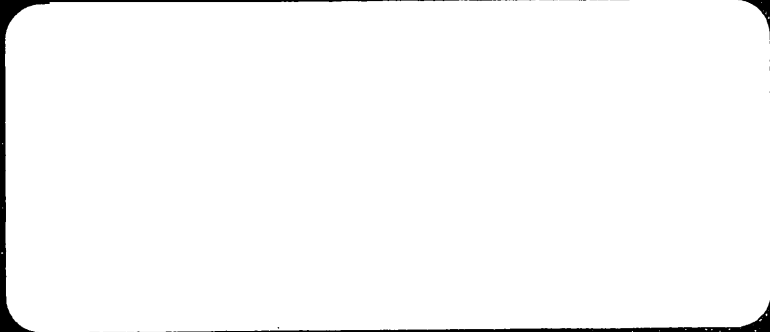


DEPT. NAT. RES & ENV



PE902537



SOUTH AUSTRALIAN OIL & GAS  
CORPORATION PTY. LTD.

OCY/500

# SOUTH AUSTRALIAN OIL & GAS CORPORATION PTY. LTD.

226 Melbourne Street, North Adelaide, S.A. 5006

Telephone: 267 5699 Telex: AA 88900

P.O. Box 470, North Adelaide, S.A. 5006

Our Ref. 1.RBOO1.MUO2

902537 002

SOUTH AUSTRALIAN OIL & GAS CORPORATION PTY. LTD. - COMSERV (779)



Page 2 of 52

ROBINVALE 1

25 OCT 1983

WELL COMPLETION REPORT

**W825**

PLEASE DO NOT TAKE APART.

Prepared by:

R.J. SUTTILL

SAOGC

July, 1983

IMPORTANT NOTICE

902537 003

The contents of this document have been prepared from information supplied to and gathered by South Australian Oil & Gas Corporation Pty. Limited ("The Company") from a variety of primary and secondary sources. Whilst the Company has attempted to ensure that such information is up-to-date and accurate and that the conclusions and recommendations contained herein are reasonably and soundly based, no warranty is given as to the correctness of any such information and no reliance should be placed on the same or on any such conclusions or recommendations as no liability is accepted by the Company for any statement, opinion, error or omission contained herein or implied hereby and whether the result of negligence or mistake or any other cause whatsoever. The document has been prepared for internal use only, and its provision by the Company is strictly subject to this disclaimer. Any party in any way contemplating action based upon or related to its contents should beforehand seek complete and objective professional and/or technical information analysis and assessments in relation thereto and proceed with any such action specifically on the basis of the same rather than the contents of this document.

# C O N T E N T S

902537 004  
Page No.

## CONTENTS

### WELL DATA CARD

### LOCATION MAP

### WELL HISTORY

1.	General Data	1
2.	Drilling Summary	2
3.	Drilling Data	5

### GEOLOGY

1.	Objectives	17
2.	Structure	17
3.	Results of Drilling	17
	(a) Stratigraphy	17
	(b) Stratigraphic Prognosis	25
	(c) Hydrocarbon Shows	22
4.	Conclusions	24

### REFERENCES

26

### APPENDICIES

1. Lithological Descriptions
2. Core Descriptions
3. Depth vs Temperature
4. Actual Depth-Time

### FIGURES

1.	Locality Map	RB.001.2945
2.	Geothermal Gradient	MAW.000.2939
3.	Actual Depth-Time Curve	RB.001.2946

### ENCLOSURES

1.	Composite Well Log (GR-Neutron) 1:200	RB.001.2547
2.	SP - Resistivity Log 1:200	
3.	Gearhart Mud Log 1:500	

WELL: ROBINVALE 1		WELL CATEGORY: Plugged & Abandoned	
LAT: 34° 49' 13.44" S.		PROSPECT TYPE: Structural Drape	
LONG: 142° 41' 04.16" E.		INTEREST HOLDERS:	
SEISMIC SP: 81-B4 (425)		SAOGC	30%
ELEVATION GND: 74 m		Conserv (779)	70%
KB: 78.6 m		Participating Interests:	
MAP: M000.2751		SAOGC	100%
T.D. (LOG): 246.10 m			
TD(DRLR): 245.67 m			
PBTD: - m			
RIG: ATCO-APM A3			

SPD: 28-6-83	RIG RELEASED: 1-7-83	
COMPLETED:		
STATUS: Plugged & Abandoned		
TYPE COMPLETION: -		
IP: -		
INTERVAL: -	902537 005	
ZONE(S): -		
CASING SIZE	SHOE DEPTH	TYPE
7"	86.87m	23 lb J55 LT & C Range 3

AGE	FORMATION OR ZONE TOPS	DEPTH (m)		THICKNESS (m)	(H)IGH/ (L)OW(m)	PERFORATIONS 4 SHOTS/m	
		DRLD	SUBSEA			UNIT	INTERVAL
Quaternary	Undifferentiated and Blanchetown Clay	4.63	+74.0	34.4	0		
Pliocene	Parilla Sand	39.0	+39.6	51.0	4.4 (L)		
Pliocene/Miocene	Bookpurnong Beds	90.0	-11.4	52.8	5.4 (L)		
Miocene	Duddo Limestone	142.8	-64.2	30.2	48.2 (L)		
Miocene	Winnambool Formation	173.0	-94.4	51.0	Not Prognosed		
Cambrian	Kanmantoo Group	224.0	-145.4	22.1	206.6 (H)		
	Total Depth	246.1	-167.5				

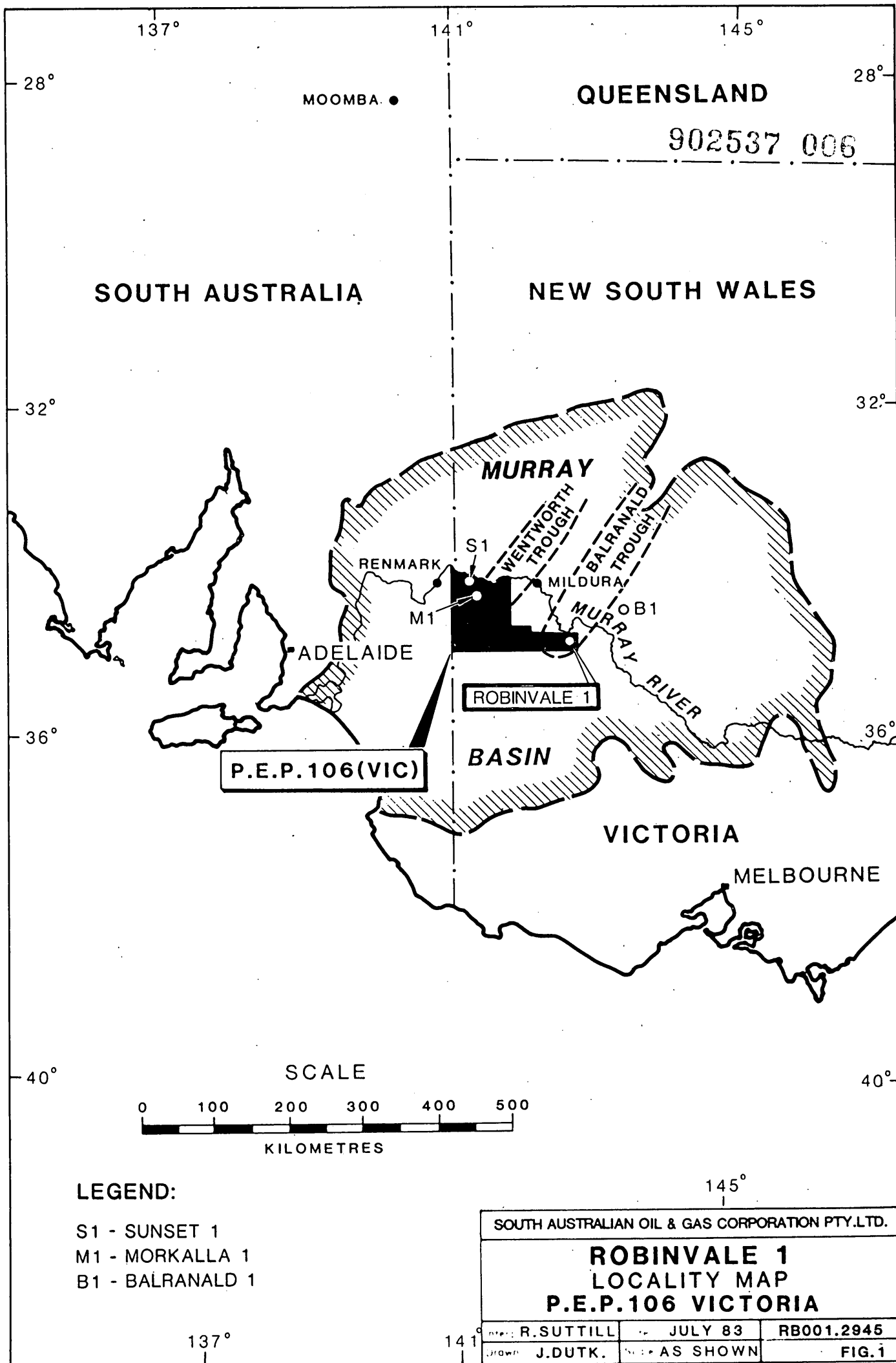
LOG	RUN	INTERVAL	BHT
BPB Logs:			
MCS	1	83.6m - 244.0m	36°C
OCS	1	Surface-246.1 m	
NS	1	Surface-245.0 m	
FE	1	86.5m - 244.0 m	
SP-RES	1	87.0m - 245.0 m	

