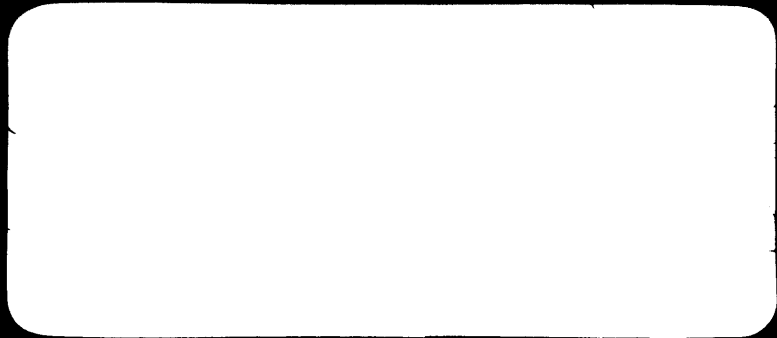


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WELL COMPLETION REPORT

VEILFIN-1

VOLUME 1

07 MAR 1985

OIL and GAS DIVISION

GIPPSLAND BASIN  
VICTORIA

ESSO AUSTRALIA LIMITED

VEILFIN-1

WELL COMPLETION REPORT

VOLUME 1

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1096L

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ESSO AUSTRALIA LTD

COMPLETION REPORT

WELL : VEILFIN-1

LOCATION : Latitude : 38° 25' 2.43"  
Longitude : 148° 0' 8.38"  
X = 587501.77 m E  
Y = 5747388.11 m N  
Map Projection: AMG  
Geographical Location: Gippsland Basin  
Field:

PERMIT : VIC/P1

ELEVATION : K.B. 21m A.S.L.

WATER DEPTH : 65m

TOTAL DEPTH : 3521m

PLUG BACK TYPE : Balanced plug

REASONS FOR  
PLUGGING BACK : Plug and Abandonment

MOVE IN : 27th February, 1984

RIG UP : 1st March, 1984

SPUDED : 2nd March, 1984

RIG DOWN COMPLETE : 14th April, 1984

RIG RELEASED : 14th April, 1984

OPERATOR : Esso Exploration and Production Australia Inc.

PERMITTEE : B.H.P. Petroleum Pty. Ltd.

ESSO INTEREST : 0%

BHP INTEREST : 100%

CONTRACTOR : South Seas Drilling Company

RIG NAME : Southern Cross

EQUIPMENT TYPE : Oilwell E-2000

TOTAL RIG DAYS : 47.07

DRILLING AFE NO. : 03-00-308233015

TYPE COMPLETION : Plug and Abandonment

WELL CLASSIFICATION : Before Drilling New Field Wildcat  
After Drilling Gas Discovery

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SEQUENTIAL OPERATIONS

VEILFIN-1

Move and Moor

The semi-submersible Southern Cross departed the Wirrah-3 location at 1715 hours on 27th February, 1984 and arrived at the Veilfin-1 location at 2400 hours the same day. The rig was towed 30km (16 nautical miles) by the workboat Lady Vera in 6-3/4 hours at an average speed of 4.4 km/hr (2.4 knots). The rig remained under tow for 59-1/2 hours while waiting-on-weather.

Anchor no. 1 was dropped by the rig and the remaining seven anchors run by the workboats Lady Vera and Torrens Tide in 9 hours. All anchors were successfully pretensioned to 200 kips.

Actual Location

Latitude : 38° 25' 2.43"S  
Longitude: 148° 00' 8.38"E  
X : 587,501.77 m E  
Y : 5,747,388.11 m N

AMG Zone 55, Universal Transverse Mercator  
Projection, Australian Geodetic Datum.

The rig was located 1.1m at 348° from the called location and 60 km at 178° from Lakes Entrance, Victoria.

26" Hole for 20" Conductor

The drilling template was run and landed at a seafloor depth of 86m RKB. The 26" hole was drilled to 225m with seawater and displaced at TD with high viscosity gel mud. The 18-3/4" well head and 20" casing were then run and cemented at a shoe depth of 207m. The BOP stack and riser were run and the casing and collet connector tested against the shear rams to 500 psi.

17-1/2" Hole for 13-3/8" Surface Casing

The 20" casing shoe was drilled out and the 17-1/2" hole drilled to 830m using seawater with slugs of high viscosity gel mud. The hole was then logged with a BHC/GR tool.

The 13-3/8" casing was run and cemented at a shoe depth of 815m. The 13-3/8" seal assembly was set and pressure tested to 5000 psi. The BOP stack was then pressure tested to 200/3500/5000 psi. A phase I PIT was conducted to 1500 psi after drilling out cement to 803m.

12-1/4" Hole for 9-5/8" Production Casing

The remaining cement and 6m of new hole were drilled and a Phase II PIT conducted to leakoff at 16.2 ppg EMW. The 12-1/4" hole was then drilled to 3321m, where the mud weight was 9.3 ppg. This mud weight was programmed to provide a 300 psi overbalance into the top of Latrobe formation. The programmed TD of 2521m was twice revised, first to 3321m and then to 3521m. Intermediate logs and 7 RFT's were run at 3321m before drilling ahead to 3453.1m. A stratigraphic core was then cut with a 9-7/8" corehead down to 3462.5m with 98% recovery. Drilling continued to TD at 3521m. Mud weight reached a maximum of 9.6 ppg.

Background gas units appeared to increase below the core at 3463m, possibly indicating the onset of abnormal pressure. No RFT's were run at TD, hence the presence of abnormal pressure was not confirmed.

Final logs were then run, including a velocity survey and 5 sidewall coring runs. A wiper trip was made and a 125 bbl 15 ppg pill spotted at TD prior to running 9-5/8" casing. This high density pill was used to prevent the cement from gravity settling down through the lighter drilling mud.

The 9-5/8" casing was run and cemented at a shoe depth of 3301m. The 9-5/8" seal assembly was set and pressure tested to 5000 psi. The BOP stack was pressure tested to 200/3500/5000 psi. The 9-5/8" casing was tested against the shear rams to 4000 psi.

#### Production Testing

An 8-1/2" bit and casing scraper were then run and soft cement drilled from 3111 to 3277m, where the float collar was tagged. A gauge ring and junk basket were run in combination with a collar locator and gamma ray tool. The casing was retested to 4000 psi before setting a Model "D" packer at 3173m, the test string was run and displaced with a perforating cushion of 60 bbls of diesel and 30 bbls of nitrogen. The wellhead pressure was bled from 2400 to 1650 psi prior to perforating in order to induce an underbalance into the wellbore. The interval 3185-3194m was then perforated with a 2-1/8" Enerjet at 4 SPF. After six minutes, there was no increase in wellhead pressure. The perforating gun was then pulled. While rigging up the HP and Amerada gauges, the well was opened and the wellhead pressure bled to 1000 psi before shutting in. The HP and two Amerada gauges were run to an HP depth of 3189.5m. After monitoring the bottom-hole pressure, the well was again opened for flow. The well was flowed for 16 hours, of which 2-1/4" hours were through the separator.

The pressure build-up was monitored before pulling out of the hole with six gradient stops. The gauges became stuck at 94m, but were pulled free after injecting methanol into the tubing through a subsea injection sub. Tandem bottom hole samples were then taken at 3040m.

The well was again opened to bleed down the tubing pressure in order to facilitate bullheading mud downhole. With an initial tubing pressure of 100 psi, 80 bbls of 9.5 ppg mud were bullheaded into the tubing before pressuring up to 4000 psi. The mud could not be injected into the formation. The seals were pulled above the packer and the test string reverse circulated before being laid down.

#### Plug and Abandonment

At the end of production test, a cement plug was set across the test interval from 3200 to 3100m. A gauge ring/junk basket run was made to 2986m before setting an EZSV bridge plug at 2985m. The plug was tested to 4000 psi.

The 9-5/8" casing was then cut with a Pengo explosive cutter at 325m and retrieved. A cement plug was set across the stub from 375 to 275m with 10.6 bbls squeezed into the 13-3/8" x 9-5/8" annulus. The plug was tested to 1500 psi. After a gauge ring/junk basket run to 270m, a 13-3/8" bridge plug was set at 260m.

The 13-3/8" casing was then cut with a Pengo explosive cutter at 187M and retrieved. A cement plug was set across the stub from 215 to 125m with 16.5 bbls squeezed into the 20" x 13-3/8" annulus. The plug was tested to 500 psi.

The BOP stack and riser were then pulled before mechanically cutting the 20" casing at 97m. When the casing was pulled with 350 kips overpull, the string parted at the pile joint CC connector at 94m. The pile joint was recovered along with the wellhead, four post guidebase, and drilling template.

#### Pulling Anchors

After a 2.08 day delay due to an industrial dispute and waiting-on-workboats, the anchors were pulled by the workboats Lady Sally, Lady Sonia and Torrens Tide. Under tow by the Lady Sonia, the rig was released to Elf-Aquitaine at 1800 hours on 14th April, 1984.

3. CASING DATA

Well: VEILFIN-1

CSG OD IN	WT LBS/FT	GRADE	CONN	CSG LENGTH METRES	SHOE DEPTH R.K.B.	CENTRALIZER POSITION	REMARKS
24	670	-	OC	11.18		One in middle of shoe.	Pile Joint
20	129	X-52	JVxCC	12.23		One per collar for first five collars.	Crossover Joint 7 Joints
20	94	X-52	JV	87.41			
20	94	X-52	JV	13.52	207.45		Shoe Joint
13-3/8	54.5	K-55	BUTT	12.77		One per collar for first six collars.	Hanger Joint 59 Joints
13-3/8	54.5	K-55	BUTT	692.99		One per collar for six collars inside	Float Joint
13-3/8	54.5	K-55	BUTT	12.27		20" CSG	Shoe Joint
13-3/8	54.5	K-55	BUTT	12.36	814.71		
9-5/8	47	N-80	BUTT	3180.80		One per collar for first eighteen collars	271 Joints W/hanger Float Joint
9-5/8	47	N-80	BUTT	12.28			
9-5/8	47	N-80	BUTT	11.51			1 Joint
9-5/8	47	N-80	BUTT	11.72	3300.96		Shoe Joint

4. CEMENT DATA

Well: VEILFIN-1

DATE	DEPTH METRES	TYPE JOB	TYPE CEMENT	AMOUNT	ADDITIVES	REMARKS
02/03/84		20" CSG - LEAD	Class "G"	750 SX	8% PHG	50/50 FW/SW SLURRY WT - 13.3 PPG
02/03/84	207	20" CSG - TAIL	Class "G"	350 SX	-	SEAWATER SLURRY WT - 15.8 PPG
05/03/84	815	13-3/8" CSG	Class "G"	1050 SX	-	SEAWATER SLURRY WT - 15.8 PPG
03/04/84	3301	9-5/8" CSG	Class "G"	1700 SX	2% HR6L 0.5% CFR2	FRESHWATER SLURRY WT - 15.8 PPG
09/04/84	3200 - 3100	P & A PLUG #1	Class "G"	120 SX	0.6% HR6L	FRESHWATER SLURRY WT - 15.7 PPG
10/04/84	375 - 275	P & A PLUG #2	Class "G"	235 SX	-	SEAWATER SQUEEZE 10.6 BBLs INTO ANNULUS
11/04/84	215 - 125	P & A PLUG #3	Class "G"	505 SX	-	SEAWATER SQUEEZE 16.5 BBLs INTO ANNULUS



WELL: VEILFIN-1

SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

<u>INTERVAL</u>	<u>TYPE</u>
225-3521m	Cuttings samples - 3 sets of washed and oven dried and 3 sets of bagged and air dried cuttings every 5 metres.
3453.1-3462.8m	Conventional core - recovered 98.5%.
935-3494m	Sidewall cores - shot 224, recovered 188.
225-3521m	Unwashed can samples every 15 metres.

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WELL: VEILFIN-1

WIRELINE LOGS AND SURVEYS

<u>Type and Scale</u>		<u>From</u>	<u>To</u>
<u>Suite 1</u>			
BHC-CAL-GR	1:200 1:500	828	86m
<u>Suite 2</u>			
LDTC-CNTH-GR	1:200	3311	1900m
LDTA-CNTA-GR	1:200 1:500	3295	815m
DLL-MSFL-GR	1:200 1:500	3317	815m
DLTE-GR	1:200	3311	1900m
RFT (HP)	1:200	3228	2050m
RFT (8 RUNS)			
<u>Suite 3</u>			
LDTA-CNTA-GR	1:200 1:500	3520	2900m
LDTC-CNTH-GR	1:200 1:500	3517	2900m
BHC-GR	1:200 1:500	3520	815m
DLTE-GR	1:200 1:500	3517	2900m
CST RUN 1 - 5	1:200		

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7. SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - VEILFIN-1

TEST	SEAT	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES)				HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		REMARKS
				OIL	COND.	GAS	FORMATION WATER	MUD FILTRATE	MPaa	Psia	MPaa	
			Litres	Litres	Litres	m <sup>3</sup>	Litres	Litres				
1	1	3228.0	Pretest							35.1	5084.6	Seal Failure
	2	3228.0	Pretest							35.1	5085.0	Seal Failure
	3	3228.2	Pretest							35.1	5085.2	Seal Failure
	4	3227.5	Pretest					34.7	5029.1	35.1	5084.2	Valid
	5	3222.0	Pretest							35.0	5078.7	Seal Failure
	6	3223.0	Pretest							35.0	5079.2	Seal Failure
	7	3220.5	Pretest							35.0	5075.3	Tight
	8	3212.5	Pretest					32.4	4699.7	34.9	5063.3	Valid
	9	3193.0	Pretest							34.7	5028.9	Seal Failure
	10	3191.8	Pretest					32.0	4642.9	34.7	5028.4	Valid
	11	3186.5	Pretest							34.6	5018.5	Tight
	12	3187.5	Pretest					32.0	4638.0	34.7	5026.7	Valid
	13	3190.0	Pretest							34.7	5029.0	Seal Failure
	14	3190.2	Pretest							34.7	5029.4	Seal Failure
	15	3149.0	Pretest					31.2	4521.4	34.2	4960.0	Valid
	16	3140.7	Pretest							34.2	4950.6	Seal Failure
	17	3140.7	Pretest							34.2	4950.0	Seal Failure
	18	3141.0	Pretest							34.2	4951.3	Seal Failure
	19	3142.0	Pretest							34.2	4951.9	Seal Failure
	20	3130.5	Pretest							34.1	4936.2	Seal Failure
	21	3130.5	Pretest					31.3	4529.0	34.1	4937.3	Valid
	22	3142.0	Pretest							34.2	4958.8	Seal Failure
	23	3118.0	Pretest							33.9	4916.6	Seal Failure
	24	3117.8	Pretest							33.9	4916.4	Seal Failure
	25	3117.8	Pretest							33.9	4916.6	Seal Failure
	26	3095.5	Pretest							33.7	4882.1	Seal Failure
	27	3095.5	Pretest					31.1	4500.7	33.7	4883.8	Valid
	28	3086.5	Pretest							33.6	4869.0	Seal Failure

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - VEILFIN-1

TEST	SEAT	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES)				HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		REMARKS
				OIL	COND.	GAS	MUD FILTRATE	MPaa	Psla	MPaa	Psla	
			Litres	Litres	Litres	m <sup>3</sup>	Litres	Litres				
29		3081.0	Pretest					30.6	4435.0	33.5	4861.2	Valid
30		3069.0	Pretest							33.4	4839.3	Seal Failure
31		3069.0	Pretest							33.4	4840.7	Seal Failure
32		3068.8	Pretest							33.4	4841.1	Seal Failure
33		3062.5	Pretest							33.3	4830.1	Tight
34		3056.5	Pretest							33.3	4825.9	Slow Leak
35		3044.0	Pretest					29.7	4309.3	33.1	4801.7	Valid
36		3033.5	Pretest							33.0	4783.1	Tight
37		3006.0	Pretest							32.7	4745.5	Tight
38		2968.0	Pretest							32.3	4686.3	Seal Failure
39		2967.0	Pretest							32.3	4686.4	Seal Failure
40		2050.0	Pretest					19.9	2881.2	22.4	3249.1	Valid
2	41	3212.5	Pretest							34.9	5063.1	Seal Failure
	42	3212.5	Pretest							34.9	5060.6	Seal Failure
	43	3212.6	22.7			0.04	20.25	32.4	4696.4	34.9	5061.0	Valid
			10.4			0.02	9.1					
3	44	3212.6	Pretest							34.9	5061.2	Seal Failure
	45	3212.6	22.7			0.05	19.80	32.3	4679.9	34.9	5061.1	Valid
			10.4			0.02	7.75					
4	46	3188.7	Pretest							34.7	5028.9	Seal Failure
	47	3188.7	Pretest							34.7	5026.8	Seal Failure
	48	3188.6	Pretest							34.7	5026.1	Seal Failure
	49	3188.9	Pretest							34.7	5027.1	Seal Failure
	50	3190.0	Sample Pretest*					32.4	4689.6	34.7	5028.1	Valid
	51	3189.8	Sample Pretest*					32.1	4645.1	34.7	5028.3	Valid
	52	3187.5	Sample Pretest*					32.0	4639.4	34.7	5022.2	Valid
	53	3191.8	*45.4			0.02	17.5	32.0	4637.8	34.7	5026.0	Valid
	54	3149.5	10.4			0.004	9.0	31.2	4516.5	34.2	4953.3	Valid

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - VEILFIN-1

TEST	SEAT	DEPTH (METRES)	CHAMBER	RECOVERY (LITRES)				HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		REMARKS		
				OIL	COND.	GAS	FORMATION WATER	MUD FILTRATE	MPaa	Psia	MPaa		Psia	
			K.B.	Litres	Litres	Litres	m <sup>3</sup>	Litres	Litres					
5	55	3149.5	45.4	Scum		0.07		41.8		31.2	4528.8	34.6	5019.2	Valid
			10.4	Scum		0.02		9.25						
6	56	2896.0	45.4					36.7		28.7	4154.9	32.0	4630.6	Valid
			10.4			0.01		9.6						
7	57	2883.0	Pretest									31.8	4606.6	Seal Failure
	58	2882.9	Pretest									31.8	4606.1	Seal Failure

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8. TEMPERATURE RECORD - VEILFIN-1

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C°)	CIRCULATION TIME (t <sub>k</sub> ) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER TEMPERATURE (C°)	GEO THERMAL GRADIENT (C°/m)
<u>Suite 1</u>						
GR	828m	33.3 <sup>0</sup>	N.A.	3.5 hours	N.A.	N.A.
<u>Suite 2</u>						
DLTE	3317m	121.1 <sup>0</sup>	2 hours	23.5 hours	127 <sup>0</sup>	0.033
LDTA	"	114.5 <sup>0</sup>	"	15.5 hours	"	"
DLL	"	104.5 <sup>0</sup>	"	8.0 hours	"	"
<u>Suite 3</u>						
RFT	3521.5m	132.0 <sup>0</sup>	1.5 hours	39.5 hours	134 <sup>0</sup>	0.034
BHC	"	120.0 <sup>0</sup>	"	20.0 hours	"	"
LDTC	"	106.6 <sup>0</sup>	"	8.0 hours	"	"

17821/17

FIGURES

# LOCALITY MAP VEILFIN-1

SCALE 1:250 000

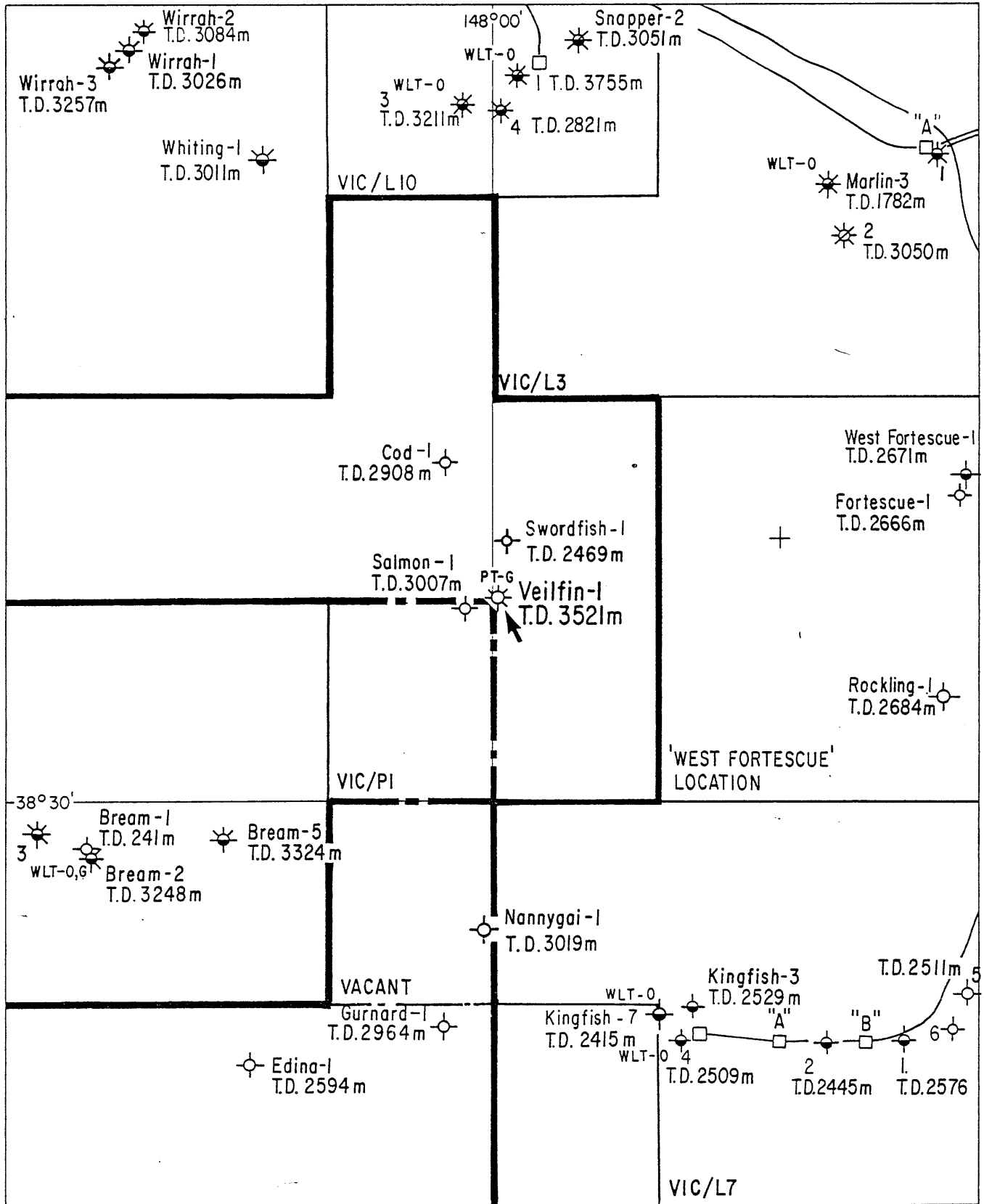


FIG. 1

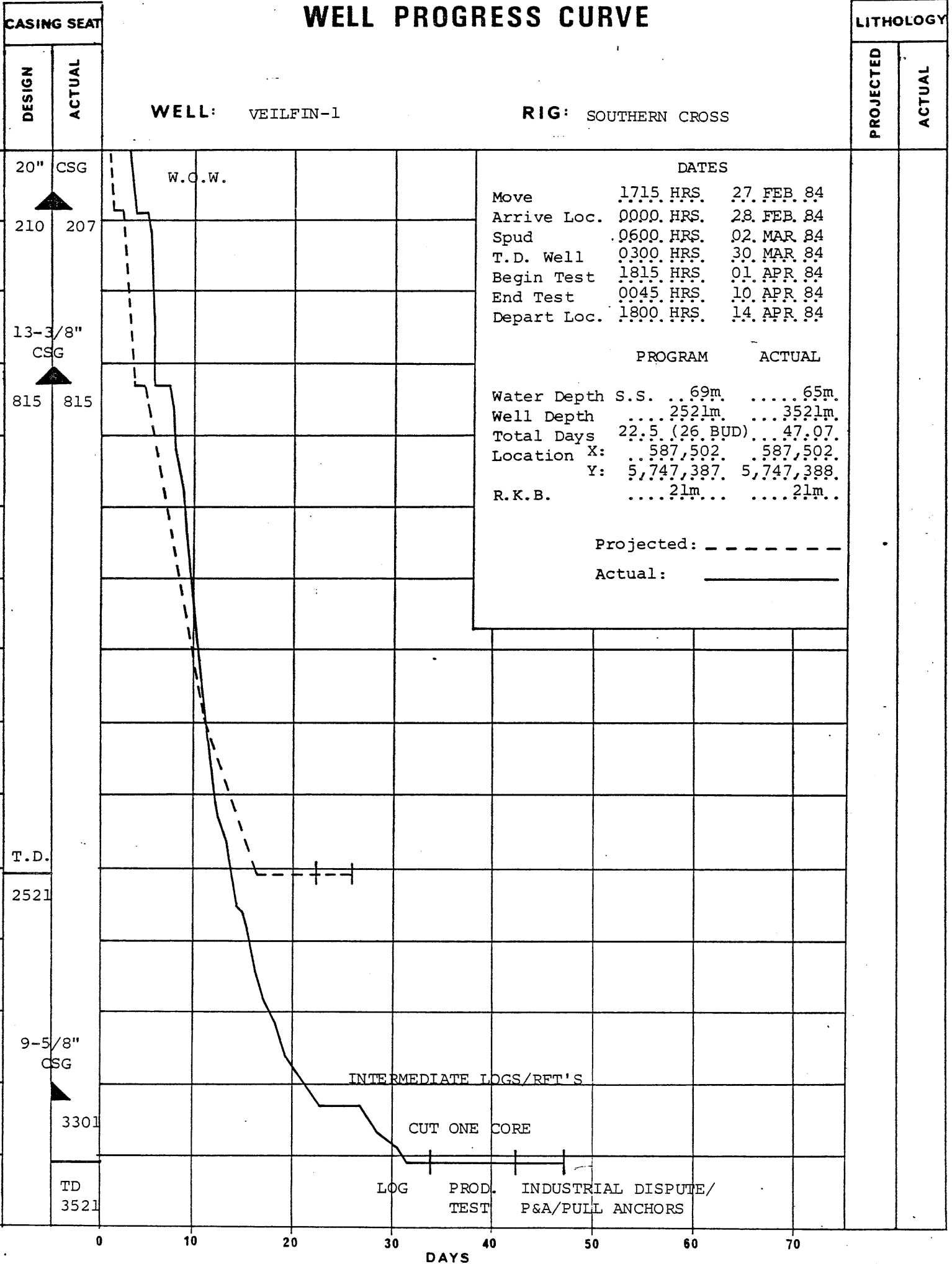


FIGURE 2.

