

W 959

BASIC DATA

WCR VOL 1

REMORA-1

(W959)

ESSO EXPLORATION AND PRODUCTION
AUSTRALIA INC.

Plus two
loose
SPECIES LIST
KERELON
DATA

WELL COMPLETION REPORT

REMORA-1

VOLUME 1

BASIC DATA 09 OCT 1987

PETROLEUM DIVISION

GIPPSLAND BASIN

VICTORIA

ESSO AUSTRALIA LIMITED

Compiled by: G.F.BIRCH .

SEPTEMBER 1987

ESSO AUSTRALIA LTD

1. WELL DATA RECORD

REMORA-1

LOCATION : Latitude : 38° 09' 14.07" S
Longitude : 148° 11' 29.21" E
X = 604,389mE
Y = 5,776,423m N
Map Projection: UTM
Geographical Location: Bass Strait,
Victoria
Field: REMORA

PERMIT : VIC/P1

ELEVATION : 22mKB

WATER DEPTH : 58.4m

TOTAL DEPTH : 2961.0m

PLUG BACK TYPE : Cement Plug

REASONS FOR
PLUGGING BACK : Plug and Abandon

MOVE IN : 22nd April, 1987

SPUDED : 23rd April, 1987

REACHED T.D. : 21st May, 1987

RIG RELEASED : 29th May, 1987

OPERATOR : Esso Exploration and Production
Australia Inc.

PERMITTEE OR LICENCEE : BHP Petroleum (Australia) Pty. Ltd.

ESSO INTEREST : 0%

OTHER INTEREST : BHP Petroleum (Australia) Pty. Ltd.:
100%

CONTRACTOR : Diamond M. Drilling Company

RIG NAME : Diamond M. Epoch

EQUIPMENT TYPE : Semi Submersible

TOTAL RIG DAYS : 38

DRILLING AFE NO. : 237100

TYPE COMPLETION : Plug and Abandon

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

2. OPERATIONS SUMMARY

REMORA-1

Moving/Mooring

Under tow by the workboat Lady Penelope, the rig departed the Kipper-2 location at 0600 hours on April 22, 1987 and arrived on location at 1115 hours the same day. The rig was towed approximately 22 nautical miles in 5.25 hours at an average speed of 4.2 kts.

Anchor No. 6 was dropped by the rig on approach to the location. The remaining seven anchors were run by the workboats Lady Caroline and Lady Penelope. All anchors were successfully pull tested to 300 kips.

The final rig position was:

Latitude: 38° 09' 14.07" S
Longitude: 148° 11' 29.21" E

X: 604,389m E
Y: 5,776,423m N

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

The rig was located 15.5m on a bearing of 189° from the called location and approximately 34 km at 150° from Lakes Entrance, Victoria.

Drill 26" Hole for 20" Casing

The drilling template was run and landed at a seafloor depth of 79m. The 26" hole was drilled to 225m using seawater and high viscosity gel slugs. At TD, the hole was displaced with 400 bbls hi-vis mud before making a wiper trip to the seafloor. The hole was again displaced with 400 bbls hi-vis mud prior to pulling out to run casing. An additional 100 bbls hi-vis pill was spotted at 107m to help prevent shallow bridging experienced on the offset Sunfish wells.

The 20" casing and 18-3/4" pipe joint assembly were then run and cemented with the 20" shoe at 210m. The BOP stack was run and landed, after which the shear rams, collet connector, and 20" casing were tested to 500 psi.

Drill 17-1/2" Hole for 13-2/8" Casing

After function testing the diverter system, the 20" casing was drilled out and the 17-1/2" hole drilled to 810m using a seawater/prehydrated gel slug mud system. A BHC/GR/CAL log was run prior to running casing.

The 13-3/8" casing was then run and cemented with the shoe at 794m. The TOC was calculated to be at 455m, based on the (one-armed) caliper log run with the BHC log. The 13-3/8" weight set seal assembly was set and tested, along with the BOP stack, to 200/3500/5000 psi. The 13-3/8" casing was tested against the shear rams to 1500 psi.

Drill 12-1/4" Hole

After drilling out the cement and 5m of new hole to 815m, a Phase II PIT was run to 16.4 ppg EMW without leakoff. The 12-1/4" hole was drilled down to the Top of Latrobe at 2172m; i.e., through the Seaspray Group (Gippsland Limestone/Lakes Entrance formation) and Turrum formation, with two bits. Eight wiper trips were made during this interval, including two wireline surveys. A seawater/natural clay mud system was used before mudding up to 9.2 ppg above the Top of Latrobe, where the 9.2 ppg mud was programmed to provide a 200 psi overbalance. The mud weight was again increased to 9.6 ppg by 2068m in order to reduce tight hole and swabbing experienced while wiper tripping.

2709L:47

Drilling proceeded through the Top of Latrobe and intra-Latrobe formations down to the originally programmed TD of 2822m. As drilling progressed, the well continued on its northerly course. Although the well was still within the programmed tolerance, drilling weight was reduced below 2378m in an effort to minimize the wellbore closure.

At 2822m, a supercombo log (DLL/MSFL/LDT/CNL/GR/CAL/SP/AMS) was run, followed by one pressure and six sampling RFT runs. A wiper trip was made while logging, during which a multishot survey was taken.

Based on encouraging results down to the original TD, the Exploration Department decided to drill ahead to 3200m, or until abnormal pressure was reached. Drilling continued past the original TD and through a 70m volcanics section down to 2944m. Drilling breaks occurred at 2929-2931.5m and 2943.5-2944m. Both were flow checked with negative results. Both breaks were circulated up with respective gas peaks of 37 and 275 units. Background gas had been running at about 10 units above 2929m.

Another flowcheck was made, again with negative results. Gas readings from this second flowcheck at 2944m were 85/140/100 units. The mud weight was therefore increased from 9.7 to 10.2 ppg. A 10/10/10 test run with the 10.2 ppg mud resulted in gas readings of 50/50/45 units.

Drilling resumed based on the negative results of the 10/10/10 test. After having drilled to 2949.5m, a pit gain of 22 bbls was detected and the well shut in. It is thought that the 22 bbl gain was not actually the bottom hole kick volume, but rather shallow expansion of gas which entered the well while drilling. It is now felt that the well was still underbalanced with 10.2 ppg mud in the hole at 2944m, as indicated by the higher background gas (50 vs. 10 units). The negative results of the 10/10/10 were probably due to the relatively low permeability of the overpressured sandstone.

Well Control

With the well shut in, the casing and drillpipe pressures were monitored. After 40 minutes, the shut-in casing pressure (SICP) was 100 psi, with no drillpipe pressure. The drillpipe float was then pumped open with 50 psi. As the first circulation began, the casing pressure fell immediately to 200 psi as gas was bled through the choke. The well was circulated for 1-1/2 hours at 20 SPM before shutting in to check pressures.

With 100 psi shut-in drillpipe pressure (SIDPP) and 960 psi SICP, circulation recommenced at 30 SPM. After a complete circulation, the well was shut in with 180 psi 1110 psi respectively. They were still rising as circulation was resumed due to gas migration in the annulus and/or pressure build-up from the kicking formation.

The mud weight was then raised to 10.9 ppg. After a complete circulation with the 10.9 ppg mud, the well was shut-in with 70 psi SIDPP and 780 psi SICP.

The well was then circulated with 11.5 ppg mud at 50 SPM through the Swaco choke. After 1-1/2 circulations, the well was shut in and the pressures monitored. SIGP was 110 psi, which was the same as the final circulating casing pressure with the choke fully open.

The well was then circulated at 127 SPM through both choke and kill lines and through all three chokes on the choke manifold. It was felt that the well was dead, but that the extra circulation (with applied back pressure) was required to remove the large amount of gas still in the annulus, as indicated by the high gas readings and gas cut mud returns. After two circulations, the well was flow checked through the choke and then up the riser after opening the annular preventer. Both checks were negative. The well was then circulated conventionally with 11.5 ppg mud at 120 SPM. After working the pipe, the drillstring was freed by slacking off 20 kips. Maximum overpull applied was 95 kips.

After circulating 9721 strokes (bit-to-wellhead), a 32 bbls pit gain was measured. This was the result of circulating up a small gas bubble. The well was shut in with 0 psi SIDPP and 70 psi SICP. The riser was subsequently filled with 32 bbls of mud.

After three circulations through the choke, the well was flow checked with negative results. The well was opened and circulated conventionally. Again, as gas bubble was circulated up and the well shut-in.

Mud weight was increased to 12.2 ppg. After 2-1/2 circulations through the choke, the well was opened and flow checked (negative). The well was then conventionally circulated, with gas units decreasing to 110 units.

The mud weight was increased to 12.5 ppg in order to "snuff out" gas units. After several circulations, the gas units remained at about 100 units. The mud weight was again increased to 12.8 ppg. After 2-1/2 circulations, the gas had fallen to 60 units.

A 10/10/10 test was conducted with results of 40/35/35 units. Three wiper trips (10, 21, and 31 stands, respectively) were then made to condition the hole and mud. (A 1% CO₂ concentration in the gas influx had led to carbonate contamination of the mud. The mud was therefore treated with lime to remove the contaminant.) Drag was experienced on these wiper trips when the stabilizers were pulled past permeable sands. A thick filter cake had developed at these sands over the four day period since the previous bit trip. Once the sands were wiped, no further drag was experienced across those sands.

The well control operations were prolonged due to the inability to accurately determine the bottom hole pressure. This was caused by the large amount of gas in the wellbore, the tightness of the kicking formation, and the insensitivity of the 10000 psi drillpipe pressure gauge.

It is felt that the pore pressure of the kicking formation was between 11.6 ppg and 12.0 ppg EMW. "Background" gas fell from 110 units with 12.2 ppg mud to as low as 25 units with 12.8 ppg mud. This reduction may have been due to the total circulating time (required to strip the gas out of the mud), and/or the increase in mud weight.

Drill 12-1/4" Hole/Final Logs

Drilling then proceeded to 2961.0m to provide rathole for wireline logging tools below the kicking sandstone. These last 6 meters were drilled and circulated bottoms up in 2m intervals.

After a 10 stand wiper trip, the hole was logged with a DLL/MSLFL/GR/AMS/CAL/BHC tool, LDT/CNL/GR tool, and sidewall coring gun.

Plug and Abandonment

The first open hole cement plug was set from 2961 to 2858m to cover the abnormally pressured sandstone at TD. The top of the plug was tagged with 15 kips.

The remaining hydrocarbon zones were then covered by open hole cement plugs over the intervals 2800 - 2630m, 2610 - 2460m, 2440 - 2290m and 2270 - 2116m. The top plug was tagged with 40 kips.

A cement plug was then set across the 13-3/8" shoe (794m) from 824 to 727m. The plug was tagged with 30 kips and pressure tested to 1500 psi with seawater in the hole.

A gauge ring/junk basket was run to 710m before setting a 13-3/8" EZSV bridge plug at 700m. the 13-3/8" casing was then cut with a Pengo Explosive cutter at 170m and retrieved.

A cement plug was set on top of the EZSV bridge plug from 700 to 655m. The final cement plug was set across the 13-3/8" stub from 200 to 120m. The first attempt to pressure test the plug after 4-1/2 hours was unsuccessful. After 7-1/2 hours, the plug was successfully pressure tested to 500 psi.

The BOP stack and riser were then pulled. An ICI 3.9 kg shaped charge was run below a ported 18-3/4" wellhead housing running tool, which was made up into the wellhead. The 20" casing was then blown at 90m, just below the pipe joint 'CC' connector. The wellhead was recovered along with the four post guidebase and drilling template.

Pull Anchors/Demobilization

Workboats were not available when the rig was ready to pull anchors. By the time the workboats had arrived on location and were offloaded, the weather had deteriorated to the point where the anchors could not be pulled. Three days were lost before the anchor-pulling operations could proceed.

The anchors were pulled by the workboats Lady Caroline and Lady Penelope. Under tow by the Lady Penelope, the rig was released at 2000 hours on May 29, 1987.

The rig was towed to an anchorage off of Rabbit Island, east of Wilson's Promontory. Standby rates were paid for 0.23 days while Diamond M equipment was offloaded and Esso equipment backloaded to complete the rig demobilization.

3, CASING DATAREMORA-1

CASING OD-IN.	CASING WT-PPF	CASING GRADE	CASING CONN.	CASING LENGTH-M.	SHOE MRKB	REMARKS
20	94	X-56	JV	11.53	210.00	FLOAT SHOE JOINT
20	94	X-56	JV	96.06		7 INTERMEDIATE JOINTS
20	129	X-52	JVXCC	13.50		CROSSOVER JOINT
24	670		CC	12.09		PILE JOINT - EP7-1-2
13-3/8"	54.5	K-55	BTC	11.92	793.68	FLOAT SHOE JOINT
13-3/8"	54.5	K-55	BTC	12.11		FLOAT JOINT
13-3/8"	54.5	K-55	BTC	12.88		FLOAT COLLAR JOINT
13-3/8"	54.5	K-55	BTC	667.91		55 INTERMEDIATE JOINTS
13-3/8"	54.5	K-55	BTC	12.36		CASING HANGER JOINT CSG. HNCR.-EHW37. S/A-ESW33-1

4. CEMENT DATA

REMORA-1

NOTE: ALL CEMENT - CLASS "G".

JOB TYPE	INTERVAL H-RKB	VOLUME- SACKS	SLURRY WT-PPG	ADDITIVES	MIX WATER	REMARKS
20" PRIMARY- LEAD	210 - SEAFLOOR	650	13.3	2.2% PHG	50/50 FW/SW	GEL PREHYDRATED IN FRESHWATER.
20" PRIMARY- TAIL		350	15.8	-	SW	
13-3/8" PRIMARY	794- 455	1200	15.8	-	SW	
P&A PLUG NO. 1	2955-2858	332	15.8	1.4% HR6L	FW	TAGGED WITH 15 KIPS.
P&A PLUG NO. 2	2800-2630	450	15.8	1.2% HR6L	FW	
P&A PLUG NO. 3	2610-2460	381	15.8	1.1% HR6L	FW	
P&A PLUG NO. 4	2440-2290	389	15.8	1.0% HR6L	FW	
P&A PLUG NO. 5	2270-2116	419	15.8	0.9% HR6L	FW	TAGGED WITH 40 KIPS
P&A PLUG NO. 6	824- 727	225	15.8	-	SW	TAGGED WITH 30 KIPS TESTED TO 1500 PSI.
P&A PLUG NO. 8	700- 655	112	15.8	-	SW	SET ON TOP OF EZSV.
P&A PLUG NO. 9	200- 120	359	15.8	-	SW	FAILED TO TEST AFTER 4-1/2 HRS. TESTED TO 500 PSI AFTER 7-1/2 HRS.

5. SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

REMORA-1

<u>INTERVAL</u>	<u>TYPE</u>
794.0-2955.5m	Cutting samples - 3 sets of washed and oven dried and 1 set of bagged air dried cuttings. Sampled from 794-2000m at 10m intervals. Sampled from 2000-2955.5m at 5m intervals.
794.0-2955.5m	Unwashed composite tinned samples for geochemistry collected at 30m/15M intervals.
2958.5-2065.0m	CST, Shot 60, Recovered 55 NO CONVENTIONAL CORES

6. WIRELINE LOGS AND SURVEYS

REMORA-1

<u>Type and Scale</u>		<u>From</u>	<u>To</u>
<u>Suite 1</u>			
BHC-CAL-GR	1:200 1:500	809.0-	79.4m
<u>Suite 2</u>			
LDL-CNL-GR-AMS	1:200 1:500	2805.0-	794.5m
DLL-MSFL-GR-SP	1:200 1:500	2811.0-	794.5m
HP GAUGE PRETESTS RUN 1 RFT-GR PRETESTS HP GAUGE SAMPLES (1 OF 2) RUNS 2 - 5 HP GAUGE SAMPLES (2 OF 2) RUNS 6 - 7 RFT SAMPLES (1 OF 2) RUNS 2 - 5 RFT SAMPLES (2 OF 2) RUNS 6 - 7			
<u>Suite 3</u>			
BHC-GR-AMS	1:200 1:500	2942.0-	794.5m
LDL-CNL-GR-AMS	1:200 1:500	2960.0-	2805.0m
DLL-MSFL-GR-AMS-SP	1:200 1:500	2956.5-	2811.0m
CST-GR RUN 1		2958.8-	2065.0m
JB, BP-0, TGC RUN 1	1:200		

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

TEST & SEAT NO.	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES)				HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		REMARKS	
			OIL Litres	COND. Litres	GAS m ³	FORMATION WATER Litres	MUD FILTRATE Litres	MPaa	Psia	MPaa		Psia
1/1	2800.7	Pretest						-	-	-	-	Seal failure
1/2	2800.8	Pretest						-	-	-	-	Seal failure
1/3	2802.0	Pretest						29.12	4222.9	31.92	4630.0	Valid
1/4	2786.5	Pretest						28.96	4199.6	31.76	4606.0	Valid
1/5	2782.5	Pretest						28.91	4193.2	31.71	4599.0	Valid
1/6	2773.8	Pretest						-	-	31.66	4592.0	Tight
1/7	2773.5	Pretest						-	-	31.60	4583.0	Seal failure
1/8	2774.1	Pretest						-	-	31.63	4588.0	Tight
1/9	2768.5	Pretest						-	-	31.56	4578.0	Tight
1/10	2768.8	Pretest						28.86	4186.4	31.55	4576.0	Supercharged
1/11	2749.7	Pretest						-	-	-	-	Seal failure
1/12	2750.0	Pretest						28.60	4148.5	31.32	4543.0	Valid
1/13	2738.0	Pretest						28.50	4134.1	31.18	4523.0	Valid
1/14	2732.3	Pretest						-	-	-	-	Tight
1/15	2734.5	Pretest						-	-	-	-	Seal failure
1/16	2732.5	Pretest						28.52	4135.9	31.11	4512.2	Valid
1/17	2703.5	Pretest						27.37	3969.1	30.78	4464.0	Valid
1/18	2696.5	Pretest						27.36	3968.9	30.72	4456.0	Valid
1/19	2677.5	Pretest						26.79	3885.1	30.51	4425.0	Valid
1/20	2656.0	Pretest						26.64	3864.3	30.28	4392.0	Valid

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - REMORA-1

TEST & SEAT NO.	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	Psia	
			Litres	Litres	Litres m ³	Litres	Litres					
1/21	2650.8	Pretest						26.62	3860.3	30.23	4384.0	Valid
1/22	2638.3	Pretest						26.57	3854.2	30.09	4364.0	Valid
1/23	2628.5	Pretest						-	-	-	-	Tight
1/24	2628.5	Pretest						26.55	3851.4	29.98	4348.0	Valid
1/25	2621.5	Pretest						26.41	3830.4	29.91	4338.0	Valid
1/26	2603.8	Pretest						25.87	3752.4	29.70	4308.0	Drawdown
1/27	2593.2	Pretest						25.78	3739.0	29.60	4293.0	Valid
1/28	2588.6	Pretest						25.73	3731.4	29.55	4286.0	Drawdown
1/29	2583.0	Pretest						-	-	-	-	Tight
1/30	2583.3	Pretest						25.88	3754.0	29.49	4277.0	Supercharged
1/31	2547.0	Pretest						25.24	3661.3	29.08	4217.7	Valid
1/32	2510.5	Pretest						24.91	3613.0	28.68	4159.0	Valid
1/33	2492.4	Pretest						24.73	3586.2	28.48	4130.0	Drawdown
1/34	2457.2	Pretest						24.54	3558.4	28.08	4073.0	Valid
1/35	2440.5	Pretest						24.32	3526.8	27.90	4045.0	Valid
1/36	2433.0	Pretest						24.31	3526.5	27.80	4032.0	Valid
1/37	2402.5	Pretest						24.24	3515.5	27.46	3983.0	Valid
1/38	2358.5	Pretest						23.41	3395.9	26.96	3910.0	Valid
1/39	2333.0	Pretest						23.11	3351.3	26.66	3866.0	Valid