LOG INTERPRETATION											
INTERVAL	Ø	Sw	INTERVAL	Ø	Sw	INTERVAL	Ø	Sw	INTERVAL	Ø	Sw

CORES				
FORM	NO.	INTERVAL	CUT	REC.
Kanmantoo	1	243.84m - 245.67m	1.83m	1.83m

FORMATION TESTS												
NO.	INTERVAL	IO	ISI	FO	FSI	1st FLOW IP/FP	ISIP	2nd FLOW IP/FP	FSIP	TC	BC	REMARKS
						NONE						

ADDITIONAL INFORMATION :	PREPARED: 1-8-83
	UPDATED:



137°

141°

145°

28°

28°

MOOMBA ●

QUEENSLAND

902537 006

SOUTH AUSTRALIA

NEW SOUTH WALES

32°

32°

MURRAY

RENMARK

S1

M1

MILDURA

MURRAY B1

ADELAIDE

ROBINVALE 1

BASIN

VICTORIA

MELBOURNE

36°

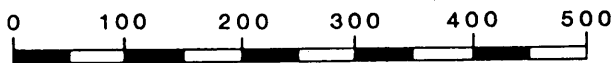
36°

P.E.P. 106 (VIC)

40°

40°

SCALE



KILOMETRES

LEGEND:

- S1 - SUNSET 1
- M1 - MORKALLA 1
- B1 - BALRANALD 1

145°

SOUTH AUSTRALIAN OIL & GAS CORPORATION PTY.LTD.

**ROBINVALE 1**  
**LOCALITY MAP**  
**P.E.P. 106 VICTORIA**

BY R. SUTTILL	JULY 83	RB001.2945
BY J. DUTK.	AS SHOWN	FIG. 1

137°

141°

**WELL HISTORY**

1. GENERAL DATA

<b>Interest Holders:</b>	SAOGC	30%
	Comserv (779)	70%
<b>Participating Interests:</b>	SAOGC	100%

**Surveyed Location:**

Latitude: 34° 49' 13.44" S (Subject to Survey)

Longitude: 142° 41' 04.16" E (Subject to Survey)

**Surveyed Elevation:**

Ground Level: +74m (Subject to Survey)

Kelly Bushing: +78.63m (Subject to Survey)

**Seismic Reference:**

81-B4 (425) Robinvale Seismic Survey 1981

**Total Depth:**

Driller: 245.67m

BPB: 246.10m

2. DRILLING SUMMARY (All depths are to Driller's K.B., unless shown otherwise)

Robinvale 1 was spudded at 1800 hours on the 28th June 1983. It was plugged and abandoned as a dry hole on the 1st July, 1983. A 8 3/4" (222.25mm) hole was drilled to 90m, this was then cased with 7 joints of 7" (177.80mm) 23bb J53, LT&C, Range 3 casing, with a shoe at 86.87m. Casing was cemented with 70 sacks Class A cement (slurry S.G. = 1.76).

A 6" (152.40mm) hole was drilled to 243.84m and Core 1 was cut from 243.84m to 245.67m with 1.83m (100%) being recovered. Total depth for the well was 245.67m.

Logs were run, then the well was plugged and abandoned with plugs set as shown in Appendix 4. The rig was released at 1530 hours on the 1st July 1983.

(a) Drilling Make-up Water

The make-up water for Robinvale 1 was obtained by tanker from the River Murray at Wemen approximately 9 kilometres from the well site.

(b) Mud Logging

Ditch cutting samples were collected at 9m intervals from the surface to 90m (surface casing point). From surface casing ditch cutting samples were collected at 3m intervals to a total depth of 245.67m. All samples were described and checked for fluorescence and visual porosity.

Source rock samples were taken at 50m intervals from surface to 245.67m (T.D.).



A Gearhart mud logging unit was used to monitor ditch gas from surface to 245.67m (T.D.). Total gas was recorded continuously using a Continental Laboratories 900 Series gas detector. Depth, rate of penetration and pump strokes were also monitored continuously.

(c) Testing

No drill stem tests were conducted in Robinvale 1.

(d) Coring

One core was cut in Robinvale 1.

Core 1: Kanmantoo Group 243.84m - 245.67m

(e) Electric Logging (B.P.B. depths)

**Suite No. 1**

MCS (Multichannel Sonic)	83.6m - 244.0m
CCS (Coal Combination Sonde)	Surface - 246.1m
NS (Neutron Sonde)	Surface - 245.0m
FE (Focussed Electric)	86.5m - 244.0m
SP-RES (Spontaneous Potential - Resistance)	87m - 245.0m

(f) Sidewall Cores

No sidewall coring programme was conducted in Robinvale 1.

(g) Temperature Controls

A bottom hole temperature (BHT) of 36°C at a depth of 246.1m was recorded prior to running the CCS logging tool. This BHT was recorded 4 hours after circulation was stopped. This gives a minimum BHT for the well of 36°C (96.8°F). As only one BHT is available it is not possible to calculate an extra-

polated BHT in the conventional way. Data from the other two wells drilled in this programme Mildura West 1 and Mildura West 2, are plotted on a depth-temperature plot (Appendix 3) which gives a minimum regional geothermal gradient of 4.5°C/100m (2.46°F/100 ft.) for this area.

(h) Deviation Surveys

Three deviation surveys were recorded, the first at 85m showed a 3/4° deviation, the second at 199m showed a 1/8° deviation and the third at 240m showed a 1/4° deviation from vertical.

(i) Velocity Survey

No Velocity Survey was conducted at Robinvale 1.

(j) Completion Details

Robinvale 1 was plugged and abandoned with two cement plugs. A 42 m plug was set across the casing shoe with 25 sacks of class A cement over the interval 66 m to 108 m. A 6 m surface plug was set at the surface using 2 sacks of class A cement. A steel cap inscribed with, the well name, the spud depth, total depth, and the plugged and abandoned date has been welded to the top of the casing. The rig was released at 1530 hours on 1st July 1983.

3. DRILLING DATA

**Date drilling commenced:** 28/6/83 @ 1800 hrs  
**Date drilling completed:** 30/6/83 @ 2130 hrs  
**Date rig released:** 1/7/83 @ 1530 hrs  
**Total rig time:** 2 days 21.5 hrs  
**Contractor:** ATCO-APM Drilling Pty. Ltd.

**Rig:** Trailer Mounted Franks Cabot Drilling Rig (Rig No. A3) Mounted on a 12' wide x 47' long Goose Neck Trailer, with a 24" Fabricated Channel Beam. Tandem Rear Axles: 16 - 11R 22.5 Radial Tyres Hydraulic support legs: Four Locknut Feature Carrier is complete with 1/8" Steel Plated Deck, 2' x 8' long Folding type Walkways on each side, Handrails and Stairways to ground level. Dog House and Generator Set are mounted on Trailer.