# WELL PROGRESS CURVE

WELL: VEILFIN-1

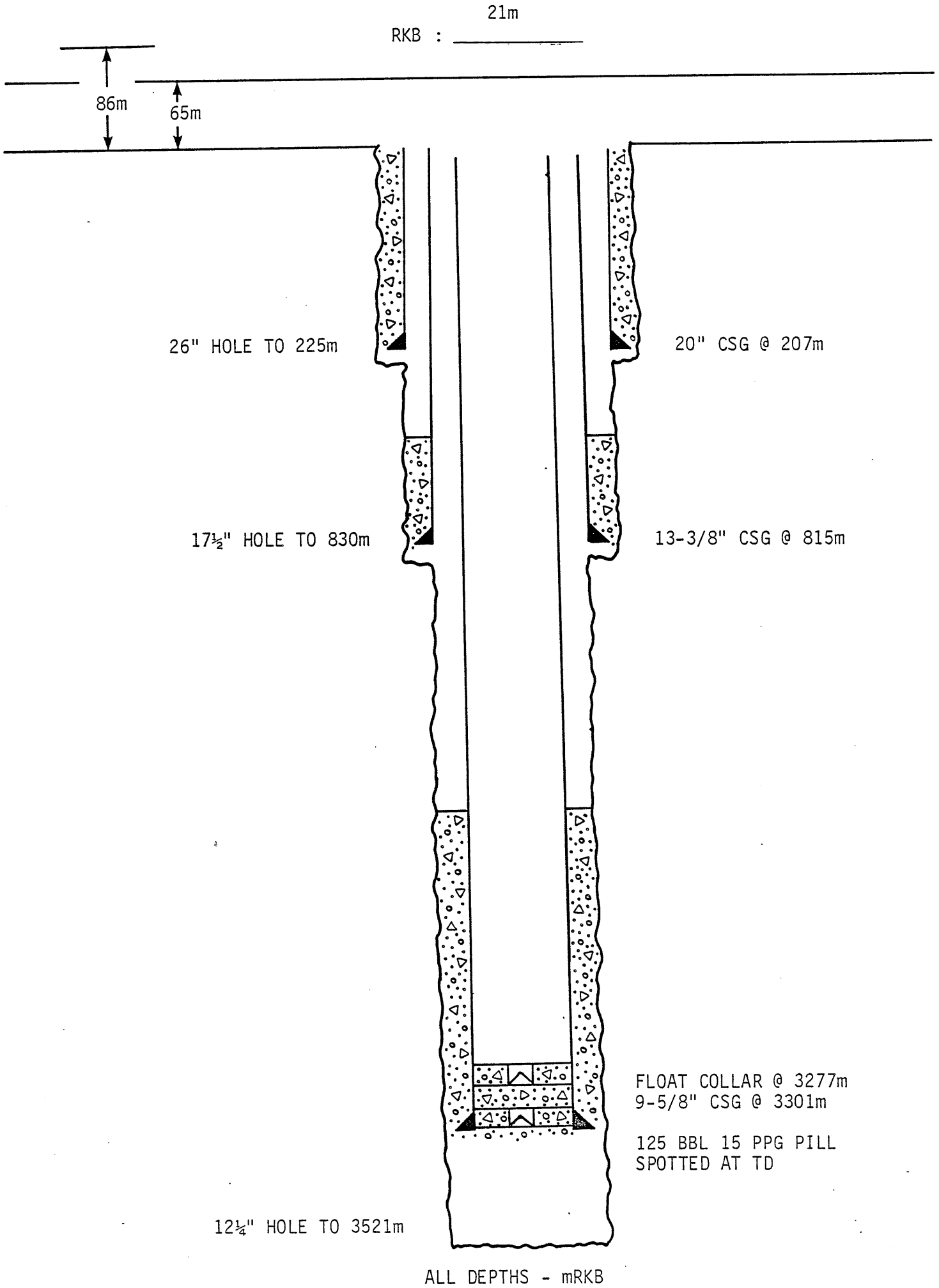
RIG: SOUTHERN CROSS



WELLBORE SCHEMATIC

FIGURE 3.

VEILFIN-1



ABANDONMENT SCHEMATIC

FIGURE 4.

VEILFIN-1

RKB : 21m

86m

65m

20" CSG CUT @ 94m

13-3/8" CSG CUT @ 187m

20" CSG @ 207m

9-5/8" CSG CUT @ 325m

13-3/8" CSG @ 815m

MODEL "D" PACKER @ 317m

PERFS @ 3185 - 3194m

9-5/8" CSG @ 3301m

TD @ 3521m

PLUG NO. 3 215 - 125m

505 SX SQUEEZED 80 SX INTO ANNULUS. PRESSURE TESTED TO 500 PSI.

13-3/8" BRIDGE PLUG @ 260m

PLUG NO. 2 375 - 275m

235 SX SQUEEZED 52 SX INTO ANNULUS. PRESSURE TESTED TO 1500 PSI.

9-5/8" BRIDGE PLUG @ 2985m  
PRESSURE TESTED TO 4000 PSI.

PLUG NO. 1 3200 - 3100m

120 SX

FLOAT COLLAR @ 3277m

125 BBL 15 PPG PILL SPOTTED AT TD.

ALL DEPTHS - m RKB





APPENDIX 1

APPENDIX 1

LITHOLOGICAL DESCRIPTIONS

VEILFIN-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Descriptions</u>
225 - 230m	40	SANDSTONE: medium to very coarse grained, subrounded to subangular, common light brown to orange iron oxide staining, loose quartz grains, clear to cream.
	40	CEMENT: phenolphthalein positive.
	20	FOSSILS: common forams, bryozoan, sponge spicules, shell fragments, echinoid spines and shells, coral, minor gastropods.
230 - 240m	60	FOSSILS: bryozoan and shell fragments most common, otherwise as above.
	30	CEMENT: phenolphthalein positive.
	10	SANDSTONE: as above.
240 - 250m	80	CALCARENITE: fine to very fine grained, light grey, moderately well rounded, moderately well sorted calcareous grains set in calcareous matrix.
	20	FOSSILS: as above.
	Trace	SANDSTONE: as above.
	Trace	CEMENT.
250 - 260m	85	CALCARENITE: as above.
	15	FOSSILS: as above.
	Trace	SANDSTONE: as above.
	Trace	CEMENT.
260 - 270m	80	CALCARENITE: as above.
	15	FOSSILS: as above.
	05	SANDSTONE: as above.
	Trace	CEMENT.
270 - 280m	85	CALCARENITE: as above.
	15	FOSSILS: as above.
	Trace	SAND: as above.
280 - 290m	90	CALCARENITE: as above.
	10	FOSSILS: as above.
	Trace	SAND: as above.
290 - 300m	90	CALCARENITE: as above.
	10	FOSSILS: as above.
	Trace	SAND: as above.
300 - 310m	80	CALCARENITE: as above.
	20	FOSSILS: as above.
310 - 320m	70	CALCARENITE: as above.
	30	FOSSILS: as above.
	Trace	SAND.
320 - 330m	70	CALCARENITE: as above.
	30	FOSSILS: as above.
330 - 340m	70	CALCARENITE: as above.
	30	FOSSILS: as above.
340 - 350m	85	CALCARENITE: as above.
	15	FOSSILS: as above.
350 - 360m	85	CALCARENITE: as above.
	15	FOSSILS: as above.



360 - 370m	90 10 Trace	CALCARENITE: as above. FOSSILS: as above. SAND: coarse, well rounded, rare.
370 - 380m	90 10	CALCARENITE: as above. FOSSILS: as above.
380 - 390m	90 10 Trace	CALCARENITE: as above. FOSSILS: as above. SAND: as above.
390 - 400m	95 05	CALCARENITE: as above. FOSSILS: as above.
400 - 410m	95 05	CALCARENITE: as above. FOSSILS: as above.
410 - 420m	95 05	CALCARENITE: as above. FOSSILS: as above.
420 - 430m	95  05	CALCARENITE: Light grey to very light grey, moderately hard, fine grained, poorly sorted calcareous cement. FOSSILS: Bryozoans, molluscs, forams.
430 - 440m	95 05	CALCARENITE: as above. FOSSILS: as above.
440 - 450m	95 05	CALCARENITE: as above. FOSSILS: as above.
450 - 460m	95 05	CALCARENITE: as above. FOSSILS: as above.
460 - 470m	95 05	CALCARENITE: as above. FOSSILS: as above.
470 - 480m	95 05	CALCARENITE: as above. FOSSILS: as above.
480 - 490m	95 05	CALCARENITE: as above. FOSSILS: as above.
490 - 500m	95 05	CALCARENITE: as above. FOSSILS: as above.
500 - 510m	95 05	CALCARENITE: as above. FOSSILS: as above.
510 - 520m	95 05	CALCARENITE: as above. FOSSILS: as above.
520 - 530m	95 05	CALCARENITE: as above. FOSSILS: as above.
530 - 540m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
540 - 550m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
550 - 560m	100  Trace	CALCARENITE: medium grey, moderately hard, fine grained, subangular to subrounded, well sorted calcareous grains set in calcite cement. Minor very fine grained glauconite. FOSSILS: dominantly bryozoan, occasional shell fragments.

560 - 570m	100 Trace	CALCARENITE: minor carbonaceous flecks, otherwise as above. FOSSILS: as above.
570 - 580m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
580 - 590m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
590 - 600m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
600 - 610m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
610 - 620m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
620 - 630m	100 Trace	CALCARENITE: matrix/cement supported in part. Otherwise as above. FOSSILS: as above.
630 - 640m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
640 - 650m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
650 - 660m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
660 - 670m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
670 - 680m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
680 - 690m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
690 - 700m	100 Trace	CALCARENITE: as above. FOSSILS: very rare.
700 - 710m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
710 - 720m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
720 - 730m	100 Trace	CALCARENITE: as above. FOSSILS: as above.
730 - 740m	100 Trace Trace	CALCARENITE: medium grey, fine grained, moderately hard, subangular to subrounded, well sorted, with calcite cement, minor glauconite. FOSSILS: dominantly bryozoan, minor shell fragments and echinoid spines. CEMENT
740 - 750m	100 Trace	CALCARENITE: very fine to fine grained, as above. FOSSILS: as above.
750 - 760m	100 Trace	CALCARENITE: as above. FOSSILS: as above.

760 - 770m	100 Trace	CALCARENITE: as above, fine grained. FOSSILS: as above.
770 - 780m	100 Trace	CALCARENITE/CALCISILTITE: fine to very fine grained, grading to silt size calcareous grains in calcite matrix, otherwise as above. FOSSILS: as above.
780 - 790m	100 Trace	CALCARENITE/CALCISILTITE: as above. FOSSILS: as above.
790 - 800m	100 Trace	CALCARENITE/CALCISILTITE: as above, slightly harder. FOSSILS: as above, minor pellets.
800 - 810m	100 Trace	CALCARENITE/CALCISILTITE: as above. FOSSILS: as above.
810 - 820m	100 Trace	CALCARENITE/CALCISILTITE: as above. FOSSILS: as above.
820 - 830m	100 Trace	CALCARENITE/CALCISILTITE: as above. FOSSILS: as above.
830 - 835m	100 Trace	CALCARENITE/CALCISILTITE: medium grey, firm, fine grained to very fine grained to silt size, subangular to subrounded, poor to moderate sorting, carbonate cement/mud matrix, minor heavy minerals, rare fossils. CEMENT
835 - 840m	100	CALCARENITE/CALCISILTITE: as above.
840 - 845m	100	CALCARENITE/CALCISILTITE: as above.
845 - 850m	100	CALCARENITE/CALCISILTITE: as above.
850 - 855m	100	CALCARENITE/CALCISILTITE: as above.
855 - 860m	100	CALCARENITE/CALCISILTITE: as above.
860 - 865m	100	CALCARENITE/CALCISILTITE: as above.
865 - 870m	100	CALCARENITE/CALCISILTITE: as above.
870 - 875m	100	CALCARENITE/CALCISILTITE: as above.
875 - 880m	100	CALCARENITE/CALCISILTITE: as above.
880 - 885m	100	CALCARENITE/CALCISILTITE: as above.
885 - 890m	100	CALCARENITE/CALCISILTITE: as above.
890 - 895m	100	CALCARENITE/CALCISILTITE: as above.
895 - 900m	100	CALCARENITE/CALCISILTITE: as above.
900 - 905m	100	CALCARENITE/CALCISILTITE: as above.
905 - 910m	100	CALCARENITE/CALCISILTITE: as above.
910 - 915m	100	CALCARENITE/CALCISILTITE: as above.
915 - 920m	100	CALCARENITE/CALCISILTITE: as above.
920 - 925m	100	CALCARENITE/CALCISILTITE: as above.

925 - 930m	100	CALCARENITE/CALCISILTITE: as above.
930 - 935m	100	CALCARENITE/CALCISILTITE: calcisiltite more predominant, otherwise as above.
935 - 940m	100	CALCARENITE/CALCISILTITE: calcisiltite more predominant, otherwise as above.
940 - 945m	100	CALCARENITE/CALCISILTITE: as above.
945 - 950m	100	CALCARENITE/CALCISILTITE: as above.
950 - 955m	100	CALCARENITE/CALCISILTITE: as above.
955 - 960m	100	CALCARENITE/CALCISILTITE: medium light grey to medium grey, firm, fine grained to predominantly very fine grained to silt, subangular to subrounded, poor to moderate sorting, calcareous cement (muddy), rare fossils.
960 - 965m	100	CALCARENITE/CALCISILTITE: as above.
965 - 970m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
970 - 975m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
975 - 980m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
980 - 985m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
985 - 990m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
990 - 995m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
995 - 1000m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
1000 - 1005m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
1005 - 1010m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
1010 - 1015m	100	CALCARENITE/CALCISILTITE: predominantly calcisiltite, otherwise as above.
1015 - 1020m	100	CALCARENITE/CALCISILTITE: medium light grey to medium grey, moderately hard, very fine grained to silt, subangular to subrounded, poorly to moderately sorted, calcareous cement (muddy), rare fossils (forams, shell fragments).
1020 - 1025m	100	CALCARENITE/CALCISILTITE: as above.
1025 - 1030m	100	CALCARENITE/CALCISILTITE: as above.
1030 - 1035m	100	CALCARENITE/CALCISILTITE: as above.
1035 - 1040m	100	CALCARENITE/CALCISILTITE: as above.
1040 - 1045m	100	CALCARENITE/CALCISILTITE: as above.

1050 - 1055m	100	CALCARENITE/CALCISILTITE: as above.
1055 - 1060m	100	CALCARENITE/CALCISILTITE: as above.
1060 - 1065m	100	CALCARENITE/CALCISILTITE: as above.
1065 - 1070m	100 Trace	CALCARENITE/CALCISILTITE: as above. SILTSTONE; dark grey, moderately hard, subangular to subrounded, poor to underatedly sorted mud matrix, fine grained carbonaceous material present.
1070 - 1075m	80 20	CALCARENITE/CALCISILTITE: as above. SILTSTONE: as above.
1075 - 1080m	80  20	CALCARENITE/CALCISILTITE; medium light grey to medium grey, moderately hard, very fine ground to silt, subangular to subrounded, poor to moderately sorted, calcareous cement (muddy). SILTSTONE; dark grey, moderately hard, subangular to subrounded, poor to moderately sorted, mud matrix, fine grained carbonaceous material present.
1080 - 1085m	80 20	CALCARENITE/CALCISILTITE: as above. SILTSTONE: as above.
1085 - 1090m	95  05	CALCARENITE/CALCISILTITE: as above, rare forams. SILTSTONE: as above.
1090 - 1095m	80 20	CALCARENITE/CALCISILTITE: as above. SILTSTONE: as above.
1095 - 1100m	100	CALCARENITE/CALCISILTITE: as above
1100 - 1105m	100	CALCARENITE/CALCISILTITE: as above.
1105 - 1110m	100	CALCARENITE/CALCISILTITE: as above.
1110 - 1115m	100 Trace	CALCARENITE/CALCISILTITE: as above. CLAYSTONE; pale grey.
1115 - 1120m	60  40	CALCISILTITE; grading to very fine grained calcarenite, pale green-grey, medium hardness. CALCISILTITE; grading to very fine grained calcarenite, light grey, soft to medium hardness.
1120 - 1125m	60 40	CALCISILTITE: light green, as above CALCISILTITE: light green, as above.
1125 - 1130m	70  Trace	CALCISILTITE: light green, as above. CALCISILTITE: light grey, as above. FOSSILS: forams, bryozoan.
1130 - 1135m	50 40 10	CALCISILTITE: light grey, as above. CALCISILTITE: light green, as above. CALCISILTITE: very pale grey, very soft.
1135 - 1140m	90 10	CALCISILTITE: light green and grey, as above. CALCISILTITE: as above.
1140 - 1145m	90  10	CALCISILTITE: as above, grading to a very fine grained calcarenite. CALCISILTITE: as above.

1145 - 1150m	100 Trace	CALCISILTITE: light green and light grey. as above. FOSSILS: forams.
1150 - 1155m	100 Trace	CALCISILTITE: as above. CALCISILTITE: as above.
1155 - 1160m	100 Trace Trace	CALCISILTITE: dominantly light grey, as above. CALCISILTITE: as above. FOSSILS: forams.
1160 - 1165m	100	CALCISILTITE: light grey, soft to moderately hard.
1165 - 1170m	100 Trace	CALCISILTITE: dominantly light grey to medium light grey. Firm sub-angular cuttings. Slightly sandy in part. Minor carbonaceous flecking. CALCILUTITE: light grey to medium light grey, soft sub-angular cuttings. Slightly silty, slightly micro carbonaceous.
1170 - 1175m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1175 - 1180m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1180 - 1185m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1185 - 1190m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1190 - 1195m	100	CALCISILTITE: as above, slightly sandy in part, occasional forams.
1195 - 1200m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1200 - 1205m	100 Trace	CALCISILTITE: as above CALCILUTITE: as above.
1205 - 1210m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1210 - 1215m	100	CALCISILTITE: as above. Small amounts of gumbo over the shakers.
1215 - 1220m	100	CALCISILTITE: as above.
1220 - 1225m	100	CALCISILTITE: as above. Small amounts of gumbo over the shakers.
1225 - 1230m	100	CALCISILTITE: medium light grey, soft, slightly silty, slightly microcarbonaceous. Gumbo over the shakers suggests greater % calcilutite down-hole.
1230 - 1235m	100 Trace	CALCISILTITE: as above. CALCISILTITE: as above.
1235 - 1240m	100	CALCISILTITE: as above.
1240 - 1245m	100	CALCISILTITE: as above.
1245 - 1250m	100	CALCISILTITE: as above.

1250 - 1255m	100	CALCISILTITE: as above. Small amounts of gumbo over the shakers.
1255 - 1260m	100	CALCISILTITE: medium light grey to medium grey, moderately hard grains predominantly silt rarely grading to very fine grained calcarenite, sub-angular to sub-rounded, poor to moderately sorted, muddy, calcareous cement. Minor carbonaceous flecking, rare fossils, rare glauconite. Small amount of gumbo over the shakers.
1270 - 1275m	100	CALCISILTITE: as above.
1275 - 1280m	100	CALCISILTITE: as above.
1280 - 1285m	100	CALCISILTITE: as above.
1285 - 1290m	100	CALCISILTITE: as above.
1290 - 1295m	100 Trace	CALCISILTITE: as above. CALCILUTITE; medium light grey, soft, slightly carbonaceous, gumbo present over shakers.
1295 - 1300m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1300 - 1305m	100  Trace	CALCISILTITE; medium light grey to medium grey, soft to firm, sub-angular to subrounded, minor very fine grained calcarenite, predominantly silt, poor to moderate sorting, muddy calcareous cement, rare carbonaceous flecking. CALCILUTITE; medium grey, soft, slightly calcareous. Gumbo over the shakers.
1305 - 1310m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1310 - 1315m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1315 - 1320m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1320 - 1325m	100  Trace	CALCISILTITE; minor glauconite, otherwise as above. CALCILUTITE. Gumbo over the shakers.
1325 - 1330m	100  Trace	CALCISILTITE; moderately hard, otherwise as above. CALCILULITE.
1330 - 1335m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1335 - 1340m	90  10	CALCISILTITE; Medium light to medium grey, soft, slightly sandy, sub-rounded cuttings. Minor heavy minerals, glauconite and microcarbonaceous material. Rare forams CALCILUTITE; Light grey, soft, rounded cuttings. Slightly silty, minor micro-carbonaceous material. Abundant clay gumbo over the shakers.

1340 - 1345m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
1345 - 1350m	100	CALCISILTITE: as above
1350 - 1355m	100	CALCISILTITE: as above.
1355 - 1360m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above
1360 - 1365m	100	CALCISILTITE: as above.
1365 - 1370m	100	CALCISILTITE: as above.
1370 - 1375m	100	CALCISILTITE: as above.
1375 - 1380m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1380 - 1385m	100	CALCISILTITE: as above.
1385 - 1390m	100	CALCISILTITE: as above.
1390 - 1395m	100	CALCISILTITE: as above.
1395 - 1400m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above
1400 - 1405m	100 Trace	CALCISILTITE: as above. CALCILUTITE: as above.
1405 - 1410m	100	CALCISILTITE: as above.
1410 - 1415m	100	CALCISILTITE: as above.
1415 - 1420m	100	CALCISILTITE: as above, minor glauconite.
1420 - 1425m	100	CALCISILTITE: as above.
1425 - 1430m	100	CALCISILTITE: as above.
1430 - 1435m	100	CALCISILTITE: as above.
1435 - 1440m	90 10	CALCISILTITE: as above. CALCILUTITE: as above. Abundant gumbo over the shakers.
1440 - 1445m	100	CALCISILTITE: as above.
1445 - 1450m	100	CALCISILTITE: Medium to medium dark grey, soft to firm, very argillaceous, sub-angular to platy cuttings. Slightly sandy in part, grading to very fine grained sandstone. Minor micro-carbonaceous material and glauconite, rare forams. Abundant gumbo over the shakers.
1450 - 1455m	100	CALCISILTITE: as above.
1455 - 1460m	100	CALCISILTITE: as above.
1460 - 1465m	100	CALCISILTITE: as above.
1465 - 1470m	100	CALCISILTITE: as above.
1470 - 1475m	100	CALCISILTITE: as above, 10% Medium light grey.
1475 - 1480m	100	CALCISILTITE: as above, 20% Medium light grey.



1480 - 1485m	100	CALCISILTITE: as above, 50% Medium grey, 50% Medium light grey.
1485 - 1490m	100	CALCISILTITE: as above, 50% Medium grey, 50% Light grey.
1490 - 1495m	100	CALCISILTITE: as above, 50% Medium grey, 50% Light grey.
1495 - 1500m	100	CALCISILTITE: as above.
1500 - 1505m	100	CALCISILTITE: as above.
1505 - 1510m	100	CALCISILTITE: as above.
1510 - 1515m	100	CALCISILTITE: as above.
1515 - 1520m	100	CALCISILTITE; Medium grey to medium dark grey, firm to moderately hard, silt with minor very fine grained calcarenite, subangular to subrounded, poor to moderately sorted, muddy calcareous cement, minor glauconite, rare fossils - bryozoans, forams. Abundant gumbo over the shakers.
1520 - 1525m	100	CALCISILTITE: as above.
1525 - 1530m	100	CALCISILTITE: as above.
1530 - 1535m	100	CALCISILTITE: as above.
1535 - 1540m	100	CALCISILTITE: as above.
1540 - 1545m	100	CALCISILTITE: as above.
1545 - 1550m	100 Trace	CALCISILTITE: as above. CALCARENITE: Medium grey to medium dark grey, moderately hard, very fine grained, subangular to subrounded, poor to moderately sorted, muddy calcareous cement.
1550 - 1555m	100	CALCISILTITE: as above.
1555 - 1560m	100	CALCISILTITE: Medium light grey to medium dark grey, otherwise as above.
1560 - 1565m	100	CALCISILTITE: as above.
1565 - 1570m	100	CALCISILTITE: as above.
1570 - 1575m	100	CALCISILTITE: as above.
1575 - 1580m	100	CALCISILTITE: Medium light grey to medium dark grey, firm to moderately hard, rare very fine grained calcarenite, subangular to subrounded, poor to moderately sorted, muddy calcareous cement. Minor glauconite, rare forams, abundant gumbo over the shakers.
1580 - 1585m	100	CALCISILTITE: as above.
1585 - 1590m	100	CALCISILTITE: as above.
1590 - 1595m	100	CALCISILTITE: as above.
1600 - 1605m	100	CALCISILTITE: as above.
1605 - 1610m	100	CALCISILTITE: as above.

1610 - 1615m	100	CALCISILTITE: as above. Abundant gumbo over the shakers.
1615 - 1620m	100	CALCISILTITE: as above.
1620 - 1625m	100	CALCISILTITE: as above.
1625 - 1630m	100	CALCISILTITE: as above.
1630 - 1635m	100	CALCISILTITE: as above.
1635 - 1640m	100	CALCISILTITE: as above.
1640 - 1645m	100	CALCISILTITE: as above.
1645 - 1650m	100	CALCISILTITE; Medium light grey to medium dark grey, soft to moderately hard, predominantly silt with rare fine grained calcarenite, poor to moderately sorted, muddy calcareous cement, minor glauconite, rare forams.
1650 - 1655m	100	CALCISILTITE: as above.
1655 - 1660m	100	CALCISILTITE: as above.
1660 - 1665m	100	CALCISILTITE: as above.
1665 - 1670m	100	CALCISILTITE: as above.
1670 - 1675m	100	CALCISILTITE; Rare glauconite. As above.
1675 - 1680m	100	CALCISILTITE: Rare glauconite. As above. Abundant gumbo over the shakers.
1680 - 1685m	100	CALCISILTITE; Rare glauconite. As above.
1685 - 1690m	100	CALCISILTITE; Medium light grey to medium dark grey, soft to firm, angular to platy cuttings, silt grains in muddy calcareous cement, rare glauconite, rare forams.
1690 - 1695m	100	CALCISILTITE: as above.
1695 - 1700m	100	CALCISILTITE: as above. Abundant gumbo over the shakers.
1700 - 1705m	100	CALCISILTITE: as above.
1705 - 1710m	100	CALCISILTITE: as above.
1710 - 1715m	100	CALCISILTITE: as above.
1715 - 1720m	100	CALCISILTITE: as above.
1720 - 1725m	100	CALCISILTITE: as above.
1725 - 1730m	100	CALCISILTITE: as above.
1730 - 1735m	100	CALCISILTITE: as above.
1735 - 1740m	90 Trace	CALCISILTITE: as above. CALCARENITE: White to very light grey, firm, very fine grained to medium grained, rare glauconite grains.
1740 - 1745m	100	CALCISILTITE: as above.

1745 - 1750m	100	CALCISILTITE: as above.
1750 - 1755m	100	CALCISILTITE: as above.
1755 - 1760m	100	CALCISILTITE: as above.
1760 - 1765m	100	CALCISILTITE: as above.
1765 - 1770m	100	CALCISILTITE: as above.
1770 - 1775m	100 Trace	CALCISILTITE: as above. FOSSILS, FOSSIL FORAMS.
1775 - 1780m	100	CALCISILTITE: as above.
1780 - 1785m	100	CALCISILTITE: as above.
1785 - 1790m	100	CALCISILTITE: as above.
1790 - 1795m	100	CALCISILTITE: as above.
1795 - 1800m	100	CALCISILTITE; Very light grey to medium grey, very soft, small to dominant proportion of silt sized particles, marly, lightly carbonaceous matrix, Trace forams, Trace pyrite.
1800 - 1805m	100	CALCISILTITE: as above.
1805 - 1810m	100	CALCISILTITE: as above.
1810 - 1815m	100	SHALE; very light grey to medium grey, calcareous, grading to siltstone in part.
1815 - 1820m	100	SHALE: as above.
1820 - 1825m	100	SHALE: as above.
1825 - 1830m	100	SHALE: as above.
1830 - 1835m	100	SHALE: as above.
1835 - 1840m	100	SHALE: as above.
1840 - 1845m	100	SHALE: as above.
1845 - 1850m	100	SHALE: as above.
1850 - 1855m	100	SHALE: as above.
1855 - 1860m	100	SHALE: as above.
1860 - 1865m	100	SHALE; calcareous, as above. Trace of very rare fine pyrite and glauconite pellets.
1865 - 1870m	100	SHALE; as above. Trace siltstone, hard, quartzose.
1870 - 1875m	100	SHALE; 80% Medium grey, silty, moderately hard, subfissile texture. 20% Medium light grey to light grey, calcareous marl with minor heavy minerals and glauconite.
1875 - 1880m	100	SHALE; 80% Medium grey siltstone, as above, minor quartz grains. Sub fissile. 20% marl as above. Sub fissile.

1880 - 1885m	100	SHALE; Medium grey, moderately hard, silty to argillaceous, calcareous. Trace, light grey to medium light grey calcareous marl with minor glauconite.
1885 - 1890m	100	SHALE; Medium grey calcareous, argillaceous as above.
1890 - 1895m	100	SHALE; Calcareous as above. Very argillaceous grading to calcareous mudstone.
1895 - 1900m	100	SHALE: as above.
1900 - 1905m	100	SHALE: as above.
1905 - 1910m	100	SHALE: as above.
1910 - 1915m	100	SHALE: as above.
1915 - 1920m	100	SHALE; Medium light to medium grey, soft, argillaceous, calcareous grains and matrix, grains are silt sized. Sub fissile, rare glauconite pellets, very rare microcarbonaceous flecks and pyrite.
1920 - 1925m	100	SHALE: as above.
1925 - 1930m	100	SHALE: as above.
1930 - 1935m	100	SHALE: as above.
1935 - 1940m	100	SHALE: as above
1940 - 1945m	100	SHALE: as above.
1945 - 1950m	100	SHALE: as above.
1950 - 1955m	100 Trace	SHALE: as above. SILTSTONE; Calcareous grains and matrix, up to 20% glauconite. Minor argillaceous material, minor medium to fine grained sub-rounded quartz grains.
1955 - 1960m	100	SHALE: as above.
1960 - 1965m	100 Trace	SHALE: as above. SILTSTONE: as above.
1965 - 1970m	100 Trace	SHALE: as above. SILTSTONE: as above.
1970 - 1975m	100 Trace	SHALE: as above. SILTSTONE: as above.
1975 - 1980m	100 Trace	SHALE: as above. SILTSTONE: as above.
1980 - 1985m	95 05	SHALE: as above. SANDSTONE; Calcareous grains, minor quartz grains and 20% emerald green glauconite pellets. Very fine to fine grained, sub-rounded, with argillaceous matrix. Typical Gurnard greensand.

