W964. WILSON-1. W.C.R. VOL 1 OF 2.

PEP 105
OTWAY BASIN

WILSON NO. 1

WELL COMPLETION REPORT
TEXT & APPENDICES

BY

B. RAYNER
FEBRUARY
1988

BEACH PETROLEUM N.L.

(Incorporated in South Australia)

WILSON NO. 1.

WELL COMPLETION REPORT

by

B.L. RAYNER

For : Beach Petroleum N.L.
685 Burke Road,
CAMBERWELL.....3124
VICTORIA.

February 1988.

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PE902208

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DLL-MSFL-GR	1	1:200
DLL-MSFL-GR	1	1:500
LDL-CNL-NGT	1	1:200 & 1:500
Mean Square Dip	1	1:200
Mean Square Dip	1	1:500
BHC-GR	1	1:200
BHC-GR	1	1:500
Cyberlook	1	1:200
Cyberlook (Sonic Porosity)	1	1:200
Cyberlitho	1	1:200
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SUMMARY

Wilson No. 1 was the second of a four well program in PEP 105/118, Otway Basin, Victoria.

The well was located 35 km east of Mount Gambier and 60 km west of Portland.

Participants in the well were Beach Petroleum N.L. (operator), Gas & Fuel Exploration N.L., SOCDET Production Pty. Ltd. and Conex Australia Ltd.

The prospect was a seismically defined faulted culmination basinward of the Tartwaup Fault.

Principle target horizons were the Paaratte Formation, the Pebble Point Formation and the intra-Pember Sandstone.

Drilling commenced on the 10th July, 1987 and reached a total depth of 1317m (KB) on the 23rd of July, 1987.

Three conventional open hole drill stem tests were attempted across the Pebble Point Formation before total depth was reached. All were miss-run.

At total depth the following wireline logs were run: Dual Laterolog Resistivity, Micro-Spherically Focused Resistivity, Litho-Density/Compensated Neuton Log, Gamma Ray-Borehole Compensated Sonic, Stratigraphic High Resolution Dipmeter, Check Shot Survey and Sidewall cores.

No conventional cores were cut.

Wilson No. 1 was plugged and abandoned, and the rig released on the 25th July, 1987.

1. INTRODUCTION

Wilson No. 1 was drilled in the Tyrendarra Embayment of the Otway Basin.

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

The well was designed to test the hydrocarbon prospectivity at the top of the Upper Cretaceous Paaratte Formation. Secondary targets were the basal Tertiary Pebble Point Formation and the intra-Pember Sand.

The prospect was seismically mapped at "Top Seismic Pember" and "Near Top Pebble Point". This interpretation suggested that the feature was a faulted rollover located immediately on the downthrown side of the Tartwaup Fault.

The anticipated source rock was the Lower Cretaceous Eumeralla Formation which is mature for oil generation below about 2500m. Vertical migration was proposed via the Tartwaup Fault with the Pember Mudstone providing the cap rock.

PEP 105	OTWAY BASIN	WILSON NO. 1	BEACH PETROLEUM N.L.

Status: P & A, Dry Hole with oil shows.

Hole Size: 12¼" to 315.5m, 8½" to 1317m.

Casing Shoe: 312.4m.

Plugs: No. 1 1195-1145m, No. 2 317-251m.

Location: Lat. 37° 56' 22.45"S Long. 141° 8' 31.9"E

Seismic: SP181, WGD85-329.

Elevation: 51.6m G.L. 56.2 K.B.

Spudded: 10 July 1987. **Rig Release:** 25 July 1987.

Rig: O.D.E. Rig 19, Kremco K600H.

Rock Unit	KB(m)	Thickness(m)	Rock Unit	KB(m)	Thickness(m)
Heytesbury Grp	Surface	186.4			
Nirranda Grp	191	14.0			
Dilwyn Fm	205	728.5			
Pember Mudstone Mbr	933.5	259.5			
Intra-Pember Sst	abs				
Pebble Point Fm	1193	90.0			
Paaratte Fm	1283	+34.0			

Total Depth (Driller) 1317

Total Depth (Logger) 1315.5

Logs: DLL/MSFL/SP/GR, LDL/CNL, GR/BHC, SHDT, WST, CST, Mudlog.

Tests: DST No. 1 (1203.5-1192m) miss-run; DST No. 2 (1203.5-1196m) miss-run: DST No. 3 (1212-1199m) miss-run.

Cores: Nil.

Summary & Conclusions:

The Wilson Prospect was a seismically defined faulted culmination basinward of the Tartwaup Fault.

Principal targets were the Paaratte Formation, the Pebble Point Formation and the intra-Pember Sand.

No anomalous mud gas readings were observed. Significant fluorescence and cut was noted in cuttings and sidewall cores of the Pebble Point Formation. Three drill stem tests across the zone were miss-run. Oil extracted from the sidewall cores suggests a marine source rock affinity. Dipmeter interpretation suggests that the structure is more complex than originally proposed and raises the possibility that Wilson No. 1 was not a valid test of a structural closure.

Prepared by: B.L. Rayner.

Date: December 1987.

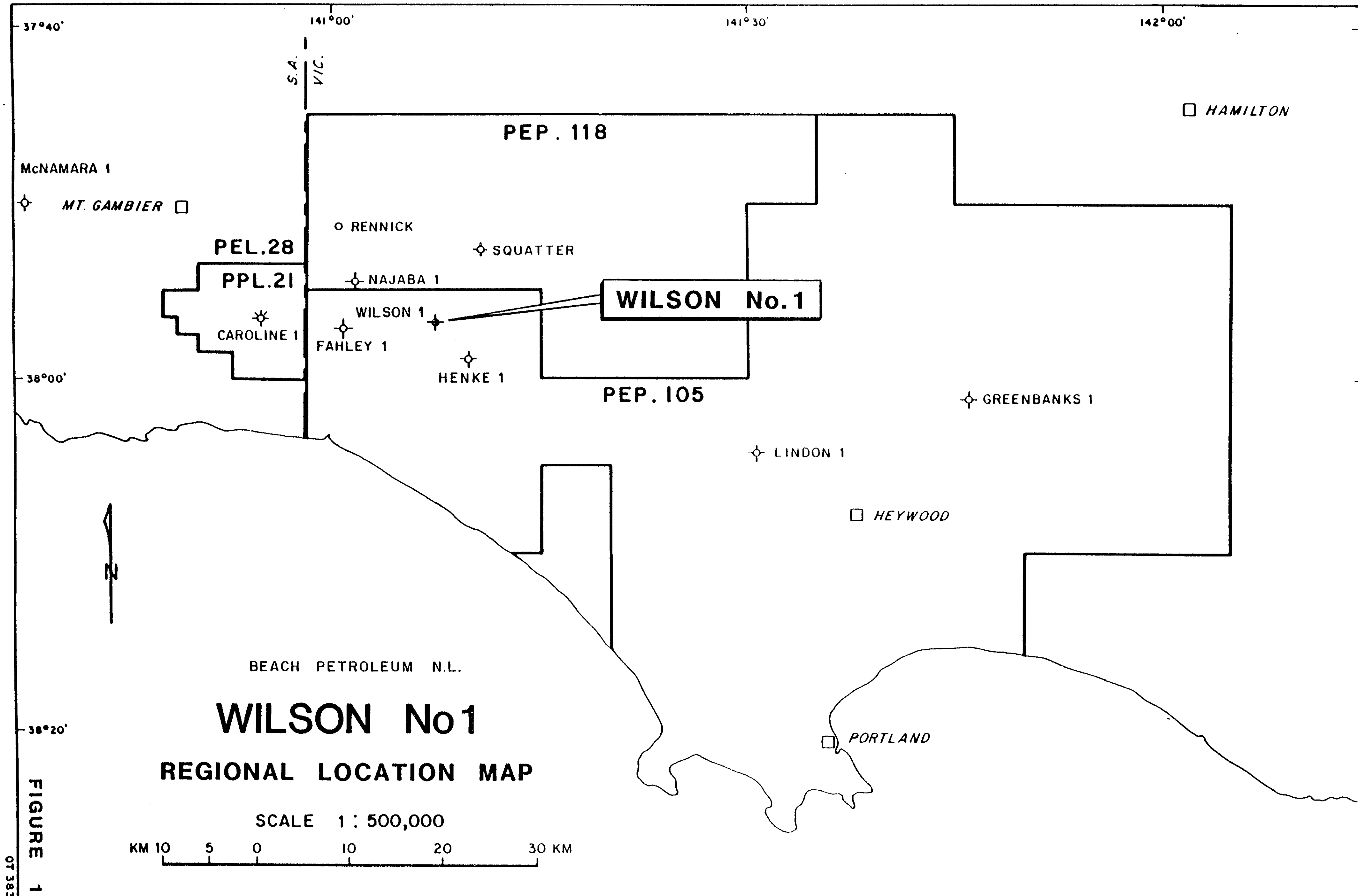
2. WELL HISTORY

2.1 Location (See Figure 1)

Co-ordinates:	Latitude 37° 56' 22.4" S Longitude 141° 8' 31.9" E
Geophysical Control:	Shot point 181, Seismic Line WGD85-329
Real Property Description:	County of Follett Parish of Wanwin Shire of Portland
Property Owner:	W.F.A. & R.L. Cook, "Kinross"

2.2 General Data (See Figure 2)

Well Name and Number:	Wilson No. 1
Tenement:	PEP 105
Operator:	Beach Petroleum N.L. 685 Burke Road CAMBERWELL VIC 3124
Participants:	Beach Petroleum N.L. Gas and Fuel Exploration N.L. 151 Flinders Street MELBOURNE VIC 3000 SOCDET Production Limited 44 Margaret Street SYDNEY NSW 2000



BEACH PETROLEUM N.L.

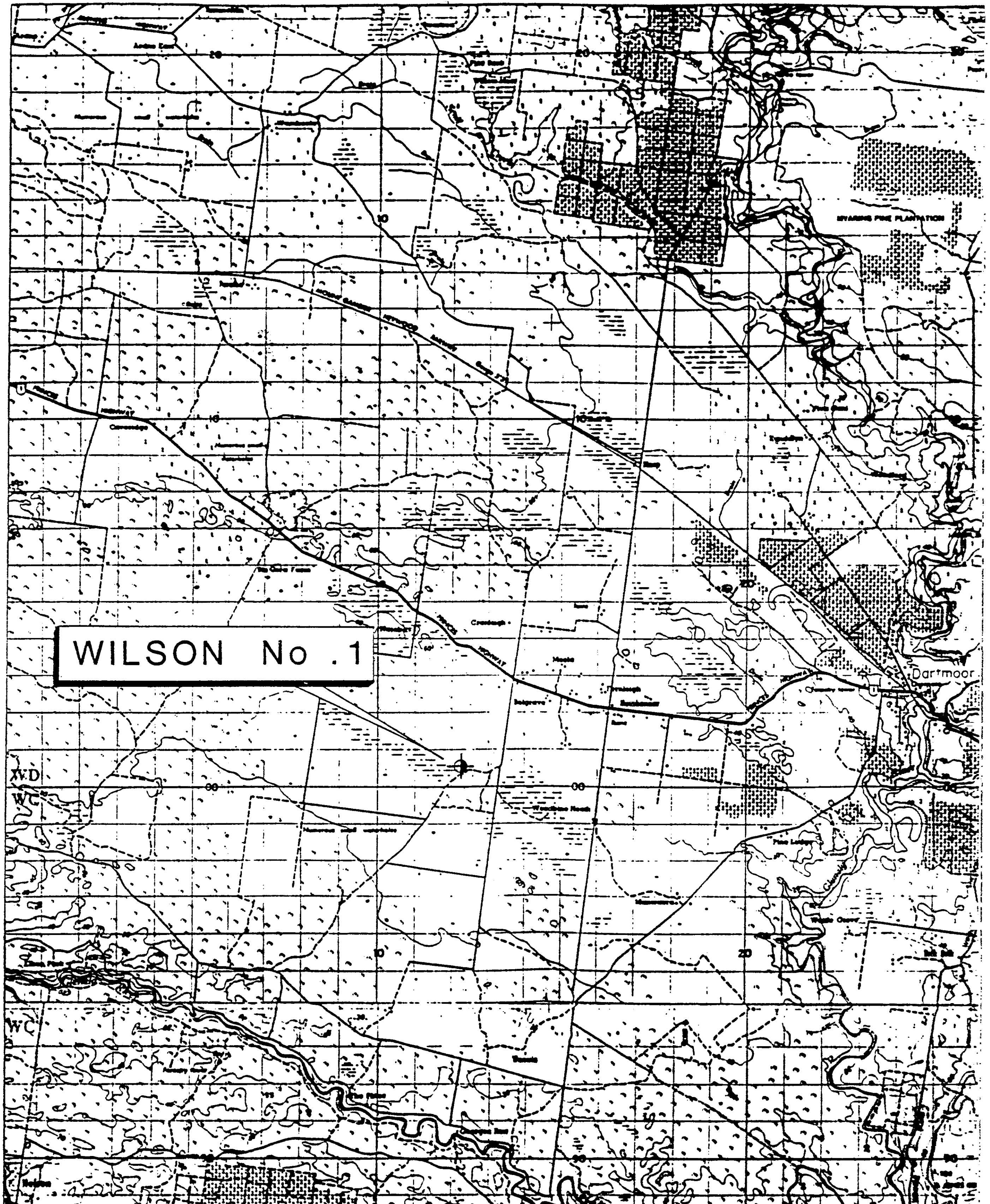
WILSON No1

REGIONAL LOCATION MAP

SCALE 1 : 500,000

FIGURE 1

OT 383



BEACH PETROLEUM N.L.

WILSON No.1

DETAILED LOCATION MAP

0 1 2 3 4 5 6 7 Km

FIGURE 2

OT 3837

	CONEX Australia Ltd 106 Forrest Street COTTESLOE WA 6001
Elevation:	Ground Level 51.6m ASL Kelly Bushing 56.2m ASL (unless otherwise stated, all depths refer to KB.)
Total Depth:	Driller 1317.0 m Wireline Logger 1315.5 m
Drilling Commenced:	10th July, 1987 @ 1500 hours
Total Depth Reached:	23rd July, 1987 @ 1200 hours
Rig Released:	25th July, 1987 @ 2130 hours
Drilling Time to T.D:	16 days
Status:	Plugged and abandoned, dry hole with oil shows.

2.3 Drilling Data (See also Appendicies 1 and 2)

2.3.1 Drilling Contractor

O.D. & E. Pty Limited
Westport Road
ELIZABETH WEST SA 5112

2.3.2 Drilling Rig

O.D. & E. Rig 19, Kremco K600H.

2.3.3 Casing and Cementing Details

A 16" conductor pipe was set at 15.5m. The conductor pipe and cellar washed out at 86m necessitating cementing, rig removal, excavation, packing gravel and a stronger cellar ring before drilling could continue.

Surface Casing

Size:	9-5/8"
Weight and Grade:	16 joints 36 lb/ft K55 8rd 13 joints 40 lb/ft K55 8rd
Centralisers:	At first, second and third joints.
Float Collar:	299.4 - 299m
Shoe:	312.4m
Cement:	240 sacks Class "A" with 2% prehydrated gel and 162 sacks Class "A" neat.
Cemented to:	Surface
Method:	Single plug displacement. (Top plug only).
Equipment:	Dowell Schlumberger (Western) S.A.

Cement Plugs

Plug No. 1

Interval:	1195 - 1145 m
Cement:	65 sacks Class "A" neat
Method:	Balanced
Tested:	No

Plug No. 2

Interval:	317 - 251 m
Cement:	65 sacks Class "A" neat
Method:	Balanced
Tested:	5000 lbs weight

Plug No. 3

Interval:	Surface
Cement:	25 sacks Class "A" neat

2.3.4 Drilling Fluid (See Appendix 3 for details)

The entire 12¼" hole and the 8½" hole to 830m was drilled with a fresh water gel/lime mud system. From 830m to 930m the drilling fluid was converted to a low KCl Bentonite CMC system. From 930m to T.D. the mud properties were held close to the following:

Weight:	9.2+ ppg
Viscosity:	39 seconds
PV/YP:	9/11
Gels:	7/8
Filtrate:	8.0
PH:	9.5
Cl^-:	9,500 - 11,000 ppm
KCl:	1.75%

2.3.5 Water Supply

Drilling water was obtained from a dam close to the well site.

2.4 Formation Sampling and Testing

2.4.1 Cuttings

Cuttings samples were collected at 10 metre intervals from the surface to 900 metres, and at 5 metre intervals from 900 metres to T.D. Each sample was washed, oven dried, divided into 4 splits and stored in labelled polythene bags. One complete sample set was distributed to the following: Gas and Fuel Exploration N.L. and the Victorian Department of Industry, Technology and Resources. Beach retained the spares.

In addition, from surface to T.D., 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) Twenty nine sidewall cores were attempted, twenty eight were recovered and one bullet was lost. Listed below are the depths and recovery of the sidewall cores (see Appendix 4 for descriptions).

SWC No.		Depth (m)	Recovery (cm)
1	A	1308.5	2.5
2		1300.3	2.4
3		1290.5	2.5
4		1287.5	4.0
5	A	1285.0	3.7
6a	A	1281.5	5.7
6b		1281.5	5.0
7	A P	1274.0	5.0
8		1265.0	Lost Bullet
9		1251.0	4.0
10	A	1237.0	3.5
11		1231.0	4.7
12	A	1223.5	2.2
13	V P	1218.0	5.5
14	A	1215.5	5.5
15		1211.5	3.5
16	V	1210.0	5.2
17	P C	1208.0	5.0
18		1200.0	5.7
19	P C	1197.0	5.5
20	V A	1195.0	5.5
21	A P C	1194.0	5.0
22	A	1173.0	4.0
23	A	1089.0	3.3
24a		1036.0	3.0
24b		1036.0	4.7
25	V	985.0	3.5
26		936.0	4.0
27		855.5	2.5

Note: V = Vitrinite Reflectance Data available, Appendix 7.
A = Age Dating available, Appendix 8.
P = Petrography available, Appendix 9.
C = Core analysis and hydrocarbon composition, Appendices 10 & 11.

2.4.3 Tests

Three conventional dual packer, bottom hole drill stem tests were performed.

DST No. 1 (1203.5 - 1192m) - packer seat failed.
DST No. 2 (1203.5 - 1196m) - packer seat could not be established.
DST No. 3 (1212 - 1199m) - packer seat failed.

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, continous mud gas monitoring, intermittent mud and cuttings gas analysis, pump rate and mud volume data. The Exlog Masterlog is included as Enclosure 2.

2.5.2 Wireline Logging

Wireline logging was performed by Schlumberger Seaco Incorporated using a skid-mounted Cyber Service Unit. Three logging suites were performed and details are listed below. An analysis of these logs is included as Appendix 12 and a summary of findings in section 4.2.

Suite 1

Gamma Ray - Caliper (GR/CAL)	1197 - 896m

Suite 2

Gamma Ray - Caliper	1208 - 1100m

Suite 3

Dual Laterolog Resistivity Log (DLL/SP/GR/CAL)	1311 - 312.5m

Micro-Spherically Focused Resistivity Log (MSFL)	1311 - 1000m
Litho-Density/Compensated Neuton/ Log (LDL/CNL)	1315.5 - 1000m
Gamma Ray/Sonic Log (GR/BHC)	1311.5 - 312.5m GR to surface
Stratigraphic High Resistivity Dipmeter Tool (SHDT) (Mean Square Dip Processing)	1313.0 - 750.0m

In addition the following CSU products were generated: Cyberlook, Cyberlook (Sonic Porosity) and Cyberlitho.

2.5.3 Deviation Surveys

Regular hole deviation surveys were conducted, the results of which are listed below:

Depth (m)	Deviation (°)
39	1.0
87	0.05
154	0.25
239	0.25
315	0.25
387	0.50
473	0.25
663	0.50
826	0.25
1057	1.75
1134	1.75
1192	1.0
1317	1.0

2.5.4 Velocity Survey

A velocity survey was carried out by Schlumberger Seaco Incorporated, the result of which is included as Appendix 5.

3. RESULTS OF DRILLING

3.1 Stratigraphy

The following stratigraphic intervals have been delineated using penetration rate, lithology and wireline log interpretation, and palynology. (Figures 3 & 4).

Group	Formation	Depth (m)	Thickness (m)
Heytesbury	undifferentiated	Surface	186.4
Nirranda	undifferentiated	191.0	14.0
Wangerrip	Dilwyn	205.0	728.5
	Pember Mdst Mbr	933.5	259.5
	Pebble Point	1193.0	90.0
Sherbrook	Paaratte	1283.0	+34.0
	T.D.	1317.0	

3.2 Lithological Descriptions

3.2.1 HEYTESBURY GROUP (Surface to 191.0m)

Surface to 135m: CALCARENITE, light to medium grey, light brown grey, light brown, friable to hard, fine to medium grained, common bryozoan fragments, trace to common shell fragments, forams, glauconite, quartz grains, black carbonaceous detritus, echinoid spines, moderately argillaceous in part, poor to good visual porosity.

135m to 191m: CALCILUTITE, medium grey, firm to soft, sticky, abundant fossil fragments, trace glauconite, with minor CALCARENITE as above.

BEACH PETROLEUM N.L.

WILSON No .1

PROGNOSED AND ACTUAL STRATIGRAPHY

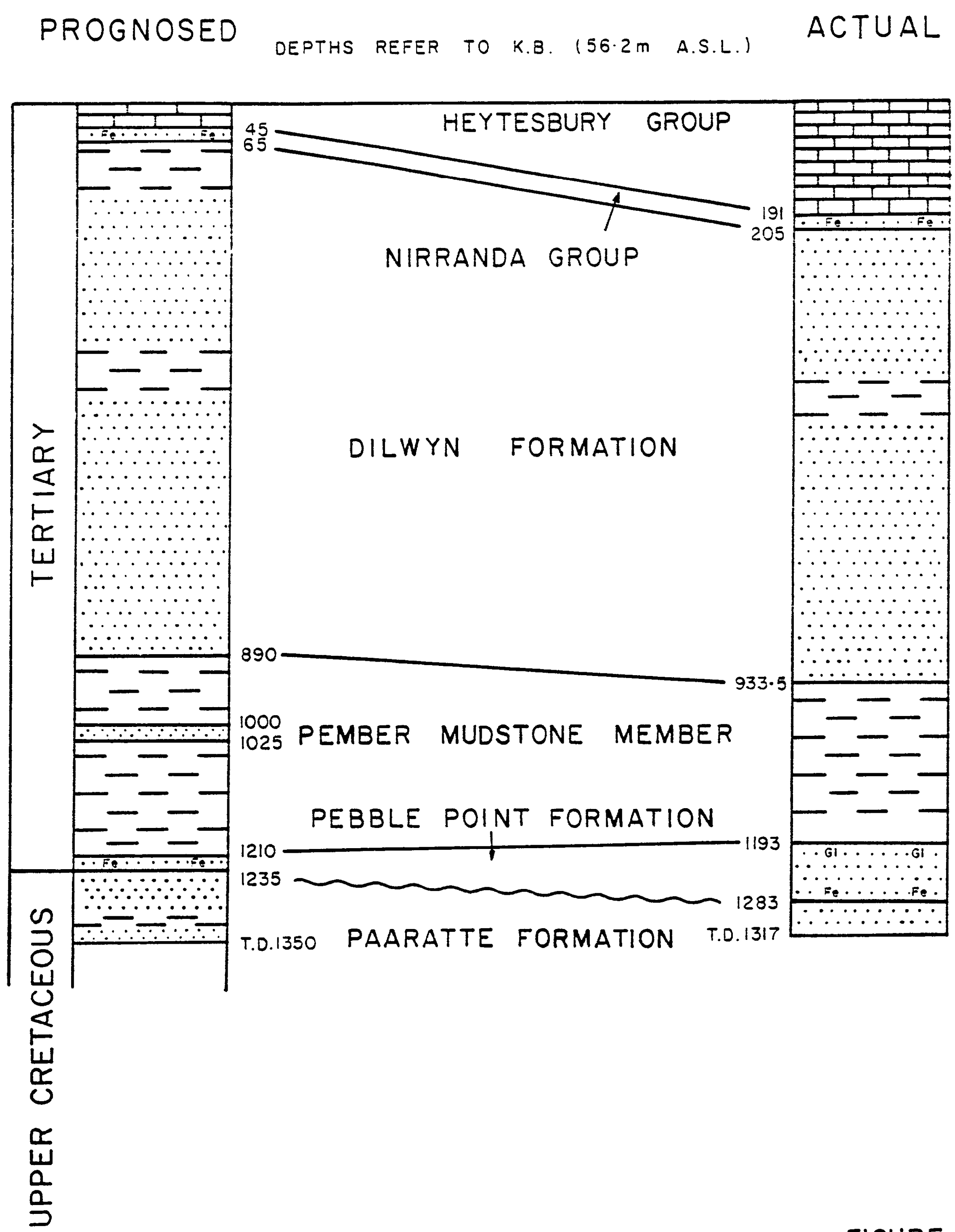


FIGURE 3

OT 3838

BEACH PETROLEUM N.L.

PEP 105/118 AND ENVIRONMENTS — OTWAY BASIN

STRATIGRAPHIC TABLE

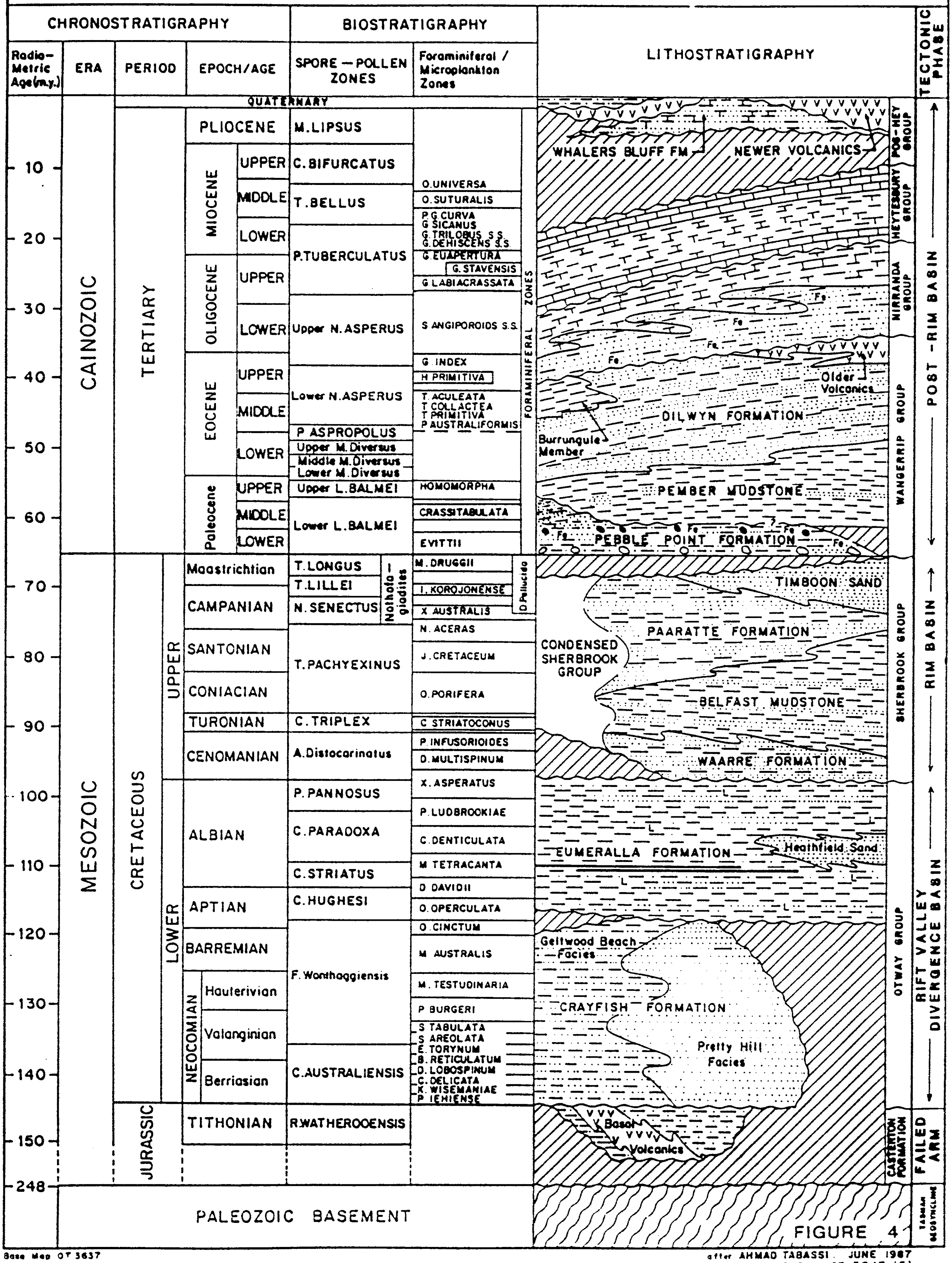


FIGURE 4

Base Map OT 3637

after AHMAD TABASSI JUNE 1987
DRG No. OT 3843 (F)

3.2.2 NIRRANDA GROUP (191m to 205m)

Interbedded DOLOMITE, light green grey, hard, with CALCARENITE, white, brown, red, common coarse rounded iron oxide pellets, minor coarse rounded iron stained quartz, trace shell fragments, and SILTY CLAYSTONE, medium red-brown, common pyrite, trace coal and reworked volcanics.

3.2.3 WANGERRIP GROUP (205m to 1283m)

Dilwyn Formation

205m to 933.5m

SANDSTONE, medium to very light brown grey, loose, very fine to granule, dominantly medium to coarse grained, subangular to subrounded, moderately sorted, clear to translucent quartz, occasional yellow-red stain, minor medium brown argillaceous matrix, trace silica and calcite cement, trace to common carbonaceous detritus, minor grey and green cherty lithics, occasional glauconite, trace pyrite and mica, good visual porosity. Interbedded with minor CLAYSTONE, medium to dark brown, grey, soft, dispersive, moderate to very carbonaceous, silty and arenaceous in part, occasionally micromicaceous, trace mica, pyrite.

Pember Mudstone Member

933.5m to 1193m

CLAYSTONE, medium grey brown to olive grey grading to dark brown grey to olive black with depth, soft to firm, very dispersive, trace to common carbonaceous detritus and laminae, trace dolomite, trace very fine quartz sand laminae, trace pyrite, trace glauconite at base.

Pebble Point Formation

1193m to 1283m

SANDSTONE, medium to dark green, medium to dark green grey, friable to hard, very fine to granule dominantly fine to medium grained, angular to subrounded, very poorly sorted quartz with common to minor brown, grey green stain, up to 60% dark green, medium green grey argillaceous matrix, weak siliceous cement in part, slight calcite cement in part, poor visual porosity. Interbedded with SANDSTONE, mottled medium brown, medium to dark green grey, off white, friable, very fine to very coarse, dominantly medium grained, subangular to subrounded, very poorly sorted quartz with trace to common brown, green, grey stain, up to 40% silty and argillaceous, white, light to medium brown, light to dark green grey, dark brown grey matrix, weak siliceous cement in part, nil to moderate calcite cement, nil to common glauconite, nil to trace shell fragments, poor visual porosity. Interbedded with SANDSTONE, dark brown, moderately hard to hard, very fine to pebble, predominantly medium grained, subrounded to rounded, very poorly sorted, with 30% dark brown iron oxide stained quartz, and 30% dark brown to brown iron oxide pellets and 40% dark brown iron oxide matrix and cement, slightly calcareous in part, very poor visual porosity.

Interbedded with minor CLAYSTONE, light to medium grey brown, light grey, soft, silty, arenaceous in part, very dispersive, trace micromicaceous, trace carbonaceous laminae.

3.2.4 SHERBROOK GROUP (1283m to 1317m)

Paaratte Formation

1283m to 1317m

SANDSTONE, light to dark grey, friable to loose, very firm to granule, dominantly medium grained, subangular to subrounded, poor to moderately sorted, clear to translucent quartz, common medium to dark grey argillaceous matrix, trace to common pyrite cement, weak siliceous cement, trace to common carbonaceous detritus and laminae, trace grey cherty lithics, trace pyrite, trace mica, poor to fair visual porosity.

Interbedded with CLAYSTONE, medium to dark grey, firm, subfissile, micromicaceous, very carbonaceous, slightly silty, occasionally arenaceous, trace pyrite.

3.3 Hydrocarbon Indications

3.3.1 Mud Gas Readings

The gas detection equipment was operational from surface to total depth.

A background mud gas of trace to 100 ppm C_1 was relatively constant throughout the entire section. No anomalous mud gas readings were observed.

3.3.2 Sample Fluorescence

Cuttings samples were routinely inspected for oil fluorescence at 10m intervals from surface to 900m and at 5m intervals from 900m to T.D. All sidewall cores were also examined for oil fluorescence.

Cuttings fluorescence was noted within the Pebble Point Formation from 1199m to 1218m. The fluorescence was described as up to 60% dull yellow-orange patchy fluorescence with a very weak pale milky-white crush cut, nil stain, nil odour.

Sidewall cores from 1194m to 1215.5m had between 10% and 30% patchy, very dull to moderately bright orange-gold and yellow-orange fluorescence with a weak to extremely weak pale yellow-white to milky yellow crush cut fluorescence (see Appendix 4 for details).

The sidewall cores from 1194m, 1197m and 1208m were examined by Amdel who noted the best fluorescence was from the 1208m sample (spotty 25% white fluorescence with fair milky-white/gold cut fluorescence). Oil extracted from this sidewall core was described as a fairly immature marine crude with a minor input from higher plant terrestrial organic matter (see Appendicies 10 and 11 for details).

4. GEOLOGY

4.1 Structure

4.1.1 Seismic

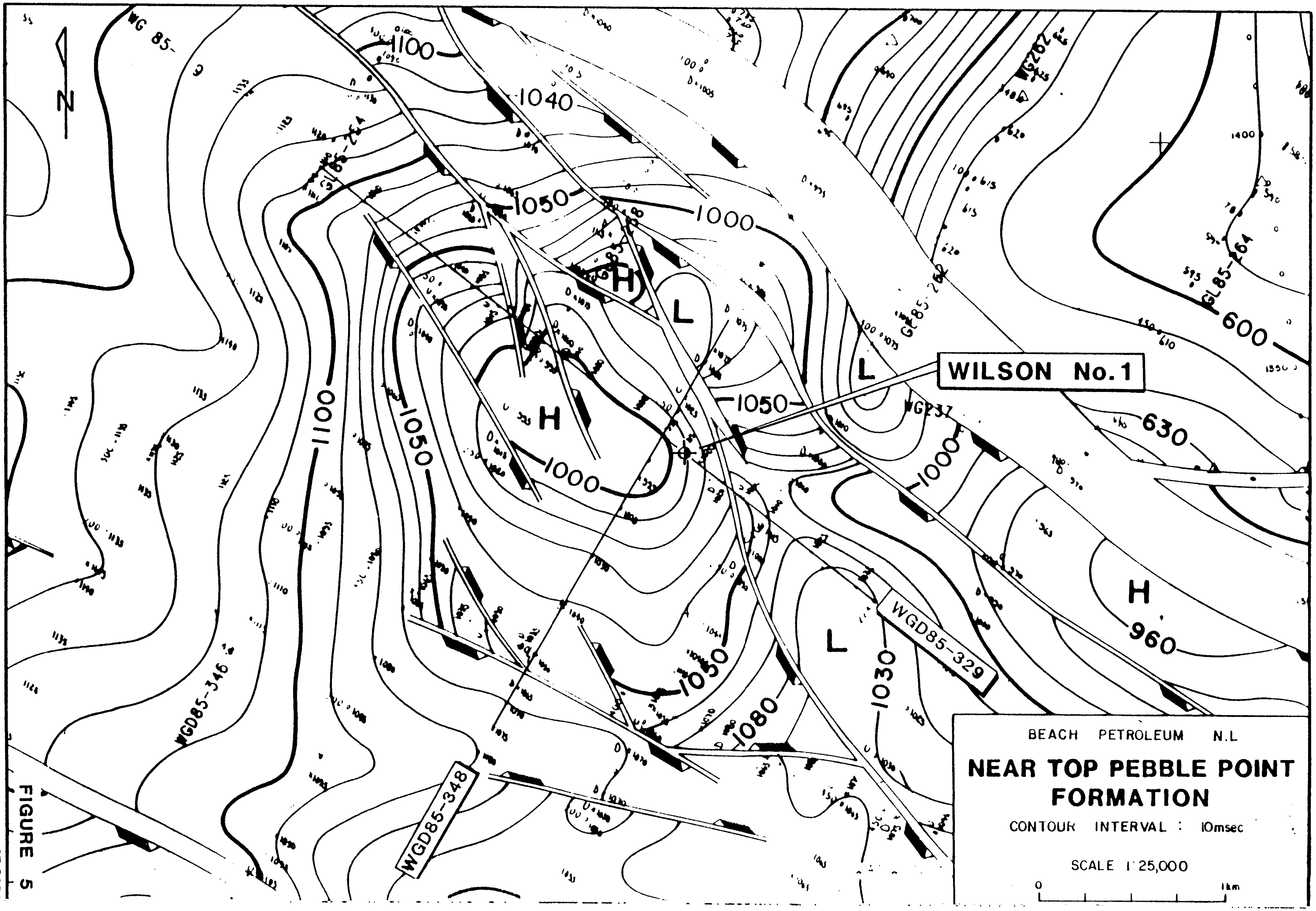
The Wilson Prospect was delineated by the Beach 1985 Wanwin Gorae (WG) Seismic Survey and refined by the Beach 1985 Wanwin Gorae Detail (WGD) Seismic Survey.

Wilson No. 1 was drilled at shot point 181, line WGD85-329. The well was designed to test the hydrocarbon prospectivity of the uppermost Paaratte Formation, secondary targets included the intra-Pember sand and the Pebble Point Formation (Figure 5 and 6).

Seismic mapping was carried out at "Top Seismic Pember" and "Near Top Pebble Point". This interpretation suggested that the feature was a fault controlled culmination on a large south-easterly plunging faulted anticline. Wilson No. 1 was located immediately on the downthrown side of the Tartwaup Fault.

Approximately 1.8 km^2 of closure was mapped at "Near Top Pebble Point" level and 1.7 km^2 at "Top Seismic Pember" level.

Interpretation of the check shot survey suggests that what was mapped as "Near Top Pebble Point" was in fact the top of the Paaratte Formation. The Pebble Point Formation at the Wilson No. 1 location appears to lack the distinctive seismic signature that is observed at other wells in the Otway Basin. In terms of the effects on structural closure the prospect is unchanged, given that the structural style of the interpretation remains the same.



BEACH PETROLEUM N.L
NEAR TOP PEBBLE POINT FORMATION
CONTOUR INTERVAL : 10msec
SCALE 1:25,000
0
1km
WILSON No.1
WGD85-329
WGD85-348
WGD85-346
GL85-262
GL85-264
WG262
WG237
H
L
1100
1040
1050
1000
1030
1080
600
630
960

FIGURE 5

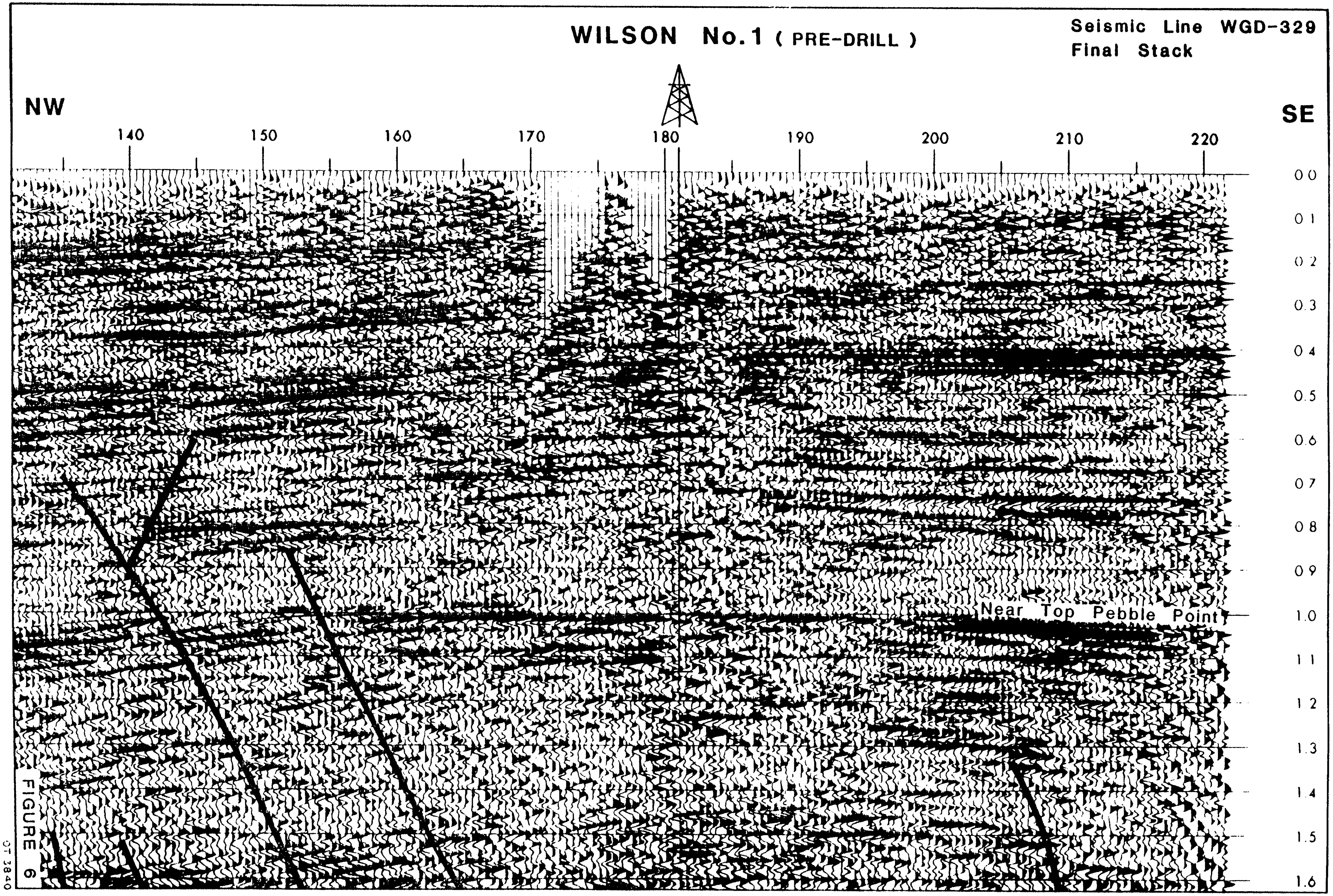


FIGURE 6

OT 3840

4.1.2 Dipmeter

A Schlumberger Stratigraphic High Resolution Dipmeter Tool (SHDT) was run over the interval 1313m to 750m. Processing results were only fair with both the Cyberdip and Mean Square Dip techniques. Any section of the borehole that was either rugose or ovoid gave dips of lesser confidence. Whether this is due to the hole condition or a result of bioturbation/contorted bedding is uncertain.

From 750m to 880m dips in the interbedded sandstones and claystones of the Dilwyn Formation have a strong northeasterly component. A structural dip of 1° or 2° is suggested in some claystones. Overall the average dip is in the order of 10°. The dip patterns and magnitude reflects the cross-bedded nature of this fluvio-deltaic sequence.

From 880m to 1193m the dips in the claystones and siltstones of the Pember Mudstone are remarkably consistent. Apart from three small normal faults near the top of the sequence, the dip is dominantly to the south east at an average of 3°. The style of dip reflected in this interval conforms to the idea of the Pember Mudstone being a pro-delta sequence.

From 1193m to 1313m the dips are irregular and of low confidence. Structural dip cannot be identified. Overall it would appear that dip trend is towards the west at an average of 6°. The westerly trend does however have significant northerly and southerly elements and the range of dips is between 0° and 40°. The Tertiary/Cretaceous unconformity suggested by the seismic is not identifiable from the dipmeter.

4.2 Porosity and Water Saturation

Bowler Log Consulting Services Pty. Ltd. supervised the wireline logging. Log evaluation was facilitated by a CSU at the wellsite from which two 'Cyberlook' products were made (density-neutron porosity and sonic porosity). Bowler's MacLog was produced at a later date.

Conventional cores were not cut and although three formation tests were attempted no formation water could be collected. All porosity and salinity values are therefore log derived. (See Appendix 12).

The Paaratte Formation was evaluated using a shaley sand model. Porosities of up to 20% were recorded and all sands were water saturated.

The Pebble Point Formation at Wilson No. 1 presents a number of difficulties to log interpretation because the rock is composed of variable amounts of detrital quartz, limonite, glauconite/chamosite with a composite iron/chlorite/carbonate matrix. Porosity evaluation is particularly subjective because of the adverse effect of limonite on the density log. One way of overcoming this problem is to use the sonic porosity, however this requires assumptions regarding the matrix transit time. In addition, the chlorite component of the rock appears to be radioactive resulting in Vclay estimates that are too high and therefore an effective porosity that is too low.

The cuttings and sidewall cores showed high clay content and low visual porosity. With this in mind the logs are interpreted to show porosity in the 10% range with approximately 50% Vclay.

The Dilwyn Formation showed water saturated sands with porosties in excess of 25%.

4.3 Maturation and Source Rock Analysis

Vitrinite reflectance estimates (R_V max) and total organic carbon analysis (TOC) were carried out on four sidewall cores. Eleven sidewall cores were also examined for biostratigraphy and spore colour. (See Appendices 7 and 8).

4.3.1 Maturation/Organic Type

Vitrinite reflectance and spore colour results agree that the section penetrated by the bit is immature/marginally mature for oil generation. (Figure 7).

The Pember Mudstone sidewall core had abundant dispersed organic matter with vitrinite and inertinite more common than exinite. In the Pebble Point Formation only the basal sidewall core gave good counts and its dispersed organic matter was characterised by inertinite with rare vitrinite and exinite. These four sidewall cores suggest that the basal Tertiary in Wilson No. 1 has only fair potential as a wet gas source rock.

4.3.2 Total Organic Carbon

The Pember Mudstone and two of the Pebble Point sidewall cores had sufficient organic carbon levels to be classified as source rocks with a moderate to good potential to produce hydrocarbons as their TOC's were between 0.53 to 1.9%.

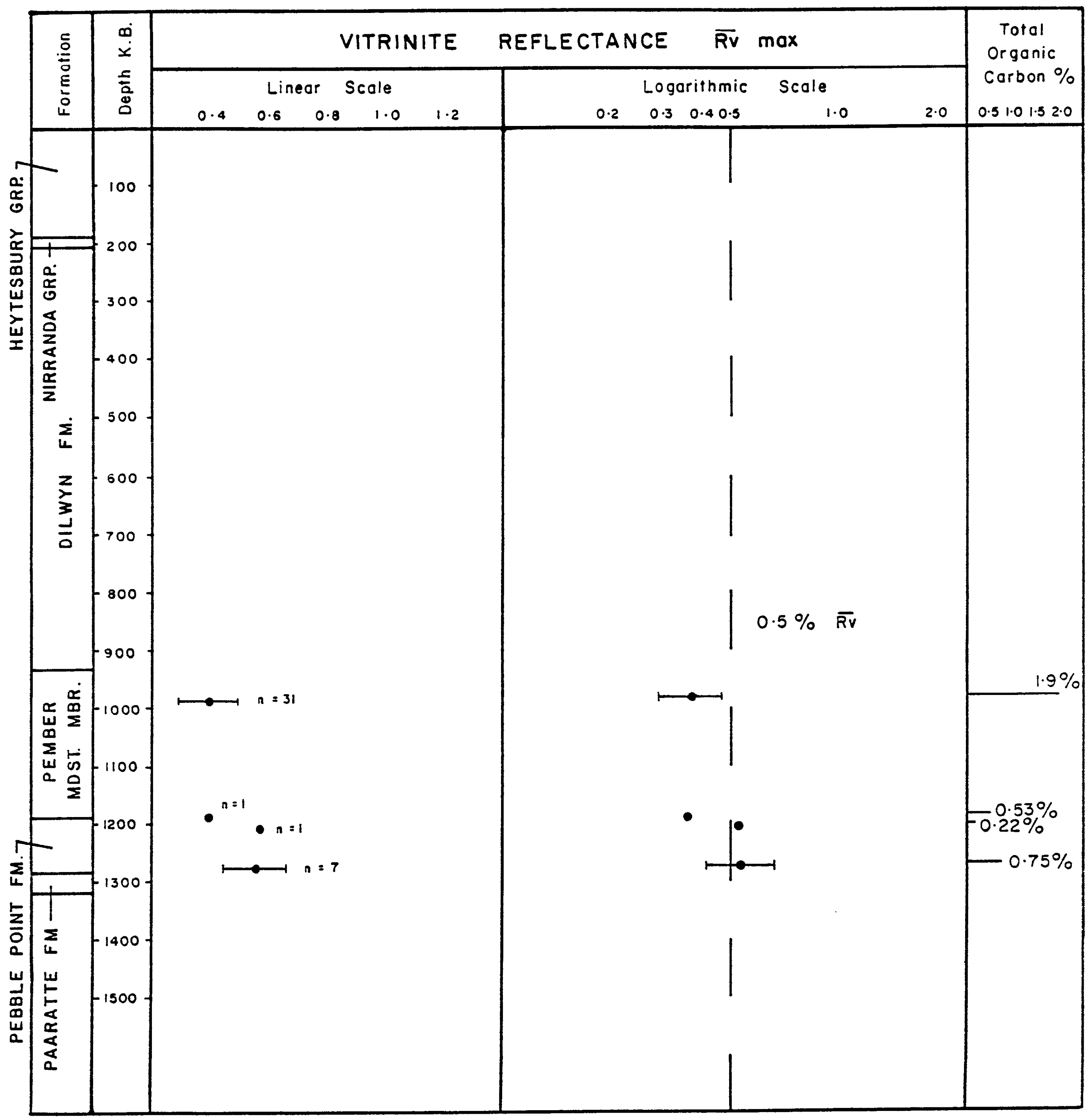
4.4 Relevance to Occurrence of Hydrocarbons

Wilson No. 1 is the westernmost Beach exploration well to have good oil shows in the Pebble Point Formation.

Unlike other Otway Basin wells with shows (e.g. Lindon No. 1, Port Campbell No. 4) the oil at Wilson No. 1 has marine source rock affinities. While it is true that the number and diversity of dinoflagellates in the Pebble Point Formation at this location

WILSON No.1

VITRINITE REFLECECTANCE & ORGANIC CARBON PROFILE



NOTE :

(1) n = 31 = $\overline{Rv}$ max and range

(2) n = number of counts

(3) All samples were sidewall cores.

FIGURE 7

indicates an offshore marine depositional environment, maturity indicators show that this formation is submature for oil generation. In addition, the level and type of organics in the Pebble Point Formation (and the Pember Mudstone) suggest that at best this horizon has only wet gas potential. These factors point to oil having been generated elsewhere, possibly the Belfast Mudstone, migrating and then trapped within the Pebble Point Formation.

Petrological analysis suggests that diagenesis has introduced carbonate at an early stage to what was already an argillaceous sand. This carbonate is now in a variety of habits and it, together with the clay content, has diminished the primary porosity. The result is an argillaceous, sometimes calcareous sandstone with very poor visual porosity as described in cuttings and sidewall cores although log interpretation shows more optimistic values.

If the observed oil is not a result of 'in situ' generation and if the porosity destroying carbonate phase occurred early in the diagenetic history then oil must, at some point in the past, have migrated into an argillaceous, sometimes calcareous, sandstone not too different from the Pebble Point Formation of today. While the porosity and permeability indicators are imprecise it is most probable that while the Pebble Point Formation is not an ideal reservoir, it is adequate and oil bearing.

If a valid test had been accomplished then there is every likelihood that oil may have been recovered in the pipe because of the close similarities between this well and Lindon No. 1.

The important question for post-drill interpretation is the structural integrity of the Wilson prospect. The dipmeter shows clear evidence of faulting in the well path near the top of the Pember Mudstone. This does not fit well with the pre-drill interpretation of the prospect and strongly suggests that structuring is more complex than originally thought. One alternative interpretation opens the structure to the north by down to basin faulting. If this is so, then the oil in the Pebble

Point Formation at Wilson No. 1 may represent residual oil in an ancient culmination that has since been destroyed by recent structural events. Another possiblity is that there is a stratigraphic element to oil at Wilson No. 1.

Regardless of the structural integrity of the Wilson prospect the well is very significant because it introduces the concept of a marine source rock, shows that the Tartwaup Fault can be a migratory route, reinforces the validity of base Tertiary plays and highlights the potential of a number of nearby prospects and leads.

APPENDIX 1

APPENDIX 1

Details of Drilling Plant

DETAILS OF DRILLING PLANT

O.D. & E. PTY. LIMITED.

RIG #19

CONTRACTOR'S RIG	: Rig #19 - rated to 7500 ft. with 4-1/2" - 16.6 lbs/ft. Drill Pipe.
DRAWWORKS	: Kremco K600H with 22" single rotor hydromatic brake, 16" x 37" main drum grooved for 1.1/8" line, 12.5/8" x 39" Sandline Drum with capacity for 14200' of 9/16 line powered by G.M. 8V92 T.A. diesel engine 435 H.P. at 2100 R.P.M. with Allison model CLT5861-5 converter and transmission. 5 speeds forward and one reverse. Mounted on 5 axle Kremco model K990 self propelled back in type carrier.
SUBSTRUCTURE	: 235 ton telescoping substructure, 16' long x 10' wide x 13' high skid, plated top and bottom to eliminate the need for matting with 8' x 7' cellar area and removable beam to allow removal from wellhead. Floor area 13' high x 16' long x 16' wide. Supports on driller's side for doghouse. NOTE: Substructure telescopes down to 10' for road transport. Rotary beam clearance 10'10". Rotary beam loading: 270,000 lb. Set back area loading: 200,000 lb. (Loaded concurrently)
MAST	: Kremco 109' 270,000 lbs. hydraulic raise and telescope, high strenghth square tubular legs, girts and diagonal bracing, ladder to crown, safety platform and handrails, travelling block carrying cradle, vertically hinged "Y" type base with screw type tilt adjustment, double acting raising ram and single telescoping ram, both equipped with safety chokes to protect mast from free failing. Automatic erecting racking board, mounted 67' from ground level with three additional mounting locations, safety chains on all fingers and capacity for 8000' of 4.1/2" drill pipe in doubles. Sufficient travel to allow for mousehole connections with 35 ft. Kelly. Standard crown with

		1 x 30" diam. fast line, 3 x 24" diam. fleet and 1 x 24" diam. deal line sheaves, grooved for 1.1/8" line. 1 x 20" diam. sandline sheave grooved 9/16". 1 x 12" diam. catline sheave grooved 1.1/2". 1 x 8" diam. winch line sheave grooved 1/2".
CATHEADS	:	Hydraulic breakout and make up catheads mounted in mast. 1 Foster 27S spinning cathead. 1 Foster 27B breakout cathead.
TRAVELLING BLOCK	:	Ideco UTB-160-4-30 shorty travelling block with unitized hook with 4 x 30" sheaves grooved 1.1/8". API working load 160 tons.
SWIVEL	:	Ideco TL-200 Tru-line swivel. API bearing rating @ 100 RPM - 123 tons.
RIG LIGHTING	:	Electric Power Systems, lighting system with fluorescent lights for mast, floor pipe rack, cellar, engine, pump and mud tank areas. Explosion proof lights.
KELLY DRIVE	:	Varco 4KRVS kelly drive bushing to suite 4.1/4" square kelly.
MUD PUMPS	:	One (1) Gardner-Denver PZ-7-550HP triplex mud pump belt driven by Caterpillar D379 TAC engine, with Faywick air clutch, MCM model 5 x 6 charging pump (pinion driven), Hydril K10-5000 pulsation dampener, Larkin suction stabilizer, unitized on 3 runner oilfield skid. One (1) Gardner-Denver PAHBFC-275HP triplex mud pump driven by Detroit Diesel 8V92T engine with Allison model HT750DRD transmission, 5 x 4 charging pump (hydraulic driven) K-10-3000 Hydril pulsation dampener unitized on 3 runner oilfield skid.
MIXING PUMP	:	One (1) Harrisburg 8" x 6" centrifugal pump powered by 60 HP 1775 RPM electric motor.
MUD AGITATORS	:	3 Harrisburg 5 HP (2 suction tank, 1 shaker tank) model MA-5.
SHALE SHAKER	:	Harrisburg, single unit with dual deck powered by 5 HP flameproof electic motor.

DEGASSER	:	Mechanical mud gas separator, Shell Co. design (capacity via choke - 200 GPM).
MUD CLEANER	:	Harrisburg MC800 2 screen combination mud cleaner or desilter capacity of 800 GPM c/w 5 HP 1800 RPM flameproof electric motor charged with Harrisburg 5 x 6 centrifugal pump with 10" Impeller and 60 HP 1800 RPM electric motor.
DESANDER	:	Harrisburg DSN-1000 unit with 2 x 10" cones charged with Harrisburg 5 x 6 centrifugal pump with 10" Impellor and 60 HP 1800 RPM electric motor.
GENERATORS	:	2 Caterpillar 3406TA, 250 KW prime, 300 KW standby, 60 HZ, 230/460 generating sets.
B.O.P.'s AND ACCUMULATOR	:	NL Shaffer spherical 11" - 5000# flanged bottom, studded top annular B.O.P. Shaffer L.W.S.11' - 5000# studded top and bottom B.O.P. with 7", 5.1/2", 4.1/2", 3.1/2", 2.7/8", 2.3/8" CSO ram assemblies. Koomey model 120LS type 80, 3000 PSI, 120 gallon accumulator equipped with 12 x 11 gallon bottles, UP2RB5AR model "P" 5 station control manifold, UFT-15B triplex charging pump with 15 HP 60 Hz electric motor, model U7A26 dual air pump package (capacity 6.4 GPM @ 3000 PSI) and model A5GRV air operated master remote control panel with 5 valves for operation of B.O.P.s and hydraulic gate valve, 1 valve for operation of bypass valve and 100' remote control hose. C/w 1" B.O.P. test outlet and gauge for testing to 5000 P.S.I.
KELLY COCK (UPPER)	:	Packard 5000 PSI upper Kelly Cock w/- 6.5/8" reg. L.H. connections P/N T65LH85.
KELLY COCK (LOWER)	:	Packard 5000 PSI lower Kelly Cock w/- 4" IF connections P/N T401F65.
DRILL PIPE SAFETY VALVE	:	Packard 5000 PSI w/- 4" IF connections and crossover to suit 8" drill collars.
AIR COMPRESSORS AND RECEIVERS	:	Two (2) Sullair model 10B-25 air compressor 105 CFM - 125 PSI with 60 HZ electric motor and air receiver. Separator 1 24" x 72" air receiver tank.

		One (1) Swan model MV-201 Cold Start air compressor with Petters diesel engine and 8 CFM compressor.
SERVICE WINCH	:	One (1) model #14 Gearomatic Hydraulic winch mounted on carrier with control at drillers console. Drum pull-back 7100 at 92 ft. per min. mean 4760 t 137 ft. per min. Full 3580 ft 182 ft. per min.
POWER TONGS	:	Foster model 54 power casing tong c/with 95/8 7" 5 1/2 jaws. Foster model 58-93-R hydraulic unit with 2.3/8", 2.7/8" and 3.1/2" jaws operated from rig hydraulic system.
SPOOLS	:	1 only 11" - 5000# FE x 11" - 5000# FE drilling spool w/- 1 x 3" - 5000# FE and 1 x 2" - 5000# FE outlet. 1 only 11" - 5000# FE x 11" - 5000# FE Spacer Spool. 1 only 11" - 5000# x 11" - 3000# Double Studded Adaptor. 1 only 11" - 5000# x 7.1/16" - 5000# Double Studded Adaptor. 1 only 11" - 5000# x 7.1/16" - 3000# Crossover Spool, double studded adaptor.
ROTARY TABLE	:	Ideco SR-175 Rotary Table. Rated capacity 325 tons dead load. Rated capacity 200 tons rotating.
MUD TANKS	:	1 only skid mounted suction tank 33' long x 9' wide x 6' high with platform for mixing hopper, mud ditch, pill tank, mud guns, walkways and agitators. Overall skid length 42'. Capacity: 317 BBLS (Suction: 260 BBLS) (Pill : 57 BBLS) 1 only skid mounted shaker tank, 28' long x 9' wide x 6' high fitted with shale shaker, desander, mud cleaner, mud ditch partitions, mud guns, walkways and agitators. Overall skid length 42'. Capacity : 271 BBLS (Sand trap: 31 BBLS (Desander : 38 BBLS) (Desilter : 38 BBLS) (Reserve : 164 BBLS)

TRIP TANK	:	1 Trip Tank 4' x 6'2" x 7'6" high (mounted on shaker tank). Capacity: 33 BBLS.
KILL MANIFOLD	:	1 - 2" 5000# Lynn check valve F/E 1 - 2" 5000# Cameron gate valve F/E 1 - 3" 5000# Cameron gate valve F/E 1 - 3" 5000# Cameron hydraulic gate valve F/E.
CHOKE MANIFOLD	:	1 x 5000# unit with 1 x 3" positive and 1 x 3" adjustable choke.
DRILL PIPE	:	7000' 16.6 LB/FT grade 'E' 4.1/2" OD drill pipe w/- 6.1/4" OD Tool Joints and 4" IF Connections, internally plastic coated.
PUP JOINTS	:	1 - 10' 4.1/2" OD 18° taper w/- - 4" IF conns. 1 - 5' 4.1/2" OD 18° taper w/- 4" IF conns.
HEVI-WEIGHT DRILL-PIPE	:	6 JTS H.W.D.P. 4.1/2 OD w/- 4" IF conns.
DRILL COLLARS	:	6 only 8" OD Drill Collars w/- 6.5/8" Reg. Connections. 24 only 6.1/2" OD Drill Collars w/- 4" IF Connections.
KELLIES	:	2 only 4.1/4" square x 35' working space (38' overall) with 6.5/8" reg. L.H. box x 4" IF pin.
FISHING TOOLS	:	1 only Bowen Type Z Jar 6.1/4" D. 1 only Bowen Series 150 overshot 7.5/8" OD. 1 only Bowen Series 150 overshot 9.5/8" OD. 1 only Junk Sub 12.1/4" Hole. 1 only Junk Sub 8.1/2" Hole.
SUBS	:	3 only 4" IF Saver Subs. 2 only 6.5/8" Reg. Pin x 4" IF Box x/Over Sub. 12 only 4" IF Lifting Nubbins. 3 only 6.5/8" reg. Lifting Nubins. 1 only 6.5/8" Reg. Box x 6.5/8" Reg. Box Bit. Sub. (5F-6R float recess) 2 only 4" IF Box x 4.1/2" Reg Box Bit Sub (4R float recess) 1 only 4.1/2" reg pin x 4.1/2" FH pin 4" long 1 only 4" IF box x 6.5/8" reg box 1 only 4" IF pin x 2" LP pin (circ sub), 12" long.

HANDLING TOOLS : 1 set Baash Ross Type "AAX" short handle tongs complete with hangers range 2.7/8" - 13.3/8".

1 set forged elevator links 2.1/4 x 96" capacity 250 tons.

2 sets of 4.1/2" - T-150 Drill Pipe Elevators.
1 set 9.5/8" - H-150 Casing Elevator.
1 set 7" - H-150 Casing Elevator.
1 set 5.1/2" - J-150 Casing Elevator.
1 set 3.1/2" - C-100 Tubing Elevator.
1 set 2.7/8" - C-100 Tubing Elevator.
1 set 2.3/8" - C-100 Tubing Elevator.
1 set 9.5/8" Single Joint Elevator. 1 set 7" Single Joint Elevator.
1 set 5.1/2" Single Joint Elevator.
1 set 3.1/2" Single Joint Elevator.
1 only 9.5/8" CMSXL Casing Slips.
1 only 7" CMSXL Casing Slips.
1 only 5.1/2" SDL-M Casing Slips.
2 only 4.1/2" SDL-M Drill Pipe Slips.
1 only Cavins Type "C" - HD air spider with 2.3/8", 2.7/8", 3.1/2" and 5.1/2" slips, 250,000 # capacity.
1 set 6.3/4 - 8.1/4 DCS-L Drill Collar Slips.
1 set 5" - 7" DCS-R Drill Collar Slips.
1 only 5.1/2" - 7" MPR Safety Clamp.
1 only 6.3/4" - 8.1/4" MPR Safety Clamp.
1 set Quick Lift Drill Collar 42" x 2" links - 100 ton and Drill Collar adaptor.
1 only 8" HD-100 Drill Collar Elevator.
1 only 6.1/2" HD-100 Drill Collar Elevator.

Varco "CU" casing bushing with No. 2 insert bowl to handle 9.5/8" - 13.3/8" casing.

Foster model 77 hydraulic kelly spinner, operated from rig hydraulic system.

Weatherford Lamb model 13000-J-29 spinnerhawk.

Varco PS-20 spring slip assy. dressed with 4.1/2" drill pipe slips.

WELDING EQUIPMENT : 1 only Lincoln 400AS Diesel Powered Welder.
1 only Oxy-Acetylene Welder and cutting set.

DOG HOUSE : 1 only Steel Dog House 14' x 7' x 7'.

UTILITY HOUSE : 1 only Steel Utility house to accommodate generators, switch gear, workshop and store room (45' long x 10' wide).

TOOL HOUSE/STORE ROOM	: Toolhouse/Spares house with welders workshop skid mounted, 40' long x 8' wide x 8' high.
CAT WALKS	: 1 set Catwalks incorporating junk rack 48' long x 5' wide x 42" high.
PIPE RACKS	: 1 set (6) Tumble type pipe racks each 28' long x 42" high.
DAY FUEL TANK	: 1 only 9' 9" long x 7' 10" wide x 2' deep. Capacity 4300 litres. Mounted on top of water/fuel tank and recessing into water/fuel tank to minimise loads during moves.
WATER/FUEL TANK	: 1 only skid mounted water tank 23' long x 9' 6" wide x 8' high (capacity 356 BBLS) with fuel storage tank (capacity 5800 galls.) one end. Overall skid length 42'. 2 x 10 HP water pumps mounted one end, 2 x 5 HP fuel pumps mounted other end including one (1) fresh water pump.
ACCUMULATOR & OIL STORAGE SKID	: 1 only skid 8' wide x 20' long to accommodate oil storage and accumulator.
DRILLING RATE RECORDER	: Martin Decker 5 Pen Record-O-Graph (Penetration, weight, pump pressure, rotary torque and rotary R.P.M.).
DEVIATION INSTRUMENT	: 1 only Totco Double Recorder 0-8 deg.
INSTRUMENTS AND INDICATORS	: Martin Decker F.S. Weight Indicator 40,0001b single line pull c/w 40' hose. National F.S. deadline anchor c/w E160 load cell. Martin Decker H-6B-28 Tong Torque Indicator 25' hose and load cylinder sensator, box mt. 20,000 lb. line pull. Martin Decker Rotary Torque, model FA-9. Swaco 96-11-321 stroke rate meter c/w limit switches for No. 1 and No. 2 pump. Martin Decker RPM tacho system. Watco Flo Sho recorder. Watco Pit-O-Graf (two tank system). Watco Trip Tank Monitor. Martin Decker SA-102 satelite drilling control.
MUD TESTING	: 1 only Baroid Mud Lab mounted on mud tank.
RATHOLE DRILLER	: Wichita engineering rat hole driller for 4.1/4" kelly.

MUD SAVER	:	Harrisburg Unit with 4.1/2", 3.1/2", 2.7/8" and 2.3/8" end sealing rubbers.
CELLAR PUMP	:	Pacific Diaphragm Pump, 3" w/- 3 HP explosion proof electric motor.
WATER PUMP	:	1 only Robin Self-Priming Pump with Diesel Engine.
FIRE EXTINGUISHERS	:	1 set extinguishers as required by State Mining Regulations.
HIGH PRESSURE WATER BLASTER	:	1 only Gerni G-115 unit with Lister Diesel Engine.
PIPE BINS	:	2 only Pipe Bins 36' x 10' x 3' 6" High.
CUP TESTER	:	Cameron Type "F" cup tester mandrel with 4" IF connections.
TRANSPORT EQUIPMENT & MOTOR VEHICLES	:	1 - International 520 Payloader with Pipe Forks. 1 - 4 x 4 Toyota Pick-up. 1 - 4 x 4 Toyota Crew car.
CAMP EQUIPMENT	:	1 - Toolpusher/Engineer office unit 40' x 10 x 10'. 1 - Crew Lunch Room/Toilet Block.

NOTE: At Contractor's discretion any of the foregoing items may be replaced by equipment of equivalent or greater capacity.

APPENDIX 2

APPENDIX 2

Summary of Wellsite Operation

SUMMARY OF DRILLING OPERATIONS

The Wilson No. 1 drill site was prepared by Mount Gambier Earthmovers.

Prior to the rig arriving a 16" conductor pipe had been installed to 15.5m (K.B.).

The O.D. & E. Rig 19 was rigged up and Wilson No. 1 was spudded at 1500 hours on the 10th July, 1987.

A 12¼" hole was drilled to 86m before the cellar and conductor area washed out and subsided. This necessitated the removal of the rig carrier and sub base so that the cellar could be rebuilt and the conductor pipe cement grouted.

The 12¼" hole was then continued to 315.5m where the 9-5/8" casing was set.

The B.O.P.'s were installed and all functions were tested to 1500 psi.

Drilling resumed with 8½" hole to 320m at which point a leak-off test established a formation integrity of 12.1 ppg.

The 8½" hole was continued to 1203.5m with bit changes at 841m and 1069.5m.

DST No. 1 was attempted over the interval 1203.5m to 1192m, but the packer seat failed.

A Schlumberger CAL/GR was run from 1197m to 896m.

DST No. 2 was attempted over the interval 1203.5m to 1196m, but a packer seat could not be established.

The 8½" hole was then deepened to 1212m and Schlumberger ran CAL/GR from 1208m to 1100m.

DST No. 3 was attempted over the interval 1212m to 1199m, but the packer seat failed.

The 8½" hole was continued to a total depth of 1317m reached at 1200 hours on the 23rd of July, 1987.

Schlumberger ran the following logs; DLL/MSFL, LDL/CNL, BHC/GR, SHDT, WST and CST.

Cement plugs were then set over the interval 1195m to 1145m, 317m to 251m and at the surface.

The rig was released at 2130 hours on the 25th of July, 1987.

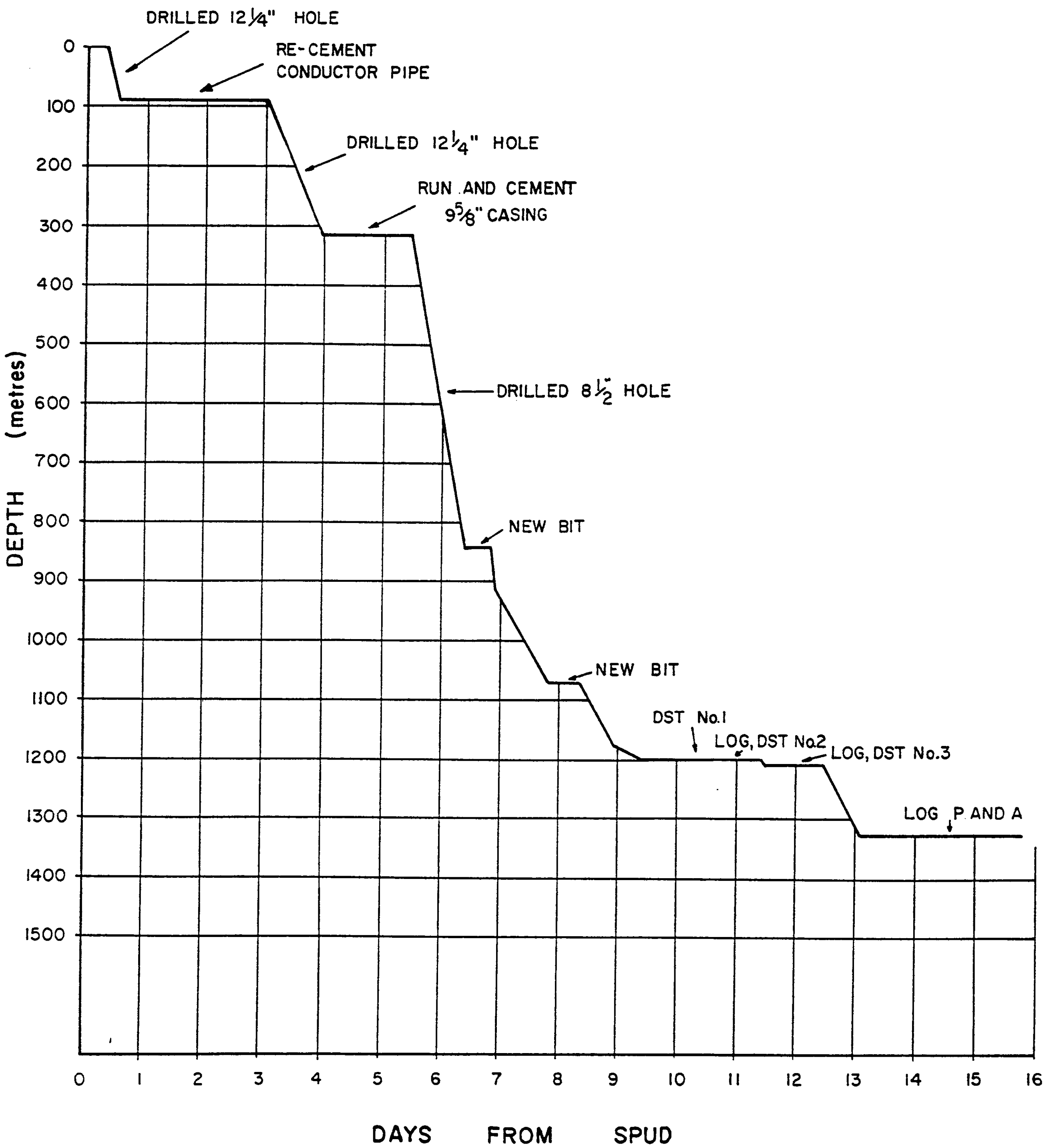
BEACH PETROLEUM N.L.

