (WST)
ADJS	- ADJUSTED SONIC TRAVEL TIME
SHDR	- DRIFT AT SHOT OR KNEE
REST	- RESIDUAL TRAVEL TIME AT KNEE
INTV	- INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	94.3000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	150.000	M
ELEVATION OF KELLY BUSHI	EKB	:	-55.7000	M
ELEV OF GL AB. SRD(WST)	GL	:	-61.9000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	:	2145.000	M/S	432.000	-	394.600
			1963.000		394.600		247.800
			1777.000		247.800		135.000
			1730.000		99.0000		7.70000

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY M/S
1	99.00	154.70	92.80	89.08	89.08	0	0	1737
2	135.00	190.70	128.80	106.83	106.83	0	0	2028
3	250.00	303.50	241.60	170.29	170.29	0	0	1778
4	409.00	450.30	388.40	245.06	245.05	0	.01	1964
5	450.00	487.70	425.80	262.49	262.49	0	.01	2145
6	566.00	588.58	526.68	304.48	305.43	-.80	-.95	2349
7	722.00	728.86	666.96	361.47	361.12	.70	.35	2519
8	835.00	829.56	767.66	401.78	400.59	1.66	1.19	2551
9	896.00	883.64	821.74	421.20	420.47	.94	.73	2721
10	962.00	941.65	879.75	441.28	440.55	.83	.73	2888
11	1017.00	989.93	928.03	459.72	458.74	.79	.98	2655
12	1165.00	1119.56	1057.66	505.06	505.01	-.54	.04	2801
13	1298.00	1235.64	1173.74	545.05	544.80	-.07	.25	2918
14	1392.00	1318.25	1256.35	573.08	572.82	.15	.26	2948
15	1441.00	1361.68	1299.78	589.04	587.56	1.46	1.48	2945
16	1680.00	1575.58	1513.68	653.19	654.05	-.37	-.86	3217
17	1742.00	1631.92	1570.02	673.21	673.35	.49	-.14	2919
18	1764.00	1652.03	1590.13	680.54	679.51	1.70	1.03	3266
19	1809.00	1693.18	1631.28	692.45	692.38	.83	.07	3196
20	1852.00	1732.50	1670.60	704.36	704.82	.39	-.46	3161
21	1912.00	1787.37	1725.47	721.76	720.60	2.17	1.16	3476

Time Depth . . . . .

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*   SCHLUMBERGER  *
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TIME CONVERTED VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

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TIME CONVERTED VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

LONG DEFINITIONS

GLOBAL

KB	- ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD	- ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL	- ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH	- UNIFORM EARTH VELOCITY (GTRFRM)
UNFDEN	- UNIFORM DENSITY VALUE

MATRIX

MVODIS	- MOVE-OUT DISTANCE FROM BOREHOLE

ZONE

LOFVEL	- LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL	- USER SUPPLIED VELOCITY DATA
LOFDEN	- LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN	- USER SUPPLIED DENSITY DATA

SAMPLED

TWOT	- TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB	- MEASURED DEPTH FROM KELLY-BUSHING
DSRD	- DEPTH FROM SRD
AVGV	- AVERAGE SEISMIC VELOCITY
RMSV	- ROOT MEAN SQUARE VELOCITY (SEISMIC)
MVOT	- NORMAL MOVE-OUT
MVOT	- NORMAL MOVE-OUT
MVOT	- NORMAL MOVE-OUT
INTV	- INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	94.3000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	150.000	M
ELEV OF GL AB. SRD(WST)	GL	:	-61.9000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST M
1	1000.0
2	1500.0
3	2000.0

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 2145.000	M/S	432.000	-	394.600
		1963.000		394.600		247.800
		1777.000		247.800		135.000
		1730.000		99.0000		7.70000
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

KB = [illegible].3

COMPANY : BEACH PETROLEUM N.L. WELL : WESTGATE - 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
0	-55.70	0						
2.00	-53.96	1.74	1737	1737	573.82	861.73	1149.64	1737
4.00	-52.23	3.47	1737	1737	571.83	859.74	1147.65	1737
6.00	-50.49	5.21	1737	1737	569.85	857.75	1145.65	1737
8.00	-48.75	6.95	1737	1737	567.88	855.77	1143.67	1737
10.00	-47.02	8.68	1737	1737	565.91	853.79	1141.68	1737
12.00	-45.28	10.42	1737	1737	563.94	851.81	1139.70	1737
14.00	-43.54	12.16	1737	1737	561.99	849.84	1137.72	1737
16.00	-41.81	13.89	1737	1737	560.04	847.88	1135.75	1737
18.00	-40.07	15.63	1737	1737	558.10	845.92	1133.78	1737
20.00	-38.33	17.37	1737	1737	556.17	843.96	1131.81	1737
22.00	-36.60	19.10	1737	1737	554.24	842.01	1129.85	1737
24.00	-34.86	20.84	1737	1737	552.32	840.06	1127.89	1737
26.00	-33.12	22.58	1737	1737	550.41	838.12	1125.93	1737
28.00	-31.39	24.31	1737	1737	548.50	836.18	1123.98	1737
30.00	-29.65	26.05	1737	1737	546.60	834.25	1122.03	1737
32.00	-27.91	27.79	1737	1737	544.71	832.32	1120.08	1737
34.00	-26.18	29.52	1737	1737	542.82	830.40	1118.14	1737
36.00	-24.44	31.26	1737	1737	540.94	828.48	1116.20	1737
38.00	-22.70	33.00	1737	1737	539.07	826.57	1114.27	1737
40.00	-20.97	34.73	1737	1737	537.21	824.66	1112.33	1737
42.00	-19.23	36.47	1737	1737	535.35	822.75	1110.41	1737
44.00	-17.49	38.21	1737	1737	533.50	820.85	1108.48	1737
46.00	-15.76	39.94	1737	1737	531.65	818.95	1106.56	1737

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
48.00	-14.02	41.68	1737	1737	529.82	817.06	1104.64	1737
50.00	-12.28	43.42	1737	1737	527.99	815.18	1102.72	1737
52.00	-10.55	45.15	1737	1737	526.16	813.29	1100.81	1737
54.00	-8.81	46.89	1737	1737	524.35	811.42	1098.90	1737
56.00	-7.07	48.63	1737	1737	522.54	809.54	1097.00	1737
58.00	-5.34	50.36	1737	1737	520.73	807.67	1095.10	1737
60.00	-3.60	52.10	1737	1737	518.94	805.81	1093.20	1737
62.00	-1.86	53.84	1737	1737	517.15	803.95	1091.31	1737
64.00	-.13	55.57	1737	1737	515.37	802.10	1089.42	1737
66.00	1.61	57.31	1737	1737	513.59	800.25	1087.53	1737
68.00	3.35	59.05	1737	1737	511.82	798.40	1085.65	1737
70.00	5.08	60.78	1737	1737	510.06	796.56	1083.76	1737
72.00	6.82	62.52	1737	1737	508.30	794.73	1081.89	1737
74.00	8.55	64.25	1737	1737	506.58	792.94	1080.07	1733
76.00	10.28	65.98	1736	1736	504.90	791.20	1078.32	1730
78.00	12.01	67.71	1736	1736	503.22	789.45	1076.56	1730
80.00	13.74	69.44	1736	1736	501.54	787.71	1074.80	1730
82.00	15.47	71.17	1736	1736	499.87	785.97	1073.04	1730
84.00	17.20	72.90	1736	1736	498.20	784.23	1071.27	1730
86.00	18.93	74.63	1736	1736	496.54	782.50	1069.51	1730
88.00	20.66	76.36	1736	1736	494.88	780.76	1067.75	1730
90.00	22.39	78.09	1735	1735	493.22	779.03	1065.98	1730
92.00	24.12	79.82	1735	1735	491.57	777.29	1064.22	1730
94.00	25.85	81.55	1735	1735	489.93	775.56	1062.45	1730

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1730
96.00	27.58	83.28	1735	1735	488.29	773.84	1060.69	
								1730
98.00	29.31	85.01	1735	1735	486.65	772.11	1058.92	
								1730
100.00	31.04	86.74	1735	1735	485.03	770.39	1057.16	
								1730
102.00	32.77	88.47	1735	1735	483.40	768.67	1055.40	
								1730
104.00	34.50	90.20	1735	1735	481.78	766.95	1053.64	
								1730
106.00	36.23	91.93	1735	1735	480.17	765.23	1051.87	
								1730
108.00	37.96	93.66	1734	1735	478.56	763.52	1050.12	
								1730
110.00	39.69	95.39	1734	1734	476.96	761.81	1048.36	
								1730
112.00	41.42	97.12	1734	1734	475.36	760.10	1046.60	
								1730
114.00	43.15	98.85	1734	1734	473.77	758.40	1044.85	
								1730
116.00	44.88	100.58	1734	1734	472.19	756.70	1043.09	
								1730
118.00	46.61	102.31	1734	1734	470.61	755.00	1041.34	
								1730
120.00	48.34	104.04	1734	1734	469.04	753.31	1039.59	
								1730
122.00	50.07	105.77	1734	1734	467.47	751.62	1037.85	
								1730
124.00	51.80	107.50	1734	1734	465.91	749.93	1036.10	
								1730
126.00	53.53	109.23	1734	1734	464.35	748.25	1034.36	
								1730
128.00	55.26	110.96	1734	1734	462.80	746.57	1032.62	
								1730
130.00	56.99	112.69	1734	1734	461.26	744.89	1030.88	
								1730
132.00	58.72	114.42	1734	1734	459.72	743.22	1029.14	
								1730
134.00	60.45	116.15	1734	1734	458.18	741.55	1027.41	
								1730
136.00	62.18	117.88	1734	1734	456.66	739.89	1025.67	
								1730
138.00	63.91	119.61	1734	1734	455.14	738.22	1023.94	
								1730
140.00	65.64	121.34	1733	1733	453.62	736.57	1022.22	
								1730
142.00	67.37	123.07	1733	1733	452.11	734.91	1020.49	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
144.00	69.10	124.80	1733	1733	450.61	733.26	1018.77	1730
146.00	70.83	126.53	1733	1733	449.11	731.62	1017.05	1730
148.00	72.56	128.26	1733	1733	447.62	729.97	1015.33	1730
150.00	74.29	129.99	1733	1733	446.13	728.33	1013.62	1730
152.00	76.02	131.72	1733	1733	444.65	726.70	1011.90	1730
154.00	77.75	133.45	1733	1733	443.18	725.07	1010.19	1730
156.00	79.48	135.18	1733	1733	441.71	723.44	1008.49	1730
158.00	81.21	136.91	1733	1733	440.25	721.82	1006.78	1730
160.00	82.94	138.64	1733	1733	438.79	720.20	1005.08	1730
162.00	84.67	140.37	1733	1733	437.34	718.58	1003.38	1730
164.00	86.40	142.10	1733	1733	435.90	716.97	1001.68	1730
166.00	88.13	143.83	1733	1733	434.46	715.36	999.99	1730
168.00	89.86	145.56	1733	1733	433.03	713.76	998.30	1730
170.00	91.59	147.29	1733	1733	431.60	712.16	996.61	1730
172.00	93.32	149.02	1733	1733	430.18	710.56	994.93	1730
174.00	95.05	150.75	1733	1733	428.76	708.97	993.25	1730
176.00	96.78	152.48	1733	1733	427.35	707.38	991.57	1730
178.00	98.51	154.21	1733	1733	425.95	705.80	989.89	1730
180.00	100.46	156.16	1735	1735	423.74	702.97	986.54	1946
182.00	102.49	158.19	1738	1739	421.24	699.68	982.57	2028
184.00	104.52	160.22	1741	1742	418.78	696.45	978.67	2028
186.00	106.54	162.24	1745	1745	416.35	693.27	974.83	2028
188.00	108.57	164.27	1748	1749	413.96	690.14	971.05	2028
190.00	110.60	166.30	1751	1752	411.61	687.05	967.34	2028

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2028
192.00	112.63	168.33	1753	1755	409.29	684.01	963.68	
								2028
194.00	114.65	170.35	1756	1758	407.00	681.02	960.08	
								2028
196.00	116.68	172.38	1759	1761	404.74	678.06	956.53	
								2028
198.00	118.71	174.41	1762	1764	402.52	675.15	953.03	
								2028
200.00	120.74	176.44	1764	1767	400.32	672.28	949.59	
								2028
202.00	122.77	178.47	1767	1769	398.16	669.44	946.19	
								2028
204.00	124.79	180.49	1770	1772	396.02	666.65	942.84	
								2028
206.00	126.82	182.52	1772	1775	393.91	663.88	939.53	
								2028
208.00	128.85	184.55	1775	1777	391.82	661.16	936.27	
								2028
210.00	130.88	186.58	1777	1780	389.76	658.46	933.05	
								2028
212.00	132.91	188.61	1779	1783	387.73	655.80	929.87	
								2028
214.00	134.93	190.63	1782	1785	385.72	653.18	926.73	
								1780
216.00	136.75	192.41	1782	1785	384.45	651.69	925.13	
								1777
218.00	138.56	194.19	1782	1785	383.19	650.22	923.56	
								1777
220.00	140.37	195.97	1782	1785	381.94	648.76	921.98	
								1777
222.00	142.18	197.75	1781	1785	380.69	647.30	920.41	
								1777
224.00	144.00	199.52	1781	1785	379.45	645.84	918.84	
								1777
226.00	145.81	201.30	1781	1785	378.21	644.39	917.27	
								1777
228.00	147.62	203.08	1781	1785	376.98	642.94	915.71	
								1777
230.00	149.43	204.86	1781	1784	375.76	641.49	914.14	
								1777
232.00	151.24	206.63	1781	1784	374.54	640.05	912.59	
								1777
234.00	153.06	208.41	1781	1784	373.32	638.61	911.03	
								1777
236.00	154.87	210.19	1781	1784	372.11	637.17	909.47	
								1777
238.00	156.68	211.97	1781	1784	370.91	635.74	907.92	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
240.00	158.49	213.74	1781	1784	369.71	634.31	906.38	1777
242.00	160.30	215.52	1781	1784	368.51	632.89	904.83	1777
244.00	162.12	217.30	1781	1784	367.33	631.47	903.29	1777
246.00	163.93	219.08	1781	1784	366.14	630.05	901.75	1777
248.00	165.74	220.85	1781	1784	364.96	628.64	900.21	1777
250.00	167.55	222.63	1781	1784	363.79	627.23	898.67	1777
252.00	169.37	224.41	1781	1784	362.62	625.83	897.14	1777
254.00	171.18	226.19	1781	1784	361.46	624.43	895.61	1777
256.00	172.99	227.96	1781	1784	360.30	623.03	894.09	1777
258.00	174.80	229.74	1781	1784	359.15	621.64	892.56	1777
260.00	176.61	231.52	1781	1784	358.00	620.25	891.04	1777
262.00	178.43	233.30	1781	1784	356.86	618.86	889.53	1777
264.00	180.24	235.07	1781	1784	355.72	617.48	888.01	1777
266.00	182.05	236.85	1781	1784	354.59	616.10	886.50	1777
268.00	183.86	238.63	1781	1783	353.46	614.72	884.99	1777
270.00	185.67	240.41	1781	1783	352.34	613.35	883.48	1777
272.00	187.49	242.18	1781	1783	351.22	611.99	881.98	1777
274.00	189.30	243.96	1781	1783	350.11	610.62	880.48	1777
276.00	191.11	245.74	1781	1783	349.00	609.26	878.98	1777
278.00	192.92	247.52	1781	1783	347.90	607.91	877.49	1777
280.00	194.74	249.29	1781	1783	346.80	606.56	875.99	1777
282.00	196.55	251.07	1781	1783	345.71	605.21	874.51	1777
284.00	198.36	252.85	1781	1783	344.62	603.86	873.02	1777
286.00	200.17	254.63	1781	1783	343.54	602.52	871.54	1777

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
288.00	201.98	256.40	1781	1783	342.46	601.19	870.05	1777
290.00	203.80	258.18	1781	1783	341.39	599.85	868.58	1777
292.00	205.61	259.96	1781	1783	340.32	598.52	867.10	1777
294.00	207.42	261.74	1781	1783	339.26	597.20	865.63	1777
296.00	209.23	263.51	1780	1783	338.20	595.88	864.16	1777
298.00	211.04	265.29	1780	1783	337.14	594.56	862.70	1777
300.00	212.86	267.07	1780	1783	336.09	593.24	861.23	1777
302.00	214.67	268.84	1780	1783	335.05	591.93	859.77	1777
304.00	216.48	270.62	1780	1783	334.01	590.63	858.32	1777
306.00	218.29	272.40	1780	1783	332.97	589.32	856.86	1777
308.00	220.11	274.18	1780	1783	331.94	588.02	855.41	1777
310.00	221.92	275.95	1780	1783	330.92	586.73	853.96	1777
312.00	223.73	277.73	1780	1783	329.90	585.44	852.52	1777
314.00	225.54	279.51	1780	1783	328.88	584.15	851.07	1777
316.00	227.35	281.29	1780	1783	327.87	582.86	849.63	1777
318.00	229.17	283.06	1780	1783	326.86	581.58	848.20	1777
320.00	230.98	284.84	1780	1782	325.86	580.31	846.76	1777
322.00	232.79	286.62	1780	1782	324.86	579.03	845.33	1777
324.00	234.60	288.40	1780	1782	323.87	577.76	843.90	1777
326.00	236.41	290.17	1780	1782	322.88	576.50	842.48	1777
328.00	238.23	291.95	1780	1782	321.89	575.23	841.06	1777
330.00	240.04	293.73	1780	1782	320.91	573.98	839.64	1777
332.00	241.85	295.51	1780	1782	319.94	572.72	838.22	1777
334.00	243.66	297.28	1780	1782	318.97	571.47	836.81	1777

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1777
336.00	245.48	299.06	1780	1782	318.00	570.22	835.40	
								1777
338.00	247.29	300.84	1780	1782	317.04	568.98	833.99	
								1777
340.00	249.10	302.62	1780	1782	316.08	567.74	832.58	
								1879
342.00	251.08	304.50	1781	1783	314.96	566.23	830.82	
								1963
344.00	253.20	306.46	1782	1784	313.71	564.51	828.74	
								1963
346.00	255.33	308.42	1783	1785	312.47	562.79	826.67	
								1963
348.00	257.46	310.39	1784	1786	311.23	561.09	824.62	
								1963
350.00	259.58	312.35	1785	1787	310.01	559.39	822.58	
								1963
352.00	261.71	314.31	1786	1788	308.79	557.71	820.55	
								1963
354.00	263.84	316.28	1787	1789	307.58	556.04	818.53	
								1963
356.00	265.96	318.24	1788	1790	306.39	554.37	816.53	
								1963
358.00	268.09	320.20	1789	1791	305.20	552.72	814.53	
								1963
360.00	270.22	322.17	1790	1792	304.02	551.08	812.55	
								1963
362.00	272.34	324.13	1791	1793	302.85	549.45	810.58	
								1963
364.00	274.47	326.09	1792	1794	301.68	547.83	808.62	
								1963
366.00	276.60	328.06	1793	1795	300.53	546.21	806.67	
								1963
368.00	278.72	330.02	1794	1796	299.38	544.61	804.73	
								1963
370.00	280.85	331.98	1795	1797	298.24	543.02	802.81	
								1963
372.00	282.98	333.95	1795	1798	297.11	541.43	800.89	
								1963
374.00	285.10	335.91	1796	1799	295.98	539.86	798.98	
								1963
376.00	287.23	337.87	1797	1800	294.87	538.29	797.09	
								1963
378.00	289.36	339.84	1798	1801	293.76	536.73	795.20	
								1963
380.00	291.48	341.80	1799	1802	292.66	535.19	793.33	
								1963
382.00	293.61	343.76	1800	1803	291.57	533.65	791.46	

COMPANY : BEACH PETROLEUM N.L. WELL : WESTGATE - 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1963
384.00	295.74	345.73	1801	1803	290.48	532.12	789.60	
								1963
386.00	297.86	347.69	1802	1804	289.41	530.59	787.76	
								1963
388.00	299.99	349.65	1802	1805	288.34	529.08	785.92	
								1963
390.00	302.12	351.62	1803	1806	287.27	527.58	784.09	
								1963
392.00	304.24	353.58	1804	1807	286.22	526.08	782.27	
								1963
394.00	306.37	355.54	1805	1808	285.17	524.59	780.46	
								1963
396.00	308.50	357.51	1806	1808	284.13	523.11	778.66	
								1963
398.00	310.62	359.47	1806	1809	283.09	521.64	776.87	
								1963
400.00	312.75	361.44	1807	1810	282.06	520.18	775.09	
								1963
402.00	314.88	363.40	1808	1811	281.04	518.72	773.32	
								1963
404.00	317.00	365.36	1809	1812	280.03	517.27	771.55	
								1963
406.00	319.13	367.33	1809	1812	279.02	515.83	769.80	
								1963
408.00	321.26	369.29	1810	1813	278.02	514.40	768.05	
								1963
410.00	323.38	371.25	1811	1814	277.02	512.97	766.31	
								1963
412.00	325.51	373.22	1812	1815	276.03	511.55	764.58	
								1963
414.00	327.64	375.18	1812	1815	275.05	510.14	762.85	
								1963
416.00	329.76	377.14	1813	1816	274.08	508.74	761.14	
								1963
418.00	331.89	379.11	1814	1817	273.11	507.34	759.43	
								1963
420.00	334.02	381.07	1815	1818	272.14	505.96	757.73	
								1963
422.00	336.14	383.03	1815	1818	271.19	504.58	756.04	
								1963
424.00	338.27	385.00	1816	1819	270.24	503.20	754.36	
								1963
426.00	340.40	386.96	1817	1820	269.29	501.83	752.68	
								1963
428.00	342.52	388.92	1817	1821	268.35	500.47	751.02	
								1963
430.00	344.65	390.89	1818	1821	267.42	499.12	749.36	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
432.00	346.78	392.85	1819	1822	266.49	497.77	747.70	1963
434.00	348.90	394.81	1819	1823	265.57	496.43	746.06	1963
436.00	351.03	396.78	1820	1823	264.66	495.10	744.42	1963
438.00	353.16	398.74	1821	1824	263.75	493.77	742.79	1963
440.00	355.28	400.70	1821	1825	262.84	492.45	741.16	1963
442.00	357.41	402.67	1822	1825	261.94	491.14	739.55	1963
444.00	359.54	404.63	1823	1826	261.05	489.83	737.94	1963
446.00	361.66	406.59	1823	1827	260.16	488.53	736.33	1963
448.00	363.79	408.56	1824	1827	259.28	487.24	734.74	1963
450.00	365.91	410.52	1825	1828	258.40	485.95	733.15	1963
452.00	368.04	412.48	1825	1828	257.53	484.67	731.57	1963
454.00	370.17	414.45	1826	1829	256.67	483.40	729.99	1963
456.00	372.29	416.41	1826	1830	255.81	482.13	728.42	1963
458.00	374.42	418.37	1827	1830	254.95	480.86	726.86	1963
460.00	376.55	420.34	1828	1831	254.10	479.61	725.31	1963
462.00	378.67	422.30	1828	1831	253.25	478.35	723.76	1963
464.00	380.80	424.26	1829	1832	252.41	477.11	722.21	1963
466.00	382.93	426.23	1829	1833	251.58	475.87	720.68	1963
468.00	385.05	428.19	1830	1833	250.75	474.64	719.15	1963
470.00	387.18	430.16	1830	1834	249.92	473.41	717.62	1963
472.00	389.31	432.12	1831	1834	249.10	472.19	716.11	1963
474.00	391.43	434.08	1832	1835	248.29	470.97	714.60	1963
476.00	393.56	436.05	1832	1835	247.47	469.76	713.09	1963
478.00	395.69	438.01	1833	1836	246.67	468.56	711.59	1963

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1963
480.00	397.81	439.97	1833	1837	245.87	467.36	710.10	
								1963
482.00	399.94	441.94	1834	1837	245.07	466.16	708.61	
								1963
484.00	402.07	443.90	1834	1838	244.28	464.98	707.13	
								1963
486.00	404.19	445.86	1835	1838	243.49	463.79	705.65	
								1963
488.00	406.32	447.83	1835	1839	242.71	462.62	704.18	
								1963
490.00	408.45	449.79	1836	1839	241.93	461.44	702.72	
								2108
492.00	410.75	451.90	1837	1840	241.01	460.03	700.91	
								2145
494.00	413.10	454.04	1838	1842	240.06	458.56	699.02	
								2145
496.00	415.46	456.19	1839	1843	239.12	457.10	697.14	
								2145
498.00	417.81	458.33	1841	1844	238.19	455.65	695.27	
								2145
500.00	420.16	460.48	1842	1846	237.26	454.20	693.41	
								2145
502.00	422.51	462.62	1843	1847	236.34	452.77	691.56	
								2145
504.00	424.86	464.77	1844	1848	235.43	451.35	689.73	
								2145
506.00	427.21	466.92	1846	1850	234.52	449.93	687.90	
								2145
508.00	429.57	469.06	1847	1851	233.63	448.52	686.08	
								2145
510.00	431.92	471.21	1848	1852	232.73	447.13	684.28	
								2145
512.00	434.27	473.35	1849	1853	231.85	445.74	682.48	
								2145
514.00	436.62	475.50	1850	1854	230.97	444.36	680.70	
								2145
516.00	438.97	477.64	1851	1856	230.09	442.98	678.92	
								2145
518.00	441.33	479.79	1852	1857	229.22	441.62	677.16	
								2145
520.00	443.68	481.93	1854	1858	228.36	440.26	675.40	
								2145
522.00	446.03	484.08	1855	1859	227.51	438.92	673.66	
								2145
524.00	448.38	486.22	1856	1860	226.66	437.58	671.92	
								2184
526.00	450.82	488.41	1857	1862	225.78	436.18	670.10	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
528.00	453.47	490.68	1859	1863	224.83	434.66	668.10	2267
530.00	456.08	492.92	1860	1865	223.91	433.19	666.17	2245
532.00	458.73	495.19	1862	1867	222.97	431.68	664.18	2274
534.00	461.36	497.45	1863	1868	222.05	430.21	662.24	2255
536.00	464.03	499.75	1865	1870	221.11	428.68	660.22	2298
538.00	466.61	501.96	1866	1872	220.25	427.30	658.42	2211
540.00	469.17	504.16	1867	1873	219.40	425.94	656.64	2201
542.00	471.80	506.42	1869	1874	218.51	424.51	654.75	2258
544.00	474.38	508.63	1870	1876	217.67	423.16	652.98	2209
546.00	477.04	510.92	1871	1877	216.76	421.69	651.03	2291
548.00	480.18	513.61	1874	1881	215.48	419.56	648.13	2692
550.00	483.39	516.37	1878	1885	214.15	417.32	645.08	2757
552.00	486.22	518.79	1880	1887	213.16	415.69	642.89	2426
554.00	488.87	521.07	1881	1889	212.30	414.29	641.03	2281
556.00	491.51	523.34	1883	1890	211.46	412.92	639.22	2267
558.00	494.44	525.85	1885	1893	210.41	411.18	636.87	2511
560.00	497.39	528.39	1887	1896	209.35	409.42	634.49	2535
562.00	500.03	530.66	1888	1897	208.53	408.08	632.71	2268
564.00	502.69	532.94	1890	1899	207.71	406.73	630.92	2281
566.00	505.50	535.35	1892	1901	206.78	405.20	628.86	2413
568.00	508.75	538.14	1895	1904	205.52	403.07	625.93	2791
570.00	511.37	540.38	1896	1906	204.75	401.80	624.25	2244
572.00	514.02	542.66	1897	1907	203.95	400.50	622.51	2279
574.00	516.85	545.09	1899	1909	203.05	398.99	620.48	2429

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
576.00	519.63	547.48	1901	1911	202.18	397.55	618.54	2388
578.00	522.64	550.07	1903	1914	201.16	395.83	616.20	2585
580.00	525.40	552.44	1905	1916	200.32	394.43	614.31	2376
582.00	528.06	554.79	1906	1917	199.50	393.08	612.50	2349
584.00	530.84	557.24	1908	1919	198.62	391.60	610.49	2448
586.00	533.69	559.75	1910	1922	197.70	390.04	608.37	2511
588.00	536.44	562.17	1912	1924	196.85	388.62	606.44	2424
590.00	539.14	564.56	1914	1925	196.03	387.26	604.61	2382
592.00	541.83	566.93	1915	1927	195.24	385.93	602.81	2373
594.00	544.47	569.26	1917	1929	194.48	384.66	601.10	2331
596.00	547.21	571.71	1919	1931	193.63	383.23	599.17	2453
598.00	550.19	574.39	1921	1934	192.63	381.51	596.80	2672
600.00	552.87	576.79	1923	1935	191.83	380.17	594.98	2409
602.00	555.20	578.88	1923	1936	191.25	379.23	593.74	2088
604.00	557.50	580.94	1924	1936	190.70	378.32	592.55	2060
606.00	559.84	583.04	1924	1937	190.13	377.38	591.31	2096
608.00	562.25	585.20	1925	1938	189.52	376.37	589.97	2157
610.00	564.53	587.26	1925	1938	188.97	375.48	588.80	2061
612.00	566.90	589.40	1926	1939	188.38	374.50	587.50	2140
614.00	569.86	592.07	1929	1942	187.43	372.86	585.23	2671
616.00	572.77	594.70	1931	1944	186.51	371.28	583.05	2634
618.00	576.03	597.65	1934	1948	185.36	369.28	580.24	2944
620.00	579.00	600.33	1937	1951	184.42	367.66	578.00	2686
622.00	582.17	603.19	1940	1955	183.36	365.81	575.41	2863

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
624.00	585.01	605.76	1942	1957	182.54	364.38	573.44	2566
626.00	587.73	608.22	1943	1959	181.79	363.10	571.69	2456
628.00	590.63	610.83	1945	1961	180.94	361.63	569.65	2616
630.00	593.77	613.68	1948	1965	179.93	359.87	567.18	2846
632.00	596.45	616.09	1950	1966	179.23	358.67	565.54	2414
634.00	599.15	618.54	1951	1968	178.51	357.44	563.85	2446
636.00	601.91	621.03	1953	1970	177.77	356.16	562.09	2495
638.00	604.67	623.52	1955	1972	177.04	354.90	560.35	2490
640.00	607.56	626.13	1957	1974	176.24	353.51	558.41	2607
642.00	610.36	628.66	1958	1976	175.49	352.22	556.62	2532
644.00	613.18	631.21	1960	1978	174.74	350.91	554.81	2550
646.00	615.96	633.73	1962	1980	174.02	349.66	553.08	2515
648.00	618.76	636.26	1964	1982	173.29	348.39	551.33	2530
650.00	621.47	638.70	1965	1983	172.62	347.23	549.72	2448
652.00	624.20	641.17	1967	1985	171.95	346.06	548.10	2467
654.00	627.02	643.72	1969	1987	171.23	344.80	546.36	2545
656.00	629.92	646.34	1971	1989	170.47	343.47	544.50	2620
658.00	632.89	649.02	1973	1992	169.68	342.08	542.55	2683
660.00	636.12	651.94	1976	1995	168.74	340.41	540.18	2923
662.00	639.13	654.66	1978	1998	167.95	339.01	538.21	2713
664.00	642.10	657.34	1980	2000	167.18	337.65	536.30	2686
666.00	644.80	659.78	1981	2002	166.56	336.57	534.80	2440
668.00	647.53	662.25	1983	2003	165.92	335.46	533.26	2470
670.00	650.21	664.67	1984	2005	165.32	334.41	531.81	2420

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
672.00	652.86	667.07	1985	2006	164.74	333.39	530.40	2395
674.00	655.63	669.57	1987	2007	164.10	332.27	528.84	2501
676.00	658.94	672.55	1990	2011	163.19	330.63	526.50	2977
678.00	662.07	675.35	1992	2014	162.39	329.21	524.49	2803
680.00	664.79	677.77	1993	2015	161.81	328.20	523.08	2424
682.00	667.45	680.15	1995	2016	161.26	327.23	521.74	2378
684.00	670.09	682.51	1996	2017	160.72	326.29	520.44	2356
686.00	672.69	684.83	1997	2018	160.21	325.39	519.19	2322
688.00	675.14	687.02	1997	2019	159.76	324.61	518.12	2189
690.00	677.74	689.34	1998	2020	159.24	323.71	516.88	2320
692.00	680.39	691.71	1999	2021	158.71	322.78	515.59	2371
694.00	683.10	694.12	2000	2022	158.16	321.81	514.23	2415
696.00	685.91	696.63	2002	2024	157.57	320.76	512.76	2505
698.00	688.55	698.99	2003	2025	157.06	319.85	511.50	2358
700.00	691.21	701.36	2004	2026	156.54	318.94	510.22	2374
702.00	693.93	703.79	2005	2027	156.00	317.98	508.88	2429
704.00	696.74	706.30	2007	2029	155.42	316.95	507.43	2511
706.00	699.56	708.82	2008	2030	154.84	315.92	505.98	2522
708.00	702.29	711.26	2009	2031	154.31	314.97	504.65	2437
710.00	704.97	713.66	2010	2033	153.80	314.06	503.38	2394
712.00	707.65	716.05	2011	2034	153.29	313.16	502.12	2390
714.00	710.70	718.77	2013	2036	152.63	311.96	500.41	2726
716.00	713.44	721.22	2015	2037	152.10	311.03	499.10	2445
718.00	716.01	723.51	2015	2038	151.65	310.23	497.98	2296

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
720.00	718.65	725.87	2016	2039	151.17	309.38	496.78	2361
722.00	721.21	728.16	2017	2040	150.73	308.59	495.69	2284
724.00	723.97	730.62	2018	2041	150.21	307.66	494.38	2463
726.00	726.88	733.22	2020	2043	149.63	306.62	492.90	2597
728.00	729.69	735.73	2021	2044	149.10	305.66	491.54	2511
730.00	732.39	738.14	2022	2045	148.61	304.79	490.31	2414
732.00	735.13	740.59	2023	2046	148.12	303.90	489.05	2446
734.00	737.85	743.01	2025	2048	147.63	303.03	487.82	2425
736.00	740.67	745.53	2026	2049	147.11	302.08	486.48	2519
738.00	743.71	748.25	2028	2051	146.50	300.97	484.88	2718
740.00	746.52	750.76	2029	2052	145.99	300.05	483.57	2505
742.00	749.15	753.11	2030	2053	145.55	299.26	482.46	2352
744.00	751.86	755.53	2031	2054	145.08	298.42	481.26	2424
746.00	754.57	757.95	2032	2055	144.62	297.58	480.08	2417
748.00	757.25	760.34	2033	2056	144.17	296.77	478.93	2393
750.00	760.03	762.82	2034	2058	143.69	295.90	477.69	2480
752.00	762.93	765.42	2036	2059	143.16	294.93	476.31	2594
754.00	765.81	767.98	2037	2061	142.65	294.00	474.97	2566
756.00	768.58	770.46	2038	2062	142.18	293.15	473.75	2475
758.00	771.34	772.92	2039	2063	141.72	292.31	472.55	2463
760.00	774.12	775.40	2041	2064	141.25	291.45	471.34	2483
762.00	776.84	777.84	2042	2065	140.80	290.64	470.18	2433
764.00	779.61	780.31	2043	2067	140.34	289.81	468.99	2473
766.00	782.42	782.81	2044	2068	139.88	288.95	467.76	2507

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2514
768.00	785.24	785.33	2045	2069	139.41	288.10	466.54	
								2581
770.00	788.15	787.91	2047	2071	138.92	287.19	465.24	
								2434
772.00	790.89	790.34	2048	2072	138.48	286.41	464.11	
								2398
774.00	793.58	792.74	2048	2073	138.07	285.65	463.03	
								2465
776.00	796.36	795.21	2050	2074	137.63	284.85	461.88	
								2303
778.00	798.95	797.51	2050	2074	137.25	284.16	460.91	
								2563
780.00	801.83	800.07	2051	2076	136.78	283.30	459.66	
								2819
782.00	805.00	802.89	2053	2078	136.21	282.24	458.12	
								2754
784.00	808.10	805.65	2055	2080	135.67	281.24	456.66	
								2638
786.00	811.07	808.28	2057	2082	135.19	280.33	455.35	
								2512
788.00	813.89	810.80	2058	2083	134.75	279.53	454.19	
								2531
790.00	816.74	813.33	2059	2084	134.31	278.71	453.01	
								2722
792.00	819.80	816.05	2061	2086	133.79	277.76	451.62	
								3402
794.00	823.63	819.45	2064	2090	132.99	276.24	449.36	
								2615
796.00	826.57	822.07	2065	2092	132.53	275.38	448.11	
								2633
798.00	829.53	824.70	2067	2093	132.06	274.52	446.86	
								2646
800.00	832.51	827.35	2068	2095	131.60	273.65	445.59	
								2813
802.00	835.67	830.16	2070	2097	131.07	272.66	444.15	
								2732
804.00	838.74	832.89	2072	2099	130.58	271.74	442.81	
								2637
806.00	841.71	835.53	2073	2100	130.13	270.90	441.57	
								2672
808.00	844.72	838.20	2075	2102	129.67	270.04	440.31	
								2638
810.00	847.68	840.84	2076	2103	129.22	269.20	439.09	
								2657
812.00	850.67	843.49	2078	2105	128.77	268.36	437.86	
								2784
814.00	853.80	846.28	2079	2107	128.28	267.43	436.50	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
816.00	856.95	849.07	2081	2109	127.78	266.50	435.13	2793
818.00	860.06	851.84	2083	2111	127.30	265.60	433.81	2765
820.00	863.25	854.68	2085	2113	126.80	264.65	432.41	2840
822.00	866.42	857.49	2086	2115	126.31	263.73	431.04	2818
824.00	869.61	860.33	2088	2117	125.82	262.79	429.67	2837
826.00	872.73	863.10	2090	2119	125.35	261.91	428.37	2771
828.00	875.76	865.80	2091	2120	124.91	261.09	427.15	2698
830.00	878.87	868.56	2093	2122	124.45	260.22	425.88	2761
832.00	881.94	871.29	2094	2124	124.01	259.39	424.65	2725
834.00	884.81	873.81	2095	2125	123.64	258.69	423.63	2520
836.00	887.88	876.50	2097	2126	123.22	257.89	422.45	2696
838.00	890.99	879.24	2098	2128	122.78	257.06	421.23	2736
840.00	894.00	881.89	2100	2129	122.37	256.30	420.10	2647
842.00	897.10	884.60	2101	2131	121.95	255.49	418.91	2719
844.00	900.26	887.38	2103	2133	121.51	254.65	417.67	2781
846.00	903.49	890.22	2105	2135	121.05	253.78	416.38	2835
848.00	906.79	893.13	2106	2137	120.57	252.87	415.02	2908
850.00	910.30	896.21	2109	2139	120.04	251.85	413.49	3081
852.00	913.59	899.10	2111	2142	119.57	250.96	412.16	2893
854.00	916.78	901.91	2112	2143	119.14	250.13	410.93	2806
856.00	920.10	904.82	2114	2145	118.67	249.24	409.60	2916
858.00	923.34	907.67	2116	2147	118.23	248.40	408.35	2849
860.00	926.60	910.53	2118	2149	117.79	247.55	407.09	2860
862.00	929.85	913.39	2119	2151	117.36	246.72	405.84	2856

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								3032
864.00	933.30	916.42	2121	2154	116.87	245.77	404.42	
								3058
866.00	936.78	919.48	2124	2156	116.37	244.82	402.99	
								2928
868.00	940.11	922.41	2125	2158	115.92	243.96	401.70	
								2987
870.00	943.51	925.39	2127	2161	115.46	243.06	400.36	
								2941
872.00	946.85	928.34	2129	2163	115.01	242.21	399.07	
								2789
874.00	950.03	931.12	2131	2164	114.62	241.44	397.93	
								2767
876.00	953.18	933.89	2132	2166	114.23	240.70	396.82	
								2795
878.00	956.36	936.69	2134	2168	113.84	239.95	395.69	
								2781
880.00	959.52	939.47	2135	2169	113.45	239.20	394.58	
								2846
882.00	962.76	942.31	2137	2171	113.05	238.43	393.42	
								2668
884.00	965.80	944.98	2138	2172	112.70	237.76	392.42	
								2709
886.00	968.88	947.69	2139	2173	112.34	237.07	391.39	
								2687
888.00	971.94	950.38	2140	2175	111.99	236.40	390.39	
								2734
890.00	975.05	953.11	2142	2176	111.63	235.70	389.35	
								2674
892.00	978.09	955.79	2143	2177	111.28	235.04	388.36	
								2609
894.00	981.06	958.39	2144	2178	110.96	234.42	387.44	
								2630
896.00	984.05	961.02	2145	2180	110.63	233.79	386.50	
								2679
898.00	987.10	963.70	2146	2181	110.30	233.14	385.52	
								2713
900.00	990.19	966.42	2148	2182	109.95	232.48	384.52	
								2608
902.00	993.15	969.02	2149	2183	109.64	231.87	383.62	
								2544
904.00	996.05	971.57	2149	2184	109.34	231.30	382.76	
								2540
906.00	998.94	974.11	2150	2185	109.04	230.73	381.92	
								2543
908.00	1001.83	976.65	2151	2186	108.75	230.16	381.07	
								2717
910.00	1004.93	979.37	2152	2187	108.41	229.51	380.09	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
912.00	1008.08	982.12	2154	2188	108.07	228.84	379.09	2757
914.00	1011.15	984.81	2155	2190	107.74	228.21	378.14	2688
916.00	1014.15	987.44	2156	2191	107.43	227.62	377.25	2626
918.00	1017.17	990.09	2157	2192	107.12	227.02	376.34	2648
920.00	1020.25	992.78	2158	2193	106.80	226.39	375.41	2690
922.00	1023.38	995.52	2159	2194	106.47	225.75	374.44	2745
924.00	1026.30	998.08	2160	2195	106.18	225.20	373.61	2556
926.00	1029.37	1000.77	2161	2196	105.87	224.59	372.69	2692
928.00	1032.33	1003.36	2162	2197	105.58	224.03	371.85	2594
930.00	1035.31	1005.97	2163	2198	105.29	223.46	370.99	2608
932.00	1038.37	1008.65	2164	2199	104.98	222.87	370.10	2677
934.00	1041.37	1011.28	2165	2201	104.69	222.30	369.24	2630
936.00	1044.50	1014.01	2167	2202	104.37	221.68	368.30	2736
938.00	1047.64	1016.77	2168	2203	104.05	221.06	367.36	2754
940.00	1050.66	1019.41	2169	2204	103.76	220.49	366.50	2641
942.00	1053.70	1022.08	2170	2205	103.47	219.91	365.63	2667
944.00	1056.74	1024.73	2171	2206	103.17	219.34	364.77	2658
946.00	1059.77	1027.39	2172	2207	102.89	218.78	363.92	2653
948.00	1062.85	1030.08	2173	2208	102.59	218.20	363.04	2692
950.00	1065.87	1032.73	2174	2209	102.30	217.65	362.20	2652
952.00	1068.87	1035.35	2175	2210	102.03	217.10	361.38	2622
954.00	1071.94	1038.04	2176	2212	101.74	216.54	360.52	2690
956.00	1075.20	1040.90	2178	2213	101.41	215.89	359.54	2853
958.00	1078.36	1043.67	2179	2214	101.10	215.29	358.63	2769

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
960.00	1081.48	1046.40	2180	2216	100.81	214.72	357.75	2732
962.00	1084.58	1049.12	2181	2217	100.52	214.15	356.88	2718
964.00	1087.83	1051.96	2182	2218	100.20	213.52	355.93	2847
966.00	1091.03	1054.76	2184	2220	99.90	212.92	355.01	2798
968.00	1094.17	1057.51	2185	2221	99.60	212.35	354.14	2748
970.00	1097.34	1060.28	2186	2222	99.31	211.77	353.25	2774
972.00	1100.52	1063.07	2187	2223	99.01	211.18	352.35	2790
974.00	1103.67	1065.83	2189	2225	98.72	210.61	351.48	2759
976.00	1106.96	1068.71	2190	2226	98.41	209.99	350.53	2877
978.00	1110.18	1071.53	2191	2228	98.11	209.40	349.63	2824
980.00	1113.38	1074.33	2193	2229	97.82	208.83	348.75	2797
982.00	1116.70	1077.24	2194	2230	97.50	208.20	347.79	2912
984.00	1120.07	1080.19	2196	2232	97.18	207.56	346.81	2948
986.00	1123.46	1083.16	2197	2234	96.86	206.92	345.82	2971
988.00	1126.78	1086.07	2199	2235	96.55	206.31	344.88	2907
990.00	1130.13	1089.00	2200	2237	96.24	205.69	343.92	2936
992.00	1133.61	1092.05	2202	2239	95.90	205.02	342.89	3050
994.00	1137.21	1095.20	2204	2241	95.55	204.31	341.79	3149
996.00	1141.02	1098.54	2206	2244	95.15	203.52	340.55	3336
998.00	1144.58	1101.65	2208	2246	94.81	202.83	339.49	3116
1000.00	1148.22	1104.85	2210	2248	94.45	202.12	338.38	3195
1002.00	1151.43	1107.66	2211	2250	94.17	201.57	337.54	2814
1004.00	1154.72	1110.55	2212	2251	93.89	201.00	336.66	2886
1006.00	1158.03	1113.45	2214	2253	93.60	200.43	335.77	2898

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1008.00	1161.12	1116.16	2215	2254	93.35	199.93	335.01	2715
1010.00	1164.24	1118.89	2216	2255	93.10	199.43	334.24	2732
1012.00	1167.85	1122.06	2218	2257	92.76	198.75	333.18	3164
1014.00	1171.30	1125.09	2219	2259	92.45	198.14	332.23	3027
1016.00	1175.11	1128.42	2221	2261	92.08	197.39	331.06	3339
1018.00	1178.69	1131.57	2223	2263	91.75	196.73	330.04	3143
1020.00	1182.04	1134.50	2225	2265	91.47	196.17	329.17	2929
1022.00	1185.37	1137.40	2226	2266	91.19	195.62	328.32	2904
1024.00	1188.77	1140.37	2227	2268	90.91	195.05	327.43	2967
1026.00	1192.20	1143.36	2229	2269	90.62	194.47	326.53	2991
1028.00	1195.54	1146.28	2230	2271	90.35	193.93	325.69	2919
1030.00	1198.80	1149.12	2231	2272	90.09	193.41	324.89	2847
1032.00	1201.91	1151.84	2232	2273	89.86	192.95	324.17	2713
1034.00	1204.95	1154.49	2233	2274	89.64	192.51	323.50	2653
1036.00	1208.25	1157.37	2234	2275	89.38	191.99	322.69	2877
1038.00	1211.55	1160.24	2236	2276	89.12	191.48	321.89	2875
1040.00	1214.89	1163.16	2237	2278	88.86	190.95	321.07	2918
1042.00	1218.22	1166.06	2238	2279	88.60	190.43	320.26	2906
1044.00	1221.70	1169.10	2240	2281	88.32	189.86	319.37	3032
1046.00	1224.93	1171.92	2241	2282	88.08	189.37	318.62	2825
1048.00	1228.40	1174.95	2242	2284	87.80	188.82	317.74	3025
1050.00	1231.81	1177.92	2244	2285	87.53	188.28	316.91	2970
1052.00	1235.15	1180.83	2245	2287	87.28	187.77	316.11	2916
1054.00	1238.33	1183.61	2246	2288	87.05	187.31	315.40	2772

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1056.00	1241.70	1186.55	2247	2289	86.80	186.80	314.60	2941
1058.00	1245.02	1189.45	2248	2290	86.55	186.30	313.82	2900
1060.00	1248.32	1192.32	2250	2292	86.31	185.82	313.06	2875
1062.00	1251.62	1195.20	2251	2293	86.07	185.33	312.31	2879
1064.00	1254.85	1198.01	2252	2294	85.84	184.87	311.59	2813
1066.00	1258.04	1200.79	2253	2295	85.62	184.43	310.90	2779
1068.00	1261.20	1203.54	2254	2296	85.40	183.99	310.22	2746
1070.00	1264.44	1206.36	2255	2297	85.18	183.54	309.51	2819
1072.00	1267.92	1209.39	2256	2299	84.92	183.01	308.69	3028
1074.00	1271.47	1212.48	2258	2300	84.65	182.47	307.83	3092
1076.00	1274.79	1215.37	2259	2302	84.42	181.99	307.09	2895
1078.00	1278.14	1218.29	2260	2303	84.18	181.52	306.34	2912
1080.00	1281.44	1221.15	2261	2304	83.95	181.06	305.62	2867
1082.00	1284.77	1224.05	2263	2305	83.72	180.59	304.89	2899
1084.00	1287.97	1226.84	2264	2306	83.51	180.16	304.21	2793
1086.00	1291.22	1229.68	2265	2307	83.29	179.72	303.52	2838
1088.00	1294.55	1232.61	2266	2309	83.06	179.25	302.78	2933
1090.00	1298.02	1235.66	2267	2310	82.81	178.74	301.98	3047
1092.00	1302.00	1239.16	2270	2313	82.48	178.06	300.91	3500
1094.00	1305.65	1242.36	2271	2315	82.20	177.51	300.03	3201
1096.00	1308.90	1245.22	2272	2316	81.99	177.07	299.34	2859
1098.00	1312.18	1248.10	2273	2317	81.77	176.63	298.65	2882
1100.00	1315.58	1251.09	2275	2319	81.54	176.15	297.90	2989
1102.00	1319.16	1254.24	2276	2320	81.28	175.63	297.07	3146

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1104.00	1322.45	1257.13	2277	2321	81.06	175.19	296.38	2891
1106.00	1325.74	1260.02	2279	2323	80.85	174.76	295.69	2890
1108.00	1329.14	1263.01	2280	2324	80.62	174.29	294.96	2992
1110.00	1332.43	1265.90	2281	2325	80.41	173.86	294.28	2894
1112.00	1335.90	1268.95	2282	2327	80.17	173.38	293.52	3044
1114.00	1339.26	1271.90	2283	2328	79.96	172.93	292.82	2951
1116.00	1342.48	1274.73	2284	2329	79.76	172.53	292.18	2830
1118.00	1345.76	1277.62	2286	2330	79.55	172.11	291.51	2887
1120.00	1349.03	1280.49	2287	2331	79.34	171.69	290.85	2874
1122.00	1352.28	1283.35	2288	2332	79.14	171.28	290.21	2855
1124.00	1355.42	1286.10	2288	2333	78.96	170.90	289.62	2755
1126.00	1358.80	1289.07	2290	2334	78.74	170.47	288.92	2969
1128.00	1362.17	1292.04	2291	2336	78.53	170.03	288.23	2970
1130.00	1365.45	1294.92	2292	2337	78.33	169.62	287.58	2882
1132.00	1368.76	1297.83	2293	2338	78.13	169.21	286.93	2908
1134.00	1372.09	1300.76	2294	2339	77.92	168.79	286.27	2926
1136.00	1375.32	1303.59	2295	2340	77.73	168.40	285.65	2838
1138.00	1378.49	1306.38	2296	2341	77.55	168.03	285.06	2785
1140.00	1381.69	1309.20	2297	2342	77.36	167.65	284.46	2815
1142.00	1385.01	1312.11	2298	2343	77.16	167.24	283.82	2915
1144.00	1388.53	1315.20	2299	2344	76.94	166.78	283.09	3092
1146.00	1391.94	1318.20	2301	2346	76.73	166.36	282.41	2995
1148.00	1395.39	1321.23	2302	2347	76.52	165.92	281.72	3033
1150.00	1398.79	1324.22	2303	2348	76.32	165.50	281.05	2987

