W522

Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

FLOUNDER-1 (G.B.)

WELL SUMMARY

1 Folio No	2 Referred to	3 Date	4 Clearing Officer's Initials	1 Folio No.	2 Referred to	3 Date	4 Clearing Officer's Initials

FILE COVER INSTRUCTIONS FOR ACTION OFFICERS

(1) FOLIO NUMBERS: Each subject paper attached to a file is to be given a consecutive number by the attaching officer. Papers must not be removed from or attached to a file without approval.

(2) REFERRAL TO OTHER OFFICERS: When an Officer completes action on the file and further action is required by some other Officer, please initial Column (4) and on the next vacant line, enter the relevant folio number in Column (1), indicate to whom the file is to be forwarded in Column (2) and record the date in Column (3).

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LOCATION

EARLIER FILES	LATER FILES	RECORDS DISPOSITION

RELEVANT FILES

File No.	Subject

SYMBOLS FOR ACTION OFFICERS

EXECUTIVE

Secretary	SEC
Deputy Secretary	DS
Executive Director Portfolio Management	EDPM
Executive Director Performance Evaluation	EDPE
Executive Director Primary Industries and Chief Scientist	EDPI,CS
Executive Director Catchment Mgt & Sustainable Agriculture	EDCMSA
Executive Director Minerals and Petroleum	EDMP
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Manager Business Management Parks, Flora & Fauna	MBMPFF
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Director Resources & Reform	DRR
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Valuer General	VG
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Director Water Agencies	DWA
Manager Portfolio Coordination	MPC
Manager Environmental Policy	MEP
Manager Policy Support	MPOS
Director Media	DM

FLOUNDER-1

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COMPLETION REPORT

FLOUNDER 1, FLOUNDER 2 & FLOUNDER 3.

GENERAL

	Flounder 1 Gippsland Basin, Vic.	Flounder 2 Gippsland Basin, Vic.	Flounder 3 Gippsland Basin, Vic.
Location			
Shot Point	5325	2074	142
Line	EG-67	EC-142	G69A-262
Lease	Vic. P-1	Vic. P-1	Vic. P-1
Latitude	38° ~~25' 29"~~ S.	38° 19' 17" S.	38° 18' 58" S.
Longitude	148° 25' ~~52~~ 29 E. See logs	148° 26' 53" E.	148° 28' 23" E.
Elevation	Rotary table above mean sea level		
	93'	99'	99'
Water Depth	287'	326'	363'
Total Depth	11,740'	9321'	8634'
Spud Date	19 July, 1968	18 February, 1969	24 April, 1969
Completion Date	11 October, 1968	24 March, 1969	14 May, 1969
Well Status	Flounder 1, 2 and 3 were abandoned as oil discoveries		
Casing & Plugs	See Completion Log		
Cores			
No. Cut	10	5	4
Total footage	260'	165'	80'
Feet recovered	232'	108'	58'
% recovery	89.3%	65.5%	72.5%
	(See Completion Log)		
Electric Logs	I.E.S. 898-11310'; Sonic 898-11300';Dipmeter 980-10,007';FDC 7800-8800';MLL 8100-8500', 9966-11,151';GRN 7800-8800' Velocity Survey	I.E.S. 881-9321'; Sonic 881-9320';FDC 2411-9319';Dipmeter 2411-9320'	I.E.S.968-8635' Sonic 968-8620' FDC 2457-8635.'
Mud Logs	Mud logging by Exploration Logging Company		
	955-11,740'	975-9321'	1010-8634'

Tests:

Flounder 1

15 wire line tests were run in Flounder 1 with 4 successful tests recovering gas and oil at 8296', 8314', 8330' and 8395'. Filtrate was recovered at 10,324' and five tight tests were

run at 3971', 8212', 10,059', 10,956', and 11,097'. Mis-runs due to equipment failure occurred at 8217', 8296', 10,956', 11,097'.

One DST was run through perforations at 8314-15'and 8330-32'. In order to meet requirements for refinery tests,only seven barrels of congealed waxy oil of 46.7° API gravity and a 72°F pour point was recovered before the test was terminated.

Flounder 2

Five wireline tests were run in Flounder 2 with gas and oil, or gas and condensate being recovered at 7012', 7021', 8329'. Water was recovered at 9262'and an FIT at 7014'had no recovery.

Flounder 3

Two FIT's at 8399'and 8415'recovered gas and oil and one FIT at 8426' recovered filtrate.

(See Completion Log for test details).

GEOLOGICAL SUMMARY

FORMATION TOPS

Flounder 1	Gippsland formation	Ocean Floor
	Lakes Entrance formation	6268 (-6175)
	Latrobe Marine Eocene	6325 (-6232)
	M. diversus	6325 (-6232)
	L. balmei	7450 (-7357)
	Upper Cretaceous	9940 (-9847)
Flounder 2	Gippsland formation	Ocean floor
	Lakes Entrance formation	6413 (-6314)
	Latrobe Marine Eocene	6460 (-6361)
	M. diversus	6460 (-6361)
	L. balmei	
Flounder 3	Gippsland formation	Ocean floor
	Lakes Entrance formation	6525 (-6426)
	Latrobe Marine Eocene	6550 (-6451)
	M. Diversus	6550 (-6451)
	L. balmei	7430 (-7331)

GEOLOGY OF THE FLOUNDER FIELD.

General

The Flounder field is located approximately 9 miles northeast of the Halibut and 10 miles south of the Tuna field. It is approximately 36 miles from shore. Flounder 1, the discovery well, was drilled to test intra-Latrobe Sands near the crest of an east-west anticlinal structure as delineated by seismic mapping. The well was spudded on July 19, 1968 and was completed as an abandoned oil well on October 11, 1968. Two stepouts, Flounder 2 and 3 were drilled in 1969 as confirmation wells. Both encountered the intra-Latrobe reservoir discovered in Flounder 1. Flounder 2 also encountered a volatile oil reservoir occurring in a point bar braided stream sequence near the top of the Marine Eocene Section.

Structure

The structure on the top of the intra-Latrobe pay shows Flounder to be an east-west trending anticline. Apparent west dip of 4-5° is slightly steeper than seen in other intra-Latrobe fields.

At Flounder, one unconformity occurs at the top of the Marine Eocene Latrobe and another near the M. diversus - L. balmei boundary. A structure map at the top of the Latrobe has been made and is included in this report.

The intra-Latrobe reflection, on which the Top of Pay Structure Map was based originates from an interbedded coal-sand-shale sequence some 600 to 700' above the oil. No mappable reflection event is generated at the top of the braided stream sand which reservoirs the oil. Log correlations between the three wells indicate a thinning of this interbedded section to the east, but a thinning of the section between the lowest coal and the top of the pay to the west (see enclosures). Because of the necessity to obtain as accurate a structural picture as possible this situation presents two problems.

Firstly, the amplitude and frequency of the mapped reflection changes slightly due to the thickness variation in the interbedded section A point of consistent reflection character was carefully picked and mapped over the whole field. This represented as close an approximateion to true structural configuration as could be mapped taking into account the resolution available with this quality data. When tied back to the three wells this structural map matched Flounder 2 and 3 as correlated at the base of the interbedded section but in Flounder-1 was some 40' low to the same point. It was assumed that the log correlations were correct and the map was adjusted to compensate for this difference. This final adjusted map represented the structural configuration of the deepest coal.

Secondly, a simple isopach was constructed of the interval between the deepest coal and the top of the braided stream oil sand using the well data. This was then cross contoured with the adjusted structure map to obtain the Top of Pay Structure Map. Errors that exist in this structure map should not be of sufficient magnitude to be significant.

Stratigraphy

The age of the 11,350' of sediments penetrated in the Flounder field ranges from Upper Cretaceous to Miocene. The Miocene Gippsland Formation is composed chiefly of marl, calcarenite and micritic limestone. The Oligocene Lakes Entrance Formation is predominantly soft, light grey marl. Neither of these formations is of interest as no significant hydrocarbon shows were encountered in these horizons.

The 5415' of sediments below the base of the Oligocene penetrated by Flounder 1 are Early Eocene, Paleocene and Upper Cretaceous in age. The three Flounder wells, Turrum 1 and the two Tuna wells are unique when compared to other wells in Gippsland Basin, where the "Latrobe Complex" underlying the marine Lakes Entrance consists of continental type sediments. At Flounder the marine Lakes Entrance overlies a section of marine sediments upper diversus (Early Eocene) in age and equivalent in time to continental "Latrobe Complex" sediments in other parts of the basin. From regional studies now in progress in Gippsland Basin it appears, after deposition of the Lower M. diversus sediments uplift occured in the Flounder - Tuna area and erosion by channeling removed the Lower M. diversus section and locally, some of the L. balmei sediments. This was followed by an encroachment of the seas depositing marine shales with local sand bodies, or in general, marine channel filling. In the Flounder area the marine section immediately below the base of the Lakes Entrance is referred to as the marine Eocene section or the M. diversus and the term"Latrobe Complex"is reserved for the normal continental section found elsewhere in the basin.

Enclosures:

Structure map Top of Latrobe
Structure map Top of Intra-Latrobe Pay
Structure Section Flounder Field
Stratigraphic Section Flounder Field
Completion Logs Flounder 1, Flounder 2, Flounder 3.
Time Depth Curves Flounder 1, Flounder 2, Flouder 3

PE905269

This is an enclosure indicator page.
The enclosure PE905269 is enclosed within the container PE904913 at this location in this document.

The enclosure PE905269 has the following characteristics:

ITEM_BARCODE	= PE905269
CONTAINER_BARCODE	= PE904913
NAME	= Contour Map, Top of Latrobe
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Flounder-1 Structure Contour Map on Top of Latrobe. Contour Interval = 100 feet. Enclosure from section 1.0 of Well Summary.
REMARKS	= Belongs to the completion report for Flounder -1, -2, -3.
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Esso Exploration and Production Australia Inc.
CLIENT_OP_CO	= Esso Exploration and Production

(Inserted by DNRE - Vic Govt Mines Dept)

PE905270

This is an enclosure indicator page.
The enclosure PE905270 is enclosed within the container PE904913 at this location in this document.

The enclosure PE905270 has the following characteristics:

ITEM_BARCODE	= PE905270
CONTAINER_BARCODE	= PE904913
NAME	= Structure Map
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Flounder Field Structure Map Top of Intra-Latrobe Pay. Enclosure from section 1.0 of Well Summary.
REMARKS	= Belongs to the completion report for Flounder -1, -2, -3.
DATE_CREATED	= 30/06/1969
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Esso Exploration and Production Australia Inc.
CLIENT_OP_CO	= Esso Exploration and Production

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PE905271

This is an enclosure indicator page.
The enclosure PE905271 is enclosed within the container PE904913 at this location in this document.

The enclosure PE905271 has the following characteristics:

ITEM_BARCODE	= PE905271
CONTAINER_BARCODE	= PE904913
NAME	= Structure Section Flounder Field
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Structure Section Flounder Field (Well Correlation between Founder -1, -2 and -3). Enclosure from section 1.0 of Well Summary.
REMARKS	= Belongs to the completion report for Flounder -1, -2, -3.
DATE_CREATED	= 31/08/1969
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Esso Exploration and Production Australia Inc.
CLIENT_OP_CO	= Esso Exploration and Production

(Inserted by DNRE - Vic Govt Mines Dept)

PE905272

This is an enclosure indicator page.
The enclosure PE905272 is enclosed within the container PE904913 at this location in this document.

The enclosure PE905272 has the following characteristics:

ITEM_BARCODE	= PE905272
CONTAINER_BARCODE	= PE904913
NAME	= Flounder Field Stratigraphic Section
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Flounder Field Stratigraphic Section (Well Correlation between Flounder -1, -2 and -3). Enclosure from section 1.0 of Well Summary.
REMARKS	= Belongs to the completion report for Flounder -1, -2, -3.
DATE_CREATED	= 30/06/1969
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Esso Exploration and Production Australia Inc.
CLIENT_OP_CO	= Esso Exploration and Production

(Inserted by DNRE - Vic Govt Mines Dept)

PE902874

This is an enclosure indicator page.
The enclosure PE902874 is enclosed within the container PE904913 at this location in this document.

The enclosure PE902874 has the following characteristics:

ITEM_BARCODE	= PE902874
CONTAINER_BARCODE	= PE904913
NAME	= Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time Depth Curve
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE603211

This is an enclosure indicator page.
The enclosure PE603211 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603211 has the following characteristics:

ITEM_BARCODE	= PE603211
CONTAINER_BARCODE	= PE904913
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Flounder 1 Well Completion Log (Induction-Electrical Log). From section 1.0 of Well Summary Folder.
REMARKS	=
DATE_CREATED	= 28/08/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

2.0 WELL SUMMARY

FLOUNDER-1 WELL SUMMARY

Type of Well: Exploratory.

Purpose of Well: Flounder 1 well was located approximately 9 miles north-east of Halibut 1 and 9 miles south of Tuna 1.

Structure as seismically mapped on the Latrobe Delta No.5 Reflection, approximately 1150 feet below the top of Latrobe, is a faulted anticline. The anticlinal axis forms an arcuate pattern convex to the south. Three separate culminations occur along the axis, with the Flounder well being on the westernmost and largest. The faulting consists of two major down to the north normal faults either side and trending parallel to the anticlinal axis, and several minor transverse normal faults. As mapped on this horizon the structure is approximately 14 miles long, 2 to 3 miles wide, with about 1000 feet of vertical closure.