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - REMORA-1

TEST & SEAT NO.	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES)				FORMATION WATER Litres	MUD FILTRATE Litres	HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		REMARKS
			OIL Litres	COND. Litres	GAS m ³				MPaa	Psia	MPaa	Psia	
1/40	2323.5	Prefest						22.92	3324.5	26.57	3853.0	Valid	
1/41	2319.0	Prefest						22.86	3320.0	26.52	3847.0	Valid	
1/42	2277.0	Prefest						22.61	3279.4	26.03	3775.0	Valid	
1/43	2271.0	Prefest						22.61	3279.4	25.98	3768.0	Valid	
1/44	2251.7	Prefest						22.56	3272.1	25.77	3738.0	Valid	
1/45	2233.5	Prefest						22.46	3257.5	25.57	3708.0	Valid	
1/46	2173.0	Prefest						21.46	3113.1	24.87	3607.0	Valid	
2/47	2650.8	Sample						-	-	-	-	Tight	
2/48	2650.5	Sample						-	-	30.25	4387.0	Tight	
2/49	2651.1	Sample						-	-	30.25	4387.0	Partial seal failure	
2/50	2651.1	Sample						-	-	30.24	4386.0	Partial seal failure	
2/51	2651.2	22.8 3.8	5.5 -	- -	0.44 -	- -	12.3 -	26.62	3861.4	29.54	4385.0	Preserved	
3/52	2677.5	22.8 3.8	Film Film	- -	0.03 0.01	- -	20.0 3.5	26.83	3891.4	30.54	4429.0		
4/53	2696.5	22.8 3.8	Film Film	- -	0.46 0.31	- -	18.5 2.25	27.42	3977.4	30.74	4458.0		
5/54	2319.0	22.8 3.8	- -	17.5 -	1.40 -	- -	- -	22.88	3318.0	26.48	3840.0	Preserved	
6/55	2276.5	Sample						-	-	-	-	Seal Failure	
6/56	2277.0	Sample						-	-	-	-	Seal Failure	

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - REMORA-1

TEST & SEAT NO.	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES)				HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		REMARKS	
			OIL Litres	COND. Litres	GAS Litres m ³	FORMATION WATER Litres	MUD FILTRATE Litres	MPaa	Psia	MPaa		Psia
6/57	2276.3	Sample						-	-	-	-	Seal Failure
6/58	2275.5	Sample						-	-	-	-	Seal Failure
6/59	2276.8	22.8 3.8	- -	0.2 Trace	2.89 0.62	- -	4.8 0.35	22.63	3282.1	26.17	3796.0	
7/60	2701.5	Sample						-	-	-	-	Tight
7/61	2701.7	Sample						-	-	-	-	Tight
7/62	2701.4	Sample						-	-	-	-	Tight
7/63	2703.0	44.4 10.4	- -	Fillm 0.25	0.71 0.51	- -	26.0 4.75	27.30	3959.0	30.86	4476.0	No flow restricter, wide packer used, strain gauge pressures.

8. TEMPERATURE RECORD - REMORA-1

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C°)	CIRCULATION TIME (t_k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER TEMPERATURE (C°)	GEOHERMAL GRADIENT (C°/km)
<u>Suite 1</u>						
BHC-CAL-GR	810.0	45.6	1.5	4.3		
<u>Suite 2</u>						
DLL-MSFL-LDL-CNL-GR	2816.0	100.0	2.0	9.83	106.3	35.17
HP-PRETESTS	2816.0	103.8	2.0	17.5		
<u>Suite 3</u>						
DLL-MSFL-GR-AMS-SP	2961.0	94.0	3.25	8.0	103.8	32.3
BHC-GR-AMS	2961.0	94.0	3.25	9.16		
LDL-CNL-GR-AMS	2961.0	98.0	3.25	14.75		



FIGURES

REMORA-1 PROGRESS CURVE

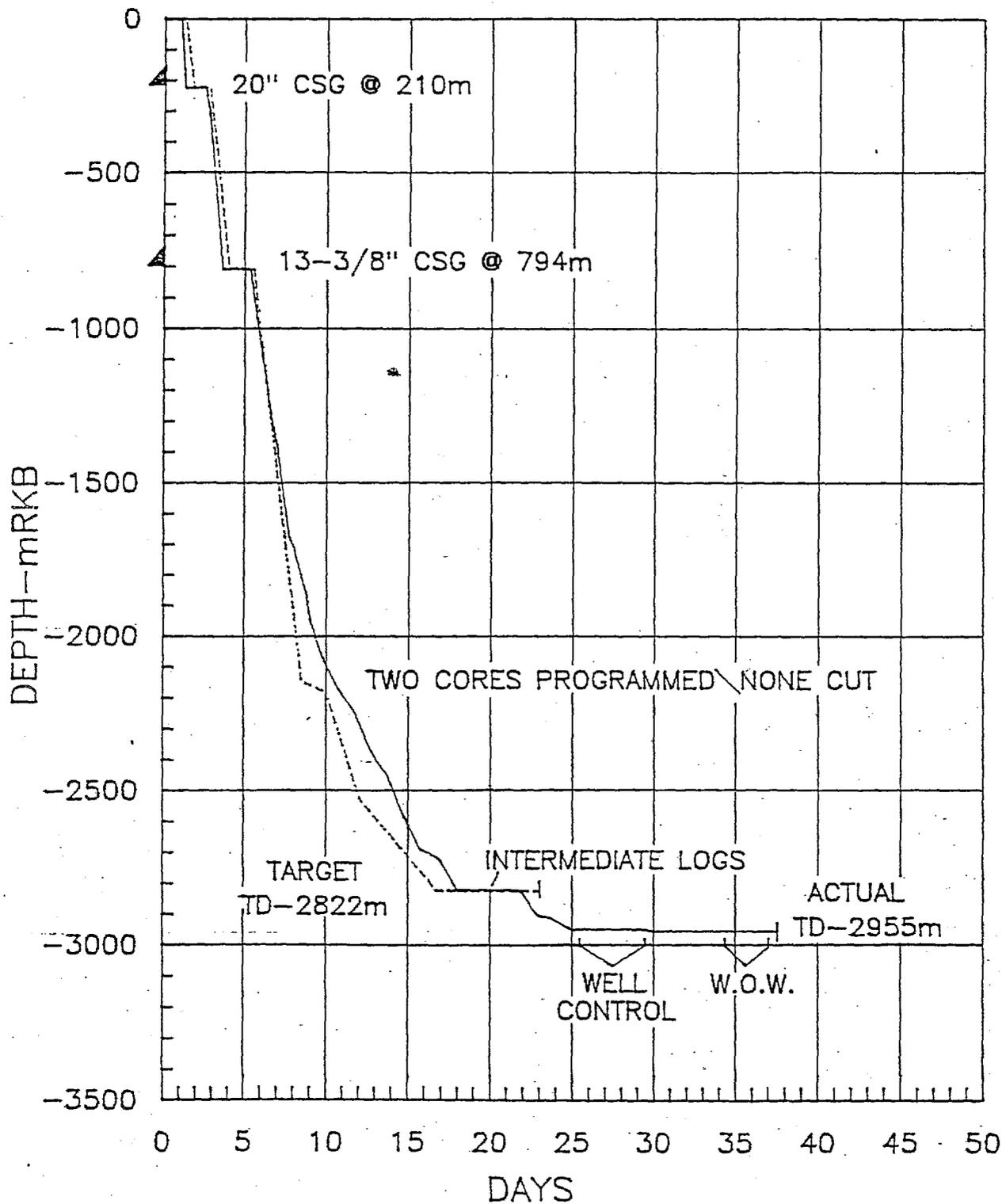
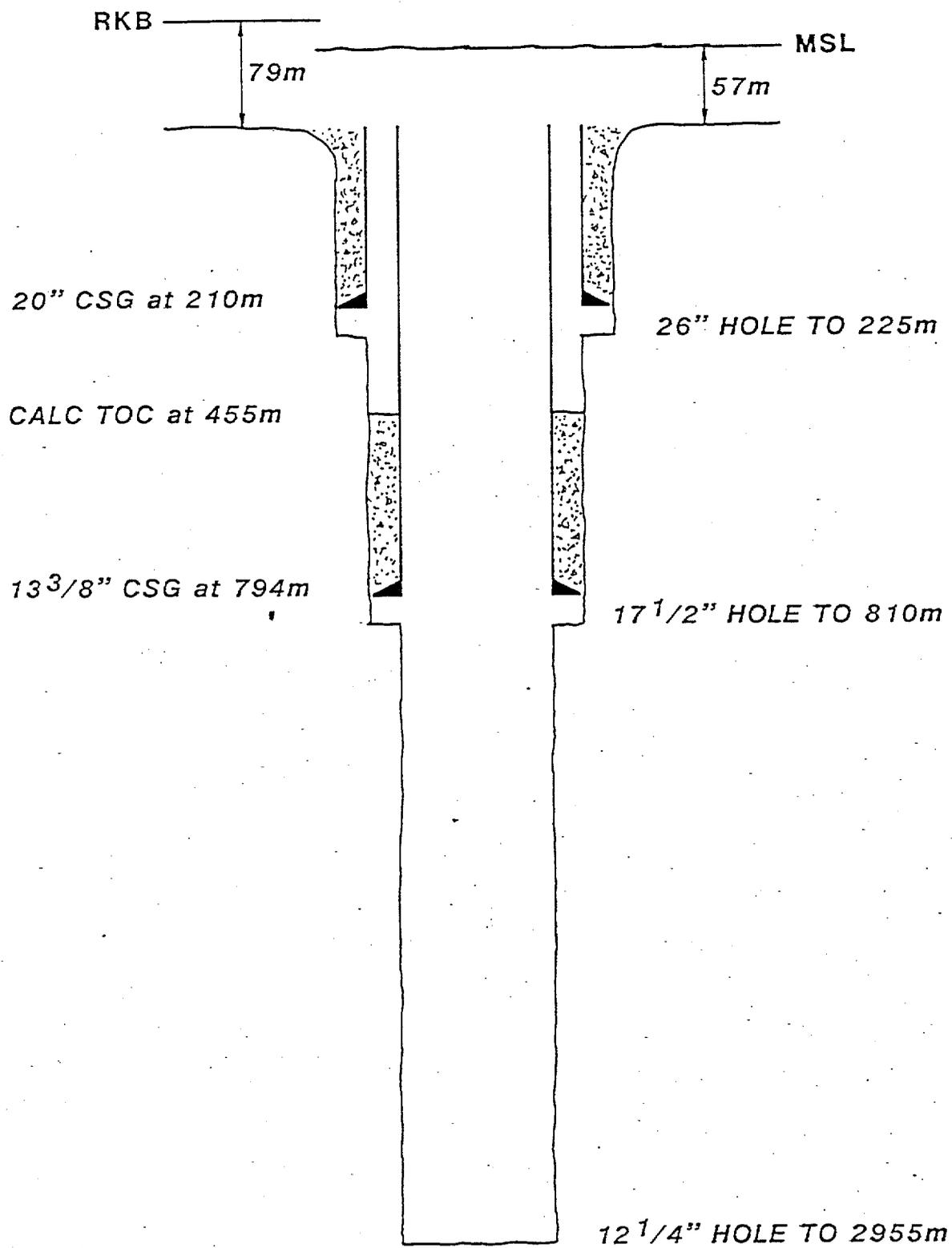


