Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

DEPT. NAT. RES & ENV

PE907681

Well Summary
Stoneyford-1 (W849)

PEP 100

Otway Basin

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

FILE COVER INSTRUCTIONS FOR ACTION OFFICERS

1. FOLIO NUMBERS: Each subject paper attached to a file is to be given a consecutive number by the attaching officer. Papers must not be removed from or attached to a file without approval.
2. REFERRAL TO OTHER OFFICERS: When an Officer completes action on the file and further action is required by some other Officer, please initial Column (4) and on the next vacant line, enter the relevant folio number in Column (1), indicate to whom the file is to be forwarded in Column (2) and record the date in Column (3).
3. BRING UP MARKINGS: When action on a file is required at a later date, the officer will initial Column (4) and, on the next vacant line, enter the relevant folio number in Column (1), then write "B/U" followed by the action officer's name in Column (2) and the date the file is required in Column (3).
4. PUTAWAY MARKINGS: When ALL action on a file is completed the officer concerned will initial Column (4) and, on the next vacant line, write "P/A" in column (2).

REGISTRY MUST BE NOTIFIED OF ANY FILE MOVEMENTS BETWEEN OFFICERS

LOCATION

Well Summary Stoneyford-1 (W849)

Well Summary; Stoneyford-1

Contents

Well Summary
Stoneyford-1
(W849)

1.0 Well Completion Report

1.0 Well Completion Report

STONEYFORD - 1
W.C.R

SUMMARY

GEOLOGICAL

Stoneyford - 1 was drilled over a 15 day period from the 15th January to the 29th January, 1984, as a wildcat exploration well in the Colac area, P.E.P.100, Otway Basin, Victoria.

This well was designed to test the Lower Cretaceous sandstone unit at the base of the Eumeralla Formation, called the Pretty Hill Sandstone. The Pretty Hill Sandstone was successfully located and had good reservoir potential, but did not contain any signs of hydrocarbons.

The Eumeralla Formation has good to excellent hydrocarbon generative potential, however the source material is only marginally mature and has not yet reached the peak generation stage. Organic matter examined over the Otway Group interval is of humic type and most likely to generate mainly gas with a subordinate amount of oil. There were no suitable sandstone reservoir targets within the Eumeralla Formation over the Stoneyford Prospect.

SUMMARY.

ENGINEERING

Stoneyford - 1 was spudded at 00.00hrs. on the 15th January, 1984. Total depth was reached at 1203m. on the 26th January at 10.30hrs. The rig was released at 07.30 hrs. on the 29th January.

Prior to spud in, extensive site preparations were carried out. Three kilometres of access road were constructed and the site was prepared in very hard basalt rock conditions typical of the Stoney Rises area. A water well and a test bore were drilled on site to establish water supply and check drilling conditions in the basalt layer. The static bore water head was at wellhead surface level and the basalt was 26m. thick.

The bore produced 10,000 gallons per hour from the basalt at 22m. RKB. The static bore head was at wellhead surface level.

A coring rig was used to install 7m. of 24 inch conductor pipe and start the rat hole to 4m. After rig up, a further 24 hrs were required to complete the "rat" and "mouse" holes, the difficulty being hard rock, water and loose cavings.

A 17½ inch hole was drilled to 59m. The drilling rate was slow through the basalt (av. 1.2m/hr.) but quickened up once into the underlying Gellibrand Marl. The 13 3/8" casing was run and cemented to 57.5m. After pressure testing the stack to 5500 kPa the casing shoe was drilled out to 65m. and a leak off test performed.

The 12¼ inch hole was drilled to 59m. The drilling rate was slow through the basalt (av. 1.2m/hr.) but quickened up once into the underlying Gellibrand Marl. The 13 3/8" casing was run and cemented to 57.5m. After pressure testing the stack to 5500 kPa the casing shoe was drilled out to 65m. and a leak off test performed.

The 12¼" hole was drilled to 352m. Maximum deviation to this point was 3/4°. Schlumberger Seaco Inco. ran a number of wireline logs and then the 9 5/8" casing was installed and cemented to 347m. The stack was re-rigged and pressure tested to 10,300 kPa. The casing shoe was drilled out and a leak off test performed. Formation leak off occurred at 3264 kPa giving an equivalent mud density of 16.9 ppm.

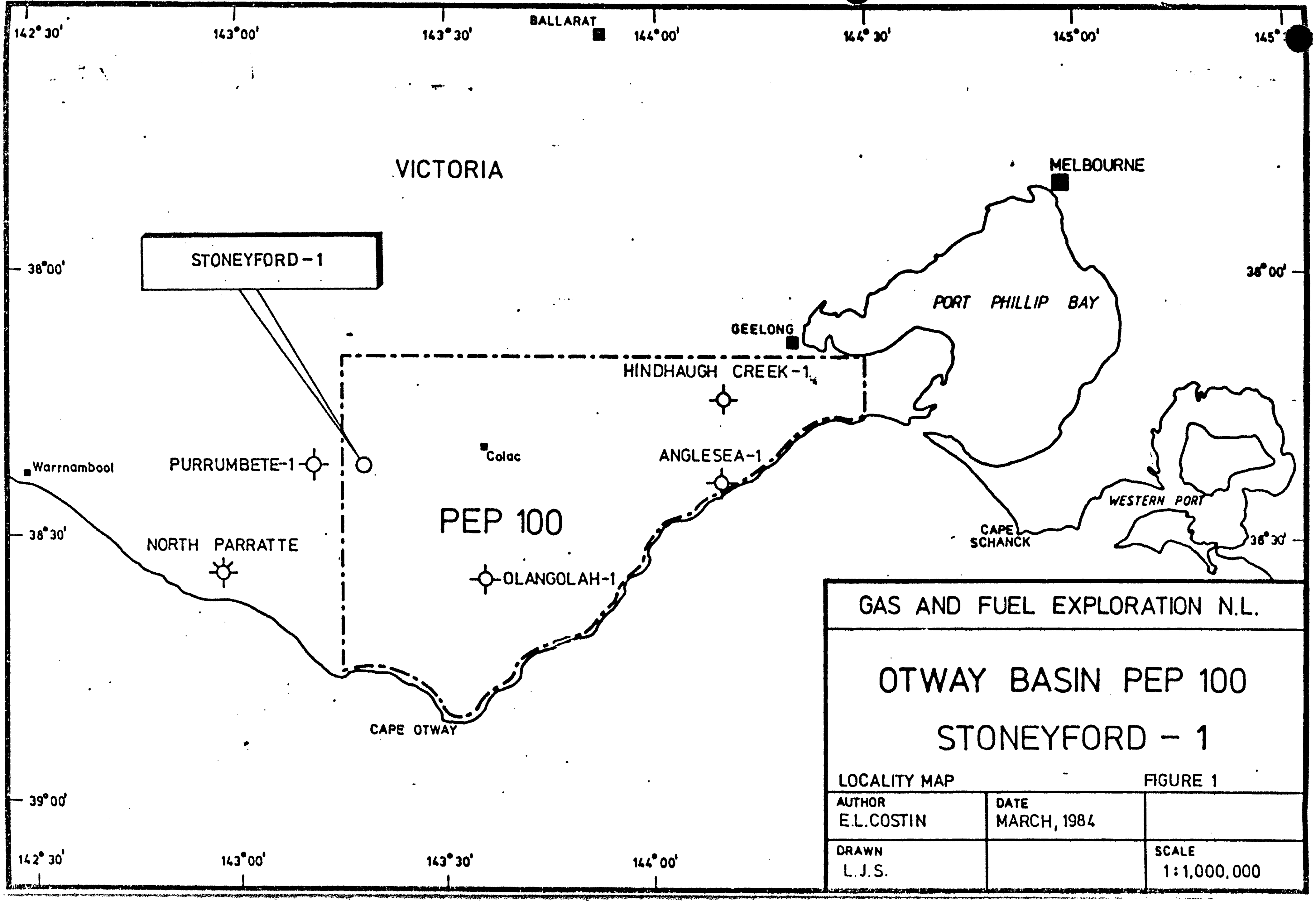
The 8¼ inch hole was drilled through to T.D. at 1203m. Some minor tight hole problems were noticed over the 500 to 670m. interval but these disappeared after reducing the mud system fluid loss slightly. Deviation increased to a max. of 6°, a packed hole assembly held it to this over the interval 924 to 1203m. No serious hole problems were encountered. At T.D., a number of wireline logs were run and a velocity survey carried out. The hole was plugged over two zones, 1100 to 1050m. and 430 to 208m., as well as at the surface.

Stoneyford - 1 was abandoned on the 29th January, 1984.

The following is a brief bit record for Stoneyford - 1:

Bit No.	Size	Type	Depth Run	Condition T.	B.	G.
1	17½	OSC 3AJ re-run	53m.	3	1	in
2	12¼	J1	293m.	1	1	in
3	8½	J1	321m.	4	1	1/16
4	8½	J2	251m.	4	1	in
5	8½	J2	241m.	5	2	1/8
6	8½	J3	1168m.	4	2	in

G. ALLEN.



GAS AND FUEL EXPLORATION N.L.

OTWAY BASIN PEP 100

STONEYFORD - 1

LOCALITY MAP

FIGURE 1

AUTHOR	DATE	
E.L.COSTIN	MARCH, 1984	
DRAWN L.J.S.		SCALE 1:1,000,000

1. INTRODUCTION.

The prime objective of the Stoneyford - 1 program was to test the Pretty Hill Sandstone reservoir on structure. The Stoneyford Structure within the basal portion of the Otway Group is fault controlled, with a southerly dip closure and some roll over in the east-west sense. The northern boundary of the structure is fault downthrown to the north.

It was anticipated that the Eumeralla Formation would provide both source and seal for the Pretty Hill Sandstone Reservoir. Migration of hydrocarbons was proposed to have occurred laterally and down dip from sections of the Eumeralla situated in deeper sections of the Colac Trough Complex and into the Pretty hill Sandstone reservoir.

A possible secondary target area was Intra Eumeralla Sandstone bodies of sufficient extent and with adequate reservoiring properties.

2. WELL HISTORY.

2.1 Location.

Co-ordinates: Latitude 38° 21' 06.1"S
Longitude 143° 18' 47.3"E.

Geophysical Control: 120m. west of vibrator point 496 Line 83-02, G.F.E. Colac Seismic (1) Survey.

Property: Parish: Pomborneit
Shire: Heytesbury
County: Heytesbury
Allotment No.18A.

