



PETROLEUM DIVISION

907522 001
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13 OCT 1999

ESSO AUSTRALIA LTD

BLACKBACK A-3

FINAL WELL REPORT



Prepared By
Geoservices Overseas S.A.



ESSO AUSTRALIA LIMITED

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FINAL WELL REPORT

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Geoservices Overseas S.A.

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1	10/07/99	Geoservices Unit 093	Base Mudlogging Coordinator	

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Section 1

General Well Summary

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WELL DATA

Operator : Esso Australia
 Platform : SEDCO 702 (semi-submersible)
 Well name : Blackback A-3
 Country : Australia
 Location : Gippsland Basin
 Well Type : Subsea Oil Development
 Field : Blackback

Local co-ordinates Latitude = 148° 33' 11.918" E Longitude = 38° 32' 30.854" S
 AMG co-ordinates X = 635 371.1 m E Y = 5 732 898.5 m N

Profile : 61.89° build by 2743 m/ horizontal 89.32° to TD.
 Reference depth : Rotary Table (RT)
 Elevation RT A.M.S.L. : 25.9 m
 Seawater depth : 395.0 m
 Proposed total depth (MDRT) : 3939.0 m MDRT (2841.0 m TVDRT)
 Actual total depth : 3913.0 m
 True vertical depth : 2843.3 m
 12.25" Hole Spudded on : 28 June 1999
 TD reached on : 29 July 1999

Drilling Contractor

Drilling Contractor : Schlumberger Sedco Forex
 Rig name : SEDCO 702
 Rig type : Semi-Submersible

Drilling Phases

Diameter (inch)	From (m)	To (m)	Mud Type
12¼"	1195.6 m	3355 m	Petrofree Synthetic Oil
8½"	3355 m	3913 m	Water based Gel Mud

Cased Hole

Casing Diameter (inch)	Casing Type	Shoe Depth (m)	Top (m)
30"	Vetco- Surface	488.6 m	419 m
13 ³ / ₈ "	Buttress	1195.8 m	418.2 m
9 ⁵ / ₈ "	Buttress	3341.2 m	1195.6 m
5½"	Liner	3907.0 m	2893.0 m

MUD LOGGING

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Logging Unit Number : 93

Engineers : Paul McGilveray
 Mark Smith
 Stan Willson
 Ozren Radicevic

Mudloggers : Alan Dunn
 Cherie Clark-Moore
 Andrew Philps
 Derick Zurcher

Cuttings Collection

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Washed and Dried	3	100 grams	10 metres	3110	3225
	3	100 grams	5 metres	3225	3913

Cuttings Distribution

Company	Washed and Dried Sample
Esso Australia	1 set
Victoria Department of Energy and Minerals	1 set
Australian Bureau of Resources	1 set

N.B. 30 metre spot samples were collected from 1211 m to 3110 m.

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WELL SUMMARY

Blackback-A3 is the third and final well of the Blackback subsea development program. This well is designed to be drilled as a near horizontal well (89° maximum angle) to a total depth of 3939 m MD, (2841 m TVD) with a 500 m horizontal hole section in the target Latrobe Formation due to the expected poorer quality reservoir sandstone. An oil column thickness of 21 m is expected and oil will be produced through a 5½" slotted liner with TD for this well programmed at 19 m TVD above the OWC at 2834 m SS.

Blackback-1 is the closest offset well located 1.5 km to the southeast of the A-3 surface location. Drilled as a deviated well to 4401 m in 1989, it tested significant amounts of oil and gas before being permanently plugged and abandoned. H2S was encountered in Terakihi-1, drilled about 3 km north of the Blackback A-3 surface location, with levels of H2S from formation samples reaching 400 ppm. CO2 levels are reported to 0.35% in the field area. Abnormal formation pressure is not expected in this well.

The Blackback A-3 well was drilled using the semi-submersible rig Sedco Forex 702 in 395 metres of water, located in Bass Strait, Australia, in license VIC L-20. The original top hole section of Blackback # 3 was batch-drilled in the phase 1 operations and 13³/₈" casing was set at 1195.81 m after drilling 17½" hole to 1211 m. Blackback A-3 was drilled as a double-build, near horizontal well to a TD of 3913 m MD (2843 m TVD) in 8½" hole. The 12¼" hole section was spudded on the 28th July 1999, from the top of the cement at 1171 m and in this section hole angle was built from vertical at kick off point at 1948 m to a maximum angle of 89.30 degrees at 3355 m MD which was TD for this phase. This hole was cased with 9⁵/₈" casing which was set at 3341.2 m. A near horizontal 8½" hole section completed the well reaching TD at 01:00 hrs on the 29/07/99, a total of 43 drilling days. This well was cased and completed before moving on to complete the previously drilled Blackback A-1A.

Gas levels stayed between 5 to 50 units of C1 only until the Latrobe Formation where gas composed of C1 to C5 rose to a steady high background of between 500 units to 1000 units with a maximum of 1487 units recorded at 3587 m. No CO₂ or H2S was detected in this well.

Blackback A3 was drilled down to 9⁵/₈" casing point at 3355 m using Petrofree ester-based mud with a maximum MW of 11.2 ppg. The final 8½" reservoir section was drilled using a water-based KCl-polymer mud system with MW built from 9.4 ppg to 9.8 ppg at TD. The low formation pressures in the reservoir section necessitated lower mud weights but high gas levels were kept in check by circulating out high peaks. No connection gas was reported and only minor losses of fluid to the formation occurred while drilling.

In this well, the practice of backreaming each stand up to 3 times at connections and circulating until the hole was clean before tripping was successful in maintaining good hole conditions. Monitoring overpull / drag and torque at connections and studying trends was useful in determining when a wiper trip was necessary. Large gas peaks in the productive zone were circulated out to minimise mud gas content and helped keep mud densities constant. The use of Baracarb CaCO₃ LCM in the water-based mud used to drill the LaTrobe Fm helped minimise fluid losses.

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WELL PROFILE

'Sedco 702 Semi-submersible'