**Tag Axle:**

1 - 45,000lb rated Tandem Axle Booster with  
8 - 11R 16.5 Tyres to offset overload weight on Rig Carrier during highway moves.

**Drawworks:**

Franks Cabot, Model 1287-TD Single Drum Drawworks  
Main Drum Barrel Dia. : 18 7/8" x 34" 1" Grooving  
Brake Rim Dia./Width : 42" x 12  
Drum Clutch : 24" - 2 Plate  
Jackshaft Clutches : 18" - 2 Plate  
Drum Shaft Diameter : 6"  
Main Drum Drive Chain : 1 1/4" - T  
Jackshaft Drive Chain : 1 1/4" - DBL

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.:**

Rig Light Plant:

Stamford Generator, 37.5 K.V.A., Type AC-244D, powered by a Chrysler Nissan Six Cylinder Diesel Engine.

Generator Nos. 1 and 2

E.M. Bemac Brushless Generator, S.N: 178235231

500 K.V.A., 400 KW, 600 Volts, Powered by a Caterpillar Model D-353E Diesel Engine.

**Table Rotary Machine:**

Ideco Model C-175 Rotary Table

Size: 17.5" 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

Top Floor Section Accommodates Rotary Table and Racking Platform has 3'6" Fold-Out Walkways on each side, wide square tubing Handrails, V-Door Ramp and Stairs to Catwalk 3' Fold-Out Stabilizers on each side. Substructure is sheathed with 10 gauge steel panels and is pinned to the Rig Carrier.

**Lighting:**

Including: Mast Light String, Flood Lights, Building Lighting.

**Mast:**

96' Two Section Telescoping Type Mast, manufactured by Greco Steel Corp.

Raising/Lowering System: Two Double Acting, three stage, telescoping type Hydraulic Cylinders.

Top Section is raised with Bridle Line

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- 4 1/4" x 40' long Kelly with 4 1/2" XH Pin and  
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: 5000 PSI

**No. 1 Pump Drive:**

54" OD Sheave with 10 Grooves and Pressed on 6" dia Shaft  
complete with 10 Groove "V" Belt Power Bands and Steel  
Guard.

**No. 1 Pump Engine:**

G.E. Electric Motor, Model 5-GE-761-J1,

**No. 2 Pump Drive:**

1 - Pump Drive Pedestal Assembly with 20" Clutch,  
Drum Spider, Rotor Seal and Mounted on Skid with  
D-353 Caterpillar Engine.

1 - 58" 8V 10 Groove Pump Sheave V-Hub

2 - 15" 8V 10 Groove Drive Sheave X-Hub

2 - (5) 8V3150 "Vee" Belts

**No. 2 Pump Engine:**

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

**Tanks - Mud and Mud System:**

Single Tank Mud System, 265 BBL Capacity.

- One Tank - 3 Compartment Mud System with Sand Trap.
  - Low pressure Mud System with 3 Subsurface Guns.
  - 2 - Grey Agitators Model 72-0-5, powered by 2 - 5 H.P. Electric Motors, Starozik Single Screen Shale Shaker Model SC-145, powered by a 5 H.P. Electric Motor.
  - 1 - 2" x 3" Poor Boy Degasser
  - 1 - 4" x 2" Standard Mud Mix Hopper
  - 1 - 3 Cone Desander complete with 6" square Header Manifold and underflow Trough.
  - 1 - B.J. Hughes 4" x 6" Centrifugal Pump model 112-6CW, powered by 75 H.P. Electric Motor, 575 Volts.
- All connected to Mud System with 1 - 4"  
1 - 6" and 1 - 8" Demco Butterfly Valves.

**Blowout and Well Control Equipment:**

- 1 - Shaffer "Annular" Blowout Preventer  
3000 PSI, Assembly No. 5820  
Trim : Internal H<sub>2</sub>S  
Top Connection : Studded  
Btm Connection : Flanged  
Bore Size : 11"
- 1 - Cameron 3000 PSI Double Gate Blowout Preventer,  
Type "SS", No. 165  
Bore Size : 11"  
Top & 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 H.P. Electric Motor.

2 - 220 Cu. Ft. Nitrogen Bottle Back-up System

2 - CPW 3000 and 5000 LB. Hydro Poise Read-Out Gauges,  
A-B On/Off Switch Panel.

System is complete with Remote Control Panel, mounted  
in Dog House.

**Compressor - Air, Auxiliary:**

Dresser Model 660-A Air Compressor

Belt driven by a C.G.E. 15 H.P. Electric Motor Model  
IF5295H, A-B Switch and Mounted on 24" dia x 66" long  
Air Receiver (Situated on Gooseneck of Rig Carrier)

**B.O.P. Spools and Valves:**

Including:

- 1 - 900 Series 10" Adapter Spool with 2 - 3" Flanged  
Outlets
- 1 - 3" 3000 PSI McEvoy Gate 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 LB Flanged McEvoy Gate Valves
- 2 - 3" 3000 LB Flanged McEvoy Gate Valves
- 2 - 2" Three Way Block Connectors
- 2 - 3"x3"x2"x2" Four Way Block Connectors
- 2 - Willis Multi-Orifice Chokes



902537 017

- 1 - CPW, 21 MPA Pressure Gauge
- 1 - Marsh 20,000 LB Gauge complete with 100' 1/2" Hydraulic Hose.

**Drilling Line:**

2500' Wrights 1" Steel Drilling Line.

**Drill Pipe:**

- 58 - Joints (Approx 1815') 4 1/2" 16.60# Grade "E" Range 2 Armco seamless Drill Pipe W/ 6 1/4" ID 18 Deg. Reed 4 1/4" XH Tool Joints. Drill Pipe is complete with Hardfacing, Series 200 inspected and internally coated with PA-200.
- 137- Joints (approx 4288') 4 1/2" 16.60# Grade "E" Range 2 Armco Seamless 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 internally coated with PA-2000.
- 10 - Joints 4 1/2" 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:**

- 14 - 6 1/4" OD Drill Collars, Zip Lift, Hardbanded with 4 1/2" XH Connections.

**Tongs - Rotary and Power Tongs:**

- 1 - Set Web Wilson Type "B" Tongs with 4 1/4" - 6 3/4" Jaws.
- 2 - 13 3/8" Farr Model LW-13375 Hi-Torque Power Tongs, complete with 5 1/2", 7" and 9 5/8" Jaws, Torque Gauge and Single Hanger Assembly. Hydraulic Power Unit, driven by a Lister Four Cylinder

902537 018

Diesel Engine.

**Elevators and Links:**

- 1 - Set 1 3/4" x 72" B.J. Ruffneck Links.
- 1 - 4 1/2" B.J. Type "MAA" Centre Latch Elevators.
- 1 - 4 1/2" W.W. 18 Degree Type T-100 Centre Latch Elevators
- 1 - 7" W.W. Single Joint Pick-up Elevators with 5 1/2" Bushing.
- 1 - 7" Side Door Casing Elevators
- 1 - 10 3/4" W.W. H-150 Casing Elevators with 8 5/8" and 9 5/8" Bushings.
- 1 - 5 1/2" W.W. Type H-150 Casing Elevators
- 1 - 9 5/8" Single Joint Pick-up Elevators with 8 5/8" Insert.

**Slips, Spider and Safety Clamps:**

- 1 - 4 1/2" DU Reg. Baash Ross Slips
- 1 - 5 1/2" - 7" Baash Ross Type "C" Drill Collars Slips
- 1 - Baash Ross Type "C" 5" - 7" Safety Clamp complete with Wrench and Box.
- 1 - Varco "CMSCL" Multi Segment 10 3/4" Casing Slips
- 1 - 4 1/2" DU Reg. Baash Ross Slips with 2 3/8", 2 7/8" and 3 1/2" Dies.
- 1 - 7" Baash Ross Type "UC" Casing Slips

**Instrumentation:**

- 1 - Cameron Type "C" Weight Indicator, 180,000 LB, S.N 78D5431
- 2 - 2" Gauges Int. Mud Gauges Type "D" (Standpipe).
- 1 - 2" Cameron Type "F" Pressure Gauge (Pump).

902537 019

**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' High.

Dog House Contents:

1 - Knowledge Box

2 - NRL Light Fixtures recessed into roof of building

**Combination Building:**

Accumulator Building/Change Room/Water Tank.

