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WELL COMPLETION REPORT
VEILFIN-1

W857

VOLUME II

INTERPRETIVE DATA

GIPPSLAND BASIN
VICTORIA

ESSO AUSTRALIA LIMITED

Compiled by: P.A.ARDITTO

JULY, 1985

VEILFIN-1

WELL COMPLETION REPORT

VOLUME II

(Interpretative Data)

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GEOLOGICAL AND GEOPHYSICAL ANALYSIS

AGE	FORMATION	DEPTH PREDICTED (MKB)	DEPTH DRILLED (MKB)	DEPTH DRILLED (MSS)
Middle to Late Miocene	Gippsland Limestone	90	86	65
Early to Middle Miocene	Lakes Entrance Formation	1791	1682	1661
Late Cretaceous to Late Eocene	Latrobe Group	1949	1988	1967
	"coarse clastics"	1980	2025	2004
	TOTAL DEPTH	2521	3521	3500

INTRODUCTION

The primary objective of the Veilfin-1 well was to test the hydrocarbon potential of a faulted anticlinal closure at the top of the Latrobe Group "coarse clastics". A secondary objective was to test the potential of possible fault dependent stacked reservoirs deeper within the Latrobe Group. Veilfin-1 encountered water-wet sands at the "coarse clastics" level and tight gas sands within the deeper Latrobe Group. The well was plugged and abandoned as a dry hole with gas recovered on a production test.

PREVIOUS DRILLING HISTORY

Cod-1 (the third well drilled in the offshore Gippsland Basin) was drilled in 1965 to test an interpreted large anticlinal closure in the central part of the basin. The well was plugged and abandoned as a dry hole. Post drill velocity analysis revealed that the well had possibly drilled a two-way time pull-up associated with an overlying channel infilled with high velocity sediments. Subsequent wells drilled to test structures below the same high velocity channel, namely Salmon-1 (1969) and Swordfish-1 (1976) were also abandoned as dry holes. In both cases the pre-drill velocity analysis had failed to adequately compensate for the two-way time pull up at the top of Latrobe.

GEOLOGICAL SUMMARY

Structure

Predrill the Veilfin structure was interpreted as a faulted NW-SE trending anticlinal closure at the top of the Latrobe Group. Fault-dependant closures were also interpreted to exist deeper within the Latrobe Group. The prospect was situated on a general SW-NE broad anticlinal trend which extended from the Bream field to the Marlin field. Although the flank of the structure as mapped had been previously penetrated by Salmon-1, Veilfin-1 was located near an interpreted culmination some 2 km further to the east.

The top of "coarse clastics" came in 45 m low to prediction, eliminating any updip potential east of Salmon-1. The post drill structure map of this horizon, incorporating velocity data from Veilfin-1 reveals that a small low relief, untested closure may still exist to the northwest of the Veilfin-1 location but that relief in the Salmon-1/Veilfin-1/Swordfish-1 area is essentially low.

The structure persists at depth but it is entirely fault dependent. At the Lower L. balmei seismic marker level the structural culmination has migrated some 2 km to the E - SE of Veilfin-1.

STRATIGRAPHY

Latrobe Group

The stratigraphy encountered in the Veilfin-1 well was generally as predicted. All depths referred to are in metres KB (21m).

The well intersected 37 m of glauconitic greensand at the top of Latrobe Group, referred to as the Gurnard Formation (1988 - 2025m), before encountering "coarse clastics" - the primary target horizon. As these sands were water-wet, no conventional cores were cut and wireline log character was used to deduce depositional environments.

The interval 2025 - 2116m was composed of stacked shoreface/foreshore sandstone units, displaying typical coarsening upward cycles, of excellent reservoir quality. A thin 1m coal encountered between 2042 - 2043m probably represented a local back barrier accumulation.

The interval 2116m - 2346m comprises interbedded, relatively thick, sands (10m), displaying fining upward character, shales and thick coals (4m) interpreted as point bar units deposited in a coastal plain to flood plain environment. The interval below this to TD (3521m) is similar to the preceeding and comprises interbedded sand - shale - coal units although individual units are much thinner and more poorly developed. A conventional core cut over the interval 3453.1m - 3462.8m intersected a sequence of middle to upper (ripple-laminated) point bar channel sands, abandoned channel mudstones and flood plain - levee carbonaceous mudstones and coals.

The Seaspray Group

The marls and limestones of the Lakes Entrance Formation and Gippsland Limestone were encountered as expected. An unnamed glauconitic marl was recognized between 1985.0 and 1988.0m. Although lithologically similar to the basal Lakes Entrance Formation, it is separated from it by a significant hiatus. The relationship of this unit to the current stratigraphic nomenclature is still being investigated.

HYDROCARBONS

The primary objective at the top of "coarse clastics" was water-wet. The presumed reason for the absence of hydrocarbons at this level is the lack of a suitable structural trap. Structural closure does increase with depth, although it is entirely fault dependent and requires sealing faults for intra-Latrobe Group hydrocarbon accumulations.

Tight gas sands with high water saturations were encountered throughout the interval 3185m to 3490 mkb and and RFT sample recovered a scum of oil at 3149.5 mkb. A production test over the interval 3185m - 3194 mkb recovered 0.3 MSCF of gas and an unmeasured quantity of condensate together with 40 Bbls of filtrate and formation water. Two 20 litre gas samples were taken during the test and one litre of condensate was recovered from the choke manifold prior to reverse circulating. No gas-water contact could be observed from the wireline logs or from pressure plot data.

GEOPHYSICAL ANALYSIS

INTRODUCTION

Veilfin-1 tested a prospect lying beneath a broad, NW-SE-trending Miocene "high velocity channel". The geometry of the sediments filling this channel and the velocity contrast between the channel fill and the underlying sediments cause distortion of seismic ray-paths passing through the channel and lead to a large scatter in normal moveout velocities (VNMO's) to the top of the Latrobe Group. This scatter introduces uncertainty in the determination of depth conversion velocities and hence compensation for the channel-induced two-way time "pull-up" of horizons below the channel is approximate.

At the top of "coarse clastics" the pre-drill interpretation of the Veilfin prospect was of a faulted anticline with 46m of closure updip from the Salmon-1 well. When the structure was drilled, the top of "coarse clastics" came in 45m low to prediction, only 4m updip from its intersection at the Salmon-1 well.

This error in depth prediction necessitated a significant revision to depth conversion velocities subsequent to drilling. These revised velocities have changed the interpreted structural picture for the horizons beneath the channel significantly from the pre-drill interpretation.

SEISMIC CONTROL

The post-drill interpretation described here was based on data from the G81A survey and reprocessed data from the G74A and G77A surveys, in a grid varying from one to two kilometres in density. The seismic sections used were final stack sections without migration.

DATA QUALITY

Data quality is very good down to the *M. diversus* marker, with the exception that there is some degeneration in data quality in the zone immediately below the axis of the high velocity channel. Below the *M. diversus* marker data quality deteriorates significantly, primarily because of loss of energy to interbed multiples sourced from coals in the shallow part of the Latrobe Group.

Reprocessing in 1983 of data from the G74A and G77A surveys has provided major improvements in data quality at both the top of Latrobe and intra Latrobe levels, especially with the G74A data.

PRE-DRILL INTERPRETATION

Three horizons were mapped in both time and depth pre-drill. These were the top of Latrobe Group "coarse clastics", lower M. diversus seismic marker and lower L. balmei seismic marker.

The "coarse clastics" maps were based on interpretation utilizing the reprocessed G74A and G77A data. The intra-Latrobe maps were based on interpretation which was completed prior to the conclusion of the reprocessing and used data from the original processing of the G74A and G77A surveys.

Two depth maps for the top of "coarse clastics" were produced pre-drill. They were the products of two independent approaches to depth conversion, a VNMO approach and an interval velocity (VINT) approach. Both methods predicted a fault-dependent closure updip from the Salmon-1 well, although they differed in predicted heights and areas of closure.

POST-DRILL INTERPRETATION

Both the VNMO and the VINT methods of depth conversion failed to compensate sufficiently for the two-way time "pull-up" at the top of Latrobe Group "coarse clastics" due to the overlying high velocity channel.

The error in depth prediction with the VNMO method was due to the axis of high velocity being placed too far to the west on the top of "coarse clastics" average velocity (VAVG) map. This axis was aligned pre-drill with the two-way time axis of the high velocity channel, which is approximately one kilometre to the west of Salmon-1.

Veilfin-1 was drilled well up on the eastern flank of the channel (apparently with less overlying high velocity material). In spite of this, VAVG to the top of "coarse clastics" was found to be higher at Veilfin-1 than it is at Salmon-1, revealing that there is in fact more overlying high velocity material at the Veilfin location, and implying that the axis of high velocity should be located near Veilfin-1 or slightly further to the east. It is now believed that the axis of high velocity should be aligned with a high trend apparent on the top of "coarse clastics" time structure map. This high trend runs NW-SE through a point about 0.7km east of Veilfin-1 and continues northwards, passing to the east of the Cod-1 well. It seems highly likely that this high trend corresponds to the axis of maximum two-way time pull-up.

The VINT approach accurately predicted the depth to the base of the high velocity channel but underestimation of interval velocities below the channel, led to an error in depth prediction for the top of "coarse clastics" of 40m.

A revised VNMO method was used for the post-drill remapping. Because of the large scatter in VNMO values it was necessary to work the velocities in map form, and to use a computer programme designed to smooth scattered values. A suite of maps of VNMO to the "coarse clastics" was generated, each with a different degree of smoothing. A map of smoothed VNMO was then drawn by hand, by combining credible portions of the computer maps and ensuring consistency with the high trend on the time map, with well control and with the time structure map for the base of the channel.

A revised conversion factor map was also produced. The trends on this map were derived from the revised VNMO map and from a map of two-way time to the base of the high velocity channel.

The revised VNMO, conversion factor and average velocity maps are all enclosed.

A lag correction of 6 msec was applied before depth conversion of the "coarse clastics" horizon.

The revised "coarse clastics" depth map shows that a small, low relief, untested closure may still exist to the northwest of the Veilfin-1 location and that relief in the Salmon-1/Veilfin-1/Swordfish-1 area is essentially low.

The placement of the axis of high velocity to the east of the Cod-1 well has eliminated any closure in the vicinity of Cod-1, and explains the failure of Cod-1 to encounter hydrocarbons.

Note that subsequent to the drilling of Veilfin-1 the pick for the top of "coarse clastics" at Salmon-1 has been revised from 1994 mSS to 2008 mSS.

The top of "coarse clastics" structure map was digitised and then depth conversion of the *M. diversus* and lower *L. balmei* seismic markers was achieved by isopaching down from the "coarse clastics" structure map, using smoothed "pseudo interval velocity" (pseudo VINT) maps.

These "pseudo VINT" maps provided interval velocities to convert interval times from the seismic sections to appropriate interval thicknesses prior to isopaching from the "coarse clastics" structure map. The trends on these "pseudo VINT" maps were derived from "Dix" interval velocity maps.

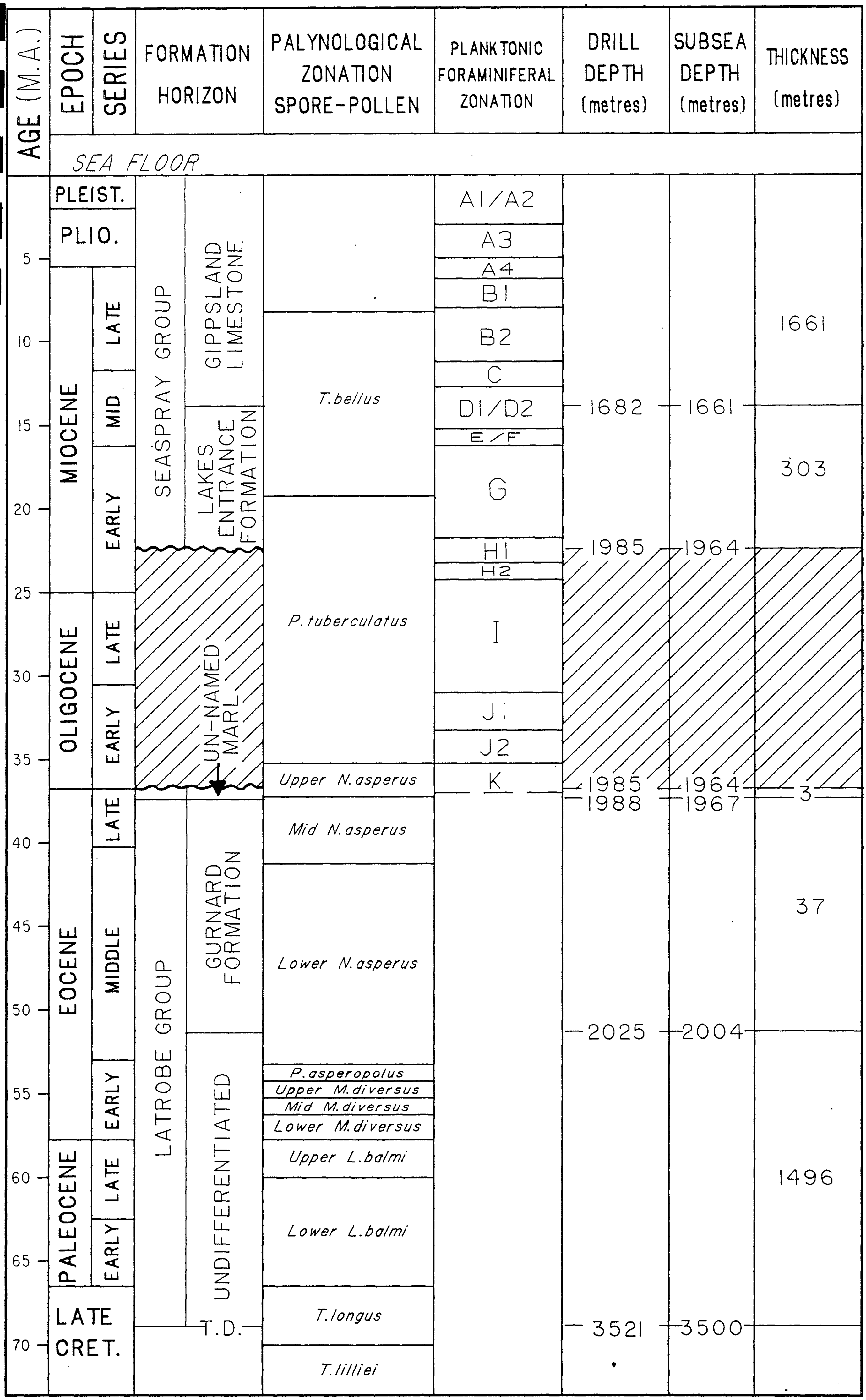
The intra-Latrobe depth maps differ markedly from their pre-drill equivalents, firstly because of the incorporation of reprocessed G74A and G77A data and secondly because of the revised structural picture at the top of "coarse clastics".

They reveal that large, stacked, fault-dependent closures exist within the Latrobe group at Veilfin and that the crests of these structures appear to migrate to the southeast of the Veilfin-1 location with increasing depth.

This fact allows the possibility for small updip potential deeper within the Latrobe group. Unfortunately, there is a trade-off with porosity at the depths where the size of this untested closure would approach an economic pool size. This was demonstrated by the discouraging results of the production test.

FIGURE 1

VEILFIN-1
STRATIGRAPHIC TABLE



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APPENDIX 1

APPENDIX I

APPENDIX

FORAMINIFERAL ANALYSIS, VEILFIN-1,
GIPPSLAND BASIN

by

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INTERPRETATIVE DATA

INTRODUCTION

Forty one sidewall core samples from Veilfin-1 between 934.8 and 2024.0m (KB depth) were processed for foraminiferal analysis. Select samples were also examined for calcareous nannoplankton. All samples from Latrobe Group coarse clastics between 2002.6 and 2024.0m were barren of skeletal material. Four additional samples from the Latrobe Group (sidewall cores at 2395.1, 2399.0, 2678.0 and 2765.0m) were checked for their calcareous microfossil content because palynological evidence indicated a marine environment. These samples proved to be barren of foraminifera and calcareous nannoplankton.

Table 1 summarises the biostratigraphy of the units in Veilfin-1. Tables 2 and 3 summarise the palaeontological analysis of Veilfin-1 (basic and interpretative data). A range chart for planktonic foraminifera and calcareous nannoplankton is included as basic data.

TABLE 1

CALCAREOUS MICROFOSSIL SUMMARY, VEILFIN-1

AGE	UNIT	ZONE	DEPTH(mKB)
-	Gippsland Limestone	Indeterm.	934.8-1234.2
Late Miocene		C	1300.0-1427.5
log break at 1441.5m (latest Middle Miocene disconformity)			
Middle Miocene	Gippsland Limestone	D1	1449.9
log break at 1472.0m (mid Middle Miocene disconformity - base channelling)			
Middle Miocene	Gippsland Limestone	D1	1490.2-1675.3
log break at 1682.0m (early Middle Miocene disconformity)			
Middle Miocene	Lakes Entrance Fm	D2	1706.6
log break at 1735.0m			
-	Lakes Entrance Fm (shelf-derived skeletal limestone unit)	Indeterm.	1761.0
# upper Early Miocene - earliest Middle Miocene		CN2-CN4	1799.0
-		Indeterm.	1866.0
log break at 1867.0m (latest Early Miocene disconformity)			
Early Miocene	Lakes Entrance Fm	H1	1949.5-1983.0
log break at 1985.0m (basal Early Miocene, mid Late Oligocene or basal Late Oligocene disconformity)			
-	un-named glauconitic marl	Indeterm.	1986.0
latest Late Eocene		K	1988.0
log break at 1988.0m			
latest Late Eocene	Gurnard Formation (Member A)	K	1990.0-1992.5
# Late Eocene		CP15a or younger	1996.1-1999.5
lithological change at 2000.0m (?basal Late Eocene disconformity)			
* Middle Eocene	Gurnard Formation (Member B)	Lower *N. asperus*	2002.6-2024.0
log break at 2025.0m (latest Early Eocene disconformity)			
+	Latrobe Group (coarse clastics)		

T.D. 3521mKB

* Age based on Hannah & Macphail (1985)
# Age based on calcareous nannoplankton
\+ Not studied

GEOLOGICAL COMMENTS

The Gurnard Formation disconformably overlies the Latrobe Group "coarse clastics". The log break at 2025.0m equates with the 49.5Ma event (latest Early Eocene disconformity) of Vail et al. (1977). This event coincides with the cutting of the Marlin Channel in the northwestern part of the offshore Gippsland Basin. The Gurnard Formation in Veilfin-1 consists of two members, one of Middle Eocene age (Member B) and one of Late Eocene age (Member A). Member B (2000.0-2025.0m) comprises non-calcareous glauconitic sandstone and has been age-dated as Lower N. asperus Zone by Hannah & Macphail (1985). Member A (1988.0-2000.0m) comprises calcareous glauconitic sandstone and calcareous greensand, and is Middle N. asperus Zone, Late Eocene in age. A Late Eocene age for Member A is confirmed by calcareous microfossil (this report) and palynological evidence (Hannah & Macphail, 1985). A disconformity which equates with the basal Late Eocene disconformity (40Ma event) of Vail et al. (1977) is suspected to separate Members A and B. A hiatus would be expected between the two greensand members but this cannot be confirmed by biostratigraphic evidence.

An un-named glauconitic marl unit (1985.0-1988.0m) conformably overlies the Gurnard Formation in Veilfin-1. The unit is latest Late Eocene in age (Zone K). The common occurrence of pelletal glauconite and the presence of fish teeth remains in the marl indicate that it represents a condensed sequence deposited during a period of high relative sea-level (transgressive phase).

The un-named glauconitic marl is disconformably overlain by Early Miocene (Zone H1) calcareous shale of the Lakes Entrance Formation. The disconformity at 1985.0m may equate with the basal Early Miocene, mid Late Oligocene or basal Late Oligocene (30Ma event) events of Vail et al. (1977). The hiatus between the un-named glauconitic marl and the Lakes Entrance Formation spans the entire Oligocene interval (approximately 11myr).

The log break at 1867.0m in Veilfin-1 marks the base of a 132m thick shelfal-derived skeletal limestone unit which probably was derived from the distal edge of the prograding Gippsland Limestone. Three sidewall core samples shot in the unit (1761.0, 1799.0 and 1866.0m) contain abundant skeletal remains (echinoid spines, bryozoan fragments and shell fragments) and very impoverished planktonic foraminiferal assemblages. On the basis of a calcareous nannoplankton dating of one sidewall core sample from the unit (SWC at 1799.0m), the skeletal limestone unit is considered to be upper Early Miocene to earliest Middle Miocene in age. It is suspected that this skeletal limestone unit disconformably overlies calcareous shales of the Lakes Entrance

Formation, however, this conclusion is speculative because of poor sample control between the units. The log break at 1867.0m (base skeletal limestone unit) probably equates with the Mid Miocene Seismic Marker (latest Early Miocene disconformity). The skeletal limestone unit may well have slumped from the shelf edge of the prograding Gippsland Limestone into a slope/bathyal environment.

The shelf-derived skeletal limestone unit is conformably (?) overlain by early Middle Miocene calcilutites (Zone D2) referred to the Lakes Entrance Formation.

The Lakes Entrance Formation is disconformably overlain by Gippsland Limestone of Zone D1 age. The log break at 1682m equates with an early Middle Miocene disconformity which is known to straddle the Zone D2/D1 boundary basinwide. Sidewall core samples of the Gippsland Limestone in Veilfin-1 indicate that the basal 700m of the unit comprises sponge spicule rich calcilutite, calcisiltite and fine grained calcarenite.

The log break at 1472.0m occurs within Zone D1 and probably equates with the mid Middle Miocene disconformity (13Ma event) of Vail et al. (1977). Seismic evidence indicates that this event represents the base of "Late Miocene Channelling". Another log break approximately 30m higher at 1441.5m may equate with the latest Middle Miocene (11Ma event) of Vail et al. (1977).

DISCUSSIONS OF ZONES

The Tertiary biostratigraphy in Veilfin-1 is based on the Gippsland Basin planktonic foraminiferal zonal scheme of Taylor (in prep.) and the calcareous nannoplankton zonal scheme of Bukry (1981).

Indeterminate Interval: 2002.6 - 2024.0m

The interval is barren of foraminifera. Palynological evidence indicates that the interval is assignable to the Lower N. asperus spore/pollen Zone (Hannah & Macphail, 1985).

Zone CP15a or younger: 1996.1-1999.5m

The sidewall core sample at 1999.5m contains very poorly preserved specimens of Chiamolithus oamaruensis. This indicates that the interval is no older than Zone CP15a. The interval is assignable to the Middle N. asperus spore/pollen Zone (Hannah & Macphail, 1985).

Zone K: 1988.0-1992.5m

Typical Zone K planktonic foraminiferal assemblages including Globigerina angiporoides, G. brevis, G. linaperta and Globorotalia gemma, occur in the interval.

Indeterminate Interval: 1986.0m

The sidewall core sample at 1986.0m only contains severely recrystallized indeterminate planktonics and is not age-diagnostic.

Zone H1: 1949.5-1983.0m

The uphole entry of Globigerina woodi connecta at 1983.0m defines the base of Zone H1 in the well.

Indeterminate Interval: 1866.0m

The sample at 1866.0m contains a very sparse indeterminate planktonic foraminiferal assemblage which is not age diagnostic. Calcareous nannoplankton are more common but the assemblage is also not age diagnostic. Sphenolithus moriformis represents a dominant floral component of the nannofossil assemblage.

Zones CN2-CN4: 1799.0m

The occurrence of Sphenolithus heteromorphous indicates that the sidewall core sample at 1799.0m is Zone CN2, CN3 or CN4 in age.

Indeterminate Interval: 1761.0m

Very impoverished planktonic foraminiferal and calcareous nannoplankton assemblages in the sample at 1761.0m are not age diagnostic.

Zone D2: 1706.6m

A diverse, well preserved Zone D2 assemblage occurs in the sidewall core sample at 1706.6m.

Zone D1: 1449.9-1675.3m

The association of Orbulina universa and Globorotalia miozea miozea without a diverse Globigerinoides fauna indicates that the interval is assignable to Zone D1.

Zone C: 1300.0-1427.5m

The uphole entry of Globorotalia miotumida miotumida at 1427.5m defines the base of Zone C in the well.

Indeterminate Interval: 934.8-1234.2m

The planktonic foraminiferal faunas in the interval are very pooly preserved and no zonal assignment is possible.

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TABLE 1

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, VEILFIN-1, GIPPSLAND BASIN

INTERPRETATIVE DATA

NATURE OF SAMPLE	DEPTH (mKB)	PLANKTONIC FORAMINIFERAL YIELD	PRESERVATION	PLANKTONIC FORAMINIFERAL DIVERSITY	ZONE	AGE	COMMENTS
SWC 184	2024.0	Barren	-	-	-	-	
SWC 185	2022.0	Barren	-	-	-	-	
SWC 186	2020.0	Barren	-	-	-	-	
SWC 187	2017.5	Barren	-	-	-	-	
SWC 188	2016.7	Barren	-	-	-	-	
SWC 189	2014.1	Barren	-	-	-	-	
SWC 190	2012.0	Barren	-	-	-	-	
SWC 191	2009.5	Barren	-	-	-	-	
SWC 192	2008.0	Barren	-	-	-	-	
SWC 193	2005.9	Barren	-	-	-	-	
SWC 194	2004.0	Barren	-	-	-	-	
SWC 195	2002.6	Barren	-	-	-	-	
SWC 196	1999.5	Barren	-	-	-	-	
SWC 197	1996.1	Barren	-	-	-	-	
SWC 198	1992.5	Low	Poor	Low	K	L.Eocene-E.Oligocene	
SWC 199	1990.0	Low/Moderate	Poor	Low	K	" "	Fish Teeth
SWC 200	1988.0	Low/Moderate	Very poor	Low	K	" "	
SWC 201	1986.0	Low	Very poor	Very Low	Indeterm.	-	
SWC 202	1983.0	Low/Moderate	Poor	Moderate	H-1	Early Miocene	
SWC 203	1980.0	High	Moderate	Moderate	H-1	"	echinoid spines (few)
SWC 204	1975.5	High	Moderate/poor	High	H-1	"	echinoid spines (common)
SWC 205	1970.1	High	Poor	Moderate	H-1	"	echinoid spines (common), shell frags (few)
SWC 206	1965.0	Moderate	Poor	Moderate	H-1	"	echinoid spines, sponge spicules (few)
SWC 207	1957.5	High	Poor	Moderate	H-1	"	sponge spicules (few)
SWC 208	1949.5	High	Moderate/poor	Moderate	H-1	"	echinoid spines (few)
SWC 209	1866.0	Very low	Very poor	Very low	Indeterm.	-	shell fragments, echinoid spines (common)
SWC 210	1799.0	Very low	Very poor	Very low	Indeterm.	-	bryozod, echinoid spines (common), sponge spics (few)
SWC 211	1761.0	Very Low	Very poor	Very low	Indeterm.	-	as above
SWC 212	1706.6	High	Moderate	Moderate/High	D-2/D-1	Mid Miocene	
SWC 213	1675.3	Very Low	Very poor	Very low	D-2/D-1	"	sponge spicules (few)
SWC 214	1660.1	Low	Very poor	Very low	D-2/D-1	"	as above
SWC 215	1520.1	High	Poor	Moderate	D-2/D-1	"	sponge spicules (common)
SWC 216	1490.2	Moderate	Moderate/Poor	Low/Moderate	D-2/D-1	"	as above plus echinoid spines (few)

TABLE I cont.

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, VEILFIN-1, GIPPSLAND BASIN

INTERPRETATIVE DATA

NATURE OF SAMPLE	DEPTH (mKB)	PLANKTONIC FORAMINIFERAL YIELD	PRESERVATION	PLANKTONIC FORAMINIFERAL DIVERSITY	ZONE	AGE	COMMENTS
SWC 217	1449.9	Moderate	Moderate/Poor	Low/Moderate	D-2/D-1	"	sponge spicules (common)
SWC 218	1427.5	Moderate	Moderate	Moderate	C	Late Miocene	sponge spicules, echinoid spines (few)
SWC 219	1400.0	Moderate	Moderate	Moderate	C	"	sponge spicules (few)
SWC 220	1300.0	Low	Poor	Low/Moderate	C	"	sponge spicules (common)
SWC 221	1234.2	Very low	Moderate/Poor	Very Low	Indeterm.	-	sponge spicules (few)
SWC 222	1150.1	Very low	Poor	Very Low	Indeterm	-	as above
SWC 223	1045.1	Very low	Poor	Very low	Indeterm.	-	
SWC 224	934.8	Low	Poor	Very low	Indeterm.	-	

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TABLE 2

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, VEILFIN-1, GIPPSLAND BASIN
INTERPRETATIVE DATA

NATURE OF SAMPLE	DEPTH (mKB)	YIELD PLANK FORAMS	YIELD NANNOS	PRESERVATION PLANK FORAMS	PRESERVATION NANNOS	DIVERSITY PLANK FORAMS	DIVERSITY NANNOS	ZONE PLANK FORAMS	ZONE NANNOS	AGE	COMMENTS
SWC 184	2024.0	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 185	2022.0	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 186	2020.0	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 187	2017.5	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 188	2016.7	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 189	2014.1	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 190	2012.0	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 191	2009.5	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 192	2008.0	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 193	2005.9	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 194	2004.0	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 195	2002.6	Barren	Not stud.	-	-	-	-	-	-	-	
SWC 196	1999.5	Barren	Low	-	Poor	-	Very low	-	No older than CP15a	Late Eocene	
SWC 197	1996.1	Barren	Mod/low	-	Poor	-	Low	-	Indeterm.	Late Eocene	
SWC 198	1992.5	Low	Low	Poor	Poor	Low	Very low	K	Indeterm.	latest L. Eocene	Fish teeth
SWC 199	1990.0	Low/mod	Mod/low	Poor	Poor	Low	Very low	K	Indeterm.	latest L. Eocene	Fish teeth
SWC 200	1988.0	Low/mod	High	Very poor	Mod/poor	Low	Low	K	Indeterm.	latest L. Eocene	Fish teeth
SWC 201	1986.0	Low	Very low	Very poor	Very poor	Very low	-	Indeterm.	Indeterm.	-	Fish teeth
SWC 202	1983.0	Low/mod	Not stud.	Poor	-	Mod.	-	H1	-	E. Miocene	-
SWC 203	1980.0	High	Not stud.	Mod.	-	Mod.	-	H1	-	E. Miocene	Echinoid spines (few)
SWC 204	1975.5	High	Not stud.	Mod/poor	-	High	-	H1	-	E. Miocene	Echinoid spines (common)
SWC 205	1970.1	High	Not stud.	Poor	-	Mod.	-	H1	-	E. Miocene	Echinoid spines (common), shell fragments (few)

TABLE 2 cont.

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, VEILFIN-1, GIPPSLAND BASIN
INTERPRETATIVE DATA

NATURE OF SAMPLE	DEPTH (mKB)	YIELD PLANK FORAMS	YIELD NANNOS	PRESERVATION PLANK FORAMS	PRESERVATION NANNOS	DIVERSITY PLANK FORAMS	DIVERSITY NANNOS	ZONE PLANK FORAMS	ZONE NANNOS	AGE	COMMENTS
SWC 206	1965.0	Mod.	Not stud.	Poor	-	Mod.	-	H1	-	E. Miocene	Echinoid spines, sponge spicules (few)
SWC 207	1957.5	High	Not stud.	Poor	-	Mod	-	H1	-	E. Miocene	Sponge spicules (few)
SWC 208	1949.5	High	Not stud.	Mod/poor	-	Mod.	-	H1	-	E. Miocene	Echinoid spines (few)
SWC 209	1866.0	Very low	Moderate	Very poor	Mod/poor	Very low	Very low	Indeterm.	Indeterm.	-	Shell fragments, echinoid spines (common)
SWC 210	1799.0	Very low	Low	Very poor	Mod.	Very low	Low	Indeterm.	CN2-CN4	upper E. Miocene - earliest M. Miocene	Bryozoa, echinoid spines (common), sponge spics (few)
SWC 211	1761.0	Very low	Very low	Very poor	Mod.	Very low	Very low	Indeterm.	Indeterm.	earliest M. Miocene	Bryozoa, echinoid spines (common), sponge spics (few)
SWC 212	1706.6	High	Not stud.	Mod.	-	Mod/high	-	D2	-	M. Miocene	-
SWC 213	1675.3	Very low	Not stud.	Very poor	-	Very low	-	D1	-	M. Miocene	sponge spicules (few)
SWC 214	1660.1	Low	Not stud.	Very poor	-	Very low	-	D1	-	M. Miocene	sponge spicules (few)
SWC 215	1520.1	High	Not stud.	Poor	-	Mod.	-	D1	-	M. Miocene	sponge spicules (common)
SWC 216	1490.2	Mod.	Not stud.	Mod/poor	-	Low/mod.	-	D1	-	M. Miocene	sponge spicules (common), echinoid spines (few)
SWC 217	1449.9	Mod.	Not stud.	Mod/poor	-	Low/mod.	-	D1	-	M. Miocene	sponge spicules (common)
SWC 218	1427.5	Mod.	Not stud.	Mod.	-	Mod.	-	C	-	L. Miocene	sponge spicules, echinoid spines (few)
SWC 219	1400.0	Mod.	Not stud.	Mod.	-	Mod.	-	C	-	L. Miocene	sponge spicules (few)
SWC 220	1300.0	Low	Not stud.	Poor	-	Low/mod.	-	C	-	L. Miocene	sponge spicules (common)
SWC 221	1234.2	Very low	Not stud.	Mod/poor	-	Very low	-	Indeterm.	-	L. Miocene	sponge spicules (few)
SWC 222	1150.1	Very low	Not stud.	Poor	-	Very low	-	Indeterm.	-	L. Miocene	sponge spicules (few)
SWC 223	1045.1	Very low	Not stud.	Poor	-	Very low	-	Indeterm.	-	L. Miocene	sponge spicules (few)
SWC 224	934.8	Low	Not stud.	Poor	-	Very low	-	Indeterm.	-	L. Miocene	sponge spicules (few)

BASIC DATA

TABLE 3: FORAMINIFERAL DATA, VEILFIN-1

RANGE CHART: TERTIARY PLANKTONIC FORAMINIFERA AND CALCAREOUS NANNOPLANKTON

TABLE 3

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, VEILFIN-1, GIPPSLAND BASIN
BASIC DATA

NATURE OF SAMPLE	DEPTH (mKB)	YIELD		PRESERVATION		DIVERSITY	
		PLANK FORAMS	NANNOS	PLANK FORAMS	NANNOS	PLANK FORAMS	NANNOS
SWC 184	2024.0	Barren	Not stud.	-	-	-	-
SWC 185	2022.0	Barren	Not stud.	-	-	-	-
SWC 186	2020.0	Barren	Not stud.	-	-	-	-
SWC 187	2017.5	Barren	Not stud.	-	-	-	-
SWC 188	2016.7	Barren	Not stud.	-	-	-	-
SWC 189	2014.1	Barren	Not stud.	-	-	-	-
SWC 190	2012.0	Barren	Not stud.	-	-	-	-
SWC 191	2009.5	Barren	Not stud.	-	-	-	-
SWC 192	2008.0	Barren	Not stud.	-	-	-	-
SWC 193	2005.9	Barren	Not stud.	-	-	-	-
SWC 194	2004.0	Barren	Not stud.	-	-	-	-
SWC 195	2002.6	Barren	Not stud.	-	-	-	-
SWC 196	1999.5	Barren	Low	-	Poor	-	Very low
SWC 197	1996.1	Barren	Mod/low	-	Poor	-	Low
SWC 198	1992.5	Low	Low	Poor	Poor	Low	Very low
SWC 199	1990.0	Low/mod	Mod/low	Poor	Poor	Low	Very low
SWC 200	1988.0	Low/mod	High	Very poor	Mod/poor	Low	Low
SWC 201	1986.0	Low	Very low	Very poor	Very poor	Very low	-
SWC 202	1983.0	Low/mod	Not stud.	Poor	-	Mod.	-
SWC 203	1980.0	High	Not stud.	Mod.	-	Mod.	-
SWC 204	1975.5	High	Not stud.	Mod/poor	-	High	-
SWC 205	1970.1	High	Not stud.	Poor	-	Mod.	-
SWC 206	1965.0	Mod.	Not stud.	Poor	-	Mod.	-
SWC 207	1957.5	High	Not stud.	Poor	-	Mod	-
SWC 208	1949.5	High	Not stud.	Mod/poor	-	Mod.	-
SWC 209	1866.0	Very low	Moderate	Very poor	Mod/poor	Very low	Very low
SWC 210	1799.0	Very low	Low	Very poor	Mod.	Very low	Low
SWC 211	1761.0	Very low	Very low	Very poor	Mod.	Very low	Very low
SWC 212	1706.6	High	Not stud.	Mod.	-	Mod/high	-
SWC 213	1675.3	Very low	Not stud.	Very poor	-	Very low	-
SWC 214	1660.1	Low	Not stud.	Very poor	-	Very low	-
SWC 215	1520.1	High	Not stud.	Poor	-	Mod.	-
SWC 216	1490.2	Mod.	Not stud.	Mod/poor	-	Low/mod.	-
SWC 217	1449.9	Mod.	Not stud.	Mod/poor	-	Low/mod.	-
SWC 218	1427.5	Mod.	Not stud.	Mod.	-	Mod.	-
SWC 219	1400.0	Mod.	Not stud.	Mod.	-	Mod.	-
SWC 220	1300.0	Low	Not stud.	Poor	-	Low/mod.	-
SWC 221	1234.2	Very low	Not stud.	Mod/poor	-	Very low	-
SWC 222	1150.1	Very low	Not stud.	Poor	-	Very low	-
SWC 223	1045.1	Very low	Not stud.	Poor	-	Very low	-
SWC 224	934.8	Low	Not stud.	Poor	-	Very low	-

0935L

FOSSIL TYPE : CALCAREOUS MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 1 of 2

SAMPLE TYPE OR NO. *	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
DEPTHS	2024.0	2022.0	2020.0	2017.5	2016.0	2014.1	2012.0	2009.5	2008.0	2005.9	2004.0	2002.6	1999.5	1996.1	1992.5	1990.0	1988.0	1986.0	1983.0	1980.0	1975.5	1970.1	1965.0	1957.5	1949.5	1866.0
PLANKTONIC FORAMINIFERA																										
Globigerina angiporoides															---	—	---									
G. brevis															---	---										
G. linaperta															---	---	—									
Globorotalia gemma															---	---	---									
Chiloguembelina cubensis																---										
indeterminate globigerinids																	■						■			---
indeterminate planktonics																		■								
Globoquadrina dehiscens s.l.																			---	—	—	---			—	
G. dehiscens s.s.																			—	—	---	---	---	---	—	
Globigerina praebulloides																			—	■	■	■	---	—	■	
G. woodi connecta																			—	—	—	---	—	---	—	
G. cf. tripartita																			---							
Catapsydrax dissimilis																			---	—	—	---	---	---		
Globoquadrina advena																				—	---	---	---		—	
Globorotalia continuosa																					---					
G. mayeri group																					—					
G. sp. 1																					---					
Globigerina woodi woodi																					—		—	—		
Globorotalia obesa																						—				
juvenile planktonics																						▓		▓	▓	
Globorotalia miozea miozea																										
G. miozea conoidea																										
G. praemenardii																										
G. praescitula																										
Globigerina bulloides																										
Globigerinoides sicanus																										
G. trilobus																										
Orbulina universa																										
Globorotalia menardii group																										
G. miotumida miotumida																										
CALCAREOUS NANNOPLANKTON																										
Cyclococcolithus sp.													---		---											
Reticulofenestra aff. scissura													---													
indeterminate coccoliths													—	—	—											
Coccolithus spp.														■	---				▓							—
Helicopontosphaera sp.														---												
Reticulofenestra scissura														---	---											
Discoaster sp. 1														---												
Chiasmolithus oamaruensis																										
Zygrhablithus bijugatus																	■									
Discoaster tani nodifer																	---									
Braarudosphaera bigelowi																			---							---
Discoaster druggi																			---							
Coccolithus pelagicus																										---
Sphenolithus moriformis																										■
Discoaster deflandre																										
Sphenolithus heteromorphus																										
Micrantholithus pinguis																										

