



FLOUNDER A-24a

FINAL WELL REPORT

Prepared by

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Revision	Date	Issued by	Approved by	Remarks
1	25-03-2003	Geoservices Unit 137	Base Mud logging Coordinator	

Section 1

General Well Summary

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WELL DATA

Operator : Esso Australia Ltd
Platform : Flounder
Well name : Flounder A-24a
Country : Australia
Location : Gippsland Basin
Structure : Flounder T-1
Field : Flounder
Permit : Vic/ L11

Location AMG co-ordinates 5 758 709.11 mN 625 849.47 mE

Location local co-ordinates Lat: 38° 18' 39.233" S Long: 148° 26' 22.099

Target Local co-ordinates 1503.6 mN 1155.3 mW

Profile : Deviated
Reference depth : Rotary Table
RT to Seabed : 126.85 metres
RT above M.S.L. : 33.85 metres
Sea-water depth : 93.00 metres
Proposed total depth : 3193.2metres
Actual total depth : 3193.0 metres
True vertical depth : 2626.97 metres
Spudded on : 02nd March 2003
Total depth reached on : 14th March 2003

Drilling Contractor

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

Drilling Phases

<u>Diameter (inch)</u>	<u>From (m)</u>	<u>To (m)</u>	<u>Mud Type</u>
8½"	665	3193	KCl / Glycol / PHPA

Cased Hole

<u>Casing Diameter (inch)</u>	<u>Casing Type</u>	<u>Shoe Depth (m)</u>
20"	Conductor	202.9 MDKB (Existing)
10¾"	Surface	662.6 MDKB (Existing)
7"	Production	3186.0 MDKB

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MUD LOGGING

Logging Unit Number: 137

Engineers: R. Pereira, M. Smith, P. Rady, G Fawns.

Sampling Interval**Flounder A-24a**

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Washed and Dried	3	100 grams	10 metres	2010	2470
Washed and Dried	3	100 grams	5 metres	2475	3193

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

Flounder A-24a is a dual target well designed to develop the P sand in the Tuna – Flounder Channel and the T-1.1 in Fault Block 2. The well was drilled to a Total Depth of 3193 m MDRT (2626.97 m TVDRT) in 8½" hole and completed with a single oil completion string of 3½" tubing in 7" production casing.

Flounder A-24a was spudded at 13:45 hours on the 02nd of March 2003, drilling the cement plug, in the existing 10¾" casing, from 603.7 m to 665 m.

An 8½" steerable / MWD drilling assembly was made up with a Smith S73HPX PDC bit and run in the hole and kicked – off from 665 m at 03:30 hours on the 03rd of March 2003. The well was drilled to 780 m and the hole circulated to condition the mud, before a PIT (376 psi @ 8.7 ppg; 12.4 ppg EMW) was carried out.

Drilled, steered and rotated 8½" hole from 665 m to 2414 m. The well was kicked – off with an inclination 46.12° and an azimuth of 155.29°. The hole was steered to an angle of 40° and a direction of 136°, by 903 m. The well path was then held till the primary target. One stand of drill pipe was laid down at 1782 m, due to a wash out in the string.

A precautionary wiper trip to the shoe was carried out at 2414 m, before penetrating the Latrobe Formation. The hole was then drilled from 2414 m to 2704 m. The primary target P sand was penetrated at 2666 m and the final drop and turn was initiated from 2681 m. The drill string was tripped at 2704 m, due to a significant loss of pump pressure and reduction in weight on hook. It was found on pulling out, that there was 1009 m of drill pipe and BHA left in the hole, at a depth of 1695 m. A fishing assembly was made up and run in the hole. The fish was successfully retrieved at the first attempt.

A SII ER6026RPD tri-cone rock bit was used on the next run to improve directional drilling ability in the Latrobe Formation. The hole was drilled from 2704 m to 2959 m, completing the final drop and turn. Initially the drill string was tripped to the casing, due to concerns with a leak in the production annulus of the A-26 production well but once successfully killed the bit was change out. A BHC MXLR20DDT tri-cone rock bit was run, drilling the secondary target and the remainder of the 8½" section.

Baracarb-25 and Baracarb-100 were added to the mud system at 2414 m, prior to entering the Latrobe Formation, to bridge the pore throats and reduce seepage losses. The mud weight was maintained below 9.5 ppg to reduce the likelihood of differential sticking. Finagreen-EBL was added from 2695 m to reduce torque.

Flounder A-24a reached a Total Depth of 3193 m (2626.97 mTVD) at 23:30 hours on the 14th March 2003. The final survey at a depth of 3176.43 m had an inclination of 2.85° and an azimuth of 121.76°. The hole was logged, production casing run and the completion program executed. The well was handed over to production at 21:00 hours on the 24th of March 2003.