Accumulator Bldg. Size : 11'6"W x 13'8"L x 8'6"H

Change Room Size : 7' W x 10' L x 8'6"H

Water Tank Size : 11'6"W x 17'4"L x 8'6"H (300 BBLS)

Fuel Section : 4'6"W x 10' L x 8'6"H (approx 1800 galls)

Overall Size : 11'6"W x 41' L x 8'6"H

**Combination Building:**

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

Trailer Mounted Combination Building complete with 16 - 11R 22.5 Radial Tyres

S.C.R. Building Size : 12'W x 7'6"L x 8'8" High

Generator Bldg. Size : 12'W x 20' L x 8'8" High

Fuel Tank Size : 12'L x 6'6"H x 45" Deep  
(approx 1800 galls)

Overall Trailer Size : 12'W x 38'L x 12'6" High

S.C.R. Building has 2 - 48" NRL Light Fixtures

Generator Building has 2 - NLR 48" Fluorescent Light Fixtures.

**Pump House No. 1 & 2:**

902537 020

12'W x 30'L x 9'6" High with Peaked Roof.

3 - NRL Model 484 Fluorescent Light Fixtures.

**Catwalk - Pipe Racks:**

Trailer Mounted Catwalk 8' Wide x 40' Long

Mounted on Tandem Axles with 8 - 10.00 x 20 Tyres,  
complete with 2 - 15' long fold-out Pipe Racks, constructed  
with 3 1/2" Pipe.

2 - Sets Pipe Racks built with 4" Square Tubing.

**Miscellaneous Rig Up Parts:**

Including:

Wireline, Manilla Rope, Snakeskin, Chain, Shackles,  
Clamps, Cable, Safety Hooks, Fuel, Oil, Gaskets and  
Grease.

1 - Lot of Piping, Valves and Fittings

Required for Air, Fuel and Water Lines.

1 - Junk Rack 5'W x 8': x 2'H mounted on Skid  
with Steel Frame, expanded metal floor and sides.

1 - Baroid Mud Testing Equipment

1 - Combination Derrick Stand and Drilling Line Stand.

1 - Gavel Mud Saver Bucket complete with 4 1/2" End  
Seals.

1 - Chemical Mixing Barrel

1 - 52" Bug Blower with 3 HP explosion proof Electric  
Motor, 1800 RPM.

1 - Bell Nipple and Flow Line

6 - Assorted Bit Breakers

1 - 8 5/8" x 28' Long Mousehole

1 - 8 5/8" x 40' Long Rathole

**Subs:**

- 4 - Save Subs with 4 1/2" XH Pin and Box
- 2 - Bit Subs with 4 1/2" XH Box with 4 1/2" Reg. Box.
- 1 - Bell Sub with 4 1/2" Reg Box by 6 5/8" Reg Box.
- 1 - 7" Casing Cement Head
- 1 - Cementing Nubbin with 4 1/2" XH Pin

**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 3 HP Brook Electric Motor, 230o460 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 Hydraulic Motor and complete with 7000' of .092 Wire Line.

**Fishing Equipment:**

- 1 - 8 1/8" OD 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.

902537 022

**Swabbing Unit:**

TSM Swabbing Unit consisting of IDECO H-25 Main Drum with 10,000' - 9/16" Sand Line Fawick Clutch. Kremco Right Angle Gear Box, 1 3/4" Single Drive Chain. Fuller Model T905-C 5 Speed Transmission and driven by a Detroit Diesel Engine Model 471, complete with 24 Volt Starter, Barber Rig Saver, Model 25-2191. Tu-Flo Air Compressor P.T.O. driven off engine with 10" dia. x 15" Long Air Receiver mounted on a 7'6" Wide x 15' Long Skid.

902537 023

## GEOLOGY

### 1. OBJECTIVES

Robinvale 1 was an exploration well designed to test the stratigraphy and the hydrocarbon potential of structurally high sediments onlapping the southern end of the Balranald Trough (Fig.1). The Robinvale structure is situated 75 kms west-southwest of Balranald 1 in the central Murray Basin (Fig 1). A further objective of the well was to gather source rock and maturity data for this part of the Murray Basin.

The Primary targets were the early Cretaceous Pyap Member and early Permian sediments if present. Secondary targets were the early Cretaceous Merreti and Coombool Members of the Monash Formation.

### 2. STRUCTURE

The Robinvale prospect lies at the southern end of the Balranald Trough. Structural closure is mapped at the 'Z' horizon (top of Cambrian) (Robinvale 1 Prospect Sheet, SAOGC Drawing Number MU000. 2751). There is also structural closure at the 'BT' horizon (base of Tertiary) (Robinvale 1 Prospect Sheet, SAOGC Drawing Number MU000 2751). The 'Z' horizon shows a broadly north-south trending structurally high closure. At this horizon the Robinvale 1 location is toward the northern flank of the structure. The configuration at the 'BT' horizon is slightly different with the culmination trending east-west (at right angles to the axis of the adjacent Balranald Trough).

902537 024

3. RESULTS OF DRILLING

(a) Stratigraphy

The following stratigraphic section was intersected at Robinvale 1:

Age	Formation	Depth (K.B.) (metres)	Subsea Elev. (Subject to Survey)	Thickness (metres)
Quaternary	Undifferentiated and Blanchetown Clay	4.63	+ 74.0	34.4
Pliocene	Parilla Sand	39.0	+ 39.6	51.0
Pliocene/Miocene	Bookpurnong Beds	90.0	- 11.4	52.8
Miocene	Duddo Limestone	142.8	- 64.2	30.2
Miocene	Winnambool Formation	173.0	- 94.4	51.0
Cambrian	Kanmantoo Group	224.0	-145.4	22.1
<b>Total Depth</b>		<b>246.1</b>	<b>-167.5</b>	

UNDIFFERENTIATED AND BLANCHETOWN CLAY

(Recent)

Surface to 39m SANDSTONE: two types; (A) Moderate red - orange, colourless coarse grained quartz, subrounded, occasionally subangular, moderate red-orange silty matrix, moderate-good visual porosity. (B) grey-orange, translucent, medium, occasionally coarse grained, subangular, occasionally subrounded, well sorted, clean, excellent visual porosity.

PARILLA SAND

(Pliocene)



39m - 90.0m

SANDSTONE and CLAYSTONE interbeds with trace COAL. SANDSTONE: two types; (A) light brown-dark yellowish orange, coarse ground, subangular, occasionally subrounded, well sorted, abundant microcrystalline limonite with associated pyrite, good visual porosity, (B) colourless - light grey, coarse - very coarse, subangular- subrounded, well sorted, clean, trace pyrite, excellent visual porosity. CLAYSTONE: dark brown-grey-olive, soft, becoming firm with depth, slightly swelling - swelling. COAL: dark brown-black, firm, rounded, possibly reworked grains.

BOOKPURNONG BEDS

(Miocene to Pliocene)

90.0m - 142.8m

SILTSTONE and CLAYSTONE interbeds with minor SANDSTONE and FOSSIL FRAGMENTS. SILTSTONE: light grey-creamish white, firm-hard, abundant lithic fragments of coal, mica, quartz, silica cement, occasional trace shell fragments, and microfossils becoming dark grey and pyritic with depth, also becoming slightly calcareous with depth. CLAYSTONE: dark olive green, soft, very sticky, swelling, pyritic, slightly calcareous. SANDSTONE: colourless, medium grained, subangular - subrounded, olive grey silty matrix, poor visual porosity, no fluorescence. FOSSIL FRAGMENTS: Bryozoa, gastropods, lamellibranchs.

902537 026

DUDDO LIMESTONE

(Miocene)

142.8m - 173.0m

MASSIVE LIMESTONE with MARL interbeds and FOSSIL FRAGMENTS. LIMESTONE: light grey-creamish white, firm to moderately hard, trace silt, trace reworked quartz, becomes microcrystalline with depth, sucrosic texture, trace glauconite, poor visual porosity. MARL: moderate green-brilliant green, firm occasionally soft, occasionally microcrystalline, calcareous, very silty in part, occasionally contains abundant clay matrix, grading to CLAYSTONE. FOSSIL FRAGMENTS: Echinoids, bryozoa, gastropods, corals, microfossils.

