AMPOL EXPLORATION LIMITED

WELL COMPLETION REPORT

FAIRHOPE 1

Petroleum Exploration Permit 98

NOVEMBER, 1985

FAIRHOPE #1

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WELL DATA CARDS

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AMPOL EXPLORATION LTD.

WELL: FAIRHOPE #1

Location: Latitude: 37° 54' 48.327" S

Longitude: 147° 35' 16.37"E

Seismic S.P. 337 Line GM83A-21

Elevation: G.L.: 39m ASL K.B. 42.96 ASL

Map: BAIRNSDALE 1:50,000

Grid:

Spudded: 0530 hrs 25/6/85 Completed: 1300 hrs 30/6/85

Type Structure: Tertiary Sediments draped over Basement high

Status PLUGGED & ABANDONED

Rig ATCO-3

Total Depth: Driller: 569m. Log: 567.5m.

Completion Details: ABANDONMENT PLUGS SET AT

1. 508m - 554m
2. 113.7 - 150m

Casing Size	Shoe Depth
244 MM	129.05m (DRILLER)
	129.5m (LOGGER)

Cutting Samples Collected from: 132m to T.D.

FORMATIONS PENETRATED

Age	Formation	Depth	Elevation	Thickness
PLIOCENE TO PLEISTOCENE	HAUNTED HILLS GRAVELS	3.96m	+39m	89±3m
PLIOCENE	JEMMYS POINT FM.	93±3m	-50± 8m	28±8m
LATE MIOCENE TO PLIOCENE	TAMBO RIVER FM.	121±5m	-78±5m	11±5m
EARLY TO LATE MIOCENE	GIPPSLAND LIMESTONE	132.4m	-89.4m	363.6m
LATE OLIGOCENE TO EARLY				
MIOCENE	LAKES ENTRANCE FM.	496.0m	-453.0m	37.0m
EARLY TO LATE OLIGOCENE	LATROBE GROUP	533.0m	-490.0m	11.0m
ORDOVICIAN	BASEMENT	544.0m	-501.0m	25.0m
	T.D.	569.0m	-526.0m	

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WELL: FAIRHOPE #1

LOGS

Type Log	Run. No.	Interval	BHT/Time	Type Log	Run. No	Interval	BHT/Time
DLL-GR	1	567-129.5 m	35°C/	BHC(SON)-GR	1	560-129.5 m	38.3°C/
			3½ hrs				8 hrs
MSFL	1	567-267 m	35°C/	NGT(GR	1	560-249 m	40.5°C/
			3½ hrs	TO SURFACE)			10 hrs
LDT-GR	1	567-129.5m	37.7°C/				
			6 hrs	V.S.P.			
CNL	1	560-260 m	37.7°C/				
			6 hrs	C.S.T.			

FORMATION TESTS

Test No.	Interval	Formation	Flow (min)	Shut in (min)	Bottom gauge IP/FP	Shut in Press	Fluid to Surf. (min)	Max Press	T C.	B.C.	Rev. Circ.	Results
	NIL											

FULL HOLE CORES

No.	Interval	Formation	Cut	Rec.
	NIL			

PERFORATIONS

Interval	Formation	Shots/ft.
NIL		

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WELL: FAIRHOPE #1

LOG INTERPRETATION

Interval	Formation	Ø %	Sw.%	Interval	Formation	Ø	Sw.
533-535 m	LATROBE	0	-				
535-542.5	LATROBE	9.3	88.5				
542.5-544 m	LATROBE	17	168				
544-556.5 m	BASEMENT	2	23.3				

Net Pay Intervals: NO PAY FOR FAIRHOPE #1

CORE ANALYSIS (INTERVAL AVERAGES) - LOGGERS DEPTH

Interval	Ø	K.	So.	Sw.	Interval	Ø	K.	So.	Sw.
NIL									

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WELL: FAIRHOPE #1

SIDEWALL CORES

Depth	Lithology	Depth	Lithology	Depth	Lithology	Depth	Lithology
555 m	SANDSTONE	454 m	SANDSTONE				
547 m	NO RECOVERY	439 m	NO RECOVERY				
544.5m	SANDSTONE	421 m	NO RECOVERY				
543 m	SANDSTONE	419 m	SANDSTONE				
541.5m	SANDSTONE	390.5m	SANDSTONE				
540 m	SANDSTONE	351.5m	NO RECOVERY				
538.5m	CLAYSTONE	324.5m	SANDSTONE				
536 m	SANDSTONE	314 m	SANDSTONE				
533.5m	SANDSTONE	296.5m	SANDSTONE				
532 m	SANDSTONE	267 m	SANDSTONE				
524 m	NO RECOVERY	257 m	MARL				
511.5m	NO RECOVERY	200 m	SANDSTONE				
483 m	NO RECOVERY	179 m	MARL				
464 m	NO RECOVERY	138 m	NO RECOVERY				
456 m	MARL	136 m	NO RECOVERY				

SUMMARY: Fairhope #1 is an exploration well located approximately 12 km south of Bairnsdale in PEP 98 in the onshore Gippsland Basin.

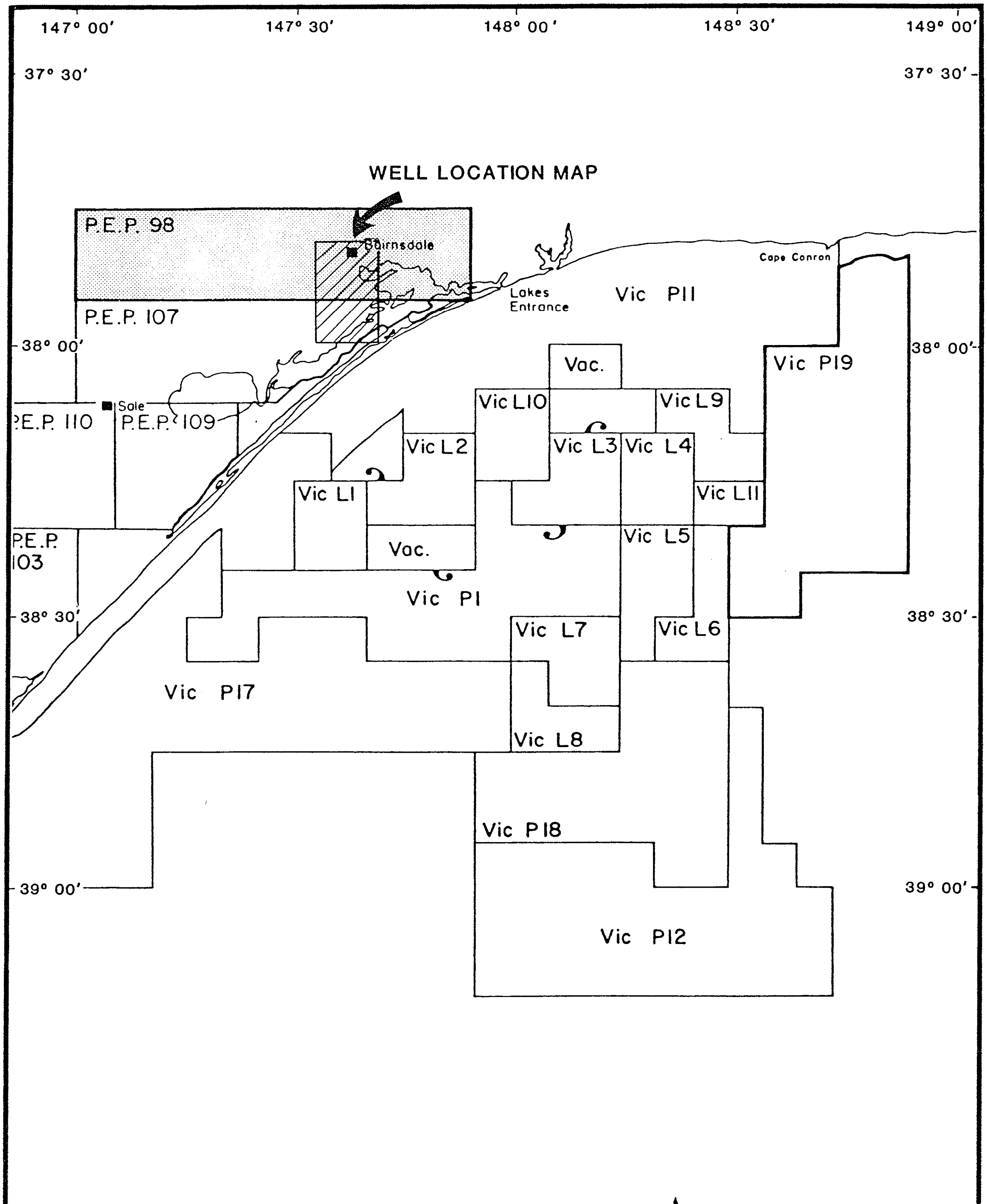
The Fairhope prospect was prognosed to be a fourway closed drape of Tertiary sediments over a basement high. The primary objectives were sandstone reservoirs in the Latrobe Valley Coal Measures.

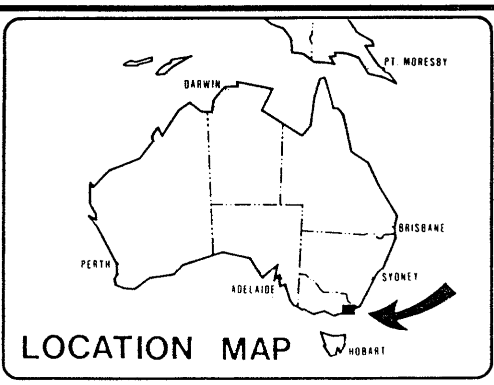
The well reached a total depth of 569 m in metasedimentary Basement of Ordovician age. The top Latrobe Group was 4 m. low to prognosis and Basement came in 88 m high. No oil or gas shows were encountered and the log interpretation showed the Latrobe Group to be 100% water-saturated. The well was plugged and abandoned. Re-mapping of the seismic for the Fairhope prospect suggests that there is only a maximum 5 millseconds of possible closure at the top of the Latrobe Group.

Wellsite Geologist: M. SCHMEDJE Card Prepared By M. SCHMEDJE Date: September 1985

LOCATION

LOCATION





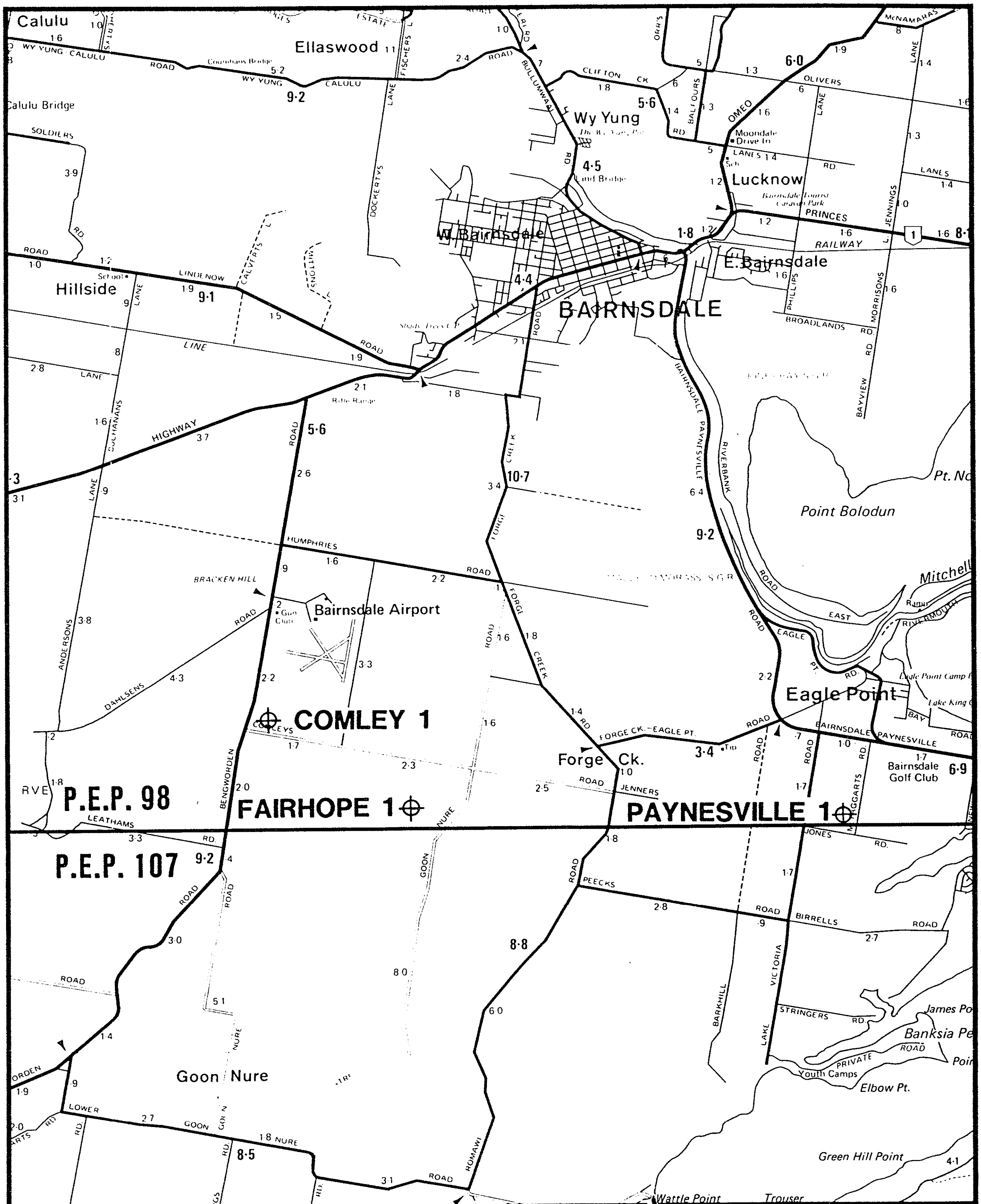
AMPOL EXPLORATION LIMITED

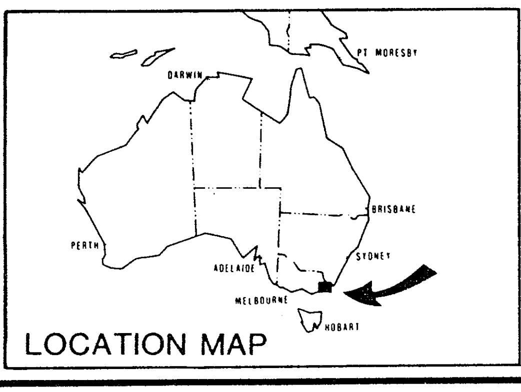
GIPPSLAND BASIN
PEP 98, VICTORIA

PERMIT LOCATION MAP

0 15 30 45 60km

NOVEMBER 1985





AMPOL EXPLORATION LIMITED

GIPPSLAND BASIN
PEP 98, VICTORIA

WELL LOCATION MAP

0 1 2 3 4km.

AUTHOR DATE NOV. 1985

WELL HISTORY

WELL HISTORY

1. GENERAL DATA

Well Name & Number:	FAIRHOPE NO. 1	
Location:	Latitude: 37° 54' 48.327" S Longitude: 147° 35' 16.37" E Seismic Line: 83A - 21 Shot Point: 337 Elevation-GL: 39.00 m A.S.L. Elevation-KB: 42.96 m A.S.L.	
Licence Area:	Onshore Victoria PEP-98	
Interest Holders:	Ampol Exploration Limited	38.32%*
	Mincorp Petroleum N.L.	27.30%
	National Oil	8.75%
	Texas Gas	6.88%
	Messrs. A.R. Burns & D.R. Gascoine	5.00%
	Phoenix Oil & Gas N.L.	5.00%
	Victoria Exploration	5.00%*
	Bralorne International	1.25%
	Petroleum Royalties Pty. Ltd.	1.25%
	Versatile Farm Equipment	1.25%

* Ampol Exploration and Victoria Exploration currently earning interest.

Participating Interests:	Ampol Exploration Limited	85.15%
	Victoria Exploration	11.10%
	Phoenix Oil & Gas N.L.	3.75%
Operator:	Ampol Exploration Limited on behalf of Mincorp Petroleum N.L.	
District:	Bairnsdale, Victoria	
Total Depth:	569.0 m (Driller) 567.5 m (Logger)	
Date Spudded:	June 25, 1985	
Date T.D. Reached:	June 28, 1985	
Date Rig Released:	June 30, 1985	
Drilling time to T.D.:	3 days	
Status:	Dry hole. Plugged and abandoned.	

1. DRILLING DATA

Drilling Contractor:	Atco-APM Drilling Pty. Ltd., 33 Barfield Crescent, ELIZABETH WEST. S.A. 5112
Rig:	Atco Rig No. A3

DRILLING RIG:

Trailer mounted Franks Cabot drilling rig
Mounted on a 12'8" wide x 47' long Goose Neck trailer
Tandem Rear Axles: 16 - 11R 22.5 Radial Tyres
Hydraulic support legs: Four Locknut Feature
Dog House and Generator Set are mounted on trailer
Trailer Weight: 40.857 tonnes
Axle Loading: 28.0 tonnes

DRAWWORKS

Franks Cabot, Model 1287-TD Single Drum Drawworks
Hydromatic: 22" SR Parmac

DRAWWORKS MOTOR

G.E. Series SGE-76101 electric motor, complete with blower driven by a 5 h.p. electric motor.

HYDRAULIC SYSTEM

1 - 1/4" x 2" hydraulic pump, driven by a 50 h.p. electric motor 575 volts, ID# 9002764-049, connected to a 270 gallon fluid reservoir.

S.C.R. SYSTEM

Manufactured by Integrated Power Systems Corporation

Ratings:	Input Voltage	:	600 VAC 30-3W
	Output Voltage	:	0-750 VDC
	Input Current	:	600 ADC Cont 1250 ADC Int

GENERATORS A.C.

Generators Nos. 1 and 2
E.M. Bemac Brushless Generator
500 KVA, 400 KW, 600 Volts, 60HZ/110V/220V Rig Supply
Powered by a Caterpillar Model D-353E Diesel engine
S.C.R. generator system fully inter-dependent

TABLE ROTARY MACHINE

Ideco Model C-175 Rotary Table
Size: 17 1/2" x 44" complete with split master bushings

SUBSTRUCTURE

Two Section Box Style Substructure
Top Section : 11'W x 11'L x 9' high (BOP Rack)
Pony Sub : 11'W x 11'L x 3'8" high
Overall Size : 11'W x 11'L x 12'8" high

LIGHTING

Including: Mast Light String, Flood Lights, Building Lighting

MAST

96' Two Section Telescoping Type Mast, manufactured by Greco Steel Corp.
Deadline Anchor: Attached to Carrier
Crown Blocks:
Working Sheaves : 4 - 22" dia. - 1" grooving
Fastline Sheave : 1 - 32" dia. - 1" grooving

BLOCKS AND HOOK

Sowa Hook-Block Assembly, 150 ton capacity, Model 3630-4, S/N: 3896-1 with 4 - 30" sheaves, grooved for 1" drilling line

SWIVEL

Oilwell Model No. SA-150 Swivel, Job No. 2048
Kelly Spinner, Foster Model 77, S/N: 77-1-412 complete with 2 - 1" x 60' Long Hydraulic Hoses

KELLY, KELLY BUSHING, KELLY COCK AND STABBING VALVE

1 - 1-1/4" x 40' long Kelly with 4-1/2" XH pin & 6-5/8" Reg. box
1 - Baash Ross 2RCS4 Kelly Bushings
1 - Griffith Upper Kelly Cock, 5000 psi, S/N: 5139 452U-33
1 - Hydril Stabbing Valve with 4-1/2" XH pin and box
1 - Grey Inside B.O.P. with 4-1/2" XH pin and box

PUMPS - SLUSH NO. 1 AND 2

1 - TSM-500 Duplex Slush Pump, Size: 7-1/2" x 16"
Maximum Pump Speed: 65 S.P.M.
Maximum Fluid End Test Pressure: 3000 psi
Pumps loaded w/- 5-1/2" liners
Rated at 1902 psi @D 65 SP.M
5.31 Gallons (U.S)/Stroke @ 90% effic.

NO. 1 PUMP ENGINE

G.E. Electric Motor, Model 5-GE-761-JI

NO. 2 PUMP ENGINE

Caterpillar Model D-353 Diesel Engine, 435 H.P.

TANKS - MUD AND MUD SYSTEM

Mud Tanks - Total Capacity 650 BBL

Tank 1
265 BBL capacity in 3 compartments with sand trap
Low pressure mud system with 3 subsurface guns
2 Grey Agitators model 72-0-5 powered by 2 x 5 hp electric motors
1 Harrisburg double deck shale shaker powered by 5 h.p. electric motor
1 x 3 cone Desander complete sq header manifold and overflow trough
1 Mission 5" x 6" centrifugal pump 1 7/8 shaft powered by 50 HP 575 volt electric motor
1 x 16" Poorboy Degasser fed by 3" mud line

Tank 2
385 BBL capacity in two compartments (suction tank 342 BBL's and pill) tank of 43 BBL's
Connected to tank 1 via 10" suctions and 12" mud trough
Low pressure mud systems with 4 subsurface guns
Fitted with 2 - 4 x 2 standard mud mix hopper
1 Mission 5" x 6" centrifugal powered by 60 HP 575 volts electric motor
1 x 10 Cone Desilter (Swabco) @D 500 GPM

BLOWOUT AND WELL CONTROL EQUIPMENT

1 - Shaffer "Annular" Blowout Preventer 3000 psi, Assembly No. 5820

Trim	:	Internal H_2S
Top Connection	:	Studded
Btm Connection	:	Flanged
Bore Size	:	11"

1 - Cameron 3000 psi Double Gate Blowout Preventer, Type "SS" No. 165. Fitted with 4 1/2" Rams x Blind Rams

Bore Size	:	11"
Top and Bottom:		
Connections	:	Studded
Outlets	:	2 - 3" 3000 psi Flanged

Extra Rams to Fit - 2 3/8", 2 7/8", 5 1/2" and 7"

HYDRAULIC FLUID ACCUMULATOR

1 - Wagner Model 5-80-1BN Hydraulic Fluid Accumulator Unit Four Station Control Manifold with 4 - 20 gallon bladder type Accumulator Bottles, hydraulic pump powered by a 5 HP electric motor
2 - 220 cu. ft. Nitrogen Bottle Back-up System
2 - CIW 3000 and 5000 PSI Hydro Poise Readout Gauges, A-B On/Off Switch panel
System is complete with Remote Control Panel, mounted in Dog House

B.O.P SPOOLS AND VALVES

Including:
1 - 900 Series 11" Adaptor Spool with 2 - 3" Flanged Outlets
1 - 3" 3000 PSI McEvoy Gale Valve with Otis Actuator
2 - 3" McEvoy 3000 PSI Gate Valves
2 - 3" 3000 PSI National Ball Valves
1 - 3" 3000 PSI Check Valve

WELL CONTROL MANIFOLD

McEvoy 3" x 2" Well Control Manifold consisting of:

8 - 2" 3000 PSI Flanged McEvoy Gate Valves
2 - 3" 3000 PSI Flanged McEvoy Gate Valves
2 - 2" Three Way Block Connectors
2 - 3" x 3" x 2" Four Way Block Connectors
2 - Willis Multi-Orifice Chokes
1 - CIW, 3000 PSI Pressure Gauge
1 - Marsh 3000 PSI Gauge complete with 100' 1/2" Hydraulic Hose

DRILL PIPE

90 - Joints (approx 900M) 4 1/2" 16.60# Grade "E" Range 2 Drill Pipe W/ 6 1/4" ID 18 Deg. Reed 4 1/2" XH Tool Joints. Drill Pipe is complete with Hardfacing, Series 200 inspected and internall coated with PA-2000.

10 - Joints 4 1/4" XH Heavi-Wate Drill Pipe Range 2 with 4 1/2" XH Box to pin complete ID Tube cote and Hardfacing Premium No. 1.

DRILL COLLARS

20 - 6 1/4" OD Drill Collars, Hardbanded with 4 1/2" Xh Connections
3 - 8" O.D. Drill Collars - Hardbanded - W/- 6 5/8" reg Connections

INSTRUMENTATION

1 - Cameron Type "C" Weight Indicator, 180,000 LB.
2 - 2" Gauges Int. Mud Gauges type "D" (Standpipe)
1 - 2" Cameron type "F" Pressure Gauge (Pump)

TOOL HOUSE

11'6" wide x 30' long x 8'4" high Broken Panel Steel Construction

DOG HOUSE

Mounted on Rig Carrier - Size: 12'W x 12'L x 7'H
Dog House Contents:
1 - Knowledge Box
2 - NRL Light Fixtures recessed into roof of building

COMBINATION BUILDING

S.C.R. Building/Generator Room/Fuel Tank

Fuel Tank Size: 10'L x 6'6"H x 45" Deep (approx. 1500 gallons) or 6860
Overall Skid Size: 10'W x 38'L x 10'6"H

CATWALK - PIPE RACKS

Catwalk - 8'W x 40'L
2 - Sets Pipe Racks built with 4" Square Tubing

PUMPS CENTRIFUGAL

Water Circulating:

1 - 2" x 2" Centrifugal Pump driven by a 5 HP Lincoln Electric Motor

Rig Wash Pump:

Magikist Model 32-C Triplex pump driven by a 3HP Brook Electric Motor, 230-460 Volts Type "DP", S/N: X807080.

Fuel Transfer Pump:

1 - 1" x 1" Fuel Transfer Pump driven by a 3/4 HP Electric Motor.

MATTING - RIG

4 - 8' Wide x 20' Long x 8" High Rig Mats.

WINCHES

Gearmatic Pullmaster Model H-10 powered by a Commercial 1" x 1" Hydraulic motor, Model D230-154-2, S/N: C39-647, complete with approx. 300' - 1/2" steel cable.

1 - Wireline Survey unit, powered by a Hydrailic motor and complete with 7000' of.092 Wire Line.

FISHING EQUIPMENT

1 - 8 1/8" OD S.H. Series 150 Overshot with 4 1/2" FH Box Connection, complete with 4 3/8", 4 1/2", 5 3/4", 6", 6 1/8", 6 1/4" Basket Grapples and Mill Control Packers for each.

CAMP AND FACILITIES

1 - Toolpush Shack - fully furnished and airconditioned

2 - Toyotas - four wheel drive (crewcab, ute)

3. DRILLING SUMMARY: (K.B. DEPTHS)

Fairhope No. 1 was spudded at 0130 hours on June 25, 1985 in 12-1/4" hole and drilled to 132 metres with surveys. The hole was conditioned and 9 joints of 40 PPF N.80 Range 3 BT&C casing run, landed at 129.05 metres and cemented with 378 sacks Class "A" cement with 2% Calcium Chloride. Good returns were noticed throughout with cement to surface.

After waiting on cement, the bradenhead and B.O.P's were installed, nippled up and then tested to the required pressures.

The float collar and shoe were drilled out with a Gel/Polymer mud and a Pressure Integrity Test held 4 metres below the shoe gave a mudweight limit of 15.5 P.P.G.

Drilling continued in 8-1/2" hole with surveys to 569 metres, (T.D), having improved the properties of the Gel/Polymer mud at 300 metres, where the hole was conditioned and electric logs were run.

Consequently the well was plugged and abandoned with 2 cement plugs and the rig was released at 1300 hours on June 30, 1985.

(a) Drilling Fluid

Chemical additives and mud control services were supplied by Geofluids Pty. Ltd. Drilling Fluids.

Spud mud was used from surface to 132 metres in the 12-1//4" surface hole and a Gel/Polymer mud from 132 metres to 569 metres (T.D) in the 8-1/2" hole.

Properties:

Date	Mudweight (P.P.G)	Viscosity (Secs)	W.L. (mls/30 mins)	P.H.	Solids
June 25	9.1	35	N/A	9.5	N/A
June 26	9.0	36	N/A	9.0	N/A
June 27	8.8	46	9.6	10.5	3.5
June 28	8.9	41	8.8	9.5	4.0

Chemicals Used (12-1/4" Surface Hole)

Milgel	60 sacks	(100 lbs)	2727 kgs
Caustic Soda	2 drums	(50 kgs)	100 kgs

Chemicals Used (8-1/2" Hole)

Milgel	7 sacks	(100 lbs)	318 kgs
Caustic Soda	1 drum	(50 kgs)	50 kgs
Celpol	12 sacks	(25 kgs)	300 kgs

(b) Water Supply

Make-up water for drilling was obtained from the local Shire Council and trucked to location approximately 4 kilometres.

LOGGING AND TESTING

(a) Formation Sampling

Mudlogging was provided by Geoservices Overseas S.A. Spot samples of ditch cuttings were collected at 10 metre intervals from 10 metres to 132 metres. Regular ditch cuttings samples were collected at 5 metre intervals to 425 metres and then at 3 metre intervals to T.D. All samples were washed, checked for fluorescence and visual porosity, described and bagged. One set of washed and dried cuttings samples was forwarded to:

Oil & Gas Division,
Office of Minerals & Energy,
Dept. of Industry, Technology & Resources,
151 Flinders Street,
MELBOURNE. VICTORIA. 3000

(b) Coring

No cores were cut on Fairhope No. 1.

(c) Sidewall Cores

One gun of sidewall cores was shot. 30 shots were fired and 20 samples were recovered.

(d) Wireline Logging

Electric wireline logging was carried out by Schlumberger Seaco, Inc.

Log	From (m)	To (m)	Temperature (^{o}C)
DLL-MSFL-GR	567.0	129.5	35.5 (3.5 hrs)
LDT-CNL-GR	567.0	129.5	37.7 (6 hrs)
BHC (Sonic)-GR	560.0	129.5	38.3 (8 hrs)
NGT-GR (to surface)	560.0	249.0	40.5 (10 hrs)

Hole Problems: The hole bridged off at 556 metres, a trip had to be made to clean the hole but logging tools still could not get to bottom. GR run to surface run on NGT and not the BHC (Sonic) as tool malfunctioned in the casing.

(e) Formation Testing

No D.S.T's were attempted on Fairhope No. 1.

(f) Deviation Surveys

Depth (m)	Deviation
31.0	1/4°
82.3	1°
131.9	1°
214.0	1/4°
321.0	1/4°
499.0	1/2°

(g) Velocity Survey

Survey was carried out using a VSP tool with shots taken going down with the tool closed.

Interval surveyed was from 42.9 metres to 561 metres.

37 levels were recorded with a total of 272 shots stacked.

(h) Bits

2 bits were used to drill Fairhope No. 1.

Size	IADC Type	Depth Out (m)	Hours
12-1/4"	1-1-4	132	8.5
8-1/4"	1-1-4	569	19

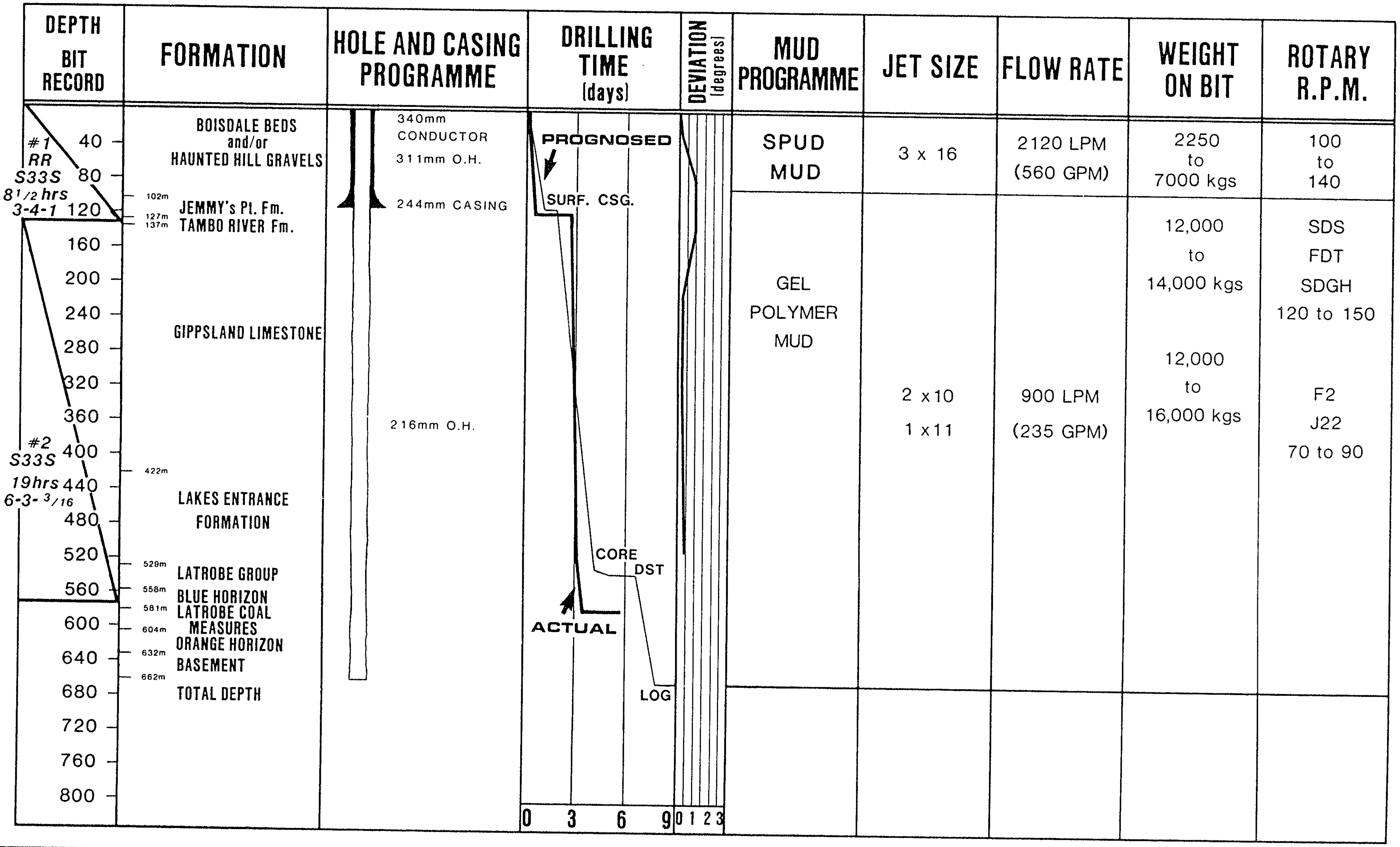
(i) Completion

Fairhope No. 1 was plugged and abandoned with 2 cement plugs and a cap screwed on the casing stub with a 1" valve installed.

