EXPLORATION LOGGING
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ATTACHMENT TO WCR

FOR FORTESCUE-2

EXPLORATION LOGGING OF AUSTRALIA, INC.
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Rec'd 26-4-79

GEOLOGICAL - ENGINEERING WELL REPORT

ESSO AUSTRALIA LIMITED

FORTESCUE No. 2

BASIC

NOVEMBER 1978

OIL and GAS DIVISION

by

EXPLORATION LOGGING OF AUSTRALIA INC.

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I. INTRODUCTION

The Fortescue No. 2 exploration well was drilled in the Gippsland Basin in the Bass Strait at geographical coordinates 38°25' 56.96"S, 148°15' 59.13"E.

The well was spudded in 70 metres of water on 30th October, 1978 and drilled to a total depth of 2653 metres on 14th November, 1978. The objective was to evaluate the position of liquid boundaries and the hydrocarbon content in the Latrobe sandstones within the Latrobe Group.

The well was plugged and abandoned after wireline testing on 21st November, 1978.

Drilling was contracted to the Odeco semi-submersible rig "Ocean Digger". Exploration Logging of Australia, Inc. provided a full data acquisition and pressure detection service using the Gemdas Level VI system. (Geological Engineering and Data Acquisition System).

II. WELL HISTORY

a) 26" hole section, 101m (seabed) - 256m (20" casing point), 30 October 1978

NB	≠ 1	HTC	OSC3AJ	26"	132-256 m

Fortescue No. 2 was spudded on 30th October 1978 with an HTC OSC 3AJ 26" bit with 20, 20, 20 jets which drilled to 256 metres in 7¼ hours without a marine riser. At 256 metres the hole angle was $\frac{1}{2}^{o}$. 20" casing was set with the shoe at 234 metres with 650 sacks of Class N cement with 2600 bbls of gel, and tailed with 350 sacks of Class N cement with 2% C_aCl_2 and 43 bbls of fresh water.

b) 17½" hole section, 256 - 879 m (13 3/8 " casing point), 1 - 2 November 1978

NB	≠ 2	HTC	OSC3AJ	17½"	256-879 m

A 17½" HTC OSC 3AJ with 20, 20, 20 jets was used to drill out the shoe and continued drilling to 879 metres using spud mud as the circulation fluid. Initially the penetration rate averaged 180 metres per hour, but was slowed to a 40 metre per hour average due to a rapid increase in mud solids. Mud weights of 8.5ppg at 260 metres rapidly increased to 10.0 ppg at the flowline at 879 metres. The maximum formation gas over this interval was 74 units and the average background gas increased from 6 units to 40 units. At 879 metres the hole was circulated clean prior to running ISF/Sonic, FDC/GR/Cal logs. Hole deviation at 879 metres was 0^{o}. 13.3/8" casing was run and cemented with the shoe at 861 metres. Before drilling out the B.O.P's were tested.

c) 12¼' hole section, 879 - 2420m, 3 - 8 November 1978

NB	≠ 3	HTC	X3A	12¼"	879 - 1238 m
NB	≠ 4	HTC	X3A	12¼"	1238 - 1615 m
NB	≠ 5	HTC	X3A	12¼"	1615 - 2142 m
NB	≠ 6	HTC	X3A	12¼"	2142 - 2420 m

An HTC X3A 12¼" bit with 18, 18, 18 jets drilled out the cement and shoe using a lightly dispersed mud type of 9.2 ppg. At 894 metres a pressure integrity test was performed; the hole was pressured to 13.5ppg EMW without any leak-off occurring. This bit drilled on to 1238 metres attaining an average rate of penetration of 19.4 metres and the background gas varied from 12 to 20 units. A survey at 1238 metres indicated a possible hole angle of 2.3/4°. Trip gas at this depth was 60 units.

Bit No. 4, another HTC X3A 12¼" bit with 18, 18, 18 jets drilled to 1615 metres at an average rate of 12.2 metres per hour, using 160 RPM and 50,000 lbs weight. The maximum formation gas for this bit run was 16 units at 1135 metres and the average background gas was 6 units. Trip gas at 1615 metres was 12 units. A survey at 1615 indicated a hole angle of 0°.

Bit No. 5 was another HTC X3A 12¼" bit with 18, 18, 20 jets. This bit drilled to 2142 metres at an average penetration rate of 19.9 metres per hour using 120 RPM and 40 - 60,000 lbs. weight. The average background gas was 7 units for this bit run; the maximum formation gas being 8 units. Trip gas at 2142 metres was 5 units, and a survey showed the hole angle to be ½$^{\circ}$.

Upon resuming drilling with bit no. 6, an HTC X3A 12¼" bit with 18, 18, 20 jets, the flowline became blocked with gumbo at 2146 metres. This took 2 hours to clear before drilling recommenced. At the start of the bit run the mud system was treated such that the lightly dispersed type was changed to a Polysal type. The average penetration rate for this bit was 16.6 metres per hour using 135 RPM and 20 - 60,000 lbs. weight. This bit was pulled at 2420 metres, the average background gas for the interval was 4 units, with a maximum of 8 units. Mud weight to 2345 metres averaged 9.1 to 9.4 ppg, but at 2345 metres the mud was weighted up to 9.3 ppg, and this weight was maintained to T.D.

The hole was circulated clean and the pipe was strapped out of the hole in preparation for the coring programme. The mud was changed to a polymer type at this stage, this mud being used to T.D. A survey at 2420 metres showed a hole angle of 2°.

d) 8 15/32" hole section, 2420 - 2464m - coring, 9 - 11 November 1978

CB ≠ 1	CHRIS	C22	8 15/32	2420 - 2436 m
CB ≠ 2	CHRIS	RRC22	8 15/32	2436 - 2451 m
CB ≠ 3	CHRIS	RRC22	8 15/32	2451 - 2464 m

Core barrel No. 1 was run in and bottom up was circulated prior to coring. Trip gas at 2420 metres was 12 units. Core No. 1 was cut from 2420 metres to 2436 metres at an average penetration rate of 0.8 metres per hour. The core bit used was a Christensen C22 8.15/32". Recovery was 97%. 50-80 RPM and 30,000 lbs. weight were used to cut the core.

Core No. 2 was cut with the same C22 bit, to 2451 metres. An average rate of penetration of 2.3 metres per hour was achieved with 50-85 RPM and 20,000 lbs. weight. Recovery was 79%.

Core No. 3 used the same bit again, from 2451 metres to 2464 metres. The average penetration rate was 3.3 metres per hour using 60-80 RPM and 15 - 20,000 lbs. weight. Recovery was 81%.

e) 12¼" hole section, 2420 - 2464m - 12 November 1978

NB ≠ 7	HTC	XDG	12¼"	2420 - 2464 m

Bit No. 7, a 12¼" HTC XDG with 14, 15, 15 jets was used to ream the rat-hole from 2420 metres to 2464 metres. At 2464 metres the bit became stuck in the hole necessitating 100,000 lbs. overpull to free it. Upon pulling the bit it was found to have several broken teeth.

f) 8 15/32 " hole section, 2464 - 2480 m - coring, 12 - 13 November 1978

CB ≠ 4	CHRIS	C20	8 15/32"	2464 - 2480 m

Core No. 4 was cut from 2464 metres to 2480 metres with a Christensen C20 8.15/32" bit. Using 80 RPM and 20,000 lbs. weight it drilled at an average rate of penetration of 3.8 metres per hour. Recovery was 87.5%. Background gas during coring operations varied from 1 unit to 4 units with no peaks. Trip gas at 2480 metres was 22 units.

g) 12¼" hole section, 2464 - 2653m - 13 - 14 November 1978

NB ≠ 8	HTC	XDG	12¼"	2464 - 2600 m
NB ≠ 9	HTC	XDG	12¼"	2600 - 2653 m

Bit No. 8, an HTC XDG 12¼" bit with 15, 15, 15 jets drilled to 2600 metres at an average rate of 13.1 metres per hour using 120 RPM and 50- 60,000 lbs. weight. The average background gas for this bit run was 2 units with a maximum of 4 units. Trip gas at 2600 metres was 18 units.

Bit No. 9, an HTX XDG 12¼" bit with 15, 15, 16 jets drilled to T.D. at 2653 metres at an average rate of 18.8 metres per hour using 120 RPM and 50,000 lbs. weight. The average background gas was 2 units with a maximum of 3 units. Bottoms-up was circulated prior to a wiper trip, after which returns were circulated again in preparation for Schlumberger logs. Trip gas from the wiper trip was 40 units. Logs run at T.D. were IES/Sonic, FDC/CNL, HDT, CIS, RFT, CST.

Fortescue No. 2 was plugged and abandoned on 21st November 1978.

III. GEOPRESSURE ENGINEERING

A. PORE PRESSURE

Refer to Appendix C (iii) Pressure Analysis Log, for a graphical presentation of the pore pressure regimes present in Fortescue No. 2

Before a more detailed analysis of the various pressure evaluation parameters is undertaken it may be stated in general that the absence of hole problems in Fortescue No. 2 can be attributed to the absence of abnormal pressure regimes. An overbalanced condition was maintained throughout the well with the mud weights used. This may have hindered rather than enhanced the optimization of drill rates and hydrocarbon evaluation. A pressure gradient of 8.5 lb/gal E.M.W. was considered to be normal for the area.

LITHOLOGY -

Because of the absence of clean shales throughout the well, very little in the way of quantitative analysis could be performed. However, general compaction trends modified locally by lithological variations are readily observable in both the drill rate and drilling exponent plots.

DRILL RATE -

The top hole section of the well drilled at rates of up to 500 m/hr. These decreased with depth to 10 m/hr. Apart from minor fluctuations the decrease was uniform. Four cores were cut between 2420 and 2480 metres. Drill rates during coring varied from 1 m/hr in siltstone to a maximum of 7 m/hr in sandstone. The remainder of the well was drilled in sequence of interbedded sandstones, siltstones and coal which were erratic in behaviour as regards drill rate and drilling exponents.

The use of bumper subs in the drill string was an obstacle to the accurate determination of drill rates and subsequent drilling exponent analysis. Wherever possible these inaccuracies have been removed.

DRILLING EXPONENTS -

As a result of the absence of clean shales it was not possible to establish a normal trend line for corrected 'd' exponent which was suitable for quantitative use. However, with one exception normal compaction trends were readily apparent. A kick back in trend occurs at 1615 metres, however this was not considered to be an indication of abnormal pressure but a reflection of the transitional nature of the lithology in the interval.

GAS -

Background gas ranged from a low of ½ unit to 50 units. The maximum gas reading recorded was 74 units at 717 metres. Below 879 metres average background gas showed a steady decrease to 2 units at TD. Oil was found in sands in cores ≠ 2 and ≠ 3.

It is considered that the magnitude of the gas readings were adversely affected by the high overbalance in the borehole.

No connection gases were recorded and trip gas values were consistent with influencing factors such as length of time spent out of the hole.

These were taken to be an indication that the pressure regime of the area was normal.

TEMPERATURE -

Continuous monitoring of the flowline temperature was carried out in an attempt to locate transition zones in the geothermal gradient due to changes in the thermal conductivity of the formations due to the presence of excess pore fluids. On all occasions when sudden decreases or increases in the flowline temperature occurred, either the addition of water or chemicals to the mud system was the apparent cause.

B. FRACTURE PRESSURE

Refer to Appendix C (iii), Pressure Analysis Log, for a graphical presentation of the estimated fracture gradients for Fortescue No. 2.

Values for fracture pressure in Fortescue No. 2 were calculated using standard methods derived from Gulf Coast data. The three principal methods used were Mathews and Kelly, Eaton's and Anderson et al.

A pressure integrity test was performed at the 13.3/8" casing shoe, although the test did not continue to leak off. From this data, however, it was possible to calculate a value for Poisson's ratio, which was then used to prepare a fracture curve using Eaton's method. Due to the imcomplete fracture test data the calculated value for Poisson's ratio is somewhat higher than values normally obtained from actual leak off pressures.

The overburden gradient was calculated from bulk density values obtained from wireline data for the whole well. An overburden curve was thus established and the values used in determination of fracture pressures.

At no time during the drilling of Fortescue No. 2 was there any indication that mud hydrostatic could exceed the estimated fracture gradient.

IV. DRILLING ENGINEERING

Monitoring and analysis of the Drilling Engineering at the wellsite was centred on the Bit Analysis, Hydraulics, Hole Condition and Hole Deviation.

The pertinent data for each engineering aspect covered is presented in a tabular format, in this section.

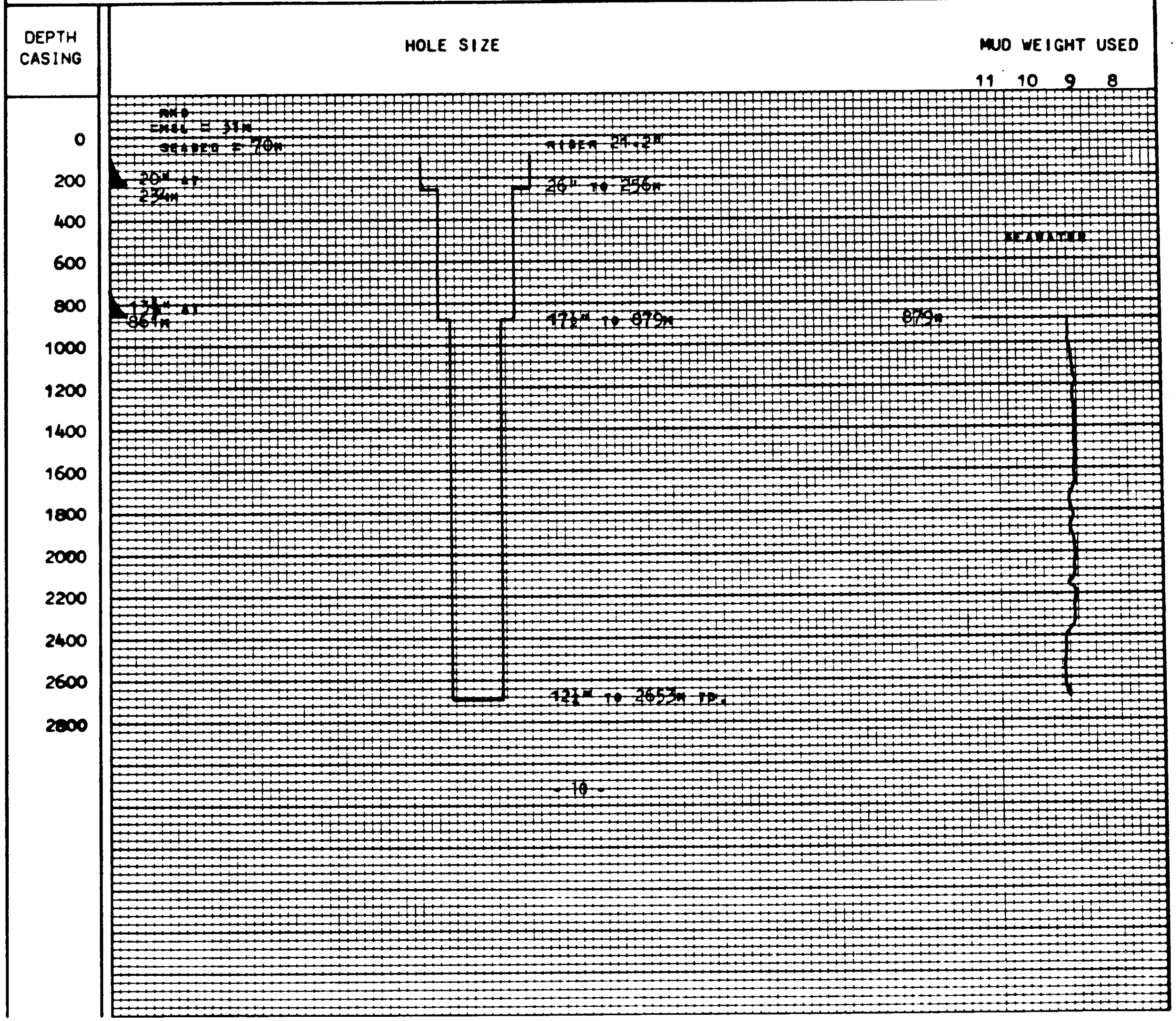
More detailed analysis of all the engineering parameters relevant to the drilling of the well, such as weight on bit, rate of penetration, torque, mud characteristics, detailed hydraulics and flow regime analysis, are presented in Appendix D as hardcopy computer printouts and plots reduced to size for this Report or reference to the original listings in the Esso files.

EXPLORATION LOGGING

WELL DATA

COMPANY: ESSO AUSTRALIA

WELL: FORTESCUE No.2



B. BIT SUMMARY - COST ANALYSIS

BIT NO.	SIZE	MAKE	TYPE	IADC CODE	JET SIZES	DRILLED INTERVAL	HOURS	AVERAGE ROP (m/HR)	FINAL COST/M	ACTUAL AVERAGE WOB	RPM	TORQUE	IADC BIT CONDITION
1	26"	HTC	OSC3AJ	1111	20,20,20	0-256M	7¼	21.5	---	5-10	125	1	1 2 1
2	17½"	HTC	OSC3AJ	1111	20,20,20	256-879M	10	38.3	4	30	120	3	2 2 0
3	12¼"	HTC	X3A	1141	18,18,18	879-1238M	18	19.4	12	30	120	4	4 5 1/8
4	12¼"	HTC	X3A	1141	18,18,18	1238-1615M	31	12.2	21	50	160	5	3 8 1/16
5	12¼"	HTC	X3A	1141	18,18,20	1615-2142M	26½	19.9	11	40-60	120	5	4 7 1/16
6	12¼"	HTC	X3A	1141	18,18,20	2142-2420M	16 3/4	16.6	16	20-60	135	5.5	2 7 1
CB 1	8 15/32"	CHRIS	C22	8888	---	2420-2436M	20 3/4	0.8	567	30	50-80	4	10% WORN
CB 2	8 15/32"	CHRIS	RR C22	8888	---	2436-2451M	6½	2.3	195	20	50-85	4	15% WORN
CB 3	8 15/32"	CHRIS	RR C22	8888	---	2451-2464M	4	3.3	178	15-20	60-80	3	SALVAGE
7	12¼"	HTC	XDG	1351	14,15,15	2420-2464M	3	14.7 REAM	---	50	140	5	3 2 ¼
CB 4	8 15/32"	CHRIS	C20	8888	---	2464-2480M	3	3.8	161	20	80	4.5	SALVAGE
8	12¼"	HTC	XDG	1351	15,15,15	2464-2600M	11¼	10.7	24	50-60	120	3.5	5 3 3/16
9	12¼"	HTC	XDG	1351	15,15,16	2600-2653M	3¼	16.3	32	50	120	5.5	2 3 1

C. HYDRAULICS ANALYSIS

DEPTH INTERVAL (M)	265-878	878-1135	1135-2235	2235-2420	2420-2653
Hole Size (in)	17½	12¼	12¼	12¼	12¼
Nozzles (/32)	20 20 20	18 18 18	18 18 20	18 18 20	15 15 16
Av Drill Rate (m/hr)	280	50	26	35	20
Mud Flow (GPM)	1040	505	970	955	660
Mud Flow (SPM)	120	58	112	110	76
Pump Pressure (PSI)	2320	850	2660	2370	2710
ANNULAR VELOCITIES Ft/Min: Collars	103	138	264	260	180
Pipe	91	99	190	187	120
Casing	74	92	182	174	120
Riser	60	29	56	55	38
Mud Wt in PPG	9.1	9.1	9.1	9.3	9.3
PV/YP	7/15	8/13	7/14	14/16	17/22
Jet Velocity ft/sec	363	217	387	381	409
Jet Pressure Drop (PSI)	1094	387	1220	1209	1377
Bit Hydraulic HP	664	114	691	674	530
Impact Force (lb)	1814	520	1767	1752	1285
ECD (PPG)	9.26	9.30	9.29	9.48	9.46

D. HOLE CONDITION

The borehole condition was monitored during the drilling of the well by observing the differential lag time, the type, percentage, size and shape of the cavings, the hole deviation, the estimated differential pressure, the percentage of swelling clays, and the differential annular velocity adjacent to the drill collars. During trips hole drag and fillup were monitored and recorded.

There were two isolated borehole problems in the well, namely, blocked flowline and stuck pipe.

Carbides indicated that the well remained reasonably in gauge to 2142 metres with a maximum difference between carbide and theoretical lag of +120 strokes. At 2142 metres the flowline became blocked and took some two hours to clear. Subsequent carbides indicated the hole was out of gauge with a carbide to a theoretical lag difference of +613 strokes.

After reaming out the core rat hole at 2464 metres the drill string became stuck and took an overpull of 100,000 lbs.

With the exception of excessive cavings at 2142 metres sample quality was good with only approximately 5% cavings.

E. SURVEY DATA

Depth M.	Inclination Deg.
256	½
879	0
1238	2 3/4?
1615	0
2142	½°
2420	2°

V. HYDROCARBON EVALUATION

INTRODUCTION -

Hydrocarbon evaluation at the wellsite was performed while drilling by use of standard mud logging techniques. These included "hot wire" gas detection which indicated the relative amount of combustible gas in the drill returns. Both total gas and petroleum vapours (all combustible gases less methane) were monitored and recorded.

Gas held in cuttings was assessed by pulverising 100 cc's of cuttings in a blendor with water and measuring the amount of gas liberated. A comparison of the cuttings' gas magnitude with that of the ditch gas was used to give a qualitative indication of formation permeability.

Ditch gas was analysed continuously and automatically by three chromatographs, standard catalytic, hydrogen flame ionization and thermo-conductivity. The catalytic detector can become saturated at high gas levels and the flame ionization detector is used as a back-up in this event. The thermoconductivity chromatograph was used to detect inert gases nitrogen and helium and also for carbondioxide.

Samples of mud and pulverised cuttings gas were manually entered into the standard chromatograph directly from the blendor.

Oil evaluation was undertaken by observing the mud and unwashed cuttings for oil. Cuttings samples were observed under the ultraviolet light for all fluorescence and solvent cut.

RESULTS -

Gas readings were generally low throughout the drilling of Fortescue No. 2. In the surface hole section the background gas remained at around 2 units to 450 metres where it increased steadily to 10 units. Prior to setting surface casing ditch gas increased to 50-70 units. All chromatographic analysis showed only C_1 present in this section.

Following the setting of 13 3/8" casing the ditch gas dropped steadily to a background of less than 10 units, falling further to under 5 units as the payzone was approached. Small traces of C_2 were recorded from 1100 metres down.

Before encountering the Labrobe Formation the drilling was halted and the top of the payzone was continuously cored. Mud weight was increased prior to penetration of the paysands and these factors led to a further drop in ditch gas. Despite the evidence of oil in the cores ditch gas and chromatographic analysis showed no significant increase during the coring of the Latrobe Group sands.

When drilling recommenced after coring there was no increase in gas detected in the mud, although traces of C_3 were consistent after penetrating some coal stringers. Gas remained low until T.D. at 2653 metres.

Cuttings gas was negligible throughout the entire well. No connection gases were observed and maximum trip gas was 50 units at 2536 metres.

GAS RATIOS -

Since the gas readings taken while drilling were so low and the presence of only three members of the paraffin series detected, the most useful application of the gas ratio analysis is with the samples gained from the RFT tool which were analysed by chromatograph at the wellsite. A print-out of these results is included (See A).

N.B. DELTA C = $\%C_1 - (\%C_3 + \%C_4)$

TRIANGULAR GAS PLOT - (See B.)

A triangular gas plot analysis of the hydrocarbon measurements from the RFT tool was conducted to determine possible productivity and hydrocarbon phase of the formation fluids.

It has been found that the summation of $\%C_2/100 + \%C_3/100 + \%C4/100$ called the hydrocarbon coefficient (HC) is directly proportional to the size of the triangle plotted. The larger the HC then the wetter the gas is, or the heavier the oil is. The hydrocarbon phase is determined by the orientation of the triangle - i.e. if the apex is above the base Δ gas is indicated; the opposite ∇ indicates oil. Of the five sets of results plotted all triangles indicated oil phase and three plotted offscale indicating a heavier oil phase.

From empirical methods it has been found that an HC of <0.003 indicates unproductive, $0.003 < HC < 0.175$ indicates gas and $HC > 0.175$ indicates oil. In addition, if lines are drawn from each corner of the plotted triangle to the points A, B and C, then they intersect at a data point (+). If this point falls within the ellipse then the section is considered productive.

All the HC values from Fortescue No. 2 were above 0.175, which indicated oil but the intersection data points fell outside of the ellipse, though close, indicates doubtful productivity.

RECTANGULAR GAS RATIO PLOT (See C.) -

This gas ratio plot uses methane ratios to determine possible productivity and hydrocarbon phase. The limitations are as follows:-

a) Productive dry gas zones may show only C_1 but abnormally high C_1 shows are usually indicative of salt water.

b) If the $C_1:C_2$ ratio falls low in the oil section and the $C_1:C_4$ ratio falls high in the gas section the zone is probably non-productive.

c) If any ratio ($C_1:C_5$ excepted if oil mud is used) is lower than a preceding ratio the zone is probably non-productive. For example, if the $C_1:C_4$ ratio is less than the $C_1:C_3$ ratio the zone is probably wet.

d) The ratios may not be definitive for tight, low permeability zones.

All results plotted from Fortescue No. 2 indicate the oil phase. Lower C_3 ratios with respect to C_2 indicates non-productive zones in all cases.

These gas ratio programs are still in the experimental stage, and with more data available the phase boundaries and productivity prediction fields may be modified. From the results shown for Fortescue No. 2, the plots correctly identify the phase since oil was recovered in the RFT tool. The indications of productivity were all negative or at least marginal, though production tests may prove otherwise.

EXPLORATION LOGGING

A

FORTESCUE NO.2 RFT DATA

CHROMATOGRAPHIC GAS RATIOS ANALYSIS

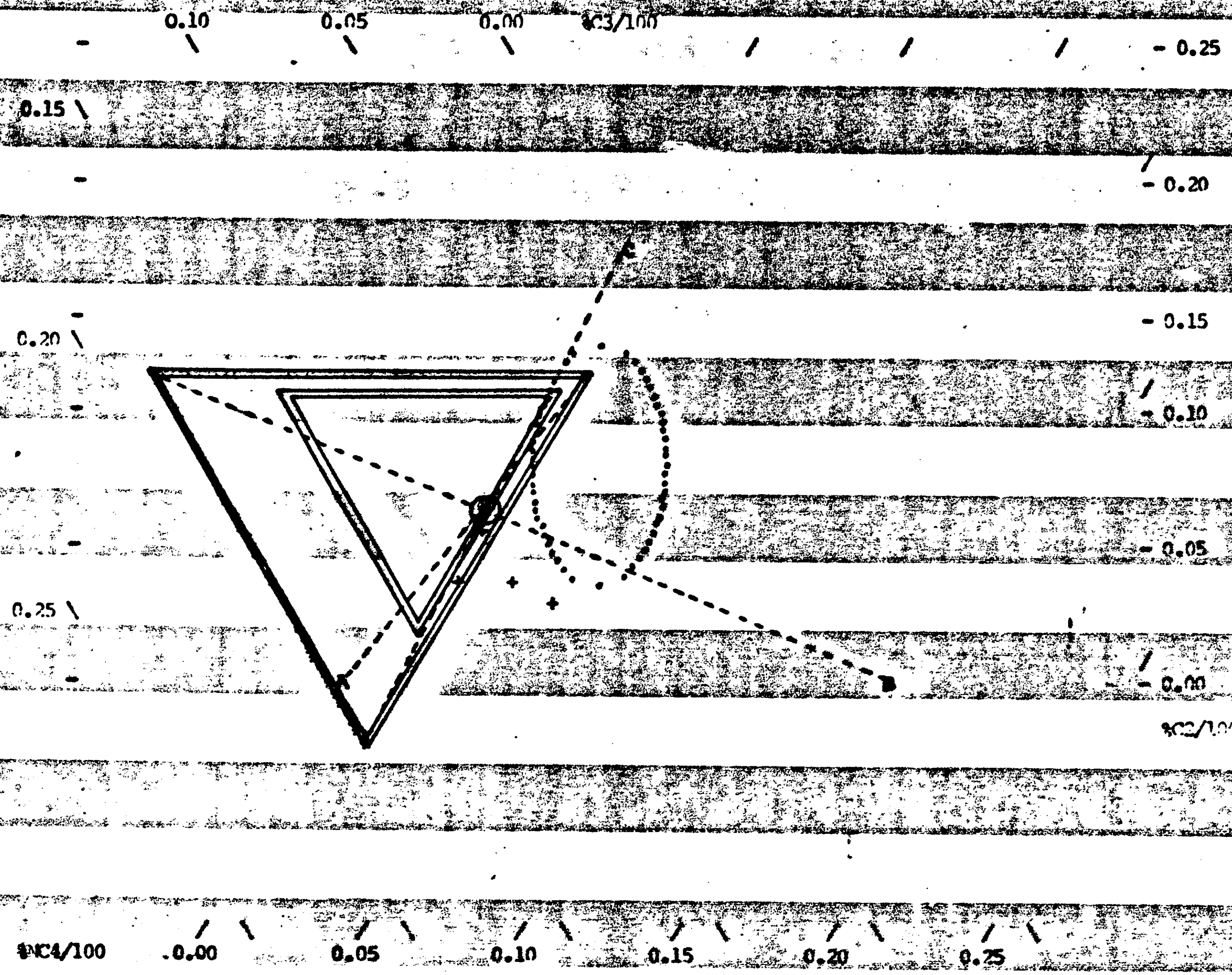
REAL-TIME PRINT OUT

	DEPTH	PPM							% OF TOTAL GAS						METHANE RATIOS					ETHANE RATIOS				PROPANE			iC4	DELTA
		C1	C2	C3	iC4	nC4	C5	TOTAL	C1	C2	C3	iC4	nC4	C5	C2	C3	iC4	nC4	C5	C3	iC4	nC4	C5	iC4	nC4	C5	nC4	C's
0	2447	9326	2049	4409	622	306	240	16952	55.01	12.09	25.01	3.67	1.81	1.42	.22	.47	.07	.03	.03	2.15	.30	.15	.12	.14	.07	.05	2.03	22.12
0	2448	60702	12200	16624	4880	876	208	95490	63.57	12.78	17.41	5.11	.92	.22	.20	.27	.08	.01	.00	1.36	.40	.07	.02	.29	.05	.01	5.57	39.91
0	2449	70350	12169	13468	4163	306	125	100581	69.94	12.10	13.39	4.14	.30	.12	.17	.19	.06	.00	.00	1.11	.34	.03	.01	.31	.02	.01	13.60	51.99
0	2450	13668	3416	6136	2318	1606	715	27859	49.06	12.26	22.03	8.32	5.76	2.57	.25	.45	.17	.12	.05	1.80	.68	.47	.21	.38	.26	.12	1.44	10.38
0	2451	4020	1000	1955	756	934	715	9330	42.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.25	.40	[illegible]	.23	[illegible]	1.96	.76	.93	.72	.39	.48	.37	.81	-3.62

B EXPLORATION LOGGING

GAS RATIO PLOT TO DETERMINE POSSIBLE PRODUCTIVITY AND HYDROCARBON PHASE FORTESCUE NO.2 INTERVAL FROM 2447 TO 2451

IF THE APEX OF THE TRIANGLE IS ABOVE THE BASE,GAS IS INDICATED.THE OPPOSITE INDICATES OIL Δ or ∇
IF THE DATA POINT PLOTS WITHIN THE ELLIPSE IT IS CONSIDERED PRODUCTIVE.THE SMALLER THE GAS TRIANGLE THEN THE WETTER IT IS.THE LARGER THE OIL TRIANGLE THE THE HEAVIER THE OIL.
THE HYDROCARBON COEFFICIENT (HC) IS PROPORTIONAL TO THE SIZE OF THE TRIANGLE.UNPRODUCTIVE - HC<.003, GAS .003<HC<.175;OIL HC>.175.