Two interpretations exist for the top of Latrobe, depending on the interpretation of channelling seen on the seismic to the south-east of the Flounder location. Assuming the channelling is intra-Latrobe, the structure is a dome with about 200 feet of vertical closure and an area of 5 square miles. If the channelling is interpreted as Oligocene the structure has a closure of about 500 feet. No faulting is observed at this horizon.

Well Statistics:

Status: Plugged and abandoned.

Location: Latitude 38° 18' 52" S
Longitude 148° 25' 29" E
Shot Point 5325, Line ET.67

Drilling Unit: Ocean Digger.

Elevation: Rotary Table 93 feet above mean sea level.

Water Depth: 287 feet.

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Spudded: July 10, 1968.

Completed: October 11, 1968.

Operation Time: 94 days.

Total Depth: 11,740 feet.

Casing:

30"	at	499 feet.
20"	at	898 feet.
13 3/8"	at	2556 feet.
9 5/8"	at	9957 feet.

Plugs: Plugs were set over the following intervals:

Approx. 150 ft plug	below	11,307 ft
150 ft plug	at	11,307 ft
150 ft plug	at	11,155 ft
300 ft plug	at	9,920 ft
200 ft plug	at	8,370 ft
200 ft plug	at	500 ft.

Mud Logging: Exploration Logging logged the well from 950 feet to total depth.

Electric Logging:

IES	Run 1	898 - 2592 feet
	Run 2	2558 - 8901 feet
	Run 3	8200 -10006 feet
	Run 4	9962 -11310 feet
FDCGR	Run 1	2558 - 8900 feet
	Run 2	8700 -10007 feet
	Run 3	9964 -11312 feet
SGR	Run 1	898 - 2590
Sonic	Run 2	2558 - 8892 feet
	Run 3	8700 -10004 feet
	Run 4	9962 -11307 feet
CDM	Run 1	900 - 2589 feet
	Run 2	2556 - 8899 feet
	Run 3	8700 -10004 feet
	Run 4	9957 -11307 feet
MLL	Run 1	8100 - 8500 feet
GRN	Run 1	8100 - 8600 feet
CBL	Run 1	8000 - 8950 feet

Logs were not run below 11,307 feet because a plug was set below this depth prior to logging.

Coring: Ten conventional cores were cut. Total footage cut was 260 feet and recovery was 232 feet or 89%.

120 Sidewall cores were cut with a recovery of 72.

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Hydrocarbons:

The top of the Latrobe Delta Complex was encountered at 7183 feet. The section down to 8292 feet consisted of sandstone, siltstone, shale and coal, with high gas readings being recorded only in association with coal. Sandstone with high gas readings was encountered from 8292 to 8406 feet. No cores were taken in this section but log analysis indicates tight section, probably with gas from 8206 to 8294 feet and an oil zone from 8294 to 8406 feet (nett 92 feet).

Log analysis indicates porosities are in the vicinity of 13% in the gas zone, with porosities in the oil zone ranging from 20 to 25%.

Below this zone, shows were observed from gas logs and cores in following zones:

10,956 - 10,963 feet	-	gas kick.
11,083 - 11,092 feet	-	gas kick.
11,115 - 11,133 feet	-	7½ foot core showed good stain, odour, fluorescence and cut.
11,320 - 11,340 feet	-	Gas kick, with faint cut, fluorescence, stain and odour.
11,450 - 11,465 feet	-	gas kick, fluorescence and stain and cut.
11,657 - 11,672 feet	-	gas kick.
11,726 - 11,734 feet	-	gas kick.

10,956 - 10,963 and 11,115 - 11,133 feet are probable gas zones. 11,083 - 11,092 feet occurs in a major shale unit.

Electric logs were not run below 11,307 feet; therefore further interpretation on the four zones below this depth cannot be given.

Stratigraphy:

Formation	Age	Top (RT)	Subsea	Thickness
Water		93 ft	0	287 ft
Gippsland	Miocene and younger.	380 ft	- 287 ft	5950 ft
Lakes Entrance	Oligocene	6330 ft	-6237 ft	853 ft
Latrobe Delta Complex	Eocene -Paleocene -U. Cretaceous.	7183 ft	-7090 ft	4557+ft

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Gippsland Formation

950 - 6330 feet: Calcarenite and marl. Calcarenite: grey white, medium grained.
Marl: light grey, soft, fossiliferous, slightly silty and shaley.

Lakes Entrance Formation

6330 - 7183 feet: Siltstone and shale.
Siltstone: medium to dark brown, slightly calcareous, fossiliferous, glauconitic, abundant muscovite and biotite.
Shale: light to dark grey, pyritic.

Latrobe Delta Complex

7183 - 8078 feet: Interbedded sandstone, siltstone, shale and coal.
Sandstone: light grey, fine to coarse grained, firm, dolomitic, quartzose.
Siltstone: brown grey, hard, contorted, micaceous, trace pyrite, shaley in part.
Shale: light to dark brown, hard, silty, carbonaceous.
Coal: black, hard.

8078 - 8292 feet: Shale: dark brown grey, firm, silty, massive, pyritic, carbonaceous, dolomitic.

8292 - 8406 feet: Sandstone with minor shale.
Sandstone: grey, medium to granule size.
Shale: dark grey to brown, micaceous, carbonaceous, silty.

8406 - T.D. Mainly shale with interbedded sandstone and siltstone and some coal.
Shale: black, silty, carbonaceous, pyritic, micaceous, hard.
Sandstone: light grey, hard, fair sorting, fine to medium grained, argillaceous, micaceous.
Siltstone: medium grey, hard, tight, sandy and shaley, micaceous, dolomitic, carbonaceous.
Coal: black, hard.

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Melbourne
MZ:JHM
17.10.68

Testing:

A total of 15 wireline formation tests were run. Of these 11 were successful, and details are as follows:

F.I.T. No. 1	8395 feet	Recovered 65.1 c. ft gas, 10,300 ccs oil, 2000 ccs mud.
F.I.T. No. 2	8212 feet	Tight.
F.I.T. No. 3	3971 feet	Recovered 0.55 c. ft gas 150 ccs mud. 6200 ccs filtrate.
F.I.T. No. 4	8296 feet	Failed.
F.I.T. No. 5	8217 feet	Tight.
F.I.T. No. 6	8296 feet	Recovered 10,000 ccs oil, 21.6 c. ft gas 300 ccs mud.
F.I.T. No. 7	11097 feet	Failed.
F.I.T. No. 8	11097 feet	Tight.
F.I.T. No. 9	10956 feet	Failed.
F.I.T. No.10	10956 feet	Failed.
F.I.T. No.11	10956 feet	Recovered 750 ccs water.
F.I.T. No.12	10059 feet	Tight.
F.I.T. No.13	10324 feet	Recovered 0.3 c. ft gas, 9500 ccs water.
F.I.T. No.14	8330 feet	Recovered 2225 ccs fluid oil.
F.I.T. No.15	8314-15 ft	Recovered 311.3 c. ft gas, 6.4 galls oil.

A modified drill stem test was also run. Details are given below:

Intervals Tested :- 8314 - 8315 feet
8330 - 8332 feet

Open 42 minutes. Flowed water cushion at 150 barrels/hour through $^{5}/_{8}$" surface choke, with 800 lbs pressure. Water cushion to surface in 12 minutes. Displaced 112 barrels of fluid, containing approximately 9 barrels of oil, 46.7° A.P.I., pour point about 70°.

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Melbourne
MZ:JHM
24.10.68

DRAFT

Comment: ~~Flounder~~ Flounder No 1 well

Most of the gas shows recorded in the interval 8520-10,006' appear to be associated with coal seams and coaly sections.

~~The~~ An interesting section ~~for~~ from 8206 feet to 8408 feet can be divided into two main zones:-

8206' - 8292'

8292' - 8408'

The 8206' - 8292' consisting of siltstone with some silty sandstone. This sandstone has low permeability although the rock carries fluorescence it is not capable of yielding a hydrocarbon flow.

The interval 8292' - 8408' has a gross thickness of 116 feet which consists of 3 sandstone beds separated by thin shales. The nett thickness of pay is 95 feet. The tests conducted, i. e. No. 6 at 8296 feet and No. 1 at 8395', indicate that this is an oil-bearing zone.

From correlations much between the Tuna and Flounder wells it is seen that this oil zone can be considered as being at about the same stratigraphic position as the deeper hydrocarbon zone in the Tuna well. The upper hydrocarbon zone, which has been encountered in Marlin, Barracouta, Kingfish, Snapper, Halibut and Tuna wells, is not present in the Flounder well due to a change in rock type at the Flounder location.

30/4/68.

3.0 LITHOLOGY

Flounder A1

Lithologic Log.

From Daily Reports

957'-1130' Coquina, brysz.
1130'-1820' Calcarenite, gy wh., m. grd; some coquina
1820'-2360' Marl, v. foss.
2360'-2420' Clay, l. olive gy., calc., fos.
2420'-2600' Marl, l. olive gy., fos.
-3650' Marl, l. gy, s., w. some arg. lo., l. brn gy, m. hd, v. f. to silt sz. debris in arg. matrix, slight to. Gal.
-4630' Marl, l. gy, fos., as above, with some calcilutite:
-5500' Marl as above.
5500'-6320' Marl as above
6320'-6419' Silty sandstone, brown, f. grd, light-
6419'-6449' Core No 1 Rec 30/t.
Siltstone, m. to dk brn, slightly calcareous, fossiliferous, glauc., ab. mica C muse. & biot.).
6449'-6510' Siltstone as above
6510'-6720' Siltstone, as above, 70-100%.
Limestone, orange brn, hd, dense, partly skeletal, fgr, glau.
6720'-6900' Siltstone, as above, and shale, with shale increasing up to 70% towards bottom; grn gy, hd, calc., fos.
6900'-7050' Siltstone, v-f. grd, sdy, as above, with beds of shale.
7050'-7180' Siltstone, as above, w. 25 to 40% wh. sandstone, v. ld, light, v.f. to f. grd, dol. cont, no fluor., no cut, no gas show.
7181'-7215' Core No. 2. Rec. 27 feet
2' Sandstone, l. gy, v.f. to m. grd, tight, dol. cont.
6' Sandstone, gy brn, por., silt to V.C. grd, fri. no show.
19' Shaly siltstone, brn gy, hd. contorted.
7215'-7270' Mainly siltstone, as above with sd & ss no show.
-7442' Siltstone & shale interbedded with scattered sandstone + coal
Sandstone: Consolidated to unconsolidated, fri to granule, mostly fine grained and dolomitic. No show
7440'-7470' 70% Silty shale, light to dark brown, hard.
20% Gal. Trace sand.

7470 - 7520 feet: Silty shale 80%; coal 20%.

7520 - 7580 feet: Silty shale 60%; coal 10 to 20%; sandstone, gy, unconsol., good por. and perm., clean, 20 to 30%.

7580 - 7600 feet: Coal.

7600 - 7710 feet: Silty shale, 30 to 60%; Ss., 70 to 40%.

7710 - 7800 feet: Silty shale, 80 to 10%; coal 20 to 80%; tr. sd.

7800 - 7820 feet: Sandstone as above, 50%; Coal 20%; silty shale 30%.

7820 - 7840 feet: Coal.

7840 - 7960 feet: Sandstone, 50 to 80%; remainder shale & coal.

7960 - 8088 feet: Sandstone, as above, 30 to 50%. Coal 20%.
Silty shale, 30 to 50%.
Significant increase in dol. (5%), fawn to l. brn, sucosic.

Core No. 3, 8088 - 8118 feet, recovered 30 feet -

Arg. siltstone to quartzwacke, dk brn gy, firm to hd, well-compacted, mass. to sub-fiss., mic., scattered carb. lfecks and rare wavy lam., pyr. locally nodular in burrows, dol. v.f. to f. xln in mtx and locally nodular; dk brn mtx of slt and swelling clay; churned bedding and burrows common. No shows.

8118 - 8160 feet: Siltstone, as above, 30 to 60%.
Silty shale, 30%.
Coal cavings, 10 to 20%.

8160 - 8240 feet: Silty shale, slightly sandy.

8240 - 8260 feet: Siltstone, gy to brn gy, s., carb., w. some f. grd silty sandstone; faint fluor. and l. bl. cut.

8260 - 8270 feet: Silty sandstone, w. minor sltst., faint fluor.

8270 - 8300 feet: Siltstone, as above.

8300 - 8310 feet: Siltstone, as above, w. some qtz grns and 30% coal.

8310 - 8320 feet: Sandstone, w. minor sltst and 30% coal.

8320 - 8330 feet: Siltstone, as above, w. minor sd and coal.

8330 - 8378 feet: Sandstone, uncons., qtz, m. to gran. size; occ faint fluor. & bl-y. cut

8378 - 8400 feet: Sandstone, loose m. to granule size qtz, minor silty shale, dk gy to brn, carb. mic.; coal up to 40% at 8400 feet.
No shows.

8400 - 8420 feet: Silty shale to arg. sltst., brn-gy, carb. mic., minor ss and coal.

8420 - 8430 feet: Sandstone loose qtz and dol. aggregates, 50%; rest silty shale, sltst., and coal.

8430 - 8520 feet: Silty shale to sltst., as above, minor ss. and coal.

3.1 CORE/CUTTINGS DESCRIPTION

FLOUNDER-1.