FIGURE 2

REMORA - 1 WELLBORE SCHEMATIC



ALL DEPTHS - m RKB

FIGURE 3

REMORA - 1 ABANDONMENT SCHEMATIC

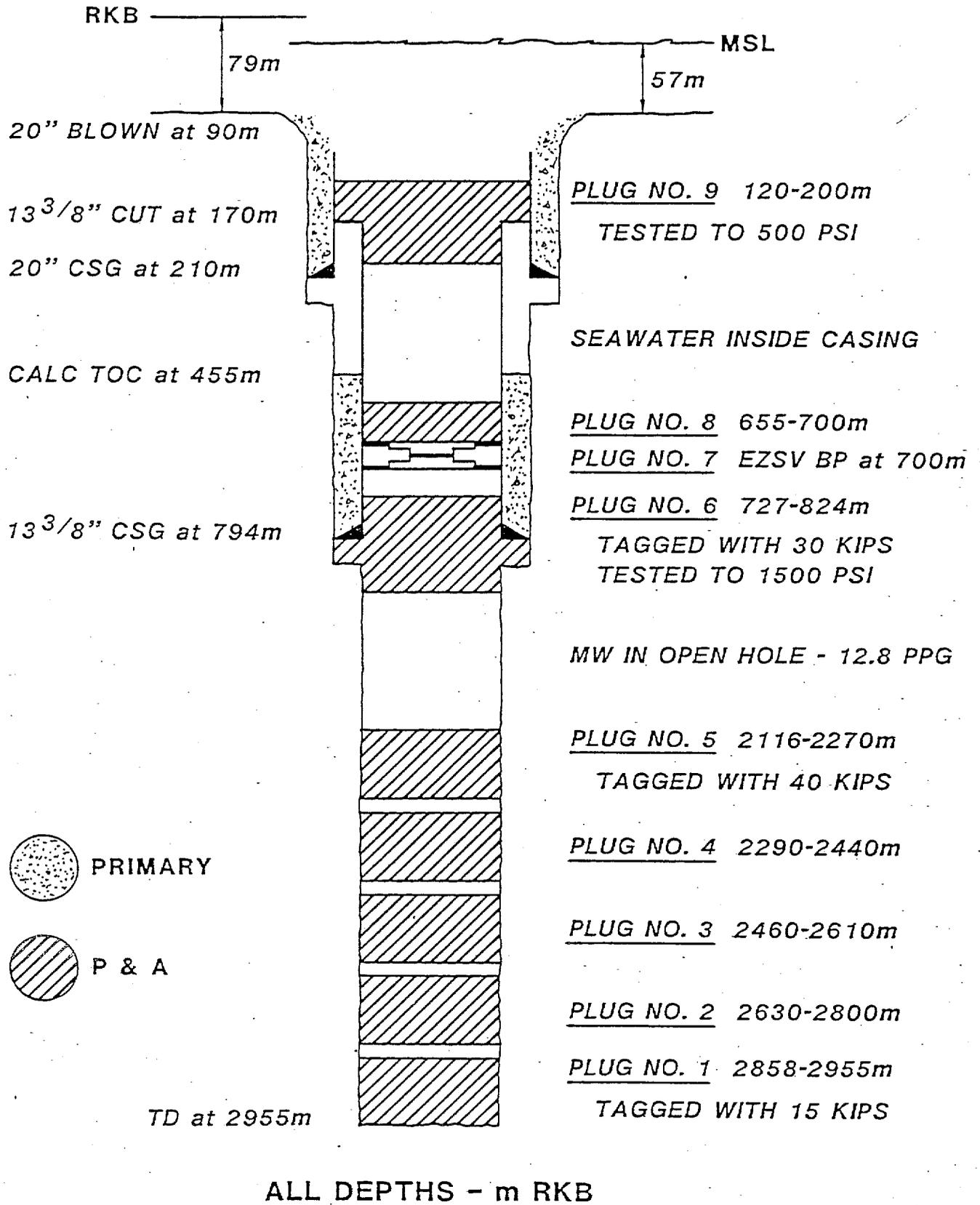


FIGURE 4

REMORA-I

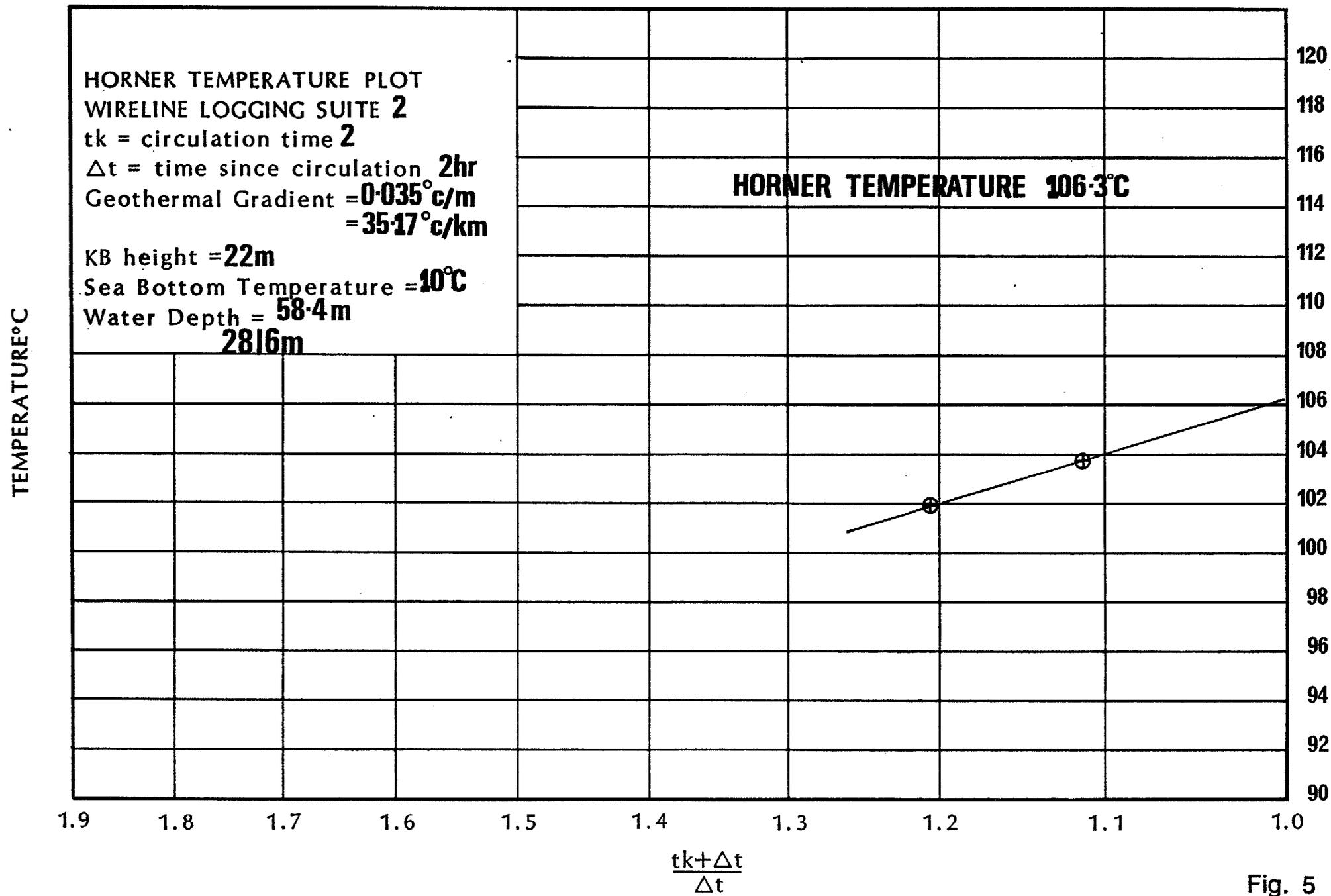


Fig. 5

REMORA-1

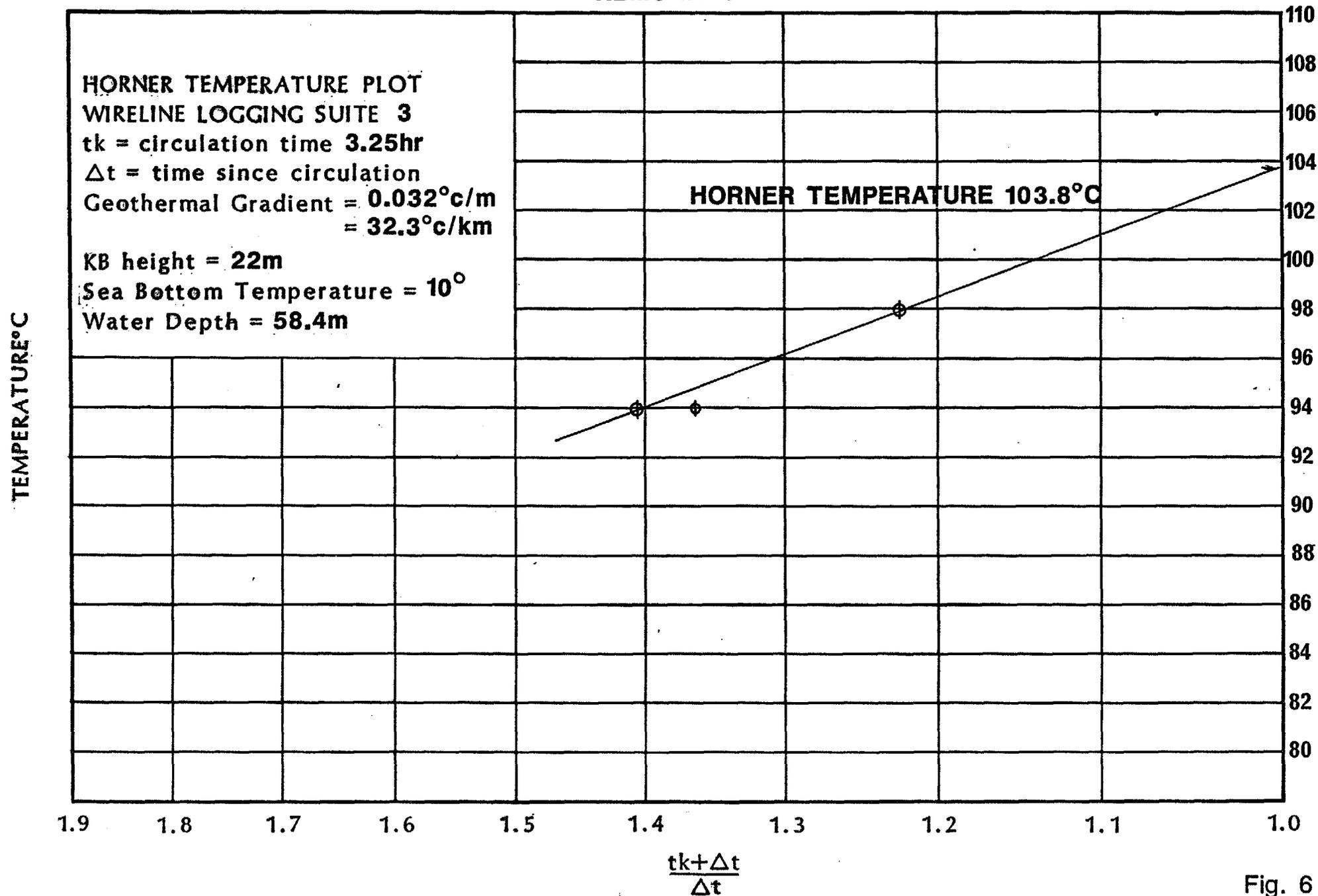


Fig. 6

APPENDIX 1

REMORA-1

Cuttings Descriptions

<u>Depth</u>	<u>%</u>	<u>Descriptions</u>
810 - 820m	80 20	CEMENT. CALCARENITE: medium to light grey; medium grained; soft to friable; shell fragments and calcite in calcareous mud matrix.
820 - 830m	60 40	CEMENT. CALCARENITE: as above.
830 - 840m	95 5	CALCARENITE: as above. CEMENT.
840 - 850m	100 trace	CALCARENITE: medium grey; grades to calcisiltite. CALCITE: white.
850 - 860m	100	CALCARENITE: becoming finer grained; increasing amounts of lime mud matrix.
860 - 870m	100	CALCARENITE/CALCISILTITE: as above.
870 - 880m	100	CALCARENITE/CALCISILTITE: as above.
880 - 890m	100	CALCARENITE/CALCISILTITE: as above; rare bentlonic foraminifera.
890 - 900m	100	CALCARENITE/CALCISILTITE: as above.
900 - 910m	100	CALCARENITE/CALCISILTITE: as above; rare forams.
910 - 920m	100	CALCISILTITE: medium grey; friable/soft; rare forams.
920 - 930m	100	CALCISILTITE: as above.
	trace	CALCITE: white; sparse forams.
930 - 940m	100	CALCISILTITE: as above.
940 - 950m	100 trace	CALCISILTITE: as above. CALCITE: white; sparse forams.
950 - 960m	100 trace	CALCISILTITE: light grey to mid grey; soft, friable; light grey becoming more abundant (about 20%). CALCITE: white; sporadic forams.
960 - 970m	100 trace	CALCISILTITE: light grey to mid grey; light grey variety has more clay matrix and is softer - about 25%; CALCITE: white; sporadic forams.
970 - 980m	100 trace	CALCISILTITE: as above. CALCITE: white.
980 - 990m	100% trace	CALCISILTITE: grading to calcarenite; as above.. CALCITE: white.
990 - 1000m	100 trace	CALCISILTITE: as above. CALCITE: white.

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1000 - 1010m	100 trace	CALCISILTITE: as above. CALCITE: white.
1010 - 1020m	100 trace	CALCISILTITE. CALCITE: white.
1020 - 1030m	100 trace	CALCISILTITE: as above. CALCITE: as above.
1030 - 1040m	100 trace	CALCISILTITE: light to medium grey, greenish; medium to fine grained; soft to friable calcite and fossil fragments; trace pyrite; common foraminifera. CALCITE: white.
1040 - 1050m	100 trace	CALCISILTITE: as above. CALCITE: white.
1050 - 1060m	100 trace	CALCISILTITE: as above. CALCITE: white.
1060 - 1070m	100	CALCISILTITE: as above.
1070 - 1080m	100	CALCISILTITE: as above; common forams.
1080 - 1090m	100	CALCISILTITE: as above; rare glauconite.
1090 - 1100m	100	CALCISILTITE: as above; light grey variety becoming more common; trace glauconite - becoming more common; common forams.
1100 - 1110m	100	CALCISILTITE: as above; trace pyrite.
1110 - 1120m	100	CALCISILTITE: as above; trace glauconite, pyrite.
1120 - 1130m	95 5 trace	CALCISILTITE: very light grey to medium grey; soft/friable; abundant forams; trace of glauconite and trace of pyrite. CALCILUTITE: offwhite to light grey; very soft; contains scattered fine to medium clear carbonate grains. CALCITE: white.
1130 - 1140m	95 5	CALCISILTITE: as above. CALCILUTITE: as above.
1140 - 1150m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
1150 - 1160m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
1160 - 1170m	95 5	CALCISILTITE: as above; grading to pale brown calcarenite. CALCILUTITE: as above.
1170 - 1180m	70 20 10	CALCARENITE: very pale brown to light grey; glassy; fine to very fine, moderately hard to friable; sparse glauconite grains; grades to calcisiltite. CALCISILTITE: as above. CALCILUTITE: as above; abundant forams.

1180 - 1190m	80	CALCARENITE: as above; becoming more glauconitic - coarser glauconite but still only minor.
	10	CALCISILTITE: as above.
	10	CALCILUTITE: as above; abundant forams.
1190 - 1200m	60	CALCARENITE: as above; grading to calcisiltite.
	30	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
		Conspicuous but minor glauconite; abundant forams; trace fossil fragments - bryozoans.
1200 - 1210m	60	CALCISILTITE: as above.
	20	CALCARENITE: as above.
	20	CALCILUTITE: as above; trace of pyrite, glauconite.
1210 - 1220m	60	CALCISILTITE: as above.
	20	CALCARENITE: as above.
	20	CALCILUTITE: as above; minor forams.
1220 - 1230m	80	CALCISILTITE: as above; grading in part to calcarenite as above.
	20	CALCILUTITE: as above; minor conspicuous glauconite; rare forams.
1230 - 1240m	70	CALCISILTITE: offwhite, light grey to grey; friable to soft; grades into calcarenite fine to very fine; moderately hard to friable.
	30	CALCILUTITE: offwhite to grey; soft; minor forams; minor conspicuous glauconite.
1240 - 1250m	90	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
1250 - 1260m	60	CALCISILTITE: as above.
	35	CALCILUTITE: as above.
	5	LIMESTONE: light to medium grey; hard.
	trace	CALCITE: clear to white.
1260 - 1270m	70	CALCISILTITE: light grey to grey; soft to friable.
	25	CALCILUTITE: offwhite to light grey; soft.
	5	LIMESTONE: dark grey; hard.
	trace	CALCITE: white
		Abundant forams; minor glauconite.
1270 - 1280m	60	CALCARENITE: offwhite to light grey; fine to very fine; moderately hard to friable; sparse glauconite.
	35	CALCISILTITE: as above.
	5	LIMESTONE: as above.
1280 - 1290m	100	CALCILUTITE: light-medium grey; soft; grades to calcisiltite; minor forams.
1290 - 1300m	100	CALCILUTITE: as above; minor forams.
1300 - 1310m	100	CALCISILTITE: grading to calcilutite; as above.
1310 - 1320m	100	CALCILUTITE: grading to calcisiltite; as above.
1320 - 1330m	100	CALCILUTITE/CALCISILTITE: as above.
1330 - 1340m	100	CALCILUTITE/CALCISILTITE: as above.

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1340 - 1350m	100	CALCILUTITE/CALCISILTITE: as above.
1350 - 1360m	100	CALCILUTITE/CALCISILTITE: as above.
1360 - 1370	100	CALCILUTITE/CALCISILTITE: medium grey, greenish tinge; soft to firm; trace white calcite; common fossil fragments; rare glauconite; clays washing out.
1370 - 1380m	100	CALCILUTITE/CALCISILTITE: as above.
1380 - 1390m	100	CALCILUTITE/CALCISILTITE: as above.
1390 - 1400m	100	CALCILUTITE/CALCISILTITE: as above.
1400 - 1410m	100 trace trace	CALCISILTITE: medium grey; soft to firm; fissile to platy, flaky; common forams. CALCITE: white. CALCISILTITE: offwhite to light grey; soft.
1420 - 1430m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above.
1430 - 1440m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above.
1440 - 1450m	95 5	CALCISILTITE: as above. CALCILUTITE: as above.
1450 - 1460m	100	CALCISILTITE: as above but slightly harder - larger cuttings up to 1 cm.
1460 - 1470m	100	CALCISILTITE: as above; with minor calcilutite as above.
1470 - 1480m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
1480 - 1490m	80 20 trace	CALCISILTITE: as above. CALCILUTITE: as above. CALCITE: white, clear.
1490 - 1500m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
1500 - 1510m	80 20	CALCISILTITE: as above. CALCILUTITE: as above.
1510 - 1520m	80 20	CALCISILTITE: as above. CALCILUTITE: as above.
1520 - 1530	80 20	CALCISILTITE: as above. CALCILUTITE: as above; minor forams.
1530 - 1540m	80 20	CALCISILTITE: as above. CALCILUTITE: as above; minor forams; rare echinoid spine fragments.
1540 - 1550m	80 20	CALCISILTITE: as above. CALCILUTITE: as above; common forams; rare echinoid spines.
1550 - 1560m	100 trace trace	CALCISILTITE: as above; becoming harder fragments up to 1 cm. CALCILUTITE: as above. CALCITE: clear; common forams.

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1560 - 1570m	100	CALCISILTITE: as above.
1570 - 1580m	100	CALCISILTITE: as above.
1580 - 1590m	100 trace	CALCISILTITE: as above; minor forams. GLAUCONITE
1590 - 1600m	100 trace trace	CALCISILTITE: medium grey; firm to soft; grades to Calcilutite; minor forams; trace Glauconite. CALCILUTITE: offwhite; soft. trace pyrite. CALCITE: white.
1600 - 1610m	95 5 trace	CALCISILTITE: as above. CALCILUTITE: as above. CALCITE: white Common forams; minor echinoid spines.
1610 - 1620m	100 trace	CALCISILTITE: as above. CALCITE: white; shell fragments; minor forams, echinoid spines; trace glauconite.
1620 - 1630m	100 trace trace	CALCISILTITE: as above; common forams. CALCITE: white; calcilutite as above. PYRITE, GLAUCONITE.
1630 - 1640m	100 trace trace	CALCISILTITE: as above; common forams. CALCITE: white; shell fragments; pyrite. CALCILUTITE: as above.
1640 - 1650m	60 40 trace	CALCISILTITE: as above. CALCARENITE: light grey, fine grained; firm to soft. PYRITE: common chips of fine grained pyrite aggregates; common forams.
1650 - 1660m	60 40	CALCISILTITE: as above; common forams. CALCARENITE: as above; abundant pyrite.
1660 - 1670m	40 40 20	CALCARENITE: light grey to grey; fine to very fine grained; firm to soft; commonly glauconitic. CALCISILTITE: as above. CALCILUTITE: as above. common forams.
1670 - 1680m	60 40	CALCISILTITE: grading at times to fine grained calcarenite. CALCILUTITE: grades to calcisiltite.
1680 - 1690m		DEPTH ADJUSTMENT. NOT COLLECTED
1690 - 1700m	50 50	CALCISILTITE: as above. CALCILUTITE: as above.
1700 - 1710m	100 trace	CALCISILTITE: as above. CALCARENITE and CALCILUTITE: as above. Abundant forams; rare pyrite.
1710 - 1720m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above; minor pyrite; rare glauconite; minor forams.

1720 - 1730m	90 10 trace	CALCISILTITE: as above. CALCARENITE: as above; common forams; common pyrite. CALCITE: common white.
1730 - 1740m	80 20 trace	CALCISILTITE: as above. CALCARENITE: as above. CALCITE: white; abundant forams.
1740 - 1750m	60 40	CALCISILTITE: as above; abundant forams. CALCARENITE: as above; minor glauconite; abundant pyrite.
1750 - 1760m	60 20 20	CALCISILTITE CALCARENITE CALCILUTITE
1760 - 1770	50 50	CALCISILTITE CALCILUTITE
1770 - 1780m	60 30 10	CALCISILTITE: medium greenish grey, firm grading to finer and coarser grained material. CALCILUTITE: dark grey; firm to soft; very fine grained. CALCARENITE: buff white to grey; fine to medium grained; hard to firm; well cemented; trace dull yellow-white mineral fluorescence.
1780 - 1790m	50 20 30	CALCISILTITE: CALCILUTITE: CALCARENITE: as above.
1790 - 1800m	70 30 trace trace	CALCISILTITE: as above. CALCARENITE: as above. GLAUCONITE: abundant forams PYRITE
1800 - 1810m	80 20 trace trace	CALCISILTITE: as above; abundant forams CALCARENITE: as above. GLAUCONITE PYRITE: rare bryozoans; dull yellow mineral fluorescence from shelly fragments and white calcarenite.
1810 - 1820m	80 20 trace trace	CALCISILTITE: as above; abundant forams. CALCARENITE: as above. CALCILUTITE: as above. GLAUCONITE
1820 - 1830m	80 20	CALCISILTITE: as above. CALCARENITE: as above with minor glauconite and pyrite; abundant forams.
1830 - 1840m	70 30	CALCISILTITE: as above. CALCARENITE: as above; (glauconitic in part); common pyrite; very abundant forams.
1840 - 1850m	95 5	CALCISILTITE: as above. CALCARENITE: as above; (glauconitic in part); common pyrite and forams.
1850 - 1860m	100 trace	CALCISILTITE: medium dark grey; firm; fine grained; rarely grading to medium grained calcarenite; minor glauconite; pyrite. CALCITE: white; firm to hard; with white to straw yellow mineral fluorescence; no cut.

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1860 - 1870m	90 10 trace	CALCISILTITE: as above. CALCARENITE: white to tan; grades to calcilsiltite. PYRITE
1870 - 1880m	90 10	CALCISILTITE: as above. CALCARENITE: as above.
1880 - 1890m	90 10 trace	CALCISILTITE: medium grey; as above. CALCARENITE: FORAMINIFERA
1890 - 1900m	100	CALCISILTITE: as above.
1900 - 1910m	40 60	CALCARENITE: buff to medium grey. CALCISILTITE: as above.
1910 - 1920m	30 70	CALCARENITE: as above. CALCISILTITE: as above; glauconite more common.
1920 - 1930m	20 80	CALCARENITE: as above. CALCISILTITE: as above.
1930 - 1940m	20 80	CALCARENITE: as above. CALCISILTITE: as above.
1940 - 1950m	20 80	CALCARENITE: as above. CALCISILTITE: as above.
1950 - 1960m	20 80	CALCARENITE: as above. CALCISILTITE: as above.
1960 - 1970m	20 80 trace	CALCARENITE: as above. CALCISILTITE: as above. CALCILUTITE: offwhite; very soft; common forams; minor glauconite.
1970 - 1980m	80 20 trace	CALCISILTITE: as above. CALCILUTITE: as above. GLAUCONITE: and white CALCITE; minor forams.
1980 - 1990m	80 10 10 trace	CALCISILTITE: as above; grades to very fine calcarenite. CALCILUTITE: as above. CALCARENITE: as above. CALCITE: white; glauconite; pyrite.
1990 - 2000m	70 20 10 trace	CALCISILTITE: grey; soft to firm. CALCARENITE: buff, to light grey; soft, firm to moderately hard; fine to very fine grained. CALCILUTITE: offwhite to light grey. GLAUCONITE: pyrite; abundant forams.
2000 - 2005m	60 30 10	CALCARENITE: as above; minor glauconite. CALCISILTITE: as above. CALCILUTITE: as above.
2005 - 2010m	50 50	CALCARENITE: as above. CALCISILTITE: as above.
2010 - 2015m	60 40	CALCISILTITE: as above. CALCARENITE: as above.

2015 - 2020m	60 40 trace	CALCARENITE: as above. CALCISILTITE: as above. GLAUCONITE, PYRITE
2020 - 2025m	40 60 trace	CALCISILTITE: as above. CALCARENITE: as above; minor glauconite and pyrite. CALCILUTITE. Abundant forams.
2025 - 2030m	80 20	CALCARENITE: as above. CALCISILTITE: as above. Minor pyrite, glauconite; abundant forams.
2030 - 2035m	60 40	CALCISILTITE: as above. CALCARENITE: as above.
2035 - 2040m	60 40	CALCARENITE: as above. CALCISILTITE: as above; common pyrite, glauconite.
2040 - 2045m	60 40 trace	CALCARENITE: light grey to mid grey; firm to soft; sparsely glauconitic; fine to very fine grained - grades to calcisiltite. CALCISILTITE: mid grey; soft. ?COAL/CARBONACEOUS FRAGMENTS: black to red-brown stained; finely fissile; common forams; large.
2045 - 2050m	80 20 trace	CALCARENITE: as above. CALCISILTITE: as above. ?COAL
2050 - 2055m	60 40	CALCARENITE: as above; common forams. CALCISILTITE: as above; minor glauconite; pyrite.
2055 - 2060m	60 40	CALCARENITE: as above. CALCISILTITE: as above.
2060 - 2065m	60 40	CALCISILTITE: as above. CALCARENITE: as above; minor glauconite; pyrite.
2065 - 2070m	80 20	CALCISILTITE: as above. CALCARENITE: as above; trace pyrite; minor conspicuous coarser glauconite grains.
2070 - 2075m	100 trace trace	CALCISILTITE: as above; minor glauconite; pyrite. CALCILUTITE: as above; minor forams. MINERAL FLUORESCENCE: pale yellow-white.
2075 - 2080m	90 9 1	CALCISILTITE: as above; grading to very fine calcarenite; as above. CALCILUTITE: as above; trace pyrite. GLAUCONITE: very abundant coarser than usual glauconite grains - very dark green.