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WELL PROFILE

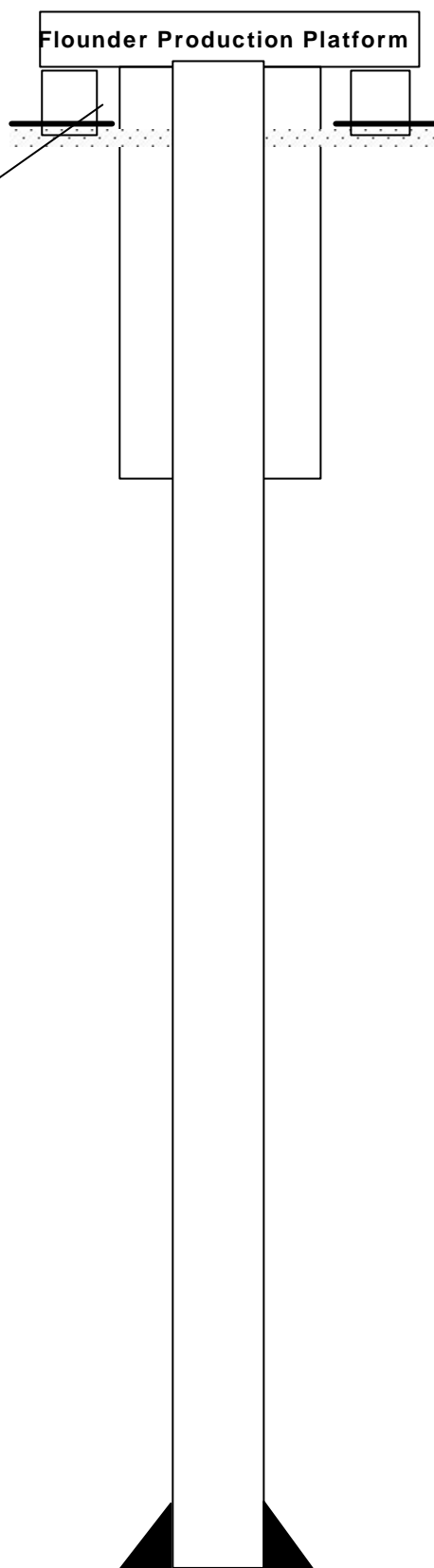
Rotary Table to Mean Sea Level
33.85 m

Rotary Table to Sea Bed 126.85 m

20" Conductor at 202.85 m

10¾" Surface Casing at 662.6 m

7" Production Casing at 3186.0 m



Nabors Rig 453

Spudded A-24a
02nd March 2003

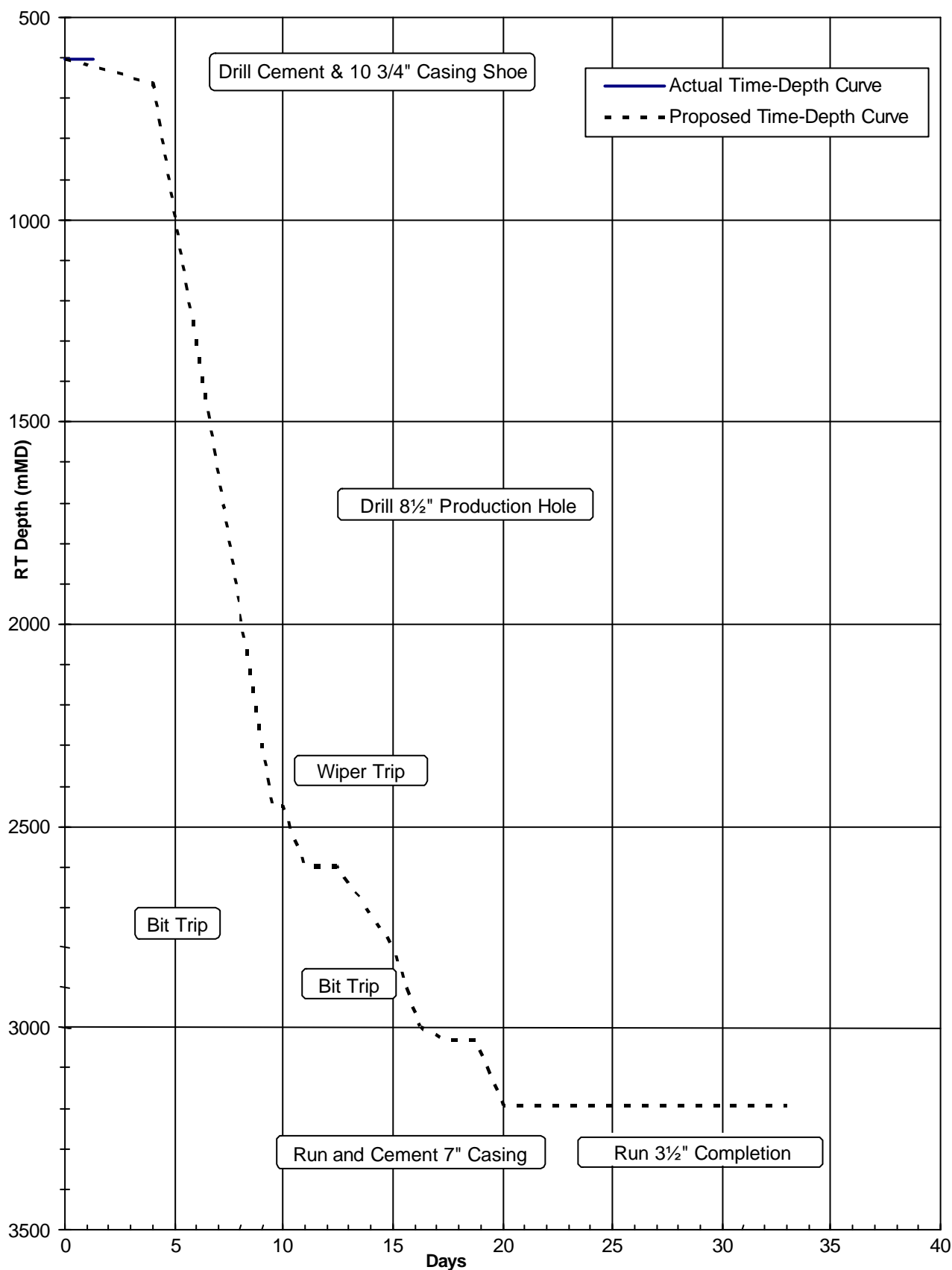
Drilled Cement from
603.7 m – 665 m

665.0 m – 3193.0 m
Mud Weight 8.7 – 9.5 ppg

