



MARLIN A-6A

FINAL WELL REPORT

Prepared by

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Section 1 **General Well Summary**

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WELL DATA

Operator : ESSO Australia Ltd
Platform : Marlin
Well name : Marlin A-6A
Country : Australia
Location : Gippsland Basin
Field : Marlin
Permit : Vic/L3

Location AMG co-ordinates : 5 767 920.460m N 606 866.830m E

Location local co-ordinates : Lat: 38° 13' 49.308" S Long: 148° 13' 15.624" E

Surface co-ordinates : 6.44 N -26.23 E

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 : 3574.93 metres
Actual total depth : 3563 metres
True vertical depth : 2698.45 metres
Spudded on : 05th March 2004
Total depth reached on : 29th March 2004

Drilling Contractor

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

Drilling Phases

Diameter (inch)	From (mMDRT)	To (mMDRT)	Mud Type
8 ½"	1013.0	3563.0	KCl / Glycol / PHPA

Cased Hole

Casing Diameter (inch)	Casing Type	Shoe Depth (mMDRT)
13 ⅜"	Surface	1013.2
7"	Production	3563.0

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MUD LOGGING

Logging Unit Number: 137

Engineers: M. Boyd, M. Smith, G. Fawns, R. Pereira

Sampling Interval

Halibut A6A

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Washed and Dried	3	100 grams	10 metres	1560	1710
Washed and Dried	3	100 grams	5 metres	1710	3563

Cuttings Distribution

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

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WELL SUMMARY

Marlin A-6A is re-drill directional well designed to target the Turrum L-500 sandstone. The well was drilled to a Total Depth of 3563 mMDRT (2698.45 mTVDRT) in an 8½" production hole. 7" production casing was run and then Marlin A-6A was suspended.

Initially the rig spent four days attempting to shell test the BOPs against the annular without success. The rig was skidded across to Marlin A-24 to carry out a plug and abandonment program whilst repairs were made to the Marlin A-6A wellhead. Operations resumed on Marlin A-6A eleven days later and Marlin A-6A was spudded at 12:15 hours on the 05th of March 2004 after drilling out cement with seawater from 966 m to the kick off depth at 1015 mMDRT. A trip to surface was necessary at 1001 m after the BHA became blocked with hardened cement from the P & A operation.

A steerable / MWD assembly with an 8½" Reed Hycalog RSX 192 bit was used to kick off from the 13⅜" casing shoe at a depth of 1015 mMDRT. When new hole had been drilled to 1025 mMDRT, a Pressure Integrity Test (830 psi: 14.3 ppg EMW) was carried out with 9.0 ppg mud. The hole was then drilled with various bits and without issues until the bit was tripped out of the hole at a depth of 3268 m. On pulling to surface it was revealed that the bit had lost all three cones. A fishing run was unsuccessful and the well was plugged back to 3192 m. Drilling continued to Total Depth without further issues except for the blinding of shaker screens while drilling the L-500 sands exacerbating losses over the shakers and reducing the mud weight.

Prior to reaching the kick off depth the hole was displaced to a KCl / Polymer mud system with an initial mud weight of 9.0 ppg and maintained to 1025 m for the PIT. Once out of cement and drilling new formation, PHPA, Glycol and Baracor-129 were added to the mud system to maintain mud rheology as per programmed concentrations. The mud weight was maintained at 9.2 ppg to 9.4 ppg until 1509 m where it was gradually weighted up to 9.8 ppg with Barite additions prior to drilling the Lakes Entrance formation. Baracarb 25 and 100 were added at 1687 m as per programmed concentrations to bridge the pore throats and reduce the likelihood of differential sticking and seepage losses through the Latrobe Formation. At 1711 m Barablok was added to the mud system prior to drilling into coals, this was discontinued at 2157 m until the L-100 sand at 2770 m where it was once again added to the system. Throughout the hole to Total Depth, the mud weight ranged from 9.0 ppg to 10.5 ppg as dictated by hole conditions.

Marlin A-6A reached a Total Depth of 3563 m at 08:45 hours on the 29th March 2004. The final survey at a depth of 3543.78 mMDRT had an inclination of 41.00° and an azimuth of 510.20°. A wiper trip was made to the 13⅜" 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 to further evaluate the reservoir. 14 points were measured before the string became differentially stuck at 3451 m and the MDT logging programme was abandoned. After freeing the string and pulling out of hole, a post logging wiper trip was carried out and the 7" production was run and set at 3563 m and the well suspended.

Throughout the Marlin A-6A drilling programme, there was no problematic tight hole / loses / gains encountered on any trip, or whilst drilling.

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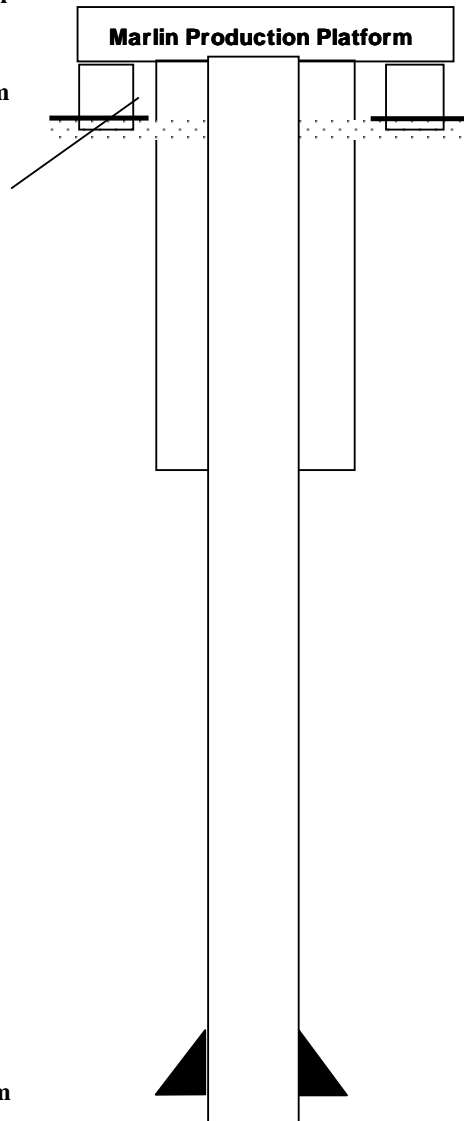
WELL PROFILE