Owners: B.J. and J.E. Enticott.

2.2 General.

Well Name: Stoneyford - 1

Operator: Gas and Fuel Exploration N.L., (G.F.E.)
171 Flinders Street,
Melbourne, 3000.

Tenement Holder: G.F.E.

Petroleum Tenement: P.E.P. 100.

Elevation: Ground Level - 148m.
Kelly Bushing - 154m.
All depths measured from R.K.B.

Total Depth: Driller 1203m.
Schlumberger 1205m.

Date Drilling Commenced: 14/1/84 at 2400hrs.

Date Drilling Completed: 27/1/84 at 1030hrs.

Date Rig Released: 29/1/84 at 0730hrs.

Drilling time to total depth: 12 days

<u>Status:</u> Plugged and abandoned, dry hole.

<u>Total Cost:</u> $564,484.00 as at 30th April, 1984.

2.3 Drilling Data.

Drilling Contractor: Petroleum Drilling Services (Australia) Pty. Ltd.,(P.D.S.A.) 5 Westcombe St., Darra, Queensland, 4076.

Drilling Rig: P.D.S.A. Rig 1.

Draw Works: Kremco K750T Double Drum, 860 H.P. Max. Rating.

Mud Pumps: Two Oilwell model PT 600 7inch x 8inch single acting.

Blowout Preventors: Annular Hydril Type 4K 13 5/8" 3000 lbs. Ram Type Hydril Double 13 5/8", 5000 lbs. Wagner 160 gallon capacity.

2.4 Road Works and Site Preparation/Restoration.

An access carriageway 3km. long was constructed to cater for heavy vehicular traffic entering the well site.

Site preparation involved levelling an area 100m. square and then laying of road metal over an area approximately 30m. x 60m. in size around the drill hole location.

Extensive site clean up activities commenced after release of the rig. The purpose of this program was to remove evidence of the drilling operation and restore the site towards its natural bushland setting. The sump however was left at the owners request for water storage purposes.

2.5 Hole and Drilling Fluid Characteristics.

Report by Geofluids - Appendix I.

2.6 Water Supply.

A 22m. deep water bore was drilled at the Stoneyford site by W.L. Sides and Son Pty. Ltd. to provide drilling fluid for the Stoneyford - 1 operation. The well was capable of producing 10,000 gallons per hour from the Basalt aquifer.

2.7 Casing and Cementing Details.

2.7.1 Surface Casing

No. of Joints	6
Size	13 3/8"
Weight	48 lb/ft.
Grade	H-40
Threads	RND
Range	2
Metres (less threads)	59.69
Centralizers	2
Float Collar	1
Shoe	at 57.52m.
Cement	150 class A "neat" cement 90 class A with 2% $CaCl_2$ additive
Cemented to	Surface
Method	Displacement

2.7.2 Intermediate Casing.

No. of Joints	29
Size	9 5/8"
Weight	36 lb/ft.
Grade	J-55
Threads	RND
Range	3
Metres (less threads)	346.69
Centralizers	3
Float Collar	1
Shoe	at 346.87
Cement	450 sacks class A "neat" cement
Cement to	Surface
Method	Displacement

Equipment: Haliburton truck, mounted pump.

2.8 Plugging.

Plug No.1	:	at 1100 - 1050m.
Plug No.2a	:	at 430 - 379m.
Plug No.2b	:	at 379 - 208m.
Plug NO.3	:	at 20 - 0m.

Plug No. 1. The V.D.M.E. requested a plug to be placed at 1100-1050m. because of the porous nature of the formation at that particular interval.

Plug No. 2a. The first attempt to seal the interval between 430-208m. was tagged at 379m. The diameter of the hole was larger than anticipated, therefore the volume of cement used was not sufficient to reach the required depth.

Plug No. 2b. A second plug was then laid at 379m. and tagged at 208m.

Plug No. 3. A surface plug was then placed from 20m. to the surface.

The total amount of class A cement used for the plugging operation was 304 sacks.

2.9 Formation Sampling and testing.

2.9.1 Cuttings:

Ditch Cuttings were collected from the shale shakers at five metre intervals from the surface to total depth.

One large unwashed and sun dried sample was collected every 50m. from the surface to total depth.

Washed and dried samples were stored in polythene bags, unwashed samples in calico bags.

Samples were distributed as follows:

2 washed and dried, 1 unwashed and sun dried, 1 large unwashed and sun dried.	Gas and Fuel Exploration N.L., 171 Flinders Street, Melbourne, 3000.
1 washed and dried	Department of Minerals and Energy, Victoria.

Unwashed and sun dried samples selected from various depths were distributed as follows for analysis:

For Palynology	Mines Administration Pty. Ltd., 10 Eagle Place, Brisbane.
For Geochemistry	Analabs, 52 Murray Road, Welshpool, W.A.
For Organic Petrology	Keirville Konsultants Pty. Ltd., 7 Dallas Street, Keirville, N.S.W. 2500.

2.9.2 Sidewall Cores

Twenty sidewall cores were attempted of which nineteen recovered a sample, and one (sidewall core number 20) failed.

See Appendix No.3 for sidewall core descriptions.

Cores were attempted at the following depths:

No.1 at	1193m.	No.11 at	552m.
No.2 at	1181m.	No.12 at	551m.
No.3 at	1172m.	No.13 at	550m.
No.4 at	1155.5m.	No.14 at	549m.
No.5 at	1125m.	No.15 at	548m.
No.6 at	1104.5m.	No.16 at	546.5m.
No.7 at	559m.	No.17 at	538.5m.
No.8 at	557m.	No.18 at	538m.
No.9 at	554m.	No.19 at	422m.
No.10 at	553m.	No.20 at	413m.

Sidewall core No.4 was sent for Palynological Analysis to Mines Administration Pty. Ltd., 10 Eagle Place, Brisbane.

2.9.3 Conventional Cores

No conventional cores were taken.

2.9.4 Formation Testing

No formation tests were conducted.

2.10 Logging and Surveys

2.10.1 Logging

A standard EXLOG unit was used to provide penetration rate, pump rate, mud pit volume and continuous gas monitoring. The formation evaluation log is included as part of the Composite Well Log in Enclosure No.1.

2.10.2 Wireline Logging

Using an off shore skid mounted unit, Schlumberger Seaco Inc. personnel recorded the following logs in an open hole.

Interval (m)		
	Run 1.	
57-348	Deep induction - Spherically focused Resistivity	ISF
	Gamma Ray	GR
	Spontaneous Potential	SP
	Run 2.	
348-672	Compensated Neutron and formation Density	CNL/FDC
	Caliper	CAL
	Gamma Ray	GR
348-1205	Micro Spherically Focused Log	MSFL
	Dual Laterolog	DLL
	Caliper	CAL
	Spontaneous Potential	SP
	Gamma Ray	GR
	Borehole Compensated Sonic Log	BHCS
	Gamma Ray	GR

Cont'd....

348-1205 Cont'd.	Run 2 Cont'd. High Resolution Dipmeter Tool Sidewall Sampler	 HDT CST

2.10.3 Deviation Surveys

A Totco double recorder was used to measure hole deviation of up to 8 degrees.

Details of the deviation survey results are tabulated as follows:

DEPTH (M)	DEGREES	DEPTH (M)	DEGREES
59.3	0°	863	4°
142	3/4°	911	4½°
254	½°	976	5°
352	0°	1001	5¼°
480	3/4°	1039	5½°
587	1°	1109	6°
682	1½°	1143	6°
730	3°	1153	7°
759	2 3/4	1191	5 3/4°

2.10.4 Velocity Survey

Schlumberger recorded a velocity survey at total depth, the results are recorded in Appendix No.8 and Enclosure No.9.

3. GEOLOGY.

3.1 Regional Geology.

The Otway Basin is a west-northwest trending rough, filled with up to 8000m. of Mesozoic to Tertiary age sediments and minor volcanics.

The basin extends from Cape Jaffa in South Australia for approximately 360km to the King Island - Mornington Peninsular Basement High in the east. The northern margin of the basin is taken as the limit of Early Cretaceous to Tertiary sedimentation marked by an approximate boundary line running 60km. inland and parallel to the present day coastline (Fig. 2).

To the northeast, Otway Group sediments pitch beneath Tertiary group sediments north of Anglesea and re-emerge as an isolated outlier in the Barrabool Hills, where they abut against Paleozoic rocks at the northern margin of the basin. (Spencer-Jones, D. & Kenley, P.R., 1971). The southwestern margin offshore is poorly defined.

The basin is subdivided into a number of Embayments Gambier, Tyrendarra, Port Campbell and Torquay), by a number of basement highs (Dartmoor Ridge, Warrnambool High and Otway Ranges High). It is believed that basin taphrogenesis during the mid to post Cretaceous produced these structural features. (Ingram, 1983).

(Falvey & Mutter, 1981) recognizes three principle uplift and subsidence phases during the tectonic evolution of the Otway Basin on the South Australian passive margin.

The initial infra-rift phase involved regional sedimentary basin subsidence and relative uplift and deposition of the Otway Group sequence. This was succeeded by deposition of the Sherbrook Group sequence during onset of the true rift stage, associated with rift subsidence, relative uplift and major faulting. At the end of the rifting stage, there was break up of Australia and Antartica and subsequent post break up subsidence and deposition of Tertiary sediments.

The break up of Australia and Antartica began about 45 million years ago and is continuing to the present. (Robertson et al 1978). Depositional rates were highest during intra and rift valley phases.

APPENDIX IV.

