WCR
YELLOWTAIL-1
(W756)

ESSO EXPLORATION AND PRODUCTION
AUSTRALIA INC.

WELL COMPLETION REPORT

YELLOWTAIL - 1

GIPPSLAND BASIN

VICTORIA

ESSO AUSTRALIA LIMITED

COMPILED BY: L. FINLAYSON

AUGUST, 1982

YELLOWTAIL-1

WELL COMPLETION REPORT

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1. Mudlogging Report - Core Laboratories Australia (RECEIVED 29-4-82)
2. (missing) Well Location Report - Offshore Navigation Inc.

ESSO AUSTRALIA LTD.

COMPLETION REPORT

1. WELL DATA RECORD

LOCATION

WELL NAME	STATE	PERMIT or LICENCE	GEOLOGICAL BASIN	FIELD
Yellowtail-1	Victoria	VIC/L5	Gippsland	Yellow-tail

CO-ORDINATES	MAP PROJECTION	GEOGRAPHICAL LOCATION
LATITUDE 38° 31' 34.51"S LONGITUDE 148° 16' 26.73"E X 611,060mE Y 5,735,009mN	AMG Zone 55	Bass Strait Victoria

ELEVATIONS & DEPTHS

ELEVATIONS	WATER DEPTH	TOTAL DEPTH / MEASURED DEPTH	Average Angle
KB 21m	77m	2571m 2571m	Vertical Well (1 3/4°)
	PLUG BACK TYPE	REASONS FOR PLUGGING BACK	
	P & A	Abandonment	

DATES

MOVE IN	RIG UP	SPUDDED
14th October, 1981	17th October, 1981	17th October, 1981
RIG DOWN COMPLETE	**RIG RELEASED**	**PRODUCTION UNIT - RIG UP**
9th November, 1981	9th November, 1981	-
PRODUCTION UNIT - RIG DOWN		**INITIAL PRODUCTION ESTABLISHED**
-		-

MISCELLANEOUS

OPERATOR	PERMITTEE or LICENCE	ESSO INTEREST / OTHER INTEREST
Esso Australia Ltd.	EEPA, Hematite Petroleum Pty. Limited	50% 50%

CONTRACTOR	RIG NAME	EQUIPMENT TYPE
South Seas Drilling Co.	Southern Cross	Oilwell E-2000

TOTAL RIG DAYS	DRILLING AFE NO.	COMPLETION NO.	TYPE COMPLETION
26.5	231-007	-	-

LAHEE WELL CLASSIFICATION	Before Drilling	New Field Wildcat
	After Drilling	New Field Discovery

2. CASING DATA

WELL: YELLOWTAIL-1

CSG O.D. IN.	WTL LBS/FT	GRADE	CONN.	CSG LENGTH METRES	SHOE DEPTH R.K.B.	CENTRALIZER POSITION	REMARKS
24	670		CC	8.20			Pile Joint Ext.
20	129	X52	CCXJV	13.46			Crossover Joint
20	94	X52	JV	111.34	229.24	1 ea across 1st five joints of casing.	8 Jts & Float Joint
10.75	45.2	K55	Butt	706.38	803.94	Across collars 1, 2,3,4,5,6 & above the float collar. First 6 collars inside 20" casing.	59 Joints & Float Shoe & Float Collar & Csg Hgr w/ pup.

3.CEMENT DATA

WELL: YELLOWTAIL-1

DATE	DEPTH METRES	TYPE JOB	TYPE CEMENT	AMOUNT	ADDITIVES	REMARKS
Oct. 19	229.24	Cement 20" Casing	Class 'N'	627 sx	Freshwater 12% Dry Blend Gel	Lead Slurry 1.48 SG (12.3 ppg)
					2% $CaCl_2$ by wt of Cement	
			Class 'N'	350 sx	Freswater + 2% $CaCl_2$ by wt of Cement	Tail Slurry 1.87 SG (15.6 ppg)
Oct. 22	804.94	Cement 10 3/4" Casing	Class 'N'	850 sx	Freshwater	Lead Slurry 1.87 SG (15.6 ppg)
			Class 'N'	200 sx	Seawater	Tail Slurry 1.87 SG (15.6 ppg)
Nov. 7	2455 to 2340	P & A Plug #1	Class 'N'	176 sx	Freshwater 1% HR6L	Slurry Wt. 1.87 SG (15.6 ppg)
Nov. 7	835 to 720	P & A Plug #2	Class 'N'	202 sx	Seawater	Slurry Wt. 1.87 SG (15.6 ppg)
Nov. 7	620	P & A Plug #3				EZSV Bridge Plug
Nov. 8	165	P & A Plug #4	Class 'N'	328 sx below bridge plug 68 sx above bridge plug	Seawater	Slurry Wt. 1.87 SG (15.6 ppg)

WELL : YELLOWTAIL - 1

4. SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES.			
INTERVAL	TYPE	INTERVAL	TYPE
415 - 2571 m	5 m cuttings samples, washed and dried. 5 m cuttings samples,unwashed. 15 m composite cuttings samples, canned wet (Geochem)		
2413.6-2424.5m	Conventional Core		
2424.5-2437.5m	Conventional Core		
1584.2-2570.0m Runs 1 & 2	Sidewall Cores (CST) Att 81, Rec 78.		

5. WIRELINE LOGS AND SURVEYS			
Type ¢ Scale	From To	Type & Scale	From To
ISF-Sonic 1:200	816 - 98 m		
ISF-Sonic 1:500	816 - 98 m		
DLL-MSFL 1:200	2565 - 804 m		
DLL-MSFL 1:500	2565 - 804 m		
BHC-GR 1:200	2568 - 804 m		
BHC-GR 1:500	2568 - 804 m		
LDT-CNL 1:200	2565 - 804 m		
LDT-CNL 1:500	2565 - 804 m		
HDT(Continuous Dipmeter) 1:200	2568 - 2000 m		
HDT(Continuous Dipmeter) 1:500	2568 - 2000 m		
GEODIP 1:20	2475 - 2350 m		
CYBERDIP 1:200	2568 - 2000 m		
CYBERDIP 1:500	2568 - 2000 m		
VELOCITY SURVEY	2568 - 500 m		
VELOCITY DATA	(11 Levels)		
SCHLUMBERGER	(11 Levels)		
RFT 1:200	2468 - 2417 m		

6. GEOLOGICAL AND GEOPHYSICAL ANALYSIS

AGE	UNIT/HORIZON	DEPTH (m) PREDICTED KB	ACTUAL KB	ACTUAL SUBSEA	THICKNESS (m)
Pliocene/Miocene	Gippsland Limestone	99	98	-77	1536
Miocene/Oligocene	Lakes Entrance Formation	1657	1634	-1613	771
Eocene/Paleocene	Latrobe Group (Gurnard Fm.)	2389	2405	-2384	8
	("Coarse Clastics")		2413	-2392	158+
	TOTAL DEPTH	2571			

INTRODUCTION:

Yellowtail-1 was drilled to assess the hydrocarbon potential of reservoir sandstones within the Latrobe Group in a low relief, topographic high. A 10.5 metre oil column was encountered at the top of the Latrobe Group "coarse clastics".

PREVIOUS DRILLING HISTORY:

Opah-1, drilled in 1977, is located 475 metres to the SE of Yellowtail-1. It encountered fluorescence and cut in sidewall cores and cuttings in non-net Latrobe Group sediments to a depth of 2395m(ss). No shows were recorded in the underlying Latrobe Group "coarse clastics".

GEOLOGICAL ANALYSIS:

Structure

Post-drill mapping of the Yellowtail area confirms the pre-drill interpretation of an eroded low relief topographic high at the top of the Latrobe Group (Enclosure 1). Yellowtail-1 was drilled on the crest of the more westerly culmination of the larger closure.

Stratigraphy

Yellowtail-1 encountered the limestones and calcareous sediments of the Gippsland Limestone and Lakes Entrance Formation as predicted. A major unconformity representing most of the Oligocene occurs near the base of the Lakes Entrance Formation.

An unconformity in excess of 4 million years occurs at 2384m(ss) between the base of the Lakes Entrance Formation and the top of the Gurnard Formation. The Gurnard Formation at the top of the Latrobe Group is composed of glauconitic siltstones and sandstones and in Yellowtail-1 is non-net. An unconformity of at least 13 million years occurs at 2392m(ss) between the base of the Gurnard Formation and the top of "coarse clastics".

The reservoir section in Yellowtail-1 is at the top of the "coarse clastics", in upper L. balmei nearshore marine sandstones. Log analysis indicates an average porosity of 18 percent and a net to gross ratio of 100 percent for the reservoir section.

Beneath the reservoir, the section consists of nearshore marine sandstone, interbedded with minor shale and siltstone. The age of the sediments at TD is lower L. balmei.

HYDROCARBONS:

Yellowtail-1 encountered a 10.5 metre oil accumulation near the top of Latrobe Group "coarse clastics" from 2395m - 2405.5m(ss). The oil-water contact has been interpreted from log analysis to be at 2405.5m(ss) but the logs also indicate that residual, or immovable oil is present from 2405.5m(ss) to 2410.5m(ss). It is interpreted that this zone would produce water.

The oil-water contact at 2405.5m(ss) is 10.5 metres deeper than predicted and may require the presence of a permeability barrier between Yellowtail-1 and Opah-1 to explain the water saturated sand in Opah-1 at 2395m(ss).

No hydrocarbons were encountered within the Latrobe Group below this oil accumulation

GEOPHYSICAL ANALYSIS:

At the well location the top of Latrobe came in 16m low to prediction, an error of 0.7%.

Most of this discrepancy is due to the presence of low velocity sediments just above the top of the Latrobe Group. This lithology leads to areal variation in the seismic reflection character from the top of the Latrobe Group surface and results in the reflection correlating with an event above the Latrobe Group in the area of Yellowtail-1. When allowance is made for this, the error in prediction is reduced to 0.3% which can be accounted for by the difference between predicted and actual velocities.

Remapping of the field in the light of Yellowtail-1 has resulted in a reduction of the predrill volume of the western culmination of the closure (see Enclosure 1). This is due to the "coarse clastics" being deeper than predicted. This effect is somewhat reduced by the deeper than predicted OWC of 2405.5m(ss).

7. SUMMARY OF FORMATION TEST PROGRAMME

NOTE: Seats 1/1 - 1/8 were run using a Martineau probe. None obtained a good seal to give reliable pressure information. Only seat 1/8 (where a sample was taken) is listed here.

RUN	SEAT	DEPTH (METRES) K.B.	CHAMBER lit	RECOVERY (LITRES) OIL ml	COND.	GAS lit	FORMATION WATER ml	FILTRATE ml	HEWLETT-PACKARD FORMATION PRESSURE MPaa	Psia	HEWLETT-PACKARD HYDROSTATIC PRESSURE MPaa	Psia	HORIZONTAL PERMEABILITY millidarcys	REMARKS
1	8	2417.0	12.5	2150		42.5		2000	23.273	3375.53	27.262	3954.0		Segregated sample. 4.5 l chamber preserved for full analysis
1	8	2417.0	4.5						23.277	3376.02	27.262	3954.0		
2	9	2468.0	Pretest						23.757	3445.70	27.818	4034.6		
2	10	2440.5	Pretest						23.481	3405.60	27.515	3990.7		
2	11	2432.0	Pretest						23.397	3393.46	27.412	3975.8		
2	12	2431.0	Pretest						23.390	3392.39	27.400	3974.0		
2	13	2429.0	Pretest						23.370	3389.50	27.362	3968.6		
2	14	2426.5	Pretest						23.347	3386.15	27.350	3966.8		
2	15	2423.0	Pretest						23.332	3384.00	27.303	3960.0		
2	16	2422.5	Pretest						23.319	3382.10	27.293	3958.5		
2	17	2421.0	Pretest						23.309	3380.62	27.274	3955.8		
2	18	2419.5	Pretest						23.297	3378.97	27.269	3955.1		
2	19	2417.0	Pretest						23.277	3376.10	27.234	3950.0		
2	20	2409.5	Pretest								27.107	3931.6		Seal Failure
2	21	2410.0	Pretest								27.134	3935.5		Seal Failure
2	22	2405.0	Pretest								27.134	3935.5		Seal Failure
2	23	2430.5	12.5			4.5	10400		23.391	3392.60	27.400	3974.0		
2	24	2425.5	12.5						23.349	3386.44	27.338	3965.0		Unsuccessful: probe plugging - could not obtain sample

SUMMARY OF FORMATION TEST PROGRAMME

RUN	SEAT	DEPTH (METRES) K.B.	CHAMBER lit	RECOVERY (LITRES) OIL ml	COND.	GAS lit	FORMATION WATER ml	FILTRATE ml	HEWLETT-PACKARD FORMATION PRESSURE MPaa	Psia	HEWLETT-PACKARD HYDROSTATIC PRESSURE MPaa	Psia	HORIZONTAL PERMEABILITY millidarcys	REMARKS
2	25	2426.0	12.5			14.2	9400		23.353	3387.00	27.338	3965.0		
3	26	2427.0	12.5			12.7	9900		23.336	3384.60	27.269	3955.0		
3	27	2423.5	12.5			14.2	9500		23.315	3381.60	27.236	3950.3		
5	28	2425.7	27.3	5500 +2050ml oil/filt emulsion		181.2	6750		23.333	3384.20	27.895	4045.9		Segregated sample. 12.5 l chamber preserved for full analysis.
5	28	2425.7	12.5						23.336	3384.60	27.895	4045.9		

NB: Run 4 was unsuccessful due to bridges in hole. A wiper trip was necessary before Run 5.

8. YELLOWTAIL - 1 TEMPERATURE RECORD

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C^o)	CIRCULATION TIME (t_k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER* TEMPERATURE (C^o)	GEOTHERMAL GRADIENT (C^o/km)
GR-ISF-MSFL-BHC	816	35.0	1 hr 30 min	5 hrs		
GR-MSFL-DLL	2571	76.1	1 hr 45 min	6 hrs 45 min		
GR-LDT-CNL	2571	78.8	1 hr 45 min	13 hrs	98.9	38.2
GR-BHC	2571	83.3	1 hr 45 min	18 hrs		
GR-HDT	2571	87.2	1 hr 45 min	23 hrs 15 min		
Seismic Survey	2571	73.8		5 hrs		
RFT-1	2571	88.8	1 hr 40 min	6 hrs 30 min		
RFT-5	2571	79.4	2 hrs	5 hrs	Note: Ran wiper trip & circulated before RFT-5	

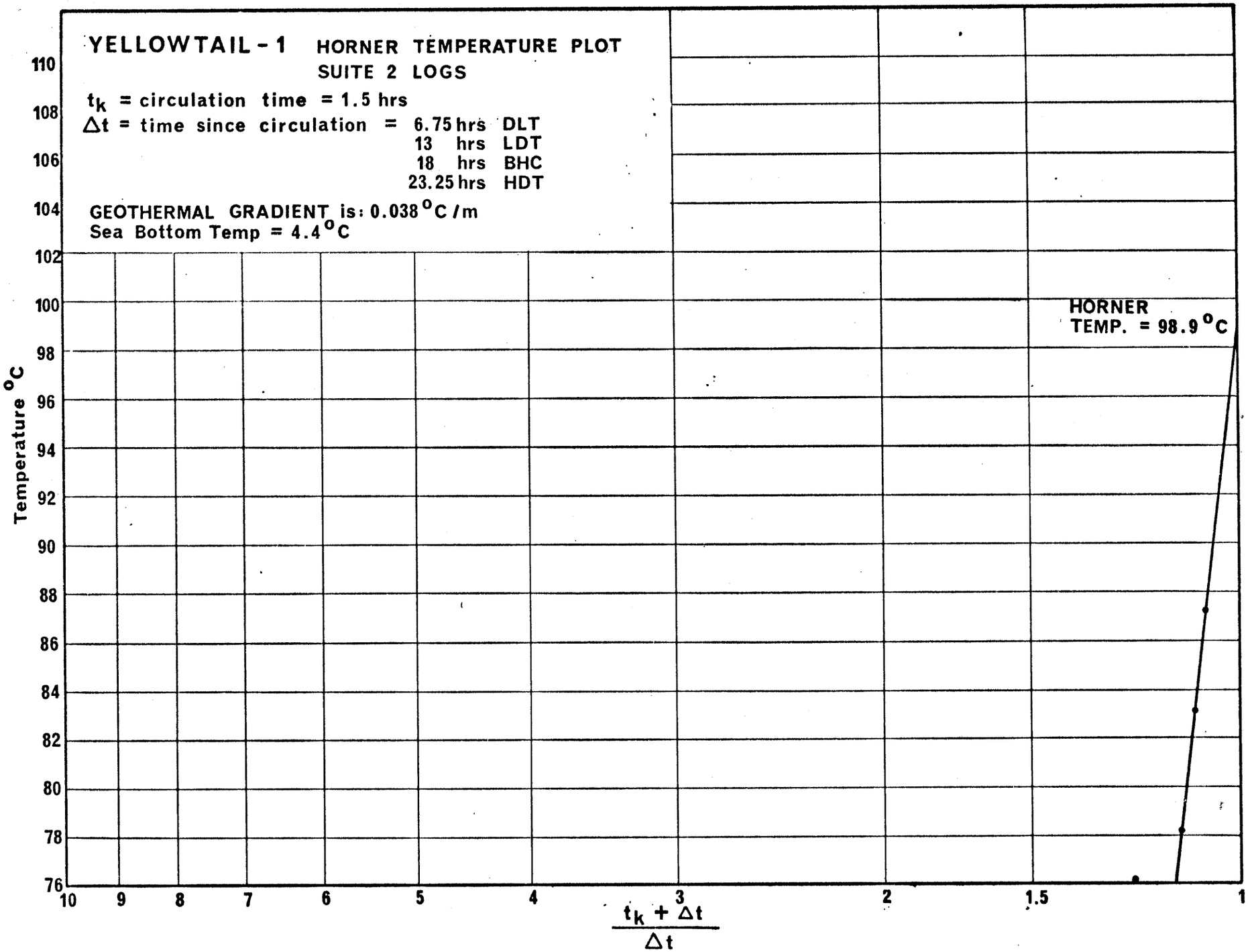

YELLOWTAIL - 1 HORNER TEMPERATURE PLOT
SUITE 2 LOGS
t_k = circulation time = 1.5 hrs
Δt = time since circulation = 6.75 hrs DLT
13 hrs LDT
18 hrs BHC
23.25 hrs HDT
GEOTHERMAL GRADIENT is: 0.038 °C / m
Sea Bottom Temp = 4.4 °C
HORNER TEMP. = 98.9 °C
Temperature °C
110
108
106
104
102
100
98
96
94
92
90
88
86
84
82
80
78
76
10
9
8
7
6
5
4
3
2
1.5
1
$\frac{t_k + \Delta t}{\Delta t}$

Figure 5

FIGURES

YELLOWTAIL-1
STRATIGRAPHIC TABLE

MM YEARS	EPOCH	SERIES	FORMATION HORIZON	PALYNOLOGICAL ZONATION SPORE – POLLEN ASSEMBLAGE ZONES A.D. PARTRIDGE/H.E. STACEY	PLANKTONIC FORAMINIFERAL ZONATIONS D TAYLOR	DRILL DEPTH (METRES)	SUBSEA DEPTH (METRES)	THICKNESS (METRES)
0			SEAFLOOR			98	-77	
0	PLEIST	E L			A 1			
	PLIO	M L			A 2			
		E			A 3			
					A 4			
5			GIPPSLAND LIMESTONE		B 1			1536
	MIOCENE	LATE			B 2			
10					C			
		MIDDLE	? ?		D 1	1634	-1613	
					D 2			
15			LAKES ENTRANCE FORMATION		E 1			
					E 2			762
		EARLY			F			
20					G			
					H 1			
25		LATE		P. tuberculatus	H 2	2396	-2375	
					I 1			
30	OLIGOCENE				I 2			
		EARLY			J 1			
35					J 2	2405	2384	9
				Upper N. asperus	K	2405	-2384	
		LATE	LATROBE GROUP GURNARD FM	Middle N. asperus				8
40						2413	-2392	
	EOCENE	MIDDLE		Lower N. asperus				
45								
				P. asperopolus				
50		EARLY		Upper M. diversus				
				Middle M. diversus				
				Lower M. diversus		2413	-2392	
55		LATE	LATROBE GROUP "COARSE CLASTICS"	Upper L. balmei				158+
	PALEOCENE		T.D.			2571	-2550	
60		EARLY		Lower L. balmei				
65								

YELLOWTAIL - 1

ABANDONMENT SCHEMATIC

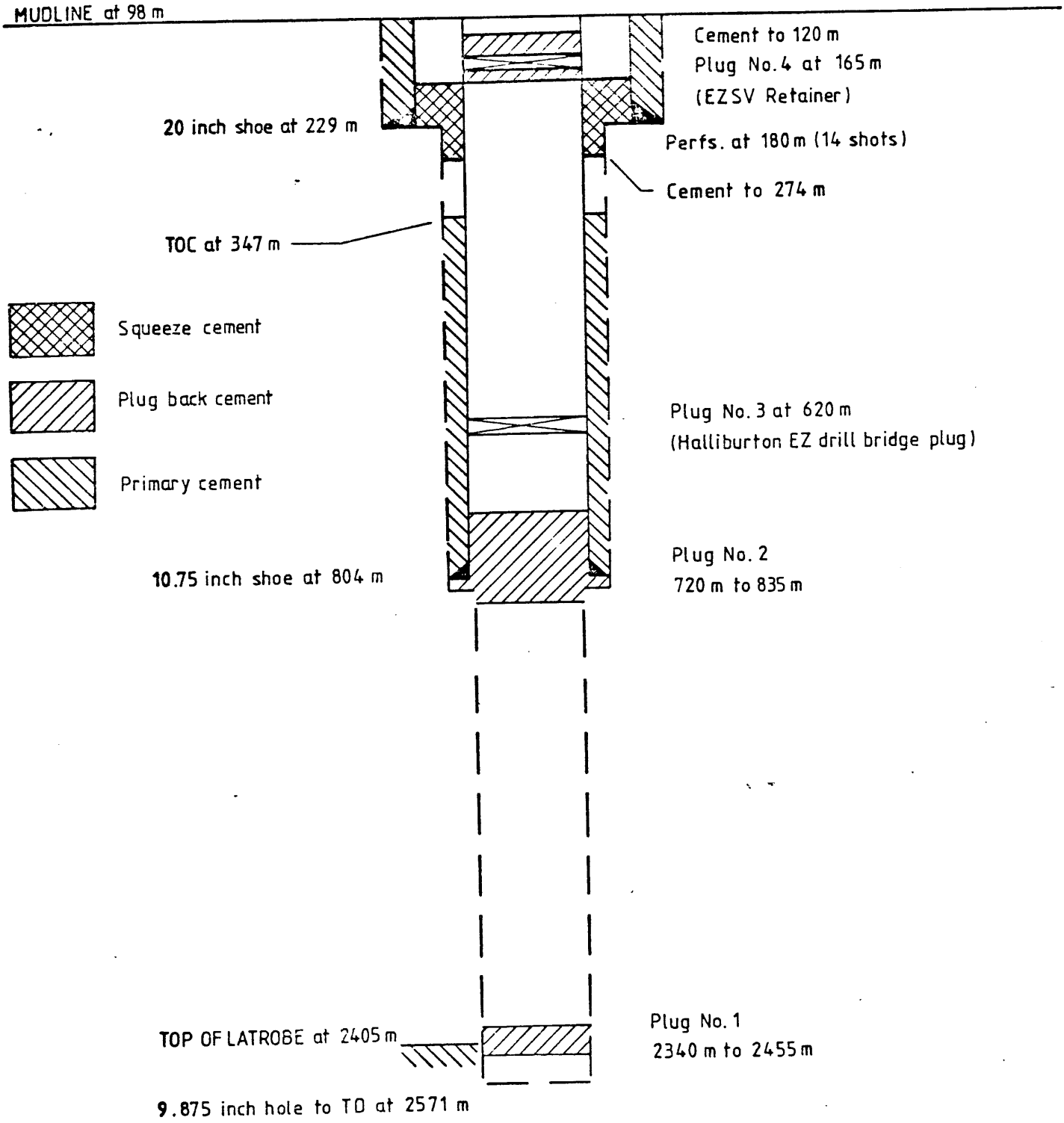
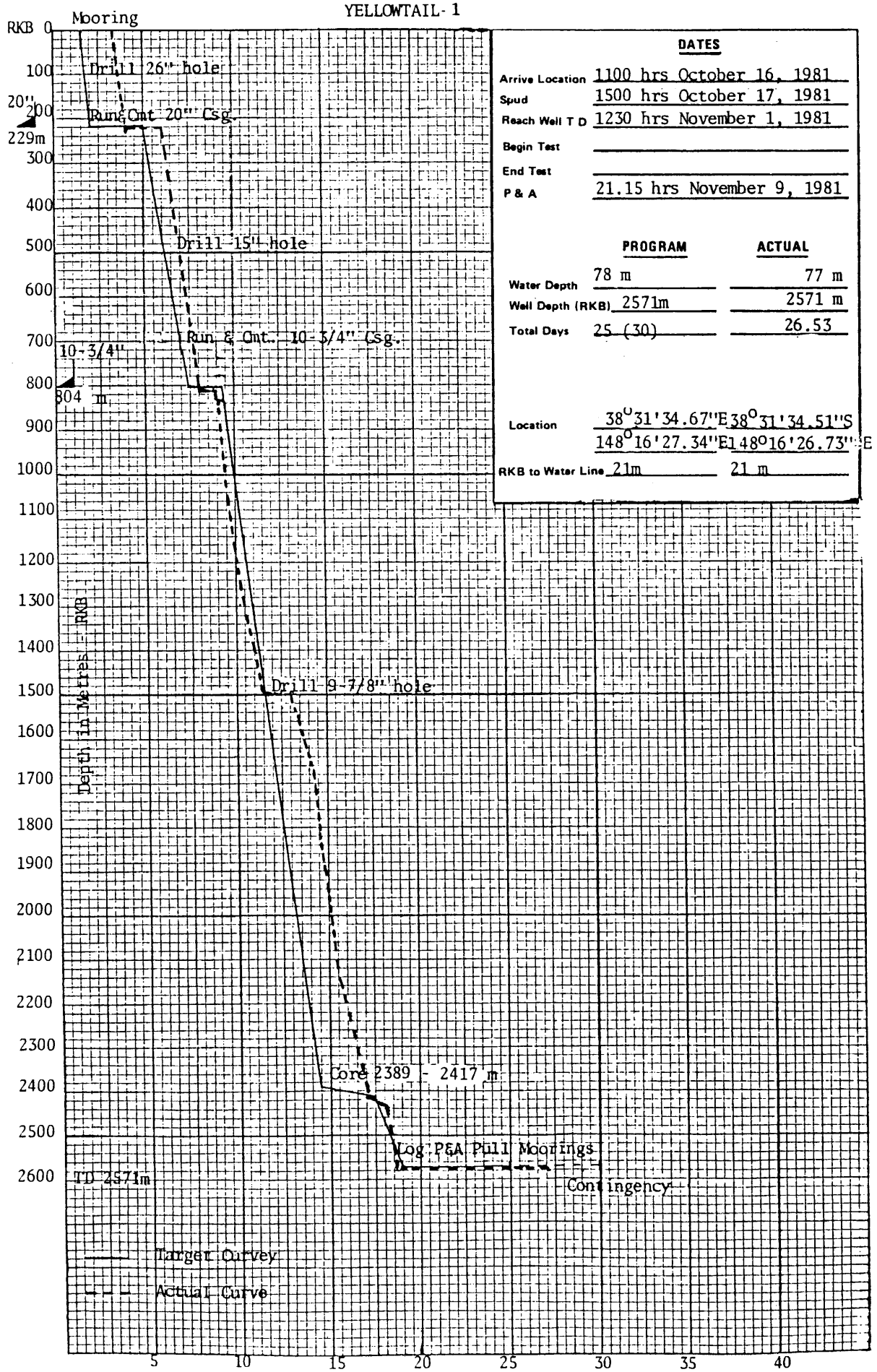


FIGURE 2.

ESSO AUSTRALIA LTD.
WELL PROGRESS CURVE
YELLOWTAIL-1



DATES	
Arrive Location	1100 hrs October 16, 1981
Spud	1500 hrs October 17, 1981
Reach Well T D	1230 hrs November 1, 1981
Begin Test	
End Test	
P & A	21.15 hrs November 9, 1981

	PROGRAM	ACTUAL
Water Depth	78 m	77 m
Well Depth (RKB)	2571m	2571 m
Total Days	25 (30)	26.53
Location	38°31'34.67"E 38°31'34.51"S 148°16'27.34"E 148°16'26.73"E	
RKB to Water Line	21m	21 m

LOCALITY MAP

SCALE - 1:250,000

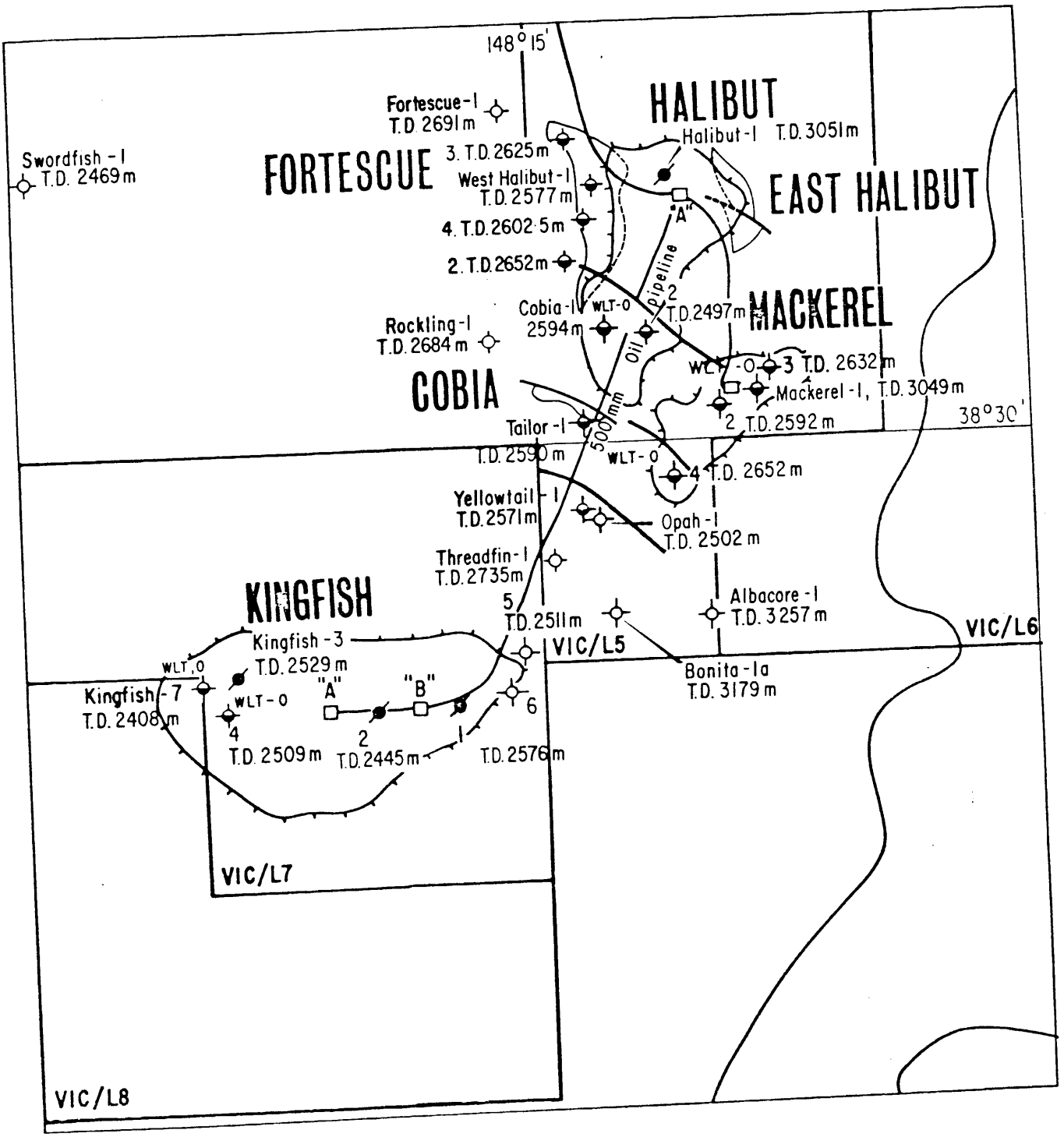
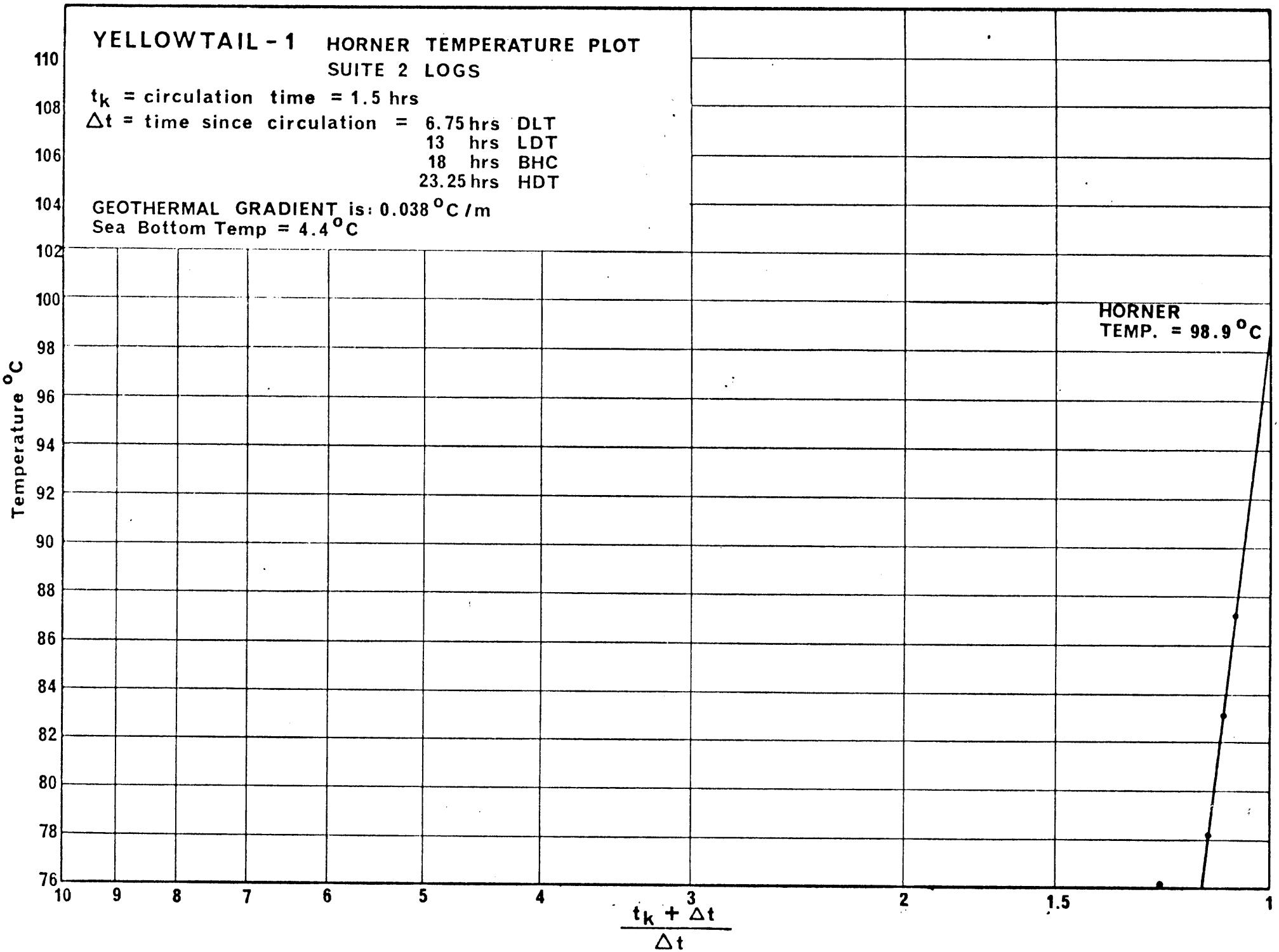


Figure 1

Dwg 2054/OP/14


YELLOWTAIL - 1 HORNER TEMPERATURE PLOT
SUITE 2 LOGS
t_k = circulation time = 1.5 hrs
Δt = time since circulation = 6.75 hrs DLT
13 hrs LDT
18 hrs BHC
23.25 hrs HDT
GEOTHERMAL GRADIENT is: 0.038 °C/m
Sea Bottom Temp = 4.4 °C
HORNER
TEMP. = 98.9 °C
Temperature °C
110
108
106
104
102
100
98
96
94
92
90
88
86
84
82
80
78
76
10
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8
7
6
5
4
3
2
1.5
1
$\frac{t_k + \Delta t}{\Delta t}$