CUTTINGS DESCRIPTION

950 - 6330 feet:	Calcarenite and marl. Calcarenite: grey white, medium grained. Marl: light grey, soft, fossiliferous, slightly silty and shaley.
6330 - 7183 feet:	Siltstone and shale. Siltstone: medium to dark brown, slightly calcareous, fossiliferous, glauconitic, abundant muscovite and biotite. Shale: light to dark grey, pyritic.
7183 - 8078 feet:	Interbedded sandstone, siltstone, shale and coal. Sandstone: light grey, fine to coarse grained, firm, dolomitic, quartzose. Siltstone: brown grey, hard, contorted, micaceous, trace pyrite, shaley in part. Shale: light to dark brown, hard, silty, carbonaceous. Coal: black, hard.
8078 - 8292 feet:	Shale: dark brown grey, firm, silty, massive, pyritic, carbonaceous, dolomitic.
8292 - 8406 feet:	Sandstone with minor shale. Sandstone: grey, medium to granule size. Shale: dark grey to brown, micaceous, carbonaceous, silty.
8406 - T.D.	Mainly shale with interbedded sandstone and siltstone and some coal. Shale: black, silty, carbonaceous, pyritic, micaceous, hard. Sandstone: light grey, hard, fair sorting, fine to medium grained, argillaceous, micaceous. Siltstone: medium grey, hard, tight, sandy and shaley, micaceous, dolomitic, carbonaceous. Coal: black, hard.

. . . . . .

3.2 Side Wall Core Descriptions

SIDEWALL CORE DESCRIPTIONS

FLOUNDER-1

CST RUN #1

	Depths (feet)	Recovery (inches)	Description
1.	7668	1-3/4	Mudstone, dark grey to black, very carbonaceous (<50%), dolomitic, no show.
2.	7575	1¼	Mudstone as above
3.	7485	1	Coal, silty, hard, micaceous, conchoidal fracture.
4.	7467	½	Mudstone, dark grey brown, moderately soft, micaceous, dolomitic.
5.	7329	3/4	Sandy siltstone, medium brown to grey with medium to coarse grains (occasionally very coarse), subangular to subrounded, possible porosity, friable, micaceous, carbonaceous, no shows.
6.	7139		NO RECOVERY
7.	7117	3/4	Sandy siltstone, medium grey brown with very fine quartz sandstone streaks, micaceous, dolomitic
8.	7019	1¼	Mudstone, medium brown grey, soft, micaceous, calcareous
9.	6911	1¼	Sandy siltstone, light grey to brown, soft with very fine quartz grains, micaceous, dolomitic, no shows.
10.	6811	1½	Silty mudstone, medium to dark brown, moderately soft, micaceous, very calcareous.
11.	6728	1½	Siltstone, medium to dark brown, soft, very micaceous, calcareous
12.	6530	3/4	Siltstone as above, moderately hard
13.	6330	1½	Siltstone, medium to dark brown, soft, micaceous, calcareous, slightly sandy (very fine grained)
14.	6289	1½	Marl, medium grey, soft.
15.	6160		NO RECOVERY
16.	6021	1-3/4	Marl as above
17.	5865	1¼	Marl, medium grey, moderately hard
18.	5555	1¼	Marl, medium grey, soft, with occasional calcareous fossil fragments and forams (Robulus?)
19.	5271	1½	Marl, medium grey, soft, with occasional calcareous fossil fragments.
20.	5047	3/4	Marl as above
21.	4794	1	Marl as above
22.	4615	3/4	Marl as above

..2/

	Depths (feet)	Recovery (inches)	Description
23.	4359	1¼	Calcareous siltstone, very little residue after dissolving in acid, glauconitic
24.	3993	1¼	Calcareous siltstone as above
25.	3970	1¼	Calcareous siltstone (Calcarutice), soft, glauconitic, fossiliferous, no shows
26.	3690	1	Marl, medium grey, soft
27.	3443	½	Marl, light brownish grey, soft
28.	3204	1¼	Marl, medium grey, soft, no fossils
29.	2983	1¼	Marl as above
30.	2623	1½	Marl as above

20.8.68

SIDEWALL CORE DESCRIPTIONS

FLOUNDER-1

CST RUN #2

Depths (feet)	Recovery (inches)	Description
7792		NO RECOVERY
7749	½	Sandy siltstone, medium grey, hard, micaceous, carbonaceous, dolomitic, no show.
7831		NO RECOVERY
7860	3/4	Sandy siltstone as above, moderately soft to soft
7960		NO RECOVERY
8031	½	Sandstone, light buff, possible porosity, very fine to occasional coarse grains, moderately soft, friable, poor sorting, very silty, calcareous (?dolomitic). NO SHOWS.
8091	½	Sandy siltstone, medium grey, nil porosity, micaceous, dolomitic, NO SHOWS.
8069		NO RECOVERY.
8337		NO RECOVERY.
8211		NO RECOVERY.
8229		NO RECOVERY.
8705		NO RECOVERY.
8419	½	Sandstone, light brown, very fine to medium, silty, consists of quartz, clear to white, subrounded, and 30-40% siltstone. NO FLUORESCENCE, NO CUT, BROWN OIL (?) STAIN.
8307		NO RECOVERY.
8321		NO RECOVERY.
8203	3/4	Sandstone, medium grey, very silty as above. NO SHOWS.
8267	¼	Siltstone, sandy, medium brown grey, scattered coarse sand grains, moderately soft to moderately hard, non calcareous. NO SHOWS.
8367		NO RECOVERY.
8472	½	Siltstone, sandy, medium brown grey, moderately soft to hard, slightly calcareous, NO SHOWS.
8401		NO RECOVERY.
8426		NO RECOVERY.

..2/

FLOUNDER-1 4 of 4
S.W.C DESCRIPTION.
RUN 2

Depths (feet)	Recovery (inches)	Description
8413		NO RECOVERY
8295	½	Sandstone, light grey, very fine to fine, well sorted, silty (5-10%), subangular to subrounded, strong silver-blue fluorescence.
8455	½	Sandstone, light brown grey, very fine to medium, subangular to subrounded, friable, porous, well sorted quartz, clear to white containing 5-10% siltstone. Strong even silver blue fluorescence and cut. No stain.
8408	1	Sandstone, light grey, very fine to medium, silty, slightly porous, friable, subangular to subrounded, micaceous. Uneven silver blue fluorescence and very weak pale yellow cut. No stain.
8349	½	Sandstone, light brown to buff, porous, friable, very fine to coarse, poor to fair sorting, subangular to subrounded with 25-30% silty material. Strong even silver blue fluorescence and streaming pale yellow cut. No stain.
8541		NO RECOVERY
8604		NO RECOVERY
8385	¼	Sandstone, as above with minor carbonaceous material and trace green silicate. Strong even silver blue fluorescence and cut. No stain.
8873	1½	Sandstone as above. No shows.

20.8.68.

3.3 Core Analysis Report

CORE#1

EXPLORATION LOGGING OF AUSTRALIA, LTD.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437
CABLE: EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO
WELL FLOUNDER A-1
LOCATION/FIELD GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA
REMARKS CUT:30'REC:30', SILTSTONE:MEDIUM DARK GREY-BROWN, MEDIUM HARD, VERY MICACEOUS AND PYRITIC, VERY FOSSILIFEROUS. OCCASIONAL CALCAREOUS STREAK. NO SHOWS

DATE 27-7-68
DEPTH 6419' TO 6449'
GEO-ENGINEER ASHTON

SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME		GRAVITY OIL °API	TOTAL Cl^- G/G	REMARKS
				OIL	WATER			
	6419'							
	6430							
								NO CORE ANALYSIS REQUIRED
	6449'							

ANALYSIS GRAPH

PERMEABILITY MD. o—o
POROSITY % x—x
8 6 4 2 0
40 30 20 10 0

WATER SATURATION % PORE o—o
100 80 60 40 20 0
OIL SATURATION % PORE y x
0 20 40 60 80 100

2 of 10

IRE #2

EXPLORATION LOGGING OF AUSTRALIA, LTD.

A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437 CABLE EXLOGG PERTH

CORE ANALYSIS REPORT

OMPANY ESSO-BHP
ELL FLOUNDER A-1
CATION/FIELD OFFSHORE/GIPPSLAND BASIN
OUNTY STATE VICTORIA
OUNTRY AUSTRALIA

DATE JULY 30, 1968
DEPTH 7187' TO 7215'
GEO-ENGINEER WATT AND ASHTON

EMARKS CUT 28', REC. 27' TOP 2'=HARD, GRAY, VERY ANDY CLAYSTONE, THEN 7' SANDSTONE; VC-CONGLOM-RITIC, VERY DIRTY. BOTTOM 18'=SILTSTONE; VERY ANDY, BROWN, STRONG CURRENT FEATURES, SAND GRAINS O PEBBLE SIZE.

SAND · SILTY SAND · SILTST. · SHALE · LIME · CONGL.

TABULAR DATA — NO SHOWS

NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	DRY BULK DENS.	REMARKS
	7187							
	7189	#	21.5	0	93.5	-	2.07	
	7190							
#	NOTE: SANDSTONE TOO FRIABLE & COARSE TO SHAPE PLUGS, NO PERMEABILITYES OBTAINED.							
	7194	#	18.0	0	105.0	-	2.16	
	7195							
	7200							
	7205							
	7210							
	7215							

ANALYSIS GRAPH

PERMEABILITY MD. o—o
POROSITY % x—x
40 30 20 10 0
WATER SATURATION % PORE o—
100 80 60 40 20
0 20 40 60 80
DENS. 2.0 2.8

CORE #3

EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437 CABLE: EXLOGG, PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL "FLOUNDER A-1"
LOCATION/FIELD OFFSHORE / GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA

DATE AUG. 14, 1968
DEPTH 8088' TO 8118'
GEO-ENGINEER WATT

REMARKS CUT 30', REC. 30' SILTSTONE: ARGILLACEOUS, SANDY, MICAOUS, PYRITIC, CARBONACEOUS, SLIGHTLY DOLOMITIC, INTENSELY BURROWED, BROWN TO GRAY-BROWN. NO SHOWS

SAND · SILTY SAND · SILTST. · SHALE · LIME · CONGL.

TABULAR DATA

CORE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	TOTAL CL' G/G	REMARKS
	NO CORE ANALYSIS REQUIRED							
	8110	0	HORIZONTAL					
	8110	0	VERTICAL					

ANALYSIS GRAPH

PERMEABILITY MD. o—o
POROSITY % x—x 8 6 4 2 0 / 40 30 20 10 0
WATER SATURATION % PORE o—o 100 80 60 40 20
OIL SATURATION % PORE x—x 0 20 40 60 80 10

CORE #4

EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY. VICTORIA PARK. WESTERN AUSTRALIA
PHONE: 61 4437
CABLE: EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL "FLOUNDER A-1"
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA

DATE AUGUST 18, 1968
DEPTH 8275 TO 8297
GEO-ENGINEER WATT

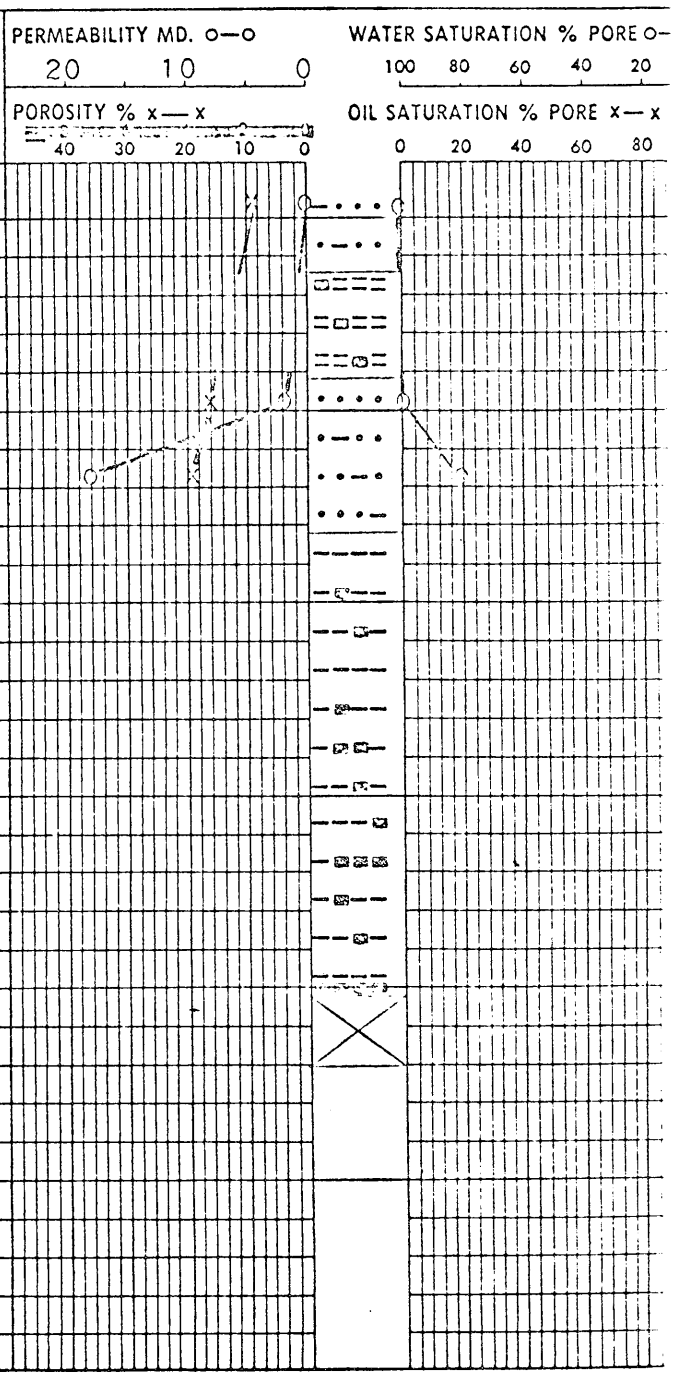
REMARKS CUT 22', REC. 20' 8275-77 SHALY SAND; 8277-79 CARBONACEOUS SILT; 8279-83 BURROWED SAND WITH CARBONACEOUS, SHALY STREAKS; 8283-8295 INTERBEDDED CARBONACEOUS SHALE AND COAL. 8295-97 NO RECOVERY. NO SHOWS

SAND · SILTY SAND · SILTST. · SHALE · LIME · CONGL.

