W592

Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

EMPEROR-1 (G.B)

WELL SUMMARY

OFFSHORE

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).

(3) BRING UP MARKINGS: When action on a file is required at a later date, the officer will initial Column (4) and, on the next vacant line, enter the relevant folio number in Column (1), then write "B/U" followed by the action officer's name in Column (2) and the date the file is required in Column (3).

(4) PUTAWAY MARKINGS: When ALL action on a file is completed the officer concerned will initial Column (4) and, on the next vacant line, write "P/A" in column (2).

REGISTRY MUST BE NOTIFIED OF ANY FILE MOVEMENTS BETWEEN OFFICERS

LOCATION

EARLIER FILES	LATER FILES	RECORDS DISPOSITION

EMPEROR-1. ESSO. VIC/P1 TD6545'

SPUD. 5-6-1970. COMP. 29-6-1970. 38° 5' 34"S 148° 0' 20"E 592 W.D. 170'. KB 31' GLOMAR III

IES.	RUN 1	2", 5" & 1"	2000' - 5261'
"	" 2	2" & 5"	5241' - 6543
"	" 1 & 2.		2000' - 6543' SEP. LOGS 2" AND 5".
B.H.C.S.	" 1.	2" & 5"	2000' - 5254'.
"	" 2	2 & 5"	5241' - 6540'
	" 1 & 2		2000' - 6540'. SEP. LOGS 2" AND 5".
FDC/GR.	" 1.	2" & 5"	4800' (170 GR.) — 5262
	" 2.	2" & 5"	5241' - 6544'.
	" 1 & 2.		4800' (170 GR.) — 6544'. SEP. LOGS 2" AND 5"
C.D.M.	" 1.	5" and 2" Sh.	2000' — 5158'
	" 2.	5" & 2"	5241' — 6540'.
MLL	" 1.	5"	4800' — 5161'.
	" 1.	2" & 5"	4800' - 5161'
NL.	" 1.	2" & 5"	4800' - 5164
	" 1.		4800' - 5164' SEP. LOGS 2" AND 5"
FIT	" 1.	TESTS 1 — 5.	5025, 5062', 5063', 5078' & 5110'.
	" 2.	" 1.	5606'.
	" 1 & 2.	" 1-5 & 1.	

CORE LAB. MUD LOG. 2500' — 6545'

" " COMPLETION COREGRAPH. CORES 1, 2 & 4.

CORE DESCRIPTIONS 1 — 4.

S.W.C. " 5320 - 6516. 1 — 30

" " 2130 - 5143 1 — 28.

T.D.C. (TIME DEPTH CURVE).

COMPLETION REPORT. HORIZON IDENTIFICATION (GA-82A REV. 14/12/82)

AGNEW'S FORMATION INTERVAL TESTING RESULTS.

CUTTING 2500' — 6545'

CORES. CORE No 1. 5055' - 5085' REC 1'. No 2. 5084' - 5141' REC 11'. N.A.
No 3. 5141' - 5174'. REC 0'. No 4. 5180 - 5206. REC 23'.

CORE ANALYSIS RESULTS FOR CORES 1, 2 & 4. B.M.R.

WELL COMPLETION LOG. 2". * WELL LOG ANALYSIS REPORT 000882

MICROPALAEONTOLOGY REPORT BY D TAYLOR.

PALYNOLOGY REPORT BY STOVER & PARTRIDGE. PLUS REVISION

" " " P.R. EVANS & MRS A. NICHOLLS

HYDROCARBON REPORT - SUBSURFACE OIL. EPR 31PS 71. JIM'S OFFICE.

STRUCTURE MAP TOP OF LATROBE GROUP (COARSE CLASTICS)

" " " " ZONE 11 GAS. -5241'.

EMPEROR-1

TABLE OF CONTENTS

ESSO STANDARD OIL (AUSTRALIA) LTD.

COMPLETION REPORT

592.

I WELL DATA RECORD

Date October 13,

LOCATION

WELL NAME	STATE	PERMIT or LICENCE	GEOLOGICAL BASIN	FIELD
EMPEROR-1	Victoria	Vic.P/1	GIPPSLAND	NFWC

CO-ORDINATES	Lat.	Long.	X	Y	MAP PROJECTION	GEOGRAPHICAL DESCRIPTION
Surface	38°05'54"S	148°00'20"E	592,408	300,59	Australian Transverse Mercator	7 miles north of Snapper Field
Bottom Hole						

ELEVATIONS & DEPTHS

ELEVATIONS	WATER DEPTH	TOTAL DEPTH	
Ground		M.D. 6545	Avg.Angle
KB 31	170	T.V.D.	
RT	PLUG BACK DEPTH	REASONS FOR P.B.	
Braden Head	450	Abandoned	
Top Deck Platform			

DATES

MOVE IN	RIG UP	SPUDDED
June 4, 1970.	June 4, 1970.	June 5, 1970.
RIG DOWN COMPLETE	RIG RELEASED	PROD.UNIT - Start Rigging Up
June 29, 1970	June 29, 1970	
PROD.UNIT - Rig Down Complete		I.P. ESTABLISHED

MISCELLANEOUS

OPERATOR	PERMITTEE or LICENCEE	ESSO INTEREST	OTHER INTEREST
ESSO	HEMATITE	Well 100% Other - Nil	-

CONTRACTOR	RIG NAME	EQUIPMENT TYPE
Global Marine	GlomarIII	Ship-shape drilling vessel

TOTAL RIG DAYS	DRILLING AFE NO.	COMPLETION NO.	TYPE COMPLETION
24.98	230-105		

LAHEE WELL CLASSIFICATION	Before Drilling	New Field Wildcat
	After Drilling	Unsuccessful New Field Wildcat with shows of hydrocarbons.

WELL

II INITIAL PRODUCTION TEST

Date

WELL COMPLETION AS:
Oil Well _____ Gas Well _____ Dry Hole _____

Choke size, inch			Calculated P.I.		
Length of Test			Calculated A.O.F		
Oil, BPD			Perforations		
Water, BPD			Shut-In BHP		
Gas, MCFD			Flowing BHP		
Gas Liquids, BPD			Shut-In Tubing Press		
Gas-Oil Ratio			Flowing-Tubing Press		
Gravity, API			Flowing Temperature		

III PERFORATING RECORD (Prod.test, Completion, DST, FIT)

INTERVAL	HPF	TOTAL SHOTS	SERV. CO.	DIFF. PRESS.	PERFORATION FLUID	SIZE AND TYPE GUN

IV CASING - LINER - TUBING RECORD

Type	Size	Weight	Grade	Thread	No. Joints	Amount	Depth
Conductor	20"	94	Line pipe	Vetco	11	470	660'
Surface	13-3/8"	54.5	J-55	Butt.	46	1812	2000'
Intermed-iate	9-5/8"	47.0	N-80	Butt.	127	5050	5240'

V CEMENT RECORD

String	20"	13-3/8"	9-5/8"
Type of Cement	1000 sx w/ 2% gel +500 sx w/ 2% $CaCl_2$	1000 Sx w/ 2% gel +500 Sx neat	600 sx w/0.4% HR-4
Number of FT^3	2200	2200	710
Average weight of slurry	12.9/15.6 ppg	13.5/15.5 ppg	15.8 ppg
Cement Top	Sea floor	-	-
Casing Tested with	0	1250 psi	2000 psi
Number of Centralizers	0	5	17
Number of Scratchers	0	0	0
Stage Collar etc.	0	0	0
Remarks	Gel prehydrated	Gel prehydrated	-

B. Student

Engineer

WELL EMPEROR-1

VI

SUBSURFACE COMPLETION EQUIPMENT

DATE COMPLETED _____

Schematic	Equipment Description	Length	Depth

WELL EMPEROR-1

VII SAMPLES, CONVENTIONAL CORES, SW CORES

INTERVAL	TYPE	RECOVERED	INTERVAL	TYPE	RECOVERED
2500-6545	cuttings	samples taken every 10'			
2130-6515	Sidewall cores	Shot and recovered 58			
5055-5085	Conventional Cores	Recovered 1'			
5087-5141	"	11'			
5141-5174	"	0'			
5180-5206	"	23'			

VIII WIRELINE LOGS AND SURVEYS (Incl. FIT)

Type & Scale	From To	Type & Scale	From To
IES 2" & 5"	2000-6543		
BHCS 2" & 5"	2000-6540		
FDC/GR 2" & 5"	4800-6544 GR up to 170		
MLL 2" & 5"	4800-5161		
NL 2" & 5"	4800-5164		
CDM	2000-6540		
Velocity Survey	2100-6500		
FITs 1-6	5025, 5062, 5063, 5078, 5110, 5606.		

D.I. McEvoy
Geologist

WELL EMPEROR -1

IX	FORMATION TOPS/Zones					
NAME	Tops		Gross Interval (ft)	Net Pay (ft).		REMARKS
	M.D.	Sub-sea		Gas	Oil	
Gippsland Form.	201	-170	4318			
Lakes Entrance Fm.	4500	-4469	480			
Oligocene	4919	-4888	61			
Latrobe Group	4980	-4949	1045			
Gurnard Form.	4980	-4949	20			
Zone 1	4980	-4949	88	50'		
Paleocene	5200	-5169	750			
Zone 2	5322	-5291	318	117'		
Zone 3	5790	-5759	186	77'		
Upper Cretaceous	5950	-5919	75			
Strzelecki Group	6025	-5994	520+			

X GEOLOGIC ANALYSIS (Pre Drilling prognosis Vs actual results)

Pre-Drill	Age	Formation	Formation Top
		Water	MSL
	Miocene	Gippsland	-175
	Lower Miocene-Oligocene	"Lakes Entrance"	-4450
	Eocene	Latrobe Group	-4970
	Lower Cretaceous	Strzelecki	-7550

(Pre drilling (estimated))

This well was designed to test Latrobe sediments of lower Eocene and Paleocene age and drill 500 ft. into the Strzelecki (Lower Cretaceous) Group.