* C=CORE S=SIDEWALL CORE
T=CUTTINGS J=JUNK BASKET

--- RARE
— FEW
■ COMMON
▓ ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE: CALCAREOUS-MICROFOSSILS

Well Name: Veilfin-1 | Basin: Gippsland | Sheet No. 2 of 2

SAMPLE TYPE OR NO. *	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DEPTHS	1799.0	1761.0	1706.6	1675.3	1660.1	1520.1	1490.2	1449.9	1427.5	1400.0	1300.0	1234.2	1150.1	1045.1	934.8
PLANKTONIC FORAMINIFERA															
Globigerina angiporoides															
G. brevis															
G. linaperta															
Globorotalia gemma															
Chiloguembelina cubensis															
indeterminate globigerinids	F	R									F	F	F	F	
indeterminate planktonics				F	C										
Globoquadrina dehiscens s.l.															
G. dehiscens s.s.									R						
Globigerina praebulloides															
G. woodi connecta															
G. cf. tripartita															
Catapsydrax dissimilis															
Globoquadrina advena															
Globorotalia continuosa															
G. mayeri group															
G. sp. 1															
Globigerina woodi woodi	R		C			R	R		F	C					
Globorotalia obesa															
juvenile planktonics			A					A							
Globorotalia miozea miozea			F		R		F	R							
G. miozea conoidea			R			F	F	R		R					
G. praemenardii			R												
G. praescitula	R		R			C									
Globigerina bulloides			F			F	F		F	F	R	R			
Globigerinoides sicanus			R												
G. trilobus			C	R		R			R	R	R				
Orbulina universa			R	R		F	C		A	A	R	R	R	R	
Globorotalia menardii group									R	R					
G. miotumida miotumida										F	R				
CALCAREOUS NANNOPLANKTON															
Cyclococcolithus sp.															
Reticulofenestra aff. scissura															
indeterminate coccoliths															
Coccolithus spp.	F														
Helicopontosphaera sp.															
Reticulofenestra scissura															
Discoaster sp. 1															
Chiasmolithus oamaruensis															
Zygrhablithus bijugatus															
Discoaster tani nodifer															
Braarudosphaera bigelowi	R														
Discoaster druggi															
Coccolithus pelagicus	R	R													
Sphenolithus moriformis	F	R													
Discoaster deflandre	R														
Sphenolithus heteromorphus	R														
Micrantholithus pinguis		R													

* C=CORE S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- RARE (R) — FEW (F) ▬ COMMON (C) ▓ ABUNDANT (A)

PALAEO.CHART-2
DWG.1107/OP/287

Well Name Veilfin-1 Basin Gippsland Sheet No. 1 of 2

SAMPLE TYPE OR NO. *	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
DEPTHS	2024.0	2022.0	2020.0	2017.5	2016.0	2014.1	2012.0	2009.5	2008.0	2005.9	2004.0	2002.6	1999.5	1996.1	1992.5	1990.0	1988.0	1986.0	1983.0	1980.0	1975.5	1970.1	1965.0	1957.5	1949.5	1866.0
PLANKTONIC FORAMINIFERA																										
Globigerina angiporoides															---	—	---									
G. brevis															---	---										
G. linaperta															---	---	—									
Globorotalia gemma															---	---	---									
Chiloguembelina cubensis																---										
indeterminate globigerinids																	■						■			---
indeterminate planktonics																		■								
Globoquadrina dehiscens s.l.																			---	—	—	---			—	
G. dehiscens s.s.																			—	—	---	---	---	---	—	
Globigerina praebulloides																			—	▓	▓	▓	---	—	▓	
G. woodi connecta																			—	—	—	---	—	---	—	
G. cf. tripartita																			---							
Catapsydrax dissimilis																			---	—	—	---	---	---		
Globoquadrina advena																				—	---	---	---		—	
Globorotalia continuosa																					---					
G. mayeri group																					—					
G. sp. 1																					---					
Globigerina woodi woodi																					—		—	—	—	
Globorotalia obesa																						—				
juvenile planktonics																						▓		▓	▓	
Globorotalia miozea miozea																										
G. miozea conoidea																										
G. praemenardii																										
G. praescitula																										
Globigerina bulloides																										
Globigerinoides sicanus																										
G. trilobus																										
Orbulina universa																										
Globorotalia menardii group																										
G. miotumida miotumida																										
CALCAREOUS NANNOPLANKTON																										
Cyclococcolithus sp.													---		---											
Reticulofenestra aff. scissura													---													
indeterminate coccoliths													—	—	—											
Coccolithus spp.														■	---				▓							—
Helicopontosphaera sp.														---												
Reticulofenestra scissura														---	---											
Discoaster sp. 1														---												
Chiasmolithus oamaruensis																										
Zygrhablithus bijugatus																	■									
Discoaster tani nodifer																	---									
Braarudosphaera bigelowi																			---							---
Discoaster druggi																			---							
Coccolithus pelagicus																										---
Sphenolithus moriformis																										■
Discoaster deflandre																										
Sphenolithus heteromorphus																										
Micrantholithus pinguis																										

* C=CORE S=SIDEWALL CORE
T=CUTTINGS J=JUNK BASKET

--- RARE
— FEW
■ COMMON
▓ ABUNDANT

FOSSIL TYPE : CALCAREOUS-MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 2 of 2

SAMPLE TYPE OR NO. *	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DEPTHS	1799.0	1761.0	1706.6	1675.3	1660.1	1520.1	1490.2	1449.9	1427.5	1400.0	1300.0	1234.2	1150.1	1045.1	934.8
PLANKTONIC FORAMINIFERA															
Globigerina angiporoides															
G. brevis															
G. linaperta															
Globorotalia gemma															
Chiloguembelina cubensis															
indeterminate globigerinids	F	R									F	F	F	F	
indeterminate planktonics				F	C										
Globoquadrina dehiscens s.l.															
G. dehiscens s.s.									R						
Globigerina praebulloides															
G. woodi connecta															
G. cf. tripartita															
Catapsydrax dissimilis															
Globoquadrina advena															
Globorotalia continuosa															
G. mayeri group															
G. sp. 1															
Globigerina woodi woodi	R		C			R	R		F	C					
Globorotalia obesa															
juvenile planktonics			A					A							
Globorotalia miozea miozea			F		R		F	R							
G. miozea conoidea			R			F	F	R		R					
G. praemenardii			R												
G. praescitula	R		R			C									
Globigerina bulloides			F			F	F		F	F	R	R			
Globigerinoides sicanus			R												
G. trilobus			C	R		R			R	R	R				
Orbulina universa			R	R		F	C	F	C	C	R	R	R	R	
Globorotalia menardii group									R	R					
G. miotumida miotumida										F	R				
CALCAREOUS NANNOPLANKTON															
Cyclococcolithus sp.															
Reticulofenestra aff. scissura															
indeterminate coccoliths															
Coccolithus spp.	F														
Helicopontosphaera sp.															
Reticulofenestra scissura															
Discoaster sp. 1															
Chiasmolithus oamaruensis															
Zygrhablithus bijugatus															
Discoaster tani nodifer															
Braarudosphaera bigelowi	R														
Discoaster druggi															
Coccolithus pelagicus	R	R													
Sphenolithus moriformis	F	R													
Discoaster deflandre	R														
Sphenolithus heteromorphus	R														
Micrantholithus pinguis		R													

* C=CORE S=SIDEWALL CORE
T=CUTTINGS J=JUNK BASKET

--- RARE (R)
— FEW (F)
COMMON (C)
ABUNDANT (A)

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE: CALCAREOUS MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 1 of 2

SAMPLE TYPE OR NO. *	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
DEPTHS	2024.0	2022.0	2020.0	2017.5	2016.0	2014.1	2012.0	2009.5	2008.0	2005.9	2004.0	2002.6	1999.5	1996.1	1992.5	1990.0	1988.0	1986.0	1983.0	1980.0	1975.5	1970.1	1965.0	1957.5	1949.5	1866.0
PLANKTONIC FORAMINIFERA																										
Globigerina angiporoides															R	F	R									
G. brevis															R	R										
G. linaperta															R	R	F									
Globorotalia gemma															R	R	R									
Chiloguembelina cubensis																R										
indeterminate globigerinids																	C						C			R
indeterminate planktonics																		C								
Globoquadrina dehiscens s.l.																			R	F	F	R			F	
G. dehiscens s.s.																			F	F	R	R	R	R	F	
Globigerina praebulloides																			F	C	C	C	R	F	C	
G. woodi connecta																			F	F	F	R	F	R	F	
G. cf. tripartita																			R							
Catapsydrax dissimilis																			R	F	F	R	R	R		
Globoquadrina advena																				F	R	R	R		F	
Globorotalia continuosa																					R					
G. mayeri group																					F					
G. sp. 1																					R					
Globigerina woodi woodi																					F		F	F	F	
Globorotalia obesa																						F				
juvenile planktonics																						A		A	A	
Globorotalia miozea miozea																										
G. miozea conoidea																										
G. praemenardii																										
G. praescitula																										
Globigerina bulloides																										
Globigerinoides sicanus																										
G. trilobus																										
Orbulina universa																										
Globorotalia menardii group																										
G. miotumida miotumida																										
CALCAREOUS NANNOPLANKTON																										
Cyclococcolithus sp.												R		R												
Reticulofenestra aff. scissura												R														
indeterminate coccoliths												F	F	F												
Coccolithus spp.													C	R				A								F
Helicopontosphaera sp.													R													
Reticulofenestra scissura													R	R												
Discoaster sp. 1													R													
Chiasmolithus oamaruensis																										
Zygrhablithus bijugatus																C										
Discoaster tani nodifer																R										
Braarudosphaera bigelowi																		R								R
Discoaster druggi																		R								
Coccolithus pelagicus																										R
Sphenolithus moriformis																										C
Discoaster deflandre																										
Sphenolithus heteromorphus																										
Micrantholithus pinguis																										

* C=CORE S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- RARE (R) — FEW (F) COMMON (C) ABUNDANT (A)

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS·MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 2 of 2

SAMPLE TYPE OR NO. *	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DEPTHS	1799.0	1761.0	1706.6	1675.3	1660.1	1520.1	1490.2	1449.9	1427.5	1400.0	1300.0	1234.2	1150.1	1045.1	934.8
PLANKTONIC FORAMINIFERA															
Globigerina angiporoides															
G. brevis															
G. linaperta															
Globorotalia gemma															
Chiloguembelina cubensis															
indeterminate globigerinids	Few	Rare									Few	Few	Few	Few	
indeterminate planktonics				Few	Common										
Globoquadrina dehiscens s.l.															
G. dehiscens s.s.									Rare						
Globigerina praebulloides															
G. woodi connecta															
G. cf. tripartita															
Catapsydrax dissimilis															
Globoquadrina advena															
Globorotalia continuosa															
G. mayeri group															
G. sp. 1															
Globigerina woodi woodi	Rare		Common			Rare	Rare		Few	Common					
Globorotalia obesa															
juvenile planktonics			Abundant					Abundant							
Globorotalia miozea miozea			Few		Rare		Few	Rare							
G. miozea conoidea			Rare			Few	Few	Rare		Rare					
G. praemenardii			Rare												
G. praescitula	Rare		Rare			Common									
Globigerina bulloides			Few			Few	Few		Few	Few	Rare	Rare			
Globigerinoides sicanus			Rare												
G. trilobus			Common	Rare		Rare			Rare	Rare	Rare				
Orbulina universa			Rare	Rare		Few	Common	Few	Common	Common	Rare	Rare	Rare	Rare	
Globorotalia menardii group									Rare	Rare					
G. miotumida miotumida										Few	Rare				
CALCAREOUS NANNOPLANKTON															
Cyclococcolithus sp.															
Reticulofenestra aff. scissura															
indeterminate coccoliths															
Coccolithus spp.	Few														
Helicopontosphaera sp.															
Reticulofenestra scissura															
Discoaster sp. 1															
Chiasmolithus oamaruensis															
Zygrhablithus bijugatus															
Discoaster tani nodifer															
Braarudosphaera bigelowi	Rare														
Discoaster druggi															
Coccolithus pelagicus	Rare	Rare													
Sphenolithus moriformis	Few	Rare													
Discoaster deflandre	Rare														
Sphenolithus heteromorphus	Rare														
Micrantholithus pinguis		Rare													

* C=CORE S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- RARE — FEW ▬ COMMON ▩ ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 1 of 2

SAMPLE TYPE OR NO. *	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
DEPTHS	2024.0	2022.0	2020.0	2017.5	2016.0	2014.1	2012.0	2009.5	2008.0	2005.9	2004.0	2002.6	1999.5	1996.1	1992.5	1990.0	1988.0	1986.0	1983.0	1980.0	1975.5	1970.1	1965.0	1957.5	1949.5	1866.0
PLANKTONIC FORAMINIFERA																										
Globigerina angiporoides															R	F	R									
G. brevis															R	R										
G. linaperta															R	R	F									
Globorotalia gemma															R	R	R									
Chiloguembelina cubensis																R										
indeterminate globigerinids																	C						C			R
indeterminate planktonics																		C								
Globoquadrina dehiscens s.l.																			R	F	F	R			F	
G. dehiscens s.s.																			F	F	R	R	R	R	F	
Globigerina praebulloides																			F	A	A	A	R	F	A	
G. woodi connecta																			F	F	F	R	F	R	F	
G. cf. tripartita																			R							
Catapsydrax dissimilis																			R	F	F	R	R	R		
Globoquadrina advena																				F	R	R	R		F	
Globorotalia continuosa																					R					
G. mayeri group																					F					
G. sp. 1																					R					
Globigerina woodi woodi																					F		F	F	F	
Globorotalia obesa																						F				
juvenile planktonics																						A		A	A	
Globorotalia miozea miozea																										
G. miozea conoidea																										
G. praemenardii																										
G. praescitula																										
Globigerina bulloides																										
Globigerinoides sicanus																										
G. trilobus																										
Orbulina universa																										
Globorotalia menardii group																										
G. miotumida miotumida																										
CALCAREOUS NANNOPLANKTON																										
Cyclococcolithus sp.													R		R											
Reticulofenestra aff. scissura													R													
indeterminate coccoliths													F	F	F											
Coccolithus spp.														C	R				A							F
Helicopontosphaera sp.														R												
Reticulofenestra scissura														R	R											
Discoaster sp. 1														R												
Chiasmolithus oamaruensis																										
Zygrhablithus bijugatus																	C									
Discoaster tani nodifer																	R									
Braarudosphaera bigelowi																			R							R
Discoaster druggi																			R							
Coccolithus pelagicus																										R
Sphenolithus moriformis																										A
Discoaster deflandre																										
Sphenolithus heteromorphus																										
Micrantholithus pinguis																										

* C=CORE S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- RARE — FEW ▬ COMMON ▓ ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS-MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 2 of 2

SAMPLE TYPE OR NO. *	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DEPTHS	1799.0	1761.0	1706.6	1675.3	1660.1	1520.1	1490.2	1449.9	1427.5	1400.0	1300.0	1234.2	1150.1	1045.1	934.8
PLANKTONIC FORAMINIFERA															
Globigerina angiporoides															
G. brevis															
G. linaperta															
Globorotalia gemma															
Chiloguembelina cubensis															
indeterminate globigerinids	FEW	RARE									FEW	FEW	FEW	FEW	
indeterminate planktonics				FEW	COMMON										
Globoquadrina dehiscens s.l.															
G. dehiscens s.s.									RARE						
Globigerina praebulloides															
G. woodi connecta															
G. cf. tripartita															
Catapsydrax dissimilis															
Globoquadrina advena															
Globorotalia continuosa															
G. mayeri group															
G. sp. 1															
Globigerina woodi woodi	RARE		COMMON			RARE	RARE		FEW	COMMON					
Globorotalia obesa															
juvenile planktonics			ABUNDANT					ABUNDANT							
Globorotalia miozea miozea			FEW		RARE		FEW	RARE							
G. miozea conoidea			RARE			FEW	FEW	RARE		RARE					
G. praemenardii			RARE												
G. praescitula	RARE		RARE			COMMON									
Globigerina bulloides			FEW			FEW	FEW		FEW	FEW	RARE	RARE			
Globigerinoides sicanus			RARE												
G. trilobus			COMMON	RARE		RARE			RARE	RARE	RARE				
Orbulina universa			RARE	RARE		FEW	COMMON		ABUNDANT	ABUNDANT	RARE	RARE	RARE	RARE	
Globorotalia menardii group									RARE	RARE					
G. miotumida miotumida										FEW	RARE				
CALCAREOUS NANNOPLANKTON															
Cyclococcolithus sp.															
Reticulofenestra aff. scissura															
indeterminate coccoliths															
Coccolithus spp.	FEW														
Helicopontosphaera sp.															
Reticulofenestra scissura															
Discoaster sp. 1															
Chiasmolithus oamaruensis															
Zygrhablithus bijugatus															
Discoaster tani nodifer															
Braarudosphaera bigelowi	RARE														
Discoaster druggi															
Coccolithus pelagicus	RARE	RARE													
Sphenolithus moriformis	FEW	RARE													
Discoaster deflandre	RARE														
Sphenolithus heteromorphus	RARE														
Micrantholithus pinguis		RARE													

* C=CORE S=SIDEWALL CORE
T=CUTTINGS J=JUNK BASKET

--- RARE
— FEW
COMMON
ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 1 of 2

SAMPLE TYPE OR NO. *	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
DEPTHS	2024.0	2022.0	2020.0	2017.5	2016.0	2014.1	2012.0	2009.5	2008.0	2005.9	2004.0	2002.6	1999.5	1996.1	1992.5	1990.0	1988.0	1986.0	1983.0	1980.0	1975.5	1970.1	1965.0	1957.5	1949.5	1866.0
PLANKTONIC FORAMINIFERA																										
Globigerina angiporoides															---	—	---									
G. brevis															---	---										
G. linaperta															---	---	—									
Globorotalia gemma															---	---	---									
Chiloguembelina cubensis																---										
indeterminate globigerinids																	C						C			---
indeterminate planktonics																		C								
Globoquadrina dehiscens s.l.																			---	—	—	---			—	
G. dehiscens s.s.																			—	—	---	---	---	---	—	
Globigerina praebulloides																			—	A	A	A	---	—	A	
G. woodi connecta																			—	—	—	---	—	---	—	
G. cf. tripartita																			---							
Catapsydrax dissimilis																			---	—	—	---	---	---		
Globoquadrina advena																				—	---	---	---		—	
Globorotalia continuosa																					---					
G. mayeri group																					—					
G. sp. 1																					---					
Globigerina woodi woodi																					—		—	—		
Globorotalia obesa																						—				
juvenile planktonics																						A		A	A	
Globorotalia miozea miozea																										
G. miozea conoidea																										
G. praemenardii																										
G. praescitula																										
Globigerina bulloides																										
Globigerinoides sicanus																										
G. trilobus																										
Orbulina universa																										
Globorotalia menardii group																										
G. miotumida miotumida																										
CALCAREOUS NANNOPLANKTON																										
Cyclococcolithus sp.													---		---											
Reticulofenestra aff. scissura													---													
indeterminate coccoliths													—	—	—											
Coccolithus spp.														C	---				A							—
Helicopontosphaera sp.														---												
Reticulofenestra scissura														---	---											
Discoaster sp. 1														---												
Chiasmolithus oamaruensis																										
Zygrhablithus bijugatus																	C									
Discoaster tani nodifer																	---									
Braarudosphaera bigelowi																			---							---
Discoaster druggi																			---							
Coccolithus pelagicus																										---
Sphenolithus moriformis																										C
Discoaster deflandre																										
Sphenolithus heteromorphus																										
Micrantholithus pinguis																										

* C=CORE S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- RARE — FEW ■ COMMON ▒ ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS-MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 2 of 2

SAMPLE TYPE OR NO. *	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DEPTHS	1799.0	1761.0	1706.6	1675.3	1660.1	1520.1	1490.2	1449.9	1427.5	1400.0	1300.0	1234.2	1150.1	1045.1	934.8
PLANKTONIC FORAMINIFERA															
Globigerina angiporoides															
G. brevis															
G. linaperta															
Globorotalia gemma															
Chiloguembelina cubensis															
indeterminate globigerinids	—	---									—	—	—	—	
indeterminate planktonics				—	■										
Globoquadrina dehiscens s.l.															
G. dehiscens s.s.									---						
Globigerina praebulloides															
G. woodi connecta															
G. cf. tripartita															
Catapsydrax dissimilis															
Globoquadrina advena															
Globorotalia continuosa															
G. mayeri group															
G. sp. 1															
Globigerina woodi woodi	---		■			---	---		—	■					
Globorotalia obesa															
juvenile planktonics			▩					▩							
Globorotalia miozea miozea			—		---		—	---							
G. miozea conoidea			---			—	—	---		---					
G. praemenardii			---												
G. praescitula	---		---			■									
Globigerina bulloides			—			—	—		—	—	---	---			
Globigerinoides sicanus			---												
G. trilobus			■	---		---			---	---	---				
Orbulina universa			---	---		—	■	—	▩	▩	---	---	---	---	
Globorotalia menardii group									---	---					
G. miotumida miotumida										—	---				
CALCAREOUS NANNOPLANKTON															
Cyclococcolithus sp.															
Reticulofenestra aff. scissura															
indeterminate coccoliths															
Coccolithus spp.	—														
Helicopontosphaera sp.															
Reticulofenestra scissura															
Discoaster sp. 1															
Chiasmolithus oamaruensis															
Zygrhablithus bijugatus															
Discoaster tani nodifer															
Braarudosphaera bigelowi	---														
Discoaster druggi															
Coccolithus pelagicus	---	---													
Sphenolithus moriformis	—	---													
Discoaster deflandre	---														
Sphenolithus heteromorphus	---														
Micrantholithus pinguis		---													

* C=CORE S=SIDEWALL CORE
T=CUTTINGS J=JUNJ BASKET

--- RARE
— FEW
■ COMMON
▩ ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 1 of 2

SAMPLE TYPE OR NO. *	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209
DEPTHS	2024.0	2022.0	2020.0	2017.5	2016.0	2014.1	2012.0	2009.5	2008.0	2005.9	2004.0	2002.6	1999.5	1996.1	1992.5	1990.0	1988.0	1986.0	1983.0	1980.0	1975.5	1970.1	1965.0	1957.5	1949.5	1866.0
PLANKTONIC FORAMINIFERA																										
Globigerina angiporoides															R	F	R									
G. brevis															R	R										
G. linaperta															R	R	F									
Globorotalia gemma															R	R	R									
Chiloguembelina cubensis																R										
indeterminate globigerinids																	C						C			R
indeterminate planktonics																		C								
Globoquadrina dehiscens s.l.																			R	F	F	R			F	
G. dehiscens s.s.																			F	F	R	R	R	R	F	
Globigerina praebulloides																			F	C	C	C	R	F	C	
G. woodi connecta																			F	F	F	R	F	R	F	
G. cf. tripartita																			R							
Catapsydrax dissimilis																			R	F	F	R	R	R		
Globoquadrina advena																				F	R	R	R		F	
Globorotalia continuosa																					R					
G. mayeri group																					F					
G. sp. 1																					R					
Globigerina woodi woodi																					F		F	F	F	
Globorotalia obesa																						F				
juvenile planktonics																						A		A	A	
Globorotalia miozea miozea																										
G. miozea conoidea																										
G. praemenardii																										
G. praescitula																										
Globigerina bulloides																										
Globigerinoides sicanus																										
G. trilobus																										
Orbulina universa																										
Globorotalia menardii group																										
G. miotumida miotumida																										
CALCAREOUS NANNOPLANKTON																										
Cyclococcolithus sp.													R		R											
Reticulofenestra aff. scissura													R													
indeterminate coccoliths													F	F	F											
Coccolithus spp.														C	R				A							F
Helicopontosphaera sp.														R												
Reticulofenestra scissura														R	R											
Discoaster sp. 1														R												
Chiasmolithus oamaruensis																										
Zygrhablithus bijugatus																	C									
Discoaster tani nodifer																	R									
Braarudosphaera bigelowi																			R							R
Discoaster druggi																			R							
Coccolithus pelagicus																										R
Sphenolithus moriformis																										C
Discoaster deflandre																										
Sphenolithus heteromorphus																										
Micrantholithus pinguis																										

* C=CORE S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- RARE (R) — FEW (F) ▬ COMMON (C) ▩ ABUNDANT (A)

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE : CALCAREOUS·MICROFOSSILS

Well Name Veilfin-1 Basin Gippsland Sheet No. 2 of 2

SAMPLE TYPE OR NO. *	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DEPTHS / PLANKTONIC FORAMINIFERA	1799.0	1761.0	1706.6	1675.3	1660.1	1520.1	1490.2	1449.9	1427.5	1400.0	1300.0	1234.2	1150.1	1045.1	934.8
Globigerina angiporoides															
G. brevis															
G. linaperta															
Globorotalia gemma															
Chiloguembelina cubensis															
indeterminate globigerinids	—	---									—	—	—	—	
indeterminate planktonics				—	■										
Globoquadrina dehiscens s.l.															
G. dehiscens s.s.									---						
Globigerina praebulloides															
G. woodi connecta															
G. cf. tripartita															
Catapsydrax dissimilis															
Globoquadrina advena															
Globorotalia continuosa															
G. mayeri group															
G. sp. 1															
Globigerina woodi woodi	---		■			---	---		—	■					
Globorotalia obesa															
juvenile planktonics			▩					▩							
Globorotalia miozea miozea			—		---		—	---							
G. miozea conoidea			---			—	—	---		---					
G. praemenardii			---												
G. praescitula	---		---			■									
Globigerina bulloides			—			—	—		—	—	---	---			
Globigerinoides sicanus			---												
G. trilobus			■	---		---			---	---	---				
Orbulina universa			---	---		—	■	—	▩	▩	---	---	---	---	
Globorotalia menardii group									---	---					
G. miotumida miotumida										—	---				
CALCAREOUS NANNOPLANKTON															
Cyclococcolithus sp.															
Reticulofenestra aff. scissura															
indeterminate coccoliths															
Coccolithus spp.	—														
Helicopontosphaera sp.															
Reticulofenestra scissura															
Discoaster sp. 1															
Chiasmolithus oamaruensis															
Zygrhablithus bijugatus															
Discoaster tani nodifer															
Braarudosphaera bigelowi	---														
Discoaster druggi															
Coccolithus pelagicus	---	---													
Sphenolithus moriformis	—	---													
Discoaster deflandre	---														
Sphenolithus heteromorphus	---														
Micrantholithus pinguis		---													

* C=CORE S=SIDEWALL CORE
T=CUTTINGS J=JUNK BASKET

--- RARE
— FEW
■ COMMON
▩ ABUNDANT

PALAEO.CHART-2
DWG.1107/OP/287

APPENDIX 2

APPENDIX 2

PALYNOLOGICAL ANALYSIS,

VEILFIN-1, GIPPSLAND BASIN

by

M.J. HANNAH

&

M.K. MACPHAIL

Esso Australia Ltd.

March 1985

Palaeontology Report 1985/5

1479L

PART 1

INTERPRETATIVE DATA

INTRODUCTION

SUMMARY

GEOLOGICAL COMMENT

DISCUSSION OF ZONES

TABLE 1: INTERPRETATIVE DATA SUMMARY

TABLE 2: ANOMALOUS OCCURRENCES

INTRODUCTION

In Veilfin-1 intersected Latrobe Group and basal Lakes Entrance Formation sediments ranging in age from Late Cretaceous (Lower *T. longus* Zone) to Early Miocene (*P. tuberculatus* Zone). The only apparent unconformity is between sidewall cores at 1983.0 m and 1986.0 m respectively where the age changes from Middle *N. asperus* Zone to *P. tuberculatus* Zone.

Floral yields range negligible to very good but were in general low. Best yields were obtained from Lower *M. diversus* Zone to *P. asperopolus* Zone interval. Quality of preservation decreases downhole.

In total seventy seven sidewall cores and four cuttings samples were examined.

SUMMARY

AGE	UNIT *	ZONE	DEPTH (m)
Early Miocene	LAKES ENTRANCE FM	*P. tuberculatus*	1980.0-1983.0
	log break at 1985.0m		
Late Eocene	UN-NAMED GLAUCONITIC MARL	Middle *N. asperus*	1986.0
	log break at 1988.0m		
Late Eocene	GURNARD FM. [MEMBER A]	Middle *N. asperus*	1990.0-1999.5
	log break at 2000.0m		
Late Eocene	GURNARD FM. [MEMBER B]	Lower *N. asperus*	2002.6-2024.0
	log break at 2025.0m		
Middle Eocene	LATROBE GROUP (coarse clastics)	Lower *N. asperus*	2026.0
Early Eocene		*P. asperopolus*	2030.3-2136.5
Early Eocene		Upper *M. diversus*	2172.0-2188.9
		Middle *M. diversus*	2226.1-2355.5
		Lower *M. diversus*	2399.0-2430.0
		Upper *L. balmei*	2437.1-2713.0
		Lower *L. balmei*	2765.0-2891.1
		Upper *T. longus*	3034.5-3325
		Lower *T. longus*	3350-3494

T.D. 3521.0m

* Units and boundaries after Rexilius (1984)

GEOLOGICAL COMMENT

The recognition of Middle N. asperus Zone from a glauconitic marl (sidewall core 201 at 1986.0m) is somewhat disconcerting as this lithology is normally associated with the Late Entrance Formation of Oligocene and younger age. However, as recorded in the summary data table the top-most confident Middle N. asperus Zone ages is at 1996.1m within the Gurnard "formation" member A of Rexilius (1984). Samples above this level are largely assigned to Middle N. asperus Zone because they lack Upper N. asperus Zone indicators. If some of this section really is Upper N. asperus Zone in age then the apparent unconformity disappears.

DISCUSSION OF ZONES

The zone boundaries have been established using criteria proposed by Stover and Evans (1974), Stover and Partridge (1973) and Partridge (1976) with subsequent proprietary revisions including Macphail (1983).

1) Lower T. longus Zone (Maastrichtian) 3494.0m - 3350.55m

The lowermost sample in the well is assigned a Lower T. longus Zone age on the basis of frequent Gambierina rudata plus Tricolpites longus. Proteacidites reticuloconcavus, Proteacidites wahooensis and Triporopollenites sectilis occur in this sample.

No other sample can be assigned to this zone with the same confidence. In fact many are recorded as being T. longus in age simply because they contain frequent to common G. rudata. The topmost sample assigned to the zone is from cuttings at 3350-55m containing G. rudata (common) and Tetracolporites verrucosus but not Stereisporites punctatus.

2) Upper T. longus Zone (Maastrichtian) 3320.25m - 3045.5m

The base of the Upper T. longus Zone is placed at 3320.25m, at the first appearance of S. punctatus. However, since this is a cuttings sample it carries only a low degree of confidence. The base can be placed with more certainty at 3283.0m. This sidewall core contains S. punctatus, Proteacidites gemmatus, T. verrucosus, and Gambierina edwardsii. Floral assemblages from this zone are typically poorly preserved and of low yields.

The youngest sample assigned with a high confidence to the Upper T. longus Zone is sidewall core 71 at 3117.5m which contains frequent G. rudata plus S. punctatus and T. verrucosus. A sidewall core at 3045.5m is also assigned to the Upper T. longus Zone but with a reduced degree of confidence because the assemblage includes Sterisporites regium and Tricolpites waiparaensis.

3) Lower L. balmei Zone (Early-Late Paleocene) 2891.1m - 2765.0m

Sidewall core 108 at 2891.1 containing Lygistepollenites balmei, G. rudata and frequent T. verrucosus is recognised as the base of the Lower L. balmei Zone. Sidewall core 103 at 2916.0m is recorded as being no younger than Lower L. balmei Zone. The preservation of samples from this zone is a slight improvement on the material recovered from the underlining zones. Floral yields remain generally low.

4) Upper L. balmei Zone (Late Paleocene) 2713.0m - 2437.1m

The Upper/Lower L. balmei Zone boundary lies between sidewall cores at 2.713.0m and 2765.0m. The basal sample assigned to the Upper zone contains Proteacidites grandis and the dinoflagellate species Apectodinium homomorpha. L. balmei is common-frequent throughout the zone. Proteacidites annularis makes sporadic appearances throughout the zone and Verrucosisporites kopukuensis makes its only appearance in sidewall core 142 at 2584.5. The topmost sample (sidewall core 153 at 2437.1m) is confidently assigned to this zone containing as it does common L. balmei plus Nothofagidites endurus, Proteacidites incurvatus and G. rudata. Floral preservation and yields increase upsection.

5) Lower M. diversus Zone (Early Eocene) 2430.0m - 2399.0m

The basal two samples are assigned to this zone largely on the presence of Cupanieidites orthoteichus. The younger sample, however, has a high confidence rating (= 0). Since it contains common Malvacipollis diversus, Spinozonocolpites prominatus, Crassiretitriletes vanraadshoovenii, C. orthoteichus plus the dinoflagellate species Apectodinium hypercantha and Fibrocysta bipolare. These species unequivocally place the sample in the Lower M. diversus Zone (A. hypercantha dinoflagellate zone) and makes it equivalent to the onshore Rivernook member. Despite its certain age determination this final sample has the poorest preservation and lowest yield of the three samples assigned to the Lower M. diversus Zone.

6) Middle M. diversus Zone (Early Eocene) 2355.5m - 2226.1m

No samples can be assigned to the Middle M. diversus zone with a high degree of confidence. The appearance of Proteacidites tuberculotumulatus and Tricolporites adelaidensis in sidewall core 160 at 2355.5m is taken as the base of the zone. The presence of Tricolporites moultonii, Myrtaceidites tenuis and several other species of Proteacidites are sufficient to assign the other samples to this zone.

7) Upper M. diversus Zone (Early Eocene) 2188.9m - 2172 0m

Only two samples are assigned to this zone. The lowermost one (sidewall core 171 at 2188.9m) can only be dated as no older than Upper M. diversus since in contains M. tenuis and Proteacidites pachypolus. Proteacidites ornatus demonstrates the sample is no younger than P. asperopolus Zone in age.

8) P. asperopolus Zone (Early Eocene) 2136.5m - 2030.3m

The presence of Proteacidites asperopolus without a varied Nothofagidites assemblage is sufficient for this zonal determination. Samples containing M. tenuis are assigned to this zone more confidently.

One exception is sidewall core 182 at 2030.3m which although containing P. asperopolus and M. tenuis also has a large admixture of Nothofagidites species (N. falcatus, N. emarcidus/heterus). This is probably due to downhole contamination. Nevertheless the zonal assignment is given a low confidence rating.

9) Lower N. asperus (Middle Eocene) 2026.0m - 2002.6m

The first appearance of Tricolpites simatus in a nothofagidites dominated assemblage in sidewall core 183 at 2026.0m is enough to provide a low confidence zone base. The dinoflagellate species A. diktyoplokus characteristic of the Lower N. asperus Zone occurs sporatically through the zone and the presence of this species increases the confidence in the age determination.

10) Middle N. asperus Zone (Late Eocene) 1999.5m - 1986.0m

Most samples are assigned to this zone with only a low degree of confidence. The zonal assignment relying on the presence of a varied Nothofagidites flora and the absence of either Upper or Lower N. asperus Zone indicators.

A high confidence however is assigned to SWC 197 at 1996.1m which yielded a diverse dinoflagellate flora including *Vozzhennikovia extensa, Corrudinium corrugatum* and *Corrudinium incompositum*.

11) *P. tuberculatus* Zone (Oligocene) 1980.0m - 1983.0m

The presence of *Cyatheacidites annulatus* in both samples assigned to this zone is sufficient for a very confident zone determination. The Early Miocene age follows the foraminiferal age dating by Rexilius (1984).

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PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: 21.0 GL: -65.0

WELL NAME: VEILFIN-1 TOTAL DEPTH: 3521

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
	P. tuberculatus	1980.0	0				1983.0	0			
PALEOGENE	Upper *N. asperus*										
	Mid *N. asperus*	1986.0	2				1999.5	2	1996.1	0	
	Lower *N. asperus*	2002.6	0				2026.0	2			
	P. asperopolus	2030.3	2	2033.5	1		2136.5	0			
	Upper *M. diversus*	2172.0	1				2188.9	2	2172.0	1	
	Mid *M. diversus*	2226.1	2				2355.5	1			
	Lower *M. diversus*	2399.0	0				2430.0	2			
	Upper *L. balmei*	2437.1	0				2713.0	2			
	Lower *L. balmei*	2765.0	1				2891.1	1	2821.1	2	
LATE CRETACEOUS	*T. longus*	3045.5	2	3117.5	0		3494.0	1			
	T. lilliei										
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
	PRE-CRETACEOUS										

COMMENTS: The Upper/Lower T. longus boundary lies between SWC 14 at 3283.0 and SWC 2 at 3478.0m.