1985 - 1989.2m	50	SHALE: as above.
	50	SANDSTONE; 40% Light green with abundant glauconite pellets, as above. 60% Light brown to mustard, firm very argillaceous. Contains calcareous grains, quartz grains and approximately 20% glauconite pellets. No fluorescence. No cut. No gas show.
1989.2 - 1995m	70	SHALE; Medium light grey to medium grey, moderately soft, very argillaceous, slightly sandy in part. Probably contains some cavings after bit change. Very calcareous.
	30	SANDSTONE; Glauconite rich, common sub-rounded medium to fine grained quartz. Argillaceous matrix. No fluorescence. No cut. No gas show.
1995 - 2000m	90	SHALE: as above.
	10	SANDSTONE: as above. Slightly less glauconite rich.
2000 - 2005m	60	SHALE: as above.
	40	SANDSTONE: as above.
2005 - 2010m	60	SHALE: as above.
	40	SANDSTONE: as above.
2010 - 2015	50	SHALE: as above.
	50	SANDSTONE: as above.
2015 - 2020	10	SHALE: as above.
	90	SANDSTONE: off white to clear loose grains, medium to very coarse grained, rounded to well rounded, well sorted, common pyrite, common pyrite coating on quartz grains. 5%, slight mineral fluorescence. No cut. No crush cut. No gas show.
2020 - 2025m	100	SANDSTONE: as above.
	Trace	COAL; black, platy to conchoidal fracture, bright. No cut. No crush cut. 1% mineral fluorescence.
2025 - 2030m	100	SANDSTONE: as above.
	Trace	COAL: as above. No cut. No crush cut. Rare mineral fluorescence.
2030 - 2035m	90	SANDSTONE: as above.
	10	COAL: as above. No cut. No crush cut. Rare mineral fluorescence.
2035 - 2040m	90	SANDSTONE: as above.
	10	COAL: as above. Rare mineral fluorescence. No cut. No crush cut.
2040 - 2045m	95	SANDSTONE: as above.
	05	COAL: as above. Rare mineral fluorescence. No cut. No crush cut.
2045 - 2050m	95	SANDSTONE: as above.
	05	COAL: as above. No fluorescence
2050 - 2055m	100	SANDSTONE: as above.
	Trace	COAL: as above. No fluorescence.

2055 - 2060m	100 Trace Trace	SANDSTONE: as above. COAL: as above. SHALE: as above. No fluorescence.
2060 - 2065m	100 Trace Trace	SANDSTONE: as above. SHALE: as above. COAL: as above. Rare mineral fluorescence. No cut. No crush cut.
2065 - 2070m	100 Trace Trace	SANDSTONE: as above. SHALE: as above. COAL: as above. No fluorescence.
2070 - 2075m	100 Trace	SANDSTONE: as above. SHALE: as above. No fluorescence.
2075 - 2080m	100	SANDSTONE: as above. No fluorescence.
2080 - 2085m	100 Trace	SANDSTONE: as above. SHALE: as above. Rare mineral fluorescence. No cut. No crush cut.
2085 - 2090m	100	SANDSTONE: as above. No fluorescence.
2090 - 2095m	100	SANDSTONE: as above. No fluorescence.
2095 - 2100m	100	SANDSTONE: as above, with more common pyrite.
2100 - 2105m	100	SANDSTONE: as above and common pyrite.
2105 - 2110m	100 Trace Trace	SANDSTONE: as above. SHALE: as above. COAL: as above. No fluorescence.
2110 - 2115m	100 Trace Trace	SANDSTONE: as above. COAL: as above. SILTSTONE: as above.
2115 - 2120m	95  05  Trace	SANDSTONE: Clear to milky, medium to very coarse grained, well rounded to angular, moderately well sorted, loose quartz. Minor pyrite cement, minor rose coloured quartz. Rare pyrite cemented medium grained aggregates. No fluorescence. No cut. Excellent visible porosity. COAL: Black, moderately hard, brittle, vitreous to earthy, slightly silty and argillaceous in part. SILTSTONE: Medium grey to medium dark brown, very argillaceous, minor carbonaceous material. No show.
2120 - 2125m	80 15 05	SANDSTONE: as above. COAL: as above. SILTSTONE: as above.
2125 - 2130m	60 35 05	COAL: as above. SANDSTONE: as above. SILTSTONE: as above.

2130 - 2135m	50	COAL: as above.
	40	SANDSTONE: 80% loose quartz as above. 20% medium to fine grained, silica cemented aggregates. Moderately well sorted, sub-rounded to sub angular. Has associate 5% moderately bright spotty yellow minimal fluorescence. Slightly calcareous matrix is probably fluorescing. No visibility. No cut.
2135 - 2140m	10	SILTSTONE: as above.
	65	SILTSTONE: as above.
	20	SANDSTONE: as above.
2140 - 2145m	15	COAL: as above.
	60	SANDSTONE: as above. Loose grains are angular to sub-angular. No cut.
	20	COAL: as above.
2145 - 2150m	20	SILTSTONE: as above. Carbonaceous.
	70	SANDSTONE: as above. No show.
	15	SILTSTONE: as above.
2150 - 2155m	15	COAL: as above.
	70	SANDSTONE: as above.
	15	SILTSTONE: as above.
2155 - 2160m	15	COAL: as above.
	65	SANDSTONE: Clear to milky white quartz grains, coarse to very coarse grained, moderately well rounded, moderate to very well sorted, unconsolidated, excellent porosity. 5% moderately bright spotty yellow mineral fluorescence. No cut.
	25	SILTSTONE: Medium light grey to medium dark grey, firm, sub-angular to sub-rounded, moderately well sorted, in part grading into very fine sandstone, muddy to slightly argillaceous matrix, micromicaceous.
2160 - 2165m	15	COAL: Black, firm to moderately hard, minor siltstone present, blocky.
	80	SANDSTONE: 80% as above. No shows. 20% sandstone aggregates, medium grey, moderately hard, fine to very fine grained, moderate to well sorted, muddy slightly carbonaceous matrix, slightly micromicaceous. No visible porosity.
	15	SILTSTONE: as above.
2165 - 2170m	05	COAL: as above.
	80	SANDSTONE: 80% sandstone. No shows. 20% sandstone aggregates.
	15	SILTSTONE: as above.
2170 - 2175m	05	COAL: as above.
	40	SANDSTONE: 60%, clear to milky white quartz grains, coarse to very coarse grained, unconsolidated, moderately well rounded to well rounded, well sorted, pyrite. Excellent porosity.
		40% sandstone aggregates, light grey to medium grey, moderately hard, medium to very fine grained, sub-rounded to well rounded, moderately well sorted, muddy matrix with possible silica cementation. No visible porosity. Rare mineral fluorescence. No shows.

	40	COAL: black, hard, blocky to conchoidal, silty to micromicaceous in part.
	20	SILTSTONE: Medium grey, firm to moderately hard, sub-angular to moderately well rounded, moderately well sorted, muddy matrix with rare silica and/or carbonate cement. No visible porosity.
2175 - 2180m	60	SANDSTONE: 70% as above. 30% sandstone aggregates as above. 2% moderately bright, spotty yellow mineral fluorescence. No cut.
	30	COAL: as above.
	10	SILTSTONE: as above.
2180 - 2185m	40	SANDSTONE: 80% as above - rare mineral fluorescence, no shows. 20% sandstone aggregates as above.
	40	COAL: as above.
	20	SILTSTONE: as above.
2185 - 2190m	60	SANDSTONE: 80% clear to milky quartz grains, coarse to very coarse grains, moderately to well rounded, well sorted, unconsolidated, excellent porosity, 5% moderately bright yellow spotty mineral fluorescence, no cut. 20% sandstone aggregates - medium light grey to medium grey, firm to moderately hard, fine to very fine grained, subangular to subrounded, moderately well sorted, calcareous and/or silica cementation of muddy matrix, no visible porosity.
	30	SILTSTONE: medium grey to medium dark grey, firm to moderately hard, subangular to subrounded, moderately well sorted, muddy matrix with possible silica cementation, pyritic.
	10	COAL: black, hard, blocky to conchoidal, occasionally earthy.
2190 - 2195m	80	COAL: black, hard, blocky to conchoidal.
	15	SANDSTONE: as above, no shows.
	5	SILTSTONE: as above.
2195 - 2200m	40	COAL: black, hard, blocky.
	40	SANDSTONE: 80% clear to milky white, unconsolidated, medium to very coarse grained, well sorted, subrounded to well rounded, excellent porosity, 10% moderately bright yellow spotty mineral fluorescence, no cut, no crush cut, no shows. 20% sandstone aggregates - medium light grey to medium dark grey, firm to moderately hard, fine to very fine grained, subangular to subrounded, moderately well sorted, muddy micromicaceous matrix with possible silica cementation, no visible porosity.
	20	SILTSTONE: as above.
2200 - 2205m	60	SANDSTONE: 60% clear to milky white quartz grains, unconsolidated, medium to very coarse grained, subrounded to rounded, moderately well sorted, excellent porosity. 20% moderately bright yellow spotty mineral fluorescence, no cut, no crush cut, no shows.



		40% sandstone aggregates - medium light grey to medium dark grey, firm to moderately hard, moderate sorting, muddy matrix with calcareous and/or silica cement, rare glauconite (possibly from cavings), no visible porosity.
	20	SILTSTONE: medium dark grey, moderately hard to hard, muddy matrix with possible 2 <sup>0</sup> calcareous/silica cement.
	20	COAL: black, hard, blocky, vitrinite.
2205 - 2210m	80	SANDSTONE: 60% no shows, as above. 40% sandstone aggregates as above.
	10	SILTSTONE: as above.
	10	COAL: as above.
2210 - 2215m	70	SANDSTONE: 70% no shows, mineral fluorescence as above. 30% sandstone aggregates, as above.
	20	COAL: as above.
	10	SILTSTONE: as above.
2215 - 2220m	70	COAL: as above.
	20	SANDSTONE: 80% sandstone - 5% moderately bright yellow spotty mineral fluorescence, no shows. 20% sandstone aggregates as above.
2225 - 2230m	60	SANDSTONE: 70% - clear to milky white quartz grains, unconsolidated, medium to coarse grained, angular to well rounded, moderately well sorted, minor pyrite, good porosity. 5% moderately bright yellow spotty mineral fluorescence, no cut, no crush cut, no shows. 30% sandstone aggregates - medium light grey to medium dark grey, moderately hard, medium to very fine grained, moderate sorting, silica cement, no visible porosity.
	30	SILTSTONE: medium grey to medium dark grey, firm, muddy matrix with possible silica cement.
	10	COAL: black, hard, blocky to conchoidal.
2230 - 2235m	80	SANDSTONE: 80% sandstone as above. 20% sandstone aggregates as above.
	20	SILTSTONE: as above.
	Trace	COAL: as above.
2235 - 2240m	80	SANDSTONE: 70% as above, no shows. 30% sandstone aggregates as above.
	20	SILTSTONE: as above.
	Trace	COAL: as above.
2240 - 2245m	80	SANDSTONE: 70% sandstone as above. 30% sandstone aggregates as above.
	20	SILTSTONE: as above.
	Trace	COAL: as above.
2245 - 2250m	90	SANDSTONE: 80% sandstone as above, no shows. 20% sandstone aggregates as above.
	10	SILTSTONE: as above.
	Trace	COAL
2250 - 2255m	70	COAL: black, hard, blocky, vitrinite.
	30	SANDSTONE: clear to milky white quartz grains, unconsolidated, subangular to moderately well rounded, medium to coarse grained, moderately well sorted, good porosity. Moderate bright yellow spotty mineral fluorescence, no cut, no crush cut.

	Trace	SILTSTONE: medium grey, firm to moderately hard, angular to platy cuttings.
2255 - 2260m	70	SILTSTONE: medium grey, firm, mud matrix, angular to platy cuttings.
	25	SANDSTONE: 30% clear to milky white quartz grains, unconsolidated, medium to coarse grained, subangular to rounded, moderately well sorted, good porosity. No cut, no crush cut, moderately bright yellow spotty mineral fluorescence, no shows. 70% sandstone aggregates - medium light grey to medium grey, moderately hard, medium to very fine grained, subangular to subrounded, poorly to moderately sorted, possible silica cement, no visible porosity.
	5	COAL: black, hard, blocky.
2260 - 2265m	40	SANDSTONE: 50% sandstone - as above, mineral fluorescence, no cut, no crush cut. 50% sandstone aggregates as above.
	40	SILTSTONE: as above.
	20	COAL: as above.
2265 - 2270m	60	COAL: as above.
	30	SILTSTONE: as above.
	10	SANDSTONE: 10% as above, no cut, no crush cut, mineral fluorescence as above; 80% sandstone aggregates as above.
2270 - 2275m	50	SANDSTONE: 20% sandstone as above, no cut, no crush cut, mineral fluorescence. 80% sandstone aggregates - as above, except predominantly fine to very fine grained.
	30	SILTSTONE: as above.
	20	COAL: as above.
2275 - 2280m	50	SANDSTONE: 20% clear to milky white quartz grains, unconsolidated, medium to coarse grained, angular to rounded, moderately well sorted, good porosity, no shows; 5% moderate bright yellow spotty mineral fluorescence. 80% sandstone aggregates - medium light grey to medium grey, moderately hard, fine to very fine grained, subangular to subrounded, moderately sorted, muddy argillaceous matrix with possible silica cement, no visible porosity.
	40	SILTSTONE: medium grey to medium dark grey, firm to moderately hard, angular to platy cuttings.
	10	COAL: hard, blacky, blocky to conchoidal.
2280 - 2285m	70	SANDSTONE: 40% sandstone as above, no shows, moderately bright yellow spotty mineral fluorescence.
	20	SILTSTONE: as above.
	10	COAL: as above.
2285 - 2290m	70	SANDSTONE: 5% sandstone as above, no shows, 10% mineral fluorescence. 95% sandstone aggregates as above, medium light grey to medium grey to brownish grey.
	20	SILTSTONE: as above.
	10	COAL: as above.

2290 - 2295m	80	SANDSTONE: 60% clear to milky white quartz grains, unconsolidated, predominantly medium to coarse grained with rare very coarse grains, subangular to subrounded, moderately well sorted, good porosity, no shows, moderately well sorted, good porosity, no shows; moderately bright yellow spotty mineral fluorescence. 40% sandstone aggregates - light medium grey to brownish grey, moderately hard, subangular to subrounded, medium to very fine grained, poor to moderately sorted, muddy matrix with possible silica cement,
	10	SILTSTONE: light medium grey to medium grey, firm, angular to platy cuttings.
	10	COAL: black, hard, blocky.
2295 - 2300m	70	SANDSTONE: 80% sandstone as above, dominantly medium grained, no shows, 5% mineral fluorescence. 20% sandstone aggregates as above.
	20	COAL: as above.
	10	SILTSTONE: as above.
2300 - 2305m	70	SILTSTONE: medium grey to brown, firm, sandy, very argillaceous, slightly micromicaceous, slightly carbonaceous in part. Subangular to platy cuttings.
	25	SANDSTONE: 50% loose, medium to coarse quartz grains. Subangular to subrounded, moderately well sorted, very good visual porosity. 50% aggregates of fine to medium grained quartz sand. Silica and fluorescing calcareous cements, no shows in either type.
	5	COAL: black, hard, slightly silty. Note: individual chips taken from sample (fluorescing ones) all proved to be calcareous cemented aggregates with no cut. When chloroethene added to sample tray, 2 or 3 chips gave moderately fast, moderately bright yellow/green cut - unable to identify origin of cut - possible kerogen in silty coal/carbonaceous siltstone cuttings - no heavies in gas, no gas peak.
2305 - 2310m	85	SILTSTONE: as above.
	15	SANDSTONE: as above, no shows.
	Trace	COAL: as above. Note: no cut observed with addition of chloroethene to tray.
2310 - 2315m	50	SANDSTONE: as above, no shows.
	30	COAL: as above.
	20	SILTSTONE: as above. Note: cut observed on addition of chloroethene. Cut is accompanied by dark brown hydrocarbon streaming from two silty coal/carbonaceous silt cuttings. Cuttings have earthy texture, are dark brown and have woody light brown flecks. Dark brown oil can be squeezed out of these spongy cuttings - kerogen, mature organics, no shows.
2315 - 2320m	50	SANDSTONE: 60% clear to milky, loose, medium to coarse grained, fair sorting, good porosity, no shows. 40% sandstone aggregates - white, hard, fine grained, well rounded, well sorted, silica cement, fair porosity, no shows.

	25	COAL: hard, bright, lustrous, blocky.
	25	SILTSTONE: light grey brown to medium grey, soft, elongate platy cuttings. Several carbonaceous siltstone cuttings gave medium streaming dark brown cut, bright yellow fluorescence - mature organics.
2320 - 2325m	40	SANDSTONE: 80% loose sand grains, as above, no shows. 20% sandstone aggregates, as above, no shows.
	55	SILTSTONE: as above.
	5	COAL: as above. A few carbonaceous siltstone cuttings give a medium streaming bright yellow cut, mature organics or "kerogen". 5% mineral fluorescence.
2325 - 2330m	80	COAL: as above.
	15	SILTSTONE: as above.
	5	SANDSTONE: as above, no shows. Scattered mineral fluorescence, no cut on chlorothene.
2330 - 2335m	90	COAL: as above.
	5	SANDSTONE: as above, no shows.
	5	SILTSTONE: as above, a few grains of very carbonaceous siltstone gave a slow to medium cut, bright yellow fluorescence - kerogen.
2335 - 2340m	40	SANDSTONE: 30% loose sand grains, clear to milky white, medium to very coarse grained, well rounded and well sorted, fine pyrite coating on some grains, no shows. 70% sandstone, white, hard, fine grained, well rounded and sorted, low porosity, silica and calcareous cements. No shows.
	40	SILTSTONE: light grey brown to medium grey, soft, grading to shale.
	20	COAL: black, vitreous, conchoidal fracture, one cutting of kerogen gave a moderate crush cut, bright yellow fluorescence.
2340 - 2345m	10	SANDSTONE: as above.
	60	COAL: as above.
	30	SILTSTONE: as above. One kerogen cutting gave a slow cut, strong crush cut, bright yellow fluorescence. Two siltstone grains gave a weak crush cut.
2345 - 2350m	20	SANDSTONE: as above, no shows.
	50	COAL: as above.
	30	SILTSTONE: as above. Several carbonaceous siltstone grains gave a moderately fast streaming cut, bright yellow fluorescence - kerogen.
2350 - 2355m	40	SANDSTONE: as above, no shows.
	30	COAL: as above.
	20	SILTSTONE: as above. Several carbonaceous siltstone grains give slow streaming cut, bright yellow fluorescence.
2355 - 2360m	80	SANDSTONE: offwhite to light grey, hard very fine grained to medium grained, well rounded, fair to good sorting, low porosity. No shows.
	20	SILTSTONE: light brown to medium grey, moderately hard to soft.
	Trace	PYRITE.
	Trace	COAL: as above.
		Two carbonaceous siltstone cuttings gave a weak crush cut - kerogen.

2360 - 2365m	90 5 5	COAL: as above. SANDSTONE: as above. SILTSTONE: as above. Several carbonaceous siltstone grains give fast streaming cut, bright yellow fluorescence - kerogen.
2365 - 2370m	95 5  Trace	COAL: as above. SANDSTONE: as above. SILTSTONE: as above. Slow cut, strong crush cut on a few siltstone grains - kerogen.
2370 - 2375m	80 10 10	COAL: as above. SANDSTONE: as above. SILTSTONE: as above. One carbonaceous siltstone cutting gave slow cut, weak crush cut - kerogen.
2375 - 2380m	50 30 20	COAL: as above. SANDSTONE: as above. SILTSTONE: as above. Two carbonaceous grains gave fast streaming cut - kerogen.
2380 - 2385m	80 15 5	SILTSTONE: as above. COAL: as above. SANDSTONE: as above. No shows.  Five cuttings kerogen as above.
2385 - 2390m	90 5 5	SILTSTONE: as above. COAL: as above. SANDSTONE: as above. No shows.  Five kerogen chips gave cut.
2390 - 2395m	90  5  5	SILTSTONE: medium light grey, medium dark grey to brownish grey, soft to firm, angular to platy cuttings, minor organic matter. One siltstone showed streaming in sample tray - kerogen. SANDSTONE: very light grey, moderately hard, fine to very fine grained, sub-angular to sub-rounded, moderately well sorted, muddy matrix with possible silica/calcareous cement. No visible aggregates. No shows. COAL: black, hard, blocky, in part silty.
2395 - 2400m	90 10  Trace	SILTSTONE: as above. SANDSTONE: (aggregates) as above. No cut, no crush cut, no show. COAL: as above.
2400 - 2405m	85  10 5	SILTSTONE: as above. No cut, slow crush cut observed from carbonaceous siltstone - kerogen. SANDSTONE: as above. COAL: as above.
2405 - 2410m	80 20 Trace	SILTSTONE: as above. No show. SANDSTONE: as above. COAL: as above.
2410 - 2415m	80 20 Trace	SILTSTONE: as above. SANDSTONE: as above. No shows. COAL: as above.

2415 - 2420m	70	SANDSTONE: very light grey to grey-brown, moderately hard, very fine grained to medium grained, well rounded to very well rounded, well sorted, silicious cement, low porosity. No shows.
	20	SILTSTONE: light grey to medium grey, soft to moderately hard.
	10	COAL: hard, black, vitreous.
2420 - 2425m	60	SANDSTONE: as above. No shows.
	30	SILTSTONE: as above.
	10	COAL: as above.
2425 - 2430m	70	SANDSTONE: as above. No shows.
	25	SILTSTONE: as above.
	5	COAL: as above.
2430 - 2435m	50	SANDSTONE: as above. No shows.
	30	SILTSTONE: as above.
	20	COAL: as above.
2435 - 2440m	40	SANDSTONE: as above.
	30	SILTSTONE: as above.
	30	COAL: as above.
	Trace	PYRITE.
One dark siltstone grain gave a moderately fast streaming cut, bright yellow fluorescence.		
2440 - 2445m	40	SANDSTONE: very light grey to light grey, soft to medium hardness, very fine grained to medium grained, well rounded, well sorted, low porosity. No shows.
	40	SILTSTONE: grey-brown to dark grey-black, soft.
	20	COAL: hard, black, vitreous.
	Trace	PYRITE.
2445 - 2450m	40	SANDSTONE: as above. No shows.
	30	SILTSTONE: as above.
	30	COAL: as above.
	Trace	PYRITE
2450 - 2455m	60	SANDSTONE: as above.
	20	SILTSTONE: as above.
	20	COAL: as above.
	Trace	PYRITE
No shows.		
2455 - 2460m	70	SANDSTONE: as above.
	20	SILTSTONE: as above.
	10	COAL: as above.
	Trace	PYRITE.
No shows.		
2460 - 2465m	60	SANDSTONE: as above.
	20	SILTSTONE: as above.
	20	COAL: as above.
No shows.		
2465 - 2470m	50	SILTSTONE: medium grey to brown, angular micromicaceous, slightly carbonaceous, slightly sandy in part. Firm subangular cuttings, non calcareous.

	40	COAL: black, brittle, slightly sandy, conchoidal fracture in places.
	10	SANDSTONE: Two types:- 1) Fine grained aggregates dominant, well sorted, subrounded to subangular calcareous and silica cements. Very poor to poor visual porosity. Argillaceous in part. 2) Minor loose medium to coarse grained, subrounded quartz.
		No shows in either type.
2470 - 2475m	60	SILTSTONE: as above.
	30	COAL: as above.
	10	SANDSTONE: as above. No shows.
		One kerogen chip gave cut.
2475 - 2480m	50	SILTSTONE: as above;
	30	COAL: as above.
	20	SANDSTONE: as above. No shows.
		Three kerogen chips gave cut.
2480 - 2485m	90	COAL: as above.
	10	SILTSTONE: as above.
	Trace	SANDSTONE: as above. No shows.
		Three kerogen chips gave cut.
2485 - 2490m	40	COAL: black hard, brittle, sandy in part.
	40	SILTSTONE: medium grey to brown, argillaceous, slightly sandy, firm cuttings. Carbonaceous, micromicaceous, sub-angular cuttings.
	20	SANDSTONE: Two types:- 1) Fine grained, calcareous (gives 5% minimum fluorescence) and silica cemented aggregates. Sub-rounded to sub-angular, moderately well sorted. Dominant sandstone type. No shows, poor visible porosity. 2) Loose medium to coarse grains. Well rounded, excellent visible porosity. No shows. Minor sandstone type.
		Four kerogen cuttings gave cut.
		5% of sample consists of loose fine grained quartz grains, siltstone and coal fragments bound up in white "fluffy" clay matrix. Clay matrix is drill solids, largely barite therefore not included in lithology percentage.
2490 - 2495m	60	COAL: as above.
	35	SILTSTONE: as above.
	5	SANDSTONE: as above. No shows.
		Seven kerogen chips gave cut.
2495 - 2500m	60	SILTSTONE: medium grey to greyish brown, firm angular cuttings, carbonaceous, micromicaceous, slightly argillaceous.
	30	SANDSTONE: Two types:- 1) Very light grey aggregates, fine to very fine grained, moderately hard, sub-angular to sub-rounded, moderately well sorted, possible silica/calcareous cement, 5% moderately bright spotty yellow mineral fluorescence. No visible porosity. No shows. 2) Minor unconsolidate clear to milky white quartz grains, rounded to well rounded, good porosity. No shows (possible cavings).

	10	COAL: black, hard, silty in part, blocky.
2500 - 2505m	60	SILTSTONE: as above.
	30	SANDSTONE: as above. No shows.
	10	COAL: as above.
2505 - 2510m	70	SILTSTONE: as above.
	30	SANDSTONE: as above. No shows.
	Trace	COAL: as above.
		Four kerogen cuttings gave cut.
2510 - 2515	80	SILTSTONE: as above.
	15	SANDSTONE: as above.
	5	COAL: as above.
		Two kerogen cuttings gave cut.
2515 - 2520m	70	SILTSTONE: as above, becoming very, very fine grained sandstone.
	30	SANDSTONE: as above.
	Trace	COAL: as above.
		Three kerogen cuttings gave cut.
2520 - 2525m	60	SILTSTONE: medium grey to brownish grey, firm to moderately hard, angular cuttings, carbonaceous, micromicaceous.
	40	SANDSTONE: light grey to medium grey, firm to moderately hard, fine to very fine grained, subangular to subrounded, moderately well sorted, silica/calcareous cement. No visible porosity. No shows.
	Trace	COAL: black, hard, block to conchoidal, vitrinate.
		One kerogen cutting gave cut.
2525 - 2530m	50	SILTSTONE: as above.
	30	COAL: as above.
	20	SANDSTONE: as above. No shows.
		Four kerogen cuttings gave cut.
2530 - 2535m	50	SILTSTONE: as above.
	45	SANDSTONE: as above.
	5	COAL: as above.
2535 - 2540m	50	SILTSTONE: as above.
	30	COAL: as above.
	20	SANDSTONE: as above. No shows.
		One kerogen cutting gave cut.
2540 - 2545m	80	COAL: as above.
	20	SILTSTONE: as above.
	Trace	SANDSTONE: as above. No shows.
		Two kerogen cuttings gave cut.
2545 - 2550m	80	SILTSTONE: as above.
	20	COAL: as above.
	Trace	SANDSTONE: as above. Minor pyrite cemented aggregates.
		No kerogen cuttings with cut.