Post Drill:

1. Formation tops as in section IX

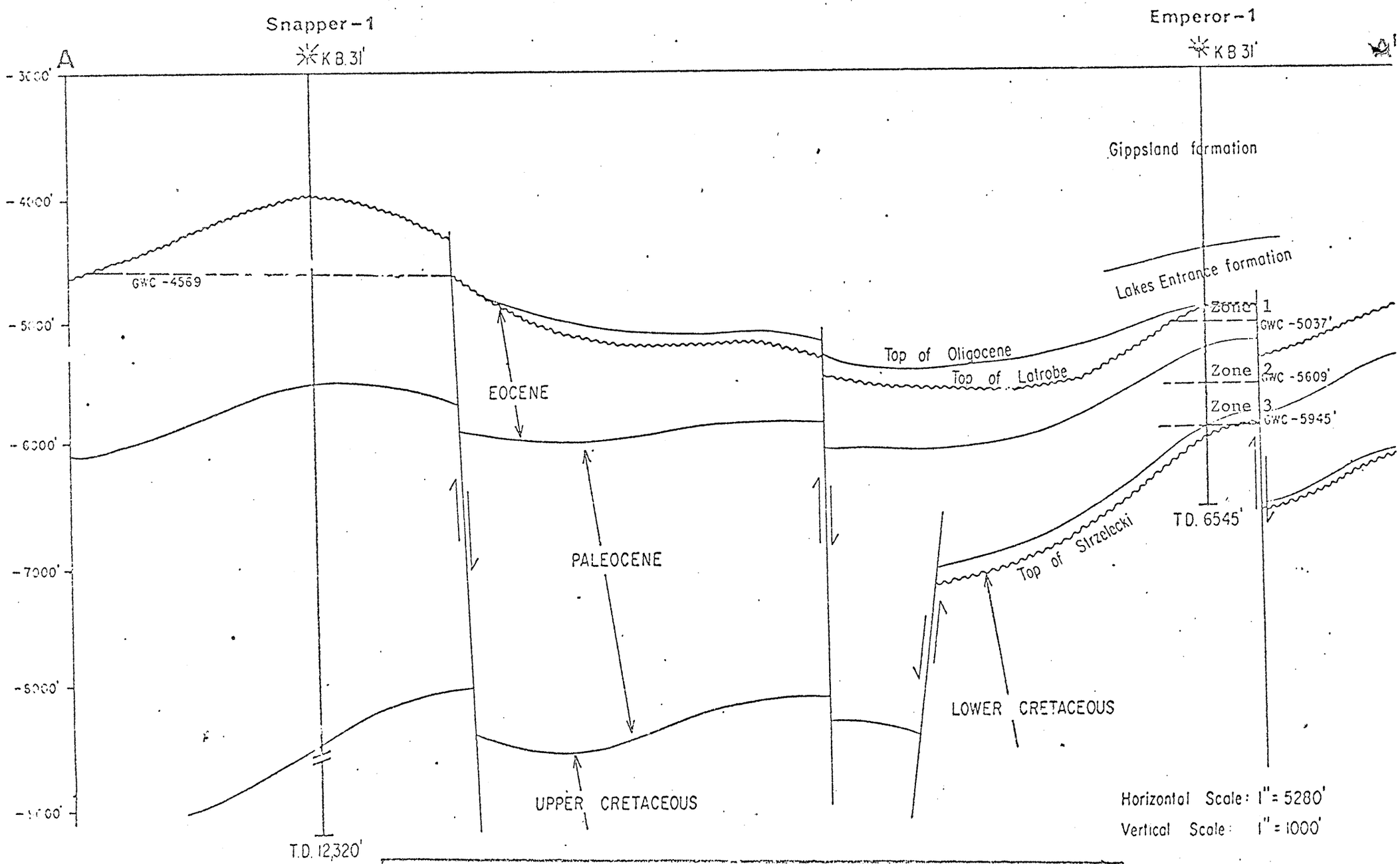
2. A non-commercial hydrocarbon accumulation was discovered by Emperor -1. This accumulation occurred in three discrete zones, each zone having an associated water column.

   FIT tests in Zone 1 at 5025' and 5062' recovered gas and condensate. Zone 2 was tested with an FIT at 5606'. This test recovered dry gas from the bottom 46' of the zone. Zone 3 has been interpreted as dry gas bearing on the basis of sidewall cores and log character and analysis.

3. The structure and stratigraphy of the Emperor prospect remained essentially as predicted.

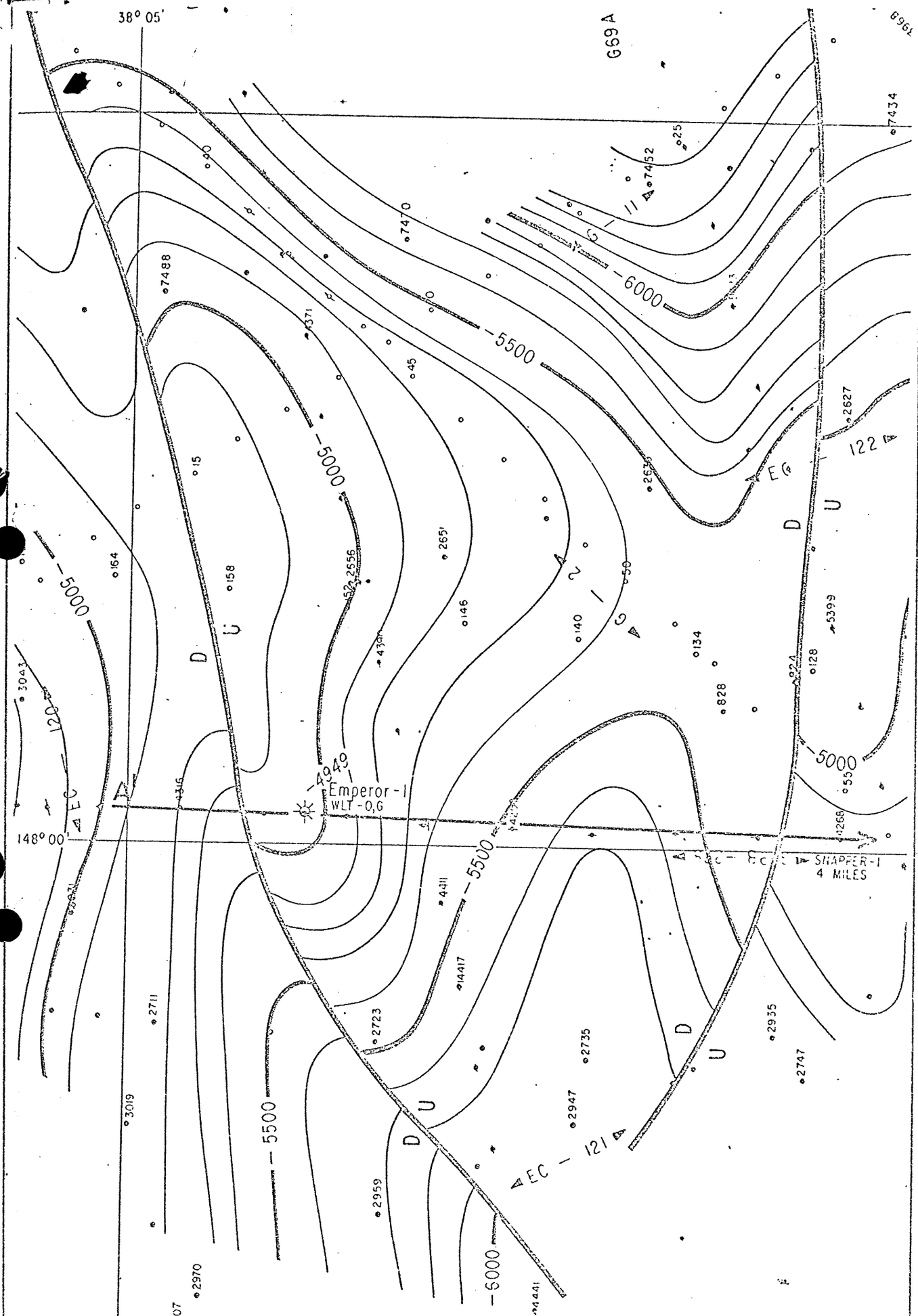
D.T. McEvoy

CROSS SECTION OF AFTER DRILLING PICTURE



OIL MCEVOY

GEOLOGIC MAP OF AFTER DRILLING PICTURE



STRUCTURE MAP ON TOP OF LATROBE GROUP

SCALE 1:50,000

1 0 1

MILES

D. L. McEVOY

Geologist

2.0 LITHOLOGY

LITHOLOGY:

Interval (ft.)	
2040-3798	- Limestone and Marl
3798-5000	- Limestone, Calcarenite and Marl.
5000-5014	- Sand, coarse grained, Siltstone and Coal.

Core No.1

5014-5055, Sand, coarse to granular with minor Siltstone and Coal.

5055-5085, cut 30 feet, recovered 1 foot - Sand, shaly, pyritic, poor porosity, slight fluorescence, good cut and odour.

5085-5087 - Sand, pyritic with minor Siltstone.

Core No.2

5087-5141, cut 54 feet, recovered 11 feet
4 feet Siltstone and Shale
7 feet Sandstone, medium to coarse grained, good porosity, grain size, good fluorescence, odour and cut.

Core No.3

5141-5175, cut 34 feet, nil recovery.

5087-5180 - Sand, coarse and v. minor Sandstone, with slight fluorescence, no shows.

Core No.4

5180-5210, cut 30 feet, recovered 26 feet
2 feet Sandstone, very coarse to granular, unconsolidated, no shows.
24 feet Coal and Shale.

5210-5284	Sand, medium to coarse grained, partly unconsolidated, Shale, Siltstone, Coal, trace.
5284-5500	Sandstone, unconsolidated, poorly sorted, sub-angular to sub-rounded. Coal - upto 90%. Siltstone, light to dark brown, carbonaceous.
5500-5564	Sandstone - Minor quartz, mainly feldspar upto 80%, green and brown, weathered-white. Coal - Minor. Siltstone - Minor.
5564-5720	Volcanics, 20-50%, buff to green, fine to fibrous feldspar in chlorite matrix. Sandstone, 20-70% as before, unconsolidated. Siltstone - Minor. Coal - Minor.
5720-5820	Siltstone and Coal with minor Sandstone.
5820-6030	Volcanics, trace to 70%. Sandstone upto 60%, average 20%. Siltstone and Coal upto 70%.
6030-6040	Siltstone 70% Coal 10% Sandstone 20% Volcanics - trace.

EMPEROR-1

C.R.

LITHOLOGY (Contd.)

Interval (ft.)	
6040-6150	Siltstone predominantly, buff to medium grey. Sandstone 30% as before. Coal 10%.
6150-6220	Siltstone, predominantly, as above (80%). Sandstone, 10-20% lithic and feldspathic light grey to greenish, very fine, sub-angular to sub-rounded, containing 50% clear quartz and 50% green and white feldspars also chert and mica with clay and chlorite matrix, weakly calcareous. Poor porosity.
6220-6310	Sandstone upto 90%, lithic, feldspathic.
6310-6525	Sandstone, lithic feldspathic. Siltstone - (present, 6440-6460 feet).