WINNAMBOOL FORMATION

(Miocene)

173.0m - 224.0m

SILTSTONE with minor beds of SANDSTONE, MUDSTONE and PELLETAL LIMESTONE. SILTSTONE: 2 types: (a) light grey-greish green, soft, occasionally moderately hard, crumbly, trace fine sand, pellets, interbedded with SANDSTONE. (b) light grey, occasionally dark greyish brown, firm occasionally soft, non calcareous, occasional reworked calcareous fragments, trace pyrite, associated fossil debris includes, pyritized; lamellibranchs, gastropods, crinoids, bryozoa. SANDSTONE: colourless, medium, occasionally coarse grained, subangular-subrounded, poor visual porosity, no fluorescence. MUDSTONE: white-

902587 037

off white, soft, sticky, non calcareous, silty. PELLETAL LIMESTONE: grey-dark grey, moderately hard, occasionally firm, blocky in part.

KANMANTOO GROUP

(Cambrian)

224.0m - 246.1m

(T.D.) PHYLLITE with minor METAQUARTZITE.

PHYLLITE: light grey-green, moderately hard-hard, fissile, subvitreous lustre, chloritic, micaceous, occasional calcite and quartz veins. METAQUARTZITE: clear, very hard, recrystallized.

(Slate! Kom)

902537 028

(b) Stratigraphic Prognosis

The table below summarises the prognosed and actual depths of the Formations predicted and intercepted.

Formation	Prognosed Depth (KB)	Actual Depth (KB)	Variations from Prognosis	Thickness	Variations from Prognosis
<b>QUATERNARY</b>					
Undifferentiated and Blanchetown Clay	4.63	4.63	0	34.4	+ 4.4
<b>TERTIARY</b>					
Parilla Sand	34.6	39.0	4.4(L)	51.0	+ 1.0
Bookpurnong Beds	84.6	90.0	5.4(L)	52.8	+ 32.8
Duddo Limestone	104.6	142.8	38.2(L)	30.2	- 60.8
Winnambool Formation	Not prognosed	173.0	Not prognosed	51.0	+ 51.0
<b>CRETACEOUS</b>					
Monash Formation					
Coombool Member	195.6	Absent	Absent	Absent	- 100.0
Merreti Member	295.6	Absent	Absent	Absent	- 75.0
Pyap Member	370.6	Absent	Absent	Absent	- 50.0
<b>PERMIAN</b>					
Early Permian	420.6	Absent	Absent	Absent	- 10.0
<b>CAMBRIAN</b>					
Kanmantoo Group	430.6	224.0	206.6(H)	22.1	
Total Depth	440.6	246.1	194.5(H)		

(All depths in metres)

The stratigraphic prognosis to the top of the Bookpurnong Beds was good with a maximum error of 5.4m. An unpredicted thickness of Bookpurnong Beds was encountered which resulted in the Duddo Limestone top being 48.2m low to prognosis. A thin sequence (30.2m) of Duddo Limestone was drilled

902587 099

which then gave way to an unpredicted occurrence of the Winnambool Formation with a thickness of 51.0m. The Winnambool Formation is interpreted as the lateral, shallower water facies equivalent of the Duddo Limestone (Lawrence, 1975).

The base of Tertiary was intersected at 224.0m which is 28.4m lower than the prognosed depth. Beneath the Tertiary Winnambool Formation, no Cretaceous or early Permian section was intersected and the well drilled straight into economic basement represented by the Cambrian Kanmantoo Group at 224.0m which was 206.6m high to prognosis. The explanation of this large error, and the complete absence of Cretaceous and early Permian sediments, is that a multiple of the real 'Z' reflector was picked as the top of the Kanmantoo Group. The reflector originally picked to represent the base of Tertiary (BT) is actually the 'Z' reflector (Robinvale 1 Prospect Sheet, SAOGC Drawing Number MU000.2751).

902537 030

(c) Hydrocarbons

A gas detector was in operation from the surface to total depth, 245.67m and all cutting samples were checked for fluorescence in ultra-violet light. One core was cut, but this was for basement identification and not for reservoir analysis.

Only a trace of gas was recorded in the section from the surface to the base of the Duddo Limestone. In the Bookpurnong Beds and Duddo Limestone connection gas was recorded in the range 1-4 units with a trip gas peak of 9.5 units.

In the Winnambool Formation gas values ranged from 0-0.8 units with small connection gas peaks.

In the Kanmantoo Group gas values quickly decline to zero.

No shows of fluorescence were recorded in any of the samples analysed. Also the primary target zones were not present in the section penetrated. Hence, no drill stem tests were conducted in this well.

4. CONCLUSIONS

Robinvale 1 was an exploration well designed to test the stratigraphy and structural closure at the southern end of the Balranald Trough. Primary targets were the sandstones of the Pyap Member, Monash Formation and of the early Permian with secondary targets in the Coombool and Merreti Members of the Monash Formation.

The stratigraphy encountered in Robinvale 1 was at

variance with that prognosed, with the result that all the target zones were absent from the well. Total depth was 246.1m (KB Logger) which occurred in Cambrian metasediments. The Cambrian section was encountered 206.6m high to prognosis. Another deviation from the prognosed stratigraphy was the presence of the Winnambool Formation underlying the Duddo Limestone and resting directly on basement.

No source rock studies of samples from Robinvale 1 were undertaken because of the absence of the source prone section.

No hydrocarbon shows were encountered in Robinvale 1 and no drill stem tests were run. The well was plugged and abandoned as a dry hole. No zones were suitable for completion as a water well.

902537 032

References

Lawrence, C.R. Geology, hydrodynamics and hydrochemistry of the southern Murray Basin. Memoir 30, Geological Survey of Victoria, 359pp.



902537 003

**APPENDIX 1 : LITHOLOGICAL DESCRIPTIONS**

In accordance with the Robinvale 1 Prospect Sheet and Drilling Programme, ditch cuttings were collected, washed, split, bagged and described at 9 metre intervals from surface to 90m. Sampling at 3 metre intervals then took place from 90m to 245.67m (Drillers T.D.) by Gearhart Pty. Ltd. (Geodata Division).

All lithological intervals and core intervals are quoted as drillers depths.

9-metre Sampling

<u>Depth</u>	<u>§</u>	<u>Description</u>
9	100	<u>SANDSTONE</u> : moderate red-orange, colourless, coarse grained quartz, subrounded, occasionally subangular, moderate red-orange silty matrix. Moderate-good visual porosity, no fluorescence.
18	100	<u>SANDSTONE</u> : grey-orange-translucent, medium occasionally coarse grained, subangular-subrounded, well sorted, clean. Excellent visual porosity, no fluorescence.
27	100	<u>SANDSTONE</u> : as above.
36	100	<u>SANDSTONE</u> : as above.
45	100	<u>SANDSTONE</u> : light brown-dark yellowish-orange, coarse grained, subangular, occasionally subrounded, well sorted, abundant microcrystalline limonite with pyrite associated, good visual porosity, no fluorescence.
54	60	<u>SANDSTONE</u> : as above.
	40	<u>CLAYSTONE</u> : dark brown, soft, swelling.
63	100	<u>SANDSTONE</u> : colourless-light grey, coarse-very coarse, subangular-subrounded, well sorted, clean, trace pyrite, excellent visual porosity, no fluorescence.
72	60	<u>SANDSTONE</u> : as above
	40	<u>CLAYSTONE</u> : greyish-olive, soft, slightly sticky, slightly swelling interbedded with COAL.
	TR	<u>COAL</u> : dark brown-black, crumbly, rounded possibly reworked grains.
81	50	<u>SANDSTONE</u> : as above
	50	<u>CLAYSTONE</u> : as above becoming light grey-greyish olive with depth, soft, slightly sticky.
90	70	<u>SANDSTONE</u> : as above
	30	<u>CLAYSTONE</u> : as above, becoming firm with depth.