2550 - 2555m	70	SILTSTONE: medium light grey, medium grey to brownish grey, firm, angular cuttings, carbonaceous, micromicaceous, very, very fine sand in part.
	30	SANDSTONE: very light grey to medium light grey, moderately hard, fine to very fine grained, moderately well sorted, subrounded to subangular, slightly argillaceous matrix with silica/calcareous cement, minor pyrite. No visible porosity, 5% moderate bright yellow spotty mineral fluorescence. No shows.
	Trace	COAL: black, hard, earthy, vitrinite.
2555 - 2560m	60	SILTSTONE: as above.
	30	SANDSTONE: as above. No shows.
	10	COAL: as above.
Four kerogen cuttings gave cut.		
2560 - 2565m	65	SILTSTONE: as above.
	30	COAL: as above.
	5	SANDSTONE: as above. No shows.
Seven kerogen cuttings gave cut.		
2565 - 2570m	70	SILTSTONE: as above.
	20	COAL: as above.
	10	SANDSTONE: as above. No show.
5% moderate bright yellow spotty mineral fluorescence.		
2570 - 2575m	60	SILTSTONE: as above.
	30	COAL: as above.
	10	SANDSTONE: as above. No shows.
Six kerogen cuttings gave cut.		
2575 - 2580m	50	SILTSTONE: medium light grey to brownish grey, firm to moderately hard, angular to platy cuttings, carbonaceous, micromicaceous.
	30	SANDSTONE: light grey to medium light grey, moderately hard, fine to very fine grained, moderately well sorted, possible silica/calcareous cement. No visible porosity. No shows.
	20	COAL: black, hard, vitrinite.
2580 - 2585m	60	SILTSTONE: as above.
	40	SANDSTONE: as above. No shows.
	Trace	COAL.
2585 - 2590m	50	SILTSTONE: as above.
	40	SANDSTONE: no shows.
	10	COAL: as above.
Three kerogen cuttings gave cut.		
2590 - 2595m	70	SILTSTONE: as above.
	25	SANDSTONE: as above. No shows.
	5	COAL: as above.
Two kerogen cuttings gave cut.		
2595 - 2600m	60	SILTSTONE: as above.
	40	SANDSTONE: as above. Minor pyrite cement, no shows.
	Trace	COAL: as above.

2600 - 2605m	80 20  Trace	COAL: black, hard, blocky, vitrinite. SILTSTONE: medium, light grey to brownish grey, firm to moderately hard, angular cuttings, carbonaceous, micromicaceous. SANDSTONE: as above.
2605 - 2610m	90 5 5	COAL: as above. SANDSTONE: as above. SILTSTONE: as above.  Rare mineral fluorescence, no shows.
2610 - 2615m	60 30 10	COAL: as above. SANDSTONE: as above. SILTSTONE: as above.  No shows.
2615 - 2620m	50  30 20	SANDSTONE: white to grey-brown, firm to moderately hard, very fine grained to fine grained, well sorted, argillaceous matrix, occasional carbonaceous stringers, low porosity. SILTSTONE: medium grey to grey-brown, soft to firm. COAL: hard, black, vitreous.  No shows.
2620 - 2625m	70 25 5 Trace	SANDSTONE: as above. SILTSTONE: as above. COAL: as above. PYRTIE: as above.  No shows.
2625 - 2630m	60 30 10	SANDSTONE: as above. SILTSTONE: as above. COAL: as above.  No shows.
2630 - 2635m	70  25 5	SANDSTONE: 20% loose sand grains, clear to milky white, medium to coarse grained, subangular to well rounded, fair sorting, occasional pyrite coatings, good porosity inferred. 80% sandstone aggregates, white to light grey, very fine grained to medium grained, well rounded, fair to good sorting, siliceous cement, low visual porosity. SILTSTONE: medium to dark grey, soft. COAL: hard, black, lustrous.  No shows.
2635 - 2640m	90 10 Trace	COAL: as above. SANDSTONE: as above. SILTSTONE: as above.  Spotty mineral fluorescence, no shows.
2640 - 2645m	80 10 10	SANDSTONE: as above. SILTSTONE: as above. COAL: as above.  No shows.

2645 - 2650m	60	SANDSTONE: as above.
	30	SILTSTONE: as above.
	10	COAL: as above.
	Trace	PYRITE.
		Three carbonaceous siltstone gave a weak, pale yellow-blue crush cut.
		Four siltstone grains gave a very pale blue cut.
		5% fluorescence.
2650 - 2655m	40	SANDSTONE: as above.
	40	SILTSTONE: as above.
	20	COAL: as above.
	Trace	MUSCOVITE MICA.
		Several fine carbonaceous, siltstone gave a very weak, pale yellow crush cut.
2660 - 2665m	40	COAL: as above.
	40	SILTSTONE: as above.
	20	SANDSTONE: as above. No shows.
		One cutting keogen gave cut.
2665 - 2670m	60	SILTSTONE: medium light grey, brownish grey to brown, firm to moderately hard, carbonaceous, micromicaceous, angular to platy cuttings.
	30	SANDSTONE: white to light grey, moderately hard, fine to very fine grained, angular to subrounded, moderately well sorted, silica/calcareous cement. No visible porosity. No shows.
	10	10% moderate bright yellow spotty mineral fluorescence, possible associated with calcareous/dolomite cement in the sandstone. COAL: black, hard, blocky, vitreous.
2670 - 2675m	75	SILTSTONE: as above.
	20	SANDSTONE: as above. Minor pyrite cement. No shows.
	5	COAL: as above.
2675 - 2680m	85	SILTSTONE: as above.
	10	COAL: as above.
	5	SANDSTONE: as above. No shows
2680 - 2685m	60	SILTSTONE: as above.
	35	SANDSTONE: as above. No shows.
	5	COAL: as above.
2685 - 2690m	90	COAL: as above.
	10	SILTSTONE: as above.
	Trace	SANDSTONE: as above.
	Trace	PYRITE.
2690 - 2695m	70	SILTSTONE: brownish grey to brown, moderately hard, angular cuttings, carbonaceous to very carbonaceous in part, micromicaceous.
	20	COAL: black, hard, vitreous, block, conchoidal.
	10	SANDSTONE: white to medium light grey, moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, silica/calcareous cement. No visible porosity. No shows.

5% moderate bright yellow spotty mineral fluorescence possible due to calcareous/dolomite cement in the sandstone.

2695 - 2700m	60	SILTSTONE: as above.
	35	SANDSTONE: as above. Minor pyritic cement. No shows.
	5	COAL: as above.
Two kerogen cuttings gave cut.		
2700 - 2705m	50	COAL: as above.
	40	SILTSTONE: as above.
	10	SANDSTONE: as above. No shows.
2705 - 2710m	60	SILTSTONE: as above.
	20	COAL: as above.
	20	SANDSTONE: as above. No shows.
Five kerogen cuttings gave cut.		
2710 - 2715m	60	SILTSTONE: medium grey, brownish grey to brown, moderately hard, platy cuttings, carbonaceous, micromicaceous.
	30	COAL: black, hard, vitreous, blocky cuttings.
	10	SANDSTONE: white to medium light grey, moderately hard, fine to very fine grained, subangular to rounded, moderate sorting, silica/calcareous cement. No visible porosity. No shows.
5% moderate bright yellow spotty mineral fluorescence possible associated with calcareous/dolomite cement.		
2715 - 2720m	70	SILTSTONE: as above.
	25	SANDSTONE: as above. No shows.
	5	COAL: as above.
2720 - 2725m	50	SILTSTONE: soft to firm dolomitic cement in parts, otherwise as above. Few cuttings show dull, pale yellow/gold mineral fluorescence (no cut).
	40	COAL: black, brittle, vitreous, angular cuttings.
	10	SANDSTONE: predominantly quartzose aggregates as above. Minor loose quartz, translucent, coarse to very coarse, subrounded, well sorted. No shows.
2725 - 2730m	60	SILTSTONE: light grey in parts, otherwise as above.
	30	SANDSTONE: predominantly quartzose aggregates, light grey, friable, fine to medium grained occasionally coarse, subrounded, moderately to well sorted, dolomitic cement. Poor visible porosity, dull pale whitish yellow mineral fluorescence. No shows.
	10	COAL: as above.
2730 - 2735m	80	SILTSTONE: carbonaceous flecking and inclusions, otherwise as above.
	20	SANDSTONE: predominantly quartzose aggregates as above. Minor loose quartz, translucent, medium to very coarse, predominantly medium to coarse, subangular to subrounded, moderately well sorted.
	Trace	COAL.
	Trace	PYRITE: microcrystalline aggregates.

2735 - 2740m	50	SILTSTONE: as above. Few carbonaceous cuttings show fluorescence and cut.
	30	COAL: as above.
	20	SANDSTONE: quartzose aggregates as above.
2740 - 2745m	60	SILTSTONE: as above. Grading to claystone in parts.
	20	COAL: as above.
	20	SANDSTONE: quartzose aggregates, Trace mineral fluorescence.
2745 - 2750m	60	SILTSTONE: as above.
	20	SHALE: brown to medium dark grey, firm, fissile, carbonaceous.
	10	SANDSTONE: quartzose aggregates as above. Also minor loose quartz as above.
	10	COAL: as above.
2750 - 2755m	40	SILTSTONE: as above. Few cuttings show white streaming cut.
	30	COAL: as above.
	20	SANDSTONE: quartzose aggregates and loose quartz as above. No shows. Trace mineral fluorescence.
	10	SHALE: as above.
2755 - 2760m	70	SILTSTONE: as above.
	30	SANDSTONE: aggregates and loose quartz as above. No shows. Few cuttings showed mineral fluorescence.
	Trace	COAL: as above.
	Trace	SHALE: as above.
2760 - 2765m	Trace	PYRITE: as above.
	50	SILTSTONE: as above. Becoming soft in parts.
	40	SANDSTONE: aggregates and loose quartz as above. Aggregates containing mica inclusions. No shows.
	10	SHALE: as above.
2765 - 2770m	Trace	COAL: as above.
	Trace	PYRITE: as above. Also occasionally as a cement between fine quartz grains.
	70	SILTSTONE: as above. Grading in parts to claystone, light grey to buff, very soft, slightly sticky, blocky, rounded cuttings.
	30	SANDSTONE: aggregates and loose quartz as above.
2770 - 2775m	Trace	COAL: as above.
	Trace	PYRITE: as above.
	80	COAL: black, brittle, vitreous in parts, angular cuttings.
	10	SANDSTONE: predominantly loose quartz as above. Also quartzose aggregates as above.
2775 - 2780m	10	SILTSTONE: as above.
	Trace	PYRITE: as above.
	70	SILTSTONE: light grey to medium dark grey, occasionally pale brown, firm to soft, subrounded to rounded blocky cuttings, common carbonaceous flecks and inclusions, also occasionally very fine grained quartz inclusions.
	20	SHALE: brown to dark grey, firm to moderately hard, subfissile to fissile, carbonaceous.
2775 - 2780m	10	SANDSTONE: quartzose aggregates and loose quartz as above.
	Trace	PYRITE: as above.

2780 - 2785m	80	COAL: as above.
	10	SILTSTONE: as above.
	10	SANDSTONE: aggregates and loose quartz as above.
2785 - 2790m	80	SILTSTONE: as above.
	10	SANDSTONE: quartzose aggregates as above. Also loose quartz, translucent, medium to very coarse, subangular to subrounded, moderately well sorted. No shows.
	10	SHALE: very carbonaceous.
	Trace	COAL: as above.
	Trace	PYRITE: as above.
2790 - 2795m	70	SILTSTONE: as above. Grading to claystone.
	20	CLAYSTONE: very light grey to medium grey, very soft, blocky, well rounded cuttings, carbonaceous flecking, calcareous.
	10	SANDSTONE: quartzose aggregates, light grey, friable to very friable, very fine to course, predominantly very fine to medium grained, subangular to subrounded, well sorted (very fine and fine grained aggregates) to moderately well sorted (medium to course aggregates), siliceous cement and weak dolomitic cement, fine grain sized carbonaceous inclusions, poor visual porosity, no shows. All loose quartz as above.
	Trace	COAL: as above.
2795 - 2800m	60	SILTSTONE: as above.
	30	COAL: as above.
	10	SANDSTONE: quartzose aggregates and loose quartz as above.
	Trace	SHALE: as above - carbonaceous.
2800 - 2805m	60	SILTSTONE: as above.
	20	SANDSTONE: loose quartzose and quartzose aggregates as above.
	20	COAL: as above. Occasional cuttings five fast whitish yellow streaming cut.
2805 - 2810m	70	SILTSTONE: as above.
	20	SANDSTONE: predominantly quartzose aggregates as above. Also loose quartz as above. Aggregates trace mineral fluorescence.
	10	COAL: as above.
	Trace	SHALE: as above.
	Trace	CLAYSTONE: as above.
2810 - 2815m	100	COAL: black, brittle, moderately hard, vitreous, angular cuttings.
	Trace	SILTSTONE: as above.
	Trace	SANDSTONE: aggregates and loose quartz as above.
2815 - 2820m	80	COAL: as above.
	10	SHALE: fissile - as above.
	10	SILTSTONE: as above.
	Trace	SANDSTONE: aggregates and loose quartz as above.
2820 - 2825m	90	COAL: as above.
	10	SILTSTONE: as above.
	Trace	SANDSTONE: predominantly quartzose aggregates, also minor loose quartz.

2825 - 2830m	60	COAL: as above.
	20	SHALE: as above
	10	SILTSTONE: as above.
	10	SANDSTONE: predominantly quartzose aggregates, otherwise as above.
	Trace	PYRITE: microcrystalline aggregates.
2830 - 2835m	70	COAL: black, hard, vitreous, blocky.
	10	SHALE: brownish grey, firm, slightly carbonaceous, micromicaceous.
	10	SILTSTONE: medium grey, brownish grey to brown, moderately hard, carbonaceous, micromicaceous.
	10	SANDSTONE: light grey to medium light grey, quartz aggregates, moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, silica/calcareous cement, no visible porosity, no shows. Minor loose coarse grained quartz aggregates, rounded to well rounded, now shows, possible cavings. 5% moderate bright yellow spotty mineral fluorescence.
2835 - 2840m	90	COAL: as above.
	10	SILTSTONE: as above.
	Trace	SHALE: as above.
	Trace	SANDSTONE: quartzose aggregate and minor loose quartz grains as above, no shows.
2840 - 2845m	40	COAL: as above.
	30	SILTSTONE: as above.
	20	SANDSTONE: quartz aggregates as above, no shows.
	10	SHALE: as above.
2845 - 2850m	50	SILTSTONE: as above.
	30	SANDSTONE: as above. No shows.
	10	SHALE: as above.
	10	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
2850 - 2855m	60	SILTSTONE: as above.
	20	SANDSTONE: as above. Predominantly quartzose aggregates with minor loose quartz grains. Trace of pyritic cement. No shows.
	10	SHALE: as above.
	10	COAL: as above.
2855 - 2860m	80	COAL: black, hard, silty in part, vitreous, blocky.
	10	SHALE: brownish grey to brown, firm, subfissile to fissile, carbonaceous, micromicaceous.
	5	SILTSTONE: medium grey to brown, moderately hard, angular cuttings, carbonaceous, micromicaceous.
	5	SANDSTONE: white to medium light grey quartz aggregates, moderately hard, fine to very fine grained, moderate to moderately well sorted, subangular to subrounded, argillaceous matrix with secondary silica/calcareous cement, no visible porosity, no shows. Minor loose coarse grained quartz grains, moderately well rounded to well rounded, no shows. Minor moderate bright yellow spotty mineral fluorescence in sandstone aggregates. Possible calcareous/dolomite cement.

2860 - 2865m	50	SILTSTONE: as above.
	40	SANDSTONE: quartzose aggregates as above. No shows.
	10	SHALE: as above.
	Trace	COAL: as above.
2865 - 2870m	50	COAL: as above.
	20	SILTSTONE: as above.
	20	SANDSTONE: as above. No shows.
	10	SHALE: as above.
	Trace	Minor sand through desanders.
	Trace	Minor gumbo over the shakers.
2875 - 2880m	40	SANDSTONE: i) white to medium light grey, moderately hard, fine to very fine quartz grains, subangular to well rounded, moderately sorted, argillaceous matrix with possible secondary silica/calcareous cement, poor visual porosity, no shows.
		ii) brownish grey to brown, firm, fine to very fine grained, subangular to subrounded, moderately sorted, argillaceous matrix, carbonaceous, no visual porosity, no shows.
		iii) minor loose quartz grains, coarse grained moderately well rounded to well rounded, possible cavings, no shows.
	40	SILTSTONE: greyish brown to brown, firm to moderately hard, angular to platy cuttings, carbonaceous, micromicaceous.
	20	COAL: black, moderately hard, brittle, blocky, vitreous.
2880 - 2885m	50	COAL: as above.
	20	SANDSTONE: as above. No shows.
	20	SILTSTONE: as above.
	10	SHALE: medium dark grey, firm, fissile, slightly carbonaceous.
2885 - 2890m	50	COAL: as above.
	30	SILTSTONE: as above.
	10	SHALE: as above.
	10	SANDSTONE: as above. No shows.
2890 - 2895m	50	SANDSTONE: minor pyrite cement as above. No shows.
	30	SILTSTONE: as above.
	10	SHALE: as above.
	10	COAL: as above.
2895 - 2900m	60	SANDSTONE: white to medium light grey, buff to brownish grey, moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, argillaceous matrix with secondary silica/calcareous cement, slightly carbonaceous, poor visual porosity. No shows. Moderate bright yellow spotty mineral fluorescence.
		30
	10	COAL: black, hard, vitreous, blocky.
2900 - 2905m	50	COAL: as above.
	30	SILTSTONE: as above. Occasional cuttings show fast white streaming cut.
	20	SANDSTONE: aggregates above, trace mineral fluorescence (due to dolomite cement).
	Trace	PYRITE: microcrystalline aggregates.



2905 - 2910m	60	SILTSTONE: as above. Occasional cuttings show fast white cut as above.
	30	SANDSTONE: aggregates as above, trace mineral fluorescence.
	10	COAL: as above. Occasional cuttings show fast white streaming cut.
At 2913.1m POOH for bit trip.		
2910 - 2915m	70	SILTSTONE: as above.
	10	SHALE: as above.
	10	SANDSTONE: aggregates as above, approximately 10% dull yellow mineral (dolomite) fluorescence.
	10	COAL: as above.
2915 - 2920m	70	SILTSTONE: light grey to medium dark grey, firm to soft, blocky subangular to subrounded cuttings, calcareous in parts, carbonaceous flecking and inclusions, very fine to soft sized quartz grain inclusions in parts. These cuttings have dull yellow fluorescence and pale, slow, faint, white cut. Other more carbonaceous cuttings show bright white streaming cut.
	10	SHALE: brownish grey, firm, subfissile to fissile, common carbonaceous inclusions.
	10	SANDSTONE: very light grey to medium light grey, friable to moderately hard, very fine to fine grained, subrounded, well sorted, argillaceous matrix in parts, dolomitic cement in parts, carbonaceous inclusions, poor visual porosity. No shows.
	10	COAL: black, firm to moderately hard, brittle, angular cuttings.
2920 - 2925m	80	SILTSTONE: as above.
	20	SANDSTONE: quartzose aggregates as above. Also loose quartz, clear to translucent, medium to very coarse grained, predominantly coarse, angular to subrounded, moderately well sorted. No shows.
	Trace	SHALE: as above.
	Trace	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
2925 - 2930m	80	SILTSTONE: as above.
	20	SANDSTONE: predominantly aggregates, also loose quartz.
	Trace	PYRITE: as above.
2930 - 2935m	70	SILTSTONE: as above.
	30	SANDSTONE: quartzose aggregates and loose quartz as above with the aggregates now composed of grains up to medium grain size, otherwise as above.
2935 - 2940m	70	COAL: black, moderately hard, blocky to angular cuttings, vitreous.
	20	SANDSTONE: white to medium light grey, firm to moderately hard, fine to very fine grained, subangular to subrounded, moderately sorted, argillaceous matrix, silica/calcareous cement, poor visual porosity. No shows. 5% moderate dull yellow spotty mineral fluorescence.
	10	SILTSTONE: medium grey to brownish grey, moderately hard, angular to subrounded cuttings, carbonaceous, micromicaceous.

2940 - 2945m	80	COAL: as above.
	10	SILTSTONE: as above.
	10	SANDSTONE: quartzose aggregates with minor loose clear to milky white quartz grains, rounded to well rounded, coarse grained, otherwise as above. No shows. Moderately dull yellow spotty mineral fluorescence.
	Trace	PYRITE: microcrystalline aggregates.
2945 - 2950m	60	COAL: as above.
	30	SILTSTONE: as above.
	10	SANDSTONE: as above. No shows.
2950 - 2955m	50	COAL: as above.
	40	SILTSTONE: brownish grey to brown, moderately hard, angular cuttings, very carbonaceous, slightly micromicaceous.
	10	SANDSTONE: white to light grey quartzose aggregates, moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, white argillaceous matrix with possible secondary silic/calcareous cement, poor visual porosity. No shows.
		10% cutting in sample tray, kerogen in the coals gave the cut.
2955 - 2960m	40	COAL: black, hard, earthy.
	50	SILTSTONE: brownish grey to brown, firm, angular cuttings, very carbonaceous, micromicaceous.
	10	SANDSTONE: white to light grey quartzose aggregates, firm to moderately hard, fine to very fine grained, subangular to subrounded, moderately well sorted, white argillaceous matrix, possible secondary silica/calcareous cement, poor visual porosity. No shows.
		10% cutting in sample tray, kerogen in the coals gave the cut.
2960 - 2965m	40	COAL: as above.
	40	SILTSTONE: carbonaceous as above.
	20	SANDSTONE: as above. No shows.
		10% cutting in sample tray, kerogen cut given by the coals.
2965 - 2970m	40	COAL: as above.
	40	SILTSTONE: as above.
	20	SANDSTONE: minor loose quartz grains, clear to milky, coarse grained, round. No shows.
		5% cutting in sample tray, kerogen in the coals and carbonaceous siltstones.
2970 - 2975m	40	SILTSTONE: slightly carbonaceous with carbonaceous flecking otherwise as above.
	40	SANDSTONE: white to light grey quartzose aggregates, moderately hard, fine to very fine grained, subangular to rounded, white argillaceous matrix with possible secondary silica/calcareous cement, poor visual porosity. No shows. Minor moderate dull yellow spotty mineral fluorescence.
	20	COAL: black, hard, vitreous.
		Minor cuttings in coals due to kerogen.

2975 - 2980m	60	SANDSTONE: white to medium light grey quartzose aggregates, moderately hard, fine to very fine grained, subangular to rounded, moderately sorted, white argillaceous matrix with possible secondary silica cement, poor visual porosity. No shows. Minor dull yellow spotty mineral fluorescence. Minor loose clear to milky white quartz grains, coarse grained, rounded to well rounded, no shows.
	40	SILTSTONE: brownish grey to brown, firm to moderately hard, angular cuttings, carbonaceous, slightly micromicaceous.
	Trace Trace	COAL: as above. PYRITE: microcrystalline aggregates.
2980 - 2985m	50	SANDSTONE: quartzose aggregates minor quartz grains. No shows.
	40	SILTSTONE: as above.
	10	COAL: as above. 5% coal gives moderately bright yellow stream cut due to kerogen.
2985 - 2990m	50	SILTSTONE: as above.
	40	SANDSTONE: as above. No shows.
	10	COAL: as above. Coal is giving moderate bright yellow streaming cut, kerogen.
2990 - 2995m	50	SILTSTONE: brownish grey to brown, firm, angular to occasionally platy cuttings, slightly carbonaceous to very carbonaceous, slightly micromicaceous.
	30	SANDSTONE: white to medium light grey, moderately hard, fine to very fine grained, subangular to well rounded, moderately well sorted white argillaceous matrix with silica cement, poor visual porosity. No shows. Minor moderately dull yellow spotty mineral fluorescence. Minor loose quartz grains, clear to milky white, medium to coarse grained, rounded to well rounded. No shows.
	20	COAL: black, hard, vitreous, block, in sample tray coal has a moderately bright streaming cut due to mature organics (kerogen).
2995 - 3000m	50	SANDSTONE: as above. No shows.
	40	SILTSTONE: as above.
	10	COAL: as above.  5% moderate bright yellow/green streaming cut in sample tray from the coals - mature organics.
3000 - 3005m	70	SANDSTONE: white to medium light grey quartzose aggregates as above. No shows. Clear to milky white quartz grains, unconsolidated, subangular to subrounded, medium to coarse grain size, moderately well sorted. No shows.
	30	SILTSTONE: brownish grey to brown, firm to moderately hard, angular cuttings carbonaceous, slightly micromicaceous.
	Trace	COAL: black, hard, blocky, vitreous.

3005 - 3010m	80	SANDSTONE: white to medium light grey quartzose aggregates, moderately hard, fine to very fine grained, subangular to subrounded, moderately well sorted, white to very light grey argillaceous matrix, possible silica cement, poor visible porosity. No shows. Loose clear to milky white quartz grains, medium grained, angular to subrounded, moderately well sorted. No shows.
	20	SILTSTONE: as above.
	Trace	COAL.
3010 - 3015m	70	SANDSTONE: loose quartz, clear to translucent, medium to very coarse, predominantly coarse to very coarse, subangular to subrounded, well sorted. No shows. Also quartzose aggregates, very light to light grey, friable, very fine to coarse grained, predominantly very fine to medium, moderately well sorted, trace argillaceous matrix to occasionally very argillaceous, well compacted, mica and carbonaceous inclusions, poor to occasional moderate visual porosity. No shows. Approximately 5% of sample has dull patchy yellow fluorescence and slow, weak, white streaming to diffuse cut. The cuttings with above shows were very argillaceous and carbonaceous sandstone aggregates.
	30	SILTSTONE: medium light grey to medium dark grey, firm to moderately hard, blocky subrounded to subangular cuttings, calcareous in parts, carbonaceous inclusions and flecking in parts.
3015 - 3020m	60	SANDSTONE: predominantly loose quartz, occasionally to granule size, otherwise as above. Also quartzose aggregates as above; trace dull, patchy yellow fluorescence and white cut as above.
	40	SILTSTONE: as above.
3020 - 3025m	70	SANDSTONE: loose quartz and quartzose aggregates as above; trace fluorescence and cut in carbonaceous aggregates as above.
	30	SILTSTONE: as above.
	Trace	PYRITE: microcrystalline aggregates.
3025 - 3030m	60	SANDSTONE: loose quartz as above. Quartzose aggregates with trace shows as above. Also quartzose aggregates type 2): clear to translucent, friable, medium to coarse grained, occasionally very coarse, subangular to subrounded, poor to moderately well sorted, siliceous cement, also well compacted, poor to no visual porosity, occasional carbonaceous inclusions. No shows.
	20	SILTSTONE: moderately hard and silicified in parts, otherwise as above.
	20	COAL: black, moderately hard, brittle, blocky, angular to subrounded cuttings, vitreous in parts. Trace of coal cuttings gave fast yellow to white streaming cut.
3030 - 3035m	70	SANDSTONE: predominantly loose quartz as above, and quartzose aggregates type 1) as above. Also aggregates type 2) as above.
	30	SILTSTONE: as above.
	Trace	COAL: as above, with trace bright white streaming cut.