BLACKBACK A-3 well

Rotary Table to Mean Sea Level
26 metres

Rotary Table to Sea Bed
420 metres

30" Conductor set at 488.51 m

3³/₈" Casing Shoe at 1195.61 m
17¹/₂" hole drilled to 1211 mMD

5¹/₂" Liner lap at 2893 m MD

12¹/₄" hole at 3355 mMD

9⁵/₈" Casing Shoe at
3341.2 mMD

FIT at 1214 m: EMW=12.7 ppg

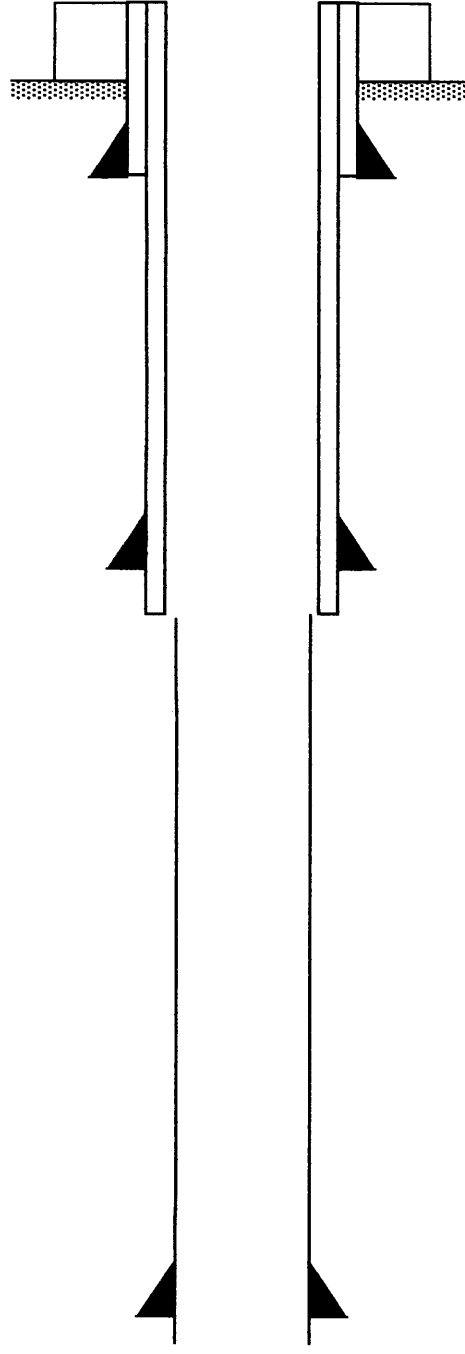
Kickoff directional hole from
1948 mMD

Kickoff horizontal hole from
3355 mMD

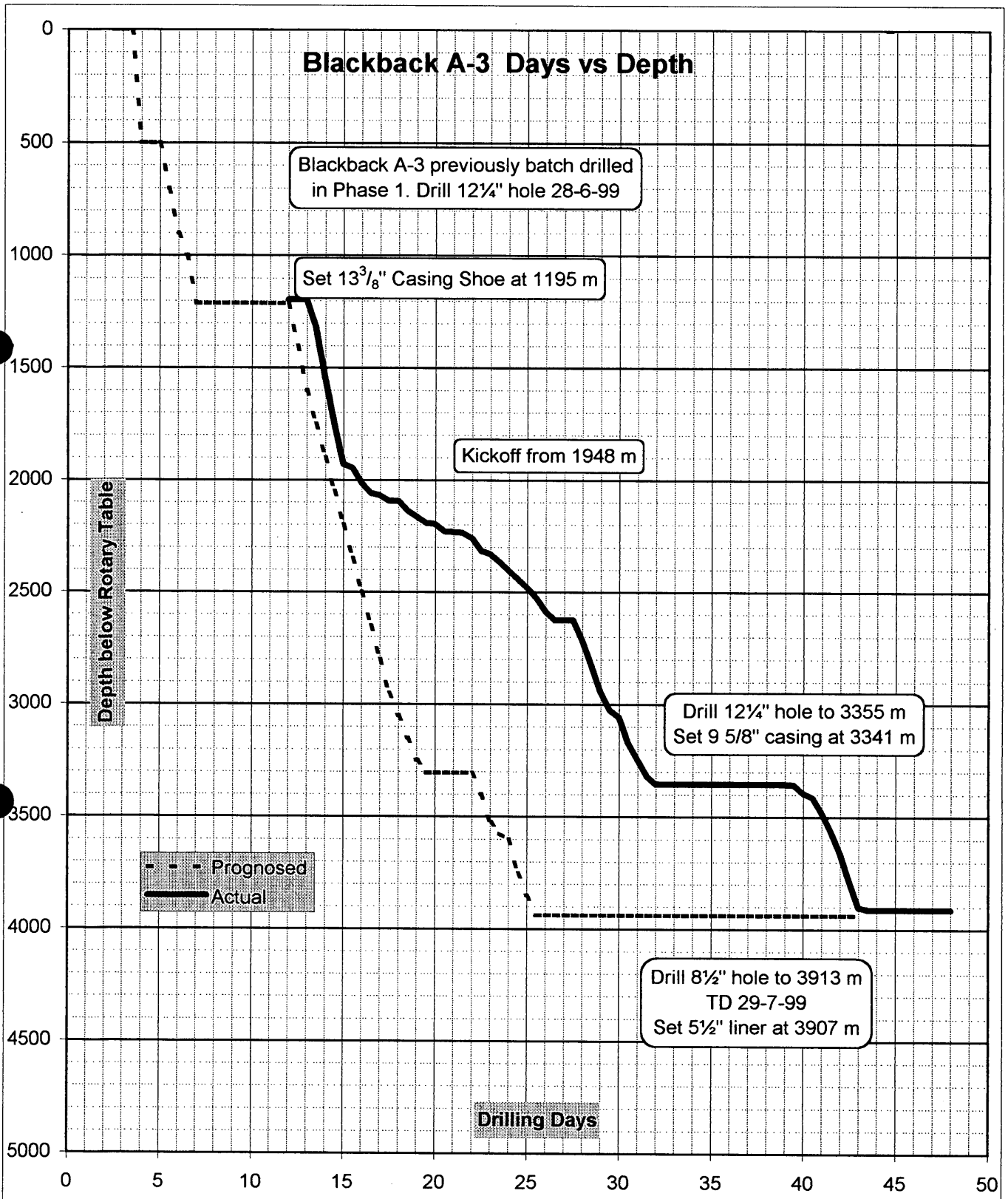
FIT at 3358 m EMW=12.0 ppg

5 1/2" Liner Shoe at 3907 mMD

8 1/2" hole TD at
3913 mMD, 2843 mTVD



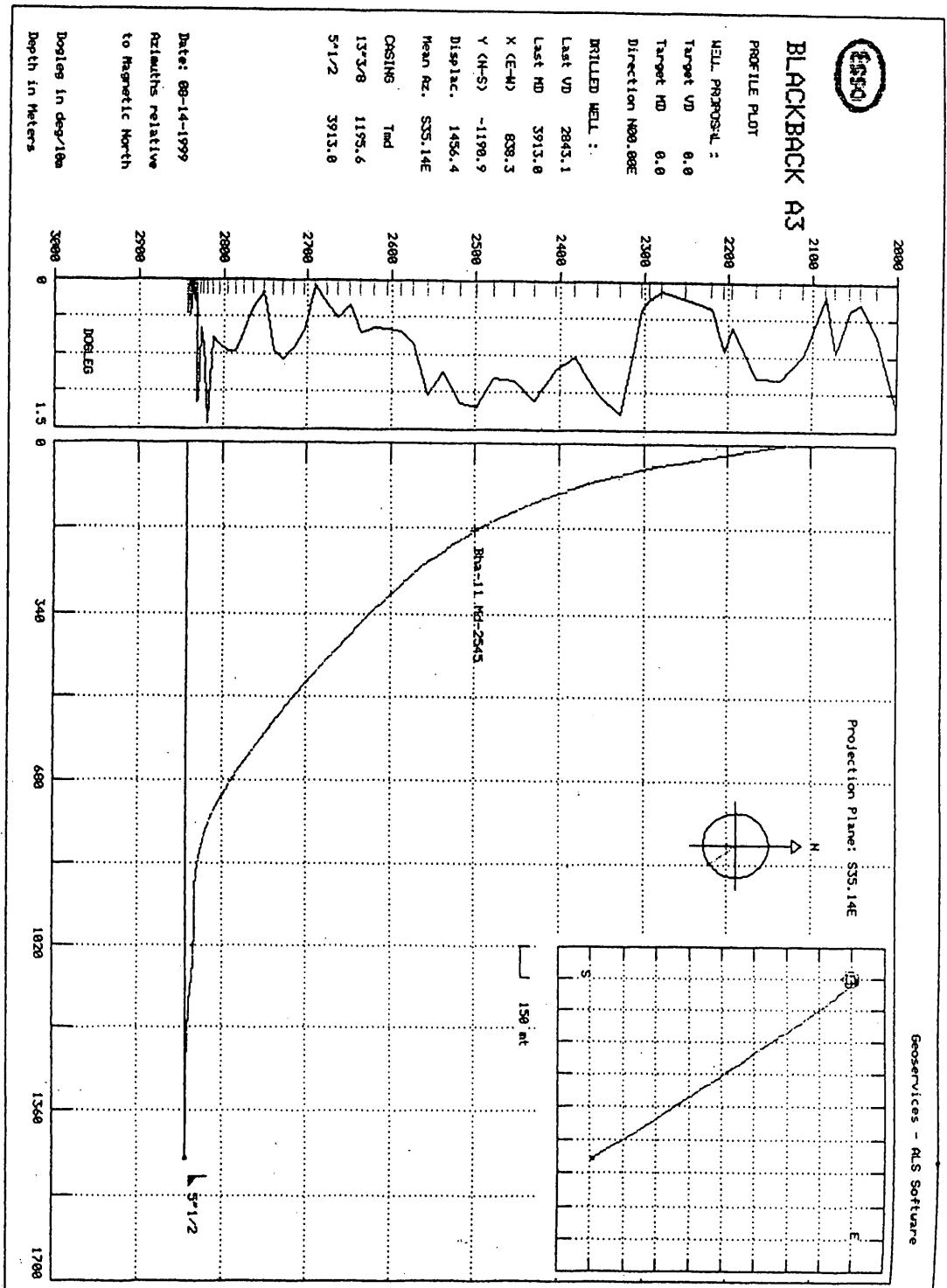
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CEMENTING DATA

