

DEPT. NAT. RES & ENV



PE902238

BEACH PETROLEUM N.L.

(Incorporated in South Australia)

WCR
Westgate-1A
(W929)

W929

WESTGATE-1

W.C.R.

PETROLEUM DIVISION

03 FEB 1987

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BEACH PETROLEUM N.L.

NO.

WESTGATE NO. 1A

OTWAY BASIN
PEP 108 - OTWAY BASIN

WELL COMPLETION REPORT

BY:

B.L. RAYNEE.
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 Antarctica. 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.

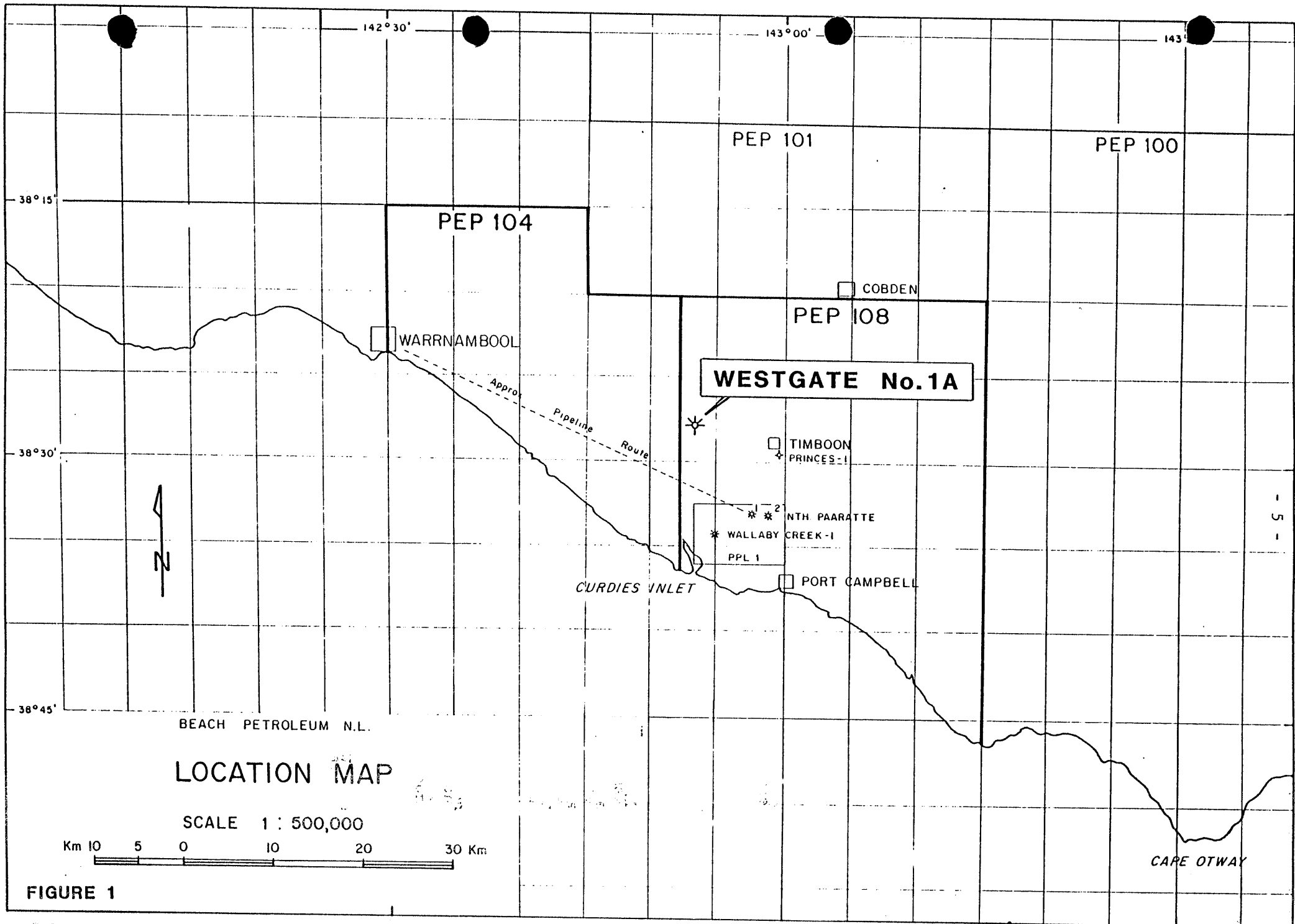
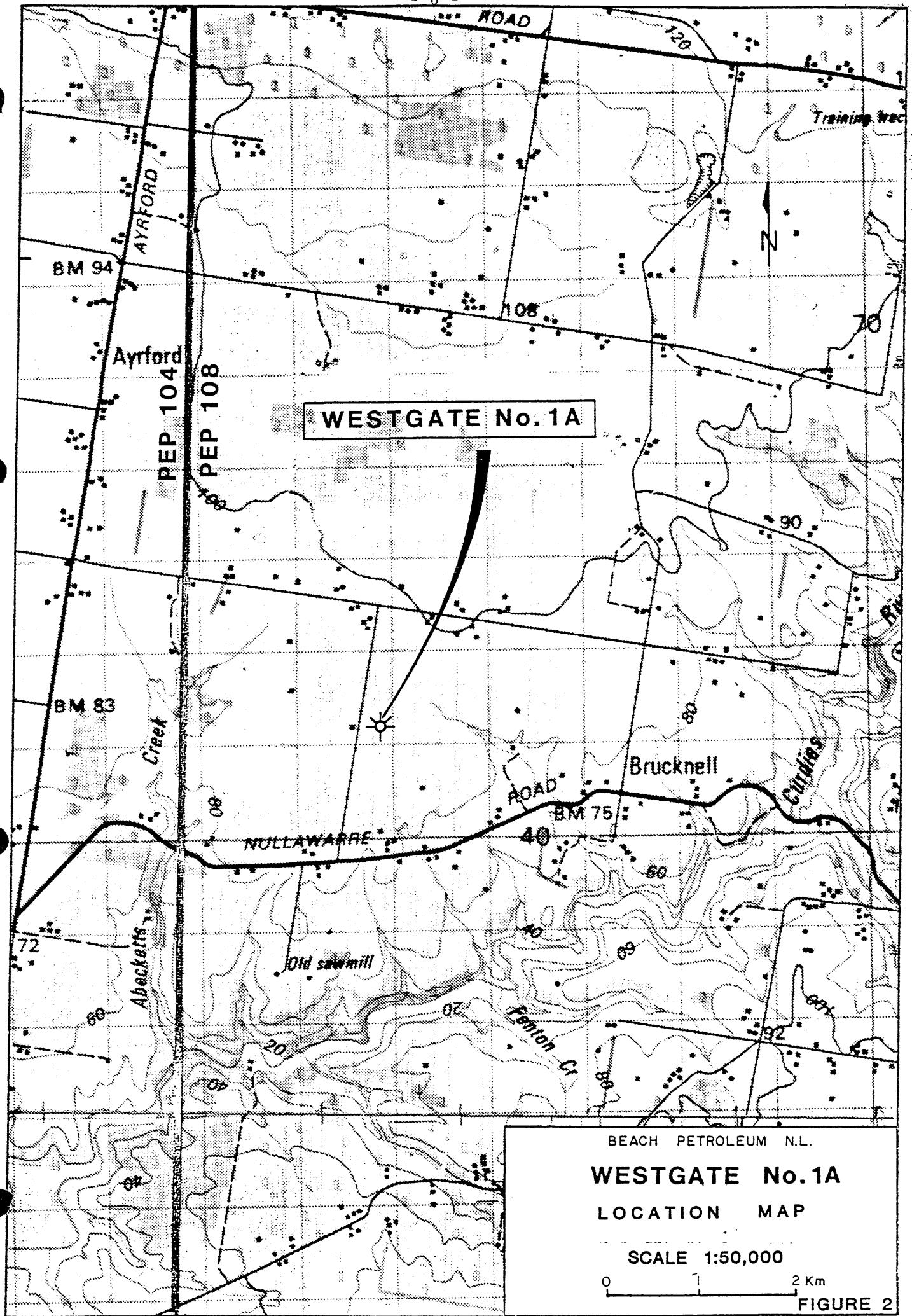


FIGURE 1



WESTGATE No. 1A

BEACH PETROLEUM N.L.

WESTGATE No. 1A

LOCATION MAP

SCALE 1:50,000

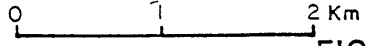


FIGURE 2

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)

. 12 $\frac{1}{2}$ " 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.

8½" Hole, 456m to 1819m MD

The 8½" 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).

<u>SWC</u> <u>No.</u>	<u>Depth</u> (m)	<u>Recovery</u> (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

Note:

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

P - Petrological 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 filtrate 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.

DEPTH	TEN	HYDROSTATIC		FORMATION		TEST
		SG	HPG	SG	HPG	
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.I., Depth in metres, Ten=Tension.
SG = strain gauge, HPG = high precision gauge.

DST No.1

5½" 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 nipped down and Otis lubricator nipped up. Amerada guages run in hole. Well opened to flare through ¾" 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) 122lm,. 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 453m to 1914m
(DLL/SP/GR/Cal)

Micro spherically 453m to 1914m
focused log

Lithodensity/Compensated 500m to 1150m
Neutron Log 1425m to 1914m
(LDL/CNL)

Sonic Log 1125m to 1914m
(SLS)

Natural Gamma Ray 850m to 970m
Spectroscopy Log 1425m to 1515m
(NGT) 1665m to 1910m

Stratigraphic High 850m to 1916m
Resolution Dipmeter Tool
(SHDT)
(Mean Square Dip Processing)

Microlog 850m to 970m
(ML) 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).

<u>Group</u>	<u>Formation</u>	<u>Depth</u>	<u>Depth</u>	<u>Depth</u>	<u>Thick-</u>
		MD	TVD	Subsea	ness 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
Otway	Flaxmans	1743.0	1577	1482.7	65
	Waarre	1813.0	1642	1547.7	35
	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.

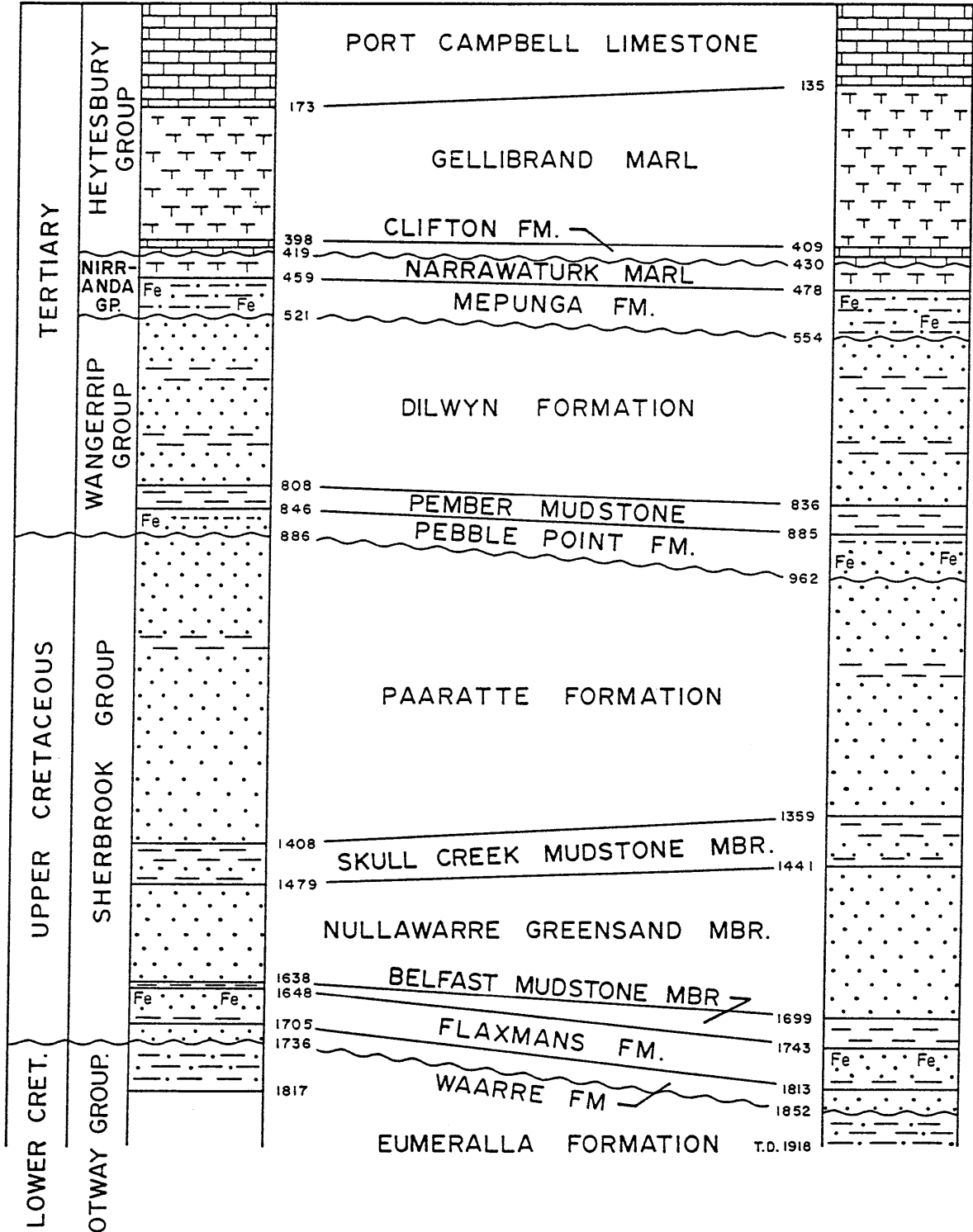


FIGURE 3

OTWAY BASIN STRATIGRAPHIC TABLE

GENERAL TIME SCALE		GROUP	FORMATION	MEMBER	GENERAL LITHOLOGY	OIL / GAS	
Period	Age						
TERTIARY	Q.	POST - HEYTESBURY	NEWER VOLCANIC		V V V V V V V V NEWER VOLCANIC V V V V		
			WHALERS BLUFF FM., ETC.				
		Pliocene	HEYTESBURY	PORT CAMPBELL			
		Miocene		GELLIBRAND			
		Oligocene		CLIFTON	Fe		
		Eocene	NIRRANDA	NARRAWATURK			
				MEPUNGA	Fe Fe Fe		
		Palaeocene	WANGERRIP		Burrungule		V V V V OLDER VOLCANIC
				DILWYN			
					Pember		
				PEBBLE POINT	?	Fe ? Fe ? Fe	
CRETACEOUS	UPPER	SHERBROOK		Timboon Sand			
				Undifferentiated part			
				Skull Creek Mudstone and Nullawarre Greensand			
				Belfast			
			FLAXMAN				
			WAARRE				
	LOWER	Albian	OTWAY	EUMERALLA	Heathfield		
		Aptian					
Neocamian		CRAYFISH		Geltwood Beach			
				Pretty Hill			
JURASSIC	Late						
	Middle		CASTERTON		V V V V V V V V BASAL VOLCANIC V V V V		
PALAEOZOIC		BASEMENT					

LINDON-1

North Paaratte Wallaby Creek Grumby

Port Campbell No. 4

BASE MAP OT.2088.

OT. 3188

FIGURE 4

3.2 Lithological Descriptions

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.

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.

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.

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.

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 lithice, 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.

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.

836^m to 885^{ft}

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.

885^m to 962^m

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.

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.

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.

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.

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.

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.

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.

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.

3.2 Lithological Descriptions

3.2.1 HEYTESBURY GROUP (surface to 430m)

Port Campbell

Surface to 135m

Limestone:

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

1699m to 1743m

Member

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 ppm 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 fluorescence. 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

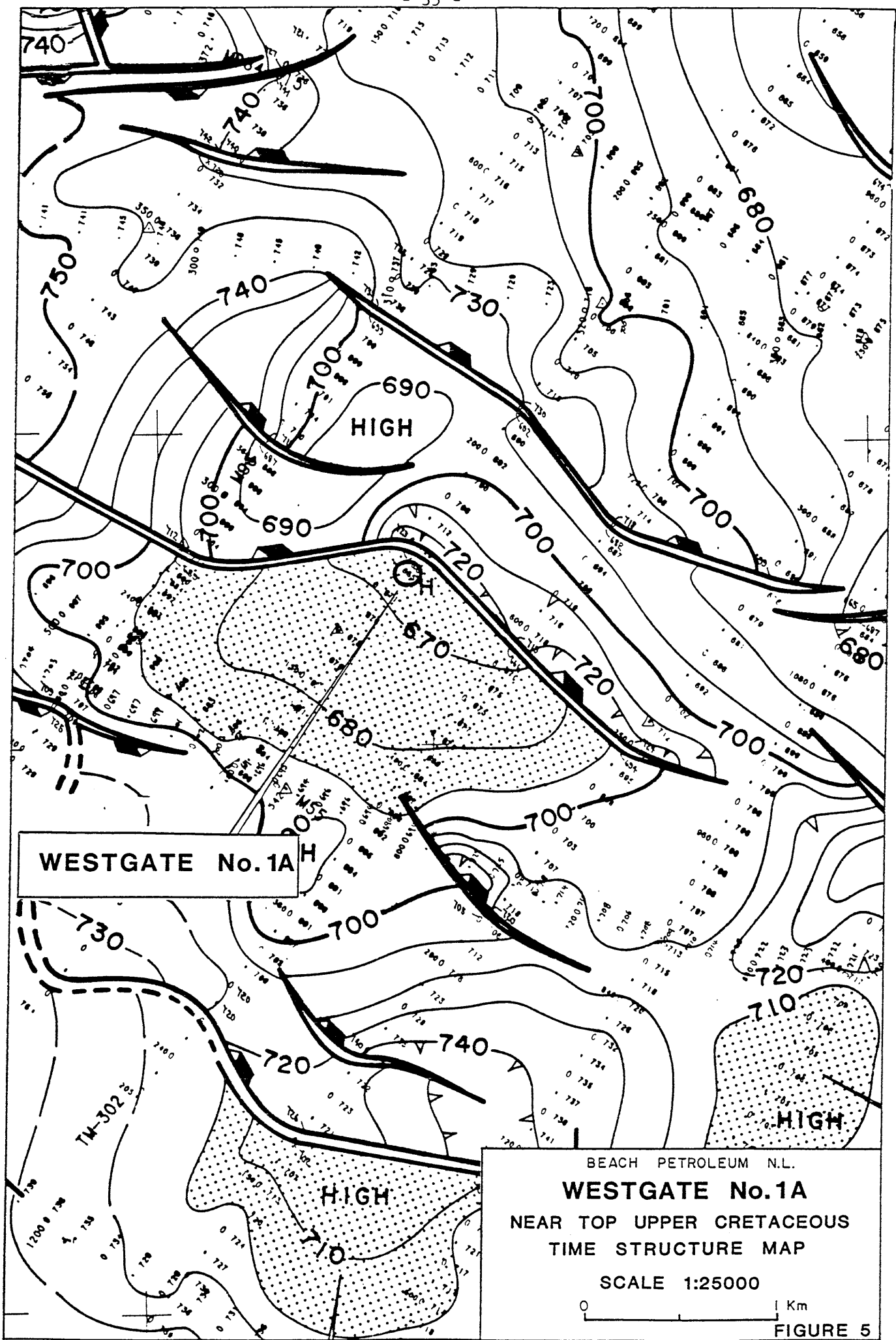
4.1.1 Seismic

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).

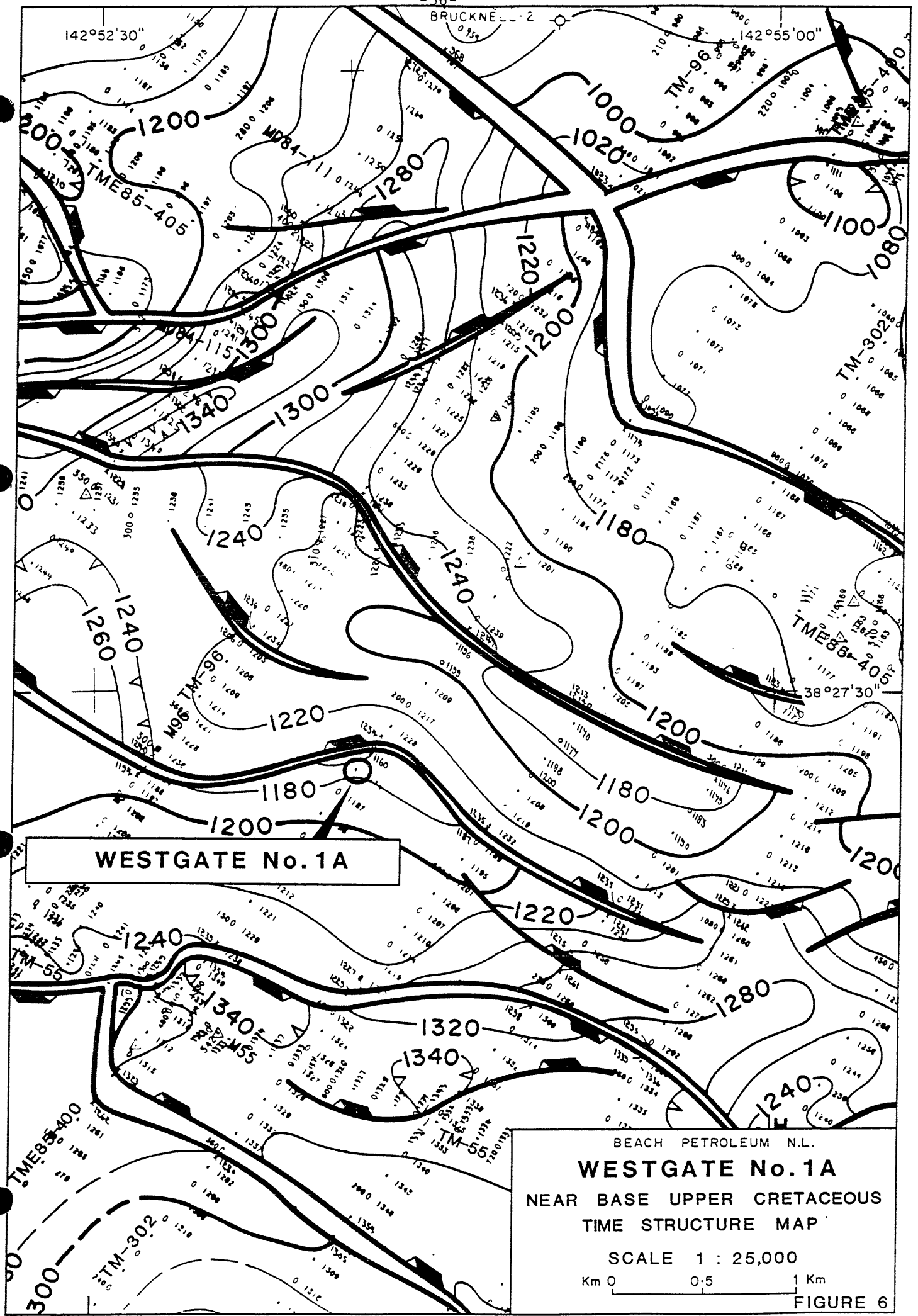
This type of structural style is not uncommon in the Otway Basin but has rarely been tested by the bit because the highest points of the traditional primary targets are usually offset by a significant horizontal distance. In this case the Waarre Formation is offset by some 390m to the north of the Pebble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



WESTGATE No.1A

BEACH PETROLEUM N.L.
WESTGATE No.1A
 NEAR TOP UPPER CRETACEOUS
 TIME STRUCTURE MAP
 SCALE 1:25000
 0 1 Km
 FIGURE 5

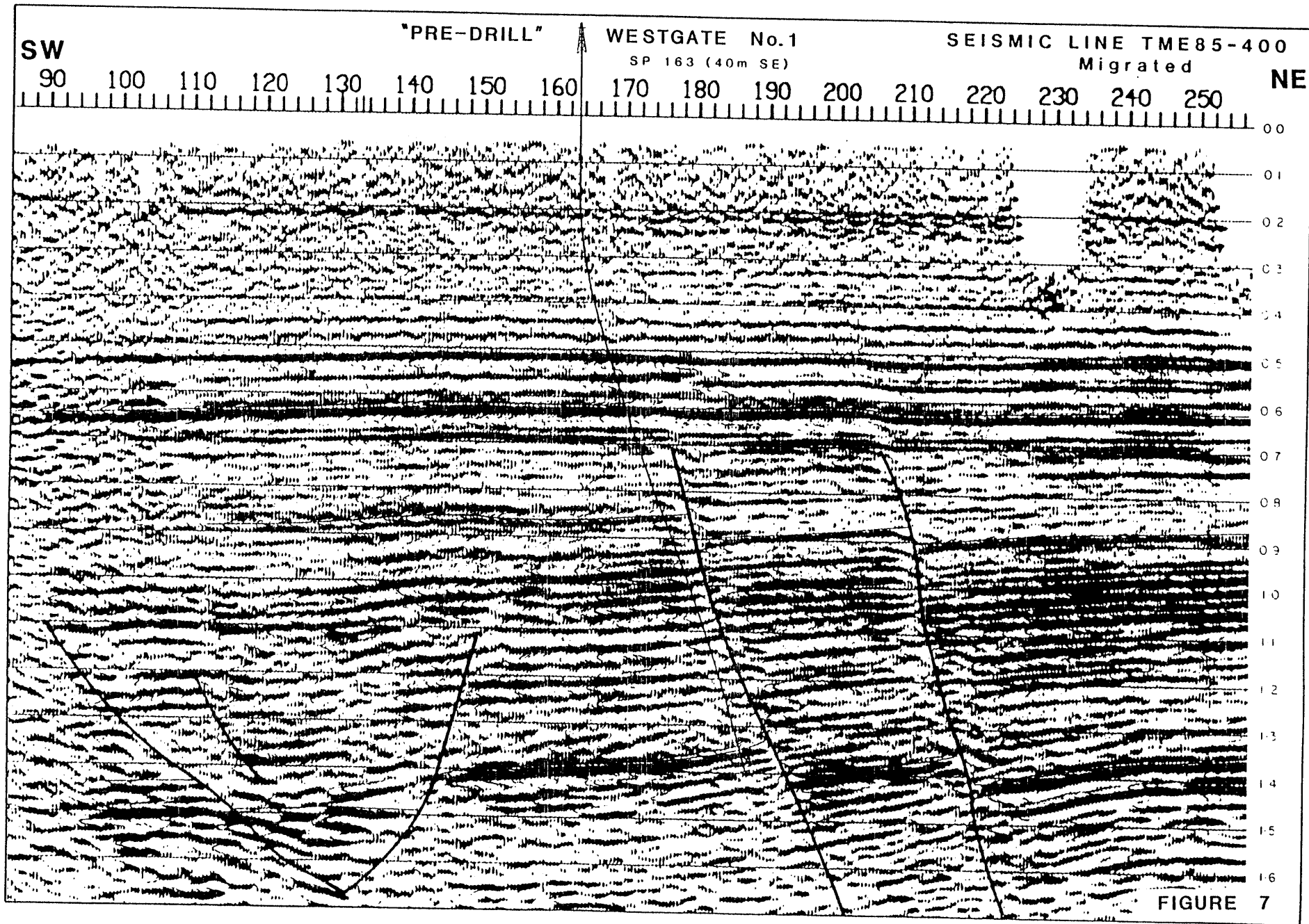


WESTGATE No. 1A

BEACH PETROLEUM N.L.
WESTGATE No. 1A
 NEAR BASE UPPER CRETACEOUS
 TIME STRUCTURE MAP
 SCALE 1 : 25,000



FIGURE 6



"POST DRILL" WESTGATE No.1A

SEISMIC LINE TME 85-400

Final Stack

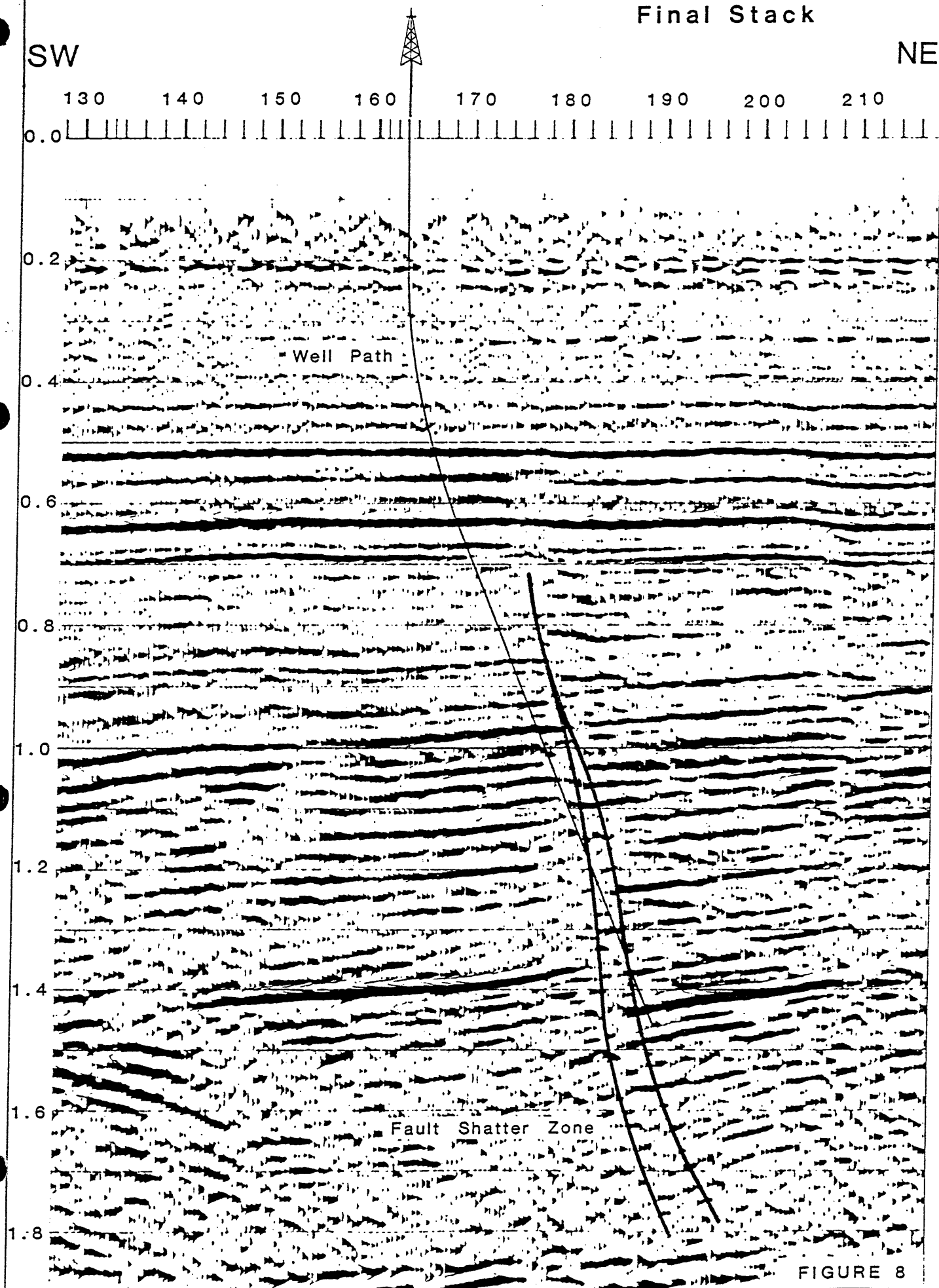


FIGURE 8

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°.

. Skull Creek Member (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.

. Paaratte Formation (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 dominant 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.

Pebble Point Formation and Basal Pember Mudstone
(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

WESTGATE No.1A

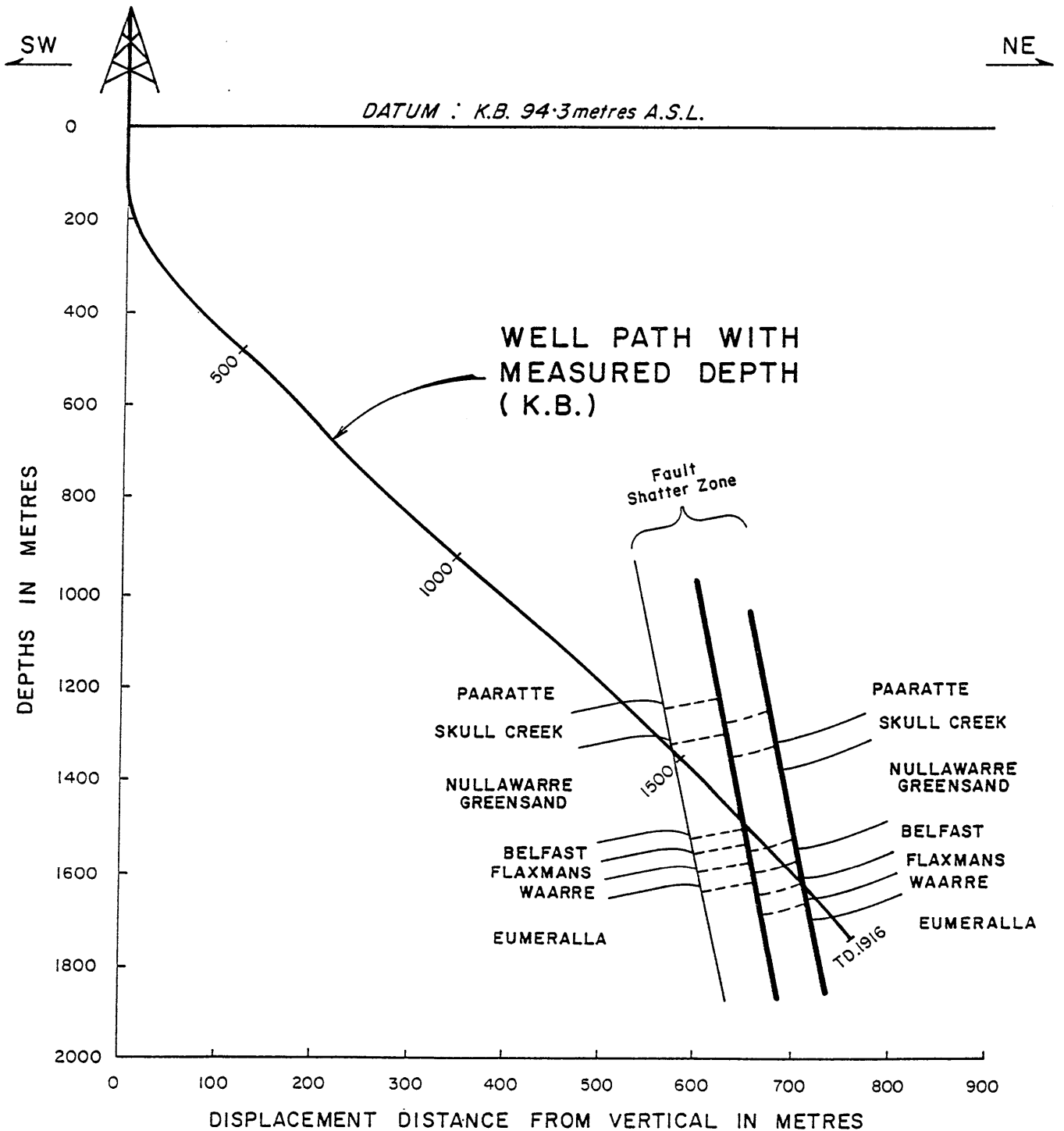


FIGURE No.9

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
1780.03-1739.97m (FLAXMANS FORMATION)

Z AXIS IS THE FREQUENCY

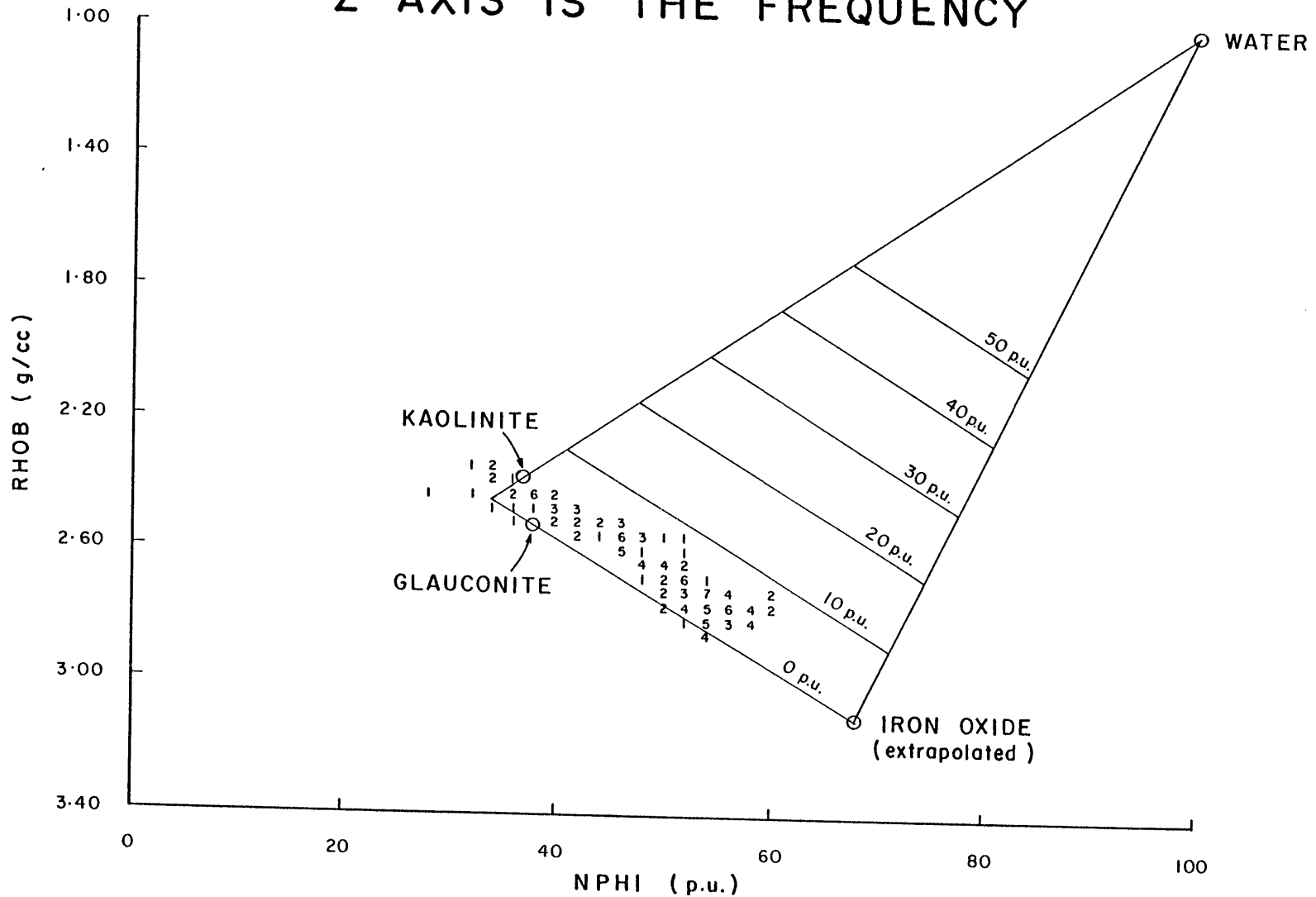


FIGURE No. 10

OT. 3468

- 49 -

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 $\mu\text{s}/\text{ft}$, 55 $\mu\text{s}/\text{ft}$ and 48 $\mu\text{s}/\text{ft}$, 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 (R_v 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

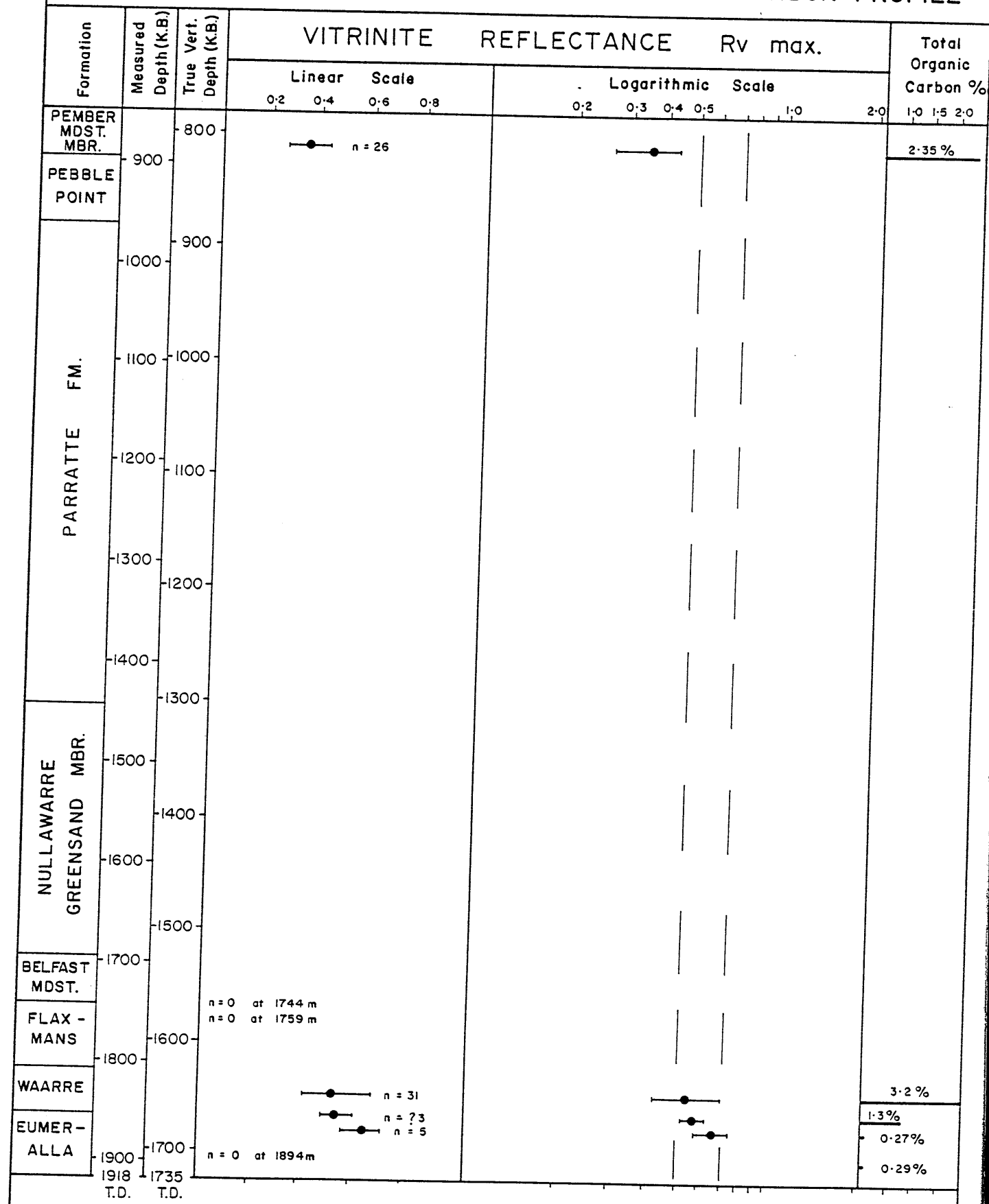
The sidewall core sample from the Pember Mudstone Member gave a TOC value of 2.35% which suggests good source potential for this rock. However, as the level of exinite in the sediment is low, the potential is mainly for gas.

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.

WESTGATE No 1A

VITRINITE REFLECTANCE AND TOTAL ORGANIC CARBON PROFILE



n = 14 \bar{R}_v max. range
 n = number of samples
 Samples were all sidewall cores.

FIGURE No. 11

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, 1½" 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 9½" equipped with 6½" 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, 4 $\frac{1}{2}$ " 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:

5½" 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 12½" hole was drilled to 126m, at which point the hole was deviated to the north east by the use of a Dyna Drill.

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.

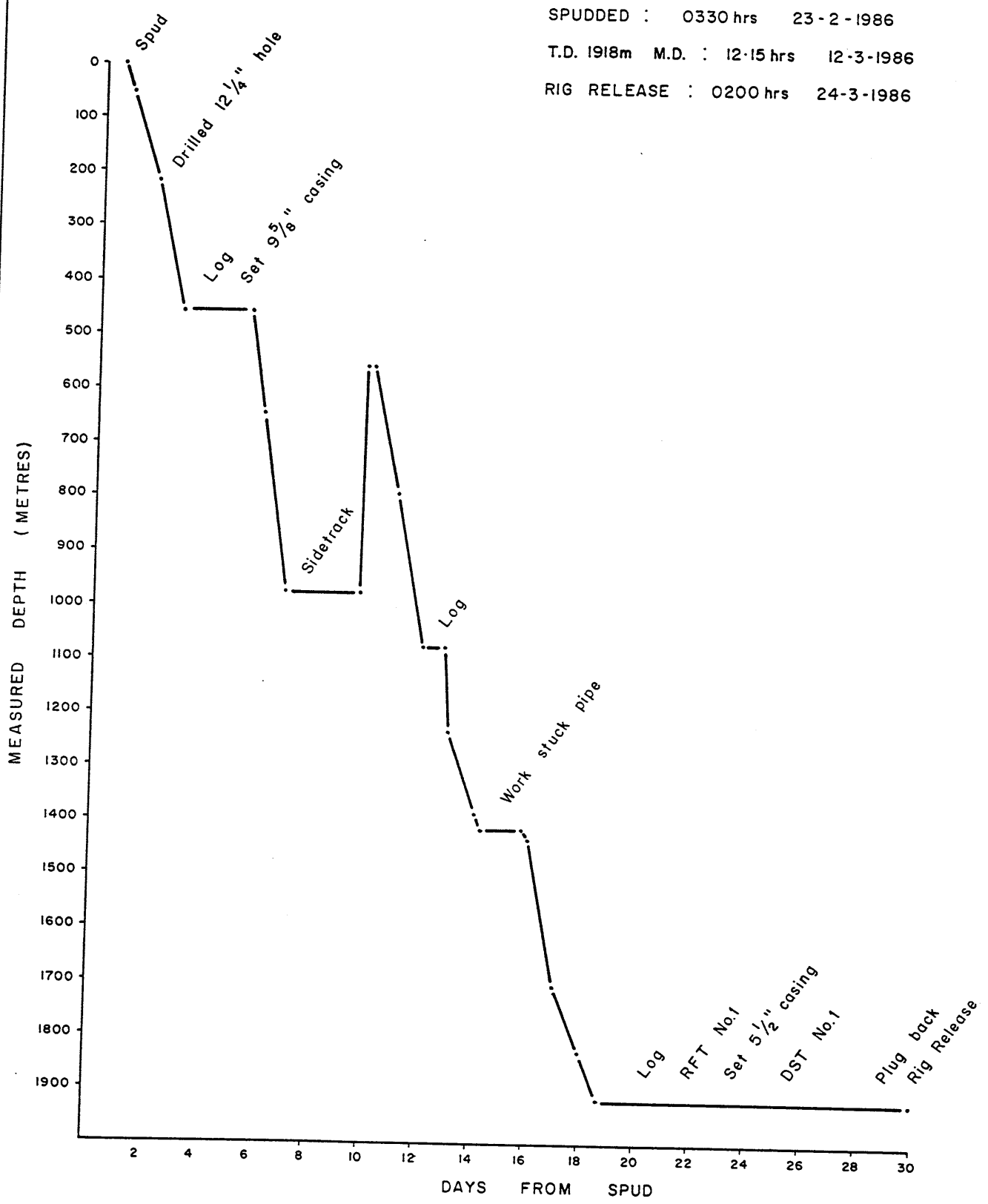
The 8½" hole continued to 1144m MD with a bit change at 924m MD.

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.

SPUDED : 0330 hrs 23-2-1986
 T.D. 1918m M.D. : 12.15 hrs 12-3-1986
 RIG RELEASE : 0200 hrs 24-3-1986



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 nipling up Otis lubricator
 20:12 Completed nipling 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.

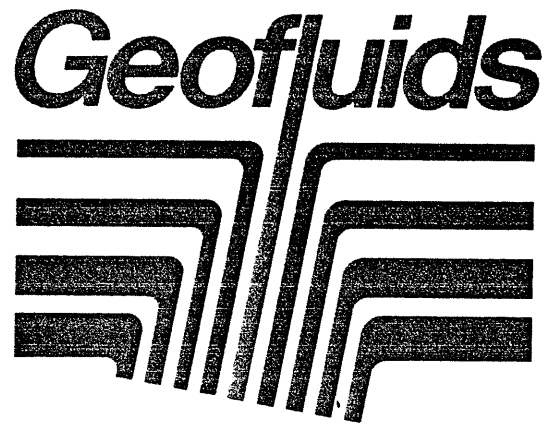
03:30 Rig down test head and surface equipment.

04:00 Circulate.

08:00 POOH lay out TCP guns and test tools.

APPENDIX 3

Drilling Fluid Recap



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

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.
Telephone (09) 382 1766 Telex AA93908

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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.

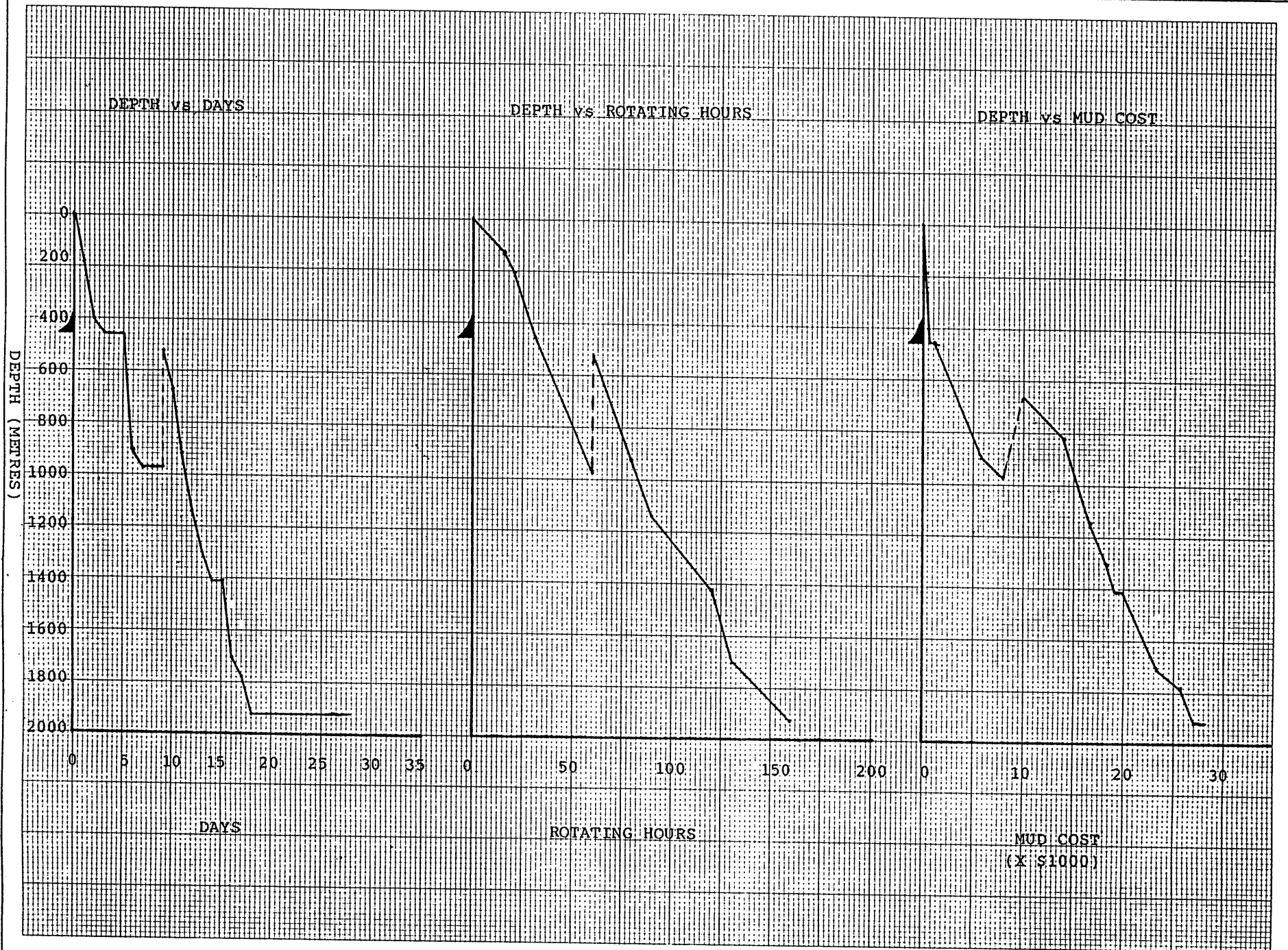
This section of hole was drilled relatively cheaply. 1879 m of 8-1/2" hole was drilled, with an interval mud cost of \$27827, or \$14.81 per metre. (This includes the plug backed section and sidetrack.) The low mud cost was facilitated by the use of reclaimed sump water when building volume. It had a 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.