8½" Hole Drilled to 3193.0 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"	DBS Sec XSC1S	3x22	605	665	2.6	1-1-WT-A-E-IN-NO-BHA
2	8½"	SII S73HPX	8x15	665	2704	65.9	1-1-WT-A-X-IN-NO-DSF
3	8½"	SII ER6067RPD	3x22	2704	2959	19.9	4-5-WT-A-E-E-E-2/16-CT/ER-HR
4	8½"	BHC MXLR20DDT	3x22	2959	3193	26.8	8-8-BT/WT/CT/LT-A-F-F-F-3/16-ER-TD

CASING DATA

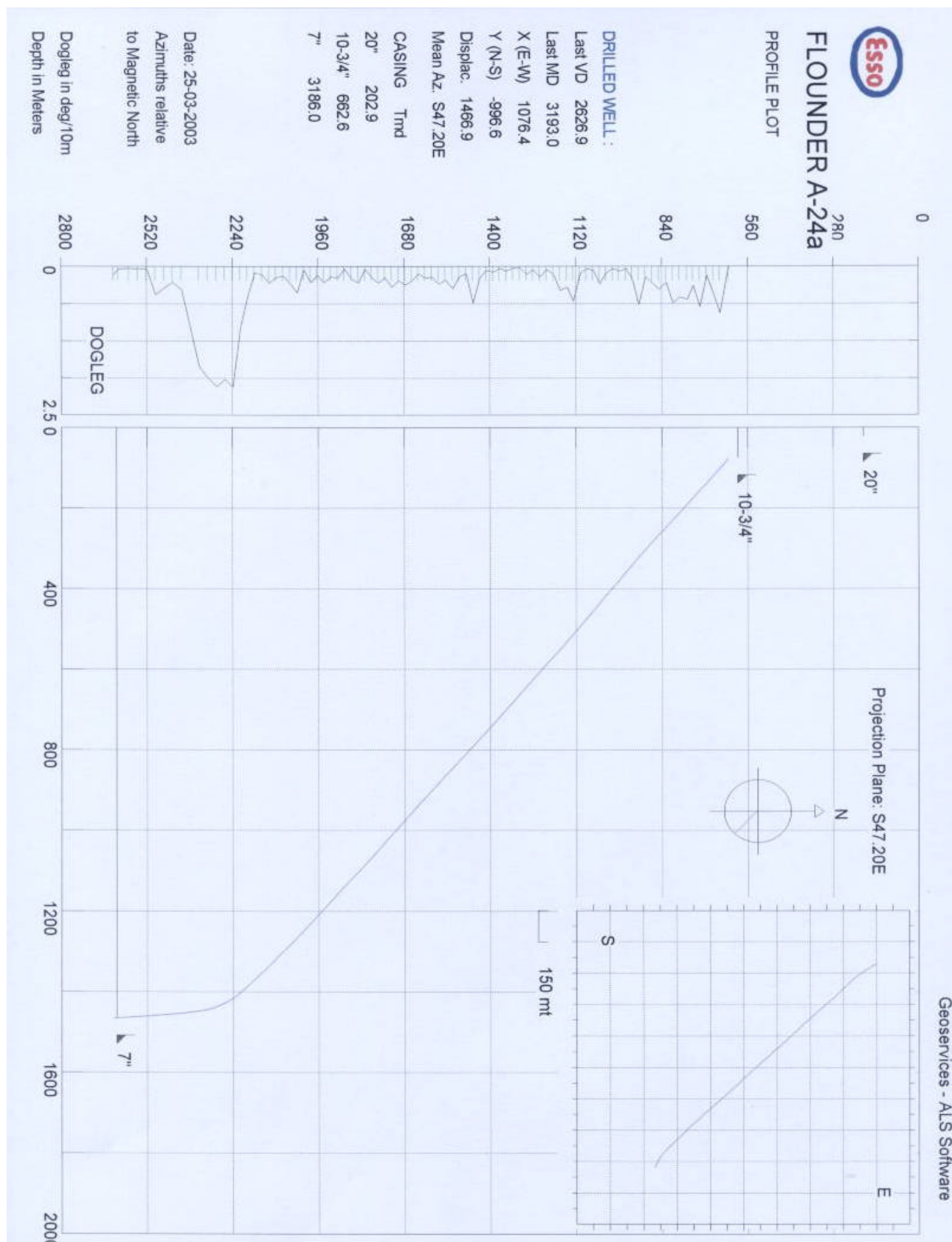
Type	Size (inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Conductor	20"	133	K-55	BTC	202.85
Surface	10¾"	40.5	K-55	BTC	662.6
Production	7"	26	L-80	LTC	3186.0