3035 - 3040m	70	SANDSTONE: loose quartz as above. Quartzose aggregates types 1) and 2) as above.
	30	SILTSTONE: as above, with some cuttings containing very fine to silt sized quartz grains.
	Trace	PYRITE: as above.
3040 - 3045m	60	SILTSTONE: as above.
	30	SANDSTONE: loose quartz as above. Quartzose aggregates types 1) and 2) as above. No shows.
	10	COAL: black, hard, vitreous.
3045 - 3050m	70	SILTSTONE: medium light grey to medium grey, moderately hard, angular to subrounded cuttings, micromicaceous, brownish grey to brown, firm to moderately hard, angular to subrounded cutting, carbonaceous, micromicaceous.
	30	SANDSTONE: loose quartz grains, clear to milky white, medium to coarse grained, angular to subrounded, moderately well sorted. No shows. Quartzose aggregates, white to medium light grey, firm to moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, white argillaceous matrix with possible secondary silica cement, poor visual porosity. No shows. Minor moderate dull yellow spotty mineral fluorescence.
	Trace	COAL: black, hard, vitreous, blocky.
3050 - 3055m	60	SILTSTONE: as above.
	40	SANDSTONE: quartzose aggregates with minor loose quartz grains as above. No shows.
3055 - 3060m	60	SILTSTONE: medium light grey to medium grey, brownish grey to brown as above.
	30	SANDSTONE: quartzose aggregates with minor loose quartz grains as above. No shows.
	10	SHALE: brown, firm, subfissile, carbonaceous flecking.
	Trace	COAL: as above.
3060 - 3065m	Trace	PYRITE: microcrystalline aggregates.
	60	SILTSTONE: medium light grey to medium grey, brownish grey to brown as above.
	20	SANDSTONE: quartzose aggregates with minor pyritic cement plus loose quartz grains as above. No shows. Minor moderately dull yellow spotty mineral fluorescence.
	10	SHALE: as above.
3065 - 3070m	10	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
	70	SILTSTONE: medium light grey to medium dark grey, firm to moderately hard, blocky cuttings, calcareous in parts (the lighter coloured, non-carbonaceous cuttings are calcareous), carbonaceous in parts, 1 carbonaceous cutting had dull patchy yellow fluorescence and slow white streaming cut.
	20	SANDSTONE: loose quartz, clear to translucent, medium to very coarse, subangular to rounded, moderately well sorted. No shows. Also quartzose aggregates, clear to translucent grains, light grey cuttings, friable, very fine to fine grained, subrounded to rounded, well sorted, siliceous cement, common carbonaceous inclusions, mica inclusions, poor visual porosity. No shows.

	10	SHALE: brownish grey, predominantly firm to moderately hard, subfissile, carbonaceous.
3070 - 3075m	80	SILTSTONE: as above. No shows.
	10	SANDSTONE: predominantly quartzose aggregates as above. Also loose quartz as above.
	10	SHALE: as above.
	Trace	PYRITE: microcrystalline aggregates.
3075 - 3080m	80	SILTSTONE: as above.
	20	SANDSTONE: predominantly quartzose aggregates with occasional medium to very coarse, rounded quartz grain inclusions, otherwise as above. Loose quartz as above.
	Trace	SHALE: as above.
	Trace	PYRITE: as above.
3080 - 3085m	70	SILTSTONE: as above.
	30	SANDSTONE: predominantly quartzose aggregates as above. Also loose quartz as above.
	Trace	SHALE: as above.
3085 - 3090m	70	SANDSTONE: predominantly quartzose aggregates as above. Also minor loose quartz as above.
	20	SILTSTONE: the majority of cuttings are carbonaceous, otherwise as above.
	10	CLAYSTONE: very light grey to medium grey, very soft, occasionally sticky, well rounded, blocky cuttings, carbonaceous.
3090 - 3095m	50	SANDSTONE: predominantly quartzose aggregates as above. Also minor loose quartz as above.
	40	SILTSTONE: as above.
	10	CLAYSTONE: as above.
	Trace	PYRITE: as above.
3095 - 3100m	50	SANDSTONE: predominantly aggregates as above. Also loose quartz as above.
	50	SILTSTONE: As above.
	Trace	CLAYSTONE: as above.
3100 - 3105m	60	SILTSTONE: as above.
	40	SANDSTONE: predominantly aggregates as above. Also minor loose quartz as above.
	Trace	CLAYSTONE: as above.
	Trace	SHALE: as above.
3105 - 3110m	50	SANDSTONE: predominantly aggregates, 5% of sample has moderately bright white fluorescence and slow faint streaming white cut, no crush cut. These cuttings are predominantly loose quartz fragments dusted with black or brown carbonaceous and or carbonaceous argillaceous matter, as above. Also minor loose quartz as above.
	40	SILTSTONE: as above.
	10	CLAYSTONE: as above.
	Trace	SHALE: as above.
3110 - 3115m	50	SILTSTONE: as above.
	30	SANDSTONE: predominantly quartzose aggregates as above, with trace of cutting (covered with carbonaceous matter) has fluorescence and cut as above. Also minor loose quartz as above.
	20	CLAYSTONE: as above.

3115 - 3120m	60	SILTSTONE: light grey to medium dark grey, firm to soft, blocky cuttings, occasional light grey, non-calcareous, common carbonaceous flecking and inclusions.
	20	CLAYSTONE: very light grey to medium grey, very soft, well rounded, blocky cuttings, common carbonaceous inclusions.
	20	SANDSTONE: predominantly quartzose aggregates as above. Also trace of loose quartz as above.
3120 - 3125m	40	SILTSTONE: as above.
	30	CLAYSTONE: as above.
	30	SANDSTONE: quartzose aggregates, clear to translucent grains, light grey cuttings, friable, predominantly very fine to fine grained, occasionally medium to coarse grained, subrounded to rounded predominantly well sorted, siliceous cement, carbonaceous and micaceous inclusions, poor visual porosity. No hydracarbon shows. Also minor loose quartz, clear to translucent, medium to very coarse, subangular to rounded. No shows. Trace of quartz grains, covered (or partly) with carbonaceous matter gave white fluorescence and very slow, faint white diffuse cut.
	Trace	PYRITE: microcrystalline aggregates.
3125 - 3130m	50	SILTSTONE: as above.
	40	SANDSTONE: predominantly aggregates and loose quartz as above. Trace shows in carbonaceous cuttings as above.
	10	CLAYSTONE: as above.
	Trace	PYRITE: as above.
	Trace	COAL: black, brittle angular cuttings grading to very carbonaceous shale, very dark grey, firm to soft, fissile
3130 - 3135m	60	SILTSTONE: brownish grey, to greyish black, firm to moderately hard, subangular to subrounded cuttings, carbonaceous to very carbonaceous.
	40	SANDSTONE: light grey to brownish grey quartzose aggregates, moderately hard, fine to very fine grained, moderately well sorted, subangular to rounded, white argillaceous matrix, slightly carbonaceous to moderately carbonaceous, poor visual porosity. No shows. Moderately dull yellow spotty mineral fluorescence. Loose clear to milky white quartz grains, predominantly medium grained with minor coarse grains, moderately well sorted. No shows.
	Trace	COAL: black, hard, blocky to angular cuttings, earthy moderately bright yellow streaming cut.
	Trace	PYRITE: microcrystalline aggregates.
3135 - 3140m	60	SILTSTONE: brownish grey to greyish black as above.
	30	SANDSTONE: quartzose aggregates and loose quartz grains as above. Carbonaceous matter gives a very slow, faint white diffuse cut.
	10	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
	Trace	Gumbo over shakers.

3140 - 3145m	50	SILTSTONE: as above.
	40	SANDSTONE: quartzose aggregates and loose quartz grains as above. No shows. Very slow weak, faint white crush cut due to matured organics in quartzose aggregates.
	10	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
3145 - 3150m	50	SANDSTONE: white to light grey quartzose aggregates, moderately hard, medium to very fine grained subangular to subrounded, moderately to moderately well sorted, white argillaceous matrix with silica cement, slightly carbonaceous, poor visual porosity. No shows. Very slow, weak faint white crush cut due to carbonaceous matter (mature organics) in quartzose aggregates. Loose clear to milky white quartz grains, coarse to medium grained, moderately sorted. No shows.
	30	SILTSTONE: as above.
	20	COAL: black, hard, vitreous, silty, appears to be transitional to siltstone.
3150 - 3155m	50	SILTSTONE: as above.
	40	SANDSTONE: quartzose aggregates slightly carbonaceous plus loose quartz grains. No shows.
	10	COAL: as above.
3155 - 3160m	60	SANDSTONE: white to medium light grey, firm to moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, white to light grey argillaceous, poor visual porosity. No shows. Clear to milky white quartz grains, fine to medium grained, subangular to subrounded, moderately sorted, silica cemented, no visual porosity. No shows. Loose clear to milky white quartz grains, medium to coarse grained, angular to subrounded, moderately well sorted. No shows. Moderately dull yellow spotty mineral fluorescence.
	30	SILTSTONE: brownish grey, brown to greyish black, firm to moderately hard, angular to subrounded cuttings, carbonaceous, micromicaceous.
	10	COAL: black, hard, vitreous, earthy in parts.
3160 - 3165m	50	SILTSTONE: as above.
	40	SANDSTONE: as above.
	10	SHALE: greyish brown, firm, fissile to subfissile, carbonaceous.
	Trace	COAL: as above.
3165 - 3170m	40	SILTSTONE: medium light grey to medium dark grey, firm to moderately hard, subangular to subrounded blocky cuttings, the lighter, non-carbonaceous cuttings are calcareous, carbonaceous in part.



	60	SANDSTONE: loose quartz, clear to translucent, medium to granule sized fragments, angular to rounded, moderately well sorted to poorly sorted. No shows. (These fragments probably represent the coarse to granule sized grains in the aggregates below). Also quartzose aggregates, clear to translucent grains, very light grey cuttings, friable to moderately hard, fine to coarse grained, occasionally to granule size, predominantly medium, subrounded to rounded, poor to moderately well sorted, siliceous cement, occasional possible quartzose overgrowths. Also dolomitic cement, occasional carbonaceous inclusions, poor to no visible porosity, 15% patchy gold mineral fluorescence (dolomite). No shows.
	Trace	SHALE: as above.
3170 - 3175m	70	SILTSTONE: as above.
	20	SANDSTONE: predominantly quartzose aggregates type 1): as above, with occasional mica inclusion and a trace mineral fluorescence as above. Minor loose quartz as above. Also trace quartzose aggregates type 2): very light grey, friable, very fine to fine grained subrounded to rounded grains, well sorted, siliceous and occasionally dolomitic cement carbonaceous inclusions, poor visual porosity. No shows.
	10	SHALE: as above.
	Trace	COAL: 5%; black, brittle, vitreous, angular cuttings.
3175 - 3180m	80	SILTSTONE: as above.
	10	SHALE: as above.
	10	SANDSTONE: predominantly quartzose aggregates types 1) and 2) with 10% mineral fluorescence as above. Also minor loose quartz as above.
	Trace	COAL: as above. Grading to shale is parts.
3180 - 3185m	70	SILTSTONE: as above.
	30	SANDSTONE: predominantly quartzose aggregates type 2) as above and loose quartz as above. also minor type 1) aggregates as above.
	Trace	SHALE: as above.
3185 - 3190m	70	SANDSTONE: quartzose aggregates types 1) and 2) as above with 15% mineral fluorescence as above. Loose quartz as above.
	30	SILTSTONE: as above.
	Trace	PYRITE: microcrystalline aggregates.
3190 - 3195m	60	SANDSTONE: white to medium light grey quartzose aggregates, firm to moderately hard, fine to very fine grained, subangular to subrounded, moderately sorted to moderately well sorted, white argillaceous matrix with secondary silica/dolomitic cement, slightly carbonaceous, poor visual porosity. No shows. Clear to milky white quartzose aggregates, moderately hard, fine to coarse grained predominantly medium to coarse grained, angular to subrounded, moderately sorted, silica cement with possible silica overgrowths, no visual porosity. No shows.

			Clear to milky white quartz grains, medium to very coarse grained, angular to subrounded, moderately sorted. No shows. 15% moderately dull yellow spotty mineral fluorescence.
	40	SILTSTONE:	medium light grey to medium grey, moderately hard, angular to subrounded cuttings, slightly calcareous, micromicaceous; brownish grey to greyish black, moderately hard, angular to subrounded cuttings, carbonaceous, micromicaceous.
	Trace	COAL:	black, hard, vitreous.
	Trace	PYRITE:	microcrystalline aggregates.
3195 - 3200m	70	SANDSTONE:	quartzose aggregates and loose quartz grains as above. No shows. 15% moderate dull yellow mineral fluorescence.
	30	SILTSTONE:	as above.
	Trace	COAL:	as above.
	Trace	PYRITE:	microcrystalline aggregates.
3200 - 3205m	50	SILTSTONE:	as above.
	40	SANDSTONE:	quartzose aggregates and loose quartz grains as above. No shows. 20% moderate dull yellow mineral fluorescence.
	10	COAL:	as above.
3205 - 3210m	60	SILTSTONE:	predominantly brownish grey to greyish black otherwise as above.
	40	SANDSTONE:	quartzose aggregates and loose quartz grains as above. No shows. 20% moderately dull yellow mineral fluorescence possibly associated with calcareous cement in the quartzose aggregates.
	Trace	COAL:	as above.
3210 - 3215m	50	SANDSTONE:	quartzose aggregates and loose quartz grains as above. No shows. 20% moderate dull yellow mineral fluorescence.
	50	SILTSTONE:	predominantly brownish grey to greyish black otherwise as above.
	Trace	COAL:	as above.
	Trace	PYRITE:	microcrystalline aggregates.
3215 - 3220m	70	SANDSTONE:	quartzose aggregates, white to light grey, moderately hard, fine to very fine grained, subangular to rounded, moderately well sorted, white to light grey argillaceous matrix with possible secondary silic/calcareous cement, slightly carbonaceous, poor visual porosity. No shows. Clear to milky white, moderately hard, medium to coarse grained, moderately sorted, angular to subrounded, silica cement with possible silica overgrowths, no visual porosity. No shows. Loose clear to milky white medium to coarse quartz grains angular to subrounded, moderately sorted. No shows. 20% moderate dull yellow spotty mineral fluorescence.
	30	SILTSTONE:	brownish grey to greyish black, angular to subrounded cuttings, carbonaceous slightly micromicaceous, slightly calcareous.
	Trace	COAL:	black, hard, blocky, vitreous, silty in part.
	Trace	PYRITE:	microcrystalline aggregates.

3220 - 3225m	60	SANDSTONE: quartzose aggregates and loose grains as above. No shows.
	40	SILTSTONE: as above.
	Trace	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
3225 - 3230m	60	SANDSTONE: loose quartz, clear to translucent, medium to granule sized grains, predominantly coarse to very coarse, angular to subrounded, poorly sorted. No shows. Quartzose aggregates type 1): clear to translucent grains, very light grey cuttings friable to moderately hard, fine to granule sized grains, predominantly medium, subrounded to rounded, poorly sorted, siliceous and dolomitic cement, possible quartz overgrowths, poor visual porosity, mica and carbonaceous inclusions, 20% gold mineral fluorescence. Also trace of quartz aggregates type 2): very light grey cuttings, friable, very fine to fine grained, subrounded grains, well sorted, siliceous cement, carbonaceous inclusions, poor visual porosity, no shows.
	40	SILTSTONE: light grey to medium dark grey, firm to moderately hard, subangular to rounded, blocky cuttings calcareous in parts (the lighter and non-carbonaceous cuttings), predominantly carbonaceous.
	Trace	PYRITE: microcrystalline aggregates.
3230 - 3235m	60	SILTSTONE: as above, predominantly dark and carbonaceous.
	40	SANDSTONE: loose quartz as above, type 1) aggregates as above, 10% mineral fluorescence as above. Trace type 2) aggregates as above.
3235 - 3240m	50	SILTSTONE: as above.
	50	SANDSTONE: predominantly loose quartz as above. Also quartzose aggregates types 1) and 2) as above. Type 1) aggregates have 10% mineral fluorescence (few quartz grains covered with, or attached to kerogen show faint white cut).
	Trace	COAL: black, brittle, vitreous to subvitreous, angular to subrounded cuttings.
	Trace	SHALE: dark greyish brown, firm, fissile, carbonaceous.
3240 - 3245m	70	SILTSTONE: as above.
	30	SANDSTONE: loose quartz, aggregates type 1) (trace mineral fluorescence) and type 2) as above (occasional grains, with kerogen coating show cut as above).
	Trace	COAL: as above.
3245 - 3250m	70	SANDSTONE: predominantly loose quartz and quartzose aggregates type 1) as above. Also minor quartz aggregates type 2) as above.
	Trace	PYRITE: microcrystalline aggregates.
3250 - 3255m	80	SILTSTONE: predominantly firm, and grades to shale as above in parts, otherwise as above.
	20	SANDSTONE: predominantly loose quartz and quartzose aggregates type 1) as above. Aggregates show. Also minor type 2) aggregates as above.
	Trace	PYRITE: microcrystalline aggregates.

3255 - 3260m	80	SILTSTONE: predominantly dark and carbonaceous otherwise as above.
	20	SANDSTONE: predominantly loose quartz and quartzose aggregates type 1) as above. No shows. 10% dull yellow spotty mineral fluorescence.
	Trace	COAL: black, hard, silty in part.
3260 - 3265m	90	SILTSTONE: as above.
	10	SANDSTONE: coarse quartz, quartz aggregates types 1) and 2) as above.
	Trace	COAL: as above.
	Trace	PYRITE: as above.
3265 - 3270m	90	SILTSTONE: light grey to medium dark grey, predominantly firm to occasionally moderately hard, subangular to rounded, blocky cuttings, calcareous in parts (i.e. the lighter grey, non-carbonaceous cuttings are calcareous) carbonaceous in parts.
	10	SANDSTONE: loose quartz and quartzose aggregates types 1) and 2) as above. Trace mineral fluorescence, with occasional (3 cuttings) quartz grains partly covered with or attached to black kerogen giving slow white streaming cut.
3270 - 3275m	90	SILTSTONE: as above.
	10	SANDSTONE: loose quartz as above. Quartz aggregates type 1) as above with trace mineral fluorescence as above.
3275 - 3280m	80	SILTSTONE: as above. Becoming very carbonaceous in parts.
	20	SANDSTONE: loose quartz, translucent to milky white medium to coarse grained, subrounded. No shows. Quartzose aggregates, translucent to white, moderately hard, subangular, moderately to well sorting, siliceous and dolomitic cement, poor porosity. No shows. Trace mineral fluorescence.
	Trace	COAL: black, firm, subangular.
3280 - 3285m	70	SILTSTONE: as above.
	10	SANDSTONE: loose quartz, translucent to milky white, subrounded, medium to coarse grained. Quartzose aggregates, milky white, moderately hard medium to coarse grained, subrounded, moderate sorting, siliceous cement, poor porosity. No shows.
	20	COAL: black, firm, subangular, vitreous lustre, conchoidal fracture.
3285 - 3290m	85	SILTSTONE: as above.
	5	SANDSTONE: as above.
	10	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates.
3290 - 3295m	90	SILTSTONE: very carbonaceous, otherwise as above.
	10	SANDSTONE: loose quartz as above. Quartz aggregates as above with 3 cuttings (with common carbonaceous inclusions) having dull yellow fluorescence and very slow faint white diffuse cut and crush cut.
	Trace	COAL: as above, grading to very carbonaceous siltstone.
	Trace	PYRITE: as above.

3295 - 3300m	90	SILTSTONE: carbonaceous in parts only, as above.
	10	SANDSTONE: loose quartz, translucent, coarse to very coarse, angular to subrounded, moderately well sorted. No shows. Also quartzose aggregates, very light grey cuttings, clean to translucent grains, friable to moderately hard, very fine to medium grained with occasional grains up to very coarse grain size, subangular to subrounded, with the larger grains being predominantly subrounded, poor to moderate sorting, siliceous cement, occasional carbonaceous inclusions, poor visual porosity. No shows.
	Trace	COAL: as above.
3300 - 3305m	Trace	PYRITE: microcrystalline aggregates.
	90	SILTSTONE: soft to firm, otherwise as above.
	10	SANDSTONE: loose quartz and quartzose aggregates as above. No shows.
3305 - 3310m	Trace	PYRITE: as above.
	100	SILTSTONE: as above.
	Trace	SANDSTONE: aggregates as above.
3310 - 3315m	100	SILTSTONE: as above.
	Trace	COAL: as above.
	Trace	SANDSTONE: loose quartz and aggregates as above. One particularly carbonaceous cutting had yellow fluorescence and slow, very faint white cut.
3315 - 3320m	100	SILTSTONE: as above.
	Trace	SANDSTONE: loose quartz and aggregates as above, with 3 carbonaceous cuttings showing yellow fluorescence and weak, slow white cut. (Desander sampled showed 10% ss)
3320 - 3325m	50	SILTSTONE: light to dark grey, firm, medium to coarse grains (cavings), subangular, moderate sorting, carbonaceous in parts.
	20	SANDSTONE: loose quartz, translucent to white, hard, subrounded to angular, medium to coarse grained. No shows. Quartz aggregates, milky white to white friable, medium to coarse grained, subangular moderately sorted, carbonate cement, poor visual porosity. No shows.
	30	COAL: as above.
3325 - 3330m	60	SILTSTONE: as above.
	10	SANDSTONE: as above. Some well rounded loose grains.
	30	COAL: as above.
	Trace	PYRITE.
3330 - 3335m	60	COAL: as above.
	30	SILTSTONE: as above.
	10	SANDSTONE: as above, with very occasional (3 cuttings per sample) carbonaceous cuttings giving slow, white streaming cut.
	Trace	PYRITE.
3335 - 3340m	50	COAL: black, firm, brittle, angular cuttings, vitreous, conchoidal fracture.
	40	SHALE: greyish brown to dark grey, firm to moderately hard, subfissile to fissile cuttings, very carbonaceous.

	10	SILTSTONE: as above.
	Trace	SANDSTONE: loose quartz as above. Occasional aggregates as above. No shows.
		(Desander sampled showed 50% loose quartz, 50% shale/coal).
3340 - 3345m	20	COAL: as above.
	20	SHALE: as above.
	60	SILTSTONE: as above.
	Trace	SANDSTONE: Occasional loose quartz fragments/grains as above. Predominantly quartzose aggregates, very light grey, friable to moderately hard, fine to occasionally coarse grained, predominantly medium, well sorted, subrounded grains, siliceous cement, occasional carbonaceous inclusions, poor visual porosity. No shows.
	Trace	PYRITE: microcrystalline aggregates.
3345 - 3350m	100	SILTSTONE: as above.
	Trace	COAL: as above.
	Trace	SHALE: as above.
	Trace	SANDSTONE: as above. Aggregates and loose quartz.
3350 - 3355m	30	COAL: as above.
	60	SILTSTONE: as above.
	10	SHALE: as above.
3355 - 3360m	40	COAL: as above.
	60	SILTSTONE: light grey to dark grey, predominantly medium to medium dark grey, firm to moderately hard, blocky cuttings, occasionally calcareous, carbonaceous.
	Trace	SANDSTONE: aggregates as above.
	Trace	PYRITE: as above.
3360 - 3365m	60	COAL: as above.
	30	SILTSTONE: as above.
	10	SANDSTONE: loose quartz, clear to translucent, medium to very coarse, angular to subrounded. No shows. Also quartzose aggregate as above.
		(Desander sample at 3365.5m has 90% fine grained, subrounded loose quartz).
3365 - 3370m	60	COAL: as above.
	30	SILTSTONE: as above.
	10	SANDSTONE: predominantly aggregates as above becoming very carbonaceous in parts. These carbonaceous cuttings have dull gold fluorescence and very slow, weak white cut.
3370 - 3375m	70	SANDSTONE: loose quartz, translucent to white, medium to granule sized, predominantly medium to very coarse, subangular to sub rounded, poorly sorted. No shows. Predominantly quartzose aggregates; type 1) clear to translucent grains, very light grey cuttings, friable to moderately hard, medium to coarse grained, subangular to subrounded, well sorted, dolomite cement, well cemented, occasional carbonaceous inclusions, poor visual porosity to no visual porosity, approximately

		20% of sample has bright whitish yellow mineral fluorescence. No shows. Type 2) clear to translucent grains, light grey cuttings, friable to moderately hard, very fine to medium grained, subrounded, well sorted, siliceous/argillaceous cement, carbonaceous inclusions, poor visual porosity. No shows.
	30	SILTSTONE: as above.
	Trace	COAL: as above.
3375 - 3380m	80	SANDSTONE: minor loose quartz as above. Predominantly quartzose aggregates type 1) with approximately 30% yellow mineral fluorescence, type 2) as above.
	10	SILTSTONE: as above. Very carbonaceous in parts.
	10	COAL: as above.
	Trace	PYRITE: microcrystalline aggregates and has cement surrounding quartz grains.
3380 - 3385m	90	SANDSTONE: minor loose quartz, predominantly coarse otherwise as above. Predominantly quartzose aggregates type 1) as above, with approximately 40% bright yellow mineral fluorescence and type 2) as above.
	10	COAL: as above.
	Trace	SILTSTONE: as above.
3385 - 3390m	80	SANDSTONE: minor loose quartz, medium to very coarse, otherwise as above. Predominantly quartz aggregates type 1) as above with approximately 20% whitish yellow mineral fluorescence, also type 2) as above.
	10	COAL: as above.
	10	SILTSTONE: as above.
3390 - 3395m	50	SILTSTONE: as above.
	30	SANDSTONE: loose quartz as above. Quartzose aggregates predominantly type 1) as above with 20% mineral fluorescence, also minor type 2) as above.
	10	COAL: as above.
	10	SHALE: as above.
	Trace	PYRITE: as above.
3395 - 3400m	70	SILTSTONE: as above.
	20	COAL: as above.
	10	SANDSTONE: loose quartz as above. Aggregates type 1) with 10% yellow to white mineral fluorescence; and type 2) as above.
3400 - 3405m	70	SILTSTONE: brownish grey to dark grey, firm to moderately hard, blocky cuttings, carbonaceous to very carbonaceous in parts.
	30	COAL: black, firm to moderately hard, brittle, angular cuttings, vitreous, conchoidal fracture in parts.
	Trace	SANDSTONE: Occasional loose quartz as above. Predominantly quartz aggregates type 1) as above, with trace mineral fluorescence, and slow, weak, white diffuse cut and crush cut.
3405 - 3410m	80	SILTSTONE: as above.
	10	SANDSTONE: predominantly aggregates type 1) as above, with 10% mineral fluorescence and very slow, weak white diffuse cut and crush cut. Also minor loose quartz as above.
	10	COAL: as above.
	Trace	PYRITE: as above.

3410 - 3415m	70	SILTSTONE: as above, and containing very fine quartz grains in parts.
	30	SANDSTONE: predominantly aggregates type 1) as above, 10% whitish yellow mineral fluorescence. No shows. Loose quartz and type 2) aggregates as above.
	Trace Trace	COAL: as above. PYRITE: as above.
3415 - 3420m	70	SANDSTONE: loose quartz as above. Quartzose aggregates type 1) siliceous cement, trace dolomitic cement, otherwise as above, with trace mineral fluorescence as above. Also minor type 2) aggregates as above.
	30	SILTSTONE: as above.
	Trace	COAL: as above.
3420 - 3425m	50	SILTSTONE: medium light grey to medium dark grey, soft to moderately hard, blocky cuttings, very fine quartz grains inclusions in parts, common carbonaceous inclusions, to very carbonaceous in parts.
	50	SANDSTONE: loose quartz, clear to translucent, medium to very coarse grained, predominantly coarse to very coarse, angular to subrounded, moderately well sorted. No shows. Predominantly aggregates type 1) with trace mineral fluorescence as above, and trace fluorescent trace cuttings have very slow, very weak white diffuse cut (probably cavings). Also minor type 2) aggregates.
3425 - 3430m	60	SILTSTONE: as above.
	30	SANDSTONE: minor loose quartz as above. Predominantly quartzose aggregates. Clear to translucent grains, friable to moderately hard, very fine to very coarse grained, predominantly very fine to fine, and medium to coarse with occasional very coarse grains, well sorted (very fine to fine grained aggregates) to moderately well sorted, siliceous cement, carbonaceous inclusions, poor visual porosity. No shows. Trace cuttings (probably cavings) have bright yellow fluorescence and very slow, very weak white diffuse cut.
	10	COAL: as above.
3430 - 3435m	50	SILTSTONE: as above.
	30	COAL: as above.
	30	SANDSTONE: loose quartz as above. Aggregates as above. Trace cuttings have bright yellow fluorescence, and very slow, very weak streaming cut.
	Trace Trace	SHALE: dark brownish grey, firm, fissile cuttings, carbonaceous. PYRITE: microcrystalline aggregates.
3435 - 3440m	50	SILTSTONE: as above.
	50	SANDSTONE: minor loose quartz as above. Aggregates as above. No shows.
	Trace	COAL: as above.
	Trace	SHALE: as above.
		At 3447m POOH due to rough seas.
3440 - 3447m		CAVINGS: did not circulate bottom up.