	Plug Interval (m)	Remarks
1.	554-508 m	54 sacks of Class "A" cement across the top of the Gurnard formation.
2.	150-113.7 m	56 sacks of Class "A" cement with 2% $CACL_2$ across the surface casing shoe. (Tagged at 113.7 metres).

DRILLING SUMMARY

AMPOL EXPLORATION LTD. **FAIRHOPE - 1** RIG ATCO – A3 EXPLORATION



GEOLOGY

GEOLOGY

1. SUMMARY

Fairhope #1 is an exploration well located approximately 12 km. south of Bairnsdale in PEP 98 in the onshore Gippsland Basin.

The Fairhope prospect was prognosed to be a four-way closed drape of Tertiary sediments over a basement high. The primary objectives were sandstone reservoirs in the Latrobe Valley Coal Measures.

The well reached a total depth of 569 m. in metasedimentary Basement of Ordovician age. The top Latrobe Group was 4 m. low to prognosis and Basement came in 88 m. high. No oil or gas shows were encountered and the log interpretation shows that the Latrobe Group is 100% water-saturated. The well was plugged and abandoned. Re-mapping of the seismic for the Fairhope prospect suggests that there is only a maximum 5 milliseconds of possible closure at the top of the Latrobe Group.

2. REGIONAL GEOLOGY

Tectonic Setting

PEP 98 is located in the onshore portion of the Gippsland Basin. The Gippsland Basin is the most easterly of several small Mesozoic-Cainozoic basins along the south coast of Australia. The development of the basin was controlled by the opening of the Tasman Sea as the Lord Howe Rise separated from the east coast of Australia late in the Cretaceous.

The basin proper can be considered as that area west of the Lakes Entrance granite high, south of the Tertiary-Paleozoic contact on the north side of the basin and east of a line between the Wilson's Promontory granite and the town of Warragul. The position of the south boundary of the basin is not known as it lies in the area of Bass Strait.

The Gippsland Basin formed on the site of an earlier infilled rift system, (Strzelecki Basin) which developed across the southern margin of Australia during the early Mesozoic. A new rift, the Gippslnd Basin, formed during the Late Cretaceous by down-faulting between two east-west fault systems. The southern margin of the new graben, the Foster Fault System, closely follows that of the ancient rift while the northern boundary, the Rosedale Fault and its offshore extensions, lies some kilometres to the south of the ancient rift margin. Mid-Eocene to Miocene transgressive events combined with progressive subsidence of the platform north of the Rosedale Fault system resulted in deposition of an onlapping series of formations which extended the basin northward to the line of present day paleozoic outcrop. Although normal fault movements predominate, a major phase of wrench faulting along the trend of the Rosedale Fault System during the Late Eocene resulted in the formation of a number of large anticlines which host the major known hydrocarbon reserves of the offshore Gippsland Basin. Although the influence of this event is less pronounced in the onshore areas it probably had significant effects on the stratigraphy, facies distribution and structure. The northern flank of the Gippsland Basin underwent basinwards tilting during the Kosciusko uplift in the Late Pliocene.

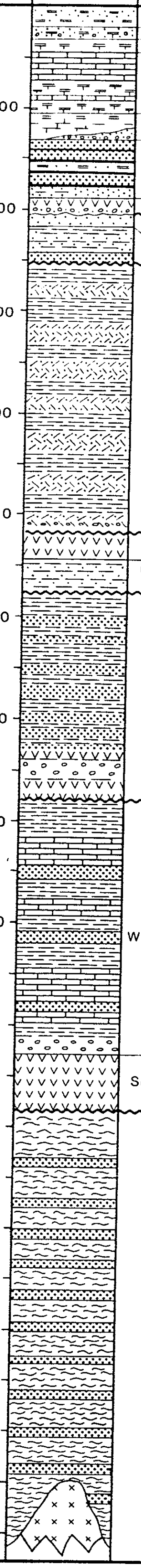
Stratigraphy

The basement of the Gippsland Basin is probably very similar to the area of Paleozoic outcrops on the north side of the basin. Ordovician and Silurian sediments, altered by dynamic metamorphism and intruded by granite, probably underlie Mesozoic strata over most of the basin. Highly folded marine strata of Middle Devonian age occur as erosional remnants, or down-faulted blocks, north of the eastern half of the basin. Isolated occurrences of Middle Devonian rocks could be expected in the subsurface in the eastern half of the basin. Overlying these altered and highly folded older Paleozoic rocks on the northern side of the basin is a thick continental sequence of red shales, sandstones, conglomerates and volcanics of Upper Devonian-Lower Carboniferous age. These beds are slightly to moderately folded and probably extend south at least as far as the Lake Wellington area.

Generalised Stratigraphy
GIPPSLAND BASIN

Aggregate Thickness (ft): 2000, 4000, 6000, 8000, 10000, 12000, 14000, 16000, 18000, 20000, 22000, 24000, 26000, 28000, 30000

Lithology



Name	Description	Unit Thickness		Age
Haunted Hills Gravels and/or Lake Wellington Fm	Sand,gravel and clay	0-400'	TERTIARY	U.PLIOCENE to PLEISTOCENE
Jemmy's Point Formation	Shelleys sand and marl	100-1000'	TERTIARY	L.PLIOCENE
Tambo River Formation	Shelley marl	20-250'	TERTIARY	U.MIOCENE
Gippsland Limestone	Limestone and marl	500-1650	TERTIARY	MIOCENE
Lakes Entrance Fm	Shale,clay & marl-Greensand Mbr & Colquhoun Gravel at base	200-776	TERTIARY	OLIGOCENE
Latrobe Valley Coal Measures	Sand, brown coal,clay and gravel	0-2500	TERTIARY	L.OLIGOCENE to U.EOCENE
Narracan Group	Basalt,gravel,coal	0-400'	TERTIARY	EOCENE
Marine Cretaceous? Hollands Landing Bore only	Siltstone - mudstone	Unknown,probably very thin	MESOZOIC	L.CRETACEOUS
Strzelecki Group? seen only in Merriman No.1	Shale,mudstone and porous sand	0-650	MESOZOIC	L.CRETACEOUS
Possible Unconformity				
Strzelecki Group	Monotonous sequence of shale, mudstone,graywacke, sub-graywacke, thin coal beds and minor conglomerate. Non - marine	0-20,000' Missing in northern part of basin; 490' in Duck Bay No.1; 8236'+ in Wellington Park No.1; 10,000-20,000' estimated in Strzelecki Ranges	MESOZOIC	L.CRETACEOUS to U.JURASSIC
Unnamed,seen only in Duck Bay No.1	Volcanics	325' in Duck Bay No.1	PALEOZOIC	PERMIAN?
Unnamed,seen only in Duck Bay No.1	Argillaceous,fine grained sandstones	624' in Duck Bay No.1	PALEOZOIC	L.PERMIAN?
Avon River Group or Iguana Creek Beds	Red and green shale, sandstone,siltstone and conglomerate with volcanics in basal part. Non-marine	0-10,000; 2398' in Southwest Bairnsdale No.1; Absent in eastern part of the basin	PALEOZOIC	L.CARBONIFEROUS to U.DEVONIAN
Tabberabbera Beds, Buchan Group and Waratah Bay Limestones	Limestone,dolomite, siltstone and shale with basal conglomerate. Bioherms in Buchan Group. Marine	5000'+ at Tabberabbera; 2500'± at Buchan; 1200'+ at Waratah Bay	PALEOZOIC	MIDDLE DEVONIAN
Snowy River Volcanics	Flows and pyroclastics	0-2500'	PALEOZOIC	MIDDLE to LOWER DEVONIAN
Basement	Strongly folded slate,shale, sandstone and quartzite with quartz veins intruded by granite and other igneous rocks	30,000'+	PALEOZOIC	SILURIAN and ORDOVICIAN Undifferentiated

AMPOL EXPLORATION LIMITED

DATE NOV 1985

No Permian sediments are known in the subsurface of the basin. However, conglomerate exposed along a major fault on the south side of the Carrajung uplift, is thought to be glacial tillite of Permian age.

The major structural trend in the Tasman geosyncline is north-south, and because the Paleozoic rocks in the sub-surface of the Gippsland Basin are an extension of this geosyncline the same trend is thought to persist.

No sediments of Triassic age are known in the Gippsland Basin.

The oldest sediments in the basin are those of the Early Cretaceous Strzelecki Group which were deposited in the earlier Strzelecki rift system. Where it is known on the uplifted and eroded flanks of the basin, the Strzelecki Group consists of distinctive non-marine greywackes, shales and minor coals. These rocks were deposited in coalescing alluvial fan and alluvial plain complexes.

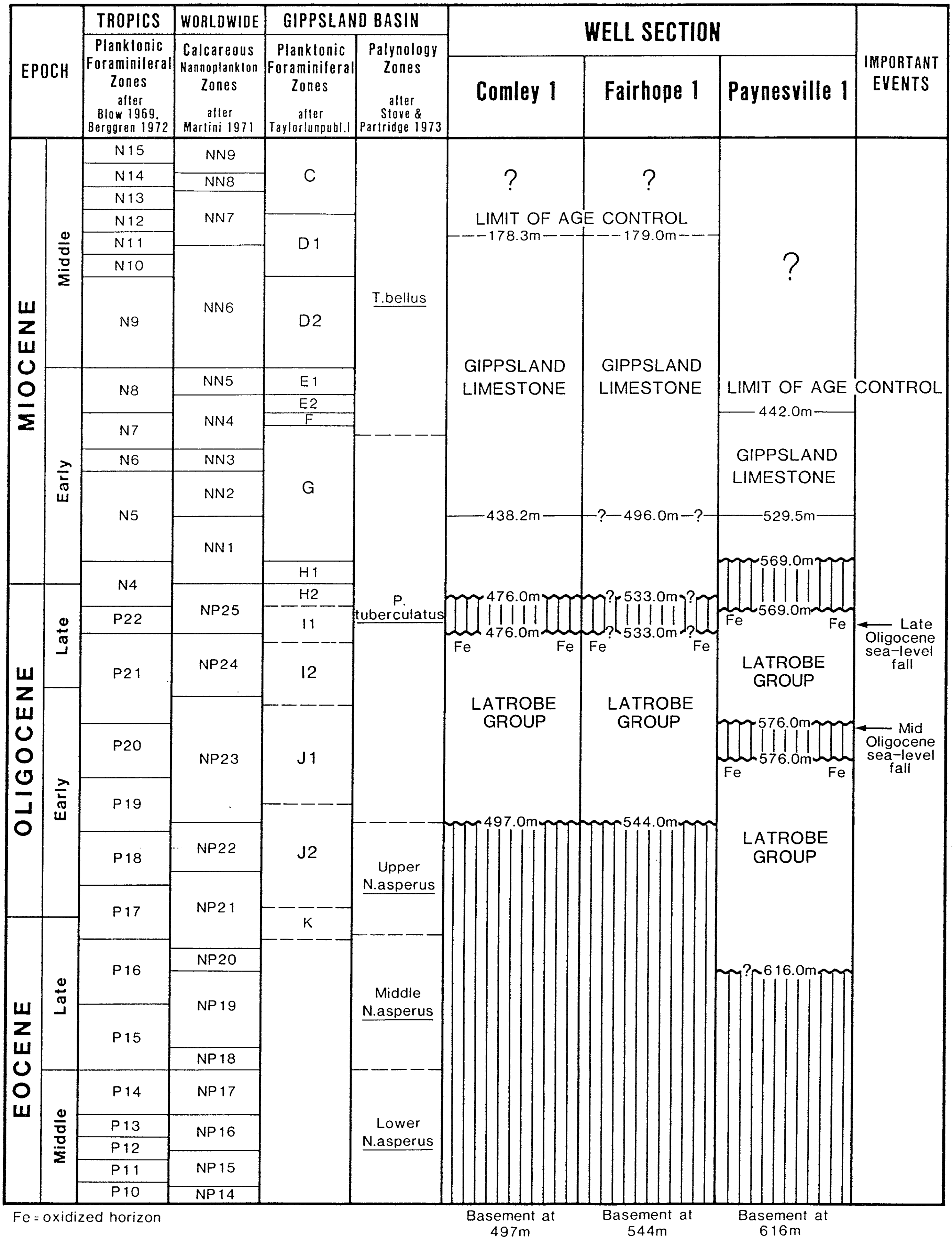
Overlying the Strzelecki Group, often with pronounced angular unconformity, is the Latrobe Group. Onshore in the western portion of the basin, the "Latrobe Valley Coal Measures" contain the world's largest commercial brown coal deposits. These are Miocene to Oligocene in age. Offshore a similar sequence is known from exploratory oil wells where the Latrobe Group ranges in age from Late Cretaceous to Late Eocene. The group thins rapidly north of the Rosedale fault system but is still present at Bairnsdale (located in PEP 98) near the northern limit of the Basin. Well control is very sparse but there may have been several of these embayment areas along the northern basin edge interspersed with locally high areas of non-deposition during Late Latrobe time.

Offshore the Latrobe Group consists of up to 5,000 metres of sandstone, siltstone, shale and coal deposited largely in non-marine environments. Marine incursions are indicated by zones rich in dinoflagellates which have assisted in the subdivision of this otherwise monotonous sequence. In the southeastern part of the basin, foresetted strandline sandstones which have been recognized in well intersections and on seismic records, represent a limit of non-marine sedimentation in the basin at that time. Since the Tasman Sea existed as early as the Late Cretaceous, marine sediments laterally-equivalent to the Latrobe Group may be preserved in deep water along the southeastern margin of the basin.

Onshore to the north of the basin centre, the Latrobe Group consists of up to some hundred metres of fluvial sandstones and gravels interbedded with siltstones and shales and some coals. The sequence appears to be fining upwards with braided stream deposits succeeded by meandering stream deposits with perhaps some marine influence towards the top of the Latrobe transgressive sequence. The Latrobe group here is probably intermediate in age between the older sequence in the offshore area and the younger sequence in the western onshore Coal Measures area.

Uplift of the northeastern part of the basin during Late Eocene periods of wrench faulting, led to the formation of submarine channels in the top of the Latrobe Group which was simultaneously subject to marine

Tentative chronostratigraphic correlation between COMLEY 1, FAIRHOPE 1 & PAYNESVILLE 1 wells, onshore Gippsland Basin - revised by Ampol Exploration Ltd



transgression. Marine greensands at the top of the Latrobe Group mark the onset of Late Eocene transgression, and are overlain by marine shales and marls of the Lakes Entrance Formation (Oligocene to Early Miocene). Deposition of shallow marine shelf carbonates of the Gippsland Limestone began in the Early Miocene with laterally equivalent shales of the Lakes Entrance Formation in deeper water.

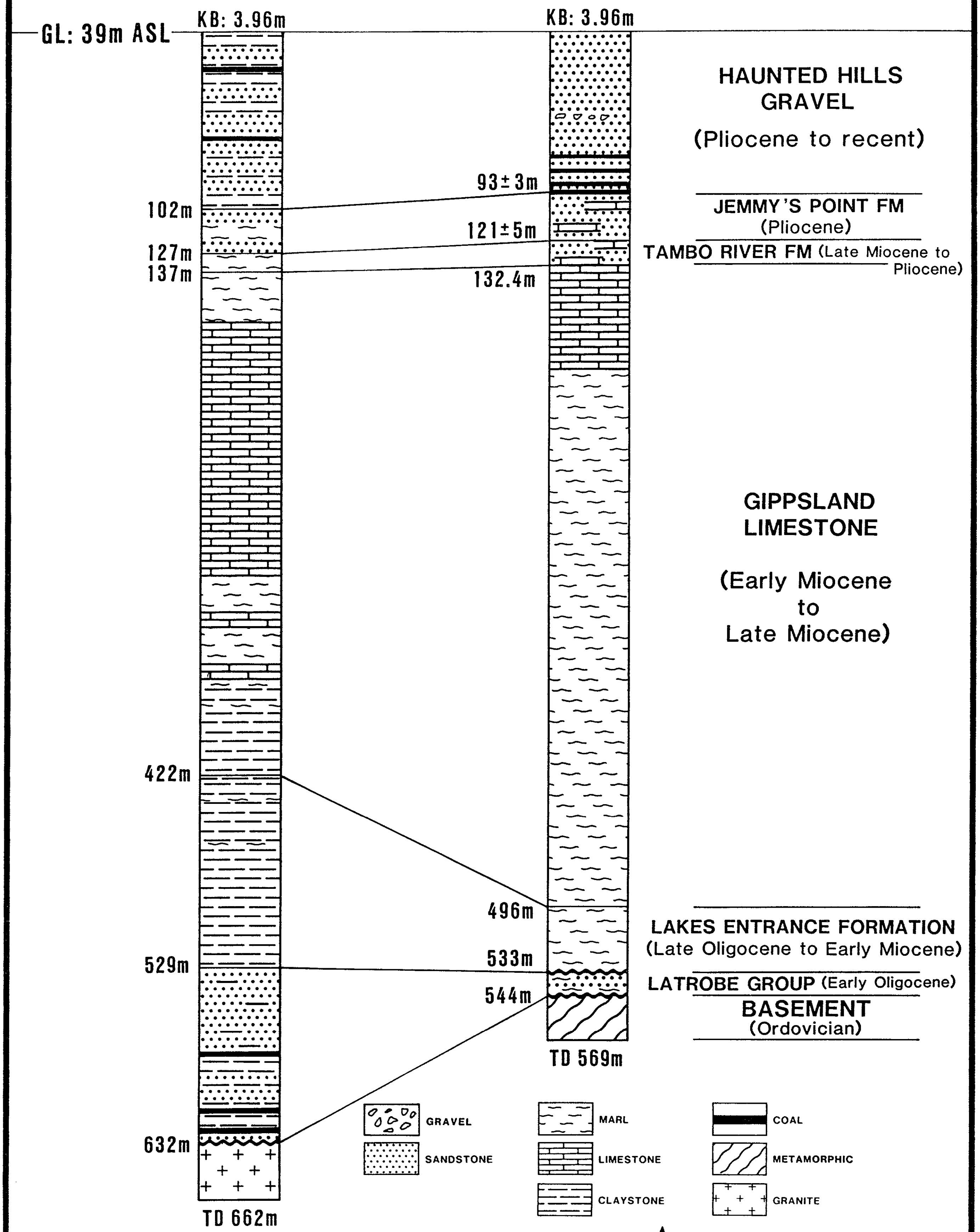
A marine environment continued into Pliocene time but then gradual retreat of the sea ended marine deposition in the Gippsland area of the Gippsland basin. From Upper Pliocene to recent time non-marine conditions prevailed, and a cover of sand, gravel and clay was deposited over part of the basin (Haunted Hills Gravel).

Although only a limited amount of time-stratigraphic data is publicly available it is clear that many of the lithostratigraphic units recognised in the Gippsland Basin are diachronous.

Hydrocarbon Occurrence

Apart from the vast accumulations of oil and gas in the offshore Gippsland Basin, only one field has been discovered onshore to date. The Lakes Entrance oil field is located within the original limits of PEP 98 and was discovered in 1924. During the life of the field 64 bores were drilled and a total of 10,000 barrels of 15.7^{o} A.P.I. gravity crude oil produced (peak production was 572 barrels per annum). The oil is an asphaltic base crude which is devoid of gasoline and kerosene fractions. The oil is stratigraphically trapped in a glauconitic sandstone (greensand) placed at the base of the Lakes Entrance Formation/top Latrobe Group. The areal extent of the greensand is approxmately 15 km^2. Porosity and permeability are highly variable throughout the reservoir but it is usually tight and unproductive. Geochemical analysis of the Lakes Entrance oil shows that it is heavily biodegraded. The gas associated with the oil is rich in CH_4 (up to 94%) and N_2 (up to 71%). The composition of this gas is markedly different to that produced in the offshore Gippsland Basin. The gas in the Lakes Entrance field is likely to have been derived from biodegradation of the crude oil after it had migrated into the Lakes Entrance trap. Gravel (Colquhoun Gravel) with excellent reservoir potential underlies the greensand. Wireline logs show the gravel to be 100% water-saturated. Prior to the Kosciusko uplift late in the Pliocene it is possible that the gravel may have contained significant quantities of oil. Basinward tilting would have resulted in the flushing of the gravel leaving only residual oil in the less porous overlying greensand.

FAIRHOPE 1
PREDICTED v's ACTUAL



DEPTH IN METRES BELOW KB
VERTICAL SCALE 1:3000

AMPOL EXPLORATION LIMITED

AUTHOR : M.SCHMEDJE	DATE : SEPT.'85
CONTOUR INT. :	MAP N° :

4. SUMMARY OF STRATIGRAPHY

HAUNTED HILLS GRAVEL: Surface to 93±3M (89±3M)
(Pliocene to Recent)

Predominantly SAND: unconsolidated, coarse to very coarse grained, subangular to subrounded, milky to translucent, moderate to well sorted. Occasional lithic grains and muscovite. Good visual porosity

with common GRAVEL at 50 m: pebbles up 1/2 cm. diameter, mainly fine grained brown quartzite

with abundant LIGNITE from 74 m: black, dull, very poorly indurated, soft, stringy, woody texture, fissile in part

with abundant SANDSTONE from 74 m: very fine grained quartz, grey, non-calcareous, abundant argillaceous matrix, poorly sorted, soft, abundant carbonaceous matter, micaceous. Poor visual porosity.

JEMMY'S POINT FORMATION: 93±3 to 121±5m (28±8M)
(Pliocene)

Predominantly SANDSTONE A/A, calcareous and pyritic

with common to abundant CARBONATE: unconsolidated, coarse to very coarse fossil fragments.

TAMBO RIVER FORMATION: 121±5 m to 132.4 m (11.4±5 m)
(Late Miocene to Pliocene)

Predominantly SANDSTONE: A/A, less consolidated, more argillaceous with abundant CARBONATE: A/A.

GIPPSLAND LIMESTONE: 132.4m to 496 m (363.6 m)
(Early Miocene to Late Miocene)

Predominantly CARBONATE to 194 m: unconsolidated, coarse to very coarse, angular to subangular, off-white & smokey grey, fossil fragments. Poor to moderately well sorted, good visual porosity.

Predominantly MARL from 194 m: grey, soft, unconsolidated, poorly sorted micrite and fossil fragments, rare glauconite and pyrite. Nil visual porosity

with occasional ARENACEOUS LIMESTONE: grey, bioclastic, fine grained, moderately indurated, glauconitic. Nil visual porosity

with rare CLAYSTONE: pale green-grey, calcareous, soft, poor to moderately indurated, subfissile in part.

LAKES ENTRANCE FORMATION: 496 to 533 m (37 m)
(Late Oligocene to Early Miocene)

Predominantly MARL: A/A, common to abundant glauconite, trace pyrite

with minor SANDSTONE: grey, very fine grained, moderately indurated, hard, calcareous, glauconitic?/chloritic?, pyritic. Poor visual porosity

with minor CLAYSTONE: A/A

LATROBE GROUP: 533 to 544 m (11 m)
(Early Oligocene)

Predominantly SANDSTONE: Type A, dominate at top, red-brown, fine grained, translucent quartz, poorly sorted, calcareous, abundant glauconite, hard, indurated, brittle, trace pyrite. Poor visual porosity. Type B, dominate from 536 m, coarse grained, subangular, translucent, well sorted quartz, common pyrite and trace glauconite. Moderate visual porosity

with common MARL A/A.

BASEMENT: 544 to 569 m (25 m)
(Ordovician)

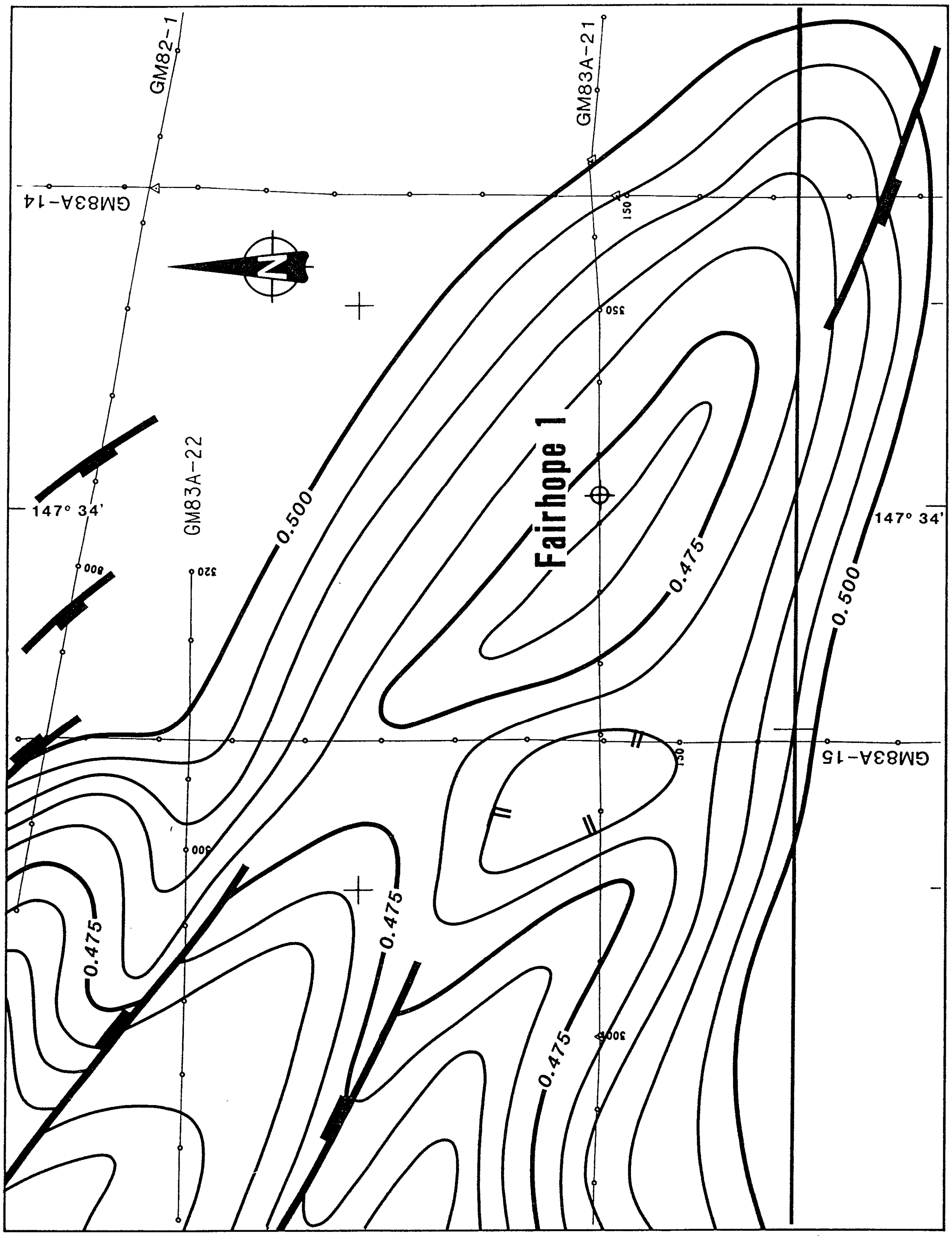
Predominantly QUARTZITE: coarse grained, angular to subangular, translucent quartz with trace to abundant red-grey argillaceous matrix and pyrite. Poor visual porosity.

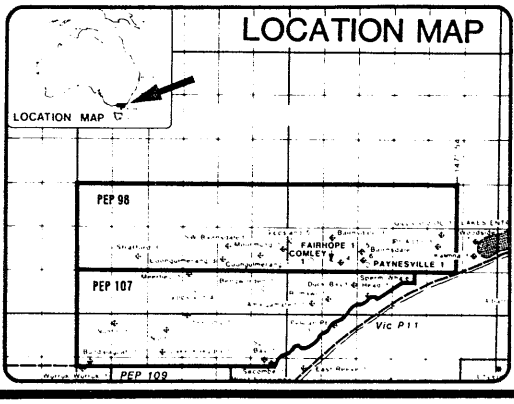
5. GEOPHYSICAL ANALYSIS

Fairhope-1 was predicted to penetrate a 103m thick section of Latrobe Group but only 11m of Latrobe Group was present; the basement was encountered 88m high to prediction. The top of the Latrobe Group was only 4m low to prediction. The vertical seismic profile (VSP) and well checkshot survey indicate that the top of the Latrobe Group is a half-cycle higher than mapped at 0.464s rather than 0.470s This correlation error was countered by the use of an average velocity of 2070 m/s as against the actual velocity of 2110 m/s.

Post-drill mapping of the prospect shows that the top of Latrobe Group structure is basically unchanged. The positive half-cycle at 0.472 has been mapped as there is no significant difference in the structure, in this area. The mapping indicates that the well was located slightly off the crest of a northwest trending anticline and was probably within a small closure. The critical dip direction for the trap is to the northwest where closure depends on only a few milliseconds of relief on line GM83-15. Some doubt must exist about the closure.

The most surprising result was the very thin Latrobe Group. A number of coherent reflectors below the top of Latrobe Group had been interpreted as being coal measures and other units within a locally thick section. The exact nature of these reflectors is uncertain but they may be due to the following causes:





AMPOL EXPLORATION LIMITED

GIPPSLAND BASIN
PEP 98, VICTORIA

FAIRHOPE 1
TIME STRUCTURE MAP
Top of Latrobe Group

0 400m
1:10000

AUTHOR R. A. CASSIE	DATE NOVEMBER 1985
CONTOUR INT. 5msec	MAP N°

1) multiples - the synthetic seismogram (GEOGRAM) shows a number of strong multiples below the basement reflector, which would show up even stronger using a short scalar. The best correlation between the synthetic and the actual seismic section was achieved using the primaries and multiples synthetic. The VSP also showed a large number of multiples in the downgoing wavelet, which may not have been fully attenuated by the processing of the actual seismic section.

2) Sideswipe - some of the events may be due to reflectors off the line of the section. It is believed that the area has a complicated basement structure which could lead to stray events being recorded.

3) Basement layering - while drilling, a weathered basement layer was recognized over fresh basement but the wireline logs did not go deep enough to confirm a difference in velocity between these two layers.

The effects of the multiple and off-line reflectors could be tested by reprocessing, possibly using the VSP down-going wavelet to design the deconvolution operator, and migration; although the latter will not remove off-line events it will remove other sources of diffraction, sharpen fault cuts and generally improve structural interpretation, allowing a more accurate recognition of basement lows and associated thick Latrobe Group sediments.

6. POROSITY AND PERMEABILITY

Wireline log evaluation indicates the Latrobe Group is the only sequence in Fairhope #1 with effective porosity. Log calculated porosities range from 0% to 19% with an average of 6.2% Analysis of wireline logs also indicates that the Latrobe Group is very clayey and that the sand content increases with depth while the clay and glauconite content decrease.

Log evaluation indicates that basement has no effective porosity although up to 8% porosity may exist at 556.5 m. Basement is unlikely to be permeable unless it is fractured.

7. HYRDROCARBONS

No significant indications of hydrocarbons were encountered in Fairhope #1. Evaluation of wireline logs show that the Latrobe Group is 100% water-saturated.

Analysis of the headspace gas from ditch cuttings yielded the highest readings from 488 to 508 m. at the base of the Gippsland Limestone and top of the Lakes Entrance Formation (560 ppm C1, 17 ppm C2 and 2 ppm C3). Headspace gas levels in the Latrobe Group were significantly lower (294 ppm C1, 1 ppm C2, 1 ppm C3).

8. CONCLUSIONS AND CONTRIBUTIONS TO GEOLOGICAL KNOWLEDGE

- Fairhope #1 was drilled to test sandstone reservoirs of the Latrobe Group. The objective was encountered at 533m KB, 4m low to prognosis.

- The basement was encountered at 544m KB, 88m high to prognosis. This reduced the total thickness of the Latrobe Group from the predicted 103m to only 11m. A number of coherent reflectors are present below the top of Latrobe Group and had been interpreted as being coal measures and other units within a locally thick Latrobe section.