CONFIDENCE RATING:
- 0: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
- 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
- 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
- 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: M. Hannah/M. Macphail DATE: 14/12/84

DATA REVISED BY: DATE:

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
1980.0	203	Good	Low	*P. tuberculatus* (0)	Oligocene	*Cyatheacidites annulatus*
1983.0	202	Fair-Good	Low	*P. tuberculatus* (0)	Oligocene	*C. annulatus*, *Foveotriletes crater*
1986.0	201	Good	Very Low	Middle *N. asperus* (2)	Late Eocene	*Nothofagidites falcatus*, *Proteacidites pachypolus*
1988.0	200	Poor-Fair	Neglig.	Indeterminate		
1990.0	199	Fair	Very Low	Middle *N. asperus* (2)	Late Eocene	*Proteacidites tuberculatus*
1992.3	198	Fair	Neglig.	*N. asperus*		Zone subdivision undifferentiated
1996.1	197	Good	Good	Middle *N. asperus* (0)	Late Eocene	*P. pachypolus*, *P. rectomarginis* & dinoflagellate species *Vozzhennikovia extensa*, *Corrudinium corrugatum*, *Corrudinium incompositum*
1999.5	196	Fair	Good	Middle *N. asperus* (2)	Late Eocene	*N. falcatus*, *P. pachypolus*, *C. corrugatum*
2002.6	195	Fair	Fair-Good	Lower *N. asperus* (0)	Mid Eocene	*N. falcatus* and dinoflagellate species *Areosphaeridium diktyoplokus*
2004.0	194	Good	Neglig.	Indeterminate		
2005.9	193	Good	Neglig.	Indeterminate		

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
2008.0	192	Poor	Moderate	Lower N. asperus (0)	Mid Eocene	N. falcatus, A. diktyoplokus
2009.0	191	Fair	Good	Lower N. asperus (0)	Mid Eocene	Tricolpites simatus, A. diktyoplokus
2014.1	189	Good	Low	Lower N. asperus (0)	Mid Eocene	Proteacidites asperopolus, A. diktyoplokus
2017.5	187	Fair	Neglig.	N. asperus		Zone subdivision undifferentiated
2020.0	186	Good	Very Low	Indeterminate		
2022.0	185	Good	Very Good	Lower N. asperus (0)	Mid Eocene	Abundant, varied Nothofagidites assemblage, P. asperopolus, T. simatus, Tricolporites delicatus
2024.0	184	Fair	Very Low	Lower N. asperus (2)	Mid Eocene	Nothofagidites, emarcidus/heterus
2026.0	183	Good	Very Low	Lower N. asperus (1)	Mid Eocene	T. simatus
2030.3	182	Good	Very Good	P. asperopolus (2)	Early Eocene	Myrtaceidites tenius, P. asperopolus plus mixing of N. asperus Zone flora. (N. falcatus, N. emarcidus/heterus)
2033.5	181	Good	Low	P. asperopolus (0)	Early Eocene	M. tenuis, P. asperopolus

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
2043.0	180	Poor	Low	Indeterminate		
2118.5	176	Fair-Good	Very Good	*P. asperopolus*	(1) Early Eocene	*M. tenuis*, *P. asperopolus*
2136.5	174	Fair-Good	Very Good	*P. asperopolus*	(0) Early Eocene	*Clavastephanocolporites meleosus*, *P. asperopolus*
2172.0	172	Fair	Good	Upper *M. diversus*	(1) Early Eocene	*M. tenuis*, *Proteacidites crassus*, *Proteacidites pachypolus*
2188.9	171	Very Good	Very Good	Upper *M. diversus* *M. diversus*	(2) Early Eocene	*M. tenuis*, *P. pachypolus*
2226.1	168	Fair	Very Good	Middle *M. diversus*	(2) Early Eocene	*Malvacipollis diversus*, *Proteacidites leightonii*, *Proteacidites ornatus*
2259.2	166	Fair	Good	Middle *M. diversus*	(2) Early Eocene	*Proteacidites tuberculotumulatus*, *Tricolpites moultanii*, *M. tenuis*
2328.0	162	Poor-Good	Good	Middle *M. diversus*	(2) Early Eocene	*T. moultanii*
2355.5	160	V.Poor-Fair	Fair	Middle *M. diversus*	(2) Early Eocene	*P. tuberculotumulatus*, *Tricolporites adelaidensis*

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
2399.0	156	Poor-Fair	Low	Lower M. diversus (0)	Early Eocene	A. hyperacantha Zone; M. diversus common, Spinizonocolpites prominatus, Crassiretitriletes vanraadshoovenii, Cupanieidites orthoteichus and dinoflagellate species Apectodinium hypercantha, Fibrocysta bipolare
2412.7	155	Good	High	Lower M. diversus (2)	Early Eocene	C. orthoteichus
2430.0	154	Moderate	Moderate	Lower M. diversus (2)	Early Eocene	C. orthoteichus, P. pachypolus
2437.1	153	Fair	Fair	Upper L. balmei (0)	Late Paleocene	Common Lygistepollenites balmei, Nothofagidites endurus, Proteacidites incurvatus, Gambierina rudata
2480.2	150	Very Poor	Good	Upper L. balmei (1)	Late Paleocene	L. balmei (common) Proteacidites annularis

TABLE 1: INTERPRETATIVE DATA SUMMARY: VEILFIN-1

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)		AGE	COMMENTS
2528.0	146	Good	Good	L. balmei	(1)		L. balmei (frequent) Polycolpites langstonii, Integricorpus antipodus
2584.5	142	Fair	Fair	Upper L. balmei	(1)	Late Paleocene	L. balmei (frequent) P. annularis, Verrucosisporites kopukuensis
2640.0	138	Fair	High	Indeterminate			
2644.0	137	Fair	Good	Upper L. balmei	(2)	Late Paleocene	L. balmei (common), N. endurus
2678.0	135	Very Poor	Fair	L. balmei			L. balmei (common) & dinoflagellate species Glaphyrocysta retiintexta, Palaeocystodinium golzowense
2683.9	134	Fair	Good	Upper L. balmei	(2)	Late Paleocene	L. balmei (abundant), Australopollis obscurus, Gleicheniidites circinidites, P. langstonii
2709.0	131	Very Poor	Neglig.	Indeterminate			
2713.0	130	Very Poor	Low	Upper L. balmei	(2)	Late Paleocene	Proteacidites grandis & dinoflagellate species: Apectodinium homomorpha

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
2719.0	129	Poor	Low	Indeterminate		
2747.0	125	Poor	Low	Indeterminate		
2765.0	122	V. Poor	Fair	Lower L. balmei (2)	Early-Late Paleocene	L. balmei (common), G. retiintexta
2780.6	121	Good	Low	Lower L. balmei (2)	Early-Late Paleocene	L. balmei, G. rudata, A. obscurus, Proteacidites anguatus, Haloragacidites harrisii
2787.6	120	Fair	Fair	Lower L. balmei (2)	Early-Late Paleocene	L. balmei, Juxtacolpus peiratus
2805.2	117	Poor	Low	Indeterminate		
2821.1	115	Very Poor	Very Low	Lower L. balmei (2)	Early-Late Paleocene	G. rudata, T. verrucosus
2891.1	108	Fair	Good	Lower L. balmei (1)	Early-Late Paleocene	L. balmei, G. rudata, Tetracolporites verrucosus
2901.5	105	Poor	Low	Indeterminate		
2916.0	103	Very Poor	Very Low	No younger than Lower L. balmei		Proteacidites gemmatus, L. balmei

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
2937.0	100	Poor	Very Low	Indeterminate		
2942.0	99	Very Poor	Very Low	Indeterminate		
2947.0	98	Very Poor	Very Low	Indeterminate		
2984.8	92	Very Poor	Very Low	Indeterminate		
3045.5	83	Very Poor	Low	Upper *T. longus* (2)	Late Cretaceous	*Stereisporites regium*, *Tricolpites waiparaensis*
3088.0	76	Very Poor	Low	*T. longus*		*G. rudata* (common)
3099.5	73	Poor	Low	*T. longus*		*G. rudata* (common)
3117.5	71	Very Poor	Low	Upper *T. longus* (0)	Late Cretaceous	frequent *G. rudata*, *Stereisporites punctatus*, *T. verrucosus*
3139.0	66	Poor	Low	Indeterminate		
3158.2	60	Very Poor	Low	Upper *T. longus* (2)	Late Cretaceous	*G. rudata* (common), *Proteacidites molosexinus*, *Proteacidites otwayensis*, *T. verrucosus*
3178.0	56	Poor	Very Low	Indeterminate		
3206.0	29	Very Poor	Very Low	*T. longus*		

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
3234.0	28	Very Poor	Neglig.	Upper T. longus (0)		S. punctatus, T. verrucosus, G. rudata
3240.2	19	Poor	Very Low	Indeterminate		
3247.3	18	Very Poor	Very Low	Upper T. longus (2)		S. punctatus, Tricolpites sabulosus
3267.8	16		Barren			
3283.0	14	Very Poor	Low	Upper T. longus (0)		G. edwardsii, Proteacidites cleinei, P. gemmatus, S. punctatus, T. verrucosus
3331.0	12	Very Poor	Very Low	Indeterminate		
3320-25	CTS	Poor	Low	Upper T. longus (3)		S. punctatus, T. verrucosus
3340-45	CTS	Very Poor	Low	T. longus		G. rudata (common), T. verrucosus
3350-55	CTS	Very Poor	Low	Lower T. longus (3)		G. rudata (common), T. verrucosus
3365-70	CTS	Very Poor	Low	T. longus		G. rudata (abundant), P. cleinei
3414.1	6	Very Poor	Low	T. longus	Late Cretaceous	G. rudata (abundant)
3432.0	5	Very Poor	Very Low	T. longus	Late Cretaceous	G. rudata (common)
3435.6	4	Very Poor	Very Low	T. longus	Late Cretaceous	T. verrucosus, G. edwardsii

TABLE 1: INTERPRETATIVE DATA SUMMARY: VEILFIN-1

DEPTH	SWC	PRESERVATION	PALYNOMORPH YIELD	ZONE (Confidence rtg)	AGE	COMMENTS
3459.0	3	Poor	Low	no younger than Upper T. longus	Late Cretaceous	G. rudata, Proteacidites palisadus
3478.0	2	Poor	Moderate	Lower T. longus (2)	Late Cretaceous	G. rudata (abundant)
3494.0	1	Very Poor	Very Low	Lower T. longus (1)	Late Cretaceous	G. rudata (frequent), Proteacidites reticuloconcavus, Proteacidites wahooensis, Tricolpites longus, Triporopollenites sectilus

PART 2

BASIC DATA

TABLE 3: BASIC DATA SUMMARY

DISTRIBUTION CHARTS

TABLE 3: BASIC DATA SUMMARY: VEILFIN-1

DEPTH	SWC	PRESERVATION YIELD	PALYNOMORPH YIELD
1980.0	203	Good	Low
1983.0	202	Fair-Good	Low
1986.0	201	Good	Very Low
1988.0	200	Poor-Fair	Neglig.
1990.0	199	Fair	Very Low
1992.3	198	Fair	Neglig.
1996.1	197	Good	Good
1999.5	196	Fair	Good
2002.6	195	Fair	Fair-Good
2004.0	194	Good	Neglig.
2005.9	193	Good	Neglig.
2008.0	192	Poor	Moderate
2009.0	191	Fair	Good
2014.1	189	Good	Low
2017.5	187	Fair	Neglig.
2020.0	186	Good	Very Low
2022.0	185	Good	Very Good
2024.0	184	Fair	Very Low
2026.0	183	Good	Very Low
2030.3	182	Good	Very Good
2033.5	181	Good	Low
2043.0	180	Poor	Low
2118.5	176	Fair-Good	Very Good
2136.5	174	Fair-Good	Very Good
2172.0	172	Fair	Good
2188.9	171	Very Good	Very Good
2226.1	168	Fair	Very Good
2259.2	166	Fair	Good

TABLE 3: BASIC DATA SUMMARY: VEILFIN-1

DEPTH	SWC	PRESERVATION YIELD	PALYNOMORPH YIELD
2328.0	162	Poor-Good	Good
2355.5	160	V.Poor-Fair	Fair
2399.0	156	Poor-Fair	Low
2412.7	155	Good	High
2430.0	154	Moderate	Moderate
2437.1	153	Fair	Fair
2480.2	150	Very Poor	Good
2528.0	146	Good	Good
2584.5	142	Fair	Fair
2640.0	138	Fair	High
2644.0	137	Fair	Good
2678.0	135	Very Poor	Fair
2683.9	134	Fair	Good
2709.0	131	Very Poor	Neglig.
2713.0	130	Very Poor	Low
2719.0	129	Poor	Low
2747.0	125	Poor	Low
2765.0	122	V. Poor	Fair
2780.6	121	Good	Low
2787.6	120	Fair	Fair
2805.2	117	Poor	Low
2821.1	115	Very Poor	Very Low
2891.1	108	Fair	Good
2901.5	105	Poor	Low
2916.0	103	Very Poor	Very Low
2937.0	100	Poor	Very Low
2941.0	99	Very Poor	Very Low
2947.0	98	Very Poor	Very Low

TABLE 3: BASIC DATA SUMMARY: VEILFIN-1

DEPTH	SWC	PRESERVATION YIELD	PALYNOMORPH YIELD
2984.8	92	Very Poor	Very Low
3045.5	83	Very Poor	Low
3088.0	76	Very Poor	Low
3099.5	73	Poor	Low
3117.5	71	Very Poor	Low
3139.0	66	Poor	Low
3158.2	60	Very Poor	Low
3178.0	56	Poor	Very Low
3206.0	29	Very Poor	Very Low
3234.0	28	Very Poor	Neglig.
3240.23	19	Poor	Very Low
3247.3	18	Very Poor	Very Low
3267.8	16		Barren
3283.0	14	Very Poor	Low
3331.0	12	Very Poor	Very Low
3320.25	CTS	Poor	Low
3340.45	CTS	Very Poor	Low
3350.55	CTS	Very Poor	Low
3365.70	CTS	Very Poor	Low
3414.1	6	Very Poor	Low
3432.0	5	Very Poor	Very Low
3435.6	4	Very Poor	Very Low
3459.0	3	Poor	Low
3478.0	2	Poor	Moderate
3494.0	1	Very Poor	Very Low

APPENDIX 3

VEILFIN-1

QUANTITATIVE LOG ANALYSIS

Interval: 2000 - 3500m KB

Analyst : L.J. Finlayson

Date : November, 1984

VEILFIN-1 QUANTITATIVE LOG ANALYSIS

Veilfin-1 wireline logs have been analysed for effective porosity and water saturation over the interval 2000m - 3500m KB. Analysis was carried out over much of the logged section using a reiterative technique which incorporates hydrocarbon correction to the porosity logs, density-neutron crossplot porosities, a Dual Water saturation relationship and convergence on a preselected grain density window by shale volume adjustment. Below 3250m the hole was badly washed out and porosity was estimated from the sonic and VSH estimated from the Gamma Ray.

Logs Used

LLD, LLS (DLTE), MSFL, RHOB (LDTA), CAL, GR, NPHI (CNTH.A), BHC.

The resistivity gamma ray and neutron porosity logs were corrected for borehole and environmental effects. The borehole corrected resistivity logs were then used to derive Rt and invasion diameter logs.

Log Quality

All logs appear to be of good quality however some comments are necessary.

1. Density-neutron comparisons were made in Suite 2 and Suite 3 of this well and we have decided to use the LDTA density log and the CNTH.A neutron porosity log. (The CNTH.A is a CNTH tool with a CNTA housing and detectors in Suite 2 and just CNTA detectors in Suite 3).

2. Significant crossover occurs on the density-neutron log over much of the clean sands in the Latrobe Group. This may reflect the formation lithology (low grain density minerals) and is therefore not interpreted as a gas effect on the logs.

Analysis Parameters

a	1
m	2
N	2
Rmf @ 121.1°C	0.056 ohm.m
Grain Density - lower limit	2.65 gm/cc
Grain Density - upper limit	2.67 gm/cc
Mud Filtrate Density (RHOF)	1.00 gm/cc
Bottom Hole Temperature	121.1 °C

Depth Interval (m)	GR min (API units)	GR max (API units)
1975 - 2125	30	130
2125 - 2625	50	130
2625 - 3100	50	140
3100 - 3500	60	160

Depth Interval (m)	RHOBSH (gm/cc)	NPHISH (gm/cc)
1975 - 2375	2.47	0.25
2375 - 2700	2.52	0.32
2700 - 3150	2.57	0.28
3150 - 3250	2.62	0.24

Shale Volume

An initial estimate of VSH was taken as the minimum of VSH calculated from density-neutron separation and VSH calculated from gamma ray.

$$VSHND = \frac{NPHI - \left(\frac{2.65 - RHOB}{1.65}\right)}{NPHISH - \left(\frac{2.65 - RHOBSH}{1.65}\right)} \quad - 1$$

$$VSHGR = \frac{GRlog - GRmin}{GRmax - GRmin} \quad - 2$$

Total Porosities

A. From 2000-3250m, total porosity was calculated as follows:

Total porosity was initially calculated from a density-neutron logs using the following algorithms:

$$h = 2.71 - RHOB + NPHI\ (RHOF - 2.71) \quad - 3$$

if h is greater than 0, then

$$\text{apparent matrix density, } RHOMa = 2.71 - h/2 \quad - 4$$

if h is less than 0, then

$$\text{apparent matrix density, } RHOMa = 2.71 - 0.64h \quad - 5$$

$$\text{Total porosity: } PHIT = \frac{RHOMa - RHOB}{RHOMa - RHOF} \quad - 6$$

where RHOB = bulk density in gms/cc
NPHI = environ. corrected neutron porosity in limestone porosity units.
RHOF = fluid density (1.00 gms.cc)

B. From 3250-3500m, total porosity was calculated as follows:

$$PHITS = \frac{\text{delta T} - \text{delta Tmatrix}}{\text{delta Tfluid} - \text{delta Tmatrix}} \quad - 7$$

where delta Tmatrix = 182.1 ms/m
delta Tfluid = 620 ms/m
delta T = transit time in ms/m from BHC

Free Formation Water (Rw) and Bound Water (Rwb) Resistivities

Apparent water resistivity (Rwa) was derived as follows:

$$Rwa = Rt * PHIT^{m} \quad (m = 2) \quad - 8$$

Free formation water resistivity (Rw) was taken from the clean, water sand Rwa. Bound water resistivity (Rwb) was calculated from the input shale resistivity value (RSH) read directly from the Rt log.

Listed below are the selected Rw and Rwb values.

Depth Interval (m)	Salinity (ppm NaCleq.)
2000 - 2125	40,000
2125 - 2325	25,000
2325 - 2700	17,000
2700 - 2770	15,000
2770 - 2875	13,000
2875 - 2950	10,000
2950 - 3500	15,000

Depth Interval (m)	Rwb (ohm.m)	RSH (ohm.m)
2000 - 2375	0.51	10
2375 - 2700	1.09	15
2700 - 3150	1.36	25
3150 - 3500	1.94	50

Water Saturations

Water saturations were determined from the Dual Water model which uses the following relationship:

$$\frac{1}{Rt} = SwT^{n} * \left(\frac{PHIT^{m}}{aRw}\right) + SwT^{(n-1)} \left[\frac{Swb * PHIT^{m}}{a} \left(\frac{1}{Rwb} - \frac{1}{Rw}\right)\right] \quad -9$$

or

$$\frac{1}{Rxo} = SxoT^{n} * \left(\frac{PHIT^{n}}{aRmf}\right) + SxoT^{(n-1)} \left[\frac{Swb * PHIT^{m}}{a} \left(\frac{1}{Rwb} - \frac{1}{Rmf}\right)\right] \quad -10$$

where: SwT and SxoT are "total" water saturations

and Swb (bound water saturation) $= \frac{VSH * PHISH}{PHIT}$ -11

where: PHISH = total porosity in shale derived from density-neutron crossplot or from BHC log below 3250m.

with a = 1
m = 2
n = 2

A. Between 2000-3250m

Hydrocarbon correction to the porosity logs utilised the following algorithms:

$$RHOB = RHOB(raw) + 1.07\ PHIT\ (1-SxoT)\ [(1.11-0.15P)RHOF - 1.15RHOH] \quad -12$$
(Hydrocarbon corrected)

$$NPHI = NPHI(raw) + 1.3\ PHIT\ (1-SxoT)\ \frac{RHOF(1-P)-1.5RHOH + 0.2}{RHOF(1-P)} \quad -13$$
(Hydrocarbon corrected)

where: P = mud filtrate salinity in parts per unity
RHOF = mud filtrate density
RHOH = hydrocarbon density (0.70 gm/cc)

The calculated "grain density" was derived by removing the shale component from the rock using the following algorithms:

$$RHOBSC = \frac{RHOB\ (hydrocarbon\ corrected) - VSH * RHOBSH}{1-VSH} \qquad -14$$

$$NPHISC = \frac{NPHI\ (hydrocarbon\ corrected) - VSH * NPHISH}{1-VSH} \qquad -15$$

The shale corrected density and neutron values were then entered into the cross-plot algorithms (equations 3, 4 and 5) to derive grain density (RHOG).

If calculated RHOG fell inside the specified grain density window, then PHIE and Swe were calculated as follows:

$$PHIE = PHIT - VSH * PHISH \qquad -16$$

$$Swe = 1 - \frac{PHIT}{PHIE}(1-SwT) \qquad -17$$

If VSH was greater than 0.50 and PHIE less than 0.10, Swe was set to 1.

If the calculated RHOG fell outside the specified grain density window, VSH was adjusted appropriately and the process repeated.

B. Below 3250m:

Effective porosity and water saturation was calculated as follows:-

$$PHIE = PHITS - PHISH * VSH \qquad -18$$

where PHISH = PHITS in shales (0.09)

$$Swe = 1 - \frac{PHITS}{PHIE}(1-SwT) \qquad -19$$

If VSH was greater than 0.50 and PHIE less than 0.10, Swe was set to 1.

Comments

1. The interval 2000-3032m KB is interpreted to be water wet.
2. A medium to high water saturation gas zone occurs from 3032.25m KB to T.D.
3. No water sands occur in this interval.
4. Porosities and water saturations currently calculated below 3250m KB appear to be optimistic as the sands are badly washed out and the sonic log has been used to estimate porosity. We are currently awaiting core analysis results to calibrate our calculations over this interval.

19061/30-34

VEILFIN #1

SUMMARY OF RESULTS

Interval Evaluated: 2000m to 3500m KB

Depth Interval (m KB)	* Net Thickness (m)	Gross Thickness (m)	*Porosity Average	* Swe Average	Fluid Content
2026.25 - 2041.75	15.50	15.50	0.239	1.000	Water
2044.75 - 2115.75	70.75	71.00	0.248	1.000	Water
2141.75 - 2150.75	9.00	9.00	0.268	1.000	Water
2155.75 - 2170.75	14.75	15.00	0.248	1.000	Water
2186.00 - 2188.00	2.00	2.00	0.210	1.000	Water
2190.75 - 2194.75	4.00	4.00	0.251	1.000	Water
2205.00 - 2212.75	7.75	7.75	0.283	1.000	Water
2229.75 - 2249.25	19.50	19.50	0.275	1.000	Water
2280.50 - 2293.25	12.75	12.75	0.280	1.000	Water
2307.30 - 2310.75	3.50	3.50	0.227	1.000	Water
2313.25 - 2315.75	2.50	2.50	0.289	1.000	Water
2348.00 - 2353.75	5.75	5.75	0.222	1.000	Water
2356.75 - 2363.75	7.00	7.00	0.213	1.000	Water
2384.75 - 2387.25	2.50	2.50	0.188	1.000	Water
2440.25 - 2452.25	11.50	12.00	0.202	1.000	Water
2472.50 - 2475.25	2.75	2.75	0.182	1.000	Water
2555.50 - 2567.75	12.00	12.25	0.194	1.000	Water
2596.00 - 2600.25	4.25	4.25	0.183	1.000	Water
2617.75 - 2624.25	6.50	6.50	0.192	1.000	Water
2703.75 - 2705.50	1.75	1.75	0.125	1.000	Water
2740.25 - 2744.75	4.50	4.50	0.179	1.000	Water
2748.50 - 2754.50	6.00	6.00	0.186	1.000	Water
2757.25 - 2760.50	3.25	3.25	0.164	1.000	Water
2797.25 - 2803.75	5.50	6.50	0.139	1.000	Water
2843.25 - 2851.75	7.25	8.50	0.138	1.000	Water
2892.50 - 2899.50	7.00	7.00	0.138	1.000	Water
2923.25 - 2934.00	10.25	10.75	0.154	1.000	Water
2952.25 - 2954.50	2.25	2.25	0.145	1.000	Water
2959.50 - 2963.00	3.50	3.50	0.125	1.000	Water
2965.50 - 2975.25	9.25	9.75	0.156	1.000	Water
2979.75 - 2982.00	2.25	2.25	0.150	1.000	Water
2985.00 - 3019.75	31.50	34.75	0.146	1.000	Water
3032.25 - 3116.75	24.00	84.50	0.135	0.917	Gas-High Sw
3127.75 - 3130.75	1.75	3.00	0.125	0.792	Gas-High Sw
3140.15 - 3150.50	7.00	10.00	0.123	0.793	Gas-High Sw
3185.50 - 3193.75	8.25	8.25	0.135	0.656	Gas

Depth Interval (m KB)	* Net Thickness (m)	Gross Thickness (m)	*Porosity Average	* Swe Average	Fluid Content
3210.75 - 3215.25	4.00	4.50	0.124	0.595	Gas
3219.25 - 3227.65	3.50	8.50	0.141	0.565	Gas
3370.25 - 3373.50	-	3.25	-	-	Gas
3381.75 - 3383.75	-	2.00	-	-	Gas
3407.00 - 3412.75	-	5.75	-	-	Gas
3438.50 - 3445.00	-	6.50	-	-	Gas
3450.25 - 3455.25	-	5.00	-	-	Gas
3489.50 - 3493.25	-	3.75	-	-	Gas
3497.00 - 3498.50	-	1.50	-	-	Gas

* Porosity Average, Net Porous Thickness and Sw Average refer to zones with calculated porosities in excess at 10%.

Minor sands interpreted as being hydrocarbon bearing also occur at approximately 3121m, 3124m, 3202m, 3368m and 3465m.

Below 3250m the hole is badly washed out in sands. We are currently awaiting core analysis results to calibrate our calculations over this interval. These final calculations will be forwarded as soon as possible.

19061/35-36

APPENDIX 3

VEILFIN-1
QUANTITATIVE LOG ANALYSIS
(PART 2)

Interval: 3250 - 3500m KB
Analyst : L.J. Finlayson
Date : November, 1984

VEILFIN-1 QUANTITATIVE LOG ANALYSIS (PART 2)

Veilfin-1 wireline logs have been reanalysed over the interval 3250 - 3500m KB in the light of recently received core analysis. None of the porosity logs worked reliably over this interval of the well due to bad washouts, especially in the sands. Therefore a constant water saturation and water resistivity was assumed and using the Rt log it was possible to calculate realistic porosity values. It is stressed that this approach was only possible due to the presence of a core in this interval which we would use as a calibration point for the calculation of porosity from Rt.

Logs Used

LLD, LLS, MSFL, GR, Core Analysis.

The resistivity logs were used to derive Rt and invasion diameter logs. The Core Analysis was depth matched to the logs by adding 5m.

Log Quality

Over the interval 3250-3500m, no porosity logs worked reliably due to bad washouts, especially in the sands. The Dual Laterolog and Gamma Ray logs are little affected by hole conditions.

Shale Volume

An estimate of VSH was taken from the Gamma Ray as follows:

$$VSH = \frac{GRlog - GRmin}{GRmax - GRmin} \qquad \begin{matrix} GRmin = 60 \text{ API units} \\ GRmax = 160 \text{ API units} \end{matrix} \qquad - 1$$

Total Porosity

Total porosity was calculated from the Rt log assuming a constant total water saturation of 0.75 and a constant water salinity of 15,000 ppm NaCleq. This water saturation appeared reasonable (with regard to the mudlog shows) and the salinity appears reasonable (with regard to the SP).

$$PHIT = \sqrt{\frac{Rw}{Rt}} * \frac{1}{SwT} \qquad - 2$$

Effective Porosity and Water Saturation

Effective porosity was calculated as follows:

$$PHIE = PHIT - VSH * PHISH \ (PHISH = 0.19) \qquad - 3$$

Effective water saturation was calculated as follows:

$$Swe = 1 - \frac{PHIT}{PHIE} (1 - SwT) \qquad - 4$$

Comments

1. Between 3250-3500m KB the hole is badly washed out and none of the porosity logs work reliably. Porosity is therefore "back calculated" from Rt assuming a constant water saturation (0.75) and a constant salinity (15,000 ppm NaCleq.)

2. Core analysis from a core cut over the interval 3453.1-3462.8m KB (+5m to depth match to logs) agrees well with calculated porosities.

3. A total of 9.25m of net sand occurs in the interval 3250-3500m. Porosities are estimated to be approximately 11% and water saturations approximately 75%.

4. Attached is a Summary of Results, Core Porosity vs. Effective Porosity Plot, Porosity/Saturation Depth Plot and a listing.

22591/28-30

VEILFIN #1

SUMMARY OF RESULTS (PART 2)

Interval Evaluated: 3250m to 3500m KB

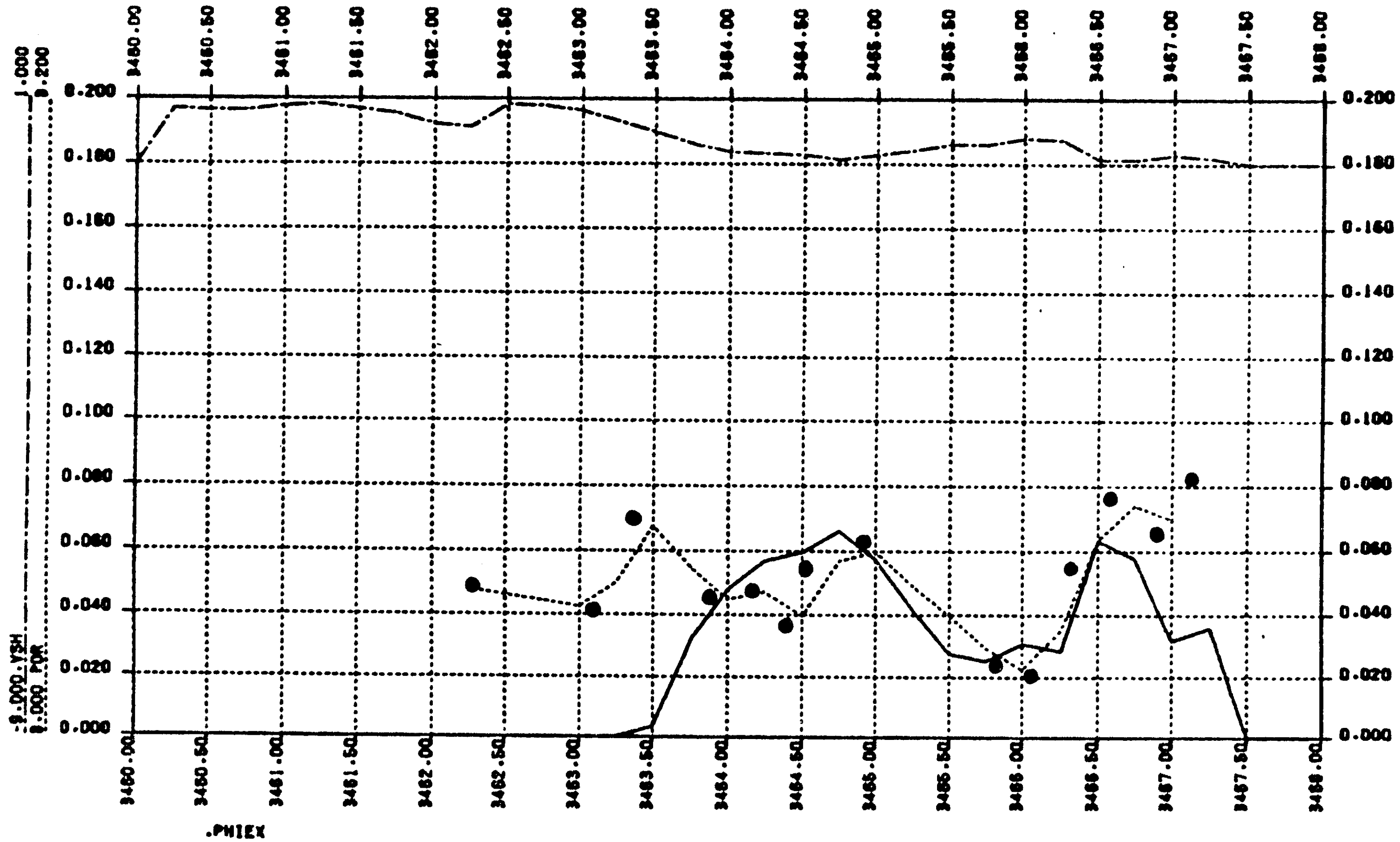
Depth Interval (m KB)	* Net Thickness (m)	Gross Thickness (m)	*Porosity Average	* Swe Average	Fluid Content
3381.75 - 3383.50	1.75	1.75	0.107	0.752	Gas-High Sw
3407.25 - 3412.75	4.25	5.50	0.115	0.754	Gas-High Sw
3439.00 - 3439.75	0.75	0.75	0.112	0.755	Gas-High Sw
3443.75 - 3445.00	1.25	1.25	0.118	0.757	Gas-High Sw
3450.75 - 3451.75	1.00	1.00	0.114	0.754	Gas-High Sw
3489.75 - 3490.25	0.25	0.25	0.106	0.753	Gas-High Sw

* Porosity Average, Net Porous Thickness and Sw Average refer to zones with calculated porosities in excess at 10%.

It is stressed that SwT is assumed to be 75% and that porosity is back calculated from Rt.

22591/31

0=EXIT 1=NEXT PLOT 2=SECONDARY PLOT 3=DIG DEPTHS
2

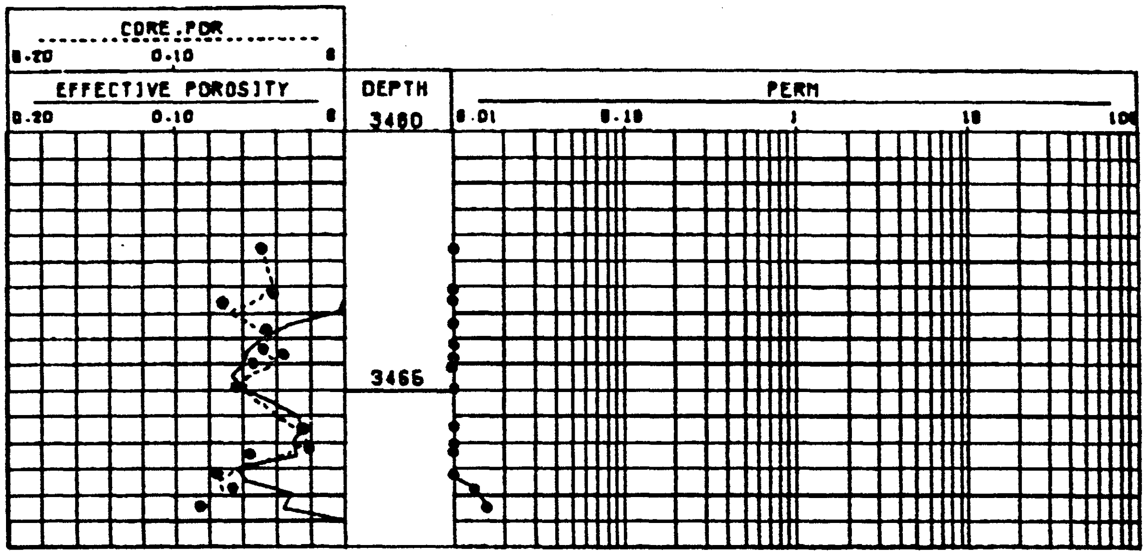


VEILFIN#1   CORE POROSITY VS EFFECTIVE POROSITY

VEILFIN#1

PHIE/CORE.POR/PERM

SCALE=1:100.00
DEPTHS IN METRES



PE603877

This is an enclosure indicator page.
The enclosure PE603877 is enclosed within the container PE902491 at this location in this document.

The enclosure PE603877 has the following characteristics:

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CONTAINER_BARCODE =	PE905491
NAME =	Log Analysis
BASIN =	GIPPSLAND
PERMIT =	VIC/P1
TYPE =	WELL
SUBTYPE =	WELL_LOG
DESCRIPTION =	Log Analysis Part 1 of Veilfin-1
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	4/10/85
W_NO =	W857
WELL_NAME =	VEILFIN-1
CONTRACTOR =	
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603876

This is an enclosure indicator page.
The enclosure PE603876 is enclosed within the container PE905491 at this location in this document.

The enclosure PE603876 has the following characteristics:

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CONTAINER_BARCODE = PE905491
NAME = Log Analysis
BASIN = GIPPSLAND
PERMIT = VIC/P1
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SUBTYPE = WELL_LOG
DESCRIPTION = Log Analysis Part 2 of Veilfin-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED = 4/10/85
W_NO = W857
WELL_NAME = VEILFIN-1
CONTRACTOR =
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 4

APPENDIX 4

REPORT

VEILFIN RFT TESTS

Six RFT runs were made in the Veilfin exploration well on March 21, 1984 to test suspected hydrocarbon zones, provide estimates of contact depths and to recover reservoir fluid samples. The RFT runs were unsuccessful in confirming hydrocarbons zones, the samples obtained were water/filtrate with small amounts of gas and the pressures obtained could not be interpreted due to the lack of a constant water gradient line. For this reason the pretest run #1 was curtailed.

Discussion

Figure 1 shows depth/pressure results from valid RFT measurements. A total of 56 seats were attempted, but only 18 seats gave valid pressures (table 1). The other seats failed to obtain valid pressures because of lack of seal or supercharging. Fluid samples were taken in runs 2 through 6, all the samples were water/filtrate with minor quantities of gas. The results of sampling are summarised in table 2. There was a lack of clearly defined water gradient which can be due to:

(a) supercharging, as demonstrated by non-repeatability of measurements at the same depth.
(b) lack of vertical communication between sand units which thus have differing drawdowns
(c) onset of overpressure.
(d) the presence of minor gas accumulations. Small amounts of gas were produced in a production test (3185-3194m MDKB).

The sand quality (porosity 8-16%) and low permeability made it likely that supercharging was occurring. However such sand qualities increase the likelihood of poor vertical communication between sand bodies. Thus the RFT results make it unlikely that the sands tested form a common hydrocarbon system..

TABLE 1

RFT PRETEST PRESSURES VEILFIN

No.	Seat No.	Depth (mKB)	Pressure (Psi)
1	1/8	3212.5	4699.7
2	1/0	3191.8	4642.5
3	1/12	3187.5	4637.8
4	1/15	3149.0	4521.4
5	1/21	3130.5	4529.0
6	1/27	3095.5	4500.6
7	1/29	3081.0	4435.0
8	1/33	3062.5	4456.3
9	1/34	3056.5	4475.0
10	1/35	3044.0	4309.3
11	1/36	3033.5	4296.5
12	1/37	3006.0	4230.0
13	1/40	2050.0	2881.2
14	2/43	3212.6	4696.4
15	3/45	3212.6	4680.0
16	4/54	3149.5	4516.5
17	5/55	3149.5	4528.8
18	6/56	2896.0	4154.9

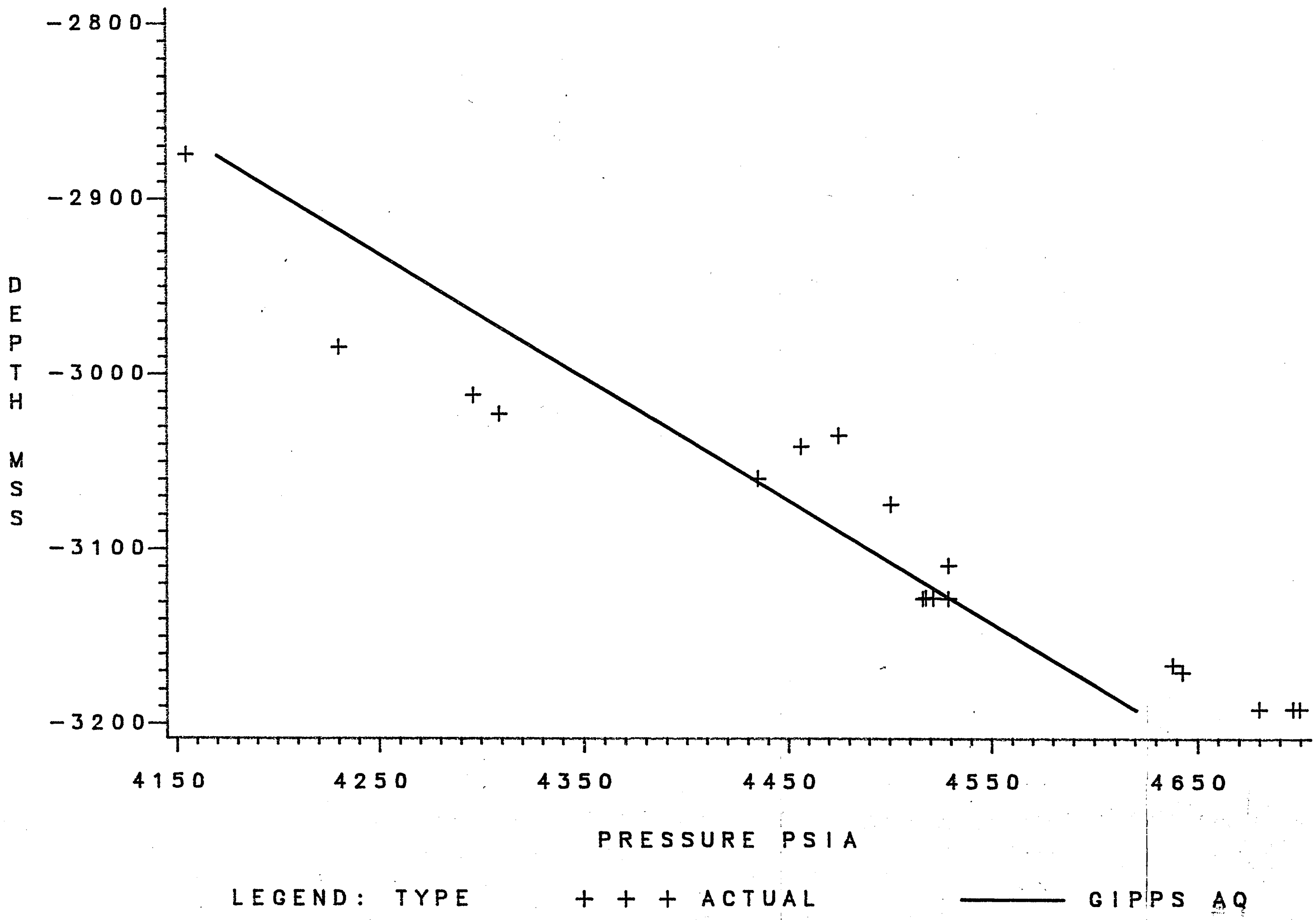
TABLE 2 SAMPLE RESULTS

RECOVERY - VEILFIN

Seat No.	Depth	Press	Chaml	Gas cu.ft.	Oil	Condensate	Water/ filtrate litres
2/44 2/43?	3212.6	4694.4	6 gal	1.59			20.25
			2 3/4	0.92			9.1
3/45	3212.6	4680.0	6 gal	1.79			19.8
			2 3/4	0.8			7.75
4/53	3191.8		6	1.79			17.5
4/54	3149.5	4516.5	2 3/4	0.14			9.0
5/55	3149.5	4528.8	12	2.35		Very slight	41.8
			2 3/4	0.62			9.25
6/56	2896	4154.9	12	-			36.71
			2 3/4	0.4			9.6

3039f/4

VEILFIN RFT RESULTS



APPENDIX 5

APPENDIX 5

GEOCHEMICAL REPORT

VEILFIN-1 WELL, GIPPSLAND BASIN

VICTORIA

by

J.K. EMMETT

Sample handling and Analyses by:

- D.M. Hill	)	
- D.M. Ford	)	
- D.E. Bishop	)	
- H. Schiller	)	ESSO AUSTRALIA LTD.
- J. McCardle	)	
- Exxon Production Research Company		
- Geochem Laboratories		

Esso Australia Ltd.
Geochemical Report

November 1984

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VEILFIN-1

INTRODUCTION

Various geochemical analyses were performed on samples of wet canned cuttings and sidewall cores collected during drilling of the Veilfin-1 well, Gippsland Basin. Canned cuttings composited over 15-metre intervals were collected from 230m (KB) down to Total Depth (T.D.) at 3521m (KB). Light hydrocarbon (C_{1-4}) headspace gases were determined on alternate 15-metre intervals between 1835m (KB) and 3440m (KB). Succeeding alternate 15-metre intervals were analysed for C_{4-7} gasoline-range hydrocarbons from 1850m (KB) down to 3425m (KB). Samples were then hand-picked for more detailed analyses such as Total Organic Carbon (T.O.C.), Rock-Eval Pyrolysis, kerogen isolation and elemental analysis, and C_{15+} liquid and gas chromatography. Vitrinite reflectance measurements were performed by A.C. Cook of Wollongong.