TABULAR DATA

SAMPLE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	DRY BULK TOTAL X CLX XGLX DNSY	REMARKS
1	8275	0	9.3	0	100	–	2.41	
2	8280	4	16.2	0	100	–	2.20	
3	8282	18	19.4	0	80	–	2.18	
	8290							
	8295							
	8297		NO RECOVERY					

ANALYSIS GRAPH



CORE #5

EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service
PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437
CABLE EXLOGG, PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER A-1
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA
REMARKS CUT 30', REC. 22': 9498-9505 SHALEY SILTSTONE & MINOR INTERBEDDED SANDSTONE; 9505-08 SANDSTONE; 9508-14 INTERBEDDED SANDSTONE & SILTSTONE; 9514-20 SHALEY SILTSTONE. NO SHOWS.

DATE AUGUST 26, 1968
DEPTH 9498 FT TO 9528 FT
GEO-ENGINEER ALBERT; CRAIG

SAND, SILTY SAND, SILTST., SHALE, LIME, CONGL.

TABULAR DATA

SAMPLE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	DRY BULK DENSITY	TOTAL CL G/G	REMARKS
1	9507	1.5	11.4	-	-	2.42		
2	9508	0.4	11.3	-	-	2.32		
	9520							
		NO RECOVERY						
	9528							

ANALYSIS GRAPH

PERMEABILITY MD. o—o 3 2 1 0
POROSITY % x—x 8 6 4 2 0 / 40 30 20 10 0
WATER SATURATION % PORE o- 100 80 60 40 20
OIL SATURATION % PORE x—x 0 20 40 60 80

6 of 10

CORE #6

EXPLORATION LOGGING OF AUSTRALIA, LTD.

A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437 CABLE: EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER A-1
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA
REMARKS CUT 13', REC. 12': DK GREY SHALE GRADING TO SILTSTONE; CARBONACEOUS, MICACEOUS, PYRITIC W/STRINGERS, HARD, TIGHT, PART DOLOMITIC SANDSTONE. FLU & CUT FROM BITUMINOUS LAMINAE.

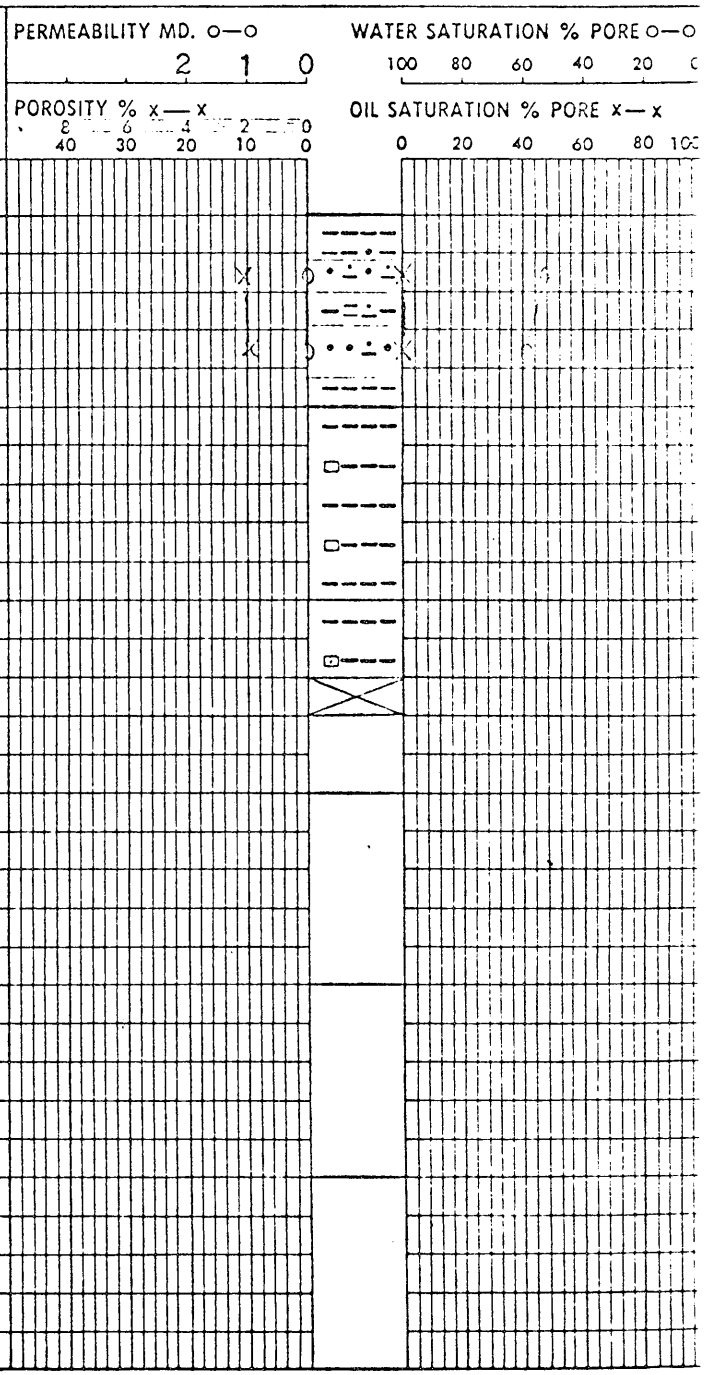
DATE SEPTEMBER 7, 1968
DEPTH 10,395FT TO 10,408 FT
GEO-ENGINEER ALBERT

SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	DRY BULK DENSITY	TOTAL CL⁻ G/G	REMARKS
1	10,396.5	<0.1	10.3	0.0	46.8	2.46		
2	10,398	<0.1	9.7	0.0	41.3	2.50		
	10,407-10,408 NO RECOVERY							

ANALYSIS GRAPH



CORE NO. 7

EXPLORATION LOGGING OF AUSTRALIA, LTD.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437
CABLE: EXLOGG, PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER A-1
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA

DATE SEPT. 13, 1968
DEPTH 11,103 TO 11,133 FT
GEO-ENGINEER D. CRAIG

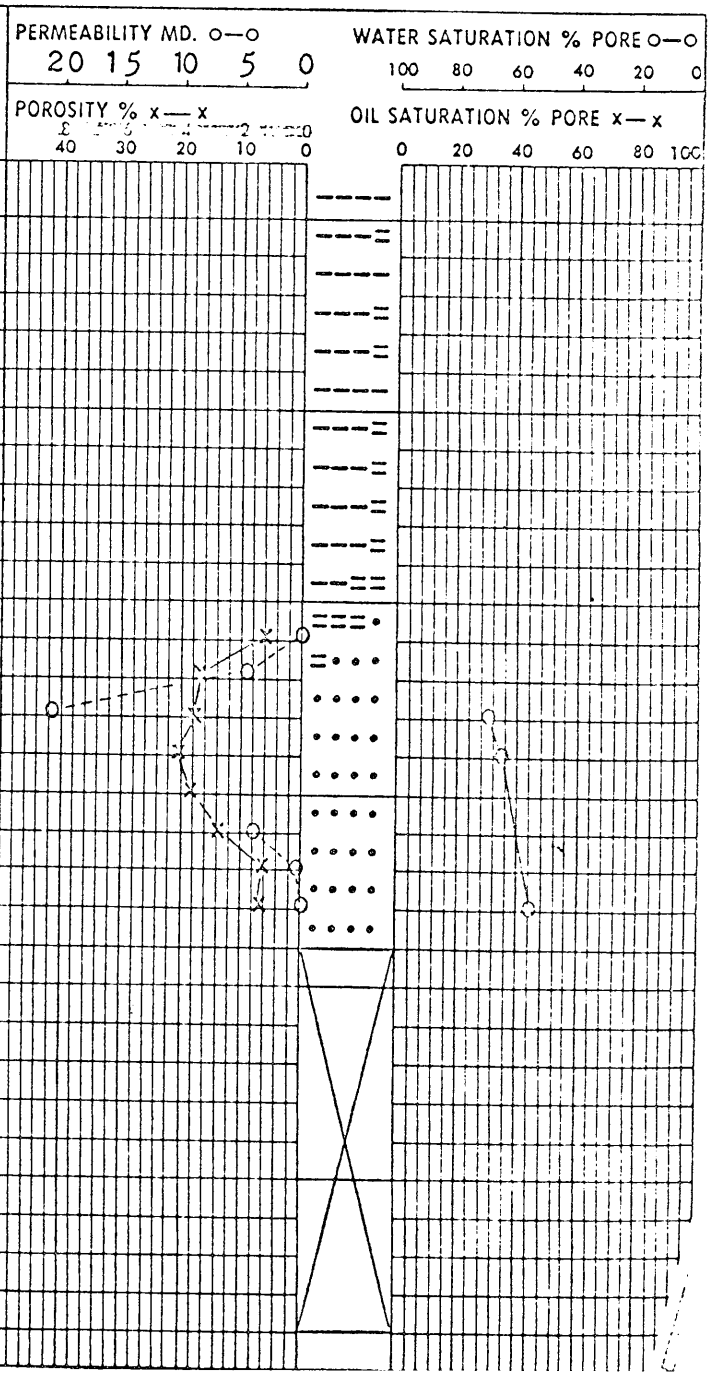
REMARKS CUT 30', REC. 20': 11,103-114 SHALE, BLACK SILTY; 11,114-115 SILTSTONE GRADING TO SANDSTONE; 11,115-123 SANDSTONE, LIGHT GREY, COURSE GRAIN, FRIABLE, YELLOW FLUORESCENCE & GOOD CUT.

SAND · SILTY SAND · SILTST. · SHALE · LIME · CONGL.

TABULAR DATA

DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	DRY BULK GRAIN DENSITY	TOTAL CL G/G	REMARKS
11,115	0	6.6			2.54		
11,116	4.7	17.0			2.22		
11,117	22.1	17.8	TR	69	2.17		
11,118	%	21.2	TR	65	2.10		
11,119	%	19.0			2.12		
11,120	3.9	14.4			2.28		
11,121	0.8	5.8			2.55		
11,122	0	6.1	0	54	2.52		
11,123-133: NO RECOVERY							
% TOO FRIABLE							

ANALYSIS GRAPH



CORE NO. 8

EXPLORATION LOGGING OF AUSTRALIA, LTD.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437 CABLE: EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER A-1
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA

DATE SEPT. 14, 1968
DEPTH 11,133 TO 11,158 FT
GEO-ENGINEER R. ALBERT

REMARKS CUT 25', REC 21': 11,133-139 SANDSTONE, GREY, CONGLOMERATIC, FRIABLE-HARD, YELLOW MINERAL FLUORESCENCE, NO ODOR OR CUT. 11,139-154': SHALE, BLACK, HARD, SILTY.

SAND · SILTY SAND · SILTST. · SHALE · LIME · CONGL.