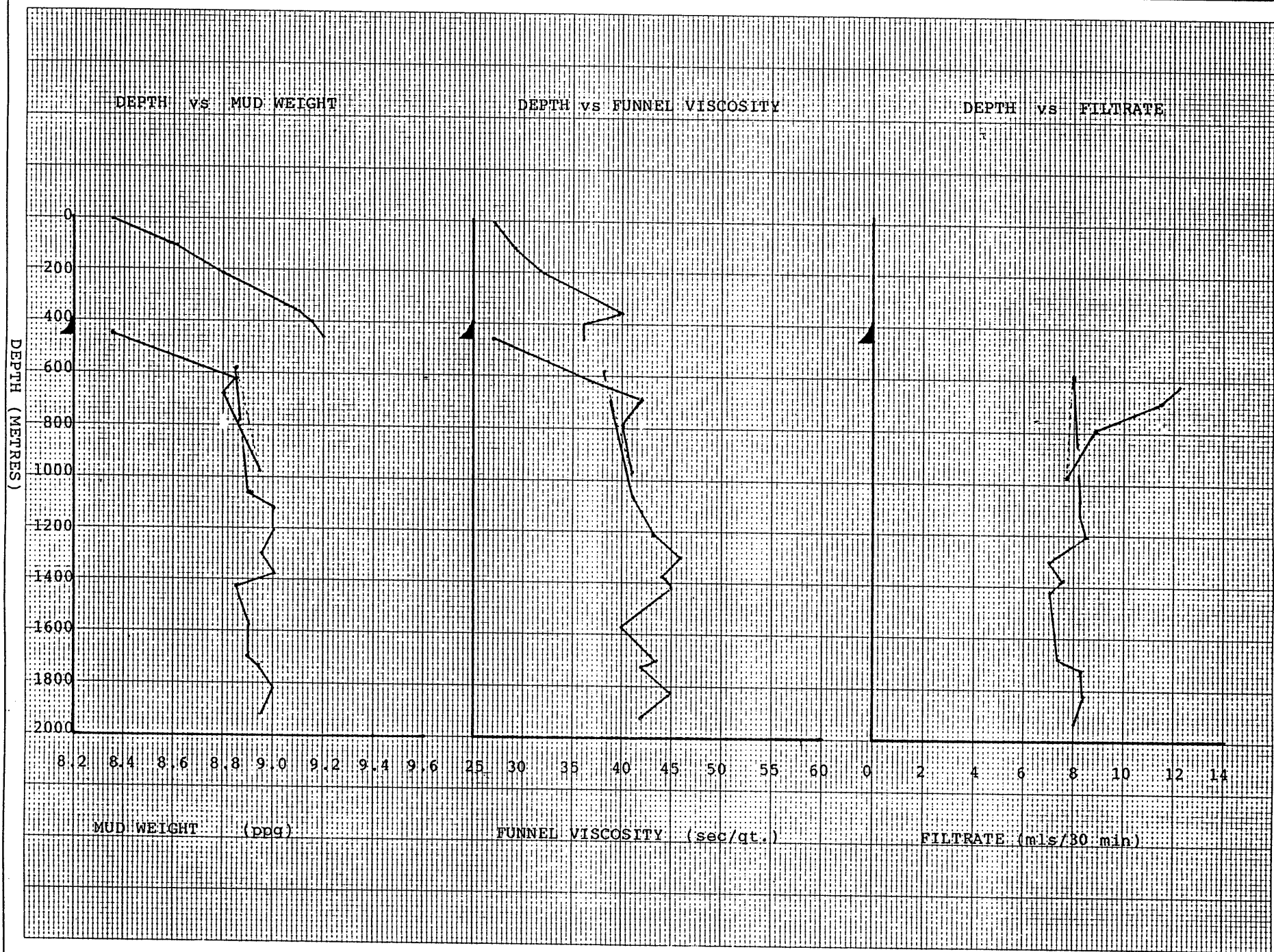
The level of KCl used in this mud (3-4%) seemed quite adequate due to the mainly inert formations drilled. A higher level does not appear justified for similar wells.

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. COST ANALYSIS

			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 lb	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 lb	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	





5. FLUID PROPERTIES SUMMARY



5. FLUID PROPERTIES SUMMARY

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

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

DATE	DEPTH	M.W.	ECD	VIS	PV	YP	GELS	pH	W.L.	FLOWLINE	KCI	Pf	Mf	Cl-	Ca/Mg	SAND	SOL	WATER	MBC
1986	m	ppg	ppg	sec	cp	lb/100ft			ml	TEMP (C)	(%)			ppm	ppm	%	%	%	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	
24/02	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																			
29/02	616	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	
29/02	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
29/02	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	8.9+		36	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	876	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
07/03	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	16	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	
17/03	PIT	9.0+		46	18	18	3/ 5	10.0	8.5		2.9	.22	.84	17000	140	TR	3.5	96.5	
17/03	BIRC	9.0		43	15	16	2/ 3	10.5	8.0		2.9	.10	.20	17000	TR	TR	3.5	96.5	
17/03	PIT	9.0		45	15	15	2/ 3	10.5	7.6		2.7	.10	.20	16500	TR	TR	3.5	96.5	

6.

BIT RECORD

6.

Bit Record



Operator	BEACH PETROLEUM	Well No.	1	Location	WESTGATE	Supervisors	VINCE SANTOSTEFANO / JIM HANSON / DAN HORNE
Contractor	RICHTER DRILLING	Rig No.	8	Mud Pumps	NATIONAL 9-P-100	Drill Pipe	4 1/2"
Spud Date	23rd FEB '86	TD Date	12th MARCH '86	Surface Csg	9 5/8" @ 4.53m	Inter Csg	—
				Prod Csg	5 1/2"	Mud Type	WATER - NATIVE SOLIDS - KLU 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/Min	Ann. Vel.	Mud Weight	Visc.	W.L.	Dull Cond				Formation	
																			T	B	G	Other		
1	1	12 1/4"	SEL	S335	3x16	126m	126m	16 1/2	16 1/2	20	120	1/2"	300	8.8	70	W	A	T	F	R	1	1	I	
2	2	12 1/4"	VARCEL	13A	OPEN	204m	78m	3 3/4	20 1/4	3	—	2 1/2"	400	6.8	54	8.8	32	N.L.		2	3	I		
3	REL1	12 1/4"	SEL	S335	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"	SEL	S335	3x10	92m	56m	2 5/4	58	10-30	120-180	2 3/4"	1000-1050	6.8	135	8.9+	41	7.7		Lost				
5	4	8 1/2"	SEL	S335	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	REL4	8 1/2"	SEL	S335	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"	SEL	S446	3x11	1144m	220m	10 1/2	89 3/4	15	120	2.8 3/4"	1050	6.8	135	9.0	45	8.6		6	5	1/8		
8	6	8 1/2"	SEL	S82F	3x11	1256m	112m	6 3/4	96 1/2	10-15	100	2.9 1/4"	1300	6.8	135	9.0	43	8.5		1	1	1/6		
9	REL6	8 1/2"	SEL	S82F	3x11	1414m	158m	2 3/4	118 1/4	10-20	100	2.7 1/4"	1350	6.8	135	9.0	44	8.2		1	1	1/8		
10	7	8 1/2"	SEL	S446	10.10.12	1704m	290m	18 1/2	136 3/4	15-25	120	2.6	1350	6.8	135	8.9+	44	7.8		8	6	1/8		
11	8	8 1/2"	SEL	S84F	10.10.12	1916m	212m	22 1/2	159 1/4	25-30	80	2.1 1/4"	1400	6.8	135	8.9+	45	8.1		2	4	1/6		

Remarks



7. DAILY DRILLING FLUID REPORTS



Geofluids Pty Ltd Drilling Fluid Report

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

OPERATOR BEACH PETROLEUM		CONTRACTOR RILATER DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LANNIE COULSON	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. WILDLAS	LOCATION OTTWAY BASIN STATE VICTORIA
OPERATION		CASING	MUD VOLUME
Present Activity		Surface at	CIRCULATION DATA
Bit Size	No.	Intermediate at	Hole Pits Pump Size x Annular Vel. (/Min).
Drill Pipe Size	Type	Production or Liner at	Total Circulating Volume Pump Make Model Opposite Collar Riser
Drill Collar Size	Length	Mud Type	In Storage /Stroke Stroke/Min Circulating Pressure Bottoms Up (Min.) Systems Total (Min.)

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature °C	MUD PROPERTIES			EQUIPMENT							
Time Sample Taken	Depth	Weight <input type="checkbox"/> (S.G.) <input type="checkbox"/>	Mud Gradient (psi/ft)	Funnel Viscosity (sec./qt) API at °C	SIZE		Hours		SIZE		Hours	
Plastic Viscosity cps at	Yield Point (lb/100 sq. ft.)	Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter	Filtrate API (ml./30 min.)	API HP-HT Filtrate (ml./30 min.)	Centrifuge	Degasser	Desander	DAILY COST	CUMULATIVE COST	Desilter	Shaker
Cake Thickness (mm) API <input type="checkbox"/> HP-HT <input type="checkbox"/>	Alkalinity, Mud (Pm)	Alkalinity, Filtrate (P/Mft)	Chloride (mg/l)	Total Hardness <input type="checkbox"/> epm <input type="checkbox"/> (mg/l)	Sand Content (% by Vol.)	MUD PROPERTIES SPECIFICATIONS						
Oil Content (% by Vol.)	Water Content (% by Vol.)	Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)	K ⁺ (mg/l)	Nitrate (mg/l) /Sulphite (mg/l)	WEIGHT	PV/YP	FILTRATE	BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Operator's Representative <input type="checkbox"/> Drilling Contractor <input type="checkbox"/> Other				
					BIT INFORMATION							
					TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP		

RECOMMENDATIONS

OPERATIONS SUMMARY

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

Product/Package	Units	Unit Cost	Cost
NIL			

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

RIG UP

GEOFLUIDS ENGINEER **ANDRZEJ SKUJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-745102**

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Geofluids Pty Ltd
Drilling Fluid Report

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

OPERATOR BEACH PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LANIE COULSON	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. MILLER	LOCATION OTTWAY BASIN STATE VICTORIA
OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity Rig up to Spud	Surface at	Hole Pits 450	Pump Size 6 1/2" x 9 1/4" Annular Vel. (F+ /Min).
Bit Size 12 1/4" No. 1	Intermediate at	Total Circulating Volume	Pump Make NAT Opposite DP 140 / 104
Drill Pipe Size Type	Production or Liner at	In Storage 60	Pump Model 9-12-100 Opposite Collar 140 / 104
Drill Collar Size 8" 6 1/4" Length	Mud Type WATER	Stroke/Min 140	Riser
		Stroke/Min 11.7 @ 95%	Circulating Pressure
			Bottoms Up (Min.)
			Systems Total (Min.)

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature °C	MUD PROPERTIES		
Time Sample Taken	Depth	Weight <input type="checkbox"/> (S.G.) <input type="checkbox"/>	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.	cH <input type="checkbox"/> Strip <input type="checkbox"/> Meter	Filtrate API (ml./30 min.)
API HP-HT Filtrate (ml./30 min.)	Cake Thickness (mm) API <input type="checkbox"/> HP-HT <input type="checkbox"/>	Alkalinity, Mud (Pm)	Alkalinity, Filtrate (P/M)	Chloride (mg/l)
Total Hardness <input type="checkbox"/> epm <input type="checkbox"/> (mg/l)	Sand Content (% by Vol.)	Solids Content (% by Vol.)	Oil Content (% by Vol.)	Water Content (% by Vol.)
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)	K ⁻ (mg/l)	Nitrate (mg/l) / Sulphite (mg/l)		

EQUIPMENT		SIZE		Hours	
Centrifuge				Desilter	12x4
Degasser	DULLO			Shaker	840/580
Desander	4x6"				840/580
DAILY COST	MUD PROPERTIES SPECIFICATIONS		CUMULATIVE COST		
WEIGHT	PV/YP	FILTRATE			
WATER					
BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor					
<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other					
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEL S335	3x18			211	

RECOMMENDATIONS

Spud in with water
Use H. vis. pills as required to aid hole cleaning

COST SUMMARY/24 HOURS ENDING 22-2-86 @ DEPTH			
Product/Package	Units	Unit Cost	Cost
MILLER	-		
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

OPERATIONS SUMMARY

Rig up to Spud

GEOFLUIDS ENGINEER ANDRE SKUTINS	HOME ADDRESS ADELAIDE	TELEPHONE 08-795102
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Geofluids Pty Ltd
Drilling Fluid Report

Table with 2 columns: Field/Block No., Location, State, Date, Spud Date, Depth. Values include: REPORT NO. 3, DATE 23rd FEB '86, RIG NO. 8, SPUD DATE 23rd FEB '86, DEPTH 0m TO 185m.

OPERATOR BEACH PETROLEUM, CONTRACTOR RILITER DRILLING, REPORT FOR VINIE SANTOSTEFANO, REPORT FOR LAWRIE KLASSEN, WELL NAME AND NO. WESTGATE #1, FIELD OR BLOCK NO. MILDUR, LOCATION OTWAY BASIN, STATE VICTORIA.

OPERATION DRILLING, CASING Surface at Intermediate, MUD VOLUME Hole 60, Pits 540, Pump Size 6 1/4 x 9 1/4, Annular Vel. (Ft/Min) 54, Opposite DP 6.3, Bit Size 12 1/4, No. 1/2, Total Circulating Volume 620, Pump Make NKT, Model 9-P-100, Riser 100/78, Drill Pipe Size 4 1/2, Type Production or Liner at, In Storage, Stroke/Min 98.77, Stroke/Min 100/78, Circulating Pressure, Drill Collar Size 5 x 8" 5 x 6 1/4", Length 154/150, Mud Type SPUD MUD, BOL/Min 7.8/6.8 @ 100%.

Table with columns: Sample from, Flowline, Pit, MUD PROPERTIES, EQUIPMENT, SIZE, Hours. Includes rows for Time Sample Taken, Depth, Weight, Mud Gradient, Funnel Viscosity, Plastic Viscosity, Gel Point, Gel Strength, Filtrate API, Cake Thickness, Alkalinity, Chloride, Total Hardness, Sand Content, Solids Content, Oil Content, Water Content, Methylene Blue Capacity, K-, Nitrate.

SUMMARY/24 HOURS ENDING 23-2-86 @ DEPTH 185m

Table with columns: Product/Package, Units, Unit Cost, Cost. Includes entries for MILCEL (17 units, 14.08 unit cost, 239.36 cost) and CARSTU SODA POTASH (1 unit, 24.00 unit cost, 24.00 cost).

LIQUID ADDITIONS FOR 24 HOURS (BBL) table with columns: Diesel, Drill Water, Sea Water, Prehydrate. Values: 60.

GEOFLUIDS ENGINEER ANDREW SKUSINSKI, HOME ADDRESS ADELAIDE, TELEPHONE 098-795102

Table with columns: EQUIPMENT, SIZE, Hours. Includes rows for Centrifuge, Degasser, Desander, DAILY COST, CUMULATIVE COST, MUD PROPERTIES SPECIFICATIONS, WEIGHT, PV/YP, FILTRATE, BIT INFORMATION.

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 K-vis pill instead of NaOH. Desander UF: 12.7 pps @ 2.1 gal/min. Desilter UF: 10.3 pps @ 3.8 gal/min.

OPERATIONS SUMMARY: Spud in @ 03:00 hrs. Drill 12 1/4" hole wt. screens. Pump Hi. Vis pill @ 413' (126m.) and PSH. Make up Dyna Drill & 2 x 6 1/4" collars. R.H. Drill Ahead wt Dyna Drill.

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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 BEAUM PETROLEUM		CONTRACTOR RILATER DRILLING	
REPORT FOR VINCE SANTO STEFANO		REPORT FOR LAWRIE KLASSEN	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. MILGEM	LOCATION OTWAY BASIN STATE VICTORIA
OPERATION DRILLING	CASING Surface at	MUD VOLUME Hole 185 Pits 480	CIRCULATION DATA
Present Activity DRILLING	Surface at Intermediate at	Pump Size 6 1/2" x 9 1/4"	Annular Vel. (Ft/Min) 76
Bit Size 12 1/4"	No. of R/R 2	Total Circulating Volume 605	Opposite DP 4.5
Drill Pipe Size 4 1/2"	Type LF	In Storage -	Opposite Collar 4.5
Drill Collar Size 6 x 8" 4 x 6 1/4"	Length 600/121'	Mud Type SPUD MUD	Filter 8" 81.15
Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 32 °C	MUD PROPERTIES	EQUIPMENT

Time Sample Taken	16:30	23:45	04:00
Depth (METRES)	360	400	456
Weight (S.G.) 3ppm	9.1	9.1	9.2
Mud Gradient (psi/ft)	.473	.476	.478
Funnel Viscosity (sec./qt) API at 36 °C	40	36	36
Plastic Viscosity cps at 36 °C	7	8	8
Gel Point (lb/100 sq. ft.)	13	13	16
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	7/15	11/25	10/28
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>			
Alkalinity, Mud (Ppm)			
Alkalinity, Filtrate (Ppm)	/	/	/
Chloride (mg/l)	300	300	300
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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) <input type="checkbox"/> (equiv. #/bbl bent)	-	-	-
K ⁻ (mg/l)			
Nitrate (mg/l) / Sulphite (mg/l)	/	/	/
	n/k		41/18

SIZE	Hours	SIZE	Hours
Centrifuge		Desilter	12 1/4" 12
Degasser DRILL	0	Shaker	360/150 14
Desander 4x6"	14		360/150 14
DAILY COST \$7.27 (lost circulation)		CUMULATIVE COST	\$270.63
MUD PROPERTIES SPECIFICATIONS			
WEIGHT M.W	2.85 vis	FILTRATE	
BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor <input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other			
BIT INFORMATION			
TYPE VAAL 13A	JETS OPEN	W.T. 3	R.P.M. -
SEL S335	3x16	20	60
		20	20

RECOMMENDATIONS
 Maintaining vis at approx 35 cP to lower probability of mud ring, but aid in hole cleaning.

Desander VF 11.2 ms @ 1.5 gal/min
 Desilter VF 10.5 ms @ 2.2 gal/min

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

Product/Package	Units	Unit Cost	Cost
NOIL			
NOTE: Cost correction -			
Milgel B 14-02 per sack			
Amite 832-29 per sack			+ \$7.27
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
	500		

OPERATIONS SUMMARY

Drill to 185m
 PCH to change bent sub
 R.H.
 Drill to 204m
 PCH to change BHA and Bit
 R.H.
 Drill to 381m
 PCH to change BHA
 R.H.
 Drill Ahead

GEOFLUIDS ENGINEER **ANDRE SKUTINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 5	DATE 25th Feb '81
RIG NO. 8	SPUD DATE 23rd Feb
DEPTH 407m	TO 456m

OPERATOR BEACH PETROLEUM		CONTRACTOR RILCHER	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LAURIE KLASSEN	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. WILDLAT	LOCATION OTWAY BASIN STATE VIC
OPERATION WDC		CASING Surface at	MUD VOLUME Hole 195 Pits 300
Present Activity WDC	Bit Size 12 1/4"	Intermediate at	CIRCULATION DATA
Drill Pipe Size 4 1/2"	Drill Collar Size 6 x 8" 4 x 6 1/4"	Production or Liner at	Pump Size 6 1/4" x 9 1/4"
		Mud Type SPUD MUD	Annular Vel. (17/Min) 17
			Opposite DP 6 1/4" 17 1/2"
			Opposite Collar 8" 17 1/2"
			Circulating Pressure 600
			Bottoms Up (Min.) 23
			Systems Total (Min.) 70

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature °C	MUD PROPERTIES	EQUIPMENT			
Time Sample Taken	Depth		Centrifuge	Hours	Desilter	Hours
Weight <input type="checkbox"/> (S.G.) <input type="checkbox"/>	Mud Gradient (psi/ft)		Degasser Drill	0	Shaker B 40/1500	4
Funnel Viscosity (sec./qt) API at °C	Elastic Viscosity cps at		Desander 4x6"	4	B 40/1500	4
Yield Point (lb/100 sq. ft.)	Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	/ / /	DAILY COST \$250.36	CUMULATIVE COST \$522.99		
	<input type="checkbox"/> Strip <input type="checkbox"/> Meter		MUD PROPERTIES SPECIFICATIONS			
Filtrate API (ml./30 min.)	API HP-HT Filtrate (ml./30 min.)		WEIGHT	~35	FILTRATE	
Cake Thickness (mm) API <input type="checkbox"/> HP-HT <input type="checkbox"/>	Alkalinity, Mud (Pm)		BY AUTHORITY	<input checked="" type="checkbox"/> Operator's Written	<input type="checkbox"/> Drilling Contractor	
Alkalinity, Filtrate (P/MF)	Chloride (mg/l)	/ / /	<input checked="" type="checkbox"/> Operator's Representative	<input type="checkbox"/> Other		
Total Hardness <input type="checkbox"/> epm <input type="checkbox"/> (mg/l)	Sand Content (% by Vol.)		BIT INFORMATION			
Solids Content (% by Vol.)	Cl Content (% by Vol.)		TYPE	JETS	WT.	R.P.M.
Water Content (% by Vol.)	Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)		SEL 5335	3x16	20	120
K ⁻ (mg/l)	Nitrate (mg/l) / Sulphite (mg/l)	/ / /				225

RECOMMENDATIONS
Dump Spud Mud and Clean tanks.

COST SUMMARY/24 HOURS ENDING 25-2-81 @ DEPTH 456m			
Product/Package	Units	Unit Cost	Cost
* MILGEL	18	14.02	252.36
* Used for Cement Job.			

OPERATIONS SUMMARY
 Arr. to 456m.
 Circ.
 3 stand Nipper trip.
 R.H.
 Circ.
 PDA.
 Rig up and run Electric Logs.
 Rig down.
 Rig up and run 95' 18" cong.
 Circ. 65.
 Cement.
 WDC.

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER **ANDRE SKOJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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Geofluids Pty Ltd
Drilling Fluid Report

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

OPERATOR BEACH PETROLEUM		CONTRACTOR RILATER DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LAURIE KLASSEN	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. WILD CAT	LOCATION OTWAY BASIN STATE VICTORIA
OPERATION		CASING	MUD VOLUME
Present Activity Nipple Up BOP's	9 5/8"	Surface at	Hole Pits
Bit Size	No.	Intermediate at	Total Circulating Volume
Drill Pipe Size	Type	Production or Liner at	In Storage
Drill Collar Size	Length	Mud Type	

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature <input type="checkbox"/> °C	MUD PROPERTIES			EQUIPMENT					
Time Sample Taken	Depth				Centrifuge	Hours	Desilter	SIZE	Hours	
Weight <input type="checkbox"/> (S.G.) <input type="checkbox"/>	Mud Gradient (psi/ft)				Degasser	0	Shaker	11x4"	0	
Funnel Viscosity (sec./qt) API at <input type="checkbox"/> °C	Plastic Viscosity cps at				Desander	0				
Yield Point (lb/100 sq. ft.)	Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	/	/	/	DAILY COST		CUMULATIVE COST			
pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter	Filtrate API (ml./30 min.)				MUD PROPERTIES SPECIFICATIONS					
API HP-HT Filtrate (ml./30 min.)	Cake Thickness (mm) API <input type="checkbox"/> HP-HT <input type="checkbox"/>				WEIGHT	PV/YP	FILTRATE			
Alkalinity, Mud (Pm)	Alkalinity, Filtrate (P/Mf)	/	/	/	BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Operator's Representative <input type="checkbox"/> Drilling Contractor <input type="checkbox"/> Other					
Chloride (mg/l)	Total Hardness <input type="checkbox"/> epm <input type="checkbox"/> (mg/l)				BIT INFORMATION					
Sand Content (% by Vol.)	Solids Content (% by Vol.)				TYPE	JETS	W.T.	R.P.M.	JET VEL	BHHP
Oil Content (% by Vol.)	Water Content (% by Vol.)									
Methylene Blue Capacity <input type="checkbox"/> ml/ml mud <input type="checkbox"/> (equiv. #/bbl bent)	K+ (mg/l)				RECOMMENDATIONS					
Nitrate (mg/l) / Sulphite (mg/l)		/	/	/	1) Drill out cement etc. with irrator pretreated w/ Bicarb and Paraformaldehyde.					
					2) Drilling water has been pretreated, and K4 and Polymers while drilling until mud specs. are attained.					
					3) Changed stakers to B60/B50 & B50/B100.					

COST SUMMARY/24 HOURS ENDING 26-2-86 @ DEPTH 456			
Product/Package	Units	Unit Cost	Cost
NIL			

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER ANDREW SKWINS	HOME ADDRESS ADELAIDE	TELEPHONE 08-79502
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OPERATIONS SUMMARY

NOL
Nipple up BOP's.



Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 7	DATE 27 FEB 86
RIG NO. 8	SPUD DATE 23 FEB 86
DEPTH 456m	TO 457m

OPERATOR BEALH PETROLEUM	CONTRACTOR RICHTER DRILLING
REPORT FOR VINLE SANTO STEFANO	REPORT FOR LAURIE KLASSEN
WELL NAME AND NO. WESTGATE #1	FIELD OR BLOCK NO. NIKOLAR LOCATION OTWAY BASIN STATE VICTORIA

OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity R/H	9 5/8" Surface at 453m	Hole 115 Pits 500	Pump Size 53" x 94"
Bit Size 8 1/2" No 3	Intermediate	Total Circulating Volume 615	Pump Make Model NAP 9-P-100
Drill Pipe Size 4 1/2" Type	Production or Liner at	In Storage	Stroke 0.680 Stroke/Min 100
Drill Collar Size 6 1/4" Length 180 Mud Type KU POLYMER			RAI/Min 6.3 @ 100%

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 29.0°C	MUD PROPERTIES	EQUIPMENT
Time Sample Taken		06.30	Centrifuge Dumas 520 0 Desilter 11x4" 0
Depth (METRES)		618	Degasser DRILLCO 0 Shaker B30/B100 1
Weight <input type="checkbox"/> (S.G.) APP		8.8+	Desander 4x6" 1 Shaker B60/B80 1
Mud Gradient (psi/ft)		460	DAILY COST \$669.30 CUMULATIVE COST \$1192.29
Funnel Viscosity (sec./qt) API at 29.0°C		37	MUD PROPERTIES SPECIFICATIONS
Plastic Viscosity cps at		9	WEIGHT 9.0-9.5 PV/YP 8-12/12-18 FILTRATE 8-12 KU 3-4 1/2 pH 9.9
Yield Point (lb/100 sq. ft.)		9	BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.		1/2	<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter		10.0	BIT INFORMATION
Filtrate API (ml./30 min.)		12.2	TYPE SE 5335 JETS 3x10 WT. 25 R.P.M. 150 JET VEL 398 BHHP 209
API HP-HT Filtrate (ml./30 min.)		-	
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1(H)	
Alkalinity, Mud (Pm)		-	
Alkalinity, Filtrate (P/Mf)		15.35	
Chloride (mg/l)		19500	
Total Hardness <input type="checkbox"/> ecm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent)		-	
K+ (mg/l)		2500	
Nitrate (mg/l) / Sulphite (mg/l)		1/1	
	KU (% w/v)	58/47	
	N/K	9.1	
	ELD	9.0	

RECOMMENDATIONS
While drilling, add:
KU @ 1min/lx until 4% is attained
Milpac @ 20min/lx " Waterloss < 9mls
Milzane @ 20min/lx " Yield Pt. > 12
KOH @ 1hr/lx " pH 9-9.5

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

Product/Package	Units	Unit Cost	Cost
BILKARS SODA	4	23.61	93.64
PARAFORMALDEHYDE	4	37.05	148.20
KU	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 Collar (8")
R/H w/ Bit
Drill at Cement, Plug & Shoe.
Drill 8 1/2" hole to 457m
Conduct Leak off Test.
POH
Pick up Stabilizers & Jars and Make up B.H.A.
R.H.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER **ANDREW SKUTINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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Geofluids Pty Ltd
Drilling Fluid Report

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

OPERATOR BEACH PETROLEUM		CONTRACTOR RUNTER DRILLING	
REPORT FOR JIM HANSON		REPORT FOR LAWRIE KLASSEN	
WELL NAME AND NO. WESTGATE B1		FIELD OR BLOCK NO. WILPAT	LOCATION OTWAY BASIN STATE VIC
OPERATION DRILLING	CASING 95/8" Surface at 453M	MUD VOLUME Hole 195 Pits 395	CIRCULATION DATA
Present Activity DRILLING		Pump Size 53" x 9 1/2"	Annular Vel. (Ft./Min) 155 (GPM) 350
Bit Size 8 1/2" No 3	Intermediate at —	Total Circulating Volume 590	Opposite DP 2 1/2"
Drill Pipe Size 4 1/2" Type —	Production or Liner at —	In Storage —	Riser —
Drill Collar Size 6 3/4" Length 180	Mud Type KU POLYMER		Circulating Pressure 1025
			Bottoms Up (Min.) 25
			Systems Total (Min.) 90

Sample from <input checked="" type="checkbox"/> Flowline <input checked="" type="checkbox"/> Pit	MUD PROPERTIES			EQUIPMENT					
	Flowline Temperature 41°C	SIZE			Hours		SIZE		Hours
Time Sample Taken	10:30	18:00	05:30	Centrifuge	BT S3-D	24	Desilter	11x4"	16
Depth (Max)	674	789	991	Degasser	DRILL	0	Shaker	B60/B60	24
Weight <input type="checkbox"/> (S.G.) 8.8	8.8	8.8	8.9	Desander	4x6"	24		B60/B60	24
Mud Gradient (psi/ft) 4.58	4.40	4.65		DAILY COST \$4565.91	CUMULATIVE COST \$57820				
Funnel Viscosity (sec./qt) API at 42	40	41		MUD PROPERTIES SPECIFICATIONS					
Plastic Viscosity cps at 14	10	12		WEIGHT	PV/YP	FILTRATE	KU		
Yield Point (lb/100 sq. ft.) 19	12	16		9.0-9.5	8-12/12-18	<9u	3-4 1/2		
Gel Strength (lb/100 sq. ft.) 10 sec/10 min. 3.5	2.3	1.3		BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor					
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter 9.0	9.5	9.0		<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other					
Filtrate API (ml./30 min.) 11.5	8.8	7.7		BIT INFORMATION					
API HP-HT Filtrate (ml./30 min.) —	—	—		TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/> 1(10)	1(10)	1(10)		SEL S33S	3x10	10-30	150-150	398	22
Alkalinity, Mud (Pm) —	—	—		RECOMMENDATIONS					
Alkalinity, Filtrate (P/Mf) 0.8/35	1.2/30	1.2/20		By-passing slide slakers partially due to blinding of screens due to sand and polymers in mud. No mud cleaning problems have resulted.					
Chloride (mg/l) 2300	2350	17500		Note: All mud was taken in Section tank.					
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l) 160	180	240		Centrifuge OF 8.8" API					
Sand Content (% by Vol.) (Section)	TR	TR		Desander OF 12.0" API @ 1.5 gal/min					
Solids Content (% by Vol.) 2.0	2.0	3.0		Desilter VF 10.5" API @ 3 gal/min					
Oil Content (% by Vol.) —	—	—		OPERATIONS SUMMARY					
Water Content (% by Vol.) 98.0	98.0	97.0		R.H. Drill 8 1/2" hole to 608M					
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent) 5	—	7.2		Work stuck pipe					
K- (mg/l) 21000	19500	16500		Drill Ahead w/ surveys.					
Nitrate (mg/l) / Sulphite (mg/l) 1	1	1							
KU (% w/w)	4.0	3.7	3.2						
A/K	51/14	54/76	51/11						
E/O	9.1	9.0	9.1						

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

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
	55		

GEOFLUIDS ENGINEER **ANDRE SKOJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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Geofluids Pty Ltd
Drilling Fluid Report

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

OPERATOR BEACH PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR JIM HANSON		REPORT FOR LAWRIE KLASSON	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. WILLOW	LOCATION OTWAY BASIN STATE VIC
OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity Work Stick Pipe	9 5/8" Surface at 45m	Hole 220 Pits 400	Pump Size 5 1/2" x 9 1/4" Annular Vel. (ft Min) 135
Bit Size 8 1/2" No 3	Intermediate at	Total Circulating Volume 620	Pump Make NAT Opposite DP 211
Drill Pipe Size 4 1/2" Type	Production or Liner at	In Storage	Model 9-P-W Opposite Collar 211
Drill Collar Size 6 1/4" Length 180	Mud Type KU POLYMER		Stroke/Min 100 Circulating Pressure 1025
			Min 6-8 Bottoms Up (Min) 30
			Systems Total (Min) 90

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 40 °C	MUD PROPERTIES		EQUIPMENT					
		SIZE	Hours	SIZE	Hours	SIZE	Hours		
Time Sample Taken				Centrifuge	S-3-0	9	Desilter	11x4"	12
Depth (Meters)		17-00		Degasser	DRUD	0	Shaker	B10/B50	12
Weight <input type="checkbox"/> (S.G.) 2.0		972m		Desander	4x6"	12		NX0/B100	12
Mud Gradient (psi/ft)		8.9+		DAILY COST	\$2390.63		CUMULATIVE COST	\$8148.83	
Funnel Viscosity (sec/qt) API at 40 °C		.465		MUD PROPERTIES SPECIFICATIONS					
Plastic Viscosity cps at		38		WEIGHT	PV/YP	FILTRATE	KU		
Gel Point (lb/100 sq. ft.)		11		9.0-9.5	8-12/12-18	< 9	3-4%		
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.		13		BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Operator's Representative <input type="checkbox"/> Drilling Contractor <input type="checkbox"/> Other					
Strip <input checked="" type="checkbox"/> Meter <input type="checkbox"/>		1/2		BIT INFORMATION					
Filtrate API (ml./30 min.)		9.0		TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
API HP-HT Filtrate (ml./30 min.)		9.1		SEL 5333	3x10	20-30	130	308	
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		11.0		RECOMMENDATIONS					
Alkalinity, Mud (Pm)		12.22		.....				
Alkalinity, Filtrate (P/Mft)		2100		.....				
Chloride (mg/l)		200		.....				
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)		TR		.....				
Sand Content (% by Vol.)		3.0		.....				
Solids Content (% by Vol.)		-						
Cl ⁻ Content (% by Vol.)		97.0		.....				
Water Content (% by Vol.)		-						
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent)		20500		.....				
Fe (mg/l)		39		.....				
Sulfate (mg/l) / Sulphite (mg/l)		39		.....				

COST SUMMARY/24 HOURS ENDING 1-3-86 @ DEPTH 972m			
Product/Package	Units	Unit Cost	Cost
MILZEM	3	22.40	67.23
MILPAL	9	78.33	704.97
KU	20	15.84	316.80
PARA FORMALDEHYDE	1	37.05	37.05
CASTLE POTASH	2	32.29	64.58
MILFREE	1	600.00	600.00
			2390.63
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

OPERATIONS SUMMARY
 Drill to 972m.
 CIP
 POH.
 Work tight hole at 920m
 POH.
 Struck in hole at 718m
 Work stick pipe.
 Spot Pil.

GEOFLUIDS ENGINEER **ANDRE SWINSINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-79500**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 10	DATE 20 March 86
RIG NO. 8	SPUD DATE 23 Feb 86
DEPTH 972m TO	

OPERATOR BEACH PETROLEUM	CONTRACTOR RICHTER DRILLING		
REPORT FOR JIM HANSON	REPORT FOR LARRIE KLASSON		
WELL NAME AND NO. WESTGATE #1	FIELD OR BLOCK NO. WILD CAT	LOCATION OTWAY BASIN	STATE VIC
OPERATION RH	CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 215 Pits 360	CIRCULATION DATA Pump Size 5 1/2" x 9 1/4"
Present Activity	Intermediate	Total Circulating Volume 515	Annular Vel. (Ft/Min). Opposite DP
Bit Size 8 1/2" No. 3	Production or Liner at	In Storage	Opposite Collar
Drill Pipe Size 4 1/2" Type	Mud Type KU POLYMER	Pump Make NAT	Riser
Drill Collar Size 6 1/4" Length		Pump Stroke 9-P-100	Circulating Pressure
		Stroke/Min	Bottoms Up (Min.)
			Systems Total (Min.)

Sample from <input type="checkbox"/> Flowline <input checked="" type="checkbox"/> Pit	Flowline Temperature	°C	MUD PROPERTIES	SIZE	Hours	EQUIPMENT	SIZE	Hours
Time Sample Taken			3/3	Centrifuge S-3-0	0	Desilter	11x4"	0
Depth			PIT CHECK	Degasser DRILL	0	Shaker	8x0/BW	0
Weight <input type="checkbox"/> (S.G.) 8.9				Desander 4x6"	0		8x0/B50	0
Mud Gradient (psi/ft)		4.63		DAILY COST		CUMULATIVE COST		
Funnel Viscosity (sec./qt) API at		37		MUD PROPERTIES SPECIFICATIONS				
Elastic Viscosity cps at		12						
Yield Point (lb/100 sq. ft.)		12						
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	1	1/2	1					
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter		9.0		WEIGHT		PV/YP		FILTRATE
Filtrate API (ml./30 min.)		8.2		9.0-9.5		8-12/12-18		<90
API HP-HT Filtrate (ml./30 min.)		-		BY AUTHORITY		<input checked="" type="checkbox"/> Operator's Written		<input type="checkbox"/> Drilling Contractor
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1(W)		<input checked="" type="checkbox"/> Operator's Representative		<input type="checkbox"/> Other		
Alkalinity, Mud (Pm)		-		BIT INFORMATION				
Alkalinity, Filtrate (Pf/Mf)	1	18/18	1	TYPE		JETS		WT.
Chloride (mg/l)		20510		SEL S330		3x10		R.P.M.
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)		220						JET VEL
Sand Content (% by Vol.)		18						BHHP
Solids Content (% by Vol.)		2.5						
Oil Content (% by Vol.)		-						
Water Content (% by Vol.)		97.5						
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)		-						
K ⁻ (mg/l)		19000						
Nitrate (mg/l) / Sulphite (mg/l)	1	1	1					
	Ku (% w/w)	3.6						

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

Product/Package	Units	Unit Cost	Cost
Oil			

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER **ANDRE SKUSINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-245102**

RECOMMENDATIONS

OPERATIONS SUMMARY

Mark stuck pipe.
Ramp 2 barrels Mifre pill per hour.
Circ out pill.
Rig up. Suckers etc.
Break off pipe.
Lamp at shut off heavy wt. Drill pipe and jars.
Pick up jars and drill collars & R.H.

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 11	DATE 3RD MARCH 86
RIG NO. 8	SPUD DATE 23RD FEB 86
DEPTH 972M	TO

OPERATOR BEACH PETROLEUM		CONTRACTOR RUMFERT DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LAURIE KLASSON	
WELL NAME AND NO. WESTGATE #1		FIELD OR BLOCK NO. MILOLAT	LOCATION OTWAY BASIN STATE VICTORIA
OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity M.V. BHA	9 5/8" Surface at 453m	Hole 130 Pits 250	Pump Size 5 1/2" x 9 1/4" Annular Vel. (F /Min).
Bit Size 8 1/2" No. 4	Intermediate	Total Circulating Volume 380	Pump Make NAL Opposite DP
Drill Pipe Size 4 1/2" Type	Production or Liner at	In Storage 60	Model Q-10-100 Opposite Collar
Drill Collar Size 6 1/4" Length	Mud Type KU POLYMER		Stroke/Min 57 Riser
			Stroke/Min 0-080 Circulating Pressure
			Bottoms Up (Min.)
			Systems Total (Min.)

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature	MUD PROPERTIES	EQUIPMENT
Time Sample Taken		SIZE	Hours
Depth (METRES) 18-00		Centrifuge BILMOS S30	Desilter 11x4"
Weight (S.G.) 8.8		Degasser DRUW	Shaker B60/B80
Mud Gradient (psi/ft) 4.60		Desander 4x6"	B60/B100
Funnel Viscosity (sec./qt) API at 38		DAILY COST \$162.20	CUMULATIVE COST \$8432.53
Plastic Viscosity cps at 9		MUD PROPERTIES SPECIFICATIONS	
Yield Point (lb/100 sq. ft.) 10		WEIGHT 9.0-9.5	PV/YP 0.12/12-18
Gel Strength (lb/100 sq. ft.) 10 sec/10 min. 1.1		FILTRATE < 9cc	KU pH 9-9.5
<input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter 8.5		BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor	
Filtrate API (ml./30 min.) 8.0		<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other	
API HP-HT Filtrate (ml./30 min.)		BIT INFORMATION	
Cake Thickness (mm) 1.14		TYPE SEL S33	JETS 3x11
Alkalinity, Mud (Pm)		WT.	R.P.M.
Alkalinity, Filtrate (P/M) 11.5		JET VEL.	BHHP
Chloride (mg/l) 18000		RECOMMENDATIONS	
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l) 240			
Sand Content (% by Vol.) TR			
Solids Content (% by Vol.) 2.0			
Sol Content (% by Vol.) TR			
Water Content (% by Vol.) 98.0			
Methylene Blue Capacity (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)			
K ⁻ (mg/l) 13000			
Nitrate (mg/l) / Sulphite (mg/l) 3.4			

COST SUMMARY/24 HOURS ENDING 3-3-86 @ DEPTH 972m			
Product/Package	Units	Unit Cost	Cost
BILMOS SODA	2	23.41	46.82
PARAFORMALDEHYDE	1	37.05	37.05
MILPAL	1	78.33	78.33
			162.20
COST CORRECTION		+ 121.50	
MILKREE PAUL BDL 50			
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

OPERATIONS SUMMARY

RHT. Jam Fish at 2140' (652m)
Screw into fish
Jar fish.

Remove Kelly hose & loose pack.
Run Subhanger & back off.
RHT.

RHT. w/ Drill Pipe to set cement plug.
Jam fish at 1916' (584m)
Run Cement Plug back to 521m
RHT. 4 studs.
Circulate
RHT.

Pick up Drill Collars & HWDP.

GEOFLUIDS ENGINEER **ANDRE SKWJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795192**

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Geofluids Pty Ltd Drilling Fluid Report

REPORT NO. 12	DATE 14th March 86
RIG NO. 8	SPUD DATE 23 Feb 86
DEPTH 53m (HOLE BACK)	TO 667m

OPERATOR BEAUA PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LAWRIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILDLAT	LOCATION OTWAY BASIN STATE VIC
OPERATION DRILLING	CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 160 Pits 350	CIRCULATION DATA
Present Activity DRILLING	Bit Size 8 1/2" No. 4	Total Circulating Volume 570	Pump Size 5 1/2" x 9 1/4"
Drill Pipe Size 4 1/2" Type VF	Production or Liner at	In Storage	Pump Make NAT Model a-p-100 Stroke 100 Stroke/Min 100
Drill Collar Size 6 1/4" Length 230	Mud Type KU POLYMER		Annular Vel. (Ft/Min) 155 Opposite DP 211 Opposite Collar 211 Riser 211 Circulating Pressure 800 Bottoms Up (Min.) 800 Systems Total (Min.) 800

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 32 °C	MUD PROPERTIES SF4	
Time Sample Taken		23:00	05:30
Depth (METRES)		648	792
Weight <input type="checkbox"/> (S.G.) <input checked="" type="checkbox"/>		8.8	8.8
Mud Gradient (psi/ft)		4.60	4.60
Annular Viscosity (sec./qt) API at 32 °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 1/3	2 1/3
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter		9.5	9.0
Filtrate API (ml./30 min.)		8.4	8.3
API HP-HT Filtrate (ml./30 min.)		11.4	11.4
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1.4	1.4
Alkalinity, Mud (Pm)		-	-
Alkalinity, Filtrate (PI/Mf)		25.50	18.40
Chloride (mg/l)		2250	17500
Total Hardness <input type="checkbox"/> ecm <input checked="" type="checkbox"/> (mg/l)		250	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 <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent)		-	5
K ⁻ (mg/l)		2050	15000
Nitrate (mg/l) / Sulphite (mg/l)		/	/
	KU (% w/v)	3.3	3.0
	with EUS	54.76	51.1
		9.1	9.1

EQUIPMENT		SIZE	Hours	SIZE	Hours
Centrifuge	OUTER	5	Desilter	11x4"	5
Degasser	OUTER	0	Shaker	8x5/1350	7
Desander	4x6"	7		8x5/1350	7
DAILY COST	\$ 1417.47		CUMULATIVE COST	\$ 9850.00	
MUD PROPERTIES SPECIFICATIONS					
WEIGHT	PV/YP	FILTRATE	K _U / pH		
MINIMUM	8-2	16-20	< 9cc	3-4.6 / 9.5	
BY AUTHORITY	<input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor		<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other		
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEL S330	3x11	15	125	329	143

RECOMMENDATIONS

Increasing Yield Pt. to approx 18 at Operator's Request.

Building Volume in Mud Tanks to Approx 450-600 bbls

CENTRIFUGE OF **8-9 ppm**

DESANDER UP **13.6 ppm @ 2.2 gal/min**

DESILTER UP **10.0 ppm @ 3.8 gal/min**

COST SUMMARY/24 HOURS ENDING 4-3-86		@ DEPTH 667m	
Product/Package	Units	Unit Cost	Cost
MILPAL	1	78.33	78.33
MILPAU	4	222.44	879.64
KU	24	15.84	380.16
PARAFORMALDEHYDE	1	37.25	37.25
CARBOX POLYMER	1	32.29	32.29
			1417.47
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
	30		110

OPERATIONS SUMMARY

Mud

R.H. - Top cement @ 554m

Dress plug to 559m

R.H. Back 1 stand of room 525m - 547m

Ream 547m - 553m

Drill 553m - 567m

R.H. and Lay down Drill Pipe

M.U. Now 15MA & R.H.

Ream 567m - 567m

Drill 8 1/2" hole 567m - 667m

GEOFLUIDS ENGINEER **ANDREW SKOJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-745102**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 13	DATE STA MEL 4/86
RIG NO. 8	SPUD DATE 22nd FEB 86
DEPTH 667m	TO 924m

OPERATOR BEACH PETROLEUM		CONTRACTOR RILWATER DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LAWRIE KLASON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. MILZAN	LOCATION OTWAY BASIN STATE VICTORIA
OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity R/LH	9 5/8" Surface at 453m	Hole 230 Pits 300	Pump Size 5 1/2" x 9 1/4" Annular Vel. (FPM) 135 Opposite DP 211 Opposite Collar 211 Riser 360
Bit Size 8 1/2" No. 4/5	Intermediate at	Total Circulating Volume 530	Pump Make NAT Model 9-P-100 Stroke 100 Stroke/Min 100
Drill Pipe Size 4 1/2" Type DF	Production or Liner at	In Storage	Circulating Pressure 800/105
Drill Collar Size 6 1/2" Length 220	Mud Type KU POLYMER		Bottoms Up (Min.) 16 Systems Total (Min.) 80

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 31.0c	MUD PROPERTIES			EQUIPMENT					
Time Sample Taken		63	63	63	SIZE	Hours	SIZE	Hours		
Depth (METERS)		14:30	1:30	06:30	Centrifuge ALUMINA	23	Desilter 11x14"	15		
Weight (S.G.) 8.9		8.9	8.9	8.9	Degasser DRULLO	2	Shaker 1500/1800	15		
Mud Gradient (psi/ft) 4.63		4.63	4.63	4.63	Desander 4x6"	15	1500/1800	15		
Annular Viscosity (sec/qt) API at 41		41	41	41	DAILY COST \$3954.80		CUMULATIVE COST \$13804.88			
Plastic Viscosity cps at 13		13	14	13	MUD PROPERTIES SPECIFICATIONS					
Yield Point (lb/100 sq. ft.) 17		17	16	17	WEIGHT	PV/YP	FLTRATE	KU PH		
Gel Strength (lb/100 sq. ft.) 10 sec/10 min. 2.5		2.5	2.16	2.5	MW	8-2 16-20	< 9	3-4% 9-9.5		
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter 9.0		9.0	9.0	9.0	BY AUTHORITY	<input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor <input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other				
Filtrate API (ml/30 min.) 9.1		9.1	9.0	8.2	BIT INFORMATION					
API HP-HT Filtrate (ml/30 min.) -		-	-	-	TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/> 1(W)		1(W)	1(W)	1(W)	SEL S335	3x11	15	125	329	144
Alkalinity, Mud (Pm) -		-	-	-	SEL S445	3x11	20	100	229	144
Alkalinity, Filtrate (P/1M) TR/24		08/15	TR/30		RECOMMENDATIONS					
Chloride (mg/l) 17500		20000	17500		.....				
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l) 260		260	260	260	.....				
Sand Content (% by Vol.) TR		TR	TR	TR	.....				
Solids Content (% by Vol.) 2.5		2.5	2.5	2.5	.....				
Cl- Content (% by Vol.) TR		TR	TR	TR	.....				
Water Content (% by Vol.) 97.5		97.5	97.5	97.5	.....				
Methylene Blue Capacity (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent) 7.6		-	5		.....				
K- (mg/l) 17500		22000	18000		.....				
Nitrate (mg/l) / Sulphite (mg/l) /		/	/	/	.....				
KU (%) w/w 3.3		4.2	3.4		.....				
N/K 52/12		55/96	52/12		.....				
FLD 9.1+		9.1+	9.1+		.....				

COST SUMMARY/24 HOURS ENDING 5-3-86 @ DEPTH 924m			
Product/Package	Units	Unit Cost	Cost
MILZAN	11	78.33	861.63
MILZAN	10	222.40	2224.00
KU	40	15.84	633.60
PARAFORMALDEHYDE	2	37.05	74.10
CAUSTIC POTASH	5	32.24	161.20
			3954.80
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
	50		50

CENTRIFUGE OF: **\$ 8 ppm**
 DESANDER UP: **13.1 ppm @ 1:1** gal/min
 DESILTER UP: **9.9 ppm @ 3:1** gal/min

OPERATIONS SUMMARY
 Drill to 764m. Circ.
 1.5 stand. Wiper Trip.
 Ream 10m to bottom.
 Drill to 924m. Circ.
 Trip Bit

GEOFLUIDS ENGINEER **ANDRE SKUSINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-745102**

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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 LANNIE KLASSON	
WELL NAME AND NO. WESTGATE B1A		FIELD OR BLOCK NO. WILDCAT	LOCATION OTWAY BASIN
OPERATION RIH		CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 280 Pits 350
Present Activity RIH	Bit Size 8 1/2"	No. 5	Intermediate at Production or Liner at
Drill Pipe Size 4 1/2"	Type DF	Length 220'	Mud Type KU POLYMER
Drill Collar Size 6 1/4"	Flowline <input checked="" type="checkbox"/> Pit <input type="checkbox"/>	Flowline Temperature 55 °C	MUD PROPERTIES 713

Sample from	MUD PROPERTIES			EQUIPMENT					
	SIZE	Hours	SIZE	Hours	SIZE	Hours	Hours		
Time Sample Taken	11-00	15-30	06-30	Centrifuge	DAITONS	23	Desilter	11x4"	15
Depth (Meters)	1120	1144	1208	Degasser	DAULW	0	Shaker	860/800	15
Weight (S.G.)	9.0	9.0	9.0	Desander	11x6"	15		800/800	15
Mud Gradient (psi/ft)	4.68	4.48	4.68	DAILY COST	\$2716.04			CUMULATIVE COST	\$16,520.97
Annular Viscosity (sec./qt) API at	42	45	43	MUD PROPERTIES SPECIFICATIONS					
Plastic Viscosity cps at	15	16	15	WEIGHT	PV/YP	FILTRATE			
Yield Point (lb/100 sq. ft.)	16	21	20	MIN	8-11 / 16-20	≤ 9	KU 3-4%		
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	2/3	2/5	2/4	BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor					
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter	9.5	8.5	9.5	<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other					
Filtrate API (ml./30 min.)	8.2	8.5	8.5	BIT INFORMATION					
API HP-HT Filtrate (ml./30 min.)	-	-	-	TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1(1)	1(1)	1(1)	SEL S446	3x11	20	120	32g	145
Alkalinity, Mud (Pm)	-	-	-	SEL S81F	3x11			32g	145
Alkalinity, Filtrate (P/M)	10.50	TR/32	12.46	RECOMMENDATIONS					
Chloride (mg/l)	18500	22000	20500	Settling tanks & Degasser tank dumped & cleaned while logging.					
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)	220	260	200	Centrifuge OF 8.9"					
Sand Content (% by Vol.)	2.5	TR	TR	Desander OF 13.4" @ 1.3 gal/min					
Solids Content (% by Vol.)	3.5	3.0	3.0	Desilter OF 9.9" @ 1.9 gal/min					
Oil Content (% by Vol.)	TR	TR	TR	OPERATIONS SUMMARY					
Water Content (% by Vol.)	96.5	97.0	97.0	Reach 10m to bottom.					
Methylene Blue Capacity (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)	-	5	5	Drill to 1144m					
K+ (mg/l)	19000	23000	21000	Circ.					
Nitrate (mg/l) / Sulphite (mg/l)	/	/	/	Wiper trip to shoe					
KU (9.0 w/v)	3.6	4.4	4.0	RM					
W/K	57.84	52.15	57.14	Circ.					
ELD	9.2	9.3	9.3	RM Log. w/ Schlumberger.					
				RM w/ new bit					

COST SUMMARY/24 HOURS ENDING 6-3-86 @ DEPTH 1144			
Product/Package	Units	Unit Cost	Cost
MILPAC	15	78.33	1174.95
MILERN	3	222.41	667.23
KU	40	15.84	633.60
PARAFORMALDEHYDE	3	37.05	111.15
CAUSTIC POTASH	4	32.29	129.16
			2716.04

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
	120		110

GEOLUIDS ENGINEER **ANDRE SKOJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795122**

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Geofluids Pty Ltd Drilling Fluid Report

REPORT NO. 15	DATE 7th March 81
RIG NO. 9	SPUD DATE 23rd Feb 81
DEPTH 1146m	TO 1306m

OPERATOR BEACH PETROLEUM		CONTRACTOR RILATER DRILLING	
REPORT FOR VINCE SANTOSTEFANO		REPORT FOR LAURIE KLASSEN	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILBERT	LOCATION OTWAY BASIN STATE VIC
OPERATION DRILLING	CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 315 Pits 460	CIRCULATION DATA
Present Activity DRILLING			Pump Size 5 1/2" x 9 1/4"
Bit Size 8 1/2"	No. 6/RH	Intermediate at	Annular Vel. (FPM) 135
Drill Pipe Size 4 1/2"	Type IF	Production or Liner at	Opposite DP 211
Drill Collar Size 6 1/4"	Length 17	Mud Type KU POLYMER	Riser
			Circulating Pressure 1350
			Bottoms Up (Min.)
			Systems Total (Min.) 120

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 36°C	MUD PROPERTIES	
Time Sample Taken		22:00	06:30
Depth (Metres)		1304	1375
Weight <input type="checkbox"/> (S.G.) <input checked="" type="checkbox"/> PPM		9.9+	9.0
Mud Gradient (psi/ft)		4.65	4.68
Annular Viscosity (sec./qt) API at		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 <input checked="" type="checkbox"/> Strip <input type="checkbox"/> 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 <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1(L)	1(L)
Alkalinity, Mud (Pm)		-	-
Alkalinity, Filtrate (P/Mf)		14.5/18	18/16
Chloride (mg/l)		23000	22500
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent)		5	-
K ⁻ (mg/l)		22000	22500
Nitrate (mg/l) /Sulphite (mg/l)		/	/
	KU (90 W/O)	4.2	4.3
	n/k	52/1.5	52/1.2
	EO	9.2+	9.2+

EQUIPMENT		SIZE		Hours	
Centrifuge	OUTROLS	24	Desilter	11x6"	15
Degasser	DELYO	0	Shaker	8.60/8.50	18
Desander	4x6"	18		8.50/8.100	18
DAILY COST	\$1690.25		CUMULATIVE COST	\$18,211.22	
MUD PROPERTIES SPECIFICATIONS					
WEIGHT	PV/YP	FILTRATE	KU		
Minimum	8-12 / 16-20	≤ 9	3-4%		
BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor <input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other					
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEL 584F	3x11	10-15	100	329	145

COST SUMMARY/24 HOURS ENDING 7-3-86 @ DEPTH 1306m			
Product/Package	Units	Unit Cost	Cost
MILPOL	15	78.33	1174.95
KU	20	15.84	316.80
CASHE POTASH	5	32.29	161.45
PARAFORMALDEHYDE	1	37.05	37.05
			1690.25
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
	0		280

RECOMMENDATIONS

Maintaining Volume wt "Water" pumped from sump.