Rotary Table to Mean Sea Level
27.91 m

Rotary Table to Sea Bed 86.91 m

13³/₈" Casing Set at 1013.2 m

7" Production casing at 3563.0 m



NABORS Rig 453

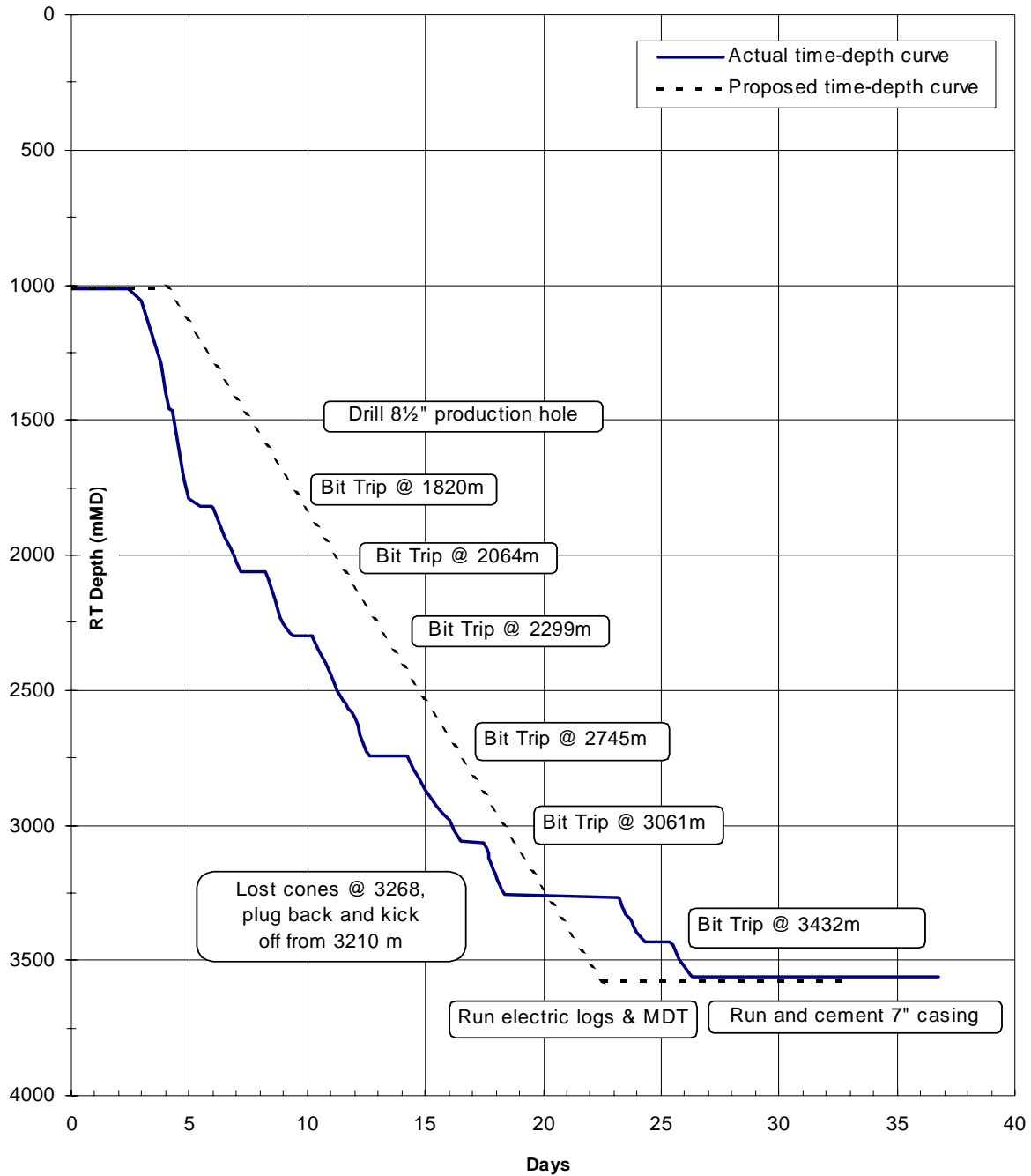
**Kicked-off A-6A
05th March 2004**

**560.0 m – 3563.0 m
Mud Weight 8.8 – 10.0 ppg**

8 1/2" Hole drilled to 3563.0 m

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TIME-DEPTH CURVE (measured depth)



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BIT RUN SUMMARY

BIT	Size (")	Type	Jets	In(m)	Out(m)	Hours	Condition
1	8½	Reed Hycalog RSX192	7 x 15	1013	1820	40.1	1-8-WT-A-X-2-LT-ROP
2	8½	DBS Security SEB485	2 x 22 1 x 28	1820	2064	22.0	2-3-WT-A-E/E/E-IN-ER-HR
3	8½	Reed Hycalog DSX173	3 x 21 3 x 18	2064	2299	17.6	1-2-WT/CT-T-X-IN-PN-DTF
4	8½	DBS Security SEB485	2 x 29 1 x 22	2299	2745	39.1	8-5-WT/LT/CT-A-F-E-E-1/16"-ER-HR
5	8½	Reed Hycalog TD51AKPRDH	2 x 29 1 x 22	2745	3061	40.4	8-8-BT/A/LT/CD-AM1-F-F-F-1/16-ER-HR
6	8½	Security EBXS20DS	2 x 29 1 x 22	3061	3268	20.0	8-8-LC-1,2,3-F-F-F-4-NO-TQ/PR
7	8½	Reed-Hycalog DSX-173	3 x 21 3 x 18	3268	3268	6.5	2-8-WT/JD-A/S-X-I-BT/CI-TQ/HP
8	8½	Smith GF30ODPD	1 x 24 2 x 30	3193	3432	26.15	3-8-BT/WT-G2,3/A-F-E-E-E-2-SD-TQ/HR
9	8½	DBS Security SEB485	2 x 29 1 x 22	3432	3563	19.6	4-5-WT-A-E-E-E-1-NO-TD