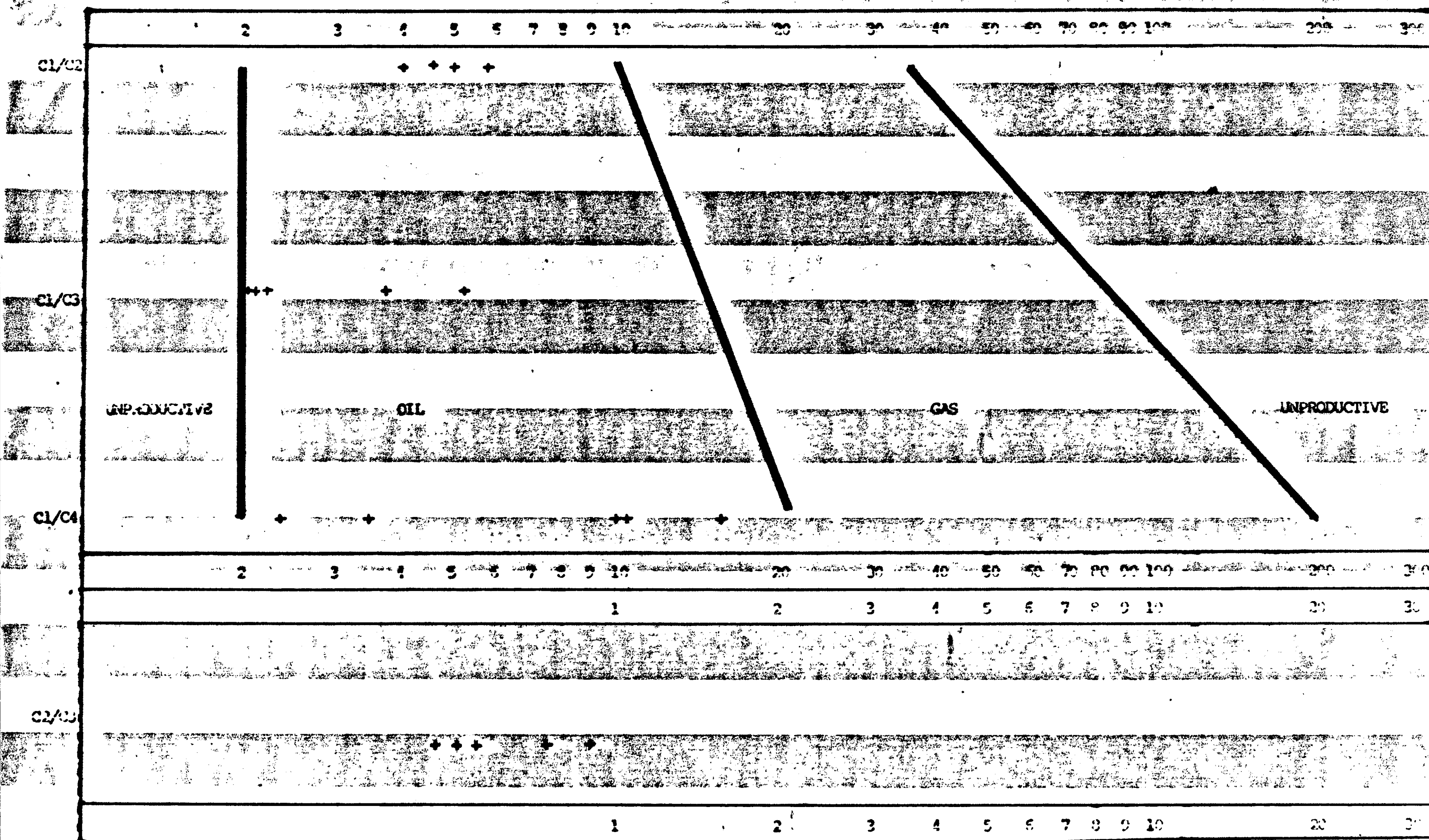


DEPTH	HC	DEPTH	HC	DEPTH	HC
2447	.405				
[illegible]	[illegible]				
[illegible]	.258				
2450	.449				
2451	.411				

EXPLORATION LOGGING

GAS RATIO PLOT TO DETERMINE POSSIBLE PRODUCTIVITY AND HYDROCARBON PHASE — FORTESCUE NO.2

"TAKEN FROM RFT RESULTS 2446.5 - 2551 METRES"



NOTES

1) PRODUCTIVE DRY GAS ZONES MAY SHOW ONLY C1 BUT ABNORMALLY HIGH C1 ONLY SHOWS ARE INDICATIVE OF SALT WATER
2) IF THE C1/C2 RATIO FALLS LOW IN THE OIL SECTION & THE C1/C4 FALLS HIGH IN THE GAS SECTION THE ZONE IS PROBABLY UNPRODUCTIVE
3) IF ANY RATIO IS LOWER THAN THE PRECEDING RATIO THE ZONE IS PROBABLY NON-PRODUCTIVE

VI. CONCLUSIONS AND RECOMMENDATIONS

The successful drilling of Fortescue No. 2 in 16 days to 2653 metres was attributed in part to the normal pore pressure regimes and consequent lack of hole problems.

For future wells in the same area it is recommended that mud weights used in drilling competent formations are such that at any depth the mud hydrostatis pressure is kept at approximately 200 p.s.i. more than the estimated pore pressure at that depth. This is a practical over-balance margin which would allow pore pressure estimation and hydrocarbon evaluation to be more accurate and meaningful.

A P P E N D I X   A

GEOPRESSURE AND ENGINEERING METHODS

Appendix A

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Appendix A

Data Acquisition and Methods of Analysis

The methods used to obtain data, and the calculations employed to predict and quantify pore and fracture pressures are explained below.

A. Pore Pressure Prediction and Detection

I. Before Drilling

(1) Seismic Information

Field data from the reflection seismograph may be used to predict both the depth to abnormally pressured formations and the approximate pressure magnitude. The degree of accuracy depends upon the quality of the velocity spectrum. Where common depth point stacking is performed and scanned using RMS velocity increments of 50 feet/sec., areas of greatest semblance are enhanced. Therefore interval velocity calculations are more accurate and trends can be placed within closer limits.

From the velocity spectrum of RMS velocity versus two-way time, the interval transit time of the seismic energy (Eq. 2) (reciprocal of interval velocity x 10^6) can be derived using Dix's formula (Eq. 1). A near exponential decrease of interval transit time with depth is usually seen in normally compacted sediments. Departures from this curve are usually caused by abnormal pressures, formation changes and poor resolution in the velocity analysis. With Interval Transit Time plotted on the semilogrithmic X axis (abscissa) and depth on the linear axis (ordinate), a "sonic log" type plot is produced. Therefore the compaction trend can be readily compared with that derived from shale interval transit time from the sonic wireline logging tool. Decreases in the rate of decrease of interval time (i.e. increase interval velocity) with depth within shale section is usually indicative of undercompaction and geopressures.

Screening of raw data during drilling of the well consists of selecting shale points and utilizing velocity survey data at casing points. This can help to reduce the log intervals over which data is averaged and so narrow down the range of possible normal trends. The greater the velocity data available in an area the more accurate the pore pressure predictions.

Assuming near horizontal beds

V_{n-1},

t_{n-1}

V_{int_n}

V_n, t_n

EQ. (1) $V^2{}_{int_n} = (V_n{}^2 t_n - V_{n-1}{}^2\, t_{n-1})/(t_n\, t_{n-1})$

where V_{int_n} = interval transit velocity for reflecting horizon n, ft/sec.

V_n = Rms velocity ft/sec for layer n

V_{n-1} = Rms velocity ft/sec for layer (n-1)

t_n = Two way time to layer n, secs

t_{n-1} = Two way time to layer (n-1), secs

EQ. (2) $1/V_{int_n} \times 10^6$ = interval transit time in micro secs

(2) Well Histories

Data from other wells drilled in the vicinity are very useful prespud information. Information from seismic profiles, wireline logs (FDC, sonic and conductivity/resistivity), FIT and DST data, lithology and mud logs, and completion and pressure reports is of great asset in evaluating the pore pressure prospects in a new well.

II. Drilling Parameters

(1) Rate of Penetration

The rate of penetration is calculated from a kelly height versus time recorder.

With constant drilling conditions (i.e. bit size, weight on bit, rotary rpm, hydraulics and mud weight) in a uniform lithology, the rate of penetration will be determined by formation compaction characteristics. As the formations become more compacted with depth, the rate of penetration will decrease. The lithology used for determining the compaction rate is clean shale. On entering an overpressured shale there will be an increase in drill rate concomitant with the increase in porosity, and the decrease in differential pressure between mud weight and pore pressure.

It is not always possible to maintain constant parameters when drilling, and bit wear is usually an unknown factor.

To normalise the parameters and remove the effect of all non-lithological variations, the corrected drilling exponent was devised.

(2) Dxc (Drilling Exponent Corrected)

Various formulae have been proposed to allow control of the major drilling variables. The Jorden and Shirley formulation allows control of most of the drilling variables and has proved very successful in most areas.

$$Dx = \frac{\text{Log } \frac{R}{60N}}{\text{Log } \frac{12W}{10^6 D}}$$

where D = drilling exponent
R = rate of penetration (ft/hour)
N = rotary speed (rpm)
W = weight on bit (lbs)
D = bit diameter (in)

The drilling exponent will increase with depth, compaction and differential pressure in a homogenous shale. On entering an overpressured zone, the compaction and differential pressure will decrease, which is reflected by a decrease in the D exponent.

Rehm and McClendon proposed the following correction to allow for mud weight.

$$Dxc = Dx \times \frac{Weq}{ECD}$$

where Dxc = corrected D
Dx = D exponent
Weq = normal pore pressure gradient (Equivalent mud weight, ppg)
ECD = effective circulating density

Any negative deviation of the Dxc from a normal trend (based on clean shale points) may be indicative of an increase in pore pressure.

(3) Mud Temperature

Heatflow is generated radially from the Earth's core and is usually constant in any given area across any given increment. This may be true for the average temperature gradient across normally pressured formations, but abnormally pressured formations have been shown to exhibit abnormally high geothermal gradients. The top of an overpressured zone will be marked by a sharp increase in geothermal gradient due to the higher than normal porosity of the formation which reduces thermal conductivity (insulates). The seal above zones of overpressure may exhibit a decrease in the geothermal gradient due to insulating effect of the geopressured zone below and/or due to the greater thermal conductivity of the abnormally compacted seal rock.

The temperature of the drilling fluid at the flowline will be proportional to the geotemperature, but many variables must be taken into account. These variables include the mixing, treatment and addition of new, cooler mud into the circulatory system, pump rate, lag time, ambient temperature, lithology, casing size and length of riser.

Two other methods are also used to obtain geotemperature data whilst drilling. The first is the circulate returns temperature. Returns are usually circulated prior to pulling each bit, and after significant drilling breaks. A plot of these circulated returns temperatures usually provides a better approximation of the geothermal gradient than that obtained from the flowline temperature over the bit run. As with the standard method, recent mud additions can have a serious effect upon the circulated returns temperature.

A further method of obtaining geotemperature data is a survey Temp-Plate. This is a small, heat sensitised strip which is attached to the survey tool. A record of downhole survey temperature can therefore be kept. It has been found that this latter method more closely reflects the true geothermal gradient, although recorded temperature values are lower than true values.

Wireline log runs present an opportunity to calculate true bottom hole temperatures. By use of a Horner Plot, a method adapted from Horner's bottom hole pressure plots, reasonably accurate true bottom hole temperatures can be obtained. In most cases, the circulation time prior to running wireline logs is recorded. For each log run, time (in hours) since circulation stopped and the maximum bottom hole temperatures are recorded.

The recorded data may then be plotted on semilogrithmic paper, with temperature on the linear ordinate and the dimensionless time factor, $\frac{\Delta t}{t+\Delta t}$ on the semilog abscissa (where t = circulation hours and Δt = time since circulation stopped, hours). A straight line joining the plotted points is extrapolated to the temperature axis and true bottom hole static temperature is read off. (See Figure 1).

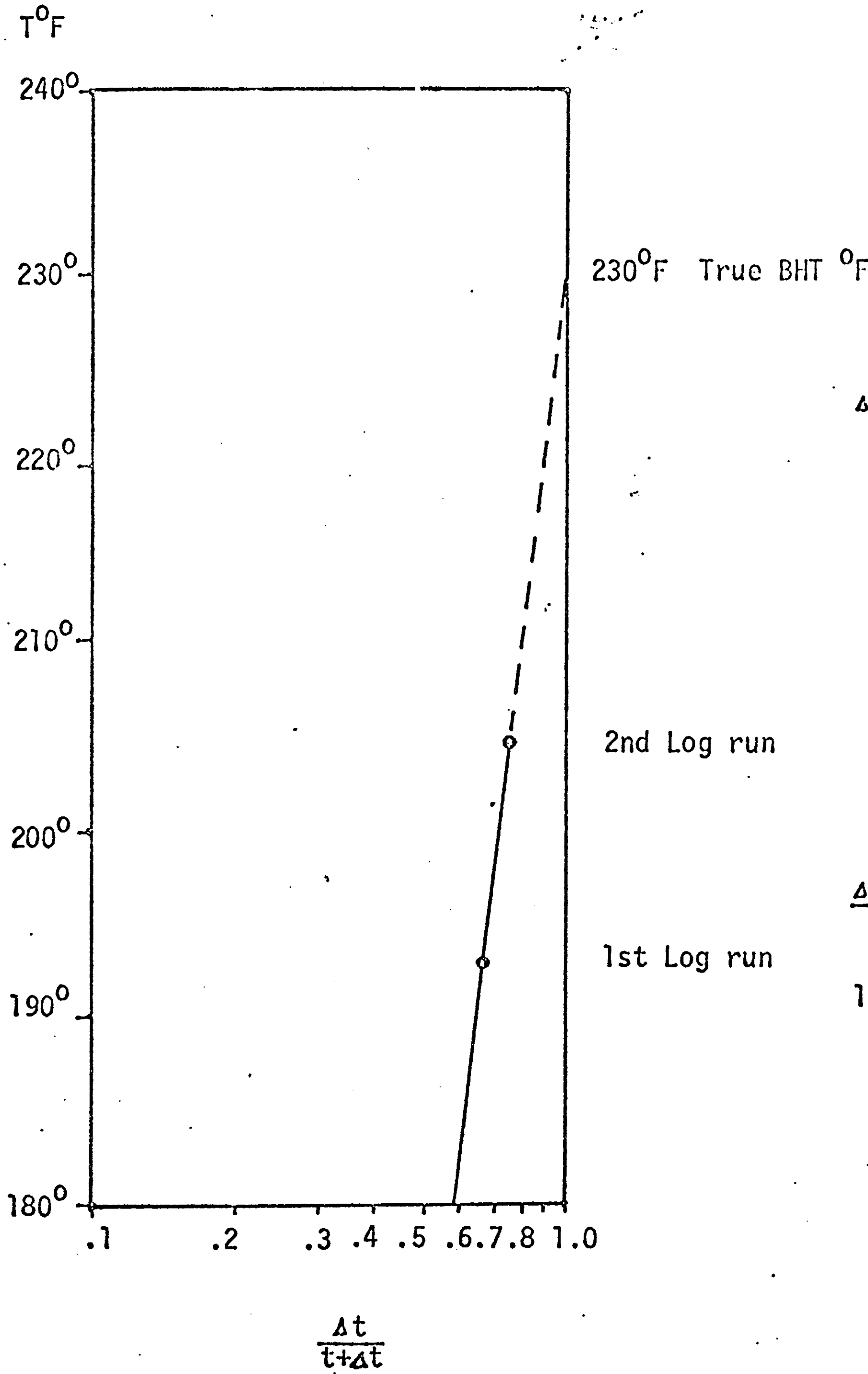
The method fails if circulation and the addition of new, cool mud into the system occurs between log runs.

(4) Gas

The amount of gas detected within the drilling mud at the flowline can be very useful indicator of differential pressure. Background gas values are very important. If the background gas increases with depth in a formation of constant lithology, permeability, and gas saturation with a fixed mud weight, then an increase in pore pressure may be indicated.

Gas magnitude is relative when gas is being used as a measure of differential pressure. Formation permeability and gas saturation must be considered in determining the amount of background gas to be expected while drilling. Low permeability formations are likely to yeild only small amounts of background gas even with high gas saturation. This is also the case for a formation with high permeability and low gas saturation. Refer to Figure 2.

HORNER TEMPERATURE PLOT



Δt = Hours since circulation

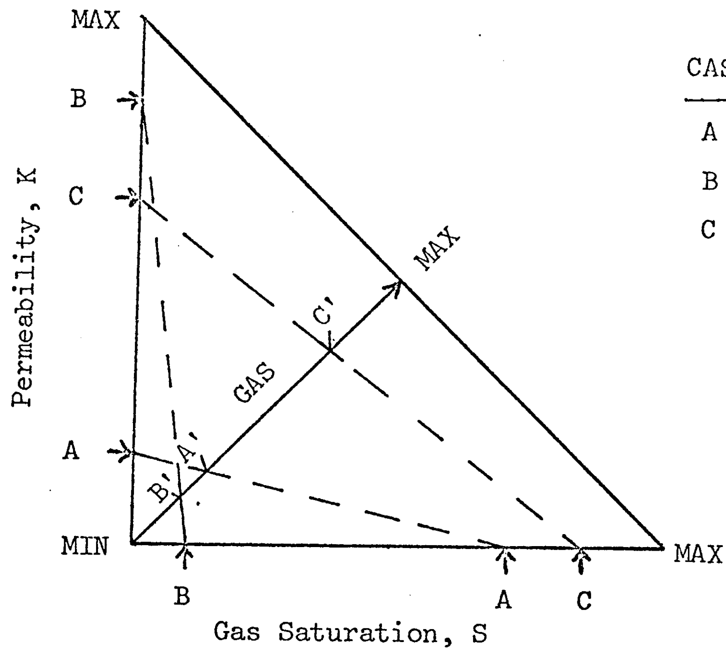
t = Circulation Time, Hours

T = Max. Recorded BHT, °F

$t = 4.5$

Δt	T	$\frac{\Delta t}{t+\Delta t}$
9	193	.67
13	205	.74

GAS MAGNITUDE AS A FUNCTION OF SATURATION AND PERMEABILITY



CASE	K	S	GAS
A	LOW	HIGH	LOW
B	HIGH	LOW	LOW
C	HIGH	HIGH	HIGH

FIGURE 2

In a low gas saturated formation a slight increase in background gas may be significant while in a high gas saturated formation high background gas may not be significant. Thus, low background gas in low gas saturated or low permeability formations can be expected, even when drilling underbalanced. Disregard of this factor can lead to sloughing, bridging, stuck pipe, or a well kick if gas alone is used for determining an underbalanced hole condition.

The background gas after a gas peak should be compared with the background gas prior to the peak. A higher background gas after a peak than that before the peak may suggest an underbalanced hole condition.

Pore pressures cannot be quantified by gas readings alone, but they can be quantified (provided the above mentioned permeability and saturation factors are taken into account) by a comparison of changes in gas readings with changes in mud weight in hydrocarbon bearing formations.

Produced gas (e.g. connection gas, swab gas and trip gas) are also important factors to consider in pore pressure analysis. Their presence indicates a near balanced hole condition for permeable hydrocarbon bearing formations or even a slightly underbalanced condition for low permeability hydrocarbon bearing formations.

Connection gas is due to the reduction in differential pressure caused in part by ceasing circulation and in part by swabbing, such that hydrocarbons (or other fluids) are produced (flow into the hole) from the formation.

Swab gas is that gas produced by a formation due to underbalance caused by the upward movement at the drill string. This may be accompanied by pump shutdown (e.g. during connections and trips) or not. There are two types of swabbing, one being the piston type (some part of the drill string acting as a plunger in the bore hole) and the other being the frictional type (friction between moving drill string and annular mud inducing a slight lifting force in annular mud column).

Trip gas is produced gas caused by pump shutdown, pulling the drill string, and lowering of the hydrostatic head (if the hole is not kept full) during a trip.

(5) Shale Density

Shale density in a homogeneous claystone/shale section which has a hydropressure gradient will increase with depth as compaction increases and porosity decreases. Values typically range from 1.7 to 2.7 gm/cc and show a steady rate of increase with depth. Anomalies from this normal compaction trend may be due to mineralogy, e.g., sideritic, dolomitic and calcareous shales exhibit higher than normal values. Sandy, silty shales and soft wet clay will produce further variations.

Geopressure is indicated by a constant or decrease in density with depth reflecting the increased porosity and fluid content. Cap rocks of higher than normal density may be present above this zone of abnormal pressure.

(6) Shale Factor (Refer Figure 3)

During normal deposition of clays, the principle component is montmorillonite. This is a flocculated sheet silicate which has a large capacity to absorb and retain water between the individual molecular sheets and between the flocculate particles. After deposition, montmorillonite undergoes compaction through gravity loading which flushes the intraparticle water into the pore spaces. Providing that the hydraulic conductivity is sufficiently high to remove this water, compaction will continue. The outer layers of water bonded to the clay particles may next be removed as montmorillonite alters diagenetically with depth to mixed-layer clays and finally to illite. This alteration involves compaction of pore spaces, orientation of particles and reduction in inter-layer and intraparticle area, thereby reducing the total area available for chemical absorption. Note that if the hydraulic conductivity is insufficient to remove the liberated water as it is flushed, then at depth the clays will be abnormally pressured and of a "younger" diagenetic age.

Illite or kaolinite may be deposited as the primary clays. As non-swelling clays they have very little intraparticle water. These clays dewater by loss of interparticle water through compaction. Again, if the hydraulic conductivity of the clays is lower than that required to efficiently flush the water, then these clays will be overpressured. Non-swelling clays, as stated above, are geometrically more compact than their swellable counterparts and therefore originally contain less sites for chemical absorption of free ions.

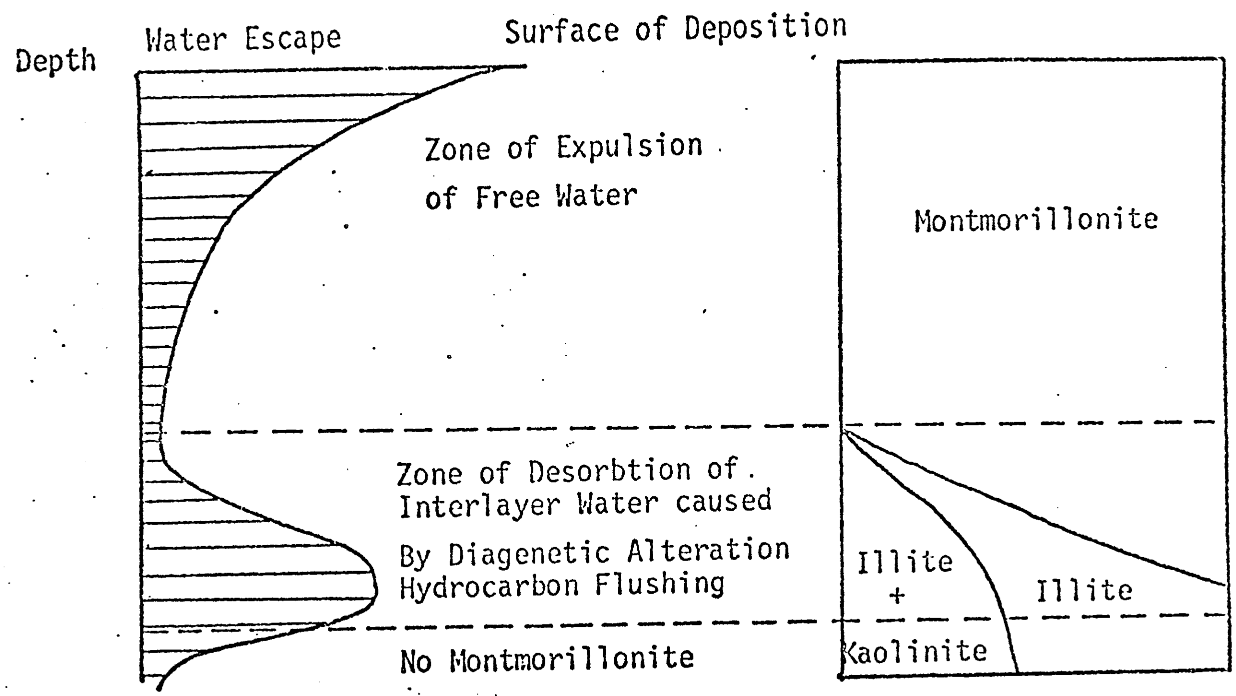
It is the diagenetic state (% montmorillonite) of the clays that shale factor reveals. If a crushed slurry of the shale is titrated with methylene blue solution, the dye will be absorbed onto the available sites by cation exchange mechanisms. The amount of dye required to saturate the cation exchange capacity of the shale will depend upon the latter's geologic maturity.