3-metre Sampling

93	20	<u>SANDSTONE</u> : as above
	80	<u>CLAYSTONE</u> : as above
96	10	<u>SANDSTONE</u> : as above
	90	<u>CLAYSTONE</u> : as above
99	20	<u>SANDSTONE</u> : as above

<u>Depth</u>	<u>ft</u>	<u>Description</u>
	80	<u>CLAYSTONE</u> : dark grey-dark greyish olive, soft, very sticky, swelling, silty, occasionally slightly sandy.
102	10	<u>SANDSTONE</u> : as above
	90	<u>CLAYSTONE</u> : as above
105	TR	<u>SANDSTONE</u> : as above
	80	<u>CLAYSTONE</u> : as above
	20	<u>SILTSTONE</u> : light grey-creamish white, firm-hard, abundant lithics; coal mica, quartz, silica cement.
	TR	<u>FOSSIL FRAGMENTS</u> : microfossils
108	10	<u>SANDSTONE</u> : as above
	70	<u>CLAYSTONE</u> : as above
	20	<u>SILTSTONE</u> : as above, lithics becoming slightly calcareous with depth.
	TR	<u>FOSSIL FRAGMENTS</u> : as above
111	10	<u>SANDSTONE</u> : as above
	50	<u>CLAYSTONE</u> : as above
	40	<u>SILTSTONE</u> : as above
114	TR	<u>SANDSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	100	<u>SILTSTONE</u> : as above, trace pyrite, becoming dark grey, fewer lithics.
	TR	<u>FOSSIL FRAGMENTS</u> : Corals
117	TR	<u>SANDSTONE</u> : as above
	20	<u>CLAYSTONE</u> : as above
	80	<u>SILTSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
120	TR	<u>SANDSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	100	<u>SILTSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
123	TR	<u>SANDSTONE</u> : as above

902537 036

<u>Depth</u>	<u>§</u>	<u>Description</u>
100		<u>SILTSTONE</u> : dark olive grey, soft, occasionally firm, poorly cemented, carbonaceous, trace pyrite, occasional trace calcite, trace shell fragments.
126	TR	<u>SANDSTONE</u> : colourless, medium grained, subangular-subrounded, olive grey, silty matrix.
	40	<u>SILTSTONE</u> : as above
	60	<u>CLAYSTONE</u> : dark olive green, soft, very sticky, non swelling, slightly calcareous, trace lithics, becoming less calcareous with depth.
129	TR	<u>SANDSTONE</u> : as above
	50	<u>SILTSTONE</u> : as above
	20	<u>CLAYSTONE</u> : as above
	30	<u>FOSSIL FRAGMENTS</u> : Bryozoa, gastropods, lamellibranchs, microfossils.
132	TR	<u>SANDSTONE</u> : as above
	50	<u>SILTSTONE</u> : as above
	30	<u>CLAYSTONE</u> : as above
	20	<u>FOSSIL FRAGMENTS</u> : as above
135	TR	<u>SANDSTONE</u> : as above
	10	<u>SILTSTONE</u> : as above
	60	<u>CLAYSTONE</u> : as above
	30	<u>FOSSIL FRAGMENTS</u> : as above
138	TR	<u>SANDSTONE</u> : as above
	30	<u>SILTSTONE</u> : as above
	50	<u>CLAYSTONE</u> : as above
	20	<u>FOSSIL FRAGMENTS</u> : as above
141	TR	<u>SANDSTONE</u> : as above
	50	<u>SILTSTONE</u> : dark brown, firm, occasionally soft, carbonaceous, pyritic.
	30	<u>CLAYSTONE</u> : as above becoming hydroclastic, pyritic.
	20	<u>FOSSIL FRAGMENTS</u> : Bryozoa, gastropods, lamellibranchs, microfossils.
144	TR	<u>MARL</u> : moderate green-brilliant green, firm, occasionally microcrystalline, calcitic, silty, very silty in part, occasional abundant clay matrix, grading to claystone.

902537 037

<u>Depth</u>	<u>ft</u>	<u>Description</u>
	30	<u>SILTSTONE</u> : as above
	70	<u>CLAYSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
147	10	<u>MARL</u> : as above
	20	<u>SILTSTONE</u> : as above
	70	<u>CLAYSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
150	20	<u>MARL ONE</u> : as above
	50	<u>SILTSTONE</u> : as above
	20	<u>CLAYSTONE</u> : as above
	10	<u>FOSSIL FRAGMENTS</u> : as above
	TR	<u>LIMESTONE</u> : light grey occasionally light greyish green, firm, silty, very silty in part, interbedded with and grading to Marl (described above).
153	10	<u>MARL</u> : as above
	60	<u>SILTSTONE</u> : as above
	10	<u>CLAYSTONE</u> : as above
	20	<u>FOSSIL FRAGMENTS</u> : echinoid spines, bryozoa, gastropods, corals, microfossils.
	TR	<u>LIMESTONE</u> : as above
156	TR	<u>MARL</u> : as above
	30	<u>SILTSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	40	<u>FOSSIL FRAGMENTS</u> : as above
	30	<u>LIMESTONE</u> : light grey-cream white, firm moderately hard, trace silt, trace reworked siderite stained quartz, poor visual porosity no fluorescence.
159	TR	<u>MARL</u> : as above
	20	<u>SILTSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	30	<u>FOSSIL FRAGMENTS</u> : as above

902537 038

<u>Depth</u>	<u>§</u>	<u>Description</u>
	50	<u>LIMESTONE</u> : as above
162	TR	<u>MARL</u> : as above
	20	<u>SILTSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	20	<u>FOSSIL FRAGMENTS</u> : as above
	60	<u>LIMESTONE</u> : light grey-creamish white as above, becoming microcrystalline, sucrosic, wackestone.
165	TR	<u>MARL</u> : as above
	10	<u>SILTSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	20	<u>FOSSIL FRAGMENTS</u> : as above
	70	<u>LIMESTONE</u> : as above
168	TR	<u>MARL</u> : as above
	20	<u>SILTSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	20	<u>FOSSIL FRAGMENTS</u> : as above
	60	<u>LIMESTONE</u> : as above with trace glauconite.
171	10	<u>MARL</u> : medium greyish green, soft, occasionally firm, crumbly, silty, occasional trace of crystalline calcite, grading to silty limestone, glauconitic, becoming very glauconitic with depth.
	30	<u>SILTSTONE</u> : as above
	TR	<u>CLAYSTONE</u> : as above
	30	<u>FOSSIL FRAGMENTS</u> : as above
	30	<u>LIMESTONE</u> : as above
174	20	<u>MARL</u> : as above
	40	<u>SILTSTONE</u> : moderate green, soft, crumbly, non calcareous, abundant lithics, coal, pyrite.
	TR	<u>CLAYSTONE</u> : as above
	30	<u>FOSSIL FRAGMENTS</u> : as above
	10	<u>LIMESTONE</u> : as above

<u>Depth</u>	<u>§</u>	<u>Description</u>	902537 039
177	30	<u>MARL</u> : as above	
	50	<u>SILTSTONE</u> : as above	
	TR	<u>CLAYSTONE</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	10	<u>LIMESTONE</u> : as above	
180	30	<u>MARL</u> : as above	
	40	<u>SILTSTONE</u> : as above	
	TR	<u>CLAYSTONE</u> : as above	
	20	<u>FOSSIL FRAGMENTS</u> : as above	
	10	<u>LIMESTONE</u> : as above	
183	10	<u>LIMESTONE</u> : as above, light grey.	
	70	<u>SILTSTONE</u> : as above	
	10	<u>MARL</u> : as above, light green.	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : as above	
186	10	<u>LIMESTONE</u> : as above	
	70	<u>SILTSTONE</u> : light grey-greyish green, soft, crumbly, trace fine sand, abundant lithics; pellets, siltstone, fine quartz, trace carbonate, interbedded with sandstone.	
	10	<u>MARL</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : colourless, medium occasionally coarse grained, subangular-subrounded, occasionally predominantly subangular, poor visual porosity, no fluorescence.	
189	10	<u>LIMESTONE</u> : as above	
	80	<u>SILTSTONE</u> : as above	
	TR	<u>MARL</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : as above	
192	10	<u>LIMESTONE</u> : as above	