3447 - 3450m	80	SANDSTONE: Predominantly type 1) 70% moderately hard silica cemented quartz aggregates. Fine to medium to occasional coarse grained, poorly to moderately well sorted. Slightly carbonaceous in part 50% of aggregates show moderate to bright yellow fluorescence coming from calcareous cement. Very poor to no visual porosity. No shows. (Calcareous cemented aggregates commonly have light brown staining in cement. Will not cut, definitely not oil stain). Type 2) 30% loose medium to very coarse, clear quartz grains. Some shattered (broken free from coarse grained aggregates) some possibly cavings. No shows.
	20	SILTSTONE: argillaceous, sandy, medium light grey subfissile, moderately hard, micromicaceous in part.
	Trace	COAL: as above.
3450 - 3453.1m	90	SANDSTONE: dominantly (95%) type 1) fine grained to medium grained, to very occasional coarse grained, subrounded, moderately well sorted sandstone aggregates. Very stoney silica, dolomite and rare pyrite cements make moderately hard to hard cuttings. Silica cement is clear, subcrystalline, very hard, dolomite cement is clear to light brown ( <u>not</u> oil stained) and gives moderately bright to bright yellow mineral fluorescence translucent 30% of sandstone aggregates, pyrite is cubic, microcrystalline. Very poor to no visual porosity. No shows. Minor (5%) type 2) loose angular to occasional subrounded clear quartz. Some medium to coarse grain clear grains are shattered. Probably broken loose from aggregates and possibly some coarse clastic cavings.
	10	SILTSTONE: light grey to medium dark grey argillaceous, sandy, micromicaceous (muscovite), subfissile, slightly microcarbonaceous, moderately hard.
	Trace	COAL: hard, blocky, brittle cuttings, rare conchoidal fracture.
	Trace	PYRITE.
3453.1 - 3462.8m		See Core #1 description.
3462.8 - 3465m	60	COAL: as above.
	30	SANDSTONE: as above.
	10	SILTSTONE: as above.
3465 - 3470m	80	COAL: black, hard, shiny, vitreous lustre, conchoidal fracture.
	10	SANDSTONE: predominantly type 1) very fine to medium grained aggregates, silica and dolomite cements, 10% moderately bright yellow mineral fluorescence. No shows. Very poor to no visual porosity. Grains are subangular to subrounded, medium to poorly sorted, common micromicaceous and microcarbonaceous material.
	10	SILTSTONE: medium light to medium dark grey, hard, subfissile, micromicaceous, microcarbonaceous.
3470 - 3475m	40	SANDSTONE: as above.
	40	SILTSTONE: as above.
	20	COAL: as above.

3475 - 3480m	40	SANDSTONE: as above.
	40	SILTSTONE: as above.
	20	COAL: as above.
3480 - 3485m	60	SILTSTONE: medium to light grey to medium dark grey, moderately hard, subfissile, micromicaceous and microcarbonaceous.
	30	SANDSTONE: Type 1) very fine to fine grained, occasional medium grained aggregates, Silica and dolomite cements (5% dolomitic mineral fluorescence) subangular to subrounded, medium to well sorted, minor micromicaceous and pyrite cement, very poor visual porosity. No shows.
	10	COAL: black, hard, shiny, conchoidal fracture.  NOTE: 2 silty coal cuttings give slow, bright yellow cut - kerogen.
2485 - 3490m	60	SILTSTONE: medium to dark grey, hard, argillaceous, slightly sandy, in part carbonaceous, micromicaceous.
	20	COAL: black, hard, shiny, conchoidal fracture.
	20	SANDSTONE: off white to clear, medium to coarse grained, subrounded to subangular aggregate to loose (mostly caving).
3490 - 3495m	60	SILTSTONE: medium to dark grey, hard medium grey silts are sandy, dark grey silts are carbonaceous.
	20	COAL: as above.
	20	SANDSTONE: as above.  NOTE: sample quality poor (mostly cavings) less than 5% mineral fluorescence, less than 2 % of carbonaceous silt shows white lue fluorescence with slow even white cut.
3495 - 3500m	40	SILTSTONE: as above.
	40	SANDSTONE: clear to white coarse grained, loose angular to subangular in part with silica cement, no visual porosity. No shows. Trace of mineral fluorescence.
	20	COAL: as above.
3500 - 3505m	60	SANDSTONE: as above. Trace mineral fluorescence.
	30	SILTSTONE: as above.
	10	COAL: as above.
3505 - 3510m	60	SANDSTONE: off white to clear. Predominantly type 1) coarse to very coarse grained quartz, loose, angular to subangular, type 2) medium to coarse grained aggregates, clear to white, no visual porosity. No shows.
	40	SILTSTONE: light grey, medium hard, sandy, occasionally very sandy, slightly carbonaceous, micromicaceous. Trace of green to yellow fluorescence with even white cut.
3510 - 3515m	70	SANDSTONE: as above. Trace of mineral fluorescence.
	30	SILTSTONE: as above.
3515 - 3521m	50	SANDSTONE: as above.
	30	SILTSTONE: as above.

APPENDIX 2

APPENDIX 2

CORE DESCRIPTIONS

Core No. 1

Well : Veilfin-1

Interval Cored : 3453.1-3462.8m

Cut : 9.7m

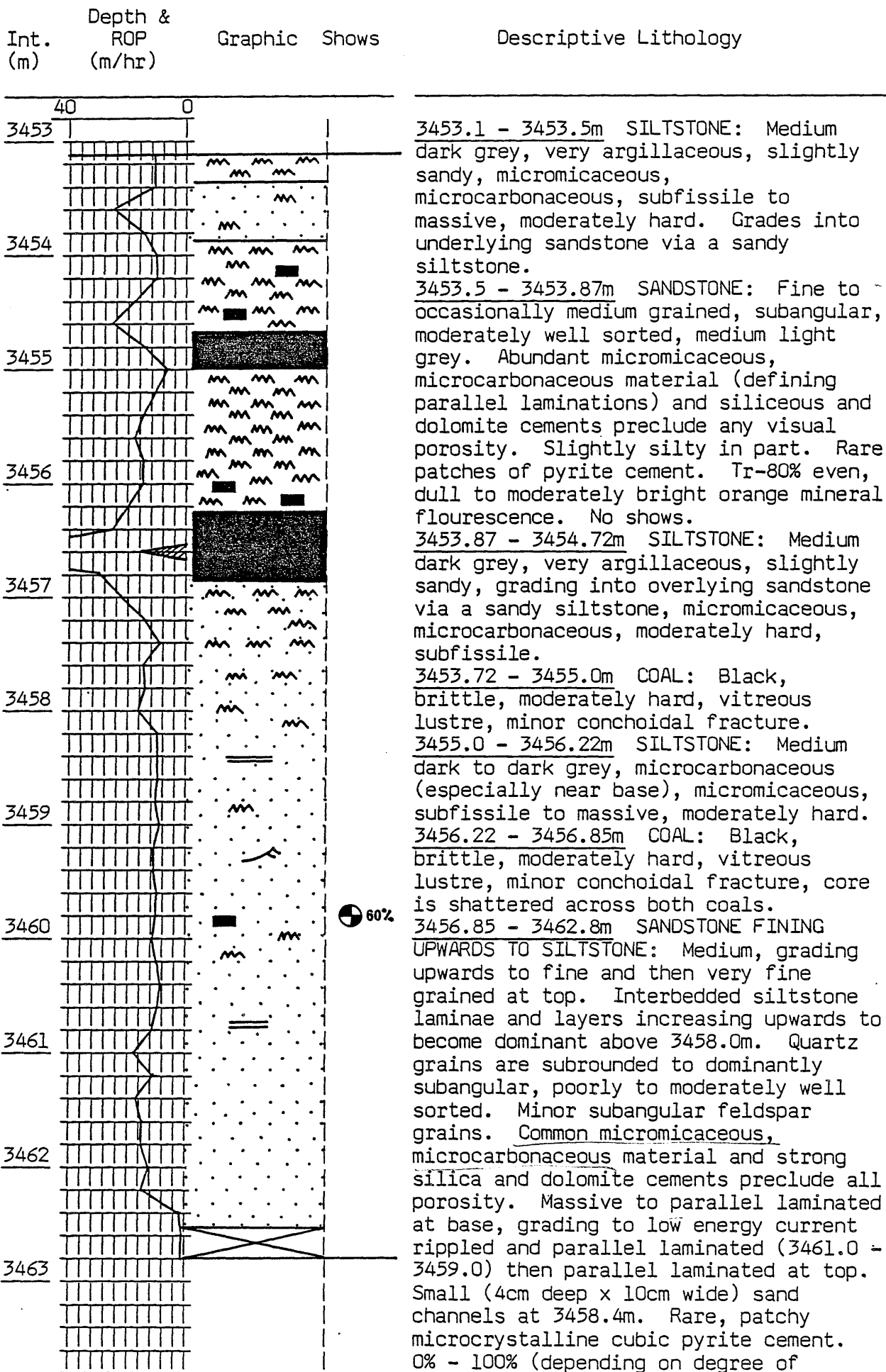
Bit Type : RC-4

Described by : R. Neumann

Recovered : 9.55m (98.5%)

Bit Size : 9-7/8"

Date : 29/3/84



Core No. 1 cont'd

Well : Veilfin-1

Interval Cored : 3453.1-3462.8m

Cut : 9.7m

Bit Type : RC-4

Described by : R. Neumann

Recovered : 9.55m (98.5%)

Bit Size : 9-7/8"

Date : 29/3/84

Int. (m)	Depth & ROP (m/hr)	Graphic Shows	Descriptive Lithology
			<p>cementation) dull to moderately bright, even orange mineral fluorescence from dolomite cement (2% - 6% dolomite from calcimetry) SHOWS: a 1cm thick sandstone layer from 3459.78 - 3459.79m gave 40% even dull orange mineral fluorescence and 60% even, moderately bright yellow/green fluorescence. Slow, moderately bright yellow stream cut and very weak, moderately bright yellow/green crush cut. The sand is fine grained, well cemented with dolomite and sucrosic to subcrystalline silica cements and has 60% light brown to brown oil staining. Visual porosity is zero, precluded by diagenetic cements and syndepositional matrix.</p>

APPENDIX

3

APPENDIX 3

SIDEWALL CORE DESCRIPTIONS



VEILFIN-1

SIDEWALL CORE DESCRIPTIONS

<u>No.</u>	<u>Depth</u>	<u>Rec.</u> (mm)	<u>Rock</u> <u>Type</u>	<u>Description</u>
1	3494.0	20	SILTSTONE	Medium grey, firm, carbonaceous, micromicaceous, argillaceous.
2	3478.0	25	SILTSTONE	Medium grey, unconsolidated, very carbonaceous, argillaceous, micromicaceous. Subfissile.
3	3459.0	46	COAL	Black, brittle, slightly silty.
4	3435.6	40	SILTSTONE	Dark grey, firm, coaly laminations, argillaceous, micromicaceous. 2mm coal lamination.
5	3432.0	26	SILTSTONE	Dark grey, firm, very argillaceous, carbonaceous, micromicaceous.
6	3414.1	30	SILTSTONE	Medium grey, firm, very argillaceous, carbonaceous, micromicaceous.
7	3408.2	38	SILTSTONE	Light grey, medium to coarse grained, moderate to well sorted, subrounded, soft. Siltstone lithic fragments, silica cement.
8	3390.7			Shot off.
9	3380.1			No recovery, empty bullet.
10	3371.6	39	SANDSTONE	Light grey, fine to coarse grained, poorly sorted, subangular to subrounded, soft, silty laminations, carbonaceous. 10% spotty moderately bright yellow mineral fluorescence. Crystalline silica cement.
11	3359.3	17	SILTSTONE	Medium grey, soft, carbonaceous, argillaceous, micromicaceous.
12	3331.0	15	SILTSTONE	Medium grey, soft, carbonaceous laminations, argillaceous, micromicaceous.
13	3312.2	15	SILTSTONE	Light grey, soft, slightly argillaceous.
14	3283.2	31	SILTSTONE	Medium grey, soft, argillaceous, carbonaceous laminations.
15	3273.6	25	SILTSTONE	Medium grey, soft, carbonaceous, slightly argillaceous.
16	3267.8	25	SILTSTONE	Light grey, soft, slightly carbonaceous, micromicaceous.
17	3257.0			Shot off.
18	3247.3	23	SILTSTONE	Dark grey, moderately soft, fissile, carbonaceous, micromicaceous, argillaceous. 2% spotty, yellow fluorescence.
19	3240.2	25	SILTSTONE	Dark grey, moderately soft, fissile, carbonaceous, micromicaceous, argillaceous.

20	3234.0	22	SILTSTONE	Dark grey, soft, fissile, carbonaceous, micromicaceous, argillaceous.
21	3226.8	31	SANDSTONE	Off white, medium to coarse grained, moderate to well sorted, subrounded, sublabile, carbonaceous, argillaceous (white clay). 5% spotty moderately bright blue to yellow fluorescence. Poor visible porosity.
22	3223.5	15	SANDSTONE	Off white, medium to coarse grained, moderate to well sorted, subrounded to subangular, soft, slightly carbonaceous, argillaceous (white clay). 5% spotty moderately bright yellow fluorescence. Poor visible porosity.
23	3220.7	25	SANDSTONE	Clear white, medium to coarse grained, moderately sorted, subangular to subrounded, soft. 10% spotty moderately bright yellow fluorescence.
24	3218.0	20	SILTSTONE	Dark grey, soft, microcarbonaceous.
25	3216.2	20	SANDSTONE	Clear to white, medium to coarse grained, moderate to well sorted, subrounded to subangular, soft. 50% spotty moderately bright yellow white fluorescence.
26	3214.1	17	SANDSTONE	White, clear, medium to coarse grained, moderate to well sorted, subangular, soft. 15% spotty moderately bright yellow fluorescence.
27	3212.8	30	SANDSTONE	White, medium to coarse grained, moderate to well sorted, subrounded to subangular, soft, microcarbonaceous. 5% spotty dull yellow fluorescence.
28	3210.0	25	SILTSTONE	Dark grey, soft, carbonaceous, argillaceous. Subfissile.
29	3206.0	20	SILTSTONE	Dark grey to black, carbonaceous, argillaceous (coaly).
30	3197.1	22	SILTSTONE	Light grey, microcarbonaceous, argillaceous.
31	3193.0	15	SANDSTONE	White, coarse to very coarse grained, moderately sorted, subrounded to subangular, friable. 80% spotty, bright white fluorescence.
32	3191.0			Misfire.
33	3189.3			Misfire.
34	3187.0			Misfire.
35	3185.5			Misfire.
36	3178.0			Misfire.
37	3175.0			Misfire.
38	3169.5			Misfire.
39	3165.0			Misfire.

40	3158.2			Misfire.
41	3149.0			Misfire.
42	3147.0			Misfire.
43	3145.0			Misfire.
44	3143.0			Misfire.
45	3141.0			Misfire.
46	3139.0			Misfire.
47	3132.6			Misfire.
48	3130.3			Misfire.
49	3124.5			Misfire.
50	3121.3			Misfire.
51	3117.5			Misfire.
52	3191.0	25	SANDSTONE	White, coarse to very coarse grained, moderately sorted, subangular, friable, quartz. 70% spotty bright white fluorescence, bright white cut fluorescence, heavy, white cut residue.
53	3188.9	22	SANDSTONE	White, medium to very coarse grained, moderately sorted, subangular, friable, carbonaceous. 30% spotty bright white fluorescence, dull white cut fluorescence, light, white cut residue. Very slow even cut.
54	3187.0	25	SANDSTONE	White, medium to very coarse grained, moderately sorted, subangular to subrounded, friable, carbonaceous. 5% spotty dull yellow fluorescence, mineral cut fluorescence. Very slow even cut.
55	3185.4			No recovery - empty.
56	3178.0	15	SHALE	Black, very carbonaceous. Subfissile.
57	3175.0	30	SILTSTONE	Light grey to white, fine to medium grained, moderate to well sorted, subrounded, friable, slightly carbonaceous, clay?. Fair visible porosity.
58	3169.5	20	SILTSTONE	Dark grey, soft, argillaceous, microcarbonaceous.
59	3165.0			No recovery - empty.
60	3158.2	24	SHALE	Dark grey to black, soft, silty, coaly. Subfissile.
61	3149.1	20	SANDSTONE	White, medium to coarse grained, moderate to well sorted, subangular, friable, coaly, quartz. 70% spotty bright white fluorescence, bright white cut fluorescence.
62	3146.9	15	SANDSTONE	White, medium to coarse grained, moderate to well sorted, subrounded to subangular, unconsolidated, quartz.

63	3145.0			No recovery - empty.
64	3143.0	17	SANDSTONE	White, medium to coarse grained, moderate to well sorted, subangular, unconsolidated, quartz. 5% spotty dull yellow fluorescence.
65	3141.0	23	SANDSTONE	White, fine to medium grained, moderate to well sorted, subrounded to subangular, friable, quartz, carbonaceous, micaceous. 5% spotty dull white yellow fluorescence, bright, white cut fluorescence, light white cut residue. Very slow cut.
66	3139.0	15	SHALE	Black, soft, very carbonaceous, silty. Subfissile.
67	3132.5	15	SANDSTONE	Grey, very fine to fine grained, moderately sorted, subrounded, unconsolidated, carbonaceous, micaceous.
68	3129.9	15	SANDSTONE	White, fine to medium grained, moderately sorted, subrounded to subangular, unconsolidated, quartz. 5% spotty bright white fluorescence, bright white cut fluorescence.
69	3124.5	10	SANDSTONE	White, medium to coarse grained, moderately sorted, subrounded to subangular, unconsolidated, quartz.
70	3121.5	13	SANDSTONE	White, medium to coarse grained, moderately sorted, subangular, unconsolidated, quartz. 30% spotty bright white yellow fluorescence, moderately bright white cut residue.
71	3117.5	27	SILTSTONE	Dark grey to black, moderately firm, carbonaceous, argillaceous. 5% spotty dull yellow fluorescence, bright white cut fluorescence, heavy white cut residue. Subfissile.
72	3112.9	20	SILTSTONE	Black, firm, microcarbonaceous, micromicaceous. Moderately bright white cut fluorescence, medium white cut residue. Very, very slow cut.
73	3099.5	25	SILTSTONE	Black, firm, microcarbonaceous, micromicaceous. Moderately bright white cut fluorescence, medium white cut residue. Very, very slow cut.
74	3095.4	15	SANDSTONE	White, fine to medium grained, moderate to well sorted, subangular to subrounded, unconsolidated, slightly carbonaceous. 80% spotty bright white fluorescence, bright white cut fluorescence, heavy white cut residue. Quick cut.
75	3092.9	50		No recovery.
76	3088.0	10	SILTSTONE	Black, firm argillaceous, carbonaceous, sandy. Dull yellow white cut fluorescence. Subfissile, very weak cut.

77	3081.0	15	SANDSTONE	Light grey, medium grained, moderately sorted, subangular to subrounded, soft, slightly carbonaceous, slightly silty. Moderate visible porosity.
78	3073.5	10	SANDSTONE	Light grey, fine grained, moderately sorted, subangular, soft, slightly carbonaceous. Poor visible porosity.
79	3069.0	25	SANDSTONE	Light grey, fine to medium grained, soft, slightly carbonaceous, silica cement. 5% spotty moderately bright yellow fluorescence, mineral cut fluorescence. Poor visible porosity.
80	3062.5	12	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subangular to subrounded, unconsolidated, slightly carbonaceous. 30% spotty, dull blue fluorescence, mineral cut fluorescence.
81	3059.0	25	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subangular to subrounded, firm, silica cement, carbonaceous.
			SHALE	Dark grey, firm, very argillaceous, micaceous.
82	3054.0	11	SHALE	Dark grey, firm, very argillaceous, micaceous.
83	3045.5	15	SHALE	Dark grey, firm, very argillaceous, micaceous. Subfissile.
84	3044.0	17	SANDSTONE	Light grey, very fine grained, well sorted subangular, firm, slightly carbonaceous, micaceous. Poor visible porosity.
85	3033.5	15	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subangular to subrounded, firm, carbonaceous laminations, clay laminations. 5% streaks moderately bright yellow fluorescence, very dull, weak, yellow, crush cut residue. Fluorescence associated with silty/carbonaceous laminations.
86	3030.0	16	SANDSTONE	Light grey, very fine to fine grained, well sorted, subrounded, unconsolidated, carbonaceous, micaceous.
87	3026.0	10	SILTSTONE	Dark grey, firm, microcarbonaceous, micromicaceous.
88	3021.0			No recovery - empty.
89	3007.0	10	SANDSTONE	White, medium to coarse grained, moderately sorted, subangular to subrounded, unconsolidated.
90	2999.0	15	SANDSTONE	White, medium to coarse grained, moderately sorted, subangular to subrounded, unconsolidated. 30% spotty moderately bright white fluorescence, mineral cut fluorescence.

91	2993.0	22	SANDSTONE	White, medium to very coarse grained, poor to moderately sorted, angular to subrounded, unconsolidated. 5% spotty dull white fluorescence, mineral cut fluorescence.
92	2984.8	22	SANDSTONE	Light grey to white, fine grained, moderately sorted, subrounded, friable, carbonaceous streaks. 20% spotty moderately bright white fluorescence, dull white cut fluorescence.
93	2976.5			No recovery - empty.
94	2968.0			No recovery - empty.
95	2965.0	15	SANDSTONE	Light grey to white, fine to medium grained, moderate to well sorted, subrounded, firm, carbonaceous streaks, clay?, quartz.
96	2961.0			Shot off.
97	2953.0	12	SANDSTONE	White, fine to medium grained, moderately sorted, subangular to subrounded, slightly firm, carbonaceous streaks, quartz.
98	2947.0	12	SHALE	Black to dark grey, firm, micromicaceous, silty. Subfissile.
99	2942.0	30	COAL	Black, firm.
100	2937.0	20	SILTSTONE	Light grey, very fine grained, very well sorted, rounded, soft, carbonaceous disseminated, white quartz laminar.
101	2931.6	25	SANDSTONE	White, medium grained, moderate to well sorted, subrounded to subangular, soft.
102	2927.1	27	SANDSTONE	White, fine to medium grained, moderately sorted, subrounded, carbonaceous disseminated, micaceous disseminated.
103	2916.0	18	SILTSTONE	Dark grey, firm, argillaceous, micaceous. Subfissile.
104	2904.6	22	SANDSTONE	White, fine to coarse grained, poorly to moderately sorted, angular to subrounded, soft, carbonaceous, disseminated and quartz.
105	2901.5	20	SANDSTONE	White, fine to medium grained, moderately sorted, subrounded, soft, carbonaceous streaks.
106	2898.0	25	SANDSTONE	White, medium to coarse grained, moderately sorted, subangular to subrounded, soft, carbonaceous streaks. 5% spotty dull yellow fluorescence, mineral cut fluorescence.
107	2896.0	25	SANDSTONE	White, medium coarse, well sorted, subrounded, soft, carbonaceous streaks.
108	2891.1	15	SILTSTONE	Dark grey, firm, slightly carbonaceous, argillaceous. Plant remains.

109	2883.0	25	SANDSTONE	White, medium to coarse, moderate to well sorted, subangular to subrounded, soft, mica (muscovite). 5% spotty dull yellow fluorescence, mineral cut fluorescence.
110	2878.0	22	SANDSTONE	Light grey to white, fine to medium grained, moderately sorted, subrounded, firm, carbonaceous.
111	2865.0	20	SILTSTONE	Dark grey, firm, carbonaceous, micaceous, argillaceous.
112	2850.0	20	SANDSTONE	Light grey to white, fine to medium grained, moderately sorted, subrounded, soft.
113	2844.0	17	SANDSTONE	White, medium grained, well sorted, subrounded, unconsolidated, quartzose.
114	2834.7	10	SANDSTONE	Light grey to white, very fine to fine grained, well sorted, subrounded, firm, quartzose.
115	2821.1	22	SHALEY COAL	Black, firm very carbonaceous.
116	2815.0	30	COAL	Black.
117	2805.2	20	SILTSTONE	Dark grey, moderately firm, carbonaceous, argillaceous.
118	2803.0	20	SANDSTONE	White, medium grained, well sorted, subrounded, soft, carbonaceous. Trace spotty moderately bright yellow fluorescence, mineral cut fluorescence.
119	2800.0	20	SANDSTONE	White, medium grained, well sorted, subrounded, moderately firm, carbonaceous, micaceous.
120	2787.6	20	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subangular to subrounded, firm, carbonaceous.
121	2780.6	20	SILTSTONE	Light grey to white, firmed, carbonaceous laminations.
122	2765.0	20	SILTSTONE	Dark grey, firm, carbonaceous. Subfissile.
123	2760.1	20	SANDSTONE	White, fine to medium grained, moderate to well sorted, subrounded to subangular. Trace spotty moderately bright white fluorescence, mineral cut fluorescence.
124	2753.0	25	SANDSTONE	Light grey to white, medium to coarse grained, moderate to very well sorted, angular to subangular, firm, carbonaceous.
125	2747.0	15	SILTSTONE	Dark grey to black, firm argillaceous, carbonaceous.
126	2745.0	15	SANDSTONE	White, fine to medium grained, moderate to well sorted, subrounded, soft, carbonaceous.
127	2741.9	15	SANDSTONE	Clear, fine to medium, moderate to well sorted, subangular to subrounded, soft, carbonaceous.

128	2734.5	22	SHALE	Black, firm, carbonaceous, micaceous, silty.
129	2719.0	17	SILTSTONE	Light grey, very fine grained, firm, carbonaceous laminations, micaceous.
130	2713.0	18	SHALE	Black, firm, carbonaceous.
131	2709.4	18	SANDSTONE	Light grey to white, very fine grained, well sorted, subrounded, soft.
132	2705.0	18	SANDSTONE	Light grey to white, fine to medium grained, moderately sorted, subrounded, soft, carbonaceous streaks.
133	2696.1	15	SILTSTONE	Grey, very fine grained, soft.
134	2683.9	18	SILTSTONE	Light grey, soft, fine grained, carbonaceous.
135	2678.0	15	SHALE	Dark grey, firm, carbonaceous. With white, very fine grained quartz laminations.
136	2668.0			No recovery - empty.
137	2644.2	25	SILTSTONE	Dark grey, firm, coaly laminations, very argillaceous. Subfissile, parrallel laminations.
138	2640.0	30	COAL	Black, brittle, slightly argillaceous.
139	2630.4	15	SILTSTONE	Light grey, firm, slightly argillaceous.
140	2616.0	18	SILTSTONE	Medium grey, firm, slightly sandy, carbonaceous, micaceous. Subfissile.
141	2601.2	23	SANDSTONE	Medium grey, very fine to fine grained, moderately sorted, subangular to subrounded, firm, very argillaceous, carbonaceous, silica cement. Very poor visible porosity.
142	2584.5	24	SILTSTONE	Medium dark grey, firm, very argillaceous, carbonaceous laminations, slightly sandy. Subfissile.
143	2576.0	19	SILTSTONE	Medium grey, firm, slightly argillaceous, micaceous.
144	2552.0	10	SILTSTONE	Medium grey, firm, slightly argillaceous, slightly carbonaceous.
145	2531.0	8	SANDSTONE	Medium dark grey, very fine to fine grained, moderately sorted, subangular, soft, very argillaceous, micaceous, carbonaceous. Very poor visible porosity.
146	2528.0	14	SILTSTONE	Grey brown, firm, very argillaceous, very carbonaceous, micaceous.
147	2515.0	19	SANDSTONE	Light grey, fine grained, well sorted subrounded, firm, slightly argillaceous. Very poor visible porosity.
148	2510.0	23	SANDSTONE	Dark grey, fine grained, poorly sorted, subangular, firm, very argillaceous, carbonaceous, micaceous. No visible porosity.