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CASING DATA

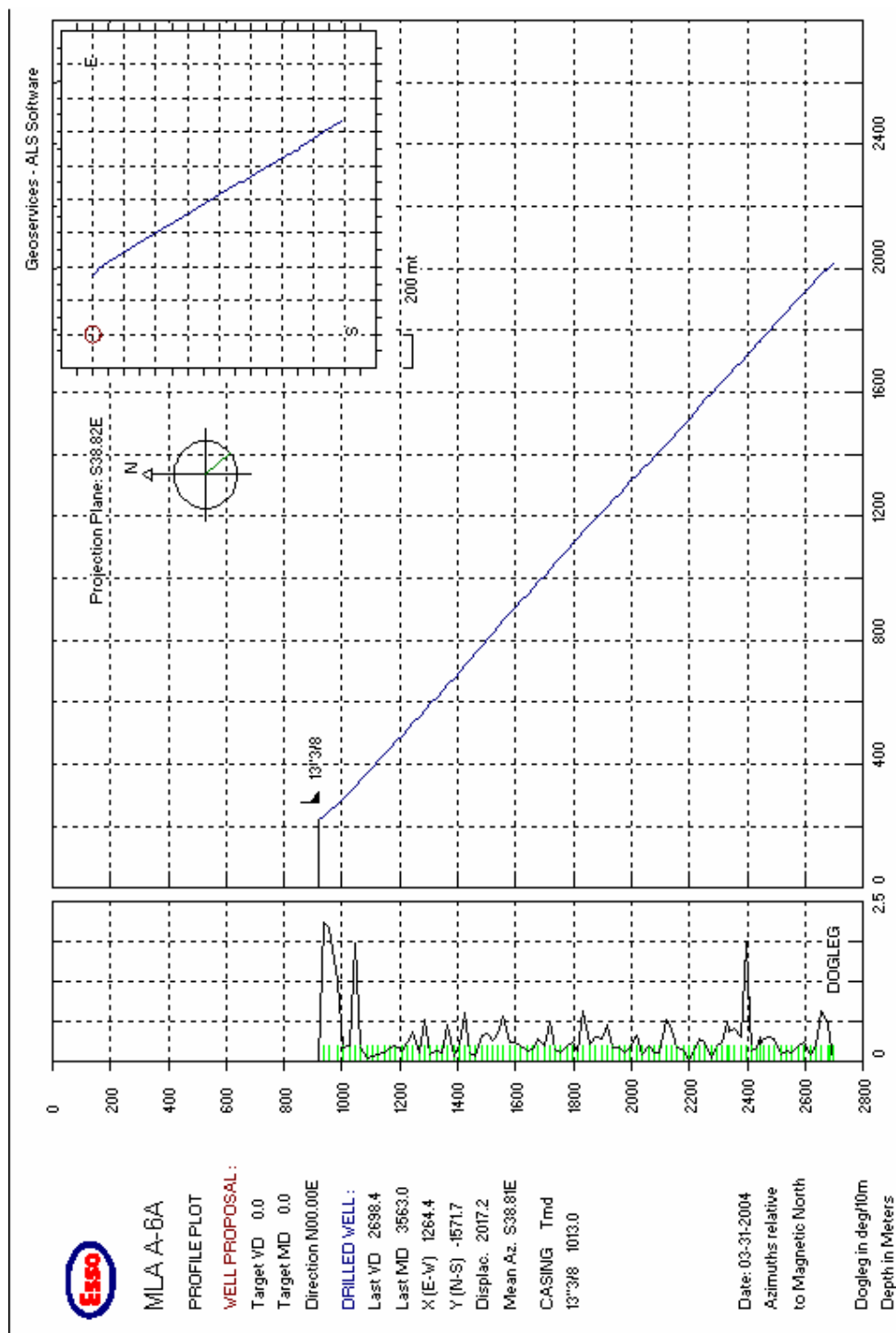
Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Surface	13 ³ /8	54.5	K-55	BTC	1013.2
Production	7	26	L-80	LTC	3563.0

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	824	HALAD 413L 30 gal / 10 bbl GAS CON 469 60 gal / 10 bbl SCR-100L 7 gal / 10 bbl CFR-3L 2 gal / 10 bbl NF-5 0.25 gal / 10 bbl	188.3	258	13.2	1613.0 m 3563.0 m	2500 psi

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WELL DIRECTIONAL PROFILE



WELL DIARY

- 18th February 2004** Continue to remove test stump from BOPs whilst Howco test shock and Kelly hoses. Break down test assembly. Make up and test 4" grey valve. Install fast lock to BOPs, remove grating, bleed down pressure and remove abandonment flange. Cameron inspect 'A' section. Install tie down and DSA flange as per Cameron. Install riser, BOPs, deluge system, bell nipple and flow line. Varco commission TDS. Function test BOPs. Make up test plug, run in hole, seat and leave same in well profile.
- 19th February 2004** Rig up surface lines. Howco flush and conduct line test. Howco attempt shell test against blinds, no go, leak past test plug. Run in hole, latch onto and attempt to free test plug with 15K overpull, no go. Remove tie down dogs and inspect thru port hole. Continue work string and free test plug with 60K overpull. Cameron clean and inspect test plug. Check all connections. Run in hole with test plug and seat same. Reinstall tie down dogs in flange. Howco attempt shell test BOPs against annular, no go, leak past plug. Pull test plug with 35K overpull and inspect same. Make up jet assembly, jet BOPs and break down assembly. Make up test assembly and attempt shell test. Failed. Attempt unseat test plug with 70K overpull, no go. Lift BOP and riser. Cameron inspect test plug – cocked, realign, engage and unseat as per Cameron to surface. Skid rig west to realign over well centre, secure same whilst redress test plug and consult Cameron management. Check casing head profile, test plug and consult Cameron engineering regarding different profiles. Nipple up BOP and riser and lay out test assembly. Rig service. Pick up and make up 5" drill pipe.
- 20th February 2004** Continue to pick up and make up 5" drill pipe. Service rig. Lay out 4" drill pipe on deck from boat. Strap and tally drill pipe whilst construction use crane. Continue to lay out 4" drill pipe. Prepare decks and conduct maintenance. Pick up and make up 4" drill pipe.
- 21st February 2004** Continue to pick up and make up 4" drill pipe. Wait on weather. Reconfigure scaffold rack and prepare decks for skidding to A-24. Erect scaffold in sub-base to access BOP rams. Install 4" solid to LPR's and blinds to MPR's. Pick up and make up 4" drill pipe. Service rig. Continue to dress BOPs and conduct maintenance whilst wait on boom logistics to service crane. Pick up and make up 5" HWDP. Nipple down BOP and riser. Remove deluge skid, install abandonment flange and install deck grating. Prepare to skid to Marlin A-24 P&A.
- 02nd March 2004** Prepare to skid to Marlin A-6A.
- 03rd March 2004** Prepare to skid to MLA A-6A. Erect scaffold and dress BOPs UPRs – blind, MPRs – 2⁷/₈"-5¹/₂" VBRs and LPRS – 5" solids. Remove air lift air venturi and suction hose. Lift and secure access ways to skid. Dress riser. Clear access ways, secure equipment and prepare to skid. Skid rig from A-24 P&A to A-6A. Secure rig and reinstate access ways. Remove deck grating, abandonment flange and run riser. Continue to rig up access ways whilst Cameron test casing head void seals. Nipple up BOPs and deluge skid. Make up 5" test assembly. Test lines, BOPs, choke and standpipe manifold.
- 04th March 2004** Continue to test lines, BOPs, choke and standpipe manifold. Lay out 5" test assembly, make up 4" test assembly and test VBRs. Make up test assembly and test blind rams. Break down and lay out all test assemblies. Rig to and run wear bushing, break down running tool. Rig to and Howco pressure test casing. Pick up and make up 8¹/₂" steerable BHA – shallow test MWD, set bend at 1.5° and run in hole to 198 m. Rig to and continue to run in hole with 4" DP to 916 m. Rig service. Conduct pit and power choke drill. Howco test grey valves whilst crane install hose to air lift system. Conduct H₂S drill. Test flow rate of air lift system. Conduct power choke drill and SCR's. Run in hole from 916 m to top of cement at 966 m. Conduct torque and drag readings. Drill cement from 966 m to 1001 m. Attempt to circulate after connection, no go. Rotate, work string and pull out of hole from 1001 m to 943 m whilst try to re-establish circulation. No go.