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	720	HALAD 413L 32 gal / 10 bbls SCR-100L 2 gal / 10 bbls CFR-3L 5 gal / 10 bbls NF-5 0.25 gal / 10 bbls	81.5	152	15.8	2241 m -3186 m	2500 psi

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WELL DIRECTIONAL PROFILE
(From Geoservices ALS Software)



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WELL DIARY

28th February 2003	Prepare to skid rig to A-24a. Skid rig to A-24a. Secure rig and reinstate walkways. Reinstate rig over A-24a. Break down TDS components for crack testing whilst continuing to reinstate rig. Hang blocks whilst reinstating rig. Break down draw works components and ETRS conduct crack testing on same. Erect scaffold in sub-base and open BOPs. Clean and prepare BOPs. Reassemble draw works brake assembly whilst western engineering check BOP cavities. Install torque beam base and draw works covers.
01st March 2003	Dress BOPs LPRs to 5" solids. Reassemble TDS, IBOP and manual Kelly valve. Install test stump to BOPs whilst working boat. ETRS crack test TDS rotating link adaptor assembly. West engineering complete BOP, mud pumps and draw works inspection. Dress UPRs to 4 ½"-7" VBRs. Test blind rams on stump whilst pickup and make up riser from V-door. Remove abandonment flange from well head. Nipple up riser and BOPs, bell nipple, return line and deluge skid. Make up jetting assembly; jet BOPs and wellhead. Break out same. Function test Koomey and remotes. Make up test assembly and test BOPs.
02nd March 2003	Make up test assembly and test BOPs to 300/3000 psi for 5 minutes – ok. Layout test assembly. Rig to test casing 2000psi/10 minutes – ok. Run wear bushing. Make up BHA and run in hole to 67m. Hang blocks, replace bell crank in draw works brake linkage assembly whilst Anadrill change out sensor at deadman. Run in hole with 5" HWDP from 67m to 178m. Run in hole with 5" DP to 464m. Inspect torque beam. Run in hole to top of cement at 605m. Obtain parameters. Drill cement from 605m to 665m. Pump high viscosity sweep and circulate clean. Condition mud and circulate clean. Condition mud and circulate. Displace well to 8.8 ppg mud. Rotate and reciprocate whilst displacing to 8.8 ppg mud at 665m. Pull out of hole from 665m to 178m. Electrician repair TDS control panel fault. Pull out of hole from 178m to surface, breakout bit. Make up bit, set bend and orientate UBHO.
03rd March 2003	Run in hole with BHA to 178 m. Run in hole with 5" drill pipe to 637 m. Slip and cut drilling line. Run in hole to 665 m and kick-off well as per Anadrill instructions. Drill to 680 m and circulate and condition mud. Pull back into casing at 646 m and conduct PIT (8.7 ppg to 376 psi; EMW - 12.4 ppg). Rig up Schlumberger sheaves at crown. Run in hole and drill, steer and survey 8½" hole from 680 m to 723 m. Run wireline and conduct gyroscopic survey at 700 m. Drill, steer and survey 8½" hole from 723 m to 923 m.
04th March 2003	Drill, steer and survey 8½" hole from 923 m to 1210 m. Circulate and condition mud, while clearing mud pump suction lines. Drill, steer and survey 8½" hole from 1210 m to 1373 m.
05th March 2003	Drill, steer and survey 8½" hole from 1373 m to 1726 m. Flush mud pump suction lines and lubricate rig. Drill, steer and survey 8½" hole from 1726 m to 1782 m. Lay out stand, due to wash in drill string.
06th March 2003	Drill, steer and survey 8½" hole from 1782 m to 2213 m. Slow pump circulation rates and work pipe, while changing shaker screens. Drill, steer and survey 8½" hole from 2213 m to 2299 m.
07th March 2003	Drill, steer and survey 8½" hole from 2299 m to 2414 m. Work string, whilst circulating hole clean. Pull out of the hole to 780 m. Circulate hole clean. Pull back into shoe and conduct rig service. Cut and slip drilling line. Run in hole.
08th March 2003	Continue to run in hole to 2356 m. Condition mud, during precautionary wash and ream to bottom. Drill, steer and survey 8½" hole from 2414 m to 2704 m. Loss of pump pressure and reduction in weight on hook, during sliding operations. Circulate hole clean and pull out of hole.