<u>Depth</u>	<u>%</u>	<u>Description</u>	902537 040
	80	<u>SILTSTONE</u> : as above	
	TR	<u>MARL</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : as above	
195	TR	<u>LIMESTONE</u> : as above	
	90	<u>SILTSTONE</u> : as above	
	TR	<u>MARL</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
198	TR	<u>LIMESTONE</u> : as above	
	90	<u>SILTSTONE</u> : as above, very abundant lithics, pyrite, pyritic coal, fine sand, shell fragments.	
	TR	<u>MARL</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : as above	
201	TR	<u>LIMESTONE</u> : as above	
	90	<u>SILTSTONE</u> : as above	
	TR	<u>MARL</u> : as above	
	10	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : as above	
204	10	<u>LIMESTONE</u> : as above	
	90	<u>SILTSTONE</u> : light grey-greyish green, soft occasionally moderately hard, gritty, trace fine sand, pyritic grains, carbonaceous fragments, mixed lithics; trace limestone fragments, pyritized shell fragments, pyritized mudstone pellets (? coprolites) occasionally spherical, predominantly ellipsoidal dark brown-black, non calcareous, intermixed with siltstone.	
	TR	<u>MARL</u> : as above	
	TR	<u>FOSSIL FRAGMENTS</u> : as above	
	TR	<u>SANDSTONE</u> : as above	
207	10	<u>LIMESTONE</u> : as above	
	90	<u>SILTSTONE</u> : as above	



<u>Depth</u>	<u>%</u>	<u>Description</u>
	TR	<u>MARL</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
	TR	<u>SANDSTONE</u> : as above
210	TR	<u>LIMESTONE</u> : as above
	90	<u>SILTSTONE</u> : as above
	10	<u>CLAYSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
	TR	<u>SANDSTONE</u> : as above
213	20	<u>MUDSTONE</u> : white-off white, soft, silty, non calcareous, sticky, relatively clean.
	30	<u>PELLETAL LIMESTONE</u> : grey-dark grey, moderately hard-firm, blocky in part, pellets form up to 50% of limestone.
	40	<u>SILTSTONE</u> : as above with abundant pellets and pyrite fragments.
	TR	<u>CLAYSTONE</u> : as above
	10	<u>FOSSIL FRAGMENTS</u> : as above
	TR	<u>SANDSTONE</u> : as above
216	30	<u>MUDSTONE</u> : grey-dark grey, massive, hard to very hard, non calcareous, pelletal cavities/molds relatively common.
	TR	<u>LIMESTONE</u> : as above but pellets scarce to absent.
	50	<u>SILTSTONE</u> : as above becoming firmer, cleaner, less pellets.
	10	<u>MARL</u> : light grey, silty, pyritic, soft.
	TR	<u>FOSSIL FRAGMENTS</u> : as above
	10	<u>SANDSTONE</u> : very fine grained, yellow-off white, hard, well cemented, no visual porosity.
219	40	<u>MUDSTONE</u> : as above
	10	<u>LIMESTONE</u> : as above
	50	<u>SILTSTONE</u> : as above
	TR	<u>MARL</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
	TR	<u>SANDSTONE</u> : as above

902537 041

502537 042

<u>Depth</u>	<u>%</u>	<u>Description</u>
222	30	<u>MUDSTONE</u> : as above
	10	<u>LIMESTONE</u> : as above
	50	<u>SILTSTONE</u> : grey, occasionally brown, non calcareous, moderately firm, fine pyrite, hard in part.
	TR	<u>MARL</u> : as above
	10	<u>FOSSIL FRAGMENTS</u> : bivalves, gastropods crinoid stems, bryozoa.
225	TR	<u>PHYLLITE</u> : shiny, lustrous greyish green, flaky, micaceous, moderately hard to hard, fissile in part.
	10	<u>MUDSTONE</u> : as above
	TR	<u>LIMESTONE</u> : as above
	70	<u>SILTSTONE</u> : as above
	10	<u>FOSSIL FRAGMENTS</u> : as above
	10	<u>SANDSTONE</u> : as above
228	80	<u>PHYLLITE AND METAQUARTZITE</u> : <u>PHYLLITE</u> ; shiny, lustrous, greyish green, flaky, micaceous, moderately hard to hard, fissile in part. <u>META-QUARTZITE</u> ; clear, very hard, recrystallized, possible veins in phyllite.
	TR	<u>LIMESTONE</u> : as above
	20	<u>SILTSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
231	90	<u>PHYLLITE AND METAQUARTZITE</u> : as above
	TR	<u>LIMESTONE</u> : as above
	10	<u>SILTSTONE</u> : as above
	TR	<u>FOSSIL FRAGMENTS</u> : as above
234	100	<u>PHYLLITE</u> : as above, quartzite lacking.
237	100	<u>PHYLLITE</u> : as above
240	100	<u>PHYLLITE</u> : as above
243	100	<u>PHYLLITE</u> : as above

Core 1 243.84m - 245.67m (T.D.) See Core description

APPENDIX 2 : CORE DESCRIPTIONS

**Core 1      Kanmantoo Group**  
243.84m - 245.67m (Driller)  
243.84m - 245.67m (B.P.B.)  
Cut 1.83m  
Recovered 100%

# SOUTH AUSTRALIAN OIL AND GAS CORPORATION

Date 30-6-83

## CORE DESCRIPTION

Page 1 of 1

Well Name Robinvale 1

**CORE No 1**

Location : Lat 34°49'13.44"S

Interval 243.84-245.67 Cut 1.83 m

Long 142°41'04.16"E

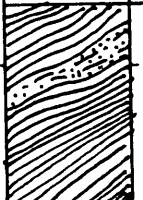
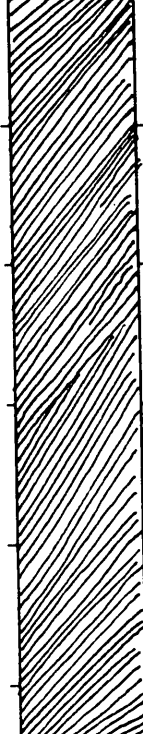
Recovery 1.83 m 100 %