TYPICAL CLAY DIAGENESIS (AFTER MC POWERS (1967) FIGURE 3

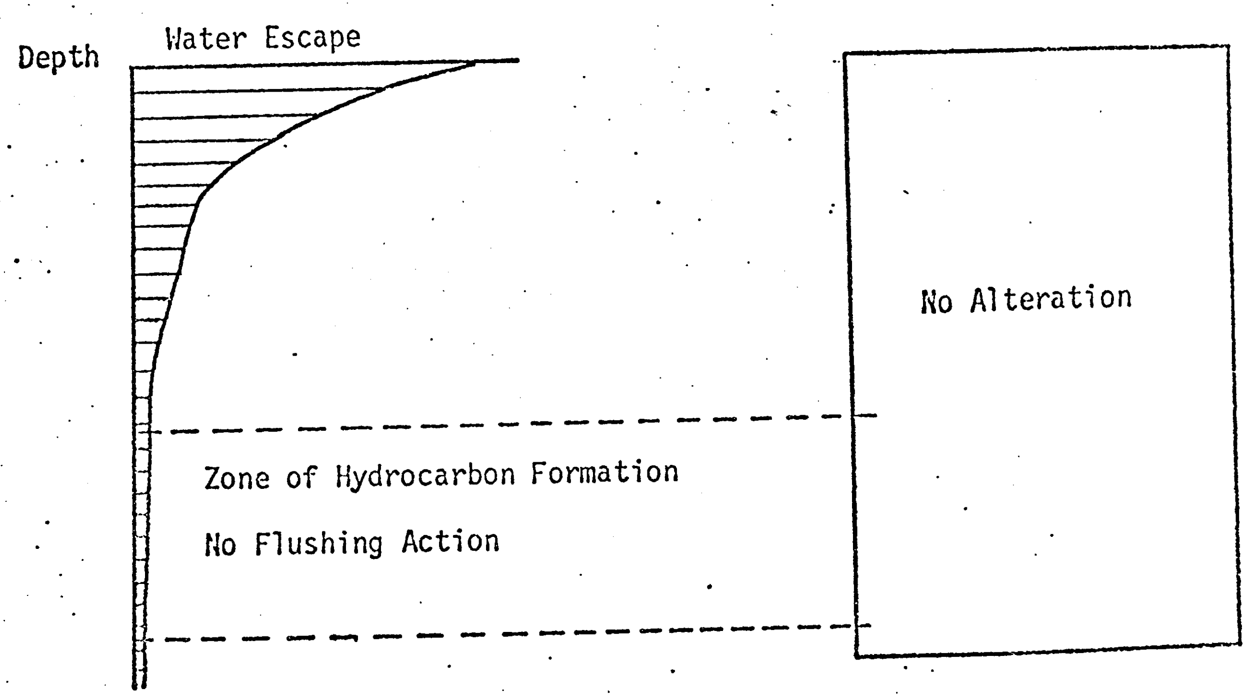
1. MONTMORILLONITE

WATER LOSS vs DEPTH OF BURIAL

DIAGENETIC HISTORY



2. ILLITE/KAOLINITE



If the principle primary clay is montmorillonite, which undergoes compaction to "mixed-layer" clays and then illite, the shale factor values would initially be high, and would show a steady decline with diagenesis. Overpressured, undercompacted sections would theoretically show an increase of the shale factor due to the increased porosity and hence larger surface areas for cation exchange. Were illite and kaolinite the primary clays, the shale factor would be low initially. In the case of an overpressured section of such clays, the shale factor may show no increase whatsoever. Hence in sections of mature, reworked clays, shale factor may be of little use in the detection of geopressures.

If the geopressures is generated by tectonic forces rather than by abnormal compaction through gravity loading, shale factor ceases to be useful as a pressure indicator.

(7) Hole Condition (Carbide Results, Hole Behaviour, Cuttings Size)

Hole condition has to be used in conjunction with all other data. Tight hole on connections and trips, increased rotary torque, connection gases, swab gases, % and size of cuttings, texture of cuttings (i.e. gumbo or splintery), carbide lag time versus theoretical lag time are all indicators of hole condition and will tend to indicate the presence of abnormal pressure.

B. Pore Pressure Quantification

Pore pressure quantification can be made from either empirical data such as tight hole or kick information, or from pressure parameter data such as seismic data (ITT), drilling data including Dxc and cuttings Sh ρ , and wireline log data including Δt, R_{SH}, Sh ρ . The quantification of pore pressure from pressure parameter data requires knowledge of the normal pore pressure for the area, the establishment of a normal shale compaction trend line on a plot of the pressure parameter data, and a quantitative relationship between the pressure parameter deviation from normal and the abnormal pore pressure which causes such deviation.

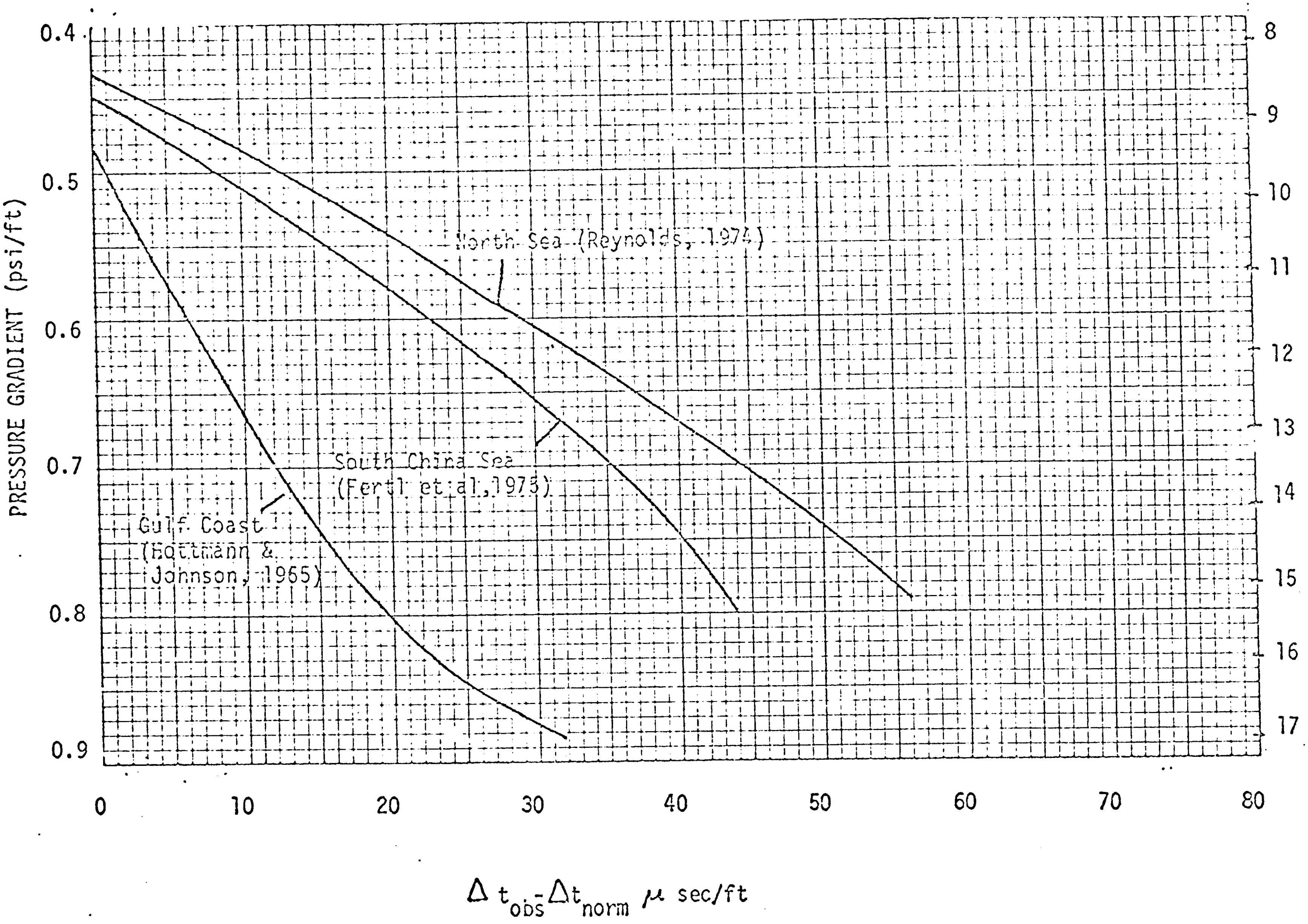
The normal pore pressure for the area can either be assumed to be 8.3 - 9 ppg EMW on a rank wildcat well, estimated from area pressure data, or calculated from wireline log formation salinity data.

All the above mentioned pressure parameters usually increase (Dxc, Sh ρ , R_{SH}) or decrease (ITT, Δt) exponentially with depth in clean normally pressured shales. Thus a best fit line drawn through the normally compacted clean shale points will generally be straight when the pressure parameter scale is log and the depth scale is linear. After a normal trend line has been established, and knowing the pore pressure that this trend line represents, quantification of the pore pressure for abnormally pressured shale points may be made.

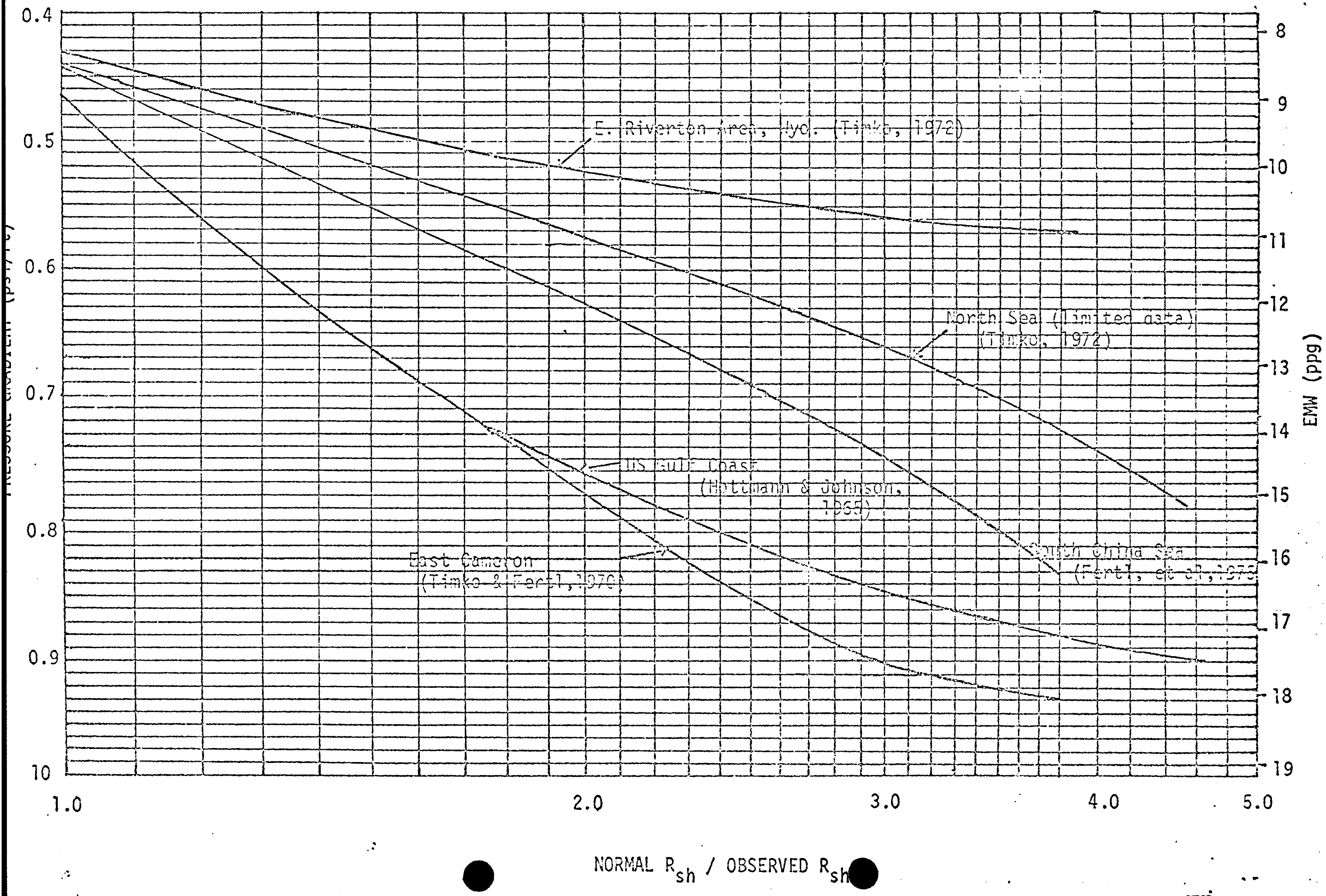
It should be emphasised that the above mentioned pressure parameters reflect changes in porosity, and hence compaction only, and do not reflect changes in pore pressure from other causes.

The degree of deviation of a pressure parameter value in shale from the normal trend is usually directly proportional to the amount of pore pressure increase. Several methods have been derived for relating the pressure parameter deviation from normal and the pore pressure change, with each method's reliability being questionable in a new geographical area until supported by empirical data.

SONIC LOG DEPARTURE vs PORE PRESSURE

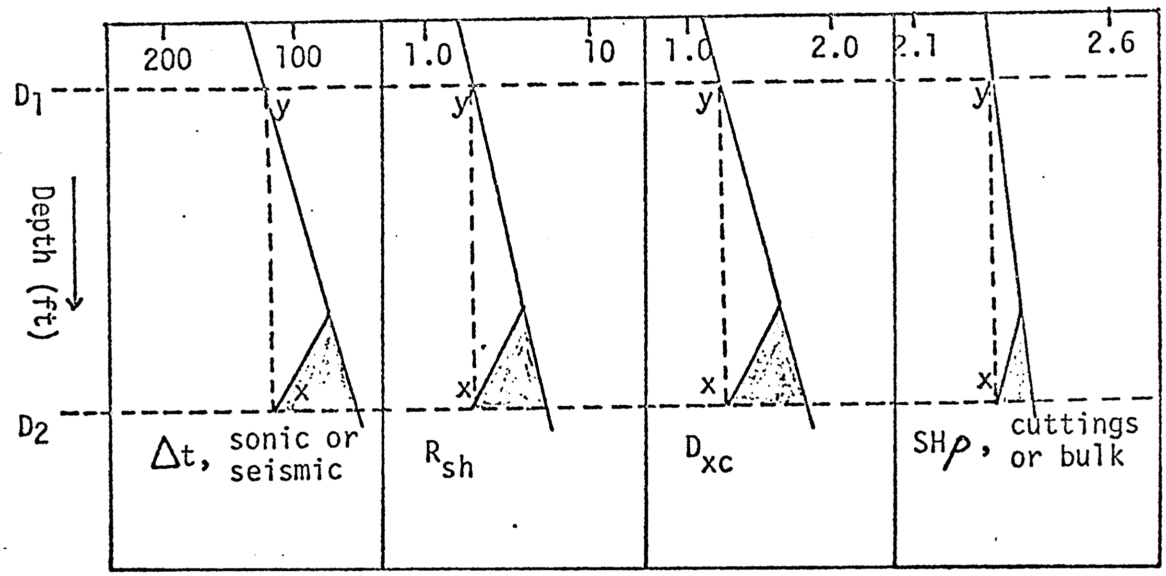


SHALE RESISTIVITY RATIO vs PORE PRESSURE



Matrix Stress or Equivalent Depth Method

The matrix stress or equivalent depth method assumes that the part of the overburden supported by the clay matrix will be constant for clays with the same porosity. More precisely it assumes that the rock matrix stress at a particular depth in an overpressured zone is equal to the rock matrix stress at a shallower depth point where the pressure parameter value on the parameter normal trend is equal to the pressure parameter value at the depth of interest in the overpressured zone. In the diagram below point X at the point of interest has the same pressure parameter value as point Y on the normal pressure parameter trend line. With the overburden gradient and normal pore pressure known, the pore pressure at the depth of interest may be calculated as shown.



$$P_2 = D_2 Po_2 - D_1 (Po_1 - P_1)$$

P_2 = Pore pressure at D_2, psi

D_2 = Depth of interest, feet

Po_2 = Overburden gradient at D_2, psi/ft

D_1 = Equivalent Depth

P_1 = Pore pressure at D_1, a normal gradient, psi/ft

Po_1 = Overburden gradient at D_1, psi/ft

Eaton's Variable Overburden Method

Geopressure magnitude may be calculated from pressure parameter data using the following equations or charts.

1. $$P/D = S/D - \left[S/D - (P/D)n \right] \times \left(\frac{Ro}{Rn} \right)^{1.2}$$

2. $$P/D = S/D - \left[S/D - (P/D)n \right] \times \left(\frac{\Delta tn}{\Delta to} \right)^{3.0}$$

3. $$P/D = S/D - \left[S/D - (P/D)n \right] \times \left(\frac{dc_o}{dc_n} \right)^{1.2}$$

P/D = Formation pressure gradient either normal or geopressured, psi per foot

(P/D)n = Normal water gradient in the area such as 0.465 in and along the Gulf of Mexico, or 0.433 in West Texas, psi per foot

Rn = Shale resistivity from normal line, ohm-meters

Ro = Shale resistivity from well log, ohm-meters

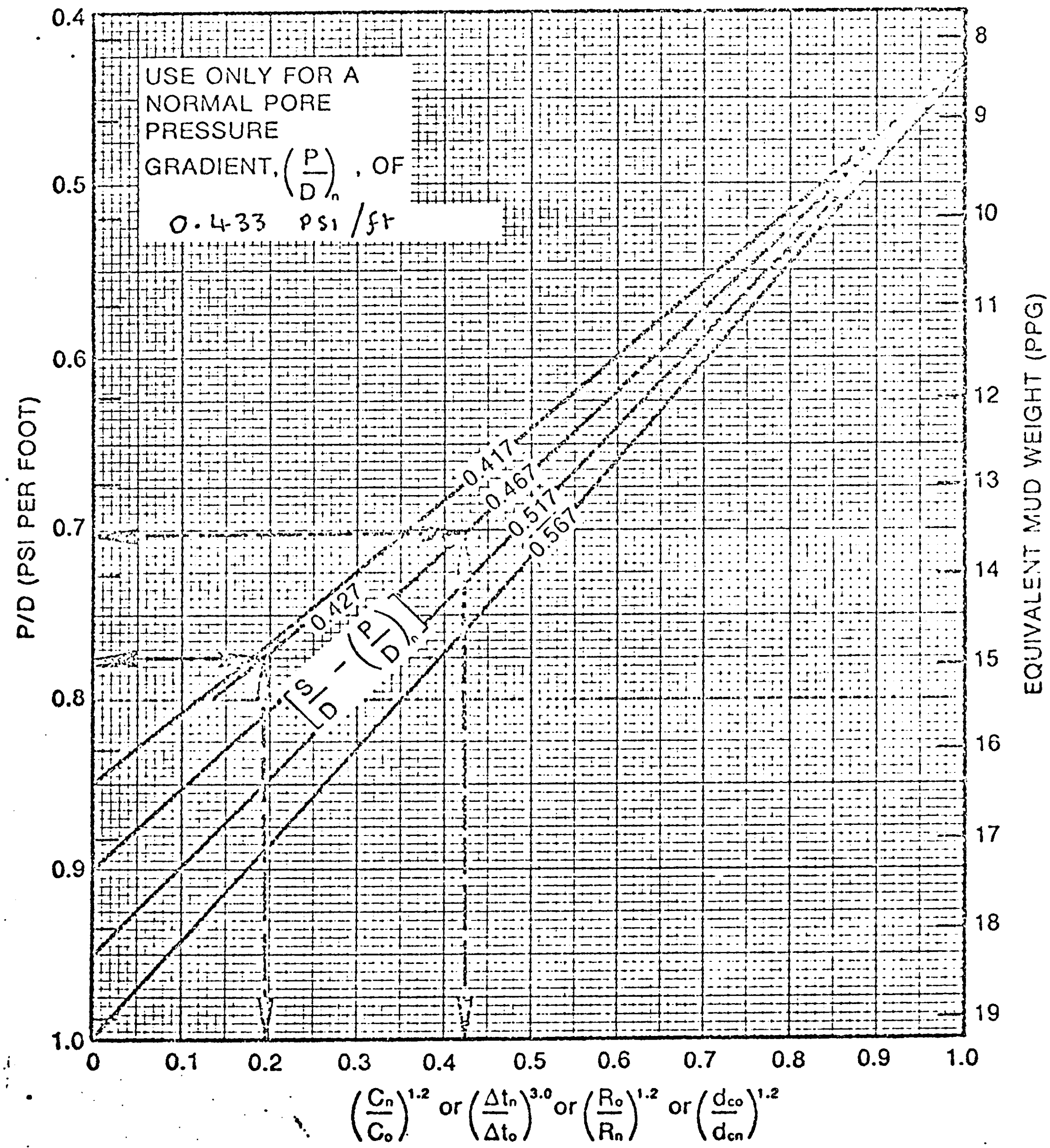
S/D = Overburden stress gradient, psi per foot

Δtn = Normal shale travel time, micro-seconds per foot

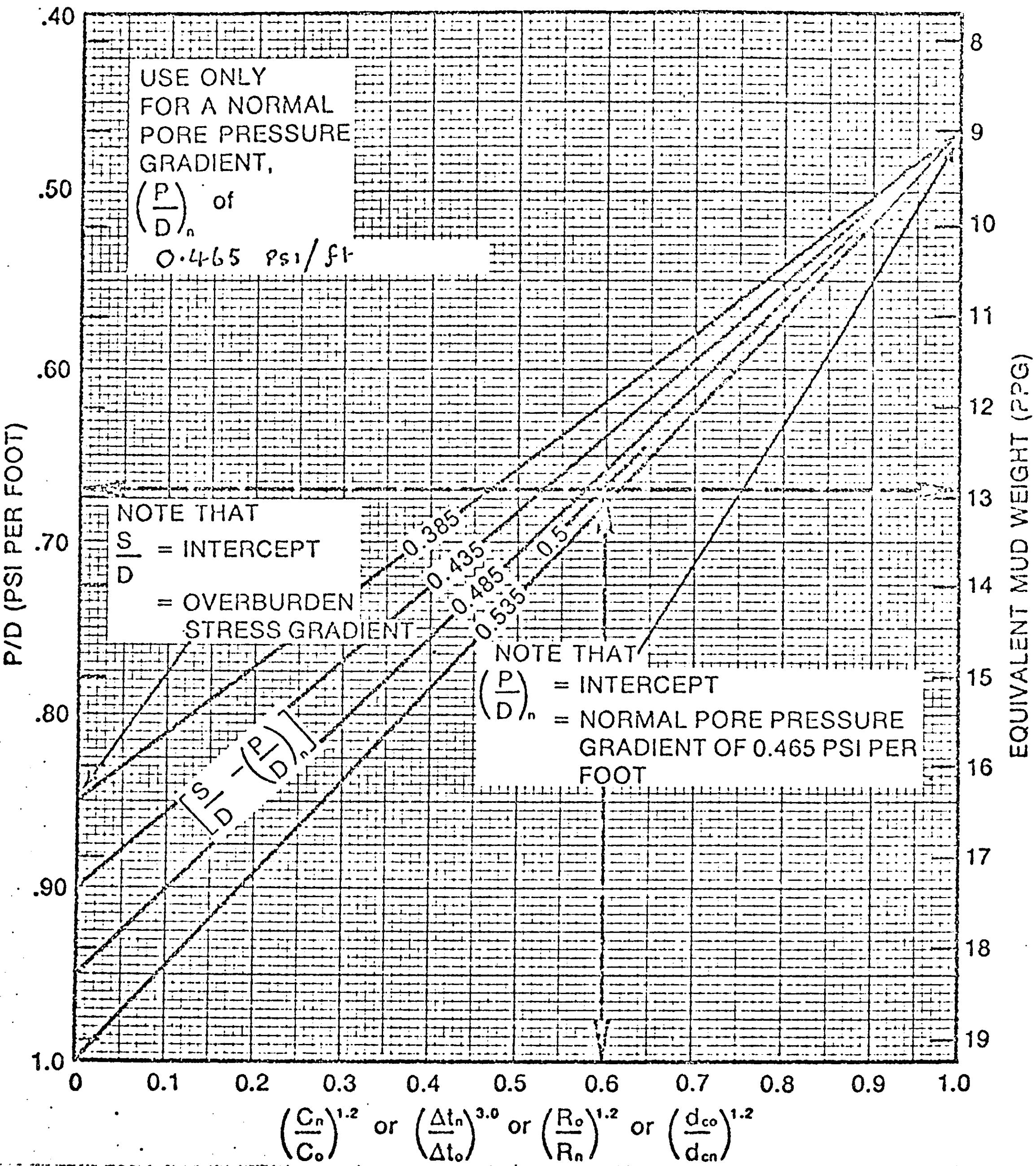
Δto = Shale travel time value, micro-seconds per foot

dc_n = Actual d_c from trend line

dc_o = Actual d_c calculated



USE ONLY FOR A NORMAL PORE PRESSURE GRADIENT, $\left(\frac{P}{D}\right)_n$, OF
0.433 psi/ft
P/D (PSI PER FOOT)
EQUIVALENT MUD WEIGHT (PPG)
0.417
0.467
0.517
0.567
0.427
$\left[\frac{S}{D} - \left(\frac{P}{D}\right)_n\right]$
$\left(\frac{C_n}{C_o}\right)^{1.2}$ or $\left(\frac{\Delta t_n}{\Delta t_o}\right)^{3.0}$ or $\left(\frac{R_o}{R_n}\right)^{1.2}$ or $\left(\frac{d_{co}}{d_{cn}}\right)^{1.2}$



USE ONLY FOR A NORMAL PORE PRESSURE GRADIENT, $\left(\frac{P}{D}\right)_n$ of
0.465 psi/ft
NOTE THAT $\frac{S}{D}$ = INTERCEPT = OVERBURDEN STRESS GRADIENT
NOTE THAT $\left(\frac{P}{D}\right)_n$ = INTERCEPT = NORMAL PORE PRESSURE GRADIENT OF 0.465 PSI PER FOOT
0.385
0.435
0.485
0.535
0.5
$\left[\frac{S}{D} - \left(\frac{P}{D}\right)_n\right]$
P/D (PSI PER FOOT)
.40
.50
.60
.70
.80
.90
1.0
EQUIVALENT MUD WEIGHT (PPG)
8
9
10
11
12
13
14
15
16
17
18
19
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
$\left(\frac{C_n}{C_o}\right)^{1.2}$ or $\left(\frac{\Delta t_n}{\Delta t_o}\right)^{3.0}$ or $\left(\frac{R_o}{R_n}\right)^{1.2}$ or $\left(\frac{d_{co}}{d_{cn}}\right)^{1.2}$

The Dxc compaction trend line is in general parallel to a line joining 1.4 and 1.7 (values of Dxc) 5,000 ft. apart. The quantification of pore pressure from Dxc is most usually effected by using the following equation.

$$Po = Pn \times \frac{Dxc^n}{Dxc^o}$$

Po	=	Pore pressure at depth of interest (ppg)
Pn	=	Normal Pore Pressure (ppg)
Dxc^o	=	Observed Dxc at depth of interest
Dxc^n	=	The Dxc value on the trend line at the depth of interest

From this equation overlays can be constructed.

Shale density data is sometimes plotted on a linear-linear plot and sometimes on a linear (depth) log (Sh ρ) plot. The matrix stress or equivalent depth technique is most usually utilised to quantify pore pressure from this pressure parameter.

C. Overburden Pressure Determination

The average density for each successive 50 feet interval from surface to total depth is obtained from cuttings or, preferably, from the FDC log. The bulk density data are converted from gm/cc to psi/ft to give overburden pressure.

D. Fracture Pressure Determination

Both empirical and theoretical methods are utilised to determine the fracture pressure of the formation. Empirical data from loss circulation and formation integrity tests are the most reliable. Fracture data from well histories can be very beneficial. The following theoretical methods are currently accepted:

a) HUBBERT AND WILLIS

$$\frac{Fp}{D} = \frac{Pp}{D} + \frac{1}{3}\left(\frac{Po - Pp}{D}\right) \quad \text{..... min}$$

$$= \frac{Pp}{D} + \frac{1}{2}\left(\frac{Po - Pp}{D}\right) \quad \text{..... max}$$

Where Po is unknown an approximation of Fp can be derived making Po = 1.0 thus:

$$\frac{Fp}{D} = \left(1 + \frac{2Pp}{D}\right)\frac{1}{3} \quad \ldots\ldots \text{min}$$

$$= \left(1 + \frac{Pp}{D}\right)\frac{1}{2} \quad \ldots\ldots \text{max}$$

b) MATHEWS AND KELLY

$$\frac{Fp}{D} = \frac{Pp}{D} + \frac{Ki(Po-Pp)}{Di}$$

Where Di = D in normally pressured sections. If the formation pressure is greater than normal then:

$$Di = \left(\frac{\frac{Po}{D} - \frac{Pp}{D}}{\frac{Po}{D} - Pn}\right) D$$

Ki is a variable matrix stress coefficient i.e. A variable horizontal to vertical stress ratio back calculated or using Gulf Coast and West Texas Data represented as a curve of Di versus Ki.

c) EATON

$$\frac{Fp}{D} = \frac{Pp}{D} + \left(\frac{v}{1-v}\right)\left(\frac{Po - Pp}{D}\right)$$

Where v is Poisson's ratio, either back calculated or using original Gulf Coast Data, a curve of $\frac{Po}{D}$ versus v.

d) ANDERSON, INGRAM AND ZANIER

$$\frac{Fp}{D} = \frac{Pp}{D}\left(\frac{1-3v}{1-v}\right) + \frac{Po}{D}\left(\frac{2v}{-1v}\right)$$

Where v is Poisson's ratio , either back calculated for a given area or using original Gulf Coast data of v versus a formation shaliness index.