APPENDIX 1

APPENDIX 1

LITHOLOGICAL DESCRIPTIONS

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
415 - 420	100	CALCARENITE: white, light grey to tan, very calcareous, well sorted, sandy in part, brittle, firm to hard, occasional forams, shell fragments, minor calcareous clasts, occasional bryozoans, brachiopods and plant remains.
420 - 425	100	CALCARENITE: a:a
425 - 430	100	CALCARENITE: a:a
430 - 435	100	CALCARENITE: a:a
435 - 440	100	CALCARENITE: a:a
440 - 445	100	CALCARENITE: a:a
445 - 450	100	CALCARENITE: a:a
450 - 455	100	CALCARENITE: a:a
455 - 460	100	CALCARENITE: white, light medium grey, tan, occasionally opaque, trace vari coloured grains, sandy in part, abundant shell fragments, consisting of corals, forams, with occasional fenestral texturing, firm, excellent sorting, abundant calcareo opaque clasts, occasional bryozoans and brachiopods.
460 - 465	100	CALCARENITE: a:a
465 - 470	100	CALCARENITE: a:a
470 - 475	100	CALCARENITE: a:a
475 - 480	100	CALCARENITE: a:a
480 - 485	100	CALCARENITE: a:a
485 - 490	100	CALCARENITE: a:a
490 - 495	100	CALCARENITE: a:a
495 - 500	100	CALCARENITE: Light to dark grey, tan, becoming increasingly argillaceous, sandy in part, abundant fossil fragments consisting of coral and bryozoan remains, forams, bivalves, occasional fenestral texturing, relatively unconsolidated.
500 - 505	100	CALCARENITE: a:a
505 - 510	100	CALCARENITE: a:a
510 - 515	100	CALCARENITE: a:a
515 - 520	100	CALCARENITE: a:a
520 - 525	100	CALCARENITE: a:a
525 - 530	100	CALCARENITE: a:a
530 - 535	100	CALCARENITE: a:a
535 - 540	100	CALCARENITE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
540 - 545	100	CALCARENITE: a:a
545 - 550	100	CALCARENITE: medium to dark grey, buff, tan; less fossiliferous, abundant, varicoloured calcareous clasts, occasional shell fragments, occasional biotite? black, coarse grained sub-angular grains, well sorted, argillaceous, sandy, occasionally silt matrix , tight.
550 - 555	100	CALCARENITE: a:a
555 - 560	100	CALCARENITE: a:a becoming increasingly argillaceous and finer grained.
560 - 565	100	CALCARENITE: a:a
565 - 570	100	CALCARENITE: a:a
570 - 575	100	CALCARENITE: a:a
575 - 580	100	CALCARENITE: a:a
580 - 585	100	CALCARENITE: a:a
585 - 590	100	CALCARENITE: becoming less argillaceous, otherwise a:a
590 - 595	100	CALCARENITE: a:a
595 - 600	100	CALCARENITE: light grey, buff, becoming cleaner, sandy, minor carbonaceous matrix, firm, trace fossil fragments, increasing amount of broken shell fragments, tight.
600 - 605	100	CALCARENITE: a:a
605 - 610	100	CALCARENITE: becoming finer grained.
610 - 615	100	CALCARENITE: a:a
615 - 620	100	CALCARENITE: a:a
620 - 625	100	CALCARENITE: a:a
625 - 630	100	CALCARENITE: a:a
630 - 635	100	CALCARENITE: a:a
635 - 640	100	CALCARENITE: a:a
640 - 645	100	CALCARENITE: a:a
645 - 650	100	CALCARENITE: white, light grey, sandy, fine to very fine grained, becoming increasingly sandy, occasional forams and shell fragments, occasionally opaque vari coloured calcareous clasts, tight.
650 - 655	100	CALCARENITE: a:a
655 - 660	100	CALCARENITE: a:a
660 - 665	100	CALCARENITE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
665 - 670	100	CALCARENITE: a:a
670 - 675	100	CALCARENITE: a:a
675 - 680	100	CALCARENITE: a:a becoming increasingly finer grained and unconsolidated.
680 - 685	100	CALCARENITE: a:a
685 - 690	100	CALCARENITE: light grey, buff, sandy, very firm, good sorting, occasional forams and broken shells trace opaque vari coloured calcareous clasts, tight.
690 - 695	100	CALCARENITE: a:a
695 - 700	100	CALCARENITE: a:a
700 - 705	100	CALCARENITE: a:a
705 - 710	100	CALCARENITE: a:a
710 - 715	100	CALCARENITE: a:a
715 - 720	100	CALCARENITE: white, buff, fine grained, slightly carbonaceous, relatively unconsolidated, fossil fragments.
720 - 725	100	CALCARENITE: a:a
725 - 730	100	CALCARENITE: a:a
730 - 735	100	CALCARENITE: a:a
735 - 740	100	CALCARENITE: a:a
740 - 745	100	CALCARENITE: a:a
745 - 750	100	CALCARENITE: white, buff, sandy to silty, becoming increasingly sandy, unconsolidated to firm, minor carbonaceous matter, trace fossils, minor shell fragments, occasionally vari coloured opaque calcareous clasts.
750 - 755	100	CALCARENITE: a:a few plant remains.
755 - 760	100	CALCARENITE: a:a
760 - 765	100	CALCARENITE: a:a
765 - 770	100	CALCARENITE: a:a
770 - 775	100	CALCARENITE: a:a
775 - 780	100	CALCARENITE: a:a
780 - 785	100	CALCARENITE: a:a
785 - 790	100	CALCARENITE: a:a grading to a very fine grained sandstone.
790 - 795	100	CALCARENITE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
795 - 800	100	CALCARENITE: a:a
800 - 805	100	CALCARENITE: a:a
805 - 810	100	CALCARENITE: a:a
810 - 815	100	CALCARENITE: a:a
818 Spot Sample	100	CALCARENITE: buff, white, very sandy calcareous matrix, minor carbonaceous matter, relatively unconsolidated, becoming soft, occasionally firm, rare opaque clasts, rare fossil fragments.
815 - 820	100	CALCARENITE: medium grey, very sandy, calcareous matrix, minor carbonaceous matter, friable to firm, occasionally hard, rare fossil fragments, a lot of cement cavings.
820 - 825	100	CALCARENITE: a:a but less cement cavings, minor amounts of light grey sand.
825 - 830	100	CALCARENITE: a:a less carbonaceous matter
830 - 835	100	CALCARENITE: a:a
835 - 840	100	CALCARENITE: a:a
840 - 845	100	CALCARENITE: a:a
845 - 850	100	CALCARENITE: a:a
850 - 855	100	CALCARENITE: a:a
855 - 860	100	CALCARENITE: medium light grey to medium grey , calcareous matrix, friable to hard. Rare fossil fragments and forams , tight.
860 - 865	100	CALCARENITE: a:a
865 - 870	100	CALCARENITE: a:a
870 - 875	100	CALCARENITE: a:a
875 - 880	100	CALCARENITE: a:a
880 - 885	100	CALCARENITE: light grey to medium light grey, sandy calcareous matrix, minor carbonaceous matter, very friable to hard, trace fossil fragments, minor forams
885 - 890	100	CALCILUTITE: similar to calcarenite above.
890 - 895	100	CALCARENITE: a:a with small inclusions in fossil fragments .
895 - 900	100	CALCARENITE: a:a
900 - 905	100	CALCARENITE: a:a
905 - 910	100	CALCARENITE: a:a
910 - 915	100	CALCARENITE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
915 - 920	100	CALCARENITE: medium light grey, fine to very fine grained calcareous matrix, unconsolidated to hard, rare fossil fragments, some silty matrix.
920 - 925	100	CALCARENITE: a:a
925 - 930	100	CALCARENITE: a:a
930 - 935	100	CALCARENITE: a:a
935 - 940	100	CALCARENITE: a:a
940 - 945	100	CALCARENITE: a:a
945 - 950	100	CALCARENITE: a:a
950 - 955	100	CALCARENITE: a:a silty in part.
955 - 960	100	CALCARENITE: a:a
960 - 970	100	CALCARENITE: a:a
970 - 980	100	CALCARENITE: medium light grey, fine to very fine grained, silty in part, calcareous matrix, argillaceous unconsolidated to friable, rare fossil fragments, occasional quartz grains.
980 - 990	100	CALCARENITE: a:a becoming lighter.
990 - 1000	100	CALCARENITE: a:a
1000 - 1010	100	CALCARENITE: a:a
1010 - 1020	100	CALCARENITE: a:a becoming clayey in part, clayey balls
1020 - 1030	100	CALCARENITE: a:a silty.
1030 - 1040	100 Trace	CALCARENITE: a:a CALCILUTITE: medium dark grey.
1040 - 1050	65 35	CALCILUTITE: medium dark grey, calcareous, friable to hard, large fragments, cavings? CALCARENITE: medium light grey, calcareous matrix, unconsolidated, rare fossil fragments, balled up in sticky clay.
1050 - 1060	65 35	CALCARENITE: a:a CALCILUTITE: a:a
1060 - 1070	100	CALCARENITE: a:a fossil limestone, minor carbonaceous matter.
1070 - 1080	100	CALCARENITE: a:a including fossil fragments, forams.
1080 - 1090	50 50	CALCARENITE: fewer clayballs. CALCILUTITE: a:a
1090 - 1100	100	CALCARENITE: a:a
1100 - 1110	95 5	CALCARENITE: a:a SHALE: medium dark grey, hard, non-calcareous.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1110 - 1120	50	CALCILUTITE: medium dark grey, hard, rare fossil fragments
	50	CALCARENITE: a:a
1120 - 1130	50	CALCILUTITE: a:a shell fragments.
	50	CALCARENITE: a:a
1130 - 1140	100	CALCILUTITE: medium light grey, calcareous, argillaceous, sandy in part, minor fossil content and shell fragments.
1140 - 1150	60	CALCILUTITE: clayey matrix, hard.
	40	CALCARENITE: a:a
1150 - 1160	100	CALCARENITE: medium light grey, very fine to medium grained, calcareous clay matrix, unconsolidated to hard, fossils, especially forams.
1160 - 1170	50	CALCARENITE: a:a
	50	CALCILUTITE: a:a
1170 - 1180	100	CALCARENITE: a:a
1180 - 1190	50	CALCARENITE: a:a
	50	CALCILUTITE: a:a
1190 - 1200	100	CALCARENITE: medium light grey, very fine to fine grained, calcareous, large amounts of unconsolidated clay matrix, sandy in part, minor amount of fossil fragments.
1200 - 1210	100	CALCARENITE: a:a slightly carbonaceous.
1210 - 1220	100	CALCARENITE: a:a
1220 - 1230	100	CALCARENITE: a:a becoming lighter colour, increase in fossil content, very clayey.
1230 - 1235	100	CALCARENITE: a:a
1235 - 1240	100	CALCARENITE: a:a
1240 - 1245	100	CALCARENITE: a:a
1245 - 1250	100	CALCARENITE: a:a
1250 - 1255	100	CALCARENITE: a:a
1255 - 1260	100	CALCARENITE: a:a
1260 - 1265	100	CALCARENITE: a:a
1265 - 1270	100	CALCARENITE: a:a markedly less clay.
1270 - 1275	100	CALCARENITE: medium light grey to medium grey, calcareous matrix, silty, partly unconsolidated to friable, numerous forams, occasional fossil fragments, mineral fluorescence.
1275 - 1280	100	CALCARENITE: a:a
1280 - 1285	100	CALCARENITE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1285 - 1290	100	CALCARENITE: a:a
1290 - 1295	100	CALCARENITE: a:a
1295 - 1300	100	CALCARENITE: medium grey, calcareous matrix, very fine grained, becoming silty
1300 - 1305	100	CALCARENITE: light grey, unconsolidated to hard, rare fossils and forams, occasional opaque calcareous clasts, mineral fluorescence.
1305 - 1310	100	CALCARENITE: a:a
1310 - 1315	100	CALCARENITE: a:a
1315 - 1320	100	CALCARENITE: a:a
1320 - 1325	100	CALCARENITE: a:a grading to calcilutite.
1325 - 1330	100	CALCARENITE: a:a
1330 - 1335	100	CALCARENITE: a:a
1335 - 1340	100	CALCARENITE: a:a
1340 - 1345	40 60	CALCARENITE: a:a CALCILUTITE: medium light grey, calcareous matrix, friable to hard, very rare fossil fragments and calcareous clasts.
1345 - 1350	90 10	CALCILUTITE: a:a CALCARENITE: a:a clayey matrix .
1350 - 1355	90 10	CALCILUTITE: a:a increasing in silt content, gradin to calcareous siltstone . CALCARENITE: a:a
1355 - 1360	90 10	CALCILUTITE: grading to calcareous siltstone . CALCARENITE - SILTSTONE
1360 - 1365	100	CALCILUTITE: grading to siltstone. Sandy in part, argillaceous matrix.
1365 - 1370	100	CALCILUTITE: grading to calcareous siltstone, medium grey to medium light grey, friable to hard, minor calcarenite,medium light grey to light grey clay and silty matrix, occasional fossil fragments.
1370 - 1375	100	CALCILUTITE: a:a
1375 - 1380	100	CALCILUTITE: a:a minor dolomite.
1380 - 1385	100	CALCILUTITE: a:a
1385 - 1390	100	CALCILUTITE: a:a small amount of calcarenite, light grey, very fine grained to clay, trace coal(?)
1390 - 1395	100	CALCILUTITE: a:a
1395 - 1400	100	CALCILUTITE: a:a
1400 - 1405	100	CALCILUTITE: a:a trace dolomite.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1405 - 1410	100	CALCILUTITE: a:a
1410 - 1415	100	CALCILUTITE: a:a
1415 - 1420	100	CALCILUTITE: a:a trace dolomite.
1420 - 1425	100	CALCILUTITE: a:a trace dolomite.
1425 - 1430	100	CALCILUTITE: a:a
1430 - 1435	100	CALCILUTITE: a:a
1435 - 1440	100	CALCILUTITE: a:a trace dolomite.
1440 - 1445	100	CALCILUTITE: a:a trace dolomite.
1445 - 1450	100	CALCILUTITE: a:a trace dolomite.
1450 - 1455	100	CALCILUTITE: a:a trace dolomite.
1455 - 1460	100	CALCILUTITE: a:a trace dolomite.
1460 - 1465	100	CALCILUTITE: a:a trace dolomite.
1465 - 1470	100	CALCILUTITE: light medium grey, silty, minor calcarenite with clay matrix, rare fossils and forams, friable to hard, trace dolomite, speck coal (?).
1470 - 1475	95 5	CALCILUTITE: a:a CALCARENITE: medium light grey, fine to very fine, calcareous matrix, argillaceous, unconsolidated to friable, trace dolomite.
1475 - 1480	100	CALCILUTITE: slightly sandy.
1480 - 1485	100	CALCILUTITE: medium light grey, friable to hard, some calcareous clay matrix, minor dolomite.
1485 - 1490	100	CALCILUTITE: a:a
1490 - 1495	100	CALCILUTITE: a:a
1495 - 1500	100	CALCILUTITE: a:a slightly sandy, very fine grained.
1500 - 1505	100	CALCARENITE: medium light grey, calcareous, silty in part, minor light grey clay inclusions in fossils and forams, unconsolidated to friable, trace dolomite.
1505 - 1510	100	CALCARENITE: a:a
1510 - 1515	100	CALCARENITE: a:a
1515 - 1520	100	CALCARENITE: a:a
1520 - 1525	90 10	CALCARENITE: a:a CLAYSTONE: light grey with very fine grains of sand, calcareous.
1525 - 1530	90 10	CALCARENITE: light medium grey, fine to very fine, calcareous matrix, friable to hard to tight, rare fossil fragments, minor calcilutite, silty. CLAYSTONE: light grey clay material, with some fine grained calcareous sand.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1530 - 1535	95	CALCARENITE: a:a
	5	CLAYSTONE: a:a
1535 - 1540	100	CALCARENITE: a:a with minor clay.
1540 - 1545	100	CALCARENITE: a:a
1545 - 1550	80	CALCARENITE: a:a
	20	CLAYSTONE: a:a
1550 - 1555	60	CALCARENITE: a:a
	40	CLAYSTONE: a:a
1555 - 1560	90	CALCARENITE: a:a
	10	CLAYSTONE: a:a
1560 - 1565	60	CALCARENITE: a:a
	40	CLAYSTONE: a:a
1565 - 1570	60	CALCARENITE: a:a
		CLAYSTONE: a:a
1570 - 1575	80	CALCARENITE: a:a
	20	CLAYSTONE: a:a
1575 - 1580	100	CALCARENITE: medium light grey, friable to hard, tight fine to very fine, calcareous, rare fossils, minor silty calcilutite and clay.
1580 - 1585	95	CALCARENITE: grading in part to calcilutite but not as sticky as before.
	5	CLAYSTONE: a:a
1585 - 1590	95	CALCARENITE: a:a
	5	MARL
1590 - 1595	100	CALCARENITE: grading to calcilutite, minor marl.
1595 - 1600	100	CALCARENITE: grading to calcilutite, minor marl.
1600 - 1605	100	CALCARENITE: a:a
1605 - 1610	100	CALCARENITE: a:a no marl.
1610 - 1615	100	CALCARENITE: a:a
1615 - 1620	100	CALCARENITE: a:a
1620 - 1625	100	CALCILUTITE: light medium grey, silty, calcareous, friable to hard, tight, occasional specks of opaque calcite, trace coal? becoming increasingly silty.
1625 - 1630	100	CALCAREOUS SILTSTONE: light grey to medium light grey, friable to hard, tight, minor opaque calcite, marl, and mineral fluorescence.
1630 - 1635	100	CALCAREOUS SILTSTONE: a:a
1635 - 1640	100	CALCAREOUS SILTSTONE: a:a
1640 - 1645	100	CALCAREOUS SILTSTONE: 5% clayey material containing silt sized particles. More calcareous than previous sample.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1645 - 1650	70	CALCILUTITE: light grey to medium light grey.
	30	SILTSTONE: a:a
1650 - 1655	60	SILTSTONE: a:a
	40	CALCILUTITE: a:a
1655 - 1660	60	CALCAREOUS SILTSTONE: medium light grey, friable to hard, tight.
	40	CALCILUTITE: medium light grey. Also abundant forams of various species, minor calcite, trace of clay.
1660 - 1665	100	CALCAREOUS SILTSTONE: a:a forams, trace of clay.
1665 - 1670	100	CALCAREOUS SILTSTONE: a:a
1670 - 1675	100	CALCAREOUS SILTSTONE: a:a forams of various species.
1675 - 1680	100	CALCAREOUS SILTSTONE: a:a
1680 - 1685	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, tight, forams.
1685 - 1690	100	CALCAREOUS SILTSTONE: a:a forams.
1690 - 1695	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, tight, forams, possible trace of glauconitic siltstone. Not as calcareous as earlier samples.
1695 - 1700	100	CALCAREOUS SILTSTONE: a:a trace of clay.
1700 - 1705	100	CALCAREOUS SILTSTONE: a:a forams.
1705 - 1710	100	CALCAREOUS SILTSTONE: a:a forams.
1710 - 1715	100	CALCAREOUS SILTSTONE: a:a forams.
1715 - 1720	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, tight, forams, trace of carbonaceous material.
1720 - 1725	100	CALCAREOUS SILTSTONE: a:a
1725 - 1730	100	CALCAREOUS SILTSTONE: a:a
1730 - 1735	100	CALCAREOUS SILTSTONE: a:a
1735 - 1740	100	CALCAREOUS SILTSTONE: a:a
1740 - 1745	100	CALCAREOUS SILTSTONE: a:a forams.
1745 - 1750	100	CALCAREOUS SILTSTONE: a:a forams.
1750 - 1755	100	CALCAREOUS SILTSTONE: a:a trace of clay.
1755 - 1760	100	CALCAREOUS SILTSTONE: a:a forams.
1760 - 1765	100	CALCAREOUS SILTSTONE: a:a
1765 - 1770	100	CALCAREOUS SILTSTONE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1770 - 1775	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, platy to elongate, forams, minor calcite, and light grey silty clay, calcareous.
1775 - 1780	100	CALCAREOUS SILTSTONE: a:a although less platy.
1780 - 1785	100	CALCAREOUS SILTSTONE: a:a trace quartz.
1785 - 1790	100	CALCAREOUS SILTSTONE: a:a forams, minor calcite, trace coal, trace calcarenite, platy.
1790 - 1795	100	CALCAREOUS SILTSTONE: a:a platy, trace fossils, trace quartz.
1795 - 1800	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, platy.
1800 - 1805	100	CALCAREOUS SILTSTONE: a:a
1805 - 1810	100	CALCAREOUS SILTSTONE: a:a
1810 - 1815	100	CALCAREOUS SILTSTONE: a:a
1815 - 1820	100	CALCAREOUS SILTSTONE: a:a forams.
1820 - 1825	100	CALCAREOUS SILTSTONE: a:a forams, trace of calcareni
1825 - 1830	100	CALCAREOUS SILTSTONE: a:a forams.
1830 - 1835	100	CALCAREOUS SILTSTONE: a:a fragments tend to be more equidimensional.
1835 - 1840	100	CALCAREOUS SILTSTONE: a:a forams.
1840 - 1845	100	CALCAREOUS SILTSTONE: a:a forams.
1845 - 1850	100	CALCAREOUS SILTSTONE: a:a forams.
1850 - 1855	100	CALCAREOUS SILTSTONE: a:a forams.
1855 - 1860	100	CALCAREOUS SILTSTONE: a:a trace of coal, forams.
1860 - 1865	100	CALCAREOUS SILTSTONE: a:a (large fragment coal (1 cm not in sieved sample). Large bivalve.
1865 - 1870	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, platy, a:a, trace of calcarenite, forams.
1870 - 1875	100	CALCAREOUS SILTSTONE: a:a minor calcite.
1875 - 1880	100	CALCAREOUS SILTSTONE: medium light grey, friable to occasionally hard, platy habit, tight, occasionally calcareous fragments and forams. 5% mineral fluorescence.
1880 - 1885	100	CALCAREOUS SILTSTONE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
1885 - 1890	100	CALCAREOUS SILTSTONE: a:a
1890 - 1895	100	CALCAREOUS SILTSTONE: a:a coral fragment.
1895 - 1900	100	CALCAREOUS SILTSTONE: a:a forams.
1900 - 1905	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, platy fragments, tight, coral fragment, trace of coal.
1905 - 1910	100	CALCAREOUS SILTSTONE: a:a trace mica, black chert, coal.
1910 - 1915	100	CALCAREOUS SILTSTONE: a:a trace coal.
1915 - 1920	100	CALCAREOUS SILTSTONE: a:a trace coal.
1920 - 1925	100	CALCAREOUS SILTSTONE: a:a
1925 - 1930	100	CALCAREOUS SILTSTONE: a:a
1930 - 1935	100	CALCAREOUS SILTSTONE: a:a trace of coal, calcarenite.
1935 - 1940	100	CALCAREOUS SILTSTONE: a:a trace of coal.
1940 - 1945	100	CALCAREOUS SILTSTONE: a:a trace of calcarenite.
1945 - 1950	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, platy fragments, trace of quartz.
1950 - 1955	100	CALCAREOUS SILTSTONE: a:a
1955 - 1960	100	CALCAREOUS SILTSTONE: a:a trace of coal.
1960 - 1965	100	CALCAREOUS SILTSTONE: a:a trace of coal and calcarenite.
1965 - 1970	100	CALCAREOUS SILTSTONE: a:a trace of coal and calcarenite.
1970 - 1975	100	CALCAREOUS SILTSTONE: a:a trace of non-calcareous siltstone.
1975 - 1980	100	CALCAREOUS SILTSTONE: a:a trace of non-calcareous siltstone.
1980 - 1985	100	CALCAREOUS SILTSTONE: a:a fossil, either internal mould of bivalve or foram. Granular texture on one face (no relief to this texture).
1985 - 1990	100	CALCAREOUS SILTSTONE: a:a forams, calcareous.
1990 - 1995	100	CALCAREOUS SILTSTONE: a:a trace calcarenite.
1995 - 2000	100	CALCAREOUS SILTSTONE: a:a foram, trace of calcarenit
2000 - 2005	100	CALCAREOUS SILTSTONE: a:a platy habit.
2005 - 2010	100	CALCAREOUS SILTSTONE: a:a
2010 - 2015	90 10	CALCAREOUS SILTSTONE: medium grey, hard platy fragmen MARL: very light grey.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
2015 - 2020	100	CALCAREOUS SILTSTONE: a:a with minor marl.
2020 - 2025	90 10	CALCAREOUS SILTSTONE: a:a forams. MARL: forams common.
2025 - 2030	90 10	CALCAREOUS SILTSTONE: a:a MARL: a:a
2030 - 2035	100	CALCAREOUS SILTSTONE: a:a minor marl.
2035 - 2040	100	CALCAREOUS SILTSTONE: a:a
2040 - 2045	100	CALCAREOUS SILTSTONE: a:a minor marl.
2045 - 2050	100	CALCAREOUS SILTSTONE: a:a forams various species.
2050 - 2055	100	CALCAREOUS SILTSTONE: medium light grey, friable to hard, platy fragments, minor marl and calcarenite.
2055 - 2060	90 10	CALCAREOUS SILTSTONE: a:a MARL: very light grey.
2060 - 2065	100	CALCAREOUS SILTSTONE: a:a trace marl, forams.
2065 - 2070	100	CALCAREOUS SILTSTONE: a:a trace marl, forams.
2070 - 2075	100	CALCAREOUS SILTSTONE: a:a trace marl, forams.
2075 - 2080	90 10	CALCAREOUS SILTSTONE: a:a MARL: a:a, very light grey.
2080 - 2085	100	CALCAREOUS SILTSTONE: a:a trace marl.
2085 - 2090	100	CALCAREOUS SILTSTONE: a:a trace marl.
2090 - 2095	100	CALCAREOUS SILTSTONE: a:a trace of calcarenite and marl.
2095 - 2100	100	CALCAREOUS SILTSTONE: a:a
2100 - 2105	100	CALCAREOUS SILTSTONE: a:a trace marl.
2105 - 2110	100	CALCAREOUS SILTSTONE: a:a trace calcarenite.
2110 - 2115	90 10	CALCAREOUS SILTSTONE: medium grey, friable, platy to elongate, tight, trace glauconite, forams. MARL
2115 - 2120	100	CALCAREOUS SILTSTONE: a:a
2120 - 2125	100	CALCAREOUS SILTSTONE: a:a
2125 - 2130	100	CALCAREOUS SILTSTONE: a:a
2130 - 2135	100	CALCAREOUS SILTSTONE: a:a
2135 - 2140	100	CALCAREOUS SILTSTONE: a:a
2140 - 2145	100	CALCAREOUS SILTSTONE: a:a increase in platy particle
2145 - 2150	100	CALCAREOUS SILTSTONE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
2150 - 2155	100	CALCAREOUS SILTSTONE: a:a becoming increasingly fissile.
2155 - 2160	100	CALCAREOUS SILTSTONE: platy to elongate, minor marl.
2160 - 2165	100	CALCAREOUS SILTSTONE: a:a
2165 - 2170	100	CALCAREOUS SILTSTONE: a:a minor marl, glauconite, coa
2170 - 2175	100	CALCAREOUS SILTSTONE: a:a
2175 - 2185		NO DATA AVAILABLE.
2185 - 2190	100 trace	CALCAREOUS SILTSTONE: medium light grey, platy fragments, mainly hard. MARL: very light grey, minor shale.
2190 - 2195	100 trace	CALCAREOUS SILTSTONE: a:a hard to fissile. MARL: containing silt sized particles, some shale (minor).
2195 - 2200	100 trace	CALCAREOUS SILTSTONE: a:a minor marl and shale, medium light grey, soft. CALCARENITE: very fine grained calcareous sand.
2200 - 2205	100	CALCAREOUS SILTSTONE: a:a minor marl, minor very fine grained, very calcareous sand.
2205 - 2210	100	CALCAREOUS SILTSTONE: a:a minor marl, silt appears to be coarser locally.
2210 - 2215	100	CALCAREOUS SILTSTONE: a:a minor marl, minor very fine sand with calcareous cement.
2215 - 2220	100	CALCAREOUS SILTSTONE: a:a minor marl and very fine sand with calcareous cement, hard to friable.
2220 - 2225	100	CALCAREOUS SILTSTONE: medium to light grey, hard, platy fragments, trace of calcarenite, coarser fraction of silt, coarse to very fine sand (no sand in sand catcher), trace of marl.
2225 - 2230	100	CALCAREOUS SILTSTONE: a:a (hard to friable). Minor marl a:a, trace of carbonaceous material.
2230 - 2235	100	CALCAREOUS SILTSTONE: a:a friable to hard; minor marl, minor sand, trace of carbonaceous material.
2235 - 2240	100	CALCAREOUS SILTSTONE: a:a minor very fine calcareous sand, friable, trace of marl.
2240 - 2245	80 20 trace	CALCAREOUS SILTSTONE: a:a CALCARENITE: fine to very fine sand, calcareous, well sorted, light grey, friable to tight. MARL
2245 - 2250	100 trace	CALCAREOUS SILTSTONE: a:a CALCARENITE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
2250 - 2255	90 10	CALCAREOUS SILTSTONE: a:a MARL: very light grey, with very fine grained sand particles.
2255 - 2260	100	CALCAREOUS SILTSTONE: a:a trace of marl, minor fine to very fine grained, friable to tight calcareous sand, glauconite as faecal pellets.
2260 - 2265	100	CALCAREOUS SILTSTONE: a:a trace marl, trace sand.
2265 - 2270	100	CALCAREOUS SILTSTONE: a:a trace marl, trace sand.
2270 - 2275	100	CALCAREOUS SILTSTONE: a:a very platy fragments, trace marl, a:a.
2275 - 2280	100	CALCAREOUS SILTSTONE: a:a
2280 - 2285	100	CALCAREOUS SILTSTONE: medium light grey to medium grey, friable to hard, tight platy fragments, minor very fine calcite, friable sandstone.
2285 - 2290	70 30 trace	CALCAREOUS SILTSTONE: a:a SHALE: medium dark grey, platy fragments, very fine, calcareous, friable. SANDSTONE
2290 - 2295	100 trace	CALCAREOUS SILTSTONE: a:a SANDSTONE
2295 - 2300	100	CALCAREOUS SILTSTONE: a:a
2300 - 2305	100	CALCAREOUS SILTSTONE: a:a
2305 - 2310	100	CALCAREOUS SILTSTONE: a:a trace of very fine calcareous sand.
2310 - 2315	100	CALCAREOUS SILTSTONE: a:a trace of marl.
2315 - 2320	100	CALCAREOUS SILTSTONE: a:a minor very fine calcareou sand, with minor marl.
2320 - 2325	100 trace	CALCAREOUS SILTSTONE: a:a MARL
2325 - 2330	100	CALCAREOUS SILTSTONE: a:a medium light grey, friable to hard, platy fragments, minor very fine calcareous sandstone, content of sand increasing.
2330 - 2335	100	CALCAREOUS SILTSTONE: a:a friable to brittle, minor very fine calcareous sand.
2335 - 2340	100	CALCAREOUS SILTSTONE: a:a trace marl, trace very fine calcareous sand.
2340 - 2345	100	CALCAREOUS SILTSTONE: a:a minor marl, as usual containing grains of silt and very fine sand, minor very fine calcareous sand.
2345 - 2350	100	CALCAREOUS SILTSTONE: medium light grey to medium grey, friable, brittle, platy fragments, in part grading to calcareous shale, minor marl very light grey, containing silty and sand sized minor very fine calcareous sandstone, friable.

LITHOLOGICAL DESCRIPTIONS

DEPTH	%	DESCRIPTION
2350 - 2355	100	CALCAREOUS SILTSTONE: a:a
	trace	CALCARENITE: fine to very fine, hard to friable, grading to calcareous shale in part.
	trace	MARL: fine to medium, occasionally coarse, rich in calcareous swelling clay matrix, or fine grained limestone containing fine grained sand particles.
2355 - 2360	90	CALCAREOUS SILTSTONE: grading to very fine sand set in swelling clay matrix, friable.
	10	SHALE
2360 - 2365	90	CALCAREOUS SILTSTONE: grading to very fine sand with swelling clay as matrix.
	10	SHALE
2365 - 2370	80	CALCAREOUS SILTSTONE: a:a
	20	CALCARENITE: with swelling clay as matrix.
2370 - 2375	60	CALCAREOUS SILTSTONE: a:a
	40	CALCARENITE: very fine grained sand set in swelling clay matrix, friable.
2375 - 2380	50	CALCARENITE: sub-fissile to fissile, platy, friable.
	50	SILTSTONE: grading in part to calcarenite.
2380 - 2385	50	SILTSTONE: a:a
	50	CALCARENITE: a:a
2385 - 2390	100	CALCAREOUS SHALE: medium to dark grey, very calcarec slightly carbonaceous, sub-fissile to fissile, friabl occasionally platy.
2390 - 2393 B.U.	80	CALCAREOUS SHALE: a:a grading in part to calcareou siltstone.
	20	SANDSTONE: white, buff, very fine grained, sub-angu to subrounded, quartzose in a predominantly clean silty calcareous matrix, soft to friable, tight, no show.
2393 - 2395	80	CALCAREOUS SHALE: a:a grading in part to calcareous siltstone.
	20	SANDSTONE: buff, very fine grained sub-angular to sub-rounded, quartzose, soft to friable, tight in a predominantly silty calcareous matrix, white calcareous clay matrix also prominent, no show.
2395 - 2400	80	CALCAREOUS SILTSTONE: medium light grey, friable to brittle, grading in part to calcareous shale.
	20	SANDSTONE: buff, very fine grained, sub-angular to sub-rounded quartzose, soft to friable, tight in a white calcareous clay matrix.
2400 - 2405	60	CALCAREOUS SILTSTONE: medium to light grey, very calcareous, subfissile to fissile, platy, occasiona soft, grading to calcareous shale in part.
	40	SANDSTONE: white, buff, very fine grained, sub-ang to sub-rounded, quartzose in a predominantly silty calcareous matrix, poor to fair sorting, occasional glauconitic, tight, no show.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
2407	50	CALCAREOUS SILTSTONE: a:a
Spot Sample	50	SANDSTONE: a:a trace medium to very coarse quartz grains, well rounded, no show.
2405 - 2410	80	CALCAREOUS SILTSTONE: a:a
	20	SANDSTONE: a:a occasionally opaque clear vitreous very coarse rounded quartzose pebbles, tight, occasionally dull yellow mineral fluorescence, no show.
2410 - 2413.6 B.U.	100	SANDSTONE:clear & opaque, coarse to very coarse, occasionally medium grained, well-rounded to sub-angular quartzose grains, occasionally fine glauconit quartz in a predominantly argillaceous matrix, occasional quartz grains encrusted with pyrite, fair sorting, good porosity, unconsolidated to hard. Approximately 25% pale blue to dull yellow fluorescenc with pale brown oil staining, predominantly instant-aneous white cut with occasional streaming white cut.
2413.6-2437.5		CUT CORE - 1 2413.6 - 2424.5 CUT CORE - 2 2424.5 - 2437.5
2437.5 - 2440	30	SANDSTONE: clear, smoky, coarse to very coarse, sub-angular to sub-rounded, unconsolidated quartz crystals, fair sorting, hard, moderate interpreted intergranular porosity, no show.
	70	SILTSTONE: light to medium grey, slightly calcareous sandy, quartzose, slightly fissile, predominantly blocky, slightly carbonaceous, firm to friable, trace pyrite.
2440 - 2445	50	SANDSTONE: unconsolidated a:a.
	50	SILTSTONE: grading to shale.
2445 - 2450	60	SANDSTONE: a:a becoming finer grained in a dominant kaolinitic/silty matrix, very friable to soft, no show
	40	SILTSTONE: a:a
2450 - 2455	70	SANDSTONE: a:a
	30	SILTSTONE: a:a
2455 - 2460	80	SANDSTONE: a:a unconsolidated, occasionally very coarse, cubic singular pyrite crystals.
	20	SILTSTONE: a:a predominantly blocky.
2460 - 2465	50	SANDSTONE: a:a unconsolidated
	50	SILTSTONE: a:a
2465 - 2470	60	SANDSTONE: dominantly vitreous, coarse grained, sub-angular to sub-rounded, unconsolidated quartz grains, moderately sorted, good interpreted porosity, minor biotite, trace pyrite, no show.
	40	SILTSTONE: light to medium grey, slightly carbonaceou calcareous, predominantly blocky, occasionally sub-fissile to platy, becoming slightly argillaceous, friable.
2470 - 2475	60	SANDSTONE: a:a
	40	SILTSTONE: a:a
2475 - 2480	90	SANDSTONE: a:a
	10	SILTSTONE: a:a grading in part to shale.

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
2480 - 2485	90	SANDSTONE: increasing pyrite, otherwise a:a.
	10	SILTSTONE: a:a
	trace	COAL: dark brown, blocky.
	trace	SHALE: with laminations of pyrite.
2485 - 2490	90	SANDSTONE: clear, white, medium to coarse, sub-angular to sub-rounded, unconsolidated quartz grains, good sorting, moderate interpreted porosity, pyrite encrusted quartz grains, trace fine grained pale green friable glauconite with silty matrix, no show.
	10	SILTSTONE: light medium grey, slightly calcareous, predominantly blocky, firm.
	trace	COAL: black, vitreous, blocky with pyrite laminations.
2490 - 2495	90	SANDSTONE: a:a
	10	SILTSTONE: a:a
2495 - 2500	90	SANDSTONE: a:a
	10	SILTSTONE: a:a
2500 - 2505	90	SANDSTONE: a:a
	10	SILTSTONE: a:a
	trace	SHALE: a:a
2505 - 2510	90	SANDSTONE: white, clear, predominantly medium grained, sub-angular to sub-rounded, occasionally very coarse, sub-rounded unconsolidated quartz grains, well sorted, occasional pyrite encrusted quartz grains Minor fraction consists of very fine grained sand with kaolinite matrix, friable, no show.
	10	SILTSTONE: light medium grey, slightly calcareous, slightly sandy, blocky, friable.
2510 - 2515	90	SANDSTONE: white to light grey, clear, friable, sub-angular to sub-rounded, well sorted, pyrite encrustations, minor clay matrix, no show.
	10	SILTSTONE: a:a
2515 - 2520	80	SANDSTONE: a:a
	20	CALCAREOUS SHALE: medium grey, firm to hard, sub-fissile, calcareous matrix.
2520 - 2525	80	SANDSTONE: a:a grains becoming well-rounded.
	10	CALCAREOUS SHALE: a:a
	10	SILTSTONE: medium grey to light grey, soft, calcareous matrix, quartz grains, pyrite cement common
2525 - 2530	20	SANDSTONE: a:a
	80	CALCAREOUS SHALE: a:a
2530 - 2535	30	SANDSTONE: a:a
	60	CALCAREOUS SHALE: a:a
	10	SILTSTONE: a:a
2535 - 2540	65	SANDSTONE: clear, light grey to white quartz grains friable, medium to very coarse, dominantly coarse, well sorted, well-rounded, some pyrite encrustations.
	35	CALCAREOUS SHALE: a:a
2540 - 2545	20	SANDSTONE: light to medium grey, coarse, very well-rounded.
	80	CALCAREOUS SHALE: a:a

LITHOLOGICAL DESCRIPTIONS

YELLOWTAIL - 1

DEPTH	%	DESCRIPTION
2545 - 2550	50	SANDSTONE: white to light grey, clear quartz grains, friable, medium to coarse, sub-angular to sub-rounded, moderately sorted, grains have frosted surface texture, minor pyrite cement.
	50	CALCAREOUS SHALE: medium grey to dark grey, hard, subfissile.
2550 - 2555	55	SANDSTONE: a:a
	40	CALCAREOUS SHALE: a:a
	5	SILTSTONE: light to medium grey, quartz grains, calcareous cement.
2555 - 2560	60	SANDSTONE: a:a medium to very coarse, poorly sorted, sub-rounded.
	35	CALCAREOUS SHALE: a:a
	5	SILTSTONE: a:a
2560 - 2565	40	SANDSTONE: white to light grey, clear quartz grains, firm to friable, fine to coarse, dominantly medium, poorly sorted, sub-angular to well-rounded, minor pyrite cement, no show.
	55	CALCAREOUS SHALE: a:a
	5	SILTSTONE: a:a
2565 - 2570	35	SANDSTONE: off white to light grey, clear, occasionally yellow-brown, otherwise as above. No show.
	65	CALCAREOUS SHALE: a:a
2570 - 2571	55	SANDSTONE: a:a
T.D.	45	CALCAREOUS SHALE: a:a

APPENDIX 2

APPENDIX 2

CORE DESCRIPTIONS

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

Core No. 1

Well YELLOWTAIL-1

Interval Cored 2413.6-2424.5 m, Cut 10.9 m, Recovered 7.76 m, (71.19 %) Fm. LATROBE

Bit Type C22 FD Bit Size 8 5/32" x 4" in., Desc by J. ROCHE Date 31.10.81

Depth & Coring Rate (m/hr)	Graphic	Shows	Interval (m)	Descriptive Lithology
20 16 12 8 4 0				
2414			2416.8-2419.65	Bimodal Sandstone, clear, white, opaque, m.-c. grained, sa-sr qtz grns with v.c. conglom. opaque size qtz pebbles, possible siliceous cement with kaolinitic/silty matrix, minor f.g. mica, biotite, occ. f-m qtz gns encrusted with pyrite, friable when cemented, becoming unconsolidated, strong HC odour, faint brown grey to colourless oil staining Even 100% bright white/pale yellow fluorescence with instantaneous streaming white cut.
2415				
2416				
2417		●	2419.65-2421.07	Sandstone, clear white, predom. f-m.g, sa-sr qtz gns in a silty/siliceous minor kaolinitic? matrix, minor biotite, friable, good sorting, mod. porosity, 100% show a:a with excellent faint brown grey oil staining. Occ. opaque well rounded coarse pebbles with no associated fluorescence or cut.
2418				
2419				
2420		●	2421.82-2424.5	Sandstone, clear, wh, opaque, predom. coarse, sa-sr, with conglom. opaque size pebbles, with mod.-good interpreted porosity, mainly unconsolidated, mnr faint brown oil staining, otherwise as for interval 2416-8 - 2419.65 m.
2421				
2422				
2423				
2424				

Note: Moderate H_2S odour when core retrieved, 4 ppm H_2S measured. 30 per cent of Core was totally non describable because of unconsolidation, but can assume a complete monotonous and homogeneous sequence as described above. Due to the large percentage of unconsolidation, recovered percentage is probably underestimated.

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

Core No. 1

Well YELLOWTAIL-1

Interval Cored 2413.6-2424.5 m, Cut 10.9 m, Recovered 7.76 m, (71.9 %) Fm LATROBE

Bit Type C22FO Bit Size 8 5/32" x 4" in., Desc by J. ROCHE Date 31.10.81

Depth & Coring Rate (m/hr)	Graphic	Shows	Interval (m)	Descriptive Lithology
20 16 12 8 4 0				
2424				As for 2421.82 - 2424.5 m
2425				

ESSO AUSTRALIA LTD.