WILSON No1

SPUDDED : 1500 HRS 10-7-87

T.D. REACHED : 1200 HRS 23-7-87

RIG RELEASE : 2130 HRS 25-7-87



PENETRATION PROFILE

FIGURE 8

APPENDIX 3

APPENDIX 3

Drilling Fluid Recap

BEACH PETROLEUM NL
DRILLING FLUID RECAP
WILSON NO. 1

Prepared By : M. Olejniczak

Dated : July 1987

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APPENDICES

WELL SUMMARY

Operator	:	Beach Petroleum NL
Well Number	:	Wilson No. 1
Location	:	PEP 105, Otway Basin, Victoria
Contractor	:	O. D. & E.
Rig	:	No. 19
Rig on Location	:	9th July, 1987
Spud Date	:	10th July, 1987
Water Depth/RKB-Sea Bed	:	4.57 m
Total Depth	:	1317 m
Date Reached T.D.	:	25th July, 1987
Total Days Drilling	:	16
Rig off Location	:	27th July, 1987
Total Days on Well	:	18

Drilling Fluid Type	Interval	Hole Size	Cost
F.W. Gel/Lime Spud Mud	0 - 315 m	$12^1/4$"	$1,637.87
F.W. Gel/Lime Converted	315 - 1317 m	$8^1/2$"	8,386.44
KCl Gel/CMC from 830 m.			---------
MUD MATERIALS CHARGED TO DRILLING			$10,024.31

Engineer on Location from : 10-07-87 to 25-07-87

Mud Engineering : 16 days @ $375	6,000.00

TOTAL DRILLING COST MATERIALS & ENGINEERING SERVICE	$16,024.31

Mud Materials not charged to Drilling	-
Engineering not charged to Drilling	-

Casing Program	:	$9^5/8$" @ 312.4 m
16" Conductor	:	15.5 m

Drilling Supervisors	:	H. Walker
Baroid Mud Engineers	:	M. Olejniczak

INTRODUCTION

Wilson No. 1 was originally programmed to be drilled with a freshwater Bentonite CMC mud as Henke No. 1 had been.

The caliper log and hole stability were satisfactory on Henke No. 1, however, cuttings while drilling through the Pember Mudstone were very mushy and the drill stem test run had become plugged with clay. A packer seat was achieved and some water recovered but the test was only partially successful. It appeared most likely that the test tool wiped the side of the hole on the way in pushing some mushy clay ahead of it, which then plugged the tool.

For this reason, the mud was changed to a low KCl Bentonite CMC to try to produce a slightly firmer well bore through the Pember Mudstone and avoid plugging of test tools.

In addition, should any hole instability eventuate, it would be a simple matter to increase the concentration of KCl as there would be no need to significantly alter mud treatment.

DISCUSSION BY INTERVAL

12^1/4" Hole   Surface to 315 m

Wilson No. 1 was spudded in at 1500 hours on 10th July, 1987 with a Lime flocculated Bentonite spud mud with a viscosity of about 38 seconds, pumping at 300 gpm.

Drilled slowly through Fossiliferous Calcarenite with some loose sand until the conductor apparently washed out out at 86 m. On closer examination, it was found that a larger part of the cellar area had actually subsided into the hole and the conductor had separated for the flowline connection. It was most likely that the soft unconsolidated surface, the conductor being uncemented and drilling vibration had all contributed.

During the next two days, the entire cellar and rig sub base area was rebuilt with the rig carrier and sub base being removed and replaced on wooden matting. The conductor was also cement grouted and a cement plug set in the hole from 38 m back to 6 m from surface.

Drilling resumed at 22 hours on 12th July using a higher viscosity Lime flocculated Bentonite mud combined with a reduced pump rate of 185 pgm to reduce stress and erosion of the formation as much as possible. Another washout could not have been tolerated without moving the rig.

Drilling through the cement, the mud viscosity was 45 seconds. It was then gradually raised drilling through the Calcarenite to about 70 seconds. From 135 m, began drilling sticky Calcilutite, so the mud had to be diluted back to about 45-50 seconds to avoid bit balling. At about 200 m, the top of the Dilwyn Sand was reached. It's high content of organic rich clays immediately thinned the mud to 34 seconds so additional prehydrated Bentonite and Lime was added to maintain a viscosity of about 50 seconds right through the Dilwyn Sands.

At 315 m the casing depth was reached after intersecting a suitable clay band. A wiper trip was run without problems and the 9^5/8" casing then run and cemented at 312.4 m, also without problems.

DISCUSSION BY INTERVAL

12 1/4" Hole (Cont.)

During the cementing, cement returned to surface one minute after beginning displacement indicating a good gauge hole. A carbide lag test run by the logging unit at 269 m indicated an average hole size of 13".

As the drilling of the 12 1/4" hole had gone so smoothly and resulted in a stable good gauge hole, it was decided to repeat the procedure of using high viscosity flocculated Bentontie with a slow pump rate on the next well.

DISCUSSION BY INTERVAL

$8^1/2$" Hole   315 to 1317 m T.D.

During nippling up of the B.O.P. stack, most of the old mud from the $12^1/4$" hole was retained as the Dilwyn Sands were to be drilled with flocculated Bentonite Native Clay mud only.

The cement and casing shoe were drilled out, circulating through the suction tank only using mud diluted with water to avoid excessive thickening from cement contamination. With 4 m of new hole, a leak off test was run at 319 m giving a 12.1 ppg equivalent.

Drilling then continued through the Dilwyn Sands maintaining a flocculated Bentonite Native Clay mud with addition of prehydrated Aquagel, Lime and Caustic only. Typical mud properties were:

Mud Weight	:	8.9 ppg
Viscosity	:	43 seconds
PV/YP	:	8/38
Gels	:	20/28
Filtrate	:	No control
pH	:	11.0

One bit nozzle appeared to be partially plugged down to 540 m when it unplugged by itself. In this interval mud losses mostly to the desander were high at 20-30 bbl/hr suggesting a washed out hole. When the nozzle cleared, mud losses at surface dropped back to 10 bbl/hr indicating less washout with the reduced nozzle velocity. This was later confirmed by the caliper log at the end of the well. A carbide lag run at 732 m gave an average hole size of 10.4".

With the first target being the Inter Pember Sand in the upper part of the Pember Mudstone, conversion to a KCl Bentonite CMC mud was begun at 830 m to give the mud and the hole sufficient time to stabilise. The bit was changed and a stabiliser added at 842 m with no problems running back in.

DISCUSSION BY INTERVAL

$8^1/2$" Hole (Cont.)

Drilling continued through the lower part of the Dilwyn Formation, adding premixed Aquagel, CMC and Potassium Chloride. Mud losses were a bit high indicating possible filtration losses down hole of up to 5 bbl/hr but reduced to normal drilling losses after reaching the top of the Pember Mudstone at 935 m.

The mud properties had stabilised by this time and were held quite consistent for the remainder of the well. Typical properties were:

Mud Weight	:	9.2+ ppg
Viscosity	:	39 seconds
PV/YP	:	9/11
Gels	:	7/8
pH	:	9.5
Filtrate	:	8.0
Cl-	:	9,500 - 11,000 ppm
KCl	:	$1^3/4$%

The next trip for a bit change at 1069 m had tight hole from the 9th to 16th stands pulling out and had to wash back through a tight spot at 895 m running back in. Drilling then continued right through the Pember Mudstone, circulating out drilling breaks. At 1203.8 m, after drilling into the top of the Pebble Point Formation, it was decided to test as fluorescence but no gas indicated some residual oil in a tight sand.

A 35 stand wiper trip was run with very tight hole up to 931 m requiring several singles to be washed out with the kelly. After running back in and reaming 12 m back to bottom, were then able to pull out with only minor tight spots.

This tight hole occurred within the Pember Mudstone itself so was due to formation swelling.

DISCUSSION BY INTERVAL

8 1/2" Hole (Cont.)

It also indicated that the drilling hydraulics with a nozzle velocity of 320 ft/second and impact of 350 force lbs were not washing out the hole. During the four well drilling program, only this well showed this tight hole with either fresh water mud or a significantly higher percentage of KCl run on the other wells. It is possible that this low percentage of KCl at 1 3/4% was sufficient to inhibit washout during actual drilling but insufficient to control swelling soon after.

DST No. 1 was then run with packer set at 1189.8 m and 1192 m. No water cushion was run and the packer seat failed when the tool was opened. As a successful test was a high priority, the Schlumberger four arm caliper log was run to determine hole condition and pick alternative packer seats.

The caliper showed the Mudstone to be washed out slightly in one direction up to 2 1/2" over gauge but still close to gauge in most areas. Surprisingly, the previous packer seat still appeared close to gauge.

A wiper trip was then run without problems with a high viscosity mud sweep pumped to clean out the hole. Returns at the shakers showed a lot of filter cake from up in the Dilwyn Sands but were clean from the lower part of the hole. A carbide lag was also run giving an 8.8" average hole size.

DST No. 2 was then run with packers set at 1193.8 m and 1196 m with 1000 ft of water cushion but failed to seat at all. A wiper trip was run again with the hole drilled a little deeper to 1212 m to allow for deeper packer seats. The Schlumberger four arm caliper log was then run again. This time it showed a marked deterioration of the lower part of the Pember Mudstone with no further packer seats available in the Mustone intself.

As a last attempt, DST No. 3 was then run with 1000 ft of water cushion with packers set at 1197 m and 1199 m, in the top of the sand itself. This again failed so drilling was resumed.

DISCUSSION BY INTERVAL

$8^1/2$" Hole (Cont.)

When the next bit was being pulled out at 1317 m, it was decided to T.D. the well, so a 40 stand wiper trip was run with the hole being in good condition.

Then pulled out and ran Schlumberger logs with no problems. After careful log analysis, it was decided not to attempt any further tests but to plug and abandon the well.

The caliper log showed deterioration of the lower part of the Pember Mudstone continuing in areas where circulation had occurred during wiper trips. The upper parts of the Mudstone were still in reasonable gauge.

RECOMMENDATIONS AND CONCLUSIONS

The major problem on the well was the failure of the packer seats, even though the drill string was pulled back and circulated above picked packer seats prior to running the tests.

Drilling hydraulics could not be blamed for washout out the hole. The Pember Mudstone was tight on the wiper trip prior to running DST No. 1. The four arm caliper run after DST No. 1 showed the Pember Mudstone still mostly in gauge although slightly washout out in one direction. This all showed that the hole was originally drilled in gauge.

The caliper logs did show that there was one direction of weakness due to tectonic stress causing washout in that direction.

The continued deterioration of the hole where circulation took place between wiper trips and testing indicated that the formation was becoming progressively weaker with prolonged exposure to the mud so that circulation would easily wash it out, even though it had not washed out much during drilling.

Cuttings of this well had been less sticky than on Henke No. 1 indicating KCl had some effect on the formation with the tight hole suggesting the level of KCl may not have been enough to reduce swelling. However, the record of drill stem tests run in the area does not directly support an improved packer seat with higher KCl concentrations. On two wells that ran 8% KCl (Lindon No. 1 and Fahley No. 1) packer seats held and failed respectively. In addition, Henke No. 1 had a satisfactory packer seat with a fresh water mud so there may not be any correlation at all between a sticky well bore and the ability of the formation to hold a packer seat.

Instead, it appears much more likely that the underlying strength of the Pember Mudstone is directly related to the length of time exposed to the well bore.

The mechanism causing weakness being most likely a combination of hydration and tectonic stress. As the Mudstone does not have a high reactive clay content, the hydration may be more hygroscopic than clay swelling.

RECOMMENDATIONS AND CONCLUSIONS (Cont.)

If this is the case, the KCl content will not drastically reduce hydration and it will be significantly time dependant.

The most likely approach to obtaining a successful packer seat would be to minimise the length of time it is exposed to the mud by getting the test run as quickly as possible and the packers set in as fresh mudstone as possible. There is no doubt that a water cushion should also be run to reduce the pressure differential on what is known weak formation.

Reducing drilling hydraulics and circulating hydraulics lower than that run on this well may not neccessarily improve the situation. From the caliper logs, the hole was originally drilled in gauge but later washed out where further circulation occurred. This washing out may simply be the result of washing already weakened areas and exposing more new hole. Instead, it might be best to run medium hydraulics which will still drill the hole quickly enough without causing excessive washout to reduce the length of time of exposure of the formation.

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL RECAP

COMPANY	BEACH PETROLEUM	MUD TYPES	F.W. AQUAGEL-LIME CONVERTED TO KCl GEL CMC FROM 830 M	HOLE SIZE	8½"
WELL	WILSON NO.1			INTERVAL TO	1317 m
LOCATION	PEP 105, VICTORIA			FROM	315 m
COST/DAY	$762.40			MTRS DRILLED	1002 m
COST/M	$ 8.37	CONTRACTOR	O. D. & E. RIG 19		
COST/M³	$ 6.45	DRILLING DAYS/PHASE	11		
RECAPPED BY	M. OLEJNICZAK	ROTATING HRS/PHASE	72½		
DATE	25-07-87			MUD CONSUMPTION FACTOR	1.30 bbl/m

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	ESTIMATED KG/M³	ACTUAL USED	ACTUAL KG/M³	TOTAL COST ESTIMATED	TOTAL COST ACTUAL
AQUAGEL	100 lb	15.25			137			2089.25
CAUSTIC SODA	25 kg	21.90			16			350.40
BICARBONATE	40 kg	21.63			6			129.78
LIME	25 kg	4.29			10			42.90
CMC (EHV)	25 kg	59.03			18			1062.54
CMC (LV) BEACH STOCK	25 kg	51.40			19			976.60
Q-BROXIN	25 kg	32.20			24			772.80
SODA ASH	40 kg	17.66			2			35.32
POTASSIUM CHLORIDE	50 kg	19.48			98			1909.04
DEXTRID	50 lb	39.99			25			999.75
BARITE	50 kg	9.03			2			18.06

CHEMICAL VOLUME	40 BBLS	
FRESH WATER	1260 BBLS	
SEA WATER		
TOTAL MUD MADE	1300 BBLS	
COST LESS BARYTES		
COST WITH BARYTES		$8386.44

COMMENTS: CMC (LV) USED WAS ACTUALLY OLD BEACH STOCK AND PRICE USED IS BAROID PRICE FOR COMPARATIVE PURPOSES.

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL RECAP

COMPANY	BEACH PETROLEUM	MUD TYPES	F.W. AQUAGEL/LIME SPUD MUD	HOLE SIZE	$12\frac{1}{4}$"
WELL	WILSON NO. 1			INTERVAL TO	315 m
LOCATION	PEP 105, VICTORIA			FROM	15.5 m
COST/DAY	$327.57			MTRS DRILLED	299.5 m
COST/	$ 5.47	CONTRACTOR	O.D. & E.		
COST/	$ 2.27	DRILLING DAYS/PHASE	5		
RECAPPED BY	M. OLEJNICZAK	ROTATING HRS/PHASE	$22\frac{1}{2}$		
DATE	14-07-87			MUD CONSUMPTION FACTOR	2.4

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	ESTIMATED KG/M³	ACTUAL USED	ACTUAL KG/M³	TOTAL COST ESTIMATED	TOTAL COST ACTUAL
AQUAGEL	100 lb	15.25			98			1494.50
CAUSTIC SODA	25 kg	21.90			4			87.60
LIME	25 kg	4.29			13			55.77

CHEMICAL VOLUME	15 BBL	
FRESH WATER	705 BBL	
SEA WATER		
TOTAL MUD MADE	720 BBL	
COST LESS BARYTES		
COST WITH BARYTES		$1637.87

COMMENTS: 7 SACKS AQUAGEL OF ABOVE ACTUALLY USED WITH 100 BBL OF WATER TO MIX LEAD SLURRY CMT WATER.

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL SUMMARY

COMPANY	BEACH PETROLEUM	MUD TYPE	F.W. AQUAGEL-LIME CONVERTED TO KCl/GEL/CMC FROM 830 M	HOLE SIZE	DRILLED	DRILLING DAYS
WELL	WILSON NO.1					
LOCATION	PEP 105, VICTORIA					
COST/DAY	$626.52			$12\frac{1}{4}$	299.5	5
COST/	$ 7.70	TOTAL ROTATING HRS	95	$8\frac{1}{2}$	1002	11
COST/	$ 4.96	TOTAL DAYS ON HOLE	16			
RECAPPED BY	M. OLEJNICZAK	TOTAL DEPTH	1317 M	TOTAL	1301.5	16
DATE	25-07-87	MUD CONSUMPTION : WELL AVERAGE			1.55 BBL/M	

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	ESTIMATED KG/M³	ACTUAL USED	ACTUAL KG/M³	TOTAL COST ESTIMATED	TOTAL COST ACTUAL
AQUAGEL	100 lb	15.25			235			3583.75
CAUSTIC SODA	25 kg	21.90			20			438.00
BICARBONATE	40 kg	21.63			6			129.78
LIME	25 kg	4.29			23			98.67
CMC (EHV)	25 kg	59.03			18			1062.54
CMC (LV) OLD BEACH STOCK	25 kg	51.40			19			976.60
Q-BROXIN	25 kg	32.20			24			772.80
SODA ASH	40 kg	17.66			2			35.32
POTASSIUM CHLORIDE	50 kg	19.48			98			1909.04
DEXTRID	50 lb	39.99			25			999.75
BARITE	50 kg	9.03			2			18.06

CHEMICAL VOLUME	55 BBL	
FRESH WATER	1965 BBL	
SEA WATER		
TOTAL MUD MADE	2020 BBL	
COST LESS BARYTES		$10006.25
COST WITH BARYTES		$10024.31
COMMENTS		

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

DRILLING FLUID PROPERTY RECAP

COMPANY BEACH PETROLEUM WELL WILSON NO.1

DATE	DEPTH m	HOLE SIZE	TEMP °C	WEIGHT	VIS SEC	PV	YP	GELS 10 sec	GELS 10 min	WATER LOSS API	CAKE	pH	Pf	Mf	Cl mg/l	Ca mg/l	SAND %	SOLIDS %	WATER %	OIL %	MBC	REMARKS TREATMENT	FORMATION
10/7	86	$12\frac{1}{4}$	-	8.8	38	6	18	19	25	NC	4	11	2.4	-	200	80	$\frac{1}{4}$	3	97	-	-	SPUD, CONDUCTOR WASHOUT.	LIMESTONE.
11/7	86	$12\frac{1}{4}$	-	8.8	38																	REBUILD RIG PAD AREA.	
12/7	86	$12\frac{1}{4}$	-	8.8	45	5	30	25	30	NC	4	11.5	4.5	-	250	100	TR	3	97	-	-	DRILLING OUT CEMENT.	
13/7	306	$12\frac{1}{4}$	-	8.8	50	8	46	30	55	NC	4	11.5	1.0	-	300	20	TR	4	96	-	-	DRILLING.	LIMESTONE, SAND.
14/7	315	$12\frac{1}{4}$	-	8.8	50	8	45	30	40	NC	4	11.4	1.1	-	300	20	TR	4	96	-	-	RAN 9-5/8" CASING.	SAND/CLAY.
15/7		$8\frac{1}{2}$	-	8.8	40	6	28	18	25	NC	4	11.0	2.4	-	200	40	TR	4	96	-	15	DRILLING.	SANDS.
16/7	842	$8\frac{1}{2}$	-	8.8	36	8	12	15	21	25	4	10.0	0.35	-	7500	80	TR	4	96	-	17	DRILLING.	SANDS/CLAY.
17/7	1028	$8\frac{1}{2}$	-	9.1	43	9	15	10	25	8.0	2	9.0	0.1	-	9000	50	TR	5	95	-	11	DRILLING.	CLAY/SAND.
18/7	1142	$8\frac{1}{2}$	-	9.2+	39	9	11	7	18	8.0	2	9.5	0.3	-	9500	20	TR	6	94	-	10	DRILLING.	CLAY.
19/7	1203.8	$8\frac{1}{2}$	-	9.2+	38	10	11	6	18	7.8	2	9.5	0.3	-	11000	20	TR	6	94	-	10	DRILL, WIPER TRIP.	CLAY/SAND.
20/7	1203.8	$8\frac{1}{2}$	-	9.2+	39	10	12	6	18	8.0	2	9.5	0.3	-	11000	20	TR	6	94	-	11	DST #1, WIPER TRIP.	
21/7	1212	$8\frac{1}{2}$	-	9.2+	39	12	12	4	16	7.8	2	9.5	0.25	-	10000	35	TR	6	94	-	9	DST #2, WIPER TRIP.	
22/7	1212	$8\frac{1}{2}$	-	9.2+	39	12	12	4	16	7.8	2	9.5	0.25	-	10000	35	TR	6	94	-	9	DST #3, RIH TO DRILL.	
23/7	1317	$8\frac{1}{2}$	-	9.2+	40	13	12	4	18	8.0	2	9.5	0.3	-	12000	25	TR	6	94	-	9	DRILL TO T.D. LOG.	SANDSTONE.
24/7	1317	$8\frac{1}{2}$	-	9.2+	40	13	12	4	18	8.0	2	9.5	0.3	-	12000	25	TR	6	94	-	9	LOGGING.	

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

BIT RECORD

COMPANY BEACH PETROLEUM WELL WILSON NO. 1 CONTRACTOR/RIG O. D. & E. RIG 19

LOCATION PEP 105, OTWAY BASIN SPUD DATE 10-07-87 DATE REACHED T.D. 25-07-87

COMPANY SUPERVISORS H. WALKER TOOLPUSHERS R. PYNE, G. RILEY

PUMPS: MAKE, TYPE GDP27 PAHBFC LINERS USED $5\frac{1}{2}$ x 7 / 5 x 8 DRILL COLLARS 8" / $6\frac{1}{4}$" DRILL PIPE $4\frac{1}{2}$"

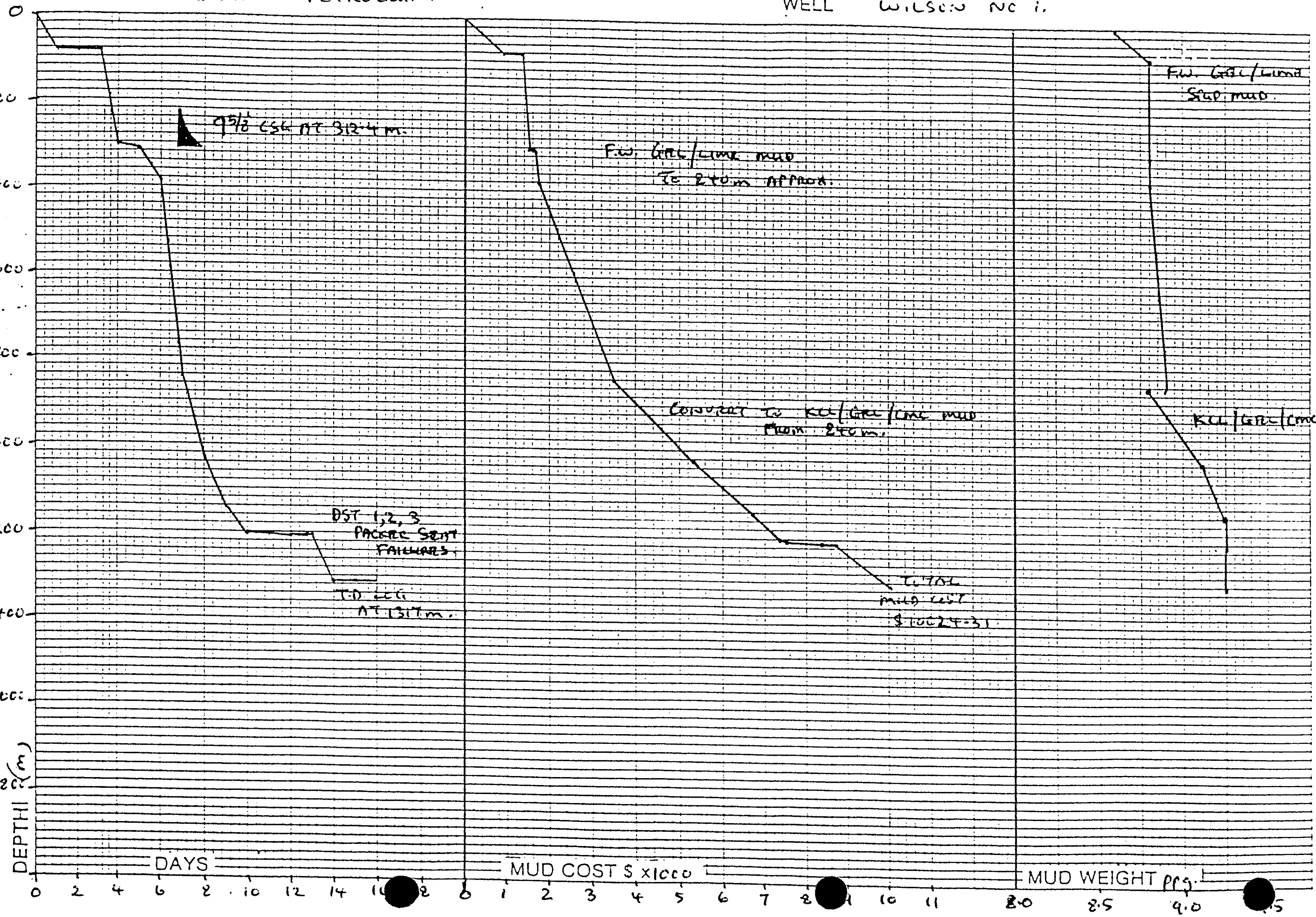
MUD SYSTEMS, DEPTHS F.W. GEL/LIME SPUD MUD TO 315 M. F.W. GEL/LIME TO 830 M. KCl/GEL/CMC TO T.D.

DATE	No	SIZE	MAKE	TYPE	JETS 32nd"	DEPTH OUT m	METRES DRILLED	HOURS	MTRS/HR	ACCUM DRLG HOURS	BIT WEIGHT tonnes	RPM	VERT DEV'N	PUMP PRESSURE p.s.i.	PUMP RATE spm	WT SG	MUD VIS sec	CONDITION T	B	G	FORMATION	REMARKS
10/7	1	$12\frac{1}{4}$	SEC	S3SJ	15-15-16	86	70.5	$6\frac{1}{2}$	10.9	6.5	0-3	100/140	0°	550	150	8.8	38	1	1	I		
14/7	RR1	$12\frac{1}{4}$	SEC	S3SJ	15-15-16	315.5	229.5	16	14.3	22.5	0-3	100	0°	100	90	8.8	50	2	2	I		
16/7	2	$8\frac{1}{2}$	HTC	X3A	3 x 10	841	525.5	18	29.2	40.5	0-15	100/120	$\frac{1}{4}$°	700	110	8.8	43	6	4	1/16		
18/7	3	$8\frac{1}{2}$	HTC	X3A	3 x 10	1069.5	228.5	26	8.8	66.5	0-15	100	1-3/4°	700	110	9.1	43	6	4	1/16		
19/7	4	$8\frac{1}{2}$	HTC	JD3	3 x 10	1203.8	134.3	$17\frac{1}{2}$	7.7	84	0-18	100	1°	1000	110	9.2+	38	4	1	I		
20/7	5	$8\frac{1}{2}$	HTC	XDG	3 x 10	1203.8																WIPER TRIPS FOR TESTING.
21/7	RR5	$8\frac{1}{2}$	HTC	XDG	3 x 10	1212	8.2	0.5	16.4	84.5	0-15	100		1000	110	9.2+	40	1	1	IN		WIPER TRIPS FOR TESTING.
23/7	RR5	$8\frac{1}{2}$	HTC	XDG	3 x 10	1317	105	11	11.6	95.5	0-30	70-100	1°	1100	110	9.2+	40	8	4	1/16		T.D. LOGGING.

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

GRAPH SUMMARY

OPERATOR BEACH PETROLEUM. WELL WILSON NO 1.



BEACH PETROLEUM NL
WILSON NO. 1

APPENDIX A

Formation Tops — Wilson No.1

Heytesbury Formation	Surface
Dilwyn Formation	195 m
Pember Mudstone	935 m
Pebble Point Formation	1224 m
Paraate Formation	1262 m
T.D.	1317 m

APPENDIX B

$8^1/2$" Caliper (Averaged Over 25 m Intervals)

Formation Tops — Henker No.1

Depth	Hole Size	Depth	Hole Size
350	$11^1/2$"	850	$9^3/4$"
375	$13^1/2$"	875	$8^3/4$"
400	$10^1/2$"	900	$8^3/4$"
425	12"	925	$8^3/4$"
450	12"	950	$8^3/4$"
475	12"	975	$8^3/4$"
500	12"	1000	$8^3/4$"
525	$10^1/2$"	1025	$9^1/4$"
550	11"	1050	10"
575	10"	1075	$9^3/4$"
600	10"	1100	$9^3/4$"
625	$8^3/4$"	1125	10"
650	$9^1/4$"	1150	$10^1/4$"
675	$8^3/4$"	1175	$11^1/2$"
700	$8^3/4$"	1200	12"
725	$8^3/4$"	1225	$8^3/4$"
750	9"	1250	9"
775	$8^3/4$"	1275	$8^1/2$"
800	$9^3/4$"	1300	$8^3/4$"
825	83/4"		

BEACH PETROLEUM NL
WILSON NO. 1

APPENDIX C

Four Arm Caliper Run In 8 1/2" Hole After DST No. 1

Depth	C_1	C_2	
925 m	8"	8"	
950 m	8 1/4"	8 1/4"	
975 m	8"	8"	
1000 m	8"	8"	
1025 m	8 1/2+"	8 1/2"	
1050 m	8 3/4"	8 1/2+"	
1075 m	8 1/2"	9 1/2"	
1100 m	8 1/2"	9"	
1125 m	8 1/2"	9"	
1150 m	8 1/2"	9"	
1175 m	8 1/2"	9 1/4"	
1185 m	8 1/2"	10"	Washed out in one axis
1195 m	7"	7 1/4"	Fill

APPENDIX D

Packer Seat Depths for DST No.'s 1, 2 and 3

DST No. 1	1189.8 m	and	1192 m
DST No. 2	1193.8 m	and	1196 m
DST No. 3	1197 m	and	1199 m

APPENDIX 4

APPENDIX 4

Sidewall Core Descriptions

WILSON NO. 1

SIDEWALL CORE DESCRIPTIONS

SWC	Depth (m)	Rec. (cm)	Description
1	1308.5m	2.5cm	CLAYSTONE, dark grey, firm, massive to sub-fissile, common micromica, very carbonaceous, slightly silty, non-calcareous. No show.
2	1300.3m	2.4cm	SANDSTONE, medium grey, friable, very fine to occasionally coarse, dominantly fine grained, angular to sub-rounded, dominantly subangular, poorly sorted quartz, 20% medium - dark grey argillaceous matrix, common pyrite cement and disseminated pyrite, trace siliceous cement, moderately carbonaceous, non-calcareous, poor visual porosity. Trace very dull orange fluorescent (mineral), patchy - 10%.
3	1290.5m	2.5cm	SANDSTONE, medium to dark grey, friable, very fine to coarse, dominantly very fine grained, angular to subrounded, dominantly subangular, poorly sorted quartz, common dark grey argillaceous matrix, trace siliceous cement, trace pyrite cement, trace black coally lithics, common silty carbonaceous laminae, non-calcareous, very poor visual porosity. No show.
4	1287.5m	4.0cm	SANDSTONE, dark grey, friable, very fine to coarse, occasionally granule, dominantly medium grained, subangular to subrounded, poorly sorted quartz, very abundant (up to 40%) dark grey argillaceous matrix, non-calcareous, trace very fine mica, very poor visual porosity. No show.
5	1285.0m	3.7cm	SANDSTONE, medium grey, friable, very fine to granule, dominantly fine grained, subangular to subrounded, very poorly sorted quartz, abundant medium grey to brown argillaceous matrix, trace black, very carbonaceous, argillaceous matrix in part, rare mica flakes, trace siliceous cement, non-calcareous, very poor visual porosity. No show.
6A	1281.5m	5.7cm	SANDSTONE, dark green, friable, very fine to coarse, dominantly medium grained, angular to subrounded, dominantly subangular, very poorly sorted, common iron oxide stained quartz, 60% dark green argillaceous matrix, nil cement, non-calcareous, very poor visual porosity. No show.

6B	1281.5m	5.0cm	SANDSTONE, as above with 40% dark green argillaceous matrix. No show.
7	1274.0m	5.0cm	SANDSTONE, dark grey to dark green grey, friable, very fine to coarse, dominantly medium grained, angular to subrounded, dominantly subangular, very poorly sorted quartz with minor brown iron oxide staining, 30-50% dark green-grey argillaceous matrix, very weak siliceous cement in part, non-calcareous, very poor visual porosity. No show.
8	1265.0m		No recovery, lost bullet.
9	1251.0m	4.0cm	SANDSTONE, dark brown, moderately hard, very fine to very coarse, dominantly fine grained, subrounded to rounded, poorly sorted, 30% dark brown iron oxide stained quartz, 30% dark brown fine grained iron oxide pellets, set in 40% iron oxide rich matrix and cement, non-calcareous, very poor visual porosity. No show.
10	1237.0m	3.5cm	SANDSTONE, dark brown, moderately hard, very fine to pebble, dominantly very coarse grained, subrounded to rounded, very poorly sorted, 50% brown iron oxide stained quartz with 50% dark brown iron oxide matrix and cement, trace very fine iron oxide pellets, non-calcareous, very poor visual porosity. No show.
11	1231.0m	4.7cm	SANDSTONE, dark brown, hard, fine to coarse, dominantly medium grained, subrounded to rounded, very poorly sorted, 30% brown iron oxide stained quartz, 40% dark brown iron oxide pellets, 30% dark brown iron oxide matrix and cement, non-calcareous, very poor visual porosity. No show.
12	1223.5m	2.2cm	SANDSTONE, medium brown, firm, very fine to granule, dominantly fine grained, subangular to rounded, poorly sorted, 40% brown oxide stained quartz, 20% brown iron oxide pellets, 40% medium yellow - brown to dark brown, occasional green brown mottled argillaceous iron rich matrix, slightly calcareous, very poor visual porosity. No show.
13	1218.0m	5.5cm	SANDSTONE, dark green, firm to hard, very fine to granule, dominantly fine grained, subangular to subrounded, very poorly sorted quartz, up to 30% dark green argillaceous matrix, non-calcareous, trace intergranular porosity. No show.

14	1215.5m	5.5cm	SANDSTONE, medium green-grey, friable, very fine to very coarse, dominantly coarse grained, subangular to rounded, dominantly subangular, poorly sorted quartz, up to 30% medium green-grey argillaceous matrix, trace intergranular porosity with 10% patchy, very dull yellow-orange fluorescence, no cut.
15	1211.5m	3.5cm	SANDSTONE, mottled off white to medium green - medium brown, friable, very fine to coarse, dominantly fine grained, subangular to subrounded, poorly sorted quartz, with common light brown iron oxide stain, 10% white - medium green argillaceous matrix, very weak siliceous cement, weak calcareous cement, poor visual porosity with 30% patchy, very dull yellow-orange fluorescence, weak pale yellow-white crush cut.
16	1210.0m	5.2cm	SANDSTONE, medium green, medium green-grey, firm, very fine to very coarse, dominantly medium grained, subangular to subrounded, poorly sorted quartz, with common green to yellow stain, 30% medium grey-green argillaceous matrix, very weak siliceous cement, non-calcareous, trace red cherty lithics, very poor visual porosity with 40% dull to medium bright patchy, orange - gold fluorescence, extremely weak pale yellow-white crush cut.
17	1208m	5.0cm	SANDSTONE, medium to dark green-grey, firm, very fine to very coarse, dominantly medium grained, subrounded, poorly sorted quartz with common green-grey stain, 30% medium green-grey argillaceous matrix, very weak siliceous cement, slightly calcareous in part, very poor visual porosity with 20% patchy dull to moderately bright yellow-gold fluorescence and very weak pale yellow-white crush cut.
18	1200m	5.7cm	SANDSTONE, medium green-grey, firm, very fine to very coarse, dominantly fine grained, subrounded, very poorly sorted quartz, with minor brown and grey-green stain, 30% mottled light brown to light green-grey, and medium green-grey argillaceous matrix, very weak siliceous cement in part, non-calcareous, very poor visual porosity. No show.

19	1197.0m	5.5cm	SANDSTONE, mottled medium brown, medium green, friable, very fine to very coarse, dominantly very coarse grained, angular to subrounded, very poorly sorted quartz, with minor brown stain, 50% medium green matrix, medium brown and medium grey in part, non-calcareous, very weak siliceous cement in part, common fine-grained glauconite, very poor visual porosity with 10% very dull, patchy, orange - gold fluorescence, very weak pale milky-yellow crush cut.
20	1195.0m	5.5cm	SANDSTONE, mottled dark green, brown, grey, friable, very fine to very coarse, dominantly fine grained, subangular to subrounded, very poorly sorted quartz with common brown, green and grey stain, 50% dark green-grey to dark brown-grey argillaceous matrix, moderately calcareous, trace shell (?) fragments, very poor visual porosity with 15% patchy, very dull to moderately bright, orange - gold fluorescence with weak pale yellow - milky crush cut.
21	1194.0m	5.0cm	SANDSTONE, mottled medium brown, medium to dark green-grey, friable, very fine to very coarse, subangular to subrounded, very poorly sorted quartz with trace green-grey stain, 40% silty and argillaceous medium brown to medium dark green-grey matrix, moderate to very calcareous, very poor visual porosity with 30% patchy, dull orange-gold fluorescence, weak pale yellow-milky crush cut.
22	1173.0m	4.0cm	CLAYSTONE, medium brown-grey, firm, massive to sub-fissile, trace black carbonaceous laminae and detritus, trace micromica, trace very fine grained sand laminae, slightly silty, slightly calcareous. No show.
23	1089.0m	3.3cm	CLAYSTONE, medium brown, firm, massive to sub-fissile, trace micromica, common very fine quartz sand laminae, trace carbonaceous, slightly silty, very slightly calcareous. No show.
24A	1036.0m	3.0cm	CLAYSTONE, light to medium brown, firm, massive to sub-fissile, trace micromica, slightly silty, trace diseminated pyrite, non-calcareous. No show.
24B	1036.0m	4.7cm	CLAYSTONE, medium brown, massive to sub-fissile, moderate micromica, very silty, slightly carbonaceous, trace very fine quartz sand laminae, rare medium quartz sand grains, trace carbonaceous detritus in part, very slightly calcareous in part. No show.

This SWC is fractured transverse to bedding and also splits readily along bedding planes.

25	985.0m	3.5cm	Interlaminated very fine Sandstone and Claystone. CLAYSTONE, medium to dark brown, firm, massive to sub-fissile, trace micromica, moderately carbonaceous, trace coally detritus and laminae, slightly silty. SANDSTONE, off white to very light brown, very fine to silty, subangular to subrounded, medium sorted quartz, trace carbonaceous detritus, abundant medium brown argillaceous matrix in part, non-calcareous, very weak siliceous cement, fair visual porosity. No show.
26	936.0m	4.0cm	CLAYSTONE, medium to dark brown, firm, massive to sub-fissile, trace micromica, slightly carbonaceous, trace very fine quartz sand and coally laminae, rare pyrite, slightly silty, non calcareous. No show.
27	855.5m	2.5cm	SANDSTONE, light brown grey, friable to loose, very fine to pebble, dominantly fine-grained, subangular to subrounded, very poorly sorted quartz, trace medium brown argillaceous matrix (probably filter cake) very weak siliceous cement in part, rare carbonaceous detritus, good visual porosity. No show.

APPENDIX 5

APPENDIX 5

Velocity Survey

Schlumberger

BEACH PETROLEUM N.L.

GEOGRAM PROCESSING REPORT

WILSON - 1

FIELD	:	WILDCAT
STATE	:	VICTORIA
COUNTRY	:	AUSTRALIA
COORDINATES	:	037 deg 56' 22.4" S 141 deg 08' 31.9" E
DATE OF SURVEY	:	24-JULY-1987
REFERENCE NO.	:	570804

CONTENTS

1. Introduction

A checkshot survey was shot in the Wilson - 1 well on 24 July 1987. Data was acquired using a dynamite source. Nineteen levels were shot from 1316 to 56.6 metres below KB.

2. Data Acquisition

Table 1 Field Equipment and Survey Parameters

Elevation Datum	MSL
Elevation KB	56.2 metres AMSL
Elevation DF	55.9 metres AMSL
Elevation GL	51.6 metres AMSL
Total Depth	1316 metres below KB
No. of Levels	19
Energy Source	Dynamite
Source Offset	37.0 metres
Source Azimuth	270 deg
Source Elevation	1.0 metres below GL
Reference Sensor	Hydrophone & Geophone
Downhole Geophone	Geospace HS-1
	High Temp. (350 deg F)
	Coil Resist. 225Ω ±10 %
	Natural Freq. 8-12 hertz
	Sensitivity 0.45 V/in/sec
	Maximum tilt angle 60 deg

Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format on 9 track magnetic tape and at a recording density of 1600 BPI.

3. Checkshot Data

Nineteen levels were used in the sonic calibration processing. The data quality is good with clearly defined first breaks.

Table 2 Check Shot Levels

Measured Depth	Shots Stacked	Shots Rejected	Quality	Comments
56.6	1	0	Good	
120	2	0	Good	
195	2	0	Good	
311	1	0	Good	
380	2	0	Good	
381	2	0	Good	
447	2	2	Good	
520	1	0	Good	
600	1	0	Good	
690	1	0	Good	
777	2	0	Good	
850	1	0	Good	
890	1	1	Good	
935	2	0	Good	
979	1	0	Good	
980	3	0	Good	Not used
1100	1	1	Good	
1205	1	0	Good	
1235	1	0	Good	
1262	5	0	Good	
1282	3	1	Good	
1316	1	1	Good	

4. Sonic Calibration Processing

4.1 Sonic Calibration

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

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

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

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

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

Two methods of correction to the sonic log are used.

1. **Uniform or block shift** This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in μsec/ft.

2. **ΔT Minimum** In the case of negative drift a second method is used, called Δt minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt_{min}. Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min}, Δt - Δt_{min}.

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

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

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

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

4.2 Open Hole Logs

The sonic log was recorded from 1316 metres to the casing shoe at 311 metres below KB. The overall log quality is good. The density log was recorded upto 1000 metres and a constant density of 2.25 gm/cc from this depth to the top of the sonic log. The caliper and gamma ray logs are included as correlation curves.

4.3 Correction to Datum and Velocity Modelling

The sonic calibration processing has been referenced to the seismic datum at mean sea level. A checkshot was taken at MSL and a static correction is computed from this shot.

4.4 Sonic Calibration Results

The top of the sonic log (311 metres 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 (m below KB)	Block Shift μsec/ft	Δt_{min} μsec/ft	Equiv Block Shift μsec/ft
311-469	0.0	-	0.0
469-545	-	121.90	-5.97
545-777	-	112.13	-5.93
777-980	-	106.26	-1.50
980-1316	0.0	-	0.0

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

5. Synthetic Seismogram Processing

GEOGRAM plots were generated using 12-60 hertz zero phase butterworth wavelets.

The presentations include both normal and reverse polarity on a time scale of 3.75 in/sec.

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.

5.1 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.

5.2 Primary Reflection Coefficients

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

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

where:

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

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

5.3 Primaries with Transmission Loss

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

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

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

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

5.4 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.

5.5 Multiples Only

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

5.6 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.

Time variant butterworth filtering can be applied after convolution.

5.7 Polarity Convention

An increase in acoustic impedance gives a positive reflection coefficent and is displayed as a white trough under normal polarity. Polarity conventions are displayed in Figure-1.

5.8 Convolution

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

A Summary of Geophysical Listings

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

A1 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 feet from kelly bushing .
3. Vertical depth from SRD : *dsrd*, the depth in feet from seismic reference datum.
4. Vertical depth from GL : *dgl*, the depth in feet from ground level.
5. Observed travel time HYD to GEO : *tim*0, the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.
6. Vertical travel time SRC to GEO : *timv*, is corrected for source to hydrophone distance and for source offset.
7. Vertical travel time SRD to GEO : *shtm*, is *timv* corrected for the vertical distance between source and datum.
8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level, $\frac{dsrd}{shtm}$.
9. Delta depth between shots : $\Delta depth$, the vertical distance between each level.
10. Delta time between shots : $\Delta time$, the difference in vertical travel time (*shtm*) between each level.
11. Interval velocity between shots : the average seismic velocity between each level, $\frac{\Delta depth}{\Delta time}$.

A2 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 feet from kelly bushing .
3. Vertical depth from SRD : the depth in feet from seismic reference datum.
4. Vertical depth from GL : the depth in feet 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).

A3 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 feet from kelly bushing .

3. Vertical depth from SRD : the depth in feet from seismic reference datum.

4. Vertical depth from GL : the depth in feet 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.

A4 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 feet from kelly bushing .

3. Vertical depth from SRD : the depth in feet from seismic reference datum

4. Vertical depth from GL : the depth in feet 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.

A5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 millisecs) and the sampling rate is 2 millisecs.

2. Measured depth from KB : the depth from KB at each corresponding value of two way time.

3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.

4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.

5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

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

   where v_i is the velocity between each 2 millisecs interval.

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

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

   where:

   Δt = normal moveout (secs)
   X = moveout distance (feet)
   t = two way time (secs)
   v_{rms} = rms velocity (feet /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.

A6 Synthetic Seismogram Table

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at the top of the sonic. The default sampling rate is 2 millisecs.

2. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.

3. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 millisecs two way time, (1 millisec one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

4. Interval density : the average density between two successive values of two way time.

5. Reflect. coeff. : the difference in acoustic impedance divided by the sum of the acoustic impedance between any two levels. The acoustic impedance is the product of the interval density and the interval velocity.

6. Two way atten. coeff. : is computed from the series

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

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

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

8. Primary + multiple : a transform technique is used to calculate multiples from the input reflection coefficients.

9. Multiples only : (Primary + multiple) - (Synthetic seismo. primary)

SCHLUMBERGER (SEG-1976) WAVELET POLARITY CONVENTION

Figure 1

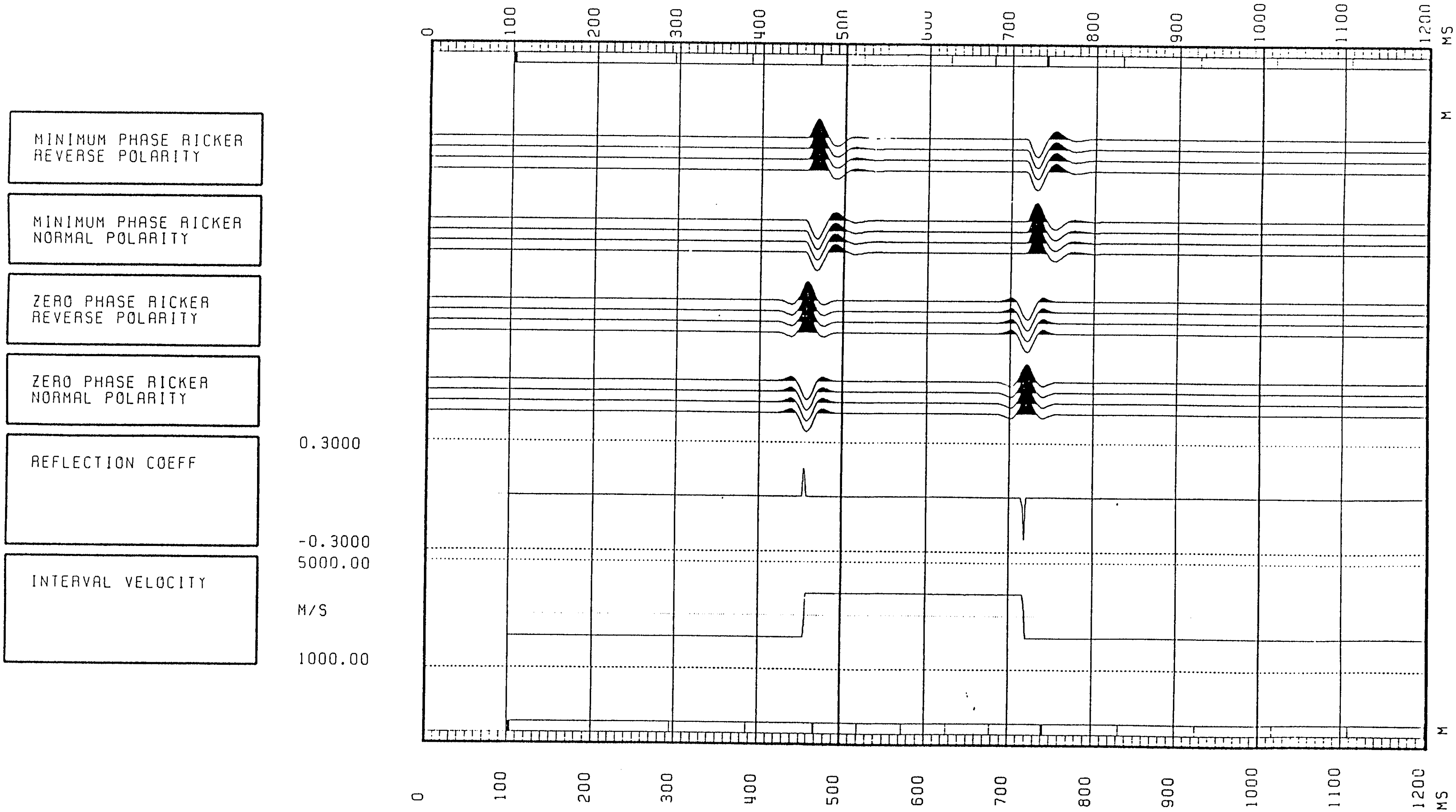
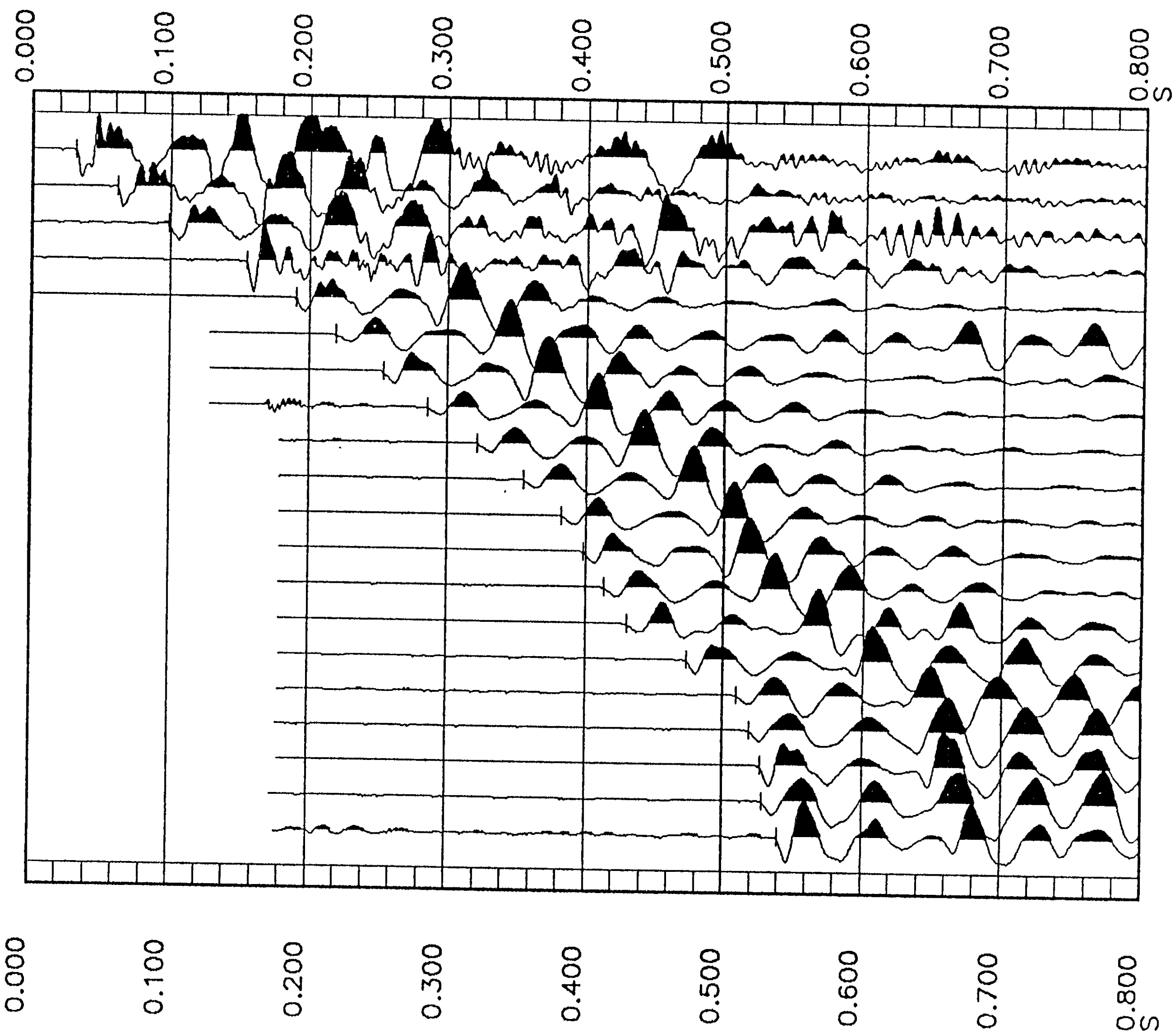


Figure 2

WILSON - 1
STACKED CHECKSHOT DATA

RAW DEPTH M	TRANSIT TIME S	LEVEL NO
56.6	0.031	24
120.0	0.062	23
195.0	0.099	22
311.1	0.155	21
381.0	0.190	19
447.2	0.220	17
520.0	0.254	15
600.0	0.286	14
690.0	0.322	13
777.0	0.355	12
850.0	0.382	11
890.0	0.398	10
935.1	0.413	9
979.0	0.430	8
1100.1	0.473	6
1205.1	0.509	5
1235.1	0.519	4
1262.1	0.527	3
1282.1	0.528	2
1316.1	0.540	1



SHOT

ANALYST:

1-AUG-87 16:00:11 PROGRAM: GSHOT 007.E08

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GEOPHYSICAL AIRGUN REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WILSON # 1

FIELD : WILD CAT

REFERENCE: FS2A.

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	:	56.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	56.2000	M
ELEV OF GL AB. SRD(WST)	GL	:	51.6000	M
VEL SOURCE-HYDRO(WST)	VELHYD	:	1500.00	M/S
VEL SOURCE-SRD (WST)	VELSUR	:	1948.95	M/S

(MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	50.60	-37.00	0	50.60	-39.00	0

	TRT HYD-SC MS	TRT SC-SRD MS
1	1.33	-25.96

	MD @ KB M	VD @ KB M	VD @ SRD M	E-W COORD M	N-S COORD M
1	56.20	56.20	0	0	0
2	120.00	120.00	63.80	0	0
3	195.00	195.00	138.80	0	0
4	311.00	311.00	254.80	0	0
5	381.00	381.00	324.80	0	0
6	447.00	447.00	390.80	0	0
7	520.00	520.00	463.80	0	0
8	600.00	600.00	543.80	0	0
9	690.00	690.00	633.80	0	0
10	777.00	777.00	720.80	0	0
11	850.00	850.00	793.80	0	0
12	890.00	890.00	833.80	0	0
13	935.00	935.00	878.80	0	0
14	979.00	979.00	922.80	0	0
15	1100.00	1100.00	1043.80	0	0
16	1205.00	1205.00	1148.80	0	0
17	1235.00	1235.00	1178.80	0	0
18	1282.00	1282.00	1225.80	0	0
19	1316.00	1316.00	1259.80	0	0

DRIFT

ANALYST:

1-AUG-87 16:05:15 PROGRAM: GDRIFT 007.E09

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DRIFT COMPUTATION REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WILSON # 1

FIELD : WILD CAT

REFERENCE: FS2A.

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
DKE - 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	:	56.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	56.2000	M
ELEV OF GL AB. SRD(WST)	GL	:	51.6000	M
TOP OF ZONE PROCD (WST)	XSTART	:	0	M
BOT OF ZONE PROCD (WST)	XSTOP	:	0	M
RAW SONIC CH NAME (WST)	GAD001	:	DT.ATT.002.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

ANALYST: M. SANDERS 1-AUG-87 21:10:36 PROGRAM: GADJST 008.E08

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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : EEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 57C804

ANALYST: M. SANDERS 1-AUG-87 21:10:36 PROGRAM: GADJST 008.E08

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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 57C804

LONG DEFINITIONS

GLOBAL

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

ZONE

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

SAMPLED

SHOT - SHOT NUMBER
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
E - 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	:-7.000000	MS	1316.00	-	980.000
		-7.000000		980.000		777.000
		-6.000000		777.000		545.600
		-1.500000		545.600		469.000
		0		469.000		311.000
		0		311.000		0
ADJUSMNT MODE (WST)	ADJOPZ	:-999.2500		30479.7	-	0
USER DELTA-T MIN (WST)	ADJUSZ	:-999.2500	US/F	30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 1948.950	M/S	56.2000	-	0

COMPANY : BEACH PETROLEUM N.L. WELL : WILSON # 1

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
2	311.00	254.80	306.40	0	0			0
3	469.00	412.80	464.40	0	0			0
4	545.60	489.40	541.00	-1.50		121.90	.58	-5.97
5	777.00	720.80	772.40	-6.00		112.13	.56	-5.93
6	980.00	923.80	975.40	-7.00		106.26	.84	-1.50
7	1316.00	1259.80	1311.40	-7.00	0			0

COMPANY : BEACH PETROLEUM N.L. WELL : WILSON # 1

LEVEL NUMBER	MEASUR DEPTH FROM KB M	VERTIC DEPTH FROM SRD M	VERTIC DEPTH FROM GL M	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS M/S
1	56.20	0	51.60	30.83	25.96	0				
2	120.00	63.80	115.40	62.00	60.26	34.30	1860	63.80	34.30	1860
3	195.00	138.80	190.40	99.00	98.47	72.51	1914	75.00	38.21	1963
4	311.00	254.80	306.40	155.00	155.20	129.24	1972	116.00	56.73	2045
5	381.00	324.80	376.40	190.00	190.41	164.45	1975	70.00	35.21	1988
6	447.00	390.80	442.40	220.00	220.56	194.60	2008	66.00	30.15	2189
7	520.00	463.80	515.40	254.00	254.68	228.71	2028	73.00	34.12	2140
8	600.00	543.80	595.40	286.00	286.78	260.82	2085	80.00	32.10	2492
9	690.00	633.80	685.40	322.00	322.86	296.90	2135	90.00	36.08	2494
10	777.00	720.80	772.40	355.00	355.92	329.96	2184	87.00	33.06	2631
11	850.00	793.80	845.40	382.00	382.97	357.00	2224	73.00	27.04	2700
12	890.00	833.80	885.40	398.00	398.98	373.02	2235	40.00	16.02	2497
13	935.00	878.80	930.40	413.00	414.01	388.04	2265	45.00	15.02	2996
14	979.00	922.80	974.40	430.00	431.02	405.06	2278	44.00	17.02	2586
15	1100.00	1043.80	1095.40	473.00	474.06	448.10	2329	121.00	43.04	2811
16	1205.00	1148.80	1200.40	509.00	510.09	484.13	2373	105.00	36.03	2914
17	1235.00	1178.80	1230.40	519.00	520.10	494.14	2386	30.00	10.01	2998
18	1282.00	1225.80	1277.40	528.00	529.11	503.15	2436	47.00	9.01	5215
19	1316.00	1259.80	1311.40	540.00	541.12	515.15	2445	34.00	12.01	2832

ANALYST: M. SANDERS 1-AUG-87 21:10:47 PROGRAM: GADJST 008.E08

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*  SCHLUMBERGER   *
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VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 570804

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*   SCHLUMBERGER  *
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VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 570804

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	56.20	0	51.60	0	0	0	0
2	120.00	63.80	115.40	34.30	34.30	0	0
3	195.00	138.80	190.40	72.51	72.51	0	0
4	311.00	254.80	306.40	129.24	129.24	0	0
5	381.00	324.80	376.40	164.45	163.49	.95	4.16
6	447.00	390.80	442.40	194.60	193.99	.61	-1.61
7	520.00	463.80	515.40	228.71	229.03	-.31	-3.84
8	600.00	543.80	595.40	260.82	263.32	-2.50	-8.34
9	690.00	633.80	685.40	296.90	300.61	-3.71	-4.10
10	777.00	720.80	772.40	329.96	335.50	-5.54	-6.40
11	850.00	793.80	845.40	357.00	364.47	-7.47	-8.06
12	890.00	833.80	885.40	373.02	379.60	-6.58	6.79
13	935.00	878.80	930.40	388.04	395.89	-7.85	-8.60
14	979.00	922.80	974.40	405.06	411.90	-6.84	6.95
15	1100.00	1043.80	1095.40	448.10	455.00	-6.90	-.13
16	1205.00	1148.80	1200.40	484.13	490.81	-6.68	.64
17	1235.00	1178.80	1230.40	494.14	499.68	-5.54	11.51
18	1282.00	1225.80	1277.40	503.15	512.68	-9.53	-25.87
19	1316.00	1259.80	1311.40	515.15	522.57	-7.42	18.94

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	:	56.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	56.2000	M
ELEV OF GL AB. SRD(WST)	GL	:	51.6000	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	:	1948.950	M/S	56.2000	-	0

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	56.20	0	51.60	0	0	0	0	
2	120.00	63.80	115.40	34.30	34.29	0	0	1860
3	195.00	138.80	190.40	72.51	72.50	0	.01	1963
4	311.00	254.80	306.40	129.24	129.23	0	0	2045
5	381.00	324.80	376.40	164.45	163.48	.95	.96	2044
6	447.00	390.80	442.40	194.60	193.99	.61	.61	2164
7	520.00	463.80	515.40	228.71	227.91	-.31	.80	2152
8	600.00	543.80	595.40	260.82	260.45	-2.50	.37	2459
9	690.00	633.80	685.40	296.90	295.92	-3.71	.98	2538
10	777.00	720.80	772.40	329.96	329.50	-5.54	.47	2591
11	850.00	793.80	845.40	357.00	357.89	-7.47	-.89	2571
12	890.00	833.80	885.40	373.02	372.82	-6.58	.20	2680
13	935.00	378.80	930.40	388.04	389.00	-7.85	-.96	2780
14	979.00	922.80	974.40	405.06	404.90	-6.84	.16	2768
15	1100.00	1043.80	1095.40	448.10	447.99	-6.90	.11	2808
16	1205.00	1148.80	1200.40	484.13	483.80	-6.68	.33	2932
17	1235.00	1178.80	1230.40	494.14	492.67	-5.54	1.46	3381
18	1282.00	1225.80	1277.40	503.15	505.67	-9.53	-2.52	3615
19	1316.00	1259.80	1311.40	515.15	515.56	-7.42	-.40	3440

TIME/DEPTH

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*   SCHLUMBERGER  *
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TIME CONVERTED VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 57C804

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	:	56.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEV OF GL AB. SRD(WST)	GL	:	51.6000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST M
1	914.4
2	1371.6
3	1828.3

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 1948.950	M/S	56.2000	-	0
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

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	56.20	0						1949
2.00	58.06	1.86	1860	1860	489.56	735.34	981.12	1860
4.00	59.92	3.72	1860	1860	487.57	733.35	979.12	1860
6.00	61.78	5.58	1860	1860	485.59	731.36	977.13	1860
8.00	63.64	7.44	1860	1860	483.62	729.38	975.15	1860
10.00	65.50	9.30	1860	1860	481.66	727.40	973.17	1860
12.00	67.36	11.16	1860	1860	479.70	725.43	971.19	1860
14.00	69.22	13.02	1860	1860	477.76	723.47	969.22	1860
16.00	71.08	14.88	1860	1860	475.82	721.51	967.25	1860
18.00	72.94	16.74	1860	1860	473.89	719.56	965.28	1860
20.00	74.80	18.60	1860	1860	471.96	717.61	963.32	1860
22.00	76.66	20.46	1860	1860	470.05	715.66	961.36	1860
24.00	78.52	22.32	1860	1860	468.14	713.73	959.41	1860
26.00	80.38	24.18	1860	1860	466.24	711.79	957.46	1860
28.00	82.24	26.04	1860	1860	464.35	709.87	955.51	1860
30.00	84.10	27.90	1860	1860	462.47	707.95	953.57	1860
32.00	85.96	29.76	1860	1860	460.60	706.03	951.64	1860
34.00	87.82	31.62	1860	1860	458.73	704.12	949.70	1860
36.00	89.68	33.48	1860	1860	456.87	702.21	947.77	1860
38.00	91.54	35.34	1860	1860	455.02	700.32	945.85	1860
40.00	93.40	37.20	1860	1860	453.18	698.42	943.93	1860
42.00	95.26	39.06	1860	1860	451.35	696.53	942.01	1860
44.00	97.12	40.92	1860	1860	449.52	694.65	940.10	1860
46.00	98.98	42.78	1860	1860	447.71	692.77	938.19	1860

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	100.85	44.65	1860	1860	445.90	690.90	936.29	1860
50.00	102.71	46.51	1860	1860	444.09	689.03	934.39	1860
52.00	104.57	48.37	1860	1860	442.30	687.17	932.49	1860
54.00	106.43	50.23	1860	1860	440.51	685.31	930.60	1860
56.00	108.29	52.09	1860	1860	438.74	683.46	928.71	1860
58.00	110.15	53.95	1860	1860	436.97	631.61	926.82	1860
60.00	112.01	55.81	1860	1860	435.21	679.77	924.94	1860
62.00	113.87	57.67	1860	1860	433.45	677.94	923.07	1860
64.00	115.73	59.53	1860	1860	431.71	676.11	921.20	1860
66.00	117.59	61.39	1860	1860	429.97	674.28	919.33	1860
68.00	119.45	63.25	1860	1860	428.24	672.47	917.46	1860
70.00	121.38	65.18	1862	1862	425.93	669.76	914.42	1938
72.00	123.35	67.15	1865	1865	423.47	666.83	911.06	1963
74.00	125.31	69.11	1868	1868	421.06	663.97	907.80	1963
76.00	127.27	71.07	1870	1871	418.71	661.18	904.62	1963
78.00	129.24	73.04	1873	1873	416.39	658.45	901.51	1963
80.00	131.20	75.00	1875	1875	414.12	655.77	898.48	1963
82.00	133.16	76.96	1877	1877	411.89	653.14	895.52	1963
84.00	135.12	78.92	1879	1880	409.70	650.57	892.62	1963
86.00	137.09	80.89	1881	1882	407.54	648.04	889.77	1963
88.00	139.05	82.85	1883	1883	405.41	645.55	886.98	1963
90.00	141.01	84.81	1885	1885	403.32	643.10	884.24	1963
92.00	142.97	86.77	1886	1887	401.25	640.69	881.55	1963
94.00	144.94	88.74	1888	1889	399.22	638.32	878.90	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
96.00	146.90	90.70	1890	1890	397.21	635.98	876.29	1963
98.00	148.86	92.66	1891	1892	395.22	633.67	873.73	1963
100.00	150.83	94.63	1893	1893	393.26	631.39	871.19	1963
102.00	152.79	96.59	1894	1894	391.32	629.14	868.70	1963
104.00	154.75	98.55	1895	1896	389.41	626.92	866.23	1963
106.00	156.71	100.51	1896	1897	387.51	624.72	863.80	1963
108.00	158.68	102.48	1898	1898	385.64	622.55	861.40	1963
110.00	160.64	104.44	1899	1900	383.79	620.40	859.02	1963
112.00	162.60	106.40	1900	1901	381.95	618.27	856.68	1963
114.00	164.56	108.36	1901	1902	380.14	616.17	854.35	1963
116.00	166.53	110.33	1902	1903	378.34	614.08	852.05	1963
118.00	168.49	112.29	1903	1904	376.56	612.02	849.78	1963
120.00	170.45	114.25	1904	1905	374.80	609.97	847.53	1963
122.00	172.42	116.22	1905	1906	373.05	607.95	845.30	1963
124.00	174.38	118.18	1906	1907	371.32	605.94	843.09	1963
126.00	176.34	120.14	1907	1908	369.61	603.95	840.90	1963
128.00	178.30	122.10	1908	1909	367.91	601.97	838.72	1963
130.00	180.27	124.07	1909	1909	366.23	600.01	836.57	1963
132.00	182.23	126.03	1910	1910	364.56	598.07	834.43	1963
134.00	184.19	127.99	1910	1911	362.90	596.14	832.32	1963
136.00	186.16	129.96	1911	1912	361.26	594.22	830.21	1963
138.00	188.12	131.92	1912	1913	359.63	592.32	828.13	1963
140.00	190.08	133.88	1913	1913	358.01	590.43	826.05	1963
142.00	192.04	135.84	1913	1914	356.41	588.56	824.00	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
144.00	194.01	137.81	1914	1915	354.82	586.70	821.96	1963
146.00	196.01	139.81	1915	1916	353.09	584.62	819.61	2008
148.00	198.06	141.86	1917	1918	351.25	582.36	817.03	2045
150.00	200.10	143.90	1919	1920	349.43	580.13	814.48	2045
152.00	202.15	145.95	1920	1921	347.63	577.93	811.96	2045
154.00	204.19	147.99	1922	1923	345.85	575.74	809.46	2045
156.00	206.24	150.04	1924	1924	344.09	573.58	807.00	2045
158.00	208.28	152.08	1925	1926	342.35	571.45	804.56	2045
160.00	210.33	154.13	1927	1928	340.63	569.33	802.15	2045
162.00	212.37	156.17	1928	1929	338.93	567.23	799.76	2045
164.00	214.42	158.22	1929	1931	337.24	565.16	797.39	2045
166.00	216.46	160.26	1931	1932	335.57	563.10	795.05	2045
168.00	218.51	162.31	1932	1933	333.92	561.07	792.73	2045
170.00	220.55	164.35	1934	1935	332.28	559.05	790.44	2045
172.00	222.60	166.40	1935	1936	330.66	557.05	788.16	2045
174.00	224.64	168.44	1936	1937	329.05	555.07	785.90	2045
176.00	226.69	170.49	1937	1939	327.46	553.10	783.66	2045
178.00	228.73	172.53	1939	1940	325.88	551.15	781.45	2045
180.00	230.78	174.58	1940	1941	324.32	549.22	779.25	2045
182.00	232.82	176.62	1941	1942	322.77	547.30	777.07	2045
184.00	234.87	178.67	1942	1943	321.24	545.40	774.90	2045
186.00	236.91	180.71	1943	1944	319.72	543.52	772.76	2045
188.00	238.96	182.76	1944	1946	318.21	541.64	770.63	2045
190.00	241.00	184.80	1945	1947	316.72	539.79	768.51	2045

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
								2045
192.00	243.05	186.85	1946	1948	315.24	537.94	766.42	
								2045
194.00	245.09	188.89	1947	1949	313.77	536.12	764.33	
								2045
196.00	247.14	190.94	1948	1950	312.31	534.30	762.27	
								2045
198.00	249.18	192.98	1949	1951	310.87	532.50	760.21	
								2045
200.00	251.23	195.03	1950	1952	309.44	530.71	758.18	
								2045
202.00	253.27	197.07	1951	1953	308.02	528.93	756.15	
								2045
204.00	255.32	199.12	1952	1953	306.61	527.16	754.14	
								2045
206.00	257.36	201.16	1953	1954	305.21	525.41	752.14	
								2045
208.00	259.41	203.21	1954	1955	303.83	523.67	750.16	
								2045
210.00	261.45	205.25	1955	1956	302.45	521.94	748.19	
								2045
212.00	263.50	207.30	1956	1957	301.09	520.23	746.23	
								2045
214.00	265.54	209.34	1956	1958	299.74	518.52	744.29	
								2045
216.00	267.59	211.39	1957	1959	298.39	516.83	742.35	
								2045
218.00	269.63	213.43	1958	1959	297.06	515.14	740.43	
								2045
220.00	271.68	215.48	1959	1960	295.74	513.47	738.52	
								2045
222.00	273.72	217.52	1960	1961	294.43	511.81	736.62	
								2045
224.00	275.77	219.57	1960	1962	293.13	510.15	734.73	
								2045
226.00	277.81	221.61	1961	1963	291.84	508.51	732.85	
								2045
228.00	279.85	223.65	1962	1963	290.56	506.88	730.99	
								2045
230.00	281.90	225.70	1963	1964	289.29	505.26	729.13	
								2045
232.00	283.94	227.74	1963	1965	288.02	503.65	727.29	
								2045
234.00	285.99	229.79	1964	1965	286.77	502.04	725.45	
								2045
236.00	288.03	231.83	1965	1966	285.53	500.45	723.62	
								2045
238.00	290.08	233.88	1965	1967	284.29	498.87	721.81	