149	2494.9	20	SANDSTONE	Light grey, very fine to fine grained, moderately sorted, subangular to subrounded, firm, slightly argillaceous. Poor visible porosity.
150	2480.2	16	SHALE	Dark grey, firm, sandy laminations, micaceous. Parallel laminations.
151	2467.3	25	SANDSTONE	Light grey, very fine grained, moderately sorted, subangular to subrounded, firm, carbonaceous laminations. Poor visible porosity.
152	2456.0	30	COAL	Black, brittle, vitreous lustre.
153	2437.1	31	SILTSTONE	Grey brown, firm, carbonaceous laminations, argillaceous, micaceous. Subfissile.
154	2430.1	19	SILTSTONE	Light grey, soft, carbonaceous laminations.
155	2412.7	25	SILTSTONE	Dark grey, firm, quartz laminations.
156	2399.0	40	CLAYSTONE	Grey, firm.
157	2395.1	28	CLAYSTONE	Dark grey, firm, micaceous.
158	2384.0	25	SILTSTONE	Light grey, clear, fine to medium grained, well sorted, subrounded, soft, micaceous, carbonaceous.
159	2369.2	20	SILTSTONE	Light grey, soft, carbonaceous streaks.
160	2355.5	20	SHALE	Dark grey, firm, carbonaceous laminations, micromicaceous. 5% contamination.
161	2338.5	22	CLAYSTONE	Light grey, soft.
162	2328.0	12	SILTSTONE	Dark grey, firm, argillaceous.
163	2301.9	20	SILTSTONE	Light grey, firm.
164	2277.5	27	SANDSTONE	Light grey, very fine to fine grained, well sorted, subrounded, soft.
165	2273.5	33	COAL	Black.
166	2259.2	16	SILTSTONE	Light grey, soft, carbonaceous streaks.
167	2229.3	30	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subrounded, soft, carbonaceous laminations.
168	2226.1	22	SILTSTONE	Grey, firm, argillaceous.
169	2218.0	25	SILTSTONE	Dark grey, firm, carbonaceous, argillaceous, micaceous, coaly. Strongly carbonised.
170	2203.6	20	SILTSTONE	Grey, firm, argillaceous, micaceous.
171	2188.9	22	SILTSTONE	Dark grey, firm, argillaceous, carbonaceous. Pyrite filled fracture.
172	2172.0	45	SILTSTONE	Dark grey, firm, micaceous, carbonaceous.

173	2151.9	45	SANDSTONE	Light grey to clear, very coarse grained, moderately sorted, subrounded, friable, clear quartz.
174	2136.5	15	SILTSTONE	Dark grey, firm, argillaceous, carbonaceous, sandy.
175	2130.1	45	COAL	Black.
176	2118.5	25	SILTSTONE	Dark grey, firm, argillaceous, micaceous, carbonaceous.
177	2107.5	33	SANDSTONE	Light grey, fine to very coarse grained, poor to moderate sorting, subrounded, friable.
178	2090.6	20	SANDSTONE	Light grey, fine grained, well sorted, subrounded, soft.
179	2055.0	35	SANDSTONE	Light grey, fine grained, well sorted, subrounded, friable.
180	2043.0	40	COAL	Black.
181	2033.5	40	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subrounded, unconsolidated.
182	2030.3	25	SANDSTONE	Light grey, fine to medium grained, moderately sorted, subrounded, friable.
183	2026.0	34	CONGLOMERATE	Dark green to grey, very fine to very coarse grained, poorly sorted, subangular, friable, silty.
184	2024.0	15	SILTSTONE	Light grey, fine grained, friable, sandy. Pyrite disseminated.
185	2022.0	23	SANDY	Dark grey, fine grained, friable, sandy. Pyrite, glauconite.
186	2020.0	40	SILTSTONE	Green, fine to medium grained, friable, sandy glauconite. Pyritic.
187	2017.5	33	CONGLOMERATE	Dark grey, fine to very coarse grained, poorly sorted, subrounded, firm, silty.
188	2016.0	32	SANDSTONE	Green grey, fine to very coarse grained, poor to moderately sorted, subrounded, firm, conglomeratic, glauconitic, pyritic.
189	2014.1	27	SANDSTONE	Green grey, fine to very coarse grained, poor to moderately sorted, subrounded, firm, conglomeratic, glauconitic, pyritic.
190	2012.0	20	SILTSTONE	Grey, fine to medium grained, poor to moderately sorted, subrounded, firm, glauconitic.
191	2009.5	35	SANDSTONE	Grey green, very fine grained, well sorted, subrounded, firm, glauconitic.
192	2008.0	32	SANDSTONE	Grey green, very fine grained, well sorted, subrounded, firm, glauconitic.
193	2005.9	40	SILTSTONE	Grey green, very fine grained, well sorted, subrounded, firm, glauconitic.
194	2004.0	45	SANDSTONE	Grey green, very fine grained, moderately sorted, subrounded, firm, glauconitic.

195	2002.6	35	SILTSTONE	Grey brown, firm, argillaceous.
196	1999.5	36	SILTSTONE	Brown grey, firm, argillaceous, glauconitic, micaceous.
197	1996.1	25	SILTSTONE	Brown green, firm, argillaceous, glauconitic, micaceous.
198	1992.5	28	SILTSTONE	Brown green, firm, argillaceous, glauconitic. Medium grained quartz intraclasts.
199	1990.0	30	SILTSTONE	Brown green, firm, argillaceous, glauconitic.
200	1988.0	35	SILTSTONE	Cream green, firm, argillaceous, glauconitic.
201	1986.0	15	SANDSTONE	White green, very fine to fine grained, moderate to well sorted, soft, glauconite, calcareous. 10% spotty moderately bright white yellow mineral fluorescence.
202	1983.0	30	SILTSTONE	Grey, soft, calcareous.
203	1980.0	35	SILTSTONE	Grey, soft, slightly glauconitic.
204	1975.5	35	SILTSTONE	Grey, soft.
205	1970.1	22	SILTSTONE	Grey green, soft.
206	1965.0	32	SILTSTONE	Grey green, soft.
207	1957.5	34	SILTSTONE	Grey, firm.
208	1949.5	30	MUDSTONE	Green grey, soft.
209	1866.0	20	LIMESTONE	Cream green, firm, glauconitic.
210	1799.0	35	LIMESTONE	Grey, soft, slightly glauconitic.
211	1761.0	30	LIMESTONE	Grey, firm, slightly glauconitic.
212	1706.6	30	LIMESTONE	Grey, firm, micritic.
213	1675.3	24	LIMESTONE	Grey, firm, micritic.
214	1660.1	25	LIMESTONE	Grey, firm, micritic.
215	1520.1	27	LIMESTONE	Grey, firm.
216	1490.2	30	LIMESTONE	Grey, firm, glauconitic.
217	1449.9	33	LIMESTONE	Grey, firm, micritic.
218	1427.5	25	LIMESTONE	Grey, firm, glauconitic.
219	1400.0	30	LIMESTONE	Grey, soft, slightly glauconitic.
220	1300.00	27	LIMESTONE	Grey, soft.
221	1234.2	27	LIMESTONE	Grey, soft, glauconitic.
222	1150.1	30	LIMESTONE	Grey, firm.
223	1045.1	20	LIMESTONE	Grey, firm.
224	934.8	20	LIMESTONE	Grey, firm.

APPENDIX 9.

APPENDIX 4

R.F.T. RESULTS

RFT SAMPLE TEST REPORT

Well :.Veilfin-1

OBSERVER : N.V. Williams

DATE : 23/3/84

RUN NO. : 2

	CHAMBER 1 (22.7 lit.)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	2/41	2/43	2/43	
DEPTH	3212.5	3212.6	3212.6	
A. RECORDING TIMES				
Tool Set	0557	0605		
Chamber Open		0610	0628	
Chamber Full		0615	0631	
Fill Time		5	3	
Finish Build Up		0625	0642	
Build Up Time		10	11	
Tool Retract			0643	
Total Time			mins.	mins.
B. SAMPLE PRESSURE				
IHP	5063	5061	psia	psia
ISIP		4696.3		4570
Initial Flowing Press.		107/1700		1300
Final Flowing Press.		1700/4550		4560
FSIP				4568
FHP				5061
C. TEMPERATURE				
Max. Tool Depth	3214.7		m	m
Max. Rec. Temp	251-260		deg F	deg F
Length of Circ.			hrs	hrs
Time Circ. Stopped	0700	21/3/84	hrs	hrs
Time since Circ.	47		hrs	hrs
D. SAMPLE RECOVERY				
Surface Pressure	350		psig	300 psig
Amt Gas	1.59		cu ft	0.92 cu ft
Amt Oil			cc	cc
Amt Water (Total)	20.25		cc	9.1 cc
Amt Others			cc	cc
E. SAMPLE PROPERTIES				
Gas Composition				
C1	286720		ppm	Insufficient ppm
C2	20101		ppm	Sample ppm
C3	7014		ppm	for ppm
C4	1315		ppm	Analysis ppm
C5	199		ppm	ppm
C6+	Tr.		ppm	ppm
CO2/H2S	0.3%		%/ppm	%/ppm
Oil Properties				
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	.196 ohm@	21	deg C	.196 ohm@ 21 deg C
NaCl Equivalent	23000		ppm	23000 ppm
Cl-titrated	20000		ppm	22000 ppm
NO3	160 + 20		ppm	120 + 20 ppm
pH	7.7			7.7
Est. Water Type	Filtrate			Filtrate
Mud Filtrate Properties				
Resistivity	0.23 ohm@	20	deg C	ohm@ deg C
NaCl Equivalent			ppm	ppm
Cl-titrated	23000		ppm	23000 ppm
pH	10.4			10.4
NO3			ppm	ppm
General Calibration				
Mud Weight			ppg	ppg
Calc. Hydrostatic			ppg	ppg
Serial No. (Preserved)				
REMARKS				

RFT SAMPLE TEST REPORT

Well : Veilfin-1

OBSERVER : N.V. Williams

DATE : 23/3/84

RUN NO. : 3

	CHAMBER 1 (22.7 lit.)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	3/45			
DEPTH	3212.6			
A. RECORDING TIMES				
Tool Set	1046			
Chamber Open	1051		1251	
Chamber Full	1245		1335	
Fill Time	2 hrs			
Finish Build Up	Not finished			
Build Up Time	5 mins			
Tool Retract			1337	
Total Time	mins.		mins.	
B. SAMPLE PRESSURE				
IHP	5062 psia		psia	
ISIP	4680		4616	
Initial Flowing Press.	69		188	
Final Flowing Press.	4109		461	
FSIP	4616 Not finished		Not finished	
FHP			5065	
C. TEMPERATURE				
Max. Tool Depth	3216 m		m	
Max. Rec. Temp	256 deg F		deg F	
Length of Circ.	hrs		hrs	
Time Circ. Stopped	0700 21/3/84 hrs		hrs	
Time since Circ.	52 hrs		hrs	
D. SAMPLE RECOVERY				
Surface Pressure	400 psig		130 psig	
Amt Gas	1.79 cu ft		0.8 cu ft	
Amt Oil	cc		cc	
Amt Water (Total)	19.80 cc		7.75 cc	
Amt Others	cc		cc	
E. SAMPLE PROPERTIES				
Gas Composition				
C1	286742 ppm		387072 ppm	
C2	28025 ppm		14979 ppm	
C3	10522 ppm		4548 ppm	
C4	1992 ppm		1002 ppm	
C5	306 ppm		204 ppm	
C6+	Tr. ppm		Tr. ppm	
CO2/H2S	0.5/Nil %/ppm		0.6/Nil %/ppm	
Oil Properties				
Colour	API@ deg C		API@ deg C	
Fluorescence				
GOR				
Water Properties				
Resistivity	0.190 ohm@ 72 deg F		0.200 ohm@ 71.5 deg C	
NaCl Equivalent	32000 ppm		31000 ppm	
Cl-titrated	20000 ppm		19000 ppm	
NO3	140 ppm		90 ppm	
pH	7.4		7.3	
Est. Water Type	Filtrate		Filtrate	
Mud Filtrate Properties				
Resistivity	0.230 ohm@ 20 deg C		ohm@ deg C	
NaCl Equivalent	ppm		ppm	
Cl-titrated	23000 ppm		ppm	
pH				
NO3	160 ppm		ppm	
General Calibration				
Mud Weight	ppg		ppg	
Calc. Hydrostatic	ppg		ppg	
Serial No. (Preserved)				
REMARKS				

RFT SAMPLE TEST REPORT

Well : Veilfin 1

OBSERVER : N.V. Williams

DATE : 23/3/84

RUN NO. : 4

	CHAMBER 1 ( 12 gal.)				CHAMBER 2 (2-3/4gal.)	
SEAT NO.	50	51	52	53	54	
DEPTH	3190	3189.8	3187.5	3191.8	3149.5	
A. RECORDING TIMES						
Tool Set						
Chamber Open	1946	2010	2043	2112	2230	
Chamber Full	Not Full				2234	
Fill Time					4	
Finish Build Up					2242 Not complete	
Build Up Time					8	
Tool Retract	53	34	03	2216	2249	
Total Time					180	mins.
B. SAMPLE PRESSURE						
IHP	5026				psia	
ISIP	4636				Increasing	
Initial Flowing Press.	50	75	150	165	465-930	
Final Flowing Press.	75	222	260	285	4513	
FSIP	4493				4517	
FHP	5029				4957	
C. TEMPERATURE						
Max. Tool Depth	3191			m	m	
Max. Rec. Temp	259			deg F	deg F	
Length of Circ.					hrs	
Time Circ. Stopped	0700	21/3/84		hrs	hrs	
Time since Circ.	60			hrs	hrs	
D. SAMPLE RECOVERY						
Surface Pressure	100			psig	120	psig
Amt Gas	0.77			cu ft	0.14	cu ft
Amt Oil					cc	
Amt Water (Total)	17.5			cc	9	cc
Amt Others					cc	
E. SAMPLE PROPERTIES						
Gas Composition						
C1	112614			ppm	Insufficient ppm	
C2	6979			ppm	Sample ppm	
C3	3279			ppm	ppm	
C4	894			ppm	ppm	
C5	186			ppm	ppm	
C6+				ppm	ppm	
CO2/H2S	0/-			%/ppm	%/ppm	
Oil Properties						
Colour	API@			deg C	API@ deg C	
Fluorescence						
GOR						
Water Properties						
Resistivity	0.2	ohm@	21.7	deg C	0.2	ohm@ 21.7 deg C
NaCl Equivalent				ppm	ppm	
Cl-titrated	23000			ppm	24000 ppm	
NO3	160			ppm	120 ppm	
pH	8.3				8.3	
Est. Water Type	Filtrate				Filtrate	
Mud Filtrate Properties						
Resistivity	ohm@			deg C	ohm@ deg C	
NaCl Equivalent				ppm	ppm	
Cl-titrated				ppm	ppm	
pH						
NO3				ppm	ppm	
General Calibration						
Mud Weight				ppg	ppg	
Calc. Hydrostatic				ppg	ppg	
Serial No. (Preserved)						
REMARKS	No suitable sampling point found - would require 4hrs to fill chamber					



RFT SAMPLE TEST REPORT

Well : Veilfin 1

OBSERVER : M. Fittall P. Priest

DATE : 24/3/84

RUN NO. : 5

	CHAMBER 1 (45.4 lit.)	CHAMBER 2 (10.4 lit.)
SEAT NO.	55	55
DEPTH	3149.5	3149.5
A. RECORDING TIMES		
Tool Set	2000	
Chamber Open	2003	2109
Chamber Full	2050	2115
Fill Time		
Finish Build Up		
Build Up Time		
Tool Retract		2135
Total Time		
	mins.	mins.
B. SAMPLE PRESSURE		
IHP	5019.2 psia	psia
ISIP	4528.8	
Initial Flowing Press.	47.2	147.9
Final Flowing Press.	800	240
FSIP	4513.3 not stabilized	4517.8
FHP		5021.8
C. TEMPERATURE		
Max. Tool Depth	3175 m	m
Max. Rec. Temp		deg F
Length of Circ.		hrs
Time Circ. Stopped		hrs
Time since Circ.		hrs
D. SAMPLE RECOVERY		
Surface Pressure	300 psig	350 psig
Amt Gas	2.35 cu ft	0.62 cu ft
Amt Oil	scum cc	trace scum cc
Amt Water (Total)	41.8 cc	9.25 cc
Amt Others		cc
E. SAMPLE PROPERTIES		
Gas Composition		
C1	304128 ppm	304128 ppm
C2	27220 ppm	19027 ppm
C3	16056 ppm	11039 ppm
C4	2701 ppm	2093 ppm
C5	387 ppm	290 ppm
C6+	Tr. ppm	Tr. ppm
CO2/H2S	3.5/0 %/ppm	3.5/0 %/ppm
Oil Properties		
Colour	API@ deg C	API@ deg C
Fluorescence		
GOR		
Water Properties		
Resistivity	0.192ohm@ 20.5 deg C	0.197ohm@ 20.5 deg C
NaCl Equivalent	31000 ppm	30000 ppm
Cl-titrated	23000 ppm	22500 ppm
NO3	60 ppm	40 ppm
pH	7.8	7.5
Est. Water Type		
Mud Filtrate Properties		
Resistivity	0.195 ohm@ 19.9 deg C	0.195 ohm@ 19.9 deg C
NaCl Equivalent	23000 ppm	23000 ppm
Cl-titrated	22500 ppm	22500 ppm
pH	10.6	10.6
NO3	160 ppm	160 ppm
General Calibration		
Mud Weight		ppg
Calc. Hydrostatic		ppg
Serial No. (Preserved)		
REMARKS		
	Pretest 2 secs per number	
	Then 10 secs per number	
	Then 25 secs per number	

RFT SAMPLE TEST REPORT

Well : Veilfin 1

OBSERVER : M. Fittall P. Priest

DATE : 25/3/84

RUN NO. : 6

	CHAMBER 1 (45.4 lit.)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	56		56	
DEPTH	2896		2896	
A. RECORDING TIMES				
Tool Set	0053			
Chamber Open	0058		0235	
Chamber Full	No		0250	
Fill Time				
Finish Build Up				
Build Up Time				
Tool Retract			0304	
Total Time			mins.	
B. SAMPLE PRESSURE				
IHP	4630.8	psia		psia
ISIP	4154.8		4002.5	
Initial Flowing Press.	146.68		55.7	
Final Flowing Press.	688		209	
FSIP			4041	not stabilised
FHP			4633	
C. TEMPERATURE				
Max. Tool Depth		m		m
Max. Rec. Temp		deg F		deg F
Length of Circ.		hrs		hrs
Time Circ. Stopped		hrs		hrs
Time since Circ.		hrs		hrs
D. SAMPLE RECOVERY				
Surface Pressure	0	psig	100	psig
Amt Gas	0	cu ft	0.4	cu ft
Amt Oil		cc		cc
Amt Water (Total)	36.7	cc	9.6	cc
Amt Others		cc		cc
E. SAMPLE PROPERTIES				
Gas Composition				
C1		ppm		ppm
C2		ppm		ppm
C3		ppm		ppm
C4		ppm		ppm
C5		ppm		ppm
C6+		ppm		ppm
CO2/H2S		%/ppm		%/ppm
Oil Properties				
API@		deg C		deg C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	0.196 ohm@	21.6 deg C	0.196 ohm@	21.6 deg C
NaCl Equivalent		ppm		ppm
Cl-titrated	20000	ppm	21000	ppm
NO3	80mg/lit		80mg/lit	
pH	7.3		7.3	
Est. Water Type				
Mud Filtrate Properties				
Resistivity	0.195 ohm@	19.9 deg C	0.195 ohm@	19.9 deg C
NaCl Equivalent	23000	ppm	23000	ppm
Cl-titrated	21000	ppm	21000	ppm
pH				
NO3	160	ppm	160	ppm
General Calibration				
Mud Weight		ppg		ppg
Calc. Hydrostatic		ppg		ppg
Serial No. (Preserved)				
REMARKS				

APPENDIX 5

APPENDIX 5

PRODUCTION TEST RESULTS

## COMPLETION DATA

Well VEILEIN-1 Test 1 Date 5/4/84Company Supervisor TER/RDSTest Engineer MO'B/PB/BF (BHP)1. Interval 3185-3194m MD (rel. to DLTE/LAT/CNTH/GR log of 22/3/84)2. Well loading fluid DIESEL (58.5 Bbl), WATER (2 Bbl), N<sub>2</sub> (30 Bbl)3. Approximate Differential (pf-pw) 300 (psi)4. Type of perforating gun 2 1/8" ENERJET5. Perforation density 4 (spf)6. Mud weight 9.5 (ppg)7. Cl<sup>-</sup> of filtrate 19000 (ppm) NO<sub>3</sub> 100 ppm8. Cl<sup>-</sup> of mud filtrate at time of drilling 23,000 (ppm) NO<sub>3</sub> 160 ppm

9. Casing:	10. Liner:	11. Tubing:
Size <u>9 5/8</u> (in.)	Size _____ (in.)	Size <u>3 1/2</u> (in.)
Weight <u>47</u> (lb/ft)	Weight _____ (lb/ft)	Inside Diameter <u>2.992</u> (in.)
Grade <u>N-80</u>	Grade _____	Weight <u>9.3</u> (lb/ft)
Capacity <u>0.0732</u> (bbl/ft)	Capacity _____ (bbl/ft)	Grade <u>L-80</u>
Shoe <u>3301</u> (ft)	Top _____ (ft)	Capacity <u>0.0087</u> (bbl/ft)
Burst: <u>6870</u> PSIG	Shoe _____ (ft)	Connections <u>FUE A B MODIFIED</u>
		Burst pressure <u>10160</u> PSIG

12. Plugged back total depth 3278 (fx) m13. Depth of packer 3173 (fx) m14. Tubing volume 90.5 (bbl)15. Volume between packer and lowest perforation 5 (bbl)16. Rathole volume 20 (bbl)17. Depth of tailpipe 3177.6 (fx) m Depth of XN 31770.0 m

18. Location of pressure gauges: depth \_\_\_\_\_ (ft) gauge number \_\_\_\_\_

depth \_\_\_\_\_ (ft) gauge number \_\_\_\_\_

19. Initial WHP before well open \_\_\_\_\_

PERFORATION

Well VEILFIN-1 Test 1 Perforation 3185-3194 Date 6/4

1. Geologist(s): \_\_\_\_\_
2. Test Engineer(s): MJO/PB/BF (BHP)
3. Service Company/Engineer: SCHLUMBERGER - MIKE AW
4. Distance between CCL and top of gun: 1.4 m ft
5. Number of Runs: 1/118 shots
6. Wellhead pressure bled down to zero before perforating?  
1650 (Yes) No (No) NOT APPLICABLE
7. Wellhead pressure before perforating: 1689 psig
8. Time of perforation: 1535 (local time)
9. After perforating, record pressure versus time every minute for the first 10 minutes and every 5 minutes thereafter until pressure stabilizes.

Time (Local)	WHP (PSIG)	°C

Time (Local)	WHP (PSIG)	°F

- No change in pressure.  
 10. Other perforating runs:

<u>Time</u>	<u>Run</u>	<u>Interval</u>	<u>WHP</u>
-	-	-	-

11. Remarks: Bled WHP from 2400 psig to 1650 psig prior to perforating well to obtain underbalance of 300 psi. Underbalance well with 58.5 bbls diesel, 2 bbls water and 30 bbls N<sub>2</sub>.

PRODUCTION TEST DATA SHEET

WELL VEILFIN-1 TEST PT-1 PERFORATIONS 3185-3194 m KB DATE 6/4

APRIL 6

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DATE TIME	REMARKS	WELLHEAD PRESSURE PSI	WELLHEAD TEMPERATURE OF	CASING PRESSURE PSI	CHOKE 64TH	CUMULATIVE PRODUCTION			RATES			GOR OR CONDENSATE GAS RATIO	GRAVITY	
						OIL STB	WATER BBLs	GAS MSCF	OIL STB/D	WATER B/D	GAS MSCF/D		OIL °API @ 60°	GAS AIR = 1
1300	BLEED THP TO 1650 psig	1650												
	AND RIH WITH PERFORATING GUN.													
1415	DEPTH TIE-IN	1689												
1535	PERFORATE 3185-3194	1689	ALL SHOTS FIRED											
1649	CLOCK LOWER MASTER V,	1645												
1722	OPEN LMV	1615												
1727	START BLEEDING THP													
	to 1000 PSI	1615												
1736	FINISHED BLEEDING	1049												
1745		1062	Influx rate = 189 BPD											
1750		1063	Influx rate = 130 BPD											
1810	CLOSE LMV TO RIG UP													
	SCHLUMBERGER HP													
1849	PT LUBRICATOR (FAILED)													
2210	RIH WITH HP GAUGE													
2214	OPEN LMV	1232	Influx rate = 83 BPD											

PRODUCTION TEST DATA SHEET

WELL VEILFIN-1

TEST PT-1

PERFORATIONS 3185-3194 mKB

DATE 6/4

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DATE TIME	REMARKS	WELLHEAD PRESSURE PSI	WELLHEAD TEMPERATURE OF	CASING PRESSURE PSI	CHOKE 64TH	CUMULATIVE PRODUCTION.			RATES			GOR OR CONDENSATE GAS RATIO	GRAVITY	
						OIL STB	WATER BBLS	GAS MSCF	OIL STB/D	WATER B/D	GAS MSCF/D		OIL °API @ 60°	GAS AIR = 1
2300		1270	Influx rate =		106 BPD									
2330		1292	Influx rate =		105 BPD									
2339	HANG GAUGES AT 3189.5m													
0630	RIG UP OTIS DOWNHOLE SAMPLINE EQUIPMENT													
0800	DUPLICATE BHS TAKEN AT 3040 m													
0900	BHS AT SURFACE													
0957 to 1000	1 LITRE CONDENSATE SAMPLE AND 5 GALLON JERRY CAN OF WATER/FILTRATE TAKEN FROM CHOKE MANIFOLD WHILE BLEEDING DOWN SURFACE LINES.													

7/4



RIG-FLOOR AND BOTTOMHOLE DATA

WELL VEILFIN-1 TEST PT - 1 PERFORATIONS 3175 - 3194 DATE 7/4 PAGE 1 OF 2

1	2	3	4	5	6		1	2	3	4	5	6		
TIME LOCAL	REMARKS	WHP PSIG	WHT DEG. F	CAS. PRESS.	CHOKE 64TH	BHP PSIA	TIME LOCAL	REMARKS	WHP PSIG	WHT DEG. F	CAS. PRESS.	CHOKE 64TH	BHP PSIA	
6/4	2339	Hang gauges at 3189.5				3189.5		0330	q = 54 BPD					
	2345					4366.58								
	2347					4363.85		0345	BHP dropping, diesel					
	2349					4362.44								
	2351		27			4361.75	250.3	0413	11" diesel in tank:	3" in 5 mins - 430 BPD				
7/4	2400	1303	27	200		4363.9	250.4			2 1/2" in 5 mins - 358 BPD				
	0002	Bleed down WHP and				200	24A				2" in 5 mins - 2 BPD			
		commence flow period												
	0005			200	"	4057.1	250.4	0430		15			2960.6	
	0010			200	"	3313	250.4	0439	Increase choke	17	32	48A	2778.3	
	0015	(WHP = 0 at 0014)		0	27	200	32A	3017.4	250.4	68				
	0020	0	"	200	"	3030	250.4	0455		385				
	0025	0	"		"	3039.4	250.4	0500	Gas at surface					
	0030	q	76 BPD	0	"			3049	250.4			48A	1223.8	
	0045	0	"		"	3075.9	250.4	0525		160		48A	1223.8	
	0100	q	65 BPD						250.4			32A		
		Cum Prod = 14.4 Bbl		0	28	230	"	3096.7	250.4			32A	1216.7	
	0115	Medium bubbling		0			"	3118.5	250.4			24A		
	0130	q	59 BPD						250.4			16F		
		Cum Prod = 15.7 Bbl		0	28	250	"	3141.1	250.4			24A		
	0200	q	52 BPD						250.4			32F		
		Cum Prod = 17.0 Bbl		0	28	280	"	3185.7	250.4				1345.3	
	0230	q	60 BPD						250.4			24F	1282.6	
		Cum Prod = 18.3 Bbl		2	28	290	"	3232.6	249.2					
	0300	q	71 BPD	1.7	28	290	"	3272.9	249.2				1277.3	

Cum Prod = 19.5 Bbl

RIG-FLOOR AND BOTTOMHOLE DATA

25A

WELL VEILFIN-1 TEST PT - 1 PERFORATIONS 3185 - 3194 DATE 7/4 PAGE 2 OF 2

1	2	3	4	5	6	
TIME LOCAL	REMARKS	WHP PSIG	WHT DEG. F	CAS. PRESS.	CHOKE 64TH	BHP PSIA
0643	Start Separator				24F	
0650		305			"	1212.6
0700		322	34		"	1202.6
0730		250			"	1096.6
0734	Bypass separator - too much solids					
0800		200	32			1099.8
0900		330				1125.0
0944	Increase choke	260			2"	976
1000		170	30			670.6
1100		90				588.3
1105	)					
to	) Reduce choke from	2" - 1" - 24/64				
1110	)					
1200		415	34	380	24	929
1300		330	34		24	755.8
1330		270	32		24	716.9
1400		260	31		"	738
1415		310	32		"	761.2
1430		300	32		"	791.8
1445		295	32	280	"	788.5
1500		390	34		"	816.0
1515		350	30		"	738.3
1530		330	35		"	701.2
1545					"	678.6
1600		275	33		"	673.1

236.8

221.1

226.4

222.9

223.3

223.3

1	2	3	4	5	6	
TIME LOCAL	REMARKS	WHP PSIG	WHT DEG. F	CAS. PRESS.	CHOKE 64TH	BHP PSIA
1605	Shut well in for build up					
1615		475	33			
	(See D-12A for BHP)					
1630		700	33			
1645		895	33			
1700		1087	33			
1715		1295	33			
1730		1438	33			
1745		1600	33			
	( LMV closed to					
	( fix chicksan leak					
	( during build-up.					