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1152.00	1402.29	1327.29	2304	2350	76.10	165.06	280.35	3074
1154.00	1405.65	1330.25	2305	2351	75.90	164.65	279.70	2957
1156.00	1408.99	1333.19	2307	2352	75.71	164.25	279.06	2944
1158.00	1412.25	1336.09	2308	2353	75.52	163.87	278.45	2897
1160.00	1415.63	1339.10	2309	2354	75.32	163.45	277.79	3013
1162.00	1418.83	1341.95	2310	2355	75.14	163.08	277.20	2851
1164.00	1422.07	1344.83	2311	2356	74.95	162.70	276.60	2879
1166.00	1425.40	1347.80	2312	2357	74.76	162.31	275.97	2964
1168.00	1428.72	1350.75	2313	2359	74.57	161.91	275.34	2957
1170.00	1431.99	1353.66	2314	2360	74.39	161.54	274.74	2904
1172.00	1435.25	1356.56	2315	2361	74.20	161.16	274.14	2906
1174.00	1438.54	1359.49	2316	2362	74.02	160.78	273.54	2925
1176.00	1441.86	1362.44	2317	2363	73.83	160.40	272.92	2953
1178.00	1445.51	1365.69	2319	2365	73.61	159.93	272.18	3248
1180.00	1449.17	1368.95	2320	2367	73.38	159.46	271.42	3264
1182.00	1452.54	1371.95	2321	2368	73.19	159.07	270.80	2996
1184.00	1456.25	1375.25	2323	2370	72.96	158.59	270.04	3305
1186.00	1459.80	1378.41	2324	2371	72.75	158.16	269.35	3154
1188.00	1463.24	1381.47	2326	2372	72.56	157.76	268.70	3060
1190.00	1466.60	1384.47	2327	2374	72.37	157.38	268.09	2997
1192.00	1469.91	1387.41	2328	2375	72.19	157.02	267.51	2940
1194.00	1473.21	1390.35	2329	2376	72.02	156.65	266.92	2942
1196.00	1476.50	1393.27	2330	2377	71.84	156.29	266.35	2926
1198.00	1479.74	1396.16	2331	2378	71.68	155.95	265.79	2883

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1200.00	1483.05	1399.10	2332	2379	71.50	155.59	265.22	2942
1202.00	1486.26	1401.96	2333	2380	71.34	155.25	264.68	2862
1204.00	1489.38	1404.74	2333	2380	71.18	154.93	264.17	2775
1206.00	1492.69	1407.68	2334	2381	71.01	154.57	263.60	2948
1208.00	1496.02	1410.64	2336	2383	70.84	154.22	263.03	2959
1210.00	1499.41	1413.66	2337	2384	70.66	153.85	262.43	3015
1212.00	1502.78	1416.66	2338	2385	70.48	153.48	261.84	3006
1214.00	1506.20	1419.71	2339	2386	70.30	153.11	261.24	3042
1216.00	1509.58	1422.73	2340	2387	70.13	152.74	260.65	3025
1218.00	1512.95	1425.76	2341	2389	69.95	152.37	260.06	3028
1220.00	1516.36	1428.81	2342	2390	69.77	152.00	259.47	3052
1222.00	1519.70	1431.81	2343	2391	69.60	151.64	258.89	3001
1224.00	1523.19	1434.94	2345	2392	69.41	151.26	258.27	3125
1226.00	1526.66	1438.06	2346	2394	69.23	150.88	257.65	3118
1228.00	1530.13	1441.16	2347	2395	69.05	150.50	257.04	3109
1230.00	1533.67	1444.34	2349	2396	68.86	150.11	256.41	3172
1232.00	1537.23	1447.53	2350	2398	68.67	149.71	255.77	3192
1234.00	1540.78	1450.72	2351	2399	68.48	149.32	255.14	3190
1236.00	1544.43	1453.99	2353	2401	68.28	148.91	254.47	3268
1238.00	1548.03	1457.22	2354	2403	68.09	148.51	253.83	3234
1240.00	1551.58	1460.40	2355	2404	67.91	148.12	253.21	3178
1242.00	1555.14	1463.59	2357	2406	67.72	147.74	252.58	3193
1244.00	1558.68	1466.77	2358	2407	67.54	147.36	251.97	3181
1246.00	1562.21	1469.94	2359	2408	67.36	146.99	251.36	3162

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1248.00	1565.77	1473.13	2361	2410	67.18	146.60	250.75	3199
1250.00	1569.36	1476.35	2362	2411	66.99	146.22	250.13	3213
1252.00	1572.97	1479.59	2364	2413	66.81	145.83	249.50	3242
1254.00	1576.58	1482.83	2365	2415	66.62	145.45	248.88	3236
1256.00	1580.24	1486.11	2366	2416	66.44	145.06	248.24	3284
1258.00	1583.85	1489.35	2368	2418	66.25	144.68	247.62	3241
1260.00	1587.44	1492.57	2369	2419	66.07	144.30	247.01	3219
1262.00	1591.11	1495.86	2371	2421	65.89	143.91	246.38	3287
1264.00	1594.79	1499.16	2372	2422	65.70	143.52	245.75	3305
1266.00	1598.52	1502.50	2374	2424	65.51	143.13	245.10	3341
1268.00	1602.28	1505.88	2375	2426	65.32	142.72	244.45	3373
1270.00	1606.00	1509.21	2377	2428	65.13	142.33	243.81	3333
1272.00	1609.70	1512.53	2378	2429	64.95	141.94	243.18	3324
1274.00	1613.47	1515.91	2380	2431	64.76	141.55	242.53	3378
1276.00	1617.29	1519.34	2381	2433	64.56	141.14	241.87	3427
1278.00	1621.10	1522.76	2383	2435	64.37	140.74	241.21	3420
1280.00	1624.92	1526.18	2385	2437	64.18	140.34	240.56	3421
1282.00	1628.74	1529.61	2386	2439	63.99	139.94	239.90	3428
1284.00	1632.59	1533.06	2388	2440	63.80	139.53	239.24	3451
1286.00	1636.51	1536.57	2390	2442	63.60	139.11	238.56	3517
1288.00	1640.51	1540.16	2392	2445	63.39	138.68	237.86	3589
1290.00	1644.49	1543.74	2393	2447	63.19	138.26	237.16	3572
1292.00	1648.47	1547.30	2395	2449	62.99	137.83	236.47	3568
1294.00	1652.44	1550.86	2397	2451	62.79	137.42	235.79	3560

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1296.00	1656.32	1554.35	2399	2453	62.60	137.02	235.13	3485
1298.00	1660.15	1557.78	2400	2455	62.42	136.64	234.51	3433
1300.00	1663.90	1561.15	2402	2456	62.25	136.27	233.91	3363
1302.00	1667.66	1564.51	2403	2458	62.08	135.91	233.31	3369
1304.00	1671.45	1567.92	2405	2460	61.90	135.53	232.71	3404
1306.00	1675.37	1571.43	2406	2462	61.71	135.14	232.06	3513
1308.00	1679.08	1574.76	2408	2463	61.55	134.79	231.49	3326
1310.00	1682.84	1578.13	2409	2465	61.38	134.44	230.91	3371
1312.00	1686.53	1581.44	2411	2467	61.21	134.09	230.35	3309
1314.00	1689.87	1584.44	2412	2467	61.08	133.81	229.89	3004
1316.00	1693.28	1587.49	2413	2468	60.94	133.53	229.43	3050
1318.00	1696.51	1590.39	2413	2469	60.82	133.27	229.01	2903
1320.00	1699.73	1593.28	2414	2470	60.70	133.02	228.59	2887
1322.00	1702.89	1596.16	2415	2470	60.58	132.76	228.18	2876
1324.00	1706.06	1599.05	2415	2471	60.46	132.51	227.77	2897
1326.00	1709.20	1601.92	2416	2472	60.34	132.26	227.37	2870
1328.00	1712.30	1604.76	2417	2472	60.23	132.02	226.97	2832
1330.00	1715.39	1607.58	2417	2473	60.11	131.78	226.59	2829
1332.00	1718.58	1610.50	2418	2474	59.99	131.53	226.17	2912
1334.00	1721.71	1613.36	2419	2474	59.88	131.29	225.77	2868
1336.00	1724.92	1616.29	2420	2475	59.76	131.03	225.36	2929
1338.00	1728.06	1619.17	2420	2476	59.64	130.79	224.96	2873
1340.00	1731.17	1622.01	2421	2476	59.53	130.55	224.58	2841
1342.00	1734.23	1624.81	2421	2477	59.42	130.32	224.20	2800

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2799
1344.00	1737.29	1627.61	2422	2477	59.31	130.09	223.83	
								2777
1346.00	1740.32	1630.38	2423	2478	59.20	129.87	223.47	
								2962
1348.00	1743.56	1633.35	2423	2479	59.08	129.62	223.05	
								3341
1350.00	1747.22	1636.69	2425	2480	58.93	129.29	222.52	
								3258
1352.00	1750.78	1639.94	2426	2481	58.78	128.98	222.01	
								3090
1354.00	1754.16	1643.03	2427	2482	58.65	128.71	221.56	
								3335
1356.00	1757.81	1646.37	2428	2484	58.50	128.39	221.04	
								3218
1358.00	1761.33	1649.59	2429	2485	58.36	128.10	220.55	
								3365
1360.00	1765.01	1652.95	2431	2487	58.21	127.77	220.02	
								3281
1362.00	1768.59	1656.23	2432	2488	58.07	127.47	219.52	
								3302
1364.00	1772.21	1659.54	2433	2489	57.92	127.16	219.02	
								3388
1366.00	1775.91	1662.92	2435	2491	57.77	126.84	218.49	
								3230
1368.00	1779.44	1666.15	2436	2492	57.63	126.55	218.01	
								3205
1370.00	1782.95	1669.36	2437	2493	57.50	126.26	217.54	
								3337
1372.00	1786.60	1672.70	2438	2495	57.35	125.96	217.04	
								3349
1374.00	1790.26	1676.05	2440	2496	57.21	125.65	216.53	
								3200
1376.00	1793.76	1679.25	2441	2497	57.07	125.37	216.07	
								3082
1378.00	1797.13	1682.33	2442	2498	56.95	125.11	215.64	
								2935
1380.00	1800.34	1685.26	2442	2499	56.84	124.88	215.26	
								3038
1382.00	1803.66	1688.30	2443	2500	56.72	124.63	214.85	
								2987
1384.00	1806.93	1691.29	2444	2501	56.61	124.39	214.46	
								3385
1386.00	1810.63	1694.67	2445	2502	56.47	124.08	213.95	
								3344
1388.00	1814.29	1698.02	2447	2504	56.33	123.79	213.46	
								3209
1390.00	1817.80	1701.23	2448	2505	56.20	123.51	213.01	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1392.00	1821.40	1704.52	2449	2506	56.06	123.23	212.54	3292
1394.00	1824.76	1707.60	2450	2507	55.94	122.98	212.13	3079
1396.00	1828.01	1710.57	2451	2508	55.84	122.75	211.75	2972
1398.00	1831.33	1713.60	2451	2509	55.72	122.51	211.36	3027
1400.00	1834.53	1716.53	2452	2509	55.62	122.29	210.99	2933
1402.00	1837.72	1719.44	2453	2510	55.51	122.07	210.63	2915
1404.00	1841.32	1722.73	2454	2511	55.38	121.79	210.17	3290
1406.00	1844.87	1725.98	2455	2512	55.26	121.52	209.72	3248
1408.00	1848.65	1729.44	2457	2514	55.11	121.21	209.21	3461
1410.00	1851.92	1732.43	2457	2515	55.00	120.98	208.84	2984
1412.00	1855.66	1735.85	2459	2516	54.86	120.69	208.35	3421
1414.00	1859.66	1739.51	2460	2518	54.71	120.35	207.79	3661
1416.00	1863.38	1742.91	2462	2520	54.57	120.06	207.30	3398
1418.00	1867.16	1746.36	2463	2521	54.43	119.76	206.81	3454
1420.00	1870.84	1749.73	2464	2523	54.29	119.47	206.34	3373
1422.00	1874.53	1753.10	2466	2524	54.16	119.19	205.88	3367
1424.00	1878.31	1756.56	2467	2526	54.02	118.90	205.38	3463
1426.00	1881.96	1759.90	2468	2527	53.90	118.62	204.93	3333
1428.00	1885.65	1763.27	2470	2528	53.77	118.35	204.47	3375
1430.00	1889.68	1766.96	2471	2530	53.61	118.01	203.92	3683
1432.00	1893.29	1770.26	2472	2531	53.49	117.75	203.48	3302
1434.00	1896.96	1773.61	2474	2533	53.36	117.48	203.03	3357
1436.00	1900.68	1777.02	2475	2534	53.23	117.20	202.57	3406
1438.00	1904.73	1780.72	2477	2536	53.07	116.87	202.03	3701

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								3685
1440.00	1908.76	1784.41	2478	2538	52.92	116.55	201.49	

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SYNTHETIC

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SYNTHETIC SEISMOGRAM TABLE

COMPANY : BEACH PETROLEUM N.L.
WELL : WESTGATE - 1
FIELD : WILDCAT
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: 560311

THE HEADINGS AND FLAGS SHOWN IN THE DATA LIST ARE DEFINED AS FOLLOWS:

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IGEOFL- FLAG INDICATING  MODE OF PROCESSING
        IGEOFL = 0    WST DATA AVAILABLE AND PROCESSED
        IGEOFL = 1    WST DATA NOT AVAILABLE

LOG INPUT DATA :
GRF001- CHANNEL NAME FOR INPUT DENSITY LOG DATA
GTR0C1- CHANNEL NAME FOR INPUT SONIC LOG DATA
GCURVE- CORRELATION LOG NAMES

USER DEFINED MODELING

LOFVEL- LAYER OPTION FLAG FOR VELOCITY
LOFDEN- LAYER OPTION FLAG FOR DENSITY
LAYVEL- LAYERED VELOCITY VALUES FOR USER SUPPLIED ZONE LIMIT
        WITH RESPECT TO SONIC LOG DATA
LAYDEN- LAYERED DENSITY VALUES FOR USER SUPPLIED ZONE LIMITS
        WITH RESPECT TO SONIC LOG DATA
UNERTH- UNIFORM EARTH VELOCITY
UNFDEN- UNIFORM EARTH DENSITY
SRATE   SAMPLING RATE IN MS
INIDEP  START DEPTH FOR COMPUTING SYNTHETIC SEISMOGRAM
        WITH RESPECT TO SONIC LOG DATA
IGESTP  STOP DEPTH FOR COMPUTING SYNTHETIC SEISMOGRAM
        WITH RESPECT TO SONIC LOG DATA
INITAU  TWO WAY TRAVEL TIME FROM TOP SONIC TO SRD
EKB     ELEVATION OF KELLY BUSHING WITH RESPECT TO
        MEAN SEA LEVEL
SRDGEO  SEISMIC REFERENCE DEPTH WITH RESPECT TO
        MEAN SEA LEVEL
ICDP    FLAG FOR COMPUTING RESIDUAL MULTIPLES
CDPTIM  TWO WAY TIME INTERVAL FOR COMPUTATION OF
        RESIDUAL MULTIPLES
SCRTIM  SURFACE REFLECTOR TWO WAY TIME ABOVE INITAU
SCREFL  SURFACE REFLECTION COEFFICIENT
RCMAX   REFLECTION COEFFICIENTS THAT ARE EQUAL TO OR
        GREATER  THAN THIS VALUE SHALL BE FLAGGED

*NOTE*  IN CASE OF MODELING A SYNTHETIC SEISMOGRAM WITHOUT
        SONIC LOG DATA ,THE DEPTH REFERENCES SHALL BE USER
        DEFINED


OUTPUT DATA

RMSVWE  ROOT MEAN SQUARE VELOCITY FOUND FOR THE WELL
SRDTIM  TWO WAY TRANSIT TIME BETWEEN INIDEP AND SRDGEO

CHANNNEL NAMES
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TWOT- TWO WAY TRAVEL TIME
DSRD- DEPTH OF COMPUTED DATA WITH RESPECT TO SRD
INTV- INTERVAL VELOCITY ON A TIME SCALE
RHOT- INTERVAL DENSITY  ON A TIME SCALE
REFL- REFLECTION COEFFICIENT AT GIVEN TWO WAY TRAVEL TIMES
ATTE- ATTENUATION COEFFICIENT AT GIVEN TWO WAY TRAVEL TIMES
PRIM- SYNTHETIC SEISMOGRAM  - PRIMARIES
MULT- SYNTHETIC SEISMOGRAM  - PRIMARIES + MULTIPLES
MUON- MULTIPLES ONLY
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CHANNEL NAMES

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CHAN   1 - TWOT.GMU.002.*
CHAN   2 - DSRD.GRF.006.*
CHAN   3 - INTV.GRF.007.*
CHAN   4 - RHOT.GRF.001.*
CHAN   5 - REFL.GRF.001.*
CHAN   6 - ATTE.GRF.001.*
CHAN   7 - PRIM.GRF.001.*
CHAN   8 - MULT.GMU.001.*
CHAN   9 - MUON.GMU.001.*
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(GLOBAL PARAMETERS)			(VALUE)	
MODE OF PROC (GEOGRAM)	IGEOFL	:	0	
INITIALIZE CDP LOGIC	ICDP	:	0	
CDP TIME	CDPTIM	:	.200000	S
TIME SAMPLING (WST)	SRATE	:	2.00000	MS
TOP DEPTH OF PROCESSING	INIDEP	:	487.700	M
BOTTOM DEPTH OF PROCESSI	IGESTP	:	1787.00	M
INITIAL TWO WAY TRAVEL T	INITAU	:	.524980	S
SRD FOR GEOGRAM	SRDGEO	:	-30479.7	M
ELEVATION OF KELLY BUSHI	EKB	:	0	M
SRD TIME	SRDTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCRTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCREFL	:	-1.00000	
REFLECTION COEFF MAXIMUM	RCMAX	:	.300000	
RMS VELOCITY IN WELL	RMSVWE	:	2860.49	M/S
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

1 SD01*
2 SD02*
3 SD03*
4 SD04*
5 GR*
6 CALI*
7 SD04.CUR.LOG.003.*

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0
USER VELOC (WST)	LAYVEL	: 2145.000	M/S	432.000	-	394.600
		1963.000		394.600		247.800
		1777.000		247.800		135.000
		1730.000		99.0000		7.70000

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2264	2.100					
527.0	489.96			.001	1.00000	.00069	.00069	0
		2267	2.100					
529.0	492.23			-.004	.99999	-.00379	-.00379	0
		2250	2.100					
531.0	494.48			.006	.99995	.00571	.00572	.00001
		2276	2.100					
533.0	496.76			.001	.99995	.00094	.00092	-.00002
		2280	2.100					
535.0	499.04			-.006	.99991	-.00633	-.00629	.00004
		2251	2.100					
537.0	501.29			-.023	.99938	-.02309	-.02311	-.00002
		2150	2.100					
539.0	503.44			.024	.99881	.02374	.02372	-.00002
		2254	2.100					
541.0	505.69			-.001	.99881	-.00056	-.00069	-.00013
		2252	2.100					
543.0	507.94			.002	.99881	.00195	.00241	.00046
		2261	2.100					
545.0	510.20			.059	.99534	.05886	.05859	-.00027
		2544	2.100					
547.0	512.75			.063	.99137	.06291	.06255	-.00035
		2887	2.100					
549.0	515.64			-.096	.98230	-.09482	-.09489	-.00007
		2383	2.100					
551.0	518.02			-.012	.98216	-.01163	-.01059	.00104
		2327	2.100					
553.0	520.35			-.010	.98207	-.00946	-.01225	-.00279
		2283	2.100					
555.0	522.63			.047	.97988	.04638	.04829	.00190
		2509	2.100					
557.0	525.14			-.048	.97758	-.04748	-.04366	.00382
		2277	2.100					
559.0	527.41			.053	.97483	.05178	.05094	-.00084
		2532	2.100					
561.0	529.95			-.057	.97168	-.05549	-.06360	-.00811
		2259	2.100					
563.0	532.21			.035	.97050	.03377	.03744	.00366
		2422	2.100					
565.0	534.63			.072	.96548	.06983	.06741	-.00242
		2797	2.100					
567.0	537.42			-.106	.95462	-.10238	-.10692	-.00454
		2261	2.100					
569.0	539.69			-.001	.95462	-.00135	.00201	.00336
		2255	2.100					
571.0	541.94			.040	.95312	.03781	.05166	.01385
		2441	2.100					
573.0	544.38			-.030	.95224	-.02904	-.03843	-.00939
		2296	2.100					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
575.0	546.68			.048	.95001	.04601	.04651	.00051
		2529	2.100					
577.0	549.21			-.008	.94995	-.00791	-.01193	-.00402
		2488	2.100					
579.0	551.69			-.024	.94939	-.02301	-.02011	.00290
		2370	2.100					
581.0	554.06			.010	.94930	.00942	.00603	-.00339
		2418	2.100					
583.0	556.48			.016	.94906	.01511	.02741	.01230
		2496	2.100					
585.0	558.98			-.008	.94899	-.00785	-.03309	-.02524
		2455	2.100					
587.0	561.43			-.026	.94834	-.02483	-.00666	.01817
		2330	2.100					
589.0	563.76			.014	.94815	.01346	.02599	.01252
		2397	2.100					
591.0	566.16			.003	.94815	.00254	-.00855	-.01109
		2410	2.100					
593.0	568.57			-.010	.94805	-.00958	-.02141	-.01183
		2361	2.100					
595.0	570.93			.025	.94746	.02365	.02905	.00540
		2482	2.100					
597.0	573.41			.039	.94602	.03694	.03698	.00003
		2684	2.100					
599.0	576.10			-.111	.93432	-.10519	-.10202	.00317
		2147	2.100					
601.0	578.24			-.019	.93397	-.01803	-.00851	.00952
		2065	2.100					
603.0	580.31			0	.93397	-.00012	-.02211	-.02199
		2065	2.100					
605.0	582.37			.025	.93339	.02328	.01760	-.00568
		2170	2.100					
607.0	584.54			-.021	.93299	-.01943	.01831	.03774
		2082	2.100					
609.0	586.62			0	.93299	-.00037	-.02707	-.02670
		2080	2.100					
611.0	588.70			.063	.92931	.05860	.04943	-.00917
		2359	2.100					
613.0	591.06			.094	.92105	.08760	.10730	.01970
		2850	2.100					
615.0	593.91			.006	.92102	.00535	-.00486	-.01021
		2883	2.100					
617.0	596.80			-.039	.91960	-.03613	-.03041	.00572
		2666	2.100					
619.0	599.46			.012	.91946	.01134	.02631	.01497
		2732	2.100					
621.0	602.19			.015	.91925	.01405	.02186	.00781
		2817	2.100					
623.0	605.01			-.079	.91351	-.07262	-.07987	-.00725

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2404	2.100					
625.0	607.41			.039	.91210	.03586	.03711	.00125
		2601	2.100					
627.0	610.02			.048	.90996	.04419	.02572	-.01847
		2866	2.100					
629.0	612.88			-.076	.90474	-.06896	-.05675	.01221
		2462	2.100					
631.0	615.34			-.009	.90467	-.00801	-.01525	-.00724
		2419	2.100					
633.0	617.76			.014	.90448	.01280	-.00303	-.01583
		2488	2.100					
635.0	620.25			-.009	.90441	-.00835	-.03289	-.02454
		2443	2.100					
637.0	622.69			.044	.90266	.03977	.08082	.04105
		2667	2.100					
639.0	625.36			-.035	.90154	-.03176	-.00844	.02332
		2486	2.100					
641.0	627.85			.013	.90140	.01128	-.02091	-.03220
		2549	2.100					
643.0	630.39			-.002	.90140	-.00162	-.00150	.00012
		2540	2.100					
645.0	632.93			-.006	.90136	-.00555	.00452	.01007
		2509	2.100					
647.0	635.44			-.005	.90134	-.00409	-.02776	-.02367
		2486	2.100					
649.0	637.93			-.007	.90131	-.00586	.02468	.03054
		2454	2.100					
651.0	640.38			.015	.90111	.01317	.00610	-.00708
		2527	2.100					
653.0	642.91			.004	.90110	.00341	-.00511	-.00851
		2546	2.100					
655.0	645.46			.019	.90077	.01736	.02815	.01078
		2646	2.100					
657.0	648.10			.042	.89920	.03757	.04283	.00526
		2876	2.100					
659.0	650.98			-.004	.89919	-.00358	-.02596	-.02238
		2854	2.100					
661.0	653.83			-.022	.89876	-.01947	-.00376	.01571
		2733	2.100					
663.0	656.57			-.050	.89648	-.04530	-.03733	.00798
		2470	2.100					
665.0	659.04			-.008	.89643	-.00675	-.02974	-.02299
		2433	2.100					
667.0	661.47			.002	.89643	.00163	.00277	.00114
		2442	2.100					
669.0	663.91			-.010	.89634	-.00881	.02096	.02977
		2395	2.100					
671.0	666.31			.006	.89630	.00572	-.02479	-.03051
		2425	2.100					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
673.0	668.73			.068	.89210	.06137	.07574	.01437
		2782	2.100					
675.0	671.51			.050	.88991	.04427	.03843	-.00584
		3073	2.100					
677.0	674.59			-.118	.87749	-.10512	-.13677	-.03165
		2423	2.100					
679.0	677.01			-.011	.87737	-.01000	.01840	.02840
		2369	2.100					
681.0	679.38			.001	.87737	.00102	.01057	.00955
		2374	2.100					
683.0	681.75			.004	.87736	.00347	-.01351	-.01698
		2393	2.100					
685.0	684.15			-.062	.87400	-.05429	-.03711	.01718
		2114	2.100					
687.0	686.26			.062	.87069	.05379	.06084	.00705
		2392	2.100					
689.0	688.65			-.021	.87031	-.01828	-.02611	-.00784
		2293	2.100					
691.0	690.94			.023	.86984	.02016	.01435	-.00581
		2402	2.100					
693.0	693.35			.018	.86957	.01523	.01804	.00281
		2488	2.100					
695.0	695.83			-.011	.86946	-.00977	-.01990	-.01013
		2432	2.100					
697.0	698.27			-.019	.86916	-.01613	-.00869	.00744
		2344	2.100					
699.0	700.61			.008	.86911	.00668	.02839	.02172
		2380	2.100					
701.0	702.99			.038	.86786	.03300	.01515	-.01785
		2568	2.100					
703.0	705.56			-.011	.86776	-.00933	-.01369	-.00435
		2513	2.100					
705.0	708.07			-.020	.86742	-.01722	-.02143	-.00421
		22	2.094					
707.0	710.49			-.002	.86741	-.00215	-.01995	-.01780
		2411	2.093					
709.0	712.90			-.006	.86738	-.00547	-.01415	-.00868
		2394	2.082					
711.0	715.30			.097	.85930	.08371	.13489	.05118
		2683	2.254					
713.0	717.98			-.065	.85563	-.05613	-.09949	-.04337
		2477	2.143					
715.0	720.46			-.034	.85464	-.02911	-.00455	.02457
		2364	2.097					
717.0	722.82			-.005	.85462	-.00402	.01965	.02367
		2285	2.149					
719.0	725.11			.020	.85429	.01678	.00076	-.01601
		2345	2.179					
721.0	727.45			-.022	.85388	-.01888	-.04349	-.02462

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2298	2.127					
723.0	729.75			.088	.84721	.07542	.09376	.01834
		2676	2.181					
725.0	732.43			-.045	.84549	-.03818	-.04588	-.00769
		2502	2.131					
727.0	734.93			-.009	.84543	-.00740	-.00018	.00722
		2440	2.147					
729.0	737.37			.005	.84541	.00424	.01093	.00669
		2459	2.152					
731.0	739.83			-.023	.84497	-.01910	-.03663	-.01753
		2411	2.097					
733.0	742.24			.023	.84454	.01911	.01523	-.00387
		2495	2.121					
735.0	744.73			.078	.83936	.06615	.13177	.06562
		2727	2.270					
737.0	747.46			-.073	.83495	-.06086	-.09987	-.03902
		2479	2.160					
739.0	749.94			.014	.83477	.01204	-.00620	-.01824
		2490	2.213					
741.0	752.43			-.058	.83199	-.04817	-.06457	-.01640
		2299	2.136					
743.0	754.73			.043	.83046	.03571	.04656	.01085
		2421	2.209					
745.0	757.15			-.018	.83019	-.01499	-.04736	-.03237
		2433	2.121					
747.0	759.58			0	.83019	.00007	.05392	.05384
		2463	2.095					
749.0	762.05			.022	.82978	.01848	.01599	-.00250
		2530	2.133					
751.0	764.58			.053	.82741	.04437	.02650	-.01787
		2666	2.252					
753.0	767.24			-.064	.82401	-.05300	-.03183	.02116
		2416	2.186					
755.0	769.66			.022	.82361	.01818	.00629	-.01189
		2507	2.202					
757.0	772.17			-.037	.82250	-.03026	-.05213	-.02187
		2417	2.122					
759.0	774.58			.025	.82198	.02076	.05614	.03538
		2479	2.177					
761.0	777.06			-.022	.82156	-.01849	-.04470	-.02621
		2452	2.103					
763.0	779.51			.006	.82153	.00530	.00214	-.00316
		2507	2.084					
765.0	782.02			.005	.82151	.00403	.03525	.03121
		2510	2.102					
767.0	784.53			.030	.82078	.02452	.02217	-.00235
		2564	2.185					
769.0	787.09			-.019	.82047	-.01577	-.05959	-.04382
		2448	2.202					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
771.0	789.54			-.021	.82011	-.01727	.03787	.05514
		2424	2.132					
773.0	791.97			.010	.82002	.00848	-.02993	-.03841
		2437	2.165					
775.0	794.40			-.007	.81998	-.00569	.00072	.00641
		2389	2.178					
777.0	796.79			.012	.81986	.00995	.05082	.04088
		2443	2.182					
779.0	799.24			.034	.81892	.02777	.02748	-.00029
		2614	2.182					
781.0	801.85			.094	.81168	.07697	.03906	-.03791
		2942	2.341					
783.0	804.79			-.078	.80669	-.06370	-.06025	.00345
		2685	2.192					
785.0	807.48			-.043	.80518	-.03486	-.02428	.01057
		2532	2.132					
787.0	810.01			-.013	.80505	-.01019	-.02475	-.01456
		2481	2.122					
789.0	812.49			.060	.80216	.04823	.02940	-.01883
		2679	2.215					
791.0	815.17			.054	.79983	.04329	.08436	.04107
		2905	2.275					
793.0	818.08			.067	.79627	.05334	.06228	.00895
		3187	2.371					
795.0	821.26			-.135	.78179	-.10739	-.09894	.00846
		2554	2.255					
797.0	823.82			.023	.78137	.01799	.00772	-.01027
		2686	2.245					
799.0	826.50			.005	.78135	.00418	-.03610	-.04028
		2741	2.224					
801.0	829.24			.010	.78127	.00776	.01719	.00942
		2791	2.228					
803.0	832.03			-.036	.78027	-.02794	.00183	.02977
		2677	2.163					
805.0	834.71			-.017	.78004	-.01346	-.04207	-.02860
		2534	2.207					
807.0	837.24			.061	.77716	.04741	.06142	.01401
		2762	2.287					
809.0	840.01			-.023	.77676	-.01753	.02013	.03766
		2638	2.289					
811.0	842.64			.008	.77672	.00609	-.04851	-.05460
		2736	2.242					
813.0	845.38			.008	.77666	.00635	.00496	-.00139
		2798	2.228					
815.0	848.18			-.009	.77661	-.00660	.00691	.01351
		2759	2.222					
817.0	850.94			.026	.77608	.02025	.05245	.03221
		2833	2.279					
819.0	853.77			-.005	.77606	-.00392	-.02972	-.02581

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2812	2.273					
821.0	856.58			.001	.77606	.00071	-.01061	-.01132
		2835	2.259					
823.0	859.42			-.004	.77604	-.00347	-.03619	-.03272
		2806	2.262					
825.0	862.22			-.019	.77576	-.01494	.04668	.06162
		2715	2.250					
827.0	864.94			-.001	.77576	-.00104	.00840	.00944
		2719	2.240					
829.0	867.66			.006	.77573	.00429	-.02934	-.03363
		2771	2.222					
831.0	870.43			-.039	.77458	-.02993	-.05963	-.02969
		2603	2.190					
833.0	873.03			.004	.77456	.00303	.07052	.06749
		2573	2.233					
835.0	875.60			.045	.77299	.03492	.01148	-.02345
		2751	2.286					
837.0	878.35			-.016	.77278	-.01274	-.06275	-.05001
		2696	2.257					
839.0	881.05			-.015	.77260	-.01180	.01432	.02611
		2625	2.248					
841.0	883.68			.049	.77078	.03750	.04780	.01030
		2819	2.307					
843.0	886.49			-.009	.77071	-.00720	-.00582	.00138
		2793	2.285					
845.0	889.29			.040	.76946	.03101	.05630	.02528
		2950	2.345					
847.0	892.24			.012	.76935	.00948	-.03162	-.04110
		3022	2.346					
849.0	895.26			-.034	.76844	-.02636	.00229	.02866
		2903	2.281					
851.0	898.16			-.009	.76838	-.00680	-.00086	.00594
		2872	2.265					
853.0	901.03			-.009	.76832	-.00688	.00379	.01066
		2854	2.238					
855.0	903.89			.006	.76829	.00461	-.00406	-.00867
		2868	2.255					
857.0	906.76			-.007	.76826	-.00516	.00031	.00547
		2828	2.256					
859.0	909.58			.015	.76809	.01143	-.01225	-.02369
		2891	2.273					
861.0	912.48			.021	.76776	.01598	.00649	-.00949
		2989	2.292					
863.0	915.47			.015	.76759	.01138	.03030	.01892
		3028	2.331					
865.0	918.49			.009	.76752	.00710	.00336	-.00374
		2968	2.422					
867.0	921.46			-.005	.76750	-.00399	-.01701	-.01301
		2941	2.420					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
869.0	924.40			-.001	.76750	-.00081	.02473	.02554
		2985	2.378					
871.0	927.39			-.038	.76639	-.02920	-.02088	.00832
		2842	2.315					
873.0	930.23			-.019	.76611	-.01454	-.03249	-.01795
		2789	2.271					
875.0	933.02			.003	.76611	.00237	.01967	.01730
		2786	2.288					
877.0	935.81			.019	.76584	.01431	-.00377	-.01808
		2807	2.357					
879.0	938.61			.004	.76583	.00341	-.04630	-.04971
		2838	2.353					
881.0	941.45			-.048	.76409	-.03649	-.01461	.02189
		2684	2.261					
883.0	944.13			-.006	.76406	-.00450	-.00859	-.00409
		2713	2.211					
885.0	946.85			-.019	.76379	-.01423	-.01349	.00074
		2651	2.180					
887.0	949.50			.008	.76375	.00603	.03891	.03288
		2703	2.172					
889.0	952.20			.015	.76358	.01137	.01071	-.00067
		2722	2.222					
891.0	954.92			-.020	.76327	-.01524	-.01981	-.00457
		2664	2.181					
893.0	957.59			-.008	.76322	-.00610	-.02019	-.01409
		2609	2.192					
895.0	960.20			-.005	.76320	-.00416	.00857	.01272
		2617	2.162					
897.0	962.81			.040	.76200	.03033	-.00478	-.03512
		2745	2.232					
899.0	965.56			-.015	.76182	-.01171	.00991	.02161
		2645	2.246					
901.0	968.20			-.019	.76153	-.01473	-.00102	.01371
		2549	2.242					
903.0	970.75			-.002	.76153	-.00125	-.01015	-.00890
		2579	2.209					
905.0	973.33			-.029	.76089	-.02216	-.04366	-.02150
		2512	2.140					
907.0	975.84			.051	.75891	.03881	.06287	.02405
		2680	2.221					
909.0	978.52			.001	.75890	.00062	-.04615	-.04677
		2685	2.220					
911.0	981.21			.012	.75879	.00942	.05581	.04639
		2767	2.209					
913.0	983.98			-.043	.75741	-.03238	-.04799	-.01562
		2614	2.147					
915.0	986.59			.024	.75699	.01786	.02451	.00665
		2669	2.204					
917.0	989.26			.006	.75696	.00475	.02496	.02021

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2644	2.253					
919.0	991.90			.032	.75617	.02431	.04154	.01723
		2781	2.284					
921.0	994.68			-.050	.75431	-.03750	-.07992	-.04243
		2593	2.218					
923.0	997.28			.001	.75431	.00066	.03079	.03013
		2600	2.216					
925.0	999.88			.010	.75423	.00777	-.00747	-.01524
		2662	2.209					
927.0	1002.54			-.019	.75397	-.01405	-.02511	-.01105
		2593	2.186					
929.0	1005.13			.030	.75330	.02259	.00451	-.01808
		2651	2.269					
931.0	1007.78			.002	.75329	.00157	.04830	.04673
		2676	2.258					
933.0	1010.46			-.008	.75324	-.00617	-.02425	-.01807
		2696	2.205					
935.0	1013.16			.013	.75311	.00998	.00731	-.00267
		2744	2.224					
937.0	1015.90			-.024	.75267	-.01823	-.04146	-.02323
		2648	2.196					
939.0	1018.55			.018	.75243	.01331	.04107	.02776
		2699	2.232					
941.0	1021.25			-.021	.75209	-.01601	-.04518	-.02917
		2646	2.182					
943.0	1023.89			-.006	.75206	-.00454	.04697	.05151
		2639	2.162					
945.0	1026.53			.015	.75189	.01161	-.01137	-.02298
		2703	2.176					
947.0	1029.24			-.022	.75152	-.01666	-.03474	-.01807
		2652	2.122					
949.0	1031.89			-.006	.75149	-.00446	.00284	.00729
		2627	2.117					
951.0	1034.51			.023	.75109	.01730	.03622	.01892
		2669	2.182					
953.0	1037.18			.032	.75032	.02402	-.00291	-.02692
		2732	2.272					
955.0	1039.92			.045	.74879	.03393	.04838	.01446
		2897	2.346					
957.0	1042.81			-.051	.74680	-.03856	-.08208	-.04352
		2753	2.226					
959.0	1045.57			-.017	.74659	-.01254	.02980	.04233
		2678	2.213					
961.0	1048.24			.014	.74644	.01066	.01729	.00663
		2773	2.199					
963.0	1051.02			.038	.74537	.02832	.04310	.01478
		2860	2.301					
965.0	1053.88			-.042	.74406	-.03116	-.06653	-.03536
		2735	2.213					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
967.0	1056.61			.011	.74397	.00839	.03737	.02898
		2779	2.227					
969.0	1059.39			.003	.74396	.00253	-.00922	-.01174
		2774	2.247					
971.0	1062.17			-.013	.74384	-.00930	.03231	.04161
		2782	2.185					
973.0	1064.95			.008	.74380	.00588	-.02061	-.02649
		2804	2.203					
975.0	1067.75			.040	.74259	.02998	.00148	-.02850
		2897	2.311					
977.0	1070.65			-.046	.74099	-.03441	-.04518	-.01076
		2765	2.207					
979.0	1073.41			.025	.74052	.01875	.03910	.02035
		2877	2.231					
981.0	1076.29			.040	.73931	.02994	.07300	.04305
		2980	2.335					
983.0	1079.27			-.002	.73930	-.00178	-.03678	-.03500
		2939	2.356					
985.0	1082.21			-.023	.73892	-.01687	-.00372	.01315
		2915	2.270					
987.0	1085.12			.012	.73882	.00875	.02706	.01831
		2956	2.292					
989.0	1088.08			-.016	.73863	-.01174	-.06906	-.05732
		2912	2.254					
991.0	1090.99			.054	.73646	.04001	.05019	.01018
		3151	2.322					
993.0	1094.14			.038	.73541	.02781	.06721	.03939
		3318	2.378					
995.0	1097.46			-.042	.73412	-.03088	-.03170	-.00082
		3111	2.331					
997.0	1100.57			.045	.73260	.03330	.05851	.02521
		3317	2.394					
999.0	1103.89			-.080	.72792	-.05857	-.07053	-.01196
		2872	2.356					
1001.0	1106.76			-.006	.72790	-.00402	-.06089	-.05687
		2885	2.320					
1003.0	1109.65			.002	.72790	.00139	-.00069	-.00208
		2896	2.320					
1005.0	1112.54			-.032	.72715	-.02327	.02788	.05115
		2716	2.320					
1007.0	1115.26			0	.72715	-.00020	-.00810	-.00791
		2715	2.320					
1009.0	1117.97			.066	.72402	.04771	.05144	.00373
		3096	2.320					
1011.0	1121.07			-.010	.72394	-.00757	-.04624	-.03866
		3032	2.320					
1013.0	1124.10			.030	.72330	.02158	.03850	.01692
		3218	2.320					
1015.0	1127.32			.007	.72326	.00506	.00954	.00447

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		3264	2.320					
1017.0	1130.58			-.041	.72203	-.02985	-.01374	.01611
		3005	2.320					
1019.0	1133.59			-.027	.72152	-.01924	-.05076	-.03152
		2849	2.320					
1021.0	1136.44			.013	.72139	.00955	.02649	.01694
		2925	2.320					
1023.0	1139.36			.022	.72104	.01601	.04567	.02967
		3058	2.320					
1025.0	1142.42			-.020	.72074	-.01473	-.03778	-.02304
		2936	2.320					
1027.0	1145.36			-.013	.72062	-.00937	-.03026	-.02088
		2860	2.320					
1029.0	1148.22			-.014	.72047	-.01021	.04730	.05751
		2780	2.320					
1031.0	1151.00			-.022	.72012	-.01589	-.10701	-.09113
		2661	2.320					
1033.0	1153.66			.022	.71978	.01572	.03702	.02131
		2779	2.320					
1035.0	1156.44			.014	.71963	.01034	.02710	.01677
		2860	2.320					
1037.0	1159.30			.011	.71954	.00797	.01852	.01055
		2924	2.320					
1039.0	1162.22			-.002	.71954	-.00137	.01277	.01414
		2913	2.320					
1041.0	1165.13			.005	.71952	.00341	.00229	-.00111
		2941	2.320					
1043.0	1168.07			-.005	.71950	-.00394	-.07260	-.06865
		2909	2.320					
1045.0	1170.98			.013	.71939	.00900	.02899	.01998
		2983	2.320					
1047.0	1173.97			.003	.71938	.00184	.02122	.01939
		2998	2.320					
1049.0	1176.96			-.009	.71933	-.00612	.00262	.00874
		2947	2.320					
1051.0	1179.91			-.022	.71899	-.01564	-.01340	.00224
		2822	2.320					
1053.0	1182.73			.007	.71896	.00496	.00633	.00137
		2861	2.320					
1055.0	1185.59			.010	.71888	.00740	-.00807	-.01547
		2921	2.320					
1057.0	1188.51			-.008	.71883	-.00595	.01009	.01604
		2873	2.320					
1059.0	1191.39			.007	.71879	.00535	.00001	-.00534
		2916	2.320					
1061.0	1194.30			-.018	.71857	-.01268	-.00776	.00491
		2815	2.320					
1063.0	1197.12			-.007	.71853	-.00499	-.02824	-.02325
		2776	2.320					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1065.0	1199.89	2781	2.320	.001	.71853	.00062	.01290	.01228
1067.0	1202.67	2752	2.320	-.005	.71851	-.00365	-.00100	.00265
1069.0	1205.43	2949	2.320	.034	.71766	.02478	.01654	-.00824
1071.0	1208.38	3102	2.320	.025	.71720	.01815	.05251	.03436
1073.0	1211.48	2966	2.320	-.022	.71684	-.01606	-.06009	-.04403
1075.0	1214.44	2900	2.320	-.011	.71675	-.00811	-.01207	-.00396
1077.0	1217.34	2870	2.320	-.005	.71673	-.00366	.03787	.04152
1079.0	1220.21	2919	2.320	.008	.71668	.00596	-.02116	-.02712
1081.0	1223.13	2850	2.320	-.012	.71658	-.00855	-.01970	-.01115
1083.0	1225.98	2772	2.320	-.014	.71644	-.00988	-.00504	.00484
1085.0	1228.75	2908	2.320	.024	.71603	.01717	.01684	-.00033
1087.0	1231.66	2884	2.320	-.004	.71602	-.00300	-.00256	.00044
1089.0	1234.55	3629	2.320	.114	.70665	.08192	.11284	.03092
1091.0	1238.18	3287	2.320	-.050	.70491	-.03500	-.01759	.01741
1093.0	1241.46	2845	2.320	-.072	.70125	-.05080	-.08843	-.03763
1095.0	1244.31	2917	2.320	.013	.70114	.00877	.03764	.02887
1097.0	1247.22	2914	2.320	0	.70114	-.00033	-.01293	-.01260
1099.0	1250.14	2945	2.320	.005	.70112	.00365	-.01476	-.01841
1101.0	1253.08	3116	2.320	.028	.70056	.01984	.00823	-.01161
1103.0	1256.20	2870	2.320	-.041	.69938	-.02875	-.00573	.02302
1105.0	1259.07	2977	2.320	.018	.69915	.01271	-.00687	-.01958
1107.0	1262.05	2906	2.320	-.012	.69905	-.00841	.01189	.02031
1109.0	1264.95	3007	2.320	.017	.69885	.01191	-.05393	-.06584
1111.0	1267.96	2998	2.320	-.001	.69884	-.00104	.01163	.01266
1113.0	1270.96			-.028	.69830	-.01946	.06209	.08155

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2835	2.320					
1115.0	1273.79			.011	.69822	.00767	.00218	-.00549
		2898	2.320					
1117.0	1276.69			-.004	.69821	-.00251	-.06385	-.06134
		2878	2.320					
1119.0	1279.57			.001	.69821	.00063	.03871	.03808
		2883	2.320					
1121.0	1282.45			-.014	.69807	-.01002	-.02403	-.01402
		2801	2.320					
1123.0	1285.25			.003	.69806	.00188	.02461	.02273
		2816	2.320					
1125.0	1288.07			.039	.69697	.02754	.00045	-.02708
		3048	2.320					
1127.0	1291.12			-.029	.69640	-.02006	-.01114	.00891
		2877	2.320					
1129.0	1293.99			.006	.69637	.00428	-.05399	-.05827
		2913	2.320					
1131.0	1296.91			.001	.69637	.00052	.07669	.07617
		2917	2.320					
1133.0	1299.82			-.009	.69631	-.00630	.00770	.01400
		2865	2.320					
1135.0	1302.69			-.006	.69628	-.00444	-.03545	-.03101
		2828	2.320					
1137.0	1305.52			-.015	.69612	-.01068	-.01872	-.00803
		2743	2.320					
1139.0	1308.26			.028	.69558	.01948	.04062	.02114
		2901	2.320					
1141.0	1311.16			.011	.69549	.00762	-.04381	-.05144
		2965	2.320					
1143.0	1314.13			.026	.69500	.01841	.06671	.04830
		3126	2.320					
1145.0	1317.25			-.018	.69478	-.01261	-.01904	-.00643
		3015	2.320					
1147.0	1320.27			-.006	.69475	-.00445	.01874	.02318
		2977	2.320					
1149.0	1323.24			.013	.69463	.00916	.01124	.00208
		3056	2.320					
1151.0	1326.30			-.011	.69454	-.00775	.01799	.02574
		2989	2.320					
1153.0	1329.29			-.004	.69453	-.00284	-.04882	-.04598
		2964	2.320					
1155.0	1332.25			-.017	.69432	-.01204	-.00081	.01122
		2863	2.320					
1157.0	1335.12			.026	.69385	.01800	-.00128	-.01928
		3016	2.320					
1159.0	1338.13			-.019	.69359	-.01341	-.01731	-.00390
		2901	2.320					
1161.0	1341.03			-.012	.69349	-.00860	-.01555	-.00694
		2854	2.301					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1163.0	1343.89			.021	.69319	.01439	.03436	.01997
		2950	2.320					
1165.0	1346.84			.004	.69318	.00274	-.01428	-.01702
		2974	2.320					
1167.0	1349.81			-.010	.69310	-.00721	.02436	.03157
		2913	2.320					
1169.0	1352.72			-.002	.69310	-.00144	-.00991	-.00847
		2900	2.320					
1171.0	1355.63			.005	.69308	.00361	-.02364	-.02725
		2931	2.320					
1173.0	1358.56			-.012	.69299	-.00814	-.00105	.00709
		2863	2.320					
1175.0	1361.42			.059	.69058	.04085	.09689	.05604
		3221	2.320					
1177.0	1364.64			0	.69058	-.00030	-.05930	-.05900
		3219	2.320					
1179.0	1367.86			-.030	.68994	-.02092	-.02451	-.00359
		3088	2.276					
1181.0	1370.95			.029	.68936	.01999	.05549	.03549
		3235	2.302					
1183.0	1374.18			-.003	.68936	-.00181	-.04034	-.03853
		3236	2.289					
1185.0	1377.42			-.030	.68876	-.02037	-.02552	-.00515
		3069	2.276					
1187.0	1380.49			-.012	.68865	-.00840	.02942	.03782
		3019	2.257					
1189.0	1383.51			-.015	.68850	-.01041	-.03803	-.02762
		2948	2.243					
1191.0	1386.45			.005	.68848	.00346	.00207	-.00139
		2952	2.263					
1193.0	1389.41			.003	.68847	.00241	.05278	.05037
		2965	2.268					
1195.0	1392.37			-.024	.68809	-.01627	-.05151	-.03524
		2861	2.242					
1197.0	1395.23			.008	.68804	.00542	-.01637	-.02179
		2911	2.239					
1199.0	1398.14			.008	.68800	.00565	.04082	.03517
		2962	2.237					
1201.0	1401.10			-.039	.68693	-.02708	-.06785	-.04077
		2727	2.246					
1203.0	1403.83			.030	.68633	.02032	.02793	.00760
		2893	2.246					
1205.0	1406.72			.021	.68603	.01429	.03829	.02400
		2962	2.287					
1207.0	1409.69			.008	.68599	.00568	-.02587	-.03155
		3001	2.295					
1209.0	1412.69			-.009	.68593	-.00648	.04224	.04872
		2996	2.255					
1211.0	1415.68			.013	.68581	.00898	.00382	-.00517