2080 - 2085m	60	CALCISILTITE: medium grey to light grey; firm to moderately hard; grades to very fine calcarenite.
	20	CALCARENITE: medium brown, buff, light grey; commonly very glauconitic (up to 20 - 40% glauconite in individual cuttings); medium to fine grained; firm to hard.
	14	CALCILUTITE: offwhite to light grey; very soft.
	1	GLAUCONITE: grains; dark green to green; minor pyrite; abundant forams; minor clear quartz grains.
2085 - 2090m	60	CALCARENITE: glauconitic; as above.
	30	CALCISILTITE: as above.
	7	QUARTZ: subrounded, clear grains up to 1-2 mm diameter.
	3	GLAUCONITE: minor pyrite; forams echinoderm spines.
2090 - 2095m	40	CALCARENITE/CALCISILTITE: as above; possibly significant amount of cavings.
	40	SILTSTONE: medium to dark brownish grey; fine grained; common quartz grains; firm to hard.
	1	PYRITE: minor, slightly calcareous.
	15	SANDSTONE: very fine grained, loose quartz; subangular to subrounded; well sorted; poor inferred porosity; no shows.
	5	GLAUCONITE: green to black.
2095 - 2100m	60	SILTSTONE: glauconitic, as above; grading to very fine sandstone.
	30	CALCARENITE/CALCISILTITE: as above (probably cavings).
	10	SANDSTONE: quartzose; very fine/fine grained up to very coarse/granular (grains up to 3mm); minor pyrite; no shows.
2100 - 2105m	40	SILTSTONE: glauconitic (about 10%); as above.
	40	SANDSTONE: fine to very coarse; quartzose; as above.
	20	CALCISILTITE: as above (probably cavings); very glauconite-rich; common pyrite; no shows.
2105 - 2110m	60	SANDSTONE: quartzose; subrounded; fine to medium with some coarse/very coarse.
	30	SILTSTONE: as above.
	10	GLAUCONITE: green to dark green; no shows (trace dull yellow-gold mineral fluorescence).
	trace	COAL: black.
2110 - 2115m	90	SANDSTONE: as above; no shows.
	10	GLAUCONITE
	trace	COAL: black, pyrite; no shows.
2115 - 2120m	80	SANDSTONE: very fine to medium grained, quartzose; angular to subrounded; poorly sorted, very glauconitic grading to glauconitic sandstone in parts; very carbonaceous in parts with black fine carbonaceous laminations and common pyrite; cements include silica, carbonate and pyrite with common silt/glauconitic/kaolinitic matrix; very poor to no visual porosity; no shows; 5% mineral fluorescence associated with calcareous cement.
	10	CALCISILTITE: probably cavings - light grey; very calcareous.

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2120 - 2125m	100	SANDSTONE: as above; very glauconitic/pyritic; trace mineral fluorescence from calcareous fragments; no shows; poor to possible good visual porosity; abundant loose, fine to medium grained which is probably poorly cemented.
2125 - 2130m	100	SANDSTONE: as above; very glauconitic; no shows; 10% bright yellow fluorescence associated with carbonate cement; loose fine to medium grained quartz, could be weakly cemented downhole.
2130 - 2135m	95	SANDSTONE: as above. very glauconitic, dominantly loose, fine to medium grained sandstone; minor aggregates with poor to occasional fair visual porosity; aggregates probably most representative of downhole porosity.
	5	SILTSTONE: light brown; siliceous; pyritic and glauconitic; sandy grading to sandstone as above.
2135 - 2140m	95	SANDSTONE: as above; very glauconitic; no shows.
	5	SILTSTONE: as above.
2140 - 2145m	90	SANDSTONE: as above; very glauconitic; no shows; 10% mineral fluorescence associated with calcareous cementing; strong calcareous and silica cementing in parts.
	10	SILTSTONE: as above.
2145 - 2150m	80	SANDSTONE: as above; common glauconite (20% of sandstone grains); predominantly fine grained aggregates with moderately strong dolomite and silica cement; poor to occasional moderate visible porosity; no shows; 10% mineral fluorescence associated with calcareous cement and minor bryozoan cavings.
2150 - 2155m	95	SANDSTONE: as above; very glauconitic in parts grading to greensand no shows; poor visual porosity; 15% bright yellow mineral fluorescence associated with bryozoan cavings and carbonate cemented sandstone aggregates; common light brown clay staining on aggregates.
	5	SILTSTONE: as above.
2155 - 2160m	100	SANDSTONE: as above; no shows.
2160 - 2165m	100	SANDSTONE: as above; no shows.
2165 - 2170m	95	SANDSTONE: as above; 5% bright yellow mineral fluorescence (as above).
	trace	CALCISILTITE: cavings.
	trace	COAL and SILTSTONE: as above; minor pyrite; abundant glauconite.
2170 - 2175m	60	SANDSTONE: as above; fine to very coarse/granular.
	20	SILTSTONE: brown; as above.
	20	SILTSTONE: dark grey to grey-green; grading to fine sandstone; consists of sand-sized glauconite and quartz grains imbedded in dark grey siltstone matrix; hard to firm; minor pyrite; minor yellow mineral fluorescence.

2175 - 2180m	90	SANDSTONE: fine to very coarse grained; subangular to sub-rounded; dominantly clear to milky white, loose quartz grains; minor aggregates of moderately strongly cemented fine-grained sandstone; minor glauconite grains in aggregates; inferred good porosity downhole, only fair to poor visual porosity in aggregates; minor pyrite cement, minor very thin carbonaceous laminae in aggregates; no shows.
	10	SILTSTONE: brown to grey to grey-green; firm to hard; sandy; glauconitic; slightly argillaceous in parts; slightly micaceous; minor pyrite.
2180 - 2185m	50	SANDSTONE: as above; only trace glauconite, dominantly loose grains; minor aggregates; as above.
	40	COAL: black; hard; vitreous lustre.
	10	SILTSTONE: as above.
2185 - 2190m	85	SANDSTONE: fine to dominantly very coarse grained; loose milky white to clear quartz; angular to subrounded; poorly sorted; inferred very good porosity; no shows.
	10	SILTSTONE: as above; micaceous in parts; sandy; grading to fine grained sandstone in parts.
	5	COAL: black; hard; brittle, vitreous lustre.
2190 - 2195m	40	SANDSTONE: as above.
	40	SILTSTONE: brown to dark grey; as above with sporadic coaly lenses/partings.
	20	COAL: as above.
2195 - 2200m	70	SILTSTONE: white to dominantly brown and dark grey; as above.
	25	COAL: as above.
	5	SANDSTONE: as above; 1 aggregate of fine grained, moderately well sorted, moderately well cemented sandstone; has moderately bright yellow fluorescence, moderately fast, milky white stream cut.
2200 - 2202m	30	SPOT SAMPLE
	50	COAL: as above.
	20	SILTSTONE: as above.
2202 - 2205m	85	SANDSTONE: dominantly aggregates of very fine grained to fine grained sandstone; very well sorted; subangular to subrounded; minor loose coarse grained sandstone grains; 10% bright yellow fluorescence; fast milky white steam cut; milky yellow fluorescent residue.
	10	SILTSTONE: as above.
	5	SANDSTONE: dominantly fine grained aggregates; as above; 10% bright yellow fluorescence; fast, moderately bright milky white cut; fluorescence and cut from weakly sucrosic silica cemented very fine to fine grained sandstone aggregates; moderate to poor visual porosity; faint brown oil ring residue after cut.
	5	COAL: as above.

2205 - 2210m	95	SILTSTONE: as above.
	5	SANDSTONE: as above; with 5% hydrocarbon fluorescence; as above; in very fine sandstone aggregates.
	trace	COAL: as above.
2210 - 2215m	80	SILTSTONE: as above.
	20	SANDSTONE: as above with 20% bright yellow mineral fluorescence associated with dolomite/calcite; cemented; fine to medium grained sandstone aggregates, trace of which exhibits fast, moderately bright yellow white to milky cut; aggregates have strong calcareous cement; very poor to no visual porosity.
	trace	COAL: as above.
2215 - 2220m	40	SILTSTONE: as above.
	40	COAL: as above.
	20	SANDSTONE: calcareous cemented as above with 20% moderately bright to bright yellow mineral fluorescence; no hydrocarbon, fluorescence or cut.
2220 - 2225m	60	SILTSTONE: brown to medium dark grey, argillaceous in parts; common carbonaceous flecks and laminae; firm to hard; subfissile in parts.
	30	SANDSTONE: very fine to medium grained, dolomite cemented aggregates; minor loose medium to coarse grained sandstone grains; 20% of sample has bright yellow fluorescence (mineral fluorescence and hydrocarbon fluorescence exactly the same colour and brightness); 5% of sample gives slow to moderately fast, bright, milky white steam cut; strong milky white crush cut; very faint light brown oil residue; hydrocarbons associated with aggregates only which have dominantly poor to occasional fair visual porosity.
	10	COAL: black; hard; brittle; vitreous lustre.
2225 - 2230 m	90	SILTSTONE: as above with 10% very dark grey orange fluorescent; carbonaceous, slightly calcareous siltstone.
	5	SANDSTONE: as above; trace (2 cuttings) with hydrocarbon fluorescence; as above.
	5	COAL: as above.
2230 - 2235 m	70	SILTSTONE: as above.
	25	SANDSTONE: as above with trace Hydrocarbon fluorescence in aggregates; as above.
	5	COAL: as above.
2235 - 2240m	100	SILTSTONE: brown to medium dark grey; slightly argillaceous; firm to hard; slightly carbonaceous in parts.
	trace	COAL: black; hard; brittle; vitreous lustre. Abundant Gippsland limestone/Lakes Entrance Formation cavings (30% of sample).
2240 - 2245 m	100	SILTSTONE: as above.
	trace	COAL: as above.

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2245 - 2248 m	70	SILTSTONE: as above. CBU ON DRILL BREAK
	20	SANDSTONE: loose; clear to milky white quartz; medium grained; subangular to subrounded; excellent visual porosity; no shows; minor silica cemented; very fine grained to fine grained aggregates; very poor visual porosity; no shows.
	10	COAL: as above.
2248 - 2250m	70	SANDSTONE: as above.
	30	SILTSTONE: as above.
	trace	COAL: as above;
	trace	PYRITE
2250 - 2255m	90	SANDSTONE: loose; clear to milky quartz; medium to very coarse and granular; subangular to subrounded; excellent visual porosity; some carbonate cemented medium to fine grained aggregates.
		bright yellow mineral fluorescence associated with carbonate cemented sand aggregates.
	trace	bright yellow to orange mineral fluorescence associated with carbonate cement; very minor trace of yellow fluorescence with instant pale yellow to milky cut - associated with dark grey carbonaceous siltstone.
	5	SILTSTONE: as above.
	5	COAL: as above.
2255 - 2260m	50	SANDSTONE: as above; medium to very coarse; trace bright yellow/orange mineral fluorescence.
	50	SILTSTONE: as above.
	trace	COAL: as above.
2260 - 2265m	40	SANDSTONE: as above; 20% of sample is fine to very coarse; trace bright yellow mineral fluorescence. 20% of sample is offwhite to light grey; very fine grained - grading to siltstone.
	60	SILTSTONE: as above.
	trace	COAL: as above.
2265 - 2270m	70	SANDSTONE: as above; fine to medium grained; finer-grained phases are carbonate cemented aggregates with yellow mineral fluorescence.
	30	SILTSTONE: as above.
	trace	COAL
2270 - 2275m	70	SANDSTONE: dominantly fine to medium grained with fine grained aggregates showing bright to moderately bright yellow fluorescent calcite cement; dominantly poor to occasional fair visual porosity in aggregates; moderately well sorted; subangular; no shows; 60% mineral fluorescence.
	30	SILTSTONE: brown to dominantly medium grey; siliceous; moderately hard; slightly argillaceous in parts; slightly carbonaceous in parts.
	trace	COAL: black; hard; brittle; slightly pyritic in parts.
2275 - 2280m	90	SANDSTONE: as above; 60% mineral fluorescence as above; no shows.
	10	SILTSTONE: as above.
	trace	COAL: as above.

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2280 - 2285m	95	SANDSTONE: as above; 70% mineral fluorescence from dolomite/calcite cement as above; weak, milky crush cut - leaves ring of pale yellow fluorescence.
	5	SILTSTONE: as above.
	trace	COAL: as above.
2285 - 2290m	95	SANDSTONE: as above; 60% mineral fluorescence from dolomite/calcite cement as above; minor weak milky crush cut - leaves very pale yellow fluorescent ring.
	4	SILTSTONE: as above.
	1	COAL: as above.
2290 - 2295m	80	SANDSTONE: dominantly fine to medium grained - mostly in cemented calcite/dolomite aggregates; minor loose coarse grains; 25% bright to soft yellow mineral fluorescence; trace of oil fluorescence with instant pale yellow to milky cut; trace weak milky crush cut; visual porosity in cemented aggregates - nil.
	10	SILTSTONE: light brown, brown, light grey to grey; common carbonaceous grains; soft to firm.
	10	COAL: black; conchoidal fracture.
2295 - 2300m	50	SANDSTONE: as above; 15% bright gold to soft yellow mineral fluorescence; no shows; no crush cut.
	45	SILTSTONE: as above.
	5	COAL: as above; trace pyrite.
2300 - 2305m	70	SANDSTONE: as above; fine to coarse-grained; dominantly loose grains, but calcite/dolomite cemented aggregates of finer sand also present; 10% mineral fluorescence as above; minor very weak milky crush cut.
	30	SILTSTONE: as above; grades to very fine quartz sandstone.
	trace	COAL: minor pyrite.
2305 - 2310m	90	SANDSTONE: fine to medium grained; angular to subangular; strongly carbonate cemented aggregates; 50% dull to moderately bright yellow mineral fluorescence associated with carbonate cement; very poor visual porosity; rare pyrite cement; no streaming cut; very weak, paler milky white crush cut from a few percent of cuttings.
	10	SILTSTONE: brown to dominantly dark grey; firm to hard; slightly micaceous and argillaceous; slightly carbonaceous in parts.
	trace	COAL: black; hard.
2310 - 2315m	60	SANDSTONE: as above; no shows.
	25	SILTSTONE: as above.
	25	COAL: as above.
2315 - 2320m	80	COAL: as above.
	20	SANDSTONE: as above.
	trace	SILTSTONE: as above.

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2320 - 2325m	60	SANDSTONE: as above; 40% carbonate cemented, fine to medium grained aggregates; 60% loose medium grained angular quartz grains; no shows.
	30	SILTSTONE: as above.
	10	COAL: as above.
2325 - 2330m	50	SANDSTONE: as above; with 60% carbonate cemented aggregates; 40% loose fine to medium grained quartz grains; very slow milky white crush cut from 10% of sandstone aggregates.
	30	COAL: as above.
	20	SILTSTONE: as above.
2330 - 2335 m	60	SILTSTONE: as above.
	20	SANDSTONE: dominantly loose, medium grained, subrounded quartz; minor carbonate cemented aggregates; rare pyrite cement; no shows.
	10	COAL: as above.
2335 - 2340m	80	SILTSTONE: as above; very carbonaceous in parts.
	10	SANDSTONE: as above; dominantly loose, medium grained quartz grains; minor carbonaceous cemented aggregates.
	10	COAL: as above.
2340 - 2345m	100	SILTSTONE: as above; very carbonaceous in parts.
	trace	SANDSTONE: as above; dominantly loose, medium grained quartz; no shows.
	trace	COAL.
2345 - 2350m	90	SILTSTONE: brown-grey to medium dark grey; argillaceous; commonly carbonaceous; firm to hard; non calcareous.
	5	SANDSTONE: very fine to fine grained, well sorted; subangular to subrounded cemented aggregates; moderately strong silica and carbonate cements; common carbonaceous flecks. Minor bright yellow mineral fluorescence associated with carbonate cement. Rare pyrite cement; no shows.
	trace	COAL: black; hard; commonly associated with pyrite.
2350 - 2355m	60	SILTSTONE: as above.
	40	SANDSTONE: dominantly medium grained, loose, subangular clear quartz grains; good visual porosity; no shows.
2355 - 2360m	50	SILTSTONE: as above.
	50	SANDSTONE: as above; no shows.
	trace	COAL: as above.
2360 - 2365m	100	SILTSTONE: as above.
	trace	SANDSTONE: as above; no shows.
	trace	COAL: as above.
2365 - 2370m	90	SILTSTONE: brown grey to medium dark grey; firm to moderately hard; argillaceous and micaceous in parts; slightly carbonaceous; non calcareous.
	5	SANDSTONE: dominantly loose, medium grained; angular; quartz; good visible porosity; no shows; minor carbonate cemented fine to medium grained aggregates; no shows.
	5	COAL: black; hard; brittle; minor pyrite.

2370 - 2375m	85	SILTSTONE: as above.
	10	COAL: as above.
	5	SANDSTONE: as above; no shows.
2375 - 2380m	50	SANDSTONE: as above; with some fine-grained aggregates exhibiting 1% mineral fluorescence.
	50	SILTSTONE: as above.
	trace	COAL: as above; minor pyrite.
2380 - 2385m	70	SILTSTONE: as above.
	20	SANDSTONE: as above; minor carbonate; common silica cemented fine grained aggregates; minor pyrite cement.
	10	COAL: as above.
2385 - 2390m	100	SILTSTONE: light brown-grey to medium dark grey; firm to moderately hard; argillaceous; slightly micaceous in parts; common carbonaceous flecks and fine laminae; sandy in parts.
	trace	SANDSTONE: loose; medium to coarse-grained; clear to milky white; well rounded to rounded; excellent visual porosity; no shows; minor carbonate cemented fine-grained aggregates with poor to medium visual porosity; no shows.
	trace	COAL: black; hard; brittle.
2390 - 2395m	95	SILTSTONE: as above.
	5	SANDSTONE: as above.
	trace	COAL: AS ABOVE.
2395 - 2400m	50	SILTSTONE: as above.
	40	SANDSTONE: 50% loose, medium grained; 50% fine to medium grained cemented aggregates; no shows.
	10	COAL: as above.
2400 - 2405m	60	SANDSTONE: 50% loose, fine to medium grained; angular to subangular quartz grains; 50% silica and rare carbonate cemented aggregates of fine to occasional medium grained sandstone; trace of aggregates (2 cuttings) gave slow, moderately bright milky white stream cut; slow moderately bright milky crush cut.
	40	SILTSTONE: as above.
	trace	COAL: as above.
2405 - 2410m	60	SANDSTONE: as above; 50% loose; 50% aggregates; no shows.
	40%	SILTSTONE: as above.
	trace	COAL: as above/
2410 - 2415m	60	SILTSTONE: as above; sandy in parts grading to very fine grained, silty sandstone.
	40	SANDSTONE: as above; dominantly silica cemented, fine grained aggregates; minor pyrite cemented aggregates; no shows.
	trace	COAL: as above.
2415 - 2420m	85	SANDSTONE: as above; 50% loose; 50% aggregates; 20% moderately bright yellow fluorescence; trace of sample gives low diffuse milky white stream cut; slow dull milky white crush cut when chlorothene applied to tray of cuttings - possible condensate show or pipe dope contamination.
	15	SILTSTONE: as above.
	trace	COAL: as above.