Symbols used

Fp	=	Fracture Pressure, psi
Po	=	Overburden Pressure, psi
Pp	=	Formation Pressure, psi
Pn	=	Normal or Hydropressure Graident, psi/ft
D	=	Depth, ft

APPENDIX B

INSTRUMENTATION AND DATA COLLECTION METHODS

INSTRUMENTATION AND DATA COLLECTION METHODS

INSTRUMENTATION -

The Gemdas Level VI system consists of the following equipment packages:

a) Two Hewlett Packard 21MX, 36K memory computer systems with associated link tape drives, operator consols, printer-plotter outputs and remote video display units. One system is online and the other is used for offline work and as a backup in the event of breakdown.

b) Drill Monitor System (DMS Mk II) which monitors the drilling variables hook load, weight on bit, rotary RPM, total bit revolution, depth, kelly height, drill rate, torque, pump and casing pressures. The system monitors displays and records these variables and feeds them to the online computer system for analysis and final tape storage.

c) Mud Monitoring System for recording total and individual pit volumes, mud weights in and out, mud temperatures in and out and pump flow in and out. These variables are also linked to the online computer.

d) Gas detection system for the analysis of mud stream and blendor gases which includes the standard hot wire detectors for total gas and petrol vapours; standard chromatograph for hydrocarbons C_1 through C_5; FID-flame ionization detectors for total gas and C_1-C_5 for high percentage of these gases which would saturate a normal system; a thermoconductivity chromatograph for the detection of non combustible gases; and a H_2S detection system.

SOFTWARE CAPABILITIES -

The Gemdas System incorporates software capabilities that have been developed to monitor drilling operations, aid in drilling control and pressure detection and provide a permanent easy-recall record of all pertinent drilling data. The following basic units are involved:

a) The drill monitor program which reads the various DMS equipment during drilling to provide a continuous readout of drilling variables. The program also computes such parameters as cost per foot, estimated tooth wear, Dxc and estimated pore pressure over a fixed depth or time interval.

b) The trip monitor program which provides a critical monitoring of all necessary parameters during trips on a continuous real time basis. By monitoring the number of stands the program computes expected hook-load and pit level and compares these with the actual values. Pipe running speed, surge pressures and estimated completion time are also computed and displayed.

c) The kick and kill monitor program provies a valuable method of analysing a kick situation. The program can be run prior to killing the well to compute the results of various kill mud weights and pump rates. The program also monitors and records the actual kill procedure.

d) Data Collection:

The complete drilling data for Fortescue No. 2 is stored on data tapes 1. to 3.

Tape 1	256 m	to	1408m
Tape 2	1408 m	to	2435m
Tape 3	2435 m	to	2653m

A complete printout of this data is presented in Appendix E and selected parameters have been plotted on a 1:1000 scale and presented in Appendix F.

Handplots on a 1:2500 scale of drill rate, Dxc, background gas, shale density and mud temperature are presented in Appendix D.

APPENDIX C

MANUAL PLOTS AND CHARTS -

(i) Drilling Data Pressure Log

(ii) Temperature Data Log

(iii) Pressure Analysis Log

A P P E N D I X   D

COMPUTER PRINTS (+) AND PLOTS (X) -

+ (i) Drilling Data Printout
+ (ii) Hydraulics Pressure Loss Data Printout
x (iii) Drilling Data Plot 1:1000

(i) DRILLING DATA PRINTOUT

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 12:41 11/15/76

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
ESSO AUSTRALIA FORTESCUE #2,GIPPSLAND BASIN								38 DEGREES 25' 56.64" SOUTH									146 DEGREES 15' 59.364" EAST										
KELLY BUSHING TO MEAN SEA LEVEL 31 METRES								MEAN SEA LEVEL TO SEA BED 70 METRES									26" HOLE TO 256 METRES,20" CASING AT 234 METRES										
NB#2 HTC OSC 3AJ 17.5",20,20,20.								START DEPTH 256 METRES																			
430	265	155	2.1	2.7	31	1.6	1545	256	8.5	8.9	1113	1038	4.6	4.8	4.6	245	654	7	.0	41	64	0.00	.41	.72	8.0	9.3	8.4
432	270	155	2.0	3.9	109	1.8	2100	256	8.4	8.8	1035	1045	4.6	4.9	4.6	235	902	15	.0	1	31	.09	.32	.43	27.4	9.2	8.4
435	275	139	1.5	2.1	108	1.4	2222	256	8.5	8.9	1061	1002	4.6	4.1	4 6	267	1150	15	.0	1	31	.09	.34	.73	27.0	9.2	8.3
437	280	130	1.7	1.9	110	1.7	2201	256	8.5	9.0	1061	1009	4.6	4.9	4.6	259	1184	16	.0	1	29	.09	.36	.67	26.0	9.2	8.4
439	285	130	1.5	1.4	111	1.6	2182	256	8 5	9.0	1066	1032	4.6	4.9	4.6	257	1216	16	.0	1	29	.09	.37	.41	25.7	9.2	8.4
441	290	130	1.2	1.7	112	1.1	2184	257	8 6	8.9	1077	1011	4.6	4.2	4.6	261	1281	16	.0	1	28	.09	.35	.64	26.2	9.2	8.4
441	290	510	2.3	2.1	109	12.7	2215	267	9.4	8.9	1088	1069	15.6	19.6	15.5	269	1899	34	.1	0	14	.10	.24	.74	30.8	9.2	8.4
441	291	554	2.3	2.5	115	10.0	2225	267	9 4	8.9	1086	1065	15.6	19.5	15.5	276	1906	35	.1	0	14	.10	.23	.74	31.1	9.2	8.4
442	292	653	2.8	3.0	109	16.4	2221	267	9.4	8.9	1067	1083	15.6	19.5	15.5	269	1917	36	.1	0	14	.10	.22	.63	31.6	9.2	8.4
442	293	682	2.8	2.9	109	17.5	2212	267	9.4	8.8	1086	1137	15.6	19.5	15.5	262	1924	37	.1	0	13	.10	.21	.60	31.9	9.2	8.3
442	293	707	2.3	2.7	116	11.8	2265	268	9 4	8.8	1069	1148	15.6	19.5	15.5	272	1935	38	.1	0	13	.10	.21	.60	31.8	9.1	8.4
442	294	697	2.7	2.7	116	16.5	2260	268	9 4	9.0	1075	1288	15.6	19.5	15.5	259	1945	39	.1	0	13	.10	.19	.62	32.0	9.1	8.5
442	295	642	2.5	2.7	115	9.4	2200	268	9.4	8.9	1087	1280	15.6	19.5	15.5	281	1956	40	.1	0	12	.10	.23	.79	31.7	9.1	8.5
442	296	635	2.7	2.7	117	14.9	2174	269	9.4	8.8	1076	1372	15.6	19.5	15.5	298	1968	41	.1	0	12	.10	.23	.73	31.4	9.1	8.5
453	301	221	2.5	3.2	115	9.3	2492	274	8.5	8.8	1025	1259	15.6	19.6	15.5	299	2182	45	.1	1	11	.11	.38	.78	25.9	9.1	8.3
453	301	217	2.5	2.5	107	11.8	2516	274	8.5	8.8	1035	1186	15.6	19.6	15.5	307	2186	45	.1	1	11	.11	.40	.48	25.9	9.1	8.4
453	301	215	2.6	2.5	107	12.7	2515	274	8.5	8.9	1023	1184	15.6	19.6	15.5	312	2192	45	.1	1	11	.11	.40	.43	25.4	9.1	8.3
453	304	320	3.7	3.6	116	29.5	2583	274	8.5	8.9	1035	1282	15.6	19.6	15.5	311	2249	48	.1	1	10	.11	.37	.71	27.1	9.0	8.5
453	304	316	4.5	4.4	116	42.0	2571	274	8.5	8.8	1047	1398	15.6	19.6	15.5	299	2255	48	.1	1	10	.11	.40	.63	25.7	9.0	8.4
454	305	234	4.0	4.1	117	41.4	2528	274	8.5	8.9	1034	1483	15.6	19.6	15.5	311	2297	49	.1	1	10	.11	.44	.67	24.0	9.0	8.5
455	307	155	2.9	4.1	110	12.2	2232	274	8.4	9.0	982	991	15.6	19.6	15.5	305	2411	51	.1	1	10	.11	.47	.52	22.3	8.9	8.5
455	307	162	2.7	2.7	110	10.7	2236	274	8.4	8.9	980	987	15.6	19.6	15.5	297	2417	52	.1	1	10	.11	.47	.49	22.3	8.9	8.5
455	308	165	2.4	2.4	110	11.3	2267	274	8.4	8.9	988	982	15.6	19.6	15.5	327	2423	52	.1	1	10	.11	.46	.69	22.3	8.9	8.4
456	310	178	2.5	3.1	111	6.7	2395	278	8.4	8.9	1007	999	15.6	20.0	15.5	302	2547	54	.1	1	9	.12	.45	.73	23.3	8.9	8.5
456	311	178	2.6	2.5	111	15.1	2418	278	8.4	9.0	1019	992	15.6	20.1	15.5	327	2553	55	.1	1	9	.12	.43	.80	23.8	8.9	8.4
508	313	135	2.8	3.1	103	15.8	2746	287	8.5	8.9	1056	1518	15.7	20.5	15.6	328	2958	57	.1	1	9	.12	.44	.42	23.4	8.5	8.5
508	313	133	2.6	2.7	118	12.4	2752	287	8.5	8.8	1066	1512	15.6	20.5	15.6	336	2963	57	.1	1	9	.12	.48	.72	23.4	8.5	8.4
508	314	138	3.1	3.1	118	16.0	2697	287	8.5	8.8	1067	1526	15.6	20.5	15.6	337	2971	58	.1	1	9	.12	.48	.63	22.0	8.5	8.4
508	315	290	3.5	3.5	112	22.8	2689	288	8.5	9.0	1059	1541	15.6	20.5	15.6	344	2989	59	.1	1	9	.12	.46	.61	24.5	8.5	8.3
508	316	374	3.5	3.5	113	21.8	2638	288	8.5	9.0	1037	1540	15.6	20.5	15.6	341	3002	60	.1	1	9	.12	.36	.46	27.8	8.5	8.4
508	317	434	3.4	3.4	114	23.5	2747	288	8.5	9.0	1041	1551	15.6	20.5	15.6	336	3016	61	.1	0	8	.12	.34	.47	28.4	8.5	8.3
508	318	439	3.2	3.8	115	18.5	2693	288	8.5	8.9	1035	1549	15.7	20.5	15.6	343	3035	62	.1	0	8	.12	.35	.70	28.4	8.5	8.5
509	319	421	3.6	3.7	118	23.6	2584	288	8.6	8.8	1040	1553	15.7	20.5	15.6	351	3055	63	.1	0	8	.13	.35	.52	27.9	8.4	8.4
509	320	405	3.9	3.9	121	26.9	2525	289	8.6	8.9	1041	1545	15.7	20.5	15.6	337	3075	64	.1	0	8	.13	.39	.55	27.2	8.4	8.3
509	321	400	3.2	3.9	119	15.9	2539	289	8.6	8.8	1025	1552	15.7	20.4	15.6	344	3087	65	.2	0	8	.13	.39	.48	27.0	8.4	8.4
509	322	434	4.0	4.0	118	30.6	2552	290	8.6	8.9	1023	1533	15.7	20.5	15.6	337	3100	66	.2	0	8	.13	.37	.50	27.7	8.4	8.4
509	323	452	3.6	3.9	118	24.9	2535	290	8.6	8.9	1017	1544	15.7	20.5	15.6	354	3119	67	.2	0	8	.13	.36	.67	27.9	8.4	8.4
509	324	457	3.0	3.2	112	17.5	2520	291	8.5	8.9	1019	1541	15.7	20.5	15.6	341	3131	68	.2	0	8	.13	.35	.65	28.3	8.4	8.3
518	326	183	2.7	2.8	115	12.0	2451	299	8.5	9.0	993	1005	15.7	21.6	15.6	482	3433	71	.2	1	7	.13	.47	.50	22.7	8.4	8.4
518	327	179	2.7	2.6	116	13.2	2449	299	8.5	8.8	1006	983	15.7	20.0	15.6	483	3439	71	.2	1	7	.13	.47	.78	22.6	8.4	8.4
519	328	224	3.0	3.2	115	16.1	2439	299	8.5	9.0	1011	951	15.7	19.8	15.6	465	3468	72	.2	1	7	.14	.45	.41	24.1	8.4	8.5
519	329	281	2.8	3.1	115	12.3	2533	299	8.5	9.0	1007	946	15.7	21.6	15.6	463	3489	73	.2	1	7	.14	.41	.70	25.6	8.4	8.4
519	330	272	3.4	3.5	114	20.4	2561	299	8.5	9.0	1014	958	15.7	20.2	15.6	461	3514	74	.2	1	7	.14	.43	.69	25.1	8.4	8.4
519	331	286	3.3	4.1	118	18.6	2554	299	8.5	8.9	1019	950	15.7	21.6	15.6	459	3536	75	.2	1	7	.14	.46	.68	24.5	8.4	8.4
519	332	327	3.2	3.5	117	20.9	2527	299	8.5	8.9	1027	978	15.7	19.6	15.6	464	3556	76	.2	1	7	.14	.42	.69	25.8	8.4	8.3
520	333	327	3.4	3.7	117	24.0	2546	299	8.6	9.0	1020	1005	15.7	21.6	15.6	492	3578	77	.2	1	7	.14	.41	.65	26.1	8.4	8.4
520	334	302	2.9	3.8	118	22.6	2538	299	8.6	8.9	1025	1000	15.7	19.6	15.6	478	3602	78	.2	1	7	.14	.43	.40	24.5	8.4	8.4

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 12:45 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	ΔP	ECD	NXMW
520	335	294	3.3	3.6	116	24.4	2535	299	8.6	8.8	1032	1014	15.7	20.1	15.6	476	3625	79	.2	1	7	.15	.44	.57	25.0	8.4	8.4
520	336	265	3.0	3.7	117	15.9	2527	299	8.6	8.9	1029	991	15.7	19.8	15.6	463	3657	80	.2	1	7	.15	.42	.46	25.3	8.4	8.3
520	337	265	3.4	3.8	116	24.7	2547	299	8.6	8.9	1021	961	15.7	19.8	15.6	463	3678	81	.2	1	7	.15	.45	.45	24.6	8.4	8.4
527	339	147	2.2	3.6	113	20.3	2489	302	8.6	8.9	986	978	17.1	21.4	15.6	492	3929	83	.2	1	7	.15	.49	.57	21.8	8.4	8.4 ↑
528	339	151	2.5	2.7	115	18.8	2514	302	8.6	9.0	985	1012	17.1	21.4	15.6	502	3935	83	.2	1	7	.15	.49	.78	21.8	8.4	8.4
528	340	152	1.9	2.7	115	10.9	2540	303	8.6	8.9	999	1035	16.8	21.4	15.6	521	3953	84	.2	1	6	.15	.54	.67	20.2	8.4	8.4
528	341	206	2.1	2.6	115	16.2	2528	304	8.6	8.9	1020	1017	16.7	21.4	15.6	504	3972	85	.2	1	6	.16	.53	.46	20.7	8.4	8.4
528	342	278	2.2	3.3	117	14.4	2546	305	8.6	8.8	1016	1039	16.4	21.4	15.6	512	4003	86	.2	1	6	.16	.44	.56	24.8	8.4	8.5
528	343	243	3.0	3.7	117	23.1	2554	306	8.6	9.0	1006	1056	16.2	21.4	15.6	510	4028	87	.2	1	6	.16	.46	.47	23.7	8.5	8.3
529	344	224	2.6	3.8	116	13.8	2563	308	8.6	8.9	1006	1074	16.2	21.4	15.6	502	4063	88	.2	1	6	.16	.49	.68	22.1	8.5	8.3
529	345	234	3.9	3.9	118	36.9	2535	309	8.6	8.9	1022	1108	16.0	21.4	15.6	507	4088	89	.2	1	6	.16	.49	.62	22.8	8.5	8.4
529	346	229	3.7	3.8	117	29.1	2528	310	8.6	8.9	1032	1078	16.0	21.4	15.6	510	4124	90	.2	1	6	.16	.50	.51	22.5	8.5	8.5
530	347	210	3.3	3.6	117	22.9	2527	312	8.5	9.0	1022	1174	16.0	21.4	15.6	512	4169	91	.3	1	6	.16	.50	.79	22.2	8.5	8.4
530	348	186	3.9	3.9	118	30.5	2522	313	8.5	8.8	1021	1099	15.9	21.4	15.6	511	4204	92	.3	1	6	.17	.53	.62	21.0	8.5	8.4
530	349	198	3.8	4.0	117	25.9	2549	313	8.5	8.8	1032	1073	15.9	21.4	15.6	508	4237	93	.3	1	6	.17	.53	.49	20.9	8.5	8.4
530	350	223	3.5	3.7	118	29.0	2534	313	8.5	8.9	1035	1042	16.1	21.3	15.6	529	4270	94	.3	1	6	.17	.52	.58	21.3	8.5	8.5
531	351	235	3.8	3.8	118	28.1	2512	313	8.5	8.9	1023	1032	16.0	21.3	15.6	499	4295	95	.3	1	6	.17	.51	.48	22.2	8.5	8.4
537	353	111	1.7	3.2	109	11.9	2587	313	8.8	8.9	1004	1130	16.1	21.3	15.6	492	4515	97	.3	2	6	.18	.54	.65	19.9	8.5	8.4 ↑
537	353	106	2.3	2.4	109	16.8	2572	313	8.8	8.9	985	1087	16.1	21.3	15.6	499	4521	97	.3	2	6	.18	.54	.40	19.8	8.5	8.5
537	354	110	2.7	3.1	109	27.9	2570	313	8.8	9.0	1012	1111	16.1	21.3	15.6	500	4558	98	.3	2	6	.18	.60	.52	17.8	8.5	8.4
537	355	192	2.6	3.5	112	22.8	2571	313	8.8	8.9	1014	1109	16.2	21.3	15.6	505	4577	99	.3	1	6	.18	.57	.71	20.1	8.5	8.4
537	356	240	4.0	4.1	110	27.8	2561	314	8.8	8.9	1016	1204	16.1	21.3	15.6	501	4607	100	.3	1	6	.18	.50	.53	22.8	8.5	8.4
538	357	240	3.1	4.0	115	13.6	2563	314	8.8	9.0	1017	1193	16.2	21.3	15.6	494	4631	101	.3	1	6	.18	.49	.72	23.1	8.5	8.3
538	358	250	4.0	4.1	112	30.6	2564	315	8.8	8.8	1016	1219	16.2	21.3	15.6	506	4655	102	.3	1	6	.18	.49	.47	23.6	8.5	8.5
538	359	259	4.1	4.5	112	29.9	2537	316	8.8	8.9	1029	1219	16.2	21.3	15.6	499	4685	103	.3	1	6	.18	.50	.61	23.0	8.5	8.3
538	360	245	3.7	4.5	112	31.1	2532	317	8.8	8.9	1016	1236	16.1	21.3	15.6	506	4715	104	.3	1	6	.19	.49	.79	23.3	8.5	8.4
539	361	222	3.4	3.8	110	29.2	2581	318	8.8	8.8	1005	1225	16.2	21.3	15.6	499	4747	105	.3	1	5	.19	.49	.60	23.2	8.5	8.4
539	362	209	3.1	3.2	115	23.1	2574	319	8.8	8.9	1016	1262	16.2	21.3	15.6	489	4779	106	.3	1	5	.19	.49	.59	22.9	8.5	8.4
539	363	224	3.2	3.5	109	20.9	2557	320	8.8	8.9	1027	1247	16.1	21.3	15.6	499	4808	107	.3	1	5	.19	.49	.54	23.1	8.5	8.4
539	364	234	3.2	3.8	110	23.3	2536	321	8.8	8.9	1016	1227	16.2	21.3	15.6	504	4838	108	.3	1	5	.19	.47	.80	23.7	8.5	8.4
546	366	174	2.4	2.8	107	24.4	2499	326	8.8	8.8	986	1135	16.3	21.2	15.6	504	5022	110	.4	1	5	.20	.50	.77	22.4	8.6	8.4 ↑
546	366	180	2.8	2.6	106	26.3	2501	326	8.8	8.8	994	1143	16.2	21.2	15.6	505	5028	111	.4	1	5	.20	.50	.62	22.4	8.6	8.5
546	367	187	3.2	3.2	111	30.1	2499	326	8.8	8.9	990	1175	16.3	21.2	15.6	508	5038	111	.4	1	5	.20	.51	.45	22.2	8.6	8.4
546	368	337	2.7	3.3	120	24.3	2590	326	8.8	8.8	989	1151	16.3	21.2	15.6	497	5064	112	.4	1	5	.20	.40	.69	26.6	8.6	8.4
547	369	298	4.3	4.5	121	36.0	2563	326	8.8	8.9	1012	1210	16.3	21.2	15.6	504	5090	113	.4	1	5	.20	.47	.40	25.4	8.6	8.4
547	370	269	3.1	4.0	121	27.3	2587	326	8.9	8.9	1013	1219	16.3	21.2	15.6	499	5122	114	.4	1	5	.20	.48	.71	23.7	8.6	8.3
547	371	258	3.3	4.1	121	28.5	2590	326	8.9	9.0	1002	1232	16.3	21.2	15.6	494	5155	115	.4	1	5	.20	.51	.69	22.7	8.6	8.5
547	373	248	3.9	4.5	120	32.9	2550	327	8.9	9.0	1029	1250	16.3	21.2	15.6	497	5190	117	.4	1	5	.20	.54	.63	22.6	8.6	8.5
548	373	214	3.4	3.9	121	31.0	2575	328	8.9	8.9	1017	1278	16.3	21.2	15.6	508	5223	117	.4	1	5	.21	.55	.63	21.1	8.6	8.4
548	374	167	2.7	3.4	120	18.7	2584	329	8.9	8.9	1029	1239	16.3	21.2	15.6	500	5281	118	.4	1	5	.21	.56	.63	20.5	8.6	8.4
549	375	149	3.0	3.5	121	23.5	2556	331	8.9	8.9	1020	1262	16.3	21.2	15.6	504	5325	119	.4	1	5	.21	.60	.41	18.7	8.6	8.3
549	376	172	3.3	3.8	120	33.8	2565	332	8.9	8.9	1022	1220	16.3	21.2	15.6	513	5357	120	.4	1	5	.21	.57	.76	20.2	8.6	8.3
549	377	196	2.7	3.5	116	22.2	2611	332	8.9	8.8	1016	1259	16.3	21.2	15.6	494	5392	121	.4	1	5	.22	.54	.62	21.2	8.6	8.5
553	380	199	2.8	3.3	119	30.9	2596	338	8.9	9.0	1016	1185	16.4	21.2	15.6	517	5510	124	.4	1	5	.22	.50	.51	22.7	8.7	8.5 ↑
553	380	194	3.5	3.7	119	33.8	2574	338	8.9	8.8	1013	1198	16.4	21.2	15.6	515	5517	124	.4	1	5	.22	.50	.75	22.8	8.7	8.5
554	380	196	3.4	3.5	118	26.2	2568	338	8.9	8.8	998	1200	16.4	21.2	15.6	507	5528	124	.4	1	5	.22	.51	.42	22.1	8.7	8.4
554	381	240	3.6	3.9	120	33.1	2574	339	8.9	8.9	1028	1225	16.4	21.2	15.8	509	5572	125	.4	1	5	.22	.50	.71	22.8	8.7	8.4
554	382	206	3.4	4.0	121	34.9	2607	339	8.9	8.9	1018	1192	16.4	21.2	15.8	496	5604	126	.4	1	5	.23	.53	.50	21.6	8.7	8.4
554	383	195	3.2	4.0	120	26.0	2584	339	8.9	8.9	1026	1179	16.4	21.2	15.8	498	5642	127	.4	1	5	.23	.57	.47	20.5	8.7	8.4
555	384	192	3.3	4.2	123	29.7	2591	339	8.9	8.8	1030	1144	16.4	21.2	15.8	512	5681	128	.4	1	5	.23	.58	.58	19.5	8.7	8.3