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		3048	2.276					
1213.0	1418.73			-.006	.68579	-.00389	.00026	.00415
		3033	2.261					
1215.0	1421.76			-.002	.68578	-.00147	-.03317	-.03170
		3009	2.270					
1217.0	1424.77			.010	.68571	.00691	.03977	.03286
		3057	2.279					
1219.0	1427.83			-.014	.68557	-.00985	-.05580	-.04595
		3008	2.250					
1221.0	1430.84			.015	.68542	.01015	.01371	.00356
		3080	2.264					
1223.0	1433.92			.006	.68540	.00416	.04031	.03615
		3125	2.259					
1225.0	1437.04			-.002	.68539	-.00142	.00448	.00589
		3110	2.260					
1227.0	1440.15			.012	.68529	.00831	-.02572	-.03403
		3151	2.286					
1229.0	1443.30			.019	.68503	.01332	.09013	.07681
		3203	2.337					
1231.0	1446.51			-.018	.68481	-.01228	-.06790	-.05562
		3159	2.287					
1233.0	1449.67			.031	.68417	.02100	.00046	-.02054
		3260	2.357					
1235.0	1452.93			-.003	.68416	-.00181	.00189	.00370
		3255	2.347					
1237.0	1456.18			-.023	.68379	-.01599	-.02956	-.01357
		3190	2.286					
1239.0	1459.37			-.001	.68379	-.00071	-.00729	-.00658
		3177	2.290					
1241.0	1462.55			-.003	.68378	-.00201	.09700	.09900
		3200	2.261					
1243.0	1465.75			-.004	.68377	-.00287	-.07927	-.07640
		3162	2.269					
1245.0	1468.91			.006	.68374	.00438	-.01099	-.01537
		3178	2.286					
1247.0	1472.09			.004	.68374	.00247	.00106	-.00141
		3222	2.271					
1249.0	1475.31			.001	.68373	.00057	.02112	.02055
		3228	2.271					
1251.0	1478.54			.003	.68373	.00204	.00889	.00685
		3239	2.277					
1253.0	1481.78			.011	.68365	.00743	.01910	.01167
		3262	2.310					
1255.0	1485.04			.019	.68340	.01296	-.00207	-.01503
		3273	2.392					
1257.0	1488.31			-.032	.68270	-.02188	.00072	.02260
		3204	2.292					
1259.0	1491.52			.018	.68248	.01220	-.00172	-.01393
		3276	2.323					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1261.0	1494.79			.003	.68248	.00178	-.02088	-.02267
		3294	2.322					
1263.0	1498.09			.005	.68246	.00320	-.03675	-.03995
		3339	2.313					
1265.0	1501.42			.007	.68243	.00483	.05094	.04611
		3370	2.324					
1267.0	1504.79			-.004	.68242	-.00246	.03894	.04141
		3331	2.335					
1269.0	1508.13			.010	.68236	.00667	-.02520	-.03187
		3324	2.385					
1271.0	1511.45			.005	.68234	.00341	.00483	.00143
		3358	2.385					
1273.0	1514.81			-.004	.68233	-.00307	.00896	.01202
		3410	2.327					
1275.0	1518.22			0	.68233	.00028	-.05312	-.05340
		3439	2.310					
1277.0	1521.66			-.010	.68226	-.00668	.04315	.04983
		3408	2.285					
1279.0	1525.07			.004	.68225	.00256	-.01393	-.01649
		3426	2.291					
1281.0	1528.49			.003	.68224	.00224	-.01329	-.01553
		3437	2.298					
1283.0	1531.93			.009	.68219	.00626	.05695	.05068
		3496	2.301					
1285.0	1535.42			.013	.68208	.00858	.02552	.01695
		3567	2.313					
1287.0	1538.99			.002	.68207	.00152	-.00959	-.01111
		3584	2.312					
1289.0	1542.58			-.002	.68207	-.00170	-.03213	-.03043
		3565	2.313					
1291.0	1546.14			0	.68207	.00024	.00865	.00841
		3562	2.317					
1293.0	1549.70			-.007	.68204	-.00460	-.02103	-.01643
		3521	2.313					
1295.0	1553.22			-.013	.68192	-.00888	.00864	.01752
		3447	2.301					
1297.0	1556.67			-.003	.68192	-.00221	-.00016	.00205
		3390	2.325					
1299.0	1560.06			-.004	.68190	-.00274	-.02789	-.02515
		3352	2.333					
1301.0	1563.41			-.003	.68190	-.00183	-.00742	-.00559
		3369	2.308					
1303.0	1566.78			.044	.68058	.02998	.06962	.03964
		3543	2.397					
1305.0	1570.32			-.034	.67980	-.02302	-.06747	-.04444
		3391	2.340					
1307.0	1573.72			-.022	.67946	-.01516	.01495	.03011
		3303	2.298					
1309.0	1577.02			.033	.67872	.02252	.03464	.01213

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		3406	2.381					
1311.0	1580.42			-.062	.67609	-.04227	-.08282	-.04055
		3044	2.352					
1313.0	1583.47			-.013	.67597	-.00899	-.00726	.00173
		3024	2.305					
1315.0	1586.49			-.001	.67597	-.00047	.00684	.00731
		3005	2.317					
1317.0	1589.50			-.026	.67550	-.01776	-.04427	-.02651
		2876	2.296					
1319.0	1592.37			.002	.67550	.00108	.03469	.03361
		2843	2.331					
1321.0	1595.22			.019	.67524	.01311	.00836	-.00475
		2904	2.372					
1323.0	1598.12			-.008	.67520	-.00544	-.04873	-.04329
		2897	2.339					
1325.0	1601.02			-.018	.67499	-.01200	-.01236	-.00035
		2837	2.306					
1327.0	1603.85			.005	.67497	.00350	.06857	.06506
		2827	2.338					
1329.0	1606.68			.006	.67494	.00419	-.03021	-.03440
		2870	2.331					
1331.0	1609.55			.007	.67490	.00502	.01460	.00958
		2893	2.348					
1333.0	1612.44			.004	.67489	.00287	.01588	.01301
		2898	2.364					
1335.0	1615.34			.028	.67436	.01901	.01269	-.00632
		2916	2.486					
1337.0	1618.26			-.040	.67326	-.02722	-.05022	-.02299
		2837	2.356					
1339.0	1621.10			-.005	.67324	-.00346	.03507	.03854
		2824	2.343					
1341.0	1623.92			-.006	.67322	-.00375	-.04342	-.03967
		2791	2.345					
1343.0	1626.71			-.001	.67322	-.00066	-.00404	-.00337
		2773	2.355					
1345.0	1629.48			.006	.67320	.00378	.02820	.02442
		2822	2.341					
1347.0	1632.31			.149	.65822	.10043	.11237	.01195
		3289	2.712					
1349.0	1635.59			.010	.65815	.00678	.00699	.00022
		3312	2.750					
1351.0	1638.91			-.049	.65654	-.03255	.01713	.04967
		3128	2.637					
1353.0	1642.03			.025	.65614	.01617	-.06436	-.08053
		3238	2.676					
1355.0	1645.27			.001	.65614	.00068	.03220	.03152
		3251	2.670					
1357.0	1648.52			.030	.65554	.01988	.01224	-.00764
		3411	2.704					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1359.0	1651.93			-.053	.65370	-.03467	.00572	.04039
		3238	2.563					
1361.0	1655.17			-.003	.65370	-.00209	-.02045	-.01837
		3299	2.499					
1363.0	1658.47			.006	.65367	.00419	.04777	.04358
		3381	2.470					
1365.0	1661.85			-.028	.65315	-.01843	-.04562	-.02720
		3270	2.414					
1367.0	1665.12			.007	.65311	.00489	-.03681	-.04171
		3191	2.511					
1369.0	1668.31			.030	.65254	.01928	.02206	.00279
		3293	2.581					
1371.0	1671.61			.001	.65254	.00038	.02100	.02062
		3348	2.542					
1373.0	1674.96			.002	.65254	.00154	-.01783	-.01937
		3299	2.592					
1375.0	1678.25			-.051	.65087	-.03303	.01136	.04439
		3106	2.488					
1377.0	1681.36			-.012	.65077	-.00786	-.05329	-.04543
		2964	2.545					
1379.0	1684.32			-.014	.65064	-.00930	-.04969	-.04038
		2993	2.449					
1381.0	1687.32			-.009	.65058	-.00605	.03262	.03867
		2968	2.424					
1383.0	1690.28			.052	.64881	.03395	.05865	.02470
		3229	2.473					
1385.0	1693.51			.014	.64869	.00893	-.02341	-.03235
		3423	2.399					
1387.0	1696.94			-.053	.64686	-.03447	-.01871	.01576
		3258	2.265					
1389.0	1700.19			.027	.64639	.01734	-.00433	-.02166
		3231	2.410					
1391.0	1703.42			-.008	.64635	-.00533	-.01415	-.00882
		3173	2.414					
1393.0	1706.60			-.050	.64474	-.03222	.02262	.05485
		3000	2.311					
1395.0	1709.60			.018	.64453	.01156	-.00231	-.01387
		3048	2.358					
1397.0	1712.65			-.018	.64432	-.01186	-.04886	-.03700
		2936	2.359					
1399.0	1715.58			-.012	.64423	-.00746	-.00107	.00638
		2924	2.314					
1401.0	1718.51			.050	.64262	.03221	.04414	.01193
		3162	2.365					
1403.0	1721.67			.010	.64256	.00622	-.00435	-.01057
		3267	2.335					
1405.0	1724.94			.057	.64048	.03655	.05233	.01578
		3516	2.431					
1407.0	1728.45			-.109	.63281	-.07009	-.05972	.01037

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2978	2.303					
1409.0	1731.43			.059	.63060	.03738	.02100	-.01639
		3296	2.343					
1411.0	1734.73			.027	.63014	.01707	.03138	.01431
		3460	2.356					
1413.0	1738.19			.028	.62963	.01790	.03791	.02001
		3609	2.391					
1415.0	1741.79			-.029	.62910	-.01821	-.05530	-.03708
		3446	2.363					
1417.0	1745.24			-.008	.62907	-.00474	.01402	.01876
		3386	2.369					
1419.0	1748.63			-.008	.62902	-.00530	-.00457	.00073
		3375	2.337					
1421.0	1752.00			.011	.62895	.00690	-.00809	-.01499
		3458	2.331					
1423.0	1755.46			-.018	.62875	-.01125	.01037	.02163
		3342	2.328					
1425.0	1758.80			.004	.62874	.00233	.02379	.02146
		3373	2.323					
1427.0	1762.17			.042	.62762	.02645	-.01002	-.03647
		3621	2.354					
1429.0	1765.80			-.034	.62689	-.02145	.01501	.03646
		3396	2.344					
1431.0	1769.19			-.007	.62686	-.00453	-.03761	-.03308
		3318	2.365					
1433.0	1772.51			0	.62686	-.00016	-.02738	-.02722
		3389	2.314					
1435.0	1775.90			.047	.62544	.02977	.00935	-.02042
		3618	2.384					
1437.0	1779.52			-.004	.62543	-.00272	.07360	.07632
		3685	2.320					
1439.0	1783.20			.013	.62533	.00801	-.04056	-.04857
		3685	2.380					
1441.0	1786.89			.018	.62512	.01141	.03023	.01882
		3685	2.469					
1443.0	1790.57			0	0	0	-.02301	-.02301
1445.0							.05314	.05314
1447.0							.00201	.00201
1449.0							-.01777	-.01777
1451.0							-.02215	-.02215
1453.0							.02944	.02944
1455.0							.02244	.02244

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1457.0							-.01348	-.01348
1459.0							-.04198	-.04198
1461.0							.04674	.04674
1463.0							-.04176	-.04176
1465.0							.00378	.00378
1467.0							.01302	.01302
1469.0							.02388	.02388
1471.0							-.03058	-.03058
1473.0							.02915	.02915
1475.0							-.05608	-.05608
1477.0							.00969	.00969
1479.0							.03320	.03320
1481.0							-.03026	-.03026
1483.0							-.01173	-.01173
1485.0							.02439	.02439
1487.0							.06537	.06537
1489.0							-.03318	-.03318
1491.0							-.02132	-.02132
1493.0							.00821	.00821
1495.0							-.05431	-.05431
1497.0							.01975	.01975
1499.0							.05034	.05034
1501.0							-.03079	-.03079
1503.0							.02056	.02056
1505.0							-.02424	-.02424

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1507.0							-.01525	-.01525
1509.0							.04830	.04830
1511.0							.01567	.01567
1513.0							-.04105	-.04105
1515.0							.03192	.03192
1517.0							-.03530	-.03530
1519.0							.00433	.00433
1521.0							.02214	.02214
1523.0							-.00997	-.00997
1525.0							-.01950	-.01950
1527.0							.01231	.01231
1529.0							.01859	.01859
1531.0							-.02500	-.02500
1533.0							-.05105	-.05105
1535.0							.05965	.05965
1537.0							-.03657	-.03657
1539.0							.00700	.00700
1541.0							.02299	.02299
1543.0							-.01667	-.01667
1545.0							-.00458	-.00458
1547.0							.02594	.02594
1549.0							-.04435	-.04435
1551.0							.02043	.02043
1553.0							.01858	.01858

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1555.0							-.01196	-.01196
1557.0							-.04880	-.04880
1559.0							.01073	.01073
1561.0							.02461	.02461
1563.0							.05963	.05963
1565.0							.01406	.01406
1567.0							-.03659	-.03659
1569.0							-.04574	-.04574
1571.0							.03315	.03315
1573.0							-.01250	-.01250
1575.0							-.00210	-.00210
1577.0							.02122	.02122
1579.0							.00940	.00940
1581.0							-.04488	-.04488
1583.0							.05361	.05361
1585.0							-.02507	-.02507
1587.0							.00635	.00635
1589.0							.01134	.01134
1591.0							-.01130	-.01130
1593.0							.00168	.00168
1595.0							.00193	.00193
1597.0							.02089	.02089
1599.0							-.04810	-.04810
1601.0							.00215	.00215
1603.0							-.02291	-.02291

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1605.0							.03629	.03629
1607.0							.03174	.03174
1609.0							-.01765	-.01765
1611.0							-.04632	-.04632
1613.0							-.00352	-.00352
1615.0							-.00085	-.00085
1617.0							.03331	.03331
1619.0							-.00208	-.00208
1621.0							.01372	.01372
1623.0							-.04362	-.04362
1625.0							.05298	.05298
1627.0							-.01287	-.01287
1629.0							.00413	.00413
1631.0							-.01437	-.01437
1633.0							.04345	.04345
1635.0							-.05184	-.05184
1637.0							-.00621	-.00621
1639.0							.01727	.01727
1641.0							.01015	.01015
1643.0							.01358	.01358
1645.0							.02262	.02262
1647.0							-.06197	-.06197
1649.0							.01956	.01956
1651.0							.00313	.00313

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1653.0							.01661	.01661
1655.0							-.03180	-.03180
1657.0							.03379	.03379
1659.0							-.02325	-.02325
1661.0							.02997	.02997
1663.0							-.01317	-.01317
1665.0							-.04530	-.04530
1667.0							.01247	.01247
1669.0							.01713	.01713
1671.0							-.03998	-.03998
1673.0							.00980	.00980
1675.0							.02361	.02361
1677.0							-.03463	-.03463
1679.0							-.00188	-.00188
1681.0							.05774	.05774
1683.0							-.03660	-.03660
1685.0							-.00408	-.00408
1687.0							.01338	.01338
1689.0							-.00833	-.00833
1691.0							-.01853	-.01853
1693.0							.01126	.01126
1695.0							-.02954	-.02954
1697.0							.00156	.00156
1699.0							.07270	.07270
1701.0							-.02676	-.02676

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1703.0							-.01053	-.01053
1705.0							.02415	.02415
1707.0							-.01861	-.01861
1709.0							-.01046	-.01046
1711.0							.00967	.00967
1713.0							-.03664	-.03664
1715.0							.06252	.06252
1717.0							.00848	.00848
1719.0							-.03450	-.03450
1721.0							-.02900	-.02900
1723.0							.03041	.03041
1725.0							-.00393	-.00393
1727.0							-.00371	-.00371
1729.0							-.00622	-.00622
1731.0							.03826	.03826
1733.0							-.04682	-.04682
1735.0							.02832	.02832
1737.0							-.02873	-.02873
1739.0							-.03059	-.03059
1741.0							.03389	.03389
1743.0							.03453	.03453
1745.0							-.04918	-.04918
1747.0							.03477	.03477
1749.0							-.00530	-.00530

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1751.0							-.01309	-.01309
1753.0							-.00113	-.00113
1755.0							-.01188	-.01188
1757.0							.01647	.01647
1759.0							.04626	.04626
1761.0							-.01709	-.01709
1763.0							-.02784	-.02784
1765.0							-.00366	-.00366
1767.0							.03972	.03972
1769.0							-.03379	-.03379
1771.0							.01103	.01103
1773.0							.01081	.01081
1775.0							-.04033	-.04033
1777.0							.00861	.00861
1779.0							.05018	.05018
1781.0							-.04433	-.04433
1783.0							.02827	.02827
1785.0							.00849	.00849
1787.0							-.04602	-.04602
1789.0							.01966	.01966
1791.0							.00033	.00033
1793.0							-.02079	-.02079
1795.0							.02957	.02957
1797.0							-.00194	-.00194
1799.0							-.01094	-.01094

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1801.0							.00819	.00819
1803.0							-.01535	-.01535
1805.0							.00356	.00356
1807.0							.01194	.01194
1809.0							.02265	.02265
1811.0							-.02887	-.02887
1813.0							.00464	.00464
1815.0							.00058	.00058
1817.0							-.03157	-.03157
1819.0							-.01695	-.01695
1821.0							.06058	.06058
1823.0							-.00509	-.00509
1825.0							.02187	.02187
1827.0							-.02448	-.02448
1829.0							-.03827	-.03827
1831.0							-.01952	-.01952
1833.0							.07216	.07216
1835.0							-.00888	-.00888
1837.0							.00385	.00385
1839.0							-.02391	-.02391
1841.0							.01480	.01480
1843.0							-.02950	-.02950
1845.0							.03577	.03577
1847.0							-.03344	-.03344

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1849.0							.02205	.02205
1851.0							-.00802	-.00802
1853.0							.02141	.02141
1855.0							-.03234	-.03234
1857.0							.04498	.04498
1859.0							-.03369	-.03369
1861.0							-.00406	-.00406
1863.0							.01965	.01965
1865.0							.00750	.00750
1867.0							-.02367	-.02367
1869.0							.03120	.03120
1871.0							-.03726	-.03726
1873.0							-.02989	-.02989
1875.0							.05527	.05527
1877.0							.00437	.00437
1879.0							-.03763	-.03763
1881.0							.02687	.02687
1883.0							-.02293	-.02293
1885.0							-.01391	-.01391
1887.0							.05214	.05214
1889.0							.00059	.00059
1891.0							-.04098	-.04098
1893.0							.00281	.00281
1895.0							.00507	.00507
1897.0							-.02266	-.02266

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1899.0							.02868	.02868
1901.0							-.00079	-.00079

PE902239

This is an enclosure indicator page.
The enclosure PE902239 is enclosed within the container PE902238 at this location in this document.

The enclosure PE902239 has the following characteristics:

ITEM_BARCODE =	PE902239
CONTAINER_BARCODE =	PE902238
NAME =	Velocity Profile
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	VELOCITY_CHART
DESCRIPTION =	Velocity Profile (enclosure from WCR appendix 5--Velocity Survey) for Westgate-1A
REMARKS =	
DATE_CREATED =	30/05/86
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	Schlumberger
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE902240

This is an enclosure indicator page.
The enclosure PE902240 is enclosed within the container PE902238 at this location in this document.

The enclosure PE902240 has the following characteristics:

ITEM_BARCODE =	PE902240
CONTAINER_BARCODE =	PE902238
NAME =	Synthetic Seismogram/Geogram
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	SYNTH_SEISMOGRAM
DESCRIPTION =	Synthetic Seismogram/Geogram (enclosure from WCR appendix 5--Velocity Survey) for Westgate-1A
REMARKS =	
DATE_CREATED =	30/05/86
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	Schlumberger
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE601116

This is an enclosure indicator page.
The enclosure PE601116 is enclosed within the container PE902238 at this location in this document.

The enclosure PE601116 has the following characteristics:

ITEM_BARCODE = PE601116
CONTAINER_BARCODE = PE902238
NAME = Seismic Calibration Log
BASIN = OTWAY
PERMIT = PEP 108
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Seismic Calibration Log (enclosure from WCR appendix 5--Velocity Survey) for Westgate-1A
REMARKS =
DATE_CREATED = 30/05/86
DATE_RECEIVED = 3/02/87
W_NO = W929
WELL_NAME = Westgate-1A
CONTRACTOR = Schlumberger
CLIENT_OP_CO = Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 6

Mean Square Dip Processing Report

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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	8ØACH PETROLEUM
WELL	:	ØØSTGATE # 1
FIELD	:	ØØLDCAT
COUNTRY	:	8ØSTRALIA
RUN	:	ØØE
DATE LOGGED	:	14 - MAR - 86
REFERENCE	:	8ØJ.160301

1 M X 50% - 35 DEG X 2

PARAMETERS: 1M X 0.5M, 35 DEG. X 2

OPTION: WHITE CIRCLES ARE QUALITY 15 TO 16

OPTION: BLACK CIRCLES ARE QUALITY 17 TO 20

END OF LSF - VERSION 007.E05
14-APR-86 - 15:11:12

BEACH PETROLEUM

WESTGATE # 1

SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 847.06	27.6	209.	28.1	30.	8.0	12.3	A
BOTTOM 1199.99	4.7	211.	29.5	33.	8.6	8.9	B

DIP FREQUENCY BY AZIMUTH
0-90 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
847- 850						2			2	1		1	
850- 900	5	2	1	2	1		2	4	1	4	10	8	
900- 950	5	3	1	1	4	5	1	1	2	4	3	17	
950- 1000	4		1		7	9	4	1	5	2	4	6	
1000- 1050	10	5	2	1	2	3	3	3	4	2	5	7	
1050- 1100	9	3	4	9	2	4	3	8	4	6	10	6	
1100- 1150	9	6	5	2	3	4	7	4	7	4	8	7	
1150- 1199	4	5	2	3	7	7	5	1	2	2	4	10	

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
847- 850									2	1		1	
850- 900	5	1	1	2	1		1	2	1	4	9	8	
900- 950	3	3	1	1	3	5	1	1	2	4	3	11	
950- 1000	4		1		1		1	1	4	2	2	3	
1000- 1050	10	5	2	1	2	2	1	2	2	2	4	6	
1050- 1100	8	2	3	3	2	1	3	8	4	6	8	6	
1100- 1150	9	6	4	1	2	4	4	3	6	3	8	4	
1150- 1199		4	2	1	6	4	2	1	2	2	3	9	

DIP FREQUENCY BY AZIMUTH
10-90 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
847- 850													2
850- 900		1	2			1			1				
900- 950							6	2				1	
950- 1000		3		1		2	3					6	9
1000- 1050		2	1	2		1	1						1
1050- 1100						2		1	1	1	6		3
1100- 1150		3	1	1	1		3			1	1	1	
1150- 1199		3				1	1	4	1		2	1	3

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
847- 850			2	1		1							
850- 900	1	2	1	4	9	8	5	1	1	2	1		
900- 950	1	1	2	4	3	11	3	3	1	1	3	5	
950- 1000	1	1	4	2	2	3	4		1		1		
1000- 1050	1	2	2	2	4	6	10	5	2	1	2	2	
1050- 1100	3	8	4	6	8	6	8	2	3	3	2	1	
1100- 1150	4	3	6	3	8	4	9	6	4	1	2	4	
1150- 1199	2	1	2	2	3	9		4	2	1	6	4	

BEACH PETROLEUM WESTGATE # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 847.06	27.6	209.	28.1	30.	8.0	12.3	A
BOTTOM 1199.99	4.7	211.	29.5	33.	8.6	8.9	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1193.99	7.9	11	29.5	34	8.7	8.8	A
1194.49	7.6	17	29.5	34	8.6	8.8	A
1195.99	9.3	30	29.5	34	8.5	8.5	A
1196.49	2.8	11	29.5	34	8.5	8.5	B
1196.99	1.0	316	29.5	34	8.5	8.5	A
1197.49	15.5	359	29.5	35	8.5	8.5	B
1197.99	7.2	301	29.6	35	8.5	8.6	A
1198.49	8.2	24	29.7	34	8.6	9.0	B
1198.99	2.3	8	29.7	34	8.5	9.0	B
1199.49	5.6	200	29.6	34	8.6	9.0	B
1199.99	4.7	211	29.5	33	8.6	8.9	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1150.96	6.1	178	29.5	32	8.5	8.7	A
1151.96	2.1	296	29.5	32	8.5	8.6	A
1152.46	7.4	68	29.5	32	8.5	8.6	A
1153.46	10.9	162	29.5	32	8.4	8.6	B
1155.97	3.6	67	29.5	33	8.5	8.6	B
1157.97	12.2	60	29.5	32	8.4	8.5	B
1159.97	33.9	135	29.5	33	[illegible]	8.5	B
1160.97	4.9	-	29.5	32	8.5	8.5	A
1161.97	9.9	110	29.5	32	8.4	8.5	B
1162.47	1.5	204	29.5	33	8.5	8.5	B
1167.47	8.5	2	29.5	33	8.5	8.6	B
1167.97	5.7	18	29.5	33	8.4	8.5	A
1169.97	27.8	224	29.5	33	8.4	8.5	B
1170.97	18.1	52	29.5	32	8.4	8.6	B
1171.47	4.7	169	29.5	33	8.5	8.6	B
1171.97	6.4	173	29.5	33	8.4	8.6	B
1174.48	19.7	133	29.5	33	8.4	8.5	B
1174.98	6.6	339	29.4	33	8.5	8.6	A
1175.48	8.8	335	29.3	33	8.6	8.9	A
1175.98	6.4	281	29.2	33	8.7	9.1	B
1177.48	2.8	180	29.1	33	8.6	9.3	A
1177.98	3.3	178	29.1	33	8.7	9.4	A
1178.48	5.5	242	29.2	33	8.4	9.0	A
1178.98	3.3	168	29.2	33	8.6	9.1	A
1179.98	3.1	100	29.3	33	8.5	8.8	B
1180.48	22.9	49	29.3	34	8.5	8.7	B
1181.98	18.0	45	29.8	33	8.4	8.7	B
1182.48	62.8	226	29.9	32	8.4	8.6	B
1183.98	22.3	10	29.7	33	8.5	8.6	B
1185.48	8.9	212	29.5	33	8.5	8.8	A
1185.98	9.2	207	29.4	34	8.6	8.8	A
1186.98	13.6	213	29.4	33	8.6	8.9	A
1187.48	9.7	195	29.3	33	8.8	9.1	B
1187.98	18.0	185	29.3	33	8.7	9.0	B
1188.48	14.6	185	29.3	33	8.8	9.0	B
1188.98	15.4	182	29.3	33	8.6	8.8	A
1189.48	5.1	73	29.4	33	8.6	8.8	A
1189.98	5.5	81	29.4	33	8.6	8.6	B
1192.98	11.3	82	29.5	33	8.8	8.8	A
1193.48	9.7	129	29.4	34	8.8	9.1	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1115.44	3.0	283	29.4	32	8.4	9.3	B
1116.95	7.0	224	29.4	31	8.5	9.5	A
1117.45	6.7	231	29.3	31	8.6	9.7	A
1118.45	15.5	1	29.4	32	8.6	9.7	B
1118.95	6.5	348	29.4	32	8.5	9.5	B
1119.45	6.6	310	29.4	32	8.5	9.5	B
1119.95	9.4	341	29.4	32	8.5	9.4	A
1120.45	1.7	359	29.5	32	8.4	9.3	A
1120.95	3.5	207	29.6	32	8.5	9.4	B
1121.45	11.3	239	29.7	32	8.4	9.2	A
1121.95	8.9	237	29.8	32	8.6	9.3	A
1122.45	5.7	253	29.8	32	8.5	9.1	A
1122.95	9.8	218	29.9	32	8.5	9.0	A
1126.45	7.0	300	29.7	31	8.6	9.4	A
1126.95	2.2	89	29.6	31	8.6	9.1	A
1127.45	4.1	44	29.6	31	8.5	8.8	B
1132.45	4.7	99	29.7	31	8.4	8.6	A
1132.95	6.4	87	29.6	31	8.5	8.7	B
1133.45	15.4	168	29.6	31	8.4	8.6	B
1133.95	12.7	117	29.5	31	8.4	8.6	A
1134.45	6.7	69	29.5	31	8.4	8.6	B
1135.46	14.3	13	29.4	31	8.4	8.6	B
1135.96	7.5	8	29.4	31	8.4	8.6	A
1136.46	3.1	38	29.3	31	8.4	8.6	A
1136.96	2.9	60	29.3	31	3.4	8.6	A
1137.46	5.4	51	29.3	31	8.4	8.6	A
1137.96	4.2	103	29.4	31	8.4	8.6	A
1139.46	11.0	228	29.4	31	8.4	8.7	B
1139.96	18.2	229	29.4	31	8.4	8.7	B
1141.96	8.0	297	29.4	31	3.4	8.6	B
1142.46	8.5	204	29.4	31	8.5	8.7	B
1144.46	3.2	44	29.3	31	8.6	8.9	B
1144.96	5.1	199	29.3	31	8.7	8.9	A
1145.46	7.5	202	29.3	31	8.6	8.8	A
1146.46	13.9	246	29.3	32	8.6	8.7	B
1147.96	15.9	123	29.4	32	8.6	8.6	B
1148.46	3.7	343	29.4	32	8.5	8.7	B
1149.46	6.2	341	29.5	32	8.6	8.8	A
1149.96	9.6	13	29.5	32	8.6	8.8	A
1150.46	5.0	335	29.5	32	8.7	8.8	B

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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM
WELL	:	WESTGATE # 1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	ONE
DATE LOGGED	:	14 - MAR - 86
REFERENCE	:	80J.160301