A condensate sample (PWT No. 1., 3185 -3194m (KB)) was analysed for API gravity, whole oil gas chromatography, C_{15+} liquid and gas chromatography and mass spectrometry, and carbon isotopes were determined on the saturate and aromatic fractions.

DISCUSSION OF RESULTS

The detailed headspace C_{1-4} hydrocarbon cuttings gas analysis data are listed in Table 1. A profile of this data is more conveniently presented in log form in Figures 1(a) and 1(b). Cuttings gas values are lean in the Lakes Entrance Formation section indicating a poor hydrocarbon source potential for these sediments. In the underlying Latrobe Group however, cuttings gas values are consistently rich, although wet gas (C_{2-4}) components are generally below 25% (Fig. 1b). The Latrobe Group sediments are regarded as having very good potential to be a hydrocarbon source, although indications from cuttings gas results are that they are gas/condensate prone. It should also be noted that "smearing" of light hydrocarbons is prevalent in a sand/shale/coal type of section, as the Latrobe Group is, and this makes indentification of discrete source intervals difficult.

Detailed data sheets for C_{4-7} gasoline-range hydrocarbon analyses are presented in Appendix-1, and pertinent information is again presented in log form in Figure-2. The gasoline-range hydrocarbon results tend to mirror the cuttings gas data, and a very good hydrocarbon source potential for the Latrobe Group sediments is again indicated. Intervals registering very-rich values (i.e. 10,000 - 100,000 ppb) usually coincide with coaly sections.

Total Organic Carbon (T.O.C.) values (Table 2) are rich in the undifferentiated Latrobe Group sediments average (T.O.C. = 2.27%) and this is again indicative of a very good hydrocarbon source potential. T.O.C. values in the Lakes Entrance Formation are poor (average T.O.C. = 0.41%) confirming previous indications of little or no source potential for this unit.

Vitrinite Reflectance data are listed in Table 3, and $\bar{R}_V$ max has been plotted with depth in Figure 3. Using the straightline maturation profile plotted in Figure 3, the top of organic maturity (taken to be $\bar{R}_V$max = 0.65%) occurs at about 2750m (KB).

The results of Rock-Eval pyrolysis analyses of samples with T.O.C. values of 0.5% or more, are listed in Table 4. Figure 4 is a plot of Hydrogen Index (HI) versus T_{max} (^{o}C) on which fields delineating the basic kerogen types and their degree of maturation (indicated by equivalent vitrinite reflectance curves) are also shown. Figure 4 shows that the Latrobe Group sediments contain Type III and Type II-III kerogen, the latter of which is indicative of very good oil source potential. The top of organic maturity as indicated by T_{max} values (Table 4) occurs at about 2900m (KB) which is somewhat deeper than that indicated by vitrinite reflectance.

Elemental analyses of selected kerogen concentrates isolated from sidewall cores and cuttings samples are listed in Table 5. Approximate hydrogen:carbon (H/C), oxygen:carbon (O/C) and nitrogen:carbon (N/C) atomic ratios are given in Table 6. These ratios are labelled "approximate" since the oxygen % is calculated by difference and the organic sulphur % (which may be up to a few percent) was not determined. Figure 5 is a modified Van Krevelen Plot of atomic H/C ratio versus atomic O/C ratio. Comparison of Figure 5 with Figure 6, a similar plot showing the principal products of kerogen evolution again indicates that the main kerogen types are Type III and intermediate Type II-III. The depth at which organic material in the Latrobe Group sediments is seen to be first capable of generating oil or wet gas (Table 6) occurs in the vicinity of about 2750m (KB), which gives some confirmation to the top of organic maturity prediction using vitrinite reflectance data. Overall the Latrobe Group sediments are regarded as having very good oil and gas source potential.

C_{15+} liquid chromatography results from selected canned cuttings are listed in Table 7. Total extract values for the Latrobe Group samples are rich to very rich, in comparison with the poor total extract from the Lakes Entrance Formation sample. The ratio of hydrocarbon:non-hydrocarbon components increases with greater depth of burial (i.e. maturity), but the deepest sample with an equivalent $\bar{R}_v$max of 0.88%) still shows less than 50% total hydrocarbon content. The latter point may be evidence for a relatively reduced oil source potential for the Latrobe Group sediments in the Veilfin-1 area. The corresponding C_{15+} saturate chromatograms are shown in Figures 7-12. The Lakes Entrance Formation chromatogram (Fig. 7) shows an immature mixture of marine and terrestrial organic matter. The remainingchromatograms from Latrobe Group samples, (Figs. 8-12) are typical of terrestrial organic matter becoming more mature with increasing depth ofburial, as indicated by a reduction of odd/even predominance in the high molecular weight (C_{23+}) waxy n-alkanes, and a shift of n-alkane maxima from C_{27} or C_{29} (Figs. 8-10) down to the C_{25} region (Fig. 12).

Figure 13 is a "whole oil" chromatogram of the 1 litre of "condensate" recovered from the choke manifold during the Veilfin-1 production test (PWT - No. 1, 3185 - 3194m (KB)). This yellow-brown "condensate" has an API gravity of 37.8^{0}, which is quite heavy for a condensate. Figure 13 shows an obvious reduction in n-alkanes in the C_9 to C_{14} region, which is difficult to explain other than blaming dubious sampling conditions. This "condensate" also contains n-alkanes obvious up to C_{31}, with a very slight remnant odd/even predominance, and is no doubt derived from predominantly terrestrial organic matter.

CONCLUSIONS

1) The top of organic maturity significant hydrocarbon generation occurs at approximately 2750m (KB).

2) The Latrobe Group sediments are rated as having very good potential to source gas/condensate and oil.

3) A condensate sample recovered from the Veilfin-1 production test appears to have an altered compostion due to difficult sampling conditions.

1210L

TABLE 1

C1-C4 HYDROCARBON ANALYSES

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND
WELL - VEILFIN 1

GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS) / GAS COMPOSITION (PERCENT)

SAMPLE NO.	DEPTH	METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	TOTAL GAS M	TOTAL GAS E	TOTAL GAS P	TOTAL GAS IB	TOTAL GAS NB	WET GAS E	WET GAS P	WET GAS IB	WET GAS NB
72979 A	1850.00	571	48	64	42	19	173	744	23.25	77.	6.	9.	6.	3.	28.	37.	24.	11.
72979 C	1880.00	557	39	44	32	13	128	685	18.69	81.	6.	6.	5.	2.	30.	34.	25.	10.
72979 E	1910.00	176	12	13	13	6	44	220	20.00	80.	5.	6.	6.	3.	27.	30.	30.	14.
72979 G	1940.00	130	22	24	18	8	72	202	35.64	64.	11.	12.	9.	4.	31.	33.	25.	11.
72979 I	1970.00	484	87	103	46	25	261	745	35.03	65.	12.	14.	6.	3.	33.	39.	18.	10.
72979 K	2000.00	835	111	138	52	32	333	1168	28.51	71.	10.	12.	4.	3.	33.	41.	16.	10.
72797 M	2030.00	19941	5843	2222	306	288	8659	28600	30.28	70.	20.	8.	1.	1.	67.	26.	4.	3.
72979 O	2060.00	12556	3319	1333	197	181	5030	17586	28.60	71.	19.	8.	1.	1.	66.	27.	4.	4.
72979 Q	2090.00	2465	641	382	92	84	1199	3664	32.72	67.	17.	10.	3.	2.	53.	32.	8.	7.
72979 S	2120.00	40599	11547	2183	172	153	14055	54654	25.72	74.	21.	4.	0.	0.	82.	16.	1.	1.
72979 U	2150.00	12103	3549	999	117	90	4755	16858	28.21	72.	21.	6.	1.	1.	75.	21.	2.	2.
72979 W	2180.00	29621	9735	2534	255	219	12743	42364	30.08	70.	23.	6.	1.	1.	76.	20.	2.	2.
72979 Y	2210.00	25534	8029	1822	181	143	10175	35709	28.49	72.	22.	5.	1.	0.	79.	18.	2.	1.
72980 A	2240.00	34578	8101	1823	172	134	10230	44808	22.83	77.	18.	4.	0.	0.	79.	16.	2.	1.
72980 C	2270.00	13383	3792	533	47	26	4398	17781	24.73	75.	21.	3.	0.	0.	86.	12.	1.	1.
72980 E	2300.00	25399	7863	2356	255	182	10656	36055	29.55	70.	22.	7.	1.	1.	74.	22.	2.	2.
72980 G	2330.00	10842	1541	389	50	32	2012	12854	15.65	84.	12.	3.	0.	0.	77.	19.	2.	2.
72980 I	2360.00	14270	1529	290	49	22	1890	16160	11.70	88.	9.	2.	0.	0.	81.	15.	3.	1.
72980 K	2390.00	11819	2176	587	71	44	2878	14697	19.58	80.	15.	4.	0.	0.	76.	20.	2.	2.
72980 M	2420.00	5690	1370	407	117	32	1926	7616	25.29	75.	18.	5.	2.	0.	71.	21.	6.	2.
72980 O	2450.00	11233	1867	568	152	43	2630	13863	18.97	81.	13.	4.	1.	0.	71.	22.	6.	2.
72980 Q	2480.00	12611	1757	483	135	26	2401	15212	15.78	84.	12.	3.	1.	0.	73.	20.	6.	1.
72980 S	2510.00	9341	1124	454	152	42	1772	11113	15.95	84.	10.	4.	1.	0.	63.	26.	9.	2.
72980 U	2540.00	9543	886	346	93	27	1352	10895	12.41	88.	8.	3.	1.	0.	66.	26.	7.	2.
72980 W	2570.00	6320	901	383	116	24	1424	7744	18.39	82.	12.	5.	1.	0.	63.	27.	8.	2.
72980 Y	2600.00	4568	550	221	63	17	851	5419	15.70	84.	10.	4.	1.	0.	65.	26.	7.	2.
72981 A	2630.00	7287	917	375	99	27	1418	8705	16.29	84.	11.	4.	1.	0.	65.	26.	7.	2.
72981 C	2660.00	3394	319	108	29	9	465	3859	12.05	88.	8.	3.	1.	0.	69.	23.	6.	2.
72981 E	2690.00	10549	938	283	51	17	1289	11838	10.89	89.	8.	2.	0.	0.	73.	22.	4.	1.
72981 G	2720.00	9670	897	414	84	39	1434	11104	12.91	87.	8.	4.	1.	0.	63.	29.	6.	3.
72981 I	2750.00	9723	1270	686	140	72	2168	11891	18.23	82.	11.	6.	1.	1.	59.	32.	0.	3.
72981 K	2780.00	9500	1523	672	126	55	2376	11876	20.01	80.	13.	6.	1.	0.	64.	28.	5.	2.
72981 M	2810.00	14298	2479	1045	225	88	3837	18135	21.16	79.	14.	6.	1.	0.	65.	27.	6.	2.
72981 O	2840.00	17553	2502	704	99	30	3335	20888	15.97	84.	12.	3.	0.	0.	75.	21.	3.	1.
72981 Q	2870.00	22410	3678	1191	162	58	5089	27499	18.51	81.	13.	4.	1.	0.	72.	23.	3.	1.
72981 S	2900.00	33099	3747	1684	291	116	5838	38937	14.99	85.	10.	4.	1.	0.	64.	29.	5.	2.
72981 U	2930.00	16146	1723	635	116	52	2526	18672	13.53	86.	9.	3.	1.	0.	68.	25.	5.	2.
72981 W	2960.00	34370	10600	2581	323	196	13700	48070	28.50	71.	22.	5.	1.	0.	77.	19.	2.	1.
72981 Y	2990.00	14708	3326	2077	329	306	6038	20746	29.10	71.	16.	10.	2.	1.	55.	34.	5.	5.
72982 A	3020.00	2879	926	782	194	165	2067	4946	41.79	58.	19.	16.	4.	3.	45.	38.	9.	8.
72982 C	3050.00	20884	2110	796	170	92	3168	24052	13.17	87.	9.	3.	1.	0.	67.	25.	5.	3.
72982 E	3080.00	5736	1516	906	88	103	2613	8349	31.30	69.	18.	11.	1.	1.	58.	35.	3.	4.
72982 G	3110.00	17396	2650	1194	105	136	4085	21481	19.02	81.	12.	6.	0.	1.	65.	29.	3.	3.
72982 I	3140.00	72150	8145	3695	312	465	12617	84767	14.88	85.	10.	4.	0.	1.	65.	29.	2.	4.
72982 K	3170.00	7374	1223	661	80	92	2056	9430	21.80	78.	13.	7.	1.	1.	59.	32.	4.	4.
72982 M	3200.00	38670	2744	1071	129	184	4128	42798	9.65	90.	6.	3.	0.	0.	66.	26.	3.	4.
[redacted]																		

TABLE 1 (CONT'D) C1-C4 HYDROCARBON ANALYSES

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND
WELL - VEILFIN 1

SAMPLE NO.	DEPTH	GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS) METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	GAS COMPOSITION (PERCENT) TOTAL GAS M	E	P	IB	NB	WET GAS E	P	IB	NB
72982 Q	3260.00	17485	3122	2033	224	294	5673	23158	24.50	76.	13.	9.	1.	1.	55.	36.	4.	5.
72982 S	3290.00	40655	5843	2831	320	424	9418	50073	18.81	81.	12.	6.	1.	1.	62.	30.	3.	5.
72982 U	3320.00	21018	3446	1697	200	239	5582	26600	20.98	79.	13.	6.	1.	1.	62.	30.	4.	4.
72982 W	3350.00	31950	5222	1994	214	249	7679	39629	19.38	81.	13.	5.	1.	1.	68.	26.	3.	3.
72982 Y	3380.00	39661	5649	1506	153	158	7466	47127	15.84	84.	12.	3.	0.	0.	76.	20.	2.	2.
72983 A	3410.00	28113	5130	1813	195	255	7393	35506	20.82	79.	14.	5.	1.	1.	69.	25.	3.	3.
72983 C	3440.00	28265	3623	1189	129	187	5128	33393	15.36	85.	11.	4.	0.	1.	71.	23.	3.	4.

TABLE 2

TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND
WELL - VEILFIN 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	T/C03	DESCRIPTION
72979 B	1865.00	EARLY MIOCENE	LAKES ENTRANCE	2	.39					
72979 D	1895.00	EARLY MIOCENE	LAKES ENTRANCE	2	.38					
72979 F	1925.00	EARLY MIOCENE	LAKES ENTRANCE	2	.39					
72979 H	1955.00	EARLY MIOCENE	LAKES ENTRANCE	2	.34					
72953 U	1957.50	EARLY MIOCENE	LAKES ENTRANCE	1	.59			1	36.20	MD GY SLTST,CALC
72979 J	1985.00	EARLY MIOCENE	LAKES ENTRANCE	2	.35					

===> DEPTH : .00 TO 1986.50 METRES. <=== I ===> AVERAGE TOC : .41 % EXCLUDING VALUES GREATER THAN 10.00 % <===

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	T/C03	DESCRIPTION
72953 I	2002.60	OLIGOCENE-MIOCENE	LATROBE GROUP-GURNARD FM.	1	.81			1	16.75	GY/BRN SLTST,ARG,CALC
72979 L	2015.00	OLIGOCENE-EOCENE	LATROBE GROUP-GURNARD FM.	2	.47					
72952 Y	2022.00	OLIGOCENE-EOCENE	LATROBE GROUP-GURNARD FM.	1	2.56			1	3.38	M-DK GY SDY SLTST

===> DEPTH : 1986.50 TO 2025.00 METRES. <=== I ===> AVERAGE TOC : 1.28 % EXCLUDING VALUES GREATER THAN 10.00 % <===

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	T/C03	DESCRIPTION
72979 N	2045.00	EOCENE	LATROBE GROUP	2	52.50					
72979 R	2105.00	EOCENE	LATROBE GROUP	2	.57					
72952 P	2118.50	EOCENE	LATROBE GROUP	1	3.91			1	1.61	DK GY SLTST,ARG
72979 T	2135.00	EOCENE	LATROBE GROUP	2	.60					
72979 V	2165.00	EOCENE	LATROBE GROUP	2	.39					
72952 L	2172.00	EOCENE	LATROBE GROUP	1	2.66			1	.64	DK GY SLTST,CARB,MICA
72979 X	2195.00	EOCENE	LATROBE GROUP	2	68.80					
72952 I	2218.00	EOCENE	LATROBE GROUP	1	8.88			1	1.35	DK GY SLTST,CARB,ARG
72979 Z	2225.00	EOCENE	LATROBE GROUP	2	5.81					
72980 B	2255.00	EOCENE	LATROBE GROUP	2	4.96					
72952 F	2259.20	EOCENE	LATROBE GROUP	1	.74			1	1.60	LT GY SLTST
72980 D	2285.00	EOCENE	LATROBE GROUP	2	3.19					
72952 C	2301.90	EOCENE	LATROBE GROUP	1	.41			1	.88	LT GY SLTST
72980 F	2315.00	EOCENE	LATROBE GROUP	2	1.83					
72980 H	2345.00	EOCENE	LATROBE GROUP	2	63.80					
72951 Z	2355.50	EOCENE	LATROBE GROUP	1	2.44			1	.85	DK GY SH
72980 J	2375.00	EOCENE	LATROBE GROUP	2	.91					
72951 V	2399.00	EOCENE	LATROBE GROUP	1	1.52			1	1.24	MD GY CLYST
72980 L	2405.00	EOCENE	LATROBE GROUP	2	.63					
72980 N	2435.00	EOCENE	LATROBE GROUP	2	.48					
72951 S	2437.00	PALEOCENE	LATROBE GROUP	1	2.64			1	.92	GY/BRN SLTST,CARB LAM
72980 P	2465.00	PALEOCENE	LATROBE GROUP	2	6.15					
72980 R	2495.00	PALEOCENE	LATROBE GROUP	2	.86					
72951 N	2510.00	PALEOCENE	LATROBE GROUP	1	3.67			1	2.11	DK GY SDY SLTST
72980 T	2525.00	PALEOCENE	LATROBE GROUP	2	4.55					
72951 J	2552.00	PALEOCENE	LATROBE GROUP	1	1.19			1	3.09	MD GY SLTST
72980 V	2555.00	PALEOCENE	LATROBE GROUP	2	.39					
72980 X	2585.00	PALEOCENE	LATROBE GROUP	2	3.50					

TABLE 2 (CONT'D)

TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND
WELL - VEILFIN 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	T/C03	DESCRIPTION
72980 Z	2615.00	PALEOCENE	LATROBE GROUP	2	.56					
72951 F	2616.00	PALEOCENE	LATROBE GROUP	1	1.22			1	8.00	MD GY SDY SLTST
72951 C	2644.20	PALEOCENE	LATROBE GROUP	1	7.36			1	2.70	DK GY SLTST
72981 B	2645.00	PALEOCENE	LATROBE GROUP	2	4.44					
72981 D	2675.00	PALEOCENE	LATROBE GROUP	2	.41					
72950 Z	2696.10	PALEOCENE	LATROBE GROUP	1	1.69			1	1.69	MD GY SLTST
72981 F	2705.00	PALEOCENE	LATROBE GROUP	2	2.30					
72981 H	2735.00	PALEOCENE	LATROBE GROUP	2	1.80					
72950 R	2747.00	PALEOCENE	LATROBE GROUP	1	2.14			1	2.45	MD GY SDY SLTST
72981 J	2765.00	PALEOCENE	LATROBE GROUP	2	2.76					
72981 L	2795.00	PALEOCENE	LATROBE GROUP	2	.81					
72950 J	2805.20	PALEOCENE	LATROBE GROUP	1	2.48			1	1.61	DK GY SLTST,CARB,ARG
72981 N	2825.00	PALEOCENE	LATROBE GROUP	2	73.70					
72981 P	2855.00	PALEOCENE	LATROBE GROUP	2	1.90					
72950 D	2865.50	PALEOCENE	LATROBE GROUP	1	2.21			1	2.51	DK GY SLTST,CARB,ARG
72981 R	2885.00	PALEOCENE	LATROBE GROUP	2	1.90					
72949 V	2916.00	PALEOCENE	LATROBE GROUP	1	3.50			1	1.37	DK GY SLTST,ARG,MICA
72981 V	2945.00	PALEOCENE	LATROBE GROUP	2	2.22					
72981 X	2975.00	PALEOCENE	LATROBE GROUP	2	2.63					
72981 Z	3005.00	PALEOCENE	LATROBE GROUP	2	.24					
72949 J	3026.00	PALEOCENE	LATROBE GROUP	1	2.57			1	5.85	DK GY SLTST,CARB,MICA
72982 B	3035.00	PALEOCENE	LATROBE GROUP	2	.47					
72949 E	3054.00	PALEOCENE	LATROBE GROUP	1	4.29			1	4.56	DK GY SH,ARG,MICA
72982 D	3065.00	PALEOCENE	LATROBE GROUP	2	1.68					
72982 F	3095.00	PALEOCENE	LATROBE GROUP	2	.47					
72948 V	3099.50	PALEOCENE	LATROBE GROUP	1	4.26			1	6.89	BLK SLTST,CARB,ARG
72982 H	3125.00	LATE CRETACEOUS	LATROBE GROUP	2	1.32					
72982 J	3155.00	LATE CRETACEOUS	LATROBE GROUP	2	1.30					
72948 J	3158.20	LATE CRETACEOUS	LATROBE GROUP	1	6.93			1	1.05	DK GY/BLK SLTY SH,COALY
72982 L	3185.00	LATE CRETACEOUS	LATROBE GROUP	2	1.84					
72947 Z	3206.00	LATE CRETACEOUS	LATROBE GROUP	1	10.40			1	8.53	DK GY/BLK SLTST,CARB,ARG
72982 N	3215.00	LATE CRETACEOUS	LATROBE GROUP	2	.50					
72982 P	3245.00	LATE CRETACEOUS	LATROBE GROUP	2	.80					
72947 O	3247.30	LATE CRETACEOUS	LATROBE GROUP	1	1.59			1	5.78	DK GY SLTST,CARB,ARG
72982 R	3275.00	LATE CRETACEOUS	LATROBE GROUP	2	.84					
72947 L	3283.20	LATE CRETACEOUS	LATROBE GROUP	1	5.27			1	2.24	MD GY SLTST,CARB LAM,ARG
72982 T	3305.00	LATE CRETACEOUS	LATROBE GROUP	2	2.14					
72982 V	3335.00	LATE CRETACEOUS	LATROBE GROUP	2	.58					
72982 X	3365.00	LATE CRETACEOUS	LATROBE GROUP	2	69.80					
72982 Z	3395.00	LATE CRETACEOUS	LATROBE GROUP	2	.60					
72947 F	3414.10	LATE CRETACEOUS	LATROBE GROUP	1	2.91			1	1.34	MD GY SLTST,CARB,ARG
72983 B	3425.00	LATE CRETACEOUS	LATROBE GROUP	2	.60					
72947 D	3435.60	LATE CRETACEOUS	LATROBE GROUP	1	11.88			1	.84	DK GY SLTST,COALY LAM
72947 A	3494.00	LATE CRETACEOUS	LATROBE GROUP	1	1.41			1	4.15	MD GY SLTST,ARG,CARB

===> DEPTH : 2025.00 TO 3494.00 METRES. <=== I ===> AVERAGE TOC : 2.27 % EXCLUDING VALUES GREATER THAN 10.00 % <===

TABLE 3

VITRINITE REFLECTANCE REPORT

ASIN - GIPPSLAND
ELL - VEILFIN 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	MAX. RO	FLUOR. COLOUR	NO.CNTS.	MACERAL TYPE
72953 W	1866.00	EARLY MIOCENE	LAKES ENTRANCE	5	.36	YELLOW	8	V>I>E,DOM RARE
72952 T	2043.00	EOCENE	LATROBE GROUP	5	.41	YELLOW	32	COAL,V,E DOMINANT
72952 O	2130.00	EOCENE	LATROBE GROUP	5	.47	YELLOW	26	COAL,V,E DOMINANT
72952 E	2273.50	EOCENE	LATROBE GROUP	5	.46	GRN-YEL-OR	27	COAL,E,V DOMINANT
72951 R	2456.00	PALEOCENE	LATROBE GROUP	5	.57	GRN-YEL-OR	27	COAL,V,I,E ABUNDANT
72951 D	2640.00	PALEOCENE	LATROBE GROUP	5	.65	YEL-OR	32	COAL,I,V,E ABUNDANT
72950 I	2815.10	PALEOCENE	LATROBE GROUP	5	.78	YEL-OR-BRN	26	COAL,V RICH
72949 R	2942.00	PALEOCENE	LATROBE GROUP	5	.77	OR-BRN	26	COAL,V RICH
72948 J	3150.20	LATE CRETACEOUS	LATROBE GROUP	5	.79	OR	33	V>E>I,DOM ABUNDANT
72947 E	3432.00	LATE CRETACEOUS	LATROBE GROUP	5	.84	OR-DULL OR	29	V>E>I,DOM ABUNDANT

TABLE 4

ROCK EVAL ANALYSES

REPORT A - SULPHUR & PYROLYZABLE CARBON

ASIN - GIPPSLAND
ELL - VEILFIN 1

AMPLE NO.	DEPTH	SAMPLE TYPE	AGE	TMAX	S1	S2	S3	PI	S2/S3	PC	COMMENTS
2953 U	1957.5	SWC	EARLY MIOCENE	408.	.05	.12	.21	.30	.58	.01	
2953 I	2002.6	SWC	OLIGOCENE-MIOCENE	414.	.03	.06	.46	.33	.13	.01	
2952 Y	2022.0	SWC	OLIGOCENE-EOCENE	416.	.05	.15	.35	.25	.43	.02	
2952 P	2118.5	SWC	EOCENE	415.	.79	8.91	.54	.08	16.50	.80	
2952 L	2172.0	SWC	EOCENE	421.	.27	3.40	.37	.07	9.19	.30	
2952 I	2218.0	SWC	EOCENE	416.	2.00	26.15	.61	.07	42.87	2.34	
2952 F	2259.2	SWC	EOCENE	419.	.22	.48	.32	.31	1.50	.06	
2952 C	2301.9	SWC	EOCENE	398.	.07	.18	.24	.28	.75	.02	
2951 Z	2355.5	SWC	EOCENE	425.	.38	4.86	.57	.07	8.53	.43	
2951 V	2399.0	SWC	EOCENE	422.	.10	.65	.30	.13	2.17	.06	
2951 S	2437.0	SWC	PALEOCENE	425.	.82	9.83	.45	.08	21.84	.88	
2951 N	2510.0	SWC	PALEOCENE	429.	.50	3.75	.50	.12	7.50	.35	
2951 J	2552.0	SWC	PALEOCENE	428.	.47	1.34	.31	.26	4.32	.15	
2951 F	2616.0	SWC	PALEOCENE	428.	.33	1.43	.34	.19	4.24	.15	
2951 C	2644.2	SWC	PALEOCENE	425.	1.96	26.23	.60	.07	43.75	2.34	
2950 Z	2696.1	SWC	PALEOCENE	432.	.37	1.22	.46	.23	2.65	.13	
2950 R	2747.0	SWC	PALEOCENE	429.	.36	2.19	.25	.14	8.76	.21	
2950 J	2805.2	SWC	PALEOCENE	429.	.37	3.46	.25	.10	13.84	.32	
2950 D	2865.5	SWC	PALEOCENE	434.	.58	3.54	.29	.14	12.21	.34	
2949 V	2916.0	SWC	PALEOCENE	429.	.44	2.11	.20	.17	10.55	.21	
2949 J	3026.0	SWC	PALEOCENE	437.	.72	2.06	.34	.26	6.09	.23	
2949 E	3054.0	SWC	PALEOCENE	441.	.88	6.15	.30	.13	20.53	.58	
2948 V	3099.5	SWC	PALEOCENE	444.	1.29	8.58	.32	.13	26.94	.82	
2948 J	3158.2	SWC	LATE CRETACEOUS	442.	2.75	15.36	.38	.15	40.42	1.50	
2947 Z	3206.0	SWC	LATE CRETACEOUS	444.	3.16	28.12	.49	.10	57.82	2.60	
2947 U	3247.3	SWC	LATE CRETACEOUS	447.	.68	1.96	.23	.26	8.57	.22	
2947 L	3283.2	SWC	LATE CRETACEOUS	445.	2.81	10.57	.24	.21	44.08	1.11	
2947 F	3414.1	SWC	LATE CRETACEOUS	447.	1.93	4.44	.26	.30	17.08	.53	
2947 D	3435.6	SWC	LATE CRETACEOUS	450.	3.44	33.33	.42	.09	79.36	3.05	
2947 A	3494.0	SWC	LATE CRETACEOUS	446.	.27	.73	.15	.27	4.87	.08	

I=PRODUCTIVITY INDEX PC=PYROLYZABLE CARBON TC=TOTAL CARBON HI=HYDROGEN INDEX OI=OXYGEN INDEX

TABLE 5

KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - VEILFIN 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	N%	C%	H%	S%	O%	ASH%	COMMENTS
			--- ELEMENTAL % (ASH FREE) ---						
72953 F	2008.00	SWC	2.81	65.76	4.23	.00	27.20	8.43	
72953 C	2014.10	SWC	1.99	68.83	3.56	.00	25.62	8.48	
72952 W	2026.00	SWC	.97	70.59	5.37	.00	23.08	7.87	
72952 P	2118.50	SWC	.73	70.66	5.42	.00	23.20	7.88	
72952 N	2136.30	SWC	.81	71.70	5.07	.00	22.42	3.18	
72952 L	2172.00	SWC	.78	70.66	4.97	.00	23.59	7.30	
72952 K	2188.90	SWC	.91	70.31	4.89	.00	23.90	9.94	
72952 J	2203.10	SWC	.69	71.46	5.51	.00	22.34	3.68	
72952 I	2218.00	SWC	.74	69.31	4.87	.00	25.08	5.50	
72952 H	2226.10	SWC	.88	74.70	6.72	.00	17.69	17.46	HIGH ASH
72952 F	2259.20	SWC	.96	72.90	5.47	.00	20.68	3.77	
72952 B	2328.00	SWC	1.12	74.39	5.82	.00	18.68	11.33	HIGH ASH
72951 Z	2355.50	SWC	.51	73.25	5.06	.00	21.19	5.36	
72951 Y	2369.20	SWC	.85	73.10	5.31	.00	20.74	6.81	
72951 U	2412.70	SWC	1.12	75.71	5.63	.00	17.53	3.05	
72951 T	2430.10	SWC	1.13	75.75	5.48	.00	17.65	5.25	
72951 S	2437.00	SWC	.75	70.15	6.07	.00	23.03	5.61	
72951 Q	2467.30	SWC	1.11	73.22	5.08	.00	20.58	3.81	
72951 P	2480.20	SWC	.98	65.62	4.42	.00	28.98	11.51	HIGH ASH
72951 N	2510.00	SWC	1.05	66.40	4.85	.00	27.70	5.06	
72951 L	2523.00	SWC	1.11	76.85	5.53	.00	16.51	8.35	
72951 H	2584.50	SWC	1.66	79.77	4.82	.00	13.75	6.79	
72951 C	2644.20	SWC	.46	46.86	3.98	.00	48.69	3.10	
72951 B	2673.00	SWC	.93	72.33	5.06	.00	21.67	12.89	HIGH ASH
72950 W	2713.00	SWC	1.25	77.53	5.39	.00	15.83	10.36	HIGH ASH
72950 R	2747.00	SWC	.89	76.13	4.77	.00	18.22	6.46	
72950 O	2765.00	SWC	.98	77.36	4.73	.00	16.93	8.26	
72950 N	2780.60	SWC	.96	80.14	5.21	.00	13.69	4.29	
72950 J	2805.20	SWC	.89	78.31	5.37	.00	15.43	3.80	
72950 H	2821.10	SWC	1.00	74.43	6.28	.00	18.28	1.35	
72950 D	2865.50	SWC	1.03	81.10	5.37	.00	12.50	7.66	
72950 A	2891.10	SWC	.87	79.12	5.34	.00	14.67	8.53	
72949 X	2901.50	SWC	.95	81.60	4.96	.00	12.49	3.16	
72949 V	2916.00	SWC	1.09	76.40	4.71	.00	17.80	7.06	
72949 S	2937.00	SWC	.93	81.70	5.32	.00	12.05	7.67	
72949 Q	2947.00	SWC	1.10	81.42	5.76	.00	11.72	4.34	
72949 N	2984.80	SWC	.98	80.66	4.72	.00	13.63	4.07	
72949 F	3045.50	SWC	1.26	83.43	5.41	.00	9.90	4.78	
72949 D	3059.00	SWC	1.11	80.81	4.64	.00	13.44	6.53	
72948 Y	3089.00	SWC	1.15	82.36	5.05	.00	11.44	2.91	
72948 C	3099.50	SWC	1.13	84.21	5.77	.00	8.89	3.19	
72948 U	3112.90	SWC	1.33	84.09	5.31	.00	9.27	5.60	
72948 T	3117.50	SWC	1.39	83.64	5.01	.00	9.96	3.58	
72948 P	3132.50	SWC	1.19	84.89	4.85	.00	9.08	3.20	
72948 O	3139.00	SWC	1.07	80.67	5.07	.00	13.18	3.96	

TABLE 4 (CONT'D)

ROCK EVAL ANALYSES

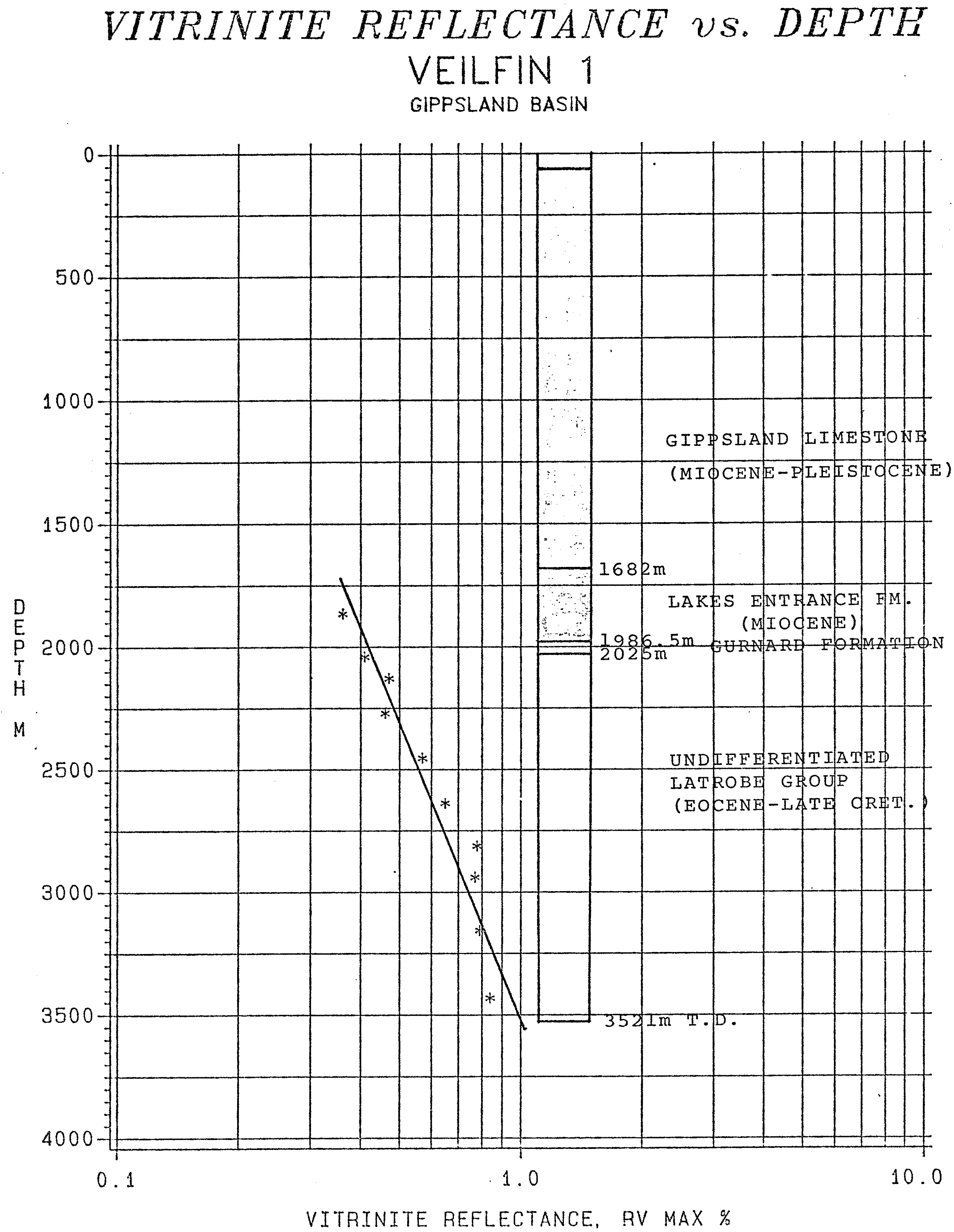
REPORT B - TOTAL CARBON,H/O INDICES

:ASIN - GIPPSLAND
:ELL - VEILFIN 1

:AMPLE NO.	DEPTH	SAMPLE TYPE	FORMATION	TC	HI	OI	HI/OI	COMMENTS
2953 U	1957.5	SWC	LAKES ENTRANCE	.59	21.	35.	.58	
2953 I	2002.6	SWC	LATROBE GROUP-GURNARD FM	.81	7.	56.	.13	
2952 Y	2022.0	SWC	LATROBE GROUP-GURNARD FM	2.56	6.	14.	.43	
2952 P	2118.5	SWC	LATROBE GROUP	3.91	228.	14.	16.50	
2952 L	2172.0	SWC	LATROBE GROUP	2.66	128.	14.	9.19	
2952 I	2218.0	SWC	LATROBE GROUP	8.88	294.	7.	42.87	
2952 F	2259.2	SWC	LATROBE GROUP	.74	65.	43.	1.50	
2952 C	2301.9	SWC	LATROBE GROUP	.41	44.	59.	.75	
2951 Z	2355.5	SWC	LATROBE GROUP	2.44	199.	23.	8.53	
2951 V	2399.0	SWC	LATROBE GROUP	1.52	43.	20.	2.17	
2951 S	2437.0	SWC	LATROBE GROUP	2.64	372.	17.	21.84	
2951 N	2510.0	SWC	LATROBE GROUP	3.67	102.	14.	7.50	
2951 J	2552.0	SWC	LATROBE GROUP	1.19	112.	26.	4.32	
2951 F	2616.0	SWC	LATROBE GROUP	1.22	117.	28.	4.24	
2951 C	2644.2	SWC	LATROBE GROUP	7.36	356.	8.	43.75	
2950 Z	2696.1	SWC	LATROBE GROUP	1.69	72.	27.	2.65	
2950 R	2747.0	SWC	LATROBE GROUP	2.14	102.	12.	8.76	
2950 J	2805.2	SWC	LATROBE GROUP	2.48	139.	10.	13.84	
2950 D	2865.5	SWC	LATROBE GROUP	2.21	160.	13.	12.21	
2949 V	2916.0	SWC	LATROBE GROUP	3.50	60.	6.	10.55	
2949 J	3026.0	SWC	LATROBE GROUP	2.57	80.	13.	6.09	
2949 E	3054.0	SWC	LATROBE GROUP	4.29	143.	7.	20.53	
2948 V	3099.5	SWC	LATROBE GROUP	4.26	201.	7.	26.94	
2948 J	3158.2	SWC	LATROBE GROUP	6.93	222.	5.	40.42	
2947 Z	3206.0	SWC	LATROBE GROUP	10.40	270.	5.	57.82	
2947 O	3247.3	SWC	LATROBE GROUP	1.59	123.	14.	8.57	
2947 L	3283.2	SWC	LATROBE GROUP	5.27	201.	5.	44.08	
2947 F	3414.1	SWC	LATROBE GROUP	2.91	153.	9.	17.08	
2947 D	3435.6	SWC	LATROBE GROUP	11.88	281.	4.	79.36	
2947 A	3494.0	SWC	LATROBE GROUP	1.41	52.	11.	4.87	

PI=PRODUCTIVITY INDEX PC=PYROLYZABLE CARBON TC=TOTAL CARBON HI=HYDROGEN INDEX OI=OXYGEN INDEX

FIGURE 3

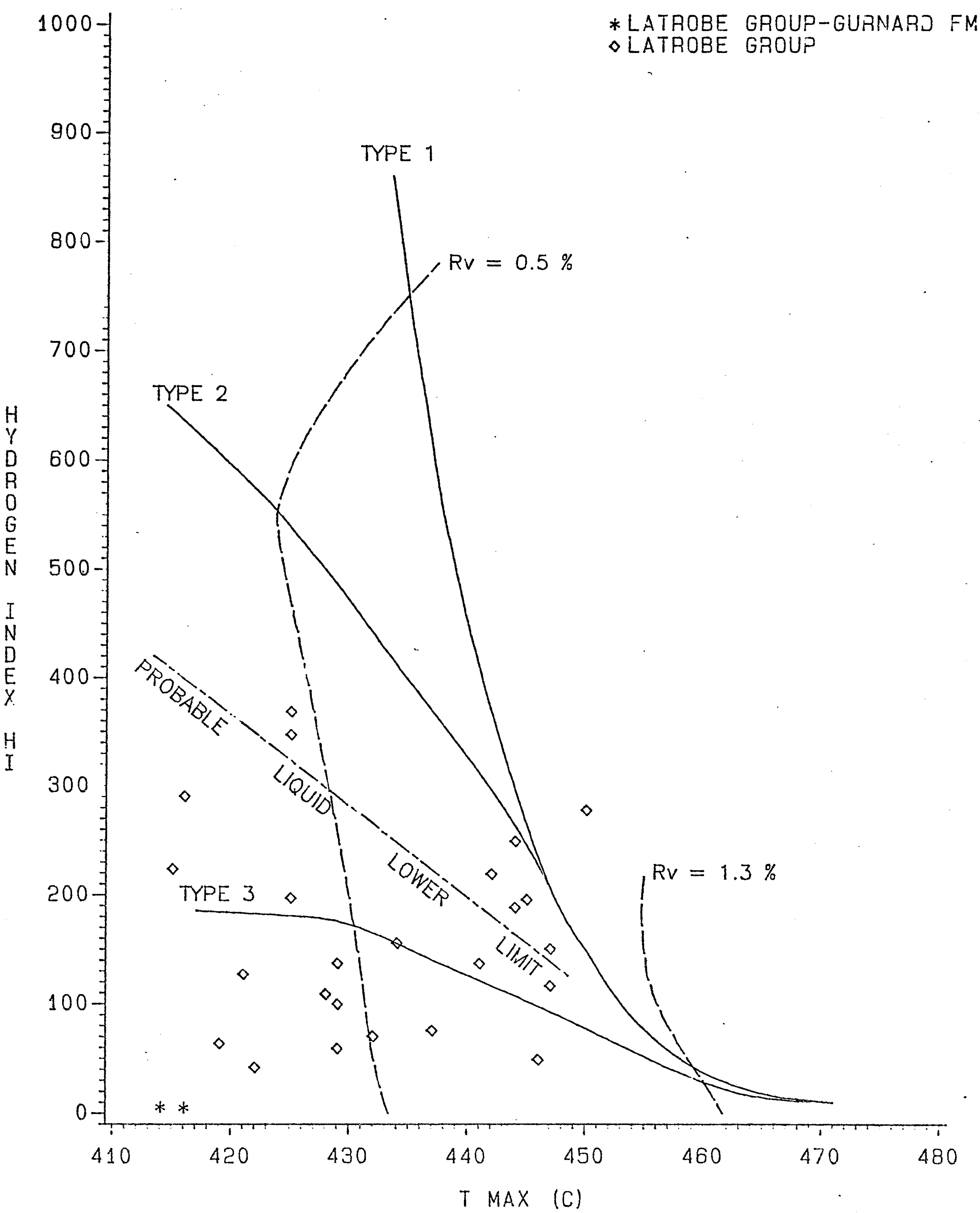

VITRINITE REFLECTANCE vs. DEPTH
VEILFIN 1
GIPPSLAND BASIN
0
500
1000
1500
2000
2500
3000
3500
4000
DEPTH M
0.1
1.0
10.0
VITRINITE REFLECTANCE, RV MAX %
GIPPSLAND LIMESTONE
(MIOCENE-PLEISTOCENE)
1682m
LAKES ENTRANCE FM.
(MIOCENE)
1986.5m GURNARD FORMATION
2025m
UNDIFFERENTIATED
LATROBE GROUP
(EOCENE-LATE CRET.)
3521m T.D.