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05th March 2004	Pull out of hole to surface, break bit and inspect motor. Cement found in motor and bit blocked. Install cross overs, flush out motor and clean bit. Make up BHA and run in hole to 973 m. Rig service. Wash and ream from 973 m to 1001 m. Drill cement from 1001 m to 1010 m. Displace well to 9.0 ppg mud whilst continue to drill to 1013 m. Drill and steer from 1013 m to 1025 m. Work pipe and circulate hole clean and condition mud whilst pull out of hole to 1013 m. Rig to and Howco conduct PIT with 9.0 ppg. Run in hole to 1025 m. Drill from 1025 m to 1030 m. Pull out of hole to 1002 m. Run in hole to 10360 m. Drill and steer to 1059 m. Rotate and work string whilst circulate hole clean. Rig to and SDI run in hole with gyro to 1027 m.
06th March 2004	Rig to and SDI run in hole with gyro to 1027 m. Pull out of hole and rig down wireline. Drill, steer and survey 8½" hole from 1059 m to 1088 m. Rig to and SDI run gyro survey. Drill, steer and survey 8½" hole from 1088 m to 1403 m.
07th March 2004	Drill, steer and survey 8½" hole from 1403 m to 1432 m. Rig service and change out shaker screens. Drill, steer and survey 8½" hole from 1432 m to 1461 m. Circulate and reciprocate pipe, rack back 1 stand every ½ hour to 1404 m whilst investigate #2 mud pump intermittently shutting down. Drill, steer and survey 8½" hole from 1461 m to 1791 m.
08th March 2004	Drill, steer and survey 8½" hole from 1791 m to 1820 m. Flow check, slug pipe and pull out of hole to 399 m. H ₂ S drill. Continue to pull out of hole. Break bit and reset motor to 0°. Make up new bit, shallow test MWD, set bend in motor to 0.78° and run in hole to 198 m. Rig service and conduct H ₂ S drill. Continue to run in hole filling every 10 stands. Wash and ream last 2 stands to 1820 m. Drill, steer and survey 8½" hole from 1820 m to 1827 m.
09th March 2004	Drill, steer and survey 8½" hole from 1827 m to 2016 m. Rotate, work string and circulate while change shaker screen. Drill, steer and survey 8½" hole from 2016 m to 2025 m.
10th March 2004	Drill, steer and survey 8½" hole from 2025 m to 2064 m. Rotate, work string and rack back 1 stand per ½ hour whilst circulate hole clean from 2064 m to 1949 m. Pull out of hole and change out roller reamer, motor and bit. Set bend at 1.15° on motor, shallow test MWD and run in hole to 915 m. Slip and cut drilling line. Rig service. Change saver sub to 4½" and dress pipe handler. Install crossover. Continue to run in hole.
11th March 2004	Continue to run in hole to 1820 m, wash and work through hang up depths at 1772 m. Hang up depth at 1820 m, wash to 2006 m. Wash and ream from 2006 m to 2064 m. Rotate, work string and circulate hole clean. Drill, steer and survey 8½" hole from 2064 m to 2255 m.
12th March 2004	Drill, steer and survey 8½" hole from 2255 m to 2299 m. Rotate, work string and rack back 1 stand every ½ hour whilst circulating hole clean from 2299 m to 2208 m. Slug pipe and pull out of hole. Rack back collars, break bit, lay out motor, lay down roller reamer. Function test remote Koomey. Pick up and make up motor, bit, roller reamer and NM pony collar and run in hole 32 m. Shallow test and set bend to 1.15°. Continue to run in hole.
13th March 2004	Continue to run in hole to tight spot at 1720 m. Wash and ream through tight spot and continue to run in hole to 2241 m. Wash and ream from 2241 m to 2299 m. Drill, steer and survey new hole from 2299 m to 2441 m.
14th March 2004	Drill, steer and survey new hole from 2441 m to 2461 m. Rotate, work string and circulate hole whilst replace valve on #1 pump. Drill, steer and survey new hole from 2461 m to 2513 m. Rig service whilst change shaker screens. Drill, steer and survey new hole from 2513 m to 2548 m. Work string and circulate hole whilst fault find and fix TDS hydraulic problem. Drill, steer and survey new hole from 2548 m to 2580 m. Rotate, work string and circulate hole whilst change shaker screens. Drill, steer and survey new hole from 2580 m to 2581 m. Repair suction hose. Drill, steer and survey new hole from 2581 m to 2605 m.

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15th March 2004	Drill, steer and survey 8½" hole from 2605 m to 2692 m. Conduct rig service, whilst changing shaker screens. Drill, steer and survey 8½" hole from 2692 m to 2745 m. Tight hole at 2740 m, rotate and work string free. Rotate and work string while replacing stand pipe seal. Howco test seal to 5000 psi. Rotate, work string and rack back 1 stand per ½ hour from 2695 m to 2631 m, whilst circulating hole clean. Flow check, slug pipe and pull out of hole from 2631 m to 2064 m. Change running gear and pull out of hole from 2064 m.
16th March 2004	Continue to pull out of hole from 2064 m to 1013 m. Flow check and pull out from 1013 m to 198 m. Lay out jar and rack back HWDP to 32 m. Lay out MWD and break bit. Retrieve wear bushing and jet BOP stack and well profile. Rig up Howco high pressure lines and test. Conduct full pressure test on all 5" and 4" equipment; chokes; grey valves and rams. Rig down test assembly and high pressure lines. Rig to and re-run wear bushing. Make up 8½" bit and steerable drilling assembly to 32m. Run in hole to 198 m with HWDP and jar. Continue to run in hole to shoe. Cut and slip drilling line.
17th March 2004	Conduct rig service. Run in hole from 945 m to 2064 m, changed to 5" DP. Run in hole from 2064 m to tight hole at 2303 m. Wash and ream through tight hole at 2303 m. Run in hole from 2303 m to 2637 m. Wash and ream from 2637 m to 2745 m. Drill, steer and survey 8½" hole from 2745 m to 2811 m. Rotate; work string and circulate while changing shaker screen. Drill, steer and survey 8½" hole from 2811 m to 2866 m.
18th March 2004	Drill, steer and survey 8½" hole from 2866 m to 2953 m. Conduct rig service while circulating to change shaker screens. Drill, steer and survey 8½" hole from 2953 m to 2969 m. Circulate through choke manifold while fixing stand pipe hose leak. Drill, steer and survey 8½" hole from 2969 m to 2978 m.
19th March 2004	Drill, steer and survey 8½" hole from 2978 m to 3061 m. rotate and work string while circulating 2 times bottoms up. Rack back 1 stand every ½ hour while circulating. Flow check and pull out of hole with 5" DP from 2953 m to 2323 m. Lay out singles from 2323 m to 2064 m. Pull out of hole with 4" DP to 906 m and conduct rig service. Pull out of hole 198 m and rack back HWDP.
20th March 2004	Rack back HWDP, steerable BHA and break bit. Make up bit, steerable BHA and shallow test. Run in hole with HWDP to 198 m. Run in hole with 4" DP from 198 m to 2064 m. Pick up 5" DP from 2064 m to 2303 m and run in hole to 2982 m. Wash and ream to 3061 m. Drill, steer and survey 8½" hole from 3061 m to 3191 m.
21st March 2004	Drill, steer and survey 8½" hole from 3191 m to 3268 m. Rotate and work string while circulating 2 times bottoms up. Flow check and pull out of hole from 3268 m to 2982 m and pump slug. Continue to pull out of hole from 2982 m to 914 m. Slip and cut drilling line.
22nd March 2004	Continue to trip out of hole. Slip and cut drilling line. Continue to pull out of hole. Bit missing cones. Rack back MWD. Make up reverse circulating junk basket and run in hole, wash and ream from 3126m. Work junk basket to fish lost cones. Pull out of hole.
23rd March 2004	Pull out of hole.
24th March 2004	Pull out of hole. Lay out bit, motor and MWD tools. Ran back in hole with mule shoe and set cement plug. Pull back 2 stands and reverse circulate, dump cement and water contaminated returns. Pull out of hole to 3130 m and circulate. Pump slug and pull out of hole
25th March 2004	Continue to pull out of hole. Rack back BHA, lay out mud motor. Pick up steerable assembly, run in hole and shallow test. Run in hole to 945 m. Slip and cut drilling line, conduct rig service. Continue to run in hole rabbiting tubulars. Wash and ream last 2 stands to bottom and tag cement at 3193 m. Drill cement to 3210 m and kick off from cement plug. Steer ahead to 3121 m, circulate bottoms up.