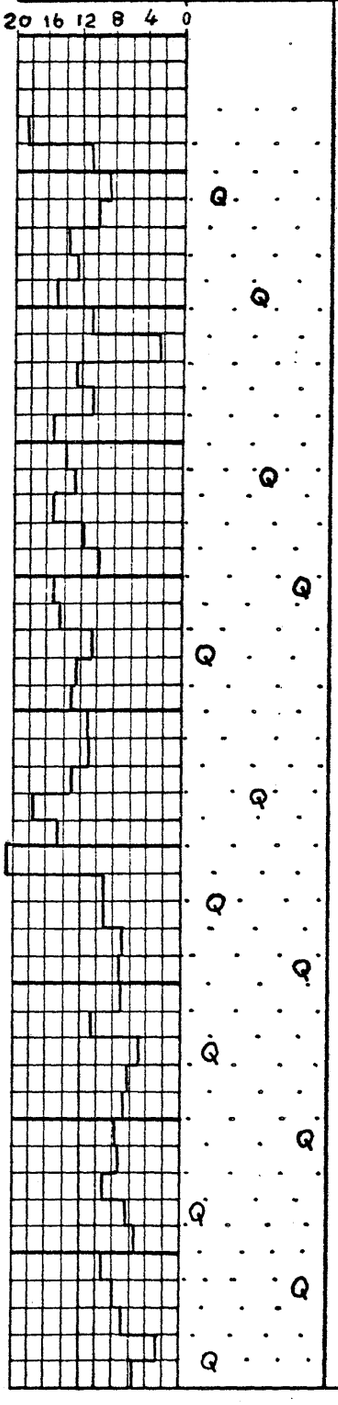
CORE DESCRIPTION

Core No. 2

Well YELLOWTAIL-1

Interval Cored 2424.5-2437.5 m, Cut 13 m, Recovered 9.63 m, (74.07%) Fm LATROBE

Bit Type C22 FD Bit Size 8 5/32" x 4" in., Desc by J. ROCHE Date 1-11-81



Graphic	Shows	Interval (m)	Descriptive Lithology
	⊕	2424.5 - 2425.6	Loose Sandstone, clear, wh, predom. f-m gr., occ. coarse, sa-sr qtz gns, good sorting, unconsolidated, good interpreted lithology, 100% even pale yellow gold fluor with instantaneous milky white cut.
		2425.6 - 2426.6	Loose Sandstone, predom. clear, vitreous-smokey, f.m.gr., sa-sr. qtz gns with occ. lt-m gy v coarse rnded pebble size qtz, minor biotite, f.g. mica, good sorting, mod. interp. porosity with less than <10% spotty uneven cream-gold fluor. with relatively slow white cut.
		2426.6 - 2429.21	Loose Sandstone a:a. but without any show.
		2429.21 - 2434.13	Loose Sandstone, predom. f. gr, sr clean qtz, well sorted, good int. porosity, minor mica flakings encrusted in part upon c. rnded qtz, tr coal partings, occ. smokey v. c rnded pebbles, No. show.
			Note: Core becomes very hard and consolidated / firm from 2430.94 to end of core at 2434.13 m

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

Core No. 2

Well YELLOWTAIL-1

Interval Cored 2425.5-2437.5 m, Cut 13 m, Recovered 9.63 m, (74.07%) Fm LA TROBE

Bit Type C 22 FD Bit Size 8 5/32" x 4" in., Desc by J. ROCHE Date 1-11-81

Depth & Coring Rate (m/hr)	Graphic	Shows	Interval (m)	Descriptive Lithology
20 16 12 8 4 0				
2434				
2435				
2436				
2437				
2438				

APPENDIX 3

APPENDIX 3

SIDEWALL CORE DESCRIPTIONS

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ATT 81 REC 78

DATE 13th November 1981

IES RUN NO 1 SWC RUN NO 1

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

WELL YELLOWTAIL -1

GEOLOGIST J. ROCHE/S. McINTYRE

SERVICE CO SCHLUMBERGER

NO. 1a	DEPTH 1	REC 2	TYPE 3	4	CAL 5	COLOR 6	DEG 7	SIZE 8	SRTG 9	RND 10	CLAY 11	STAIN 12	CUT RESIDUE % RK	CUT RESIDUE DISTR 14	CUT RESIDUE INTEN 15	CUT RESIDUE COLOR 16	CUT FLUOR INTEN 17	CUT FLUOR COLOR 18	CUT FLUOR QUAN 19	CUT FLUOR COLOR 20	SHOW 21	PROD 22	REMARKS - GAS 23
1	2570.0	20	Ss	qtz,mica	-	wh-lt gy	Fri	mg	wsrtd	sr													
2	2560.5	30	Ss	qtz,arg	Sl	wh-lt gy	Fri	fg	wsrtd	sr													
3	2540.8	20	Ss	qtz,slty	mod	wh-lt gy	Fri	mg	msrtd	sr													
4	2534.7	18	Ss	qtz,slty	Sl	wh-lt gy	Fri	fg	msrtd	r													
5	2524.0	12	Ss	qtz,slty	-	wh-lt gy	Fri	vfg	wsrtd	sr-sa													
6	2521.7	10	Ss	qtz,slty arg	-	wh-lt gy	Fri	vfg	wsrtd	sr-sa													
7	2519.8	8	Ss	qtz,slty	-	wh-lt gy	Fri	fg	msrtd	sa													
8	2492.6	10	Ss	qtz,slty arg	-	wh-lt gy	Fri	fg	psrtd	sa													
9	2486.8	20	Ss	qtz,slty	mod	wh-lt gy	Fri	mg	psrtd	sa													
10	2483.4	18	Ss	qtz,slty	mod	wh-lt gy	Fri	fg	psrtd	sa													

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DATE 13th November 1981

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

IES RUN NO ..... SWC RUN NO 1

WELL YELLOWTAIL-1

GEOLOGIST J.ROCHE/S.McINTYRE

SERVICE CO SCHLUMBERGER

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
11	2480.0	20	Ss	qtz,slty, arg	Sl	wh-lt gy	Fri	mg	psrtd	a													
12	2477.0	20	Ss	qtz,arg	-	wh-lt gy	Fri	fg	psrtd	sr-sa													
13	2473.0			NO RECOVERY																			
14	2470.0	20	Ss	qtz, arg, slty	-	m-md gy	Fri	vfg	psrtd	sr													
15	2463.9	25	Ss	qtz,arg,	med	wh-lt	Fri	fg	psrtd	sa													
16	2463.1	25	Ss	qtz,arg slty	-	wh-lt gy	Fri	fg	msrtd	sa-sr													
17	2458.1	25	Ss	qtz,arg,	-	wh-lt gy	Firm	fg	msrtd	sa-sr													
18	2456.0	30	Ss	qtz, arg, slty	-	wh-lt gy	Fri	fg	psrtd	sr													
19	2453.5	28	Sltst	arg,qtz,mica	-	dk gy	hd			sa													
20	2452.0	20	Sltst	arg,qtz, mica	-	dk gy	hd			sa													

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DATE 13th November 19

ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

IES RUN NO 1 SWC RUN NO 1

WELL YELLOWTAIL-1
GEOLOGIST J.ROCHE/S.McINTYRE
SERVICE CO SCHLUMBERGER

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE % RK	FLOURESCENCE DISTR	FLOURESCENCE INTEN	FLOURESCENCE COLOR	CUT FLUOR. INTEN	CUT FLUOR. COLOR	CUT RESIDUE QUAN	CUT RESIDUE COLOR	SHOW	PROD	REMARKS - GAS
1a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
21	2438.2	28	Ss	qtz.	sl	white	Fri	fg	wsrtd	sr													
22	2435.9	28	Ss	qtz,mica	sl	wh-lt gy	Fri	fg	wsrtd	sr													
23	2434.0	29	Ss	qtz,arg	sl	wh-lt gy	Fri	fg	psrtd	sr													
24	2433.1	29	Ss	qtz,arg, slty	sl	wh-lt gy	Fri	fg	psrtd	sr													
25	2431.5	30	Ss	qtz	sl	white	Fri	mg	wsrtd	sr													
26	2431.0	22	Ss	qtz	sl	wh-lt gy	Fri	f-mg	wsrtd	sr			100	even	dull	white	-	-					
27	2430.0	15	Ss	qtz	sl	wh-lt gy	Fri	f-mg	wsrtd	sr			100	even	dull	white	faint	white	light	dk gy			
28	2429.0	15	Ss	qtz	sl	wh-lt gy	Fri	f-mg	wsrtd	sr			100	even	dull	white	faint	white	light	dk gy			
29	2427.9	20	Ss	qtz,slt, arg	-	lt-dk gy	Fri	f-mg	msrtd	sa-sr													
30	2426.9	20	Ss	qtz	-	lt-dk gy	Fri	f-mg	msrtd	sa-sr			70	spty	faint	wh/yell	dull	white	light				

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ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

IES RUN NO ..... SWC RUN NO 1

WELL YELLOWTAIL-1
GEOLOGIST J.ROCHE/S. McINTYRE
SERVICE CO SCHLUMBERGER

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE % RK	FLOURESCENCE DISTR	FLOURESCENCE INTEN	FLOURESCENCE COLOR	CUT FLUOR. INTEN	CUT FLUOR. COLOR	CUT RESIDUE QUAN	CUT RESIDUE COLOR	SHOW	PROB PROD	REMARKS - GAS
1a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
31	2426.0	12	Ss	qtz,arg	-	lt-dk gy	Fri	f-mg	msrtd	sa-sr			100	even	faint	white	dull	white	light				
32	2425.0	12	Ss	qtz,arg		lt-gy	Fri	f-mg	psrtd	sa-sr			100	even	faint	white	dull	white	light				
33	2424.0	20	Ss	qtz,slty arg		lt-m gy	Fri	f-mg	msrtd	sa-sr			70	spty	faint	white							
34	2423.0	15	Ss	qtz,slty, arg		lt-m gy	Fri	f-m/c	psrtd	sr			70	spty	faint	white							
35	2422.0	20	Ss	qtz,slty, arg		lt-m gy	Fri	f-m/c	psrtd	sr			100	even	faint	white	dull	white	light				
36	2420.9	20	Ss	qtz,slty, arg		lt-m gy	Fri	f-m/c	msrtd	sr			100	even	faint	white	dull	white	light				
37	2420.1	28	Ss	qtz		lt gy	Fri	f-g/c	msrtd	sr			100	even	faint	white	dull	white	light				
38	2419.0			NO RECOVERY																			
39	2418.0	18	Ss	qtz, slty, arg, mica		lt-m gy	Fri	fg	msrtd	sa-sr			100	even	faint	white	dull	white	light				
40	2417.0	10	Ss	qtz, arg		lt-m gy	Fri	fg	msrtd	sa-sr			100	even	faint	white	dull	white	light				

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SWC RUN NO 1

IES RUN NO

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

WELL YELLOWTAIL-1

GEOLOGIST J.ROCHE/S. McINTYRE

SERVICE CO SCHLUMBERGER

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE %	FLOURESCENCE DISTR	FLOURESCENCE INTEN	FLOURESCENCE COLOR	CUT FLUOR. INTEN	CUT FLUOR. COLOR	CUT RESIDUE QUAN	CUT RESIDUE COLOR	SHOW	PROB PROD	REMARKS - GAS
1a	1	2	3	4	5	6	7	8	9	10	11	12	RK	14	15	16	17	18	19	20	21	22	23
41	2415.9	10	Ss	qtz,slty, arg	sl	med-lt gy	Fri	fg	msrtd	sa-sr			100	even	faint	white	dull	white	light				
42	2415.0	20	Ss	qtz	sl	lt-md gy	Fri	fg	msrtd	sa-sr			100	even	faint	white	dull	white	light				
43	2414.0	20	Ss	qtz,arg	Sl	md-lt gy	Fri	f-mg+ vcg	psrtd	sa			60	spty	faint	white	dull	white	light				
44	2412.9	20	Ss	qtz,arg	-	wh-md lt gy	Fri	f-vcg	psrtd	sr			80	spty	dull	white	dull	white	light				
45	2412.0	25	Ss	qtz,arg	-	lt-md lt gy	Fri	m-vcg	psrtd	sr			80	spty	faint	white	dull	white	light				
46	2411.0	20	Ss	qtz,arg	-	md-lt gy	Fri	mg	,srtd	sr			60	spty	faint	white	-	-	-				
47	2409.9	25	Ss	qtz,arg, glauc		lt-gy md.	Fri	m-vcg	psrtd	sr			40	spty	faint	white	-	-	-				
48	2409.0	30	Ss	qtz,arg glauc	sl	l-md gy	Fri	m-fg	psrtd	sa			50	spty	faint	white	-	-	-				
49	2408.0	30	Ss	qtz,slt, glauc,arg	mod	lt-dk gy	Fri	f-mg	psrtd	sa-sr													

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ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

IES RUN NO _____ SWC RUN NO 1/2

WELL YELLOWTAIL-1
GEOLOGIST J.ROCHE/S. McINTYRE
SERVICE CO SCHLUMBERGER

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLOUR. INTEN 17	CUT FLOUR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROD 22	REMARKS - GAS 23
50	2407.0	30	Ss	qtz,arg	sl	md gy	Fri	fg	psrtd	sa-sr													
51	2406.1	30	Ss	qtz,arg	sl	md gy	Fri	f-mg	psrtd	sa-sr													
52	2405.0	40	sltst	qtz,arg	v	md-lt gy	Soft	slt	msrtd	sa-sr													
53	2403.9	60	Sltst	qtz,arg	v	md-lt gy	soft	slt	msrtd	sa-sr													
54	2402.9	40	sltst	qtz,arg	v	md-lt gy	firm	slt	psrtd	sa-sr													
55	2401.9	40	sltst	qtz,arg	v	md-lt gy	soft	slt	psrtd	sa-sr													
56	2401.0	35	sltst	qtz,arg	v	md-lt gy	soft	slt	msrtd	sa-sr													
57	2399.9	15	sltst	qtz,arg	v	md-lt gy	soft	slt	wsrtd	sa-sr													
58	2399.0	45	sltst	qtz,arg	v	md-lt gy	soft	slt	wsrtd	sa-sr													
59	2398.0	-	NO RECOVERY																				

FORM R 257 3 72

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ATT 81 REC 78

DATE 13th November 1981

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

SWC RUN NO 2

IES RUN NO

WELL YELLOWTAIL-1

GEOLOGIST J. ROCHE/S. McINTYRE

SERVICE CO SCHLUMBERGER

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
60	2397.0	40	Sltst	qtz,arg	v	md-lt gy	sft	slt	msrtd	sa-sr													
61	2396.0	25	sltst	qtz,arg	v	md-lt gy	sft	slt	msrtd	sa-sr													
62	2395.0	35	Ss	qtz,mica, glauc, slty	v	md-lt gy	Fri	v.f	wrstd	sa-sr													
63	2390.0	35	sltst	qtz,	v	md gy	sft	slt	mstrd	sa													
64	2388.0	40	sltst	qtz	v	md-lt gy	sft	slt	wrst	sa-sr													
65	2383.0	35	sltst	qtz	v	md-lt gy	firm	slt	msrtd	sa-a													
66	2382.4	38	sltst	qtz,mica, arg	v	md-lt gy	firm	slt	msrtd	sa													
67	2381.0	28	sltst	qtz,mica arg	v	md-lt gy	firm	slt	msrtd	sr-a													
68	2378.9	40	sltst	qtz,mica, arg	v	md-lt gy	firm	slt	msrtd	sr-a													
69	2376.5	50	sltst	qtz,arg	v	md-lt gy	firm	slt	msrtd	sr-a													

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ATT 81 REC 78

DATE 13th November 198

IES RUN NO ..... SWC RUN NO 2

ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

WELL YELLOWTAIL-1

GEOLOGIST J. ROCHE/S. McINTYRE

SERVICE CO SCHLUMBERGER

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE				CUT FLUOR.		CUT RESIDUE		SHOW	PROB PROD	REMARKS - GAS
													%	DISTR	INTEN	COLOR	INTEN	COLOR	QUAN	COLOR			
1a	1	2	3	4	5	6	7	8	9	10	11	12	RK	14	15	16	17	18	19	20	21	22	23
70	2374.4	40	Sltst	qtz,sl. arg	v	md-lt gy	firm	slt cl	msrtd														
71	2372.6	32	Sltst	qtz,arg	v	md-lt gy	firm	slt cl	msrtd														
72	2371.0	40	sltst	arg	v	md gy	firm	slt cl															
73	2367.9	30	sltst	arg	v	md gy	firm	slt cl															
74	2356.5	40	sltst	arg	v	md gy	firm	slt cl															
75	2352.2	30	sltst	arg	v	md gy	firm	slt cl															
76	2340.7	35	sltst	arg	v	md gy	firm	slt cl															
77	2332.9	30	sltst	arg	v	md gy	firm	slt cl															
78	2246.8	30	sltst	sl. sndy, arg	v	lt gy	firm	slt cl															
79	2236.2	28	sltst	arg	v	md gy	firm	slt cl															

FORM R 357 3/72

WELL YELLOWTAIL - 1

GEOLOGIST J.ROCHE/S.McINTYRE

SERVICE CO SCHLUMBERGER

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

PAGE 9 OF 9

ATT 81 REC 78

IES RUN NO ..... SWC RUN NO 2 DATE 13th November 19

FORM R 257 3.72

SHOCK NO. 1a	DEPTH 1	REC 2	TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	DISTR 14	INTEN 15	COLOR 16	CUT FLUOR. INTEN 17	COLOR 18	CUT RESIDUE QUAN 19	COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
80	1903.2	25	sltsl	arg	v	lt gy	firm	clay															
81	1871.0	20	sltsl	arg	v	lt gy	firm	clay															

APPENDIX 4

APPENDIX 4

FORAMINIFERAL SEQUENCE

APPENDIX-4

YELLOWTAIL-1, FORAMINIFERAL BIOSTRATIGRAPHY

by

DAVID TAYLOR (CONSULTANT)

Esso Australia Ltd

Paleontology Report: 1982/17

April 1982.

PART-1

INTERPRETATIVE DATA

Introduction

Explanation of materials

Summary Table

Data Sheet

INTRODUCTION

by

A.D. Partridge

The analysis of the foraminiferal sequence in Yellowtail-1, given in this report was made by David Taylor and presented as two "data packages" on March 31, 1982.

The aim of the study, and the reason for the format of this report, was to make a rapid reconnaissance examination of twenty eight sidewall core samples to give a breakdown of the marine sequence into foraminiferal zones and ages. No attempt has been made to fully document the foraminiferal assemblages or to prepare a detailed environmental and geological interpretation of the sequence. The rationale for this approach was to limit costs and to reduce the time spent by the principal investigator, David Taylor, on what is essentially routine age determinations and report preparation. It is also argued that since the Gippsland Basin is now a mature petroleum province detailed discussion of the individual foraminiferal zones in the well is not essential as it has been adequately treated in earlier reports.

EXPLANATION OF MATERIALS

by

David Taylor

Twenty eight procesed sidewall cores from Yellowtail-1 were submitted for examination and delineation of planktonic biostratigraphy. Samples submitted from the transition "Greensand" unit below 2397, contained a Late Eocene, Zone K, Assemblage. The highest sample submitted was of a heavily recrystallised micrite with a poorly preserved Mid or Late Miocene fauna.

The list accompanying the samples had the following cautionary footnote: "All samples with exception of SWC's 62, 65, 72 and 79 are more than likely to be contaminated". However with the possible exception of SWC 80 at 1903.2 metres, no tangible evidence of contamination was seen and the faunal sequence followed the established biostratigraphic pattern for this area in Gippsland. A distinct hiatus is apparent between 2397 (= Zone J-2) and 2396 (= Zone H-1); both regard to biostratigraphic and sediment grain composition.

SUMMARY TABLE - YELLOWTAIL-1

SAMPLE	DEPTH(m)	ZONE	AGE
SWC 81	1871.0	C/B	Mid Miocene - Early Pliocene
SWC 80	1903.2	C/B	Mid Miocene - Early Pliocene
SWC 79	2236.2	F	late Early Miocene
SWC 78	2246.8	G	Early Miocene
SWC 77	2332.9	G	Early Miocene
SWC 75	2352.2	G	Early Miocene
SWC 74	2356.5	G	Early Miocene
SWC 73	2367.9	G	Early Miocene
SWC 72	2371.0	G	Early Miocene
SWC 71	2372.6	G	Early Miocene
SWC 70	2374.4	G	Early Miocene
SWC 69	2376.5	G	Early Miocene
SWC 68	2378.9	G	Early Miocene
SWC 67	2381.0	H-1	Early Miocene
SWC 66	2382.4	H-1	Early Miocene
SWC 65	2383.0	H-1	Early Miocene
SWC 64	2388.0	H-1	Early Miocene
SWC 62	2395.0	H-1	Early Miocene
SWC 61	2396.0	H-1	Early Miocene
SWC 60	2397.0	J-2	Early Oligocene
SWC 58	2399.0	J-2	Early Oligocene
SWC 57	2399.9	J-2 with D-2 Cont.	Early Oligocene
SWC 56	2401.0	J-2	Early Oligocene
SWC 55	2401.9	J-2	Early Oligocene
SWC 54	2402.9	J-2	Early Oligocene
SWC 53	2403.9	J-2	Early Oligocene
SWC 52	2405.0	K	Late Eocene
SWC 50	2407.0	NFF	- -

PART-2

BASIC DATA

Key to Data Codes and Abbreviations

Analysis of Samples

KEY TO DATA CODES AND ABBREVIATIONS

CC #2	= conventional core #2
SWC	= sidewall core
NFF	= no foraminifera found
J-2	= planktonic foram Zone J-2
K/J-2	= exact zonal entity uncertain combined zonal interval.
f	= fine grain size (.25)
m	= medium grain size (.25-5)
c	= coarse grain size (.5-1mm)
ang	= angular grains
subang	= subangular grains
subrd	= subround grains
rd	= round grains
qtz	= quartz
pyr	= pyrite
lim	= limonite
glauc	= glauconite
lst	= limestone
mic. lst	= micritic limestone
sdst	= sandstone
siltst	= siltstone
mdst	= mudstone
calc. siltst	= calcareous siltstone
calc. aren	= calcarenite
recryx	= recrystalised
plank	= significant grain component of planktonic foraminifera.

ANALYSIS OF SAMPLES

SWC 81 at 1871.0 metres

Lithology: Recryx. micrite.

Fauna: Planktonics: Preservation poor.
Globorotalia scitula
Globorotalia miozea conoidea
Orbulina universa
Globigerina bulloides
Globigerina decoraperta
Globigerina indeteminate
Dominance of: Cassidulina laevigata
Benthonics:
Cibicides including Cibicides subhaidingeri
Cassidulina laevigata
Bolivina
Other Fauna: sponge spicules
Count: ?1000
% Planks: ?50%

Comments: Shape and size sorting

SWC 80 at 1903.2 metres

Lithology: Recryx. micrite r. c-m ang. quartz

Fauna: Planktonics: Preservation very poor.
Orbulina universa
Globigerina woodi woodi
Globigerina decoraperta
Globigerina bulloides
Globigerina Indeterminate
Possible contamination of Globorotalia conomiozea (see explanatory notes)
Benthonics:
Cassidulina laevigata
Other Fauna: Sponge spincules ostra.
Count: ?500
% Planks: ?95%

SWC 79 at 2236.2 metres

Lithology: 90% plank. Forams pyr. infill & spotting.

Fauna: Planktonics: Preservation good.
Globigerinoides bisphericus

Globigerinoides trilobus
Globorotalia praescitula
Globorotalia miozea miozea
Globorotalia bella
Globorotalia zealandica zealandica
Globorotalia? conica?
Globorotalia nana
Turborotalids
Globigerina spp. - small
Globigerina woodi woodi
Dominance of: approx. 80%, approx. 2mm.
Benthonics:
Anomalinoides
Cibicides
Arenaceous
Bolivina
Sigmoidopsis
Count: 3000
% Planks: 99%

SWC 78 at 2246.8 metres
Lithology: Recryx. biomicrite pyrite spotting
Fauna: Planktonics: Preservation fair to poor
Globigerinoides trilobus
Globoquadrina dehiscens
Globorotalia? praescitula?
Globorotalia bella
Globorotalia zealandica zealandica
Globorotalia nana
Globorotalia continuosa
Turborotalia indeterminate
Globigerina indeterminate
Globigerina apertura
Globigerina woodi woodi
Dominance of: N.B. Dramatic increase in Globigerinoides and departure of Globigerina woodi connecta
Benthonics:
Siphouvigerina
Cibicides
Gyroidinoides
Martinotiella
Lagena
Other Fauna: Echinoid spines.
Count: ?1500
% Planks: ?95%

SWC 77 at 2332.9 metres

Lithology: 80% forams, 15% calc. siltstones r. pyrite mica.

Fauna: Planktonics: Preservation excellent.
Globigerinoides trilobus
Globigerina woodi connecta
Globigerina ?apertura
Globigerina woodi woodi
Globigerina praebullides
Globigerina ouachitaensis
Globorotalia zealaindica zealandica
Globorotalia bella
Globorotalia nana
Globorotalia continuosa
Turborotalids indeterminate
Dominance of: Approximately 75%, approximately .2mm of Globigerina and Turborotalids.
Benthonics:
Lenticulina
Bulimina
Bathysiphon
Count: 5000
% Planks: 99%

SWC 75 at 2352.2 metres:

Lithology: Recryx. biomicrite

Fauna: Planktonics: Preservation poor. Similar assemblage as SWC 74 at 2356.5 metres.
Dominance of: Spec. approximately .2mm
Benthonics:
Chilostomella
Lagena
Other Fauna: Echinoid spines.
Count: ?1000*
% Planks: ?90%*

Comments: * Preservation poor because of diagenesis.

SWC 74 at 2356.5 metres:

Lithology: Foram micrite. r. mica, glauc. c. ang. quartz.

Fauna: Planktonics: Preservation fair.
Globigerinoides trilobus
Globigerina woodi connecta
Globigerina woodi woodi
Globigerina praebulloides
Globigerina ouachitaensis

Globoquadrina dehiscens (s.s.)
Globoquadrina altispira
Globoquadrina advena
Turborotalids indeterminate
Dominance of: approximately 80%, approximately .2mm of Globigerina and Turborotalids.
Benthonics:
"Haplophragmoides"
Discammina
Cassidulina laevigata
Other Fauna: oogenia.
Count: 3000
% Planks: 99%

SWC 73 at 2367.9 metres:

Lithology: Recryx. biomicrite, pyrite spotting and infill.

Fauna: Planktonics: Preservation very poor because of recryx. Presumed to be similar to SWC 72 at 2371 metres.
Count: +1000
% Planks: uncertain.

SWC 72 at 2371 metres:

Lithology: Biomicrite. Pyrite spotting and infill.

Fauna: Planktonics: Preservation fair.
Globigerinoides trilobus
Globigerina woodi connecta
Globigerina woodi woodi
Globigerina ciperoensis
Globigerina praebulloides
Globigerina ouachitaensis
Globoquadrina dehiscens (s.s)
Globoquadrina advena
Globorotalia continuosa
Turborotalids indeterminate
Dominance of: .2mm Globigerina and Turborotalids comprise approximately 90% of the fauna.
Benthonics:
"Haplophragmoides"
Discammina
Pseudoclavulina
Nodosaria
Other Fauna: Echinoid. spines and plates, bryozoa
Count: 2000
% Planks: 99%

SWC 71 at 2372.6 metres:

Lithology: Biomicrite. Pyrite spotting and infill.

Fauna: Planktonics: Preservation poor to fair. Diverse but small similar assemblage to SWC 70 at 2374.4 metres with the addition of Globigerina ciperoensis

Benthonics:

Buliminella

Bulimina

Other Fauna: Ostr.

Count: 3000

% Planks: 99%

SWC 70 at 2374.4 metres:

Lithology: Biomicrite, pyrite spotting and infill.

Fauna: Planktonics: Preservation fair.

Globigerinoides trilobus

Globigerina woodi woodi

Globigerina woodi connecta

Globigerina Indeterminate

Globoquadrina dehiscens (s.s.)

Globoquadrina advena

Globoquadrina altispira

Globorotalia zealandica zealandica

Globorotalia bella

Catapsydrax dissimilis

Turborotalids Indeterminate

Dominance of: .2mm Globigerina and Turborotalids, comprise 8% of fauna.

Benthonics:

Gaudyrina convexa

Cibicides

Bathysiphon

Discammina

"Haplophragmoides"

Count: 3000

% Planks: 98%

SWC 69 at 2376.5 metres:

Lithology: Calc. shale.

Fauna: Planktonics: Preservation poor.

Globigerinoides trilobus

Globigerina woodi woodi

Globigerina woodi connecta

Globigerina praebulloides
Globigerina ouachitaensis
Globigerina? apertura
Globoquadrina advena
Benthonics:
Vulvulina
Other Fauna: oogenia.
Count: 1000
% Planks: 99%

SWC 68 at 2378.9 metres:
Lithology: Biomicrite. Pyrite spotting.
Fauna: Planktonics: Preservation poor.
Globigerinoides trilobus
Globigerina woodi woodi
Globigerina woodi connecta
Globigerina Indeterminate
Globoquadrina altispira
Globoquadrina dehiscens (s.s.)
Globoquadrina advena
Globorotalia nana
Globorotalia continuosa
Globorotalia bella
Globorotalia zealandica zealandica
Turborotalids Indeterminate
Dominance of: .2mm Globigerina and Turborotalids comprise approximately 90% of fauna.
Benthonics:
Euuvigerina pickii
Discammina
"Haplophragmoides"
Lenticulina
Bathysiphon
Other Fauna: echinoid spines.
Count: 3000
% Planks: 98%

SWC 67 at 2381 metres:
Lithology: Biomicrite, pyrite spotting.
Fauna: Planktonics: Preservation fair.
Globigerina woodi connecta
Globigerinoides trilobus
Globigerina woodi woodi
Globigerina bulloides

Globigerina ouachitaensis
Globorotalia zealandica zealandica
Globorotalia bella
Globorotalia nana
Globorotalia continuosa
Dominance of: .2mm Globigerina and Turborotalids comprise 90% of fauna.
Benthonics:
Cassidulina
Gyroidinoides
Melonis
Bathysiphon
Rhabdammina
Count: 3000
% Planks: 95%

SWC 66 at 2382.4 metres:

Lithology: Biomicrite, 10% pyrite and minor lim.

Fauna: Planktonics:
Globorotalia bella
Globorotalia zealandica zealandica
Globorotalia nana
Globorotalia continuosa, and as for SWC 65 and 64.
Benthonics:
Karreriella bradyi
Cassidulina laevigata, as below SWC's 65 and 65.
Other Fauna: Some ?pyrite sp. spicules.
Count: ?2000*
% Planks: ?95%

Comments: * Sugary texture.

SWC 65 at 2383 metres:

Lithology: Recryx. biomicrite, pyrite - much as infill.

Fauna: Planktonics: Preservation fair to poor
Globorotalia bella
Globorotalia zealandica zealandica
Globorotalia nana
Globorotalia continuosa
Turborotalids Indeterminate
Globoquadrina dehiscens
Globoquadrina altispira
Globoquadrina advena
Globigerina woodi connecta
Globigerina woodi woodi

Globigerina praebulloides
Globigerina ouachitaensis
Dominance of: Spec. approximately .2mm comprising approximately 75% of planks.
Benthonics:
Nodosaria
Lagena
Globobulimina
Bolivina
Gyroidinoides
Miliolids
Count: ?1500
% Planks: 95%

SWC 64 at 2388 metres:

Lithology: Biomicrite forams - dom. r. m-c ang. quartz.

Fauna: Planktonics: Preservation good compared with SWC 64.
Globigerina woodi woodi
Globigerina woodi connecta
Globigerina praebulloides
Globigerina ouachitaensis
Globoquadrina dehiscens (s.s.)
Globoquadrina advena
Globoquadrina altispira
Turborotalids - Dominant
Globorotalia nana
Globorotalia continuosa
Globorotalia bella
Globorotalia zealandica zealandica
Species .2mm of Globigerina and Turborotalids comprise approximately 75% of planktonics.
Benthonics:
Nodosaria
Lagena
Cibicides
Siphonina
Sphaeroidina
Melonis barleeanum
Other Fauna: Echinoid spines.
Count: 3000
% Planks: 95%
N.B. No Melonis pompilioides

SWC 62 at 2395 metres:

Lithology: Recryx biomicrite. 10% amorphous glauc. some glauc. molds and pyrite and lim. after pyrite.

Fauna: Planktonics: Poor preservation.
Globoquadrina dehiscens (s.s)
Globoquadrina advena
Globorotalia nana
Globorotalia? kugleri?
Globorotalia bella
Globigerina woodi woodi
Globigerina? woodi connecta?
Globigerina Indeterminate
Benthonics:
Cibicides
Globobulimina
Martinotiella
Cassidulina
Miliolids
Count: 1500*
% Planks: 80-90%

Comments: * Preservation poor, sugary spec. because of diagenesis.

SWC 61 at 2396 metres:

Lithology: 90% foram biomicrite, 10% glauc. recryx, some as infill or pellets, r.c. ang. quartz.

Fauna: Planktonics:
Globigerina woodi connecta
Globigerina woodi woodi
Globoquadrina dehiscens (s.s)
Globoquadrina altispira
Globorotalia bella
Globorotalia zealandica zealandica
Globorotalia nana
Globigerina ciperoensis
Globigerina praebulloides
Benthonics:
Discammina
Reophax
Textularia trochus
Martinottiella
Karreriella bradyi
Stilostomella

Gyroidinoides
Anomalinoides vitrinoda
Other Fauna: Fish teeth.
Count: 3000
% Planks: 95%

Comments: Preservation fair though some diagenesis.

SWC 60 at 2397 metres:

Lithology: Grey calc. siltstone. 20% foram and minor pyrite and lim. infill and spotting

Fauna: Planktonics:
Globoquadrina tripartita
Globigerina angiporoides angiporoides
Globigerina brevis
Globigerina praebulloides
Globorotalia gemma
Globorotalia munda
Globorotalia nana
Globorotalia continuosa
Globorotalia testarugosa
Globorotalia extans
Dominance of: Globoquadrina tripartia and Globigerina angiporoides angiporoides
Benthonics:
Vulvulina granulosa
Bathysiphon
Rhabdammina
Reophax
Cribostomella
Ammodiscus (coarse)
Ammodiscus (opaline)
Discammina
Cribostomella
Sphaeroidina
Dominance of: Fine-grained "deep-water" arenaceous.
Count: 1500
% Planks: 90%

Comments: Preservation fair with some squashing. N.B. Sudden change in fauna from SWC 61.

SWC 58 at 2399 metres

Lithology: Flaky calc. siltst.

Fauna: Planktonics: Very poor preservation
Globigerina angiporoides (s.s)
Globigerina brevis
+ Indeterminate
Benthonics: Indeterminate

SWC 57 at 2399.9 metres
Lithology: Flaky clac. siltst.
Fauna: Planktonics:
Globigerina brevis
Globigerina angiporoides (s.s)
Zone D contamination
Orbulina universa
Globigerina woodi woodi
Globorotalia miozea miozea
Comments: N.B. mud contamination.

SWC 56 at 2401 metres
Lithology: Flaky grey calc., siltst. forams. A-pellet glauc.
Fauna: Planktonics:
Similar Assemblage to SWC 60 at 2397 metres.
Benthonics:
Similar Assemblage to SWC 60 at 2397 metres.
Other Fauna: Fish.
Count: 1500
% Planks: 90%

SWC 55 at 2401.9 metres
Lithology: Flaky gry. calc. siltst. minor pyr/lim.
Fauna: Planktonics: Very poor preservation
Globigerina angiporoides (s.s)
Globigerina praebulloides
Globorotalia gemma
Otherwise indeterminate.
Benthonics: Indeterminate.
Count: ?100
% Planks: ?

SWC 54 at 2402.9 metres
Lithology: Flaky grey/bn calc., siltst. minor pyrite and c-m ang. quartz and lim.
Fauna: Planktonics: Preservation fair.
Globigerina brevis
Globigerina angiporoides (s.s)

Globigerina praebulloides
Globoquadrina tripartita
Globorotalia nana
Benthonics:
Sphaeroidina bulloides
Bathysiphon
Lenticulina
Other Fauna: Echinoid spines.
Count: 250
% Planks: 90%

SWC 53 at 2403.9 metres

Lithology: Grey calc. silsts., 30% forams, minor pyrite.

Fauna: Planktonics: Preservatin fair.
Globoquadrina tripartita
Globigerina angiporoides (s.s)
Globigerina brevis
Globigerina praebulloides
Globorotalia gemma
Globorotalia munda
Globorotalia nana
Globorotalia continuosa
Globigerinoides testarugosa
Globigerinoides extans
Benthonics:
Vulvulina granulosa
Bathysiphon
Rhabdammina
Reophax
Cribostomella
Ammodiscus (coarse)
Ammodiscus (opaline)
Discammina
Cribostomella
Sphaeroidina
Count: 1500
% Planks: 90%

SWC 52 at 2405 metres

Lithology: Calc. siltst. r. pyr. mica.

Fauna: Planktonics: Preservation sugary.
Globigerina brevis
Globigerina angiporoides (s.s)
Globigerina linaperta

Globoquadrina tripartita
Globorotalia munda
Globorotalia nana
Globorotalia insolita
Dominance of: No Globigerinatheka index seen after long search
Benthonics:
Siphonina
Anomalinoides
Sphaeroidina bulloides
Textularia conica
Pseudoclavulina
Bathysiphon
Haplophragmoides
Vulvulina
Lenticulina
Saccammina
Karreria
Other Fauna: Echinoid spines
Count: 500
% Planks: 60%

Comments: Suspect Browns Creek dinoflagellates

SWC 50 at 2407 metres

Lithology: 20% pebble, c-m subang-rd fractured clear and orange quartz. 50% m-f ang. quartz. 20% lim. pellet after glauc. r. glauc clay-pyrite.

Fauna: NFF

MICROPALEONTOLOGICAL DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: _____ GL: _____

WELL NAME: YELLOWTAIL # 1 TOTAL DEPTH: _____

AGE		FORAM. ZONULES	HIGHEST DATA					LOWEST DATA				
			Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Wa Time
PLEISTOCENE		A_1										
		A_2										
PLIOCENE		A_3										
		A_4										
MIOCENE	LATE	B_1										
		B_2										
		C										
	MIDDLE	D_1										
		D_2										
		E_1										
		E_2										
	EARLY	F						2236.2	1			
		G	2246.8	1				2378.9	1			
		H_1	2381	1				2396	1			
OLIGOCENE	LATE	H_2										
		I_1										
		I_2										
	EARLY	J_1										
		J_2	2397	0				2403.9	0			
EOCENE		K	2405	1				2405	1			
		Pre-K										

COMMENTS: D-2 contamination in SWC at 2399.9

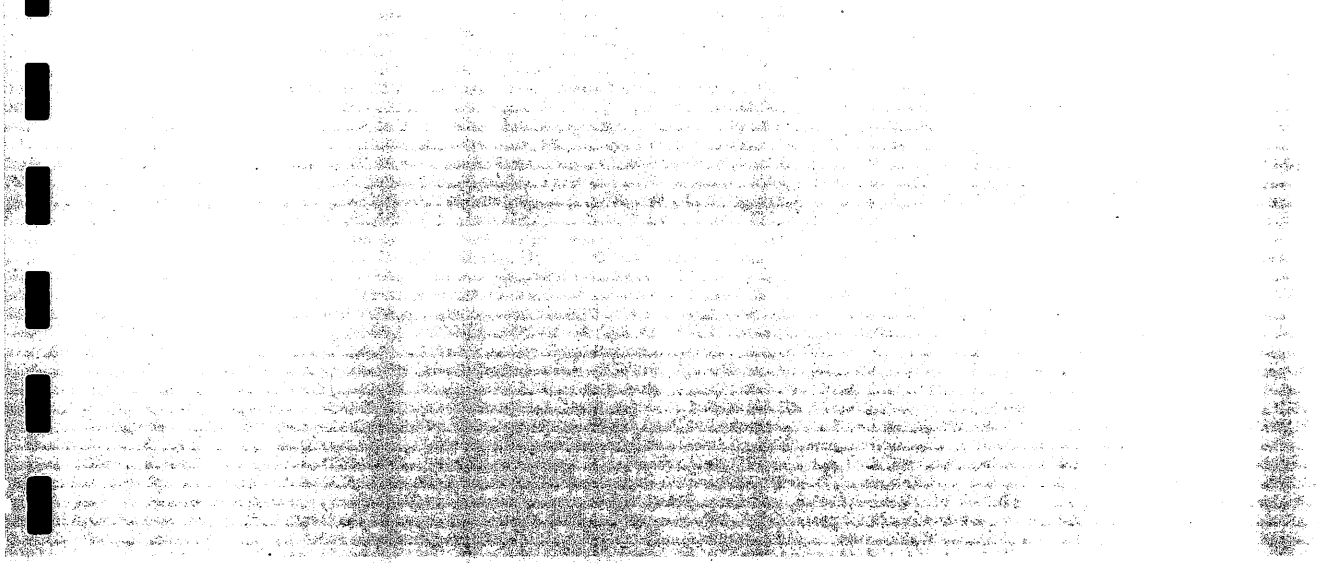
CONFIDENCE RATING:

0:	SWC or Core	-	Complete assemblage (very high confidence).
1:	SWC or Core	-	Almost complete assemblage (high confidence).
2:	SWC or Core	-	Close to zonule change but able to interpret (low confidence).
3:	Cuttings	-	Complete assemblage (low confidence).
4:	Cuttings	-	Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence).

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: *PALTECH* PTY. LTD. DATE: February 16, 1982.

DATA REVISED BY: *PALTECH* PTY. LTD. DATE: March 31, 1982.



PE905604

This is an enclosure indicator page.
The enclosure PE905604 is enclosed within the container PE902684 at this location in this document.

The enclosure PE905604 has the following characteristics:

ITEM_BARCODE	= PE905604
CONTAINER_BARCODE	= PE902684
NAME	= Dinoflagellate Distribution Chart
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Dinoflagellate Distribution Chart (from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= YELLOWTAIL-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO-BHP

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 5

APPENDIX 5

PALYNOLOGICAL ANALYSIS

PALYNOLOGICAL ANALYSIS OF YELLOWTAIL-1

GIPPSLAND BASIN

by

HOWARD E. STACY

ESSO AUSTRALIA LTD

PALAEONTOLOGICAL REPORT 1982/7 FEBRUARY 25, 1982

PART I

INTERPRETATIVE DATA

Introduction

Summary Table

Geological Comments

Comments on Age Zones

Table-1: Interpretative Data

Palynology Data Sheet

INTRODUCTION.

Twenty five (25) sidewall cores were processed and examined for palynomorphs. The recovery of microfossils was poor to fair from most samples, however, all but two yielded enough palynomorphs so that an age determination could be made.

Palynological zones and lithological facies subdivisions, from the base of the Lakes Entrance Formation to the total depth of the well, is given below. Table 1 presents a summary of the palynological analysis for each sample and the occurrence of each species is tabulated in the accompanying check-charts.

SUMMARY

UNIT/FACIES	ZONE	DEPTH KB (metres)
Lakes Entrance Formation (base)	P. tuberculatus	2402
	UNCONFORMITY	
Gurnard Formation	Middle N. asperus	2406-2410
	UNCONFORMITY	
Latrobe Group "Coarse Clastics"	Upper L. balmei	2415-2438
	Lower L. balmei	2470-2570
		T.D. 2571

GEOLOGICAL COMMENTS:

1) Two major periods of non-deposition and/or unconformities are evident in the well section examined. One is located between 2402 and 2406 metres, between the base of the Lakes Entrance Formation (Oligocene, P. tuberculatus Zone) and the top of the Gurnard Formation (Late Eocene, Middle N. asperus Zone). Foraminiferal studies of this section will probably offer more accurate estimates of the amount

of time missing, but it appears, from this study to be in excess of 4 million years.

The second time gap is much larger. At least 13 million years appear to be missing from the stratigraphic record between 2410 and 2415 metres. The flora changes from one of the Middle N. asperus Zone at 2410 metres to an Upper L. balmei Zone assemblage in the sidewall core from 2415 metres. The 5 metre sand in between was barren of fossils.

2) Foraminiferal examination of the basal Lakes Entrance sediments revealed that uppermost Eocene (Zone K) was present in the Opah-1 section. A similar occurrence is possible in this well.

3) The Gurnard Formation (Middle N. asperus Zone) which extends from 2406 to 2410 metres is almost pure quartz sand in this well. The lithological evidence for equating this to the Gurnard Formation is the presence of glauconite in most of the samples. The 5 metres of sand between the last N. asperus Zone sample (2410 metres) and the highest L. balmei Zone record at 2415 metres was barren of palynomorphs.