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09th March 2003	Continue to pull out of hole. 1009.3 m of fish in hole at 1695 m. Make up fishing assembly and run in hole to 1695 m. Rotate and work string to latch onto fish. Confirmed with pressure and weight on hook increase. Jar on fish to free and pull out of hole.
10th March 2003	Lay out motor and NMDCs and break bit. Pick up new BHA and make up bit. Run in hole to the shoe and conduct rig service. Continue to run in hole from 663 m to 2585 m. Precautionary wash and ream to bottom. Drill, steer and survey 8½" hole from 2704 m to 2803 m.
11th March 2003	Drill, steer and survey 8½" hole from 2803 m to 2959 m. Reciprocate and work string, whilst cleaning hole. Pull out of hole to shoe.
12th March 2003	Continue to pull out of hole into casing at 638 m. Monitor well, whilst Halliburton kills A-26 production well. Pull out of hole, rack back HWDP, layout motor and NMDCs and break bit. Pull wear bushing and jet stack. Pressure test BOP stack and lines.
13th March 2003	Make up BHA and run in hole on 5" drill pipe to 2959 m. Drill, slide and survey 8½" hole from 2959 m to 3050 m.
14th March 2003	Drill, steer and survey 8½" hole from 3050 m to 3193m (TD) and circulate hole clean.
15th March 2003	Rack back 1 stand every 30 minutes from 3193 m to 3135 m and back ream from 3135 m to 2420 m. Condition and circulate mud. Rotate, work string, pump super sweep and rack back 1 stand every 30 minutes from 2420 m to 2380 m. Flow check – static; pull out of hole from 2380 m to 750 m. Pump super sweep, back reaming from 750 m to 693 m. Pull out of hole from 693 m to 660 m. Run in hole from 660 m to 3130 m and wash and ream from 3130 m to 3193 m. Rotate and work string, racking back 1 stand every 30 minutes from 3193 m to 3130 m. Flow check and pull out of hole to 2350 m.
16th March 2003	Continue to pull out of hole from 2350 m to 740 m. Pump super sweep and circulate hole clean, whilst back reaming from 740 m to 665 m. Slug pipe and pull out of hole to surface. Rig up Schlumberger sheaves and make up Reeves logging tools, load source and run in hole with Reeves to 660 m. Pull out of hole from 660 m, unload source and change out neutron tool. Schlumberger run in hole with Reeves to 3139 m. Schlumberger pull out of hole and log hole with Reeves from 3139 m to surface. Lay down Reeves logging tools and Schlumberger sheaves. Retrieve wear bushing, jet BOPs and well profile and rig up to run 7" casing. Rig down 7" running gear.
17th March 2003	Re-run wear bushing. Rig up 5" handling gear. Make up 8½" clean out BHA and run in hole to tight hole at 2703 m. Wash, ream and work tight hole from 2703-2750 m. Pull out of hole and change out stabiliser. Run in hole to tight hole at 2690 m. Wash, ream and work through tight hole from 2690-2700 m. Run in hole from 2700 m to obstruction at 2751 m. Attempt to wash and ream past obstruction at 2751 m, no go. Backream from 2751-2672 m. Condition and circulate mud, rotate and work string and rack back 1 stand per ½ hour from 2672-2644 m whilst circulate hole clean.
18th March 2003	Pull out of hole. Make up motor and BHA and run in hole to the shoe, slip and cut drill line. Run in hole with no trouble getting past previous tight spots. Backream from 2786-2671 m. Run in hole from 2671 m to 3101 m. Wash and ream from 3101 m to bottom. Pump 35 bbl Super Sweep pill with considerable, but not excessive amounts of cuttings returned at shakers. Circulate while adding premix to active system. Pump slug and pull out of hole.
19th March 2003	Continue to pull out of hole, lay out motor and BHA. Retrieve wear bushing. Jet well head. Rig up to and run 7" casing.

