



# **MARLIN A-22A**

## **FINAL WELL REPORT**

Prepared by

**Geoservices Overseas S.A.**

Engineers: R. Pereira, S. Oades, G. Doczy, G. Fawns

Esso Australia Ltd.  
12 Riverside Quay,  
South Bank, Melbourne  
Victoria 3006  
Australia  
Tel: (03) 9270-3625  
Fax: (03) 9270-3593

Geoservices Overseas SA  
Suite 6, 23 Plain Street,  
East Perth  
Western Australia 6004  
Australia  
Tel : (08) 9225-5677  
Fax : (08) 9225-4277

**CONTENTS****SECTION 1 -- GENERAL WELL SUMMARY**

WELL DATA	4
MUDLOGGING	5
WELL SUMMARY	6
WELL PROFILE	7
TIME DEPTH CURVE	8
BIT SUMMARY	9
CASING and CEMENTING DETAILS	10
WELL DIRECTIONAL PROFILE	11
WELL DIARY	12

**SECTION 2 -- GEOLOGICAL SUMMARY**

FORMATION TOPS	18
GEOLOGICAL SUMMARY	18
GAS REPORT	22
MDT SUMMARY	25

**SECTION 3 -- GEOSERVICES WELL LOGS**

MASTERLOG --	1:500 scale from 1900 to 3617 metres 1:200 scale from 1900 to 3617 metres
DRILLING LOG --	1:1000 scale from 1900 to 3617 metres
GAS RATIO LOG --	1:500 scale from 1900 to 3617 metres
RESERVAL GAS RATIO LOG --	1:500 scale from 1900 to 3617 metres

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

## **Section 1**

### **General Well Summary**

<b>Revision</b>	<b>Date</b>	<b>Issued by</b>	<b>Approved by</b>	<b>Remarks</b>
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**WELL DATA**

Operator : ESSO Australia Ltd  
Platform : Marlin  
Well name : Marlin A-22A  
Country : Australia  
Location : Gippsland Basin  
Field : Marlin  
Permit : Vic L3 / L4

Surface Location  
GDA94/MGA94 co-ordinates : 5 767 922.760m N 606 871.490m E  
Zone 55

Location local co-ordinates : Lat: 38° 13' 49.232" S Long: 148° 13' 15.814" E

Surface co-ordinates : 4.14 mN -30.89 mE

Profile : Deviated  
Reference depth : Rotary Table  
RT to Seabed : 86.91 metres  
RT above M.S.L. : 27.91 metres  
Sea-water depth : 59.00 metres  
Proposed total depth : 3675 metres  
Actual total depth : 3617 metres  
True vertical depth : 2713.99 metres  
Spudded on : 27<sup>th</sup> May 2004  
Total depth reached on : 10<sup>th</sup> June 2004

**Drilling Contractor**

Drilling Contractor : NABORS ISDL  
Rig name : 453  
Rig type : Platform

**Drilling Phases**

Diameter (inch)	From (mMDRT )	To (mMDRT )	Mud Type
8½"	1900	3617.0	KCl / Glycol / PHPA

**Cased Hole**

Casing Diameter (inch)	Casing Type	Shoe Depth (mMDRT )
20"	Conductor	163.0
13 <sup>3</sup> / <sub>8</sub> "	Surface	673.0
9 <sup>5</sup> / <sub>8</sub> "	Intermediate	1894.6
7"	Production	2100.0
4½"	Liner	3615.5

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

## MUD LOGGING

Logging Unit Number: 137

Engineers: R. Pereira, G. Doczy, S. Oades, G. Fawns

### Sampling Interval

#### Marlin A22A

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Washed and Dried	3	100 grams	10 metres	1900	1970
Washed and Dried	3	100 grams	5 metres	1970	3617

### Cuttings Distribution

Company	Washed and Dried Sample Set
Esso Australia	1
Victorian Department of Energy and Minerals	1
Australian Bureau of Resources	1

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

## WELL SUMMARY

Marlin A-22A is a re-drill directional well designed to target the Turrum L-500 sandstone. The well was drilled to a Total Depth of 3617 mMDRT (2713.99 mTVDRT) in an 8½" production hole. The well was logged with Reeves Shuttle system, MDTs were performed and 7" production casing was run to 2100 mMDRT where it was held up and cemented in place. 4½" liner was then run to 3616 mMDRT and Marlin A-22A was suspended.

Marlin A-22A was spudded at 18:45 hours on the 27<sup>th</sup> of May 2004 after setting a 9⅝" whipstock and milling a window in the existing 9⅝" casing from 1888.9 m to 1894.6 m and extending into the formation to 1900 m.

After milling the casing window the string was pulled out of the hole and an 8½" steerable / MWD drilling assembly was made up with a Smith GF11YODV bit and run in the hole and worked through the window. The hole was displaced to new KCl/Polymer mud, five metres of new hole was drilled and the hole circulated to condition the mud before a Pressure Integrity Test (998 psi: 14.0 ppg EMW) was carried out with 9.6 ppg mud. The well was kicked-off and drilled, steered and rotated ahead to 2437 where the bit was pulled due to hours. Bit #2 was made up on an 8½" steerable / MWD assembly and run in hole and used to drill ahead to 3499 m where a wiper trip to the shoe was carried out. On running in the hole packed off at 2196 m and the string became stuck. After jarring and freeing the string it was pulled to the surface and the BHA changed. A new BHA was made up and run in the hole but could not pass an obstruction at 1888 m. After 3 attempts at pushing through the obstruction, a window mill was made up and the whipstock milled from 1888 m to 1891 m out the window. Another milling run was conducted to 1896 m and the hole cleaned up. A steerable BHA was then made up and the hole washed to bottom. The well was then drilled ahead to TD at 3617.0 m.

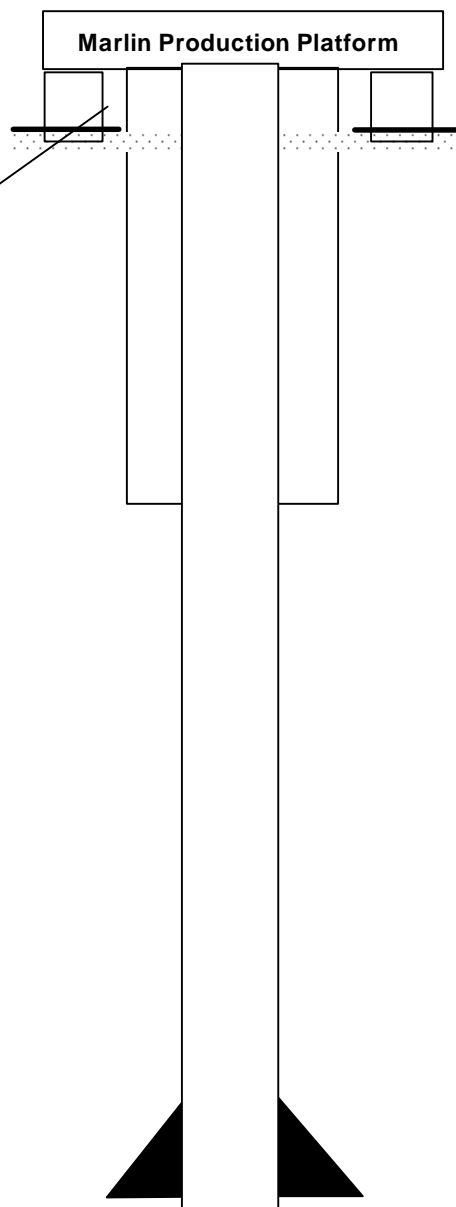
Marlin A-22A reached a Total Depth of 3217 m at 21:15 hours on the 10<sup>th</sup> of June 2004. The final survey at a depth of 3593.49 mMDRT had an inclination of 18.05° and an azimuth of 242.73°. A wiper trip was made to just below the 9⅝" casing shoe prior to pulling out of the hole and running the Reeves shuttle conveyed memory logging system. After Reeves logging was completed, a Schlumberger Modular Reservoir Dynamics Tester (MDT) tool was run on drill pipe to further evaluate the reservoir. A post logging wiper trip was carried out and the mud was conditioned and mud weight reduced from 10.0 ppg to 9.85 ppg. 7" production casing was run and set at 2100 m after it hung up at 2110 m and attempts to free the casing were unsuccessful.