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	292.12	235.92	1966	1967	283.07	497.29	720.00	2045
242.00	294.17	237.97	1967	1968	281.85	495.73	718.21	2045
244.00	296.21	240.01	1967	1969	280.65	494.17	716.42	2045
246.00	298.26	242.06	1968	1969	279.45	492.63	714.64	2045
248.00	300.30	244.10	1969	1970	278.26	491.09	712.87	2045
250.00	302.35	246.15	1969	1971	277.08	489.56	711.11	2045
252.00	304.39	248.19	1970	1971	275.90	488.04	709.36	2045
254.00	306.44	250.24	1970	1972	274.74	486.53	707.62	2045
256.00	308.48	252.28	1971	1972	273.58	485.02	705.89	2045
258.00	310.53	254.33	1972	1973	272.44	483.53	704.16	2045
260.00	312.52	256.32	1972	1973	271.38	482.18	702.64	1991
262.00	314.51	258.31	1972	1973	270.34	480.84	701.12	1990
264.00	316.45	260.25	1972	1973	269.37	479.62	699.76	1945
266.00	318.41	262.21	1972	1973	268.38	478.37	698.37	1958
268.00	320.33	264.13	1971	1973	267.47	477.22	697.10	1917
270.00	322.33	266.13	1971	1973	266.42	475.87	695.56	2003
272.00	324.32	268.12	1972	1973	265.41	474.54	694.06	1992
274.00	326.35	270.15	1972	1973	264.35	473.16	692.46	2021
276.00	328.35	272.15	1972	1973	263.32	471.81	690.92	2007
278.00	330.17	273.97	1971	1972	262.56	470.91	689.98	1817
280.00	332.00	275.80	1970	1971	261.80	469.98	689.01	1826
282.00	333.95	277.75	1970	1971	260.86	468.77	687.64	1954
284.00	335.92	279.72	1970	1971	259.90	467.52	686.22	1974
286.00	337.96	281.76	1970	1972	258.85	466.12	684.59	2039

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	339.99	283.79	1971	1972	257.81	464.74	682.99	2032
290.00	342.04	285.84	1971	1973	256.78	463.35	681.37	2041
292.00	344.04	287.84	1972	1973	255.80	462.06	679.87	2004
294.00	345.95	289.75	1971	1972	254.95	460.97	678.66	1910
296.00	347.94	291.74	1971	1973	254.00	459.71	677.21	1991
298.00	350.02	293.82	1972	1973	252.94	458.27	675.51	2075
300.00	352.09	295.89	1973	1974	251.89	456.84	673.81	2074
302.00	354.19	297.99	1973	1975	250.81	455.35	672.05	2101
304.00	356.26	300.06	1974	1975	249.78	453.95	670.38	2070
306.00	358.37	302.17	1975	1976	248.69	452.45	668.59	2115
308.00	360.48	304.28	1976	1977	247.63	450.98	666.84	2105
310.00	362.63	306.43	1977	1978	246.52	449.43	664.97	2146
312.00	364.88	308.68	1979	1980	245.26	447.63	662.75	2259
314.00	367.11	310.91	1980	1982	244.07	445.94	660.68	2221
316.00	369.28	313.08	1982	1983	242.95	444.36	658.75	2177
318.00	371.44	315.24	1983	1984	241.87	442.83	656.91	2156
320.00	373.59	317.39	1984	1985	240.81	441.34	655.10	2148
322.00	375.72	319.52	1985	1986	239.76	439.87	653.32	2139
324.00	377.80	321.60	1985	1987	238.80	438.54	651.73	2076
326.00	379.89	323.69	1986	1988	237.83	437.18	650.11	2093
328.00	382.58	326.38	1990	1993	236.05	434.47	646.60	2687
330.00	384.70	328.50	1991	1994	235.06	433.08	644.92	2123
332.00	386.81	330.61	1992	1994	234.10	431.73	643.30	2106
334.00	388.91	332.71	1992	1995	233.15	430.40	641.70	2101

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	391.02	334.82	1993	1996	232.21	429.06	640.10	2104
338.C0	393.10	336.90	1994	1996	231.29	427.77	638.55	2088
340.00	394.91	338.71	1992	1995	230.67	426.98	637.69	1811
342.00	397.13	340.93	1994	1996	229.62	425.45	635.80	2216
344.00	399.25	343.05	1995	1997	228.68	424.10	634.17	2124
346.00	401.30	345.10	1995	1997	227.82	422.91	632.75	2050
348.00	403.45	347.25	1996	1998	226.87	421.54	631.07	2147
350.00	405.65	349.45	1997	2000	225.86	420.07	629.27	2200
352.00	407.84	351.64	1998	2001	224.88	418.65	627.51	2186
354.00	410.07	353.87	1999	2002	223.85	417.14	625.65	2231
356.00	412.39	356.19	2001	2004	222.74	415.48	623.56	2317
358.00	414.63	358.43	2002	2005	221.71	413.97	621.68	2249
360.00	416.82	360.62	2003	2006	220.76	412.59	619.97	2183
362.00	418.99	362.79	2004	2007	219.84	411.24	618.32	2169
364.00	421.16	364.96	2005	2008	218.91	409.89	616.65	2177
366.00	423.30	367.10	2006	2009	218.03	408.61	615.08	2141
368.00	425.43	369.23	2007	2010	217.17	407.36	613.54	2128
370.00	427.54	371.34	2007	2010	216.33	406.14	612.06	2113
372.00	429.69	373.49	2008	2011	215.46	404.87	610.49	2147
374.00	431.87	375.67	2009	2012	214.57	403.54	608.86	2180
376.00	434.04	377.84	2010	2013	213.69	402.25	607.26	2169
378.00	436.16	379.96	2010	2013	212.87	401.06	605.80	2113
380.00	438.32	382.12	2011	2014	212.00	399.78	604.21	2169
382.00	440.51	384.31	2012	2015	211.13	398.48	602.60	2187

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	442.70	386.50	2013	2016	210.26	397.18	600.98	2190
386.00	444.87	388.67	2014	2017	209.41	395.93	599.43	2167
388.00	447.02	390.82	2015	2018	208.59	394.71	597.91	2153
390.00	448.89	392.69	2014	2017	208.01	393.91	597.00	1871
392.00	450.68	394.48	2013	2016	207.51	393.23	596.25	1790
394.00	452.49	396.29	2012	2015	206.98	392.52	595.45	1811
396.00	454.30	398.10	2011	2014	206.46	391.81	594.66	1807
398.00	456.16	399.96	2010	2013	205.90	391.03	593.76	1864
400.00	458.12	401.92	2010	2013	205.27	390.12	592.68	1958
402.00	460.13	403.93	2010	2013	204.60	389.15	591.50	2004
404.00	462.01	405.81	2009	2012	204.03	388.34	590.56	1889
406.00	463.86	407.66	2008	2012	203.49	387.59	589.70	1842
408.00	465.62	409.42	2007	2010	203.02	386.95	588.99	1766
410.00	467.19	410.99	2005	2008	202.68	386.54	588.60	1566
412.00	468.72	412.52	2003	2006	202.36	386.16	588.27	1535
414.00	470.96	414.76	2004	2008	201.51	384.86	586.62	2232
416.00	473.27	417.07	2005	2009	200.59	383.44	584.79	2315
418.00	475.58	419.38	2007	2011	199.69	382.04	583.00	2304
420.00	477.70	421.50	2007	2011	198.95	380.93	581.60	2125
422.00	480.00	423.80	2009	2013	198.07	379.56	579.85	2296
424.00	482.32	426.12	2010	2014	197.18	378.17	578.06	2321
426.00	484.64	428.44	2011	2016	196.29	376.78	576.27	2325
428.00	486.94	430.74	2013	2017	195.43	375.44	574.55	2298
430.00	489.28	433.08	2014	2019	194.54	374.04	572.74	2343

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	491.63	435.43	2016	2020	193.65	372.65	570.94	2344
434.00	493.99	437.79	2017	2022	192.75	371.23	569.10	2365
436.00	496.34	440.14	2019	2024	191.88	369.86	567.32	2348
438.00	498.68	442.48	2020	2025	191.03	368.51	565.57	2337
440.00	501.01	444.81	2022	2027	190.18	367.18	563.85	2331
442.00	503.36	447.16	2023	2028	189.33	365.83	562.10	2351
444.00	505.76	449.56	2025	2030	188.44	364.42	560.26	2398
446.00	508.12	451.92	2027	2032	187.59	363.07	558.50	2365
448.00	510.44	454.24	2028	2033	186.79	361.79	556.84	2322
450.00	513.18	456.98	2031	2037	185.62	359.88	554.27	2741
452.00	515.65	459.45	2033	2039	184.72	358.42	552.35	2464
454.00	517.91	461.71	2034	2040	183.97	357.25	550.84	2267
456.00	520.21	464.01	2035	2041	183.22	356.05	549.28	2292
458.00	522.59	466.39	2037	2043	182.40	354.74	547.56	2384
460.00	524.96	468.76	2038	2044	181.60	353.45	545.87	2370
462.00	527.36	471.16	2040	2046	180.78	352.14	544.15	2393
464.00	529.76	473.56	2041	2048	179.97	350.82	542.42	2405
466.00	532.17	475.97	2043	2049	179.15	349.51	540.68	2414
468.00	534.55	478.35	2044	2051	178.37	348.25	539.03	2374
470.00	536.89	480.69	2045	2052	177.62	347.04	537.46	2342
472.00	539.24	483.04	2047	2054	176.88	345.84	535.88	2347
474.00	541.61	485.41	2048	2055	176.12	344.62	534.26	2370
476.00	543.98	487.78	2049	2056	175.37	343.40	532.66	2371
478.00	546.42	490.22	2051	2058	174.57	342.10	530.94	2440

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
480.00	548.96	492.76	2053	2061	173.71	340.67	529.03	2545
482.00	551.48	495.28	2055	2063	172.87	339.30	527.19	2515
484.00	554.02	497.82	2057	2065	172.03	337.90	525.32	2540
486.00	556.57	500.37	2059	2067	171.18	336.50	523.44	2549
488.00	559.07	502.87	2061	2069	170.38	335.17	521.66	2509
490.00	561.55	505.35	2063	2071	169.60	333.89	519.95	2472
492.00	564.01	507.81	2064	2073	168.84	332.64	518.28	2461
494.00	566.45	510.25	2066	2074	168.10	331.41	516.64	2446
496.00	568.96	512.76	2068	2076	167.32	330.12	514.91	2509
498.00	571.43	515.23	2069	2078	166.58	328.89	513.26	2465
500.00	573.85	517.65	2071	2079	165.87	327.71	511.69	2427
502.00	576.37	520.17	2072	2081	165.10	326.43	509.97	2519
504.00	578.85	522.64	2074	2083	164.37	325.22	508.34	2472
506.00	581.34	525.14	2076	2085	163.64	323.99	506.69	2492
508.00	583.87	527.67	2077	2087	162.88	322.73	504.99	2529
510.00	586.34	530.14	2079	2088	162.17	321.54	503.39	2477
512.00	588.80	532.60	2080	2090	161.48	320.38	501.84	2454
514.00	591.29	535.09	2082	2092	160.77	319.19	500.23	2491
516.00	593.80	537.60	2084	2093	160.05	317.98	498.60	2513
518.00	596.31	540.11	2085	2095	159.34	316.79	496.98	2509
520.00	598.86	542.66	2087	2097	158.61	315.56	495.31	2550
522.00	601.38	545.18	2089	2099	157.91	314.37	493.70	2520
524.00	603.91	547.71	2090	2101	157.21	313.19	492.10	2526
526.00	606.42	550.22	2092	2102	156.52	312.02	490.52	2515

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	608.93	552.73	2094	2104	155.84	310.87	488.95	2514
530.00	611.47	555.27	2095	2106	155.15	309.69	487.35	2539
532.00	613.97	557.77	2097	2108	154.48	308.57	485.83	2498
534.00	616.47	560.27	2098	2109	153.83	307.45	484.31	2500
536.00	619.01	562.81	2100	2111	153.15	306.31	482.75	2539
538.00	621.64	565.44	2102	2113	152.43	305.07	481.05	2626
540.00	624.23	568.03	2104	2115	151.74	303.88	479.43	2591
542.00	626.76	570.56	2105	2117	151.09	302.77	477.91	2529
544.00	629.27	573.07	2107	2118	150.45	301.68	476.42	2514
546.00	631.78	575.58	2108	2120	149.82	300.60	474.95	2510
548.00	634.31	578.11	2110	2122	149.19	299.51	473.45	2534
550.00	636.83	580.63	2111	2123	148.56	298.44	471.98	2519
552.00	639.36	583.16	2113	2125	147.94	297.36	470.51	2531
554.00	641.87	585.67	2114	2126	147.33	296.31	469.07	2510
556.00	644.40	588.20	2116	2128	146.71	295.26	467.62	2527
558.00	646.85	590.65	2117	2129	146.14	294.28	466.29	2450
560.00	649.32	593.12	2118	2130	145.57	293.29	464.94	2472
562.00	651.75	595.55	2119	2132	145.02	292.35	463.65	2426
564.00	654.25	598.05	2121	2133	144.44	291.34	462.27	2498
566.00	656.79	600.59	2122	2135	143.84	290.31	460.85	2540
568.00	659.31	603.11	2124	2136	143.25	289.29	459.44	2528
570.00	661.84	605.64	2125	2138	142.67	288.28	458.05	2525
572.00	664.40	608.20	2127	2139	142.08	287.25	456.63	2558
574.00	666.99	610.79	2128	2141	141.47	286.19	455.16	2592

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	669.55	613.35	2130	2142	140.89	285.18	453.76	2557
578.00	672.13	615.93	2131	2144	140.30	284.15	452.33	2579
580.00	674.68	618.48	2133	2146	139.73	283.15	450.95	2550
582.00	677.21	621.01	2134	2147	139.17	282.17	449.59	2536
584.00	679.81	623.61	2136	2149	138.59	281.15	448.16	2600
586.00	682.38	626.18	2137	2150	138.02	280.15	446.78	2570
588.00	684.97	628.77	2139	2152	137.45	279.15	445.38	2591
590.00	687.60	631.40	2140	2154	136.87	278.12	443.95	2625
592.00	690.21	634.01	2142	2156	136.30	277.11	442.54	2611
594.00	692.65	636.45	2143	2157	135.81	276.26	441.36	2437
596.00	695.10	638.90	2144	2158	135.31	275.39	440.16	2458
598.00	697.52	641.32	2145	2159	134.84	274.56	439.01	2419
600.00	700.05	643.85	2146	2160	134.32	273.65	437.74	2525
602.00	702.66	646.46	2148	2162	133.77	272.67	436.37	2611
604.00	705.23	649.03	2149	2163	133.24	271.73	435.06	2570
606.00	707.83	651.63	2151	2165	132.70	270.78	433.72	2602
608.00	710.40	654.20	2152	2166	132.18	269.85	432.42	2574
610.00	712.98	656.78	2153	2168	131.66	268.92	431.12	2580
612.00	715.50	659.30	2155	2169	131.17	268.05	429.91	2518
614.00	718.07	661.87	2156	2170	130.66	267.15	428.64	2567
616.00	720.61	664.41	2157	2172	130.17	266.27	427.41	2541
618.00	723.17	666.97	2158	2173	129.67	265.38	426.16	2564
620.00	725.75	669.55	2160	2174	129.17	264.49	424.90	2571
622.00	728.36	672.16	2161	2176	128.66	263.57	423.61	2614

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
								2633
624.00	730.99	674.79	2163	2173	128.14	262.65	422.30	
								2658
626.00	733.65	677.45	2164	2179	127.62	261.71	420.96	
								2610
628.00	736.26	680.06	2166	2181	127.12	260.81	419.70	
								2598
630.00	738.86	682.66	2167	2182	126.63	259.93	418.45	
								2456
632.00	741.32	685.12	2168	2183	126.20	259.16	417.37	
								2473
634.00	743.79	687.59	2169	2184	125.76	258.38	416.28	
								2538
636.00	746.33	690.13	2170	2185	125.31	257.56	415.12	
								2553
638.00	748.88	692.68	2171	2187	124.85	256.73	413.95	
								2618
640.00	751.50	695.30	2173	2188	124.36	255.86	412.72	
								2609
642.00	754.11	697.91	2174	2189	123.89	255.00	411.50	
								2611
644.00	756.72	700.52	2176	2191	123.42	254.15	410.28	
								2643
646.00	759.36	703.16	2177	2192	122.94	253.28	409.04	
								2676
648.00	762.04	705.84	2179	2194	122.45	252.39	407.77	
								2642
650.00	764.68	708.48	2180	2196	121.98	251.53	406.54	
								2607
652.00	767.29	711.09	2181	2197	121.52	250.70	405.36	
								2634
654.00	769.92	713.72	2183	2198	121.06	249.86	404.16	
								2751
656.00	772.67	716.47	2184	2200	120.55	248.94	402.84	
								2878
658.00	775.55	719.35	2186	2203	120.00	247.93	401.37	
								2741
660.00	778.29	722.09	2188	2205	119.51	247.02	400.08	
								2491
662.00	780.78	724.58	2189	2205	119.12	246.30	399.05	
								2436
664.00	783.22	727.02	2190	2206	118.74	245.62	398.09	
								2471
666.00	785.69	729.49	2191	2207	118.35	244.92	397.09	
								2441
668.00	788.13	731.93	2191	2208	117.98	244.24	396.13	
								2380
670.00	790.51	734.31	2192	2208	117.63	243.61	395.23	

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	793.00	736.80	2193	2209	117.24	242.90	394.23	2493
674.00	795.47	739.27	2194	2210	116.86	242.21	393.25	2473
676.00	797.89	741.69	2194	2211	116.51	241.57	392.34	2410
678.00	800.40	744.20	2195	2212	116.12	240.86	391.33	2514
680.00	802.97	746.77	2196	2213	115.72	240.12	390.26	2574
682.00	805.50	749.30	2197	2214	115.33	239.41	389.25	2528
684.00	808.01	751.81	2198	2215	114.95	238.72	388.26	2507
686.00	810.55	754.35	2199	2216	114.57	238.02	387.25	2540
688.00	813.11	756.91	2200	2217	114.18	237.30	386.22	2558
690.00	815.68	759.48	2201	2218	113.79	236.58	385.18	2575
692.00	818.27	762.07	2203	2219	113.40	235.86	384.14	2585
694.00	820.83	764.63	2204	2220	113.02	235.15	383.12	2560
696.00	823.41	767.21	2205	2221	112.63	234.44	382.10	2581
698.00	825.95	769.75	2206	2222	112.26	233.76	381.11	2538
700.00	828.61	772.41	2207	2224	111.85	233.00	380.01	2668
702.00	831.23	775.03	2208	2225	111.47	232.28	378.97	2611
704.00	833.84	777.64	2209	2226	111.08	231.57	377.93	2619
706.00	836.42	780.22	2210	2227	110.71	230.87	376.93	2580
708.00	839.05	782.85	2211	2228	110.33	230.16	375.90	2622
710.00	841.75	785.55	2213	2230	109.92	229.41	374.80	2700
712.00	844.56	788.36	2214	2232	109.48	228.59	373.59	2812
714.00	847.40	791.20	2216	2234	109.04	227.75	372.37	2840
716.00	850.29	794.09	2218	2236	108.59	226.89	371.11	2891
718.00	852.94	796.74	2219	2237	108.21	226.19	370.08	2649

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	855.55	799.35	2220	2238	107.85	225.51	369.09	2613
722.00	858.31	802.11	2222	2240	107.44	224.75	367.97	2762
724.00	860.94	804.74	2223	2241	107.08	224.07	366.98	2630
726.00	863.46	807.26	2224	2242	106.75	223.45	366.08	2521
728.00	866.05	809.85	2225	2243	106.40	222.80	365.14	2586
730.00	868.66	812.46	2226	2244	106.05	222.14	364.17	2612
732.00	871.33	815.13	2227	2245	105.68	221.45	363.16	2671
734.00	874.09	817.89	2229	2247	105.30	220.72	362.08	2756
736.00	876.87	820.67	2230	2248	104.90	219.97	360.98	2786
738.00	879.50	823.30	2231	2249	104.56	219.33	360.03	2623
740.00	882.18	825.98	2232	2251	104.20	218.65	359.03	2681
742.00	884.91	828.71	2234	2252	103.83	217.94	358.00	2735
744.00	887.63	831.43	2235	2253	103.46	217.26	356.98	2714
746.00	890.52	834.32	2237	2255	103.05	216.47	355.82	2888
748.00	893.23	837.03	2238	2257	102.69	215.80	354.82	2716
750.00	895.94	839.74	2239	2258	102.34	215.12	353.83	2711
752.00	898.66	842.46	2241	2259	101.98	214.45	352.83	2721
754.00	901.39	845.19	2242	2261	101.63	213.78	351.83	2726
756.00	904.12	847.92	2243	2262	101.28	213.10	350.84	2730
758.00	906.87	850.67	2245	2264	100.92	212.43	349.84	2748
760.00	909.60	853.40	2246	2265	100.57	211.76	348.85	2737
762.00	912.34	856.14	2247	2266	100.23	211.10	347.87	2737
764.00	915.13	858.93	2249	2268	99.87	210.41	346.85	2787
766.00	917.90	861.70	2250	2269	99.52	209.74	345.85	2775

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
								2835
768.00	920.74	864.54	2251	2271	99.15	209.04	344.80	
								2873
770.00	923.61	867.41	2253	2273	98.78	208.32	343.73	
								2910
772.00	926.52	870.32	2255	2275	98.40	207.59	342.63	
								2893
774.00	929.41	873.21	2256	2276	98.02	206.87	341.56	
								2743
776.00	932.16	875.96	2258	2278	97.69	206.24	340.61	
								2832
778.00	934.99	878.79	2259	2279	97.34	205.56	339.60	
								2686
780.00	937.67	881.47	2260	2280	97.03	204.96	338.70	
								2703
782.00	940.38	884.18	2261	2282	96.71	204.35	337.80	
								2728
784.00	943.11	886.91	2263	2283	96.39	203.74	336.88	
								2756
786.00	945.86	889.66	2264	2284	96.07	203.11	335.95	
								2854
788.00	948.72	892.52	2265	2286	95.72	202.45	334.95	
								2894
790.00	951.61	895.41	2267	2288	95.37	201.76	333.92	
								2801
792.00	954.41	898.21	2268	2289	95.04	201.13	332.97	
								2782
794.00	957.19	900.99	2270	2290	94.72	200.51	332.04	
								2853
796.00	960.05	903.85	2271	2292	94.38	199.85	331.06	
								2805
798.00	962.85	906.65	2272	2293▼	94.06	199.23	330.12	
								2796
800.00	965.65	909.45	2274	2295	93.74	198.61	329.19	
								2793
802.00	968.44	912.24	2275	2296	93.42	198.00	328.27	
								2743
804.00	971.18	914.98	2276	2297	93.12	197.42	327.40	
								2729
806.00	973.91	917.71	2277	2299	92.82	196.84	326.53	
								2676
808.00	976.59	920.39	2278	2300	92.54	196.30	325.71	
								2677
810.00	979.26	923.06	2279	2301	92.26	195.75	324.90	
								2938
812.00	982.20	926.00	2281	2302	91.92	195.09	323.89	
								2965
814.00	985.17	928.97	2282	2304	91.58	194.42	322.87	

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	988.05	931.85	2284	2306	91.25	193.79	321.92	2885
818.00	991.01	934.81	2286	2308	90.92	193.13	320.92	2956
820.00	993.84	937.64	2287	2309	90.61	192.54	320.03	2827
822.00	996.64	940.44	2288	2310	90.31	191.96	319.15	2803
824.00	999.44	943.24	2289	2312	90.02	191.38	318.28	2796
826.00	1002.22	946.02	2291	2313	89.73	190.82	317.42	2788
828.00	1004.96	948.76	2292	2314	89.45	190.28	316.61	2736
830.00	1007.77	951.57	2293	2315	89.16	189.70	315.74	2814
832.00	1010.56	954.36	2294	2317	88.88	189.15	314.90	2784
834.00	1013.29	957.09	2295	2318	88.60	188.62	314.09	2733
836.00	1016.04	959.84	2296	2319	88.33	188.09	313.29	2747
838.00	1018.81	962.61	2297	2320	88.06	187.55	312.47	2767
840.00	1021.56	965.36	2298	2321	87.78	187.01	311.66	2759
842.00	1024.33	968.13	2300	2322	87.51	186.48	310.85	2765
844.00	1027.08	970.88	2301	2323	87.24	185.96	310.06	2752
846.00	1029.84	973.64	2302	2325	86.98	185.43	309.26	2760
848.00	1032.60	976.40	2303	2326	86.71	184.91	308.47	2761
850.00	1035.37	979.17	2304	2327	86.44	184.39	307.68	2765
852.00	1038.12	981.92	2305	2328	86.18	183.88	306.90	2751
854.00	1040.84	984.64	2306	2329	85.93	183.38	306.14	2727
856.00	1043.58	987.38	2307	2330	85.67	182.88	305.38	2731
858.00	1046.32	990.12	2308	2331	85.42	182.38	304.61	2746
860.00	1049.07	992.87	2309	2332	85.16	181.88	303.85	2748
862.00	1051.82	995.62	2310	2333	84.91	181.38	303.09	2750

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	1054.59	998.39	2311	2334	84.66	180.87	302.32	2771
866.00	1057.37	1001.17	2312	2335	84.40	180.37	301.55	2784
868.00	1060.12	1003.92	2313	2336	84.15	179.88	300.80	2749
870.00	1062.88	1006.68	2314	2338	83.90	179.39	300.05	2758
872.00	1065.67	1009.47	2315	2339	83.65	178.89	299.28	2786
874.00	1068.49	1012.29	2316	2340	83.39	178.38	298.50	2822
876.00	1071.34	1015.14	2318	2341	83.13	177.86	297.71	2850
878.00	1074.22	1018.02	2319	2343	82.86	177.33	296.89	2882
880.00	1077.08	1020.88	2320	2344	82.60	176.81	296.10	2864
882.00	1079.94	1023.74	2321	2345	82.34	176.30	295.31	2860
884.00	1082.81	1026.61	2323	2346	82.09	175.79	294.52	2860
886.00	1085.69	1029.49	2324	2348	81.83	175.27	293.73	2881
888.00	1088.57	1032.37	2325	2349	81.57	174.76	292.94	2881
890.00	1091.44	1035.24	2326	2350	81.31	174.26	292.16	2869
892.00	1094.32	1038.12	2328	2352	81.06	173.75	291.38	2881
894.00	1097.16	1040.96	2329	2353	80.81	173.26	290.62	2847
896.00	1100.03	1043.83	2330	2354	80.56	172.76	289.86	2868
898.00	1102.90	1046.70	2331	2355	80.32	172.27	289.10	2867
900.00	1105.79	1049.59	2332	2357	80.07	171.77	288.33	2887
902.00	1108.67	1052.47	2334	2358	79.82	171.28	287.57	2881
904.00	1111.57	1055.37	2335	2359	79.57	170.78	286.80	2901
906.00	1114.54	1058.34	2336	2361	79.31	170.26	285.99	2973
908.00	1117.42	1061.22	2337	2362	79.07	169.78	285.24	2876
910.00	1120.31	1064.11	2339	2364	78.83	169.29	284.49	2896

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
								2929
912.00	1123.24	1067.04	2340	2365	78.58	168.80	283.72	
								2944
914.00	1126.19	1069.99	2341	2366	78.33	168.30	282.94	
								2890
916.00	1129.08	1072.88	2343	2368	78.09	167.82	282.21	
								2904
918.00	1131.98	1075.78	2344	2369	77.85	167.34	281.46	
								2880
920.00	1134.86	1078.66	2345	2370	77.62	166.87	280.74	
								2912
922.00	1137.77	1081.57	2346	2371	77.38	166.40	280.00	
								2959
924.00	1140.73	1084.53	2347	2373	77.14	165.91	279.23	
								2999
926.00	1143.73	1087.53	2349	2374	76.89	165.41	278.45	
								2976
928.00	1146.71	1090.51	2350	2376	76.64	164.92	277.69	
								2978
930.00	1149.68	1093.48	2352	2377	76.40	164.43	276.93	
								2980
932.00	1152.66	1096.46	2353	2379	76.16	163.94	276.17	
								2953
934.00	1155.62	1099.42	2354	2380	75.92	163.47	275.43	
								2963
936.00	1158.58	1102.38	2356	2382	75.69	162.99	274.69	
								2927
938.00	1161.51	1105.31	2357	2383	75.46	162.53	273.97	
								2941
940.00	1164.45	1108.25	2358	2384	75.23	162.07	273.25	
								2934
942.00	1167.38	1111.18	2359	2385	75.00	161.61	272.54	
								2887
944.00	1170.27	1114.07	2360	2387	74.79	161.17	271.85	
								2994
946.00	1173.26	1117.06	2362	2388	74.55	160.70	271.11	
								2938
948.00	1176.20	1120.00	2363	2389	74.33	160.25	270.41	
								2950
950.00	1179.15	1122.95	2364	2391	74.10	159.80	269.70	
								2932
952.00	1182.08	1125.88	2365	2392	73.89	159.36	269.00	
								2956
954.00	1185.04	1128.84	2367	2393	73.66	158.91	268.30	
								2969
956.00	1188.01	1131.81	2368	2395	73.44	158.45	267.59	
								2878
958.00	1190.89	1134.69	2369	2396	73.23	158.03	266.93	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
960.00	1193.79	1137.59	2370	2397	73.02	157.61	266.27	2903
962.00	1196.69	1140.49	2371	2398	72.81	157.19	265.61	2898
964.00	1199.67	1143.47	2372	2399	72.59	156.74	264.91	2981
966.00	1202.64	1146.44	2374	2401	72.38	156.30	264.21	2976
968.00	1205.61	1149.41	2375	2402	72.16	155.86	263.53	2969
970.00	1208.89	1152.69	2377	2404	71.90	155.33	262.69	3274
972.00	1212.08	1155.88	2378	2406	71.65	154.83	261.89	3193
974.00	1215.49	1159.29	2380	2409	71.37	154.26	260.99	3407
976.00	1218.71	1162.51	2382	2411	71.12	153.75	260.19	3227
978.00	1222.09	1165.89	2384	2413	70.86	153.20	259.31	3374
980.00	1225.70	1169.50	2387	2416	70.55	152.57	258.30	3615
982.00	1229.30	1173.10	2389	2419	70.24	151.95	257.31	3600
984.00	1232.65	1176.45	2391	2421	69.99	151.42	256.47	3348
986.00	1236.19	1179.99	2393	2424	69.70	150.83	255.53	3535
988.00	1240.11	1183.91	2397	2428	69.35	150.10	254.37	3921
990.00	1244.09	1187.89	2400	2432	68.99	149.36	253.19	3986
992.00	1247.87	1191.67	2403	2436	68.67	148.70	252.13	3781
994.00	1251.52	1195.32	2405	2439	68.37	148.10	251.16	3649
996.00	1254.99	1198.79	2407	2441	68.11	147.55	250.30	3467
998.00	1258.78	1202.58	2410	2445	67.80	146.91	249.27	3788
1000.00	1262.66	1206.46	2413	2448	67.47	146.23	248.18	3888
1002.00	1266.44	1210.24	2416	2452	67.16	145.61	247.18	3772
1004.00	1269.70	1213.50	2417	2454	66.94	145.14	246.44	3263
1006.00	1273.03	1216.83	2419	2456	66.71	144.66	245.67	3330

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1008.00	1276.43	1220.23	2421	2458	66.47	144.17	244.88	3398
1010.00	1279.78	1223.58	2423	2460	66.23	143.69	244.12	3350
1012.00	1283.17	1226.97	2425	2462	66.00	143.20	243.34	3393
1014.00	1286.60	1230.40	2427	2464	65.76	142.71	242.54	3425
1016.00	1289.93	1233.73	2429	2466	65.53	142.24	241.80	3331
1018.00	1293.42	1237.22	2431	2469	65.29	141.74	240.99	3490
1020.00	1297.25	1241.05	2433	2472	64.99	141.12	240.01	3839
1022.00	1301.06	1244.86	2436	2476	64.70	140.53	239.05	3805
1024.00	1304.83	1248.63	2439	2479	64.42	139.95	238.11	3768
1026.00	1308.06	1251.86	2440	2480	64.22	139.53	237.44	3231
1028.00	1311.37	1255.17	2442	2482	64.01	139.09	236.74	3310
1030.00	1314.33	1258.13	2443	2483	63.84	138.75	236.19	2957

SYNTHETIC

ANALYST: M. SANDERS 1-AUG-87 22:04:35 PROGRAM: GMULTP 006.E06

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*  SCHLUMBERGER  *
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SYNTHETIC SEISMOGRAM TABLE

COMPANY : BEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 570804

ANALYST: M. SANDERS 1-AUG-87 22:04:35 PROGRAM: GMULTP 006.E06

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*  SCHLUMBERGER   *
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SYNTHETIC SEISMOGRAM TABLE

COMPANY : BEACH PETROLEUM N.L.
WELL : WILSON # 1
FIELD : WILD CAT
COUNTRY : AUSTRALIA
REFERENCE: 57C804

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


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

LOG INPUT DATA :
GRF001- CHANNEL NAME FOR INPUT DENSITY LOG DATA
GTR001- CHANNEL NAME FOR INPUT SONIC LOG DATA
GCURVE- CORRELATION LOG NAMES

USER DEFINED MODELING

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

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


OUTPUT DATA

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

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

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 PRCC (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	:	254.800	M
BOTTOM DEPTH OF PROCESSI	IGESTP	:	1259.00	M
INITIAL TWO WAY TRAVEL T	INITAU	:	.258480	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	:	2633.72	M/S
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

1 GR*
2 CALI*

(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	: 1948.950	M/S	56.2000	-	0

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
		1980	2.250					
260.5	256.78			.005	.99998	.00456	.00456	0
		1998	2.250					
262.5	258.78			-.017	.99967	-.01747	-.01749	-.00002
		1929	2.250					
264.5	260.71			.007	.99962	.00750	.00765	.00016
		1958	2.250					
266.5	262.66			-.008	.99955	-.00805	-.00842	-.00037
		1927	2.250					
268.5	264.59			.018	.99923	.01800	.01833	.00034
		1998	2.250					
270.5	266.59			.001	.99923	.00061	.00011	-.00050
		2000	2.250					
272.5	268.59			.006	.99920	.00552	.00626	.00075
		2022	2.250					
274.5	270.61			-.005	.99917	-.00534	-.00571	-.00037
		2001	2.250					
276.5	272.61			-.062	.99536	-.06171	-.06117	.00054
		1768	2.250					
278.5	274.38			.028	.99459	.02775	.02768	-.00007
		1869	2.250					
280.5	276.25			.023	.99408	.02252	.02036	-.00216
		1956	2.250					
282.5	278.21			.007	.99402	.00730	.00871	.00141
		1985	2.250					
284.5	280.19			.014	.99384	.01346	.01293	-.00053
		2040	2.250					
286.5	282.23			0	.99384	-.00047	.00215	.00263
		2038	2.250					
288.5	284.27			-.001	.99384	-.00113	-.00131	-.00018
		2033	2.250					
290.5	286.30			-.009	.99376	-.00870	-.00875	-.00005
		1998	2.250					
292.5	288.30			-.026	.99308	-.02600	-.02713	-.00113
		1896	2.250					
294.5	290.19			.031	.99212	.03086	.02651	-.00434
		2017	2.250					
296.5	292.21			.015	.99190	.01483	.01727	.00244
		2079	2.250					
298.5	294.29			0	.99190	.00026	.00324	.00298
		2080	2.250					
300.5	296.37			.003	.99189	.00345	.00339	-.00007
		2094	2.250					
302.5	298.46			-.004	.99187	-.00407	-.00190	.00217
		2077	2.250					
304.5	300.54			.010	.99177	.01006	.00857	-.00149
		2120	2.250					
306.5	302.66			0	.99177	-.00049	-.00181	-.00132
		2118	2.250					

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
308.5	304.78	2135	2.250	.004	.99175	.00404	.00250	-.00154
310.5	306.91	2302	2.250	.038	.99035	.03725	.03390	-.00335
312.5	309.22	2191	2.250	-.025	.98975	-.02447	-.01875	.00572
314.5	311.41	2175	2.250	-.004	.98974	-.00362	-.00085	.00277
316.5	313.58	2152	2.250	-.005	.98971	-.00517	-.00750	-.00233
318.5	315.73	2158	2.250	.001	.98971	.00148	.00214	.00065
320.5	317.89	2114	2.250	-.010	.98960	-.01022	-.01387	-.00365
322.5	320.01	2075	2.250	-.009	.98951	-.00931	-.00779	.00153
324.5	322.08	2109	2.250	.008	.98945	.00816	.00604	-.00213
326.5	324.19	2674	2.250	.118	.97565	.11686	.11736	.00050
328.5	326.86	2125	2.250	-.114	.96287	-.11165	-.10623	.00543
330.5	328.99	2097	2.250	-.007	.96283	-.00632	-.00710	-.00079
332.5	331.09	2113	2.250	.004	.96281	.00363	-.00356	-.00719
334.5	333.20	2126	2.250	.003	.96230	.00295	.00581	.00286
336.5	335.33	2007	2.250	-.029	.96200	-.02787	-.03452	-.00664
338.5	337.33	1878	2.250	-.033	.96095	-.03173	-.02818	.00356
340.5	339.21	2231	2.250	.086	.95390	.08233	.07791	-.00443
342.5	341.44	2081	2.250	-.035	.95274	-.03316	-.02846	.00470
344.5	343.52	2063	2.250	-.004	.95273	-.00398	.01646	.02045
346.5	345.59	2161	2.250	.023	.95222	.02199	-.00419	-.02619
348.5	347.75	2207	2.250	.010	.95211	.00997	.01273	.00276
350.5	349.95	2184	2.250	-.005	.95209	-.00495	-.00373	.00122
352.5	352.14	2275	2.250	.021	.95169	.01959	.02252	.00293
354.5	354.41	2292	2.250	.004	.95167	.00336	-.00083	-.00419
356.5	356.70			-.013	.95152	-.01214	-.01422	-.00208

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
		2234	2.250					
358.5	358.94			-.013	.95135	-.01252	.00528	.01780
		2176	2.250					
360.5	361.11			.003	.95134	.00325	.00114	-.00212
		2191	2.250					
362.5	363.30			-.009	.95126	-.00888	-.02588	-.01700
		2150	2.250					
364.5	365.45			-.004	.95125	-.00351	.00297	.00649
		2134	2.250					
366.5	367.59			-.001	.95125	-.00125	.00009	.00134
		2129	2.250					
368.5	369.72			-.003	.95124	-.00315	-.00352	-.00037
		2115	2.250					
370.5	371.83			.011	.95112	.01042	.01011	-.00031
		2162	2.250					
372.5	373.99			.002	.95112	.00196	.00076	-.00120
		2171	2.250					
374.5	376.16			-.001	.95112	-.00113	.00728	.00841
		2165	2.250					
376.5	378.33			-.012	.95098	-.01137	-.01831	-.00694
		2114	2.250					
378.5	380.44			.016	.95073	.01548	.00677	-.00871
		2184	2.250					
380.5	382.63			0	.95073	.00013	.01164	.01151
		2185	2.250					
382.5	384.81			.001	.95073	.00084	-.00001	-.00085
		2189	2.250					
384.5	387.00			-.008	.95066	-.00790	-.00711	.00080
		2153	2.250					
386.5	389.15			-.005	.95064	-.00491	-.00816	-.00324
		2130	2.250					
388.5	391.28			-.076	.94518	-.07199	-.06562	.00637
		1830	2.250					
390.5	393.12			-.012	.94504	-.01166	-.01352	-.00186
		1786	2.250					
392.5	394.90			.010	.94495	.00908	-.00755	-.01663
		1821	2.250					
394.5	396.72			-.003	.94495	-.00264	-.01064	-.00800
		1810	2.250					
396.5	398.53			.019	.94462	.01755	.04269	.02514
		1879	2.250					
398.5	400.41			.023	.94411	.02197	.01536	-.00661
		1968	2.250					
400.5	402.38			.011	.94399	.01079	.00718	-.00361
		2014	2.250					
402.5	404.39			-.041	.94244	-.03825	-.03436	.00388
		1857	2.250					
404.5	406.25			-.006	.94240	-.00563	.00390	.00953
		1835	2.250					

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
406.5	408.08			-.031	.94149	-.02927	-.04388	-.01461
		1724	2.250					
408.5	409.81			-.052	.93895	-.04895	-.07024	-.02129
		1554	2.250					
410.5	411.36			.011	.93883	.01065	.03459	.02394
		1590	2.250					
412.5	412.95			.190	.90492	.17843	.17150	-.00693
		2336	2.250					
414.5	415.29			-.007	.90488	-.00596	.00539	.01135
		2305	2.250					
416.5	417.59			-.006	.90485	-.00499	.00351	.00850
		2280	2.250					
418.5	419.87			-.034	.90382	-.03054	-.02602	.00452
		2131	2.250					
420.5	422.00			.041	.90227	.03740	.02766	-.00974
		2315	2.250					
422.5	424.32			.001	.90227	.00045	-.00844	-.00890
		2317	2.250					
424.5	426.64			.003	.90226	.00268	.01766	.01499
		2331	2.250					
426.5	428.97			-.006	.90223	-.00557	-.02253	-.01696
		2302	2.250					
428.5	431.27			.008	.90217	.00750	.01826	.01076
		2341	2.250					
430.5	433.61			.002	.90216	.00141	.03242	.03101
		2348	2.250					
432.5	435.96			.004	.90215	.00334	-.00515	-.00849
		2366	2.250					
434.5	438.33			-.004	.90213	-.00396	-.01527	-.01131
		2345	2.250					
436.5	440.67			-.003	.90213	-.00245	-.00887	-.00642
		2332	2.250					
438.5	443.00			.002	.90212	.00214	.00014	-.00200
		2343	2.250					
440.5	445.35			.001	.90212	.00118	.00382	.00264
		2350	2.250					
442.5	447.70			.009	.90205	.00830	-.00051	-.00881
		2393	2.250					
444.5	450.09			-.006	.90201	-.00570	.00968	.01538
		2363	2.250					
446.5	452.45			-.011	.90190	-.00998	-.00380	.00619
		2311	2.250					
448.5	454.76			.099	.89307	.08923	.08278	-.00645
		2819	2.250					
450.5	457.58			-.082	.88701	-.07358	-.08041	-.00683
		2390	2.250					
452.5	459.97			-.030	.88624	-.02617	-.02649	-.00032
		2253	2.250					
454.5	462.23			.016	.88602	.01398	.01597	.00198

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
		2325	2.250					
456.5	464.55			.012	.88590	.01029	.02007	.00979
		2380	2.250					
458.5	466.93			-.002	.88589	-.00165	-.01384	-.01219
		2371	2.250					
460.5	469.30			.006	.88586	.00502	.01066	.00564
		2398	2.250					
462.5	471.70			.001	.88586	.00114	-.00415	-.00529
		2404	2.250					
464.5	474.10			.004	.88585	.00323	-.01959	-.02283
		2422	2.250					
466.5	476.52			-.014	.88567	-.01270	.00389	.01659
		2353	2.250					
468.5	478.88			-.002	.88567	-.00156	-.02032	-.01876
		2345	2.250					
470.5	481.22			0	.88567	-.00004	.01815	.01818
		2345	2.250					
472.5	483.57			.008	.88561	.00688	-.00279	-.00967
		2381	2.250					
474.5	485.95			-.003	.88561	-.00241	.01695	.01936
		2369	2.250					
476.5	488.32			.023	.88514	.02024	.03511	.01487
		2479	2.250					
478.5	490.80			.011	.88505	.00934	-.01012	-.01946
		2532	2.250					
480.5	493.33			-.003	.88503	-.00306	-.04090	-.03784
		2515	2.250					
482.5	495.84			.006	.88500	.00528	.04855	.04327
		2545	2.250					
484.5	498.39			0	.88500	.00033	-.00832	-.00865
		2547	2.250					
486.5	500.94			-.011	.88490	-.00931	-.01318	-.00387
		2494	2.250					
488.5	503.43			-.005	.88489	-.00407	-.00615	-.00209
		2471	2.250					
490.5	505.90			-.003	.88488	-.00233	.02268	.02501
		2458	2.250					
492.5	508.36			-.002	.88488	-.00153	-.00791	-.00639
		2450	2.250					
494.5	510.81			.017	.88464	.01463	.00134	-.01329
		2532	2.250					
496.5	513.34			-.020	.88428	-.01776	-.00758	.01018
		2432	2.250					
498.5	515.77			.004	.88427	.00336	-.00767	-.01103
		2451	2.250					
500.5	518.22			.011	.88416	.00957	.01146	.00190
		2504	2.250					
502.5	520.73			-.006	.88413	-.00497	.00034	.00530
		2476	2.250					

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
504.5	523.20	2495	2.250	.004	.88412	.00324	.00871	.00547
506.5	525.70	2524	2.250	.006	.88409	.00520	-.01343	-.01863
508.5	528.22	2493	2.250	-.006	.88406	-.00549	-.00298	.00251
510.5	530.72	2429	2.250	-.013	.88391	-.01150	-.00292	.00858
512.5	533.15	2510	2.250	.016	.88367	.01457	.00996	-.00461
514.5	535.66	2516	2.250	.001	.88367	.00100	-.00903	-.01003
516.5	538.17	2499	2.250	-.003	.88366	-.00308	-.01092	-.00784
518.5	540.67	2556	2.250	.011	.88354	.01001	.04412	.03411
520.5	543.23	2520	2.250	-.007	.88350	-.00624	-.02102	-.01479
522.5	545.75	2522	2.250	0	.88350	.00036	-.00536	-.00573
524.5	548.27	2512	2.250	-.002	.88350	-.00173	-.00506	-.00333
526.5	550.78	2524	2.250	.002	.88349	.00208	.01237	.01030
528.5	553.31	2528	2.250	.001	.88349	.00075	-.00463	-.00538
530.5	555.83	2497	2.250	-.006	.88345	-.00557	-.01144	-.00587
532.5	558.33	2508	2.250	.002	.88345	.00196	.01702	.01506
534.5	560.84	2546	2.250	.008	.88340	.00663	-.00871	-.01534
536.5	563.38	2640	2.250	.018	.88311	.01609	.01373	-.00236
538.5	566.02	2573	2.250	-.013	.88296	-.01134	-.02300	-.01167
540.5	568.60	2520	2.250	-.010	.88287	-.00918	.00641	.01559
542.5	571.12	2515	2.250	-.001	.88287	-.00099	.00839	.00938
544.5	573.63	2514	2.250	0	.88287	-.00009	.00284	.00293
546.5	576.15	2537	2.250	.005	.88285	.00399	.02099	.01700
548.5	578.68	2514	2.250	-.004	.88283	-.00397	-.00002	.00394
550.5	581.20	2529	2.250	.003	.88282	.00258	-.02041	-.02299
552.5	583.73			-.004	.88281	-.00339	-.00093	.00245

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
		2510	2.250					
554.5	586.24	2521	2.250	.002	.88280	.00198	.00140	-.00057
556.5	588.76	2452	2.250	-.014	.88263	-.01227	-.00929	.00298
558.5	591.21	2466	2.250	.003	.88263	.00260	-.00423	-.00684
560.5	593.68	2423	2.250	-.009	.88256	-.00776	.01583	.02359
562.5	596.10	2511	2.250	.018	.88228	.01572	.03389	.01817
564.5	598.61	2544	2.250	.006	.88224	.00570	-.00655	-.01225
566.5	601.16	2527	2.250	-.003	.88223	-.00293	-.02931	-.02637
568.5	603.68	2527	2.250	0	.88223	-.00008	-.00452	-.00443
570.5	606.21	2569	2.250	.008	.88217	.00732	.00513	-.00219
572.5	608.78	2583	2.250	.003	.88216	.00242	.01068	.00826
574.5	611.36	2564	2.250	-.004	.88215	-.00333	-.00223	.00110
576.5	613.92	2572	2.250	.002	.88215	.00152	-.00005	-.00156
578.5	616.50	2553	2.250	-.004	.88214	-.00341	.00308	.00649
580.5	619.05	2541	2.250	-.002	.88213	-.00197	-.00027	.00170
582.5	621.59	2600	2.250	.011	.88202	.01011	.00182	-.00830
584.5	624.19	2560	2.250	-.008	.88196	-.00684	-.01464	-.00779
586.5	626.75	2608	2.250	.009	.88189	.00816	-.00548	-.01364
588.5	629.36	2622	2.250	.003	.88188	.00234	.01724	.01490
590.5	631.98	2590	2.250	-.006	.88185	-.00530	.00092	.00622
592.5	634.57	2440	2.250	-.030	.88106	-.02645	-.01917	.00728
594.5	637.01	2425	2.250	-.003	.88105	-.00262	-.01876	-.01613
596.5	639.44	2450	2.250	.005	.88102	.00453	.01310	.00857
598.5	641.89	2539	2.250	.018	.88074	.01574	.01713	.00139
600.5	644.43	2613	2.250	.014	.88056	.01267	-.00704	-.01971

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
602.5	647.04			-.010	.88047	-.00903	-.02941	-.02038
		2560	2.250					
604.5	649.60			.009	.88039	.00808	.03933	.03125
		2608	2.250					
606.5	652.21			-.006	.88036	-.00558	.01502	.02059
		2575	2.250					
608.5	654.78			-.001	.88036	-.00072	-.00594	-.00522
		2571	2.250					
610.5	657.35			-.010	.88026	-.00922	-.02626	-.01704
		2517	2.250					
612.5	659.87			.009	.88019	.00804	.01586	.00782
		2564	2.250					
614.5	662.43			-.002	.88018	-.00187	-.01575	-.01388
		2553	2.250					
616.5	664.99			.002	.88018	.00171	.01290	.01119
		2563	2.250					
618.5	667.55			.003	.88017	.00249	-.00049	-.00298
		2577	2.250					
620.5	670.13			.010	.88009	.00840	.01139	.00298
		2627	2.250					
622.5	672.75			.001	.88009	.00128	.00929	.00801
		2635	2.250					
624.5	675.39			.004	.88008	.00324	.00865	.00541
		2654	2.250					
626.5	678.04			-.011	.87997	-.00993	-.01045	-.00053
		2595	2.250					
628.5	680.64			-.002	.87996	-.00165	-.01429	-.01264
		2585	2.250					
630.5	683.22			-.027	.87930	-.02414	-.03548	-.01134
		2447	2.250					
632.5	685.67			.006	.87927	.00547	.01366	.00818
		2478	2.250					
634.5	688.15			.015	.87907	.01324	.01761	.00436
		2554	2.250					
636.5	690.70			-.001	.87907	-.00097	-.01252	-.01155
		2548	2.250					
638.5	693.25			.016	.87883	.01437	.01234	-.00203
		2633	2.250					
640.5	695.88			-.005	.87881	-.00461	.01019	.01480
		2605	2.250					
642.5	698.49			.003	.87880	.00243	.00829	.00586
		2620	2.250					
644.5	701.11			.005	.87878	.00407	-.01155	-.01563
		2644	2.250					
646.5	703.75			.007	.87874	.00611	.00905	.00294
		2681	2.250					
648.5	706.43			-.010	.87865	-.00867	-.00817	.00050
		2629	2.250					
650.5	709.06			-.005	.87864	-.00418	-.00277	.00140

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
		2604	2.250					
652.5	711.67			.009	.87857	.00761	.01336	.00575
		2649	2.250					
654.5	714.32			.024	.87805	.02140	.01952	-.00188
		2782	2.250					
656.5	717.10			.022	.87763	.01909	.01429	-.00480
		2905	2.250					
658.5	720.00			-.047	.87565	-.04168	-.04113	.00055
		2642	2.250					
660.5	722.65			-.031	.87480	-.02739	-.02314	.00426
		2482	2.250					
662.5	725.13			-.011	.87469	-.00976	-.00645	.00331
		2427	2.250					
664.5	727.55			.014	.87451	.01261	-.00124	-.01386
		2498	2.250					
666.5	730.05			-.019	.87420	-.01632	-.02001	-.00369
		2406	2.250					
668.5	732.46			-.004	.87419	-.00328	.00681	.01009
		2388	2.250					
670.5	734.85			.028	.87351	.02436	.02739	.00303
		2525	2.250					
672.5	737.37			-.012	.87339	-.01019	-.03336	-.02317
		2467	2.250					
674.5	739.84			-.013	.87325	-.01107	.00621	.01727
		2405	2.250					
676.5	742.24			.025	.87268	.02226	.02365	.00139
		2531	2.250					
678.5	744.77			.007	.87265	.00574	.00809	.00235
		2565	2.250					
680.5	747.34			-.006	.87261	-.00541	-.01688	-.01147
		2533	2.250					
682.5	749.87			-.007	.87257	-.00624	.01156	.01780
		2497	2.250					
684.5	752.37			.010	.87248	.00857	-.00094	-.00951
		2547	2.250					
686.5	754.92			.004	.87247	.00331	.00197	-.00134
		2566	2.250					
688.5	757.48			0	.87247	0	.00447	.00447
		2566	2.250					
690.5	760.05			.003	.87246	.00274	-.00993	-.01268
		2582	2.250					
692.5	762.63			-.001	.87246	-.00074	.00518	.00591
		2578	2.250					
694.5	765.21			-.002	.87246	-.00190	.00279	.00469
		2567	2.250					
696.5	767.77			-.005	.87243	-.00452	.00467	.00918
		2540	2.250					
698.5	770.31			.025	.87188	.02201	.01919	-.00282
		2672	2.250					

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
700.5	772.99	2644	2.250	-.005	.87186	-.00449	-.01873	-.01424
702.5	775.63	2577	2.250	-.013	.87171	-.01119	-.01260	-.00141
704.5	778.21	2593	2.250	.003	.87170	.00273	.01863	.01591
706.5	780.80	2639	2.250	.009	.87164	.00761	-.00391	-.01153
708.5	783.44	2708	2.250	.013	.87149	.01115	.00723	-.00392
710.5	786.15	2842	2.250	.024	.87098	.02109	.03833	.01724
712.5	788.99	2857	2.250	.003	.87098	.00226	.01215	.00989
714.5	791.85	2831	2.250	-.004	.87096	-.00390	-.01590	-.01200
716.5	794.68	2636	2.250	-.036	.86985	-.03113	-.03418	-.00305
718.5	797.31	2689	2.250	.010	.86976	.00868	.01459	.00591
720.5	800.00	2701	2.250	.002	.86976	.00194	-.00493	-.00687
722.5	802.70	2600	2.250	-.019	.86944	-.01652	-.02322	-.00670
724.5	805.30	2542	2.250	-.011	.86933	-.00980	-.01138	-.00158
726.5	807.85	2584	2.250	.008	.86928	.00707	.01655	.00949
728.5	810.43	2629	2.250	.009	.86921	.00749	.00580	-.00168
730.5	813.06	2680	2.250	.010	.86913	.00836	.00991	.00155
732.5	815.74	2782	2.250	.019	.86882	.01631	.01769	.00139
734.5	818.52	2740	2.250	-.008	.86877	-.00668	-.00678	-.00009
736.5	821.26	2625	2.250	-.021	.86837	-.01865	-.03058	-.01192
738.5	823.89	2693	2.250	.013	.86823	.01121	.01048	-.00073
740.5	826.58	2755	2.250	.011	.86812	.00978	.01798	.00820
742.5	829.33	2679	2.250	-.014	.86795	-.01208	-.02304	-.01096
744.5	832.01	2925	2.250	.044	.86628	.03805	.03422	-.00384
746.5	834.94	2695	2.250	-.041	.86483	-.03544	-.02111	.01432
748.5	837.63			.003	.86483	.00234	.02187	.01952

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
		2710	2.250					
750.5	840.34			.003	.86482	.00241	-.01252	-.01493
		2725	2.250					
752.5	843.07			0	.86482	.00028	-.00549	-.00577
		2727	2.250					
754.5	845.80			.001	.86482	.00081	.00822	.00741
		2732	2.250					
756.5	848.53			.003	.86481	.00261	.01303	.01042
		2748	2.250					
758.5	851.28			-.003	.86480	-.00247	-.02075	-.01828
		2733	2.250					
760.5	854.01			.002	.86480	.00205	-.00764	-.00968
		2746	2.250					
762.5	856.75			.008	.86474	.00704	.01584	.00880
		2791	2.250					
764.5	859.54			-.002	.86474	-.00172	.00039	.00211
		2780	2.250					
766.5	862.32			.012	.86461	.01033	.00537	-.00496
		2847	2.250					
768.5	865.17			.003	.86461	.00267	.02270	.02003
		2864	2.250					
770.5	868.04			.011	.86449	.00983	-.00036	-.01018
		2930	2.250					
772.5	870.97			-.015	.86430	-.01292	-.01044	.00249
		2844	2.250					
774.5	873.81			-.016	.86409	-.01363	-.00869	.00493
		2756	2.250					
776.5	876.57			.013	.86393	.01147	-.00099	-.01247
		2830	2.250					
778.5	879.40			-.027	.86328	-.02373	-.04237	-.01864
		2679	2.250					
780.5	882.07			.007	.86324	.00597	.01085	.00488
		2716	2.250					
782.5	884.79			0	.86324	.00026	.02231	.02205
		2718	2.250					
784.5	887.51			.008	.86318	.00700	.02258	.01558
		2762	2.250					
786.5	890.27			.020	.86285	.01698	-.00222	-.01920
		2873	2.250					
788.5	893.14			.002	.86285	.00191	.00884	.00693
		2886	2.250					
790.5	896.03			-.017	.86260	-.01455	-.01480	-.00025
		2790	2.250					
792.5	898.82			0	.86260	.00015	-.00890	-.00904
		2791	2.250					
794.5	901.61			.011	.86249	.00967	-.00343	-.01310
		2854	2.250					
796.5	904.46			-.008	.86244	-.00673	-.01486	-.00813
		2810	2.250					

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
798.5	907.27	2791	2.250	-.003	.86243	-.00289	.01055	.01344
800.5	910.06	2784	2.250	-.001	.86243	-.00105	-.00535	-.00430
802.5	912.85	2753	2.250	-.006	.86240	-.00484	.00417	.00901
804.5	915.60	2712	2.250	-.008	.86235	-.00657	.00440	.01097
806.5	918.31	2673	2.250	-.007	.86231	-.00618	-.02114	-.01496
808.5	920.99	2693	2.250	.004	.86229	.00318	-.01669	-.01987
810.5	923.68	2977	2.250	.050	.86012	.04327	.04659	.00332
812.5	926.66	2964	2.250	-.002	.86012	-.00197	.00404	.00601
814.5	929.62	2858	2.250	-.018	.85984	-.01558	.00655	.02213
816.5	932.48	2956	2.250	.017	.85960	.01439	.01202	-.00237
818.5	935.43	2823	2.250	-.023	.85914	-.01979	-.01408	.00571
820.5	938.26	2802	2.250	-.004	.85913	-.00311	.00130	.00441
822.5	941.06	2802	2.250	0	.85913	-.00009	-.01296	-.01286
824.5	943.86	2775	2.250	-.005	.85911	-.00408	-.01035	-.00627
826.5	946.64	2729	2.271	-.004	.85910	-.00320	.00555	.00875
828.5	949.36	2840	2.288	.024	.85862	.02032	.03416	.01384
830.5	952.20	2758	2.332	-.005	.85859	-.00436	-.02119	-.01683
832.5	954.96	2738	2.292	-.012	.85846	-.01070	-.01014	.00055
834.5	957.70	2751	2.283	0	.85846	.00038	.00813	.00776
836.5	960.45	2766	2.233	-.008	.85840	-.00713	-.01830	-.01118
838.5	963.22	2759	2.266	.006	.85837	.00516	.01065	.00549
840.5	965.98	2765	2.229	-.007	.85833	-.00605	-.00403	.00202
842.5	968.74	2752	2.308	.015	.85814	.01277	.01207	-.00070
844.5	971.49	2760	2.203	-.022	.85774	-.01859	-.01701	.00159
846.5	974.25			-.004	.85772	-.00341	.00486	.00827

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
		2762	2.184					
848.5	977.02			.010	.85764	.00830	.00812	-.00018
		2766	2.224					
850.5	979.78			.002	.85764	.00200	-.01051	-.01250
		2742	2.253					
852.5	982.52			-.018	.85737	-.01502	-.03351	-.01848
		2725	2.189					
854.5	985.25			.013	.85722	.01132	.02140	.01008
		2739	2.236					
856.5	987.99			.009	.85716	.00746	.01305	.00560
		2744	2.272					
858.5	990.73			.004	.85715	.00320	.00599	.00279
		2747	2.286					
860.5	993.48			-.015	.85696	-.01263	-.00658	.00605
		2756	2.212					
862.5	996.24			.005	.85694	.00400	.00303	-.00097
		2774	2.219					
864.5	999.01			-.003	.85694	-.00226	-.01646	-.01420
		2774	2.207					
866.5	1001.78			-.015	.85674	-.01283	-.02759	-.01476
		2747	2.163					
868.5	1004.53			.014	.85657	.01221	.02102	.00881
		2764	2.212					
870.5	1007.29			.010	.85648	.00875	.01493	.00618
		2798	2.230					
872.5	1010.09			.008	.85643	.00693	.00140	-.00553
		2821	2.248					
874.5	1012.91			.015	.85624	.01272	.02485	.01213
		2863	2.282					
876.5	1015.78			.008	.85618	.00687	.01202	.00515
		2875	2.309					
878.5	1018.65			.007	.85614	.00605	.00172	-.00433
		2868	2.348					
880.5	1021.52			.009	.85607	.00776	.01681	.00905
		2855	2.402					
882.5	1024.37			.006	.85604	.00490	.00121	-.00369
		2867	2.419					
884.5	1027.24			.007	.85599	.00630	-.00438	-.01068
		2883	2.441					
886.5	1030.12			-.005	.85597	-.00448	.00026	.00474
		2868	2.428					
888.5	1032.99			.001	.85597	.00047	.00698	.00651
		2880	2.421					
890.5	1035.87			-.012	.85585	-.01001	.00854	.01856
		2875	2.369					
892.5	1038.75			-.028	.85518	-.02406	-.02944	-.00538
		2843	2.265					
894.5	1041.59			.005	.85516	.00394	-.00855	-.01249
		2879	2.257					

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
896.5	1044.47			-.023	.85469	-.02004	-.02391	-.00387
		2864	2.165					
898.5	1047.33			.030	.85393	.02550	.02271	-.00279
		2893	2.275					
900.5	1050.23			.003	.85392	.00283	.00259	-.00024
		2885	2.296					
902.5	1053.11			-.001	.85392	-.00076	-.00753	-.00677
		2897	2.283					
904.5	1056.01			.006	.85388	.00555	.02156	.01601
		2982	2.247					
906.5	1058.99			-.039	.85261	-.03300	-.03640	-.00339
		2861	2.167					
908.5	1061.85			.026	.85205	.02181	.01289	-.00893
		2910	2.243					
910.5	1064.76			0	.85205	.00003	-.01946	-.01950
		2934	2.225					
912.5	1067.70			-.002	.85205	-.00128	.03188	.03317
		2931	2.221					
914.5	1070.63			-.003	.85204	-.00232	-.01004	-.00772
		2890	2.240					
916.5	1073.52			.002	.85204	.00168	-.00490	-.00658
		2901	2.240					
918.5	1076.42			-.003	.85203	-.00291	.00942	.01233
		2881	2.240					
920.5	1079.30			.007	.85198	.00622	.00777	.00155
		2924	2.240					
922.5	1082.22			.006	.85195	.00494	-.01928	-.02422
		2958	2.240					
924.5	1085.18			.009	.85188	.00764	-.00027	-.00791
		3011	2.240					
926.5	1088.19			-.007	.85184	-.00606	.00864	.01470
		2969	2.240					
928.5	1091.16			.003	.85184	.00220	-.00597	-.00816
		2984	2.240					
930.5	1094.14			-.003	.85183	-.00224	-.00970	-.00745
		2969	2.240					
932.5	1097.11			-.001	.85183	-.00119	.03064	.03183
		2960	2.240					
934.5	1100.07			-.001	.85183	-.00044	-.00468	-.00424
		2957	2.240					
936.5	1103.03			-.005	.85181	-.00415	-.01163	-.00748
		2929	2.240					
938.5	1105.96			.002	.85180	.00175	-.00346	-.00520
		2941	2.240					
940.5	1108.90			-.003	.85180	-.00251	-.00001	.00249
		2923	2.240					
942.5	1111.82			-.006	.85177	-.00494	-.00625	-.00131
		2890	2.240					
944.5	1114.71			.020	.85143	.01689	.01672	-.00017

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
		3007	2.240					
946.5	1117.72	2920	2.240	-.015	.85125	-.01238	-.00499	.00739
948.5	1120.64	2968	2.240	.008	.85120	.00693	.01078	.00386
950.5	1123.61	2920	2.240	-.008	.85114	-.00699	-.01686	-.00986
952.5	1126.53	2969	2.240	.008	.85108	.00701	.00525	-.00176
954.5	1129.50	2957	2.240	-.002	.85108	-.00171	.00478	.00649
956.5	1132.45	2859	2.240	-.017	.85084	-.01434	-.02299	-.00865
958.5	1135.31	2914	2.243	.010	.85075	.00873	.01665	.00791
960.5	1138.23	2906	2.293	.010	.85067	.00823	.02752	.01929
962.5	1141.13	2975	2.300	.013	.85052	.01133	.01040	-.00093
964.5	1144.11	2984	2.251	-.009	.85044	-.00786	-.02318	-.01533
966.5	1147.09	3003	2.353	.025	.84990	.02149	.00898	-.01251
968.5	1150.09	3303	2.362	.050	.84782	.04208	.04559	.00350
970.5	1153.40	3238	2.316	-.020	.84748	-.01690	-.02253	-.00563
972.5	1156.64	3300	2.391	.025	.84693	.02160	.02622	.00463
974.5	1159.94	3340	2.310	-.011	.84682	-.00953	-.00337	.00616
976.5	1163.28	3363	2.436	.030	.84606	.02546	.02701	.00155
978.5	1166.64	3661	2.563	.068	.84217	.05733	.08232	.02499
980.5	1170.30	3572	2.509	-.023	.84173	-.01940	-.03081	-.01141
982.5	1173.87	3347	2.548	-.025	.84121	-.02084	-.02576	-.00492
984.5	1177.22	3574	2.491	.022	.84082	.01820	.01518	-.00302
986.5	1180.79	3977	2.508	.057	.83813	.04756	.05442	.00686
988.5	1184.77	3947	2.562	.007	.83808	.00592	.00780	.00188
990.5	1188.72	3735	2.548	-.030	.83730	-.02556	-.01100	.01456
992.5	1192.45	3615	2.544	-.017	.83706	-.01430	-.02073	-.00643

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
994.5	1196.07	3515	2.538	-.015	.83687	-.01268	-.02249	-.00981
996.5	1199.58	3825	2.517	.038	.83566	.03180	.03734	.00555
998.5	1203.41	3899	2.520	.010	.83557	.00852	.00886	.00034
1000.5	1207.30	3682	2.445	-.044	.83398	-.03643	-.05548	-.01905
1002.5	1210.99	3220	2.595	-.037	.83282	-.03122	-.01920	.01202
1004.5	1214.21	3351	2.416	-.016	.83261	-.01318	-.00527	.00791
1006.5	1217.56	3395	2.421	.008	.83256	.00643	.01350	.00706
1008.5	1220.95	3359	2.466	.004	.83255	.00318	-.00429	-.00747
1010.5	1224.31	3451	2.472	.015	.83237	.01223	.00760	-.00463
1012.5	1227.76	3377	2.390	-.028	.83173	-.02307	-.03040	-.00733
1014.5	1231.14	3304	2.390	-.011	.83163	-.00915	-.00712	.00203
1016.5	1234.44	3512	2.456	.044	.83000	.03678	.03163	-.00514
1018.5	1237.95	3896	2.469	.054	.82754	.04518	.04884	.00366
1020.5	1241.85	3820	2.423	-.019	.82724	-.01585	-.00065	.01520
1022.5	1245.67	3688	2.430	-.016	.82702	-.01348	-.01389	-.00041
1024.5	1249.36	3174	2.293	-.104	.81814	-.08568	-.08893	-.00325
1026.5	1252.53	3326	2.280	.021	.81779	.01680	.00464	-.01216
1028.5	1255.86	2908	2.220	-.080	.81253	-.06560	-.07935	-.01376
1030.5	1258.77	2903	2.235	.002	.81253	.00190	-.00836	-.01026
1032.5	1261.67			0	0	0	-.00101	-.00101
1034.5							-.00478	-.00478
1036.5							-.01084	-.01084
1038.5							.01529	.01529
1040.5							-.01675	-.01675
1042.5							.00389	.00389

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
1044.5							-.00920	-.00920
1046.5							-.00384	-.00384
1048.5							.03288	.03288
1050.5							.01223	.01223
1052.5							-.01433	-.01433
1054.5							-.01452	-.01452
1056.5							.02094	.02094
1058.5							-.01152	-.01152
1060.5							.00586	.00586
1062.5							-.00044	-.00044
1064.5							-.00191	-.00191
1066.5							-.00229	-.00229
1068.5							.01257	.01257
1070.5							-.00585	-.00585
1072.5							-.00818	-.00818
1074.5							-.01080	-.01080
1076.5							.02378	.02378
1078.5							-.00851	-.00851
1080.5							.01111	.01111
1082.5							.00541	.00541
1084.5							-.01520	-.01520
1086.5							-.01471	-.01471
1088.5							.00869	.00869
1090.5							.00581	.00581

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
1092.5							.01655	.01655
1094.5							-.01919	-.01919
1096.5							.04096	.04096
1098.5							-.02746	-.02746
1100.5							-.00701	-.00701
1102.5							-.00330	-.00330
1104.5							.00811	.00811
1106.5							-.00643	-.00643
1108.5							-.00133	-.00133
1110.5							.02060	.02060
1112.5							-.00149	-.00149
1114.5							.00301	.00301
1116.5							-.00583	-.00583
1118.5							.01919	.01919
1120.5							-.00058	-.00058
1122.5							-.00779	-.00779
1124.5							-.01050	-.01050
1126.5							.00793	.00793
1128.5							-.00064	-.00064
1130.5							-.02099	-.02099
1132.5							-.02981	-.02981
1134.5							.01148	.01148
1136.5							.01974	.01974
1138.5							-.01343	-.01343
1140.5							-.01662	-.01662

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
1142.5							-.01000	-.01000
1144.5							.00348	.00348
1146.5							.03202	.03202
1148.5							-.01018	-.01018
1150.5							-.03033	-.03033
1152.5							.00371	.00371
1154.5							.01558	.01558
1156.5							-.00567	-.00567
1158.5							-.02241	-.02241
1160.5							.00330	.00330
1162.5							.00282	.00282
1164.5							-.00055	-.00055
1166.5							.03341	.03341
1168.5							-.01234	-.01234
1170.5							.00560	.00560
1172.5							-.02851	-.02851
1174.5							-.01365	-.01365
1176.5							.00056	.00056
1178.5							.02025	.02025
1180.5							.00407	.00407
1182.5							.02424	.02424
1184.5							-.00150	-.00150
1186.5							-.00885	-.00885
1188.5							.00731	.00731

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
1190.5							.01477	.01477
1192.5							-.00805	-.00805
1194.5							.00128	.00128
1196.5							-.00340	-.00340
1198.5							.01376	.01376
1200.5							.00032	.00032
1202.5							-.01087	-.01087
1204.5							-.01581	-.01581
1206.5							.00921	.00921
1208.5							-.00672	-.00672
1210.5							.00967	.00967
1212.5							.00133	.00133
1214.5							.00960	.00960
1216.5							-.00716	-.00716
1218.5							.01222	.01222
1220.5							-.01023	-.01023
1222.5							-.01552	-.01552
1224.5							.01634	.01634
1226.5							.01168	.01168
1228.5							-.00818	-.00818
1230.5							-.00310	-.00310
1232.5							.00230	.00230
1234.5							-.01526	-.01526
1236.5							.00422	.00422
1238.5							-.00662	-.00662

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
1240.5							.01016	.01016
1242.5							.00116	.00116
1244.5							.00438	.00438
1246.5							-.00407	-.00407
1248.5							.01477	.01477
1250.5							-.01823	-.01823
1252.5							.00561	.00561
1254.5							.00102	.00102
1256.5							-.00371	-.00371
1258.5							.00252	.00252
1260.5							.00712	.00712
1262.5							-.01011	-.01011
1264.5							-.00107	-.00107
1266.5							-.00838	-.00838
1268.5							.00574	.00574
1270.5							.00544	.00544
1272.5							-.00765	-.00765
1274.5							-.00569	-.00569
1276.5							.00945	.00945
1278.5							.00041	.00041
1280.5							-.00358	-.00358
1282.5							-.00326	-.00326
1284.5							.00773	.00773
1286.5							.00314	.00314

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
1288.5							.01108	.01108
1290.5							-.00641	-.00641
1292.5							-.00740	-.00740
1294.5							.00611	.00611
1296.5							.00171	.00171
1298.5							-.00235	-.00235
1300.5							-.01676	-.01676
1302.5							.01505	.01505
1304.5							.01151	.01151
1306.5							-.00207	-.00207
1308.5							-.01733	-.01733
1310.5							.00746	.00746
1312.5							.01737	.01737
1314.5							-.00282	-.00282
1316.5							-.00610	-.00610
1318.5							-.00192	-.00192
1320.5							-.00314	-.00314
1322.5							.00235	.00235
1324.5							-.01020	-.01020
1326.5							.00295	.00295
1328.5							.00642	.00642
1330.5							.00826	.00826
1332.5							-.00467	-.00467
1334.5							-.00412	-.00412
1336.5							-.00895	-.00895

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
1338.5							.00308	.00308
1340.5							.00702	.00702
1342.5							-.00223	-.00223
1344.5							-.00162	-.00162
1346.5							.00553	.00553
1348.5							.00603	.00603
1350.5							-.00883	-.00883
1352.5							-.00393	-.00393
1354.5							-.00064	-.00064
1356.5							-.00183	-.00183
1358.5							.00692	.00692
1360.5							-.00440	-.00440
1362.5							.00303	.00303
1364.5							-.01150	-.01150
1366.5							.00034	.00034
1368.5							.00851	.00851
1370.5							.00130	.00130
1372.5							-.01562	-.01562
1374.5							.01274	.01274
1376.5							.01121	.01121
1378.5							.00193	.00193
1380.5							-.01633	-.01633
1382.5							.01030	.01030
1384.5							-.01685	-.01685