ROCKEVAL MATURATION PLOT

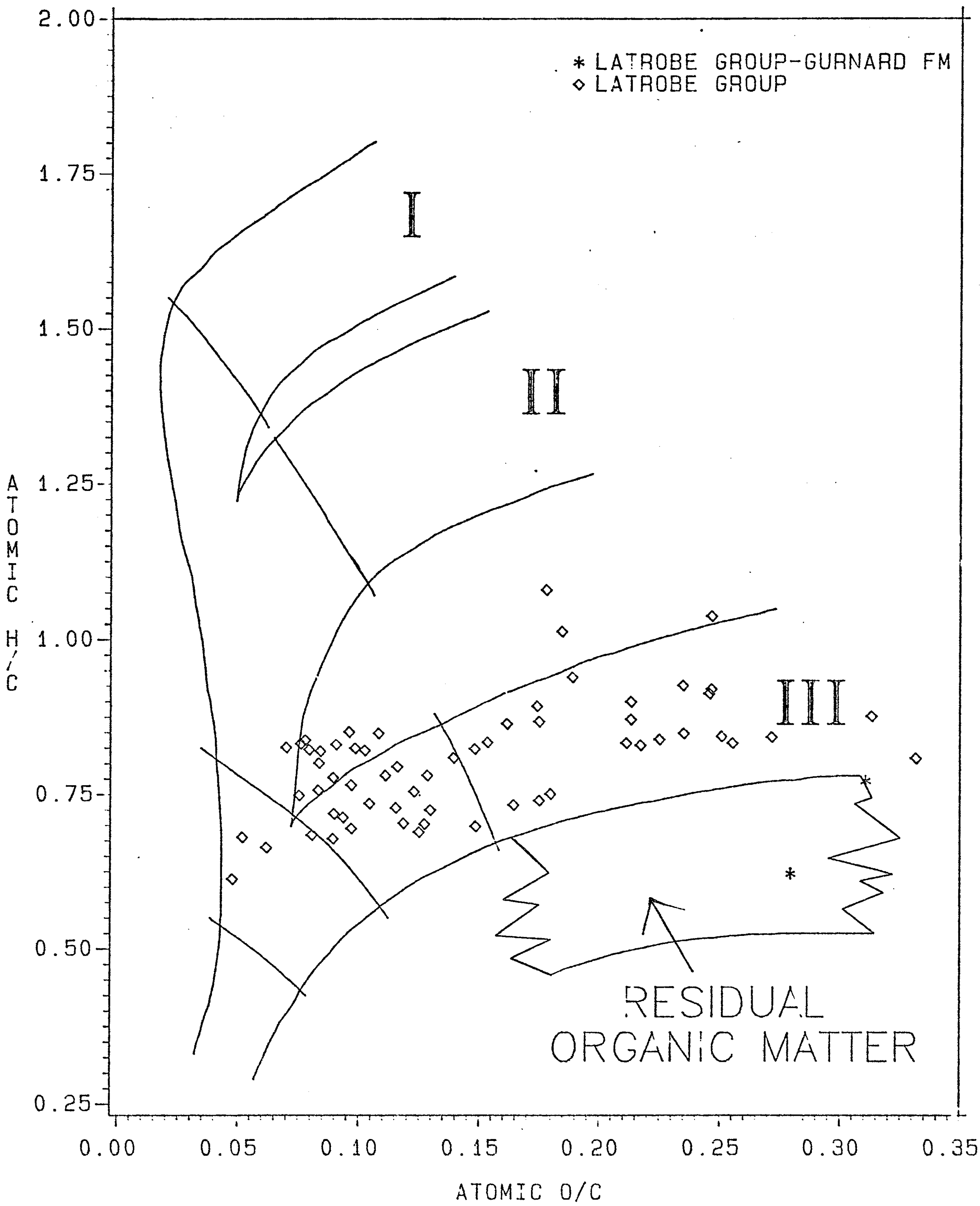
Tmax vs HYDROGEN INDEX

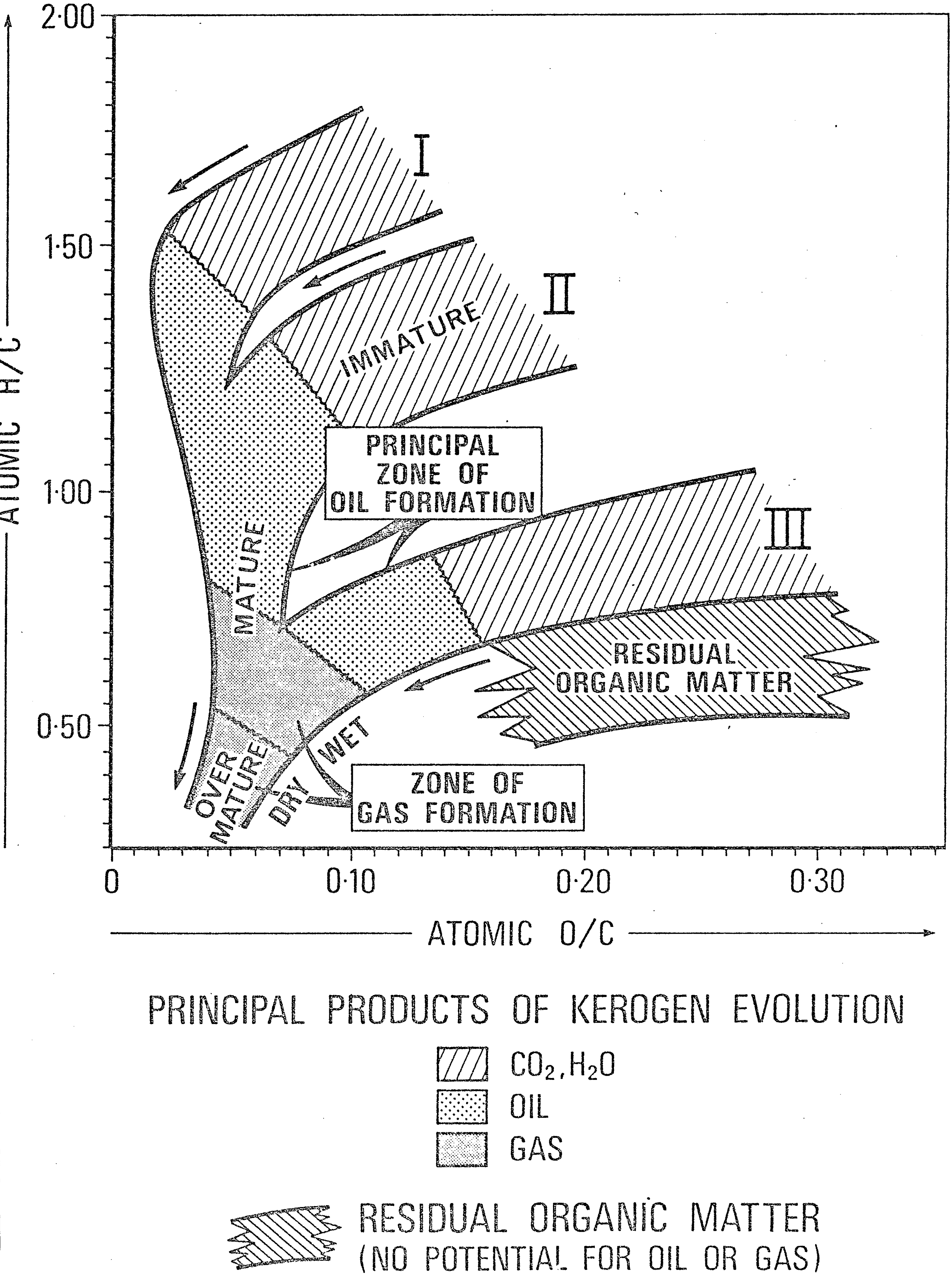
VEILFIN 1

GIPPSLAND BASIN



KEROGEN TYPE
VEILFIN 1
GIPPSLAND BASIN




ATOMIC H/C
ATOMIC O/C
2·00
1·50
1·00
0·50
0
0·10
0·20
0·30
I
II
III
IMMATURE
PRINCIPAL ZONE OF OIL FORMATION
MATURE
RESIDUAL ORGANIC MATTER
OVER MATURE
DRY
WET
ZONE OF GAS FORMATION
PRINCIPAL PRODUCTS OF KEROGEN EVOLUTION
CO_2, H_2O
OIL
GAS
RESIDUAL ORGANIC MATTER
(NO POTENTIAL FOR OIL OR GAS)

1380/BS/75

C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E618-001

Exxon Identification No. 72979-F

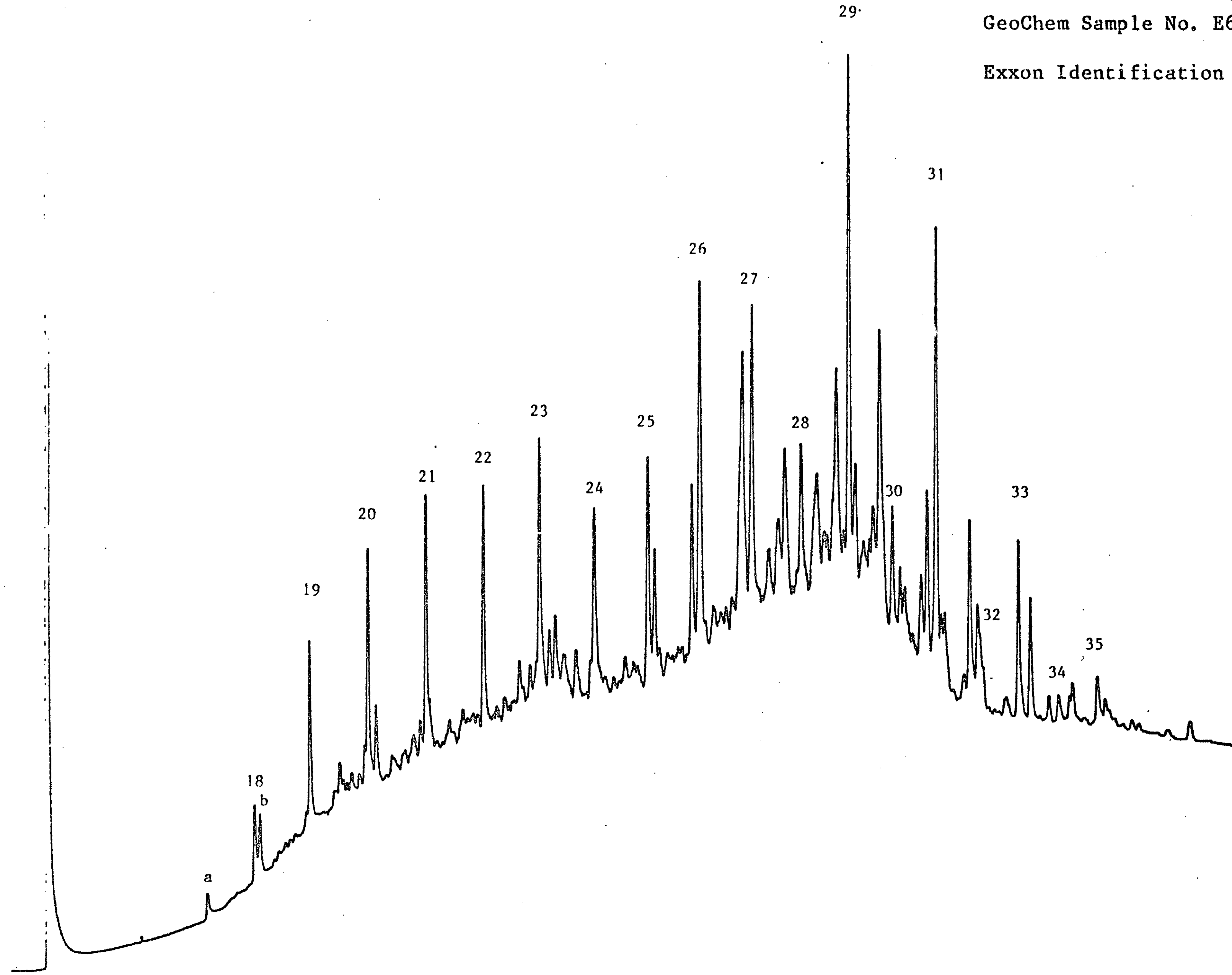


FIGURE 7: Veilfin-1 Cuttings Extract, 1910 - 1925m (KB), Lakes Entrance Formation

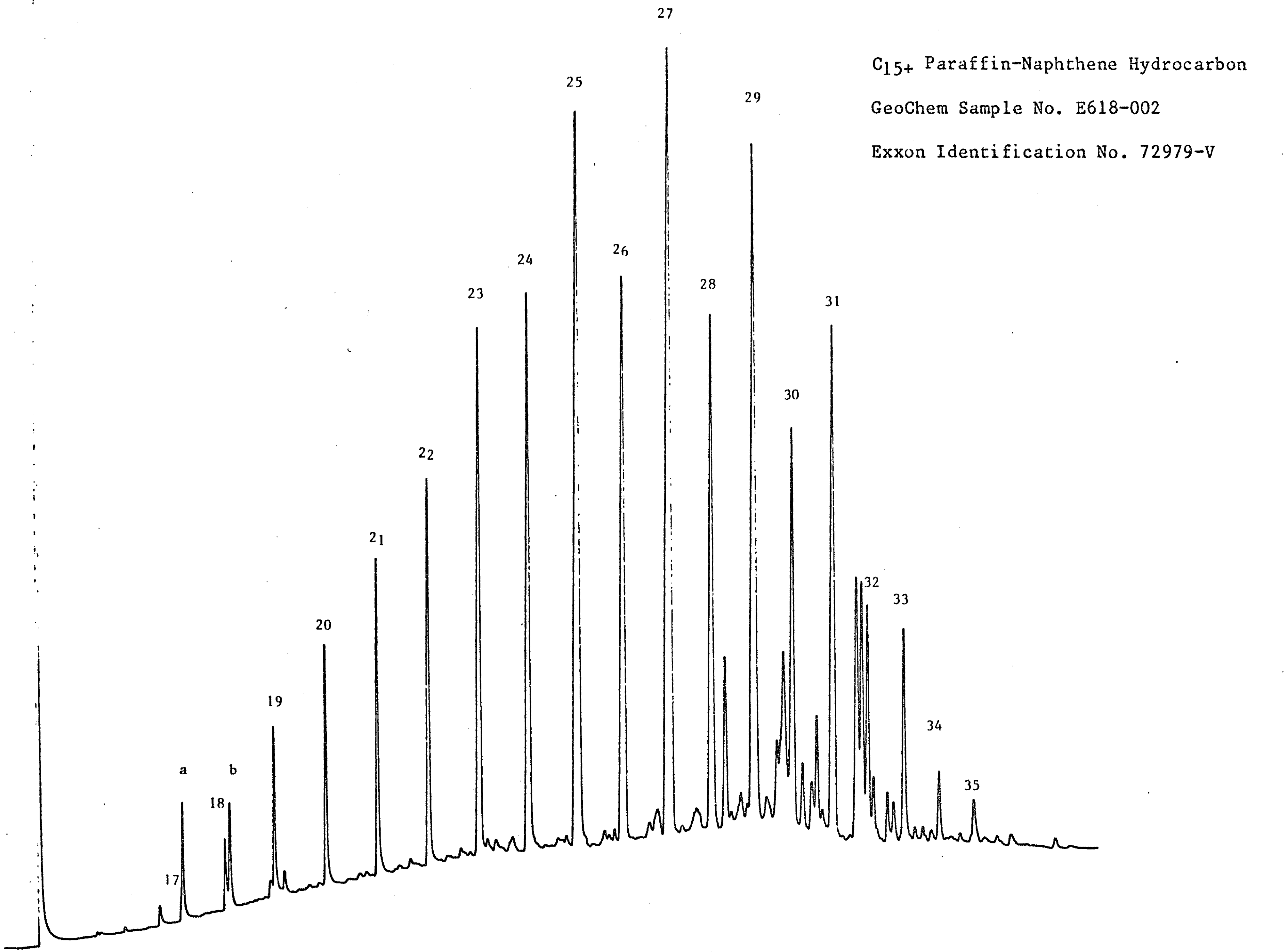


FIGURE 8: Veilfin-1 Cuttings Extract, 2150 - 2165m (KB), Latrobe Group

C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E618-003

Exxon Identification No. 72980-L

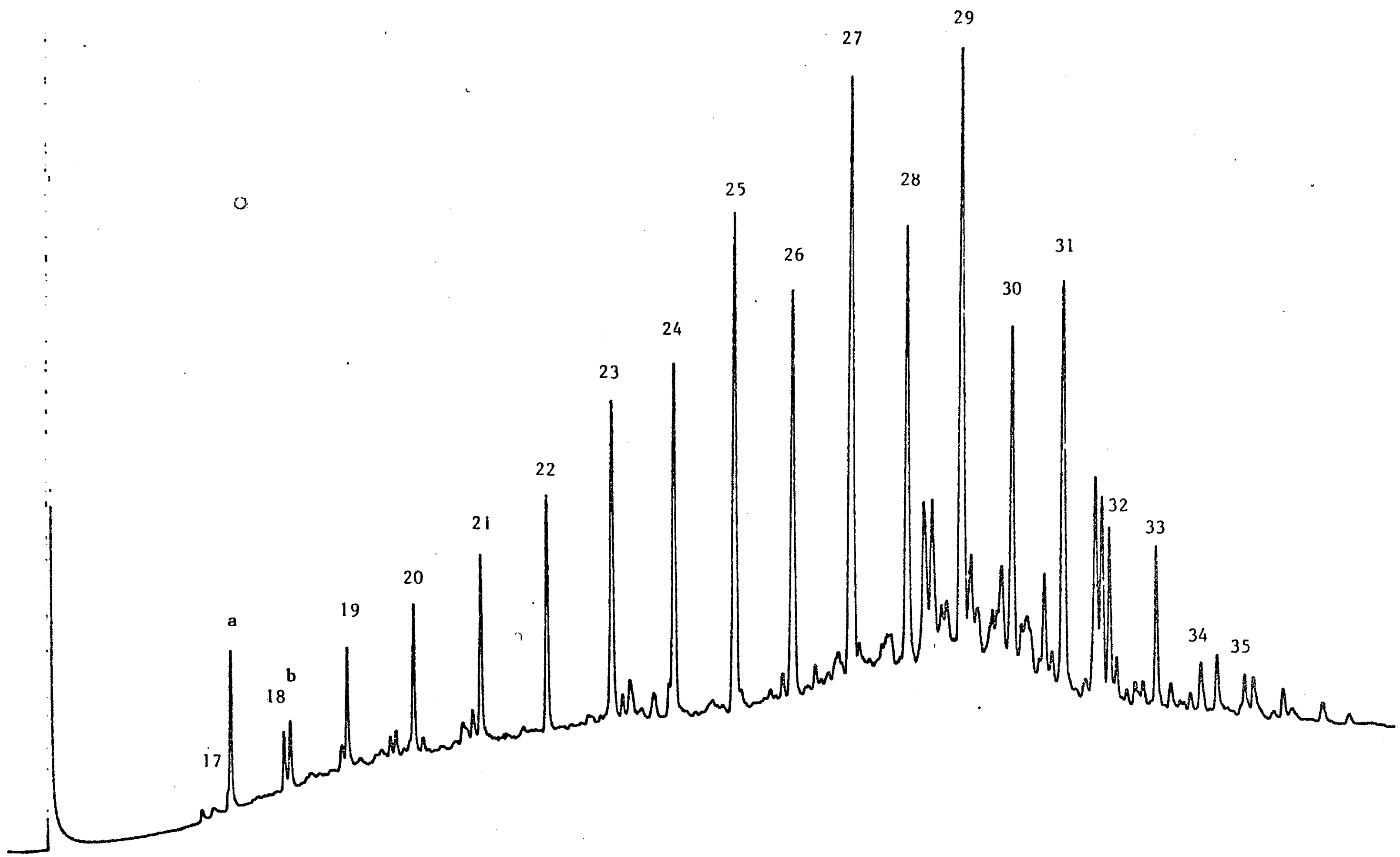


FIGURE 9: Veilfin-1 Cuttings Extract, 2390 - 2405m (KB), Latrobe Group

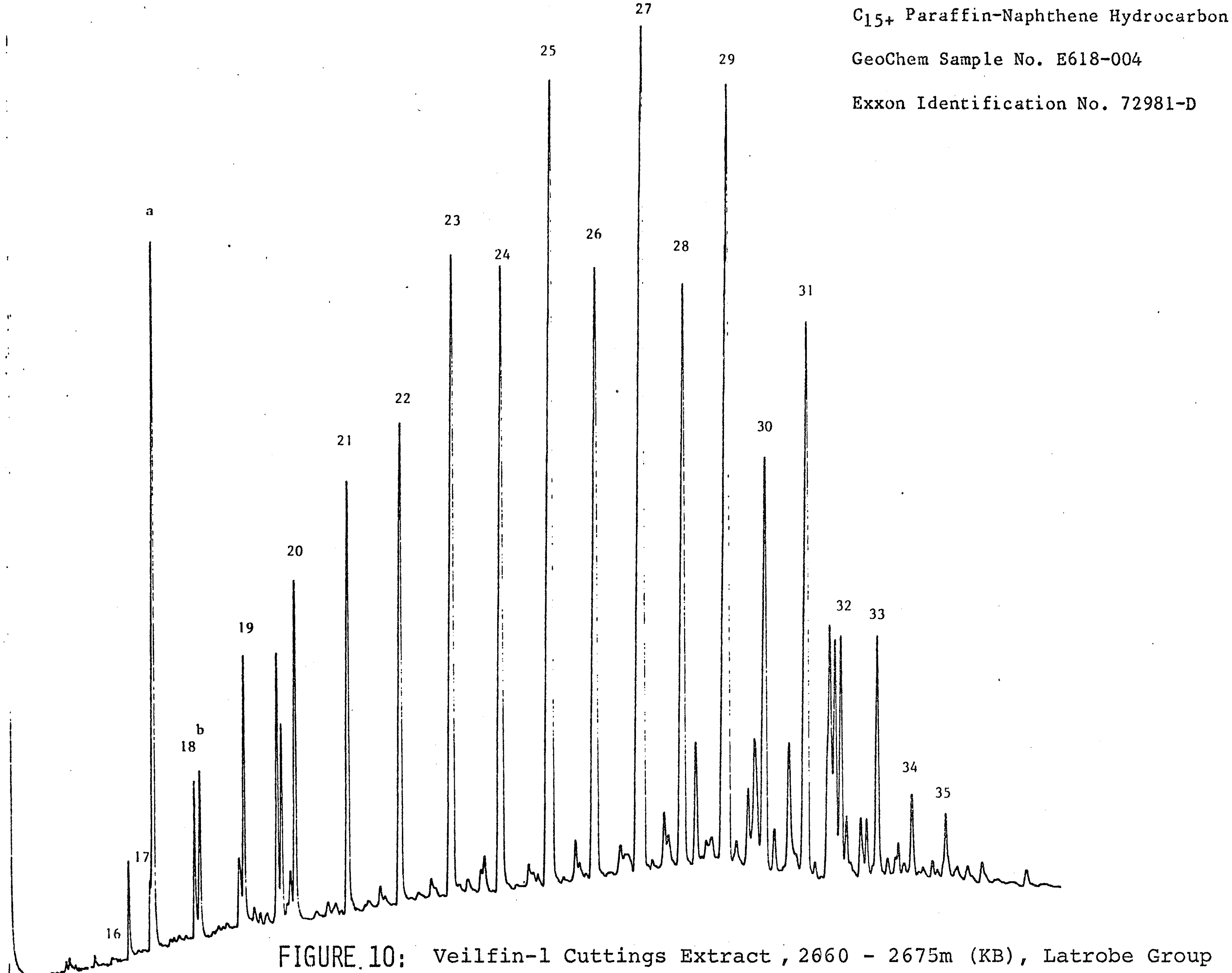


FIGURE 10: Veilfin-1 Cuttings Extract , 2660 - 2675m (KB), Latrobe Group

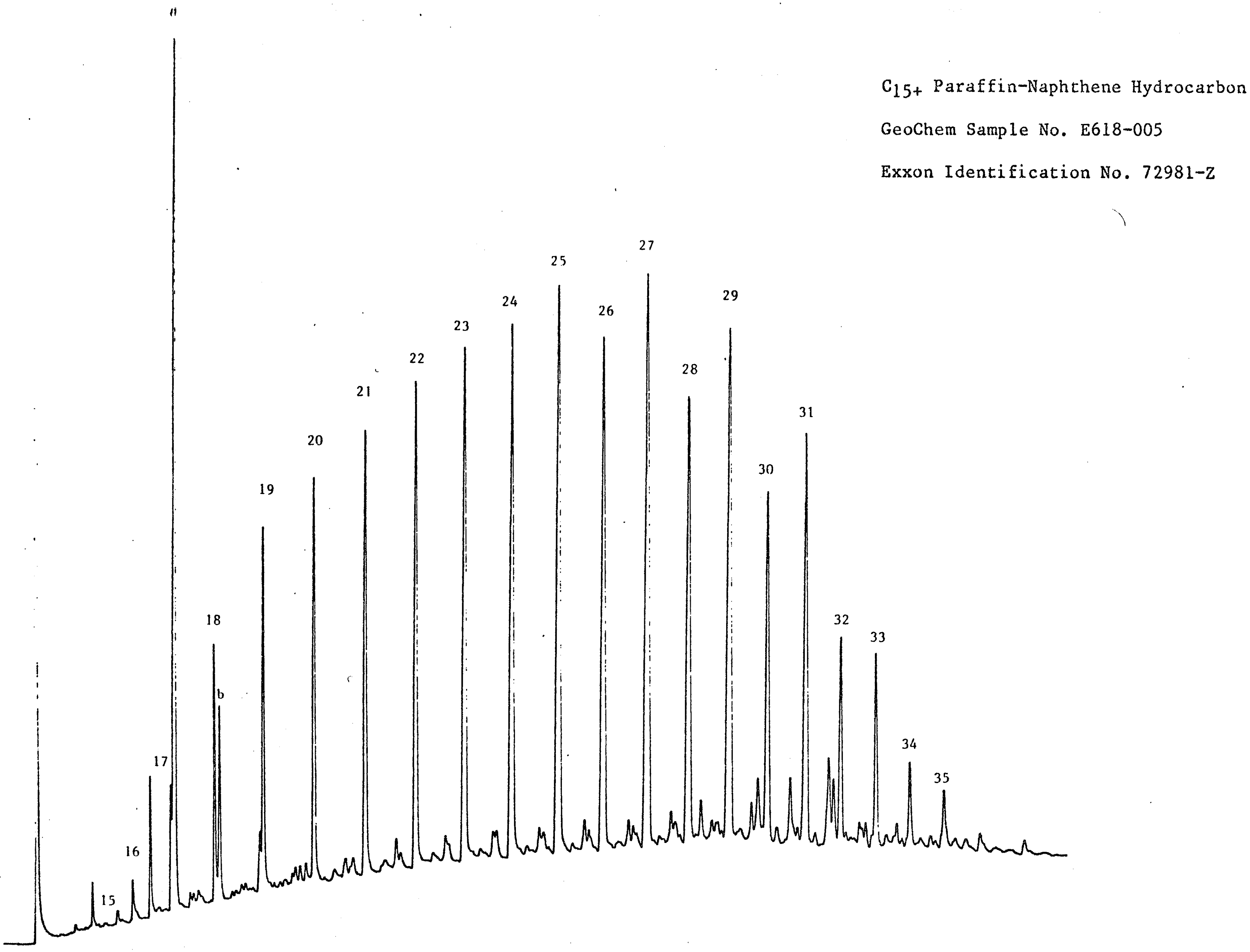


FIGURE 11: Veilfin-1 Cuttings Extract, 2990 - 3005m (KB), Latrobe Group

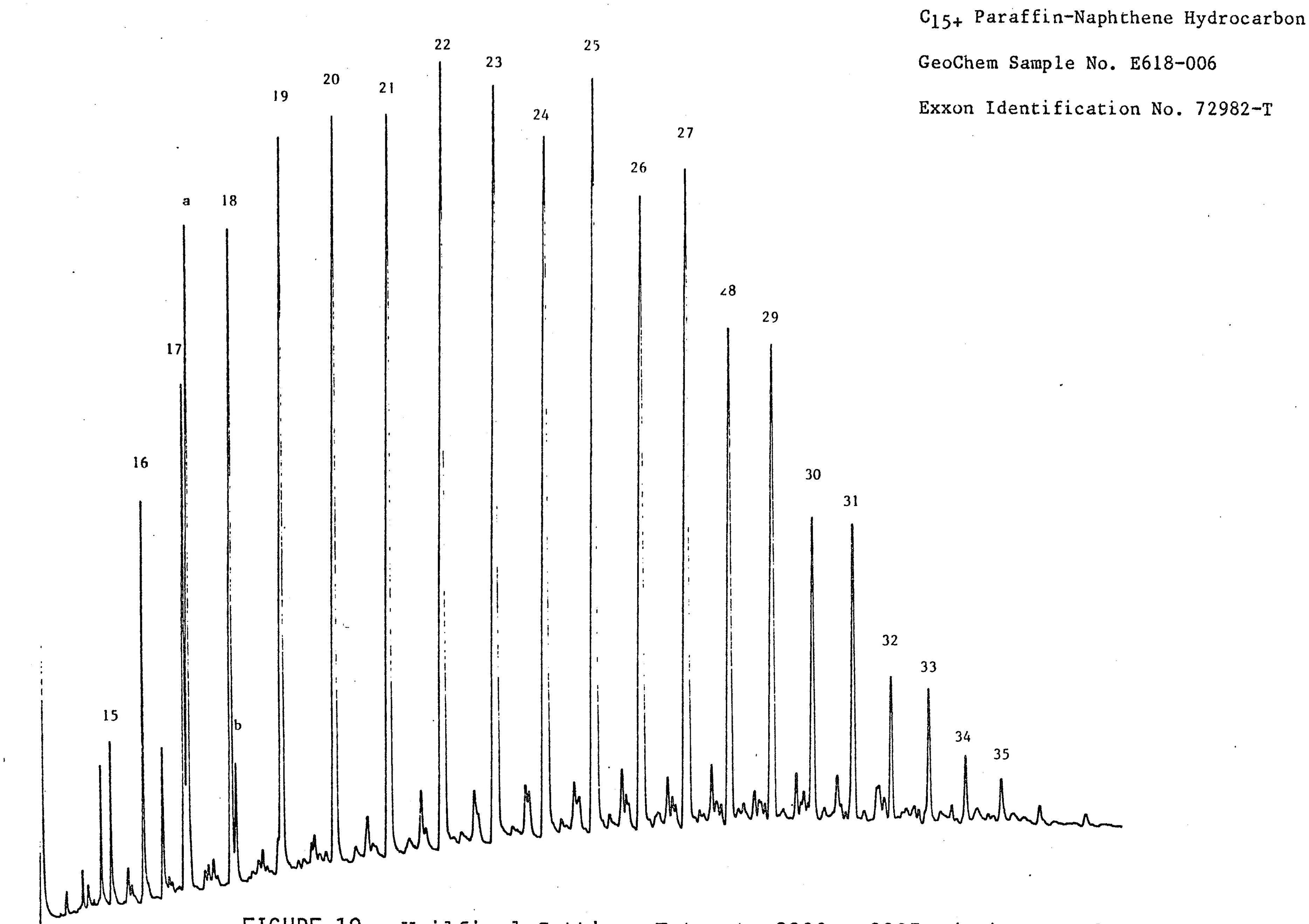
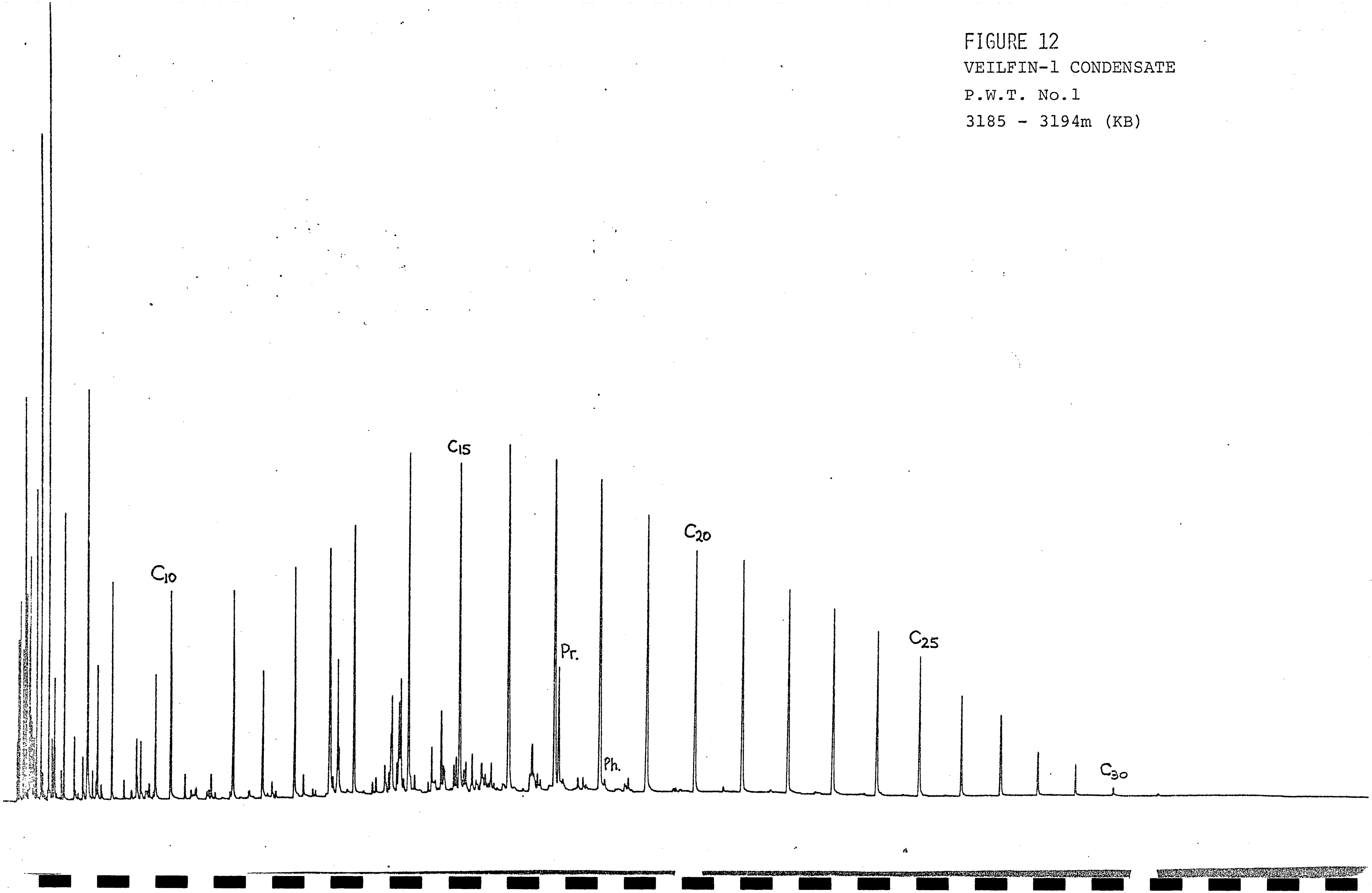


FIGURE 12: Veilfin-1 Cuttings Extract, 3290 - 3305m (KB), Latrobe Group

FIGURE 12
VEILFIN-1 CONDENSATE
P.W.T. No.1
3185 - 3194m (KB)



APPENDIX-1

Detailed C_{4-7} Gasoline-Range

Hydrocarbon Data Sheets

72979B AUSTRALIA. VEILFIN-1. 1850-1865 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	41.0	2.77
NBUTANE	48.2	3.26
IPENTANE	238.0	16.09
NPENTANE	102.8	6.95
22-DMB	3.0	0.21
CPENTANE	8.5	0.58
23-DMB	18.8	1.27
2-MP	112.2	7.58
3-MP	48.2	3.26
NHEXANE	73.1	4.94
MCP	153.2	10.36
22-DMP	0.0	0.0
24-DMP	6.7	0.45
223-TMB	0.0	0.0
CHEXANE	19.0	1.28
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	45.6	3.08
23-DMP .	26.6	1.80
3-MHEX .	33.6	2.27
1C3-DMCP	48.8	3.30
1T3-DMCP	48.4	3.27
1T2-DMCP	48.2	3.26
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	101.2	6.84
1C2-DMCP	18.5	1.25
MCH	235.9	15.95