After cutting casing, reinstalling and testing the B section and BOP, a 6" cleanout assembly was made up and run in hole to drill out the cement and obstructions and to wipe the hole prior to running 4½" liner. Whilst circulating during washing and reaming operations at 3560 m, a 6 bbl flow was recorded and a 2344 unit gas peak circulated out through the choke manifold. Whilst circulating, the pipe became differentially stuck as the mud weight crept up from 9.85 ppg to 10.5 ppg. After working the pipe free, the mud weight was reduced back down to 9.8 ppg and the open hole section was wiped twice to ensure competent hole conditions. The 4½" liner was run and set at 3615.5 m with the liner lap at 1946.3 m. The rig was then skidded to Marlin A-10 for a plug and abandonment programme.

Prior to displacing the well to new mud and drilling new formation, Baracarb 25 and 100 was added as per programmed concentrations to bridge the pore throats and reduce the likelihood of differential sticking and seepage losses through the Latrobe Formation. Barablok was also added to the mud system at 4 ppb prior to drilling new formation and drilling into coals, this was discontinued at 2450 m until the L-100 sand at 2957 m where it was once again added to the system at 4 ppb and maintained to TD. At 3248 m an increased downhole torque required the addition of 2% Radiagreen EME to the mud system. Throughout the lithology sections to 3499 m, the mud weight ranged from 9.5 ppg to 9.75 ppg while drilling as dictated by hole conditions, and the mud rheology was maintained at the programmed concentrations with the addition of Glycol and PHPA. After drilling ahead from 3499 m the mud weight increased to 10.4 ppg due to static hole conditions and solids build up, but was brought down by rapid dilution to 10.15 ppg. Glycol, Radiagreen, Baracarb and Barablok were added to the system to maintain the mud properties to TD.

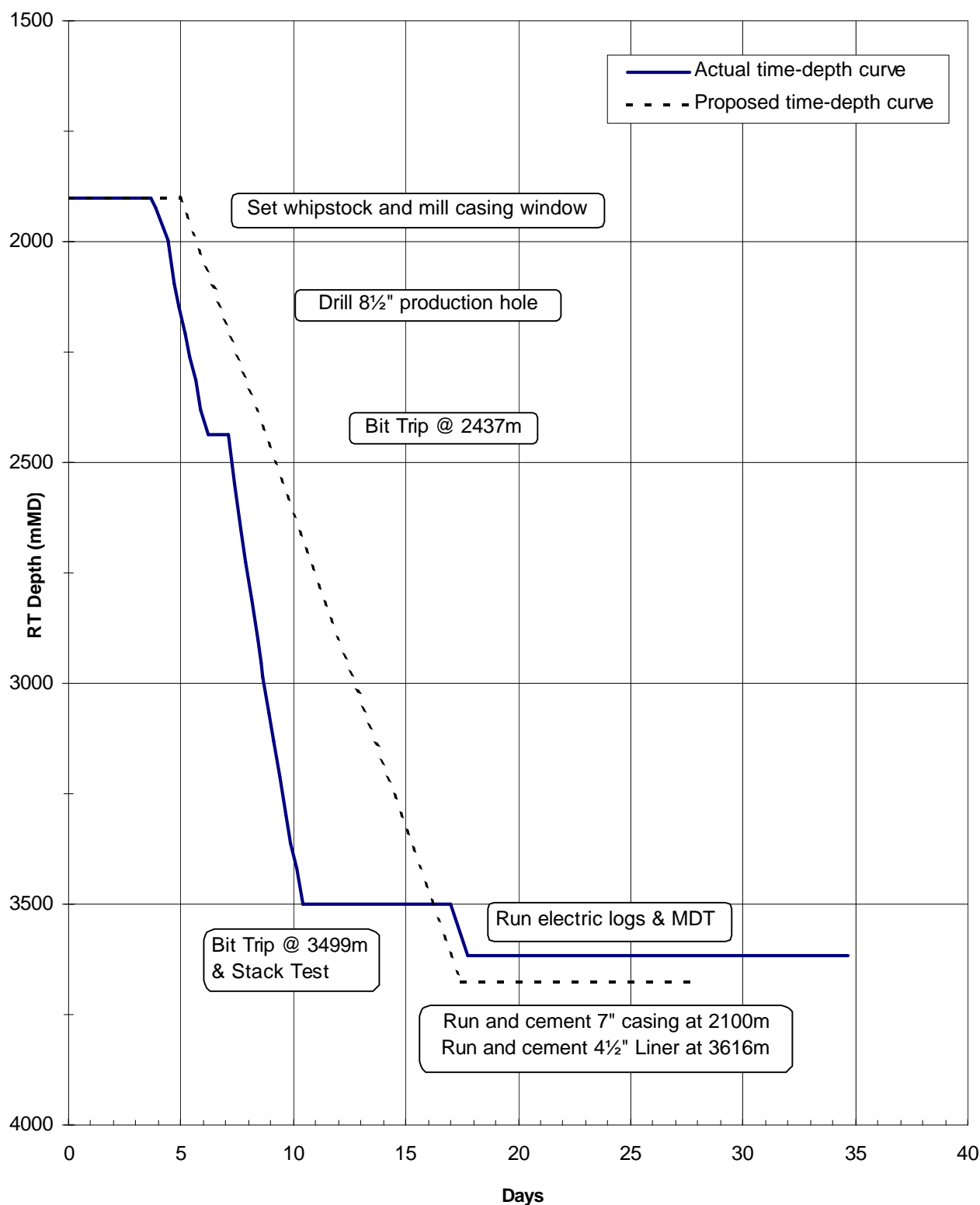
Throughout the Marlin A-22A drilling programme, there were no significant losses or gains encountered while drilling. Problematic tight hole was encountered on most trips after drilling into the Latrobe Group which required back reaming on the trip out and washing and reaming when tripping in the hole.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**WELL PROFILE****Rotary Table to Mean Sea Level**  
27.91 m**Rotary Table to Sea Bed** 86.91 m**20" Conductor at** 163.0 m**9<sup>5</sup>/<sub>8</sub>" Casing Set at** 1894.6 m**4½" Liner lap at** 1946.3 m**7" Production casing at** 2100.0 m**4½" Liner at** 3615.5 m**NABORS Rig 453****Kicked-off A-22A**  
27<sup>th</sup> May 2004**1900.0 m – 3617.0 m**  
**Mud Weight 9.6 – 10.3 ppg****8½" Hole drilled to 3617.0 m**

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

### TIME-DEPTH CURVE (measured depth)



Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	



### BIT RUN SUMMARY

BIT	Size	Type	Jets	In(m)	Out(m)	Hours	Condition
1	8½"	Smith GFi11YODV	3 x 24	1900	2437	40.0	5-5-WT-A-F/E/E-1-ER-HR
2	8½"	Reed Hycalog RSX 163	3 x 18 3 x 21	2437	3499	44.6	4-6-WT-A-X-IN-PN-HR
3	8½"	Smith GF11YODV	2 x 30 1 x 22	3499	3617	14.2	4-3-WT-A-E-E-E-IN-BT-TD