4) The section between the base of P. tuberculatus Zone at 2402 metres and top of L. balmei Zone at 2415 metres is similar in thickness and sandiness in both Opah-1 (14 metres) and Yellowtail-1 (13 metres). In Yellowtail-1, the upper 8 metres to 2410 metres includes a well-defined Middle N. asperus Zone fora. The bottom 5 metres of this section is barren of fossils. The reverse situation is true in Opah-1, where the upper 11 metres of the section

is barren of significant fossils and a poorly developed assemblage of probable P. asperopolus Zone age was identified from the sidewall cores taken from the lower 3 metres.

5) Samples in Yellowtail-1 from the upper part of the L. balmei section, from 2415 to 2421 metres, were badly contaminated by drilling mud and originally were considered to be a mixed flora of N. asperus Zone with L. balmei Zone reworking. Because additional study shows that the younger element of the flora is a mixture of P. tuberculatus and N. asperus Zone species, rather than just an N. asperus Zone Assemblage, it is believed that the post L. balmei Zone fossils were introduced by drilling mud infiltration of this sandy section.

6) This well bottomed in the Lower L. balmei Zone of the Paleocene age. The bottom sample (2570 metres) contained not only a well developed spore-pollen flora, but also included a fairly diverse dinoflagellate assemblage that included both Palaeoperidinium pyrophorum and Deflandrea speciosus, dinoflagellate marker species for the Lower L. balmei Zone.

DISCUSSION OF ZONES:

Lower Lygistepollenites balmei Zone: 2470 to 2570 metres

Samples from this section contained specimens of Tetracolporites verrucosus, a marker of the Lower L. balmei Zone, in addition to the usual general L. balmei markers, such as Lygistepollenites balmei, Australopollis obscurus, Gambierina edwardsii and G. rudata. The bottom sample (2570 metres) is especially notable because of the addition of marine dinoflagellates, which include Palaeoperidinium pyrophorum and Deflandrea speciosus as well as Senegalinium dilwynensis and Ginginodinium palaeocenicum.

Upper Lygistepollenites balmei Zone 2415 to 2438 metres. Common and consistent occurrence of L. balmei, A. obscurus, G. edwardsii and G. rudata in these samples indicate an age of Paleocene (L. balmei Zone) or lower; and the regular presence of Apectodinium homomorpha demonstrates that they are no older than Upper L. balmei Zone.

Middle Nothofagidites asperus Zone: 2406 to 2410 metres. Samples from this section contained well-developed floras of both dinoflagellates and spore-pollen that included the following important markers: Triorites magnificus, Eisenackia ornata, Phthanoperidium comatum, Holoroginella spinosa, Systematophora placacantha and Schematophora speciosus.

Proteacidites tuberculatus Zone: 2371 to 2402 metres. The regular presence of Cyatheacidites annulatus and Protoellipsodinium simplex in these samples are indicative of post-Eocene sediments.

TABLE-1

INTERPRETATIVE DATA

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, YELLOWTAIL-1, GIPPSLAND BASIN

SAMPLE	DEPTH METRES	DEPTH FEET	ZONE	AGE	CONFIDENCE RATING	YIELD	SPORE-POLLEN DIVERSITY	DINO. DIVERSITY	COMMENTS
SWC 72	2371	7779	P. tuberculatus	Oligocene	1	Poor	Low	Moderate	
SWC 67	2381	7812	P. tuberculatus	Oligocene	1	Poor	Low	Moderate	
SWC 64	2388	7835	P. tuberculatus	Oligocene	1	Poor	Low	Moderate	
SWC 58	2399	7871	P. tuberculatus	Oligocene	1	Poor	Moderate	Moderate	C. annulatus
SWC 55	2401.9	7880	P. tuberculatus	Oligocene	1	Poor	Low	Moderate	C. annulatus
SWC 52	2405	7890.5	Indeterminate	-	-	Poor	None	Moderate	
SWC 51	2406.1	7894	Middle N. asperus	Late Eocene	1	Poor	Very Low	Low	Eisenackia ornata
SWC 50	2407	7897	Middle N. asperus	Late Eocene	1	Fair	Moderate	Moderate	T. magnificus
SWC 49	2408	7900	N. asperus	Late Eocene	2	Poor	Low	Low	
SWC 47	2409.9	7906.5	Middle N. asperus	Late Eocene	1	Poor	Low	Moderate	
SWC 42	2415	7923	Upper L. balmei	Late Paleocene	2	Good	Moderate	Moderate	Badly mud contaminated
SWC 41	2415.9	7926	Upper L. balmei	Late Paleocene	1	Poor	Moderate	None	
SWC 40	2417	7930	Upper L. balmei	Late Paleocene	1	Fair	Moderate	Very Low	
SWC 39	2418	7933	Upper L. balmei	Late Paleocene	1	Fair	Moderate	Low	
SWC 37	2420.1	7940	Indeterminate	-	-	Poor	Low	Low	
SWC 36	2420.9	7942.5	L. balmei	Paleocene	2	Poor	Low	Low	
SWC 34	2423	7949.5	Upper L. balmei	Late Paleocene	1	Poor	Moderate	Low	
SWC 33	2424	7953	Upper L. balmei	Late Paleocene	1	Fair	Moderate	Low	Mud contamination
SWC 28	2429	7969	Upper L. balmei	Late Paleocene	1	Very Poor	None	Low	W. homomorpha
SWC 21	2438.2	7999	Upper L. balmei	Late Paleocene	1	Fair	Moderate	Low	
SWC 18	2456	8058	L. balmei	Paleocene	2	Fair	Moderate	Low	
SWC 14	2470	8103.5	Lower L. balmei	Paleocene	1	Poor	Moderate	None	
SWC 10	2483.4	8147.5	Lower L. balmei	Paleocene	2	Fair	Moderate	Low	
SWC 7	2519.8	8267	Lower L. balmei	Paleocene	2	Fair	Moderate	Low	
SWC 1	2570	8432	Lower L. balmei	Paleocene	0	Fair	Moderate	Moderate	P. pyrophorum, D. speciosus

PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: 21 GL: 77

WELL NAME: YELLOWTAIL-1 TOTAL DEPTH: 2571 metres

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two W Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
PALEOGENE	*P. tuberculatus*	2371	1				2401.9	1			
	Upper *N. asperus*										
	Mid *N. asperus*	2406.1	1				2409.9	1			
	Lower *N. asperus*										
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*	2415	1				2438.2	1			
	Lower *L. balmei*	2470	1				2570	0			
LATE CRETACEOUS	*T. longus*										
	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: _____

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: HOWARD E. STACY DATE: FEBRUARY 25, 1982

DATA REVISED BY: _____ DATE: _____

PART II

BASIC DATA

Table-1: Basic Data

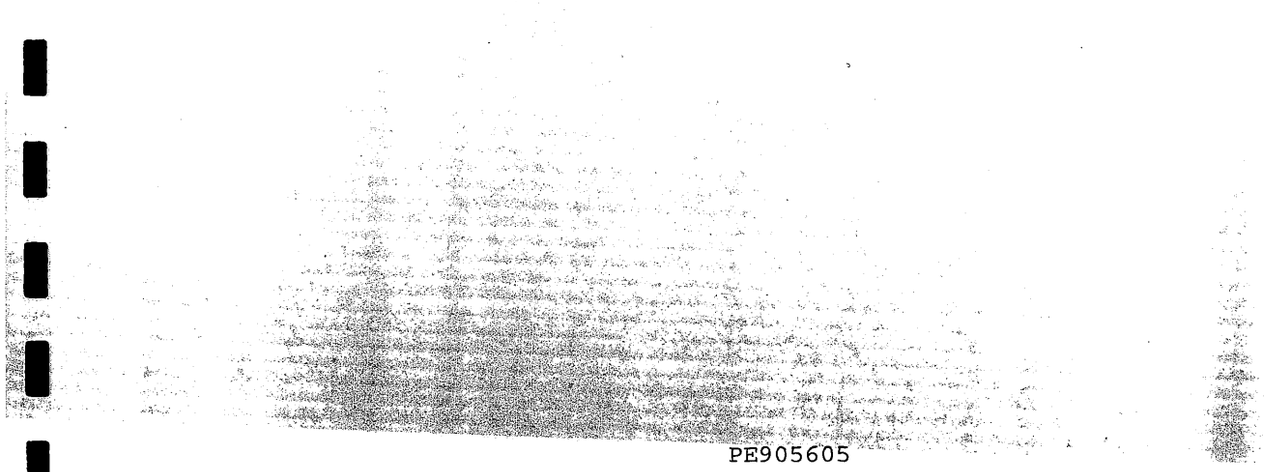
Range Charts

TABLE-1

BASIC DATA

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, YELLOWTAIL-1, GIPPSLAND BASIN

SAMPLE	DEPTH METRES	DEPTH FEET	YIELD	SPORE-POLLEN DIVERSITY	DINO. DIVERSITY
SWC 72	2371	7779	Poor	Low	Moderate
SWC 67	2381	7812	Poor	Low	Moderate
SWC 64	2388	7835	Poor	Low	Moderate
SWC 58	2399	7871	Poor	Moderate	Moderate
SWC 55	2401.9	7880	Poor	Low	Moderate
SWC 52	2405	7890.5	Poor	None	Moderate
SWC 51	2406.1	7894	Poor	Very Low	Low
SWC 50	2407	7897	Fair	Moderate	Moderate
SWC 49	2408	7900	Poor	Low	Low
SWC 47	2409.9	7906.5	Poor	Low	Moderate
SWC 42	2415	7923	Good	Moderate	Moderate
SWC 41	2415.9	7926	Poor	Moderate	None
SWC 40	2417	7930	Fair	Moderate	Very Low
SWC 39	2418	7933	Fair	Moderate	Low
SWC 37	2420.1	7940	Poor	Low	Low
SWC 36	2420.9	7942.5	Poor	Low	Low
SWC 34	2423	7949.5	Poor	Moderate	Low
SWC 33	2424	7953	Fair	Moderate	Low
SWC 28	2429	7969	Very Poor	None	Low
SWC 21	2438.2	7999	Fair	Moderate	Low
SWC 18	2456	8058	Fair	Moderate	Low
SWC 14	2470	8103.5	Poor	Moderate	None
SWC 10	2483.4	8147.5	Fair	Moderate	Low
SWC 7	2519.8	8267	Fair	Moderate	Low
SWC 1	2570	8432	Fair	Moderate	Moderate



PE905605

This is an enclosure indicator page.
The enclosure PE905605 is enclosed within the container PE902684 at this location in this document.

The enclosure PE905605 has the following characteristics:

ITEM_BARCODE	= PE905605
CONTAINER_BARCODE	= PE902684
NAME	= Spore and Pollen Distribution Chart
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Spore and Pollen Distribution Chart (from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= YELLOWTAIL-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO-BHP

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 6

APPENDIX 6

QUANTITATIVE LOG EVALUATION

YELLOWTAIL-1

QUANTITATIVE LOG ANALYSIS

The wireline log data for the interval 2414m - 2560m has been quantitatively analysed using the HP41 CV "LOOKLOG" analysis program.

LOGS USED

GR, LLd, MSFL, LDT and CNL.
A correction factor of 0.75 was applied to the recorded MSFL values to allow for mudcake effects.
All depths referred to as K.B. depths.

ANALYSIS AND SHALE PARAMETERS USED

a	1	
m	1.86	
n	2.12	
Matrix density limits	2.65 - 2.665	gm/cc
Fluid density	1	gm/cc
Hydrocarbon density - oil	0.7	gm/cc
Apparent shale density	2.5	gm/cc
Apparent shale neutron porosity	30%	
Apparent shale resistivity	4.5 ohm metres	
Gamma Ray minimum	30 API units	
Gamma Ray maximum	120 API units	

Values for a, m and n were derived from analysis of cores from the nearby Mackerel reservoir sands.

SALINITIES

Apparent water salinities were calculated from log readings in the water sand, by backing out RWa from the Archie and Indonesian shaly sand relationships, assuming 100% water saturation. This indicated that water salinities are in the order of 44000 ppm NaCleq.

HYDROCARBONS

100% water saturated sand exists in Yellowtail-1 as high as 2431.5m RKB. From 2431.5 to 2426.5 RKB, the formation appears to contain "residual", or immovable oil, with invaded and uninvaded zone water saturations (Sxo and Sw) being equal and decreasing upwards from 100% to 75%, with increasing LLd, LLs and MSFL resistivity values. This zone should produce water only. The effective water-(movable) oil contact appears to occur at 2426.5m. Oil is then present to the top of the Coarse Clastic reservoir sand at 2416m. Through this section (2426.5-2416m) Sxo values are relatively uniform, (approx 60 - 70%). Sw values are much lower than this Sxo value range for the intervals 2416 - 2421.5m, (Sw = 20 - 40%) and 2425 - 2426.5m (Sw = 46%), indicating good probable oil productivity. The interval 2421.5 - 2425m, however, is slightly shaly and gives Sw values only a few percent lower than the Sxo values, indicating low, if any, oil productivity.

T.M. FRANKHAM
6th November 1981

6-11-81

YELLOWTAIL-1

LOG ANALYSIS SUMMARY SHEET

Depth Interval (metres KB)	Thickness (metres)	V. Shale	Matrix Density gm/cc	Av. Porosity	Sxo	Sw	Comment
2415 - 2416	1m	77%	2.76	3.4%	100%	100%	Shale
2416 - 2417.5	1.5m	11%	2.65	22.5%	66%	28%	Clean oil sand, net porosity.
2417 - 2418.5	1m	8%	2.64	16.3%	72%	27%	↕
2418.5 - 2420.5	2m	11%	2.65	17.2%	67%	21%	↕
2420.5 - 2421.5	1m	10%	2.65	16.2%	71%	44%	Clean oil sand, net porosity
2421.5 - 2423	1.5m	20%	2.65	15.3%	63%	60%	Slightly shaly net sand; low probable oil productivity.
2423 - 2425	2m	26%	2.65	16.1%	65%	62%	
2425 - 2426	1m	9%	2.66	20.2%	64%	46%	Clean net sand, probably oil productive.
2426 - 2426.5	0.5m	9%	2.67	18.7%	75%	61%	
2426.5 - 2429.5	3m	10%	2.65	20.2%	75%	75%	Clean net sand with minor oil
2429.5 - 2431.5	2m	11%	2.65	20.3%	90%	90%	saturation. Probably water productiv
2431.5 - 2436	4.5m	8%	2.64	23.2%	100%	100%	Clean, net, water saturated sand
2436 - 2438	2m	8%	2.64	27.5%	96%	96%	↕
2438 - 2439.5	1.5m	16%	2.64	16.4%	91%	91%	↕
2439.5 - 2450	10.5m	14%	2.64	20.2%	100%	100%	Clean, net, water saturated sand
2450 - 2457	7m	37m	2.64	11.5%	89%	89%	Non-net shaly water sand
2457 - 2463	6m	21%	2.64	21.5%	98%	98%	Clean net water saturated sand
2463 - 2493	30m	-	-	Predominantly water sand with minor shaly/silty sections			
	6.5m	38%	2.65	10.3%	87%	87%	Non-net shaly sand
	23.5m	6%	2.66%	19.8%	100%	100%	Clean, net, sand
2493 - 2519	26m	5-8%	2.65%	21.7-22.8%	100%	100%	Massive, uniform, clean, net, water saturated, sand. Slight porosity decrease with increasing depth.
2519 - 2525	6m	57%	2.64%	3.7%	96%	96%	Shaly siltstone
2525 - 2527	2m	20%	2.67%	11.2%	100%	100%	Non-net shaly water sand
2527 - 2560	33m	11%	2.66%	22.6%	100%	100%	Massive, uniform, clean, net, water saturated sand.

YELLOWTAIL-1

NET - GROSS INTERVAL SUMMARY

SECTION	DEPTH INTERVAL (KB)	GROSS THICKNESS	NET THICKNESS	NET:GROSS-%age
Oil Zone	2416 - 2426.5m	10,5m	10.5m	100%
Water Zone	2426.5 - 2560m	133.5m	112m	83.9%
Total Section (Coarse Clastics)	2416 - 2560m	144m	122.5m	85.1%

6-11-81

APPENDIX 7

APPENDIX 7

WIRELINE TEST REPORT

YELLOWTAIL - 1

RFT RUNS 1 - 5

From November 4 to 6, 1981, five RFT runs were made on Yellowtail-1. (Run 4 was an unsuccessful run due to bridges blocking the hole - no seats were obtained on this run). Altogether 28 seats were attempted to obtain 17 valid pressure readings and 5 samples. The eight seats taken during run 1 either failed or are regarded as doubtful, as the Martineau Probe being used would not seal properly against the formation.

All the valid pressure build-ups were rapid, indicating a high permeability formation. Quantitative analysis was not possible because of plugging or near wellbore reduced permeability.

Pressure and sampling results are listed in the following pages. Attachment 1 shows formation pressures from Run 2 pretest data plotted against depth. The estimated water gradient is 1.46 psi/m and the oil gradient is 1.02 psi/m. The oil water contact is estimated to be 2427.0m KB $\pm$ 1 m. This is consistent with the lowest proved oil sample at 2425.7m KB and the highest proved water sample at 2430.5 m KB. It is also consistent with log analysis, which indicates an oil-water contact at 2426.5 m KB, with residual, or immovable oil, present to 2431.5 m .

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER.....RFT RUN. NO: ONE, TWO.....

WELL : YELLOWTAIL-1.....
DATE : 4th NOVEMBER, 1982...
OBSERVERS : Phil Tan/Jeff Roche

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FORMATION PRESSURE psi	FORMATION PRESSURE ppg	FHP psi	FHP ppg	TEST RESULT
1/8	2417.0	2396.0	SPT	HP	Y	A	3950.4	9.61	3376.02	8.29	3954.0	9.62	Segregated Sample
2/9	2468.0	2447.0	PT	HP	Y	A	4041.4	9.63	3445.70	8.28	4034.6	9.62	Good K - water
10	2440.5	2419.5	PT	HP	Y	A	3990.0	9.62	3405.60	8.28	3990.7	9.62	Good K - water
11	2432.0	2411.0	PT	HP	Y	A	3974.5	9.61	3393.46	8.28	3975.8	9.62	Good K - water
12	2431.0	2410.0	PT	HP	Y	A	3972.4	9.61	3392.39	8.28	3974.0	9.62	Good K - water
13	2429.0	2408.0	PT	HP	Y	A	3968.6	9.61	3389.50	8.28	3968.60	9.61	Good K
14	2426.5	2405.5	PT	HP	Y	A	3964.0	9.61	3386.15	8.28	3966.8	9.62	Good K - oil

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

N.B. A Martineau probe was used during Run 1. Eight seats were attempted - none obtained a good seal (although a sample was obtained at seat 8, 2417m - see RFT Sample Test Report). Seats 1/1 to 1/7 are not listed here.

RFT PRETEST PRESSURES

SERVICE COMPANY: ...SCHLUMBERGER.....RFT RUN. NO: .TWO.....

WELL : .YELLOWTAIL-1.....
DATE : .4th. NOVEMBER 1981...
OBSERVERS : Phil. Tan., Jeff. Roche

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FORMATION PRESSURE psi	FORMATION PRESSURE ppg	FHP psi	FHP ppg	TEST RESULT
15	2423.0	2402.0	PT	HP	Y	A	3958.4	9.61	3384.00	8.29	3960.00	9.61	Good K - oil
16	2422.5	2401.5	PT	HP	Y	A	3960.0	9.62	3382.10	8.28	3958.5	9.61	Good K - oil
17	2421.0	2400.0	PT	HP	Y	A	3955.2	9.61	3380.62	8.29	3955.8	9.61	Good K - oil
18	2419.5	2398.5	PT	HP	Y	A	3952.0	9.61	3378.97	8.29	3955.1	9.62	Good K - oil
19	2417.0	2396.0	PT	HP	Y	A	3950.0	9.61	3376.10	8.29	3950.0	9.61	Good K - oil
20	2409.5	2388.5	PT	HP	Y	A	3931.6	9.60					Seal Failure
21	2410.0	2389.0	PT	HP	Y	A	3935.5	9.61					Seal Failure.

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER ..... RFT RUN. NO: TWO - FIVE .....

WELL : YELLOWTAIL-1 .....
DATE : 4th November - 6th November, 1981
OBSERVERS : Phil Tan/Jeff Roche

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FORMATION PRESSURE psi	FORMATION PRESSURE ppg	FHP psi	FHP ppg	TEST RESULT	
22	2405.0	2384.0	PT	HP	Y	A	3935.5	9.63					Seal Failure	
23	2430.5	2409.5	SPT	HP	Y	A	3964.7	9.60	3392.60	8.28	3974.0	9.62	Good Flow 12.5 l chamber	(Lower)
24	2425.5	2404.5	SPT	HP	Y	A	3965.0	9.62	3386.44	8.28			Probe Plugging	
25	2426.0	2405.0	SPT	HP	Y	A	3966.0	9.62	3387.00	8.28	3965.0	9.61	Good Flow 12.5 l chamber	(Upper)
3/26	2427.0	2406.0	SPT	HP	Y	A	3956.0	9.59	3384.60	8.27	3955.0	9.59	12.5 l chamber (Lower)	
27	2423.5	2402.5	SPT	HP	Y	A	3951.9	9.59	3381.60	8.28	3950.3	9.59	12.5 l chamber (Upper)	
5/28	2425.7	2404.7	SPT	HP	Y	A	4045.8	9.81	3384.60	8.28	4045.9	9.81	Segregated Sample (27 & 12.5 l chambers)	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

N.B. Attempted Run 4 - hit bridge. Pulled RFT out of hole and ran wiper trip before Run 5.

RFT SAMPLE TEST REPORT

WELL : YELLOWTAIL-1

OBSERVER P. TAN/J. ROCHE DATE : 4th November 1981 RUN NO.: 2

	CHAMBER 1 (12.5 lit.)		CHAMBER 2 (12.5 lit.)	
SEAT NO.	2/23 (unseg)		2/25 (unseg)	
DEPTH	2430.5		2426	
A.RECORDING TIMES				
Tool Set	1350		1427	
Pretest Open	1352		1428	
Time Open	1352			
Chamber Open	1356		1428	
Chamber Full	1402		1434	
Fill Time	6 min		6 min	
Start Build up	1402		1434	
Finish Build up	1404		1436	
Build Up time	2 min		2 min	
Seal Chamber	1404		1436	
Tool Retract	1405		1457	
Total Time	15 min			
B.SAMPLE PRESSURES				
IHP	3964.70	psia	3966.00	psia
ISIP	3393.3		3387.00	
Initial Flowing Press.	2592.00		167.41	
Final Flowing Press.	3215.6		2029.7	
Sampling Press. Range				
FSIP	3392.6		3387.00	
FHP	3974.00		3965.00	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.	92.2	°C	93.3	°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	0	psig	20	psig
Amt Gas	(0.16cf) 4.5	lit.	(0.5cf) 14.2	lit.
Amt oil		lit.		lit.
Amt Water	10.40	lit.	9.4	lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1		ppm	42458.2	ppm
C2		ppm	25976.8	ppm
C3		ppm	35824.2	ppm
IC4/nC4		ppm	2047.44	ppm
C5		ppm	4124.8	ppm
C6+		ppm	Tr	ppm
CO2/~~H2S~~		ppm	14	ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	.26 @	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	17800	ppm	14600	ppm
NO3	0	ppm	25	ppm
Est.Water Type				
Mud Properties				
Resistivity	@°C		0.305 @°C 21.1	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize				
REMARKS	Good sample and Pretest.		Partial Plugging.	

RFT SAMPLE TEST REPORT

WELL : YELLOWTAIL - 1

OBSERVER : P.TAN/J.ROCHE DATE : 4th November, 1981 RUN NO. : THREE

	CHAMBER 1 (12.5 lit.)		CHAMBER 2 (12.5 lit.)	
SEAT NO.	3/26 (unseg)		3/27 (unseg)	
DEPTH	2427		2423.5	
A.RECORDING TIMES				
Tool Set	1905		1918	
Pretest Open	1905		1921	
Time Open	1908		1921	
Chamber Open	1909		1924 1928	
Chamber Full	1913		1932	
Fill Time	4 min		7 min	
Start Build up	1913		1932	
Finish Build up	1915		1935	
Build Up time	2 min		3 min	
Seal Chamber	1915		1936	
Tool Retract	1915		1937	
Total Time	1 min		1 min	
B.SAMPLE PRESSURES				
IHP	3956.02	psia	3951.9	psia
ISIP	3383.70		3380	
Initial Flowing Press.	2607.13		43.91 87.05	
Final Flowing Press.			1622.9	
Sampling Press. Range				
FSIP	3384.6		3381.6	
FHP	3955.0		3950.3	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.	94.4	°C	94.6	°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	70	psig	10	psig
Amt Gas	(0.45cf) 12.7	lit.	(0.5cf) 14.2	lit.
Amt oil		lit.		lit.
Amt Water	9.9	lit.	9.5	lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	20655.4	ppm	16925.9	ppm
C2	11835.2	ppm	10014.4	ppm
C3	14224.4	ppm	11781.8	ppm
IC4/nC4	8129.6	ppm	6581.0	ppm
C5	1747.2	ppm	1478.4	ppm
C6+	Tr	ppm	-	ppm
~~CO2~~/H2S	6	ppm	More than 200	ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	0.30 @ 21.1	°C	0.30 @ 21.1	°C
NaCl Equivalent		ppm	± 1%	ppm
Cl-titrated	14200	ppm	14800	ppm
NO3	15	ppm	15	ppm
Est.Water Type	Filtrate		Filtrate	
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C	95.1	°C
Hewlett Packard No.				
Mud Weight	9.6+		9.6+	
Calc.Hydrostatic				
RFT Chokesize	.51 mm		.76mm	
REMARKS	pH water 8.1		pH water 7.3	

WELL : YELLOWTAIL-1

RFT SAMPLE TEST REPORT

OBSERVER P.TAN/J.ROCHE DATE : 6th NOVEMBER 1981 RUN NO.: FIVE

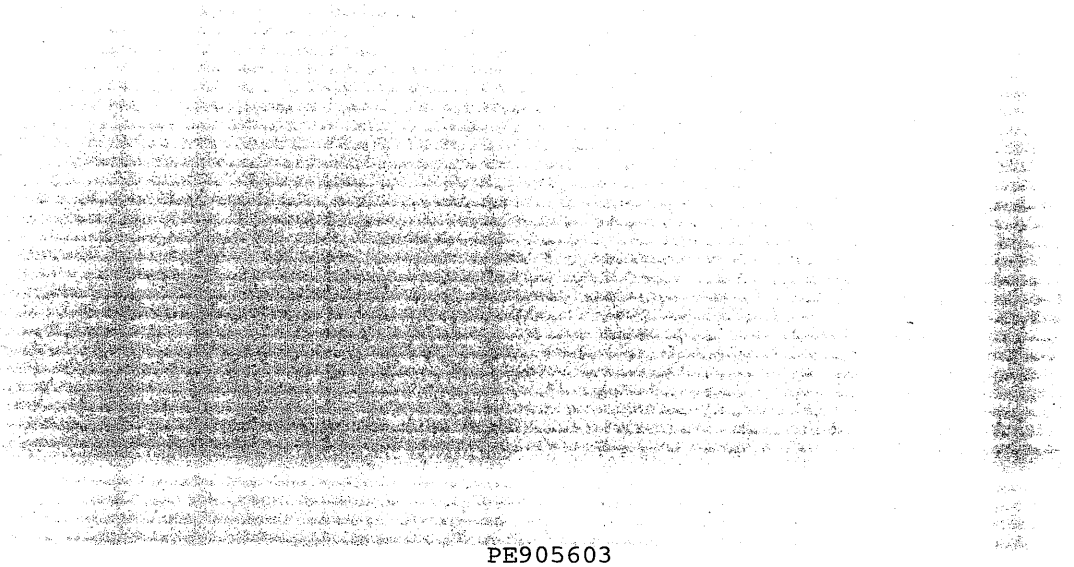
	CHAMBER 1 (27.3lit.)		CHAMBER 2 (12.5 lit.)	
SEAT NO.	5/28 (unseq)		5/28 (seq)	
DEPTH	2425.7		2425.7	
A.RECORDING TIMES	0937			
Tool Set	09			
Pretest Open	0940			
Time Open	0942		1005	
Chamber Open	0944		1005	
Chamber Full	0948		1018	
Fill Time	4		12	
Start Build up	0948		1018	
Finish Build up	0950		1019	
Build Up time	2 min		1 min	
Seal Chamber	0950		1020	
Tool Retract			1020	
Total Time				
B.SAMPLE PRESSURES				
IHP	4045.80	psia		psia
ISIP	3384.40			
Initial Flowing Press.	1894.50		568	
Final Flowing Press.	1631.90		889.59	
Sampling Press. Range				
FSIP	3384.20		3384.60	
FHP			4045.88	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m	2425.7	m
Max.Rec.Temp.	74.1	°C	79.4	°C
Time Circ. Stopped	0300	hrs.	0300	hrs.
Time since Circ.	7	hrs.	7	hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	150	psig	160	psig
Amt Gas	181.2 lit (6.4cf)	lit.	131 lit (4.62cf)	lit.
Amt oil	5.5	lit.	8.7	lit.
Amt Water	6.75	lit.	0	lit.
Amt Others	(Oil/filtrate 2.05	lit.	0	lit.
E.SAMPLE PROPERTIES	emulsion)			
Gas Composition				
C1	204375	ppm	38012	ppm
C2	122358	ppm	11712	ppm
C3	689664	ppm	8906	ppm
IC4/nC4	19614	ppm	1840	ppm
C5	2693	ppm	NIL	ppm
C6+	Tr	ppm	NIL	ppm
CO2/H2S	More than 20	ppm	1.25	ppm
Oil Properties	47.8 °API@ 21.7 °C		45.3 °API@ 15.6 °C	
Colour	Dark brown		Dark Brown	
Fluorescence	Bright pale yellow		Bright White	
GOR				
Water Properties				
Resistivity	@	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	14800	ppm		ppm
NO3	660/121(Emulsion)	ppm		ppm
Est.Water Type	Filtrate			
Mud Properties				
Resistivity	0.34 @°C 21.1		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated	151600	ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	1.02mm		0.51mm	
REMARKS				

RFT SAMPLE TEST REPORT

WELL : YELLOWTAIL-1

OBSERVER : P. TAN/J. ROCHE DATE : 4th November 1981. RUN NO.: 1

	CHAMBER 1 (12.5 lit.)		CHAMBER 2 (4.5 lit.)	
SEAT NO.	1/8		1/8	
DEPTH	2417		2417	
A.RECORDING TIMES				
Tool Set	0600			
Pretest Open	0601			
Time Open	0602		0611	
Chamber Open	0605		0611	
Chamber Full	0610		0614	
Fill Time	5 min		3 min	
Start Build up	0608		0613	
Finish Build up	0609		0614	
Build Up time	1 min		1 min	
Seal Chamber	0610		0617	
Tool Retract	0610		0619	
Total Time	10 min		8 min	
B.SAMPLE PRESSURES				
IHP	3950.44	psia		psia
ISIP	3371.54			
Initial Flowing Press.	2461.93		2997.83	
Final Flowing Press.	3370.96		2892.40	
Sampling Press. Range				
FSIP	3375.53		3376.02	
FHP			3954	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.	88.9	°C	88.3	°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	80	psig		psig
Amt Gas	(1.5cf) 42.5	lit.		lit.
Amt oil	2.15	lit.		lit.
Amt Water	2.0	lit.		lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	69120	ppm		ppm
C2	80819	ppm		ppm
C3	9873	ppm		ppm
IC4/nC4	1886	ppm		ppm
C5		ppm		ppm
C6+		ppm		ppm
CO2/~~H2S~~	3	ppm		ppm
Oil Properties	48.2 °API@ 21.7	°C	°API@	°C
Colour	Dark brown			
Fluorescence	White			
GOR				
Water Properties				
Resistivity	@	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	14200	ppm		ppm
NO3	30	ppm		ppm
Est.Water Type	Formation water			
Mud Properties				
Resistivity	0.3 @°C 21.1		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight	9.6+			
Calc.Hydrostatic				
RFT Chokesize				
REMARKS			Segregated sample - Preserved for full analysis.	



PE905603

This is an enclosure indicator page.
The enclosure PE905603 is enclosed within the container PE902684 at this location in this document.

The enclosure PE905603 has the following characteristics:

ITEM_BARCODE	= PE905603
CONTAINER_BARCODE	= PE902684
NAME	= RFT Pretests vs. Depth
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= RFT
DESCRIPTION	= RFT Pretests vs. Depth (from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= YELLOWTAIL-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 8

GEOCHEMICAL REPORT

YELLOWTAIL-1

GIPPSLAND BASIN, VICTORIA

By

J.K. Emmett

Esso Australia, Ltd.

Geochemical Report

10 August, 1982

YELLOWTAIL-1

INTRODUCTION:

Various geochemical analyses were performed on samples of canned cuttings and sidewall cores collected during drilling of Yellowtail-1. Canned cuttings composited over 15-metre intervals were collected from below the 20 inch casing shoe at 235 metres down to 2571 metres (T.D.). Alternate 15-metre intervals were analysed for C_{1-4} headspace hydrocarbon gases over the whole sequence, and between 1185m and 2445m. succeeding alternate 15-metre intervals were analysed for C_{4-7} gasoline range hydrocarbons. Selected samples were hand-picked for more detailed analyses such as Total Organic Carbon (T.O.C.) and $C_{15}+$ Liquid and gas chromatography. Vitrinite Reflectance ($R_o$max) was measured by Professor A.C. Cook of Wollongong.

An oil sample (RFT No. 4, from 2425.7m) was analysed for API gravity, whole oil, and C_{4-7} gas chromatography.

DISCUSSION OF RESULTS

The detailed headspace C_{1-4} hydrocarbon gas analysis data are listed in Table 1, but are more conveniently displayed in Figure 1. The C_{1-4} gas content is uniformly fairly low over the whole sequence, indicating no significant hydrocarbon source rock potential for any of the formations penetrated. The relatively uniform C_{1-4} gas content profile is common through extensive sequences of similar rock types where "smearing" of light hydrocarbons caused by migration occurs. The % "wet" (C_2+) gas components is uniformly low down to the top of the Latrobe Group sediments, below which it begins to rate consistently above 50%, indicating some source potential, or perhaps some contamination by the reservoired oil.

The detailed C_{4-7} gasoline range hydrocarbon data sheets are given in Appendix-1 and have also been plotted in Figure 2. Again the values are uniformly fairly low, indicating generally poor hydrocarbon source potential and reflecting the monotonous Lakes Entrance Formation and Latrobe Group rock types penetrated.

There are few Total Organic Carbon (T.O.C.) values for Yellowtail-2 and these are given in Table 2. The Lakes Entrance Formation has low T.O.C. values (average T.O.C. = 0.55%, 8 samples) and would be rated as having a poor hydrocarbon source potential. There are only two T.O.C. determinations for the Latrobe Group sediments which prevents confident interpretation of source rock potential. However the T.O.C. value of 0.67% for the Gurnard Formation sample is similar to other determinations for this unit in other wells, and indicates a fair-poor hydrocarbon source potential. The T.O.C. value of 3.16% for the undifferentiated Latrobe Group sediments, is quite rich, indicating a good hydrocarbon source potential, but it is dangerous to interpret too much from a single sample.

Vitrinite reflectance ($R_o$max) data are presented in Table 3 and have been plotted against depth in Figure 3. Although there are only 3 determinations, figure 3 shows a straight line gradient indicating no major maturation breaks. If the top of the organic maturity window for significant hydrocarbon generation is taken to be $R_o$max = 0.65%, then clearly the entire section penetrated in Yellowtail-1 is still presently immature.

The C_{15}+ liquid chromatography results from canned cuttings are given in Table 4. The total extract values for all samples are moderately rich but each sample contains a high proportion of non-hydrocarbon material, which indicates that the samples are immature. Representative C_{15}+ chromatograms are shown in figures 4-7. Figure 4, shows that the sample from the Gippsland Limestone consists of a mixture of marine and terrestrial organic matter. The

marine component is indicated by the slight hump in the lower molecular weight (up to n-C_{22}) portion of the chromatogram and the high phytane peak (b). The terrestrial input is shown by the odd-over even predominance in the high molecular weight (n-C_{22}+) n-alkanes, the high pristane peak (a), and the hump of sterane high molecular weight ferpaned compounds.

Similar evidence seen in Figures 5 and 6 shows that the Lakes Entrance Formation sediments also contain a mixture of marine and terrestrial organic matter (to varying degree). In Figure 7 the Latrobe Group sample is seen to contain predominantly terrestrial organic matter. The strong odd-over-even predominance above n-C_{22}, the n-C_{29} maxima, a n-C_{17}/pristane (a) ratio of less than one and the obvious sterane/terpane components, confirms that the Latrobe Group sediments are still presently immature. The remaining Yellowtail-1 C_{15}+ chromatograms are given in Appendix-2.

A whole oil chromatogram (figure 8) of an oil sample, (RFT No. 4 taken at 2425.7m), from the oil column encountered near the top of the Latrobe Group "coarse clastics" shows it to be a highly paraffinic based oil. The API gravity of this sample was 47° at 60°F.

CONCLUSIONS

1. Little significant petroleum source rock information can be obtained from Yellowtail-1 which was completed after encountering an oil column near the top of Latrobe coarse clastics.

2. The entire section penetrated in Yellowtail-1 is presently immature.

3. Cuttings gas data and a single Total Orgaic Carbon value indicate that the undifferentiated Latrobe Group sediments have a good hydrocarbon source potential. The top of the Latrobe Group, Gurnard Formation, and the overlying Lakes Entrance Formation, have fair-poor hydrocarbon source rock potentials.

CONTENTS

LIST OF TABLES:

1. C_{1-4} Headspace Cuttings Gas Data
2. Total Organic Carbon Report - Yellowtail-1
3. Vitrinite Reflectance Report-Yellowtail-1
4. $C_{15}+$ Liquid Chromatography Results.

LIST OF FIGURES:

1. C_{1-4} Headspace Cuttings Gas Log
2. C_{4-7} Gasoline Range Geochemical Log
3. Vitrinite Reflectance Vs. Depth.
4. $C_{15}+$ Saturate Chromatogram, Yellowtail-1, 1605-1620m.
5. $C_{15}+$ Saturate Chromatogram, Yellowtail-1, 1710-1725m.
6. $C_{15}+$ Saturate Chromatogram, Yellowtail-1, 2340-2355m.
7. $C_{15}+$ Saturate Chromatogram, Yellowtail-1, 2430-2455m.
8. Whole Oil Chromatogram - RFT No. 4 at 2425.7m.