TESTING:

F.I.T. No.1 at 5025 feet recovered 92.5 cubic feet gas and 1900 ccs condensate.

F.I.T. No.2 at 5063 feet - no recovery.

F.I.T. No.3 at 5062 feet recovered 88 cfs gas, 12,000 ccs condensate and 1600 ccs mud.

F.I.T. No.4 at 5078 feet recovered 21,000 ccs water, 1000 ccs mud.

F.I.T. No.5 at 5110 feet recovered 22,000 ccs water, 100 ccs mud.

F.I.T. No.6 at 5606 feet recovered 106 cubic feet gas and 1800 ccs mud.

2.1 Core Descriptions

SHOW REPORT
CL-4

CORE LABORATORIES AUSTRALIA LTD.

No. 1
Date JUNE 15, 1970
CLA No. FL-155-25L

Operator ESSO STANDARD OIL (AUS) LTD.
Well EMPEROR - 1 AUST. State VIC.

DESCRIPTION OF SHOW:

Show Interval 5000' To 5055'
Color of Flu NO FLUO. Intensity of Flu
% Sand-Lime in Sample 30-60% % of Sand-Lime w/Flu
Cut: Visual NO CUT Flu
Lithology of Section: SANDSTONE, UNCONSOL, LT GY, MED-V CRSE GR, SUBANG-SUBRNDED, PYRITIC. SILTSTONE, LT GY, FIRM, CARB, PYRITIC.

GAS UNITS:

Mud	HOT WIRE Hi	HOT WIRE Lo	Mud	P H/D (CHROMATOGRAPH) Methane C_1	Ethane (-) C_2 (+)	Ethane C_2	Propane C_3	Butane C_4	Pentane C_5
From:	4	-	From:	900	-	-	-	-	-
To:	80	-	To:	31000	-	18000	4300	1200	900
Cuttings			Cuttings						
From:	0	-	From:		NOT MEASURED				
To:	42	-	To:		NOT MEASURED				

ADDITIONAL INFORMATION:

Bit Condition	New X		Worn	Dull
Drilling Break	Yes X		No	
Average Drilling Rate	Controlled Rate		Before Break 1.0	During Break 0.7
Weight on Bit Changes	Increased		Decreased	No Change X
Circulated Out	Yes X	No	Depth CO	
Chloride Changes	Before		After	

FIELD EVALUATION:

Minor ___ Poor X Fair ___ Good ___ Remarks:

FINAL EVALUATION: (It is recognized that other information such as other shows, side wall samples, etc. are necessary for the best evaluation. Consequently, this final opinion will be given at the end of the job after this data is available.)

CORE LABORATORIES, INC
Petroleum Reservoir Engineering
DALLAS, TEXAS

2/2

Page 1 of 1

File FL-155-25

Cores

Well Emperor No. 1

Core No.	Depth: Feet	Feet Recovered	Lithological Description
1	5055-5085	1	
	5055-5056		Ss, pebbly, gry/grn, rounded-sub angular, grnlr sd grns (quartzose) w/well rounded qtz pebbles, well sorted, pyr, alternating cse and finer horz beds
			Yellow spotted flu, strong immediate cut, yellow, strong odor
			Sh, lt gry, w/fn irregular coal stringers, steeply bedded (20°), one bed (5cm) w/sh pellets up to 5cm across
2	5087-5141	11	
	5130-5134		Dk gry-lt gry, ss, v/fn grn w/occ carb stringers & carb fragments, v/hd & shiny
	5134-5137		Ss, well sorted, lt brn-lt gry, fn grn-med grn, fn carb stringers, v/good yell flu, good cut & odor
	5137-5141		Ss, well sorted lt brn-gry, med-cse grn stringers (carb), some fn grn slty bands, v/good yellow flu & v/good cut & odor
3	5141-5175		No recovery
4	5180-5206	23	
	5180-5183		No recovery
	5183-5185		Ss/Cong, v/cse grn, poorly sorted, sl/mica, arg, qtz cl-white, no shows
	5185-5186		Coal
	5186-5189		Ss/Sh, lt gry, firm-hd, v/homogeneous
	5189-5192		Ss/claystone, v/poor recovery, v/soluble
	5192-5194		Ss/sh, lt gry, firm-hd, v/homogeneous
	5194-5195		Ss/claystone, v/poor recovery, v/soluble
	5195-5206		Ss, lt gry-gry, incr in carb content downwards. Homogeneous at top w/occ carb fragments charging to carb laminae downwards, incr in sand & mica content towards base

CORE ANALYSIS OF ZONE 5055' TO 5184' INDICATED SATISFACTORY RESERVOIR CONDITIONS WITH A REASONABLY GOOD OIL SATURATION.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS
July 21, 1970

Esso Standard Oil (Australia) Ltd.
G. P. O. Box 4249
Sydney, New South Wales 2001

Attention: Mr. A. C. Pierce

Subject: Core, Mud and Cuttings Analysis
Emperor No. 1 Well
Gippsland Basin
Victoria, Australia

Gentlemen:

A Core Laboratories Australia combination drill cuttings and core analysis unit was present at the site of the subject well during drilling operations from 2500 to the total depth of 6545 feet.

Using standard equipment plus a Programmed Hydrocarbon Detector, Beckman chromatograph and shale density kit, the drilling fluid was monitored continuously for hydrocarbon content and the drill cuttings were checked at regular intervals for gas and oil content and lithology. All core analysis was performed by conventional procedures. The results of these operations are shown on the accompanying Grapholog and Coregraph. A lithologic description of cores recovered is given on page one.

Hydrocarbon Shows:

Hydrocarbons were detected in one zone during the drilling of this well. Details of this show are included on the attached Show Report.

Core Analysis:

Core Analysis of the zone 5055 to 5184 feet indicated satisfactory reservoir conditions with a reasonably good oil saturation.

We sincerely appreciate this opportunity to have been of service, and trust that the information furnished in this report and during drilling operations has assisted in the evaluation of this well.

Very truly yours,

Core Laboratories Australia (VIC) Ltd.

Gene Jackman

Gene Jackman
Resident Manager

GJ:dl
12 cc. - Addressee

EMPEROR – 1/4

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

RECEIVED 23 JUN 1970 MINES, DEPT.

Core No. 1 WELL ...OR #1

Interval Cored 5055 – 55 ft., Cut ... ft., Recovered ... ft., (... %) Fm. [illegible]

Bit Type [illegible], Bit Size 8 ½ in., Desc. by J. K. Davidson Date 6-6-70

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10		Oil	5055-56	NB. 1' removed placed at the top of the cored interval. This is not accurate as the core is in 3 distinct sections (separated by rounded mud surfaces), two of the sandstone and 1 of shale.
		SS. – yellow spotted fluor. strong, immed. slow yellow cut. strong odour	[illegible]	[illegible] pebbly sandstone: green rounded to sub angular granular sand grains (quartzose) with well rounded quartz pebbles, well sorted and pyritic, 20.9% porosity (see below) – alternating coarse and finer, herg. beds probably braided stream.
			8"	shale, light grey with fine, irregular coal stringers, steeply bedded (20°). One bed 5 cm thick with shale pellets up to 5cm across.

REMARKS: Corelab analysis of sandstone.

20.9% porosity, 1.1% (vol.) oil & 5.5% pore oil & 70.8% total pore water.

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 2

WELL: EMPERER #1.

Interval Cored 5081-5141 ft., Cut 54 ft., Recovered 11 ft., (20 %) Fm. LATROBE

Bit Type C22, Bit Size 8 5/16" in., Desc. by A.J.RIGG. Date 17-6-70.

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 1 2 3 4 5	5087			
	NO RECOVERY 5120		5130-5134.	Dk gry → lt gry siltstone. V. f. gr. c occ carb stringers & cark fragments. V. hard & shiny.
	5130		5134-5137.	Sandst. well sorted lt brn → lt gry. f. gr → m. gr, fine carb stringers, V. good yell. flour, good cut & odour
		Good flour, cut, odour.	5137-5141.	Well sorted lt brn → grn sandstone m → c gr. stringers (carb). Some f. gr silty bands. V. good yell. flour & v. good cut & odour.
	5141.			

REMARKS: Core #1 ended at 5085. The extra 2' to 5087' drilled while reaming.

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 3

WELL: EMPEROR # 1

Interval Cored 5141-5174 ft., Cut 33' ft., Recovered NIL ft., (%) Fm. LATROBE.

Bit Type C 22, Bit Size 8 5/16" in., Desc. by A.J. RIGG. Date 17th JUNE 1970.

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 1 2 3 4 5				No recovery

REMARKS: Opinion of Christensen representative that the top of the dart broke off and jammed between inner and outer barrels causing inner barrel to rotate with the bit, resulting in grinding of the core.

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 4

WELL: EMPERER No 1.

Interval Cored 5180-5206 ft., Cut 26 ft., Recovered 23 ft., (%) Fm. LATROBE.

Bit Type C 8, Bit Size 8 5/16" in., Desc. by A.J. RIGG Date 18-6-70.

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10	5180			
	No RECOVERY.		5180-5183	No recovery.
			5183-5185	Sandstone/Conglomerate. V. c. gr, poorly sorted, sl. micaceous, argillaceous. Qtz. s.a → s.r. cl → wh. No shows.
			5185-5186	Coal.
			5186-5189.	Siltstone/Shale: lt gry, firm → hard v. homogeneous.
			5189-5192.	V. poor recovery: Siltstone, claystone. v. soluble.
			5192-5194	Siltstone/Shale: as 5186-5189
			5194-5195	V poor recovery: as 5189-5192.
			5195-5206	Siltstone: lt gry-dk gry, incr in carb content downwards. Homogeneous at top with occ. carb fragments changing to carb. laminae downwards. Incr. in sand & mica content towards base.

REMARKS: lithology inferred. Loss in recovery at top, but possible loss has occurred from 5189-5192 and 5194-5195.