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**CASING DATA**

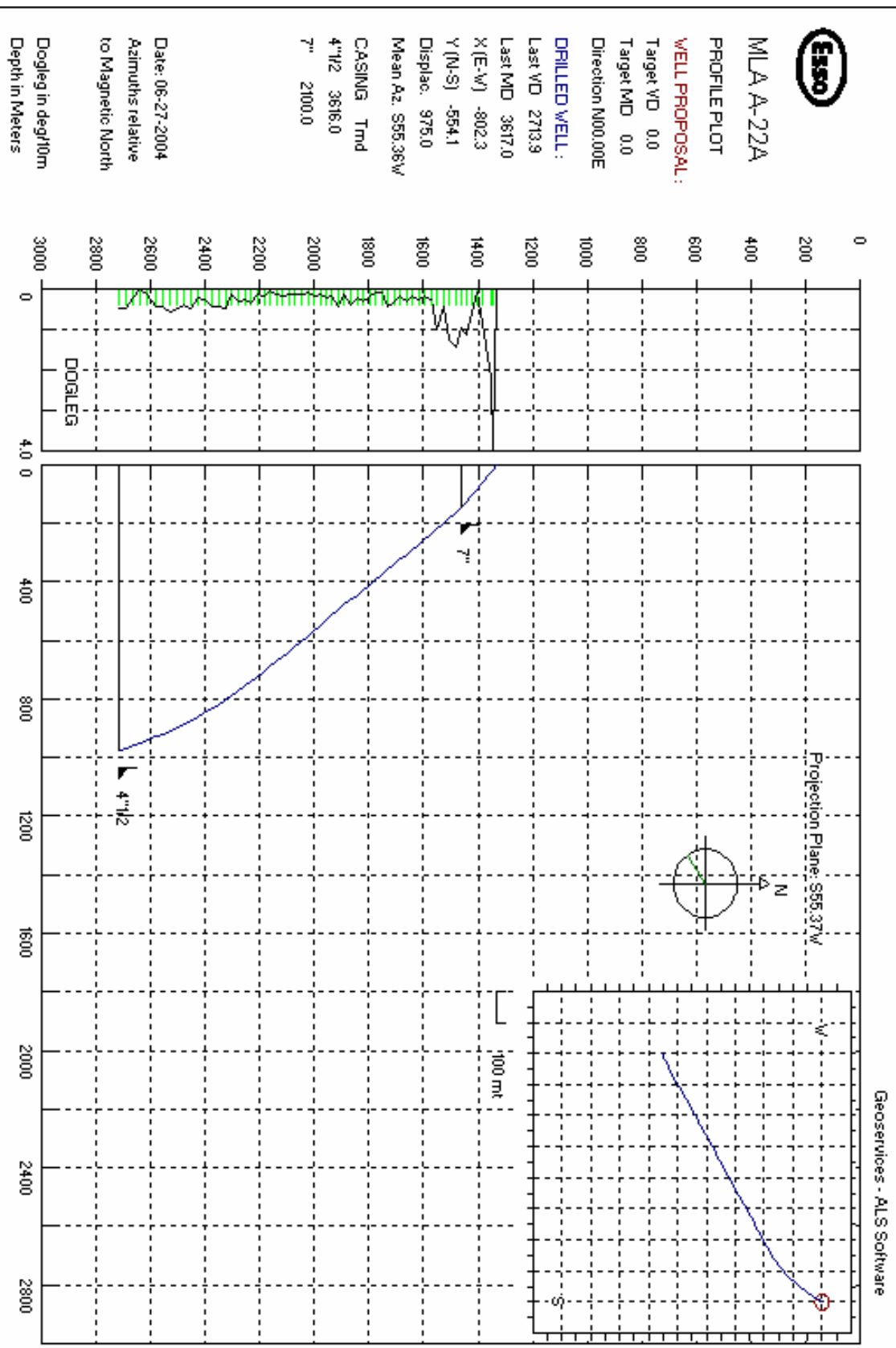
Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Conductor	20	133	K-55	BTC	163.0
Surface	13 <sup>3</sup> / <sub>8</sub>	54.5	J-55	LTC	673.0
Intermediate	9 <sup>5</sup> / <sub>8</sub>	47	L-80	LTC	1894.6
Production	7	26	L-80	LTC	2100.0
Liner	4½	12.6	CR-80	VAM ACE	3615.5

**CEMENTING DATA**

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water  (bbls)	Slurry Volume  (bbls)	Slurry Density  (ppg)	Cement to/from  (mMDRT)	Casing Pressure Test (psi)
7"	HTB	224	HALAD 413L 20 gal / 10 bbl  CFR-3L 5 gal / 10 bbl  NF-6 0.25 gal / 10 bbl	25	45	L:13.0 T:15.8	2077.18 m 2101.37 m	2500 psi
4 1/2" Liner	HTB	490 Lead slurry          632 Tail slurry	HALAD 413L 30 gal / 10 bbl  CFR-3L 2 gal / 10 bbl  SCR-100L 7gal/10bbl  NF-5 0.25 gal / 10bbl  HALAD 413L 30 gal / 10 bbl  CFR-3L 5 gal / 10 bbl  SCR-100L 2gal/10bbl  NF-6 0.25 gal / 10 bbl	118          88	162          144	L:13.0          T:15.0	Liner Lap Top 1946.3m	2500 psi

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

## WELL DIRECTIONAL PROFILE



Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**WELL DIARY**

<b>24<sup>th</sup> May 2004</b>	Complete P & A of MLA A-22 at 01:30 hours. Nipple down BOPs and riser. Nipple down 'B' section. Recover control line outlet. Cameron and Furmanite inspect 'A' section ring groove. Dress MPRs to 2 <sup>7</sup> / <sub>8</sub> "-5 <sup>1</sup> / <sub>2</sub> ", VBRs and LPRs to 5" solids. Install new 'B' section and test void. Nipple up BOP and riser. Make up test assembly and test LPRs. Test VBRs in middle with 4" and 5" drill pipe. Lay out test assembly. Run wear bushing, flush choke manifold and test BOP remotes. Rig service. Pick up 9 <sup>5</sup> / <sub>8</sub> " scraper assembly. Run in hole and tag top of cement at 1914m. Conduct choke drill.
<b>25<sup>th</sup> May 2004</b>	Pull out of hole and lay out scraper assembly. Make up and run junk basket and gauge ring to 1914m. Schlumberger arm EZSV, run in hole and set at 1897m. Pull out of hole with wireline. Rig up sheave at crown and make up whipstock / mill assembly and run in hole to 1895m. Run in gyro tool with wireline, orientate and set whipstock. Milling starts at 1887.9m.
<b>26<sup>th</sup> May 2004</b>	Mill a 12 m window in casing from 1888m to 1900m pumping sweeps as required. Complete milling. Work mill through window, pump sweep before starting to pull out of hole to 1882m. 10 klbs overpull at 1882 m resulted in a 2 <sup>nd</sup> sweep being pumped before continuing to pull out of the hole to surface.
<b>27<sup>th</sup> May 2004</b>	Pull out of hole and lay out milling bottom hole assembly. Pick up motor and make up bit with steerable assembly. Shallow test and run in hole to 1864m. Orientate tool face. Displace well and weight up mud to 9.6 ppg before run in hole to 1900m. Drill 5 m of formation to 1905m. Conduct pressure integrity test. EMW 14.0 ppg with 9.6 ppg mud and 998 psi pressure.
<b>28<sup>th</sup> May 2004</b>	Drill, steer and survey from 1905m to 197 m. Run gyro survey on wireline at 1938m. Pull out of hole and rig down wireline. Drill ahead from 1979m to 2149m.
<b>29<sup>th</sup> May 2004</b>	Drill, steer and survey from 2149m to 2380m.
<b>30<sup>th</sup> May 2004</b>	Condition mud and circulate working pipe while changing out shaker screens. Drill, steer and survey to 2413m. Condition mud and circulate working string while changing out swab on number 2 mud pump. Drill, steer and survey from 2413m to 2437m. Rotate and work string and rack back to 2323m while circulating hole clean. Slug pipe and pull out of hole. Rack back heavy weight drill pipe, jar, non magnetic collars and MWD. Lay out bit motor and flush. Make up bit, motor and set bend to 1°. Change out roller reamer and run in to 16 m and conduct a rig service. Rig down Schlumberger sheave at crown. Replace broken cable on top drive. Change out sub. Shallow test bottom hole assembly and run in hole.
<b>31<sup>st</sup> May 2004</b>	Continue to run in hole reaming tight hole at 2097m and 2284m. Wash and ream from 2284m to 2437m. Drill, steer and survey from 2437m to 2725m.
<b>1<sup>st</sup> June 2004</b>	Drill, steer and survey from 2725m to 3068m.
<b>2<sup>nd</sup> June 2004</b>	Drill, steer and survey from 3068m to 3127m. Rig service and inspect monorail. Rotate, work string and circulate while replace swab on #1 mud pump. Drill, steer and survey ahead from 3127m to 3184m. Rotate, work string and circulate while replace liner and swab on #2 mud pump. Drill, steer and survey ahead from 3184m to 3248m. Rotate, work string and circulate while replace seat and valve on #2 mud pump. Drill, steer and survey ahead from 3248m to 3363m.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**3<sup>rd</sup> June 2004**

Pump and work string while electrician resets TDS control panel. Drill, steer and survey ahead from 3363m to 3499m. Rotate, work string and circulate hole clean. Rotate, work string and circulate whilst replace swab on #1 mud pump. Rotate, work string and circulate hole clean whilst rack back 1 stand per ½ hour from 3499m to 3410m. Slug pipe and pull out of hole from 3410m to 2066m. Work through tight spots at 2684, 2585, 2498, 2483, 2126 and 2118m. 20 to 25 klbs overpull through the noted depths. Pull out of hole from 2066m to 1980m. Attempt to rotate, work string and circulate bottoms up, no go, hole packed off, work free and regain circulation, work string and circulate bottoms up. Backream from 1980m to tight hole at 1938m. Packed off at 1938m, break free and regain circulation. Work string while electrician fault finds and rectifies TDS drive fault.