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 12:49 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
555	385	201	4.0	4.1	120	46.4	2567	339	8.9	8.8	1018	1128	16.4	21.2	16.3	515	5713	129	.4	1	5	.23	.57	.45	20.5	8.7	8.4
555	386	184	3.1	4.3	121	25.0	2527	339	8.9	8.8	1010	1157	16.4	21.2	16.3	514	5759	130	.5	1	5	.23	.59	.76	19.5	8.7	8.3
556	387	179	3.5	4.1	122	33.4	2565	339	8.9	8.9	1030	1160	16.4	21.3	16.3	509	5804	131	.5	1	5	.24	.58	.72	19.6	8.7	8.3
556	388	171	3.1	3.9	119	26.8	2537	339	9.0	8.8	1018	1129	16.4	21.2	16.3	496	5841	132	.5	1	5	.24	.58	.58	19.3	8.7	8.5
557	389	169	2.8	4.4	120	12.0	2553	340	9.0	8.9	1013	1229	16.4	21.2	16.0	503	5885	133	.5	1	5	.24	.59	.60	19.2	8.7	8.4
557	390	172	3.9	4.0	120	33.6	2559	342	9.0	8.9	1016	1184	16.4	21.2	16.0	505	5929	134	.5	1	5	.24	.56	.64	20.4	8.7	8.5
607	392	110	2.9	3.7	112	30.0	2491	356	9.1	8.9	994	1315	16.5	21.2	16.1	510	6224	137	.5	2	5	.25	.54	.65	20.5	8.9	8.3 ↑
607	393	112	3.4	3.2	108	29.4	2486	356	9.1	8.8	1004	1318	16.5	21.2	16.1	507	6230	137	.5	2	5	.25	.54	.57	20.5	8.9	8.3
607	393	115	3.1	4.1	108	29.6	2484	356	9.1	8.8	1005	1289	16.6	21.2	16.1	505	6249	137	.5	2	5	.25	.59	.69	18.9	8.9	8.3
608	395	191	3.9	3.9	111	36.3	2470	358	9.2	8.8	1008	1251	16.6	21.2	16.1	498	6302	139	.5	1	5	.26	.54	.68	21.8	8.9	8.5
608	395	194	4.1	4.4	120	34.6	2483	358	9.2	8.9	1009	1260	16.6	21.2	16.1	500	6323	139	.5	1	5	.26	.55	.60	21.2	8.9	8.4
608	396	199	3.3	4.3	120	27.4	2578	359	9.1	8.9	992	1248	16.6	21.2	16.1	513	6355	140	.5	1	5	.26	.54	.70	20.3	8.9	8.4
609	397	202	3.4	4.0	121	24.8	2574	360	9.1	8.8	1013	1195	16.6	21.2	16.1	509	6393	141	.5	1	5	.26	.54	.70	21.7	8.9	8.3
609	398	198	4.1	4.3	122	30.3	2561	361	9.0	8.8	1020	1129	16.6	21.2	16.2	514	6429	142	.5	1	5	.26	.55	.63	21.1	8.9	8.4
609	399	155	2.9	4.2	119	23.4	2582	362	9.0	8.9	1023	1168	16.6	21.2	16.2	500	6493	143	.6	1	5	.27	.54	.54	21.1	8.9	8.4
610	400	137	3.4	4.0	118	27.1	2478	363	8.9	8.8	1017	1180	16.6	21.2	16.2	509	6550	144	.6	1	5	.27	.60	.72	18.8	9.0	8.4
610	401	129	4.2	4.1	116	35.2	2556	364	8.9	8.9	1007	1167	16.6	21.2	16.2	511	6594	145	.6	-1	4	.27	.63	.55	18.0	9.0	8.3
610	402	161	3.9	4.1	121	33.1	2569	364	8.9	8.8	1011	1151	16.6	21.2	16.2	514	6627	146	.6	1	4	.28	.60	.66	19.5	9.0	8.5
611	403	174	3.6	4.3	120	37.5	2539	364	8.9	8.9	1007	1171	16.6	21.2	16.2	500	6671	147	.6	1	4	.28	.54	.40	21.5	9.0	8.4
622	406	78.4	2.9	3.7	117	39.4	2582	378	9.0	8.9	1031	1040	17.2	21.0	16.3	485	7090	150	.6	2	4	.29	.58	.78	18.8	9.0	8.4 ↑
622	406	77.8	2.6	3.0	117	22.7	2568	378	9.0	8.9	1029	1059	17.2	21.0	16.3	493	7096	150	.6	2	4	.29	.65	.61	18.8	9.0	8.4
622	406	79.0	2.4	2.9	110	28.6	2592	378	9.0	8.9	1022	1113	17.2	21.0	16.3	496	7121	150	.6	2	4	.30	.66	.50	16.0	9.0	8.5
623	407	191	4.0	4.2	110	38.7	2513	378	9.0	8.9	1019	1180	17.2	21.0	16.3	493	7156	151	.7	1	4	.30	.53	.54	22.1	9.0	8.4
623	408	183	3.5	4.8	107	14.7	2487	378	9.0	8.8	1027	1089	17.2	21.0	16.3	493	7187	152	.7	1	4	.30	.54	.64	21.5	9.0	8.4
623	409	185	3.9	4.2	109	37.5	2514	378	9.0	8.8	1029	1136	17.3	21.0	16.3	503	7221	153	.7	1	4	.30	.53	.42	21.4	9.0	8.4
624	410	186	3.7	4.2	109	31.8	2518	378	9.0	8.8	1036	1175	17.2	21.0	16.3	500	7262	154	.7	1	4	.30	.53	.70	22.0	9.0	8.4
624	411	203	4.1	4.4	110	36.4	2533	378	9.0	8.9	1026	1191	17.3	21.0	16.4	501	7291	155	.7	1	4	.30	.53	.51	22.6	9.0	8.5
624	412	184	3.9	4.7	110	35.3	2553	378	9.0	8.9	1028	1175	17.3	21.0	16.4	492	7332	156	.7	1	4	.30	.55	.43	21.1	9.0	8.4
625	413	172	3.5	4.6	109	32.5	2529	378	9.0	8.9	1028	1354	17.3	21.0	16.4	498	7372	157	.7	1	4	.31	.55	.73	21.1	9.0	8.4
625	414	165	4.2	4.3	113	35.7	2492	378	9.0	9.0	1033	1368	17.3	21.0	16.4	501	7413	158	.7	1	4	.31	.56	.62	21.2	9.0	8.3
625	415	189	3.4	4.7	120	24.4	2533	378	9.0	8.9	1026	1375	17.3	21.0	16.4	503	7445	159	.7	1	4	.31	.53	.66	21.3	9.1	8.5
625	417	193	4.7	4.7	125	42.1	2544	378	9.0	8.9	1023	1370	17.3	21.0	16.4	505	7488	161	.7	1	4	.31	.56	.71	21.1	9.1	8.4
635	419	80.2	3.1	4.8	110	33.9	2570	391	8.7	8.9	1050	1379	17.4	21.0	16.4	492	7750	163	.7	2	4	.32	.59	.70	18.7	9.1	8.3 ↑
635	419	79.7	2.8	2.9	110	28.5	2608	391	8.7	9.0	1048	1376	17.4	21.0	16.4	489	7756	163	.7	2	4	.32	.63	.40	18.7	9.1	8.4
636	420	79.9	2.4	3.6	107	14.2	2553	391	8.8	8.9	1040	1402	17.4	21.0	16.4	479	7795	164	.7	2	4	.33	.69	.53	15.4	9.1	8.3
636	420	123	3.3	3.6	107	32.4	2519	391	8.8	8.8	1061	1401	17.4	21.0	16.4	476	7814	164	.7	2	4	.33	.63	.44	19.1	9.1	8.5
636	421	157	2.6	3.5	109	23.1	2575	391	8.8	9.0	1040	1404	17.4	21.0	16.4	483	7866	165	.8	1	4	.33	.51	.67	22.7	9.1	8.4
637	422	133	3.7	4.1	116	24.3	2529	391	8.9	8.9	1061	1390	17.4	21.0	16.4	490	7922	166	.8	1	4	.33	.59	.60	19.6	9.1	8.4
637	423	140	3.2	4.3	117	35.0	2582	391	8.9	9.0	1036	1409	17.4	21.0	16.5	485	7959	167	.8	1	4	.33	.58	.48	18.9	9.1	8.4
638	424	149	3.5	4.7	118	27.3	2601	391	8.9	9.0	1047	1273	17.4	21.0	16.5	469	8010	168	.8	1	4	.34	.60	.55	19.6	9.0	8.5
638	425	157	2.7	3.6	118	14.3	2530	391	9.0	8.9	1039	1277	17.4	21.3	16.5	480	8048	169	.8	1	4	.34	.55	.59	20.8	9.0	8.3 *
646	431	156	3.0	4.0	117	32.7	2500	394	8.7	8.9	1050	1015	17.4	21.2	16.5	463	10615	175	1.2	1	4	.45	.57	.57	20.0	8.9	8.4 ↑
707	436	106	2.8	4.1	117	22.4	2543	431	8.7	8.9	1054	1015	17.5	21.2	16.6	467	10615	180	1.2	4	4	.45	.62	.47	18.0	8.9	8.4
710	446	96.0	2.9	4.2	116	19.6	2546	420	8.7	8.8	1044	1032	17.6	21.2	16.8	491	10615	190	1.2	4	4	.45	.65	.41	15.0	8.9	8.4
718	451	126	3.2	4.0	116	20.8	2549	431	8.7	8.9	1050	1034	17.7	21.4	16.9	493	10615	195	1.2	4	4	.45	.59	.42	19.0	8.9	8.3
717	456	86.0	3.0	4.0	117	20.8	2477	431	8.7	9.0	1063	1015	17.8	21.8	17.0	498	10618	200	1.2	5	4	.45	.64	.45	14.0	8.9	8.4
719	456	55.8	3.0	4.0	119	21.5	77	431	8.7	8.8	1020	1034	5.4	6.8	5.2	501	10619	200	1.2	5	4	.45	.64	.42	14.0	8.9	8.3
721	457	61.0	2.8	2.9	79	27.8	2328	431	8.7	8.9	1013	1319	18.1	22.8	17.6	460	10691	201	1.2	3	4	.45	.60	.55	19.8	8.9	8.5 ↑
722	459	64.4	3.4	3.8	118	29.7	2310	431	8.7	8.8	1026	1322	18.1	21.5	17.6	467	10747	203	1.2	3	4	.45	.78	.50	13.8	8.9	8.3
722	461	192	3.1	3.9	117	34.7	2322	431	8.7	8.8	1011	1299	18.1	22.8	17.6	462	10828	205	1.2	1	4	.45	.53	.80	23.8	8.9	8.4

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 12:52 11/15/76

TIME	DEPTH	ROP M/h	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NAB	$P	ECD	NXMW	
723	463	176	3.7	3.9	118	50.2	2311	431	8.8	8.9	1000	1266	18.1	22.8	17.6	457	10906	207	1.2	1	4	.46	.59	.71	22.1	8.9	8.5	
724	465	143	2.8	4.3	118	32.8	2353	431	8.8	8.8	1009	1335	18.1	21.5	17.7	455	11013	209	1.2	1	4	.46	.59	.74	21.8	8.9	8.5	
725	467	113	2.8	3.7	115	26.4	2324	431	8.8	8.8	1014	1351	18.1	22.8	17.7	457	11132	211	1.2	2	4	.47	.63	.78	20.4	8.9	8.4	
726	469	136	2.9	3.9	118	25.4	2338	432	8.8	8.9	1023	1180	18.1	22.8	17.7	453	11237	213	1.2	1	4	.47	.64	.56	20.4	8.9	8.4	
736	471	71.4	3.5	3.5	119	37.7	2325	444	8.6	8.8	1011	1360	18.1	21.2	18.0	455	11501	215	1.3	3	4	.48	.67	.48	20.4	8.9	8.3	
736	473	156	2.4	4.3	118	24.1	2306	444	8.6	8.8	1014	1338	18.1	22.8	18.0	468	11610	217	1.3	1	4	.49	.55	.72	23.8	8.9	8.4	
737	475	143	3.9	4.5	117	45.0	2295	444	8.6	8.9	1005	1317	18.1	22.8	18.0	453	11695	219	1.3	1	4	.49	.64	.42	21.1	8.9	8.4	
738	477	143	3.2	3.8	117	34.5	2288	444	8.7	8.9	1016	1359	18.1	22.8	18.0	462	11606	221	1.3	1	4	.49	.60	.69	23.3	8.9	8.4	
739	479	126	3.9	4.0	118	48.6	2320	444	8.7	9.0	1025	1327	18.1	21.1	18.0	461	11903	223	1.3	1	4	.50	.67	.47	20.7	8.9	8.3	
739	480	127	2.9	4.1	117	32.9	2333	444	8.8	8.9	1000	1345	18.1	22.8	18.0	452	11955	224	1.3	1	4	.50	.63	.63	21.5	8.9	8.4	*
740	481	114	2.4	4.1	119	22.4	2329	444	8.8	8.8	1000	1336	18.0	21.3	18.0	454	12036	225	1.4	2	4	.51	.66	.56	20.5	8.9	8.4	
749	483	56.0	2.7	4.4	120	26.1	2467	453	8.8	8.9	1044	1349	18.0	22.8	18.0	456	12401	227	1.4	3	4	.52	.65	.54	20.4	8.9	8.4	↑
750	485	63.3	3.6	4.4	120	34.3	2532	455	8.7	8.9	1035	1334	18.0	22.8	18.0	474	12481	229	1.4	3	4	.52	.83	.64	15.4	8.9	8.4	
751	487	116	3.5	4.9	121	36.7	2507	457	8.7	8.8	1049	1331	18.0	22.8	18.0	479	12623	231	1.4	2	4	.53	.71	.64	19.9	8.9	8.3	
753	489	81.6	3.1	4.5	118	24.4	2489	457	8.7	9.0	1038	1347	18.0	22.8	18.0	471	12805	233	1.5	2	4	.54	.73	.75	19.5	8.9	8.4	
754	491	86.2	3.1	4.5	120	37.8	2444	457	8.8	8.8	1052	1361	18.0	22.8	18.0	473	12971	235	1.5	2	4	.55	.70	.65	20.1	8.9	8.3	
757	493	54.5	3.9	4.5	121	50.6	2569	457	8.9	8.9	1045	1326	18.0	22.8	18.0	487	13278	237	1.5	3	4	.56	.81	.54	16.6	8.9	8.4	
759	495	55.7	2.9	4.3	122	45.7	2518	462	9.0	8.9	1047	1262	17.9	22.8	18.0	489	13551	239	1.6	3	4	.57	.74	.49	19.1	8.9	8.4	
820	497	52.3	3.5	4.4	67	24.8	2440	480	8.8	8.9	1031	1269	19.0	31.5	18.0	443	14180	241	1.7	4	4	.59	.72	.54	20.6	9.0	8.5	↑
821	499	107	3.5	4.2	115	37.6	2379	481	8.8	8.8	1031	1277	19.2	31.6	18.0	436	14300	243	1.7	2	4	.59	.66	.77	22.7	9.0	8.4	
822	501	86.9	3.1	4.2	118	30.1	2425	482	8.8	8.9	1018	1264	19.2	31.7	18.0	431	14441	245	1.8	2	4	.60	.73	.52	20.0	9.0	8.4	
823	503	92.9	3.5	4.3	117	49.7	2407	483	8.8	8.8	1030	1317	18.9	31.7	18.0	441	14593	247	1.8	2	4	.61	.70	.73	21.1	9.0	8.3	
825	505	64.1	2.3	4.8	115	29.6	2381	483	8.8	8.8	1044	1334	18.8	31.6	18.0	445	14864	249	1.8	3	4	.62	.69	.69	21.4	9.0	8.4	
828	507	52.0	3.6	4.3	117	41.6	2394	483	8.8	8.9	1029	1295	18.7	31.7	17.9	440	15131	251	1.8	4	4	.63	.85	.66	16.9	9.1	8.3	
836	510	45.8	2.3	4.2	85	30.2	2359	483	8.6	8.8	1026	1294	18.6	31.7	17.9	442	15637	254	1.9	4	4	.65	.38	.53	29.0	9.0	8.3	↑
840	511	42.8	1.6	4.0	112	16.1	2328	483	8.6	8.9	1022	1227	17.7	31.1	17.9	444	15720	255	1.9	4	4	.65	.72	.71	20.5	9.0	8.4	
842	513	61.4	3.2	3.6	115	30.7	2324	484	8.6	8.8	1026	1323	17.3	31.5	17.9	439	15943	257	2.0	3	4	.66	.74	.74	20.6	9.0	8.4	
844	515	62.5	1.9	3.6	117	24.1	2380	487	8.6	8.8	1029	1349	17.5	31.6	17.8	447	16168	259	2.0	3	4	.67	.68	.47	22.5	9.0	8.3	
845	517	63.4	1.9	3.4	116	15.3	2322	490	8.6	9.0	1035	1332	17.6	31.7	17.8	454	16373	261	2.0	3	4	.68	.72	.51	21.4	8.9	8.4	
847	519	78.3	2.2	3.5	115	21.7	2340	492	8.6	8.9	1023	1297	17.6	31.6	17.8	465	16542	263	2.1	2	4	.68	.66	.58	23.9	8.9	8.5	
848	521	75.3	2.6	3.4	115	41.3	2333	493	8.6	8.8	1012	1328	17.9	32.1	17.8	469	16739	265	2.1	2	4	.69	.63	.65	24.2	8.9	8.5	
903	523	30.6	3.8	3.8	93	46.6	2500	499	9.5	8.9	1040	1307	20.3	31.8	18.7	414	17527	267	2.2	6	4	.71	.75	.74	20.7	8.9	8.4	↑
904	525	64.6	2.6	4.1	127	36.5	2493	501	9.4	8.8	1052	1218	20.5	32.0	18.7	401	17701	269	2.2	4	4	.72	.85	.42	19.0	8.9	8.4	
906	527	83.3	2.3	3.6	125	19.2	2463	502	9.4	9.7	1053	1200	20.4	32.0	18.7	410	17881	271	2.3	2	4	.73	.73	.49	22.2	8.9	8.4	
907	529	86.8	3.1	4.0	124	41.3	2510	503	9.5	10.1	1061	1140	20.2	32.1	18.7	414	18052	273	2.3	2	4	.74	.71	.76	23.1	8.9	8.3	
910	531	56.3	2.3	3.8	126	26.9	2516	506	9.5	10.1	1061	1276	20.3	32.3	18.7	418	18362	275	2.3	3	4	.75	.66	.43	23.9	9.0	8.5	
912	533	44.6	.9	3.1	126	13.4	2525	509	9.5	10.2	1055	1191	20.2	32.5	17.9	421	18683	277	2.4	4	4	.76	.72	.61	22.6	9.1	8.4	
915	535	44.4	1.2	3.2	125	16.4	2519	510	9.5	10.3	1059	1198	20.3	32.5	17.3	439	19046	279	2.4	4	4	.78	.57	.60	26.2	9.2	8.3	
925	537	45.6	1.1	3.6	110	14.2	2403	511	9.4	5.7	1027	1315	19.2	31.9	17.8	383	19440	281	2.5	4	4	.79	.65	.62	23.7	9.4	8.4	
927	539	65.4	1.8	3.3	118	22.1	2360	512	9.4	9.5	1040	1297	19.3	32.2	17.8	392	19687	283	2.5	3	4	.80	.66	.48	24.5	9.5	8.3	
929	541	63.4	2.1	3.7	118	16.9	2338	515	9.4	10.0	1039	1307	19.7	32.3	17.8	395	19915	285	2.5	3	4	.81	.69	.63	24.1	9.6	8.3	
930	543	69.5	2.4	3.6	116	17.5	2334	517	9.4	10.1	1041	1311	19.5	32.4	17.8	395	20111	287	2.6	3	4	.81	.68	.64	24.5	9.6	8.5	
932	545	71.3	2.9	3.9	119	25.6	2354	519	9.4	10.2	1016	1264	19.5	32.7	17.8	406	20323	289	2.6	3	4	.82	.69	.58	25.1	9.6	8.4	
934	547	66.6	2.2	3.9	116	35.5	2340	520	9.4	10.2	1039	1263	19.2	32.7	20.0	410	20531	291	2.6	3	4	.83	.63	.65	25.8	9.6	8.4	
945	549	42.0	1.1	3.3	101	14.8	2418	523	9.4	10.1	1031	1233	18.4	32.9	20.2	428	21064	293	2.7	5	4	.85	.49	.43	25.0	9.6	8.3	↑
946	551	53.2	2.6	4.1	119	30.3	2526	523	9.4	10.1	1058	1166	18.4	32.3	20.2	429	21222	295	2.7	3	4	.85	.75	.77	22.2	9.6	8.3	
948	553	76.2	3.0	4.7	117	30.6	2474	524	9.4	10.1	1056	1003	18.4	32.5	20.2	439	21412	297	2.7	3	4	.86	.78	.60	23.1	9.6	8.4	
950	555	59.8	3.1	4.5	113	35.0	2543	526	9.4	10.0	1027	1036	18.4	32.4	20.1	440	21655	299	2.8	3	4	.87	.76	.69	23.7	9.6	8.4	
952	557	58.1	2.2	4.3	115	24.5	2527	528	9.5	10.1	1034	1025	18.3	32.6	20.1	451	21897	301	2.8	3	4	.88	.73	.75	24.4	9.6	8.4	
954	559	60.6	2.5	3.6	115	41.1	2536	530	9.4	10.1	1056	1079	18.3	32.7	20.2	433	22121	303	2.8	3	4	.89	.69	.75	25.2	9.6	8.4	

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 12:56 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	KINS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
955	561	69.8	2.2	3.4	116	30.3	2496	532	9.4	10.1	1046	1123	18.3	32.8	20.1	413	22323	305	2.9	3	4	.89	.63	.62	26.6	9.6	8.4
1007	563	56.0	2.4	3.4	112	18.0	2508	536	9.4	5.0	1030	1100	22.4	32.6	19.5	402	22737	307	2.9	3	4	.91	.65	.74	26.3	9.6	8.5
1009	565	67.2	2.2	3.6	115	38.1	2554	538	9.3	9.3	1051	1065	22.1	32.5	19.4	399	22984	309	3.0	3	4	.91	.57	.76	27.9	9.6	8.4
1011	567	55.0	2.6	3.0	117	36.7	2541	541	9.3	10.0	1045	1066	22.0	32.5	19.3	408	23220	311	3.0	3	4	.92	.67	.71	26.5	9.6	8.5
1013	569	76.9	2.0	3.0	115	18.9	2515	542	9.4	10.1	1043	1029	21.8	32.7	19.3	413	23381	313	3.0	2	4	.93	.63	.59	27.0	9.6	8.4
1014	571	84.4	2.5	3.2	116	43.2	2560	543	9.4	10.1	1048	1095	22.1	32.9	19.1	410	23552	315	3.0	2	4	.94	.61	.55	27.6	9.6	8.5
1016	573	73.4	1.6	3.1	116	19.8	2523	545	9.4	10.1	1047	932	21.8	32.9	18.9	409	23749	317	3.1	3	4	.94	.65	.79	26.9	9.6	8.3
1046	577	136	2.4	4.5	116	51.4	2530	563	9.5	10.1	1019	1103	19.3	33.6	22.0	286	25929	319	3.4	1	4	1.01	.45	.69	30.3	9.6	8.4
1049	577	66.4	2.7	3.8	117	36.6	2433	563	9.5	10.1	1033	1103	19.3	33.6	22.0	287	26021	319	3.5	2	4	1.01	.62	.80	27.7	9.6	8.3
1049	579	64.8	3.0	3.2	116	39.2	2518	563	9.5	10.1	1034	1076	19.3	33.6	21.8	286	26105	329	3.5	3	4	1.02	.72	.41	25.7	9.6	8.3
1050	585	50.8	1.9	3.1	120	30.5	2559	563	9.5	10.0	1044	1088	19.3	33.7	21.8	284	26197	329	3.5	4	4	1.02	.64	.60	27.4	9.6	8.5
1102	587	30.6	3.6	3.9	111	40.4	2444	578	9.8	10.0	1042	1130	17.3	34.4	21.6	262	26620	331	3.5	6	4	1.03	.84	.48	23.8	9.6	8.5
1105	589	37.3	3.9	4.8	120	51.7	2471	578	9.7	10.1	1035	1069	17.3	33.8	21.5	256	26906	333	3.6	5	4	1.04	.91	.73	22.8	9.7	8.5
1107	591	50.1	2.8	4.0	118	38.3	2391	578	9.7	9.9	1043	1036	17.2	34.3	21.2	255	27195	335	3.6	4	4	1.05	.79	.45	25.4	9.7	8.5
1110	593	44.0	2.7	4.5	119	31.7	2453	578	9.8	10.1	1041	933	17.3	34.7	20.6	243	27547	337	3.7	4	4	1.06	.85	.53	24.3	9.7	8.4
1113	595	39.9	3.8	4.1	117	54.3	2474	578	9.8	10.2	1017	990	17.2	34.7	20.3	249	27904	339	3.7	5	4	1.08	.85	.50	25.0	9.7	8.4
1118	597	31.4	1.6	4.2	117	19.9	2423	580	9.7	10.2	1029	1020	17.2	34.8	19.9	259	28451	341	3.8	6	4	1.10	.76	.55	25.9	9.8	8.4
1121	599	36.1	1.9	4.2	117	24.8	2432	580	9.6	10.1	1048	951	17.2	34.8	19.6	256	28766	343	3.8	5	4	1.11	.71	.67	27.0	9.8	8.3
1131	601	32.9	1.8	3.5	90	27.0	2478	583	9.5	10.3	1050	1109	17.2	35.0	19.3	275	29320	345	3.9	6	4	1.13	.76	.61	26.2	9.9	8.4
1135	604	29.7	1.7	3.9	109	16.3	2522	586	9.5	10.2	1051	998	17.2	35.1	17.7	287	29716	347	4.0	6	4	1.14	.78	.48	26.0	9.9	8.3
1140	606	27.6	2.1	3.9	109	32.5	2525	589	9.5	10.1	1061	1025	17.2	35.2	17.2	300	30201	350	4.1	7	4	1.16	.75	.59	26.5	9.9	8.4
1142	608	44.3	2.4	3.6	109	36.7	2509	590	9.5	10.1	1037	1062	17.2	35.3	17.2	304	30427	352	4.1	4	4	1.16	.75	.44	26.9	9.9	8.5
1145	610	43.3	1.9	3.3	108	33.4	2542	592	9.6	10.1	1047	1071	17.2	35.5	17.2	311	30758	354	4.2	4	4	1.17	.67	.40	28.0	9.8	8.5
1147	612	54.4	3.1	3.7	109	54.9	2549	593	9.6	10.1	1051	1062	17.2	35.4	17.2	312	30956	356	4.2	3	4	1.18	.73	.57	27.4	9.8	8.5
1149	614	53.2	1.2	4.8	108	16.9	2520	594	9.6	10.1	1058	1018	17.1	35.5	17.2	318	31217	358	4.2	4	4	1.19	.77	.41	27.0	9.8	8.3
1200	616	45.0	1.2	4.4	120	24.5	2641	596	9.6	9.3	1060	928	17.2	35.0	17.1	261	31805	360	4.3	4	4	1.20	.73	.70	27.6	9.7	8.5
1202	618	67.3	2.3	4.4	119	35.7	2628	597	9.6	9.5	1063	924	17.2	35.1	17.1	265	31991	362	4.3	3	4	1.21	.66	.65	28.7	9.7	8.4
1203	620	89.6	4.3	4.8	118	56.2	2600	598	9.6	9.6	1061	951	17.2	35.1	17.1	270	32151	364	4.4	2	4	1.22	.65	.53	29.0	9.7	8.5
1205	622	80.9	4.1	4.7	120	50.6	2594	598	9.6	9.6	1075	925	17.2	35.4	17.1	269	32337	366	4.4	2	4	1.22	.70	.76	28.5	9.7	8.3
1206	624	91.9	4.3	4.9	120	48.4	2562	599	9.6	9.7	1065	936	17.2	35.5	17.1	269	32484	368	4.4	2	4	1.23	.67	.80	29.0	9.7	8.5
1207	626	102	4.1	5.0	120	50.8	2568	600	9.6	9.7	1072	952	17.2	35.5	17.1	265	32622	370	4.4	2	4	1.23	.66	.49	29.2	9.7	8.3
1217	628	66.0	2.5	5.0	121	25.8	2637	606	9.6	9.9	1051	1029	17.2	35.7	17.1	257	33176	372	4.5	3	4	1.25	.72	.51	28.3	9.7	8.5
1218	630	82.9	3.9	4.4	119	44.7	2584	607	9.6	10.0	1064	979	17.2	35.6	17.1	255	33349	374	4.5	3	4	1.26	.73	.79	28.3	9.7	8.4
1220	632	95.6	4.2	4.9	122	53.7	2597	607	9.6	10.0	1063	1004	17.2	35.5	17.1	250	33501	376	4.5	2	4	1.26	.67	.49	29.3	9.7	8.3
1221	634	107	4.5	4.8	120	30.6	2601	607	9.6	10.0	1059	988	17.2	35.6	17.1	252	33633	378	4.6	2	4	1.27	.65	.69	29.6	9.7	8.5
1222	636	103	4.7	5.0	120	33.3	2670	607	9.6	10.0	1063	1039	17.2	35.8	17.1	250	33777	380	4.6	2	4	1.27	.68	.65	29.3	9.8	8.3
1223	638	96.3	3.6	5.0	120	35.7	2621	607	9.6	10.0	1064	1040	17.2	35.9	17.1	252	33930	382	4.6	2	4	1.28	.70	.45	29.2	9.8	8.5
1224	640	96.0	3.7	4.6	120	31.0	2581	608	9.6	10.1	1075	1057	17.2	35.8	17.1	252	34079	384	4.6	2	4	1.28	.69	.72	29.4	9.8	8.3
1236	642	51.3	3.0	4.7	123	17.1	2632	619	9.6	10.2	1062	1083	17.3	36.1	17.1	237	34909	386	4.7	4	4	1.29	.82	.79	27.6	9.8	8.3
1238	644	61.6	4.5	4.7	120	30.8	2615	620	9.6	10.3	1050	1033	17.2	36.3	17.1	243	35134	388	4.7	3	4	1.30	.78	.70	28.2	9.8	8.5
1240	646	67.6	3.2	4.5	123	30.1	2666	620	9.7	10.3	1060	1058	17.3	36.3	17.1	240	35347	390	4.7	3	4	1.31	.75	.48	28.8	9.8	8.3
1241	648	104	4.8	5.0	119	37.3	2570	620	9.7	10.3	1062	1095	17.2	35.9	17.1	233	35467	392	4.7	2	4	1.31	.68	.44	29.7	9.8	8.3
1242	650	119	3.9	5.3	121	30.5	2626	620	9.7	10.3	1060	1055	17.3	36.4	17.1	239	35590	394	4.8	2	4	1.31	.65	.74	30.1	9.8	8.4
1243	652	106	4.0	4.9	112	33.1	2469	621	9.7	10.2	1030	1037	17.3	36.4	17.1	239	35731	396	4.8	2	4	1.32	.69	.43	29.6	9.8	8.5
1254	654	62.7	2.6	5.0	128	25.1	2628	632	9.7	10.3	1062	1104	17.3	36.7	17.1	239	36315	398	4.8	3	4	1.33	.78	.44	28.7	9.8	8.4
1255	656	59.4	4.4	4.5	128	28.7	2543	634	9.7	10.3	1065	1052	17.4	36.5	17.1	233	36469	400	4.8	3	4	1.33	.77	.60	28.8	9.8	8.4
1256	658	96.0	3.9	5.0	127	34.4	2552	634	9.7	10.3	1046	1062	17.4	36.7	17.1	234	36610	402	4.9	2	4	1.34	.67	.50	29.9	9.8	8.5
1257	660	101	4.7	4.9	132	39.2	2642	634	9.7	10.4	1067	1085	17.4	36.8	17.1	236	36767	404	4.9	2	4	1.34	.68	.76	30.0	9.8	8.5
1258	662	114	4.0	5.1	126	29.7	2592	634	9.7	10.4	1052	1072	17.4	36.8	17.1	236	36899	406	4.9	2	4	1.35	.67	.69	30.2	9.8	8.4
1259	664	100	4.3	5.0	131	31.3	2647	634	9.7	10.4	1056	1075	17.4	36.9	17.1	236	37070	408	4.9	2	4	1.35	.69	.55	30.0	9.8	8.5