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
1386.5							.01298	.01298
1388.5							.01250	.01250
1390.5							.00237	.00237
1392.5							.00543	.00543
1394.5							-.00966	-.00966
1396.5							-.00463	-.00463
1398.5							-.00135	-.00135
1400.5							.00147	.00147
1402.5							-.00807	-.00807
1404.5							.00240	.00240
1406.5							-.00503	-.00503
1408.5							-.00022	-.00022
1410.5							.00928	.00928
1412.5							-.00601	-.00601
1414.5							-.01602	-.01602
1416.5							.00638	.00638
1418.5							.01227	.01227

APPENDIX 6

APPENDIX 6

High Resolution Dipmeter Cluster Listings

Stratigraphic High Resolution Dipmeter
Mean Square Dip Computations

LISTINGS

WILSON #1

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***************
* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM N.L.
WELL	:	WILSON # 1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	1
DATE LOGGED	:	24 - JUL - 87
REFERENCE	:	170011

1M X 50% - 35 DEG X 2

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***************
*             *
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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM N.L.
WELL	:	WILSON # 1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	1
DATE LOGGED	:	24 - JUL - 87
REFERENCE	:	170011

1M X 50% - 35 DEG X 2

BEACH PETROLEUM N.L. WILSON # 1 PAGE 1-FILE 1

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
750.12	6.7	4	0.4	0	8.3	8.1	A
750.62	8.7	13	0.4	0	8.2	8.1	A
751.12	8.8	11	0.4	0	8.2	8.1	A
751.62	4.2	94	0.3	0	8.2	8.1	A
752.12	7.6	129	0.3	0	8.2	8.1	B
752.62	6.4	197	0.3	0	8.2	8.2	B
753.12	2.0	329	0.3	0	8.1	8.1	A
753.62	3.6	324	0.3	0	8.1	8.2	A
754.12	4.8	265	0.3	0	8.1	8.1	A
755.12	5.7	26	0.3	0	8.1	8.1	A
756.12	6.7	335	0.2	0	8.1	8.1	B
756.62	0.3	165	0.2	0	8.1	8.1	A
757.12	1.6	128	0.3	0	8.1	8.1	A
757.62	5.6	143	0.3	0	8.1	8.1	A
758.13	6.5	72	0.3	0	8.1	8.2	B
758.63	6.7	59	0.3	0	8.1	8.2	A
759.63	7.1	51	0.2	0	8.1	8.2	A
761.13	7.2	72	0.3	0	8.1	8.2	B
761.63	7.2	79	0.3	0	8.1	8.2	A
762.63	8.0	50	0.3	0	8.1	8.2	B
763.63	10.3	86	0.2	0	8.1	8.2	B
764.13	5.1	110	0.2	0	8.1	8.2	B
766.13	10.2	26	0.3	0	8.1	8.2	A
766.63	11.6	6	0.3	0	8.1	8.2	A
767.13	7.4	72	0.2	0	8.1	8.2	B
767.63	4.2	87	0.2	0	8.1	8.2	A
768.13	5.3	73	0.3	0	8.1	8.2	A
768.63	4.5	73	0.3	0	8.1	8.2	A
769.13	6.2	35	0.3	0	8.1	8.2	A
769.63	7.9	23	0.3	0	8.1	8.2	A
770.13	1.6	16	0.3	0	8.1	8.2	A
770.63	1.0	44	0.2	0	8.2	8.1	A
771.14	3.4	38	0.2	0	8.1	8.2	A
771.64	2.9	75	0.2	0	8.2	8.1	A
772.14	3.1	104	0.2	0	8.2	8.1	A
772.64	2.3	98	0.2	0	8.3	8.1	A
773.14	6.5	40	0.2	0	8.3	8.1	A
773.64	4.8	142	0.2	0	8.4	8.3	A
774.14	4.6	145	0.2	0	8.5	8.5	A
775.14	1.1	92	0.2	0	8.5	8.5	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
775.64	7.6	31	0.2	0	8.4	8.2	A
776.14	7.8	36	0.2	0	8.3	8.2	A
776.64	8.9	32	0.2	0	8.3	8.2	A
777.14	15.3	61	0.2	0	8.7	8.3	B
779.64	5.8	282	0.1	0	9.0	9.1	A
780.14	5.0	291	0.1	0	9.8	9.5	A
783.64	27.5	111	0.2	0	9.2	9.8	B
787.65	NO CORR		0.3	0	8.6	9.6	
798.66	NO CORR		0.3	0	8.6	8.6	
799.66	NO CORR		0.3	0	8.1	8.3	
801.16	17.3	21	0.3	0	8.2	8.3	B
801.66	18.3	29	0.2	0	8.2	8.3	B
802.16	18.3	21	0.2	0	8.2	8.4	A
802.66	16.6	22	0.2	0	8.1	8.3	A
803.16	14.0	18	0.2	0	8.2	8.4	B
804.66	8.6	352	0.3	0	8.1	8.2	B
805.16	9.4	33	0.3	0	8.1	8.2	B
805.66	8.4	56	0.3	0	8.1	8.2	B
808.16	3.8	96	0.4	0	8.2	8.1	B
809.66	7.3	45	0.5	28	8.2	8.2	B
810.16	5.2	30	0.6	27	8.2	8.1	A
811.67	15.8	67	0.5	27	8.2	8.1	B
812.17	13.0	38	0.5	27	8.2	8.1	A
812.67	13.2	33	0.5	28	8.2	8.1	A
813.17	13.3	27	0.5	28	8.2	8.1	A
814.17	12.4	41	0.5	29	8.3	8.1	B
814.67	10.7	37	0.6	29	8.3	8.1	B
815.17	44.8	3	0.6	30	8.3	8.1	A
815.67	42.4	13	0.6	31	8.3	8.1	A
816.17	16.5	13	0.6	30	8.3	8.1	
816.67	15.1	9	0.6	28	8.3	8.1	A
818.17	13.5	38	0.5	28	8.4	8.1	B
818.67	42.6	8	0.5	28	8.3	8.1	B
819.17	43.9	10	0.6	29	8.4	8.1	A
819.67	15.4	20	0.6	28	8.4	8.2	A
820.17	11.5	22	0.6	28	8.3	8.1	A
820.67	12.8	12	0.6	30	8.4	8.1	A
821.17	17.8	5	0.6	33	8.3	8.1	A
822.17	14.1	28	0.6	36	8.3	8.1	A
822.67	12.4	34	0.6	36	8.3	8.1	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
823.17	12.4	29	0.6	36	8.4	8.1	A
823.68	11.6	27	0.6	37	8.3	8.1	A
824.18	13.4	19	0.6	38	8.4	8.1	A
824.68	13.4	34	0.6	39	8.3	8.1	A
825.18	14.3	39	0.6	39	8.4	8.1	A
825.68	11.7	26	0.6	38	8.6	8.4	A
826.18	6.3	28	0.6	36	8.4	8.3	B
827.18	27.0	6	0.6	41	8.5	10.9	B
827.68	19.0	17	0.7	46	8.3	10.6	B
829.68	NO CORR		0.7	49	8.1	10.4	
830.68	9.3	320	0.7	46	8.2	10.2	B
831.18	18.1	250	0.7	50	8.1	10.1	B
833.68	27.5	34	0.7	59	8.5	9.5	B
834.18	3.9	305	0.7	57	8.3	9.7	B
836.18	1.8	302	0.8	55	8.2	10.0	B
839.19	9.6	47	0.6	51	8.3	10.5	B
847.19	6.4	21	0.7	55	9.2	8.4	A
847.69	7.7	24	0.7	56	9.0	8.4	A
848.19	5.6	30	0.7	59	8.8	8.3	A
848.69	3.8	18	0.7	62	8.4	8.2	A
849.19	2.9	302	0.7	63	8.3	8.2	B
850.20	6.6	359	0.8	64	8.2	8.2	A
850.70	5.2	3	0.8	65	8.1	8.2	A
851.20	6.7	3	0.8	66	8.1	8.2	A
851.70	11.5	351	0.8	66	8.1	8.2	B
852.70	8.0	50	0.8	67	8.2	8.1	B
853.20	7.2	71	0.8	67	8.2	8.1	B
853.70	3.4	92	0.8	67	8.2	8.1	A
854.20	2.6	353	0.8	68	8.3	8.1	A
854.70	5.9	332	0.8	71	8.2	8.1	A
855.20	6.4	97	0.8	72	8.3	8.1	A
855.70	1.1	313	0.7	72	8.2	8.1	B
861.70	10.6	171	0.8	72	8.3	8.2	B
862.70	10.9	356	0.7	72	8.3	8.2	B
863.21	5.4	322	0.8	74	8.2	8.1	A
863.71	3.7	65	0.8	76	8.2	8.1	A
864.21	4.1	71	0.8	78	8.2	8.1	A
865.21	4.9	170	0.8	78	8.3	8.3	B
865.71	3.8	144	0.7	76	8.3	8.2	B
867.71	3.1	38	0.8	72	8.2	8.1	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
868.21	4.4	24	0.8	75	8.1	8.1	A
868.71	9.6	40	0.8	78	8.1	8.1	B
869.21	0.9	260	0.8	81	8.1	8.1	A

BEACH PETROLEUM N.L. WILSON # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 750.12	6.7	4.	0.4	0.	8.3	8.1	A
BOTTOM 869.21	0.9	260.	0.8	81.	8.1	8.1	A

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
750- 800			1	2	2	1	6	10	8	5	5	1	1
800- 850					4	1	6	4		1			
850- 869			1		2	3	3	3	3	2	1	1	

DIP FREQUENCY BY AZIMUTH
10-90 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
750- 800							2		2	1			
800- 850			1				23	9	1				
850- 869						2						1	

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*  DIP FREQUENCY BY AZIMUTH *
*     0-10 DEGREE DIPS      *
*                           *
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PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
750- 800	10	8	5	5	1	1		1	2	2	1	6	
800- 850	4		1							4	1	6	
850- 869	3	3	2	1	1			1		2	3	3	

DIP FREQUENCY BY AZIMUTH
0-90 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
750- 800	10	10	6	5	1	1		1	2	2	1	8	
800- 850	13	1	1					1		4	1	29	
850- 869	3	3	2	1	2			1		2	5	3	

BEACH PETROLEUM N.L. WILSON # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 750.12	6.7	4.	0.4	0.	8.3	8.1	A
BOTTOM 869.21	0.9	260.	0.8	81.	8.1	8.1	A

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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM N.L.
WELL	:	WILSON # 1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	1
DATE LOGGED	:	24 - JUL - 87
REFERENCE	:	170011

1M X 50% - 35 DEG X 2

BEACH PETROLEUM N.L. WILSON # 1 PAGE 1-FILE 1

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
864.77	6.7	88	0.8	67	8.3	8.5	B
867.27	4.0	45	0.8	62	8.2	8.3	B
867.77	4.6	20	0.8	65	8.2	8.2	B
868.27	9.2	37	0.8	68	8.2	8.3	B
869.77	1.6	273	0.8	75	8.2	8.3	A
870.27	0.9	35	0.8	74	8.2	8.3	A
87C.77	2.0	66	0.8	72	8.1	8.3	A
871.27	2.9	227	0.8	72	8.2	8.3	A
871.77	5.8	121	0.8	74	8.2	8.3	A
872.27	2.9	349	0.8	76	8.2	8.3	B
873.77	24.9	151	0.8	79	8.2	8.3	B
874.27	6.8	275	0.8	77	8.2	8.3	B
874.77	3.6	283	0.8	77	8.2	8.3	A
875.28	3.9	338	0.8	78	8.2	8.3	A
875.78	3.2	51	0.8	80	8.2	8.3	A
876.28	1.6	83	0.8	81	8.2	8.3	A
876.78	1.4	207	0.7	83	8.2	8.3	B
877.28	17.6	62	0.7	84	8.2	8.3	B
877.78	8.0	49	0.7	83	8.2	8.2	B
878.28	3.0	3	0.7	80	8.2	8.2	B
879.28	NO CORR		0.7	71	8.2	8.2	
881.28	34.3	328	0.6	64	8.2	8.2	B
881.78	2.3	351	0.6	64	8.2	8.1	B
882.28	1.2	145	0.6	65	8.2	8.2	A
882.78	1.5	130	0.6	66	8.2	8.2	A
883.28	3.2	66	0.7	68	8.2	8.2	A
883.78	3.1	69	0.7	70	8.2	8.2	A
886.78	14.5	68	0.7	66	8.2	8.2	A
887.78	3.7	32	0.6	67	8.3	8.2	A
888.28	1.1	95	0.7	70	8.3	8.2	A
888.79	5.4	138	0.7	72	8.3	8.2	B
889.29	10.1	109	0.7	72	8.4	8.2	B
889.79	10.8	108	0.7	70	8.4	8.2	A
890.29	10.0	158	0.7	70	8.4	8.2	B
890.79	4.7	100	0.7	71	8.3	8.2	A
891.29	3.1	69	0.7	73	8.3	8.2	A
891.79	3.0	114	0.7	73	8.3	8.2	A
892.29	4.7	122	0.7	73	8.3	8.2	A
892.79	3.8	81	0.7	72	8.3	8.2	A
893.29	5.2	106	0.7	72	8.3	8.2	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
893.79	7.3	120	0.7	74	8.3	8.1	A
894.29	6.4	127	0.7	76	8.3	8.1	B
894.79	5.5	116	0.7	78	8.2	8.1	A
895.29	4.9	118	0.7	78	8.2	8.1	A
895.79	5.5	123	0.7	79	8.2	8.1	A
896.29	5.4	114	0.7	79	8.2	8.1	A
896.79	4.3	119	0.7	79	8.2	8.1	A
897.29	4.8	118	0.7	78	8.2	8.1	A
897.79	5.1	112	0.6	77	8.2	8.1	A
898.29	5.1	113	0.6	75	8.2	8.1	A
898.79	4.8	111	0.6	75	8.2	8.1	A
899.29	4.1	112	0.6	74	8.2	8.1	A
899.79	4.8	107	0.6	74	8.2	8.1	A
900.29	5.5	109	0.5	73	8.2	8.1	A
900.79	6.0	115	0.5	72	8.2	8.2	A
901.29	5.9	110	0.5	72	8.2	8.1	A
901.80	6.9	93	0.5	71	8.2	8.2	A
902.30	6.8	93	0.5	77	8.2	8.2	A
902.80	6.4	96	0.5	0	8.2	8.2	A
903.30	7.6	88	0.5	0	8.2	8.1	A
903.80	7.2	85	0.5	0	8.2	8.2	A
904.30	7.2	90	0.5	0	8.2	8.2	A
904.80	8.5	101	0.5	0	8.2	8.2	A
905.30	7.0	91	0.5	0	8.2	8.2	A
905.80	7.3	89	0.5	0	8.3	8.2	A
906.30	10.2	112	0.5	0	8.3	8.2	A
906.80	11.4	114	0.5	0	8.2	8.2	A
907.30	9.9	107	0.5	0	8.2	8.2	A
907.80	9.0	104	0.5	0	8.2	8.2	A
908.30	8.9	104	0.4	0	8.2	8.2	A
908.80	9.4	106	0.4	0	8.2	8.2	A
909.30	11.5	116	0.4	0	8.2	8.2	A
909.80	11.8	109	0.4	0	8.3	8.2	A
910.30	12.7	114	0.4	0	8.2	8.2	A
910.80	11.9	114	0.4	0	8.3	8.2	A
911.30	12.0	110	0.4	0	8.3	8.2	A
911.80	10.5	102	0.4	0	8.3	8.2	A
912.30	10.7	107	0.4	0	8.3	8.2	A
912.80	12.0	119	0.3	0	8.2	8.2	A
913.30	11.9	123	0.3	0	8.2	8.2	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
913.80	11.9	130	0.3	0	8.2	8.2	A
914.30	11.3	131	0.3	0	8.2	8.2	A
914.81	11.7	137	0.3	0	8.2	8.2	A
915.31	13.5	141	0.3	0	8.2	8.2	A
915.81	15.5	137	0.2	0	8.2	8.2	A
916.31	14.8	143	0.2	0	8.2	8.2	A
916.81	14.6	140	0.2	0	8.2	8.2	A
917.31	15.3	146	0.2	0	8.2	8.2	A
917.81	15.8	150	0.2	0	8.2	8.2	A
918.31	16.6	144	0.2	0	8.2	8.2	A
918.81	19.0	152	0.2	0	8.2	8.2	A
919.31	19.7	166	0.2	0	8.3	8.2	A
919.81	19.6	167	0.2	0	8.3	8.2	A
920.31	16.5	152	0.2	0	8.3	8.2	A
920.81	15.2	156	0.2	0	8.3	8.2	A
921.31	13.2	154	0.2	0	8.2	8.2	A
921.81	10.4	145	0.2	0	8.2	8.2	A
922.81	7.9	94	0.2	0	8.3	8.2	A
923.31	6.9	101	0.3	0	8.2	8.2	A
923.81	8.9	121	0.2	0	8.3	8.2	A
924.31	14.7	118	0.2	0	8.2	8.2	A
924.81	14.3	117	0.2	0	8.2	8.2	A
925.31	14.5	108	0.2	0	8.2	8.2	A
925.81	14.6	102	0.1	0	8.2	8.2	A
926.31	13.7	138	0.1	0	8.2	8.2	A
926.81	14.1	150	0.1	0	8.2	8.2	A
927.31	20.2	172	0.1	0	8.2	8.2	B
927.82	13.2	171	0.1	0	8.2	8.2	A
928.32	10.9	168	0.1	0	8.2	8.2	A
928.82	8.7	151	0.1	0	8.3	8.2	A
929.32	6.8	128	0.1	0	8.3	8.2	A
931.32	5.9	90	0.1	0	8.4	8.2	A
931.82	13.4	99	0.1	0	8.4	8.2	B
932.32	16.7	100	0.1	0	8.4	8.2	A
932.82	15.7	77	0.1	0	8.3	8.2	A
933.32	11.6	81	0.0	0	8.3	8.2	A
933.82	10.9	85	0.0	0	8.3	8.2	A
934.32	8.2	91	0.0	0	8.3	8.2	A
934.82	6.2	94	0.0	0	8.3	8.3	A
935.32	6.5	95	0.1	0	8.3	8.2	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
935.82	7.4	81	0.1	0	8.3	8.3	B
937.32	5.6	53	0.2	0	8.4	8.6	A
937.82	9.8	27	0.2	0	8.5	8.5	A
938.32	28.7	350	0.2	0	8.7	8.8	A
939.32	8.0	212	0.2	0	8.7	8.8	B
939.82	2.9	106	0.2	0	8.6	8.9	B
940.32	2.9	117	0.2	0	8.6	8.9	A
940.82	5.0	130	0.2	0	8.5	8.7	B
943.33	1.0	102	0.1	0	8.4	8.6	B
943.83	1.4	62	0.1	0	8.4	8.6	A
944.33	3.4	59	0.1	0	8.4	8.4	A
945.33	3.9	199	0.1	0	8.3	8.2	A
945.83	4.3	155	0.1	0	8.5	8.3	A
946.33	2.9	132	0.1	0	8.6	8.5	A
946.83	2.8	86	0.1	0	8.6	8.5	B
947.33	4.2	107	0.1	0	8.7	8.5	A
947.83	3.1	114	0.1	0	8.7	8.4	A
948.33	4.8	51	0.1	0	8.4	8.2	B
948.83	2.5	120	0.1	0	8.7	8.6	A
949.33	2.7	100	0.1	0	8.4	8.2	A
949.83	2.6	95	0.1	0	8.6	8.5	A
950.33	1.6	116	0.1	0	8.4	8.3	A
950.83	1.2	117	0.1	0	8.4	8.2	A
951.33	2.1	107	0.1	0	8.4	8.2	B
951.83	3.9	92	0.1	0	8.4	8.2	A
952.33	3.0	94	0.1	0	8.4	8.2	A
952.83	2.2	84	0.1	0	8.5	8.2	A
953.33	1.9	80	0.1	0	8.5	8.2	A
953.83	1.9	71	0.2	0	8.5	8.2	A
954.34	1.1	172	0.2	0	8.5	8.2	A
954.84	3.3	128	0.2	0	8.4	8.2	B
955.34	3.9	91	0.2	0	8.4	8.2	A
955.84	2.6	131	0.2	0	8.4	8.2	A
956.34	1.1	217	0.2	0	8.3	8.1	A
956.84	6.8	282	0.2	0	8.3	8.2	B
957.34	3.2	124	0.2	0	8.2	8.1	A
957.84	2.5	124	0.2	0	8.3	8.1	A
958.34	2.7	156	0.2	0	8.4	8.4	A
958.84	2.4	135	0.2	0	8.3	8.2	A
959.34	2.0	109	0.2	0	8.5	8.4	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
959.84	2.3	116	0.2	0	8.4	8.2	A
960.34	4.5	153	0.2	0	8.3	8.2	A
960.84	3.9	145	0.2	0	8.3	8.2	A
961.34	3.6	110	0.2	0	8.3	8.2	A
961.84	6.9	57	0.3	0	8.3	8.2	B
962.84	6.1	126	0.3	0	8.4	8.2	A
963.34	5.6	138	0.3	0	8.5	8.3	A
963.84	5.4	148	0.3	0	8.4	8.2	A
964.34	4.3	144	0.3	0	8.4	8.3	A
964.84	2.4	142	0.3	0	8.4	8.1	A
965.34	3.2	138	0.3	0	8.4	8.1	A
965.84	3.3	118	0.3	0	8.4	8.1	A
966.34	0.5	358	0.3	0	8.4	8.1	B
966.84	2.3	230	0.3	0	8.4	8.1	B
967.35	2.1	154	0.3	0	8.4	8.1	A
967.85	1.7	112	0.3	0	8.4	8.2	A
968.35	3.0	133	0.3	0	8.5	8.2	A
968.85	2.2	141	0.3	0	8.7	8.4	A
969.35	3.7	128	0.3	0	8.6	8.3	A
969.85	2.8	109	0.3	0	8.8	8.5	A
970.35	4.9	152	0.3	0	8.7	8.5	A
970.85	3.4	168	0.3	0	8.8	8.5	A
971.35	2.9	176	0.3	0	8.6	8.5	A
971.85	1.5	124	0.3	0	8.7	8.5	A
972.35	1.9	100	0.3	0	8.5	8.2	A
972.85	2.8	141	0.4	0	8.5	8.2	A
973.35	4.3	132	0.4	0	8.5	8.2	A
973.85	5.4	158	0.4	0	8.4	8.3	A
976.85	3.1	150	0.5	268	8.5	8.5	B
977.85	5.2	120	0.5	274	8.5	8.5	A
979.85	2.8	142	0.5	274	8.3	8.2	A
980.35	2.3	138	0.5	274	8.2	8.2	A
980.86	1.8	135	0.5	273	8.3	8.2	B
981.36	4.5	146	0.5	273	8.3	8.2	A
981.86	1.3	124	0.5	274	8.3	8.2	A
982.36	1.1	124	0.5	275	8.3	8.2	A
982.86	3.1	116	0.5	274	8.3	8.2	A
983.36	2.5	137	0.5	271	8.3	8.2	A
983.86	3.2	140	0.6	269	8.3	8.2	A
984.36	3.2	121	0.6	269	8.3	8.2	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
984.86	3.3	132	0.6	271	8.3	8.2	A
985.36	3.3	137	0.6	272	8.3	8.2	A
985.86	2.6	139	0.6	273	8.3	8.2	A
986.36	3.1	135	0.7	274	8.2	8.2	A
986.86	3.4	134	0.7	276	8.3	8.2	A
987.36	2.8	144	0.7	277	8.2	8.2	A
987.86	2.9	135	0.7	277	8.3	8.2	A
988.36	3.4	149	0.7	277	8.3	8.2	A
988.86	3.5	141	0.7	277	8.4	8.4	A
989.36	3.6	143	0.7	276	8.4	8.3	A
989.86	3.2	143	0.7	276	8.4	8.4	A
990.36	2.9	137	0.8	276	8.4	8.4	A
990.86	2.7	140	0.8	276	8.2	8.2	A
991.36	3.0	143	0.8	275	8.2	8.2	A
991.86	2.9	136	0.8	272	8.2	8.2	A
992.36	3.0	139	0.8	271	8.2	8.2	A
992.86	3.4	135	0.8	273	8.1	8.2	A
993.36	3.3	121	0.8	276	8.1	8.2	A
993.87	3.5	133	0.8	277	8.2	8.3	A
994.37	3.1	131	0.8	277	8.1	8.3	A
994.87	3.1	108	0.9	277	8.2	8.3	A
995.37	2.8	133	0.9	278	8.1	8.3	A
995.87	3.3	125	0.9	278	8.1	8.3	B
996.87	3.3	126	0.9	280	8.2	8.4	B
997.37	4.3	124	0.9	281	8.2	8.4	B
999.87	3.6	150	0.9	283	8.1	8.5	B
1000.37	2.6	152	0.9	283	8.2	8.6	A
1000.87	2.5	149	0.9	284	8.2	8.6	A
1001.87	2.5	120	0.9	284	8.3	8.6	B
1002.37	2.1	126	0.9	284	8.3	8.6	B
1004.87	2.9	99	1.0	282	8.5	8.7	B
1005.37	3.2	174	1.0	282	8.5	8.7	B
1005.87	3.8	178	1.0	283	8.3	8.8	B
1009.88	2.9	156	1.0	284	8.3	9.2	A
1010.38	3.1	155	1.0	284	8.3	9.1	A
1012.88	0.9	126	1.0	283	8.8	9.0	B
1013.38	3.4	112	1.1	283	8.9	9.0	B
1013.88	3.0	109	1.1	284	8.8	9.0	B
1014.38	3.2	134	1.1	284	8.9	9.1	B
1022.89	3.3	146	1.2	288	8.8	8.9	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1023.39	2.3	79	1.2	288	8.8	8.9	B
1023.89	3.2	155	1.3	288	8.6	8.9	B
1024.39	5.1	191	1.3	288	8.5	8.9	B
1024.89	4.6	189	1.3	289	8.5	8.9	B
1026.89	3.8	198	1.3	289	8.4	8.9	A
1027.39	2.5	138	1.3	289	8.4	9.0	B
1027.89	3.0	97	1.3	291	8.4	9.0	B
1028.89	3.1	176	1.3	293	8.5	8.9	B
1030.89	5.4	187	1.3	290	8.7	8.8	B
1031.39	3.7	162	1.4	293	8.5	8.9	B
1033.40	4.4	152	1.4	291	9.0	9.0	A
1035.40	1.3	89	1.5	293	8.4	8.9	B
1035.90	2.6	241	1.5	292	8.4	8.8	B
1043.40	4.3	219	1.7	295	9.7	8.5	B
1046.91	3.5	149	1.8	296	9.2	8.6	B
1049.41	15.5	215	1.8	296	9.4	8.9	B
1051.41	2.0	183	1.9	295	10.0	8.8	B
1053.91	4.3	155	2.0	298	10.1	8.7	B
1054.41	3.4	146	2.0	298	10.0	8.7	A
1055.41	6.6	162	2.0	297	10.1	8.6	B
1057.41	5.5	174	2.0	297	10.2	8.7	B
1070.92	6.2	112	2.2	302	9.3	8.8	B
1075.93	3.7	169	2.1	303	9.2	8.7	B
1077.93	5.9	159	2.2	302	9.1	8.8	A
1078.43	6.7	163	2.2	301	9.2	8.7	A
1078.93	6.3	189	2.1	301	9.2	8.8	B
1080.93	4.8	176	2.1	298	8.7	9.1	B
1081.43	2.2	188	2.1	300	8.8	9.1	A
1081.93	2.5	96	2.1	300	8.6	9.1	A
1082.43	4.9	170	2.1	301	8.6	9.1	B
1082.93	4.6	200	2.1	302	8.6	9.0	A
1083.43	3.1	159	2.1	303	8.5	9.0	A
1083.93	4.4	174	2.1	304	8.7	9.0	A
1084.93	9.9	193	2.1	299	8.7	9.0	
1085.94	4.6	179	2.1	300	8.5	9.0	A
1086.44	4.3	179	2.1	301	8.4	9.0	A
1086.94	4.9	178	2.1	301	8.4	9.1	A
1087.44	4.8	176	2.1	301	8.5	9.1	B
1088.44	6.3	185	2.1	301	8.6	9.1	A
1088.94	4.0	162	2.1	301	8.6	9.0	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1089.44	5.8	174	2.1	301	8.6	9.0	A
1089.94	4.2	169	2.1	301	8.6	9.0	A
1090.44	10.7	80	2.1	302	8.5	9.0	B
1090.94	2.4	168	2.1	302	8.6	8.9	A
1091.44	1.7	154	2.0	302	8.5	8.9	B
1091.94	4.5	164	2.0	301	8.6	8.9	A
1092.44	3.6	173	2.0	302	8.6	8.9	A
1092.94	4.2	172	2.0	303	8.6	8.9	B
1093.44	3.3	171	2.0	306	8.5	8.8	A
1093.94	3.8	167	2.0	308	8.7	8.8	A
1094.94	6.1	193	2.0	306	9.0	8.7	B
1095.44	5.8	183	2.0	305	9.5	8.7	B
1095.94	4.2	172	2.0	304	9.3	8.7	A
1096.44	4.5	197	2.0	303	9.5	8.7	A
1096.94	4.9	193	2.0	302	9.4	8.8	B
1097.44	2.4	145	2.0	302	9.1	8.7	A
1097.94	2.7	167	2.0	303	9.3	8.8	A
1098.44	3.7	150	2.0	304	9.1	8.8	A
1098.95	2.5	82	2.0	305	9.2	8.9	A
1099.45	2.2	114	2.0	305	9.4	8.9	A
1100.95	6.4	148	2.0	305	8.8	9.0	A
1101.45	4.5	153	2.0	307	9.0	9.0	A
1101.95	3.7	156	2.0	307	8.8	8.9	B
1102.45	2.5	141	2.0	307	9.1	8.9	A
1102.95	3.6	171	2.0	306	8.9	8.9	A
1103.45	7.1	189	2.0	306	9.1	8.8	B
1103.95	7.1	204	2.0	306	9.0	8.8	A
1104.95	4.5	213	2.0	306	9.3	8.7	B
1105.95	3.3	183	2.0	304	9.4	8.7	A
1106.45	2.6	192	2.0	305	8.9	8.7	B
1106.95	3.2	173	2.0	305	9.3	8.7	A
1109.45	7.1	224	1.9	306	9.3	8.6	B
1110.45	1.1	44	1.9	304	9.4	8.7	B
1110.95	3.0	175	1.9	305	9.3	8.7	A
1111.95	4.5	170	1.9	307	9.2	8.7	A
1112.46	6.3	161	1.9	306	9.1	8.7	A
1115.96	9.5	80	1.9	308	9.2	8.8	B
1123.96	5.2	176	1.8	308	9.0	8.6	B
1126.47	15.2	217	1.8	312	9.3	8.7	B
1128.97	4.9	149	1.9	306	10.0	8.7	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1130.47	3.2	239	1.9	308	9.8	8.8	A
1130.97	4.7	208	1.9	308	9.5	8.8	B
1131.47	5.8	223	1.9	306	10.4	8.8	B
1134.47	4.5	104	1.9	311	9.4	9.2	B
1135.97	4.9	159	1.9	310	9.7	9.1	B
1136.47	3.0	178	1.9	311	9.6	9.2	B
1138.98	2.6	183	1.8	311	9.1	9.1	B
1139.48	2.5	122	1.8	312	9.0	9.0	B
1139.98	2.7	163	1.8	312	9.6	8.9	B
1149.48	2.5	284	1.7	311	10.3	8.7	B
1151.99	2.9	117	1.8	311	9.5	8.8	B
1152.49	3.0	98	1.7	312	9.9	8.8	B
1154.49	4.9	188	1.7	311	10.3	8.7	B
1155.99	36.1	226	1.7	308	10.8	8.7	B
1158.49	11.9	282	1.7	310	11.1	8.5	B
1159.49	2.5	195	1.7	310	12.5	8.6	B
1159.99	2.4	161	1.7	310	12.4	8.7	B
1165.50	2.9	103	1.7	310	11.1	8.5	A
1166.00	5.7	54	1.7	309	12.0	8.4	B
1166.50	22.2	298	1.7	310	12.3	8.5	B
1167.00	1.7	147	1.7	312	11.1	8.4	A
1168.00	1.9	104	1.7	322	10.4	8.2	B
1169.50	4.9	115	1.8	307	10.5	8.3	B
1170.50	3.0	173	1.8	307	9.8	8.5	B
1171.00	4.7	277	1.7	306	9.4	8.6	B
1171.50	2.2	133	1.7	305	9.3	8.6	B
1172.00	3.6	169	1.7	306	10.2	8.6	A
1172.50	3.0	198	1.8	308	10.4	8.7	A
1177.00	1.8	312	1.7	309	10.5	8.3	B
1178.01	NO CORR		1.6	307	11.6	8.3	
1180.01	4.6	61	1.7	308	12.4	8.7	B
1180.51	5.0	56	1.7	309	12.1	8.5	B
1182.51	3.5	121	1.7	315	13.6	8.5	B
1183.51	15.2	95	1.6	314	13.1	8.5	B
1184.51	5.3	166	1.7	310	13.6	8.6	B
1185.51	2.5	358	1.7	309	14.0	8.6	B
1186.01	3.6	15	1.6	310	13.5	8.7	A
1186.51	11.4	56	1.6	310	13.8	8.6	B
1187.51	31.0	239	1.6	309	13.3	8.7	B
1188.01	6.9	40	1.6	308	13.2	8.7	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1189.51	37.3	140	1.5	307	13.2	8.7	B
1191.52	NO CORR		1.6	306	9.2	9.0	
1194.52	0.4	20	1.6	299	8.5	8.8	B
1195.02	3.9	251	1.6	301	8.8	9.0	B
1198.52	20.0	318	1.5	302	8.8	8.9	B
1200.02	8.3	56	1.5	308	8.8	9.2	B
1201.52	40.9	146	1.4	308	9.4	10.8	B
1202.02	26.7	187	1.4	308	9.1	10.0	B
1202.52	8.9	18	1.4	309	9.2	10.5	B
1205.03	23.1	51	1.4	309	8.6	9.1	B
1207.03	4.9	88	1.4	308	8.4	8.3	B
1208.53	7.1	333	1.4	311	8.3	8.2	B
1209.03	5.4	20	1.4	312	8.3	8.2	A
1211.03	5.5	37	1.4	307	8.2	8.3	B
1211.53	7.0	47	1.4	306	8.2	8.1	B
1212.03	3.5	63	1.3	302	8.2	8.3	B
1212.53	3.6	39	1.3	300	8.2	8.2	B
1213.03	4.1	330	1.2	299	8.1	8.1	A
1213.53	4.1	302	1.2	300	8.2	8.2	A
1214.03	10.1	237	1.2	303	8.2	8.2	B
1214.53	7.3	232	1.2	308	8.2	8.0	A
1215.03	8.0	220	1.1	309	8.2	8.1	A
1215.53	8.6	248	1.1	308	8.1	8.0	A
1216.03	18.2	262	1.1	306	8.1	8.0	B
1216.53	1.7	240	1.1	304	8.1	8.0	B
1217.03	9.5	317	1.2	302	8.1	8.1	B
1218.04	14.9	141	1.2	304	8.0	8.1	B
1219.54	3.2	191	1.2	305	8.0	8.1	B
1220.04	9.2	167	1.2	307	8.3	8.4	B
1221.04	13.5	259	1.2	312	8.2	8.4	B
1221.54	17.2	6	1.2	311	8.4	8.6	B
1222.04	7.0	208	1.2	311	8.2	8.5	A
1222.54	5.7	233	1.2	311	8.4	8.6	A
1223.04	17.2	241	1.2	309	8.4	8.7	B
1225.04	6.9	105	1.2	310	8.4	8.7	B
1226.04	5.5	260	1.1	311	8.4	8.8	B
1226.54	9.1	224	1.1	312	8.6	8.9	A
1227.04	11.0	208	1.1	311	8.6	8.9	B
1233.05	13.2	256	1.0	305	8.7	8.8	B
1233.55	3.8	251	1.0	304	8.5	8.8	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1234.05	5.1	207	1.0	303	8.5	8.7	A
1234.55	8.8	192	1.0	300	8.4	8.7	B
1235.05	2.3	195	1.1	297	8.3	8.5	B
1235.55	8.3	255	1.1	294	8.3	8.4	B
1236.55	12.1	47	1.1	296	8.2	8.3	B
1238.05	4.4	35	1.2	307	8.1	8.2	B
1239.55	2.2	82	1.1	312	8.3	8.2	B
1240.05	2.1	163	1.1	306	8.3	8.2	A
1242.05	8.8	180	1.1	297	8.2	8.4	B
1247.06	10.1	198	0.9	298	8.8	8.8	
1249.56	1.1	212	1.0	298	8.5	8.4	A
1250.06	2.9	244	1.0	298	8.5	8.6	A
1250.56	2.1	264	1.0	296	8.5	8.6	A
1251.06	1.2	69	1.0	296	8.5	8.6	A
1251.56	1.7	68	1.1	297	8.5	8.6	A
1252.06	1.9	236	1.1	298	8.5	8.5	A
1253.06	5.8	291	1.2	301	8.4	8.4	A
1253.56	5.0	296	1.2	302	8.4	8.6	A
1255.06	14.0	248	1.2	299	8.3	8.3	A
1255.56	12.5	254	1.2	299	8.2	8.3	A
1256.56	4.0	99	1.1	305	8.2	8.3	B
1257.57	9.8	282	1.0	300	8.2	8.3	B
1259.57	0.6	237	0.9	303	8.1	8.2	A
1260.07	7.6	265	0.9	303	8.1	8.3	B
1261.57	7.3	267	0.9	302	8.2	8.4	B
1262.07	4.6	251	0.9	300	8.1	8.3	A
1262.57	5.2	266	0.8	300	8.2	8.4	B
1264.07	29.2	254	0.9	293	8.1	8.2	B
1264.57	30.8	248	0.9	291	8.2	8.3	B
1266.07	5.5	274	1.0	285	8.3	8.4	A
1266.57	5.3	280	0.9	285	8.2	8.4	A
1267.07	4.7	349	0.9	286	8.4	8.5	B
1267.57	5.8	336	0.9	289	8.5	8.5	B
1268.07	3.8	337	0.9	291	8.4	8.6	B
1268.57	10.7	292	0.9	290	8.5	8.6	A
1269.07	11.7	313	0.9	290	8.5	8.6	A
1269.57	9.1	311	0.9	289	8.5	8.6	B
1270.07	5.9	296	0.9	288	8.4	8.5	A
1270.58	4.5	311	0.9	289	8.3	8.4	A
1272.58	11.3	303	0.9	281	8.1	8.2	B

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
1273.58	26.5	16	0.8	281	8.2	8.2	B
1274.58	3.7	294	0.7	284	8.4	8.3	A
1275.08	18.5	327	0.7	284	8.3	8.3	B
1284.09	3.6	305	1.0	287	8.2	8.2	B
1284.59	14.7	116	1.0	287	8.2	8.2	B
1286.09	2.6	178	1.1	291	8.3	8.2	B
1288.09	3.1	210	1.0	292	8.3	8.2	A
1288.59	2.1	239	1.0	289	8.3	8.2	A
1289.09	4.2	256	1.0	287	8.3	8.2	A
1296.59	NO CORR		1.1	283	8.1	8.2	
1297.10	38.5	157	1.2	286	8.2	8.2	B
1300.10	13.2	165	1.2	288	8.0	8.2	B
1303.60	5.5	349	1.0	287	7.8	6.7	A
1304.10	6.5	331	1.0	287	7.9	6.7	A
1304.60	20.2	17	1.0	289	7.8	6.8	B
1305.10	14.7	351	0.9	291	7.8	6.8	A
1305.60	6.3	281	0.8	291	7.8	7.0	B
1306.10	6.3	250	0.8	286	6.9	6.0	A
1306.60	10.3	228	0.8	279	7.2	6.4	A
1307.10	17.9	284	0.9	279	6.6	5.8	B
1307.60	18.6	296	0.9	284	7.0	6.4	B
1308.10	10.8	25	0.9	283	7.1	6.7	A
1308.60	14.5	309	0.9	280	7.5	7.3	A
1309.10	23.7	318	0.9	280	7.0	7.5	B
1310.11	7.8	22	0.9	291	7.2	7.0	B
1311.11	6.2	281	0.9	290	7.4	6.9	B
1312.11	16.2	327	0.9	289	6.6	6.9	B
1312.61	6.8	9	0.9	293	6.0	6.3	A
1313.11	4.5	19	0.9	295	5.7	5.9	A
1313.61	0.6	100	0.9	296	5.8	5.8	A

BEACH PETROLEUM N.L.   WILSON # 1   SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 864.77	6.7	88.	0.8	67.	8.3	8.5	B
BOTTOM 1313.61	0.6	100.	0.9	296.	5.8	5.8	A

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
864- 900		1		3		3	2	6	7	15	7		1
900- 950		1					1	3	8	25	4	2	1
950- 1000		2		1		1		1	3	16	53	8	
1000- 1050		1	1						2	5	7	9	4
1050- 1100									1	3	3	26	10
1100- 1150		4		1				1	1	1	4	11	6
1150- 1200			1	1	1	1	2	3	1	5	3	4	3
1200- 1250		6	4		3	1	2	5	3	1		3	5
1250- 1300		3	7	7	3	3			2	1		1	1
1300- 1313			1	2		2	3			1			

DIP FREQUENCY BY AZIMUTH
10-90 DEGREE DIPS

PRESENTATION	210		240		W		300		330		N		30		60		E		120		150		S		210
864- 900								1								2		2				2			
900- 950										1						3		16		14		9			
950- 1000																									
1000- 1050		1																							
1050- 1100																1									
1100- 1150		1																							
1150- 1200		2				2		1						1				1		1					
1200- 1250		1		4								1		2						2				3	
1250- 1300				4		1		3				1						1				1			
1300- 1313		1				2		3		1		2										1			

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	30		60		E		120		150		S		210		240		W		300		330		N		30
864- 900		6		7		15		7				1		1				3				3		2	
900- 950		3		8		25		4		2		1		1										1	
950- 1000		1		3		16		53		8				2				1				1			
1000- 1050				2		5		7		9		4		1		1									
1050- 1100				1		3		3		26		10													
1100- 1150		1		1		1		4		11		6		4				1							
1150- 1200		3		1		5		3		4		3				1		1		1		1		2	
1200- 1250		5		3		1				3		5		6		4				3		1		2	
1250- 1300				2		1				1		1		3		7		7		3		3			
1300- 1313						1										1		2				2		3	

DIP FREQUENCY BY AZIMUTH
0-90 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
864- 900	6	9	17	7	2	1	1		3	1	3	2	
900- 950	3	11	41	18	11	1	1				1	1	
950- 1000	1	3	16	53	8		2		1		1		
1000- 1050		2	5	7	9	4	2	1					
1050- 1100		2	3	3	26	10							
1100- 1150	1	1	1	4	11	6	5		1				
1150- 1200	4	1	6	4	4	3	2	1	3	2	1	2	
1200- 1250	7	3	1	2	3	8	7	8		3	1	3	
1250- 1300		2	2		2	1	3	11	8	6	3	1	
1300- 1313			1		1		1	1	4	3	3	5	

BEACH PETROLEUM N.L.   WILSON # 1   SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 864.77	6.7	88.	0.8	67.	8.3	8.5	B
BOTTOM 1313.61	0.6	100.	0.9	296.	5.8	5.8	A

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* SCHLUMBERGER *
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STRATIGRAPHIC

HIGH RESOLUTION

DIPMETER

MSD COMPUTATIONS

COMPANY	:	BEACH PETROLEUM N.L.
WELL	:	WILSON # 1
FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
RUN	:	1
DATE LOGGED	:	24 - JUL - 87
REFERENCE	:	170011

1M X 50% - 35 DEG X 2

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
749.52	3.7	14	0.4	0	8.1	8.4	B
750.03	7.0	11	0.4	0	8.1	8.3	A
750.53	8.7	15	0.3	0	8.1	8.3	A
751.03	8.8	8	0.3	0	8.1	8.3	A
751.53	4.2	114	0.3	0	8.1	8.3	A
752.03	17.0	150	0.3	0	8.1	8.2	B
752.53	4.2	182	0.3	0	8.1	8.2	B
753.03	2.7	331	0.3	0	8.1	8.2	A
753.53	3.9	327	0.3	0	8.1	8.2	A
754.03	6.0	255	0.3	0	8.1	8.2	B
755.03	5.5	24	0.3	0	8.1	8.2	A
756.03	6.8	330	0.3	0	8.1	8.2	B
756.53	0.3	178	0.3	0	8.1	8.2	A
757.03	1.7	126	0.3	0	8.1	8.2	A
757.53	3.1	103	0.3	0	8.1	8.2	A
758.03	7.1	68	0.3	0	8.2	8.2	A
758.53	7.4	71	0.3	0	8.2	8.2	B
759.53	9.4	69	0.3	0	8.2	8.2	B
760.03	8.6	121	0.3	0	8.2	8.2	B
761.03	8.9	65	0.4	0	8.2	8.2	B
761.53	7.6	73	0.4	0	8.1	8.2	B
762.03	32.2	325	0.4	0	8.2	8.1	B
763.54	7.8	94	0.4	0	8.2	8.2	B
765.04	8.9	85	0.4	0	8.2	8.2	A
765.54	8.5	59	0.4	0	8.1	8.1	B
766.04	12.0	0	0.4	0	8.2	8.1	A
766.54	10.2	15	0.4	0	8.2	8.1	A
767.04	2.5	115	0.4	0	8.2	8.1	A
767.54	4.6	86	0.4	0	8.2	8.1	A
768.04	12.0	57	0.4	0	8.2	8.1	B
768.54	4.0	67	0.4	0	8.2	8.2	A
769.04	6.7	25	0.4	0	8.2	8.1	A
769.54	7.7	20	0.4	0	8.2	8.2	A
770.04	1.1	9	0.4	0	8.2	8.2	A
770.54	1.0	37	0.4	0	8.1	8.2	A
771.04	2.5	65	0.4	0	8.2	8.2	A
771.54	3.2	72	0.4	0	8.1	8.3	A
772.04	3.0	87	0.4	0	8.1	8.3	A
772.54	2.7	87	0.4	0	8.1	8.4	A
773.04	2.0	17	0.4	0	8.1	8.4	A

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	Q
773.54	4.6	143	0.4	0	8.4	8.6	A
774.04	5.5	144	0.4	0	8.2	8.5	A
775.04	9.4	22	0.4	0	8.3	8.5	B
775.54	8.7	30	0.4	0	8.1	8.4	A
776.04	8.1	34	0.4	0	8.2	8.4	A
776.55	8.8	33	0.4	0	8.2	8.4	A
779.55	5.5	294	0.3	0	9.2	9.5	A
780.05	4.3	302	0.3	0	9.6	9.5	A
783.05	25.3	103	0.4	0	9.5	9.3	B
784.55	26.8	71	0.4	0	9.5	9.6	B
787.55	NO CORR		0.5	0	9.6	8.8	
799.56	NO CORR		0.5	27	8.3	8.2	

BEACH PETROLEUM N.L. WILSON # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 749.52	3.7	14.	0.4	0.	8.1	8.4	B
BOTTOM 784.55	26.8	71.	0.4	0.	9.5	9.6	B

DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	210	240	W	300	330	N	30	60	E	120	150	S	210
749- 750							1						
750- 784			1	1	3	1	10	4	12	4	4	1	1

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*                           *
*  DIP FREQUENCY BY AZIMUTH *
*     10-90 DEGREE DIPS     *
*                           *
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PRESENTATION 210  240   W   300  330   N    30   60   E  120  150   S   210
------------
  749-   750
  750-   784                        1         2    1    1    1    1
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DIP FREQUENCY BY AZIMUTH
0-10 DEGREE DIPS

PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
749- 750												1	
750- 784	4	12	4	4	1	1		1	1	3	1	10	

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* * * * * * * * * * * * * * *
*                           *
*  DIP FREQUENCY BY AZIMUTH *
*     0-90 DEGREE DIPS      *
*                           *
* * * * * * * * * * * * * * *
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PRESENTATION	30	60	E	120	150	S	210	240	W	300	330	N	30
749- 750													1
750- 784		5	13	5	5	1	1		1	1	4	1	12

BEACH PETROLEUM N.L. WILSON # 1 SUMMARY

DEPTH	DIP	DIP AZM	DEV	DEV AZM	DIAM 1-3	DIAM 2-4	QUAL
TOP 749.52	3.7	14.	0.4	0.	8.1	8.4	B
BOTTOM 784.55	26.8	71.	0.4	0.	9.5	9.6	B

APPENDIX 7

APPENDIX 7

Maturation and Source Rock Analysis

WILSON NO.1

K.K. No.	Depth (m)	$\bar{R}_v max$	Range	N	Description Including Exinite Fluorescence
x7008	985 Core	0.39	0.30-0.45	31	Rare to sparse ?phytoplankton, greenish yellow to dull yellow, rare sporinite, yellow, rare resinite, greenish yellow. (Sandy siltstone. Dom abundant, V>I>E. Vitrinite abundant, inertinite common, exinite rare to sparse. Diffuse humic organic matter abundant. Pyrite abundant.)
x7009	1195 Core $\bar{R}_I$	0.38	-	1	Rare liptodetrinite, greenish yellow to dull yellow. (Sandy claystone. Dom sparse, I>E>V. Inertinite sparse, exinite and vitrinite rare. Iron oxide rare. Iron oxide rare to sparse. Pyrite common.)
x7010	1210 Core	0.57	-	1	Exinite absent. (Impure sandstone with angular quartz grains. Dom rare, V. Vitrinite rare, inertinite and exinite absent. Glauconite major, siderite abundant. Pyrite common.)
x7011	1281 Core	0.55	0.43-0.63	7	Rare phytoplankton/liptodetrinite, orange to dull orange. (Impure sandstone>claystone. Dom common, I>V>E. Inertinite common, vitrinite and exinite rare. Siderite common. Abundant micrinite in some vitrinite. Pyrite common.)
	$\bar{R}_I$	1.04	0.72-1.94	25	

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Wilson - 1   SAMPLE NO. X 7008   DEPTH 985 m   TYPE Core

FGV = First Generation Vitrinite   I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type
.10			
.11			
.12			
.13			
.14			
.15			
.16			
.17			
.18			
.19			
.20			
.21			
.22			
.23			
.24			
.25			
.26			
.27			
.28			
.29			
.30	1	↑	
.31			
.32			
.33			
.34	1		
.35	.5		
.36	1		
.37	4	FGV	
.38	2		
.39	3		
.40	7		
.41	1		
.42			
.43	3		
.44	2		
.45	1	↓	

Ro %	No. Read	Pop Rnge	Pop Type
.46			
.47			
.48			
.49			
.50			
.51			
.52			
.53			
.54			
.55			
.56			
.57			
.58			
.59			
.60			
.61			
.62			
.63			
.64			
.65			
.66			
.67			
.68			
.69			
.70			
.71			
.72			
.73			
.74			
.75			
.76			
.77			
.78			
.79			
.80			
.81			

Ro %	No. Read	Pop Rnge	Pop Type
.82			
.83			
.84			
.85			
.86			
.87			
.88			
.89			
.90			
.91			
.92			
.93			
.94			
.95			
.96			
.97			
.98			
.99			
1.00			
1.01			
1.02			
1.03			
1.04			
1.05			
1.06			
1.07			
1.08			
1.09			
1.10			
1.11			
1.12			
1.13			
1.14			
1.15			
1.16			
1.17			

Ro %	No. Read	Pop Rnge	Pop Type
1.18			
1.19			
1.20			
1.21			
1.22			
1.23			
1.24			
1.25			
1.26			
1.27			
1.28			
1.29			
1.30			
1.31			
1.32			
1.33			
1.34			
1.35			
1.36			
1.37			
1.38			
1.39			
1.40			
1.41			
1.42			
1.43			
1.44			
1.45			
1.46			
1.47			
1.48			
1.49			
1.50			
1.51			
1.52			
1.53			

Ro %	No. Read	Pop Rnge	Pop Type
1.54			
1.55			
1.56			
1.57			
1.58			
1.59			
1.60			
1.61			
1.62			
1.63			
1.64			
1.65			
1.66			
1.67			
1.68			
1.69			
1.70			
1.71			
1.72			
1.73			
1.74			
1.75			
1.76			
1.77			
1.78			
1.79			
1.80			
1.81			
1.82			
1.83			
1.84			
1.85			
1.86			
1.87			
1.88			
1.89			

Ro %	No. Read	Pop Rnge	Pop Type
1.90			
1.91			
1.92			
1.93			
1.94			
1.95			
1.96			
1.97			
1.98			
1.99			
2.00			

Organic matter Comp.(%)

Exinite	Alginite
0.1	0
Vitrinite	**Inertinite**
3.0	1.5

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Wilson-1 SAMPLE NO. X7009 DEPTH 1195m TYPE Core

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	I			1.54	I			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	I			1.22	I			1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60	I			1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90	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	I	INERTINITE		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	I			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	I	FGV		.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	2			1.14				1.50				1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp. (%)

Exinite	Alginite
<0.1	
Vitrinite	**Inertinite**
<0.1	0.2

Keiraville Konsultants Pty Ltd.

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Wilson-1 SAMPLE NO: X7010 DEPTH: 1210m TYPE: Core

FGV = First Generation Vitrinite I = Inertinite

Ro %	No. Read	Pop Rnge	Pop Type	Ro %	NO. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	NO. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type	Ro %	No. Read	Pop Rnge	Pop Type
.10				.46				.82				1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84				1.20				1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50				.86				1.22				1.58				1.94			
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88				1.24				1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54				.90				1.26				1.62				1.98			
.19				.55				.91				1.27				1.63				1.99			
.20				.56				.92				1.28				1.64				2.00			
.21				.57	1	?FGV		.93				1.29				1.65							
.22				.58				.94				1.30				1.66							
.23				.59				.95				1.31				1.67							
.24				.60				.96				1.32				1.68							
.25				.61				.97				1.33				1.69							
.26				.62				.98				1.34				1.70							
.27				.63				.99				1.35				1.71							
.28				.64				1.00				1.36				1.72							
.29				.65				1.01				1.37				1.73							
.30				.66				1.02				1.38				1.74							
.31				.67				1.03				1.39				1.75							
.32				.68				1.04				1.40				1.76							
.33				.69				1.05				1.41				1.77							
.34				.70				1.06				1.42				1.78							
.35				.71				1.07				1.43				1.79							
.36				.72				1.08				1.44				1.80							
.37				.73				1.09				1.45				1.81							
.38				.74				1.10				1.46				1.82							
.39				.75				1.11				1.47				1.83							
.40				.76				1.12				1.48				1.84							
.41				.77				1.13				1.49				1.85							
.42				.78				1.14				1.50				1.86							
.43				.79				1.15				1.51				1.87							
.44				.80				1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp.(%)

Exinite	Alginite
0	0
Vitrinite	**Inertinite**
<0.1	0

VITRINITE REFLECTANCE WORKSHEET

WELL NAME: Wilson - 1 SAMPLE NO. X7011 DEPTH 1281m TYPE core

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			1.18				1.54				1.90			
.11				.47				.83				1.19				1.55				1.91			
.12				.48				.84	3			1.20	1			1.56				1.92			
.13				.49				.85				1.21				1.57				1.93			
.14				.50	1			.86				1.22				1.58				1.94	1		
.15				.51				.87				1.23				1.59				1.95			
.16				.52				.88	2			1.24	1			1.60				1.96			
.17				.53				.89				1.25				1.61				1.97			
.18				.54	1			.90	3			1.26				1.62				1.98			
.19				.55		FGV		.91				1.27				1.63				1.99			
.20				.56	1			.92	1			1.28				1.64				2.00			
.21				.57				.93				1.29				1.65							
.22				.58	1			.94	1			1.30				1.66							
.23				.59	1			.95				1.31				1.67							
.24				.60				.96	1			1.32				1.68							
.25				.61				.97				1.33				1.69							
.26				.62				.98	1			1.34	2			1.70							
.27				.63	1			.99				1.35				1.71							
.28				.64				1.00	1			1.36	1			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			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		INERTINITE		1.12				1.48				1.84							
.41				.77				1.13				1.49				1.85							
.42				.78	1			1.14	1			1.50	1			1.86							
.43	1			.79				1.15				1.51				1.87							
.44				.80	1			1.16				1.52				1.88							
.45				.81				1.17				1.53				1.89							

Organic matter Comp. (%)

Exinite	Alginite
<0.1	0
Vitrinite	**Inertinite**
<0.1	1.5

WILSON NO. 1

KK No.	Depth (m)	TOC
x7008	985	1.99%
x7009	1195	0.53%
x7010	1210	0.22%
x7011	1281	0.75%

APPENDIX 8

APPENDIX 8

Palynology

PALYNOLOGY OF BEACH WILSON-1,

OTWAY BASIN, AUSTRALIA

BY

ROGER MORGAN

FOR BEACH PETROLEUM SEPTEMBER, 1987.

PALYNOLOGY OF BEACH WILSON-1, OTWAY BASIN, AUSTRALIA

BY

ROGER MORGAN

CONTENTS PAGE

I SUMMARY

1089m (swc) - 1173m (swc) : upper M. diversus Zone : Early Eocene : Marginally marine : immature.

1194m (swc) : indeterminate : nearly barren.

1195m (swc) - 1223.5m (swc) : upper L. balmei Zone (E. crassitabulata Dinoflagellate Zone) : Paleocene : immature offshore marine.

1237m (swc) : lower L. balmei (T. evittii Dinoflagellate Zone : Paleocene : offshore marine : marginally mature.

1274m (swc) - 1281.5m (swc) : very lean - presumed Tertiary.

1285m (swc) - 1308.5m (swc) : T.longus Zone : Maastrichtian : marginally marine at 1308.5m, marine (M.druggii Dinoflagellate Zone) at 1285m : marginally mature.

II INTRODUCTION

Eleven sidewall cores were examined from Beach Wilson-1 for biostratigraphy and spore colour. Yields were generally good. The samples are assigned to four palynological zones on the basis of the supporting data presented here as Appendix I. The Cretaceous zonation used is basically that of Helby, Morgan and Partridge (1987), which draws an all previous work. The Tertiary zonation is that of Stover and Partridge (1973) and Stover and Evans (1973) as modified by Partridge (1976).

Maturity data was generated on the Thermal Alteration Index (TAI) Scale of Staplin and plotted on Figure 2 as a Maturity Profile. The oil and gas windows on Figure 2 follow the general consensus of geochemical literature. The oil window corresponds to spore colours of light-mid brown (2.7) to dark brown (3.6) and would correspond to Vitrinite Reflectances of 0.6% to 1.3%. Geochemists, however, have not reached universal agreement on these values and argue variations based on kerogen type, basin type and basin history. The maturity interpretation is thus open to reinterpretation using the basic colour observations as raw data. However, the range of interpretation philosophies is not great, and would probably not move the oil window by more than 200 metres. Instrumental geochemistry offers quantitative and repeatable raw data.

	AGE		SPORE - POLLEN ZONES	DINOFLAGELLATE ZONES
Early Tertiary	Early Oligocene		P. tuberculatus	
	Late Eocene		upper N. asperus	P. comatum
			middle N. asperus	V. extensa
	Middle Eocene		lower N. asperus	D. heterophlycta W. echinosuturata
			P. asperopolus	W. edwardsii W. thompsonae
	Early Eocene		upper M. diversus	W. ornata W. waipawaensis
			middle M. diversus	
			lower M. diversus	W. hyperacantha
	Paleocene		upper L. balmei	A. homomorpha
			lower L. balmei	E. crassitabulata T. evittii
Late Cretaceous	Maastrichtian		T. longus	M. druggii
	Campanian		T. lillei	I.korojonense
			N. senectus	X. australis
	Santonian		T. pachyexinus	N. aceras I. cretaceum O. porifera
	Coniacian		C. triplex	
	Turonian			C. striatoconus
	Cenomanian		A. distocarinatus	P. infusorioides
Early Cretaceous	Albian	Late	P. pannosus	
		Middle	upper C. paradoxa	
		Early	lower C. paradoxa	
			C. striatus	
	Aptian		upper C. hughesi	
			lower C. hughesi	
	Barremian		F. wonthaggiensis	
	Hauterivian			
	Valanginian		upper C. australiensis	
	Berriasian		lower C. australiensis	
Juras.	Tithonian		R. watherooensis	

FIGURE 1 ZONATION FRAMEWORK

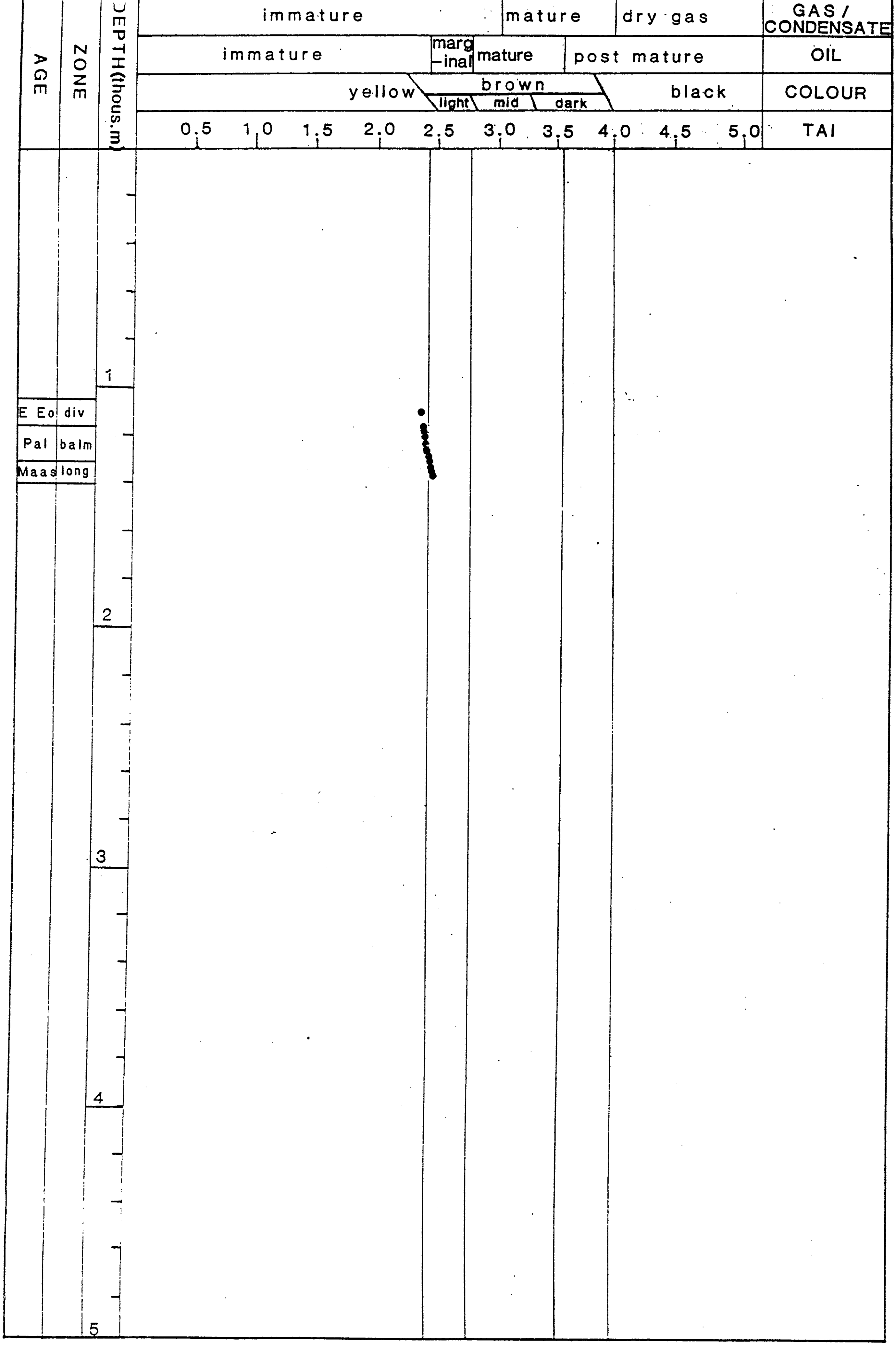

FIGURE 2 MATURITY PROFILE, WILSON-1

III PALYNOSTRATIGRAPHY

A. 1089m (swc) - 1173m (swc) : upper M.diversus Zone

Assignment to the upper Malvacipollis diversus Zone is indicated at the top by the absence of younger indicators and at the base by oldest Proteacidites pachypolus. Assemblages are dominated by Proteacidites spp. and Cyathidites spp., with minor Cretaceous and Permian reworking. The presence of Cyathidites gigantis, Proteacidites grandis, P. kopiensis, P. ornatus, Spinozonocolpites prominatus and consistent Malvacipollis diversus offer general support to the assignment.

The very scarce dinoflagellates include Apectodinium homomorphum, Deflandrea obliquipes and Muratodinium fimbriatum and are consistent with the spore-pollen assignment. The assemblages lack the key taxa to enable dinoflagellate zonal assignment.

Marginally marine environments are indicated by the abundant and diverse spores and pollen, and only very scarce low diversity dinoflagellates. The presence of the freshwater alga Botryococcus indicates some freshwater influence.

Spore colours of yellow to yellow/brown indicate immaturity for hydrocarbon generation.

B. 1194m (swc) : indeterminate

The yield from this sample was too lean to enable zonal assignment. The taxa observed may therfore be partly or largely mud contamination. The presence of Proteacidites grandis and P. incurvatus however, suggests an upper L.balmei or younger assignment.

Amongst the very few dinoflagellates seen, Apectodinium homomorphum suggests assignment to the A. homomorphum or younger zones (equivalent to the upper L. balmer or younger spore-pollen assignment). Manumiella coronata is reworked from the Cretaceous.

Marine environments are suggested by the presence of dinoflagellates, although too few were seen to accurately assess their relative abundance.

Yellow to yellow/brown spore colours indicate immaturity for hydrocarbon generation.

C. 1195m (swc) - 1223.5m (swc) : upper L. balmei Zone (E. crassitabulata Dinoflagellate Zone).
Assignment to the upper Lygistepollenites balmei Zone is indicated at the top by youngest Gambierina rudata, supported by dinoflagellate evidence, and at the base by oldest Proteacidites grandis and P. incurvatus. However, the shallowest sample (1195m swc) does contain some anomalies such as Anacolosidites acutullus (suggesting a M. diversus Zone assignment) as well as Tricolpites longus and T. sabulosus (suggesting a late Cretaceous age). It is possible that 1195m could belong to the M. diversus Zone with significant reworking, but an upper L. balmei assignment is considered more likely. The other samples (1215.5 and 1223.5m) contain common L. balmei indicators and lack any evidence of caving or significant reworking, and their assignment is more confident.

Dinoflagellates are relatively common but are mostly longranging taxa. Eisenackia crassitabulata occurs at 1195m and 1223.5m without older indicators, and suggests assignment of the entire interval to the E. crassitabulata Zone. If, however, the species is reworked at 1195m, as discussed above, only the sample at 1223.5m may belong to the Zone.

Offshore marine environments are indicated by the common dinoflagellates (50% of palynomorphs) and their moderate diversity.

Yellow to yellow/brown spore colours indicate immaturity for hydrocarbon generation.

D. 1237m (swc) : lower L.balmei Zone (T. evittii Dinoflagellate Zone)

Assignment to the lower Lygistepollinites balmei Zone is indicated by youngest L. balmei without older or younger indicators, and confirmed by the dinoflagellates. Assemblages are lean, with Gleicheniidites common.

Dinoflagellates are common but not very diverse. The sample contains dominant Palaeoperidinium pyrophorum, seen in the Gippsland Basin as typical of the basal Paleocene T. evittii Dinoflagellate Zone, and worldwide as a Danian or older feature.

Marine environments, possibly offshore, are indicated by the high content (90%) but low diversity dinoflagellates and the rare low diversity spores and pollen.

Spore colours are yellow/brown, indicating marginal maturity for oil, and immaturity for gas condensate.

E. 1274m (swc) - 1281.5m (swc) : very lean - presumed Tertiary.

These samples were very lean, partly due to previous sampling by AMDEL resulting in small rock volumes being available. The sample at 1274m was almost barren, and lacks any age diagnostic species. The sample at 1281.5m is very lean and contains some obvious caving. However, the presence of G. rudata, L. balmei and H. harrisii without older indicators suggests L. balmei Zone assignment. The non-descript dinoflagellates include frequent Alisocysta margarita, E. crassitabulata and Deflandrea spp., but lack any Manumiella spp. usually common in the Cretaceous. The samples are therefore probably Tertiary, but assignment is not confident.

The presence of frequent dinoflagellates with moderate diversity, suggests offshore marine environments. At 1281.5m (swc), mid to dark brown spore colours suggest maturity for oil, but this is considered anomalous and caused by some factors related to the lithology.

F. 1285m (swc) - 1308.5m (swc) : T.longus Zone (1285m M.druggii Dinoflagellate Zone)

Assignment to the Tricolpites longus Zone is indicated at the top by youngest Grapnelispora evansii, Tricolpites waiparaensis and Triporopollenites sectilis, and confirmed by the dinoflagellates. At the base, assignment is indicated by oldest Tetracolporites verrucosus, Tripunctisporis punctatus and Tricolpites longus. Assemblages are dominated by Proteacidites spp., with subordinate Phyllocladidites mawsonii.

At 1285m, common Isabelidinium pellucidum with some Manumiella druggii and M. coronata indicate assignment to the M. druggii Dinoflagellate Zone. At 1308.5m, very rare dinoflagellates include I. pellucidum, consistent with the spore pollen assignment, but not sufficient for dinoflagellate zone assignment.

Marine environments are indicated at 1285m by the very common (90%) dinoflagellates, although diversity is low. Marginal marine environments are indicated at 1308.5m by the very rare low diversity dinoflagellates.

Yellow/brown spore colours indicate marginal maturity for oil, but immaturity for gas/condensate.

IV CONCLUSIONS

A. Log picks are a little unclear due to non-typical lithologies encountered, including a sandy section with shows at 1192.5m - 1220.5m. The usual situation is for a Pember Formation (upper L. balmei Zone at the base) to conformably overlie a Pebble Point Formation (upper L. balmei and correlative E. crassitabulata Dinoflagellate Zone) which in turn unconformably overlies a Curdies or Paaratte Formation (T. longus and correlative M. druggii Dinoflagellate Zone).

This well fits this pattern if the Pebble Point is taken to be 1192.5m to 1283m (that is, if the sandy section is seen as a facies variant of the normal Pebble Point Formation). However, if the sample at 1195m is assigned to the M. diversus Zone, a top Pebble Point pick at 1220.5m would fit better. The PEF log indicates a top Pebble Point at 1192.5m. In either case, the presence of abundant P. pyrophorum at 1237m (T. evittii Dinoflagellate Zone) is unusual in the Otway Basin, and may suggest that Pebble Point deposition at this locality predates deposition elsewhere. To my knowledge , this feature and Zone has not previously been seen west of the Gippsland Basin.

B. Environmental data are consistent with regional knowledge, with the strongest marine influence in the latest Cretaceous and Paleocene. The Eocene Dilwyn Formation is much less marine.

C. Maturity data indicate that the base of the section is only marginally mature for oil. Deeper burial offstructure and the undrilled section could have provided suitable mature source rocks.