**4<sup>th</sup> June 2004**

Continue to work string while electrician fault finds and rectifies TDS drive fault. Pull out of hole from 1938m through tight hole to 1884m. Hole created 25k overpull. Rotate and work string while circulate hole clean. Large volume of cuttings from hole at bottoms up. Slip and cut. Conduct a rig service. Run in hole from 1884 m to tight hole at 2196 m. Hole packed off at 2196m. "No go". Work string and attempt to free stuck pipe whilst electrician fault find and rectify TDS drive fault. Continue to attempt to rotate and jar free stuck pipe as per Baker instructions. Conduct post jarring inspection on TDS. Continue to attempt to rotate and jar free stuck pipe as per Baker instructions. Free stuck pipe, work string and circulate whilst rectify TDS drive fault. Pull out of hole from 2196m to 2150m. Rotate, work string whilst circulate, condition and raise mud weight to 9.9 ppg. Excess coal at shakers at bottoms up. Pull out of hole from 2150m to 1866m. Rotate, work string and circulate 1.5 times bottoms up. Conduct post jarring inspection on TDS.

**5<sup>th</sup> June 2004**

Slug pipe and pull out of hole to surface. Rack back HWDP, lay down 8½" steerable assembly. Electrical inspection of TDS control panel. Rig to and retrieve wear bushing, break down same. Make up jetting assembly and flush BOPs. Function test BOPs. Rig to and make up 5" test assembly, seat same and install high pressure line. Howco flush lines and test same. Howco pressure test BOPs, choke and pipes. Remove high pressure line and break down 5" test assembly. Make up 4" test assembly and seat same. Howco test variable rams and TIWs. Howco test blind rams and all Grey valves. Break down test assembly. Rerun wear bushing. Clear floor of excess equipment. Electrician replaces CPU card in UFD for TDS. Make up 8½" steerable assembly and run in hole.

**6<sup>th</sup> June 2004**

Run in hole to 198m with 8½" steerable assembly and shallow test power pulse. Lubricate rig, conduct rig service and inspect mono rail. Run in hole inside 9⅝" casing from 198m to 1345m. Check all connections and replace 5 joints of 4" drill pipe. Continue to run in from 1345m to 1863m. Condition mud, circulate, work string. Mud weight to 10 ppg while TDS auto tune undertaken by electrician. Run in hole from 1863m to obstruction at 1888m. Attempt to pass obstruction and through window - No Go. Flow check, static. Slug pipe and pull out from 1888m to surface. Rack back HWDP and jar. Inspect bit. Set bend on motor to 1.15° and shallow test, OK. Run in with 8½" steerable assembly from 199m to 1863m. Obtain tool face at 1863m. Run in hole from 1863m to obstruction at 1888m. Work string while attempt to pass obstruction and through window. No Go. Lubricate rig and conduct rig service with inspect monorail. Flow check, static. Slug pipe and pull out of hole from 1888m to surface. Rack back HWDP, jar and 8½" steerable assembly. Break and inspect bit. Slip and cut drill line. Test communications.

**7<sup>th</sup> June 2004**

POOH to surface. Rack back HWDP, jar and 8½" steerable assembly. Break and inspect bit. Cut off drilling line. Slip and cut 80' of drill line. Test communications. Rig up Schlumberger wireline and sheaves. Schlumberger run in hole with 6' lead impression block to 1888m, tag obstruction and pull out of hole. Inspect lead impression block. Rearrange 4" drill pipe in mast. Rig up 5" handling gear. Make up 3½" bull nose, jars and run in hole with 5" heavyweight drill pipe to 197m. Run in hole from 197m to 671m. Pick up 5" drill pipe from deck and run in hole to obstruction at 1888m. Attempt to pass obstruction and go through window. No go. Pull out of hole from 1888m to 197m. Rack back heavy weight drill pipe, break and lay down 3½" bull nose and make up tapered mill BHA. Run in hole to 322m. Esso safety presentation. Run in

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

hole from 322m to 1888m. Mill on obstruction at 1888m. Rotate and work through window from 1888m to 1891m.

**8<sup>th</sup> June 2004**

Ream and work string through window from 1888m to 1891m. Pump 30 bbl high-vis and circulate hole clean. Rig service. Flow check, OK. Slug pipe and pull out of hole from 1888m to 178m. Pull out of hole from 178m, rack back heavy weight drill pipe and jar. Break and lay down 8½" tapered mill assembly. Clear rig floor and modify 5" mule shoe. Make up mule shoe and Z jar. Run in hole to 197m. Run in hole from 197m through window at 1918m, OK. Rack back 1 stand from 1918m to 1886m. Pump and circulate hole clean. Re-work string and confirm hole clear, pull out of hole from 1886m to 1717m. Monitor well while crew attend Esso safety presentation. Slug pipe, pull out of hole from 1717m to 1630m. Conduct full H<sub>2</sub>S drill. Pull out of hole from 1630m to 967m. Monitor well while crew attend safety presentation. Pull out of hole from 967m to 197m. Pull out of hole from 197m, rack back heavy weight drill pipe. Lay down Z jar and mule shoe. Rig service. Offload boat and prepare BHA. Make up 8½" milling assembly and run in hole to 200m.

**9<sup>th</sup> June 2004**

Run in hole from 200m to 1888m. Rotate, work string and ream window with milling assembly from 1888m to 1896m. Pull back to 1885m, pump 20 bbl super sweep and circulate hole clean. Flow check, OK. Slug pipe and pull out of hole from 1885m to 183m. Pull out of hole from 183m, rack back heavy weight drill pipe, break and lay down milling assembly. Make up 8½" steerable assembly, check float and shallow test assembly, OK. Run in hole to 198m. Rig up to and run in hole from 198m to 1888m. Orientate tool face and run in hole from 1888m to 1950m. Precautionary wash and ream from 1950m to 2323m. Excess cuttings at shakers. Rotate. Work string and circulate hole clean. Run in hole from 2323m to 3451m. Precautionary wash and ream from 3451m to 3499m. Rotate, work string, rack back 1 stand per ½ hour from 3499m to 3451m whilst circulate and condition mud.

**10<sup>th</sup> June 2004**

Rotate, work string, rack back 1 stand per ½ hour from 3499m to 3451m whilst circulate and condition mud. Rig service while Geoservices replace depth sensor on drawworks. Continue to rotate, work string whilst circulate and condition mud. Drill and survey 8½" hole from 3499m to 3532m. Circulate while replace cap seal on mud pump #2. Drill and survey from 3532m to 3551m. Circulate while replace cap seal on mud pump #2. Drill and survey from 3551m to 3559m. Circulate while change swab on mud pump #1. Drill and survey from 3559m to TD at 3617m (21:15 hrs). Pump 20 bbl super sweep. Rack back from 3617m to 3527m while circulate hole clean.

**11<sup>th</sup> June 2004**

Flow check, OK. Pull out of hole from 3525m to 2007m. Pump 20 bbl super sweep and circulate clean while work from 2007m to 1978m. Rig service. Run in hole from 2007m to 3617m. Precautionary wash and ream last 2 stands. Pump 20 bbl sweep and circulate clean with bottoms up x 2. Rack from 3617m to 3556m. Flow check, OK. Pull out of hole from 3556m to 2007m. Pump 20 bbl sweep and circulate clean while work from 2007m to 1978m. Pull out of hole from 2007m to 1978m. Pull out of hole from 2007m to inside shoe at 1891m. Pull out of hole from 1891m to 1806m. Slip and cut 80' drill line. Conduct CFTs. Rig service. Pull out of hole from 1806m to 198m with 4" drill pipe. Rack BHA. Clear rig floor of excess equipment. Rig up Reeves Logging.