- Mapping indicates that the well was located slightly off the crest of a northwest trending anticline and was probably within a small closure.

- The top 3m of the Latrobe Group consists of glauconitic siltstone, below which the sand content increases. The bottom 1.5m consists of almost clean sandstone with a porosity of 17%. The sediments are water-wet.

- No significant hydrocarbon shows were encountered.

- The well was plugged and abandoned.

APPENDICES

APPENDICES

APPENDIX 1.

DAILY DRILLING REPORTS

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE #1

DAILY DRILLING REPORT 1

RIG SUPERVISOR J. HANSON	CONTRACTOR ATCO	RIG A3	TOOLPUSHER B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
25.6.85	1	42M	0	42M	311MM	406MM	6M

ACTIVITY DRILLING 311MM HOLE

BHA BIT/2 x 203mm D.C's			MUD RECORD	IN	OUT	PUMP DATA	1	2
2 x 152mm D.C.			Wt S.G.	1.03		MAKE		
LENGTH	37.8M		Vis	32		MODEL	TS-500	TSM-500
BHA TOTAL WT			W.L.			LINER	140	140
DRILL PIPE			PV	SPUD		STROKE	406	406
TOT. STR. WT.			YP			S.P.M.	65	-
W.O.B.	2-4000kg		GELS			PRESSURE	400	-
BIT NO	1 R.R.		FILT CK.	MUD		G.P.M.	1306	
TYPE	S33S		Chlorides			Total G.P.M.	1306	
JETS	3 x 16		pH			D.C. Annul Vel	30 M/MIN	
DEPTH IN	0		KCl			D.P. Annul Vel	23.2 M/MIN	
FOOTAGE	42M		Solids			Circ. Time		
RPM	100		TEMP.			Hole Volume	3.2 M^3	
ROT. HRS	4		Additives	GEL: 25 CAUSTIC: 2		Pit Volume	15.9 M^3	
CONDITION	IN							

FROM	TO	HRS	OPERATIONS SUMMARY		
0600	2400	18	MOVE RIG FROM COMLEY#1 & RIG UP	DAY COST	$107,387
2400	0130	1½	DRILL RATHOLE & RIG TO SPUD	Previous Cost	-
0130	0530	4	SPUD IN & DRILL 311MM HOLE TO 42M	Cumulative Cost	$107,387
0530	0600	½	CIRCULTE & RUN SURVEY @ 31M = ¼ DGR.	Major Items	
				RIG MOVE; LEASE PREP)	$104,000
				BUDGET	
				Cond.	
				Surf.	
				Int.	
				Prod.	

NEXT 24 HRS DRILL SURFACE HOLE; RUN & CEMENT 244MM CASING.

DISCUSSION

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	TOTAL
14		2		5	21

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE # 1	DAILY DRILLING REPORT 2

RIG SUPERVISOR	CONTRACTOR	RIG	TOOLPUSHER
I.C. HOFFMEIER	ATCO	A3	B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
26.6.85	2	132M	42M	90M	311MM	244MM	129.05 M

ACTIVITY NIPPLE UP BOP

BHA			MUD RECORD	IN	OUT	PUMP DATA	1	2
			Wt	1.09		MAKE	TSM-500	TSM-500
LENGTH	123.1		Vis	35		MODEL		
BHA TOTAL WT	58K.		W.L.	–		LINER	5½	5½
DRILL PIPE			PV	–		STROKE	16	16
TOT. STR. WT.			YP	–		S.P.M.	42	42
W.O.B.	5K.		GELS	–		PRESSURE	550	
BIT NO	1RR		FILT CK.	–		G.P.M.	851	851
TYPE	S335		Chlorides	–		Total G.P.M.	1702	
JETS	3 x 16		pH	9.5		D.C. Annul Vel	38.4 M/MIN	
DEPTH IN	0		KCl			D.P. Annul Vel	29.3 M/MIN	
FOOTAGE	13.2 M		Solids			Circ. Time	28	
RPM	120		TEMP.			Hole Volume	9.5M^3	
ROT. HRS	8.5		Additives	MILGEL-60		Pit Volume	39.7M^3	
CONDITION	4-4-1		CAUSTIC - 2					

FROM	TO	HRS	OPERATIONS SUMMARY		
0600	0700	1	DRILL FROM 42M TO 60M	DAY COST	$ 16,705
0700	0800	1	REPAIR PUMPS	Previous Cost	$107,387
0800	1130	3.5	DRILL & SURVEY 60M TO 120M	Cumulative Cost	$124,092
1130	1230	1	WIPER TRIP - STRAP OUT	Major Items	
1230	1300	.5	DRILL FROM 120M TO 132M	CEMENTING SERVICE	
1300	1400	1	CIRC HOLE CLEAN SPOT HI VIS MUD	CEMENT & CHEMICALS	
1400	1500	1	POH - LAY OUT 203MM D.C's		
1500	1830	3.5	RIG TO & RUN 244MM CSG & CIRC	BUDGET	
1830	2000	1.5	TEST CMT LINES & CMT CSG.	Cond.	
2000	0200	6	W.O.C.	Surf.	
0200	0600	4	CUT COLLAR - LAY OUT LANDING JOINT -	Int.	
			INSTALL CSG HEAD - INSTALL BOP STACK	Prod.	

NEXT 24 HRS PRESS TEST BOP - DRILL 8½ HOLE

DISCUSSION SURVEYS 82.3M - 1 DGR / 131.97 - 1 DEGREE

CMT SAMPLES NOT SET AFTER 4 HOURS - HARD AFTER 6 HOURS.
OF CONTAMINATED CMT RETURNS (RISER HEIGHT)

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	TOTAL
14		2			16

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE NO.1	DAILY DRILLING REPORT 3

RIG SUPERVISOR	I. HOFFMEIER	CONTRACTOR	ATCO	RIG	A3	TOOLPUSHER	B. NEIHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
27/6/85	3	132m	132m	-	216mm	244mm	129.05m

ACTIVITY RIG UP TO P/TEST CASING.

BHA BIT-BITSUB-14x165mmD.C.			MUD RECORD	IN	OUT	PUMP DATA	1	2
6 x HWDP			Wt	1.08		MAKE		
LENGTH			Vis	36		MODEL		
BHA TOTAL WT			W.L.			LINER		
DRILL PIPE			PV			STROKE		
TOT. STR. WT.			YP			S.P.M.		
W.O.B.			GELS			PRESSURE		
BIT NO	2		FILT CK.			G.P.M.		
TYPE	S33S		Chlorides			Total G.P.M.		
JETS	3x11		pH	9.0		D.C. Annul Vel		
DEPTH IN	132m		KCl			D.P. Annul Vel		
FOOTAGE	-		Solids			Circ. Time		
RPM	-		TEMP.			Hole Volume		
ROT. HRS			Additives	NIL		Pit Volume		
CONDITION	IN							

FROM	TO	HRS	OPERATIONS SUMMARY		
0600	1600	10	INSTALL BOP STACK & NIPPLE UP	DAY COST	$ 26,486
1600	1930	3½	REPAIR PIPE RAM HYDRAULIC SEAL	Previous Cost	$124,092
1930	2400	4½	PRESSURE TEST CHOKE MANIFOLD,	Cumulative Cost	$150,578
			BOP STACK, KELLY COOKS, STAND-PIPE	Major Items	
			VALVES - REPAIR 3" VALVE IN CHOKE		
			MANIFOLD.		
2400	0200	2	MAKE UP BHA & R.I.H. TO	BUDGET	
0200	0600	4	DRILL ON PLUG AT 113.63M	Cond.	
				Surf.	
				Int.	
				Prod.	

NEXT 24 HRS DRILL OUT & DRILL 8½ HOLE TO CORE POINT.

DISCUSSION NO PARTS ON RIG TO REPAIR 3" McEVOY VALVE - HAD PARTS DELIVERED IN TAXI FROM MELBOURNE.

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	TOTAL
14		2		6	22

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE NO. 1	DAILY DRILLING REPORT 4

RIG SUPERVISOR I.C. HOFFMEIER	CONTRACTOR ATCO	RIG A3	TOOLPUSHER B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
28/6/85	4	511	132	379	216 mm	244 mm	129.05

ACTIVITY DRILLING 216 mm HOLE

BHA BIT-BITSUB-14x6 3/8" D.C.			MUD RECORD	IN	OUT	PUMP DATA	1	2
6 HWDP			Wt S.G.	1.06		MAKE	TSM	
LENGTH	185.4		Vis	45		MODEL	500	
BHA TOTAL WT	15,900kg		W.L.	8.6		LINER	140	
DRILL PIPE	-		PV	15		STROKE	406	
TOT. STR. WT.	40,000kg		YP	18		S.P.M.	43	
W.O.B.	8-11000kg		GELS	3/11		PRESSURE	720	
BIT NO	2		FILT CK.	3 mm		G.P.M.	890	
TYPE	S33S		Chlorides	200		Total G.P.M.	890	
JETS	3 x 11		pH	10		D.C. Annul Vel	58.5 M/MIN	
DEPTH IN	132m		KCl	-		D.P. Annul Vel	33.8 M/MIN	
FOOTAGE	379M		Solids	3.5		Circ. Time	70	
RPM	110		TEMP.	27 DGRS.	C.	Hole Volume	14.3m³	
ROT. HRS	14		Additives	CAUSTIC 1 -		Pit Volume	47.7m³	
CONDITION	IN		CELPOL 6 - MILGEL 7					

FROM	TO	HRS	OPERATIONS SUMMARY
0600	0800	2	DRILL PLUG - FLOAT COLLAR & CMT
0800	0930	1.5	CMT CONDUCTOR TOP
0930	1130	2	DRILL CMT & TEST CSG TO 500 PSI
1130	1230	1	DRILL CMT - SHOE & FORMATION TO 1:35M
1230	1300	.5	CIRC & PIT EQUIV.M/W: 150PSI W/1.08 MUD = 1.86 CAP.
1300	1400	1	FINISH REPAIRS TO CHOKE MANIFOLD
1400	1500	1	TEST CHOKE MANIFOLD O.K.
1500	0530	14.5	DRILL & SURVEY FROM 135 TO 511M
0530	0600	.5	CIRC SAMPLE @ 511M

DAY COST	$ 12,183
Previous Cost	$150,578
Cumulative Cost	$162,761
Major Items	
BUDGET	
Cond.	
Surf.	
Int.	
Prod.	

NEXT 24 HRS CUT CORE # 1 - DRILL TO T.D. - LOGGING

DISCUSSION SURVEYS:- 214=¼ - 321=¼ - 499=½ DEGREES.

CONTRACTOR PERS.	AMPOL PERS.	OTHERS	TOTAL
13	2	6	21

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE # 1	DAILY DRILLING REPORT 5

RIG SUPERVISOR I. HOFFMEIER	CONTRACTOR ATCO	RIG A3	TOOLPUSHER B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
29.6.85	5	569M	511M	58M	216MM	244MM	129.06M

ACTIVITY LOGGING W/SCHLUMBERGER

BHA BIT/B.SUB/14x6½" D.C.			MUD RECORD	IN	OUT	PUMP DATA	1	2
6 HWDP			Wt S.G.	1.07		MAKE		
LENGTH	185.4M		Vis	40		MODEL	TSM-500	
BHA TOTAL WT	16,000kg		W.L.	9.2		LINER	140	
DRILL PIPE			PV	13		STROKE	406	
TOT. STR. WT.	42,300kg		YP	16		S.P.M.	43	
W.O.B.	11-13,500kg		GELS	3/6		PRESSURE	775	
BIT NO	2		FILT CK.	2		G.P.M.	889	
TYPE	S33S		Chlorides	200		Total G.P.M.	889	
JETS	3x11		pH	9.5		D.C. Annul Vel	58.5 M/MIN	
DEPTH IN	132M		KCl	-		D.P. Annul Vel	33.8 M/MIN	
FOOTAGE	437M		Solids	4%		Circ. Time	82	
RPM	60-110		TEMP.	30 DGRS.C		Hole Volume	20.7M3	
ROT. HRS	19		Additives	CELPOL: 6		Pit Volume	52.5M3	
CONDITION	6-3-3/16							

FROM	TO	HRS	OPERATIONS SUMMARY	DAY COST	$ 11,539
0600	0630	½	CIRCULATE SAMPLE @ 511M	Previous Cost	$162,761
0630	0700	½	DRILL 216MM HOLE TO 521M	Cumulative Cost	$174,300
0700	0730	½	CIRCULATE SAMPLE @ 521M	Major Items	
0730	0800	½	DRILL 216MM HOLE TO 536M		
0800	0830	½	CIRCULATE SAMPLE @ 536M		
0830	1230	4	DRILL 216MM HOLE TO 569M		
1230	1330	1	CIRCULATE HOLE CLEAN	BUDGET	
1330	1500	1½	WIPER TRIP TO SHOE(STRAP OUT)	Cond.	
1500	1530	½	CIRCULATE HOLE CLEAN	Surf.	
1530	1700	1½	P.O.H. TO LOG	Int.	
1700	1900	2	R/U SCHLUMBERGER & R.I.H.: BRIDGE @ 557M	Prod.	
1900	2130	2½	R/D SCHLUMBERGER & R.I.H.		.....2/..

NEXT 24 HRS CONTINUE LOGGING

DISCUSSION

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	TOTAL
13		2		5	20

AMPOL EXPLORATION LIMITED

(2)

WELL: FAIRHOPE # 1	DAILY DRILLING REPORT 5

RIG SUPERVISOR I. HOFFMEIER	CONTRACTOR ATCO	RIG A3	TOOLPUSHER B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT

ACTIVITY

BHA			MUD RECORD	IN	OUT	PUMP DATA	1	2
			Wt			MAKE		
LENGTH			Vis			MODEL		
BHA TOTAL WT			W.L.			LINER		
DRILL PIPE			PV			STROKE		
TOT. STR. WT.			YP			S.P.M.		
W.O.B.			GELS			PRESSURE		
BIT NO			FILT CK.			G.P.M.		
TYPE			Chlorides			Total G.P.M.		
JETS			pH			D.C. Annul Vel		
DEPTH IN			KCl			D.P. Annul Vel		
FOOTAGE			Solids			Circ. Time		
RPM			TEMP.			Hole Volume		
ROT. HRS			Additives			Pit Volume		
CONDITION								

FROM	TO	HRS	OPERATIONS SUMMARY	DAY COST	
2130	2200	½	WASH TO BTM & CIRC. HOLE CLEAN	Previous Cost	
2200	2330	1½	CHAIN OUT TO LOG	Cumulative Cost	
2330	0600	6½	RIG UP SCHLUMBERGER & LOG	Major Items	
				BUDGET	
				Cond.	
				Surf.	
				Int.	
				Prod.	

NEXT 24 HRS

DISCUSSION

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE NO. 1	DAILY DRILLING REPORT 6

RIG SUPERVISOR	I.C. HOFFMEIER	CONTRACTOR	ATCO	RIG	A3	TOOLPUSHER	B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
30.6.85	6	569	-	-	216mm	244mm	129.05

ACTIVITY LAYOUT D/P & DC.

BHA			MUD RECORD	IN	OUT	PUMP DATA	1	2
			Wt			MAKE	TSM	
LENGTH			Vis			MODEL	500	
BHA TOTAL WT			W.L.			LINER		
DRILL PIPE			PV			STROKE		
TOT. STR. WT.			YP			S.P.M.		
W.O.B.			GELS			PRESSURE		
BIT NO			FILT CK.			G.P.M.		
TYPE			Chlorides			Total G.P.M.		
JETS			pH			D.C. Annul Vel		
DEPTH IN			KCl			D.P. Annul Vel		
FOOTAGE			Solids			Circ. Time		
RPM			TEMP.			Hole Volume		
ROT. HRS			Additives			Pit Volume		
CONDITION								

FROM	TO	HRS	OPERATIONS SUMMARY		
				DAY COST	$ 72,186
0600	2200	16	LOGGING WITH SCHLUMBERGER	Previous Cost	$174,300
2200	2300	1	RIG DOWN SCHLUMBERGER & LAY	Cumulative Cost	$246,486
			OUT HWDP.	Major Items	
2300	0100	1.5	RIH & PICK UP SINGLES	LOGGING	
0100	0130	.5	MIX & PUMP CMT PLUG #1: 508M-554M w/54sx 'A' CMT		
0130	0230	1	PULL HSTOP - CIRC - PULL 17 STDS.		
0230	0300	.5	MIX & PUMP CMT PLUG#2: 56sx 'A' CMT w/2% CACL.		
0300	0330	.5	HOWCO PUMP FAILED - CIRC PLUG OUT	Cond.	
0330	0500	1.5	CLEAN OUT HOWCO PUMP - WASHED VALVE	Surf.	
0500	0530	.5	MIX & PUMP CMT PLUG#2: 104m-150m w/56sx 'A' CMT w/2% CACL		
0530	0600	.5	PULL 4 STANDS & CIRC - LAY OUT D/PIPE	Prod.	

NEXT 24 HRS RELEASE RIG - TEAR OUT SAME & MOVE 50% OF RIG.

DISCUSSION HOWCO UNIT DOES NOT HAVE A SEPARATE MIX PUMP THEREFORE THEY DO NOT HAVE A BACKUP PUMP IF ONE FAILS ON CMT JOBS.

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	TOTAL
13		2		5	20

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE # 1	DAILY DRILLING REPORT 7

RIG SUPERVISOR	CONTRACTOR	RIG	TOOLPUSHER
I. HOFFMEIER	ATCO	A3	B. NIEHAUS

DATE	SINCE SPUD	DEPTH	PREVIOUS DEPTH	FOOTAGE	BIT SIZE	CASING	SHOE AT
1.7.85	7	569 M	569 M	-	-	244 MM	129.05 M

ACTIVITY RIG RELEASED @ 1300 hrs. 30/6/85

BHA			MUD RECORD	IN	OUT	PUMP DATA	1	2
			Wt			MAKE		
LENGTH			Vis			MODEL		
BHA TOTAL WT			W.L.			LINER		
DRILL PIPE			PV			STROKE		
TOT. STR. WT.			YP			S.P.M.		
W.O.B.			GELS			PRESSURE		
BIT NO			FILT CK.			G.P.M.		
TYPE			Chlorides			Total G.P.M.		
JETS			pH			D.C. Annul Vel		
DEPTH IN			KCl			D.P. Annul Vel		
FOOTAGE			Solids			Circ. Time		
RPM			TEMP.			Hole Volume		
ROT. HRS			Additives			Pit Volume		
CONDITION								

FROM	TO	HRS	OPERATIONS SUMMARY	DAY COST	$ 6,712
0600	0830	2½	LAY OUT D. PIPE & D. COLLARS	Previous Cost	$246,486
0830	0900	½	R.I.H. TAG PLUG # 2 @ 113.7 M	Cumulative Cost	$253,198
0900	1000	1	LAY DOWN D. PIPE	Major Items	
1000	1200	2	NIPPLE DOWN & LAY OUT B.O.P's		
1200	1300	1	RECOVER BRADEN HEAD; CLEAN TANKS & LAY OUT KELLY & SWIVEL		
1300			RELEASE RIG @ 1300 hrs.		
	0600		MOVE TO PAYNESVILLE #1	BUDGET	
				Cond.	
				Surf.	
				Int.	
				Prod.	

NEXT 24 HRS MOVE RIG & SPUD PAYNESVILLE #1

DISCUSSION

CONTRACTOR PERS.		AMPOL PERS.		OTHERS	TOTAL
13		2		5	20

APPENDIX 2.

DAILY GEOLOGICAL REPORTS

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 25.6.85

DEPTH: 42m PROGRESS: 42m DAYS FROM SPUD: 1

REPORT PERIOD: 0600, 24/6 to 0600, 25/6. OPERATION: DRILLING AHEAD

FORMATION: HAUNTED HILLS GRAVEL PAGE: 1 OF: 1

FORMATION TOPS: NOTE: NO MUDLOGGING IN TOP HOLE, SPOT SAMPLES ONLY.

DEPTH INTERVAL	ROPM/hr MIN	AVE	MAX	LITHOLOGY
				SAND: (100%)
4m	75	98	120	a) QUARTZ SAND (85-100%) unconsolidated,
to				coarse to very coarse grained, subangular-
42m				subrounded, milky white to translucent,
				moderately to well sorted.
SAMPLES AT:				Infered good visual porosity.
12m				b) LITHIC SAND, (Trace-15%)
20m				occurs as minor component of quartz sand.
30m				Predominately fine grained, hard, well
40m				indurated igneous (grey, blue, black, red) &
				quartzite (yellow-orange) coarse-very coarse
				rock fragments.
				CLAY (Trace)
				Yellow & dispersed.
				MUSCOVITE (Rare)
				Very coarse grained plates.

GAS: BACKGROUND: UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 26/6/85

DEPTH: 132m PROGRESS: 90m DAYS FROM SPUD: 2

REPORT PERIOD: 0600, 25/6 to 0600, 26/6 . OPERATION: NIPPLING UP B.O.P.

FORMATION: TAMBO RIVER FORMATION PAGE: 1 OF: 3

FORMATION TOPS: JEMMY'S POINT FORMATION (93m), TAMBO RIVER FORMATION (121m)

NOTE: NO MUD LOGGING IN TOP HOLE. SPOT SAMPLES ONLY.

DEPTH INTERVAL	ROP M/hr MIN	ROP M/hr AVE	ROP M/hr MAX	LITHOLOGY
42m				SAND (95-100%)
to				~~unconsolidated, coarse to very coarse~~
70m				grained, subangular-subrounded, quartz, milky
SAMPLES AT:				white - translucent, moderately-well sorted,
50				yellow staining in part. Infered good visual
60				porosity.
70				
				~~GRAVEL (5%) at 50m only.~~
				up to ½ cm diameter, subangular, predominately
				fine grained, brown, extremely indurated
				quartzite.
				LITHIC SAND - (Trace) - as above
				CLAY - (Trace) - as above
				~~MUSCOVITE - (Rare - trace)~~ - as above
70m				
to				COAL (50-60%)
93m				black, dull, very poorly indurated,
SAMPLES AT:				soft, stringy in part, woody
76m				texture, fissil in part. .....2/..

GAS: BACKGROUND: UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT (2)

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 26/6/85

DEPTH: PROGRESS: DAYS FROM SPUD: 2

REPORT PERIOD: to . OPERATION:

FORMATION: PAGE: 2 OF: 3

FORMATION TOPS:

DEPTH INTERVAL	ROP M/hr MIN	AVE	MAX	LITHOLOGY
80m				SANDSTONE (35-40%)
90m				very fine grained (occasional fine grained)
				quartz, grey, non-calcareous, abundant
				argillaceous matrix (30%), poorly sorted,
				very soft and very poorly indurated,
				abundant carbonaceous fragments, micaceous.
				Very poor visual porosity.
				SAND (Trace-15%)
				coarse to very coarse grained quartz
				type as above.
93m				SANDSTONE: (50-70%)
to				as above but strongly calcareous and
121m				rare pyrite.
SAMPLES AT:				LIMESTONE: (15-50%)
96m				Unconsolidated fossil fragments, up to
107m				½ cm in length; predominately corals,
117m				bivalves, gastropods & shell fragments.

....3/..

GAS: BACKGROUND: UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT (3)

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 26/6/85

DEPTH: PROGRESS: DAYS FROM SPUD: 2

REPORT PERIOD: to . OPERATION:

FORMATION: PAGE: 3 OF: 3

FORMATION TOPS:

DEPTH INTERVAL	ROP M/hr MIN	ROP M/hr AVE	ROP M/hr MAX	LITHOLOGY
				COAL (Trace - 25%)
				as above
121m				
to				SANDSTONE (50-70%)
132m				as above but less consolidated & more
SAMPLES AT:				argillaceous.
126				
132				LIMESTONE (30-50%)
				as above
				COAL (Trace - 5%)
				as above

GAS: BACKGROUND: UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT

WELL: FAIRHOPE # 1   PERMIT: P.E.P. 98   DATE: 27/6/85

DEPTH: 132m   PROGRESS: NIL   DAYS FROM SPUD: 3

REPORT PERIOD: 0600, 26/6 to 0600, 17/6 .   OPERATION: DRILLING OUT FLOAT COLLAR

FORMATION: TAMBO RIVER FORMATION   PAGE: 1 OF: 1

FORMATION TOPS:

DEPTH INTERVAL	ROP			LITHOLOGY
	MIN	AVE	MAX	

GAS: BACKGROUND: UNITS; C_1, C_2, C_3, C_4^+.

PEAK @   M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS:

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 28/6/85

DEPTH: 511 M PROGRESS: 379 M DAYS FROM SPUD: 4

REPORT PERIOD: 0600, 27/6 to 0600, 28/6 . OPERATION: DRILLING AHEAD

FORMATION: LAKES ENTRANCE FORMATION PAGE: 1 OF: 3

FORMATION TOPS: GIPPSLAND LIMESTONE (135m), LAKES ENTRANCE FM. (423m),

*NOTE: CHROMATOGRAPH NOT WORKING *

DEPTH INTERVAL	ROP M/hr MIN	ROP M/hr AVE	ROP M/hr MAX	LITHOLOGY
132m	20	48.6	120	LIMESTONE (95-100%)
to				unconsolidated, coarse, occasional very
185m				coarse, angular-subangular, off-white &
				smokey grey fossil fragments. Moderately
				sorted becoming poorly sorted at base.
				Infered fair-good visual porosity.
				COAL (NIL-5%)
				black, soft, dull (probable cavings)
				SAND (NIL-Trace)
				medium grained, subrounded, unconsolidated
				quartz.
185m	100	100	100	MARL (100%)
to				Fossil fragments (80%) as above, medium
205m				grained
				Micrite (20%), grey, very fine grained,
				very soft, unconsolidated.
				Nil visual porosity.
				.....2/..

GAS: BACKGROUND: NIL UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT (2)

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 28/6/85

DEPTH: PROGRESS: DAYS FROM SPUD: 4

REPORT PERIOD: to . OPERATION:

FORMATION: PAGE: 2 OF: 3

FORMATION TOPS:

DEPTH INTERVAL	ROP M/hr MIN	AVE	MAX	LITHOLOGY
205m	60	77.1	120	MARL (100%)
to				Fossil fragments (50-60%) as above
305m				Micrite (40-50%) as above
				rare-trace glauconite. Nil visual porosity.
				ARENACEOUS LIMESTONE (NIL-Trace)
				grey, bioclastic, fine grained, moderately
				indurated, glauconitic. Nil visual porosity.
305m	40	92	100	MARL (100%)
to				Fossil fragments (5-20%) as above,
400m				fine-medium grained
				Micrite (80-95%) as above
400m	28.5	36.1	75	MARL (85-100%)
to				Fossil fragments (15-30%) as above
458m				but occasional massive, arenaceous,
				moderately indurated Limestone.
				Micrite (65-80%) as above, rare pyrite.
				SANDSTONE (NIL-15%)
				grey, moderately indurated, poorly sorted,

GAS: BACKGROUND: NIL UNITS; C_1, C_2, C_3, C_4.

...3/..

PEAK @ M: UNITS; C_1, C_2, C_3, C_4.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT (3)

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 28/6/85

DEPTH: PROGRESS: DAYS FROM SPUD: 4

REPORT PERIOD: to . OPERATION:

FORMATION: PAGE: 3 OF: 3

FORMATION TOPS:

DEPTH INTERVAL	ROP M/hr MIN	AVE	MAX	LITHOLOGY
				fine grained, very calcareous, chloritic,
				glauconitic, Nil visual porosity.
458m	24	28.1	37.5	MARL (45-90%) as above
to				SANDSTONE (10-35%) as above
476m				SAND (Trace - 15%)
				coarse grained, subangular - subrounded,
				translucent, unconsolidated quartz.
				PYRITE (Trace - 5%)
				fine grained aggregates.
476m	21.4	41.6	54.5	MARL (85-100%) as above
to				SANDSTONE (Trace -10%) as above
511m				SAND (NIL-5%) as above
				PYRITE (NIL-Trace) as above

GAS: BACKGROUND: NIL UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 29/6/85

DEPTH: 569m PROGRESS: 58m DAYS FROM SPUD: 5

REPORT PERIOD: 0600, 28/6 to 0600, 29/6 . OPERATION: WIRE LINE LOGGING

FORMATION: BASEMENT PAGE: 1 OF: 3

FORMATION TOPS: TOP LATROBE (536m)

BASEMENT (442m)

NOTE: CHROMATOGRAPH NOT WORKING

DEPTH INTERVAL	ROP M/hr MIN	AVE	MAX	LITHOLOGY
511m	25	39.4	67.7	MARL (75-100%)
to				Fossil fragments (5-15%)
526m				Micrite (60-90%)
				GLAUCONITE (TRACE - 15%)
				green & black, medium grained,
				rounded pellets.
				SANDSTONE (NIL-10%)
				grey, very fine grained, poorly sorted,
				moderately indurated & hard, very calcareous,
				chloritic, pyritic. Poor visual porosity.
				CLAYSTONE (NIL-10%)
				pale green-grey, strongly calcareous, soft,
				poor-moderately indurated, subfissile in part.
526m	30	52.9	120	SANDSTONE (70%)
to				Type A: (55-70%) red brown, fine grained,
536m				translucent, poorly sorted quartz,
				abundant fine to coarse grained glauconite
				pellets, very calcareous, hard, indurated,
				....2/..

GAS: BACKGROUND: NIL UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT (2)

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 29/6/85

DEPTH: PROGRESS: DAYS FROM SPUD: 5

REPORT PERIOD: to . OPERATION:

FORMATION: PAGE: 2 OF: 3

FORMATION TOPS:

DEPTH INTERVAL	ROP M/hr MIN	ROP M/hr AVE	ROP M/hr MAX	LITHOLOGY
				brittle, salt & pepper texture, trace pyrite.
				Poor visual porosity.
				Type B: (TRACE - 15%)
				coarse grained, subangular, translucent,
				well sorted, friable quartz, with common
				pyrite encrusting grains in part, trace
				glauconite. Moderate visual porosity.
				MARL (20-25%)
				Micrite (80%) as above
				Fossil fragments (TRACE-20%) as above
536	100	105	120	SANDSTONE (70-80%)
to				as above (Type B). Inferred mod.-good.
542m				visual porosity.
				PYRITE: (15-20%) as above & blocky aggregates.
				Micrite: (10-15%) as above.
				....3/..

GAS: BACKGROUND: NIL UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

AMPOL EXPLORATION LIMITED

DAILY GEOLOGICAL REPORT

WELL: FAIRHOPE # 1 PERMIT: P.E.P. 98 DATE: 29/6/85

DEPTH: PROGRESS: DAYS FROM SPUD: 5

REPORT PERIOD: to

FORMATION: PAGE: 3 OF: 3

FORMATION TOPS:

DEPTH INTERVAL	ROP M/hr MIN	ROP M/hr AVE	ROP M/hr MAX	LITHOLOGY
542m	10	12.1	30	BASEMENT (WEATHERED) (100%)
to				GRANITE? (75-80%)
552m				Quartz (65-75%), coarse, angular-subangular,
				translucent. Clay (15-20%) red-grey, soft.
				QUARTZITE (15%), red, fine grained quartz,
				abundant red argillaceous matrix, soft &
				micaceous.
				PYRITE (5-10%)
552m	3.5	5.5	9.2	BASEMENT (FRESH) (100%)
to				GRANITE?(100%): quartz (95%), as above,
569				occasional euhedral shape , Feldspar (5%)
T.D.				white, hard.
				PYRITE (TRACE) as above.

GAS: BACKGROUND: NIL UNITS; C_1, C_2, C_3, C_4^+.

PEAK @ M: UNITS; C_1, C_2, C_3, C_4^+.

SHOWS: NIL

APPENDIX 3.

FIELD ELECTRIC LOG REPORT

AMPOL EXPLORATION LIMITED

FIELD ELECTRIC LOG REPORT

GENERAL INFORMATION

WELL: FAIRHOPE # 1

PROGNOSED TO T.D.: 662m

CO-ORDINATES: 37° 54'49"
147° 35'14"

MUD TYPES: FRESH GEL-POLYMER

AREA: GIPPSLAND BASIN

LOGGING COMPANY: SCHLUMBERGER

PERMIT: P.E.P. 98

LOGGING ENGINEER: J. ELLIS

ELEVATION: GL 39M ASL ;KB 42.96m ASL

GEOLOGIST: M. SCHMEDJE

LOGS RUN

RUN No: 1

DRILLERS DEPTH: 569M

HOLE SIZE: 8½"

LOGGERS DEPTH: 567.5M

CASING SHOE: 129.5m

DATE LOGGED: 28-29/6/85

HOLE PROBLEMS: HOLE BRIDGED OFF AT 556M, HAD TO RUN IN HOLE. STILL COULD NOT GET LOGGING TOOLS TO T.D.