TABULAR DATA

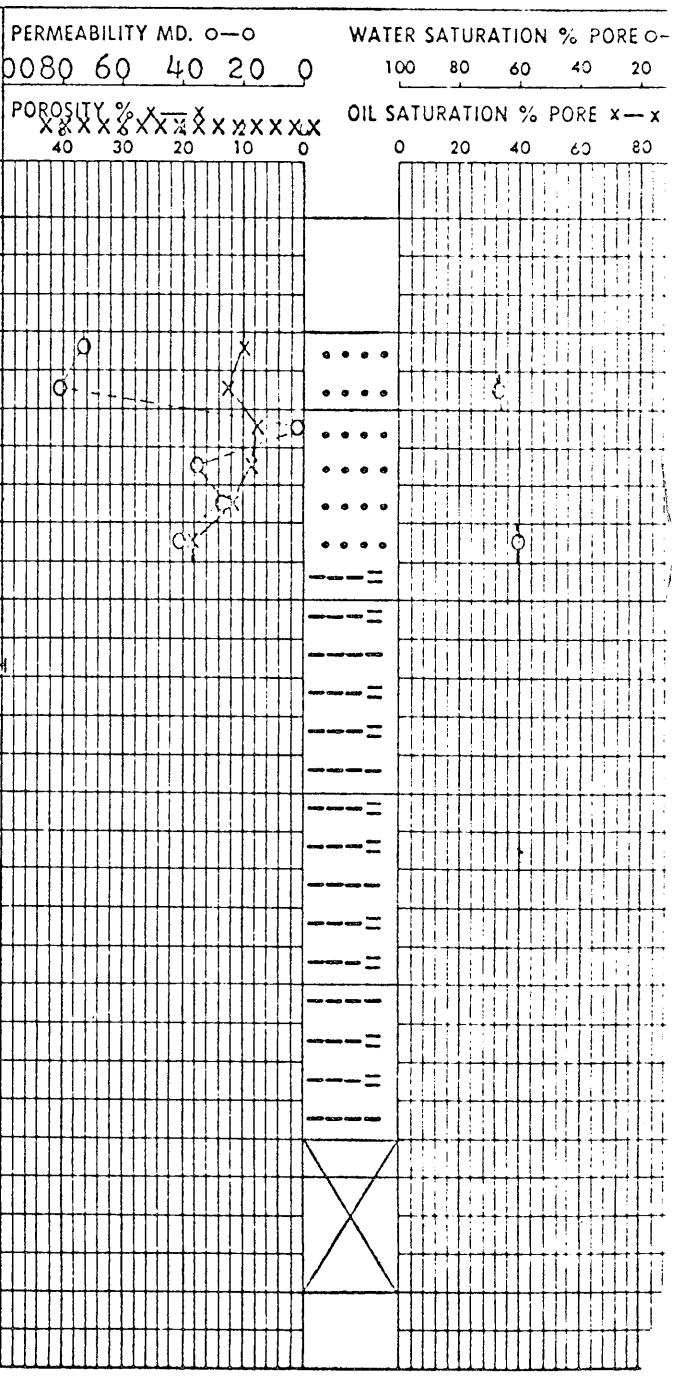
SAMPLE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	DRY BULK GRAIN DENSITY	TOTAL CL⁻ G/G	REMARKS
1	11,133.5	72	9.9			2.43		%
2	11,134.5	92	11.9	0.0	67.5	2.39		#
3	11,135.5	2.7	6.8			2.51		
4	11,136.5	35	8.1			2.48		%
5	11,137.5	25	11.7			2.43		%
6	11,138.5	40	19.1	0.0	59.8	2.22		%

% - VERY FRIABLE, PERM PLUG MOUNTED IN PITCH

- PROBABLE HAIRLINE FRACTURE IN PERM PLUG

11,154-158': NO RECOVERY

ANALYSIS GRAPH



CORE #9

EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRA
PHONE: 61 4437
CABLE: EXLOGG PE.

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL "FLOUNDER 1"
LOCATION/FIELD OFFSHORE / GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA

DATE SEPT. 12, 1968
DEPTH 11,334 TO 11,356
GEO-ENGINEER WATT

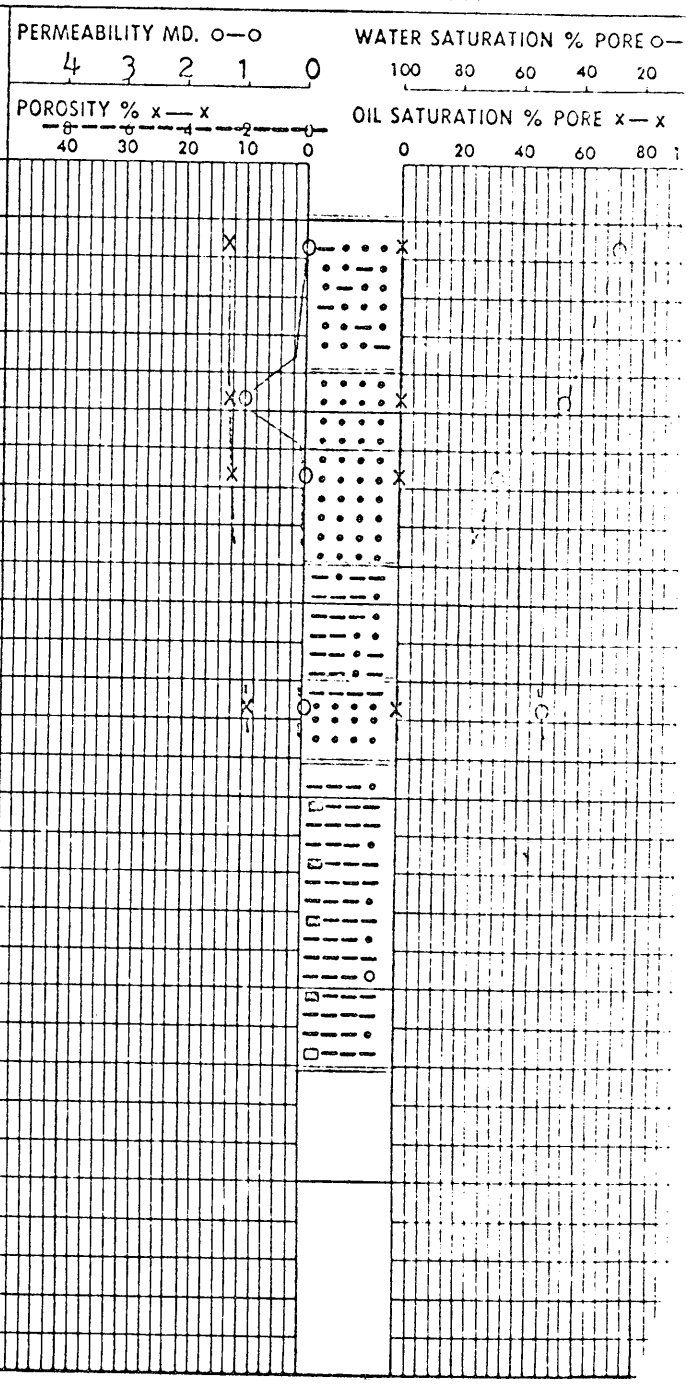
REMARKS CUT 22', REC. 22' 11,334-38: SHALY SAND, 11338-43: SAND WITH SHALE PARTINGS, 11343-46: SANDY SHALE, 11346-48: SHALY SAND, 11348-56: SANDY, CARB. SHALE; ALL WITH MUCH DOLOMITIC CEMENT. SAND HAS STRONG OIL ODOR, BRIGHT ORANGE FLOR., SLIGHT LIGHT, YELLOW-GREEN CUT.

SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

SAMPLE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	DRY BULK DENSITY	REMARKS
	11,334							
1	35	0	12.7	TR	28	-	2.42	
2	39	1	12.5	TR	45	-	2.34	
3	41	0	12.0	.02	68	-	2.38	
4	47	0	9.2	TR	52	-	2.48	
	11,356							

ANALYSIS GRAPH



ORE #1

EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY, VICTORIA PARK, WESTERN AUSTRALIA
PHONE: 61 4437
CABLE: EXLOGG PERTH

CORE ANALYSIS REPORT

OMPANY ESSO-BHP
'ELL FLOUNDER A-1
)CATION/FIELD OFFSHORE/GIPPSLAND BASIN
)UNTY _____ STATE VICTORIA
)UNTRY AUSTRALIA
EMARKS CUT 30', REC. 28': 11,672-74.5: SHALE
,674.5-78.5: SHALE W/SANDSTONE INTERLAMS
,678.5-80.5: SHALE; 11,680.5-82: COAL, 11,682-
)0: SHALE W/OCCAISONAL COAL LAMINATIONS.

DATE SEPT 23, 1968
DEPTH 11,672 TO 11,702
GEO-ENGINEER [redacted] ALBERT

SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

ANALYSIS GRAPH

DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME		GRAVITY OIL °API	TOTAL Cl⁻ G/G	REMARKS
			OIL	WATER			
NO CORE ANALYSIS REQUIRED							
11,700-11,702 NO RECOVERY							

PERMEABILITY MD. o—o
POROSITY % x—x
8 6 4 2 0
40 30 20 10 0
WATER SATURATION % PORE o—o
100 80 60 40 20 0
OIL SATURATION % PORE x—x
0 20 40 60 80 100

4.0 PALYNOLOGY

PALYNOLOGY OF THE FLOUNDER FIELD

GIPPSLAND BASIN

by

P.R. Evans

Palyn. Rept. 1970/31

July, 1970.

INTRODUCTION

Palyn. Rept. 1969/9 detailed evidence from the Flounder 1 - 3 wells relating in particular to the nature of fossil assemblages in the "channel fill". Considerable modifications had to be made to the MS and only the correlation diagram was issued. Subsequently, Stover in Palyn. Rept. 1970/2 described the dinoflagellates from the upper M. diversus Zone and modified the original zonation based on these fossils, without altering the essential correlation pattern.

Subsequently wells have been drilled through and to the side of the "Flounder channel" (Trevally, Batfish and Tuna-3) and problems of correlation in the region particularly to the north of Flounder have been raised. The main questions have been:

1. The extension and internal characteristics of the "Flounder channel".

2. The degree of erosion into the L. balmei Zone effected by the channel.

3. The position of the top of the T. lilliei Zone.

The following summary of data from the Flounder field contributes to these questions. A summary of the correlations thus indicated between Tuna-Batfish-Flounder and Trevally will be incorporated in Palyn. Rept. 1970/32.

OBSERVATIONS

The zones to which the samples are ascribed are listed in Table 1. Both pollen and dinoflagellate zones (within the upper M. diversus Zone) are listed.

Flounder-2, swc 6492 feet is regarded as Oligocene, but according to its depth should have been cut from pre-Oligocene strata and is thougt to be incorrectly labelled.

The Early Eocene age for the upper M. diversus - basal P. asperopolus "channel fill" sequence is fully discussed in Palyn. Rept. 1970/2 and needs no repetition here.

COMMENT

The best position within the spore-pollen zone scheme for the "channel fill" is still in doubt. It is certainly no older than the upper M. diversus Zone and is certainly no younger than the P. asperopolus Zone. Doubt remains of its position within the range uppermost M. diversus - basal P. asperopolus. This is due to the presence only in small numbers of P. asperopolus and P. pachypolus, although the count rises to 4.5% at 6830 feet in Flounder-3 and 5% at 6890 and 7093 feet in Flounder -2, and to the greater proportion of T. Larrissi relative to Nothofagidites over most of the sequence in all three wells. Thus, it is probably best to regard the channel fill as deposited during a period commencing within the time of the upper M. diversus and continuing into the P. asperopolus Zone. The latter ratio appears to be diagnostic of the base of the P. asperopolus Zone in wells further to the west.

The dinoflagellate zones within the "channel fill" are defined in Palyn. Rept. 1970/2. Their extension across the Flounder field is graphically presented in the attached diagram. They parallel the four zones originally illustrated in Palyn. Rept. 1969/9.

INTERPRETATIVE

TABLE I ZONATION SUMMARY

Age & Zone		Flounder 2	
	1		3
Lower Eocene P. asperopolus - Upper M. diversus			
Indeterminate		s.6492 s.6595	s.6555 s.6578 s.6580
W. edwardsii	c.6419 u.6700 u.6750 u.6800 u.6850	s.6743	
W. thompsonae	u.6900 u.6960 u.7000 u.7050	s.6844 s.6890 s.6930 c.6964-84 s.7093	s.6637 s.6680 s.6730
W. brachycysta	c.7187 c.7211	s.7207 s.7333 s.7480	s.6780 s.6830 s.6880 s.6930 s.6980 s.7028 s.7080
W. parva			s.7130 s.7180 s.7210 s.7230 s.7280
Paleocene L. balmei	s.7485 s.7668 s.7786 s.7838 c.8115 s.8192 s.8207 s.8426 s.8452 s.8595 c.8775-97 s.9114 c.9498-528	u.7560 u.7640 u.7710 s.8099 s.8149 c.8242 s.8520 s.9200 s.9300	s.7472 s.7506 s.7562 s.7608 c.8350 c.8361 c.8370 c.8374 c.8379
Indeterminate	s.9822		
Upper Cretaceous T. lilliei	s.9942 c.10395-405		
N. senectus	c.11113-58 s.11222 c.11334-56 c.11675 c.11700		

c= core: s = sidewall core: u = cuttings. Depths in feet

The main difference between the old and nes schemes lies in recognition of the W. parva and W. brachycysta Zones in preference to the W. "waipawaensis" and"B. septatum" Zones. Nevertheless the distribution of the zones suggests a prograding attitude to sediments filling the channel.

In considering the mode in which fill was deposited within the channel, note should be taken that the relative abundance of dinoflagellates in Flounder-3 changes radically in apparently repetitive sequences from a flood where the fossils comprise about 80% of the assemblage to lesser proportions. Each sequence extends over an interval of about 200 feet. There are exceptions to this generalization but the nature of the statistics on which these comments are based does not warrant more rigorous analysis. Whether or not similarly repetitive sequences were intersected by Flounder-1 and -2 cannot be ascertained because of the spacing and type of sample available. These changing abundances could be construed as a further indication of the clinoform mode of deposition within the channel, each unit being about 200 feet thick at the location of Flounder-3. Each flood of fossils could represent a deepening of the channel to a maximum of 200 feet and the increase in relative pollen content could represent an increase in the amount of terrigenous material silting up the channel.

Occurrences of pelagic foraminifera do not coincide with the greatest abundances of dinoflagellates. At Flounder-3, the foraminifera occur in what appears to be a more stable period of dinoflagellate production. Perhaps stability of depositional conditions, rather than mere depth of water contributed to the growth and preservation of the foraminifera.

The position of the base of the channel depicted in the attached diagram is chosen because of relative ages of Flounder-2, 7480 feet (upper M. diversus) and Flounder -3, 7472 feet (L. balmei) and because of possible log correlations at about these depths.

There is no evidence of the presence of the lower M. diversus Zone at Flounder, contrary to assertions made in Palyn. Rept. 1969/9.

The L. balmei Zone has yielded dinoflagellates at several levels. Their identification and correlative significance has yet to be determined.

The relatively uniformly layered sequence through the L. balmei Zone in contrast to the diversus Zone permits numerous good log correlations between the wells within the sequence. Consequently, although Flounder-1, 7485 feet contained an indeterminate assemblage, it is assigned to the balmei Zone because of correlation of this horizon into the balmei Zone in Flounder-3.