**12<sup>th</sup> June 2004**

Continue to rig up Reeves Logging. Make up and run in hole Reeves garage BHA to 68m. Make up log tools, load source and install in garage BHA. Conduct 2 x trip drills. Run in hole with logging BHA to 236m. Pick up locked jars, conduct pressure drip checks and rabbit all tubulars. Run in hole with 4" drill pipe from 236m to 1891m. Drift tubulars. Continue run in hole to 3617m. Drift tubulars. Tag TD at 3617m and establish circulation. Pull out of hole from 3617m to 3560m. Insert and deploy messenger dart. Circulate and work string as per Reeves at 3560m. Log tools deployed to 3614m at end of tool. Pick up and break over with 350k and minimal rotary. Conduct Reeves logging whilst pull out of hole from 3614m to 1891m. Continue pull out of hole from 1891m to 1800m.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

- 13<sup>th</sup> June 2004** Continue pull out of hole from 1800m to 236m. Rack BHA; lay out Reeves subs to 54m. Recover radioactive source and layout log tools from 54m. Service rig. Pick up and make up Schlumberger MDT tools to 19m. Run in hole with heavy weight drill pipe to 46m. Rig up wireline sheave at crown while monitor well. Run in hole with MDT BHA from 46m to 241m. Run in hole with drill pipe from 241m to 1847m. Circulate 1½ x string volume. Make up side entry sub assembly. Schlumberger run in hole with wireline, spot 10 bbl freshwater, engage PWCH and confirm latch with 3500 lbs overpull. Run in hole drill pipe from 1847m to 2110m with conductor line. Continue run in hole with MDT on 5" drill pipe and conductor line from 2110m to 2970m.
- 14<sup>th</sup> June 2004** Continue run in hole with MDT on 5" drill pipe and conductor line from 2970m to 3602m. Fill every 10 stands. Circulate and work string from 3602m to 3573m while correlate MDT tools. Pull out of hole and conduct formation pressure tests from 3574m to 3006m. Pump slug and pull out of hole from 3006m to 2530m.
- 15<sup>th</sup> June 2004** Pull out of hole from 2530m to 1848m. Schlumberger release PWCH and pull out of hole with wireline. Rig down side entry assembly. Rig service. Pull out of hole from 1848m to 241m. Rack BHA from 241m to 20m. Lay out MDT log assembly from 20m and clear rig floor. Make up wiper assembly and run in hole with BHA to 186m. Run in hole from 186m to 1851m. Slip and cut drill line. Secure hang off line and conduct CFTs. Rig service. Unable to complete due to high winds. Run in hole from 1851m to TD at 3617m. Precautionary wash and ream last 2 stands. 1 metre of fill. Circulate and condition mud.
- 16<sup>th</sup> June 2004** Continue to circulate and condition mud whilst rack back from 3617m to 3228m. Rack back from 3228m to 3171m whilst circulating 20 bbls super sweep. Flow check – ok. Pull out of hole from 3179m to 1995m. Work string whilst circulating 20 bbls super sweep at 1995m. Pull out of hole from 1995m to 1822m. Rig down Schlumberger wireline sheave from crown. Pull out of hole from 1822m to 186m. Flow check – ok. Rack heavyweight drill pipe from 186m and layout wiper trip assembly. Flush motor, layout logging jars and excess heavyweight drill pipe from mast. Pull wear bushing.
- 17<sup>th</sup> June 2004** Continue to pull wear bushing. Jet well head and BOPs. Flush choke manifold. Conduct rig service and monitor well. Run 2 stands heavyweight drill pipe and close LPRs. Change middle pipe RAMs from 4 ½" to 7" VBRs. Rack heavyweight drill pipe. Make up test plug and shell test BOPs to 1000 psi. Dress rig floor and prepare to run 7" casing. Rig up Weatherford and run 7" shoe track. Run in hole 7" casing to 2065m.
- 18<sup>th</sup> June 2004** Run in hole 7" casing from 2065m to tight spot at 2095m. Confirm casing measurements with BBMT tally. Circulate and reciprocate casing while attempt to work through tight hole at 2095m. Pull out of hole with casing from 2095m to obstruction at 2075m. Circulate and reciprocate casing while attempt to work through casing at 2075m – no go. Work through obstructions from 2075m to 2100m. Rig service. Wait on weather. Rig maintenance. Run in hole with 7" casing from 2100m to obstruction at 2110m, attempt to work through same – no go. Pull out of hole with casing from 2110m to 2100m. Conduct post push plate inspection on TDS. Change out bale arms, rig down Weatherford. Rig up cement head and high pressure lines. Circulate and condition mud while Howco prepare to cement 7" casing. Howco test lines. Howco mix and pump cement as per Esso program, displace with 272 bbls mud. Bump plug – ok. Howco test casing 2500 psi for 5 minutes, bleed back 2.9 bbls. Floats hold. Wait on cement.
- 19<sup>th</sup> June 2004** Wait on cement. Rig down cement head and high pressure lines. Lift and secure riser and BOPs. Cameron set casing slips with 275K including block weight. Sit down riser and BOPs, nipple up same. Rig to with Howco and test casing slip seal assembly. Lift riser, BOPs and secure same. Furmanite rough cut 7" casing, layout same. Nipple down BOP and riser. Reconfigure riser stack whilst Furmanite dress casing stump. Change out pipe rams MPRs to 2 7/8" – 5 ½" VAR, LPRs to 4" solid whilst Cameron install B section and test same. Nipple up Riser, BOPs, Bell nipple and flow lines. Change out saver sub to 4" F/H. Rig service.
- 20<sup>th</sup> June 2004** Pressure test BOPs and lines. Wait on weather. Rig service.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

- 21<sup>st</sup> June 2004** Winds abate. Continue to change out liners, prepare back loading, conduct rig maintenance whilst wait on sea state. Make up combination tool and pull wearbushing. Seat test plug in well head, continue to work on mud pumps and rig maintenance. Lay out heavyweight drill pipe and 5" drill pipe sideways from mast. Retrieve test plug from wellhead, make up combination tool and run wearbushing. Lay out same. Dress rig floor and prepare decks to pick up BHA. Make up 6" clean out assembly and run in hole with 3½" heavyweight drill pipe from deck to 169m.
- 22<sup>nd</sup> June 2004** Pick up 4" drill pipe and run in hole. Tagged cement at 2075m. Drill out cement and shoe track from 2075m to 2101m. Circulate hole clean, gas peak of 1300 units. Circulate gas out through choke manifold. Wash and ream from 2101m to 2177m. Run in hole from 2177m to 3555m. Wash and ream from 3555m to 3560m. Gas peak of 2344 units. Circulate out gas through choke manifold.
- 23<sup>rd</sup> June 2004** Circulate out gas through choke manifold at 3555m. Attempt to wash and ream, no go. Gas units peak to 1200. Shut in well. Strip in hole from 3555m to obstruction at 3560m. Circulate via choke manifold. Attempt to run in hole from 3560m, no go, pipe stuck. Attempt to fire jars, no go. Work drill string and attempt to free same. Pick up to 380K. Circulate, rotate and reciprocate drill string from 3560m to 3584m whilst reduce mud weight. Wash and ream from 3584m to TD at 3617m. Circulate, rotate and reciprocate drill string while circulate hole clean. Pump 20 bbl super sweep and circulate same, continue to reduce mud weight to 9.8 ppg. Flow check and pull out of hole.
- 24<sup>th</sup> June 2004** Flow check and pull out of hole to 2091m. Slip and cut. Run in hole from 2091m to 3617m, precautionary wash and ream last 2 stands. Pump 20 bbl super sweep. Circulate, rotate and reciprocate drill string while circulate hole clean. Pull out of hole to shoe at 2100m. Circulate, rotate and reciprocate drill string while circulate hole clean. Pull out of hole. Lay out BHA. Make up 4½" liner pre-assembly.
- 25<sup>th</sup> June 2004** Make up 4½" liner pre-assembly. Run in hole with 4½" liner to 1632m. Circulate hole to even out mud weight. Make up seal assembly, stinger and hanger. Continue to run in hole with liner on drill pipe.
- 26<sup>th</sup> June 2004** Continue to run in hole with liner on drill pipe to TD at 3617m. Space out to 3616m. Make up cement head, rig up high pressure lines. Attempt to rotate liner, no go. Rig to circulate and condition mud at 3616m. Rig up Howco. Baker drop ball and displace same. Pressure to 1600 psi. Set packer, confirm set with 25K SO/WT. Howco shear ball seat. Circulate and condition mud while conduct pre-job cementing JSA. Howco mix and pump cement as per program, displace with 151 bbls inhibited brine. Bump plug, hold 2800 psi for 5 minutes. Bleed back 1.5 bbls, floats hold okay. Set liner hanger as per Baker. Pressure test liner lap. Disengage running tool with 2600 psi and reverse circulate while displace mud in annulus with inhibited KCl brine / KCL brine. Mud returns dumped at shakers. Stop circulating when clean 9.45 ppg KCl brine returned. Pulled out to 1873m. Reverse circulate hole with KCl brine and added 2 gal/10 bbl of Coat-2748 inhibitor. Pull out with 4" drill pipe.
- 27<sup>th</sup> June 2004** Continue to pull out of hole with 4" drill pipe and lay out sideways to liner running tool at 20m. Lay out liner running tool. Pick up and break out pup joints and crossovers from cement head. Lay out same. Clear rig floor. Pressure test liner 2500 psi. Make up combination tool and pull wear bushing. Lay out same. Make up jetting assembly and jet wellhead. Lay out same. Nipple down bell nipple and BOP, lay out riser. Commence change out liners to 6" on mud pump #2. Cameron install abandonment flange to wellhead. Reinstate deluge system and install deck grating. Off MLA A-22A at 18:00 hours.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	