TYPE OF LOG	FROM M	TO M	REPEAT SECTION M	Time Since Last Circ/BHT
DLL-GR	567	129.5	565.5 - 474	35.5DGRS.C/3½ hr
MSFL	567	267	" "	" "
LDT - GR	567	129.5	567 - 469.5	37.7DGRS.C/6 hrs
CNL	560	260	" "	" "
BHC (SONIC) - GR	560	129.5	560 - 459.5	38.3DGRS.C/8 hrs
NGT (GR to SURFACE)	560	249	560 - 495.5	40.5DGRS.C/10hrs
V.S.P.	-	-	-	-
C.S.T.	-	-	-	-

S.W.C. No. OF ATTEMPTS: 30 RECOVERED: 20 (only 19 bought) MISFIRED: 10 (Formations to soft)

R.F.T. No. OF ATTEMPTS: - FLUID SAMPLES: -

FORMATION TOPS

FORMATION	PROGNOSED	CUTTINGS	LOGS	DIFF.FROM PROGNOSED
HAUNTED HILLS				
GRAVEL	9M		C	-
			A	
			S	
JEMMYS POINT			I	
FM	102M	93M	N	
TAMBO RIVER			G	
FM	127M	121M		
GIPPSLAND				
LIMESTONE	137M	135M	137M	0M
LAKES ENTRANCE	422M	422M	455M	+33M
GURNAID/LATROBE	529M	536M	533M	+4M
BASEMENT	632M	542M	544M	-88M

COMMENTS ON LOGGING RUN: NOTE: GR ran to surface on NGT not BHC (sonic) as tool malfunctioned in casing.

APPENDIX 4.

SIDEWALL CORE REPORT

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE # 1

SIDEWALL CORE REPORT

DEPTH INTERVAL: 569m - 524m GEOLOGIST: M. SCHMEDJE

GUN NO. 1 : SHEET : 1 OF: 3

SWC NO.	DEPTH M	REC.	BOUGHT/ REJECT	PALYN. EVAL.	LITHOLOGICAL DESCRIPTION, FLUORESCENCE, ETC.
1	555	80%	B	PAL	SANDSTONE: Very pale grey, fine grained quartz sandstone: Abundant pyrite, tight, friable. NIL FLUORESCENCE
2	547	NIL	REJ		NOT RECOVERED.
3	544.5	100%	B	PAL	As above; hard & argillaceous
4	543	50%	B	THIN SECT.	SANDSTONE, coarse grained to very coarse, poorly consolidated quartz (extremely friable). Argillaceous, pyritic, mod-good visual porosity. NIL FLUORESCENCE.
5	541.5	100%	B	PAL	SANDSTONE: fine grained quartz, abundant glauconite, argillaceous, pyritic Moderately indurated. Poor visual porosity. NIL FLUORESCENCE.
6	540	100%	B	PAL	As above. Extremely pyritic, calcareous fragments (fossiliferous?)
7	538.5	60%	B	PAL	CLAYSTONE: sandy in part, very poorly indurated and glauconitic. NIL FLUORESCENCE.
8	536	100%	B	PAL & THIN SECT.	SANDSTONE: red-brown, very fine to fine grained quartz. Abundant glauconite, pyritic. Poor visual porosity. NIL FLUORESCENCE.
9	538.5	60%	B	PAL	As above. Extremely argillaceous.
10	532	100%	B	PAL	SANDSTONE: fine grained quartz, grey-brown, indurated, glauconitic, fossiliferous. Poor visual porosity. NIL FLUORESCENCE.
11	524	NIL	REJ		NOT RECOVERED.

COMMENTS: 30 CORES SHOT, 20 RECOVERED, 19 BOUGHT.

NOTE: NIL FLUORESCENCE; OCCASIONAL DULL MINERAL FLUORESCENCE

NOTE: if more than one gun of SWC is shot please number the cores consecutively

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE # 1

SIDEWALL CORE REPORT

DEPTH INTERVAL: 524m - 296.5m   GEOLOGIST: M. SCHMEDJE

GUN NO. : 1   SHEET : 2 OF: 3

SWC NO.	DEPTH M	REC.	BOUGHT/ REJECT	PALYN. EVAL.	LITHOLOGICAL DESCRIPTION, FLUORESCENCE, ETC.
12	511.5	NIL	REJ		NOT RECOVERED
13	483	NIL	REJ		" "
14	464	NIL	REJ		" "
15	456	80%	B	PAL	MARL. White-very pale grey, moderately indurated, sandy in part, pyritic, NIL VISUAL POROSITY. NIL FLUORESCENCE.
16	454	80%	B	PAL	SANDSTONE: grey, well cemented, moderately indurated, fine grained quartz, abundant argillaceous matrix, NIL VISUAL POROSITY. NIL FLUORESCENCE.
17	439	NIL	REJ		NOT RECOVERED.
18	421	NIL	REJ		" "
19	419	100%	B	PAL	SANDSTONE: White-very pale grey, very fine grained, argillaceous, glauconite, indurated. NIL VISUAL POROSITY. NIL FLUORESCENCE.
20	390.5	100%	B	PAL	SANDSTONE: As above. Pyritic not glauconitic.
21	351.5	NIL	REJ		NOT RECOVERED.
22	324.5	100%	B		SANDSTONE: Very fine grained, white-very pale grey, very argillaceous, soft NIL VISUAL POROSITY. NIL FLUORESCENCE.
23	314	100%	B		As above
24	296.5	100%	B	PAL	As above

COMMENTS: 30 CORES SHOT, 20 RECOVERED, 19 BOUGHT.

NOTE: if more than one gun of SWC is shot please number the cores consecutively.

AMPOL EXPLORATION LIMITED

WELL: FAIRHOPE # 1

SIDEWALL CORE REPORT

DEPTH INTERVAL: 296.5M - 136M GEOLOGIST: M. SCHMEDJE

GUN NO. : 1 SHEET : 3 OF: 3

SWC NO.	DEPTH M	REC.	BOUGHT/ REJECT	PALYN. EVAL.	LITHOLOGICAL DESCRIPTION, FLUORESCENCE, ETC.
25	267	100%	B		SANDSTONE: grey, very fine grained quartz, argillaceous, glauconitic. NIL VISUAL POROSITY. NIL FLUORESCENCE.
26	257	15%	REJ		MARL, grey, soft, silty-fine sand in part. NIL VISUAL POROSITY. NIL FLUORESCENCE.
27	200	100%	B		SANDSTONE: Very fine grained, extremely argillaceous, soft, grey, fossiliferous, NIL VISUAL POROSITY. NIL FLUORESCENCE.
28	179	90%	B	PAL	MARL, soft, grey, poorly indurated, silty-sand in part, fossiliferous, NIL VISUAL POROSITY, NIL FLUORESCENCE.
29	138	NIL	REJ		NOT RECOVERED.
30	136	NIL	REJ		NOT RECOVERED.

COMMENTS: 30 CORES SHOT, 20 RECOVERED, 19 BOUGHT

NOTE: if more than one gun of SWC is shot please number the cores consecutively.

APPENDIX 5.

WIRELINE LOG EVALUATION REPORT

BOWLER LOG CONSULTING SERVICES PTY. LTD.
JACK BOWLER
Telephone: (051) 56 6170
P.O. BOX 2,
PAYNESVILLE, VICTORIA.
AUSTRALIA, 3880.

Ms Erna de Vries
Ampol Exploration Limited
7th Floor
76 Berry Street
North Sydney, NSW, 2060

14 July, 1985

Dear Erna,

Please find my evaluation of the Latrobe and Basement for Fairhope #1. Log computions listed in Table Two show the two formations to be water wet.

Latrobe 533-544 meters

The top 3 meters from 533-536 meters have similar log characteristics to the top 7 meters in Paynesville #1 and are most likely the same kind of glauconitic siltstone with no effective porosity. See the Density-Neutron and Resistivity-Porosity plots.

Below this there is a trend, with increasing depth, of decreasing PEF, RHOB and K. Travel time and negative SP increase with depth.. This all suggests an increasing sand content with depth and a decreasing clay and gauconite content with depth. This conclusion is confirmed by the sidewall cores. The pyrite content at 541.5 and 543 meters is so high that it is causing the resistivity curves to read too low and thus the computed S_W is too high. Pyrite also causes density derived porosities to be low.

The Lartobe then is very clayey and maximum porosity is 17 to 19 % with clay percentages around the low forties in the best sand. The Density-Neutron plot clearly shows that the sands are not as clean as the better sands of Paynesville #1

Basement 544-569

Basement is characterized by a decreasing NPHI with increasing depth suggesting a decrease of clay with depth. The position of the data on the Density-Neutron and Resistivity-Porosity plots is not too different than some of the data in Paynesville #1 so the lithology may be somewhat similar except that there is less clay in the Basement rock of Fairhope #1. Generally there is no effective porosity. There may be around 8% porosity at 556.5 meters in the granite but unless it is fractured there is probably little permeability.

Yours truly,

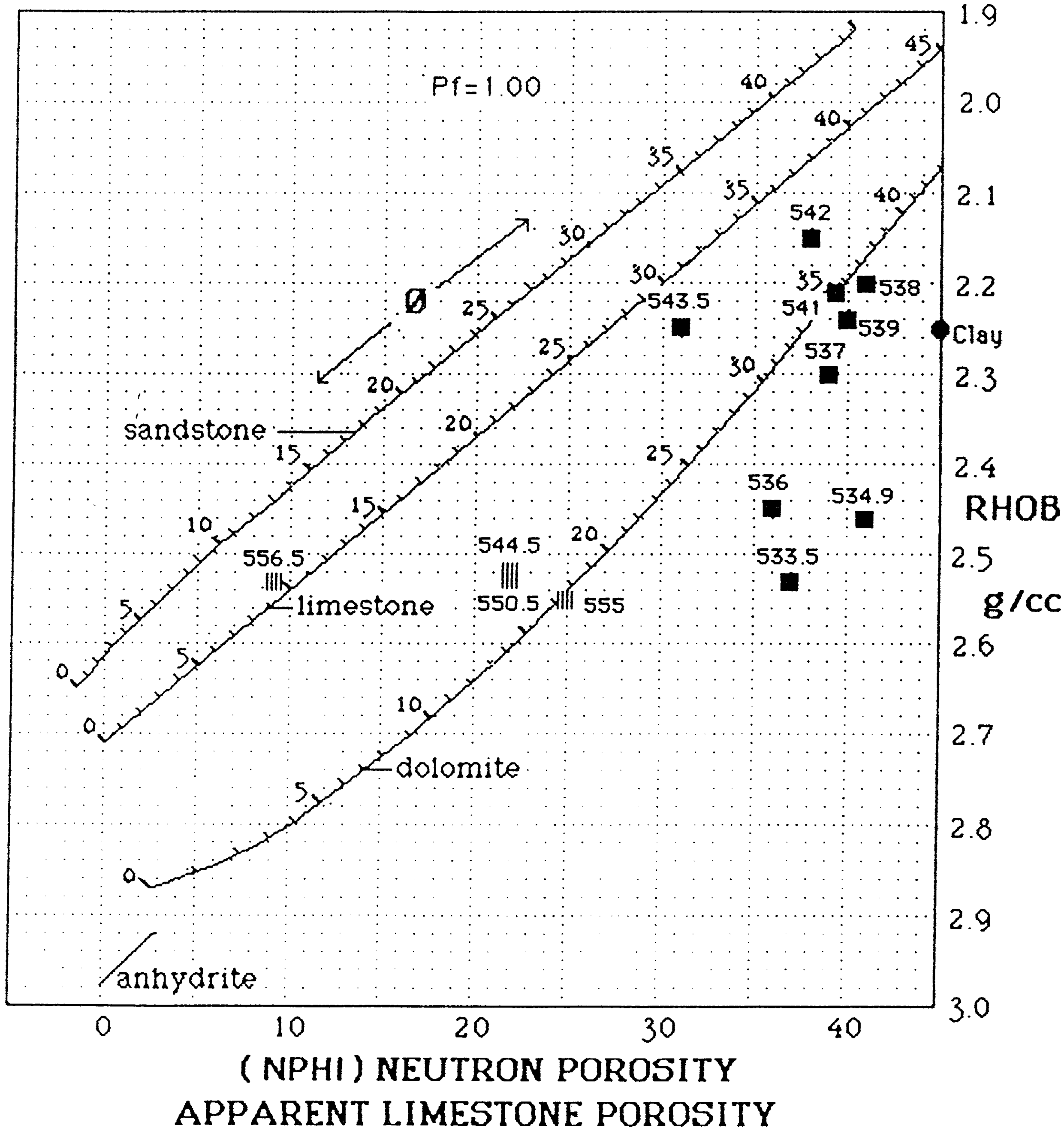
J Bowler

Jack Bowler

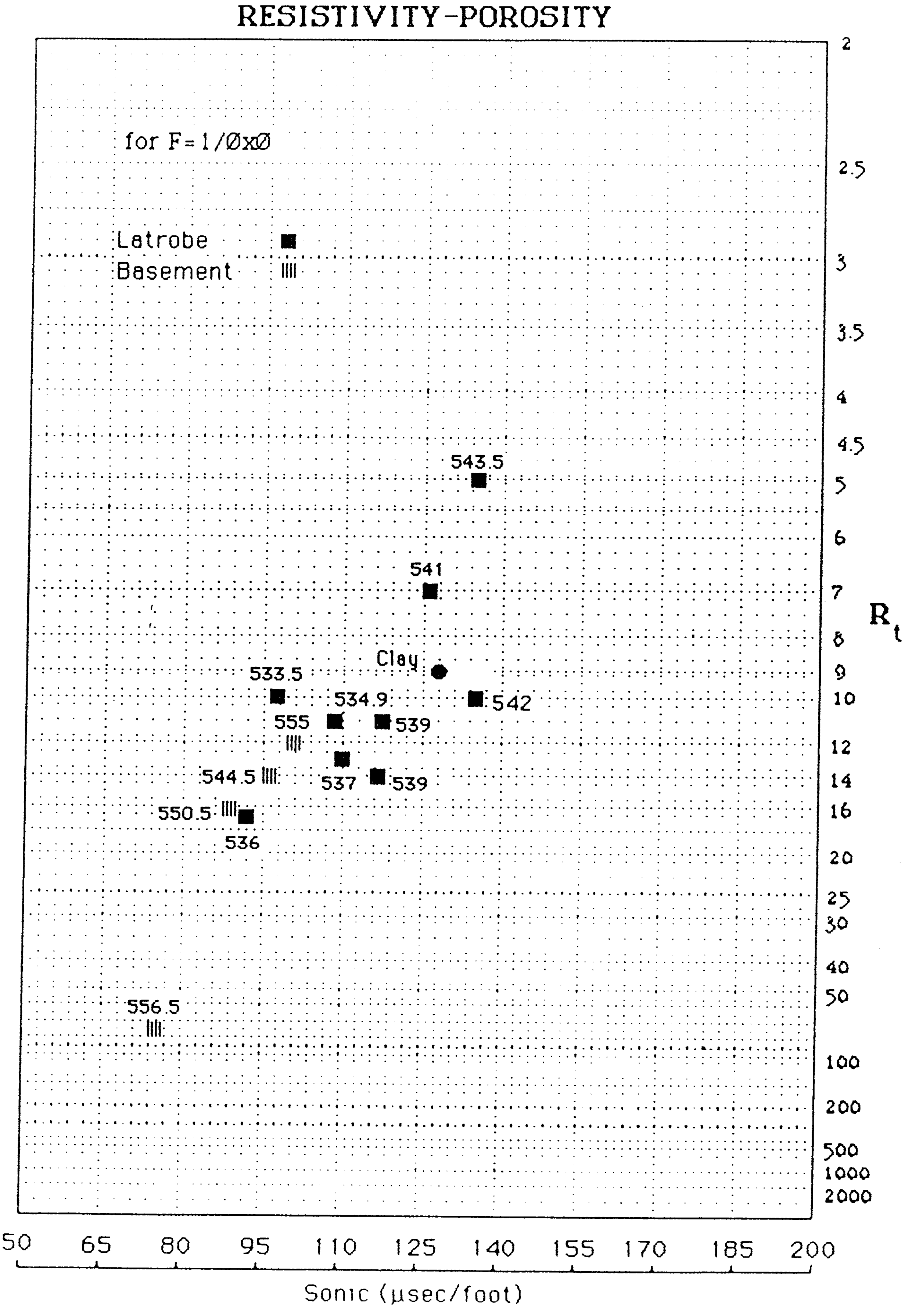
Fairhope #1

DENSITY-NEUTRON
POROSITY AND LITHOLOGY

Latrobe ■
Basement ||||



Fairhope #1



RESISTIVITY-POROSITY
for F=1/Øx Ø
Latrobe
Basement
543.5
541
Clay
533.5
534.9
542
555
539
544.5
537
539
550.5
536
556.5
2
2.5
3
3.5
4
4.5
5
6
7
8
9
10
12
14
16
20
25
30
40
50
100
200
500
1000
2000
R_t
50
65
80
95
110
125
140
155
170
185
200
Sonic (μsec/foot)

TABLE ONE Fairhope #1

Level	Depth (meters)	MSFL (ohm.m)	RT (ohm.m)	GR (API)	RHOB (g/cc)	NPHI (ls. por.)	SONIC (sec/ft)
1			LATROBE				
2	533.5	12.0	10	75	2.53	37	97
3	534.9	11.0	11	105	2.46	41	108
4	536.0	39.0	17	60	2.45	36	92
5	537.0	17.0	13	80	2.30	39	110
6	538.0	20.0	14	70	2.20	41	115
7	539.0	17.0	11	75	2.24	40	117
8	541.0	10.0	7	75	2.21	39	126
9	542.0	12.0	10	65	2.15	38	135
10	543.5	8.0	5	35	2.25	31	135
11			BASEMENT				
12	544.5	20.0	14	135	2.52	22	96
13	550.5	16.0	16	120	2.53	22	89
14	555.0	12.0	12	135	2.55	25	100
15	556.5	160.0	70	55	2.53	9	75
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40							

TABLE TWO Fairhope #1

Level	Depth (meters)	RMFA (ohm.m)	RWA (ohm.m)	PHIT %	Vclay %	Porosity %	Sw %	Sxo %
1			LATROBE					
2	533.5	0.69	0.58	24	100	0		
3	534.9	0.86	0.86	28	100	0		
4	536.0	2.64	1.15	26	100	0		
5	537.0	1.74	1.33	32	85	5	101	95
6	538.0	2.74	1.92	37	70	11	90	89
7	539.0	1.97	1.27	34	76	8	106	96
8	541.0	1.23	0.86	35	64	13	129	130
9	542.0	1.56	1.30	36	46	19	105	130
10	543.5	0.67	0.42	29	41	17	168	179
11			BASEMENT					
12	544.5	0.58	0.40	17	100	0		
13	550.5	0.41	0.41	16	100	0		
14	555.0	0.35	0.35	17	100	0		
15	556.5	1.60	0.70	10	21	8	93	82
16								
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TABLE ONE & TWO comments

Formation	Levels	Rmf	Rw	Temp. °F	Source of Rw	Rclay
Latrobe	2-10	5.84	1.5	96	estimated	15
Basement	12-15	5.84	1.5	96	estimated	15

R_w cannot be computed from the SP because there is no clean sand available. The -30mv SP (which is depressed due to clay content) at 543 meters gives R_{weq} = 1.94 @ 96°F. This is out of range for determining R_w from Schlumberger Chart SP-2. As a result the R_w has been estimated at 1.5 ohm.m @ 96°F (3,000 PPM $NaCl_{eqv}$). This is an optimistic value and gives reasonable results.

Rmf= 8.215 ohm.m @ 66.2°F measured. BHT = 96°F @ 567.5 meters.

R_t is determined from LLD, LLS, MSFL and Schlumberger Chart Rint-9.

R_{wa} and R_{mfa} are computed from density-neutron porosity prior to clay correction. $R_{wa}=PHIT^2R_t$ $R_{mfa}=PHIT^2R_{MSFL}$

Porosity values are clay corrected. Porosity and V_{clay} are determined from the density-neutron crossplot. Porosity=$(1-V_{clay})$PHIT.

The density and neutron log characteristics for the micrite at 588-591 meters in Paynesville #1 have been used again for the clay parameters. This seems to be a reasonable choice for the clay point from the way the data falls on the Fairhope #1 Density-Neutron plot.

Water saturations are computed from the Indonesian Water Saturation Equation and thus are clay corrected.

a=1 and m=n=2.

APPENDIX 6.

BIOSTRATIGRAPHIC REPORT AND SOURCE ROCK EVALUATION

C O N T E N T S

APPENDIX 1

Glossary of semiquantitative source rock parameters recorded using palynological techniques.

APPENDIX 2

Vitrinite reflectance results on samples from Fairhope-1.

ENCLOSURE 1

Micropalaeontological distribution chart for Fairhope-1.

TABLE 1

Summary of the source rock and maturity data from Fairhope-1.

I. ABSTRACT

Fairhope-1 was drilled to 567.5m KB in Permit PEP 98, onshore Gippsland Basin. Sidewall core samples from 179.0m to 541.5m have been examined for calcareous nannoplankton, foraminifera and palynomorphs.

DEPTH (m)	UNIT	ZONE	AGE
179	Gippsland Limestone	NN6, D	Middle Miocene
296.5-419	Gippsland Limestone	NN4-NN5, G	Early Miocene-lower Middle Miocene
454	Gippsland Limestone	H2 or younger	Latest Oligocene or younger
456	Gippsland Limestone	-	Indeterminate
532	Lakes Entrance Fm. ('lower member')	-	Indeterminate
533.6-541.5	Lakes Entrance Fm. ('lower member')	NP23-24, *P. tuberculatus*	Early-Late Oligocene

The Gippsland limestone sampled from 179m-456m was deposited in an inner neritic environment. From 533.6m to 541.5m the 'lower member' of the Lakes Entrance Formation was also deposited in a marine environment.

No significant source rocks were observed in the sampled section. Spore colours of light yellow, fluorescence of white and vitrinite reflectance of 0.29%-0.30% indicate the section penetrated by Fairhope-1 is immature.

II. INTRODUCTION

ECL Geological Laboratory was contracted by Ampol Exploration Ltd to undertake laboratory studies of sidewall core samples from the well Fairhope-1. The well is located in onshore exploration Permit PEP 98, Gippsland Basin, Victoria, and was drilled to a total depth of 567.5m KB.

Sidewall core samples from the interval 179.0 to 541.5m were analysed for calcareous nannoplankton, foraminifera, palynomorphs, source rock potential and maturity. The objective of this study was to provide biostratigraphic zonations, interpretation of depositional environment and information on hydrocarbon habitat for geological evaluation of the well section.

III. ROCK-STRATIGRAPHIC NOMENCLATURE

(A) Lakes Entrance Formation (Lower Member)

In this investigation Early-Late Oligocene glauconitic sandstone, oxidized glauconitic sandstone-siltstone and glauconitic marl, are referred to informally as the "lower member" of the Lakes Entrance Formation. The "lower member" includes the following formal onshore stratigraphic units : Colquhoun Sandstone Member, Cunninghame Greensand Member, Metung Marl Member, Giffard Sandstone Member and Seacombe Marl Member.

(B) Lakes Entrance Formation (Upper Member)

In this investigation Late Oligocene-Early Miocene marls are referred to informally as the "upper member" of the Lakes Entrance Formation.

(C) Gippsland Limestone

In Fairhope-1 Early-Middle Miocene clean skeletal limestone and calcarenites with common bryozoan fragments are referred to as the Gippsland Limestone.

IV. GEOLOGICAL COMMENTS

The mid-Oligocene disconformity recorded in both Comley-1 and Paynesville-1 is interpreted to occur at 536m in Fairhope-1 (see Figure 2). The disconformity is defined at the top of the oxidized horizon (536-537m). The oxidized horizon formed during the mid-Oligocene (Zone NP23-NP24 time). Sidewall core samples above (536m) and below (540m) the disconformity surface at 536m are NP23-NP24 in age. The sample at 536m is a glauconitic sandstone which contains an oxidized sandstone fraction. The mixed fresh glauconitic (dominant) and oxidized glauconitic fractions in the sample is consistent with its position just above the disconformity surface. The mid-Oligocene disconformity is considered to have resulted from the major global fall in sea-level at 30Ma proposed by Vail <u>et</u>. <u>al</u>. (1977). This event has resulted in a widespread Oligocene disconformity in offshore Gippsland Basin wells (unpublished data).

Lack of sample control above 532m, and the absence of <u>in situ</u> calcareous nannoplankton in samples at 532 and 533.6m in Fairhope-1 has restricted stratigraphic interpretation of this interval. However, log correlation with the nearby Comley-1 Well has assisted in resolving the stratigraphy of this interval. A second and younger oxidized horizon occurs between 530.5 and 534m. Sidewall core samples at 532 and 533.6m penetrated oxidized fine grained sandstone and oxidized siltstone respectively. The top of the oxidized horizon has been selected at 530.5m. The oxidized horizon has also been recognized in Comley-1 between 476 and 478m and in Paynesville-1 between 569 and 570.5m. The top of the horizon is interpreted to equate with the Late Oligocene disconformity recognized in Comley-1. This disconformity cannot be confirmed on palaeontological evidence in Fairhope-1. The thickness of the Lakes Entrance Formation ('lower member') between the Mid and Late Oligocene disconformities in Fairhope-1 is 5.5m. This is almost identical to that recorded in Comley-1 (5m) and Paynesville-1 (7m).

Log correlation with Comley-1 indicates that the 'upper member' of the lakes Entrance Formation in Fairhope-1 is probably represented by the interval 476.5m (tentative log pick) to 530.5m. Definite Gippsland Limestone consisting of bryozoan rich calcarenite was penetrated by the sidewall core sample at 456.0m.

V. MICROPALAEONTOLOGY

A total of 14 sidewall core samples from the interval 161.0-486.5m were analysed for foraminifera and calcareous nannoplankton. Calcareous microfossil species identified in the well section, interpreted zonation and depositional environment subdivision have been plotted on the micropalaeotological distribution chart (Enclosure 1).

The planktonic foraminiferal letter zonal scheme of Taylor (in prep.) and the NP-NN calcareous nannoplankton letter scheme of Martini (1971) are used in this investigation. Foraminiferal studies by Carter (1964) and Jenkins (1971), and calcareous nannoplankton investigations by Edward (1971) and Siesser (1979) have also been consulted.

(A) Calcareous Nannoplankton Biostratigraphy

i) 179m : Zone NN6 (Middle Miocene)

The presence of Cyclicargolithus floridanus (extinction at top of Zone NN6) without Sphenolithus heteromorphous (extinction at top of Zone NN5) in a moderate yielding and moderately well preserved nannofossil assemblage is indicative of Zone NN6.

ii) 296.5m : Zones NN4-NN5 (upper Early Miocene - early Middle Miocene).

The occurrence of Sphenolithus heteromorphous at 296.5m is indicative of Zones NN4 to NN5.

iii) 390.5m : Zone NN4 (upper Early Miocene)

The association of moderate numbers of Sphenolithus heteromorphous with rare S. belemnos at 390.5m indicates a position at the base of Zone NN4.

iv) 419.0-533.6m : Indeterminate

Samples 419.0-456.0m inclusive contain impoverished and poorly preserved nannofossil assemblages which are not age-diagnostic. Samples 532.0 and 533.6m are barren of calcareous nannoplankton.

v) 536.0m - 540.0m : Zones NP23-NP24 (Early/Late Oligocene boundary)

The uphole extinction of Chiasmolithus oamaruensis at 536.0m defines the top of Zone NP24 in the well. The absence of Reticulofenestra umbilica indicates that the nannofossil assemblage in the interval is no older than Zone NP23.

vi) 541.5m : Indeterminate

The nannofossil assemblage at 541.5m lacks oligocene species and appears to have caved from higher in the well.

B) Planktonic Foraminiferal Biostratigraphy

i) 179.0m : Zone D (Middle Miocene)

The association of Orbulina universa and Globigerinoides sicanus indicates that the sample at 179.0m is Zone D in age.

ii) 296.5-390.5m : Zone G or younger (Early Miocene or younger).

The occurrence of very rare specimens of Globigerinoides trilobus in a very low yielding planktonic foraminiferal assemblage indicates that the interval is assignable to Zone G or younger zones.

iii) 419.0m : Zone G (Early Miocene)

The occurrence of moderate numbers of Globigerinoides trilobus without its descendants Globigerinoides sicanus and the Praeorbulina-Orbulina group indicates that the sample at 419.0m is assignable to Zone G.

iv) 454.0m : Zone H2 or younger (latest Oligocene or younger).

The occurrence of rare specimens of Globigerina woodi woodi in a very low yielding and poorly preserved planktonic foraminiferal assemblage indicates that the sample at 454.0m is Zone H2 or younger in age.

v) 456.0-541.5m : Indeterminate

With the exception of the sample at 456.0m the interval is barren of in situ planktonic foraminifera. The sample at 456.0m contained one specimen of Catapsydrax dissimilis which is of limited biostratigraphic value. A zone F planktonic foraminiferal assemblage was noted at 538.5m but this has caved from higher in the well.

C) Environment of Deposition

i) 179.0-456.0m : Inner neritic

An inner neritic environment of deposition for the interval is indicated by the common occurrence of bryozoan fragments, very low percentage of planktonic foraminifera and the absence or rare occurrence of Euvigerina spp., Brizalina spp., and Sphaeroidina bulloides. The moderate to common occurrence of Elphidium crassatum in the upper samples at 179.0 and 296.5m is also indicative of an inner neritic environment of deposition.

ii) 536.0m and 540.0m : Marine

The samples at 536.0 and 540.0m consist of a low yielding, low diversity and abraded benthonic foraminiferal assemblage which can only be interpreted to have been deposited in a marine environment. The moderate to high abundance of calcareous nannoplankton in the samples confirms a marine environment of deposition.

VI. PALYNOLOGY

Five sidewall core samples ranging in depths from 533.6m to 541.5m from Fairhope No. 1 well were palynologically examined. The upper two samples were moderate in organic richness but rich in palynomorph contents while the lower three were rich on both accounts. The following palynostratigraphic classification is suggested according to the scheme of Stover and Partridge (1973) updated by Raine (1984) and ECL file data.

A) Palynostratigraphy

i) 533.6m-541.5m : *Proteacidites tuberculatus* Zone (Early Oligocene)

The interval is correlated with the *Proteacidites tuberculatus* Zone of Early Oligocene age due to occurrences of *Cyathidites subtilis* with its base in the zone, and *Nothofagidites asperus* with its top in the zone. Dinoflagellates support this dating in precise terms. *Kallosphaeridium biarmatum* occurring at 533.6m is known to be restricted to the Early Oligocene, while *Deflandrea spinulosa* occurring at 541.5m, and the acritarch *Ascostomocystis granulatus* occuring at 533.6m are not known from rocks younger than the Oligocene. *Operculodinium israelianum* occurring in most of the samples is not known to be older than the Oligocene.

B) Environment of Deposition

All samples treated contain abundant and diverse dinoflagellate cysts and common foraminiferal chamber-linings except the sample at 540.0m which is low in dinoflagellate cysts. The entire interval is therefore considered to have been deposited in a marine environment.

VII. SOURCE ROCK POTENTIAL AND MATURITY

Three samples at 533.6m, 536.0m and 540.0m were studied for source rock potential and organic maturity. The results are given in Tables 1A, 1B and 1C, and the methods and terms used are explained in Appendix No. 1.

All samples yielded around 1.0ml/10g organic matter which suggests a good source-rock potential. The liptinite contents and the fluorescing liptinites were, however, very poor, negating a good potential. Most of the palynomorphs were oxidised and non-fluorescing. The spore colours ranged from light yellow through yellow to light orange. The fluorescence colours were white and yellow. All these data indicate immaturity to early oil generating potentials only.

Samples from 538.5m and 541.5m were analysed for vitrinite reflectance (Appendix 2). A total of 14 and 19 determinations respectively were made and gave mean reflectances of 0.29% and 0.30% with a range of 0.22% to 0.36%, indicating the immaturity of the section.

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FIGURE 1 : SUMMARY CHART, FAIRHOPE-1

DEPTH (mkB)	LITHOLOGY *	UNIT	NANNOFOSSIL ZONE	PLANK FORAM ZONE	PALYNOLOGY ZONE	AGE	ENVIRONMENT
179.0	Calcarenite	Gippsland Limestone	NN6	B	Not studied	Middle Miocene	Inner neritic
296.5	Calcarenite		NN4-NN5	G or younger	Not studied	Upper Early Miocene - lower Middle Miocene	Inner neritic
390.5	Calcarenite		NN4	G or younger	Not studied	Upper Early Miocene	Inner neritic
419.0	Calcarenite/calcisiltite		Indeterm.	G	Not studied	Early Miocene	Inner neritic
454.0	Calcisiltite		Indeterm.	H2 or younger	Not studied	Latest Oligocene or younger	Inner neritic
456.0	Calcarenite		Indeterm.	Indeterm.	Not studied	Indeterm.	Inner neritic
log break at 476.5m							
Not studied		Lakes Entrance Formation ("upper member")					
log break at 530.5m							
#532.0	Oxidized fine grained sandstone	Lakes Entrance Formation ("lower member")	Indeterm.	Indeterm.	Not studied	Indeterm.	Indeterm.
#533.6	Oxidized siltstone		Indeterm.	Indeterm.	P. tuberculatus	Early Oligocene	+ Marine
536.0	Glauconitic sandstone/ oxidized sandstone		NP23-NP24	Indeterm.	P. tuberculatus	Early/Late Oligocene boundary	Marine
?log break at 536.0m							
#538.5	Glauconitic sandstone	Lakes Entrance Formation ('lower member')	Indeterm.	Indeterm.	P. tuberculatus	Early Oligocene	+ Marine
540.0	glauconitic/pyritic sandstone		NP23-NP24	Indeterm.	P. tuberculatus	Early/Late Oligocene boundary	Marine
#541.5	Slightly glauconitic/ pyritic sandstone		Indeterm.	Indeterm.	P. tuberculatus	Early Oligocene	+ Marine

* Lithology based on washed residue
# Downhole contamination noted.
+ Environment based on palynomorph data.