	Depth	Rec.	Description	
1	6516	¼	Sandstone:	calcareous, lithic, feldspathic, quartz, (=40%), light green-grey, friable, fine grain, moderate to well rounded, moderate to well sorted, high clay matrix, poor porosity, no shows.
2	6479	¼	Sandstone:	calcareous, lithic, feldspathic, quartz (=40%), light green-grey, friable to hard, fine grain, moderate to well rounded, no shows as for 6516'.
3	6446	½	Shale:	carbonaceous, medium grey - medium brown, very firm, carbonaceous laminae, barren.
4	6403	½	Shale:	calcareous, medium grey, firm.
5	6311	¼	Shale:	calcareous, medium grey, with siltstone laminae, grading to fine sandstone.
6	6230	½	Sandstone:	carbonaceous, lithic, feldspathic, quartz (30-50%), light green-grey as at 6516, no shows.
7	6192	1	Sandstone:	as above but very fine-fine grain, no shows.
8	6108	1¼	Siltstone:	carbonaceous, dark brown-black, firm, calcareous, with scattered quartz, with occasional coal fragments.
9	6030	1	Shale:	non-calcareous, medium grey, moderate soft-firm.
10	5980	1	Shale:	silty, carbonaceous, calcareous, light brown grey, very soft, with coal laminae, disintegrates in water.
11	5958	¾	Sandstone:	quartz, slightly calcareous, slightly lithic, (coal, chert & feldspar) light grey, friable, medium to coarse grain, subangular, moderately sorted, good porosity, very spotty, straw fluorescence, slow pale yellow cut, no stain, oil taste.
12	5930	¼	Shale:	silty calcareous, light grey, very soft.
13	5914	¼	Sandstone:	quartz, 5% dark lithic, calcareous, light grey, friable, medium grain, subangular, small amount clay matrix, very weak patchy fluorescence, very weak pale yellow cut, good porosity.
14	5878	¾	Sandstone:	quartz,weakly calcareous,trace lithic, light grey, coarse grain, subangular, no fluorescence, weak pale yellow cut, good porosity, friable.
15	5856	1	Sandstone:	quartz, light grey, very friable, as above at 5878, no fluorescence, very weak pale yellow cut.
16	5806	1	Shale:	carbonaceous, silty, calcareous, medium grey, firm.
17	5794	¾	Sandstone:	quartz, pyritic, trace dark lithic, light grey, very friable, very coarse/ medium grain, subangular, poorly sorted, no matrix, excellent porosity & permeability, spotty pale yellow fluorescence, slow yellow cut.
18	5742	1	Shale:	silty, non calcareous, grey, with silt laminae.
19	5623	1	Shale:	silty, carbonaceous, medium grey brown, with carbonaceous laminae, calcareous.
20	5615	1	Sandstone:	carbonaceous, quartz, very calcareous, medium to very coarse grain, poorly sorted, subrounded to rounded, carbonaceous laminae, trace dark lithic, very friable, good porosity, very spotty pale yellow fluorescence, very weak pale yellow cut.
21	5604	¾	Sandstone:	quartz, fine to very coarse grain, predominantly

				coarse grain, poorly sorted, angular to subrounded, light grey, very friable, good to excellent porosity and permeability, no fluorescence very weak pale yellow cut.
22	5590	¾	Sandstone:	as above but pyritic, no fluorescence, weak pale yellow cut.
23	5560	1¼	Sandstone:?	very argillaceous, very pyritic, weakly calcareous, light grey, very hard, with pyritic veins, no shows, poor porosity and permeability 55% matrix.
24	5530	1	Sandstone:	white, very fine-silty, very argillaceous, very calcareous, soft, 35% clay matrix, no shows, poor porosity and permeability.
25	5514	1	Volcanics:?	bright green coarse grains, well rounded, poorly sorted, (could be chlorite or glauconite?), buff clay matrix, 40-50% of total, green grain soft and easily broken,weaklycalcareous, poor porosity and permeability.
26	5505	1½	Sandstone:?	scattered quartz in buff clay matrix (matrix 50-60%) carbonaceous laminae, scattered amber fragments, which fluorescence a blue colour, coarse quartz grains.
27	5408	1½	Shale:	light grey, silty, firm, weakly calcareous.
28	5395	1	Sandstone:	quartz, non calcareous light grey, medium grain, well sorted, friable, trace of buff feldspar and carbonaceous material, porosity and permeability good, no fluorescence, no cut.
29	5348	½	Sandstone:	quartz, trace dark lithic, light grey, very friable, medium grain, well sorted, subangular, porosity and permeability good to excellent, very weak patchy, yellow fluorescence, slow weak pale yellow cut.
30	5320	¾	Shale:	light grey, silty, firm, noncalcareous.

2.3 Core Analysis Results

Petroleum Technology Laboratory, Bureau of Mineral Resources, Geology and Geophysics, Canberra

BASIC

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. EMPEROR NO.1

DATE ANALYSIS COMPLETED 30 March 1976

Core No.	Sample Depth FEET		Lithology	Average Effective Porosity two plugs (% Bulk Vol.	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Sample 'cut' in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
1	5055' 0"	5056' 0"	Sh; slty	15.0	N.D.	N.D.	2.29	2.67	28	2.6	N.D.	Nil	Nil	Nil
2	5134' 0"	5135' 0"	Sst; f.gr. slty	16.5	0.18	60	2.22	2.65	5.6	8.4	N.D.	Tr.	Dull, even yellow	Fair
2	5138' 7"	5139' 6"	Sst; f.gr mic.	20.7	0.30	230	2.09	2.64	17	5.3	N.D.	Tr	good, even white to yellow	Fair
4	5184' 0"	5185' 0"	Sst; m.gr to c. gr.	15.2	N.D.	84	2.25	2.65	2	Tr	N.D.	Nil	Nil	Nil
4	5195' 0"	5196' 0"	Clyst.	11.9	<0.1	N.D.	2.38	2.67	1.5	Tr	N.D.	Nil	Nil	Nil
4	5205' 0"	5206' 0"	Slst; arg, carb.	10.5	<0.1	0.12	2.39	2.65	21	Tr	N.D.	Nil	Nil	Trace

Remarks: - Core No 3 - No recovery

General File No. ~~XX/XXXXX~~ 74/1076

Well File No. _____

2.4 Well Log Analysis Report

WELL LOG ANALYSIS REPORT

TO Well File.
C.C. J.H. Armitage , A.C. Pierce, J.S. Bain.

OPERATOR ESSO AUSTRALIA | WELL EMPEROR I | DATE Feb 16, 1972.

STATE VICTORIA | ELEV. KB 31'.

DEPTH INTERVAL	POROSITY ESTIMATE	WATER SAT. ESTIMATE	REMARKS
5018-21(3	23 5-24.5	17-18	Gas productive
5021-32(11	25-27	8-9	Gas productive
5032-34(2	20-21	16-17	See comments #1
5034-40(6	23-24	12-13	"
5040-48(8	20.5-21.5	14-15	"
5048-52(4	25-26.5	13-14	"
5052-57(5	29-30	7	"
5057-61(4	19-20	17-18	"
5061-65(4	21.5-22.5	19-20	"
5065-68(3	26-17	19-20	"
5075-79(4	26.27	90-100	Formation water productive
5079-82(3	20-21	Shaly	Formation water productive
5082-91(9	25.5-26.5	80-100	Formation water productive
Run 1 IES depths			
5322-28(6	19-20	28-29	Probably gas productive
5328-34(6	28-29	11-12	"
5334-38(4	16-17	34-36	"
5338-41(3	26-27	15	" 5322 - 1 1/16'
5341-44(3	24.5-25.5	16-17	"
5344-46(2 27'	30.5-31.5	12-13	"
5346-49(3	25-26	26-27	"
5359-62(3	21.5-22.5	-	Too thin for resolution
5387-93(6 30'	15.5-17	42-47 shaly	Probably gas productive
5393-5400(7	20.5-22	21-23	"
5414-18(4	Indeterminate	-	"
5473-80(7	20.5-22	40-43	"
5502-05(3 12'	19-20	Indeterminate	Severe adjacent bed effects.
5505-08(3	20.5-22	Indeterminate	"
5574-77(3	16.5-17.5	27-29	Probably gas productive
5577-80(3	21.5-23	16-17	"
5580-86(6	22-23.5	15-17	"
5536-90(4 40'	27-29	8-9	"
5590-94(4	26-27	10	"
5594-5600(6	23-24.5	14-15	"
5600-05(5	30.5-31.5	8	"
5605-08(3	21.5-23	20-21	"
5608-14(6	26-27	16-17	"

TESTS:

FORMATION:

LOGS:

COMMENTS:

1. The hydrocarbon in the formation is much more dense in the interval 5032-68 than in the interval 5018-32.

Form R193 3/71

BASIN GIPPSLAND BASIN BY David TAYLOR

WELL NAME EMPEROR - 1 DATE 19 April 1971 ELEV. +31

INTERPRETATIVE

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A						
	Alternate						
	B						
	Alternate						
	C				2500	3	
	Alternate						
	D_1	2540	0		3010	3	
	Alternate						
	D_2	3115	0		3400	3	
	Alternate						
	E	3476	0		4000	0	
	Alternate						
	F	4000	0		4244	0	
	Alternate						
	G	4244	0		4850	3	
	Alternate						
	H_1	4410	3		4784	0	
	Alternate						
	H_2	4832	0		4900	3	
	Alternate						
OLIGOCENE	I_1	4919	0		4919	0	
	Alternate						
	I_2	4933	1		4933	1	
	Alternate						
	J_1	4956	0		4978	2	
	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 _____

By _____

2.2 Side Wall Core Descriptions

REF. # | FIELD WILDCAT | STATE VICTORIA | ATT. 28 REC. 28 | PAGE 1 OF 2 PAGES

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	ODOR	FIDO	FLUORESENCE DIST	FLUORESENCE INT	FLUORESENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	PROB. PROD.
1	5143'	1"	SANDST: uncons. c.gr. poor sort. sa→s.r cl→wh qtz grains	lt brn			—			Uneven		Pale yell.	Slight					
2	5122'	1¼"	SANDST: uncons. c.gr. poor. sort. A.A Pyrite specked	do.			—			do		do	do.					
3	5106'	1"	SANDST: uncons. f.gr. even sort. S.a→s.r. white qtz grains.	do.	slight					Poor uneven		do	Good	Blue yell.				
4	5094'	¾"	CLAYST. soft→firm: sl. micaceous	lt.grey→buff			slight			—			—					
5	5084'	1½"	SANDST: uncons. v.poor. sort. V.coarse.gr→v.f.gr. S.r→r, cl→wh. Frag. detrital. carb. silrst.	? lt brn.			—	—		Fair — uneven			Fair.					
6	5054'	¾"	SANDST: uncons f→m.gr, clean fair sort. s.a→r. grns. cl→wh	lt brn			—	Strong		Good uneven		Blue yell.	V. Strong.	Blue yell.				
7	5042'	1"	SANDST: uncons. f→m.gr., fair sort, clean, ~~s~~a s.a→s.r. white poss. bleeding gas.	lt.brn			—	—		Poor uneven		? do.	FAIR	do.				
8	5030'	¼"	SANDST: uncons., m.gr, fair sort clean, s.a→s.r., white frosted, tr. pyrite.	lt-gry→buff			—	—		V. poor		Indef.	Good	yell.				
9	5016'	½"	CLAYST: firm.	buff.			slight	—		—		—	—	—				
10	4998	1"	SANDST: consol. m→f.gr. poor sort. glauc. pyr, argill, micac.	m.gry.			—	—		—		—	—	—				
11	4992	1"	Sandy SILTST: consol. Occ sand gr., wh→cl, Tr. glauc.	lt→md gry.			—	—		—		—	—	—				
12	4984	½"	SHALE: pyr. tr. f.gr. sandst. white	dk gry.			—	—		—		—	—	—				