CUTTING DESCRIPTIONS.

by

L. Davey and B.L. Rayner
GAS AND FUEL EXPLORATION N.L.

SIDEWALL CORE SAMPLE DESCRIPTIONS

NO.	DEPTH (m)	RECOVERY (mm)	LITHOLOGIC DESCRIPTION
(3)	1172	15	Sandstone; white, qtz. pred. m.g., w/coarse - f.g., subang. - subrndd., poorly sorted, white calcite cement, w/clay matrix, tr. blk. carb., friable, soft, good vis. porosity. W/2mm. wide laminae, Sandstone, lt. grey, coarse, subang., qtz. grns., abund. Arg. matrix, tr. blk. carb.
(2)	1181	10	Sandstone; white, m.g. (pred.) - f.g., subang. - subrndd., poorly sorted, white calcite cement, w/clay matrix, tr. carb. specks, soft, friable, vis. porosity.
(1)	1193	0	

SIDEWALL CORE SAMPLE DESCRIPTIONS

NO.	DEPTH (m)	RECOVERY (mm)	LITHOLOGIC DESCRIPTION
(11)	552	30	Claystone, lt. - med. grey, v. finely, evenl laminated, clay - silt size, abund. calcite cement, v. Argillaceous, tr. blk. carb. material (specks). mod. hd., no vis. porosity.
(10)	553	25	Claystone; lt. - med. grey, unevenly laminated, clay - silt size, Arg., abund. carbonate cement, tr. blk. carbonaceous specks, tr. white lithics, mod. hd. no vis. porosity. laminae: lt. grey, silt size.
(9)	554	26	Claystone, (Silty) lt. grey unevenly laminated, clay - silt size, Arg., abund. calcite cement, tr. blk. carb. material (specks), tr. white lithics, mod. hd., no vis. porosity.
(8)	557	25	Claystone; grey, clay size (pred.), v argillaceous, com. calcite cement, tr. blk. carb. material, mod. hd., no vis. porosity.
(7)	559	27	Claystone; (Silty) finely laminated, clay - silt size, Arg., abund. calcite cement, tr. blk. carb. material, mod. hd. no vis. porosity.
(6)	1104.5	20	Claystone; dk. grey, clay size (pred.), v argill., min. blk. carb. (Specks), mod. soft no vis. porosity. W/Interlaminated (2mm wide) Sandstone, qtz. white, v.f.g., subrndd., milky gns., mod. sorting, arg., calcite cement, abund. white lithics, tr. blk. carb., hd.
(5)	1125	15	Sandstone; white, qtz. coarse - m.g., subang. - subrdd., poorly sorted, W/v.f.g. - silt size qtz., com. clay matrix, tr. siliceous cement, tr. mica tr. blk. carb. specks, friable, soft, good vis. porosity.
(4)	1155.5	20	Sandstone; white, qtz. m.g. (pred.) - f.g., subang. - subrndd, poorly sorted, white calcite cement, clay matrix, tr. blk., carb., friable, soft fair vis. porosity.

SIDEWALL CORE SAMPLE DESCRIPTIONS

NO.	DEPTH (m)	RECOVERY (mm)	LITHOLOGIC DESCRIPTION
(20)	413	40	Qtz. Sand; lt. brn, v.f.g. - m.g. (pred.), subrndd, cl. grns, poorly srt. Arg. Mtrx., minor sil. cmt. in part, soft, fair - good vis. porosity.
(19)	422	45	Qtz. Sand, lt. grey, coarse (pred) - v.f.gr., subrndd, frg., pred. milky grns, Arg. mtrx. tr. blk. carb. material minor; calcite cement. soft, fair - good vis. porosity.
(18)	538	25	Siltstone: (Sandy), dk. grey, v.f.g. - silt. size, mod. sorted, arg. mtrx., tr: blk. carb. material (specks) Fine laminations of qtz. sand, v.f.g., with calcite cement. Soft, poor vis. porosity.
(17)	508.5	30	Siltstone:(Sandy); lt. grey, v.f.g. - silt. size, well sorted, pt. arg. mtrx., abund. calcite cement, tr. blk. carb. material (specks) tr. brn. lithics. mod. soft, no vis. porosity.
(16)	546.5	30	Claystone: (Silty); lt. grey, v.f.g. - silt size, abund. calcite cement, v arg., tr. blk. carb. material (specks). tr. white lithics, tr. mica. mod soft, no vis. porosity.
(15)	548	35	Claystone: (Silty), A/A
(14)	549	35	Claystone: (Silty), A/A
(13)	550	30	Claystone: grey, clay - silt size, v arg., tr. calcite cement, tr. blk. carb. material (specks) mod. hard, no vis. porosity.
(12)	551	25	Claystone: dk. grey, clay - silt size, v arg., com. blk. carb. material (specks), mod. hd., no vis. porosity. Grading to - Claystone; Laminated, lt. grey, v.f.g. - silt size, abund. calcite cement, Arg. matrx., tr. blk. carb. material (specks). W/Laminae, Claystone; dk. grey A/A, mod. hd., no vis. porosity.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
820	825	100	A/A
825	830		Sandstone, sidertic A/A, trace
		10	Sandstone, A/A (non sidertic)
		30	Sandy Siltstone, A/A
		60	Shale, A/A
			Trace coal, A/A
830	835	10	Sandstone, (non sidertic) A/A
		50	Sandy Siltstone, A/A
		40	Shale, A/A
			Trace coal, A/A
835	840	20	Sandstone,(non-part siclestic) A/S
		70	Sandy Siltstone, A/A
		10	Shale, A/A trace coal, A/A
840	845	60	Sandstone, A/A
		40	Siltstone, A/A
			trace coal, A/A
845	850	80	Siltstone, A/A, grades to shale
		20	Sandstone, A/A
			trace coal A/A
850	855	60	Sandstone, A/A
		40	Siltstone, A/A
855	860	90	Siltstone, lt.-med. grey, hd., speckled texture, grades
			to sandstone,v.f.g.
		10	Sandstone, A/A
860	865	10	Sandstone, (non sideritic) predominant, trace sid. A/A
		20	Sandy Siltstone, A/A
		10	Siltstone, A/A
		40	Shale, A/A
		20	Coal, A/A
865	870	10	Sandstone, (non Sid.) pred. A/A
		60	Sandy Siltstone, A/A
		30	Shale, A/A trace coal, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
870	875	20	Sandstone, A/A
		70	Sandy Siltstone, A/A
		10	Shale, A/A
875	880	80	Coal, A/A
		10	Sandstone, non sid. pred. A/A
		10	Sandy Siltstone, A/A
			trace shale
880	885	70	Siltstone, A/A
		30	Coal, A/A
			trace Sandstone, A/A, trace Sandy Siltstone, A/A
885	890	10	Sandstone, A/A non Sideritic
		40	Sandy Siltstone, A/A
		40	Shale, A/A
		10	Coal, A/A
890	895	60	Siltstone, A/A
		20	Sandstone, A/A
		20	Coal, A/A
895	900	70	Coal, black, sub vitreous lustre, platy - conchoidal
			fracture, mod. hd.
		30	Sandstone, A/A
900	905	60	Claystone, lt. grey, subfissile, mod. hd. minor sandstone,
			siltstone
		40	Coal, A/A
905	910	50	Silstone, A/A
		30	Sandstone, A/A
		20	Coal, A/A
910	915	20	Sandy Siltstone, A/A
		20	Siltstone, A/A
		10	Coal, A/A
		50	Shale, A/A
			trace sandstone, (non sid.) A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
915	920	20	Sandy Siltstone, A/A
		20	Siltstone, A/A
		50	Shale, A/A
		10	Coal, A/A
			Trace sandstone, A/A
920	925	70	Coal, A/A
		10	Sandy Siltstone, A/A
		10	Siltstone, A/A
		10	Shale, A/A
			Trace sandstone, A/A
925	930	20	Sandy Siltstone, A/A
		30	Siltstone, A/A
		40	Shale, A/A
		10	Coal, A/A
930	935	20	Sandy Siltstone, A/A
		10	Sandstone, A/A
		20	Siltstone, A/A
		50	Shale, A/A
			com: coal, A/A
935	940	30	Sandy Siltstone, A/A
		50	Siltstone, A/A
		20	Shale, A/A
			Trace coal,A/A, trace Siltstone, A/A
940	945	10	Silty Sandstone, A/A
		50	Sandy Siltstone, A/A
		20	Siltstone, A/A
		10	Shale, A/A
			Trace coal, A/A Trace Sandstone, A/A
945	950	10	Sandstone, A/A (non. sid.)
		40	Sandy Siltstone, A/A
		20	Siltstone, A/A
		30	Shale, A/A comm. coal, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
950	955	60	Sandstone, white, f.grn., cl. milky grns., sub rounded-
			sub angular, mod. sorted, ankeritic cement in part,
			friable, poor vls. porosity, occ. brn. lithic frags.,
			com. light-dk. grn. (mint) grains translucent, fine grn.,
			sub angular.
		20	Sandstone, non. sid. A/A
		10	Sandy Siltstone, A/A
		10	Shale, A/A trace pyrite
			Trace coal, A/A
955	960	80	Friable Sandstone, A/A
		10	Sandy Siltstone, A/A
		10	Siltstone, A/A
			com. Shale, A/A, trace siltstone (sid.), A/A lithics (white)
960	965	60	Sandstone, A/A (Friable)
		20	Sandy Siltstone, A/A
		20	Shale, A/A
			Trace coal, A/A
965	970	60	Sandy Siltstone, A/A
		40	Shale, A/A
			com. Sandstone, A/A trace coal, A/A
970	975	40	Siltstone, A/A
		60	Shale, A/A
			com. Sandstone, A/A trace coal, A/A
975	980	70	Siltstone, A/A
		30	Sandstone, A/A
980	985	70	Siltstone, A/A
		30	Sandstone, A/A
985	990	60	Sandstone, white-lt. grey, v.f.-m.g., ang.-subrndd., poor-
			mod. sorted, friable-hd., good calcite cement in part,
			white clayey matrix, abundant-common lithics, black, dk.
			brown and dk. green. Very poor visual porosity
		40	Shale, lt. grey-lt. brown, hd., subfissile, grades to siltstone.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
			Occ. laminae of carbonaceous matrix in shales and siltstones.
990	995	70	Sandstone, A/A
		30	Shale, A/A
995	1000	40	Sandy Siltstone, A/A
		20	Siltstone, A/A
		30	Shale, A/A
		10	Sandstone, A/A
1000	1005		No sample
1005	1010	100	Sandstone, friable (A/A)
			(i.e. sample is loose)
1010	1015	70	Shale, A/A
		20	Siltstone, A/A
		10	Sandstone, A/A
1015	1020	40	Siltstone, A/A
		20	Sandstone, A/A
		40	Shale, A/A
1020	1025	60	Siltstone, A/A
		20	Sandy Siltstone, A/A
		20	Shale, A/A
1025	1030	50	Sandstone, A/A
		40	Siltstone, A/A
		10	Shale, A/A
1030	1035	60	Siltstone, A/A
		30	Shale, A/A
		10	Sandstone, A/A
1035	1040	80	Siltstone, A/A
		10	Sandstone, A/A
		10	Shale, A/A
1040	1045	80	Siltstone, A/A grades to shale
		20	Sandstone, A/A
1045	1050	50	Siltstone, A/A
		50	Sandstone, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
1050	1055	60	Siltstone,lt.-med. grey, subfissile, hd., speckled
			texture, common carbonaceous laminae
		40	Sandstone, lt. grey-lt. brown, v.f.-m.g., subang.-subrndd.,
			white clay matrix, calcite in part.
			Trace calcite vein.
1055	1060	100	A/A
1060	1065	60	Sandstone, A/A
		40	Siltstone, A/A greades claystone, common shale.
1[illegible]	1070	100	Siltstone, A/A
			trace coal
1070	1075	90	Siltstone, A/A grades shale.
		10	Sandstone, A/A
1075	1080	90	Siltstone, A/A
		10	Sandstone, A/A
1080	1085		A/A
1085	1090	60	Sandstone, A/A
		40	Siltstone, A/A MINOR coal
1090	1095	60	Sandstone, A/A
		40	Siltstone, A/A
			Trace calcite veins, coal, A/A
1095	1100	90	Siltstone, lt.-med. grey, speckled texture platy, occ.
			carbonaceous laminae grades to claystone
		10	Sandstone,A/A
			Trace coal, trace quartz,cl.-lt. horizon, m-c.g.
			subrounded-rounded.
1100	1105	60	Siltstone, A/A
		40	Sandstone, A/A
1105	1110	60	Sandstone, A/A
		40	Siltstone, A/A
1110	1115	80	Sandstone, A/A
		20	Siltstone, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
1115	1120	100	Sandstone, white-lt. grey, med. grn.-coarse, subrounded-subangular, cl.-frosted grns., well sorted. Siliceous cement (ground out), sample appears loose, with few remaining aggregated grains, siliceously cemented together
1120	1125	100	Sandstone, A/A
1125	1130	100	Sandstone, A/A w/dk. brn. lithics
1130	1135	60	Sandstone, A/A
		40	Sandstone, lt.-dk. brn., v.f.g.-m.gr., angular, poorly sorted, w/blk., grey lithics, carbonate cement brn. sid., mod. hard, no vis. porosity. (blk. lithics carbonaceous) com. med. qtz. grns., cl. angular.
1135	1140	100	Sandstone, white, lt. grey, siliceous cement A/A
			trace Siltstone, A/A
			trace Meta lithics, Green/greyish qtz. Schist,
			trace chert - qtz. overgrowths.
1140	1145	100	Sandstone, A/A
			Clay matrix (white)
1145	1150	100	Sandstone, white siliceous cement A/A
1150	1155	60	Silty Sandstone, grey-brn., speckled white, blk., f.-med. grn., subrounded-subangular, poor sorting, w/blk. carbonaceous, micaceous, clay-argillaceous cement, med. hd., fissile. (Eum.)
		40	Sandstone, A/A (Siliceous) white.
1155	1160	80	Sandstone, white, f.g.-m.g., subrounded-subangular, milky grns., mod. sorted, clay/slightly siliceous cement, mod. hd., trace grey lithics-blk. lithics, low vis. porosity
		10	Sandstone, Siliceous A/A
		10	Silty Sandstone, A/A
1160	1165	50	Sandstone, white, v.f.-m.g., ang.-subang., mod.-hd., mod. sorted, white clay matrix, siliceous in part, trace lithics, very poor visual porosity.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
		40	Sandstone, cl.-milky, m.-v.c.g., subang.-subrounded,
			siliceous cement, often disaggregated/loose
		10	Siltstone, lt.-med. grey, subfissile, med. hd., speckled
			texture in part
1165	1170	60	Sandstone, cl.-milky, m.-v.c.g. A/A
		30	Siltstone, A/A greades to shale
		10	Sandstone, white-lt. grey, v.f.-m.g. A/A
1170	1175	70	Sandstone, cl.-milky, m.-v.c.g. A/A
		30	Sandstone, lt. grey-lt. brown, v.f.-m.g., subangular-
			subrounded, mod. sorted, white clay matrix, argillaceous
			in part, common lithics, common carbonaceous laminae,
			common shale, A/A
1175	1180	80	Sandstone, cl.-milky, m.-v.c.g., A/A
		20	Sandstone, lt. grey-brown, A/A
1180	1185	60	Sandstone, cl.-milky, m.-v.c.g. A/A
		40	Sandstone, white-lt. grey, A/A
			Minor Siltstone, A/A, coal, A/A
1185	1190	100	Phyllite, silver-lt. grey, platy, mod. soft-hd., good
			schistose foliation
1190	1195	60	Phyllite, A/A
		40	Quartzite, milky-lt. green-lt. brown, v.f.g., hd., occ.
			argillaceous, good lineation of qtz. grains.
1195	1200	60	Quartzite, A/A
		40	Phyllite, A/A
1200			A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
785	790	40	Sandstone, A/A
		40	Coal, A/A
		20	Siltstone, A/A
790	795	70	Siltstone,lt. grey, speckled texture A/A
		30	Sandstone, v.f.-m.g., subang.-subrndd., poor-mod. sorted,
			friable-hd., argillaceous white clayey to calcite cement,
			very poor visual porosity.
			Trace claystone, coal, A/A
795	800	60	Coal, A/A
		40	Sandstone, A/A
800	805	90	Coal, A/A
		10	Claystone, A/A
			Common siltstone, sandstone, A/A
805	810	80	Coal, A/A
		10	Sandy Siltstone, light grey, speckled with carbonaceous
			material black, v.f.-m.g., mod. sorted, clay-calcite
			cement, grading to Siltstone; grey, speckled, A/A
		10	Shale, light grey-dk. grey, sub fissile-fissile.
			trace loose, white calcite.
			traceS
810	815	20	Sandstone, A/A
		60	Sandy Siltstone, A/A
		20	Shale, A/A
			trace coal.
815	820	30	Sandstone, light brown, med.-f.g., subrndd.-subangular
			grn, poor sorting, abund. white lithic frags., brn.
			sidertic-clay-calcite cement, no visible porosity.
			trace carbonaceous frags. blk.
		20	Sandstone, A/A increase in abund. lithic frags.
		20	Sandy Siltstone, A/A
		20	Shale, A/A
		10	Coal, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
		40	Shale, black, argillaceous-carbonaceous A/A
740	745	60	Sandstone, A/A
		40	Claystone, lt.-grey, speckled texture in part, grades to
			siltstone A/A. Trace coal, black, subvitreous lustre.
745	750	60	Siltstone, lt.-med. grey, subfissile, speckled texture,
			carbonaceous laminae in part, grades to sandstone.
		20	Coal, dk. grey-black, vitreous lustre, fissile.
		20	Sandstone, lt. grey, v.f.-f.g. A/A.
			Minor fluorescence A/A.
750	755	100	A/A
755	760	30	Sandstone, A/A
		40	Sandy Siltstone, A/A
		10	Siltstone, A/A
		20	Shale, black-dk. brown, sub-mod. fissile, hard.
			common coal, A/A
760	765	30	Sandstone, A/A
		60	Sandy Siltstone, A/A
		10	Siltstone, A/A, Shale, A/A
			common coal
765	770	60	Sandstone, lt. grey, v.f.-f.g., subang-subrndd., mod. hd.-
			mod. soft, white clayey matrix, calc. in part carbonaceous
			laminae, occ. dk. brown lithic, v. poor visual porosity.
		40	Siltstone, lt.-med. grey, speckled texture, subfissile
			Occ. coal, A/A: Shale A/A
770	775	60	Siltstone, A/A
		40	Sandstone, A/A
775	780	70	Sandstone, lt. grey, v.f.-m.g., A/A
		30	Siltstone, A/A grading claystone.
780	785	30	Shale, black-dk. grey, hd., fissile
		40	Coal, black, vitreous lustre, hd.
		30	Sandstone, A/A,