V REFERENCES

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APPENDIX I

PALYNOMORPH OCCURRENCE DATA

WILSON #1

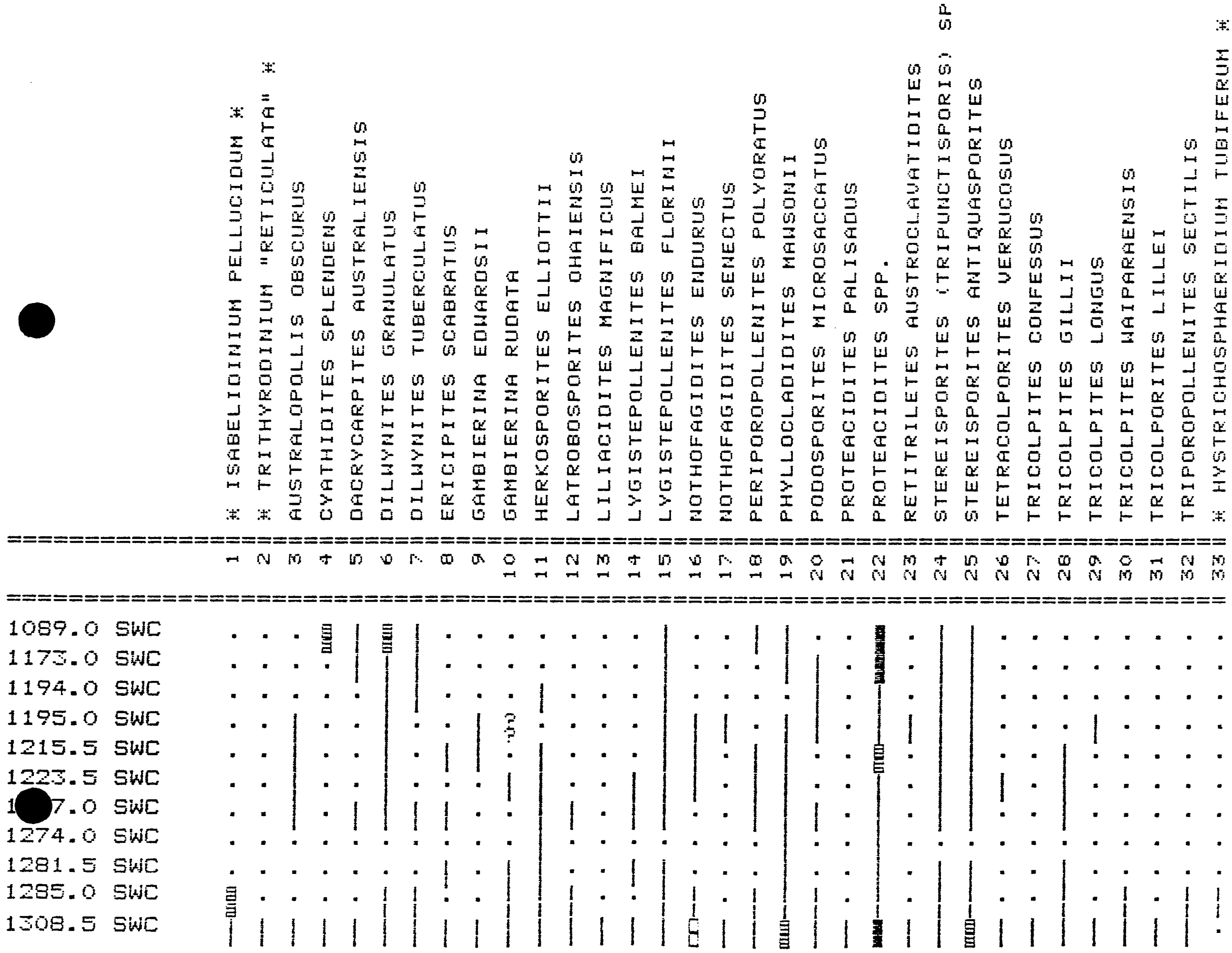
DESCRIPTION:

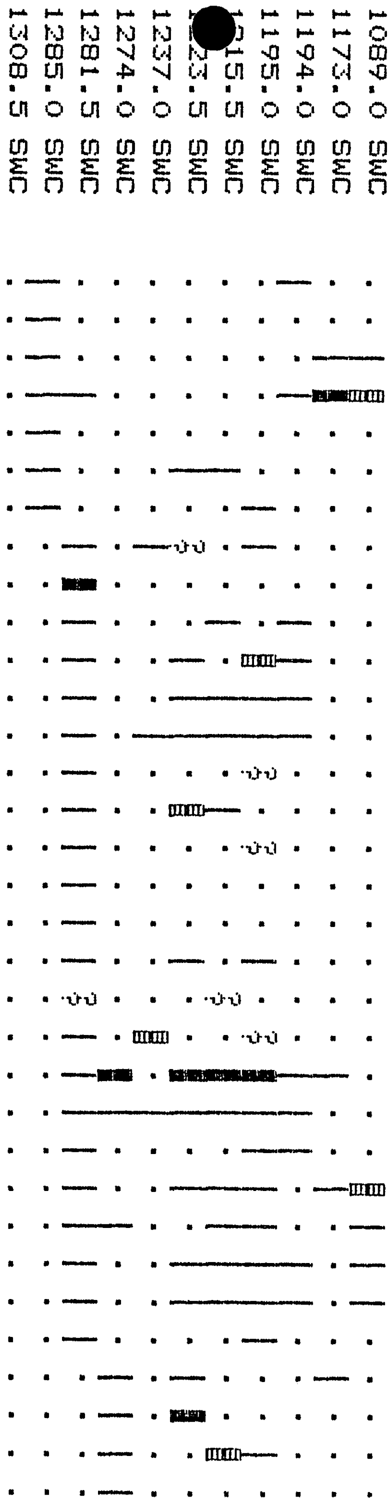
PALYNOLOGICAL INTERPRETATION OF DATA BY ROGER MORGAN - SEPTEMBER 1987.
ALL SAMPLE DEPTHS ARE IN METRES.
** INDICATES DINOFLAGELLATE **

CHECKLIST OF GRAPHIC ABUNDANCE BY LOWEST APPEARANCE

= Abundant
= Common
= Few
= Rare
= Very Rare

? = Questionably Present
. = Not Present





34 * MANUMIELLA CORONATA *
35 * MANUMIELLA DRUGGII *
36 CYATHIDITES GIGANTIS
37 CYATHIDITES SPP.
38 GRAPNELISPORA EVANSII
39 PHYLLOCLADIDITES VERRUCOSUS
40 TRICOLPITES SABULOSUS
41 * ACHOMOSPHAERA SEPTATA *
42 * ALISOCYATA CIRCUMTABULATA *
43 * ALISOCYSTA MARGARITA *
44 * AREOLIGERA SENONENSIS *
45 * CEREBROCYSTA SP. *
46 * DEFLANDERA DARTMOORIA *
47 * DEFLANDREA HETEROPHLYCTA *
48 * DEFLANDREA MEDCALFII *
49 * DEFLANDREA PHOSPHORITICA *
50 * DEFLANDREA SPECIOSUS *
51 * DEFLANDREA STRIATA *
52 * EISENACKIA CRASSITABULATA *
53 * IMPAGIDINIUM DISPERTITUM *
54 * SPINIDINIUM ESSOI *
55 * SPINIFERITES RAMOSUS *
56 CLAVIFERA TRIPLEX
57 FALCISPORITES SIMILIS
58 HALORAGACIDITES HARRISII
59 LATROBOSPORITES CRASSUS
60 NOTHOFAGIDITES BRACHYSPINULOSUS
61 PROTEACIDITES GRANDIS
62 PROTEACIDITES TENUIEXINUS
63 * CORDOSPAERIDIUM FIBROSPINOSUM *
64 * CORDOSPHAERIDIUM MULTISPINOSUM *
65 * DEFLANDREA DILWYNENSIS *
66 MICROCACHRYIDITES ANTARCTICUS

1089.0 SWC
1173.0 SWC
1194.0 SWC
1195.0 SWC
1215.5 SWC
1223.5 SWC
1237.0 SWC
1274.0 SWC
1281.5 SWC
1285.0 SWC
1308.5 SWC

67	* BOTRYOCOCCUS *
68	* PALAEOPERIDINIUM PYROPHORUM *
69	* PARALECANIELLA INDENTATA *
70	GLEICHENIIDITES
71	PROTEACIDITES ANNULARIS
72	STEREISPORITES REGIUM
73	TRICOLPITES PHILLIPSII
74	* ACHOMOSPHAERA CRASSIPELLA *
75	* APECTODINIUM HOMOMORPHA (SH.) *
76	* CORDOSPAERIDIUM INODES *
77	* DYPHES COLLIGERUM *
78	* GLAPHYROCYSTA RETIINTEXTA *
79	* PHTHANOPERIDINIUM ECHINATUM *
80	MALVACIPOLLIS DIVERSUS
81	MALVACIPOLLIS SUBTILIS
82	PEROTRILETES MORGANII
83	PROTEACIDITES INCURVATUS
84	* BALTISPHAERIDIUM NANUM *
85	* DAPSILIDIUM PASTIELSII *
86	* DEFLANDREA CF. EXTENSA *
87	* OPERCULODINIUM CENTROCARPUM *
88	CAMEROZONOSPORITES BULLATUS
89	CICATRICOSISPORITES AUSTRALIENSIS
90	PHYLLOCLADIDITES RETICULOSACCATUS
91	TETRACOLPORITES OAMARUENSIS
92	TRIPOROPOLLENITES AMBIGUUS
93	* CORRUDINIUM SP. *
94	* PALAEOCYSTODINIUM GOLZOWENSE *
95	* THALASSIPHORA PELIGICA *
96	*MICRHYSTRIDIUM*
97	ANACOLOSIDITES ACUTULLUS
98	PERIPOROPOLLENITES DEMARCATUS
99	TRICOLPITES APOXYEXINUS

1308.5 SWC	1285.0 SWC	1281.5 SWC	1274.0 SWC	1237.0 SWC	1223.5 SWC	1215.5 SWC	1195.0 SWC	1194.0 SWC	1173.0 SWC	1089.0 SWC		
•	•	•	•	•	•	•	•	—	•	•	100	* GLAPHYROCYSTA DIVERICATUM *
•	•	•	•	•	•	•	•	•	—	•	101	* APECTODINIUM HOMOMORPHA (L.) *
•	•	•	•	•	•	•	•	•	—	—	102	* DEFLANDREA OBLIQUIPES *
•	•	•	•	•	•	•	•	•	—	•	103	* FIBROCYSTA BIPOLARE *
•	•	•	•	•	•	•	•	•	—	•	104	* FIBROCYSTA VECTENSE *
•	•	•	•	•	•	•	•	•	—	—	105	* MURATODINIUM FIMBRIATUM *
•	•	•	•	•	•	•	•	•	—	•	106	CONVOLUTISPORA SPP.
•	•	•	•	•	•	•	•	•	—	•	107	INTRATRIPOROPOLLENITES NOTABILIS
•	•	•	•	•	•	•	•	•	—	uu	108	PROTEACIDITES PACHYPOLUS
•	•	•	•	•	•	•	•	•	—	—	109	SPINIZONOCOLPITES PROMINATUS
•	•	•	•	•	•	•	•	•	•	—	110	CUPANIEIDITES ORTHOTEICHUS
•	•	•	•	•	•	•	•	•	•	—	111	FOVEOTRILETES SPP.
•	•	•	•	•	•	•	•	•	•	—	112	PROTEACIDITES BUN GRANDIS
•	•	•	•	•	•	•	•	•	•	—	113	PROTEACIDITES KOPIENSIS
•	•	•	•	•	•	•	•	•	•	—	114	PROTEACIDITES ORNATUS
•	•	•	•	•	•	•	•	•	•	—	115	PROTEACIDITES TUBERCULIFORMIS
•	•	•	•	•	•	•	•	•	•	—	116	TRICOLPITES SPP.
•	•	•	•	•	•	•	•	•	•	—	117	TRICOLPORITES SPP.
•	•	•	•	•	•	•	•	•	•	—	118	TRIPOROLETES RETICULATUS

SPECIES LOCATION INDEX

Index numbers are the columns in which species appear.

INDEX NUMBER	SPECIES
74	* ACHOMOSPHAERA CRASSIPELLA *
41	* ACHOMOSPHAERA SEPTATA *
42	* ALISOCYATA CIRCUMTABULATA *
43	* ALISOCYSTA MARGARITA *
101	* APECTODINIUM HOMOMORPHA (L.) *
75	* APECTODINIUM HOMOMORPHA (SH.) *
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47	* DEFLANDREA HETEROPHLYCTA *
48	* DEFLANDREA MEDCALFII *
102	* DEFLANDREA OBLIQUIPES *
49	* DEFLANDREA PHOSPHORITICA *
50	* DEFLANDREA SPECIOSUS *
51	* DEFLANDREA STRIATA *
77	* DYPHES COLLIGERUM *
52	* EISENACKIA CRASSITABULATA *
103	* FIBROCYSTA BIPOLARE *
104	* FIBROCYSTA VECTENSE *
100	* GLAPHYROCYSTA DIVERICATUM *
78	* GLAPHYROCYSTA RETIINTEXTA *
33	* HYSTRICHOSPHAERIDIUM TUBIFERUM *
53	* IMPAGIDINIUM DISPERTITUM *
1	* ISABELIDINIUM PELLUCIDUM *
34	* MANUMIELLA CORONATA *
35	* MANUMIELLA DRUGGII *
105	* MURATODINIUM FIMBRIATUM *
87	* OPERCULODINIUM CENTROCARPUM *
94	* PALAEOCYSTODINIUM GOLZOWENSE *
68	* PALAEOPERIDINIUM PYROPHORUM *
69	* PARALECANIELLA INDENTATA *
79	* PHTHANOPERIDINIUM ECHINATUM *
54	* SPINIDINIUM ESSOI *

55	* SPINIFERITES RAMOSUS *
95	* THALASSIPHORA PELIGICA *
2	* TRITHYRODINIUM "RETICULATA" *
96	*MICRHYSTRIDIUM*
97	ANACOLOSIDITES ACUTULLUS
3	AUSTRALOPOLLIS OBSCURUS
88	CAMEROZONOSPORITES BULLATUS
89	CICATRICOSISPORITES AUSTRALIENSIS
56	CLAVIFERA TRIPLEX
106	CONVOLUTISPORA SPP.
110	CUPANIEIDITES ORTHOTEICHUS
36	CYATHIDITES GIGANTIS
4	CYATHIDITES SPLENDENS
37	CYATHIDITES SPP.
5	DACRYCARPITES AUSTRALIENSIS
6	DILWYNITES GRANULATUS
7	DILWYNITES TUBERCULATUS
8	ERICIPITES SCABRATUS
57	FALCISPORITES SIMILIS
111	FOVEOTRILETES SPP.
9	GAMBIERINA EDWARDSII
10	GAMBIERINA RUDATA
70	GLEICHENIIDITES
38	GRAPNELISPORA EVANSII
58	HALORAGACIDITES HARRISII
11	HERKOSPORITES ELLIOTTII
107	INTRATRIPOROPOLLENITES NOTABILIS
59	LATROBOSPORITES CRASSUS
12	LATROBOSPORITES OHAIENSIS
13	LILIACIDITES MAGNIFICUS
14	LYGISTEPOLLENITES BALMEI
15	LYGISTEPOLLENITES FLORINII
80	MALVACIPOLLIS DIVERSUS
81	MALVACIPOLLIS SUBTILIS
66	MICROCACHRYIDITES ANTARCTICUS
60	NOTHOFAGIDITES BRACHYSPINULOSUS
16	NOTHOFAGIDITES ENDURUS
17	NOTHOFAGIDITES SENECTUS
98	PERIPOROPOLLENITES DEMARCATUS
18	PERIPOROPOLLENITES POLYORATUS
82	PEROTRILETES MORGANII
19	PHYLLOCLADIDITES MAWSONII
90	PHYLLOCLADIDITES RETICULOSACCATUS
39	PHYLLOCLADIDITES VERRUCOSUS
20	PODOSPORITES MICROSACCATUS
71	PROTEACIDITES ANNULARIS
112	PROTEACIDITES BUN GRANDIS
61	PROTEACIDITES GRANDIS

83	PROTEACIDITES INCURVATUS
113	PROTEACIDITES KOPIENSIS
114	PROTEACIDITES ORNATUS
108	PROTEACIDITES PACHYPOLUS
21	PROTEACIDITES PALISADUS
22	PROTEACIDITES SPP.
62	PROTEACIDITES TENUIEXINUS
115	PROTEACIDITES TUBERCULIFORMIS
23	RETITRILETES AUSTROCLAVATIDITES
109	SPINIZONOCOLPITES PROMINATUS
24	STEREISPORITES (TRIPUNCTISPORIS) SPP.
25	STEREISPORITES ANTIQUASPORITES
72	STEREISPORITES REGIUM
91	TETRACOLPORITES OAMARUENSIS
26	TETRACOLPORITES VERRUCOSUS
99	TRICOLPITES APOXYEXINUS
27	TRICOLPITES CONFESSUS
28	TRICOLPITES GILLII
29	TRICOLPITES LONGUS
73	TRICOLPITES PHILLIPSII
40	TRICOLPITES SABULOSUS
116	TRICOLPITES SPP.
30	TRICOLPITES WAIPARAENSIS
31	TRICOLPORITES LILLEI
117	TRICOLPORITES SPP.
118	TRIPOROLETES RETICULATUS
92	TRIPOROPOLLENITES AMBIGUUS
32	TRIPOROPOLLENITES SECTILIS

APPENDIX 9

APPENDIX 9

Petrology

1. PETROGRAPHY

Sample: Wilson-1, SWC 7, 274 m; TSC49202

Rock Name:
Argillaceous sandstone

Thin Section:
An optical estimate of the constituents gives the following:

Constituent	%
Quartz and quartzite	80
Lithic fragments	Trace
Muscovite	Rare
Carbonate	1-2
Brown matrix	15-20

The sandstone contains a significant proportion of detrital grains 1-2 mm in size as well as abundant material in the 0.15-0.3 mm size range and hence it is poorly sorted. Larger grains tend to be equant and rounded whereas smaller grains are round to sub-angular. Common or plutonic quartz is by far the most abundant grain type but there are polycrystalline quartzite and a few coarse granular quartz aggregates. No feldspar was seen but there are rare, small lithic clasts (? of volcanic origin) and one grain of muscovite was noted.

In the plane of the thin section the detrital grains are not in contact but are separated by a pervasive brown matrix which, in the better-preserved parts of the section, fills the intergranular space entirely. It is possible that this material is drilling mud but petrographically it is not inconsistent with a smectite-rich muddy matrix, or an iron-rich phyllosilicate.

Carbonate is a diagenetic phase which now forms well-developed, clear crystals up to 0.8 mm in size. The mineral has a rather patchy distribution since many fields-of-view contain none whereas in one place in the thin section, there is a polycrystalline aggregate of carbonate crystals 1.5 mm in overall size.

In brief, this is a chemically mature but ill-sorted sandstone with an abundant muddy matrix and a little authigenic carbonate. Porosity and permeability will have been occluded by the presence of the matrix.

Sample: Wilson-1, SWC 21, 1194 m; TSC49207

Rock Name:
Sideritic sandstone (?Sandy limestone)

Thin Section:
An optical estimate of the constituents gives the following:

Constituent	%
Quartz and quartzite	50
Feldspar	1
Carbonate	45
Clay	5

This is an unusual sandstone characterised by the abundance of fine-grained carbonate 'cement'.

The detrital grains of quartz and feldspar are ill-sorted; many are 0.3 to 1.5 mm in size and are equant and well-rounded but there is a minor amount of fine-sand grains which, although equant, tend to be sub-angular (? as a result of corrosion by carbonate). There are a few fairly fresh microcline grains but plutonic quartz is the most abundant type; polycrystalline granoblastic quartz is a rare detrital lithology.

Carbonate forms small crystals in a dense aggregate which comprises about half of the volume of the rock; over most of the thin section, there is simply a monomineralic mosaic of carbonate between the detrital grains. The average crystal size is not more than 0.1 mm. Elsewhere there is clearer and coarser-grained carbonate (?dolomite) in lenticles and, rarely, annular structures. Within the carbonate are patches of brown, indeterminate phyllosilicate. Most often this is present in spherular, concretionary structures around a central core of quartz. Sometimes there is a layer of carbonate within such structures. It is not easy to interpret the origin of the carbonate in this rock but the wide separation of the silicate clasts indicates either that a pre-existing detrital phase has been completely removed and subsequently replaced by diagenetic carbonate cement or that there were carbonate clasts which have recrystallised to yield the abundant carbonate minerals now observed. A third possibility is that the rock may be better viewed as a carbonate with an abundant terrigenous component, i.e. that the depositional environment was such that carbonate(s) precipitated directly. In petrographic terms, and given the extent to which the carbonates could be modified during diagenesis, there are fewer problems with this interpretation.

<u>Sample: Wilson-1, SWC 19, 1197 mm; TSC49206</u>

Rock Name:
<u>Sideritic sandstone</u>

Thin Section:
An optical estimate of the constituents gives the following:

Constituent	%
Quartz and quartzite	60-65
Feldspar	1
Carbonate	30-35
Clay	5

In most respects this sample is similar to that from 1194 m, described above.

The rock is ill-sorted and particularly shows a skewed grain size distribution with a tail towards the finer sizes; many grains are well rounded quartz and quartzite 0.5-2.0 mm in size. Among these large grains are a few examples of slightly turbid microcline. A characteristic feature in this sample is the presence of fracturing of the large grains and the presence of fine-grained carbonate in the cracks.

The matrix shows fine-grained, dark carbonate with patchy dark clays. Spherulitic textures are present in the latter. There is more evidence in the thin section of carbonate being a late diagenetic phase which has partly replaced the clay matrix; this is particularly the case where the clay is dotted with well-formed crystals of the carbonate. One can therefore envisage a very early diagenetic situation in which grains of ferruginous clays either grew ab novo or at least were enlarged by iron oxide/hydroxide deposition in an agitated, current-dominated environment. Subsequently, siderite crystallisation occurred and partly replaced ferruginous clays in nodules (and, probably in the matrix generally) and filled in many or all void spaces.

Sample: Wilson-1, SWC 17, 1208 m; TSC49205

Rock Name:
Sideritic argillaceous sandstone

Thin Section:
An optical estimate of the constituents gives the following:

Constituents	%
Quartz and quartzite	70
Feldspar	trace
Carbonate	20
Clays	10

The proportions given above are approximate only; they serve to indicate the abundance of the matrix/cement phases carbonate and clay. As well as having been damaged during collection, it appears that the original sample was heterogeneous so that estimation of mineral proportions is not straightforward.

Quartz, rare quartzites and feldspar grains have been only poorly sorted and commonly range in size from 0.1 to 0.8 mm. Larger grains tend to be rounded and equant but many smaller grains are distinctly angular. Quartz is of the common, plutonic variety; the only feldspar identified was turbid, non-twinned K-feldspar.

The non-detrital part of the rock consists of a dark brown stained clay and carbonate. Neither has a random distribution and, indeed, there are some fields of view in which one of the two minerals is absent. The clay is completely dark between crossed Nicols and a medium to dark brown in plane polarised light. As far as can be determined it is homogeneous and does not show any oriented textural features; it has been assumed, therefore, that this is derived from an original muddy, clay matrix which was iron-stained during diagenesis. The carbonate invariably forms small, equant crystals, generally within the clay but grading into areas where all the non-detrital space is filled with the carbonate. This mineral is a diagenetic phase probably introduced into the rock from circulating waters. The abundance of carbonate and clay is probably responsible for diminishing the primary porosity and permeability of the rock.

Sample: Wilson-1, SWC 13, 1218 m; TSC49204

Rock Name:
Argillaceous sandstone

Thin Section:
An optical estimate of the constituents gives the following:

Constituent	%
Quartz and quartzite	60-70
Feldspar	Trace
Carbonate	2-5
Brown matrix	25-35

The sample has been badly damaged and the proportions given above are approximate only; however, the sample is, in most respects, very similar to others from this well, described above.

Quartz shows moderate to poor sorting and there is evidence of a grain-size distribution tailing towards the finer sizes. Most grains are round to sub-round in outline and 0.3 to 1 mm in diameter. Plutonic, slightly strained quartz is abundant but there are granular, granoblastic and, possibly, vein-derived quartzites also.

The matrix may well have been washed from some of the rock but it is likely that virtually all of the intergranular space was occupied by a mottled, brown aggregate of clays and secondary iron oxide/hydroxide phases. This is generally completely dark between crossed Nicols; a few paler patches could represent altered and stained lithic clasts. Some of these show clay flakes but birefringence is marked by the moderate brown staining. Carbonate is relatively clean and well-crystallised compared to that in other samples in this job. Crystals are up to 0.3 mm in size. There is no random arrangement of the carbonate, rather, there tend to be clusters of ragged crystals within the matrix. In one or two places the carbonate occurs with a highly birefringent mineral which is difficult to distinguish from the carbonate but may be barite or anhydrite.

2. X-RAY DIFFRACTION ANALYSIS

2.1 Procedure

Portion of each sample was powdered finely and used to prepare an X-ray diffractometer trace which was interpreted by standard procedures.

Further, weighed, lightly pre-ground subsamples were taken and dispersed in water with the aid of deflocculants and an electric blender, and allowed to sediment to produce −2 µm e.s.d. size 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 carried out consisted of examination of the glycerol-free plate hot at ≃130°C, after heating at 375°C for 1½ hours, and after heating at 550°C for 1 hour.

2.2 Results

The results are given in Table 1, which lists the following:

(a) The mineralogy of the total sample, as derived from examination of the bulk material, with supporting evidence as available. The minerals found are listed in approximate order of decrasing abundance, using the semiquantitative abbreviations given. Coverage of clays may be incomplete, and for full clay mineralogy Section (c) should be consulted. This section (a) is for information on non-clay minerals and to give a general idea of the makeup and proportion.

(b) The proportion of the sample found to separate into the −2 µm size fraction, as determined by the plummet balance. The Figure obtained applies only to the pre-treatment and dispersions conditions used.

(c) The mineralogy of the −2 µm fraction given as in Sectin (a).

2.3 Remarks

2.3.1 Clays

The interpretation of the clay mineralogy of the −2 µm fractions was very difficult. The mineralogical makeup proved to be more-or-less uninterpretable in terms of a mixture of conventional clay minerals. The clays consist mainly of iron-rich phyllosilicates, these evidently being an intimate mixture, or even an interstratification, of bertheirine and poorly-crystalline chlorite of varying stability.

There was good evidence for a 14Å mineral and this proves the presence of chlorite, although in some cases this did not survive a heat treatment at 375°C, indicating it to be unstable as well as poorly crystalline. The diagnostic test used for berthierine was the shrinkage of the basal spacing on heat treatment to 375°C, corresponding to the oxidation of iron ions from the ferrous to the ferric state. The average shrinkage was from 7.11Å to 6.99Å.

The chlorite, as remarked, was often unstable against heat and also was always poorly crystalline. Its thermal stability is summarised in the table. A 'good' chlorite should give a 13.9Å peak after 550°C.

Sample	Survives 375°C	Gives peak after 500°
Core 7	No	-
Core 9	No	-
Core 13	Yes	Yes
Core 17	Yes	Yes
Core 19	No	-
Core 21	Yes	Yes

Smectite is reported only in Cores 19 and 21. The quantities present are insufficient to allow a proper assessment, but it is suspected to be interstratified, but it is not possible to determine with what. In both cases it appears to be "inhibited", i.e. due to interlayering of foreign material it does not collapse when interlayer water is driven out at temperatures above 100°C.

There may be an unfamiliar interstratification present incorporating these two iron-rich minerals, and possibly including some smectite layers, but the situation was too difficult to be resolved. Kaolinite was well crystalline but a minor or absent component, and illite appeared only as a trace.

2.3.2 Carbonates

As will be perceived, the composition of the carbonates was variable from sample to sample. Iron-bearing carbonates were common, both siderite itself and a siderite showing appreciable diffraction peak displacement, confirmed as a calcian siderite in the SEM examination.

Dolomite also existed both as a stoichiometric dolomite and as a partly-substituted calcian dolomite.

3. SCANNING ELECTRON MICROSCOPY

Small fractured pieces of the six samples were mounted on aluminium stubs and coated with evaporated carbon and gold-palladium layers. The coated fragments were examined using an ETEC SEM. Energy-dispersive analysis was used where appropriate for mineral identification.

Polaroid positive/negative film was used to photograph areas of interest and a selection of fields is presented in the accompanying plates.

The resulting enlarged photographs are given herewith. The length of the bar scale |————————| on each photograph corresponds to the indicated number of micrometres (10 or 100).

TABLE 1: MINERALOGY OF SIX DRILLCORE SAMPLES, WILSON#1

Sample	Core 7		Core 9		Core 13		Core 17		Core 19		Core 21	
Bulk Mineralogy:	Q	D	Q	D	Q	D	Q	D	Sid'	D	Q	D
	Sid	A	Sid	SD	Ber	A	Ber	A	Q	SD	Sid'	SD
	Ber	A	Dol	A-SD	Dol'	Tr-A	Dol'	Tr-A	Ber	A	Ber	A
	M	Tr	Sid'	A	Sid'	Tr	F	Tr	F	Tr	Dol'	A
	F	Tr	Ber	A	F	Tr					Cal	A
			F	Tr							F	Tr
-2 μm fract. %:	12		12		9		8		9		9	
Mineralogy:	Ber	D	Ber	D	Ber	D	C	D	Ber	D	Ber	D
	C	SD	C	SD	C	SD	Ber	SD	C?	A-SD	C	SD
	K	A	K	A	M	Tr	M	Tr	K	A	Sm+	A
	M	Tr	M	Tr	Q	Tr	Q	Tr	Sm+	A	M	Tr-A
	Sid	Tr	Sid	Tr					M	Tr	Sid	Tr
	Q	Tr	Dol	Tr					Sid	Tr	Q	Tr
			Q	Tr					Q	Tr		

Mineral Key

Ber	Berthierine (formerly chamosite)
C	Chlorite, of variable stability to heat (see text)
Cal	Calcite
Dol	Dolomite
Dol'	Calcian dolomite
F	K feldspar
K	Kaolinite
M	Mica/illite
Q	Quartz
Sid	Siderite
Sid'	Calcian siderite
Sm+	Smectite-related material, uncertain interstratification (see text).

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%.

PE905855

This is an enclosure indicator page.
The enclosure PE905855 is enclosed within the container PE902207 at this location in this document.

The enclosure PE905855 has the following characteristics:

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CONTAINER_BARCODE =	PE902207
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BASIN =	OTWAY BASIN
PERMIT =	PEP/105
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Core Thinsection Photograph ,figure 1&2, (from appendix 9--Petrology--of WCR) for Wilson-1
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	
W_NO =	W964
WELL_NAME =	WILSON-1
CONTRACTOR =	
CLIENT_OP_CO =	BEACH PETROLEUM NL.

(Inserted by DNRE - Vic Govt Mines Dept)

FIGURE 1: Wilson-1, SWC 21. Plane polarised light. Long dimension 2 mm. A field which contains abundant carbonate which possibly shows shadowy outlines of replaced grains. Near bottom centre is a concretion of iron oxide.

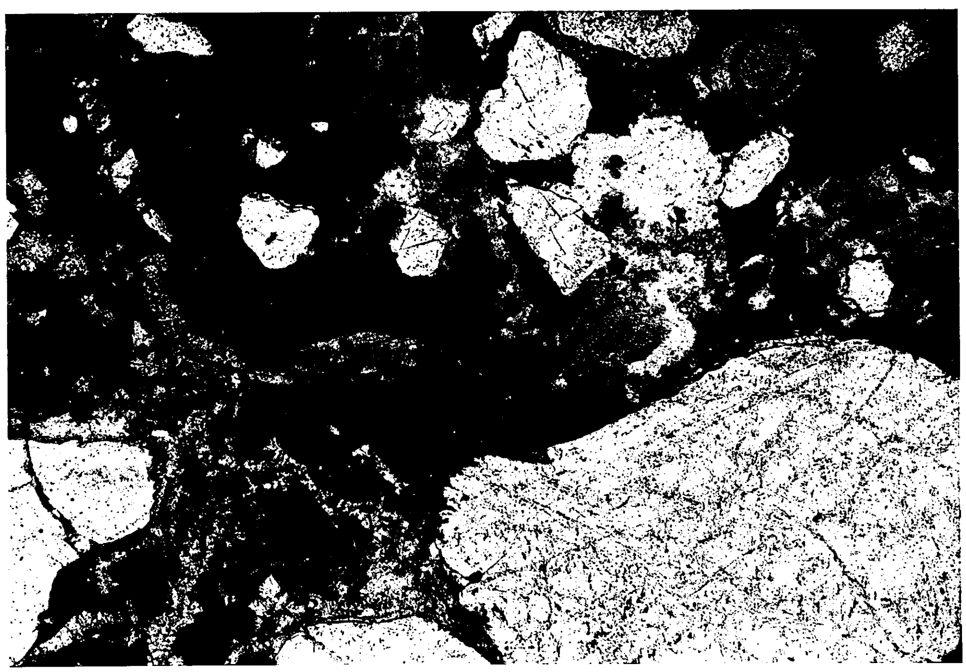

FIGURE 2: Wilson-1, SWC 21. PPL, 2 mm. Field with goethitic matrix and ill-defined concretionary textures. On the left is fine-grained (clear) late carbonate.

FIGURE 3: Wilson-1, SWC 19. PPL, 2 mm. Large quartz grain on left has been fractured and carbonate occupies the fractures. The brown matrix is composed mainly of iron-stained clay.

FIGURE 4: Wilson-1, SWC 17. PPL, 2 mm. Junction between carbonate-cemented area (left) and clay cemented (right). Less quartz on left suggests that the carbonate has replaced some detrital material.

PE905856

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The enclosure PE905856 has the following characteristics:

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CONTAINER_BARCODE = PE902207
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BASIN = OTWAY BASIN
PERMIT = PEP/105
TYPE = WELL
SUBTYPE = PHOTOMICROGRAPH
DESCRIPTION = Core Thinsection Photograph ,figures 3&4, (from appendix 9--Petrology--of WCR) for Wilson-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W964
WELL_NAME = WILSON-1
CONTRACTOR =
CLIENT_OP_CO = BEACH PETROLEUM NL.

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PE905857

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TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Scanning Electron Microscope Photograph, plate 1, (from appendix 9--Petrology--of WCR) for Wilson-1
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	
W_NO =	W964
WELL_NAME =	WILSON-1
CONTRACTOR =	
CLIENT_OP_CO =	BEACH PETROLEUM NL.

(Inserted by DNRE - Vic Govt Mines Dept)

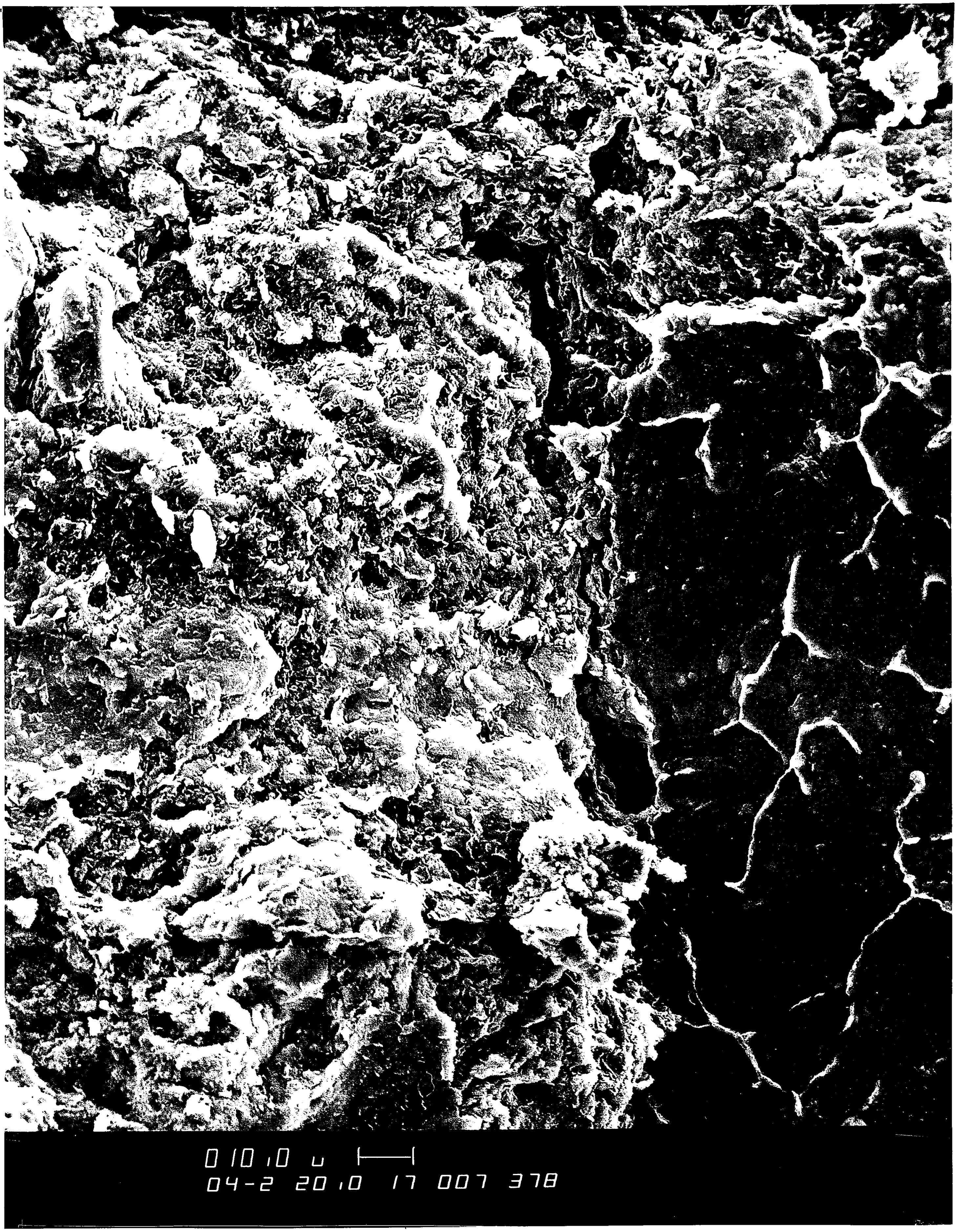

PLATE 1: Core 7 (x 1100)
The mass on the LHS is iron-rich clay material. The dark, flat, somewhat wrinkled area on the RHS is essentially siderite (some very minor Si and Al were present).

PE905858

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The enclosure PE905858 has the following characteristics:

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BASIN =	OTWAY BASIN
PERMIT =	PEP/105
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Scanning Electron Microscope Photograph, plate 3, (from appendix 9--Petrology--of WCR) for Wilson-1
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	
W_NO =	W964
WELL_NAME =	WILSON-1
CONTRACTOR =	
CLIENT_OP_CO =	BEACH PETROLEUM NL.

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PLATE 3: Core 13 (x 1480)
High magnification detail of a clay coating. Analysis showed very high Fe with Si and Al indicating iron-rich clay with admixed or underlying siderite.

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The enclosure PE905859 has the following characteristics:

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BASIN = OTWAY BASIN
PERMIT = PEP/105
TYPE = WELL
SUBTYPE = PHOTOMICROGRAPH
DESCRIPTION = Scanning Electron Microscope Photograph, plate 4, (from appendix 9--Petrology--of WCR) for Wilson-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W964
WELL_NAME = WILSON-1
CONTRACTOR =
CLIENT_OP_CO = BEACH PETROLEUM NL.

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PLATE 4: Core 17 (x 1100)
The irregular, angular blocks at the top L are quartz. Most of the fragments in the field are seen to be coated in wispy clay material. Analysis of the coating in the bottom R showed Si, Al, Fe and K. Appreciable K is surprising in view of the very minor illite level found by XRD.

PE905860

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The enclosure PE905860 has the following characteristics:

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PERMIT =	PEP/105
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Scanning Electron Microscope Photograph, plate 5, (from appendix 9--Petrology--of WCR) for Wilson-1
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DATE_CREATED =	
DATE_RECEIVED =	
W_NO =	W964
WELL_NAME =	WILSON-1
CONTRACTOR =	
CLIENT_OP_CO =	BEACH PETROLEUM NL.

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PLATE 5: Core 19 (x 850)
A general low-magnification view shows a mass of irregular broken fragments. Analysis shows major Fe and Ca throughout, corresponding to calcian siderite. Some small patches of platy material showed Fe, Si, Al and Mg probably corresponding to chlorite.

PE905861

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The enclosure PE905861 is enclosed within the container PE902207 at this location in this document.

The enclosure PE905861 has the following characteristics:

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CONTAINER_BARCODE =	PE902207
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PERMIT =	PEP/105
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Scanning Electron Microscope Photograph, plate 6, (from appendix 9--Petrology--of WCR) for Wilson-1
REMARKS =	
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DATE_RECEIVED =	
W_NO =	W964
WELL_NAME =	WILSON-1
CONTRACTOR =	
CLIENT_OP_CO =	BEACH PETROLEUM NL.

(Inserted by DNRE - Vic Govt Mines Dept)

PLATE 6: Core 21 (x 1350)
This field of irregular fragments of broken appearance showed major Fe and minor Ca generally, corresponding again to calcium siderite (cf. Plate 5). Some of the material on the centre right appears to have cleaved into rough rhombs suggestive of the carbonates.

APPENDIX 10

APPENDIX 10

Core Analysis and Hydrocarbon Composition

[redacted]

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24 August 1987

F 3/944/0
F 6891/88 - Part 1

Beach Petroleum NL
PO Box 360
CAMBERWELL VIC 3124

Attention: B. Rayner

REPORT F 6891/88 - Part 1

YOUR REFERENCE:	Letter of 31 July 1987
TITLE:	Core analysis and hydrocarbon composition Wilson-1
MATERIAL:	Sidewall cores
LOCALITY:	WILSON-1
IDENTIFICATION:	1194.0, 1197.0 and 1208.0 metres depth
DATE RECEIVED:	3 August 1987
WORK REQUIRED:	Pore volume, water saturation, oil saturation and hydrocarbon composition

Investigation and Report by: Brian L. Watson, Robert D. East

Manager, Petroleum Services Section: Dr Brian G. Steveson

for Dr William G. Spencer
General Manager
Applied Sciences Group

cap

1. INTRODUCTION

Six sidewall cores were received for fluid saturation, petrology, XRD and SEM analyses. This report (Part 1) presents the fluid saturation data and GC trace of the oil extracted from SWC 17 (1208.0 metres depth).

2. RESULTS

Fluid saturation results are presented in Table 1 and brief fluorescence descriptions are summarised in Table 2. Figure 1 is a gas chromatograph trace of the oil extracted from SWC 17 (1208.0 metres depth).

TABLE 1: FLUID SATURATION RESULTS

Sample	Depth (m)	Weight Loss on Extraction (g)	Volume H_2O Collected (mls)	Weight Oil (g)	Volume Oil (mls)	Sample Pore Volume (mls)	Oil % PV	Water % PV
21	1194.0	2.301	2.3	-	-	1.70	-	100.0
19	1197.0	6.042	6.0	0.04	0.05	6.40	0.8	93.8
17	1208.0	3.823	3.6	0.23	0.27	4.05	6.7	88.9

TABLE 2: BRIEF FLUORESCENCE DESCRIPTIONS

Sample	Depth (m)	Description
21	1194.0	No visible fluorescence. No cut.
19	1197.0	Tr spotty 10% wh/yel fluor. v. faint milky cut.
17	1208.0	Spotty 25% wh fluor. fair milky wh/gold cut.

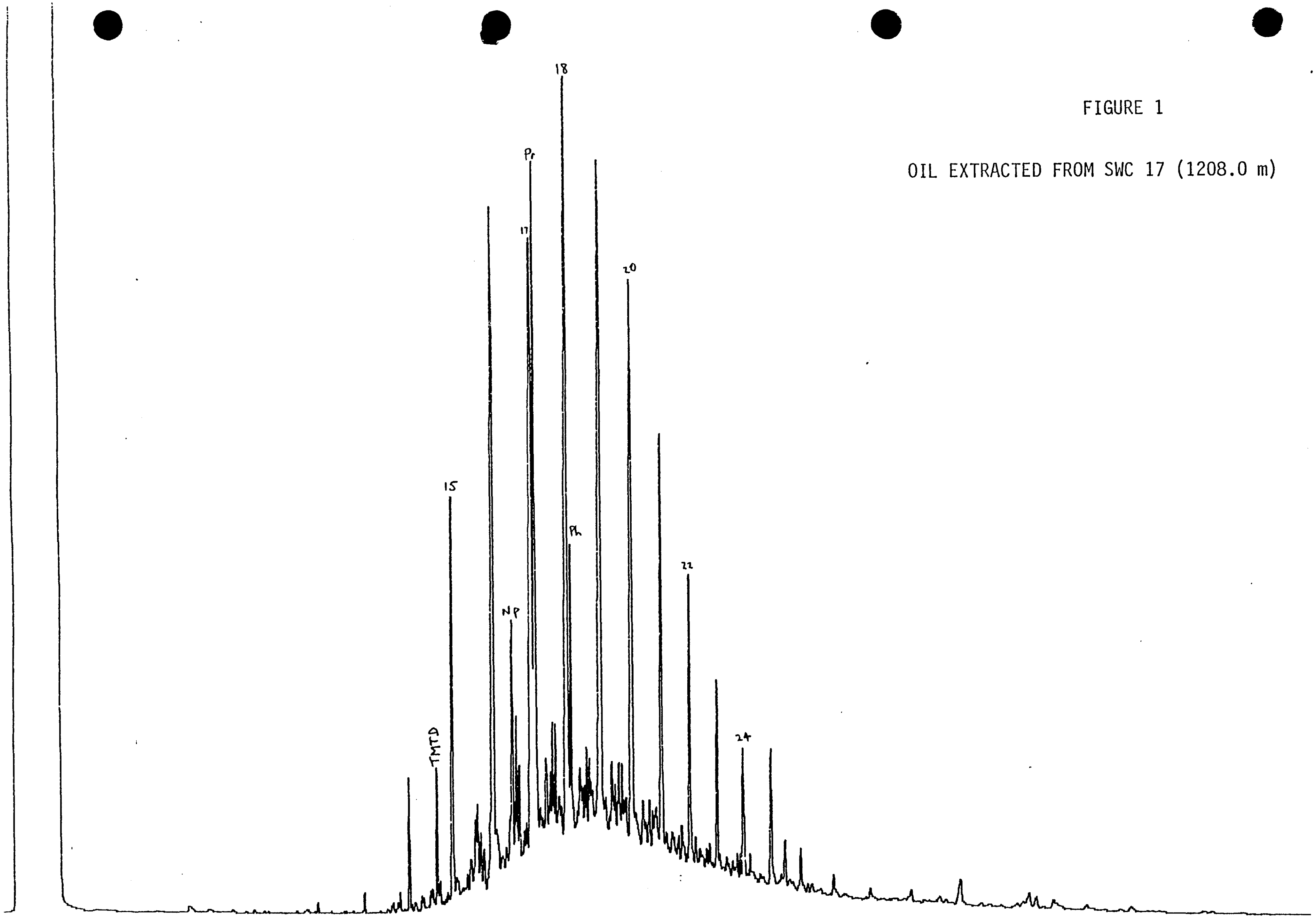

FIGURE 1

OIL EXTRACTED FROM SWC 17 (1208.0 m)

APPENDIX 11

APPENDIX 11

Source Affinity and Maturity of Wilson-1 Hydrocarbons

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2 September 1987

F 3/944/0
F 6891/88 - Part 2

Beach Petroleum NL
685 Burke Road
CAMBERWELL VIC 3124

Attention: Mr A. Tabassi

REPORT F 6891/88 - Part 2

YOUR REFERENCE:	Phone call 22 August 1987
TITLE:	Source affinity and maturity of Wilson-1 hydrocarbons
MATERIAL:	Sidewall core
LOCALITY:	WILSON-1
IDENTIFICATION:	1208.0 metres depth
DATE RECEIVED:	3 August 1987
WORK REQUIRED:	Interpretation of hydrocarbon composition

Investigation and Report by: Brian L. Watson

Manager, Petroleum Services Section: Dr Brian G. Steveson

for Dr William G. Spencer
General Manager
Applied Sciences Group

cap

1. INTRODUCTION

Six sidewall cores were received for fluid saturation, petrology, XRD and SEM analyses. The fluid saturation data and GC trace of the oil extracted from SWC 17 (1208.0 metres depth) were reported in part 1 of this report. This report (part 2) compares this oil with that from Lindon-1, DST 1.

2. RESULTS

The whole oil alkane ratios and distribution are summarised in Table 1. Figures 1 and 2 are whole-oil chromatograms of the Wilson-1 and Lindon-1 oils respectively. Figure 3 illustrates the genetic affinity and maturity of the oil based on its pristane/n-heptadecane and phytane/n-octadecane ratios. The Port Campbell-4 oil is also included for comparison.

3. DISCUSSION

3.1 Source

The n-alkane distribution of the Wilson-1 oil (particularly the abundance of C_{16}-C_{19} n-alkanes Figure 1) indicates its generation from algal organic matter. The n-alkane distribution of the Lindon-1 (Figure 2) oil is markedly different with an abundance of C_{20}-C_{24} n-alkanes which is indicative of its generation from terrigenous organic matter.

The pristane/phytane ratio of the Wilson-1 oil (pr/ph = 2.0) is considerably lower than both the Lindon-1 crude (pr/ph = 3.7) and the Port Campbell-4 oil (pr/ph = 7.5). This reflects differences in the original depositional environment of their respective source rocks. Higher pr/ph values indicate more oxic (less reducing) conditions and pr/ph values of 2 or less are characteristic of marine source rocks.

The pristane/n-heptadecane versus phytane/n-octadecane plot (Figure 3) indicates that the sediments which sourced of the Wilson-1 oil may also contain some higher plant (terrestrial) organic matter.

3.2 Maturity

The pristane/n-heptadecane ratio of the Wilson-1 oil (1.1) is significantly higher than that of the Lindon-1 oil (0.50) indicating that the Wilson-1 oil is markedly less mature. This evidence is substantiated by the more pronounced odd-even predominance of the Wilson-1 oil C_{23+} n-alkanes.

4. CONCLUSIONS

1. The Wilson-1 oil is a fairly immature marine crude with a minor input from higher plant terrestrial organic matter. The Lindon-1 crude is significantly different being a more mature waxy oil derived from a terrestrial source.

2. The Belfast Mudstone is the most likely source for the Wilson-1 crude whilst the Lindon-1 oil is probably sourced from the Eumeralla Formation.

TABLE 1: OIL ANALYSES, WILSON-1 AND LINDON-1

Well	Sample Depth (m)	Formation	C_{15+} Alkane Distribution						
			Pr / n-C_{17}	Ph / n-C_{18}	TMTD / Pr	Np / Pr	Pr / Ph	n-Alkane Profile Maximum	n-Alkane Profile Range
Wilson-1	1208.0	Pebble Point	1.1	0.44	0.19	0.40	2.0	C_{18}	C_{12}-C_{33}
Lindon-1	DST-1	Pebble Point	0.50	0.09	0.68	0.31	4.2	C_{23}	C_5-C_{33}

TMTD = 2,6,10-trimethyltridecane
Np = norpristane
Pr = pristane
Ph = phytane
n-C_{17} = n-heptadecane
n-C_{18} = n-octadecane

FIGURE 1
SATURATES CHROMATOGRAM
WILSON-1 1208.0 m

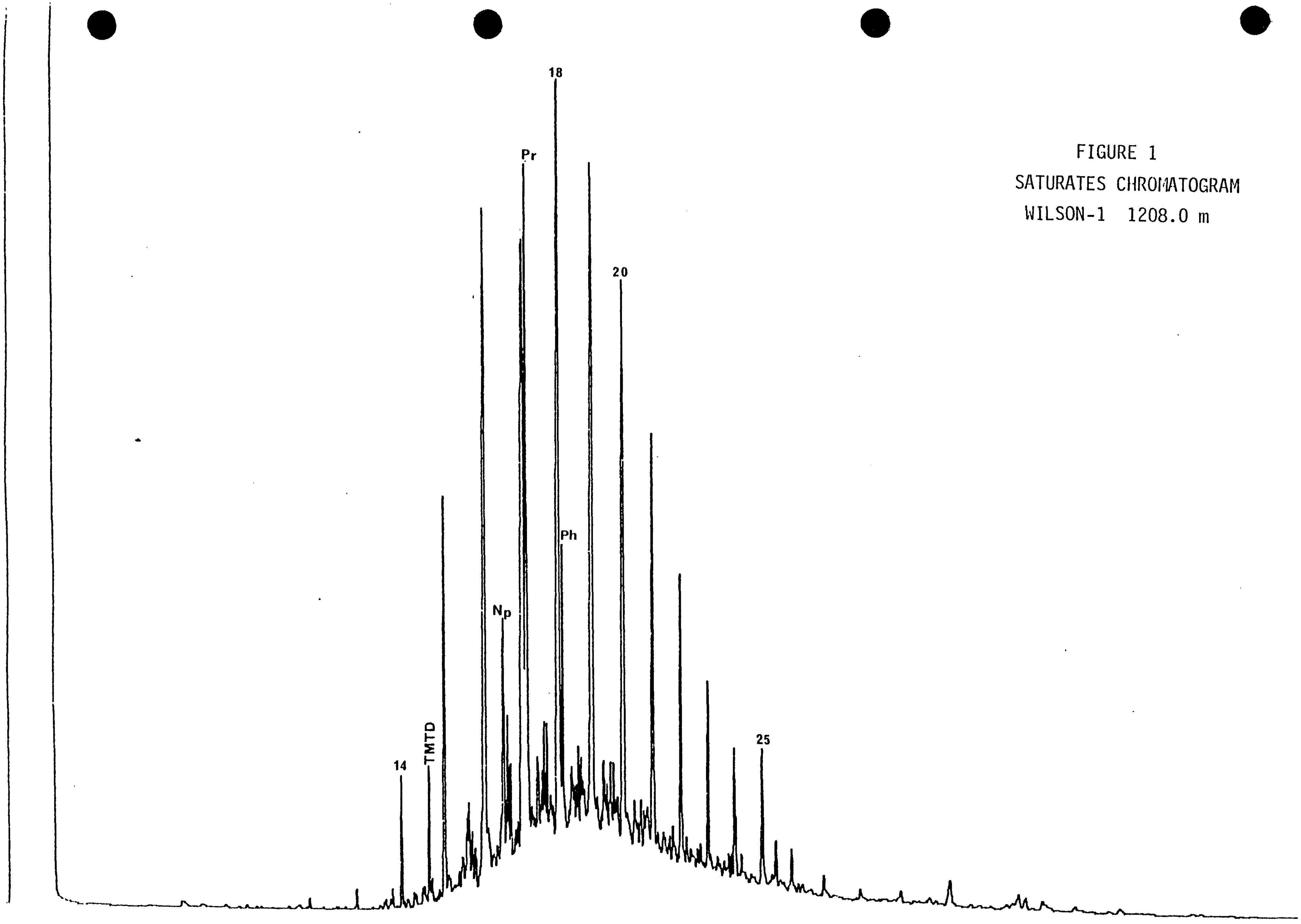


FIGURE 2

WHOLE-OIL CHROMATOGRAM
LINDON-1, DST 1

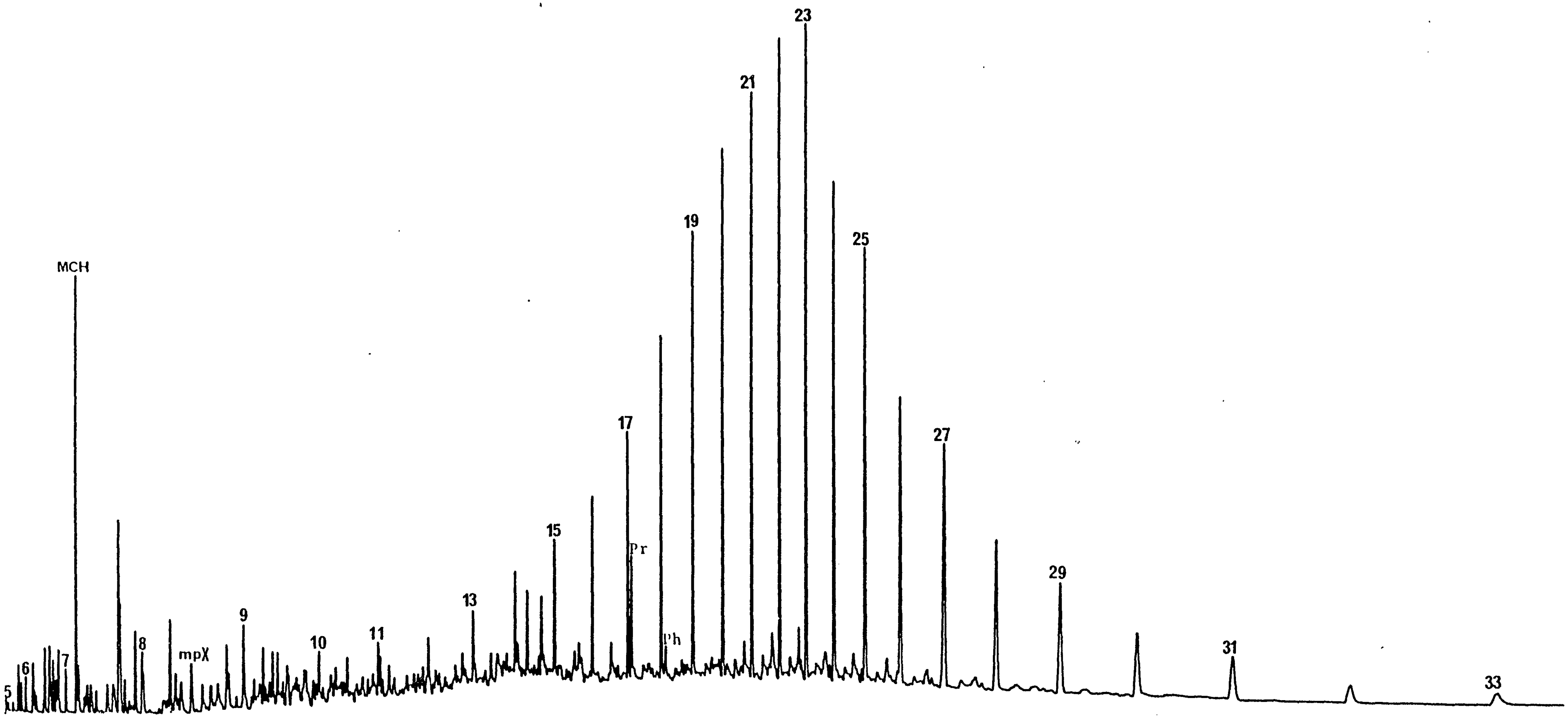
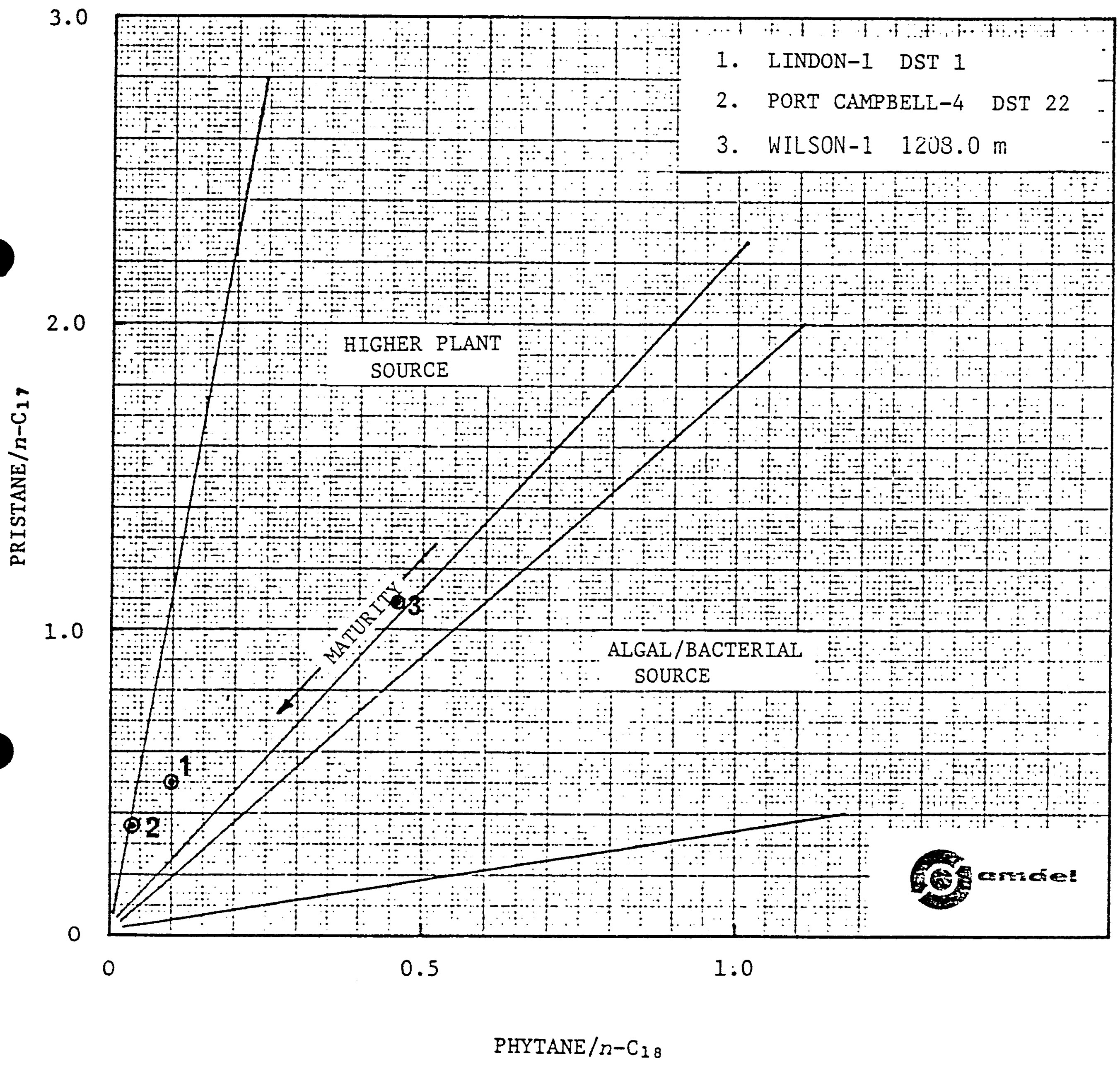


FIGURE 3
GENETIC AFFINITY AND MATURITY
OF THREE OTWAY BASIN OILS



[based on Connan and Cassou, 1980, fig.12]

APPENDIX 12

APPENDIX 12

Wireline Log Evaluation

BEACH PETROLEUM NL

WILSON #1

WIRELINE LOG EVALUATION

BOWLER LOG CONSULTING SERVICES PTY. LTD.

JACK BOWLER
Telephone: (051) 56 6170

P.O. BOX 2,
PAYNESVILLE, VICTORIA.
AUSTRALIA, 3880.

Dr. Ahmad Tabasi
Beach Petroleum N.L.
PO Box 360 Camberwell
Victoria, 3124

August 14, 1987

Dear Ahmad,

Please find my report on the logs of Wilson #1 over the Pebble Point and the Paaratte. In keeping with Bernie Rayner's letter of 28 July, 1987, I have some suggestions on how it might be possible to improve the ability to evaluate the Pebble Point at the wellsite despite the presence of Limonite.

Logs and data available over the zones of interest included:
-DLL-MSFL-GR-CAL-SP
-LDL-CNL-GR-CAL
-BHC-GR
-SHDT-GR with Cyberdip
-Cyberlook using both density-neutron and sonic derived porosities.
-Bore hole profile
-Cyberlitho
-SWC descriptions
-Exlog cuttings log

Paaratte

Log evaluation of the Paaratte is fairly straight-forward as it consists mainly of sand and clay. A shaly-sand model such as the dual-water model used in Cyberlook based on the density-neutron (preferable) or sonic-GR (in bad hole) will do a good job at the wellsite. I have used the Indonesian Equation with both density-neutron and sonic-GR and obtained similar results to those of the two Cyberlooks. Water saturations are very high suggesting that the Paaratte is water-wet with porosities up to 20 %.

The pyrite reported in the cuttings and sidewall cores will cause the resistivity to read too low if there is 7% or more (enough for a continuous electrical path) present thus masking the effects of hydrocarbons. Pyrite with a log density of 4.99 g/cc will cause the porosity to read too low by about 1.4% porosity for each one percent pyrite present and it will also cause the density log delta-rho correction to be negative. Pyrite has a high PEF of 17. The effects on the sonic and neutron logs are small. The reference for the above remarks on pyrite effects is a SPWLA paper: "Effect of Pyrite on Resistivity and Other Logging Measurements" by Clavier et all, published in the June, 1976 SPWLA Symposium.

Corrected page.

10 MAR 1988

Pyrite will cause the density log to read high and thus increase the apparant shale content if the density-neutron is used as a shale indicator. It does not seem that there is enough pyrite present to have adversly affected the logs in the Paaratte and this is confirmed by the density-neutron, MN and RHOmaaUmaa crossplots enclosed.

Carbonaceous material and coals often have high resistivities but there does not seem to be enough present to have affected the logs.

Pebble Point

Although composed mostly of sand and clay, log evalaution of the Pebble Point is difficult due to the large amount of Limonite present. To make matters worse the Limonite is accompanied by a radioactive material which increases the gamma-ray readings. The 1986 Schlumberger Chart Book shows the following log characteristics for:

	Limonite [FeO(OH)(H2O)2.05] and	**Quartz [SiO2]**
Density:	3.59	2.64
NPHI:	60+	-2
t_c:	56.9	56
Pe:	13.0	1.81
U:	46.67	4.79
GR:	-	-

It is possible to calculate the effect of Limonite on density-derived porosity as follows:

Case one

80% Quartz and 20% porosity with fresh water (RHOF=1.00 g/cc).

RHOB= 0.80*2.64 + 0.20*1.00 = 2.31 g/cc.

Case two

50% Quartz, 30% Limonite and 20% porosity with fresh water (RHOF=1.00 g/cc).

RHOB= 0.50*2.64 + 0.30*3.59 +0.20*1.00 = 2.60 g/cc.

To compute porosity from RHOB computed in case 2 assuming only quartz and water in a clean sand without a correction for Limonite:

PHIE=(2.64-RHOB)/(2.64-RHOF)

PHIE=(2.64-2.60)/(2.64-1.00)=0.04/1.64=2.4%.

Thus 30% Limonite almost completely masks the density-derived porosity in a clean sand of 20% porosity.

It is also possible to calculate the effect of Limonite on sonic-derived porosity as follows:

Case one

80% Quartz and 20% porosity with fresh water (t_f=189 µsec/ft).

t_{log}= 0.80*56 + 0.20*189 = 82.6 µsec/ft.

Case two

50% Quartz, 30% Limonite and 20% porosity with fresh water (t_f=189µsec/ft).

t_{log}= 0.50*56 + 0.30*56.9 + 0.20*189 = 82.9 µsec/ft

To compute porosity from t_{log} assuming only quartz and water in a clean sand without a correction for Limonite:

PHIE=(t_{log}-56)/(t_f-56)

PHIE=(82.9-56)/(189-56)=26.9/133=20.2%.

The above shows that the sonic is relatively unaffected by Limonite while the density is greatly affected.

Generally it is the density-neutron that is used for porosity determination not just the density alone but it can be seen that the density is not the best of porosity devices when Limonite is present. Note the RHOma plot where RHOma (computed from the density-neutron) is greater than 3 due to Limonite. Note also the effect of Limonite on the density-neutron, MN and RHOmaa-Umaa crossplots. Umaa=(RHOB*PEF-PHIT*PEF_{fluid}*RHOF)/(1-PHIT).

We can try to calculate the neutron (CNL) log response of case two above: NPHI=0.50*(-2) + 0.30*60 + 0.20*100=37. RHOB was 2.60 for case two. This point plotted on a density-neutron crossplot would have: PHIT=22, RHOma=3.0, Vclay(density-neutron)=100 and PHI=0. Thus 30% Limonite results in a complete masking of the density-neutron porosity.

Also note the RT-density crossplot which suggests that the resistivity of Limonite in Wilson #1 is around 4 ohm.m. This may be related to Rw.

To make matters worse I understand from the "Glossary of Geology" second edition by Bates and Jackson, 1980, and our recent discussion that Limonite is "A general field term for a group of brown, amorphous, naturally occurring hydrous ferric oxides whose real identities are unknown." This makes the quantification of Limonite with logs very difficult because one is not sure of exactly which hydrous ferric oxides are present and in what quantity.

If you examine the 23 July, 1987, Cyberlook and the upper MacLog evaluation which are both based on the density-neutron for porosity and Vclay it can be seen that porosity is too low at levels with high concentrations of Limonite (pellets) described in cuttings and in sidewall cores as at 1223.5 and 1231 meters. Note the increase in PEF. Due to Limonite Vclay is too high and the resulting porosity too low and even nil in some cases.

The sonicGR Cyberlook of 28 July, 1987, and the bottom MacLog evaluation were made to try to improve the situation due to the minimal Limonite effect on the sonic. Unfortunately the increase in GR associated with the Limonite causes the resulting clay-corrected porosity to be too low.

Suggestions

- Use the **NGT** which measures uranium, potassium and thorium to try to find out what causes the radioactivity associated with the Limonite. It may then be possible to use some combination of the NGT curves to determine Vclay. If we are lucky it might be uranium that is associated with the Limonite and then the corrected GR (Total GR minus uranium) could be used to determine Vclay for the Cyberlook.
- Use the **sonic for porosity** in the Cyberlook because it is least affected by Limonite. Correct the sonic porosity for clay using the NGT.
- Run the **MicrSolog** as late as possible (when the mudcake is the thickest) in the logging program to identify those zones that have mudcake and thus inferred permeability. Tailor the mud program such that the mudcake will be thick (taking safe drilling practices under consideration) so that the Micrregister response will identify permeable zones. There is some reduction in the LDL-CNL caliper which suggests that mudcake is present in the Pebble Point of Wilson #1 but one cannot be sure without some other indication of mudcake such as the Microlog.
- Try to have the mud so that **Rmf is much less than Rw** so that the permeable zones which are invaded by mud filtrate will show a separtion between the three resistivity devices with LLD>LLS>MSFL. This was evident in the permeable Pebble Point zones of Squatter #1 mainly because Rw was around 3.5 compared to Rmf=0.07 while Rw was only 0.20 and Rmf=0.12 In Wilson #1. Care is needed here because often KCl muds which cause low Rmf values also cause very thin mudcakes and thus a poor Microlog response in permeable zones.

Note the Limonite effect on the logs at 823 meters in the Pebble Point of Squatter #1. The gamma ray is 170 suggesting shale or clay. RHOB=2.34 and NPHI=39 also suggesting shale or clay. The resulting Cyberlook using the density-neutron shows nil porosity. Note however the separation between the MSFL and LLS and LLD suggesting permeability. The MSFL and sonic suggest that there is some clay present.

The other option is to **use very fresh water muds** so that Rmf is several times greater than Rw. In this case the Dual Induction should be run in place of the Dual Laterolog. This would also be useful because this might produce a negative SP which would identify permeable beds. As I recall the Mines Department well drilled near Squatter #1 was logged with fresh mud in the hole and had a negative SP opposite the permeable zones.