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20th March 2003	Continue to run in hole with 7" casing. Change out slips, bales and rig up to cement casing. Circulate 600 barrels at 10 barrels per minute. Test lines and cement casing with Halliburton as per program. Bump plug and hold at 2500 psi for 15 minutes. Bleed back 3.75 barrels, floats held. Wait on cement. Perform scheduled rig maintenance.
21st March 2003	Wait on cement. Prepare to nipple down BOP. Lift and secure BOP's. Pull 100 klbs tension above estimated string weight, Cameron set slip / seal assembly. Furmanite rough cut casing. Lay out landing joints and rig down Weatherford. Nipple down BOP and riser. Change bales and clear rig floor of excess equipment. Furmanite dress casing stub whilst change upper pipe rams to 2 7/8" – 5" variables and lower rams to 3½" solids. Dress riser. Run tubing head and nipple up same. Cameron test lower void 3000 psi / 15 minutes. Nipple up riser and BOP. Function BOP and remotes. Make up test assembly, test lines, upper and lower pipe rams. Layout test assembly. Rig up Schlumberger wireline sheaves.
22nd March 2003	Schlumberger run in hole with junk basket / gauge ring to 1350 m. Pull out of hole and lay out same. Make up Schlumberger Max-R gun hanger. Run in hole with same, correlate and set Max-R at 3096 m, top shot at 3105 m. Pull out of hole with same and check tool fired - OK. Rig down wireline sheaves and clear rig floor. Lubricate rig and inspect torque beam. Conduct maintenance whilst unloading completion equipment from boat. Continue with maintenance and backload boat.
23rd March 2003	Continue with maintenance and backload boat. Prepare to run 3½" completion tubing. Make up tail pipe / packer assembly and run in hole with 3½" completion tubing.
24th March 2003	Continue to run in hole with 3½" completion tubing to 2135m. Pick up and make up TRSSV. Install control line and test to 4000psi for 15 minutes – ok. Run in hole with 3½" completion tubing to 2581m. Make up hanger, test control line to 4000 psi for 10 minutes. Make up landing joints and land out hanger. Engage tubing hanger and confirm lockdown with 10k overpull. End of tubing at 2593.9m. Cameron test hanger seals to 5000psi for 5 minutes. Rig up FOBV/Lubricator and test same – ok. Run in hole with test tool to 2591m. Howco pressure tubing and set packer with 4000psi. Pull out of hole with test tool. Howco test lines, tubing, packer seals and annulus – ok. Rig down wireline, FOBV and lubricator. Back out hanger run tool and layout landing joints. Cameron run back pressure valve. Nipple down BOP and riser. Cameron terminate control line and nipple up Xmas tree. Test upper void and SRL seal – ok. Cameron pull back pressure valve. Cameron test Xmas tree void. Install pump in Flange to crown and reinstate grating.

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Section 2

Geological Summary

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FORMATION TOPS

DESCRIPTION	MD (m) RT	TVD (m) RT	TVD (m) SS
Top of Gippsland Limestone	Not Applicable		
Top of Lakes Entrance	2408.0	1926.7	1892.85
Top of Latrobe Group	2467.5	1972.3	1938.45
Top of P – Sand	2652.0	2117.6	2083.75
Base Tuna - Flounder Channel	2849.0	2285.2	2251.35
Shallow Coal Marker	2874.5	2309.8	2275.95
Mid Palaeocene Marker	2939.0	2373.5	2339.65
Top of T Shale	3021.0	2455.2	2421.35
Top of T1.1 Sand	3103.0	2537.1	2503.25
Base of T1.1 Sand	3144.0	2578.0	2544.15
Top of T1.1.1 Sand	3148.0	2582.0	2548.15
Base of T1.1.1 Sand	3152.0	2586.0	2552.15
Top of T1.2 Sand	3157.5	2591.5	2557.65
Base of T1.2 Sand	3167.5	2601.0	2567.15
TOTAL DEPTH	3193.0	2626.97	2593.12

GEOLOGICAL SUMMARY**GIPPSLAND FORMATION:**

665 m - 2408 m

CALCILUTITE**CALCILUTITE:**

Light olive grey to olive grey, green grey, light grey to medium grey, silty, grading to CALCISILTITE at shallower depths, argillaceous, grading to CALCAREOUS CLAYSTONE with depth, minor to common fossil fragments, Foraminifera, Bryozoa, occasional Ooids, locally trace disseminated and nodular pyrite, locally trace carbonaceous specks, locally trace glauconite, locally trace DOLOMITE grains, very soft to firm, occasionally moderately hard to hard, commonly dispersive, dominantly amorphous to sub-blocky, locally blocky to sub-fissile.

LAKES ENTRANCE FORMATION:

2408 m – 2467.5 m

Interbedded CALCAREOUS CLAYSTONE and LIMESTONE**CALCAREOUS CLAYSTONE:**

Light olive grey to olive grey, silty, trace disseminated pyrite, occasional glauconite grains, firm to moderately hard, sub-blocky to blocky.

CALCILUTITE:

Medium grey to olive grey, light olive grey, medium dark grey to green grey, grading to CALCAREOUS CLAYSTONE, silty in part, micro-micaceous in part, trace disseminated and nodular pyrite, trace carbonaceous specks, trace fossil fragments, firm to moderately hard, sub-blocky to blocky.

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LATROBE GROUP:

2467.5 m – 2652 m

SILTSTONE with minor interbedded SANDSTONE**SILTSTONE:**

Dark yellow brown to grey brown, dusky brown, dusky yellow brown, argillaceous to very argillaceous, grading to CLAYSTONE, common to abundant micro-micaceous, locally trace to common glauconite, locally common disseminated and nodular pyrite, soft to firm, dispersive, amorphous to sub-blocky

SANDSTONE:

Pale to light grey, clear to translucent, fine to medium, dominantly fine, moderately to well sorted, sub-rounded, weak calcareous cement, common to abundant kaolinite matrix, trace Iron staining on quartz grains, trace carbonaceous specks, disaggregated to friable, poor to fair porosity.