SERV. CO. SCHLUM | DATE 20/3/70 | LOG RUN NO. 1 | GEOLOGIST A.J. RIGG

REF. # | FIELD WILDCAT | STATE VICTORIA | ATT. 28 | REC. 28 | PAGE 2 OF 2 PAGES

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	ODOR	FIDO	FLUORESCENCE DIST	FLUORESCENCE INT	FLUORESCENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	POSS. PROD.
13.	4978'	1¼"	CLAYST: furn. tr glauc & pyr.	lt. gry.			✓											
14	4956'	1¼"	CLAYST: do. + fossils.	lt. gry → olt. brn			✓											
15	4933'	1¾"	CLAYST: ~~tr~~ tr. mica & fossils.	lt. gry			✓											
16	4919'	1¾"	do.	do.			✓											
17	4832'	1"	do plaky texture	do.			✓											
18.	4784'	1½"	do. do.	do.			✓											
19.	4490'	½"	Sandy. SILTST. Qtz: grns. S.r pr. dark: pyr, tr. glauc. Silty matrix.	do.			–											
20.	4244'	1¼"	CLAYST: sl. micac. Plaky texture.	lt brn – gry			✓											
21.	4000'	1"	do. ? foss.	m. gry → brn.			✓											
22.	3720'	1"	do. foss. harder than above.	do.			✓											
23.	3476'	¾"	CLAYST: occ. glauc. sl. harder.	lt gry			✓											
24.	3115'	½"	CLAYST: furn. foss.	lt brn gry.			✓											
25	2810'	1¼"	CLAYST: occ. Qtz. grns. foss.	m. gry.			✓											
26.	2540	1"	CLAYST: furn flake.	lt. gry.			✓											
27.	2288	1"	LST: finely xstlline calcite. foss. in f.gr. calc. matrix. Few detrit. qtz. grains.	lt brn			✓ very.											
28.	2130	1¼"	Clayst - MARL. inc. f. gr. qtz. uni local. calc. matrix. foss.	lt/gry			✓											

BHP

INTERPRETATIVE

PALYNOLOGY OF EMPEROR-1,

GIPPSLAND BASIN

by

P.R. Evans & Mrs. A. Nicholls

Palyn. Rept. 1970/34

July 1970.

INTRODUCTION

Samples from Emperor-1 were received for analysis during June and July, 1970. The following notes summarize determinations derived by the end of July.

SUMMARY

Sample	Depth (ft.)	Age	Zone
swc 11	4992	U. Eocene	N. asperus
c. 1	5055-85	L. Eocene	u. M. diversus
c.	5131	"	"
c.	5210	Eocene/Paleocene	M. diversus undiff.
swc 30	5320	Paleocene	L. balmei
cutt.	5600	"	"
swc 19	5623	"	"
cutt.	5700	"	"
swc 18	5742	"	"
" 16	5806	"	" (basal)
" 12	5930	Indeterminate	
" 10	5980	U. Cretaceous	T. lilliei
" 9	6030	L. Cretaceous	undet.
" 8	6108	"	"
" 5	6311	"	"
" 4	6403	"	"
" 3	6446	"	no older than C. hughesi

COMMENT

The Upper Eocene N. asperus Zone is well represented at 4992 feet by a glauconitic silty sandstone. Rare dinoflagellates of an as yet undetermined zone are present.

The Upper M. diversus Zone is relatively well represented between 5055 and 5131 feet. Whether or not core at 5210 feet should also be referred to the Upper M. diversus Zone cannot be decided on available evidence, although it appears probable this is so.

The proximity of the M. diversus Zone at 5055-85 feet to the N. asperus Zone at 4992 feet suggests a break exists between the zones. Furthermore, if 5210 feet does represent the Upper M. diversus, an hiatus may occur between the diversus and L. balmei Zones. The latter probability is heightened by the fact that uppermost L. balmei Zone (=Pla) has not been detected.

The L. balmei Zone may be grouped into two parts: 5320-5742 feet is typical L. balmei; 5806 feet is of "basal" L. balmei type, to be linked with the T. lilliei Zone below, rather than the "typical" balmei above.

The sample at 5980 feet of the T. lilliei Zone yielded an abundant assemblage. Some confusion about its designation remains because of very sparse evidence to indicate possibly a basal balmei age.

The Lower Cretaceous, although represented by five fossiliferous samples, cannot be allocated to accepted zones due to the lack of diagnostic fossils. However, sufficient are present to indicate the base of the hole is no older than the C. hughesi Zone (Aptian) and that probably the section in fact represents the hughesi Zone.

The uppermost two samples assigned to the Lower Cretaceous, 6030 and 6108 feet, are so dated by stratigraphic position only and a complete lack of Upper Cretaceous microfloras.

Recycling of older fossils into younger strata is evident at 6311 feet where Triassic spores were recognized. Again, in the L. balmei Zone at 5742 feet, Late Devonian spores were found.

EMPEROR-1

ELEVATION: KB + 31'

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
	P. tuberculatus										
	U. N. asperus										
	M. N. asperus										
	L. N. asperus	4992	1				4992	1			
	P. asperopolus	5055	1				5055	1			
	U. M. diversus										
	M. M. diversus										
	L. M. diversus	5131	2	5210	1		5210	1			
	U. L. balmei	5320	1				5320	1			
	L. L. balmei	5408	2	5623	1		5742	1			
	T. longus	5806	1				5806	1			
	T. lilliei	5980	1				5980	1			
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.	6030	1				6030	1			
	T. pannosus										
	T.D	6565									

COMMENTS: Deflandrea heterophylcta Dinoflagellate Zone 4992 (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.S./A.D.P. DATE June 1971; Dec. 1971

DATA REVISED BY: A.D.P. DATE Jan. 1975

BASIN GIPPSLAND DATE June 1971

WELL NAME EMPEROR -1 ELEVATION +31 feet **INTERPRETATIVE**

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
L. MIOC.	T. bellus										
	P. tuberculatus	-									
EOCENE	U. N. asperus										
	L. N. asperus	4992	1				4992	1			
	P. asperopolus										
	U. M. diversus	5055	2				5131	1			
	L. M. diversus	5210	2				5210	2			
PALEO-CENE	L. balmei	5320	1				5742	2	5623	1	
	T. longus	5806	1				5930	2	5806	1	
LATE CRETACEOUS	T. lilliei	5980	1				5980	1			
	N. senectus										
	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 Early Cretaceous zone the interval 6030 to 6446 feet represents is uncertain.

T.D. 6545 (1.463)

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.

DATE RECORDED BY: L.E.Stover / A.D.Partridge. DATE June 1971

DATA REVISED BY: CHECKED; L.E.S. DATE Dec. 1971

WELL LOG ANALYSIS REPORT

TO PAGE 2 (CONTINUED)

OIL and GAS DIVISION - 6 AUG 1982

OPERATOR ESSO AUSTRALIA WELL EMPEROR I DATE Feb 16, 1972.

STATE VICTORIA ELEV. KB 31'.

DEPTH INTERVAL	POROSITY ESTIMATE	WATER SAT. ESTIMATE	REMARKS
5614-16(2	21-22	26-27	Probably gas productive
5616-19(3	25-26.5	26-27	"
5627-40(13	21-22	38-40	See comments #2 GWC
5640-55(15	24.5-25.5	90-100	Formation water productive
5791-96(5	27-28	13	Probably gas productive
5850-54(4	17.5-19	20-22	"
5854-59(5	21.5-23	15-16	"
5859-63(8	19-20	20-22	"
5863-71(8	16.5-18	30-32	"
5871-73(2	21.5-22.5	16-17	"
5873-76(3	25-26	14	"
5876-79(3	22.5-23.5	17-18	"
5879-82(3	17.5-18.5	23-24	"
5882-86(4	25.5-26.5	17-18	"
5910-16(6	25.5-27	12-13	"
5916-20(4	17-18	29-32	"
5951-57(6	19-20	34-36	See comments #3.
5957-60(3	21-22.5	32-35	"
5960-63(3	17-18	44-47 shaly	"
5963-66(3	21-22.5	38-41	"
5969-72(3	14.5-16	59-67 shaly	"
5972-76(4	18-19.5	46-50 shaly	"
5983-87(4	17.5-19	71-78	Probably water productive
5987-92(5	16.5-17.5	71-76 shaly	"

18' TOTAL 58'

177'

Run 2 IES depths.

TESTS:

5 FIT's attempted.

FORMATION:

Latrobe Group.

LOGS:

R1, IES, MLL, FDC-(
BHC, GNT. Rz IES,
FDC-GR, BHC.

COMMENTS:

2. The logs for this zone were interpreted assuming gas saturation. If this zone were interpreted assuming oil saturation the porosity difference between this zone and the djacent ones would disappear and the water saturation would be lower. With the existing ogs the question cannot be answered.

3. The T. lilliei section always presents problems in log interpretation. This section robably contains hydrocarbons 5951-76'.

BY R J Dang

3.0 PALYNOLOGY OF EMPEROR 1

3.1 Cretaceous Sediments in Emperor I

PALYNOLOGY REPORT

CRETACEOUS SEDIMENTS IN EMPEROR NO. 1

by

MARY E. DETTMANN

Prepared for
LASMO ENERGY AUSTRALIA LTD.