2420 - 2425m	90	SANDSTONE: 50% fine to medium grained, moderately well sorted aggregates of sub-angular, clear quartz; moderately strong carbonate and silica cements; poor to occasional moderate visual porosity; no shows; 50% loose fine to dominantly medium grained and occasional coarse grained, clear angular to subrounded quartz grains; excellent visual porosity; no shows.
	10%	SILTSTONE: brown-grey to medium dark grey; micaceous and carbonaceous in parts; slightly argillaceous; firm to moderately hard.
	trace	COAL: black; hard; occasional conchoidal fracture; brittle vitreous lustre.
2425 - 2430m	75	SANDSTONE: as above; trace of cuttings give weak diffuse, milky white stream cut when chloroethene applied to tray of cuttings; possible condensate or residual oil show; possible pipe dope contamination.
	25	SILTSTONE: as above.
2430 - 2435m	90	SANDSTONE: as above; again trace of cuttings give weak diffuse, milky white stream cut when chloroethene applied to tray; possible condensate show or pipe dope contamination.
	10	SILTSTONE: as above.
2435 - 2440m	95	SANDSTONE: dominantly loose, medium to coarse grained; sub angular to subrounded; milky white to clear quartz; no shows.
	5	SILTSTONE: as above.
2440 - 2445m	85	SANDSTONE: dominantly loose, medium to coarse grained quartz.
	10	SILTSTONE: as above.
	5	COAL:
2445 - 2450m	60	SANDSTONE: 50% loose, coarse grained, clear to milky white quartz, 50% fine to medium grained silica and calcareous cemented aggregates; no shows.
	40	SILTSTONE: as above.
	trace	COAL: as above.
2450 - 2455m	90	SANDSTONE: dominantly loose, medium to coarse grained, milky white; subrounded quartz; common aggregates; silica and carbonate cemented; of fine to medium grained quartz exhibiting 10% dull yellow mineral fluorescence; several aggregates give very very slow weak diffuse milky white stream cut; very weak diffuse crush cut; possible condensate show.
	5	SILTSTONE: as above.
	5	COAL: as above.
2455 - 2460m	90	SANDSTONE: dominantly loose; medium to coarse with minor very coarse grained; subrounded to subangular; quartzose; 20% dull to moderately bright yellow mineral fluorescence associated with carbonate cemented fine to medium aggregates.
	10	SILTSTONE: light to dark brown; grey; with abundant carbonaceous grains; soft to moderately hard.
	trace	COAL: minor pyrite.

2460 - 2465m	85	SANDSTONE: as above; 10% dull yellow fluorescence associated with individual sand grains and carbonate cemented fine grained aggregates; minor very weak milky crush cut.
	15	SILTSTONE: as above; grades to light grey; very fine sandstone; minor dull yellow hydrocarbon fluorescence; instant diffuse milky to pale yellow crush cut; minor pyrite.
2465 - 2470m	70	SANDSTONE: as above; 5% dull to moderately bright yellow fluorescence associated with cemented aggregates; as above.
	30	SILTSTONE: as above; minor dull yellow fluorescence; instant; diffuse; weak milky to pale yellow crush cut; minor pyrite.
FLOW CHECK @ 2485.5m - NO FLOW		
2470 - 2475m	60	SANDSTONE: as above; 50% of sample is medium to coarse, loose grains; minor very coarse; trace of mineral fluorescence associated with minor cemented aggregates; no cut; 10% of sample is fine to very fine grained; light brown, light grey; sporadic carbonaceous specks; firm to very hard; minor very dull yellow to orange-yellow fluorescence; no cut but instant moderately strong streaming, very pale yellow milky crush cut.
	40	SILTSTONE: as above; with sporadic grains of pale brown variety which contain minor glauconite and pyrite.
	trace	COAL: minor pyrite.
2475 - 2480m	50	SANDSTONE: as above; 30% of sample is medium to coarse grained (as above); 20% of sample is fine to very fine grained as above; trace of pale yellow fluorescence; no cut.
	50 trace	SILTSTONE: as above. COAL: minor pyrite, glauconite.
2480 - 2485m	50	SANDSTONE: as above; 40% of sample is loose, fine to very coarse sand grains; 10% of sample is fine to very fine cemented aggregates as above exhibiting 1% pale yellow fluorescence and very weak milky crush cut.
	45	SILTSTONE: as above.
	5	COAL: as above; minor pyrite, glauconite.
2485 - 2490m	75	SANDSTONE: as above; 50% of sample is loose quartz grains; subangular to subrounded; medium to coarse, with lesser very coarse; inferred good porosity; 25% of sample is fine to medium sand in cemented aggregates - carbonate cement; moderate visual porosity; trace mineral fluorescence; no cut.
	20	SILTSTONE: as above.
	5	COAL: as above; minor pyrite; trace glauconite.
2490 - 2495m	70	SANDSTONE: as above; 60% of sample is loose sand; 10% of sample is cemented aggregates; trace mineral fluorescence; no cut.
	25	SILTSTONE
	5	COAL: as above; minor pyrite, trace of glauconite.

2495 - 2500m	80	SANDSTONE: as above; 70% of sample is medium to coarse and very coarse quartz grains; 10% of sample is fine to medium carbonate cemented aggregates; trace pale yellow mineral fluorescence; no cut.
	19	SILTSTONE: as above.
	1	COAL: minor pyrite.
2500 - 2505m	60	SANDSTONE: as above; 50% medium to coarse and very coarse grains; 10% cemented aggregates as above; 5% mineral fluorescence; no cut.
	30%	SILTSTONE: as above.
	10%	COAL: as above; minor pyrite, trace glauconite.
2505 - 2510m	70	SANDSTONE: 50% of sample is loose, fine to medium with lesser coarse quartz grains; subangular to subrounded; inferred good porosity; some silica/carbonate cemented medium to coarse aggregates; moderate visual porosity; 20% of sample is fine grained sand aggregates with silica/carbonate aggregates; 10% pale to moderately bright yellow fluorescence associated with aggregates; trace to 5% slow streaming pale yellow to milky cut and instant crush cut.
	20	SILTSTONE: as above.
	10	COAL: as above.
2510 - 2515m	50	SANDSTONE: as above; 25% of sample is loose fine to coarse sand grains as above; 25% is cemented aggregates as above; 15% moderately bright yellow fluorescence; associated with aggregates; 5% very slow streaming pale yellow cut; slow to moderate streaming crush cut.
	40	SILTSTONE: as above.
	10	COAL: as above.
2515 - 2520m	60	SANDSTONE: as above; 40% of sample is loose grains as above; 20% is cemented aggregates as above; 15% moderately bright fluorescence associated with aggregates; 5% slow streaming pale yellow cut, slow to moderately fast streaming crush cut.
	40	SILTSTONE: as above.
	trace	COAL: minor pyrite.
2520 - 2525m	85	SILTSTONE: brown to medium dark grey; commonly very carbonaceous; micaceous and argillaceous in parts; firm to hard.
	10	SANDSTONE: 50% loose; fine to medium grained, milky white; subrounded quartz grains; 50% fine grained aggregates, well cemented with moderate strong silica and carbonate cements; dominantly silica cement; trace of cuttings give slow diffuse milky white-yellow stream cut; weak dull milky white yellow crush cut; good visible porosity in loose grains; fair to poor visual porosity in aggregates.
	5	COAL: black; hard; brittle.
2525 - 2530m	50	SILTSTONE: as above.
	50	SANDSTONE: 50% loose; 50% aggregate; trace of sample gives very slow milky white stream cut; slow milky white diffuse crush cut.

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2530 - 2535	50	SILTSTONE: as above.
	40	SANDSTONE: as above; no shows.
	10	COAL: as above.
2535 - 2540m	70	SILTSTONE: as above.
	30	SANDSTONE: 50% loose, medium to occasionally coarse grained; 50% carbonate and silica cemented aggregates; no shows.
2540 - 2545m	60	SANDSTONE: dominantly loose, medium to coarse grained quartz; no shows.
	40	SILTSTONE: as above.
	trace	COAL: as above.
2545 - 2550m	60	SILTSTONE: as above.
	30	SANDSTONE: as above; trace of cuttings give very slow milky white-yellow stream cut; weak diffuse crush cut.
	10	COAL: as above.
2550 - 2555m	55	SILTSTONE: as above.
	40	SANDSTONE: dominantly loose medium grained clear to milky quartz. Trace of cuttings give slow milky yellow-white steam cut, weak diffuse crush cut from aggregates.
	trace	COAL: as above.
2555 - 2560m	70	SILTSTONE: brown-grey to medium dark grey; firm; argillaceous; micaceous; and carbonaceous; slightly sandy in parts.
	20	SANDSTONE: 50% loose medium grained; subangular; clear to milky white quartz with excellent visible porosity; no shows. 50% silica and dolomite cemented; fine grained; subrounded to angular; moderately well sorted aggregates; poor to occasional fair visible porosity.
	10	COAL: black; hard; brittle; occasional conchoidal fracture.
2560 - 2565m	90	SILTSTONE: as above.
	10	SANDSTONE: as above; no shows.
	trace	COAL: as above.
2565 - 2570m	90	SILTSTONE: as above.
	5	SANDSTONE: as above; no shows.
	5	COAL: as above.
2570 - 2575m	90	SILTSTONE: as above.
	5	SANDSTONE: as above; dominantly fine to medium grained silica/carbonate cemented aggregates; trace (2 cuttings) give slow milky yellow stream cut; slow milky yellow crush cut.
	5	COAL: as above.
2575 - 2580m	60	SILTSTONE: as above.
	30	SANDSTONE: 60% loose; fine to medium grained; milky to clear quartz; 40% fine grained aggregates; silica and minor carbonate cements; no shows.
	10	COAL: as above.

2580 - 2584m	70	BOTTOMS UP/SURVEY SILTSTONE: brown, light brown; minor light grey to grey; abundant carbonaceous grains; firm to soft; rarely grading to moderately hard.
	20	SANDSTONE: as above; 10% moderately bright to pale yellow fluorescence; trace slow streaming milky crush cut.
	10	COAL: as above; minor pyrite.
2585m	70	SILTSTONE: as above.
	20	SANDSTONE: as above; 10% mineral fluorescence as above; no cut.
	10%	COAL: as above.
2585 - 2590 m	60	SILTSTONE: as above.
	40	SANDSTONE: 30% of sample is loose fine to coarse quartz grains; subrounded to subangular; rare aggregates of cemented medium grained aggregates with poor to moderate visual porosity; 10% of sample is silica/carbonate cemented fine to very fine aggregates; moderate visual porosity; 10% moderate to bright yellow mineral fluorescence; trace to 5% weak streaming pale yellow/milky cut and crush cut.
	trace	COAL: minor pyrite.
2590 - 2595m	50	SILTSTONE: as above.
	45	SANDSTONE: as above; 30% loose/15% aggregates; 15% moderate bright yellow mineral fluorescence; trace of very weak diffuse milky crush cut.
	5	COAL: as above; minor pyrite.
2595 - 2600m	60	SANDSTONE: as above; fine to coarse; 50% of sample is loose grains; 10% is cemented medium to fine grained aggregates; 10% mineral fluorescence; no cut.
	35	SILTSTONE: as above.
	5	COAL: as above.
2600 - 2605m	60	SANDSTONE: as above; 10% mineral fluorescence; trace extremely weak milky crush cut.
	35	SILTSTONE: as above.
	5	COAL: as above; minor pyrite.
2605 - 2610m	50	SANDSTONE: as above; 40% of sample is dominantly medium to coarse with some very coarse loose grains; 10% of sample is cemented fine-grained aggregates; visual porosity poor to fair; 5% mineral fluorescence associated with cemented aggregates; no cut.
	48	SILTSTONE: as above.
	2	COAL: as above; minor pyrite.
2610 2615m	40	SANDSTONE: as above; 25% of sample loose grains; fine to very coarse; 15% is cemented aggregates; 10% mineral fluorescence; trace of very weak slow non-streaming milky crush cut.
	60	SILTSTONE: as above.
	trace	COAL: minor pyrite.
2615 - 2620m	70	SANDSTONE: as above; (50% loose sand and 20% aggregates); 5% mineral fluorescence; no shows.
	25	SILTSTONE: as above.
	5	COAL

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2620 - 2625m	40	SANDSTONE: as above; 30% of sample is fine to coarse loose grains; sporadic aggregates of several medium and coarse show pores blocked with silica/carbonate cement suggesting poor to fair porosity; 10% of sample is cemented aggregates of fine sand with fair visual porosity; 5% moderate to bright mineral fluorescence associated with aggregates; trace (3 grains) instant fast streaming cut - pale yellow; 1% slow streaming crush cut, pale yellow to milky.
	50	SILTSTONE: as above.
	10	COAL: as above.
2625 - 2630m	70	SANDSTONE: as above; 50% of sample is fine to medium loose sand; 20% of sample is fine grained cemented aggregates; 1% moderately bright mineral fluorescence; trace (2 grains) instant fast streaming very pale yellow to milky cut.
	25	SILTSTONE: as above.
	5	COAL: as above; minor pyrite.
2630 - 2635m	80	SANDSTONE: as above; fine to medium grained; 70% of sample is loose sand; subrounded to subangular; 10% of sample is fine grained cemented aggregates; 1% pale yellow fluorescence; trace instant streaming pale yellow cut; instant diffuse to streaming crush cut.
	20	SILTSTONE: as above.
	trace	COAL: as above; minor pyrite.
2635 - 2640	60	SANDSTONE: 60% loose fine to medium grained, milky white to clear, subrounded quartz; excellent visual porosity; no shows; 40% fine grained, silica and minor carbonate cemented, moderately well sorted, angular to subrounded quartz aggregates; 5% of sample with dull to moderately bright yellow fluorescence, gives slow milky yellow stream cut; slow milky yellow crush cut; found 1mm globule of dark brown sticky grease giving, slow bright milky yellow steam, dull orange fluorescent residue.
	40	SILTSTONE: brown grey to medium dark grey; firm to moderately hard; carbonaceous; micaceous; slightly argillaceous.
	trace	COAL: black; hard; brittle.
2640 - 2645	70	SANDSTONE: dominantly (60%) loose fine to occasionally coarse grained quartz; no show; again trace of dark brown refined hydrocarbons giving milky yellow stream cut.
	30	SILTSTONE: as above.
	trace	COAL: as above.
2645 - 2650m	90	SANDSTONE: as above; abundant pyrite, possibly corresponding to very slow metre drilled at 2650m - hard cubic crystalline pyrite cemented fine-grained aggregates; trace 5% of samples with hydrocarbon show; as above.
	5	SILTSTONE: as above.
	5	COAL: as above.

2650 - 2655m	90	SANDSTONE: dominantly loose medium grained; subrounded; quartz sand; trace slow diffuse milky white steam cut from several aggregates of silica/carbonate cemented fine-grained sandstone (sample shows 80% moderately bright yellow/white fluorescence associated with carbonate cement and possibly a small percentage hydrocarbon fluorescence). Very very faint hydrocarbon odour detectable; possible condensate show; no heavy gases.
	5	SILTSTONE: as above.
	5	COAL: as above.
2655 - 2660m	90	SANDSTONE: dominantly loose, medium to coarse grained; 60% moderately bright yellow fluorescence from loose grains and cemented aggregate - predominantly from carbonate cement but small amount possibly hydrocarbon fluorescence; trace amount of cemented aggregate sandstone cuttings give very slow to no streaming cut; diffuse moderately bright milky white to white/blue; slow diffuse milky white crush cut; very faint hydrocarbon odour; possible condensate show; common kaolin as matrix clay in cemented aggregates.
	10	SILTSTONE: as above.
	trace	COAL: as above.
2660 - 2665m	80	SANDSTONE: 50% loose medium to coarse grained; angular; milky white to clear quartz. 50% silica and carbonate cemented fine-grained aggregates. 50% dull to moderately bright yellow fluorescence associated with both loose grains and aggregates - carbonate cement. 5% of cutting gives show to no weak diffuse milky white/blue stream cut; moderate diffuse milky white crush cut - possible gas/condensate shows. Common pyrite cements/fine grained aggregates; poor to occasional fair visible porosity in aggregates; good visible porosity in loose grains.
	15	COAL: black-grey; silty; argillaceous in part; grading to very carbonaceous siltstone/shale; minor associated pyrite.
	5	SILTSTONE: brown-grey to medium dark grey; very carbonaceous in parts; argillaceous in places.
2665 - 2670m	70	SANDSTONE: as above; trace of aggregates give slow to no milky white steam cut; slow diffuse or milky white crush cut.
	25	SILTSTONE: as above.
	5	COAL: as above.
		SHOW MAY BE RESIDUAL OIL/GAS PROD. INTERNAL - NO HEAVY GASES, POOR SHOWS OF LIQUIDS.
2670 - 2675m	80	SANDSTONE: as above; 50% loose medium grained; 50% carbonate and silica cemented aggregates; trace amount aggregates; give no stream cut; slow diffuse, moderately bright white/blue crush cut.
	15	SILTSTONE: as above. very carbonaceous in parts with well defined vascular plant material (leaves).
	5	COAL: as above.

2675 - 2680m	60	SANDSTONE: 60% loose medium to coarse grained; subrounded; milky white to clear quartz; excellent visual porosity; no shows; 40% fine to medium grained; subrounded; moderately well sorted silica and carbonate cemented aggregates; moderately strong sucrosic crystalline silica and carbonate cements reduce visual porosity to poor to occasional fair; minor kaolin in matrix; minor cubic crystalline quartz pyrite cement; 60% moderately bright yellow/white fluorescence associated primarily with carbonate cement or both loose sand grains and aggregates, but some also possibly associated with hydrocarbon fluorescence. Trace of aggregates give slow diffuse moderately bright white/blue stream cut, most aggregates give slow weak diffuse moderately bright to dull blue/white crush cut. Probably a gas - condensate show - possible residual oil show i.e. Sunfish- - no heavies in gas, probably not producing oil.
	40	SILTSTONE: brown to brown grey; micaceous and carbonaceous in parts; slightly argillaceous; firm to hard.
	trace	COAL: black/ brittle; vitreous lustre slightly silty in parts.
2680 - 2685m	50	SANDSTONE: as above; trace streaming cut; most aggregates give slow, weak diffuse blue/white crush cut.
	35	SILTSTONE: as above.
	15	ALTERED VOLCANICS: white, light blue, and buff; highly altered clay rich; soft to firm cuttings; common remnant acicular phenocrysts.
2685 - 2690m	80	SANDSTONE: as above; no shows.
	15	ALTERED VOLCANICS: as above.
	5	SILTSTONE: as above.
2690 - 2695m	75	SANDSTONE: as above; 5% pale yellow, mineral fluorescence.
	15	COAL: as above.
	10	ALTERED VOLCANICS: as above.
2695 - 2700m	65	SANDSTONE: as above; 15% moderately bright yellow fluorescence associated with carbonate cement in fine aggregates and some coarse grains; trace instant slow pale yellow to milky streaming cut; 5% instant diffuse milky crush cut.
	10	SILTSTONE: as above.
	5	COAL: AS ABOVE.
	20	ALTERED VOLCANICS: silt to very fine sand grain size; quartzo-feldspathic - finely interlocked grains of milky white quartz and cream to buff altered feldspar; overall colour cream, offwhite to very pale orangey-brown; firm to moderately hard; sporadic disseminated pyrite.
		JUNK BASKET SAMPLES RETRIEVED AT 2701.3 (?2703 DRILLER)

1. Dominantly LAKES ENTRANCE/GIPPSLAND LIMESTONE; light to medium grey calcilutite; fissile, moderately soft; (less common) dark grey calcisiltite with discontinuous light grey/offwhite carbonate streaks, abundant glauconite, pyrite.
2. Less common SANDSTONE and SILTSTONE; medium grey SILTSTONE with abundant carbonaceous grains and carbonaceous to coaly fragments and wisps plus carbonaceous root traces; SANDSTONE fine to very fine grained with abundant carbonaceous to coaly wisps; moderately soft to moderately hard; moderately well cemented with carbonate probably dolomite (fast reaction to 30% HCl but very weak slow reaction to 10% HCl); subangular to subrounded, well sorted, fair to moderate visual porosity; 15% moderately bright yellow fluorescence associated with carbonate cement and hydrocarbons; instant slow streaming pale yellow white cut and instant milky crush cut leaving moderately bright yellow-white ring in cut dishes; petroliferous odour or freshly broken surfaces; SANDSTONE as above but with better development of carbonate cement (calcite); poor to fair visual porosity; mineral fluorescence only in slightly coarse grained phases; SANDSTONE offwhite to light grey; medium to coarse and very coarse grained; subangular to subrounded; moderately well sorted; moderately hard to very hard; well cemented but with minor associated mineral fluorescence - but fast reaction to 10% HCl - calcite cement; very tight - poor visual porosity.