Lost approx 60 bbls mud while tripping for new BHA.

Centrifuge OP 11.0 PM @ 1.5 gpm

Desander UF 9.5 PM @ 2.8 gpm

Desilter UF 9.5 PM @ 2.8 gpm

OPERATIONS SUMMARY

RH
Ran 20m to btm
Drill Ahead
Starting hole on survey (1157m)
Drill to 1256m
POH
Change BHA
RH
Work stuck pipe 20m from btm.
Ran Tight hole
Drill Ahead.

GEOLUIDS ENGINEER **ANDREW SKWINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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REPORT NO. 16	DATE 8th March 86
RIG NO. 8	SPUD DATE 23rd Feb 86
DEPTH 1306m	TO 1414

OPERATOR BEACH PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR VINCE SAUTOSTEFANO		REPORT FOR LAURIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILSON	LOCATION OTWAY BASIN STATE Vic
OPERATION JAR SNCK PIPE		CASING 1.578" Surface at 4.53m	MUD VOLUME 335 450
Present Activity	Bit Size 8 1/2"	Drill Pipe Size 4 1/2"	Drill Collar Size 6 1/4"
Bit Size	Drill Pipe Size	Drill Collar Size	
Drill Pipe Size	Drill Collar Size		
Drill Collar Size			

Sample from		MUD PROPERTIES	
Flowline Temperature	Flowline	Flowline	Pit
Time Sample Taken	12:00		
Depth (Meters)	1414		
Weight (S.G.)	9.0		
Mud Gradient (psi/ft)	4.67		
Funnel Viscosity (sec./qt) API at	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	9.0		
Filtrate API (ml./30 min.)	8.2		
API HP-HT Filtrate (ml./30 min.)	-		
Cake Thickness (mm)	1 (4)		
Alkalinity, Mud (Pm)	-		
Alkalinity, Filtrate (P1/Mf)	0.8 / 0.4	/	/
Chloride (mg/l)	21500		
Total Hardness (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)	7 1/2		
K- (mg/l)	22000		
Nitrate (mg/l) / Sulphite (mg/l)	1 / 1	/	/
	KU (1/2 wt)	4.2	
	with	581.1	
	FLD	9.25	

EQUIPMENT		SIZE	Hours	SIZE	Hours
Centrifuge	OUTON	24		Desilter	11x4" 14
Degasser	DELU	0		Shaker	B60/B80 18
Desander	4x6"	18			B40/B80 18
DAILY COST	\$974.70			CUMULATIVE COST	\$19,185.92
MUD PROPERTIES SPECIFICATIONS					
WEIGHT	PV/YP	FILTRATE			
MIN	8.2 / 16-20	≤ 9			KU 3-4%
BY AUTHORITY	Operator's Written		Operator's Representative		
	Operator's Representative		Drilling Contractor		
	Other		Other		
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEL SELF	3x4	10-5	100	329	145

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

COST SUMMARY/24 HOURS ENDING 8-3-86 @ DEPTH 1414m			
Product/Package	Units	Unit Cost	Cost
MILCHEM	2	78.23	156.33
MILZAN	-	-	-
KU	-	-	-
CARSTIL POTASH	3	22.29	96.87
MILPFE	1	21.50	21.50
			974.70
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			110

OPERATIONS SUMMARY
 Drill to 1414m
 Make tip to shoe. Hologram.
 Run
 Stick in hole @ 1291m
 Work stick pipe.
 Pump 17 bbls. Miltree P11

GEOFLUIDS ENGINEER **ANDRE SKUJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-725102**

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Geofluids Pty Ltd Drilling Fluid Report

REPORT NO. 17	DATE 9th March 86
RIG NO. 8	SPUD DATE 23rd Feb 86
DEPTH 1414	TO

OPERATOR BEACH PETROLEUM		CONTRACTOR RUCHTER DRILLING	
REPORT FOR VINCE SANDSTEFAN/JIM HANSON		REPORT FOR LAWRIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. MILPAT	LOCATION OTWAY BASIN STATE VIC
OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity POH	9 5/8" Surface at 453m	Hole 395 Pits 200	Pump Size 5 1/2" x 9 1/4"
Bit Size 8 1/2"	No. Reel	Intermediate at	Pump Make NM Model 9-P-100
Drill Pipe Size 4 1/2"	Type IF	Production or Liner at	Annular Vel. (Ft/Min) 99
Drill Collar Size 6 1/4"	Length 220	Mud Type KU POLYMER	Opposite DP 54
			Opposite Collar 54
			Riser
			Circulating Pressure 800
			Bottoms Up (Min.)
			Systems Total (Min.) 90

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 32 °C	MUD PROPERTIES 10/3	
Time Sample Taken		02:00	07:00
Depth (Metres)		891	1414
Weight (S.G.) <input checked="" type="checkbox"/> PPG		8.8+	8.8+
Mud Gradient (psi/ft)		4.60	4.60
Funnel Viscosity (sec./qt) API at		38	45
Plastic Viscosity cps at		11	15
Yield Point (lb/100 sq. ft.)		11	13
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.		2/3	2/4
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> 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 <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1(LH)	1(LH)
Alkalinity, Mud (Pm)		-	-
Alkalinity, Filtrate (P/M)		0/26	TR/36
Chloride (mg/l)		16500	19500
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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) <input type="checkbox"/> (equiv. #/bbl bent)		-	-
K ⁻ (mg/l)		17000	19500
Nitrate (mg/l) / Sulphate (mg/l)		1	1
	KU (1% W/W)	3.2	3.7
	n/k	54	11
	FLD	9	1

EQUIPMENT		SIZE		Hours	
Centrifuge	OUTRAC	22	Desilter	11x4"	3
Degasser	DRILL	0	Shaker	96/100	3
Desander	4x6"	3		100/100	3
DAILY COST	\$521.98		CUMULATIVE COST	\$14,707.90	
MUD PROPERTIES SPECIFICATIONS					
WEIGHT	PV/YP	FILTRATE	KU		
MIN	8-2 / 16-20	≤ 9cc	3-4%		
BY AUTHORITY	<input checked="" type="checkbox"/> Operator's Written	<input type="checkbox"/> Drilling Contractor			
	<input checked="" type="checkbox"/> Operator's Representative	<input type="checkbox"/> Other			
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEL SELF	3X11				

RECOMMENDATIONS

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

COST SUMMARY/24 HOURS ENDING 9-3-86		@ DEPTH 1414m	
Product/Package	Units	Unit Cost	Cost
MILPAT	3	78.33	234.99
MILZAN	1	222.44	222.44
CRUSTAL POTASH	2	32.29	64.58
			521.98
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

OPERATIONS SUMMARY

Bar on stuck pipe.
 Displace 1 BBL Milfree pill bar.
 Rig up & run Schlumberger to find free point.
 Rig down.
 Displace out mud from hole with fresh water and then circulate with water (5450 strokes).
 Bar on pipe - Pipe comes free.
 Pick up Kelly & circulate and displace hole with mud.
 Circulate and work pipe.
 POH - No hole problems.

GEOFLUIDS ENGINEER **ANDREW SKUJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-785002**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 18	DATE 10 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 LARRIE KLASSON
WELL NAME AND NO. WESTGATE #1A	FIELD OR BLOCK NO. WILLOW LOCATION OTWAY BASIN STATE VICTORIA

OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity DRILLING	958m Surface at 453m	Hole 455 Pits 460	Pump Size 52" x 94"
Bit Size 8 1/2"	Intermediate at	Total Circulating Volume 915	Annular Vel. (Ft/Min) 1350
Drill Pipe Size 4 1/2"	Production or Liner at	In Storage 150	Opposite DP 241
Drill Collar Size 6 1/4"	Mud Type KU POLYMER		Riser 241
			Circulating Pressure 1350
			Bottoms Up (Min.) 50
			Systems Total (Min.) 150

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit 39 °C	MUD PROPERTIES			EQUIPMENT					
Flowline Temperature	M3			SIZE	Hours	SIZE	Hours		
Time Sample Taken	15:30	22:30	03:00	Centrifuge	01/1000	24	Desilter	11x4"	18
Depth (METRES)	673	1690	1705	Degasser	01/1000	0	Shaker	8x5/1000	18
Weight (S.G.)	8.9	8.9	8.9	Desander	4x6"	18		8x5/1000	18
Mud Gradient (psi/ft)	.43	.43	.45	DAILY COST	\$3665.50			CUMULATIVE COST	\$23373.40
Annular Viscosity (sec./qt) API at	40	43	44	MUD PROPERTIES SPECIFICATIONS					
Plastic Viscosity cps at	12	13	14	WEIGHT	PV/YP	FILTRATE	KU		
Yield Point (lb/100 sq. ft.)	16	19	20	MIN	8-11/16-20	≤ 9	3-4%		
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	2/3	2/5	3/5	BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor					
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter	9.0	9.0	9.5	<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other					
Filtrate API (ml./30 min.)	7.2	7.4	7.8	BIT INFORMATION					
API HP-HT Filtrate (ml/30 min.)	-	-	-	TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1(LW)	1(LW)	1(LW)	SEC Sumps	10:10-2	25	120	347	161
Alkalinity, Mud (Pm)	-	-	-	RECOMMENDATIONS					
Alkalinity, Filtrate (Pt/Mf)	10/400	28/26	14/68	Centrifuge OF 8-8T					
Chloride (mg/l)	17500	21500	21000	Desander UF 13.5 ppm @ 4-3 gal/min					
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)	180	180	160	Desilter UF 9.9 ppm @ 1.4 gal/min					
Sand Content (% by Vol.)	TR	TR	TR	OPERATIONS SUMMARY					
Solids Content (% by Vol.)	2.5	2.0	2.5	Pm. Change BHA - Lay down 3 D.L.					
Oil Content (% by Vol.)	TR	TR	TR	Rt up New Bit					
Water Content (% by Vol.)	97.5	98.0	97.5	Pm 7 Sample to btm					
Methylene Blue Capacity (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)	5	-	5	Drill Ahead					
K ⁺ (mg/l)	18000	22000	22000						
Nitrate (mg/l) / Sulphite (mg/l)	/	/	/						
KU (% w/w)	3.4	4.2	4.2						
n/k	5.1-1	4.1-5	5.1-5						
FLO	9.1	9.1	9.2						

COST SUMMARY/24 HOURS ENDING 10-3-86 @ DEPTH			
Product/Package	Units	Unit Cost	Cost
MIL PAC	5	78.33	391.65
MIL TAN	11	222.44	2446.84
CARSTIC POTASH	6	32.29	193.74
KU	40	15.84	633.60
			3665.50

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			300

GEOLUIDS ENGINEER ANDREW SKWINS	HOME ADDRESS ADELAIDE	TELEPHONE 08-795102
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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 19	DATE 11th March 88
RIG NO. 8	SPUD DATE 23rd Feb 88
DEPTH 1695m	TO 1776m

OPERATOR **BEACH PETROLEUM** CONTRACTOR **RILATER DRILLING**
 REPORT FOR **TAN HOEMEIER / JIM HANSON** REPORT FOR **LANNIE KLASSON**
 WELL NAME AND NO. **WESTGATE #1A** FIELD OR BLOCK NO. **WILLOW** LOCATION **OTWAY BASIN** STATE **VIC**

OPERATION **DRILLING** CASING **058" Surface at 453m** MUD VOLUME **470 Pits 480** CIRCULATION DATA
 Present Activity **DRILLING** Hole **470** Pits **480** Pump Size **5 1/2 x 6 1/4** Annular Vel. (Ft./Min.) **329**
 Bit Size **8 1/2"** No **9/8** Intermediate at **453m** Total Circulating Volume **450** Pump Make **N/A** Opposite DP **2.1** Opposite Collar Riser **1.40**
 Drill Pipe Size **4 1/2"** Type **API** Production or Liner at **453m** In Storage **138** Stroke/Min **9-100** Circulating Pressure **1300**
 Drill Collar Size **6 1/4"** Length **126** Mud Type **KCl POLYMER** Stroke/Min **100** Bottoms Up (Min.) **1.40** Systems Total (Min.) **1.40**

Sample from Flowline Pit **39.0c**

Time Sample Taken	MUD PROPERTIES		
	16:00	23:30	06:30
Depth (Metre)	1123	1773	1820
Weight (S.G.) <input checked="" type="checkbox"/> API	8.95	8.95	9.0
Mud Gradient (psi/ft)	4.15	4.15	4.18
Funnel Viscosity (sec./qt) API at 39.0c	42	43	45
Plastic Viscosity cps at 39.0c	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 <input checked="" type="checkbox"/> Strip <input type="checkbox"/> 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 <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1(LH)	1(LH)	1(LH)
Alkalinity, Mud (Pm)	-	-	-
Alkalinity, Filtrate (P/Mf)	18/10	12/65	08/58
Chloride (mg/l)	16500	16000	20000
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)	160	160	200
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	77.0
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent)	7.5	5	-
K ⁻ (mg/l)	18000	17500	19500
Nitrate (mg/l) / Sulphite (mg/l)	/	/	/
KCl (% w/w)	3.4	3.3	3.5
MLK	2/12	5/13	5/13
ELD	9.1	9.2	9.2

EQUIPMENT		Hours	EQUIPMENT		Hours
SIZE	Hours	SIZE	Hours	SIZE	Hours
Centrifuge DILTOX	24	Desilter 11x4"	15		
Degasser DRILW	0	Shaker 11x4"	15		
Desander 4x6"	15				
DAILY COST \$2394.48		CUMULATIVE COST \$25,767.88			
MUD PROPERTIES SPECIFICATIONS					
WEIGHT	PV/YP	FILTRATE	KCl		
MINIMUM 8-10	10-20	< 9	3-4%		
BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor <input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other					
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP.
SEL 5446	10-10-2	25	120	347	161
SEL 584F	10-10-2	15	95	347	162

RECOMMENDATIONS

Transferred approx 800 bbls mud into system from Flare Pt.

Centrifuge OF 8.4 ppm
 Desander VF 12.8 ppm @ 2.2 gal/min
 Desilter VF 9.7 ppm @ 2.4 gal/min

OPERATIONS SUMMARY

Drill to 1704m
 Circ.
 Trip bit - No hole problems
 Run to 1489m - Able tight.
 Wash & ream tight spots.
 RHT 4 sets
 Wash & ream 20m to bit.
 Drill Ahead

COST SUMMARY/24 HOURS ENDING **11-3-88** @ DEPTH **1776m**

Product/Package	Units	Unit Cost	Cost
MILCHEM	5	78.33	391.65
MILCHEM	7	222.4	1556.87
CASSEL 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

GEOFLUIDS ENGINEER **ANDREW SKWINS** HOME ADDRESS **ADELAIDE** TELEPHONE **(08-745102)**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 20	DATE 20th March '88
RIG NO. 8	SPUD DATE 23rd Feb '88
DEPTH 1776m	TO 1916m (TD)

OPERATOR BEACH PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR JIM HANSON / IAN HOFMEIER		REPORT FOR LAWRIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. NILDAT	LOCATION OTWAY BASIN
			STATE VICTORIA
OPERATION		CASING	MUD VOLUME
Present Activity	POH TO LOG	9 5/8" Surface at 453m	Hole 500 Pits 440
Bit Size	8 1/2" No. 8	Intermediate at	Total Circulating Volume 940
Drill Pipe Size	4 1/2" Type DF	Production or Liner at	In Storage
Drill Collar Size	6 1/4" Length 126'	Mud Type KU POLYMER	
Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit		Flowline Temperature 40 °C	

	MUD PROPERTIES		EQUIPMENT					
	SIZE	Hours	SIZE	Hours	SIZE	Hours		
Time Sample Taken	13:30	20:00	Centrifuge	DILTOOLS	24	Desilter	11x4"	16
Depth (Metres)	1874	1916	Degasser	DALLOS	0	Shaker	1360/1980	16
Weight (S.G.)	8.97	8.97	Desander	14x6"	16		1360/1980	16
Mud Gradient (psi/ft)	4.65	4.65	DAILY COST	\$1183.22		CUMULATIVE COST	\$26951.10	
Annular Viscosity (sec./qt) API at	43	45	MUD PROPERTIES SPECIFICATIONS					
Plastic Viscosity cps at	15	16	WEIGHT	PV/YP	FILTRATE	CU		
Yield Point (lb/100 sq. ft.)	18	20	MINIMUM	8-12 / 16-20	≤ 9u	3-4%		
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	3/5	3/6	BY AUTHORITY	<input type="checkbox"/> Operator's Written	<input type="checkbox"/> Drilling Contractor			
pH	9.0	9.0	<input type="checkbox"/> Operator's Representative	<input type="checkbox"/> Other				
Filtrate API (ml./30 min.)	8.6	8.1	BIT INFORMATION					
API HP-HT Filtrate (ml./30 min.)	-	-	TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1(W)	1(W)	SEL S84F	10-10.12	20-30	85	347	161
Alkalinity, Mud (Pm)	-	-	RECOMMENDATIONS					
Alkalinity, Filtrate (P/MI)	10/55	13/65						
Chloride (mg/l)	20000	20000						
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input checked="" type="checkbox"/> (equiv. #/bbl bent)	-	5						
K ⁻ (mg/l)	20000	19500						
Nitrate (mg/l) / Sulphite (mg/l)	/	/						
	KU (% w/w)	3.8						
	n/k	54/11						
	FLD	9.2						

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
KU	20	15.84	316.80
			1183.22

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			200

GEOFLUIDS ENGINEER ANDREW SKELKINS	HOME ADDRESS ADELAIDE	TELEPHONE 08-795100
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Centrifuge OF 8.4 ppm
 Desander UF 13.2 ppm @ 2.5 gal/min
 Desiter UF 9.6 ppm @ 2.0 gal/min

OPERATIONS SUMMARY

Drill to 1916m (T.D.)
 Run 16 stand Wiper trip.
 Pickup Kelly and pump out 1643m - 1646m
 and run same.
 R.M.
 C.M.
 POH - no hole problems.



Geofluids Pty Ltd Drilling Fluid Report

REPORT NO. 21	DATE 13th March 81
RIG NO. 8	'SPUD DATE 23rd Feb 81
DEPTH 1916 m (TD) TO	

OPERATOR BEAMA PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR JIM HANSON / IAN HOEFMEIER		REPORT FOR LANNIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILDAR	LOCATION OTWAY BASIN STATE VIC
OPERATION CIRCULATING	CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 500 Pits 400	CIRCULATION DATA
Bit Size 8 1/2"	No. 2	Total Circulating Volume 900	Pump Size 5 1/2" x 9 1/4"
Drill Pipe Size 4 1/2"	Type EF	In Storage —	Pump Make NOR Model Q-P-100
Drill Collar Size 6 1/2"	Length —	Mud Type KU POLYMER	Annular Vel. (F/M) 1.55
			Opposite DP 2.11
			Opposite Collar —
			Riser —
			Circulating Pressure 1400
			Bottoms Up (Min.) 55
			Systems Total (Min.) 130

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature 37 °C	MUD PROPERTIES
Time Sample Taken	10:45	Depth (Meters) TD
Weight <input type="checkbox"/> (S.G.) <input checked="" type="checkbox"/> API	8.94	Mud Gradient (psi/ft) 4.65
Funnel Viscosity (sec./qt) API at 30 °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 <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter	9.5	Filtrate API (ml./30 min.) 8.4
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1.18	Alkalinity, Mud (Pm) —
Alkalinity, Filtrate (P/Mf)	15.72	Chloride (mg/l) 18000
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)
K+ (mg/l)	12500	Nitrate (mg/l) / Sulphite (mg/l) —
	3.3	
	54.11	
	9.2	

EQUIPMENT		SIZE		Hours	
Centrifuge	OLYX	12	Desilter	11x4	1
Degasser	DALCO	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	KU		
Min	8-12 / 16-20	≤ 9	3-4%		
BY AUTHORITY	<input checked="" type="checkbox"/> Operator's Written	<input type="checkbox"/> Drilling Contractor			
	<input checked="" type="checkbox"/> Operator's Representative	<input type="checkbox"/> Other			
BIT INFORMATION					
TYPE	JETS	WT.	R.P.M.	JET VEL	BHHP
SEL SAFE	W10.12			347	

RECOMMENDATIONS

OPERATIONS SUMMARY

Run up and Log lost 33 bbls mud in initial weeks of logging. Run in bit for 10 min. trip. All good. Circ hole clean.

COST SUMMARY/24 HOURS ENDING 13-3-81 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
MILPRAC	2	78.33	156.66
CASOIN SODA	2	30.00	60.00
			216.66
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			50

GEOFLUIDS ENGINEER **ANDRE SKJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795101**

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**Geofluids Pty Ltd
Drilling Fluid Report**

REPORT NO. 22	DATE 14th March 81
RIG NO. 8	SPUD DATE 23rd Feb 81
DEPTH 1416 (TD) TO	

OPERATOR BEACH PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR JAN ADMEYER / JIM HANSON		REPORT FOR LARRY KLASSEN	
WELL NAME AND NO. NESTLATE #1A		FIELD OR BLOCK NO. NILGAL	LOCATION UTWAY BASIN STATE Vic
OPERATION		CASING	MUD VOLUME
Present Activity LOG		Surface at 453m	
Bit Size 8 1/2"	No. RAB 3	Intermediate at	Hole Pits 3 1/2"
Drill Pipe Size 4 1/2"	Type DF	Production or Liner at	Total Circulating Volume 640
Drill Collar Size 6 1/4"	Length	Mud Type KU POLYMER	In Storage
Pump Size 5 1/2" x 4 1/2"		CIRCULATION DATA	
Pump Make NA		Annular Vel. (ft/Min) 235	
Model 9-P-100		Opposite DP 2.11	
Stroke/Min 100		Riser 2.11	
Stroke/Min 100		Circulating Pressure 100	
BPM/Min 6.8		Bottoms Up (Min) 100	
		Systems Total (Min) 100	

Sample from <input type="checkbox"/> Flowline <input checked="" type="checkbox"/> Pit	Flowline Temperature °C	MUD PROPERTIES	EQUIPMENT	
			SIZE	Hours
Time Sample Taken			Centrifuge OUTLES	2
Depth PT 1416m			Degasser DELLS	2
Weight <input type="checkbox"/> (S.G.) 8.9			Desander 4.6"	2
Mud Gradient (psi/ft)			DAILY COST \$22327	CUMULATIVE COST \$27,371.03
Tunnel Viscosity (sec./qt) API at °C			MUD PROPERTIES SPECIFICATIONS	
Plastic Viscosity cps at			WEIGHT MIN	PV/YP 8-12 / 16-20
Yield Point (lb/100 sq. ft.)			FILTRATE ≤ 9	KU
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.			BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Operator's Representative <input type="checkbox"/> Drilling Contractor <input type="checkbox"/> Other	
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter			BIT INFORMATION	
Filtrate API (ml./30 min.)			TYPE SEL 584F	JETS W.W.12
API HP-HT Filtrate (ml./30 min.)			W.T.	R.P.M.
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>				JET VEL 347
Alkalinity, Mud (Pm)				BHHP
Alkalinity, Filtrate (P/M)			RECOMMENDATIONS	
Chloride (mg/l)				
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)				
Sand Content (% by Vol.)				
Solids Content (% by Vol.)				
Oil Content (% by Vol.)				
Water Content (% by Vol.)				
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)				
K ⁺ (mg/l)				
Nitrate (mg/l) / Sulphite (mg/l)				
KU (% w/w)				

COST SUMMARY/24 HOURS ENDING 14-3-81 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
NILGAL	1	78.33	78.33
* NILGAL	10	14.02	140.20
COST BREAKDOWN:			
Castor Soda Cost		\$2237	7526
* Used for Previous Beach Job			
			22327

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER **ANNE SWIND** HOME ADDRESS **ADELAIDE** TELEPHONE **08-745102**

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OPERATIONS SUMMARY
 CIRL
 PDA - No Problems
 Log



Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 23	DATE 15th March 88
RIG NO. 8	SPUD DATE 23rd Feb 88
DEPTH 1916m	TO

OPERATOR BEAM PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR IAN HOEYER / JIM HANSON		REPORT FOR LAWRIE KLASSON	
WELL NAME AND NO. NESTEATE #1A		FIELD OR BLOCK NO. WILKAT	LOCATION OTWAY BASIN STATE VICTORIA
OPERATION LOG		CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 500 Pits 320
Present Activity	Bit Size 8 1/2"	Intermediate	Pump Size 5 1/2" x 9 1/4"
Drill Pipe Size 4 1/2"	No. ROB	Production or Liner at	Pump Make NAT
Drill Collar Size 6 1/2"	Type TF	Mud Type KU POLYMER	Model 9-P-100
	Length		Stroke/Min 100
			Stroke/Min 6-8

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	MUD PROPERTIES	EQUIPMENT			
		SIZE	Hours	SIZE	Hours
Time Sample Taken	18-00	Centrifuge	8	Desilter	2
Depth	TD	Degasser	0	Shaker	2
Weight <input type="checkbox"/> (S.G.)	9.0	Desander	2		2
Mud Gradient (psi/ft)	4.65	DAILY COST	\$ 156.66	CUMULATIVE COST	\$ 27,527.64
Annular Viscosity (sec./qt) API at	4.5	MUD PROPERTIES SPECIFICATIONS			
Plastic Viscosity cps at	1.6	WEIGHT	PV/YP	FILTRATE	KU
Yield Point (lb/100 sq. ft.)	18	MUN	8-12 / 16-20	< 9	3-4%
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	3/4	BY AUTHORITY	<input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor		
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter	9.0	<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other			
Filtrate API (ml./30 min.)	8-0	BIT INFORMATION			
API HP-HT Filtrate (ml./30 min.)	-	TYPE	JETS	WT.	R.P.M.
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1.1	SEL SX4F	W-10. R		347
Alkalinity, Mud (Pm)	-	RECOMMENDATIONS			
Alkalinity, Filtrate (P/M)	10.58	.....		
Chloride (mg/l)	12500	.....		
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (mg/l)	180	.....		
Sand Content (% by Vol.)	TR	.....		
Solids Content (% by Vol.)	3.5	.....		
Oil Content (% by Vol.)	TR	.....		
Water Content (% by Vol.)	96.3	.....		
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)	-	.....		
K ⁺ (mg/l)	15500	.....		
Nitrate (mg/l) / Sulphite (mg/l)	1 / 1	.....		
	KU (% w/w)	.....		
	2.9	.....		

COST SUMMARY/24 HOURS ENDING 15-3-88 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
MILCHEM	2	78.33	156.66
CAUSTIC SODA	-	22.37	-
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			100

OPERATIONS SUMMARY

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

GEOFLUIDS ENGINEER **ANDRÉ SKEWINS** HOME ADDRESS **ADELAIDE** TELEPHONE **198-145102**

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Geofluids Pty Ltd 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 RIKHTER DRILLING	
REPORT FOR IAN HOEMEIER / JIM HANSON		REPORT FOR LAURIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILDLAT	LOCATION OTWAY BASIN STATE VIC
OPERATION LOG		CASING 9 5/8" Surface at 453m	MUD VOLUME Hole 500 Pits 370
Present Activity LOG	Bit Size 8 1/2"	Intermediate at	CIRCULATION DATA
Drill Pipe Size 4 1/2"	Drill Collar Size 6 1/2"	Production or Liner at	Pump Size 5 1/2" x 9 1/4"
		Mud Type KU POLYMER	Annular Vel. (Ft/Min) 135
			Opposite Collar 24
			Riser ---
			Circulating Pressure ---
			Bottoms Up (Min.) ---
			Systems Total (Min.) ---

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature °C	MUD PROPERTIES	EQUIPMENT		
			SIZE	Hours	
Time Sample Taken		16-15	Centrifuge 01700S	24	
Depth		TD	Degasser DRUW	0	
Weight <input type="checkbox"/> (S.G.) <input checked="" type="checkbox"/> API		9.0	Desander UX6"	5	
Mud Gradient (psi/ft)		-466	DAILY COST		
Annular Viscosity (sec./qt) API at °C		46	CUMULATIVE COST		
Plastic Viscosity cps at		17	MUD PROPERTIES SPECIFICATIONS		
Yield Point (lb/100 sq. ft.)		20	WEIGHT MM	PV/YP 8-12 / 16-20	FILTRATE < 9
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.		3.16	BY AUTHORITY <input checked="" type="checkbox"/> Operator's Written <input type="checkbox"/> Drilling Contractor		
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter		8.5	<input checked="" type="checkbox"/> Operator's Representative <input type="checkbox"/> Other		
Filtrate API (ml./30 min.)		8.2	BIT INFORMATION		
API HP-HT Filtrate (ml./30 min.)		-	TYPE SEL S&F	JETS W-10-12	WT. ---
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1(LH)		R.P.M. ---	JET VEL 347
Alkalinity, Mud (Pm)		-			BHHP ---
Alkalinity, Filtrate (P/M)		TR/SI	RECOMMENDATIONS		
Chloride (mg/l)		16000	.....	
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)		-		
K ⁻ (mg/l)		13500	.....	
Nitrate (mg/l) / Sulphite (mg/l)		1 / 1	.....	
		KU (% W/W)	.....	
		2.6	.....	

COST SUMMARY/24 HOURS ENDING 16-3-86 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
MILPOL	3	78.33	234.99
CARSTEL SODA	2	22.37	44.74
			279.73

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			140

GEOLUIDS ENGINEER ANDREW SKOJINS	HOME ADDRESS ADELMOE	TELEPHONE 08-795102
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OPERATIONS SUMMARY

Log - RFT.
 Unable to pass 447m
 RMA wt. bit.
 Bridge @ 447m
 Work pipe 447m - 534m
 RMA 2 stks - No probs
 Circ & work pipe @ 534m
 RMA
 Rig up & run RFT.
 Unable to pass 533m
 RMA wt. bit. - Perm 533m - 594m
 RMA Circ. Hole Clean
 RMA
 Rig up & run RFT.

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 25	DATE 17 March '86
RIG NO. 8	SPUD DATE 23 Feb '86
DEPTH 1916m (TD) TO	

OPERATOR BEACH PETROLEUM		CONTRACTOR Richter Drilling	
REPORT FOR JIM HANSON / IAN HOEMEIER		REPORT FOR LARRIE KLASSON	
WELL NAME AND NO. WESTGATE #4A		FIELD OR BLOCK NO. WILDENT	LOCATION OTWAY BASIN STATE VIC
OPERATION POW SIDEWAYS.		CASING 9 5/8" Surface at 453m	MUD VOLUME Hole Pits 500 350
Present Activity	Bit Size 8 1/2"	Drill Pipe Size 4 1/2"	Drill Collar Size 6 1/2"
Bit Size No. RR8	Type	Production or Liner at	Mud Type KU POLYMER
Flowline Temperature 41 °C	MUD PROPERTIES		EQUIPMENT

Time Sample Taken	Depth	Weight (S.G.)	Mud Gradient (psi/ft)	Annular Viscosity (sec./qt) API at	Plastic Viscosity cps at	Yield Point (lb/100 sq. ft.)	Gel Strength (lb/100 sq. ft.) 10 sec/10 min.	pH	Filtrate API (ml./30 min.)	API HP-HT Filtrate (ml./30 min.)	Cake Thickness (mm)	Alkalinity, Mud (Ppm)	Alkalinity, Filtrate (Pt/Ml)	Chloride (mg/l)	Total Hardness	Sand Content (% by Vol.)	Solids Content (% by Vol.)	Oil Content (% by Vol.)	Water Content (% by Vol.)	Methylene Blue Capacity (ml/ml mud)	K+ (mg/l)	Nitrate (mg/l) / Sulphite (mg/l)	
	2130	TD	9.0+	4.71	4.5	17	18	8.5	8.4	-	110	-	TR/46	17000	180	TR	3.5	TR	96.5	-	15000	1	2-9

Centrifuge	Degasser	Desander	DAILY COST	CUMULATIVE COST
8	0	2	\$236.73	\$28,044.15
MUD PROPERTIES SPECIFICATIONS				
WEIGHT	PV/YP	FILTRATE	BY AUTHORITY	
MUN	8-12 / 16-20	< 9	Operator's Written / Operator's Representative / Drilling Contractor / Other	
BIT INFORMATION				
TYPE	JETS	W.T.	R.P.M.	JET VEL
SEL 584F	10, 10, 12			347

RECOMMENDATIONS

OPERATIONS SUMMARY

Run RFT
RFT w/ Bit
Beam tight hole 16.31m - 16.71m
Run
Circ. hole clean
12 std. Wiper Trip
Circ. hole clean
POA sideways

COST SUMMARY/24 HOURS ENDING 17-3-86 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
MILPAL	1	28.33	28.33
KU	10	15.84	158.40
			236.73
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate
			110

GEOLUIDS ENGINEER **ANDREW SKUJINS** HOME ADDRESS **ADELAIDE** TELEPHONE **(08-29562)**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 226	DATE 18th March 86
RIG NO. 8	SPUD DATE 23rd Feb 86
DEPTH 1916m(TD) TO	

OPERATOR BEACH PETROLEUM		CONTRACTOR RILHATER DRILLING	
REPORT FOR JIM HANSON / IAN HOFMEIER		REPORT FOR LAURIE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILD CAT	LOCATION OTWAY BASIN STATE VIC
OPERATION		CASING	MUD VOLUME
Present Activity Circ C&G		9 5/8" Surface at 453'	Hole Pits 660 250
Bit Size 8 1/2" No.		Intermediate at	Pump Size 5 1/2" x 9 1/4"
Drill Pipe Size 4 1/2" Type		Production or Liner at	Total Circulating Volume 910
Drill Collar Size 6 1/2" Length		Mud Type KU POLYMER	In Storage
			Pump Make Model NAP 9-2-2000
			Stroke/Min 100
			Annular Vel. (Ft/Min) 167
			Opposite Collar ---
			Riser ---
			Circulating Pressure ---
			Bottoms Up (Min.) ---
			Systems Total (Min.) ---

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit		MUD PROPERTIES			EQUIPMENT					
Flowline Temperature °C					SIZE	Hours	SIZE	Hours		
Time Sample Taken		01-00			Centrifuge	012000	8	Desilter	11x4"	2
Depth		TD			Degasser	DRU 10	0	Shaker	R400/1360	3
Weight <input type="checkbox"/> (S.G.) <input checked="" type="checkbox"/>		9.24			Desander	4x8"	0		R60/1300	3
Mud Gradient (psi/ft)		4.21			DAILY COST	\$134.22		CUMULATIVE COST	\$28,178.37	
Annular Viscosity (sec/qt) API at °C		43			MUD PROPERTIES SPECIFICATIONS					
Plastic Viscosity cps at		16			WEIGHT	PV/YP		FILTRATE		
Yield Point (lb/100 sq. ft.)		17			MIN					
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.		2/5			BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Operator's Representative <input type="checkbox"/> Drilling Contractor <input type="checkbox"/> Other					
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter		10.0			BIT INFORMATION					
Filtrate API (ml./30 min.)		8.0			TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
API HP-HT Filtrate (ml./30 min.)		-								
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1 (H)			RECOMMENDATIONS					
Alkalinity, Mud (Pm)		-			.....				
Alkalinity, Filtrate (Pf/Mf)		-			.....				
Chloride (mg/l)		16000			.....				
Total Hardness <input type="checkbox"/> ppm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)		-			.....				
K ⁻ (mg/l)		14000			.....				
Nitrate (mg/l) / Sulphite (mg/l)		1			.....				
		KU (% w/w)			.....				
									

COST SUMMARY/24 HOURS ENDING 18-3-86 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
CWSTRA SODA	6	22.37	134.22
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

OPERATIONS SUMMARY

*POH sideways.
Rig up and on 5 1/2" csg.
Circ log on bottom.*

GEOFLUIDS ENGINEER **Andre Skojins** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 27 DATE (G.M. March 8)
RIG NO. 8 SPUD DATE (23 Oct 8)
DEPTH (191m(m)) TO

OPERATOR BEACH PETROLEUM CONTRACTOR RILATER DRILLING
REPORT FOR DAN HOFMEIER REPORT FOR LAWRIE KLASSON
WELL NAME AND NO. WESTGATE #1A FIELD OR BLOCK NO. WILD CAT LOCATION OTWAY BASIN STATE VIC
OPERATION Present Activity LOG CASING 95/8" Surface at 453m MUD VOLUME Hole 145 Pits 400 Pump Size 5 1/2" x 9 1/4" CIRCULATION DATA Annular Vel. (/Min.)
Bit Size No. Intermediate at 545 Total Circulating Volume Pump Make Model NH 9-10-10 Opposite DP
Drill Pipe Size Type 5 1/2 Production or Liner at In Storage 0.8 Stroke/Min Riser
Drill Collar Size Length Mud Type KU POLYMER /Min Circulating Pressure
Systems Total (Min.)

Sample from Flowline Pit
Flowline Temperature °C MUD PROPERTIES
Time Sample Taken 22-00
Depth PIT (CHECK)
Weight (S.G.) 1.05
Mud Gradient (psi/ft) -4.71
Funnel Viscosity (sec/qt) API at 4.6
Plastic Viscosity cps at 1.8
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 114
Alkalinity, Mud (Pm)
Alkalinity, Filtrate (Pm/Ml) 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) /
KU (% w/v) 2.9

EQUIPMENT TABLE with columns: EQUIPMENT, SIZE, Hours. Includes rows for Centrifuge, Degasser, Desander, DAILY COST, CUMULATIVE COST, MUD PROPERTIES SPECIFICATIONS, and BIT INFORMATION.

RECOMMENDATIONS
OPERATIONS SUMMARY
Cement loss.
NIPPLE:
Nipple down BOPs
Nipple up. Taking Hanger Seal
Change pipe ends to 2 1/2"

COST SUMMARY/24 HOURS ENDING 9-3-86 @ DEPTH TO
Table with columns: Product/Package, Units, Unit Cost, Cost. Includes section for LIQUID ADDITIONS FOR 24 HOURS (BBL) with Diesel, Drill Water, Sea Water, Prehydrate.

GEOFLUIDS ENGINEER ANDRE SKWINS HOME ADDRESS ADELAIDE TELEPHONE 08-745602

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Geofluids Pty Ltd Drilling Fluid Report

REPORT NO. 28	DATE 20th March 86
RIG NO. 8	SPUD DATE 23rd Feb 86
DEPTH 1916 m (TD) TO	

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

Present Activity	OPERATION	CASING	MUD VOLUME	CIRCULATION DATA	
Bit Size	No.	9 5/8" Surface at 453m	Hole Pits 145 400	Pump Size 57" x 9 1/4"	Annular Vel. (Ft/Min) 255
Drill Pipe Size	Type	Intermediate at 57" Production or Liner at	Total Circulating Volume 545	Pump Make Model 9-P-100	Opposite DP
Drill Collar Size	Length	Mud Type KLU POLYMER	In Storage	Stroke/Min 57	Riser
				Stroke/Min 3.88	Circulating Pressure 4600
					Bottoms Up (Min) 23
					Systems Total (Min)

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature	°C	MUD PROPERTIES		EQUIPMENT			
Time Sample Taken			15:30		Centrifuge 1011200LS	6	Desilter 11x4"	2
Depth			Circ in (sq. ft.)		Degasser DRILLUS	0	Shaker B501A50	2
Weight <input type="checkbox"/> (S.G.) <input checked="" type="checkbox"/> Sppn			9.04		Desander 4x6"	0	B501A50	2
Mud Gradient (psi/ft)			4.11		DAILY COST \$46.82		CUMULATIVE COST \$28,225.19	
Funnel Viscosity (sec./qt) API at		°C	63		MUD PROPERTIES SPECIFICATIONS			
Plastic Viscosity cps at			15		WEIGHT	PV/YP	FILTRATE	
Yield Point (lb/100 sq. ft.)			16		BY AUTHORITY <input type="checkbox"/> Operator's Written- <input type="checkbox"/> Drilling Contractor			
Gel Strength (lb/100 sq. ft.) 10 sec/10 min.			10.5		<input type="checkbox"/> Operator's Representative <input type="checkbox"/> Other			
pH <input checked="" type="checkbox"/> Strip <input type="checkbox"/> Meter			8.0		BIT INFORMATION			
Filtrate API (ml./30 min.)			-		TYPE	JETS	W.T.	R.P.M.
API HP-HT Filtrate (ml./30 min.)			-					JET VEL.
Cake Thickness (mm) API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>			1140					BHHP
Alkalinity, Mud (Pm)			-		RECOMMENDATIONS			
Alkalinity, Filtrate (P/M)			1.12/1					
Chloride (mg/l)			17000					
Total Hardness <input type="checkbox"/> epm <input checked="" type="checkbox"/> (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 <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)			-					
K ⁺ (mg/l)			15000					
Nitrate (mg/l) / Sulphite (mg/l)			2.9					
			57.84					

COST SUMMARY/24 HOURS ENDING 20-3-86 @ DEPTH TD			
Product/Package	Units	Unit Cost	Cost
POLLARD SOON	2	23.41	46.82
LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

OPERATIONS SUMMARY

Rig up and on 27th Feb 86 at 5800 ft
 Run Schlumberger Bond log.
 Rig up and on 28th Feb 86 to 1768 m
 Core and land mud.
 P.O.H.
 Presented using.

GEOFLUIDS ENGINEER **ANDREW SKUSINS** HOME ADDRESS **ADELAIDE** TELEPHONE **08-795102**

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Geofluids Pty Ltd
Drilling Fluid Report

Table with 2 columns: Field Name, Value. Includes REPORT NO. 29, DATE 21st March '86, RIG NO. 8, SPUD DATE 23rd Feb '86, DEPTH 1916m(TD) TO

Operator: BEACH PETROLEUM
Contractor: RUMTER DRILLING
Report for: IAN HOEMER
Report for: LAURIE KLASSON
Well Name: WESTGATE #1A
Field: WILD CAT
Location: OTWAY BASIN
State: VIC
Present Activity: TEST
Casing: 95/8" Surface at 453m
Mud Volume: Hole 145 Pits 440
Circulation Data: Pump Size 5 1/2" x 9 1/4"
Annular Vel. (Ft/Min):
Opposite DP:
Opposite Collar:
Riser:
Circulating Pressure:
Bottoms Up (Min.):
Systems Total (Min.):

MUD PROPERTIES Table
Flowline Temperature:
Time Sample Taken: 23:30
Depth: 1916.0
Weight: 8.9
Mud Gradient: 0.48
Funnel Viscosity: 45
Plastic Viscosity: 15
Yield Point: 15
Gel Strength: 2/3
pH: 10.5
Filtrate API: 7.6
API HP-HT Filtrate:
Cake Thickness: 116
Alkalinity, Mud (Pm):
Alkalinity, Filtrate (P/Mf):
Chloride: 16500
Total Hardness: TR
Sand Content: TR
Solids Content: 3.5
Oil Content: TR
Water Content: 96.5
Methylene Blue Capacity:
K+: 14000
Nitrate/Sulphite:
KU (% w/w): 2.7

EQUIPMENT Table
Centrifuge: OILTOOLS 12
Degasser: DALLS 0
Desander: 4x8 0
DAILY COST:
CUMULATIVE COST: 28225.19
MUD PROPERTIES SPECIFICATIONS Table
WEIGHT, PV/YP, FILTRATE
BY AUTHORITY:
BIT INFORMATION Table
TYPE, JETS, WT, R.P.M, JET VEL, BHP

RECOMMENDATIONS
.....
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COST SUMMARY/24 HOURS ENDING 21-3-86 @ DEPTH TD
Product/Package, Units, Unit Cost, Cost
WIL
LIQUID ADDITIONS FOR 24 HOURS (BBL)
Diesel, Drill Water, Sea Water, Prehydrate

OPERATIONS SUMMARY
Make up Refracting Gun
Pit - Fill tubing w/ water cushion
Pump back detailed
Pit & inspect hole - Repair tool
Pit & fill tubing w/ water cushion
Rig up on Schlumberger GR-UL Log
Rig up Halliburton & set packer
Pressure Test Packer & Manifold
Sheet recording gns
Observe Well & start test

GEOFLUIDS ENGINEER: ANDRE SKUJINS
HOME ADDRESS: ADELAIDE
TELEPHONE: 08-745102

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 30	DATE 22nd March 81
RIG NO. 8	SPUD DATE 23rd Feb
DEPTH 1916m (TD) TO	

OPERATOR BEALM PETROLEUM		CONTRACTOR RICHTER DRILLING	
REPORT FOR IAN HOEFMEIER		REPORT FOR LARUE KLASSON	
WELL NAME AND NO. WESTGATE #1A		FIELD OR BLOCK NO. WILLOW	LOCATION OTWAY BASIN
		STATE VIC	
OPERATION	CASING	MUD VOLUME	CIRCULATION DATA
Present Activity	9.5" Surface at 45m	Hole Pits	Pump Size 5 1/2" x 9 1/4"
Bit Size	No. Intermediate	Total Circulating Volume	Pump Make Model VAF 9-0-100
Drill Pipe Size	Type 5 1/2" Production or Liner at 1914m	In Storage	Stroke/Min 85L/Stroke
Drill Collar Size	Length	Mud Type KU POLYMER	Stroke/Min 135L/Min

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature °C	MUD PROPERTIES	EQUIPMENT			
Time Sample Taken			SIZE	Hours	SIZE	Hours
Depth			Centrifuge OILTOL	0	Desilter 1 1/2"	
Weight <input type="checkbox"/> (S.G.) <input type="checkbox"/>			Degasser DRILL	0	Shaker 1540/1500	
Mud Gradient (psi/ft)			Desander 4x6		1560/1500	
Funnel Viscosity (sec./qt) API at °C			DAILY COST \$124.45		CUMULATIVE COST \$28,349.64	
Elastic Viscosity cps at			MUD PROPERTIES SPECIFICATIONS			
Yield Point (lb/100 sq. ft.)			WEIGHT	PV/YP	FILTRATE	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	BY AUTHORITY <input type="checkbox"/> Operator's Written <input type="checkbox"/> Operator's Representative <input type="checkbox"/> Drilling Contractor <input type="checkbox"/> Other			
pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter			BIT INFORMATION			
Filtrate API (ml./30 min.)			TYPE	JETS	WT.	R.P.M.
API HP-HT Filtrate (ml./30 min.)						JET VEL.
Cake Thickness (mm) API <input type="checkbox"/> HP-HT <input type="checkbox"/>						BHPP
Alkalinity, Mud (Pm)			RECOMMENDATIONS			
Alkalinity, Filtrate (Pf/Mf)	/	/	.....		
Chloride (mg/l)			.....		
Total Hardness <input type="checkbox"/> epm <input type="checkbox"/> (mg/l)			.....		
Sand Content (% by Vol.)			.....		
Solids Content (% by Vol.)			.....		
Oil Content (% by Vol.)			.....		
Water Content (% by Vol.)			.....		
Methylene Blue Capacity <input type="checkbox"/> (ml/ml mud) <input type="checkbox"/> (equiv. #/bbl bent)			.....		
K ⁻ (mg/l)			.....		
Nitrate (mg/l) / Sulphite (mg/l)	/	/	.....		

Product/Package	Units	Unit Cost	Cost
DAMAGED MUD			
BARBITES	3	8.05	24.15
WO. DEFOAM	1	85.95	85.95
MILBELL	1	14.02	14.02
Cost Location			+ 2.33
			\$124.45

LIQUID ADDITIONS FOR 24 HOURS (BBL)			
Diesel	Drill Water	Sea Water	Prehydrate

GEOFLUIDS ENGINEER ANDRE SWJINS HOME ADDRESS ADELAIDE TELEPHONE 08-745102

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OPERATIONS SUMMARY

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

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 srted
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 srted 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 srted 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 srted 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 srted. 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 srted. 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 srted, 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 srted, 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
FERRUGINOUS SANDSTONE, dk brn, friab, vf - v
crs dom crs, w rnd, pr srted, 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
FERRUGINOUS SANDSTONE, as before. Tr
intergranular vis porosity. No fluorescence,
sl odour.
- SWC #21
1749.5m, Rec 3cm
FERRUGINOUS SANDSTONE, med dk yell - or brn,
friab, vf - crs, dom crs, rnd pr srted, 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
FERRUGINOUS SANDSTONE, m - dk brn, friab, vf
- v crs, dom crs, rnd, poor srted, 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
FERRUGINOUS SANDSTONE, m - dk brn, friab, vf
- crs, dom mg, SA - r, dom rnd, mod srted, 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
FERRUGINOUS SANDSTONE, m - dk brn, friab, vf
- crs, dom mg, SA - r, pr srted, 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
SANDY CLAYSTONE, 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
SANDSTONE, med brn - grn, friab, vf - mg dom
fg, SA - SR, pr srted 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
SANDSTONE, dk grn - gry, friab, vf - mg, dom
f - g, SA - SR, pr srted. 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
srted, tr micromic, tr vf, SA qtz grains, sl
carb. No fluorescence, no odour.

APPENDIX 5

Velocity Survey

CONTENTS

- 1 Introduction
- 2 Data Acquisition
- 3 Well Deviation Data
- 4 Check Shot Data
- 5 Sonic Calibration
- 6 Sonic Calibration Processing
- 7 GEOGRAM Processing
- 8 Summary of Geophysical Listings

Fig. 1 : Wavelet polarity convention

Fig. 2 : Checkshot data from mudpit shots

Fig. 3 : Checkshot data from offset shots

Fig. 4 : Source geometry sketch

Geophysical Airgun Report

Drift Computation Report

Sonic Adjustment Parameter Report

Velocity Report

Time Converted Velocity Report

Synthetic Seismogram Table

Colour Velocity Profile

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	228	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 anisotropy 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 $\mu\text{sec}/\text{ft}$.
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} , $\Delta t - \Delta t_{min}$.