Blackback A3 was cased with 13^{3/8}" casing from the hanger at 419 m to 1195.8 m and 9^{5/8}" casing was run with good hole conditions from 1195.6 m with the shoe set at 3341.2 m MD. While running casing, slow mud losses to the Latrobe sandstone totaling 20 bbl were recorded but the cement job was performed successfully. Prior to cementing, the 12^{1/4}" hole was displaced with 20 bbl ester base oil & 130 bbl 11 ppg 3% KCL polymer displacing the EBM to surface pits. The Horizontal 8^{1/2}" hole was drilled to 3913.0 m & 5^{1/2}" Liner was set at 3907 m with the liner lap at 2893 m

SLURRY DETAILS	CEMENT TYPE	DRY CMT VOLUME	CMT ADDITIVES	MIX WATER	SLURRY VOL.	SLURRY DENSITY	CEMENT to/from
9 ^{5/8} " Casing Spacer	n/a	n/a	0.13 gal/bbl Dual spacer mixing aid 68.85 lbs/bbl Dual spacer 168.8 lbs/bbl Barite 11.0 lbs/bbl KCl 1.4 gal/bbl Musol A 1.4 gal/bbl SEM-7	30.1 gal/bbl fresh water	80 bbl	12.0 ppg	n/a
9 ^{5/8} " Lead slurry	Class G	358.7sx	0.6 gal/bbl SCR-100L retarder 3.2 gal/bbl GasCon-469 stabiliser 2.5 gal NF-5 antifoamer	n/a	115 bbls	13.2 ppg	2474 m to 3010.4 m
9 ^{5/8} " Tail slurry	Class G	373 sx	0.4 gal/bbl SCR-100L retarder 3.2 gal/bbl Halad-413L fluid loss additive 2 gal/bbl GasCon-469 stabiliser 2.5 gal NF-5 antifoamer	n/a	77 bbls	15.8 ppg	3010.4m to 3341.2 m

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WELL DIARY

- 27 June 1999** ROV removed guide lines with unlatching tool from A-1A. Move rig off location to A-3 location. Rig off location ROV release Vx ring for connector. Continue to move rig over to A-3 location. ROV install guide lines to A-3. Land out BOP's on well head and latch confirm with 500 pull, Pressure test connector against shear rams to 200 psi (low for 5 min.), and 2300 psi (high for 30 min.). Lay out land joint and install diverter. Lay out spider and running tool. Rig down 500T equipment and rig up 350T. Make up and RIH with BOP, Vetco testing tool and land out same. fill pipe with seawater.
- 28 June 1999** Attempt to pressure test - no success. Attempt to set test tool in numerous positions - no success. POOH with test plug. Lay out same rack HWDP, inspect test tool at surface. RIH and recover well head wear bushing. POOH. Make up test plug assembly and RIH and land out. Pressure test BOP's (200/5000 psi), 1 (200/3500 psi). Carry out function and depletion test. POOH with test assembly and lay out same. Pick up and run Vetco well head nominal seal protector, lay out running tool. Install diverter and RIH with one stand of drill pipe and function test diverter - starboard and port side. Test with seawater. Install oil pump on TDS and test - OK. Run flex joint wear bushings and install, lay out running tool. Make up test tools and test up IBOP, man IBOP and mud hose (200/5000 psi). Hold JSA and make 12 1/4" directional drilling assembly, test MWD and motor on the way in, angle set at 1.15°. At 95 m rearrange HWDP and DC in derrick. Continue to RIH from 95 m to 1130 m. Wash down from 1130 m and tag gloat at 1171 m (washed and tagged with seawater). Mix spacer and pump it. Displace hole to Petrofree mud, displace choke and kill line to same. Drill out plugs from 1171 m while displacing.
- 29 June 1999** Continue to drill plugs and float. Drill out cement from 1172 m to 1185 m. Circulate and record SCR's, hang off and hold choke drill with crew. Continue to drill out hard cement from 1185 m to shoe at 1195 m and rat hole to 1211 m. Drill out 12 1/4" hole from 1211 m to 1214 m. Circulate shakers clean and mud even at 10.0 ppg mud weight prior to FIT. Perform FIT with 10.0 ppg MW resulting in 12.7 ppg EMW. Drill 12 1/4" hole from 1214 m to 1312 m. Backream all connections twice and wiping single to confirm up and down drag (220 Klbs up and down) prior to connections. Taking surveys. Continue to drill 12 1/4" hole from 1312 m to 1472 m backreaming all connections twice and wiping single to confirm up and down drag prior to connection. Taking surveys. Circulate bottoms up, boost riser. Continue to drill 12 1/4" hole from 1472 m to 1528 m. Change out swivel packing on TDS. Continue to drill 12 1/4" section from 1528 m to 1545m.
- 30 June 1999** Continue to drill 12 1/4" hole from 1545 m to 1750 m backreaming all connections twice and wiping a single to confirm up and down drag prior to connections. Taking surveys. Boost riser and circulate. Circulate and work string while repairing piston on mud pump. Drill to 1880 m backream twice and confirm up and down drag prior connections. Taking surveys. Trouble shoot and change out swivel packing on TDS, circulate through cement hose while changing out. Continue to drill 12 1/4" hole from 1880 m to 1909 m (rotate) attempt to kick off, slide from 1909 to 1924 m, rotate to 1928 m.
- 01 July 1999** Drill from 1928 m to 1948 m. Circulate bottoms up, boost riser until shakers clean, flow check & pull out of the hole. Pump a slug at 1892 m. Pull to the shoe at 1195 m, flow check. Clean rig floor of EBM, H2S kick drill. Pull out, flow check prior to pulling BHA through the BOP. Rack back BHA, service & break out MWD, bit, inspect nozzle jet on down hole motor. Test MWD, make up Bit, confirm orientation of MWD & DHM. Run in with 12 1/4" BHA. Fill every 20 stands. Wash down 1918 m to 1948 m, no fill. Take up & down drag, drill directional hole with surveys from 1948 m to 2014 m. Ream each connection x 2.
- 02 July 1999** Drill directional hole from 2014 m to 2060 m. Slide & rotary, backream each stand twice, take MWD surveys, record up-down drag prior to connections. Take SCR. Drill to 2070 m, circulate & condition mud, build slug. Pull 1 stand wet, pump slug & pull out to the shoe at 1195 m. No excess drag observed. Flow check good. Pull out, flow check prior to pulling through BOP. Break out bit, make up BHA # 6.