2700 - 2705m

- 70 SILTSTONE: brown-grey to medium dark grey; argillaceous in parts; carbonaceous; slightly micaceous; firm to moderately hard; possibly largely cavings.
- 20 ALTERED VOLCANICS: white to cream; firm to hard; common remnant circular plane; quartzo-feldspathic.
- 10 SANDSTONE: fine grained silica and carbonate cemented aggregates; common cubic crystalline pyrite cemented aggregates; poor to no visual porosity; no shows; possibly cavings.
- Abundant Lakes Entrance and Turrum Formation cavings.

2705 - 2710m

- 90 SILTSTONE: buff; highly siliceous to brown grey; as above.
- 10 COAL: as above.
- trace SANDSTONE: as above.

2710 - 2715m

- 100 SILTSTONE: dark brown, medium brown, to grey brown; abundant carbonaceous grains and wisps; less common grey to light grey variety; abundant very fine quartz grains; soft to firm.
- trace SANDSTONE: loose grains and finer cemented aggregates - possibly cavings; minor pyrite; no shows.

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2715 - 2720m	100	SILTSTONE: as above; but grey to light grey variety - coarser siltstone with less carbonaceous grains is more common.
	trace	COAL: black conchoidal fracture; trace of fluorescence and instant pale yellow-white streaming cut; source of cut uncertain; iridescent oily film on water with sample after cutting (? contaminant).
2720 - 2725m	80	SILTSTONE: as above; sandy in places.
	20	SANDSTONE: very fine to fine grained aggregates of moderately well sorted, subrounded quartz with weak kaolin matrix and silica cement; minor carbonate cement; trace of aggregates give slow moderately bright white steaming cut; 5% of aggregates give weak diffuse, milky white crush cut.
	trace	COAL.
2725 - 2728m (CBU)	60	SILTSTONE: as above.
	40	SANDSTONE: as above; trace shows as above.
2728 - 2730m	60	SILTSTONE: as above.
	40	SANDSTONE: 30% of sample is loose quartz grains; dominantly medium to coarse; 10% of sample is fine cemented sandstone aggregates as above; trace shows as above.
	trace	COAL: minor pyrite.
2730 - 2735m	80	SANDSTONE: 60% of sample is medium to coarse, loose quartz grains; clear to milky; subangular to subrounded; moderately well sorted; 20% of sample is fine grained cemented sandstone aggregates; carbonate cement; poor to fair visual porosity; trace dull yellow mineral fluorescence; trace instant streaming yellow-white cut from ?contaminant.
	20	SILTSTONE: as above.
	trace	COAL: as above.
2735 - 2740m	70	SANDSTONE: as above; 60% medium to very coarse, loose quartz grains; 20% cemented aggregates as above; shows as above.
	30	SILTSTONE: as above.
	trace	COAL
2740 - 2745m	70	SANDSTONE: as above; 5% bright yellow/yellow green mineral fluorescence associated with carbonate cement - no cut associated with this; trace instant streaming bright yellow-white cut from several locations on cuttings tray with no identifiable source grains; leaves yellow-brown residual oil ring when trichlor. evaporates - ?contaminant; residue fluoresces dull orange-brown.
	30	SILTSTONE: as above.
2745 - 2750m	50	SANDSTONE: 30% of sample is loose fine to very coarse quartz grains; 20% of sample is carbonate cemented sandstone aggregates - generally fine-grained grading into quartzose siltstone, poor visual porosity; firm to soft; 40% bright greenish yellow fluorescence associated carbonate cement; trace very slow streaming milky white crush cut.

	50	SILTSTONE: 40% of sample is brown siltstone with abundant carbonaceous grains; 10% is light grey quartzose siltstone; firm to moderately hard.
	trace	COAL: minor pyrite.
2750 - 2755m	50	SANDSTONE: as above; 40% fluorescence as above; 20% of sample (sandstone aggregates) give very slow diffuse milky crush cut; slow diffuse milky white crush cut.
	50	SILTSTONE: as above; minor pyrite, faint odour.
	trace	COAL
2755 - 2760m	80	SILTSTONE: as above
	20	SANDSTONE: fine-grained cemented aggregates as above, approximately half give moderately bright yellow-green fluorescence which is mostly mineral fluorescence associated with carbonate cement but most aggregates give slow to very slow milky white/blue stream cut, slow milky white to white/blue crush cut; faint odour.
2760 - 2765m	80	SANDSTONE: predominantly weak silica and carbonate cemented aggregates of fine-grained, moderately well sorted quartz with minor kaolinitic matrix. Minor carbonaceous material in sandstone aggregates; 40% moderately bright yellow-green fluorescence associated with carbonate cement and possible hydrocarbon fluorescence. Half of fluorescent grains (20% of sample) give slow to very slow diffuse, milky white to white stream cut, slow diffuse milky white to white/blue crush cut. No residual ring after cut (in white light), pale white-blue residue ring under U.V. light. Poor to occasionally moderate visual porosity. Faint hydrocarbon odour present. Show very similar to Sunfish-2 2525 to 2575 m residual oil show.
	20	SILTSTONE: cream to medium dark grey; very siliceous with only minor argillaceous, very slightly carbonaceous, sandy in parts grading to silty sandstone.
2765 - 2770m	60	SANDSTONE: as above; 30% fluorescence, as above; 10% of sample gives hydrocarbon cut as above.
	40	SILTSTONE: as above.
	trace	COAL: as above.
2770 - 2775m	55	SILTSTONE: as above.
	40	SANDSTONE: as above with 20% moderately bright yellow-green fluorescence, half of which (10% of sample) gives slow to very slow diffuse, milky white stream cut, slow diffuse milky white to white/blue crush cut; faint odour.
	5	COAL: black, hard, brittle conchoidal fracture.
2775 - 2780m	60	SANDSTONE: as above with 20% moderately bright yellow-green fluorescence; trace of sample gives slow to very slow stream cut; slow diffuse milky white crush cut; minor pyrite cemented aggregates.
	40	SILTSTONE: as above.
	trace	COAL: as above.

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2780 - 2785m	70	SANDSTONE: as above, dominantly cemented aggregates of fine grained siltstone, minor loose milky white to clear angular quartz; 50% dull to moderately bright yellow-green fluorescence associated with carbonate cement and trace hydrocarbon shows. Trace amount of cuttings give slow to very slow, moderately bright milky white stream cut; slow moderately bright diffuse crush cut; common pyrite cemented fine grained aggregates; poor visible porosity in aggregates, inferred good porosity in loose grains.
	30	SILTSTONE: as above; abundant carbonaceous matter in parts.
2785 - 2790m	50	SANDSTONE: as above; 30% moderately bright yellow/green fluorescence; trace of sample gives very slow to no steam cut, very slow diffuse milky white crush cut; minor loose coarse-grained angular quartz.
	45	SILTSTONE: as above.
	5	COAL: as above.
2790 - 2795m	70	SILTSTONE: as above.
	30	SANDSTONE: as above; fine to coarse; 20% moderately bright yellow green mineral fluorescence; trace very weak show; diffuse milky crush cut.
2795 - 2800m	80	SANDSTONE: as above; dominantly fine to coarse loose grains; 40% moderately bright yellow-green fluorescence; trace slow pale yellow-white streaming cut; trace slow diffuse milky cut.
	20	SILTSTONE: as above; minor pyrite
	trace	COAL: as above.
2800 - 2805m	90	SANDSTONE: as above; dominant fine to medium, loose quartz gains with lesser coarse grains with lesser coarse grains, and minor cemented aggregates; 20% fluorescence as above; trace shows as above.
	10%	SILTSTONE: as above; minor pyrite.
2805 - 2810m	90	SANDSTONE: as above; 20% fluorescence as above; trace weak diffuse milky crush cut.
	10	SILTSTONE: as above; minor pyrite.
2810 - 2815m	95	SANDSTONE: 80% of sample is fine to coarse with less very coarse, loose quartz grains; subangular to subrounded; moderately well sorted; 15% of sample is carbonate (dolomitic) cemented fine-grained sandstone aggregates; 15% bright yellow-green mineral fluorescence associated with cement; trace slow streaming pale yellow-white cut instant diffuse milky crush cut.
	5	SILTSTONE: as above.
	trace	COAL: minor pyrite.
2815 - 2820m	50	SANDSTONE: as above; 15% fluorescence as above; trace very slow very diffuse milky crush cut.
	50	SILTSTONE: as above; minor pyrite.
	trace	COAL

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2820 - 2822m	50	SANDSTONE: as above.
B.U.	50	SILTSTONE: as above.
	trace	COAL
T.D.		0626 STOP PUMPS 10/5/87 DROP SURVEY PUMP SLUG 0648 - 0656 FINAL STOP CIRCULATION 0656
FINAL TEMPS		IN OUT 2020 - 58.3 2022 52.2 58.3 (MUD DRS THERMO - IN ERROR/CF CHANGEVER)
2822m	40	CALCILUTITE: medium light grey
	40	CALCISILTITE: medium grey - olive grey
	15	SILTSTONE: medium dark brown, carbonaceous
	5	SANDSTONE: well cemented aggregates, trace loose quartz.
	trace	GLAUCONITE
2822 - 2825m	20	CALCILUTITE: as above; cavings
	40	CALCISILTITE: as above; cavings
	30	SILTSTONE: medium dark grey-brown grey; firm-very hard; subblocky-sub fissile; carbonaceous; siliceous
	10	SANDSTONE: predominantly well cemented fine-medium grained aggregates, occasional loose subangular quartz grains. 5% moderately bright pinpoint pale yellow fluorescence; diffuse milky white crush cut. Trace dull orange mineral fluorescence.
	trace	COAL: glauconite (common), weathered igneous clasts
2825 - 2830m	20	CALCILUTITE: as above; cavings
	50	CALCISILTITE: as above; cavings
	20	SANDSTONE: light grey, well cemented; fine grained aggregates; occasional loose subangular loose quartz grains; 10% moderately bright pinpoint, pale yellow fluorescence; pale yellow/white crush cut.
	10	SILTSTONE: dark grey; carbonaceous flecks
	trace	PYRITE: coal; glauconite (cavings?)
2830 - 2835m	70	SANDSTONE: 60% clear, loose quartz grains, medium-coarse, subrounded-subangular, moderately sorted, good inferred porosity; 40% firm-friable aggregates, clear to semi opaque medium grained quartz; trace mica; common fine white clay matrix; common silica cement; poor inferred porosity. 25% fluorescence - pinpoint, moderately bright pale yellow fluorescence; diffuse milky white crush cut; 5% dull yellow-gold-orange mineral fluorescence. trace dolomite/pyrite cements. pale yellow residual film.
	30	SILTSTONE: 50% i) light-medium grey, calcareous, cavings. 50% ii) medium dark brown, light brown; sub-blocky, sub-fissile, siliceous, carbonaceous, grading to fine grained sandstone in parts; firm to hard.
	trace	COAL, PYRITE, GLAUCONITE
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2835 - 2840m	80	SANDSTONE: 60 i) loose quartz grains as above; commonly occurring as silica cemented composite grains/aggregates. 40% i) aggregates as above; 20% moderately bright, pinpoint fluorescence in aggregates; very dull blue white in loose grains; diffuse milky white crush cut; moderately bright residual film; 5% dull gold mineral fluorescence.
	20	SILTSTONE: 100% ii) as above.
	trace	PYRITE, MUSCOVITE, COAL, ANHYDRITE
2840 - 2845m	80	SANDSTONE: dominantly 75% loose sub-angular quartz grains, medium grained; some 25% light grey fine-grained, cemented aggregates. 15% moderately bright yellow, pinpoint fluorescence in aggregates; diffuse milky; trace orange mineral fluorescence crush cut.
	20	SILTSTONE: medium grey; trace carbonaceous.
	trace	PYRITE
2845 - 2850m	100	SANDSTONE: 90% i) clear-white, medium-coarse grained, sub-rounded; moderately sorted quartz grains, loose, commonly cemented (silica), occasionally sub-angular, fair inferred porosity. 10% ii) fine-grained aggregates, clay matrix, silica cement, firm-friable, very poor inferred porosity. 10% fluorescence as above. 5% mineral fluorescence as above.
	trace	PYRITE, SILTSTONE, GLAUCONITE, COAL
2850 - 2855m	100	SANDSTONE: i) 80% quartz grains as above. ii) 20% fine-grained aggregates as above; 5% moderately bright yellow fluorescence milky crush cut; 15% dull orange-dull gold fluorescence (dolomite).
	trace	PYRITE; SILTSTONE; COAL
2855 - 2860m	50	SANDSTONE: semi translucent; medium-very coarse grained; granular-grit sized in parts; rounded-subangular, very poorly sorted, ; loose medium grains quartz, composite, sutured, silica cemented granular/grit sized quartz, well rounded, occasionally angular, nil visual porosity in composite grains. Trace 5% pinpoint moderately bright, blue-white to pale yellow fluorescence, weak diffuse milky white crush cut. 10% dull yellow gold/orange mineral fluorescence.
	50	SILTSTONE: medium dark brown to medium grey; firm to hard; sub-blocky, carbonaceous; siliceous.
	Trace	PYRITE
2860 - 2865m	50	SANDSTONE: common pyrite cemented quartz aggregates; trace fluorescence as above. trace mineral fluorescence as above.
	50	SILTSTONE: medium dark grey, siliceous, carbonaceous, sub-blocky, medium light grey, micromicaceous, quartzose, hard, grading to very fine-grained dirty sandstone.
	trace	PYRITE

2865 - 2870m	60	SILTSTONE: as above.
	40	SANDSTONE: loose light grey subangular quartz grains, medium grained and cemented fine-grained aggregates; trace moderately yellow fluorescence, yellow-white crush cut; 5% dull yellow mineral fluorescence (dolomitic cement)
	trace	PYRITE, COAL
2870 - 2875m	60	SILTSTONE: AS ABOVE.
	40	SANDSTONE: as above; fluorescence as above. 2872-2873 2-3% bright yellow white fluorescence slow streaming cut.
	trace	PYRITE (sandstone cement), coal.
2875 - 2880m	70	SILTSTONE: medium dark grey, carbonaceous.
	30	SANDSTONE: light grey, loose quartz grains and dolomite/silica cemented fine-grained aggregates, poor visual porosity; 5% dull yellow mineral fluorescence.
	trace	PYRITE
2880 - 2885m	30	VOLCANICS: rhyolitic, white, fine grained lath and euhedral crystals set in amorphous groundmass. Possibly flowbanded.
	40	SILTSTONE: as above.
	30	SANDSTONE: as above.
	trace	PYRITE, ANHYDRITE
2885 - 2890m	70	VOLCANICS: light grey-cream-buff, altered, abundant calcite spherulites - concentric banding, commonly clumped together
	20	SILTSTONE: medium dark grey, hard, quartzose, sub-blocky, grading to matrix supported very fine-grained sandstone, non-calcareous.
	10	SANDSTONE: white-clear, loose coarse grained quartz, sub-angular, trace pyrite cement; 10% dull orange-gold carbonate mineral fluorescence.
	trace	CHLORITE; GLAUCONITE; CHERT; PYRITE
2890 - 2895m	100	ALTERED VOLCANICS: red-brown oxidised iron staining in parts; abundant calcite spherulites.
	trace	SILTSTONE: cemented quartz sand; pyrite; 5-10% mineral fluorescence as above.
2895 - 2900m	100	ALTERED VOLCANICS; as above; 5-10% mineral fluorescence.
	trace	SILTSTONE, QUARTZ, CHLORITE, CHERT, PYRITE
2900 - 2905m	100	ALTERED VOLCANICS: as above.
2905 - 2910m	80	VOLCANICS: clear-milky brown and green crystals in an amorphous milky to light brown ground mass (Rhyolitic??); some medium to very coarse grains brown; green, grey, black crystalline cuttings also; firm to hard; coarse pyrite; lumps common; some coarse white quartz grains also; trace mineral fluorescence; trace Chlorite?
	20	SILTSTONE: light grey, soft to firm, very calcareous, slightly carbonaceous, possibly cavings as tend to be larger cuttings.
2910 - 2915m	100	VOLCANICS: as above.
	trace	PYRITE: as discrete lumps and also as cement between quartz and other grains/crystals.

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2915 - 2920	100	VOLCANICS: fine to very coarse quartz/feldspar crystals in an amorphous groundmass. Crystals clear, milky, brown, red, green; groundmass generally white to milky but also grey, brown, green; trace mica; pyrite, chert; trace mineral fluorescence.
2920 - 2925m	100	VOLCANICS: dark green, grey. very fine grain size; more basic than previous volcanics; occasional quartz phenocrysts; altered volcanics cream; trace calcitic; some quartz/feldspar phenocrysts, clayey.
2925 - 2930m	100	VOLCANICS: dark green grey; intermediate basic volcanic; very hard, generally very fine grained occasional larger quartz and feldspar phenocrysts; trace calcareous. Altered volcanics; as above.
2933.5m	100	VOLCANICS: as above - spot sample from drill break of 6.1 m/hr and about 80 units of gas. Increase in mineral fluorescence about 15%.
2930 - 2935m	100	VOLCANICS: as above; 15% mineral fluorescence; trace chert; not much pyrite.
2935 - 2940m	100	VOLCANICS: as above; 15% mineral fluorescence.
2942 - 2944m	100	VOLCANICS: as above; 15-20% mineral fluorescence.
2945m	100	VOLCANICS: as above; trace coal; loose quartz grains (sandstone); no shows.
2945 - 2949m	90	SANDSTONE: predominantly loose, clear to milky quartz grains; medium to very coarse, subangular to subrounded; moderately sorted; visible oil staining; moderate to good inferred porosity; 80% dull yellow fluorescence; weak cut; blue to blue-white; moderate crush cut - blue to blue-white; clear residue, blue to blue-white.
	10 trace	VOLCANICS: as above. COAL, PYRITE
2949.5 - 2951.5m	90	SANDSTONE: predominantly loose, clear to milky quartz grains; angular to subangular, some subrounded; medium to very coarse, some visible oil staining, moderate sorting; moderate to good inferred porosity; also some fine-grained to medium grained sandstone aggregates, with some silica cementing, moderate visual porosity. 90% dull yellow to blue to blue-white fluorescence; moderate cut, blue to blue-white; good crush cut; blue to blue-white (sandstone aggregates); clear residue, blue to blue-white.
	10 trace	VOLCANICS: as above; probably cavings? COAL, PYRITE
2951.5 - 2953.5	70	SANDSTONE: as above; shows as above.
	20	VOLCANICS: as above; possibly cavings?
	10	SILTSTONE: medium to dark grey; hard; blocky; non-calcareous; carbonaceous.