$\Delta t - \Delta t_{min}$ is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G , can be 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 densities 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 $\mu\text{sec}/\text{ft}$	Δt_{min} $\mu\text{sec}/\text{ft}$	Equiv Block Shift $\mu\text{sec}/\text{ft}$
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:

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

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:

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

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

$$Primary_n = R_n \cdot A_{n-1}$$

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 : $dsrc$, 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, $\frac{dsrc}{shtm}$.
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.

$$v_{rms} = \sqrt{\frac{\sum_1^n v_i^2 t_i}{\sum_1^n t_i}}$$

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. Synthetic 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

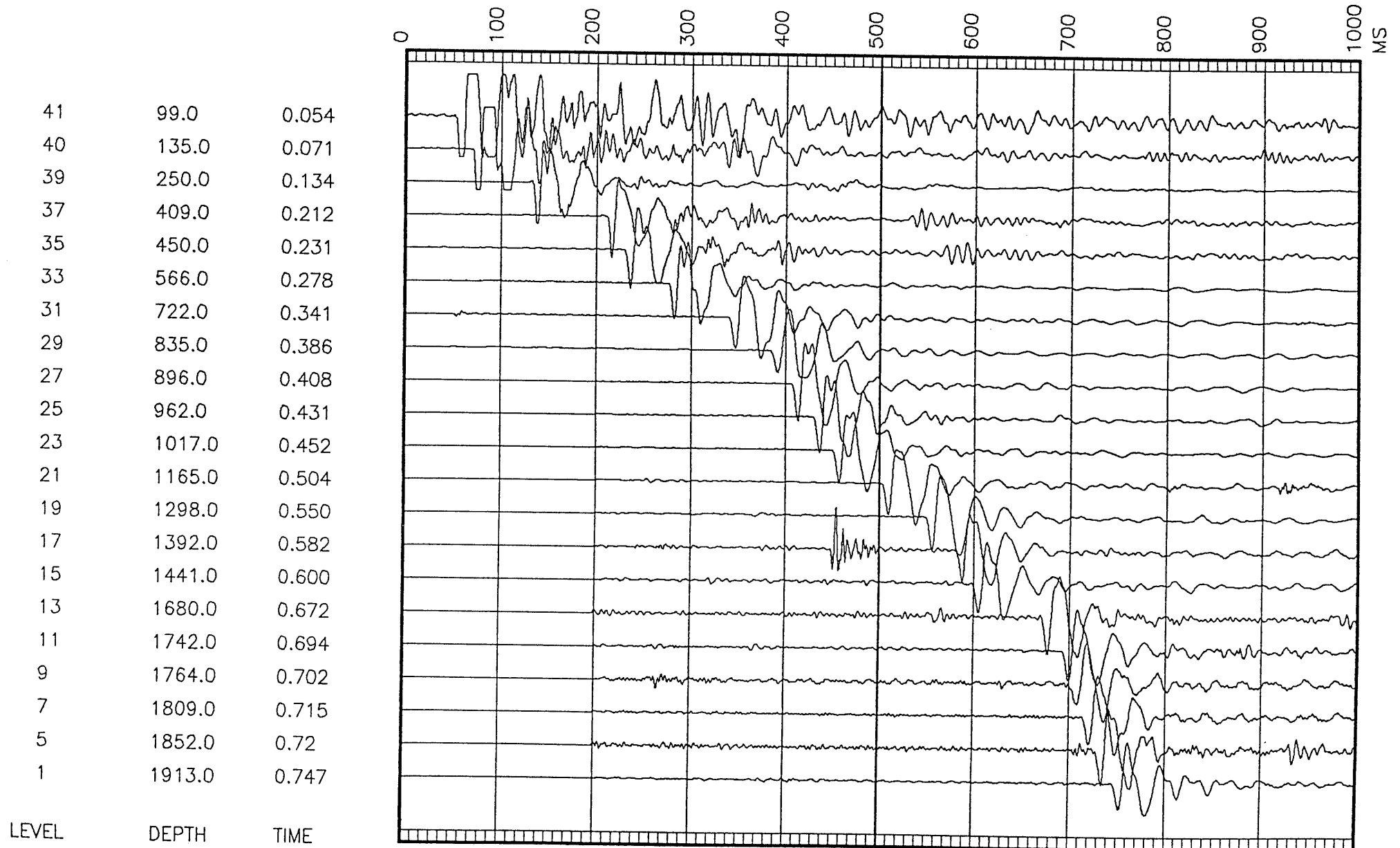
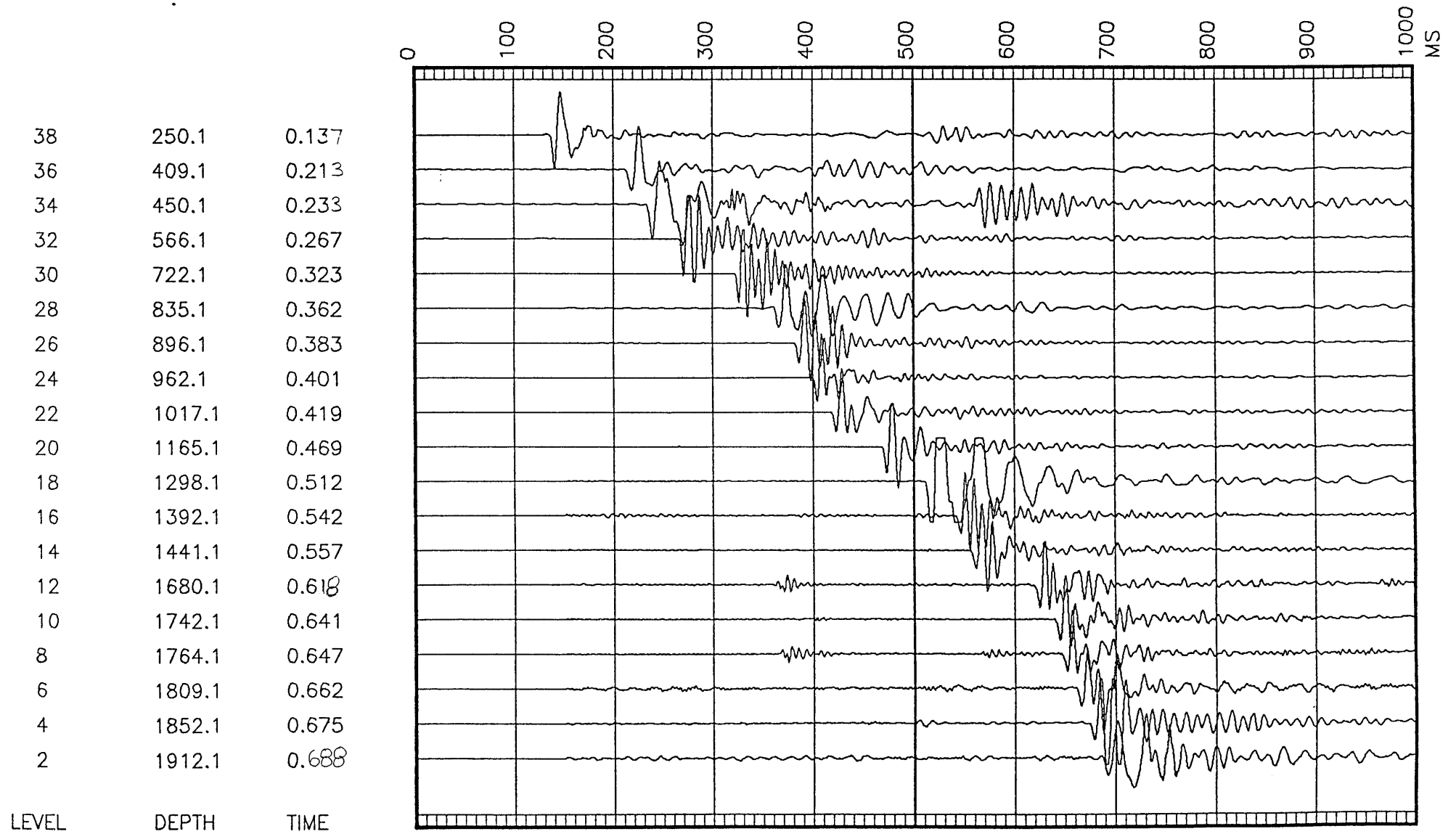


FIGURE 3

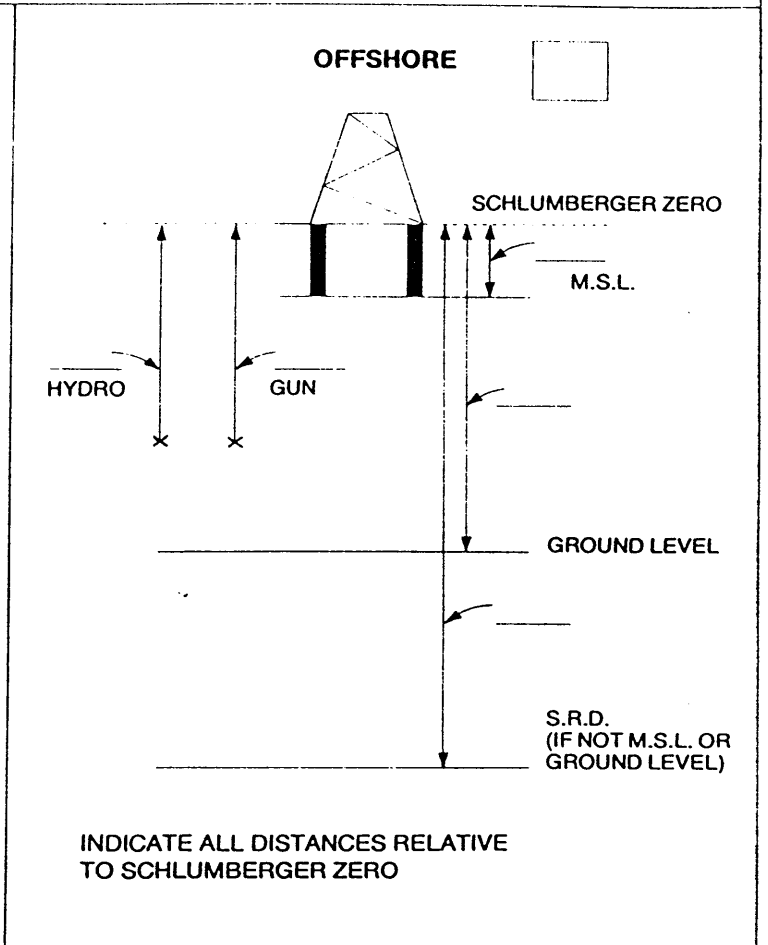
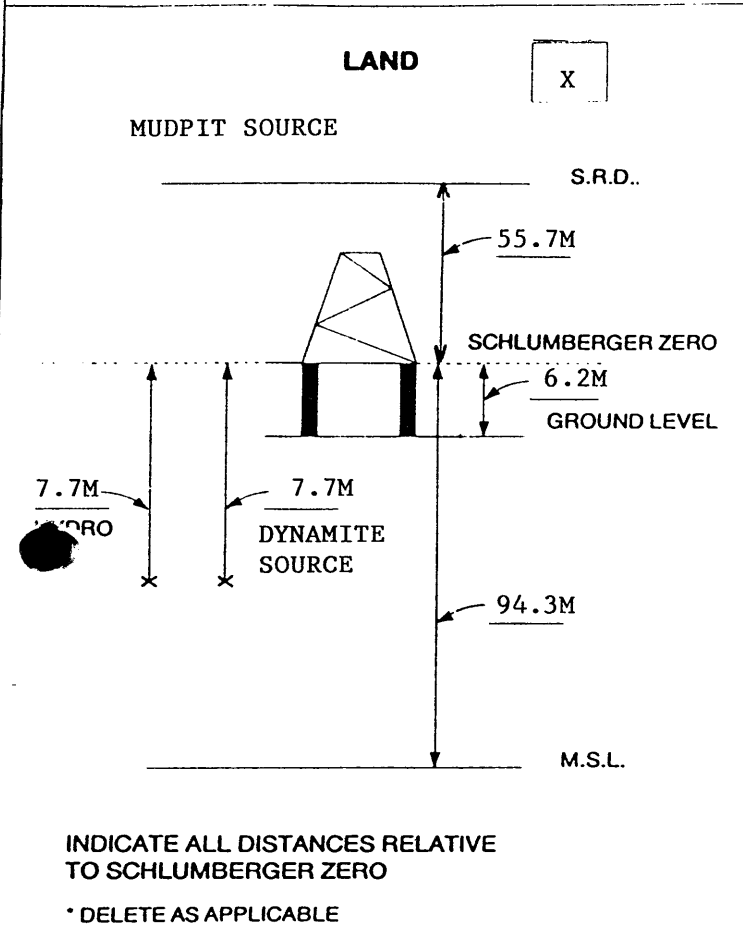
WESTGATE - 1 OFFSET SOURCE



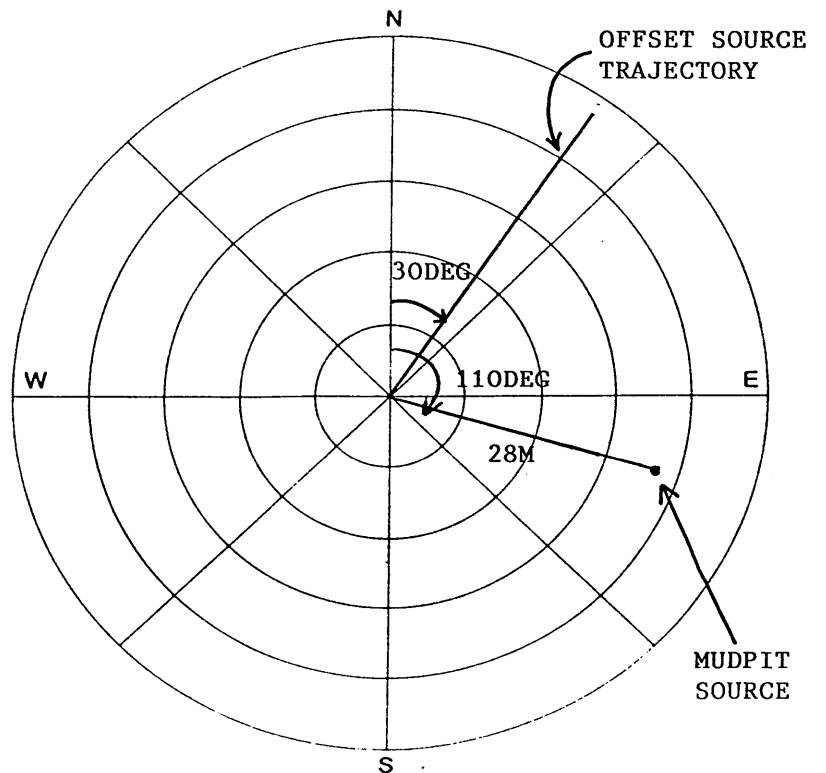
CLIENT: BEACH PETROLEUM NL

WELL: WESTGATE-1

DATE: 14.3.86



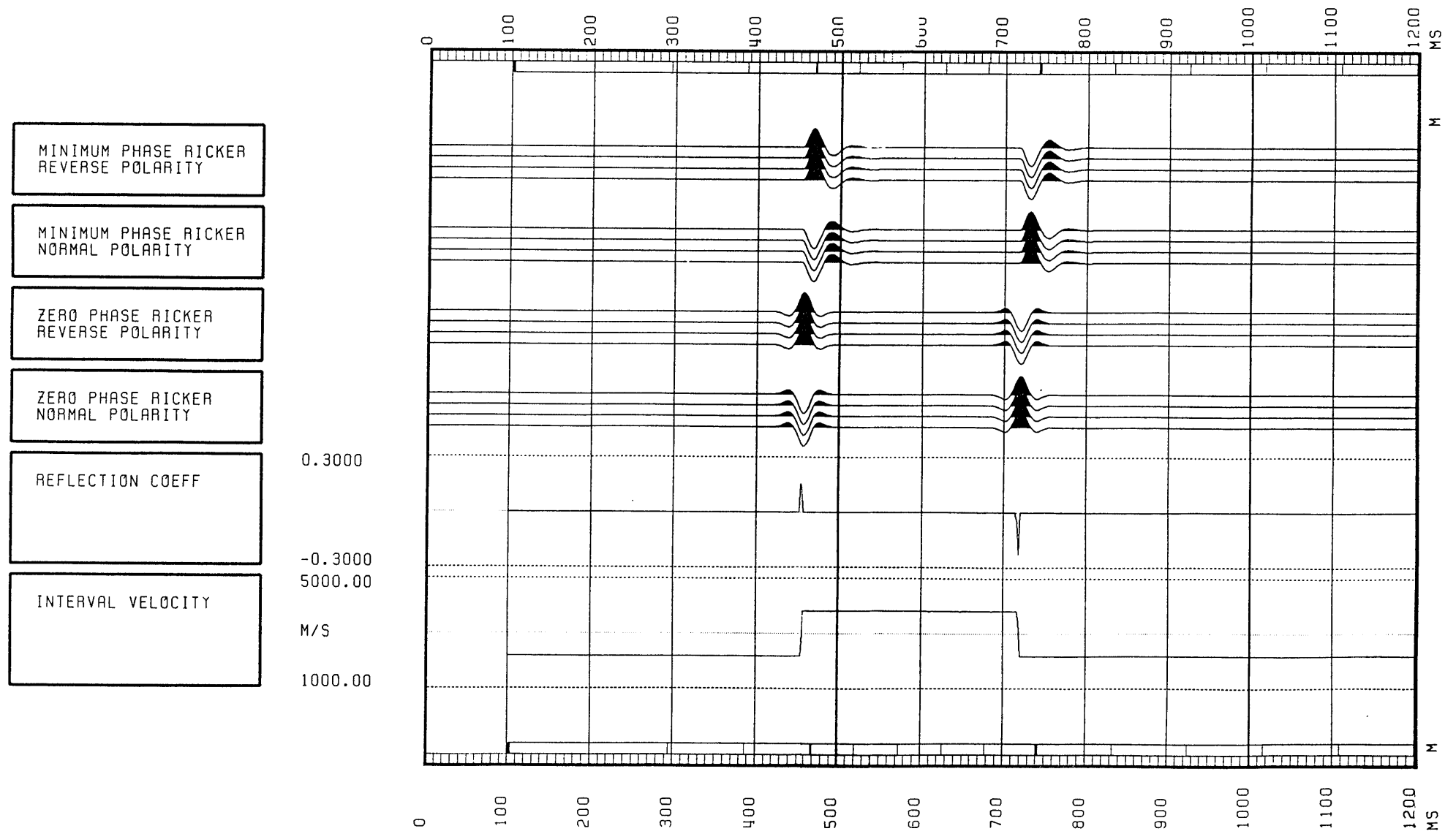
SHOT POS'N	DYNA OFFSET	HYDRO OFFSET	DYNA DEPTH	HYDRO DEPTH
1	28.2M	2M FROM DYNA	1.5M	1.5M
2				
3				
4				
5				
6				
7				



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

SCHLUMBERGER (SEG-1976) WAVELET POLARITY CONVENTION

Figure 1



Shots

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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

ANALYST: M. SANDERS

2-JUN-86 17:52:10

PROGRAM: GSHOT 007.E07

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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

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

Drift.....

ANALYST: M. SANDERS

2-JUN-86 17:57:21

PROGRAM: GDRIFT 007.E09

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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

ANALYST: M. SANDERS

2-JUN-86 17:57:21

PROGRAM: GDRIFT 007.E09

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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

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

ANALYST: M. SANDERS

2-JUN-86 18:02:18

PROGRAM: GADJST 008.E08

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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 ADJUSTMENT 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
			-.600000		1049.00		769.000
			.50000000		769.000		432.000
			0		432.000		99.00000
ADJUSMNT MODE (WST)	ADJOPZ	:	-999.2500		30479.7	-	0
			-999.2500	US/F	30479.7		0
			1.000000		30479.7		0
			2145.000	M/S	432.000	-	394.600
USER DELTA-T MIN (WST)	ADJUSZ	:	1963.000		394.600		247.800
			1777.000		247.800		135.000
			1730.000		99.0000		7.70000
LAYER OPTION FLAG VELOC	LOFVEL	:	1963.000		394.600		247.800
			1777.000		247.800		135.000
			1730.000		99.0000		7.70000
USER VELOC (WST)	LAYVEL	:	1963.000		394.600		247.800
			1777.000		247.800		135.000
			1730.000		99.0000		7.70000

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

PAGE 2

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
2	99.00	154.70	92.80	0	0			0
3	432.00	487.70	425.80	0	0			0
4	769.00	824.70	762.80	.50	.45			.45
5	1049.00	1104.70	1042.80	-.60		102.39	.87	-1.20
6	1731.67	1787.37	1725.47	1.00	.71			.71

ANALYST: M. SANDERS

2-JUN-86 18:02:36

PROGRAM: GADJST 008.E08

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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

ANALYST: M. SANDERS

2-JUN-86 18:06:55

PROGRAM: GTRFRM 007.E11

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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

ANALYST: M. SANDERS

2-JUN-86 18:06:55

PROGRAM: GTRFRM 007.E11

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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

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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

PAGE 2

(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

28-011.3

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

PAGE 3

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						1737
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	1733
74.00	8.55	64.25	1737	1737	506.58	792.94	1080.07	1730
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
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	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
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
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	2028
216.00	136.75	192.41	1782	1785	384.45	651.69	925.13	1780
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	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
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
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	1777
342.00	251.08	304.50	1781	1783	314.96	566.23	830.82	1879
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	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
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	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
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
768.00	785.24	785.33	2045	2069	139.41	288.10	466.54	2514
770.00	788.15	787.91	2047	2071	138.92	287.19	465.24	2581
772.00	790.89	790.34	2048	2072	138.48	286.41	464.11	2434
774.00	793.58	792.74	2048	2073	138.07	285.65	463.03	2398
776.00	796.36	795.21	2050	2074	137.63	284.85	461.88	2465
778.00	798.95	797.51	2050	2074	137.25	284.16	460.91	2303
780.00	801.83	800.07	2051	2076	136.78	283.30	459.66	2563
782.00	805.00	802.89	2053	2078	136.21	282.24	458.12	2819
784.00	808.10	805.65	2055	2080	135.67	281.24	456.66	2754
786.00	811.07	808.28	2057	2082	135.19	280.33	455.35	2638
788.00	813.89	810.80	2058	2083	134.75	279.53	454.19	2512
790.00	816.74	813.33	2059	2084	134.31	278.71	453.01	2531
792.00	819.80	816.05	2061	2086	133.79	277.76	451.62	2722
794.00	823.63	819.45	2064	2090	132.99	276.24	449.36	3402
796.00	826.57	822.07	2065	2092	132.53	275.38	448.11	2615
798.00	829.53	824.70	2067	2093	132.06	274.52	446.86	2633
800.00	832.51	827.35	2068	2095	131.60	273.65	445.59	2646
802.00	835.67	830.16	2070	2097	131.07	272.66	444.15	2813
804.00	838.74	832.89	2072	2099	130.58	271.74	442.81	2732
806.00	841.71	835.53	2073	2100	130.13	270.90	441.57	2637
808.00	844.72	838.20	2075	2102	129.67	270.04	440.31	2672
810.00	847.68	840.84	2076	2103	129.22	269.20	439.09	2638
812.00	850.67	843.49	2078	2105	128.77	268.36	437.86	2657
814.00	853.80	846.28	2079	2107	128.28	267.43	436.50	2784

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

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

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

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

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

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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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

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

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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

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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
1440.00	1908.76	1784.41	2478	2538	52.92	116.55	201.49	3685

Synthetic

ANALYST: M. SANDERS

2-JUN-86 19:41:20

PROGRAM: GTRFRM 007.E11

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*                                     *  
*                                     *  
*                                     *  
*                                     *  
*                                     *  
*          SCHLUMBERGER              *  
*                                     *  
*                                     *  
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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:

IGEOF1- FLAG INDICATING MODE OF PROCESSING
IGEOF1 = 0 WST DATA AVAILABLE AND PROCESSED
IGEOF1 = 1 WST DATA NOT AVAILABLE

LOG INPUT DATA :

GRFOO1- CHANNEL NAME FOR INPUT DENSITY LOG DATA
GTROO1- CHANNEL NAME FOR INPUT SONIC LOG DATA
G CURVE- 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
SRD GEO 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 SRD GEO

CHANNEL NAMES

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

CHANNEL NAMES

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.*

(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
527.0	489.96	2264	2.100	.001	1.00000	.00069	.00069	0
529.0	492.23	2267	2.100	-.004	.99999	-.00379	-.00379	0
531.0	494.48	2250	2.100	.006	.99995	.00571	.00572	.00001
533.0	496.76	2276	2.100	.001	.99995	.00094	.00092	-.00002
535.0	499.04	2280	2.100	-.006	.99991	-.00633	-.00629	.00004
537.0	501.29	2251	2.100	-.023	.99938	-.02309	-.02311	-.00002
539.0	503.44	2150	2.100	.024	.99881	.02374	.02372	-.00002
541.0	505.69	2254	2.100	-.001	.99881	-.00056	-.00069	-.00013
543.0	507.94	2252	2.100	.002	.99881	.00195	.00241	.00046
545.0	510.20	2261	2.100	.059	.99534	.05886	.05859	-.00027
547.0	512.75	2544	2.100	.063	.99137	.06291	.06255	-.00035
549.0	515.64	2887	2.100	-.096	.98230	-.09482	-.09489	-.00007
551.0	518.02	2383	2.100	-.012	.98216	-.01163	-.01059	.00104
553.0	520.35	2327	2.100	-.010	.98207	-.00946	-.01225	-.00279
555.0	522.63	2283	2.100	.047	.97988	.04638	.04829	.00190
557.0	525.14	2509	2.100	-.048	.97758	-.04748	-.04366	.00382
559.0	527.41	2277	2.100	.053	.97483	.05178	.05094	-.00084
561.0	529.95	2532	2.100	-.057	.97168	-.05549	-.06360	-.00811
563.0	532.21	2259	2.100	.035	.97050	.03377	.03744	.00366
565.0	534.63	2422	2.100	.072	.96548	.06983	.06741	-.00242
567.0	537.42	2797	2.100	-.106	.95462	-.10238	-.10692	-.00454
569.0	539.69	2261	2.100	-.001	.95462	-.00135	.00201	.00336
571.0	541.94	2255	2.100	.040	.95312	.03781	.05166	.01385
573.0	544.38	2441	2.100	-.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	2529	2.100	.048	.95001	.04601	.04651	.00051
577.0	549.21	2488	2.100	-.008	.94995	-.00791	-.01193	-.00402
579.0	551.69	2370	2.100	-.024	.94939	-.02301	-.02011	.00290
581.0	554.06	2418	2.100	.010	.94930	.00942	.00603	-.00339
583.0	556.48	2496	2.100	.016	.94906	.01511	.02741	.01230
585.0	558.98	2455	2.100	-.008	.94899	-.00785	-.03309	-.02524
587.0	561.43	2330	2.100	-.026	.94834	-.02483	-.00666	.01817
589.0	563.76	2397	2.100	.014	.94815	.01346	.02599	.01252
591.0	566.16	2410	2.100	.003	.94815	.00254	-.00855	-.01109
593.0	568.57	2361	2.100	-.010	.94805	-.00958	-.02141	-.01183
595.0	570.93	2482	2.100	.025	.94746	.02365	.02905	.00540
597.0	573.41	2684	2.100	.039	.94602	.03694	.03698	.00003
599.0	576.10	2147	2.100	-.111	.93432	-.10519	-.10202	.00317
601.0	578.24	2065	2.100	-.019	.93397	-.01803	-.00851	.00952
603.0	580.31	2065	2.100	0	.93397	-.00012	-.02211	-.02199
605.0	582.37	2170	2.100	.025	.93339	.02328	.01760	-.00568
607.0	584.54	2082	2.100	-.021	.93299	-.01943	.01831	.03774
609.0	586.62	2080	2.100	0	.93299	-.00037	-.02707	-.02670
611.0	588.70	2359	2.100	.063	.92931	.05860	.04943	-.00917
613.0	591.06	2850	2.100	.094	.92105	.08760	.10730	.01970
615.0	593.91	2883	2.100	.006	.92102	.00535	-.00486	-.01021
617.0	596.80	2666	2.100	-.039	.91960	-.03613	-.03041	.00572
619.0	599.46	2732	2.100	.012	.91946	.01134	.02631	.01497
621.0	602.19	2817	2.100	.015	.91925	.01405	.02186	.00781
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
625.0	607.41	2404	2.100	.039	.91210	.03586	.03711	.00125
627.0	610.02	2601	2.100	.048	.90996	.04419	.02572	-.01847
629.0	612.88	2866	2.100	-.076	.90474	-.06896	-.05675	.01221
631.0	615.34	2462	2.100	-.009	.90467	-.00801	-.01525	-.00724
633.0	617.76	2419	2.100	.014	.90448	.01280	-.00303	-.01583
635.0	620.25	2488	2.100	-.009	.90441	-.00835	-.03289	-.02454
637.0	622.69	2443	2.100	.044	.90266	.03977	.08082	.04105
639.0	625.36	2667	2.100	-.035	.90154	-.03176	-.00844	.02332
641.0	627.85	2486	2.100	.013	.90140	.01128	-.02091	-.03220
643.0	630.39	2549	2.100	-.002	.90140	-.00162	-.00150	.00012
645.0	632.93	2540	2.100	-.006	.90136	-.00555	.00452	.01007
647.0	635.44	2509	2.100	-.005	.90134	-.00409	-.02776	-.02367
649.0	637.93	2486	2.100	-.007	.90131	-.00586	.02468	.03054
651.0	640.38	2454	2.100	.015	.90111	.01317	.00610	-.00708
653.0	642.91	2527	2.100	.004	.90110	.00341	-.00511	-.00851
655.0	645.46	2546	2.100	.019	.90077	.01736	.02815	.01078
657.0	648.10	2646	2.100	.042	.89920	.03757	.04283	.00526
659.0	650.98	2876	2.100	-.004	.89919	-.00358	-.02596	-.02238
661.0	653.83	2854	2.100	-.022	.89876	-.01947	-.00376	.01571
663.0	656.57	2733	2.100	-.050	.89648	-.04530	-.03733	.00798
665.0	659.04	2470	2.100	-.008	.89643	-.00675	-.02974	-.02299
667.0	661.47	2433	2.100	.002	.89643	.00163	.00277	.00114
669.0	663.91	2442	2.100	-.010	.89634	-.00881	.02096	.02977
671.0	666.31	2395	2.100	.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	2782	2.100	.068	.89210	.06137	.07574	.01437
675.0	671.51	3073	2.100	.050	.88991	.04427	.03843	-.00584
677.0	674.59	2423	2.100	-.118	.87749	-.10512	-.13677	-.03165
679.0	677.01	2369	2.100	-.011	.87737	-.01000	.01840	.02840
681.0	679.38	2374	2.100	.001	.87737	.00102	.01057	.00955
683.0	681.75	2393	2.100	.004	.87736	.00347	-.01351	-.01698
685.0	684.15	2114	2.100	-.062	.87400	-.05429	-.03711	.01718
687.0	686.26	2392	2.100	.062	.87069	.05379	.06084	.00705
689.0	688.65	2293	2.100	-.021	.87031	-.01828	-.02611	-.00784
691.0	690.94	2402	2.100	.023	.86984	.02016	.01435	-.00581
693.0	693.35	2488	2.100	.018	.86957	.01523	.01804	.00281
695.0	695.83	2432	2.100	-.011	.86946	-.00977	-.01990	-.01013
697.0	698.27	2344	2.100	-.019	.86916	-.01613	-.00869	.00744
699.0	700.61	2380	2.100	.008	.86911	.00668	.02839	.02172
701.0	702.99	2568	2.100	.038	.86786	.03300	.01515	-.01785
703.0	705.56	2513	2.100	-.011	.86776	-.00933	-.01369	-.00435
705.0	708.07	22	2.094	-.020	.86742	-.01722	-.02143	-.00421
707.0	710.49	2411	2.093	-.002	.86741	-.00215	-.01995	-.01780
709.0	712.90	2394	2.082	-.006	.86738	-.00547	-.01415	-.00868
711.0	715.30	2683	2.254	.097	.85930	.08371	.13489	.05118
713.0	717.98	2477	2.143	-.065	.85563	-.05613	-.09949	-.04337
715.0	720.46	2364	2.097	-.034	.85464	-.02911	-.00455	.02457
717.0	722.82	2285	2.149	-.005	.85462	-.00402	.01965	.02367
719.0	725.11	2345	2.179	.020	.85429	.01678	.00076	-.01601
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
723.0	729.75	2298	2.127	.088	.84721	.07542	.09376	.01834
725.0	732.43	2676	2.181	-.045	.84549	-.03818	-.04588	-.00769
727.0	734.93	2502	2.131	-.009	.84543	-.00740	-.00018	.00722
729.0	737.37	2440	2.147	.005	.84541	.00424	.01093	.00669
731.0	739.83	2459	2.152	-.023	.84497	-.01910	-.03663	-.01753
733.0	742.24	2411	2.097	.023	.84454	.01911	.01523	-.00387
735.0	744.73	2495	2.121	.078	.83936	.06615	.13177	.06562
737.0	747.46	2727	2.270	-.073	.83495	-.06086	-.09987	-.03902
739.0	749.94	2479	2.160	.014	.83477	.01204	-.00620	-.01824
741.0	752.43	2490	2.213	-.058	.83199	-.04817	-.06457	-.01640
743.0	754.73	2299	2.136	.043	.83046	.03571	.04656	.01085
745.0	757.15	2421	2.209	-.018	.83019	-.01499	-.04736	-.03237
747.0	759.58	2433	2.121	0	.83019	.00007	.05392	.05384
749.0	762.05	2463	2.095	.022	.82978	.01848	.01599	-.00250
751.0	764.58	2530	2.133	.053	.82741	.04437	.02650	-.01787
753.0	767.24	2666	2.252	-.064	.82401	-.05300	-.03183	.02116
755.0	769.66	2416	2.186	.022	.82361	.01818	.00629	-.01189
757.0	772.17	2507	2.202	-.037	.82250	-.03026	-.05213	-.02187
759.0	774.58	2417	2.122	.025	.82198	.02076	.05614	.03538
761.0	777.06	2479	2.177	-.022	.82156	-.01849	-.04470	-.02621
763.0	779.51	2452	2.103	.006	.82153	.00530	.00214	-.00316
765.0	782.02	2507	2.084	.005	.82151	.00403	.03525	.03121
767.0	784.53	2510	2.102	.030	.82078	.02452	.02217	-.00235
769.0	787.09	2564	2.185	-.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
773.0	791.97	2424	2.132	.010	.82002	.00848	-.02993	-.03841
775.0	794.40	2437	2.165	-.007	.81998	-.00569	.00072	.00641
777.0	796.79	2389	2.178	.012	.81986	.00995	.05082	.04088
779.0	799.24	2443	2.182	.034	.81892	.02777	.02748	-.00029
781.0	801.85	2614	2.182	.094	.81168	.07697	.03906	-.03791
783.0	804.79	2942	2.341	-.078	.80669	-.06370	-.06025	.00345
785.0	807.48	2685	2.192	-.043	.80518	-.03486	-.02428	.01057
787.0	810.01	2532	2.132	-.013	.80505	-.01019	-.02475	-.01456
789.0	812.49	2481	2.122	.060	.80216	.04823	.02940	-.01883
791.0	815.17	2679	2.215	.054	.79983	.04329	.08436	.04107
793.0	818.08	2905	2.275	.067	.79627	.05334	.06228	.00895
795.0	821.26	3187	2.371	-.135	.78179	-.10739	-.09894	.00846
797.0	823.82	2554	2.255	.023	.78137	.01799	.00772	-.01027
799.0	826.50	2686	2.245	.005	.78135	.00418	-.03610	-.04028
801.0	829.24	2741	2.224	.010	.78127	.00776	.01719	.00942
803.0	832.03	2791	2.228	-.036	.78027	-.02794	.00183	.02977
805.0	834.71	2677	2.163	-.017	.78004	-.01346	-.04207	-.02860
807.0	837.24	2534	2.207	.061	.77716	.04741	.06142	.01401
809.0	840.01	2762	2.287	-.023	.77676	-.01753	.02013	.03766
811.0	842.64	2638	2.289	.008	.77672	.00609	-.04851	-.05460
813.0	845.38	2736	2.242	.008	.77666	.00635	.00496	-.00139
815.0	848.18	2798	2.228	-.009	.77661	-.00660	.00691	.01351
817.0	850.94	2759	2.222	.026	.77608	.02025	.05245	.03221
819.0	853.77	2833	2.279	-.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
821.0	856.58	2812	2.273	.001	.77606	.00071	-.01061	-.01132
823.0	859.42	2835	2.259	-.004	.77604	-.00347	-.03619	-.03272
825.0	862.22	2806	2.262	-.019	.77576	-.01494	.04668	.06162
827.0	864.94	2715	2.250	-.001	.77576	-.00104	.00840	.00944
829.0	867.66	2719	2.240	.006	.77573	.00429	-.02934	-.03363
831.0	870.43	2771	2.222	-.039	.77458	-.02993	-.05963	-.02969
833.0	873.03	2603	2.190	.004	.77456	.00303	.07052	.06749
835.0	875.60	2573	2.233	.045	.77299	.03492	.01148	-.02345
837.0	878.35	2751	2.286	-.016	.77278	-.01274	-.06275	-.05001
839.0	881.05	2696	2.257	-.015	.77260	-.01180	.01432	.02611
841.0	883.68	2625	2.248	.049	.77078	.03750	.04780	.01030
843.0	886.49	2819	2.307	-.009	.77071	-.00720	-.00582	.00138
845.0	889.29	2793	2.285	.040	.76946	.03101	.05630	.02528
847.0	892.24	2950	2.345	.012	.76935	.00948	-.03162	-.04110
849.0	895.26	3022	2.346	-.034	.76844	-.02636	.00229	.02866
851.0	898.16	2903	2.281	-.009	.76838	-.00680	-.00086	.00594
853.0	901.03	2872	2.265	-.009	.76832	-.00688	.00379	.01066
855.0	903.89	2854	2.238	.006	.76829	.00461	-.00406	-.00867
857.0	906.76	2868	2.255	-.007	.76826	-.00516	.00031	.00547
859.0	909.58	2828	2.256	.015	.76809	.01143	-.01225	-.02369
861.0	912.48	2891	2.273	.021	.76776	.01598	.00649	-.00949
863.0	915.47	2989	2.292	.015	.76759	.01138	.03030	.01892
865.0	918.49	3028	2.331	.009	.76752	.00710	.00336	-.00374
867.0	921.46	2968	2.422	-.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	2985	2.378	-.001	.76750	-.00081	.02473	.02554
871.0	927.39	2842	2.315	-.038	.76639	-.02920	-.02088	.00832
873.0	930.23	2789	2.271	-.019	.76611	-.01454	-.03249	-.01795
875.0	933.02	2786	2.288	.003	.76611	.00237	.01967	.01730
877.0	935.81	2807	2.357	.019	.76584	.01431	-.00377	-.01808
879.0	938.61	2838	2.353	.004	.76583	.00341	-.04630	-.04971
881.0	941.45	2684	2.261	-.048	.76409	-.03649	-.01461	.02189
883.0	944.13	2713	2.211	-.006	.76406	-.00450	-.00859	-.00409
885.0	946.85	2651	2.180	-.019	.76379	-.01423	-.01349	.00074
887.0	949.50	2703	2.172	.008	.76375	.00603	.03891	.03288
889.0	952.20	2722	2.222	.015	.76358	.01137	.01071	-.00067
891.0	954.92	2664	2.181	-.020	.76327	-.01524	-.01981	-.00457
893.0	957.59	2609	2.192	-.008	.76322	-.00610	-.02019	-.01409
895.0	960.20	2617	2.162	-.005	.76320	-.00416	.00857	.01272
897.0	962.81	2745	2.232	.040	.76200	.03033	-.00478	-.03512
899.0	965.56	2645	2.246	-.015	.76182	-.01171	.00991	.02161
901.0	968.20	2549	2.242	-.019	.76153	-.01473	-.00102	.01371
903.0	970.75	2579	2.209	-.002	.76153	-.00125	-.01015	-.00890
905.0	973.33	2512	2.140	-.029	.76089	-.02216	-.04366	-.02150
907.0	975.84	2680	2.221	.051	.75891	.03881	.06287	.02405
909.0	978.52	2685	2.220	.001	.75890	.00062	-.04615	-.04677
911.0	981.21	2767	2.209	.012	.75879	.00942	.05581	.04639
913.0	983.98	2614	2.147	-.043	.75741	-.03238	-.04799	-.01562
915.0	986.59	2669	2.204	.024	.75699	.01786	.02451	.00665
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	2781	2.284	.032	.75617	.02431	.04154	.01723
921.0	994.68	2593	2.218	-.050	.75431	-.03750	-.07992	-.04243
923.0	997.28	2600	2.216	.001	.75431	.00066	.03079	.03013
925.0	999.88	2662	2.209	.010	.75423	.00777	-.00747	-.01524
927.0	1002.54	2593	2.186	-.019	.75397	-.01405	-.02511	-.01105
929.0	1005.13	2651	2.269	.030	.75330	.02259	.00451	-.01808
931.0	1007.78	2676	2.258	.002	.75329	.00157	.04830	.04673
933.0	1010.46	2696	2.205	-.008	.75324	-.00617	-.02425	-.01807
935.0	1013.16	2744	2.224	.013	.75311	.00998	.00731	-.00267
937.0	1015.90	2648	2.196	-.024	.75267	-.01823	-.04146	-.02323
939.0	1018.55	2699	2.232	.018	.75243	.01331	.04107	.02776
941.0	1021.25	2646	2.182	-.021	.75209	-.01601	-.04518	-.02917
943.0	1023.89	2639	2.162	-.006	.75206	-.00454	.04697	.05151
945.0	1026.53	2703	2.176	.015	.75189	.01161	-.01137	-.02298
947.0	1029.24	2652	2.122	-.022	.75152	-.01666	-.03474	-.01807
949.0	1031.89	2627	2.117	-.006	.75149	-.00446	.00284	.00729
951.0	1034.51	2669	2.182	.023	.75109	.01730	.03622	.01892
953.0	1037.18	2732	2.272	.032	.75032	.02402	-.00291	-.02692
955.0	1039.92	2897	2.346	.045	.74879	.03393	.04838	.01446
957.0	1042.81	2753	2.226	-.051	.74680	-.03856	-.08208	-.04352
959.0	1045.57	2678	2.213	-.017	.74659	-.01254	.02980	.04233
961.0	1048.24	2773	2.199	.014	.74644	.01066	.01729	.00663
963.0	1051.02	2860	2.301	.038	.74537	.02832	.04310	.01478
965.0	1053.88	2735	2.213	-.042	.74406	-.03116	-.06653	-.03536

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	2779	2.227	.011	.74397	.00839	.03737	.02898
969.0	1059.39	2774	2.247	.003	.74396	.00253	-.00922	-.01174
971.0	1062.17	2782	2.185	-.013	.74384	-.00930	.03231	.04161
973.0	1064.95	2804	2.203	.008	.74380	.00588	-.02061	-.02649
975.0	1067.75	2897	2.311	.040	.74259	.02998	.00148	-.02850
977.0	1070.65	2765	2.207	-.046	.74099	-.03441	-.04518	-.01076
979.0	1073.41	2877	2.231	.025	.74052	.01875	.03910	.02035
981.0	1076.29	2980	2.335	.040	.73931	.02994	.07300	.04305
983.0	1079.27	2939	2.356	-.002	.73930	-.00178	-.03678	-.03500
985.0	1082.21	2915	2.270	-.023	.73892	-.01687	-.00372	.01315
987.0	1085.12	2956	2.292	.012	.73882	.00875	.02706	.01831
989.0	1088.08	2912	2.254	-.016	.73863	-.01174	-.06906	-.05732
991.0	1090.99	3151	2.322	.054	.73646	.04001	.05019	.01018
993.0	1094.14	3318	2.378	.038	.73541	.02781	.06721	.03939
995.0	1097.46	3111	2.331	-.042	.73412	-.03088	-.03170	-.00082
997.0	1100.57	3317	2.394	.045	.73260	.03330	.05851	.02521
999.0	1103.89	2872	2.356	-.080	.72792	-.05857	-.07053	-.01196
1001.0	1106.76	2885	2.320	-.006	.72790	-.00402	-.06089	-.05687
1003.0	1109.65	2896	2.320	.002	.72790	.00139	-.00069	-.00208
1005.0	1112.54	2716	2.320	-.032	.72715	-.02327	.02788	.05115
1007.0	1115.26	2715	2.320	0	.72715	-.00020	-.00810	-.00791
1009.0	1117.97	3096	2.320	.066	.72402	.04771	.05144	.00373
1011.0	1121.07	3032	2.320	-.010	.72394	-.00757	-.04624	-.03866
1013.0	1124.10	3218	2.320	.030	.72330	.02158	.03850	.01692
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
1017.0	1130.58	3264	2.320	-.041	.72203	-.02985	-.01374	.01611
1019.0	1133.59	3005	2.320	-.027	.72152	-.01924	-.05076	-.03152
1021.0	1136.44	2849	2.320	.013	.72139	.00955	.02649	.01694
1023.0	1139.36	2925	2.320	.022	.72104	.01601	.04567	.02967
1025.0	1142.42	3058	2.320	-.020	.72074	-.01473	-.03778	-.02304
1027.0	1145.36	2936	2.320	-.013	.72062	-.00937	-.03026	-.02088
1029.0	1148.22	2860	2.320	-.014	.72047	-.01021	.04730	.05751
1031.0	1151.00	2780	2.320	-.022	.72012	-.01589	-.10701	-.09113
1033.0	1153.66	2661	2.320	.022	.71978	.01572	.03702	.02131
1035.0	1156.44	2779	2.320	.014	.71963	.01034	.02710	.01677
1037.0	1159.30	2860	2.320	.011	.71954	.00797	.01852	.01055
1039.0	1162.22	2924	2.320	-.002	.71954	-.00137	.01277	.01414
1041.0	1165.13	2913	2.320	.005	.71952	.00341	.00229	-.00111
1043.0	1168.07	2941	2.320	-.005	.71950	-.00394	-.07260	-.06865
1045.0	1170.98	2909	2.320	.013	.71939	.00900	.02899	.01998
1047.0	1173.97	2983	2.320	.003	.71938	.00184	.02122	.01939
1049.0	1176.96	2998	2.320	-.009	.71933	-.00612	.00262	.00874
1051.0	1179.91	2947	2.320	-.022	.71899	-.01564	-.01340	.00224
1053.0	1182.73	2822	2.320	.007	.71896	.00496	.00633	.00137
1055.0	1185.59	2861	2.320	.010	.71888	.00740	-.00807	-.01547
1057.0	1188.51	2921	2.320	-.008	.71883	-.00595	.01009	.01604
1059.0	1191.39	2873	2.320	.007	.71879	.00535	.00001	-.00534
1061.0	1194.30	2916	2.320	-.018	.71857	-.01268	-.00776	.00491
1063.0	1197.12	2815	2.320	-.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		2.320	-.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	2898	2.320	.011	.69822	.00767	.00218	-.00549
1117.0	1276.69	2878	2.320	-.004	.69821	-.00251	-.06385	-.06134
1119.0	1279.57	2883	2.320	.001	.69821	.00063	.03871	.03808
1121.0	1282.45	2801	2.320	-.014	.69807	-.01002	-.02403	-.01402
1123.0	1285.25	2816	2.320	.003	.69806	.00188	.02461	.02273
1125.0	1288.07	3048	2.320	.039	.69697	.02754	.00045	-.02708
1127.0	1291.12	2877	2.320	-.029	.69640	-.02006	-.01114	.00891
1129.0	1293.99	2913	2.320	.006	.69637	.00428	-.05399	-.05827
1131.0	1296.91	2917	2.320	.001	.69637	.00052	.07669	.07617
1133.0	1299.82	2865	2.320	-.009	.69631	-.00630	.00770	.01400
1135.0	1302.69	2828	2.320	-.006	.69628	-.00444	-.03545	-.03101
1137.0	1305.52	2743	2.320	-.015	.69612	-.01068	-.01872	-.00803
1139.0	1308.26	2901	2.320	.028	.69558	.01948	.04062	.02114
1141.0	1311.16	2965	2.320	.011	.69549	.00762	-.04381	-.05144
1143.0	1314.13	3126	2.320	.026	.69500	.01841	.06671	.04830
1145.0	1317.25	3015	2.320	-.018	.69478	-.01261	-.01904	-.00643
1147.0	1320.27	2977	2.320	-.006	.69475	-.00445	.01874	.02318
1149.0	1323.24	3056	2.320	.013	.69463	.00916	.01124	.00208
1151.0	1326.30	2989	2.320	-.011	.69454	-.00775	.01799	.02574
1153.0	1329.29	2964	2.320	-.004	.69453	-.00284	-.04882	-.04598
1155.0	1332.25	2863	2.320	-.017	.69432	-.01204	-.00081	.01122
1157.0	1335.12	3016	2.320	.026	.69385	.01800	-.00128	-.01928
1159.0	1338.13	2901	2.320	-.019	.69359	-.01341	-.01731	-.00390
1161.0	1341.03	2854	2.301	-.012	.69349	-.00860	-.01555	-.00694

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	2950	2.320	.021	.69319	.01439	.03436	.01997
1165.0	1346.84	2974	2.320	.004	.69318	.00274	-.01428	-.01702
1167.0	1349.81	2913	2.320	-.010	.69310	-.00721	.02436	.03157
1169.0	1352.72	2900	2.320	-.002	.69310	-.00144	-.00991	-.00847
1171.0	1355.63	2931	2.320	.005	.69308	.00361	-.02364	-.02725
1173.0	1358.56	2863	2.320	-.012	.69299	-.00814	-.00105	.00709
1175.0	1361.42	3221	2.320	.059	.69058	.04085	.09689	.05604
1177.0	1364.64	3219	2.320	0	.69058	-.00030	-.05930	-.05900
1179.0	1367.86	3088	2.276	-.030	.68994	-.02092	-.02451	-.00359
1181.0	1370.95	3235	2.302	.029	.68936	.01999	.05549	.03549
1183.0	1374.18	3236	2.289	-.003	.68936	-.00181	-.04034	-.03853
1185.0	1377.42	3069	2.276	-.030	.68876	-.02037	-.02552	-.00515
1187.0	1380.49	3019	2.257	-.012	.68865	-.00840	.02942	.03782
1189.0	1383.51	2948	2.243	-.015	.68850	-.01041	-.03803	-.02762
1191.0	1386.45	2952	2.263	.005	.68848	.00346	.00207	-.00139
1193.0	1389.41	2965	2.268	.003	.68847	.00241	.05278	.05037
1195.0	1392.37	2861	2.242	-.024	.68809	-.01627	-.05151	-.03524
1197.0	1395.23	2911	2.239	.008	.68804	.00542	-.01637	-.02179
1199.0	1398.14	2962	2.237	.008	.68800	.00565	.04082	.03517
1201.0	1401.10	2727	2.246	-.039	.68693	-.02708	-.06785	-.04077
1203.0	1403.83	2893	2.246	.030	.68633	.02032	.02793	.00760
1205.0	1406.72	2962	2.287	.021	.68603	.01429	.03829	.02400
1207.0	1409.69	3001	2.295	.008	.68599	.00568	-.02587	-.03155
1209.0	1412.69	2996	2.255	-.009	.68593	-.00648	.04224	.04872
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	3033	2.261	-.006	.68579	-.00389	.00026	.00415
1215.0	1421.76	3009	2.270	-.002	.68578	-.00147	-.03317	-.03170
1217.0	1424.77	3057	2.279	.010	.68571	.00691	.03977	.03286
1219.0	1427.83	3008	2.250	-.014	.68557	-.00985	-.05580	-.04595
1221.0	1430.84	3080	2.264	.015	.68542	.01015	.01371	.00356
1223.0	1433.92	3125	2.259	.006	.68540	.00416	.04031	.03615
1225.0	1437.04	3110	2.260	-.002	.68539	-.00142	.00448	.00589
1227.0	1440.15	3151	2.286	.012	.68529	.00831	-.02572	-.03403
1229.0	1443.30	3203	2.337	.019	.68503	.01332	.09013	.07681
1231.0	1446.51	3159	2.287	-.018	.68481	-.01228	-.06790	-.05562
1233.0	1449.67	3260	2.357	.031	.68417	.02100	.00046	-.02054
1235.0	1452.93	3255	2.347	-.003	.68416	-.00181	.00189	.00370
1237.0	1456.18	3190	2.286	-.023	.68379	-.01599	-.02956	-.01357
1239.0	1459.37	3177	2.290	-.001	.68379	-.00071	-.00729	-.00658
1241.0	1462.55	3200	2.261	-.003	.68378	-.00201	.09700	.09900
1243.0	1465.75	3162	2.269	-.004	.68377	-.00287	-.07927	-.07640
1245.0	1468.91	3178	2.286	.006	.68374	.00438	-.01099	-.01537
1247.0	1472.09	3222	2.271	.004	.68374	.00247	.00106	-.00141
1249.0	1475.31	3228	2.271	.001	.68373	.00057	.02112	.02055
1251.0	1478.54	3239	2.277	.003	.68373	.00204	.00889	.00685
1253.0	1481.78	3262	2.310	.011	.68365	.00743	.01910	.01167
1255.0	1485.04	3273	2.392	.019	.68340	.01296	-.00207	-.01503
1257.0	1488.31	3204	2.292	-.032	.68270	-.02188	.00072	.02260
1259.0	1491.52	3276	2.323	.018	.68248	.01220	-.00172	-.01393

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
1263.0	1498.09	3294	2.322	.005	.68246	.00320	-.03675	-.03995
1265.0	1501.42	3339	2.313	.007	.68243	.00483	.05094	.04611
1267.0	1504.79	3370	2.324	-.004	.68242	-.00246	.03894	.04141
1269.0	1508.13	3331	2.335	.010	.68236	.00667	-.02520	-.03187
1271.0	1511.45	3324	2.385	.005	.68234	.00341	.00483	.00143
1273.0	1514.81	3358	2.385	-.004	.68233	-.00307	.00896	.01202
1275.0	1518.22	3410	2.327	0	.68233	.00028	-.05312	-.05340
1277.0	1521.66	3439	2.310	-.010	.68233	-.00668	.04315	.04983
1279.0	1525.07	3408	2.285	.004	.68226	.00256	-.01393	-.01649
1281.0	1528.49	3426	2.291	.003	.68224	.00224	-.01329	-.01553
1283.0	1531.93	3437	2.298	.009	.68224	.00224	-.01329	-.01553
1285.0	1535.42	3496	2.301	.013	.68219	.00626	.05695	.05068
1287.0	1538.99	3567	2.313	.003	.68208	.00858	.02552	.01695
1289.0	1542.58	3567	2.313	.002	.68207	.00152	-.00959	-.01111
1289.0	1542.58	3584	2.312	-.002	.68207	-.00170	-.03213	-.03043
1291.0	1546.14	3565	2.313	0	.68207	.00024	.00865	.00841
1293.0	1549.70	3562	2.317	-.007	.68204	-.00460	-.02103	-.01643
1295.0	1553.22	3521	2.313	-.013	.68192	-.00888	.00864	.01752
1297.0	1556.67	3447	2.301	-.003	.68192	-.00221	-.00016	.00205
1299.0	1560.06	3390	2.325	-.004	.68190	-.00274	-.02789	-.02515
1301.0	1563.41	3352	2.333	-.003	.68190	-.00183	-.00742	-.00559
1303.0	1566.78	3369	2.308	.044	.68058	.02998	.06962	.03964
1305.0	1570.32	3543	2.397	-.034	.67980	-.02302	-.06747	-.04444
1307.0	1573.72	3391	2.340	-.022	.67946	-.01516	.01495	.03011
1309.0	1577.02	3303	2.298	.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	3044	2.352	-.062	.67609	-.04227	-.08282	-.04055
1313.0	1583.47	3024	2.305	-.013	.67597	-.00899	-.00726	.00173
1315.0	1586.49	3005	2.317	-.001	.67597	-.00047	.00684	.00731
1317.0	1589.50	2876	2.296	-.026	.67550	-.01776	-.04427	-.02651
1319.0	1592.37	2843	2.331	.002	.67550	.00108	.03469	.03361
1321.0	1595.22	2904	2.372	.019	.67524	.01311	.00836	-.00475
1323.0	1598.12	2897	2.339	-.008	.67520	-.00544	-.04873	-.04329
1325.0	1601.02	2837	2.306	-.018	.67499	-.01200	-.01236	-.00035
1327.0	1603.85	2827	2.338	.005	.67497	.00350	.06857	.06506
1329.0	1606.68	2870	2.331	.006	.67494	.00419	-.03021	-.03440
1331.0	1609.55	2893	2.348	.007	.67490	.00502	.01460	.00958
1333.0	1612.44	2898	2.364	.004	.67489	.00287	.01588	.01301
1335.0	1615.34	2916	2.486	.028	.67436	.01901	.01269	-.00632
1337.0	1618.26	2837	2.356	-.040	.67326	-.02722	-.05022	-.02299
1339.0	1621.10	2824	2.343	-.005	.67324	-.00346	.03507	.03854
1341.0	1623.92	2791	2.345	-.006	.67322	-.00375	-.04342	-.03967
1343.0	1626.71	2773	2.355	-.001	.67322	-.00066	-.00404	-.00337
1345.0	1629.48	2822	2.341	.006	.67320	.00378	.02820	.02442
1347.0	1632.31	3289	2.712	.149	.65822	.10043	.11237	.01195
1349.0	1635.59	3312	2.750	.010	.65815	.00678	.00699	.00022
1351.0	1638.91	3128	2.637	-.049	.65654	-.03255	.01713	.04967
1353.0	1642.03	3238	2.676	.025	.65614	.01617	-.06436	-.08053
1355.0	1645.27	3251	2.670	.001	.65614	.00068	.03220	.03152
1357.0	1648.52	3411	2.704	.030	.65554	.01988	.01224	-.00764

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
1361.0	1655.17	3238	2.563	-.003	.65370	-.00209	-.02045	-.01837
1363.0	1658.47	3299	2.499	.006	.65367	.00419	.04777	.04358
1365.0	1661.85	3381	2.470	-.028	.65315	-.01843	-.04562	-.02720
1367.0	1665.12	3270	2.414	.007	.65311	.00489	-.03681	-.04171
1369.0	1668.31	3191	2.511	.030	.65254	.01928	.02206	.00279
1371.0	1671.61	3293	2.581	.001	.65254	.00038	.02100	.02062
1373.0	1674.96	3348	2.542	.002	.65254	.00154	-.01783	-.01937
1375.0	1678.25	3299	2.592	-.051	.65087	-.03303	.01136	.04439
1377.0	1681.36	3106	2.488	-.012	.65077	-.00786	-.05329	-.04543
1379.0	1684.32	2964	2.545	-.014	.65064	-.00930	-.04969	-.04038
1381.0	1687.32	2993	2.449	-.009	.65058	-.00605	.03262	.03867
1383.0	1690.28	2968	2.424	.052	.64881	.03395	.05865	.02470
1385.0	1693.51	3229	2.473	.014	.64869	.00893	-.02341	-.03235
1387.0	1696.94	3423	2.399	-.053	.64686	-.03447	-.01871	.01576
1389.0	1700.19	3258	2.265	.027	.64639	.01734	-.00433	-.02166
1391.0	1703.42	3231	2.410	-.008	.64635	-.00533	-.01415	-.00882
1393.0	1706.60	3173	2.414	-.050	.64474	-.03222	.02262	.05485
1395.0	1709.60	3000	2.311	.018	.64453	.01156	-.00231	-.01387
1397.0	1712.65	3048	2.358	-.018	.64432	-.01186	-.04886	-.03700
1399.0	1715.58	2936	2.359	-.012	.64423	-.00746	-.00107	.00638
1401.0	1718.51	2924	2.314	.050	.64262	.03221	.04414	.01193
1403.0	1721.67	3162	2.365	.010	.64256	.00622	-.00435	-.01057
1405.0	1724.94	3267	2.335	.057	.64048	.03655	.05233	.01578
1407.0	1728.45	3516	2.431	-.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
1409.0	1731.43	2978	2.303	.059	.63060	.03738	.02100	-.01639
1411.0	1734.73	3296	2.343	.027	.63014	.01707	.03138	.01431
1413.0	1738.19	3460	2.356	.028	.62963	.01790	.03791	.02001
1415.0	1741.79	3609	2.391	-.029	.62910	-.01821	-.05530	-.03708
1417.0	1745.24	3446	2.363	-.008	.62907	-.00474	.01402	.01876
1419.0	1748.63	3386	2.369	-.008	.62902	-.00530	-.00457	.00073
1421.0	1752.00	3375	2.337	.011	.62895	.00690	-.00809	-.01499
1423.0	1755.46	3458	2.331	-.018	.62875	-.01125	.01037	.02163
1425.0	1758.80	3342	2.328	.004	.62874	.00233	.02379	.02146
1427.0	1762.17	3373	2.323	.042	.62762	.02645	-.01002	-.03647
1429.0	1765.80	3621	2.354	-.034	.62689	-.02145	.01501	.03646
1431.0	1769.19	3396	2.344	-.007	.62686	-.00453	-.03761	-.03308
1433.0	1772.51	3318	2.365	0	.62686	-.00016	-.02738	-.02722
1435.0	1775.90	3389	2.314	.047	.62544	.02977	.00935	-.02042
1437.0	1779.52	3618	2.384	-.004	.62543	-.00272	.07360	.07632
1439.0	1783.20	3685	2.320	.013	.62533	.00801	-.04056	-.04857
1441.0	1786.89	3685	2.380	.018	.62512	.01141	.03023	.01882
1443.0	1790.57	3685	2.469	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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

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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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

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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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

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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

COMPANY : BEACH PETROLEUM N.L.