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26th March 2004	Continue to drill, steer and survey 8½" hole from 3221 m. Circulate and change out shaker screens at 3332 m. Continue to drill, steer and survey 8½" hole.
27th March 2004	Continue to drill, steer and survey 8½" hole to 3432 m. Circulate bottoms up and pull out of hole. Remove bit, make up new BHA and run in hole. Perform rig service at shoe and continue to run in hole.
28th March 2004	Continue to run in hole. Work string at 2595 m during H2S drill. Continue to run in hole. Wash and ream last 2 stands to bottom. Drill steer and survey 8½" hole.
29th March 2004	Continue to drill steer and survey 8½" hole from 3522 m to 3563 m (TD). Rotate and reciprocate string while circulating hole clean from 3563 m to 3470 m. Backream from 3470 m to 3326 m. Rotate and reciprocate string while circulating hole clean from 3326 m to 3269 m. Pull out of hole from 3269 m to 1145 m. Pump sweep, circulate hole clean whilst working pipe. Flow check and pull inside shoe to 966 m. Slip and cut. Rig service. Run in hole.
30th March 2004	Continue to run in hole to bottom. Pump 25 bbl high viscosity sweep and circulate hole clean. Pull out of hole to 1092 m. Pump 20 bbl high viscosity sweep and circulate hole clean. Continue to pull out of hole to log. Rack wiper trip BHA in derrick and rig up logging equipment. Run in hole with Reeves logging tools.
31st March 2004	Continue to run in hole with Reeves logging tools to TD at 3563 m. Circulate and reciprocate drill string while condition mud. Pull out of hole from 3563 m to 3507 m, insert dart and deploy logging tools, disc shear at 1050 psi, logging tool depth at 3560 m. Pull out of hole from 3560 m to 1013 m as per Reeves instructions. Flow check and pull out of hole.
01st April 2004	Continue to pull out of hole with Reeves logging tools and lay out same. Make up Schlumberger logging tools and test. Run in hole with logging tools to 940 m. Slip and cut drill line. Service TDS. Rig up Schlumberger side entry and run in hole with wireline latch tools and test same. Pump assist 4 bbl/min 200 psi. Pull out of hole and rig down Schlumberger wireline. Continue to run in hole with Schlumberger logging tools.
02nd April 2004	Continue to run in hole with Schlumberger logging tools. Circulate and work string while circulate 1.5 times drill string volume at 2618 m. Rig up side entry sub, 8½" stabiliser and Schlumberger run in hole to 2470 m. Pump 10 bbl fresh water, displace with mud to 2618 m. Schlumberger latch tool and test same. Schlumberger clamp wire and pull tension. Run in hole with 5" DP and MDT log from 2616 m to 3354 m. Clamp slipping on wireline side entry sub. pull out of hole from 3354 m to wireline side entry sub at 2618 m. Schlumberger change out wireline clamp and conduct overpull test. Run in hole from 2618 m to 3526 m. Work string and correlate depth to 3490 m. Schlumberger MDT log at predefined intervals.
03rd April 2004	Schlumberger MDT log at predefined intervals from 3490 m to 3451 m. Attempt to work string at 3451 m, no go. Unable to fire jars, circulate and work string while attempt to pull free at 3451 m, maximum overpull 380K. Schlumberger shear weak point. Pull out of hole with wireline. Work 15K torque down string and free same at 3451 m. Flow check and pull out of hole from 3451 m to wireline side entry sub at 2618 m. Break and lay out side entry and 8½" string stabiliser. Flow check and pull out of hole from 2618 m to surface. Lay out Schlumberger tools. Rig down Schlumberger sheave from crown. Make up combination tool and pull wearbushing. Make up 5" test assembly and position in wellhead. Pressure test BOPs.
04th April 2004	Continue to pressure test BOP. Retrieve test plug. Run wearbushing. Make up bit and run in hole to 960 m. Slip and cut and rig service. Continue to run in hole to 1047 m. Rotate, circulate and reciprocate drill string while condition mud. Run in hole from 1047 m to 1800 m. Rotate, circulate and reciprocate drill string while condition mud. Run in hole from 1800 m to 2683 m. Rotate, circulate and reciprocate drill string while condition mud. Continue to run in hole to tight hole at 3447 m. Wash and ream from 3447 m to 3563 m. Rotate, circulate and reciprocate drill string while condition mud and racking back 1 stand every 20 minutes.

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05th April 2004	Rotate, circulate and reciprocate drill string while circulating mud and racking back from 3563m to 3375m. Flow check – ok. POOH with 5" DP from 3375m to 2052m. Change handling gear to 4" & POOH from 2052m to 186m. Change handling gear and POOH BHA to surface. Makeup TDS, flush BHA & break bit. Clear floor. Retrieve wear bushing. Make up test assembly and locate. Pressure test 5x300 psi / 5x3000 psi. Lay out test assembly. Rig service. Wait on weather. Remove excess drill equipment from rig floor while rig up Weatherford. Dress rig floor to run 7" casing.
06th April 2004	Dress rig floor to run 7" casing. Make up shoe track, install stop rings to 36m. Run in hole with 7" casing from 36m to 2686m.
07th April 2004	Run in hole with 7" casing from 2686m to 3563m. Rig down and change handling gear for cement job. Rig up cement head and surface lines. Pull tension 270k and circulate and clear rig floor of equipment. Condition mud and Howco mix for cement job. Cement job and displace with brine and bump plug at 5832 stks at 1925 psi. Bump upto 2500 psi and hold for 15 minutes. 4.5 bbls bleed back, floats hold. Wait on cement. Rig down service lines and prepare for lifting stack.
08th April 2004	Wait on cement. Rig down service lines and prepare for lifting stack. Nipple down Bell nipple, riser from A-section, lift BOPs and secure same. Pull casing 100k over string weight (260k), Cameron install casing slips. Rig to with Furmanite and cut casing. Set down BOPs and secure same. Rig down BOPs, layout riser. Break down riser section and prepare to lower B section. Install B section and abandonment flange and wing valves as per Cameron instruction and test same. Rig up surface lines from A6 abandonment flange to Howco, line test – ok. Test casing to 3000 psi for 15 minutes – ok. Rig down same. Remove drip pans and install grating. MLA-A6a handed over at 18:00 hrs.