Yours truly,

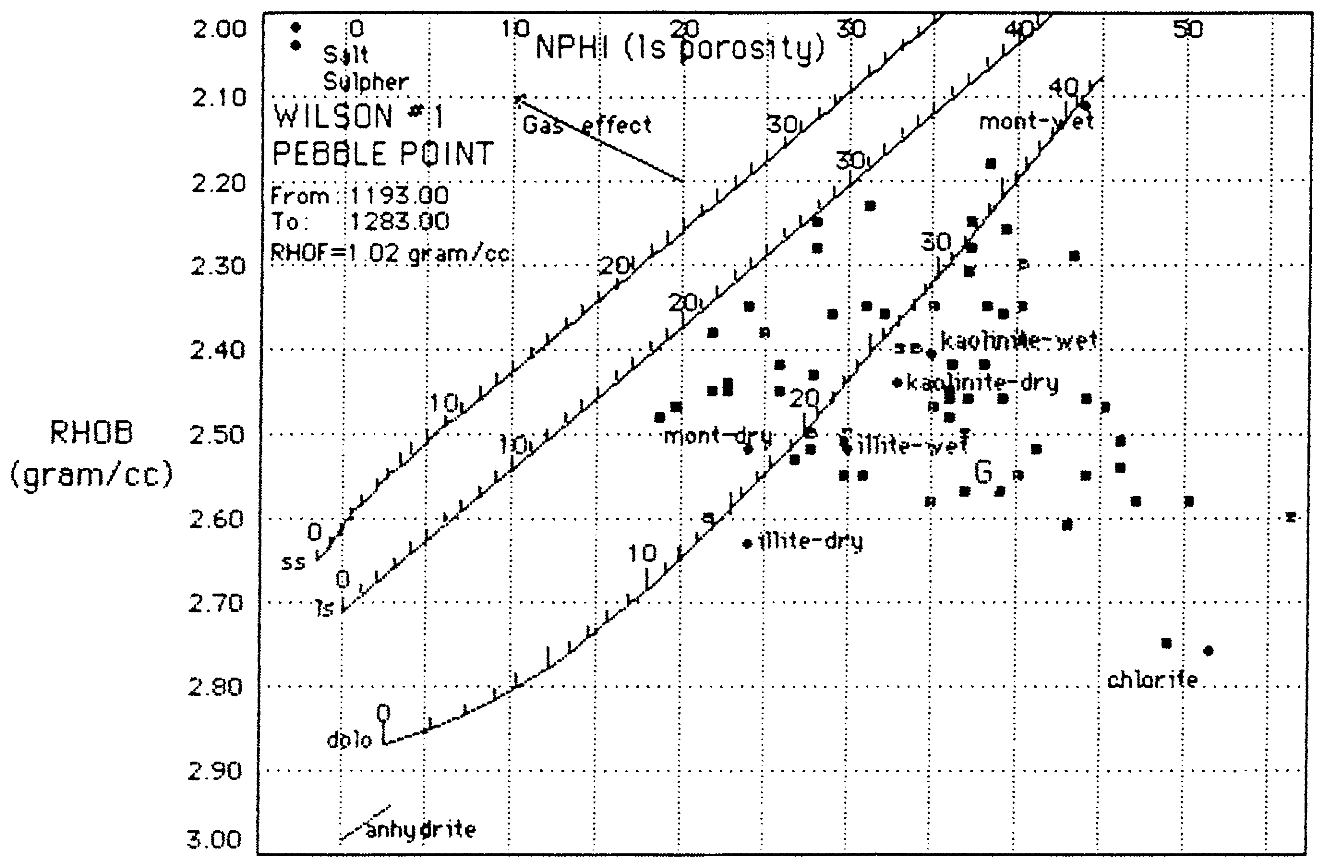
J Bowler

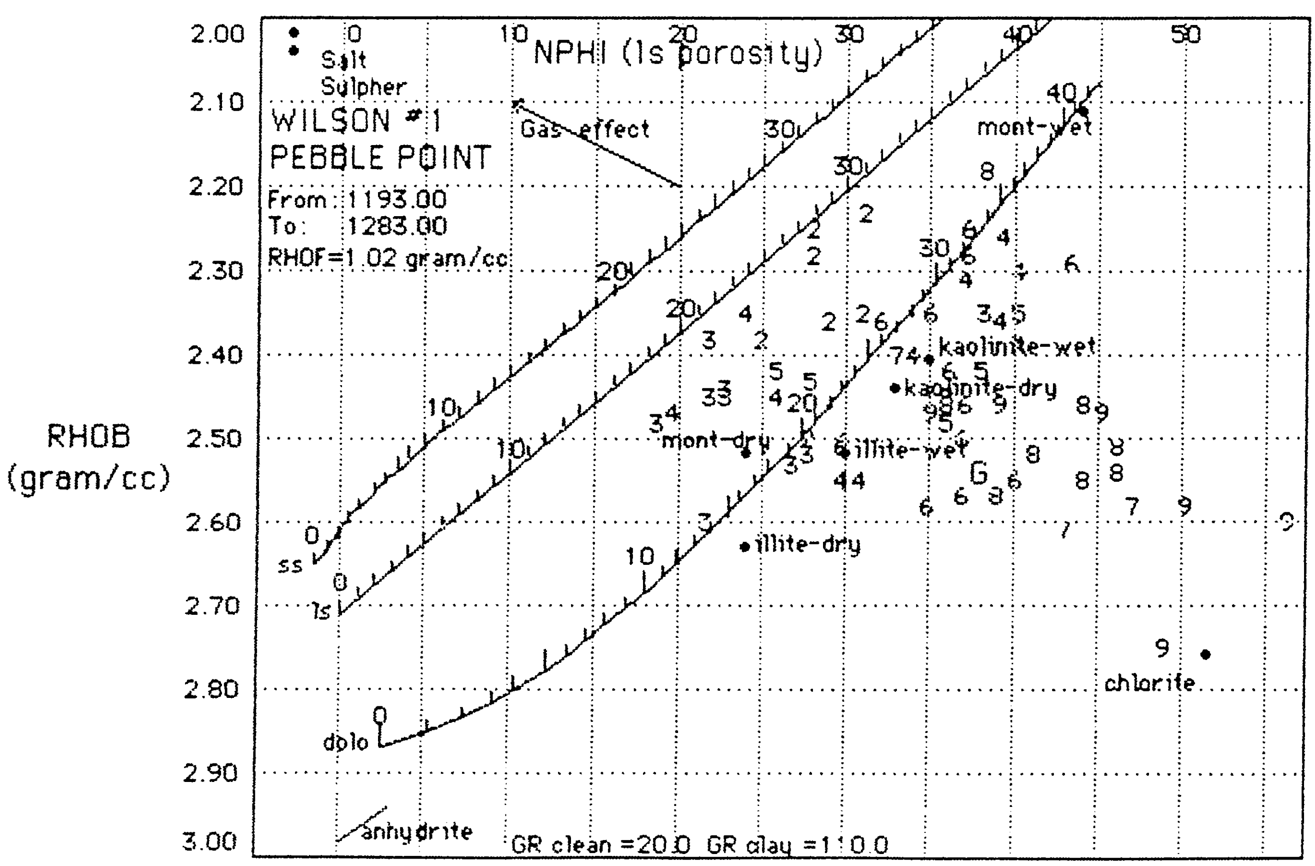
Jack Bowler

BEACH PETROLEUM NL

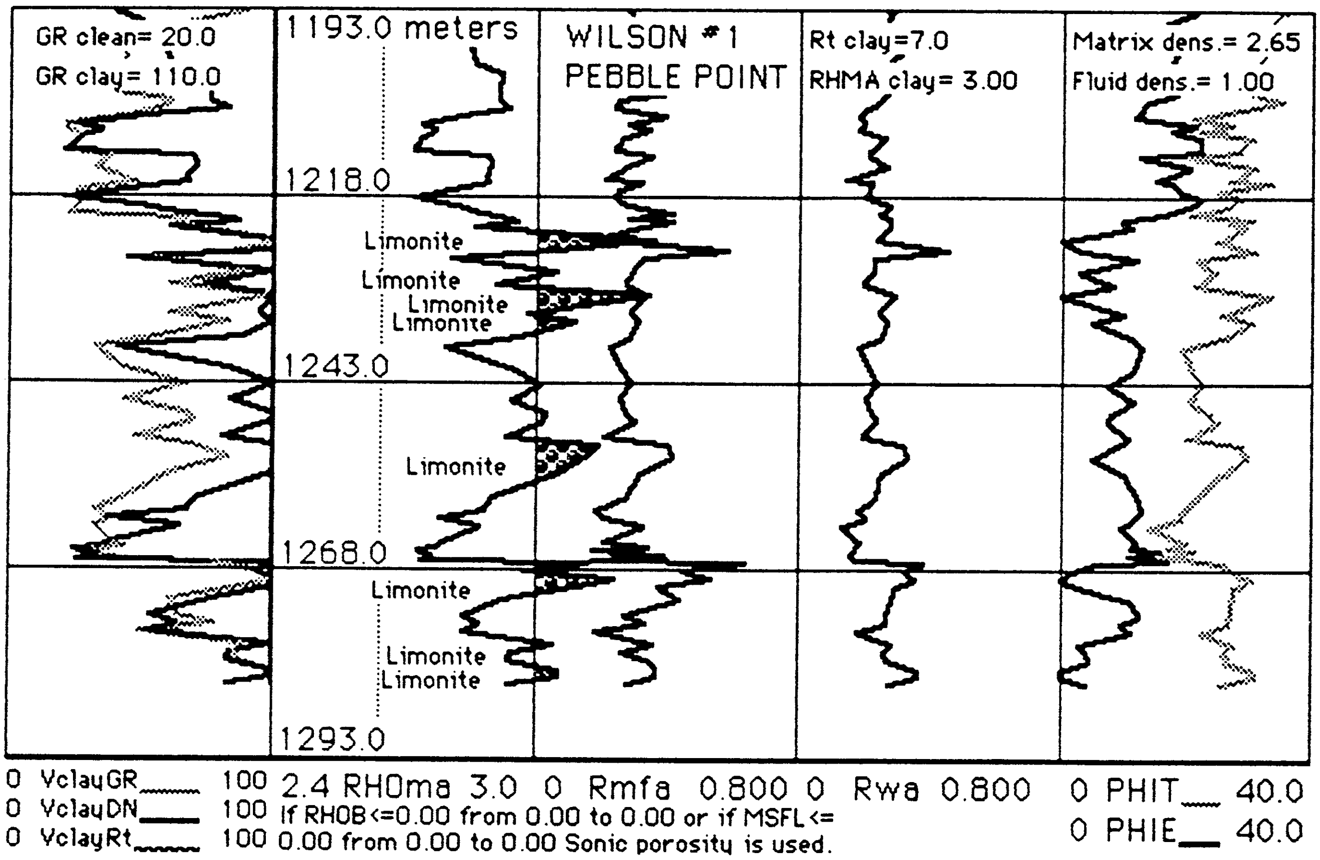
WILSON #1

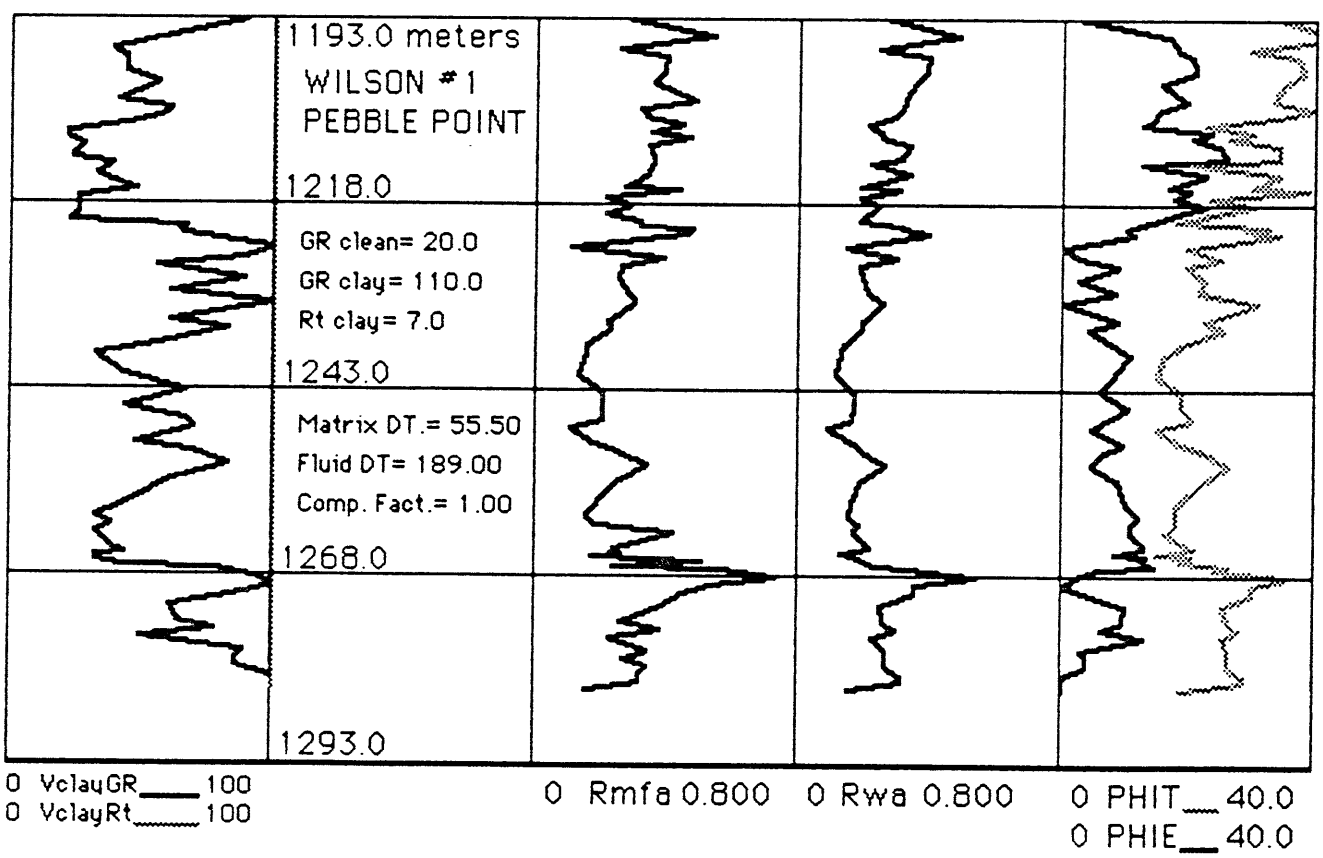
PEBBLE POINT

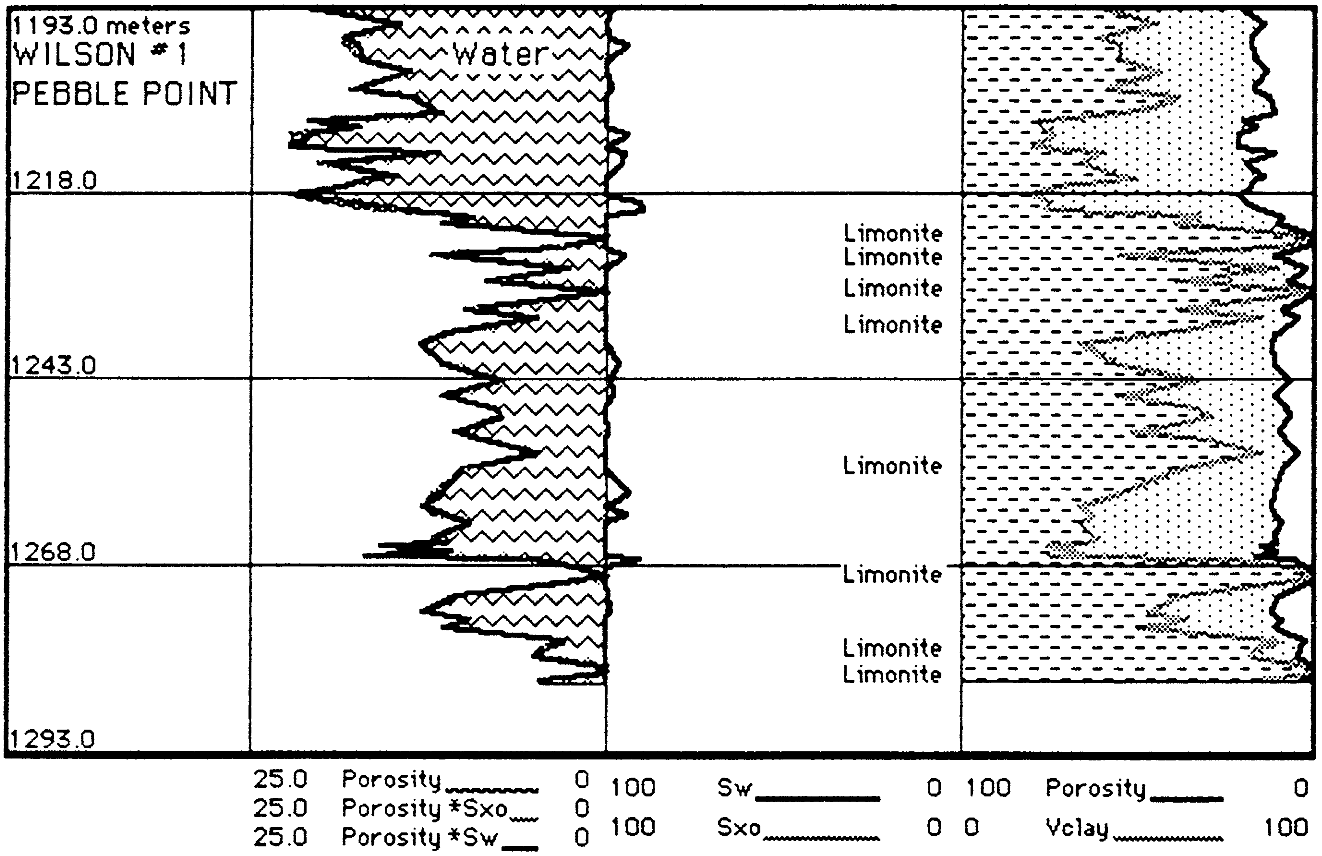




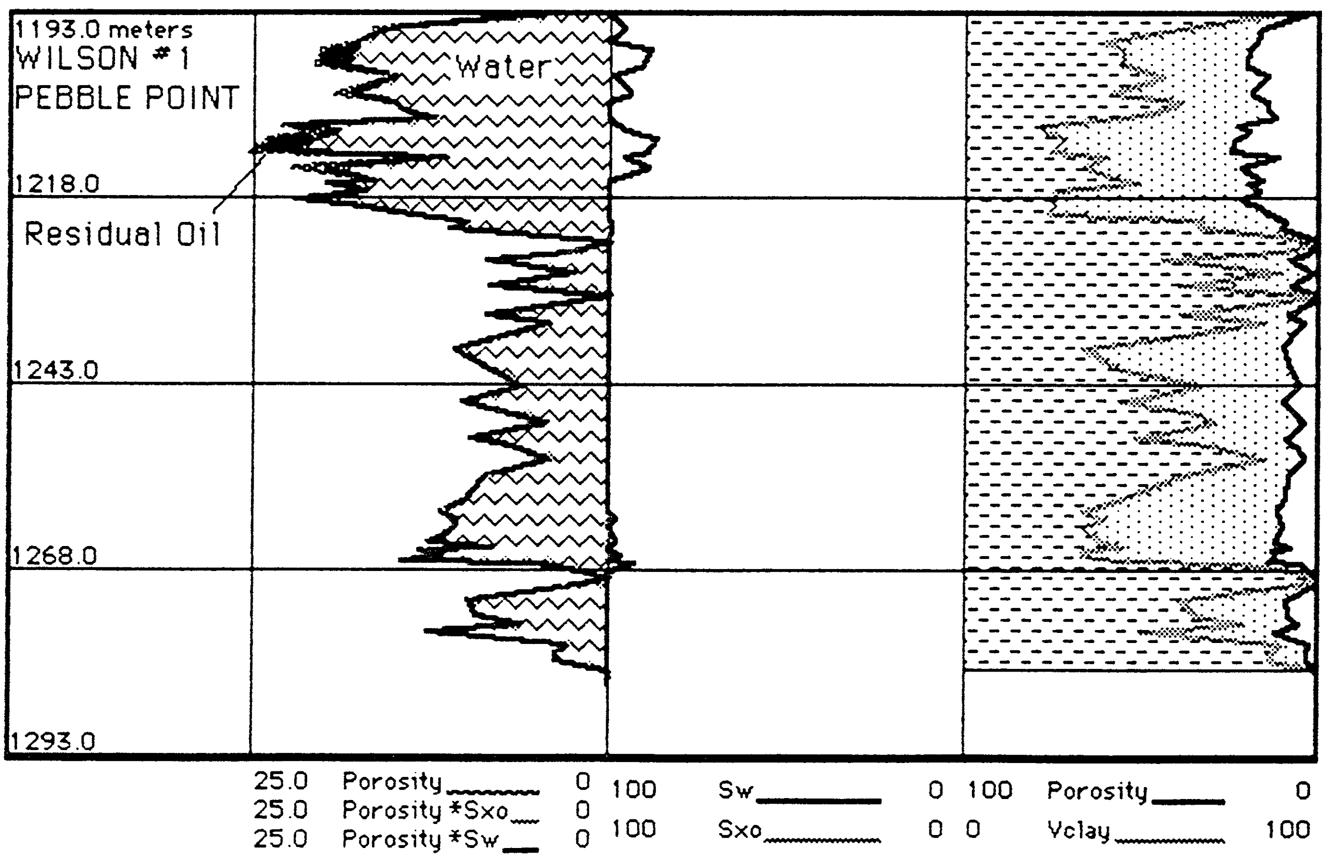
G represents the approximate Glauconite area.


GR clean= 20.0
GR clay= 110.0
1193.0 meters
WILSON #1
PEBBLE POINT
Rt clay=7.0
RHMA clay= 3.00
Matrix dens.= 2.65
Fluid dens.= 1.00
1218.0
Limonite
Limonite
Limonite
Limonite
1243.0
Limonite
1268.0
Limonite
Limonite
Limonite
1293.0
0 VclayGR 100
0 VclayDN 100
0 VclayRt 100
2.4 RHOma 3.0
0 Rmfa 0.800
0 Rwa 0.800
0 PHIT 40.0
0 PHIE 40.0
If RHOB<=0.00 from 0.00 to 0.00 or if MSFL<= 0.00 from 0.00 to 0.00 Sonic porosity is used.

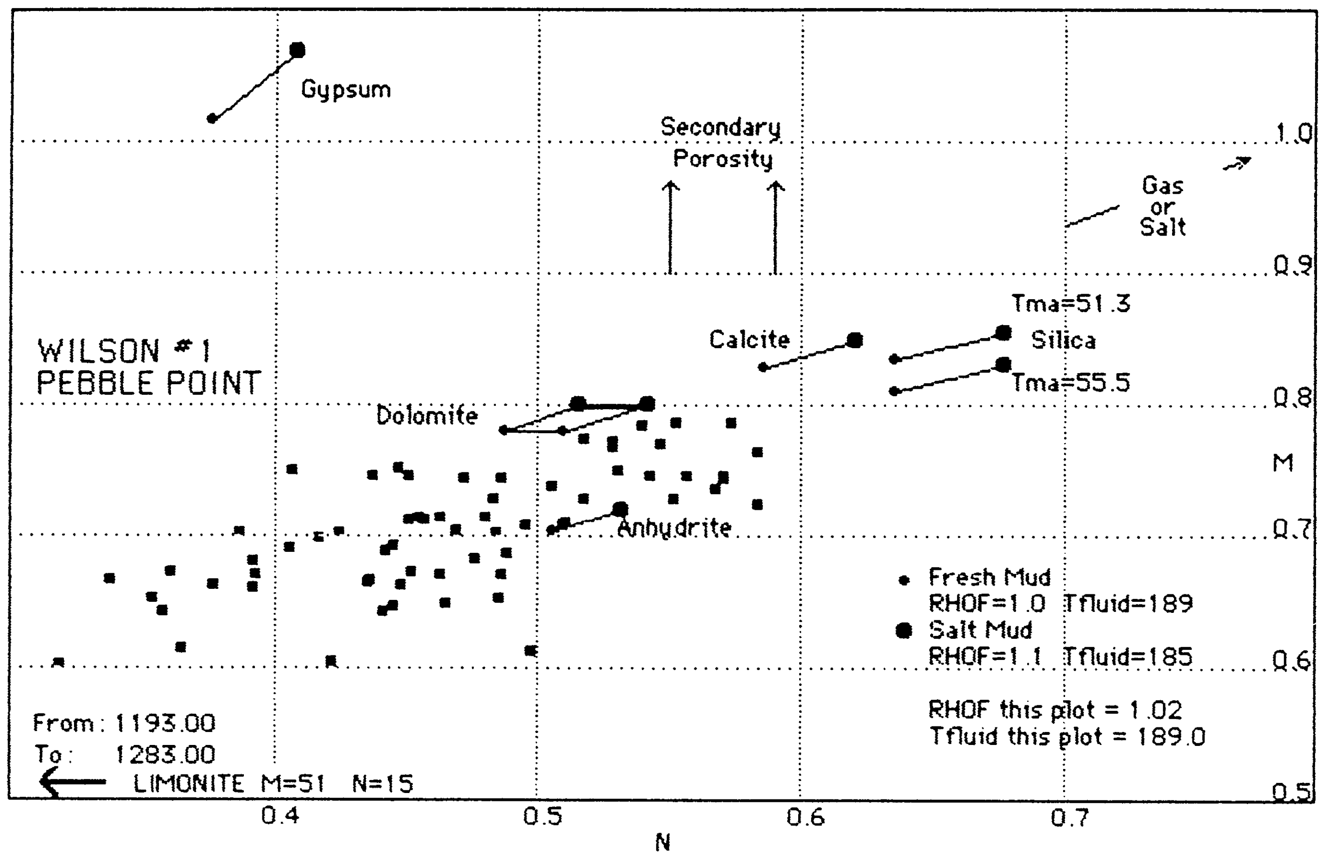

1193.0 meters
WILSON #1
PEBBLE POINT
1218.0
GR clean= 20.0
GR clay= 110.0
Rt clay= 7.0
1243.0
Matrix DT.= 55.50
Fluid DT= 189.00
Comp. Fact.= 1.00
1268.0
1293.0
0 VclayGR 100
0 VclayRt 100
0 Rmfa 0.800
0 Rwa 0.800
0 PHIT 40.0
0 PHIE 40.0



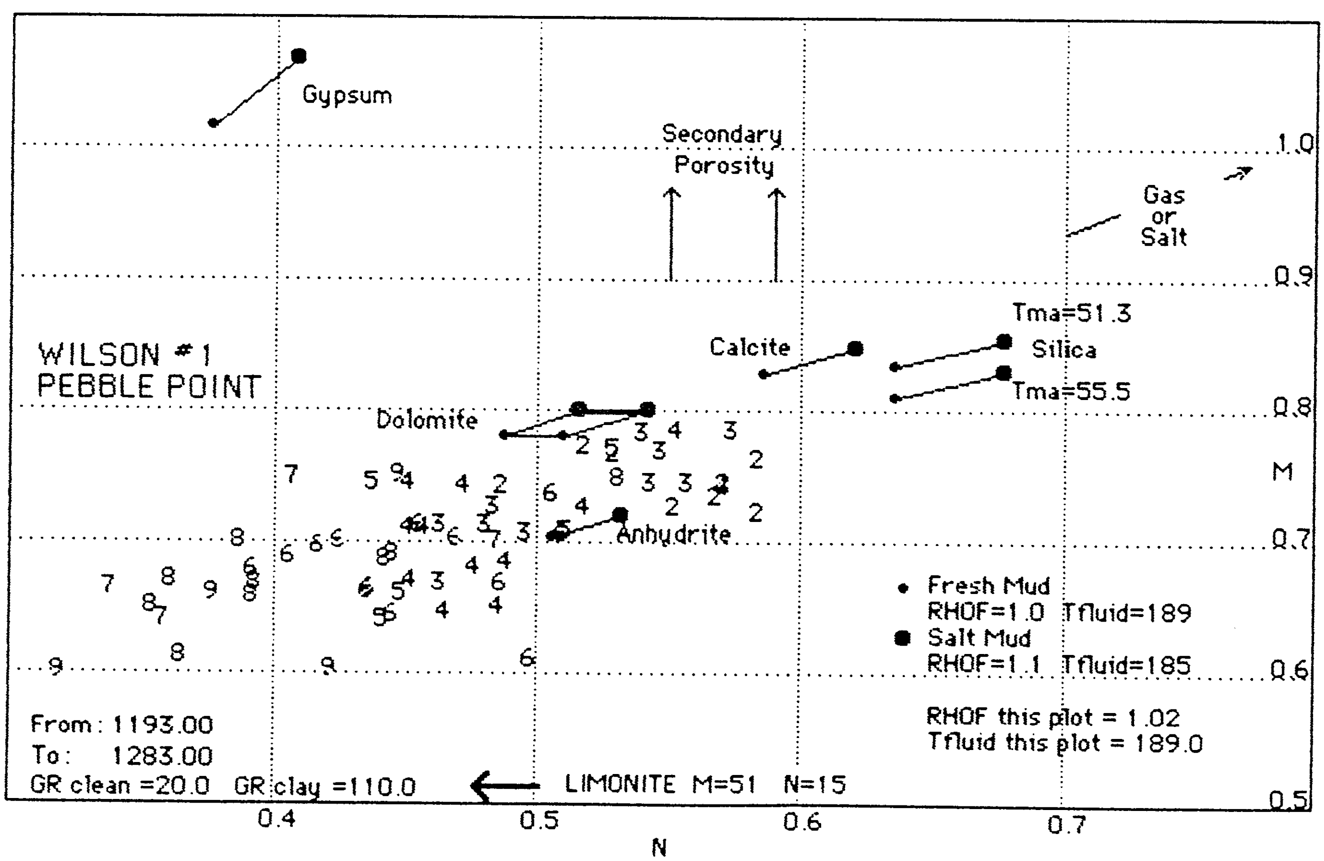
1193.0 meters
WILSON #1
PEBBLE POINT
Water
1218.0
Limonite
Limonite
Limonite
Limonite
1243.0
Limonite
1268.0
Limonite
Limonite
Limonite
1293.0
25.0 Porosity 0
25.0 Porosity *Sxo 0
25.0 Porosity *Sw 0
100 Sw 0
100 Sxo 0
100 Porosity 0
0 Vclay 100



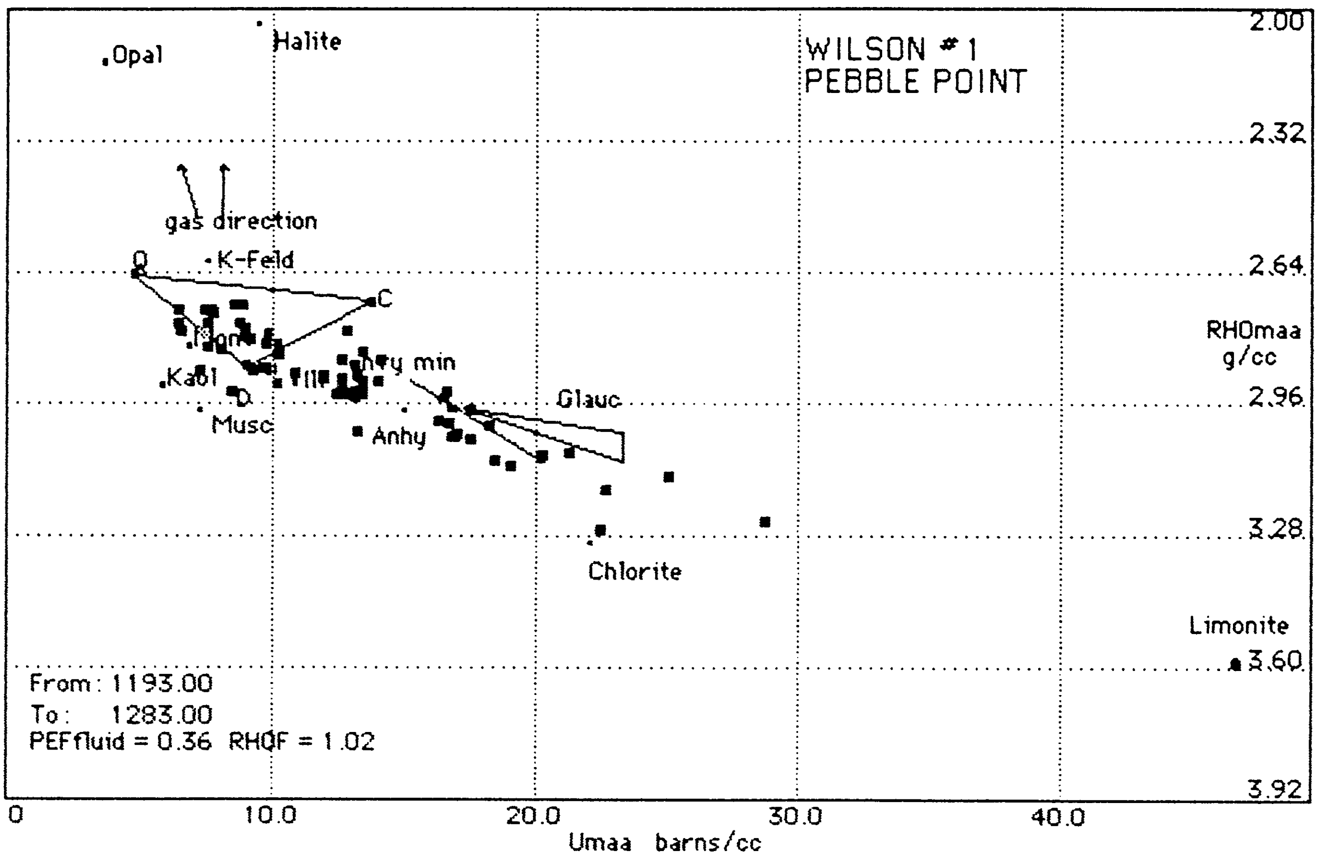
1193.0 meters
WILSON #1
PEBBLE POINT
Water
1218.0
Residual Oil
1243.0
1268.0
1293.0
25.0 Porosity 0
25.0 Porosity *Sxo 0
25.0 Porosity *Sw 0
100 Sw 0
100 Sxo 0
100 Porosity 0
0 Vclay 100



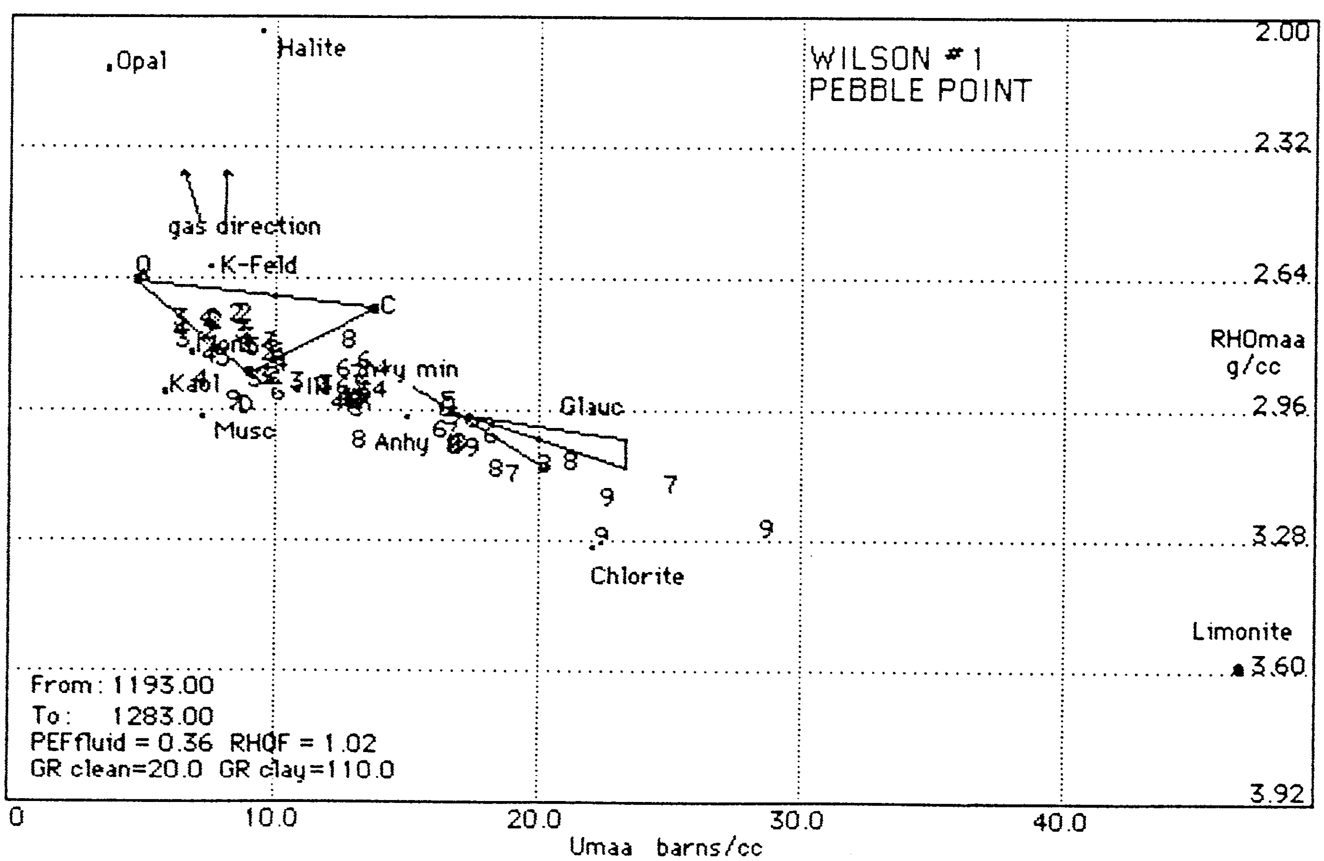
Gypsum
Secondary
Porosity
Gas
or
Salt
Tma=51.3
Calcite
Silica
Tma=55.5
WILSON #1
PEBBLE POINT
Dolomite
Anhydrite
M
Fresh Mud
RHOF=1.0 Tfluid=189
Salt Mud
RHOF=1.1 Tfluid=185
RHOF this plot = 1.02
Tfluid this plot = 189.0
From: 1193.00
To: 1283.00
LIMONITE M=51 N=15
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.5
0.6
0.7
N



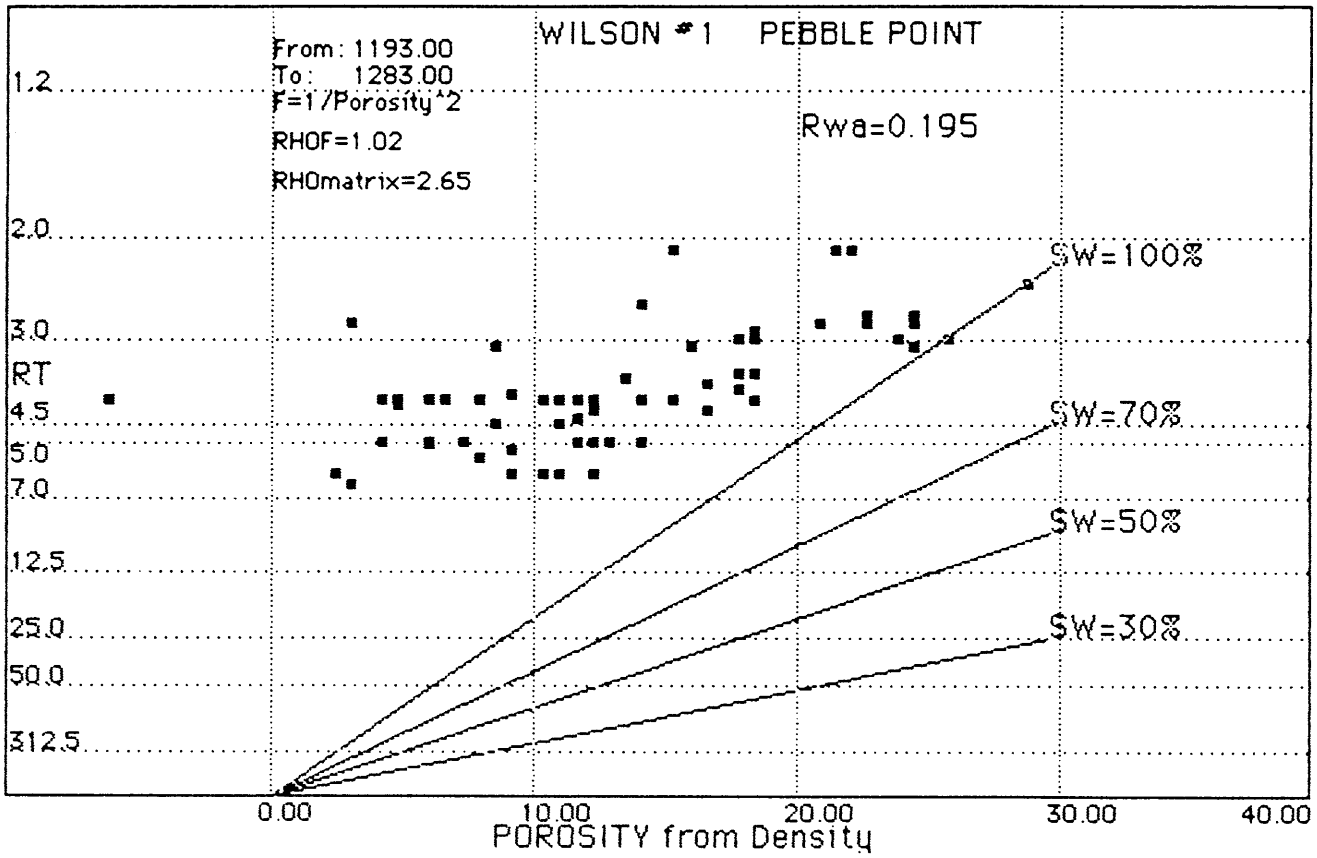
Gypsum
Secondary
Porosity
Gas
or
Salt
Tma=51.3
Calcite
Silica
Tma=55.5
WILSON #1
PEBBLE POINT
Dolomite
Anhydrite
M
Fresh Mud
RHOF=1.0 Tfluid=189
Salt Mud
RHOF=1.1 Tfluid=185
RHOF this plot = 1.02
Tfluid this plot = 189.0
From: 1193.00
To: 1283.00
GR clean =20.0 GR clay =110.0
LIMONITE M=51 N=15
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.5
0.6
0.7
N

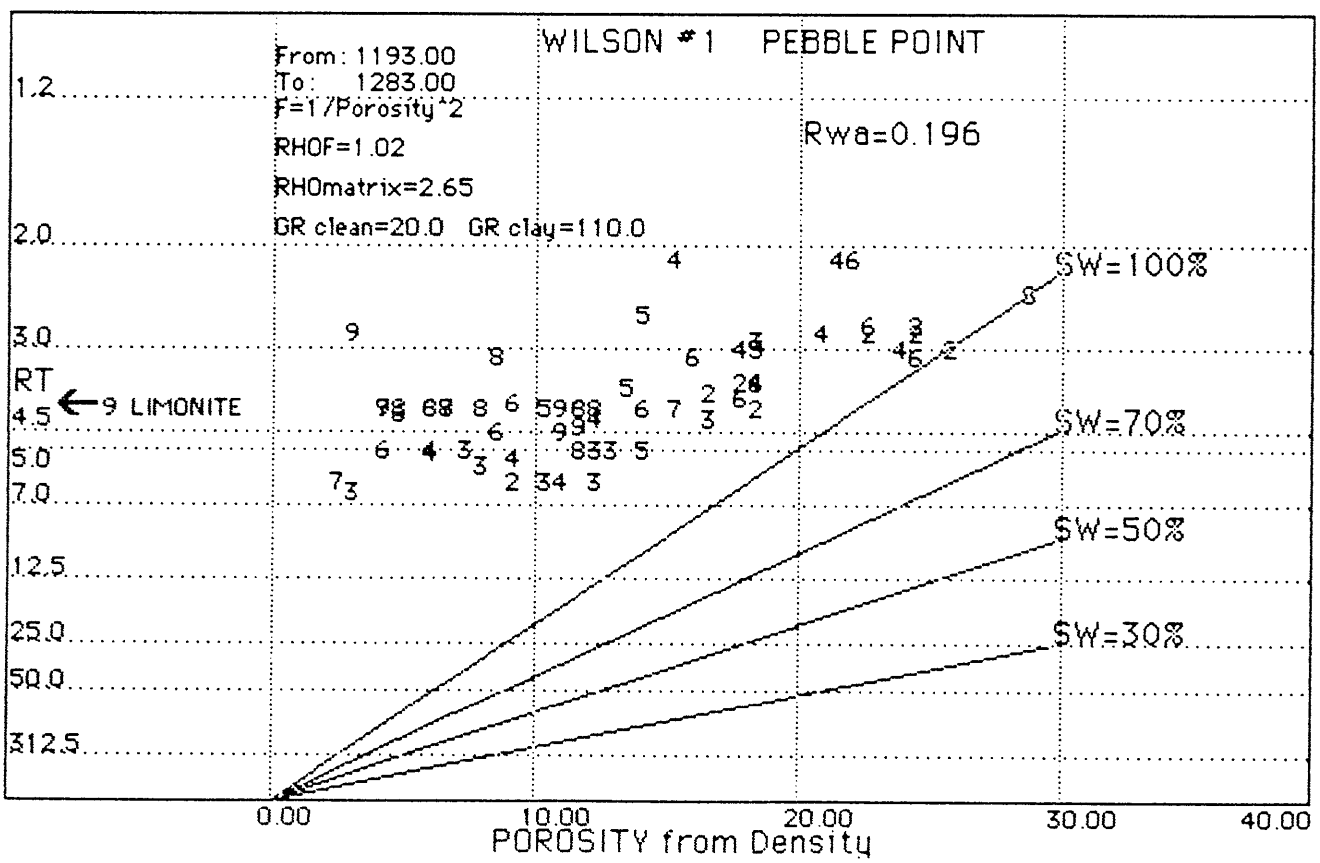


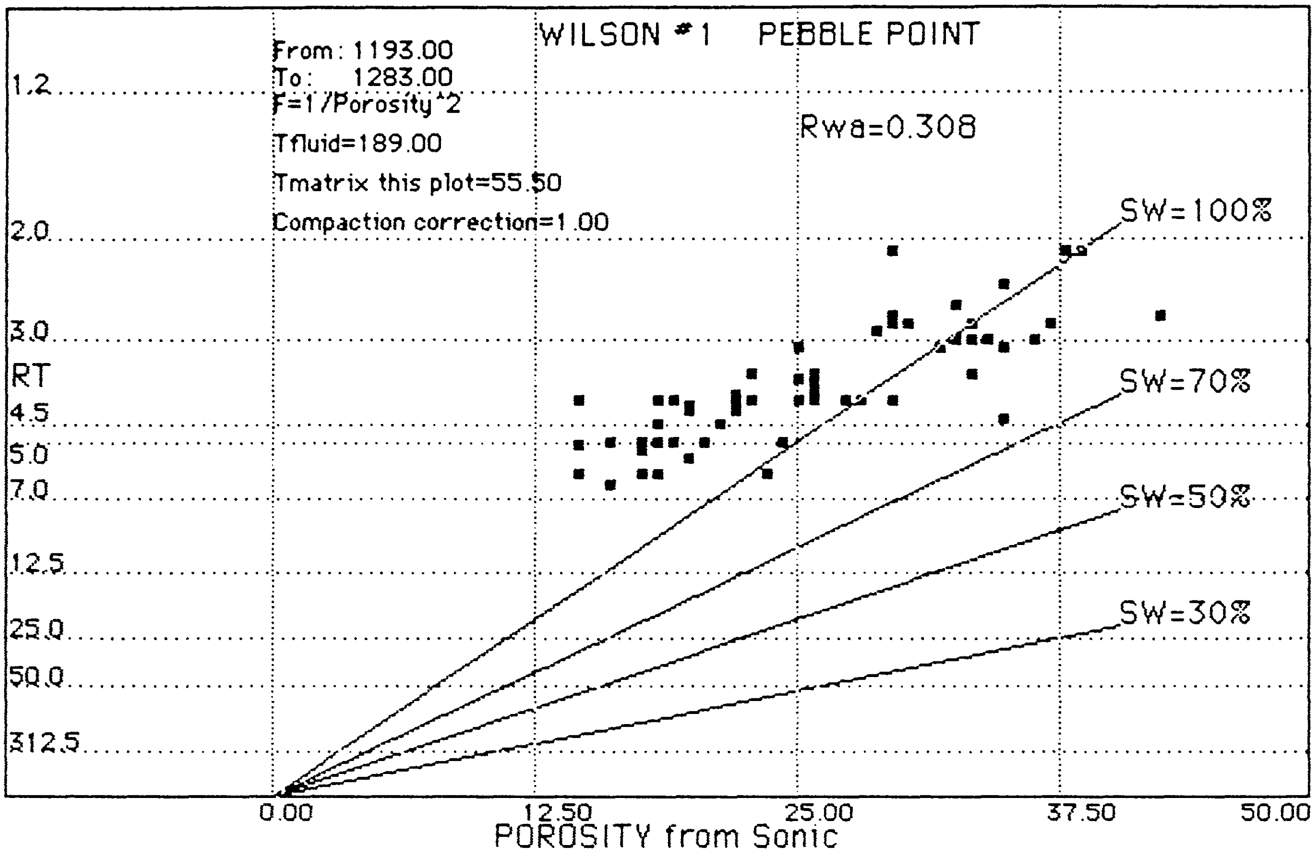
WILSON #1
PEBBLE POINT
Opal
Halite
gas direction
Q
K-Feld
C
Mont
Kaol
Ill
hvy min
D
Musc
Anhy
Glauc
Chlorite
Limonite
2.00
2.32
2.64
2.96
3.28
3.60
3.92
RHOmaa g/cc
From: 1193.00
To: 1283.00
PEFfluid = 0.36 RHOF = 1.02
0
10.0
20.0
30.0
40.0
Umaa barns/cc

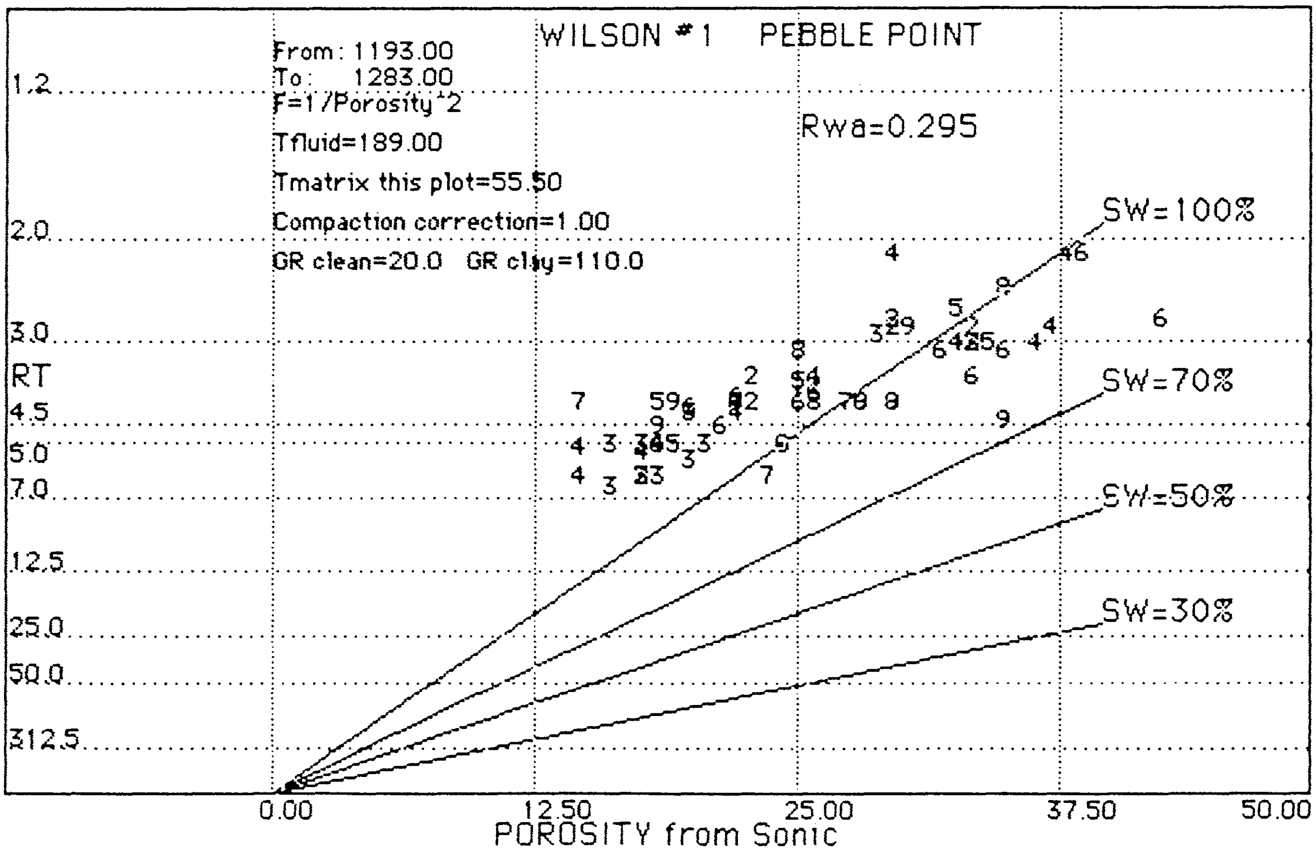


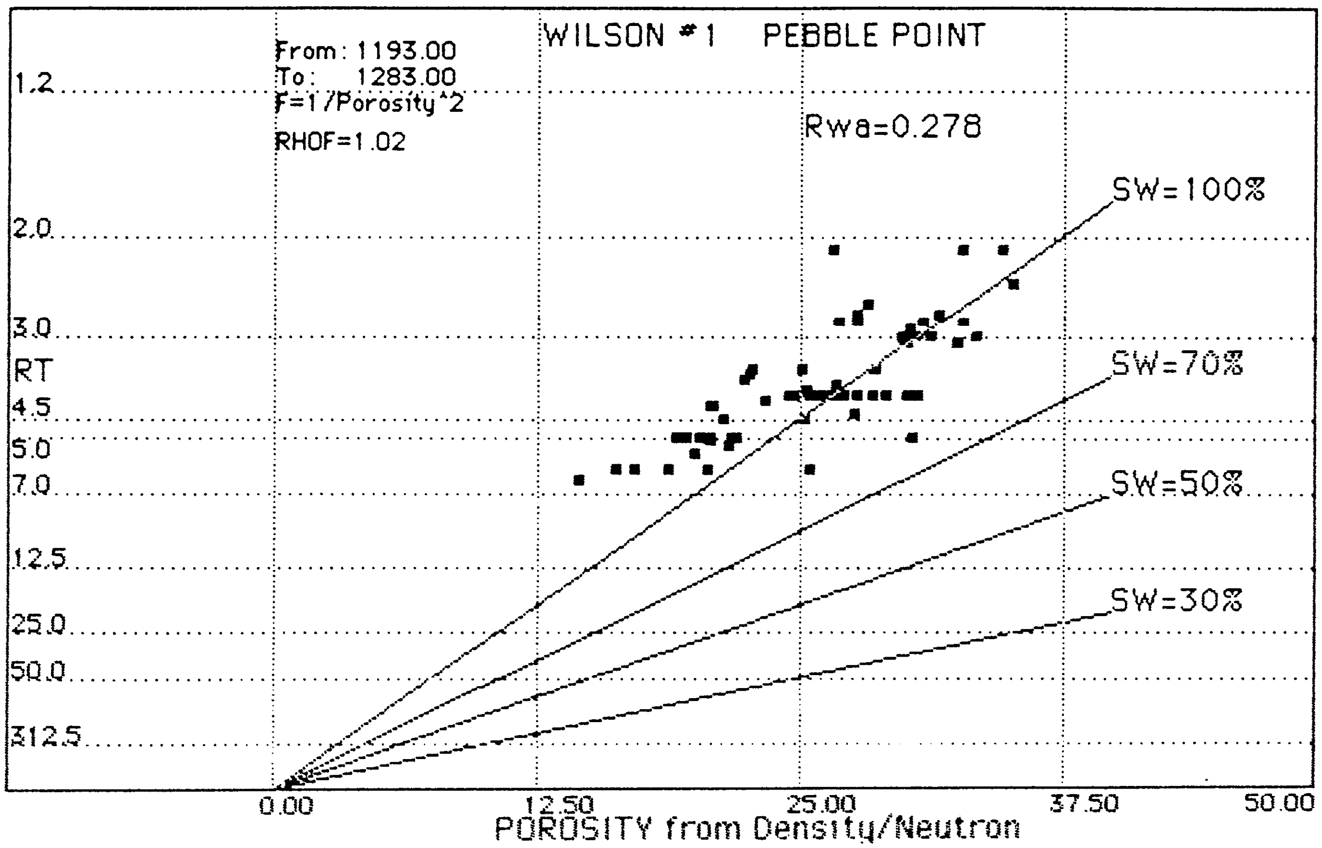
WILSON #1
PEBBLE POINT
Opal
Halite
gas direction
Q
K-Feld
C
Mont
Kaol
hvy min
Musc
Anhy
Glauc
Chlorite
Limonite
2.00
2.32
2.64
2.96
3.28
3.60
3.92
RHOmaa g/cc
From: 1193.00
To: 1283.00
PEFfluid = 0.36 RHOF = 1.02
GR clean=20.0 GR clay=110.0
0
10.0
20.0
30.0
40.0
Umaa barns/cc

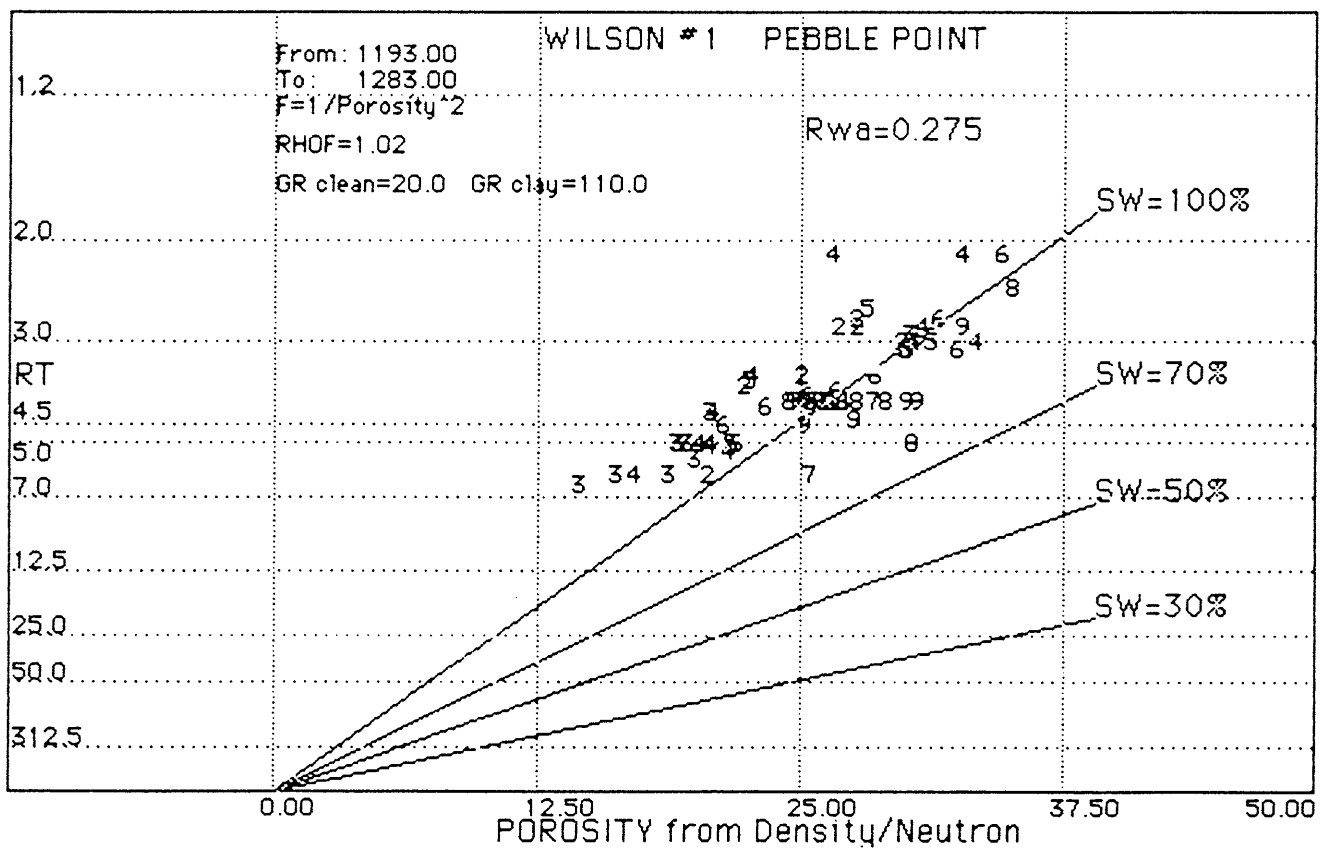

WILSON #1 PEBBLE POINT
From: 1193.00
To: 1283.00
F=1/Porosity^2
RHOF=1.02
RHOmatrix=2.65
Rwa=0.195
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density


WILSON #1 PEBBLE POINT
From: 1193.00
To: 1283.00
F=1/Porosity^2
RHOF=1.02
RHOmatrix=2.65
GR clean=20.0 GR clay=110.0
Rwa=0.196
SW=100%
SW=70%
SW=50%
SW=30%
RT
←9 LIMONITE
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density


WILSON #1 PEBBLE POINT
From: 1193.00
To: 1283.00
F=1/Porosity^2
Tfluid=189.00
Tmatrix this plot=55.50
Compaction correction=1.00
Rwa=0.308
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
12.50
25.00
37.50
50.00
POROSITY from Sonic


WILSON #1 PEBBLE POINT
From: 1193.00
To: 1283.00
F=1/Porosity^2
Tfluid=189.00
Tmatrix this plot=55.50
Compaction correction=1.00
GR clean=20.0 GR clay=110.0
Rwa=0.295
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
12.50
25.00
37.50
50.00
POROSITY from Sonic


WILSON #1 PEBBLE POINT
From: 1193.00
To: 1283.00
F=1/Porosity^2
RHOF=1.02
Rwa=0.278
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
12.50
25.00
37.50
50.00
POROSITY from Density/Neutron


WILSON #1 PEBBLE POINT
From: 1193.00
To: 1283.00
F=1/Porosity^2
RHOF=1.02
GR clean=20.0 GR clay=110.0
Rwa=0.275
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
12.50
25.00
37.50
50.00
POROSITY from Density/Neutron

WILSON #1   PEBBLE POINT
Vclay is min. of VclayDN, VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
RHOF=1.02 GR clean=20.00 GR clay=110.00 Rt clay=7.00 Rwb=0.44.
Clean matrix density= 2.65   Clay matrix density= 3.00.
Fluid DT=189.00 & clean matrix DT=55.50 microsec/ft.
Rw=0.200 everywhere except from 1193.00 to 1283.00 where Rw=0.200.
Rmf=0.12   a=1.00 m=2.00 n=2.00 Sonic por. comp. factor=1.00.
PHIE cutoff sets Sw and Sxo to 100% below 0.0 % porosity.
Coal is detected if RHOB<1.50 or if NPHI>60.0
or if Sonic>140.0 microsec/ft.
**** Sonic porosity when RHOB<=0.00g/cc from 0.00 to 0.00 meters.
**** Sonic porosity when MSFL<=0.00 from 0.00 to 0.00 meters.

EVALUATION

Depth meters	RHOma	PHIT	Vclay	PHIE	SwIndo	SxoIndo	SwtDW	SxotDW
1193.00	2.79	35.1	39.0	21.4	98.4	98.4	92.7	92.7
1195.00	2.84	31.7	53.7	14.7	100.0	100.0	100.0	100.0
1197.00	2.89	30.2	38.9	18.5	99.6	99.6	97.9	97.9
1198.00	2.85	33.3	44.4	18.5	93.8	93.8	89.0	89.0
1200.00	2.86	30.8	44.4	17.1	100.0	100.0	99.6	99.6
1201.50	2.92	31.3	55.6	13.9	100.0	100.0	98.8	98.8
1203.80	2.91	30.5	41.1	17.9	98.2	98.2	96.2	96.2
1204.80	2.91	34.6	61.1	13.5	100.0	100.0	100.0	100.0
1206.00	2.94	28.2	55.6	12.5	100.0	100.0	100.0	100.0
1207.20	2.82	20.9	44.4	11.6	100.0	100.0	100.0	100.0
1208.00	2.74	26.8	22.2	20.9	100.0	100.0	100.0	100.0
1209.00	2.77	22.4	22.2	17.4	100.0	100.0	100.0	100.0
1210.00	2.74	29.9	25.9	22.2	94.3	94.3	93.2	93.2
1211.50	2.72	27.7	20.0	22.2	100.0	100.0	100.0	100.0
1212.20	2.89	20.0	38.9	12.2	94.8	94.8	100.0	100.0
1213.80	2.89	30.2	33.3	20.2	95.9	95.9	94.4	94.4
1215.50	2.88	26.6	44.4	14.8	100.0	100.0	100.0	100.0
1216.00	2.88	32.7	47.8	17.1	100.0	100.0	100.0	100.0
1217.00	2.80	25.1	25.6	18.7	100.0	100.0	100.0	100.0
1218.00	2.72	27.7	20.0	22.2	100.0	100.0	100.0	100.0
1219.00	2.82	26.5	25.6	19.7	90.0	90.0	91.1	91.1
1220.00	2.88	20.6	23.3	15.8	89.3	89.3	95.0	95.0
1220.80	2.94	30.2	66.7	10.1	100.0	100.0	100.0	100.0
1221.20	2.95	26.5	64.4	9.4	100.0	100.0	100.0	100.0
1222.00	2.86	28.6	60.1	11.4	100.0	100.0	100.0	100.0
1223.50	3.27	24.7	100.0	0.0	100.0	100.0	100.0	100.0
1225.00	3.03	30.3	88.9	3.4	100.0	100.0	91.9	91.9
1226.00	2.80	21.8	44.2	12.1	94.8	94.8	100.0	100.0
1228.00	3.04	24.5	88.9	2.7	100.0	100.0	100.0	100.0
1229.50	2.91	21.4	61.1	8.3	100.0	100.0	100.0	100.0
1231.00	3.25	32.8	100.0	0.0	100.0	100.0	100.0	100.0
1233.50	2.98	25.4	61.1	9.9	100.0	100.0	100.0	100.0
1234.50	3.08	30.0	83.3	5.0	100.0	100.0	100.0	100.0
1236.50	2.95	25.4	55.6	11.3	100.0	100.0	100.0	100.0
1238.00	2.79	19.3	33.3	12.9	100.0	100.0	100.0	100.0
1241.00	2.94	20.8	44.4	11.5	96.5	96.5	100.0	100.0
1243.00	3.00	22.0	66.7	7.3	98.8	98.8	100.0	100.0
1245.00	2.94	20.8	44.4	11.5	97.4	97.4	100.0	100.0
1247.00	3.02	23.4	66.7	7.8	100.0	100.0	100.0	100.0
1248.00	3.01	24.8	70.0	7.4	100.0	100.0	100.0	100.0
1250.00	2.93	20.2	47.8	10.6	99.0	99.0	100.0	100.0

WILSON #1 PEBBLE POINT
Vclay is min. of VclayDN, VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
RHOF=1.02 GR clean=20.00 GR clay=110.00 Rt clay=7.00 Rwb=0.44.
Clean matrix density= 2.65 Clay matrix density= 3.00.
Fluid DT=189.00 & clean matrix DT=55.50 microsec/ft.
Rw=0.200 everywhere except from 1193.00 to 1283.00 where Rw=0.200.
Rmf=0.12 a=1.00 m=2.00 n=2.00 Sonic por. comp. factor=1.00.
PHIE cutoff sets Sw and Sxo to 100% below 0.0 % porosity.
Coal is detected if RHOB<1.50 or if NPHI>60.0
or if Sonic>140.0 microsec/ft.
**** Sonic porosity when RHOB<=0.00g/cc from 0.00 to 0.00 meters.
**** Sonic porosity when MSFL<=0.00 from 0.00 to 0.00 meters.

EVALUATION

Depth meters	RHOma	PHIT	Vclay	PHIE	SwIndo	SxoIndo	SwtDW	SxotDW
1251.00	3.14	28.5	70.0	8.6	100.0	100.0	99.7	99.7
1255.00	3.04	25.6	61.1	10.0	100.0	100.0	100.0	100.0
1258.00	2.90	21.7	44.4	12.0	93.3	93.3	100.0	100.0
1260.00	2.89	19.2	33.3	12.8	100.0	100.0	100.0	100.0
1261.00	2.78	18.8	37.0	11.8	94.4	94.4	100.0	100.0
1262.00	2.87	14.5	33.3	9.7	100.0	100.0	100.0	100.0
1264.00	2.78	19.6	38.4	12.1	100.0	100.0	100.0	100.0
1264.80	2.77	17.1	34.3	11.3	100.0	100.0	100.0	100.0
1265.20	2.74	20.8	24.5	15.7	100.0	100.0	100.0	100.0
1266.00	2.77	16.3	33.0	10.9	100.0	100.0	100.0	100.0
1266.50	2.74	22.7	25.5	16.9	100.0	100.0	100.0	100.0
1267.00	3.11	25.5	77.8	5.7	90.5	90.5	94.3	94.3
1268.00	2.97	27.6	92.6	2.1	100.0	100.0	100.0	100.0
1269.00	3.17	30.1	100.0	0.0	100.0	100.0	100.0	100.0
1270.00	3.09	27.8	88.9	3.1	100.0	100.0	100.0	100.0
1272.00	2.92	27.2	61.1	10.6	99.0	99.0	100.0	100.0
1274.00	2.83	26.7	52.5	12.7	98.8	98.8	100.0	100.0
1275.00	2.87	26.1	62.9	9.7	100.0	100.0	100.0	100.0
1276.00	2.83	22.6	50.0	11.3	100.0	100.0	100.0	100.0
1278.00	3.03	27.0	88.9	3.0	100.0	100.0	100.0	100.0
1279.00	2.94	26.0	83.1	4.4	100.0	100.0	100.0	100.0
1280.00	2.93	26.3	81.3	4.9	100.0	100.0	100.0	100.0
1281.50	3.05	30.6	100.0	0.0	100.0	100.0	100.0	100.0
1282.00	3.05	30.6	100.0	0.0	100.0	100.0	100.0	100.0
1283.00	2.94	25.2	81.7	4.6	100.0	100.0	100.0	100.0

WILSON #1   PEBBLE POINT
Vclay is min. of VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
Fluid travel time=189.0 Clean matrix travel time=55.5micsec/ft.
Sonic porosity compaction factor=1.00.
GR clean=20.00 GR clay=110.00 Rt clay=7.00 Rwb=0.44.
Rw=0.200 everywhere except from 1193.00 to 1283.00 where Rw=0.200.
Rmf=0.12   a=1.00 m=2.00 n=2.00.
PHIE cutoff sets Sw and Sxo to 100% below 0.0 % porosity.
Coal is detected if Sonic>140.0 microsec/ft.

EVALUATION

Depth meters	PHIT	Vclay	PHIE	SwIndo	SxoIndo	SwtDW	SxotDW
1193.00	34.8	88.9	3.9	100.0	100.0	100.0	100.0
1195.00	42.3	61.1	16.5	95.6	95.6	78.8	78.8
1197.00	28.8	38.9	17.6	100.0	100.0	100.0	100.0
1198.00	36.3	44.4	20.2	88.5	88.5	81.7	81.7
1200.00	37.1	44.4	20.6	90.3	90.3	82.8	82.8
1201.50	34.1	55.6	15.1	98.5	98.5	90.7	90.7
1203.80	32.6	41.1	19.2	93.8	93.8	90.0	90.0
1204.80	38.6	61.1	15.0	100.0	100.0	98.0	98.0
1206.00	32.6	55.6	14.5	100.0	100.0	100.0	100.0
1207.20	22.1	44.4	12.3	100.0	100.0	100.0	100.0
1208.00	29.6	22.2	23.0	97.4	97.4	96.4	96.4
1209.00	25.8	22.2	20.1	94.7	94.7	96.0	96.0
1210.00	33.3	27.8	24.1	87.0	87.0	84.1	84.1
1211.50	33.3	24.4	25.2	88.8	88.8	86.1	86.1
1212.20	19.9	38.9	12.1	95.2	95.2	100.0	100.0
1213.80	33.3	33.3	22.2	89.1	89.1	85.6	85.6
1215.50	29.6	44.4	16.4	100.0	100.0	100.0	100.0
1216.00	37.8	47.8	19.8	100.0	100.0	94.9	94.9
1217.00	22.8	25.6	17.0	100.0	100.0	100.0	100.0
1218.00	29.6	25.6	22.0	100.0	100.0	99.2	99.2
1219.00	22.8	25.6	17.0	100.0	100.0	100.0	100.0
1220.00	17.6	23.3	13.5	100.0	100.0	100.0	100.0
1220.80	31.8	66.7	10.6	100.0	100.0	100.0	100.0
1221.20	28.1	64.4	10.0	99.2	99.2	98.9	98.9
1222.00	33.3	66.7	11.1	99.6	99.6	89.9	89.9
1223.50	19.1	100.0	0.0	100.0	100.0	100.0	100.0
1225.00	24.3	88.9	2.7	100.0	100.0	100.0	100.0
1226.00	19.1	55.6	8.5	100.0	100.0	100.0	100.0
1228.00	22.1	88.9	2.5	100.0	100.0	100.0	100.0
1229.50	21.3	61.1	8.3	100.0	100.0	100.0	100.0
1231.00	30.3	100.0	0.0	100.0	100.0	100.0	100.0
1233.50	22.1	61.1	8.6	100.0	100.0	100.0	100.0
1234.50	25.1	83.3	4.2	100.0	100.0	100.0	100.0
1236.50	18.4	55.6	8.2	100.0	100.0	100.0	100.0
1238.00	16.1	33.3	10.7	100.0	100.0	100.0	100.0
1241.00	14.6	44.4	8.1	100.0	100.0	100.0	100.0
1243.00	18.4	66.7	6.1	100.0	100.0	100.0	100.0
1245.00	18.4	44.4	10.2	100.0	100.0	100.0	100.0
1247.00	19.9	66.7	6.6	100.0	100.0	100.0	100.0
1248.00	14.6	70.0	4.4	100.0	100.0	100.0	100.0
1250.00	18.4	47.8	9.6	100.0	100.0	100.0	100.0

WILSON #1   PEBBLE POINT
Vclay is min. of VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
Fluid travel time=189.0 Clean matrix travel time=55.5micsec/ft.
Sonic porosity compaction factor=1.00.
GR clean=20.00 GR clay=110.00 Rt clay=7.00 Rwb=0.44.
Rw=0.200 everywhere except from 1193.00 to 1283.00 where Rw=0.200.
Rmf=0.12   a=1.00 m=2.00 n=2.00.
PHIE cutoff sets Sw and Sxo to 100% below 0.0 % porosity.
Coal is detected if Sonic>140.0 microsec/ft.

EVALUATION

Depth meters	PHIT	Vclay	PHIE	SwIndo	SxoIndo	SwtDW	SxotDW
1251.00	22.1	70.0	6.6	100.0	100.0	100.0	100.0
1255.00	22.1	61.1	8.6	100.0	100.0	100.0	100.0
1258.00	17.6	44.4	9.8	100.0	100.0	100.0	100.0
1260.00	17.6	33.3	11.7	100.0	100.0	100.0	100.0
1261.00	17.6	38.9	10.8	97.9	97.9	100.0	100.0
1262.00	16.1	33.3	10.7	100.0	100.0	100.0	100.0
1264.00	20.6	38.9	12.6	97.6	97.6	100.0	100.0
1264.80	14.6	44.4	8.1	100.0	100.0	100.0	100.0
1265.20	19.9	33.3	13.2	100.0	100.0	100.0	100.0
1266.00	18.4	33.3	12.2	96.1	96.1	100.0	100.0
1266.50	25.8	44.4	14.4	100.0	100.0	100.0	100.0
1267.00	23.6	77.8	5.2	92.5	92.5	100.0	100.0
1268.00	34.8	94.4	1.9	100.0	100.0	87.9	87.9
1269.00	29.6	100.0	0.0	100.0	100.0	100.0	100.0
1270.00	29.6	88.9	3.3	100.0	100.0	100.0	100.0
1272.00	25.1	61.1	9.8	100.0	100.0	100.0	100.0
1274.00	25.8	64.4	9.2	100.0	100.0	100.0	100.0
1275.00	27.3	77.8	6.1	100.0	100.0	100.0	100.0
1276.00	25.1	50.0	12.5	100.0	100.0	100.0	100.0
1278.00	25.8	88.9	2.9	100.0	100.0	100.0	100.0
1279.00	25.8	85.6	3.7	100.0	100.0	100.0	100.0
1280.00	25.8	85.6	3.7	100.0	100.0	100.0	100.0
1281.50	28.1	100.0	0.0	100.0	100.0	100.0	100.0
1282.00	28.1	100.0	0.0	100.0	100.0	100.0	100.0
1283.00	18.4	100.0	0.0	100.0	100.0	100.0	100.0

WILSON #1   PEBBLE POINT
Vclay is min. of VclayDN, VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
Clean matrix density=2.65 Clay matrix density=3.00 Rt clay=7.0.
RHOF=1.02 GR clean=20.00   GR clay=110.00.
Fluid DT=189.00 & clean matrix DT=55.50 microsec/ft.
RWA=RT*PHIT^2 RMFA=MSFL*PHIT^2   Sonic por. comp. factor = 1.00.
**** Sonic porosity when RHOB<=0.00g/cc from 0.00 to 0.00 meters.
**** Sonic porosity when MSFL<=0.00 from 0.00 to 0.00 meters.