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- 03 July 1999** Test MWD & Motor, orientated motor to MWD. Make up Bit, run in to the shoe at 1195 m. Pick up NM pony DC & install. Fill every 20 stand. JHA on risk assessment whilst breaking circulation at shoe. Slip & cut 115' drill line. Service top drive block & crown, no losses-well static. Run in hole to 2023 m, wash & ream to bottom. Tight hole from 2060 m, feather in bit, drill to 2095 m. SCR at 2078 m. Circulate hole clean, flow check. Slug & pull out to 1195 m. No excess drag, flow check, pull out, break out Bit, make up BHA # 7. Run in to 1195 m, service top drive, run in to 2050 m & ream to bottom. Drill, steer to 2098 m.
- 04 July 1999** Drill directional hole from 2098 m to 2165 m, survey on connection, record drag, ream each connection twice.
- 05 July 1999** Drill directional hole 2165 m to 2193 m. Flow check, pump slug & pull out to the shoe 1195 m. Flow check, pull out, flow check prior to pulling BHA through the BOP. Break out bit, lay out 8" mud motor, pick up 9" motor, set angle to 1.15 degrees. Surface test MWD & Motor. Make up bit & scribe DHM to MWD. Continue to run in the hole to 1195 m casing shoe. Kick drill, compensated BHA through BOP. Function test BOP on blue & yellow pods from drill floor & SEDCO office. Shear rams were functioned when bit was at surface. Service TDS, RBS & crown sheaves. Run in, wash from 2139 m to 2193 m, bottom, no fill. Continue to drill to 2198 m, slide & rotary.
- 06 July 1999** Continue to drill from 2198 m to 2230 m, slide & rotary. Take MWD surveys, backream prior to connection. Flow check @ 2219 m. SCR @ 2207 m. Drill to 2233 m. Pit drill. Circulate hole clean while building slug. Flow check. Pull stand wet to 2179 m, no excess drag. Pump slug & pull out, flow check prior to pulling through BOP. Break out bit (Missing 22 teeth). Make up 12 1/4" assembly with junk basket. Surface test MWD. Run in the hole on HWDP to 137 m.
- 07 July 1999** Run in hole to the shoe, fill every 20 stands. BOP drill & break circulation. Service TDS block & drawworks. Run in to 2161 m, wash & ream to 2233 m, no fill. Work junk basket. Drill to 2237 m. Flow check, pump slug, pull out to shoe, 1195 m & flow check. Risk assessment for new crew, flow check well. Pull out, flow check prior to pulling through BOP. Lay out 8" drill collar, break out bit & junk basket. recovered 5 lbs of cutters. Trip kick drill. Pick up 8" NMDC & make up bit & drilling assembly. Surface test MWD. Run in hole, compensate bit through BOP. Service top drive, RBS & crown, run in to 2146 m, 20K overpull. Wash & ream to 2237 m, no fill. Drill with surveys to 2260 m, ream connections twice.
- 08 July 1999** Drill from 2260 m to 2319 m. Flow check, pump out of the hole to 2121 m. Pump slug, pull out to shoe. Flow check, layout s/stabilizer, flow check BHA prior pulling through BOP. Trip Drill. Break out Bit, lay out stab, float sub & 8" NMDC. Risk assessment. Pick up motor, set angle 1.15 degrees. Pick up & make up 12 1/4" drilling assembly. Surface test MWD & Motor, scribe mud motor to MWD. Pick up & make up 12 1/8" stab, run in the hole to the shoe & break circulation. Service Top drive, blocks & crown. Continue to run in the hole to 2251 m, wash & ream to bottom, 2319 m, no fill. Drill 2319 m to 2333 m, backream each stand twice, take surveys, record drag & weights.
- 09 July 1999** Drill to 2375 m. Circulate the hole clean & jet riser until shakers clean. Work string. Continue to drill to 2405 m, backream each connection twice, take surveys, record drag.
- 10 July 1999** Drill from 2405 m to 2417 m. Pump 40 bbl hi-vis, boost riser & circulate until shakers clean. Drill to 2444 m, slide & rotary as required, survey each stand, take drag-weight records. Pit drill. Drill to 2480 m.
- 11 July 1999** Circulate, boost riser until shakers clean. Drill ahead 2480 m to 2526 m. Take survey & ream connections twice, record drag. Drill to 2587 m, rotate & steer as required.

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- 12 July 1999** Drill from 2587 m to 2625 m, slide & rotate as required. Pit drill. Take survey on connection, ream connection twice, record drag. Circulate bottom up at 2625 m, boost riser & circulate until shakers clean. Pump out of the hole 5 stands, pump slug, work string, flow check & pull out. Flow check prior to pull BHA through BOP. Break out bit, lay out DHM. Run in & retrieve flex joint wear bushing. Make up test tool to HWDP stands and run in hole. Land out test tool. Test BOP.
- 13 July 1999** Continue to pressure test BOP 200/5000 psi, Annulars 200/3500 psi. Function test BOP on blue pod from Sedco office, pressure test on yellow pod. Unseat & pull out test plug & lay out. Pick up-make up flex joint wear bushing, run in hole & set, pull out pipe. Rig up to test surface equipment. Mud hose, lower & upper IBOP, 200/500 psi, good test. Pick up-make up DHM & 10' pony, set bent sub 1.5 degrees. Abandon rig drill-board lifeboat for collision drill. Hook up & re-program MWD, scribe MWD to DHM. Make up 12 1/4" BHA. Continue to run in hole, break circulation at the shoe, then every 15 stand after. Run in, precautionary wash & ream to bottom from 2515 m, no fill, maximum drag 15 klbs. Drill 2625 m to 2715 m, slide & rotate as required. Backream each stand twice, record drag, take surveys.
- 14 July 1999** Drill 2715 m to 2831 m. Circulate bottoms up. Take surveys on connection. Ream connections twice. Take drag readings. Pit drill. Drill 2831 m to 2947 m, circulate bottoms up twice, flush riser. Drill ahead to 2948 m, rotate & slide as required.
- 15 July 1999** Drill directional hole 2948 m to 3033 m, take surveys & drag readings, backream stands 3 times on connections. Circulate bottoms up, flush riser, JSA-new crew. Wiper trip to 2600 m, 16 stands. Minor overpull at 2970 m, 30K. Circulate bottoms up, rpm 150. Pull out to 2520 m to check hole conditions, hole good. Run in hole to 3005 m, precautionary wash & ream to bottom, no fill. Drill to 3058 m.
- 16 July 1999** Drill directional hole, backream stands three times, wipe one single to confirm up & down weight & take surveys. Drill to 3150 m, circulate bottoms up x3 & flush riser. Continue to circulate & condition mud, work string. Drill directional hole to 3248 m
- 17 July 1999** Drill directional hole 3248 m to 3278 m. Backream stands x 3, wipe single to record drag & survey. Drilling break, flow check @ 3278 m, circulate bottoms up, 2% gas peak. Continue to circulate, flush riser, condition mud, 3 x bottoms up. Drill ahead 3278 m to 3319 m (5% gas @ 3305 m), gas peaked 10% , circulate until gas level dropped & work string. Continue to drill 12 1/4" hole 3319 to 3355 m, backream stands. Circulate until gas level drops. Flow check @ 3355 m. Well static. Pull out of the hole to 3250 m, circulate shakers clean, boost riser, work string
- 18 July 1999** Circulate until gas dropped to 28 units, flow check @ 3250 m. Pull out to 3106 m (15-20 klb drag). Slug pipe & wait until slug equalizes, work string. Pull out from 3106 m to 1190 m. Maximum drag 15-20 klb. Hole in good condition. Slip & cut drill line. Service TDS. Run in the hole from 1190 m to 3355 m, tag bottom. No fill, drag down 35 klb. Average drag 15-20 klb. Circulate & condition mud, work string.
- 19 July 1999** Continue to circulate & condition mud. Work string & flow check. Make up & drop Gyro. Pump Gyro down @ 80 spm for 21 minutes, reduce pump rate to 33 spm for remainder of pumping. Total 4000 strokes pumped. take gyro survey on bottom, pull out to 3182 m. Slug pumped, work string while wait for slug to equalize. Pull out of the hole to the shoe at 1195 m. Compensate & allow time for survey on each stand. Hole in good condition. Flow check at shoe. Anadrill removed encoder from DSL. Continue to pull out of the hole. Flow check before pulling BHA through BOP. JSA-retrieve gyro survey tool. Continue to pull out, lay out BHA/DHM, clear rig floor of excess equipment. Make up hanger running tool & plug & lay out. Make up flex joint wear bushing run tool & run in hole, 5 stands. Change out saver sub in TDS. Run in hole, retrieve flex joint wear bushing & pull out. Lay out wear bushing. Rig up & run 5 1/2" HWDP. Make up jet sub to pup below well head wear bushing running tool. Run in HWDP to well head, jet well head. Latch wear bushing, take index mark, 20 klb overpull, pull out wear bushing. Continue to pull out well head

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wear bushing, running tool & jet assembly & lay out. Rig up 500 T bail. Make up cement head stand & rack back. Clear floor of EBM. JSA prior to running 9 5/8" casing, rig up to run. Pick up shoe, intermediate & float collar joint. Test & confirm float operation. Pick up & install tam packer, function test. Continue to pick up & run casing per programme. Fill every 5 joints. Change out elevators @ 1180 m to 350 T. Test tam packer & break circulation. Run casing to 1323 m. Fill every 5 stands.