INTERPRETATIVE

TERTIARY FORAMINIFERAL SEQUENCE-FLOUNDER-A-1 WELL

SUMMARY OF SEQUENCE

DEPTH	ZONULE	AGE	FACIES	DEPTH
? -1900'	B	upper to middle	coarse detritus	? -1700'
1900-2900'	C		"battered Robulus"	1700-4000'
2900-5700'	D	Miocene	suspended detritus	4000-6100'
5700-6100	E (≈10)			
6100-6330	J (= 4)	lower Oligocene	globigerinid	6100-6330'
6330-7220	?	Eocene	Anaerobic	6330-7220'

MIOCENE

The Flounder-A-1 well contains a considerable thickness of middle Miocene sediment (Zonule D & E). From the tabulation of other Gippsland Shelf wells it can be seen that this thickness is comparable with that of Kingfish-A-1, Halibut-A-1 and Cod-A-1. Similar biostratigraphic indicies have been used. In the above mentioned section, the thickness of middle Miocene was considered as channel fill sediment. Similarly the middle Miocene in Flounder appears to be channel fill, when comparing the facies sequence with that in other sections (Tabulation-2).

In Flounder "the Battered Robulus" facies extends from 1700-5000' and consists of 40% planktonics associated with a large (greater than .5 mm) benthonic species, including "Robulus" spp., Elphidium spp., and miliolids and Cibicides spp., believed have been washed into the sediment from shallow water. There are

intervals where benthonic fauna is sparse and specimen size small (e.g. 4300-4700') suggesting fluctuations in current velocities.

Below 5000' the fauna consists almost entirely planktonics with all specimens less than .3 mm. This facies appears to be the equivalent of the "sponge spicule" facies of the Kingfish section. Between 5000'and 5500' the benthonic fauna is almost entirely composed of the arenaceous species Bathysiphon sp.A, Haplophragmoides cf. incisa and Gaudyrina heywoodensis which are believed to be autochthonous and suggest that there may have been some factor on the depositional surface inhibiting a calcareous fauna.

Cutting samples at 5700' and side wall cores below this level contain precursers of Orbulina universa, indicating Zonule E at the base of the middle Miocene. The side wall core at 6021' has a planktonic fauna dominated by O. suturalis and Globigerinoides glomerosus.

LOWER OLIGOCENE

The side wall core at 6289' has an entirely different faunal aspect to the Orbulina series fauna in the side wall core at 6021'. The lower sample contains a 98% planktonic fauna of which no specimen is >.3 mm and 70% is <.15 mm. Using sieve separation this fauna has been traced in cutting samples up to 6100'. A larger percentage of this planktonic fauna is considered as juvenile specimens so that specific identification is difficult. However the following species list can be given for side wall core at 6289'

1. Globigerina angioporoides - Abundant
2. G. euapertura - Abundant
3. G. praeturritilina
4. Globorotalia opima
5. Globorotaloides suteri

   G. cf. suteri

Species 2. and 4. are Oligocene indicators in southern Australia. The association with species 1. places the fauna within Zonule J. (lower Oligocene). The planktonic faunal association is the same as that given by Jenkins (1965) for the Globigerina angioporoides angioporoides Zone of the New Zealand lower Oligocene. Despite the absence of the nominal species, this fauna also correlates with Lindsay's (1967) Chiloguembelina cubensis Zone of the South Australian lower Oligocene.

In my Nautilus-A-1 report I have divided Zonule J into two namely:-

the upper J-1 ≡ G. angioporoides angioporoides Zone of Jenkins
the lower J-2 ≡ G. brevis Zone of Jenkins.

Neither Globigerina brevis and Globorotalia gemma can be positively identified in the Flounder fauna, so that a J-2 designation cannot be assigned. In fact J-2 has not been recognised in Gippsland. But an interesting fact emerges, in that, Globorotalia testarugosa is present in other Gippsland Zonule J faunas. This species is presnet only in J-1 of the Nautilus sequence, and Jenkins (1965) and Lindsay (1967) reported it only at the top of the equivalent Zones. It can be assumed that the Flounder fauna between 6100 and 6330' does not represent the top of Zonule J.

The top of Zonule J (ie. J-1 - range of Globorotalia testarugosa is present in the basal 30-50' of the marl sequence at Lakes Entrance (see fig.1). It is present in the basal 100' of the marl sequence (immediately above La Trobe Delta Complex) in many of the Gippsland shelf weels (see tabulation-1).

In most Gippsland sections this upper part of Zonule J is the oldest foraminiferal unit present as the marl which contains it is immediately above the La Trobe Delta sequence which lacks diagnostic foraminiferal fauna. However at Lakes Entrance the sequence is

Marl
"greensand" - quartz and glauconite sandstone 30'-60'
gravel and sands cemented by pyrite and siderite -30'
with bryozoan calcarenite
GRANITE

The clastics below the greensand contain a fauna which is believed to be completely allochthonous consisting of three diverse faunal element

1. Cibicidid and elphidid element with bryozoa, probably of inner shelf origin and probably rafted in on seaweed.
2. very small uvigerinid elements of outer shelf or slope origin carried in by suspension.
3. very small planktonic fauna of similar specific make up as in Flounder (Zonule J 6100-6330').

These faunas have a faunal diversity number of 6 and a faunal dominance of 40% suggesting a variable environment and no establishment of a benthonic stock. The fauna is believed to be swept in with the encroaching transgressive sea. The sediment is probable a strand line to very shallow marine deposits consisting of marine winnowing of the granitic weathering profile. The fauna is restricted to a 2 mile coastal strip. Further northward the equivalent sediment contains only arenaceous foraminifera and fish remains. A similar fauna occurs in the clastic sequence below the marls as far north as Sale (Wurruk-Wurruk-1), and in other sections in the Lake Wellington Trough.

Therefore the transgression in lowermost Oligocene times had a widespread effect inundating the basement area around Lakes Entrance and periodically flooding the lagoonal system which extended from Lakes Entrance in a north west direction to Sale. Obviously Flounder was in the direct path of this transgression which apparently did not extend far westward. The absence of J sediment in Tuna may have been due to removal by slumping.

The J fauna in Flounder is predominantly small sized planktonic specimens and the sediment could be considered as a globigerinid ooze. The fauna was evidently size sorted from the suspended planktonic material swept over the Flounder site.

EOCENE:-

Below 6330' the sediment consists of sand, silty sandstones and dark grey sandy silts. The results of examination of cores and side wall cores are tabulated:-

side wall - 6330' - nothing found
core-1 at 6419' - Bathysiphon sp. A, B. sp. B, Haplophragmoides sp., calcareous Anglogenerina ototara, Cibicidina cf. mariae
core-1 10 samples from 6420-6446' - Bathysiphon sp.A, B. sp.B
core-1 at 6446' - Bathysiphon spp. + echinoid spines
core-1 at 6449' - Bathsiphon spp.

sidewall 6530' - Bathsiphon sp.A + small Robulus sp.
" " 6728' as above
" " 6811' as above
" " 6911 nothing found
" " 7019' small Robulus sp.
" " 7117' nothing found

core-2, 12 samples between 7195-72' All samples contain Bathysiphon sp.A with occasional Haplophragniodes sp. and Ammodiscus sp.

core-2 at 7212' & 7214 nothing found
sidewall core - 8024' nothing found

core-3, 15 samples from 8094-8118' nothing found

sidewall - 8212' nothing found

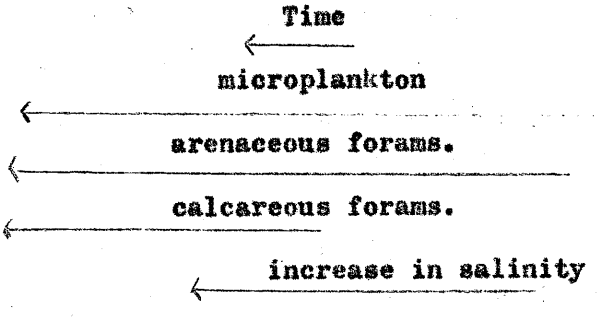
The following conclusions can be drawn:-

(i) The two calcareous species in core-1 have an Eocene aspect, but neither they nor any other species can be regarded as biostratigraphicall diagnostic.

(ii) The fauna suggests a restricted marine influence due to the dominance of the arenaceous form Bathysiphon spp. Anaerobic and/or decrease in water salinity would be responsible for a fauna with such little diversity.

(iii) Faunal diversity and specimen frequency increases up the section, indicating a trend towards a more stable marine environment. Calcareous species are present towards the top of the sequence.

(iv) No foraminifera are found below 7212' (near base of core-2) although microplankton are reported below this level. The ecological time sequence is thus similar to that of the upper Cretaceous sediments of the Otway Basin.



As stated above the major faunal element are Bathysiphon spp. The test is a straight elongate tube with the bore open at each end. The test material is composed of arenaceous material. Two species are present.

sp.A most common - very large up to 10 mm. Thick white test wall, very fine grained almost porcellaneous in appearence. Can be seen in core material with naked eye.

sp.B less frequent, smaller form, with thin wall of coarse grained arenaceous material.

Bathysiphon is an extremely morphologically simple form so is probably able to withsand a wide variety of conditions from brackish marginal marine to extremely deep water. The almost total dominance of this form suggests that the environment was a shallow brackish water one, otherwise planktonic species and calcareous benthonic species would be present. The envisaged environment is estuarine with dilution by streams which also carried in the coarse quartz sand. The dominance by one form precludes the possibility that the sediment is a channel fill. If this was the case one would except a "mixed" fauna with variation from sample to sample.

D. J. Taylor

W522

WELL NAME: FLOUNDER # 1

FLOUNDER-1.
PALYNOLOGICAL DATA

DEPTH (FT)	SAMPLE TYPE	PRESER-VATION	DIVERSITY	SPORE/POLLEN ZONE	DINOFLAGELLATE ZONE	CONFIDENCE LEVEL	ENVIRONMENT
6420-28	Core 1	Good	High	P. asperopolus	W. edwardsii	5	Shallow marine
7187	Core 2	Fair	Moderate	M. diversus	Indet.	5	Marginal marine
2196-99	Core 2	Good	High	M. diversus	Indet.	5	Shallow marine
7485	SWC	Fair	Low	L. balmei	-	4	Non-marine
7668	SWC	Fair	Low	L. balmei	-	4	Non-marine
7748	SWC 30	Fair	Moderate	L. balmei	-	4	Non-marine
7786	SWC 29	Poor	Low	L. balmei	-	4	Non-marine
7838	SWC 28	V. Poor	V. low	?L. balmei	-	3	Non-marine
8088-91	Core 3	Fair	Moderate	L. balmei	-	5	Non-marine
8192	SWC 26	Poor	Low	L. balmei	-	4	Non-marine
8267	SWC 22	V. Poor	V. low	?L. balmei	Indet.	3	Marine
8426	SWC 11	V. Poor	Low	L. balmei	-	4	Non-marine
8452	SWC 10	V. Poor	Low	L. balmei	-	4	Non-marine
8595	SWC 9	V. Poor	Low	L. balmei	-	4	Non-marine
8775-97	Core 4	Poor	Low	L. balmei	-	5	Non-marine
9114	SWC 6	Poor	Low	L. balmei	-	4	Non-marine
9498	Core 5	Poor	High	L. balmei	-	5	Non-marine
9822	SWC	Poor	V. low	Indeterminate	-	-	-
9942	SWC	Poor	V. low	T. lilliei (?)	-	4	Non-marine
10395-465	Core 6	Poor	Moderate	T. lilliei	-	5	Non-marine
11113-58	Core 8	V. Poor	Low	? T. lilliei	-	4	Non-marine
11222	SWC	V. Poor	V. low	T. lilliei/ N. senectus	-	3	Non-marine
11334-56	Core 9	V. Poor	Moderate	No older than N. senectus	-	-	Non-marine
11675	Core 10	V. Poor	Moderate	No older than N. senectus	-	-	Non-marine
11700	Core 10	V. Poor	Moderate	No older than N. senectus	-	-	Non-marine

BY W. K. HARRIS
FOR AQUITAINE, PHILLIPS, SHELL

Form R125 3/71

BASIN GIPPSLAND BASIN BY David TAYLOR

WELL NAME FLOUNDER-1 DATE 19 April 1971 ELEV. +93'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A						
	A Alternate						
	B				1600	3	
	B Alternate						
	C	1900	3		2900	3	
	C Alternate						
	D_1	2983	1		5500	3	
	D_1 Alternate						
	D_2	5555	1		6200	3	
	D_2 Alternate						
	E	5865	1		6031	1	
	E Alternate						
	F						
	F Alternate						
	G						
	G Alternate						
	H_1						
	H_1 Alternate						
	H_2						
	H_2 Alternate						
OLIGOCENE	I_1						
	I_1 Alternate						
	I_2						
	I_2 Alternate						
	J_1	6100	4		6289	1	
	J_1 Alternate	6250	3				
	J_2						
	J_2 Alternate						
EOC.	K						
	K Alternate						
	Pre K	6419	2		7206	2	

COMMENTS:

Note: If highest or lowest data is a 3 or 4, then an alternate 0, 1, 2 highest or lowest data will be filled in if control is available.

If a sample cannot be interpreted to be one zonule, as apart from the other, no entry should be made.

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).