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Section 2

Geological Summary

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FORMATION TOPS

DESCRIPTION	MD (m) RT	TVD (m) RT	TVD (m) SS
Lakes Entrance	1567.0	1313.04	1285.13
Latrobe Group (TOL)	1706.3	1408.68	1380.77
Top of main N12 Coal	Not Present	Not Present	Not Present
Base N/M Sands	2136.5	1701.71	1673.80
Top Turrum L-100 Sand	2749.0	2130.60	2102.74
Top Turrum L-500 Sands	3359.0	2552.91	2525.0
Top of Cretaceous Shale	3494.3	2647.36	2619.45
Total Depth	3563.0	2698.91	2671.0

GEOLOGICAL SUMMARY**GIPPSLAND LIMESTONE**

1013 m - 1567 m

CALCILUTITE and CALCISILTITE with minor CLAYSTONE beds at depth**CALCILUTITE**

Pale olive grey to olive grey, occasionally pale to light grey in part, occasionally silty, microcrystalline in part grading to CALCISILTITE, minor to trace disseminated pyrite, trace carbonaceous specks, trace fossil fragments and ooids, minor to trace lithics, soft to firm, amorphous in part, sub-blocky.

CALCISILTITE

Pale olive grey to moderate olive grey, occasionally pale yellowish grey to brownish grey, occasionally argillaceous, grading to CALCILUTITE in parts, occasional minor off white crystalline LIMESTONE inclusions, minor to trace disseminated pyrite, trace fossil fragments and ooids, trace micro-micaceous in part, soft to firm, predominantly firm with depth, sub-blocky to occasionally amorphous, sub-blocky to blocky in parts with depth.

CLAYSTONE

Light olive grey to olive grey, silty in part, moderate to very calcareous, grading to CALCILUTITE in parts, common disseminated and nodular pyrite, common ooids, occasional fossils, soft to firm, sub-blocky to blocky, occasionally amorphous.

LAKES ENTRANCE FORMATION

1567 m – 1706.3 m

CALCAREOUS CLAYSTONE with minor CALCISILTITE at the top**CALCAREOUS CLAYSTONE**

Light grey to light grey brown, light green grey, yellow grey to light olive grey, olive grey in part, trace to minor disseminated and nodular pyrite, slightly micro-micaceous in part, trace lithics, trace carbonaceous specks, trace silty and trace very fine arenaceous inclusions, soft to firm, sticky in part, amorphous in part, blocky to sub-blocky.

CALCISILTITE

Light olive grey to olive grey, argillaceous in part grading to CALCAREOUS CLAYSTONE, common disseminated pyrite, trace ooids, trace fossil fragments, trace very fine carbonaceous and lithic specks, slightly micro-micaceous, soft to firm, sub-blocky to blocky, occasionally amorphous.

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LATROBE GROUP

1706.3 m - 1815 m

Interbedded SANDSTONE, SILTSTONE and COAL**SANDSTONE**

Clear to translucent, off white to light grey, very fine to coarse, dominantly fine to medium, poor to moderately sorted, sub-angular to sub-rounded, common angular, trace siliceous cement, abundant off white dispersive argillaceous matrix, trace pyrite nodules, trace glauconite nodules, trace carbonaceous staining, generally clean loose quartz grains, poor visual and fair inferred porosity.

FLUORESCENCE

1720 m to 1725 m; Trace only dull yellow green to dull orange patchy fluorescence, no direct cut, instant yellow white crush cut, very thin ring residue.

SILTSTONE

1) Brown grey to light olive grey, dusky brown, argillaceous and grading to CLAYSTONE in part, trace micro-micaceous, trace pyrite nodules, dispersive to firm, amorphous to sub-blocky.

2) Medium to occasional dark brown, dusky brown, argillaceous and carbonaceous grading to silty COAL in part, micro-micaceous, trace pyrite nodules, trace very fine carbonaceous laminations, firm-occasional brittle, sub-blocky.

COAL

Black to dark brown black, earthy to sub-vitreous lustre, soft to brittle, sub-blocky to blocky, hackly to sub-conchoidal fracture, silty in part and grading to CARBONACEOUS SILTSTONE.

1815 m – 2134.5 m

Interbedded SANDSTONE, CLAYSTONE and COAL**SANDSTONE**

Clear to translucent, off white to light grey, fine to very coarse, dominantly fine to medium, poor to moderately sorted, subangular to subrounded, common round and angular in part, strong dolomitic and calcareous cement, strong pyritic cement in part, abundant white Kaolinitic matrix, trace mica flakes, firm to moderately hard aggregates, loose grains with depth, poor porosity.

FLUORESCENCE

1950 m to 1960 m; 20% dull yellow fluorescence, weak milky cut, trace residue ring.

CLAYSTONE

Pale to dark yellow brown, dusky yellow brown, dark brown grey to dark grey, common silty and grading to SILTSTONE in part (decreasing with depth), carbonaceous in part, common micro-micaceous, trace nodular pyrite, soft to firm, occasionally dispersive, amorphous to occasionally sub-blocky.

COAL

Brown black to black, dusky yellow brown, earthy to sub-vitreous lustre becoming dull to earthy with depth, firm to moderately hard, soft in part, sub-blocky to blocky, occasional sub-fissile, sub-conchoidal to conchoidal fracture, silty in part, lignitic in part, micro-micaceous in part, disseminated pyrite in part.

2134.5 m – 2270 m

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

Clear to translucent, off white to light grey, very fine to medium, common coarse, moderate to poorly sorted, subangular to subrounded, common, weak dolomitic and calcareous cement, pyritic cement in part, abundant white Kaolinitic matrix, trace glauconite and pyrite nodules, friable, common loose quartz grains, poor visual and inferred porosity increasing to good inferred with depth, no fluorescence.

CLAYSTONE

Dark yellow brown, brown grey, silty in part, common micro-micaceous, common pyrite nodules, soft to firm, dispersive in part, sub-blocky-amorphous.

COAL

Dark brown black to black, dull to earthy lustre, sub-vitreous in part, firm to moderately hard, fissile to blocky, uneven to sub-conchoidal fracture, conchoidal in part, silty in part.

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2270 m – 2749 m

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

Dark yellow brown, grey brown, silty and grading to SILTSTONE, common micro-micaceous, trace carbonaceous specks, trace lithics, trace disseminated and nodular pyrite with depth, soft to firm, dispersive, sub-blocky to amorphous, blocky in part.

SANDSTONE

Clear to translucent, off white to light grey, very fine to medium, moderate to well sorted, sub-angular to sub-rounded, common angular with depth, weak dolomitic and calcareous cement, white Kaolinitic matrix, trace carbonaceous staining, trace pyrite and mica flecks, trace carbonaceous laminations, generally loose quartz grains, soft to friable aggregates, poor to occasional fair inferred porosity.

FLUORESCENCE

2510 m to 2520 m; 80% uniform to patchy very dull yellow fluorescence, moderate streaming to blooming white cut with Isopropyl Alcohol, leaving a thin ring residue, colourless in white light.
2665 m to 2670 m; 20% spotty dull yellow fluorescence, moderate streaming white cut leaving a moderate ring residue, slightly brownish in white light.