1 M X 50% - 35 DEG X 2

PARAMETERS: 1M X 0.5M, 35 DEG. X 2

OPTION: WHITE CIRCLES ARE QUALITY 15 TO 16

OPTION: BLACK CIRCLES ARE QUALITY 17 TO 20

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
847.06	27.6	209	28.1	30	8.0	12.3	A
847.56	27.6	209	28.1	30	8.1	12.1	A
848.05	2.6	26	28.0	30	8.2	12.1	A
848.55	1.9	322	28.1	30	8.2	12.1	A
849.05	2.2	272	28.1	30	8.3	12.0	A
849.55	2.3	275	28.2	30	8.3	12.2	A
850.05	4.2	317	28.3	30	8.1	12.4	B
852.04	2.1	77	28.5	30	8.4	12.5	B
852.54	3.2	332	28.5	30	8.5	12.5	A
853.04	2.7	134	28.6	30	8.5	12.5	B
858.02	NO CORR		28.8	29	8.4	13.6	
858.52	6.0	331	28.8	30	8.4	12.9	B
859.02	10.4	343	28.9	30	8.4	12.9	B
859.52	5.1	345	28.9	30	8.4	12.4	B
860.02	3.4	22	29.0	30	8.4	12.6	A
860.51	9.0	13	29.1	30	8.5	12.6	A
861.01	6.6	3	29.1	30	8.4	12.7	A
861.51	8.9	20	29.1	30	8.5	12.7	A
862.01	6.3	15	29.1	30	8.4	12.5	A
862.51	6.7	2	29.1	30	8.4	12.5	A
863.01	5.7	344	29.2	30	8.4	12.6	A
863.50	5.1	11	29.2	30	8.4	12.9	B
864.00	6.2	32	29.1	30	8.4	13.4	A
868.49	6.0	30	29.0	30	8.4	14.0	A
868.99	3.0	145	29.0	30	8.4	13.8	B
869.49	6.4	57	29.2	30	8.4	13.8	B
869.98	4.6	340	29.3	30	8.4	13.8	A
870.48	6.8	342	29.5	30	8.4	13.8	A
875.47	8.3	151	29.7	30	8.5	14.8	B
877.96	51.4	227	29.8	30	8.3	15.1	B
878.96	NO CORR		29.8	30	8.4	14.4	
881.45	3.8	344	30.0	30	9.2	14.5	B
887.43	7.7	36	29.9	30	8.5	13.2	B
887.93	7.5	344	29.9	30	8.6	13.1	A
888.92	16.1	70	29.9	30	8.5	12.9	B
889.92	7.6	349	30.0	30	8.4	12.5	B
890.42	5.7	306	30.0	30	8.5	12.6	A
890.92	5.7	313	30.0	31	8.4	12.5	B
892.41	11.4	260	30.0	30	8.5	12.4	B
892.91	10.8	262	30.0	30	8.5	12.3	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
893.41	3.5	256	30.0	31	8.5	12.4	A
893.91	1.5	311	30.0	30	8.5	12.3	A
894.41	3.5	269	30.0	30	8.5	12.5	B
896.40	5.7	43	29.9	30	8.4	12.1	B
896.90	4.0	32	30.0	30	8.4	12.0	B
898.89	4.2	212	30.0	30	8.5	11.7	A
899.39	2.7	109	30.1	30	8.4	11.5	B
899.89	1.7	294	30.2	30	8.4	11.4	B
900.39	2.9	68	30.2	30	8.4	11.3	A
900.89	8.9	103	30.2	30	8.4	11.3	B
901.88	11.9	1	30.2	30	8.5	11.1	B
902.38	12.4	19	30.2	30	8.5	11.0	B
902.88	17.7	26	30.2	30	8.5	10.9	B
904.87	6.4	36	30.2	30	8.5	10.4	A
905.37	5.0	51	30.1	30	8.5	10.2	B
910.36	2.7	3	30.2	30	8.3	8.8	B
910.86	2.5	359	30.3	30	8.3	8.8	A
911.35	1.6	39	30.2	30	8.4	8.7	B
911.85	9.8	349	30.1	30	8.3	8.7	B
912.35	5.5	275	30.1	30	8.4	8.7	B
917.83	5.4	21	29.9	30	8.4	8.5	B
919.33	1.0	83	29.9	30	8.4	8.5	B
919.83	2.5	193	29.9	30	8.4	8.5	B
921.82	3.0	310	29.9	30	8.4	8.5	B
922.82	9.6	204	29.9	30	8.4	8.6	B
923.32	4.2	174	29.9	30	8.4	8.6	B
923.81	5.7	145	29.9	30	8.4	8.6	A
926.31	2.0	0	29.9	30	8.4	8.6	B
926.80	6.0	301	29.9	30	8.4	8.6	A
927.30	4.7	238	29.9	30	8.4	8.6	B
927.80	7.1	195	29.9	29	8.4	8.5	B
928.30	3.1	198	29.9	29	8.5	8.6	A
928.80	1.8	205	29.9	30	8.4	8.6	A
929.30	6.8	175	29.8	30	8.5	8.7	A
929.80	7.8	177	29.8	30	8.4	8.7	B
931.29	1.8	291	29.8	29	8.5	8.9	B
931.79	6.7	308	29.7	30	8.6	8.9	B
932.29	0.5	1	29.7	30	8.6	9.2	A
932.79	2.4	12	29.6	31	8.6	9.3	A
934.28	3.0	256	29.6	30	8.5	9.6	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
935.29	6.8	320	29.6	30	8.4	9.6	A
936.29	17.5	158	29.8	30	8.4	9.2	B
938.80	11.7	19	30.1	30	8.3	8.9	B
939.30	6.9	9	30.1	30	8.3	9.0	A
939.81	6.8	345	30.1	30	8.3	9.0	A
941.81	8.2	15	29.9	30	8.3	9.1	B
942.32	11.7	14	29.7	30	8.3	9.3	B
942.82	5.4	12	29.6	30	8.4	9.6	B
943.32	16.3	28	29.5	30	8.3	9.7	B
943.82	14.9	37	29.5	30	8.4	10.0	A
944.32	16.8	43	29.5	30	8.3	9.9	A
944.83	9.7	11	29.5	30	8.3	9.9	B
945.33	2.9	21	29.5	30	8.3	9.9	B
945.83	9.4	3	29.5	30	8.3	9.8	B
949.85	7.2	82	29.8	30	8.5	10.9	B
950.85	2.7	48	29.7	30	8.5	10.9	B
951.35	2.8	53	29.7	30	8.5	10.9	A
951.86	2.4	28	29.7	30	8.5	10.9	A
952.36	3.1	273	29.8	30	8.5	10.9	A
952.86	2.4	277	29.8	30	8.5	10.8	B
953.86	7.6	33	30.2	30	8.5	10.5	B
954.37	0.8	279	30.3	30	8.4	10.4	A
954.87	10.8	357	30.3	30	8.4	10.3	B
955.37	14.5	5	30.2	30	8.4	10.4	A
955.87	8.5	319	30.2	30	8.5	10.5	A
956.37	7.9	297	30.2	30	8.5	10.6	A
956.88	6.6	338	30.2	30	8.5	10.7	A
957.88	9.5	36	30.2	30	8.5	10.6	A
958.38	10.9	20	30.2	30	8.5	10.4	A
958.89	11.3	9	30.1	30	8.5	10.1	B
959.39	5.4	7	29.9	30	8.5	10.0	A
961.40	10.1	232	30.1	29	8.7	10.0	A
961.90	8.3	240	30.2	29	8.6	9.7	B
965.41	2.2	334	30.3	30	8.3	8.6	B
966.42	14.2	165	30.2	29	8.4	8.5	A
966.92	10.6	170	30.1	29	8.3	8.4	B
969.43	30.1	213	29.5	29	8.4	8.5	B
969.93	26.5	210	29.5	30	8.3	8.4	B
976.96	5.9	20	29.6	29	8.4	8.4	A
977.46	4.7	311	29.6	29	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
977.96	29.7	190	29.6	29	8.4	8.4	B
981.48	1.8	248	29.5	30	9.5	9.6	B
983.49	28.6	210	29.4	30	9.2	9.6	A
983.99	30.9	208	29.4	30	8.4	9.1	B
984.49	28.7	210	29.4	30	8.4	9.0	B
984.99	25.0	342	29.5	30	8.3	9.0	B
985.50	28.7	210	29.6	30	8.3	8.9	A
986.00	28.7	210	29.6	30	8.3	9.0	A
986.50	3.8	175	29.7	30	8.6	9.0	A
987.00	5.0	100	29.7	30	8.5	9.0	B
990.52	14.8	170	29.5	30	9.3	9.7	A
991.02	14.7	162	29.5	30	9.4	9.7	A
991.52	15.0	166	29.5	29	9.5	9.8	A
992.02	15.2	165	29.6	29	9.7	10.0	A
993.53	26.6	289	29.5	30	10.3	10.7	B
995.04	30.0	235	29.6	29	10.0	10.5	B
997.04	35.7	207	29.6	29	9.9	10.9	A
998.55	31.3	189	29.7	29	10.2	10.0	B
1000.06	17.9	221	29.5	30	8.5	8.6	B
1001.06	40.1	245	29.5	29	8.4	8.4	B
1003.07	21.6	22	29.9	30	8.5	8.6	B
1004.58	9.5	224	29.9	30	8.4	8.5	A
1005.08	2.7	177	29.8	30	8.4	8.5	B
1011.10	7.5	66	29.7	31	8.3	8.4	B
1015.62	15.0	299	29.6	30	8.5	8.7	B
1016.12	15.2	298	29.5	30	8.5	8.9	B
1018.63	3.8	339	29.6	30	8.4	8.6	A
1019.14	5.7	9	29.6	30	8.5	8.7	B
1020.14	60.7	233	29.6	31	8.6	9.0	B
1021.14	0.7	169	29.7	30	8.5	8.9	A
1021.65	3.3	55	29.9	30	8.4	8.7	B
1023.65	15.0	201	29.9	30	8.4	8.6	B
1027.17	4.3	49	30.0	31	8.4	8.5	B
1027.67	5.5	94	30.0	31	8.4	8.6	A
1028.17	5.7	111	30.0	31	8.4	8.6	B
1028.68	0.7	33	30.0	31	8.5	8.7	B
1029.18	2.4	23	29.9	31	8.4	8.7	A
1029.68	3.4	50	29.9	31	8.5	8.7	A
1031.69	3.9	13	29.9	31	8.3	8.5	B
1032.19	2.8	15	29.9	31	8.3	8.5	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1032.69	5.6	343	29.9	31	8.3	8.5	A
1033.19	3.1	284	29.9	31	8.4	8.6	A
1033.70	1.5	270	30.0	31	8.4	8.6	A
1034.20	1.3	285	30.0	31	8.4	8.6	A
1034.70	1.5	186	30.0	31	8.4	8.6	B
1035.20	3.5	61	30.0	31	8.4	8.6	B
1035.71	0.3	54	30.0	31	8.4	8.6	B
1036.21	5.6	29	30.0	31	8.4	8.5	B
1036.71	12.2	340	30.0	30	8.4	8.5	B
1039.72	2.7	206	29.8	31	8.4	9.0	A
1040.22	6.3	56	29.9	31	8.4	8.8	B
1040.73	6.9	61	29.9	31	8.3	8.8	A
1041.73	6.3	87	29.9	31	8.3	8.5	B
1042.23	2.2	253	29.9	31	8.3	8.6	A
1042.73	2.1	53	29.9	31	8.4	8.6	A
1043.24	5.0	71	29.8	31	8.4	8.6	A
1043.74	3.8	323	29.9	31	8.4	8.6	A
1044.24	1.1	314	29.9	31	8.3	8.6	A
1044.74	4.3	35	30.0	31	8.3	8.6	B
1045.75	3.7	342	30.0	31	8.4	8.6	A
1046.25	1.0	142	29.9	31	8.4	8.6	B
1046.75	7.2	9	29.8	31	8.4	8.6	A
1047.25	7.7	358	29.8	31	8.4	8.5	B
1049.26	7.3	44	29.8	31	8.4	8.6	A
1049.76	4.7	49	29.8	31	8.4	8.5	A
1050.27	5.7	79	29.8	31	8.4	8.5	B
1050.77	6.5	253	29.7	31	8.4	8.5	B
1051.27	2.6	164	29.7	31	8.4	8.4	A
1051.77	3.1	8	29.7	31	8.4	8.4	A
1052.27	8.1	154	29.7	31	8.4	8.4	A
1052.78	7.3	145	29.7	31	8.4	8.4	A
1053.28	17.4	132	29.7	31	8.4	8.4	B
1053.78	17.4	132	29.7	31	8.3	8.4	B
1055.29	2.1	347	29.7	31	8.3	8.4	A
1055.79	3.8	242	29.6	31	8.3	8.5	A
1056.29	4.3	238	29.6	31	8.3	8.5	A
1056.79	2.3	32	29.6	31	8.4	8.5	A
1057.29	10.1	96	29.6	31	8.3	8.5	B
1057.80	6.0	126	29.6	31	8.3	8.5	A
1058.30	5.3	346	29.6	31	8.3	8.5	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1058.80	6.0	336	29.6	31	8.3	8.5	A
1059.30	4.6	325	29.6	31	8.4	8.5	A
1059.81	2.5	39	29.6	31	8.4	8.5	A
1060.31	7.2	34	29.6	31	8.4	8.5	A
1060.81	10.3	44	29.6	31	8.4	8.5	A
1061.31	4.3	4	29.6	31	8.4	8.5	A
1061.81	1.7	331	29.6	31	8.3	8.5	A
1062.32	1.5	312	29.6	31	8.3	8.5	A
1062.82	1.2	22	29.6	31	8.3	8.5	A
1063.32	2.8	284	29.6	31	8.3	8.5	A
1063.82	5.5	296	29.6	31	8.3	8.5	A
1064.32	4.6	341	29.6	31	8.3	8.5	A
1064.83	2.7	49	29.6	31	8.3	8.5	A
1065.33	3.0	59	29.6	31	8.3	8.5	A
1065.83	2.7	20	29.6	31	8.3	8.5	A
1066.33	4.2	31	29.6	31	8.3	8.5	A
1066.83	2.2	127	29.6	31	8.3	8.5	B
1068.34	1.8	329	29.6	31	8.3	8.5	B
1068.84	3.6	92	29.6	31	8.3	8.5	B
1069.85	5.2	229	29.6	31	8.3	8.6	B
1070.35	4.1	251	29.6	31	8.3	8.6	A
1070.85	4.9	267	29.6	31	8.3	8.7	A
1071.35	4.2	246	29.6	31	8.3	8.6	A
1071.86	3.7	240	29.6	31	8.3	8.7	A
1072.36	5.9	294	29.5	31	8.3	8.6	A
1072.86	6.0	319	29.5	31	8.3	8.6	B
1073.36	7.9	6	29.5	31	8.3	8.7	B
1073.86	2.1	36	29.5	31	8.4	8.9	A
1075.37	1.3	333	29.5	31	8.6	9.1	A
1078.38	15.6	61	29.4	31	8.6	9.4	B
1078.88	18.7	196	29.4	31	8.7	9.4	B
1079.39	17.7	188	29.5	31	8.5	9.3	B
1080.39	4.6	329	29.7	31	8.4	8.9	B
1080.89	4.3	68	29.7	31	8.4	8.7	A
1081.40	4.2	54	29.7	31	8.4	8.6	A
1081.90	5.4	350	29.6	31	8.4	8.6	B
1084.91	13.4	342	29.9	31	8.4	8.6	B
1086.42	8.7	181	29.6	30	8.4	8.6	B
1087.92	18.5	139	29.6	31	8.5	8.7	B
1088.42	11.7	121	29.6	31	8.6	8.8	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1089.43	4.6	117	29.5	31	8.6	8.9	B
1089.93	14.8	331	29.5	31	9.0	9.4	B
1091.43	17.1	185	29.6	32	8.5	8.7	B
1092.43	15.8	138	29.7	31	8.4	8.5	A
1092.93	11.7	138	29.8	31	8.4	8.5	B
1093.93	5.1	242	29.9	31	8.4	8.5	B
1094.43	5.1	245	30.0	31	8.4	8.5	A
1096.94	9.5	93	30.0	32	8.4	8.5	B
1097.94	3.2	268	29.8	32	8.4	8.6	B
1098.44	4.1	326	29.8	32	8.4	8.7	A
1098.94	4.6	350	29.8	32	8.3	8.7	A
1099.44	5.7	20	29.8	32	8.3	8.6	A
1099.94	7.8	293	29.7	32	8.3	8.6	B
1100.44	1.7	342	29.7	32	8.3	8.6	A
1100.94	5.6	57	29.7	32	8.3	8.5	A
1101.44	8.7	64	29.7	32	8.3	8.5	A
1102.94	20.6	21	29.7	32	8.3	8.5	B
1103.44	1.8	78	29.8	32	8.3	8.5	A
1103.94	1.3	120	29.8	32	8.3	8.5	A
1104.44	3.9	261	29.7	32	8.3	8.5	A
1104.94	3.8	12	29.7	31	8.3	8.6	A
1105.44	5.7	39	29.7	31	8.3	8.6	A
1105.94	6.0	22	29.7	31	8.4	8.7	A
1106.44	2.0	328	29.6	31	8.3	8.6	A
1106.94	1.8	264	29.6	31	8.3	8.7	A
1107.44	1.8	162	29.6	31	8.3	8.7	A
1107.94	5.7	119	29.6	31	8.3	8.7	A
1108.44	1.8	130	29.6	31	8.3	8.7	A
1108.94	1.8	356	29.6	32	8.3	8.7	A
1109.44	1.3	44	29.6	32	8.3	8.7	A
1109.94	1.0	89	29.6	32	8.3	8.8	A
1110.44	5.9	283	29.6	32	8.3	8.8	A
1110.94	6.2	288	29.6	32	8.3	8.8	A
1111.44	4.7	289	29.6	32	8.3	8.8	A
1111.94	4.4	340	29.6	32	8.3	8.8	A
1112.44	3.0	310	29.6	32	8.3	8.8	A
1112.94	13.3	294	29.6	32	8.3	8.9	B
1113.94	14.3	326	29.5	32	8.3	8.9	B
1114.44	3.0	167	29.5	32	8.4	9.0	B
1114.94	4.5	41	29.5	32	8.4	9.2	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1204.35	56.1	244	29.6	34	8.4	8.5	B
1205.35	4.6	43	29.6	34	8.6	8.9	B
1206.35	10.6	288	29.4	34	8.7	9.1	B
1206.85	7.0	13	29.0	35	8.7	9.0	B
1207.34	38.9	251	28.5	43	8.6	8.8	B
1207.84	38.9	249	28.6	43	8.5	8.6	B
1208.34	3.1	264	29.2	35	8.6	8.7	B
1208.84	3.1	88	29.5	34	8.7	8.6	A
1209.34	12.8	358	29.6	34	8.6	8.7	B
1210.83	12.5	148	29.8	35	8.7	8.7	A
1211.33	9.3	158	29.9	35	8.7	8.8	A
1211.83	4.8	254	30.0	34	8.6	8.7	B
1212.33	5.9	244	29.9	34	8.6	8.8	B
1212.83	0.7	198	29.8	34	8.6	8.7	B
1214.82	6.7	45	29.8	34	8.8	9.0	B
1216.32	10.1	341	29.9	34	8.5	8.7	B
1216.81	6.8	353	29.8	34	8.5	8.6	B
1217.31	4.5	217	29.8	34	8.6	8.7	B
1219.31	40.1	209	29.9	34	8.5	8.7	B
1220.80	8.6	4	29.9	34	8.5	8.7	B
1221.80	0.8	324	29.9	34	8.5	8.6	A
1222.30	16.2	238	29.9	35	8.5	8.5	B
1222.80	16.8	250	29.9	34	8.4	8.5	B
1224.79	10.8	97	29.9	34	8.5	8.6	A
1225.29	11.4	103	29.9	35	8.6	8.6	A
1229.77	1.8	162	30.0	34	8.7	8.7	B
1230.27	4.5	138	30.0	34	8.7	8.6	B
1231.77	12.5	219	30.1	34	8.6	8.8	B
1232.76	18.8	353	30.1	34	8.7	8.7	B
1234.26	4.7	334	30.1	34	8.6	8.7	B
1234.76	6.0	321	30.2	35	8.6	8.6	B
1236.75	2.3	101	30.2	34	8.6	8.8	B
1237.25	5.0	336	30.1	34	8.6	8.7	B
1237.75	2.7	30	30.1	34	8.6	8.8	A
1238.25	4.2	80	30.2	35	8.5	8.7	A
1238.74	2.6	123	30.2	34	8.5	8.5	A
1239.24	1.8	174	30.2	34	8.5	8.6	A
1239.74	14.8	298	30.2	34	8.5	8.5	B
1241.24	11.2	336	30.2	34	8.5	8.5	B
1241.74	6.3	49	30.3	34	8.5	8.5	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1243.73	13.2	302	30.3	34	8.5	8.5	B
1244.73	11.5	83	30.2	34	8.5	8.6	B
1246.72	7.8	306	30.2	34	8.6	8.7	B
1247.22	8.7	315	30.2	34	8.5	8.6	B
1248.22	9.3	211	30.2	34	8.5	8.6	B
1248.71	13.2	197	30.2	34	8.8	8.7	A
1249.21	13.7	202	30.2	34	8.6	8.8	A
1249.71	4.3	178	30.2	35	8.8	8.7	B
1250.21	2.1	207	30.2	34	8.7	8.8	A
1250.71	2.2	229	30.2	34	8.6	8.6	A
1251.21	1.0	62	30.3	35	8.7	8.7	A
1251.70	7.3	27	30.3	35	8.5	8.7	A
1252.20	4.0	25	30.3	35	8.6	8.5	A
1252.70	3.5	341	30.3	35	8.6	8.7	B
1253.20	5.9	243	30.3	35	8.5	8.6	B
1253.70	4.5	317	30.3	34	8.6	8.6	A
1254.20	4.9	246	30.3	34	8.5	8.6	A
1254.69	3.5	237	30.3	35	8.4	8.6	B
1255.69	7.4	111	30.3	35	8.4	8.4	B
1256.19	4.0	355	30.3	35	8.4	8.4	A
1256.69	5.5	336	30.3	35	8.4	8.4	A
1257.19	3.1	342	30.3	35	8.4	8.4	A
1257.69	2.5	229	30.2	35	8.4	8.4	A
1258.18	0.6	284	30.2	35	8.4	8.4	A
1258.68	2.7	217	30.2	35	8.4	8.4	A
1259.18	14.3	166	30.2	35	8.4	8.4	B
1259.68	1.4	104	30.2	35	8.4	8.4	B
1262.67	5.8	229	30.1	35	8.4	8.4	A
1263.67	10.3	332	30.1	35	8.4	8.4	B
1264.16	2.7	231	30.1	35	8.4	8.4	B
1265.16	5.1	214	30.1	35	8.4	8.4	B
1267.65	6.9	249	30.0	35	8.4	8.4	B
1271.64	3.5	312	30.0	35	8.4	8.4	B
1272.14	2.8	135	30.0	35	8.4	8.4	B
1272.64	3.2	183	30.0	35	8.4	8.4	A
1273.14	1.6	145	30.0	35	8.4	8.4	A
1273.63	1.6	96	30.0	35	8.4	8.4	A
1274.13	3.2	289	30.0	35	8.4	8.4	B
1276.13	4.9	262	29.9	35	8.4	8.4	B
1277.12	3.7	244	29.9	35	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1277.62	4.2	275	29.9	35	8.4	8.4	A
1278.12	5.2	297	29.9	35	8.4	8.4	A
1280.61	3.2	260	29.9	35	8.4	8.4	A
1281.11	4.7	243	29.9	35	8.4	8.4	A
1281.61	4.6	261	29.9	35	8.4	8.4	A
1282.11	4.3	248	29.9	36	8.4	8.4	A
1282.61	5.0	217	29.9	36	8.4	8.5	A
1283.10	5.5	214	29.9	36	8.4	8.5	A
1283.60	6.3	291	29.9	36	8.4	8.4	A
1284.10	4.8	312	29.9	36	8.4	8.4	A
1284.60	3.9	240	29.9	36	8.4	8.4	A
1285.10	7.6	190	29.9	36	8.4	8.4	A
1285.60	4.0	242	29.9	36	8.4	8.5	A
1286.10	4.1	227	29.8	36	8.5	8.9	A
1287.09	0.2	263	29.8	35	8.5	8.9	B
1287.59	3.8	184	29.9	36	8.5	8.7	B
1288.09	5.4	269	29.9	36	8.4	8.4	A
1288.59	5.3	267	29.8	36	8.4	8.4	A
1289.09	7.0	251	29.8	36	8.4	8.4	A
1289.58	7.0	259	29.8	36	8.4	8.5	A
1291.08	8.1	274	29.7	37	8.5	9.7	A
1291.58	7.3	304	29.8	36	8.4	9.0	A
1292.08	11.6	303	29.9	35	8.5	8.8	A
1292.57	4.5	264	29.9	34	8.4	8.7	B
1294.57	6.5	176	29.7	36	8.4	8.4	A
1295.07	6.9	192	29.8	37	8.4	8.4	A
1295.57	6.2	156	29.9	36	8.4	8.4	A
1296.56	10.1	119	30.1	34	8.4	8.4	A
1297.06	5.4	203	30.0	35	8.4	8.4	B
1297.56	2.5	158	29.9	36	8.4	8.5	B
1298.06	5.2	137	29.7	36	8.5	8.6	A
1298.56	13.9	178	29.6	36	8.4	8.7	A
1299.05	27.7	231	29.6	36	8.4	8.6	B
1299.55	10.5	256	29.6	36	8.4	8.6	A
1300.05	6.1	242	29.6	36	8.4	8.5	A
1300.55	11.7	148	29.6	36	8.4	8.5	A
1301.05	5.7	147	29.6	36	8.4	8.5	A
1301.55	2.6	19	29.5	36	8.4	8.4	A
1302.05	3.1	54	29.5	36	8.4	8.5	B
1302.54	6.9	20	29.5	36	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1303.54	2.7	341	29.6	36	8.4	8.4	B
1304.04	5.8	211	29.7	35	8.4	8.4	A
1304.54	6.3	209	29.7	35	8.4	8.4	A
1305.04	8.2	216	29.7	35	8.4	8.4	A
1305.53	7.2	277	29.7	35	8.4	8.4	A
1306.03	6.6	285	29.6	35	8.4	8.4	A
1306.53	5.0	269	29.6	36	8.5	8.7	A
1307.03	7.8	237	29.6	36	8.4	8.6	A
1307.53	3.4	281	29.5	36	8.5	8.7	A
1308.03	5.1	270	29.5	36	8.4	8.6	A
1308.52	6.4	315	29.5	35	8.4	8.5	B
1309.02	3.9	336	29.5	36	8.4	8.4	B
1309.52	2.0	97	29.5	36	8.4	8.4	A
1310.02	3.0	133	29.4	36	8.4	8.4	A
1310.52	0.7	201	29.4	36	8.4	8.4	A
1311.02	1.7	20	29.4	36	8.4	8.4	A
1311.52	1.0	83	29.5	35	8.4	8.4	B
1312.01	6.2	159	29.5	35	8.4	8.4	A
1312.51	13.3	213	29.6	35	8.4	8.4	B
1313.01	6.0	235	29.5	35	8.4	8.4	B
1313.51	5.5	115	29.5	35	8.4	8.4	A
1314.01	5.5	206	29.5	35	8.4	8.4	B
1314.51	2.3	253	29.4	35	8.4	8.4	A
1315.00	4.3	230	29.4	35	8.4	8.4	A
1315.50	4.5	221	29.4	35	8.4	8.4	A
1316.00	2.9	147	29.4	35	8.4	8.4	A
1316.50	2.5	136	29.4	35	8.4	8.4	A
1317.00	5.6	231	29.4	35	8.4	8.4	A
1317.50	6.9	237	29.3	35	8.4	8.4	A
1317.99	31.2	219	29.3	35	8.4	8.4	A
1318.49	6.6	323	29.3	35	8.4	8.4	A
1318.99	7.1	258	29.3	36	8.4	8.4	A
1319.49	5.8	260	29.3	36	8.3	8.4	A
1319.99	3.8	249	29.3	36	8.3	8.4	A
1320.49	3.2	255	29.3	36	8.3	8.4	A
1320.99	1.7	286	29.3	36	8.3	8.4	A
1321.48	1.5	356	29.3	36	8.3	8.4	A
1321.98	1.6	297	29.3	36	8.3	8.4	A
1322.48	2.7	293	29.3	36	8.3	8.5	A
1322.98	6.5	287	29.3	36	8.3	8.5	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1323.48	4.7	267	29.2	36	8.3	8.5	A
1323.98	2.5	131	29.2	36	8.3	8.6	A
1324.47	2.8	114	29.2	36	8.3	8.6	A
1324.97	4.0	158	29.2	36	8.4	8.8	A
1325.47	3.5	192	29.1	36	8.4	8.9	A
1325.97	4.3	179	29.1	36	8.4	9.0	A
1326.47	0.6	155	29.0	36	8.4	9.1	A
1326.97	4.9	280	29.0	36	8.4	9.2	A
1327.46	2.6	266	28.9	36	8.5	9.4	A
1328.46	8.3	358	29.0	36	8.5	9.2	A
1328.96	5.2	341	29.1	36	8.4	8.9	A
1329.46	3.0	300	29.1	36	8.3	8.8	A
1329.96	3.0	284	29.1	36	8.3	8.8	A
1330.46	2.7	272	29.1	37	8.3	8.7	A
1330.95	1.3	235	29.2	37	8.3	8.8	A
1331.45	2.4	164	29.2	36	8.3	8.8	A
1331.95	4.1	179	29.2	36	8.4	9.0	A
1332.45	3.5	171	29.2	36	8.4	9.1	A
1332.95	3.1	196	29.3	36	8.5	9.3	A
1333.45	2.0	268	29.3	36	8.5	9.1	A
1333.94	5.0	266	29.2	36	8.6	9.2	B
1334.44	5.3	28	29.0	37	8.4	9.0	A
1334.94	3.9	63	28.8	37	8.5	10.1	A
1336.44	5.9	220	28.7	36	8.6	11.3	A
1336.93	4.6	192	28.7	36	8.6	11.2	A
1339.43	5.3	197	28.9	36	8.6	9.3	A
1339.93	4.1	189	29.0	37	8.4	8.6	B
1340.42	7.5	30	29.1	37	8.3	8.5	B
1341.42	5.5	304	29.6	36	8.4	8.4	
1341.92	9.0	315	29.6	36	8.4	8.4	A
1342.42	7.1	25	29.5	36	8.4	8.4	A
1342.92	4.8	51	29.4	35	8.4	8.4	A
1347.90	1.3	39	28.5	36	8.4	8.4	A
1348.40	2.0	29	28.5	36	8.4	8.4	A
1348.90	9.1	199	28.5	36	8.4	8.4	A
1349.40	10.2	195	28.5	36	8.4	8.4	B
1349.89	9.1	215	28.6	36	8.4	8.4	A
1350.39	6.0	85	28.6	36	8.4	8.4	B
1350.89	9.1	69	28.7	36	8.4	8.4	B
1351.39	11.4	247	28.7	36	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1351.89	12.6	240	28.7	36	8.4	8.4	B
1352.88	1.7	209	28.7	36	8.4	8.4	B
1353.38	0.3	267	28.7	36	8.4	8.4	A
1353.88	1.9	5	28.7	36	8.4	8.4	B
1354.38	13.5	194	28.7	36	8.4	8.4	B
1354.88	12.4	192	28.7	36	8.4	8.4	B
1355.38	11.0	22	28.6	36	8.4	8.4	A
1357.87	5.2	214	28.6	36	8.3	8.4	B
1359.36	2.8	324	28.6	36	8.4	8.4	B
1359.86	3.3	292	28.6	37	8.3	8.4	A
1360.36	1.2	238	28.6	37	8.3	8.4	A
1360.86	3.6	81	28.5	37	8.3	8.4	B
1361.36	0.3	348	28.5	37	8.2	8.4	B
1361.86	3.6	237	28.5	37	8.3	8.5	A
1362.35	5.9	241	28.5	37	8.2	8.5	A
1362.85	5.9	237	28.5	37	8.2	8.6	A
1363.35	1.6	287	28.5	37	8.2	8.6	A
1363.85	5.1	343	28.5	37	8.2	8.7	A
1364.35	3.1	36	28.4	37	8.3	8.7	A
1364.85	2.9	343	28.4	37	8.2	8.8	A
1365.35	2.4	345	28.4	37	8.3	8.8	A
1365.84	5.4	46	28.4	37	8.2	8.9	A
1366.34	5.6	12	28.4	37	8.2	8.9	A
1366.84	1.4	357	28.4	37	8.3	9.0	A
1367.34	1.8	238	28.3	37	8.3	9.1	A
1367.84	5.2	290	28.3	37	8.3	9.1	A
1368.34	5.3	316	28.3	37	8.2	9.1	A
1368.83	3.5	299	28.3	37	8.3	9.2	A
1369.33	2.0	265	28.3	37	8.3	9.2	A
1369.83	1.9	225	28.3	37	8.3	9.3	A
1370.83	6.2	257	28.3	37	8.3	9.9	B
1371.33	2.7	323	28.2	37	8.4	10.0	A
1371.82	3.3	230	28.2	37	8.4	10.8	A
1372.32	1.5	160	28.2	37	8.5	10.8	B
1378.80	51.6	273	28.8	37	8.5	13.6	B
1382.79	6.0	284	29.1	36	8.4	8.8	B
1383.29	4.9	282	29.1	37	8.4	8.7	A
1383.79	4.4	270	29.0	37	8.4	8.7	A
1384.29	4.5	247	29.0	37	8.4	8.8	A
1384.78	1.9	261	28.9	37	8.4	8.7	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1385.28	0.5	316	28.8	37	8.4	8.5	A
1385.78	4.5	136	28.7	37	8.5	8.4	A
1386.28	2.1	225	28.7	37	8.4	8.2	A
1386.78	3.4	289	28.6	37	8.5	8.2	A
1387.28	5.1	15	28.4	36	8.4	8.2	A
1387.78	7.7	26	28.2	36	8.4	8.4	A
1388.78	5.8	320	27.9	37	8.4	8.5	B
1389.28	4.5	268	27.8	38	8.3	8.8	A
1389.79	7.1	257	27.7	38	8.4	8.7	A
1390.29	7.0	253	27.7	38	8.3	9.0	A
1390.79	6.3	343	27.7	38	8.3	9.1	A
1391.29	0.6	320	27.7	38	8.3	9.2	A
1391.79	2.8	209	27.7	37	8.4	9.3	A
1392.30	1.2	290	27.7	37	8.4	9.7	A
1393.30	7.4	284	27.7	38	8.4	9.9	B
1393.80	7.2	266	27.6	38	8.4	9.8	B
1394.31	2.4	279	27.6	37	8.4	10.2	A
1394.81	2.6	294	27.6	37	8.4	10.3	A
1395.31	2.5	288	27.6	37	8.5	11.5	A
1395.81	8.7	33	27.6	37	8.4	11.3	B
1396.31	6.3	349	27.6	37	8.3	11.7	A
1396.82	3.4	268	27.6	37	8.5	12.2	A
1397.32	2.6	240	27.7	37	8.2	11.2	B
1397.82	2.6	273	27.8	38	8.4	12.1	A
1398.32	1.1	323	27.8	38	8.4	12.0	A
1401.33	18.8	179	28.2	37	8.3	12.1	B
1401.84	2.5	297	28.3	37	8.1	11.2	A
1402.34	4.8	252	28.4	37	7.9	11.0	A
1402.84	3.7	299	28.4	37	8.0	11.2	A
1403.34	9.4	227	28.4	37	8.0	11.7	A
1406.36	2.0	256	28.3	38	8.3	12.4	A
1406.86	7.6	201	28.2	38	8.4	12.8	B
1410.87	12.0	270	28.4	37	8.4	11.1	B
1412.88	5.0	118	28.5	37	8.3	10.3	B
1414.39	12.9	2	28.5	37	8.2	10.3	B
1417.40	5.5	331	28.1	37	8.4	9.4	A
1417.90	5.7	270	28.1	37	8.4	8.7	B
1418.41	8.9	119	28.1	37	8.3	8.8	B
1418.91	2.5	256	28.1	37	8.4	8.7	A
1419.41	8.3	229	28.1	37	8.3	8.6	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1419.91	9.9	245	28.1	37	8.3	8.7	A
1420.41	8.8	231	28.0	37	8.4	8.7	A
1420.92	6.6	231	28.0	37	8.4	8.7	A
1421.42	5.4	241	28.0	37	8.4	8.8	A
1421.92	4.9	238	28.0	37	8.4	8.8	A
1422.42	4.0	237	27.9	37	8.4	8.8	A
1422.92	2.8	274	27.7	37	8.4	8.9	A
1423.43	4.5	258	27.5	37	8.4	8.9	B
1423.93	5.0	278	27.4	38	8.3	9.0	A
1424.43	3.5	272	27.3	38	8.4	9.1	A
1424.93	3.5	216	27.2	38	8.3	9.1	A
1425.43	3.3	53	27.2	38	8.3	9.5	A
1425.94	3.6	80	27.2	38	8.4	9.6	B
1426.44	6.4	259	27.2	37	8.2	9.6	A
1426.94	4.1	333	27.2	37	8.3	9.8	A
1427.44	3.9	232	27.2	38	8.3	9.2	A
1427.95	4.1	258	27.3	38	8.3	9.4	A
1428.45	3.6	223	27.3	38	8.4	9.7	A
1431.46	4.4	271	27.6	38	8.3	9.6	A
1431.96	2.1	240	27.7	38	8.4	10.0	B
1432.46	9.1	236	27.6	38	8.3	9.9	A
1434.97	41.6	278	27.7	37	8.3	11.5	B
1437.99	23.8	268	27.6	37	8.2	11.0	B
1438.49	20.6	201	27.8	38	8.4	11.1	B
1438.99	26.9	239	27.9	38	8.3	11.3	B
1442.51	6.7	34	28.2	37	8.4	8.8	A
1443.01	2.3	135	28.2	37	8.3	8.8	A
1443.51	5.7	156	28.2	37	8.4	8.6	B
1446.02	8.7	238	27.5	37	8.4	9.4	B
1446.52	5.7	245	27.4	37	8.4	9.3	B
1447.02	4.6	242	27.3	37	8.4	9.1	A
1447.53	6.1	313	27.2	37	8.4	8.8	B
1448.03	7.6	306	27.1	37	8.4	8.7	B
1448.53	6.6	299	27.1	37	8.4	8.6	A
1449.54	21.7	37	27.0	38	8.4	8.5	B
1452.05	5.7	6	27.4	37	8.4	8.4	A
1452.55	10.7	20	27.3	37	8.4	8.4	B
1453.05	2.1	42	27.3	37	8.4	8.4	B
1453.55	15.7	64	27.2	37	8.4	8.4	B
1454.05	13.5	16	27.2	37	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1454.56	7.7	332	27.2	37	8.4	8.4	B
1455.06	5.1	269	27.2	37	8.4	8.4	A
1455.56	2.2	257	27.2	37	8.4	8.4	B
1456.06	2.6	356	27.1	37	8.4	8.4	B
1456.56	3.0	13	27.1	37	8.4	8.4	A
1457.07	1.1	188	27.1	37	8.4	8.4	A
1458.07	4.9	32	27.1	37	8.4	8.4	A
1458.57	3.0	27	27.1	37	8.4	8.4	A
1459.07	1.3	208	27.1	37	8.4	8.4	A
1459.58	21.9	215	27.1	37	8.4	8.4	B
1460.08	11.9	54	27.1	37	8.4	8.4	B
1462.09	37.3	274	27.1	37	8.4	8.4	B
1463.59	24.4	226	27.1	37	8.4	8.4	B
1468.61	26.3	213	27.1	37	8.4	8.4	A
1469.12	11.6	215	27.1	37	8.4	8.4	A
1469.62	60.2	217	27.1	37	8.4	8.4	B
1472.63	10.7	248	27.1	37	8.4	8.4	B
1478.66	1.7	308	27.0	37	8.4	8.4	B
1482.67	31.2	204	27.0	36	8.4	8.4	B
1484.68	29.1	217	27.0	37	8.4	8.4	B
1485.18	29.1	213	27.0	37	8.4	8.4	B
1486.69	25.5	216	26.9	36	8.4	8.4	B
1488.20	30.2	213	26.9	37	8.4	8.4	B
1498.24	26.1	223	26.9	36	8.4	8.4	B
1507.78	26.9	219	26.8	37	8.4	8.4	B
1509.79	29.5	218	26.8	37	8.4	8.4	B
1511.29	28.3	218	26.8	37	8.4	8.4	B
1511.79	27.0	217	26.8	37	8.4	8.4	B
1514.30	28.8	214	26.8	36	8.4	8.4	B
1514.81	26.4	215	26.8	36	8.4	8.4	B
1515.31	26.3	215	26.8	36	8.4	8.4	B
1517.32	25.9	219	26.8	37	8.4	8.4	B
1533.89	28.9	214	26.7	37	8.4	8.4	B
1534.89	25.2	222	26.7	37	8.4	8.4	B
1536.40	61.9	220	26.7	37	8.4	8.4	B
1537.40	6.5	262	26.7	37	8.4	8.4	B
1538.91	7.0	221	26.7	37	8.4	8.4	B
1539.91	5.9	47	26.7	37	8.4	8.4	B
1540.92	1.5	98	26.7	37	8.4	8.4	B
1541.42	2.3	292	26.7	37	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1544.43	8.0	274	26.7	37	8.4	8.4	B
1545.43	7.1	304	26.7	37	8.4	8.4	B
1545.93	3.5	61	26.7	37	8.4	8.4	B
1549.93	4.5	0	26.7	37	8.4	8.4	B
1550.93	6.1	270	26.7	37	8.4	8.4	B
1553.43	26.1	212	26.7	37	8.4	8.4	B
1554.43	17.0	29	26.7	37	8.4	8.4	B
1555.43	23.8	212	26.6	37	8.4	8.4	B
1557.43	25.6	215	26.6	37	8.4	8.4	A
1557.93	24.3	216	26.6	37	8.4	8.4	A
1558.43	24.8	215	26.6	37	8.4	8.4	A
1558.93	25.3	213	26.6	37	8.4	8.4	A
1559.43	26.6	216	26.6	37	8.4	8.3	A
1559.93	25.8	216	26.6	37	8.4	8.4	A
1560.43	24.2	216	26.6	37	8.4	8.4	A
1560.93	24.7	215	26.6	37	8.4	8.4	A
1561.43	25.2	216	26.6	37	8.4	8.4	A
1561.94	26.9	215	26.6	37	8.4	8.3	A
1562.44	25.2	223	26.6	37	8.4	8.4	B
1562.94	28.2	218	26.6	37	8.4	8.4	B
1563.44	24.0	216	26.6	37	8.4	8.4	B
1565.44	25.7	217	26.6	37	8.4	8.4	B
1565.94	23.3	213	26.6	37	8.4	8.4	B
1566.44	24.4	208	26.6	37	8.4	8.4	B
1570.44	21.7	212	26.6	37	8.4	8.4	B
1574.44	29.8	215	26.6	37	8.4	8.4	B
1575.44	29.5	216	26.6	37	8.4	8.4	B
1575.94	27.7	216	26.6	37	8.4	8.4	B
1577.94	24.9	220	26.6	36	8.4	8.4	B
1578.44	23.5	210	26.6	36	8.4	8.4	B
1579.94	8.4	8	26.6	36	8.4	8.4	B
1581.45	23.8	217	26.6	36	8.4	8.4	B
1581.95	26.6	221	26.6	36	8.4	8.4	B
1583.45	26.2	215	26.6	36	8.4	8.4	A
1583.95	27.8	215	26.6	36	8.4	8.4	B
1584.95	30.0	222	26.6	36	8.4	8.4	B
1585.45	27.6	219	26.6	36	8.4	8.4	B
1585.95	28.0	213	26.6	36	8.4	8.4	B
1588.95	26.4	221	26.6	36	8.4	8.4	A
1589.45	28.0	223	26.6	36	8.4	8.4	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1595.95	28.8	217	26.6	36	8.4	8.4	B
1596.45	24.9	214	26.6	36	8.4	8.4	B
1600.96	63.9	216	26.6	37	8.4	8.4	B
1608.46	27.7	217	26.6	36	8.4	8.4	B
1611.96	26.8	208	26.6	36	8.4	8.4	B
1617.46	23.6	203	26.6	36	8.4	8.4	B
1618.96	24.4	214	26.6	36	8.3	8.4	B
1619.46	25.9	205	26.6	36	8.3	8.4	B
1619.96	25.8	213	26.6	36	8.3	8.4	B
1620.47	21.8	210	26.6	36	8.3	8.4	B
1620.97	24.8	205	26.6	36	8.3	8.4	B
1621.97	30.0	222	26.6	36	8.3	8.4	B
1622.97	24.8	217	26.6	36	8.3	8.4	B
1624.97	31.7	213	26.6	36	8.4	8.4	B
1626.97	25.1	209	26.6	36	8.4	8.4	B
1627.47	5.2	183	26.6	36	8.4	8.4	B
1627.97	8.0	207	26.6	36	8.3	8.4	B
1628.97	5.3	240	26.6	36	8.3	8.4	B
1629.47	4.6	205	26.6	36	8.4	8.4	B
1630.97	28.2	215	26.6	36	8.3	8.4	B
1631.47	24.6	214	26.6	36	8.3	8.4	B
1633.47	38.1	155	26.6	36	8.3	8.4	B
1633.97	15.1	202	26.6	36	8.3	8.4	B
1634.47	11.9	214	26.6	36	8.3	8.4	A
1635.47	10.8	213	26.6	36	8.3	8.4	B
1636.97	15.0	182	26.6	36	8.4	8.4	B
1637.47	13.0	191	26.6	36	8.3	8.4	A
1637.97	10.9	185	26.6	36	8.4	8.4	B
1638.47	11.3	182	26.6	36	8.3	8.4	A
1639.43	17.0	178	26.6	36	8.4	8.4	B
1640.98	14.1	194	26.6	36	8.4	8.4	B
1641.48	15.4	189	26.6	36	8.4	8.4	B
1641.98	19.6	188	26.6	36	8.4	8.4	B
1642.48	20.6	201	26.6	36	8.4	8.4	A
1642.98	14.6	209	26.6	36	8.4	8.4	A
1643.93	19.7	188	26.6	36	8.4	8.4	B
1645.48	12.3	194	26.6	36	8.4	8.4	B
1645.98	13.6	199	26.6	36	8.4	8.4	A
1646.48	16.8	202	26.6	36	8.4	8.4	A
1646.98	16.4	194	26.6	36	8.4	8.4	B

BEACH PETROLEUM WESTGATE # 1 PAGE 12-FILE 1

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1647.48	13.1	184	26.6	36	8.4	8.4	B
1647.98	14.9	201	26.6	36	8.4	8.4	A
1648.48	22.0	174	26.6	36	8.4	8.4	B
1649.48	15.0	190	26.6	36	8.4	8.4	B
1649.98	16.2	190	26.6	36	8.4	8.4	B

BEACH PETROLEUM WESTGATE # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 1204.35	56.1	244.	29.6	34.	8.4	8.5	B
BOTTOM 1649.98	16.2	190.	26.6	36.	8.4	8.4	B

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DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

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PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
1204- 1250		2	3		4	3	3	3	2	1	2	4	1
1250- 1300		11	16	6	4	4	2		1	3	3	3	6
1300- 1350		11	12	11	4	5	7	3	2	3	5	7	9
1350- 1400		9	12	13	7	7	4	3	3		1	1	2
1400- 1450		11	11	8	2	2		2	1	2	1	1	1
1450- 1500			2		1	2	3	2					2
1500- 1550		1	1	2	1		1	1	1	1			
1550- 1600			1				1						
1600- 1649		1											3

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DIP FREQUENCY BY AZIMUTH
10-90 DEGREE DIPS

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PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
1204- 1250		2	4	2	1	4			1	2	1		3
1250- 1300		1	1		1	1				1		2	
1300- 1350		2									1		1
1350- 1400		1	1	1			1						2
1400- 1450		1	2	1			1	1				1	1
1450- 1500		10	1	1			2	1	1				1
1500- 1550		11											
1550- 1600		33					1						2
1600- 1649		11										3	25

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
1204- 1250	3	2	1	2	4	1	2	3		4	3	3	
1250- 1300		1	3	3	3	6	11	16	6	4	4	2	
1300- 1350	3	2	3	5	7	9	11	12	11	4	5	7	
1350- 1400	3	3		1	1	2	9	12	13	7	7	4	
1400- 1450	2	1	2	1	1	1	11	11	8	2	2		
1450- 1500	2					2		2		1	2	3	
1500- 1550	1	1	1				1	1	2	1		1	
1550- 1600								1				1	
1600- 1649						3	1						

DIP FREQUENCY BY AZIMUTH
0-90 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
1204- 1250	3	3	3	3	4	4	4	7	2	5	7	3	
1250- 1300		1	4	3	5	6	12	17	6	5	5	2	
1300- 1350	3	2	3	6	7	10	13	12	11	4	5	7	
1350- 1400	3	3		1	1	4	10	13	14	7	7	5	
1400- 1450	3	1	2	1	2	2	12	13	9	2	2	1	
1450- 1500	3	1				3	10	3	1	1	2	5	
1500- 1550	1	1	1				12	1	2	1		1	
1550- 1600						2	33	1				2	
1600- 1649					3	28	12						

BEACH PETROLEUM WESTGATE # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 1204.35	56.1	244.	29.6	34.	8.4	8.5	B
BOTTOM 1649.98	16.2	190.	26.6	36.	8.4	8.4	B

END OF LSF - VERSION 007.E05
14-APR-86 - 15:09:16

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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM
WELL	:	WESTGATE#1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	ONE
DATE LOGGED	:	14 - MAR - 86
REFERENCE	:	SYJ.160301

1 M X 50% - 35 DEG X 2

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1649.96	17.3	179	26.6	36	8.3	8.4	B
1650.96	8.0	233	26.6	36	8.3	8.4	B
1651.46	17.3	188	26.6	36	8.3	8.4	A
1651.97	17.5	192	26.6	36	8.3	8.4	A
1652.47	15.8	202	26.6	36	8.3	8.4	B
1652.97	36.8	157	26.6	36	8.3	8.4	B
1653.47	16.1	200	26.6	36	8.3	8.4	B
1654.48	32.6	162	26.6	36	8.3	8.4	A
1654.98	19.9	178	26.6	36	8.3	8.4	A
1655.48	18.2	179	26.6	36	8.3	8.4	A
1655.98	19.4	177	26.6	36	8.3	8.4	B
1656.48	12.9	229	26.6	36	8.3	8.4	A
1656.99	10.4	217	26.6	36	8.3	8.4	A
1657.49	7.6	199	26.6	36	8.3	8.4	B
1658.49	10.5	182	26.6	36	8.3	8.4	B
1659.00	12.1	191	26.6	36	8.3	8.4	A
1659.50	17.2	191	26.6	36	8.3	8.4	A
1660.00	22.5	188	26.6	36	8.3	8.4	A
1660.50	8.5	221	26.6	36	8.3	8.4	B
1661.00	13.3	188	26.6	36	8.3	8.4	A
1661.51	16.6	191	26.6	36	8.3	8.4	A
1662.01	19.3	177	26.6	36	8.3	8.4	B
1663.51	18.5	183	26.6	36	8.3	8.4	B
1664.02	15.7	186	26.6	36	8.3	8.4	B
1664.52	17.6	205	26.6	36	8.3	8.4	A
1665.02	14.5	200	26.5	36	8.3	8.4	A
1665.52	15.8	192	26.5	36	8.3	8.4	A
1666.02	17.8	179	26.5	36	8.3	8.4	A
1666.53	18.3	181	26.5	36	8.3	8.4	A
1667.03	19.0	183	26.5	36	8.3	8.4	A
1667.53	16.6	188	26.5	36	8.3	8.3	B
1668.03	21.8	271	26.5	36	8.3	8.4	A
1668.53	17.2	200	26.5	36	8.3	8.3	A
1669.04	21.4	190	26.5	36	8.3	8.4	A
1669.54	22.3	189	26.5	36	8.3	8.4	A
1670.04	21.8	181	26.5	36	8.3	8.4	B
1670.54	20.6	189	26.5	36	8.3	8.4	A
1671.05	22.3	189	26.5	36	8.3	8.4	A
1672.05	20.5	189	26.5	36	8.3	8.4	B
1672.55	19.2	194	26.5	36	8.3	8.4	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1673.05	17.2	195	26.5	36	8.3	8.4	B
1673.56	22.2	200	26.5	36	8.3	8.4	A
1674.56	24.9	191	26.5	36	8.3	8.4	A
1675.06	25.0	192	26.5	36	8.3	8.4	A
1675.56	23.1	193	26.4	36	8.3	8.4	A
1676.07	20.0	193	26.4	36	8.3	8.4	A
1676.57	16.8	181	26.4	36	8.3	8.4	A
1677.07	20.2	193	26.4	36	8.3	8.4	A
1677.57	23.3	193	26.4	37	8.3	8.4	A
1678.07	21.5	191	26.4	37	8.3	8.5	B
1678.58	23.6	186	26.4	37	8.3	8.5	A
1679.08	23.2	191	26.3	37	8.3	8.5	A
1679.58	25.9	177	26.3	37	8.3	8.6	B
1680.08	29.2	198	26.3	37	8.3	8.6	A
1680.59	26.4	200	26.3	37	8.3	8.7	A
1681.09	22.4	196	26.2	37	8.3	8.8	A
1681.59	26.7	181	26.2	37	8.3	9.0	B
1682.09	25.0	202	26.2	37	8.3	9.1	A
1682.59	23.6	192	26.1	36	8.3	9.3	B
1683.60	22.1	210	26.1	36	8.3	9.6	A
1696.15	19.7	181	27.1	37	8.5	12.9	B
1701.17	NO CORR		27.2	38	8.6	13.2	
1722.76	33.8	222	26.0	38	8.3	10.4	B
1726.28	14.1	214	26.0	39	8.4	10.5	B
1731.80	NO CORR		25.6	39	8.3	11.3	
1737.32	46.3	217	25.8	39	8.4	10.6	B
1740.84	NO CORR		25.6	39	8.4	10.0	
1741.34	20.3	257	25.6	39	8.5	9.5	B
1743.85	2.8	293	25.7	39	8.5	9.0	A
1746.36	2.6	280	25.5	39	8.4	8.5	A
1747.36	20.3	214	25.4	38	8.4	8.5	B
1747.87	20.8	218	25.4	38	8.4	8.6	B
1748.87	33.5	323	25.2	38	8.4	8.7	B
1749.37	24.1	220	25.1	39	8.4	8.8	A
1750.38	4.7	256	24.9	38	8.4	8.7	B
1753.39	13.8	121	24.8	40	8.4	8.6	A
1753.89	10.6	164	24.8	39	8.4	8.8	B
1755.90	16.0	214	24.9	38	8.4	8.8	B
1758.41	11.1	39	24.9	39	8.4	8.9	B
1758.91	7.9	43	24.9	39	8.4	9.1	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1759.41	21.9	214	24.8	39	8.4	9.4	B
1762.42	8.0	162	24.8	38	8.6	9.6	B
1765.43	1.4	162	25.1	38	8.4	9.0	B
1766.43	18.4	218	25.1	38	8.4	9.0	B
1766.93	24.9	223	25.0	38	8.4	9.1	B
1767.93	26.5	212	24.9	38	8.4	9.3	B
1768.43	26.6	218	24.9	38	8.5	9.4	B
1771.43	24.0	213	24.7	39	8.5	9.4	B
1777.93	NO CORR		24.7	38	8.5	10.7	
1789.44	NO CORR		24.9	38	8.5	10.0	
1789.94	4.0	305	24.9	39	8.4	9.8	A
1790.44	3.8	277	24.9	39	8.5	9.9	A
1793.94	4.3	297	24.7	39	8.5	9.6	B
1794.44	4.3	66	24.7	39	8.5	9.6	B
1794.94	14.6	75	24.7	39	8.5	9.6	B
1798.44	1.8	248	24.6	39	8.5	9.3	B
1798.94	5.3	200	24.6	39	8.4	9.4	A
1799.44	8.9	25	24.6	39	8.5	9.5	B
1804.45	11.6	218	24.7	39	8.5	9.2	B
1804.95	5.7	39	24.6	39	8.5	9.7	B
1805.45	7.4	341	24.6	39	8.5	9.1	B
1805.95	9.7	240	24.6	39	8.5	9.6	B
1811.45	8.8	227	24.6	40	8.4	8.4	A
1811.95	8.7	221	24.6	40	8.4	8.4	A
1812.45	8.9	221	24.6	40	8.4	8.4	A
1812.95	7.3	222	24.6	40	8.4	8.4	A
1814.95	3.3	156	24.5	42	8.3	8.3	A
1815.45	5.1	133	24.4	41	8.4	8.2	A
1815.95	7.9	213	24.3	41	8.4	8.3	A
1816.45	1.9	32	24.2	40	8.4	8.4	B
1816.95	9.0	239	24.0	39	8.4	8.6	B
1819.45	10.0	233	23.8	39	8.5	9.4	B
1820.45	6.9	176	23.8	41	7.6	8.9	A
1820.95	11.4	180	23.7	41	8.1	9.0	B
1823.46	26.7	277	24.2	40	8.5	9.7	B
1824.46	4.1	264	24.3	40	8.5	9.9	B
1826.46	10.3	220	24.0	40	8.4	9.4	B
1828.46	5.3	240	24.0	41	8.5	9.1	A
1828.96	4.4	229	23.9	40	8.4	9.1	B
1831.96	NO CORR		23.5	41	8.5	9.6	

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1835.46	NO CORR		23.4	41	8.4	9.3	
1837.96	9.8	220	23.4	41	8.4	8.8	A
1838.46	17.0	220	23.5	41	8.4	8.6	A
1838.96	2.7	16	23.6	41	8.4	8.5	B
1839.46	11.5	231	23.6	41	8.4	8.6	A
1839.96	10.1	219	23.5	41	8.4	8.8	A
1840.46	6.5	220	23.4	42	8.5	8.6	A
1840.96	11.4	208	23.4	41	8.5	8.7	A
1841.47	10.5	221	23.4	41	8.4	8.5	A
1841.97	5.2	212	23.4	42	8.4	8.4	A
1842.47	6.9	257	23.4	41	8.4	8.9	B
1842.97	13.8	245	23.3	40	8.4	8.6	A
1843.47	10.8	233	23.1	40	8.4	9.0	B
1844.47	13.1	226	22.9	41	8.4	8.6	A
1844.97	13.9	237	22.9	42	8.4	8.7	B
1845.47	13.2	233	22.9	42	8.4	8.4	A
1846.47	11.7	320	22.8	43	8.5	8.7	A
1846.97	4.3	347	22.7	42	8.4	8.9	B
1851.47	11.5	230	22.7	42	8.5	8.8	A
1852.47	17.0	255	22.9	41	8.4	8.2	B
1852.97	17.7	245	23.0	41	8.4	8.2	B
1853.47	21.1	226	23.2	41	8.4	8.2	A
1854.47	22.6	222	23.2	42	8.4	8.5	B
1856.97	18.6	228	22.7	40	8.5	8.6	A
1858.97	22.7	227	22.6	41	8.6	8.6	A
1859.47	18.4	239	22.6	41	8.5	8.5	A
1860.47	12.0	244	22.6	41	8.5	8.5	B
1862.48	15.8	142	22.7	41	8.4	8.5	A
1862.98	12.9	126	22.7	41	8.5	8.6	A
1863.48	9.7	253	22.6	41	8.6	8.6	B
1868.98	20.2	221	22.7	39	8.6	8.5	B
1869.48	22.2	216	22.7	40	8.7	8.5	B
1882.49	24.7	227	22.7	40	8.4	8.4	A
1882.99	36.2	271	22.8	40	8.4	8.4	B
1883.49	18.2	257	22.8	40	8.4	8.4	A
1883.99	19.3	248	22.8	41	8.4	8.4	B
1884.99	1.6	11	22.8	40	8.4	8.5	A
1886.49	15.0	269	22.6	40	8.4	8.4	B
1887.49	2.8	298	22.5	40	8.4	8.4	A
1888.49	3.8	328	22.4	39	8.6	8.5	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1889.99	10.3	217	22.3	38	9.3	8.6	B
1890.49	8.5	227	22.3	39	9.5	8.4	B
1891.99	18.8	222	22.2	39	10.0	8.5	B
1892.49	11.5	45	22.2	39	10.1	8.4	B
1894.99	6.1	261	22.4	39	9.2	8.5	A
1895.49	10.1	237	22.4	39	9.0	8.5	A
1895.99	14.8	234	22.5	38	9.2	8.4	B
1896.49	23.2	221	22.7	39	9.2	8.4	B
1900.50	14.4	207	22.5	39	9.1	8.6	B
1901.50	39.8	279	22.5	39	8.8	8.6	B
1902.50	20.3	214	22.4	39	8.9	8.7	B
1903.00	19.0	213	22.4	40	8.9	8.7	B
1903.50	14.2	246	22.3	41	8.9	8.7	A
1904.00	13.9	242	22.4	41	8.9	8.7	A
1904.50	21.5	223	22.4	41	8.9	8.6	B
1905.00	21.5	221	22.5	40	8.8	8.6	B
1905.50	10.2	200	22.6	40	8.7	8.6	B
1906.50	21.9	219	22.5	40	8.5	8.5	A
1907.00	12.4	240	22.4	40	8.6	8.6	A
1907.50	7.1	240	22.4	40	8.5	8.5	B
1908.00	5.6	242	22.5	40	8.6	8.6	A
1908.50	13.8	210	22.5	40	8.6	8.7	B
1917.51	22.9	217	22.6	40	7.7	7.4	A

BEACH PETROLEUM WESTGATE#1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP							
1649.96	17.3	179.	26.6	36.	8.3	8.4	B
BOTTOM							
1917.51	22.9	217.	22.6	40.	7.7	7.4	A

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
1649- 1650													
1650- 1700		2											1
1700- 1750				2									
1750- 1800			2	2	1		1	1	1			2	1
1800- 1850		12	2			2	1	2			1	2	
1850- 1900		1	2	1	1		1						
1900- 1917		1	1										

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*                           *
*  DIP FREQUENCY BY AZIMUTH *
*     10-90 DEGREE DIPS     *
*                           *
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PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
1649- 1650												1	
1650- 1700		2		1								8	46
1700- 1750		6	1		1								
1750- 1800		7						1	1		1	1	
1800- 1850		11	1	1	1							1	1
1850- 1900		14	6	1				1			2		
1900- 1917		7	2	1									3

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
1649- 1650													
1650- 1700						1	2						
1700- 1750									2				
1750- 1800	1	1			2	1		2	2	1		1	
1800- 1850	2			1	2		12	2			2	1	
1850- 1900							1	2	1	1		1	
1900- 1917							1	1					

DIP FREQUENCY BY AZIMUTH
0-90 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
1649- 1650					1								
1650- 1700					8	47	4		1				
1700- 1750							6	1	2	1			
1750- 1800	2	2		1	3	1	7	2	2	1		1	
1800- 1850	2			1	3	1	23	3	1	1	2	1	
1850- 1900	1			2			15	8	2	1		1	
1900- 1917						3	8	3	1				

BEACH PETROLEUM WESTGATE#1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 1649.96	17.3	179.	26.6	36.	8.3	8.4	B
BOTTOM 1917.51	22.9	217.	22.6	40.	7.7	7.4	A

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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM
WELL	:	WESTGATE#1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	ONE
DATE LOGGED	:	14 - MAR - 86
REFERENCE	:	SYJ.160301

1 M X 50% - 35 DEG X 2

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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM
WELL	:	WESTGATE#1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	ONE
DATE LOGGED	:	14 - MAR - 86
REFERENCE	:	SYJ.160301

1 M X 50% - 35 DEG X 2

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1737.96	50.3	221	25.7	40	8.3	10.4	B
1742.96	24.3	207	25.6	39	8.5	9.6	B
1743.46	17.1	227	25.6	40	8.5	9.4	B
1744.46	10.2	11	25.6	41	8.5	8.7	A
1745.46	24.9	220	25.4	40	8.4	8.4	B
1746.96	24.0	212	25.2	34	8.4	8.5	A
1747.46	25.3	211	25.3	31	8.4	8.5	A
1748.46	20.5	210	25.5	33	8.4	8.6	A
1752.47	7.7	203	24.9	39	8.4	8.6	B
1753.47	11.4	210	24.8	45	8.4	8.7	B
1753.97	24.0	228	24.7	45	8.4	8.8	B
1755.47	14.5	156	24.8	40	8.4	8.8	B
1755.97	38.7	216	24.9	39	8.4	8.8	B
1758.97	12.1	29	24.8	39	8.4	9.0	B
1759.47	14.0	34	24.8	41	8.4	9.1	B
1759.97	14.4	194	24.8	42	8.4	9.4	B
1762.47	2.5	193	24.7	37	8.6	9.6	B
1763.47	10.2	215	24.8	38	8.5	9.5	B
1765.97	9.4	285	25.1	37	8.4	9.0	B
1766.47	10.4	284	25.1	38	8.4	9.0	A
1766.97	21.4	219	25.1	39	8.4	9.0	B
1767.47	19.1	25	25.0	40	8.4	9.0	B
1767.97	22.5	207	25.0	39	8.4	9.1	B
1768.47	24.1	216	24.9	39	8.5	9.3	B
1771.98	22.8	220	24.6	39	8.5	9.4	B
1772.48	21.0	223	24.6	38	8.5	9.2	B
1774.98	14.2	288	24.8	40	8.4	9.8	B
1790.99	1.9	259	24.8	40	8.5	9.9	A
1792.49	10.7	35	24.8	39	8.5	9.7	B
1792.99	39.6	177	24.8	38	8.5	9.7	B
1793.49	38.9	177	24.7	39	8.5	9.7	B
1793.99	8.3	47	24.7	39	8.5	9.6	B
1794.99	3.9	346	24.6	39	8.5	9.5	B
1799.49	4.2	243	24.6	38	8.4	9.5	A
1799.99	6.7	206	24.6	39	8.5	9.5	B
1810.00	11.4	61	24.7	40	8.4	10.2	B
1812.00	8.8	223	24.5	41	8.5	8.1	A
1812.50	9.2	227	24.5	40	8.4	8.1	A
1813.00	9.2	217	24.5	39	8.4	8.1	A
1813.50	4.9	218	24.5	38	8.4	8.2	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1815.00	4.1	126	24.4	43	8.4	8.0	A
1815.50	5.5	215	24.4	52	8.4	8.3	A
1816.00	5.1	143	24.3	49	8.4	8.3	A
1816.50	7.1	202	24.2	42	8.4	8.3	A
1817.00	9.3	222	24.0	32	8.4	8.3	A
1817.50	11.2	216	23.8	26	8.4	8.6	B
1818.00	17.4	223	23.7	30	8.4	8.7	B
1818.50	25.4	218	23.7	37	8.5	9.2	B
1820.50	4.9	272	23.7	38	8.5	9.0	A
1824.00	19.1	229	24.1	40	8.5	9.6	B
1824.50	16.6	258	24.2	40	8.4	10.1	B
1825.00	6.6	238	24.3	39	8.5	9.6	B
1825.50	7.9	222	24.2	39	8.4	9.9	B
1827.00	12.5	229	23.9	40	8.4	9.4	B
1827.50	27.7	270	24.0	41	8.4	9.0	B
1829.01	5.4	224	23.9	41	8.4	8.7	B
1829.51	7.6	221	23.8	40	8.5	9.2	A
1833.51	8.7	221	23.3	39	8.4	8.9	A
1839.01	7.3	221	23.4	39	8.4	8.7	A
1839.51	5.0	359	23.3	40	8.4	8.6	B
1840.01	10.1	239	23.2	42	8.4	8.6	A
1840.51	16.1	225	23.1	42	8.5	8.8	B
1841.01	2.1	333	23.1	41	8.4	8.6	A
1841.51	10.8	239	23.1	40	8.4	8.7	B
1842.01	11.2	196	23.0	39	8.4	8.4	A
1842.51	7.5	210	22.9	34	8.4	8.6	A
1844.02	16.2	215	22.9	41	8.4	8.6	B
1844.52	16.7	230	22.9	45	8.5	8.8	A
1845.02	13.9	241	22.8	48	8.4	8.6	A
1845.52	9.8	87	22.8	49	8.5	8.8	B
1846.02	6.1	24	22.6	43	8.5	8.5	B
1851.02	8.8	245	22.6	42	8.5	8.1	B
1852.52	14.8	262	22.9	33	8.4	8.0	B
1853.52	18.4	223	23.0	42	8.4	8.1	B
1854.52	21.8	213	22.8	34	8.4	8.3	B
1855.02	22.8	206	22.8	28	8.5	8.7	B
1856.53	19.1	216	22.6	33	8.6	8.6	A

BEACH PETROLEUM WESTGATE#1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 1737.96	50.3	221.	25.7	40.	8.3	10.4	B
POTTOM 1856.53	19.1	216.	22.6	33.	8.6	8.6	A

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
1737- 1750													
1750- 1800			2	1		1		1					3
1800- 1850		12		1		2	1		1		2		2
1850- 1856			1										

DIP FREQUENCY BY AZIMUTH
10-90 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
1737- 1750	5					1						2	
1750- 1800	7		2			2	2				3	3	
1800- 1850	10	3						1				1	
1850- 1856	3	1										1	

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	30		60		E		120		150		S		210		240		W		300		330		N		30
1737- 1750																									
1750- 1800		1										3				2		1				1			
1800- 1850				1				2				2		12				1				2		1	
1850- 1856																1									

DIP FREQUENCY BY AZIMUTH
0-90 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
1737- 1750						2	5					1	
1750- 1800	3				3	6	7	2	3		1	2	
1800- 1850		2		2		3	22	3	1		2	1	
1850- 1856						1	3	2					

BEACH PETROLEUM WESTGATE#1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP							
1737.96	50.3	221.	25.7	40.	8.3	10.4	B
BOTTOM							
1856.53	19.1	216.	22.6	33.	8.6	8.6	A

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APPENDIX 7

Palynology

PALYNOLOGY REPORT

BIOSTRATIGRAPHY, PALAEOENVIRONMENTS, AND HYDROCARBON SOURCE POTENTIAL OF WESTGATE NO.1A, 1754m - 1909m (CRETACEOUS) OTWAY BASIN

by

MARY E. DETTMANN

Prepared for

BEACH PETROLEUM NL

April 1986

SUMMARY

Palynomorphs extracted from Westgate No.1A between 1754m and 1909m demonstrate an age range of late Albian to Turonian. During late Albian - Cenomanian sediments between 1867m and 1909m were deposited in terrestrial situations. Encroachment of the sea occurred during the Cenomanian and Turonian when sediments between 1832.5m and 1848.5m accumulated in close-to-land marginal marine situations; the sandstone at 1754m is clearly of Late Cretaceous age but yielded insufficient palynomorphs from which to draw precise age, biostratigraphic and palaeoenvironmental inferences.

Sediments at 1832.5m and 1848.5m provided high yields of organic matter and have good hydrocarbon source potential; OM is predominantly gas prone and the section is early mature with respect to the main oil generation zone. Underlying terrestrial sediments at 1867m and 1909m contain low quantities of OM and have limited source potential; spore colouration indicates that the section is mature, lying within the main oil generation zone.

SAMPLE type	depth	lithol.	SOURCE POTENTIAL low	mod.	high	v.high	OIL SOURCE POTENTIAL poor	ltd.	fair	good	MATURATION IM	EM	M	LM	OM	BIOSTRAT.	AGE	DEPOSITIONAL ENVIRONMENT terr.	par.	m.mar.	mar.
swc	1754	sst.	*				*					*				n.o. *C. triplex*	n.o. Tur.				
swc	1832.5	shl.			*			*				*				*C. triplex*	Tur.			*	
swc	1848.5	shl.		*				*				*				*A. distocar.*	Cen/Tur			*	
swc	1867	slst.	*				*						*			*P. pannosus*	Alb/Cen	*			
swc	1909	slst.	*				*						*			*P. pannosus*	Alb/Cen	*			
			0.8	1.2	2.4		20	60	80		GY 1.8	Y 2.2	A 2.5	Br	Bl 3.0						
			(ml OM/10gm) KEROGEN YIELD				% H-RICH KEROGEN				SPORE COLOUR/ TAI VALUE										

TABLE 1. Summary of palynological results showing inferred hydrocarbon source potential, oil source potential, maturation, age, and palaeoenvironments of sediments between 1754m and 1909m in Westgate No.1A.