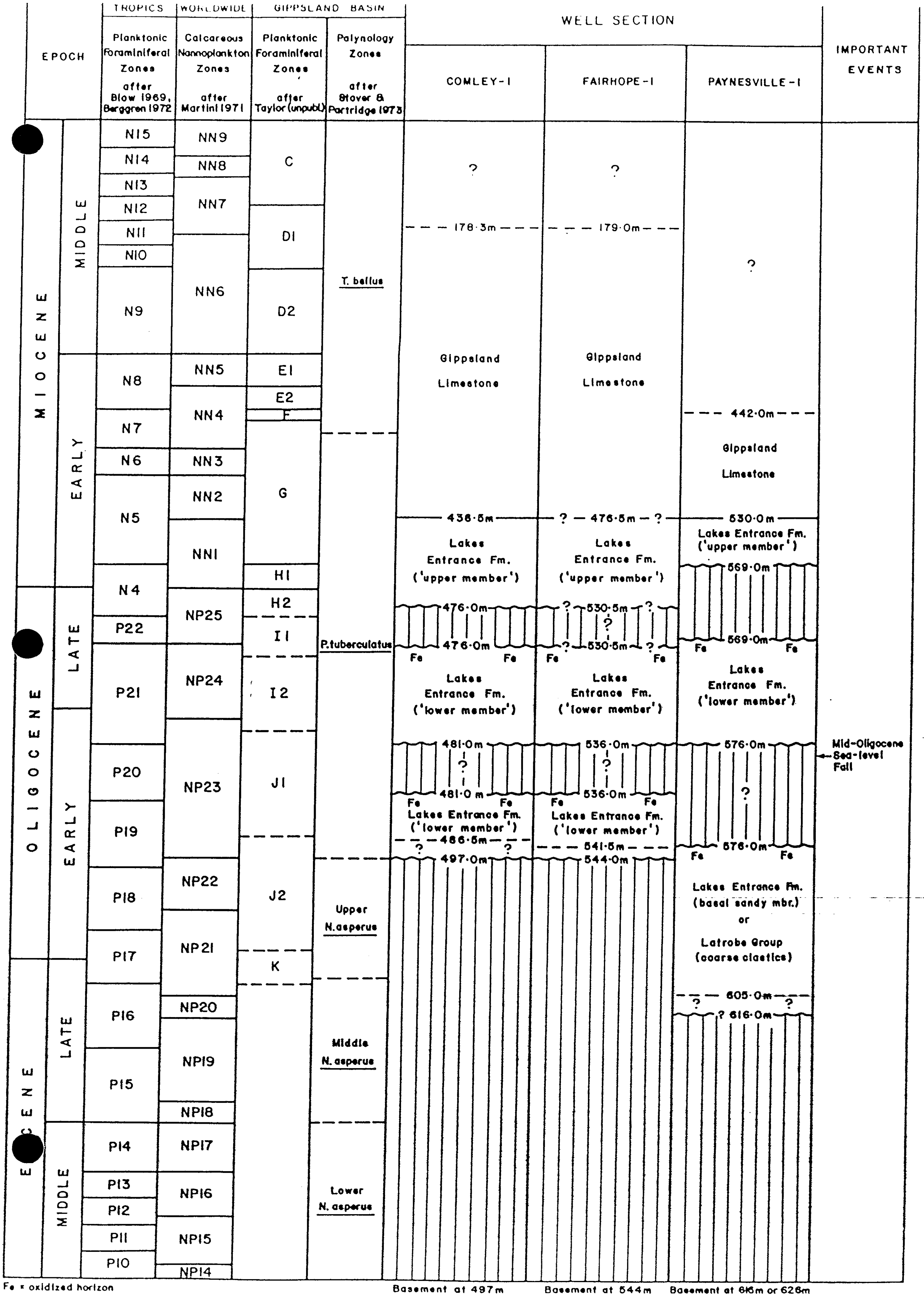
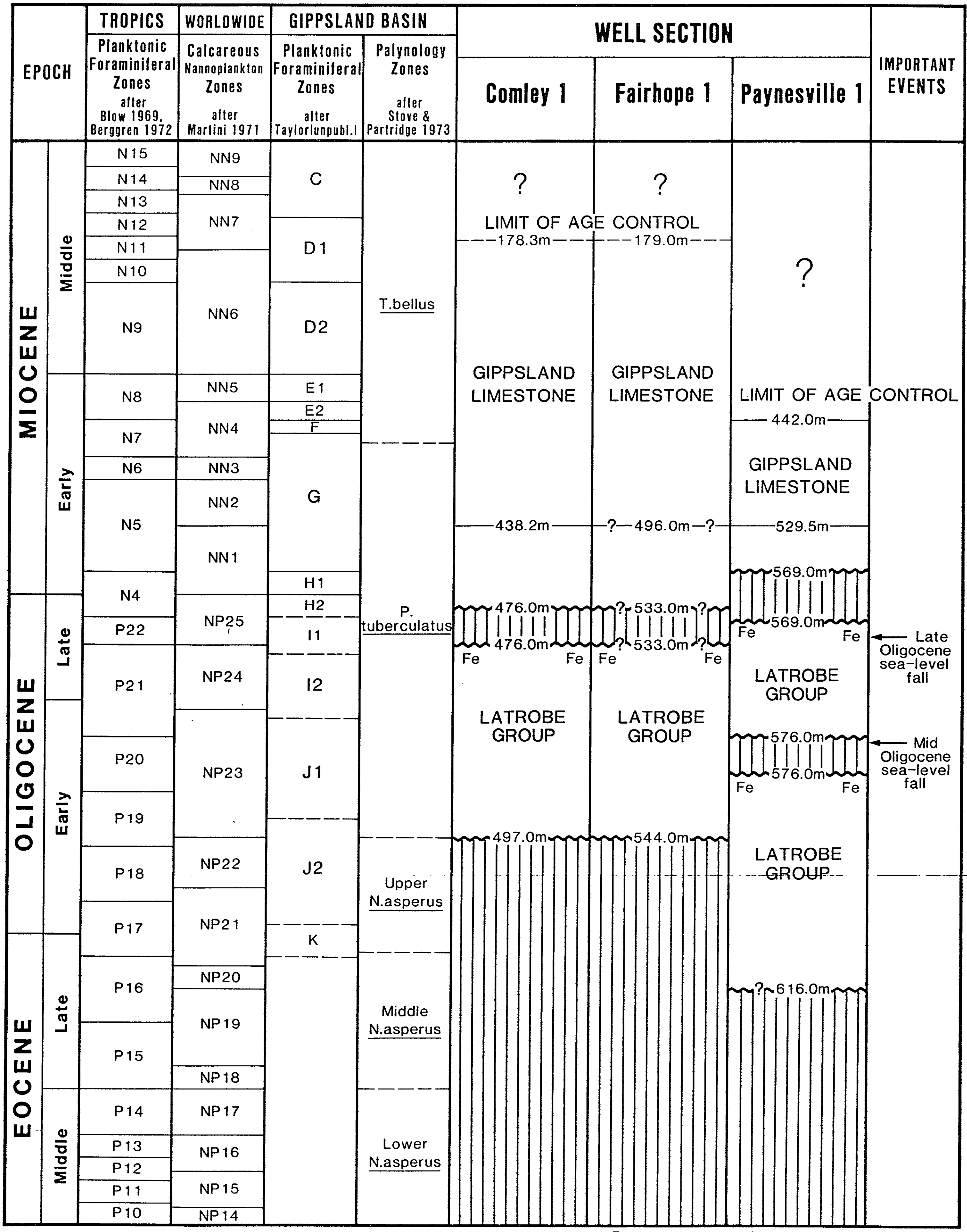


Fig.2 Tentative chronostratigraphic correlation between Comley-1, Fairhope-1, & Paynesville-1 wells, onshore Gippsland Basin.

Tentative chronostratigraphic correlation between COMLEY 1, FAIRHOPE 1 & PAYNESVILLE 1 wells, onshore Gippsland Basin - revised by Ampol Exploration Ltd



Fe = oxidized horizon

Basement at 497m

Basement at 544m

Basement at 616m

FIGURE 3

Spores and pollen recorded in Fairhope-1

KEY:

x present
c common
cf compared with

	533.6m	536.0m	538.5m	540.0m	541.5m
Alisporites varius		x		x	x
Araucariacites australis	x	x	x	x	x
Baculatisporites comaumensis	x	x			
Baculatisporites disconformis					x
Camarozonosporites bullatus					x
Camarozonosporites sherlockensis			x		
Cyathidites australis	x	x	x	x	x
Cyathidites minor	x	x	x	x	x
Cyathidites subtilis	x	x	x	x	x
Cycadopites follicularis	x				x
Dacrycarpites australiensis	x	x			x
Gleicheniidites circinidites				x	
Gleicheniidites senonicus	x		x	x	
Haloragacidites harrisii	x	x	x	x	x
Herkosporites elliottii		x	x	x	x
Laevigatosporites major	x	x		x	x
Laevigatosporites ovatus	x	x		x	x
Liliacidites bainii				x	
Lygistepollenites florinii	x	x	x	x	x
Malvacipollis subtilis			x	x	x
Microcachryidites antarcticus		x			
Myrtaceidites mesonesus				x	
Nothofagidites asperus	x	x	x	x	
Nothofagidites brachyspinulosus				x	x
Nothofagidites deminutus			x	x	
Nothofagidites emarcidus	x		x	x	x
Nothofagidites falcatus		x	x	x	x
Nothofagidites flemingii	x	x	x		
Nothofagidites goniatus				x	x
Nothofagidites heterus	x	x	x	x	x
Nothofagidites incrassatus	x	x		x	x
Nothofagidites vansteenisii	x		x	x	x
Osmundacidites wellmanii	x		x	x	
Parvisaccites catastus	x	x	x	x	x
Phyllocladidites verrucatus		x	x	x	x
Podocarpidites ellipticus	x	x	x		x
Podocarpidites microreticulatus	cf				
Propylipollis annularis					x
Propylipollis beddoesii			x		
Propylipollis latrobensis					cf
Proteacides recavus	cf		cf		
Proteacidites adenanthoides		x	cf		
Proteacidites granulatus		x		x	x
Proteacidites obscurus			x	x	x
Proteacidites pseudomoides		x			x
Proteacidites symphyonemoides			x		x
Proteacidites tuberculatus			x	cf	x
Retitriletes austroclavatidites	x	x			
Rhoipites sphaerica	x				x
Rugulatisporites mallatus	x				x
Rugulatisporites trophus				x	
Tricolporites leuros	x	x	x		
Triletes ornamentalis					x
Triletes tuberculiformis	x	x	x	x	x
Verrucosisporites cristatus	x		x		x

FIGURE 4

Dinoflagellates and acritarchs recorded in Fairhope-1

KEY:

x = present
c = common
cf = compared with

	533.6m	536.0m	538.5m	540.0m	541.5m
Alisocysta sp.		x	x		
Areosphaeridium polypetellum			cf		
Ascostomocystis granulatus	x				
Cyclonephelium-Glaphyrocysta complex	x				
Deflandrea spinulosa					x
Eatonicysta n.sp.		x	x		
Kallosphaeridium biarmatum	x				
Leiosphaeridia sp.		x	x		
Lejeunecysta paratenella					x
Lingulodinium funginum					x
Lingulodinium machaerophorum	x		x		x
Lingulodinium siculum			x	x	x
Millioudodinium sp.			x		x
Operculodinium bellulum	x	x	x	x	x
Operculodinium centrocarpum	x	x	x	x	x
Operculodinium israelianum	x	x	x		x
Operculodinium microtriainum		x	x		
Paucisphaeridium sp.			x		
Polysphaeridium subtile			x		x
Pterodinium cingulatum	x				
Selenopemphix armata		x	x		x
Selenopemphix nephroides		x			
Spiniferites membranaceous	x	x	x		
Spiniferites mirabilis	x	x	x		x
Spiniferites pachydermus		x	x		
Spiniferites ramosus gracilis	x	x	x		x
Spiniferites ramosus granomembranaceous	x				
Spiniferites ramosus multibrevis	x	x	x		x
Spiniferites ramosus ramosus	x	x	x	x	x
Spiniferites spp.	x	x		x	x

PE900764

This is an enclosure indicator page.
The enclosure PE900764 is enclosed within the container PE902393 at this location in this document.

The enclosure PE900764 has the following characteristics:

ITEM_BARCODE = PE900764
CONTAINER_BARCODE = PE902393
NAME = Micropalaeontological Chart
BASIN = GIPPSLAND
PERMIT = PEP98
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Micropalaeontological Distribution Chart for Fairhope-1
REMARKS =
DATE_CREATED = 30/09/1985
DATE_RECEIVED =
W_NO = W910
WELL_NAME = FAIRHOPE-1
CONTRACTOR = ECL AUSTRALIA
CLIENT_OP_CO = AMPOL EXPLORATION

(Inserted by DNRE - Vic Govt Mines Dept)

TABLE 1

Summary of the source rock and maturity data from Fairhope-1

TABLE 1A

DEPTH (m)	PALYNOLOGICAL ZONE	AGE	ENVIRONMENT OF DEPOSITION	OIL POTENTIAL	MATURITY
533.6	P. tuberculatus	Early Oligocene	Marine	Poor	Immature
536.0	P. tuberculatus	Early Oligocene	Marine	Poor	Immature
540.0	P. tuberculatus	Early Oligocene	Marine	Poor	Immature

TABLE 1B

DEPTH (m)	SAMPLE NO.	WEIGHT (g)	VOM (ml)	PRESER VÁTION (0-4)	% MICRO- PLANKTON	MICRO- PLANKTON DIVERSITY	SPORE- POLLEN DIVERSITY	PALYN YIELD (0-4)	CUT- ICLE (0-4)	HYL -OGEN (0-4)	MELAN -OGEN (0-4)	GRANULAR SAPROPEL (0-4)	AMORPHOUS SAPROPEL (0-4)
533.6	9	10	1.1	3	90	3	4	1	1	3	3	2	2
536.0	8	10	0.9	3	50	2	4	1	1	3	3	2	2
540.0	6	10	0.8	3	10	2	4	1	1	3	3	2	2

TABLE 1C

DEPTH (m)	VOM ml/10g	%SAPRO -PEL	%LIPT INITE	%FLUORESCENT LIPTINITES	VOL. FLUOR. LIPTINITES microlitres	OIL INDEX (0-4)	GAS INDEX (0-4)	SPORE COLOUR	UV LIPTINITE FLUORESCENCE COLOUR
533.6	1.10	85	5	2	22	1	2	Lt yell-Yell-Lt or	White - Yellow
536.0	0.90	85	2	1	9	1	2	Lt yell-Yell-Lt or	White - Yellow
540.0	0.80	90	2	1	8	1	2	Lt yell-Yell-Lt or	White - Yellow

APPENDIX NO.1.

Explanation of the source rock parameters recorded using palynological techniques.

INTRODUCTION

A rapid and reliable technique for estimating the abundances of the various kerogen components and relating these back to the source rock potential of the sediments has been developed.

Samples that are to be examined for palynology and source rock potential are processed using standard techniques that include acid digestion in cold HCl, cold HF and then boiling HCl. Any remaining mineral matter is removed by flotation of the organic material in a Zn2Br solution of SG 2.10. The heavy liquid is removed by washing and the volume of organic material (VOM, see below) recovered is measured in a 10ml conical centrifuge tube after spinning at 3000 rpm for 5 minutes. A measured proportion by volume of the organic residue (kerogen) is dried on a coverslip with PVA and is then mounted on to a microscope slide with a plastic resin (Elvacite or Eukit).

Counts of the various kerogen components are made on the kerogen slide using modified point-counting procedures and the results related back to the weight of rock processed. For example, a kerogen slide may represent the residue from 1/25g (0.04g) of the sediment. It has been measured that the field of view of the 20X objective on a Nikon microscope used by ECL is 1/4000 (1/4E3) of the total area of the kerogen slide. If, on average, there are 4 palynomorphs observed in each field of view when scanning the slide, then the number of palynomorphs estimated per gram of sediment is 4x25x4E3 = 4E5/g (400,000 per gram). This would be regarded as a good yield that could provide a significant contribution to the source rock potential of the sediment.

Each of the measured kerogen components usually show a wide size range that also must be taken into consideration during the counts. In an effort to reduce the subjective element of the estimates, the same microscope objective is used to count the same parameter where this is possible. It is not feasible to directly relate the measured number of particles of a particular kerogen component or their area to an estimated volume or mass for that component. However, an empirical relationship between the abundance estimates and source rock potential has been determined based on the examination of known source rock sequences. To facilate the display of the abundance data and discussion of these results, a simplified four point scale has been developed based on comparisons with source rocks from a wide variety of locations. For example, palynomorph abundances vary from less than 1000(1E3)/g in poor source rocks to more than 1000000(1E6)/g in very good source rocks.

GLOSSARY

1. PALYNOMORPH YIELD
   The estimated number of palynomorphs per gram of sediment expressed in terms of low (=1), moderate (=2), high (=3) and very high (=4) when compared with other source rocks (1=<1E3/g; 2=1E3-<3E4/g; 3=3E4-1E6/g; 4=>1E6/g; 20X Objective).

2. PRESERVATION
   Estimate of the general preservation level of the palynomorphs, recorded in terms of poor (=1), moderate or fair (=2), good (=3) and very good (=4).

3. SPORE-POLLEN AND MICROPLANKTON DIVERSITY
   The estimated number of different species in the sample expressed in terms of low (=1), moderate (=2), high (=3) and very high (=4) when compared with other source rocks (1=1-5; 2=6-15; 3=16-25; 4=>25).

4. PERCENT MICROPLANKTON
   The estimated proportion of dinoflagellates, acritarchs and other algal cysts expressed as a percentage when compared with the total palynomorph assemblage.

5. CUTICLE ABUNDANCE
   The estimated number of cuticle fragments (large and small) per gram of sediment expressed in terms of low (=1) to very high (=4) when compared with other source rocks (1=<1E2/g; 2=1E2-<3E3/g; 3=3E3-1E5/g; 4=>1E5/g; 10X Objective).

6. PERCENTAGE OF LIPTINITES
   The proportion of the unfiltered kerogen (as observed on a kerogen slide) that comprises palynomorphs (spores, pollen and algal cysts) and cuticle fragments is

estimated and expressed as a percentage of the total organic matter. Only the larger, properly identifiable liptinites can be included in this category. Finely degraded liptinites (less than 1 micron) are regarded as part of the sapropel group of macerals except when distinguishable by UV fluorescence.

7. PERCENTAGE OF FLUORESCENT LIPTINITES

The proportion of the unfiltered kerogen (as observed on a kerogen slide) that comprises fluorescing palynomorphs (spores, pollen and algal cysts) and fluorescing cuticle fragments is estimated and expressed as a percentage of the total organic matter. This includes the finely degraded liptinites that are regarded as Amorphous Sapropel (see below). Those liptinites that are unoxidised and able to auto-fluoresce are regarded as the most oil-prone fraction of the organic matter.

8. HYLOGEN ABUNDANCE

The estimated number of partially translucent woody or lignitic fragments per gram of sediment expressed in terms of low (=1) to very high (=4) when compared with other source rocks (1=<1E3/g; 2=1E3-<3E4/g; 3=3E4-1E6/g; 4=>1E6/g; 20X Objective). Broadly equivalent to vitrinite and previously referred to as fusain or fusinite.

9. MELANOGEN ABUNDANCE

The estimated number of opaque and angular woody fragments per gram of sediment expressed in terms of low (=1) to very high (=4) when compared with other source rocks (1=<1E3/g; 2=1E3-<3E4/g; 3=3E4-1E6/g; 4=>1E6/g; 20X Objective). Broadly equivalent to inertinite. As there is usually a gradation between melanogen and hylogen the two components can be difficult to distinguish,

10. GRANULAR SAPROPEL YIELD

The estimated number of clumps of granular sapropel per gram of sediment expressed in terms of low (=1) to very high (=4) when compared with other source rocks (1=<1E4/g; 2=1E4-<3E6/g; 3=3E6-1E7/g; 4=>1E7/g; 40X Objective). Granular sapropel is regarded as the very fine, fluffy, degraded and oxidised organic matter that shows no fluorescence and is usually a darker colour than the amorphous sapropel. The measurement of "clumps" of sapropel is highly subjective but provides a good order of magnitude estimate that is relatively consistent provided the sample processing is constant and the same objective is used.

11. AMORPHOUS SAPROPEL YIELD

The estimated number of clumps of amorphous sapropel per gram of sediment expressed in terms of low (=1) to very high (=4) when compared with other source rocks (1=<1E4/g; 2=1E4-<3E6/g; 3=3E6-1E7/g; 4=>1E7/g; 40X Objective). Amorphous sapropel is here regarded as weakly fluorescing, finely degraded liptinitic material. It appears to consist of fragments of palynomorphs eg. algae, and cuticles but may also include adsorbed hydrocarbons onto the organic debris, however, the particles are usually too small to be resolved by the microscope. The measurement of "clumps" of sapropel is highly subjective but provides a good order of magnitude estimate that is relatively consistent provided the sample processing is constant and the same objective is used.

12. PERCENTAGE OF SAPROPEL

The proportion of the unfiltered kerogen (as observed on a kerogen slide) that comprises sapropel, here regarded as very fine, (less than 1 micron) degraded organic matter is estimated and expressed as a percentage of the total organic matter. This includes both Granular and Amorphous Sapropel (see above).

13. SAPROPEL COLOUR

The overall colour of the dispersed organic matter and was the original parameter observed to estimate Thermal Alteration Index (TAI). Generally the most dominant colour is that of the granular sapropel which usually has a darker colour than the amorphous sapropel. Not usually recorded as it reflects both the environment of deposition and the maturation level.

14. SPORE COLOUR

The colour of the spore or pollen exines in transmitted white light. Variables that can affect the colour (apart from maturation) are the species type and exine thickness as well as any exposure to oxidising environments during and after deposition. The darkest colours of the least oxidised exines are taken as being the most significant. The change in colour from yellow to orange is regarded as indicating the onset of oil generation. Gas generation is suggested as becoming significant as the colours change to brown. Oil generation appears to cease as the spore colours approach dark brown and when they become black significant gas generation also probably ceases.

15. UV LIPTINITE FLUORESCENCE COLOUR

The dominant colour of the unoxidised liptinites (exines, cuticle and some amorphous sapropel) in reflected UV light observed with a Nikon EF-D UV330-380/400DM/420K filter combination and a 20x UV-Fluor objective. Liptinites that have been oxidised prior to deposition (mostly by recycling) show reduced intensities. The fluorescent colours observed are a complex mixture not comparable to normal colours as seen with white light. The hues range from light blue to white to light yellow with increasing maturity. The colours change to yellow at the beginning of the oil window (as here interpreted) and change to gold, dull yellow, orange and dull orange to dull red at the base of the oil window. The maturation level of sediments near the base of the oil window and deposited in an oxidising environment can be difficult to interpret.

16. VOLUME OF ORGANIC MATTER (VOM)

The measured volume of organic matter (VOM) left after removal of the mineral matter in the sample (see Introduction above) provides a rapid and reliable indication of the organic richness of the samples. From experience it has been found that the values of VOM when expressed as ml/10g approximate the %TOC determinations. Generally, <0.5 ml/10g is regarded as a poor (lean) source rock, 0.5-<2.5 ml/10g is moderate, 2.5-4.5 ml/10g is good (rich) and >4.5 ml/10g is very good (very rich). However, the abundance of unoxidised liptinites in the kerogen must also be considered in assessing the oil source rock potential of the sediments.

17. VOLUME OF FLUORESCENT LIPTINITES

The total amount of potential oil generating liptinites is calculated by multiplying the Volume of Organic Matter (VOM/10g) with the percentage of fluorescent liptinites observed in the sample (see above). The results are expressed as microlitres per gram. On an empiric basis, values greater than 200 are regarded as good source rocks.

18. OIL INDEX

An estimate of the overall abundance of liptinitic material in the kerogen expressed on a scale of 1-4 (being equivalent to poor, moderate, good and very good). This provides a broad indication of the potential of the sample to generate oil or condensate. The OIL INDEX is calculated by averaging the values for Palynomorph Abundance, Cuticle Abundance and Amorphous Sapropel Abundance (see above) and rounding the result to one digit.

19 GAS INDEX

An estimate of the overall abundance of that part of the organic matter in the kerogen that is regarded as being capable of generating gas if a high enough maturation level is reached. The estimate is expressed on a scale of 1-4 (being equivalent to poor, moderate, good and very good). The GAS INDEX is calculated by averaging the values for Palynomorph Abundance, Cuticle Abundance, Amorphous Sapropel Abundance, Granular Sapropel Abundance and Hylogen Abundance (see above) and rounding the result to one digit.

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Applications of geomicrophotometry of kerogen, solid hydrocarbons and crude oils to petroleum exploration, in Brooks, J. (Ed.), Organic maturation studies and fossil fuel exploration. Academic Press, London.

APPENDIX NO. 2

FAIRHOPE NO. 1

K.K. No.	Depth (m)	$\bar{R}_V$max	Range	N	Exinite Fluorescence (Remarks)
x2970	538.5 SWC	0.29	0.22-0.36	14	Rare sporinite/phytoplankton, yellow, rare liptodetrinite, yellow to orange. (Sandstone>>carbonate>claystone. Dom rare, V>E>I. All three maceral groups rare. ?Forams present. Iron oxides common. Pyrite abundant.)
x2971	541.5 SWC	0.30	0.23-0.36	19	Sparse liptodetrinite, greenish yellow to orange, rare sporinite, yellow, rare phytoplankton, greenish yellow. (Claystone>sandstone. Dom sparse, V>E>I. Vitrinite and exinite sparse, inertinite rare. Diffuse humic matter sparse. Pyrite abundant.)

APPENDIX 7.

HEADSPACE GAS ANALYSIS FROM DITCH CUTTINGS

AMDEL HEADSPACE ANALYSIS

Client: AMPOL EXPLORATION
Well: FAIRHOPE-1

DEPTH	METHANE	ETHANE	PROPANE	TOTAL GAS
		ppm		
428-458	127	37	4	168
458-488	324	15	1	340
488-508	560	17	2	579
508-538	294	<1	<1	296
538-569	42	<1	<1	44

APPENDIX 8.

HORNER TEMPERATURE PLOT

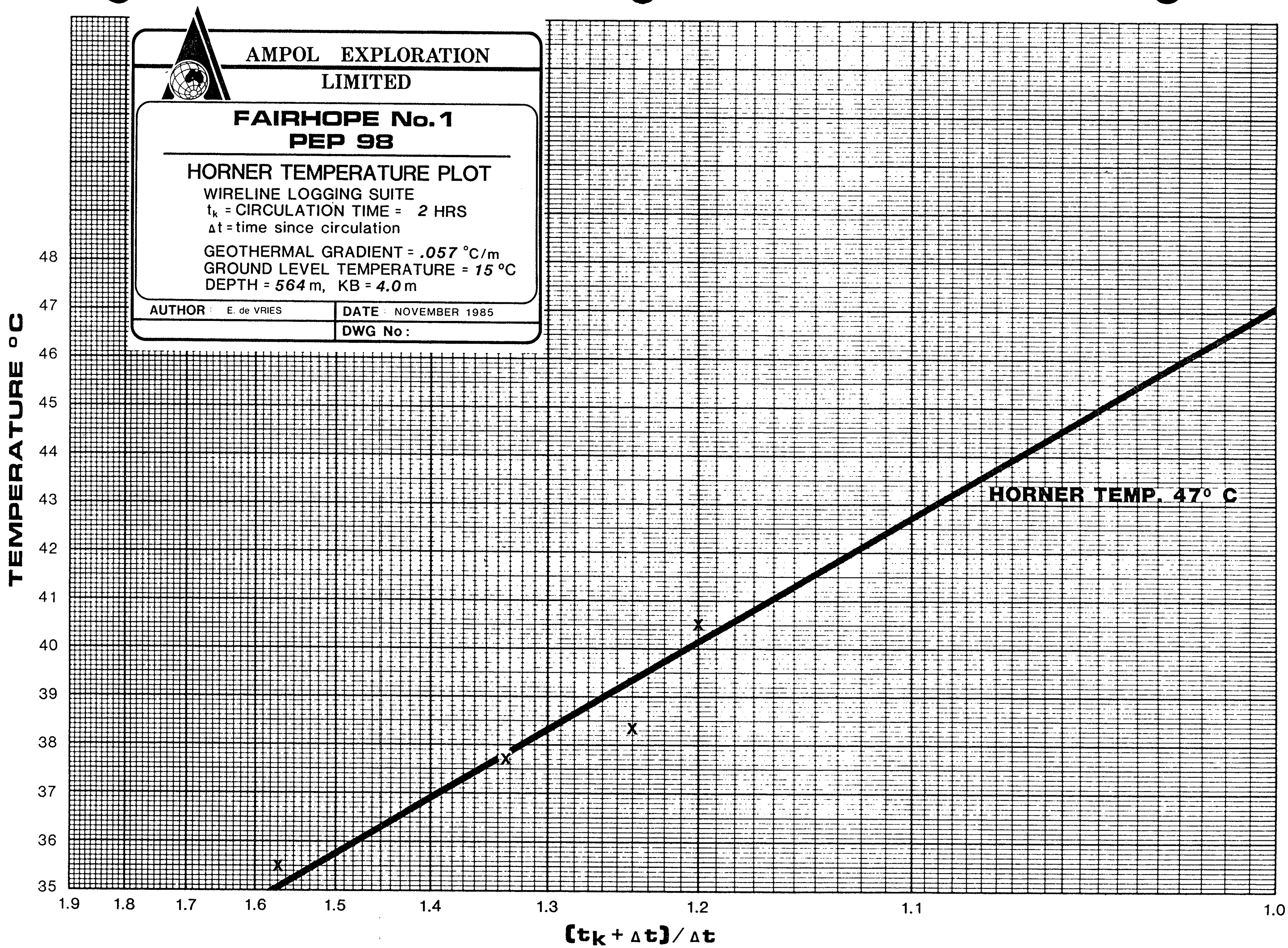
HORNER TEMPERATURE PLOT

The following data was used to estimate the geothermal gradient in Fairhope #1.

Log Run	Depth	Temp.	Time after last circulation
DLL-MSFL-GR	567m	35.5°C	3 hrs 30 mins
LDT-CNL-GR	567m	37.7°C	6 hrs
BHC-GR	560m	38.3°C	8 hrs
NGT	560m	40.5°C	10 hrs

This data gave an extrapolated BHT of 47.0°C @ 564m, a geothermal gradient of 0.0571°C/m.

A surface temperature of 15°C was assumed.



AMPOL EXPLORATION LIMITED
FAIRHOPE No.1
PEP 98
HORNER TEMPERATURE PLOT
WIRELINE LOGGING SUITE
t_k = CIRCULATION TIME = 2 HRS
Δt = time since circulation
GEOTHERMAL GRADIENT = .057 °C/m
GROUND LEVEL TEMPERATURE = 15 °C
DEPTH = 564 m, KB = 4.0 m
AUTHOR : E. de VRIES
DATE : NOVEMBER 1985
DWG No :
HORNER TEMP. 47° C
TEMPERATURE °C
35
36
37
38
39
40
41
42
43
44
45
46
47
48
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
$(t_k + \Delta t)/\Delta t$

APPENDIX 9.

VSP/SONIC CALIBRATION/GEOGRAM PROCESSING REPORT
(SEE ALSO ENCLOSURES)

CONTENTS

1.0 INTRODUCTION

A Vertical Seismic Profile was shot in the FAIRHOPE #1 well on 29-June -1985. Thirty-seven levels were shot using an airgun source, thirty-three of which were used in the final VSP processing.

All shot times have been corrected to a nominal Mean Sea Level Datum.

VSP Objectives:

- to obtain a high resolution time-depth curve. As the levels are separated by between 3 to 10*milliseconds*, accurate velocity analysis can be made.
- to obtain a better tie between the VSP and Seismic. The lateral depth of investigation of a VSP is intermediate between surface seismic and logs. (radius 20*metres*)
- to determine the multiple content of the area by analysis of the downgoing wavetrains.