	TOTALS PPB	NORM PERCENT
ALL COMP	1479.	
GASOLINE	1479.	
NAPHTHENES	580.	39.24
C6-7	859.	58.05

SIG COMP RATIOS	
C1/C2	0.95
A /D2	5.19
C1/D2	8.95
CH/MCP	0.12
PENT/IPENT.	0.43

	PPB	NORM PERCENT
MCP	153.2	37.5
CH	19.0	4.7
MCH	235.9	57.8
TOTAL	408.1	100.0

PARAFFIN INDEX 1 0.545

PARAFFIN INDEX 2 16.669

729790D AUSTRALIA, VEILFIN-1, 1880-1895 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	11.8	2.71
NBUTANE	23.4	5.39
IPENTANE	57.4	13.20
NPENTANE	42.6	9.79
22-DMB	0.0	0.0
CPENTANE	1.8	0.42
23-DMB	3.4	0.79
2-MP	27.1	6.24
3-MP	13.0	2.99
NHEXANE	32.5	7.49
MCP	28.4	6.54
22-DMP	0.0	0.0
24-DMP	0.0	0.0
223-TMB	0.0	0.0
CHEXANE	5.2	1.19
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	16.9	3.88
23-DMP .	7.9	1.82
3-MHEX .	15.4	3.53
1C3-DMCP	7.1	1.64
1T3-DMCP	5.5	1.28
1T2-DMCP	8.5	1.96
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	78.7	18.12
1C2-DMCP	0.0	0.0
MCH	47.9	11.02

	TOTALS PPB	NORM PERCENT
ALL COMP	435.	
GASOLINE	435.	
NAPHTHENES	105.	24.05
C6-7	254.	58.46

SIG COMP RATIOS

C1/C2	1.41
A /D2	7.25
C1/D2	4.55
CH/MCP	0.18
PENT/IPENT.	0.74

	PPB	NORM PERCENT
MCP	28.4	34.9
CH	5.2	6.3
MCH	47.9	58.8
TOTAL	81.5	100.0

PARAFFIN INDEX 1 1.520

PARAFFIN INDEX 2 40.760

729 79F AUSTRALIA, VEILFIN-1, 1910-1925 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	14.0	3.92
NBUTANE	22.3	6.25
IPENTANE	45.4	12.75
NPENTANE	30.1	8.45
22-DMB	0.0	0.0
CPENTANE	1.7	0.49
23-DMB	3.0	0.85
2-MP	24.2	6.80
3-MP	12.3	3.45
NHEXANE	27.7	7.78
MCP	24.5	6.89
22-DMP	0.0	0.0
24-DMP	0.0	0.0
223-TMB	0.0	0.0
CHEXANE	5.3	1.49
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	10.1	2.84
23-DMP ,	6.6	1.86
3-MHEX ,	9.4	2.64
1C3-DMCP	7.4	2.09

	TOTAL PPB	NORM PERCENT
1T3-DMCP	4.3	1.22
1T2-DMCP	5.2	1.45
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	54.9	15.40
1C2-DMCP	0.0	0.0
MCH	47.7	13.37

	TOTALS PPB	NORM PERCENT
ALL COMP	356.	
GASOLINE	356.	
NAPHTHENES	96.	27.00
C6-7	203.	57.03

SIG COMP RATIOS

C1/C2	1.52
A /D2	8.77
C1/D2	6.69
CH/MCP	0.22
PENT/IPENT.	0.66

	PPB	NORM PERCENT
MCP	24.5	31.7
CH	5.3	6.9
MCH	47.7	61.5
TOTAL	77.5	100.0

PARAFFIN INDEX 1 1.152

PARAFFIN INDEX 2 36.348

72979H AUSTRALIA. VEILFIN-1. 1940-1955 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	27.4	4.10
NBUTANE	25.1	3.74
IPENTANE	98.4	14.70
NPENTANE	58.3	8.70
22-DMB	0.0	0.0
CPENTANE	5.4	0.81
23-DMB	9.1	1.36
2-MP	57.0	8.51
3-MP	22.0	3.28
NHEXANE	58.8	8.78
MCP	42.3	6.32
22-DMP	0.0	0.0
24-DMP	2.9	0.43
223-TMB	0.0	0.0
CHEXANE	10.8	1.61
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	33.4	4.99
23-DMP .	12.2	1.83
3-MHEX .	14.9	2.22
1C3-DMCP	12.9	1.93
1T3-DMCP	9.3	1.40
1T2-DMCP	13.1	1.95
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	87.9	13.13
1C2-DMCP	0.0	0.0
MCH	68.3	10.20

	TOTALS PPB	NORM PERCENT
ALL COMP	670.	
GASOLINE	670.	
NAPHTHENES	162.	24.22
C6-7	367.	54.80

SIG COMP RATIOS	
C1/C2	1.45
A /D2	9.85
C1/D2	7.56
CH/MCP	0.25
PENT/IPENT.	0.59

	PPB	NORM PERCENT
MCP	42.3	34.9
CH	10.8	8.9
MCH	68.3	56.3
TOTAL	121.4	100.0

PARAFFIN INDEX 1 1.368

PARAFFIN INDEX 2 33.441

72979J AUSTRALIA, VEILFIN-1, 1970-1985 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	37.3	
IBUTANE	48.9	4.97
NBUTANE	79.7	8.11
IPENTANE	200.5	20.39
NPENTANE	113.9	11.59
22-DMB	0.6	0.06
CPENTANE	8.4	0.86
23-DMB	12.9	1.31
2-MP	78.8	8.02
3-MP	29.2	2.97
NHEXANE	66.4	6.76
MCP	56.4	5.74
22-DMP	0.0	0.0
24-DMP	4.0	0.41
223-TMB	0.0	0.0
CHEXANE	16.7	1.70
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	20.2	2.06
23-DMP ,	15.7	1.60
3-MHEX ,	17.0	1.73
IC3-DMCP	15.5	1.58
1T3-DMCP	13.0	1.32
1T2-DMCP	15.1	1.54
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	84.3	8.57
IC2-DMCP	0.0	0.0
MCH	85.7	8.71

	TOTALS PPB	NORM PERCENT
ALL COMP	1020.	
GASOLINE	983.	
NAPHTHENES	211.	21.45
C6-7	410.	41.72

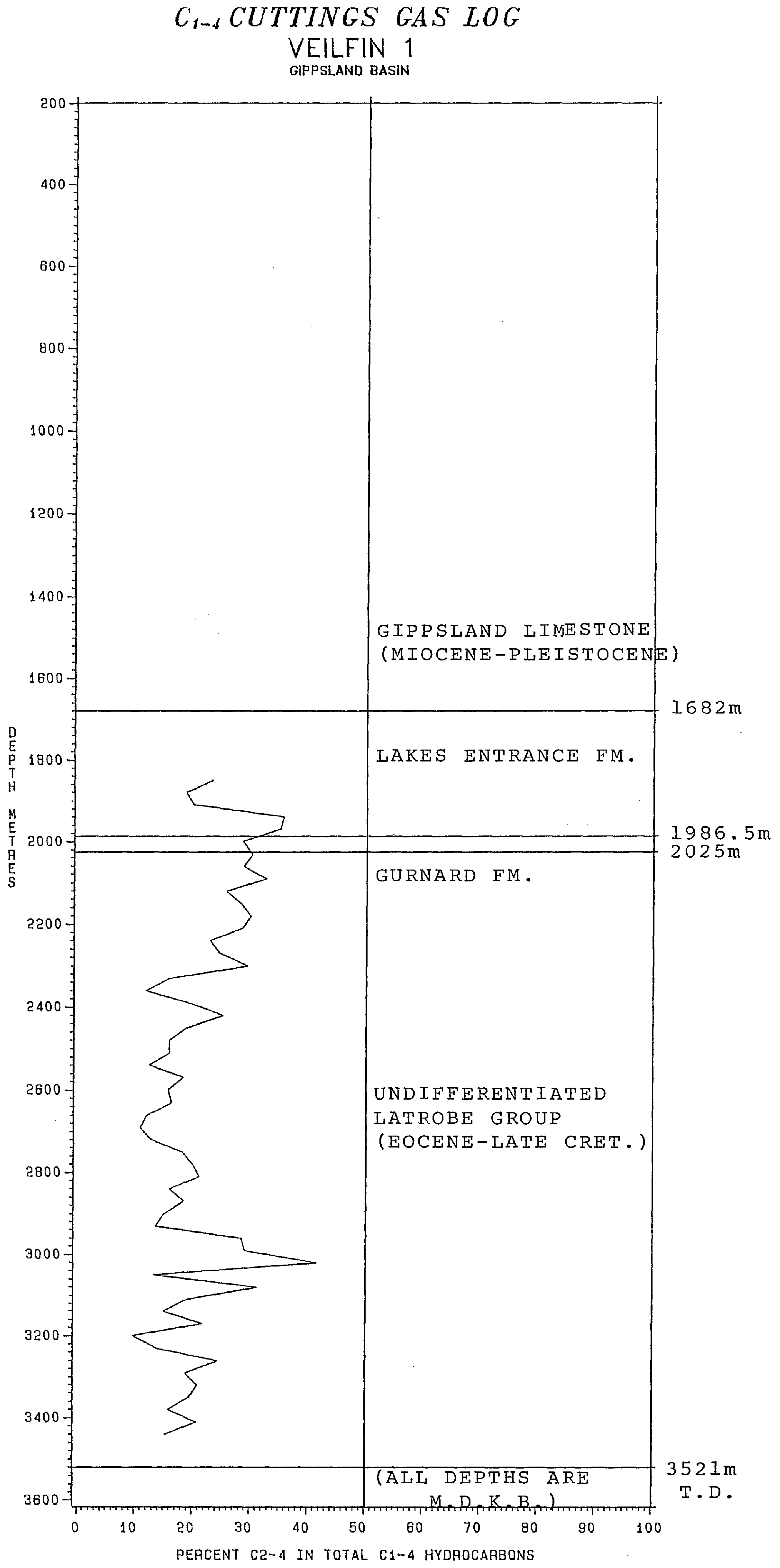
SIG COMP RATIOS	
C1/C2	1.23
A /D2	8.85
C1/D2	7.20
CH/MCP	0.30
PENT/IPENT.	0.57

	PPB	NORM PERCENT
MCP	56.4	35.5
CH	16.7	10.5
MCH	85.7	53.9
TOTAL	158.8	100.0

PARAFFIN INDEX 1 0.854

PARAFFIN INDEX 2 29.753

FIGURE 1(b)


C_{1-4} CUTTINGS GAS LOG
VEILFIN 1
GIPPSLAND BASIN
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
3600
DEPTH METRES
GIPPSLAND LIMESTONE
(MIOCENE-PLEISTOCENE)
1682m
LAKES ENTRANCE FM.
1986.5m
2025m
GURNARD FM.
UNDIFFERENTIATED
LATROBE GROUP
(EOCENE-LATE CRET.)
3521m
T.D.
(ALL DEPTHS ARE
M.D.K.B.)
0
10
20
30
40
50
60
70
80
90
100
PERCENT C2-4 IN TOTAL C1-4 HYDROCARBONS

C_{4-7} HYDROCARBON LOG

VEILFIN 1

GIPPSLAND BASIN

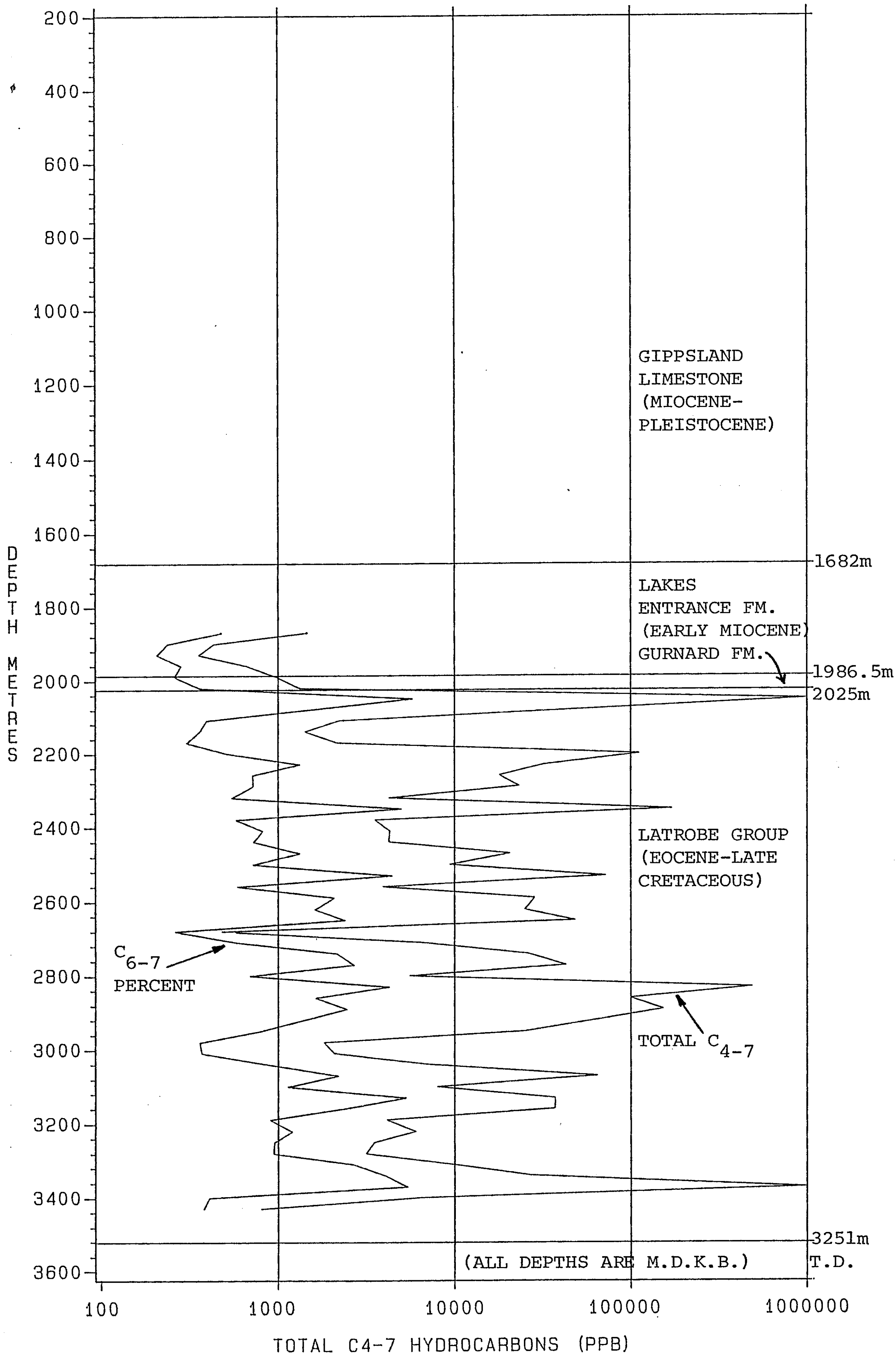


TABLE 6

KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - VEILFIN 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	FORMATION	ATOMIC RATIOS H/C	ATOMIC RATIOS O/C	ATOMIC RATIOS N/C	COMMENTS
72953 F	2008.00	SWC	OLIGOCENE-MIOCENE	LATROBE GROUP-GURNARD FM	.77	.31	.04	
72953 C	2014.10	SWC	OLIGOCENE-EOCENE	LATROBE GROUP-GURNARD FM	.62	.28	.02	
72952 W	2026.00	SWC	EOCENE	LATROBE GROUP	.91	.25	.01	
72952 P	2118.50	SWC	EOCENE	LATROBE GROUP	.92	.25	.01	
72952 N	2136.30	SWC	EOCENE	LATROBE GROUP	.85	.23	.01	
72952 L	2172.00	SWC	EOCENE	LATROBE GROUP	.84	.25	.01	
72952 K	2188.90	SWC	EOCENE	LATROBE GROUP	.83	.25	.01	
72952 J	2203.10	SWC	EOCENE	LATROBE GROUP	.93	.23	.01	
72952 I	2218.00	SWC	EOCENE	LATROBE GROUP	.84	.27	.01	
72952 H	2226.10	SWC	EOCENE	LATROBE GROUP	1.08	.18	.01	HIGH ASH
72952 F	2259.20	SWC	EOCENE	LATROBE GROUP	.90	.21	.01	
72952 B	2328.00	SWC	EOCENE	LATROBE GROUP	.94	.19	.01	HIGH ASH
72951 Z	2355.50	SWC	EOCENE	LATROBE GROUP	.83	.22	.01	
72951 Y	2369.20	SWC	EOCENE	LATROBE GROUP	.87	.21	.01	
72951 U	2412.70	SWC	PALEOCENE	LATROBE GROUP	.89	.17	.01	
72951 T	2430.10	SWC	PALEOCENE	LATROBE GROUP	.87	.17	.01	
72951 S	2437.00	SWC	PALEOCENE	LATROBE GROUP	1.04	.25	.01	
72951 Q	2467.30	SWC	PALEOCENE	LATROBE GROUP	.83	.21	.01	
72951 P	2480.20	SWC	PALEOCENE	LATROBE GROUP	.81	.33	.01	HIGH ASH
72951 N	2510.00	SWC	PALEOCENE	LATROBE GROUP	.88	.31	.01	
72951 L	2528.00	SWC	PALEOCENE	LATROBE GROUP	.86	.16	.01	
72951 H	2584.50	SWC	PALEOCENE	LATROBE GROUP	.72	.13	.02	
72951 C	2644.20	SWC	PALEOCENE	LATROBE GROUP	1.02	.78	.01	
72951 B	2678.00	SWC	PALEOCENE	LATROBE GROUP	.84	.22	.01	HIGH ASH
72950 W	2713.00	SWC	PALEOCENE	LATROBE GROUP	.83	.15	.01	HIGH ASH
72950 R	2747.00	SWC	PALEOCENE	LATROBE GROUP	.75	.18	.01	
72950 O	2765.00	SWC	PALEOCENE	LATROBE GROUP	.73	.16	.01	
72950 N	2780.60	SWC	PALEOCENE	LATROBE GROUP	.78	.13	.01	
72950 J	2805.20	SWC	PALEOCENE	LATROBE GROUP	.82	.15	.01	
72950 H	2821.10	SWC	PALEOCENE	LATROBE GROUP	1.01	.18	.01	
72950 D	2865.50	SWC	PALEOCENE	LATROBE GROUP	.79	.12	.01	
72950 A	2891.10	SWC	PALEOCENE	LATROBE GROUP	.81	.14	.01	
72949 X	2901.50	SWC	PALEOCENE	LATROBE GROUP	.73	.11	.01	
72949 V	2916.00	SWC	PALEOCENE	LATROBE GROUP	.74	.17	.01	
72949 S	2937.00	SWC	PALEOCENE	LATROBE GROUP	.78	.11	.01	
72949 Q	2947.00	SWC	PALEOCENE	LATROBE GROUP	.85	.11	.01	
72949 N	2984.80	SWC	PALEOCENE	LATROBE GROUP	.70	.13	.01	
72949 F	3045.50	SWC	PALEOCENE	LATROBE GROUP	.78	.09	.01	
72949 D	3059.00	SWC	PALEOCENE	LATROBE GROUP	.69	.12	.01	
72948 Y	3088.00	SWC	PALEOCENE	LATROBE GROUP	.74	.10	.01	
72948 C	3099.50	SWC	PALEOCENE	LATROBE GROUP	.82	.08	.01	
72948 U	3112.90	SWC	PALEOCENE	LATROBE GROUP	.76	.08	.01	
72948 T	3117.50	SWC	LATE CRETACEOUS	LATROBE GROUP	.72	.09	.01	
72948 P	3132.50	SWC	LATE CRETACEOUS	LATROBE GROUP	.68	.08	.01	
72948 O	3139.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.75	.12	.01	

TABLE 5 (CONT'D)

KEROGEN ELEMENTAL ANALYSIS REPORT

:ASIN - GIPPSLAND
:ELL - VEILFIN 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	N%	C%	H%	S%	O%	ASH%	COMMENTS
			--- ELEMENTAL % (ASH FREE) ---						
72948 J	3158.20	SWC	.99	84.62	5.87	.00	8.52	4.37	
72948 F	3178.00	SWC	1.53	82.79	5.73	.00	9.95	5.06	
72947 Z	3206.00	SWC	1.30	82.36	5.84	.00	10.49	2.61	
72947 Y	3210.00	SWC	1.30	82.76	5.28	.00	10.66	6.04	
72947 X	3212.80	SWC	1.34	83.94	4.75	.00	9.98	3.69	
72947 Q	3234.00	SWC	1.21	86.86	4.80	.00	7.13	5.51	
72947 P	3240.20	SWC	1.42	84.81	5.29	.00	8.48	6.46	
72947 O	3247.30	SWC	1.29	81.95	5.61	.00	11.15	7.80	
72947 N	3267.80	SWC	1.66	82.87	4.80	.00	10.67	6.49	
72947 L	3283.20	SWC	1.47	83.51	5.71	.00	9.31	2.93	
72954 M	3325.00	CTS	1.07	82.48	5.67	.00	10.78	6.67	
72947 J	3331.01	SWC	1.30	84.14	5.88	.00	8.68	7.96	
72954 N	3345.00	CTS	1.16	81.26	4.77	.00	12.81	5.37	
72954 O	3355.00	CTS	1.09	78.77	4.59	.00	15.55	3.68	
72954 P	3370.00	CTS	1.14	83.52	4.96	.00	10.38	6.93	
72947 F	3414.10	SWC	1.01	85.20	5.87	.00	7.92	9.33	
72947 E	3432.00	SWC	.58	43.87	3.13	.00	52.42	.56	
72947 D	3435.60	SWC	1.34	83.78	5.60	.00	9.28	3.67	
72947 B	3478.00	SWC	1.43	87.56	4.97	.00	6.04	2.25	
72947 A	3494.00	SWC	1.20	88.65	4.53	.00	5.63	1.26	

TABLE 6 (CONT'D)

KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - VEILFIN 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	FORMATION	ATOMIC RATIOS H/C	ATOMIC RATIOS O/C	ATOMIC RATIOS N/C	COMMENTS
72948 J	3158.20	SWC	LATE CRETACEOUS	LATROBE GROUP	.83	.08	.01	
72948 F	3178.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.83	.09	.02	
72947 Z	3206.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.85	.10	.01	
72947 Y	3210.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.77	.10	.01	
72947 X	3212.80	SWC	LATE CRETACEOUS	LATROBE GROUP	.68	.09	.01	
72947 Q	3234.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.66	.06	.01	
72947 P	3240.20	SWC	LATE CRETACEOUS	LATROBE GROUP	.75	.07	.01	
72947 O	3247.30	SWC	LATE CRETACEOUS	LATROBE GROUP	.82	.10	.01	
72947 N	3267.80	SWC	LATE CRETACEOUS	LATROBE GROUP	.70	.10	.02	
72947 L	3283.20	SWC	LATE CRETACEOUS	LATROBE GROUP	.82	.08	.02	
72954 M	3325.00	CTS	LATE CRETACEOUS	LATROBE GROUP	.82	.10	.01	
72947 J	3331.01	SWC	LATE CRETACEOUS	LATROBE GROUP	.84	.08	.01	
72954 N	3345.00	CTS	LATE CRETACEOUS	LATROBE GROUP	.70	.12	.01	
72954 O	3355.00	CTS	LATE CRETACEOUS	LATROBE GROUP	.70	.15	.01	
72954 P	3370.00	CTS	LATE CRETACEOUS	LATROBE GROUP	.71	.09	.01	
72947 F	3414.10	SWC	LATE CRETACEOUS	LATROBE GROUP	.83	.07	.01	
72947 E	3432.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.86	.90	.01	
72947 D	3435.60	SWC	LATE CRETACEOUS	LATROBE GROUP	.80	.08	.01	
72947 B	3478.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.68	.05	.01	
72947 A	3494.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.61	.05	.01	

TABLE 7

C15+ EXTRACT ANALYSES

BASIN - GIPPSLAND
WELL - VEILFIN 1

REPORT A - EXTRACT DATA (PPM)

SAMPLE NO.	DEPTH	TYPE	AN	AGE	TOTAL EXTRACT	HYDROCARBONS SATS.	HYDROCARBONS AROMS.	HYDROCARBONS TOTAL H/CARBS	NON-HYDROCARBONS ASPH.	NON-HYDROCARBONS ELUTED NSO	NON-HYDROCARBONS NON-ELT NSO	NON-HYDROCARBONS TOTAL NSO	NON-HYDROCARBONS SULPHUR	NON-HYDROCARBONS TOT NON/H
72979 F	1925.00	CTS	2	EARLY MIOCENE	293.	11.	46.	57.	174.	14.	3.	17.	45.	2
72979 V	2165.00	CTS	2	EOCENE	1587.	50.	333.	383.	824.	261.	73.	334.	46.	12
72980 L	2405.00	CTS	2	EOCENE	979.	67.	209.	276.	613.	57.	16.	73.	17.	7
72981 D	2675.00	CTS	2	PALEOCENE	3114.	109.	601.	710.	1809.	367.	182.	549.	46.	24
72981 Z	3005.00	CTS	2	PALEOCENE	1111.	101.	293.	394.	518.	139.	36.	175.	24.	7
72982 T	3305.00	CTS	2	LATE CRETACEOUS	2938.	603.	635.	1238.	1078.	313.	215.	528.	94.	17

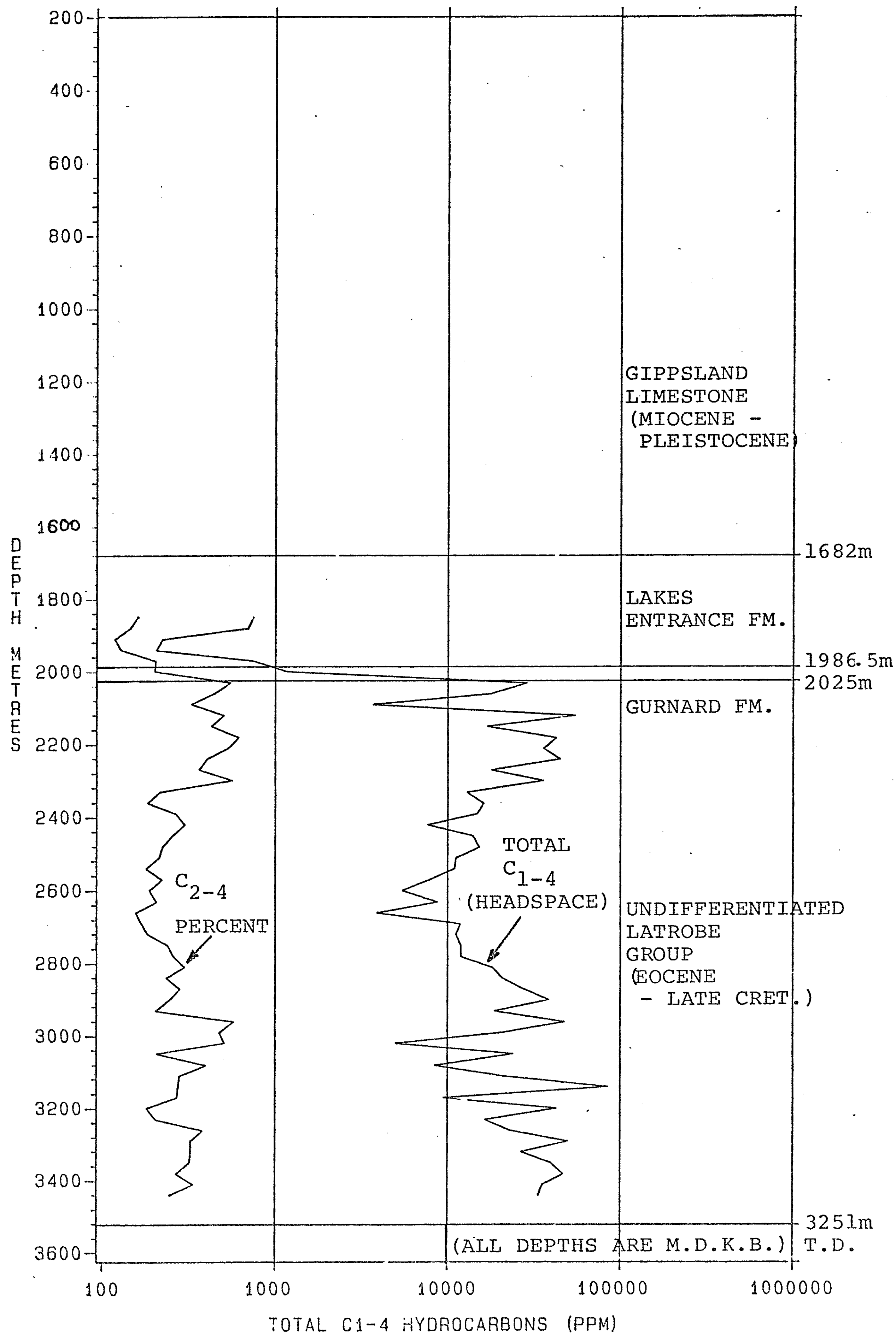
C15+ EXTRACT ANALYSES

BASIN - GIPPSLAND
WELL - VEILFIN 1

REPORT B - EXTRACTS % OF TOTAL

SAMPLE NO.	DEPTH	FORMATION	HYDROCARBONS SAT. %	HYDROCARBONS AROM.%	NON-HYDROCARBONS NSO. %	NON-HYDROCARBONS ASPH.%	NON-HYDROCARBONS SULPH%	SAT/AR	HC/NHC	COMMENTS
72979 F	1925.00	LAKES ENTRANCE	3.8	15.7	5.8	59.4	15.4	.2	.2	IMMATURE,MARGINAL MARI
72979 V	2165.00	LATROBE GROUP	3.2	21.0	21.0	51.9	2.9	.2	.3	IMMATURE,TERRESTRIAL
72980 L	2405.00	LATROBE GROUP	6.8	21.3	7.5	62.6	1.7	.3	.4	IMMATURE,TERRESTRIAL
72981 D	2675.00	LATROBE GROUP	3.5	19.3	17.6	58.1	1.5	.2	.3	IMMATURE,TERRESTRIAL
72981 Z	3005.00	LATROBE GROUP	9.1	26.4	15.8	46.6	2.2	.3	.5	EARLY MATURE,TERRESTRI
72982 T	3305.00	LATROBE GROUP	20.5	21.6	18.0	36.7	3.2	.9	.7	MATURE,TERRESTRIAL

C_{1-4} CUTTINGS GAS LOG
VEILFIN 1
GIPPSLAND BASIN



72979L AUSTRALIA. VEILFIN-1. 2000-2015 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	15.8	1.17
NBUTANE	80.4	5.95
IPENTANE	223.8	16.55
NPENTANE	172.4	12.75
22-DMB	3.8	0.28
CPENTANE	18.2	1.35
23-DMB	15.5	1.15
2-MP	99.8	7.38
3-MP	47.3	3.50
NHEXANE	100.6	7.44
MCP	104.0	7.69
22-DMP	0.0	0.0
24-DMP	5.2	0.38
223-TMB	0.0	0.0
CHEXANE	49.9	3.69
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	25.2	1.87
23-DMP .	20.8	1.54
3-MHEX .	24.9	1.84
1C3-DMCP	26.6	1.97

	TOTAL PPB	NORM PERCENT
1T3-DMCP	28.5	2.11
1T2-DMCP	28.9	2.14
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	114.8	8.49
1C2-DMCP	12.8	0.94
MCH	133.1	9.84

	TOTALS PPB	NORM PERCENT
ALL COMP	1352.	
GASOLINE	1352.	
NAPHTHENES	402.	29.73
C6-7	675.	49.94

SIG COMP RATIOS

C1/C2	1.04
A /D2	8.64
C1/D2	8.35
CH/MCP	0.48
PENT/IPENT.	0.77

	PPB	NORM PERCENT
MCP	104.0	36.2
CH	49.9	17.4
MCH	133.1	46.4
TOTAL	287.0	100.0

PARAFFIN INDEX 1 0.597

PARAFFIN INDEX 2 25.349

72979N AUSTRALIA, VEILFIN-1, 2030-2045 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	15838.1	
IBUTANE	90861.6	7.03
NBUTANE	198360.2	15.35
IPENTANE	147813.9	11.44
NPENTANE	141217.9	10.93
22-DMB	5191.1	0.40
CPENTANE	22828.3	1.77
23-DMB	15775.2	1.22
2-MP	75899.9	5.87
3-MP	39285.9	3.04
NHEXANE	79329.7	6.14
MCP	99812.9	7.72
22-DMP	0.0	0.0
24-DMP	1680.2	0.13
223-TMB	631.1	0.05
CHEXANE	101207.3	7.83
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	11243.7	0.87
23-DMP ,	13079.0	1.01
3-MHEX ,	12275.5	0.95
1C3-DMCP	15396.7	1.19
1T3-DMCP	13337.4	1.03
1T2-DMCP	23576.7	1.82
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	15560.8	1.20
1C2-DMCP	8320.8	0.64
MCH	159805.0	12.36

	TOTALS PPB	NORM PER CENT
ALL COMP	1308325.	
GASOLINE	1292487.	
NAPHTHENES	444285.	34.37
C6-7	555256.	42.96

SIG COMP RATIOS

C1/C2	1.70
A /D2	7.73
C1/D2	22.18
CH/MCP	1.01
PENT/IPENT.	0.96

	PPB	NORM PERCENT
MCP	99812.9	27.7
CH	101207.3	28.0
MCH	159805.0	44.3
TOTAL	360825.1	100.0

PARAFFIN INDEX 1 0.450

PARAFFIN INDEX 2 4.258

72979R AUSTRALIA, VEILFIN-1, 2090-2105 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	117.9	5.27
NBUTANE	186.8	8.34
IPENTANE	471.7	21.07
NPENTANE	183.3	8.19
22-DMB	8.1	0.36
CPENTANE	25.4	1.13
23-DMB	30.2	1.35
2-MP	158.4	7.07
3-MP	68.5	3.06
NHEXANE	107.8	4.82
MCP	191.2	8.54
22-DMP	0.0	0.0
24-DMP	8.7	0.39
223-TMB	2.5	0.11
CHEXANE	58.5	2.61
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	36.9	1.65
23-DMP ,	27.0	1.21
3-MHEX ,	36.4	1.63
1C3-DMCP	52.9	2.36
1T3-DMCP	56.1	2.51
1T2-DMCP	45.5	2.03
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	100.1	4.47
1C2-DMCP	21.3	0.95
MCH	243.7	10.88

	TOTALS PPB	NORM PERCENT
ALL COMP	2239.	
GASOLINE	2239.	
NAPHTHENES	695.	31.02
C6-7	989.	44.16

SIG COMP RATIOS

C1/C2	0.92
A /D2	5.71
C1/D2	9.31
CH/MCP	0.31
PENT/IPENT.	0.39

	PPB	NORM PERCENT
MCP	191.2	38.8
CH	58.5	11.9
MCH	243.7	49.4
TOTAL	493.4	100.0

PARAFFIN INDEX 1 0.474

PARAFFIN INDEX 2 15.234

72979T AUSTRALIA, VEILFIN-1, 2120-2135 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	64.9	4.55
NBUTANE	149.8	10.51
IPENTANE	228.8	16.05
NPENTANE	123.3	8.66
22-DMB	4.6	0.33
CPENTANE	16.5	1.16
23-DMB	15.8	1.11
2-MP	94.9	6.66
3-MP	41.3	2.90
NHEXANE	75.5	5.30
MCP	121.9	8.55
22-DMP	0.0	0.0
24-DMP	4.3	0.30
223-TMB	0.0	0.0
CHEXANE	53.4	3.75
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	25.5	1.79
23-DMP ,	21.3	1.49
3-MHEX ,	20.8	1.46
1C3-DMCP	32.4	2.27

	TOTAL PPB	NORM PERCENT
1T3-DMCP	40.6	2.85
1T2-DMCP	29.5	2.07
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	95.8	6.72
1C2-DMCP	11.1	0.78
MCH	153.1	10.75

	TOTALS PPB	NORM PERCENT
ALL COMP	1425.	
GASOLINE	1425.	
NAPHTHENES	458.	32.17
C6-7	685.	48.08

SIG COMP RATIOS

C1/C2	0.99
A /D2	8.23
C1/D2	11.14
CH/MCP	0.44
PENT/IPENT.	0.54

	PPB	NORM PERCENT
MCP	121.9	37.1
CH	53.4	16.3
MCH	153.1	46.6
TOTAL	328.4	100.0

PARAFFIN INDEX 1 0.452

PARAFFIN INDEX 2 20.289

72979V AUSTRALIA. VEILFIN-1. 2150-2165 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	245.7	
IBUTANE	196.2	8.96
NBUTANE	381.1	17.40
IPENTANE	317.5	14.50
NPENTANE	245.6	11.22
22-DMB	6.4	0.29
CPENTANE	78.1	3.56
23-DMB	12.5	0.57
2-MP	98.2	4.48
3-MP	59.4	2.71
NHEXANE	100.6	4.60
MCP	183.3	8.37
22-DMP	0.0	0.0
24-DMP	5.2	0.24
223-TMB	0.0	0.0
CHEXANE	126.7	5.79
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	18.1	0.83
23-DMP .	22.6	1.03
3-MHEX .	21.1	0.96
1C3-DMCP	25.1	1.15
1T3-DMCP	20.6	0.94
1T2-DMCP	27.4	1.25
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	79.0	3.61
1C2-DMCP	0.0	0.0
MCH	165.1	7.54

	TOTALS PPB	NORM PERCENT
ALL COMP	2435.	
GASOLINE	2190.	
NAPHTHENES	626.	28.60
C6-7	795.	36.30

SIG COMP RATIOS	
C1/C2	1.21
A /D2	8.50
C1/D2	14.67
CH/MCP	0.69
PENT/IPENT.	0.77

	PPB	NORM PERCENT
MCP	183.3	38.6
CH	126.7	26.7
MCH	165.1	34.8
TOTAL	475.1	100.0

PARAFFIN INDEX 1 0.537

PARAFFIN INDEX 2 15.616

72979X AUSTRALIA, VEILFIN-1, 2180-2195 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	21703.4	
IBUTANE	19725.6	17.31
NBUTANE	30294.9	26.59
IPENTANE	16462.2	14.45
NPENTANE	10500.5	9.22
22-DMB	282.0	0.25
CPENTANE	4721.3	4.14
23-DMB	312.7	0.27
2-MP	2841.3	2.49
3-MP	1940.5	1.70
NHEXANE	2736.1	2.40
MCP	7404.9	6.50
22-DMP	0.0	0.0
24-DMP	87.3	0.08
223-TMB	21.3	0.02
CHEXANE	6382.6	5.60
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	440.5	0.39
23-DMP ,	753.1	0.66
3-MHEX ,	628.2	0.55
1C3-DMCP	925.3	0.81
1T3-DMCP	769.8	0.68
1T2-DMCP	849.5	0.75
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	2048.7	1.80
1C2-DMCP	96.0	0.08
MCH	3699.4	3.25

	TOTALS PPB	NORM PERCENT
ALL COMP	135627.	
GASOLINE	113923.	
NAPHTHENES	24849.	21.81
C6-7	26843.	23.56

SIG COMP RATIOS	
C1/C2	1.05
A /D2	7.62
C1/D2	16.75
CH/MCP	0.86
PENT/IPENT.	0.64

	PPB	NORM PERCENT
MCP	7404.9	42.3
CH	6382.6	36.5
MCH	3699.4	21.2
TOTAL	17486.9	100.0

PARAFFIN INDEX 1 0.420

PARAFFIN INDEX 2 12.419

72979Z AUSTRALIA. VEILFIN-1. 2210-2225 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	250.0	
IBUTANE	790.6	2.40
NBUTANE	4031.1	12.25
IPENTANE	4924.6	14.97
NPENTANE	3841.1	11.67
22-DMB	124.9	0.38
CPENTANE	1417.9	4.31
23-DMB	208.4	0.63
2-MP	1742.0	5.29
3-MP	1088.0	3.31
NHEXANE	1935.4	5.88
MCP	2822.0	8.58
22-DMP	0.0	0.0
24-DMP	81.5	0.25
223-TMB	20.1	0.06
CHEXANE	2455.2	7.46
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	395.0	1.20
23-DMP .	453.6	1.38
3-MHEX .	464.0	1.41
1C3-DMCP	476.9	1.45
1T3-DMCP	418.0	1.27
1T2-DMCP	613.8	1.87
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	906.8	2.76
1C2-DMCP	70.6	0.21
MCH	3620.3	11.00