20 July 1999

Run 9 5/8" casing, fill every 5 joints. Change elevators to 10 3/4" @ 2245 m, pick up x/o & make up. Change 9 5/8" casing slips to 10 3/4". Run 10 3/4" casing in hole, fill every joint, confirm full every 5 joints. Down hole losses increasing, break circulation slowly, 30 spm, no losses recorded. Continue to run casing, monitor on Trip tank, correct displacement recorded. Rig down 10 3/4" elevators, rig down tam packer. Pick up casing hanger & make up. Rig down 10 3/4" casing slips. Rig up & run 5 1/2" HWDP. Make up cement head, land out hanger, confirm index line. Shoe at 3341 m. Break & establish circulation. (85 spm, 650 psi). JSA prior to cementing. Pump 20 bbl ester base oil, 130 bbl (11 ppg) 3% KCL polymer down hole. Rig up cement hose. Dowell pump 40 bbl spacer. Pressure test line to 4000 psi. Drop ball, pump 40 bbl spacer, bottom plug shear 1200 psi. Mix & pump cement, lead slurry 125 bbl, 13.2 ppg. Tail 68 bbl, 15.8 ppg. Drop dart & pump 20 bbl drill water with dowell unit. Shear wiper plug @ 2800 psi. Displace with rig pump, pump seawater, 8560 strokes pumped, plug not bumped. Check for back flow. Rig down cement hose. Set seal assembly. Pressure test to 500/3000 psi.

21 July 1999

Continue to set & test seal assembly, 250/5000 si. Transfer 100 bbl pit 1 to dowell batch tank. Displace riser - choke & kill lines to sea water. Release running tool (hanger). Pull out of the hole and rack cement stand. Pull out landing string, lay out 5 1/2" HWDP. Pick up cement stand in derrick and service break & lay out. Rig down 500 ton bails and 5 1/2" elevators. Rig up casing tong and prepare Vetco test tool. Run in hole with test tool & land out in well head. Pressure test BOP on blue pod/rams to 200/5000 psi. Annulars tested to 200/3500 psi. Perform function test on BOP on yellow pod. Pull out with Vetco test tool & break out/lay out. Make up casing hanger elevation check tool & run in hole. Land out check tool, confirm with index line & function test as per procedure. Pull out & lay out. Change out saver sub. Rig up & pressure test LIBOP, UIBOP & rotary hose to 200/5000 psi. Make up well head wear bushing & jetting assembly.

22 July 1999

Run in with well head wear bushing & jetting assembly. JSA for high winds. Run in at reduced speed & set wear bushing & release running tool. Wash out of hole, jetting BOP's & riser with seawater, whilst boosting riser through choke & kill lines. Lay out wear bushing & running tool. Run in with jetting sub to well head. Prepare & mix Barraclean in slug pit. Pump down choke & kill lines & displace to top of riser. Pull out, jetting riser on the way.

23 July 1999

Continue to wait on weather, unable to backload EBM. Unblock drill floor drains, clean out bell nipple drip tray, continue with PMS tasks, change oil in TDS. Backload 150 m³ EBM during break in weather. Commence cleaning pits. Continue cleaning around bell nipple. Backload remaining remaining EBM to work boats.

24 July 1999

Wait on weather. Continue cleaning pits, flushing lines and cleaning around bell nipple. Backload containers to workboat. Remove tapper guide pipe from middle board. Make up VGS and function test. Make up bit. Program and load MWD tool. RIH BHA to 130 m and test MWD tool. Continue RIH to 3275 m with 8 1/2" drilling assembly. Wash down from 3275 m to 3284 m. Tag top of cement at 3284 m with 10 klbs. Function test VGS and set at 7 3/4". Pump Baraclean pills and sweep hole with seawater. Hold power choke drill.

25 July 1999

Continue power choke drill. Discuss H2S drill. Perform manual choke drill. Drill out cement, plugs, float collar and casing shoe from 3284 m to 3341 m and clean rathole down to 3355 m TD with seawater. Displace seawater with 9.4 ppg water-based mud. Displace choke and kill lines to mud and jet riser. Drill new 8 1/2" hole from 3355 m to 3358 m. Circulate until shakers clean and mud balanced. Pull back inside

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shoe and perform PIT (EMW = 12.0 ppg). Take SCRs. POOH to 3317 m and log hole with MWD tool from 3317 m to 3358 m. Cycle VGS to confirm open. Continue drilling 8½" hole from 3358 m to 3383 m. Stop drilling due to high gas levels and circulate bottoms up. Flowcheck and pump OOH to 3341 m. Circulate while increase MW from 9.4 ppg to 9.7 ppg. Wash down to bottom and cycle VGS to confirm open. Drill from 3383 m to 3393 m and circulate bottoms up.

26 July 1999

Continue circulating bottoms up. Drill ahead 8½" hole from 3393 m to 3413 m. Work string and circulate bottoms up while examine deviation trend. Pump OOH from 3413 m to the shoe and flowcheck. POOH wet from 3341 m to 3184 m and pump slug. POOH up to 3097 m, change plan. Service TDS and RIH back to shoe. Wash and ream to bottom - no fill. Circulate bottoms up and work string repeatedly 1 m from bottom to wear hole and drop angle. Continue drilling from 3413 m to 3423 m. Work string as before. Drill down to 3432 m and work string as before. Drill ahead to 3484 m.

27 July 1999

Continue drilling 8½" hole from 3484 m to 3489 m. Work string 1 m from bottom to wear hole and drop angle. Drill down to 3516 m and work string as before. Drill down to 3661 m, backreaming each stand & taking survey prior to connection.

28 July 1999

Continue drilling 8 ½" hole from 3661 m to 3730 m, backreaming each stand three times, wiping one single & taking survey prior to connection. Work string from 3730 m to 3712 m. Continue to drill 8 ½" hole from 3730 m to 3830 m backreaming each stand, wiping single & surveying prior to connection. Suspend drilling due to gas level consistently above 1000 Units - Max gas 1394 Units. Circulate & work string, continue to drill 8 ½" hole from 3830 m to 3903 m.

29 July 1999

Continue drilling 8½" hole from 3903 m to 3913 m backreaming each stand 3 times, wiping single & surveying prior to connection. Circulate bottoms up 3 times - after 1st circulation - Max gas = 922 Units, after 2nd & 3rd Max gas 40 Units, flow check well & pump out from 3913m to 3335 m (inside shoe). Hole condition 60-80 klbs overpull pulling out of slips. Pump out with 1000psi and no rotary - hole in good condition with correct displacement. Circulate bottoms up at shoe, flowcheck well, service TDS & blocks, function test BOPs. RIH from shoe to 3860 m. Precautionary wash from 3860 m to bottom at 3913 m (no fill). Circulate & condition mud, pump out of hole from 3913 m to shoe at 3341 m, flowcheck & continue to POOH to 1504 m, flowcheck BHA before BOPs & continue to POOH to 159 m.