APPENDICES:

1. C_{4-7} Detailed Data Sheets
2. $C_{15}+$ Saturate Chromatograms.

TABLE 1 : C1-C4 HYDROCARBON ANALYSES

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND
WELL - YELLOWTAIL 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
72314 A	250.00	109	6	2	1	1	10	119	8.40	92.	5.	2.	1.	1.	60.	20.	10.	10.
72314 C	280.00	3	1	0	0	0	1	4	25.00	75.	25.	0.	0.	0.	100.	0.	0.	0.
72314 E	310.00	6	3	1	0	0	4	10	40.00	60.	30.	10.	0.	0.	75.	25.	0.	0.
72314 G	340.00	5	1	0	0	0	1	6	16.67	83.	17.	0.	0.	0.	100.	0.	0.	0.
72314 I	370.00	9	3	1	0	0	4	13	30.77	69.	23.	8.	0.	0.	75.	25.	0.	0.
72314 K	400.00	42	8	3	0	1	12	54	22.22	78.	15.	6.	0.	2.	67.	25.	0.	8.
72314 M	430.00	65	4	1	0	0	5	70	7.14	93.	6.	1.	0.	0.	80.	20.	0.	0.
72314 O	460.00	201	7	1	0	0	8	209	3.83	96.	3.	0.	0.	0.	88.	13.	0.	0.
72314 Q	490.00	104	2	0	0	0	2	106	1.89	98.	2.	0.	0.	0.	100.	0.	0.	0.
72314 S	520.00	100	3	1	0	0	4	104	3.85	96.	3.	1.	0.	0.	75.	25.	0.	0.
72315 A	550.00	243	13	4	2	1	20	263	7.60	92.	5.	2.	1.	0.	65.	20.	10.	5.
72315 C	580.00	209	10	0	0	1	11	220	5.00	95.	5.	0.	0.	0.	91.	0.	0.	9.
72315 E	610.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
72315 G	640.00	371	21	7	0	3	31	402	7.71	92.	5.	2.	0.	1.	68.	23.	0.	10.
72315 I	670.00	428	35	9	5	2	51	479	10.65	89.	7.	2.	1.	0.	69.	18.	10.	4.
72315 K	700.00	1047	81	11	0	6	98	1145	8.56	91.	7.	1.	0.	1.	83.	11.	0.	6.
72315 M	735.00	555	53	5	2	1	61	616	9.90	90.	9.	1.	0.	0.	87.	8.	3.	2.
72315 O	765.00	1473	103	19	1	3	126	1599	7.88	92.	6.	1.	0.	0.	82.	15.	1.	2.
72315 Q	795.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
72315 S	825.00	2276	232	27	0	6	265	2541	10.43	90.	9.	1.	0.	0.	88.	10.	0.	2.
72316 A	855.00	4418	248	60	13	5	326	4744	6.87	93.	5.	1.	0.	0.	76.	18.	4.	2.
72316 C	885.00	3885	187	67	0	22	276	4161	6.63	93.	4.	2.	0.	1.	68.	24.	0.	8.
72316 E	915.00	3900	124	91	35	11	261	4161	6.27	94.	3.	2.	1.	0.	48.	35.	13.	4.
72316 G	945.00	4673	103	110	0	44	257	4930	5.21	95.	2.	2.	0.	1.	40.	43.	0.	17.
72316 I	975.00	3150	97	91	29	12	229	3379	6.78	93.	3.	3.	1.	0.	42.	40.	13.	5.
72316 K	1005.00	5626	162	266	62	68	558	6184	9.02	91.	3.	4.	1.	1.	29.	48.	11.	12.
72316 M	1035.00	5124	155	266	86	35	542	5666	9.57	90.	3.	5.	2.	1.	29.	49.	16.	6.
72316 O	1065.00	4436	107	174	0	43	324	4760	6.81	93.	2.	4.	0.	1.	33.	54.	0.	13.
72316 Q	1095.00	3642	120	268	88	50	526	4168	12.62	87.	3.	6.	2.	1.	23.	51.	17.	10.
72316 S	1125.00	3925	145	309	0	76	530	4455	11.91	88.	3.	7.	0.	2.	27.	58.	0.	14.
72317 A	1155.00	3891	114	237	76	39	466	4357	10.70	89.	3.	5.	2.	1.	24.	51.	16.	8.
72317 C	1185.00	3445	93	168	45	22	328	3773	8.69	91.	2.	4.	1.	1.	28.	51.	14.	7.
72317 E	1215.00	2395	58	76	23	11	168	2563	6.55	93.	2.	3.	1.	0.	35.	45.	14.	7.
72317 G	1245.00	744	24	59	14	7	104	848	12.26	88.	3.	7.	2.	1.	23.	57.	13.	7.
72317 I	1275.00	1473	24	23	15	8	70	1543	4.54	95.	2.	1.	1.	1.	34.	33.	21.	11.
72317 K	1305.00	1652	52	77	49	39	217	1869	11.61	88.	3.	4.	3.	2.	24.	35.	23.	18.
72317 M	1325.00	1319	30	40	24	13	107	1426	7.50	92.	2.	3.	2.	1.	28.	37.	22.	12.
72317 O	1365.00	1513	29	80	30	15	154	1667	9.24	91.	2.	5.	2.	1.	19.	52.	19.	10.
72317 Q	1395.00	1326	28	17	11	6	62	1388	4.47	96.	2.	1.	1.	0.	45.	27.	18.	10.
72317 S	1425.00	1436	35	27	16	9	87	1523	5.71	94.	2.	2.	1.	1.	40.	31.	18.	10.
72318 A	1455.00	1197	27	14	9	6	56	1253	4.47	96.	2.	1.	1.	0.	48.	25.	16.	11.
72318 C	1485.00	2728	102	48	25	13	188	2916	6.45	94.	3.	2.	1.	0.	54.	26.	13.	7.
72318 E	1515.00	1052	29	18	11	8	66	1118	5.90	94.	3.	2.	1.	1.	44.	27.	17.	12.
72318 G	1545.00	5360	95	127	43	23	288	5648	5.10	95.	2.	2.	1.	0.	33.	44.	15.	8.
72318 I	1575.00	2644	75	74	30	14	193	2837	6.80	93.	3.	3.	1.	0.	39.	38.	16.	7.
72318 K	1605.00	2946	77	80	41	22	220	3166	6.95	93.	2.	3.	1.	1.	35.	36.	19.	10.
72318 M	1635.00	852	26	43	18	13	100	952	10.50	89.	3.	5.	2.	1.	26.	43.	18.	13.

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

BASIN - GIPPSLAND
WELL - YELLOWTAIL 1

REPORT A - HEADSPACE GAS

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
72318 O	1665.00	643	19	31	14	8	72	715	10.07	90.	3.	4.	2.	1.	26.	43.	19.	11.
72318 Q	1695.00	2447	44	44	23	15	126	2573	4.90	95.	2.	2.	1.	1.	35.	35.	18.	12.
72318 S	1740.00	890	32	50	25	14	121	1011	11.97	88.	3.	5.	2.	1.	26.	41.	21.	12.
72319 A	1770.00	1955	41	63	21	12	137	2092	6.55	93.	2.	3.	1.	1.	30.	46.	15.	9.
72319 C	1800.00	1107	42	36	15	9	102	1209	8.44	92.	3.	3.	1.	1.	41.	35.	15.	9.
72319 E	1830.00	509	26	34	19	11	90	599	15.03	85.	4.	6.	3.	2.	29.	38.	21.	12.
72319 G	1860.00	504	37	36	19	10	102	606	16.83	83.	6.	6.	3.	2.	36.	35.	19.	10.
72319 I	1890.00	473	22	58	19	9	108	581	18.59	81.	4.	10.	3.	2.	20.	54.	18.	8.
72319 K	1920.00	571	33	40	21	12	106	677	15.66	84.	5.	6.	3.	2.	31.	38.	20.	11.
72319 M	1950.00	426	24	43	28	16	111	537	20.67	79.	4.	8.	5.	3.	22.	39.	25.	14.
72319 O	1980.00	459	30	58	36	20	144	603	23.88	76.	5.	10.	6.	3.	21.	40.	25.	14.
72319 Q	2010.00	468	30	58	35	19	142	610	23.28	77.	5.	10.	6.	3.	21.	41.	25.	13.
72319 S	2040.00	710	212	67	42	23	344	1054	32.64	67.	20.	6.	4.	2.	62.	19.	12.	7.
72320 A	2070.00	1643	43	143	44	24	254	1897	13.39	87.	2.	8.	2.	1.	17.	56.	17.	9.
72320 C	2100.00	504	31	53	38	25	147	651	22.58	77.	5.	8.	6.	4.	21.	36.	26.	17.
72320 E	2130.00	934	32	60	39	17	148	1082	13.68	86.	3.	6.	4.	2.	22.	41.	26.	11.
72320 G	2160.00	412	16	28	18	16	78	490	15.92	84.	3.	6.	4.	3.	21.	36.	23.	21.
72320 I	2190.00	666	13	17	12	6	48	714	6.72	93.	2.	2.	2.	1.	27.	35.	25.	13.
72320 K	2220.00	1288	77	91	55	16	239	1527	15.65	84.	5.	6.	4.	1.	32.	38.	23.	7.
72320 M	2250.00	221	16	35	24	10	85	306	27.78	72.	5.	11.	8.	3.	19.	41.	28.	12.
72320 O	2280.00	1029	21	36	27	12	96	1125	8.53	91.	2.	3.	2.	1.	22.	38.	28.	13.
72320 Q	2310.00	244	15	23	22	8	68	312	21.79	78.	5.	7.	7.	3.	22.	34.	32.	12.
72320 S	2340.00	201	16	20	21	8	65	266	24.44	76.	6.	8.	8.	3.	25.	31.	32.	12.
72321 A	2370.00	244	21	40	37	13	111	355	31.27	69.	6.	11.	10.	4.	19.	36.	33.	12.
72321 C	2400.00	54	10	20	12	9	51	105	48.57	51.	10.	19.	11.	9.	20.	39.	24.	18.
72321 G	2460.00	1391	79	201	47	100	427	1818	23.49	77.	4.	11.	3.	6.	19.	47.	11.	23.
72321 I	2490.00	152	53	86	28	44	211	363	58.13	42.	15.	24.	8.	12.	25.	41.	13.	21.
72321 K	2520.00	112	15	69	33	45	162	274	59.12	41.	5.	25.	12.	16.	9.	43.	20.	28.
72321 M	2550.00	217	31	21	19	10	81	298	27.18	73.	10.	7.	6.	3.	38.	26.	23.	12.
72321 O	2571.00	254	54	112	70	53	289	543	53.22	47.	10.	21.	13.	10.	19.	39.	24.	18.

TABLE 2 : TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND
WELL - YELLOWTAIL 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72288 J	2236.20	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.39					MED BR SLTST 47% CO3
72288 I	2332.90	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.37					MED BR-GY SLTST CO3
72288 F	2356.50	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	1.26					MED GY SLTST CO3
72288 G	2371.00	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.58					MED BR-GY SLST OX LITHIC
72288 H	2390.00	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.87					LT BR SLST GLAUC CO3
72288 E	2399.00	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.40					MED DK GY SLTST CO3
72288 L	2401.00	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.27					LT BR SLTST GLAUC CO3
72288 K	2403.00	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	1	.27					LT BR SLST OX CO3
===>	DEPTH : .00 TO 2404.00 METRES. <=== I ===>		AVERAGE TOC :		.55 % EXCLUDING VALUES GREATER THAN 10.00 %					<===
72288 D	2405.00	EOCENE-PALEOCENE	LATROBE GROUP/GURNARD FM.	1	.67					MED GY SLTST CO3
===>	DEPTH : 2404.50 TO 2406.00 METRES. <=== I ===>		AVERAGE TOC :		.67 % EXCLUDING VALUES GREATER THAN 10.00 %					<===
72412 A	2453.50	EOCENE-PALEOCENE	LATROBE GROUP	1	3.16					MED GRY,F SST.NON CALC.
===>	DEPTH : 2452.00 TO 2453.50 METRES. <=== I ===>		AVERAGE TOC :		3.16 % EXCLUDING VALUES GREATER THAN 10.00 %					<===

TABLE 3 : VITRINITE REFLECTANCE REPORT

BASIN - GIPPSLAND
WELL - YELLOWTAIL 1

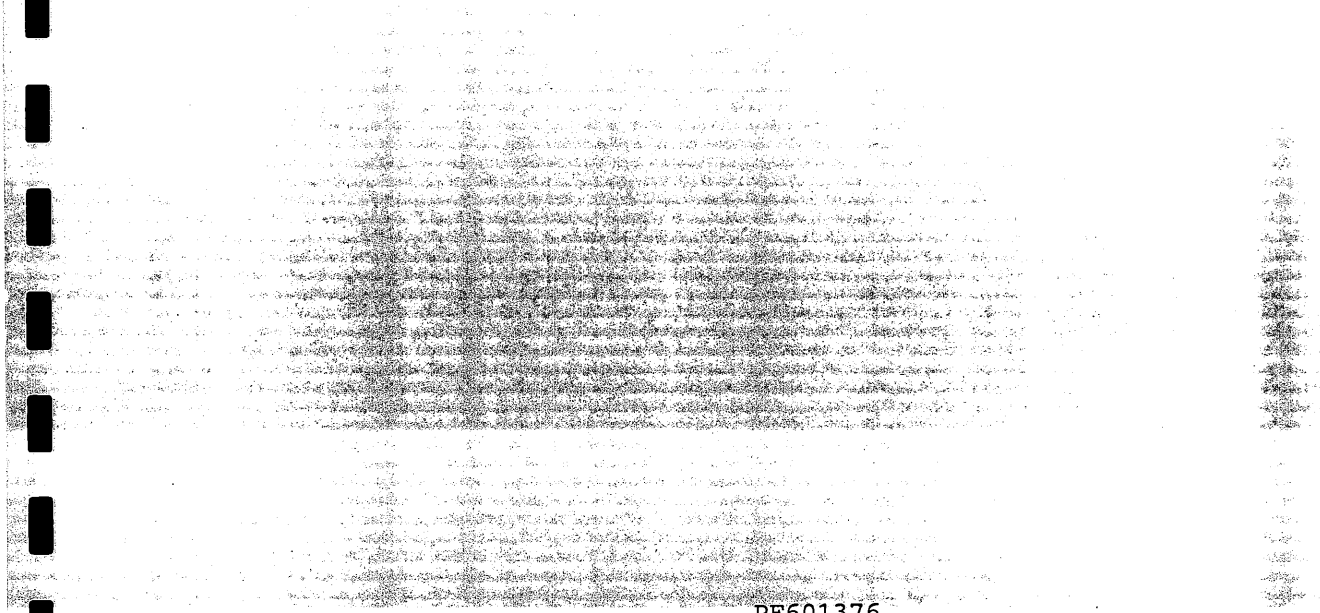
SAMPLE NO.	DEPTH	AGE	FORMATION	AN	MAX. RO	FLUOR. COLOUR	NO.CNTS.	MACERAL TYPE
72288 J	2236.20	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	5	.28	GRN'ISH-YELL	3	V>E,LITTLE/NO I
72288 E	2399.00	MIOCENE-OLIGOCENE	LAKES ENTRANCE FM.	5	.33	YELL	1	RARE ?DINOFLAGELLATES
72412 A	2453.50	EOCENE-PALEOCENE	LATROBE GROUP	5	.39	YELL-OR	20	V>I=E,V IS ABUNDANT

TABLE 4. C15+ LIQUID CHROMATOGRAPHY DATA : YELLOWTAIL-1

DEPTH IN METRES	FORMATION/EQUIVALENT	AGE	TOTAL EXTRACT (ppm)	HC's (ppm)	NON HC's (ppm)	SULPHUR (ppm)	EXTRACT COMPOSITION %				
							SATS	AROM.	N.S.O	ASPH.	SULPHUR
1605-1620	GIPPSLAND LIMESTONE	PLIOCENE-MIOCENE	569	54	515	-	4.0	5.4	27.1	63.4	-
1710-1725	LAKES ENTRANCE FORMATION	MIOCENE-OLIGOCENE	302	-	-	-	-	-	-	73.5	-
1800-1815	LAKES ENTRANCE FORMATION	MIOCENE-OLIGOCENE	306	-	-	-	-	-	-	73.2	-
1920-1935	LAKES ENTRANCE FORMATION	MIOCENE-OLIGOCENE	366	71	295	-	10.4	9.0	16.4	64.2	-
2070-2085	LAKES ENTRANCE FORMATION	MIOCENE-OLIGOCENE	645	161	484	4	10.4	14.6	20.5	54.0	0.6
2190-2205	LAKES ENTRANCE FORMATION	MIOCENE-OLIGOCENE	299	-	-	-	-	-	-	68.2	-
2340-2355	LAKES ENTRANCE FORMATION	MIOCENE-OLIGOCENE	441	55	386	-	4.8	7.6	17.3	70.2	-
2430-2445	LATROBE GROUP	EOCENE-PAL EOCENE	373	59	314	7	7.5	8.3	20.1	62.2	1.9

APPENDIX 8

GEOCHEMICAL REPORT + ORGANIC PETROLOGY



PE601376

This is an enclosure indicator page.
The enclosure PE601376 is enclosed within the container PE902684 at this location in this document.

The enclosure PE601376 has the following characteristics:

ITEM_BARCODE	= PE601376
CONTAINER_BARCODE	= PE902684
NAME	= C1-C4 Cuttings Gas Log
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= C1-C4 Cuttings Gas Log (enclosure from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= Yellowtail-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601377

This is an enclosure indicator page.
The enclosure PE601377 is enclosed within the container PE902684 at this location in this document.

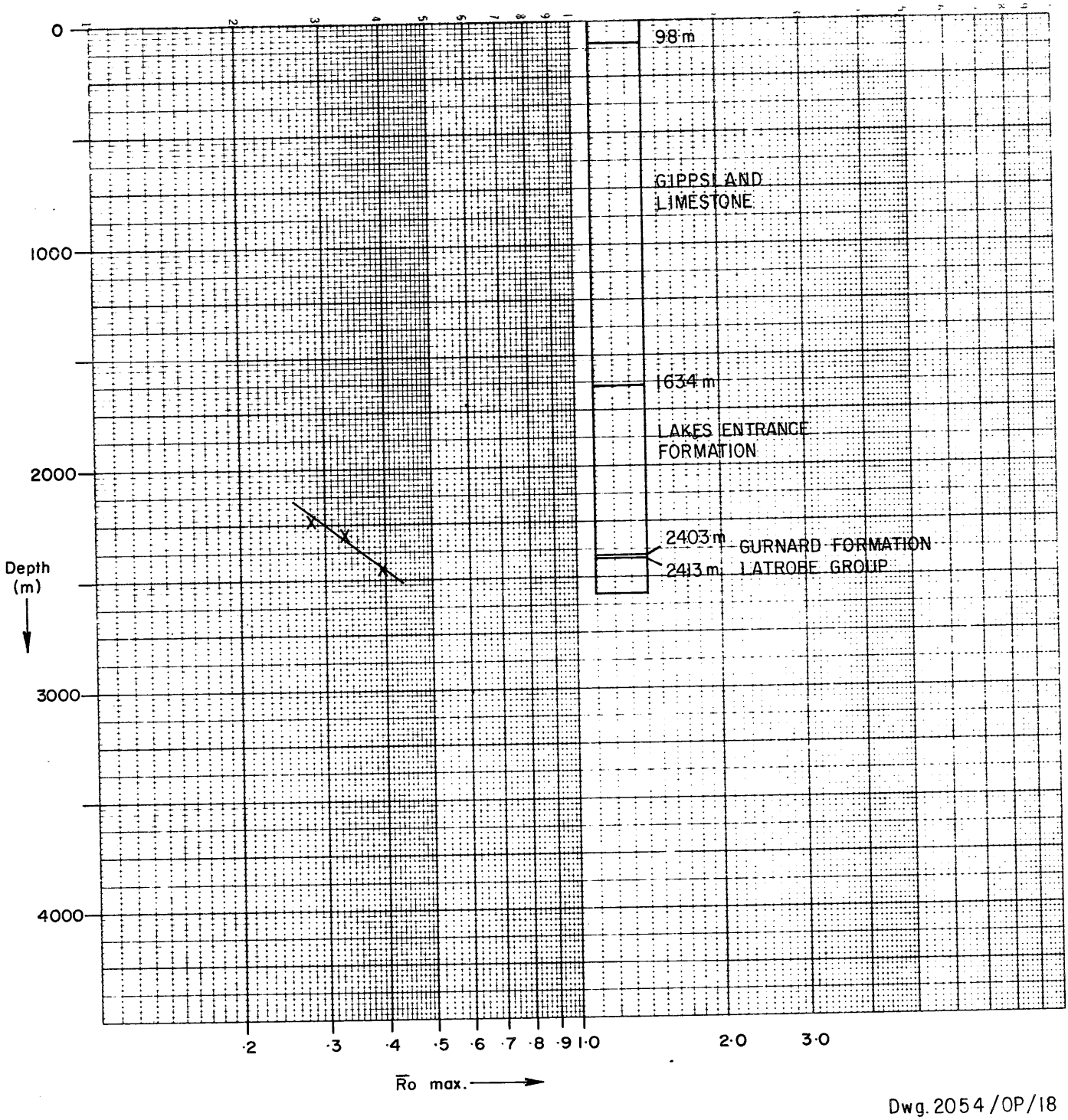
The enclosure PE601377 has the following characteristics:

ITEM_BARCODE	= PE601377
CONTAINER_BARCODE	= PE902684
NAME	= Geochemical Log
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Geochemical Log (enclosure from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= Yellowtail-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

YELLOWTAIL-1

VITRINITE REFLECTANCE vs DEPTH



Dwg. 2054/OP/18

C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-001

Exxon Identification No. 72318-L

Sterane/
Terpane
Region

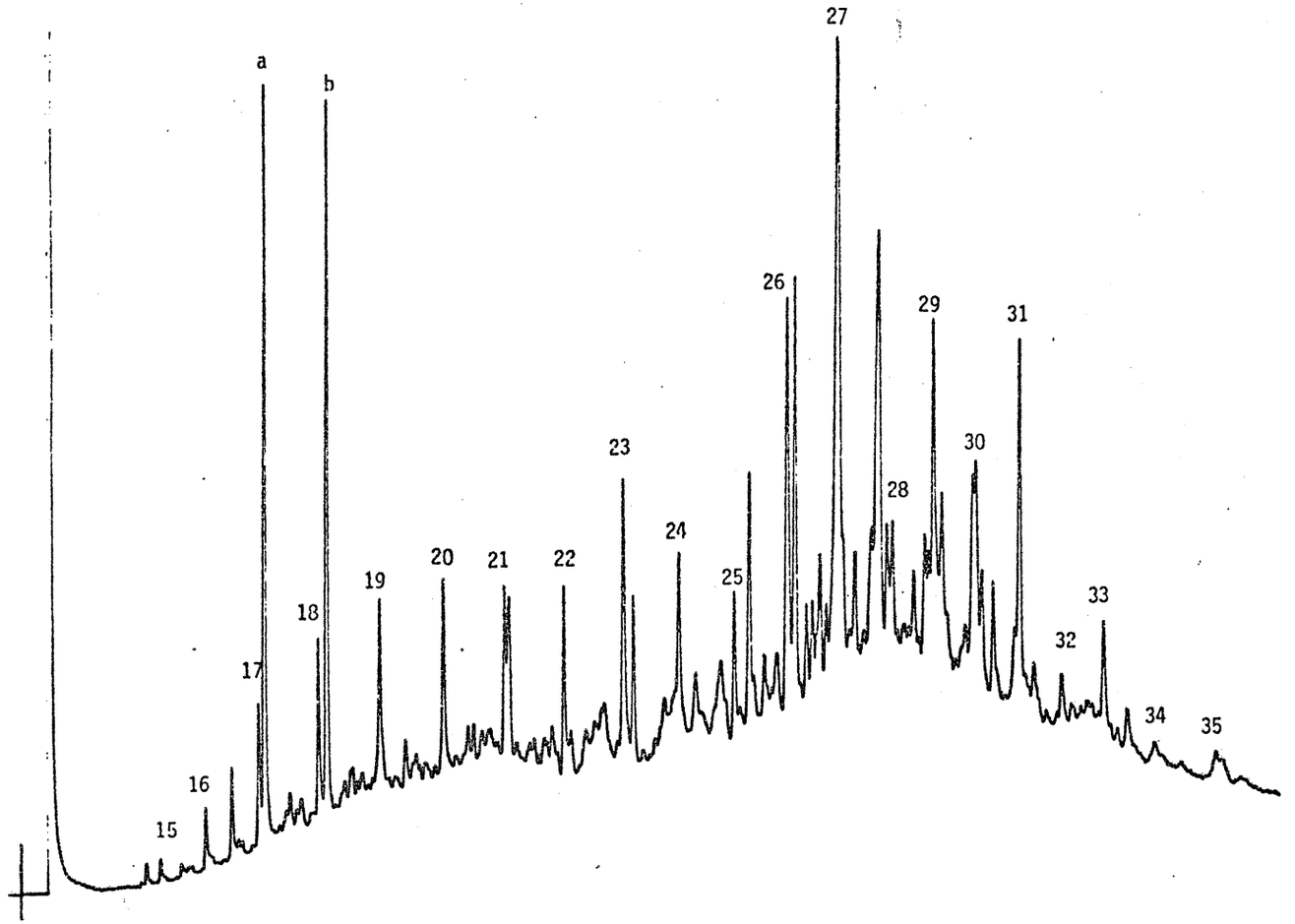


FIGURE 4: YELLOWTAIL-1, 1605-1620 m : GIPPSLAND LIMESTONE

C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-002

Exxon Identification No. 72318-R

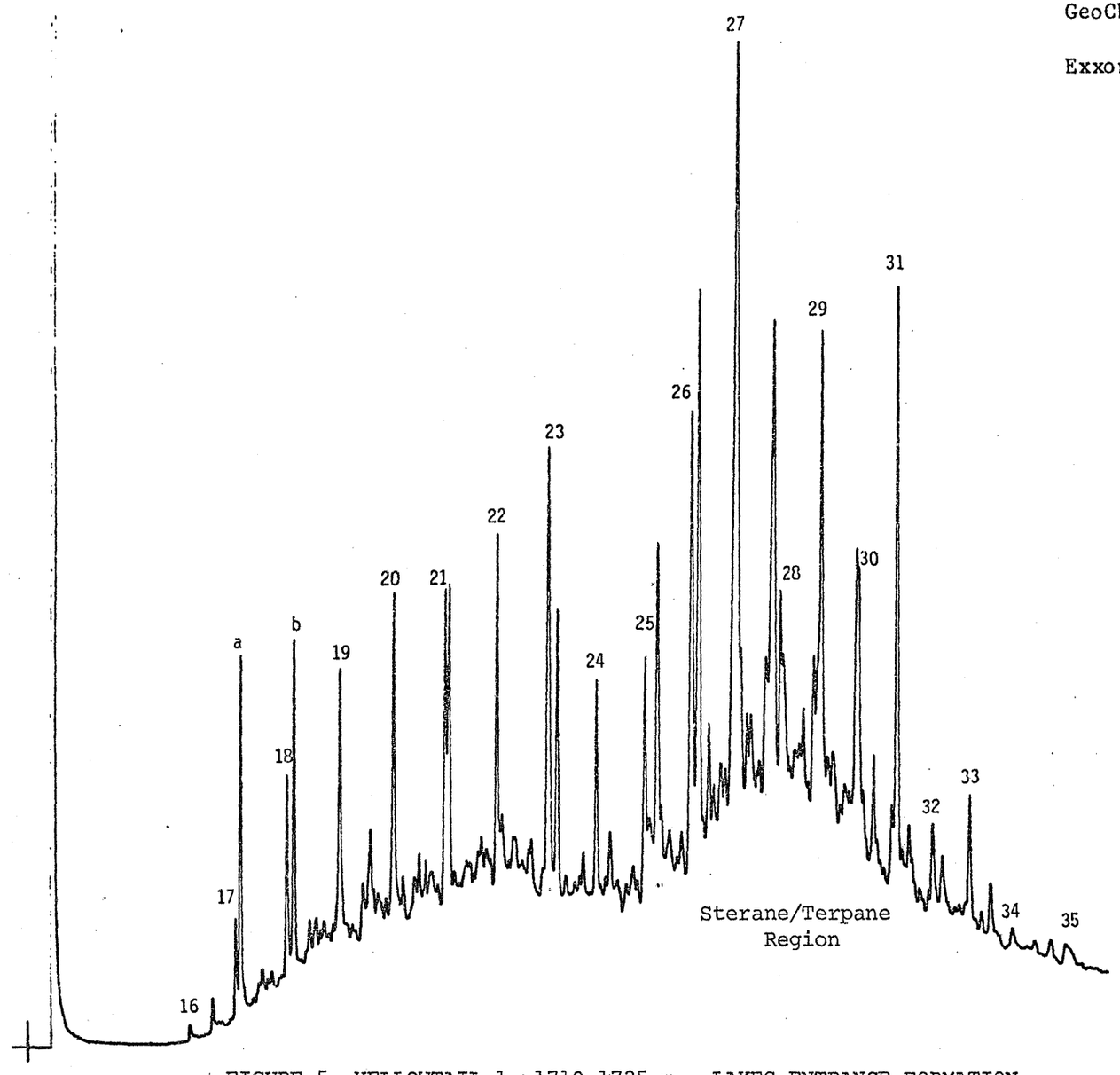


FIGURE 5: YELLOWTAIL-1, 1710-1725 m : LAKES ENTRANCE FORMATION

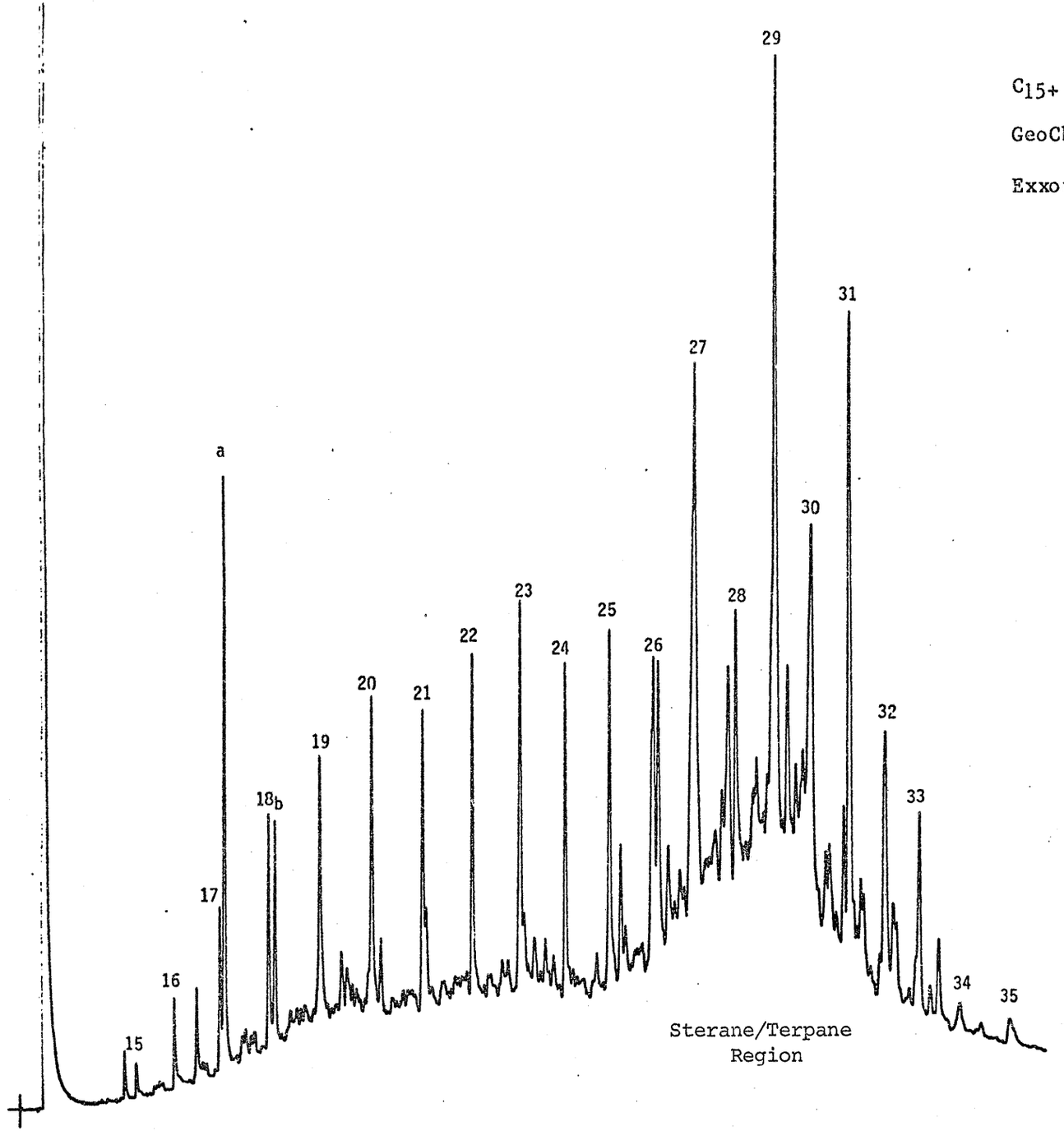
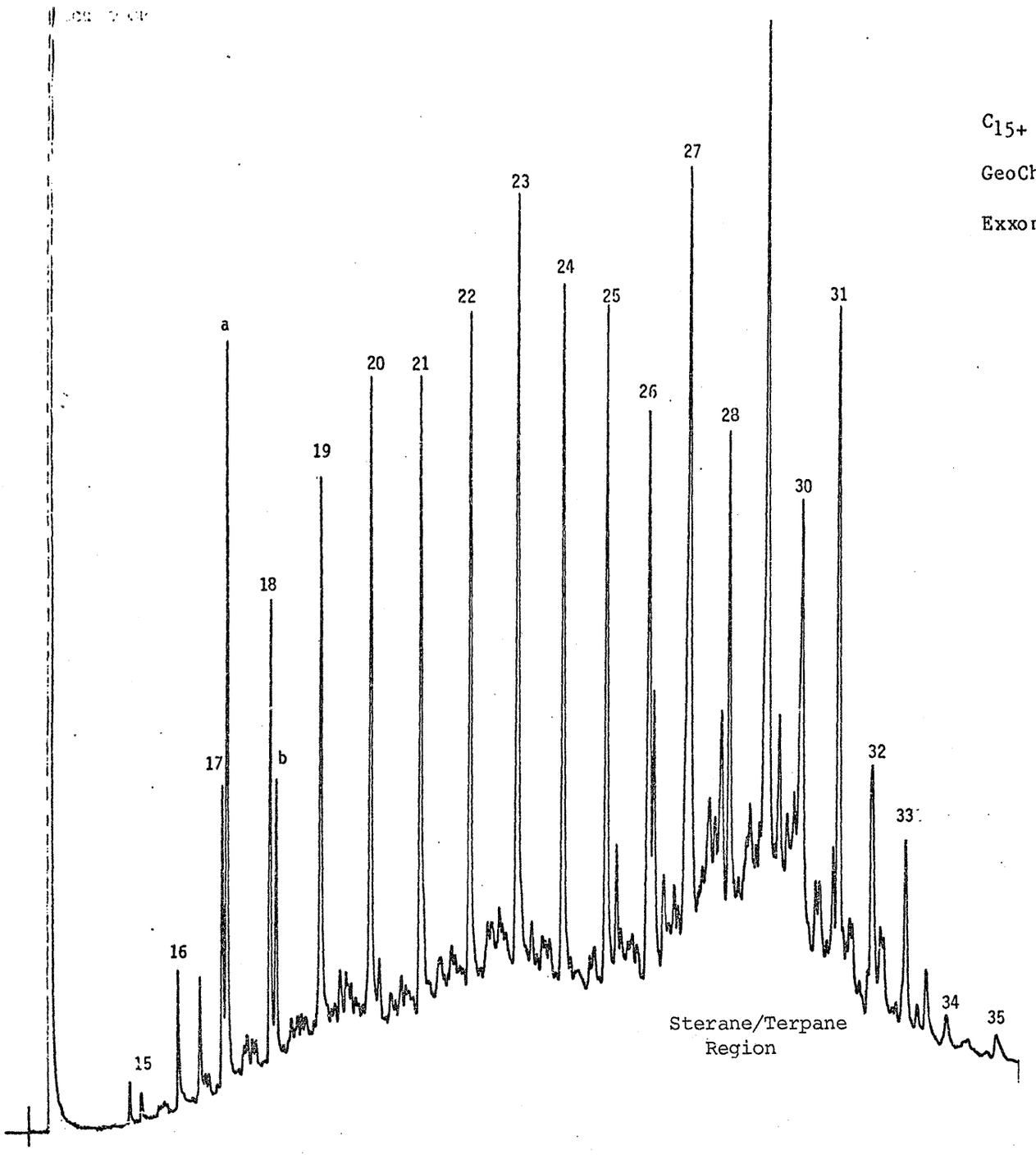


FIGURE 6: YELLOWTAIL-1, 2340-2355 m : LAKES ENTRANCE FORMATION



C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-008

Exxon Identification No. 72321-F

FIGURE 7: YELLOWTAIL-1, 2430-2455 m : LATROBE GROUP

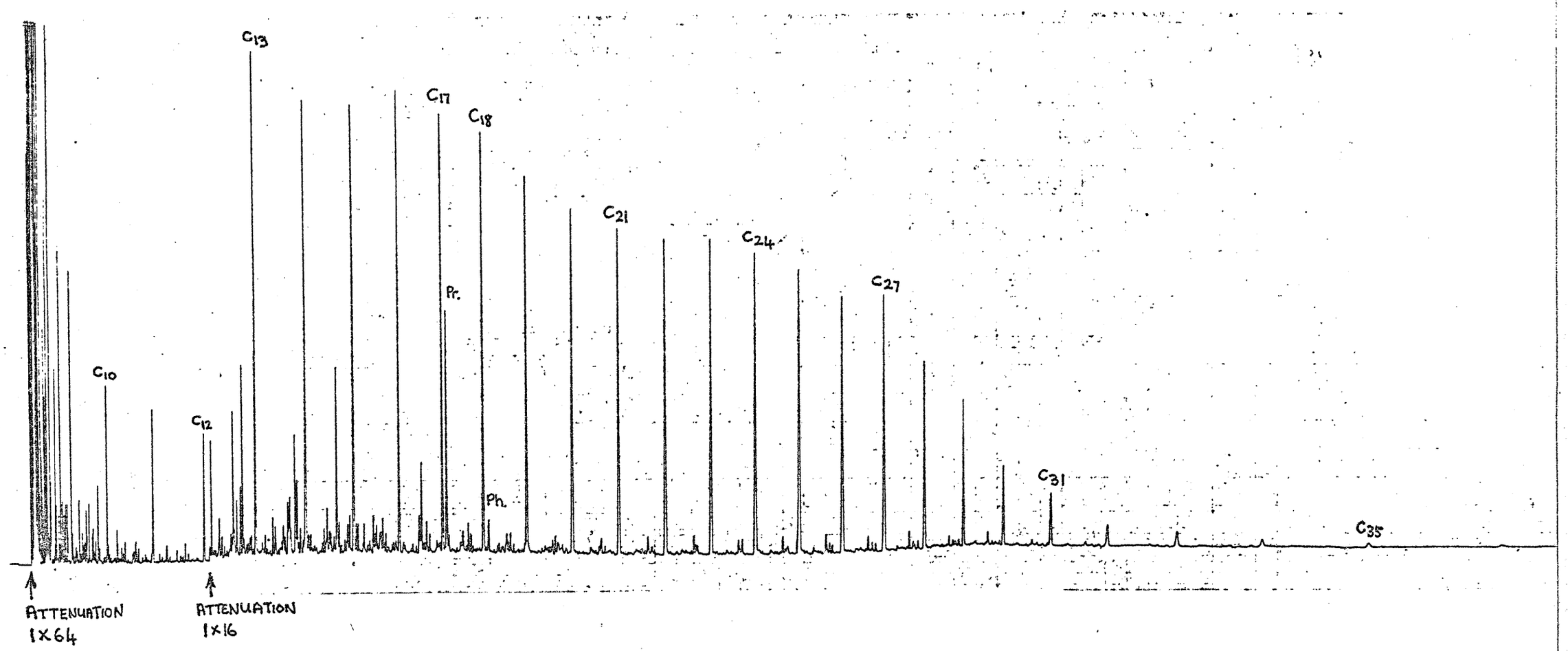


FIGURE 8: WHOLE OIL CHROMATOGRAM, YELLOWTAIL-1 OIL, RFT NO. 4, AT 2425.7m

APPENDIX 1

APPENDIX - 1

17 FEB 82

72315D AUSTRALIA, YELLOWTAIL-1, 580-595 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	0.		C1/C2	999.99
GASOLINE	0.		A /D2	999.99
NAPHTHENES	0.	0.00	C1/D2	999.99
C6-7	0.	0.00	CH/MCP	999.99
			PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72315N AUSTRALIA, YELLOWTAIL-1, 735-750 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72317B AUSTRALIA, YELLOWTAIL-1, 1155-1170 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	74.6	2.34
ETHANE	0.0		1T2-DMCP	34.4	1.08
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	85.6	2.69	224-TMP	0.0	0.00
NBUTANE	109.9	3.46	NHEPTANE	97.0	3.05
IPENTANE	1455.9	45.79	1C2-DMCP	17.4	0.55
NPENTANE	277.9	8.74	MCH	49.9	1.57
22-DMB	3.6	0.11			
CPENTANE	37.1	1.17			
23-DMB	35.0	1.10			
2-MP	268.7	8.45			
3-MP	77.2	2.43			
NHEXANE	165.7	5.21			
MCP	221.1	6.95			
22-DMP	0.0	0.00			
24-DMP	5.0	0.16			
223-TMB	8.8	0.28			
CHEXANE	11.2	0.35			
33-DMP ,	0.0	0.00			
11-DMCP	29.5	0.93			
2-MHEX ,	0.0	0.00			
23-DMP ,	29.5	0.93			
3-MHEX ,	24.7	0.78			
1C3-DMCP	60.3	1.90			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3180.		C1/C2	0.22
GASOLINE	3180.		A /D2	10.63
NAPHTHENES	535.	16.84	C1/D2	3.67
C6-7	829.	26.07	CH/MCP	0.05
			PENT/IPENT,	0.19

	PPB	NORM PERCENT
MCP	221.1	78.3
CH	11.2	4.0
MCH	49.9	17.7
TOTAL	282.2	100.0

PARAFFIN INDEX 1	0.320
PARAFFIN INDEX 2	23.599

17 FEB 82

72317F AUSTRALIA, YELLOWTAIL-1, 1215-1230 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	20.5	1.63
ETHANE	0.0		1T2-DMCP	14.5	1.16
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	50.2	4.00	224-TMP	0.0	0.00
NBUTANE	47.5	3.78	NHEPTANE	55.8	4.44
IPENTANE	470.5	37.48	1C2-DMCP	7.7	0.61
NPENTANE	113.8	9.06	MCH	28.1	2.24
22-DMB	2.4	0.19			
CPENTANE	12.8	1.02			
23-DMB	13.8	1.10			
2-MP	123.5	9.84			
3-MP	39.3	3.13			
NHEXANE	80.9	6.44			
MCP	83.1	6.62			
22-DMP	0.0	0.00			
24-DMP	2.9	0.23			
223-TMB	4.5	0.36			
CHEXANE	6.4	0.51			
33-DMP ,	0.0	0.00			
11-DMCP	18.5	1.47			
2-MHEX ,	0.0	0.00			
23-DMP ,	15.0	1.20			
3-MHEX ,	15.0	1.19			
1C3-DMCP	28.7	2.28			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1255.		C1/C2	0.34
GASOLINE	1255.		A /D2	9.13
NAPHTHENES	220.	17.54	C1/D2	3.54
C6-7	381.	30.39	CH/MCP	0.08
			PENT/IPENT,	0.24