In addition to the above the VSP has other applications:

- Further analysis of the downgoing wavetrain provides information on the earth filtering of the seismic wave versus depth.
- The VSP has the properties of being Vertical, therefore minimising the effects of moveout. This simplifies greatly the analysis of highly dipping reflectors, and also the interpretation of data recorded in faulted areas.
- One of the most important applications of VSP's is the analysis of reflected signals below the sensor.
- As the VSP can be considered the optimum seismic expression at the wellbore it may be used as the input for further studies such as:-
  - Inversion
  - Trace Attributes
  - Power Spectra
  - Attenuation

2.0 DATA ACQUISITION

Table 1 : Field Equipment and Survey Parameters

Elevation SRD	Mean Sea Level
Elevation KB	42.9*metres* AMSL
Elevation DF	42.3*metres* AMSL
Elevation GL	39.0*metres* AMSL
Well Deviation	0*degrees*
Total Depth	569*metres* measured depth below KB
Energy Source	Bolt airgun,120*cu.in.*
Source Offset	50.6*metres*
Source Depth	1.5*metres* below Ground Level
Source Azimuth	230*degrees*
Reference Sensor	Accelerometer
Sensor Offset	50.6*metres*
Sensor Depth	1.5*metres* below Ground Level
Sensor Azimuth	230*degrees*
Downhole Geophone	Geospace HS-1
(WST tool)	High Temp. ($350^{\circ}F$)
	Coil Resist. 225Ω +10 %
	Natural Freq. $8 - 12Hz$
	Sensitivity $52V/m/sec$
	Maximum tilt angle 60°

Recording was made on the Schlumberger Computerized Service Unit (CSU) using LIS format.

3.0 VSP SHOT DATA

A total of 37 check levels were shot between 42.9*metres* and 561*metres* below KB.

Timing of the data was made using a constant reference delay time of 10ms. This time was obtained from the accelerometer data on the first 19 shots of the survey and applied globally to all other shots. Data from the reference hydrophone was not used in the timing of the shots. Hence transit times picked in the computing centre differ from those picked in the field (using hydrophone data) by up to 11msecs.

The check level data recorded at 516*metres* and 471*metres* below KB is extremely noisy due to poor coupling of the well geophone with the formation. These levels have been omitted from the VSP, however good data has been recorded at the nearby depths of 514*metres* and 471.5*metres* below KB. Also omitted from the final VSP processing were the levels at SRD (42.9*metres*) and 561*metres* below KB. Both stacked signals were distorted by noise. Most of the check levels are affected by high amplitude noise from a tube wave. At and below these distortions the reliability of the data is greatly reduced. Steps have been taken in the processing chain to reduce the affect of the tube wave (see VSP PROCESSING - 4.2) but generally only the data above the tube wave should be interpreted with confidence.

Table 2

Level Depth (m below KB)	Stacked Shots	Rejected Shots	Quality	Comments
42.9	6	4	Poor	Omitted
69.0	1	4	Fair	
83.5	8	1	Fair	
98.0	6	0	Fair	
110.5	6	0	Fair	
127.5	9	0	Fair	
137.5	7	0	Fair	
153.0	6	0	Fair	
167.5	10	0	Fair	
181.0	10	0	Fair	
197.0	8	0	Fair	
212.0	9	2	Fair	
227.5	7	0	Fair	
241.5	8	0	Fair	
260.0	8	1	Fair	
275.0	8	1	Fair	
286.5	7	0	Fair	
303.5	8	3	Fair	

Table 2 (continued)

Level Depth (m below KB)	Stacked Shots	Rejected Shots	Quality	Comments
319.0	7	1	Fair	
327.5	6	2	Fair	
340.0	5	0	Fair	
348.5	9	0	Fair	
368.5	10	1	Fair	
384.0	5	1	Fair	
402.0	7	0	Fair	
417.0	5	2	Fair	
436.0	4	1	Fair	
454.0	6	2	Fair	
471.0	0	2	Poor	Omitted
471.5	5	0	Fair	
490.0	4	2	Fair	
500.0	5	0	Fair	
514.0	9	2	Fair	
516.0	0	2	Fair	Omitted
532.0	5	5	Fair	
550.0	5	16	Fair	
561.0	7	2	Poor	Omitted

4.0 VSP PROCESSING

4.1 PLOT 1 - STACKED DATA

All the shots at each level, excluding those with a high level of noise are stacked. Labelled depths are depths referenced to Kelly Bushing.

4.2 PLOT 2 - BPF, TAR and NORMALISATION

Plot 2 data is displayed in One Way Time and corrected to SRD.

A Band Pass Filter of bandwidth 14-64 Hz is applied to eliminate high and low frequency noise.

True Amplitude Recovery is a time variant gain function to compensate for spherical spreading and attenuation losses. The amplitude at time T is multiplied by $(\frac{T}{T_0})^\alpha$ where T_0 is the first break time and α is the TAR factor.

In an attempt to reduce the high amplitude of the tube wave the data has been normalised.

Band Pass Filter	:	$14 - 64Hertz$
TAR Factor	:	1.2
Normalisation Window	:	$200ms$

4.3 PLOT 3 - VELOCITY FILTER

A 7 level median velocity filter is used to seperate the upgoing and downgoing components of the total wavefield. Data from this stage is displayed in Two Way Time.

4.4 PLOT 4 - WAVESHAPE DECONVOLUTION

The objective of deconvolution is to remove multiples and to shape the seismic signal to a zero phase Ricker wavelet.The parameters for the deconvolution are selected from the downgoing signals after velocity filtering.

The WSF parameters used:

Window	:	$2.0seconds$
Wavelet	:	Zero Phase $14 - 48Hertz$

4.5 PLOTS 5/6 - FINAL DISPLAY WITH CORRIDOR STACKS AND GEOGRAM

The upgoing events after waveshape deconvolution are stacked and displayed alongside the deconvolved upgoing wavefield. Two stacks are made, one using all data and the other using the first 200ms of each wavetrain. The latter should simulate the reflectors at the borehole. Automatic gain control (AGC) using a window of 200ms has been applied to the corridor stacks.

Alongside this data are geogram traces convolved using a 30hz zero phase ricker wavelet. Relevant log data has also been displayed.

Both polarities of this data have been displayed.

All plots have been displayed at a time scale of 10in/sec.

5.0 SONIC CALIBRATION

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

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

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

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

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

Two methods of correction to the sonic log are used.

1. **Uniform or block shift** This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in $\mu sec/ft$.
2. **ΔT Minimum** In the case of negative drift a second method is used, called ΔT minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only ΔT values which are higher than a threshold, the Δt_{min}. Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of ΔT over Δt_{min}, $\Delta T - \Delta t_{min}$.

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

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

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

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

6.0 SONIC CALIBRATION PROCESSING

6.1 Open Hole Logs

Both the sonic and density log data has been edited prior to input into the Sonic calibration / Geogram chain.

6.2 Correction to Datum

Seismic reference Datum (SRD) is at Mean Sea Level. The airgun was positioned 1.5$metres$ below Ground Level (37.5$metres$ above SRD). Correction to datum has been made using a surface velocity of 829.79m/sec which resulted in a correction of -45.19 msecs between gun and datum. This velocity has been calculated using the elevation statics from the seismic line GM83A - 21.

6.3 Velocity Modelling

Interval velocities between the top of the sonic log and the top check shot were calculated from the checkshot data.

6.4 Sonic Calibration Results

The top of the sonic log (127.5$metres$ below KB)is chosen as the origin for the calibration drift curve.

A number of shifts, well defined by the drift curve, have beeen applied to the sonic log. These shifts are listed below.

Table 3

Depth Interval (m below KB)	Block Shift $\mu sec/ft$	Δt_{min} $\mu sec/ft$	Equiv Block Shift $\mu sec/ft$
0-127.5	0	-	0
127.5-352.5	6.23	-	6.23
352.5-472.5	13.72	-	13.72
472.5-561	6.2	-	6.2

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

7.0 GEOGRAM PROCESSING

Geograms were generated using zero phase Ricker wavelets with frequencies at 30, 40 and $50Hz$. The presentations are in normal and reverse polarity at time scales of $10in/sec$.

Geogram processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the well-bore. The steps in the processing chain are the following:

Time to depth conversion
Generate reflection coefficients
Generate attenuation coefficients
Choose a suitable wavelet
Convolution
Output.

7.1 Time to Depth Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and flipped to read from the top to bottom in order to match the seismic section.

7.2 Primary Reflection Coefficients

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

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

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

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

7.3 Primaries with Transmission Loss

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

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

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

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

7.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

7.5 Multiples Only

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

7.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

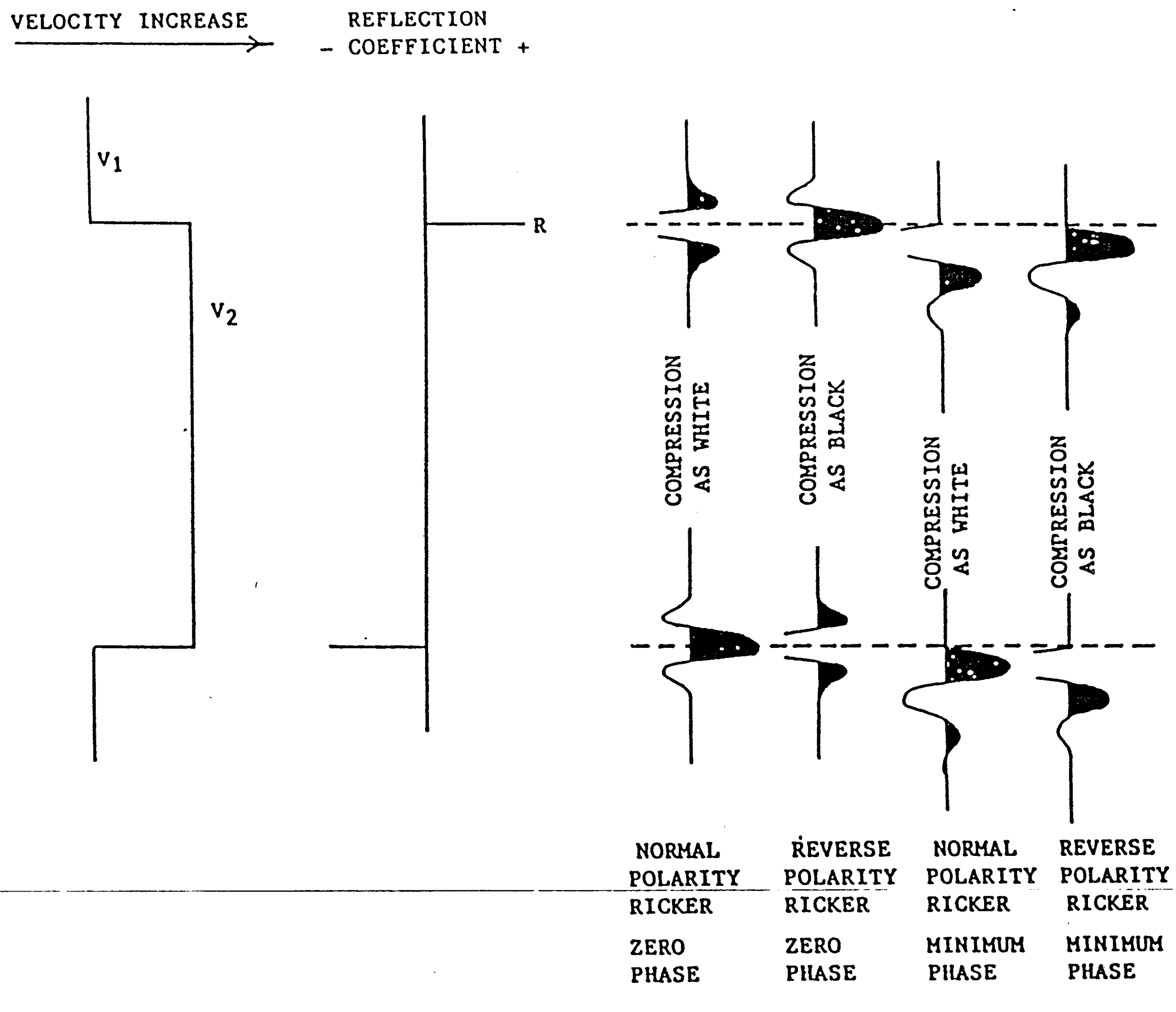
Klauder wavelet
Ricker zero phase wavelet
Ricker minimum phase wavelet
User defined wavelet.

All wavelets can be chosen with or without butterworth filtering and with user defined centre frequencies. Polarity conventions are shown in Figure 1. These Geograms were generated using zero phase ricker wavelets.

7.7 Convolution

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

SCHLUMBERGER WAVELET POLARITY CONVENTION



NOTE: WAVELET DISPLAYED UNDER GEOGRAMS ARE FOR A REFLECTION COEFFICIENT OF -0.5

FIGURE 1

Schlumberger

WELL SEISMIC SERVICE COMPUTATION REQUEST

COMPANY: AMPOL EXPLOR. CONTACT: B. CASSIE

WELL: FAIRHOPE #1

FIELD/COUNTRY: WILDCAT/AUSTRALIA

LOCATION/DIVISION: QEA/ANZ

DATE WST JOB: 29 JUNE 85

DATE SENT:

BY:

NUMBER OF COPIES OF RESULTS (CLIENT)

PRODUCT	REPORTS	PLOT TRANSP.	PLOT PRINT	TAPE
WSE				#1 x 1
WSC	3	1	3	#2 x1
GEO	3	1	3	
VSP	3	1	3	

DATA SUPPLIED FOR INTERVALS TO BE PROCESSED

	FROM	TO
A. LOGS : DENSITY	561	127.5
SONIC	561	127.5
B. SHOTS	561	42.9

UNITS: FEET ☐ METRES ☒

CLIENT TAPE: FORMAT: TAPE #1 SEGY ☒ TAPE #2 LIS ☒

DENSITY: 1600 BPI ☒ 1600 BPI ☒

SONIC CALIBRATION BY WST (WSC)

URGENT? YES ☐ NO ☐

IS A WELL SEISMIC EDIT (WSE) REQUESTED? YES ☐ NO ☐

(WSE IS RECOMMENDED WHERE FIELD STACK QUALITY IS AFFECTED BY BAD HOLE CONDITIONS)

REQUESTED TIME ORIGIN (SRD) ______ METRES ABOVE/BELOW MEAN SEA LEVEL (MSL)

STATIC CORRECTION TO BE APPLIED : -

______ MILLISECONDS FROM GROUND LEVEL OR

LAYER	VELOCITY	FROM	TO
1			
2			
3			

TRUE VERTICAL DEPTH (TVD) CORRECTION? YES ☐ NO ☐ (TVD IS RECOMMENDED IF DEVIATION EXCEEDS 5°)

DEVIATION DATA SUPPLIED? YES ☐ NO ☐

11 INCH WSC DISPLAY DEPTH SCALES TO BE USED (UP TO TWO) 1/5000 ☐ 1/1000 ☐ OTHER ☐

22INCH WIDE TIME/DEPTH DISPLAY SPECIAL TIME FUNCTION? (T - DEPTH/VELOCITY) YES ☐ NO ☐ VELOCITY ☐

22 INCH WIDE GEOLOGICAL INTERVAL VELOCITY DISPLAY? YES ☐ NO ☐ GEOLOGICAL MARKERS SUPPLIED ☐

SPECIAL SCALES TO BE USED? SPECIFY

GEOGRAM

URGENT? YES ☐ NO ☐

FREQUENCY TEST TO BE SUPPLIED BEFORE FINALIZATION (8 BAND WIDTHS) YES ☐ NO ☐

FINAL GEOGRAM PARAMETERS : -

(ONE GEOGRAM INCLUDES DISPLAYS IN BOTH POLARITIES FOR EACH OF, PRIMARIES, PRIMARIES + MULTIPLES, PRIMARIES WITH TRANSMISSION LOSS, MULTIPLES ONLY FOR THE CHOSEN WAVELET AND T.V.F.)

WAVELET	FREQ.
KLAUDER ☐	
MIN PHASE ☐	
ZERO PHASE ☐	
OTHER: ☐	

T.V.F.	T. LOW	T. HIGH	F. LOW	F. HIGH

SCALE IS 10 CM/SEC + ONE OTHER - SPECIFY ☐

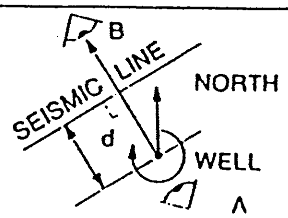
DIP OPTION YES ☐ NO ☐

SEISMIC LINE NUMBER ______

(ENCLOSE WELL LOCATION MAP VERSUS SEISMIC LINE)

DISTANCE BETWEEN TRACES ______

SECTION PERSPECTIVE: SEEN FROM A ☐ FROM B ☐



d ______

∝ ______

∝ (CLOCKWISE)

SPECIAL REQUESTS: ______

VERTICAL SEISMIC PROFILE

URGENT? YES ☐ NO ☐

UP TO 3 VELOCITY FILTER TESTS WILL BE SENT PROVISIONALLY

SPECIFY NUMBER OF TRACES IN WINDOW REQUIRED 3 ☐ 5 ☐ 7 ☐ 9 ☐ 11 ☐

TIME VARIANT FILTER (TVF) TO BE APPLIED ON FINAL DISPLAY : -

SCALE IS 10 CM/SEC + ONE OTHER. SPECIFY ☐

SPECIAL REQUESTS?

TIME 1	TIME 2	FLOW	F. HIGH

ENCLOSE SEISMIC SECTION. INDICATE RELATION TO WELL ON A DIAGRAM

Schlumberger

WELL SEISMIC SERVICE FIELD REPORT

COMPANY	WELL	DATE	LOCATION	ENGINEER	WITNESSED BY
AMPOL EXPL	FAIRHOPE#1	29 JUNE 85	QEA	J.A. ELLIS	M. SCHMEDJE

ET ☐ METRES ☒ | JACK UP ☐ PLATFORM ☐ | SHIP ☐ SEMI-SUB ☐ | WEATHER: WET AND MUDDY

SCHLUMBERGER ZERO	KELLY BUSHING	AT ELEVATION	42.96 M	RELATIVE TO MEAN SEA LEVEL (M.S.L.)
LOG MEASURED FROM		AT ELEVATION	0 M	RELATIVE TO SCHLUMBERGER ZERO
DRILLING MEASURED FROM		AT ELEVATION	0 M	RELATIVE TO SCHLUMBERGER ZERO

SOURCE

GUN TYPE WATER ☐ AIR ☒

VOLUME 1 x 120 CU INCHES

PRESSURE ______ BARS ______

VIBRATOR TYPE ______

SWEEP LENGTH ______ SECONDS

FROM ______ HZ TO ______ HZ

TIDEL INFORMATION DISTANCE HOUR DATE

TIDE LEVEL TO M.S.L.
(RECORD IF LEVEL VARIES
MORE THAN 2 METRES
DURING SURVEY)

CSU SOFTWARE VERSION: 26.2 | MAX. HOLE DEV: 0 | AZIM:

NOTE: SHOTS HIGHLY RECOMMENDED AT TD, TOP EACH SONIC, ABOVE AND BELOW BAD HOLE INTERVALS

UNCORRECTED RESULTS Quality: G = Good, P = Poor, U = Unsatisfactory

SHOT NO.	DEPTH	GUN PRESSURE	FILTERS	TRANSIT TIME	HOUR SHOT	FILE	STACK	STACKED SHOTS	QUALITY / REMARKS
	561	80			10:19	1	1	1 - 9	V. POOR
	550	80			10:28	1	2	10 - 15	POOR
	550	90			10:35	1	3	10 - 19	POOR
	532	90				1			
	550	95		274.4	12:24	3	1	1 - 10	O.K.
	532	95		267.7	12:31	3	2	12 - 18	O.K.
	516	95				3		19 - 20	NOISE
	513.5	95				3			
	514	95			12:57	3	3	21 - 31	POOR
	500	95		253.3	13:05	3	4	32 - 36	O.K.
	490	95		248.8	13:14	3		37 - 42	O.K.
	470	95				4		43	BAD
	471.5	95		238.9	13:26	4	8	45 - 49	O.K.
	454	95		231.5	13:33	4	9	50 - 57	O.K.
	436	95		223.2	13:40	4	10	58 - 63	O.K.
	417	95		215.7	13:45	4	11	64 - 70	O.K.
	402	95		208.4	13:52	4	12	71 - 77	O.K.
	384	95		200.8	13:51	4	13	78 - 83	O.K.
	368.5	95		193.9	14:04	4	14	84 - 94	TUBE WAVE
	348.5	95		185.3	14:15	4	15	95 - 103	TUBE WAVE
	340	95		181.9	14:21	4	16	104 - 108	TUBE WAVE
	327.5	95		175.8	14:30	4	17	109 - 116	O.K.
	319	95		172.6	14:35	4	18	117 - 124	O.K.
	303.5	95		165.0	14:41	4	19	125 - 135	T.W.
	286.5	95		157.5	14:46	4	20	136 - 142	O.K.
	275	95		152.6	14:53	4	21	143 - 151	T.W.
	260	95		146.6	15:03	4	22	152 - 160	T.W.
	241.5	95		137.9	15:08	4	23	161 - 168	T.W.
	227.5	95		131.8	15:14	4	24	169 - 175	T.W.
	212	95		124.2	15:19	4	25	176 -186	O.K.
	197	95		117.5	15:27	4	26	187 - 194	T.W.
	181	95		110.6	15:37	4	27	195 -204	T.W.
	167.5	95		104.6	15:42	4	28	205 -214	T.W.
	153	95		98.1	15:49	4	29	215 - 220	T.W.

Schlumberger

WELL SEISMIC SERVICE FIELD REPORT

COMPANY	WELL	DATE	LOCATION	ENGINEER	WITNESSED BY

ET ☐ METRES ☐ | JACK UP ☐ PLATFORM ☐ | SHIP ☐ SEMI-SUB ☐ | WEATHER:

SCHLUMBERGER ZERO AT ELEVATION RELATIVE TO MEAN SEA LEVEL (M.S.
LOG MEASURED FROM AT ELEVATION RELATIVE TO SCHLUMBERGER ZERC
DRILLING MEASURED FROM AT ELEVATION RELATIVE TO SCHLUMBERGER ZERC

SOURCE

GUN TYPE WATER ☐ AIR ☐
VOLUME ______ x ______ CU INCHES
PRESSURE ______ BARS ______
VIBRATOR TYPE ______
SWEEP LENGTH ______ SECONDS
FROM ______ HZ TO ______ HZ

TIDEL INFORMATION DISTANCE HOUR DATE
TIDE LEVEL TO M.S.L.
(RECORD IF LEVEL VARIES MORE THAN 2 METRES DURING SURVEY)

CSU SOFTWARE VERSION: MAX. HOLE DEV: AZIM:

NOTE: SHOTS HIGHLY RECOMMENDED AT TD, TOP EACH SONIC, ABOVE AND BELOW BAD HOLE INTERVALS

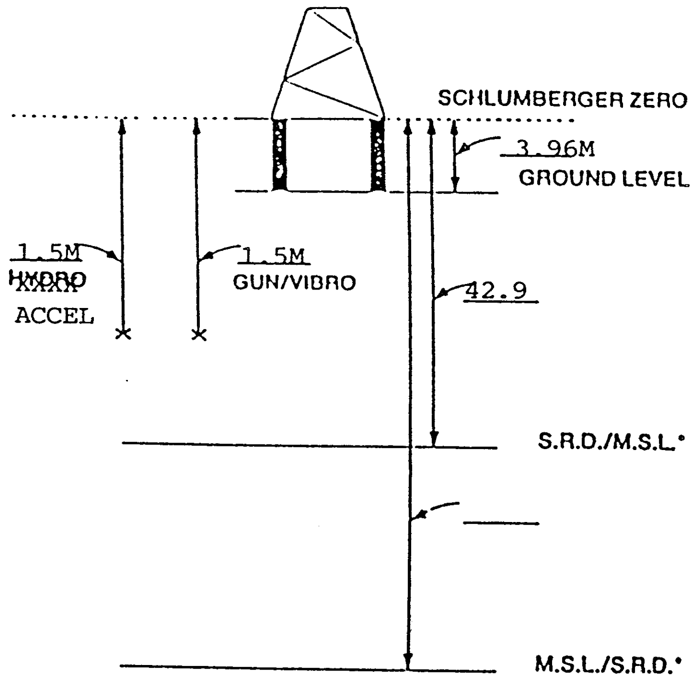
UNCORRECTED RESULTS Quality: G = Good, P = Poor, U = Unsatisfact

SHOT NO.	DEPTH	GUN PRESSURE	FILTERS	TRANSIT TIME	HOUR SHOT	FILE	STACK	STACKED SHOTS	QUALITY / REMAR
	137.5	95		92.4	15:55	4	30	221 - 227	TUBE WAVE
	127.5	95		86.5	16:05	4	31	228 - 236	TUBE WAVE
	110.5	95		79.9	16:09	4	32	237 - 242	TUBE WAVE
	98	95		74.3	16:13	4	33	243 - 248	TUBE WAVE
	83.5	95		67.7	16:22	4	34	249 - 257	TUBE WAVE
	69.0	95		61.8	16:27	4	35	258 - 262	TUBE WAVE
	42.9	95		?	16:39	4	36	263 - 272	BAD BREAK
	W E A T H E R E D Z O N E S U R V E Y								
	OFFSET								
	5	45		17.6		6	39	278 - 281	
	10	45		21.6		6	40	282 - 283	
	15	45		19.4		6	41	284 - 285	
	20	45		21.6	16:39	6	42	286 - 287	
	25	45		25.0	17:01	6	43	288 - 289	
	30	50				6		290 - 294	
	30	50		31.6	17:08	6	44	295 - 296	
	35	50				6		297 - 299	
	35	50		37.9	17:13	6	45	300 - 301	
	40	50			17:15	6	46	302 - 305	
	5	50			17:18	6	47	306 - 307	
	10	50			17:19	6	48	308 - 310	
	15	50		19.3	17:23	6		311 - 313	

GUN GEOMETRY SKETCH

CLIENT: AMPOL EXPLORATION   WELL: FAIRHOPE 1   DATE: 29 June 85

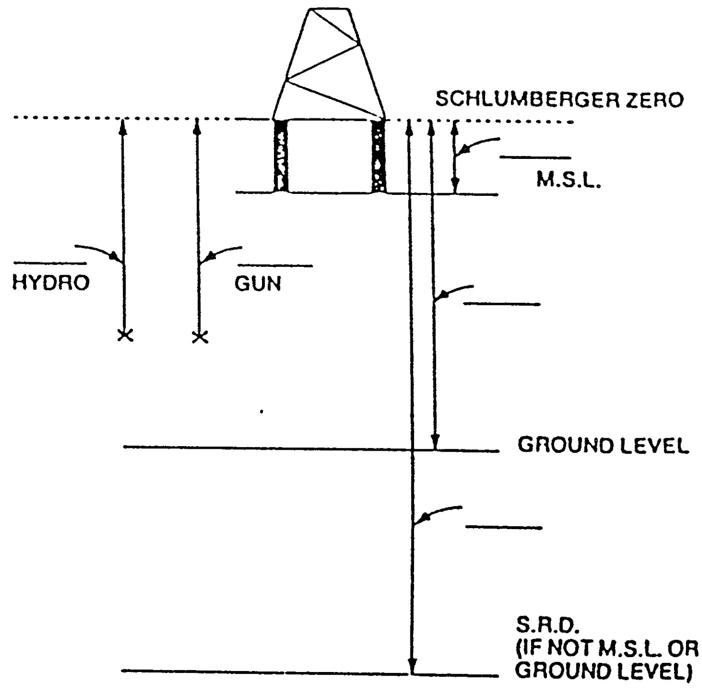
LAND [X]



INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

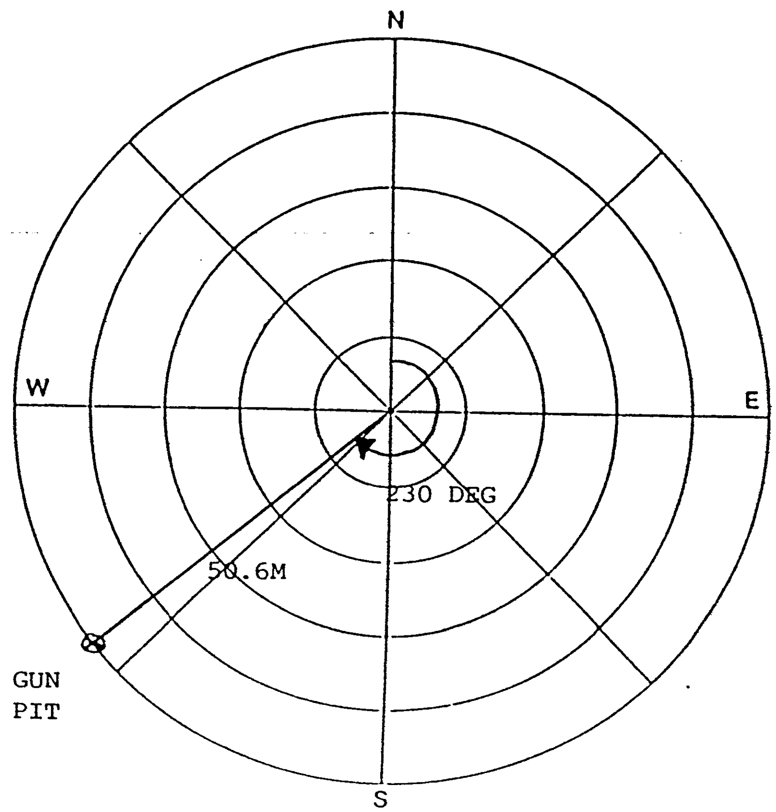
* DELETE AS APPLICABLE

OFFSHORE [ ]



INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

SHOT POS'N	GUN OFFSET	HYDRO OFFSET	GUN DEPTH	HYDRO DEPTH
1	50.6M		1.5M	
2				
3				
4				
5				
6				
7				



INDICATE GUN/VIBRO AND HYDROPHONE OFFSET AND AZIMUTH RELATIVE TO NORTH

ANALYST: R. [illegible]

14-AUG-85 22:09:10 PROGRAM: GSHOT 007.E07

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********************
*                  *
*                  *
*                  *
********************
*                  *
*   SCHLUMBERGER   *
*                  *
********************
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GEOPHYSICAL AIRGUN REPORT

COMPANY : AMPOL EXPLORATION LIMITED
WELL : FAIRHOPE #1
FIELD : WILDCAT
COUNTY : PEP-98
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: FS2A.540,362

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
GUNEWZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
GUNNSZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
HYDELZ - HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
HYDEWZ - HYDROPHONE DISTANCE FROM THE BOREH AXIS IN EW DIRECTION (CF GUNELZ)
HYDNSZ - HYDROPHONE DISTANCE FROM THE BOREH AXIS IN NS DIRECTION (CF GUNELZ)
TRTHYD - TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
TRTSRD - TRAVEL TIME FROM THE SOURCE TO THE SRD
DEVWEL - DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH - SHOT NUMBER
DKB.GSH - MEASURED DEPTH FROM KELLY-BUSHING
DSRD.GSH - DEPTH FROM SRD
DGL.GSH - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
TIMO.GSH - MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
TIMV.GSH - VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
SHTM.GSH - SHOT TIME (WST)
AVGV.GSH - AVERAGE SEISMIC VELOCITY
DELZ.GSH - DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
DELT.GSH - TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
INTV.GSH - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	42.9000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	42.9000	M
ELEV OF GL AB. SRD(WST)	GL	:	39.0000	M
VEL SOURCE-HYDRO(WST)	VELHYD	:	1500.00	M/S
VEL SOURCE-SRD (WST)	VELSUR	:	829.790	M/S

(MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	37.50	-38.76	-32.52	37.50	-38.76	-32.52

	TRT HYD-SC MS	TRT SC-SRD MS
1	0	-45.19

	MD @ KB M	VD @ KB M	VD @ SRD M	E-W COORD M	N-S COORD M
1	42.90	42.90	0	0	0
2	69.00	69.00	26.10	0	0
3	83.50	83.50	40.60	0	0
4	98.00	98.00	55.10	0	0
5	110.50	110.50	67.60	0	0
6	127.50	127.50	84.60	0	0
7	137.50	137.50	94.60	0	0
8	153.00	153.00	110.10	0	0
9	167.50	167.50	124.60	0	0
10	181.00	181.00	138.10	0	0
11	197.00	197.00	154.10	0	0
12	212.00	212.00	169.10	0	0
13	227.50	227.50	184.60	0	0
14	241.50	241.50	198.60	0	0
15	260.00	260.00	217.10	0	0
16	275.00	275.00	232.10	0	0
17	286.50	286.50	243.60	0	0
18	303.50	303.50	260.60	0	0
19	319.00	319.00	276.10	0	0
20	327.50	327.50	284.60	0	0
21	340.00	340.00	297.10	0	0
22	348.50	348.50	305.60	0	0
23	368.50	368.50	325.60	0	0
24	384.00	384.00	341.10	0	0
25	402.00	402.00	359.10	0	0
26	417.00	417.00	374.10	0	0
27	436.00	436.00	393.10	0	0
28	454.00	454.00	411.10	0	0
29	471.50	471.50	428.60	0	0
30	490.00	490.00	447.10	0	0
31	500.00	500.00	457.10	0	0
32	514.00	514.00	471.10	0	0
33	532.00	532.00	489.10	0	0