30 July 1999

Hold JHA prior to handling radioactive source on rig floor. Continue to POOH from 159 m, rack HWDP & lay out JARS, flush BHA with seawater & remove sources, hold JHA & lay out 8½" BHA, break out bit. Hold JHA & rig up to run 5½" liner. Pick up 5½" liner shoe joint & test. RIH 5½" Liner (slotted & non slotted) to 955 m. Continue to make up CIV & RIH with 5½" liner from 955 m to 1001 m. Change out 5½" handling equipment to 2³/₈" handling equipment & RIH work string, drifting each joint to 1.625". Space out & pick up wash cup assembly. Rig down tubing equipment & rig up 5" DP equipment. Pick up liner hanger assembly, continue to lay out equipment & circulate tubing. RIH liner on 5" DP to 1925 m, filling pipe & drifting each stand to 2½".

31 July 1999

Continue RIH 5½" liner on 5" DP from 1925 m to shoe at 3341 m, drifting each stand and filling every 2nd stand. Break circulation at the shoe. Continue RIH from 3341 m to 3907 m, break circulation & pump 168 bbls, drop ball, line up to Dowell pump, pressure test surface lines to 5000 psi, pump with Dowell unit. Ball seated, pressure up to 1800 psi on ball. Set liner hanger as per Baker procedure & confirm same. Pump 270 bbl of unweighted Drill-N mud without Barcarb & displace with 60 bbl of Drill-N mud of 9.8ppg. Set liner packer as per Baker procedure, pressure test liner packer to 3000 psi. Pull up 15 m for space out, pump 100 bbls of 9.8 ppg mud and flowcheck. POOH to 2946 m, take 22 klbs overpull & shift CIV to closed position & continue to POOH to 2882 m. Space out & hang off string on upper pipe rams. Pressure test CIV to 3000 psi. Circulate & condition mud and flowcheck whilst holding JHA. Slip & cut 115' drilling line. Pump slug & continue to POOH from 2882 m to 1223 m. Flowcheck before tubing at BOPs.

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1 August 1999

Continue to POOH from 1223 m to 2³/₈" tubing. Hold JSA and rig up 2³/₈" handling equipment, lay out liner hanger running tool and test cup assembly. Continue to POOH and lay out 2³/₈" tubing. Rig down 2³/₈" handling equipment, hold JSA & make up 10³/₄" casing scraper. RIH casing scraper assembly on 5" DP to 2872 m, wash from 2872 m to top of liner at 2893 m. Pump 50 bbls XCD hi-vis pill & displace well to seawater. Flowcheck, pump 50 bbl hi-vis pill, 100 bbls of seawater, pump 200 bbl of Baraklean, pump seawater until clean. Flowcheck well after 1 complete circulation, continue to circulate with seawater whilst building brine in pits. Displace well with brine at 8.9 ppg & circulate & filter same until clean.

2 August 1999

Continue to circulate well with filtered 8.9 ppg brine until clean. Pump 800 bbls of inhibited brine (0.5%) at 8.9 ppg and flow check. Hold JSA, pump slug & POOH from 2893 m to 1815 m. Lay out 10³/₄" casing scraper & continue to POOH, break out bit & lay out 9⁵/₈" scraper. Make up flex joint retrieval tool, RIH on HWDP & recover Flex joint wear bushing. POOH & lay out FJWB. Make up wellhead wear bushing running tool, jet assembly & RIH. Jet wellhead & circulate riser volume. POOH & recover wear bushing. Lay out jetting assembly & running tool. Rearrange tubulars in derrick, hold JHA & rig up to pick up landing string. Pick up tubing landing string & rack back in derrick. Hold risk assessment TBT. Rig up for completion job, spot reels on drill floor & hang sheeves in mast. Hold JHA & risk assessment. Pick up THRT on landing string, make up umbilical. Function test & rack back in derrick

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Section 2

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FORMATION TOPS (WELLSITE PICKS)

DESCRIPTION	MD (m) - RT	TVD (m) (26m RT)
GIPPSLAND LIMESTONE	1195.0 (first sample)	1195.0
LAKES ENTRANCE FORMATION	2665.0	2577.0
LaTROBE FORMATION	3273.0	2823.0
COARSE CLASTICS	n/a	n/a
TOTAL DEPTH	3913.0	2843.0

GEOLOGICAL SUMMARY

1171-1211 m TMD CEMENT

1211-2665 m TMD LIMESTONE (mainly Calcilutite)

LIMESTONE Medium to light grey, olive-grey, brown-grey, calcilutite, occasionally light grey calcarenite laminae, silty in parts, micritic, trace carbonaceous specks, rare Glauconite and Pyrite in parts, trace fossil fragments in lower parts, becoming waxy in texture, firm to moderately hard, massive, blocky, grading to Calcisiltite in part.

2665 m TMD (2577 m TVD)

LAKES ENTRANCE FORMATION

2665-3273 m TMD CLAYSTONE

CLAYSTONE Dark grey, olive-grey, becoming light to medium grey, brown-grey, light bluish grey, grading from calcilutite at top of interval, becoming less calcareous with depth, rare calcilutite laminae, trace carbonaceous specks, rare disseminated Pyrite and nodular Pyrite in parts, rare local Glauconite at top of interval, very soft and dispersive to firm, sub blocky to occasionally amorphous.

3273 m TMD (2823 m TVD)

LATROBE GROUP

3273-3355 m TMD SILTSTONE WITH INTERBEDDED SANDSTONE

SILTSTONE Medium to dark grey, green-grey, very argillaceous, becoming more arenaceous with depth, grading to very fine sandstone, common Glauconite, micromicaceous, trace disseminated Pyrite, common fine Quartz grains, soft, becoming firm to moderately hard with depth, amorphous, subblocky to blocky in parts.

SANDSTONE Light to medium grey, green-grey, fine to medium grained, locally coarse to very coarse, common siliceous cement, local calcareous/dolomitic cement, abundant Glauconite in parts, trace Muscovite and Biotite, occasional rock fragments, predominantly moderately hard, locally friable, poor to occasionally fair to good porosity, nil fluorescence.

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3355-3913 m TMD

SANDSTONE WITH MINOR SILTSTONE

SANDSTONE

Clear to translucent, light to medium brown, mainly medium grained, with occasional fine and coarse to very coarse grains, moderately poorly sorted, becoming moderately well sorted, angular to subround, trace dolomitic cement, trace argillaceous to silty matrix at top of interval, abundant pelletal Glauconite, locally common Pyrite nodules and cement, common Fe stained grains, predominantly disaggregated, occasional moderately hard to hard aggregates, fair to good inferred porosity, poor visible porosity, generally nil fluorescence, poor fluorescence in parts.

SILTSTONE

Brown-grey, dusky brown, orange-pink, dark yellow-orange, becoming light brown, light grey, light green-grey, argillaceous, locally arenaceous, micromicaceous, trace Glauconite and siliceous or dolomitic lithic inclusions, trace Pyrite nodules, very soft to firm, occasionally moderately hard, mainly amorphous, occasionally subblocky.

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FLUORESCENCE REPORT

DEPTH 3630 m to 3635 m and 3645 m to 3655 m TMD

SANDSTONE Clear to translucent, occasionally light brown, medium grained, occasionally fine and coarse grained, moderately poorly sorted, subround to subangular, trace dolomitic cement, abundant pelletal Glauconite, trace Fe stained grains, trace Pyrite nodules and cement, disaggregated with occasional moderately hard aggregates, fair to good inferred porosity, poor visible porosity.

FLUORESCENCE Trace to 5%, dull, pinpoint, yellow-green fluorescence, slow diffuse cut, thin light brown residual ring.

ASSOCIATED GAS

Depth	Tot Gas	C1	C2	C3	iC4	nC4	iC5	nC5
3635.5	450.4	4.67	0.80	0.45	0.07	0.11	0.04	0.05
3646.5	334.5	3.10	0.52	0.33	0.07	0.11	0.03	0.03

DEPTH 3880 m to 3885 m and 3900 m to 3905 m TMD

SANDSTONE Clear to translucent, light to medium brown, fine to medium grained, occasionally coarse, moderately sorted, subangular to subround, trace dolomitic cement, abundant pelletal Glauconite, trace Pyrite nodules and Fe stained grains, disaggregated, occasional moderately hard to hard aggregates, fair to good inferred porosity.