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
680	685	60	Sandstone, lt. grey, v.f. - f.g., mod. hd., angular, poor - mod. sorted, argillaceous in part, white clay matrix, calcite in part.
		40	Siltstone, A/A grades claystone
685	690	60	Sandstone, A/A
		40	Siltstone, A/A
			trace coal, black, vitreous lustre, choncoided fracture trace shale A/A.
690	695	50	Sandstone, A/A, trace carbonaceous laminae
		50	Siltstone, A/A, greades to claystone
695	700	70	Siltstone, A/A
		30	Sandstone, A/A
700	705	60	Sandstone, ltd. grey-lt. brown, v.f.g., A/A
		40	Siltstone, A/A greades to claystone.
705	710	60	Shale,black, subfissile, hd., platy
		40	Sandstone, A/A
710	715	60	Sandstone, A/A
		40	Shale, A/A
715	720	60	Sandstone, A/A, w/lt.-med. brown chips, v.f.-m.g., ang.-subang., poor-mod. sorted, hd., argillaceous brown matrix, calcite cut in part. Very poor visual porosity.
		40	Silstone, A/A, w/shale A/A.
720	725	80	Sandstone,lt. grey-white A/A
		20	Silstone, A/A
725	730	90	Siltstone, ltd. med. grey, salt & pepper texture, grades to v.f.g. Sandstone.
		10	Sandstone, A/A.
730	735	90	Siltstone, A/A
		10	Sandstone, A/A
735	740	60	Sandstone, lt. grey-lt. brown, v.f.-f.g., mod. hd., subang., poor-mod. sorted, calcite cement, argillaceous in part, grades siltstone, v. minor fluorescence A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
			weak milky white crush cut.
		10	Siltstone, A/A
640	645	90	Sandstone, A/A
			w/minor fluorescence A/A
		10	Siltstone, A/A, grades shale, A/A
645	650	60	Siltstone, lt. grey, mod. hd.-hd., pin-point textures
			in part, grades to claystone
		40	Sandstone, lt. grey-white, fine-med. grained, angular-
			subangular, mod. sorted, mod. soft friable, hd. in part,
			white clay matrix, carbonate cement in part, common
			dark brown and black lithics and carbonaceous streaks.
			Very poor visual porosity.
650	655	70	Siltstone, A/A grading Claystone
		30	Sandstone, A/A
655	660	30	Sandstone, A/A
		60	Silty Sandstone, A/A
		10	Siltstone, A/A
660	665	20	Sandstone, A/A
		60	Silty Sandstone, A/A
		20	Siltstone, A/A
			trace coal, A/A
665	670	50	Sandstone, A/A
		40	Silty Sandstone, A/A
		10	Siltstone, A/A
			trace coal, A/A
670	675	40	Sandstone, A/A
		40	Silty Sandstone, A/A
		20	Siltstone, A/A
			trace coal, trace shale
675	680	30	Sandstone, A/A
		50	Silty Sandstone, A/A
		20	Siltstone, A/A trace coal, trace shale