## **Section 2**

### **Geological Summary**

<b>Revision</b>	<b>Date</b>	<b>Issued by</b>	<b>Approved by</b>	<b>Remarks</b>
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**FORMATION TOPS**

DESCRIPTION	MD (m) RT	TVD (m) RT	TVD (m) SS
Lakes Entrance	N/A	N/A	N/A
Latrobe Group (TOL)	<b>1971.8</b>	<b>1373.5</b>	1345.6
Top of main N12 Coal	<b>2033.5</b>	<b>1413.3</b>	1385.4
Top Turrum L-100 Sand	<b>2956.7</b>	<b>2134.2</b>	2106.3
Top Turrum L-500 Sands	<b>3485.4</b>	<b>2589.7</b>	2561.8
Near Top Cretaceous Shale	<b>3578.4</b>	<b>2677.2</b>	2649.3
Total Depth	<b>3617.0</b>	<b>2613.99</b>	2586.08

**GEOLOGICAL SUMMARY****LAKES ENTRANCE FORMATION**1900 m – 1973.5 m      **CLAYSTONE**

**CLAYSTONE**      Light olive grey to light grey, occasional olive grey to medium grey, very calcareous and grading to calcareous CLAYSTONE, rare disseminated pyrite, common carbonaceous specks, trace ooids and fossil fragments, soft to firm, amorphous, blocky to sub-fissile in part with depth.

**LATROBE GROUP**1973.5 m - 2200 m      **Interbedded SANDSTONE, SILTSTONE, CLAYSTONE and COAL**

**SANDSTONE**      Clear to translucent, opaque, coarse to very coarse, common medium to fine, moderate to moderately well sorted, sub-rounded to sub-angular, common angular bit fractured grains, weak inferred siliceous cement, trace strong localised siliceous cement in fine grained aggregates, localised pyrite cement with depth, abundant off white to light grey dispersive argillaceous matrix, trace carbonaceous staining, trace nodular pyrite, loose, hard aggregates, tight visual and good inferred porosity.

**FLUORESCENCE**      2060 m to 2075 m: Trace only dull yellow green patchy fluorescence. No cut and nil residue.

**CLAYSTONE**      Dusky brown, olive grey to light grey green in part, slightly calcareous, occasional carbonaceous specks, trace micromicaceous, trace fossils, trace disseminated and nodular pyrite, dispersive, firm in part, amorphous, sub-blocky to blocky in part.

**SILTSTONE**      Pale yellow brown to light brown, argillaceous and grading to CLAYSTONE in part, trace pyrite, trace carbonaceous specks, micromicaceous, soft to firm, amorphous to sub-blocky in part.

**COAL**      Dark brown, brownish black to black, earthy to dull lustre, brittle to firm, sub-blocky to blocky, uneven fracture, silty, lignitic.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

2200 m – 2400 m

**CLAYSTONE with interbedded SANDSTONE and minor COAL****CLAYSTONE**

Pale yellow brown, dark yellow brown to dusky yellow brown, silty in part, micromicaceous in part, trace carbonaceous specks, trace nodular pyrite, dispersive to soft, amorphous, sub-blocky to sub-fissile in part.

**SANDSTONE**

Clear to translucent, fine to coarse, common very coarse, dominantly medium, moderate to poorly sorted, sub-rounded to sub-angular, common round and angular grains, localised pyrite cement, dispersive off white to pale grey argillaceous matrix, trace nodular pyrite, loose, fair inferred porosity, no fluorescence.

**COAL**

Dark brown, brownish black to black, dull to earthy lustre, brittle to firm, blocky to sub-blocky, uneven fracture, silty in part, micromicaceous in part, lignitic.

2400 m – 2680 m

**CLAYSTONE with minor interbedded SANDSTONE and COAL****CLAYSTONE**

Dark yellow brown to dusky yellow brown, brown grey, occasional brown black, slightly calcareous, silty in part, micromicaceous, trace carbonaceous specks, trace nodular pyrite, dispersive to very soft, soft to firm in part with depth, amorphous, blocky to sub-blocky in part.

**SANDSTONE**

Clear to translucent, opaque, off white to light grey, very fine to coarse, dominantly medium, moderate to poorly sorted, sub-angular to sub-rounded, localised pyrite and dolomitic cement, trace weak siliceous cement, dispersive off white to pale grey argillaceous matrix, trace carbonaceous specks, loose, soft to firm aggregates, poor inferred and visual porosity, no fluorescence.

**COAL**

Dark brown black to black, dull to earthy lustre, hard to moderately hard in part, blocky to sub-fissile in part, uneven to hackly fracture, silty, micromicaceous, silty laminations in part, disseminated pyrite, lignitic.

2680 m – 2840 m

**CLAYSTONE with minor SANDSTONE at depth****CLAYSTONE**

Dark yellow brown to dusky yellow brown, brown grey, occasional brown black, silty in part, micromicaceous, trace carbonaceous specks, dispersive to very soft, soft to firm in part, amorphous, blocky to sub-blocky.

**SANDSTONE**

Clear to translucent, off white to light grey, very fine to medium, common silt sized grains, moderately sorted, sub-rounded to sub-angular, trace weak siliceous cement, traces pyrite cement, off white to pale grey argillaceous matrix, loose, soft aggregates, poor inferred and visual porosity, no fluorescence.

2840 m – 2956.5 m

**Interbedded SANDSTONE and CLAYSTONE****SANDSTONE**

Light grey to off white, light brown grey, clear to translucent, very fine to medium, common coarse and silt sized grains, moderate to well sorted, sub-rounded to sub-angular, trace weak siliceous cement, localised strong dolomitic, localised moderate pyrite cement, off white argillaceous matrix, trace carbonaceous staining, trace nodular pyrite, trace mica flecks, trace carbonaceous and silty laminations, soft to friable, brittle in part, loose, poor inferred and visual porosity, no fluorescence.

**CLAYSTONE**

Dark yellow brown to dusky yellow brown, brown grey, silty in part, micromicaceous, common carbonaceous specks and localised flecks, rare carbonaceous laminations, trace disseminated and nodular pyrite, dispersive, soft to firm, amorphous, sub-blocky to sub-fissile.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

2956.5 m – 3205 m

**CLAYSTONE with minor interbedded SANDSTONE and COAL****CLAYSTONE**

Dusky yellow brown to dark yellow brown, silty in part, micromicaceous, carbonaceous specks and occasional laminations, trace disseminated and nodular pyrite, dispersive, soft, firm to brittle in part with depth, amorphous, sub-blocky to blocky in part.