2153.5 - 2155.5	70	SANDSTONE:	as above; shows as above.
	30	VOLCANICS:	as above.
	trace	SILTSTONE	

APPENDIX 2

REMORA-1

SIDEWALL CORE DESCRIPTIONS

<u>No.</u>	<u>Depth</u>	<u>Rec.</u> <u>(mm)</u>	<u>Rock</u> <u>Type</u>	<u>Description</u>
1	2958.5	10	SANDSTONE	White to grey, fine grained, well sorted, well rounded, friable, quartzose, silty. SHOWS: 20% spotting bright yellow to blue-white fluorescence; moderately bright blue-white cut; clear, very bright yellow-white residue; moderate streaming cut; good crush cut.
2	2954.0	10	VOLCANIC	Grey to brown, medium to fine grained, poor sorted, well rounded, very calcareous, quartzose, feldspar, clay; possibly altered volcanic rock.
3	2951.5	20	SANDSTONE	White to grey, medium grained, moderately sorted, well rounded, friable, quartzose, micaceous, clay. SHOWS: 20% spotty bright blue-white fluorescence; moderately bright blue-white cut; clear, very bright blue-white residue; poor to moderate streaming cut; moderate to good crush cut.
4	2947.0	15	SILTSTONE	Brown, hard, quartzose, very carbonaceous.
5	2937.0	15	VOLCANICS	Grey to white, medium grained, moderately sorted, angular, friable, very calcareous, quartzose, clay, feldspar; altered volcanics, very clay rich (kaolinite?).
6	2905.0	20	VOLCANICS	Grey, extremely hard in part, quartz micaceous.
7	2880.0		EMPTY	
8	2873.0		EMPTY	
9	2865.0	20	SILTSTONE	Brown, hard, slightly calcareous, quartzose, carbonaceous.
10	2859.0	20	SILTSTONE	Brown, hard, quartzose, carbonaceous.
11	2852.0	15	SANDSTONE	White, fine grained, well sorted, subangular, friable, quartzose, clay, silty; low visible porosity.
12	2842.0		EMPTY	
13	2830.0		EMPTY	
14	2821.0	20	SHALE	Brown, hard, quartzose, carbonaceous.
15	2787.2	20	SILTSTONE	Brown, firm, moderately calcareous, quartzose, sandy.

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16	2774.0	20	SANDSTONE	White, fine grained, well sorted, subangular, friable, quartzose, clay, low visible porosity. SHOWS: 10% spotty dull yellow fluorescence; weak dull white cut; clear dull white residue.
17	2770.9	15	SILTSTONE	White to grey, friable, slightly calcareous, quartzose, clay.
18	2756.0	15	SILTSTONE	Brown to grey, friable, slightly calcareous, quartzose, clay.
19	2749.5	20	SANDSTONE	White, medium grained, well sorted, subangular, friable, moderately calcareous, quartzose, clay, carbonaceous, low visible porosity. SHOWS: 60% even bright blue-white fluorescence; weak blue-white cut; clear blue-white residue.
20	2738.0	15	SANDSTONE	White, fine grained, well sorted, subrounded, friable, quartzose, clay, low visible porosity. SHOWS: 10% spotty dull blue-white fluorescence; weak blue-white cut; clear blue-white residue.
21	2716.0	25	SILTSTONE	Brown, firm, slightly calcareous, quartzose, sandy in part, very carbonaceous in part, trace weak fluorescence.
22	2680.7	15	SHALE	Grey, hard, slightly calcareous, quartz.
23	2651.0	15	SANDSTONE	White, fine grained, well sorted, subangular, friable, quartzose, clay, low visible porosity. SHOWS: 20% spotty dull blue-white fluorescence, weak blue-white cut, clear blue-white residue.
24	2641.0	15	SHALE	Grey, hard, very calcareous, quartzose, carbonaceous in part.
25	2622.0	15	SANDSTONE	White, medium grained, well sorted, subangular, friable, slightly calcareous, quartzose, clay, pyrite, no shows.
26	2612.0	20	SILTSTONE	Grey, friable, moderately calcareous, quartzose, sandy.
27	2588.5	20	SANDSTONE	White, fine grained, well sorted, subangular, friable, quartzose, clay; low visible porosity. SHOWS: 30% spotty moderately blue-white fluorescence, weak blue-white cut, clear blue-white residue.
28	2581.0	20	SHALE	Grey, hard, quartzose.
29	2572.5	15	SHALE	Grey, hard, slightly calcareous, quartzose.

30	2564.0	15	SANDSTONE	White, medium grained, well sorted, subrounded, friable, moderately calcareous, quartzose, clay, very carbonaceous, no shows.
31	2557.0	20	SHALE	Dark grey, hard, quartzose, micaceous.
32	2525.5	20	SILTSTONE	Grey, firm, slightly calcareous, quartzose, micaceous, carbonaceous.
33	2483.5	10	SILTSTONE	Brown, friable, moderately calcareous, quartzose, sandy.
34	2464.0	15	SILTSTONE	Grey, firm, very calcareous, quartzose.
35	2460.0	20	SILTSTONE	Grey, firm, quartzose, micaceous, carbonaceous, sample part sand, no shows.
36	2426.3	20	SHALE	Grey, hard, slightly calcareous, quartzose, micaceous.
37	2396.5	15	SHALE	Grey, hard, quartzose, micaceous.
38	2383.5		SHOT OFF	
39	2369.0	15	SHALE	Dark grey, firm, micaceous.
40	2338.8	10	SILTSTONE	Grey, firm, moderately calcareous, quartzose, micaceous.
41	2309.5	10	SANDSTONE	White, fine grained, moderately sorted, subangular, friable, quartzose, clay, even dull yellow fluorescence.
42	2308.0	15	SANDSTONE	White, very fine grained, moderately sorted, subangular, friable, quartzose, micaceous, even dull yellow mineral fluorescence.
43	2284.0	15	SANDSTONE	White, very fine grained, moderately sorted, subrounded, friable, quartzose, pyritic. no shows.
44	2245.5	15	SILTSTONE	Grey, firm, micaceous.
45	2213.5	15	SILTSTONE	Grey, firm, micaceous.
46	2204.4	10	SANDSTONE	White, very fine grained, moderately sorted, subrounded, friable, quartzose, pyritic SHOWS: Even medium yellow fluorescence, bright blue-white cut.
47	2202.2	10	SANDSTONE	White, very fine grained, moderately sorted, subrounded, friable, quartzose.
48	2200.2	30	SILTSTONE	Grey, firm, slightly calcareous, micaceous.
49	2194.5	15	SANDSTONE	Grey, very fine grained, moderately sorted, subrounded, friable, quartzose, carbonaceous, micaceous.

50	2182.0	30	SANDSTONE	Grey, very fine grained, moderately sorted, subangular, friable, quartzose, micaceous, clay. SHOWS: Dull yellow fluorescence, dull yellow cut.
51	2173.8	20	SILTSTONE	Brown to grey, firm, moderately calcareous, micaceous.
52	2152.0	25	SANDSTONE	Brown, very fine grained, firm, calcareous trace, silty, carbonaceous.
53	2139.0	25	SANDSTONE	Brown, green, very fine grained, firm, slightly calcareous, glauconitic, silty,
54	2133.9	25	SANDSTONE	Brown, very fine grained, firm, slightly calcareous, silty, glauconitic.
55	2119.0	25	SILTSTONE	Brown, firm, very calcareous, sandy, glauconitic.
56	2115.0	30	SANDSTONE	Green, brown, very fine grained, firm, very calcareous, silty, glauconitic.
57	2101.0	25	SILTSTONE	Green, brown, firm, sandy, glauconitic.
58	2088.0	25	SANDSTONE	Green, brown, very fine grained, firm, very calcareous, silty, glauconitic.
59	2080.0	15	SILTSTONE	Grey, firm, extremely calcareous.
60	2065.0	25	SILTSTONE	Grey, firm, extremely calcareous, micaceous.

2709L/48-51

2907L

APPENDIX 3

RFT SAMPLE TEST REPORT

Well : REMORA-1

OBSERVER : S. KOH/ J. HENDRICH DATE : 11 May, 1987 RUN NO. : 2

	CHAMBER 1 (22.8 lit.)		CHAMBER 2 (3.8 lit.)	
SEAT NO.	2/51		2/51	
DEPTH	2651.2	m	2651.2	m
A. RECORDING TIMES				
Tool Set	1636	hrs	-	hrs
Chamber Open	1641	hrs	1900	hrs
Chamber Full	1858	hrs	1938	hrs
Fill Time	2 hours 17	mins	38	mins
Finish Build Up	1900	hrs	-	hrs
Build Up Time	2	mins	-	mins
Tool Retract	-	hrs	1939	hrs
Total Time	-	mins		mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	4386	psia	-	psia
Initial Form'n Press.	3863	psia	3806.6	psia
Initial Flowing Press.	176	psia	633	psia
Final Flowing Press.	3200	psia	3430	psia
Final Formation Press.	3806.6	psia	-	psia
Final Hydrostatic	-	psia	4385	psia
C. TEMPERATURE				
Max. Tool Depth	2670	mMDKB	2670	m
Max. Rec. Temp		deg C		deg C
Length of Circ.	2	hrs	2	hrs
Time/Date Circ. Stopped	0600 hrs	10/05/87	0600 hrs	10/05/87
Time since Circ.	22.5 hrs	mins	23	hrs
D. SAMPLE RECOVERY				
Surface Pressure	1100	psig	Preserved	psia
Amt Gas	15.6	cu ft	"	cu ft
Amt Oil	5500 cc	lit	"	lit
Amt Water (Total)	12300 cc	lit	"	lit
Amt Others	NIL	lit	"	lit
E. SAMPLE PROPERTIES				
Gas Composition	Very waxy		"	
C1	20.819%	ppm	"	ppm
C2	5.725%	ppm	"	ppm
C3	1.659%	ppm	"	ppm
C4	0.210%	ppm	"	ppm
C5	0.187%	ppm	"	ppm
C6+	-	ppm	"	ppm
CO2/H2S	** Present/Nil	%/ppm	"	%/ppm
Oil Properties	*33.5 deg API@ 60 deg F		deg API@ deg F	
Colour	Dark Brown		"	
Fluorescence	Bright pale, yellow/white		"	
GOR	450		"	
Pour Point	30 deg C		"	
Water Properties	V. muddy, waxy emulsion			
Resistivity	.193 ohm-m @ 21.5 deg C		ohm-m @	deg C
NaCl Equivalent	37,000	ppm	"	ppm
Cl-titrated	22,000	ppm	"	ppm
Tritium	3,372	DPM	"	DPM
pH	7.24		"	
Est. Water Type	Mud filtrate		"	
F. MUD FILTRATE PROPERTIES				
Resistivity	0.19 ohm-m @ 21 deg C		0.19 ohm-m @ 21 deg C	
NaCl Equivalent	37,000	ppm	37,000	ppm
Cl-titrated	22,000	ppm	22,000	ppm
pH	10.4		10.4	
Tritium (in Mud)	3,200 - 3,400	DPM	3,200 - 3,400	DPM
G. GENERAL CALIBRATION				
Mud Weight	9.65	ppg	9.65	ppg
Calc. Hydrostatic	4365	psi	4365	psi
Serial No. (Preserved)	-		RFS - AD 1130	
Choke Size/Prob. Type	0.040		0.040	
REMARKS	** CO2 detected via LIRA IR Analyser - not quantitative		Preserved # RFS AD 1130	
* SG = 0.89 @ 31 deg C				
API = corrected to 60 degF				

RFT SAMPLE TEST REPORT

Well : REMORA-1

OBSERVER : S. KOH/ J. HENDRICH

DATE : 11 May, 1987 RUN NO. : 3

	CHAMBER 1 (22.8 lit.)		CHAMBER 2 (3.8 lit.)	
SEAT NO.	3/52		3/52	
DEPTH mMDKB	2677.5 m		2677.5 m	
A. RECORDING TIMES				
Tool Set	2235	hrs	-	hrs
Chamber Open	2240	hrs	2254	hrs
Chamber Full	2251	hrs	2257	hrs
Fill Time	11	mins	3	mins
Finish Build Up	2253 (S.I.)	hrs	2258 (S.I.)	hrs
Build Up Time	2	mins	1	mins
Tool Retract	-	hrs	2300	hrs
Total Time		mins		mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	4431	psia	4431	psia
Initial Form'n Press.	3891.4	psia	3888.8	psia
Initial Flowing Press.	72	psia	401	psia
Final Flowing Press.	3456	psia	2910	psia
Final Formation Press.	3888.8	psia	3888.8	psia
Final Hydrostatic	-	psia	4429	psia
C. TEMPERATURE				
Max. Tool Depth	2705	mMDKB	2705	m
Max. Rec. Temp		deg C		deg C
Length of Circ.	2	hrs	2	hrs
Time/Date Circ. Stopped	0600 hrs	10/05/87	hrs	/ /
Time since Circ.	41 hrs	mins	41	hrs
D. SAMPLE RECOVERY				
Surface Pressure	375	psig	250	psia
Amt Gas	0.9	cu ft	0.3	cu ft
Amt Oil	Thin film +/-	scum lit	Very thin film	lit
Amt Water (Total)	20.0	lit	3.5	lit
Amt Others	-	lit	-	lit
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				
Colour	-	deg API@	deg F	deg API@ deg F
Fluorescence	Very dark brown (scum)			
GOR	Bright, pale yellow			
Pour Point	-			
Water Properties				
Resistivity	.208 ohm-m @ 19.5 deg C		.216 ohm-m @ 18.5 deg C	
NaCl Equivalent	35,000	ppm	35,000	ppm
Cl-titrated	22,000	ppm	21,500	ppm
Tritium	3,319	DPM	3,105	DPM
pH/Ca ++	7.2 / 100		6.8 / 120	
Est. Water Type	Mud filtrate		Mud filtrate	
F. MUD FILTRATE PROPERTIES				
Resistivity	0.19 ohm-m @ 21 deg C		0.19 ohm-m @ 21 deg C	
NaCl Equivalent	37,000	ppm	37,000	ppm
Cl-titrated	22,000	ppm	22,000	ppm
pH	10.4		10.4	
Tritium (in Mud)	3,200 - 3,400	DPM	3,200 - 3,400	DPM
G. GENERAL CALIBRATION				
Mud Weight	9.6	ppg	9.6	ppg
Calc. Hydrostatic	4386	psi	4386	psi
Serial No. (Preserved)	-		-	
Choke Size/Probe Type	0.040		0.040	
REMARKS	Water settled out of aearated froth - slowly leaving slight scum on container walls			

RFT SAMPLE TEST REPORT

Well : REMORA-1

OBSERVER : S. KOH/ G. BRADLEY

DATE : 12 May, 1987 RUN NO. : 4

	CHAMBER 1 (22.8 lit.)		CHAMBER 2 (3.8 lit.)	
SEAT NO.	4/53		4/53	
DEPTH mMDKB	2696.5	m	2696.5	m
A. RECORDING TIMES				
Tool Set	0152	hrs	-	hrs
Chamber Open	0155	hrs	0236	hrs
Chamber Full	0230	hrs	0243	hrs
Fill Time	35	mins	7	mins
Finish Build Up	0235 (S.I.)	hrs	0247 (S.I.)	hrs
Build Up Time	5	mins	-	mins
Tool Retract	-	hrs	0250	hrs
Total Time		mins		mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	4461	psia	-	psia
Initial Form'n Press.	3977.4	psia	3971	psia
Initial Flowing Press.	50	psia	717	psia
Final Flowing Press.	3735	psia	3654	psia
Final Formation Press.	3971	psia	3970.2	psia
Final Hydrostatic	-	psia	4458	psia
C. TEMPERATURE				
Max. Tool Depth	2710	mMDKB	2710	mMDKB
Max. Rec. Temp		deg C		deg C
Length of Circ.	2	hrs	2	hrs
Time/Date Circ. Stopped	0600 hrs	10/05/87	0600 hrs	10/05/87
Time since Circ.	44 hrs	mins	44.5	hrs
D. SAMPLE RECOVERY				
Surface Pressure	1450	psig	1850	psia
Amt Gas	16.4	cu ft	10.8	cu ft
Amt Oil/Condensate	Scum/ thin film	lit	Thin film/scum	lit
Amt Water (Total)	18.5	lit	2.25	lit
Amt Others	NIL	lit	NIL	lit
E. SAMPLE PROPERTIES				
Gas Composition				
C1	22.525%	ppm	17.333%	ppm
C2	6.177%	ppm	2.851%	ppm
C3	1.767%	ppm	1.172%	ppm
C4	0.654%	ppm	0.577%	ppm
C5	0.148%	ppm	trace	ppm
C6+	-	ppm	-	ppm
CO2/H2S	1% / NIL	%/ppm	1% / NIL	%/ppm
Oil Properties				
Colour	- deg API@	- deg F	- deg API@	- deg F
Fluorescence	Dark brown		Dark brown	
GOR	Bright, pale yellow		Bright, pale yellow	
Pour Point	-		-	
Water Properties				
Resistivity	.200 ohm-m @ 20	deg C	.233 ohm-m @ 20.5	deg C
NaCl Equivalent	36,000	ppm	30,000	ppm
Cl-titrated	22,000	ppm	22,500	ppm
Tritium	3,221	DPM	2,956	DPM
pH	6.97 / 80	ppm	6.85 / 30	ppm
Est. Water Type	Mud filtrate		Mud filtrate	
F. MUD FILTRATE PROPERTIES				
Resistivity	0.19 ohm-m @ 21	deg C	0.19 ohm-m @ 21	deg C
NaCl Equivalent	37,000	ppm	37,000	ppm
Cl-titrated	22,000	ppm	22,000	ppm
pH	10.4		10.4	
Tritium (in Mud)	3,200 - 3,400	DPM	3,200 - 3,400	DPM
G. GENERAL CALIBRATION				
Mud Weight	9.6	ppg	9.6	ppg
Calc. Hydrostatic	4386	psi	4386	psi
Serial No. (Preserved)	-		-	
Choke Size/Probe Type	0.040		0.040	
REMARKS				

RFT SAMPLE TEST REPORT

Well : REMORA-1

OBSERVER : S. KOH/ J. HENDRICH DATE : 12 May, 1987 RUN NO. : 5

	CHAMBER 1 (22.8 lit.)		CHAMBER 2 (3.8 lit.)	
SEAT NO.	5/54		5/54	
DEPTH mMDKB	2319	m	2319	m
A. RECORDING TIMES				
Tool Set	0510	hrs	-	hrs
Chamber Open	0513	hrs	0522	hrs
Chamber Full	0518	hrs	0523	hrs
Fill Time	5	mins		mins
Finish Build Up	0520 (S.I.)	hrs	0519 (S.I.)	hrs
Build Up Time	-	mins	-	mins
Tool Retract	-	hrs	0526	hrs
Total Time	-	mins		mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	3836	psia	-	psia
Initial Form'n Press.	3318	psia	3318.9	psia
Initial Flowing Press.	1899	psia	2671	psia
Final Flowing Press.	2696	psia	2691	psia
Final Formation Press.	3318.9	psia	3319.0	psia
Final Hydrostatic	-	psia	3840	psia
C. TEMPERATURE				
Max. Tool Depth	2600	mMDKB	2600	mMDKB
Max. Rec. Temp		deg C		deg C
Length of Circ.	2	hrs	2	hrs
Time/Date Circ. Stopped	0600 hrs	10/05/87	0600 hrs	10/05/87
Time since Circ.	47 hrs	mins	47.5	hrs
D. SAMPLE RECOVERY				
Surface Pressure	1550	psig	Preserved	psia
Amt Gas	49.5	cu ft	"	cu ft
Amt Condensate	17.5	lit	"	lit
Amt Water (Total)	NIL	lit	"	lit
Amt Others	NIL	lit	"	lit
E. SAMPLE PROPERTIES				
Gas Composition				
C1	10.004%	ppm	"	ppm
C2	6.294%	ppm	"	ppm
C3	1.326%	ppm	"	ppm
C4	0.145%	ppm	"	ppm
C5	-	ppm	"	ppm
C6+	-	ppm	"	ppm
CO2/H2S	1% / NIL	%/ppm	"	%/ppm
Oil Properties	35 deg API@	60 deg F	deg API@	deg F
Colour	V. dark chocolate brown		"	
Fluorescence	Mod Bri Pale Yellow - Milky white		"	
GOR STB/MILLION SCF	4.50		"	
Pour Point	23 deg C		"	
Water Properties				
Resistivity	ohm-m @	deg C	ohm-m @	deg C
NaCl Equivalent		ppm	"	ppm
Cl-titrated	NO	ppm	"	ppm
Tritium		DPM	"	DPM
pH / Ca ++	RECOVERY	ppm	"	ppm
Est. Water Type			"	
F. MUD FILTRATE PROPERTIES				
Resistivity	0.19 ohm-m @	21 deg C	0.19 ohm-m @	21 deg C
NaCl Equivalent	37,000	ppm	37,000	ppm
Cl-titrated	22,000	ppm	22,000	ppm
pH	10.4		10.4	
Tritium (in Mud)	3,200 - 3,400	DPM	3,200 - 3,400	DPM
G. GENERAL CALIBRATION				
Mud Weight	9.65	ppg	9.65	ppg
Calc. Hydrostatic	-	psi	-	psi
Serial No. (Preserved)	-		RFS-AD-1157	
Choke Size/Probe Type	0.040		0.040	
REMARKS				