	TOTALS PPB	NORM PERCENT
ALL COMP	33152.	
GASOLINE	32902.	
NAPHTHENES	11895.	36.15
C6-7	14733.	44.78

SIG COMP RATIOS

C1/C2	1.47
A /D2	6.13
C1/D2	13.95
CH/MCP	0.87
PENT/IPENT.	0.78

	PPB	NORM PERCENT
MCP	2822.0	31.7
CH	2455.2	27.6
MCH	3620.3	40.7
TOTAL	8897.5	100.0

PARAFFIN INDEX 1 0.569

PARAFFIN INDEX 2 9.249

72980B AUSTRALIA, VEILFIN-1, 2240-2255 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	184.7	
IBUTANE	880.9	4.85
NBUTANE	3251.1	17.89
IPENTANE	2799.9	15.41
NPENTANE	2010.9	11.07
22-DMB	44.8	0.25
CPENTANE	744.4	4.10
23-DMB	90.0	0.50
2-MP	880.5	4.85
3-MP	567.0	3.12
NHEXANE	710.4	3.91
MCP	1727.3	9.51
22-DMP	0.0	0.0
24-DMP	33.4	0.18
223-TMB	4.0	0.02
CHEXANE	1035.9	5.70
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	177.3	0.98
23-DMP ,	198.3	1.09
3-MHEX ,	274.4	1.51
1C3-DMCP	278.0	1.53

	TOTAL PPB	NORM PERCENT
1T3-DMCP	261.5	1.44
1T2-DMCP	328.3	1.81
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	498.6	2.74
1C2-DMCP	38.5	0.21
MCH	1337.3	7.36

	TOTALS PPB	NORM PERCENT
ALL COMP	18357.	
GASOLINE	18173.	
NAPHTHENES	5751.	31.65
C6-7	6903.	37.99

SIG COMP RATIOS

C1/C2	0.97
A /D2	4.41
C1/D2	9.29
CH/MCP	0.60
PENT/IPENT.	0.72

	PPB	NORM PERCENT
MCP	1727.3	42.1
CH	1035.9	25.3
MCH	1337.3	32.6
TOTAL	4100.5	100.0

PARAFFIN INDEX 1 0.521

PARAFFIN INDEX 2 11.359

72980D AUSTRALIA, VEILFIN-1, 2270-2285 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	1679.3	
IBUTANE	1684.6	7.11
NBUTANE	2946.0	12.43
IPENTANE	3942.9	16.63
NPENTANE	2854.0	12.04
22-DMB	96.6	0.41
CPENTANE	448.8	1.89
23-DMB	376.8	1.59
2-MP	1770.7	7.47
3-MP	968.7	4.09
NHEXANE	1013.2	4.27
MCP	2650.1	11.18
22-DMP	0.0	0.0
24-DMP	42.8	0.18
223-TMB	9.5	0.04
CHEXANE	1788.7	7.55
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	143.9	0.61
23-DMP .	271.8	1.15
3-MHEX .	257.3	1.09
1C3-DMCP	309.5	1.31

	TOTAL PPB	NORM PERCENT
1T3-DMCP	295.5	1.25
1T2-DMCP	431.8	1.82
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	267.1	1.13
1C2-DMCP	32.7	0.14
MCH	1102.3	4.65

	TOTALS PPB	NORM PERCENT
ALL COMP	25384.	
GASOLINE	23705.	
NAPHTHENES	7059.	29.78
C6-7	8616.	36.35

SIG COMP RATIOS

C1/C2	0.82
A /D2	4.98
C1/D2	11.80
CH/MCP	0.67
PENT/IPENT.	0.72

	PPB	NORM PERCENT
MCP	2650.1	47.8
CH	1788.7	32.3
MCH	1102.3	19.9
TOTAL	5541.1	100.0

PARAFFIN INDEX 1 0.387

PARAFFIN INDEX 2 5.486

72980F AUSTRALIA. VEILFIN-1. 2300-2315 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	272.0	
IBUTANE	271.8	6.35
NBUTANE	498.7	11.65
IPENTANE	623.4	14.56
NPENTANE	398.6	9.31
22-DMB	16.3	0.38
CPENTANE	72.4	1.69
23-DMB	54.8	1.28
2-MP	262.4	6.13
3-MP	140.2	3.28
NHEXANE	164.8	3.85
MCP	431.1	10.07
22-DMP	0.0	0.0
24-DMP	10.5	0.24
223-TMB	0.0	0.0
CHEXANE	269.0	6.28
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	55.4	1.29
23-DMP .	53.6	1.25
3-MHEX .	50.4	1.18
1C3-DMCP	79.3	1.85

	TOTAL PPB	NORM PERCENT
1T3-DMCP	95.8	2.24
1T2-DMCP	86.6	2.02
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	128.6	3.00
1C2-DMCP	17.9	0.42
MCH	499.9	11.68

	TOTALS PPB	NORM PERCENT
ALL COMP	4553.	
GASOLINE	4281.	
NAPHTHENES	1552.	36.25
C6-7	1943.	45.38

SIG COMP RATIOS	
C1/C2	1.16
A /D2	5.82
C1/D2	16.36
CH/MCP	0.62
PENT/IPENT.	0.64

	PPB	NORM PERCENT
MCP	431.1	35.9
CH	269.0	22.4
MCH	499.9	41.7
TOTAL	1200.0	100.0

PARAFFIN INDEX 1 0.404

PARAFFIN INDEX 2 9.753

72980H AUSTRALIA, VEILFIN-1, 2330-2345 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	4711.1	
IBUTANE	12216.5	6.98
NBUTANE	9168.0	5.24
IPENTANE	23485.8	13.42
NPENTANE	10514.7	6.01
22-DMB	73.0	0.04
CPENTANE	2315.3	1.32
23-DMB	2123.1	1.21
2-MP	16660.7	9.52
3-MP	6542.7	3.74
NHEXANE	10600.2	6.06
MCP	22434.0	12.82
22-DMP	0.0	0.0
24-DMP	433.2	0.25
223-TMB	15.8	0.01
CHEXANE	4256.6	2.43
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	4033.8	2.31
23-DMP ,	2825.7	1.62
3-MHEX ,	3790.3	2.17
1C3-DMCP	4476.4	2.56
1T3-DMCP	4656.1	2.66
1T2-DMCP	4289.1	2.45
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	11664.2	6.67
1C2-DMCP	1381.1	0.79
MCH	17008.2	9.72

	TOTALS PPB	NORM PERCENT
ALL COMP	179675.	
GASOLINE	174964.	
NAPHTHENES	60817.	34.76
C6-7	91865.	52.50

SIG COMP RATIOS	
C1/C2	0.68
A /D2	5.87
C1/D2	6.67
CH/MCP	0.19
PENT/IPENT,	0.45

	PPB	NORM PERCENT
MCP	22434.0	51.3
CH	4256.6	9.7
MCH	17008.2	38.9
TOTAL	43698.8	100.0

PARAFFIN INDEX 1 0.583

PARAFFIN INDEX 2 20.463

72980J AUSTRALIA, VEILFIN-1, 2360-2375 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	205.6	5.78
NBUTANE	401.7	11.24
IPENTANE	415.6	11.63
NPENTANE	334.2	9.35
22-DMB	0.0	0.0
CPENTANE	63.0	1.76
23-DMB	34.4	0.96
2-MP	233.3	6.53
3-MP	126.8	3.55
NHEXANE	137.0	3.83
MCP	569.8	15.95
22-DMP	0.0	0.0
24-DMP	5.2	0.15
223-TMB	0.0	0.0
CHEXANE	85.7	2.40
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	43.0	1.20
23-DMP ,	41.7	1.17
3-MHEX ,	57.2	1.60
1C3-DMCP	92.9	2.60
1T3-DMCP	112.3	3.14
1T2-DMCP	114.4	3.20
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	141.0	3.95
1C2-DMCP	18.8	0.53
MCH	338.7	9.48

	TOTALS PPB	NORM PERCENT
ALL COMP	3573.	
GASOLINE	3573.	
NAPHTHENES	1396.	39.05
C6-7	1758.	49.19

SIG COMP RATIOS

C1/C2	0.51
A /D2	4.86
C1/D2	8.18
CH/MCP	0.15
PENT/IPENT.	0.80

	PPB	NORM PERCENT
MCP	569.8	57.3
CH	85.7	8.6
MCH	338.7	34.1
TOTAL	994.2	100.0

PARAFFIN INDEX 1 0.314

PARAFFIN INDEX 2 13.730

72980L AUSTRALIA. VEILFIN-1. 2390-2405 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	311.2	7.14
NBUTANE	252.2	5.79
IPENTANE	559.4	12.84
NPENTANE	232.3	5.33
22-DMB	4.1	0.09
CPENTANE	65.6	1.51
23-DMB	48.0	1.10
2-MP	286.1	6.57
3-MP	161.3	3.70
NHEXANE	135.1	3.10
MCP	753.2	17.29
22-DMP	0.0	0.0
24-DMP	10.9	0.25
223-TMB	0.0	0.0
CHEXANE	103.8	2.38
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	70.0	1.61
23-DMP .	49.2	1.13
3-MHEX .	101.6	2.33
1C3-DMCP	147.6	3.39
1T3-DMCP	142.8	3.28
1T2-DMCP	244.0	5.60
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	141.3	3.24
1C2-DMCP	30.2	0.69
MCH	506.7	11.63

	TOTALS PPB	NORM PERCENT
ALL COMP	4357.	
GASOLINE	4357.	
NAPHTHENES	1994.	45.76
C6-7	2436.	55.92

SIG COMP RATIOS	
C1/C2	0.52
A /D2	2.72
C1/D2	6.70
CH/MCP	0.14
PENT/IPENT.	0.42

	PPB	NORM PERCENT
MCP	753.2	55.2
CH	103.8	7.6
MCH	505.7	37.2
TOTAL	1363.7	100.0

PARAFFIN INDEX 1 0.321

PARAFFIN INDEX 2 9.375

7298ON AUSTRALIA. VEILFIN-1. 2420-2435 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	355.4	8.28
NBUTANE	153.7	3.58
IPENTANE	657.4	15.32
NPENTANE	238.3	5.55
22-DMB	3.3	0.08
CPENTANE	44.8	1.05
23-DMB	64.2	1.50
2-MP	366.2	8.53
3-MP	145.6	3.39
NHEXANE	181.6	4.23
MCP	584.4	13.62
22-DMP	0.0	0.0
24-DMP	11.6	0.27
223-TMB	0.0	0.0
CHEXANE	63.2	1.47
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	92.3	2.15
23-DMP .	64.9	1.51
3-MHEX .	67.3	1.57
1C3-DMCP	124.2	2.89
1T3-DMCP	158.1	3.68
1T2-DMCP	146.9	3.42
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	205.7	4.79
1C2-DMCP	28.2	0.66
MCH	533.4	12.43

	TOTALS PPB	NORM PERCENT
ALL COMP	4291.	
GASOLINE	4291.	
NAPHTHENES	1683.	39.23
C6-7	2262.	52.71

SIG COMP RATIOS	
C1/C2	0.66
A /D2	5.75
C1/D2	10.23
CH/MCP	0.11
PENT/IPENT.	0.36

	PPB	NORM PERCENT
MCP	584.4	49.5
CH	63.2	5.3
MCH	533.4	45.2
TOTAL	1181.0	100.0

PARAFFIN INDEX 1 0.372

PARAFFIN INDEX 2 14.129

72980P AUSTRALIA. VEILFIN-1. 2450-2465 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	513.8	
IBUTANE	2642.1	12.62
NBUTANE	1324.8	6.33
IPENTANE	2930.4	13.99
NPENTANE	1102.4	5.26
22-DMB	17.3	0.08
CPENTANE	253.7	1.21
23-DMB	395.8	1.89
2-MP	1469.1	7.02
3-MP	610.4	2.92
NHEXANE	692.7	3.31
MCP	2831.5	13.52
22-DMP	0.0	0.0
24-DMP	23.4	0.11
223-TMB	2.1	0.01
CHEXANE	450.3	2.15
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	297.2	1.42
23-DMP .	249.4	1.19
3-MHEX .	278.8	1.33
1C3-DMCP	592.6	2.83

	TOTAL PPB	NORM PERCENT
1T3-DMCP	643.3	3.07
1T2-DMCP	664.4	3.17
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	777.1	3.71
1C2-DMCP	213.7	1.02
MCH	2476.7	11.83

	TOTALS PPB	NORM PERCENT
ALL COMP	21453.	
GASOLINE	20939.	
NAPHTHENES	8126.	38.81
C6-7	10193.	48.68

SIG COMP RATIOS	
C1/C2	0.65
A /D2	5.27
C1/D2	11.57
CH/MCP	0.16
PENT/IPENT.	0.38

	PPB	NORM PERCENT
MCP	2831.5	49.2
CH	450.3	7.8
MCH	2476.7	43.0
TOTAL	5758.5	100.0

PARAFFIN INDEX 1 0.303

PARAFFIN INDEX 2 12.086

72980R AUSTRALIA. VEILFIN-1. 2480-2495 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	570.6	
IBUTANE	1381.4	14.50
NBUTANE	689.5	7.24
IPENTANE	1511.7	15.87
NPENTANE	618.0	6.49
22-DMB	5.0	0.05
CPENTANE	121.8	1.28
23-DMB	113.2	1.19
2-MP	682.9	7.17
3-MP	283.4	2.98
NHEXANE	326.9	3.43
MCP	1208.1	12.68
22-DMP	0.0	0.0
24-DMP	12.8	0.13
223-TMB	0.0	0.0
CHEXANE	161.7	1.70
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	124.4	1.31
23-DMP .	101.2	1.06
3-MHEX .	165.8	1.74
1C3-DMCP	227.0	2.38
1T3-DMCP	213.0	2.24
1T2-DMCP	352.3	3.70
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	280.5	2.94
1C2-DMCP	40.4	0.42
MCH	904.3	9.49

	TOTALS PPB	NORM PERCENT
ALL COMP	10096.	
GASOLINE	9525.	
NAPHTHENES	3229.	33.89
C6-7	4118.	43.24

SIG COMP RATIOS	
C1/C2	0.58
A /D2	3.66
C1/D2	7.18
CH/MCP	0.13
PENT/IPENT.	0.41

	PPB	NORM PERCENT
MCP	1208.1	53.1
CH	161.7	7.1
MCH	904.3	39.8
TOTAL	2274.1	100.0

PARAFFIN INDEX 1 0.366

PARAFFIN INDEX 2 11.086

72980T AUSTRALIA. VEILFIN-1. 2510-2525 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	2348.3	
IBUTANE	4464.8	6.08
NBUTANE	4100.3	5.59
IPENTANE	8824.1	12.02
NPENTANE	4276.6	5.83
22-DMB	13.4	0.02
CPENTANE	2368.2	3.23
23-DMB	266.9	0.36
2-MP	4080.7	5.56
3-MP	2701.1	3.68
NHEXANE	2653.2	3.61
MCP	10925.5	14.89
22-DMP	0.0	0.0
24-DMP	67.6	0.09
223-TMB	0.0	0.0
CHEXANE	1613.0	2.20
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	7975.1	10.87
23-DMP .	804.9	1.10
3-MHEX .	1310.3	1.79
1C3-DMCP	2088.8	2.85
1T3-DMCP	1727.6	2.35
1T2-DMCP	3183.9	4.34
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	1903.6	2.59
1C2-DMCP	768.7	1.05
MCH	7279.0	9.92

	TOTALS PPB	NORM PERCENT
ALL COMP	75745.	
GASOLINE	73397.	
NAPHTHENES	29955.	40.81
C6-7	42301.	57.63

SIG COMP RATIOS	
C1/C2	0.90
A /D2	3.48
C1/D2	12.87
CH/MCP	0.15
PENT/IPENT.	0.48

	PPB	NORM PERCENT
MCP	10925.5	55.1
CH	1613.0	8.1
MCH	7279.0	36.7
TOTAL	19817.5	100.0

PARAFFIN INDEX 1 1.326

PARAFFIN INDEX 2 6.826

7298GV AUSTRALIA. VEILFIN-1. 2540-2555 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	112.9	
IBUTANE	312.4	7.91
NBUTANE	215.2	5.45
IPENTANE	614.9	15.56
NPENTANE	310.9	7.87
22-DMB	0.2	0.01
CPENTANE	40.7	1.03
23-DMB	46.8	1.18
2-MP	349.8	8.85
3-MP	149.0	3.77
NHEXANE	176.5	4.47
MCP	526.4	13.32
22-DMP	0.0	0.0
24-DMP	5.4	0.14
223-TMB	0.0	0.0
CHEXANE	57.3	1.45
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	94.5	2.39
23-DMP .	41.7	1.06
3-MHEX .	68.0	1.72
1C3-DMCP	99.1	2.51
1T3-DMCP	122.3	3.09
1T2-DMCP	125.2	3.17
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	148.1	3.75
1C2-DMCP	17.0	0.43
MCH	430.0	10.88

	TOTALS PPB	NORM PERCENT
ALL COMP	4065.	
GASOLINE	3952.	
NAPHTHENES	1418.	35.89
C6-7	1912.	48.37

SIG COMP RATIOS	
C1/C2	0.65
A /D2	4.77
C1/D2	8.55
CH/MCP	0.11
PENT/IPENT.	0.51

	PPB	NORM PERCENT
MCP	526.4	51.9
CH	57.3	5.7
MCH	430.0	42.4
TOTAL	1013.7	100.0

PARAFFIN INDEX 1 0.469

PARAFFIN INDEX 2 12.487

72980X AUSTRALIA. VEILFIN-1. 2570-2585 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	1149.0	3.96
NBUTANE	1558.5	5.37
IPENTANE	4712.4	16.23
NPENTANE	1565.7	5.39
22-DMB	11.4	0.04
CPENTANE	310.1	1.07
23-DMB	383.2	1.32
2-MP	2731.7	9.41
3-MP	1028.2	3.54
NHEXANE	1174.0	4.04
MCP	3930.0	13.54
22-DMP	0.0	0.0
24-DMP	52.1	0.18
223-TMB	3.1	0.01
CHEXANE	548.4	1.89
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	675.8	2.33
23-DMP .	367.5	1.27
3-MHEX .	670.0	2.31
1C3-DMCP	755.4	2.60
1T3-DMCP	724.0	2.49
1T2-DMCP	1263.5	4.35
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	1162.3	4.00
1C2-DMCP	157.1	0.54
MCH	4094.0	14.10

	TOTALS PPB	NORM PERCENT
ALL COMP	29027.	
GASOLINE	29027.	
NAPHTHENES	11782.	40.59
C6-7	15577.	53.66

SIG COMP RATIOS	
C1/C2	0.78
A /D2	3.49
C1/D2	7.94
CH/MCP	0.14
PENT/IPENT.	0.33

	PPB	NORM PERCENT
MCP	3930.0	45.8
CH	548.4	6.4
MCH	4094.0	47.8
TOTAL	8572.4	100.0

PARAFFIN INDEX 1 0.491

PARAFFIN INDEX 2 11.327

72980Z AUSTRALIA. VEILFIN-1. 2600-2615 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	171.7	
IBUTANE	1329.3	5.27
NBUTANE	1665.2	6.61
IPENTANE	4277.6	16.97
NPENTANE	1502.6	5.96
22-DMB	10.1	0.04
CPENTANE	283.3	1.12
23-DMB	296.9	1.18
2-MP	2247.4	8.92
3-MP	886.4	3.52
NHEXANE	980.1	3.89
MCP	3265.9	12.96
22-DMP	0.0	0.0
24-DMP	41.1	0.16
223-TMB	3.5	0.01
CHEXANE	507.4	2.01
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	626.6	2.49
23-DMP .	258.5	1.03
3-MHEX .	448.4	1.78
1C3-DMCP	656.3	2.60

	TOTAL PPB	NORM PERCENT
1T3-DMCP	743.0	2.95
1T2-DMCP	738.3	2.93
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	872.6	3.46
1C2-DMCP	128.4	0.51
MCH	3433.8	13.62

	TOTALS PPB	NORM PERCENT
ALL COMP	25374.	
GASOLINE	25202.	
NAPHTHENES	9756.	38.71
C6-7	12704.	50.41

SIG COMP RATIOS

C1/C2	0.83
A /D2	4.13
C1/D2	10.19
CH/MCP	0.16
PENT/IPENT.	0.35

	PPB	NORM PERCENT
MCP	3265.9	45.3
CH	507.4	7.0
MCH	3433.8	47.6
TOTAL	7207.1	100.0

PARAFFIN INDEX 1 0.503

PARAFFIN INDEX 2 10.532

72981B AUSTRALIA. VEILFIN-1. 2630-2645 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	446.5	
IBUTANE	3837.6	7.76
NBUTANE	2668.8	5.41
IPENTANE	7257.2	14.70
NPENTANE	2838.7	5.75
22-DMB	23.2	0.05
CPENTANE	609.2	1.23
23-DMB	637.3	1.29
2-MP	4311.5	8.73
3-MP	1746.2	3.54
NHEXANE	2168.8	4.39
MCP	6011.3	12.17
22-DMP	0.0	0.0
24-DMP	84.2	0.17
223-TMB	5.9	0.01
CHEXANE	1412.2	2.86
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	953.7	1.93
23-DMP .	825.4	1.67
3-MHEX .	937.2	1.90
1C3-DMCP	1166.1	2.36
1T3-DMCP	1021.4	2.07
1T2-DMCP	1786.5	3.62
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	2024.9	4.10
1C2-DMCP	455.2	0.92
MCH	6597.6	13.36

	TOTALS PPB	NORM PERCENT
ALL COMP	49822.	
GASOLINE	49375.	
NAPHTHENES	19060.	38.60
C6-7	25450.	51.54

SIG COMP RATIOS	
C1/C2	0.86
A /D2	4.47
C1/D2	9.56
CH/MCP	0.23
PENT/IPENT.	0.39

	PPB	NORM PERCENT
MCP	6011.3	42.9
CH	1412.2	10.1
MCH	6597.6	47.1
TOTAL	14021.1	100.0

PARAFFIN INDEX 1 0.476

PARAFFIN INDEX 2 12.107

72981D AUSTRALIA. VEILFIN-1, 2660-2675 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	12.8	2.65
NBUTANE	18.8	3.89
IPENTANE	57.9	12.02
NPENTANE	28.5	5.91
22-DMB	0.0	0.0
CPENTANE	4.2	0.87
23-DMB	6.4	1.32
2-MP	40.8	8.47
3-MP	18.4	3.82
NHEXANE	33.2	6.89
MCP	45.8	9.51
22-DMP	0.0	0.0
24-DMP	1.9	0.39
223-TMB	0.0	0.0
CHEXANE	9.7	2.02
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	14.4	2.98
23-DMP ,	9.2	1.91
3-MHEX ,	12.8	2.66
1C3-DMCP	14.1	2.93

	TOTAL PPB	NORM PERCENT
1T3-DMCP	9.7	2.02
1T2-DMCP	16.4	3.41
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	43.7	9.07
1C2-DMCP	4.9	1.02
MCH	78.3	16.24

	TOTALS PPB	NORM PERCENT
ALL COMP	482.	
GASOLINE	482.	
NAPHTHENES	183.	38.02
C6-7	294.	61.05

SIG COMP RATIOS	
C1/C2	1.12
A /D2	5.99
C1/D2	7.97
CH/MCP	0.21
PENT/IPENT.	0.49

	PPB	NORM PERCENT
MCP	45.8	34.2
CH	9.7	7.3
MCH	78.3	58.5
TOTAL	133.8	100.0

PARAFFIN INDEX 1 0.675

PARAFFIN INDEX 2 20.971

72981F AUSTRALIA, VEILFIN-1, 2690-2705 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	715.9	
IBUTANE	706.6	10.58
NBUTANE	841.0	12.60
IPENTANE	941.4	14.10
NPENTANE	502.6	7.53
22-DMB	5.8	0.09
CPENTANE	107.2	1.61
23-DMB	70.6	1.06
2-MP	473.7	7.10
3-MP	196.3	2.94
NHEXANE	280.1	4.20
MCP	726.1	10.88
22-DMP	0.0	0.0
24-DMP	13.5	0.20
223-TMB	0.0	0.0
CHEXANE	217.7	3.26
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	97.3	1.46
23-DMP ,	78.1	1.17
3-MHEX ,	168.2	2.52
1C3-DMCP	129.2	1.94
1T3-DMCP	123.3	1.85
1T2-DMCP	171.8	2.57
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	299.1	4.48
1C2-DMCP	20.8	0.31
MCH	505.8	7.58

	TOTALS PPB	NORM PERCENT
ALL COMP	7392.	
GASOLINE	6676.	
NAPHTHENES	2002.	29.98
C6-7	2831.	42.40

SIG COMP RATIOS

C1/C2	0.70
A /D2	3.44
C1/D2	4.88
CH/MCP	0.30
PENT/IPENT.	0.53

	PPB	NORM PERCENT
MCP	726.1	50.1
CH	217.7	15.0
MCH	505.8	34.9
TOTAL	1449.6	100.0

PARAFFIN INDEX 1 0.626

PARAFFIN INDEX 2 16.704

7298IH AUSTRALIA, VEILFIN-1, 2720-2735 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	736.1	
IBUTANE	1608.6	6.07
NBUTANE	1746.5	6.59
IPENTANE	2912.1	11.00
NPENTANE	2030.2	7.67
22-DMB	7.6	0.03
CPENTANE	421.3	1.59
23-DMB	233.9	0.88
2-MP	1929.5	7.29
3-MP	971.7	3.67
NHEXANE	1360.7	5.14
MCP	3300.2	12.46
22-DMP	0.0	0.0
24-DMP	39.9	0.15
223-TMB	2.4	0.01
CHEXANE	1249.2	4.72
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	658.3	2.49
23-DMP .	246.7	0.93
3-MHEX .	602.5	2.27
1C3-DMCP	645.9	2.44
1T3-DMCP	761.8	2.88
1T2-DMCP	853.1	3.22
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	1035.7	3.91
1C2-DMCP	140.9	0.53
MCH	3724.8	14.06

	TOTALS PPB	NORM PERCENT
ALL COMP	27219.	
GASOLINE	26483.	
NAPHTHENES	11097.	41.90
C6-7	14622.	55.21

SIG COMP RATIOS	
C1/C2	0.99
A /D2	3.98
C1/D2	9.35
CH/MCP	0.38
PENT/IPENT.	0.70

	PPB	NORM PERCENT
MCP	3300.2	39.9
CH	1249.2	15.1
MCH	3724.8	45.0
TOTAL	8274.2	100.0

PARAFFIN INDEX 1 0.558

PARAFFIN INDEX 2 10.592

7298IJ AUSTRALIA, VEILFIN-1, 2750-2765 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	240.7	
IBUTANE	2817.9	6.47
NBUTANE	3503.4	8.05
IPENTANE	4500.7	10.34
NPENTANE	3360.0	7.72
22-DMB	14.7	0.03
CPENTANE	774.7	1.78
23-DMB	359.2	0.82
2-MP	2993.9	6.88
3-MP	1494.9	3.43
NHEXANE	2107.1	4.84
MCP	5434.9	12.48
22-DMP	0.0	0.0
24-DMP	55.3	0.13
223-TMB	2.5	0.01
CHEXANE	2339.1	5.37
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	781.1	1.79
23-DMP .	524.7	1.20
3-MHEX .	848.4	1.95
1C3-DMCP	977.2	2.24
1T3-DMCP	883.2	2.03
1T2-DMCP	1660.1	3.81
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	1619.9	3.72
1C2-DMCP	450.3	1.03
MCH	6041.5	13.87

	TOTALS PPB	NORM PERCENT
ALL COMP	43785.	
GASOLINE	43545.	
NAPHTHENES	18561.	42.63
C6-7	23725.	54.48

SIG COMP RATIOS	
C1/C2	0.97
A /D2	4.39
C1/D2	10.80
CH/MCP	0.43
PENT/IPENT.	0.75

	PPB	NORM PERCENT
MCP	5434.9	39.3
CH	2339.1	16.9
MCH	6041.5	43.7
TOTAL	13815.5	100.0

PARAFFIN INDEX 1 0.463

PARAFFIN INDEX 2 10.334

7298IL AUSTRALIA, VEILFIN-1, 2780-2795 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	119.3	2.14
ETHANE	0.0		1T2-DMCP	179.4	3.21
PROPANE	223.6		3-EPENT	0.0	0.0
IBUTANE	459.0	8.22	224-TMP	0.0	0.0
NBUTANE	396.6	7.10	NHEPTANE	228.7	4.10
IPENTANE	787.3	14.10	1C2-DMCP	23.3	0.42
NPENTANE	463.1	8.29	MCH	686.7	12.30
22-DMB	1.9	0.03			
CPENTANE	55.4	0.99			
23-DMB	59.7	1.07			
2-MP	470.4	8.42			
3-MP	192.9	3.45			
NHEXANE	277.5	4.97			
MCP	517.8	9.27			
22-DMP	0.0	0.0			
24-DMP	16.5	0.30			
223-TMB	0.0	0.0			
CHEXANE	134.3	2.41			
33-DMP ,	0.0	0.0			
11-DMCP	0.0	0.0			
2-MHEX ,	162.1	2.90			
23-DMP ,	58.1	1.04			
3-MHEX ,	172.7	3.09			
1C3-DMCP	121.5	2.18			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	5807.		C1/C2	1.02
GASOLINE	5584.		A /D2	2.93
NAPHTHENES	1838.	32.91	C1/D2	5.69
C6-7	2698.	48.31	CH/MCP	0.26
			PENT/IPENT.	0.59

	PPB	NORM PERCENT
MCP	517.8	38.7
CH	134.3	10.0
MCH	686.7	51.3
TOTAL	1338.8	100.0

PARAFFIN INDEX 1 0.797

PARAFFIN INDEX 2 12.277

7298IN   AUSTRALIA. VEILFIN-1. 2810-2825 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	1886.9	
IBUTANE	41410.3	8.32
NBUTANE	45281.4	9.10
IPENTANE	70524.9	14.17
NPENTANE	40899.5	8.22
22-DMB	370.0	0.07
CPENTANE	5378.7	1.08
23-DMB	7219.1	1.45
2-MP	51392.7	10.33
3-MP	15199.7	3.05
NHEXANE	34753.0	6.98
MCP	30912.5	6.21
22-DMP	0.0	0.0
24-DMP	1466.2	0.29
223-TMB	124.0	0.02
CHEXANE	16972.0	3.41
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	10089.1	2.03
23-DMP ,	11542.9	2.32
3-MHEX ,	8715.7	1.75
1C3-DMCP	5911.6	1.19
1T3-DMCP	5930.7	1.19
1T2-DMCP	10902.0	2.19
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	32655.7	6.56
1C2-DMCP	2364.8	0.48
MCH	47597.6	9.57

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	499500.		C1/C2	1.33
GASOLINE	497614.		A /D2	7.73
NAPHTHENES	125970.	25.31	C1/D2	8.57
C6-7	219938.	44.20	CH/MCP	0.55
			PENT/IPENT.	0.58

	PPB	NORM PERCENT
MCP	30912.5	32.4
CH	16972.0	17.8
MCH	47597.6	49.8
TOTAL	95482.1	100.0

PARAFFIN INDEX 1   0.827

PARAFFIN INDEX 2   21.725

72981P AUSTRALIA, VEILFIN-1, 2840-2855 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	6289.5	
IBUTANE	9761.6	9.72
NBUTANE	8555.5	8.52
IPENTANE	15802.7	15.74
NPENTANE	8134.5	8.10
22-DMB	79.9	0.08
CPENTANE	3302.9	3.29
23-DMB	916.6	0.91
2-MP	9547.1	9.51
3-MP	3677.6	3.66
NHEXANE	6432.3	6.41
MCP	8302.4	8.27
22-DMP	0.0	0.0
24-DMP	305.7	0.30
223-TMB	24.5	0.02
CHEXANE	3632.4	3.62
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	2417.9	2.41
23-DMP .	1843.8	1.84
3-MHEX .	1949.2	1.94
1C3-DMCP	1372.7	1.37
1T3-DMCP	1359.1	1.35
1T2-DMCP	2402.2	2.39
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	3805.7	3.79
1C2-DMCP	433.2	0.43
MCH	6338.0	6.31

	TOTALS PPB	NORM PERCENT
ALL COMP	106686.	
GASOLINE	100397.	
NAPHTHENES	27143.	27.04
C6-7	40619.	40.46

SIG COMP RATIOS	
C1/C2	0.89
A /D2	5.25
C1/D2	6.36
CH/MCP	0.44
PENT/IPENT.	0.51

	PPB	NORM PERCENT
MCP	8302.4	45.4
CH	3632.4	19.9
MCH	6338.0	34.7
TOTAL	18272.8	100.0

PARAFFIN INDEX 1 0.851

PARAFFIN INDEX 2 15.150

2870 - 2885

72981R AUSTRALIA, VEILFIN-1, ~~2840-2855~~ M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	1314.3	
IBUTANE	14036.4	9.06
NBUTANE	15470.8	9.99
IPENTANE	21275.9	13.73
NPENTANE	13716.9	8.85
22-DMB	81.6	0.05
CPENTANE	5371.6	3.47
23-DMB	752.8	0.49
2-MP	11130.9	7.18
3-MP	5423.9	3.50
NHEXANE	9246.0	5.97
MCP	12824.7	8.28
22-DMP	0.0	0.0
24-DMP	1159.1	0.75
223-TMB	129.9	0.08
CHEXANE	5968.2	3.85
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	3171.3	2.05
23-DMP ,	2152.2	1.39
3-MHEX ,	2939.6	1.90
1C3-DMCP	2205.4	1.42

	TOTAL PPB	NORM PERCENT
1T3-DMCP	2194.5	1.42
1T2-DMCP	3998.8	2.58
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	6940.5	4.48
1C2-DMCP	930.2	0.60
MCH	13817.9	8.92

	TOTALS PPB	NORM PERCENT
ALL COMP	156253.	
GASOLINE	154939.	
NAPHTHENES	47311.	30.54
C6-7	67678.	43.68

SIG COMP RATIOS

C1/C2	1.04
A /D2	5.51
C1/D2	7.81
CH/MCP	0.47
PENT/IPENT.	0.64

	PPB	NORM PERCENT
MCP	12824.7	39.3
CH	5968.2	18.3
MCH	13817.9	42.4
TOTAL	32610.8	100.0

PARAFFIN INDEX 1 0.728

PARAFFIN INDEX 2 15.996

72981V AUSTRALIA, VEILFIN-1, 2930-2945 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	826.3	
IBUTANE	2764.5	10.90
NBUTANE	3042.4	12.00
IPENTANE	3979.7	15.70
NPENTANE	2461.4	9.71
22-DMB	49.6	0.20
CPENTANE	302.3	1.19
23-DMB	339.3	1.34
2-MP	2089.3	8.24
3-MP	881.4	3.48
NHEXANE	1305.1	5.15
MCP	2032.0	8.01
22-DMP	0.0	0.0
24-DMP	51.8	0.20
223-TMB	8.7	0.03
CHEXANE	1261.4	4.98
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	325.9	1.29
23-DMP ,	388.4	1.53
3-MHEX ,	343.2	1.35
1C3-DMCP	294.5	1.16

	TOTAL PPB	NORM PERCENT
1T3-DMCP	287.7	1.13
1T2-DMCP	530.5	2.09
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	814.4	3.21
1C2-DMCP	68.7	0.27
MCH	1732.0	6.83

	TOTALS PPB	NORM PERCENT
ALL COMP	26181.	
GASOLINE	25354.	
NAPHTHENES	6509.	25.67
C6-7	9444.	37.25

SIG COMP RATIOS

C1/C2	1.03
A /D2	6.18
C1/D2	9.67
CH/MCP	0.62
PENT/IPENT.	0.62

	PPB	NORM PERCENT
MCP	2032.0	40.4
CH	1261.4	25.1
MCH	1732.0	34.5
TOTAL	5025.4	100.0

PARAFFIN INDEX 1 0.601

PARAFFIN INDEX 2 13.623

72981X AUSTRALIA. VEILFIN-1. 2960-2975 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	111.1	
IBUTANE	141.9	7.72
NBUTANE	169.6	9.23
IPENTANE	267.4	14.55
NPENTANE	182.2	9.91
22-DMB	3.6	0.20
CPENTANE	18.2	0.99
23-DMB	25.8	1.41
2-MP	162.1	8.82
3-MP	59.9	3.26
NHEXANE	120.5	6.55
MCP	137.9	7.50
22-DMP	0.0	0.0
24-DMP	5.2	0.28
223-TMB	0.0	0.0
CHEXANE	77.5	4.22
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	38.5	2.09
23-DMP .	27.7	1.51
3-MHEX .	33.4	1.82
1C3-DMCP	26.8	1.46
1T3-DMCP	21.0	1.14
1T2-DMCP	34.0	1.85
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	108.1	5.88
1C2-DMCP	0.0	0.0
MCH	176.5	9.61

	TOTALS PPB	NORM PERCENT
ALL COMP	1949.	
GASOLINE	1838.	
NAPHTHENES	492.	26.77
C6-7	807.	43.92

SIG COMP RATIOS

C1/C2	1.33
A /D2	6.84
C1/D2	8.75
CH/MCP	0.56
PENT/IPENT.	0.68

	PPB	NORM PERCENT
MCP	137.9	35.2
CH	77.5	19.8
MCH	176.5	45.0
TOTAL	391.9	100.0

PARAFFIN INDEX 1 0.878

PARAFFIN INDEX 2 19.893

72981Z AUSTRALIA, VEILFIN-1, 2990-3005 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	83.8	
IBUTANE	206.4	9.71
NBUTANE	237.3	11.17
IPENTANE	282.4	13.29
NPENTANE	188.6	8.87
22-DMB	4.3	0.20
CPENTANE	29.6	1.39
23-DMB	28.9	1.36
2-MP	169.7	7.99
3-MP	64.0	3.01
NHEXANE	135.7	6.39
MCP	145.5	6.85
22-DMP	0.0	0.0
24-DMP	7.7	0.36
223-TMB	0.0	0.0
CHEXANE	85.1	4.01
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	44.5	2.10
23-DMP .	30.0	1.41
3-MHEX .	36.5	1.72
1C3-DMCP	30.4	1.43
1T3-DMCP	29.9	1.41
1T2-DMCP	39.7	1.87
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	120.5	5.67
1C2-DMCP	9.2	0.43
MCH	198.9	9.36

	TOTALS PPB	NORM PERCENT
ALL COMP	2209.	
GASOLINE	2125.	
NAPHTHENES	568.	26.75
C6-7	914.	43.00

SIG COMP RATIOS	
C1/C2	1.29
A /D2	7.02
C1/D2	9.01
CH/MCP	0.58
PENT/IPENT.	0.67

	PPB	NORM PERCENT
MCP	145.5	33.9
CH	85.1	19.8
MCH	198.9	46.3
TOTAL	429.5	100.0

PARAFFIN INDEX 1 0.809

PARAFFIN INDEX 2 19.578

729828 AUSTRALIA, VEILFIN-1, 3020-3035 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	182.5	
IBUTANE	270.1	3.82
NBUTANE	585.5	8.29
IPENTANE	867.4	12.28
NPENTANE	709.8	10.05
22-DMB	7.4	0.10
CPENTANE	96.8	1.37
23-DMB	82.2	1.16
2-MP	604.6	8.56
3-MP	255.7	3.62
NHEXANE	515.1	7.29
MCP	637.6	9.03
22-DMP	0.0	0.0
24-DMP	16.9	0.24
223-TMB	0.0	0.0
CHEXANE	337.6	4.78
33-DMP *	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX *	189.6	2.68
23-DMP *	88.2	1.25
3-MHEX *	195.2	2.76
1C3-DMCP	115.0	1.63

	TOTAL PPB	NORM PERCENT
1T3-DMCP	111.0	1.57
1T2-DMCP	191.0	2.70
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	401.1	5.68
1C2-DMCP	26.3	0.37
MCH	759.8	10.76

	TOTALS PPB	NORM PERCENT
ALL COMP	7246.	
GASOLINE	7064.	
NAPHTHENES	2275.	32.21
C6-7	3584.	50.74

SIG COMP RATIOS

C1/C2	1.19
A /D2	4.69
C1/D2	6.59
CH/MCP	0.53
PENT/IPENT.	0.82

	PPB	NORM PERCENT
MCP	637.6	36.7
CH	337.6	19.5
MCH	759.8	43.8
TOTAL	1735.0	100.0

PARAFFIN INDEX 1 0.923

PARAFFIN INDEX 2 16.790

729820 AUSTRALIA, VEILFIN-1, 3050-3065 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	5250.6	
IBUTANE	2660.7	4.05
NBUTANE	10256.5	15.61
IPENTANE	5727.1	8.71
NPENTANE	8445.4	12.85
22-DMB	57.4	0.09
CPENTANE	1126.9	1.71
23-DMB	473.1	0.72
2-MP	3849.8	5.86
3-MP	1728.3	2.63
NHEXANE	5626.8	8.56
MCP	4057.6	6.17
22-DMP	0.0	0.0
24-DMP	88.5	0.13
223-TMB	9.9	0.02
CHEXANE	4493.6	6.84
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	1013.2	1.54
23-DMP ,	730.6	1.11
3-MHEX ,	995.4	1.51
1C3-DMCP	520.0	0.79
1T3-DMCP	568.6	0.87
1T2-DMCP	1087.3	1.65
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	4094.9	6.23
1C2-DMCP	257.3	0.39
MCH	7852.2	11.95