JUNE, 1985

SUMMARY

Palynology of Emperor No.1, 5980-6466 ft:

5980 ft	*Tricolporites lillei* Zone; Late Cretaceous, late Campanian -Maastrichtian; non-marine.
6030-6108 ft	*Clavifera triplex* Zone; Late Cretaceous, Turonian-Coniacian, non-marine.
6311 ft	Sparse assemblage, zone not determined; probably Early Cretaceous with significant recycling from the Triassic.
6403-6446 ft	*Cyclosporites hughesii* Subzone, upper unit; Early Cretaceous, Barremian-Aptian; non-marine with some recycling from the Triassic,

These data indicate that the Latrobe Valley Group extends down to at least 6108 ft; an hiatus, representing the time interval Coniacian-late Campanian occurs within the group between 5980 ft and 6030 ft. The underlying Strzelecki Group was encountered between 6403 ft and 6446 ft and sediments at 6311 ft may also be within that group. An hiatus of Aptian-Tutonian duration intervenes between the Latrobe Valley and Strzelecki Groups.

INTRODUCTION

Palynofloras from six sidewall cores between 5980 ft and 6446 ft in Emperor No.1, offshore Gippsland Basin, have been investigated to determine age relationships of the sequence and to assess whether one or more hiatuses occur within the Latrobe valley Group and the underlying Strzelecki-like facies.

Palynological zonation of the Late Cretaceous is in terms of the integrated Dettmann & Playford (1969) and Stover & Evans (1973) schemes (Fig. 1); for the Early Cretaceous, Dettmann & Douglas' (1976) zonation is used (Fig. 2). The latter was founded for the Otway Basin, but is equally applicable to the Gippsland Basin sequence. Species identified and their distribution within the sequence are tabulated in Table 1.

DISCUSSION

From slides and residues provided, palynological contents of samples are discussed in ascending stratigraphic order. Neither kerogen typing nor thermal maturation assessments were attempted since the residues have been subjected to oxidising reagents which renders dispersed organic matter unsuitable for meaningful kerogen/maturation analyses.

6446 ft, 6403 ft

The two samples yielded 'mixed' Early Cretaceous/Triassic assemblages and the interpretation presented here assumes Triassic recycling into the Early Cretaceous; species restricted to the Late Cretaceous or younger sediments were not observed. Amongst the Early Cretaceous taxa, Dictyotosporites speciosus, Cyclosporites hughesii, and Foraminisporis asymmetricus, all occurring in the upper sample, accord reference to the upper unit of the Cyclosporites hughesii Subzone (see Fig. 2). Accordingly, the sediments are interpreted to be within the Strzelecki Group and are of Barremian-Aptian age. The lower sample contains F. asymmetricus that likewise indicates an age no older than Barremian-Aptian within the C. hughesii Subzone upper unit.

The presence of occasional Late Triassic palynomorphs indicates that source sediments include erosion products of Late Triassic sequences, the nearest known outcrops and subcrops of which occur to the south, in Tasmania.

The occurrence of algal microfossils (leiosphaerids) of prasinophycean affinity indicates deposition in a land-based, possibly fluvial environment.

6311 ft

The sparse assemblage contains more common Triassic taxa together with Cretaceous species. The majority of the latter are long ranging within the Early and mid Cretaceous, but the assemblage is more consistent with those of Early

Cretaceous age. Leiosphaerids occur infrequently and desposition in a terrestrial situation is indicated with source sediments derived, at least in part, from Triassic strata.

6030 ft, 6108 ft

Both samples contain moderately diverse assemblages. The presence in each of Phyllocladidites mawsonii, Triorites minor and Clavifera triplex confirm attribution to the Clavifera triplex Zone of Turonian-Coniacian age (Fig. 1). The section is thus younger than as determined previously by Esso (Appendicisporites distocarinatus Zone, Cenomanian) and is equivalent in age to subcrops of the Latrobe Valley Group in deeper areas of the basin.

Rare Permian remanié palynomorphs, frequent leiosphaerids and occasional fungal spores occur in the assemblages. Deposition of the rainforest detritus in a non-marine situation with at least some source sediments derived from Permian sediments is indicated.

5980 ft

A varied assemblage of spores and pollen amongst which indices of the Tricolporites lillei Zone occur, is represented in the residue from 5980 ft. A latest Cretaceous, Campanian-Maastrichtian, age is indicated. Occasional Botryococcus and an abundance of land plant material indicates deposition in a non-marine swamp environment.

CONCLUSIONS

Palynofloras represented in sediments between 5980 ft and 6446 ft indicate that:

1) the section between 5980 ft to at least 6108 ft is equivalent in age to the Latrobe Valley Group.

2) an hiatus exists within this section between 5980 ft and 6030 ft, intervening between the T. lillei (5980 ft) and C. triplex (6030-6108 ft) Zones. This hiatus represents the time interval Coniacian to at least Campanian occupied by the Tricolpites pachyexinus and Nothofagidites senectus Zones (see Fig. 1).

3) providing all palynomorphs in assemblages at 6403 ft and 6446 ft are not recycled, the enclosing sediments are within the upper part of the C. hughesii Subzone (Barremian-Aptian) and hence equivalents of the Strzelecki Group. If this is true, then an hiatus occurs within the section between 6108 ft and 6430 ft. This hiatus is of Aptian to Turonian duration.

4) the sample from 6311 ft is possibly of Early Cretaceous (Barremian-Aptian) age, but may be as young as the Turonian. Source sediments of this and the underlying Strzelecki Group samples include erosion products of Triassic sequences.

REFERENCES

DETTMANN, M.E. & DOUGLAS, J.G. 1976. Mesozoic Palaeontology. In Douglas, J.G. & Ferguson, J.A. (eds.) Geology of Victoria. Geol. Soc. Aust. Spec. Publ. 5, 164-169.

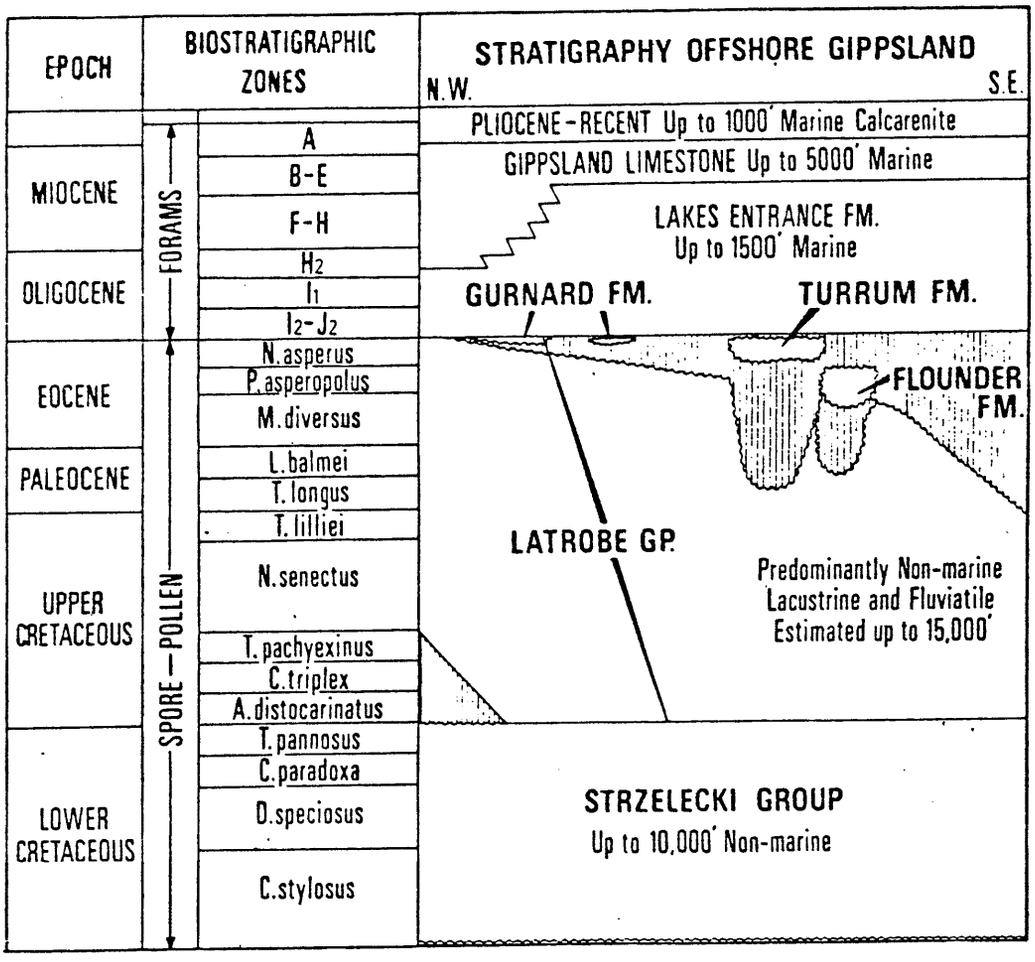
DETTMANN, M.E. & PLAYFORD, G. 1969. Palynology of the Australian Cretaceous: a review. In Campbell, K.S.W. (ed.) Stratigraphy and Palaeontology - Essays in honour of Dorothy Hill, 174-210. Aust. Nat. Univ. Press, Canberra.

STOVER, L.E. & EVANS, P.R. 1973. Upper Cretaceous spore-pollen zonation, offshore Gippsland Basin, Australia. Spec. Publs geol. Soc. Aust., 4, 55-72.

MARY E. DETTMANN

C/- Department of Geology & Mineralogy
University of Queensland
St Lucia, Q 4067

June 1985



after Stover & Evans (1973)

FIG. 1. Lithostratigraphic/biostratigraphic relationships, Cretaceous-Tertiary, Gippsland Basin.