INTRODUCTION

Five sidewall cores from between 1754m and 1909m in Westgate No.1A, Otway Basin have been palynologically analysed to ascertain the age and biostratigraphic relationships of the sediments, the palaeoenvironments at and around the depositional site, and the hydrocarbon source potential and maturation levels of the enclosed organic matter. Table 1 summarises these results. Species distributions are shown on Table 2 and source rock/maturation data, as determined palynologically, are incorporated in Table 3.

Sample processing followed conventional physico-chemical techniques for recovery and concentration of the palynological microfossils (see Phipps & Playford 1984). Kerogen slides of unoxidised residue were also prepared and form the basis of the source rock/maturation analyses.

BIOSTRATIGRAPHY AND AGE

All samples were palynologically productive, although that from 1754m provided only a low yield of palynomorphs. Biostratigraphic evaluation of the sequence is in terms of the spore-pollen zones introduced by Dettmann & Playford (1969), and, where applicable, the dinoflagellate zones of Helby et al. (in prep.) as detailed in Fig.1 (from Frakes et al. in press). Relationships of the palynozones to the lithostratigraphic sequence in the Otway Basin are displayed in Fig.2.

1. 1754m; n.o. C. triplex Zone, n.o. Turonian

The sparse assemblage is compatible with an early Late Cretaceous age. The sample is stratigraphically above sediments at 1832.5m that contain C. triplex Zone indices; a Turonian or younger age is indicated.

2. 1832.5m; C. triplex Zone, Turonian

The presence of Phyllocladidites mawsonii together with Clavifera triplex, Amosopollis cruciformis and Balmeisporites glenelgensis indicates reference of the sample to the C. triplex Zone. The dinoflagellate assemblage is taxonomically restricted and insufficiently diagnostic for precise attribution in terms of the Helby et al. zones. However it is consistent with those reported from the lower part of the Upper Cretaceous sequence in the Otway Basin; here, initial appearances of Palaeohystrichophora infusioroides are usually associated with the C. triplex Zone.

3. 1848.5m; A. distocarinatus Zone, Cenomanian/Turonian

The diverse spore-pollen assemblage contains first appearances (up section) of A. distocarinatus & Amosopollis cruciformis and lacks indices of the of the succeeding C. triplex Zone. Accordingly the sediments are assigned to the A. distocarinatus Zone. Dinoflagellates comprise species that are long ranging in Australian Early and mid Cretaceous sediments.

4. 1867m, 1909m; P. pannosus Zone, late Albian-Cenomanian

Both samples yielded Phimopollenites pannosus in diverse spore-pollen assemblages that are indicative of the P. pannosus Zone.

PALAEOENVIRONMENTS

Land plant organic matter dominates the kerogens although algal microfossils occur in four of the samples. Additionally represented in all samples are fungal and recycled palynomorphs. The palaeoenvironmental significance of the individual palynomorph assemblages is discussed below.

1. 1754m; n.o Turonian

The sandstone sample yielded a low volume of organic matter derived largely from terrestrial sources. Deposition occurred under moderate energy conditions with source sediments derived, at least in part, from Triassic sequences.

2. 1832.5m, 1848.5m; Cenomanian - Turonian

Both samples are rich in organic matter that is chiefly of land plant origin. This was deposited under low energy conditions in a close-to-land situation subjected to marine influence. Source sediments include erosion products of Permian, Triassic, and possibly Lower Cretaceous sequences.

3. 1867m, 1909m; late Albian - Cenomanian

The low volumes of organic matter extracted from the samples include products of land plants and freshwater algae. Deposition in terrestrial situations is indicated. Infrequent recycled palynomorphs of Triassic and Early Cretaceous age indicate that some of the source sediments may have derived from Triassic and Lower Cretaceous sequences.

SOURCE ROCK POTENTIAL

The source richness of the samples was determined from the volume of organic matter extracted from 10 gm of sample; this provides a guide to TOC values (Tissot & Welte 1978). Source quality was determined using transmitted and blue fluorescent microscopy methods, and maturation levels were determined from spore colouration and expressed in terms of T.A.I. values of Staplin (1982).

Samples from 1848.5m and 1832.5m provided high yields of OM and could thus be expected to support significant hydrocarbon generation when mature. Samples from 1867m and 1909m provided low volumes of OM and have limited source potential. The sandstone from 1754m is not considered a likely source rock.

OM present in the potential source rocks (1832.5m, 1848.5m) is chiefly of opaque land plant detritus that is predominantly gas prone. However, liptinitic (oil generating) macerals comprising land plant exines/ cuticles and minor alginites account for sufficiently high proportions to indicate limited potential for oil. Kerogens from underlying samples at 1867m and 1909m are predominantly gas prone and the sediments have poor oil source potential.

Based upon spore colouration, the sequence 1754m - 1848.5m is early mature; that between 1867m and 1909m is mature, lying within the main oil generation zone.

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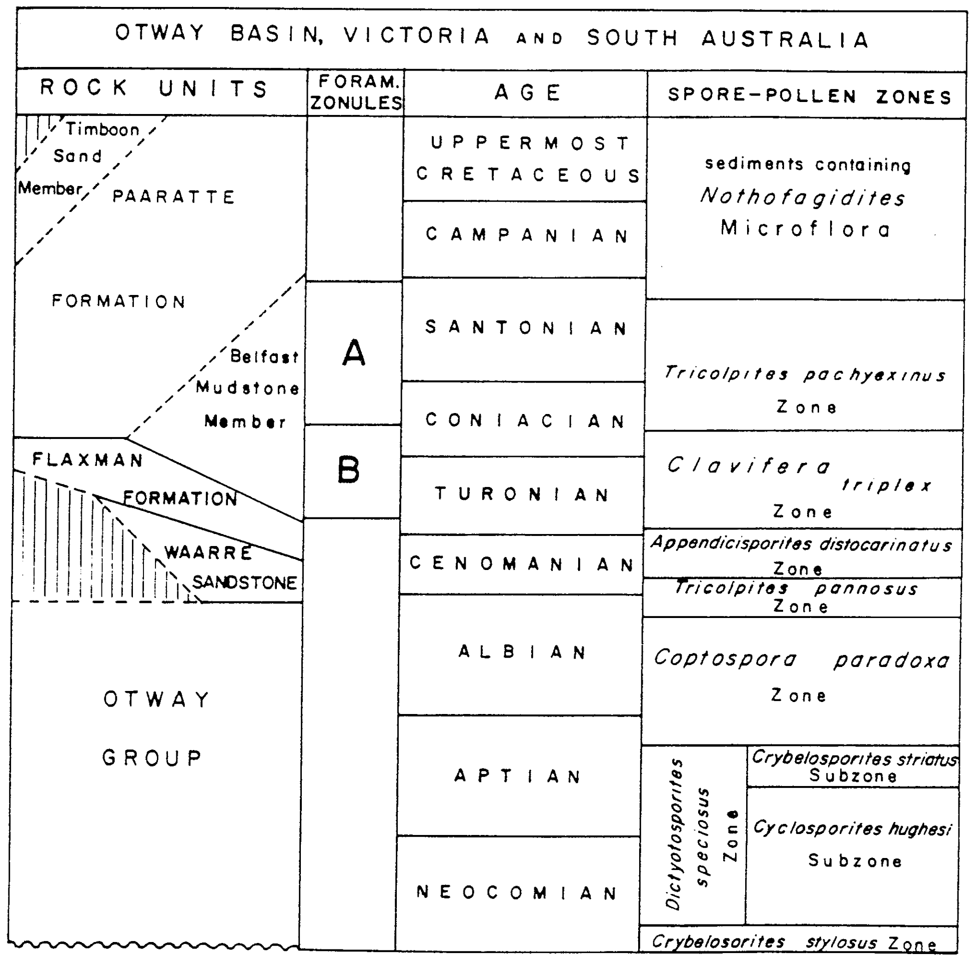

FIG. 1. Lithostratigraphic/biostratigraphic relationships in the Cretaceous sequence, Otway Basin (from Dettmann & Playford 1969).

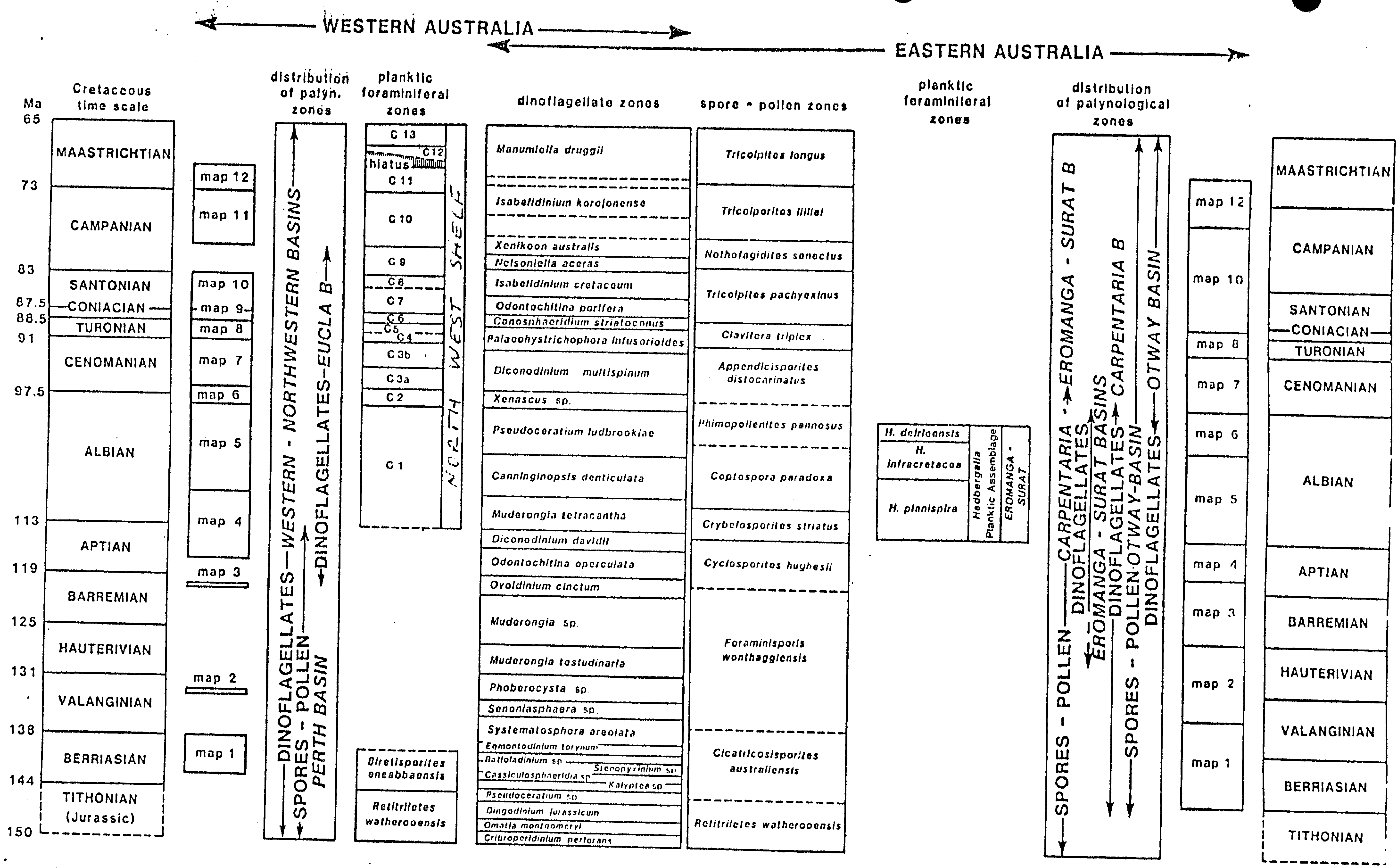

FIG. 2. Biostratigraphic units for the Australian Cretaceous (from Frakes et al. in press)

TABLE 2 PALYNOMORPH DISTRIBUTION

COMPANY: BEACH PETROLEUM N.L.

WELL: WESTGATE No. 1A BASIN: OTWAY

Sample type	s	s	s	s	s
Palynomorph / Depth (m)	1909	1867	1848.5	1832.5	1754
CRYPTOGAM MICROSPORES:					
Trilobosporites trioreticulosus	+			+	
Trilites cf. tuberculiformis	+		+		+
Stereisporites antiquasporites	+	+	+	+	+
Stereisporites pocockii	+	+	+		
Cyathidites australis/minor	+	+	+	+	+
Baculatisporites comaumensis	+	+	+	+	+
Triporoletes reticulatus	+	+	+		+
Foraminisporis wonthaggiensis	+	+	+		
Foraminisporis asymmetricus	+	+	+		
Foraminisporis dailyi	+				+
Retitriletes austroclavatidites	+	+	+		
Retitriletes nodosus	+		+		
Retitriletes eminulus	+	+	+	+	
Perinomonoletes sp.	+		+		
Crybelosporites striatus	+	+			
Aequitriradites spinulosus	+	+	+		
Aequitriradites verrucosus	+	+			
Leptolepidites verrucatus	+	+	+	+	
Cicatricosisporites australiensis	+	+	+	+	
Cicatricosisporites cuneiformis	+			+	
Cicatricosisporites hughesii	+	+	+		
Cyathidites punctatus	+		+		
Neoraistrickia truncata	+	+	+		
Gleicheniidites circinidites	+	+	+	+	+
Velosporites triquetrus	+				
Punctatosporites sp.	+			+	
Matonisporites cooksoniae	+				
Ceratosporites equalis	+	+	+	+	
Dictyophyllidites crenatus	+	+			
Klukisporites scaberis	+		+	+	
Microfoveolatosporis canaliculatus	+		+	+	
Coptospora paradoxa		+			
Osmundacidites wellmanii		+			
Densoisporites velatus		+	+		

Sample type: S = Sidewall core; C = Conventional core; D = Cuttings.

COMPANY: BEACH PETROLEUM N.L.

WELL: WESTGATE NO.1A BASIN: OTWAY

Sample type	S	S	S	S	S
Palynomorph / Depth (m)	1909	1867	1848.5	1832.5	1754
Retitriletes clavatoides		+			
Laevigatosporites ovatus		+	+	+	+
Biretisporites cf. potoniaei		+	+	+	
Triporoletes radiatus		+			
Perotrilites granulatus			+		
Perotrilites major			+		
Perotrilites jubatus			+	+	
Concavissimisporites penolaensis			+		
Stoverisporites microverrucatus			+	+	
Appendicisporites distocarinatus			+	+	
Cicatricosisporites pseudotripartitus			+	+	
Foveogleicheniidites confossus			+	+	
Leptolepidites major			+		
Retitriletes facetus			+		
Contignisporites glebulentus			+		
Camarazonosporites australis				+	
Lycopodiacidites cf. asperus				+	
Laevigatosporites major				+	
Clavifera triplex				+	
Interlobites intraverrucatus				+	
CRYPTOGAM MEGASPORES:					
Balmeisporites glenelgensis				+	+
GYMNOSPERMOUS POLLEN:					
Alisporites grandis	+	+			
Alisporites similis	+	+	+	+	
Araucariacites australis	+	+	+	+	+
Classopollis chateaunovii	+	+	+	+	
Classopollis sp.	+	+			
Microcachryidites antarcticus	+	+	+	+	+
Podocarpidites cf. ellipticus	+	+	+	+	+
Trisaccites microsaccatus	+	+	+	+	
Vitreisporites pallidus	+		+		
Cycadopites nitidus			+	+	
Hoegisporis sp.				+	
Phyllocladidites mawsonii				+	

Sample type: S = Sidewall core; C = Conventional core; D = Cuttings.

COMPANY: BEACH PETROLEUM N.L.

WELL: WESTGATE NO.1A **BASIN:** OTWAY

Sample type	S	S	S	S	S
Palynomorph / Depth (m)	1909	1867	1848.5	1832.5	1754
ANGIOSPERMOUS POLLEN:					
Phimopollenites pannosus	+	+	+		+
Tricolpites sp.	+	+			
Cupuliferoidopollenites sp			+		
Asteropollis asteroides				+	+
Tricolporites sp.				+	
FUNGAL PALYNOMORPHS:					
Spores & hyphae	+	+	+	+	+
ALGAL MICROFOSSILS:					
Botryococcus sp.	+			+	
Sigmopollis cf. carbonis	+	+			
Veryhachium sp.	+				
Amosopollis cruciformis			+	+	
Spiniferites ramosus			+	+	
Callialosphaeridium asymmetricum			+		
Oligosphaeridium complex			+	+	
Coronifera oceanica			+		
Cyclonephelium compactum			+	+	
Oligosphaeridium pulcherinum			+	+	
Cleistosphaeridium polypes			+		
Subtilosphaera sp.			+	+	
Chlamydopherella nyei				+	
Odontochitina operculata				+	
Cribroperidinium edwardsii				+	
Palaeohystrichophora infusorioides				+	
Odonotchitina striatoperforata				+	
RECYCLED PALYNOMORPHS:					
Aratrisporites spp.	+	+	+		
Cyclosporites hughesii	+				
Plicatipollenites gondwanensis			+		
Interadispora robusta			+	+	
Pseudoreticulatispora pseudoreticul.			+		
Callialasporites dampieri			+		
Lunatisporites pellucidus				+	+
Potoniesporites sp.				+	

Sample type: S = Sidewall core; C = Conventional core;
D = Cuttings.

SAMPLE	DEPTH (m)	LITHOLOGY	ORGANIC MATTER																
			AMOUNT (ml/ 10gm)	TYPE (% composition)													MATURITY		
				Alginite			Sporin./Cutin.					Humic		Vitr.					
				Dispersed	Dense	Algal cysts	Fine (<10µm)	Spores	Leaf tissue	Other	Woody tissue	<20µm	> 20µm	<20µm	> 20µm	Inertinite	Spore Colour	T.A.I. (after Staplin 1982)	Interpreted Maturity Level
swc 19	1754	sandstone med. brown f. gr.	0.1	20	+	-	-	+	-	-	-	30	-	25	25	+	yellowish amber	2.1	early mature
swc 8	1832.5	dk. grey shale, fine white lam.	2.3	10	-	+	5	15	15	+	+	10	-	15	20	10	yellowish amber	2.1	early mature
swc 6	1848.5	dk. grey shale, fine white lam.	1.0	5	-	+	10	10	+	10	+	5	15	15	30	+	yellowish amber	2.1	early mature
swc 3	1867	greenish-grey silt-stone	0.3	-	-	+	5	15	-	10	+	5	15	20	30	+	amber-brown	2.3	mature
swc 1	1909	interlam. dk. grey shale & med. grey siltstone	0.4	-	-	+	5	10	-	5	-	-	-	35	35	+	amber-brown	2.3	mature

TABLE 3. Organic matter, Westgate No.1A, sidewall cores, 1754m - 1909m.

APPENDIX 8

Maturation and Source Rock Analysis

WESTGATE-1A

K.K. No.	Depth (m)	$\bar{R}_v$max	Range	N	Description Including Exinite Fluorescence
					Pember Mudstone Member 835m
x4845	881.5 SWC 30	0.35	0.26-0.43	26	Rare cutinite, yellow orange, rare sporinite, yellow, rare liptodetrinite, yellow to orange. (Sandy claystone. Dom common, V>I>E. Vitrinite common, inertinite sparse, exinite rare. Pyrite abundant.)
					Pebble Point Formation 896m
					Paaratte Formation 962m
					Nullawarre Greensand Member 1441m
					Belfast Mudstone 1695m
					Flaxmans Formation 1743m
x4846	1744 SWC 24	-	-	-	No fluorescing exinite. (Iron oxides>>sandstone. Origin of iron oxides uncertain, many of the fragments
	?$\bar{R}_I$	?0.90	-	?1	have an oolite structure and could be oxidized oolites or an artefact. ?Dom rare, ?I only. Exinite and vitrinite absent.)
x4847	1759 SWC 18	-	-	-	No fluorescing exinite. (Iron oxides>>sandstone. Origin of iron oxides uncertain, many of the fragments
	?$\bar{R}_I$	?1.48	-	?1	have an oolite structure and could be oxidized oolites or an artefact. ?Dom rare, ?I only. Exinite and vitrinite absent.)
					Waare Formation 1809m
x4848	1832.5 SWC 8	0.53	0.42-0.69	31	Sparse sporinite, yellow to yellow orange, rare liptodetrinite, bright yellow to yellow orange, rare cutinite, yellow to orange, rare resinite, greenish yellow to yellow, rare phytoplankton, green. (Siltstone> sandstone>>shaly coal. Shaly coal sparse, V>I>E. Duroclarite. Dom common to abundant, I>V>E. Inertinite and vitrinite common, exinite sparse. Pyrite sparse.)
x4849	1851.5 SWC 5	?0.54	0.50-0.61	?3	Sparse liptodetrinite, yellow to orange, rare sporinite, yellow to orange, rare ?phytoplankton, bright yellow.
	$\bar{R}_I$	1.43	1.06-1.98	10	(Siltstone>>sandstone. Dom common, I>E>V. Inertinite common, exinite sparse, ?vitrinite rare. ?Vitrinite population small and poorly defined. Pyrite common.)
					Eumeralla Formation 1852m
x4850	1867 SWC 3	0.65	0.57-0.71	5	Rare cutinite, dull orange, rare liptodetrinite, yellow, rare sporinite, yellow, rare suberinite, brown.
	$\bar{R}_I$	1.21	0.96-1.84	7	(Sandstone>carbonate>claystone. Dom sparse, I>V>or=E. Inertinite sparse, vitrinite and exinite rare. Green fluorescing ?oil droplets rare. Patchy moderate mineral matter fluorescence sparse. Inorganic mud additive sparse. Pyrite rare.)
x4851	1894 SWC 2	-	-	-	Rare sporinite, yellow, rare liptodetrinite, yellow to orange. (Claystone. Dom rare, I>E. Inertinite and
	$\bar{R}_I$	1.32	1.06-1.56	6	exinite rare, vitrinite absent. Pyrite sparse.)

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Westgate 1A.   SAMPLE NO. X4845   DEPTH 881[illegible]m.   TYPE SWC 30.

Pember Mudstone.

FGV = First Generation Vitrinite   I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20				1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50				.86				1.22				1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26				1.62				1.98			
.19				.55				.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96				1.32				1.68							
.25				.61				.97				1.33				1.69							
.26	1			.62				.98				1.34				1.70							
.27	1			.63				.99				1.35				1.71							
.28	1			.64				1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30	2			.66				1.02				1.38				1.74							
.31	1			.67				1.03				1.39				1.75							
.32	1			.68				1.04				1.40				1.76							
.33	2			.69				1.05				1.41				1.77							
.34	2		FGV	.70				1.06				1.42				1.78							
.35	2			.71				1.07				1.43				1.79							
.36	3			.72				1.08				1.44				1.80							
.37	3			.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39	3			.75				1.11				1.47				1.83							
.40				.76				1.12				1.48				1.84							
.41	2			.77				1.13				1.49				1.85							
.42	1			.78				1.14				1.50				1.86							
.43	1			.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp.(%)

Exinite	Alginite
<0.1	0
Vitrinite	**Inertinite**
0.8	0.2

Keiraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

WELL NAME Westgate 1A SAMPLE NO. Y4847 DEPTH 1759m TYPE SWC18

Flaxmans Fm.

FGV = First Generation Vitrinite I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	NO. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	NO. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20				1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50				.86				1.22				1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26				1.62				1.98			
.19				.55				.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96				1.32				1.68							
.25				.61				.97				1.33				1.69							
.26				.62				.98				1.34				1.70							
.27				.63				.99				1.35				1.71							
.28				.64				1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30				.66				1.02				1.38				1.74							
.31				.67				1.03				1.39				1.75							
.32				.68				1.04				1.40				1.76							
.33				.69				1.05				1.41				1.77							
.34				.70				1.06				1.42				1.78							
.35				.71				1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12				1.48	1		?I.	1.84							
.41				.77				1.13				1.49				1.85							
.42				.78				1.14				1.50				1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp.(%)

Exinite	Alginite
0	0
Vitrinite	**Inertinite**
0	?<0.1

Keiraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Westgate 1A   SAMPLE NO. X4846   DEPTH 1744m   TYPE SWC 24

Flaxmans Fm.

FGV = First Generation Vitrinite   I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	NO. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	NO. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20				1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50				.86				1.22				1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90	1		?I	1.26				1.62				1.98			
.19				.55				.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96				1.32				1.68							
.25				.61				.97				1.33				1.69							
.26				.62				.98				1.34				1.70							
.27				.63				.99				1.35				1.71							
.28				.64				1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30				.66				1.02				1.38				1.74							
.31				.67				1.03				1.39				1.75							
.32				.68				1.04				1.40				1.76							
.33				.69				1.05				1.41				1.77							
.34				.70				1.06				1.42				1.78							
.35				.71				1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12				1.48				1.84							
.41				.77				1.13				1.49				1.85							
.42				.78				1.14				1.50				1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp.(%)

Exinite	Alginite
0	0
Vitrinite	**Inertinite**
0	?<0.1

Keiraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

NAME WESTGATE-1A SAMPLE NO. X4848 DEPTH 1832 m TYPE SWC 8

FGV = First Generation Vitrinite I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47	4			.83				1.19				1.55				1.91			
.12				.48	4			.84				1.20				1.56				1.92			
.13				.49	2			.85				1.21				1.57				1.93			
.14				.50	2			.86				1.22				1.58				1.94			
.15				.51	1			.87				1.23				1.59				1.95			
.16				.52	2			.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26				1.62				1.98			
.19				.55	2		FGV	.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59	1			.95				1.31				1.67							
.24				.60	1			.96				1.32				1.68							
.25				.61	1			.97				1.33				1.69							
.26				.62				.98				1.34				1.70							
.27				.63	2			.99				1.35				1.71							
.28				.64	1			1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30				.66				1.02				1.38				1.74							
.31				.67	1			1.03				1.39				1.75							
.32				.68	1			1.04				1.40				1.76							
.33				.69	1			1.05				1.41				1.77							
.34				.70				1.06				1.42				1.78							
.35				.71				1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12				1.48				1.84							
.41				.77				1.13				1.49				1.85							
.42	2			.78				1.14				1.50				1.86							
.43	1			.79				1.15				1.51				1.87							
.44	1			.80				1.16				1.52				1.88							
.45	1			.81				1.17				1.53				1.89							

Organic matter Comp. (%)

Exinite	Alginite
0.4	—
Vitrinite	**Inertinite**
1.0	2.0

Kelraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

NAME Westgate 1A SAMPLE NO. X 4849 DEPTH 1851.5 m TYPE SWC 5

Waare Fm.

FGV = First Generation Vitrinite I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20				1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50	1			.86				1.22				1.58				1.94			
.15				.51	1			.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96	1		I
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26	2		I	1.62				1.98	1		I
.19				.55				.91				1.27				1.63				1.99			
.20				.56		?	FGV	.92				1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96				1.32				1.68							
.25				.61	1			.97				1.33				1.69							
.26				.62				.98				1.34				1.70	1		I				
.27				.63				.99				1.35				1.71							
.28				.64				1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30				.66				1.02				1.38	1		I	1.74							
.31				.67				1.03				1.39				1.75							
.32				.68				1.04				1.40	1		I	1.76							
.33				.69				1.05				1.41				1.77							
.34				.70				1.06	1		I	1.42				1.78							
.35				.71				1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12	1		I	1.48				1.84							
.41				.77				1.13				1.49				1.85							
.42				.78				1.14	1		I	1.50				1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp.(%)

Exinite	Alginite
0.3	0
Vitrinite	**Inertinite**
? <0.1	1.0

Keiraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

NAME: Westgate - 1A SAMPLE NO.: X4850 DEPTH: 1867m TYPE: SWC 3

Eumeralla Fm.

FGV = First Generation Vitrinite - I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20	1		I	1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50				.86				1.22				1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26	1		I	1.62				1.98			
.19				.55				.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57	1			.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96	1		I	1.32				1.68							
.25				.61				.97				1.33				1.69							
.26				.62				.98	1		I	1.34				1.70							
.27				.63	1			.99				1.35				1.71							
.28				.64				1.00				1.36				1.72							
.29				.65	1			1.01				1.37				1.73							
.30				.66				1.02				1.38				1.74							
.31				.67	1		FGV	1.03				1.39				1.75							
.32				.68				1.04				1.40				1.76							
.33				.69				1.05				1.41				1.77							
.34				.70				1.06				1.42				1.78							
.35				.71	1			1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10	1		I	1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12	1		I	1.48				1.84	1		I				
.41				.77				1.13				1.49				1.85							
.42				.78				1.14				1.50				1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp. (%)

Exinite	Alginite
<0.1	0
Vitrinite	**Inertinite**
<0.1	0.2

Keiraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Westgate 1A   SAMPLE NO: X4851   DEPTH: 1874 m   TYPE: SWC 2

Eumeralla Fm.

FGV = First Generation Vitrinite   I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18	1		I	1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20	1		I	1.56	1		I	1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50				.86				1.22				1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26				1.62				1.98			
.19				.55				.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96				1.32				1.68							
.25				.61				.97				1.33				1.69							
.26				.62				.98				1.34				1.70							
.27				.63				.99				1.35				1.71							
.28				.64				1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30				.66				1.02				1.38				1.74							
.31				.67				1.03				1.39				1.75							
.32				.68				1.04				1.40				1.76							
.33				.69				1.05				1.41				1.77							
.34				.70				1.06	1		I	1.42	1		I	1.78							
.35				.71				1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12				1.48				1.84							
.41				.77				1.13				1.49				1.85							
.42				.78				1.14				1.50	1		I	1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp. (%)

Exinite	Alginite
60	0
Vitrinite	**Inertinite**
0	40%

Keiraville Konsultants Pty Ltd.

WESTGATE 1A

KK No.	Depth (m)	TOC
x4845	881.5	2.35
x4848	1832.5	3.20
x4849	1851.5	1.30
x4850	1867	0.27
x4851	1894	0.29

APPENDIX 9

Petrology

The Australian
Mi[illegible]al Development
Laboratories

F[illegible]mington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

21 April 1986

F 3/944/0
F 6408/86

Beach Petroleum NL
PO Box 360
CAMBERWELL VIC 3124

Attention: Ian Buckingham

REPORT F 6408/86

YOUR REFERENCE: Letter of 24 March 1986

MATERIAL: SWC

LOCALITY: Westgate-1A

WORK REQUIRED: Detailed description

Investigation and Report by: Dr Brian G. Steveson,
Dr Roger N. Brown and
Brian L. Watson

Manager-Petroleum Services Section: Dr Brian G. Steveson

Brian Steveson.

for Dr William G. Spencer
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cap

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Telephone (09) 325 7311
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1. INTRODUCTION AND SUMMARY

This report gives results of a detailed examination of 4 sidewall cores from Westgate-1A.

Three of the cores (1765.5, 1749.5 and 1746 m) are ironstones and they contain a large proportion of sand-grade grains composed of concretionary hematite/goethite. It is likely that current or wave action was involved in rolling the grains on the sediment-water interface. An environment in a near-shore marine situation is most likely - akin to the environment postulated for calcareous ooids but with a chemistry such that hematite precipitated. This implies a highly oxidising medium - probably a restricted location so that there was opportunity for the build-up of iron concentration.

Porosity in thin section is limited in these three samples due to compaction effects on both ferruginous grains and lithic clasts. However, the samples have been subjected to considerable damage prior to optical examination and visual estimates of porosity should be regarded as a guide only.

The fourth sample (1814.5 m) is a friable sand. It shows little evidence of post-depositinal modifications and hence retains a porosity greater than 25%. The rock is unlikely to present any problems as a petroleum reservoir.

2. PETROGRAPHY

Sample: TSC42088; Location: Westgate-1A, Core 23, (1746 m)

Rock Name:
Ferruginous sandstone

Thin Section:
An optical estimate of the constituents gives the following:

Component	%
Sand-grade ferruginous concretions	60-65
Lithic fragments/clay	20
Quartz	15
Pores	<5 (varies)
Feldspar	<1

The rock consists of detrital sand-grade grains of ferruginous material, quartz and heterogeneous fine-grained phases which are interpreted as being derived from original lithic clasts. There is no evidence of an original muddy matrix infiltrated between the sand-grade grains.

The ferruginous grains which comprise about two thirds of the volume of the rock are well sorted about an average size of approximately 0.3 mm. Under intense illumination many of the otherwise opaque grains can be seen to have a deep red colour and most show concentric textures indicating a concretionary origin. In some instances there is a central crystal, commonly of quartz. In rare instances the ferruginous concretions have numerous small crystals embedded in them and the ferruginous material forms a contiguous network around these crystals. Most of the ferruginous grains show well rounded outlines but there is evidence of compaction and deformation of some and rare instances of what appear to be fracturing (or possibly desiccation) of the ferruginous aggregates. As well as this opaque or semi-opaque material there are less well defined patches of dark material some of which appear to be jarosite, others are distinctly redder in colour and cannot be identified from a mineralogical point of view.

Most of the other detrital grains are fine-grained lithics, many of which are quartzofeldspathic lithologies of a metasedimentary or sedimentary origin but there is a small proportion, also, of distinctly volcanic rocks and rare grains of chert. Other lithic fragments are less well defined and contain very fine-grained admixtures of quartz and clay. Many of these grains have been deformed and now occur as heterogeneous patches between the grains of quartz and ferruginous material. The quartz grains themselves tend to be compact in shape but vary from distinctly angular to subround varieties. Some of the quartz may have been fractured during compaction of the rock.

Pores are present mainly as rather small voids between the grains and to this extent appear to be of primary origin. Many of the pores are not more than about 0.05 mm in size and do not appear to be well interconnected. The thin section contains two fragments and the smaller of these is somewhat more porous and probably somewhat more siliceous than the bulk of the sample. It is felt that at least some of the porosity in this small fragment is due to breaking up of the sample during collection of the sidewall core.

Sample: TSC47086/7; Location: Westgate-1A, Core 21 (1749.5 m) and Core 16 (1765.5 m)

Thin Section:

These samples are fundamentally similar to that described immediately above and hence a detailed description is not warranted. The sample from 1749.5 m, particularly, is very similar to that from 1746 m but it has, also, been much more badly effected by the sidewall coring bullet.

The sample from 1765.5 m contains a somewhat smaller proportion of ferruginous material and correspondingly larger amounts of both quartz and lithic fragments. As well, this sample contains very fine-grained patches of a green clay tentatively identified as glauconite. This mineral forms aggregates generally not more than 0.15 mm in size which comprise perhaps 1 to 2% of the total volume of the rock. There are also one or two rather well formed biotite flakes in this sample. Lithic fragments in this sidewall core are commonly distinctly argillaceous types more or less brown in colour as a result of staining by ferruginous material. Some show foliated textures and hence appear to schistose or phyllitic rocks, others are oriented aggregates of birefringent clay or phyllosilicate and may well be derived from somewhat metamorphosed and recrystallised shales or mudstones. Even so, there is a range towards more siliceous lithologies including some which can be specifically identified as being of igneous origin.

Porosity perhaps comprises up to 5% of the volume of this rock but, as is commonly the case, it is difficult to distinguish porosity induced by collection of the sample from that which is an integral part of the rock. It appears that as a result of deformation of the softer lithic fragments there is little porosity which can be genuinely attributed to the original sandstone sample.

These three ironstones are similar to each other and from examination of the thin section, they are interpreted as probably having been formed in some kind of shallow marine environment where wave action provided an oxygenated atmosphere and hematite was the stable iron oxide phase. Hematite crystallised around small silicate grains and ooid-like features developed due to rolling action of waves. It is likely that the ferruginous material is now goethite but this is a weathering or degradation product of the hematite which originally formed in the environment of deposition. The silicate material consists both of quartz and relatively fine-grained lithic fragments and some of the latter are distinctly of volcanic origin. There is evidence of some degradation and deformation of some of the lithic fragments and this, together with fracturing and some squeezing of the ferruginous ooliths, was responsible for reduction of any original porosity.

Sample: TSC47085; Location: Westgate-1A, Core 10 (1914.5 m)

Rock Name:
Porous clean sandstone

Thin Section:
The thin section contains about 25 to 30% of pores and much of the remainder is grains of quartz. There are trace amounts of detrital feldspar and mica and rare instances of opaque and semi-opaque heavy minerals. Lithic fragments were identified in the thin section but they are not well formed and probably comprise not more than about 2% of the volume of the rock. Carbonate has a patchy distribution and appears most likely to be dolomite.

The bulk of the rock is a well sorted sandstone consisting of equant but rather angular quartz grains with an average size of approximately 0.2 mm. The quartz grains have tangential touching contacts and there is little evidence of pressure solution effects. Feldspar is present mainly as untwinned potassium feldspar and there are traces of muscovite and fine-grained (sedimentary and metasedimentary) lithic fragments.

An unstained carbonate mineral is present as an authigenic phase and it has a poikilitic texture with respect to the quartz. Crystals of the carbonate are as much as one millimetre in size and tend to enclose or partially enclose several quartz grains. The carbonate has, however, only a patchy distribution in the thin section and the sample therefore retains a high porosity and, probably, substantial permeability also.

The excellent reservoir properties of this sandstone derived from the absence of marked pressure solution effects, the patchy distribution of the carbonate and the paucity of both the clay matrix and soft lithic fragments. The rock is probably a relatively mature sandstone but it is noticeable that the detrital grains are somewhat more angular than is commonly the case in such a pure and well sorted quartz sandstone.

3. X-RAY DIFFRACTION ANALYSIS

3.1 Procedure

Weighed subsamples were taken and dispersed in water with the aid of deflocculants and an electric blender, and allowed to sediment to produce −2 µm e.s.d. size farctins by the pipette method. The resulting dispersions were examined by plummet balance to determine their solids contents, and were then used to produce oriented clay preparations on ceramic plates. Two plates were prepared per sample, both being saturated with Mg^{++} ions, and one in addition being treated with glycerol. When air-dry, these were examined in the X-ray diffractometer. Additional diagnostic examinations were carried out as required, including examination of the glycerol-free plate hot (≈130 °C) and after heating for one hour at 550 °C.

3.2 Results

The results are given Table 1, which lists the following:

(a) The proportion of the sample found to separate into the −2 µm size fraction, as determined by the plummet balance. The figure obtained applies only to the pre-treatment and dispersion conditions used.

(b) The mineralogy of the −2 µm fraction, listing the minerals found, in approximate order of decreasing abundance, using the semiquantiative abbreviations given.

TABLE 1: MINERALOGY OF CLAY FRACTION OF FOUR SIDEWALL CORES

Sample	CORE 10 1814.5m		CORE 16 1765.5m		CORE 21 1749.5m		CORE 23 1746m	
-2μm fract. %:	3		10		5		4	
Mineralogy :	K	D	K	D	K	D	C	D
	Q	SD	Sm^+	SD	G	A	K	SD
	M	A	G	A	C	A	G	A
	C	Tr-A	C	Tr-A	Sm*	A	M	A
	F'	Tr-A	M	Tr-A	M	A	Sm*	A
			Q	Tr	Q	Tr	Q	Tr

* presence of interstratified illite not certain when amount present is low.

Mineral Key

C	Chlorite	M	Mica/illite
F'	K feldspar	Q	Quartz
G	Goethite	Sm	Smectite
K	Kaolinite	Sm^+	Smectite with detectable proportion of interstratified illite

SEMIQUANTITATIVE ABBREVIATIONS:

D = Dominant. Used for the component apparently most abundant, regardless of its probable percentage level.

SD = Sub-dominant. The next most abundant component(s) providing its percentage level is judged above about 20.

A = Accessory. Components judged to be present between the levels of roughly 5 and 20%.

Tr = Trace. Components judged to be below about 5%.

PE907627

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CONTAINER_BARCODE =	PE902238
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BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	CORE_PHOTO
DESCRIPTION =	SEM Core Photograph, Plate 1 (enclosure from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)


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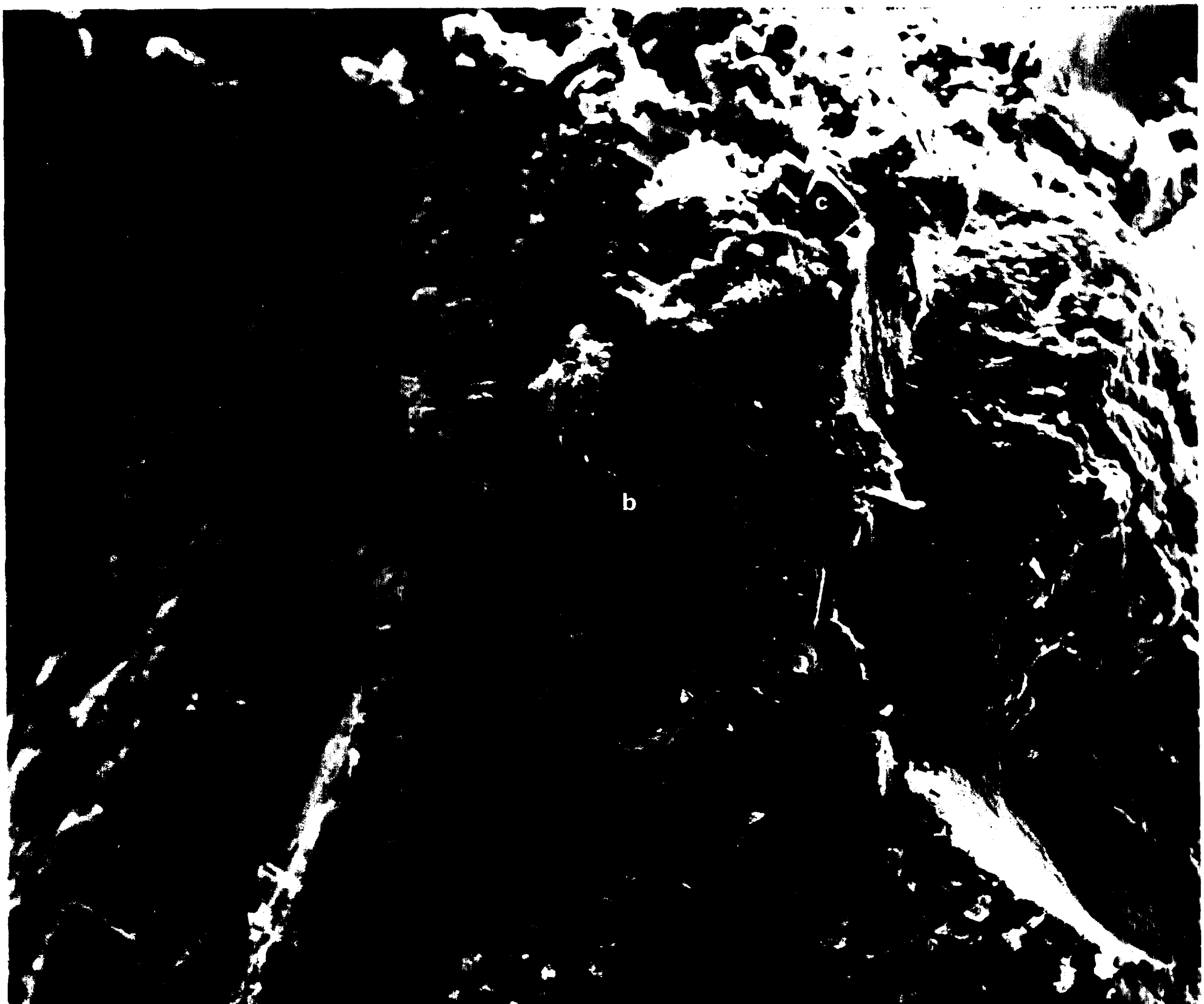
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	CORE_PHOTO
DESCRIPTION =	SEM Core Photograph, Plate 2 (enclosure from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)


c
b
010.0 u
03-2 20.0 24 023 010

PE907629

This is an enclosure indicator page.
The enclosure PE907629 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907629 has the following characteristics:

```
     ITEM_BARCODE = PE907629
CONTAINER_BARCODE = PE902238
             NAME = SEM Core Photograph
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = WELL
          SUBTYPE = CORE_PHOTO
      DESCRIPTION = SEM Core Photograph, Plate 3 (enclosure
                    from WCR appendix 9--Petrology) for
                    Westgate-1A
          REMARKS =
     DATE_CREATED =
    DATE_RECEIVED = 3/02/87
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR =
     CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)


010.0 u
03-2 20.0 24 023 011

PE907630

This is an enclosure indicator page.
The enclosure PE907630 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907630 has the following characteristics:

```
     ITEM_BARCODE = PE907630
CONTAINER_BARCODE = PE902238
             NAME = SEM Core Photograph
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = WELL
          SUBTYPE = CORE_PHOTO
      DESCRIPTION = SEM Core Photograph, Plate 4 (enclosure
                    from WCR appendix 9--Petrology) for
                    Westgate-1A
          REMARKS =
     DATE_CREATED =
    DATE_RECEIVED = 3/02/87
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR =
     CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)


100.0 u
03-1 20.0 16 012 002

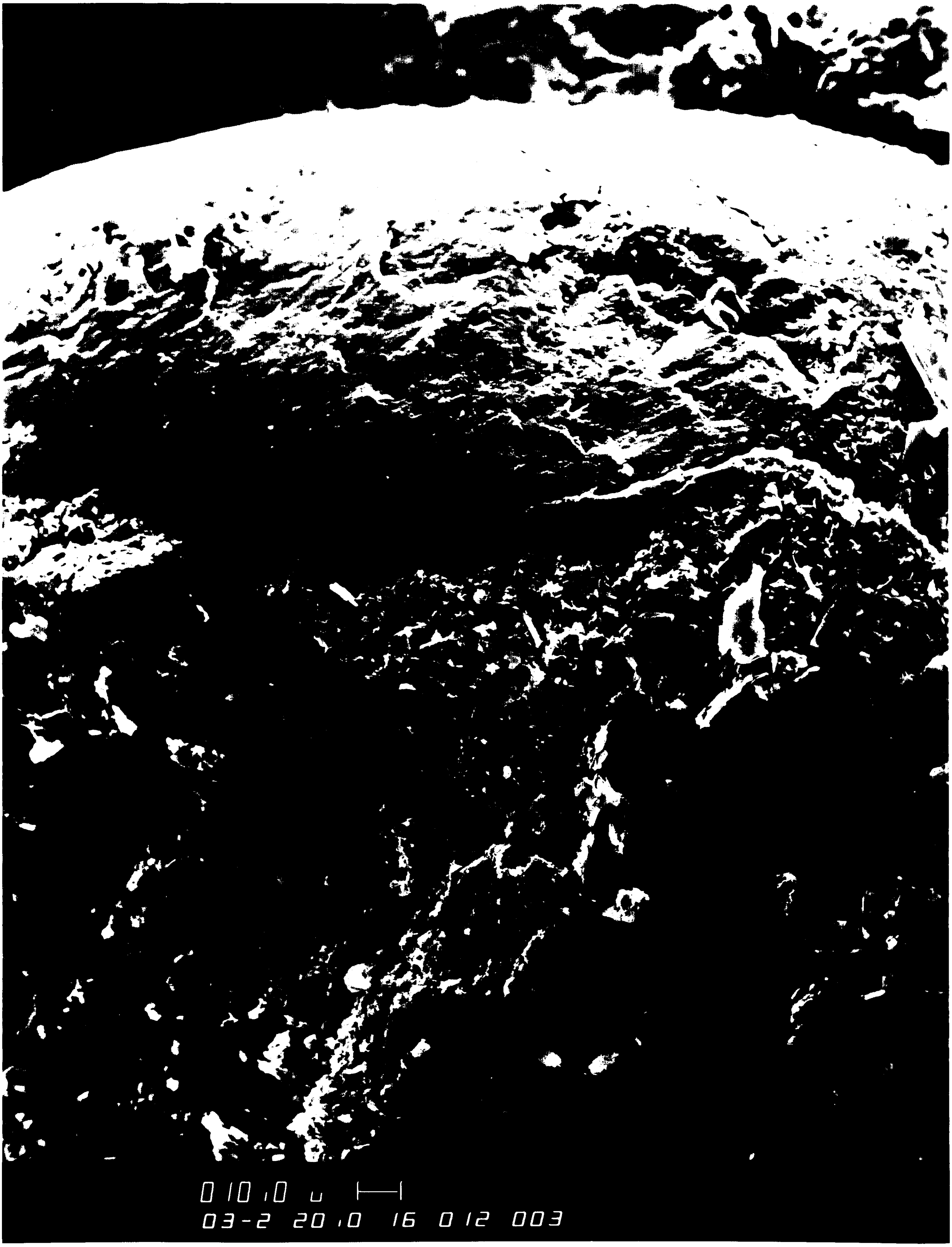
PE907631

This is an enclosure indicator page.
The enclosure PE907631 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907631 has the following characteristics:

ITEM_BARCODE =	PE907631
CONTAINER_BARCODE =	PE902238
NAME =	SEM Core Photograph
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	CORE_PHOTO
DESCRIPTION =	SEM Core Photograph, Plate 5 (enclosure from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)


0 10.0 u
03-2 20.0 16 012 003

PE907632

This is an enclosure indicator page.
The enclosure PE907632 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907632 has the following characteristics:

ITEM_BARCODE =	PE907632
CONTAINER_BARCODE =	PE902238
NAME =	SEM Core Photograph
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	CORE_PHOTO
DESCRIPTION =	SEM Core Photograph, Plate 6 (enclosure from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)


I
C
K
0 10.0 u
13-2 20.0 16 012 006

PE907633

This is an enclosure indicator page.
The enclosure PE907633 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907633 has the following characteristics:

```
     ITEM_BARCODE = PE907633
CONTAINER_BARCODE = PE902238
             NAME = SEM Core Photograph
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = WELL
          SUBTYPE = CORE_PHOTO
      DESCRIPTION = SEM Core Photograph, Plate 7 (enclosure
                    from WCR appendix 9--Petrology) for
                    Westgate-1A
          REMARKS =
     DATE_CREATED =
    DATE_RECEIVED = 3/02/87
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR =
     CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)


100.0 u
05-1 20.0 22 012 007

PE907634

This is an enclosure indicator page.
The enclosure PE907634 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907634 has the following characteristics:

ITEM_BARCODE = PE907634
CONTAINER_BARCODE = PE902238
NAME = SEM Core Photograph
BASIN = OTWAY
PERMIT = PEP 108
TYPE = WELL
SUBTYPE = CORE_PHOTO
DESCRIPTION = SEM Core Photograph, Plate 8 (enclosure from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =
DATE_CREATED =
DATE_RECEIVED = 3/02/87
W_NO = W929
WELL_NAME = Westgate-1A
CONTRACTOR =
CLIENT_OP_CO = Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

PLATE 8 1765 [illegible]
This pore [illegible]
poorly crysta[illegible]
occurs toward[illegible]

PE907635

This is an enclosure indicator page.
The enclosure PE907635 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907635 has the following characteristics:

ITEM_BARCODE = PE907635
CONTAINER_BARCODE = PE902238
NAME = SEM Core Photograph
BASIN = OTWAY
PERMIT = PEP 108
TYPE = WELL
SUBTYPE = CORE_PHOTO
DESCRIPTION = SEM Core Photograph, Plate 9 (enclosure from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =
DATE_CREATED =
DATE_RECEIVED = 3/02/87
W_NO = W929
WELL_NAME = Westgate-1A
CONTRACTOR =
CLIENT_OP_CO = Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

tone and quartz grains
though modified ... overgrowths, are still ...
weathered.

PE907636

This is an enclosure indicator page.
The enclosure PE907636 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907636 has the following characteristics:

```
     ITEM_BARCODE = PE907636
CONTAINER_BARCODE = PE902238
             NAME = SEM Core Photograph
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = WELL
          SUBTYPE = CORE_PHOTO
      DESCRIPTION = SEM Core Photograph, Plate 10
                    (enclosure from WCR appendix
                    9--Petrology) for Westgate-1A
          REMARKS =
     DATE_CREATED =
    DATE_RECEIVED = 3/02/87
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR =
     CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)

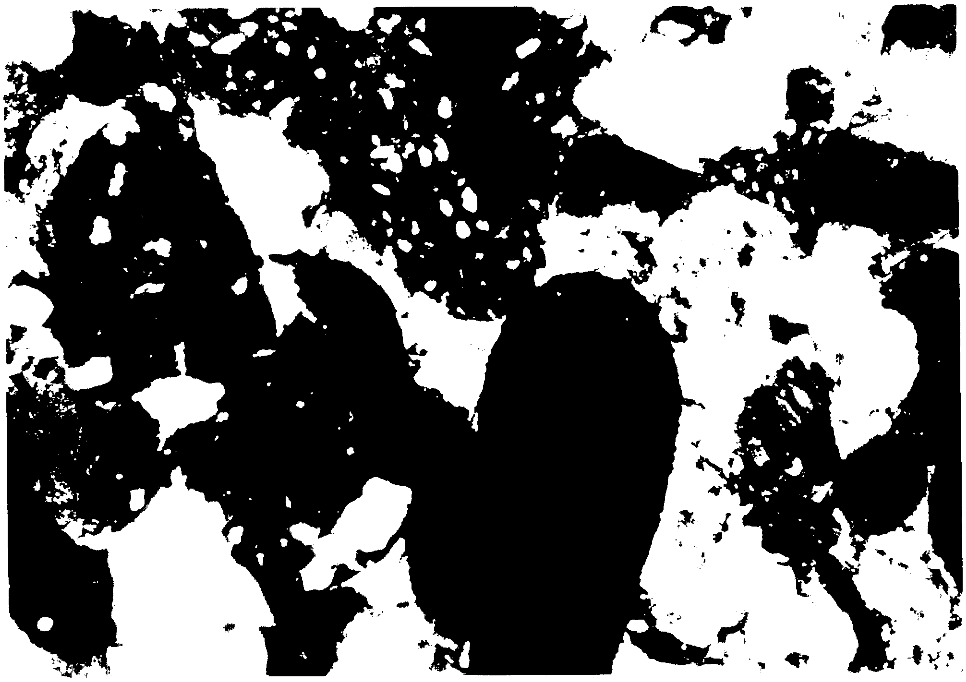
PE907637

This is an enclosure indicator page.
The enclosure PE907637 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907637 has the following characteristics:

ITEM_BARCODE =	PE907637
CONTAINER_BARCODE =	PE902238
NAME =	Thinsection Core Photograph
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	CORE_PHOTO
DESCRIPTION =	Thinsection Core Photograph, Plate 10 (Figure 1a & 1b from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)



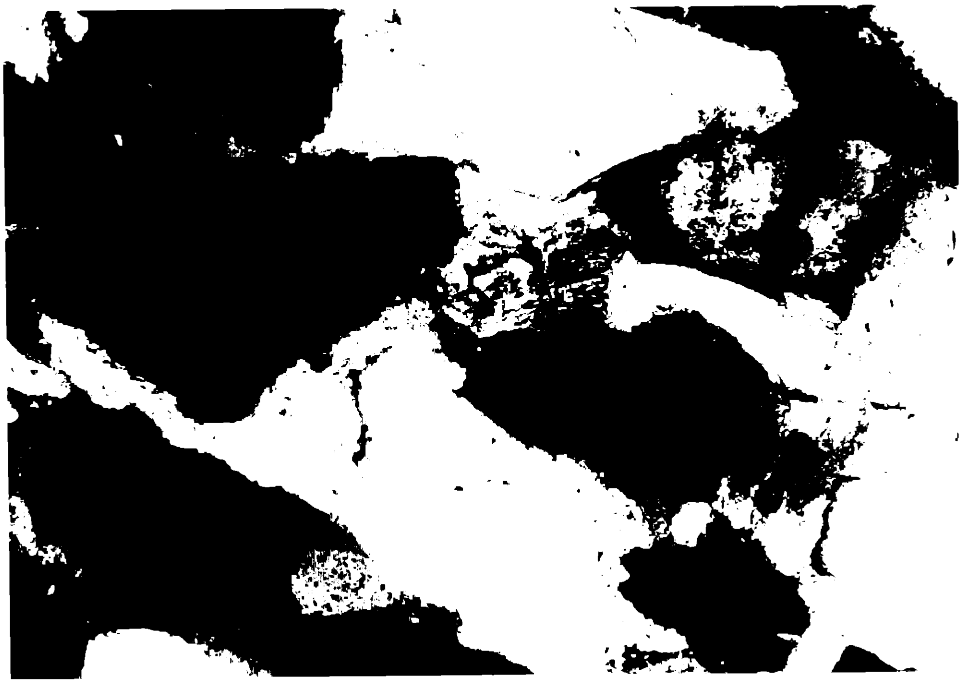
PE907638

This is an enclosure indicator page.
The enclosure PE907638 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907638 has the following characteristics:

ITEM_BARCODE =	PE907638
CONTAINER_BARCODE =	PE902238
NAME =	Thinsection Core Photograph
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	CORE_PHOTO
DESCRIPTION =	Thinsection Core Photograph, Plate 10 (Figure 2a & 2b from WCR appendix 9--Petrology) for Westgate-1A
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)



[illegible] crystal [illegible] porosity [illegible] also shown.