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 13:00 11/15/78

TIME	DEPTH	ROP M/h	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS HRS	BIT QFMI	QFMB	EST TW	DXC	NXB	%P	ECD	NXMW
1301	666	99.9	3.6	5.1	126	26.6	2559	634	9.7	10.3	1049	1023	17.4	37.0	17.1	243	37216	410	4.9	2	4	1.36	.69	.41	30.0	9.8	8.4
1314	669	69.8	3.3	4.8	133	33.1	2590	643	9.7	10.3	1069	1094	17.3	36.3	17.1	226	37934	413	5.0	3	4	1.37	.73	.67	29.6	9.8	8.5 ↑
1315	670	65.9	2.9	4.5	131	10.3	2635	645	9.7	10.3	1055	1058	17.3	36.8	17.1	235	38069	414	5.0	3	4	1.37	.76	.75	29.4	9.9	8.4
1316	672	96.6	4.8	5.1	129	33.6	2588	646	9.7	10.3	1050	1078	17.3	37.0	17.1	233	38167	416	5.0	2	4	1.38	.68	.45	30.3	9.9	8.3
1317	674	146	4.9	5.3	135	38.9	2604	646	9.7	10.3	1064	1054	17.3	37.2	17.1	233	38297	418	5.0	1	4	1.38	.60	.43	31.0	9.9	8.4
1318	676	142	4.0	5.2	132	33.9	2598	647	9.7	10.4	1048	1079	17.3	37.3	17.1	230	38411	420	5.0	1	4	1.38	.62	.69	30.9	9.9	8.5
1319	678	125	4.4	5.3	132	29.8	2582	647	9.7	10.4	1043	1086	17.3	37.3	17.1	230	38543	422	5.1	1	4	1.39	.65	.60	30.7	9.9	8.4
1337	681	61.4	3.6	5.0	134	19.7	2585	660	9.8	10.3	1048	1112	17.4	37.3	17.2	223	39736	425	5.1	3	4	1.40	.78	.43	29.6	9.9	8.3 ↑
1337	682	60.2	3.8	4.5	133	30.7	2605	660	9.8	10.3	1043	1127	17.4	37.5	17.2	227	39797	426	5.1	3	4	1.40	.77	.49	29.6	9.9	8.4
1338	684	120	4.2	5.2	132	30.8	2549	660	9.8	10.3	1043	1117	17.4	37.3	17.2	228	39922	428	5.1	2	4	1.41	.65	.57	30.9	9.9	8.3
1339	686	127	4.8	5.1	136	35.0	2579	660	9.8	10.3	1052	1109	17.4	37.2	17.2	231	40048	430	5.1	1	4	1.41	.64	.58	30.9	9.9	8.3
1340	688	123	4.4	5.0	135	31.8	2564	661	9.8	10.2	1034	1127	17.5	37.2	17.2	229	40182	432	5.2	2	4	1.42	.66	.65	30.9	9.9	8.5
1341	690	125	2.7	5.1	134	17.3	2578	661	9.8	10.2	1048	1115	17.4	37.2	17.2	229	40306	434	5.2	2	4	1.42	.65	.56	31.0	9.9	8.5
1342	692	127	4.6	4.6	133	35.6	2594	662	9.8	10.2	1058	1122	17.4	37.4	17.2	229	40433	436	5.2	2	4	1.42	.64	.47	31.1	9.9	8.4
1351	694	80.4	3.5	4.8	128	26.9	2593	673	9.8	10.1	1042	1115	16.9	37.7	17.3	220	40966	438	5.2	2	4	1.43	.69	.63	30.6	9.9	8.5 ↑
1353	696	87.4	4.2	4.9	131	34.5	2572	673	9.8	10.1	1049	1122	18.0	37.0	17.3	231	41121	440	5.2	2	4	1.44	.70	.47	30.6	9.9	8.5
1354	698	110	4.4	4.6	131	37.4	2589	673	9.8	10.1	1049	1129	18.1	37.3	17.3	214	41263	442	5.3	2	4	1.44	.66	.59	31.0	9.9	8.5
1354	700	159	4.5	5.4	128	34.0	2521	673	9.8	10.1	1036	1126	17.9	37.2	17.3	214	41342	444	5.3	1	4	1.44	.58	.54	31.5	9.9	8.3
1355	702	163	5.4	6.0	112	39.5	2535	673	9.8	10.1	1045	1122	17.5	37.3	17.3	221	41443	446	5.3	1	4	1.45	.60	.71	31.6	9.9	8.5
1356	704	110	4.5	5.7	131	36.5	2576	673	9.8	10.1	1057	1108	17.6	37.4	17.3	223	41596	448	5.3	2	4	1.45	.66	.42	31.0	10.0	8.5
1357	706	111	4.8	5.1	133	37.6	2598	673	9.8	10.1	1033	1108	17.6	37.5	17.3	225	41743	450	5.3	2	4	1.46	.67	.51	31.1	10.0	8.3
1406	708	60.6	4.3	4.6	129	35.4	2603	673	9.8	10.0	1030	1038	17.4	37.4	17.3	204	42185	452	5.4	3	4	1.47	.77	.52	30.3	10.0	8.3 ↑
1408	710	74.6	3.6	4.9	131	16.6	2521	674	9.8	10.0	1055	1012	17.2	37.5	17.3	213	42397	454	5.4	2	4	1.47	.73	.77	30.7	10.0	8.5
1409	712	89.0	4.5	4.7	131	37.2	2568	675	9.8	10.0	1055	945	17.4	37.2	17.3	218	42562	456	5.4	2	4	1.48	.68	.67	31.0	10.0	8.4
1410	714	115	3.6	5.3	132	31.0	2561	677	9.8	10.0	1054	1036	17.5	37.1	17.3	213	42688	458	5.4	2	4	1.48	.64	.69	31.4	10.0	8.4
1411	716	117	4.5	5.1	132	30.0	2526	679	9.8	10.0	1045	1042	17.5	37.5	17.3	223	42828	460	5.4	2	4	1.49	.65	.57	31.4	10.0	8.3
1414	718	40.2	2.9	4.6	131	20.5	2538	685	9.7	10.0	1040	1107	16.3	37.9	17.3	243	43272	462	5.5	4	4	1.50	.82	.76	30.1	10.0	8.5
1428	721	38.0	3.6	4.6	132	33.4	2742	696	9.8	9.8	1072	1128	17.5	37.6	17.3	298	44258	465	5.6	5	4	1.52	.81	.56	30.2	10.0	8.5 ↑
1431	722	34.9	2.1	4.2	131	11.5	2774	699	9.8	9.8	1073	1128	17.4	37.9	17.3	309	44605	466	5.6	6	4	1.52	.79	.68	30.4	10.0	8.3 ↑
1447	725	46.4	2.8	5.2	120	7.1	2617	703	9.9	8.6	1063	1126	17.3	35.9	17.3	312	45427	469	5.7	4	4	1.54	.72	.43	30.9	10.0	8.4 ↑
1456	732	75.7	4.8	5.4	38	10.2	2615	713	9.9	9.3	1057	1122	17.3	36.0	17.3	344	46550	476	5.8	2	4	1.56	.62	.62	31.6	10.0	8.4 ↑
1456	732	80.6	4.5	4.6	122	39.0	2565	713	9.9	9.3	1069	1094	17.3	36.0	17.7	354	46586	476	5.8	2	4	1.56	.64	.63	31.6	10.0	8.5
1456	732	66.0	4.6	4.7	123	36.4	2576	713	9.9	9.3	1071	1107	17.3	36.0	17.7	356	46592	476	5.8	2	4	1.56	.63	.41	31.6	10.0	8.4
1509	734	64.0	3.4	4.9	113	37.2	2583	715	9.9	8.8	1062	1123	17.3	37.3	17.6	389	47431	478	5.8	3	4	1.57	.70	.66	31.2	10.0	8.5 ↑
1511	736	62.8	3.5	3.9	112	35.7	2607	716	9.9	9.0	1063	1020	17.3	37.6	17.6	391	47683	480	5.8	3	4	1.57	.76	.71	31.0	10.0	8.4
1514	738	42.1	3.8	5.0	115	7.0	2648	717	9.9	9.1	1057	1099	17.4	37.9	17.6	395	47981	482	5.9	4	4	1.58	.81	.65	30.6	10.0	8.3
1517	740	44.7	3.4	4.8	115	23.5	2603	718	9.9	9.3	1060	1110	17.4	38.1	17.6	405	48301	484	5.9	4	4	1.59	.78	.65	30.9	10.0	8.5
1519	742	46.3	4.3	5.3	117	41.4	2612	719	9.9	9.4	1059	1050	17.5	38.1	17.6	419	48596	486	6.0	4	4	1.59	.81	.60	30.8	10.1	8.3
1522	744	49.2	4.8	5.4	117	33.7	2631	721	9.9	9.5	1070	1021	17.5	36.2	18.0	409	48897	488	6.0	4	4	1.60	.82	.59	30.7	10.1	8.4
1532	746	48.5	4.1	5.4	138	34.1	2510	726	9.9	9.6	1046	1045	17.7	37.6	17.8	414	49394	490	6.1	4	4	1.61	.84	.76	30.7	10.1	8.4 ↑
1533	748	57.9	4.5	5.0	123	38.1	2600	726	9.9	9.7	1064	1025	17.7	37.6	17.7	416	49533	492	6.1	3	4	1.62	.81	.54	30.9	10.1	8.5
1536	750	61.7	4.9	7.0	126	32.1	2621	726	9.9	9.7	1054	1040	17.8	37.7	17.7	423	49818	494	6.1	3	4	1.63	.83	.41	30.9	10.1	8.5
1538	752	48.2	4.3	5.5	125	35.5	2592	727	9.8	9.7	1066	968	17.9	37.8	17.6	425	50079	496	6.1	4	4	1.63	.86	.59	30.7	10.1	8.4
1540	754	66.5	4.2	6.2	126	31.6	2604	728	9.8	9.7	1053	1095	18.3	37.7	17.6	446	50302	498	6.2	3	4	1.64	.79	.71	31.1	10.1	8.4
1542	756	55.9	5.2	5.2	115	45.6	2413	730	9.8	9.7	1044	1101	18.4	37.7	17.5	448	50569	500	6.2	3	4	1.65	.81	.44	31.0	10.1	8.4
1545	758	44.7	3.4	6.1	123	31.7	2578	732	9.7	9.7	1063	1120	18.5	37.8	17.4	452	50913	502	6.3	4	4	1.66	.87	.64	30.8	10.1	8.4
1557	760	27.6	3.5	4.8	138	24.3	2548	739	9.7	9.8	1057	1109	18.9	37.8	17.3	461	51859	504	6.3	7	4	1.68	.95	.66	30.3	10.1	8.5 ↑
1600	762	50.9	4.1	4.9	143	30.7	2582	739	9.7	9.8	1067	1107	18.9	37.5	17.3	481	52207	506	6.4	4	4	1.69	.84	.65	31.0	10.1	8.4
1601	764	80.5	4.8	5.6	144	30.7	2580	739	9.7	9.8	1056	1103	18.8	37.6	17.3	486	52441	508	6.4	3	4	1.69	.81	.69	31.2	10.1	8.4
1603	766	95.5	5.0	6.0	126	33.6	2379	740	9.7	9.8	1059	1102	18.8	37.8	17.3	486	52613	510	6.4	2	4	1.70	.73	.63	31.6	10.1	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 13:04 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT GPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1606	768	40.9	3.4	6.0	142	32.0	2568	744	9.7	9.8	1073	1018	18.8	37.4	17.3	483	53122	512	6.5	5	4	1.72	.91	.77	30.7	10.1	8.4
1609	770	38.3	3.5	5.9	137	28.0	2511	746	9.7	9.8	1037	1112	18.9	37.6	17.3	511	53453	514	6.5	5	4	1.73	.92	.73	30.7	10.0	8.5
1622	773	26.7	4.4	4.8	142	29.6	2315	752	9.7	9.8	987	1021	19.0	38.0	17.4	478	54503	517	6.6	7	4	1.75	.96	.44	30.5	10.0	8.4
1623	774	32.8	4.1	4.7	139	29.1	2298	752	9.7	9.8	1004	1065	19.0	37.7	17.4	487	54691	518	6.7	6	4	1.76	.93	.54	30.7	10.0	8.5
1625	777	66.9	3.9	6.3	139	30.5	2301	753	9.7	9.8	1002	995	19.1	37.4	17.5	476	54971	520	6.7	3	4	1.77	.81	.45	31.4	10.0	8.3
1628	779	38.7	5.7	5.7	143	58.5	2302	753	9.7	9.8	1003	952	19.1	37.4	17.6	478	55437	523	6.7	5	4	1.78	.95	.70	30.8	9.9	8.4
1632	781	38.3	4.5	5.8	123	29.9	2287	756	9.7	9.8	998	1019	19.1	37.4	17.7	465	55884	525	6.8	5	4	1.79	.95	.44	30.8	9.9	8.3
1635	783	33.7	3.8	5.5	125	32.3	2281	760	9.7	9.8	1007	1100	19.1	37.6	17.8	486	56319	527	6.9	6	4	1.81	.94	.51	30.8	9.9	8.3
1638	785	43.1	5.3	5.8	127	50.5	2291	761	9.7	9.8	1018	1049	19.1	37.8	18.0	498	56645	529	6.9	4	4	1.82	.92	.47	31.0	9.9	8.4
1652	787	23.8	4.0	5.7	130	35.7	2348	765	9.7	9.9	1009	1104	19.1	37.2	18.4	480	57634	531	7.0	8	4	1.84	.98	.71	30.7	9.9	8.4
1656	789	31.1	4.2	7.1	113	33.9	2448	767	9.7	9.9	1035	1097	19.1	37.4	18.5	493	58087	533	7.1	6	4	1.85	.92	.65	31.0	9.9	8.4
1659	791	30.5	4.4	5.0	109	37.7	2471	770	9.7	9.9	1045	1104	19.1	38.2	18.6	497	58377	535	7.1	6	4	1.86	.92	.70	31.1	9.9	8.5
1701	793	56.5	4.1	5.2	112	27.2	2454	771	9.7	9.9	1054	1092	19.1	38.0	18.6	467	58624	537	7.2	3	4	1.86	.79	.76	31.7	9.9	8.4
1704	795	50.3	4.1	5.2	110	34.5	2437	773	9.7	9.9	1047	1099	19.1	37.8	18.6	499	58896	539	7.2	4	4	1.87	.83	.51	31.5	9.9	8.4
1706	797	45.3	5.6	6.8	113	31.8	2397	774	9.7	9.9	1039	1094	19.1	38.0	18.7	501	59205	541	7.3	4	4	1.88	.87	.61	31.4	9.9	8.4
1710	799	42.0	3.5	6.5	111	31.2	2447	776	9.7	10.0	1042	1088	19.1	37.9	18.7	515	59564	543	7.3	4	4	1.89	.86	.45	31.5	9.9	8.4
1724	801	21.0	3.3	4.3	123	25.9	1412	779	9.7	8.8	762	881	19.1	37.5	18.8	469	60506	545	7.4	9	4	1.90	.96	.48	31.0	9.9	8.4
1726	803	37.8	3.6	3.8	122	27.4	1417	780	9.6	9.0	768	950	19.0	37.2	18.9	462	60784	547	7.4	5	4	1.91	.83	.66	31.6	9.9	8.4
1729	805	45.2	4.3	4.8	120	34.0	2388	781	9.6	9.2	1044	1114	19.1	36.9	18.9	462	61160	549	7.5	4	4	1.92	.84	.67	31.6	9.9	8.4
1733	807	31.0	4.4	4.4	123	38.0	2396	782	9.6	9.4	1037	1070	19.1	37.6	19.0	464	61642	551	7.6	6	4	1.93	.93	.72	31.3	9.9	8.3
1735	809	43.3	4.4	4.5	120	42.3	2411	785	9.6	9.5	1053	1114	19.0	37.8	19.0	468	61916	553	7.6	5	4	1.94	.88	.77	31.5	9.9	8.5
1738	811	45.7	4.1	5.7	122	32.6	2414	787	9.6	9.6	1054	1094	19.0	37.9	19.0	461	62286	555	7.7	4	4	1.95	.86	.49	31.6	9.9	8.5
1751	813	29.0	3.9	5.1	65	36.8	2386	792	9.6	9.7	1021	1107	19.1	37.8	19.0	461	63104	557	7.7	6	4	1.97	.92	.79	31.4	9.9	8.4
1754	815	26.9	1.9	4.3	112	7.6	2387	792	9.6	9.8	1029	1117	19.0	37.5	19.0	465	63444	559	7.8	7	4	1.97	.88	.46	31.6	9.9	8.3
1757	817	43.5	4.0	4.5	112	33.3	2357	792	9.6	9.8	1041	1007	19.0	37.7	19.0	480	63716	561	7.8	4	4	1.98	.81	.80	31.8	9.9	8.4
1760	819	42.8	4.0	4.6	112	30.2	2391	794	9.6	9.8	1042	1067	19.0	37.7	19.0	488	64066	563	7.9	4	4	1.99	.84	.56	31.8	9.9	8.4
1803	821	33.8	3.7	4.3	112	29.1	2369	797	9.7	9.8	1030	1095	19.0	37.6	19.0	480	64461	565	8.0	6	4	2.00	.90	.51	31.6	9.9	8.4
1808	823	27.0	4.0	4.9	114	32.1	2376	800	9.7	9.8	1041	1087	19.0	37.7	19.0	486	65023	567	8.0	7	4	2.01	.95	.61	31.4	9.9	8.3
1812	825	28.8	3.2	4.4	112	29.0	2375	802	9.7	9.8	1043	1051	19.1	37.8	19.0	489	65430	569	8.1	6	4	2.02	.93	.50	31.5	9.9	8.4
1824	827	26.6	4.0	4.3	105	31.6	2327	805	9.6	8.9	1014	1105	19.0	37.5	19.0	431	66168	571	8.2	7	4	2.03	.94	.63	31.5	9.8	8.3
1828	829	26.3	4.1	4.6	121	32.8	2364	806	9.6	9.2	1035	1089	19.0	37.0	19.0	444	66615	573	8.2	7	4	2.04	.96	.58	31.5	9.9	8.4
1832	831	30.5	3.7	4.3	120	31.7	2358	809	9.6	9.4	1037	1107	19.0	37.5	19.0	453	67101	575	8.3	6	4	2.05	.93	.52	31.6	9.9	8.3
1836	833	24.3	4.5	4.7	122	30.6	2352	813	9.6	9.6	1033	1062	19.1	37.5	19.0	479	67777	577	8.4	8	4	2.07	.99	.63	31.4	9.9	8.4
1840	835	33.0	5.4	5.5	123	45.8	2308	814	9.6	9.6	1048	1082	19.2	37.5	19.0	476	68020	579	8.4	6	4	2.08	.94	.43	31.7	9.9	8.4
1845	837	31.0	4.1	6.1	122	39.0	2368	816	9.6	9.7	1035	1101	19.3	37.6	19.0	489	68633	581	8.5	6	4	2.09	.95	.56	31.6	9.9	8.4
1849	839	25.6	3.6	5.9	123	29.3	2382	818	9.6	9.8	1047	1118	19.4	37.5	19.0	510	69188	583	8.6	7	4	2.10	.99	.75	31.5	9.9	8.5
1901	841	25.9	3.8	4.6	121	28.3	2242	821	9.6	9.4	1000	1106	19.5	37.6	19.0	403	69995	585	8.7	7	4	2.12	.96	.74	31.6	9.8	8.5
1903	843	63.1	3.6	4.5	123	27.7	2257	821	9.6	9.5	1016	1087	19.6	37.2	19.0	419	70218	587	8.7	3	4	2.12	.77	.53	32.2	9.9	8.5
1907	845	37.6	6.5	7.0	124	52.2	2259	823	9.6	9.5	1024	1097	19.7	37.2	19.0	427	70695	589	8.8	5	4	2.14	.96	.79	31.7	9.8	8.4
1910	847	27.5	3.3	6.7	123	28.5	2220	825	9.6	9.6	1025	1116	19.7	37.3	19.0	439	71123	591	8.8	7	4	2.15	1.01	.65	31.6	9.8	8.4
1914	849	29.2	3.2	4.6	121	29.9	2213	827	9.5	9.6	1012	1112	19.8	37.1	19.0	447	71651	593	8.9	6	4	2.16	.94	.78	31.8	9.8	8.5
1917	851	34.4	3.3	3.8	122	29.4	2259	829	9.5	9.7	1019	1105	20.2	37.2	19.0	462	72020	595	9.0	6	4	2.17	.90	.67	31.9	9.8	8.5
1930	853	27.0	3.1	4.8	112	25.7	2334	832	9.5	9.7	1055	1086	20.2	36.9	19.0	460	72880	597	9.0	7	4	2.18	.93	.42	31.8	9.8	8.5
1933	855	28.3	3.3	3.7	112	26.6	2308	832	9.5	9.7	1052	1104	20.2	36.9	19.0	473	73266	599	9.1	7	4	2.19	.89	.77	32.0	9.8	8.4
1936	857	43.6	3.5	4.0	114	26.0	2332	834	9.5	9.7	1042	1093	20.2	37.2	19.0	477	73555	601	9.1	4	4	2.20	.82	.69	32.2	9.8	8.4
1939	859	45.2	3.5	3.9	113	30.1	2344	836	9.5	9.7	1042	1100	20.2	37.1	19.0	486	73877	603	9.2	4	4	2.20	.82	.59	32.2	9.8	8.4
1941	861	49.1	3.6	3.9	114	28.1	2319	837	9.5	9.7	1054	1079	20.2	37.1	19.0	496	74124	605	9.2	4	4	2.21	.80	.61	32.2	9.8	8.4
1944	863	43.3	3.4	3.9	114	30.9	2398	839	9.5	9.7	1041	1097	20.2	37.1	19.1	502	74470	607	9.3	4	4	2.22	.83	.44	32.2	9.8	8.4
1947	865	35.8	2.7	4.0	114	30.4	2341	841	9.5	9.7	1041	1029	20.2	37.2	19.2	480	74855	609	9.3	5	4	2.22	.88	.44	32.1	9.8	8.5
2000	867	27.9	3.5	3.9	113	28.9	2353	845	9.5	8.6	1039	1103	20.2	36.2	19.3	446	75625	611	9.4	7	4	2.24	.91	.46	32.0	9.8	8.3

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 13:08 11/15/76

TIME	DEPTH	ROP M/h	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	THIS BIT CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
2002	869	51.2	3.1	3.9	114	27.5	2312	845	9.5	8.9	1029	1085	20.3	36.3	19.4	451	75891	613	9.5	4	4	2.24	.76	.50	32.3	9.8	8.5
2006	871	34.0	3.1	4.5	113	26.7	2365	846	9.5	9.1	1031	1101	20.3	36.9	19.4	468	76358	615	9.5	6	4	2.25	.69	.64	32.1	9.8	8.4
2009	873	37.8	3.7	4.2	112	29.7	2315	847	9.5	9.2	1034	1099	20.2	36.8	19.5	481	76610	617	9.6	5	4	2.26	.87	.76	32.2	9.8	8.5
2013	875	33.8	3.3	4.3	114	28.4	2292	850	9.5	9.4	1046	1125	20.2	36.8	19.6	489	77085	619	9.6	5	4	2.27	.88	.42	32.2	9.8	8.4
2016	877	35.4	3.2	3.9	112	24.8	2313	853	9.5	9.5	1044	1123	20.3	36.9	19.6	506	77453	621	9.7	5	4	2.28	.87	.44	32.2	9.8	8.5
POOH TO RUN CASING																											
RUN SCHLUMBERGER ISF/SONIC,FDC/GR/CAL								SET 13 3/8" CASING AT 861 METRES									NB#3 HTC X3A 12.25 18,18,18.										
START DEPTH 879 METRES																											
1602	879	4.3	3.4	3.6	104	10.8	2255	879	9.3	9.3	954	866	32.1	37.9	32.0	325	10337	0	.0	44	2276	0.00	.54	.81	11.0	9.4	8.4
1602	880	9.2	3.3	3.7	103	8.9	2189	879	9.3	9.3	947	887	32.1	37.8	32.0	325	10406	1	.0	23	739	0.00	.74	.78	10.0	9.4	8.4
1605	882	58.0	3.7	4.2	104	22.1	2216	879	9.3	9.3	944	883	32.4	37.2	32.0	323	10664	4	.1	3	227	0.00	.66	.76	12.0	9.4	8.4
1722	896	47.3	3.5	4.0	112	16.3	2528	879	9.2	9.3	1004	889	33.3	37.3	32.0	313	12234	17	.1	5	49	.02	.81	.74	9.0	9.5	8.4 ↑
1722	896	61.5	3.4	3.6	110	16.1	2528	879	9.2	9.3	1010	890	33.3	37.3	32.0	313	12240	17	.1	4	48	.02	.75	.73	7.0	9.5	8.4
1723	897	110	3.3	3.8	113	12.8	2483	879	9.3	9.3	1011	889	33.2	37.0	32.0	309	12352	19	.1	2	43	.02	.59	.72	8.0	9.5	8.4
1725	900	76.4	3.7	4.0	112	11.8	2485	879	9.3	9.3	1018	888	33.0	36.9	32.0	306	12580	21	.2	2	39	.04	.67	.68	6.0	9.5	8.4
1728	903	58.8	3.1	3.8	110	18.9	2465	880	9.2	9.3	1017	888	32.9	38.2	32.0	306	12945	24	.2	3	34	.05	.74	.67	5.0	9.5	8.4 ↑
1730	905	100	3.3	3.8	111	24.4	2483	881	9.2	9.3	999	974	32.9	38.5	32.0	308	13086	26	.2	2	32	.06	.67	.64	6.0	9.5	8.4
1743	908	23.1	3.4	6.7	101	37.1	2186	885	9.2	9.3	943	986	33.7	39.8	32.2	303	13599	29	.3	8	30	.08	1.06	.59	5.0	9.5	8.4 ↑
1745	910	65.5	3.8	4.0	112	37.0	2175	889	9.2	9.2	945	983	34.0	39.8	32.3	301	13842	31	.4	3	28	.10	.69	.60	6.0	9.5	8.4
1747	912	61.3	3.1	3.8	112	37.4	2161	891	9.2	9.2	945	983	34.2	39.8	32.5	299	14112	34	.4	3	26	.12	.92	.62	5.5	9.5	8.4
1750	915	61.3	3.2	3.7	112	38.5	2145	895	9.2	9.2	946	989	34.3	40.1	32.6	296	14387	36	.4	3	24	.14	.94	.64	4.6	9.5	8.4
1752	917	52.1	3.1	3.8	109	30.7	2159	897	9.2	9.2	917	991	34.5	40.1	32.6	299	14697	39	.5	4	23	.17	.99	.66	3.9	9.5	8.4
1755	920	59.0	3.4	3.8	112	38.9	2176	897	9.2	9.2	931	987	34.6	40.3	32.7	292	14966	41	.5	3	22	.18	.96	.68	4.7	9.5	8.4
1803	922	89.8	2.7	3.9	79	34.8	2133	897	9.2	9.2	934	975	34.8	40.4	32.8	290	15304	44	.6	2	21	.20	.80	.70	12.1	9.5	8.4 ↑
1806	925	43.4	3.0	4.5	79	41.6	2131	900	9.2	9.2	922	964	34.9	40.2	33.0	291	15526	46	.6	4	20	.21	.98	.69	6.3	9.5	8.4
1810	928	35.7	3.3	4.8	79	42.9	2121	903	9.2	9.2	925	980	35.0	40.4	33.2	287	15616	49	.7	5	19	.23	1.03	.71	5.2	9.5	8.4
1813	930	37.3	3.3	4.3	81	42.1	2133	907	9.2	9.2	934	969	35.1	40.8	33.4	282	16088	51	.7	5	18	.25	1.02	.74	5.5	9.5	8.4
1817	932	33.7	3.4	3.7	79	43.8	2147	911	9.2	9.2	931	969	35.4	41.0	33.7	282	16448	54	.8	6	18	.27	1.06	.76	5.0	9.5	8.4
1832	935	22.4	3.4	3.9	113	41.5	2114	916	9.2	9.2	927	922	35.5	40.9	34.2	268	17233	56	.9	8	17	.29	1.15	.78	3.2	9.5	8.4 ↑
1835	938	50.2	3.4	3.6	112	40.0	2125	916	9.2	9.2	927	962	35.7	40.7	34.4	266	17583	59	.9	4	17	.31	.97	.79	6.9	9.5	8.4
1837	940	65.3	3.5	3.7	112	40.6	2141	920	9.2	9.2	927	917	35.7	40.8	34.4	266	17794	61	1.0	2	16	.33	.87	.79	10.0	9.5	8.4
1839	943	60.5	3.3	4.5	113	40.2	2161	921	9.2	9.2	925	929	35.7	40.9	34.5	268	18009	64	1.0	3	16	.35	.96	.76	7.4	9.5	8.4
1841	945	65.9	3.4	4.4	123	46.1	2120	922	9.3	9.2	940	976	35.7	41.0	34.6	263	18322	66	1.0	3	15	.37	.96	.78	7.5	9.5	8.4
1852	948	31.4	3.4	4.4	121	41.0	2118	924	9.2	9.3	931	960	35.6	41.3	34.9	258	19138	69	1.1	6	15	.42	1.11	.80	4.0	9.5	8.4 ↑
1854	950	64.6	3.3	3.7	123	40.0	2144	925	9.2	9.3	919	928	35.7	41.2	35.0	256	19370	71	1.2	3	15	.43	.94	.81	8.2	9.5	8.4
1856	952	63.6	3.4	3.7	123	41.5	2087	927	9.2	9.3	923	897	35.8	41.2	35.2	254	19651	74	1.2	3	14	.45	.95	.80	7.7	9.5	8.4
1900	955	41.0	3.0	3.9	123	40.3	2111	931	9.2	9.3	933	927	35.8	41.3	35.2	256	20038	76	1.3	5	14	.48	1.10	.82	4.7	9.5	8.4
1903	957	49.7	3.4	3.7	123	45.2	2093	934	9.2	9.3	924	968	35.8	41.4	35.3	258	20426	79	1.3	4	14	.51	1.05	.83	4.7	9.5	8.4
1905	960	49.3	3.3	4.2	122	41.8	2114	936	9.2	9.2	931	977	35.8	41.7	35.4	258	20729	81	1.3	4	13	.53	1.05	.83	5.6	9.5	8.4
1914	962	131	3.3	3.9	126	46.5	2559	937	9.2	9.2	1004	951	35.8	41.9	35.5	242	21179	84	1.4	1	13	.56	.79	.84	13.7	9.5	8.4 ↑
1917	965	51.3	3.3	4.9	117	50.1	2553	941	9.2	9.2	1016	976	36.0	41.7	35.6	247	21529	86	1.5	4	13	.58	1.07	.84	5.3	9.5	8.4
1920	967	42.6	3.3	4.6	116	41.0	2523	944	9.2	9.2	1007	959	36.1	41.9	35.6	249	21872	89	1.5	4	13	.59	1.05	.85	4.8	9.5	8.4
1923	970	46.5	3.4	4.7	117	39.5	2586	946	9.2	9.2	1014	959	36.1	42.1	35.6	249	22174	91	1.5	4	12	.59	1.07	.88	5.6	9.5	8.4
1925	972	76.5	3.2	4.1	117	40.3	2556	948	9.2	9.2	1017	935	36.2	42.1	35.6	251	22438	94	1.6	2	12	.59	1.02	.89	6.6	9.5	8.4
1930	975	21.2	2.6	4.6	95	40.7	762	953	9.2	9.3	559	646	36.5	42.1	35.7	253	23222	96	1.7	9	12	.60	1.66	.89	4.4	9.5	8.4
1941	978	32.0	2.8	4.3	98	40.7	783	955	9.2	9.3	548	621	36.5	42.3	35.7	251	23573	99	1.8	6	12	.61	1.18	.88	3.5	9.5	8.4
1946	980	28.4	2.9	5.2	115	30.6	825	957	9.2	9.3	565	603	36.3	41.6	35.8	258	24072	101	1.8	7	12	.65	1.16	.93	3.8	9.5	8.4
1951	982	28.0	3.0	4.7	115	30.4	800	959	9.2	9.3	574	669	36.0	33.8	35.8	262	24691	103	1.9	7	12	.68	1.12	.93	4.0	9.5	8.4
1957	985	28.2	3.2	4.5	116	37.8	808	963	9.2	9.3	576	670	35.4	41.1	35.8	209	25339	106	2.0	7	11	.71	1.10	.95	4.7	9.5	8.4
2011	988	26.0	3.5	4.8	115	40.6	2484	964	9.2	9.3	1004	974	35.0	41.1	35.9	203	26369	109	2.1	7	11	.76	1.14	.94	4.2	9.5	8.4 ↑