PRE EVALUATION

Depth meters	RHOma	PHIT	VclayRt	VclayGR	VclayDN	Vclay	PHIE	RWA	RMFA
1193.00	2.79	35.1	100.0	88.9	39.0	39.0	21.4	0.295	0.295
1195.00	2.84	31.7	100.0	61.1	53.7	53.7	14.7	0.271	0.301
1197.00	2.89	30.2	100.0	38.9	69.5	38.9	18.5	0.265	0.274
1198.00	2.85	33.3	100.0	44.4	56.5	44.4	18.5	0.333	0.333
1200.00	2.86	30.8	100.0	44.4	59.1	44.4	17.1	0.266	0.266
1201.50	2.92	31.3	100.0	55.6	75.8	55.6	13.9	0.294	0.294
1203.80	2.91	30.5	100.0	41.1	74.4	41.1	17.9	0.279	0.418
1204.80	2.91	34.6	100.0	61.1	74.5	61.1	13.5	0.252	0.252
1206.00	2.94	28.2	100.0	55.6	82.1	55.6	12.5	0.207	0.247
1207.20	2.82	20.9	100.0	44.4	49.6	44.4	11.6	0.184	0.394
1208.00	2.74	26.8	100.0	22.2	25.4	22.2	20.9	0.202	0.281
1209.00	2.77	22.4	100.0	22.2	33.9	22.2	17.4	0.185	0.350
1210.00	2.74	29.9	100.0	27.8	25.9	25.9	22.2	0.268	0.268
1211.50	2.72	27.7	100.0	24.4	20.0	20.0	22.2	0.215	0.246
1212.20	2.89	20.0	100.0	38.9	68.4	38.9	12.2	0.220	0.360
1213.80	2.89	30.2	100.0	33.3	69.5	33.3	20.2	0.274	0.274
1215.50	2.88	26.6	100.0	44.4	65.9	44.4	14.8	0.149	0.213
1216.00	2.88	32.7	100.0	47.8	66.9	47.8	17.1	0.225	0.322
1217.00	2.80	25.1	100.0	25.6	42.9	25.6	18.7	0.221	0.252
1218.00	2.72	27.7	100.0	25.6	20.0	20.0	22.2	0.207	0.246
1219.00	2.82	26.5	100.0	25.6	47.4	25.6	19.7	0.280	0.280
1220.00	2.88	20.6	100.0	23.3	64.9	23.3	15.8	0.254	0.423
1220.80	2.94	30.2	100.0	66.7	83.0	66.7	10.1	0.282	0.282
1221.20	2.95	26.5	100.0	64.4	86.1	64.4	9.4	0.282	0.423
1222.00	2.86	28.6	100.0	66.7	60.1	60.1	11.4	0.287	0.328
1223.50	3.27	24.7	100.0	100.0	100.0	100.0	0.0	0.244	0.171
1225.00	3.03	30.3	100.0	88.9	100.0	88.9	3.4	0.460	0.597
1226.00	2.80	21.8	100.0	55.6	44.2	44.2	12.1	0.237	0.332
1228.00	3.04	24.5	100.0	88.9	100.0	88.9	2.7	0.240	0.300
1229.50	2.91	21.4	100.0	61.1	73.0	61.1	8.3	0.205	0.274
1231.00	3.25	32.8	100.0	100.0	100.0	100.0	0.0	0.301	0.344
1233.50	2.98	25.4	100.0	61.1	93.3	61.1	9.9	0.252	0.291
1234.50	3.08	30.0	100.0	83.3	100.0	83.3	5.0	0.278	0.314
1236.50	2.95	25.4	100.0	55.6	86.6	55.6	11.3	0.259	0.291
1238.00	2.79	19.3	100.0	33.3	40.2	33.3	12.9	0.186	0.224
1241.00	2.94	20.8	100.0	44.4	83.4	44.4	11.5	0.220	0.258
1243.00	3.00	22.0	100.0	66.7	100.0	66.7	7.3	0.243	0.292
1245.00	2.94	20.8	100.0	44.4	83.4	44.4	11.5	0.215	0.258
1247.00	3.02	23.4	100.0	66.7	100.0	66.7	7.8	0.225	0.274
1248.00	3.01	24.8	100.0	70.0	100.0	70.0	7.4	0.246	0.308
1250.00	2.93	20.2	100.0	47.8	80.2	47.8	10.6	0.204	0.213

WILSON #1 PEBBLE POINT
Vclay is min. of VclayDN, VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
Clean matrix density=2.65 Clay matrix density=3.00 Rt clay=7.0.
RHOF=1.02 GR clean=20.00 GR clay=110.00.
Fluid DT=189.00 & clean matrix DT=55.50 microsec/ft.
RWA=RT*PHIT^2 RMFA=MSFL*PHIT^2 Sonic por. comp. factor = 1.00.
**** Sonic porosity when RHOB<=0.00g/cc from 0.00 to 0.00 meters.
**** Sonic porosity when MSFL<=0.00 from 0.00 to 0.00 meters.

PRE EVALUATION

Depth meters	RHOma	PHIT	VclayRt	VclayGR	VclayDN	Vclay	PHIE	RWA	RMFA
1251.00	3.14	28.5	100.0	70.0	100.0	70.0	8.6	0.325	0.407
1255.00	3.04	25.6	100.0	61.1	100.0	61.1	10.0	0.262	0.328
1258.00	2.90	21.7	100.0	44.4	71.3	44.4	12.0	0.244	0.281
1260.00	2.89	19.2	100.0	33.3	67.2	33.3	12.8	0.184	0.184
1261.00	2.78	18.8	100.0	38.9	37.0	37.0	11.8	0.212	0.212
1262.00	2.87	14.5	100.0	33.3	63.9	33.3	9.7	0.136	0.336
1264.00	2.78	19.6	100.0	38.9	38.4	38.4	12.1	0.192	0.211
1264.80	2.77	17.1	100.0	44.4	34.3	34.3	11.3	0.176	0.352
1265.20	2.74	20.8	100.0	33.3	24.5	24.5	15.7	0.181	0.181
1266.00	2.77	16.3	100.0	33.3	33.0	33.0	10.9	0.160	0.399
1266.50	2.74	22.7	100.0	44.4	25.5	25.5	16.9	0.181	0.181
1267.00	3.11	25.5	100.0	77.8	100.0	77.8	5.7	0.390	0.651
1268.00	2.97	27.6	100.0	94.4	92.6	92.6	2.1	0.336	0.459
1269.00	3.17	30.1	100.0	100.0	100.0	100.0	0.0	0.363	0.545
1270.00	3.09	27.8	100.0	88.9	100.0	88.9	3.1	0.308	0.385
1272.00	2.92	27.2	100.0	61.1	75.9	61.1	10.6	0.295	0.443
1274.00	2.83	26.7	100.0	64.4	52.5	52.5	12.7	0.272	0.272
1275.00	2.87	26.1	100.0	77.8	62.9	62.9	9.7	0.273	0.342
1276.00	2.83	22.6	100.0	50.0	52.4	50.0	11.3	0.184	0.184
1278.00	3.03	27.0	100.0	88.9	100.0	88.9	3.0	0.292	0.365
1279.00	2.94	26.0	100.0	85.6	83.1	83.1	4.4	0.271	0.271
1280.00	2.93	26.3	100.0	85.6	81.3	81.3	4.9	0.277	0.346
1281.50	3.05	30.6	100.0	100.0	100.0	100.0	0.0	0.375	0.375
1282.00	3.05	30.6	100.0	100.0	100.0	100.0	0.0	0.375	0.375
1283.00	2.94	25.2	100.0	100.0	81.7	81.7	4.6	0.286	0.286

WILSON #1   PEBBLE POINT
Vclay is min. of VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT).
Fluid travel time=189.00 & matrix travel time=55.50 microsec/ft
Sonic porosity compaction factor= 1.00 Rt clay=7.0
GR clean=20.00   GR clay=110.00 RWA=RT*PHIT^2   RMFA=MSFL*PHIT^2

PRE EVALUATION

Depth meters	PHIT	VclayRt	VclayGR	Vclay	PHIE	RWA	RMFA
1193.00	34.8	100.0	88.9	88.9	3.9	0.291	0.291
1195.00	42.3	100.0	61.1	61.1	16.5	0.484	0.537
1197.00	28.8	100.0	38.9	38.9	17.6	0.241	0.250
1198.00	36.3	100.0	44.4	44.4	20.2	0.396	0.396
1200.00	37.1	100.0	44.4	44.4	20.6	0.385	0.385
1201.50	34.1	100.0	55.6	55.6	15.1	0.348	0.348
1203.80	32.6	100.0	41.1	41.1	19.2	0.319	0.478
1204.80	38.6	100.0	61.1	61.1	15.0	0.313	0.313
1206.00	32.6	100.0	55.6	55.6	14.5	0.276	0.329
1207.20	22.1	100.0	44.4	44.4	12.3	0.205	0.439
1208.00	29.6	100.0	22.2	22.2	23.0	0.245	0.341
1209.00	25.8	100.0	22.2	22.2	20.1	0.247	0.467
1210.00	33.3	100.0	27.8	27.8	24.1	0.333	0.333
1211.50	33.3	100.0	24.4	24.4	25.2	0.311	0.356
1212.20	19.9	100.0	38.9	38.9	12.1	0.217	0.355
1213.80	33.3	100.0	33.3	33.3	22.2	0.333	0.333
1215.50	29.6	100.0	44.4	44.4	16.4	0.184	0.263
1216.00	37.8	100.0	47.8	47.8	19.8	0.300	0.429
1217.00	22.8	100.0	25.6	25.6	17.0	0.183	0.209
1218.00	29.6	100.0	25.6	25.6	22.0	0.236	0.280
1219.00	22.8	100.0	25.6	25.6	17.0	0.209	0.209
1220.00	17.6	100.0	23.3	23.3	13.5	0.186	0.310
1220.80	31.8	100.0	66.7	66.7	10.6	0.314	0.314
1221.20	28.1	100.0	64.4	64.4	10.0	0.316	0.473
1222.00	33.3	100.0	66.7	66.7	11.1	0.389	0.444
1223.50	19.1	100.0	100.0	100.0	0.0	0.146	0.102
1225.00	24.3	100.0	88.9	88.9	2.7	0.296	0.385
1226.00	19.1	100.0	55.6	55.6	8.5	0.182	0.255
1228.00	22.1	100.0	88.9	88.9	2.5	0.195	0.244
1229.50	21.3	100.0	61.1	61.1	8.3	0.205	0.273
1231.00	30.3	100.0	100.0	100.0	0.0	0.258	0.295
1233.50	22.1	100.0	61.1	61.1	8.6	0.190	0.220
1234.50	25.1	100.0	83.3	83.3	4.2	0.195	0.220
1236.50	18.4	100.0	55.6	55.6	8.2	0.135	0.152
1238.00	16.1	100.0	33.3	33.3	10.7	0.130	0.156
1241.00	14.6	100.0	44.4	44.4	8.1	0.109	0.128
1243.00	18.4	100.0	66.7	66.7	6.1	0.168	0.202
1245.00	18.4	100.0	44.4	44.4	10.2	0.168	0.202
1247.00	19.9	100.0	66.7	66.7	6.6	0.162	0.197
1248.00	14.6	100.0	70.0	70.0	4.4	0.085	0.107
1250.00	18.4	100.0	47.8	47.8	9.6	0.168	0.175

WILSON #1   PEBBLE POINT
Vclay is min. of VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT).
Fluid travel time=189.00 & matrix travel time=55.50 microsec/ft
Sonic porosity compaction factor= 1.00 Rt clay=7.0
GR clean=20.00   GR clay=110.00 RWA=RT*PHIT^2   RMFA=MSFL*PHIT^2

PRE EVALUATION

Depth meters	PHIT	VclayRt	VclayGR	Vclay	PHIE	RWA	RMFA
1251.00	22.1	100.0	70.0	70.0	6.6	0.195	0.244
1255.00	22.1	100.0	61.1	61.1	8.6	0.195	0.244
1258.00	17.6	100.0	44.4	44.4	9.8	0.161	0.186
1260.00	17.6	100.0	33.3	33.3	11.7	0.155	0.155
1261.00	17.6	100.0	38.9	38.9	10.8	0.186	0.186
1262.00	16.1	100.0	33.3	33.3	10.7	0.169	0.415
1264.00	20.6	100.0	38.9	38.9	12.6	0.212	0.233
1264.80	14.6	100.0	44.4	44.4	8.1	0.128	0.256
1265.20	19.9	100.0	33.3	33.3	13.2	0.165	0.165
1266.00	18.4	100.0	33.3	33.3	12.2	0.202	0.505
1266.50	25.8	100.0	44.4	44.4	14.4	0.234	0.234
1267.00	23.6	100.0	77.8	77.8	5.2	0.334	0.557
1268.00	34.8	100.0	94.4	94.4	1.9	0.534	0.728
1269.00	29.6	100.0	100.0	100.0	0.0	0.350	0.525
1270.00	29.6	100.0	88.9	88.9	3.3	0.350	0.438
1272.00	25.1	100.0	61.1	61.1	9.8	0.252	0.378
1274.00	25.8	100.0	64.4	64.4	9.2	0.254	0.254
1275.00	27.3	100.0	77.8	77.8	6.1	0.299	0.374
1276.00	25.1	100.0	50.0	50.0	12.5	0.227	0.227
1278.00	25.8	100.0	88.9	88.9	2.9	0.267	0.334
1279.00	25.8	100.0	85.6	85.6	3.7	0.267	0.267
1280.00	25.8	100.0	85.6	85.6	3.7	0.267	0.334
1281.50	28.1	100.0	100.0	100.0	0.0	0.316	0.316
1282.00	28.1	100.0	100.0	100.0	0.0	0.316	0.316
1283.00	18.4	100.0	100.0	100.0	0.0	0.152	0.152

WILSON #1 PEBBLE POINT
Mud filtrate density=1.02 g/cc.
Surface temperature=80.00 deg. F. Bottom hole temperature=126.00 deg. F.
Surface depth=0.00 Meters. Total depth=1317.00 Meters.

DATA LISTING

Depth Meters	MSFL	LLS	LLD	RT	RHOB	NPHIls	NPHIc	GR	PEF	Sonic mcs/ft
1185.00	1.90	4.00	4.00	4.00	1.60	41.0	43.2	104.0	2.0	102.0
1188.00	1.00	3.80	3.80	3.80	1.70	45.0	47.2	102.0	2.0	104.0
1190.00	1.20	2.80	2.80	2.80	1.90	37.0	38.8	100.0	2.0	113.0
1192.00	3.10	3.10	3.10	3.10	2.20	45.0	46.6	110.0	2.8	107.0
1193.00	2.40	2.40	2.40	2.40	2.18	37.0	38.4	100.0	3.9	102.0
1194.00	4.00	3.10	3.10	3.10	2.25	36.0	37.3	80.0	3.1	102.0
1195.00	3.00	2.70	2.70	2.70	2.28	36.0	37.3	75.0	4.1	112.0
1197.00	3.00	2.90	2.90	2.90	2.35	37.0	38.2	55.0	4.0	94.0
1198.00	3.00	3.00	3.00	3.00	2.26	38.0	39.4	60.0	3.1	104.0
1200.00	2.80	2.80	2.80	2.80	2.31	36.0	37.3	60.0	4.3	105.0
1201.50	3.00	3.00	3.00	3.00	2.35	39.0	40.3	70.0	4.0	101.0
1203.80	4.50	3.00	3.00	3.00	2.36	38.0	39.3	57.0	4.2	99.0
1204.80	2.10	2.10	2.10	2.10	2.29	42.0	43.4	75.0	3.9	107.0
1206.00	3.10	2.60	2.60	2.60	2.42	37.0	38.2	70.0	5.0	99.0
1207.20	9.00	4.20	4.20	4.20	2.45	25.0	25.9	60.0	2.5	85.0
1208.00	3.90	2.80	2.80	2.80	2.28	27.0	28.1	40.0	2.5	95.0
1209.00	7.00	3.70	3.70	3.70	2.38	24.0	24.9	40.0	2.5	90.0
1210.00	3.00	3.00	3.00	3.00	2.23	30.0	31.2	45.0	2.5	100.0
1211.50	3.20	2.80	2.80	2.80	2.25	27.0	28.1	42.0	2.9	100.0
1212.20	9.00	5.50	5.50	5.50	2.52	27.0	27.8	55.0	3.5	82.0
1213.80	3.00	3.00	3.00	3.00	2.35	37.0	38.3	50.0	3.6	100.0
1215.50	3.00	2.10	2.10	2.10	2.40	33.0	34.1	60.0	3.1	95.0
1216.00	3.00	2.10	2.10	2.10	2.30	39.0	40.4	63.0	2.2	106.0
1217.00	4.00	3.50	3.50	3.50	2.36	28.0	29.0	43.0	2.9	86.0
1218.00	3.20	2.70	2.70	2.70	2.25	27.0	28.2	43.0	2.8	95.0
1219.00	4.00	4.00	4.00	4.00	2.35	30.0	31.1	43.0	3.1	86.0
1220.00	10.00	6.00	6.00	6.00	2.50	27.0	27.9	41.0	3.2	79.0
1220.80	3.10	3.10	3.10	3.10	2.39	39.0	40.3	80.0	4.0	98.0
1221.20	6.00	4.00	4.00	4.00	2.46	36.0	37.1	78.0	5.0	93.0
1222.00	4.00	3.50	3.50	3.50	2.35	34.0	35.2	80.0	3.9	100.0
1223.50	2.80	4.00	4.00	4.00	2.75	48.0	49.0	125.0	6.2	81.0
1225.00	6.50	5.00	5.00	5.00	2.46	43.0	44.3	100.0	3.8	88.0
1226.00	7.00	5.00	5.00	5.00	2.42	25.0	25.9	70.0	3.0	81.0
1228.00	5.00	4.00	4.00	4.00	2.57	38.0	39.0	100.0	5.0	85.0
1229.50	6.00	4.50	4.50	4.50	2.51	29.0	29.9	75.0	4.0	84.0
1231.00	3.20	2.80	2.80	2.80	2.60	55.0	56.4	122.0	7.5	96.0
1233.50	4.50	3.90	3.90	3.90	2.50	36.0	37.1	75.0	5.3	85.0
1234.50	3.50	3.10	3.10	3.10	2.51	45.0	46.3	95.0	6.0	89.0
1236.50	4.50	4.00	4.00	4.00	2.48	35.0	36.1	70.0	4.0	80.0
1238.00	6.00	5.00	5.00	5.00	2.45	22.0	22.8	50.0	3.3	77.0
1241.00	6.00	5.10	5.10	5.10	2.55	30.0	30.9	60.0	4.0	75.0
1243.00	6.00	5.00	5.00	5.00	2.58	34.0	34.9	80.0	5.0	80.0
1245.00	6.00	5.00	5.00	5.00	2.55	30.0	30.9	60.0	3.9	80.0
1247.00	5.00	4.10	4.10	4.10	2.57	36.0	37.0	80.0	5.5	82.0
1248.00	5.00	4.00	4.00	4.00	2.54	37.0	38.1	83.0	5.0	75.0
1250.00	5.20	5.00	5.00	5.00	2.55	29.0	29.9	63.0	4.0	80.0

WILSON #1   PEBBLE POINT
Mud filtrate density=1.02 g/cc.
Surface temperature=80.00 deg. F.   Bottom hole temperature=126.00 deg. F.
Surface depth=0.00 Meters.   Total depth=1317.00 Meters.

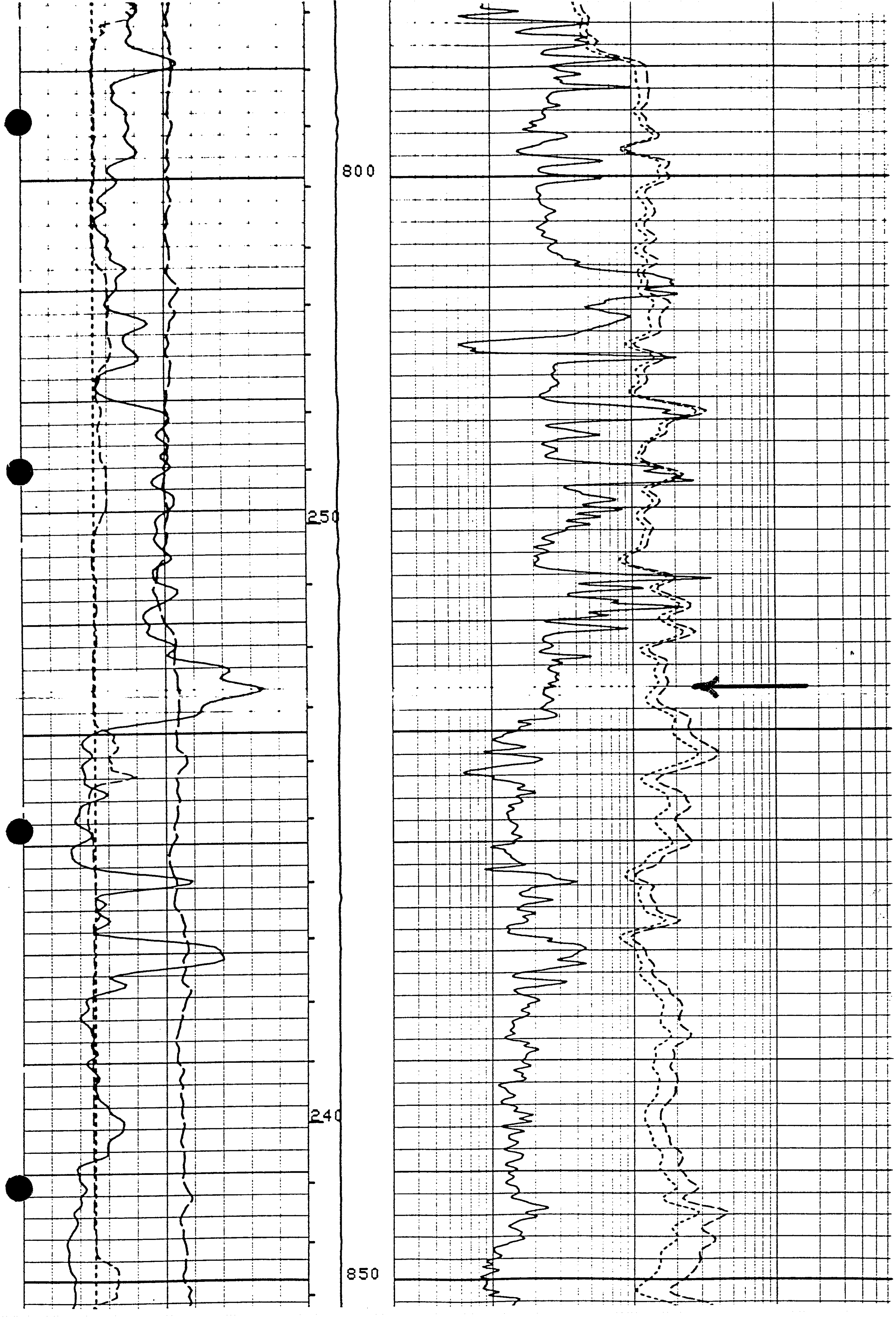
DATA LISTING

Depth Meters	MSFL	LLS	LLD	RT	RHOB	NPHIls	NPHIc	GR	PEF	Sonic mcs/ft
1251.00	5.00	4.00	4.00	4.00	2.58	46.0	47.2	83.0	7.0	85.0
1255.00	5.00	4.00	4.00	4.00	2.55	39.0	40.1	75.0	5.0	85.0
1258.00	6.00	5.20	5.20	5.20	2.50	29.0	29.9	60.0	3.8	79.0
1260.00	5.00	5.00	5.00	5.00	2.53	26.0	26.8	50.0	3.0	79.0
1261.00	6.00	6.00	6.00	6.00	2.45	21.0	21.8	55.0	3.0	79.0
1262.00	16.00	6.50	6.50	6.50	2.60	21.0	21.6	50.0	3.2	77.0
1264.00	5.50	5.00	5.00	5.00	2.44	22.0	22.9	55.0	2.2	83.0
1264.80	12.00	6.00	6.00	6.00	2.47	19.0	19.8	60.0	2.2	75.0
1265.20	4.20	4.20	4.20	4.20	2.38	21.0	21.9	50.0	2.2	82.0
1266.00	15.00	6.00	6.00	6.00	2.48	18.0	18.7	50.0	3.0	80.0
1266.50	3.50	3.50	3.50	3.50	2.35	23.0	24.0	60.0	2.5	90.0
1267.00	10.00	6.00	6.00	6.00	2.61	42.0	43.1	90.0	5.5	87.0
1268.00	6.00	4.40	4.40	4.40	2.46	38.0	39.2	105.0	5.0	102.0
1269.00	6.00	4.00	4.00	4.00	2.58	49.0	50.3	112.0	6.2	95.0
1270.00	5.00	4.00	4.00	4.00	2.55	43.0	44.2	100.0	5.8	95.0
1272.00	6.00	4.00	4.00	4.00	2.42	35.0	36.2	75.0	3.1	89.0
1274.00	3.80	3.80	3.80	3.80	2.36	31.0	32.2	78.0	3.2	90.0
1275.00	5.00	4.00	4.00	4.00	2.40	32.0	33.1	90.0	4.1	92.0
1276.00	3.60	3.60	3.60	3.60	2.43	27.0	28.0	65.0	2.6	89.0
1278.00	5.00	4.00	4.00	4.00	2.52	40.0	41.2	100.0	5.0	90.0
1279.00	4.00	4.00	4.00	4.00	2.46	35.0	36.1	97.0	4.0	90.0
1280.00	5.00	4.00	4.00	4.00	2.45	35.0	36.2	97.0	4.0	90.0
1281.50	4.00	4.00	4.00	4.00	2.47	44.0	45.3	125.0	5.0	93.0
1282.00	4.00	4.00	4.00	4.00	2.47	44.0	45.3	125.0	5.0	93.0
1283.00	4.50	4.50	4.50	4.50	2.47	34.0	35.1	112.0	2.6	80.0

BEACH PETROLEUM NL

SQUATTER #1

PEBBLE POINT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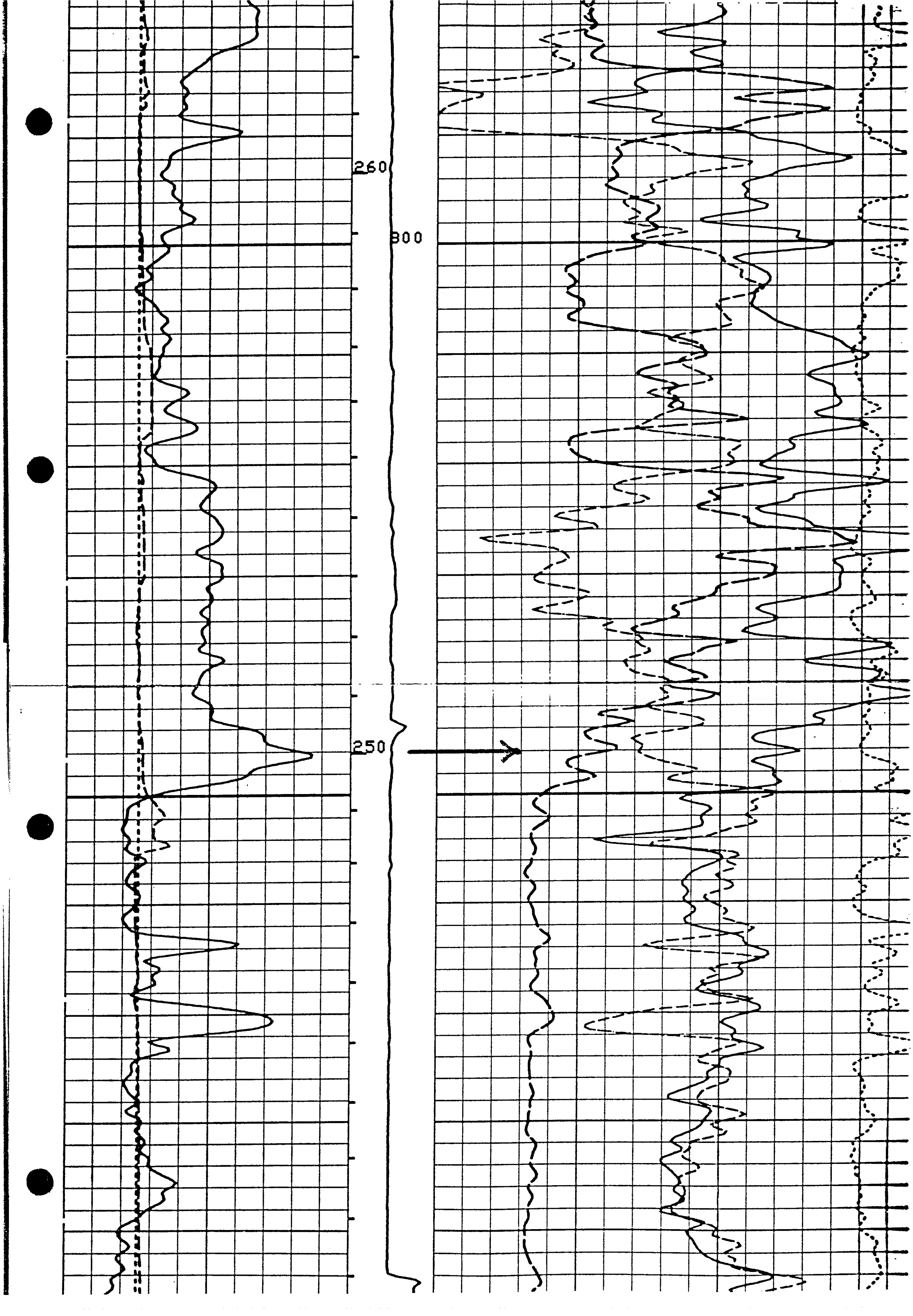
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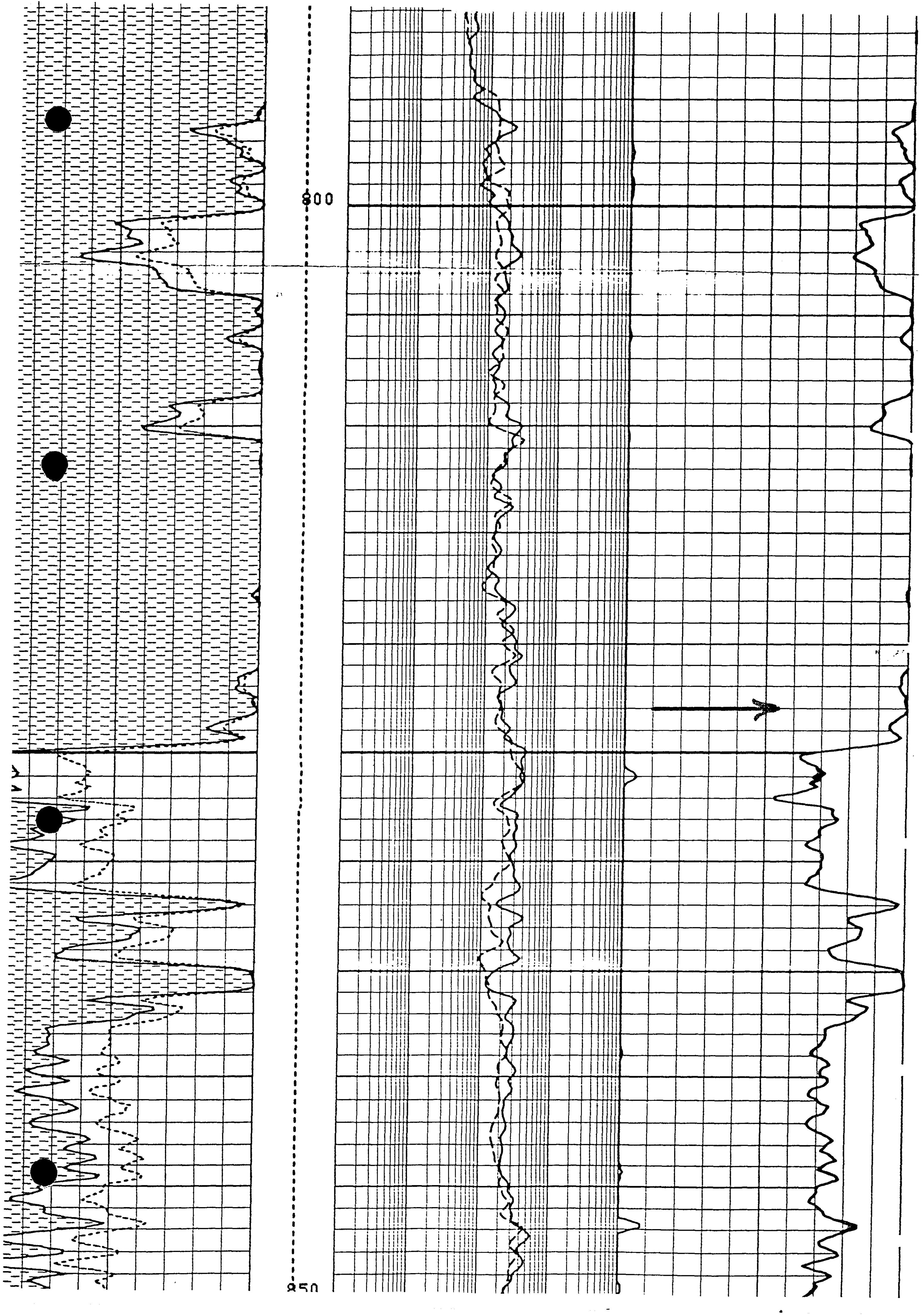
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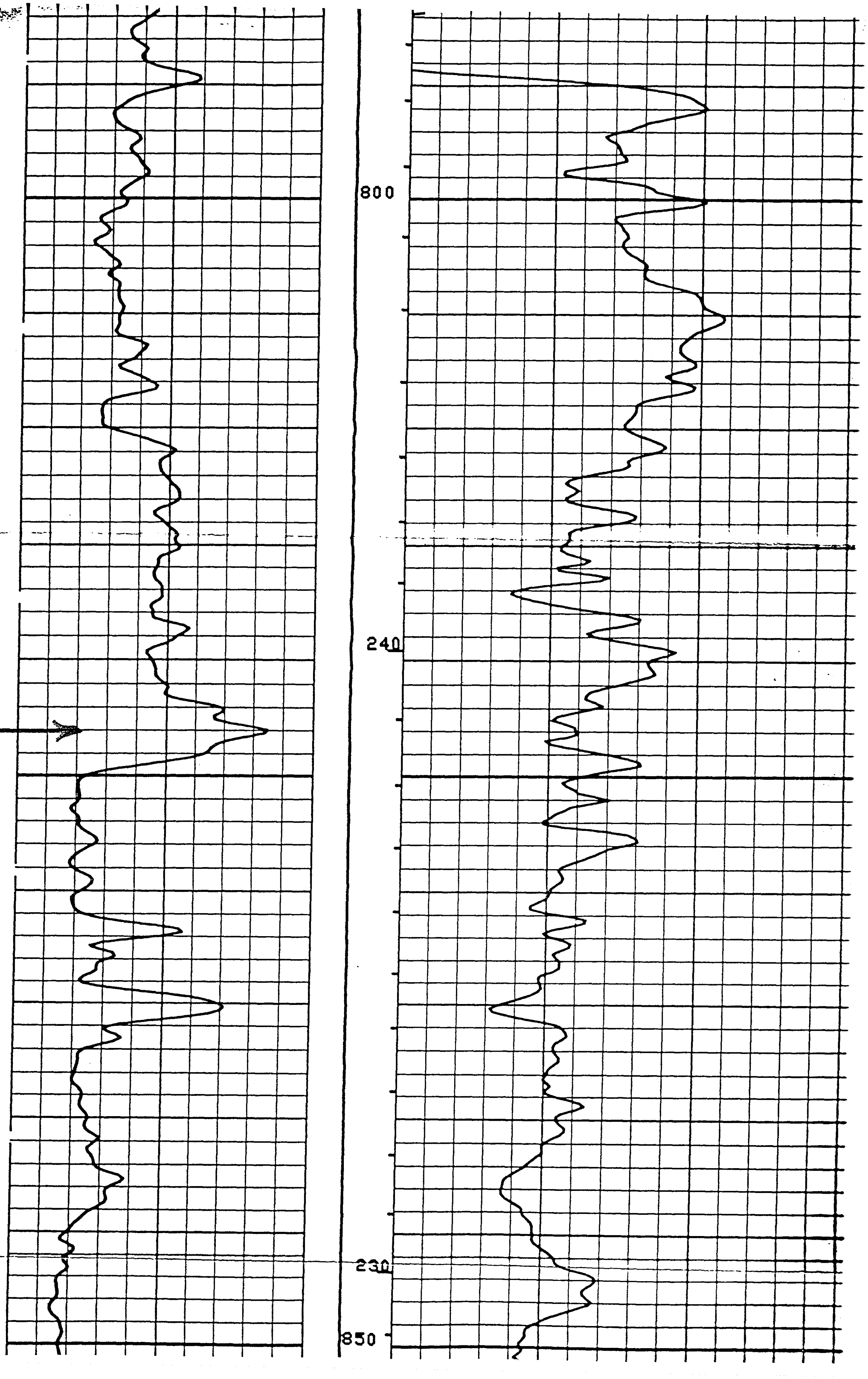
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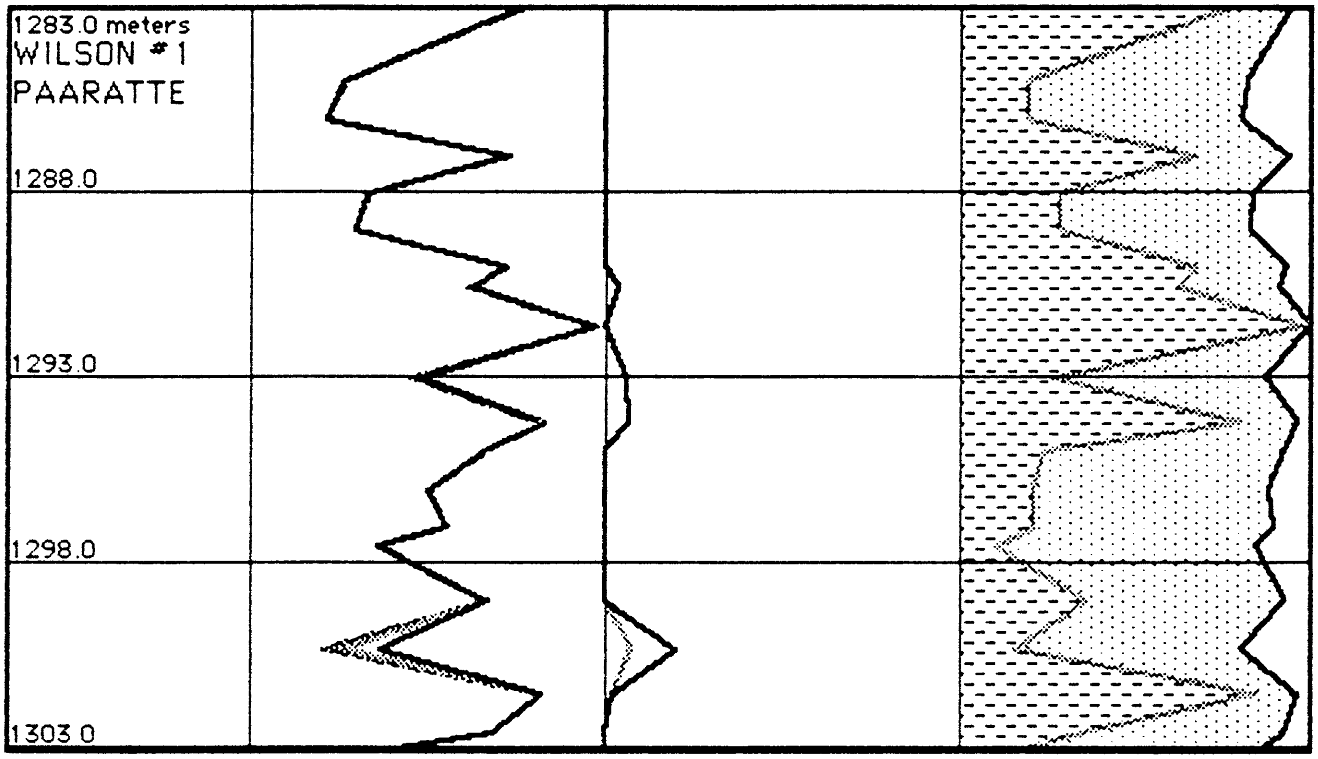
850

BEACH PETROLEUM NL

WILSON #1

PAARATTE



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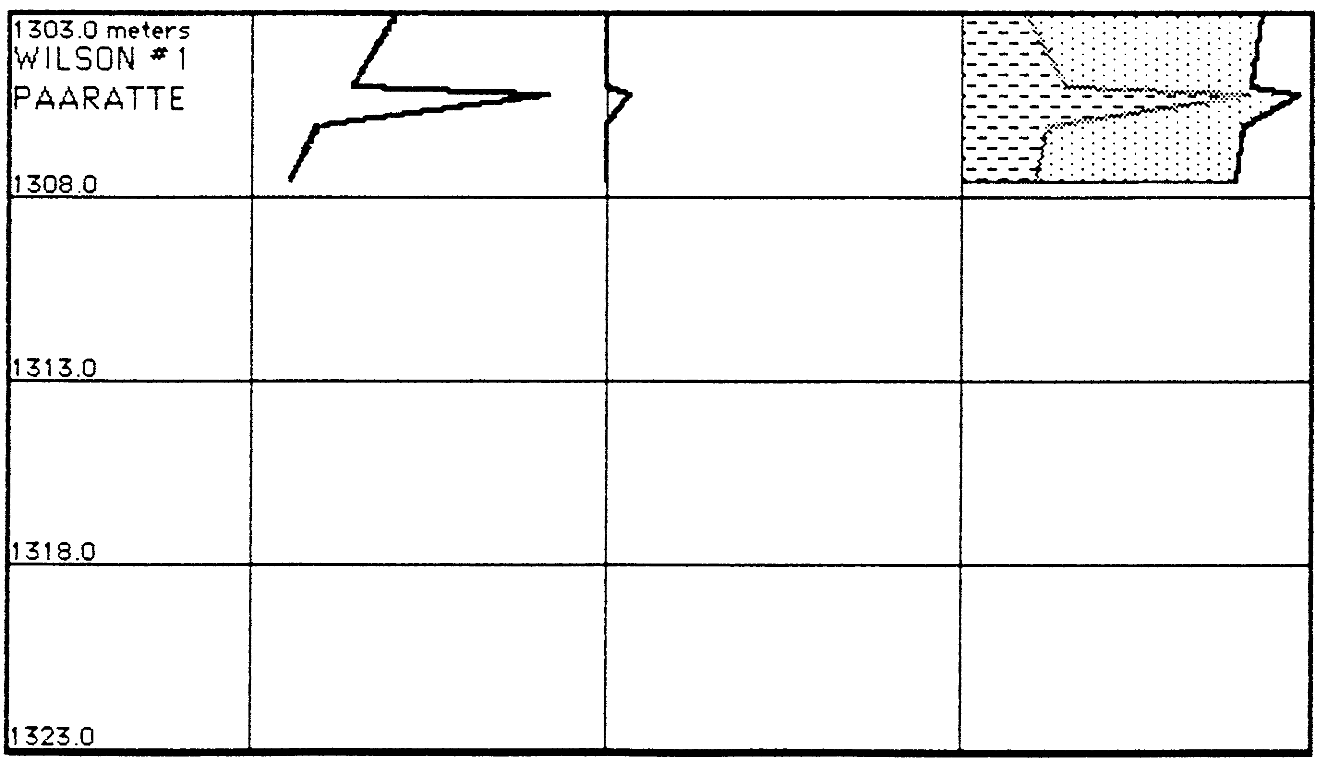
25.0 Porosity *Sw 0



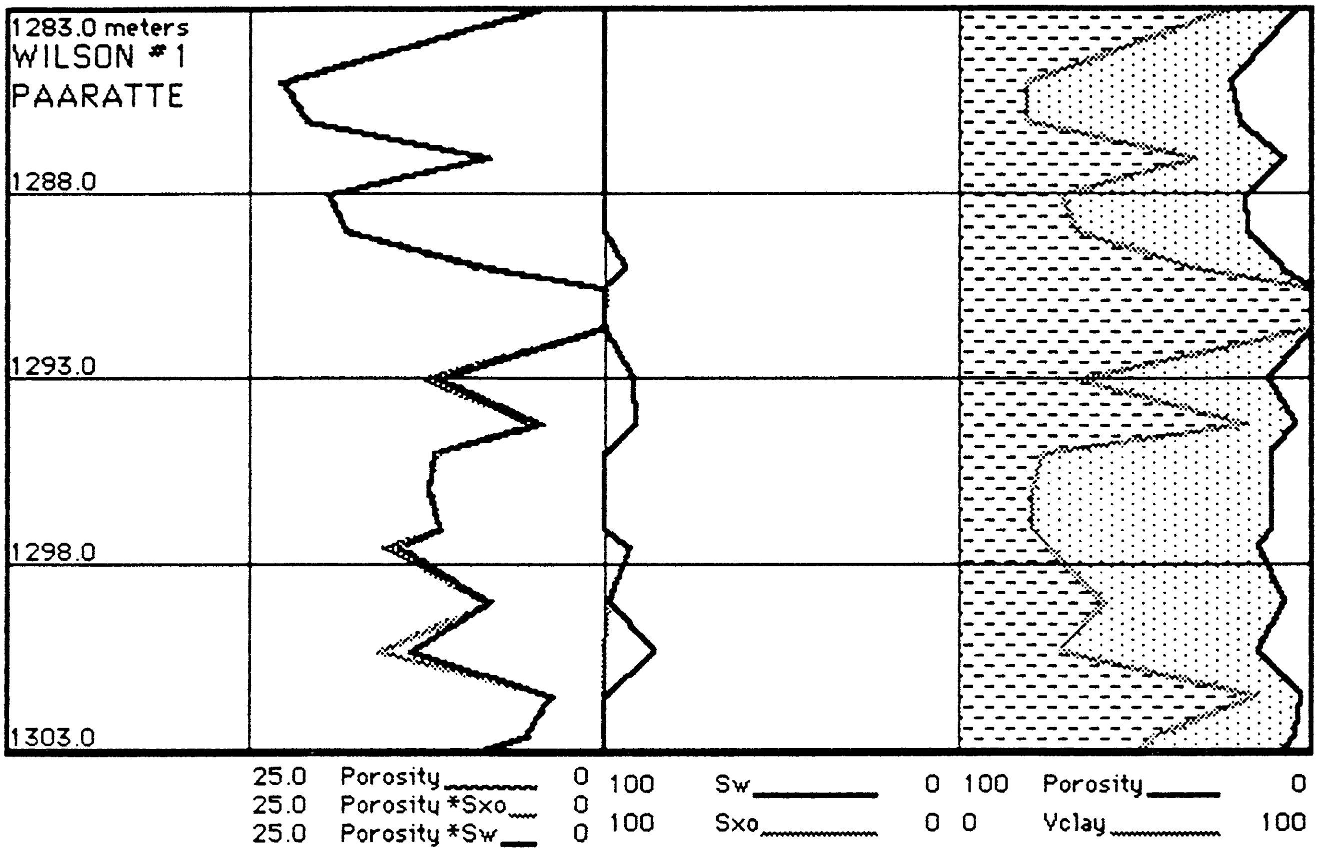
25.0 Porosity 0 100 Sw 0 100 Porosity 0
25.0 Porosity *Sxo 0 100 Sxo 0 0 Vclay 100
25.0 Porosity *Sw 0

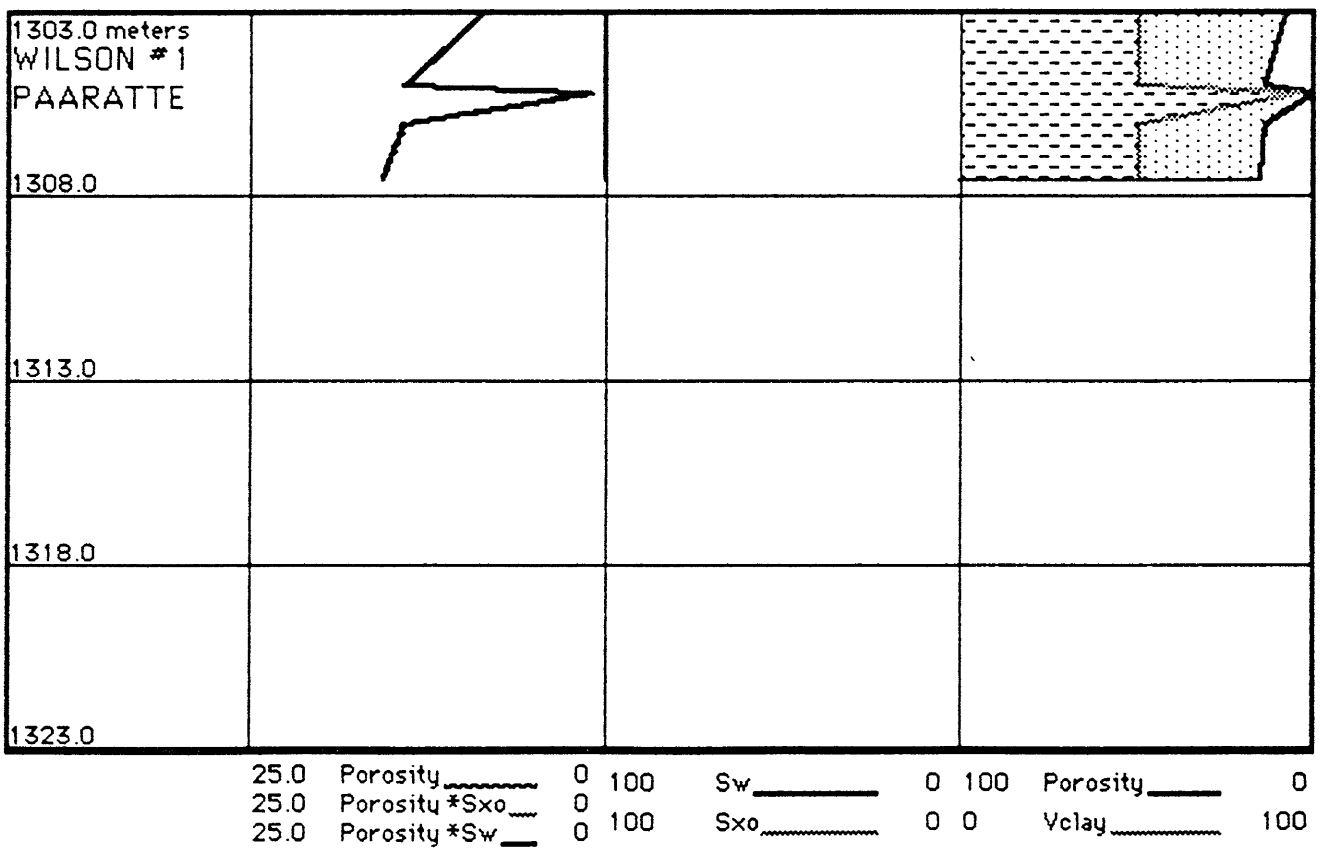
WILSON #1   PAARATTE

Vclay is min. of VclayDN, VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
RHOF=1.02 GR clean=20.00 GR clay=140.00 Rt clay=10.00 Rwb=0.63.
Clean matrix density= 2.65   Clay matrix density= 2.92.
Fluid DT=189.00 & clean matrix DT=55.50 microsec/ft.
Rw=0.200 everywhere except from 1283.00 to 1307.50 where Rw=0.200.
Rmf=0.12   a=1.00 m=2.00 n=2.00 Sonic por. comp. factor=1.00.
PHIE cutoff sets Sw and Sxo to 100% below 0.0 % porosity.
Coal is detected if RHOB<1.50 or if NPHI>55.0
or if Sonic>140.0 microsec/ft.
**** Sonic porosity when RHOB<=0.00g/cc from 0.00 to 0.00 meters.
**** Sonic porosity when MSFL<=0.00 from 0.00 to 0.00 meters.

EVALUATION

Depth meters	RHOma	PHIT	Vclay	PHIE	SwIndo	SxoIndo	SwtDW	SxotDW
1283.00	2.94	25.2	76.7	5.9	100.0	100.0	100.0	100.0
1285.00	2.72	22.8	19.2	18.4	100.0	100.0	100.0	100.0
1286.00	2.75	24.4	19.2	19.7	100.0	100.0	100.0	100.0
1287.00	2.92	20.8	66.7	6.9	100.0	100.0	100.0	100.0
1288.00	2.73	23.3	28.4	16.7	100.0	100.0	100.0	100.0
1289.00	2.73	24.4	27.9	17.6	100.0	100.0	100.0	100.0
1290.00	2.87	21.2	66.7	7.1	100.0	100.0	100.0	100.0
1290.50	2.82	25.4	62.3	9.6	96.4	96.4	99.1	99.1
1291.60	2.91	25.3	97.3	0.7	100.0	100.0	100.0	100.0
1293.00	2.72	18.3	26.5	13.5	94.3	94.3	100.0	100.0
1294.20	2.86	22.3	79.1	4.7	93.4	93.4	100.0	100.0
1295.00	2.74	11.1	23.3	8.5	100.0	100.0	100.0	100.0
1296.00	2.71	15.6	20.8	12.3	100.0	100.0	100.0	100.0
1297.00	2.74	14.1	20.8	11.2	100.0	100.0	100.0	100.0
1297.50	2.68	17.9	10.6	16.0	100.0	100.0	100.0	100.0
1299.00	2.75	13.0	35.7	8.4	100.0	100.0	100.0	100.0
1300.30	2.69	23.3	15.3	19.7	79.7	92.3	80.4	91.7
1301.50	2.89	27.5	83.3	4.6	97.7	97.7	93.6	93.6
1302.60	2.74	12.2	33.9	8.1	100.0	100.0	100.0	100.0
1303.00	2.70	17.7	17.4	14.6	100.0	100.0	100.0	100.0
1304.00	2.80	16.8	55.6	7.5	100.0	100.0	100.0	100.0
1305.00	2.73	25.2	29.7	17.7	100.0	100.0	100.0	100.0
1305.20	2.87	23.1	80.9	4.4	93.7	93.7	100.0	100.0
1306.00	2.72	26.9	24.5	20.3	100.0	100.0	100.0	100.0
1307.50	2.71	28.3	21.8	22.2	100.0	100.0	100.0	100.0

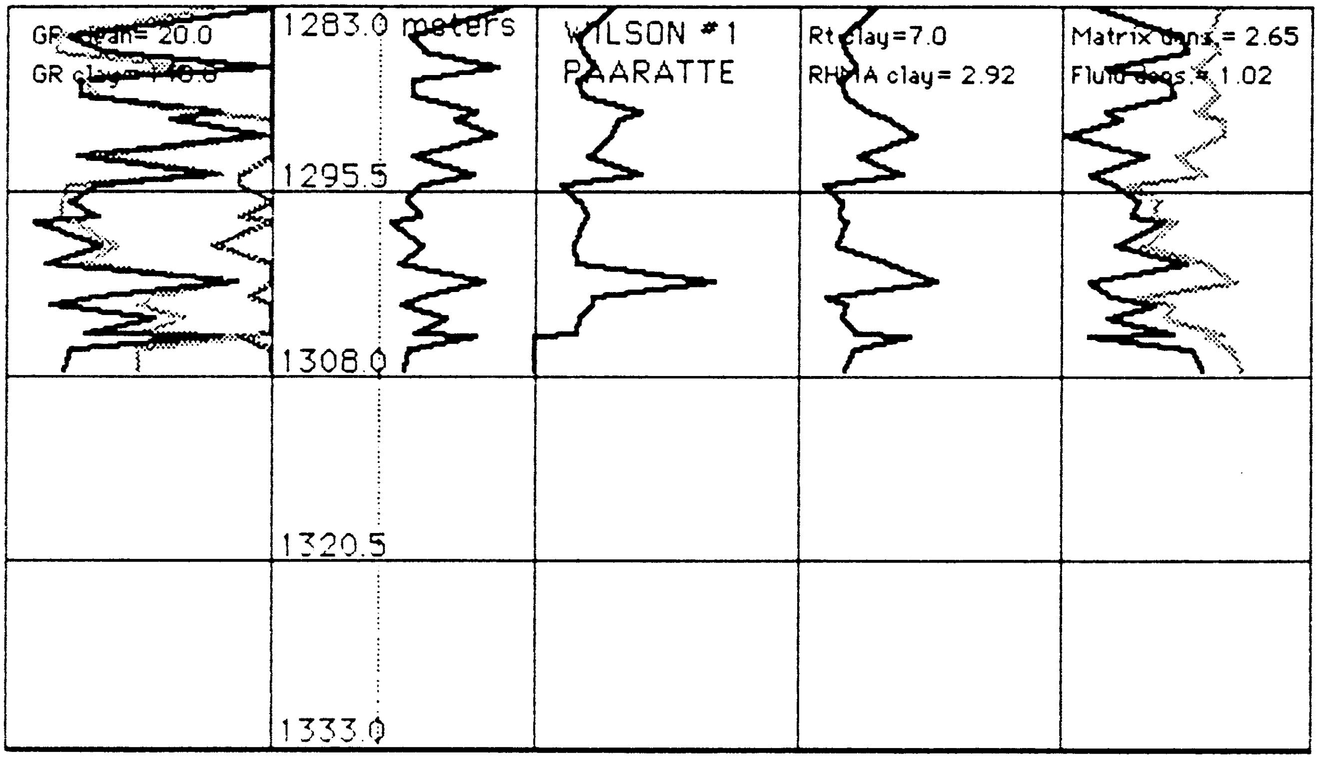

1283.0 meters
WILSON #1
PAARATTE
1288.0
1293.0
1298.0
1303.0
25.0 Porosity 0
25.0 Porosity *Sxo 0
25.0 Porosity *Sw 0
100 Sw 0
100 Sxo 0
100 Porosity 0
0 Vclay 100


1303.0 meters
WILSON #1
PAARATTE
1308.0
1313.0
1318.0
1323.0
25.0 Porosity 0
25.0 Porosity *Sxo 0
25.0 Porosity *Sw 0
100 Sw 0
100 Sxo 0
100 Porosity 0
0 Vclay 100

WILSON #1 PAARATTE
Vclay is min. of VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
Fluid travel time=189.0 Clean matrix travel time=55.5micsec/ft.
Sonic porosity compaction factor=1.00.
GR clean=20.00 GR clay=140.00 Rt clay=10.00 Rwb=0.63.
Rw=0.200 everywhere except from 1283.00 to 1307.50 where Rw=0.200.
Rmf=0.12 a=1.00 m=2.00 n=2.00.
PHIE cutoff sets Sw and Sxo to 100% below 0.0 % porosity.
Coal is detected if Sonic>140.0 microsec/ft.

EVALUATION

Depth meters	PHIT	Vclay	PHIE	SwIndo	SxoIndo	SwtDW	SxotDW
1283.00	18.4	76.7	4.3	100.0	100.0	100.0	100.0
1285.00	28.1	19.2	22.7	99.8	99.8	98.6	98.6
1286.00	25.8	19.2	20.9	100.0	100.0	100.0	100.0
1287.00	24.3	66.7	8.1	100.0	100.0	100.0	100.0
1288.00	27.3	29.2	19.4	100.0	100.0	100.0	100.0
1289.00	27.3	33.3	18.2	100.0	100.0	100.0	100.0
1290.00	25.8	66.7	8.6	94.1	94.1	95.7	95.7
1290.50	29.6	100.0	0.0	100.0	100.0	100.0	100.0
1291.60	22.1	100.0	0.0	100.0	100.0	100.0	100.0
1293.00	19.1	34.2	12.6	92.0	92.0	100.0	100.0
1294.20	25.8	80.8	5.0	90.8	90.8	91.4	91.4
1295.00	15.4	23.3	11.8	100.0	100.0	100.0	100.0
1296.00	15.4	20.8	12.2	100.0	100.0	100.0	100.0
1297.00	14.6	20.8	11.6	100.0	100.0	100.0	100.0
1297.50	20.6	25.0	15.4	92.9	92.9	97.3	97.3
1299.00	13.9	41.7	8.1	98.4	98.4	100.0	100.0
1300.30	22.1	29.2	15.7	86.0	100.0	89.6	100.0
1301.50	22.1	83.3	3.7	100.0	100.0	100.0	100.0
1302.60	12.4	55.8	5.5	100.0	100.0	100.0	100.0
1303.00	16.9	50.0	8.4	100.0	100.0	100.0	100.0
1304.00	24.3	66.7	8.1	96.6	96.6	100.0	100.0
1305.00	28.1	50.0	14.0	100.0	100.0	100.0	100.0
1305.20	25.8	95.8	1.1	100.0	100.0	100.0	100.0
1306.00	28.1	50.0	14.0	100.0	100.0	100.0	100.0
1307.50	31.1	50.0	15.5	100.0	100.0	100.0	100.0

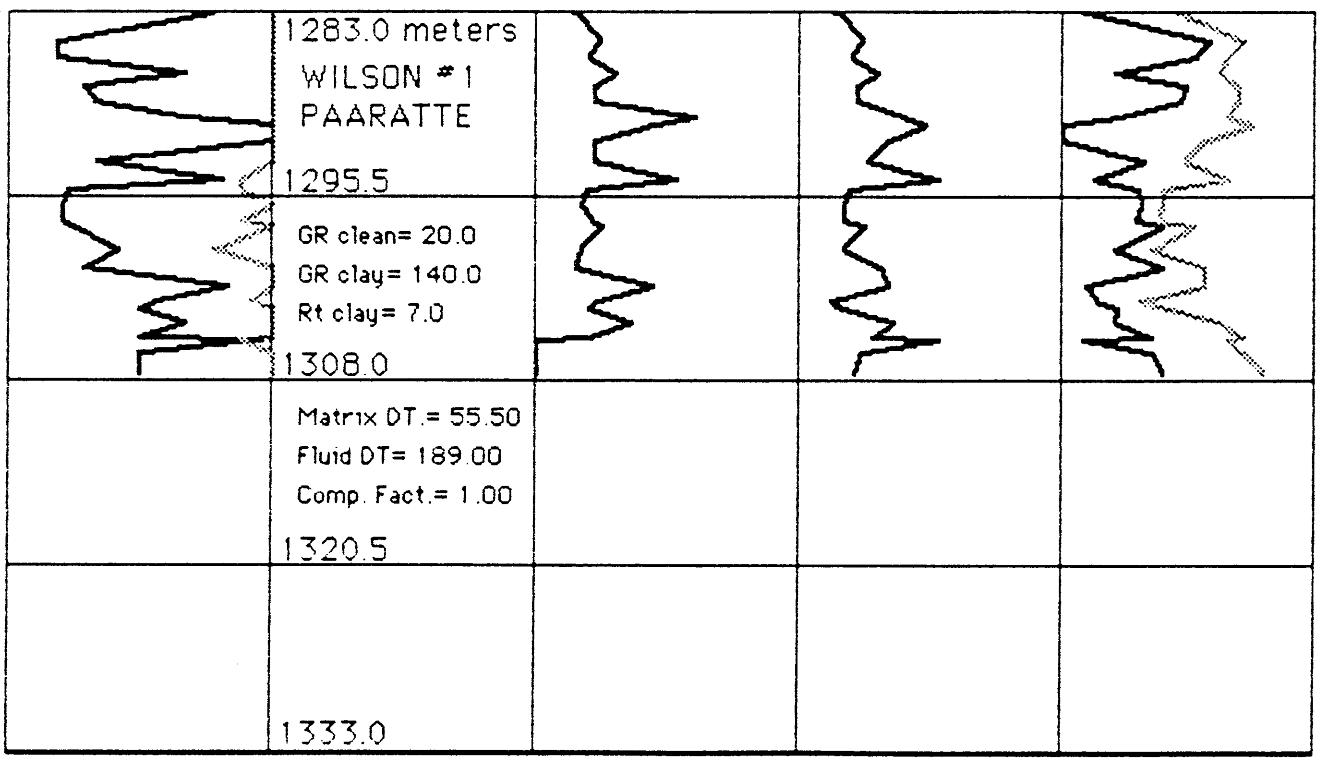


0 VclayGR____ 100
0 VclayDN____ 100
0 VclayRt____ 100

2.4 RHOma 3.0 0 Rmfa 1.000 0 Rwa 1.000 0 PHIT___ 40.0

If RHOB<=0.00 from 0.00 to 0.00 or if MSFL<= 0.00 from 0.00 to 0.00 Sonic porosity is used.

0 PHIE___ 40.0



0 VclayGR____ 100
0 VclayRt____ 100

0 Rmfa 1.000 0 Rwa 1.000 0 PHIT___ 40.0

0 PHIE___ 40.0

WILSON #1   PAARATTE

Vclay is min. of VclayDN, VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT.
Clean matrix density=2.65 Clay matrix density=2.92 Rt clay=7.0.
RHOF=1.02 GR clean=20.00   GR clay=140.00.
Fluid DT=189.00 & clean matrix DT=55.50 microsec/ft.
RWA=RT*PHIT^2 RMFA=MSFL*PHIT^2   Sonic por. comp. factor = 1.00.
**** Sonic porosity when RHOB<=0.00g/cc from 0.00 to 0.00 meters.
**** Sonic porosity when MSFL<=0.00 from 0.00 to 0.00 meters.

PRE EVALUATION

Depth meters	RHOma	PHIT	VclayRt	VclayGR	VclayDN	Vclay	PHIE	RWA	RMFA
1283.00	2.94	25.2	100.0	76.7	100.0	76.7	5.9	0.286	0.286
1285.00	2.72	22.8	100.0	19.2	24.3	19.2	18.4	0.155	0.155
1286.00	2.75	24.4	100.0	19.2	36.6	19.2	19.7	0.178	0.178
1287.00	2.92	20.8	100.0	66.7	99.4	66.7	6.9	0.216	0.216
1288.00	2.73	23.3	100.0	29.2	28.4	28.4	16.7	0.163	0.163
1289.00	2.73	24.4	100.0	33.3	27.9	27.9	17.6	0.179	0.179
1290.00	2.87	21.2	100.0	66.7	79.6	66.7	7.1	0.269	0.403
1290.50	2.82	25.4	100.0	100.0	62.3	62.3	9.6	0.354	0.322
1291.60	2.91	25.3	100.0	100.0	97.3	97.3	0.7	0.446	0.287
1293.00	2.72	18.3	100.0	34.2	26.5	26.5	13.5	0.235	0.201
1294.20	2.86	22.3	87.5	80.8	79.1	79.1	4.7	0.397	0.397
1295.00	2.74	11.1	87.5	23.3	34.5	23.3	8.5	0.098	0.098
1296.00	2.71	15.6	100.0	20.8	23.5	20.8	12.3	0.169	0.169
1297.00	2.74	14.1	87.5	20.8	35.1	20.8	11.2	0.160	0.200
1297.50	2.68	17.9	100.0	25.0	10.6	10.6	16.0	0.192	0.192
1299.00	2.75	13.0	77.8	41.7	35.7	35.7	8.4	0.152	0.152
1300.30	2.69	23.3	100.0	29.2	15.3	15.3	19.7	0.346	0.163
1301.50	2.89	27.5	100.0	83.3	87.5	83.3	4.6	0.530	0.681
1302.60	2.74	12.2	91.8	55.8	33.9	33.9	8.1	0.113	0.223
1303.00	2.70	17.7	100.0	50.0	17.4	17.4	14.6	0.187	0.219
1304.00	2.80	16.8	100.0	66.7	55.6	55.6	7.5	0.170	0.170
1305.00	2.73	25.2	100.0	50.0	29.7	29.7	17.7	0.223	0.159
1305.20	2.87	23.1	87.5	95.8	80.9	80.9	4.4	0.427	0.000
1306.00	2.72	26.9	100.0	50.0	24.5	24.5	20.3	0.225	0.000
1307.50	2.71	28.3	100.0	50.0	21.8	21.8	22.2	0.177	0.000

WILSON #1 PAARATTE

Vclay is min. of VclayGR & VclayRt. PHIE=(1-Vclay)*PHIT).

Fluid travel time=189.00 & matrix travel time=55.50 microsec/ft

Sonic porosity compaction factor= 1.00 Rt clay=7.0

GR clean=20.00 GR clay=140.00 RWA=RT*PHIT^2 RMFA=MSFL*PHIT^2

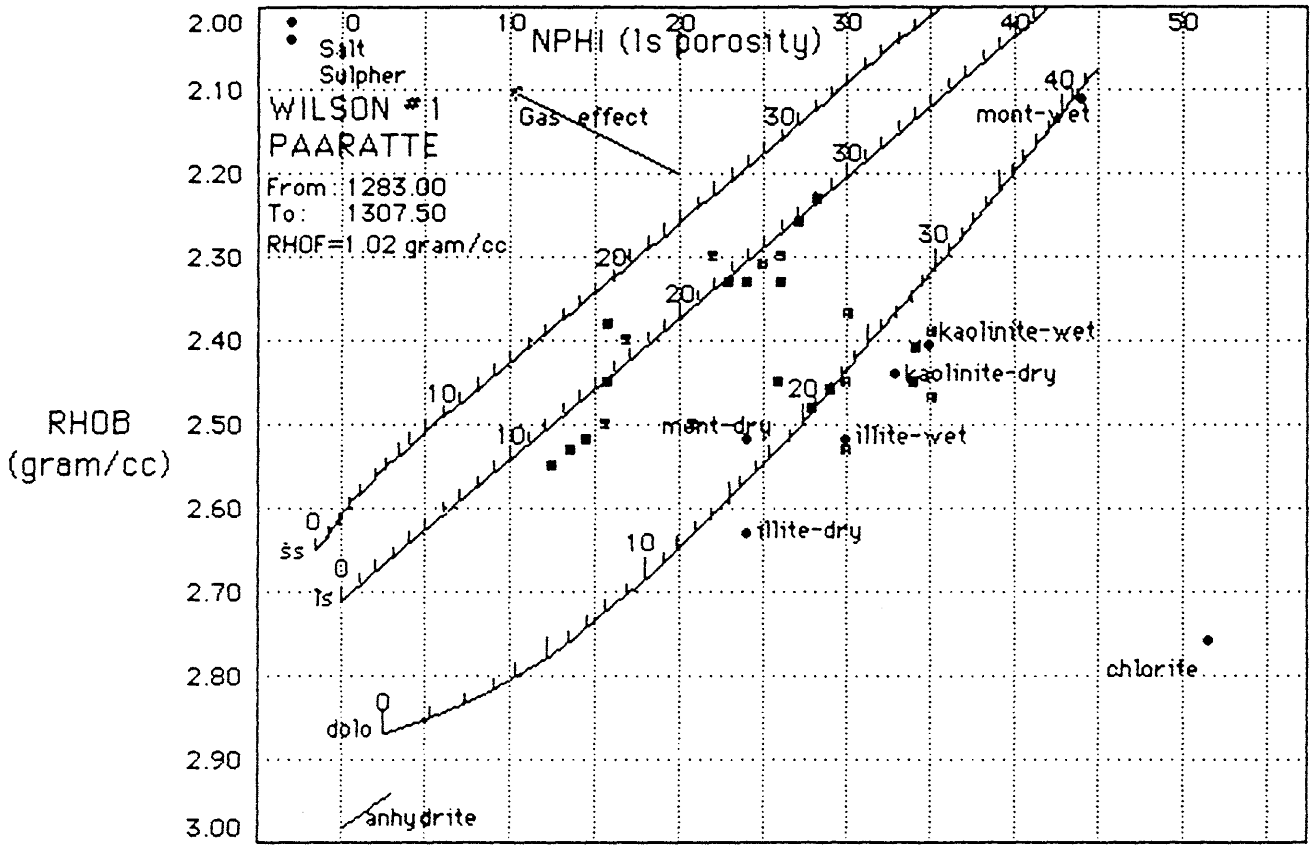
PRE EVALUATION

Depth meters	PHIT	VclayRt	VclayGR	Vclay	PHIE	RWA	RMFA
1283.00	18.4	100.0	76.7	76.7	4.3	0.152	0.152
1285.00	28.1	100.0	19.2	19.2	22.7	0.237	0.237
1286.00	25.8	100.0	19.2	19.2	20.9	0.200	0.200
1287.00	24.3	100.0	66.7	66.7	8.1	0.296	0.296
1288.00	27.3	100.0	29.2	29.2	19.4	0.224	0.224
1289.00	27.3	100.0	33.3	33.3	18.2	0.224	0.224
1290.00	25.8	100.0	66.7	66.7	8.6	0.401	0.601
1290.50	29.6	100.0	100.0	100.0	0.0	0.481	0.438
1291.60	22.1	100.0	100.0	100.0	0.0	0.342	0.220
1293.00	19.1	100.0	34.2	34.2	12.6	0.255	0.219
1294.20	25.8	87.5	80.8	80.8	5.0	0.534	0.534
1295.00	15.4	87.5	23.3	23.3	11.8	0.189	0.189
1296.00	15.4	100.0	20.8	20.8	12.2	0.165	0.165
1297.00	14.6	87.5	20.8	20.8	11.6	0.171	0.213
1297.50	20.6	100.0	25.0	25.0	15.4	0.255	0.255
1299.00	13.9	77.8	41.7	41.7	8.1	0.173	0.173
1300.30	22.1	100.0	29.2	29.2	15.7	0.311	0.146
1301.50	22.1	100.0	83.3	83.3	3.7	0.342	0.439
1302.60	12.4	91.8	55.8	55.8	5.5	0.116	0.229
1303.00	16.9	100.0	50.0	50.0	8.4	0.170	0.199
1304.00	24.3	100.0	66.7	66.7	8.1	0.356	0.356
1305.00	28.1	100.0	50.0	50.0	14.0	0.276	0.197
1305.20	25.8	87.5	95.8	87.5	3.2	0.534	0.000
1306.00	28.1	100.0	50.0	50.0	14.0	0.245	0.000
1307.50	31.1	100.0	50.0	50.0	15.5	0.213	0.000

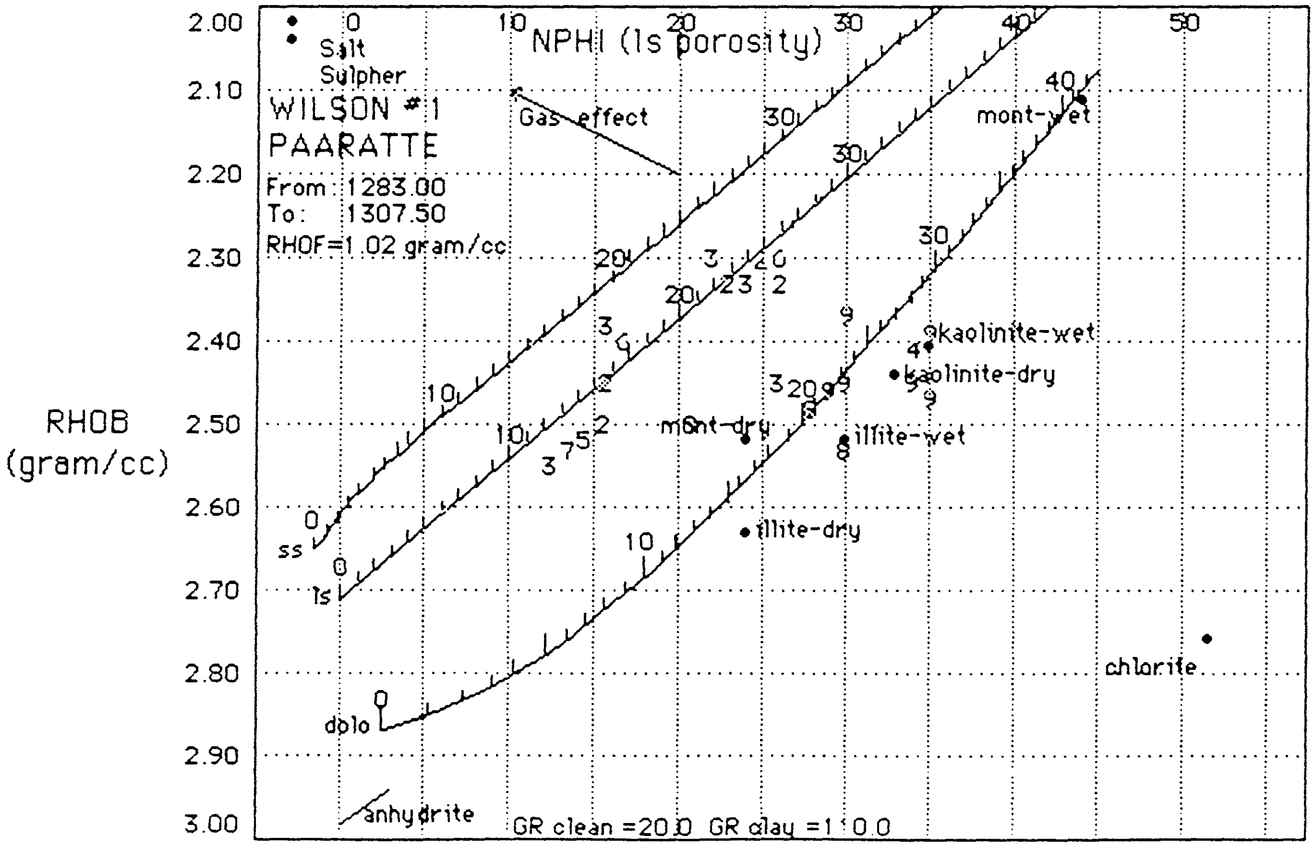
WILSON #1 PAARATTE
Mud filtrate density=1.02 g/cc.
Surface temperature=80.00 deg. F. Bottom hole temperature=126.00 deg. F.
Surface depth=0.00 Meters. Total depth=1317.00 Meters.