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
605	610	30	Sandstone, A/A
		60	Silty Sandstone, A/A
		10	Siltstone, A/A
			trace shale, trace coal.
610	615	30	Sandstone, A/A
		60	Silty Sandstone, A/A
		10	Siltstone, A/A
			trace shale, trace coal
615	620	20	Sandstone, A/A
		70	Silty Sandstone, A/A
		10	Siltstone, A/A
			trace coal.
620	625	20	Sandstone, A/A
		70	Silty Sandstone, A/A
		10	Siltstone, A/A
			trace shale, trace coal.
625	630	80	Sandstone, lt. grey-lt. brown, v.f.g. mod. hd., subang.-
			subrndd., poor-mod. sorted, white clayey matrix, carb.
			in part, trace dk. lithics grades to silstone.
		20	Shale, dk. grey-black, blocky, subfissile, hd.,
			occasionaly laminated.
			trace qtz., clear, m.-c.g., rndd.-subrndd., loose.
			Abundant cavings of silstone and shale disregarded.
630	635	60	Sandstone, A/A
		20	Silty Sandstone, A/A
		10	Siltstone, dk. brn., v.f.g., mod. soft, carbonaceous (blk).
		10	Shale, A/A
			trace coal.
635	640	90	Sandstone, lt. grey-lt. brown, v.f.g., subangualr-subrndd,
			mod.-poor sorted, white clayey cement calcerite in part,
			mod. hd., common black & dk. brown lithics, coal laminae.
			Trace fluorescence, dull yellow-orange, and extremely

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
		20	Siltstone, A/A
			trace Shale, A/A trace coal
575	580	20	Sandstone, A/A
		50	Silty Sandstone, A/A
		30	Siltstone, A/A
			trace shale A/A trace coal
580	585	20	Sandstone, A/A
		60	Silty Sandstone, A/A
		10	Siltstone, A/A
		10	Shale, A/A
585	590	10	Sandstone, A/A
		70	Silty Sandstone, A/A
		10	Siltstone, A/A
		10	Shale, A/A
			trace coal
590	595	10	Sandstone, A/A
		60	Silty Sandstone, A/A
		20	Siltstone, A/A
		10	Shale, A/A
			trace coal
595	600	40	Sandstone, Soft white, med.-f.gr., mod. sort., speckled,
			carb. material, white clay matrix
		40	Silty Sandstone, lt. grey-lt. brn., f.g., mod. sorting,
			carbonaceous specks, clay-argillaceous cement, mod. hard.
		10	Siltstone,dk. grey, v.f.g., mod. sorting, carb. specks,
			clay-argillaceous matrix, soft.
		10	Shale, A/A, trace coal.
600	605	10	Sandstone, A/A
		80	Silty Sandstone, A/A
		10	Siltstone, A/A
			trace Shale, A/A, trace coal.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
530	535	70	Siltstone, A/A
		30	Sandstone, A/A grade to siltstone.
535	540	40	Shale, Dk. grey, hd. subfissile,
		60	Sandstone, lt. grey A/A grades to siltstone A/A
540	545	60	Sandstone, A/A grades siltstone , minor fluorescence at this level
		30	Shale, A/A
		10	Sand, loose, cl.-frosted A/A
545	550	100	Sandstone, lt. grey, v.f.g., angular - subrndd., mod. sorted, argillaceous/white clay matrix, ankerite in part, minor black lithics, 100% dull grey-white fluorescence, with a weak wt. When dry the sample showed dull yellow-gold fluorescence with an immediate streaming white cst.
550	555	100	Sandstone,A/A but less fluorescence
555	560	60	Sandstone, A/A, calcite cwt in part
		40	Sand, A/A) caving) minor shell frags.)
560	565	60	Sandstone, soft-white - light grey, speckled (carbonaceous material), medium grained - grading to v.f.g. (predominant), mod. sorted, kaolin matrix, trace ankerite, fair porosity,
		20	Sandy Siltstone,light grey, f.g.,argillaceous - clay matrix, trace carb. mat. speckled and laminae. Low porosity not visible, mod. hard
		20	Siltstone, dk. grey-brn., v.f.g., argillaceous matrix, trace carb. mat., trace coal, black, shiny
565	570	30	Sandstone, A/A
		60	Silty S.S., A/A
		10	Siltstone, A/A
			trace shale, black, v.hd., sub fissile
570	575	40	Sandstone, A/A
		40	Silty Sandstone, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	INTERVAL TO	%	SAMPLE DESCRIPTION
		30	Siltstone, A/A.
		20.	Shale, grey-dk. grey, fissile, platy, mod. hd.
485	490	60	Sand, A/A.
		40	Sandstone, A/A
			Min. Shale, A/A.
490	495	40	Sandstone, A/A
		40	Siltstone, Lt. grey, mod. hd. - sft.
			fine"salt and pepper" pin point, grades to Sandstone,A/A
		20	Sand, A/A.
495	500	40	Sandstone, A/A.
		40	Siltstone, Lt. grey, mod. hd. - sft.
			fine "salt & pepper" pin point, grades to Sandstone, A/A.
		20	Sand, A/A.
500	505	70	Sandstone, Lt. grey - orange brown, v.f.g., mod.hd.-hd. A/A.
		30	Sand, A/A.
			minor siltstone A/A, shale A/A.
505	510	90	Sandstone, Lt. grey - grey, v.f.g., hd., subangular,
			white clay/argillaceous cement, trace black carbonaceous
			lithics.
		10	Sand, A/A.
510	515	90	Sandstone, Lt. grey A/A greades to siltstone.
		10	Shale, grey, hd., black.
515	520	90	Siltstone, lt. grey - grey, hd., salt & pepper pin
			point lithic
		10	Sandstone, A/A
			minor coal, sand A/A.
520	525	50	Sandstone, lt. grey-pale orange, A/A
		50	Siltstone, A/A
525	530	60	Siltstone, A/A
		30	Sandstone, A/A
		10	Sand, A/A

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
			Argillaceous matrix, com. shale A/A.
440	445	100	Sand, white -grey loose, cl.-frost-milky, v.f.g. - f.gr.,
			rounded-subrndd., mod. sorted, trace lithics, trace coal,
			Argillaceous, silty, trace shale.
445	450	90	Sand, cl.-frosted, v.f.-f.g., loose, A/A.
		10	Sandstone, lt. grey-white, v.f.g., subang., mod. sorted,
			clay matrix, ankeritic in part, common dk. lithics.
450	455	60	Sand, A/A.
		20	Shale, dk. grey-black, subfissile - fissile, platy, mod.
			hd., pin point white lithics.
		20	Coal, black, vitreous lustre, platy - chencoidal fracture.
			mnr. sandstone , A/A.
			trace pyrite.
455	460	50	Sand, A/A.
		30	Sandstone, A/A.
		20	Shale, A/A.
460	465	60	Sand, A/A.
		20	Sandstone, A/A.
		20	Shale, A/A, mnr. coal A/A.
465	470	60	Sandstone, A/A.
		30	Sand, A/A.
		10	Shale, A/A.
			w/mnr. qtz., iron stained, m.-c.g., subrndd., mnr. coal A/A.
470	475	40	Siltstone, lt. grey - grey, argillaceous grade to
			sandstone A/A.
		40	Sandstone, A/A.
		20	Sand, A/A.
475	480	70	Siltstone, A/A.
		20	Sandstone, lt. grey, v.f.g., subang. argill./white clay
			matrix, ankerite cement in part, thin carbonaceous streaks.
		10	Sand, A/A.
480	485	50	Sandstone, A/A.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
			common qtz., loose, clear fine grn. sub rounded - sub -
			angular.
			rare pyr. A/A; rare glauc.
380	385	100	Marl. 'all as above'.
385	390	100	Sand, cl.-frosted, f.g., subang.-subrndd., mod.-good srtd.,
			common siltstone chip, dk. grey, argillaceous, trace
			pyrite, trace shell frags.
			trace carbonaceous material, black, fine grn., pyritic
			in part. mnr. (fe stained qtz.), Fe-oxide cmt. in part.
390	395	100	Sand, cl.-frost., f.g., rounded-subrndd., mod.-well sorted.
395	400	100	Sand, cl. frosted, f.g., subang. - subrndd., mod. well
			sorted.
			Arg. matrix, trace pyrite, trace lithic frags., trace
			carb. material fine- med. grns., trace dk. brn. lithics.
400	405	100	Sand, cl.-frosted, f.grn., sub-ang. - subrndd., mod.-well
			sorted, argillaceous matrix (grey), trace dk. brn. lithics,
			carbonaceous frags., trace pyrite.
405	410	100	A/A.
410	415	100	Sand, cl.-frosted, med.-c.g., mod.-well rndd., mod.srtd.,
			trace siltstone, black, mod. hd., pin-point white lithics
			(carbonaceous frags.?) trace.
415	420	100	Sand, A/A.
420	425	100	Sand, cl.-pale yellow, m.-c.g., angular, subang., mod.
			sorted,
			occ. qtz. loose, v.c., rndd.
425	430	40	Shale, dk. green-black, fissile, platy, mod. hd.
		60	Sand, cl.-pale yellow, v.f.g.-m.g., A/A.
430	435	100	Sand; loose, cl., v.tg.-f.gr. - med. gr., sub-rounded -
			subangular, mod. sorting, argillaceous; coal, common, blk.
			com. shale; A/A.
435	440	100	Sand,loose,, cl.-milky, v.f.g.,-f.grn., subrndd.-subangular,
			mod. sorted, trace pyrite, trace brn. lithics, trace coal.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL		%	SAMPLE DESCRIPTION
FROM	TO		
305	310	100	A/A.
310	315	100	A/A.
315	320	90	Marl., brown, mod.-v. soft, sticky-dispensive, abund.
			shell fragments, glauconite.
		10	Calcarenite, lt. grey - green, v.f.g., subrndd., mod.
			sorted, green/black lithics, carbonate cement.
			w/common qtz., loose, cl.-frosted, m.-v.c.g., subrndd.-
			rndd.
320	325	100	A/A.
325	330	100	Marl., brown, A/A, abund. shell fragments, common
			glauconite, common loose qtz. A/A.
330	335	100	A/A.
335	340	100	Marl., lt. grey-brown, soft, dispensive, abund. loose
			qtz., A/A; good trace glauconite; abund. shell frags. A/A.
340	345	100	A/A.
345	350	100	Marl. A/A.
350	355	100	Marl., lt. brown - brown, A/A;
			common qtz.,loose, cl., med. - v.c.g., ang. - subrndd.;
			trace calcarenite, A/A;
			trace glauconite; common shell fragment;
355	360	100	A/A.
360	365	100	Marl., A/A
			rare qtz. loose, milky, v.c.g., rndd., common qtz., A/A
			rare calcarenite A/A.
			rare pyrite cement.
365	370	100	Marl., A/A.
			rare qtz., A/A
			common qtz., clear rounded - subrounded, fine.
			rare, pyr. A/A., trace glauc.
370	375	100	Marl., 'all as above'
375	380	100	Marl; A/A
			rare qtz. A/A.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL		%	SAMPLE DESCRIPTION
FROM	TO		
240	245	100	A/A.
245	250	80	Marl., A/A w/abund. shell frags.
		20	Calcarenite,lt. brown, v.f. - m.g., med. hard, good
			calc. cement, argill.
			rare qtz., loose, clear, m.-c.g., A/A.
250	255	100	A/A.
255	260	100	Marl., lt. grey - grey-green, soft, abund. fossil shell
			frags; abund. dk. green glauc., f-m, pellets.
			rare, qtx., loose, brown stained, med.g., angular.
260	265	100	A/A.
265	270	60	Calcarenite, lt. brown, v.f.g.-m.g., subang., clac. cmt.,
			tr. glauconite in calcarenite chips, v.f.g., dk. green.
			Abund. glauconite, loose, lt.-dk. green, assoc. (?)
			w/calcanrenite, approx. 20% of sample.
		40	Marl., A/A, abund. shell frags.
270	275	80	Marl., A/A.
		20	Calcarenite, A/A.
			w/rare qtz., loose, cl., m.-c.g., subrndd., w/good trace
			glauc.
275	280	100	A/A.
280	285	80	Marl., A/A.
		20	Calcarenite, A/A; w/abundant qtz. grains well rndd. -
			subrndd., clear, trace pyrite, abund. glauc.
285	290	100	A/A.
290	295	60	Marl. A/A.
		40	Calcarenite, A/A,; tr. qtz., sub. rndd. - rndd., trace
			pyrite, trace glauc.
295	300	100	A/A
300	305	50	Marl.; A/A
		50	Calcarenite; A/A
			abundant qtz., clear, rounded - subrndd., m.-v.c.c., some
			frosted; glauc., more foss. (calc. band).