	P-B	NORM PERCENT
MCP	83.1	70.7
CH	6.4	5.4
MCH	28.1	23.9
TOTAL	117.6	100.0

PARAFFIN INDEX 1	0.525
PARAFFIN INDEX 2	27.553

17 FEB 82

72315T AUSTRALIA, YELLOWTAIL-1, 825-840 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	0.		C1/C2	999.99
GASOLINE	0.		A /D2	999.99
NAPHTHENES	0.	0.00	C1/D2	999.99
C6-7	0.	0.00	CH/MCP	999.99
			PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72316J AUSTRALIA, YELLOWTAIL-1, 975-990 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72317J AUSTRALIA, YELLOWTAIL-1, 1275-1290 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72317D AUSTRALIA, YELLOWTAIL-1, 1185-1200 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	68.0	2.76
ETHANE	0.0		1T2-DMCP	36.5	1.48
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	59.3	2.40	224-TMP	0.0	0.00
NBUTANE	67.0	2.72	NHEPTANE	76.9	3.12
IPENTANE	986.5	40.02	1C2-DMCP	25.5	1.04
NPENTANE	183.3	7.44	MCH	67.0	2.72
22-DMB	4.0	0.16			
CPENTANE	32.8	1.33			
23-DMB	31.8	1.29			
2-MP	237.2	9.62			
3-MP	68.6	2.78			
NHEXANE	108.6	4.41			
MCP	222.3	9.02			
22-DMP	0.0	0.00			
24-DMP	7.7	0.31			
223-TMB	10.4	0.42			
CHEXANE	12.4	0.50			
33-DMP ,	0.0	0.00			
11-DMCP	34.6	1.40			
2-MHEX ,	0.0	0.00			
23-DMP ,	31.4	1.27			
3-MHEX ,	29.4	1.19			
1C3-DMCP	63.8	2.59			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	2465.		C1/C2	0.27	
GASOLINE	2465.		A /D2	6.31	
NAPHTHENES	563.	22.84	C1/D2	3.88	
C6-7	794.	32.23	CH/MCP	0.06	
			PENT/IPENT,		0.19

	PPB	NORM PERCENT
MCP	222.3	73.7
CH	12.4	4.1
MCH	67.0	22.2
TOTAL	301.7	100.0

PARAFFIN INDEX 1	0.380
PARAFFIN INDEX 2	18.314

17 FEB 82

72317H AUSTRALIA, YELLOWTAIL-1, 1245-1260 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	6.9	1.67
ETHANE	0.0		1T2-DMCP	4.0	0.98
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	30.6	7.40	224-TMP	0.0	0.00
NBUTANE	18.2	4.42	NHEPTANE	18.2	4.40
IPENTANE	132.5	32.10	1C2-DMCP	0.0	0.00
NPENTANE	43.5	10.55	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	3.9	0.94			
23-DMB	5.2	1.27			
2-MP	50.8	12.30			
3-MP	15.4	3.74			
NHEXANE	35.3	8.54			
MCP	28.0	6.79			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	8.7	2.10			
2-MHEX ,	0.0	0.00			
23-DMP ,	2.9	0.70			
3-MHEX ,	0.0	0.00			
1C3-DMCP	8.7	2.12			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	413.		C1/C2	0.18
GASOLINE	413.		A /D2	999.99
NAPHTHENES	60.	14.60	C1/D2	999.99
C6-7	113.	27.30	CH/MCP	0.00
			PENT/IPENT,	0.33

	PPB	NORM PERCENT
MCP	28.0	100.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	28.0	100.0

PARAFFIN INDEX 1	0.440
PARAFFIN INDEX 2	36.769

17 FEB 82

72317L AUSTRALIA, YELLOWTAIL-1, 1305-1320 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	5.8	1.38
ETHANE	0.0		1T2-DMCP	6.1	1.45
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	22.3	5.33	224-TMP	0.0	0.00
NBUTANE	17.0	4.06	NHEPTANE	16.6	3.95
IPENTANE	142.3	33.95	1C2-DMCP	0.0	0.00
NPENTANE	32.9	7.85	MCH	21.9	5.22
22-DMB	1.1	0.25			
CPENTANE	3.0	0.73			
23-DMB	4.3	1.03			
2-MP	42.3	10.08			
3-MP	16.4	3.92			
NHEXANE	22.0	5.26			
MCP	32.2	7.69			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	3.8	0.91			
33-DMP ,	0.0	0.00			
11-DMCP	9.6	2.28			
2-MHEX ,	0.0	0.00			
23-DMP ,	5.2	1.25			
3-MHEX ,	6.3	1.50			
1C3-DMCP	8.1	1.92			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	419.		C1/C2	0.68
GASOLINE	419.		A /D2	6.12
NAPHTHENES	90.	21.57	C1/D2	5.59
C6-7	138.	32.81	CH/MCP	0.12
			PENT/IPENT,	0.23

	PPB	NORM PERCENT
MCP	32.2	55.6
CH	3.8	6.6
MCH	21.9	37.8
TOTAL	57.9	100.0

PARAFFIN INDEX 1 0.798
PARAFFIN INDEX 2 19.888

17 FEB 82

72317N AUSTRALIA, YELLOWTAIL-1, 1335-1350 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72317P AUSTRALIA, YELLOWTAIL-1, 1365-1380 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72317R AUSTRALIA, YELLOWTAIL-1, 1395-1410 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72317T AUSTRALIA, YELLOWTAIL-1, 1425-1440 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS
ALL COMP	0.		C1/C2 999.99
GASOLINE	0.		A /D2 999.99
NAPHTHENES	0.	0.00	C1/D2 999.99
C6-7	0.	0.00	CH/MCP 999.99
			PENT/IPENT, 999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72318B AUSTRALIA, YELLOWTAIL-1, 1455-1470 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	0.		C1/C2	999.99
GASOLINE	0.		A /D2	999.99
NAPHTHENES	0.	0.00	C1/D2	999.99
C6-7	0.	0.00	CH/MCP	999.99
			PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72318D AUSTRALIA, YELLOWTAIL-1, 1485-1500 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	126.8	3.99
ETHANE	0.0		1T2-DMCP	77.5	2.44
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	84.1	2.65	224-TMP	0.0	0.00
NBUTANE	71.1	2.24	NHEPTANE	142.6	4.48
IPENTANE	828.6	26.06	1C2-DMCP	53.4	1.68
NPENTANE	207.8	6.53	MCH	247.6	7.79
22-DMB	10.3	0.33			
CPENTANE	15.7	0.49			
23-DMB	37.3	1.17			
2-MP	321.6	10.11			
3-MP	118.6	3.73			
NHEXANE	152.6	4.80			
MCP	319.3	10.04			
22-DMP	0.0	0.00			
24-DMP	11.4	0.36			
223-TMB	9.0	0.28			
CHEXANE	32.3	1.02			
33-DMP ,	0.0	0.00			
11-DMCP	82.8	2.60			
2-MHEX ,	0.0	0.00			
23-DMP ,	55.0	1.73			
3-MHEX ,	66.2	2.08			
1C3-DMCP	108.5	3.41			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3180.		C1/C2	0.53
GASOLINE	3180.		A /D2	4.46
NAPHTHENES	1064.	33.45	C1/D2	5.48
C6-7	1485.	46.70	CH/MCP	0.10
			PENT/IPENT,	0.25

	PPB	NORM PERCENT
MCP	319.3	53.3
CH	32.3	5.4
MCH	247.6	41.3
TOTAL	599.2	100.0

PARAFFIN INDEX 1	0.476
PARAFFIN INDEX 2	15.179

17 FEB 82

72318F AUSTRALIA, YELLOWTAIL-1, 1515-1530 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	0.		C1/C2	999.99
GASOLINE	0.		A /D2	999.99
NAPHTHENES	0.	0.00	C1/D2	999.99
C6-7	0.	0.00	CH/MCP	999.99
			PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

17 FEB 82

72318H AUSTRALIA, YELLOWTAIL-1, 1545-1560 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	117.2	3.55
ETHANE	0.0		1T2-DMCP	65.3	1.98
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	97.8	2.96	224-TMP	0.0	0.00
NBUTANE	88.2	2.67	NHEPTANE	115.6	3.50
IPENTANE	834.1	25.24	1C2-DMCP	46.2	1.40
NPENTANE	173.7	5.26	MCH	275.6	8.34
22-DMB	12.2	0.37			
CPENTANE	21.3	0.64			
23-DMB	38.2	1.15			
2-MP	317.9	9.62			
3-MP	153.2	4.64			
NHEXANE	138.2	4.18			
MCP	372.1	11.26			
22-DMP	0.0	0.00			
24-DMP	9.9	0.30			
223-TMB	0.0	0.00			
CHEXANE	30.8	0.93			
33-DMP ,	0.0	0.00			
11-DMCP	103.9	3.14			
2-MHEX ,	0.0	0.00			
23-DMP ,	59.1	1.79			
3-MHEX ,	131.3	3.97			
1C3-DMCP	102.7	3.11			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3304.		C1/C2	0.58
GASOLINE	3304.		A /D2	1.93
NAPHTHENES	1135.	34.35	C1/D2	3.13
C6-7	1568.	47.44	CH/MCP	0.08
			PENT/IPENT,	0.21

	PPB	NORM PERCENT
MCP	372.1	54.8
CH	30.8	4.5
MCH	275.6	40.6
TOTAL	678.5	100.0

PARAFFIN INDEX 1	0.825
PARAFFIN INDEX 2	11.544

17 FEB 82

72318J AUSTRALIA, YELLOWTAIL-1, 1575-1590 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	98.3	2.58
ETHANE	0.0		1T2-DMCP	65.4	1.71
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	133.5	3.50	224-TMP	0.0	0.00
NBUTANE	119.4	3.13	NHEPTANE	131.6	3.45
IPENTANE	1041.7	27.32	1C2-DMCP	43.8	1.15
NPENTANE	252.5	6.62	MCH	251.1	6.58
22-DMB	15.5	0.41			
CPENTANE	24.4	0.64			
23-DMB	47.9	1.26			
2-MP	360.5	9.45			
3-MP	185.4	4.86			
NHEXANE	188.6	4.95			
MCP	446.7	11.71			
22-DMP	0.0	0.00			
24-DMP	⊁.9	0.26			
223-TMB	0.0	0.00			
CHEXANE	32.7	0.86			
33-DMP ,	0.0	0.00			
11-DMCP	83.9	2.20			
2-MHEX ,	0.0	0.00			
23-DMP ,	61.9	1.62			
3-MHEX ,	114.4	3.00			
1C3-DMCP	104.3	2.74			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3814.		C1/C2	0.48
GASOLINE	3814.		A /D2	2.80
NAPHTHENES	1151.	30.17	C1/D2	3.21
C6-7	1633.	42.81	CH/MCP	0.07
			PENT/IPENT,	0.24

	PPB	NORM PERCENT
MCP	446.7	61.2
CH	32.7	4.5
MCH	251.1	34.4
TOTAL	730.5	100.0

PARAFFIN INDEX 1	0.740
PARAFFIN INDEX 2	13.950

17 FEB 82

72318L AUSTRALIA, YELLOWTAIL-1, 1605-1620 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	43.7	1.47
ETHANE	0.0		1T2-DMCP	30.9	1.04
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	123.6	4.16	224-TMP	0.0	0.00
NBUTANE	134.4	4.52	NHEPTANE	63.7	2.14
IPENTANE	1013.1	34.08	1C2-DMCP	12.4	0.42
NPENTANE	254.8	8.57	MCH	84.1	2.83
22-DMB	13.9	0.47			
CPENTANE	14.2	0.48			
23-DMB	38.3	1.29			
2-MP	306.7	10.32			
3-MP	144.6	4.87			
NHEXANE	183.8	6.18			
MCP	288.0	9.69			
22-DMP	0.0	0.00			
24-DMP	9.3	0.31			
223-TMB	0.0	0.00			
CHEXANE	13.3	0.45			
33-DMP ,	0.0	0.00			
11-DMCP	56.8	1.91			
2-MHEX ,	0.0	0.00			
23-DMP ,	33.6	1.13			
3-MHEX ,	58.4	1.97			
1C3-DMCP	50.8	1.71			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2973.		C1/C2	0.36
GASOLINE	2973.		A /D2	4.23
NAPHTHENES	594.	19.99	C1/D2	2.64
C6-7	929.	31.25	CH/MCP	0.05
			PENT/IPENT,	0.25

	PPB	NORM PERCENT
MCP	288.0	74.7
CH	13.3	3.5
MCH	84.1	21.8
TOTAL	385.4	100.0

PARAFFIN INDEX 1	0.919
PARAFFIN INDEX 2	14.631

17 FEB 82

72318N AUSTRALIA, YELLOWTAIL-1, 1635-1650 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	39.1	3.07
ETHANE	0.0		1T2-DMCP	29.2	2.29
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	42.2	3.31	224-TMP	0.0	0.00
NBUTANE	91.0	7.14	NHEPTANE	94.0	7.38
IPENTANE	168.1	13.20	1C2-DMCP	21.4	1.68
NPENTANE	79.1	6.21	MCH	157.0	12.33
22-DMB	1.8	0.14			
CPENTANE	3.6	0.29			
23-DMB	10.7	0.84			
2-MP	106.4	8.36			
3-MP	55.7	4.37			
NHEXANE	90.7	7.12			
MCP	96.0	7.54			
22-DMP	0.0	0.00			
24-DMP	7.1	0.56			
223-TMB	4.0	0.32			
CHEXANE	8.6	0.67			
33-DMP ,	0.0	0.00			
11-DMCP	40.7	3.20			
2-MHEX ,	0.0	0.00			
23-DMP ,	27.1	2.12			
3-MHEX ,	57.8	4.54			
1C3-DMCP	42.1	3.31			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1273.		C1/C2	0.91
GASOLINE	1273.		A /D2	3.20
NAPHTHENES	438.	34.38	C1/D2	3.57
C6-7	715.	56.13	CH/MCP	0.09
			PENT/IPENT,	0.47

	PPB	NORM PERCENT
MCP	96.0	36.7
CH	8.6	3.3
MCH	157.0	60.0
TOTAL	261.6	100.0

PARAFFIN INDEX 1	0.892
PARAFFIN INDEX 2	18.970

17 FEB 82

72318P AUSTRALIA, YELLOWTAIL-1, 1665-1680 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	49.2	3.52
ETHANE	0.0		1T2-DMCP	31.5	2.25
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	21.8	1.56	224-TMP	0.0	0.00
NBUTANE	31.2	2.23	NHEPTANE	71.6	5.11
IPENTANE	264.7	18.90	1C2-DMCP	13.0	0.93
NPENTANE	85.8	6.13	MCH	92.6	6.61
22-DMB	3.6	0.26			
CPENTANE	4.7	0.34			
23-DMB	18.7	1.33			
2-MP	173.1	12.36			
3-MP	78.8	5.63			
NHEXANE	127.2	9.08			
MCP	153.0	10.92			
22-DMP	0.0	0.00			
24-DMP	7.4	0.53			
223-TMB	4.4	0.31			
CHEXANE	10.0	0.72			
33-DMP ,	0.0	0.00			
11-DMCP	35.6	2.54			
2-MHEX ,	0.0	0.00			
23-DMP ,	27.6	1.97			
3-MHEX ,	44.2	3.15			
1C3-DMCP	50.8	3.62			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1401.		C1/C2	0.46
GASOLINE	1401.		A /D2	4.50
NAPHTHENES	440.	31.45	C1/D2	3.13
C6-7	718.	51.28	CH/MCP	0.07
			PENT/IPENT,	0.32

	PPB	NORM PERCENT
MCP	153.0	59.8
CH	10.0	3.9
MCH	92.6	36.2
TOTAL	255.6	100.0

PARAFFIN INDEX 1	0.606
PARAFFIN INDEX 2	17.332

17 FEB 82

72318U AUSTRALIA, YELLOWTAIL-1, 1695-1710 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	24.4	2.88
NBUTANE	24.4	2.88
IPENTANE	194.6	22.97
NPENTANE	51.2	6.05
22-DMB	2.1	0.24
CPENTANE	3.8	0.45
23-DMB	9.7	1.14
2-MP	84.3	9.95
3-MP	40.2	4.75
NHEXANE	33.8	3.99
MCP	89.4	10.55
22-DMP	0.0	0.00
24-DMP	3.6	0.42
223-TMB	0.0	0.00
CHEXANE	7.5	0.89
33-DMP ,	0.0	0.00
11-DMCP	18.5	2.18
2-MHEX ,	0.0	0.00
23-DMP ,	14.4	1.70
3-MHEX ,	25.5	3.01
1C3-DMCP	29.0	3.42
1T3-DMCP	18.9	2.23
1T2-DMCP	15.7	1.85
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	35.0	4.13
1C2-DMCP	12.9	1.53
MCH	108.5	12.80

	TOTALS PPB	NORM PERCENT
ALL COMP	847.	
GASOLINE	847.	
NAPHTHENES	304.	35.90
C6-7	413.	48.70

SIG COMP RATIOS

C1/C2	0.81
A /D2	2.70
C1/D2	5.28
CH/MCP	0.08
PENT/IPENT,	0.26

	PPB	NORM PERCENT
MCP	89.4	43.5
CH	7.5	3.7
MCH	108.5	52.8
TOTAL	205.4	100.0

PARAFFIN INDEX 1	0.691
PARAFFIN INDEX 2	12.812

17 FEB 82

72318R AUSTRALIA, YELLOWTAIL-1, 1710-1725 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	19.8	1.95
ETHANE	0.0		1T2-DMCP	15.0	1.47
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	18.5	1.82	224-TMP	0.0	0.00
NBUTANE	32.9	3.24	NHEPTANE	55.3	5.44
IPENTANE	166.7	16.39	1C2-DMCP	5.3	0.52
NPENTANE	86.9	8.54	MCH	77.7	7.64
22-DMB	3.4	0.34			
CPENTANE	3.7	0.37			
23-DMB	13.1	1.29			
2-MP	123.1	12.11			
3-MP	60.7	5.97			
NHEXANE	105.5	10.38			
MCP	86.4	8.50			
22-DMP	0.0	0.00			
24-DMP	8.0	0.78			
223-TMB	0.0	0.00			
CHEXANE	6.7	0.66			
33-DMP ,	0.0	0.00			
11-DMCP	36.7	3.61			
2-MHEX ,	0.0	0.00			
23-DMP ,	19.5	1.92			
3-MHEX ,	40.4	3.98			
1C3-DMCP	31.2	3.06			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1017.		C1/C2	0.77
GASOLINE	1017.		A /D2	3.98
NAPHTHENES	283.	27.79	C1/D2	2.99
C6-7	508.	49.92	CH/MCP	0.08
			PENT/IPENT,	0.52

	PPB	NORM PERCENT
MCP	86.4	50.6
CH	6.7	3.9
MCH	77.7	45.5
TOTAL	170.8	100.0

PARAFFIN INDEX 1	1.169
PARAFFIN INDEX 2	18.298

17 FEB 82

72318T AUSTRALIA, YELLOWTAIL-1, 1740-1755 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	21.8	2.15
ETHANE	0.0		1T2-DMCP	18.3	1.80
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	22.0	2.17	224-TMP	0.0	0.00
NBUTANE	24.7	2.43	NHEPTANE	37.1	3.65
IPENTANE	238.2	23.42	1C2-DMCP	10.0	0.98
NPENTANE	62.5	6.15	MCH	73.4	7.22
22-DMB	3.6	0.36			
CPENTANE	4.2	0.41			
23-DMB	14.3	1.41			
2-MP	113.6	11.17			
3-MP	57.2	5.63			
NHEXANE	54.1	5.32			
MCP	136.3	13.40			
22-DMP	0.0	0.00			
24-DMP	4.0	0.40			
223-TMB	0.0	0.00			
CHEXANE	7.8	0.77			
33-DMP ,	0.0	0.00			
11-DMCP	25.1	2.47			
2-MHEX ,	0.0	0.00			
23-DMP ,	18.5	1.82			
3-MHEX ,	30.9	3.04			
1C3-DMCP	39.1	3.84			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	1017.		C1/C2	0.47	
GASOLINE	1017.		A /D2	2.95	
NAPHTHENES	336.	33.04	C1/D2	3.44	
C6-7	476.	46.85	CH/MCP	0.06	
			PENT/IPENT,		0.26

	PPB	NORM PERCENT
MCP	136.3	62.6
CH	7.8	3.6
MCH	73.4	33.8
TOTAL	217.5	100.0

PARAFFIN INDEX 1	0.707
PARAFFIN INDEX 2	13.637

17 FEB 82

72319B AUSTRALIA, YELLOWTAIL-1, 1770-1785 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	22.6	1.60
NBUTANE	30.9	2.19
IPENTANE	345.6	24.49
NPENTANE	94.8	6.72
22-DMB	6.7	0.47
CPENTANE	6.8	0.48
23-DMB	20.3	1.44
2-MP	153.2	10.86
3-MP	76.2	5.40
NHEXANE	74.5	5.28
MCP	167.4	11.86
22-DMP	0.0	0.00
24-DMP	7.4	0.52
223-TMB	3.4	0.24
CHEXANE	14.3	1.01
33-DMP ,	0.0	0.00
11-DMCP	34.0	2.41
2-MHEX ,	0.0	0.00
23-DMP ,	23.3	1.65
3-MHEX ,	35.3	2.50
1C3-DMCP	47.7	3.38
1T3-DMCP	51.1	3.62
1T2-DMCP	18.0	1.28
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	56.3	3.99
1C2-DMCP	10.1	0.72
MCH	111.4	7.89

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1411.		C1/C2	0.54
GASOLINE	1411.		A /D2	3.71
NAPHTHENES	461.	32.65	C1/D2	4.53
C6-7	654.	46.35	CH/MCP	0.09
			PENT/IPENT,	0.27

	PPB	NORM PERCENT
MCP	167.4	57.1
CH	14.3	4.9
MCH	111.4	38.0
TOTAL	293.1	100.0

PARAFFIN INDEX 1	0.593
PARAFFIN INDEX 2	14.388

17 FEB 82

72319D AUSTRALIA, YELLOWTAIL-1, 1800-1815 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	74.4	4.19
ETHANE	0.0		1T2-DMCP	42.6	2.40
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	28.4	1.60	224-TMP	0.0	0.00
NBUTANE	26.1	1.47	NHEPTANE	88.8	5.00
IPENTANE	305.1	17.17	1C2-DMCP	35.0	1.97
NPENTANE	88.6	4.99	MCH	258.9	14.57
22-DMB	5.9	0.33			
CPENTANE	5.9	0.33			
23-DMB	21.4	1.21			
2-MP	167.5	9.43			
3-MP	91.1	5.13			
NHEXANE	85.7	4.83			
MCP	204.9	11.53			
22-DMP	0.0	0.00			
24-DMP	9.0	0.50			
223-TMB	5.3	0.30			
CHEXANE	18.0	1.01			
33-DMP ,	0.0	0.00			
11-DMCP	48.1	2.71			
2-MHEX ,	0.0	0.00			
23-DMP ,	35.0	1.97			
3-MHEX ,	55.3	3.11			
1C3-DMCP	75.6	4.26			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1777.		C1/C2	0.75
GASOLINE	1777.		A /D2	3.16
NAPHTHENES	763.	42.97	C1/D2	5.87
C6-7	1037.	58.35	CH/MCP	0.09
			PENT/IPENT,	0.29

	PPB	NORM PERCENT
MCP	204.9	42.5
CH	18.0	3.7
MCH	258.9	53.7
TOTAL	481.8	100.0

PARAFFIN INDEX 1	0.537
PARAFFIN INDEX 2	12.750

17 FEB 82

72319F AUSTRALIA, YELLOWTAIL-1, 1830-1845 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	48.0	3.43
ETHANE	0.0		1T2-DMCP	21.2	1.51
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	35.2	2.51	224-TMP	0.0	0.00
NBUTANE	29.0	2.07	NHEPTANE	84.5	6.03
IPENTANE	274.1	19.56	1C2-DMCP	15.2	1.08
NPENTANE	89.1	6.36	MCH	174.0	12.42
22-DMB	4.2	0.30			
CPENTANE	4.7	0.34			
23-DMB	17.6	1.25			
2-MP	141.7	10.11			
3-MP	67.7	4.83			
NHEXANE	77.5	5.53			
MCP	133.8	9.55			
22-DMP	0.0	0.00			
24-DMP	8.8	0.63			
223-TMB	3.4	0.24			
CHEXANE	14.4	1.03			
33-DMP ,	0.0	0.00			
11-DMCP	37.0	2.64			
2-MHEX ,	0.0	0.00			
23-DMP ,	25.8	1.84			
3-MHEX ,	43.3	3.09			
1C3-DMCP	50.9	3.63			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	1401.		C1/C2	0.84	
GASOLINE	1401.		A /D2	3.74	
NAPHTHENES	499.	35.63	C1/D2	5.20	
C6-7	738.	52.66	CH/MCP	0.11	
			PENT/IPENT,		0.33

	PPB	NORM PERCENT
MCP	133.8	41.5
CH	14.4	4.5
MCH	174.0	54.0
TOTAL	322.2	100.0

PARAFFIN INDEX 1	0.669
PARAFFIN INDEX 2	16.928

17 FEB 82

72319H AUSTRALIA, YELLOWTAIL-1, 1860-1875 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	16.3	1.79
NBUTANE	28.9	3.16
IPENTANE	142.3	15.59
NPENTANE	66.6	7.29
22-DMB	1.1	0.12
CPENTANE	2.3	0.25
23-DMB	9.8	1.07
2-MP	87.5	9.58
3-MP	45.3	4.96
NHEXANE	57.7	6.32
MCP	71.5	7.83
22-DMP	0.0	0.00
24-DMP	6.0	0.66
223-TMB	0.0	0.00
CHEXANE	11.2	1.23
33-DMP ,	0.0	0.00
11-DMCP	28.9	3.16
2-MHEX ,	0.0	0.00
23-DMP ,	20.1	2.20
3-MHEX ,	32.2	3.53
1C3-DMCP	34.2	3.75
1T3-DMCP	22.3	2.45
1T2-DMCP	19.2	2.11
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	69.4	7.60
1C2-DMCP	11.5	1.26
MCH	128.7	14.09

	TOTALS PPB	NORM PERCENT
ALL COMP	913.	
GASOLINE	913.	
NAPHTHENES	330.	36.12
C6-7	513.	56.18

SIG COMP RATIOS

C1/C2	1.06
A /D2	3.94
C1/D2	5.24
CH/MCP	0.16
PENT/IPENT,	0.47

	PPB	NORM PERCEN.
MCP	71.5	33.8
CH	11.2	5.3
MCH	128.7	60.9
TOTAL	211.4	100.0

PARAFFIN INDEX 1	0.806
PARAFFIN INDEX 2	18.947

17 FEB 82

72319J AUSTRALIA, YELLOWTAIL-1, 1890-1905 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	22.1	1.93
ETHANE	0.0		1T2-DMCP	16.1	1.40
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	49.4	4.31	224-TMP	0.0	0.00
NBUTANE	44.3	3.86	NHEPTANE	71.0	6.19
IPENTANE	253.5	22.11	1C2-DMCP	9.3	0.81
NPENTANE	87.2	7.61	MCH	111.9	9.76
22-DMB	2.7	0.23			
CPENTANE	6.7	0.58			
23-DMB	14.5	1.27			
2-MP	107.5	9.38			
3-MP	55.8	4.86			
NHEXANE	59.7	5.20			
MCP	98.0	8.54			
22-DMP	0.0	0.00			
24-DMP	5.9	0.51			
223-TMB	0.0	0.00			
CHEXANE	10.7	0.93			
33-DMP ,	0.0	0.00			
11-DMCP	37.5	3.27			
2-MHEX ,	0.0	0.00			
23-DMP ,	20.3	1.77			
3-MHEX ,	29.7	2.59			
1C3-DMCP	33.1	2.88			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1147.		C1/C2	0.90
GASOLINE	1147.		A /D2	4.40
NAPHTHENES	345.	30.12	C1/D2	5.39
C6-7	525.	45.80	CH/MCP	0.11
			PENT/IPENT,	0.34

	PPB	NORM PERCENT
MCP	98.0	44.4
CH	10.7	4.9
MCH	111.9	50.7
TOTAL	220.6	100.0

PARAFFIN INDEX 1	0.943
PARAFFIN INDEX 2	20.142

17 FEB 82

72319L AUSTRALIA, YELLOWTAIL-1, 1920-1935 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	73.4	3.43
ETHANE	0.0		1T2-DMCP	37.1	1.73
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	40.2	1.88	224-TMP	0.0	0.00
NBUTANE	62.1	2.90	NHEPTANE	103.4	4.83
IPENTANE	464.6	21.72	1C2-DMCP	26.4	1.24
NPENTANE	146.9	6.87	MCH	228.0	10.66
22-DMB	5.9	0.27			
CPENTANE	9.9	0.46			
23-DMB	27.7	1.30			
2-MP	191.0	8.93			
3-MP	108.4	5.07			
NHEXANE	101.5	4.74			
MCP	233.9	10.93			
22-DMP	0.0	0.00			
24-DMP	9.0	0.42			
223-TMB	3.7	0.17			
CHEXANE	23.1	1.08			
33-DMP ,	0.0	0.00			
11-DMCP	58.2	2.72			
2-MHEX ,	0.0	0.00			
23-DMP ,	37.2	1.74			
3-MHEX ,	69.8	3.26			
1C3-DMCP	77.9	3.64			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2139.		C1/C2	0.69
GASOLINE	2139.		A /D2	2.93
NAPHTHENES	768.	35.89	C1/D2	4.43
C6-7	1083.	50.61	CH/MCP	0.10
			PENT/IPENT,	0.32

	PPB	NORM PERCENT
MCP	233.9	48.2
CH	23.1	4.8
MCH	228.0	47.0
TOTAL	485.0	100.0

PARAFFIN INDEX 1	0.680
PARAFFIN INDEX 2	14.605

17 FEB 82

72319N AUSTRALIA, YELLOWTAIL-1, 1950-1965 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	106.4	3.21
ETHANE	0.0		1T2-DMCP	116.7	3.52
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	64.1	1.93	224-TMP	0.0	0.00
NBUTANE	74.2	2.24	NHEPTANE	112.4	3.39
IPENTANE	743.4	22.41	1C2-DMCP	48.6	1.46
NPENTANE	187.9	5.67	MCH	265.5	8.01
22-DMB	8.1	0.24			
CPENTANE	21.4	0.64			
23-DMB	45.8	1.38			
2-MP	289.5	8.73			
3-MP	200.6	6.05			
NHEXANE	137.6	4.15			
MCP	450.0	13.57			
22-DMP	0.0	0.00			
24-DMP	11.5	0.35			
223-TMB	5.4	0.16			
CHEXANE	33.7	1.02			
33-DMP ,	0.0	0.00			
11-DMCP	81.1	2.44			
2-MHEX ,	0.0	0.00			
23-DMP ,	54.2	1.63			
3-MHEX ,	117.0	3.53			
1C3-DMCP	142.1	4.28			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3317.		C1/C2	0.44
GASOLINE	3317.		A /D2	2.14
NAPHTHENES	1265.	38.15	C1/D2	3.25
C6-7	1682.	50.71	CH/MCP	0.07
			PENT/IPENT,	0.25

	PPB	NORM PERCENT
MCP	450.0	60.1
CH	33.7	4.5
MCH	265.5	35.4
TOTAL	749.2	100.0

PARAFFIN INDEX 1	0.542
PARAFFIN INDEX 2	10.922

17 FEB 82

72319P AUSTRALIA, YELLOWTAIL-1, 1980-1995 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	79.7	3.80
ETHANE	0.0		1T2-DMCP	48.2	2.30
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	28.2	1.34	224-TMP	0.0	0.00
NBUTANE	49.2	2.34	NHEPTANE	82.2	3.92
IPENTANE	443.1	21.11	1C2-DMCP	19.8	0.94
NPENTANE	134.1	6.39	MCH	140.0	6.67
22-DMB	6.3	0.30			
CPENTANE	14.5	0.69			
23-DMB	33.7	1.60			
2-MP	210.4	10.02			
3-MP	138.2	6.59			
NHEXANE	107.0	5.10			
MCP	289.3	13.79			
22-DMP	0.0	0.00			
24-DMP	10.0	0.47			
223-TMB	2.5	0.12			
CHEXANE	23.0	1.10			
33-DMP ,	0.0	0.00			
11-DMCP	61.0	2.91			
2-MHEX ,	0.0	0.00			
23-DMP ,	38.6	1.84			
3-MHEX ,	57.6	2.74			
1C3-DMCP	82.2	3.91			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2099.		C1/C2	0.43
GASOLINE	2099.		A /D2	3.28
NAPHTHENES	758.	36.10	C1/D2	3.89
C6-7	1041.	49.61	CH/MCP	0.08
			PENT/IPENT,	0.30

	PPB	NORM PERCENT
MCP	289.3	64.0
CH	23.0	5.1
MCH	140.0	30.9
TOTAL	452.3	100.0

PARAFFIN INDEX 1	0.565
PARAFFIN INDEX 2	13.425

17 FEB 82

72319R AUSTRALIA, YELLOWTAIL-1, 2010-2025 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	77.4	2.89
ETHANE	0.0		1T2-DMCP	81.6	3.05
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	61.7	2.31	224-TMP	0.0	0.00
NBUTANE	154.4	5.77	NHEPTANE	93.3	3.49
IPENTANE	610.9	22.83	1C2-DMCP	33.1	1.24
NPENTANE	154.4	5.77	MCH	229.7	8.58
22-DMB	8.0	0.30			
CPENTANE	13.6	0.51			
23-DMB	41.1	1.54			
2-MP	229.8	8.59			
3-MP	153.9	5.75			
NHEXANE	101.7	3.80			
MCP	290.8	10.87			
22-DMP	0.0	0.00			
24-DMP	10.5	0.39			
223-TMB	3.0	0.11			
CHEXANE	23.6	0.88			
33-DMP ,	0.0	0.00			
11-DMCP	43.3	1.62			
2-MHEX ,	0.0	0.00			
23-DMP ,	42.9	1.60			
3-MHEX ,	120.6	4.51			
1C3-DMCP	96.6	3.61			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2676.		C1/C2	0.51
GASOLINE	2676.		A /D2	1.62
NAPHTHENES	890.	33.25	C1/D2	2.46
C6-7	1248.	46.64	CH/MCP	0.08
			PENT/IPENT,	0.25

	PPB	NORM PERCENT
MCP	290.8	53.5
CH	23.6	4.3
MCH	229.7	42.2
TOTAL	544.1	100.0

PARAFFIN INDEX 1	0.641
PARAFFIN INDEX 2	11.527

17 FEB 82

72319T AUSTRALIA, YELLOWTAIL-1, 2040-2055 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	88.2	3.26
ETHANE	0.0		1T2-DMCP	48.6	1.80
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	63.5	2.35	224-TMP	0.0	0.00
NBUTANE	75.8	2.80	NHEPTANE	86.1	3.18
IPENTANE	728.8	26.95	1C2-DMCP	15.4	0.57
NPENTANE	179.2	6.63	MCH	126.7	4.68
22-DMB	9.1	0.34			
CPENTANE	15.4	0.57			
23-DMB	49.9	1.84			
2-MP	277.2	10.25			
3-MP	184.2	6.81			
NHEXANE	122.1	4.51			
MCP	303.1	11.21			
22-DMP	0.0	0.00			
24-DMP	11.4	0.42			
223-TMB	4.3	0.16			
CHEXANE	23.0	0.85			
33-DMP ,	0.0	0.00			
11-DMCP	72.0	2.66			
2-MHEX ,	0.0	0.00			
23-DMP ,	47.6	1.76			
3-MHEX ,	87.2	3.23			
1C3-DMCP	85.5	3.16			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2704.		C1/C2	0.41
GASOLINE	2704.		A /D2	2.39
NAPHTHENES	778.	28.76	C1/D2	2.54
C6-7	1121.	41.46	CH/MCP	0.08
			PENT/I: ENT,	0.25

	PPB	NORM PERCENT
MCP	303.1	66.9
CH	23.0	5.1
MCH	126.7	28.0
TOTAL	452.8	100.0

PARAFFIN INDEX 1	0.717
PARAFFIN INDEX 2	12.949

17 FEB 82

723208 AUSTRALIA, YELLOWTAIL-1, 2070-2085 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	55.6	2.68
ETHANE	0.0		1T2-DMCP	29.1	1.40
PROPANE	70.5		3-EPENT	0.0	0.00
IBUTANE	42.9	2.06	224-TMP	0.0	0.00
NBUTANE	280.3	13.49	NHEPTANE	75.2	3.62
IPENTANE	455.9	21.95	1C2-DMCP	11.3	0.55
NPENTANE	133.6	6.43	MCH	122.1	5.88
22-DMB	7.1	0.34			
CPENTANE	10.1	0.49			
23-DMB	33.7	1.62			
2-MP	189.6	9.13			
3-MP	111.8	5.38			
NHEXANE	114.3	5.50			
MCP	167.1	8.05			
22-DMP	0.0	0.00			
24-DMP	11.1	0.53			
223-TMB	1.6	0.08			
CHEXANE	16.5	0.79			
33-DMP ,	0.0	0.00			
11-DMCP	60.8	2.93			
2-MHEX ,	0.0	0.00			
23-DMP ,	36.8	1.77			
3-MHEX ,	58.1	2.80			
1C3-DMCP	52.6	2.53			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	2148.		C1/C2	0.63	
GASOLINE	2077.		A /D2	3.26	
NAPHTHENES	525.	25.29	C1/D2	3.43	
C6-7	812.	39.10	CH/MCP	0.10	
			PENT/IPENT,		0.29

	PPB	NORM PERCENT
MCP	167.1	54.7
CH	16.5	5.4
MCH	122.1	39.9
TOTAL	305.7	100.0

PARAFFIN INDEX 1	0.866
PARAFFIN INDEX 2	14.833

17 FEB 82

72320D AUSTRALIA, YELLOWTAIL-1, 2100-2115 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	85.5	2.98
ETHANE	0.0		1T2-DMCP	50.4	1.76
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	76.9	2.68	224-TMP	0.0	0.00
NBUTANE	72.4	2.53	NHEPTANE	113.8	3.97
IPENTANE	809.3	28.22	1C2-DMCP	17.0	0.59
NPENTANE	180.1	6.28	MCH	174.6	6.09
22-DMB	10.9	0.38			
CPENTANE	15.4	0.54			
23-DMB	52.6	1.83			
2-MP	299.4	10.44			
3-MP	162.9	5.68			
NHEXANE	143.8	5.01			
MCP	263.9	9.20			
22-DMP	0.0	0.00			
24-DMP	13.0	0.45			
223-TMB	3.7	0.13			
CHEXANE	29.4	1.03			
33-DMP ,	0.0	0.00			
11-DMCP	75.2	2.62			
2-MHEX ,	0.0	0.00			
23-DMP ,	52.7	1.84			
3-MHEX ,	81.4	2.84			
1C3-DMCP	83.0	2.89			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2867.		C1/C2	0.56
GASOLINE	2867.		A /D2	3.17
NAPHTHENES	794.	27.70	C1/D2	3.43
C6-7	1187.	41.41	CH/MCP	0.11
			PENT/IPENT,	0.22

	PPB	NORM PERCENT
MCP	263.9	56.4
CH	29.4	6.3
MCH	174.6	37.3
TOTAL	467.9	100.0

PARAFFIN INDEX 1	0.715
PARAFFIN INDEX 2	15.260

17 FEB 82

72320F AUSTRALIA, YELLOWTAIL-1, 2130-2145 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	27.7	2.96
ETHANE	0.0		1T2-DMCP	23.5	2.51
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	40.7	4.35	224-TMP	0.0	0.00
NBUTANE	28.5	3.05	NHEPTANE	105.6	11.30
IPENTANE	121.3	12.97	1C2-DMCP	5.5	0.59
NPENTANE	69.7	7.45	MCH	82.3	8.80
22-DMB	1.9	0.20			
CPENTANE	3.0	0.33			
23-DMB	14.1	1.50			
2-MP	94.9	10.15			
3-MP	43.4	4.64			
NHEXANE	85.6	9.15			
MCP	45.1	4.83			
22-DMP	0.0	0.00			
24-DMP	9.0	0.97			
223-TMB	0.0	0.00			
CHEXANE	6.2	0.67			
33-DMP ,	0.0	0.00			
11-DMCP	35.3	3.77			
2-MHEX ,	0.0	0.00			
23-DMP ,	28.1	3.01			
3-MHEX ,	35.3	3.78			
1C3-DMCP	28.5	3.05			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	935.		C1/C2	0.95
GASOLINE	935.		A /D2	5.41
NAPHTHENES	257.	27.49	C1/D2	3.50
C6-7	518.	55.36	CH/MCP	0.14
			PENT/IPENT,	0.57

	PPB	NORM PERCENT
MCP	45.1	33.8
CH	6.2	4.7
MCH	82.3	61.6
TOTAL	133.6	100.0

PARAFFIN INDEX 1	0.886
PARAFFIN INDEX 2	28.359

17 FEB 82

72320H AUSTRALIA, YELLOWTAIL-1, 2160-2175 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	42.8	3.84
ETHANE	0.0		1T2-DMCP	29.6	2.65
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	36.1	3.24	224-TMP	0.0	0.00
NBUTANE	27.6	2.48	NHEPTANE	106.2	9.54
IPENTANE	25.5	2.28	1C2-DMCP	9.3	0.84
NPENTANE	91.6	8.22	MCH	137.2	12.31
22-DMB	3.8	0.34			
CPENTANE	7.2	0.65			
23-DMB	26.5	2.38			
2-MP	134.5	12.07			
3-MP	62.5	5.61			
NHEXANE	89.3	8.01			
MCP	118.7	10.65			
22-DMP	0.0	0.00			
24-DMP	9.9	0.89			
223-TMB	0.0	0.00			
CHEXANE	17.5	1.57			
33-DMP ,	0.0	0.00			
11-DMCP	34.0	3.05			
2-MHEX ,	0.0	0.00			
23-DMP ,	32.3	2.90			
3-MHEX ,	34.8	3.12			
1C3-DMCP	37.4	3.36			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	1114.		C1/C2	0.79	
GASOLINE	1114.		A /D2	5.62	
NAPHTHENES	434.	38.92	C1/D2	5.42	
C6-7	699.	62.73	CH/MCP	0.15	
			PENT/IPENT,		3.60