Elevation G.L. +74m K.B. 78.63m

Formation Kanmantoo

Geologist R.J. Suttill

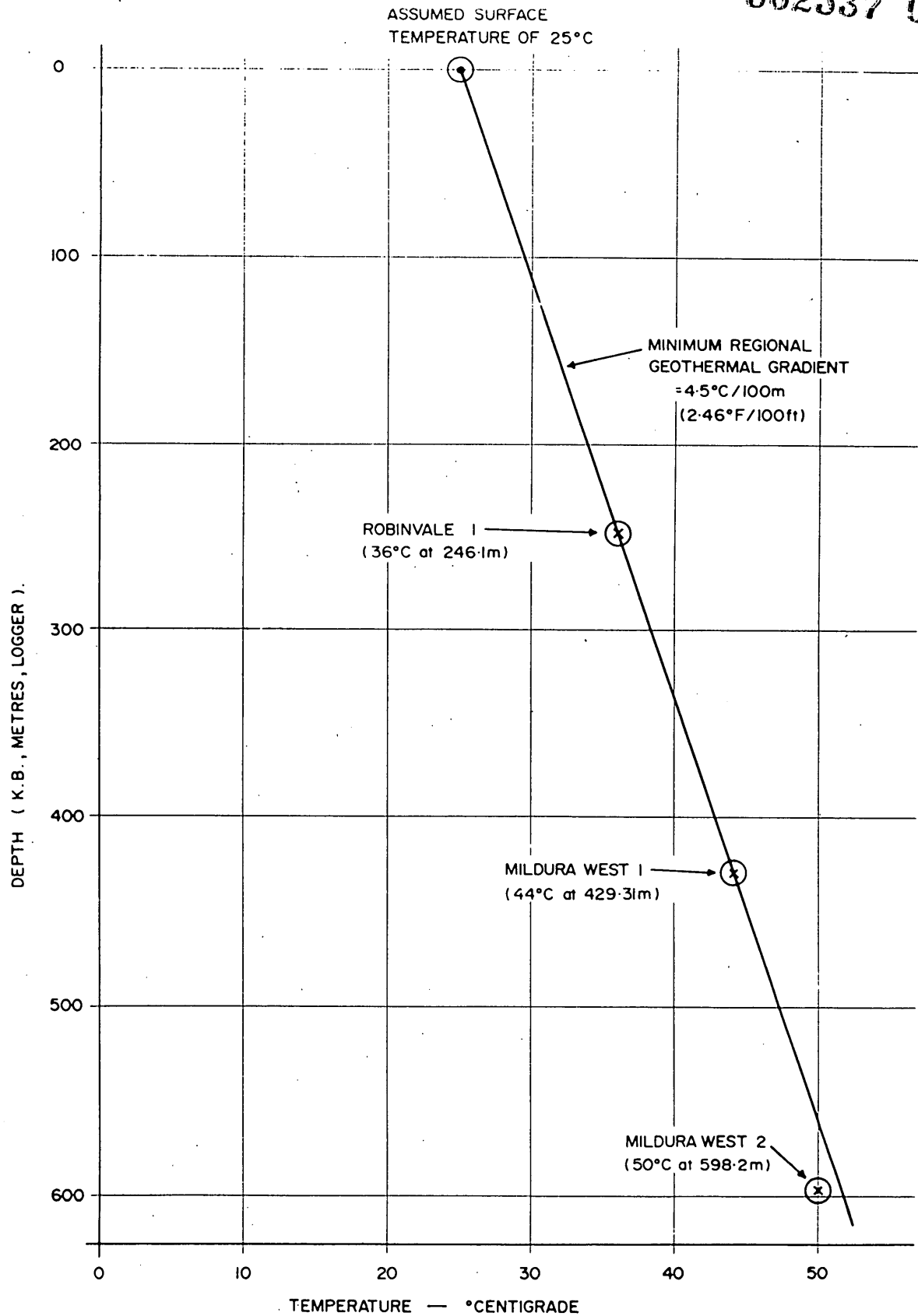
Age Cambrian

CORE ANALYSIS				SAMPLES FOR ANALYSIS	DEPTH metres	R.O.P. mm/metre	VIS φ	FLOOR GOOD FAIR TRACE	LITHOLOGY	DESCRIPTION
Ø	K	SW	Legend :							
					243.5					<div style="font-size: 2em; font-weight: bold; margin-bottom: 10px;">902537 044</div> <p style="margin-top: 100px;">Top of Core 243.84m</p>
					244	50				<p>SILTSTONE, cream-white, quartzitic, calcite cement, moderately hard</p>
					245	110				<p>PHYLLITE, shiny, lustrous, greyish green, fissile, micaceous (muscovite and biotite) minor veins of calcite and quartz. Cleavage Planes at 45°-80°</p>
					245.67	64				<p>Base of Core 245.67m</p>

902537 045

APPENDIX 3 : DEPTH VS TEMPERATURE

902537 016



SOUTH AUSTRALIAN OIL & GAS CORP. PTY. LTD.

**Mildura West 1 & 2, Robinvale 1  
GEOTHERMAL GRADIENT**

Interp. R.SUTTILL	Date JULY 83	MAW000.2939
Drawn. C.KAY	Scale AS SHOWN	FIG.2

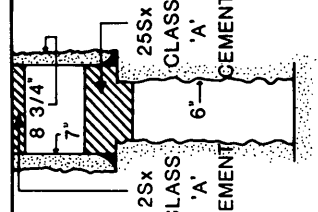
902537 017

APPENDIX 4 : ACTUAL DEPTH-TIME CURVE

WELL: **ROBINVALE 1**  
 LATITUDE. 34° 49' 13.44" S  
 LONGITUDE. 142° 41' 04.16" E  
 S.P. 81-B4 (425)  
 ELEVATION. G.L. 74m K.B. 78.63m

CONTRACTOR. ATCO-APM  
 RIG No. A3  
 TYPE. FRANKS CABOT

# ACTUAL DEPTH-TIME CURVE

WELL SECTION	STRATIGRAPHY		REMARKS (Drillers Depths)	DEPTH K.B. Metres	DAYS FROM SPUD												
	FORMATION	K.B.			1	2	3	4	5	6	7	8					
 <p>8 3/4" 7" 25Sx CLASS 'A' CEMENT 6" 25Sx CLASS 'A' CEMENT</p>	UNDIFF.	39.0	DRILL 8 3/4" HOLE TO 90.0m RUN 7Jts 7" CASING WITH 70Sx CLASS 'A' CEMENT DRILL 6" HOLE TO 243.84m	100													
	PARILLA	90.0		200													
	BOOKPUR-NONG	142.8		300													
	DUDDO	173.0		400													
	WINNAM-BOOL	224.0		500													
KANMANTOO			CUT CORE No1 TO 245.67m (T.D.)	600													
				700													
				800													
				900													

**CORE No 1 RIG RELEASED**

SOUTH AUSTRALIAN OIL & GAS CORP. PTY. LTD.

**ROBINVALE 1**

**ACTUAL DEPTH-TIME CURVE**

INT. R.J.SUTTILL	DATE. JULY '83	RB001.2946
DRN. C.KAY	Sc. AS SHOWN	FIG.3

T.D. 245.67m (driller)  
 246.10m (logger)



902537 049

**ENCLOSURES**

1. COMPOSITE WELL LOG (GR-LINEAR DENSITY) 1:200
2. SP-RESISTIVITY LOG 1:200
3. GEARHART MUD LOG 1

PE601262

This is an enclosure indicator page.  
The enclosure PE601262 is enclosed within the  
container PE902537 at this location in this  
document.

The enclosure PE601262 has the following characteristics:

ITEM\_BARCODE = PE601262  
CONTAINER\_BARCODE = PE902537  
    NAME = Composite Well Log Mildura West-2  
    BASIN = MURRAY  
    OFFSHORE? = Y  
    DATA\_TYPE = COMPOSITE\_LOG  
    DATA\_SUB\_TYPE = HARDCOPY-PAPER  
    DESCRIPTION =  
    REMARKS = 01-JUL-1983  
    DATE\_WRITTEN =  
    DATE\_PROCESSED = SA Oil Wells Corp LTD.  
    DATE\_RECEIVED =  
    RECEIVED\_FROM = 25-OCT-1983  
    WELL\_NAME =  
    CONTRACTOR =  
    AUTHOR =  
    ORIGINATOR = xls\_kb00  
    TOP\_DEPTH =  
    BOTTOM\_DEPTH =  
    ROW\_CREATED\_BY =

(Inserted by DNRE - Vic Govt Mines Dept)

902537 051

PE601263

This is an enclosure indicator page.  
The enclosure PE601263 is enclosed within the  
container PE902537 at this location in this  
document.

The enclosure PE601263 has the following characteristics:

ITEM\_BARCODE = PE601263  
CONTAINER\_BARCODE = PE902537  
NAME = SP Resistivity Log Mildura West-2  
BASIN = MURRAY  
OFFSHORE? = Y  
DATA\_TYPE = WELL\_LOG  
DATA\_SUB\_TYPE = HARDCOPY-PAPER  
DESCRIPTION =  
REMARKS = 01-JUL-1983  
DATE\_WRITTEN =  
DATE\_PROCESSED = SA Oil Wells Corp LTD.  
DATE\_RECEIVED =  
RECEIVED\_FROM = 25-OCT-1983  
WELL\_NAME =  
CONTRACTOR =  
AUTHOR =  
ORIGINATOR = xls\_kb00  
TOP\_DEPTH =  
BOTTOM\_DEPTH =  
ROW\_CREATED\_BY =

(Inserted by DNRE - Vic Govt Mines Dept)

PE601264

This is an enclosure indicator page.  
The enclosure PE601264 is enclosed within the  
container PE902537 at this location in this  
document.

The enclosure PE601264 has the following characteristics:

ITEM\_BARCODE = PE601264  
CONTAINER\_BARCODE = PE902537  
    NAME = Gearhart Mud log Mildura West-2  
    BASIN = MURRAY  
    OFFSHORE? = Y  
    DATA\_TYPE = MUD\_LOG  
DATA\_SUB\_TYPE = HARDCOPY-PAPER  
DESCRIPTION =  
    REMARKS = 30-JUN-1983  
DATE\_WRITTEN =  
DATE\_PROCESSED = SA Oil Wells Corp LTD.  
DATE\_RECEIVED =  
RECEIVED\_FROM = 25-OCT-1983  
WELL\_NAME =  
CONTRACTOR =  
AUTHOR =  
ORIGINATOR = xls\_kb00  
TOP\_DEPTH =  
BOTTOM\_DEPTH =  
ROW\_CREATED\_BY =

(Inserted by DNRE - Vic Govt Mines Dept)