DATA LISTING

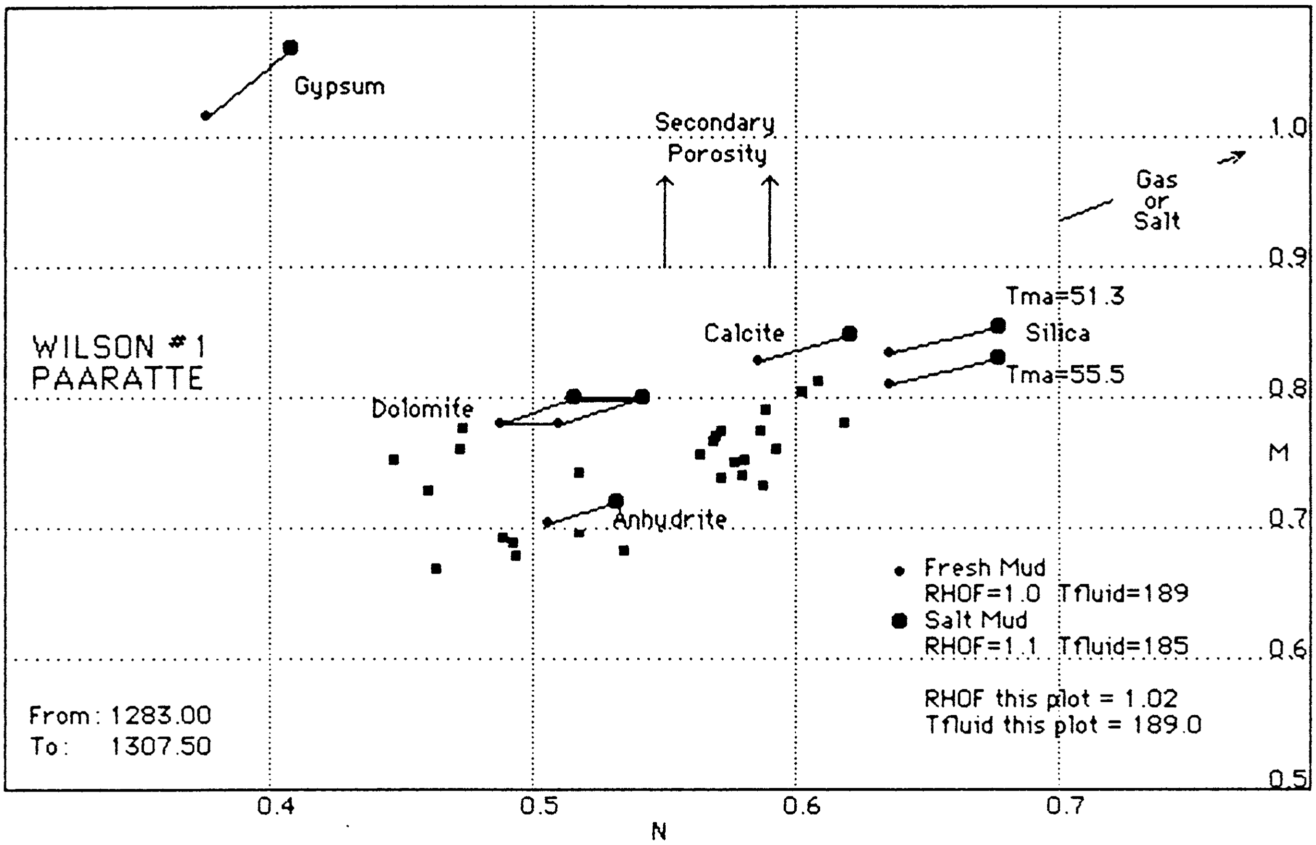
Depth Meters	MSFL	LLS	LLD	RT	RHOB	NPHIls	NPHIc	GR	PEF	Sonic mcs/ft
1283.00	4.50	4.50	4.50	4.50	2.47	34.0	35.1	112.0	2.6	80.0
1285.00	3.00	3.00	3.00	3.00	2.33	22.0	23.0	43.0	1.8	93.0
1286.00	3.00	3.00	3.00	3.00	2.33	25.0	26.1	43.0	2.0	90.0
1287.00	5.00	5.00	5.00	5.00	2.53	29.0	29.9	100.0	3.0	88.0
1288.00	3.00	3.00	3.00	3.00	2.33	23.0	24.0	55.0	2.0	92.0
1289.00	3.00	3.00	3.00	3.00	2.31	24.0	25.1	60.0	2.1	92.0
1290.00	9.00	6.00	6.00	6.00	2.48	27.0	27.9	100.0	3.0	90.0
1290.50	5.00	5.50	5.50	5.50	2.37	29.0	30.1	150.0	2.8	95.0
1291.60	4.50	7.00	7.00	7.00	2.45	33.0	34.1	140.0	3.0	85.0
1293.00	6.00	7.00	7.00	7.00	2.41	18.0	18.8	61.0	2.5	81.0
1294.20	8.00	8.00	8.00	8.00	2.46	28.0	29.0	117.0	2.7	90.0
1295.00	8.00	8.00	8.00	8.00	2.55	12.0	12.5	48.0	2.0	76.0
1296.00	7.00	7.00	7.00	7.00	2.45	15.0	15.7	45.0	2.0	76.0
1297.00	10.00	8.00	8.00	8.00	2.50	15.0	15.7	45.0	2.0	75.0
1297.50	6.00	6.00	6.00	6.00	2.38	15.0	15.8	50.0	2.0	83.0
1299.00	9.00	9.00	9.00	9.00	2.52	14.0	14.6	70.0	2.0	74.0
1300.30	3.00	4.20	5.00	6.37	2.30	21.0	22.0	55.0	2.0	85.0
1301.50	9.00	7.00	7.00	7.00	2.39	34.0	35.2	120.0	2.2	85.0
1302.60	15.00	10.00	9.00	7.62	2.53	13.0	13.6	87.0	2.1	72.0
1303.00	7.00	6.00	6.00	6.00	2.40	16.0	16.8	80.0	2.2	78.0
1304.00	6.00	6.00	6.00	6.00	2.50	20.0	20.8	100.0	2.1	88.0
1305.00	2.50	3.50	3.50	3.50	2.30	25.0	26.1	80.0	2.0	93.0
1305.20	0.00	8.00	8.00	8.00	2.45	29.0	30.0	135.0	2.1	90.0
1306.00	0.00	3.10	3.10	3.10	2.26	26.0	27.2	80.0	1.9	93.0
1307.50	0.00	2.20	2.20	2.20	2.23	27.0	28.3	80.0	1.6	97.0

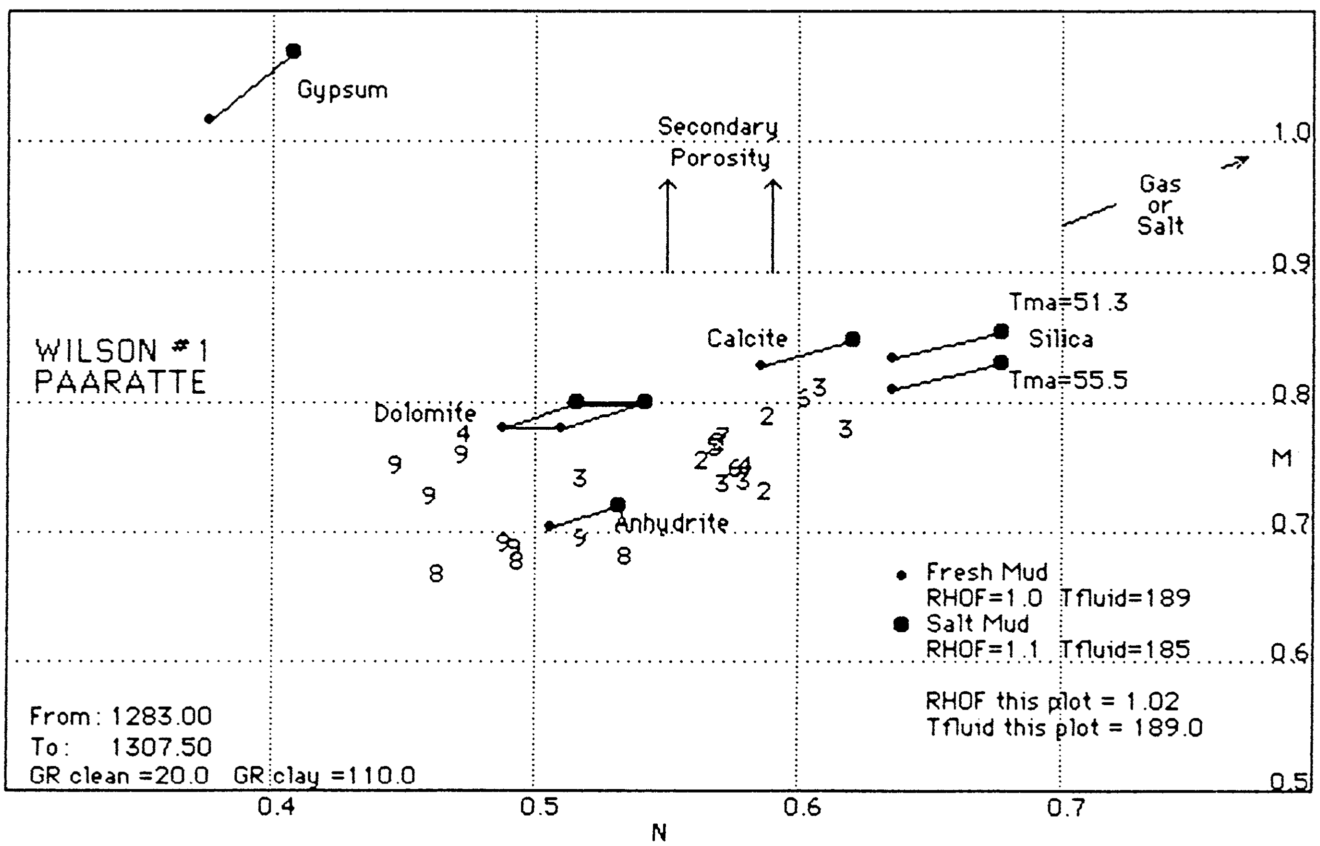


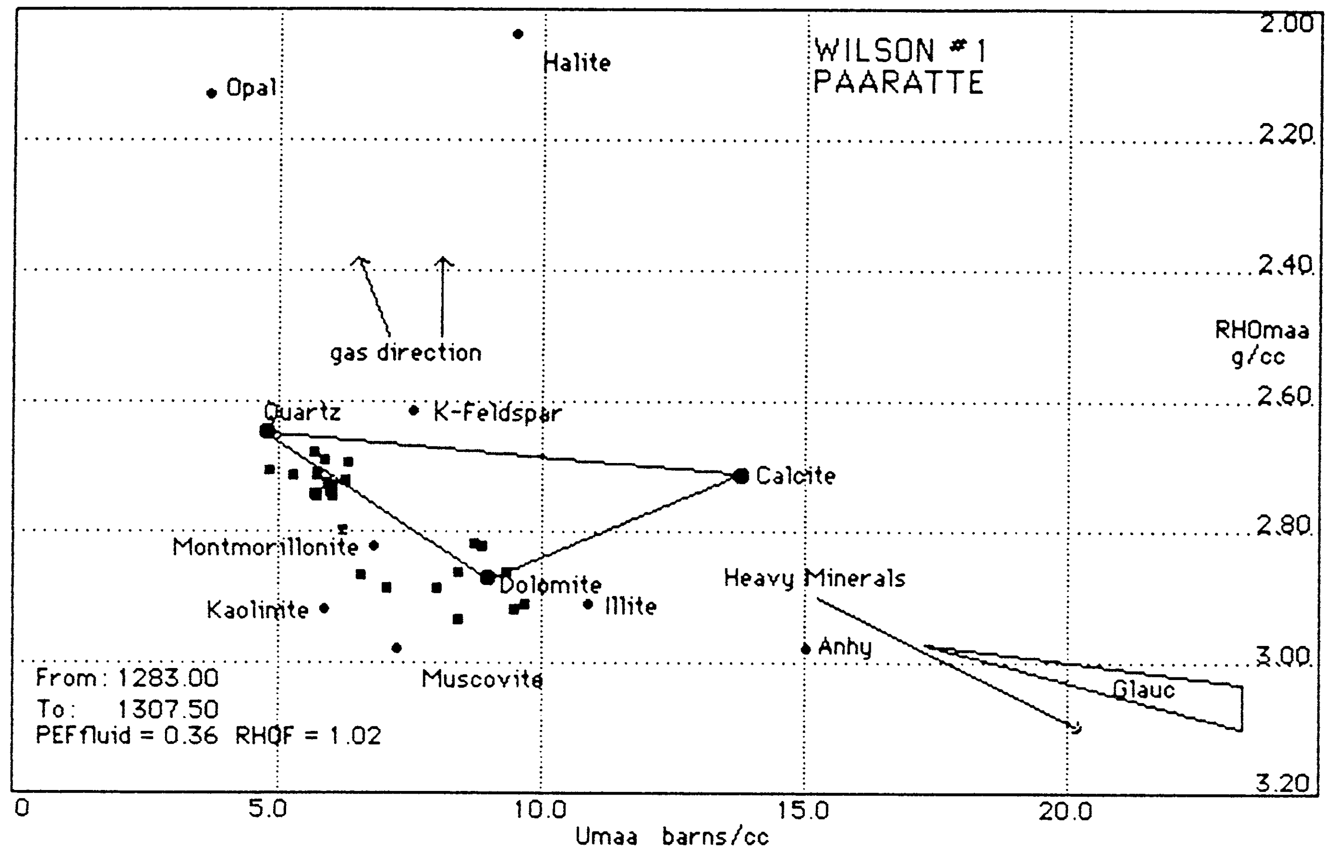
NPHI (ls porosity)
WILSON #1
PAARATTE
From: 1283.00
To: 1307.50
RHOF=1.02 gram/cc
RHOB (gram/cc)
Salt
Sulpher
Gas effect
mont-wet
mont-dry
kaolinite-wet
kaolinite-dry
illite-wet
illite-dry
chlorite
ss
ls
dolo
anhydrite



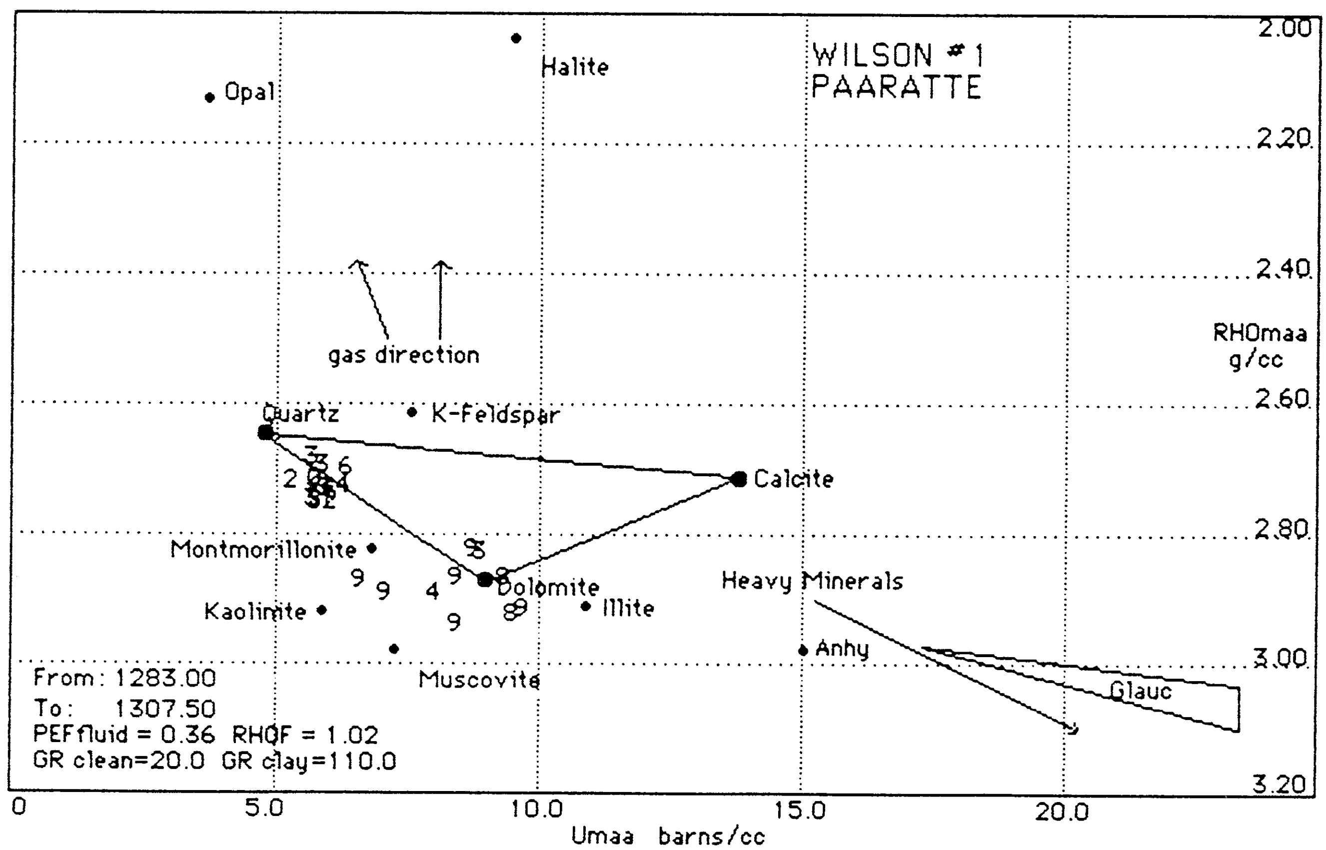
NPHI (ls porosity)
WILSON #1
PAARATTE
From: 1283.00
To: 1307.50
RHOF=1.02 gram/cc
RHOB (gram/cc)
Salt
Sulpher
Gas effect
mont-wet
mont-dry
kaolinite-wet
kaolinite-dry
illite-wet
illite-dry
chlorite
ss
ls
dolo
anhydrite
GR clean =20.0 GR clay =110.0


Gypsum
Secondary Porosity
Gas or Salt
Tma=51.3
Calcite
Silica
Tma=55.5
WILSON #1
PAARATTE
Dolomite
Anhydrite
Fresh Mud
RHOF=1.0 Tfluid=189
Salt Mud
RHOF=1.1 Tfluid=185
RHOF this plot = 1.02
Tfluid this plot = 189.0
From: 1283.00
To: 1307.50
1.0
0.9
0.8
M
0.7
0.6
0.5
0.4
0.5
0.6
0.7
N

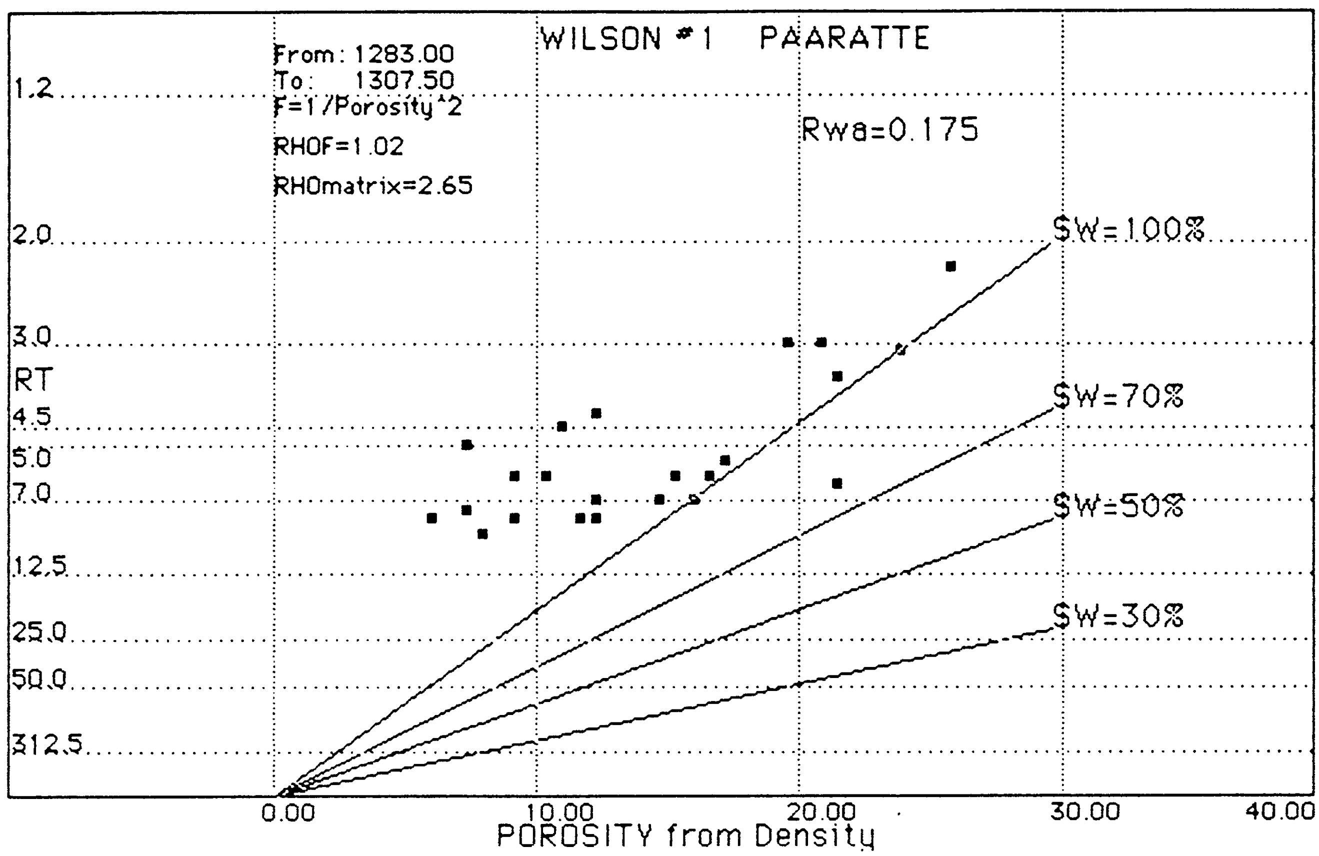

Gypsum
Secondary Porosity
Gas or Salt
Tma=51.3
Calcite
Silica
Tma=55.5
WILSON #1
PAARATTE
Dolomite
Anhydrite
Fresh Mud
RHOF=1.0 Tfluid=189
Salt Mud
RHOF=1.1 Tfluid=185
RHOF this plot = 1.02
Tfluid this plot = 189.0
From: 1283.00
To: 1307.50
GR clean =20.0 GR clay =110.0
1.0
0.9
0.8
M
0.7
0.6
0.5
0.4
0.5
0.6
0.7
N



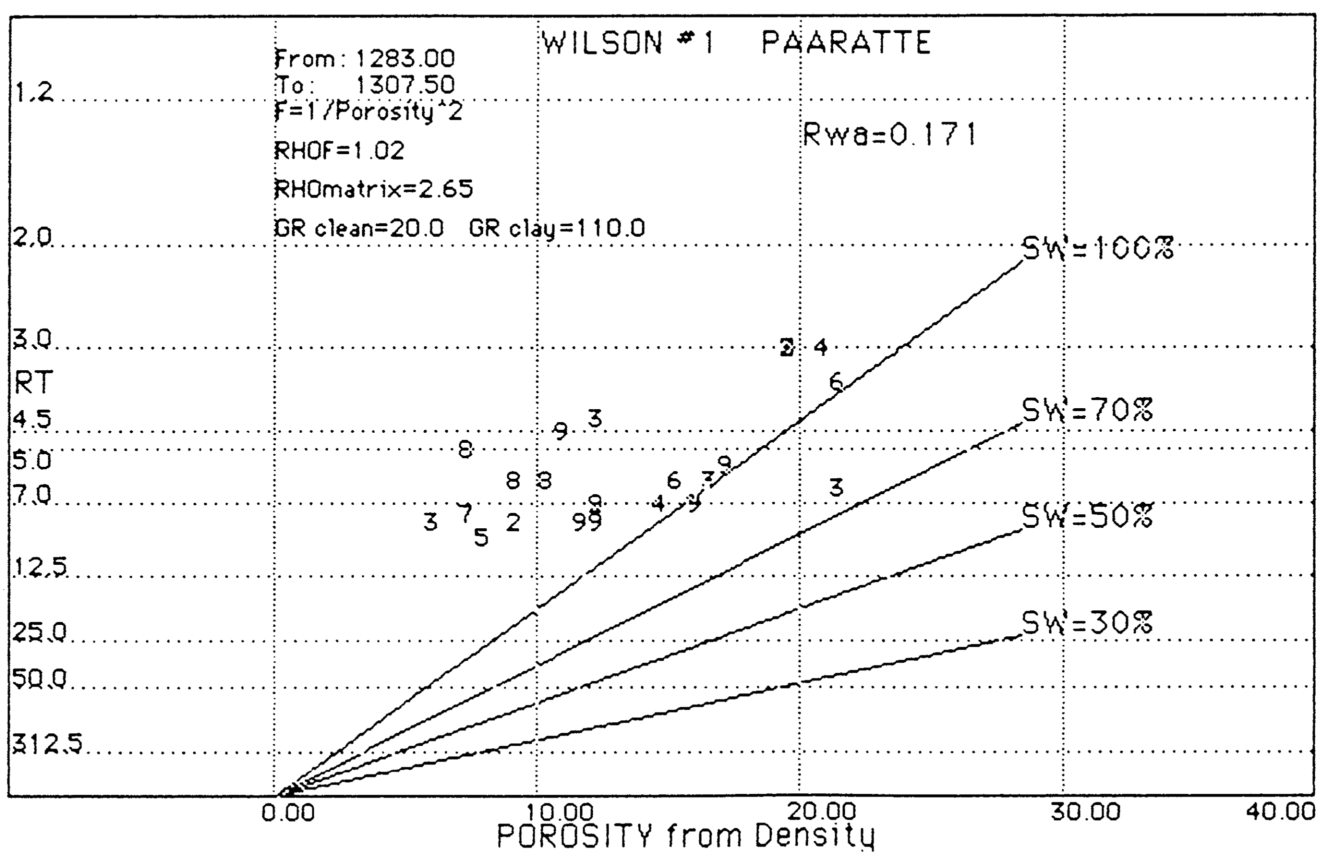
WILSON #1
PAARATTE
Opal
Halite
gas direction
Quartz
K-Feldspar
Calcite
Montmorillonite
Dolomite
Kaolinite
Illite
Heavy Minerals
Anhy
Muscovite
Glauc
From: 1283.00
To: 1307.50
PEFfluid = 0.36 RHOF = 1.02
RHOmaa g/cc
2.00
2.20
2.40
2.60
2.80
3.00
3.20
0
5.0
10.0
15.0
20.0
Umaa barns/cc



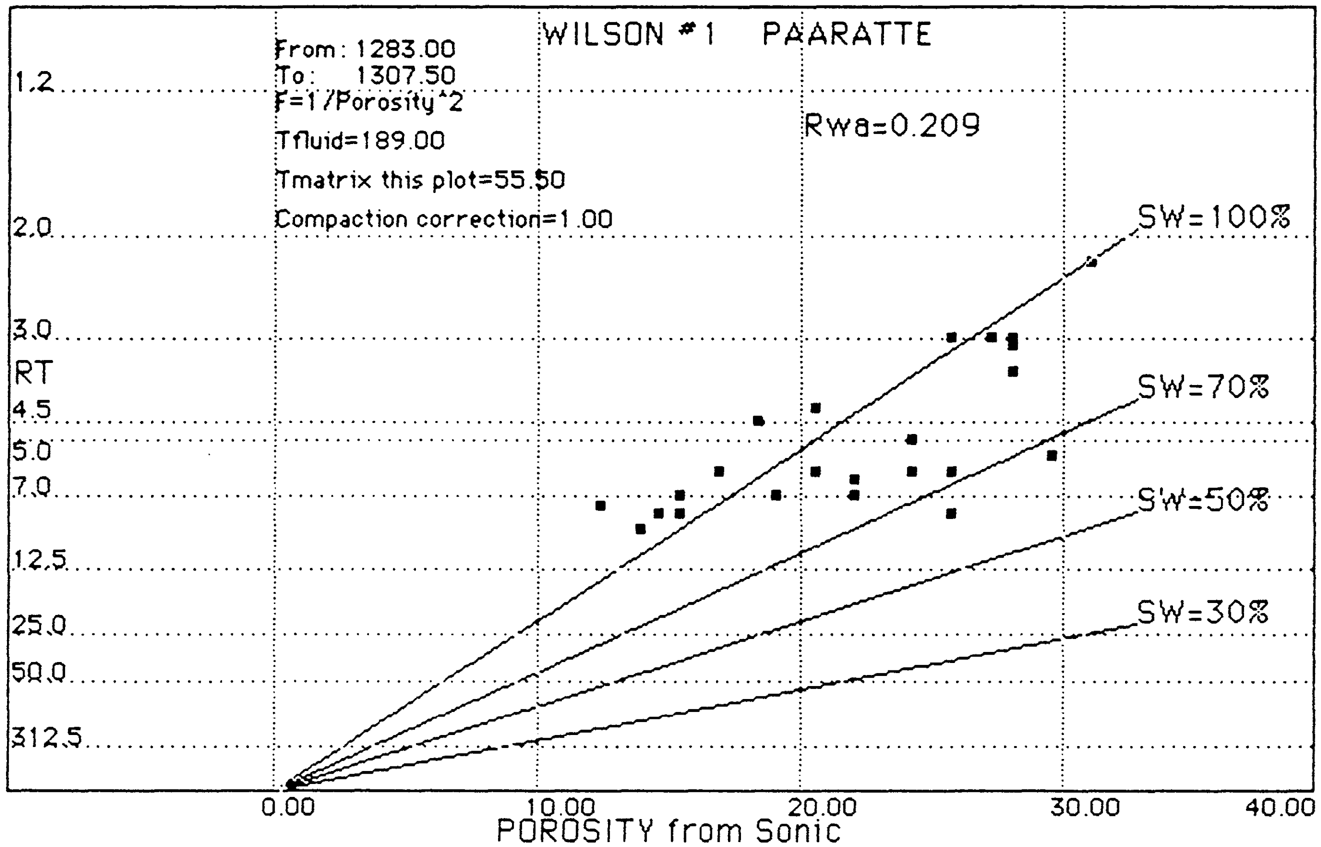
WILSON #1
PAARATTE
Opal
Halite
gas direction
Quartz
K-Feldspar
Calcite
Montmorillonite
Dolomite
Kaolinite
Illite
Heavy Minerals
Anhy
Muscovite
Glauc
From: 1283.00
To: 1307.50
PEFfluid = 0.36 RHOF = 1.02
GR clean=20.0 GR clay=110.0
RHOmaa g/cc
2.00
2.20
2.40
2.60
2.80
3.00
3.20
0
5.0
10.0
15.0
20.0
Umaa barns/cc

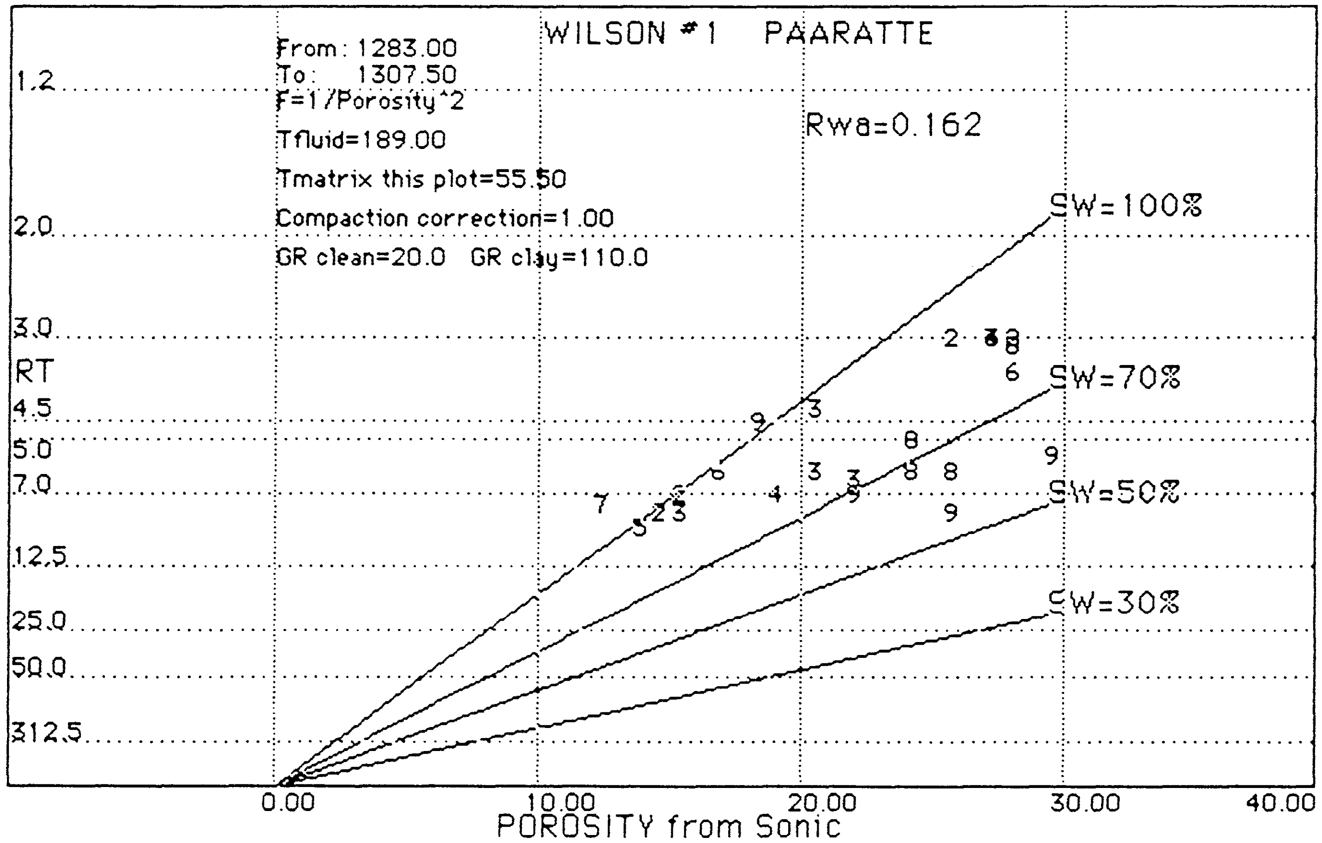


WILSON #1 PAARATTE
From: 1283.00
To: 1307.50
F=1/Porosity^2
RHOF=1.02
RHOmatrix=2.65
Rwa=0.175
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density



WILSON #1 PAARATTE
From: 1283.00
To: 1307.50
F=1/Porosity^2
RHOF=1.02
RHOmatrix=2.65
GR clean=20.0 GR clay=110.0
Rwa=0.171
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density


WILSON #1 PAARATTE
From: 1283.00
To: 1307.50
F=1/Porosity^2
Tfluid=189.00
Tmatrix this plot=55.50
Compaction correction=1.00
Rwa=0.209
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Sonic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From: 1283.00
To: 1307.50
F=1/Porosity^2
Tfluid=189.00
Tmatrix this plot=55.50
Compaction correction=1.00
GR clean=20.0 GR clay=110.0
Rwa=0.162
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
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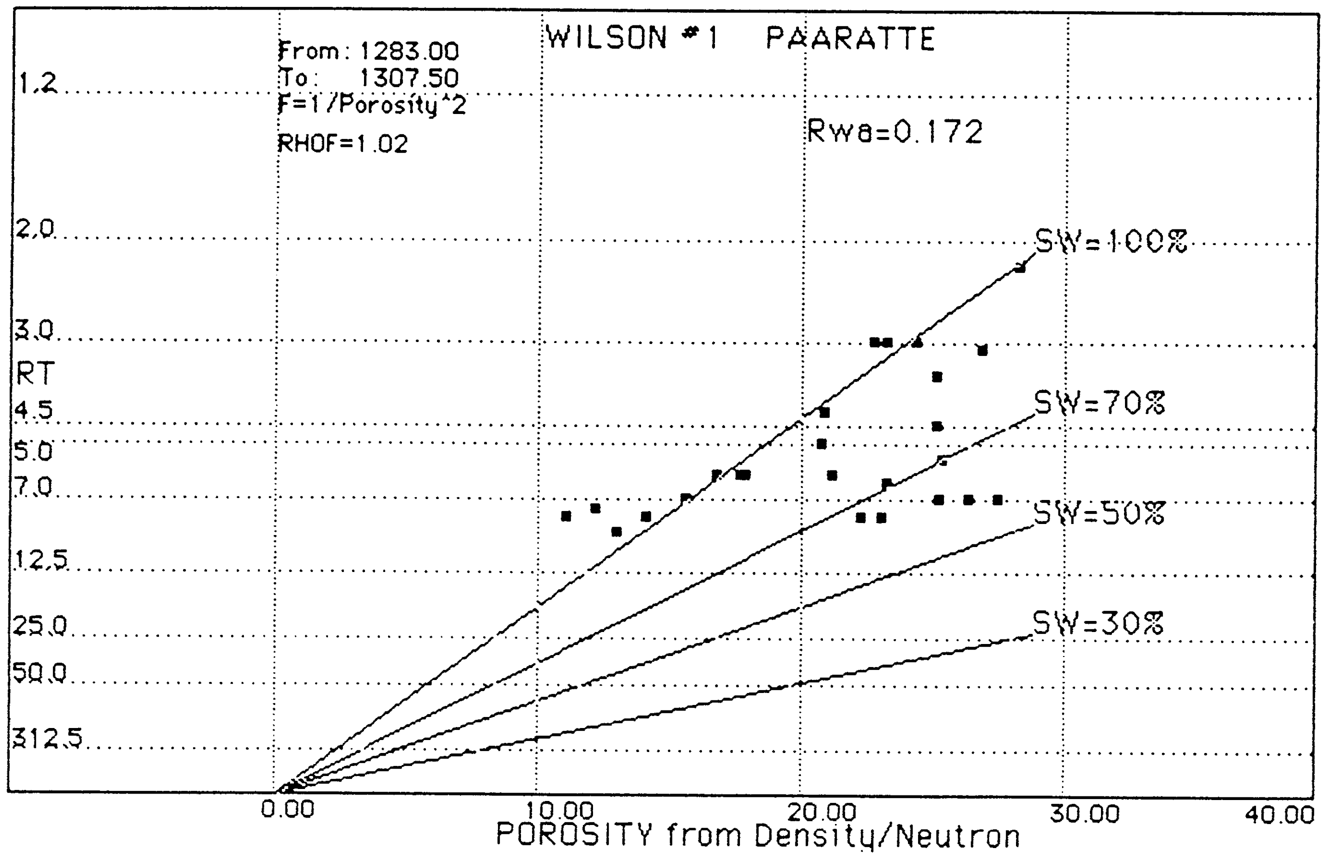
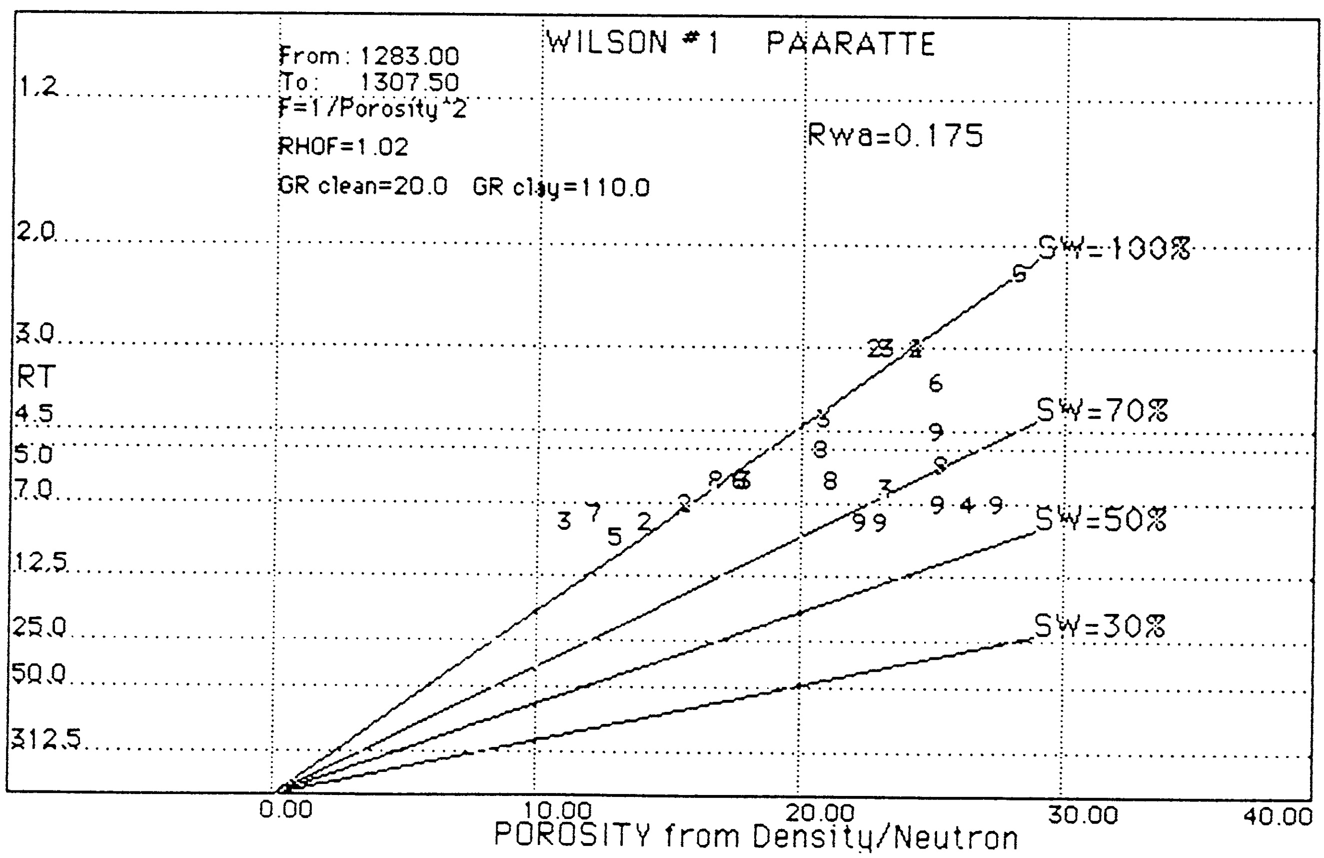
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Sonic


WILSON #1 PAARATTE
From: 1283.00
To: 1307.50
F=1/Porosity^2
RHOF=1.02
Rwa=0.172
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density/Neutron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From: 1283.00
To: 1307.50
F=1/Porosity^2
RHOF=1.02
GR clean=20.0 GR clay=110.0
Rwa=0.175
SW=100%
SW=70%
SW=50%
SW=30%
RT
1.2
2.0
3.0
4.5
5.0
7.0
12.5
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50.0
312.5
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10.00
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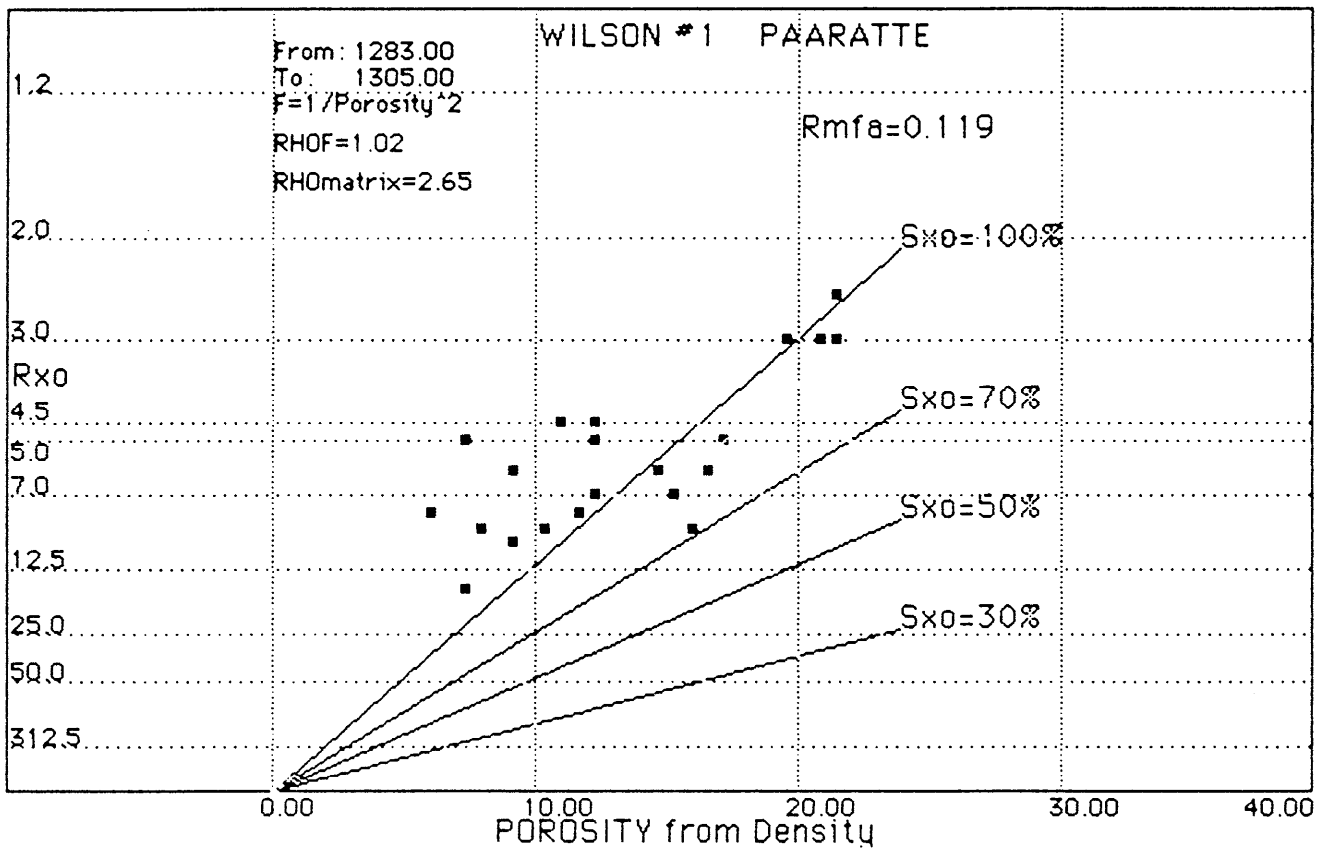
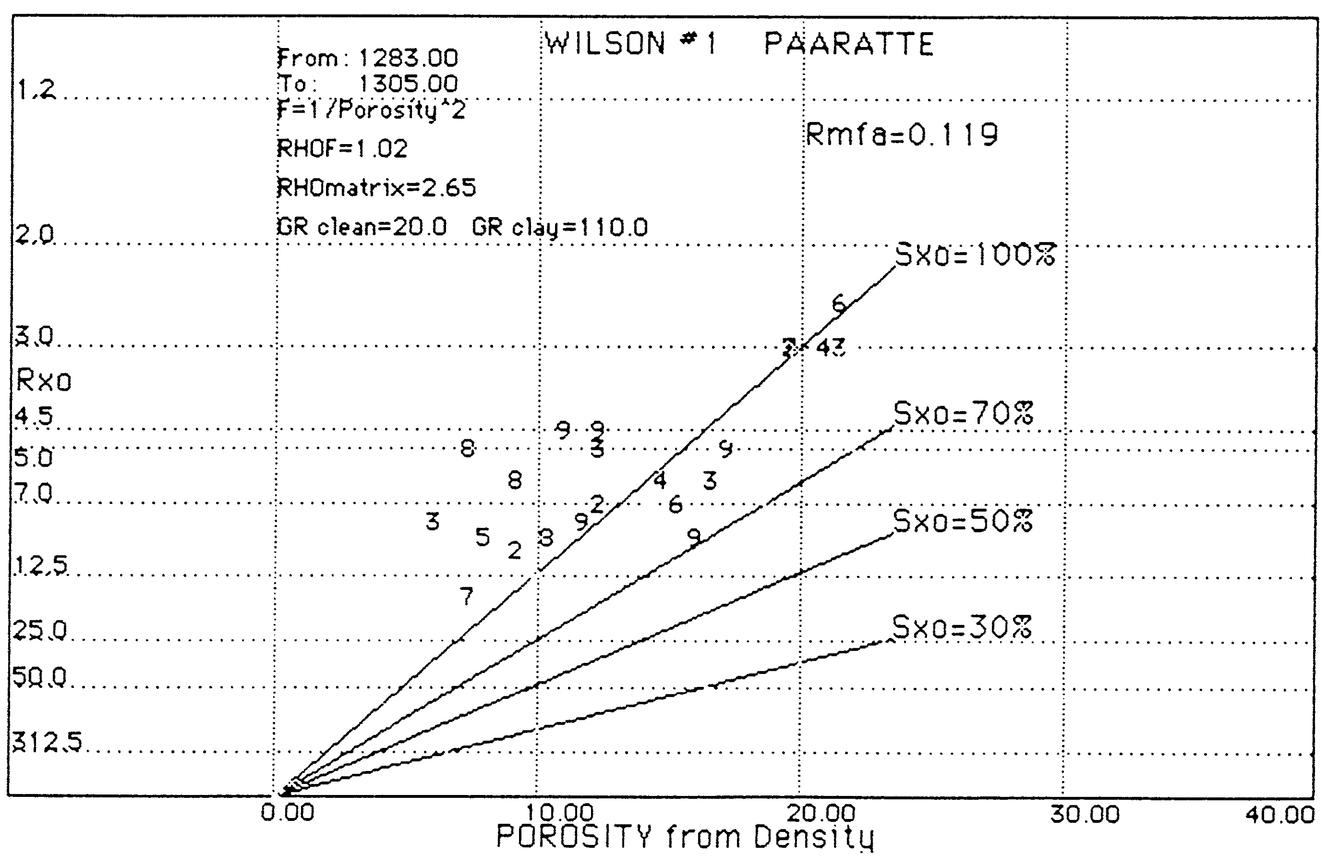
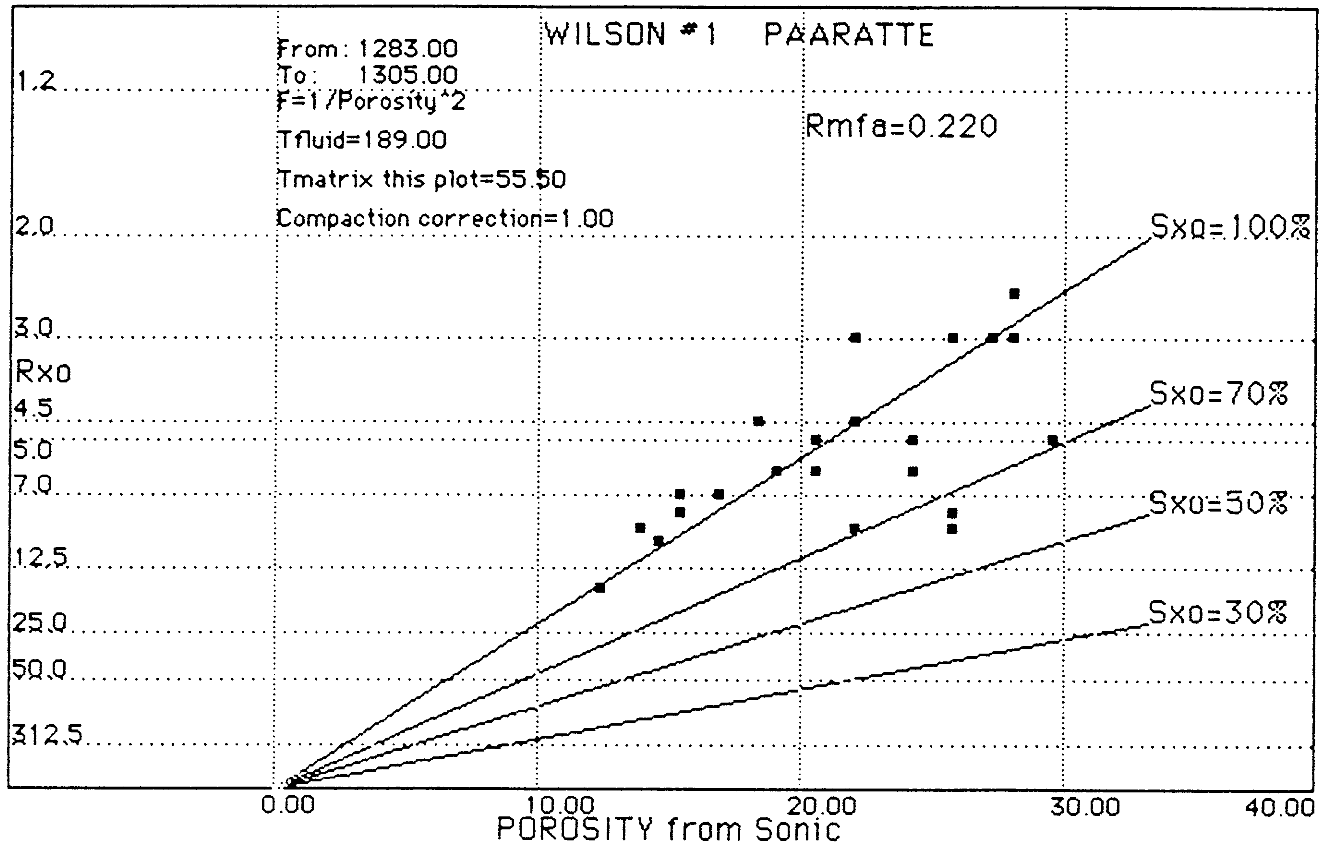
30.00
40.00
POROSITY from Density/Neutron

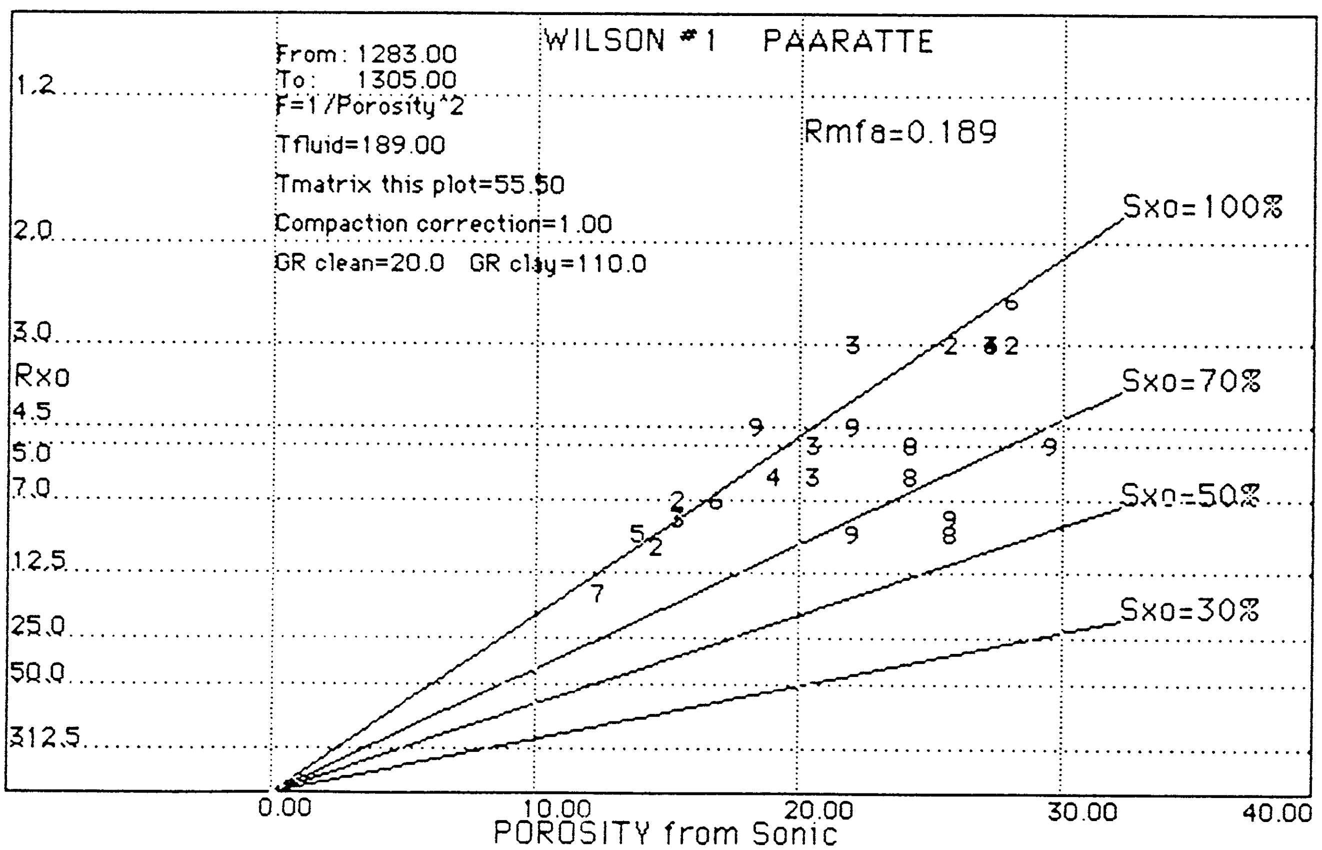


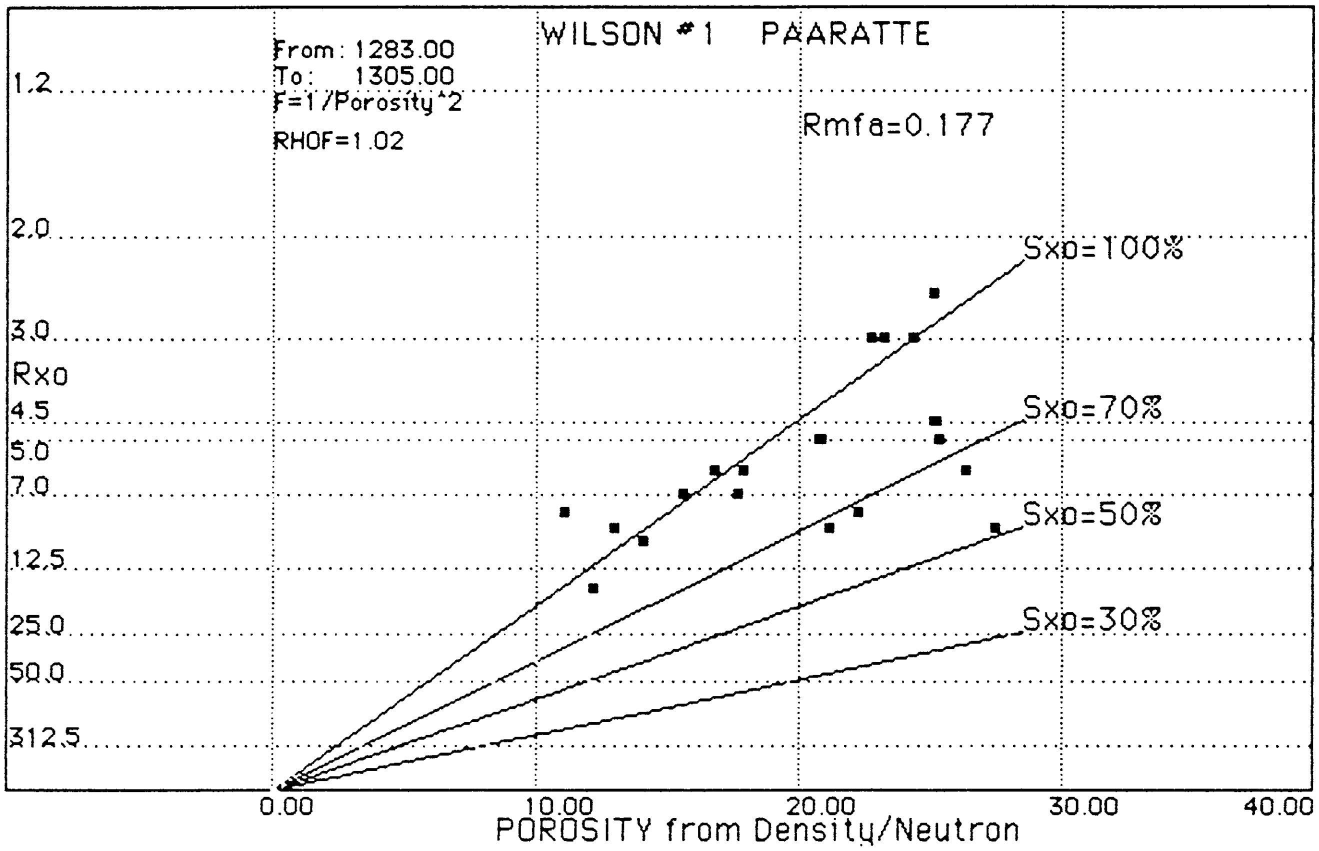
WILSON #1 PAARATTE
From: 1283.00
To: 1305.00
F=1/Porosity^2
RHOF=1.02
RHOmatrix=2.65
Rmfa=0.119
Sxo=100%
Sxo=70%
Sxo=50%
Sxo=30%
Rxo
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density

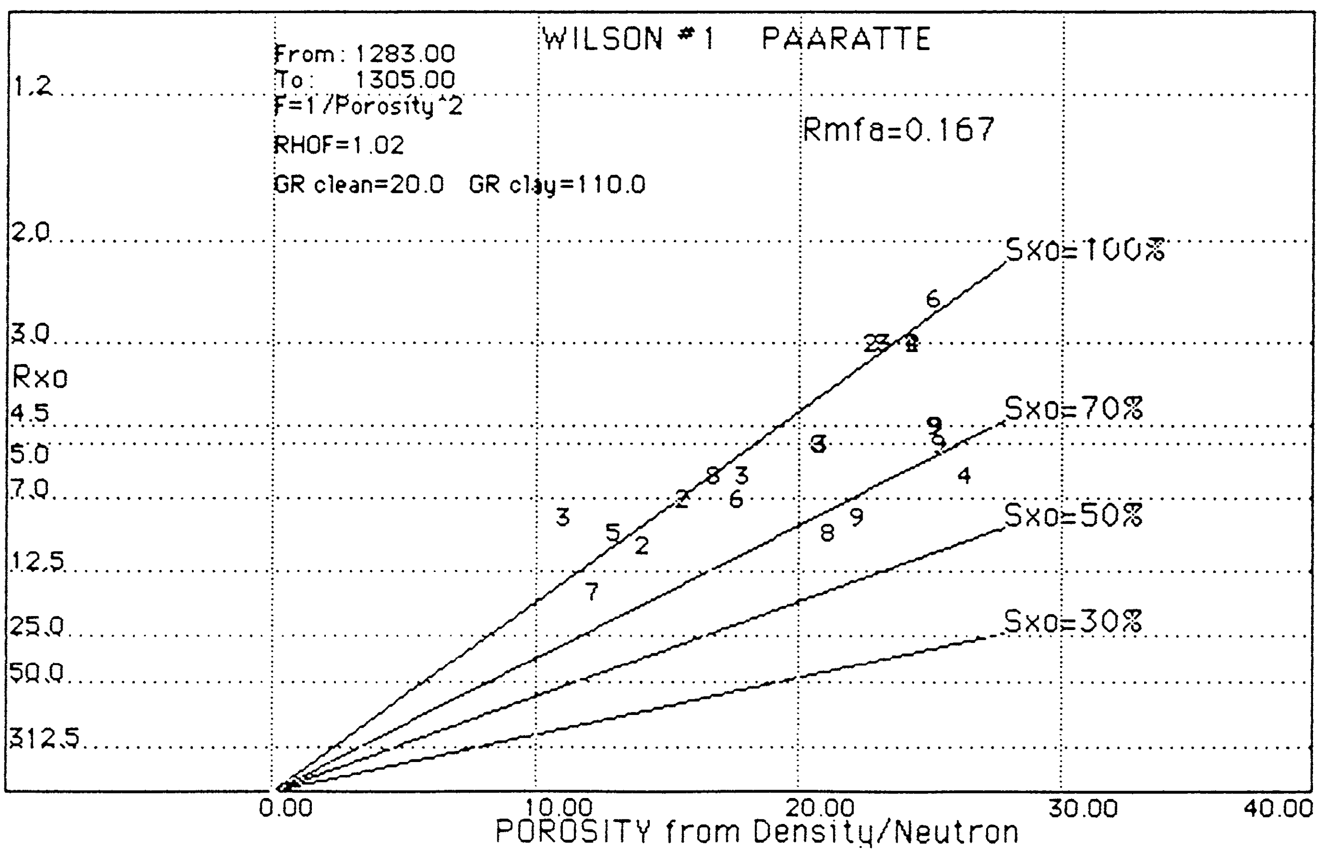


WILSON #1 PAARATTE
From: 1283.00
To: 1305.00
F=1/Porosity^2
RHOF=1.02
RHOmatrix=2.65
GR clean=20.0 GR clay=110.0
Rmfa=0.119
Sxo=100%
Sxo=70%
Sxo=50%
Sxo=30%
Rxo
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density


WILSON #1 PAARATTE
From: 1283.00
To: 1305.00
F=1/Porosity^2
Tfluid=189.00
Tmatrix this plot=55.50
Compaction correction=1.00
Rmfa=0.220
Sxo=100%
Sxo=70%
Sxo=50%
Sxo=30%
Rxo
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Sonic


WILSON #1 PAARATTE
From: 1283.00
To: 1305.00
F=1/Porosity^2
Tfluid=189.00
Tmatrix this plot=55.50
Compaction correction=1.00
GR clean=20.0 GR clay=110.0
Rmfa=0.189
Sxo=100%
Sxo=70%
Sxo=50%
Sxo=30%
Rxo
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Sonic


WILSON #1 PAARATTE
From: 1283.00
To: 1305.00
F=1/Porosity^2
RHOF=1.02
Rmfa=0.177
Sxo=100%
Sxo=70%
Sxo=50%
Sxo=30%
Rxo
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
20.00
30.00
40.00
POROSITY from Density/Neutron


WILSON #1 PAARATTE
From: 1283.00
To: 1305.00
F=1/Porosity^2
RHOF=1.02
GR clean=20.0 GR clay=110.0
Rmfa=0.167
Sxo=100%
Sxo=70%
Sxo=50%
Sxo=30%
Rxo
1.2
2.0
3.0
4.5
5.0
7.0
12.5
25.0
50.0
312.5
0.00
10.00
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POROSITY from Density/Neutron

APPENDIX 13

APPENDIX 13

Surveying Report

SAWLEY, LOCK
AND ASSOCIATES PTY. LTD.

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Peter G. Pain

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ADELAIDE,
SOUTH AUSTRALIA, 5000
Telephone (08) 212 4010

Mrs. P. Ames
Tuesday, Wednesday, Thursday.

When replying please quote

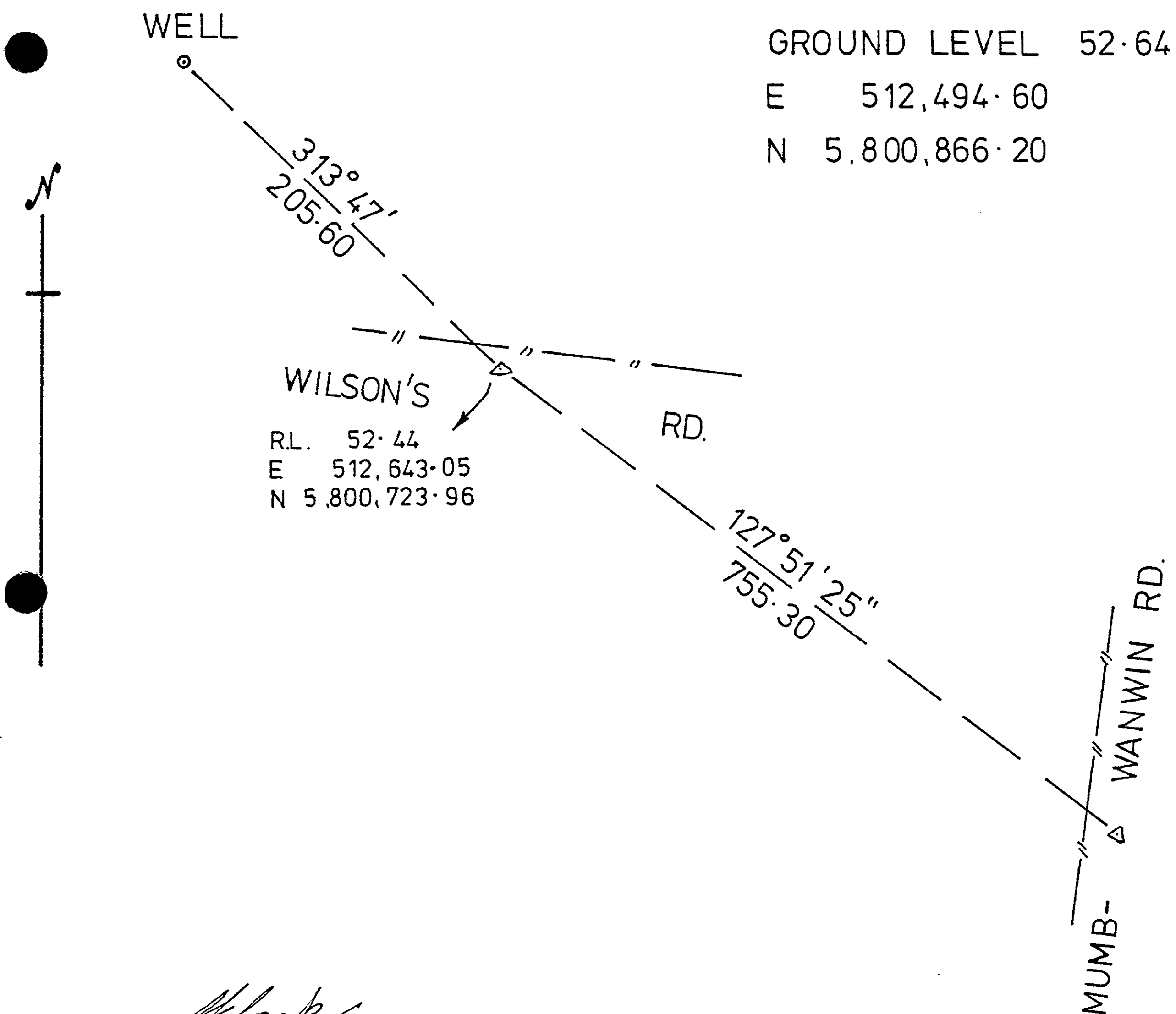
Our Ref: F4007 P268

Your Ref:

Date: 24-6-87

WILSON 1

GROUND LEVEL 52·64
E 512,494·60
N 5,800,866·20



CRAIG LOCK L.S.