Date Revised _____

By _____

Form R 193 3/71

BASIN GIPPSLAND BY

WELL NAME FLOUNDER # 1 DATE ELEV. + 99'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A						
	Alternate						
	B				1800	3	
	Alternate						
	C	1900	3		2900	3	
	Alternate						
	D_1	2983	1		5500	3	
	Alternate						
	D_2	5555	1		5865	0	
	Alternate						
	E				6021	1	
	Alternate						
	F						
	Alternate						
	G						
	Alternate						
	H_1						
	Alternate						
	H_2						
	Alternate						
OLIGOCENE	I_1						
	Alternate						
	I_2						
	Alternate						
	J_1	6250	3		6289	1	
	Alternate						
	J_2						
	Alternate						
EOC.	K						
	Alternate						
	Pre K						

COMMENTS:

Note: If highest or lowest data is a 3 or 4, then an alternate 0, 1, 2 highest or lowest data will be filled in if control is available.

If a sample cannot be interpreted to be one zonule, as apart from the other, no entry should be made.

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).

Date Revised 31.1.78

By David Taylor

BASIN GIPPSLAND DATE 22nd February, 1973

WELL NAME FOUNDER-1 ELEVATION 199 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
OLIG. MIOC.	T. bellus										
	P. tuberculatus										
EOCENE	U. N. asperus										
	L. N. asperus										
	P. asperopolus	6419	0				7050	3	6449	0	
	U. M. diversus	7187	0				7211	1			
	L. M. diversus										
PALEOCENE	L. balmei	7485	1				8267	2			
	T. longus	8426	1				9528	2			
LATE CRETACEOUS	T. lilliei	9942	1				10405	1			
	N. senectus	11,113	1				11700	1			
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS	C. paradoxa										
	C. striatus										
	U. C. hughesii										
	L. C. hughesii										
	C. stylosus										
Pre-Cretaceous											

COMMENTS: The Wetzeliella Zones occur from 6419 to 7211 feet.

RATINGS:
- 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 a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

DATA RECORDED BY: L.E. Stover & A.D. Partridge DATE March, 1971, December, 1971.

DATA REVISED BY: A.D. Partridge DATE 22 February, 1973

BASIN GIPPSLAND DATE

WELL NAME FLOUNDER-1 ELEVATION +99'

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
EOCENE (MIO.)	P. tuberculatus										
	U. N. asperus										
	M. N. asperus										
	L. N. asperus										
	P. asperopolus	6419	0				7050	3	6449	0	
	U. M. diversus	7187	0				7211	1			
	M. M. diversus										
	L. M. diversus										
PALEOCENE	U. L. balmei	7485	1				7838	2			
	L. L. balmei	8088	1				8192	2			
	T. longus	8267	0				9528	1			
LATE CRETACEOUS	T. lilliei	9942	1				10405	1			
	N. senectus	11113	1				11700	1			
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS											
PRE-CRETACEOUS											

COMMENTS: DINOFLAGELLATE ZONES

Wetzeliella edwardsii Zone 6419 (1) — 6800 (3)

Wetzeliella thompsonae Zone 6850 (3) — 7050 (3)

Wetzeliella ornata Zone 7196 (1) — 7211 (1)

Deflandrea druggii 8267 (1)

RATINGS:
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 spore and pollen or microplankton, or both.
4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

DATA RECORDED BY: L.E. Stover & A.D. Partridge DATE 1971

DATA REVISED BY: A.D.P. DATE Feb. 1973 ; March 1975

FORM No B 315 12/72

PE904914

This is an enclosure indicator page.
The enclosure PE904914 is enclosed within the container PE904913 at this location in this document.

The enclosure PE904914 has the following characteristics:

ITEM_BARCODE	= PE904914
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 1 Species List. Page 1 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904915

This is an enclosure indicator page.
The enclosure PE904915 is enclosed within the container PE904913 at this location in this document.

The enclosure PE904915 has the following characteristics:

ITEM_BARCODE	= PE904915
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 1 Species List. Page 2 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904916

This is an enclosure indicator page.
The enclosure PE904916 is enclosed within the container PE904913 at this location in this document.

The enclosure PE904916 has the following characteristics:

ITEM_BARCODE	= PE904916
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 1 Species List. Page 3 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904917

This is an enclosure indicator page.
The enclosure PE904917 is enclosed within the container PE904913 at this location in this document.

The enclosure PE904917 has the following characteristics:

ITEM_BARCODE	= PE904917
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 1 Species List. Page 4 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904918

This is an enclosure indicator page.
The enclosure PE904918 is enclosed within the container PE904913 at this location in this document.

The enclosure PE904918 has the following characteristics:

ITEM_BARCODE	= PE904918
CONTAINER_BARCODE	= PE904913
NAME	= Well Comparison of Foraminifera
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 1 Comparison of foraminifera and other phyla in Flounder 1, Flounder 2 and Flounder 3.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904919

This is an enclosure indicator page.
The enclosure PE904919 is enclosed within the container PE904913 at this location in this document.

The enclosure PE904919 has the following characteristics:

ITEM_BARCODE	= PE904919
CONTAINER_BARCODE	= PE904913
NAME	= Composite Distribution Chart
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 1 Pre-Oligocene Composite Distribution Chart for Flounder 1, Flounder 2 and Flounder 3.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

5.0 VITRINITE REFLECTANCE MEASUREMENTS

Oil & Gas

Jack Dawn

REC
22.4.
KG

Amoco Australia Petroleum Company
(Inc. in Delaware, U.S.A., with Limited Liability — Registered as a Foreign Company in Tasmania)

15 Blue Street, North Sydney
P.O. Box 126, North Sydney 2060
Phone (02) 957 4500
Telex AA23359
Facsimile (02) 922 4886

22 APR 1986

OIL and GAS DIVISION

April 16, 1986

The Director of Mines,
Department of Minerals and Energy,
East Tower, Princes Gate,
151 Flinders Street,
Melbourne. Vic. 3000

Dear Sir,

Re: Gippsland Basin Vitrinite Reflectance Measurements
MISC-AUP-141-L-310-SCB

In 1985 Amoco Australia Petroleum Company collected core and cutting samples from thirteen Gippsland Basin wells for vitrinite reflectance determinations. The following attachments are a summary of the work.

Yours faithfully,

FLOUNDER-1

S.C. Bane

S.C. Bane
Exploration Manager

SCB/lrc

Attach.

Depth (ft)	Mean Maximum Reflectance (%)	Standard Deviation	Range	Number of Determinations
ALBACORE -1				
9380&9390	0.42	0.04	0.31-0.48	42
9720&2730	0.46	0.06	0.36-0.59	36
10070	0.46	0.04	0.36-0.55	39
10320	0.47	0.04	0.38-0.54	34
BARRACOUTA-3				
7310-7320	0.54	0.05	0.46-0.63	35
8590	0.60	0.08	0.43-0.71	35
9100-9120	0.62	0.10	0.41-0.80	41
9330-9360	0.64	0.10	0.43-0.93	36
9540-9560	0.73	0.05	0.63-0.84	33
BATFISH-1				
7560-7570	0.61	0.05	0.53-0.69	34
8170-8180	0.64	0.05	0.56-0.75	34
8640-8650	0.69	0.05	0.55-0.81	31
9170-9190	0.76	0.04	0.66-0.81	28
9430-9450	0.76	0.05	0.69-0.90	41
BONITA-1A				
9780-9790	0.54	0.06	0.46-0.68	36
10050	0.56	0.05	0.47-0.64	36
10280-10290	0.55	0.04	0.47-0.64	47
BREAM-2				
8070-8090	0.63	0.05	0.52-0.70	39
8380-8390	0.67	0.06	0.53-0.80	41
8933-8944	0.73	0.05	0.62-0.85	43
9730-9750	0.83	0.07	0.71-0.98	38
10638-10641	0.88	0.11	0.62-1.13	42

Depth (ft)	Mean Maximum Reflectance (%)	Standard Deviation	Range	Number of Determinations
COD-1				
7100-7120	0.63	0.06	0.53-0.81	41
8333-8339	0.59	0.05	0.47-0.67	34
9030-9060	0.75	0.06	0.61-0.85	32
9460-9470	0.77	0.06	0.61-0.86	41
FLOUNDER-1				
7430	0.44	0.05	0.36-0.56	39
8783-8795	0.64	0.04	0.56-0.77	36
9140	0.61	0.06	0.52-0.77	42
10395-10400	0.72	0.06	0.58-0.80	34
11350-11356	0.90	0.05	0.76-0.97	36
11676-11682	0.90	0.07	0.78-1.04	44
HALIBUT-1				
7888-7891	0.49	0.07	0.37-0.67	39
8450-8460	0.54	0.04	0.47-0.61	31
9250-9260	0.57	0.06	0.46-0.66	43
9630-9640	0.61	0.04	0.54-0.69	35
9870-9880	0.63	0.06	0.47-0.75	52
MACKEREL-1				
8760-8780	0.63	0.05	0.52-0.71	31
9630-9650	0.66	0.05	0.69-0.76	25
9870-9890	0.65	0.02	0.60-0.73	28

Depth (ft)	Mean Maximum Reflectance (%)	Standard Deviation	Range	Number of Determinations
MARLIN-1				
7070-7080	0.65	0.08	0.52-0.80	32
7497-7501	0.65	0.04	0.54-0.72	38
7780-7800	0.67	0.09	0.47-0.88	39
8230-8240	0.71	0.07	0.64-0.79	4
8455-8461	0.70	0.06	0.56-0.79	32
NANNYGAI-1				
7760-7670	0.052	0.07	0.39-0.65	33
8320-8340	0.50	0.05	0.42-0.65	32
9450-9470	0.64	0.04	0.57-0.71	35
9860-9880	0.64	0.06	0.51-0.75	31
SALMON-1				
7670-7690	0.50	0.06	0.38-0.64	35
8030-8050	0.56	0.05	0.45-0.67	37
8860	0.60	0.05	0.45-0.67	33
9250-9260	0.64	0.06	0.54-0.79	36
9856-9862	0.80	0.05	0.68-0.87	37
SNAPPER-1				
7280-7300	0.56	0.06	0.43-0.69	37
7754-7760	0.56	0.09	0.38-0.73	38
9254-9257	0.68	0.03	0.60-0.72	33
9900-9903	0.86	0.10	0.62-0.96	17
10140-10200	0.81	0.10	0.58-1.01	31
10495-10507	0.99	0.06	0.81-1.06	35

6.0 F.I.T. AND D.S.T. DATA

FLOUNDER -1

FIT & DST DATA

Tests:

Flounder 1

15 wire line tests were run in Flounder 1 with 4 successful tests recovering gas and oil at 8296', 8314', 8330'and 8395'. Filtrate was recovered at 10,324'and five tight tests were run at 3971', 8212', 10,059', 10,956', and 11,097'. Mis-runs due to equipment failure occurred at 8217', 8296', 10,956', 11,097'.

One DST was run through perforations at 8314-15'and 8330-32'. In order to meet requirements for refinery tests,only seven barrels of congealed waxy oil of 46.7° API gravity and a 72°F pour point was recovered before the test was terminated.

Flounder 2

Five wireline tests were run in Flounder 2 with gas and oil, or gas and condensate being recovered at 7012', 7021', 8329'. Water was recovered at 9262'and an FIT at 7014'had no recovery.

Flounder 3

Two FIT's at 8399'and 8415'recovered gas and oil and one FIT at 8426' recovered filtrate.

(See Completion Log for test details).

1/7

DOWELL SCHLUMBERGER

FORMATION TESTING REPORT
COMPOSITE

TEST N°	TYPE	INTERV.	OPÉ.	STATION	TICKET	DATE
1	CASING	Perforations : 8332 to 8330 ft (4 shots per ft)	1	SALE	0139	OCT 8, 196

FLOUNDER. 1

DOWELL SCHLUMBERGER

FORMATION TESTING REPORT
SPECIAL DATA ANALYSIS

The enclosed test appears to be a good mechanical test during which the tools functioned properly.

RESERVOIR PRESSURE : It is suggested on future tests in this formation that an intial shut-in build-up of 30 mins be taken after a preflow period of 2 - 3 minutes. This will permit the reservoir pressure to be more accurately estimated.

PERFORATED INTERVAL : 8332 - 8330 = 2 ft ; or .61 m

FLUID PRODUCED : Heavy gas cut oil = 10 bbls

Oil (approximately) = 8 bbls

Gas = G.O.R. 2000

46.7 API gravity at 72°F

WELL BORE DAMAGE : EDR = The EDR is too large to be accepted quantitatively but from a qualitative viewpoint it indicates that extensive damage exists in the vicinity if the well bore. A significant increase in production could be expected from the correct stimulation treatment.