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 13:11 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
2013	990	76.2	3.3	3.7	120	40.9	2455	965	9.2	9.3	995	975	35.1	41.0	36.0	203	26590	111	2.2	2	11	.77	.90	.93	10.3	9.5	8.4
2015	992	69.6	3.5	4.2	122	43.9	2461	966	9.2	9.3	998	942	35.1	40.9	36.0	206	26835	114	2.2	3	11	.78	.94	.89	9.0	9.5	8.4
2016	995	44.3	3.5	4.6	121	44.1	2497	971	9.1	9.3	990	972	35.2	41.4	36.2	210	27280	116	2.3	4	11	.81	1.10	.90	5.3	9.5	8.4
2023	997	21.1	3.6	5.6	120	41.9	2464	975	9.2	9.3	1011	971	35.3	41.5	36.3	213	27875	119	2.4	9	11	.85	1.29	.90	2.4	9.4	8.4
2026	1000	51.1	3.3	3.8	121	39.4	2460	977	9.2	9.3	1010	965	35.4	41.2	36.3	225	28210	121	2.4	4	11	.67	1.04	.90	6.7	9.4	8.4
2038	1002	45.7	2.9	3.7	108	35.6	2508	982	9.2	9.3	1008	971	35.5	41.2	35.5	218	28910	124	2.5	4	11	.89	1.02	.91	7.2	9.4	8.4 ↑
2042	1005	57.1	3.5	3.5	109	41.7	2499	965	9.2	9.3	1019	947	35.8	41.1	35.3	216	29276	126	2.5	4	11	.91	.94	.90	9.2	9.4	8.4
2044	1007	42.3	3.4	4.8	111	44.1	2513	966	9.2	9.3	1006	952	35.4	41.4	35.3	227	29556	129	2.6	4	10	.92	1.05	.88	6.5	9.4	8.4
2048	1010	37.7	3.0	4.9	110	41.2	2531	968	9.2	9.3	1014	959	35.2	41.6	35.2	242	29978	131	2.6	5	10	.94	1.11	.89	5.5	9.4	8.4
2052	1012	32.4	3.2	4.0	109	40.3	2511	990	9.2	9.3	1004	940	35.2	41.9	35.2	261	30394	134	2.7	6	10	.96	1.14	.88	4.6	9.4	8.4
2104	1015	49.4	2.9	3.6	63	35.8	2454	994	9.2	9.3	1003	948	35.1	41.7	35.2	292	31069	136	2.8	4	10	.99	.97	.89	8.6	9.4	8.4 ↑
2107	1017	41.4	5.1	5.4	65	64.5	2444	997	9.2	9.3	991	904	35.2	41.6	35.2	304	31252	139	2.8	4	10	.99	.98	.86	8.4	9.4	8.4
2114	1020	19.7	3.3	6.2	66	46.4	2496	1002	9.2	9.3	1002	942	35.1	41.9	35.4	338	31733	141	2.9	9	10	1.01	1.14	.87	4.6	9.4	8.4
2116	1022	45.0	3.0	4.0	66	42.5	2428	1003	9.2	9.3	994	954	35.2	41.9	35.4	359	31990	144	3.0	4	10	1.02	.91	.86	10.3	9.5	8.4
2123	1025	34.3	3.2	4.6	114	41.0	2430	1004	9.2	9.3	1006	918	35.2	41.7	35.3	376	32366	146	3.1	6	10	1.03	1.07	.86	6.1	9.5	8.4
2136	1028	20.7	2.8	3.6	129	26.5	860	1009	9.1	9.3	573	757	35.1	41.3	35.2	417	33249	149	3.2	9	10	1.07	1.18	.87	4.1	9.4	8.4 ↑
2138	1030	86.1	4.6	5.1	123	48.1	849	1009	9.1	9.3	566	707	35.2	41.1	35.2	416	33454	151	3.2	2	10	1.07	.82	.87	13.7	9.5	8.4
2144	1032	24.3	2.8	5.9	123	28.1	831	1011	9.1	9.3	537	697	35.4	40.2	35.2	415	34214	154	3.3	8	10	1.11	1.14	.87	4.8	9.4	8.4
2151	1035	24.2	2.6	3.4	123	24.2	848	1013	9.1	9.3	524	711	35.3	39.8	35.2	418	34966	156	3.4	8	10	1.14	1.11	.89	5.3	9.4	8.4
2157	1038	22.6	2.7	3.0	124	26.7	864	1015	9.1	9.3	515	701	34.8	39.9	35.1	427	35766	159	3.5	8	10	1.17	1.11	.90	5.2	9.4	8.4
2202	1040	24.1	2.8	3.9	120	24.4	848	1016	9.1	9.3	533	668	34.5	40.0	35.1	434	36432	161	3.6	8	10	1.19	1.12	.90	5.2	9.4	8.4
2216	1042	25.8	2.8	3.8	123	29.5	852	1017	9.1	9.3	517	666	34.2	39.1	35.1	439	37444	164	3.7	7	10	1.23	1.13	.91	5.2	9.4	8.4
2223	1045	24.9	2.7	4.2	123	27.9	856	1021	9.1	9.3	523	656	33.9	39.4	35.1	447	38196	166	3.8	8	10	1.26	1.12	.93	5.3	9.4	8.4
2229	1047	22.0	2.7	4.2	122	27.3	867	1023	9.1	9.3	525	672	33.6	39.2	35.1	452	39002	169	4.0	9	10	1.29	1.14	.94	5.0	9.4	8.4
2238	1050	17.4	2.6	3.0	123	26.9	857	1027	9.1	9.2	517	565	33.3	39.0	35.1	466	40019	171	4.1	11	10	1.32	1.16	.95	4.1	9.4	8.4
2244	1053	25.1	2.6	3.9	122	26.5	879	1029	9.1	9.2	525	592	33.2	38.9	35.2	475	40749	174	4.2	7	10	1.35	1.12	.96	5.5	9.4	8.4
2255	1055	43.7	2.9	4.3	121	30.0	822	1031	9.1	9.2	499	539	33.1	38.7	35.2	480	41493	176	4.3	5	10	1.37	.99	.96	9.2	9.4	8.4 ↑
2303	1057	19.9	4.0	4.5	123	52.9	900	1034	9.1	9.2	516	579	32.9	38.2	35.0	482	42351	179	4.4	9	10	1.40	1.22	.98	3.8	9.4	8.4
2310	1060	21.6	2.9	4.8	120	26.4	872	1037	9.1	9.2	525	572	32.7	38.0	34.7	494	43309	181	4.5	9	10	1.44	1.18	.98	4.6	9.4	8.4
2318	1062	19.3	3.1	4.7	121	43.3	2512	1040	9.1	9.2	942	800	32.5	38.1	34.3	486	44231	184	4.7	10	10	1.48	1.29	.99	3.0	9.3	8.4
2323	1065	26.5	3.6	5.0	122	46.0	2491	1043	9.1	9.2	936	801	32.6	38.6	34.0	488	44763	186	4.7	7	10	1.50	1.24	1.01	4.0	9.3	8.4
2343	1067	10.6	2.4	5.4	75	27.8	854	1052	9.1	9.2	515	559	33.3	38.9	33.2	499	47131	189	4.9	11	10	1.55	1.09	1.00	6.2	9.3	8.4 ↑
2348	1070	21.5	2.6	3.8	113	29.1	873	1052	9.1	9.2	509	575	33.3	38.6	33.1	499	47694	191	5.0	9	10	1.57	1.13	.98	5.6	9.3	8.4
2357	1072	15.9	2.7	3.3	114	28.5	880	1055	9.1	9.2	499	599	33.2	38.3	32.9	494	49024	194	5.2	12	10	1.60	1.20	1.00	4.3	9.3	8.4
8	1075	15.6	2.5	3.2	115	26.6	848	1055	9.1	9.2	508	553	33.1	38.3	32.7	494	50189	196	5.3	12	10	1.64	1.19	1.00	4.5	9.3	8.4
18	1077	16.3	2.7	3.4	115	28.1	844	1056	9.1	9.2	509	569	32.9	37.9	32.6	502	51384	199	5.5	12	10	1.67	1.18	1.01	4.7	9.3	8.4
40	1080	13.3	3.3	3.6	120	28.3	781	1061	9.1	9.2	494	537	33.0	37.9	32.8	498	52927	201	5.7	14	10	1.71	1.23	1.01	3.9	9.3	8.4 ↑
46	1082	19.9	2.6	3.7	121	25.2	796	1063	9.1	9.2	498	543	32.9	36.6	32.8	494	53659	204	5.8	9	10	1.74	1.16	1.00	5.3	9.3	8.4
57	1085	13.5	3.3	3.6	122	26.6	788	1065	9.1	9.2	498	564	32.5	36.9	33.1	504	54998	206	6.0	14	10	1.76	1.24	1.01	3.8	9.3	8.4
107	1088	13.9	2.8	3.7	123	30.4	810	1068	9.1	9.2	491	561	32.3	36.6	33.1	512	56259	209	6.2	13	10	1.82	1.23	1.02	4.1	9.3	8.4
116	1090	17.6	2.7	3.8	124	25.7	785	1069	9.1	9.2	501	536	32.1	36.5	33.1	513	57307	211	6.3	11	10	1.85	1.18	1.02	5.0	9.3	8.4
124	1092	18.6	3.1	3.6	123	30.4	815	1071	9.1	9.2	490	509	32.0	36.3	32.9	518	58345	214	6.5	10	10	1.88	1.18	1.03	5.0	9.3	8.4
144	1095	25.6	2.6	3.9	117	25.7	811	1075	9.1	9.2	505	522	31.9	35.5	33.0	513	59813	216	6.7	7	10	1.91	1.05	1.01	8.0	9.3	8.4 ↑
149	1097	29.7	2.6	4.1	119	27.0	813	1076	9.1	9.2	506	520	31.7	35.9	33.0	496	60397	219	6.7	6	10	1.93	1.04	.98	8.3	9.3	8.4
156	1100	19.0	2.6	4.0	119	27.0	864	1078	9.1	9.2	505	523	31.5	36.2	32.9	501	61273	221	6.9	10	10	1.96	1.15	.97	5.7	9.3	8.4
205	1102	19.0	2.8	3.7	118	25.8	840	1080	9.1	9.2	495	520	31.5	36.1	32.7	500	62277	224	7.0	10	10	1.98	1.12	.97	6.3	9.3	8.4
213	1105	20.4	3.1	3.8	120	35.7	831	1082	9.1	9.2	505	520	31.4	36.0	32.5	508	63225	226	7.1	9	10	2.01	1.13	.97	6.1	9.3	8.4
233	1107	14.9	2.8	3.8	118	26.5	835	1086	9.1	9.3	506	527	31.3	35.2	32.2	506	64830	229	7.3	12	10	2.05	1.16	.97	5.4	9.3	8.4
240	1110	20.8	2.5	3.5	119	24.3	851	1089	9.1	9.3	497	518	31.2	35.7	32.1	510	65662	231	7.4	9	10	2.07	1.09	.96	7.0	9.3	8.4
247	1112	17.1	2.7	3.6	118	26.5	853	1091	9.1	9.2	500	528	31.2	35.8	32.0	511	66500	234	7.6	11	10	2.09	1.15	.94	6.0	9.3	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2

UNIT #101 13:43 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	L3/GAL IN	L3/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
256	1115	15.1	2.8	3.7	120	29.4	878	1094	9.1	9.2	499	515	31.1	35.7	31.9	513	67622	236	7.7	12	10	2.12	1.17	.95	5.5	9.3	8.4
308	1117	13.2	2.6	3.5	120	25.4	857	1096	9.1	9.2	509	513	31.1	35.6	31.6	516	68990	239	7.9	14	10	2.15	1.23	.97	4.7	9.3	8.4
326	1120	13.8	2.8	4.0	110	27.1	864	1101	9.1	9.2	502	524	31.1	35.9	31.4	513	70603	241	8.1	14	10	2.19	1.20	.98	5.4	9.3	8.4 ↑
337	1122	11.7	2.8	3.9	124	27.3	833	1103	9.1	9.2	504	551	31.0	35.4	31.4	495	71772	244	8.3	16	10	2.22	1.26	.98	4.0	9.3	8.4
348	1125	12.2	3.0	3.9	126	27.7	847	1106	9.1	9.2	505	523	30.9	35.7	31.3	501	73175	246	8.5	16	10	2.26	1.26	.99	4.3	9.3	8.4
358	1127	15.6	3.0	3.4	123	27.1	860	1108	9.1	9.2	504	522	31.0	35.3	31.2	498	74354	249	8.6	12	10	2.29	1.17	1.00	5.7	9.3	8.4
407	1130	14.7	2.9	3.6	127	29.9	833	1109	9.1	9.2	504	518	30.9	35.7	31.1	498	75565	251	8.8	13	10	2.33	1.21	1.01	5.2	9.3	8.4
419	1132	14.7	3.1	3.6	117	33.2	833	1112	9.1	9.2	494	513	31.0	35.6	31.1	497	76878	254	9.0	13	10	2.38	1.28	1.01	4.1	9.3	8.4
433	1135	23.3	2.8	3.9	117	24.8	818	1114	9.1	9.2	495	513	31.0	35.3	31.1	492	77952	256	9.1	8	10	2.40	1.04	.98	9.1	9.3	8.4
444	1138	12.7	3.3	3.8	118	33.7	834	1117	9.1	9.2	488	507	30.9	35.6	31.1	487	79240	259	9.3	15	10	2.43	1.18	.97	5.7	9.4	8.4
457	1140	10.5	3.0	3.9	118	36.5	850	1120	9.1	9.3	495	510	30.9	35.5	31.0	502	80762	261	9.5	18	10	2.46	1.05	.98	8.1	9.3	8.4 ↑
507	1142	15.5	2.8	4.3	118	24.6	819	1122	9.1	9.2	496	513	30.8	35.4	30.9	500	81916	264	9.7	12	10	2.49	1.17	.98	6.1	9.3	8.4
518	1145	12.6	3.4	4.1	119	32.8	2650	1125	9.1	9.2	938	731	30.8	35.4	30.9	488	83272	266	9.9	15	11	2.53	1.34	.92	3.6	9.3	8.4
535	1147	72.6	2.5	3.6	57	27.8	774	1129	9.1	9.2	477	497	31.1	36.1	30.9	483	84349	269	10.0	3	11	2.55	.77	.98	19.0	9.3	8.4 ↑
547	1150	12.1	3.0	3.7	115	39.6	848	1132	9.1	9.2	510	539	31.2	35.8	30.9	492	85744	271	10.2	16	11	2.59	1.36	1.00	3.3	9.3	8.4
557	1152	15.3	2.6	3.8	117	27.9	852	1134	9.1	9.3	506	536	31.3	36.2	30.9	482	86967	274	10.4	12	11	2.62	1.18	.99	6.1	9.3	8.4
607	1155	14.2	2.7	3.7	118	23.3	854	1135	9.1	9.3	510	532	31.5	36.1	30.9	470	88138	276	10.6	13	11	2.65	1.12	.98	7.1	9.3	8.4
620	1157	11.2	2.7	3.7	119	27.8	839	1138	9.1	9.2	502	531	31.6	35.9	30.8	459	89662	279	10.8	17	11	2.68	1.18	.99	5.9	9.3	8.4
640	1160	12.4	2.7	3.9	123	45.3	838	1141	9.1	9.2	508	522	31.6	35.9	30.9	435	91162	281	11.0	15	11	2.71	1.23	1.03	5.1	9.3	8.4 ↑
649	1163	12.2	2.8	3.9	115	24.0	820	1143	9.2	9.2	499	521	31.5	36.0	31.0	429	92295	284	11.2	15	11	2.74	1.20	.99	5.8	9.3	8.4
701	1165	15.8	2.6	4.0	115	29.5	856	1146	9.2	9.2	508	518	31.5	36.2	31.2	420	93697	286	11.4	12	11	2.77	1.25	1.00	5.3	9.3	8.4 ↑
713	1167	12.6	2.9	4.2	119	36.6	855	1148	9.1	9.2	509	517	31.3	36.2	31.2	419	95012	288	11.5	16	11	2.80	1.25	.98	5.0	9.4	8.4
725	1170	11.9	2.8	4.0	117	29.6	819	1151	9.1	9.2	508	517	31.1	36.1	31.4	415	96418	291	11.7	16	11	2.84	1.27	1.01	4.7	9.4	8.4
746	1173	14.4	2.3	4.0	79	41.2	806	1154	9.1	9.1	488	505	30.9	36.0	31.5	408	98145	294	12.0	13	11	2.87	1.19	1.02	6.2	9.4	8.4 ↑
754	1175	12.8	2.7	3.9	116	27.6	815	1156	9.1	9.1	499	495	30.7	35.6	31.5	415	99096	296	12.1	15	11	2.90	1.21	.99	5.9	9.4	8.4
806	1178	12.0	2.9	3.9	120	33.3	832	1158	9.1	9.1	499	461	30.6	35.6	31.5	420	100473	299	12.3	16	11	2.93	1.25	1.01	5.3	9.3	8.4
819	1180	10.0	3.1	3.8	119	30.2	853	1160	9.1	9.1	498	485	30.5	35.6	31.5	411	102021	301	12.5	19	11	2.96	1.28	1.00	4.8	9.3	8.4
831	1183	11.2	3.1	3.7	118	29.6	812	1163	9.1	9.2	488	497	30.4	35.4	31.4	415	103409	304	12.7	17	11	2.99	1.24	.99	5.4	9.3	8.4
844	1185	10.1	2.8	3.6	118	31.3	832	1166	9.0	9.2	488	505	30.4	35.5	31.2	414	104940	306	13.0	19	11	3.02	1.25	1.01	5.3	9.3	8.4
901	1188	25.6	3.1	3.5	115	35.7	804	1169	9.0	9.2	492	429	30.3	34.9	31.0	406	106191	309	13.1	7	11	3.04	1.06	1.03	9.3	9.3	8.4 ↑
912	1190	11.1	2.6	3.6	115	26.2	826	1171	9.0	9.2	492	406	30.4	35.0	30.8	400	107479	311	13.3	17	11	3.07	1.19	.98	6.4	9.3	8.4
924	1192	12.3	2.4	3.7	115	29.0	808	1173	9.0	9.2	492	412	30.3	35.0	30.6	394	108834	314	13.5	16	11	3.10	1.19	.99	6.7	9.3	8.4
938	1195	11.7	2.4	4.0	115	26.8	816	1175	9.0	9.2	492	536	30.3	34.4	30.5	401	110461	316	13.7	17	11	3.13	1.27	1.03	5.1	9.3	8.4
953	1197	12.6	2.8	3.7	117	28.8	862	1179	9.0	9.3	505	551	30.2	34.8	30.4	393	112215	319	14.0	16	11	3.17	1.18	1.01	6.9	9.2	8.4
1020	1200	13.3	2.4	3.6	98	30.7	871	1183	9.1	9.2	508	478	30.2	34.7	30.4	383	114310	321	14.2	14	11	3.20	1.15	1.00	8.6	9.2	8.4
1032	1202	9.7	2.5	3.7	101	30.3	878	1185	9.2	9.1	509	547	30.1	35.6	30.3	390	115547	324	14.4	19	11	3.22	1.24	.97	9.1	9.2	8.4
1049	1205	8.4	2.7	3.7	102	30.5	915	1188	9.1	9.2	510	511	30.2	35.3	30.3	405	117240	326	14.7	23	11	3.25	1.28	.99	7.1	9.2	8.4
1105	1207	8.0	3.1	3.8	101	41.5	875	1190	9.1	9.2	510	524	30.2	35.1	30.2	403	118846	329	15.0	23	12	3.28	1.30	1.00	7.9	9.3	8.4
1121	1210	10.1	2.5	3.5	101	28.7	886	1193	9.1	9.2	509	502	30.1	34.8	30.2	418	120470	331	15.2	19	12	3.31	1.18	1.00	10.3	9.4	8.4
1144	1212	12.5	2.9	3.4	118	40.2	797	1196	9.1	9.1	480	499	30.4	34.6	30.1	416	122311	334	15.5	17	12	3.34	1.25	1.02	9.4	9.4	8.4 ↑
1150	1215	16.5	3.0	3.7	119	27.2	912	1197	9.1	9.1	517	536	30.0	34.4	30.1	409	123043	336	15.6	11	12	3.35	1.21	1.01	10.2	9.4	8.4
1202	1217	11.4	2.4	3.9	120	29.6	898	1193	9.1	9.2	520	538	29.9	34.5	30.1	368	124491	339	15.8	16	12	3.38	1.36	.99	6.9	9.4	8.4
1215	1220	13.3	2.7	3.6	120	28.1	901	1200	9.1	9.2	508	516	29.9	34.3	30.1	371	126044	341	16.1	14	12	3.41	1.30	1.02	8.1	9.4	8.4
1230	1223	11.8	2.9	3.9	120	37.7	922	1203	9.1	9.2	510	540	29.8	34.3	30.1	376	127784	344	16.3	16	12	3.45	1.35	1.04	7.3	9.4	8.4
1244	1225	11.2	3.6	3.9	128	43.9	897	1207	9.1	9.2	518	495	29.7	34.3	30.1	379	129582	346	16.5	17	12	3.49	1.39	1.06	6.6	9.3	8.4
1303	1227	11.2	2.9	3.6	126	29.1	896	1209	9.1	9.2	510	513	29.8	34.0	30.3	374	131356	349	16.8	17	12	3.52	1.34	1.04	7.3	9.3	8.4
1313	1230	12.4	2.8	4.1	128	29.8	952	1211	9.1	9.2	531	516	29.7	34.2	30.1	375	132632	351	16.9	16	12	3.54	1.34	1.06	7.4	9.4	8.4
1326	1232	11.0	3.0	4.0	125	32.9	931	1214	9.1	9.2	530	518	29.6	34.0	29.9	382	134184	354	17.1	17	12	3.58	1.39	1.06	6.4	9.4	8.4
1340	1235	10.6	3.0	3.9	127	37.9	940	1216	9.2	9.2	530	493	29.6	33.7	29.8	363	135952	356	17.4	18	12	3.61	1.39	1.08	6.3	9.4	8.4
1352	1237	12.4	3.4	4.1	128	33.8	926	1219	9.1	9.2	520	518	29.6	34.3	29.8	373	137510	359	17.6	16	12	3.65	1.37	1.11	6.8	9.4	8.4

SURVEY AT 1238 METRES 2.75 DEG.?
NB#4 HIC X3A 12.25",18,18,18.