PE907626

This is an enclosure indicator page.
The enclosure PE907626 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907626 has the following characteristics:

```
     ITEM_BARCODE = PE907626
CONTAINER_BARCODE = PE902238
             NAME = Well Path Diagram
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = WELL
          SUBTYPE = DIAGRAM
      DESCRIPTION = Well Path Diagram (enclosure from WCR
                    appendix 9--Petrology) for Westgate-1A
          REMARKS =
     DATE_CREATED =
    DATE_RECEIVED = 3/02/87
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR =
    CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 10

Analysis of gas cut water from DST #1

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

2 May 1986

F 3/944/0
F 5203/86

Beach Petroleum NL
685 Camberwell Road
CAMBERWELL VIC 3124

Attention: Ian Buckingham

REPORT F 5203/86

YOUR REFERENCE: Letter received 24 March 1986

TITLE: Westgate No. 1

IDENTIFICATION: Gas

WORK REQUIRED: As in report

Investigation and Report by: David Fawcett, Nick Smith

Manager-Petroleum Services Section: Dr Brian G. Steveson

Roberto Cox

for Dr William G. Spencer
General Manager
Applied Sciences Group

cap

Head Office:
Flemington Street, Frewville
South Australia 5063
Telephone (08) 79 1662
Telex: Amdel AA82520
Pilot Plant:
Osman Place
Thebarton, S.A.
Telephone (08) 43 5733
Telex: Amdel AA82725
Branch Laboratories:
Melbourne, Vic.
Telephone (03) 645 3093
Perth, W.A.
Telephone (09) 325 7311
Telex: Amdel AA94893
Sydney, N.S.W.
Telephone (02) 439 7735
Telex: Amdel AA20053
Townsville
Queensland 4814
Telephone (077) 75 1377

amdel

WATER ANALYSIS REPORT

METHOD W2/1

SAMPLE ID. NO.1

CHEMICAL COMPOSITION

		MG/L	ME/L
CATIONS			
CALCIUM	(CA)	20.0	1.00
MAGNESIUM	(MG)	6.20	0.510
SODIUM	(NA)	95.0	4.13
POTASSIUM	(K)	27.0	0.690
ANIONS			
HYDROXIDE	(OH)		
CARBONATE	(CO3)		
BICARBONATE	(HCO3)	106	1.73
SULPHATE	(SO4)	15.0	0.312
CHLORIDE	(CL)	172	4.86
NITRATE	(NO3)	2.3	0.037

REACTION - PH	7.7
CONDUCTIVITY (E.C.) MICRO-S/CM AT 25 C	760
RESISTIVITY OHM.M @ 25C	13.2

DERIVED DATA

	MG/L
TOTAL DISSOLVED SOLIDS	
A. BASED ON E.C.	422
B. CALCULATED (HCO3=CO3)	390
TOTAL HARDNESS	75.5
CARBONATE HARDNESS	75.5
NON-CARBONATE HARDNESS	
TOTAL ALKALINITY	86.8
(EACH AS CACO3)	

TOTALS AND BALANCE

CATIONS(ME/L) 6.33 DIFF= 0.614
ANIONS (ME/L) 6.94 SUM = 13.3
DIFF*100./SUM = 4.63%

SODIUM / TOTAL CATION RATIO 65.3%

REMARKS

IMBALANCE DUE TO PRESENCE OF IRON, ALUMINIUM, AND AMMONIA (NESSLER REAGENT SPTO TEST)

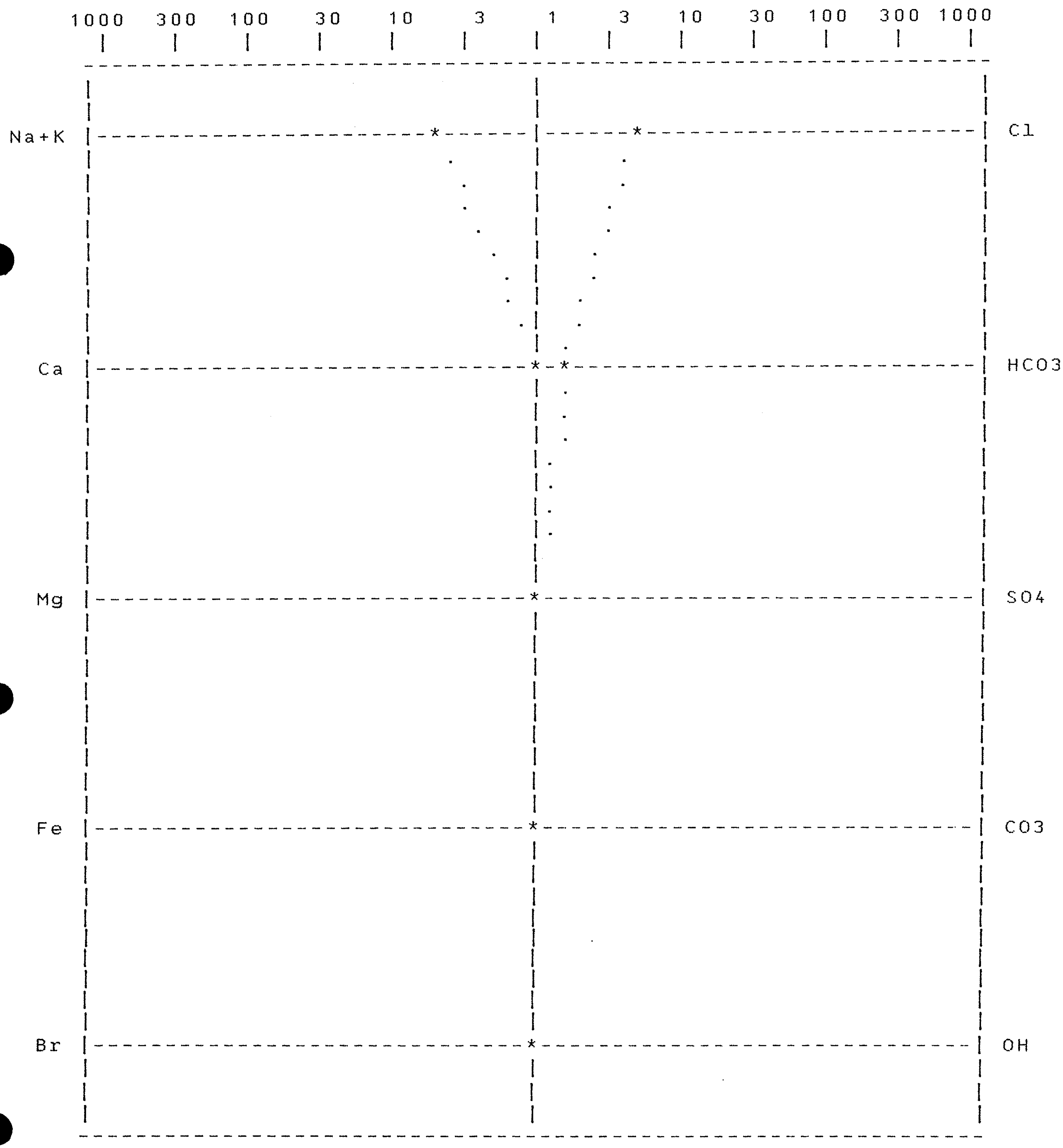
NOTE: MG/L = MILLIGRAMS PER LITRE
ME/L = MILLIEQUIVS. PER LITRE

amdel

STIFF DIAGRAM.

Sample: NO.1

Scale is logarithm (base 10) of milli-equivalent values



amdel

WATER ANALYSIS REPORT

METHOD W2/1

SAMPLE ID. NO. 2

CHEMICAL COMPOSITION

		MG/L	ME/L
CATIONS			
CALCIUM	(CA)	42.0	2.10
MAGNESIUM	(MG)	8.50	0.699
SODIUM	(NA)	100	4.35
POTASSIUM	(K)	22.0	0.563
ANIONS			
HYDROXIDE	(OH)		
CARBONATE	(CO3)		
BICARBONATE	(HCO3)	193	3.16
SULPHATE	(SO4)	26.0	0.542
CHLORIDE	(CL)	173	4.87
NITRATE	(NO3)	2.3	0.037

REACTION - PH	8.0
CONDUCTIVITY (E.C.) MICRO-S/CM AT 25 C	890
RESISTIVITY OHM.M @ 25C	11.2

DERIVED DATA

	MG/L
TOTAL DISSOLVED SOLIDS	
A. BASED ON E.C.	496
B. CALCULATED (HCO3=CO3)	468
TOTAL HARDNESS	140
CARBONATE HARDNESS	140
NON-CARBONATE HARDNESS	
TOTAL ALKALINITY (EACH AS CACO3)	158

TOTALS AND BALANCE

CATIONS(ME/L)	7.71	DIFF=	0.898
ANIONS (ME/L)	8.61	SUM =	16.3

DIFF*100./SUM = 5.51%

SODIUM / TOTAL CATION RATIO 56.4%

REMARKS

IMBALANCE DUE TO PRESENCE OF IRON, ZINC, MANGANESE, ALUMINIUM, NICKEL, AND STRONTIUM

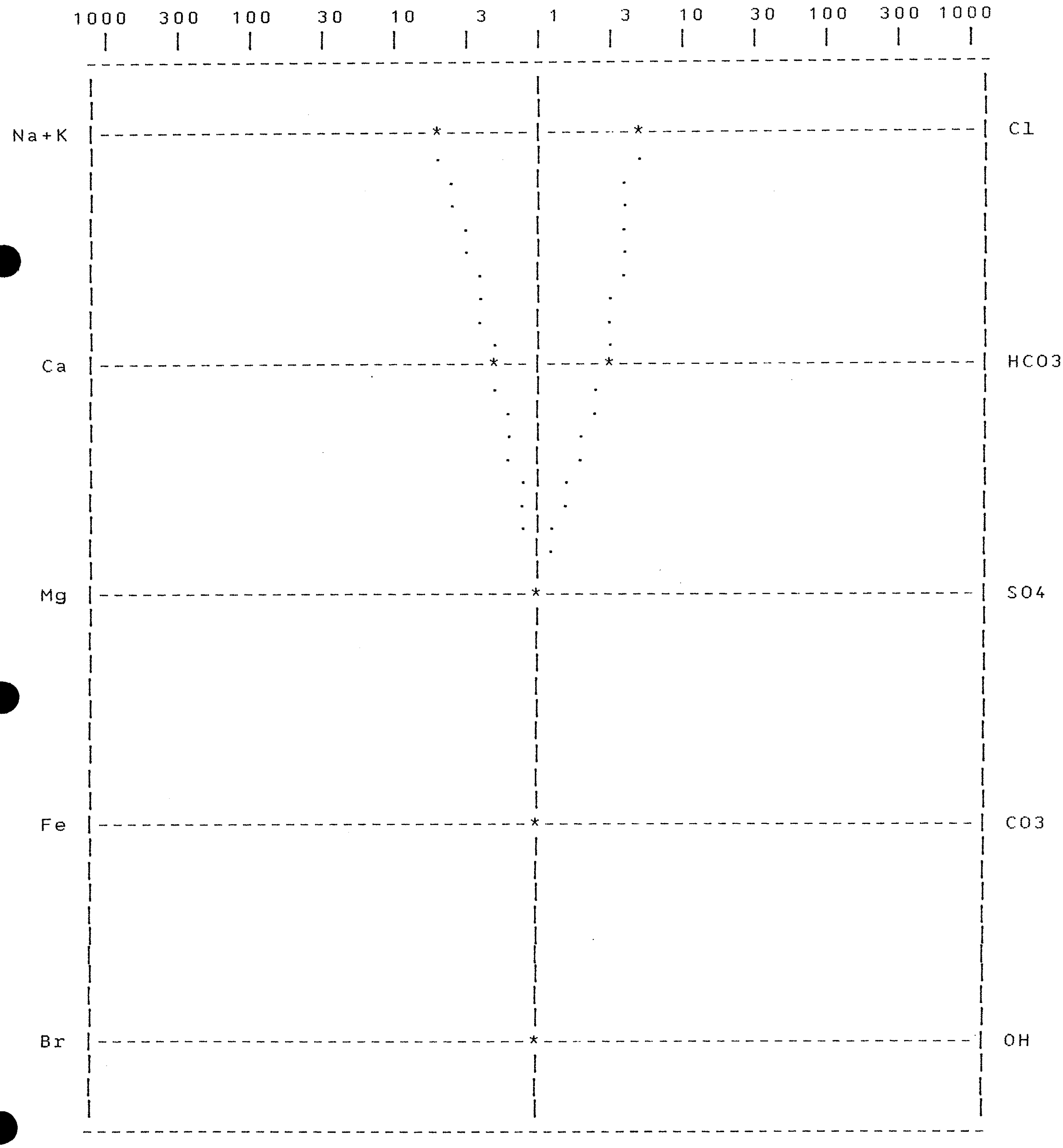
NOTE: MG/L = MILLIGRAMS PER LITRE
ME/L = MILLIEQUIVS. PER LITRE

amdel

STIFF DIAGRAM. JOB NO. 4292/86 Page W2

Sample: NO. 2

Scale is logarithm (base 10) of milli-equivalent values



AMDEL GAS ANALYSIS SERVICE Method R1.1

Client: BEACH PETROLEUM N.L. Report # 5203/86

Sample: WESTGATE NO.1
303-327 STROKES
SAMPLE NO.2

GAS	MOL %
Oxygen plus Argon	<0.01
Nitrogen	37.33
Carbon Dioxide	0.32
Methane	49.50
Ethane	7.20
Propane	3.02
I-Butane	0.67
N-Butane	1.11
I-Pentane	0.27
N-Pentane	0.20
Hexane	0.27
Heptanes	0.12
Octanes & Higher	0.00

(0.00 = less than 0.01%)

Calculated Gas Density
(Air = 1) : 0.82

Calorific Value (15.6 deg C, 760 mm Hg)

Gross:	800 BTU/CU Ft	29.78 MJ/CU.M
Nett:	725 BTU/CU Ft	27.02 MJ/CU.M

Average Molecular Weight = 23.76

All results are based on an air and water free basis

This report relates specifically to the sample tested; it also relates to the entire batch insofar as the sample is truly representative of the Batch.

Approved Signatory ____________________

Date 14-Apr-86

AMDEL GAS ANALYSIS SERVICE   Method R1.1

Client: BEACH PETROLEUM N.L.   Report # 5203/86

Sample: WESTGATE NO.1
206-302 STROKES
SAMPLE NO.1

GAS	MOL %
Oxygen plus Argon	<0.01
Nitrogen	24.24
Carbon Dioxide	0.00
Methane	60.82
Ethane	8.44
Propane	3.57
I-Butane	0.75
N-Butane	1.12
I-Pentane	0.28
N-Pentane	0.20
Hexane	0.33
Heptanes	0.23
Octanes & Higher	0.02

(0.00 = less than 0.01%)

Calculated Gas Density
(Air = 1) : 0.78

Calorific Value (15.6 deg C, 760 mm Hg)

Gross:	963 BTU/CU Ft	35.89 MJ/CU.M
Nett:	874 BTU/CU Ft	32.55 MJ/CU.M

Average Molecular Weight = 22.63

All results are based on an air and water free basis

This report relates specifically to the sample tested; it also relates to the entire batch insofar as the sample is truly representative of the Batch.

Approved Signatory ____________________

Date 14-Apr-86

APPENDIX 11

Magnetic single shot directional survey

BEACH PETROLEUM N.L.- WESTGATE No.1 - MAGNETIC SINGLE SHOT SURVEY - MARCH 1986

	MD	ANGLE	T V D	VERT SECTION	DIRECTION	NORTH	SOUTH	EAST	WEST
1	28.9	0.5	28.9	0.11	NORTH				
2	76.8	0.75	76.8	0.39	S 30.00 E	0.23		0.37	
3	125.5	0.5	125.49	0.02	N 50.00 W		0.03	0.09	
4	147.8	3.75	147.78	0.59	N 41.00 E	0.69		3.51	
5	175.6	8.25	175.42	5.34	N 27.00 E	3.09		5.13	
6	194.5	11	194.05	8.48	N 25.00 E	5.93		6.52	
7	204.2	12.5	203.55	10.45	N 27.00 E	7.71		7.38	
8	237.7	16	236.01	18.67	N 29.00 E	14.99		11.25	
9	275.2	18	271.87	29.63	N 30.00 E	24.53		16.65	
10	313.6	21	308.07	42.43	N 29.50 E	35.66		23.01	
11	352.3	24.25	343.78	57.31	N 30.00 E	48.58		30.4	
12	381	26.5	369.71	69.6	N 30.00 E	59.23		36.55	
13	437.8	28.75	420.03	95.92	N 31.00 E	81.92		49.91	
14	483.4	29	459.97	117.94	N 31.00 E	100.8		61.25	
15	525	29	496.35	138.11	N 31.50 E	118.04		71.72	
16	544.3	27.25	513.37	147.2	N 32.00 E	125.77		76.5	
17	562.6	25.5	529.76	155.33	N 32.50 E	132.65		80.84	
18	658	25.25	615.96	196.21	N 32.50 E	167.13		102.81	
19	782.4	26.25	728.01	250.25	N 33.00 E	212.58		132.04	
20	881.4	28.25	816.01	295.58	N 32.00 E	250.81		156.4	
21	1002	28.75	922	353.12	N 33.00 E	299.34		187.32	
22	1088.7	29	997.92	394.96	N 35.00 E	334.05		210.73	
23	1143.5	28.75	1045.91	421.39	N 34.50 E	355.8		225.81	
24	1181	28.75	1078.78	439.4	N 36.00 E	370.52		236.22	
25	1250.8	29.75	1139.68	473.39	N 37.50 E	397.85		256.63	
26	1289.2	29.25	1173.1	492.2	N 38.00 E	412.8		268.2	
27	1408.1	27.75	1277.59	548.51	N 40.00 E	456.89		303.9	
28	1506.7	26.5	1365.35	593	N 40.50 E	491.2		332.95	
29	1700.7	26	1539.34	677.77	N 41.25 E	556.08		389.1	
30	1917	21.75	1737.09	764.07	N 42.00 E	621.5		447.24	
31				CLOSURE 765.69m	N 35.73 E				

APPENDIX 12

Wireline log directional survey

```
****************
*              *
****************
* SCHLUMBERGER *
****************
```

DIRECTIONAL SURVEY

COMPANY	:	BEACH PETROLEUM
WELL	:	WESTGATE #1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	ONE
DATE LOGGED	:	25 - MAR - 86
REFERENCE	:	460503