**SANDSTONE**

Light grey to off white, light brown grey, clear to translucent, very fine to medium, moderately sorted, sub-angular to sub-rounded, trace weak siliceous cement, trace dolomitic and pyrite cement, abundant off white argillaceous matrix, trace nodular pyrite, trace carbonaceous specks and flecks, common white rock flour, loose, friable to occasional moderate hard, poor to fair inferred and visual porosity, no fluorescence.

**COAL**

Dark brown black to black, dull to earthy lustre, sub-vitreous in part, brittle to firm, blocky to sub-blocky, sub-fissile in part, uneven to angular fracture, sub-conchoidal in part, silty and argillaceous in part, lignitic.

3205 m – 3300 m

**Interbedded CLAYSTONE, SANDSTONE and COAL****SANDSTONE**

Light grey to off white, light brown grey, clear to translucent, very fine to fine, common medium, moderately to well sorted, sub-angular to sub-rounded, trace weak siliceous cement, abundant off white argillaceous matrix, trace carbonaceous specks and flecks, trace nodular pyrite, common white rock flour, loose, soft to firm, friable in part, poor inferred and visual porosity, no fluorescence.

**CLAYSTONE**

Light to medium grey, dusky yellow brown, silty in part, micromicaceous, trace carbonaceous specks, rare pyrite, dispersive, soft, sub-blocky to amorphous.

**COAL**

Dark brown black to black, dull to earthy lustre, sub-vitreous in part, brittle to firm, sub-blocky, uneven fracture, lignitic.

3300 m – 3485.4m

**SANDSTONE with Interbedded CLAYSTONE and COAL****SANDSTONE**

Light grey to off white, light brown grey, clear to translucent, very fine to dominantly fine, moderately well sorted, sub-rounded to sub-angular, abundant off white argillaceous matrix, trace carbonaceous specks and flecks, trace nodular pyrite, common white rock flour, dominantly unconsolidated, minor friable aggregates, poor inferred and visual porosity, no fluorescence.

**CLAYSTONE**

Light to medium grey, dusky yellowish brown, very dark brown with depth, silty in part, micromicaceous, trace carbonaceous specks and laminations, rare pyrite, dispersive, soft, sub-blocky to amorphous, occasionally blocky.

**COAL**

Dark brownish black to black, dull to earthy lustre, sub-vitreous in part, brittle to firm, sub-blocky, uneven fracture, lignitic.

3485.4 m – 3578.4 m

**SANDSTONE with minor interbedded SILTSTONE and COAL****SANDSTONE**

Translucent to very pale brown, occasionally off white, fine to medium, occasionally very fine, well sorted, sub-angular to sub-rounded, weak siliceous cement, common quartz overgrowths, rare abundant Kaolinite matrix, trace pyrite, friable, poorly visible porosity, fluorescence.

**FLUORESCENCE**

3500 m to 3520 m: 5% moderate bright patchy yellowish white direct fluorescence, slow streaming cut, thick yellowish white ring residue.  
3570 m to 3575 m: 5% dim patchy yellow fluorescence, slow streaming cut, thin ring residue.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

**SILTSTONE** Brown, mottled greyish brown to black, arenaceous, increasing argillaceous with depth, common carbonaceous flecks and fragments, occasionally very fine SANDSTONE lams at depth, sub-blocky, occasionally moderate hard.

**COAL** Black, dull, silty, grading to carbonaceous SILTSTONE, brittle, blocky.

**CRETACEOUS SHALE**

3578.4 m – 3617 m TD. **SILTSTONE with minor interbedded SANDSTONE .**

**SILTSTONE** (1) Pale greyish brown, very argillaceous, carbonaceous specks and laminations, firm, very dispersive, sub-blocky to amorphous.  
(2) Greyish black, very carbonaceous, common micro-micaceous, trace pyrite, moderate hard, sub-blocky.

**SANDSTONE** Off white, pale brown, very fine to medium, predominantly fine, well sorted, sub-rounded, weak siliceous cement, abundant Kaolinite and brown silty matrix, friable, poorly visible porosity, no fluorescence.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

## GAS REPORT

Background gas from 1900 m to 1971.8 m, prior to the Latrobe Formation was around 10 units from what was virtually 100% Claystone.

Upon entering the Latrobe Formation at 1971.8 m (1345.6 mTVDSS) an increase to 43 units was recorded adjacent to the first sand lithology at around 1985m. Significant gas peaks varied from around 30 to 329 units in the Latrobe. The first presence of hydrocarbon fluorescence was observed between 2060 m to 2075 m which gave a corresponding ratio of 87/8/4/1/Trace for a moderate gas peak of 32 units. The ratios of hydrocarbons in the larger peaks below this depth were generally consistent at around 89/7/3/1/Trace. Coal gases make the levels of Sandstone gas difficult to interpret until 2750 m.

Below 2750m the Sandstone gas peaks were more easily definable with an average of approximately 250 units from Sandstone and a background gas of 20 and 50 units in Claystones down to the Top Turrum L100 Sand.

The Top Turrum L100 Sand was penetrated at 2956.8 m (2106.3 mTVDSS) and the background gas to the L500 sand was 30 to 40 units. Significant gas peaks ranged from 126 to 329 units. Gas ratios for these peaks were typically 90/6/3/1/Trace.

At 3485.4 m (2561.8 mTVDSS) the Turrum L500 sands were encountered and at 3499 m a bit trip was performed. After several trips to rectify an obstructed casing window, and the frequent slugging of pipe required, the mud weight was around 10.4 ppg compared to 9.7 ppg previously and consequently the gas readings were lower and the gas curve had far less character than in the previous section. There was a background gas of 10 to 20 units to the top of the Cretaceous Shale and significant gas peaks were 45 units at 3500 m and 82 units at 3546 m with ratios of 82/8/5/3/2 and 88/6/4/2/1/trace respectively. The peak at 3500 m coincided with the appearance of fluorescence in the cuttings samples, as noted on the mudlog and geological summary. Fluorescence was seen from 3500 m to 3520 m.

From the top of the Cretaceous Shale at 3578.4 m (2649.3 mTVDSS) to TD, no significant gas peaks were seen and the gas ratio was typically in the order of 95/3/2, with levels remaining relatively low at about 15 to 30 units

Localised increases in background gas are attributed to both lithology variations and the penetration rate, which was dependant upon the drilling method (being either rotary or slide) carried out at the time. No CO<sub>2</sub> or H<sub>2</sub>S was detected while drilling Marlin A-22A.