FLUORESCENCE Trace to 5%, dim, pale yellow-green, pinpoint fluorescence, slow diffuse cut, thin light brown residual ring.

ASSOCIATED GAS

Depth	Tot Gas	C1	C2	C3	iC4	nC4	iC5	nC5
3881.5	551.8	4.26	0.82	0.55	0.09	0.16	0.06	0.07
3905.0	609.0	5.03	1.01	0.64	0.10	0.18	0.06	0.07

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GAS REPORT

Gas levels while drilling Blackback A3 remained between 5 units and 50 units (0.1% to 1.0% C1) of methane only until encountering the Latrobe Formation reservoir. In this section, measured background gas quickly rose to over 500 units and consisted of methane (C1) to pentane (C5). The highest background gas recorded in the well was 1487 units at 3587 m in 100% sandstone. High background gas persisted all the way to TD in the productive reservoir sandstone.

Gas measured in the Gippsland Limestone Formation consisted of C1 only, ranging between 5 and 50 units. The highest reading was 88.3 units at 1691 m. Variations in gas levels were mostly a function of drilling rates.

Gas measured in the Lakes Entrance Formation also consisted of C1 only and varied from 5 units to 40 units. The highest levels were at 2288 m. Gas level variations were related to ROP and porosity changes. From 3260 m, levels rose quickly with the onset of the LaTrobe Formation reservoir at 3273 m.

Background gas in the LaTrobe Formation was very different in composition to that of the overlying formations due to the hydrocarbon (oil) content and higher porosity of the sandstone. Heavier components (C2+) appeared from 3234 m and gas containing C5 was measured from 3288 m as the hole entered the siltstone and sandstone of the hydrocarbon-rich zone. After the build up from 3260 m to 3355 m, due to the horizontal geometry of the hole, gas composition remained mostly constant throughout this section, as the hole was following the same bed.

The change in drilling fluid from 11.2 ppg oil-based mud to 9.4 ppg water-based mud at 3355 m is very evident at 3355 m. In the oil-based fluid, heavier alkane components show a tendency to remain in solution in the mud and are harder to extract using degassing equipment. With the change to water-based mud, heavier components immediately appear in larger amounts. The drop in mud weight at this point also provides more chance for gas release.

The Gas Ratio plot from 3355 m shows a consistent oil-bearing zone in the 8½" hole section, from 3355 m to 3913 m TD. In this section, the gas wetness varies between 20 and 40, indicating ideal oil presence, from light at the top to heavy at the base of the interval. The gas balance and character curves confirm a rich oil zone. These indications show hydrocarbon presence more clearly than other Blackback wells due to the use of water-based drilling fluid.

A summary of highest gas peaks and trip gas peaks appears on the following page. For gas peaks in surface sample oil shows, see the Fluorescence section on the previous page.

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HIGH GAS PEAKS

Depth	MW ppg	TG units	C1 %	C2	C3	iC4	nC4	iC5	nC5
3369.0	9.4	1364.7	12.93	2.51	1.57	0.20	0.32	0.07	0.08
3375.5	9.5	1054.4	9.59	1.88	1.17	0.15	0.23	0.06	0.07
3454.0	9.7	857.9	8.30	1.44	0.78	0.11	0.17	0.05	0.06
3473.5	9.7	890.1	6.77	1.10	0.61	0.09	0.15	0.05	0.06
3543.5	9.8	794.1	7.17	1.29	0.74	0.11	0.18	0.06	0.07
3587.0	9.8	1487.0	13.14	2.37	1.52	0.20	0.34	0.09	0.11
3709.5	9.8	946.0	9.20	1.70	1.05	0.15	0.25	0.08	0.09
3771.0	9.8	1309.2	10.11	2.02	1.39	0.21	0.36	0.11	0.13
3790.5	9.8	1394.2	9.62	1.97	1.48	0.24	0.43	0.13	0.16
3816.0	9.8	1075.2	8.93	1.72	1.32	0.21	0.35	0.11	0.14
3875.0	9.8	914.3	5.37	1.11	0.67	0.11	0.18	0.06	0.08
3911.0	9.8	922.5	8.96	1.69	1.20	0.18	0.30	0.10	0.11

TRIP GAS PEAKS

Depth (m MD)	Type	MW (ppg)	Tot. Gas (units)
1948	Bit trip	10.2	13.2
2070	Bit trip	10.4	19.8
2095	Bit trip	10.5	11.0
2193	Bit trip	10.7	12.7
2233	Bit trip	10.7	12.8
2237	Bit trip	10.7	5.5
2319	Bit trip	10.7	13.9
2625	Bit trip	11.0	44.0
3033	Wiper trip	11.1	14.8
3355	Wiper trip	11.0	68.0
3355	Casing run	11.0	74.6
3358	Bit trip	9.4	241.0
3413	Wiper trip	9.7	61.0
3913	Wiper trip	9.8	73.6
3913	Casing run	9.8	18.2

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OVERPRESSURE SUMMARY

The following techniques were utilized as indicators of abnormal formation pressures during the drilling of Blackback A3.

D-EXPONENT: This is a normalized rate of penetration which takes into account variables such as weight on bit, rotation, and mud weight. It is designed to quantitatively predict pore pressures in shaley formations. It may also be used as an indicator in siltstones, silty shales and calcareous claystones since the fundamental principle that underbalanced bottom hole conditions result in faster drilling applies to all these formations. A shift in the normal trend (representing a normal compaction trend) to the left (representing relative undercompaction) may indicate overpressure or increased porosity due to lithological changes.

GAS: Overpressure may be indicated by increases in the background gas, trip gas, and connection gas readings. Similar changes may however also occur as a result of formation porosity changes which are unrelated to pore pressures.

CUTTINGS: Small splintery cuttings indicate overpressured formations. Long propeller-shaped cavings are usually caused by overpressure or by the hydration of reactive or swelling clays.

HOLE CONDITIONS: As mentioned above, cavings resulting from overpressure may be introduced into the hole. Subsequently, increased overpull and drag on the drill collars and stabilizers during connections and trips may occur. Increasing torque trends show deteriorating hole condition for similar reasons. Encountering hole fill on running back to bottom may also be indicative of overpressure.

TEMPERATURE: Changes in downhole temperature can be measured at the surface by means of a temperature sensor positioned in the flow line. The primary factor that enables this measurement to be of use in overpressure studies, is thermal conductivity. In an undercompacted sequence, the presence of an abnormally high percentage of pore fluids causes heat to be trapped. Hence the area immediately above the overpressured unit is a zone of heat starvation. Changes in thermal gradient can therefore be used to map a transition from normally pressured to overpressured environments. Limitations of this technique include riser cooling by seawater, surface mud additions, circulation breaks, changes in ROP, hole size and flow rate, all of which may mask or distort surface mud temperature readings.

The use of all these methods in conjunction with each other will give the most reliable indication of any abnormal formation pressures. In non-shaley formations such as the limestones which make up the greater part of the Blackback wells, the D Exponent cannot be quantitative and since it is also affected by directional drilling practices, eg. sliding and steering it must be ignored.

Background gas readings in this well generally showed a good correlation with ROP. An increase in background gas from 2795 m was due to the lithological change of entering the Lakes Entrance claystone. The obvious large increase at 3280 m was also lithological, with the top of the reservoir section being encountered. The table of trip gas peaks on the preceding page shows no excessive gas influx due to swabbing.

No splintery or unusually shaped cuttings were observed in the cuttings samples during this well.

Hole conditions were closely monitored during this well. Drag, overpull and torque values were noted every connection while drilling the 12¼" and 8½" phases. Increasing trends were generally cured with a wiper trip, but not many were required while drilling this well and fill after trips was not encountered. Generally, hole conditions were very good in Blackback A3 and any drag or overpull was related to hole geometry not formation pressures.