PE904940

This is an enclosure indicator page.
The enclosure PE904940 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904940 has the following characteristics:

ITEM_BARCODE	= PE904940
CONTAINER_BARCODE	= PE904941
NAME	= Litho/Bio -stratigraphic Relationships
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Emperor 1 Lithostratigraphic/Biostratigraphic Relationships, Early Cretaceous, Otway Basin. From Well Summary Folder section 3.1.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	=
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE904942

This is an enclosure indicator page.
The enclosure PE904942 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904942 has the following characteristics:

ITEM_BARCODE	= PE904942
CONTAINER_BARCODE	= PE904941
NAME	= Palynomorph Distribution
BASIN	= GIPPSLAND
ON_OFF	= OFFSHORE
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CHART
DESCRIPTION	= Emperor 1 Palynomorph Distribution Chart. Table 1, Sheet 1 of 3. From Well Summary Folder section 3.1.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor 1
CONTRACTOR	= Lasmo Energy Australia Ltd.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

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PE904943

This is an enclosure indicator page.
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The enclosure PE904943 has the following characteristics:

ITEM_BARCODE	= PE904943
CONTAINER_BARCODE	= PE904941
NAME	= Palynomorph Distribution
BASIN	= GIPPSLAND
ON_OFF	= OFFSHORE
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CHART
DESCRIPTION	= Emperor 1 Palynomorph Distribution Chart. Table 1, Sheet 2 of 3. From Well Summary Folder section 3.1.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor 1
CONTRACTOR	= Lasmo Energy Australia Ltd.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE904944

This is an enclosure indicator page.
The enclosure PE904944 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904944 has the following characteristics:

ITEM_BARCODE	= PE904944
CONTAINER_BARCODE	= PE904941
NAME	= Palynomorph Distribution
BASIN	= GIPPSLAND
ON_OFF	= OFFSHORE
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CHART
DESCRIPTION	= Emperor 1 Palynomorph Distribution Chart. Table 1, Sheet 3 of 3. From Well Summary Folder section 3.1.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor 1
CONTRACTOR	= Lasmo Energy Australia Ltd.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

4.0 Hydrocarbon Report

2nd copy
8 pgs

OIL and GAS DIVISION

ESSO PRODUCTION RESEARCH COMPANY

HYDROCARBON REPORT - SUBSURFACE OIL
ESSO STANDARD OIL (AUSTRALIA) LTD.
EMPEROR 1 WELL

G. T. Pyndus
C. N. Burris
H. W. Faulkner
H. H. Shepherd

Production Engineering Division

March 1971

EPR.31.PS.71

Contents

EMPEROR 1 SUBSURFACE OIL SAMPLE

Source: Esso Standard Oil (Australia) Ltd., Emperor 1 Well

Date Taken: June 20, 1970

Sampling Data

Sampled in the one-half gallon isolation chamber of an FIT subsurface tool, and transferred into two shipping containers.

Saturation Pressure

1625 psig at 75°F
1970 psig at 173°F

Reservoir Data

Depth KB	5062 ft.
Depth, SS	5031 ft.
Reservoir Pressure	2287 psig
Reservoir Temperature	173°F (ESTD)

Properties of Samples

Pressure-Volume Relations	Table I
Flash Liberation and Differential Liberation Results	Table II
Comparison of Experimental and Computed Flash Liberation Results	Table II-A
Hydrocarbon Analysis of Subsurface Oil Sample	Table III
Viscosity of Reservoir Oil at 173°F	Table IV

TABLE I

Pressure-Volume Relations of Subsurface Oil Sample

Source: Esso Standard Oil (Australia) Ltd., Emperor 1 Well

Date Taken: June 20, 1970

Temperature: 173°F

Pressure, psig	Relative Volume, V/V_{bp}	$*Y = \frac{P_s - P}{P(\frac{V_t}{V_{bp}} - 1)}$
3600	0.9426	-
3000	0.9593	-
2670	0.9700	-
2240	0.9862	-
P_s = 1970	1.0000	-
1935	1.0133	1.345
1900	1.0272	1.337
1825	1.0594	1.318
1685	1.1297	1.283
1495	1.2531	1.243
1300	1.4252	1.181
1190	1.5501	1.158
1085	1.6988	1.135
965	1.9220	1.112
845	2.2070	1.075
750	2.5048	1.051
645	2.9453	1.022
520	3.7095	1.000
445	4.3998	0.975
335	5.9450	0.945

Specific Volume at Saturation Pressure = 0.03001 cu ft/lb

*Calculated data for use in correcting subsurface oil sample

P_s = Saturation pressure of sample at 173° F, psia
P = Pressure below saturation pressure, psia
V_t = Two-phase relative volume factor at 173° F and P
V_{bp} = Saturated oil relative volume at 173° F and 1985 psia (1970 psig)

TABLE II

Flash Liberation and Differential Liberation Results
Subsurface Oil Sample

Source: Esso Standard Oil (Australia) Ltd., Emperor 1 Well

Date Taken: June 20, 1970

Properties of Saturated Oil: Temperature, °F 173 Saturation Pressure, psig 1970

Gas Liberation and Shrinkage of Oil:
(Flash)

Pressure (p_1), psig	Temperature, °F	Gas-Oil Ratio: cu ft at 60° F and psia/bbl Residual Oil Flashed at p_1	Flashed from p_1 to 0	Residual Oil Gravity, °API at 60° F	Specific Gravity Gas at 60° F (air = 1)	V_R/V_S*
0	75	2260	-	60.0	1.205	0.4011
20	75	1797	44	63.3	-	0.4620
150	75	1223	335	65.7	-	0.5140

(Differential at 173° F)

Pressure, psig	Properties of Liberated Gas at 173° F and Indicated Pressure*** Compressibility, Z:	Viscosity, cp	Gas-Oil Ratio: cu ft at and 60° F/bbl Reservoir Oil at 1800 psig, 173° F	psia	Residual Oil Gravity, °API at 60° F	V^{**}/V_S
1970	-	-	0			1.0000
1780	0.827	0.0156	96			0.952
1470	0.842	0.0141	221			0.885
1155	0.861	0.0132	353			0.815
850	0.883	0.0128	443			0.767
550	0.906	0.0122	527			0.721
280	0.926	0.0111	614			0.671
145	0.967	-	662			0.638
0	-	-	794		63.1	0.526

*V_R = Volume residual oil at 0 psig, 60° F
V_S = Volume saturated oil at 1970 psig, 173° F
**V = Volume saturated oil at indicated pressure, 173° F
*** = Determined from calculated composition of equilibrium gas

TABLE II-A

Comparison of Experimental and Computed Flash Liberation Results
Subsurface Oil Sample

Source: Esso Standard Oil (Australia) Ltd., Emperor 1 Well

Date Taken: June 20, 1970

(P_1) Pressure psig	Temperature °F	Gas-Oil Ratio - cu ft/bbl Residual Oil: Flashed at P_1 Experimental	Flashed at P_1 Computed	Flashed from P_1 to 0 Experimental	Flashed from P_1 to 0 Computed	Residual Oil Gravity °API at 60° F Experimental	Residual Oil Gravity °API at 60° F Computed	V_R/V_S Experimental	V_R/V_S Computed
0	75	2289		-	-	60.0		0.3919	
20	75	1797	1815	44	27	63.3	65.4	0.4620	0.4572
150	75	1223	1276	335	384	65.7	67.1	0.5104	0.4860

Data Used in Flash Calculations

Subsurface Oil Sample

Component	Mol %	gal/mol
Hydrogen Sulfide	Nil	
Carbon Dioxide	0.70	9.42
Nitrogen	2.14	7.30
Methane	38.22	
Ethane	5.65	
Propane	9.69	
Iso-Butane	2.38	
N-Butane	9.46	
Iso-Pentane	2.87	
N-Pentane	5.10	
Hexanes	7.14	16.08
Heptanes	7.02	16.65
Octanes	2.82	18.20
Nonanes	1.66	19.52
Heavier Fraction	5.15	30.30
Total	100.00	

K-value Source: NGAA (1957)
Convergence Pressure: 3,303 psia

Unadjusted Flash Data

Molecular weight of heavier fraction	210
Density of heavier fraction, gm/cc at 60° F	0.8303
Specific volume of reservoir fluid at 1970 bubble point and 173° F, cu ft/lb	0.03001
Mols per barrel	3.416

*Reported computed checks obtained using a plus 4 percent C_{10+} density adjustment.

Alpha 1 = 0.8876
Alpha 2 = 0.8682

TABLE III

Hydrocarbon Analysis of Subsurface Oil Sample

Source: Esso Standard Oil (Australia) Ltd., Emperor 1 Well

Date Taken: June 20, 1970

Component	Weight Percent	Density, g/cc at 60° F	Molecular Weight
Hydrogen Sulfide	Nil		
Carbon Dioxide	0.56		
Nitrogen	1.09		
Methane	11.14		
Ethane	3.09		
Propane	7.76		
Iso-Butane	2.51		
N-Butane	9.99		
Iso-Pentane	3.76		
N-Pentane	6.68		
Hexanes	11.67	0.6705	90
Heptanes	12.75	0.7196	100
Octanes	5.69	0.7309	111
Nonanes	3.65	0.7428	121
Heavier Fraction	19.66	0.8303	210
Total	100.00		
Pentane-Free Fraction		0.7502	124

Orsat Analysis of Gas Liberated at 0 psig and 75° F

Component	Volume Percent
Hydrocarbons	99.30
Hydrogen Sulfide	Nil
Carbon Dioxide	0.70
Total	100.00

Residual Crude Oil

Wax Content	0.99% by wt.
Sulfur Content	0.00% by wt.
Cloud Point	38°F
Pour Point	70°F

TABLE IV

Viscosity of Reservoir Oil at 173° F

Source: Esso Standard Oil (Australia) Ltd., Emperor 1 Well

Date Taken: June 20, 1970

Pressure, psig	Viscosity, cp	Density, gm/cc
3600	0.152	0.5663
3200	0.145	0.5599
2800	0.139	0.5529
2400	0.134	0.5447
2000	0.129	0.5347
P_s = 1970	0.130	0.5338
1800	0.134	0.5458
1600	0.140	0.5599
1400	0.148	0.5741
1200	0.157	0.5882
1000	0.168	0.6024
800	0.179	0.6165
600	0.193	0.6307
400	0.215	0.6448
200	0.250	0.6589
100	0.285	0.6660
0	0.487	0.6731

5.0 F.I.T. DATA

~~BHP~~ FIT. X 1/4

R. D. AGNEW (VIC.) PTY. LTD.
582 ST. KILDA ROAD
MELBOURNE, VICTORIA 3004

ESSO STANDARD OIL (AUST) LTD

PHONES: MEL 51-9702
SALE 3607

EMPEROR NO. 1

FORMATION INTERVAL TESTING

JUNE 19, 1970 THROUGH JUNE 20, 1970
REPORTING RESULTS OBTAINED WITH AMERADA PRESSURE RECORDERS.
OPERATOR: LARRY MURPHY, SERVICE ENGINEER SCHLUMBERGER FORMATION INTERVAL TESTER.
RIG: GLOMAR III