	TOTALS PPB	NORM PERCENT
ALL COMP	70972.	
GASOLINE	65721.	
NAPHTHENES	19963.	30.38
C6-7	31396.	47.77

SIG COMP RATIOS	
C1/C2	2.06
A /D2	9.77
C1/D2	13.42
CH/MCP	1.11
PENT/IPENT.	1.47

	PPB	NORM PERCENT
MCP	4057.6	24.7
CH	4493.6	27.4
MCH	7852.2	47.9
TOTAL	16403.4	100.0

PARAFFIN INDEX 1 0.923

PARAFFIN INDEX 2 19.175

72982F AUSTRALIA. VEILFIN-1. 3080-3095 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	410.4	
IBUTANE	389.1	4.85
NBUTANE	833.0	10.37
IPENTANE	796.7	9.92
NPENTANE	618.0	7.70
22-DMB	9.9	0.12
CPENTANE	129.4	1.61
23-DMB	74.3	0.92
2-MP	475.0	5.92
3-MP	250.0	3.11
NHEXANE	336.6	4.19
MCP	1008.1	12.56
22-DMP	0.0	0.0
24-DMP	17.3	0.21
223-TMB	0.0	0.0
CHEXANE	464.3	5.78
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	114.7	1.43
23-DMP .	96.7	1.20
3-MHEX .	207.9	2.59
1C3-DMCP	211.7	2.64
1T3-DMCP	196.6	2.45
1T2-DMCP	357.2	4.45
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	323.9	4.03
1C2-DMCP	44.8	0.56
MCH	1074.4	13.38

	TOTALS PPB	NORM PERCENT
ALL COMP	8440.	
GASOLINE	8030.	
NAPHTHENES	3487.	43.42
C6-7	4454.	55.47

SIG COMP RATIOS

C1/C2	0.91
A /D2	3.18
C1/D2	7.95
CH/MCP	0.46
PENT/IPENT.	0.78

	PPB	NORM PERCENT
MCP	1008.1	39.6
CH	464.3	18.2
MCH	1074.4	42.2
TOTAL	2546.8	100.0

PARAFFIN INDEX 1 0.421

PARAFFIN INDEX 2 10.629

72982H AUSTRALIA. VEILFIN-1. 3110-3125 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	69.2	0.18
NBUTANE	1603.1	4.27
IPENTANE	2080.0	5.54
NPENTANE	3936.6	10.49
22-DMB	34.9	0.09
CPENTANE	1643.3	4.38
23-DMB	64.4	0.17
2-MP	1801.2	4.80
3-MP	1075.9	2.87
NHEXANE	3989.6	10.63
MCP	3467.0	9.24
22-DMP	0.0	0.0
24-DMP	52.4	0.14
223-TMB	8.7	0.02
CHEXANE	3707.4	9.88
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	798.5	2.13
23-DMP .	585.4	1.56
3-MHEX .	759.8	2.02
1C3-DMCP	482.6	1.29

	TOTAL PPB	NORM PERCENT
1T3-DMCP	483.8	1.29
1T2-DMCP	906.3	2.41
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	3390.2	9.03
1C2-DMCP	266.8	0.71
MCH	6330.6	16.86

	TOTALS PPB	NORM PERCENT
ALL COMP	37538.	
GASOLINE	37538.	
NAPHTHENES	17288.	46.05
C6-7	25229.	67.21

SIG COMP RATIOS	
C1/C2	1.93
A /D2	9.71
C1/D2	14.26
CH/MCP	1.07
PENT/IPENT.	1.89

	PPB	NORM PERCENT
MCP	3467.0	25.7
CH	3707.4	27.5
MCH	6330.6	46.9
TOTAL	13505.0	100.0

PARAFFIN INDEX 1 0.832

PARAFFIN INDEX 2 19.434

72982J AUSTRALIA. VEILFIN-1. 3140-3155 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	986.4	
IBUTANE	790.8	2.11
NBUTANE	3749.9	10.00
IPENTANE	3201.4	8.54
NPENTANE	4537.2	12.10
22-DMB	35.6	0.10
CPENTANE	1212.4	3.23W
23-DMB	153.7	0.41
2-MP	2451.6	6.54
3-MP	1264.9	3.37
NHEXANE	4021.0	10.72
MCP	2237.1	5.97
22-DMP	0.0	0.0
24-DMP	97.1	0.26
223-TMB	8.1	0.02
CHEXANE	1874.9	5.00
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	949.9	2.53
23-DMP .	641.4	1.71
3-MHEX .	840.2	2.24
1C3-DMCP	336.8	0.90
1T3-DMCP	383.2	1.02
1T2-DMCP	715.8	1.91
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	3421.1	9.12
1C2-DMCP	92.5	0.25
MCH	4481.1	11.95

	TOTALS PPB	NORM PERCENT
ALL COMP	38484.	
GASOLINE	37498.	
NAPHTHENES	11334.	30.23
C6-7	20100.	53.60

SIG COMP RATIOS

C1/C2	1.94
A /D2	8.86
C1/D2	8.70
CH/MCP	0.84
PENT/IPENT.	1.42

	PPB	NORM PERCENT
MCP	2237.1	26.0
CH	1874.9	21.8
MCH	4481.1	52.1
TOTAL	8593.1	100.0

PARAFFIN INDEX 1 1.247

PARAFFIN INDEX 2 25.073

72982L AUSTRALIA, VEILFIN-1, 3170-3185 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	78.9	
IBUTANE	83.1	1.99
NBUTANE	295.9	7.10
IPENTANE	387.2	9.29
NPENTANE	390.2	9.36
22-DMB	4.3	0.10
CPENTANE	53.9	1.29
23-DMB	43.3	1.04
2-MP	293.7	7.04
3-MP	154.7	3.71
NHEXANE	302.1	7.24
MCP	443.1	10.63
22-DMP	0.0	0.0
24-DMP	12.6	0.30
223-TMB	0.0	0.0
CHEXANE	189.6	4.55
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	108.3	2.60
23-DMP ,	63.0	1.51
3-MHEX ,	101.8	2.44
1C3-DMCP	103.1	2.47
1T3-DMCP	133.9	3.21
1T2-DMCP	124.3	2.98
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	258.3	6.19
1C2-DMCP	23.9	0.57
MCH	599.9	14.39

	TOTALS PPB	NORM PERCENT
ALL COMP	4249.	
GASOLINE	4170.	
NAPHTHENES	1672.	40.08
C6-7	2464.	59.08

SIG COMP RATIOS

C1/C2	1.08
A /D2	5.51
C1/D2	8.82
CH/MCP	0.43
PENT/IPENT.	1.01

	PPB	NORM PERCENT
MCP	443.1	35.9
CH	189.6	15.4
MCH	599.9	48.7
TOTAL	1232.6	100.0

PARAFFIN INDEX 1 0.582

PARAFFIN INDEX 2 15.357

72982N AUSTRALIA. VEILFIN-1. 3200-3215 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	91.0	
IBUTANE	71.4	1.17
NBUTANE	467.3	7.66
IPENTANE	361.2	5.92
NPENTANE	848.3	13.90
22-DMB	4.5	0.07
CPENTANE	218.1	3.58
23-DMB	11.5	0.19
2-MP	257.1	4.21
3-MP	162.9	2.67
NHEXANE	690.3	11.31
MCP	437.8	7.18
22-DMP	0.0	0.0
24-DMP	9.7	0.16
223-TMB	0.0	0.0
CHEXANE	457.1	7.49
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	143.3	2.35
23-DMP .	57.4	0.94
3-MHEX .	132.9	2.18
1C3-DMCP	57.7	0.95

	TOTAL PPB	NORM PERCENT
1T3-DMCP	80.2	1.31
1T2-DMCP	77.6	1.27
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	544.4	8.92
1C2-DMCP	12.5	0.20
MCH	998.0	16.36

	TOTALS PPB	NORM PERCENT
ALL COMP	6192.	
GASOLINE	6101.	
NAPHTHENES	2339.	38.34
C6-7	3699.	60.63

SIG COMP RATIOS	
C1/C2	2.40
A /D2	9.29
C1/D2	12.03
CH/MCP	1.04
PENT/IPENT.	2.35

	PPB	NORM PERCENT
MCP	437.8	23.1
CH	457.1	24.1
MCH	998.0	52.7
TOTAL	1892.9	100.0

PARAFFIN INDEX 1 1.282

PARAFFIN INDEX 2 21.360

72982P AUSTRALIA, VEILFIN-1, 3230-3245 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	53.1	1.50
NBUTANE	199.0	5.63
IPENTANE	219.0	6.20
NPENTANE	383.9	10.86
22-DMB	5.6	0.16
CPENTANE	34.7	0.98
23-DMB	33.7	0.95
2-MP	242.4	6.86
3-MP	118.7	3.36
NHEXANE	399.2	11.30
MCP	217.4	6.15
22-DMP	0.0	0.0
24-DMP	17.0	0.48
223-TMB	0.0	0.0
CHEXANE	194.3	5.50
33-DMP ,	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX ,	134.9	3.82
23-DMP ,	55.5	1.57
3-MHEX ,	116.1	3.29
1C3-DMCP	48.6	1.37
1T3-DMCP	62.7	1.77
1T2-DMCP	65.1	1.84
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	377.6	10.69
1C2-DMCP	11.5	0.32
MCH	543.5	15.38

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3534.		C1/C2	2.15
GASOLINE	3534.		A /D2	6.69
NAPHTHENES	1178.	33.33	C1/D2	7.52
C6-7	2243.	63.49	CH/MCP	0.89
			PENT/IPENT.	1.75

	PPB	NORM PERCENT
MCP	217.4	22.8
CH	194.3	20.3
MCH	543.5	56.9
TOTAL	955.2	100.0

PARAFFIN INDEX 1 1.423

PARAFFIN INDEX 2 23.624

72982R AUSTRALIA. VEILFIN-1. 3260-3275 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	48.4	1.53
NBUTANE	147.4	4.65
IPENTANE	251.3	7.92
NPENTANE	230.7	7.28
22-DMB	2.9	0.09
CPENTANE	29.8	0.94
23-DMB	32.9	1.04
2-MP	249.6	7.87
3-MP	115.1	3.63
NHEXANE	241.8	7.62
MCP	281.0	8.86
22-DMP	0.0	0.0
24-DMP	10.0	0.32
223-TMB	0.0	0.0
CHEXANE	130.1	4.10
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	121.5	3.83
23-DMP .	49.6	1.56
3-MHEX .	103.7	3.27
1C3-DMCP	67.3	2.12

	TOTAL PPB	NORM PERCENT
1T3-DMCP	92.9	2.93
1T2-DMCP	88.1	2.78
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	252.3	7.96
1C2-DMCP	18.2	0.57
MCH	606.3	19.12

	TOTALS PPB	NORM PERCENT
ALL COMP	3171.	
GASOLINE	3171.	
NAPHTHENES	1314.	41.43
C6-7	2063.	65.05

SIG COMP RATIOS	
C1/C2	1.57
A /D2	4.77
C1/D2	8.28
CH/MCP	0.46
PENT/IPENT.	0.92

	PPB	NORM PERCENT
MCP	281.0	27.6
CH	130.1	12.8
MCH	606.3	59.6
TOTAL	1017.4	100.0

PARAFFIN INDEX 1 0.907

PARAFFIN INDEX 2 16.691

72982T AUSTRALIA, VEILFIN-1, 3290-3305 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	44.2	0.45
NBUTANE	231.4	2.36
IPENTANE	451.5	4.60
NPENTANE	840.4	8.57
22-DMB	9.3	0.09
CPENTANE	71.0	0.72
23-DMB	91.7	0.93
2-MP	690.0	7.03
3-MP	344.7	3.51
NHEXANE	1257.2	12.82
MCP	563.2	5.74
22-DMP	0.0	0.0
24-DMP	46.7	0.48
223-TMB	4.0	0.04
CHEXANE	456.8	4.66
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	416.4	4.25
23-DMP .	140.2	1.43
3-MHEX .	393.6	4.01
1C3-DMCP	110.7	1.13
1T3-DMCP	110.6	1.13
1T2-DMCP	237.1	2.42
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	1410.9	14.38
1C2-DMCP	31.3	0.32
MCH	1856.1	18.92

	TOTALS PPB	NORM PERCENT
ALL COMP	9809.	
GASOLINE	9809.	
NAPHTHENES	3437.	35.04
C6-7	7035.	71.72

SIG COMP RATIOS	
C1/C2	2.59
A /D2	6.78
C1/D2	6.93
CH/MCP	0.81
PENT/IPENT.	1.86

	PPB	NORM PERCENT
MCP	563.2	19.6
CH	456.8	15.9
MCH	1856.1	64.5
TOTAL	2876.1	100.0

PARAFFIN INDEX 1 1.767

PARAFFIN INDEX 2 27.491

72982V AUSTRALIA. VEILFIN-1. 3320 - 3335 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	413.8	
IBUTANE	458.7	1.65
NBUTANE	863.7	3.12
IPENTANE	2196.0	7.92
NPENTANE	1669.7	6.02
22-DMB	14.1	0.05
CPENTANE	282.3	1.02
23-DMB	328.3	1.18
2-MP	2628.5	9.48
3-MP	1047.7	3.78
NHEXANE	2288.4	8.25
MCP	3158.9	11.40
22-DMP	0.0	0.0
24-DMP	90.1	0.32
223-TMB	0.0	0.0
CHEXANE	928.7	3.35
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	880.8	3.18
23-DMP .	544.2	1.96
3-MHEX .	1069.7	3.86
1C3-DMCP	643.3	2.32
1T3-DMCP	624.0	2.25
1T2-DMCP	985.3	3.55
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	2773.2	10.00
1C2-DMCP	131.5	0.47
MCH	4113.9	14.84

	TOTALS PPB	NORM PERCENT
ALL COMP	28135.	
GASOLINE	27721.	
NAPHTHENES	10868.	39.20
C6-7	18232.	65.77

SIG COMP RATIOS	
C1/C2	1.07
A /D2	4.73
C1/D2	5.54
CH/MCP	0.29
PENT/IPENT.	0.76

	PPB	NORM PERCENT
MCP	3158.9	38.5
CH	928.7	11.3
MCH	4113.9	50.2
TOTAL	8201.5	100.0

PARAFFIN INDEX 1 0.866

PARAFFIN INDEX 2 22.074

72982X AUSTRALIA. VEILFIN-1. 3350-3365 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	66150.4	
IBUTANE	66898.2	6.19
NBUTANE	191206.8	17.70
IPENTANE	95954.5	8.88
NPENTANE	145138.6	13.44
22-DMB	977.4	0.09
CPENTANE	8562.2	0.79
23-DMB	8153.3	0.75
2-MP	70116.1	6.49
3-MP	26791.5	2.48
NHEXANE	119271.3	11.04
MCP	32106.9	2.97
22-DMP	0.0	0.0
24-DMP	1875.7	0.17
223-TMB	106.4	0.01
CHEXANE	41561.3	3.85
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	18864.7	1.75
23-DMP .	13622.2	1.26
3-MHEX .	16780.8	1.55
1C3-DMCP	5155.8	0.48
1T3-DMCP	7463.2	0.69
1T2-DMCP	7574.2	0.70
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	105036.5	9.73
1C2-DMCP	2576.4	0.24
MCH	94236.9	8.73

	TOTALS PPB	NORM PERCENT
ALL COMP	1146180.	
GASOLINE	1080030.	
NAPHTHENES	199237.	18.45
C6-7	466232.	43.17

SIG COMP RATIOS

C1/C2	2.82
A /D2	13.37
C1/D2	9.22
CH/MCP	1.29
PENT/IPENT.	1.51

	PPB	NORM PERCENT
MCP	32106.9	19.1
CH	41561.3	24.8
MCH	94236.9	56.1
TOTAL	167905.1	100.0

PARAFFIN INDEX 1 1.765

PARAFFIN INDEX 2 33.850

72982Z AUSTRALIA. VEILFIN-1. 3380-3395 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	336.4	
IBUTANE	272.2	4.15
NBUTANE	1008.2	15.39
IPENTANE	722.7	11.03
NPENTANE	1307.7	19.96
22-DMB	8.3	0.13
CPENTANE	92.6	1.41
23-DMB	72.5	1.11
2-MP	595.2	9.09
3-MP	256.3	3.91
NHEXANE	1116.4	17.04
MCP	365.2	5.57
22-DMP	0.0	0.0
24-DMP	16.3	0.25
223-TMB	0.0	0.0
CHEXANE	272.2	4.15
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	98.6	1.50
23-DMP .	39.5	0.60
3-MHEX .	59.5	0.91
1C3-DMCP	24.6	0.38

	TOTAL PPB	NORM PERCENT
1T3-DMCP	34.4	0.53
1T2-DMCP	32.1	0.49
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	75.7	1.16
1C2-DMCP	0.0	0.0
MCH	80.9	1.23

	TOTALS PPB	NORM PERCENT
ALL COMP	6887.	
GASOLINE	6551.	
NAPHTHENES	902.	13.77
C6-7	2215.	33.82

SIG COMP RATIOS	
C1/C2	0.99
A /D2	20.03
C1 /D2	7.59
CH/MCP	0.75
PENT/IPENT.	1.81

	PPB	NORM PERCENT
MCP	365.2	50.8
CH	272.2	37.9
MCH	80.9	11.3
TOTAL	718.3	100.0

PARAFFIN INDEX 1 1.735

PARAFFIN INDEX 2 10.550

729838 AUSTRALIA. VEILFIN-1. 3410-3425 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	25.1	
IBUTANE	18.6	2.28
NBUTANE	56.3	6.91
IPENTANE	38.4	4.71
NPENTANE	93.6	11.48
22-DMB	0.0	0.0
CPENTANE	5.8	0.71
23-DMB	5.8	0.71
2-MP	53.4	6.55
3-MP	25.3	3.10
NHEXANE	133.0	16.31
MCP	29.8	3.65
22-DMP	0.0	0.0
24-DMP	2.9	0.35
223-TMB	0.0	0.0
CHEXANE	29.5	3.62
33-DMP .	0.0	0.0
11-DMCP	0.0	0.0
2-MHEX .	31.3	3.84
23-DMP .	9.7	1.18
3-MHEX .	25.1	3.08
1C3-DMCP	4.3	0.53

	TOTAL PPB	NORM PERCENT
1T3-DMCP	5.4	0.66
1T2-DMCP	9.9	1.21
3-EPENT	0.0	0.0
224-TMP	0.0	0.0
NHEPTANE	130.5	16.00
1C2-DMCP	0.0	0.0
MCH	106.9	13.11

	TOTALS PPB	NORM PERCENT
ALL COMP	842.	
GASOLINE	815.	
NAPHTHENES	192.	23.49
C6-7	518.	63.55

SIG COMP RATIOS	
C1/C2	3.40
A /D2	10.51
C1/D2	6.69
CH/MCP	0.99
PENT/IPENT.	2.44

	PPB	NORM PERCENT
MCP	29.8	17.9
CH	29.5	17.7
MCH	106.9	64.3
TOTAL	166.2	100.0

PARAFFIN INDEX 1 2.876

PARAFFIN INDEX 2 37.014

APPENDIX-2

Detailed Vitrinite Reflectance and Exinite Fluorescence Data - Report by A.C. Cook

VEILFIN NO. 1

KK No.	Esso No.	Depth m	$\bar{R}_v$ max %	Range R_v max %	N	Exinite fluorescence (Remarks)
X213	72953-W	1866 SWC	0.36	0.29-0.42	8	Rare sporinite and cutinite, yellow, rare resinite, yellow, rare dinoflagellate/acritarchs, greenish yellow, rare tasmanitids, yellow. (Siliceous limestone. D.o.m. rare, V>I>E. All three macerals rare. Pyrite abundant. Sparse glauconite present. Mineral matter fluorescence yellow.)
X214	72952-T	2043 SWC	0.41	0.35-0.47	32	Abundant resinite, greenish yellow to yellow, abundant sporinite, cutinite, liptodetrinite, greenish yellow to yellow. Common suberinite, dull yellow. (Coal abundant. Upper Eastern View facies. Clarite>clarodurite>vitrite. Vitrinite and exinite are the dominant components of coal. Inertinite comprises semifusinite, sclerotinite, and fusinite. Resinite is the dominant exinite. Sporinite, cutinite, suberinite and liptodetrinite are present in substantial amounts. Pyrite abundant.)
X215	72952-O	2130 SWC	0.47	0.41-0.52	26	Abundant sporinite and liptodetrinite, greenish yellow to yellow, abundant resinite, yellow to yellow orange, sparse to common cutinite and suberinite, yellow. Rare fluorinite, green. (Coal abundant. Upper Eastern View facies. Clarite>>vitrite>>duroclarite. Vitrinite and exinite are the main macerals in coal, semifusinite, sclerotinite and micrinite are present in minor amounts. Sporinite, liptodetrinite and resinite are the dominant exinite macerals. Suberinite, cutinite and fluorinite are present in minor amounts. Pyrite sparse to common.)
X216	72952-E	2273.5 SWC	0.46	0.44-0.51	27	Abundant sporinite, greenish yellow to yellow, abundant liptodetrinite, greenish yellow to orange, common resinite, suberinite, yellow, common cutinite, yellow orange, sparse fluorinite, green. (Coal abundant, Lower Eastern View B facies. Duroclarite>>clarite> vitrinertite(I). Exinite and vitrinite rare dominant. Inertinite is present in substantial amounts. Inertinite comprises, inertodetrinite, semifusinite, fusinite, micrinite and sclerotinite. Micrinite common. Exinite comprises sporinite and liptodetrinite. Resinite, cutinite, fluorinite and suberinite are present in minor amounts. Dull brown vitrinite fluorescence. Clay minerals common and associated with vitrinite. Pyrite sparse.)

VEILFIN NO. 1

KK No.	Esso No.	Depth m	$\bar{R}_v max$ %	Range $R_v max$ %	N	Exinite fluorescence (Remarks)
X217	72951-R	2456 SWC	0.57	0.52-0.62	27	Abundant sporinite, yellow to orange, abundant liptodetrinite, yellow orange, sparse cutinite, orange, sparse resinite, greenish yellow, rare fluorinite, green. (Coal abundant, Lower Eastern View B facies, duroclarite>clarodurite>inertite>vitrite>vitrinertite(I). Vitrinite, inertinite and exinite present in substantial amounts. Inertinite comprises mainly, micrinite and inertodetrinite. Micrinite abundant. Inertinite 40 to 60% of most grains. Exinite comprises sporinite and liptodetrinite. Vitrinite fluorescence dull brown. Pyrite rare.)
X218	72951 D	2640 SWC	0.65	0.56-0.76	32	Abundant sporinite and liptodetrinite, yellow to orange, common cutinite and suberinite, yellow orange, sparse resinite, yellow. (Coal abundant Lower Eastern View B facies. Duroclarite>>clarodurite>vitrite=vitrinertite(I)=inertite>vitrinertite(V). Inertinite, vitrinite and exinite abundant. Inertinite comprises inertodetrinite, semifusinite, fusinite and micrinite. Micrinite common. Exinite comprises, sporinite and liptodetrinite, cutinite, suberinite and resinite present in subordinate amounts. Vitrinite fluorescence dull brown.)
X219	72950-I	2815.1 SWC	0.78	0.73-0.83	26	Abundant sporinite and liptodetrinite, orange, common resinite, yellow orange, sparse cutinite, orange, sparse suberinite, brown. (Coal abundant. Vitrinite rich. Lower Eastern View B facies. Duroclarite>vitrite>vitrinertite(V)>inertite. Exinite slightly less abundant as compared with shallower coals. Inertinite consists of semifusinite, inertodetrinite, micrinite and macrinite. Vitrinite fluorescence dull brown.)
X220	72949-R	2942 SWC	0.77	0.70-0.88	26	Abundant liptodetrinite and sporinite, bright orange, common resinite, orange, sparse cutinite, orange, commom suberinite, brown, rare fluorinite, greenish yellow. (Coal abundant, vitrinite rich. Lower Eastern View facies. Duroclarite>>vitrite>vitrinertite(V)>inertite>vitrinertite(I)=clarodurite. Exinite much less abundant as compared with shallower coals. Substantial amounts of inertinite present and consists of inertodetrinite, micrinite, semifusinite and rare sclerotinite. Micrinite common to abundant. Vitrinite fluorescence dull brown. Pyrite sparse.)

VEILFIN NO. 1

KK No.	Esso No.	Depth m	$\bar{R}_v$ max %	Range R_v max %	N	Exinite fluorescence (Remarks)
X221	72948 J	3158.2 SWC	0.79	0.69-0.86	33	Sparse sporinite, cutinite, liptodetrinite, orange. (Siltstone>shaly coal>coal. Coal abundant. Vitrite>clarite. D.o.m. abundant, V>E>I. Vitrinite abundant, exinite sparse, inertinite rare. Suberinite abundant, R approx. 0.45%, faint brown or no fluorescence. Pyrite sparse.)
X222	72947 E	3432 SWC	0.84	0.76-0.96	29	Rare sporinite, cutinite and resinite, orange to dull orange. (Siltstone>coal. Coal abundant. Vitrite>>>clarite. D.o.m. abundant, V>E>I. Vitrinite abundant, exinite and inertinite rare. Suberinite common, does not fluoresce. Mineral matter fluorescence, orange. Pyrite common.)

ABUNDANCE TERMS FOR VISUAL ESTIMATES BY VOLUME

SHALY COAL	30%< x <70%
MAJOR	10%< x <30%
ABUNDANT	2%< x <10%
COMMON	0.5%< x <2.0%
SPARSE	0.1%< x <0.5%
RARE	<0.1%

APPENDIX 6

APPENDIX 6

VEILFIN-1

PRODUCTION TEST NO. 1

YI N M3

A. Summary

Production Test No. 1 was carried out on the Veilfin-1 exploration well over the interval 3185-3194m MD on April 6 to 8, 1984. A summary of the major features of the test is provided in table 1. The test recovered 0.3 MSCF of gas at an average metered rate of 515 kSCF/d. An estimated 40 Bbls of formation water and filtrate was also recovered. The well did not stabilise during the test and both bottom-hole pressure and rate were declining at the end of the flow period. Two 20 litre gas samples were taken from the separator but a condensate sample could not be obtained.

Analysis of the build-up data indicates a formation permeability of 0.14md. The final average reservoir pressure was not obtained. A gradient survey indicated the possibility of approximately 100m of hydrocarbon liquid in the wellbore from 3089.5m MD to 2989.5m MD. Duplicate bottom hole samples at 3040m MD recovered gas with 10cc of condensate from the first chamber. The second chamber has been retained for analysis.

B. Background and Objectives

The well had encountered hydrocarbon shows in porous sands from approximately 3070m MD to 3230m MD. Open hole wireline logs confirmed the likely presence of hydrocarbons but hydrocarbon type could not be determined with confidence. RFT sampling runs recovered filtrate with only minor gas. The fluid contact could not be established from the pretest pressures.

The interval 3185-3194m MD has an interpreted porosity of 15% and water saturation of 45%. The objectives of the production test were primarily to establish fluid content, productivity index and permeability.

C. Test Description

A chronological summary of the major features of the test is provided in table 2. After perforating the interval 3185-3194m MD with a 300 psi underbalance (THP of 1650 psig) on April 6, no increase in THP was observed. Flow was established by decreasing the THP to 1049 psig prior to running a HP gauge and tandem amerada gauges into the well. An initial reservoir pressure was not obtained prior to commencing the major flow period because the low formation permeability would result in an excessive build-up time.

The major flow period was commenced at 0002 hours on April 7 and gas with water/filtrate slugs reached surface at 0500 hours. An attempt at 0643 hours to produce the well through the separator was abandoned shortly afterwards because the well was still slugging water/filtrate with a high solids content.

After further clean-up, the well was produced through the separator for about a 2-1/4 hour period commencing at 1345 hours. The rate dropped from 739 kSCF/D to 306 kSCF/D during this period and bottom-hole pressure was also dropping. A small amount of condensate was visible in the sight glass on occasions but a sample was not possible to obtain. Intermittent water production amounting to a total of 40 Bbls, was evident throughout the test. One 20 litre gas sample was taken at 1550 hours and a second was taken at 1600 hours. Cumulative production during the flow period is estimated to be 0.3 MSCF.

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The well was shut-in for the build-up period from 1605 hours to 2300 hours. The pressure was still building up slowly at the end of this period and would have taken an excessively long time to reach initial reservoir pressure. Pressures measured during the gradient survey after the build-up period were corrected to common time datums to allow for the changing bottom hole pressure. The gradient survey indicated 100 metres of water at the bottom of the well, followed by 100-150 metres of hydrocarbon liquid or gas/water emulsion and finally followed by gas. A bottom hole sampling run at 3040m MD, i.e., towards the centre of the possible liquid hydrocarbon, recovered gas with 10cc of condensate from the first chamber. The second chamber was retained for analysis.

A one litre sample of condensate was obtained from the choke manifold immediately prior to bullheading and reverse circulating. No liquid hydrocarbon were recovered during reverse circulating.

D. Results and Interpretation

1. Reservoir Pressure

Due to the low formation permeability, the reservoir pressure was not measured during the production test. The initial reservoir pressure is 4640 psia at a datum depth of 3189.5m MD (3168.5m SS) based on RFT seat nos. 1/10 and 1/12.

2. Build-up Analysis

The build-up data has been analysed using the Mc Kinley method (figure 1) as afterflow was still significant (ie. q_{af}/q of 0.15) at the end of the build-up period. The estimated value of permeability-thickness for the formation is 4.0 md-ft, leading to an estimated permeability of 0.14md based on a total net sand thickness of 29.5 ft. The radius of investigation at the end of the build-up period was 43 feet. The estimated damage ratio and skin factor are 1.09 and 0.85 respectively, indicating slight formation damage.

The Mc Kinley analysis also indicated a zone with permeability-thickness of 1.6 md-ft and permeability of 0.06md extending approximately 34 feet from the wellbore.

A horner plot and P^2 horner plot are provided in figures 2 and 3 respectively. As afterflow was significant throughout the build-up period, these plots could not be used to estimate permeability.

3. Productivity Index and Average Permeability

The average permeability calculated from the flowing bottom-hole drawdown is 0.10md. This is in good agreement with the build-up interpretation of a formation permeability of 0.14md with slight damage.

The productivity index at final flowing conditions was 0.07 Res Bbl/D/psi. As the well had not stablised, this estimate is optimistic.

TABLE 1

SUMMARY OF VEILFIN-1 PRODUCTION TEST

Test Number	1
Date (1984)	April 6-8
Perforation interval (m MDKB)	3185-3194
Production Fluid	gas and water/filtrate
Flow Time (hours) (after surfacing bottom hole fluid)	11
Cumulative gas production (MSCF)	0.3
Cumulative water/filtrate prod. (Bbl)	40
Average metered rate (STB/D)*	515
Choke size	24/64"
Gas Gravity	0.724
Co_2(%)	4-11
H_2S ppm	Nil
Flowing WHP (psig)	260-390
Initial formation pressure (psia)	4640 psia at 3189.5m MD (based on RFT)
Average reservoir pressure	Not measured
Maximum BHT (°C)	250.4
Productivity Index (Res. Bbl/D/psi)	0.07
Permeability - Thickness (md-ft)	4.0 (Mc Kinley analysis)
Permeability (md)	0.14 (Mc Kinley analysis)
Average permeability, k (md)	0.10
Drainage ratio	1.09 (Mc Kinley analysis)
Depth of Investigation (ft)	43
Hydrocarbon samples retained	2 x 200 litre gas separator, 1 x 1 litre condensate (choke manifold)

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TABLE 2

VEILFIN-1 PRODUCTION TEST 1

	Time	Comments
April 6,	1300	Bleed THP from 2400 psig to 1650 psig to obtain a 300 psi underbalance.
	1535	Perforate the interval 3185-3194m MD (relative to DLTE/LDT/CNTH/GR log of 22/3/84) with 2 1/8" enerjet (118 shots, 4 SPF). No change in THP was observed.
	1727	Bleed THP to 1049 psig. By 2400 hours, the THP had increased to 1303 psig. The estimated influx rate is 80-190 BPD.
April, 7	0002	Bleed THP to 0 psig after running the HP gauge to 3189.5m MD. Estimated influx rate of 76-54 BPD based on a fluid gradient of 1 psi/m, or 250-180 BPD based on a fluid gradient of 0.3 psi/m.
	0345	Diesel at surface and bottom-hole pressure dropping. Flowrate of 250-430 BPD.
	0439	Increased choke at 48/64 th. Flowrate increased to 1400 BPD.
	0500	Gas at surface - 16 hours after perforations
	0643	Gas diverted to separator on 24/64 th choke.
	0734	Bypassed separator as the well was slugging water/filtrate with a too high solids content.
	0944	Increased choke at 2" in attempt to clean up the well.
	1105	Decreased choke to 24/64 ths to allow well to stabilise prior to flowing to separator.
	1345	Gas diverted to separator. Rate decreasing from 739 kSCF/D to 306 kSCF/D with a trace of condensate visible in the sight glass. Two 20 l gas samples taken but unable to obtain condensate sample. The well was still occassionally slugging water/filtrate.
	1605	Shut-in for build-up (final flowing BHP and WHP were 673 psia and 275 psig respectively). Build-up data collected for 7 hours (final BHP = 4255 psia). All data is afterflow affected. The calculated permeability using the McKinley method is 0.14 md.
	2300	Commence gradient survey (BHP still changing 1.5 psi/minute.

	Depth (m MD)	Gradient (psi/m)
(0)	3189.5	1.39
(1)	3139.5	1.44
(2)	3089.5	1.08
(3)	2989.5	0.94
(4)	3039.5	0.81
(5)	2889.5	0.40
(6)	2689.5	

	Time	Comments
April 8,	0800	Duplicate 600 cc bottom hole samples taken at 3040m. The first sample contained gas with 10cc condensate. The second sample was preserved.
	0957	Surface lines bled down prior to bullheading and reverse circulating. A 1 litre condensate sample and a 5 gallon water/fitrate sample were obtained. No liquid hydrocarbons were recovered during reverse circulating.
Notes:	(i)	The water/filtrate produced during the test had a high solids content, pH of 7.2-7.5, NO_3 of trace to 40 ppm, and chlorides of 9000-15000 ppm.
	(ii)	The estimated flowrate required to lift condensate from the well is 1.0 MSCFD while to lift water the required rate is 1.6 MSCFD. Consequently the actual flowrate of 739-306 kSCF/D was not large enough to achieve stable operation.

PE905471

This is an enclosure indicator page.
The enclosure PE905471 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905471 has the following characteristics:

ITEM_BARCODE =	PE905471
CONTAINER_BARCODE =	PE905491
NAME =	Time Structure Map
BASIN =	GIPPSLAND
PERMIT =	VIC/P1
TYPE =	SEISMIC
SUBTYPE =	HRZN_CONTR_MAP
DESCRIPTION =	Time Structure Map ""Top of Latrobe"" for Veilfin-1
REMARKS =	
DATE_CREATED =	31/01/85
DATE_RECEIVED =	4/10/85
W_NO =	W857
WELL_NAME =	VEILFIN-1
CONTRACTOR =	
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE905472

This is an enclosure indicator page.
The enclosure PE905472 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905472 has the following characteristics:

ITEM_BARCODE = PE905472
CONTAINER_BARCODE = PE905491
NAME = Smoothed VNMO Map
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = SEISMIC
SUBTYPE = VEL_CONTR
DESCRIPTION = Smoothed VNMO to ""Top of Latrobe"" for Veilfin-1
REMARKS =
DATE_CREATED = 31/01/84
DATE_RECEIVED = 4/10/85
W_NO = W857
WELL_NAME = VEILFIN-1
CONTRACTOR =
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE905473

This is an enclosure indicator page.
The enclosure PE905473 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905473 has the following characteristics:

ITEM_BARCODE =	PE905473
CONTAINER_BARCODE =	PE905491
NAME =	Conversion Factor Map
BASIN =	GIPPSLAND
PERMIT =	VIC/P1
TYPE =	SEISMIC
SUBTYPE =	VEL_CONTR
DESCRIPTION =	Conversion Factor Map ""Top of Latrobe"" for Veilfin-1
REMARKS =	
DATE_CREATED =	31/01/85
DATE_RECEIVED =	4/10/85
W_NO =	W857
WELL_NAME =	VEILFIN-1
CONTRACTOR =	
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE905474

This is an enclosure indicator page.
The enclosure PE905474 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905474 has the following characteristics:

```
     ITEM_BARCODE = PE905474
CONTAINER_BARCODE = PE905491
             NAME = Average Velocity Map
            BASIN = GIPPSLAND
           PERMIT = VIC/P1
             TYPE = SEISMIC
          SUBTYPE = VEL_CONTR
      DESCRIPTION = Average Velocity Map ""Top of Latrobe""
                    for Veilfin-1
          REMARKS =
     DATE_CREATED = 31/01/85
    DATE_RECEIVED = 4/10/85
             W_NO = W857
        WELL_NAME = VEILFIN-1
       CONTRACTOR =
     CLIENT_OP_CO = ESSO AUSTRALIA LIMITED
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE905475

This is an enclosure indicator page.
The enclosure PE905475 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905475 has the following characteristics:

ITEM_BARCODE = PE905475
CONTAINER_BARCODE = PE905491
NAME = Structure Map
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = SEISMIC
SUBTYPE = HRZN_CONTR_MAP
DESCRIPTION = Structure Map ""Top of Latrobe"" for Veilfin-1
REMARKS =
DATE_CREATED = 31/01/85
DATE_RECEIVED = 4/10/85
W_NO = W857
WELL_NAME = VEILFIN-1
CONTRACTOR =
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE905476

This is an enclosure indicator page.
The enclosure PE905476 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905476 has the following characteristics:

ITEM_BARCODE =	PE905476
CONTAINER_BARCODE =	PE905491
NAME =	Structure Map - Seismic Marker
BASIN =	GIPPSLAND
PERMIT =	VIC/P1
TYPE =	SEISMIC
SUBTYPE =	HRZN_CONTR_MAP
DESCRIPTION =	Structure Map (M.Diversus) Seismic Marker for Veilfin-1
REMARKS =	
DATE_CREATED =	31/01/85
DATE_RECEIVED =	4/10/85
W_NO =	W857
WELL_NAME =	VEILFIN-1
CONTRACTOR =	
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE905477

This is an enclosure indicator page.
The enclosure PE905477 is enclosed within the container PE905491 at this location in this document.

The enclosure PE905477 has the following characteristics:

ITEM_BARCODE = PE905477
CONTAINER_BARCODE = PE905491
NAME = Structure Map - Seismic Marker
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = SEISMIC
SUBTYPE = HRZN_CONTR_MAP
DESCRIPTION = Structure Map (L.Balmei) Seismic Marker for Veilfin-1
REMARKS =
DATE_CREATED = 31/01/85
DATE_RECEIVED = 4/10/85
W_NO = W857
WELL_NAME = VEILFIN-1
CONTRACTOR =
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE902492

This is an enclosure indicator page.
The enclosure PE902492 is enclosed within the container PE902491 at this location in this document.

The enclosure PE902492 has the following characteristics:

ITEM_BARCODE = PE902492
CONTAINER_BARCODE = PE905491
NAME = Geological Cross Section
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = WELL
SUBTYPE = CROSS_SECTION
DESCRIPTION = Geological Cross Section for Veilfin-1
REMARKS =
DATE_CREATED = 30/06/85
DATE_RECEIVED = 4/10/85
W_NO = W857
WELL_NAME = Veilfin-1
CONTRACTOR = ESSO
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE603878

This is an enclosure indicator page.
The enclosure PE603878 is enclosed within the container PE905491 at this location in this document.

The enclosure PE603878 has the following characteristics:

ITEM_BARCODE =	PE603878
CONTAINER_BARCODE =	PE905491
NAME =	Well Completion Log
BASIN =	GIPPSLAND
PERMIT =	VIC/P1
TYPE =	WELL
SUBTYPE =	COMPLETION_LOG
DESCRIPTION =	Well Completion Log for Veilfin-1
REMARKS =	
DATE_CREATED =	15/04/84
DATE_RECEIVED =	4/10/85
W_NO =	W857
WELL_NAME =	VEILFIN-1
CONTRACTOR =	
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)