COAL

Brown black to black, silty and grading to carbonaceous SILTSTONE in part, earthy to dull lustre, occasional sub-vitreous, friable to brittle, occasional moderately hard, sub-blocky to blocky.

2749 m – 2935 m

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

Light to dark brown grey, olive grey, occasional to common carbonaceous, common micro-micaceous, soft to firm, dispersive, sub-fissile to sub-blocky, amorphous in part.

SANDSTONE

Light grey, predominantly disaggregated loose translucent quartz, fine to predominantly medium grained, occasional coarse grains, moderately sorted, subrounded to predominantly subangular to angular, weak siliceous cement with frequent hard aggregates well cemented by pyrite, trace to locally abundant white kaolinitic matrix (increasing with decreasing grain size), trace mica flakes, fair inferred porosity, no fluorescence.

COAL

Black to brownish black, dull to occasionally sub-vitreous lustre, firm to hard, soft in part, crumbly to brittle, uneven to conchoidal fracture, blocky, argillaceous, sub-bituminous to lignitic.

2935 m – 3356.8 m

Interbedded CLAYSTONE, SANDSTONE and COAL**CLAYSTONE**

Light to dark brown grey, silty, occasionally carbonaceous, common micro-micaceous, common carbonaceous specks, soft to firm, occasionally hard, dispersive, sub-fissile to sub-blocky, amorphous in part.

SANDSTONE

Off white to light brown, very fine, rare fine, well sorted, sub-rounded, moderate dolomitic cement, occasional pyritic cement, common white argillaceous matrix, occasional carbonaceous inclusions, friable, occasionally hard aggregates, poor visual porosity.

FLUORESCENCE

2935 m to 2985 m; Trace bright spotty yellow fluorescence, moderate streaming white cut leaving a thin film residue, colourless in white light.
3000 m to 3005 m; Trace bright spotty yellow fluorescence, moderate streaming white cut leaving a thin film residue, colourless in white light.

SANDSTONE

Light grey, translucent, opaque, fine to medium, occasional coarse, moderate to well sorted, angular to sub-rounded, weak dolomitic and sideritic cement, trace white argillaceous matrix, trace mica flecks, friable to dominantly loose, fair to good inferred porosity, dull orange mineral fluorescence.

COAL

Black to brown black, dull to sub-vitreous lustre, earthy in part, firm to moderately hard, blocky to splintery, silty in part, argillaceous in part, grading to Carbonaceous SILTSTONE in part.

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3356.8m – 3493.8 m

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

Clear to translucent, light grey to off white, very fine to very coarse, predominantly fine to medium, poor to moderately sorted, sub-angular to angular, weak siliceous cement, trace pyritic cement in part, trace light brown to common off white argillaceous matrix, trace feldspar grains, quartz overgrowths, dominantly loose to friable, common hard aggregates, poor to fair porosity.

FLUORESCENCE

3380 m to 3425 m; No fluorescence on wet sample, uniform very dull blue fluorescence in dry sample, no cut leaving trace film residue.

3425 m to 3432 m; 10% spotty yellow white fluorescence with a uniform very dull bluish fluorescence, very slow whitish cut leaving a trace residue.

3440 m to 3490 m; Trace to 20% moderately bright blue white to yellow white patchy fluorescence in argillaceous aggregates, very slow streaming milky white cut, leaving a moderate colourless ring residue.

CLAYSTONE

Medium dark grey, brownish grey to olive black, variably carbonaceous grading in part to Carbonaceous SHALE, micromicaceous in part, soft to firm, hard in part, commonly dispersive, sub-fissile.

COAL

Black, dull to sub-vitreous, hard, blocky to platy, uneven to sub-conchoidal fracture, argillaceous in part, sub-bituminous.

CRETACEOUS SHALE

3493.8 m – 3563 m

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

Dark brownish grey to brownish black, olive black, mottled off white i/p, moderately to very carbonaceous grading carbonaceous SHALE in part, pyritic in part, micromicaceous in part, laminated with black carbonaceous streaks and hard white silty laminations, firm to occasional hard, dispersive, sub-fissile.

SANDSTONE

Light grey to off white, very fine to fine, moderately well sorted, sub-angular to sub-rounded, moderate calcareous and dolomitic cement with pyritic cement in part, abundant white argillaceous matrix, common carbonaceous microlaminations, interlaminated with silty micaceous CLAYSTONE, friable to occasionally moderately hard, tight visual porosity.

FLUORESCENCE

3515 m to 3520 m; Trace bright spotty yellow white fluorescence, very slow cut leaving trace colourless ring residue

3530 m to 3535 m; Trace bright spotty yellow white fluorescence, very slow cut leaving trace colourless ring residue.

COAL

Black to brownish black, dull to sub-vitreous lustre, firm to hard, brittle, blocky, sub-bituminous, becoming very argillaceous grading to carbonaceous SHALE.

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GAS REPORT

On drilling out from surface casing at 1013 m low concentrations of gas between 2 and 10 units were recorded. The composition of the gas was mainly Methane (C1) with occasional traces (less than 1% breakdown) of Ethane (C2). Gas levels remained constant until reaching the Lakes Entrance Formation at 1578 mMDRT. After drilling into the Lakes Entrance Formation gas levels began to gradually increase from an initial level of 5 units to 10 units.

On drilling into the Latrobe Formation at 1708.5 mMDRT gas levels increased to 100 units. The composition of the gas also changed with a greater proportion of heavy gases present. Throughout the Sandstone section at the top of the Latrobe gas levels varied between 40 and 235 units with an average of 70 units and peak readings of 235 units for short sections. The relative composition of the gas in this section was 86% C1, 7% C2, 4% C3, 2% C4, 1% C5, with some minor variations in this composition. Coal was also present in this section.

The gas levels in the Claystone beneath the Sandstone were consistent, staying between 50 and 100 units until reaching Sandstone at approximately 1930mMDRT with a peak of 290 units associated with Coal at 1912mMDRT.

Generally fluorescence in this section wasn't associated with increases in gas levels. Throughout the NM sands gas increases were associated with Coal. Gas levels were consistent being on average between 50 and 80 units. At the base of the NM sands a broad gas peak from 2106mMDRT to 2121mMDRT was encountered in a predominantly Sandstone section. The composition of the Gas in this broad peak was predominantly C1 (90% C1, 7% C2, 2% C3, 1% C4, Trace C5).

After drilling out of the NM sands at 2123 mMDRT gas levels returned to between 30 and 60 units with occasional peaks of up to 175 units associated with thin Coals or in some cases thin Sandstones. Some fluorescence was seen at 2510 mMDRT to 2520 mMDRT. This was associated with a gas peak of 118 units with a slight increase in the heavy gases over this section as well. Other gas peaks at 2560 mMDRT and 2580mMDRT also produced a trace of fluorescence. From here through to the Top of the Turrum L-100 sand at 2747.8 mMDRT gas reading varied in line with the interbedded Sandstone and Claystone.