WELL : WESTGATE - 1

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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

*

* SCHLUMBERGER *

STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY : BEACH PETROLEUM
WELL : BESTGATE # 1
FIELD : WOLDCAT
COUNTRY : AUSTRALIA
RUN : 00E
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

END OF LSF - VERSION 007.E05

14-APR-86 - 15:11:12

BEACH PETROLEUM

WESTGATE # 1

SUMMARY

```
*****  
* DEPTH *   DIP   DIP   *   DEV   DEV   DIAM   DIAM * QUAL *  
*       *       AZM   *       AZM   1-3   2-4  *     *  
*****  
* 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   *  
*****
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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   *   DEV   DEV   DIAM   DIAM * QUAL *
*       *     *   AZM *     *   AZM   1-3   2-4 *     *
*****
* 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
*
*****
```

BEACH PETROLEUM

WESTGATE # 1

PAGE 10-FILE 1

```
*****
* DEPTH  DIP  DIP  DEV  DEV  DIAM  DIAM  Q
*      AZM  AZM  1-3  2-4
*****
* 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   S
* 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  5.3   200  29.6  34   8.6   9.0   B
* 1199.99  4.7   211  29.5  33   8.6   8.9   B
*****
```

BEACH PETROLEUM

WESTGATE # 1

```

*****
* DEPTH  DIP  DIP  DEV  DEV  DIAM  DIAM  Q
*   AZM   AZM   1-3  2-4
*****
* 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  5  8  6  A
* 1155.97  3.6  67  29  5  32  8  5  8  6  B
* 1157.97  12.2  60  29  5  32  8  5  8  6  B
* 1159.97  33.9  135  29  5  32  8  5  8  6  B
* 1160.97  4.9  -  29  5  32  8  5  8  6  A
* 1161.97  9.9  110  29  5  32  8  5  8  6  A
* 1162.47  1.5  204  29  5  32  8  5  8  6  B
* 1167.47  8.5  2  29  5  32  8  5  8  6  B
* 1167.97  5.7  18  29  5  32  8  5  8  6  B
* 1169.97  27.8  224  29  5  32  8  5  8  6  B
* 1170.97  18.1  52  29  5  32  8  5  8  6  B
* 1171.47  4.7  169  29  5  32  8  5  8  6  B
* 1171.97  6.4  173  29  5  32  8  5  8  6  B
* 1174.48  19.7  133  29  5  32  8  5  8  6  B
* 1174.98  6.6  339  29  5  32  8  5  8  6  A
* 1175.48  8.8  335  29  5  32  8  5  8  6  A
* 1175.98  6.4  281  29  5  32  8  5  8  6  A
* 1177.48  2.8  180  29  5  32  8  5  8  6  A
* 1177.98  3.3  178  29  5  32  8  5  8  6  A
* 1178.48  5.5  242  29  5  32  8  5  8  6  A
* 1178.98  3.3  168  29  5  32  8  5  8  6  A
* 1179.98  3.1  100  29  5  32  8  5  8  6  A
* 1180.98  2.9  49  29  5  32  8  5  8  6  B
* 1181.98  18.0  45  29  5  32  8  5  8  6  B
* 1182.98  2.3  226  29  5  32  8  5  8  6  B
* 1183.98  2.3  10  29  5  32  8  5  8  6  B
* 1185.98  2.2  212  29  5  32  8  5  8  6  A
* 1186.98  2.2  207  29  5  32  8  5  8  6  A
* 1187.98  1.6  213  29  5  32  8  5  8  6  A
* 1188.98  1.7  195  29  5  32  8  5  8  6  A
* 1189.98  1.0  185  29  5  32  8  5  8  6  A
* 1190.98  14.6  185  29  5  32  8  5  8  6  A
* 1191.98  15.4  182  29  5  32  8  5  8  6  A
* 1192.98  5.1  73  29  5  32  8  5  8  6  A
* 1193.98  5.5  81  29  5  32  8  5  8  6  A
* 1194.98  1.7  92  29  5  32  8  5  8  6  A
* 1195.98  1.7  129  29  5  32  8  5  8  6  B
*****

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q
*      AZM  AZM  1-3  2-4
*****
* 11115.44  3.0  283  29.4  32  3.4  9.3  B
* 11116.95  7.0  224  29.4  31  3.5  9.5  A
* 11117.45  6.7  231  29.3  31  3.6  9.7  A
* 11118.45  15.5  1  29.4  32  3.6  9.7  B
* 11118.95  6.5  348  29.4  32  3.5  9.5  B
* 11119.45  6.6  310  29.4  32  3.5  9.5  B
* 11119.95  9.4  341  29.4  32  3.5  9.4  A
* 11200.45  1.7  359  29.5  32  3.4  9.3  A
* 11200.95  3.5  207  29.6  32  3.5  9.4  B
* 11211.45  1.3  239  29.7  32  3.4  9.2  A
* 11211.95  8.9  237  29.8  32  3.6  9.3  A
* 11222.45  5.7  253  29.8  32  3.5  9.1  A
* 11222.95  9.8  218  29.9  32  3.5  9.0  A
* 11226.45  7.0  300  29.7  31  3.6  9.4  A
* 11226.95  2.2  89  29.6  31  3.6  9.1  A
* 11227.45  4.1  44  29.6  31  3.5  9.0  B
* 11322.45  4.7  99  29.7  31  3.6  9.0  B
* 11322.95  6.4  87  29.6  31  3.5  9.7  B
* 11333.45  15.4  168  29.6  31  3.4  9.6  B
* 11333.95  12.7  117  29.5  31  3.4  9.6  B
* 11334.45  6.7  69  29.5  31  3.4  9.6  B
* 11335.46  14.3  13  29.4  31  3.4  9.6  B
* 11335.96  7.5  8  29.4  31  3.4  9.6  B
* 11336.46  2.1  38  29.4  31  3.4  9.6  A
* 11336.96  3.9  60  29.4  31  3.4  9.6  A
* 11337.46  5.4  51  29.3  31  3.4  9.6  A
* 11337.96  11.2  103  29.4  31  3.4  9.6  A
* 11339.46  4.0  228  29.4  31  3.4  9.7  B
* 11339.96  13.2  229  29.4  31  3.4  9.7  B
* 11411.96  8.0  297  29.4  31  3.4  9.6  B
* 11422.46  8.5  204  29.4  31  3.5  9.7  B
* 11444.46  3.2  44  29.3  31  3.6  9.9  B
* 11444.96  5.1  199  29.3  31  3.7  9.9  A
* 11445.46  7.5  202  29.3  31  3.6  9.8  A
* 11446.46  13.9  246  29.3  32  3.6  9.7  A
* 11447.96  15.9  123  29.4  32  3.6  9.6  B
* 11448.46  3.7  343  29.4  32  3.5  9.6  B
* 11449.46  6.2  341  29.5  32  3.6  9.8  A
* 11449.96  9.6  13  29.5  32  3.6  9.8  A
* 11450.46  5.0  335  29.5  32  3.7  9.8  B
*****

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*

* SCHLUMBERGER *

STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY : BBACH PETROLEUM
WELL : ØØSTGATE # 1
FIELD : ØØLDCAT
COUNTRY : ØØSTRALIA
RUN : ØØE
DATE LOGGED : 14 - MAR - 86
REFERENCE : ØØJ.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	DEV	DEV	DIAM	DIAM	Q	
		AZM	AZM	AZM	AZM	1-3	2-4		
47.06	27.6		209			3	8	12.3	A
47.56	27.6		209			3	8	12.1	A
48.06	27.6		26			3	8	12.1	A
48.56	27.6		322			3	8	12.1	A
49.06	27.6		272			3	8	12.1	A
49.56	27.6		275			3	8	12.2	A
50.06	27.6		317			3	8	12.4	A
50.56	27.6		77			3	8	12.5	B
51.06	27.6		332			3	8	12.5	B
51.56	27.6		134			3	8	12.5	B
52.06	27.6		331			3	8	13.6	B
52.56	27.6		343			3	8	12.9	B
53.06	27.6		345			3	8	12.4	B
53.56	27.6		22			3	8	12.4	B
54.06	27.6		13			3	8	12.6	A
54.56	27.6		3			3	8	12.7	A
55.06	27.6		20			3	8	12.7	A
55.56	27.6		15			3	8	12.5	A
56.06	27.6		2			3	8	12.4	A
56.56	27.6		344			3	8	12.4	A
57.06	27.6		11			3	8	12.9	B
57.56	27.6		32			3	8	13.4	B
58.06	27.6		30			3	8	14.0	B
58.56	27.6		145			3	8	13.8	B
59.06	27.6		57			3	8	13.8	B
59.56	27.6		340			3	8	13.3	B
60.06	27.6		342			3	8	13.3	B
60.56	27.6		151			3	8	14.3	B
61.06	27.6		227			3	8	15.1	B
61.56	27.6		344			3	8	14.4	B
62.06	27.6		36			3	8	13.2	B
62.56	27.6		344			3	8	13.1	B
63.06	27.6		70			3	8	12.9	B
63.56	27.6		349			3	8	12.5	B
64.06	27.6		306			3	8	12.6	B
64.56	27.6		313			3	8	12.5	B
65.06	27.6		260			3	8	12.4	B
65.56	27.6		30			3	8	12.3	B

```

*****
* DEPTH  DIP  DEV  DEVIAM  DIAM  Q
* AZM    1-3  2-4
*****
*
* 893.41  3.5  256  30.0  31  8.5  12.4  A
* 893.91  1.5  311  30.0  31  8.5  12.3  A
* 894.41  3.5  269  30.0  31  8.5  12.5  A
* 896.40  5.7  43  29.9  31  8.4  12.1  A
* 896.90  4.0  32  30.0  31  8.4  12.0  A
* 898.99  4.2  212  30.0  31  8.5  11.7  A
* 899.39  2.7  109  30.0  31  8.4  11.5  A
* 899.99  1.7  294  30.0  31  8.4  11.4  A
* 900.39  2.9  68  30.0  31  8.4  11.3  A
* 900.99  8.9  103  30.0  31  8.4  11.3  A
* 901.88  1.9  1  30.0  31  8.5  11.1  A
* 902.88  1.9  19  30.0  31  8.5  11.0  A
* 902.88  7.7  26  30.0  31  8.5  10.9  A
* 904.77  6.4  36  30.0  31  8.5  10.4  A
* 905.77  5.0  51  30.0  31  8.5  10.2  A
* 910.66  7.7  3  30.0  31  8.3  8.8  A
* 910.66  2.5  359  30.0  31  8.3  8.8  A
* 911.55  1.1  39  30.0  31  8.4  8.7  A
* 911.55  9.8  349  30.0  31  8.3  8.7  A
* 912.44  5.5  275  30.0  31  8.4  8.7  A
* 917.33  5.4  21  29.9  31  8.4  8.5  A
* 919.22  1.0  83  29.9  31  8.4  8.5  A
* 919.22  5.5  193  29.9  31  8.4  8.5  A
* 921.11  3.0  310  29.9  31  8.4  8.5  A
* 922.00  6.6  204  29.9  31  8.4  8.6  A
* 922.88  4.2  174  29.9  31  8.4  8.6  A
* 922.88  7.7  145  29.9  31  8.4  8.6  A
* 926.66  2.0  0  29.9  31  8.4  8.6  A
* 926.66  6.0  301  29.9  31  8.4  8.6  A
* 927.55  4.7  238  29.9  31  8.4  8.6  A
* 927.55  7.1  195  29.9  31  8.4  8.5  A
* 928.44  3.1  198  29.9  31  8.5  8.6  A
* 928.44  1.1  205  29.9  31  8.4  8.6  A
* 929.33  6.8  175  29.9  31  8.5  8.7  A
* 929.33  8.8  177  29.9  31  8.4  8.7  A
* 931.22  1.8  291  29.9  31  8.5  8.9  A
* 931.22  7.7  308  29.9  31  8.6  8.9  A
* 932.11  0.5  1  29.9  31  8.6  8.9  A
* 932.11  7.9  12  29.9  31  8.6  8.9  A
* 934.00  2.4  12  29.9  31  8.6  8.9  A
* 934.00  3.0  256  29.9  31  8.5  8.6  A
*****

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BEACH PETROLEUM

WESTGATE # 1

PAGE 3-FILE 1

DEPTH	DIP	DIP	DEV	DEV	DIAM	DIAM	Q
	AZM	AZM	1-3	2-4			
999	66	320	29	6	30	8	4
993	17	158	29	6	30	8	4
933	11	19	30	9	30	8	4
936	11	19	30	9	30	8	4
938	6	9	30	0	30	8	4
999	6	345	30	0	30	8	4
939	8	15	30	0	30	8	4
941	8	15	30	0	30	8	4
942	11	14	29	9	30	8	4
942	11	14	29	9	30	8	4
943	5	12	29	9	30	8	4
943	5	12	29	9	30	8	4
943	16	28	29	9	30	8	4
944	14	37	29	9	30	8	4
944	16	43	29	9	30	8	4
944	9	11	29	9	30	8	4
945	21	21	29	9	30	8	4
945	21	21	29	9	30	8	4
949	8	8	29	9	30	8	4
950	7	48	29	9	30	8	4
951	2	55	29	9	30	8	4
951	2	55	29	9	30	8	4
952	1	77	29	9	30	8	4
952	1	77	29	9	30	8	4
952	1	77	29	9	30	8	4
954	7	33	29	9	30	8	4
954	7	33	29	9	30	8	4
955	10	5	29	9	30	8	4
955	14	5	29	9	30	8	4
955	14	5	29	9	30	8	4
956	3	19	29	9	30	8	4
956	3	19	29	9	30	8	4
956	3	19	29	9	30	8	4
957	2	9	29	9	30	8	4
957	2	9	29	9	30	8	4
957	2	9	29	9	30	8	4
958	10	20	29	9	30	8	4
958	10	20	29	9	30	8	4
958	10	20	29	9	30	8	4
959	11	9	29	9	30	8	4
959	11	9	29	9	30	8	4
961	10	2	29	9	30	8	4
961	10	2	29	9	30	8	4
961	10	2	29	9	30	8	4
964	10	32	29	9	30	8	4
964	10	32	29	9	30	8	4
965	2	40	29	9	30	8	4
965	2	40	29	9	30	8	4
965	2	40	29	9	30	8	4
966	3	34	29	9	30	8	4
966	3	34	29	9	30	8	4
966	3	34	29	9	30	8	4
966	14	16	29	9	30	8	4
966	14	16	29	9	30	8	4
966	14	16	29	9	30	8	4
969	10	17	29	9	30	8	4
969	10	17	29	9	30	8	4
969	10	17	29	9	30	8	4
970	3	21	29	9	30	8	4
970	3	21	29	9	30	8	4
970	3	21	29	9	30	8	4
976	5	20	29	9	30	8	4
976	5	20	29	9	30	8	4
977	4	11	29	9	30	8	4
977	4	11	29	9	30	8	4
977	4	11	29	9	30	8	4

DEPTH		DIP	DIP	DEV	DEV	DIAM	DIAM	Q		
		AZM	AZM	AZM	AZM	1-3	2-4			
97	77	.96	29	190	29	.6	29	8	.4	B
98	81	.48	1	248	29	.5	30	8	.4	B
98	83	.49	2	210	29	.4	30	8	.4	B
98	84	.49	2	208	29	.4	30	8	.4	B
98	84	.49	2	210	29	.4	30	8	.4	B
98	84	.49	2	342	29	.5	30	8	.4	B
98	85	.50	2	210	29	.6	30	8	.4	B
98	86	.50	2	210	29	.6	30	8	.4	B
98	86	.50	2	175	29	.7	30	8	.4	B
98	87	.50	2	100	29	.7	30	8	.4	B
98	87	.50	2	170	29	.7	30	8	.4	B
98	88	.52	14	162	29	.5	30	8	.4	B
98	89	.52	14	166	29	.5	30	8	.4	B
98	90	.52	14	165	29	.6	30	8	.4	B
98	91	.53	26	289	29	.5	30	8	.4	B
98	92	.53	33	235	29	.6	30	8	.4	B
98	93	.53	33	207	29	.6	30	8	.4	B
98	94	.53	33	189	29	.7	30	8	.4	B
98	95	.55	17	221	29	.5	30	8	.4	B
98	96	.56	17	245	29	.5	30	8	.4	B
98	97	.57	21	22	29	.9	30	8	.4	B
98	98	.58	9	224	29	.9	30	8	.4	B
98	99	.58	2	177	29	.8	30	8	.4	B
98	100	.60	1	66	29	.7	30	8	.4	B
98	101	.62	1	299	29	.6	30	8	.4	B
98	102	.62	1	298	29	.5	30	8	.4	B
98	103	.63	1	339	29	.6	30	8	.4	B
98	104	.63	6	9	29	.6	30	8	.4	B
98	105	.64	6	233	29	.6	30	8	.4	B
98	106	.65	1	169	29	.7	30	8	.4	B
98	107	.65	1	55	29	.9	30	8	.4	B
98	108	.65	1	201	29	.9	30	8	.4	B
98	109	.67	4	49	29	.0	30	8	.4	B
98	110	.67	5	94	29	.0	30	8	.4	B
98	111	.68	5	111	29	.0	30	8	.4	B
98	112	.68	5	33	29	.0	30	8	.4	B
98	113	.68	5	23	29	.4	30	8	.4	B
98	114	.68	5	50	29	.4	30	8	.4	B
98	115	.68	5	13	29	.4	30	8	.4	B
98	116	.68	5	15	29	.4	30	8	.4	B

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q  *
*      AZM  AZM  1-3  2-4  *
*****
* 10332.69  5.6  343  299  9  3  8  5  A *
* 10333.19  3.1  284  299  9  3  8  6  A *
* 10333.70  1.5  270  300  0  3  8  6  A *
* 10334.20  1.3  285  300  0  3  8  6  A *
* 10334.70  1.5  186  300  0  3  8  6  B *
* 10335.20  3.5  61  300  0  3  8  6  B *
* 10335.71  5.3  54  300  0  3  8  6  B *
* 10336.21  5.6  29  300  0  3  8  6  B *
* 10336.71  12.2  340  300  0  3  8  5  B *
* 10339.72  2.7  206  299  8  3  8  5  B *
* 10400.22  6.3  56  299  9  3  8  8  B *
* 10400.73  6.9  61  299  9  3  8  8  B *
* 10401.73  6.3  87  299  9  3  8  5  B *
* 10402.23  2.2  253  299  9  3  8  6  A *
* 10402.73  2.1  53  299  9  3  8  6  A *
* 10403.24  3.0  71  299  8  3  8  6  A *
* 10403.74  3.8  323  299  9  3  8  6  A *
* 10404.24  1.1  314  299  9  3  8  6  A *
* 10404.74  4.3  35  300  0  3  8  6  B *
* 10405.75  3.7  342  300  0  3  8  6  B *
* 10406.25  1.0  142  299  9  3  8  6  B *
* 10406.75  7.2  9  299  8  3  8  6  B *
* 10407.25  7.7  358  299  8  3  8  5  B *
* 10407.76  4.3  44  299  8  3  8  6  A *
* 10408.26  7.7  49  299  8  3  8  6  A *
* 10409.76  5.7  79  299  8  3  8  5  B *
* 10410.27  6.5  253  299  7  3  8  5  B *
* 10410.77  3.6  164  299  7  3  8  4  A *
* 10411.27  3.1  8  299  7  3  8  4  A *
* 10412.27  1.1  154  299  7  3  8  4  A *
* 10412.78  7.3  145  299  7  3  8  4  A *
* 10413.28  17.4  132  299  7  3  8  4  B *
* 10413.78  17.4  132  299  7  3  8  4  B *
* 10415.29  2.1  347  299  7  3  8  4  A *
* 10415.79  3.8  242  299  6  3  8  5  A *
* 10416.29  3.3  238  299  6  3  8  5  A *
* 10416.79  2.3  32  299  6  3  8  5  A *
* 10417.29  1.1  96  299  6  3  8  5  B *
* 10418.30  6.0  126  299  6  3  8  5  B *
* 10418.30  5.3  346  299  6  3  8  5  B
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DEPTH		DIP	DEV	DEV	DIAM	DIAM	Q		
		AZM	AZM		1-3	2-4			
*	1058	80	6.0	336	29.6	31	3.3	8.5	A
*	1059	300	4.6	325	29.6	11	8.4	8.5	A
*	1059	31	2.5	39	29.6	11	8.4	8.5	A
*	1060	31	7.2	34	29.6	11	8.4	8.5	A
*	1060	31	10.3	44	29.6	11	3.4	8.5	A
*	1061	11	4.3	4	29.6	11	8.4	8.5	A
*	1061	11	1.7	331	29.6	11	8.3	8.5	A
*	1062	22	1.5	312	29.6	11	8.3	8.5	A
*	1062	22	1.2	22	29.6	11	8.3	8.5	A
*	1063	22	2.8	284	29.6	11	8.3	8.5	A
*	1063	22	5.5	296	29.6	11	8.3	8.5	A
*	1064	22	4.6	341	29.6	11	8.3	8.5	A
*	1064	33	2.7	49	29.6	11	8.3	8.5	A
*	1065	33	3.0	59	29.6	11	8.3	8.5	A
*	1065	33	2.7	20	29.6	11	8.3	8.5	A
*	1066	33	4.2	31	29.6	11	8.3	8.5	A
*	1066	33	2.2	127	29.6	11	8.3	8.5	B
*	1068	44	1.8	329	29.6	11	8.3	8.5	B
*	1068	44	3.6	92	29.6	11	8.3	8.5	B
*	1069	55	5.2	229	29.6	11	8.3	8.6	S
*	1070	55	4.1	251	29.6	11	8.3	8.6	A
*	1070	55	4.9	267	29.6	11	8.3	8.7	A
*	1071	33	4.2	246	29.6	11	8.3	8.6	A
*	1071	33	3.7	240	29.6	11	8.3	8.7	A
*	1072	66	5.9	294	29.5	11	8.3	8.6	A
*	1072	66	6.0	319	29.5	11	8.3	8.6	B
*	1073	36	7.9	6	29.5	11	8.3	8.7	B
*	1073	36	2.1	36	29.5	11	8.4	8.9	A
*	1075	37	1.3	333	29.5	11	8.6	9.1	A
*	1078	38	15.6	61	29.4	11	8.6	9.4	B
*	1078	38	18.7	196	29.4	11	8.7	9.4	B
*	1079	39	17.7	188	29.5	11	8.5	9.3	B
*	1080	39	4.6	329	29.7	11	8.4	9.9	B
*	1080	39	4.3	68	29.7	11	8.4	8.7	A
*	1081	40	4.2	54	29.7	11	8.4	8.6	A
*	1081	40	5.4	350	29.6	11	8.4	8.6	B
*	1084	91	13.4	342	29.9	11	8.4	8.6	B
*	1086	42	8.7	181	29.6	11	8.4	8.6	S
*	1087	42	18.5	139	29.6	11	8.5	8.7	S
*	1088	42	11.7	121	29.6	11	8.6	8.8	B

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q
*      AZM  AZM  1-3  2-4
*****
* 1089.43  4.6  117  29.5  31  8.6  8.9  B
* 1089.93  14.8  331  29.5  11  9.0  9.4  B
* 1091.43  17.1  185  29.6  22  8.5  8.7  B
* 1092.43  15.8  138  29.7  11  8.4  8.5  B
* 1092.93  11.7  138  29.8  11  8.4  8.5  B
* 1093.93  5.1  242  29.9  11  8.4  8.5  B
* 1094.43  5.1  245  30.0  11  8.4  8.5  B
* 1096.94  9.5  93  30.0  22  8.4  8.5  B
* 1097.94  3.2  268  29.8  22  8.4  8.6  B
* 1098.44  4.1  326  29.8  22  8.4  8.7  B
* 1098.94  4.6  350  29.8  22  8.3  8.7  B
* 1099.44  5.7  20  29.8  22  8.3  8.6  B
* 1099.94  7.8  293  29.7  22  8.3  8.6  B
* 1100.44  1.7  342  29.7  22  8.3  8.6  B
* 1100.94  5.6  57  29.7  22  8.3  8.5  B
* 1101.44  8.7  64  29.7  22  8.3  8.5  B
* 1102.94  20.6  21  29.7  22  8.3  8.5  B
* 1103.44  1.8  78  29.8  22  8.3  8.5  B
* 1103.94  1.3  120  29.8  22  8.3  8.5  B
* 1104.44  3.9  261  29.7  22  8.3  8.5  B
* 1104.94  3.8  12  29.7  11  8.3  8.6  B
* 1105.44  5.7  39  29.7  11  8.3  8.6  B
* 1105.94  6.0  22  29.7  11  8.4  8.7  B
* 1106.44  2.0  328  29.6  11  8.3  8.6  B
* 1106.94  1.8  264  29.6  11  8.3  8.7  B
* 1107.44  1.8  162  29.6  11  8.3  8.7  B
* 1107.94  5.7  119  29.6  11  8.3  8.7  B
* 1108.44  1.8  130  29.6  11  8.3  8.7  B
* 1108.94  1.8  356  29.6  22  8.3  8.7  B
* 1109.44  1.3  44  29.6  22  8.3  8.7  B
* 1109.94  1.0  89  29.6  22  8.3  8.8  B
* 1110.44  5.9  283  29.6  22  8.3  8.8  B
* 1110.94  6.2  288  29.6  22  8.3  8.8  B
* 1111.44  4.7  289  29.6  22  8.3  8.8  B
* 1111.94  4.4  340  29.6  22  8.3  8.8  B
* 1112.44  3.0  310  29.6  22  8.3  8.8  B
* 1112.94  1.3  294  29.6  22  8.3  8.9  B
* 1113.94  14.3  326  29.5  22  8.3  8.9  B
* 1114.44  3.0  167  29.5  22  8.4  9.0  B
* 1114.94  4.5  41  29.5  22  8.4  9.2  B
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BEACH PETROLEUM

WESTGATE # 1

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	
1205.35	54.6	243	29.6	34	8.6	8.9	
1206.35	10.6	288	29.4	34	8.7	9.1	
1206.85	7.0	13	28.8	35	8.7	9.0	
1207.34	38.9	251	28.5	43	8.6	8.8	
1207.84	38.9	249	28.6	43	8.5	8.6	
1208.34	33.1	264	29.2	35	8.6	8.7	
1208.84	33.4	388	29.5	34	8.7	8.6	
1209.34	1.8	358	29.6	34	8.6	8.6	
1210.33	12.5	148	29.8	35	8.7	8.7	
1211.33	9.3	158	29.9	35	8.7	8.8	
1211.83	4.8	254	30.0	34	8.6	8.7	
1212.33	5.9	244	29.9	34	8.6	8.7	
1212.83	0.7	198	29.8	34	8.6	8.7	
1214.2	6.7	45	29.8	34	8.9	9.0	
1216.2	1.1	341	29.9	34	8.5	8.6	
1216.7	6.3	353	29.8	34	8.5	8.6	
1217.1	5.5	217	29.8	34	8.6	8.7	
1219.0	4.0	209	29.9	34	8.5	8.7	
1220.0	0.0	4	29.9	34	8.5	8.6	
1221.0	0.0	324	29.9	34	8.5	8.6	
1222.0	1.6	238	29.9	35	8.5	8.5	
1222.5	1.6	250	29.9	34	8.4	8.5	
1224.0	1.0	97	29.9	34	8.5	8.6	
1225.9	1.1	103	29.9	35	8.6	8.6	
1227.7	1.1	162	30.0	34	8.7	8.7	
1230.0	1.4	138	30.0	34	8.7	8.6	
1231.7	1.2	219	30.0	34	8.6	8.8	
1232.7	1.8	353	30.1	34	8.6	8.8	
1234.2	4.4	334	30.1	34	8.6	8.7	
1234.4	6.0	321	30.2	35	8.6	8.6	
1236.6	7.0	101	30.2	34	8.6	8.6	
1237.5	5.0	336	30.1	34	8.6	8.7	
1237.7	2.7	30	30.1	34	8.6	8.8	
1238.8	2.2	80	30.2	35	8.7	8.8	
1239.9	2.4	123	30.2	34	8.5	8.5	
1241.1	1.1	174	30.2	34	8.5	8.5	
1241.7	14.9	298	30.2	34	8.5	8.5	
1241.7	11.2	336	30.2	34	8.5	8.5	
1241.7	6.3	49	30.3	34	8.5	8.5	

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*****
* DEPTH DIP DEV DEV DIAM DIAM Q *
* AZM AZM 1-3 2-4 *
*****
* 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 B *
* 1249.21 13.7 202 30.2 34 8.6 8.8 B *
* 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 B *
* 1250.71 2.2 229 30.2 34 8.6 8.6 B *
* 1251.21 1.0 62 30.3 35 8.7 8.7 B *
* 1251.70 7.3 27 30.3 35 8.5 8.7 B *
* 1252.20 4.0 25 30.3 35 8.6 8.5 B *
* 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 B *
* 1254.20 4.9 246 30.3 34 8.5 8.6 B *
* 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 B *
* 1256.69 5.5 336 30.3 35 8.4 8.4 B *
* 1257.19 3.1 342 30.3 35 8.4 8.4 B *
* 1257.69 2.5 229 30.2 35 8.4 8.4 B *
* 1258.18 0.6 284 30.2 35 8.4 8.4 B *
* 1258.68 2.7 217 30.2 35 8.4 8.4 B *
* 1259.18 1.3 166 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 B *
* 1263.67 0.3 332 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 B *
* 1273.14 1.6 145 30.0 35 8.4 8.4 B *
* 1273.63 1.6 96 30.0 35 8.4 8.4 B *
* 1274.13 2.2 289 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
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BEACH PETROLEUM

WESTGATE # 1

*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
DEPTH	DIP	DIP	DEV	DEV	DIAM	DIAM	Q														
		AZM		AZM	1-3	2-4															
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
1277	62	4	275	29	35	8	4	8	4	A											
1278	12	5	297	29	35	8	4	8	4	A											
1280	61	3	260	29	35	8	4	8	4	A											
1281	11	4	243	29	35	8	4	8	4	A											
1288	61	4	261	29	35	8	4	8	4	A											
1288	11	4	248	29	36	8	4	8	4	A											
1288	61	5	217	29	36	8	4	8	5	A											
1288	10	5	214	29	36	8	4	8	5	A											
1288	60	6	291	29	36	8	4	8	5	A											
1288	10	4	312	29	36	8	4	8	4	A											
1288	60	5	240	29	36	8	4	8	4	A											
1288	10	7	190	29	36	8	4	8	4	A											
1288	60	4	242	29	36	8	4	8	5	A											
1288	10	4	227	29	36	8	4	8	5	A											
1288	99	3	263	29	36	8	4	8	9	B											
1288	59	3	184	29	36	8	4	8	7	B											
1288	99	5	269	29	36	8	4	8	4	A											
1288	99	3	267	29	36	8	4	8	4	A											
1288	88	7	251	29	36	8	4	8	4	A											
1288	88	7	259	29	36	8	4	8	5	A											
1291	88	8	274	29	36	8	4	8	7	A											
1291	88	3	304	29	36	8	4	8	9	A											
1292	88	1	303	29	35	8	4	8	8	A											
1292	88	4	264	29	34	8	4	8	7	B											
1294	77	6	176	29	36	8	4	8	4	A											
1295	7	6	192	29	37	8	4	8	4	A											
1299	57	6	156	29	36	8	4	8	4	A											
1299	56	1	119	29	34	8	4	8	4	A											
1299	56	5	203	29	35	8	4	8	4	B											
1299	56	2	158	29	36	8	4	8	5	B											
1299	56	1	137	29	36	8	4	8	6	A											
1299	56	3	178	29	36	8	4	8	7	A											
1299	55	2	231	29	36	8	4	8	6	A											
1299	55	1	256	29	36	8	4	8	6	A											
1300	55	1	242	29	36	8	4	8	5	A											
1300	55	1	148	29	36	8	4	8	5	A											
1300	55	5	147	29	36	8	4	8	5	A											
1300	55	2	19	29	36	8	4	8	4	A											
1300	55	4	54	29	36	8	4	8	5	B											
1300	55	9	20	29	36	8	4	8	4	B											

BEACH PETROLEUM

WESTGATE # 1

DEPTH		DIP	DIP	DEV	DEV	DIAM	DIAM	Q	
		AZM	AZM	1-3	2-4				
13003	54	27	341	29	6	3	8	4	B
13004	52	8	211	29	7	3	8	4	A
13005	54	6	209	29	7	3	8	4	A
13006	54	8	216	29	7	3	8	4	A
13007	53	7	277	29	7	3	8	4	A
13008	53	6	285	29	6	3	8	4	A
13009	53	5	269	29	6	3	8	5	A
13010	53	7	237	29	6	3	8	4	A
13011	53	4	281	29	6	3	8	5	A
13012	53	1	270	29	5	3	8	6	A
13013	53	4	315	29	5	3	8	5	B
13014	53	0	336	29	5	3	8	4	B
13015	53	0	97	29	5	3	8	4	A
13016	53	0	133	29	4	3	8	4	A
13017	53	0	201	29	4	3	8	4	A
13018	53	7	20	29	4	3	8	4	A
13019	53	0	83	29	5	3	8	4	B
13020	53	1	159	29	5	3	8	4	A
13021	53	1	213	29	6	3	8	4	B
13022	53	0	235	29	5	3	8	4	B
13023	53	0	115	29	5	3	8	4	A
13024	53	1	206	29	5	3	8	4	A
13025	53	1	253	29	4	3	8	4	A
13026	53	0	230	29	4	3	8	4	A
13027	53	0	221	29	4	3	8	4	A
13028	53	0	147	29	4	3	8	4	A
13029	53	0	136	29	4	3	8	4	A
13030	53	5	231	29	4	3	8	4	A
13031	53	0	237	29	3	3	8	4	A
13032	53	2	219	29	3	3	8	4	A
13033	53	6	523	29	3	3	8	4	A
13034	53	1	258	29	3	3	8	4	A
13035	53	8	260	29	3	3	8	4	A
13036	53	3	249	29	3	3	8	4	A
13037	53	2	255	29	3	3	8	4	A
13038	53	1	286	29	3	3	8	4	A
13039	53	1	356	29	3	3	8	4	A
13040	53	6	297	29	3	3	8	4	A
13041	53	7	293	29	3	3	8	4	A
13042	53	5	287	29	3	3	8	4	A

DEPTH	DIP	DEV	DEV	DIAM	DIAM	Q			
		AZM	AZM	1-3	2-4				

1323.48	4.7	267	29.2	36	3	8.5	A		
1323.98	2.5	131	29.2	36	3	8.6	A		
1324.47	2.8	114	29.2	36	3	8.6	A		
1324.97	4.0	158	29.2	36	4	8.8	A		
1325.47	3.5	192	29.2	36	4	9.0	A		
1325.97	4.3	179	29.1	36	4	9.0	A		
1326.47	0.6	155	29.0	36	4	9.1	A		
1326.97	2.9	280	29.0	36	4	9.2	A		
1327.46	2.6	266	28.8	36	5	9.4	A		
1328.88	2.3	358	29.0	36	5	9.2	A		
1328.88	5.2	341	29.1	36	4	9.0	A		
1329.46	3.0	300	29.1	36	3	8.8	A		
1329.46	3.0	284	29.1	36	3	8.8	A		
1330.00	2.7	272	29.1	36	3	8.7	A		
1330.00	1.1	235	29.2	36	3	8.8	A		
1331.11	2.4	164	29.2	36	3	8.8	A		
1331.11	2.4	179	29.2	36	4	9.0	A		
1332.22	3.5	171	29.2	36	4	9.1	A		
1332.22	1.1	196	29.3	36	5	9.3	A		
1333.33	3.0	268	29.3	36	5	9.1	A		
1333.33	3.0	266	29.3	36	6	9.2	B		
1334.44	3.3	28	29.0	36	4	9.0	A		
1334.44	3.9	63	28.8	36	5	10.1	A		
1336.66	3.9	220	28.7	36	6	11.3	A		
1336.66	4.6	192	28.7	36	6	11.2	A		
1339.99	3.3	197	28.9	36	6	9.3	A		
1339.99	4.1	189	29.0	36	4	8.6	E		
1340.00	5.5	30	29.0	36	3	3.5	E		
1341.11	5.5	304	29.6	36	4	8.4	*		
1341.11	0.0	315	29.6	36	4	8.4	A		
1342.22	7.1	25	29.5	36	4	8.4	A		
1344.44	4.1	51	29.4	36	4	8.4	A		
1344.44	0.0	39	29.5	36	4	8.4	A		
1344.44	0.0	29	28.5	36	4	8.4	A		
1344.44	1.1	199	28.5	36	4	8.4	A		
1344.44	0.2	195	28.5	36	4	8.4	B		
1344.44	0.1	215	28.6	36	4	8.4	A		
1345.55	0.0	85	28.6	36	4	8.4	B		
1345.55	0.1	69	28.6	36	4	8.4	B		
1351.79	11.4	247	28.7	36	4	8.4	B		

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*****
* DEPTH  DIP  DIP  DEV  DEV  DIAM  DIAM  @
*   AZM   AZM   1-3  2-4
*****
*
* 13551.89 12.6 240 28.7 36 8.4 8.4 B
* 13552.88 1.7 209 28.7 36 8.4 8.4 A
* 13553.88 0.3 267 28.7 36 8.4 8.4 A
* 13554.88 1.9 5 28.7 36 8.4 8.4 A
* 13555.88 1.5 194 28.7 36 8.4 8.4 B
* 13556.88 12.4 192 28.7 36 8.4 8.4 B
* 13557.88 1.0 22 28.6 36 8.4 8.4 A
* 13558.88 2.5 214 28.6 36 8.4 8.4 A
* 13559.88 2.8 324 28.6 36 8.4 8.4 A
* 13560.88 3.3 292 28.6 37 8.4 8.4 A
* 13561.88 1.2 238 28.6 37 8.4 8.4 A
* 13562.88 3.6 81 28.5 37 8.4 8.4 A
* 13563.88 3.3 348 28.5 37 8.4 8.4 A
* 13564.88 3.6 237 28.5 37 8.4 8.4 A
* 13565.88 5.9 241 28.5 37 8.4 8.4 A
* 13566.88 2.3 237 28.5 37 8.4 8.4 A
* 13567.88 3.3 287 28.5 37 8.4 8.4 A
* 13568.88 5.5 343 28.5 37 8.4 8.4 A
* 13569.88 3.3 36 28.4 37 8.4 8.4 A
* 13570.88 5.5 343 28.4 37 8.4 8.4 A
* 13571.88 2.4 345 28.4 37 8.4 8.4 A
* 13572.88 5.4 46 28.4 37 8.4 8.4 A
* 13573.88 5.6 12 28.4 37 8.4 8.4 A
* 13574.88 1.4 357 28.4 37 8.4 8.4 A
* 13575.88 1.8 238 28.3 37 8.4 8.4 A
* 13576.88 5.2 290 28.3 37 8.4 8.4 A
* 13577.88 3.3 316 28.3 37 8.4 8.4 A
* 13578.88 3.5 299 28.3 37 8.4 8.4 A
* 13579.88 1.9 225 28.3 37 8.4 8.4 A
* 13580.88 2.2 257 28.3 37 8.4 8.4 A
* 13581.88 6.7 323 28.2 37 8.4 8.4 A
* 13582.88 3.3 230 28.2 37 8.4 8.4 A
* 13583.88 1.5 160 28.2 37 8.4 8.4 A
* 13584.88 5.6 273 28.8 37 8.4 8.4 B
* 13585.88 6.0 284 28.9 36 8.4 8.4 B
* 13586.88 4.9 282 28.9 37 8.4 8.4 B
* 13587.88 4.4 270 28.9 37 8.4 8.4 A
* 13588.88 4.5 247 28.9 37 8.4 8.4 A
* 13589.88 1.9 261 28.9 37 8.4 8.4 A
*****

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*****
* DEPTH  DIP  DIP  DEV  DEV  DIAM  DIAM  Q
*          AZM  AZM  AZM  AZM  1-3  2-4
*****
*
* 1388855.288  0.5  316  288.8  37  88.4  88.5  A
* 1388855.788  4.5  136  288.7  37  88.5  88.4  A
* 1388856.288  2.1  225  288.7  37  88.5  88.4  A
* 1388856.788  3.4  289  288.6  37  88.5  88.4  A
* 1388857.288  1.1  15  288.4  36  88.5  88.4  A
* 1388857.788  5.7  26  288.2  36  88.5  88.4  A
* 1388858.288  20  320  277.9  37  88.5  88.4  A
* 1388859.788  4.5  268  277.8  37  88.5  88.4  A
* 1388860.288  7.1  257  277.7  37  88.5  88.4  A
* 1388861.788  7.1  253  277.7  37  88.5  88.4  A
* 1388862.288  6.3  343  277.7  37  88.5  88.4  A
* 1388863.788  0.6  220  277.7  37  88.5  88.4  A
* 1388864.288  1.1  209  277.7  37  88.5  88.4  A
* 1388865.788  7.7  290  277.7  37  88.5  88.4  A
* 1388866.288  1.1  284  277.7  37  88.5  88.4  A
* 1388867.788  7.2  266  277.6  37  88.5  88.4  A
* 1388868.288  2.2  279  277.6  37  88.5  88.4  A
* 1388869.788  4.4  294  277.6  37  88.5  88.4  A
* 1388870.288  2.2  288  277.6  37  88.5  88.4  A
* 1388871.788  5.5  333  277.6  37  88.5  88.4  A
* 1388872.288  6.3  349  277.6  37  88.5  88.4  A
* 1388873.788  3.3  268  277.6  37  88.5  88.4  A
* 1388874.288  2.2  240  277.7  37  88.5  88.4  A
* 1388875.788  2.2  273  277.8  38  88.5  88.4  A
* 1388876.288  1.1  323  277.8  38  88.5  88.4  A
* 140011.788  1  179  288.2  37  88.3  88.1  A
* 140012.288  2.5  297  288.2  37  88.3  88.1  A
* 140013.788  4.4  252  288.4  37  88.3  88.1  A
* 140014.288  3.7  299  288.4  37  88.3  88.1  A
* 140015.788  4.4  227  288.4  37  88.3  88.1  A
* 140016.288  0.9  256  288.3  37  88.3  88.1  A
* 140017.788  0.6  201  288.2  37  88.3  88.1  A
* 141018.288  1  270  288.4  37  88.3  88.1  A
* 141019.788  1  118  288.5  33  88.3  88.1  A
* 141020.288  9  2  288.5  33  88.3  88.1  A
* 141021.788  5  331  288.4  37  88.3  88.1  A
* 141022.288  7  270  288.4  37  88.3  88.1  A
* 141023.788  9  119  288.4  37  88.3  88.1  A
* 141024.288  1  256  288.4  37  88.3  88.1  A
* 141025.788  3  229  288.4  37  88.3  88.1  A
*****

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q  *
*      AZM  AZM  1-3  2-4  *
*****
* 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  B *
* 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  282  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  B *
* 1447.53  6.1  313  27.2  37  8.4  8.3  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  B *
* 1449.04  21.7  37  27.0  38  8.4  8.5  B *
* 1452.05  5.7  6  27.4  37  8.4  8.4  B *
* 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
*****

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BEACH PETROLEUM

WESTGATE # 1

DEPTH		DIP	DIP	DEV	DEV	DIAM	DIAM	Q
		AZM	AZM	1-3	2-4			
*	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	A
*	1460.08	11.3	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
*	1463.61	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	U
*	1472.63	10.7	248	27.1	37	8.4	8.4	U
*	1473.66	1.7	308	27.0	37	8.4	8.4	U
*	1482.67	31.2	204	27.0	36	8.4	8.4	U
*	1484.68	29.1	217	27.0	37	8.4	8.4	U
*	1485.18	29.1	213	27.0	37	8.4	8.4	U
*	1486.69	25.5	216	26.9	36	8.4	8.4	U
*	1488.20	30.2	213	26.9	37	8.4	8.4	U
*	1493.24	26.1	223	26.9	36	8.4	8.4	U
*	1507.78	26.9	219	26.8	37	8.4	8.4	U
*	1509.79	29.5	218	26.8	37	8.4	8.4	U
*	1511.79	27.0	217	26.8	37	8.4	8.4	U
*	1514.30	28.8	214	26.8	36	8.4	8.4	U
*	1514.81	26.4	215	26.8	36	8.4	8.4	U
*	1515.31	26.3	215	26.8	36	8.4	8.4	U
*	1517.32	25.9	219	26.8	37	8.4	8.4	U
*	1533.89	28.9	214	26.7	37	8.4	8.4	U
*	1534.89	25.2	222	26.7	37	8.4	8.4	U
*	1536.40	6.7	220	26.7	37	8.4	8.4	U
*	1537.40	6.7	262	26.7	37	8.4	8.4	U
*	1538.91	7.7	221	26.7	37	8.4	8.4	U
*	1539.91	5.9	47	26.7	37	8.4	8.4	U
*	1540.92	1.5	98	26.7	37	8.4	8.4	U
*	1541.42	2.3	292	26.7	37	8.4	8.4	U

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q
*   AZM   AZM   1-3  2-4
*****
* 1544.43  8.0  274  26.7  37  8.4  8.4  U
* 1545.43  7.1  304  26.7  37  8.4  8.4  U
* 1545.93  3.5  61  26.7  37  8.4  8.4  U
* 1549.93  4.5  0  26.7  37  8.4  8.4  U
* 1550.93  6.1  270  26.7  37  8.4  8.4  U
* 1553.43  26.1  212  26.7  37  8.4  8.4  U
* 1554.43  17.0  29  26.7  37  8.4  8.4  U
* 1555.43  23.3  212  26.6  37  8.4  8.4  U
* 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  24.3  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  25.3  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  U
* 1562.94  28.2  218  26.6  37  8.4  8.4  U
* 1563.44  24.0  216  26.6  37  8.4  8.4  U
* 1565.44  25.7  217  26.6  37  8.4  8.4  U
* 1565.94  23.3  213  26.6  37  8.4  8.4  U
* 1566.44  24.4  208  26.6  37  8.4  8.4  U
* 1570.44  21.7  212  26.6  37  8.4  8.4  U
* 1574.44  29.8  215  26.6  37  8.4  8.4  U
* 1575.44  29.5  216  26.6  37  8.4  8.4  U
* 1575.94  27.7  216  26.6  37  8.4  8.4  U
* 1577.94  24.9  220  26.6  36  8.4  8.4  U
* 1578.44  23.5  210  26.6  36  8.4  8.4  U
* 1579.94  8.4  8  26.6  36  8.4  8.4  U
* 1581.45  2.8  217  26.6  36  8.4  8.4  U
* 1581.95  26.6  221  26.6  36  8.4  8.4  U
* 1583.45  26.2  215  26.6  36  8.4  8.4  U
* 1583.95  27.8  215  26.6  36  8.4  8.4  U
* 1584.95  30.0  222  26.6  36  8.4  8.4  U
* 1585.45  27.6  219  26.6  36  8.4  8.4  U
* 1585.95  28.0  213  26.6  36  8.4  8.4  U
* 1588.95  26.4  221  26.6  36  8.4  8.4  U
* 1589.45  22.3  223  26.6  36  8.4  8.4  U
*****

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q
*      AZM  AZM  AZM  1-3  2-4
*****
* 1595.95  28.8  217  26.6  36  8.4  8.4  B
* 1596.45  24.9  214  25.6  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  23.5  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  21.3  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  B
* 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  B
* 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  B
* 1639.43  17.0  178  26.6  36  8.4  8.4  B
* 1640.93  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  B
* 1642.98  14.6  209  26.6  36  8.4  8.4  B
* 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  B
* 1646.48  15.3  202  26.6  36  8.4  8.4  B
* 1646.98  16.4  194  26.6  36  8.4  8.4  B
*****

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BEACH PETROLEUM

WESTGATE # 1

PAGE 12-FILE 1

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*****
* DEPTH  DIP  DIP  DEV  DEV  DIAM  DIAM  Q
*        AZM  AZM  AZM  AZM  1-3  2-4
*****
* 1647.48 13.1 184 26.6 36 8.4 8.4 S
* 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
*****
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BEACH PETROLEUM

WESTGATE # 1

SUMMARY

```
*****
* DEPTH *   DIP   DIP   *   DEV   DEV   DIAM   DIAM * QUAL *
*       *     *   AZM *     *   AZM   1-3   2-4 *     *
*****
* 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   *
*****
```


* * * * *
 * * * * *
 * DIP FREQUENCY BY AZIMUTH *
 * 0-10 DEGREE DIPS *
 * * * * *
 * * * * *

<u>PRESENTATION</u>	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 *   DEV   DEV   DIAM   DIAM * QUAL *
*       *     *   AZM *     AZM   1-3   2-4 *   *
*****
* 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