COMPANY : AMPUL EXPLORATION LIMITED WELL : FAIRHOPE #1

LEVEL NUMBER	MEASUR DEPTH FROM KB M	VERTIC DEPTH FROM SRD M	VERTIC DEPTH FROM GL M	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS M/S
34	550.00	550.00	507.10		0	0				
35	561.00	561.00	518.10		0	0				
1	42.90	0	39.00	75.90	45.19	0				
2	69.00	26.10	65.10	71.00	55.56	10.37	2517	26.10	10.37	2517
3	83.50	40.60	79.60	77.00	64.62	19.43	2090	14.50	9.06	1600
4	98.00	55.10	94.10	83.00	72.84	27.64	1993	14.50	8.21	1766
5	110.50	67.60	106.60	89.00	80.19	35.00	1932	12.50	7.36	1700
6	127.50	84.60	123.60	96.00	88.69	43.49	1945	17.00	8.50	2001
7	137.50	94.60	133.60	101.00	94.32	49.13	1926	10.00	5.63	1776
8	153.00	110.10	149.10	107.00	101.22	56.03	1965	15.50	6.90	2246
9	167.50	124.60	163.60	113.00	107.87	62.67	1988	14.50	6.65	2181
10	181.00	138.10	177.10	120.00	115.31	70.12	1970	13.50	7.44	1814
11	197.00	154.10	193.10	126.00	121.82	76.63	2011	16.00	6.52	2456
12	212.00	169.10	208.10	133.00	129.18	83.99	2013	15.00	7.36	2038
13	227.50	184.60	223.60	140.00	136.50	91.31	2022	15.50	7.32	2117
14	241.50	198.60	237.60	147.00	143.74	98.54	2015	14.00	7.23	1935
15	260.00	217.10	256.10	155.00	152.03	106.83	2032	18.50	8.29	2231
16	275.00	232.10	271.10	161.00	158.24	113.04	2053	15.00	6.21	2415
17	286.50	243.60	282.60	167.00	164.36	119.17	2044	11.50	6.12	1879
18	303.50	260.60	299.60	174.00	171.55	126.35	2062	17.00	7.19	2365
19	319.00	276.10	315.10	181.00	178.69	133.50	2068	15.50	7.14	2170
20	327.50	284.60	323.60	184.00	181.77	136.58	2084	8.50	3.08	2758
21	340.00	297.10	336.10	190.00	187.86	142.67	2082	12.50	6.09	2051
22	348.50	305.60	344.60	194.00	191.92	146.73	2083	8.50	4.06	2094
23	368.50	325.60	364.60	204.00	202.05	156.86	2076	20.00	10.12	1976

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

LEVEL NUMBER	MEASUR DEPTH FROM KB M	VERTIC DEPTH FROM SRD M	VERTIC DEPTH FROM GL M	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS M/S
24	384.00	341.10	380.10	210.00	208.15	162.96	2093	15.50	6.10	2540
25	402.00	359.10	398.10	218.00	216.25	171.05	2099	18.00	8.10	2223
26	417.00	374.10	413.10	225.00	223.32	178.13	2100	15.00	7.07	2121
27	436.00	393.10	432.10	233.00	231.41	186.22	2111	19.00	8.09	2349
28	454.00	411.10	450.10	241.00	239.48	194.29	2116	18.00	8.07	2229
29	471.50	428.60	467.60	249.00	247.55	202.35	2118	17.50	8.06	2170
30	490.00	447.10	486.10	259.00	257.60	212.41	2105	18.50	10.05	1840
31	500.00	457.10	496.10	263.00	261.63	216.44	2112	10.00	4.03	2478
32	514.00	471.10	510.10	271.00	269.67	224.48	2099	14.00	8.03	1743
33	532.00	489.10	528.10	278.00	276.73	231.53	2112	18.00	7.06	2551
34	550.00	507.10	546.10	285.00	283.78	238.59	2125	18.00	7.05	2552
35	561.00	518.10	557.10	288.00	286.81	241.62	2144	11.00	3.04	3624

ANALYST: R.BUNT

14-AUG-85 22:13:35 PROGRAM: GDRIFT 007.E09

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*  SCHLUMBERGER   *
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DRIFT COMPUTATION REPORT

COMPANY : AMPOL EXPLORATION LIMITED
WELL : FAIRHOPE #1
FIELD : WILDCAT
COUNTY : PEP-98
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: FS2A,540,362

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART - TOP OF ZONE PROCESSED BY WST
XSTOP - BOTTOM OF ZONE PROCESSED BY WST
GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN - UNIFORM DENSITY VALUE

ZONE

LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
RAWS - RAW SONIC (WST)
SHDR - DRIFT AT SHOT OR KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE

(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 42.9000	M
ELEV OF SRD AB. MSL(WST)	SRD	: 0	M
ELEVATION OF KELLY BUSHI	EKB	: 42.9000	M
ELEV OF GL AB. SRD(WST)	GL	: 39.0000	M
TOP OF ZONE PROCD (WST)	XSTART	: 0	M
BOT OF ZONE PROCD (WST)	XSTOP	: 0	M
RAW SONIC CH NAME (WST)	GAD001	: DT.BHC.004.IPA.FUN.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	: 2.30000	G/C3

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	: 1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/F
1	42.90	0	39.00	0	0	0	0
2	69.00	26.10	65.10	10.37	10.37	0	0
3	83.50	40.60	79.60	19.43	19.43	0	0
4	98.00	55.10	94.10	27.64	27.64	0	0
5	110.50	67.60	106.60	35.00	35.00	0	0
6	127.50	84.60	123.60	43.49	43.49	0	0
7	137.50	94.60	133.60	49.13	48.36	.77	23.48
8	153.00	110.10	149.10	56.03	55.75	.27	-9.83
9	167.50	124.60	163.60	62.67	62.65	.03	-5.12
10	181.00	138.10	177.10	70.12	68.63	1.48	32.91
11	197.00	154.10	193.10	76.63	75.68	.95	-10.11
12	212.00	169.10	208.10	83.99	82.54	1.45	10.17
13	227.50	184.60	223.60	91.31	89.78	1.53	1.56
14	241.50	198.60	237.60	98.54	96.04	2.50	21.10
15	260.00	217.10	256.10	106.83	103.92	2.91	6.78
16	275.00	232.10	271.10	113.04	110.29	2.75	-3.25
17	286.50	243.60	282.60	119.17	115.31	3.85	29.12
18	303.50	260.60	299.60	126.35	122.61	3.74	-2.02
19	319.00	276.10	315.10	133.50	129.39	4.11	7.18
20	327.50	284.60	323.60	136.58	133.06	3.52	-21.07
21	340.00	297.10	336.10	142.67	138.36	4.32	19.46
22	348.50	305.60	344.60	146.73	142.19	4.54	8.09
23	368.50	325.60	364.60	156.86	150.53	6.32	27.12
24	384.00	341.10	380.10	162.96	157.28	5.67	-12.75

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/F
25	402.00	359.10	398.10	171.05	164.84	6.21	9.14
26	417.00	374.10	413.10	178.13	171.12	7.00	16.09
27	436.00	393.10	432.10	186.22	178.62	7.59	9.46
28	454.00	411.10	450.10	194.29	185.52	8.77	19.92
29	471.50	428.60	467.60	202.35	192.53	9.82	18.25
30	490.00	447.10	486.10	212.41	201.13	11.27	23.99
31	500.00	457.10	496.10	216.44	205.77	10.67	-18.49
32	514.00	471.10	510.10	224.48	212.39	12.09	30.86
33	532.00	489.10	528.10	231.53	220.57	10.97	-18.93
34	550.00	507.10	546.10	238.59	227.17	11.42	7.59
35	561.00	518.10	557.10	241.62	230.24	11.38	-.86

ANALYST: R.BUNT

15-AUG-85 11:37:01 PROGRAM: GADJST 008.E07

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*  SCHLUMBERGER   *
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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : AMPOL EXPLORATION LIMITED
WELL : FAIRHOPE #1
FIELD : WILDCAT
COUNTY : PEP-98
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: FS2A,540,362

LONG DEFINITIONS

GLOBAL

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

ZONE

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

SAMPLED

SHOT - SHOT NUMBER
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)

		(VALUE)	
ORIG OF ADJ DATA (WST)	SRCDRF	: 2.00000	
CONS SONIC ADJUST (WST)	CONADJ	: 7.50000	US/F
UNIFORM EARTH VELOCITY	UNERTH	: 2133.60	M/S

(ZONED PARAMETERS)

		(VALUE)		(LIMITS)		
USER DRIFT ZONE (WST)	ZDRIFT	: 11.80000	MS	561.000	-	472.500
		10.00000		472.500		352.500
		4.600000		352.500		127.500
		0		127.500		0
ADJUSMNT MODE (WST)	ADJOPZ	:-999.2500		30479.7	-	0
USER DELTA-T MIN (WST)	ADJUSZ	:-999.2500	US/F	30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 829.7900	M/S	30479.7	-	0

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

KNEE NUMBER	VERTICAL DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/F
2	127.50	84.60	123.60	0	0			0
3	352.50	309.60	348.60	4.60	6.23			6.23
4	472.50	429.60	468.60	10.00	13.72			13.72
5	561.00	518.10	557.10	11.80	6.20			6.20

ANALYST: R.BUNT 15-AUG-85 11:40:52 PROGRAM: GADJST 008.E07

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*  SCHLUMBERGER   *
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VELOCITY REPORT

COMPANY : AMPOL EXPLORATION LIMITED
WELL : FAIRHOPE #1
FIELD : WILDCAT
COUNTY : PEP-98
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: FS2A.540,362

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
ADJS - ADJUSTED SONIC TRAVEL TIME
SHDR - DRIFT AT SHOT OR KNEE
REST - RESIDUAL TRAVEL TIME AT KNEE
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 42.9000	M
ELEV OF SRD AB. MSL(WST)	SRD	: 0	M
ELEVATION OF KELLY BUSHI	EKB	: 42.9000	M
ELEV OF GL AB. SRD(WST)	GL	: 39.0000	M
UNIFORM EARTH VELOCITY	UNERTH	: 2133.60	M/S

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 829.7900	M/S	30479.7	-	0

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY M/S
1	42.90	0	39.00	0	0	0	0	
2	69.00	26.10	65.10	10.37	10.38	0	-.01	2515
3	83.50	40.60	79.60	19.43	19.44	0	-.01	1601
4	98.00	55.10	94.10	27.64	27.65	0	-.01	1765
5	110.50	67.60	106.60	35.00	35.00	0	0	1701
6	127.50	84.60	123.60	43.49	43.49	0	0	2001
7	137.50	94.60	133.60	49.13	48.56	.77	.57	1974
8	153.00	110.10	149.10	56.03	56.28	.27	-.25	2009
9	167.50	124.60	163.60	62.67	63.46	.03	-.79	2017
10	181.00	138.10	177.10	70.12	69.72	1.48	.39	2158
11	197.00	154.10	193.10	76.63	77.10	.95	-.46	2170
12	212.00	169.10	208.10	83.99	84.26	1.45	-.27	2094
13	227.50	184.60	223.60	91.31	91.82	1.53	-.51	2050
14	241.50	198.60	237.60	98.54	98.37	2.50	.18	2138
15	260.00	217.10	256.10	106.83	106.62	2.91	.21	2241
16	275.00	232.10	271.10	113.04	113.30	2.75	-.26	2245
17	286.50	243.60	282.60	119.17	118.56	3.85	.61	2187
18	303.50	260.60	299.60	126.35	126.21	3.74	.15	2224
19	319.00	276.10	315.10	133.50	133.30	4.11	.20	2186
20	327.50	284.60	323.60	136.58	137.15	3.52	-.57	2206
21	340.00	297.10	336.10	142.67	142.69	4.32	-.02	2256
22	348.50	305.60	344.60	146.73	146.70	4.54	.03	2119
23	368.50	325.60	364.60	156.86	155.85	6.32	1.01	2187
24	364.00	341.10	380.10	162.96	163.30	5.67	-.34	2081

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY M/S
25	402.00	359.10	398.10	171.05	171.67	6.21	-.61	2151
26	417.00	374.10	413.10	178.13	178.62	7.00	-.49	2158
27	436.00	393.10	432.10	186.22	186.97	7.59	-.76	2274
28	454.00	411.10	450.10	194.29	194.67	8.77	-.38	2337
29	471.50	428.60	467.60	202.35	202.49	9.82	-.13	2240
30	490.00	447.10	486.10	212.41	211.49	11.27	.92	2055
31	500.00	457.10	496.10	216.44	216.33	10.67	.11	2065
32	514.00	471.10	510.10	224.48	223.23	12.09	1.24	2029
33	532.00	489.10	528.10	231.53	231.77	10.97	-.24	2109
34	550.00	507.10	546.10	238.59	238.73	11.42	-.14	2586
35	561.00	518.10	557.10	241.62	242.00	11.38	-.38	3368

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*   SCHLUMBERGER  *
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TIME CONVERTED VELOCITY REPORT

COMPANY : AMPOL EXPLORATION LIMITED
WELL : FAIRHOPE #1
FIELD : WILDCAT
COUNTY : PEP-98
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: FS2A.540,362

LONG DEFINITIONS

GLOBAL

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KB     - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD    - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL     - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY  (GTRFRM)
UNFDEN - UNIFORM DENSITY VALUE
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MATRIX

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MVODIS - MOVE-OUT DISTANCE FROM BOREHOLE
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ZONE

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LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA
LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA
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SAMPLED

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TWOT   - TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB    - MEASURED DEPTH FROM KELLY-BUSHING
DSRD   - DEPTH FROM  SRD
AVGV   - AVERAGE SEISMIC VELOCITY
RMSV   - ROOT MEAN SGUARE VELOCITY (SEISMIC)
MVOT   - NORMAL MOVE-OUT
MVOT   - NORMAL MOVE-OUT
MVOT   - NORMAL MOVE-OUT
INTV   - INTERNAL VELOCITY, AVERAGE
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(GLOBAL PARAMETERS)

			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	42.9000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEV OF GL AB. SRD(WST)	GL	:	39.0000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST M
1	914.4
2	1371.6
3	1828.8

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 829.7900	M/S	30479.7	-	0
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
2.00	45.42	2.52	2517	2517	361.26	542.89	724.52	2517
4.00	47.93	5.03	2517	2517	359.28	540.90	722.53	2517
6.00	50.45	7.55	2517	2517	357.31	538.92	720.54	2517
8.00	52.97	10.07	2517	2517	355.35	536.95	718.56	2517
10.00	55.49	12.59	2517	2517	353.40	534.98	716.59	2517
12.00	58.00	15.10	2517	2517	351.46	533.02	714.62	2517
14.00	60.52	17.62	2517	2517	349.53	531.07	712.65	2517
16.00	63.04	20.14	2517	2517	347.61	529.12	710.69	2517
18.00	65.55	22.65	2517	2517	345.70	527.19	708.74	2517
20.00	68.07	25.17	2517	2517	343.81	525.26	706.79	2517
22.00	70.00	27.10	2463	2469	348.98	533.93	718.98	1924
24.00	71.60	28.70	2391	2409	356.37	545.93	735.61	1600
26.00	73.20	30.30	2330	2356	362.92	556.65	750.53	1600
28.00	74.80	31.90	2278	2311	368.73	566.27	763.97	1600
30.00	76.40	33.50	2233	2270	373.90	574.92	776.13	1600
32.00	78.00	35.10	2194	2234	378.52	582.74	787.17	1600
34.00	79.60	36.70	2159	2202	382.65	589.82	797.23	1600
36.00	81.20	38.30	2128	2173	386.36	596.25	806.41	1600
38.00	82.80	39.90	2100	2147	389.67	602.10	814.81	1600
40.00	84.50	41.60	2080	2126	391.87	606.26	820.96	1699
42.00	86.26	43.36	2065	2111	393.26	609.20	825.48	1766
44.00	88.03	45.13	2051	2096	394.43	611.80	829.54	1766
46.00	89.79	46.89	2039	2083	395.40	614.10	833.20	1766
48.00	91.56	48.66	2027	2071	396.20	616.13	836.50	1766

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
50.00	93.32	50.42	2017	2059	396.83	617.92	839.46	1766
52.00	95.09	52.19	2007	2049	397.33	619.48	842.13	1766
54.00	96.86	53.96	1998	2039	397.69	620.84	844.52	1766
56.00	98.59	55.69	1989	2029	398.11	622.29	847.03	1739
58.00	100.29	57.39	1979	2019	398.68	623.95	849.82	1700
60.00	101.99	59.09	1970	2009	399.14	625.43	852.37	1700
62.00	103.69	60.79	1961	2000	399.48	626.75	854.70	1700
64.00	105.39	62.49	1953	1991	399.73	627.91	856.82	1700
66.00	107.09	64.19	1945	1983	399.90	628.94	858.75	1700
68.00	108.79	65.89	1938	1975	399.97	629.83	860.51	1700
70.00	110.50	67.60	1932	1968	399.89	630.48	861.93	1713
72.00	112.51	69.61	1933	1969	397.98	628.36	859.65	2001
74.00	114.51	71.61	1935	1970	396.09	626.26	857.40	2001
76.00	116.51	73.61	1937	1971	394.21	624.18	855.17	2001
78.00	118.51	75.61	1939	1971	392.36	622.13	852.97	2001
80.00	120.51	77.61	1940	1972	390.52	620.09	850.79	2001
82.00	122.51	79.61	1942	1973	388.70	618.07	848.63	2001
84.00	124.51	81.61	1943	1973	386.90	616.08	846.49	2001
86.00	126.51	83.61	1944	1974	385.11	614.09	844.37	2001
88.00	128.51	85.61	1946	1975	383.38	612.19	842.35	1994
90.00	130.49	87.59	1946	1975	381.70	610.36	840.43	1985
92.00	132.48	89.58	1947	1975	380.03	608.54	838.52	1985
94.00	134.45	91.55	1948	1975	378.44	606.82	836.75	1972
96.00	136.40	93.50	1948	1974	376.96	605.28	835.20	1949

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
98.00	138.38	95.48	1949	1975	375.34	603.51	833.34	1982
100.00	140.43	97.53	1951	1976	373.39	601.23	830.80	2054
102.00	142.46	99.56	1952	1977	371.58	599.15	828.53	2028
104.00	144.43	101.53	1952	1977	370.07	597.53	826.87	1964
106.00	146.43	103.53	1953	1978	368.39	595.64	824.84	2006
108.00	148.45	105.55	1955	1978	366.69	593.72	822.76	2013
110.00	150.44	107.54	1955	1978	365.10	591.95	820.90	1990
112.00	152.44	109.54	1956	1979	363.44	590.08	818.88	2009
114.00	154.46	111.56	1957	1980	361.78	588.19	816.84	2014
116.00	156.46	113.56	1958	1980	360.16	586.37	814.89	2004
118.00	158.45	115.55	1959	1980	358.61	584.63	813.04	1993
120.00	160.47	117.57	1959	1981	356.98	582.78	811.05	2012
122.00	162.51	119.61	1961	1982	355.27	580.80	808.87	2038
124.00	164.53	121.63	1962	1982	353.62	578.89	806.79	2027
126.00	166.56	123.66	1963	1983	352.00	577.03	804.76	2023
128.00	168.58	125.68	1964	1984	350.37	575.14	802.71	2028
130.00	170.65	127.75	1965	1985	348.61	573.05	800.36	2070
132.00	172.70	129.80	1967	1986	346.93	571.08	798.18	2050
134.00	174.90	132.00	1970	1989	344.75	568.32	794.94	2199
136.00	177.12	134.22	1974	1993	342.53	565.50	791.62	2217
138.00	179.41	136.51	1978	1998	340.08	562.33	787.81	2291
140.00	181.61	138.71	1982	2001	337.99	559.69	784.72	2202
142.00	183.81	140.91	1985	2004	335.95	557.12	781.72	2197
144.00	186.09	143.19	1989	2008	333.67	554.19	778.21	2276

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRL M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
146.00	188.32	145.42	1992	2011	331.58	551.52	775.07	2234
148.00	190.48	147.58	1994	2013	329.73	549.24	772.44	2163
150.00	192.61	149.71	1996	2015	328.01	547.13	770.04	2131
152.00	194.73	151.83	1998	2016	326.35	545.10	767.75	2118
154.00	196.80	153.90	1999	2017	324.83	543.30	765.76	2071
156.00	198.87	155.97	2000	2017	323.34	541.53	763.81	2068
158.00	201.01	158.11	2001	2019	321.65	539.46	761.44	2140
160.00	203.16	160.26	2003	2021	319.97	537.37	759.06	2146
162.00	205.25	162.35	2004	2022	318.44	535.54	757.01	2094
164.00	207.32	164.42	2005	2022	317.00	533.82	755.11	2068
166.00	209.39	166.49	2006	2023	315.56	532.09	753.21	2072
168.00	211.46	168.56	2007	2023	314.14	530.39	751.33	2069
170.00	213.59	170.69	2008	2025	312.56	528.44	749.11	2133
172.00	215.68	172.78	2009	2025	311.11	526.69	747.15	2089
174.00	217.71	174.81	2009	2025	309.82	525.17	745.50	2030
176.00	219.79	176.89	2010	2026	308.42	523.47	743.62	2078
178.00	221.82	178.92	2010	2026	307.13	521.95	741.96	2035
180.00	223.86	180.96	2011	2026	305.83	520.40	740.28	2041
182.00	225.86	182.96	2011	2026	304.64	519.03	738.82	1996
184.00	227.86	184.96	2010	2026	303.45	517.65	737.35	1998
186.00	229.94	187.04	2011	2026	302.09	515.98	735.49	2080
188.00	232.02	189.12	2012	2027	300.74	514.33	733.64	2081
190.00	234.23	191.33	2014	2029	299.10	512.22	731.18	2209
192.00	236.39	193.49	2015	2030	297.59	510.32	728.99	2159

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
194.00	238.50	195.60	2016	2031	296.21	508.59	727.03	2112
196.00	240.71	197.81	2018	2033	294.61	506.54	724.63	2211
198.00	242.87	199.97	2020	2034	293.16	504.69	722.50	2156
200.00	245.01	202.11	2021	2035	291.74	502.90	720.45	2144
202.00	247.18	204.28	2023	2037	290.28	501.03	718.29	2170
204.00	249.37	206.47	2024	2038	288.80	499.13	716.08	2187
206.00	251.61	208.71	2026	2040	287.22	497.07	713.65	2239
208.00	253.84	210.94	2028	2042	285.67	495.04	711.26	2236
210.00	256.20	213.30	2031	2046	283.87	492.61	708.33	2360
212.00	258.53	215.63	2034	2048	282.16	490.33	705.58	2328
214.00	260.93	218.03	2038	2052	280.33	487.84	702.55	2397
216.00	263.28	220.38	2041	2055	278.61	485.52	699.75	2355
218.00	265.53	222.62	2042	2057	277.14	483.58	697.46	2244
220.00	267.65	224.75	2043	2057	275.90	482.01	695.68	2124
222.00	269.89	226.99	2045	2059	274.46	480.11	693.44	2240
224.00	272.05	229.15	2046	2060	273.17	478.45	691.52	2166
226.00	274.33	231.43	2048	2062	271.69	476.48	689.18	2274
228.00	276.61	233.71	2050	2064	270.23	474.52	686.86	2277
230.00	278.82	235.92	2051	2065	268.89	472.77	684.80	2212
232.00	280.99	238.09	2053	2066	267.63	471.13	682.91	2174
234.00	283.16	240.26	2053	2067	266.40	469.53	681.06	2165
236.00	285.32	242.42	2054	2068	265.18	467.94	679.22	2166
238.00	287.43	244.53	2055	2068	264.07	466.52	677.61	2104
240.00	289.64	246.74	2056	2070	262.78	464.83	675.63	2212

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
242.00	291.69	248.79	2056	2070	261.77	463.56	674.22	2050
244.00	293.90	251.00	2057	2071	260.51	461.88	672.25	2213
246.00	296.23	253.33	2060	2073	259.07	459.92	669.88	2326
248.00	298.37	255.47	2060	2074	257.94	458.44	668.18	2143
250.00	300.62	257.72	2062	2075	256.65	456.71	666.12	2250
252.00	303.00	260.10	2064	2078	255.16	454.65	663.61	2381
254.00	305.15	262.25	2065	2078	254.06	453.21	661.95	2143
256.00	307.29	264.39	2066	2079	252.97	451.77	660.29	2144
258.00	309.52	266.62	2067	2080	251.75	450.14	658.36	2231
260.00	311.66	268.76	2067	2080	250.69	448.73	656.73	2139
262.00	313.91	271.01	2069	2082	249.46	447.07	654.75	2251
264.00	316.24	273.34	2071	2084	248.13	445.23	652.54	2326
266.00	318.26	275.36	2070	2083	247.24	444.11	651.28	2026
268.00	320.64	277.74	2073	2086	245.86	442.17	648.92	2379
270.00	323.01	280.11	2075	2088	244.51	440.28	646.62	2365
272.00	325.06	282.16	2075	2088	243.61	439.11	645.31	2054
274.00	327.21	284.31	2075	2088	242.58	437.75	643.72	2149
276.00	329.45	286.55	2076	2089	241.45	436.20	641.86	2235
278.00	331.80	288.90	2078	2091	240.16	434.39	639.67	2355
280.00	334.0[illegible]	291.10	2079	2092	239.10	432.94	637.96	2201
282.00	336.07	293.17	2079	2092	238.20	431.77	636.63	2071
284.00	338.40	295.50	2081	2094	236.98	430.06	634.54	2328
286.00	340.75	297.86	2083	2096	235.73	428.29	632.38	2359
288.00	342.96	300.00	2083	2096	234.77	427.00	630.88	2141

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
290.00	345.04	302.14	2084	2096	233.83	425.74	629.40	2134
292.00	346.99	304.09	2083	2095	233.11	424.82	628.41	1951
294.00	349.08	306.18	2083	2095	232.22	423.64	627.05	2094
296.00	351.20	308.30	2083	2095	231.32	422.42	625.63	2119
298.00	353.46	310.56	2084	2096	230.24	420.91	623.81	2264
300.00	355.67	312.77	2085	2097	229.24	419.52	622.16	2208
302.00	357.90	315.00	2086	2098	228.22	418.10	620.46	2231
304.00	360.07	317.17	2087	2099	227.29	416.82	618.94	2164
306.00	362.31	319.41	2088	2100	226.27	415.38	617.21	2246
308.00	364.58	321.68	2089	2101	225.23	413.92	615.44	2265
310.00	366.72	323.82	2089	2101	224.34	412.70	614.01	2141
312.00	368.83	325.93	2089	2101	223.50	411.55	612.66	2110
314.00	370.96	328.06	2090	2101	222.63	410.35	611.25	2134
316.00	373.12	330.22	2090	2102	221.74	409.11	609.78	2161
318.00	375.23	332.33	2090	2102	220.91	407.98	608.46	2106
320.00	377.20	334.30	2089	2101	220.22	407.08	607.45	1971
322.00	379.28	336.38	2089	2101	219.44	406.00	606.20	2077
324.00	381.28	338.38	2089	2100	218.72	405.05	605.12	2004
326.00	383.38	340.48	2089	2100	217.92	403.95	603.83	2099
328.00	385.48	342.58	2089	2100	217.13	402.85	602.54	2097
330.00	387.60	344.70	2089	2100	216.31	401.71	601.19	2121
332.00	389.68	346.78	2089	2100	215.53	400.64	599.93	2087
334.00	391.89	348.99	2090	2101	214.64	399.37	598.40	2206
336.00	394.16	351.26	2091	2102	213.70	398.00	596.72	2265

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
338.00	396.37	353.47	2092	2102	212.81	396.73	595.19	2213
340.00	398.44	355.54	2091	2102	212.07	395.70	593.98	2072
342.00	400.52	357.62	2091	2102	211.33	394.67	592.77	2077
344.00	402.68	359.78	2092	2103	210.50	393.50	591.36	2165
346.00	404.80	361.90	2092	2103	209.73	392.40	590.05	2121
348.00	406.88	363.98	2092	2102	209.01	391.39	588.86	2072
350.00	409.04	366.14	2092	2103	208.20	390.24	587.48	2159
352.00	411.21	368.31	2093	2103	207.39	389.07	586.06	2178
354.00	413.36	370.46	2093	2103	206.62	387.96	584.73	2143
356.00	415.57	372.67	2094	2104	205.78	386.75	583.24	2212
358.00	417.86	374.96	2095	2105	204.87	385.41	581.58	2293
360.00	420.09	377.19	2095	2106	204.04	384.18	580.08	2227
362.00	422.39	379.49	2097	2107	203.14	382.86	578.43	2297
364.00	424.73	381.83	2098	2108	202.21	381.46	576.68	2344
366.00	427.03	384.13	2099	2109	201.32	380.14	575.03	2304
368.00	429.38	386.48	2100	2111	200.40	378.75	573.29	2348
370.00	431.74	388.84	2102	2112	199.48	377.37	571.55	2354
372.00	433.90	391.00	2102	2113	198.74	376.29	570.24	2159
374.00	436.06	393.16	2102	2113	198.00	375.21	568.93	2166
376.00	438.26	395.36	2103	2113	197.24	374.09	567.54	2200
378.00	440.54	397.64	2104	2114	196.41	372.86	566.01	2275
380.00	442.99	400.09	2106	2116	195.44	371.36	564.09	2453
382.00	445.30	402.40	2107	2117	194.60	370.09	562.50	2310
384.00	447.59	404.69	2108	2118	193.78	368.86	560.96	2294

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
386.00	449.86	406.96	2109	2119	192.98	367.66	559.47	2271
388.00	452.36	409.46	2111	2121	192.00	366.14	557.50	2495
390.00	454.88	411.98	2113	2123	191.00	364.58	555.50	2519
392.00	457.20	414.30	2114	2124	190.19	363.35	553.94	2319
394.00	459.36	416.46	2114	2124	189.51	362.34	552.70	2158
396.00	461.50	418.60	2114	2125	188.85	361.36	551.50	2143
398.00	463.84	420.94	2115	2126	188.04	360.12	549.92	2341
400.00	466.06	423.16	2116	2126	187.33	359.04	548.59	2220
402.00	468.27	425.37	2116	2127	186.63	357.99	547.28	2208
404.00	470.48	427.58	2117	2127	185.94	356.95	545.98	2207
406.00	472.60	429.70	2117	2127	185.31	356.02	544.84	2123
408.00	474.72	431.82	2117	2127	184.69	355.09	543.70	2122
410.00	476.92	434.02	2117	2127	184.02	354.07	542.43	2198
412.00	478.99	436.09	2117	2127	183.44	353.22	541.40	2068
414.00	481.07	438.17	2117	2127	182.85	352.35	540.34	2087
416.00	483.06	440.16	2116	2126	182.34	351.59	539.44	1988
418.00	485.08	442.18	2116	2126	181.80	350.81	538.49	2020
420.00	487.13	444.23	2115	2125	181.25	349.98	537.49	2052
422.00	489.07	446.17	2115	2124	180.77	349.30	536.69	1933
424.00	491.06	448.16	2114	2124	180.26	348.54	535.78	1999
426.00	493.04	450.14	2113	2123	179.76	347.81	534.91	1977
428.00	495.14	452.24	2113	2123	179.19	346.94	533.85	2095
430.00	497.26	454.36	2113	2123	178.59	346.05	532.73	2126
432.00	499.33	456.43	2113	2123	178.05	345.22	531.72	2065

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
434.00	501.35	458.45	2113	2122	177.53	344.45	530.79	2020
436.00	503.42	460.52	2112	2122	176.99	343.63	529.77	2072
438.00	505.43	462.53	2112	2122	176.48	342.88	528.86	2008
440.00	507.44	464.54	2112	2121	175.98	342.13	527.95	2009
442.00	509.48	466.58	2111	2121	175.46	341.34	526.99	2039
444.00	511.51	468.61	2111	2120	174.95	340.57	526.05	2031
446.00	513.52	470.62	2110	2120	174.45	339.82	525.13	2018
448.00	515.54	472.64	2110	2120	173.95	339.07	524.21	2016
450.00	517.45	474.55	2109	2119	173.52	338.44	523.46	1904
452.00	519.53	476.63	2109	2118	172.99	337.62	522.44	2084
454.00	521.45	478.55	2108	2118	172.56	336.98	521.68	1919
456.00	523.51	480.61	2108	2117	172.04	336.19	520.70	2061
458.00	525.64	482.74	2108	2117	171.49	335.33	519.61	2128
460.00	527.91	485.01	2109	2118	170.85	334.31	518.31	2269
462.00	530.16	487.26	2109	2119	170.23	333.32	517.03	2254
464.00	532.56	489.66	2111	2120	169.51	332.17	515.52	2398
466.00	535.26	492.36	2113	2123	168.58	330.63	513.45	2704
468.00	537.93	495.03	2115	2125	167.70	329.16	511.47	2666
470.00	540.37	497.47	2117	2127	166.97	327.98	509.91	2442
472.00	542.61	499.71	2117	2127	166.38	327.04	508.70	2242
474.00	545.13	502.23	2119	2129	165.62	325.78	507.02	2519
476.00	547.92	505.02	2122	2132	164.67	324.19	504.87	2786
478.00	550.87	507.97	2125	2136	163.61	322.40	502.41	2952
480.00	554.01	511.11	2130	2142	162.41	320.35	499.58	3145

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								3224
482.00	557.24	514.34	2134	2147	161.17	318.21	496.62	

ANALYST: R.BUNT 16-AUG-85 00:11:52 PROGRAM: GTRFRM 007.E08

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*  SCHLUMBERGER   *
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SYNTHETIC SEISMOGRAM TABLE