Mud temperature plots show no evidence of an abnormal temperature gradient. The change from oil-based mud to water-based mud in 8½" hole caused a marked drop in mud temperature due to the higher thermal conductivity of water compared to oil. The water-based mud was much more susceptible to the cooling effect of the riser than the oil-based mud, with temperature readings in the possum belly dropping from 69° at 3355 m in oil-based mud to 26° after drilling out the 9 5/8" casing shoe with water based mud.

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From these observations, there is no evidence of overpressured formations in Blackback A3. Abnormal pressures in this part of the Bass strait are known to come in below the massive P.Mawsonii marine shale at 4000 m +/- SS, much deeper than the top of the Latrobe Group development target proposed for the Blackback A-1, A-2 and A-3 wells.

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Geoservices Logs & Appendix

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BLACKBACK A-3 BIT RECORD

Run #	Bit #	Bit Name	Serial #	Size"	Nozzles x32	Depth In m	Run m	Time hrs	ROP m/hr	WOB klbs	SPP psi	RPM (total)	GPM gpm	Grading
1	1	Security SS33SGJ4	720494	17½"	3x20,1x16	422	69	1.5	46.0	0-2	1500	125	1000	1-1-NO-A-E-I-NO-TD
														Pilot hole
2	2	Security S35J4	666325	26"	3x28,1x20	491	1	0.2	4.0	0-2	1000	125	1000	1-1-NO-A-E-I-NO-TD
														Hole opening
3	3	Security SS33SG	720492	17½"	4x20,1x15	492	719	19.7	36.4	5-30	1900	150	1000	1-1-NO-N-E-I-NO-TD
														TD 17½" hole
4	4RR1	Baker Hughes BX536	1902839	12¼"	3x20,3x22	1211	737	28.6	25.7	20	4200	70	1034	0-1-WT-G-X-I-CT-BHA
														Drill cement 1170-1211 m
5	5	Reed MHT13LKC DH	BW 1336	12¼"	3x28,1x20	1948	122	23.0	5.3	40-60	3250	155	900	1-2-WT-A-E-I/16-NO-PR
6	6	Geodiamond M42P	JR 1524	12¼"	6x22,1x18	2070	25	4.1	6.1	12	3300	260	860	0-0-NO-A-X-I-NO-PR
														Unable to Steer
7	7	Reed HP13G	MA 3193	12¼"	3x28	2095	98	26.1	3.8	30-40	3950	290	890	2-4-WT-A-E-I/8-NO-PR
8	8	Reed EHP41LKC	LJ 4532	12¼"	3x28,1x22	2193	40	15.1	2.6	30-50	4100	155	940	8-8-BT-A-E-I/8-LT-PR
														Lost 22 teeth
9	9	Reed MHT13GKC A	LQ 4708	12¼"	3x28,1x22	2233	4	3.6	1.1	35-45	3850	80	930	1-2-CT-RI-E-I-JD-PR
														Junk basket run
10	10RR2	Baker Hughes BX536	190 2839	12¼"	6x22	2237	82	5.9	13.9	20-40	3900	120	930	0-1-CT-G-X-I-NO-BHA
11	11RR3	Geodiamond M42X	JR 3924	12¼"	7x20	2319	306	70.3	4.3	20-50	4100	290	828	2-3-WT-A-X-I-IPN-BHA
12	12RR4	Geodiamond M42X	JR 3924	12¼"	7x20	2625	730	57.4	12.7	15-20	4200	320	830	1-2-WT-N-X-I/8-NO-TD
														TD 12¼" hole
13	13	Hycalog DS11HG	H43946	8½"	8x20	3355	558	51.0	10.9	5-15	3950	175	605	1-4-ER-N-X-I-BT-TD
														TD 8½" hole

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PE602991

This is an enclosure indicator page.
The enclosure PE602991 is enclosed within the
container PE907522 at this location in this
document.

The enclosure PE602991 has the following characteristics:

ITEM_BARCODE = PE602991
CONTAINER_BARCODE = PE907522
NAME = Blackback-A3 Mud Log
BASIN = GIPPSLAND
ONSHORE? = N
DATA_TYPE = WELL
DATA_SUB_TYPE = MUD_LOG
DESCRIPTION = Blackback-A3 Masterlog Mud Log Scale
1:500
REMARKS =
DATE_WRITTEN =
DATE_PROCESSED =
DATE_RECEIVED = 13-OCT-1999
RECEIVED_FROM = Esso Australia Ltd
WELL_NAME = Blackback-A3
CONTRACTOR = Geoservices Overseas S.A.
AUTHOR =
ORIGINATOR = Esso Australia Ltd
TOP_DEPTH = 1180
BOTTOM_DEPTH = 3930
ROW_CREATED_BY = DN07_SW

(Inserted by DNRE - Vic Govt Mines Dept)

PE602992

This is an enclosure indicator page.
The enclosure PE602992 is enclosed within the
container PE907522 at this location in this
document.

The enclosure PE602992 has the following characteristics:

ITEM_BARCODE = PE602992
CONTAINER_BARCODE = PE907522
NAME = Blackback-A3 Mud Log
BASIN = GIPPSLAND
ONSHORE? = N
DATA_TYPE = WELL
DATA_SUB_TYPE = MUD_LOG
DESCRIPTION = Blackback-A3 Masterlog Mud Log Scale
1:200
REMARKS =
DATE_WRITTEN =
DATE_PROCESSED =
DATE_RECEIVED = 13-OCT-1999
RECEIVED_FROM = Esso Australia Ltd
WELL_NAME = Blackback-A3
CONTRACTOR = Geoservices Overseas S.A.
AUTHOR =
ORIGINATOR = Esso Australia Ltd
TOP_DEPTH = 3240
BOTTOM_DEPTH = 3925
ROW_CREATED_BY = DN07_SW

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PE602993

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The enclosure PE602993 is enclosed within the
container PE907522 at this location in this
document.

The enclosure PE602993 has the following characteristics:

ITEM_BARCODE = PE602993
CONTAINER_BARCODE = PE907522
 NAME = Blackback-A3 Drilling Log
 BASIN = GIPPSLAND
 ONSHORE? = N
 DATA_TYPE = WELL
 DATA_SUB_TYPE = WELL_LOG
 DESCRIPTION = Blackback-A3 Drilling Log Scale 1:1000
 REMARKS =
 DATE_WRITTEN =
 DATE_PROCESSED =
 DATE_RECEIVED = 13-OCT-1999
 RECEIVED_FROM = Esso Australia Ltd
 WELL_NAME = Blackback-A3
 CONTRACTOR = Geoservices
 AUTHOR =
 ORIGINATOR = Esso Australia Ltd
 TOP_DEPTH = 1180
 BOTTOM_DEPTH = 3930
 ROW_CREATED_BY = DN07_SW

(Inserted by DNRE - Vic Govt Mines Dept)

PE602994

This is an enclosure indicator page.
The enclosure PE602994 is enclosed within the
container PE907522 at this location in this
document.

The enclosure PE602994 has the following characteristics:

- ITEM_BARCODE = PE602994
- CONTAINER_BARCODE = PE907522
 - NAME = Blackback-A3 Gas Ratios Log
 - BASIN = GIPPSLAND
 - ONSHORE? = N
 - DATA_TYPE = WELL
 - DATA_SUB_TYPE = WELL_LOG
 - DESCRIPTION = Blackback-A3 Gas Ratios Log Scale 1:200
 - REMARKS =
- DATE_WRITTEN =
- DATE_PROCESSED =
- DATE_RECEIVED = 13-OCT-1999
- RECEIVED_FROM = Esso Australia Ltd
 - WELL_NAME = Blackback-A3
 - CONTRACTOR = Geoservices
 - AUTHOR =
 - ORIGINATOR = Esso Australia Ltd
 - TOP_DEPTH = 1190
 - BOTTOM_DEPTH = 3920
 - ROW_CREATED_BY = DN07_SW

(Inserted by DNRE - Vic Govt Mines Dept)