*

* SCHLUMBERGER *

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 DEV DEV DIAM DIAM Q *
* AZM AZM 1-3 2-4 *
*****
* 1649.96 17.3 179 26.6 36 8 3 8.4 B *
* 1650.96 18.0 233 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 A *
* 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 *
* 1660.00 17.2 191 26.6 36 8 3 8.4 A *
* 1660.00 22.5 188 26.6 36 8 3 8.4 A *
* 1661.00 3.5 221 26.6 36 8 3 8.4 A *
* 1661.00 13.3 188 26.6 36 8 3 8.4 A *
* 1661.00 16.6 191 26.6 36 8 3 8.4 A *
* 1662.00 19.3 177 26.6 36 8 3 8.4 B *
* 1663.00 18.5 183 26.6 36 8 3 8.4 B *
* 1664.00 15.7 186 26.6 36 8 3 8.4 B *
* 1664.00 17.6 205 26.6 36 8 3 8.4 A *
* 1665.00 14.5 200 26.6 36 8 3 8.4 A *
* 1665.00 15.8 192 26.6 36 8 3 8.4 A *
* 1666.00 17.8 179 26.6 36 8 3 8.4 A *
* 1666.00 18.3 181 26.6 36 8 3 8.4 A *
* 1667.00 19.0 183 26.6 36 8 3 8.4 A *
* 1667.00 16.6 188 26.6 36 8 3 8.4 B *
* 1668.00 21.8 271 26.6 36 8 3 8.4 B *
* 1668.00 17.2 200 26.6 36 8 3 8.4 A *
* 1669.00 21.4 190 26.6 36 8 3 8.4 A *
* 1669.00 21.3 189 26.6 36 8 3 8.4 A *
* 1670.00 21.8 181 26.6 36 8 3 8.4 B *
* 1670.00 20.6 189 26.6 36 8 3 8.4 B *
* 1671.00 22.3 189 26.6 36 8 3 8.4 A *
* 1672.00 20.5 189 26.6 36 8 3 8.4 B *
* 1672.00 19.2 194 26.6 36 8 3 8.4 A
*****

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*****
* DEPTH DIP DEV DEV DIAM DIAM Q *
* AZM AZM 1-3 2-4 *
*****
* 16733.05 17.2 195 26.5 36 3 3 4 B *
* 16733.56 22.2 200 26.5 36 3 3 4 A *
* 16745.56 24.9 191 26.5 36 3 3 4 A *
* 16755.06 25.0 192 26.5 36 3 3 4 A *
* 16755.56 23.1 193 26.4 36 3 3 4 A *
* 16766.07 20.0 193 26.4 36 3 3 4 A *
* 16766.57 16.8 181 26.4 36 3 3 4 A *
* 16777.07 20.2 193 26.4 36 3 3 4 A *
* 16777.57 23.3 193 26.4 36 3 3 4 A *
* 16788.07 21.5 191 26.4 36 3 3 5 B *
* 16788.58 23.6 186 26.4 36 3 3 5 B *
* 16799.08 23.2 191 26.3 36 3 3 5 B *
* 16799.58 25.9 177 26.3 36 3 3 6 B *
* 16800.08 29.2 198 26.3 36 3 3 6 B *
* 16800.59 26.4 200 26.3 36 3 3 7 B *
* 16811.09 22.4 196 26.2 36 3 3 8 B *
* 16811.59 26.7 181 26.2 36 3 3 9 B *
* 16822.09 25.0 202 26.2 36 3 3 1 B *
* 16822.59 23.6 192 26.1 36 3 3 3 B *
* 16833.60 22.1 210 26.1 36 3 3 6 B *
* 16966.15 19.7 181 27.1 36 3 5 9 B *
* 17001.17 20.0 CORR 27.2 36 3 6 13 B *
* 17222.76 33.8 222 26.0 36 3 3 10 B *
* 17226.28 14.1 214 26.0 36 3 3 10 B *
* 17311.80 20.0 CORR 25.6 36 3 3 11 B *
* 17377.32 46.3 217 25.8 36 3 3 10 B *
* 17400.84 20.0 CORR 25.6 36 3 3 10 B *
* 17411.34 20.3 257 25.6 36 3 3 9 B *
* 17433.95 22.8 293 25.7 36 3 3 9 B *
* 17466.76 22.6 280 25.5 36 3 3 5 B *
* 17477.87 20.3 214 25.4 36 3 3 5 B *
* 17477.87 20.3 218 25.4 36 3 3 6 B *
* 17488.27 33.5 323 25.2 36 3 3 7 B *
* 17499.37 24.1 220 25.1 36 3 3 8 B *
* 17500.38 43.7 256 24.9 36 3 3 8 B *
* 17533.99 13.8 121 24.8 36 3 3 6 B *
* 17533.99 10.6 164 24.8 36 3 3 3 B *
* 17555.00 16.0 214 24.9 36 3 3 8 B *
* 17558.41 11.1 39 24.9 36 3 3 8 B *
* 17589.91 7.9 43 24.9 36 3 3 9 B
*****

```

DEPTH		DIP	DEV	DEV	DIAM	DIAM	Q	
		AZM	AZM	AZM	1-3	2-4		
*	1759.41	21.9	214	24.8	39	8.4	9.4	U
*	1762.42	8.0	162	24.8	38	8.6	9.6	U
*	1765.43	1.4	162	25.1	38	8.4	9.0	U
*	1766.43	18.4	218	25.1	38	8.4	9.0	U
*	1766.93	24.9	223	25.0	38	8.4	9.1	U
*	1767.93	26.5	212	24.9	38	8.4	9.3	U
*	1768.43	26.6	218	24.9	38	8.5	9.4	U
*	1771.43	24.0	213	24.7	38	8.5	9.4	U
*	1777.93	NO CORR		24.7	38	8.5	9.7	U
*	1789.44	NO CORR		24.9	38	8.5	10.0	U
*	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	A
*	1794.44	4.3	66	24.7	39	8.5	9.6	A
*	1794.94	14.6	75	24.7	39	8.5	9.6	A
*	1798.44	1.8	248	24.6	39	8.5	9.8	A
*	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	A
*	1804.45	11.6	218	24.7	39	8.5	9.2	A
*	1804.55	5.7	39	24.6	39	8.5	9.7	A
*	1805.45	7.4	341	24.6	39	8.5	9.1	A
*	1805.55	9.7	240	24.6	39	8.5	9.6	A
*	1811.45	8.8	227	24.6	40	8.4	8.4	A
*	1811.55	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
*	1814.45	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	A
*	1816.95	9.0	239	24.0	39	8.4	8.6	A
*	1819.45	10.0	233	23.8	39	8.5	8.4	A
*	1820.45	6.9	176	23.8	41	8.7	8.9	A
*	1820.95	11.4	180	23.7	41	8.1	9.0	A
*	1823.46	26.7	277	24.2	40	8.5	9.7	U
*	1824.46	4.1	264	24.3	40	8.5	9.9	U
*	1826.46	10.3	220	24.0	40	8.4	9.4	U
*	1828.46	5.3	240	24.0	41	8.5	9.1	U
*	1828.96	4.4	229	23.9	40	8.4	9.1	U
*	1831.96	NO CORR		23.5	41	8.5	9.6	U


```

*****
* DEPTH  DIP  DIP  DEV  DEV  DIAM  DIAM  Q
*      AZM  AZM  AZM  AZM  1-3  2-4
*****
* 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 B
* 1895.49 10.1 237 22.4 39 9.0 8.5 B
* 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 B
* 1904.00 13.9 242 22.4 41 8.9 8.7 B
* 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 B
* 1907.00 12.4 240 22.4 40 8.6 8.6 B
* 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 B
* 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 B
*****
    
```

BEACH PETROLEUM

WESTGATE#1

SUMMARY

```
*****
* DEPTH *   DIP   DIP   *   DEV   DEV   DIAM   DIAM * QUAL *
*       *       AZM   *       AZM   1-3   2-4  *
*****
* 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 *
 * * * * *

<u>PRESENTATION</u>	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					

* * * * *
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 * * * * *
 * * * * *
 * * * * *
 * * * * *

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   *   DEV   DEV   DIAM   DIAM * QUAL *
*       *     *   AZM *     *   AZM   1-3   2-4 *
*****
*
* 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
*
*****
```

END OF LSF - VERSION 007.E05

25-MAR-86 - 22:09:51

*

* SCHLUMBERGER *

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

* *

* SCHLUMBERGER *

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  DEV  DEV  DIAM  DIAM  @
*   AZM    AZM    1-3  2-4
*****
* 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  B
* 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  B
* 1747.46 25.3  211 25.3  31  8.4  8.5  B
* 1748.46 20.5  210 25.5  33  8.4  8.6  B
* 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  37  8.4  8.8  B
* 1758.99 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  B
* 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  B
* 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  B
* 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  B
* 1812.50 0.2  227 24.5  40  8.4  8.1  B
* 1813.00 9.2  217 24.5  39  8.4  8.1  B
* 1813.50 4.9  218 24.5  38  8.4  8.2  B
*****

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*****
* DEPTH  DIP  DEV  DEV  DIAM  DIAM  Q  *
*      AZM  AZM  1-3  2-4  *
*****
* 1815.00  4.1  126  24.4  43  3.4  8.0  A  *
* 1815.50  5.5  215  24.4  52  3.4  8.3  A  *
* 1816.00  5.1  143  24.3  49  3.4  8.3  A  *
* 1816.50  7.1  202  24.2  42  3.4  8.3  A  *
* 1817.00  9.3  222  24.0  32  3.4  8.3  A  *
* 1817.50  11.2  216  23.8  20  3.4  8.6  B  *
* 1818.00  17.4  223  23.7  30  3.4  8.7  B  *
* 1818.50  25.4  218  23.7  37  3.5  9.2  B  *
* 1820.50  4.9  272  23.7  38  3.5  9.0  A  *
* 1824.00  19.1  229  24.1  40  3.5  9.6  B  *
* 1824.50  16.6  253  24.2  40  3.4  10.1  B  *
* 1825.00  6.6  238  24.3  39  3.5  9.6  B  *
* 1825.50  7.9  222  24.2  39  3.4  9.9  B  *
* 1827.00  12.5  229  23.9  40  3.4  9.4  B  *
* 1827.50  27.7  270  24.0  41  3.4  9.0  B  *
* 1829.00  5.4  224  23.9  41  3.4  8.7  B  *
* 1829.51  7.6  221  23.8  40  3.5  9.2  A  *
* 1833.51  8.7  221  23.3  39  3.4  8.9  A  *
* 1839.01  7.3  221  23.4  39  3.4  8.7  A  *
* 1839.51  5.0  359  23.3  40  3.4  8.6  A  *
* 1840.01  10.1  239  23.2  42  3.4  8.6  A  *
* 1840.51  16.1  225  23.1  42  3.5  8.8  A  *
* 1841.01  2.1  333  23.1  41  3.4  8.6  A  *
* 1841.51  10.8  239  23.1  40  3.4  8.7  A  *
* 1842.01  11.2  196  23.0  39  3.4  8.4  A  *
* 1842.51  7.5  210  22.9  34  3.4  8.6  A  *
* 1844.02  16.2  215  22.9  41  3.4  8.6  B  *
* 1844.52  16.7  230  22.9  45  3.5  8.8  A  *
* 1845.02  13.9  241  22.8  48  3.4  8.6  A  *
* 1845.52  9.8  37  22.8  49  3.5  8.8  B  *
* 1846.02  6.1  24  22.6  43  3.5  8.5  B  *
* 1851.02  8.8  245  22.6  42  3.5  8.1  B  *
* 1852.02  14.8  262  22.9  33  3.4  8.0  B  *
* 1853.52  18.4  223  23.0  42  3.4  8.1  B  *
* 1854.52  22.8  213  22.8  34  3.4  8.3  B  *
* 1855.02  21.8  206  22.8  28  3.5  8.7  B  *
* 1856.53  19.1  216  22.6  33  3.6  8.6  A  *
*****

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BEACH PETROLEUM

WESTGATE#1

SUMMARY