At the Top of the Turrum L-100 Sands at 2747.8 mMDRT gas levels initially decreased. As the percentage of sandstone increased gas levels also increased. At 2764.5 mMDRT gas levels reached 185 units before decreasing back to a background level of between 20 and 40 units. From 2800 mMDRT to 3000 mMDRT gas peaks were primarily associated with coal. Some large sandstone intervals in the section from 3000 mMDRT to 3200mMDRT produced some gas however there was no fluorescence associated with these peaks.

Varying lithology in the section from 3200 mMDRT to 3380 mMDRT produced many gas peaks once again related to the Coal interbeds. Fluorescence from 3380 mMDRT to 3432 mMDRT had no associated gas peaks and was associated with a large sandstone interval. The high mud weight in this section was thought to have suppressed any gas readings that may have been associated with this section as gas levels were consistently between 20 and 40 units with only some small peaks.

The next section of fluorescence from 3440 mMDRT to 3490 mMDRT had similar characteristics and even lower levels of gas with only traces of heavy gases returned. Although a trip in and out of the hole to change the bit and the time it took may have had affected the gas readings obtained shortly after returning to drilling at 3432 mMDRT. At approximately 3490 mMDRT the lithology became dominated by CLAYSTONE again and apart from a gas peak associated with Coal at 3496 mMDRT gas levels remained constant until reaching TD at 3463 mMDRT.

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 CO2 or H2S was detected while drilling Halibut A6A.

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Gas peaks through the Latrobe Group

Depth metres	Total Gas units	C ₁ %	C ₂ %	C ₃ %	iC ₄ %	nC ₄ %	iC ₅ %	nC ₅ %
1715	99	1.438	0.095	0.059	0.011	0.019	0.006	0.008
1740	92	1.298	0.105	0.060	0.009	0.017	0.005	0.005
1759	166	2.314	0.181	0.121	0.021	0.036	0.011	0.012
1799	237	3.403	0.382	0.210	0.029	0.058	0.017	0.020
1812	153	2.117	0.153	0.096	0.016	0.031	0.010	0.012
1841	220	3.357	0.311	0.136	0.016	0.031	0.008	0.009
1912	290	4.396	0.408	0.205	0.027	0.053	0.016	0.018
1945	90	1.163	0.097	0.064	0.010	0.021	0.007	0.008
1971	91	1.141	0.082	0.047	0.008	0.017	0.007	0.008
2016	92	1.278	0.077	0.039	0.006	0.012	0.004	0.005
2083	86	1.475	0.079	0.030	0.003	0.005	0.001	0.002
2098.5	84	1.323	0.085	0.037	0.004	0.009	0.002	0.002
2112.5	302	5.992	0.472	0.134	0.021	0.034	0.010	0.010
2220	173	2.671	0.169	0.069	0.008	0.017	0.005	0.005
2264	64	0.982	0.062	0.026	0.003	0.007	0.002	0.002
2343	102	1.574	0.109	0.055	0.008	0.015	0.005	0.005
2406	160	2.542	0.160	0.053	0.013	0.023	0.007	0.007
2412	176	2.962	0.170	0.091	0.015	0.025	0.008	0.008
2435	65	0.851	0.063	0.033	0.005	0.009	0.003	0.003
2473	97	1.613	0.101	0.052	0.007	0.013	0.004	0.004
2486	167	4.035	0.136	0.088	0.015	0.029	0.007	0.001
2514	118	2.532	0.094	0.060	0.010	0.020	0.006	0.001
2561	191	4.475	0.135	0.085	0.015	0.031	0.008	0.001
2573.5	193	5.508	0.163	0.100	0.017	0.035	0.010	0.001
2595	85	1.894	0.068	0.044	0.008	0.017	0.006	0.001
2605.5	129	3.111	0.104	0.064	0.011	0.023	0.007	0.001
2620	187	5.116	0.154	0.098	0.017	0.036	0.010	0.001
2631.5	282	4.690	0.438	0.135	0.020	0.037	0.011	0.011
2677.5	170	2.494	0.154	0.085	0.013	0.025	0.008	0.008
2694	192	3.183	0.170	0.093	0.015	0.028	0.009	0.009
2710	225	3.934	0.253	0.177	0.018	0.033	0.011	0.011
2764.5	185	2.301	0.111	0.049	0.006	0.012	0.003	0.003
2808	119	1.995	0.117	0.049	0.005	0.010	0.002	0.002
2821.5	67	0.908	0.050	0.022	0.002	0.005	0.001	0.001
2880	164	1.625	0.080	0.033	0.004	0.007	0.002	0.002
2966	45	0.506	0.039	0.019	0.002	0.004	0.001	0.001
2997	69	0.825	0.043	0.017	0.002	0.004	0.001	0.001
3015.5	480	4.454	0.349	0.104	0.012	0.018	0.004	0.003
3090	390	4.116	0.241	0.084	0.010	0.018	0.004	0.004
3122.5	493	5.127	0.474	0.131	0.018	0.031	0.008	0.007
3134.5	498	5.078	0.468	0.140	0.019	0.033	0.009	0.008
3166	415	4.211	0.296	0.105	0.014	0.023	0.006	0.005
3189	317	3.186	0.187	0.074	0.009	0.017	0.004	0.003
3221	652	8.329	0.530	0.216	0.018	0.046	0.013	0.013
3274	299	3.949	0.293	0.099	0.011	0.016	0.002	0.002
3304	266	3.739	0.312	0.112	0.012	0.022	0.004	0.003
3323	240	3.351	0.294	0.097	0.011	0.020	0.003	0.003
3435	27	0.279	0.035	0.019	0.002	0.004	0.001	0.001
3443	78	1.179	0.081	0.036	0.004	0.007	0.001	0.001

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MDT SUMMARY

Depth m	TVD m	Drawdown Mobility MD/CP	Mud Pressure		Last Read build-up Pressure PSIA	Formation Pressure PSIA	Test Type
			Before PSIA	After PSIA			
3490.00	2644.23	8.15	4698.78	4696.29	3735.79	3735.79	Draw-down Pretest
3479.83	2636.98	2.16	4678.58	4677.41	3726.59	3726.59	Draw-down Pretest
3472.05	2631.50	74.22	4663.21	4663.88	3718.07	3718.07	Draw-down Pretest
3462.96	2625.10		4645.10	4645.92		2393.68	Dry Test
3462.01	2624.44		4645.09	4647.52		3967.78	Dry Test
3457.51	2621.28	2.87	4642.45		3705.71	3705.71	Draw-down Pretest
3450.07	2616.09	10.13	4626.60	4626.31	3699.65	3699.65	Draw-down Pretest
3445.96	2613.22	17.63	4618.37		3697.79	3697.79	Draw-down Pretest
3437.90	2607.60	23.58	4611.44		3691.37	3691.37	Draw-down Pretest
3431.99	2603.48	15.79	4603.17		3690.53	3690.53	Draw-down Pretest
3437.44	2607.28		4606.45	4609.50		3695.55	Lost Seal
3437.70	2607.45		4612.10	4612.62		3695.69	Lost Seal
3446.99	2613.93	6.62	4627.30	4627.46	3699.54	3699.54	Draw-down Pretest
3450.97	2616.71	3.53	4630.32		3699.99	3699.99	Draw-down Pretest

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