	PPB	NORM PERCENT
MCP	118.7	43.4
CH	17.5	6.4
MCH	137.2	50.2
TOTAL	273.4	100.0

PARAFFIN INDEX 1 0.627
PARAFFIN INDEX 2 22.521

17 FEB 82

72320J AUSTRALIA, YELLOWTAIL-1, 2190-2205 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	72.2	2.77
ETHANE	0.0		1T2-DMCP	51.4	1.97
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	90.1	3.46	224-TMP	0.0	0.00
NBUTANE	65.4	2.51	NHEPTANE	182.6	7.00
IPENTANE	593.3	22.74	1C2-DMCP	12.0	0.46
NPENTANE	209.8	8.04	MCH	212.2	8.13
22-DMB	7.7	0.29			
CPENTANE	11.1	0.43			
23-DMB	46.7	1.79			
2-MP	260.5	9.99			
3-MP	105.6	4.05			
NHEXANE	184.1	7.06			
MCP	190.2	7.29			
22-DMP	0.0	0.00			
24-DMP	16.7	0.64			
223-TMB	3.3	0.13			
CHEXANE	30.7	1.18			
33-DMP ,	0.0	0.00			
11-DMCP	83.7	3.21			
2-MHEX ,	0.0	0.00			
23-DMP ,	54.0	2.07			
3-MHEX ,	60.5	2.32			
1C3-DMCP	65.1	2.50			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	2609.		C1/C2	0.84	
GASOLINE	2609.		A /D2	6.06	
NAPHTHENES	729.	27.93	C1/D2	5.40	
C6-7	1219.	46.71	CH/MCP	0.16	
			PENT/IPENT,		0.35

	PPB	NORM PERCENT
MCP	190.2	43.9
CH	30.7	7.1
MCH	212.2	49.0
TOTAL	433.1	100.0

PARAFFIN INDEX 1	0.764
PARAFFIN INDEX 2	22.474

17 FEB 82

72320L AUSTRALIA, YELLOWTAIL-1, 2220-2235 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	124.3	4.18
NBUTANE	123.3	4.15
IPENTANE	800.5	26.93
NPENTANE	242.7	8.16
22-DMB	9.0	0.30
CPENTANE	15.5	0.52
23-DMB	57.4	1.93
2-MP	271.3	9.13
3-MP	109.4	3.68
NHEXANE	190.5	6.41
MCP	196.6	6.61
22-DMP	0.0	0.00
24-DMP	16.8	0.56
223-TMB	2.5	0.08
CHEXANE	37.2	1.25
33-DMP ,	0.0	0.00
11-DMCP	76.9	2.59
2-MHEX ,	0.0	0.00
23-DMP ,	52.7	1.77
3-MHEX ,	51.3	1.73
1C3-DMCP	61.7	2.08
1T3-DMCP	74.7	2.51
1T2-DMCP	47.0	1.58
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	176.0	5.92
1C2-DMCP	12.2	0.41
MCH	223.5	7.52

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2973.		C1/C2	0.86
GASOLINE	2973.		A /D2	7.14
NAPHTHENES	745.	25.07	C1/D2	6.58
C6-7	1220.	41.02	CH/MCP	0.19
			PENT/IPENT,	0.30

	PPB	NORM PERCENT
MCP	196.6	43.0
CH	37.2	8.1
MCH	223.5	48.9
TOTAL	457.3	100.0

PARAFFIN INDEX 1	0.699
PARAFFIN INDEX 2	21.975

17 FEB 82

72320N AUSTRALIA, YELLOWTAIL-1, 2250-2265 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	23.8	3.17
ETHANE	0.0		1T2-DMCP	17.4	2.32
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	94.0	12.54
IPENTANE	118.9	15.87	1C2-DMCP	0.0	0.00
NPENTANE	48.9	6.53	MCH	95.6	12.75
22-DMB	0.0	0.00			
CPENTANE	3.3	0.45			
23-DMB	14.1	1.89			
2-MP	77.7	10.37			
3-MP	36.6	4.88			
NHEXANE	59.5	7.94			
MCP	52.0	6.94			
22-DMP	0.0	0.00			
24-DMP	5.9	0.79			
223-TMB	0.0	0.00			
CHEXANE	9.9	1.32			
33-DMP ,	0.0	0.00			
11-DMCP	24.9	3.33			
2-MHEX ,	0.0	0.00			
23-DMP ,	21.5	2.87			
3-MHEX ,	22.7	3.03			
1C3-DMCP	22.6	3.02			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	750.		C1/C2	1.13	
GASOLINE	750.		A /D2	6.76	
NAPHTHENES	250.	33.30	C1/D2	5.74	
C6-7	450.	60.02	CH/MCP	0.19	
			PENT/IPENT,		0.41

	PPB	NORM PERCENT
MCP	52.0	33.0
CH	9.9	6.3
MCH	95.6	60.7
TOTAL	157.5	100.0

PARAFFIN INDEX 1	0.746
PARAFFIN INDEX 2	28.273

17 FEB 82

72320P AUSTRALIA, YELLOWTAIL-1, 2280-2295 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	36.0	4.00
ETHANE	0.0		1T2-DMCP	18.8	2.09
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	13.8	1.53	224-TMP	0.0	0.00
NBUTANE	17.4	1.93	NHEPTANE	114.2	12.69
IPENTANE	127.1	14.13	1C2-DMCP	0.0	0.00
NPENTANE	59.6	6.62	MCH	104.8	11.65
22-DMB	0.8	0.08			
CPENTANE	5.0	0.56			
23-DMB	17.6	1.95			
2-MP	89.0	9.89			
3-MP	38.2	4.25			
NHEXANE	64.8	7.20			
MCP	51.3	5.70			
22-DMP	0.0	0.00			
24-DMP	7.9	0.88			
223-TMB	0.0	0.00			
CHEXANE	9.9	1.10			
33-DMP ,	0.0	0.00			
11-DMCP	45.1	5.02			
2-MHEX ,	0.0	0.00			
23-DMP ,	26.1	2.90			
3-MHEX ,	29.0	3.23			
1C3-DMCP	23.4	2.60			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	900.		C1/C2	1.23
GASOLINE	900.		A /D2	6.16
NAPHTHENES	294.	32.72	C1/D2	5.51
C6-7	531.	59.05	CH/MCP	0.19
			PENT/IPENT,	0.47

	F.B	NORM PERCENT
MCP	51.3	30.9
CH	9.9	6.0
MCH	104.8	63.1
TOTAL	166.0	100.0

PARAFFIN INDEX 1	0.948
PARAFFIN INDEX 2	28.021

17 FEB 82

72320R AUSTRALIA, YELLOWTAIL-1, 2310-2325 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	13.4	1.67
ETHANE	0.0		1T2-DMCP	17.5	2.18
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	37.8	4.72	224-TMP	0.0	0.00
NBUTANE	18.0	2.25	NHEPTANE	94.2	11.76
IPENTANE	146.5	18.30	1C2-DMCP	0.0	0.00
NPENTANE	48.3	6.03	MCH	88.0	10.99
22-DMB	0.2	0.02			
CPENTANE	3.9	0.48			
23-DMB	17.2	2.15			
2-MP	78.8	9.84			
3-MP	33.5	4.19			
NHEXANE	47.7	5.95			
MCP	43.5	5.44			
22-DMP	0.0	0.00			
24-DMP	8.0	1.00			
223-TMB	0.0	0.00			
CHEXANE	9.0	1.13			
33-DMP ,	0.0	0.00			
11-DMCP	26.8	3.35			
2-MHEX ,	0.0	0.00			
23-DMP ,	25.2	3.14			
3-MHEX ,	25.5	3.19			
1C3-DMCP	17.7	2.21			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	801.		C1/C2	1.34
GASOLINE	801.		A /D2	5.55
NAPHTHENES	220.	27.46	C1/D2	4.85
C6-7	416.	52.02	CH/MCP	0.21
			PENT/IPENT,	0.33

	PPB	NORM PERCENT
MCP	43.5	31.0
CH	9.0	6.4
MCH	88.0	62.6
TOTAL	140.5	100.0

PARAFFIN INDEX 1	1.078
PARAFFIN INDEX 2	29.682

17 FEB 82

72320T AUSTRALIA, YELLOWTAIL-1, 2340-2355 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	11.8	1.53
ETHANE	0.0		1T2-DMCP	14.4	1.87
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	33.0	4.28	224-TMP	0.0	0.00
NBUTANE	22.0	2.85	NHEPTANE	88.2	11.44
IPENTANE	143.1	18.56	1C2-DMCP	0.0	0.00
NPENTANE	58.1	7.54	MCH	66.5	8.62
22-DMB	4.3	0.55			
CPENTANE	0.0	0.00			
23-DMB	16.5	2.14			
2-MP	77.6	10.06			
3-MP	36.1	4.68			
NHEXANE	56.6	7.34			
MCP	39.4	5.12			
22-DMP	0.0	0.00			
24-DMP	7.8	1.01			
223-TMB	0.0	0.00			
CHEXANE	7.3	0.95			
33-DMP ,	0.0	0.00			
11-DMCP	27.4	3.56			
2-MHEX ,	0.0	0.00			
23-DMP ,	21.7	2.81			
3-MHEX ,	22.9	2.97			
1C3-DMCP	16.3	2.12			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	771.		C1/C2	1.23	
GASOLINE	771.		A /D2	6.33	
NAPHTHENES	183.	23.77	C1/D2	4.43	
C6-7	380.	49.33	CH/MCP	0.18	
			PENT/IPENT,		0.41

	PPB	NORM PERCENT
MCP	39.4	34.8
CH	7.3	6.4
MCH	66.5	58.7
TOTAL	113.2	100.0

PARAFFIN INDEX 1	1.182
PARAFFIN INDEX 2	31.904

17 FEB 82

72321B AUSTRALIA, YELLOWTAIL-1, 2370-2385 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	10.9	1.59
ETHANE	0.0		1T2-DMCP	11.9	1.75
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	20.3	2.97	224-TMP	0.0	0.00
NBUTANE	25.8	3.78	NHEPTANE	85.2	12.47
IPENTANE	115.1	16.85	1C2-DMCP	0.0	0.00
NPENTANE	58.3	8.54	MCH	57.5	8.42
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	14.5	2.13			
2-MP	68.9	10.08			
3-MP	31.9	4.67			
NHEXANE	52.2	7.65			
MCP	31.7	4.64			
22-DMP	0.0	0.00			
24-DMP	5.6	0.82			
223-TMB	0.0	0.00			
CHEXANE	10.6	1.55			
33-DMP ,	0.0	0.00			
11-DMCP	26.8	3.93			
2-MHEX ,	0.0	0.00			
23-DMP ,	18.7	2.74			
3-MHEX ,	23.9	3.49			
1C3-DMCP	13.1	1.93			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	683.		C1/C2	1.40
GASOLINE	683.		A /D2	5.76
NAPHTHENES	163.	23.80	C1/D2	3.98
C6-7	348.	50.98	CH/MCP	0.33
			PENT/IPENT,	0.51

	PPB	NORM PERCENT
MCP	31.7	31.8
CH	10.6	10.6
MCH	57.5	57.7
TOTAL	99.8	100.0

PARAFFIN INDEX 1 1.410
PARAFFIN INDEX 2 32.941

17 FEB 82

72321D AUSTRALIA, YELLOWTAIL-1, 2400-2415 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	14.6	1.52
ETHANE	0.0		1T2-DMCP	16.6	1.73
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	19.9	2.08	224-TMP	0.0	0.00
NBUTANE	29.2	3.05	NHEPTANE	103.4	10.79
IPENTANE	141.7	14.79	1C2-DMCP	0.0	0.00
NPENTANE	98.5	10.28	MCH	94.0	9.81
22-DMB	1.6	0.17			
CPENTANE	4.3	0.45			
23-DMB	18.2	1.90			
2-MP	99.9	10.43			
3-MP	45.4	4.73			
NHEXANE	93.6	9.77			
MCP	43.8	4.57			
22-DMP	0.0	0.00			
24-DMP	9.4	0.98			
223-TMB	0.0	0.00			
CHEXANE	22.6	2.36			
33-DMP ,	0.0	0.00			
11-DMCP	30.0	3.13			
2-MHEX ,	0.0	0.00			
23-DMP ,	25.6	2.67			
3-MHEX ,	29.9	3.12			
1C3-DMCP	16.0	1.67			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	958.		C1/C2	1.61
GASOLINE	958.		A /D2	6.58
NAPHTHENES	242.	25.23	C1/D2	4.90
C6-7	500.	52.13	CH/MCP	0.52
			PENT/IPENT,	0.69

	PPB	NORM PERCENT
MCP	43.8	27.3
CH	22.6	14.1
MCH	94.0	58.6
TOTAL	160.4	100.0

PARAFFIN INDEX 1	1.273
PARAFFIN INDEX 2	29.324

17 FEB 82

72321F AUSTRALIA, YELLOWTAIL-1, 2430-2445 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	10.0	1.00
ETHANE	0.0		1T2-DMCP	13.8	1.38
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	20.5	2.06	224-TMP	0.0	0.00
NBUTANE	30.9	3.11	NHEPTANE	103.6	10.40
IPENTANE	112.1	11.26	1C2-DMCP	0.0	0.00
NPENTANE	114.3	11.48	MCH	138.0	13.86
22-DMB	0.0	0.00			
CPENTANE	6.1	0.61			
23-DMB	14.4	1.45			
2-MP	86.1	8.65			
3-MP	40.0	4.01			
NHEXANE	116.5	11.70			
MCP	54.7	5.50			
22-DMP	0.0	0.00			
24-DMP	5.1	0.51			
223-TMB	0.0	0.00			
CHEXANE	44.5	4.47			
33-DMP ,	0.0	0.00			
11-DMCP	27.3	2.74			
2-MHEX ,	0.0	0.00			
23-DMP ,	19.5	1.95			
3-MHEX ,	24.6	2.47			
1C3-DMCP	13.8	1.38			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	996.		C1/C2	2.28
GASOLINE	996.		A /D2	8.94
NAPHTHENES	308.	30.94	C1/D2	8.52
C6-7	571.	57.37	CH/MCP	0.81
			PENT/IPENT,	1.02

	PPB	NORM PERCENT
MCP	54.7	23.1
CH	44.5	18.8
MCH	138.0	58.2
TOTAL	237.2	100.0

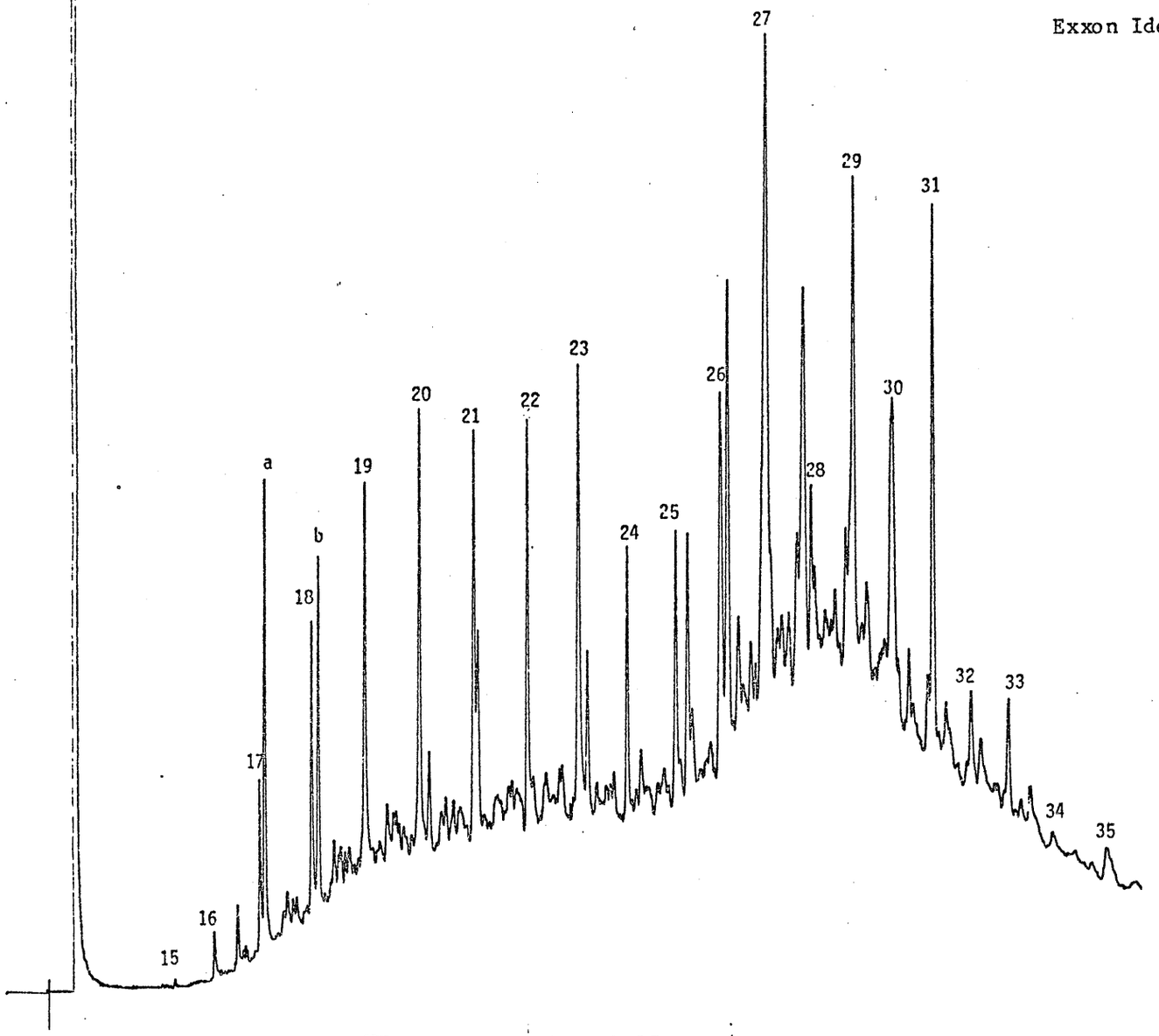
PARAFFIN INDEX 1	1.385
PARAFFIN INDEX 2	26.230

APPENDIX -2

C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-003

Exxon Identification No. 72319-D

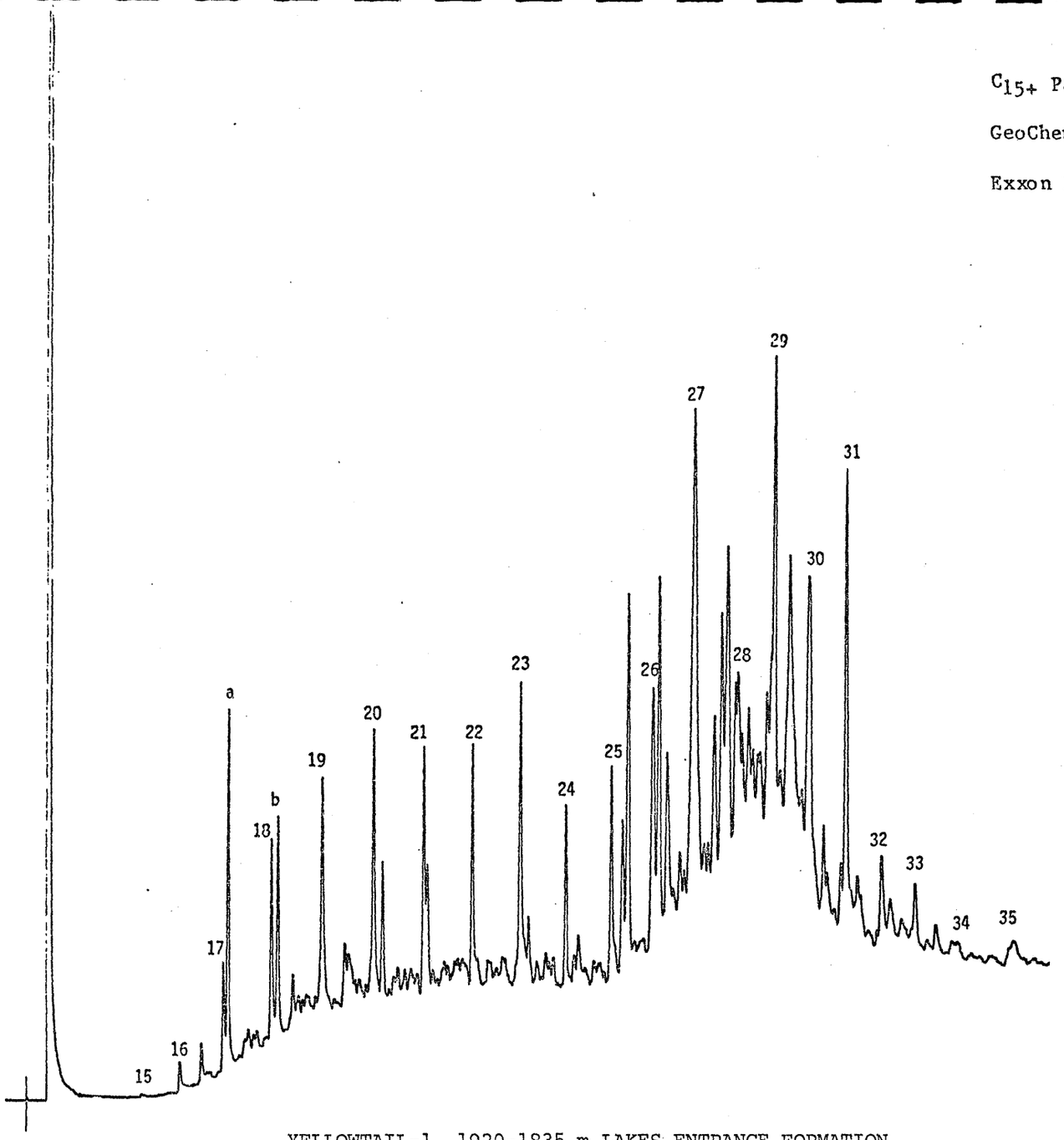


YELLOWTAIL-1, 1800-1815 m : LAKES ENTRANCE FORMATION

C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-004

Exxon Identification No. 72319-L

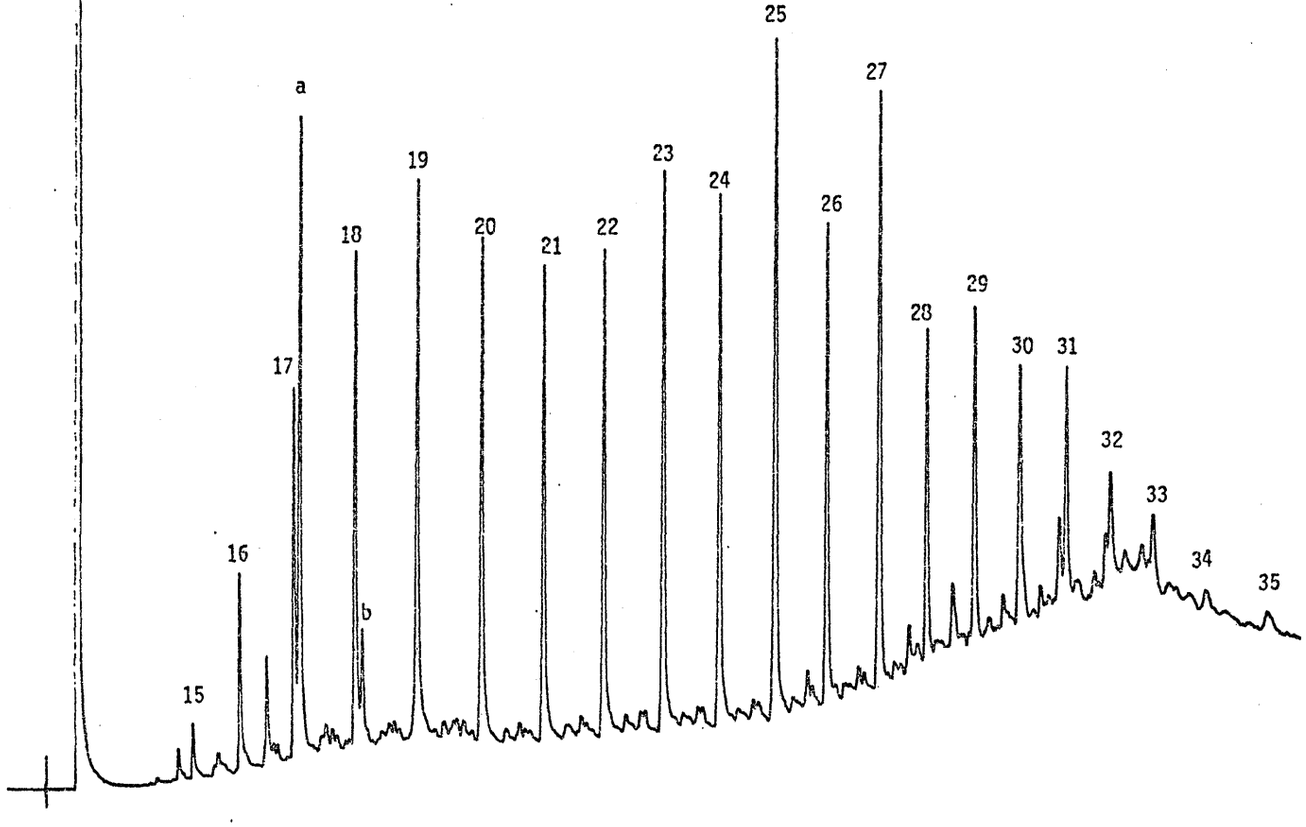


YELLOWTAIL-1, 1920-1835 m LAKES ENTRANCE FORMATION

C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-005

Exxon Identification No. 72320-B

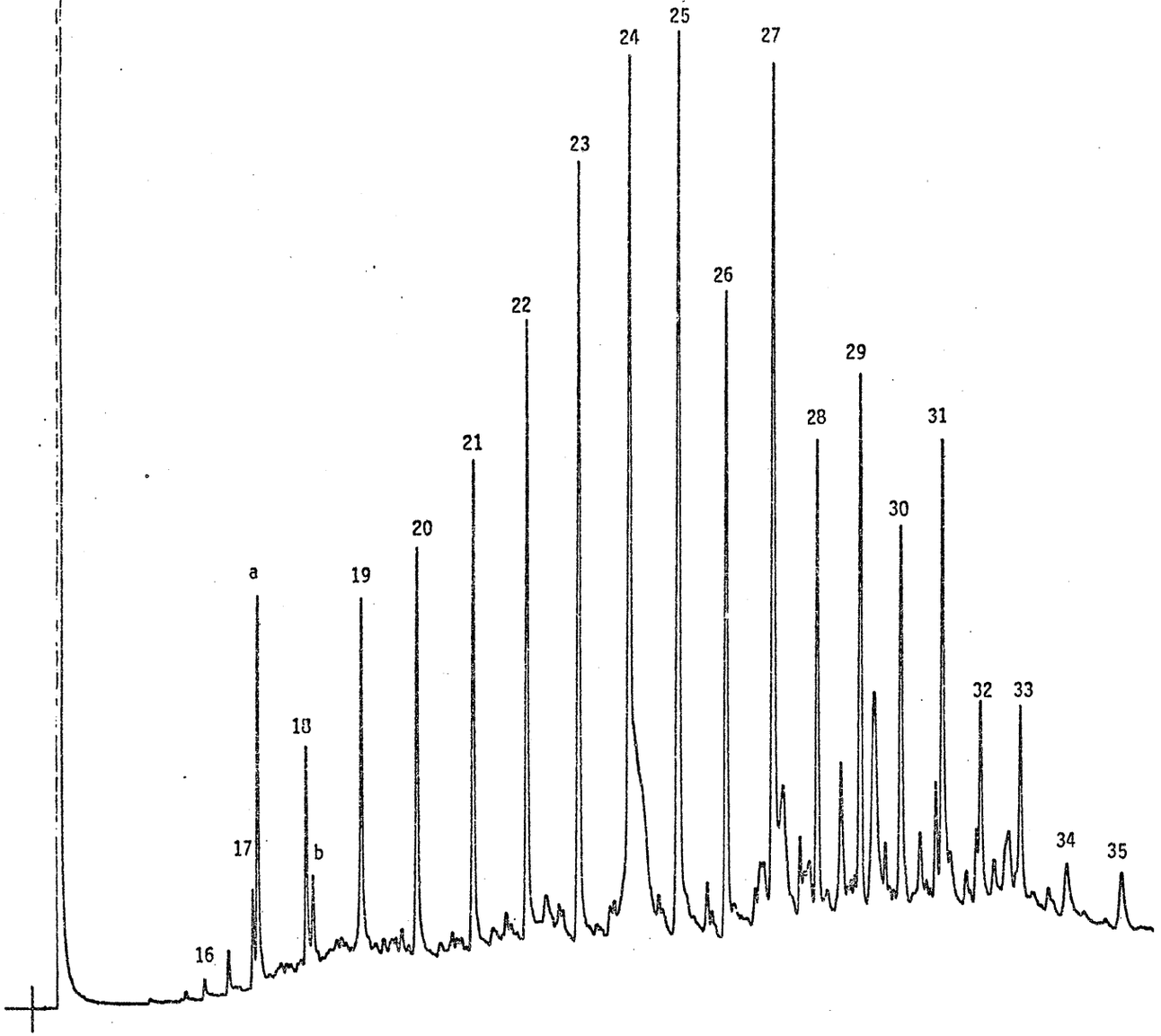


YELLOWTAIL-1, 2070-2085 m : LAKES ENTRANCE FORMATION

C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E530-006

Exxon Identification No. 72320-J



YELLOWTAIL-1, 2190-2205 m : LAKES ENTRANCE FORMATION

APPENDIX 9

APPENDIX 9

VELOCITY SURVEY REPORT

YELLOWTAIL # 1 GIPPSLAND BASIN.

COMPARISON SURVEY BETWEEN VELOCITY DATA LIMITED AND SCHLUMBERGER

Schlumberger System

The W.S.T. System is incorporated in the C.S.U. Unit and is processed and controlled by the unit's computer.

The source is a Bolt DHS 1900 airgun with 120cu.in. chamber, submerged to 30' and fired at 2000 psi. The shot hydrophone is attached 10' below the gun and is a Geospace MP8-B (pressure sensitive). The gun is charged by a portable compressor or can be charged by the rig's rucker system. The down hole tool is a standard vel-sonde incorporating four 10Hz velocity geophones, with a bandwidth from 10-200Hz at 3db. Downhole amplifier gain is 60db. There is software control of the gain on each channel but this can be overridden by the engineer.

Binary gains are 1, 2, 4, 8, 16, 32 & 64.

Each checkshot can be viewed on the oscilloscope and then stacked with other records from the same level for data enhancement. Transit time computation is automatic with an interactive algorithm for problem waveforms.

Velocity Data System

Velocity Data use an RS-49W Digital Well Survey System, comprising:-

1. RA-49W Recording Amp. Unit.
2. RV-49W Digital recording unit
3. R-6B Oscillograph
4. PS-49W Power supply

The basis system accommodates four seismic channels and two auxiliary channels, and produces a digital tape record and an oscillograph display for each successive shot. All data on tape can be later played back for oscillograph display.

The recording Amplifier contains the micro-processor/control logic for the system, and four OPA-10 seismic amplifiers, two auxiliary amplifiers and three Galvo level cards, TU-49 Test Unit.

Each OPA-10 Amplifier produces four simultaneous outputs representing 30db, 60db, 90db and 120db amplification of the applied seismic output of which only three are used, being the 30db, 60db and 90db. The optimum output is A/D converted, latched and recorded on tape along with the corresponding gain code.

The TU-49 Test Unit contains a timebreak circuit and a 50db uphole amplifier with manual gain control.

System has a 1 millisecond sample rate.

Alias filters - Active 250Hz with cut off at a 72db slope for 1ms sample rate.

Amplifier frequency response 1 Hz to 1 KHz within 3db.

In both surveys record quality was average to good. Schlumberger had less downhole noise to contend with than Velocity Data due to the hole being recirculated before they went in, whereas Velocity Data ran in after R.F.T.'s.

Velocity data suffered some downtime between the 2nd and 3rd Shots when the wireline came off the top sheave (downtime 2 1/2 hrs.). The wireline was damaged and it was necessary to splice the cable and rejoin it using a torpedo link. Due to these repairs, signal leakage occurred causing some high frequencies to be lost.
Overall, the quality of both surveys was very satisfactory.

B. HARDIMAN.

0040L

Overall, the quality of both surveys was very satisfactory.

Disadvantages with Schlumberger system are: no raw field record is obtainable, actual survey cost is high, down hole tool is of lower quality than Velocity Data's, frequency response is not as good, and the wall locking mechanism malfunctions regularly.

The air gun is not capable of emitting the higher frequencies of the gas gun. Entire trust is put upon the computer, because the computer sets gains and picks breaks. There is a time delay to receive the complete package. One major advantage is that the crew is on site during the entire logging run so no delay occurs for the mobilisation of personnel.

With Velocity Data the quality of results has proven to be high. Records and tapes are available immediately after the survey. The down hole tool is considered even by other contractors (including Schlumberger) to be one of the best in the business. All gain levels are manually controlled so it would be very difficult to lose the signal on a record.

B. HARDIMAN.

0040L

VELOCITY SURVEY

Well ....YELLOW.TAIL.#1.....

Basin ...GIPPSLAND.....

INTRODUCTION

Esso personnel .....BRETT.HARDIMAN.....

Contractor .....SCHLUMBERGER.....

Supplied (1) Instruments.
(2) Personnel

Seismic Observer ..MIKE.AW.....

Marine Shooter ....N/A.....

Navigation .....N/A.....

(3) Licenced Shooting Boat

Name .....N/A.....

Date Loaded .....

Date Released .....

Agent .....

(4) Seismic Source

AIR
~~Gas~~ Gun

Gas Pressures ..2000.psi.....

Oxygen .....N/A.....psi

Propane .....N/A.....psi

Personnel and Instruments

assembled at ....PLATFORM..... Date ....1.11.81.....

Boarded (rig) ...SOUTHERN.CROSS..... Date ....1.11.81.....

Date of survey .....3.11.81.....

Casing Depth 20" @ 229m, 10 3/4" @ 804m

T.D. when shot .....2571.m.....

water depth .....77.....metres

SURVEY PROCEDURE

Weather: Wind .....

Swell .....MODERATE.....

Sea .....SLIGHT.....

Rig Movement .MODERATE.....

Rig Noise ....LOW.....

Hydrophones: Number .....TWO.....

Depth below sea level .....12.2....metres

Position ....ONE AT TOP OF GUN AND ONE....

....IN MOONPOOL.....

Gas Gun: number of shots per level .....

gun depth .....12.2m.....metres

Well phone positioning:

No of depths .....11.....

Time: first shot .....2036....2.11.81....

last shot .....0348....3.11.81....

Total rig time .....8 hrs.....

RESULTS

Quality of results (good .....13.....

(fair .....13.....

(poor .....7.....

(not used .....1.....

Comparison of Interval Times with Sonic Log

/ / average .....19.39....microsec/metre

/ / max .....57.5.....microsec/metre

CONCLUSION

Reliability of T-D curve .....GOOD.....

COMMENTS

Comparison survey between Velocity Data & Schlumberger

Shothole Information:- Elevation, Distance & Direction from Well

Company: ESSO EXPLORATION AUSTRALIA INC.

Well: YELLOW TAIL #1

Elevation (Derrick Floor): 21m RKB

Total Depth: 2571m

LOCATION

Coordinates: 148°16'26.73"E 38°31'34.51"S

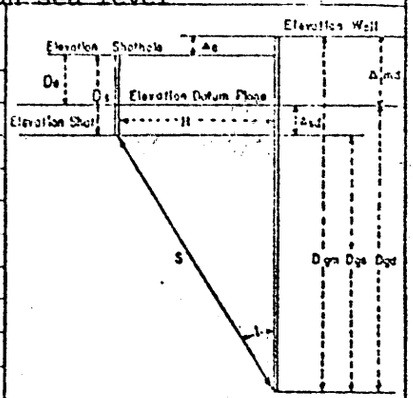
Section, Township, Range:

County:

Area or Field: Gippsland

DATUM : Mean sea level

Record Number	Shothole Number	Time of Shot	Dgm	Ds	tus	tr	T Reading	T Polarity	T Grade	Dgs	H	TAN I	Cos I	Tgs	Δsd	Δsd/V	Tgd	Tgd Average	Dgd	ΔDgd	ΔTgd	VI Interval Velocity	Vo Average Velocity
85	12	0011	500	12.2		.03	227.6			466.8	45	.098	.9952	.2265	12.2	8	.234	.234	479				2047
86																				250	.091	2747	
87																							
82	11	0020	750	"		"	318.1			716.8	"	.064	.9980	.3175	"	"	.325	.325	729				2243
83																				100	.033	3030	
84																							
79	10	2355	850	"		"	350.6			816.8	"	.056	.9984	.3500	"	"	.358	.358	829				2316
80																				350	.115	3043	
81																							
70	9	2343	1200	"		"	465.5			1166.8	"	OFFSET DOES NOT			"	"	.473	.473	1179				2493
54	8	2307	1500	"		"	552.5			1466.8	"	AFFECT TIME			"	"	.560	.560	1479	300	.087	3448	2641
55																							
51	7	2253	1800	"		"	648.9			1766.8	"	"	"	"	"	"	.657	.657	1779	300	.097	3093	2708
53																							
46	6	2233	2100	"		"	745.6			2066.8	"	"	"	"	"	"	.754	.754	2079	300	.097	3093	2757
47																							
49																				310	.104	2981	
42	5	2215	2410	"		"	850.4			2376.8	"	"	"	"	"	"	.858	.858	2389				2784
43																							
45																				40	.011	3636	
37	4	2206	2450	"		"	860.8			2416.8	"	"	"	"	"	"	.869	.869	2429				2795
39																							
40	3	2157	2500	"		"	873.9			2466.8	"	"	"	"	"	"	.882	.882	2479	50	.013	3846	2811
35		2156																					
28	2	2144	2568	"		"	891.6			2534.8	"	"	"	"	"	"	.900	.900	2547	68	.018	3778	2830
32		2147																					



Dgm = Geophone depth measured from well elevation

Dgs = " " " " shot "

Dgd = " " " " datum "

Ds = Depth of shot

De = Shothole elevation to datum plane

H = Horizontal distance from well to shotpoint

S = Straight line travel path from shot to well geophone

tus = Uphole time at shotpoint

T = Observed time from shotpoint to well geophone

tr = " " " to reference geophone

Δe = Difference in elevation between well & shotpoint.

Δsd = " " " " shot & datum plane

Δsd = Ds - De

Dgs = Dgm - Dst Δe; tan I = $\frac{H}{Dgs}$

Tgs = cos i Ta Vert. travel time from shot elev to geophone

Tgd = Tgs ± $\frac{\Delta sd}{V}$ " " " " datum plane "

Dgd = Dgm - Δmd

VI = Interval velocity = $\frac{\Delta Dgd}{\Delta Tgd}$

Vo = Average " = $\frac{Dgd}{Tgd}$

Surveyed by: Schlumberger

Date: 3.4.11.81

20" @ 229m

10 3/4" @ 804m

Casing Record

VELOCITY SURVEY ERROR CHECK

YELLOWTAIL #1 — VELOCITY DATA

Depth Rel.S.L. (m)	Av. Vertical Travel Time (check shots)	Ti Check Shots (sec.)	Ti Sonic Log (sec.)	△ (Millisecs.) Ti Check — Ti Sonic	Depth Interval (m.)	Error (Microsec. per m.)
479	.229	.094			250	
729	.323					
729	.323	.030			100	
829	.353					
829	.353	.115	.1116	3.4	350	9.7
1179	.468					
1179	.468	.089	.0848	4.2	300	14.0
1479	.557					
1479	.557	.097	.0923	4.7	300	15.7
1779	.654					
1779	.654	.096	.093	3.0	300	10.0
2079	.750					
2079	.750	.105	.102	3.0	310	9.7
2389	.855					
2389	.855	.013	.0107	2.3	40	57.5
2429	.868					
2429	.868	.014	.0134	0.6	50	12.0
2479	.882					
2479	.882	.016	.0178	- 1.8	68	26.5
2547	.898					

VELOCITY SURVEY

Well ... YELLOW TAIL #1 .....

Basin .. GIPPSLAND .....

INTRODUCTION

Esso personnel ..... BRETT HARDIMAN .....

Contractor ..... VELOCITY DATA LTD .....

Supplied (1) Instruments.
(2) Personnel

Seismic Observer . JOHN LARSEN .....

Marine Shooter ... HENRI WATTS .....

Navigation ..... N/A .....

(3) Licenced Shooting Boat

Name ..... N/A .....

Date Loaded .....

Date Released .....

Agent .....

(4) Seismic Source

Gas Gun

Gas Pressures .. 20 SEC FILL .....

Oxygen ..... 90 ..... psi

Propane ..... 45 ..... psi

Personnel and Instruments

assembled at ..... MELBOURNE ..... Date .... 1.11.81 .....

Boarded (rig) ..... SOUTHERN CROSS .... Date .... 2.11.81 .....