FLUORESCENCE:

2605 m to 2615 m; trace to 5% moderately bright solid yellow green fluorescence, slow diffuse cut, thin film residue.

2645 m to 2655 m; trace dull yellow orange even fluorescence, weak diffuse yellow green cut, thin spotty film residue.

2655 m to 2660 m; 5% dull to spotty moderately bright pale yellow orange fluorescence, yellow green diffuse cut, moderately thick film residue.

P SAND:

2652 m -2755 m

SANDSTONE interbedded with SILTSTONE.**SANDSTONE:**

Clear to translucent, frosted, fine to commonly medium to coarse, poorly to moderately sorted, angular to sub rounded, trace pyrite cement, trace kaolinite matrix, common very coarse milky quartz float, disaggregated, good porosity.

FLUORESCENCE:

2740 m- 2755 m; trace very dull yellow green patchy fluorescence, very weak diffuse cut, trace to nil ring residue.

SILTSTONE:

Grey brown to dusky yellow brown, argillaceous, grading to CLAYSTONE in part, slightly arenaceous in part, micro-micaceous, trace to locally common biotite and muscovite flakes, common lithic fragments, trace carbonaceous specks, soft to dispersive, occasionally firm, massive to blocky.

2755m – 2849 m

SILTSTONE with interbedded SANDSTONE and trace CLAYSTONE**SILTSTONE:**

Brown grey to olive grey, dark yellow brown, dusky brown, very argillaceous, grading to CLAYSTONE, micro-micaceous, trace to locally common biotite flakes, trace disseminated and nodular pyrite, trace lithic fragments, trace carbonaceous specks, soft to dispersive, occasionally moderately hard, massive to amorphous.

SANDSTONE:

Clear to translucent, frosted fine to very coarse, dominantly medium to coarse, poorly sorted, angular to sub rounded, trace to locally minor pyrite cement, locally trace argillaceous inclusions, common very coarse milky quartz float, predominantly clean, predominantly disaggregated, rarely moderately hard aggregates, fair to good porosity.

FLUORESCENCE:

2825 m– 2835 m; trace to 10% very dull yellow green patchy fluorescence, weak very slow cut, thin spotty ring residue.

CLAYSTONE:

Medium to dark grey, slightly micro-micaceous, trace to rare carbonaceous specks, smooth waxy texture, firm to moderately hard, sub-fissile.

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BASE TUNA-FLOUNDER CHANNEL:

2849 m – 2874.5 m

Interbedded SANDSTONE, SILTSTONE and**SILTSTONE:**

Brown grey to olive grey, dark yellow brown, dusky brown, very argillaceous, grading to CLAYSTONE, micro-micaceous, trace to locally common biotite flakes, trace disseminated and nodular pyrite, trace lithic fragments, trace carbonaceous specks, soft to dispersive, occasionally moderately hard, massive to amorphous.

CLAYSTONE:

Medium to dark grey, olive grey, brown grey, silty in part, grading to SILTSTONE, micro-micaceous, trace carbonaceous specks, soft, sub-blocky.

SHALLOW COAL MARKER:

2874.5 m – 2939 m

Interbedded SANDSTONE and SILTSTONE, with CLAYSTONE and COAL**SANDSTONE:**

Clear to translucent, frosted, fine to dominantly medium to coarse, poorly to moderately sorted, trace pyrite cement, trace very coarse milky quartz float, trace muscovite mica, clean, predominantly loose, rarely friable, fair to good porosity, no fluorescence.

SILTSTONE:

Brown grey, dusky brown, locally very argillaceous, grading to CLAYSTONE, micro-micaceous, common carbonaceous fragments and laminations, soft to locally firm, blocky.

CLAYSTONE:

Medium to dark grey, olive grey, brown grey, silty in part, grading to SILTSTONE, micro-micaceous, trace carbonaceous specks, soft, sub-blocky.

COAL:

Brown black to black, slightly argillaceous in part, slightly micro-micaceous, minor micro-pyrite striations, dull to sub-vitreous, sub-conchoidal in part, brittle, blocky.

MID PALAEOCENE MARKER:

2939 m – 3021 m

SANDSTONE with interbedded SILTSTONE**SANDSTONE:**

Clear to translucent, frosted, opaque, fine to very coarse, dominantly medium to coarse, poorly to moderately sorted, locally common dolomite and calcite cement, trace to occasional pyrite cement, occasional to common very coarse to granular quartz float, trace nodular pyrite, clean, predominantly loose to friable, occasionally commonly hard to very hard aggregates, fair to good porosity, locally poor porosity, locally minor mineral fluorescence.

SILTSTONE:

Brown grey, dusky brown, locally very argillaceous, grading to CLAYSTONE, micro-micaceous, common carbonaceous fragments and laminations, soft to locally firm, blocky.