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
			qtz. grns., fine-med., cemented.
165	170	100	Marl., A/A
170	175	70	Marl., A/A abundant foss. A/A.
		30	Calcarenite, pale brown, cemented, patches of glauconite,
			qtz. grns. fine-med. calc. cement, tr. disseminated pyrite
			slightly argillaceous, minor lithics.
175	180	70	Marl., A/A
		30	Calcarenite A/A
180	185	80	Marl., A/A, loose qtz. grns. angular, glauconite, A/A.
		20	Calcarenite A/A.
185	190	80	Marl., A/A.
		20	Calcarenite A/A
190	195	90	Marl., lt. grey-grey, mod. soft, mod. fossil abund. A/A
		10	Calcarenite, lt. brown-brown, mod. hd. - mod. soft, v.f.g.,
			subang.-subrndd., poor sorting, good calc. cement,
			argillaceous in part. Poor visual porosity.
			w/trace pyrite, glauconite.
195	200	100	A/A
200	205	90	Marl., A/A
		10	Calcarenite A/A
205	210	100	A/A
210	215	100	Marl., A/A
215	220	100	A/A
220	115	100	Marl., A/A w/abundant fossil shell frags.
			w/gd. trace galuconite.
			rare qtz., loose, cl, med. grained, angular.
			w/rare Calcarenite, lt. grey, v.f.g., mod. soft. ca;c/
			cement, argill. in part.
225	230	100	A/A
230	235	100	A/A
235	240	100	Marl.,A/A mod. soft - soft w/rare qtz., loose, cl., m.g.
			abundant fossil shell fragments.

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
75	80	100	Marl., grn.-grey; soft; foss frag. pelecypods, gastropods, bryozoans (no forams).
80	85	100	Marl.; gn.-grye; - soft; foss. frags, echinoid spines, bryozoan, whole & fragmented gastropods, frag. pelecypods, no forams.
85	90	100	Marl., A/A, frag; shell frags., brozoans, whole gastropods, forams, sponge spicules.
90	95	100	Marl., A/A, more foss.; gastropods, pelecypods, bryozoans, abud. forams glauc., echinoid spines, sponges, new species foram.
95	100	100	Marl., A/A, foss., shell frag., whole gastropods, bryozoans, abud. forams glauc.
100	105	100	Marl., soft grey grn.; foss. abun. forams, some glauc., bryozoans, echinoid spines, shell frags., sponge spicules.
105	110	100	Marl., A/A.
110	115	100	Marl., A/A.
115	120	100	Marl., A/A.
120	125	100	Marl., A/A.
125	130	100	Marl., A/A, abundant pyr., olivine grains subangular, qtz. grains; frags. A/A.
130	135	100	Marl., Grey-dk. grey, green, soft; less fossilferous, shell frags., forams, echinoid spines, fine grnd. loose qtz. trace mica.
135	140	100	Sponge spicules.
			Marl., A/A.
140	145	100	Marl., A/A
145	150	100	Marl., A/A
150	155	100	Marl., A/A
155	160	100	Marl., A/A
160	165	90	Marl., A/A; more foss., abund. shell frag., bryozoans, forams, echinoid spines, sponge spicules.
		10	Calcarenite, pale brown-lt. grey shell frags., patchy glauc.,

GAS AND FUEL EXPLORATION N.L.
SAMPLE DESCRIPTION REPORT

INTERVAL FROM	TO	%	SAMPLE DESCRIPTION
15		100	Basalt, grey - lt. grey, mod. hard - hard, crystalline
			qtz. - feld groundmass, abund. olivine, magnetite,
			pyrozene.
			Minor qtz. veins, milky, hard.
15	20		Basalt ' as above '
20	25		Basalt ' as above '
25	30		Basalt ' as above '
30	35	60	Basalt ' as above '
		40	Clay, black, mod. soft, carbonaceous? w/yellow, weathered/
			mod. hard chips and fine - med. grained loose qtz., cl. -
			milky, sub-rounded.
35	40	60	Clay, dk. yellow, mottled, soft, grades to black, mod.
			soft. A/A
		40	Basalt, A/A.
40	45	70	Clay, dk. - lt. yellow A/A.
		30	Basalt, A/A
45	50	70	Marl., lt. grey - green, very soft, sticky, abundant
			fossils, largely shell fragments - some whole shells
			forams - (cibicides?) Glauconitic.
			brozoans - gastropodi.
		30	Basalt, A/A.
50	55	70	Basalt- olivine rich ' as above '
		30	Marl. - grey with fine quartz loose, soft, fossils -
			forams, bryozoans, shell frags. some well rnded qtz.
			grain med. minor yellow-orange clay 'volcanic ash'?
55	60	100	Marl.grey, loose, fine quartz, foss. some large quartz
			frag.
60	65	100	Marl., A/A; soft grn. grey subrndd. well rounded, frosted,
			qtz. grns. coarse individual; foss. A/A less. foss.
65	70	100	Marl., A/A frag. bryozram, glauc. forams, gastropods,
			polecypods, (but less foss. than <60)
70	75	100	Marl., A/A.

APPENDIX V.

GEOCHEMICAL EVALUATION OF STONEYFORD - 1 CUTTINGS.

by

Analabs.

ANALABS
A Division of Macdonald Hamilton & Co. Pty. Ltd.
ANALYTICAL CHEMISTS

• PERTH:
52 MURRAY ROAD,
WELSHPOOL, WESTERN AUSTRALIA, 6106
TELEPHONE (09) 458 7999, ~~458 7154~~
TELEX: ANALAB AA 92560
P.O. BOX 210, BENTLEY, W.A. 6102

PT/fmh

19th March, 1984.

Dr. G. R. Pearson
Exploration Manager
Gas and Fuel Exploration N.L.
171 Flinders Street
MELBOURNE VIC 3000

Dear Dr. Pearson,

Please find enclosed the results of the organic geochemical analyses performed on eight (8) samples from the Stoneyford No. 1 well, drilled in the Otway Basin, Victoria. The purpose of this study has been to evaluate the hydrocarbon source potential of these eight samples.

Upon arrival at Analabs, the samples from this well were assigned the Analabs Job Number 31999, and then submitted to the following analytical program.

Type of Analysis	Table
% total organic carbon determination	1
Pyrolysis analysis	1
% inorganic carbon determination	2
Brief lithological description	3

.../2

A description of these analyses is provided in the Theory and Methods section located at the back of this report.

DISCUSSION OF THE RESULTS

A. Thermal Maturity Determination

Based on Tmax pyrolysis temperatures (Table 1), this sedimentary sequence has experienced a low to possible moderate thermal maturity history. This is based on the two Tmax temperatures obtained from the samples at 750m and 900m. These samples are the only samples which gave significant S_2 peak yields for accurate Tmax temperature measurements. Tmax temperatures are recorded at maximum S_2 peak generation, and for the temperatures to be regarded as reliable maturity indicators, a minimum of 1.0mg/g S_2 yield is required. The values obtained from these two samples (439°C and 441°C) are interpreted to correspond to moderately mature maturation levels, which places these sediments in the top portion of the oil window. The production index values for all of the samples submitted to pyrolysis analysis are considered low and tend to support the low geothermal history of these rocks, as determined by Tmax temperatures. These marginal/moderately mature sediments are in the early stage of hydrocarbon generation. It should be noted that using Tmax pyrolysis temperatures as the only data for evaluating the maturity of a well can be difficult and sometimes misleading. It is preferable to compliment this data with other maturity data, such as vitrinite reflectance and thermal alteration index.

B. Hydrocarbon Source Rock Characterisation

All eight (8) samples were analysed for % total organic carbon. These results along with an interpretation of the amount of T.O.C. is provided in the following:

3/...