COMPANY	:	AMPOL EXPLORATION LIMITED
WELL	:	FAIRHOPE #1
FIELD	:	WILDCAT
COUNTY	:	PEP-98
STATE	:	VICTORIA
COUNTRY	:	AUSTRALIA
REFERENCE	:	FS2A.540,362

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

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

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

USER DEFINED MODELING

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

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

OUTPUT DATA

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

CHANNNEL NAMES

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

CHANNEL NAMES

CHAN 1 - TWOT.GMU.002.*
CHAN 2 - DSRD.GRF.006.*
CHAN 3 - INTV.GRF.007.*
CHAN 4 - RHOT.GRF.001.*
CHAN 5 - REFL.GRF.001.*
CHAN 6 - ATTE.GRF.001.*
CHAN 7 - PRIM.GRF.001.*
CHAN 8 - MULT.GMU.001.*
CHAN 9 - MUON.GMU.001.*

(GLOBAL PARAMETERS)			(VALUE)	
MODE OF PROC (GEOGRAM)	IGEOFL	:	0	
INITIALIZE CDP LOGIC	ICDP	:	0	
CDP TIME	CDPTIM	:	.200000	S
TIME SAMPLING (WST)	SRATE	:	2.00000	MS
TOP DEPTH OF PROCESSING	INIDEP	:	84.6000	M
BOTTOM DEPTH OF PROCESSI	IGESTP	:	518.000	M
INITIAL TWO WAY TRAVEL T	INITAU	:	.086980	S
SRD FOR GEOGRAM	SRDGEO	:	-30479.7	M
ELEVATION OF KELLY BUSHI	EKB	:	0	M
SRD TIME	SRDTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCPTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCREFL	:	-1.00000	
REFLECTION COEFF MAXIMUM	RCMAX	:	.300000	
RMS VELOCITY IN WELL	RMSVWE	:	2195.52	M/S
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

1 GR*
2 CALI*

(ZONED PARAMETERS)

		(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0
USER VELOC (CST)	LAYVEL	: 829.7900	M/S	30479.7	-	0

COMPANY : A-POL EXPLORATION LIMITED   WELL : FAIRHOPE #1

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
89.0	86.59	1986	1.933					
91.0	88.57	1985	1.929	-.001	1.00000	-.00112	-.00112	0
93.0	90.55	1982	1.962	.007	.99994	.00742	.00742	0
95.0	92.51	1957	1.904	-.021	.99949	-.02121	-.02119	.00002
97.0	94.47	1961	1.923	.006	.99946	.00585	.00575	-.00011
99.0	96.48	2011	1.957	.022	.99899	.02164	.02197	.00033
101.0	98.54	2056	2.008	.024	.99842	.02386	.02338	-.00048
103.0	100.54	2004	1.943	-.029	.99755	-.02945	-.02947	-.00002
105.0	102.50	1960	1.916	-.018	.99723	-.01797	-.01748	.00049
107.0	104.53	2025	1.976	.032	.99623	.03162	.03274	.00111
109.0	106.53	2001	1.933	-.017	.99594	-.01698	-.01871	-.00173
111.0	108.51	1978	1.943	-.003	.99593	-.00305	-.00491	-.00187
113.0	110.54	2030	1.949	.014	.99572	.01436	.01689	.00253
115.0	112.56	2020	1.927	-.008	.99565	-.00808	-.00700	.00108
117.0	114.54	1988	1.948	-.003	.99565	-.00258	-.00415	-.00157
119.0	116.55	2002	1.937	.001	.99565	.00091	-.00008	-.00099
121.0	118.58	2033	1.926	.005	.99562	.00480	.00689	.00209
123.0	120.60	2022	1.918	-.005	.99560	-.00488	-.00528	-.00040
125.0	122.63	2025	1.920	.001	.99560	.00121	-.00111	-.00232
127.0	124.66	2032	1.951	.010	.99550	.00978	.01247	.00269
129.0	126.70	2043	1.985	.011	.99538	.01103	.01100	-.00003
131.0	128.75	2052	1.867	-.028	.99458	-.02825	-.03012	-.00187
133.0	130.85	2095	1.908	.021	.99413	.02116	.02224	.00108
135.0	133.05	2201	1.957	.037	.99273	.03723	.03859	.00136
		2299	1.907	.009	.99266	.00861	.00626	-.00235

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
137.0	135.35	2246	1.955	.001	.99266	.00082	.00046	-.00036
139.0	137.59	2192	1.979	-.006	.99262	-.00590	-.00281	.00309
141.0	139.78	2262	2.018	.025	.99198	.02525	.02627	.00102
143.0	142.05	2218	2.013	-.011	.99186	-.01104	-.01577	-.00473
145.0	144.26	2207	1.998	-.006	.99182	-.00622	-.00863	-.00241
147.0	146.47	2144	2.004	-.013	.99165	-.01280	-.00683	.00597
149.0	148.62	2157	1.998	.002	.99165	.00157	-.00003	-.00161
151.0	150.77	2068	2.014	-.017	.99136	-.01700	-.01963	-.00262
153.0	152.84	2079	1.994	-.002	.99135	-.00244	-.00150	.00094
155.0	154.92	2108	2.011	.011	.99123	.01121	.01319	.00199
157.0	157.03	2148	2.013	.010	.99113	.00974	.00930	-.00044
159.0	159.18	2099	1.994	-.016	.99087	-.01612	-.01781	-.00168
161.0	161.27	2084	2.001	-.002	.99087	-.00178	.00086	.00264
163.0	163.36	2082	2.014	.003	.99086	.00276	.00336	.00061
165.0	165.44	2048	1.991	-.014	.99066	-.01386	-.01696	-.00310
167.0	167.49	2097	2.002	.015	.99046	.01437	.01389	-.00047
169.0	169.59	2141	2.040	.020	.99006	.01982	.02236	.00254
171.0	171.73	2077	2.022	-.020	.98967	-.01958	-.02101	-.00143
173.0	173.80	2062	1.990	-.012	.98954	-.01161	-.01286	-.00126
175.0	175.86	2059	2.016	.006	.98950	.00589	.00872	.00283
177.0	177.92	1998	1.951	-.031	.98853	-.03105	-.03194	-.00089
179.0	179.92	2035	1.983	.017	.98823	.01700	.01134	-.00566
181.0	181.96	2001	1.949	-.017	.98795	-.01676	-.01739	-.00063
183.0	183.96	2015	1.969	.009	.98788	.00855	.01399	.00544
185.0	185.97			.024	.98731	.02356	.02170	-.00186

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TDF) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
187.0	188.05	2080	2.002					
189.0	190.15	2101	2.006	.006	.98728	.00600	.00218	-.00382
191.0	192.38	2224	2.066	.043	.98543	.04267	.04736	.00469
193.0	194.52	2147	2.047	-.022	.98495	-.02179	-.02106	.00073
195.0	196.70	2178	2.035	.004	.98493	.00399	.00147	-.00252
197.0	198.87	2164	2.018	-.007	.98488	-.00716	-.00445	.00271
199.0	201.02	2149	2.018	-.003	.98487	-.00321	-.00460	-.00138
201.0	203.17	2155	2.012	0	.98487	-.00013	.00142	.00155
203.0	205.34	2174	2.016	.005	.98485	.00495	.00250	-.00245
205.0	207.57	2223	2.034	.016	.98460	.01547	.01685	.00137
207.0	209.79	2220	2.034	-.001	.98460	-.00071	.00304	.00375
209.0	212.11	2321	2.086	.035	.98340	.03440	.02931	-.00509
211.0	214.42	2313	2.060	-.008	.98334	-.00786	-.00377	.00409
213.0	216.78	2359	2.025	.001	.98334	.00115	.00061	-.00054
215.0	219.18	2404	2.057	.017	.98304	.01709	.01558	-.00151
217.0	221.46	2278	2.063	-.025	.98240	-.02500	-.02631	-.00130
219.0	223.68	2217	2.019	-.024	.98182	-.02393	-.02305	.00088
221.0	225.80	2122	1.972	-.034	.98071	-.03305	-.03260	.00045
223.0	228.05	2252	2.027	.044	.97885	.04271	.04372	.00101
225.0	230.29	2232	2.029	-.004	.97883	-.00398	-.00445	-.00047
227.0	232.51	2222	1.990	-.012	.97869	-.01176	-.01426	-.00250
229.0	234.82	2313	2.056	.036	.97739	.03571	.04400	.00829
231.0	236.97	2149	1.969	-.058	.97405	-.05710	-.05825	-.00115
233.0	239.16	2185	2.006	.018	.97374	.01735	.01337	-.00398
		2158	1.997	-.009	.97367	-.00857	-.01185	-.00328

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OF TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
235.0	241.31	2138	2.025	.002	.97366	.00230	.00014	-.00216
237.0	243.45	2171	2.033	.010	.97357	.00964	.00931	-.00033
239.0	245.62	2158	2.017	-.007	.97352	-.00674	-.01018	-.00344
241.0	247.78	2054	1.971	-.036	.97224	-.03531	-.02922	.00610
243.0	249.83	2340	2.067	.089	.96460	.08618	.08392	-.00226
245.0	252.17	2200	2.031	-.039	.96310	-.03803	-.03984	-.00181
247.0	254.37	2133	2.009	-.021	.96267	-.02032	-.01789	.00243
249.0	256.51	2376	2.087	.073	.95756	.07012	.07091	.00078
251.0	258.88	2378	2.063	-.005	.95754	-.00515	-.00476	.00039
253.0	261.26	1938	1.919	-.138	.93939	-.13181	-.13413	-.00232
255.0	263.20	2330	2.067	.129	.92386	.12078	.11298	-.00780
257.0	265.53	2127	2.004	-.061	.92045	-.05618	-.04576	.01042
259.0	267.66	2089	1.989	-.013	.92030	-.01177	-.01814	-.00637
261.0	269.75	2526	2.106	.123	.90642	.11301	.10132	-.01169
263.	272.27	2041	1.979	-.137	.88951	-.12381	-.09427	.02954
265.0	274.31	2225	2.013	.051	.88716	.04568	.04269	-.00299
267.0	276.54	2359	2.056	.040	.88575	.03532	.00903	-.02629
269.0	278.90	2246	2.058	-.024	.88524	-.02123	.00921	.03044
271.0	281.14	2151	2.048	-.024	.88473	-.02138	-.02746	-.00608
273.0	283.29	1980	1.942	-.068	.88067	-.05993	-.08229	-.02235
275.0	285.27	2425	2.117	.143	.86256	.12627	.14715	.02088
277.0	287.70	2203	2.007	-.074	.85778	-.06421	-.05474	.00947
279.0	289.90	2232	2.065	.021	.85742	.01777	-.00091	-.01869
281.0	292.13	2147	2.029	-.028	.85673	-.02422	-.01606	.00816
283.0	294.28			.071	.85238	.06108	.06498	.00391

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2390	2.103					
285.0	296.67			-.050	.85024	-.04266	-.03967	.00300
		2212	2.055					
287.0	298.88			.007	.85020	.00614	-.00553	-.01166
		2186	2.109					
289.0	301.07			-.051	.84798	-.04340	-.05061	-.00721
		2059	2.022					
291.0	303.13			-.029	.84727	-.02464	-.00859	.01604
		1968	1.996					
293.0	305.10			.054	.84480	.04575	.01914	-.02661
		2123	2.062					
295.0	307.22			.005	.84478	.00381	.00957	.00576
		2175	2.031					
297.0	309.39			.035	.84377	.02926	.04760	.01834
		2240	2.113					
299.0	311.63			-.007	.84372	-.00588	-.00184	.00404
		2232	2.092					
301.0	313.87			-.011	.84361	-.00965	-.00989	-.00024
		2213	2.062					
303.0	316.08			-.015	.84342	-.01287	-.02062	-.00775
		2160	2.049					
305.0	318.24			.026	.84284	.02216	.01081	-.01134
		2238	2.085					
307.0	320.48			.011	.84273	.00934	.02044	.01110
		2279	2.092					
309.0	322.76			-.046	.84091	-.03917	-.04515	-.00598
		2108	2.061					
311.0	324.86			-.021	.84053	-.01800	-.01493	.00308
		2067	2.014					
313.0	326.93			.041	.83914	.03418	.02450	-.00968
		2186	2.066					
315.0	329.12			-.008	.83909	-.00644	-.00872	-.00228
		2130	2.088					
317.0	331.25			-.028	.83843	-.02343	-.00270	.02073
		2028	2.074					
319.0	333.28			-.002	.83843	-.00146	-.02425	-.02279
		2009	2.086					
321.0	335.28			.016	.83822	.01328	.03296	.01967
		2077	2.083					
323.0	337.36			-.002	.83822	-.00191	-.02043	-.01852
		2093	2.058					
325.0	339.45			-.017	.83798	-.01416	-.01389	.00027
		2056	2.025					
327.0	341.51			.024	.83750	.01991	.03659	.01668
		2112	2.068					
329.0	343.62			.004	.83749	.00298	-.00823	-.01121
		2124	2.070					
331.0	345.75			.033	.83655	.02804	.01853	-.00951
		2172	2.165					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
333.0	347.92	2202	2.073	-.015	.83637	-.01230	.01323	.02553
335.0	350.12	2214	2.131	.016	.83615	.01366	.02195	.00830
337.0	352.33	2158	2.092	-.022	.83574	-.01846	-.04018	-.02173
339.0	354.49	2127	2.121	0	.83574	-.00026	.02404	.02429
341.0	356.62	2115	2.092	-.010	.83567	-.00800	-.02793	-.01994
343.0	358.73	2133	2.153	.019	.83538	.01554	.01529	-.00025
345.0	360.87	2048	2.075	-.039	.83411	-.03248	-.03111	.00137
347.0	362.91	2126	2.065	.016	.83389	.01364	.00223	-.01141
349.0	365.04	2183	2.096	.021	.83353	.01724	.02745	.01021
351.0	367.22	2116	2.089	-.017	.83328	-.01441	-.01771	-.00330
353.0	369.34	2160	2.149	.024	.83279	.02036	.01630	-.00406
355.0	371.50	2306	2.136	.030	.83205	.02476	.05396	.02919
357.0	373.80	2241	2.124	-.017	.83181	-.01430	-.03116	-.01686
359.0	376.05	2264	2.124	.005	.83178	.00434	.01240	.00806
361.0	378.31	2295	2.109	.003	.83178	.00246	-.00213	-.00459
363.0	380.60	2321	2.131	.011	.83167	.00922	.00039	-.00883
365.0	382.92	2334	2.132	.003	.83167	.00243	.02317	.02073
367.0	385.26	2402	2.178	.025	.83114	.02088	-.00540	-.02627
369.0	387.66	2232	2.143	-.045	.82948	-.03717	-.01222	.02495
371.0	369.89	2173	2.170	-.007	.82944	-.00587	-.01666	-.01079
373.0	392.07	2180	2.162	0	.82944	-.00022	.00681	.00703
375.0	394.25	2210	2.127	-.001	.82944	-.00121	-.00969	-.00848
377.0	396.46	2380	2.168	.047	.82763	.03868	.01908	-.01960
379.0	398.84	2377	2.205	.008	.82758	.00653	.03705	.03052
381.0	401.21			-.030	.82684	-.02468	-.03381	-.00913

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
383.0	403.51	2291	2.155					
385.0	405.82	2311	2.212	.017	.82660	.01412	-.00059	-.01471
387.0	408.15	2336	2.200	.003	.82660	.00233	.00949	.00716
389.0	410.63	2475	2.190	.026	.82602	.02190	.03601	.01411
391.0	413.10	2471	2.257	.014	.82584	.01191	.00207	-.00984
393.0	415.36	2263	2.257	-.044	.82425	-.03633	-.01109	.02524
395.0	417.54	2181	2.133	-.047	.82245	-.03850	-.03139	.00711
397.0	419.80	2256	2.191	.030	.82169	.02502	-.03986	-.06488
399.0	422.03	2232	2.116	-.023	.82126	-.01863	.03566	.05429
401.0	424.20	2169	2.144	-.008	.82122	-.00638	-.03886	-.03249
403.0	426.42	2223	2.073	-.005	.82120	-.00385	-.02277	-.01892
405.0	428.61	2192	2.132	.007	.82116	.00574	.04120	.03546
407.0	430.72	2110	2.118	-.022	.82075	-.01823	-.04696	-.02874
409.0	432.93	2201	2.106	.018	.82049	.01480	.03091	.01612
411.0	435.02	2098	2.092	-.027	.81988	-.02221	-.00893	.01328
413.0	437.07	2050	2.030	-.027	.81930	-.02185	-.05074	-.02889
415.0	439.15	2078	2.112	.026	.81873	.02168	.03138	.00970
417.0	441.12	1970	2.051	-.041	.81732	-.03390	-.01907	.01483
419.0	443.18	2060	2.078	.029	.81664	.02371	-.00742	-.03113
421.0	445.20	2015	2.042	-.020	.81632	-.01610	-.00674	.00936
423.0	447.11	1915	1.989	-.039	.81510	-.03159	-.00419	.02740
425.0	449.16	2048	2.085	.057	.81244	.04653	-.01150	-.05803
427.0	451.20	2040	2.085	-.002	.81244	-.00155	.03675	.03830
429.0	453.33	2127	2.095	.023	.81200	.01883	.04301	.02418
		2055	2.034	-.032	.81117	-.02592	-.04623	-.02031

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
431.0	455.38							
433.0	457.42	2043	2.014	-.008	.81113	-.00635	-.02069	-.01434
435.0	459.45	2023	2.070	.009	.81106	.00700	.01736	.01036
437.0	461.51	2058	2.103	.017	.81084	.01352	.00124	-.01228
439.0	463.51	2000	2.058	-.025	.81033	-.02042	-.01241	.00801
441.0	465.53	2029	2.070	.010	.81024	.00824	-.01308	-.02132
443.0	467.58	2044	2.069	.003	.81023	.00267	.05734	.05466
445.0	469.60	2017	2.064	-.008	.81018	-.00623	-.04685	-.04062
447.0	471.63	2035	2.072	.006	.81015	.00515	.02700	.02185
449.0	473.58	1951	2.043	-.028	.80952	-.02269	-.01904	.00365
451.0	475.56	1978	2.075	.014	.80935	.01164	-.00961	-.02125
453.0	477.58	2022	2.123	.023	.80894	.01826	.03914	.02088
455.0	479.56	1974	2.054	-.029	.80828	-.02308	-.02541	-.00233
457.0	481.65	2091	2.128	.046	.80654	.03750	.02053	-.01698
459.0	483.81	2164	2.161	.025	.80603	.02020	.00751	-.01269
461.0	486.14	2324	2.274	.061	.80303	.04917	.09163	.04246
463.0	488.46	2322	2.263	-.003	.80303	-.00239	-.00176	.00063
465.0	491.01	2553	2.386	.074	.79864	.05933	.05641	-.00293
467.0	493.70	2692	2.411	.032	.79785	.02519	.04684	.02165
469.0	496.23	2525	2.267	-.062	.79473	-.04986	-.04750	.00237
471.0	498.60	2370	2.272	-.031	.79398	-.02450	-.03445	-.00995
473.0	500.79	2195	2.285	-.035	.79298	-.02805	-.05768	-.02962
475.0	503.65	2854	2.492	.173	.76928	.13711	.16316	.02605
477.0	506.36	2710	2.489	-.027	.76874	-.02040	-.02895	-.00855
479.0	509.47	3109	2.501	.071	.76487	.05451	.07082	.01631
				-.002	.76487	-.00153	.01077	.01230

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		3049	2,540					
481.0	512.52	3562	2,529	.075	.76051	.05774	.07055	.01281
483.0	516.08	3712	2,492	.013	.76038	.01004	-.00222	-.01227
485.0	519.79			0	0	0	.00644	.00644
487.0							.00261	.00261
489.0							-.00925	-.00925
491.0							.00300	.00300
493.0							.01364	.01364
495.0							-.04050	-.04050
497.0							.04177	.04177
499.0							-.00730	-.00730
501.0							-.01048	-.01048
503.0							-.00408	-.00408
505.0							-.01591	-.01591
507.0							.02503	.02503
509.0							-.01360	-.01360
511.0							-.02177	-.02177
513.0							.00712	.00712
515.0							.02736	.02736
517.0							-.02312	-.02312
519.0							.02237	.02237
521.0							-.00382	-.00382
523.0							-.02501	-.02501
525.0							.03051	.03051
527.0							-.03501	-.03501

COMPANY : AMPOL EXPLORATION LIMITED WELL : FAIRHOPE #1

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
529.0							.01081	.01081
531.0							.00374	.00374
533.0							.00566	.00566
535.0							-.01353	-.01353
537.0							.01097	.01097
539.0							.00456	.00456
541.0							-.00556	-.00556
543.0							-.00648	-.00648
545.0							.02129	.02129
547.0							-.03000	-.03000
549.0							.04076	.04076
551.0							-.00873	-.00873
553.0							-.01132	-.01132
555.0							.02070	.02070
557.0							-.00448	-.00448
559.0							-.01469	-.01469
561.0							-.01588	-.01588
563.0							.02571	.02571
565.0							-.02390	-.02390
567.0							.01580	.01580
569.0							.00874	.00874
571.0							-.00572	-.00572
573.0							.01659	.01659
575.0							-.05120	-.05120
577.0							.00523	.00523

TWO WAY TRAVEL TIME MS	DEPTH FROM SRC (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
579.0							.01037	.01037
581.0							-.01265	-.01265
583.0							.00226	.00226
585.0							-.01665	-.01665
587.0							.01453	.01453
589.0							.01263	.01263
591.0							-.00404	-.00404
593.0							.01391	.01391
595.0							-.03095	-.03095
597.0							-.01326	-.01326
599.0							.00544	.00544
601.0							-.00845	-.00845
603.0							.01009	.01009
605.0							.01887	.01887
607.0							-.01856	-.01856
609.0							.02204	.02204
611.0							.01863	.01863
613.0							-.02887	-.02887
615.0							-.01046	-.01046
617.0							.02381	.02381
619.0							-.00877	-.00877
621.0							-.00883	-.00883
623.0							-.00671	-.00671
625.0							.01749	.01749

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
627.0							.01437	.01437
629.0							-.01868	-.01868
631.0							.02727	.02727
633.0							-.04679	-.04679
635.0							.02108	.02108
637.0							-.03601	-.03601
639.0							.04754	.04754
641.0							-.02791	-.02791
643.0							.01599	.01599
645.0							.00850	.00850
647.0							-.03640	-.03640
649.0							.05436	.05436
651.0							-.03287	-.03287
653.0							-.01716	-.01716
655.0							-.01311	-.01311
657.0							.03363	.03363
659.0							.01532	.01532
661.0							-.04112	-.04112
663.0							.04742	.04742
665.0							-.02527	-.02527
667.0							.03837	.03837
669.0							-.05536	-.05536
671.0							-.00013	-.00013
673.0							.01219	.01219
675.0							-.00123	-.00123

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
677.0							.00896	.00896
679.0							.01420	.01420
681.0							-.00373	-.00373
683.0							.00908	.00908

APPENDIX 10

SURVEYORS REPORT

Crowther & Sadler Pty. Ltd.

LICENSED SURVEYORS
P.O. BOX 722, BAIRNSDALE, 3875
TELEPHONE (051) 52 5011

Our Ref. 4710

Your Ref.

1st November, 1985

Ampol Exploration Limited,
P.O. Box 907,
NORTH SYDNEY, 2060

Dear Sir,

Please find listed below co-ordinates as requested for the drill sites situated to the south of Bairnsdale.

The co-ordinates are as follows:-

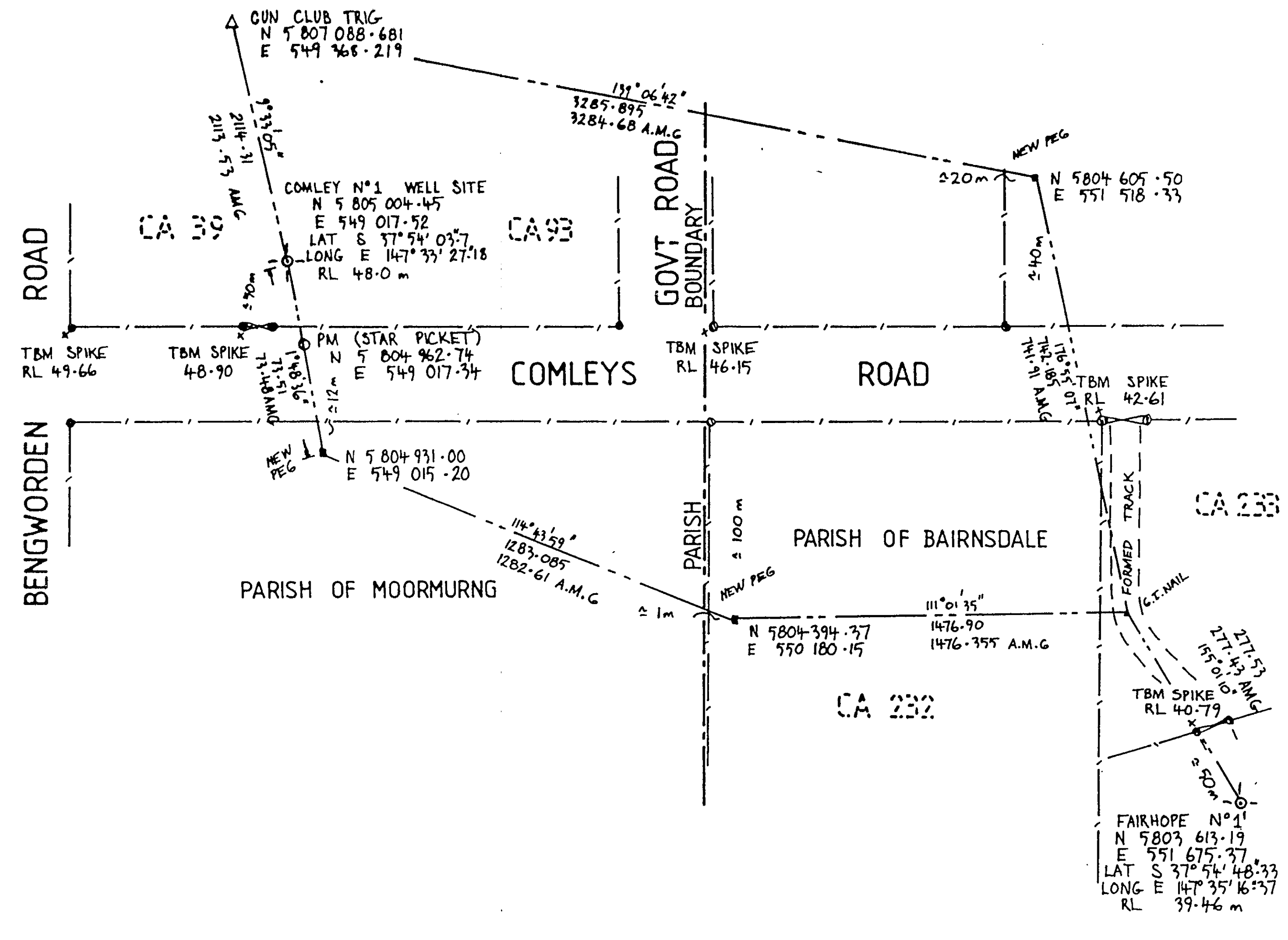
Comley No. 1	A.M.G. Zone 55	E 549 017·52
		N 5 805 004·45
	Latitude	S 37°54'03".717
	Longitude	E 147°33'27".181
Fairhope No. 1	A.M.G. Zone 55	E 551 675·366
		N 5 803 613·188
	Latitude	S 37°54'48".327
	Longitude	E 147°35'16".37
Paynesville No. 1	A.M.G. Zone 55	E 559 117·6
		N 5 803 391·00
	Latitude	S 37°54'53"
	Longitude	E 147°40'21".2

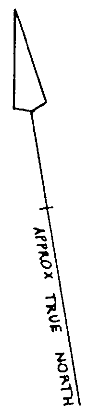
If you require any additional information please do not hesitate to contact me.

Yours faithfully,

L. Watson

CROWTHER & SADLER PTY. LTD.





NOTATIONS

CO-ORDINATES ARE A.M.G ZONE 55

LEVELS ARE TO A.H.D

DATUM OF LEVELS PM 37 50·893 m

LEVELS TAKEN ON TOP OF CASING

WELL LOCATION DIAGRAM
REFERENCE MARK PLAN

COUNTY TANJIL

PARISH BAIRNSDALE AND MOORMURNG

COMLEY N° 1
FAIRHOPE N° 1

CROWTHER AND SADLER PTY LTD
2/66 M^c CULLOCH STREET, PO BOX 722
BAIRNSDALE 3875
(051) 525011

4710

ENCLOSURES

ENCLOSURES

PE601148

This is an enclosure indicator page.
The enclosure PE601148 is enclosed within the container PE902393 at this location in this document.

The enclosure PE601148 has the following characteristics:

```
      ITEM_BARCODE = PE601148
 CONTAINER_BARCODE = PE902393
              NAME = Composite Well Log
             BASIN = GIPPSLAND
            PERMIT =
              TYPE = WELL
           SUBTYPE = COMPOSITE_LOG
       DESCRIPTION = Composite Well Log. Enclosure 1 of WCR.
                     Scale 1:200.
           REMARKS =
      DATE_CREATED = 30/06/1985
     DATE_RECEIVED = 12/12/1985
              W_NO = W910
         WELL_NAME = Fairhope-1
        CONTRACTOR = Ampol Exploration Ltd
      CLIENT_OP_CO = Ampol Exploration Ltd
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE601149

This is an enclosure indicator page.
The enclosure PE601149 is enclosed within the container PE902393 at this location in this document.

The enclosure PE601149 has the following characteristics:

ITEM_BARCODE =	PE601149
CONTAINER_BARCODE =	PE902393
NAME =	Composite Well Log
BASIN =	GIPPSLAND
PERMIT =	
TYPE =	WELL
SUBTYPE =	COMPOSITE_LOG
DESCRIPTION =	Composite Well Log. Enclosure 2 of WCR. Scale 1:500.
REMARKS =	
DATE_CREATED =	20/07/1985
DATE_RECEIVED =	12/12/1985
W_NO =	W910
WELL_NAME =	Fairhope-1
CONTRACTOR =	Schlumberger
CLIENT_OP_CO =	Ampol Exploration Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE603209

This is an enclosure indicator page.
The enclosure PE603209 is enclosed within the container PE902393 at this location in this document.

The enclosure PE603209 has the following characteristics:

```
     ITEM_BARCODE = PE603209
CONTAINER_BARCODE = PE902393
             NAME = Fairhope 1 Mudlog
            BASIN = GIPPSLAND
           PERMIT = PEP 98
             TYPE = WELL
          SUBTYPE = MUD_LOG
      DESCRIPTION = Fairhope 1 Mudlog. Enclosure 3 of WCR.
          REMARKS =
     DATE_CREATED = 29/06/85
    DATE_RECEIVED = 12/12/85
             W_NO = W910
        WELL_NAME = Fairhope-1
       CONTRACTOR = Geoservices overseas S.A.
     CLIENT_OP_CO = Ampol
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE902394

This is an enclosure indicator page.
The enclosure PE902394 is enclosed within the container PE902393 at this location in this document.

The enclosure PE902394 has the following characteristics:

ITEM_BARCODE =	PE902394
CONTAINER_BARCODE =	PE902393
NAME =	Vertical Seismic Profile
BASIN =	GIPPSLAND
PERMIT =	
TYPE =	WELL
SUBTYPE =	VELOCITY_CHART
DESCRIPTION =	Vertical Seismic Profile
REMARKS =	
DATE_CREATED =	31/08/1985
DATE_RECEIVED =	12/12/1985
W_NO =	W910
WELL_NAME =	Fairhope-1
CONTRACTOR =	Schlumberger
CLIENT_OP_CO =	Ampol Exploration Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE601150

This is an enclosure indicator page.
The enclosure PE601150 is enclosed within the container PE902393 at this location in this document.

The enclosure PE601150 has the following characteristics:

ITEM_BARCODE = PE601150
CONTAINER_BARCODE = PE902393
NAME = Seismic Calibration Log
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Seismic Calibration Log
REMARKS =
DATE_CREATED = 16/08/1985
DATE_RECEIVED = 12/12/1985
W_NO = W910
WELL_NAME = Fairhope-1
CONTRACTOR = Schlumberger
CLIENT_OP_CO = Ampol Exploration Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE902395

This is an enclosure indicator page.
The enclosure PE902395 is enclosed within the container PE902393 at this location in this document.

The enclosure PE902395 has the following characteristics:

ITEM_BARCODE =	PE902395
CONTAINER_BARCODE =	PE902393
NAME =	Synthetic Seismogram - Geogram
BASIN =	GIPPSLAND
PERMIT =	
TYPE =	WELL
SUBTYPE =	SYNTH_SEISMOGRAM
DESCRIPTION =	Synthetic Seismogram - Geogram
REMARKS =	
DATE_CREATED =	16/08/1985
DATE_RECEIVED =	12/12/1985
W_NO =	W910
WELL_NAME =	Fairhope-1
CONTRACTOR =	Schlumberger
CLIENT_OP_CO =	Ampol Exploration Ltd

(Inserted by DNRE - Vic Govt Mines Dept)