FLOUNDER. 1

Test No 1

3/7

DOWELL SCHLUMBERGER

ESSO STD. FLOUNDER.1

TEST CASING N° 1

DATE OCTOBER 8, 1968

TYPE J N° 223

x 10^6

14

FINAL SHUT IN

13

$\frac{T+\Delta t}{\Delta t}$

9 8 7 6 5 4 3 2 10^1 9 8 7 6 5 4 3 2 1

DOWELL SCHLUMBERGER

FORMATION TESTING REPORT
WELL AND JOB DATA

Operation N°
Station
S I R N°
Date

MPANY ESSO STANDARD (AUSTRALIA) Ltd Field WILDCAT
L No. 1 Location FLOUNDER
E test CASING Elevation 59 ft
L depth Test interval, from 8300 Test No. 1
E hole size 12-1/4" Casing size 9-5/8" to BAKER PACKER PLUG 8303 ft
M to Casing weight 43.5 - 47 lbs/ft Liner size
TOOL size Casing shoe depth 9957 ft Liner weight
ELS measured from K.B. Cement plug top Liner top depth
Cement plug top

PERFORATIONS 8332 to 8330 (4 SHOTS PER FT)

MATION - System LATROBE
ogic level Estimated porosity
ogy Estimated permeability
Estimated productive interval

D, Type X P - 20 SPERSENE Wt. 11.2 Viscosity 42 W.L. Chloride PPM

HION, Type FRESH WATER Lengtn 6600 ft Weight 8.3

S

ow,	from			on		to			on															
hut-in,	from			on		to			on															
ow,	from	8	43	on	7	to	9	25	on	7														
hut-in,	from	9	25	on	7	to	10	05	on	7														
w,	from			on		to			on		Reverse circulation	10	50	on	7	to	10	30	on	7			
ut-in,	from			on		to			on		Final equalization			on										

SEQUENCE - Tool	Type	O.D.	Remarks
L PIPE	4-1/2" IF	5"	7695,86 ft
L COLLARS	4-1/2" IF	6_1/2"	572,22 ft
S OVER SUB	4-1/2" IF	5-3/4"	
OUT SUB		5-3/4"	
S OVER SUB	4-1/2" IF	5-3/4"	
I FLOW EVALUATOR	JOHNSTON MFE	5"	
BY - PASS	JOHNSTON MFE	5"	
SURE RECORDER	JOHNSTON J	2-7/8"	CARRIER 4_7/8" OD
ER "CONVENTIONAL"	JOHNSTON		SET AT 8300 ft
			RUBBER 6-5/8" OD
URE RECORDER	JOHNSTON J	2-7/8"	CARRIER 4-7/8" OD
RATED ANCHOR	4-1/2" IF	6-1/4"	10,61 ft
COLLARS	4-1/2" IF	6-1/2"	61.30 ft
NOSE	4-1/2" IF	6-1/4"	
		5/8"	Bottom choke size

L N° FLOUNDER. 1
N° 1

5/7

DOWELL SCHLUMBERGER

FORMATION TESTING REPORT

RESULTS

LIQUIDS

Flowed at surface during test :	Amount
FLOWED BACK	
68-1/2 bbls of water	
Cushion before closing	
MFE tool	

Reversed out:		Amount
Remainer water		
Cushion	bbls	29
Heavy gas cut oil	bbls	10
(Maximum Pumping pressure .....)		

Recovered in DP and DC APPROXIMATELY		Amount
Oil	bbls	8
G.O.R. 2000		
46.7 API Gravity		
at 72°F		

GASES

Air blow: Gas surfaced at 10 : 15

Description	Time	Pressure	Surface choke

(Maximum surface pressure .....)

REMARKS Set packer at 8300 ft with 7500 ft of water cushion tool opened at 06 : 55 with no blow to surface, pull tool loose at 07 : 15 to dump 1000 ft water cushion. Set packer again at 08 : 43 with 6600 ft water cushion, tool opened with a weak air blow water cushion to surface at 08 : 55 closed valve at head at 09 : 40 to change flow lines, closed tool at 09:25 .

Type and Number		JOHNSTON J - 222	JOHNSTON J - 223	
Capacity		9000 PSI	9000 PSI	
Depth and Position		8287 ft - INSIDE	8303 ft - OUTSIDE	
Temperature		220°F	220°F	
RECORDERS A	Initial Hydrostatic Mud Pressure		4852	
RECORDERS B1	First flow - initial pressure			
RECORDERS C1	First flow - final pressure			
RECORDERS D1	First shut-in pressure			
RECORDERS B2	Second flow - initial pressure		3088	
RECORDERS C2	Second flow - final pressure		3317	
RECORDERS D2	Second shut-in pressure		3669	
RECORDERS B3	Third flow - initial pressure			
RECORDERS C3	Third flow - final pressure			
RECORDERS D3	Third shut-in pressure			
E	Final hydrostatic mud pressure		4849	
	Calculated hyd. mud pressure	4825	4882	

(*) Shut in pressure did not reach static reservoir pressure.

All pressures measured in : PSI

M. R.

DOWELL SCHLUMBERGER

FORMATION TESTING REPORT
PRESSURE READINGS

Recorder Type and No.:	JOHNSTON J - 223
Recorder capacity	9000 PSI
Clock hour and No.	48 hr
Clock travel	0.0224939 inch/mn
Recorder depth	8303 ft
"Inside" or "Outside"	OUSIDE
Temperature	220°F

	Given time	Computed Time
First flow	____ mn	T_1 = ____ mn
First shut-in	____ mn	____ mn
Second flow	____ mn	T_2 = ____ mn
Second shut-in	43 mn	39 mn
Third flow	40 mn	T_3 = 44 mn
Third shut-in	____ mn	____ mn
____	____ mn	____ mn
____	83 mn	83 mn

FLOW PERIOD

Breakdown: ..... increments of ..... mn and a final increment of ..... mn.

Point (Minutes)	Pressure (....PSI.....)	$\frac{T+\Delta t}{\Delta t}$ (T = ...)
B2= 0	3088	
F = 12	3325	
H = 25	3076	
I = 32	3193	
C2= 39	3317	

FINAL SHUT-IN

Breakdown: ..... increments of ..... mn and a final increment of ..... mn.

Point (Minutes)	Pressure (....PSI.....)	$\frac{T+\Delta t}{\Delta t}$ (T = 39.....)
C2= 0	3317	
1	3682	40.00
2	3682	20.50
3	3684	14.00
4	3684	10.75
5	3684	8.80
6	3686	7.50
7	3686	6.57
8	3686	5.87
9	3686	5.33
10	3688	4.90
20	3688	2.95
30	3689	2.30
40	3689	1.97
D2= 44	3689	1.88

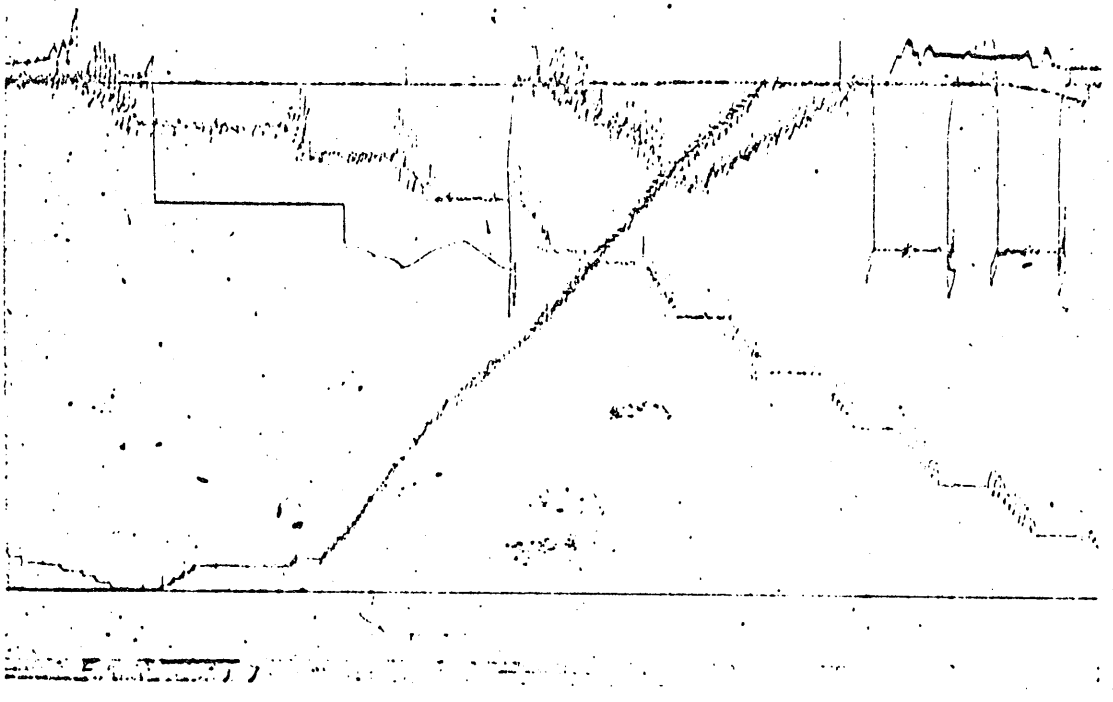
Breakdown: ..... increments of ..... mn and a final increment of ..... mn.

Point (Minutes)	Pressure (.....)	$\frac{T+\Delta t}{\Delta t}$ (T = ...)

L.R.

DOWELL
SCHLUMBERGER

ESSO STD. FLOUNDER. 1
TEST CASING N° 1
DATE OCTOBER 8, 1968
TYPE J N° 223



FLOUNDER - 1. Page

F I T. RESULTS

Testing:

A total of 15 wireline formation tests were run. Of these 11 were successful, and details are as follows:

F.I.T. No. 1	8395 feet	Recovered 65.1 c. ft gas, 10,300 ccs oil, 2000 ccs mud.
F.I.T. No. 2	8212 feet	Tight.
F.I.T. No. 3	3971 feet	Recovered 0.55 c. ft gas 150 ccs mud. 6200 ccs filtrate.
F.I.T. No. 4	8296 feet	Failed.
F.I.T. No. 5	8217 feet	Tight.
F.I.T. No. 6	8296 feet	Recovered 10,000 ccs oil, 21.6 c. ft gas 300 ccs mud.
F.I.T. No. 7	11097 feet	Failed.
F.I.T. No. 8	11097 feet	Tight.
F.I.T. No. 9	10956 feet	Failed.
F.I.T. No.10	10956 feet	Failed.
F.I.T. No.11	10956 feet	Recovered 750 ccs water.
F.I.T. No.12	10059 feet	Tight.
F.I.T. No.13	10324 feet	Recovered 0.3 c. ft gas, 9500 ccs water.
F.I.T. No.14	8330 feet	Recovered 2225 ccs fluid oil.
F.I.T. No.15	8314-15 ft	Recovered 311.3 c. ft gas, 6.4 galls oil.

A modified drill stem test was also run. Details are given below:

Intervals Tested :- 8314 - 8315 feet
8330 - 8332 feet

Open 42 minutes. Flowed water cushion at 150 barrels/hour through $^{5}/_{8}$" surface choke, with 800 lbs pressure. Water cushion to surface in 12 minutes. Displaced 112 barrels of fluid, containing approximately 9 barrels of oil, 46.7° A.P.I., pour point about 70°.

. . . . . .

Melbourne
MZ:JHM
24.10.68

PE603212

This is an enclosure indicator page.
The enclosure PE603212 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603212 has the following characteristics:

ITEM_BARCODE	= PE603212
CONTAINER_BARCODE	= PE904913
NAME	= Pressure Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Flounder 1 Pressure Log.
REMARKS	=
DATE_CREATED	= 8/10/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Dowell Schlumberger
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

7.0 ENCLOSURES

PE603213

This is an enclosure indicator page.
The enclosure PE603213 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603213 has the following characteristics:

ITEM_BARCODE	= PE603213
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log (Header Page)(Page 1 of 14).
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603214

This is an enclosure indicator page.
The enclosure PE603214 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603214 has the following characteristics:

ITEM_BARCODE	= PE603214
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 2 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603215

This is an enclosure indicator page.
The enclosure PE603215 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603215 has the following characteristics:

ITEM_BARCODE	= PE603215
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 3 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603216

This is an enclosure indicator page.
The enclosure PE603216 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603216 has the following characteristics:

ITEM_BARCODE	= PE603216
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 4 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603217

This is an enclosure indicator page.
The enclosure PE603217 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603217 has the following characteristics:

ITEM_BARCODE	= PE603217
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 5 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603218

This is an enclosure indicator page.
The enclosure PE603218 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603218 has the following characteristics:

ITEM_BARCODE	= PE603218
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 6 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603219

This is an enclosure indicator page.
The enclosure PE603219 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603219 has the following characteristics:

ITEM_BARCODE	= PE603219
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 7 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603220

This is an enclosure indicator page.
The enclosure PE603220 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603220 has the following characteristics:

ITEM_BARCODE	= PE603220
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 8 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603221

This is an enclosure indicator page.
The enclosure PE603221 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603221 has the following characteristics:

ITEM_BARCODE	= PE603221
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 9 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603222

This is an enclosure indicator page.
The enclosure PE603222 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603222 has the following characteristics:

ITEM_BARCODE	= PE603222
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 10 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603223

This is an enclosure indicator page.
The enclosure PE603223 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603223 has the following characteristics:

ITEM_BARCODE	= PE603223
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 11 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603224

This is an enclosure indicator page.
The enclosure PE603224 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603224 has the following characteristics:

ITEM_BARCODE	= PE603224
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 12 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603225

This is an enclosure indicator page.
The enclosure PE603225 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603225 has the following characteristics:

ITEM_BARCODE	= PE603225
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 13 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603226

This is an enclosure indicator page.
The enclosure PE603226 is enclosed within the container PE904913 at this location in this document.

The enclosure PE603226 has the following characteristics:

ITEM_BARCODE	= PE603226
CONTAINER_BARCODE	= PE904913
NAME	= Flounder 1 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 1 Mud Log. Page 14 of 14
REMARKS	= Renamed Flounder 1, August 1968
DATE_CREATED	= 14/07/68
DATE_RECEIVED	=
W_NO	= W522
WELL_NAME	= Flounder-1
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)