Depth (m)	%T.O.C.	Interpretation
200	0.46	Low
350	2.34	Very good
450-500	0.86	Moderate
600	0.54	Moderate
750	4.27	Very good
900	7.71	Excellent
1050	0.40	Low
1160	0.45	Low

The six (6) samples from 450m to 1160m, were submitted to II Run Rock Eval pyrolysis, as instructed in the letter dated 14th February 1984. The two samples with very good to excellent amounts of organic matter from 750m and 900m are the only samples found to have significant pyrolysis yields. The remaining four samples produced low yields (S_1+S_2; Table 1) and are interpreted to have poor hydrocarbon source rock characteristics.

The samples from 750m and 900m have good potential yields (S_1+S_2; Table 1), of which only 3% to 6% (PI; Table 1) is comprised of free hydrocarbon (S_1; Table 1). This is probably due to the low degree of thermal maturity of these sediments. The sample at 900m gave very high free hydrocarbon yields (S_1 = 0.91mg/g; Table 1), however this is probably mainly aromatic hydrocarbon, which is not a dominant constituent of liquid petroleum.

Based on the moderately high hydrogen index values, and the low oxygen index values (HI, OI, Talbe 1), the organic matter is interpreted to be comprised of a mixture of oil and gas prone organic matter types. These would probably correspond to exinite (oil-prone), vitrinite (gas-prone and inertinite (?gas-prone) maceral types.

4/...

As a result, the sediments loacted at 750m and 900m in the Stoneyford No. 1 well have the potential to be good oil and gas source rocks at a high level of thermal alteration. Presently, these sediments would be capable of generating only immature hydrocarbon.

Should you have any questions concerning this data or interpretations, or if we may be of further assistance, please do not hesitate to contact us.

Yours faithfully,

Paul Tybor

PAUL TYBOR

TABLE 1

ROCK-EVAL PYROLYSIS DATA (two run)

NAME = STONEYFORD #1

DATE OF JOB = FEBRUARY 1984

DEPTH(m)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
200.0	nd	nd	nd	nd	nd	nd	nd	nd	0.46	nd	nd
350.0	nd	nd	nd	nd	nd	nd	nd	nd	2.34	nd	nd
450.0- 500.0	433	0.02	0.58	0.19	0.60	3.05	0.03	0.05	0.86	67	22
600.0	437	0.04	0.32	0.18	0.36	1.78	0.11	0.03	0.54	59	33
750.0	439	0.17	6.00	1.04	6.17	5.77	0.03	0.51	4.27	140	24
900.0	441	0.91	13.31	1.99	14.22	6.69	0.06	1.18	7.71	172	25
1050.0	448	0.02	0.17	0.15	0.19	1.13	0.11	0.02	0.40	42	37
1160.0	434	0.05	0.29	0.05	0.34	5.80	0.15	0.03	0.45	64	11

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

APPENDIX VIII.

WELL VELOCITY ANALYSIS

(W.S.T. CALIBRATION REPORT)

by

Schlumber Seaco Inc.

DATA ACQUISITION

FIELD EQUIPMENT

Energy Source : Bolt airgun (model 1900B)
120 cu.in.

Source Offset : 59.7m

Source Depth : 146.2m AMSL

Source Azimuth : 69deg

Reference Sensor : ACCELEROMETER

Sensor Offset : 59.7m

Sensor Depth : 146.2m AMSL

Sensor Azimuth : 69deg

Downhole Geophone : Geospace HS-1
High temperature (350 Deg. F), Coil Resistance
225 + 10%, Natural Frequency 8-12 Hz, Sensitivity
0.45 V/in/sec. Maximum tilt angle 60 Deg. Min.

PROCESSING PARAMETERS

Seismic Reference Datum (SRD)	:	MEAN SEA LEVEL
Elevation SRD	:	MEAN SEA LEVEL
Elevation Kelly Bushing	:	154m AMSL
Elevation Ground Level	:	148m AMSL
Well Deviation	:	0 Deg.
Total Depth	:	1208m below KB
Sonic Log Interval	:	348 – 1206m below KB

SHOT DATA

Level Depth (m below KB)	Stacked Shots	Transit Time
1184	3	454.5
1121	1	438.6
950	2	390.4
783	2	339.4
600	2	280.2
424	2	220.6
388	3	204.9
349	2	185.5
153	4	85.5
32	7	57.9

A total of 10 check levels were shot with the number of stacked shots for each level being shown in the table above. All levels were used in the computations and calibration of the sonic log.

SUPPLEMENTARY NOTE BY G.F.E. :

For the level at 32m. Stack 13 Raw Transit Time = 18.6 milliseconds has been used to compute V interval of the surface basalt. Individual shots 27 through to 33 recorded raw transit times of 57.9 milliseconds. This is the ground roll/tube wave arrival. The weaker direct arrival through the basalt is not detectable for individual shots, all with high ambient noise. Staocking two traces produced a direct arrival pick, i.e., Stack 12 Transit Time = 18.9 milliseconds, Stack 13 Transit TIme = 18.6 milliseconds.

SUMMARY OF RESULTS ABOVE
SEISMIC REFERENCE DATUM.

DEPTH (KB)m.	DEPTH (Airgun)m.	HEIGHT ABOVE SRD m.	OBSERVED TT (Airgun to TT Geophone) ms.	TT (VERTICAL)	AVERAGE VELOCITY (Airgun to Geophone) m/s	INTERVAL VELOCITY m/s
32	24.2	122	18.6	7.0	3457	3457
153	145.2	1	85.5	79.1	1836	1678

D. MONTAGNAT.
16th February, 1984.

SONIC CALIBRATION

Purpose: To adjust the sonic log using the vertical times obtained at each check level.

Method: A "drift" curve is obtained using the sonic log and the vertical check level times. The term "drift" is defined as seismic time (from check shots) minus 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 versus 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 $\frac{\Delta \text{drift}}{\Delta \text{depth}} < 0$, and the sonic time is greater than the seismic time over a certain section of log.

For a positive drift $\frac{\Delta \text{drift}}{\Delta \text{depth}} > 0$, and the sonic time is smaller than the seismic time over that section of 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.

(a) Uniform or block shift.

This method applies a uniform correction to all 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 μs/ft.

(b) 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 log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt minimum. Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt minimum, Δt − Δt min.

Δt − Δt minimum is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, can be defined as:

$$G = 1 + \frac{\text{Drift}}{\int (\Delta t - \Delta t \text{ minimum}) dZ}$$

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

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

PROCESSING

OPEN HOLE LOGS

The sonic log used as input has been edited prior to calibration.

CORRECTION TO DATUM

Seismic reference Datum (SRD) is at Mean Sea Level. The airgun was positioned 146.2m above MSL.

VELOCITY MODELLING

An interval velocity of 1801m/s was assumed from the source MSL and an interval velocity of 1889 m/s was assumed from MSL to the top of the sonic log.

SONIC CALIBRATION RESULTS

The top of the sonic log is chosen as the origin for the calibration drift curve. All drift measurements are relative to this point.

The drift curve indicates a number of corrections to be made to the sonic log. Block shifts of 1.42 us/ft,and 4.58 us/ft have been applied over the intervals 348-434 m, and 434-1206 m respectively (depths below KB).

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

INTERVAL VELOCITIES

Interval velocities have been calculated and displayed using levels at MSL and a number of geological formation tops.

GEOGRAM PROCESSING

GEOGRAM PROCESSING

Two Geograms were generated using Klauder wavelets. The first two presentations are generated from SRD to 4sec frequencies. The last two presentations are using only 12-60Hz frequency Klauder wavelets.

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

TIME TO DEPTH CONVERSION

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

REFLECTION COEFFICIENTS - ATTENUATION COEFFICIENTS

Primaries:

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

$$R = \frac{\rho_2 v_2 - \rho_1 v_1}{\rho_2 v_2 + \rho_1 v_1}$$

where ρ_1 = density of the layer above the reflection interface
ρ_2 = density of the layer below the reflection interface
v_1 = compressional wave velocity of the layer above the reflection interface
v_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.

PRIMARIES WITH TRANSMISSION LOSS;

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

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

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

$$\text{Primary}_n = R_n \, A_{n-1}$$

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 + multiples.

MULTIPLES ONLY:

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

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 2. These Geograms were generated using a Klauder wavelet of frequency 12-60Hz.

CONVOLUTION

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

GEOGRAM OUTPUT

Standard output includes the following synthetic seismograms (normal and reverse polarity):

1 - Primaries at various sweep frequencies + 3 correlation curves GR, RHOB, and Reflection Coefficient.

2 - Primaries and multiples as follows:
    Primaries
    Primaries with transmission losses
    Primaries and multiples
    Multiples only

orrected Results

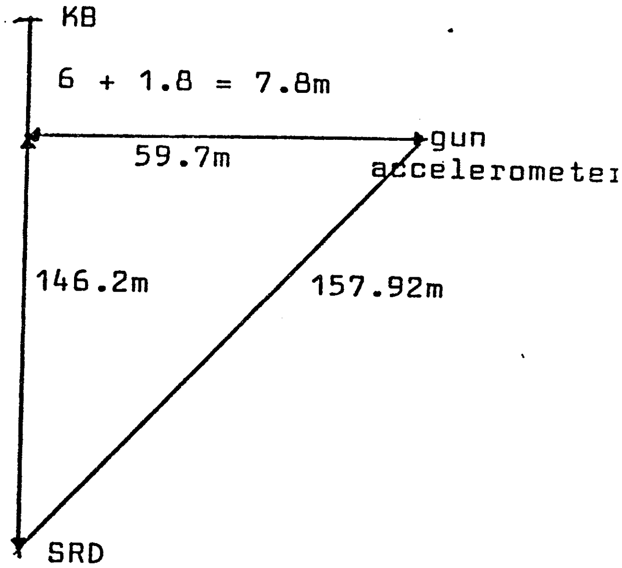
ransit times corrected to SRD
154m.

or shot @ 154m (SRD)
TT = 86.2ms

ctual travel path from gun
o SRD = 157.92m

Av. velocity = $\frac{157.92}{86.2.10^{-3}}$ m/s

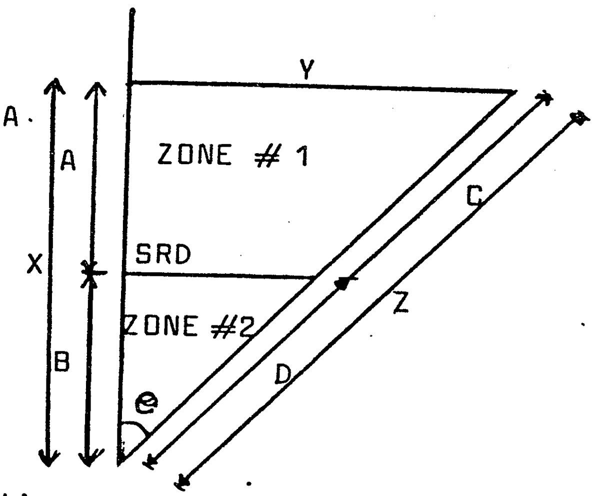
= $1832 ms^{-1}$



hot Processing: i.e. correcting to SRD

nputs: Average velocity gun to SRD = V
Gun offset = Y
SRD to hydrophone(accelerometer)=A
Raw transit time = T ms
Geophone depth = X (X = A+B)

$\theta = \tan^{-1} Y/X$
$D = (1/\cos\theta) \times (X-A)$
$Z = \sqrt{(X^2 + Y^2)}$
$C = Z-D$
$I = (T - \frac{(Z-D)}{V}).\cos\theta$



Where I is the corrected transit time

The above analysis assumes that the velocity in the zone above SRD is constant.