RFT SAMPLE TEST REPORT

Well : REMORA-1

OBSERVER : S. KOH/ J. HENDRICH

DATE : 13 May, 1987

RUN NO. : 6

	CHAMBER 1 (22.8 lit.)		CHAMBER 2 (3.8 lit.)	
SEAT NO.	6/59		6/59	
DEPTH mMDKB	2276.8	m	2276.8	m
A. RECORDING TIMES				
Tool Set	1137	hrs	-	hrs
Chamber Open	1140	hrs	1152	hrs
Chamber Full	1145	hrs	1153	hrs
Fill Time	5	mins	1	mins
Finish Build Up	1149 (S.I.)	hrs	1156 (S.I.)	hrs
Build Up Time		mins		mins
Tool Retract	-	hrs	1157	hrs
Total Time		mins		mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	3797	psia	3797	psia
Initial Form'n Press.	3282.1	psia	3281.3	psia
Initial Flowing Press.	171	psia	1957	psia
Final Flowing Press.	2105	psia	2496	psia
Final Formation Press.	3281.3	psia	3281.5	psia
Final Hydrostatic	-	psia	3796	psia
C. TEMPERATURE				
Max. Tool Depth	2350	mMDKB	2350	mMDKB
Max. Rec. Temp		deg C		deg C
Length of Circ.	5.5	hrs	5.5	hrs
Time/Date Circ. Stopped	0245 hrs	13/05/87	0245 hrs	13/05/87
Time since Circ.	9 hrs	mins	9	hrs
D. SAMPLE RECOVERY				
Surface Pressure	2150	psig	2000	psia
Amt Gas	102.1	cu ft	21.9	cu ft
Amt Condensate	0.2	lit	trace	lit
Amt Water (Total)	-	lit	-	lit
Amt Others	4.8	lit	0.35	lit
E. SAMPLE PROPERTIES				
Gas Composition				
C1	21.65%	ppm	19.66%	ppm
C2	5.76%	ppm	3.87%	ppm
C3	1.91%	ppm	1.20%	ppm
C4	0.77%	ppm	0.50%	ppm
C5	0.2%	ppm	0.15%	ppm
C6+	-	ppm	-	ppm
CO2/H2S	Tr - 1% / NIL	%/ppm	0.5 - 1% / NIL	%/ppm
Oil Properties				
	-	deg API@	-	deg F
Colour	Golden brown (honey)		-	
Fluorescence	Bright, yellowish white		-	
GOR STB/MILLION SCF	12		-	
Pour Point	-		-	
Water Properties				
Resistivity	.203 ohm-m @ 20.5 deg C		.236 ohm-m @ 20.6 deg C	
NaCl Equivalent	34,000	ppm	30,000	ppm
Cl-titrated	22,000	ppm	17,500	ppm
Tritium	2,976	DPM	2,457	DPM
pH / Ca 2+	6.7 / 80	ppm	6.8 / 60	ppm
Est. Water Type	Filtrate		Filtrate +/- Formtn H2O	
F. MUD FILTRATE PROPERTIES				
Resistivity	.197 ohm-m @ 20 deg C		.197 ohm-m @ 20 deg C	
NaCl Equivalent	38,000	ppm	38,000	ppm
Cl-titrated	22,000	ppm	22,000	ppm
pH	10.5		10.5	
Tritium (in Mud)	3,200 - 3,400	DPM	3,200 - 3,400	DPM
G. GENERAL CALIBRATION				
Mud Weight	9.7	ppg	9.7	ppg
Calc. Hydrostatic		psi		psi
Serial No. (Preserved)	-		-	
Choke Size/Probe Type	0.040		0.040	
REMARKS				

RFT SAMPLE TEST REPORT

Well : REMORA-1

OBSERVER : S. KOH/ J. HENDRICH

DATE : 13 May, 1987

RUN NO. : 7

	CHAMBER 1 (44.4 lit.)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	7/63		7/63	
DEPTH mMDKB	2703 m		2703 m	
A. RECORDING TIMES				
Tool Set	1452	hrs	-	hrs
Chamber Open	1454	hrs	1731	hrs
Chamber Full	1727 (S.I.)	hrs	1849 (S.I.)	hrs
Fill Time	153	mins	18	mins
Finish Build Up	-	hrs	-	hrs
Build Up Time	-	mins	-	mins
Tool Retract	1849	hrs	1849	hrs
Total Time		mins		mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	4480	psig	3947	psig
Initial Form'n Press.	3959	psig	3947	psig
Initial Flowing Press.	5	psig	88	psig
Final Flowing Press.	757	psig	2050	psig
Final Formation Press.	3947 (increasing)	psig	-	psig
Final Hydrostatic	-	psig	4476	psig
C. TEMPERATURE				
Max. Tool Depth	2768	mMDKB	2768	mMDKB
Max. Rec. Temp		deg C		deg C
Length of Circ.	5.5	hrs	5.5	hrs
Time/Date Circ. Stopped	0245 hrs	13/05/87	0245 hrs	13/05/87
Time since Circ.	12 hrs	mins	13	hrs
D. SAMPLE RECOVERY				
Surface Pressure	520	psig	1300	psia
Amt Gas	25.1	cu ft	18.1	cu ft
Amt Condensate	Thin film	lit	0.25	lit
Amt Water (Total)	26.0	lit	4.75	lit
Amt Others	Trace mud	lit	-	lit
E. SAMPLE PROPERTIES				
Gas Composition				
C1	24.15%	ppm	22.82%	ppm
C2	4.04%	ppm	3.85%	ppm
C3	0.75%	ppm	0.89%	ppm
C4	0.11%	ppm	0.25%	ppm
C5	0.01%	ppm	0.03%	ppm
C6+	-	ppm	-	ppm
CO2/H2S	Tr - 1% / NIL	%/ppm	Tr - 1% / NIL	%/ppm
Oil Properties				
Colour	Gold to brown (honey)		-	
Fluorescence	-		Mod. yellowish white	
GOR STB/MILLION SCF	-		-	
Pour Point	-		-	
Water Properties				
Resistivity	.189 ohm-m @ 20.5 deg C		.190 ohm-m @ 20.5 deg C	
NaCl Equivalent	37,000 ppm		37,000 ppm	
Cl-titrated	22,000 ppm		22,000 ppm	
Tritium	3,113 DPM		2,528 DPM	
pH / Ca ++	6.78 / 60 ppm		6.71 / 80 ppm	
Est. Water Type	Mud filtrate		Mud filt +/- Formtn H2O	
F. MUD FILTRATE PROPERTIES				
Resistivity	.197 ohm-m @ 20 deg C		.197 ohm-m @ 20 deg C	
NaCl Equivalent	38,000 ppm		38,000 ppm	
Cl-titrated	22,000 ppm		22,000 ppm	
pH	10.5		10.5	
Tritium (in Mud)	3,200 - 3,400 DPM		3,200 - 3,400 DPM	
G. GENERAL CALIBRATION				
Mud Weight	9.7 ppg		9.7 ppg	
Calc. Hydrostatic	psi		psi	
Serial No. (Preserved)	-		-	
Choke Size/Probe Type	NONE		NONE	
REMARKS	No flow restricter, wide packer used, strain gauge pressures.		No flow restricter, wide packer used, strain gauge pressures.	

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, R. NEUMANN

DATE: 10th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure		Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (Include Probe type) L = Long nose probe M = Martineau probe
	m MDKB	m TVDSS KB=22m				HP / RFT gauge psia / psig	HP / RFT gauge psia / psig				
1/1 Pretest	2800.7	2778.7	4628.9/4610	23:28							SEAL FAILURE 9.65 Long nose probe. No chambers run # 1 L
1/2 Pretest	2800.8	2778.8	4633.1/4610	23:34							SEAL FAILURE 9.65 L
1/3 Pretest	2802.0	2780.0	4638.3/4612	23:41	3128	4222.9/4208	233	23:56	4630.0/4612	9.65	L
1/4 Pretest	2786.5	2764.5	4597.9/4586	00:01	2459	4199.6/4181	233	00:21	4606.0/4586	9.65	L
1/5 Pretest	2782.5	2760.5	4596.7/4580	00:26	3619	4193.2/4176	233	00:36	4599.0/4581	9.65	L
1/6 Pretest	2773.8	2751.8	4579.7/4565	00:45	8 - 26	TIGHT	233	00:47	4592.0/4564		L
1/7 Pretest	2773.5	2751.5	4582.7/4565	00:52	15	SEAL FAILURE	236	00:56	4583.0/4565		L
1/8 Pretest	2774.1	2752.1	4582.1/4566	01:00	10 - 20	TIGHT	235	01:04	4588.0/4566		L

RFT PRESSURE DATA

Page 2 of 9

WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, R. NEUMANN

DATE: 10th - 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP / RFT gauge psia / psig	Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (Include Probe type)
	m MDKB	m TVDSS KB=22m								
RFT TYPE	ppg			ppg			ppg			L = Long nose probe M = Martineau probe
1/9 Pretest	2768.5	2746.5	4572.7/4556	01:08	10 - 18	TIGHT	232	01:11	4578.0/4566	L
1/10 Pretest	2768.8	2746.8	4573.0/4557	01:15	26	4186.4/4169	232 8.93	01:24	4576.0/4557	Supercharge 9.65 L
1/11 Pretest	2749.7	2727.7	4539.3/4525	01:31		SEAL FAILURE	232	01:33		L
1/12 Pretest	2750.0	2728.0	4538.5/4526	01:37	3804	4148.5/4133	235 8.91	01:53	4543.0/4525	9.64 L
1/13 Pretest	2738.0	2716.0	4520.8/4507	02:00	3047	4134.1/4120	234 8.92	02:19	4523.0/4508	Recalibrate gamma-ray 9.65 OK - ? L
1/14 Pretest	2732.3	2710.3	4512.0/4496	02:23	68	TIGHT	233	02:32		L
1/15 Pretest	2734.5	2712.5	4517.1/4500	02:37	-	SEAL FAILURE	233	02:40		L

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP / RFT gauge psia / psig	Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (Include Probe type)
	m MDKB	m TVDSS KB=22m								
I/16 Pretest	2732.5	2710.5	4513.5/4497	02:43	1845	4135.9/4122	233	02:49	4512.2/4497	Supercharge
				9.65			8.94		9.65	L
I/17 Pretest	2703.5	2681.5	4459.5/4451	02:55	275	3969.1/3956	232	03:16	4464.0/4450	
				9.65			8.68		9.65	L
I/18 Pretest	2696.5	2674.5	4451.5/4438	03:21	3477	3968.9/3955	230	03:36	4456.0/4440	
				9.65			8.70		9.65	L
I/19 Pretest	2677.5	2655.5	4421.4/4408	03:45	3622	3885.1/3877	228	04:10	4425.0/4409	
				9.65			8.57		9.65	L
I/20 Pretest	2656.0	2634.0	4386.8/4373	04:16	3836	3864.3/3851	227	04:28	4392.0/4325	
				9.65			8.60		9.65	L
I/21 Pretest	2650.8	2628.8	4380.4/4365	04:32	1195	3860.3/3845	226	04:50	4384.0/4366	
				9.65			8.61		9.65	L
I/22 Pretest	2638.3	2616.3	4360.9/4346	04:57	3764	3854.2/3841	226	05:21	4364.0/4348	
				9.66			8.63		9.66	L

L = Long nose probe

ppg M = Martineau probe

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP / RFT gauge psia / psig	Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (include Probe type)
	m MDKB	m TVDSS KB=22m								
1/23 Pretest	2628.5	2606.5	4346.7/4331	05:25	-	TIGHT	225			
				9.66						L
1/24 Pretest	2628.8	2606.8	4347.9/4332	05:30	3770	3851.4/3838	225	05:35	4348.0/4332	
				9.66			8.66		9.66	L
1/25 Pretest	2621.5	2599.5	4335.2/4321	05:39	2447	3830.4/3817	225	05:52	4338.0/4321	
				9.66			8.64		9.66	L
1/26 Pretest	2603.8	2581.8	4305.3/4292	05:56	64	3752.4/3739	225	06:07	4308.0/4293	Drawdown
				9.66			8.52		9.66	L
1/27 Pretest	2593.2	2571.2	4289.0/4275	06:12	530	3739.0/3724	225	06:32	4293.0/4277	
				9.66			8.52		9.67	L
1/28 Pretest	2588.6	2566.6	4284.0/4268	06:36	3612	3731.4/3719	224	06:43	4286.0/4270	Drawdown
				9.66			8.52		9.67	L
1/29 Pretest	2583.0	2561.0	4273.0/4259	06:47	8 - 25	TIGHT	224	06:50	-	
				9.66						L

L = Long nose probe

ppg M = Martineau probe

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic		Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure		Temp °F	Time Retract	Final Hydrostatic		Comments (Include Probe type) L = Long nose probe M = Martineau probe
	m MDKB	m TVDSS KB=22m	HP / RFT gauge psia / psig	ppg			HP / RFT gauge psia / psig	ppg			HP / RFT gauge psia / psig	ppg	
1/30 Pretest	2583.3	2561.3	4275.0/4260	9.66	06:53	83	3754.0/3738	8.59	224	06:58	4277.0/4261	9.67	Supercharge L
1/31 Pretest	2547.0	2525.0	4214.3/4201	9.67	07:04	3608	3661.3/3649	8.50	223	07:21	4217.7/4202	9.67	L
1/32 Pretest	2510.5	2488.5	4154.0/4143	9.67	07:26	1149	3613.0/3598	8.51	223	07:46	4159.0/4143	9.67	L
1/33 Pretest	2492.4	2470.4	4127.0/4113	9.67	07:50	3272	3586.2/3573	8.51	221	08:03	4130.0/4115	9.68	Drawdown L
1/34 Pretest	2457.2	2435.2	4067.0/4056	9.67	08:09	1943	3558.4/3545	8.56	220	08:25	4073.0/4058	9.72	L
1/35 Pretest	2440.5	2418.5	4042.0/4029	9.67	08:35	2781	3526.8/3515	8.55	219	08:40	4045.0/4031	9.68	L
1/36 Pretest	2433.0	2411.0	4031.0/4018	9.68	08:44	3119	3526.5/3515	8.57	218	08:55	4032.0/4019	9.71	L

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP / RFT gauge psia / psig	Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (Include Probe type)	
	m MDKB	m TVDSS KB=22m									
RFT TYPE				ppg				ppg			
1/37 Pretest	2402.5	2380.5	3979.0/3969	09:00	3337	3515.5/3503	218	09:15	3983.0/3969	Supercharge	
				9.68			8.66		9.68	L	
1/38 Pretest	2358.5	2336.5	3905.0/3896	09:22	3353	3395.9/3385	217	09:38	3910.0/3898		
				9.68			8.52		9.69	L	
1/39 Pretest	2333.0	2311.0	3867.0/3856	09:47	3348	3351.3/3343	214	09:47	3866.0/3856		
				9.69			8.50		9.69	L	
1/40 Pretest	2323.5	2301.5	3851.0/3841	09:53	3294	3324.5/3314	213	10:09	3853.0/3842		
				9.69			8.47		9.69	L	
1/41 Pretest	2319.0	2297.0	3845.0/3834	10:13	3296	3320.0/3310	212	10:18	3847.0/3834		
				9.69			8.47		9.69	L	
1/42 Pretest	2277.0	2255.0	3776.0/3764	10:26	1948	3279.4/3270	212	10:30	3775.0/3764		
				9.69			8.52		9.69	L	
1/43 Pretest	2271.0	2249.0	3765.0/3754	10:34	3249	3279.4/3268	211	10:46	3768.0/3755		
				9.69			8.55		9.69	L	

L = Long nose probe

ppg M = Martineau probe

RFT PRESSURE DATA

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WELL: REMORA-I

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP / RFT gauge psia / psig	Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (Include Probe type)
	m MDKB	m TVDSS KB=22m								
1/44 Pretest	2251.7	2229.1	3734.0/3723	10:51	3193	3272.1/3260	210	11:07	3738.0/3723	L
					9.69		8.60		9.69	
1/45 Pretest	2233.5	2211.5	3705.0/3694	11:12	1005	3257.5/3245	209	11:23	3708.0/3694	L
					9.69		8.63		9.69	
1/46 Pretest	2173.0	2151.0	3602.0/3594	11:31	3033	3113.1/3104	207	11:47	3607.0/3595	L
					9.69		8.48		9.69	
2/47 Sample	2650.8	2628.8	4387.0/4367	16:07	400	TIGHT	228		4389.0/ -	L
2/48 Sample	2650.5	2628.5	4387.0/4367	16:14	353	TIGHT	228	16:16	4387.0/4367	L
2/49 Sample	2651.1	2629.1	4386.0/4368	16:20	3811	PARTIAL SEAL FAILURE	228	16:25	4387.0/4368	L
2/50 Sample	2651.1	2629.1	4386.0/4367	16:28	3676	PARTIAL SEAL FAILURE	228	16:33	4386.0/4368	L

L = Long nose probe

M = Martineau probe

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic HP / RFT gauge psia / psig	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP / RFT gauge psia / psig	Temp °F	Time Retract	Final Hydrostatic HP / RFT gauge psia / psig	Comments (Include Probe type)	
	m MDKB	m TVDSS KB=22m									
RFT TYPE			ppg						ppg	L = Long nose probe M = Martineau probe	
2/51 Sample	2651.2	2629.2	4386.0/4368	16:36	3247	3861.4/3847	228	19:39	4385.0/4370	Recovered oil res. 1 Gallon	L
3/52 Sample	2677.5	2655.5	4431.0/4409	22:35	3460	3891.4/3876	228	23:00	- /4409	Form. Pressure stabilized	L
4/53 Sample	2696.5	2684.5	4461.0/4439	01:52	3187	3977.4/3957	231	02:50	4458.0/4440		L
5/54 Sample	2319.0	2297.0	3837.0/3828	05:10	3162	3318.0/3310	218	05:26	3840.0/3828		L
6/55 Sample	2276.5	2254.5	3805.0/3792	10:53			189	10:56		Seal Failure	L
6/56 Sample	2277.0	2255.0	3805.0/3792	11:00			190	11:02		Seal Failure	L
6/57 Sample	2276.3	2254.3	3803.0/3789	11:12			193	11:14		Seal Failure	L

RFT PRESSURE DATA

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WELL: REMORA-1

GEOLOGIST/ENGINEER: S. KOH, J. HENDRICH

DATE: 11th May, 1987

RFT No. Run/Seat	Depth		Initial Hydrostatic		Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure		Temp °F	Time Retract	Final Hydrostatic		Comments (Include Probe type) L = Long nose probe M = Martineau probe
	m MDKB	m TVDSS KB=22m	HP	/ RFT gauge psia / psig			HP	/ RFT gauge psia / psig			HP	/ RFT gauge psia / psig	
6/58 Sample	2275.5	2253.3	3799.0/3785		11:19				194	11:21			Seal Failure L
6/59 Sample	2276.8	2254.8	3797.0/3783		11:37	3104	3282.1/3271		195	11:57	3796.0/3781		L
7/60 Sample	2701.5	2679.5	- /4480		14:35				204	14:36			Tight L
7/61 Sample	2701.7	2679.7	- /4479		14:40								Tight L
7/62 Sample	2701.4	2679.4	- /4477		14:45								Tight L
7/63 Sample	2703.0	2681.0	- /4480		14:52	3187	- /3959.1		221	18:49	- /4476		Both chambers Not full L

2709L/55-63