```
***************
*             *
***************
* SCHLUMBERGER *
***************
```

DIRECTIONAL SURVEY

COMPANY	:	BEACH PETROLEUM
WELL	:	WESTGATE #1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	ONE
DATE LOGGED	:	25 - MAR - 86
REFERENCE	:	460503

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
0.0	0.0	0	0.0	0.0	0.0	0.0
1.2	0.0	0	1.2	0.0	0.0	0.0
3.0	0.1	0	3.0	0.0	0.0	0.0
4.0	0.1	0	4.0	0.0	0.0	0.0
5.0	0.1	0	5.0	0.0	0.0	0.0
6.0	0.1	0	6.0	0.0	0.0	0.0
7.0	0.1	0	7.0	0.0	0.0	0.0
8.0	0.1	0	8.0	0.0	0.0	0.0
9.0	0.2	0	9.0	0.0	0.0	0.0
10.0	0.2	0	10.0	0.0	0.0	0.0
11.0	0.2	0	11.0	0.0	0.0	0.0
12.0	0.2	0	12.0	0.0	0.0	0.0
13.0	0.2	0	13.0	0.0	0.0	0.0
14.0	0.3	0	14.0	0.0	0.0	0.0
15.0	0.3	0	15.0	0.0	0.0	0.0
16.0	0.3	0	16.0	0.0	0.0	0.0
17.0	0.3	0	17.0	0.0	0.0	0.0
18.0	0.3	0	18.0	0.0	0.0	0.0
19.0	0.3	0	19.0	0.0	0.0	0.0
20.0	0.4	0	20.0	0.1	0.0	0.1
21.0	0.4	0	21.0	0.1	0.0	0.1
22.0	0.4	0	22.0	0.1	0.0	0.1
23.0	0.4	0	23.0	0.1	0.0	0.1
24.0	0.4	0	24.0	0.1	0.0	0.1
25.0	0.4	0	25.0	0.1	0.0	0.1
26.0	0.4	0	26.0	0.1	0.0	0.1
27.0	0.4	0	27.0	0.1	0.0	0.1
28.0	0.5	0	28.0	0.1	0.0	0.1
29.0	0.5	0	29.0	0.1	0.0	0.1
30.0	0.5	1	30.0	0.1	0.0	0.1
31.0	0.5	1	31.0	0.1	0.0	0.1
32.0	0.5	2	32.0	0.1	0.0	0.1
33.0	0.5	2	33.0	0.2	0.0	0.2
34.0	0.5	3	34.0	0.2	0.0	0.2
35.0	0.5	3	35.0	0.2	0.0	0.2
36.0	0.5	4	36.0	0.2	0.0	0.2
37.0	0.5	5	37.0	0.2	0.0	0.2
38.0	0.5	5	38.0	0.2	0.0	0.2
39.0	0.5	6	39.0	0.2	0.0	0.2
40.0	0.5	6	40.0	0.2	0.0	0.2
41.0	0.5	7	41.0	0.2	0.0	0.2
42.0	0.5	7	42.0	0.2	0.0	0.2
43.0	0.5	8	43.0	0.2	0.0	0.2
44.0	0.5	9	44.0	0.2	0.0	0.2
45.0	0.5	9	45.0	0.3	0.0	0.3
46.0	0.5	10	46.0	0.3	0.0	0.3

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
47.0	0.5	10	47.0	0.3	0.0	0.3
48.0	0.5	11	48.0	0.3	0.0	0.3
49.0	0.5	11	49.0	0.3	0.0	0.3
50.0	0.5	12	50.0	0.3	0.0	0.3
51.0	0.5	13	51.0	0.3	0.0	0.3
52.0	0.5	13	52.0	0.3	0.0	0.3
53.0	0.5	14	53.0	0.3	0.0	0.3
54.0	0.5	14	54.0	0.3	0.0	0.3
55.0	0.5	15	55.0	0.3	0.0	0.3
56.0	0.5	15	56.0	0.4	0.0	0.4
57.0	0.5	16	57.0	0.4	0.0	0.4
58.0	0.5	17	58.0	0.4	0.0	0.4
59.0	0.5	17	59.0	0.4	0.0	0.4
60.0	0.5	18	60.0	0.4	0.0	0.4
61.0	0.5	18	61.0	0.4	0.0	0.4
62.0	0.5	19	62.0	0.4	0.0	0.4
63.0	0.5	19	63.0	0.4	0.0	0.4
64.0	0.5	20	64.0	0.4	0.0	0.4
65.0	0.5	21	65.0	0.4	0.1	0.4
66.0	0.5	21	66.0	0.4	0.1	0.4
67.0	0.5	22	67.0	0.4	0.1	0.4
68.0	0.5	22	68.0	0.5	0.1	0.5
69.0	0.5	23	69.0	0.5	0.1	0.5
70.0	0.5	23	70.0	0.5	0.1	0.5
71.0	0.5	24	71.0	0.5	0.1	0.5
72.0	0.5	25	72.0	0.5	0.1	0.5
73.0	0.5	25	73.0	0.5	0.1	0.5
74.0	0.5	26	74.0	0.5	0.1	0.5
75.0	0.5	26	75.0	0.5	0.1	0.5
76.0	0.5	27	76.0	0.5	0.1	0.5
77.0	0.5	27	77.0	0.5	0.1	0.5
78.0	0.5	28	78.0	0.5	0.1	0.5
79.0	0.5	29	79.0	0.5	0.1	0.5
80.0	0.5	29	80.0	0.5	0.1	0.6
81.0	0.5	30	81.0	0.6	0.1	0.6
82.0	0.5	30	82.0	0.6	0.1	0.6
83.0	0.5	31	83.0	0.6	0.1	0.6
84.0	0.5	31	84.0	0.6	0.1	0.6
85.0	0.5	32	85.0	0.6	0.1	0.6
86.0	0.5	33	86.0	0.6	0.1	0.6
87.0	0.5	33	87.0	0.6	0.1	0.6
88.0	0.5	34	88.0	0.6	0.1	0.6
89.0	0.5	34	89.0	0.6	0.1	0.6
90.0	0.5	35	90.0	0.6	0.2	0.6
91.0	0.5	35	91.0	0.6	0.2	0.6
92.0	0.5	36	92.0	0.6	0.2	0.7
93.0	0.5	36	93.0	0.6	0.2	0.7

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
94.0	0.5	37	94.0	0.6	0.2	0.7
95.0	0.5	38	95.0	0.7	0.2	0.7
96.0	0.5	38	96.0	0.7	0.2	0.7
97.0	0.5	39	97.0	0.7	0.2	0.7
98.0	0.5	39	98.0	0.7	0.2	0.7
99.0	0.5	40	99.0	0.7	0.2	0.7
100.0	0.5	40	100.0	0.7	0.2	0.7
101.0	0.5	41	101.0	0.7	0.2	0.7
102.0	0.5	42	102.0	0.7	0.2	0.7
103.0	0.5	42	103.0	0.7	0.2	0.7
104.0	0.5	43	104.0	0.7	0.2	0.8
105.0	0.5	43	105.0	0.7	0.2	0.8
106.0	0.5	44	106.0	0.7	0.2	0.8
107.0	0.5	44	107.0	0.7	0.2	0.8
108.0	0.5	45	108.0	0.7	0.2	0.8
109.0	0.5	46	109.0	0.7	0.3	0.8
110.0	0.5	46	110.0	0.8	0.3	0.8
111.0	0.5	47	111.0	0.8	0.3	0.8
112.0	0.5	47	112.0	0.8	0.3	0.8
113.0	0.5	48	113.0	0.8	0.3	0.8
114.0	0.5	48	114.0	0.8	0.3	0.8
115.0	0.5	49	115.0	0.8	0.3	0.8
116.0	0.5	50	116.0	0.8	0.3	0.8
117.0	0.5	50	117.0	0.8	0.3	0.9
118.0	0.5	51	118.0	0.8	0.3	0.9
119.0	0.5	51	119.0	0.8	0.3	0.9
120.0	0.5	52	120.0	0.8	0.3	0.9
121.0	0.5	52	121.0	0.8	0.3	0.9
122.0	0.5	53	122.0	0.8	0.3	0.9
123.0	0.5	54	123.0	0.8	0.3	0.9
124.0	0.5	54	124.0	0.8	0.4	0.9
125.0	0.5	54	125.0	0.8	0.4	0.9
126.0	0.6	54	126.0	0.8	0.4	0.9
127.0	0.8	54	127.0	0.8	0.4	0.9
128.0	0.9	53	128.0	0.9	0.4	0.9
129.0	1.0	53	129.0	0.9	0.4	1.0
130.0	1.2	52	130.0	0.9	0.4	1.0
131.0	1.3	52	131.0	0.9	0.4	1.0
132.0	1.5	51	132.0	0.9	0.4	1.0
133.0	1.6	50	133.0	0.9	0.5	1.0
134.0	1.8	50	134.0	0.9	0.5	1.0
135.0	1.9	49	135.0	0.9	0.5	1.1
136.0	2.1	48	136.0	1.0	0.5	1.1
137.0	2.2	48	137.0	1.0	0.5	1.1
138.0	2.3	47	138.0	1.0	0.6	1.2
139.0	2.5	47	139.0	1.0	0.6	1.2
140.0	2.6	46	140.0	1.1	0.6	1.2

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
141.0	2.8	45	141.0	1.1	0.7	1.3
142.0	2.9	45	142.0	1.1	0.7	1.3
143.0	3.1	44	143.0	1.2	0.7	1.4
144.0	3.2	43	144.0	1.2	0.8	1.4
145.0	3.4	43	145.0	1.2	0.8	1.5
146.0	3.5	42	146.0	1.3	0.8	1.5
147.0	3.7	41	147.0	1.3	0.9	1.6
148.0	3.8	41	148.0	1.4	0.9	1.7
149.0	3.9	40	149.0	1.4	1.0	1.7
150.0	4.1	40	150.0	1.5	1.0	1.8
151.0	4.2	39	151.0	1.5	1.1	1.9
152.0	4.4	39	152.0	1.6	1.1	1.9
153.0	4.6	38	153.0	1.6	1.2	2.0
154.0	4.7	38	154.0	1.7	1.2	2.1
155.0	4.9	37	155.0	1.8	1.2	2.2
156.0	5.1	37	156.0	1.8	1.3	2.2
157.0	5.2	36	157.0	1.9	1.4	2.3
158.0	5.4	36	158.0	2.0	1.4	2.4
159.0	5.6	35	158.9	2.0	1.5	2.5
160.0	5.7	35	159.9	2.1	1.5	2.6
161.0	5.9	34	160.9	2.2	1.6	2.7
162.0	6.0	34	161.9	2.3	1.6	2.8
163.0	6.2	33	162.9	2.4	1.7	2.9
164.0	6.4	33	163.9	2.4	1.7	3.0
165.0	6.6	32	164.9	2.5	1.8	3.1
166.0	6.7	32	165.9	2.6	1.9	3.2
167.0	6.9	31	166.9	2.7	1.9	3.3
168.0	7.0	31	167.9	2.8	2.0	3.5
169.0	7.2	30	168.9	2.9	2.0	3.6
170.0	7.4	30	169.9	3.0	2.1	3.7
171.0	7.5	29	170.9	3.1	2.2	3.8
172.0	7.7	29	171.9	3.3	2.2	3.9
173.0	7.8	28	172.9	3.4	2.3	4.1
174.0	8.0	28	173.8	3.5	2.4	4.2
175.0	8.1	27	174.8	3.6	2.4	4.4
176.0	8.3	27	175.8	3.7	2.5	4.5
177.0	8.4	27	176.8	3.9	2.6	4.6
178.0	8.6	27	177.8	4.0	2.6	4.8
179.0	8.7	27	178.8	4.1	2.7	4.9
180.0	8.9	27	179.8	4.2	2.8	5.1
181.0	9.0	26	180.8	4.4	2.8	5.2
182.0	9.2	26	181.8	4.5	2.9	5.4
183.0	9.3	26	182.7	4.7	3.0	5.5
184.0	9.5	26	183.7	4.8	3.0	5.7
185.0	9.6	26	184.7	5.0	3.1	5.8
186.0	9.7	26	185.7	5.1	3.2	6.0
187.0	9.9	26	186.7	5.3	3.3	6.2

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
188.0	10.0	26	187.7	5.4	3.3	6.3
189.0	10.2	26	188.7	5.6	3.4	6.5
190.0	10.3	25	189.7	5.7	3.5	6.7
191.0	10.5	25	190.6	5.9	3.6	6.9
192.0	10.6	25	191.6	6.0	3.6	7.0
193.0	10.8	25	192.6	6.2	3.7	7.2
194.0	10.9	25	193.6	6.4	3.8	7.4
195.0	11.1	25	194.6	6.5	3.9	7.6
196.0	11.2	25	195.5	6.7	4.0	7.8
197.0	11.3	26	196.5	6.9	4.0	8.0
198.0	11.4	26	197.5	7.1	4.1	8.2
199.0	11.5	26	198.5	7.2	4.2	8.4
200.0	11.7	26	199.5	7.4	4.3	8.6
201.0	11.8	26	200.5	7.6	4.4	8.8
202.0	12.0	27	201.4	7.8	4.5	9.0
203.0	12.1	27	202.4	8.0	4.6	9.2
204.0	12.3	27	203.4	8.1	4.6	9.4
205.0	12.4	27	204.4	8.3	4.7	9.6
206.0	12.5	27	205.3	8.5	4.8	9.8
207.0	12.6	27	206.3	8.7	4.9	10.0
208.0	12.7	27	207.3	8.9	5.0	10.2
209.0	12.8	27	208.3	9.1	5.1	10.5
210.0	12.9	27	209.2	9.3	5.2	10.7
211.0	13.0	27	210.2	9.5	5.3	10.9
212.0	13.2	27	211.2	9.7	5.4	11.1
213.0	13.3	28	212.2	9.9	5.5	11.3
214.0	13.4	28	213.1	10.1	5.7	11.6
215.0	13.5	28	214.1	10.3	5.8	11.8
216.0	13.6	28	215.1	10.5	5.9	12.0
217.0	13.7	28	216.1	10.7	6.0	12.3
218.0	13.8	28	217.0	10.9	6.1	12.5
219.0	13.9	28	218.0	11.1	6.2	12.7
220.0	14.0	28	219.0	11.3	6.3	13.0
221.0	14.1	28	219.9	11.6	6.4	13.2
222.0	14.2	28	220.9	11.8	6.5	13.5
223.0	14.4	28	221.9	12.0	6.6	13.7
224.0	14.5	28	222.9	12.2	6.8	14.0
225.0	14.6	28	223.8	12.4	6.9	14.2
226.0	14.7	28	224.8	12.6	7.0	14.4
227.0	14.8	28	225.8	12.9	7.1	14.7
228.0	14.9	28	226.7	13.1	7.2	15.0
229.0	15.0	29	227.7	13.3	7.4	15.2
230.0	15.1	29	228.7	13.5	7.5	15.5
231.0	15.2	29	229.6	13.8	7.6	15.7
232.0	15.3	29	230.6	14.0	7.7	16.0
233.0	15.5	29	231.6	14.2	7.9	16.3
234.0	15.6	29	232.5	14.5	8.0	16.5

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
235.0	15.7	29	233.5	14.7	8.1	16.8
236.0	15.8	29	234.4	14.9	8.2	17.1
237.0	15.9	29	235.4	15.2	8.4	17.3
238.0	16.0	29	236.4	15.4	8.5	17.6
239.0	16.0	29	237.3	15.6	8.6	17.9
240.0	16.1	29	238.3	15.9	8.8	18.1
241.0	16.2	29	239.3	16.1	8.9	18.4
242.0	16.3	29	240.2	16.4	9.0	18.7
243.0	16.3	29	241.2	16.6	9.2	19.0
244.0	16.4	29	242.1	16.9	9.3	19.3
245.0	16.4	29	243.1	17.1	9.4	19.5
246.0	16.4	29	244.1	17.3	9.6	19.8
247.0	16.5	29	245.0	17.6	9.7	20.1
248.0	16.6	29	246.0	17.8	9.9	20.4
249.0	16.6	29	246.9	18.1	10.0	20.7
250.0	16.7	29	247.9	18.3	10.1	21.0
251.0	16.7	29	248.9	18.6	10.3	21.2
252.0	16.7	29	249.8	18.8	10.4	21.5
253.0	16.8	29	250.8	19.1	10.6	21.8
254.0	16.8	29	251.7	19.3	10.7	22.1
255.0	16.9	29	252.7	19.6	10.8	22.4
256.0	17.0	29	253.6	19.8	11.0	22.7
257.0	17.0	30	254.6	20.1	11.1	23.0
258.0	17.1	30	255.6	20.4	11.3	23.3
259.0	17.1	30	256.5	20.6	11.4	23.6
260.0	17.2	30	257.5	20.9	11.6	23.9
261.0	17.2	30	258.4	21.1	11.7	24.1
262.0	17.3	30	259.4	21.4	11.9	24.4
263.0	17.3	30	260.3	21.6	12.0	24.7
264.0	17.4	30	261.3	21.9	12.1	25.0
265.0	17.4	30	262.2	22.2	12.3	25.3
266.0	17.5	30	263.2	22.4	12.4	25.6
267.0	17.6	30	264.1	22.7	12.6	25.9
268.0	17.6	30	265.1	22.9	12.7	26.2
269.0	17.7	30	266.1	23.2	12.9	26.5
270.0	17.7	30	267.0	23.5	13.0	26.8
271.0	17.8	30	268.0	23.7	13.2	27.1
272.0	17.8	30	268.9	24.0	13.3	27.4
273.0	17.9	30	269.9	24.2	13.5	27.7
274.0	17.9	30	270.8	24.5	13.6	28.1
275.0	18.0	30	271.8	24.8	13.8	28.4
276.0	18.0	30	272.7	25.0	14.0	28.7
277.0	18.1	30	273.7	25.3	14.1	29.0
278.0	18.2	30	274.6	25.6	14.3	29.3
279.0	18.3	30	275.6	25.9	14.4	29.6
280.0	18.4	30	276.5	26.1	14.6	29.9
281.0	18.5	30	277.5	26.4	14.7	30.2

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
282.0	18.6	30	278.4	26.7	14.9	30.5
283.0	18.6	30	279.4	26.9	15.0	30.9
284.0	18.7	30	280.3	27.2	15.2	31.2
285.0	18.8	30	281.3	27.5	15.4	31.5
286.0	18.9	30	282.2	27.8	15.5	31.8
287.0	18.9	30	283.2	28.1	15.7	32.1
288.0	19.0	30	284.1	28.3	15.8	32.5
289.0	19.1	30	285.1	28.6	16.0	32.8
290.0	19.2	30	286.0	28.9	16.2	33.1
291.0	19.2	30	286.9	29.2	16.3	33.4
292.0	19.3	30	287.9	29.5	16.5	33.8
293.0	19.4	30	288.8	29.8	16.7	34.1
294.0	19.5	30	289.8	30.0	16.8	34.4
295.0	19.5	30	290.7	30.3	17.0	34.8
296.0	19.6	30	291.7	30.6	17.2	35.1
297.0	19.7	30	292.6	30.9	17.3	35.4
298.0	19.8	30	293.5	31.2	17.5	35.8
299.0	19.9	30	294.5	31.5	17.7	36.1
300.0	20.0	30	295.4	31.8	17.8	36.4
301.0	20.1	30	296.4	32.1	18.0	36.8
302.0	20.1	30	297.3	32.4	18.2	37.1
303.0	20.2	30	298.2	32.7	18.3	37.5
304.0	20.3	30	299.2	33.0	18.5	37.8
305.0	20.3	30	300.1	33.3	18.7	38.2
306.0	20.4	30	301.1	33.6	18.8	38.5
307.0	20.5	30	302.0	33.9	19.0	38.9
308.0	20.6	30	302.9	34.2	19.2	39.2
309.0	20.6	30	303.9	34.5	19.4	39.5
310.0	20.7	30	304.8	34.8	19.5	39.9
311.0	20.8	30	305.7	35.1	19.7	40.3
312.0	20.9	30	306.7	35.4	19.9	40.6
313.0	20.9	30	307.6	35.7	20.1	41.0
314.0	21.0	30	308.5	36.0	20.2	41.3
315.0	21.1	30	309.5	36.3	20.4	41.7
316.0	21.2	30	310.4	36.7	20.6	42.0
317.0	21.3	30	311.3	37.0	20.8	42.4
318.0	21.4	30	312.3	37.3	20.9	42.8
319.0	21.5	30	313.2	37.6	21.1	43.1
320.0	21.5	30	314.1	37.9	21.3	43.5
321.0	21.6	30	315.1	38.2	21.5	43.9
322.0	21.7	30	316.0	38.6	21.7	44.2
323.0	21.8	30	316.9	38.9	21.8	44.6
324.0	21.9	30	317.9	39.2	22.0	45.0
325.0	22.0	30	318.8	39.5	22.2	45.3
326.0	22.1	30	319.7	39.8	22.4	45.7
327.0	22.2	30	320.6	40.2	22.6	46.1
328.0	22.2	30	321.6	40.5	22.8	46.5

REF 460503

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
329.0	22.3	30	322.5	40.8	23.0	46.8
330.0	22.4	30	323.4	41.2	23.1	47.2
331.0	22.4	30	324.4	41.5	23.3	47.6
332.0	22.5	30	325.3	41.8	23.5	48.0
333.0	22.6	30	326.2	42.1	23.7	48.4
334.0	22.7	30	327.1	42.5	23.9	48.7
335.0	22.8	30	328.0	42.8	24.1	49.1
336.0	22.9	30	329.0	43.1	24.3	49.5
337.0	23.0	30	329.9	43.5	24.5	49.9
338.0	23.1	30	330.8	43.8	24.7	50.3
339.0	23.1	30	331.7	44.2	24.9	50.7
340.0	23.2	30	332.7	44.5	25.1	51.1
341.0	23.3	30	333.6	44.8	25.2	51.5
342.0	23.4	30	334.5	45.2	25.4	51.9
343.0	23.5	30	335.4	45.5	25.6	52.2
344.0	23.6	30	336.3	45.9	25.8	52.6
345.0	23.7	30	337.2	46.2	26.0	53.0
346.0	23.7	30	338.2	46.6	26.2	53.4
347.0	23.8	30	339.1	46.9	26.4	53.8
348.0	23.9	30	340.0	47.3	26.6	54.2
349.0	24.0	30	340.9	47.6	26.8	54.7
350.0	24.0	30	341.8	48.0	27.0	55.1
351.0	24.2	30	342.7	48.3	27.2	55.5
352.0	24.3	30	343.6	48.7	27.4	55.9
353.0	24.3	30	344.6	49.0	27.7	56.3
354.0	24.4	30	345.5	49.4	27.9	56.7
355.0	24.5	30	346.4	49.7	28.1	57.1
356.0	24.6	30	347.3	50.1	28.3	57.5
357.0	24.6	30	348.2	50.4	28.5	57.9
358.0	24.7	30	349.1	50.8	28.7	58.3
359.0	24.8	30	350.0	51.2	28.9	58.8
360.0	24.9	30	350.9	51.5	29.1	59.2
361.0	24.9	30	351.8	51.9	29.3	59.6
362.0	25.0	30	352.7	52.3	29.5	60.0
363.0	25.1	30	353.7	52.6	29.7	60.4
364.0	25.1	30	354.6	53.0	29.9	60.9
365.0	25.2	30	355.5	53.4	30.2	61.3
366.0	25.3	30	356.4	53.7	30.4	61.7
367.0	25.4	30	357.3	54.1	30.6	62.1
368.0	25.4	30	358.2	54.5	30.8	62.6
369.0	25.5	30	359.1	54.8	31.0	63.0
370.0	25.6	30	360.0	55.2	31.2	63.4
371.0	25.7	30	360.9	55.6	31.4	63.9
372.0	25.8	30	361.8	56.0	31.7	64.3
373.0	25.9	30	362.7	56.3	31.9	64.7
374.0	26.0	30	363.6	56.7	32.1	65.2
375.0	26.1	30	364.5	57.1	32.3	65.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
376.0	26.1	30	365.4	57.5	32.5	66.0
377.0	26.2	30	366.3	57.8	32.8	66.5
378.0	26.3	30	367.2	58.2	33.0	66.9
379.0	26.3	30	368.1	58.6	33.2	67.4
380.0	26.4	30	369.0	59.0	33.4	67.8
381.0	26.5	30	369.9	59.4	33.6	68.2
382.0	26.6	30	370.8	59.8	33.9	68.7
383.0	26.6	30	371.7	60.2	34.1	69.1
384.0	26.7	30	372.6	60.5	34.3	69.6
385.0	26.7	30	373.5	60.9	34.5	70.0
386.0	26.7	30	374.3	61.3	34.8	70.5
387.0	26.8	30	375.2	61.7	35.0	70.9
388.0	26.8	30	376.1	62.1	35.2	71.4
389.0	26.8	30	377.0	62.5	35.4	71.8
390.0	26.9	30	377.9	62.9	35.7	72.3
391.0	26.9	30	378.8	63.3	35.9	72.7
392.0	26.9	30	379.7	63.7	36.1	73.2
393.0	27.0	30	380.6	64.0	36.3	73.6
394.0	27.0	30	381.5	64.4	36.6	74.1
395.0	27.1	30	382.4	64.8	36.8	74.5
396.0	27.1	30	383.3	65.2	37.0	75.0
397.0	27.1	30	384.2	65.6	37.3	75.5
398.0	27.2	30	385.0	66.0	37.5	75.9
399.0	27.2	30	385.9	66.4	37.7	76.4
400.0	27.2	30	386.8	66.8	37.9	76.8
401.0	27.3	30	387.7	67.2	38.2	77.3
402.0	27.3	30	388.6	67.6	38.4	77.7
403.0	27.3	30	389.5	68.0	38.6	78.2
404.0	27.4	30	390.4	68.4	38.9	78.7
405.0	27.4	30	391.3	68.8	39.1	79.1
406.0	27.5	30	392.2	69.2	39.3	79.6
407.0	27.6	30	393.0	69.6	39.6	80.0
408.0	27.6	30	393.9	70.0	39.8	80.5
409.0	27.7	30	394.8	70.4	40.0	81.0
410.0	27.7	31	395.7	70.8	40.3	81.4
411.0	27.7	31	396.6	71.2	40.5	81.9
412.0	27.8	31	397.5	71.6	40.7	82.4
413.0	27.8	31	398.4	72.0	41.0	82.8
414.0	27.8	31	399.2	72.4	41.2	83.3
415.0	27.9	31	400.1	72.8	41.5	83.7
416.0	27.9	31	401.0	73.2	41.7	84.2
417.0	28.0	31	401.9	73.6	41.9	84.7
418.0	28.0	31	402.8	74.0	42.2	85.2
419.0	28.0	31	403.7	74.4	42.4	85.6
420.0	28.1	31	404.5	74.8	42.6	86.1
421.0	28.1	31	405.4	75.2	42.9	86.6
422.0	28.1	31	406.3	75.6	43.1	87.0

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
423.0	28.2	31	407.2	76.0	43.4	87.5
424.0	28.2	31	408.1	76.4	43.6	88.0
425.0	28.2	31	409.0	76.8	43.9	88.4
426.0	28.3	31	409.8	77.2	44.1	88.9
427.0	28.3	31	410.7	77.6	44.3	89.4
428.0	28.4	31	411.6	78.0	44.6	89.9
429.0	28.4	31	412.5	78.4	44.8	90.3
430.0	28.4	31	413.4	78.8	45.1	90.8
431.0	28.5	31	414.2	79.3	45.3	91.3
432.0	28.5	31	415.1	79.7	45.6	91.8
433.0	28.6	31	416.0	80.1	45.8	92.2
434.0	28.7	31	416.9	80.5	46.0	92.7
435.0	28.7	31	417.8	80.9	46.3	93.2
436.0	28.7	31	418.6	81.3	46.5	93.7
437.0	28.8	31	419.5	81.7	46.8	94.2
438.0	28.8	31	420.4	82.1	47.0	94.6
439.0	28.9	31	421.3	82.5	47.3	95.1
440.0	28.9	31	422.1	83.0	47.5	95.6
441.0	28.9	31	423.0	83.4	47.8	96.1
442.0	29.0	31	423.9	83.8	48.0	96.6
443.0	29.0	31	424.8	84.2	48.3	97.1
444.0	29.1	31	425.6	84.6	48.5	97.5
445.0	29.2	31	426.5	85.0	48.8	98.0
446.0	29.2	31	427.4	85.4	49.0	98.5
447.0	29.3	31	428.3	85.9	49.3	99.0
448.0	29.3	31	429.1	86.3	49.5	99.5
449.0	29.3	31	430.0	86.7	49.8	100.0
450.0	29.4	31	430.9	87.1	50.0	100.5
451.0	29.4	31	431.8	87.5	50.3	101.0
452.0	29.5	31	432.6	88.0	50.5	101.4
453.0	29.5	31	433.5	88.4	50.8	101.9
454.0	29.6	30	434.4	88.8	51.0	102.4
455.0	29.6	30	435.2	89.2	51.3	102.9
456.0	29.7	30	436.1	89.7	51.5	103.4
457.0	29.7	30	437.0	90.1	51.8	103.9
458.0	29.8	30	437.8	90.5	52.0	104.4
459.0	29.8	30	438.7	90.9	52.3	104.9
460.0	29.8	30	439.6	91.4	52.5	105.4
461.0	29.9	30	440.4	91.8	52.8	105.9
462.0	30.0	30	441.3	92.2	53.0	106.4
463.0	30.0	30	442.2	92.7	53.3	106.9
464.0	30.1	30	443.0	93.1	53.5	107.4
465.0	30.2	30	443.9	93.5	53.8	107.9
466.0	30.4	30	444.8	94.0	54.0	108.4
467.0	30.7	30	445.6	94.4	54.3	108.9
468.0	30.8	30	446.5	94.8	54.5	109.4
469.0	30.7	30	447.4	95.3	54.8	109.9

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
470.0	30.7	30	448.2	95.7	55.0	110.4
471.0	30.7	30	449.1	96.2	55.3	110.9
472.0	30.8	30	449.9	96.6	55.6	111.4
473.0	30.9	30	450.8	97.0	55.8	112.0
474.0	30.9	30	451.7	97.5	56.1	112.5
475.0	31.0	30	452.5	97.9	56.3	113.0
476.0	31.0	30	453.4	98.4	56.6	113.5
477.0	31.0	30	454.2	98.8	56.9	114.0
478.0	31.1	30	455.1	99.3	57.1	114.5
479.0	31.1	30	455.9	99.7	57.4	115.0
480.0	31.0	30	456.8	100.2	57.6	115.6
481.0	31.0	30	457.7	100.6	57.9	116.1
482.0	30.8	30	458.5	101.0	58.1	116.6
483.0	30.5	30	459.4	101.5	58.4	117.1
484.0	30.2	30	460.2	101.9	58.7	117.6
485.0	30.0	30	461.1	102.4	58.9	118.1
486.0	29.8	29	462.0	102.8	59.2	118.6
487.0	29.7	29	462.8	103.2	59.4	119.1
488.0	29.7	29	463.7	103.7	59.7	119.6
489.0	29.6	29	464.6	104.1	59.9	120.1
490.0	29.6	29	465.4	104.5	60.1	120.6
491.0	29.7	30	466.3	105.0	60.4	121.1
492.0	29.7	30	467.2	105.4	60.6	121.6
493.0	29.7	30	468.0	105.8	60.9	122.1
494.0	29.7	30	468.9	106.3	61.1	122.6
495.0	29.7	30	469.8	106.7	61.4	123.1
496.0	29.8	30	470.6	107.1	61.6	123.6
497.0	29.9	30	471.5	107.6	61.9	124.1
498.0	30.0	30	472.4	108.0	62.1	124.6
499.0	30.0	31	473.2	108.4	62.4	125.1
500.0	30.0	31	474.1	108.8	62.6	125.6
501.0	30.0	31	475.0	109.3	62.9	126.1
502.0	30.0	31	475.8	109.7	63.1	126.6
503.0	30.0	31	476.7	110.1	63.4	127.1
504.0	30.0	31	477.6	110.6	63.6	127.6
505.0	30.0	31	478.4	111.0	63.9	128.1
506.0	30.0	31	479.3	111.4	64.1	128.6
507.0	30.0	31	480.2	111.8	64.4	129.1
508.0	30.0	31	481.0	112.3	64.7	129.6
509.0	30.0	31	481.9	112.7	64.9	130.1
510.0	30.0	31	482.8	113.1	65.2	130.6
511.0	29.9	31	483.6	113.6	65.4	131.1
512.0	29.9	31	484.5	114.0	65.7	131.6
513.0	30.0	31	485.4	114.4	65.9	132.1
514.0	30.0	31	486.2	114.8	66.2	132.6
515.0	30.0	31	487.1	115.3	66.5	133.1
516.0	30.0	31	488.0	115.7	66.7	133.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
517.0	30.0	31	488.8	116.1	67.0	134.1
518.0	30.0	31	489.7	116.6	67.2	134.6
519.0	30.0	31	490.6	117.0	67.5	135.1
520.0	30.0	31	491.4	117.4	67.8	135.6
521.0	30.0	31	492.3	117.8	68.0	136.1
522.0	29.9	31	493.2	118.3	68.3	136.6
523.0	29.9	31	494.0	118.7	68.5	137.1
524.0	30.0	31	494.9	119.1	68.8	137.6
525.0	30.0	31	495.8	119.6	69.0	138.1
526.0	30.0	31	496.6	120.0	69.3	138.6
527.0	29.9	31	497.5	120.4	69.6	139.1
528.0	29.9	31	498.4	120.8	69.8	139.6
529.0	29.8	31	499.2	121.3	70.1	140.1
530.0	29.7	31	500.1	121.7	70.3	140.6
531.0	29.7	31	501.0	122.1	70.6	141.1
532.0	29.8	31	501.8	122.5	70.8	141.5
533.0	29.9	30	502.7	123.0	71.1	142.0
534.0	29.9	30	503.6	123.4	71.3	142.5
535.0	29.8	30	504.4	123.8	71.6	143.0
536.0	29.8	31	505.3	124.3	71.8	143.5
537.0	29.3	31	506.2	124.7	72.1	144.0
538.0	28.8	31	507.0	125.1	72.3	144.5
539.0	28.4	31	507.9	125.5	72.6	145.0
540.0	28.2	31	508.8	126.0	72.8	145.5
541.0	28.1	31	509.7	126.4	73.1	146.0
542.0	28.0	31	510.6	126.8	73.3	146.4
543.0	27.9	31	511.4	127.2	73.6	146.9
544.0	27.7	31	512.3	127.6	73.8	147.4
545.0	27.6	31	513.2	128.0	74.1	147.9
546.0	27.4	31	514.1	128.4	74.3	148.3
547.0	27.3	31	515.0	128.8	74.5	148.8
548.0	27.1	31	515.9	129.2	74.8	149.2
549.0	27.0	30	516.8	129.6	75.0	149.7
550.0	26.9	30	517.6	129.9	75.2	150.2
551.0	26.9	30	518.5	130.3	75.5	150.6
552.0	26.8	31	519.4	130.7	75.7	151.1
553.0	26.8	31	520.3	131.1	75.9	151.5
554.0	26.8	31	521.2	131.5	76.2	152.0
555.0	26.8	31	522.1	131.9	76.4	152.4
556.0	26.9	31	523.0	132.3	76.6	152.9
557.0	27.0	31	523.9	132.7	76.9	153.3
558.0	27.1	31	524.8	133.1	77.1	153.8
559.0	27.3	31	525.7	133.4	77.3	154.2
560.0	27.4	31	526.6	133.8	77.6	154.7
561.0	27.5	31	527.5	134.2	77.8	155.1
562.0	27.7	31	528.3	134.6	78.0	155.6
563.0	27.9	30	529.2	135.0	78.3	156.1

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
564.0	27.9	30	530.1	135.4	78.5	156.5
565.0	27.7	31	531.0	135.8	78.7	157.0
566.0	27.6	31	531.9	136.2	79.0	157.5
567.0	27.5	31	532.8	136.6	79.2	157.9
568.0	27.5	31	533.6	137.0	79.5	158.4
569.0	27.6	31	534.5	137.4	79.7	158.8
570.0	27.4	31	535.4	137.8	79.9	159.3
571.0	27.3	30	536.3	138.2	80.2	159.8
572.0	27.2	30	537.2	138.6	80.4	160.2
573.0	26.9	30	538.1	139.0	80.6	160.7
574.0	26.7	30	539.0	139.4	80.9	161.2
575.0	26.5	30	539.9	139.8	81.1	161.6
576.0	26.3	30	540.8	140.2	81.3	162.0
577.0	26.1	30	541.7	140.6	81.5	162.5
578.0	26.1	30	542.6	140.9	81.8	162.9
579.0	26.0	31	543.5	141.3	82.0	163.4
580.0	26.0	31	544.3	141.7	82.2	163.8
581.0	26.1	31	545.2	142.1	82.4	164.3
582.0	26.3	31	546.1	142.5	82.6	164.7
583.0	26.4	31	547.0	142.8	82.9	165.1
584.0	26.3	32	547.9	143.2	83.1	165.6
585.0	26.3	32	548.8	143.6	83.3	166.0
586.0	26.2	32	549.7	144.0	83.6	166.5
587.0	26.2	32	550.6	144.3	83.8	166.9
588.0	26.1	32	551.5	144.7	84.0	167.4
589.0	26.2	31	552.4	145.1	84.3	167.8
590.0	26.3	30	553.3	145.5	84.5	168.2
591.0	26.4	29	554.2	145.8	84.7	168.7
592.0	26.3	29	555.1	146.2	85.0	169.1
593.0	26.3	30	556.0	146.6	85.2	169.6
594.0	26.2	30	556.9	147.0	85.4	170.0
595.0	26.2	30	557.8	147.4	85.6	170.4
596.0	26.2	31	558.7	147.8	85.8	170.9
597.0	26.2	31	559.6	148.2	86.0	171.3
598.0	26.2	30	560.5	148.5	86.3	171.8
599.0	26.1	30	561.4	148.9	86.5	172.2
600.0	26.2	29	562.3	149.3	86.7	172.7
601.0	26.3	28	563.2	149.7	86.9	173.1
602.0	26.4	27	564.1	150.1	87.2	173.5
603.0	26.4	27	565.0	150.4	87.4	174.0
604.0	26.4	27	565.9	150.8	87.6	174.4
605.0	26.4	27	566.8	151.2	87.8	174.9
606.0	26.3	28	567.7	151.6	88.0	175.3
607.0	26.2	30	568.6	152.0	88.2	175.7
608.0	26.2	30	569.5	152.4	88.4	176.2
609.0	26.1	31	570.4	152.8	88.6	176.6
610.0	26.1	31	571.3	153.2	88.8	177.1

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
611.0	26.2	31	572.2	153.6	89.1	177.5
612.0	26.3	31	573.1	153.9	89.3	178.0
613.0	26.4	31	574.0	154.3	89.5	178.4
614.0	26.4	31	574.8	154.7	89.7	178.8
615.0	26.4	32	575.7	155.1	90.0	179.3
616.0	26.3	32	576.6	155.5	90.2	179.7
617.0	26.3	31	577.5	155.8	90.4	180.2
618.0	26.2	31	578.4	156.2	90.7	180.6
619.0	26.2	31	579.3	156.6	90.9	181.1
620.0	26.2	30	580.2	157.0	91.1	181.5
621.0	26.3	30	581.1	157.3	91.4	181.9
622.0	26.3	30	582.0	157.7	91.6	182.4
623.0	26.4	29	582.9	158.1	91.8	182.8
624.0	26.5	29	583.8	158.5	92.0	183.3
625.0	26.6	29	584.7	158.9	92.2	183.7
626.0	26.6	30	585.6	159.3	92.4	184.2
627.0	26.6	30	586.5	159.7	92.7	184.6
628.0	26.6	30	587.4	160.1	92.9	185.1
629.0	26.6	30	588.3	160.4	93.1	185.5
630.0	26.6	30	589.2	160.8	93.3	186.0
631.0	26.5	30	590.1	161.2	93.6	186.4
632.0	26.4	30	591.0	161.6	93.8	186.8
633.0	26.5	30	591.9	162.0	94.0	187.3
634.0	26.6	29	592.8	162.4	94.2	187.7
635.0	26.7	29	593.7	162.8	94.5	188.2
636.0	26.6	30	594.5	163.2	94.7	188.6
637.0	26.5	31	595.4	163.5	94.9	189.1
638.0	26.3	31	596.3	163.9	95.1	189.5
639.0	26.2	31	597.2	164.3	95.3	190.0
640.0	26.1	30	598.1	164.7	95.6	190.4
641.0	26.0	30	599.0	165.1	95.8	190.9
642.0	25.9	30	599.9	165.5	96.0	191.3
643.0	25.8	30	600.8	165.8	96.2	191.7
644.0	25.8	31	601.7	166.2	96.5	192.2
645.0	25.8	31	602.6	166.6	96.7	192.6
646.0	25.8	31	603.5	167.0	96.9	193.0
647.0	25.8	31	604.4	167.3	97.1	193.5
648.0	25.7	31	605.3	167.7	97.3	193.9
649.0	25.7	31	606.2	168.1	97.6	194.3
650.0	25.7	31	607.1	168.5	97.8	194.8
651.0	25.7	31	608.0	168.8	98.0	195.2
652.0	25.8	31	608.9	169.2	98.2	195.6
653.0	25.9	30	609.8	169.6	98.5	196.1
654.0	26.0	30	610.7	169.9	98.7	196.5
655.0	26.1	30	611.6	170.3	98.9	197.0
656.0	26.2	30	612.5	170.7	99.1	197.4
657.0	26.3	30	613.4	171.1	99.3	197.8

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
658.0	26.2	30	614.3	171.5	99.6	198.3
659.0	26.2	30	615.2	171.8	99.8	198.7
660.0	26.2	30	616.1	172.2	100.0	199.2
661.0	26.1	30	617.0	172.6	100.2	199.6
662.0	26.1	30	617.9	173.0	100.4	200.0
663.0	26.1	30	618.8	173.4	100.7	200.5
664.0	26.2	30	619.7	173.8	100.9	200.9
665.0	26.2	30	620.6	174.1	101.1	201.4
666.0	26.2	30	621.5	174.5	101.3	201.8
667.0	26.1	31	622.4	174.9	101.6	202.2
668.0	26.0	31	623.3	175.3	101.8	202.7
669.0	25.9	30	624.2	175.7	102.0	203.1
670.0	25.7	30	625.1	176.0	102.2	203.6
671.0	25.7	30	626.0	176.4	102.4	204.0
672.0	25.7	31	626.9	176.8	102.7	204.4
673.0	25.7	31	627.8	177.2	102.9	204.9
674.0	25.9	31	628.7	177.5	103.1	205.3
675.0	26.1	30	629.6	177.9	103.3	205.7
676.0	26.3	30	630.5	178.3	103.5	206.2
677.0	26.4	30	631.4	178.7	103.8	206.6
678.0	26.4	31	632.3	179.0	104.0	207.1
679.0	26.5	31	633.2	179.4	104.2	207.5
680.0	26.4	31	634.1	179.8	104.4	207.9
681.0	26.4	30	635.0	180.2	104.7	208.4
682.0	26.3	30	635.9	180.6	104.9	208.8
683.0	26.3	30	636.8	181.0	105.1	209.3
684.0	26.2	30	637.7	181.3	105.3	209.7
685.0	26.2	30	638.6	181.7	105.6	210.2
686.0	26.3	30	639.5	182.1	105.8	210.6
687.0	26.3	30	640.4	182.5	106.0	211.0
688.0	26.3	30	641.3	182.9	106.2	211.5
689.0	26.3	30	642.2	183.3	106.5	211.9
690.0	26.3	30	643.0	183.6	106.7	212.4
691.0	26.2	30	643.9	184.0	106.9	212.8
692.0	26.1	31	644.8	184.4	107.1	213.3
693.0	26.1	31	645.7	184.8	107.3	213.7
694.0	26.2	31	646.6	185.2	107.6	214.1
695.0	26.3	30	647.5	185.5	107.8	214.6
696.0	26.4	31	648.4	185.9	108.0	215.0
697.0	26.4	31	649.3	186.3	108.2	215.5
698.0	26.5	31	650.2	186.7	108.5	215.9
699.0	26.4	31	651.1	187.1	108.7	216.4
700.0	26.4	31	652.0	187.5	108.9	216.8
701.0	26.3	31	652.9	187.8	109.2	217.2
702.0	26.3	31	653.8	188.2	109.4	217.7
703.0	26.4	31	654.7	188.6	109.6	218.1
704.0	26.4	31	655.6	189.0	109.8	218.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
705.0	26.3	31	656.5	189.4	110.1	219.0
706.0	26.2	31	657.4	189.7	110.3	219.5
707.0	26.1	31	658.3	190.1	110.5	219.9
708.0	26.1	30	659.2	190.5	110.8	220.4
709.0	26.0	30	660.1	190.9	111.0	220.8
710.0	26.1	30	661.0	191.3	111.2	221.2
711.0	26.3	31	661.9	191.6	111.4	221.7
712.0	26.4	31	662.8	192.0	111.6	222.1
713.0	26.5	31	663.7	192.4	111.9	222.6
714.0	26.6	31	664.6	192.8	112.1	223.0
715.0	26.5	31	665.5	193.2	112.3	223.4
716.0	26.4	31	666.4	193.5	112.6	223.9
717.0	26.3	31	667.3	193.9	112.8	224.3
718.0	26.2	31	668.1	194.3	113.0	224.8
719.0	26.2	30	669.0	194.7	113.2	225.2
720.0	26.2	30	669.9	195.1	113.5	225.7
721.0	26.3	30	670.8	195.4	113.7	226.1
722.0	26.5	31	671.7	195.8	113.9	226.5
723.0	26.6	31	672.6	196.2	114.1	227.0
724.0	26.7	31	673.5	196.6	114.4	227.4
725.0	26.8	31	674.4	197.0	114.6	227.9
726.0	26.7	31	675.3	197.4	114.8	228.3
727.0	26.7	31	676.2	197.7	115.1	228.8
728.0	26.6	31	677.1	198.1	115.3	229.2
729.0	26.5	31	678.0	198.5	115.5	229.7
730.0	26.3	30	678.9	198.9	115.8	230.1
731.0	26.2	30	679.8	199.3	116.0	230.6
732.0	26.3	30	680.7	199.7	116.2	231.0
733.0	26.5	31	681.6	200.0	116.4	231.5
734.0	26.6	31	682.5	200.4	116.7	231.9
735.0	26.7	31	683.4	200.8	116.9	232.4
736.0	26.8	31	684.3	201.2	117.1	232.8
737.0	26.8	31	685.2	201.6	117.3	233.2
738.0	26.7	31	686.0	202.0	117.6	233.7
739.0	26.5	30	686.9	202.4	117.8	234.2
740.0	26.5	30	687.8	202.7	118.0	234.6
741.0	26.4	30	688.7	203.1	118.3	235.0
742.0	26.4	30	689.6	203.5	118.5	235.5
743.0	26.5	30	690.5	203.9	118.7	235.9
744.0	26.5	31	691.4	204.3	118.9	236.4
745.0	26.5	31	692.3	204.7	119.2	236.8
746.0	26.5	31	693.2	205.0	119.4	237.3
747.0	26.4	31	694.1	205.4	119.6	237.7
748.0	26.4	31	695.0	205.8	119.8	238.2
749.0	26.5	30	695.9	206.2	120.1	238.6
750.0	26.5	30	696.8	206.6	120.3	239.1
751.0	26.6	30	697.7	207.0	120.5	239.5

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
752.0	26.8	30	698.6	207.3	120.8	239.9
753.0	26.9	30	699.5	207.7	121.0	240.4
754.0	26.8	30	700.4	208.1	121.2	240.8
755.0	26.7	30	701.3	208.5	121.4	241.3
756.0	26.7	30	702.1	208.9	121.7	241.7
757.0	26.7	30	703.0	209.3	121.9	242.2
758.0	26.7	30	703.9	209.7	122.1	242.6
759.0	26.6	30	704.8	210.1	122.3	243.1
760.0	26.5	30	705.7	210.5	122.6	243.5
761.0	26.4	30	706.6	210.9	122.8	244.0
762.0	26.4	30	707.5	211.2	123.0	244.4
763.0	26.4	30	708.4	211.6	123.2	244.9
764.0	26.4	30	709.3	212.0	123.4	245.3
765.0	26.5	30	710.2	212.4	123.7	245.8
766.0	26.7	30	711.1	212.8	123.9	246.2
767.0	26.8	30	712.0	213.2	124.1	246.7
768.0	26.9	30	712.9	213.6	124.3	247.1
769.0	27.1	30	713.8	213.9	124.6	247.6
770.0	27.0	30	714.7	214.3	124.8	248.0
771.0	26.9	31	715.6	214.7	125.0	248.5
772.0	26.7	31	716.4	215.1	125.2	248.9
773.0	26.6	30	717.3	215.5	125.5	249.4
774.0	26.5	30	718.2	215.9	125.7	249.8
775.0	26.5	29	719.1	216.3	125.9	250.3
776.0	26.5	30	720.0	216.7	126.2	250.7
777.0	26.6	30	720.9	217.1	126.4	251.2
778.0	26.6	30	721.8	217.4	126.6	251.6
779.0	26.8	30	722.7	217.8	126.8	252.1
780.0	26.9	30	723.6	218.2	127.0	252.5
781.0	26.9	30	724.5	218.6	127.3	253.0
782.0	26.8	30	725.4	219.0	127.5	253.4
783.0	26.7	30	726.3	219.4	127.7	253.9
784.0	26.6	30	727.2	219.8	128.0	254.3
785.0	26.6	30	728.1	220.2	128.2	254.8
786.0	26.5	30	729.0	220.6	128.4	255.2
787.0	26.5	30	729.9	220.9	128.6	255.7
788.0	26.5	30	730.7	221.3	128.8	256.1
789.0	26.6	30	731.6	221.7	129.1	256.6
790.0	26.7	30	732.5	222.1	129.3	257.0
791.0	26.8	30	733.4	222.5	129.5	257.4
792.0	26.9	30	734.3	222.9	129.7	257.9
793.0	27.1	30	735.2	223.3	130.0	258.3
794.0	27.2	30	736.1	223.7	130.2	258.8
795.0	27.2	30	737.0	224.1	130.4	259.3
796.0	27.1	29	737.9	224.5	130.7	259.7
797.0	27.1	29	738.8	224.9	130.9	260.2
798.0	27.2	30	739.7	225.3	131.1	260.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
799.0	27.2	30	740.6	225.6	131.3	261.1
800.0	27.3	30	741.4	226.0	131.5	261.5
801.0	27.4	30	742.3	226.4	131.8	262.0
802.0	27.5	30	743.2	226.8	132.0	262.5
803.0	27.4	30	744.1	227.2	132.2	262.9
804.0	27.3	30	745.0	227.6	132.5	263.4
805.0	27.3	30	745.9	228.0	132.7	263.8
806.0	27.2	30	746.8	228.4	132.9	264.3
807.0	27.1	30	747.7	228.8	133.2	264.8
808.0	27.1	30	748.6	229.2	133.4	265.2
809.0	27.2	30	749.4	229.6	133.6	265.7
810.0	27.2	30	750.3	230.0	133.8	266.1
811.0	27.3	30	751.2	230.4	134.1	266.6
812.0	27.2	30	752.1	230.8	134.3	267.0
813.0	27.2	30	753.0	231.2	134.5	267.5
814.0	27.2	30	753.9	231.6	134.8	268.0
815.0	27.1	30	754.8	232.0	135.0	268.4
816.0	27.0	30	755.7	232.4	135.2	268.9
817.0	27.0	30	756.6	232.8	135.4	269.3
818.0	26.9	30	757.5	233.2	135.7	269.8
819.0	26.9	30	758.3	233.6	135.9	270.2
820.0	27.0	30	759.2	234.0	136.1	270.7
821.0	27.1	30	760.1	234.4	136.3	271.1
822.0	27.2	30	761.0	234.8	136.6	271.6
823.0	27.4	30	761.9	235.1	136.8	272.0
824.0	27.5	30	762.8	235.5	137.0	272.5
825.0	27.4	30	763.7	235.9	137.3	273.0
826.0	27.3	30	764.6	236.3	137.5	273.4
827.0	27.2	30	765.5	236.7	137.7	273.9
828.0	27.2	30	766.3	237.1	138.0	274.3
829.0	27.3	30	767.2	237.5	138.2	274.8
830.0	27.4	30	768.1	237.9	138.4	275.3
831.0	27.6	30	769.0	238.3	138.6	275.7
832.0	27.8	30	769.9	238.7	138.9	276.2
833.0	27.8	30	770.8	239.1	139.1	276.6
834.0	27.7	30	771.7	239.5	139.3	277.1
835.0	27.6	30	772.6	239.9	139.6	277.6
836.0	27.5	30	773.4	240.3	139.8	278.0
837.0	27.4	30	774.3	240.7	140.0	278.5
838.0	27.3	30	775.2	241.1	140.3	279.0
839.0	27.5	30	776.1	241.5	140.5	279.4
840.0	27.7	29	777.0	241.9	140.7	279.9
841.0	27.9	29	777.9	242.3	140.9	280.3
842.0	28.0	29	778.8	242.7	141.2	280.8
843.0	28.2	30	779.6	243.2	141.4	281.3
844.0	28.3	30	780.5	243.6	141.6	281.7
845.0	28.2	30	781.4	244.0	141.9	282.2

REF 46[illegible]3

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
846.0	28.2	30	782.3	244.4	142.1	282.7
847.0	28.2	30	783.2	244.8	142.3	283.2
848.0	28.2	30	784.1	245.2	142.6	283.6
849.0	28.2	30	784.9	245.6	142.8	284.1
850.0	28.3	30	785.8	246.0	143.1	284.6
851.0	28.4	30	786.7	246.4	143.3	285.1
852.0	28.5	30	787.6	246.8	143.5	285.5
853.0	28.6	30	788.5	247.2	143.8	286.0
854.0	28.6	30	789.3	247.7	144.0	286.5
855.0	28.7	30	790.2	248.1	144.2	287.0
856.0	28.7	29	791.1	248.5	144.5	287.4
857.0	28.8	29	792.0	248.9	144.7	287.9
858.0	28.9	29	792.8	249.3	145.0	288.4
859.0	29.0	30	793.7	249.7	145.2	288.9
860.0	29.0	30	794.6	250.2	145.4	289.4
861.0	29.1	30	795.5	250.6	145.7	289.9
862.0	29.1	30	796.3	251.0	145.9	290.3
863.0	29.1	30	797.2	251.4	146.2	290.8
864.0	29.1	30	798.1	251.9	146.4	291.3
865.0	29.0	30	799.0	252.3	146.6	291.8
866.0	28.9	30	799.8	252.7	146.9	292.3
867.0	29.0	30	800.7	253.1	147.1	292.8
868.0	29.0	30	801.6	253.5	147.4	293.3
869.0	29.2	30	802.5	254.0	147.6	293.7
870.0	29.4	30	803.3	254.4	147.9	294.2
871.0	29.5	30	804.2	254.8	148.1	294.7
872.0	29.6	30	805.1	255.2	148.3	295.2
873.0	29.7	30	806.0	255.6	148.6	295.7
874.0	29.7	30	806.8	256.1	148.8	296.2
875.0	29.7	30	807.7	256.5	149.1	296.7
876.0	29.7	30	808.6	256.9	149.3	297.2
877.0	29.8	30	809.4	257.4	149.6	297.7
878.0	29.8	30	810.3	257.8	149.8	298.2
879.0	29.9	30	811.2	258.2	150.1	298.7
880.0	29.9	30	812.0	258.7	150.3	299.2
881.0	30.0	30	812.9	259.1	150.6	299.7
882.0	30.1	30	813.8	259.5	150.8	300.2
883.0	30.1	30	814.6	260.0	151.1	300.7
884.0	30.0	30	815.5	260.4	151.3	301.2
885.0	30.0	30	816.4	260.8	151.6	301.7
886.0	30.0	30	817.2	261.3	151.8	302.2
887.0	29.9	30	818.1	261.7	152.1	302.7
888.0	29.9	30	819.0	262.1	152.3	303.2
889.0	30.0	30	819.8	262.6	152.6	303.7
890.0	30.0	30	820.7	263.0	152.8	304.2
891.0	30.0	30	821.6	263.4	153.1	304.7
892.0	30.0	30	822.4	263.9	153.3	305.2

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
893.0	30.0	30	823.3	264.3	153.6	305.7
894.0	30.0	30	824.2	264.7	153.8	306.2
895.0	29.9	30	825.0	265.1	154.1	306.7
896.0	29.9	30	825.9	265.6	154.3	307.2
897.0	30.0	30	826.8	266.0	154.6	307.7
898.0	30.0	30	827.6	266.4	154.8	308.2
899.0	30.1	30	828.5	266.9	155.1	308.7
900.0	30.1	30	829.4	267.3	155.3	309.2
901.0	30.2	30	830.2	267.7	155.6	309.7
902.0	30.2	30	831.1	268.2	155.8	310.2
903.0	30.2	30	832.0	268.6	156.1	310.7
904.0	30.2	30	832.8	269.0	156.3	311.2
905.0	30.2	30	833.7	269.5	156.6	311.7
906.0	30.2	30	834.5	269.9	156.8	312.2
907.0	30.2	30	835.4	270.4	157.1	312.7
908.0	30.2	30	836.3	270.8	157.3	313.2
909.0	30.2	30	837.1	271.2	157.6	313.7
910.0	30.2	30	838.0	271.7	157.8	314.2
911.0	30.1	30	838.9	272.1	158.1	314.7
912.0	30.1	30	839.7	272.5	158.3	315.2
913.0	30.0	30	840.6	273.0	158.6	315.7
914.0	30.0	30	841.5	273.4	158.8	316.2
915.0	29.9	30	842.3	273.8	159.1	316.7
916.0	29.9	30	843.2	274.3	159.3	317.2
917.0	29.9	30	844.1	274.7	159.6	317.7
918.0	29.9	30	844.9	275.1	159.8	318.2
919.0	29.9	30	845.8	275.6	160.1	318.7
920.0	29.9	30	846.7	276.0	160.3	319.2
921.0	29.9	30	847.5	276.4	160.6	319.7
922.0	29.9	30	848.4	276.9	160.8	320.2
923.0	29.9	30	849.3	277.3	161.1	320.7
924.0	29.9	30	850.1	277.7	161.3	321.2
925.0	29.9	30	851.0	278.2	161.6	321.7
926.0	29.9	30	851.9	278.6	161.8	322.2
927.0	29.9	30	852.7	279.0	162.1	322.7
928.0	29.9	29	853.6	279.5	162.3	323.2
929.0	29.9	29	854.5	279.9	162.6	323.7
930.0	29.8	29	855.3	280.3	162.8	324.2
931.0	29.8	29	856.2	280.8	163.0	324.7
932.0	29.7	29	857.1	281.2	163.3	325.2
933.0	29.7	30	857.9	281.6	163.5	325.7
934.0	29.6	30	858.8	282.1	163.8	326.2
935.0	29.7	30	859.7	282.5	164.0	326.7
936.0	29.8	30	860.5	282.9	164.3	327.1
937.0	29.8	30	861.4	283.3	164.5	327.6
938.0	29.9	30	862.3	283.8	164.8	328.1
939.0	30.1	30	863.1	284.2	165.0	328.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
940.0	30.0	30	864.0	284.6	165.3	329.1
941.0	29.9	30	864.9	285.1	165.5	329.6
942.0	29.8	30	865.7	285.5	165.8	330.1
943.0	29.7	30	866.6	285.9	166.0	330.6
944.0	29.6	30	867.5	286.4	166.3	331.1
945.0	29.5	30	868.3	286.8	166.5	331.6
946.0	29.5	30	869.2	287.2	166.8	332.1
947.0	29.6	30	870.1	287.6	167.0	332.6
948.0	29.6	30	871.0	288.1	167.2	333.1
949.0	29.6	30	871.8	288.5	167.5	333.6
950.0	29.7	30	872.7	288.9	167.7	334.1
951.0	29.8	30	873.6	289.4	168.0	334.6
952.0	29.8	30	874.4	289.8	168.2	335.1
953.0	29.9	30	875.3	290.2	168.5	335.6
954.0	30.0	30	876.2	290.6	168.7	336.1
955.0	30.1	30	877.0	291.1	169.0	336.6
956.0	30.2	30	877.9	291.5	169.2	337.1
957.0	30.2	30	878.8	291.9	169.5	337.6
958.0	30.1	30	879.6	292.4	169.7	338.1
959.0	30.1	30	880.5	292.8	170.0	338.6
960.0	30.1	29	881.4	293.3	170.2	339.1
961.0	30.1	29	882.2	293.7	170.5	339.6
962.0	30.2	29	883.1	294.1	170.7	340.1
963.0	30.2	30	884.0	294.6	171.0	340.6
964.0	30.3	30	884.8	295.0	171.2	341.1
965.0	30.2	30	885.7	295.4	171.5	341.6
966.0	30.2	29	886.5	295.9	171.7	342.1
967.0	30.1	29	887.4	296.3	172.0	342.6
968.0	29.8	29	888.3	296.8	172.2	343.1
969.0	29.6	29	889.1	297.2	172.5	343.6
970.0	29.5	30	890.0	297.6	172.7	344.1
971.0	29.4	29	890.9	298.1	172.9	344.6
972.0	29.4	29	891.8	298.5	173.2	345.1
973.0	29.4	29	892.6	298.9	173.4	345.6
974.0	29.5	29	893.5	299.3	173.7	346.1
975.0	29.5	29	894.4	299.8	173.9	346.6
976.0	29.5	29	895.2	300.2	174.1	347.1
977.0	29.6	29	896.1	300.6	174.4	347.5
978.0	29.6	29	897.0	301.1	174.6	348.0
979.0	29.6	29	897.8	301.5	174.9	348.5
980.0	29.5	29	898.7	301.9	175.1	349.0
981.0	29.5	29	899.6	302.4	175.3	349.5
982.0	29.4	30	900.5	302.8	175.6	350.0
983.0	29.4	30	901.3	303.2	175.8	350.5
984.0	29.5	30	902.2	303.6	176.1	351.0
985.0	29.6	30	903.1	304.1	176.3	351.5
986.0	29.6	30	903.9	304.5	176.6	352.0

REF 460503

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
987.0	29.7	30	904.8	304.9	176.8	352.5
988.0	29.7	30	905.7	305.4	177.1	353.0
989.0	29.7	30	906.5	305.8	177.3	353.5
990.0	29.6	30	907.4	306.2	177.5	354.0
991.0	29.6	29	908.3	306.6	177.8	354.5
992.0	29.6	29	909.2	307.1	178.0	354.9
993.0	29.6	30	910.0	307.5	178.3	355.4
994.0	29.6	30	910.9	307.9	178.5	355.9
995.0	29.6	30	911.8	308.4	178.8	356.4
996.0	29.6	29	912.6	308.8	179.0	356.9
997.0	29.6	29	913.5	309.2	179.3	357.4
998.0	29.6	29	914.4	309.6	179.5	357.9
999.0	29.5	30	915.2	310.1	179.7	358.4
1000.0	29.5	30	916.1	310.5	180.0	358.9
1001.0	29.7	30	917.0	310.9	180.2	359.4
1002.0	29.8	30	917.9	311.4	180.5	359.9
1003.0	29.8	30	918.7	311.8	180.7	360.4
1004.0	29.8	30	919.6	312.2	181.0	360.9
1005.0	29.8	30	920.5	312.7	181.2	361.4
1006.0	29.8	30	921.3	313.1	181.5	361.9
1007.0	29.8	30	922.2	313.5	181.7	362.4
1008.0	29.8	30	923.1	313.9	182.0	362.9
1009.0	29.7	30	923.9	314.4	182.2	363.4
1010.0	29.7	31	924.8	314.8	182.5	363.9
1011.0	29.7	31	925.7	315.2	182.7	364.4
1012.0	29.7	30	926.5	315.7	183.0	364.8
1013.0	29.6	30	927.4	316.1	183.2	365.3
1014.0	29.6	30	928.3	316.5	183.5	365.8
1015.0	29.5	30	929.1	316.9	183.7	366.3
1016.0	29.5	30	930.0	317.4	184.0	366.8
1017.0	29.5	30	930.9	317.8	184.2	367.3
1018.0	29.6	30	931.7	318.2	184.4	367.8
1019.0	29.6	30	932.6	318.6	184.7	368.3
1020.0	29.7	30	933.5	319.1	184.9	368.8
1021.0	29.8	30	934.4	319.5	185.2	369.3
1022.0	29.9	30	935.2	319.9	185.4	369.8
1023.0	29.9	30	936.1	320.4	185.7	370.3
1024.0	30.0	30	937.0	320.8	185.9	370.8
1025.0	30.0	30	937.8	321.2	186.2	371.3
1026.0	30.0	31	938.7	321.7	186.4	371.8
1027.0	30.0	31	939.6	322.1	186.7	372.3
1028.0	30.0	31	940.4	322.5	186.9	372.8
1029.0	29.9	31	941.3	322.9	187.2	373.3
1030.0	29.9	31	942.2	323.4	187.5	373.8
1031.0	29.9	31	943.0	323.8	187.7	374.3
1032.0	29.9	31	943.9	324.2	188.0	374.8
1033.0	29.9	31	944.8	324.7	188.2	375.3

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1034.0	29.9	31	945.6	325.1	188.5	375.8
1035.0	30.0	31	946.5	325.5	188.7	376.3
1036.0	30.0	31	947.4	325.9	189.0	376.8
1037.0	29.9	31	948.2	326.4	189.3	377.3
1038.0	29.9	31	949.1	326.8	189.5	377.8
1039.0	29.9	31	950.0	327.2	189.8	378.3
1040.0	29.9	31	950.8	327.7	190.0	378.8
1041.0	29.9	31	951.7	328.1	190.3	379.3
1042.0	29.9	31	952.6	328.5	190.5	379.8
1043.0	29.9	31	953.4	328.9	190.8	380.3
1044.0	29.9	31	954.3	329.4	191.1	380.8
1045.0	29.9	31	955.2	329.8	191.3	381.3
1046.0	29.8	31	956.0	330.2	191.6	381.8
1047.0	29.8	31	956.9	330.6	191.8	382.3
1048.0	29.8	31	957.8	331.1	192.1	382.8
1049.0	29.8	31	958.6	331.5	192.3	383.3
1050.0	29.8	31	959.5	331.9	192.6	383.7
1051.0	29.7	31	960.4	332.3	192.9	384.2
1052.0	29.7	31	961.2	332.8	193.1	384.7
1053.0	29.7	31	962.1	333.2	193.4	385.2
1054.0	29.7	31	963.0	333.6	193.6	385.7
1055.0	29.7	31	963.8	334.0	193.9	386.2
1056.0	29.6	31	964.7	334.5	194.1	386.7
1057.0	29.6	31	965.6	334.9	194.4	387.2
1058.0	29.6	31	966.4	335.3	194.6	387.7
1059.0	29.6	31	967.3	335.7	194.9	388.2
1060.0	29.6	31	968.2	336.2	195.1	388.7
1061.0	29.6	31	969.1	336.6	195.4	389.2
1062.0	29.6	31	969.9	337.0	195.7	389.7
1063.0	29.6	31	970.8	337.4	195.9	390.2
1064.0	29.6	31	971.7	337.9	196.2	390.7
1065.0	29.6	31	972.5	338.3	196.4	391.2
1066.0	29.6	31	973.4	338.7	196.7	391.7
1067.0	29.6	31	974.3	339.1	196.9	392.2
1068.0	29.6	31	975.1	339.6	197.2	392.7
1069.0	29.6	31	976.0	340.0	197.4	393.1
1070.0	29.6	31	976.9	340.4	197.7	393.6
1071.0	29.6	31	977.7	340.8	197.9	394.1
1072.0	29.6	31	978.6	341.2	198.2	394.6
1073.0	29.5	31	979.5	341.7	198.5	395.1
1074.0	29.5	31	980.4	342.1	198.7	395.6
1075.0	29.5	31	981.2	342.5	199.0	396.1
1076.0	29.5	31	982.1	342.9	199.2	396.6
1077.0	29.5	31	983.0	343.4	199.5	397.1
1078.0	29.5	31	983.8	343.8	199.7	397.6
1079.0	29.5	31	984.7	344.2	200.0	398.1
1080.0	29.5	31	985.6	344.6	200.2	398.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1081.0	29.6	31	986.4	345.0	200.5	399.1
1082.0	29.6	31	987.3	345.5	200.7	399.6
1083.0	29.7	31	988.2	345.9	201.0	400.0
1084.0	29.8	31	989.1	346.3	201.3	400.5
1085.0	29.9	31	989.9	346.7	201.5	401.0
1086.0	29.8	31	990.8	347.2	201.8	401.5
1087.0	29.7	31	991.7	347.6	202.0	402.0
1088.0	29.6	31	992.5	348.0	202.3	402.5
1089.0	29.5	31	993.4	348.4	202.5	403.0
1090.0	29.5	31	994.3	348.9	202.8	403.5
1091.0	29.6	31	995.1	349.3	203.0	404.0
1092.0	29.7	31	996.0	349.7	203.3	404.5
1093.0	29.8	31	996.9	350.1	203.5	405.0
1094.0	29.9	31	997.7	350.6	203.8	405.5
1095.0	30.0	31	998.6	351.0	204.1	406.0
1096.0	30.1	31	999.5	351.4	204.3	406.5
1097.0	30.0	31	1000.3	351.8	204.6	407.0
1098.0	29.9	32	1001.2	352.3	204.8	407.5
1099.0	29.8	32	1002.1	352.7	205.1	408.0
1100.0	29.7	32	1002.9	353.1	205.4	408.5
1101.0	29.7	32	1003.8	353.5	205.6	409.0
1102.0	29.7	32	1004.7	354.0	205.9	409.5
1103.0	29.7	32	1005.5	354.4	206.1	410.0
1104.0	29.8	32	1006.4	354.8	206.4	410.5
1105.0	29.7	32	1007.3	355.2	206.7	411.0
1106.0	29.6	31	1008.2	355.6	206.9	411.5
1107.0	29.6	31	1009.0	356.1	207.2	412.0
1108.0	29.6	31	1009.9	356.5	207.4	412.5
1109.0	29.6	32	1010.8	356.9	207.7	412.9
1110.0	29.6	32	1011.6	357.3	208.0	413.4
1111.0	29.6	32	1012.5	357.7	208.2	413.9
1112.0	29.6	32	1013.4	358.2	208.5	414.4
1113.0	29.6	32	1014.2	358.6	208.7	414.9
1114.0	29.5	32	1015.1	359.0	209.0	415.4
1115.0	29.5	32	1016.0	359.4	209.3	415.9
1116.0	29.4	32	1016.8	359.8	209.5	416.4
1117.0	29.3	31	1017.7	360.3	209.8	416.9
1118.0	29.3	31	1018.6	360.7	210.1	417.4
1119.0	29.4	31	1019.5	361.1	210.3	417.9
1120.0	29.5	32	1020.3	361.5	210.6	418.4
1121.0	29.6	32	1021.2	361.9	210.8	418.9
1122.0	29.7	32	1022.1	362.4	211.1	419.3
1123.0	29.9	32	1022.9	362.8	211.3	419.8
1124.0	29.8	32	1023.8	363.2	211.6	420.3
1125.0	29.8	31	1024.7	363.6	211.9	420.8
1126.0	29.7	31	1025.5	364.0	212.1	421.3
1127.0	29.6	31	1026.4	364.5	212.4	421.8

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
1128.0	29.5	31	1027.3	364.9	212.6	422.3
1129.0	29.5	32	1028.2	365.3	212.9	422.8
1130.0	29.6	31	1029.0	365.7	213.1	423.3
1131.0	29.7	31	1029.9	366.1	213.4	423.8
1132.0	29.7	31	1030.8	366.6	213.7	424.3
1133.0	29.6	31	1031.6	367.0	213.9	424.8
1134.0	29.5	31	1032.5	367.4	214.2	425.3
1135.0	29.4	31	1033.4	367.8	214.4	425.8
1136.0	29.4	31	1034.2	368.3	214.7	426.3
1137.0	29.3	31	1035.1	368.7	214.9	426.8
1138.0	29.3	31	1036.0	369.1	215.2	427.3
1139.0	29.4	31	1036.9	369.5	215.4	427.7
1140.0	29.4	31	1037.7	369.9	215.7	428.2
1141.0	29.4	31	1038.6	370.4	215.9	428.7
1142.0	29.4	31	1039.5	370.8	216.2	429.2
1143.0	29.4	31	1040.3	371.2	216.5	429.7
1144.0	29.3	31	1041.2	371.6	216.7	430.2
1145.0	29.3	31	1042.1	372.1	217.0	430.7
1146.0	29.3	31	1043.0	372.5	217.2	431.2
1147.0	29.4	32	1043.8	372.9	217.5	431.7
1148.0	29.4	32	1044.7	373.3	217.7	432.2
1149.0	29.4	32	1045.6	373.7	218.0	432.6
1150.0	29.5	32	1046.4	374.1	218.2	433.1
1151.0	29.5	32	1047.3	374.6	218.5	433.6
1152.0	29.5	32	1048.2	375.0	218.8	434.1
1153.0	29.5	32	1049.1	375.4	219.0	434.6
1154.0	29.5	32	1049.9	375.8	219.3	435.1
1155.0	29.5	33	1050.8	376.2	219.5	435.6
1156.0	29.5	33	1051.7	376.6	219.8	436.1
1157.0	29.5	33	1052.5	377.1	220.1	436.6
1158.0	29.5	32	1053.4	377.5	220.3	437.1
1159.0	29.5	32	1054.3	377.9	220.6	437.6
1160.0	29.5	32	1055.1	378.3	220.9	438.1
1161.0	29.5	32	1056.0	378.7	221.1	438.6
1162.0	29.5	32	1056.9	379.1	221.4	439.0
1163.0	29.5	32	1057.8	379.6	221.6	439.5
1164.0	29.5	32	1058.6	380.0	221.9	440.0
1165.0	29.5	32	1059.5	380.4	222.2	440.5
1166.0	29.5	33	1060.4	380.8	222.4	441.0
1167.0	29.5	33	1061.2	381.2	222.7	441.5
1168.0	29.5	33	1062.1	381.6	223.0	442.0
1169.0	29.5	33	1063.0	382.1	223.2	442.5
1170.0	29.5	33	1063.8	382.5	223.5	443.0
1171.0	29.5	33	1064.7	382.9	223.8	443.5
1172.0	29.5	33	1065.6	383.3	224.0	444.0
1173.0	29.5	33	1066.5	383.7	224.3	444.5
1174.0	29.4	33	1067.3	384.1	224.6	444.9

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1175.0	29.3	33	1068.2	384.5	224.8	445.4
1176.0	29.3	33	1069.1	384.9	225.1	445.9
1177.0	29.2	33	1069.9	385.4	225.4	446.4
1178.0	29.1	33	1070.8	385.8	225.6	446.9
1179.0	29.2	33	1071.7	386.2	225.9	447.4
1180.0	29.4	34	1072.6	386.6	226.2	447.9
1181.0	29.5	34	1073.4	387.0	226.4	448.4
1182.0	29.6	34	1074.3	387.4	226.7	448.9
1183.0	29.7	33	1075.2	387.8	227.0	449.3
1184.0	29.7	33	1076.0	388.2	227.3	449.8
1185.0	29.6	33	1076.9	388.6	227.5	450.3
1186.0	29.4	33	1077.8	389.1	227.8	450.8
1187.0	29.4	33	1078.7	389.5	228.1	451.3
1188.0	29.3	33	1079.5	389.9	228.3	451.8
1189.0	29.3	33	1080.4	390.3	228.6	452.3
1190.0	29.4	33	1081.3	390.7	228.9	452.8
1191.0	29.4	33	1082.1	391.1	229.1	453.3
1192.0	29.5	33	1083.0	391.5	229.4	453.8
1193.0	29.5	34	1083.9	391.9	229.7	454.3
1194.0	29.5	34	1084.8	392.3	229.9	454.8
1195.0	29.5	34	1085.6	392.7	230.2	455.2
1196.0	29.5	34	1086.5	393.2	230.5	455.7
1197.0	29.5	35	1087.4	393.6	230.8	456.2
1198.0	29.5	34	1088.2	394.0	231.0	456.7
1199.0	29.5	34	1089.1	394.4	231.3	457.2
1200.0	29.5	34	1090.0	394.8	231.6	457.7
1201.0	29.5	34	1090.8	395.2	231.9	458.2
1202.0	29.5	34	1091.7	395.6	232.1	458.7
1203.0	29.5	34	1092.6	396.0	232.4	459.2
1204.0	29.5	34	1093.5	396.4	232.7	459.7
1205.0	29.5	34	1094.3	396.8	233.0	460.2
1206.0	29.5	34	1095.2	397.2	233.3	460.7
1207.0	29.4	34	1096.1	397.6	233.5	461.1
1208.0	29.3	35	1096.9	398.1	233.8	461.6
1209.0	29.4	35	1097.8	398.5	234.1	462.1
1210.0	29.7	35	1098.7	398.9	234.4	462.6
1211.0	29.9	35	1099.6	399.3	234.6	463.1
1212.0	29.8	35	1100.4	399.7	234.9	463.6
1213.0	29.8	34	1101.3	400.1	235.2	464.1
1214.0	29.7	34	1102.2	400.5	235.5	464.6
1215.0	29.8	34	1103.0	400.9	235.8	465.1
1216.0	29.8	34	1103.9	401.3	236.0	465.6
1217.0	29.8	34	1104.8	401.7	236.3	466.1
1218.0	29.9	34	1105.6	402.1	236.6	466.6
1219.0	29.9	34	1106.5	402.5	236.9	467.1
1220.0	29.9	34	1107.4	403.0	237.2	467.6
1221.0	29.9	34	1108.2	403.4	237.4	468.1

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH − SOUTH	CO-ORDINATES + EAST − WEST	COURSE LENGTH M
1222.0	29.9	35	1109.1	403.8	237.7	468.6
1223.0	29.9	34	1110.0	404.2	238.0	469.1
1224.0	29.9	34	1110.8	404.6	238.3	469.6
1225.0	29.9	34	1111.7	405.0	238.6	470.1
1226.0	29.9	34	1112.6	405.4	238.8	470.6
1227.0	30.0	34	1113.4	405.8	239.1	471.1
1228.0	30.0	34	1114.3	406.3	239.4	471.5
1229.0	30.0	34	1115.2	406.7	239.7	472.0
1230.0	30.0	34	1116.0	407.1	240.0	472.5
1231.0	30.0	34	1116.9	407.5	240.2	473.0
1232.0	30.1	34	1117.8	407.9	240.5	473.5
1233.0	30.1	35	1118.6	408.3	240.8	474.0
1234.0	30.1	34	1119.5	408.7	241.1	474.5
1235.0	30.2	34	1120.4	409.2	241.4	475.0
1236.0	30.2	34	1121.2	409.6	241.7	475.5
1237.0	30.2	34	1122.1	410.0	241.9	476.0
1238.0	30.2	34	1122.9	410.4	242.2	476.6
1239.0	30.2	34	1123.8	410.8	242.5	477.1
1240.0	30.2	34	1124.7	411.2	242.8	477.6
1241.0	30.2	34	1125.5	411.6	243.1	478.1
1242.0	30.2	34	1126.4	412.1	243.4	478.6
1243.0	30.2	34	1127.3	412.5	243.6	479.1
1244.0	30.2	34	1128.1	412.9	243.9	479.6
1245.0	30.2	34	1129.0	413.3	244.2	480.1
1246.0	30.2	34	1129.9	413.7	244.5	480.6
1247.0	30.2	34	1130.7	414.1	244.8	481.1
1248.0	30.2	34	1131.6	414.6	245.0	481.6
1249.0	30.2	34	1132.5	415.0	245.3	482.1
1250.0	30.2	35	1133.3	415.4	245.6	482.6
1251.0	30.3	35	1134.2	415.8	245.9	483.1
1252.0	30.3	35	1135.0	416.2	246.2	483.6
1253.0	30.3	35	1135.9	416.6	246.5	484.1
1254.0	30.3	35	1136.8	417.1	246.8	484.6
1255.0	30.3	35	1137.6	417.5	247.0	485.1
1256.0	30.3	35	1138.5	417.9	247.3	485.6
1257.0	30.2	35	1139.4	418.3	247.6	486.1
1258.0	30.2	35	1140.2	418.7	247.9	486.6
1259.0	30.1	35	1141.1	419.1	248.2	487.1
1260.0	30.1	35	1142.0	419.5	248.5	487.6
1261.0	30.1	35	1142.8	419.9	248.8	488.1
1262.0	30.1	35	1143.7	420.4	249.1	488.6
1263.0	30.1	35	1144.6	420.8	249.4	489.1
1264.0	30.1	35	1145.4	421.2	249.6	489.6
1265.0	30.0	35	1146.3	421.6	249.9	490.1
1266.0	30.0	35	1147.1	422.0	250.2	490.6
1267.0	30.0	35	1148.0	422.4	250.5	491.1
1268.0	30.0	35	1148.9	422.8	250.8	491.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1269.0	30.0	35	1149.7	423.2	251.1	492.1
1270.0	30.0	35	1150.6	423.6	251.4	492.6
1271.0	30.0	35	1151.5	424.0	251.7	493.1
1272.0	30.0	35	1152.3	424.5	251.9	493.6
1273.0	30.0	35	1153.2	424.9	252.2	494.1
1274.0	30.0	35	1154.1	425.3	252.5	494.6
1275.0	30.0	35	1154.9	425.7	252.8	495.1
1276.0	29.9	35	1155.8	426.1	253.1	495.6
1277.0	29.9	35	1156.7	426.5	253.4	496.1
1278.0	29.9	35	1157.5	426.9	253.7	496.6
1279.0	29.9	35	1158.4	427.3	253.9	497.1
1280.0	29.9	35	1159.3	427.7	254.2	497.6
1281.0	29.9	36	1160.1	428.1	254.5	498.1
1282.0	29.9	36	1161.0	428.5	254.8	498.6
1283.0	29.9	36	1161.9	428.9	255.1	499.1
1284.0	29.9	36	1162.7	429.4	255.4	499.6
1285.0	29.9	36	1163.6	429.8	255.7	500.1
1286.0	29.9	36	1164.5	430.2	256.0	500.6
1287.0	29.9	36	1165.3	430.6	256.3	501.1
1288.0	29.9	36	1166.2	431.0	256.6	501.6
1289.0	29.8	36	1167.1	431.4	256.9	502.0
1290.0	29.7	37	1167.9	431.8	257.1	502.5
1291.0	29.7	37	1168.8	432.2	257.4	503.0
1292.0	29.7	36	1169.7	432.6	257.7	503.5
1293.0	29.8	36	1170.5	433.0	258.0	504.0
1294.0	29.9	36	1171.4	433.4	258.3	504.5
1295.0	30.0	35	1172.3	433.8	258.6	505.0
1296.0	30.1	34	1173.2	434.2	258.9	505.5
1297.0	29.9	35	1174.0	434.6	259.2	506.0
1298.0	29.7	36	1174.9	435.0	259.5	506.5
1299.0	29.6	36	1175.7	435.4	259.8	507.0
1300.0	29.6	36	1176.6	435.8	260.1	507.5
1301.0	29.5	36	1177.5	436.2	260.3	508.0
1302.0	29.5	36	1178.4	436.6	260.6	508.5
1303.0	29.6	35	1179.2	437.0	260.9	509.0
1304.0	29.7	35	1180.1	437.4	261.2	509.5
1305.0	29.7	35	1181.0	437.8	261.5	510.0
1306.0	29.6	36	1181.8	438.2	261.8	510.4
1307.0	29.5	36	1182.7	438.6	262.1	510.9
1308.0	29.5	36	1183.6	439.0	262.4	511.4
1309.0	29.4	36	1184.4	439.4	262.6	511.9
1310.0	29.4	36	1185.3	439.8	262.9	512.4
1311.0	29.5	36	1186.2	440.2	263.2	512.9
1312.0	29.5	35	1187.1	440.6	263.5	513.4
1313.0	29.5	35	1187.9	441.0	263.8	513.9
1314.0	29.5	35	1188.8	441.4	264.1	514.4
1315.0	29.4	35	1189.7	441.3	264.4	514.9

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1316.0	29.4	35	1190.5	442.2	264.6	515.4
1317.0	29.3	35	1191.4	442.6	264.9	515.8
1318.0	29.3	35	1192.3	443.0	265.2	516.3
1319.0	29.3	35	1193.2	443.4	265.5	516.8
1320.0	29.3	36	1194.0	443.8	265.8	517.3
1321.0	29.3	36	1194.9	444.2	266.1	517.8
1322.0	29.3	36	1195.8	444.6	266.3	518.3
1323.0	29.2	36	1196.6	445.0	266.6	518.8
1324.0	29.2	36	1197.5	445.4	266.9	519.3
1325.0	29.1	36	1198.4	445.8	267.2	519.7
1326.0	29.0	36	1199.3	446.2	267.5	520.2
1327.0	29.0	36	1200.1	446.6	267.8	520.7
1328.0	29.1	36	1201.0	447.0	268.1	521.2
1329.0	29.1	36	1201.9	447.4	268.3	521.7
1330.0	29.1	36	1202.8	447.8	268.6	522.2
1331.0	29.2	36	1203.6	448.2	268.9	522.7
1332.0	29.2	36	1204.5	448.6	269.2	523.1
1333.0	29.1	36	1205.4	449.0	269.5	523.6
1334.0	29.0	37	1206.3	449.3	269.8	524.1
1335.0	28.9	37	1207.1	449.7	270.1	524.6
1336.0	28.8	36	1208.0	450.1	270.4	525.1
1337.0	28.8	36	1208.9	450.5	270.6	525.6
1338.0	28.9	36	1209.8	450.9	270.9	526.0
1339.0	29.0	37	1210.6	451.3	271.2	526.5
1340.0	29.1	37	1211.5	451.7	271.5	527.0
1341.0	29.2	36	1212.4	452.1	271.8	527.5
1342.0	29.3	36	1213.3	452.5	272.1	528.0
1343.0	29.3	35	1214.1	452.8	272.4	528.4
1344.0	29.1	36	1215.0	453.2	272.7	528.9
1345.0	28.9	36	1215.9	453.6	272.9	529.4
1346.0	28.7	36	1216.7	454.0	273.2	529.9
1347.0	28.6	36	1217.6	454.4	273.5	530.4
1348.0	28.5	36	1218.5	454.8	273.8	530.9
1349.0	28.6	36	1219.4	455.2	274.1	531.3
1350.0	28.6	36	1220.3	455.6	274.3	531.8
1351.0	28.7	36	1221.1	456.0	274.6	532.3
1352.0	28.7	36	1222.0	456.4	274.9	532.8
1353.0	28.7	36	1222.9	456.8	275.2	533.2
1354.0	28.7	36	1223.8	457.1	275.5	533.7
1355.0	28.6	36	1224.6	457.5	275.8	534.2
1356.0	28.6	36	1225.5	457.9	276.0	534.7
1357.0	28.6	36	1226.4	458.3	276.3	535.2
1358.0	28.6	36	1227.3	458.7	276.6	535.6
1359.0	28.6	36	1228.2	459.1	276.9	536.1
1360.0	28.6	36	1229.0	459.5	277.2	536.6
1361.0	28.5	37	1229.9	459.9	277.4	537.1
1362.0	28.5	37	1230.8	460.2	277.7	537.5

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1363.0	28.5	37	1231.7	460.6	278.0	538.0
1364.0	28.4	37	1232.5	461.0	278.3	538.5
1365.0	28.4	37	1233.4	461.4	278.6	539.0
1366.0	28.3	37	1234.3	461.8	278.9	539.4
1367.0	28.3	37	1235.2	462.1	279.2	539.9
1368.0	28.3	37	1236.1	462.5	279.4	540.4
1369.0	28.3	37	1236.9	462.9	279.7	540.9
1370.0	28.3	37	1237.8	463.3	280.0	541.3
1371.0	28.3	37	1238.7	463.7	280.3	541.8
1372.0	28.2	37	1239.6	464.0	280.6	542.3
1373.0	28.2	37	1240.5	464.4	280.9	542.7
1374.0	28.2	37	1241.3	464.8	281.2	543.2
1375.0	28.3	38	1242.2	465.2	281.4	543.7
1376.0	28.4	38	1243.1	465.5	281.7	544.2
1377.0	28.5	37	1244.0	465.9	282.0	544.6
1378.0	28.7	37	1244.9	466.3	282.3	545.1
1379.0	28.9	37	1245.7	466.7	282.6	545.6
1380.0	29.0	37	1246.6	467.1	282.9	546.1
1381.0	29.1	36	1247.5	467.4	283.2	546.5
1382.0	29.0	37	1248.4	467.8	283.5	547.0
1383.0	29.0	37	1249.2	468.2	283.8	547.5
1384.0	29.0	37	1250.1	468.6	284.0	548.0
1385.0	28.8	37	1251.0	469.0	284.3	548.5
1386.0	28.7	37	1251.9	469.4	284.6	548.9
1387.0	28.5	37	1252.7	469.8	284.9	549.4
1388.0	28.2	38	1253.6	470.2	285.2	549.9
1389.0	27.9	38	1254.5	470.5	285.5	550.4
1390.0	27.8	38	1255.4	470.9	285.8	550.8
1391.0	27.7	37	1256.3	471.3	286.1	551.3
1392.0	27.7	37	1257.2	471.6	286.4	551.8
1393.0	27.7	37	1258.0	472.0	286.6	552.2
1394.0	27.6	37	1258.9	472.4	286.9	552.7
1395.0	27.6	37	1259.8	472.8	287.2	553.2
1396.0	27.7	37	1260.7	473.1	287.5	553.6
1397.0	27.7	37	1261.6	473.5	287.8	554.1
1398.0	27.8	37	1262.5	473.9	288.0	554.5
1399.0	27.9	37	1263.4	474.2	288.3	555.0
1400.0	28.1	37	1264.2	474.6	288.6	555.5
1401.0	28.2	37	1265.1	475.0	288.9	555.9
1402.0	28.3	37	1266.0	475.4	289.2	556.4
1403.0	28.4	37	1266.9	475.7	289.5	556.9
1404.0	28.4	37	1267.8	476.1	289.7	557.3
1405.0	28.4	37	1268.6	476.5	290.0	557.8
1406.0	28.4	37	1269.5	476.9	290.3	558.3
1407.0	28.2	37	1270.4	477.3	290.6	558.8
1408.0	28.1	37	1271.3	477.6	290.9	559.2
1409.0	28.1	37	1272.2	478.0	291.2	559.7

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1410.0	28.2	37	1273.0	478.4	291.5	560.2
1411.0	28.4	37	1273.9	478.8	291.7	560.6
1412.0	28.4	37	1274.8	479.1	292.0	561.1
1413.0	28.5	37	1275.7	479.5	292.3	561.6
1414.0	28.5	37	1276.6	479.9	292.6	562.1
1415.0	28.3	37	1277.4	480.3	292.9	562.5
1416.0	28.1	37	1278.3	480.7	293.2	563.0
1417.0	28.0	37	1279.2	481.0	293.5	563.5
1418.0	28.1	37	1280.1	481.4	293.7	564.0
1419.0	28.1	37	1281.0	481.8	294.0	564.4
1420.0	28.1	37	1281.9	482.2	294.3	564.9
1421.0	28.0	37	1282.7	482.5	294.6	565.4
1422.0	27.9	37	1283.6	482.9	294.9	565.8
1423.0	27.7	37	1284.5	483.3	295.2	566.3
1424.0	27.4	38	1285.4	483.7	295.4	566.8
1425.0	27.2	38	1286.3	484.0	295.7	567.2
1426.0	27.2	38	1287.2	484.4	296.0	567.7
1427.0	27.3	38	1288.1	484.8	296.3	568.1
1428.0	27.3	38	1288.9	485.1	296.6	568.6
1429.0	27.3	38	1289.8	485.5	296.8	569.0
1430.0	27.4	38	1290.7	485.8	297.1	569.5
1431.0	27.4	38	1291.6	486.2	297.4	570.0
1432.0	27.4	38	1292.5	486.6	297.7	570.4
1433.0	27.4	37	1293.4	486.9	298.0	570.9
1434.0	27.5	37	1294.3	487.3	298.3	571.3
1435.0	27.5	38	1295.2	487.7	298.5	571.8
1436.0	27.6	38	1296.0	488.0	298.8	572.2
1437.0	27.7	38	1296.9	488.4	299.1	572.7
1438.0	27.8	38	1297.8	488.8	299.4	573.2
1439.0	27.9	38	1298.7	489.1	299.7	573.6
1440.0	28.0	38	1299.6	489.5	300.0	574.1
1441.0	28.1	37	1300.5	489.9	300.2	574.6
1442.0	28.2	37	1301.4	490.2	300.5	575.0
1443.0	28.1	37	1302.2	490.6	300.8	575.5
1444.0	28.1	37	1303.1	491.0	301.1	576.0
1445.0	27.9	37	1304.0	491.4	301.4	576.4
1446.0	27.6	37	1304.9	491.7	301.7	576.9
1447.0	27.3	37	1305.8	492.1	301.9	577.4
1448.0	27.2	37	1306.7	492.5	302.2	577.8
1449.0	27.1	38	1307.5	492.9	302.5	578.3
1450.0	27.1	38	1308.4	493.2	302.8	578.7
1451.0	27.2	38	1309.3	493.6	303.1	579.2
1452.0	27.3	37	1310.2	493.9	303.3	579.6
1453.0	27.3	37	1311.1	494.3	303.6	580.1
1454.0	27.2	37	1312.0	494.7	303.9	580.6
1455.0	27.2	37	1312.9	495.0	304.2	581.0
1456.0	27.2	37	1313.8	495.4	304.4	581.5

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1457.0	27.1	37	1314.7	495.8	304.7	581.9
1458.0	27.1	37	1315.5	496.1	305.0	582.4
1459.0	27.1	37	1316.4	496.5	305.3	582.8
1460.0	27.1	37	1317.3	496.9	305.5	583.3
1461.0	27.1	37	1318.2	497.2	305.8	583.7
1462.0	27.1	37	1319.1	497.6	306.1	584.2
1463.0	27.1	37	1320.0	497.9	306.4	584.6
1464.0	27.1	37	1320.9	498.3	306.6	585.1
1465.0	27.1	37	1321.8	498.7	306.9	585.6
1466.0	27.1	37	1322.7	499.0	307.2	586.0
1467.0	27.1	37	1323.6	499.4	307.5	586.5
1468.0	27.1	37	1324.4	499.8	307.7	586.9
1469.0	27.1	37	1325.3	500.1	308.0	587.4
1470.0	27.1	37	1326.2	500.5	308.3	587.8
1471.0	27.1	37	1327.1	500.9	308.6	588.3
1472.0	27.1	37	1328.0	501.2	308.8	588.7
1473.0	27.0	37	1328.9	501.6	309.1	589.2
1474.0	27.0	37	1329.8	501.9	309.4	589.6
1475.0	27.0	37	1330.7	502.3	309.7	590.1
1476.0	27.0	36	1331.6	502.7	309.9	590.5
1477.0	27.0	36	1332.5	503.0	310.2	591.0
1478.0	27.0	36	1333.4	503.4	310.5	591.4
1479.0	27.0	36	1334.2	503.8	310.7	591.9
1480.0	27.0	36	1335.1	504.1	311.0	592.3
1481.0	27.0	36	1336.0	504.5	311.3	592.8
1482.0	27.0	36	1336.9	504.9	311.5	593.3
1483.0	27.0	36	1337.8	505.2	311.8	593.7
1484.0	27.0	36	1338.7	505.6	312.1	594.2
1485.0	27.0	36	1339.6	506.0	312.3	594.6
1486.0	27.0	36	1340.5	506.3	312.6	595.1
1487.0	26.9	37	1341.4	506.7	312.9	595.5
1488.0	26.9	37	1342.3	507.1	313.1	596.0
1489.0	26.9	37	1343.2	507.4	313.4	596.4
1490.0	26.9	36	1344.0	507.8	313.7	596.9
1491.0	26.9	36	1344.9	508.2	314.0	597.3
1492.0	26.9	36	1345.8	508.5	314.2	597.8
1493.0	26.9	36	1346.7	508.9	314.5	598.2
1494.0	26.9	36	1347.6	509.3	314.8	598.7
1495.0	26.9	36	1348.5	509.6	315.0	599.1
1496.0	26.9	36	1349.4	510.0	315.3	599.6
1497.0	26.9	36	1350.3	510.3	315.6	600.0
1498.0	26.9	36	1351.2	510.7	315.8	600.5
1499.0	26.9	36	1352.1	511.1	316.1	600.9
1500.0	26.9	36	1353.0	511.4	316.4	601.4
1501.0	26.9	36	1353.9	511.8	316.6	601.8
1502.0	26.9	36	1354.7	512.2	316.9	602.3
1503.0	26.9	36	1355.6	512.5	317.2	602.7

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1504.0	26.9	36	1356.5	512.9	317.4	603.2
1505.0	26.9	36	1357.4	513.3	317.7	603.6
1506.0	26.9	37	1358.3	513.6	318.0	604.1
1507.0	26.9	37	1359.2	514.0	318.2	604.5
1508.0	26.9	37	1360.1	514.4	318.5	605.0
1509.0	26.8	37	1361.0	514.7	318.8	605.4
1510.0	26.8	37	1361.9	515.1	319.0	605.9
1511.0	26.8	37	1362.8	515.5	319.3	606.3
1512.0	26.8	37	1363.7	515.8	319.6	606.8
1513.0	26.8	37	1364.6	516.2	319.8	607.2
1514.0	26.8	37	1365.5	516.5	320.1	607.7
1515.0	26.8	36	1366.3	516.9	320.4	608.1
1516.0	26.8	36	1367.2	517.3	320.7	608.6
1517.0	26.8	37	1368.1	517.6	320.9	609.0
1518.0	26.8	37	1369.0	518.0	321.2	609.5
1519.0	26.8	37	1369.9	518.3	321.5	609.9
1520.0	26.8	37	1370.8	518.7	321.7	610.4
1521.0	26.8	37	1371.7	519.1	322.0	610.8
1522.0	26.8	37	1372.6	519.4	322.3	611.3
1523.0	26.7	37	1373.5	519.8	322.5	611.7
1524.0	26.7	37	1374.4	520.1	322.8	612.2
1525.0	26.7	37	1375.3	520.5	323.1	612.6
1526.0	26.7	37	1376.2	520.9	323.4	613.1
1527.0	26.7	37	1377.1	521.2	323.6	613.5
1528.0	26.7	37	1378.0	521.6	323.9	614.0
1529.0	26.7	37	1378.8	521.9	324.2	614.4
1530.0	26.7	37	1379.7	522.3	324.4	614.9
1531.0	26.7	37	1380.6	522.7	324.7	615.3
1532.0	26.7	37	1381.5	523.0	325.0	615.8
1533.0	26.7	37	1382.4	523.4	325.3	616.2
1534.0	26.7	37	1383.3	523.7	325.5	616.7
1535.0	26.7	37	1384.2	524.1	325.8	617.1
1536.0	26.7	37	1385.1	524.5	326.1	617.5
1537.0	26.7	37	1386.0	524.8	326.3	618.0
1538.0	26.7	37	1386.9	525.2	326.6	618.4
1539.0	26.7	37	1387.8	525.5	326.9	618.9
1540.0	26.7	37	1388.7	525.9	327.1	619.3
1541.0	26.7	37	1389.6	526.2	327.4	619.8
1542.0	26.7	37	1390.5	526.6	327.7	620.2
1543.0	26.7	37	1391.4	527.0	328.0	620.7
1544.0	26.7	37	1392.2	527.3	328.2	621.1
1545.0	26.7	37	1393.1	527.7	328.5	621.6
1546.0	26.7	37	1394.0	528.0	328.8	622.0
1547.0	26.7	37	1394.9	528.4	329.0	622.5
1548.0	26.7	37	1395.8	528.8	329.3	622.9
1549.0	26.7	37	1396.7	529.1	329.6	623.4
1550.0	26.7	37	1397.6	529.5	329.8	623.8

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1551.0	26.7	37	1398.5	529.8	330.1	624.3
1552.0	26.7	37	1399.4	530.2	330.4	624.7
1553.0	26.7	37	1400.3	530.6	330.7	625.2
1554.0	26.7	37	1401.2	530.9	330.9	625.6
1555.0	26.7	37	1402.1	531.3	331.2	626.1
1556.0	26.6	37	1403.0	531.6	331.5	626.5
1557.0	26.6	37	1403.9	532.0	331.7	626.9
1558.0	26.6	37	1404.8	532.3	332.0	627.4
1559.0	26.6	37	1405.6	532.7	332.3	627.8
1560.0	26.6	37	1406.5	533.1	332.5	628.3
1561.0	26.6	37	1407.4	533.4	332.8	628.7
1562.0	26.6	37	1408.3	533.8	333.1	629.2
1563.0	26.6	37	1409.2	534.1	333.4	629.6
1564.0	26.6	37	1410.1	534.5	333.6	630.1
1565.0	26.6	37	1411.0	534.8	333.9	630.5
1566.0	26.6	37	1411.9	535.2	334.2	631.0
1567.0	26.6	37	1412.8	535.6	334.4	631.4
1568.0	26.6	37	1413.7	535.9	334.7	631.9
1569.0	26.6	37	1414.6	536.3	335.0	632.3
1570.0	26.6	37	1415.5	536.6	335.2	632.7
1571.0	26.6	37	1416.4	537.0	335.5	633.2
1572.0	26.6	36	1417.3	537.4	335.8	633.6
1573.0	26.6	36	1418.2	537.7	336.0	634.1
1574.0	26.6	36	1419.1	538.1	336.3	634.5
1575.0	26.6	37	1420.0	538.4	336.6	635.0
1576.0	26.6	37	1420.8	538.8	336.8	635.4
1577.0	26.6	37	1421.7	539.2	337.1	635.9
1578.0	26.6	36	1422.6	539.5	337.4	636.3
1579.0	26.6	36	1423.5	539.9	337.6	636.8
1580.0	26.6	36	1424.4	540.2	337.9	637.2
1581.0	26.6	36	1425.3	540.6	338.2	637.7
1582.0	26.6	36	1426.2	541.0	338.4	638.1
1583.0	26.6	36	1427.1	541.3	338.7	638.5
1584.0	26.6	36	1428.0	541.7	339.0	639.0
1585.0	26.6	36	1428.9	542.0	339.2	639.4
1586.0	26.6	36	1429.8	542.4	339.5	639.9
1587.0	26.6	36	1430.7	542.8	339.8	640.3
1588.0	26.6	36	1431.6	543.1	340.0	640.8
1589.0	26.6	36	1432.5	543.5	340.3	641.2
1590.0	26.6	36	1433.4	543.9	340.5	641.7
1591.0	26.6	36	1434.3	544.2	340.8	642.1
1592.0	26.6	36	1435.2	544.6	341.1	642.6
1593.0	26.6	36	1436.1	544.9	341.3	643.0
1594.0	26.6	36	1436.9	545.3	341.6	643.5
1595.0	26.6	36	1437.8	545.7	341.9	643.9
1596.0	26.6	36	1438.7	546.0	342.1	644.4
1597.0	26.6	36	1439.6	546.4	342.4	644.8

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1598.0	26.6	36	1440.5	546.8	342.6	645.2
1599.0	26.6	36	1441.4	547.1	342.9	645.7
1600.0	26.6	36	1442.3	547.5	343.2	646.1
1601.0	26.6	36	1443.2	547.8	343.4	646.6
1602.0	26.6	36	1444.1	548.2	343.7	647.0
1603.0	26.6	36	1445.0	548.6	344.0	647.5
1604.0	26.6	36	1445.9	548.9	344.2	647.9
1605.0	26.6	36	1446.8	549.3	344.5	648.4
1606.0	26.6	36	1447.7	549.6	344.8	648.8
1607.0	26.6	36	1448.6	550.0	345.0	649.3
1608.0	26.6	36	1449.5	550.4	345.3	649.7
1609.0	26.6	36	1450.4	550.7	345.5	650.2
1610.0	26.6	36	1451.3	551.1	345.8	650.6
1611.0	26.6	36	1452.1	551.5	346.1	651.1
1612.0	26.6	36	1453.0	551.8	346.3	651.5
1613.0	26.6	36	1453.9	552.2	346.6	651.9
1614.0	26.6	36	1454.8	552.5	346.9	652.4
1615.0	26.6	36	1455.7	552.9	347.1	652.8
1616.0	26.6	36	1456.6	553.3	347.4	653.3
1617.0	26.6	36	1457.5	553.6	347.7	653.7
1618.0	26.6	36	1458.4	554.0	347.9	654.2
1619.0	26.6	36	1459.3	554.4	348.2	654.6
1620.0	26.6	36	1460.2	554.7	348.4	655.1
1621.0	26.6	36	1461.1	555.1	348.7	655.5
1622.0	26.6	36	1462.0	555.4	349.0	656.0
1623.0	26.6	36	1462.9	555.8	349.2	656.4
1624.0	26.6	36	1463.8	556.2	349.5	656.9
1625.0	26.6	36	1464.7	556.5	349.8	657.3
1626.0	26.6	36	1465.6	556.9	350.0	657.8
1627.0	26.6	36	1466.5	557.3	350.3	658.2
1628.0	26.6	36	1467.3	557.6	350.5	658.6
1629.0	26.6	36	1468.2	558.0	350.8	659.1
1630.0	26.6	36	1469.1	558.3	351.1	659.5
1631.0	26.6	36	1470.0	558.7	351.3	660.0
1632.0	26.6	36	1470.9	559.1	351.6	660.4
1633.0	26.6	36	1471.8	559.4	351.9	660.9
1634.0	26.6	36	1472.7	559.8	352.1	661.3
1635.0	26.6	36	1473.6	560.2	352.4	661.8
1636.0	26.6	36	1474.5	560.5	352.7	662.2
1637.0	26.6	36	1475.4	560.9	352.9	662.7
1638.0	26.6	36	1476.3	561.2	353.2	663.1
1639.0	26.6	36	1477.2	561.6	353.4	663.6
1640.0	26.6	36	1478.1	562.0	353.7	664.0
1641.0	26.6	36	1479.0	562.3	354.0	664.5
1642.0	26.6	36	1479.9	562.7	354.2	664.9
1643.0	26.6	36	1480.8	563.0	354.5	665.4
1644.0	26.6	36	1481.7	563.4	354.8	665.8

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1645.0	26.6	36	1482.5	563.8	355.0	666.2
1646.0	26.6	36	1483.4	564.1	355.3	666.7
1647.0	26.6	36	1484.3	564.5	355.5	667.1
1648.0	18.3	25	1485.2	564.9	355.8	667.6
1649.0	8.6	12	1486.1	565.2	356.1	668.0
1650.0	1.1	2	1487.0	565.5	356.3	668.4
1651.0	10.8	15	1488.0	565.5	356.3	668.4
1652.0	20.5	28	1489.0	565.5	356.3	668.4
1653.0	26.6	36	1490.0	565.7	356.4	668.6
1654.0	26.6	36	1490.9	566.0	356.7	669.0
1655.0	26.6	36	1491.8	566.4	356.9	669.5
1656.0	26.6	36	1492.7	566.8	357.2	669.9
1657.0	26.6	36	1493.6	567.1	357.5	670.4
1658.0	26.6	36	1494.5	567.5	357.7	670.8
1659.0	26.6	36	1495.4	567.9	358.0	671.3
1660.0	26.6	36	1496.2	568.2	358.2	671.7
1661.0	26.6	36	1497.1	568.6	358.5	672.2
1662.0	26.6	36	1498.0	568.9	358.8	672.6
1663.0	26.6	36	1498.9	569.3	359.0	673.1
1664.0	26.6	36	1499.8	569.7	359.3	673.5
1665.0	26.5	36	1500.7	570.0	359.6	674.0
1666.0	26.5	36	1501.6	570.4	359.8	674.4
1667.0	26.5	36	1502.5	570.7	360.1	674.8
1668.0	26.5	36	1503.4	571.1	360.4	675.3
1669.0	26.5	36	1504.3	571.5	360.6	675.7
1670.0	26.5	36	1505.2	571.8	360.9	676.2
1671.0	26.5	36	1506.1	572.2	361.1	676.6
1672.0	26.5	36	1507.0	572.6	361.4	677.1
1673.0	26.5	36	1507.9	572.9	361.7	677.5
1674.0	26.5	36	1508.8	573.3	361.9	678.0
1675.0	26.5	36	1509.7	573.6	362.2	678.4
1676.0	26.4	37	1510.6	574.0	362.4	678.9
1677.0	26.4	37	1511.5	574.4	362.7	679.3
1678.0	26.4	37	1512.4	574.7	363.0	679.7
1679.0	26.3	37	1513.2	575.1	363.2	680.2
1680.0	26.3	37	1514.1	575.4	363.5	680.6
1681.0	26.2	37	1515.0	575.8	363.8	681.1
1682.0	26.2	36	1515.9	576.1	364.0	681.5
1683.0	26.1	36	1516.8	576.5	364.3	682.0
1684.0	26.0	36	1517.7	576.8	364.6	682.4
1685.0	25.9	37	1518.6	577.2	364.8	682.8
1686.0	25.9	37	1519.5	577.6	365.1	683.3
1687.0	26.0	36	1520.4	577.9	365.4	683.7
1688.0	26.1	36	1521.3	578.3	365.6	684.1
1689.0	26.3	36	1522.2	578.6	365.9	684.6
1690.0	26.5	37	1523.1	579.0	366.1	685.0
1691.0	26.8	37	1524.0	579.3	366.4	685.5

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1692.0	27.0	37	1524.9	579.7	366.7	685.9
1693.0	27.1	36	1525.8	580.0	366.9	686.4
1694.0	27.3	36	1526.7	580.4	367.2	686.8
1695.0	27.2	36	1527.6	580.8	367.5	687.3
1696.0	27.2	37	1528.5	581.1	367.7	687.7
1697.0	27.1	37	1529.4	581.5	368.0	688.2
1698.0	27.1	37	1530.3	581.9	368.3	688.6
1699.0	27.1	37	1531.1	582.2	368.6	689.1
1700.0	27.1	37	1532.0	582.6	368.8	689.5
1701.0	27.2	37	1532.9	583.0	369.1	690.0
1702.0	27.2	37	1533.8	583.3	369.4	690.4
1703.0	27.2	38	1534.7	583.7	369.7	690.9
1704.0	27.1	38	1535.6	584.1	369.9	691.4
1705.0	27.1	38	1536.5	584.4	370.2	691.8
1706.0	27.0	38	1537.4	584.8	370.5	692.3
1707.0	26.9	38	1538.3	585.1	370.8	692.7
1708.0	26.8	38	1539.2	585.5	371.1	693.2
1709.0	26.7	38	1540.0	585.8	371.3	693.6
1710.0	26.7	38	1540.9	586.2	371.6	694.1
1711.0	26.6	38	1541.8	586.6	371.9	694.5
1712.0	26.6	38	1542.7	586.9	372.2	695.0
1713.0	26.5	38	1543.6	587.3	372.4	695.4
1714.0	26.5	38	1544.5	587.6	372.7	695.9
1715.0	26.4	38	1545.4	588.0	373.0	696.3
1716.0	26.4	38	1546.3	588.3	373.3	696.7
1717.0	26.3	38	1547.2	588.7	373.5	697.2
1718.0	26.2	38	1548.1	589.0	373.8	697.6
1719.0	26.2	38	1549.0	589.4	374.1	698.1
1720.0	26.1	38	1549.9	589.7	374.4	698.5
1721.0	26.	39	1550.8	590.1	374.6	698.9
1722.0	26.1	39	1551.7	590.4	374.9	699.4
1723.0	26.0	38	1552.6	590.8	375.2	699.8
1724.0	26.0	38	1553.5	591.1	375.5	700.3
1725.0	26.0	38	1554.4	591.4	375.7	700.7
1726.0	26.0	39	1555.3	591.8	376.0	701.1
1727.0	26.0	39	1556.2	592.1	376.3	701.6
1728.0	25.9	39	1557.1	592.5	376.5	702.0
1729.0	25.7	39	1558.0	592.8	376.8	702.4
1730.0	25.7	39	1558.9	593.2	377.1	702.9
1731.0	25.7	39	1559.8	593.5	377.4	703.3
1732.0	25.7	39	1560.7	593.8	377.6	703.7
1733.0	25.7	39	1561.6	594.2	377.9	704.2
1734.0	25.8	39	1562.5	594.5	378.2	704.6
1735.0	25.8	39	1563.4	594.8	378.5	705.0
1736.0	25.8	39	1564.3	595.2	378.7	705.5
1737.0	25.8	39	1565.2	595.5	379.0	705.9
1738.0	25.7	39	1566.1	595.8	379.3	706.3

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1739.0	25.7	39	1567.0	596.2	379.6	706.8
1740.0	25.6	39	1567.9	596.5	379.8	707.2
1741.0	25.6	39	1568.8	596.9	380.1	707.6
1742.0	25.6	39	1569.7	597.2	380.4	708.0
1743.0	25.6	39	1570.6	597.5	380.6	708.5
1744.0	25.6	39	1571.5	597.9	380.9	708.9
1745.0	25.6	39	1572.4	598.2	381.2	709.3
1746.0	25.6	39	1573.3	598.5	381.5	709.8
1747.0	25.5	39	1574.2	598.9	381.7	710.2
1748.0	25.4	38	1575.1	599.2	382.0	710.6
1749.0	25.2	38	1576.0	599.5	382.3	711.0
1750.0	25.1	38	1576.9	599.9	382.5	711.5
1751.0	25.0	38	1577.8	600.2	382.8	711.9
1752.0	24.9	38	1578.7	600.6	383.1	712.3
1753.0	24.8	39	1579.6	600.9	383.3	712.7
1754.0	24.8	39	1580.5	601.2	383.6	713.2
1755.0	24.9	39	1581.4	601.5	383.8	713.6
1756.0	24.9	38	1582.3	601.9	384.1	714.0
1757.0	25.0	38	1583.3	602.2	384.4	714.4
1758.0	24.9	38	1584.2	602.5	384.6	714.8
1759.0	24.8	38	1585.1	602.9	384.9	715.2
1760.0	24.8	38	1586.0	603.2	385.1	715.7
1761.0	24.8	38	1586.9	603.5	385.4	716.1
1762.0	24.8	38	1587.8	603.9	385.7	716.5
1763.0	24.9	38	1588.7	604.2	385.9	716.9
1764.0	24.9	38	1589.6	604.5	386.2	717.3
1765.0	25.0	38	1590.5	604.8	386.4	717.8
1766.0	25.0	38	1591.4	605.2	386.7	718.2
1767.0	24.9	38	1592.3	605.5	387.0	718.6
1768.0	24.9	38	1593.2	605.8	387.2	719.0
1769.0	24.8	38	1594.1	606.2	387.5	719.4
1770.0	24.7	39	1595.0	606.5	387.7	719.9
1771.0	24.7	39	1596.0	606.8	388.0	720.3
1772.0	24.8	39	1596.9	607.2	388.3	720.7
1773.0	24.9	39	1597.8	607.5	388.5	721.1
1774.0	24.8	39	1598.7	607.8	388.8	721.5
1775.0	24.8	39	1599.6	608.1	389.1	721.9
1776.0	24.7	39	1600.5	608.5	389.3	722.4
1777.0	24.7	39	1601.4	608.8	389.6	722.8
1778.0	24.6	39	1602.3	609.1	389.9	723.2
1779.0	24.6	39	1603.2	609.4	390.1	723.6
1780.0	24.8	39	1604.1	609.8	390.4	724.0
1781.0	24.9	39	1605.0	610.1	390.6	724.4
1782.0	25.0	39	1605.9	610.4	390.9	724.9
1783.0	25.0	39	1606.8	610.7	391.2	725.3
1784.0	25.0	39	1607.8	611.1	391.4	725.7
1785.0	25.0	39	1608.7	611.4	391.7	726.1

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1786.0	24.9	39	1609.6	611.7	392.0	726.5
1787.0	24.9	39	1610.5	612.1	392.2	727.0
1788.0	24.9	39	1611.4	612.4	392.5	727.4
1789.0	24.9	39	1612.3	612.7	392.8	727.8
1790.0	24.9	39	1613.2	613.0	393.0	728.2
1791.0	24.9	39	1614.1	613.4	393.3	728.6
1792.0	24.8	39	1615.0	613.7	393.6	729.0
1793.0	24.8	39	1615.9	614.0	393.8	729.5
1794.0	24.7	39	1616.8	614.3	394.1	729.9
1795.0	24.6	39	1617.7	614.7	394.3	730.3
1796.0	24.6	39	1618.6	615.0	394.6	730.7
1797.0	24.6	39	1619.6	615.3	394.9	731.1
1798.0	24.6	39	1620.5	615.6	395.1	731.5
1799.0	24.6	39	1621.4	616.0	395.4	732.0
1800.0	24.7	39	1622.3	616.3	395.7	732.4
1801.0	24.7	39	1623.2	616.6	395.9	732.8
1802.0	24.7	39	1624.1	616.9	396.2	733.2
1803.0	24.7	39	1625.0	617.3	396.4	733.6
1804.0	24.7	39	1625.9	617.6	396.7	734.0
1805.0	24.6	39	1626.8	617.9	397.0	734.4
1806.0	24.6	40	1627.7	618.2	397.2	734.9
1807.0	24.7	40	1628.6	618.6	397.5	735.3
1808.0	24.7	40	1629.5	618.9	397.8	735.7
1809.0	24.8	40	1630.5	619.2	398.0	736.1
1810.0	24.7	40	1631.4	619.5	398.3	736.5
1811.0	24.7	40	1632.3	619.8	398.6	736.9
1812.0	24.6	40	1633.2	620.2	398.8	737.3
1813.0	24.6	41	1634.1	620.5	399.1	737.8
1814.0	24.6	41	1635.0	620.8	399.4	738.2
1815.0	24.5	41	1635.9	621.1	399.6	738.6
1816.0	24.2	40	1636.8	621.4	399.9	739.0
1817.0	24.0	39	1637.7	621.7	400.2	739.4
1818.0	23.9	39	1638.6	622.1	400.4	739.8
1819.0	23.8	40	1639.6	622.4	400.7	740.2
1820.0	23.8	40	1640.5	622.7	401.0	740.6
1821.0	23.9	40	1641.4	623.0	401.2	741.0
1822.0	23.9	40	1642.3	623.3	401.5	741.4
1823.0	24.0	40	1643.2	623.6	401.7	741.8
1824.0	24.1	40	1644.1	623.9	402.0	742.2
1825.0	24.2	40	1645.0	624.2	402.3	742.6
1826.0	24.2	40	1646.0	624.6	402.5	743.0
1827.0	24.1	41	1646.9	624.9	402.8	743.4
1828.0	24.1	41	1647.8	625.2	403.0	743.8
1829.0	23.9	41	1648.7	625.5	403.3	744.2
1830.0	23.8	40	1649.6	625.8	403.6	744.7
1831.0	23.7	40	1650.5	626.1	403.8	745.1
1832.0	23.6	40	1651.4	626.4	404.1	745.5

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1833.0	23.4	41	1652.3	626.7	404.4	745.9
1834.0	23.4	41	1653.3	627.0	404.6	746.2
1835.0	23.4	41	1654.2	627.3	404.9	746.6
1836.0	23.5	41	1655.1	627.6	405.1	747.0
1837.0	23.5	41	1656.0	627.9	405.4	747.4
1838.0	23.6	41	1656.9	628.2	405.7	747.8
1839.0	23.6	41	1657.9	628.5	405.9	748.2
1840.0	23.5	41	1658.8	628.8	406.2	748.6
1841.0	23.5	42	1659.7	629.1	406.5	749.0
1842.0	23.4	42	1660.6	629.4	406.7	749.4
1843.0	23.2	42	1661.5	629.7	407.0	749.8
1844.0	23.0	42	1662.4	630.0	407.2	750.2
1845.0	22.9	41	1663.4	630.3	407.5	750.6
1846.0	22.8	41	1664.3	630.6	407.8	751.0
1847.0	22.7	41	1665.2	630.9	408.0	751.3
1848.0	22.6	41	1666.1	631.2	408.3	751.7
1849.0	22.7	41	1667.0	631.5	408.5	752.1
1850.0	22.8	41	1668.0	631.8	408.8	752.5
1851.0	22.8	41	1668.9	632.1	409.0	752.9
1852.0	22.9	41	1669.8	632.4	409.3	753.3
1853.0	23.0	41	1670.7	632.6	409.5	753.6
1854.0	23.0	40	1671.7	632.9	409.8	754.0
1855.0	23.0	40	1672.6	633.2	410.1	754.4
1856.0	22.9	40	1673.5	633.5	410.3	754.8
1857.0	22.8	40	1674.4	633.8	410.6	755.2
1858.0	22.7	41	1675.3	634.1	410.8	755.6
1859.0	22.6	41	1676.3	634.4	411.1	756.0
1860.0	22.7	41	1677.2	634.7	411.3	756.3
1861.0	22.7	41	1678.1	635.0	411.6	756.7
1862.0	22.7	41	1679.0	635.3	411.8	757.1
1863.0	22.6	40	1680.0	635.6	412.1	757.5
1864.0	22.6	40	1680.9	635.9	412.3	757.9
1865.0	22.6	40	1681.8	636.2	412.6	758.2
1866.0	22.5	39	1682.7	636.5	412.8	758.6
1867.0	22.5	39	1683.6	636.8	413.1	759.0
1868.0	22.6	39	1684.6	637.1	413.3	759.4
1869.0	22.7	40	1685.5	637.4	413.5	759.8
1870.0	22.7	40	1686.4	637.7	413.8	760.2
1871.0	22.6	41	1687.3	638.0	414.0	760.5
1872.0	22.6	41	1688.3	638.2	414.3	760.9
1873.0	22.6	40	1689.2	638.5	414.5	761.3
1874.0	22.5	40	1690.1	638.8	414.8	761.7
1875.0	22.5	39	1691.0	639.1	415.0	762.1
1876.0	22.6	39	1692.0	639.4	415.3	762.4
1877.0	22.7	40	1692.9	639.7	415.5	762.8
1878.0	22.7	40	1693.8	640.0	415.8	763.2
1879.0	22.8	40	1694.7	640.3	416.0	763.6

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	CO-ORDINATES + EAST - WEST	COURSE LENGTH M
1880.0	22.8	40	1695.6	640.6	416.3	764.0
1881.0	22.8	40	1696.6	640.9	416.5	764.4
1882.0	22.8	40	1697.5	641.2	416.8	764.7
1883.0	22.8	40	1698.4	641.5	417.0	765.1
1884.0	22.8	40	1699.3	641.8	417.3	765.5
1885.0	22.7	40	1700.3	642.1	417.5	765.9
1886.0	22.7	40	1701.2	642.4	417.8	766.3
1887.0	22.6	40	1702.1	642.7	418.0	766.7
1888.0	22.5	39	1703.0	643.0	418.3	767.0
1889.0	22.4	39	1703.9	643.3	418.5	767.4
1890.0	22.3	39	1704.9	643.6	418.7	767.8
1891.0	22.3	39	1705.8	643.9	419.0	768.2
1892.0	22.3	39	1706.7	644.2	419.2	768.6
1893.0	22.3	40	1707.6	644.5	419.5	768.9
1894.0	22.3	40	1708.6	644.7	419.7	769.3
1895.0	22.4	40	1709.5	645.0	419.9	769.7
1896.0	22.6	40	1710.4	645.3	420.2	770.1
1897.0	22.7	40	1711.3	645.6	420.4	770.4
1898.0	22.7	39	1712.3	645.9	420.7	770.8
1899.0	22.8	39	1713.2	646.2	420.9	771.2
1900.0	22.7	39	1714.1	646.5	421.2	771.6
1901.0	22.6	39	1715.0	646.8	421.4	772.0
1902.0	22.5	39	1716.0	647.1	421.7	772.4
1903.0	22.5	39	1716.9	647.4	421.9	772.7
1904.0	22.5	39	1717.8	647.7	422.1	773.1
1905.0	22.5	40	1718.7	648.0	422.4	773.5
1906.0	22.5	40	1719.7	648.3	422.6	773.9
1907.0	22.5	40	1720.6	648.6	422.9	774.3
1908.0	22.4	40	1721.5	648.9	423.1	774.6
1909.0	22.4	40	1722.4	649.2	423.3	775.0
1910.0	22.4	41	1723.3	649.5	423.6	775.4
1911.0	22.4	41	1724.3	649.8	423.8	775.8
1912.0	22.3	40	1725.2	650.1	424.1	776.2
1913.0	22.2	40	1726.1	650.3	424.3	776.5
1914.0	22.3	40	1727.0	650.6	424.6	776.9
1915.0	22.5	40	1728.0	650.9	424.8	777.3
1916.0	22.6	40	1728.9	651.2	425.1	777.7

BOTTOM HOLE LOCATION

COURSE LENGTH:	777.7	M
COURSE AZIMUTH:	33.1	DEGREES
MEASURED DEPTH:	1916.0	M
TRUE VERTICAL DEPTH:	1728.9	M
DISTANCE NORTH:	651.2	M
DISTANCE EAST:	425.1	M

CONTINUOUS CURVATURE METHOD

PE902241

This is an enclosure indicator page.
The enclosure PE902241 is enclosed within the container PE902238 at this location in this document.

The enclosure PE902241 has the following characteristics:

ITEM_BARCODE = PE902241
CONTAINER_BARCODE = PE902238
NAME = Directional Survey
BASIN = OTWAY
PERMIT = PEP 108
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Directional Survey Chart, ie.Well Path Diagrams, (enclosure from WCR) for Westgate-1A
REMARKS =
DATE_CREATED = 30/05/86
DATE_RECEIVED = 3/02/87
W_NO = W929
WELL_NAME = Westgate-1A
CONTRACTOR = Schlumberger
CLIENT_OP_CO = Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE605037

This is an enclosure indicator page.
The enclosure PE605037 is enclosed within the container PE902238 at this location in this document.

The enclosure PE605037 has the following characteristics:

```
     ITEM_BARCODE = PE605037
CONTAINER_BARCODE = PE902238
             NAME = Exlog Mud Log
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = WELL
          SUBTYPE = MUD_LOG
      DESCRIPTION = Exlog Mud Log (enclosure from WCR) for
                    Westgate-1A
          REMARKS =
     DATE_CREATED = 12/03/86
    DATE_RECEIVED = 3/02/87
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR = EXLOG
     CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE605038

This is an enclosure indicator page.
The enclosure PE605038 is enclosed within the container PE902238 at this location in this document.

The enclosure PE605038 has the following characteristics:

ITEM_BARCODE =	PE605038
CONTAINER_BARCODE =	PE902238
NAME =	Composite Well Log
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	WELL
SUBTYPE =	COMPOSITE_LOG
DESCRIPTION =	Composite Well Log (enclosure from WCR) for Westgate-1A
REMARKS =	
DATE_CREATED =	24/03/86
DATE_RECEIVED =	3/02/87
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE907624

This is an enclosure indicator page.
The enclosure PE907624 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907624 has the following characteristics:

ITEM_BARCODE =	PE907624
CONTAINER_BARCODE =	PE902238
NAME =	Structure Map Near Top of Cretaceous (Pebble Pt.)
BASIN =	OTWAY
PERMIT =	PEP 108
TYPE =	SEISMIC
SUBTYPE =	HRZN_CNTR_MAP
DESCRIPTION =	Structure Map Near Top of Cretaceous (Pebble Point), enclosure from WCR for Westgate-1A
REMARKS =	
DATE_CREATED =	31/10/85
DATE_RECEIVED =	8/01/86
W_NO =	W929
WELL_NAME =	Westgate-1A
CONTRACTOR =	Beach Petroleum NL
CLIENT_OP_CO =	Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE907625

This is an enclosure indicator page.
The enclosure PE907625 is enclosed within the container PE902238 at this location in this document.

The enclosure PE907625 has the following characteristics:

```
     ITEM_BARCODE = PE907625
CONTAINER_BARCODE = PE902238
             NAME = Structure Map Near Top of Waarre
                    Sandstone
            BASIN = OTWAY
           PERMIT = PEP 108
             TYPE = SEISMIC
          SUBTYPE = HRZN_CNTR_MAP
      DESCRIPTION = Structure Map Near Top of Waarre
                    Sanstone, enclosure from WCR for
                    Westgate-1A
          REMARKS =
     DATE_CREATED = 31/10/85
    DATE_RECEIVED = 8/01/86
             W_NO = W929
        WELL_NAME = Westgate-1A
       CONTRACTOR = Beach Petroleum NL
     CLIENT_OP_CO = Beach Petroleum NL
```

(Inserted by DNRE - Vic Govt Mines Dept)