Date of survey 2. . 3.11.81 .....

Casing Depth 20" @ 229m, 10 3/4" @ 804m

T.D. when shot ..... 2571m .....

water depth ..... 77 ..... metres

SURVEY PROCEDURE

Weather: Wind .....

Swell .. MODERATE – HIGH .....

Sea .... MODERATE .....

Rig Movement ... MODERATE – HIGH .....

Rig Noise ..... LOW .....

Hydrophones: Number .....TWO.....

Depth below sea level ...12.2.....metres

Position .....ONE IN MOONPOOL.....

.....AND ONE 3.05 m BELOW GUN.....

Air Gun: number of shots per level .....

gun depth .....9.15.....metres

Well phone positioning:

No of depths .....11.....

Time: first shot .....2140.....

last shot .....

Total rig time .....

RESULTS

Quality of results (good .....

(fair .....

(poor .....

(not used .....

Comparison of Interval Times with Sonic Log

/ Δ / average ...8.86.....microsec/metre

/ Δ / max .....15.7.....microsec/metre

CONCLUSION

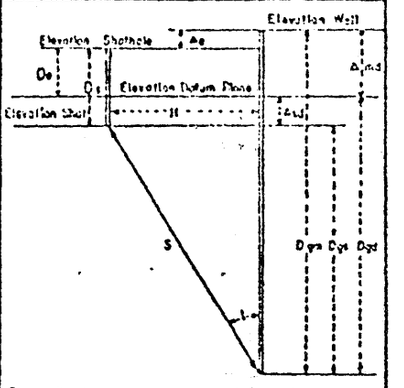
Reliability of T-D curve .....AVERAGE.....

COMMENTS

Shothole Information - Elevation, Distance & Direction from Well

Company: ESSO EXPLORATION AUSTRALIA INC.
Well: YELLOWTAIL #1
Elevation (Derrick Floor): 21m RKB
Total Depth: 2571m
LOCATION
Coordinates: 148°16'26.73"E 38°31'34.51"S
Section, Township, Range:
County:
Area or Field: Gippsland
DATUM: Mean Sealevel

Record Number	Shot Number	Time of Shot	Dgm	Ds	tus	tr	T Reading	T Clarity	T Grade	Dgs	H	TAN i	Cos i	Tgs	Δsd	Δsd/V	Tgd	Tgd Average	Dgd	ΔDgd	ΔTgd	VI Interval Velocity	Va Average Velocity
33	12	0347	500	2.2		.03	222		P	466.8	45.8	.098	.9952	.2209	12.2	8	.2289	.229	479				
34		0348	"	"		"	"		"	"	"				"									
31	11	0335	750	"		"	316		"	716.8	"	.064	.998	.3154	"	"	.3234	.323	729	250	.094	2660	2092
32		0336	"	"		"	"		"	"	"				"	"								
28	10	0325	850	"		"	346		E	816.8	"	.056	.9984	.3454	"	"	.3534	.353	829	100	.030	3333	2257
29		0326	"	"		"	"		"	"	"				"	"								
30		0327	"	"		"	"		"	"	"				"	"								2348
25	9	0310	1200	"		"	460		"	1166.8	"	OFFSET DOES NOT			"	"	.4676	.468	1179	350	.115	3043	
26		0311	"	"		"	"		"	"	"	AFFECT TIME			"	"								2519
27		0312	"	"		"	"		"	"	"				"	"								
21	8	0255	1500	"		"			NR	1466.8	"	"	"	"	"	"	.5567	.557	1479	300	.089	3371	
22		0256	"	"		"	549		G	"	"				"	"								2655
23		0257	"	"		"	"		"	"	"				"	"								
24		0258	"	"		"	"		"	"	"				"	"				300	.097	3093		
1	1	2036	1800	"		"	646		"	1766.8	"	"	"	"	"	"	.6538	.654	1779					2720
2		2038	"	"		"	"		"	"	"				"	"								
18	7	0234	"	"		"	"		F	"	"				"	"								
19		0236	"	"		"	"		"	"	"				"	"				300	.096	3125		
20		0239	"	"		"	"		"	"	"				"	"								
15	6	0203	2100	"		"	742		G	2066.8	"	"	"	"	"	"	.7499	.750	2079					2772
16		0204	"	"		"	"		P	"	"				"	"								
17		0205	"	"		"	"		F	"	"				"	"				310	.105	2952		
12	5	0143	2410	"		"	847		G	2376.8	"	"	"	"	"	"	.8548	.855	2389					2794
13		0144	"	"		"	"		"	"	"				"	"								
14		0145	"	"		"	"		"	"	"				"	"				40	.013	3077		
9	4	0133	2450	"		"	860		F	2416.8	"	"	"	"	"	"	.8678	.868	2429					2798
10		0134	"	"		"	"		"	"	"				"	"								
11		0135	"	"		"	"		G	"	"				"	"				50	.014	3571		
6	3	0121	2500	"		"	874		P	2466.8	"	"	"	"	"	"	.8818	.882	2479					2811
7		0122	"	"		"	"		"	"	"				"	"								
8		0123	"	"		"	"		E	"	"				"	"				68	.016	4250		
3	2	0106	2568	"		"	890		G	2534.8	"	"	"	"	"	"	89.78	.898	2547					2836
4		0108	"	"		"	"		"	"	"				"	"								
5		0110	"	"		"	"		"	"	"				"	"								



Dgm = Geophone depth measured from well elevation
Dgs = " " " " shot "
Dgd = " " " " datum "
Ds = Depth of shot
De = Shothole elevation to datum plane
H = Horizontal distance from well to shotpoint
S = Straight line travel path from shot to well geophone
tus = Uphole time at shotpoint
T = Observed time from shotpoint to well geophone
tr = " " " to reference geophone
Δs = Difference in elevation between well & shotpoint.
Δsd = " " " " shot & datum plane
Δsd = De - Ds
Dgs = Dgm - Ds; tan i = $\frac{H}{Dgs}$
Tgs = cos i Ts Vert. travel time from shot also to geophone
Tgd = Tgs ± $\frac{\Delta sd}{V}$ " " " datum plane "
Dgd = Dgm - Δmd
VI = Interval velocity = $\frac{\Delta Dgd}{\Delta Tgd}$
Va = Average " = $\frac{Dgd}{Tgd}$

Surveyed by: Velocity Data Pty. Ltd
Date: 2,3.11.81

20" @ 229m
10 3/4" @804m

Casing Record

VELOCITY SURVEY ERROR CHECK

YELLOWTAIL #1 — SCHLUMBERGER

Depth Rel.S.L. (m)	Av. Vertical Travel Time (check shots)	Ti Check Shots (sec.)	Ti Sonic Log (sec.)	△ (Millisecs.) Ti Check — Ti Sonic	Depth Interval (m.)	Error (Microsec. per m.)
479	.234	.091			250	
729	.325					
729	.325	.033			100	
829	.358					
829	.358	.115	.1116	3.4	350	9.7
1179	.473					
1179	.473	.087	.0848	2.2	300	7.3
1479	.560					
1479	.560	.097	.0923	4.7	300	15.7
1779	.657					
1779	.657	.097	.093	4.0	300	13.3
2079	.754					
2079	.754	.104	.102	2.0	310	6.5
2389	.858					
2389	.858	.011	.01 07	0.3	40	7.5
2429	.869					
2429	.869	.013	.0134	- 0.4	50	8.0
2479	.882					
2479	.882	.018	.0178	0.2	68	2.9
2547	.900					

YELLOWTAIL – 1

WELL VELOCITY RECORD

3-11-81

REC. 33

KB 500m

REC. 34

KB 500m

REC. 31

KB 750m

REC. 32

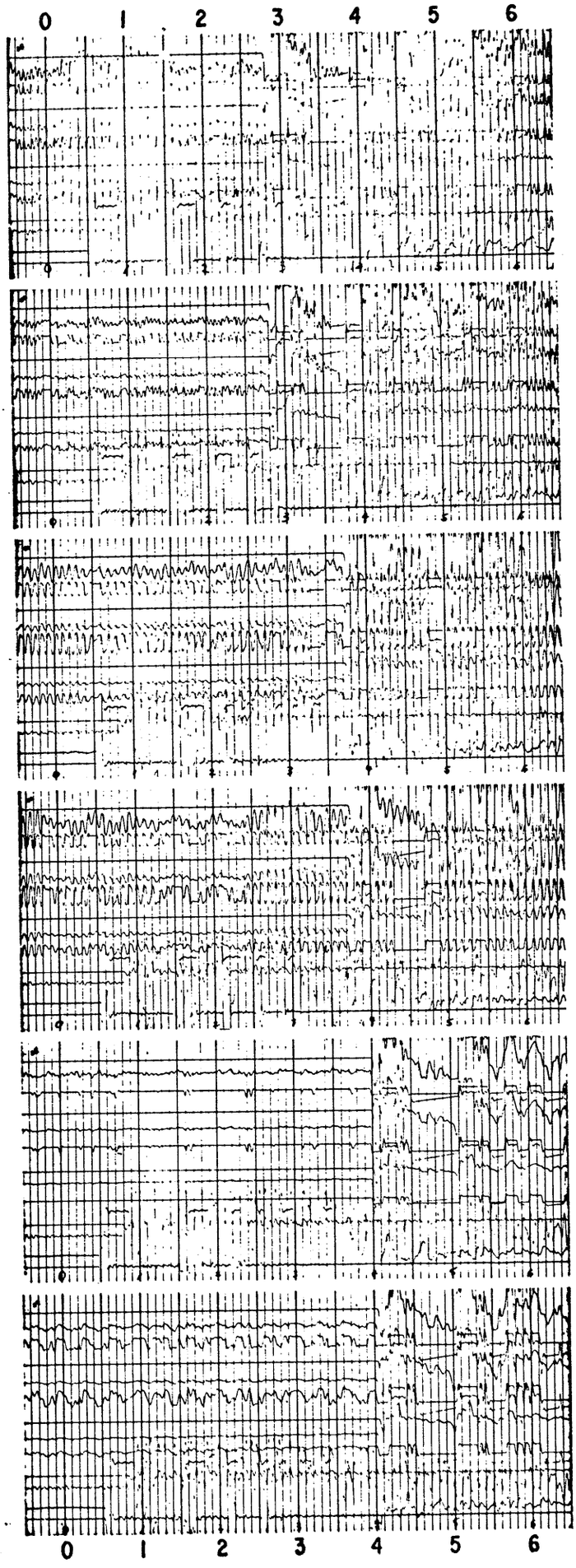
KB 750m

REC. 28

KB 850m

REC. 29

KB 850m



YELLOWTAIL - 1

WELL VELOCITY RECORD

3-11-81

REC. 30

KB 850 m

REC. 25

KB 1200m

REC. 26

KB 1200 m

REC. 27

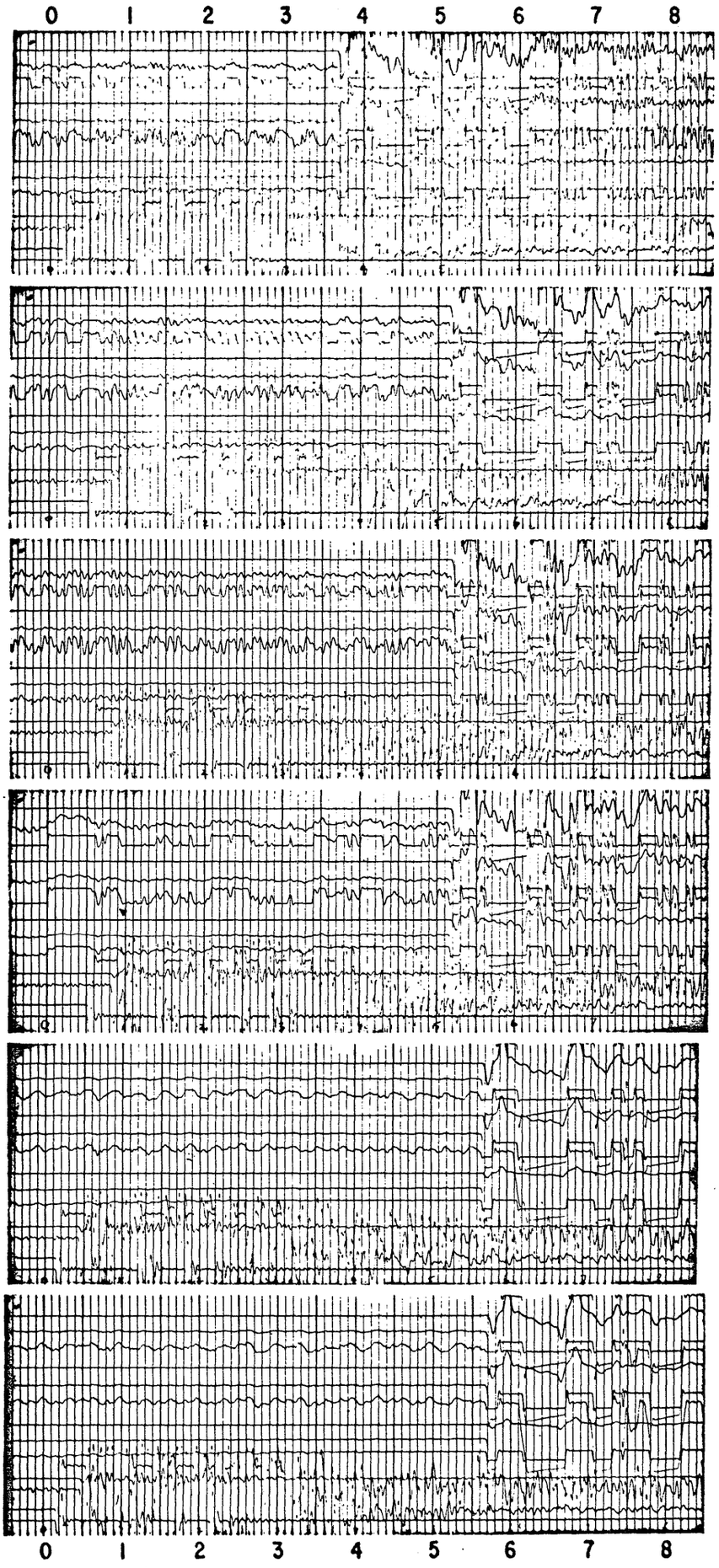
KB 1200m

REC. 22

KB 1500 m

REC. 23

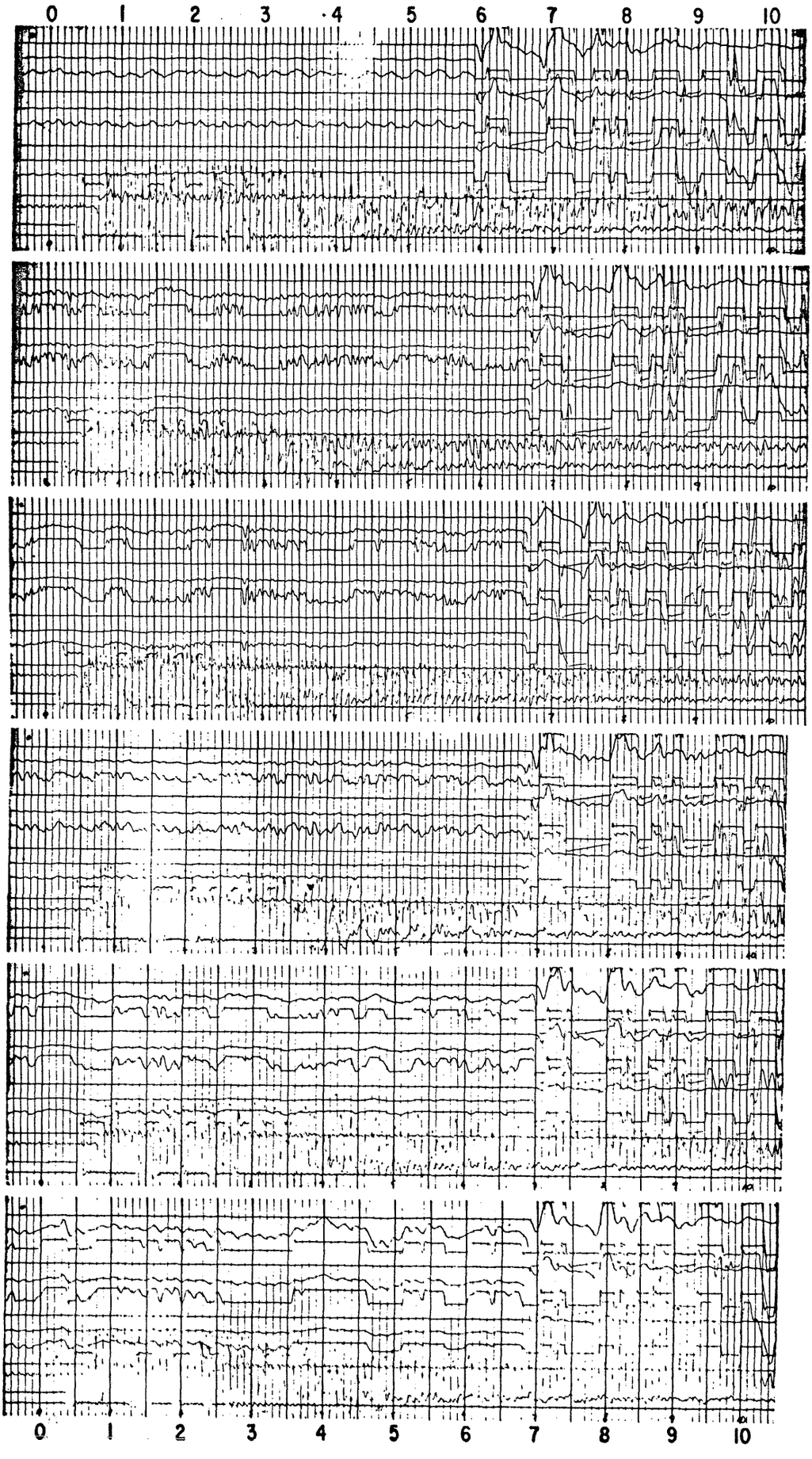
KB 1500 m



YELLOWTAIL - 1

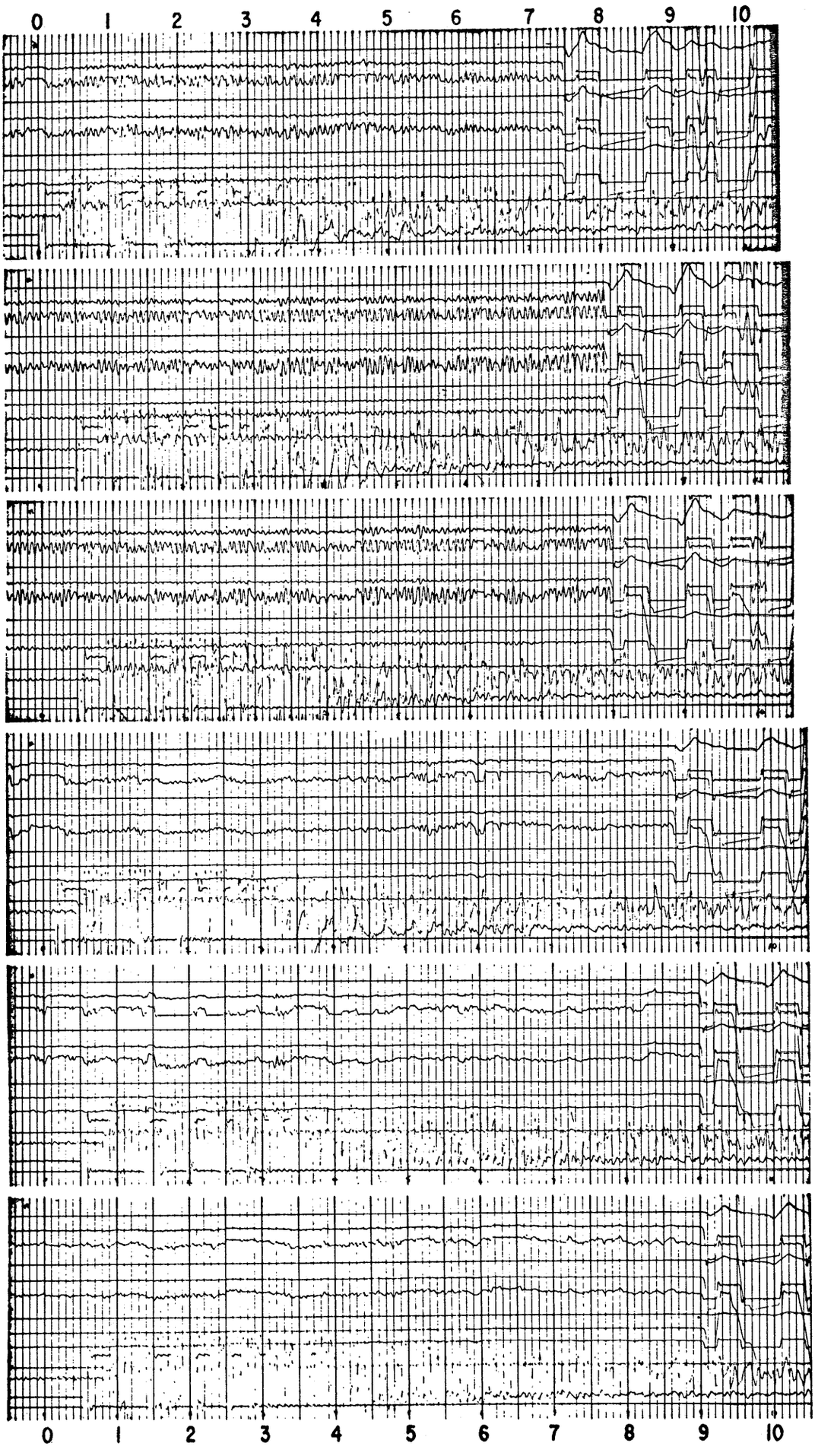
WELL VELOCITY RECORD

3-11-81



YELLOWTAIL - 1

WELL VELOCITY RECORD 3-11-81



YELLOWTAIL - 1

WELL VELOCITY RECORD

3-11-81

REC. 9

KB 2450m

REC. 10

KB 2450m

REC. 11

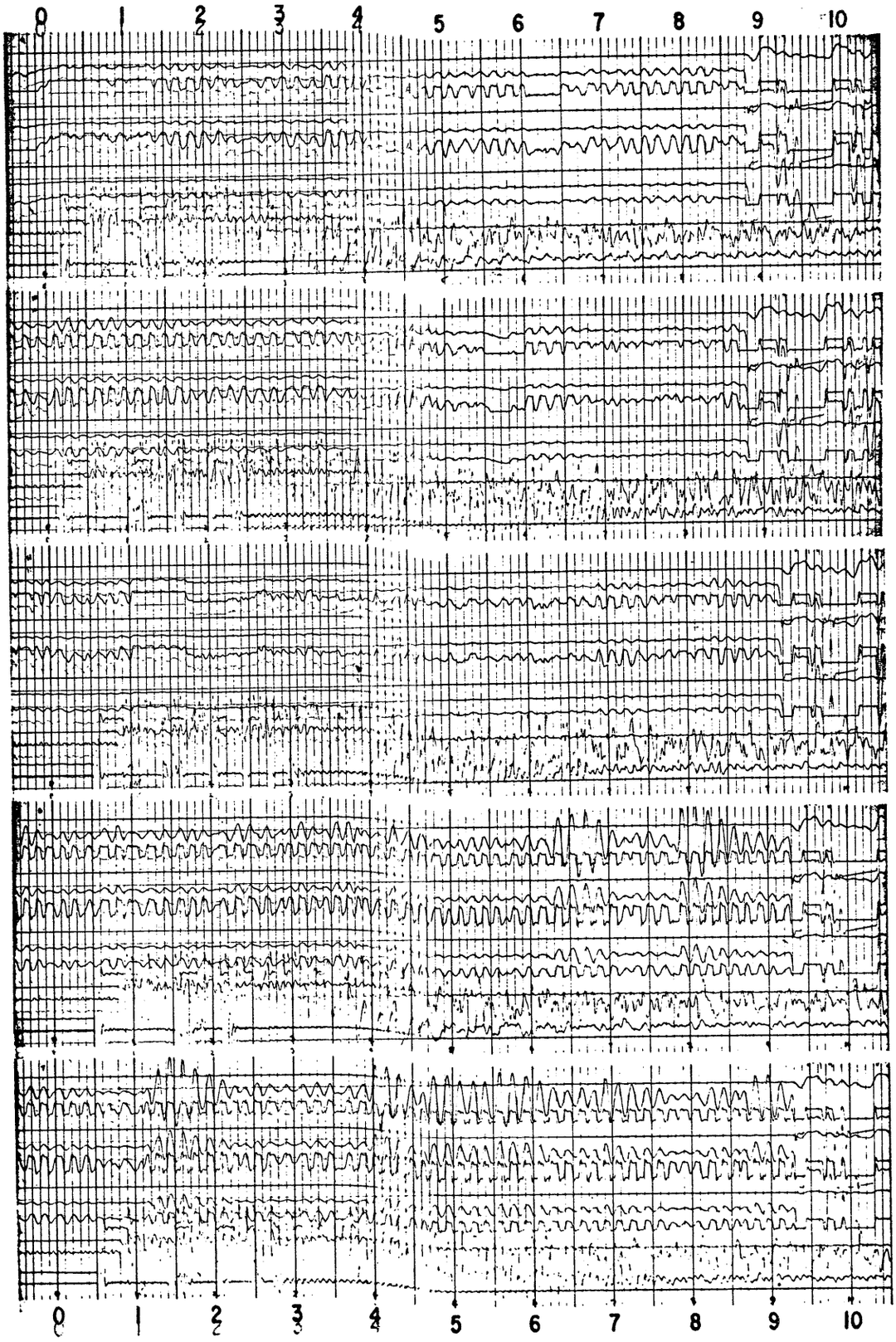
KB 2450m

REC. 6

KB 2500m

REC. 7

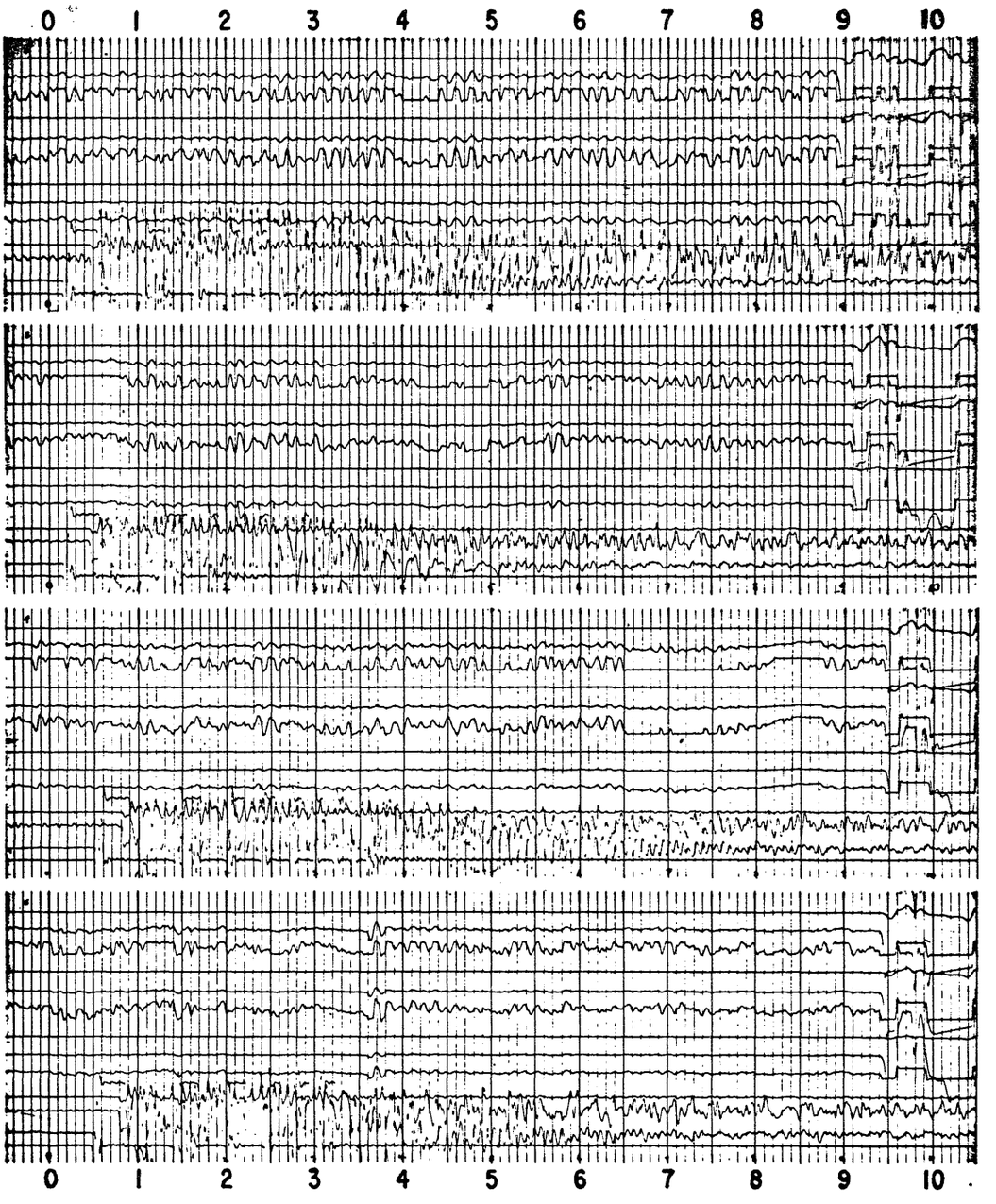
KB 2500m



YELLOWTAIL - 1

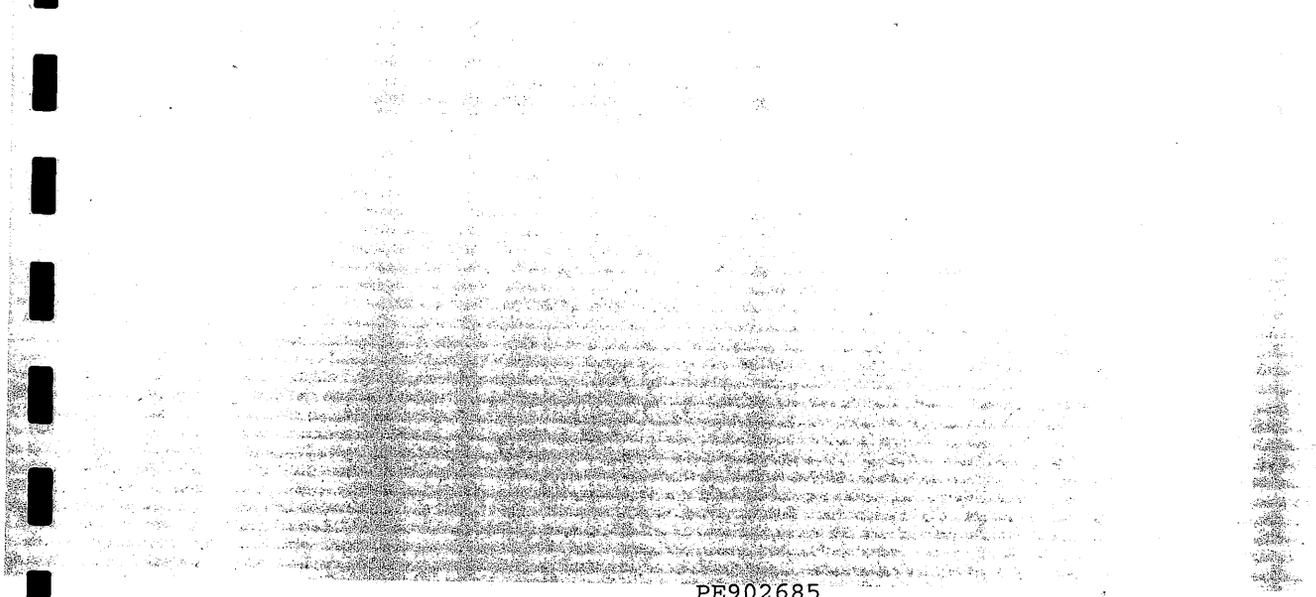
WELL VELOCITY RECORD

3-11-81



Dwg. 2054/OP/8

ENCLOSURES



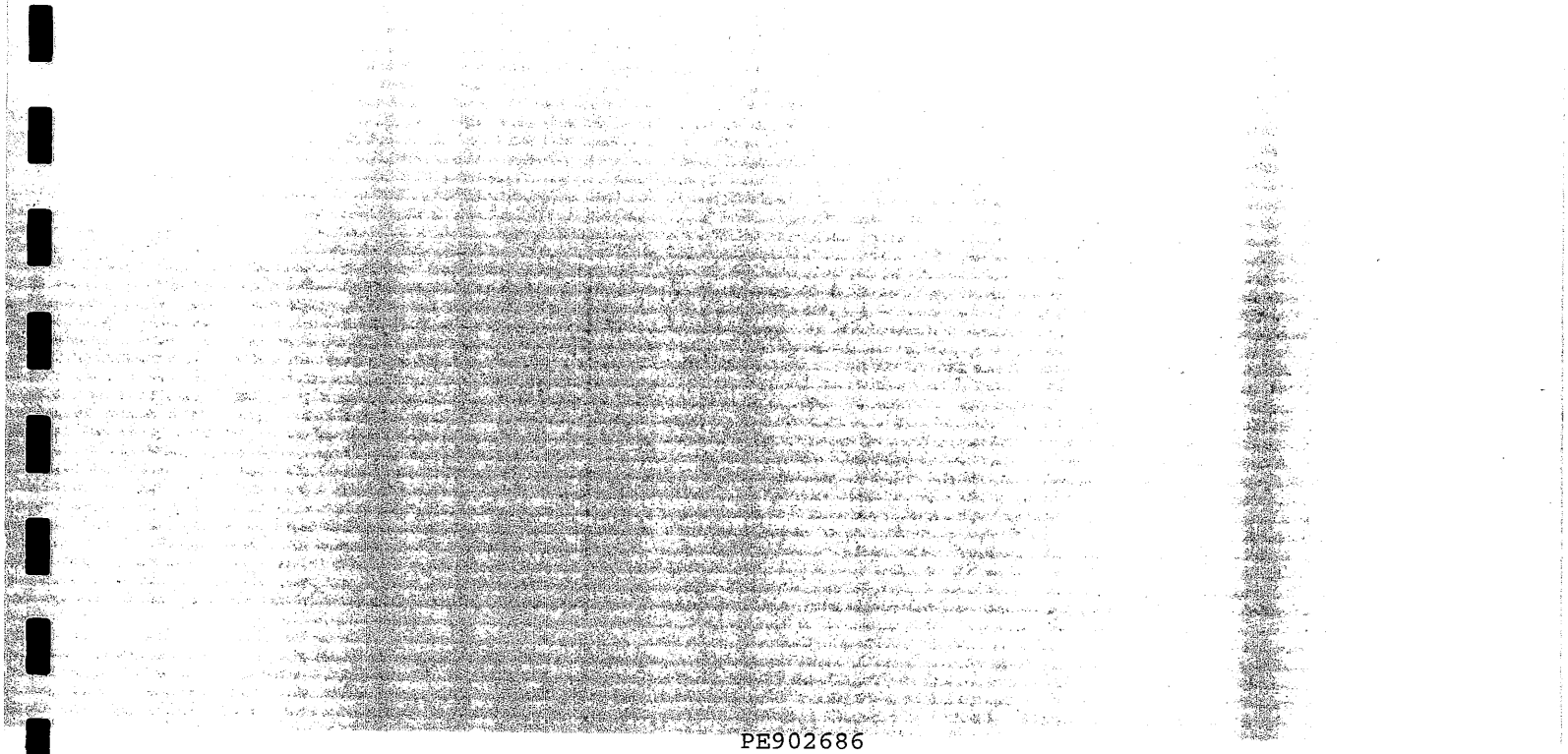
PE902685

This is an enclosure indicator page.
The enclosure PE902685 is enclosed within the container PE902684 at this location in this document.

The enclosure PE902685 has the following characteristics:

ITEM_BARCODE	= PE902685
CONTAINER_BARCODE	= PE902684
NAME	= Structure Map Depth to Top of Latrobe Seismic Marker
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= HRZN_CNTR_MAP
DESCRIPTION	= Structure Map Depth to Top of Latrobe Seismic Marker, Most Likely Case, (enclosure from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	= 30/04/82
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= Yellowtail-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC

(Inserted by DNRE - Vic Govt Mines Dept)



PE902686

This is an enclosure indicator page.
The enclosure PE902686 is enclosed within the container PE902684 at this location in this document.

The enclosure PE902686 has the following characteristics:

ITEM_BARCODE	= PE902686
CONTAINER_BARCODE	= PE902684
NAME	= Yellowtail prospect Geological Cross Secton A-A'
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Yellowtail prospect Geological Cross Secton A-A' (enclosure from WCR)
REMARKS	=
DATE_CREATED	= 31/04/82
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= Yellowtail-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC

(Inserted by DNRE - Vic Govt Mines Dept)

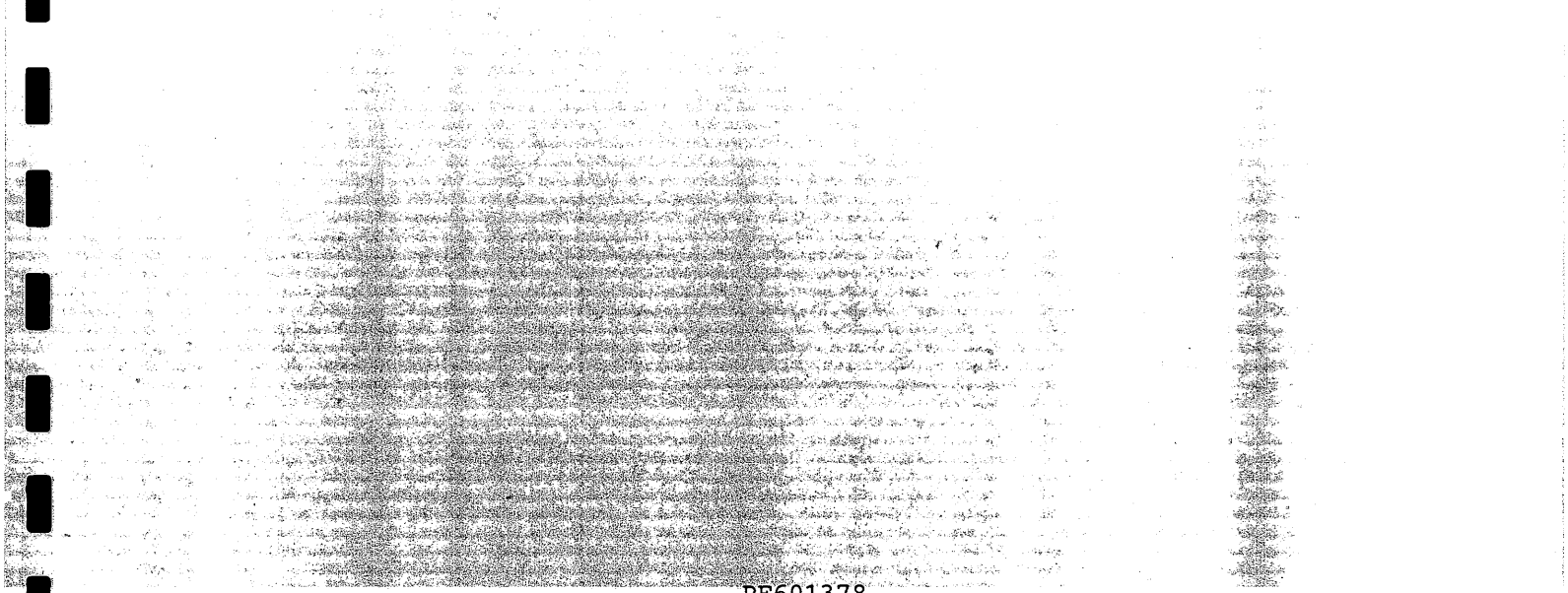
PE902687

This is an enclosure indicator page.
The enclosure PE902687 is enclosed within the container PE902684 at this location in this document.

The enclosure PE902687 has the following characteristics:

ITEM_BARCODE	= PE902687
CONTAINER_BARCODE	= PE902684
NAME	= Time Depth Curve - Velocity Data
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time Depth Curve - Velocity Data (enclosure from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	= 31/12/81
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= Yellowtail-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC

(Inserted by DNRE - Vic Govt Mines Dept)



PE601378

This is an enclosure indicator page.
The enclosure PE601378 is enclosed within the container PE902684 at this location in this document.

The enclosure PE601378 has the following characteristics:

ITEM_BARCODE	= PE601378
CONTAINER_BARCODE	= PE902684
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Well Completion Log (enclosure from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	= 9/11/81
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= Yellowtail-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC

(Inserted by DNRE - Vic Govt Mines Dept)

PE905747

This is an enclosure indicator page.
The enclosure PE905747 is enclosed within the container PE902684 at this location in this document.

The enclosure PE905747 has the following characteristics:

ITEM_BARCODE	= PE905747
CONTAINER_BARCODE	= PE902684
NAME	= Sonic Calibration Curve
BASIN	= GIPPSLAND BASIN
PERMIT	= VIC/L5
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Sonic Calibration Curve (enclosure 5 from WCR) for Yellowtail-1
REMARKS	=
DATE_CREATED	= 28/02/82
DATE_RECEIVED	=
W_NO	= W756
WELL_NAME	= YELLOWTAIL-1
CONTRACTOR	= SCHLUMBERGER
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA PTY LTD

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