```
*****
* DEPTH *   DIP   DIP   *   DEV   DEV   DIAM   DIAM * QUAL *
*       *     *   AZM *     *   AZM   1-3   2-4 *     *
*****
* TOP
* 1737.96   50.3   221.   25.7   40.   8.3   10.4   B
*
* POTOM
* 1856.53   19.1   216.   22.6   33.   8.6   8.6   A
*
*****
```


* * * * *
 *
 * 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   *   DEV   DEV   DIAM   DIAM * QUAL *  
*       *     *     *     *     *     1-3   2-4  *     *  
*****  
* 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

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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			OIL SOURCE POTENTIAL			MATURATION				BIOSTRAT.	AGE	DEPOSITIONAL ENVIRONMENT			
	low	mod.	high v.high	poor	ltd.	fair good	IM	EM	M	LM			OM	terr.	par.	m.mar.	mar.
swc 1754 sst.	*			*				*				n.o.	n.o.			
swc 1832.5 shl.			*		*			*				<u>C. triplex</u>	Tur.			
swc 1848.5 shl.		*			*			*				<u>C. triplex</u>	Tur.			*
swc 1867 slst.	*				*				*			<u>A. distocar.</u>	Cen/Tur			*
swc 1909 slst.	*				*				*			<u>P. pannosus</u>	Alb/Cen	*		
					*				*			<u>P. pannosus</u>	Alb/Cen	*		
	0.8	1.2	2.4	20	60	80	GY	Y	A	Br	Bl					
	(ml OM/10gm) KEROGEN YIELD			% H-RICH KEROGEN			1.8 2.2 2.5 3.0 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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OTWAY BASIN, VICTORIA AND SOUTH AUSTRALIA			
ROCK UNITS	FORAM. ZONULES	AGE	SPORE-POLLEN ZONES
Timboon Sand Member PAARATTE FORMATION		UPPERMOST CRETACEOUS	sediments containing <i>Nothofagidites</i> Microflora
		CAMPANIAN	
Belfast Mudstone Member PAARATTE FORMATION	A	SANTONIAN	<i>Tricolpites pachyexinus</i> Zone
		CONIACIAN	
FLAXMAN FORMATION	B	TURONIAN	<i>Clavifera triplex</i> Zone
		CENOMANIAN	<i>Appendicisporites distocarinus</i> Zone
WAARRE SANDSTONE			<i>Tricolpites pannosus</i> Zone
OTWAY GROUP		ALBIAN	<i>Coptospora paradoxa</i> Zone
		APTIAN	<i>Dictyosporites speciosus</i> Zone
		NEOCOMIAN		Crybelosporites striatus Subzone
			<i>Cyclosporites hughesi</i> Subzone
			<i>Crybelosporites stylosus</i> Zone

FIG. 1. Lithostratigraphic/biostratigraphic relationships in the Cretaceous sequence, Otway Basin (from Dettmann & Playford 1969).

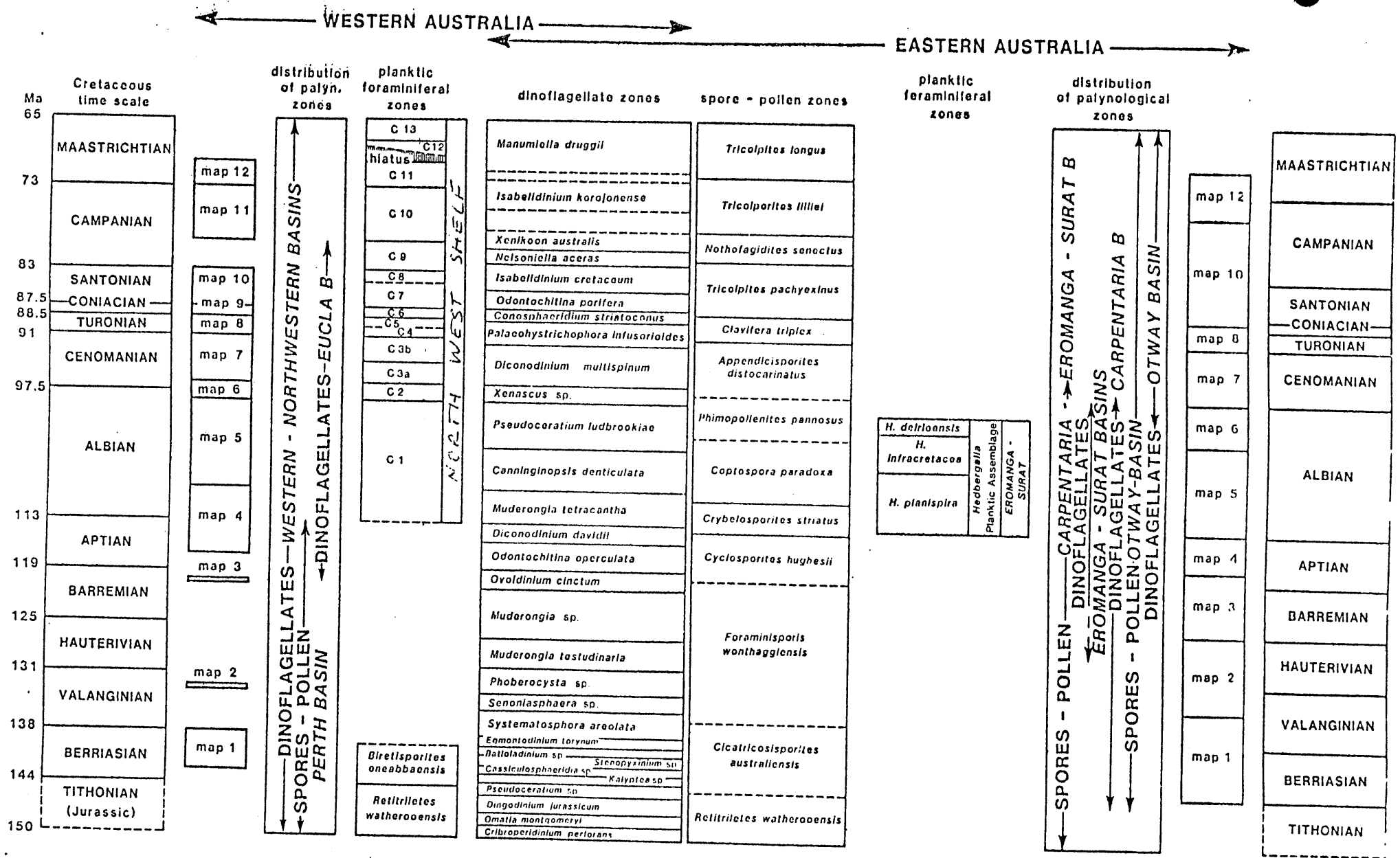


FIG. 2. Biostratigraphic units for the Australian Cretaceous (from Frakes et al. in press)

COMPANY: BEACH PETROLEUM N.L.

Sheet 1 of 3

WELL: WESTGATE No. 1A

BASIN: OTWAY

Sample type	S	S	S	S	S															
Depth (m)	1909	1867	1848.5	1832.5	1754															
Palynomorph																				
CRYPTOGAM MICROSPORES:																				
<i>Trilobosporites trioreticulosus</i>	+			+																
<i>Trilites cf. tuberculiformis</i>	+		+		+															
<i>Stereisporites antiquasporites</i>	+	+	+	+	+															
<i>Stereisporites pocockii</i>	+	+	+																	
<i>Cyathidites australis/minor</i>	+	+	+	+	+															
<i>Baculatisporites comaumensis</i>	+	+	+	+	+															
<i>Triporoletes reticulatus</i>	+	+	+		+															
<i>Foraminisporis wonthaggiensis</i>	+	+	+																	
<i>Foraminisporis asymmetricus</i>	+	+	+																	
<i>Foraminisporis dailyi</i>	+				+															
<i>Retitriletes austroclavatidites</i>	+	+	+																	
<i>Retitriletes nodosus</i>	+		+																	
<i>Retitriletes eminulus</i>	+	+	+	+																
<i>Perinomonoletes sp.</i>	+		+																	
<i>Crybelosporites striatus</i>	+	+																		
<i>Aequitriradites spinulosus</i>	+	+	+																	
<i>Aequitriradites verrucosus</i>	+	+																		
<i>Leptolepidites verrucatus</i>	+	+	+	+																
<i>Cicatricosisporites australiensis</i>	+	+	+	+																
<i>Cicatricosisporites cuneiformis</i>	+			+																
<i>Cicatricosisporites hughesii</i>	+	+	+																	
<i>Cyathidites punctatus</i>	+		+																	
<i>Neoraistrickia truncata</i>	+	+	+																	
<i>Gleicheniidites circinidites</i>	+	+	+	+	+															
<i>Velosporites triquetrus</i>	+																			
<i>Punctatosporites sp.</i>	+			+																
<i>Matonisporites cooksoniae</i>	+																			
<i>Ceratosporites equalis</i>	+	+	+	+																
<i>Dictyophyllidites crenatus</i>	+	+																		
<i>Klukisporites scaberis</i>	+		+	+																
<i>Microfoveolatosporis canaliculatus</i>	+		+	+																
<i>Coptospora paradoxa</i>		+																		
<i>Osmundacidites wellmanii</i>		+																		
<i>Densoisporites velatus</i>		+	+																	

Sample type: S = Sidewall core; C = Conventional core;
D = Cuttings.

COMPANY: BEACH PETROLEUM N.L.

Sheet 2 of 3

WELL: WESTGATE NO.1A

BASIN: OTWAY

Sample type	s	s	s	s	s															
Depth (m)																				
Palynomorph	1909	1867	1848.5	1832.5	1754															
<i>Retitriletes clavatoides</i>		+																		
<i>Laevigatosporites ovatus</i>		+	+	+	+															
<i>Biretisporites cf. potoniaei</i>		+	+	+																
<i>Triporoletes radiatus</i>		+																		
<i>Perotrilites granulatus</i>			+																	
<i>Perotrilites major</i>			+																	
<i>Perotrilites jubatus</i>			+	+																
<i>Concavissimisporites penolaensis</i>			+																	
<i>Stoverisporites microverrucatus</i>			+	+																
<i>Appendicisporites distocarinatus</i>			+	+																
<i>Cicatricosisporites pseudotripartitus</i>			+	+																
<i>Foveogleicheniidites confossus</i>			+	+																
<i>Leptolepidites major</i>			+																	
<i>Retitriletes facetus</i>			+																	
<i>Contignisporites glebulentus</i>			+																	
<i>Camarazonosporites australis</i>				+																
<i>Lycopodiacidites cf. asperus</i>				+																
<i>Laevigatosporites major</i>				+																
<i>Clavifera triplex</i>				+																
<i>Interlobites intraverrucatus</i>				+																
CRYPTOGAM MEGASPORES:																				
<i>Balmeisporites glenelgensis</i>				+	+															
GYMNOSPERMOUS POLLEN:																				
<i>Alisporites grandis</i>	+	+																		
<i>Alisporites similis</i>	+	+	+	+																
<i>Araucariacites australis</i>	+	+	+	+	+															
<i>Classopollis chateauvii</i>	+	+	+	+																
<i>Classopollis sp.</i>	+	+																		
<i>Microcachryidites antarcticus</i>	+	+	+	+	+															
<i>Podocarpidites cf. ellipticus</i>	+	+	+	+	+															
<i>Trisaccites microsaccatus</i>	+	+	+	+																
<i>Vitreisporites pallidus</i>	+		+																	
<i>Cycadopites nitidus</i>			+	+																
<i>Hoegisporis sp.</i>				+																
<i>Phyllocladidites mawsonii</i>				+																

Sample type: S = Sidewall core; C = Conventional core;
D = Cuttings.

COMPANY: BEACH PETROLEUM N.L.

Sheet 3 of 3

WELL: WESTGATE NO.1A

BASIN: OTWAY

Sample type	s	s	s	s	s															
Depth (m)																				
Palynomorph	1909	1867	1848.5	1832.5	1754															
ANGIOSPERMOUS POLLEN:																				
Phimopollenites pannosus	+	+	+		+															
Tricolpites sp.	+	+																		
Cupuliferoidipollenites 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			+																	
Interadisporea 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.				Woody tissue	Humic		Vitr.		Inertinite	Spore Colour	T.A.I. (after Staplin 1982)	Interpreted Maturity Level
				Dispersed	Dense	Algal cysts	Fine (<10µm)	Spores	Leaf tissue	Other		<20µm	>20µm	<20µm	>20µm				
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 \bar{R}_I	-	-	-	- No fluorescing exinite. (Iron oxides>>sandstone. Origin of iron oxides uncertain, many of the fragments ?I have an oolite structure and could be oxidized oolites or an artefact. ?Dom rare, ?I only. Exinite and vitrinite absent.)
x4847	1759 SWC 18 \bar{R}_I	-	-	-	- No fluorescing exinite. (Iron oxides>>sandstone. Origin of iron oxides uncertain, many of the fragments ?I 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 \bar{R}_I	0.54	0.50-0.61	23	Sparse liptodetrinite, yellow to orange, rare sporinite, yellow to orange, rare ?phytoplankton, bright yellow.
		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 \bar{R}_I	0.65	0.57-0.71	5	Rare cutinite, dull orange, rare liptodetrinite, yellow, rare sporinite, yellow, rare suberinite, brown.
		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 \bar{R}_I	-	-	-	- Rare sporinite, yellow, rare liptodetrinite, yellow to orange. (Claystone. Dom rare, I>E. Inertinite and exinite rare, vitrinite absent. Pyrite sparse.)

VITRINITE REFLECTANCE WORKSHEET

W. NAME Mistake 1A

S. LE NO. X4845

DEPTH 881.5m

TYPE SWC 30

FGV = First Generation Vitrinite - I = Inertinite

Member Mudstone

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
20.1	0
Vitrinite	Inertinite
0.8	0.2

VITRINITE REFLECTANCE WORKSHEET

WE NAME Westgate 1A

SAMPLE NO. Y4847

DEPTH 1759m

TYPE SWC18

FGV = First Generation Vitrinite - I = Inertinite

Flaxmans Fm.

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				1.84							
.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
○	○
Vitrinite	Inertinite
○	? < 0.1

VITRINITE REFLECTANCE WORKSHEET

WELL NAME Westgate 1A

SAMPLE NO. X4846

DEPTH 1744m

TYPE SWC 24

FGV = First Generation Vitrinite - I = Inertinite

Flaxmans Fm.

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
○	○
Vitrinite	Inertinite
○	? < 0.1

VITRINITE REFLECTANCE WORKSHEET

NAME WESTGATE-1A

SAMPLE NO. X4848

DEPTH 1832 m

TYPE SWCS

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				Vitrinite		Inertinite	
.43	1			.79				1.15				1.51				1.87				1.0		2.0	
.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

VITRINITE REFLECTANCE WORKSHEET

NAME Westgate 1A

SAMPLE NO. X 4849

DEPTH 1857.5 m

TYPE SwCS

FGV = First Generation Vitrinite - I = Inertinite

Waare Fm.

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	I			I
.17				.53				.89				1.25				1.61				1.97				
.18				.54				.90				1.26	2		I	1.62				1.98	I			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	/	↓		.97				1.33				1.69								
.26				.62				.98				1.34				1.70	I		T					
.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	I		I	1.74								
.31				.67				1.03				1.39				1.75								
.32				.68				1.04				1.40	I		I	1.76								
.33				.69				1.05				1.41				1.77								
.34				.70				1.06	I		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	I		I	1.48				1.84								
.41				.77				1.13				1.49				1.85								
.42				.78				1.14	I		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

VITRINITE REFLECTANCE WORKSHEET

NAME Westgate - 1A

SAMPLE NO. X 4850

DEPTH. 186 m

TYPE SWC 3

FGV = First Generation Vitrinite - I = Inertinite

Eumeralla Fm.

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								
.11				.47				.83				1.19				1.55				1.90				
.12				.48				.84				1.20	I		T	1.56				1.91				
.13				.49				.85				1.21				1.57				1.92				
.14				.50				.86				1.22				1.58				1.93				
.15				.51				.87				1.23				1.59				1.94				
.16				.52				.88				1.24				1.60				1.95				
.17				.53				.89				1.25				1.61				1.96				
.18				.54				.90				1.26	I		I	1.62				1.97				
.19				.55				.91				1.27				1.63				1.98				
.20				.56				.92				1.28				1.64				1.99				
.21				.57	I	↑		.93				1.29				1.65				2.00				
.22				.58				.94				1.30				1.66								
.23				.59				.95				1.31				1.67								
.24				.60				.96	I		I	1.32				1.68								
.25				.61				.97				1.33				1.69								
.26				.62				.98	I		I	1.34				1.70								
.27				.63	I			.99				1.35				1.71								
.28				.64				1.00				1.36				1.72								
.29				.65	I			1.01				1.37				1.73								
.30				.66				1.02				1.38				1.74								
.31				.67	I		FGU	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	I	↓		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	I		I	1.46				1.82								
.39				.75				1.11				1.47				1.83								
.40				.76				1.12	I		I	1.48				1.84	I		I	201			0	
.41				.77				1.13				1.49				1.85								
.42				.78				1.14				1.50				1.86				Vitrinite			Inertinite	
.43				.79				1.15				1.51				1.87								
.44				.80				1.16				1.52				1.88								
.45				.81				1.17				1.53				1.89				201				0.2

Organic matter Comp. (%)	
Exinite	Alginite
201	0
Vitrinite	Inertinite
201	0.2

VITRINITE REFLECTANCE WORKSHEET

NAME Westgate 1A

SAMPLE NO. X 4851

DEPTH 1874 m

TYPE SWC 2

FGV = First Generation Vitrinite - I = Inertinite

Emeralla Fm.

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								
.11				.47				.83				1.19				1.55				1.90				
.12				.48				.84				1.20	1		I	1.56				1.91				
.13				.49				.85				1.21				1.57	1		I	1.92				
.14				.50				.86				1.22				1.58				1.93				
.15				.51				.87				1.23				1.59				1.94				
.16				.52				.88				1.24				1.60				1.95				
.17				.53				.89				1.25				1.61				1.96				
.18				.54				.90				1.26				1.62				1.97				
.19				.55				.91				1.27				1.63				1.98				
.20				.56				.92				1.28				1.64				1.99				
.21				.57				.93				1.29				1.65				2.00				
.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		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
61	0
Vitrinite	Inertinite
0	601

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
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

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

for Dr William G. Spencer
General Manager
Applied Sciences Group

cap

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Townsville
Queensland 4814
Telephone (077) 75 1377

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 Names:

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 $-2 \mu\text{m}$ e.s.d. size fractions 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 ($\approx 130^\circ\text{C}$) 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 $-2 \mu\text{m}$ 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 $-2 \mu\text{m}$ fraction, listing the minerals found, in approximate order of decreasing abundance, using the semiquantitative 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	
-2 μ m 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%.

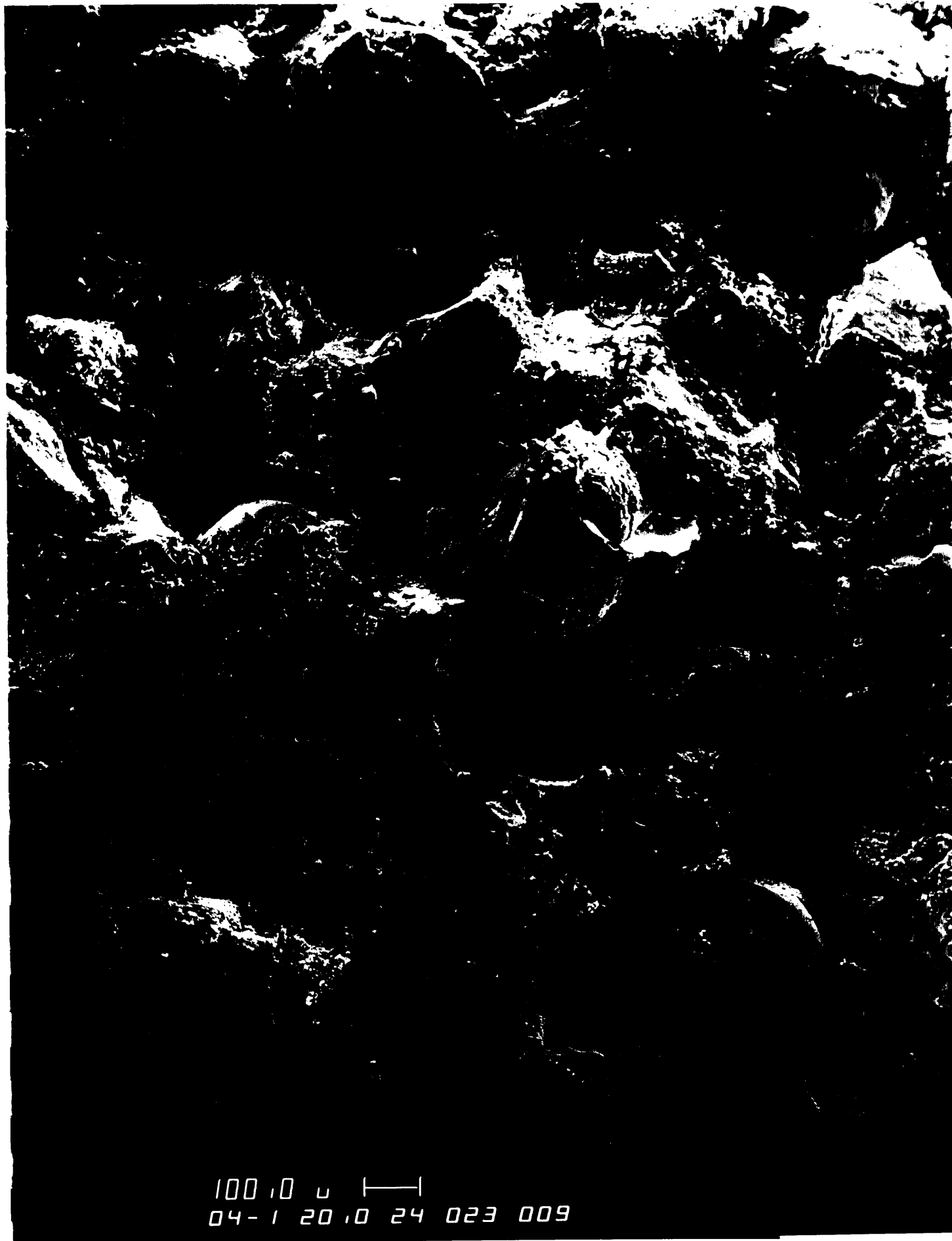
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The enclosure PE907627 is enclosed within the
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The enclosure PE907627 has the following characteristics:

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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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04-1 20 10 24 023 009

DEPT. NAT. RES & ENV



PE907627

PE907628

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container PE902238 at this location in this
document.

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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 =
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- DATE_RECEIVED = 3/02/87
 - W_NO = W929
 - WELL_NAME = Westgate-1A
- CONTRACTOR =
- CLIENT_OP_CO = Beach Petroleum NL

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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

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PE907629

PE907630

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- CONTAINER_BARCODE = PE902238
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 - SUBTYPE = CORE_PHOTO
- DESCRIPTION = SEM Core Photograph, Plate 4 (enclosure
from WCR appendix 9--Petrology) for
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- REMARKS =
- DATE_CREATED =
- DATE_RECEIVED = 3/02/87
 - W_NO = W929
 - WELL_NAME = Westgate-1A
- CONTRACTOR =
- CLIENT_OP_CO = Beach Petroleum NL

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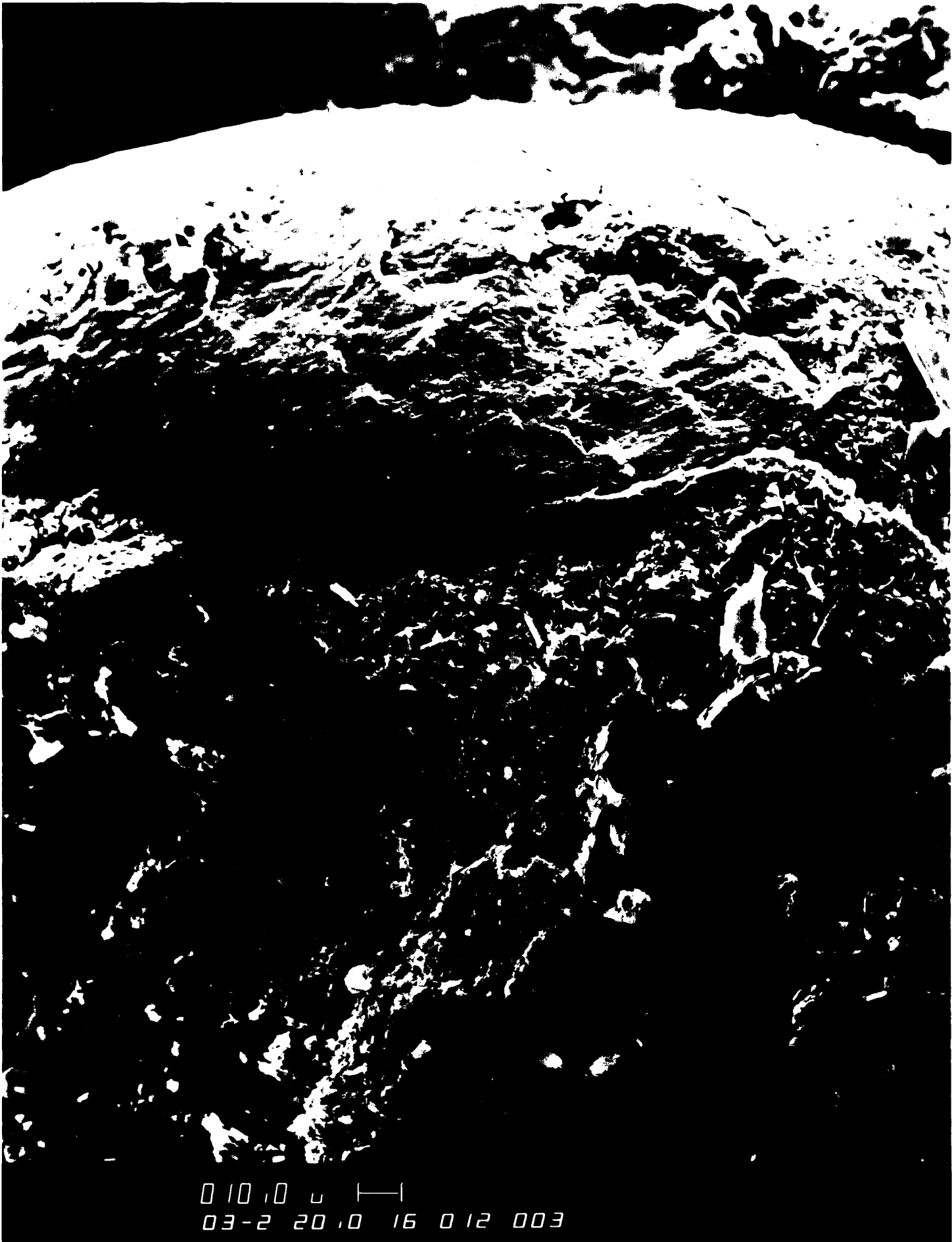
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- PERMIT = PEP 108
- TYPE = WELL
- SUBTYPE = CORE_PHOTO
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Westgate-1A
- REMARKS =
- DATE_CREATED =
- DATE_RECEIVED = 3/02/87
- W_NO = W929
- WELL_NAME = Westgate-1A
- CONTRACTOR =
- CLIENT_OP_CO = Beach Petroleum NL

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PE907631

PE907632

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- BASIN = OTWAY
- PERMIT = PEP 108
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Westgate-1A
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- DATE_CREATED =
- DATE_RECEIVED = 3/02/87
- W_NO = W929
- WELL_NAME = Westgate-1A
- CONTRACTOR =
- CLIENT_OP_CO = Beach Petroleum NL

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DEPT. NAT. RES & ENV



PE907632

PE907633

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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

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PE907633

PE907634

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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)



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DEPT. NAT. RES & ENV



PE907634

PLATE 8

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This zone contains
poorly crystalline
occurs downward

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PE907635

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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

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07-1 20 10 19 0 10 000

DEPT. NAT. RES & ENV



PE907635

145
The rock surface shows a complex, irregular texture, likely representing mineral overgrowths and weathered rock. The image is dominated by dark, shadowed areas and bright, reflective highlights, creating a highly detailed and somewhat abstract appearance. The scale bar indicates a length of 100 units, and the date stamp reads 07-1 20 10 19 0 10 000.

PE907636

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BASIN = OTWAY
PERMIT = PEP 108
TYPE = WELL
SUBTYPE = CORE_PHOTO
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(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

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PE907636

PE907637

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 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

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 PERMIT = PEP 108
 TYPE = WELL
 SUBTYPE = CORE_PHOTO
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 (Figure 2a & 2b from WCR appendix
 9--Petrology) for Westgate-1A
REMARKS =
DATE_CREATED =
DATE_RECEIVED = 3/02/87
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 WELL_NAME = Westgate-1A
CONTRACTOR =
CLIENT_OP_CO = Beach Petroleum NL

(Inserted by DNRE - Vic Govt Mines Dept)

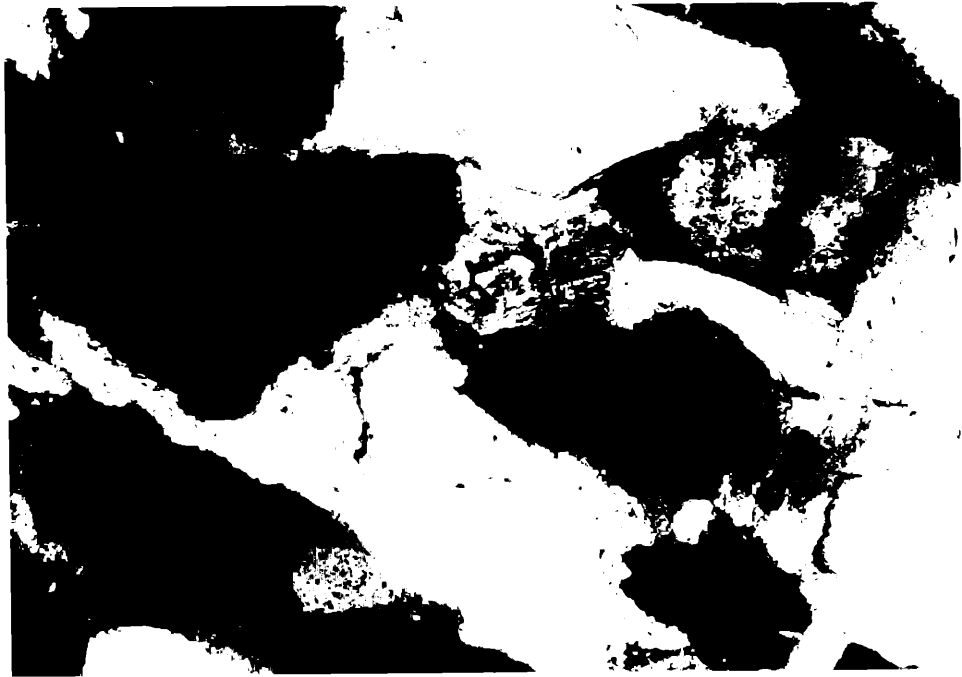


Figure 1. Scanning electron micrograph (SEM) of a porous, irregular structure, likely a biological or geological specimen. The image shows a complex, interconnected network of fibers or cells, with a highly porous and irregular morphology. The structure is composed of numerous small, interconnected units, creating a highly porous and irregular morphology. The image shows a complex, interconnected network of fibers or cells, with a highly porous and irregular morphology. The structure is composed of numerous small, interconnected units, creating a highly porous and irregular morphology. The image shows a complex, interconnected network of fibers or cells, with a highly porous and irregular morphology. The structure is composed of numerous small, interconnected units, creating a highly porous and irregular morphology.



PE907626

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The enclosure PE907626 is enclosed within the
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The enclosure PE907626 has the following characteristics:

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- CONTAINER_BARCODE = PE902238
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- 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

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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

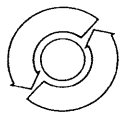
Investigation and Report by: David Fawcett, Nick Smith

Manager-Petroleum Services Section: Dr Brian G. Steveson

for Dr William G. Spencer
General Manager
Applied Sciences Group

cap

Head Office:
Flemington Street, Frewville
South Australia 5063
Telephone (08) 79 1662
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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



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WATER ANALYSIS REPORT

METHOD W2/1

SAMPLE ID. NO.1

CHEMICAL COMPOSITION				DERIVED DATA	
		MG/L	ME/L		MG/L
CATIONS					
CALCIUM	(CA)	20.0	1.00	TOTAL DISSOLVED SOLIDS	
MAGNESIUM	(MG)	6.20	0.510	A. BASED ON E.C.	422
SODIUM	(NA)	95.0	4.13	B. CALCULATED (HCO3=CO3)	390
POTASSIUM	(K)	27.0	0.690		
ANIONS					
HYDROXIDE	(OH)			TOTAL HARDNESS	75.5
CARBONATE	(CO3)			CARBONATE HARDNESS	75.5
BICARBONATE	(HCO3)	106	1.73	NON-CARBONATE HARDNESS	
SULPHATE	(SO4)	15.0	0.312	TOTAL ALKALINITY	86.8
				(EACH AS CaCO3)	
CHLORIDE	(CL)	172	4.86	TOTALS AND BALANCE	

NITRATE	(NO3)	2.3	0.037	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)	
REACTION - PH			7.7		
CONDUCTIVITY (E.C.)					
MICRO-S/CM AT 25 C			760		
RESISTIVITY OHM.M @ 25C			13.2		
				NOTE: MG/L = MILLIGRAMS PER LITRE	
				ME/L = MILLIEQUIVS. PER LITRE	

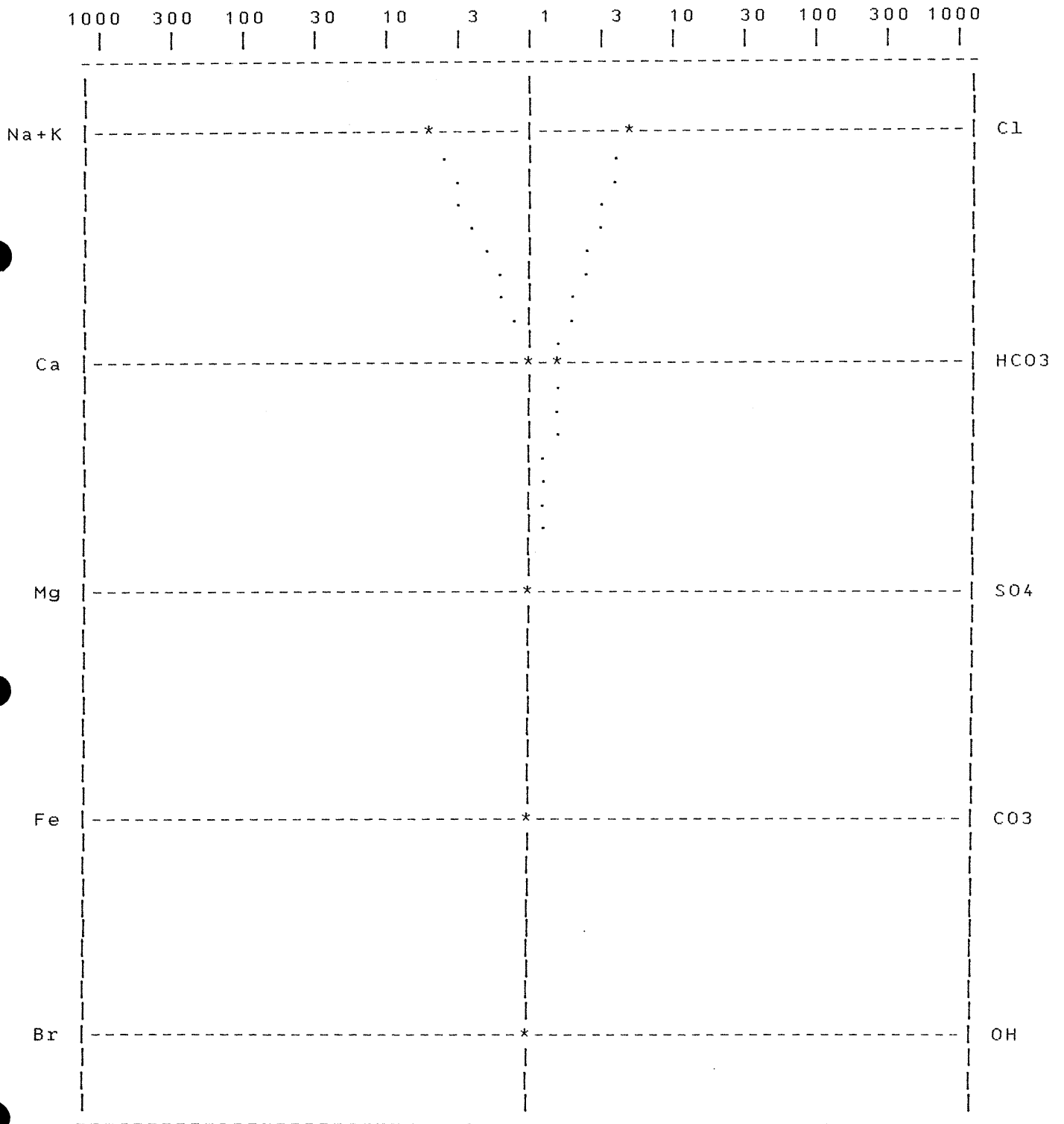


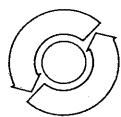
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STIFF DIAGRAM.

Sample: NO.1

Scale is logarithm (base 10) of milli-equivalent values





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WATER ANALYSIS REPORT

METHOD W2/1

SAMPLE ID. NO. 2

CHEMICAL COMPOSITION

DERIVED DATA

		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

DERIVED DATA		MG/L
TOTAL DISSOLVED SOLIDS		
A. BASED ON E.C.		496
B. CALCULATED (HCO3=CO3)		468
TOTAL HARDNESS		
CARBONATE HARDNESS		140
NON-CARBONATE HARDNESS		140
TOTAL ALKALINITY		
(EACH AS CACO3)		158

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

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

REACTION - PH	8.0
CONDUCTIVITY (E.C.)	
MICRO-S/CM AT 25 C	890
RESISTIVITY OHM.M @ 25C	11.2

NOTE: MG/L = MILLIGRAMS PER LITRE
ME/L = MILLIEQUIVS. PER LITRE



amdel

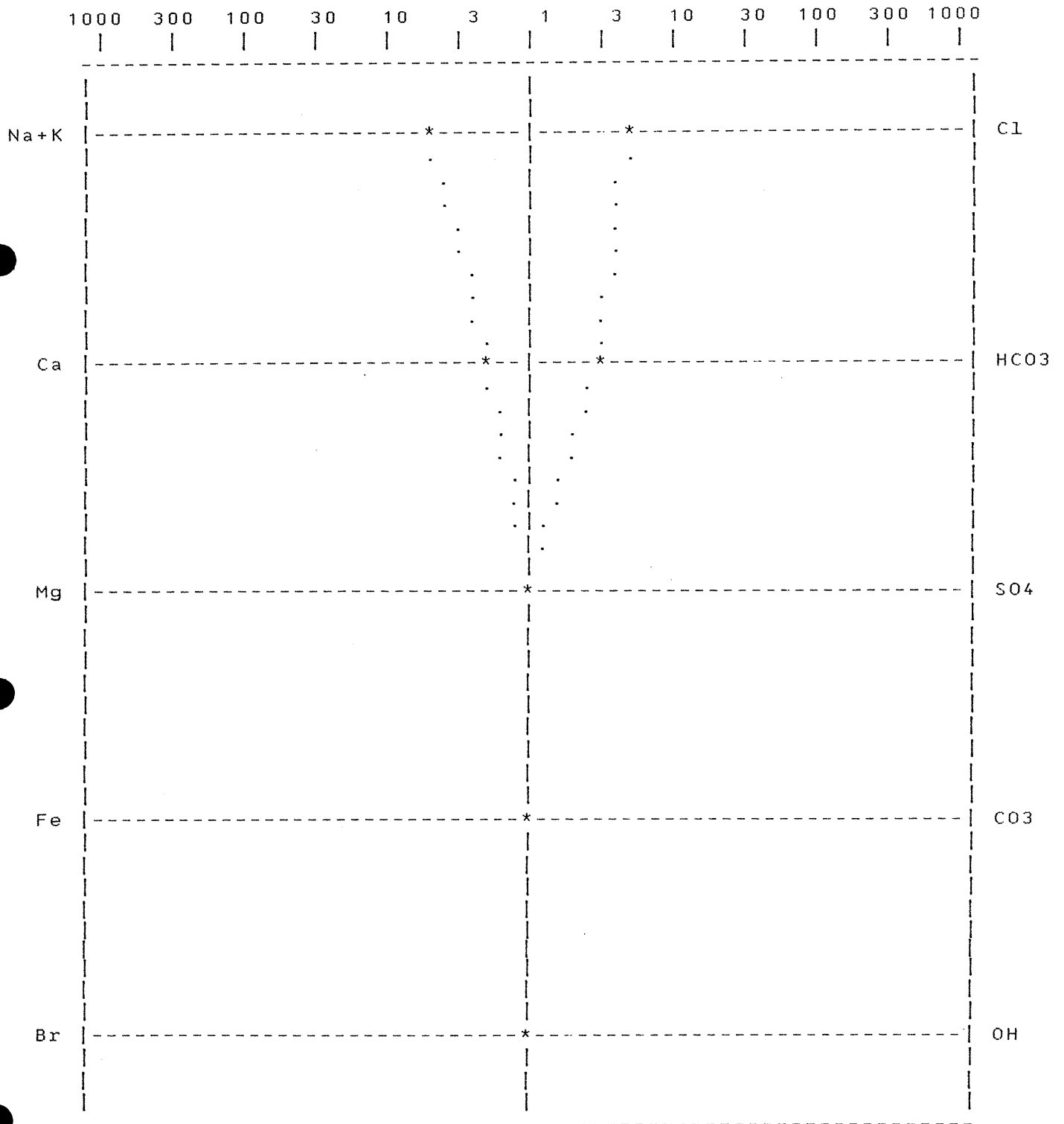
STIFF DIAGRAM.

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

MEASUREMENT	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
				+ NORTH * + EAST * - SOUTH * - WEST *	
0.0	0.0	0	0.0	0.0	0.0
1.2	0.0	0	1.2	0.0	0.0
3.0	0.0	0	3.0	0.0	0.0
4.1	0.0	0	4.1	0.0	0.0
5.0	0.0	0	5.0	0.0	0.0
6.1	0.0	0	6.1	0.0	0.0
7.0	0.0	0	7.0	0.0	0.0
8.1	0.0	0	8.1	0.0	0.0
9.0	0.0	0	9.0	0.0	0.0
10.0	0.0	0	10.0	0.0	0.0
11.0	0.0	0	11.0	0.0	0.0
12.0	0.0	0	12.0	0.0	0.0
13.0	0.0	0	13.0	0.0	0.0
14.0	0.0	0	14.0	0.0	0.0
15.0	0.0	0	15.0	0.0	0.0
16.0	0.0	0	16.0	0.0	0.0
17.0	0.0	0	17.0	0.0	0.0
18.0	0.0	0	18.0	0.0	0.0
19.0	0.0	0	19.0	0.0	0.0
20.0	0.0	0	20.0	0.1	0.1
21.0	0.0	0	21.0	0.1	0.1
22.0	0.0	0	22.0	0.1	0.1
23.0	0.0	0	23.0	0.1	0.1
24.0	0.0	0	24.0	0.1	0.1
25.0	0.0	0	25.0	0.1	0.1
26.0	0.0	0	26.0	0.1	0.1
27.0	0.0	0	27.0	0.1	0.1
28.0	0.0	0	28.0	0.1	0.1
29.0	0.0	0	29.0	0.1	0.1
30.0	0.0	1	30.0	0.1	0.1
31.0	0.0	1	31.0	0.1	0.1
32.0	0.0	2	32.0	0.1	0.1
33.0	0.0	2	33.0	0.2	0.2
34.0	0.0	3	34.0	0.2	0.2
35.0	0.0	3	35.0	0.2	0.2
36.0	0.0	4	36.0	0.2	0.2
37.0	0.0	4	37.0	0.2	0.2
38.0	0.0	5	38.0	0.2	0.2
39.0	0.0	5	39.0	0.2	0.2
40.0	0.0	6	40.0	0.2	0.2
41.0	0.0	7	41.0	0.2	0.2
42.0	0.0	7	42.0	0.2	0.2
43.0	0.0	8	43.0	0.2	0.2
44.0	0.0	9	44.0	0.2	0.2
45.0	0.0	9	45.0	0.3	0.3
46.0	0.0	10	46.0	0.3	0.3

MEAN DEPTH		DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH	CO-ORDINATES		COURSE LENGTH
M				M	+ NORTH - SOUTH	+ EAST - WEST	M
47.00	*	00.5	10	47.00	0.3	0.0	0.3
48.00	*	00.5	11	48.00	0.3	0.0	0.3
49.00	*	00.5	11	49.00	0.3	0.0	0.3
50.00	*	00.5	12	50.00	0.3	0.0	0.3
51.00	*	00.5	13	51.00	0.3	0.0	0.3
52.00	*	00.5	13	52.00	0.3	0.0	0.3
53.00	*	00.5	14	53.00	0.3	0.0	0.3
54.00	*	00.5	14	54.00	0.3	0.0	0.3
55.00	*	00.5	15	55.00	0.3	0.0	0.3
56.00	*	00.5	15	56.00	0.4	0.0	0.4
57.00	*	00.5	16	57.00	0.4	0.0	0.4
58.00	*	00.5	17	58.00	0.4	0.0	0.4
59.00	*	00.5	17	59.00	0.4	0.0	0.4
60.00	*	00.5	18	60.00	0.4	0.0	0.4
61.00	*	00.5	18	61.00	0.4	0.0	0.4
62.00	*	00.5	19	62.00	0.4	0.0	0.4
63.00	*	00.5	19	63.00	0.4	0.0	0.4
64.00	*	00.5	20	64.00	0.4	0.0	0.4
65.00	*	00.5	21	65.00	0.4	0.1	0.4
66.00	*	00.5	21	66.00	0.4	0.1	0.4
67.00	*	00.5	22	67.00	0.4	0.1	0.4
68.00	*	00.5	22	68.00	0.5	0.1	0.5
69.00	*	00.5	23	69.00	0.5	0.1	0.5
70.00	*	00.5	23	70.00	0.5	0.1	0.5
71.00	*	00.5	24	71.00	0.5	0.1	0.5
72.00	*	00.5	25	72.00	0.5	0.1	0.5
73.00	*	00.5	25	73.00	0.5	0.1	0.5
74.00	*	00.5	26	74.00	0.5	0.1	0.5
75.00	*	00.5	26	75.00	0.5	0.1	0.5
76.00	*	00.5	27	76.00	0.5	0.1	0.5
77.00	*	00.5	27	77.00	0.5	0.1	0.5
78.00	*	00.5	28	78.00	0.5	0.1	0.5
79.00	*	00.5	29	79.00	0.5	0.1	0.5
80.00	*	00.5	29	80.00	0.5	0.1	0.6
81.00	*	00.5	30	81.00	0.6	0.1	0.6
82.00	*	00.5	30	82.00	0.6	0.1	0.6
83.00	*	00.5	31	83.00	0.6	0.1	0.6
84.00	*	00.5	31	84.00	0.6	0.1	0.6
85.00	*	00.5	32	85.00	0.6	0.1	0.6
86.00	*	00.5	33	86.00	0.6	0.1	0.6
87.00	*	00.5	33	87.00	0.6	0.1	0.6
88.00	*	00.5	34	88.00	0.6	0.1	0.6
89.00	*	00.5	34	89.00	0.6	0.1	0.6
90.00	*	00.5	35	90.00	0.6	0.2	0.6
91.00	*	00.5	35	91.00	0.6	0.2	0.6
92.00	*	00.5	36	92.00	0.6	0.2	0.7
93.00	*	00.5	36	93.00	0.6	0.2	0.7

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH * + EAST * - SOUTH * - 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	0.8
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 * 0.3	0.9
125.0	0.5	54	125.0	0.8 * 0.3	0.9
126.0	0.8	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	0.9	53	129.0	0.9 * 0.4	1.1
130.0	0.9	52	130.0	0.9 * 0.4	1.1
131.0	0.9	52	131.0	0.9 * 0.4	1.1
132.0	0.9	51	132.0	0.9 * 0.4	1.1
133.0	0.6	50	133.0	0.9 * 0.5	1.1
134.0	0.8	50	134.0	0.9 * 0.5	1.1
135.0	0.9	49	135.0	0.9 * 0.5	1.1
136.0	1.1	48	136.0	1.0 * 0.5	1.1
137.0	1.1	48	137.0	1.0 * 0.5	1.1
138.0	1.3	47	138.0	1.0 * 0.6	1.2
139.0	1.5	47	139.0	1.0 * 0.6	1.2
140.0	2.0	46	140.0	1.1 * 0.6	1.2

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE CO-ORDINATES		COURSE LENGTH M	
			VERTICAL DEPTH M	+ NORTH - SOUTH		+ EAST - WEST
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	1.8
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	1.3	2.2
156.0	5.1	37	156.0	1.8	1.4	2.3
157.0	5.2	36	157.0	1.9	1.4	2.4
158.0	5.4	36	158.0	2.0	1.5	2.5
159.0	5.6	35	159.0	2.1	1.5	2.6
160.0	5.9	35	160.0	2.2	1.6	2.7
161.0	6.0	34	161.0	2.3	1.6	2.8
162.0	6.2	33	162.0	2.4	1.7	2.9
163.0	6.4	33	163.0	2.5	1.7	3.0
164.0	6.6	32	164.0	2.5	1.8	3.1
165.0	6.7	32	165.0	2.6	1.9	3.2
166.0	6.9	31	166.0	2.7	1.9	3.3
167.0	7.1	31	167.0	2.8	2.0	3.4
168.0	7.3	30	168.0	2.9	2.0	3.5
169.0	7.5	30	169.0	3.0	2.1	3.6
170.0	7.7	29	170.0	3.1	2.2	3.7
171.0	7.9	29	171.0	3.2	2.2	3.8
172.0	8.1	28	172.0	3.3	2.3	3.9
173.0	8.3	28	173.0	3.4	2.3	4.0
174.0	8.5	27	174.0	3.5	2.4	4.1
175.0	8.7	27	175.0	3.6	2.5	4.2
176.0	8.9	27	176.0	3.7	2.6	4.3
177.0	9.1	26	177.0	3.8	2.6	4.4
178.0	9.3	26	178.0	4.0	2.7	4.5
179.0	9.5	26	179.0	4.1	2.8	4.6
180.0	9.7	26	180.0	4.2	2.8	4.7
181.0	9.9	26	181.0	4.4	2.9	4.8
182.0	10.1	26	182.0	4.5	2.9	4.9
183.0	10.3	26	183.0	4.7	3.0	5.0
184.0	10.5	26	184.0	4.8	3.1	5.1
185.0	10.7	26	185.0	5.0	3.2	5.2
186.0	10.9	26	186.0	5.1	3.2	5.3
187.0	11.1	26	187.0	5.3	3.3	5.4

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH	+ EAST	
				- SOUTH	- WEST	
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	196.6	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	28	211.1	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	222.1	12.0	6.6	13.7
224.0	14.5	28	223.3	12.2	6.8	14.0
225.0	14.6	28	224.8	12.4	6.9	14.2
226.0	14.7	28	225.8	12.6	7.0	14.4
227.0	14.8	28	225.5	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	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
				+ NORTH * + EAST * - SOUTH * - WEST *	
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	248.8	18.6 * 10.3 *	21.2 *
252.0	16.7	29	249.9	18.8 * 10.4 *	21.5 *
253.0	16.8	29	250.0	19.1 * 10.6 *	21.8 *
254.0	16.8	29	251.1	19.3 * 10.7 *	22.1 *
255.0	16.9	29	252.2	19.6 * 10.8 *	22.4 *
256.0	17.0	29	253.3	19.8 * 11.0 *	22.7 *
257.0	17.0	30	254.4	20.1 * 11.1 *	23.0 *
258.0	17.1	30	255.5	20.4 * 11.3 *	23.3 *
259.0	17.1	30	256.6	20.6 * 11.4 *	23.6 *
260.0	17.2	30	257.7	20.9 * 11.6 *	23.9 *
261.0	17.2	30	258.8	21.1 * 11.7 *	24.1 *
262.0	17.3	30	259.9	21.4 * 11.9 *	24.4 *
263.0	17.3	30	260.0	21.6 * 12.0 *	24.7 *
264.0	17.4	30	261.1	21.9 * 12.1 *	25.0 *
265.0	17.4	30	262.2	22.2 * 12.3 *	25.3 *
266.0	17.5	30	263.3	22.4 * 12.4 *	25.6 *
267.0	17.6	30	264.4	22.7 * 12.6 *	25.9 *
268.0	17.6	30	265.5	22.9 * 12.7 *	26.2 *
269.0	17.7	30	266.6	23.2 * 12.9 *	26.5 *
270.0	17.7	30	267.7	23.5 * 13.0 *	26.8 *
271.0	17.8	30	268.8	23.7 * 13.2 *	27.1 *
272.0	17.8	30	269.9	24.0 * 13.3 *	27.4 *
273.0	17.9	30	270.0	24.2 * 13.5 *	27.7 *
274.0	17.9	30	271.1	24.5 * 13.6 *	28.1 *
275.0	18.0	30	272.2	24.8 * 13.8 *	28.4 *
276.0	18.0	30	273.3	25.0 * 14.0 *	28.7 *
277.0	18.1	30	274.4	25.3 * 14.1 *	29.0 *
278.0	18.2	30	275.5	25.6 * 14.3 *	29.3 *
279.0	18.3	30	276.6	25.9 * 14.4 *	29.6 *
280.0	18.4	30	277.7	26.1 * 14.6 *	29.9 *
281.0	18.5	30	278.8	26.4 * 14.7 *	30.2 *

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ EAST - WEST	COURSE LENGTH M
282.0	13.6	30	278.4	26.7	14.9	30.5
283.0	13.6	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	19.3	30	286.9	29.2	16.3	33.4
292.0	19.4	30	288.8	29.8	16.7	33.8
293.0	19.5	30	289.8	30.0	16.8	34.1
294.0	19.6	30	290.7	30.3	17.0	34.4
295.0	19.7	30	291.6	30.6	17.2	34.8
296.0	19.8	30	292.5	30.9	17.3	35.1
297.0	19.8	30	293.5	31.2	17.5	35.4
298.0	19.9	30	294.5	31.5	17.7	35.8
299.0	20.0	30	295.4	31.8	17.8	36.1
300.0	20.1	30	296.4	32.1	18.0	36.4
301.0	20.2	30	297.3	32.4	18.2	36.8
302.0	20.3	30	298.3	32.7	18.3	37.1
303.0	20.3	30	299.2	33.0	18.5	37.5
304.0	20.3	30	300.1	33.3	18.7	37.8
305.0	20.4	30	301.1	33.6	18.8	38.2
306.0	20.5	30	302.0	33.9	19.0	38.5
307.0	20.6	30	303.0	34.2	19.2	38.9
308.0	20.7	30	304.0	34.5	19.4	39.2
309.0	20.8	30	305.0	34.8	19.5	39.5
310.0	20.9	30	306.0	35.1	19.7	39.9
311.0	20.9	30	307.0	35.4	19.9	40.3
312.0	21.0	30	308.0	35.7	20.1	40.6
313.0	21.1	30	309.0	36.0	20.2	41.0
314.0	21.1	30	310.0	36.3	20.4	41.3
315.0	21.2	30	311.0	36.7	20.6	41.7
316.0	21.3	30	312.0	37.0	20.8	42.0
317.0	21.4	30	313.0	37.3	20.9	42.4
318.0	21.5	30	314.0	37.6	21.1	42.8
319.0	21.5	30	315.0	37.9	21.3	43.1
320.0	21.6	30	316.0	38.2	21.5	43.5
321.0	21.7	30	317.0	38.6	21.7	43.9
322.0	21.8	30	318.0	38.9	21.9	44.2
323.0	21.9	30	319.0	39.2	22.2	44.6
324.0	22.0	30	320.0	39.5	22.4	45.0
325.0	22.1	30	321.0	39.8	22.6	45.3
326.0	22.2	30	322.0	40.2	22.8	45.7
327.0	22.2	30	323.0	40.5	23.0	46.1
328.0	22.2	30	324.0	40.8	23.2	46.5

MEAS. DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH	CO-ORDINATES		COURSE LENGTH
M			M	+ NORTH - SOUTH	+ EAST - WEST	M
329.0	22.3	000000	329.5	40.8	23.0	46.8
330.0	22.4	000000	330.4	41.2	23.1	47.2
331.0	22.4	000000	331.4	41.5	23.3	47.6
332.0	22.5	000000	332.4	41.8	23.5	48.0
333.0	22.6	000000	333.4	42.1	23.7	48.4
334.0	22.7	000000	334.4	42.5	23.9	48.7
335.0	22.8	000000	335.4	42.8	24.1	49.1
336.0	22.9	000000	336.4	43.1	24.3	49.5
337.0	23.0	000000	337.4	43.5	24.5	49.9
338.0	23.1	000000	338.4	43.8	24.7	50.3
339.0	23.1	000000	339.4	44.2	24.9	50.7
340.0	23.2	000000	340.4	44.5	25.1	51.1
341.0	23.3	000000	341.4	44.8	25.2	51.5
342.0	23.4	000000	342.4	45.2	25.4	51.9
343.0	23.5	000000	343.4	45.5	25.6	52.2
344.0	23.6	000000	344.4	45.9	25.8	52.6
345.0	23.7	000000	345.4	46.2	26.0	53.0
346.0	23.8	000000	346.4	46.6	26.2	53.4
347.0	23.9	000000	347.4	47.0	26.4	53.8
348.0	24.0	000000	348.4	47.3	26.6	54.2
349.0	24.1	000000	349.4	47.7	26.8	54.6
350.0	24.2	000000	350.4	48.0	27.0	55.0
351.0	24.3	000000	351.4	48.4	27.2	55.4
352.0	24.4	000000	352.4	48.8	27.4	55.8
353.0	24.5	000000	353.4	49.2	27.6	56.2
354.0	24.6	000000	354.4	49.6	27.8	56.6
355.0	24.7	000000	355.4	50.0	28.0	57.0
356.0	24.8	000000	356.4	50.4	28.2	57.4
357.0	24.9	000000	357.4	50.8	28.4	57.8
358.0	25.0	000000	358.4	51.2	28.6	58.2
359.0	25.1	000000	359.4	51.6	28.8	58.6
360.0	25.2	000000	360.4	52.0	29.0	59.0
361.0	25.3	000000	361.4	52.4	29.2	59.4
362.0	25.4	000000	362.4	52.8	29.4	59.8
363.0	25.5	000000	363.4	53.2	29.6	60.2
364.0	25.6	000000	364.4	53.6	29.8	60.6
365.0	25.7	000000	365.4	54.0	30.0	61.0
366.0	25.8	000000	366.4	54.4	30.2	61.4
367.0	25.9	000000	367.4	54.8	30.4	61.8
368.0	26.0	000000	368.4	55.2	30.6	62.2
369.0	26.1	000000	369.4	55.6	30.8	62.6
370.0	26.2	000000	370.4	56.0	31.0	63.0
371.0	26.3	000000	371.4	56.4	31.2	63.4
372.0	26.4	000000	372.4	56.8	31.4	63.8
373.0	26.5	000000	373.4	57.2	31.6	64.2
374.0	26.6	000000	374.4	57.6	31.8	64.6
375.0	26.7	000000	375.4	58.0	32.0	65.0
376.0	26.8	000000	376.4	58.4	32.2	65.4
377.0	26.9	000000	377.4	58.8	32.4	65.8
378.0	27.0	000000	378.4	59.2	32.6	66.2
379.0	27.1	000000	379.4	59.6	32.8	66.6
380.0	27.2	000000	380.4	60.0	33.0	67.0
381.0	27.3	000000	381.4	60.4	33.2	67.4
382.0	27.4	000000	382.4	60.8	33.4	67.8
383.0	27.5	000000	383.4	61.2	33.6	68.2
384.0	27.6	000000	384.4	61.6	33.8	68.6
385.0	27.7	000000	385.4	62.0	34.0	69.0
386.0	27.8	000000	386.4	62.4	34.2	69.4
387.0	27.9	000000	387.4	62.8	34.4	69.8
388.0	28.0	000000	388.4	63.2	34.6	70.2
389.0	28.1	000000	389.4	63.6	34.8	70.6
390.0	28.2	000000	390.4	64.0	35.0	71.0
391.0	28.3	000000	391.4	64.4	35.2	71.4
392.0	28.4	000000	392.4	64.8	35.4	71.8
393.0	28.5	000000	393.4	65.2	35.6	72.2
394.0	28.6	000000	394.4	65.6	35.8	72.6
395.0	28.7	000000	395.4	66.0	36.0	73.0
396.0	28.8	000000	396.4	66.4	36.2	73.4
397.0	28.9	000000	397.4	66.8	36.4	73.8
398.0	29.0	000000	398.4	67.2	36.6	74.2
399.0	29.1	000000	399.4	67.6	36.8	74.6
400.0	29.2	000000	400.4	68.0	37.0	75.0

MEAS DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
				+ NORTH * - SOUTH	+ EAST * - WEST
376.0	26.1	30	365.4	57.5	32.5
377.0	26.2	30	366.3	57.8	32.8
378.0	26.3	30	367.2	58.2	33.0
379.0	26.3	30	368.1	58.6	33.2
380.0	26.4	30	369.0	59.0	33.4
381.0	26.5	30	369.9	59.4	33.6
382.0	26.6	30	370.8	59.8	33.9
383.0	26.6	30	371.7	60.2	34.1
384.0	26.7	30	372.6	60.5	34.3
385.0	26.7	30	373.5	60.9	34.5
386.0	26.7	30	374.4	61.3	34.8
387.0	26.8	30	375.2	61.7	35.0
388.0	26.8	30	376.1	62.1	35.2
389.0	26.9	30	377.0	62.5	35.4
390.0	26.9	30	377.9	62.9	35.7
391.0	26.9	30	378.8	63.3	35.9
392.0	27.0	30	379.7	63.7	36.1
393.0	27.0	30	380.6	64.0	36.3
394.0	27.1	30	381.5	64.4	36.6
395.0	27.1	30	382.4	64.8	36.8
396.0	27.1	30	383.3	65.2	37.0
397.0	27.1	30	384.2	65.6	37.3
398.0	27.2	30	385.1	66.0	37.5
399.0	27.2	30	386.0	66.4	37.7
400.0	27.3	30	386.9	66.8	37.9
401.0	27.3	30	387.8	67.2	38.2
402.0	27.3	30	388.7	67.6	38.4
403.0	27.4	30	389.6	68.0	38.6
404.0	27.4	30	390.5	68.4	38.9
405.0	27.5	30	391.4	68.8	39.1
406.0	27.5	30	392.3	69.2	39.3
407.0	27.6	30	393.2	69.6	39.6
408.0	27.6	30	394.1	70.0	39.8
409.0	27.7	30	395.0	70.4	40.0
410.0	27.7	31	395.9	70.8	40.3
411.0	27.7	31	396.8	71.2	40.5
412.0	27.8	31	397.7	71.6	40.7
413.0	27.8	31	398.6	72.0	41.0
414.0	27.8	31	399.5	72.4	41.2
415.0	27.9	31	400.4	72.8	41.5
416.0	27.9	31	401.3	73.2	41.7
417.0	28.0	31	402.2	73.6	41.9
418.0	28.0	31	403.1	74.0	42.2
419.0	28.0	31	404.0	74.4	42.4
420.0	28.1	31	404.9	74.8	42.6
421.0	28.1	31	405.8	75.2	42.9
422.0	28.1	31	406.7	75.6	43.1

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ EAST - WEST	COURSE LENGTH M
423.0	288.2	331	407.2	76.0	43.4	87.5
424.0	288.2	331	408.1	76.4	43.6	88.0
425.0	288.2	331	409.0	76.8	43.9	88.4
426.0	288.3	331	409.8	77.2	44.1	88.9
427.0	288.3	331	410.7	77.6	44.3	89.4
428.0	288.4	331	411.6	78.0	44.6	89.9
429.0	288.4	331	412.5	78.4	44.8	90.3
430.0	288.4	331	413.4	78.8	45.1	90.8
431.0	288.5	331	414.2	79.3	45.3	91.3
432.0	288.5	331	415.1	79.7	45.6	91.8
433.0	288.6	331	416.0	80.1	45.8	92.2
434.0	288.7	331	416.9	80.5	46.0	92.7
435.0	288.7	331	417.8	80.9	46.3	93.2
436.0	288.8	331	418.6	81.3	46.5	93.7
437.0	288.8	331	419.5	81.7	46.8	94.2
438.0	288.8	331	420.4	82.1	47.0	94.6
439.0	288.9	331	421.3	82.5	47.3	95.1
440.0	288.9	331	422.1	82.9	47.5	95.6
441.0	288.9	331	423.0	83.3	47.8	96.1
442.0	289.0	331	423.9	83.8	48.0	96.6
443.0	289.0	331	424.8	84.2	48.3	97.1
444.0	289.1	331	425.6	84.6	48.5	97.6
445.0	289.1	331	426.5	85.0	48.8	98.1
446.0	289.2	331	427.4	85.4	49.0	98.6
447.0	289.2	331	428.3	85.9	49.3	99.1
448.0	289.3	331	429.1	86.3	49.5	99.6
449.0	289.3	331	430.0	86.7	49.8	100.1
450.0	289.4	331	430.9	87.1	50.0	100.6
451.0	289.4	331	431.8	87.5	50.3	101.1
452.0	289.5	331	432.6	88.0	50.5	101.6
453.0	289.5	331	433.5	88.4	50.8	102.1
454.0	289.6	330	434.4	88.8	51.0	102.6
455.0	289.6	330	435.2	89.2	51.3	103.1
456.0	289.7	330	436.1	89.6	51.5	103.6
457.0	289.7	330	437.0	90.0	51.8	104.1
458.0	289.8	330	437.8	90.4	52.0	104.6
459.0	289.8	330	438.7	90.8	52.3	105.1
460.0	289.9	330	439.6	91.2	52.5	105.6
461.0	289.9	330	440.4	91.6	52.8	106.1
462.0	290.0	330	441.3	92.0	53.0	106.6
463.0	290.0	330	442.2	92.4	53.3	107.1
464.0	290.0	330	443.0	92.8	53.5	107.6
465.0	290.1	330	443.9	93.2	53.8	108.1
466.0	290.1	330	444.8	93.6	54.0	108.6
467.0	290.2	330	445.6	94.0	54.3	109.1
468.0	290.2	330	446.5	94.4	54.5	109.6
469.0	290.7	330	447.4	94.8	54.8	110.1

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
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	31.8	30	458.5	101.0	58.1	116.6
483.0	31.8	30	459.4	101.5	58.4	117.1
484.0	32.2	30	460.2	101.9	58.7	117.6
485.0	32.2	30	461.1	102.4	58.9	118.1
486.0	32.8	30	462.0	102.8	59.2	118.6
487.0	32.7	30	462.8	103.2	59.4	119.1
488.0	32.7	30	463.7	103.7	59.7	119.6
489.0	32.6	30	464.6	104.1	59.9	120.1
490.0	32.6	30	465.4	104.5	60.1	120.6
491.0	32.7	30	466.3	105.0	60.4	121.1
492.0	32.7	30	467.2	105.4	60.6	121.6
493.0	32.7	30	468.0	105.8	60.9	122.1
494.0	32.7	30	468.8	106.3	61.1	122.6
495.0	32.7	30	469.6	106.7	61.4	123.1
496.0	32.8	30	470.4	107.1	61.6	123.6
497.0	32.9	30	471.2	107.6	61.9	124.1
498.0	32.9	30	472.0	108.0	62.1	124.6
499.0	32.9	31	472.8	108.4	62.4	125.1
500.0	32.9	31	473.6	108.8	62.6	125.6
501.0	32.9	31	474.4	109.2	62.9	126.1
502.0	32.9	31	475.2	109.6	63.1	126.6
503.0	32.9	31	475.9	110.1	63.4	127.1
504.0	32.9	31	476.7	110.6	63.6	127.6
505.0	32.9	31	477.4	111.0	63.9	128.1
506.0	32.9	31	478.1	111.4	64.1	128.6
507.0	32.9	31	478.8	111.8	64.4	129.1
508.0	32.9	31	480.0	112.3	64.7	129.6
509.0	32.9	31	481.1	112.7	64.9	130.1
510.0	32.9	31	482.2	113.1	65.2	130.6
511.0	32.9	31	483.3	113.6	65.4	131.1
512.0	32.9	31	484.4	114.0	65.7	131.6
513.0	32.9	31	485.4	114.4	65.9	132.1
514.0	32.9	31	486.2	114.8	66.2	132.6
515.0	32.9	31	487.1	115.3	66.5	133.1
516.0	32.9	31	488.0	115.7	66.7	133.6

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ 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	29.9	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	500.0	121.7	70.3	140.6
531.0	29.7	31	500.9	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	31	504.4	123.8	71.6	143.0
536.0	29.8	31	505.3	124.3	71.8	143.5
537.0	29.8	31	506.2	124.7	72.1	144.0
538.0	28.8	31	507.0	125.1	72.3	144.5
539.0	28.8	31	507.9	125.5	72.6	145.0
540.0	28.8	31	508.8	126.0	72.8	145.5
541.0	28.8	31	509.7	126.4	73.1	146.0
542.0	28.8	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	26.8	31	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	528.4	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		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
564.0	27.9	30	530.1	135.4	78.5	156.5
565.0	27.7	31	531.0	135.8	78.7	156.5
566.0	27.5	31	531.9	136.2	79.0	157.0
567.0	27.3	32	532.8	136.6	79.2	157.5
568.0	27.1	33	533.6	137.0	79.5	157.9
569.0	26.9	34	534.5	137.4	79.8	158.4
570.0	26.7	35	535.4	137.8	80.1	158.8
571.0	26.5	36	536.3	138.2	80.4	159.3
572.0	26.3	37	537.2	138.6	80.7	159.8
573.0	26.1	38	538.1	139.0	81.0	160.3
574.0	25.9	39	539.0	139.4	81.3	160.8
575.0	25.7	40	539.9	139.8	81.6	161.3
576.0	25.5	41	540.8	140.2	81.9	161.8
577.0	25.3	42	541.7	140.6	82.2	162.3
578.0	25.1	43	542.6	141.0	82.5	162.8
579.0	24.9	44	543.5	141.4	82.8	163.3
580.0	24.7	45	544.4	141.8	83.1	163.8
581.0	24.5	46	545.3	142.2	83.4	164.3
582.0	24.3	47	546.2	142.6	83.7	164.8
583.0	24.1	48	547.1	143.0	84.0	165.3
584.0	23.9	49	548.0	143.4	84.3	165.8
585.0	23.7	50	548.9	143.8	84.6	166.3
586.0	23.5	51	549.8	144.2	84.9	166.8
587.0	23.3	52	550.7	144.6	85.2	167.3
588.0	23.1	53	551.6	145.0	85.5	167.8
589.0	22.9	54	552.5	145.4	85.8	168.3
590.0	22.7	55	553.4	145.8	86.1	168.8
591.0	22.5	56	554.3	146.2	86.4	169.3
592.0	22.3	57	555.2	146.6	86.7	169.8
593.0	22.1	58	556.1	147.0	87.0	170.3
594.0	21.9	59	557.0	147.4	87.3	170.8
595.0	21.7	60	557.9	147.8	87.6	171.3
596.0	21.5	61	558.8	148.2	87.9	171.8
597.0	21.3	62	559.7	148.6	88.2	172.3
598.0	21.1	63	560.6	149.0	88.5	172.8
599.0	20.9	64	561.5	149.4	88.8	173.3
600.0	20.7	65	562.4	149.8	89.1	173.8
601.0	20.5	66	563.3	150.2	89.4	174.3
602.0	20.3	67	564.2	150.6	89.7	174.8
603.0	20.1	68	565.1	151.0	90.0	175.3
604.0	19.9	69	566.0	151.4	90.3	175.8
605.0	19.7	70	566.9	151.8	90.6	176.3
606.0	19.5	71	567.8	152.2	90.9	176.8
607.0	19.3	72	568.7	152.6	91.2	177.3
608.0	19.1	73	569.6	153.0	91.5	177.8
609.0	18.9	74	570.5	153.4	91.8	178.3
610.0	18.7	75	571.4	153.8	92.1	178.8

MEAS DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
				+ NORTH - SOUTH	+ EAST - WEST	
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	31	575.1	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	26.3	31	577.8	156.2	90.7	180.6
619.0	26.2	31	579.3	156.6	90.9	181.1
620.0	26.2	30	580.0	157.0	91.1	181.5
621.0	26.3	30	581.1	157.3	91.4	181.9
622.0	26.4	30	582.2	157.7	91.6	182.4
623.0	26.4	30	582.9	158.1	91.8	182.8
624.0	26.5	30	583.3	158.5	92.2	183.3
625.0	26.6	30	584.7	158.9	92.5	183.7
626.0	26.6	30	585.6	159.3	92.7	184.2
627.0	26.6	30	586.6	159.7	92.9	184.6
628.0	26.6	30	587.5	160.1	93.1	185.1
629.0	26.6	30	588.8	160.4	93.5	185.5
630.0	26.6	30	589.9	160.8	93.3	186.0
631.0	26.5	30	590.0	161.2	93.6	186.4
632.0	26.4	30	591.1	161.6	93.8	186.8
633.0	26.5	30	591.9	162.0	94.0	187.3
634.0	26.7	30	592.8	162.4	94.2	187.7
635.0	26.6	30	593.3	162.8	94.5	188.2
636.0	26.6	30	594.4	163.2	94.7	188.8
637.0	26.6	30	595.5	163.5	94.9	189.5
638.0	26.6	30	596.6	163.9	95.1	190.0
639.0	26.6	30	597.7	164.3	95.3	190.4
640.0	26.6	30	598.8	164.7	95.6	190.8
641.0	26.6	30	599.9	165.1	95.8	191.3
642.0	26.6	30	600.0	165.5	96.0	191.7
643.0	26.6	30	600.8	165.8	96.2	192.2
644.0	26.6	30	601.1	166.2	96.5	192.6
645.0	26.6	30	602.2	166.6	96.7	193.1
646.0	26.6	30	603.5	167.0	97.1	193.5
647.0	26.6	30	604.4	167.3	97.3	193.9
648.0	26.6	30	605.3	167.7	97.6	194.4
649.0	26.6	30	606.2	168.1	97.8	195.0
650.0	26.6	30	607.1	168.5	98.0	195.5
651.0	26.6	30	608.0	168.9	98.2	196.0
652.0	26.6	30	608.9	169.3	98.5	196.5
653.0	26.6	30	609.8	169.7	98.7	197.0
654.0	26.6	30	610.7	170.1	99.0	197.4
655.0	26.6	30	611.6	170.5	99.3	197.8
656.0	26.6	30	612.5	170.9	99.6	198.3
657.0	26.6	30	613.4	171.3	99.9	198.8

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST
658.0	26.2	330	614.3	171.5	99.6
659.0	26.2	330	615.2	171.8	99.8
660.0	26.2	330	616.1	172.2	100.0
661.0	26.1	330	617.0	172.6	100.2
662.0	26.1	330	617.7	173.0	100.4
663.0	26.1	330	618.8	173.4	100.7
664.0	26.2	330	619.7	173.8	100.9
665.0	26.2	330	620.6	174.1	101.1
666.0	26.2	330	621.5	174.5	101.3
667.0	26.1	330	622.2	174.9	101.6
668.0	26.0	330	623.3	175.3	101.8
669.0	25.9	330	624.2	175.7	102.0
670.0	25.7	330	625.5	176.0	102.2
671.0	25.7	330	626.6	176.4	102.4
672.0	25.7	330	627.7	176.8	102.7
673.0	25.7	330	628.8	177.2	102.9
674.0	25.9	330	629.7	177.5	103.1
675.0	26.1	330	630.6	177.9	103.3
676.0	26.3	330	631.5	178.3	103.5
677.0	26.4	330	632.4	178.7	103.8
678.0	26.4	330	633.2	179.0	104.0
679.0	26.5	330	634.3	179.4	104.2
680.0	26.4	330	635.4	179.8	104.4
681.0	26.4	330	636.5	180.0	104.7
682.0	26.3	330	637.5	180.6	104.9
683.0	26.3	330	638.6	181.1	105.1
684.0	26.2	330	639.7	181.3	105.3
685.0	26.2	330	640.5	181.7	105.6
686.0	26.3	330	641.4	182.1	105.8
687.0	26.3	330	642.2	182.5	106.0
688.0	26.3	330	643.3	183.3	106.5
689.0	26.3	330	644.0	184.0	106.7
690.0	26.3	330	645.0	184.6	106.9
691.0	26.2	330	646.6	185.5	107.3
692.0	26.1	330	647.7	185.8	107.6
693.0	26.1	330	648.8	186.6	108.0
694.0	26.2	330	649.9	187.7	108.7
695.0	26.3	330	651.0	188.7	109.4
696.0	26.4	330	652.2	189.8	110.2
697.0	26.4	330	653.3	190.8	111.1
698.0	26.5	330	654.4	191.7	112.0
699.0	26.4	330	655.5	192.7	113.3
700.0	26.4	330	656.6	193.7	114.6
701.0	26.4	330	657.7	194.7	115.9
702.0	26.3	330	658.8	195.5	116.4
703.0	26.4	330	659.9	196.8	117.2
704.0	26.4	330	661.0	198.0	118.1

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
				+ NORTH * - SOUTH	+ EAST * - WEST	
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	31	659.2	190.5	110.8	220.4
709.0	26.0	31	660.1	190.9	111.0	220.8
710.0	26.1	31	661.0	191.3	111.2	221.1
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	31	669.0	194.7	113.2	225.2
720.0	26.2	31	669.9	195.1	113.5	225.7
721.0	26.2	31	670.8	195.4	113.7	226.1
722.0	26.2	31	671.7	195.8	113.9	226.6
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	26.6	31	678.0	198.5	115.5	229.7
730.0	26.6	31	678.9	198.8	115.8	230.0
731.0	26.6	31	679.8	199.2	116.0	230.5
732.0	26.6	31	680.7	199.5	116.2	231.0
733.0	26.6	31	681.6	199.9	116.4	231.5
734.0	26.6	31	682.5	200.0	116.7	231.9
735.0	26.7	31	683.4	200.4	116.9	232.4
736.0	26.8	31	684.3	200.8	117.1	232.8
737.0	26.8	31	685.2	201.2	117.3	233.3
738.0	26.7	31	686.1	201.6	117.6	233.7
739.0	26.6	31	687.0	202.0	117.8	234.2
740.0	26.6	31	687.9	202.4	118.0	234.6
741.0	26.6	31	688.8	202.7	118.3	235.0
742.0	26.6	31	689.7	203.1	118.5	235.5
743.0	26.6	31	690.6	203.5	118.7	235.9
744.0	26.6	31	691.5	204.0	118.9	236.4
745.0	26.6	31	692.4	204.3	119.2	236.8
746.0	26.6	31	693.3	204.7	119.4	237.3
747.0	26.6	31	694.2	205.0	119.7	237.7
748.0	26.6	31	695.1	205.4	119.9	238.2
749.0	26.6	31	696.0	205.8	120.1	238.6
750.0	26.6	31	696.9	206.2	120.3	239.1
751.0	26.6	31	697.8	207.0	120.5	239.5

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ EAST - WEST	COURSE LENGTH M
752.0	26.8	300	698.6	207.3	120.8	239.9
753.0	26.9	300	699.5	207.7	121.0	240.4
754.0	26.8	300	700.4	208.1	121.2	240.8
755.0	26.7	300	701.3	208.5	121.4	241.3