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

Gas peaks through the Latrobe Group

Depth metres	Total Gas units	C <sub>1</sub> %	C <sub>2</sub> %	C <sub>3</sub> %	iC <sub>4</sub> %	nC <sub>4</sub> %	iC <sub>5</sub> %	nC <sub>5</sub> %
1985	43	0.572	0.045	0.017	0.001	0.002	-	-
2018	29	0.362	0.034	0.016	0.001	0.003	0.001	0.001
2040	115	1.425	0.164	0.078	0.009	0.017	0.004	0.004
2063	30	0.373	0.034	0.018	0.001	0.004	0.001	0.001
2140	64	0.639	0.067	0.030	0.002	0.006	0.001	0.002
2146	56	0.669	0.069	0.030	0.002	0.006	0.001	0.002
2158	116	1.430	0.157	0.071	0.007	0.015	0.003	0.004
2192	178	2.346	0.240	0.108	0.009	0.018	0.004	0.004
2253	44	0.526	0.048	0.021	0.001	0.005	0.001	0.001
2270	33	0.360	0.031	0.013	0.001	0.003	0.001	0.001
2308	36	0.433	0.023	0.006	-	0.001	-	0.001
2347	40	0.351	0.014	0.002	0.001	0.001	0.001	0.001
2387	26	0.330	0.012	0.001	0.001	0.001	0.001	0.001
2404	29	0.382	0.014	0.001	0.001	0.001	0.001	0.001
2471	64	0.545	0.026	0.008	0.001	0.002	0.001	0.001
2557	54	0.456	0.028	0.008	0.001	0.001	0.001	0.001
2598	55	0.616	0.045	0.013	0.001	0.001	0.001	0.001
2682	32	0.360	0.036	0.015	0.001	0.002	-	-
2704	55	0.646	0.056	0.024	0.002	0.003	0.001	-
2729	50	0.554	0.059	0.033	0.003	0.006	0.001	0.001
2774	138	1.878	0.131	0.057	0.006	0.011	0.002	0.002
2810	164	2.034	0.142	0.063	0.007	0.013	0.003	0.003
2825	204	1.943	0.141	0.066	0.007	0.014	0.003	0.003
2839	124	1.699	0.122	0.064	0.008	0.013	0.003	0.003
2851	226	3.532	0.208	0.109	0.013	0.023	0.006	0.006
2880	250	3.818	0.270	0.132	0.018	0.039	0.007	0.007
2890	283	4.346	0.288	0.140	0.018	0.029	0.007	0.007
2936	260	3.475	0.213	0.106	0.014	0.026	0.007	0.007
2943	250	3.554	0.237	0.109	0.014	0.026	0.007	0.007
2975	223	2.244	0.148	0.066	0.008	0.016	0.004	0.005
3006	316	5.052	0.350	0.151	0.016	0.030	0.007	0.007
3053	225	3.067	0.203	0.092	0.011	0.022	0.006	0.007
3110	203	3.146	0.177	0.070	0.008	0.017	0.005	0.005
3143	329	4.260	0.295	0.132	0.017	0.030	0.008	0.008
3164	271	3.840	0.225	0.102	0.013	0.026	0.007	0.008
3212	275	4.236	0.310	0.129	0.016	0.031	0.008	0.009
3267	196	2.321	0.165	0.069	0.009	0.018	0.005	0.005
3286	291	2.991	0.183	0.074	0.010	0.018	0.005	0.005
3372	248	4.090	0.240	0.076	0.008	0.015	0.003	0.002
3384	143	2.020	0.136	0.044	0.005	0.008	0.002	0.002
3406	80	1.010	0.067	0.026	0.003	0.006	0.001	0.002
3424	293	4.579	0.348	0.097	0.010	0.013	0.003	0.003
3440	268	4.366	0.283	0.100	0.010	0.017	0.004	0.004
3461	126	1.639	0.107	0.046	0.005	0.009	0.002	0.002
3484	162	2.555	0.169	0.054	0.006	0.010	0.002	0.002
3546	82	0.684	0.037	0.014	0.001	0.001	0.001	0.001
3588	54	0.448	0.020	0.008	0.001	0.001	0.001	0.001
3616	28	0.196	0.003	0.002	0.001	0.001	0.001	0.001

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	

### MDT SUMMARY

Depth	TVDSS	Drawdown Mobility	Hydrostatic Pressure (Quartz gauge)		Formation Pressure	Test Type
			Before PSIA	After PSIA		
M	M	MD/CP			PSIA	
3574.0	2645.2		4975	4984	3774.1	? ; Plugging & DP very sticky
3568.5	2639.5	?			3768.3	valid
3561.0	2632.9					terminated; some plugging on pre flow, could not clear....pretest
3553.0	2625.4	12.7			3747.3	valid; Pretest 10cc..pump..stop pump...
3549.5	2622.1	43.8	4959	4941	3742.3	final 10cc pretest
3540.0	2613.1	48.6	4945	4925	3732.2	valid; Mobility difficult to pick due to time restrictions but P valid
3535.0	2608.4	38.0	4936	4916	3725.9	valid
3530.0	2603.7		4919			terminated; Power failure, retest after approx 30 mins, unable to d/d at sufficient rate-valve open
3529.0	2602.8	1.3	4905	4908	3720.4	valid
3525.0	2599.0	7.1	4896	3715	3715.0	valid
3518.0	2592.5		4884			tight; check GR correlation...old OK... after power down...may be slightly off depth
3517.0	2591.5			4885		tight
3516.0	2590.6	93.3	4880	4882	3699.2	valid
3515.5	2590.1	78.2	4878		3697.9	valid
3512.5	2587.3		4874			tight
3510.0	2584.9	35.7	4892	4871	3692.3	valid
3508.0	2583.1		4865			s/c; Supercharged...3700 increasing
3505.2						tight
3506.0	2581.2	151.0	4859		3689.0	valid
3501.0	2576.5	127.1	4851	4852	3684.0	valid
3498.5	2574.1	47.7	4847		3683.4	valid
3496.5	2572.3	17.0	4842		3683.8	? ; First Fm P slightly high, (3683.7 psi) d/d again, same P, higher than previous
3494.0	2569.9	42.3	4839	4840	3682.8	valid
3491.5	2567.6	60.8	4840		3681.9	valid
3448.5	2527.4	114.3	4771	4770	3734.1	valid
3442.5	2521.8	10.2	4754	4757	3732.8	valid
3437.0	2516.7	5.0	4741	4744	3731.5	valid; Tighter but looked stable after 10 mins
3434.5	2514.4	1472.0	4734	4738	3730.1	valid
3408.0	2490.0	724.9	4695	4694	3702.7	valid
3405.0	2487.3	3.6	4685	4685	3702.6	? ; Tighter, required 2 pretest d/d
3406.0	2488.2	11.2	4680	4680	3702.7	? ; 3rd test of sand, no room to move in quality section.
3374.0	2459.1	2364.6	4632	4632	3698.2	valid
3370.0	2455.5	167.4	4617	4619	3697.3	valid
3299.0	2392.1	3.3	4501	4501	3498.5	?/tight; Still very slowly building after 11 mins, terminated.
3297.2	2390.5		4491	4492		tight; Very slow P buildup. Pretests abandoned. Move down to try validate pretest 34.
3297.5	2390.8		4490	4490		tight; Slow build up test terminated after d/d w/ pump. Unable to validate pretest 34 in this sand. Stuck after tool retraction
3287.2	2381.8	90.4	4473	4475	3494.8	valid; Gas sand
3284.0	2378.9	2312.6	4465	4466	3494.1	valid; Gas sand little Fm pressure difference w/ pretest 38

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	



Depth M	TVDSS M	Drawdown Mobility MD/CP	Hydrostatic Pressure		Formation Pressure PSIA	Test Type
			Before PSIA	After PSIA		
3281.0	2376.3	32.0	4461	4462	3493.0	valid
3265.0	2362.3	2568.8	4437		3487.0	valid
3260.0	2357.9	391.1	4429	4428	3486.0	valid
3236.0	2337.1	1493.4	4392		3459.8	valid
3229.0	2331.0	523.0	4378	4380	3457.6	valid
3225.5	2328.0		4370			tight; Very slow build up, time limit reached, test aborted.
3222.5	2325.4		4368	4362	3455.5	valid
3220.0	2323.2		4356		3354.6	tight; Time limit reached, test aborted.
3211.5	2316.0	7.0	4343	4344	3453.5	valid
3207.0	2312.1	880.3	4335	4336	3451.0	valid; Strain gauge very stable, quartz gauge varying slightly, time limit reached.
3193.2	2300.3	214.7	4322	4317	3416.1	valid
3191.0	2298.4		4313	4313		tight
3151.0	2264.8	60.7	4261	4254	3410.8	valid
3146.0	2260.6	2746.2	4240	4243	3409.2	valid
3143.0	2258.1	92.6	4232	4234	3408.3	valid
3030.0	2164.3		4063	4059		tight; Stopped on Reeves depth 3030 instead of 3029.5 as per program, cannot move 0.5m. Tight hole
3026.5	2162.5		4049.6	4050		tight
3023.0	2159.6	665.1	4035.3	4037	3217.2	valid
3020.0	2157.2	164.4	4027.8	4030	3216.3	valid
3016.0	2154.0	9181.4	4022.9	4023	3215.1	valid
3011.5	2150.4	1345.4	4019.9	4017	3214.5	valid
3006.0	2145.9	6599.9	4017.7	4008.7	3213.2	valid

Revision	Date	Issued by	Approved by	Remarks
1	28-06-2004	Geoservices Unit 137	QC Technical Assistant	