T SHALE:

3021 m – 3103 m

MASSIVE SILTSTONE**SILTSTONE:**

Very light grey to grey brown, pale yellow brown to light grey brown, moderate brown in part, grey green to dark grey green, argillaceous, dolomite in part, common disseminated and nodular pyrite, common disseminated glauconite in part, micro-micaceous in part, locally common carbonaceous inclusions grading to COAL, soft, occasionally firm to moderately hard, amorphous to sub-blocky.

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T – SAND:

3103 m – 3193 m

Interbedded SANDSTONE and SILTSTONE**SANDSTONE:**

Light grey, clear to translucent, milky white, frosted, fine to coarse, common very coarse fractured grains, poorly sorted, sub-angular to sub-rounded, moderate siliceous cement, trace pyrite cement, minor siliceous and light grey argillaceous matrix, common coarse fractured quartz grains, commonly loose, friable to moderately hard

FLUORESCENCE:

3103 m– 3130 m; trace to 50% pale to moderately bright pin point blue white fluorescence, very weak to nil cut, moderately fast crush cut, thin yellow ring residue.

SANDSTONE:

Light grey to light yellow brown, clear to translucent, fine to coarse, dominantly medium, rarely very coarse, poorly to moderately sorted, sub-angular, rarely round, moderately strong siliceous cement, trace dolomite cement, common off white to light grey argillaceous matrix, very fine siliceous matrix in part, common fractured quartz grains, generally loose, friable to moderately hard aggregates, poor to fair porosity, minor mineral fluorescence.

SILTSTONE:

- (1) Brown grey to light brown, medium grey to olive grey, argillaceous, dolomite, common nodular pyrite, occasional disseminated pyrite, minor carbonaceous specks, rare glauconite inclusions, soft, rarely moderately hard to hard, amorphous, rarely sub-fissile.
- (2) White to off white, argillaceous, grading to CLAYSTONE, calcareous, soft to firm, amorphous to fissile.
- (3) Moderately orange pink to dark yellow brown, argillaceous to slightly arenaceous, slightly dolomitic, minor carbonaceous specks, micro-micaceous, soft, firm in part, amorphous, minor sub-blocky.

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GAS REPORT

Gas was present immediately on exiting from 10¾" casing into the Gippsland formation at 665 m, with background values increasing to 5 units and remaining around 3 to 5 units. Minor gas peaks of between 8 to 12 units were recorded during the Gippsland and Lakes Entrance formations with Methane (C1) as the only constituent.

Through out the Latrobe Group there was a gradual increase in the background gas, but not until the first sand within the Latrobe Group at 2605 m did gas values increase to above 50 units (1%), peaking at 543.8 units at 2663 m in the P – Sand reservoir. The peak consisted of Methane through to n-Butane and the resultant gas ratios signified an Oil bearing rock.

After which background gas dropped back to between 5 to 10 units by around 2705. The background gas for the remainder of the well was between 5 to 15 units. Below the Shallow Coal Marker, a number of gas peaks, to 50 units, were recorded in the Coals and Sands. There were a small number of peaks below the Mid Palaeocene Marker and into the T Shale, from a Coal and Sandstone stringers.

The secondary target T1.1 Sand reservoir gave only a gas peak of 42 units at the very top. In the Siltstone at the base of the section, a carbonaceous layer gave a small peak of 30 units.

Connection gas was observed from 1810 m to 2356 m while drilling Flounder A-24a. The mud weight was raised two points and this alleviated the problem.

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 Flounder A-24a.

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 %
2612	103.5	0.521	0.072	0.049	0.009	0.014	0.006	0.006
2658	527.4	4.802	0.936	0.595	0.093	0.139	0.048	0.054
2663	543.8	4.940	1.090	0.0857	0.139	0.212	0.070	0.070
2677	125.7	0.561	0.119	0.111	0.019	0.033	0.010	0.010
2748	6.6	0.031	0.003	0.002	0.001	0.001	0.001	0.001
2758	7.4	0.032	0.003	0.003	0.001	0.001	0.001	0.001
2813	8.9	0.054	0.007	0.009	0.002	0.004	0.001	0.001
2879	29.6	0.224	0.036	0.015	0.001	0.004	0.001	0.001
2884	56.9	0.585	0.084	0.035	0.003	0.007	0.001	0.001
2917	30.2	0.284	0.045	0.022	0.002	0.006	0.001	0.001
2939	35.1	0.224	0.036	0.017	0.002	0.005	0.0021	0.001
2957	36.0	0.261	0.050	0.026	0.003	0.007	0.001	0.002
3082	40.6	0.265	0.025	0.013	0.001	0.003	0.001	0.001
3103	42.2	0.357	0.033	0.023	0.003	0.008	0.002	0.002
3123	25.3	0.163	0.18	0.015	0.003	0.007	0.002	0.002
3187	30.5	0.325	0.019	0.012	0.001	0.003	0.001	0.001

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