OPERATION SCHEDULE

JUNE 19, 1970

0730 HRS	DEPART LONGFORD	
0830 HRS	SCHLUMBERGER LOGGING. ARRIVE GLOMAR III	
1030 HRS	START TO RIG UP FOR F.I.T. NO. 1	
1059 HRS	CLOCK WOUND	
1100 HRS	STYLUS ENGAGED	
1138 HRS	INTO HOLE	F.I.T. NO. 1
1300 HRS	OPEN TOOL - SET PACKER @ 5025½ FT.	"
1311 HRS	SEAL SEGREGATOR	"
1314 HRS	UNSEAT PACKER	"
1355 HRS	OUT OF HOLE	"
1402 HRS	DISENGAGE STYLUS	
1406 HRS	CLOCK WOUND	
1407 HRS	STYLUS ENGAGED	
1450 HRS	INTO HOLE	F.I.T. NO. 2
1600 HRS	OPEN TOOL - SET PACKER @ 5063 FT.	"
1604 HRS	FIRE SHAPE CHARGE	"
1637 HRS	SEAL VALVE AND OPEN SEGREGATOR	"
1642 HRS	SEAL SEGREGATOR (TOOL PLUGGED)	"
1644 HRS	UNSEAT PACKER	"
1725 HRS	OUT OF HOLE	"
1733 HRS	DISENGAGE STYLUS	
1800 HRS	ROUND TRIP TO CONDITION MUD	

JUNE 20, 1970

0100 HRS	ROUND TRIP TO CONDITION MUD	
0135 HRS	CLOCK WOUND	
0136 HRS	STYLUS ENGAGED	
0205 HRS	INTO HOLE	F.I.T. NO. 3
0421 HRS	OPEN TOOL - SET PACKER @ 5062 FT.	"
0441 HRS	FIRE SHAPE CHARGE	"
0446 HRS	SEAL VALVE AND OPEN SEGREGATOR	"
0450 HRS	SEAL SEGREGATOR	"
0452 HRS	UNSEAT PACKER	"
0540 HRS	OUT OF HOLE	"
0552 HRS	DISENGAGE STYLUS	
0556 HRS	CLOCK WOUND	
0557 HRS	STYLUS ENGAGED	
0630 HRS	INTO HOLE	
0812 HRS	OPEN TOOL - SET PACKER @ 5078'	
0837 HRS	SEAL VALVE AND OPEN SEGREGATOR	

ESSO STANDARD OIL (AUST) LTD EMPEROR NO. 1

FIT TESTING: JUNE 19, 1970 THROUGH JUNE 20, 1970 (CONTINUED)

JUNE 20, 1970

0841	HRS	SEAL SEGREGATOR
0842	HRS	UNSEAT PACKER
0915	HRS	OUT OF HOLE
0931	HRS	DISENGAGE STYLUS
0936	HRS	CLOCK WOUND
0937	HRS	STYLUS ENGAGED
1010	HRS	INTO HOLE
1132	HRS	OPEN TOOL - SET PACKER @ 5110'
1150	HRS	SEAL VALVE AND OPEN SEGREGATOR; PACKER UNSEATED
		SEAL SEGREGATOR AND UNSEAT
1152	HRS	OFF BOTTOM
1305	HRS	OUT OF HOLE
1318	HRS	DISENGAGE STYLUS AND RIG DOWN RECORDER
1600	HRS	DEPART GLOMAR III
1730	HRS	ARRIVE LONGFORD

TEST NO. 1 @ 5025-½ FT.

JUNE 19, 1970 TO JUNE 20, 1970

AMERADA ELEMENT NO. 3969-N (9000 PSI) 12 HOUR CLOCK - 7½ T.L.S.

TIME	PSIG		FUNCTION
	2976		INITIAL HYDROSTATIC
0	2307		OPEN TOOL - SET PACKER
1	2307		
2	2307		SEGREGATOR SEALED INSTEAD
5	2307		OF MAIN CHAMBER. NO
			SEGREGATOR SAMPLE OBTAINED
11	2307	SEAL SEGREGATOR	MAIN CHAMBER OPEN FOR 11 MIN
12	2295		
13	2295		
14	2295		
	2960	FINAL HYDROSTATIC	
SAMPLE:-	92.5	CU. FT. GAS.	
	3800	CC. CONDENSATE AND MUD	

N.B:- FOR ALL 5 F.I.T. TESTS, A REVERSE FIRE PROCEDURE WAS USED TO SET THE TOOL. I.E:- THE TOOL WAS OPENED TO FLOW BEFORE THE PACKER WAS SET. FOR THIS REASON ALL SAMPLES CONTAIN SOME MUD CONTAMINATION.

TEST NO. 2 @ 5063 FT.

TOOL PLUGGED BEFORE TEST AND NO SAMPLE OR PRESSURES WERE OBTAINED.

TEST NO. 3 @ 5062 FT.

	2968	HYDROSTATIC
0		OPEN TOOL - SET PACKER
1	2202	
2	2202	
3	2218	
4	2231	
10	2231	
15	2231	MAIN CHAMBER FILLED; START BUILD-UP

TEST NO. 3 @ 5062 FT. (CONTINUED)

16	2295	
17	2295	
18	2295	
20	2295	FIRE SHAPE CHARGE FINAL SHUT-IN PRESSURE
21	2303	
22	2307	
23	2307	
24	2307	
25	2307	SEAL VALVE AND OPEN SEG.
26	2287	
28	2287	
29	2287	SEAL SEGREGATOR
30	2299	
31	2299	UNSEAT PACKER
	2943	HYDROSTATIC

SAMPLE: - 88 CU. FT. GAS.
12,000 CC. CONDENSATE 70.4° API @ 60°F
1,000 CC. MUD.

TEST NO. 4 @ 5078 FT.

	2980	HYDROSTATIC
0		OPEN TOOL - SET PACKER
1	1312	
2	1468	
3	1556	
4	1732	
5	1724	
6	1840	
7	1832	
8	1828	
9	1884	
10	1864	
11	1856	
12	1852	
13	1852	
14	1840	
15	1828	MAIN CHAMBER FILLED; START BUILD-UP
16	2218	
17	2312	
18	2312	
20	2312	
25	2312	SEAL VALVE AND OPEN SEGREGATOR
26	2312	
27	2312	
28	2312	
29	2316	SEAL SEGREGATOR
30		UNSEAT PACKER

SAMPLE:- 21,000cc. H_2O 3500 PPM. CHLORIDES
.1 CU. FT. GAS.

FIT

ESSO STANDARD OIL (AUST) LTD EMPEROR NO. 1

FIT TESTING: JUNE 19, 1970 THROUGH JUNE 20, 1970 (CONTINUED)

TEST NO. 5 @ 5110 FT.

	3000	INITIAL HYDROSTATIC
0		OPEN TOOL - SET PACKER
2	1940	
4	1972	
6	1968	
8	1952	
10	1956	
12	1944	
14	1944	
15	1944	MAIN CHAMBER FILLED; START BUILD-UP
16	2324	
17	2324	
18	2324	SEAL VALVE AND OPEN SEGREGATOR; PACKER LOST SEAL AND SEG. FILLED WITH MUD. SEAL SEGREGATOR AND UNSEAT PACKER.
20	3008	FINAL HYDROSTATIC

SAMPLE:- 20,700 CC. H_2O 2860 PPM. CHLORIDES.

PE904945

This is an enclosure indicator page.
The enclosure PE904945 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904945 has the following characteristics:

ITEM_BARCODE	= PE904945
CONTAINER_BARCODE	= PE904941
NAME	= Emperor 1 F.I.T. Data
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= FIT
DESCRIPTION	= Emperor 1 Formation Interval Test (F.I.T.) Data. From section 5.0 of Well Summary.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

6.0 ENCLOSURES

PE904946

This is an enclosure indicator page.
The enclosure PE904946 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904946 has the following characteristics:

ITEM_BARCODE	= PE904946
CONTAINER_BARCODE	= PE904941
NAME	= Structure Map
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Emperor Area Structure Map Top of Latrobe Group (Coarse Clastics). Enclosure 6.1 of Well Summary.
REMARKS	=
DATE_CREATED	= 30/04/74
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Esso Exploration and Production Australia INC.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE904947

This is an enclosure indicator page.
The enclosure PE904947 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904947 has the following characteristics:

ITEM_BARCODE	= PE904947
CONTAINER_BARCODE	= PE904941
NAME	= Structure Map
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Emperor Area Structure Map Top of Zone 2 Gas (-5291' Emperor 1). Enclosure 6.2 of Well Summary.
REMARKS	=
DATE_CREATED	= 30/04/74
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Esso Exploration and Production Australia INC.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE603281

This is an enclosure indicator page.
The enclosure PE603281 is enclosed within the container PE904941 at this location in this document.

The enclosure PE603281 has the following characteristics:

ITEM_BARCODE	= PE603281
CONTAINER_BARCODE	= PE904941
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Emperor 1 Well Completion Log. Enclosure 6.3 of Well Summary.
REMARKS	=
DATE_CREATED	= 25/06/70
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Esso Exploration and Production Australia INC.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE603282

This is an enclosure indicator page.
The enclosure PE603282 is enclosed within the container PE904941 at this location in this document.

The enclosure PE603282 has the following characteristics:

ITEM_BARCODE	= PE603282
CONTAINER_BARCODE	= PE904941
NAME	= Grapholog
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Emperor 1 Grapholog (Mud Log). Enclosure 6.6 of Well Summary.
REMARKS	=
DATE_CREATED	= 27/06/70
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Core Laboratories, INC.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE904948

This is an enclosure indicator page.
The enclosure PE904948 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904948 has the following characteristics:

ITEM_BARCODE	= PE904948
CONTAINER_BARCODE	= PE904941
NAME	= Time-Depth Curve
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Emperor 1 Time-Depth Curve. Enclosure 6.4 of Well Summary.
REMARKS	=
DATE_CREATED	= 31/08/71
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Esso Exploration and Production Australia INC.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE904949

This is an enclosure indicator page.
The enclosure PE904949 is enclosed within the container PE904941 at this location in this document.

The enclosure PE904949 has the following characteristics:

ITEM_BARCODE	= PE904949
CONTAINER_BARCODE	= PE904941
NAME	= Completion Coregraph
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Emperor 1 Completion Coregraph. Enclosure 6.5 of Well Summary.
REMARKS	= Cores 1, 2 & 4.
DATE_CREATED	= 16/06/70
DATE_RECEIVED	=
W_NO	= W592
WELL_NAME	= Emperor-1
CONTRACTOR	= Core Laboratories, INC.
CLIENT_OP_CO	= Esso Standard Oil (Aust.) LTD.

(Inserted by DNRE - Vic Govt Mines Dept)