In this particular survey to obtain a drift curve a further constant velocity zone had to be assumed namely from 154m to 349m.

2.0 Composite Well Log

2.0 Composite Well Log

PE601219

This is an enclosure indicator page.
The enclosure PE601219 is enclosed within the container PE907681 at this location in this document.

The enclosure PE601219 has the following characteristics:

ITEM_BARCODE =	PE601219
CONTAINER_BARCODE =	PE907681
NAME =	Composite Well Log Part 2
BASIN =	OTWAY
PERMIT =	
TYPE =	WELL
SUBTYPE =	COMPOSITE_LOG
DESCRIPTION =	Composite Well log, part 2 of 2, (enclosure from Well Summary) for Stoneyford-1
REMARKS =	Contains a Mud Log and Cluster Log
DATE_CREATED =	26/01/84
DATE_RECEIVED =	13/07/84
W_NO =	W849
WELL_NAME =	Stoneyford-1
CONTRACTOR =	Gas and Fuel Exploration N.L.
CLIENT_OP_CO =	Gas&Fuel Exp NL

(Inserted by DNRE - Vic Govt Mines Dept)

3.0 Mud Log

3.0 Mud Log

PE605058

This is an enclosure indicator page.
The enclosure PE605058 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605058 has the following characteristics:

ITEM_BARCODE = PE605058
CONTAINER_BARCODE = PE907681
NAME = Formation Evaluation Log
BASIN = OTWAY
PERMIT = PEP 100
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Formation Evaluation Log, sheet 1 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS = Cover sheet
DATE_CREATED = 21/01/84
DATE_RECEIVED =
W_NO = W849
WELL_NAME = STONEYFORD-1
CONTRACTOR = Exploration Logging
CLIENT_OP_CO = Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605059

This is an enclosure indicator page.
The enclosure PE605059 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605059 has the following characteristics:

ITEM_BARCODE = PE605059
CONTAINER_BARCODE = PE907681
NAME = Formation Evaluation Log
BASIN = OTWAY
PERMIT = PEP 100
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Formation Evaluation Log, sheet 2 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =
DATE_CREATED = 31/05/80
DATE_RECEIVED =
W_NO = W849
WELL_NAME = STONEYFORD-1
CONTRACTOR = EXLOG
CLIENT_OP_CO = Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605060

This is an enclosure indicator page.
The enclosure PE605060 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605060 has the following characteristics:

ITEM_BARCODE =	PE605060
CONTAINER_BARCODE =	PE907681
NAME =	Formation Evaluation Log
BASIN =	OTWAY
PERMIT =	PEP 100
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Formation Evaluation Log, sheet 3 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =	
DATE_CREATED =	31/05/80
DATE_RECEIVED =	
W_NO =	W849
WELL_NAME =	STONEYFORD-1
CONTRACTOR =	EXLOG
CLIENT_OP_CO =	Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605061

This is an enclosure indicator page.
The enclosure PE605061 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605061 has the following characteristics:

ITEM_BARCODE = PE605061
CONTAINER_BARCODE = PE907681
NAME = Formation Evaluation Log
BASIN = OTWAY
PERMIT = PEP 100
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Formation Evaluation Log, sheet 4 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =
DATE_CREATED = 31/05/80
DATE_RECEIVED =
W_NO = W849
WELL_NAME = STONEYFORD-1
CONTRACTOR = EXLOG
CLIENT_OP_CO = Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605062

This is an enclosure indicator page.
The enclosure PE605062 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605062 has the following characteristics:

```
     ITEM_BARCODE = PE605062
CONTAINER_BARCODE = PE907681
             NAME = Formation Evaluation Log
            BASIN = OTWAY
           PERMIT = PEP 100
             TYPE = WELL
          SUBTYPE = MUD_LOG
      DESCRIPTION = Formation Evaluation Log, sheet 5 of
                    14, (enclosure from Well Summary), for
                    Stoneyford-1
          REMARKS =
     DATE_CREATED = 31/05/80
    DATE_RECEIVED =
             W_NO = W849
        WELL_NAME = STONEYFORD-1
       CONTRACTOR = EXLOG
     CLIENT_OP_CO = Gas and Fuel Exploration N.L
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE605063

This is an enclosure indicator page.
The enclosure PE605063 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605063 has the following characteristics:

```
     ITEM_BARCODE = PE605063
CONTAINER_BARCODE = PE907681
             NAME = Formation Evaluation Log
            BASIN = OTWAY
           PERMIT = PEP 100
             TYPE = WELL
          SUBTYPE = MUD_LOG
      DESCRIPTION = Formation Evaluation Log, sheet 6 of
                    14, (enclosure from Well Summary), for
                    Stoneyford-1
          REMARKS =
     DATE_CREATED = 31/05/80
    DATE_RECEIVED =
             W_NO = W849
        WELL_NAME = STONEYFORD-1
       CONTRACTOR = EXLOG
    CLIENT_OP_CO = Gas and Fuel Exploration N.L
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE605064

This is an enclosure indicator page.
The enclosure PE605064 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605064 has the following characteristics:

ITEM_BARCODE =	PE605064
CONTAINER_BARCODE =	PE907681
NAME =	Formation Evaluation Log
BASIN =	OTWAY
PERMIT =	PEP 100
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Formation Evaluation Log, sheet 7 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =	
DATE_CREATED =	31/05/80
DATE_RECEIVED =	
W_NO =	W849
WELL_NAME =	STONEYFORD-1
CONTRACTOR =	EXLOG
CLIENT_OP_CO =	Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605065

This is an enclosure indicator page.
The enclosure PE605065 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605065 has the following characteristics:

ITEM_BARCODE =	PE605065
CONTAINER_BARCODE =	PE907681
NAME =	Formation Evaluation Log
BASIN =	OTWAY
PERMIT =	PEP 100
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Formation Evaluation Log, sheet 8 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =	
DATE_CREATED =	31/05/80
DATE_RECEIVED =	
W_NO =	W849
WELL_NAME =	STONEYFORD-1
CONTRACTOR =	EXLOG
CLIENT_OP_CO =	Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605066

This is an enclosure indicator page.
The enclosure PE605066 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605066 has the following characteristics:

ITEM_BARCODE = PE605066
CONTAINER_BARCODE = PE907681
NAME = Formation Evaluation Log
BASIN = OTWAY
PERMIT = PEP 100
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Formation Evaluation Log, sheet 9 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =
DATE_CREATED = 31/05/80
DATE_RECEIVED =
W_NO = W849
WELL_NAME = STONEYFORD-1
CONTRACTOR = EXLOG
CLIENT_OP_CO = Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605067

This is an enclosure indicator page.
The enclosure PE605067 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605067 has the following characteristics:

ITEM_BARCODE = PE605067
CONTAINER_BARCODE = PE907681
NAME = Formation Evaluation Log
BASIN = OTWAY
PERMIT = PEP 100
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Formation Evaluation Log, sheet 10 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =
DATE_CREATED = 31/05/80
DATE_RECEIVED =
W_NO = W849
WELL_NAME = STONEYFORD-1
CONTRACTOR = EXLOG
CLIENT_OP_CO = Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605068

This is an enclosure indicator page.
The enclosure PE605068 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605068 has the following characteristics:

ITEM_BARCODE =	PE605068
CONTAINER_BARCODE =	PE907681
NAME =	Formation Evaluation Log
BASIN =	OTWAY
PERMIT =	PEP 100
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Formation Evaluation Log, sheet 11 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =	
DATE_CREATED =	31/05/80
DATE_RECEIVED =	
W_NO =	W849
WELL_NAME =	STONEYFORD-1
CONTRACTOR =	EXLOG
CLIENT_OP_CO =	Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605070

This is an enclosure indicator page.
The enclosure PE605070 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605070 has the following characteristics:

ITEM_BARCODE =	PE605070
CONTAINER_BARCODE =	PE907681
NAME =	Formation Evaluation Log
BASIN =	OTWAY
PERMIT =	PEP 100
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Formation Evaluation Log, sheet 13 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =	
DATE_CREATED =	31/05/80
DATE_RECEIVED =	
W_NO =	W849
WELL_NAME =	STONEYFORD-1
CONTRACTOR =	EXLOG
CLIENT_OP_CO =	Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605071

This is an enclosure indicator page.
The enclosure PE605071 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605071 has the following characteristics:

ITEM_BARCODE =	PE605071
CONTAINER_BARCODE =	PE907681
NAME =	Formation Evaluation Log
BASIN =	OTWAY
PERMIT =	PEP 100
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Formation Evaluation Log, sheet 14 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =	
DATE_CREATED =	31/05/80
DATE_RECEIVED =	
W_NO =	W849
WELL_NAME =	STONEYFORD-1
CONTRACTOR =	EXLOG
CLIENT_OP_CO =	Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)

PE605069

This is an enclosure indicator page.
The enclosure PE605069 is enclosed within the container PE907681 at this location in this document.

The enclosure PE605069 has the following characteristics:

ITEM_BARCODE = PE605069
CONTAINER_BARCODE = PE907681
NAME = Formation Evaluation Log
BASIN = OTWAY
PERMIT = PEP 100
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Formation Evaluation Log, sheet 12 of 14, (enclosure from Well Summary), for Stoneyford-1
REMARKS =
DATE_CREATED = 31/05/80
DATE_RECEIVED =
W_NO = W849
WELL_NAME = STONEYFORD-1
CONTRACTOR = EXLOG
CLIENT_OP_CO = Gas and Fuel Exploration N.L

(Inserted by DNRE - Vic Govt Mines Dept)