D-12A

## BOTTOM-HOLE PRESSURES

PAGE \_\_\_ OF \_\_\_

WELL VEILFIN-1 TEST PT - 1 DATE 7/4/84  
 HORNER TIME \_\_\_\_\_ FLOWING BHP 673.1 INITIAL BHP 4620  
 Shut-in time 4:05 p.m.

TIME LOCAL	$\Delta T$	$\frac{T_{H+\Delta T}}{\Delta T}$	BHP PSIA	REMARKS	TIME LOCAL	$\Delta T$	$\frac{T_{H+\Delta T}}{\Delta T}$	BHP PSIA	REMARKS
4.10	5		784.19		950	345		4120.5	
4.12	7		826.61		1010	365		4164.53	
4.14	9		875.06		1030	385		4205.0	
4.16	11		925.88		1050	405		4238.59	
4.18	13		974.30		1100			4254.98	
4.20	15		1021.62						
4.22	17		1067.49						
4.24	19		1107.84						
4.26	21		1142.23						
4.28	23		1183.82						
4.30	25		1223.94						
4.32	27		1263.42						
4.34	29		1302.09						
4.36	31		1339.28						
4.38	33		1380.74						
4.40	35		1446.39						
4.45	40		1514.04						
4.50	45		1591.51						
4.55	50		1679.75						
5.00	55		1755.93						
5.10	65		1913.03						
5.20	75		2079.85						
5.30	85		2208.08						
5.40	105		2347.11						
5.50	105		2480.47						
6.00	125		2602.72						
6.15	130		2775.15						
6.30	145		2941.82						
6.45	160		3090.13						
7.00	175		3228.2						
7.15	190		3354.0						
7.30	205		3470.88						
7.45	220		3575.00						
8.00	235		3667.8						
8.13			3745.77						
8.14			3749.62						
8.15	250		3753.44						
9.00	295		3964.8						
9.20	315		4034.56						
9.40	335		4093.17						

PRODUCTION TEST SUMMARYWell VEILFIN-1 Test 1 Date 6-8 APRIL, 1984

## Test Data:

1. Interval 3185-3194m MD (rel. to DLTE/LDT/CNTH/GR log of 22/3/84)
2. Produced fluid GAS
3. Cumulative production 0.3 (~~MM~~, MMSCF)
4. Stabilized <sup>average</sup> rate 740 declining to 310 (~~MMSCF/D~~)
5. Length of flow period 11 hours, 5 min (hr) from gas surfacing
6. Choke 24 (64ths)
7. Gravity of oil or condensate Condensate too light (°API @ 60°F)  
to measure
8. GOR or Condensate - Gas Ratio too low (SCF/STB, STB/MMSCF)
9. Water cut none measured: well slugging (%)  
water/filtrate cut mud.
10. Chlorides 9000-15000 (ppm)
11. H<sub>2</sub>S - (%, ppm)
12. CO<sub>2</sub> - 4-11 (%)
13. Stabilized flowing wellhead pressure 300 (psi )
14. Stabilized flowing wellhead temperature 33 (°F)
15. Wellhead pressure at end of buildup \_\_\_\_\_ (psi )
16. Initial reservoir pressure 4640 (psi ) @ 3189.5 (ft)
17. Final flowing pressure 673 (psi ) @ 3189.5 (ft)
18. Productivity index 0.08 (~~MMSCF/D~~, ~~MMSCF/D~~)  $\frac{\text{KSCF/D}}{\text{psi}}$
19. Maximum bottom-hole temperature 250.4 (°F) @ 3189.5 (ft)
20. Samples taken: 2 x BH samples at 3040 m (one retained)  
2 x separator gas, 1 condensate from choke manifold, 1 water/filtrate
21. Remarks: Rate and BHP declining at end of test.



SEPARATOR SAMPLE DATA

Well VEILFIN-1 Test PT - 1 Date 7/4/84  
 Producing Interval 3185 - 3194 m MD  
 Initial Reservoir Pressure 4640 psi @ 3189.5 ~~ft~~ MD  
 Reservoir Temperature 250.4 °F @ 3189.5 ~~ft~~ m MD

	<u>Liquid</u>		<u>Gas</u>	
	<u>Sample No. 1</u>	<u>Sample No. 2</u>	<u>Sample No. 1</u>	<u>Sample No. 2</u>
Time Sampled			<u>1550</u>	<u>1600</u>
Length of Time Well was Produced				
Container No.			<u>A-11627</u>	<u>A-11034</u>
Container Volume			<u>20 litres</u>	<u>20 litres</u>
Separator Pressure			<u>105</u>	<u>95</u>
Separator Temperature			<u>114</u>	<u>108</u>
Wellhead Pressure			<u>275 psig</u>	<u>275 psig</u>
Wellhead Temperature (°F)			<u>33°C</u>	<u>33°C</u>
Flowing Bottom-hole Pressure (psi)			<u>673.1 psia</u>	<u>673.1 psia</u>
Flowing Bottom-hole Temperature (°F)			<u>223°F</u>	<u>223°F</u>
Separator Rate (Sep. bbl/D)*			<u>-</u>	<u>-</u>
Separator Gas Rate (MSCF/D)			<u>306</u>	<u>306</u>
Separator GOR (SCF/Sep. bbl)			<u>-</u>	<u>-</u>
Well Rate (STB/D) <sup>+</sup>				
Well GOR (SCF/STB) <sup>+</sup>				
Full Wellstream Water Cut				
How Outage was Taken on Liquid Samples	<u></u>			

Gas Sampling Method

Liquid Sampling Method

Special Instruction for Lab

Sampled by

\* Rates based on Meter Readings corrected for Meter Factor Only.

+ Rates corrected to Stock-Tank Conditions as per Form D-7.

BOTTOM-HOLE SAMPLE DATA

Well VEILFIN-1 Date 8/4/84  
 Test PT - 1  
 Producing Interval 3185-3194  
 Initial Reservoir Pressure 4623 psi @ 3187.5 ft m  
 Reservoir Temperature 250.4 °F @ 3189.5 ft  
 Last Production Rate 305,500 k SCFD STB/D  
 Last Flowing Bottom-hole Pressure 673.1 psi  
 Type of Bottom-hole Sampler Used Otis

	<u>Sample No. 1</u>	<u>Sample No. 2</u>
Container No.		
Time Sampled	<u>0800</u>	<u>0800</u>
Length of Time Well Shut in (hrs)		
Sampling Depth (ft)	<u>3040</u>	<u>3040</u>
Sampling Depth Pressure (psi)	<u>4155 psia</u>	<u>4155 psia (rising)</u>
Tubing Pressure (psi)		
Sampler Pressure After Valve Opening (psi)		
Sample Transfer Temperature (°F)		
Sample Transfer Pressure (psi)		
Outage Taken in Sample Container (cc)		
Container Volume (cc)	<u>600</u>	<u>600</u>

Special Instructions for Lab \_\_\_\_\_  
 \_\_\_\_\_

Notes: 1) Sample No. 1: gas with 10 cc condensate.  
2) Picked up at 8.15 a.m.  
3) Sample No. 2 to be transferred.

Sampled by \_\_\_\_\_

APPENDIX 6.

APPENDIX 6

VELOCITY SURVEY REPORT

VELOCITY SURVEY REPORT

1. Marine Velocity Survey Summary.
2. Field Report from Esso Representative.
3. Processing Report.
4. Schlumberger Field Report.
5. Gun geometry sketch.
6. Check shot data - observed and corrected.
7. Schlumberger "Geograms" (Synthetic Seismic Traces)
8. Schlumberger seismic calibration log-drift curve, adjusted continuous velocity log and time-depth curve.
9. Schlumberger "CSU" field logs.
10. Time-Depth Curve.

1. MARINE VELOCITY SURVEY SUMMARY

WELL : Veilfin-1

BASIN : Gippsland

DATE OF SURVEY : 31.3.84

CONTRACTOR : Schlumberger

RECORDED BY : M. Aw

WITNESSED BY : R. Seitz, D. Spring

WATER DEPTH : 65m

R.T. ELEVATION : 21m

T.D. WHEN SHOT : 3521m

CASING DEPTH : 20" @ 207mKB, 13 3/8" @ 815mKB

NO. OF SHOOTING LEVELS : 18

ENERGY SOURCE : Bolt Airgun (model 1900B)  
200 cu. in.

SOURCE OFFSET : 36 m

SOURCE DEPTH : 9.14 m below MSL

## 2. FIELD REPORT FROM ESSO REPRESENTATIVE

Schlumberger commenced to rig up for the velocity survey around 1600 hrs on Saturday, March 31, the sonic log having been run earlier on the same day.

It was intended to shoot 19 levels over the interval 330m to 3480m. Only 18 of these could be shot, the shallowest level (330m) being unsuccessful.

RIH commenced at 1650 hours. At 1000m, several check shots were taken and the system appeared to be functioning well, although some noise was apparent at this level. The WST tool was run to the bottom of the hole to check the depth calibration and the tool was pulled up and locked at the first survey level (3480m) at 1815 hrs. An accelerometer was used as the source sensor, the hydrophone being kept to be used in the moonpool for the offset shot.

At 3480m noise problems were experienced, with regular bursts of noise swamping the data. Two jackhammers were being used on the rig at the time and after these were shut down the problem with noise bursts was eliminated. However, a problem with an apparent noise of 60 Hz persisted. The Schlumberger engineer checked his plugs and connections but could not find the cause of this problem. Though the signal from the source at this level was strong, the first breaks were poor and of some concern. Many shots were taken at this level in an attempt to obtain better records.

At the next level (3345m), in addition to the 60 Hz noise problem, a problem with the machine picking of the source detector break was occurring, with the second cycle being picked instead of the first break, introducing an error of 4 to 6 msec. Only about one in seven shots had the first break of the source pulse correctly picked. Subsequently twenty shots were fired and recorded to obtain three satisfactory shots for stacking. At this stage the engineer replaced the WSM (well site module - containing the firing button) with the spare WSM. This appeared to alleviate the problem somewhat, with only the occasional source break being incorrectly picked.

Also, after some trial shots, the polarity of the source pulse on the monitor (and also the CSU logs) was changed from a downgoing first break (as is usual) to an upgoing first break, as this also appeared to give better results.

No major problems were experienced after this level, with the signal to noise ratio and first breaks improving as the survey progressed up the hole. The shallowest level recorded satisfactorily was 530m. Shots were attempted at 330m but the first arrivals detected were casing breaks. An attempt was made to shoot at 390m but again casing breaks were the first arrivals.

The last shot, recorded at 2230 hours, was for the offset determination, with the hydrophone in the moonpool.



### 3. PROCESSING REPORT

#### A. Shot Data Summary

Level 1: 530m - stacked 2 shots, 9 shots not used due to noise.  
Level 2: 730m - stacked 3 shots, 4 shots not used due to noise.  
Level 3: 1000m - stacked 3 shots, 5 shots not used due to noise.  
Level 4: 1150m - stacked 3 shots.  
Level 5: 1305m - stacked 3 shots, 1 shot not used due to noise.  
Level 6: 1440m - stacked 3 shots, 3 shots not used due to noise.  
Level 7: 1675m - stacked 2 shots, 4 shots not used due to noise.  
Level 8: 1765m - stacked 3 shots, 2 shots not used due to noise.  
Level 9: 1860m - stacked 2 shots, 2 shots not used due to noise.  
Level 10: 1985m - stacked 3 shots, 1 shot not used due to noise.  
Level 11: 2110m - stacked 3 shots, 1 shot not used due to noise.  
Level 12: 2240m - stacked 2 shots, 10 shots not used due to noise.  
Level 13: 2515m - stacked 3 shots, 1 shot not used due to noise.  
Level 14: 2800m - stacked 3 shots, 3 shots not used due to noise.  
Level 15: 3005m - stacked 3 shots, 4 shots not used due to noise.  
Level 16: 3145m - stacked 2 shots, 7 shots not used due to noise.  
Level 17: 3345m - stacked 3 shots, 18 shots not used due to noise.  
Level 18: 3480m - stacked 5 shots, 18 shots not used due to noise.

#### B. Log Data used in Computation of "Geograms" (Synthetic Seismic Traces)

"Geograms" were computed for the interval 3521m to 225mKB. The sonic data were used over the interval 3521m to 225mKB. The density data were used over the interval 3521m to 700mKB. From 700m to 225mKB, the last density reading was extrapolated.

C. Other Processing Parameters

Well is assumed vertical.

SRD (seismic reference datum) is sea level.

Kelly Bushing: 20.7m above SRD

Ground Level: 65m from SRD

Gun and shot sensor were calculated to be 36 metres from the wellbore, using the moonpool hydrophone (measured transit time = 24.3 msec).

Azimuth of gun and shot sensor: 40°.

Gun and shot sensor elevation from SRD: -9.1m.

Average velocity used between SRD and sea bed: 1495 m/sec.

1107L

4. SCHLUMBERGER FIELD REPORT

Schlumberger

WELL SEISMIC SERVICE FIELD REPORT

COMPANY	WELL	DATE	LOCATION	ENGINEER	WITNESSED BY
ESSE AUSTRALIA	VELPINF1	20-3-84	5X(SEA)	M. AW	R. SEITZ, D. SPRING
FEET <input type="checkbox"/> METRES <input checked="" type="checkbox"/>	JACK UP <input type="checkbox"/> PLATFORM <input type="checkbox"/>	SHIP <input type="checkbox"/> SEMI-SUB <input checked="" type="checkbox"/>	WEATHER: Good.		
SCHLUMBERGER ZERO	DRILL FLOOR	AT ELEVATION	20.7	RELATIVE TO MEAN SEA LEVEL (M.S.L.)	
LOG MEASURED FROM	DRILL FLOOR	AT ELEVATION	0	RELATIVE TO SCHLUMBERGER ZERO	
DRILLING MEASURED FROM	DRILL FLOOR	AT ELEVATION	0	RELATIVE TO SCHLUMBERGER ZERO	

SOURCE		TIDAL INFORMATION		DISTANCE	HOUR	DATE
GUN TYPE	WATER <input type="checkbox"/> AIR <input checked="" type="checkbox"/>	TIDE LEVEL TO M.S.L.				
VOLUME	200 x _____ CU INCHES	(RECORD IF LEVEL VARIES MORE THAN 2 METRES DURING-SURVEY)				
PRESSURE	140 BARS					
VIBRATOR TYPE	—					
SWEEP LENGTH	— SECONDS					
FROM	— HZ TO — HZ					
		CSU SOFTWARE VERSION: 24.2		MAX. HOLE DEV: 3% AZIM: 330°		

NOTE: SHOTS HIGHLY RECOMMENDED AT TD, TOP EACH SONIC, ABOVE AND BELOW BAD HOLE INTERVALS

UNCORRECTED RESULTS

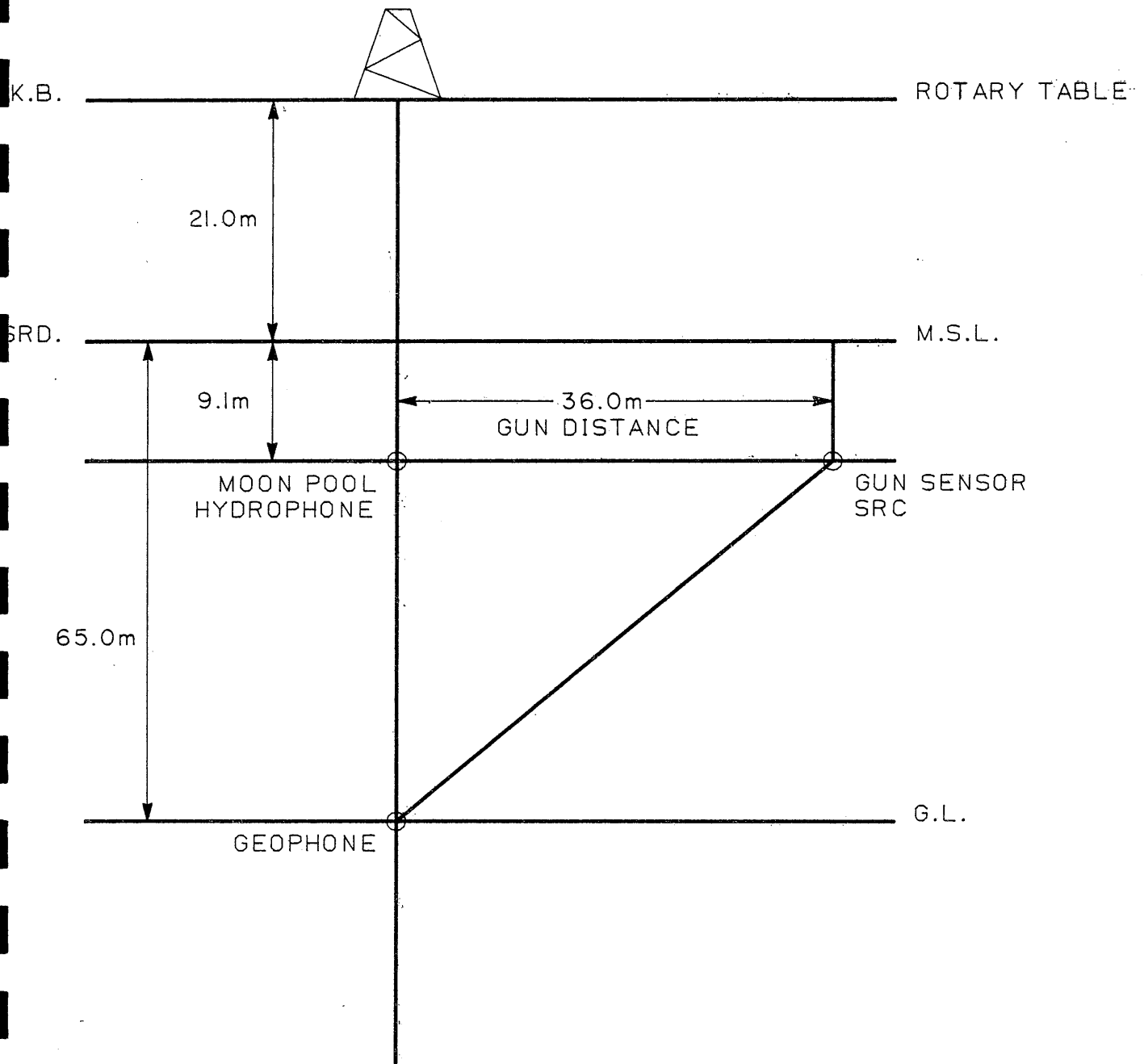
Quality: G = Good, P = Poor, U = Unsatisfactory

SHOT NO.	DEPTH	GUN PRESSURE	FILTERS	TRANSIT TIME	HOUR SHOT	FILE	STACK	STACKED SHOTS	QUALITY / REMARKS
1-12	1000	140	NONE	382.383	17:05	1	1 & 2	STACK 2 - 11 & 12	TEST SHOT GOING DOWN.
13-35	3480	140	NONE	1122.9	18:30	2	3	22, 24, 29, 31	Noisy.
	3480			1122.6	18:36	2	4	22, 24, 29, 31, 35	Noisy.
36-56	3345	"	NONE	1086.5	19:03	2	5	37, 47, 56	Noisy.
57-65	3145	"	"	1033.8	19:19	2	6	64, 65	OK.
66-72	3005	"	"	998.	19:29	2	7	69, 71, 72	GOOD.
73-78	2800	"	"	939.6	19:42	2	8	75, 77, 78	GOOD.
79-82	2515	"	"	856.6	19:50	2	9	79, 80, 82	GOOD.
83-94	2240	"	"	772	20:10	2	10	91, 94	GOOD.
95-98	2110	"	"	728.7	20:20	2	11	95, 97, 98	GOOD.
99-102	1985	"	"	672.2	20:29	2	12	99, 101, 102	GOOD.
103-106	1860	"	"	656	20:35	2	13	103, 106	"
107-111	1765	"	"	617.5	20:46	"	14	107, 110, 111	"
112-117	1675	"	"	596.7	20:54	2	15	115, 117	"
118-123	1440	"	"	514.2	21:06	"	16	121, 122, 123	"
124-127	1305	"	"	474.3	21:15	"	17	125, 126, 127	"
128-130	1150	"	"	427.5	21:22	2	18	128, 129, 130	"
131-138	1000	"	"	382.8	21:31	2	19	133, 134, 138	"
139-145	730	"	"	299.5	21:42	"	20	142, 144, 145	GOOD.
146-156	530	"	"	230.5	21:53	"	21	149, 151	Noisy.
157-159	330	"	"	CASING BREAK DETECTED				159	CASING BREAKS
	390	"	"	CASING BREAKS DETECTED					CASING BREAKS
170	0	140	NONE	243	22:15	2	-	-	Hydrophobes in Moon Pool.

NOTE: AFTER STACK 5 CHANGED POLARITY OF SURFACE SENSOR SIGNAL (ACCELEROMETER) AT WAB TO IMPROVE DETECTION OF ACCELEROMETER SIGNAL.

# 5. GUN GEOMETRY SKETCH

## VEILFIN-1



DWG. 2246/0P/2

6. CHECK SHOT DATA - OBSERVED AND CORRECTED

<u>LEVEL NUMBER</u>	<u>MEASURED DEPTH FROM KB (m)</u>	<u>VERTICAL DEPTH FROM MSL (m)</u>	<u>OBSERVED TRAVEL TIME (ms)</u>	<u>VERTICAL TRAVEL TIME MSL/GEOPHONE (ms)</u>	<u>AVERAGE VELOCITY MSL/GEOPHONE (m/s)</u>	<u>DELTA DEPTH BETWEEN SHOTS (m)</u>	<u>DELTA TIME BETWEEN SHOTS (ms)</u>	<u>INTERVAL VELOCITY BETWEEN SHOTS (m/s)</u>
	85.70	64.70	44.30	43.27	1495	139.30	71.38	1951
	225.00	204.00	110.40	114.66	1779	305.00	124.83	2443
1	530.00	509.00	234.00	239.49	2125	200.00	65.21	3067
2	730.00	709.00	299.00	304.70	2327	270.00	83.13	3248
3	1000.00	979.00	382.00	387.83	2524	150.00	45.04	3330
4	1150.00	1129.00	427.00	432.87	2608	155.00	47.03	3296
5	1305.00	1284.00	474.00	479.90	2676	135.00	40.02	3373
6	1440.00	1419.00	514.00	519.93	2729	235.00	73.03	3218
7	1675.00	1654.00	587.00	592.95	2789	90.00	30.01	2999
8	1765.00	1744.00	617.00	622.96	2800	95.00	33.01	2878
9	1860.00	1839.00	650.00	655.97	2803	125.10	42.01	2978
10	1985.10	1964.10	692.00	697.98	2814	125.00	37.01	3378
11	2110.10	2089.10	729.00	734.98	2842	130.00	42.01	3095
12	2240.10	2219.10	771.00	776.99	2856	274.90	85.01	3234
13	2515.00	2494.00	856.00	862.00	2893	285.00	84.01	3392
14	2800.00	2779.00	940.00	946.01	2938	205.10	58.01	3536
15	3005.10	2984.10	998.00	1004.02	2972	139.90	36.00	3886
16	3145.00	3124.00	1034.00	1040.02	3004	200.10	51.01	3923
17	3345.10	3324.10	1085.00	1091.03	3047	135.00	36.00	3750
18	3480.10	3459.10	1121.00	1127.03	3069			

PE902495

This is an enclosure indicator page.  
The enclosure PE902495 is enclosed within the  
container PE902491 at this location in this  
document.

The enclosure PE902495 has the following characteristics:

ITEM\_BARCODE = PE902495  
CONTAINER\_BARCODE = PE902491  
NAME = Time Depth Curve  
BASIN = GIPPSLAND  
PERMIT = VIC/P1  
TYPE = WELL  
SUBTYPE = VELOCITY\_CHART  
DESCRIPTION = Time Depth Curve from WCR vol.1 for  
Veilfin-1  
REMARKS =  
DATE\_CREATED = 30/07/84  
DATE\_RECEIVED = 7/03/85  
W\_NO = W857  
WELL\_NAME = Veilfin-1  
CONTRACTOR =  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902493

This is an enclosure indicator page.  
The enclosure PE902493 is enclosed within the  
container PE902491 at this location in this  
document.

The enclosure PE902493 has the following characteristics:

ITEM\_BARCODE = PE902493  
CONTAINER\_BARCODE = PE902491  
    NAME = Tertiary Palynology - species list  
    BASIN = GIPPSLAND  
    PERMIT = VIC/P1  
    TYPE = WELL  
    SUBTYPE = DIAGRAM  
DESCRIPTION = Tertiary Palynology - species list for  
              Veilfin-1  
REMARKS =  
DATE\_CREATED = 21/03/84  
DATE\_RECEIVED = 7/03/85  
    W\_NO = W857  
    WELL\_NAME = Veilfin-1  
CONTRACTOR =  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902494

This is an enclosure indicator page.  
The enclosure PE902494 is enclosed within the  
container PE902491 at this location in this  
document.

The enclosure PE902494 has the following characteristics:

ITEM\_BARCODE = PE902494  
CONTAINER\_BARCODE = PE902491  
NAME = Cretaceous Palynology - species list  
BASIN = GIPPSLAND  
PERMIT = VIC/P1  
TYPE = WELL  
SUBTYPE = DIAGRAM  
DESCRIPTION = Cretaceous Palynology - species list  
for Veilfin-1  
REMARKS =  
DATE\_CREATED = 21/03/84  
DATE\_RECEIVED = 7/03/85  
W\_NO = W857  
WELL\_NAME = Veilfin-1  
CONTRACTOR =  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)



PE601216

This is an enclosure indicator page.  
The enclosure PE601216 is enclosed within the  
container PE902491 at this location in this  
document.

The enclosure PE601216 has the following characteristics:

ITEM\_BARCODE = PE601216  
CONTAINER\_BARCODE = PE902491  
NAME = Seismic Calibration Log  
BASIN = GIPPSLAND  
PERMIT = VIC/P1  
TYPE = WELL  
SUBTYPE = VELOCITY\_CHART  
DESCRIPTION = Seismic Calibration Log for Veilfin-1  
REMARKS =  
DATE\_CREATED = 21/03/84  
DATE\_RECEIVED = 7/03/85  
W\_NO = W857  
WELL\_NAME = Veilfin-1  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601217

This is an enclosure indicator page.  
The enclosure PE601217 is enclosed within the  
container PE902491 at this location in this  
document.

The enclosure PE601217 has the following characteristics:

ITEM\_BARCODE = PE601217  
CONTAINER\_BARCODE = PE902491  
NAME = WSC-GEO  
BASIN = GIPPSLAND  
PERMIT = VIC/P1  
TYPE = WELL  
SUBTYPE = VELOCITY\_CHART  
DESCRIPTION = WSC-GEO, Ricker Wavelets zero and  
normal phase, fo Veilfin-1  
REMARKS =  
DATE\_CREATED = 21/03/84  
DATE\_RECEIVED = 7/03/85  
W\_NO = W857  
WELL\_NAME = Veilfin-1  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)