756.0	26.7	300	702.1	208.9	121.7	241.7
757.0	26.7	300	703.0	209.3	121.9	242.2
758.0	26.7	300	703.9	209.7	122.1	242.6
759.0	26.6	300	704.8	210.1	122.3	243.1
760.0	26.5	300	705.7	210.5	122.6	243.5
761.0	26.4	300	706.6	210.9	122.8	244.0
762.0	26.4	300	707.5	211.2	123.0	244.4
763.0	26.4	300	708.4	211.6	123.3	244.9
764.0	26.5	300	709.3	212.0	123.4	245.3
765.0	26.5	300	710.2	212.4	123.7	245.8
766.0	26.7	300	711.1	212.8	123.9	246.2
767.0	26.8	300	712.0	213.2	124.1	246.7
768.0	26.9	300	712.9	213.6	124.3	247.1
769.0	27.1	300	713.8	213.9	124.6	247.6
770.0	27.0	300	714.7	214.3	124.8	248.0
771.0	26.9	300	715.6	214.7	125.0	248.5
772.0	26.7	300	716.4	215.1	125.2	248.9
773.0	26.6	300	717.3	215.5	125.5	249.4
774.0	26.5	300	718.2	215.9	125.7	249.8
775.0	26.5	299	719.1	216.3	125.9	250.3
776.0	26.6	300	720.0	216.7	126.2	250.7
777.0	26.6	300	720.9	217.1	126.4	251.1
778.0	26.6	300	721.8	217.4	126.6	251.6
779.0	26.8	300	722.7	217.8	126.8	252.1
780.0	26.9	300	723.6	218.2	127.0	252.5
781.0	26.8	300	724.5	218.6	127.3	253.0
782.0	26.8	300	725.4	219.0	127.5	253.4
783.0	26.7	300	726.3	219.4	127.7	253.9
784.0	26.6	300	727.2	219.8	128.0	254.3
785.0	26.6	300	728.1	220.2	128.2	254.8
786.0	26.5	300	728.9	220.6	128.4	255.2
787.0	26.5	300	729.8	220.9	128.6	255.7
788.0	26.5	300	730.7	221.3	128.8	256.1
789.0	26.6	300	731.6	221.7	129.1	256.6
790.0	26.7	300	732.5	222.1	129.3	257.0
791.0	26.8	300	733.4	222.5	129.5	257.4
792.0	26.9	300	734.3	222.9	129.7	257.9
793.0	27.1	300	735.2	223.3	130.0	258.3
794.0	27.2	300	736.1	223.7	130.2	258.8
795.0	27.2	300	737.0	224.1	130.4	259.3
796.0	27.1	300	737.9	224.5	130.7	259.7
797.0	27.1	300	738.8	224.9	130.9	260.2
798.0	27.2	300	739.7	225.3	131.1	260.6

MEAS. DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH	CO-ORDINATES	COURSE LENGTH	
M			M	+ NORTH - SOUTH	+ EAST - WEST	
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	27.3	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	27.3	30	765.5	236.7	137.7	273.9
828.0	27.2	30	766.4	237.1	138.0	274.3
829.0	27.3	30	767.3	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	138.8	275.7
832.0	27.8	30	769.9	238.7	139.0	276.2
833.0	27.8	30	770.8	239.1	139.2	276.6
834.0	27.7	30	771.7	239.5	139.5	277.1
835.0	27.6	30	772.6	239.9	139.8	277.6
836.0	27.5	30	773.4	240.3	139.9	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	29	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	28.1	30	779.6	243.1	141.4	281.3
844.0	28.2	30	780.5	243.5	141.6	281.7
845.0	28.2	30	781.4	244.0	141.9	282.2

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
				+ NORTH - SOUTH	+ EAST - WEST	
846.0	22	30	782.3	244.4	142.1	282.7
847.0	22	30	783.2	244.8	142.3	283.2
848.0	22	30	784.1	245.2	142.5	283.6
849.0	22	30	785.0	245.6	142.8	284.1
850.0	22	30	785.9	246.0	143.1	284.6
851.0	22	30	786.8	246.4	143.3	285.1
852.0	22	30	787.7	246.8	143.5	285.5
853.0	22	30	788.6	247.2	143.8	286.0
854.0	22	30	789.5	247.6	144.0	286.5
855.0	22	30	790.4	248.0	144.2	287.0
856.0	22	30	791.3	248.4	144.4	287.4
857.0	22	30	792.2	248.8	144.6	287.9
858.0	22	30	793.1	249.2	144.8	288.4
859.0	22	30	794.0	249.6	145.0	288.9
860.0	22	30	794.9	250.0	145.2	289.4
861.0	22	30	795.8	250.4	145.4	289.9
862.0	22	30	796.7	250.8	145.6	290.4
863.0	22	30	797.6	251.2	145.8	290.9
864.0	22	30	798.5	251.6	146.0	291.4
865.0	22	30	799.4	252.0	146.2	291.9
866.0	22	30	800.3	252.4	146.4	292.4
867.0	22	30	801.2	252.8	146.6	292.9
868.0	22	30	802.1	253.2	146.8	293.4
869.0	22	30	803.0	253.6	147.0	293.9
870.0	22	30	803.9	254.0	147.2	294.4
871.0	22	30	804.8	254.4	147.4	294.9
872.0	22	30	805.7	254.8	147.6	295.4
873.0	22	30	806.6	255.2	147.8	295.9
874.0	22	30	807.5	255.6	148.0	296.4
875.0	22	30	808.4	256.0	148.2	296.9
876.0	22	30	809.3	256.4	148.4	297.4
877.0	22	30	810.2	256.8	148.6	297.9
878.0	22	30	811.1	257.2	148.8	298.4
879.0	22	30	812.0	257.6	149.0	298.9
880.0	22	30	812.9	258.0	149.2	299.4
881.0	22	30	813.8	258.4	149.4	299.9
882.0	22	30	814.7	258.8	149.6	300.4
883.0	22	30	815.6	259.2	149.8	300.9
884.0	22	30	816.5	259.6	150.0	301.4
885.0	22	30	817.4	260.0	150.2	301.9
886.0	22	30	818.3	260.4	150.4	302.4
887.0	22	30	819.2	260.8	150.6	302.9
888.0	22	30	820.1	261.2	150.8	303.4
889.0	22	30	821.0	261.6	151.0	303.9
890.0	22	30	821.9	262.0	151.2	304.4
891.0	22	30	822.8	262.4	151.4	304.9
892.0	22	30	823.7	262.8	151.6	305.4
893.0	22	30	824.6	263.2	151.8	305.9
894.0	22	30	825.5	263.6	152.0	306.4
895.0	22	30	826.4	264.0	152.2	306.9
896.0	22	30	827.3	264.4	152.4	307.4
897.0	22	30	828.2	264.8	152.6	307.9
898.0	22	30	829.1	265.2	152.8	308.4
899.0	22	30	830.0	265.6	153.0	308.9
900.0	22	30	830.9	266.0	153.2	309.4

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES NORTH SOUTH	EAST WEST	COURSE LENGTH M
893.0	3.0	3.0	823.3	264.3	153.6	305.7
894.0	3.0	3.0	824.2	264.7	153.8	306.2
895.0	3.0	3.0	825.0	265.1	154.1	306.7
896.0	3.0	3.0	825.9	265.6	154.3	307.2
897.0	3.0	3.0	826.8	266.0	154.6	307.7
898.0	3.0	3.0	827.6	266.4	154.8	308.2
899.0	3.0	3.0	828.5	266.9	155.1	308.7
900.0	3.0	3.0	829.4	267.3	155.3	309.2
901.0	3.0	3.0	830.2	267.7	155.6	309.7
902.0	3.0	3.0	831.1	268.2	155.8	310.2
903.0	3.0	3.0	832.0	268.6	156.1	310.7
904.0	3.0	3.0	832.8	269.0	156.3	311.2
905.0	3.0	3.0	833.7	269.5	156.6	311.7
906.0	3.0	3.0	834.5	269.9	156.8	312.2
907.0	3.0	3.0	835.4	270.4	157.1	312.7
908.0	3.0	3.0	836.3	270.8	157.3	313.2
909.0	3.0	3.0	837.1	271.1	157.6	313.7
910.0	3.0	3.0	838.0	271.7	157.8	314.2
911.0	3.0	3.0	838.9	272.1	158.1	314.7
912.0	3.0	3.0	839.7	272.5	158.3	315.2
913.0	3.0	3.0	840.6	273.0	158.6	315.7
914.0	3.0	3.0	841.5	273.4	158.8	316.2
915.0	3.0	3.0	842.3	273.8	159.1	316.7
916.0	3.0	3.0	843.2	274.3	159.3	317.2
917.0	3.0	3.0	844.1	274.7	159.6	317.7
918.0	3.0	3.0	844.9	275.1	159.8	318.2
919.0	3.0	3.0	845.8	275.6	160.1	318.7
920.0	3.0	3.0	846.7	276.0	160.3	319.2
921.0	3.0	3.0	847.5	276.4	160.6	319.7
922.0	3.0	3.0	848.4	276.9	160.8	320.2
923.0	3.0	3.0	849.3	277.3	161.1	320.7
924.0	3.0	3.0	850.1	277.7	161.3	321.2
925.0	3.0	3.0	851.0	278.2	161.6	321.7
926.0	3.0	3.0	851.9	278.6	161.8	322.2
927.0	3.0	3.0	852.7	279.0	162.1	322.7
928.0	3.0	3.0	853.6	279.5	162.3	323.2
929.0	3.0	3.0	854.5	279.9	162.6	323.7
930.0	3.0	3.0	855.4	280.3	162.8	324.2
931.0	3.0	3.0	856.2	280.8	163.0	324.7
932.0	3.0	3.0	857.1	281.2	163.3	325.2
933.0	3.0	3.0	857.9	281.6	163.5	325.7
934.0	3.0	3.0	858.8	282.1	163.8	326.2
935.0	3.0	3.0	859.7	282.5	164.0	326.7
936.0	3.0	3.0	860.5	282.9	164.3	327.2
937.0	3.0	3.0	861.4	283.3	164.5	327.7
938.0	3.0	3.0	862.3	283.8	164.8	328.2
939.0	3.0	3.0	863.1	284.2	165.0	328.7

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
940.0	30.0		864.0	284.6	165.3	329.1
941.0	29.9		864.9	285.1	165.5	329.6
942.0	29.8		865.5	285.5	165.8	330.1
943.0	29.7		866.6	286.9	166.0	330.6
944.0	29.6		867.7	288.6	166.3	331.1
945.0	29.5		868.8	290.4	166.5	331.6
946.0	29.5		869.9	292.2	166.8	332.1
947.0	29.6		870.0	294.6	167.0	332.6
948.0	29.6		871.1	298.1	167.2	333.1
949.0	29.6		872.1	301.5	167.5	333.6
950.0	29.7		873.3	304.4	168.0	334.1
951.0	29.8		874.4	308.8	168.5	334.6
952.0	29.9		875.5	313.6	168.8	335.1
953.0	29.9		876.6	318.2	168.8	335.6
954.0	29.9		877.7	323.6	169.0	336.1
955.0	29.9		877.9	329.1	169.2	336.6
956.0	29.9		878.8	334.9	169.5	337.1
957.0	29.9		879.9	341.4	169.7	337.6
958.0	29.9		880.0	348.8	170.0	338.1
959.0	29.9		881.1	356.3	170.2	338.6
960.0	29.9		882.2	364.7	170.5	339.1
961.0	29.9		883.3	373.1	170.7	339.6
962.0	29.9		884.4	381.6	171.0	340.1
963.0	29.9		885.5	390.0	171.2	340.6
964.0	29.9		886.6	398.4	171.5	341.1
965.0	29.9		887.7	406.8	171.7	341.6
966.0	29.9		888.8	415.2	172.0	342.1
967.0	29.9		889.9	423.6	172.2	342.6
968.0	29.9		890.0	432.0	172.5	343.1
969.0	29.9		891.1	440.4	172.7	343.6
970.0	29.9		892.2	448.8	173.0	344.1
971.0	29.9		893.3	457.2	173.2	344.6
972.0	29.9		894.4	465.6	173.4	345.1
973.0	29.9		895.5	474.0	173.7	345.6
974.0	29.9		896.6	482.4	173.9	346.1
975.0	29.9		897.7	490.8	174.1	346.6
976.0	29.9		898.8	499.2	174.4	347.1
977.0	29.9		899.9	507.6	174.6	347.6
978.0	29.9		900.0	516.0	174.9	348.1
979.0	29.9		901.1	524.4	175.1	348.6
980.0	29.9		902.2	532.8	175.3	349.1
981.0	29.9		903.3	541.2	175.6	349.6
982.0	29.9		904.4	549.6	175.8	350.1
983.0	29.9		905.5	558.0	176.1	350.6
984.0	29.9		906.6	566.4	176.3	351.1
985.0	29.9		907.7	574.8	176.6	351.6
986.0	29.9		908.8	583.2	176.8	352.1

MEAS. DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
				+ NORTH - SOUTH	+ EAST - WEST	
9887.0	29.7	300	904.8	304.9	176.8	352.5
9888.0	29.7	300	905.7	305.4	177.1	353.0
9889.0	29.7	300	906.6	305.8	177.3	353.5
9890.0	29.6	300	907.4	306.2	177.5	354.0
9891.0	29.6	300	908.2	306.6	177.8	354.5
9892.0	29.6	300	909.0	307.1	178.0	354.9
9893.0	29.6	300	910.0	307.5	178.3	355.4
9894.0	29.6	300	911.0	308.4	178.5	355.9
9895.0	29.6	300	912.0	308.8	178.8	356.4
9896.0	29.6	300	913.0	309.2	179.0	356.9
9897.0	29.6	300	914.0	309.6	179.3	357.4
9898.0	29.5	300	915.0	310.1	179.5	357.9
9899.0	29.5	300	916.0	310.5	179.7	358.4
10000.0	29.5	300	917.0	310.9	180.0	358.9
10001.0	29.5	300	918.0	311.4	180.2	359.4
10002.0	29.5	300	919.0	311.8	180.5	359.9
10003.0	29.5	300	920.0	312.2	180.7	360.4
10004.0	29.5	300	921.0	312.7	181.0	360.9
10005.0	29.5	300	922.0	313.1	181.2	361.4
10006.0	29.5	300	923.0	313.5	181.5	361.9
10007.0	29.5	300	924.0	313.9	181.7	362.4
10008.0	29.5	300	925.0	314.4	182.0	362.9
10009.0	29.5	300	926.0	314.8	182.2	363.4
10010.0	29.5	300	927.0	315.2	182.5	363.9
10011.0	29.5	300	928.0	315.7	182.7	364.4
10012.0	29.5	300	929.0	316.1	183.0	364.9
10013.0	29.5	300	930.0	316.5	183.2	365.4
10014.0	29.5	300	931.0	316.9	183.5	365.9
10015.0	29.5	300	932.0	317.4	183.7	366.4
10016.0	29.5	300	933.0	317.8	184.0	366.9
10017.0	29.5	300	934.0	318.2	184.2	367.4
10018.0	29.5	300	935.0	318.7	184.5	367.9
10019.0	29.5	300	936.0	319.1	184.7	368.4
10020.0	29.5	300	937.0	319.5	185.0	368.9
10021.0	29.5	300	938.0	319.9	185.2	369.4
10022.0	29.5	300	939.0	320.4	185.5	369.9
10023.0	29.5	300	940.0	320.8	185.7	370.4
10024.0	29.5	300	941.0	321.2	186.0	370.9
10025.0	29.5	300	942.0	321.7	186.2	371.4
10026.0	29.5	300	943.0	322.1	186.5	371.9
10027.0	29.5	300	944.0	322.5	186.7	372.4
10028.0	29.5	300	945.0	323.0	187.0	372.9
10029.0	29.5	300	946.0	323.4	187.2	373.4
10030.0	29.5	300	947.0	323.8	187.5	373.9
10031.0	29.5	300	948.0	324.3	187.7	374.4
10032.0	29.5	300	949.0	324.7	188.0	374.9
10033.0	29.5	300	950.0	325.1	188.2	375.4

MEAS DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
M			M	+ NORTH - SOUTH	+ EAST - WEST	
10334.0	29.9	31	945.6	325.1	188.5	375.8
10335.0	30.0	31	946.5	325.5	188.7	376.3
10336.0	30.0	31	947.4	325.9	189.0	376.8
10337.0	29.9	31	948.2	326.4	189.3	377.3
10338.0	29.9	31	949.1	326.8	189.5	377.8
10339.0	29.9	31	950.0	327.2	189.8	378.3
10411.0	29.9	31	951.7	328.1	190.3	379.8
10422.0	29.9	31	952.6	328.5	190.5	379.8
10433.0	29.9	31	953.4	328.9	190.8	380.3
10444.0	29.9	31	954.3	329.4	191.1	380.8
10455.0	29.9	31	955.2	329.8	191.3	381.3
10466.0	29.8	31	956.0	330.2	191.6	381.8
10477.0	29.8	31	956.9	330.6	191.8	382.3
10488.0	29.8	31	957.8	331.1	192.1	382.8
10499.0	29.8	31	958.6	331.5	192.3	383.3
10510.0	29.8	31	959.5	331.9	192.6	383.8
10521.0	29.7	31	960.4	332.3	192.9	384.3
10532.0	29.7	31	961.2	332.8	193.1	384.8
10543.0	29.7	31	962.1	333.2	193.4	385.3
10554.0	29.7	31	963.0	333.6	193.6	385.8
10565.0	29.6	31	963.8	334.0	193.9	386.3
10576.0	29.6	31	964.7	334.5	194.1	386.8
10587.0	29.6	31	965.5	334.9	194.4	387.3
10598.0	29.6	31	966.4	335.3	194.6	387.8
10609.0	29.6	31	967.3	335.7	194.9	388.3
10620.0	29.6	31	968.2	336.2	195.1	388.8
10631.0	29.6	31	969.1	336.6	195.4	389.3
10642.0	29.6	31	969.9	337.0	195.7	389.8
10653.0	29.6	31	970.8	337.4	195.9	390.3
10664.0	29.6	31	971.7	337.9	196.2	390.8
10675.0	29.6	31	972.5	338.3	196.4	391.3
10686.0	29.6	31	973.4	338.7	196.7	391.8
10697.0	29.6	31	974.3	339.1	196.9	392.3
10708.0	29.6	31	975.1	339.6	197.2	392.8
10719.0	29.6	31	976.0	340.0	197.4	393.3
10730.0	29.6	31	976.9	340.4	197.7	393.8
10741.0	29.6	31	977.7	340.8	197.9	394.3
10752.0	29.5	31	978.6	341.2	198.2	394.8
10763.0	29.5	31	979.5	341.7	198.5	395.3
10774.0	29.5	31	980.4	342.1	198.7	395.8
10785.0	29.5	31	981.2	342.5	199.0	396.3
10796.0	29.5	31	982.1	342.9	199.2	396.8
10807.0	29.5	31	983.0	343.4	199.5	397.3
10818.0	29.5	31	983.8	343.8	199.7	397.8
10829.0	29.5	31	984.7	344.2	200.0	398.3
10840.0	29.5	31	985.6	344.6	200.2	398.8

MEAS. DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
M				+ NORTH * - SOUTH * + EAST * - WEST		
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	1001.1	352.3	204.8	407.5
1099.0	29.8	32	1002.0	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	32	1008.2	355.6	206.9	411.5
1107.0	29.6	32	1009.1	356.1	207.2	412.0
1108.0	29.6	32	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	1011.7	357.3	208.0	413.4
1111.0	29.6	32	1012.6	357.7	208.2	413.9
1112.0	29.6	32	1013.5	358.2	208.5	414.4
1113.0	29.6	32	1014.4	358.6	208.7	414.9
1114.0	29.5	32	1015.3	359.0	209.0	415.4
1115.0	29.5	32	1016.2	359.4	209.3	415.9
1116.0	29.4	32	1017.1	359.8	209.5	416.4
1117.0	29.3	31	1018.0	360.3	209.8	416.9
1118.0	29.3	31	1018.9	360.7	210.1	417.4
1119.0	29.4	31	1019.8	361.1	210.3	417.9
1120.0	29.5	32	1020.7	361.5	210.6	418.4
1121.0	29.6	32	1021.6	361.9	210.8	418.9
1122.0	29.7	32	1022.5	362.4	211.1	419.3
1123.0	29.9	32	1023.4	362.8	211.3	419.8
1124.0	29.8	32	1024.3	363.2	211.6	420.3
1125.0	29.8	31	1025.2	363.6	211.9	420.8
1126.0	29.7	31	1026.1	364.0	212.1	421.3
1127.0	29.6	31	1027.0	364.5	212.4	421.8

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
1128.0	29.5	31	1027.3	364.9	212.6	422.3
1129.0	29.5	32	1028.2	365.3	212.9	422.3
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	1031.1	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	1038.8	370.4	215.9	428.8
1142.0	29.4	31	1039.9	370.8	216.2	429.3
1143.0	29.4	31	1040.0	371.2	216.5	429.7
1144.0	29.3	31	1041.1	371.6	216.7	430.2
1145.0	29.3	31	1042.2	372.1	217.0	430.7
1146.0	29.3	31	1043.3	372.5	217.2	431.2
1147.0	29.4	32	1044.3	372.9	217.5	431.7
1148.0	29.4	32	1044.4	373.3	217.7	432.2
1149.0	29.4	32	1045.5	373.7	218.0	432.6
1150.0	29.5	32	1046.6	374.1	218.2	433.1
1151.0	29.5	32	1047.7	374.6	218.5	433.6
1152.0	29.5	32	1048.8	375.0	218.8	434.1
1153.0	29.5	32	1049.9	375.4	219.0	434.6
1154.0	29.5	32	1050.0	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	223.3	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	1065.5	383.3	224.0	444.0
1173.0	29.5	33	1066.6	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	COURSE LENGTH M	
				+ NORTH - SOUTH	+ EAST - WEST	
1175.0	29.3	333	1068.2	384.5	224.8	445.4
1176.0	29.3	333	1069.1	384.9	225.1	445.9
1177.0	29.2	333	1069.9	385.4	225.4	446.4
1178.0	29.1	333	1070.8	385.8	225.6	446.9
1179.0	29.2	333	1071.7	386.2	225.9	447.4
1180.0	29.4	334	1072.6	386.6	226.2	447.9
1181.0	29.5	334	1073.4	387.0	226.4	448.4
1182.0	29.6	334	1074.3	387.4	226.7	448.9
1183.0	29.7	333	1075.2	387.8	227.0	449.3
1184.0	29.6	333	1076.1	388.2	227.3	449.8
1185.0	29.4	333	1077.0	388.6	227.5	450.3
1186.0	29.4	333	1077.9	389.1	227.8	450.8
1187.0	29.3	333	1078.8	389.5	228.1	451.3
1188.0	29.3	333	1079.7	389.9	228.3	451.8
1189.0	29.4	333	1080.6	390.3	228.6	452.3
1190.0	29.4	333	1081.5	390.7	228.9	452.8
1191.0	29.5	333	1082.4	391.1	229.1	453.3
1192.0	29.5	333	1083.3	391.5	229.4	453.8
1193.0	29.5	334	1084.2	391.9	229.7	454.3
1194.0	29.5	334	1085.1	392.3	229.9	454.8
1195.0	29.5	334	1086.0	392.7	230.2	455.3
1196.0	29.5	334	1086.9	393.1	230.5	455.8
1197.0	29.5	334	1087.8	393.5	230.8	456.3
1198.0	29.5	334	1088.7	393.9	231.1	456.8
1199.0	29.5	334	1089.6	394.3	231.4	457.3
1200.0	29.5	334	1090.5	394.7	231.7	457.8
1201.0	29.5	334	1091.4	395.1	232.0	458.3
1202.0	29.5	334	1092.3	395.5	232.3	458.8
1203.0	29.5	334	1093.2	395.9	232.6	459.3
1204.0	29.5	334	1094.1	396.3	232.9	459.8
1205.0	29.5	334	1095.0	396.7	233.2	460.3
1206.0	29.5	334	1095.9	397.1	233.5	460.8
1207.0	29.4	334	1096.8	397.5	233.8	461.3
1208.0	29.3	334	1097.7	397.9	234.1	461.8
1209.0	29.4	334	1098.6	398.3	234.4	462.3
1210.0	29.4	334	1099.5	398.7	234.7	462.8
1211.0	29.4	334	1100.4	399.1	235.0	463.3
1212.0	29.4	334	1101.3	399.5	235.3	463.8
1213.0	29.4	334	1102.2	399.9	235.6	464.3
1214.0	29.4	334	1103.1	400.3	235.9	464.8
1215.0	29.4	334	1104.0	400.7	236.2	465.3
1216.0	29.4	334	1104.9	401.1	236.5	465.8
1217.0	29.4	334	1105.8	401.5	236.8	466.3
1218.0	29.4	334	1106.7	401.9	237.1	466.8
1219.0	29.4	334	1107.6	402.3	237.4	467.3
1220.0	29.4	334	1108.5	402.7	237.7	467.8
1221.0	29.4	334	1109.4	403.1	238.0	468.3
1222.0	29.4	334	1110.3	403.5	238.3	468.8

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ EAST - WEST	COURSE LENGTH M
1222.0	29.9	35	1109.1	403.8	237.7	468.6
1223.3	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	29.9	34	1113.4	405.8	239.1	471.1
1228.0	29.9	34	1114.3	406.3	239.4	471.5
1229.0	29.9	34	1115.2	406.7	239.7	472.0
1230.0	29.9	34	1116.0	407.1	240.0	472.5
1231.0	29.9	34	1116.9	407.5	240.2	473.0
1232.0	29.9	34	1117.8	407.9	240.5	473.5
1233.0	29.9	34	1118.6	408.3	240.8	474.0
1234.0	29.9	34	1119.5	408.7	241.1	474.5
1235.0	29.9	34	1120.4	409.2	241.4	475.0
1236.0	29.9	34	1121.2	409.6	241.7	475.5
1237.0	29.9	34	1122.1	410.0	241.9	476.0
1238.0	29.9	34	1122.9	410.4	242.2	476.6
1239.0	29.9	34	1123.8	410.8	242.5	477.1
1240.0	29.9	34	1124.7	411.2	242.8	477.6
1241.0	29.9	34	1125.5	411.6	243.1	478.1
1242.0	29.9	34	1126.4	412.1	243.4	478.6
1243.0	29.9	34	1127.3	412.5	243.6	479.1
1244.0	29.9	34	1128.1	412.9	243.9	479.6
1245.0	29.9	34	1129.0	413.3	244.2	480.1
1246.0	29.9	34	1129.9	413.7	244.5	480.6
1247.0	29.9	34	1130.7	414.1	244.8	481.1
1248.0	29.9	34	1131.6	414.6	245.0	481.6
1249.0	29.9	34	1132.5	415.0	245.3	482.1
1250.0	29.9	35	1133.3	415.4	245.6	482.6
1251.0	29.9	35	1134.2	415.8	245.9	483.1
1252.0	29.9	35	1135.0	416.2	246.2	483.6
1253.0	29.9	35	1135.9	416.6	246.5	484.1
1254.0	29.9	35	1136.8	417.0	246.8	484.6
1255.0	29.9	35	1137.6	417.5	247.0	485.1
1256.0	29.9	35	1138.5	417.9	247.3	485.6
1257.0	29.9	35	1139.4	418.3	247.6	486.1
1258.0	29.9	35	1140.2	418.7	247.9	486.6
1259.0	29.9	35	1141.1	419.1	248.2	487.1
1260.0	29.9	35	1142.0	419.5	248.5	487.6
1261.0	29.9	35	1142.8	419.9	248.8	488.1
1262.0	29.9	35	1143.7	420.4	249.1	488.6
1263.0	29.9	35	1144.6	420.8	249.4	489.1
1264.0	29.9	35	1145.4	421.2	249.6	489.6
1265.0	29.9	35	1146.3	421.6	249.9	490.1
1266.0	29.9	35	1147.1	422.0	250.2	490.6
1267.0	29.9	35	1148.0	422.4	250.5	491.1
1268.0	29.9	35	1148.9	422.8	250.8	491.6

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
1269.0	30.0		1149.7	423.2	251.1	492.1
1270.0	30.0		1150.6	423.6	251.4	492.6
1271.0	30.0		1151.5	424.0	251.7	493.1
1272.0	30.0		1152.3	424.5	251.9	493.6
1273.0	30.0		1153.2	424.9	252.2	494.1
1274.0	30.0		1154.1	425.3	252.5	494.6
1275.0	30.0		1154.9	425.7	252.8	495.1
1276.0	30.0		1155.8	426.1	253.1	495.6
1277.0	30.0		1156.7	426.5	253.4	496.1
1278.0	30.0		1157.5	426.9	253.7	496.6
1279.0	30.0		1158.4	427.3	253.9	497.1
1280.0	30.0		1159.3	427.7	254.2	497.6
1281.0	30.0		1160.1	428.1	254.5	498.1
1282.0	30.0		1161.0	428.5	254.8	498.6
1283.0	30.0		1161.9	428.9	255.1	499.1
1284.0	30.0		1162.7	429.4	255.4	499.6
1285.0	30.0		1163.6	429.8	255.7	500.1
1286.0	30.0		1164.5	430.2	256.0	500.6
1287.0	30.0		1165.3	430.6	256.3	501.1
1288.0	30.0		1166.2	431.0	256.6	501.6
1289.0	30.0		1167.1	431.4	256.9	502.1
1290.0	30.0		1167.9	431.8	257.1	502.6
1291.0	30.0		1168.8	432.2	257.4	503.1
1292.0	30.0		1169.7	432.6	257.7	503.6
1293.0	30.0		1170.5	433.0	258.0	504.1
1294.0	30.0		1171.4	433.4	258.3	504.6
1295.0	30.0		1172.2	433.8	258.6	505.1
1296.0	30.0		1173.1	434.2	258.9	505.6
1297.0	30.0		1174.0	434.6	259.2	506.1
1298.0	30.0		1174.8	435.0	259.5	506.6
1299.0	30.0		1175.7	435.4	259.8	507.1
1300.0	30.0		1176.6	435.8	260.1	507.6
1301.0	30.0		1177.5	436.2	260.4	508.1
1302.0	30.0		1178.4	436.6	260.7	508.6
1303.0	30.0		1179.2	437.0	261.0	509.1
1304.0	30.0		1180.1	437.4	261.3	509.6
1305.0	30.0		1181.0	437.8	261.6	510.1
1306.0	30.0		1181.8	438.2	261.9	510.6
1307.0	30.0		1182.7	438.6	262.2	511.1
1308.0	30.0		1183.6	439.0	262.5	511.6
1309.0	30.0		1184.4	439.4	262.8	512.1
1310.0	30.0		1185.3	439.8	263.1	512.6
1311.0	30.0		1186.2	440.2	263.4	513.1
1312.0	30.0		1187.1	440.6	263.7	513.6
1313.0	30.0		1188.0	441.0	264.0	514.1
1314.0	30.0		1188.8	441.4	264.3	514.6
1315.0	30.0		1189.7	441.8	264.6	515.1

MEAN DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ EAST - WEST	COURSE LENGTH M
13311600	2299.4	35	1190.5	442.2	264.6	515.4
13311700	2299.4	35	1191.4	442.6	264.9	515.8
13311800	2299.3	35	1192.3	443.0	265.2	516.3
13311900	2299.3	35	1193.2	443.4	265.5	516.8
13322000	2299.3	36	1194.0	443.8	265.8	517.3
13322100	2299.3	36	1194.9	444.2	266.1	517.8
13322200	2299.3	36	1195.8	444.6	266.3	518.3
13322300	2299.3	36	1196.6	445.0	266.6	518.8
13322400	2299.3	36	1197.5	445.4	266.9	519.3
13322500	2299.1	36	1198.4	445.8	267.2	519.7
13322600	2299.0	36	1199.3	446.2	267.5	520.2
13322700	2299.0	36	1200.1	446.6	267.8	520.7
13322800	2299.1	36	1201.0	447.0	268.1	521.2
13322900	2299.1	36	1201.9	447.4	268.3	521.7
13323000	2299.1	36	1202.8	447.8	268.6	522.2
13323100	2299.1	36	1203.6	448.2	268.9	522.7
13323200	2299.1	36	1204.5	448.6	269.2	523.1
13323300	2299.0	36	1205.4	449.0	269.5	523.6
13323400	2299.0	37	1206.3	449.4	269.8	524.1
13323500	2299.0	37	1207.1	449.7	270.1	524.6
13323600	2299.0	36	1208.0	450.1	270.4	525.1
13323700	2299.0	36	1208.9	450.5	270.6	525.6
13323800	2299.0	36	1209.8	450.9	270.9	526.0
13323900	2299.0	37	1210.6	451.3	271.2	526.5
13324000	2299.1	37	1211.5	451.7	271.5	527.0
13324100	2299.1	36	1212.4	452.1	271.8	527.5
13324200	2299.1	36	1213.3	452.5	272.1	528.0
13324300	2299.1	35	1214.1	452.8	272.4	528.4
13324400	2299.1	36	1215.0	453.2	272.7	528.9
13324500	2299.1	36	1215.9	453.6	272.9	529.4
13324600	2299.1	36	1216.7	454.0	273.2	529.9
13324700	2299.1	36	1217.6	454.4	273.5	530.4
13324800	2299.1	36	1218.5	454.8	273.8	530.9
13324900	2299.1	36	1219.4	455.2	274.1	531.4
13325000	2299.1	36	1220.3	455.6	274.3	531.8
13325100	2299.1	36	1221.1	456.0	274.6	532.3
13325200	2299.1	36	1222.0	456.4	274.9	532.8
13325300	2299.1	36	1222.9	456.8	275.2	533.3
13325400	2299.1	36	1223.8	457.2	275.5	533.7
13325500	2299.1	36	1224.7	457.6	275.8	534.2
13325600	2299.1	36	1225.5	458.0	276.1	534.7
13325700	2299.1	36	1226.4	458.4	276.4	535.2
13325800	2299.1	36	1227.3	458.8	276.7	535.6
13325900	2299.1	36	1228.2	459.2	277.0	536.1
13326000	2299.1	37	1229.1	459.6	277.3	536.6
13326100	2299.1	37	1230.0	460.0	277.6	537.1

MEAN DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
				+ NORTH - SOUTH	+ EAST - WEST	
13663.0	28.5	37	1231.7	460.6	278.0	538.0
13664.0	28.4	37	1232.5	461.0	278.3	538.5
13665.0	28.4	37	1233.3	461.4	278.6	539.0
13666.0	28.3	37	1234.3	461.8	278.9	539.4
13667.0	28.2	37	1235.5	462.1	279.2	539.9
13668.0	28.1	37	1236.6	462.5	279.4	540.4
13669.0	28.0	37	1237.9	462.9	279.7	540.9
13670.0	27.9	37	1239.8	463.3	280.0	541.3
13671.0	27.8	37	1241.7	463.7	280.3	541.8
13672.0	27.7	37	1244.0	464.4	280.6	542.3
13673.0	27.6	37	1246.3	465.2	280.9	542.7
13674.0	27.5	37	1249.2	466.1	281.2	543.2
13675.0	27.4	37	1252.7	467.1	281.5	543.7
13676.0	27.3	37	1256.8	468.2	281.8	544.2
13677.0	27.2	37	1261.5	469.4	282.1	544.7
13678.0	27.1	37	1266.8	470.7	282.4	545.2
13679.0	27.0	37	1272.7	472.1	282.7	545.7
13680.0	26.9	37	1279.2	473.6	283.0	546.2
13681.0	26.8	37	1286.3	475.2	283.3	546.7
13682.0	26.7	37	1294.0	476.9	283.6	547.2
13683.0	26.6	37	1302.3	478.7	283.9	547.7
13684.0	26.5	37	1311.2	480.6	284.2	548.2
13685.0	26.4	37	1320.7	482.6	284.5	548.7
13686.0	26.3	37	1330.8	484.7	284.8	549.2
13687.0	26.2	37	1341.5	486.9	285.1	549.7
13688.0	26.1	37	1352.8	489.2	285.4	550.2
13689.0	26.0	37	1364.7	491.6	285.7	550.7
13690.0	25.9	37	1377.2	494.1	286.0	551.2
13691.0	25.8	37	1390.3	496.7	286.3	551.7
13692.0	25.7	37	1404.0	499.4	286.6	552.2
13693.0	25.6	37	1418.3	502.2	286.9	552.7
13694.0	25.5	37	1433.2	505.1	287.2	553.2
13695.0	25.4	37	1448.7	508.1	287.5	553.7
13696.0	25.3	37	1464.8	511.2	287.8	554.2
13697.0	25.2	37	1481.5	514.4	288.1	554.7
13698.0	25.1	37	1498.8	517.7	288.4	555.2
13699.0	25.0	37	1516.7	521.1	288.7	555.7
13700.0	24.9	37	1535.2	524.6	289.0	556.2
13701.0	24.8	37	1554.3	528.2	289.3	556.7
13702.0	24.7	37	1574.0	531.9	289.6	557.2
13703.0	24.6	37	1594.3	535.7	289.9	557.7
13704.0	24.5	37	1615.2	539.6	290.2	558.2
13705.0	24.4	37	1636.7	543.6	290.5	558.7
13706.0	24.3	37	1658.8	547.7	290.8	559.2
13707.0	24.2	37	1681.5	551.9	291.1	559.7
13708.0	24.1	37	1704.8	556.2	291.4	560.2
13709.0	24.0	37	1728.7	560.6	291.7	560.7
13710.0	23.9	37	1753.2	565.1	292.0	561.2
13711.0	23.8	37	1778.3	569.7	292.3	561.7
13712.0	23.7	37	1804.0	574.4	292.6	562.2
13713.0	23.6	37	1830.3	579.2	292.9	562.7
13714.0	23.5	37	1857.2	584.1	293.2	563.2
13715.0	23.4	37	1884.7	589.1	293.5	563.7
13716.0	23.3	37	1912.8	594.2	293.8	564.2
13717.0	23.2	37	1941.5	599.4	294.1	564.7
13718.0	23.1	37	1970.8	604.7	294.4	565.2
13719.0	23.0	37	2000.7	610.1	294.7	565.7
13720.0	22.9	37	2031.2	615.6	295.0	566.2
13721.0	22.8	37	2062.3	621.2	295.3	566.7
13722.0	22.7	37	2094.0	626.9	295.6	567.2
13723.0	22.6	37	2126.3	632.7	295.9	567.7
13724.0	22.5	37	2159.2	638.6	296.2	568.2
13725.0	22.4	37	2192.7	644.6	296.5	568.7
13726.0	22.3	37	2226.8	650.7	296.8	569.2
13727.0	22.2	37	2261.5	656.9	297.1	569.7
13728.0	22.1	37	2296.8	663.2	297.4	570.2
13729.0	22.0	37	2332.7	669.6	297.7	570.7
13730.0	21.9	37	2369.2	676.1	298.0	571.2
13731.0	21.8	37	2406.3	682.7	298.3	571.7
13732.0	21.7	37	2444.0	689.4	298.6	572.2
13733.0	21.6	37	2482.3	696.2	298.9	572.7
13734.0	21.5	37	2521.2	703.1	299.2	573.2
13735.0	21.4	37	2560.7	710.1	299.5	573.7
13736.0	21.3	37	2600.8	717.2	299.8	574.2
13737.0	21.2	37	2641.5	724.4	300.1	574.7
13738.0	21.1	37	2682.8	731.7	300.4	575.2
13739.0	21.0	37	2724.7	739.1	300.7	575.7
13740.0	20.9	37	2767.2	746.6	301.0	576.2
13741.0	20.8	37	2810.3	754.2	301.3	576.7
13742.0	20.7	37	2854.0	761.9	301.6	577.2
13743.0	20.6	37	2898.3	769.7	301.9	577.7
13744.0	20.5	37	2943.2	777.6	302.2	578.2
13745.0	20.4	37	2988.7	785.6	302.5	578.7
13746.0	20.3	37	3034.8	793.7	302.8	579.2
13747.0	20.2	37	3081.5	801.9	303.1	579.7
13748.0	20.1	37	3128.8	810.2	303.4	580.2
13749.0	20.0	37	3176.7	818.6	303.7	580.7
13750.0	19.9	37	3225.2	827.1	304.0	581.2
13751.0	19.8	37	3274.3	835.7	304.3	581.7
13752.0	19.7	37	3324.0	844.4	304.6	582.2
13753.0	19.6	37	3374.3	853.2	304.9	582.7
13754.0	19.5	37	3425.2	862.1	305.2	583.2
13755.0	19.4	37	3476.7	871.1	305.5	583.7
13756.0	19.3	37	3528.8	880.2	305.8	584.2
13757.0	19.2	37	3581.5	889.4	306.1	584.7
13758.0	19.1	37	3634.8	898.7	306.4	585.2
13759.0	19.0	37	3688.7	908.1	306.7	585.7
13760.0	18.9	37	3743.2	917.6	307.0	586.2
13761.0	18.8	37	3798.3	927.2	307.3	586.7
13762.0	18.7	37	3854.0	936.9	307.6	587.2
13763.0	18.6	37	3910.3	946.7	307.9	587.7
13764.0	18.5	37	3967.2	956.6	308.2	588.2
13765.0	18.4	37	4024.7	966.6	308.5	588.7
13766.0	18.3	37	4082.8	976.7	308.8	589.2
13767.0	18.2	37	4141.5	986.9	309.1	589.7
13768.0	18.1	37	4200.8	997.2	309.4	590.2
13769.0	18.0	37	4260.7	1007.6	309.7	590.7
13770.0	17.9	37	4321.2	1018.1	310.0	591.2
13771.0	17.8	37	4382.3	1028.7	310.3	591.7
13772.0	17.7	37	4444.0	1039.4	310.6	592.2
13773.0	17.6	37	4506.3	1050.2	310.9	592.7
13774.0	17.5	37	4569.2	1061.1	311.2	593.2
13775.0	17.4	37	4632.7	1072.1	311.5	593.7
13776.0	17.3	37	4696.8	1083.2	311.8	594.2
13777.0	17.2	37	4761.5	1094.4	312.1	594.7
13778.0	17.1	37	4826.8	1105.7	312.4	595.2
13779.0	17.0	37	4892.7	1117.1	312.7	595.7
13780.0	16.9	37	4959.2	1128.6	313.0	596.2
13781.0	16.8	37	5026.3	1140.2	313.3	596.7
13782.0	16.7	37	5094.0	1151.9	313.6	597.2
13783.0	16.6	37	5162.3	1163.7	313.9	597.7
13784.0	16.5	37	5231.2	1175.6	314.2	598.2
13785.0	16.4	37	5300.7	1187.6	314.5	598.7
13786.0	16.3	37	5370.8	1199.7	314.8	599.2
13787.0	16.2	37	5441.5	1211.9	315.1	599.7
13788.0	16.1	37	5512.8	1224.2	315.4	600.2
13789.0	16.0	37	5584.7	1236.6	315.7	600.7
13790.0	15.9	37	5657.2	1249.1	316.0	601.2
13791.0	15.8	37	5730.3	1261.7	316.3	601.7
13792.0	15.7	37	5804.0	1274.4	316.6	602.2
13793.0	15.6	37	5878.3	1287.2	316.9	602.7
13794.0	15.5	37	5953.2	1300.1	317.2	603.2
13795.0	15.4	37	6028.7	1313.1	317.5	603.7
13796.0	15.3	37	6104.8	1326.2	317.8	604.2
13797.0	15.2	37	6181.5	1339.4	318.1	604.7
13798.0	15.1	37	6258.8	1352.7	318.4	605.2
13799.0	15.0	37	6336.7	1366.1	318.7	605.7
13800.0	14.9	37	6415.2	1379.6	319.0	606.2
13801.0	14.8	37	6494.3	1393.2	319.3	606.7
13802.0	14.7	37	6574.0	1406.9	319.6	607.2
13803.0	14.6	37	6654.3	1420.7	319.9	607.7
13804.0	14.5	37	6735.2	1434.6	320.2	608.2
13805.0	14.4	37	6816.7	1448.6	320.5	608.7
13806.0	14.3	37	6898.8	1462.7	320.8	609.2
13807.0	14.2	37	6981.5	1476.9	321.1	609.7
13808.0	14.1	37	7064.8	1491.2	321.4	610.2
13809.0	14.0	37	7148.7	1505.6	321.7	610.7
13810.0	13.9	37	7233.2	1520.1	322.0	611.2
13811.0	13.8	37	7318.3	1534.7	322.3	611.7
13812.0	13.7	37	7404.0	1549.4	322.6	612.2
13813.0	13.6	37	7490.3	1564.2	322.9	612.7
13814.0	13.5	37	7577.2	1579.1	323.2	613.2
13815.0	13.4	37	7664.7	1594.1	323.5	613.7
13816.0	13.3	37	7752.8	1609.2	323.8	614.2
13817.0	13.2	37	7841.5	1624.4	324.1	614.7
13818.0	13.1	37	7930.8	1639.7	324.4	615.2
13819.0	13.0	37	8020.7	1655.1	324.7	615.7
13820.0	12.9	37	8111.2	1670.6	325.0	616.2
13821.0	12.8	37	8202.3	1686.2	325.3	616.7
13822.0	12.7	37	8294.0	1701.9	325.6	617.2
13823.0	12.6	37	8386.3	1717.7	325.9	617.7
13824.0	12.5	37	8479.2	1733.6	326.2	618.2
13825.0	12.4	37	8572.7	1749.6	326.5	618.7
13826.0	12.3					

DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
				+ NORTH - SOUTH	+ EAST - WEST	
1410.0	288.2	37	1273.0	478.4	291.5	560.2
1411.0	288.4	37	1273.9	478.8	291.7	560.6
1412.0	288.4	37	1274.8	479.1	292.0	561.1
1413.0	288.5	37	1275.7	479.5	292.3	561.6
1414.0	288.3	37	1276.6	479.9	292.6	562.1
1415.0	288.3	37	1277.4	480.3	292.9	562.5
1416.0	288.1	37	1278.3	480.7	293.2	563.0
1417.0	288.0	37	1279.2	481.0	293.5	563.5
1418.0	288.1	37	1280.0	481.4	293.7	564.0
1419.0	288.1	37	1280.9	481.8	294.0	564.4
1420.0	288.1	37	1281.7	482.2	294.3	564.9
1421.0	288.0	37	1282.6	482.5	294.6	565.4
1422.0	287.9	37	1283.5	482.9	294.9	565.8
1423.0	287.7	37	1284.4	483.3	295.2	566.3
1424.0	287.4	38	1285.3	483.7	295.5	566.8
1425.0	287.2	38	1286.2	484.0	295.7	567.2
1426.0	287.7	38	1287.1	484.4	296.0	567.7
1427.0	287.3	38	1288.0	484.8	296.3	568.1
1428.0	287.3	38	1288.9	485.1	296.6	568.6
1429.0	287.3	38	1289.8	485.5	296.8	569.0
1430.0	287.4	38	1290.7	485.8	297.1	569.5
1431.0	287.4	38	1291.6	486.2	297.4	570.0
1432.0	287.4	38	1292.5	486.6	297.7	570.4
1433.0	287.4	37	1293.4	486.9	298.0	570.9
1434.0	287.5	38	1294.3	487.3	298.3	571.3
1435.0	287.5	38	1295.2	487.7	298.6	571.8
1436.0	287.6	38	1296.1	488.0	298.8	572.2
1437.0	287.7	38	1297.0	488.4	299.1	572.7
1438.0	287.8	38	1297.9	488.8	299.4	573.2
1439.0	287.9	38	1298.8	489.1	299.7	573.6
1440.0	288.0	38	1299.7	489.5	300.0	574.1
1441.0	288.1	37	1300.6	489.9	300.2	574.6
1442.0	288.2	37	1301.5	490.2	300.5	575.0
1443.0	288.1	37	1302.4	490.6	300.8	575.5
1444.0	288.1	37	1303.3	491.0	301.1	576.0
1445.0	287.9	37	1304.2	491.4	301.4	576.4
1446.0	287.6	37	1305.1	491.7	301.7	576.9
1447.0	287.3	37	1306.0	492.1	301.9	577.4
1448.0	287.2	37	1306.9	492.5	302.2	577.8
1449.0	287.1	38	1307.8	492.9	302.5	578.3
1450.0	287.1	38	1308.7	493.3	302.8	578.7
1451.0	287.2	38	1309.6	493.6	303.1	579.2
1452.0	287.3	37	1310.5	493.9	303.3	579.6
1453.0	287.3	37	1311.4	494.3	303.6	580.1
1454.0	287.2	37	1312.3	494.7	303.9	580.6
1455.0	287.2	37	1313.2	495.0	304.2	581.0
1456.0	287.2	37	1314.1	495.4	304.4	581.5

MEASUREMENT	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
DEPTH M				+ NORTH - SOUTH	+ EAST - WEST
1457.0	27.1	37	1314.7	495.8	304.7
1458.0	27.1	37	1315.5	496.1	305.0
1459.0	27.1	37	1316.4	496.5	305.3
1460.0	27.1	37	1317.3	496.9	305.5
1461.0	27.1	37	1318.2	497.2	305.8
1462.0	27.1	37	1319.1	497.6	306.1
1463.0	27.1	37	1320.0	497.9	306.4
1464.0	27.1	37	1320.9	498.3	306.6
1465.0	27.1	37	1321.8	498.7	306.9
1466.0	27.1	37	1322.7	499.0	307.2
1467.0	27.1	37	1323.6	499.4	307.5
1468.0	27.1	37	1324.4	499.8	307.7
1469.0	27.1	37	1325.3	500.1	308.0
1470.0	27.1	37	1326.2	500.5	308.3
1471.0	27.1	37	1327.1	500.9	308.6
1472.0	27.1	37	1328.0	501.2	308.8
1473.0	27.0	37	1328.9	501.6	309.1
1474.0	27.0	37	1329.8	501.9	309.4
1475.0	27.0	37	1330.7	502.3	309.7
1476.0	27.0	36	1331.6	502.7	309.9
1477.0	27.0	36	1332.5	503.0	310.2
1478.0	27.0	36	1333.4	503.4	310.5
1479.0	27.0	36	1334.3	503.8	310.7
1480.0	27.0	36	1335.2	504.1	311.0
1481.0	27.0	36	1336.1	504.5	311.3
1482.0	27.0	36	1337.0	504.9	311.5
1483.0	27.0	36	1337.9	505.2	311.8
1484.0	27.0	36	1338.8	505.6	312.1
1485.0	27.0	36	1339.7	506.0	312.3
1486.0	27.0	36	1340.6	506.3	312.6
1487.0	26.9	37	1341.5	506.7	312.9
1488.0	26.9	37	1342.4	507.1	313.1
1489.0	26.9	37	1343.3	507.4	313.4
1490.0	26.9	36	1344.2	507.8	313.7
1491.0	26.9	36	1345.1	508.2	314.0
1492.0	26.9	36	1346.0	508.5	314.2
1493.0	26.9	36	1346.9	508.8	314.5
1494.0	26.9	36	1347.8	509.2	314.8
1495.0	26.9	36	1348.7	509.6	315.1
1496.0	26.9	36	1349.6	510.0	315.3
1497.0	26.9	36	1350.5	510.3	315.6
1498.0	26.9	36	1351.4	510.7	315.8
1499.0	26.9	36	1352.3	511.1	316.1
1500.0	26.9	36	1353.2	511.4	316.4
1501.0	26.9	36	1354.1	511.8	316.6
1502.0	26.9	36	1355.0	512.2	316.9
1503.0	26.9	36	1355.9	512.5	317.2

REF	DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
					+ NORTH - SOUTH	+ EAST - WEST
15500000	26.9	36	13556.5	512.9	317.4	603.2
15500050	26.9	36	13557.4	513.3	317.7	603.6
15500100	26.9	37	13558.3	513.6	318.0	604.1
15500150	26.9	37	13559.2	514.0	318.2	604.5
15500200	26.9	37	13560.1	514.4	318.5	605.0
15500250	26.8	37	13561.0	514.7	318.8	605.4
15500300	26.8	37	13561.9	515.1	319.0	605.9
15500350	26.8	37	13562.8	515.5	319.3	606.3
15500400	26.8	37	13563.7	515.8	319.6	606.8
15500450	26.8	37	13564.6	516.2	319.8	607.2
15500500	26.8	36	13565.5	516.5	320.1	607.7
15500550	26.8	36	13566.3	516.9	320.4	608.1
15500600	26.8	36	13567.2	517.3	320.7	608.6
15500650	26.8	37	13568.1	517.6	321.0	609.0
15500700	26.8	37	13569.0	518.0	321.2	609.5
15500750	26.8	37	13569.9	518.3	321.5	610.0
15500800	26.8	37	13570.8	518.7	321.7	610.4
15500850	26.8	37	13571.7	519.1	322.0	610.9
15500900	26.8	37	13572.6	519.4	322.3	611.3
15500950	26.7	37	13573.5	519.8	322.5	611.7
15501000	26.7	37	13574.4	520.1	322.8	612.2
15501050	26.7	37	13575.3	520.5	323.1	612.6
15501100	26.7	37	13576.2	520.9	323.3	613.1
15501150	26.7	37	13577.1	521.2	323.6	613.5
15501200	26.7	37	13578.0	521.6	323.9	614.0
15501250	26.7	37	13578.9	521.9	324.2	614.4
15501300	26.7	37	13579.8	522.3	324.4	614.9
15501350	26.7	37	13580.7	522.7	324.7	615.3
15501400	26.7	37	13581.6	523.0	325.0	615.8
15501450	26.7	37	13582.5	523.4	325.3	616.2
15501500	26.7	37	13583.4	523.7	325.5	616.7
15501550	26.7	37	13584.3	524.1	325.8	617.1
15501600	26.7	37	13585.2	524.5	326.1	617.5
15501650	26.7	37	13586.1	524.8	326.3	618.0
15501700	26.7	37	13587.0	525.2	326.6	618.4
15501750	26.7	37	13587.9	525.5	326.9	618.8
15501800	26.7	37	13588.8	525.9	327.1	619.3
15501850	26.7	37	13589.7	526.2	327.4	619.7
15501900	26.7	37	13590.6	526.6	327.7	620.2
15501950	26.7	37	13591.5	527.0	328.0	620.6
15502000	26.7	37	13592.4	527.3	328.2	621.1
15502050	26.7	37	13593.3	527.7	328.5	621.5
15502100	26.7	37	13594.2	528.0	328.8	622.0
15502150	26.7	37	13595.1	528.4	329.0	622.4
15502200	26.7	37	13596.0	528.8	329.3	622.8
15502250	26.7	37	13596.9	529.1	329.6	623.3
15502300	26.7	37	13597.8	529.5	329.8	623.8

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
15551.0	26.7	37	1398.5	529.8	330.1	624.3
15552.0	26.7	37	1399.4	530.2	330.4	624.7
15553.0	26.7	37	1400.3	530.6	330.7	625.2
15554.0	26.7	37	1401.2	530.9	330.9	625.6
15555.0	26.7	37	1402.1	531.3	331.2	626.1
15556.0	26.6	37	1403.0	531.6	331.5	626.6
15557.0	26.6	37	1403.9	532.0	331.7	626.9
15558.0	26.6	37	1404.8	532.3	332.0	627.4
15559.0	26.6	37	1405.6	532.7	332.3	627.8
15560.0	26.6	37	1406.5	533.1	332.5	628.3
15561.0	26.6	37	1407.4	533.4	332.8	628.7
15562.0	26.6	37	1408.3	533.8	333.1	629.2
15563.0	26.6	37	1409.2	534.1	333.4	629.6
15564.0	26.6	37	1410.1	534.5	333.6	630.1
15565.0	26.6	37	1411.0	534.8	333.9	630.5
15566.0	26.6	37	1411.9	535.2	334.2	631.0
15567.0	26.6	37	1412.8	535.5	334.4	631.4
15568.0	26.6	37	1413.7	535.9	334.7	631.9
15569.0	26.6	37	1414.6	536.3	335.0	632.3
15570.0	26.6	37	1415.5	536.6	335.2	632.7
15571.0	26.6	37	1416.4	537.0	335.5	633.2
15572.0	26.6	36	1417.3	537.4	335.8	633.6
15573.0	26.6	36	1418.2	537.7	336.0	634.1
15574.0	26.6	36	1419.1	538.1	336.3	634.5
15575.0	26.6	36	1420.0	538.4	336.6	635.0
15576.0	26.6	37	1420.8	538.8	336.8	635.4
15577.0	26.6	37	1421.7	539.2	337.1	635.9
15578.0	26.6	36	1422.6	539.5	337.4	636.3
15579.0	26.6	36	1423.5	539.9	337.7	636.8
15580.0	26.6	36	1424.4	540.2	337.9	637.2
15581.0	26.6	36	1425.3	540.6	338.2	637.7
15582.0	26.6	36	1426.2	541.0	338.4	638.1
15583.0	26.6	36	1427.1	541.3	338.7	638.5
15584.0	26.6	36	1428.0	541.7	339.0	639.0
15585.0	26.6	36	1428.9	542.0	339.2	639.4
15586.0	26.6	36	1429.8	542.4	339.5	639.9
15587.0	26.6	36	1430.7	542.8	339.8	640.3
15588.0	26.6	36	1431.6	543.1	340.0	640.8
15589.0	26.6	36	1432.5	543.5	340.3	641.2
15590.0	26.6	36	1433.4	543.9	340.5	641.7
15591.0	26.6	36	1434.3	544.2	340.8	642.1
15592.0	26.6	36	1435.2	544.6	341.1	642.6
15593.0	26.6	36	1436.1	544.9	341.3	643.0
15594.0	26.6	36	1437.0	545.3	341.6	643.5
15595.0	26.6	36	1437.9	545.7	341.9	643.9
15596.0	26.6	36	1438.8	546.0	342.1	644.4
15597.0	26.6	36	1439.7	546.4	342.4	644.8

MEAS. DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH	
M				+ NORTH * - SOUTH * + EAST * - WEST	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		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
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	363.3	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	26.1	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	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
M				+ NORTH * - SOUTH	+ EAST * - WEST
1692.0	27.0	37	1522.9	579.7	366.7
1693.0	27.0	36	1522.8	580.0	366.9
1694.0	27.3	36	1522.7	580.4	367.2
1695.0	27.2	36	1522.6	580.8	367.5
1696.0	27.2	37	1522.5	581.1	367.7
1697.0	27.1	37	1522.4	581.5	368.0
1698.0	27.1	37	1522.3	581.9	368.3
1699.0	27.1	37	1522.2	582.2	368.6
1700.0	27.2	37	1522.1	582.6	368.8
1701.0	27.2	37	1522.0	583.0	369.1
1702.0	27.2	37	1521.9	583.3	369.4
1703.0	27.2	38	1521.8	583.7	369.7
1704.0	27.1	38	1521.7	584.1	369.9
1705.0	27.1	38	1521.6	584.4	370.2
1706.0	27.0	38	1521.5	584.8	370.5
1707.0	26.9	38	1521.4	585.1	370.8
1708.0	26.8	38	1521.3	585.5	371.1
1709.0	26.7	38	1521.2	585.8	371.4
1710.0	26.7	38	1521.1	586.2	371.6
1711.0	26.6	38	1521.0	586.6	371.9
1712.0	26.6	38	1520.9	586.9	372.2
1713.0	26.5	38	1520.8	587.3	372.4
1714.0	26.5	38	1520.7	587.6	372.7
1715.0	26.4	38	1520.6	588.0	373.0
1716.0	26.4	38	1520.5	588.3	373.3
1717.0	26.3	38	1520.4	588.7	373.5
1718.0	26.2	38	1520.3	589.0	373.8
1719.0	26.2	38	1520.2	589.4	374.1
1720.0	26.1	38	1520.1	589.7	374.4
1721.0	26.1	39	1520.0	590.1	374.6
1722.0	26.1	39	1519.9	590.4	374.9
1723.0	26.0	38	1519.8	590.8	375.2
1724.0	26.0	38	1519.7	591.1	375.5
1725.0	26.0	38	1519.6	591.4	375.7
1726.0	26.0	39	1519.5	591.8	376.0
1727.0	26.0	39	1519.4	592.2	376.3
1728.0	25.9	39	1519.3	592.5	376.5
1729.0	25.7	39	1519.2	592.8	376.8
1730.0	25.7	39	1519.1	593.2	377.1
1731.0	25.7	39	1519.0	593.5	377.4
1732.0	25.7	39	1518.9	593.8	377.7
1733.0	25.7	39	1518.8	594.2	377.9
1734.0	25.8	39	1518.7	594.5	378.2
1735.0	25.8	39	1518.6	594.8	378.5
1736.0	25.8	39	1518.5	595.2	378.7
1737.0	25.8	39	1518.4	595.5	379.0
1738.0	25.7	39	1518.3	595.8	379.3

MEAS. DEPTH	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M	
M				+ NORTH - SOUTH	+ EAST - WEST	
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	381.1	709.3
1746.0	25.6	39	1573.3	598.5	381.5	709.8
1747.0	25.5	39	1574.2	598.8	381.7	710.2
1748.0	25.4	38	1575.1	599.1	382.2	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	38	1581.4	601.5	383.8	713.6
1756.0	24.9	38	1582.3	601.9	384.4	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	603.3	385.1	715.7
1761.0	24.8	38	1586.9	603.6	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	717.7
1766.0	25.0	38	1591.4	605.1	386.6	718.1
1767.0	24.9	38	1592.3	605.4	386.7	718.5
1768.0	24.9	38	1593.2	605.7	387.0	718.9
1769.0	24.8	38	1594.1	606.0	387.2	719.3
1770.0	24.7	39	1595.0	606.3	387.5	719.7
1771.0	24.8	39	1596.0	606.6	387.8	720.1
1772.0	24.8	39	1596.9	606.9	388.0	720.5
1773.0	24.9	39	1597.8	607.2	388.3	720.9
1774.0	24.8	39	1598.7	607.5	388.5	721.3
1775.0	24.8	39	1599.6	607.8	388.8	721.7
1776.0	24.7	39	1600.5	608.1	389.1	722.1
1777.0	24.7	39	1601.4	608.4	389.3	722.5
1778.0	24.6	39	1602.3	608.7	389.6	722.9
1779.0	24.6	39	1603.2	609.0	389.9	723.3
1780.0	24.8	39	1604.1	609.3	390.1	723.7
1781.0	24.9	39	1605.0	610.0	390.6	724.1
1782.0	25.0	39	1605.9	610.4	390.9	724.5
1783.0	25.0	39	1606.8	610.7	391.1	724.9
1784.0	25.0	39	1607.8	611.1	391.4	725.3
1785.0	25.0	39	1608.7	611.4	391.7	725.7

REF	MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES + NORTH - SOUTH	+ 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	392.0	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
*	1800.1	24.7	39	1622.3	616.3	395.7	732.4
*	1800.2	24.7	39	1622.4	616.6	395.9	732.8
*	1800.3	24.7	39	1622.5	617.3	396.2	733.3
*	1800.4	24.7	39	1622.5	617.3	396.2	733.3
*	1800.5	24.6	39	1622.6	617.6	396.4	733.6
*	1800.6	24.6	40	1622.6	617.9	397.0	734.0
*	1800.7	24.6	40	1622.7	618.2	397.2	734.4
*	1800.8	24.7	40	1622.8	618.6	397.5	735.0
*	1800.9	24.7	40	1622.9	618.9	397.8	735.5
*	1801.0	24.8	40	1630.5	619.2	398.0	736.1
*	1811.0	24.7	40	1631.4	619.5	398.3	736.5
*	1812.0	24.6	40	1632.3	619.8	398.6	736.9
*	1813.0	24.6	41	1633.2	620.2	398.8	737.3
*	1814.0	24.6	41	1634.1	620.5	399.1	737.7
*	1815.0	24.5	41	1635.0	620.8	399.4	738.2
*	1816.0	24.2	40	1635.9	621.1	399.6	738.6
*	1817.0	24.0	39	1636.8	621.4	399.9	739.0
*	1818.0	23.9	39	1637.7	621.7	400.2	739.4
*	1819.0	23.8	40	1638.6	622.1	400.4	739.8
*	1820.0	23.8	40	1640.5	622.4	400.7	740.2
*	1821.0	23.9	40	1641.4	622.7	401.0	740.6
*	1822.0	23.9	40	1642.3	623.0	401.2	741.0
*	1823.0	24.0	40	1643.2	623.3	401.5	741.4
*	1824.0	24.1	40	1644.1	623.6	401.7	741.8
*	1825.0	24.2	40	1645.0	623.9	402.0	742.2
*	1826.0	24.2	40	1646.0	624.2	402.3	742.6
*	1827.0	24.1	41	1646.9	624.6	402.5	743.0
*	1828.0	24.1	41	1647.8	624.9	402.8	743.4
*	1829.0	23.9	41	1648.7	625.2	403.0	743.8
*	1830.0	23.8	40	1648.7	625.5	403.3	744.2
*	1831.0	23.7	40	1649.6	625.8	403.6	744.7
*	1832.0	23.6	40	1650.5	626.1	403.8	745.1
*	1833.0	23.6	40	1651.4	626.4	404.1	745.5

MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES		COURSE LENGTH M
				+ NORTH - SOUTH	+ EAST - WEST	
1080333.0	23.4	41	1652.3	626.7	404.4	745.9
1080334.0	23.4	41	1653.3	627.0	404.6	746.2
1080335.0	23.4	41	1654.2	627.3	404.9	746.6
1080336.0	23.5	41	1655.1	627.6	405.1	747.0
1080337.0	23.5	41	1656.0	627.9	405.4	747.4
1080338.0	23.5	41	1656.9	628.2	405.7	747.8
1080339.0	23.6	41	1657.9	628.5	405.9	748.2
1080340.0	23.5	41	1658.8	628.8	406.2	748.6
1080341.0	23.5	42	1659.7	629.1	406.5	749.0
1080342.0	23.5	42	1660.6	629.4	406.7	749.4
1080343.0	23.2	42	1661.5	629.7	407.0	749.8
1080344.0	23.0	42	1662.4	630.0	407.2	750.2
1080345.0	23.4	41	1663.3	630.3	407.5	750.6
1080346.0	22.9	41	1664.3	630.6	407.8	751.0
1080347.0	22.7	41	1665.2	630.9	408.0	751.3
1080348.0	22.6	41	1666.1	631.2	408.3	751.7
1080349.0	22.8	41	1667.0	631.5	408.5	752.1
1080350.0	22.7	41	1668.0	631.8	408.8	752.5
1080351.0	22.8	41	1668.9	632.1	409.0	752.9
1080352.0	22.9	41	1669.8	632.4	409.3	753.3
1080353.0	23.0	41	1670.7	632.6	409.5	753.6
1080354.0	23.0	40	1671.7	632.9	409.8	754.0
1080355.0	23.0	40	1672.6	633.2	410.1	754.4
1080356.0	22.9	40	1673.5	633.5	410.3	754.8
1080357.0	22.8	40	1674.4	633.8	410.6	755.2
1080358.0	22.7	41	1675.3	634.1	410.8	755.6
1080359.0	22.6	41	1676.2	634.4	411.1	756.0
1080360.0	22.7	41	1677.1	634.7	411.3	756.3
1080361.0	22.7	41	1678.0	635.0	411.6	756.7
1080362.0	22.8	41	1679.0	635.3	411.8	757.1
1080363.0	22.6	40	1680.0	635.6	412.1	757.5
1080364.0	22.6	40	1680.9	635.9	412.3	757.9
1080365.0	22.5	40	1681.8	636.2	412.6	758.2
1080366.0	22.5	39	1682.7	636.5	412.8	758.6
1080367.0	22.5	39	1683.6	636.8	413.1	759.0
1080368.0	22.6	39	1684.5	637.1	413.3	759.4
1080369.0	22.7	40	1685.4	637.4	413.5	759.8
1080370.0	22.7	40	1686.3	637.7	413.8	760.2
1080371.0	22.6	41	1687.2	638.0	414.0	760.5
1080372.0	22.6	41	1688.1	638.3	414.3	760.9
1080373.0	22.6	40	1689.0	638.6	414.5	761.3
1080374.0	22.5	40	1690.0	638.8	414.8	761.7
1080375.0	22.5	39	1691.0	639.1	415.0	762.1
1080376.0	22.6	39	1692.0	639.4	415.3	762.4
1080377.0	22.7	40	1692.9	639.7	415.5	762.8
1080378.0	22.7	40	1693.8	640.0	415.8	763.2
1080379.0	22.8	40	1694.7	640.3	416.0	763.6

REF	MEAS DEPTH M	DEVIATION DEGREES	AZIMUTH DEGREES	TRUE VERTICAL DEPTH M	CO-ORDINATES	COURSE LENGTH M
					+ NORTH - SOUTH	+ EAST - WEST
*	18880.0	22.8	40	1695.6	640.6	416.3
*	18881.0	22.8	40	1696.6	640.9	416.5
*	18882.0	22.8	40	1697.5	641.2	416.8
*	18883.0	22.8	40	1698.4	641.5	417.0
*	18884.0	22.8	40	1699.3	641.8	417.3
*	18885.0	22.7	40	1700.3	642.1	417.5
*	18886.0	22.7	40	1701.2	642.4	417.8
*	18887.0	22.6	40	1702.1	642.7	418.0
*	18888.0	22.5	39	1703.0	643.0	418.3
*	18889.0	22.4	39	1703.9	643.3	418.5
*	18890.0	22.3	39	1704.9	643.6	418.7
*	18891.0	22.3	39	1705.8	643.9	419.0
*	18892.0	22.3	39	1706.7	644.2	419.2
*	18893.0	22.3	40	1707.6	644.5	419.5
*	18894.0	22.3	40	1708.6	644.7	419.7
*	18895.0	22.4	40	1709.5	645.0	419.9
*	18896.0	22.6	40	1710.4	645.3	420.2
*	18897.0	22.7	40	1711.3	645.6	420.4
*	18898.0	22.7	39	1712.3	645.9	420.7
*	18899.0	22.8	39	1713.2	646.2	420.9
*	19000.0	22.7	39	1714.1	646.5	421.2
*	19001.0	22.6	39	1715.0	646.8	421.4
*	19002.0	22.5	39	1716.0	647.1	421.7
*	19003.0	22.5	39	1716.9	647.4	421.9
*	19004.0	22.5	39	1717.8	647.7	422.1
*	19005.0	22.5	40	1718.7	648.0	422.4
*	19006.0	22.5	40	1719.7	648.3	422.6
*	19007.0	22.5	40	1720.6	648.6	422.9
*	19008.0	22.4	40	1721.5	648.9	423.1
*	19009.0	22.4	40	1722.4	649.2	423.3
*	1910.0	22.4	41	1723.3	649.5	423.6
*	1911.0	22.4	41	1724.3	649.8	423.8
*	1912.0	22.3	40	1725.2	650.1	424.1
*	1913.0	22.2	40	1726.1	650.3	424.3
*	1914.0	22.3	40	1727.0	650.6	424.6
*	1915.0	22.5	40	1728.0	650.9	424.8
*	1916.0	22.6	40	1728.9	651.2	425.1

* 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)