START DEPTH 1238 METRES

2006	1240	22.7	3.9	4.3	120	28.2	964	1223	9.2	9.3	500	508	26.2	32.2	29.7	407	1263	2	.1	8	494	.05	1.13	1.10	9.1	9.4	8.5
2017	1242	13.8	3.0	4.8	120	28.4	921	1239	9.2	9.3	501	506	26.9	32.2	29.7	420	2593	5	.3	17	228	.16	1.35	1.10	4.5	9.3	8.5
2027	1245	13.9	3.2	4.8	120	26.9	909	1240	9.1	9.3	500	627	27.3	32.0	29.7	410	3804	7	.5	14	154	.24	1.29	1.12	6.0	9.3	8.5
2036	1247	14.6	3.6	3.8	122	38.5	858	1242	9.2	8.9	500	400	27.3	32.2	29.6	389	4889	10	.6	13	118	.31	1.28	1.12	6.2	9.3	8.5
2046	1250	12.3	3.8	4.9	121	41.0	875	1242	9.2	9.1	496	506	27.4	32.1	29.6	411	6129	12	.8	15	97	.40	1.33	1.12	5.4	9.3	8.5
2102	1252	22.2	3.0	5.4	126	30.7	966	1246	9.2	9.2	517	501	27.6	31.7	29.6	392	7272	15	.9	9	82	.58	1.20	1.08	7.9	9.3	8.5
2111	1255	14.6	3.0	4.7	129	27.6	964	1248	9.2	9.2	526	659	27.7	32.3	29.6	401	8507	17	1.1	14	72	.66	1.32	1.13	5.6	9.3	8.5
2123	1257	17.4	2.6	4.4	129	29.3	1000	1251	9.1	9.3	523	569	27.8	32.5	28.0	407	10034	20	1.3	11	65	.74	1.24	1.13	6.0	9.3	8.5
2133	1260	17.2	2.6	5.0	128	28.7	987	1254	9.0	9.4	513	606	28.0	32.3	27.0	402	11336	22	1.5	11	59	.81	1.27	1.13	6.6	9.3	8.5
2140	1262	50.6	3.5	4.8	120	38.4	2752	1256	9.0	9.4	963	1104	28.3	33.6	27.0	372	12141	25	1.6	4	54	.86	1.05	1.15	11.7	9.3	8.5
2155	1265	23.1	2.6	5.5	116	26.7	911	1260	9.1	9.3	506	446	29.2	34.1	27.2	397	13191	27	1.7	9	50	.91	1.18	1.10	9.0	9.3	8.5
2208	1267	9.6	2.7	4.7	121	27.0	881	1263	9.2	9.2	515	512	29.2	33.3	27.3	387	14658	30	1.9	19	47	.97	1.36	1.08	4.8	9.3	8.5
2220	1270	14.7	2.7	3.7	120	32.2	917	1266	9.2	9.3	514	513	29.2	33.6	27.5	378	16164	32	2.1	13	45	1.04	1.29	1.11	6.1	9.2	8.5
2243	1273	22.2	3.1	4.4	118	31.4	2364	1268	9.1	9.6	885	1026	29.1	33.9	27.7	364	17591	35	2.3	9	43	1.11	1.21	1.12	7.7	9.2	8.5
2251	1275	18.8	3.0	4.4	120	38.7	2730	1271	9.1	9.5	943	973	29.6	35.1	27.9	366	18587	37	2.5	10	41	1.16	1.37	1.14	5.0	9.2	8.5
2304	1278	20.4	3.3	4.6	103	38.4	2753	1275	9.1	9.3	945	966	30.1	35.2	28.4	370	19590	40	2.6	9	39	1.20	1.28	1.12	6.3	9.3	8.5 ↑
2312	1280	17.2	3.4	4.7	108	43.2	2744	1277	9.1	9.2	957	968	30.7	35.9	28.9	350	20396	42	2.7	12	37	1.24	1.34	1.11	5.2	9.3	8.5
2320	1282	17.3	3.2	5.3	121	36.8	2760	1280	9.1	9.2	945	960	31.2	36.5	29.1	364	21410	45	2.8	11	36	1.30	1.38	1.13	4.8	9.3	8.5
2330	1285	15.2	3.0	5.1	123	40.8	2732	1282	9.1	9.2	943	961	31.6	36.7	29.1	371	22590	47	3.0	12	34	1.36	1.39	1.13	4.5	9.2	8.5
2339	1287	14.6	3.0	4.2	122	39.9	2640	1285	9.1	9.2	952	972	32.0	37.5	29.3	366	23683	50	3.2	13	33	1.41	1.39	1.15	4.5	9.2	8.5
2348	1290	17.0	3.1	3.9	123	35.9	2687	1287	9.0	9.3	947	957	32.5	38.3	31.8	363	24723	52	3.3	11	32	1.46	1.35	1.16	5.0	9.2	8.5
2	1293	31.1	3.1	4.0	120	38.1	2699	1288	9.1	9.3	954	966	32.9	38.0	31.8	378	25657	55	3.4	6	31	1.49	1.17	1.14	8.6	9.2	8.5
9	1295	20.2	3.2	4.2	120	40.0	2697	1289	9.0	9.2	941	955	33.2	38.6	31.8	380	26512	57	3.5	9	30	1.53	1.29	1.12	6.0	9.2	8.5
16	1293	19.8	3.0	4.2	120	37.5	2722	1290	9.0	9.2	939	973	33.5	38.6	31.8	390	27420	60	3.7	9	29	1.57	1.29	1.11	9.7	9.2	8.5
26	1300	14.6	3.2	4.1	120	37.3	2710	1292	9.0	9.1	952	970	33.7	39.0	32.2	385	28631	62	3.8	13	29	1.62	1.35	1.12	8.7	9.2	8.5
34	1302	16.2	3.0	4.4	120	36.1	2670	1295	9.0	9.2	938	969	34.0	39.6	32.6	395	29600	65	4.0	12	28	1.66	1.35	1.12	8.8	9.2	8.5
51	1305	27.5	3.2	4.0	122	32.8	2696	1299	9.0	9.1	939	951	34.4	39.5	33.0	385	30887	67	4.1	7	27	1.70	1.16	1.12	12.6	9.2	8.5
58	1308	18.0	3.3	4.2	122	38.2	2727	1301	9.0	9.1	924	944	34.5	40.2	33.3	397	31787	70	4.2	11	27	1.74	1.32	1.11	9.2	9.2	8.5
106	1310	19.0	3.3	4.4	123	42.8	2697	1303	9.0	9.1	935	956	34.6	40.3	33.5	394	32778	72	4.4	10	26	1.78	1.32	1.11	9.4	9.1	8.5
115	1312	17.0	3.0	4.2	123	36.3	2656	1304	9.0	9.1	939	951	34.7	40.5	33.8	394	33854	75	4.5	11	26	.79	1.34	1.11	9.1	9.2	8.4
126	1315	15.3	3.2	4.4	124	33.2	2713	1308	9.1	9.3	954	965	35.2	41.0	34.2	408	35265	77	4.7	12	25	.81	1.37	1.13	8.2	9.2	8.4
145	1317	15.6	3.2	3.6	120	31.5	2717	1312	9.1	9.3	953	921	35.5	40.7	34.5	415	36663	80	4.9	12	25	.83	1.31	1.13	10.1	9.2	8.4 ↑
149	1320	35.6	3.3	3.5	120	32.2	2662	1313	9.1	9.3	942	950	35.6	41.1	34.5	402	37211	82	5.0	5	24	.83	1.10	1.10	15.5	9.2	8.4
158	1322	15.0	3.0	4.2	122	33.1	2670	1315	9.1	9.2	945	953	35.8	41.2	34.7	419	38298	85	5.1	12	24	.85	1.35	1.08	9.5	9.2	8.4
207	1325	16.1	3.1	4.1	122	32.5	2695	1316	9.1	9.2	948	946	35.9	41.4	35.0	418	39387	87	5.3	12	24	.87	1.32	1.09	10.0	9.2	8.4
217	1327	14.0	3.2	4.0	121	33.0	2680	1321	9.0	9.2	944	962	36.1	41.8	35.3	428	40590	90	5.4	13	23	.88	1.36	1.10	9.0	9.2	8.4
234	1330	20.7	3.4	3.6	128	35.2	2720	1324	9.1	9.2	956	972	36.4	41.0	35.5	424	41569	92	5.6	9	23	.90	1.24	1.10	14.5	9.2	8.4 ↑
240	1332	26.8	3.2	3.6	128	34.9	2716	1326	9.1	9.2	956	945	36.3	41.8	35.6	419	42599	95	5.7	6	23	.91	1.16	1.08	13.3	9.2	8.4
245	1335	25.6	3.2	4.3	129	35.2	2726	1327	9.1	9.2	956	930	36.4	41.9	35.7	431	43300	97	5.8	7	22	.92	1.22	1.05	12.3	9.2	8.4
252	1337	22.1	3.1	4.5	129	34.8	2746	1329	9.1	9.2	945	952	36.6	42.0	35.8	427	44232	100	5.9	9	22	.93	1.30	1.05	10.3	9.2	8.4
303	1340	13.3	3.2	3.9	123	34.3	2704	1331	9.1	9.2	953	937	36.6	42.2	36.1	440	45506	102	6.1	14	22	.95	1.36	1.06	9.0	9.3	8.4
312	1342	14.6	3.1	3.9	123	37.7	2718	1335	9.1	9.2	946	958	36.9	42.4	36.2	445	46640	105	6.2	13	22	.97	1.35	1.03	8.9	9.3	8.4
331	1345	27.4	3.4	4.3	121	52.9	2716	1339	9.1	9.2	935	925	36.8	42.3	36.3	443	47692	107	6.4	7	21	.98	1.25	1.08	11.2	9.2	8.4
340	1348	15.8	3.0	3.9	121	42.5	2720	1341	9.1	9.2	940	959	37.0	42.8	36.4	450	48858	110	6.5	12	21	1.00	1.43	1.09	7.5	9.2	8.4
350	1350	16.0	3.4	3.9	122	42.7	2692	1343	9.1	9.2	955	925	37.2	42.4	36.5	448	50042	112	6.7	12	21	1.02	1.42	.71	7.6	9.3	8.4
405	1352	10.6	3.1	4.4	123	42.4	2729	1347	9.1	9.2	946	946	37.4	43.0	36.7	455	51608	115	6.9	18	21	1.04	1.50	.72	6.3	9.2	8.4
414	1355	18.1	3.3	3.6	124	40.9	2727	1349	9.1	9.2	945	923	37.6	43.1	36.8	462	52609	117	7.1	10	21	1.06	1.36	.72	8.8	9.2	8.4
437	1357	24.6	3.2	3.5	122	41.6	2653	1352	9.1	9.2	943	855	37.8	43.0	37.0	468	54236	120	7.3	8	21	1.08	1.28	.73	10.8	9.2	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 13:53 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
444	1360	18.3	3.2	4.4	122	45.3	2672	1355	9.1	9.2	930	939	37.9	43.7	37.1	478	55074	122	7.4	10	20	1.09	1.41	.74	9.2	9.2	8.4
503	1362	15.2	3.4	3.7	119	48.2	2696	1356	9.1	9.2	934	906	38.0	44.7	37.4	497	56372	125	7.6	12	20	1.11	1.41	.72	10.5	9.2	8.4
514	1365	14.5	3.1	4.3	121	42.9	2734	1361	9.1	9.2	933	943	38.5	44.2	37.6	506	57746	127	7.7	13	20	1.13	1.45	.72	1.4	9.2	8.4
525	1367	17.0	3.0	3.7	121	41.8	2736	1362	9.1	9.2	933	956	38.7	43.9	37.7	500	58967	130	7.9	12	20	1.15	1.44	.72	1.1	9.2	8.4
543	1370	21.3	2.9	4.0	119	42.1	2720	1365	9.1	9.2	933	926	38.8	45.2	37.9	505	60324	132	8.1	10	20	1.17	1.35	.73	.9	9.2	8.4
551	1373	17.9	3.1	3.6	119	42.6	2671	1367	9.1	9.2	944	959	39.0	44.5	38.0	507	61291	135	8.2	11	20	1.18	1.39	.75	.3	9.2	8.4
602	1375	13.8	3.1	3.6	118	44.4	2742	1369	9.1	9.2	941	957	39.1	44.9	38.3	505	62534	137	8.4	14	20	1.20	1.49	.74	1.2	9.2	8.4
615	1377	9.5	3.1	3.4	120	39.8	2801	1372	9.1	9.2	958	957	39.3	44.9	38.6	497	64162	140	8.6	20	20	1.22	1.55	.74	.5	9.2	8.4
624	1380	20.1	2.8	3.4	118	39.8	2764	1374	9.1	9.2	946	948	39.3	45.8	38.7	486	65139	142	8.8	10	19	1.25	1.32	.77	.6	9.2	8.4
649	1382	10.8	3.1	3.4	121	39.8	2782	1378	9.1	9.2	953	887	39.3	44.6	39.0	485	66985	145	9.0	17	19	1.25	1.50	.67	.0	9.2	8.4
655	1385	22.7	3.0	3.5	120	39.9	2784	1380	9.1	9.2	950	918	39.5	45.0	39.0	476	67720	147	9.1	8	19	1.25	1.27	.67	.1	9.2	8.4
705	1387	14.6	3.1	4.3	123	43.3	2781	1382	9.1	9.2	946	858	39.6	45.0	39.1	477	68974	150	9.3	13	19	1.26	1.46	.75	1.4	9.2	8.4
716	1390	13.3	2.9	4.0	120	42.0	2758	1383	9.0	9.2	949	925	39.5	44.8	39.2	482	70315	152	9.5	14	19	1.28	1.47	.76	1.3	9.2	8.4
727	1392	13.4	2.8	3.6	123	42.4	2778	1387	9.1	9.2	936	940	39.6	45.4	39.2	485	71640	155	9.7	14	19	1.30	1.47	.76	1.2	9.2	8.4
751	1395	12.0	3.0	3.8	144	42.0	2792	1391	9.1	9.2	945	878	39.6	44.6	39.4	470	73771	157	9.9	15	19	1.33	1.55	.76	.8	9.2	8.4
757	1398	23.5	3.0	3.3	146	43.0	2735	1393	9.1	9.2	946	913	39.5	44.9	39.5	469	74706	160	10.0	8	19	1.34	1.34	.78	2.4	9.2	8.4
804	1400	17.9	2.9	4.0	148	43.3	2775	1394	9.1	9.2	954	864	39.6	45.3	39.5	467	75681	162	10.1	10	19	1.36	1.46	.79	2.3	9.2	8.4
NOTE: RPM INCREASED TO APPROXIMATELY 150																											
813	1402	17.5	3.0	3.9	148	44.8	2796	1395	9.1	9.2	948	881	39.7	45.1	39.5	467	76971	165	10.3	11	19	1.38	1.48	.79	2.1	9.2	8.4
829	1406	13.0	2.8	3.9	147	41.5	2763	1400	9.1	9.2	933	896	39.7	45.5	39.6	455	79355	169	10.5	14	18	1.41	1.49	.81	1.4	9.2	8.4
832	1407	16.2	2.9	3.2	148	41.2	2778	1401	9.1	9.2	947	883	39.8	45.4	39.6	450	79910	170	10.6	12	18	1.43	1.49	.81	1.1	9.3	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 15:48 11/15/76

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
852	1410	20.0	2.9	3.5	153	36.2	2830	1405	9.1	9.2	958	869	39.7	45.2	39.5	426	82157	172	10.8	7	18	1.46	1.28	.81	4.4	9.3	8.4
855	1411	23.0	3.0	3.3	48	12.9	2748	1406	9.1	9.2	952	865	11.9	13.5	11.8	443	[illegible]	174	10.8	8	18	1.46	1.39	.83	2.9	9.3	8.4
857	1412	21.7	2.9	4.1	48	12.5	2811	1406	9.1	9.2	961	903	11.9	13.6	11.8	447	82971	174	10.9	9	18	1.47	1.43	.83	2.5	9.3	8.5
900	1413	17.7	3.2	4.1	153	44.3	2789	1407	9.1	9.2	961	869	39.7	45.6	39.6	448	83320	175	10.9	11	18	1.47	1.51	.82	1.8	9.3	8.4
901	1413	16.7	3.3	3.7	47	14.2	2803	1407	9.1	9.2	961	951	11.9	13.6	11.8	436	83599	175	10.9	11	18	1.48	1.51	.82	1.8	9.3	8.4
908	1415	16.2	3.0	4.0	159	40.5	2765	1409	9.1	9.2	942	922	39.8	45.6	39.6	447	84706	177	11.1	12	18	1.50	1.48	.83	2.0	9.3	8.4
911	1416	17.0	2.9	3.4	160	46.3	2769	1409	9.1	9.2	939	916	39.9	45.7	39.6	443	85164	178	11.1	11	18	1.50	1.46	.84	2.1	9.3	8.5
913	1416	16.9	3.0	3.8	158	41.4	2698	1409	9.1	9.2	939	920	39.9	45.5	39.6	439	85412	179	11.1	11	18	1.51	1.46	.84	2.0	9.3	8.4
920	1418	17.1	3.0	3.7	158	43.7	2782	1411	9.1	9.2	947	926	40.0	45.5	39.7	431	86585	181	11.3	11	18	1.52	1.46	.85	0.0	9.3	8.4
929	1420	12.3	2.7	4.0	154	38.6	2635	1414	9.2	9.2	931	866	40.5	45.9	39.7	437	[illegible]	183	11.4	15	18	1.54	1.54	.85	0.0	9.3	8.3
943	1422	29.4	2.9	3.7	162	38.9	2721	1416	9.2	9.2	940	885	40.3	45.9	39.7	433	89084	185	11.5	6	18	1.55	1.30	.86	0.0	9.3	8.3
949	1424	20.5	3.3	3.9	163	50.8	2722	1418	9.1	9.2	940	864	40.2	45.5	39.7	423	90147	187	11.6	9	18	1.57	1.45	.89	6.8	9.3	8.4
959	1426	12.2	2.9	3.8	162	44.1	2703	1420	9.1	9.2	929	926	40.3	46.3	39.7	440	91654	189	11.8	15	18	1.60	1.60	.87	2.4	9.3	8.5
1005	1428	18.5	3.0	3.7	164	46.6	2675	1421	9.1	9.2	923	966	40.6	47.1	39.8	421	92759	191	11.9	10	18	1.61	1.48	.89	3.7	9.3	8.3
1015	1430	11.6	3.1	4.2	164	46.1	2690	1424	9.0	9.2	940	968	41.1	47.1	40.0	423	94353	193	12.0	16	18	1.64	1.61	.89	2.4	9.3	8.4
1023	1432	16.1	3.3	3.4	165	52.0	2659	1426	9.1	9.2	932	934	41.2	47.4	40.2	422	95677	195	12.2	12	18	1.66	1.53	.91	3.2	9.3	8.4
1042	1434	12.9	2.6	3.3	153	41.5	2645	1430	9.2	9.2	902	844	41.3	46.3	40.2	409	97532	197	12.4	15	18	1.68	1.53	.92	3.0	9.2	8.3
1047	1436	24.3	2.7	3.4	161	42.2	2614	1431	9.2	9.2	917	896	41.3	47.0	40.2	405	98246	199	12.4	8	18	1.69	1.37	.94	5.4	9.2	8.3
1053	1438	17.6	3.0	4.1	164	43.9	2622	1432	9.3	9.2	924	936	41.4	47.0	40.3	399	99273	201	12.5	11	18	1.71	1.55	.96	3.0	9.2	8.4
1101	1440	14.0	2.9	3.9	164	45.3	2685	1434	9.2	9.2	920	956	41.5	[illegible]	[illegible]	392	[illegible]	203	12.7	13	17	1.73	1.58	.96	3.9	9.3	8.4
1116	1442	16.7	2.8	3.6	153	46.5	2732	1436	9.2	9.2	956	966	41.7	48.5	40.9	385	102229	205	12.9	11	17	1.75	1.47	.96	5.3	9.3	8.4
1123	1444	17.8	2.8	3.4	161	45.3	2812	1439	9.1	9.2	951	964	42.0	45.5	41.1	383	103479	207	13.0	11	17	1.77	1.47	.98	5.5	9.4	8.4
1133	1446	12.4	2.8	3.6	161	47.3	2764	1441	9.1	9.2	949	969	42.2	48.2	41.2	380	104970	209	13.1	16	17	1.79	1.60	.99	3.6	9.4	8.4
1144	1448	37.0	3.3	4.5	129	62.3	2811	1442	9.2	9.2	943	933	42.3	47.8	41.3	382	105905	211	13.2	5	17	1.80	1.30	1.02	10.1	9.4	8.4
1153	1450	13.8	2.7	3.9	129	41.7	2765	1445	9.2	9.2	956	956	42.3	47.7	41.4	371	107091	213	13.4	14	17	1.82	1.57	1.01	4.8	9.3	8.5
1202	1452	12.5	2.6	4.5	131	41.0	2785	1447	9.1	9.2	944	962	42.3	48.4	41.5	371	108257	215	13.5	15	17	1.83	1.53	1.05	5.1	9.3	8.5
1210	1455	14.9	3.8	4.2	162	54.1	2702	1448	9.1	9.2	956	939	42.5	47.7	41.6	369	109385	217	13.7	13	17	1.85	1.56	1.08	5.0	9.3	8.3
1219	1456	14.7	2.9	3.9	161	46.6	2804	1450	9.1	9.2	955	971	42.4	47.9	41.9	375	110836	219	13.8	13	17	1.87	1.54	1.07	5.2	9.3	8.5
1228	1458	12.7	2.8	3.9	161	43.6	2773	1452	9.1	9.3	942	928	42.2	48.9	42.1	374	112251	221	14.0	15	17	1.89	1.58	1.10	4.6	9.3	8.3
1240	1460	18.1	2.8	4.1	158	42.5	2641	1455	9.1	9.3	926	941	42.0	48.4	42.2	373	113456	223	14.1	10	17	1.90	1.49	1.13	5.8	9.3	8.5 ↑
1247	1462	15.7	3.0	4.0	156	52.6	2743	1456	9.1	9.3	941	958	42.0	48.4	42.2	383	114569	225	14.2	12	17	1.92	1.57	1.14	4.8	9.2	8.5
1256	1465	[illegible]	2.8	3.7	155	48.9	2699	1458	9.1	9.3	952	957	42.2	48.5	42.3	360	115948	227	14.4	13	17	1.94	1.57	1.15	4.7	9.2	8.3
1303	1466	15.3	2.8	3.9	133	51.2	2805	1460	9.1	9.3	942	939	42.2	48.2	42.3	387	117047	229	14.5	12	17	1.95	1.54	1.17	5.2	9.2	8.4
1313	1469	13.7	2.8	4.0	139	53.2	2763	1462	9.1	9.3	961	623	42.3	48.6	42.3	390	118301	231	14.6	14	17	1.96	1.55	1.18	5.0	9.3	8.5
1323	1471	11.5	3.1	3.9	158	51.5	2774	1465	9.1	9.3	953	951	42.3	48.5	42.2	390	119893	233	14.8	16	17	1.99	1.66	1.22	3.5	9.2	8.4
1331	1473	13.8	2.9	4.3	154	47.2	2766	1467	9.1	9.3	955	954	42.3	48.4	42.1	383	121124	235	15.0	14	17	2.01	1.66	1.22	3.7	9.2	8.4
1344	1475	15.0	3.2	4.1	156	54.0	2764	1469	9.1	9.3	957	971	42.1	48.5	42.1	392	122465	237	15.1	13	17	2.02	1.59	1.23	4.5	9.3	8.5
1352	1477	19.3	3.7	4.2	158	62.9	2770	1471	9.1	9.3	957	970	42.3	48.2	42.1	397	123736	239	15.2	10	17	2.04	1.54	1.24	4.9	9.3	8.4
1400	1479	16.3	3.4	4.3	159	53.8	2760	1472	9.1	9.3	946	973	42.2	48.4	42.1	397	124904	241	15.4	10	17	2.06	1.57	1.26	4.9	9.3	8.3
1407	1481	16.3	2.8	4.3	156	61.1	2734	1474	9.1	9.3	948	963	42.2	48.3	42.2	380	126117	243	15.5	12	17	2.08	1.63	1.25	4.3	9.3	8.4
1415	1483	18.6	3.4	3.9	157	60.3	2777	1475	9.1	9.3	944	962	42.2	48.4	42.2	400	127244	245	15.6	10	17	2.10	1.53	1.24	5.2	9.3	8.3
1424	1485	14.0	3.1	4.4	157	41.4	2749	1478	9.1	9.3	934	973	42.2	48.6	42.2	399	128713	247	15.8	14	17	2.13	1.79	1.30	2.6	9.3	8.4
1439	1487	12.9	2.5	4.3	157	52.0	2338	1481	9.1	9.3	864	921	42.2	47.4	42.2	390	130297	249	15.9	15	17	2.15	1.68	1.28	3.5	9.2	8.4
1447	1489	15.9	2.7	4.2	156	48.1	2847	1483	9.1	9.3	958	960	42.2	48.5	42.2	396	131571	251	16.1	11	17	2.17	1.61	1.26	4.5	9.3	8.3
1456	1491	13.5	2.8	4.1	158	42.0	2774	1485	9.1	9.3	958	905	42.2	48.1	42.2	380	132682	253	16.2	14	17	2.19	1.63	1.26	4.1	9.3	8.5
1505	1493	13.1	2.8	4.3	158	50.0	2778	1487	9.1	9.3	950	947	42.2	48.3	42.2	390	134292	255	16.4	14	17	2.21	1.58	1.24	4.6	9.3	8.3
1513	1495	15.2	3.4	3.9	160	59.8	2818	1488	9.1	9.2	947	941	42.2	48.2	42.2	394	135589	257	16.5	12	17	2.23	1.53	1.24	4.9	9.3	8.4
1524	1497	9.4	2.6	4.1	158	41.0	2789	1491	9.1	9.2	944	947	42.2	48.3	42.2	404	137388	259	16.7	20	17	2.25	1.64	1.23	3.6	9.3	8.4
1532	1499	15.2	2.7	3.9	156	45.5	2728	1493	9.1	9.2	947	941	42.2	48.2	42.2	394	138687	261	16.8	12	17	2.26	1.56	1.24	4.9	9.3	8.4
1544	1501	12.3	3.4	3.7	123	53.6	2321	1495	9.1	9.2	[illegible]	926	42.0	49.2	42.2	406	139750	263	[illegible]	15	17	2.27	1.55	1.23	4.6	9.3	8.4 ↑

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 15:52 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1552	1503	11.5	3.8	5.2	127	61.0	2343	1496	9.1	9.2	862	910	42.2	48.8	42.1	387	140837	265	17.1	16	17	2.29	1.66	1.25	3.7	9.3	8.3
1602	1505	12.4	3.4	5.7	115	35.9	2477	[illegible]	9.1	9.2	[illegible]	921	42.2	[illegible]	42.1	392	142119	267	17.2	15	17	2.30	1.59	1.24	4.5	9.3	8.4
1614	1507	10.7	4.6	5.1	152	53.6	2792	1500	9.1	9.2	934	951	42.1	48.0	42.1	385	[illegible]	269	17.4	17	17	2.32	1.62	1.24	3.8	9.3	8.4
1625	1509	10.5	4.1	6.0	148	66.2	2736	1503	9.1	9.2	951	940	42.0	48.3	42.2	387	145324	271	17.6	18	17	2.34	1.72	1.26	3.1	9.3	8.4
1635	1511	10.9	4.2	5.1	150	31.8	2727	1505	9.1	9.3	943	955	42.3	48.4	42.1	375	146888	273	17.8	17	17	2.35	1.58	1.23	4.4	9.3	8.3
1647	1513	10.8	4.7	5.2	153	54.4	2788	1507	9.2	9.3	940	931	42.0	48.4	42.1	380	148604	275	18.0	19	17	2.37	1.60	1.25	4.5	9.3	8.4
1702	1515	11.9	4.7	6.1	143	60.6	2743	1509	9.2	9.3	944	929	42.1	48.0	42.1	371	150099	277	18.1	16	17	2.39	1.58	1.24	4.5	9.3	8.3
1713	1517	10.4	3.8	5.5	145	41.6	2754	1511	9.2	9.3	948	917	42.3	48.4	42.1	377	151736	279	18.3	19	17	2.40	1.60	1.21	4.2	9.3	8.4
1723	1519	10.9	3.9	6.0	144	41.7	2735	1513	9.2	9.3	947	959	42.3	48.4	42.0	375	153197	281	18.5	17	17	2.42	1.59	1.19	4.3	9.3	8.4
1733	1521	10.3	4.2	5.3	137	43.9	2650	1515	9.2	9.3	907	867	42.4	48.3	42.0	372	154574	283	18.7	18	17	2.44	1.61	1.21	4.1	9.3	8.5
1746	1523	9.3	2.9	5.2	88	43.7	2574	1517	9.2	9.3	879	906	42.3	48.7	42.0	363	156181	285	18.9	20	17	2.45	1.62	1.25	3.9	9.3	8.4
1758	1525	10.6	2.8	4.9	152	41.5	2765	1519	9.2	9.3	938	930	42.4	49.0	42.0	349	157876	287	19.1	18	17	2.47	1.58	1.23	4.5	9.3	8.3
1817	1527	11.7	2.5	3.7	150	39.7	2697	1522	9.2	9.3	936	973	42.6	48.7	42.2	335	159745	289	19.3	16	17	2.48	1.56	1.23	4.8	9.3	8.3 ↑
1825	1529	12.1	2.7	3.6	150	41.4	2760	1523	9.2	9.3	944	931	42.7	48.6	42.2	335	161033	291	19.4	15	17	2.50	1.52	1.22	5.0	9.3	8.3
1836	1531	11.4	2.6	3.6	151	43.2	2769	1525	9.2	9.3	940	930	42.7	48.5	42.3	346	162636	293	19.6	16	17	2.51	1.53	1.20	5.0	9.4	8.4
1846	1533	11.9	2.6	3.7	150	43.4	2732	1526	9.2	9.3	930	937	42.8	48.8	42.3	296	164147	295	19.8	16	17	2.53	1.54	1.20	5.1	9.4	8.4
1855	1535	14.3	3.5	4.3	157	58.2	2714	1528	9.1	9.3	937	964	43.0	48.6	42.3	306	165506	297	19.9	13	17	2.54	1.53	1.22	5.3	9.4	8.4
1905	1537	13.8	3.6	3.8	155	65.8	2734	1530	9.1	9.3	935	950	43.0	48.3	42.5	303	167032	299	20.1	14	17	2.56	1.62	1.23	4.2	9.4	8.4
1914	1539	12.8	2.9	4.6	156	49.1	2737	1532	9.1	9.3	924	970	43.1	49.2	42.6	310	168492	301	20.2	15	17	2.58	1.65	1.23	3.8	9.4	8.5
1929	1541	19.4	2.6	4.1	155	43.1	2763	1534	9.1	9.3	940	916	43.0	47.9	42.6	308	[illegible]	303	20.4	10	17	2.60	1.50	1.22	6.1	9.3	8.5 ↑
1940	1543	12.1	3.1	4.2	157	56.4	2823	1537	9.1	9.3	955	935	42.7	48.5	42.7	315	171605	305	20.5	15	17	2.62	1.62	1.20	3.8	9.3	8.5
1950	1545	11.6	3.0	4.0	156	51.4	2759	1539	9.2	9.3	953	929	42.0	48.5	42.8	337	173242	307	20.7	16	17	2.63	1.67	1.23	3.2	9.3	8.4
2001	1547	11.0	3.4	4.0	154	54.9	2727	1541	9.2	9.3	940	890	41.7	49.0	42.9	363	174875	309	20.9	17	17	2.65	1.69	1.25	3.4	9.3	8.4
FLOW CHECK AT 1548 METRES																											
2017	1549	11.4	2.7	3.8	150	50.2	2754	1543	9.1	9.3	957	888	41.8	48.7	43.0	393	176789	311	21.1	18	17	2.67	1.63	1.24	4.3	9.3	8.4
2028	1551	12.0	2.9	4.0	150	46.2	2744	1545	9.1	9.3	943	896	42.2	48.3	43.0	363	178335	313	21.3	16	17	2.69	1.63	1.25	4.0	9.3	8.3
2047	1554	15.0	3.0	4.5	144	54.1	2821	1548	9.1	9.3	968	961	42.2	48.6	42.6	383	180392	316	21.5	12	17	2.71	1.60	1.25	4.7	9.3	8.4 ↑
2054	1555	13.5	3.1	4.2	153	59.0	2773	1549	9.1	9.3	960	962	42.1	48.5	42.3	376	181291	317	21.6	14	17	2.72	1.67	1.25	3.6	9.3	8.4
2106	1557	10.4	2.7	4.1	154	49.6	2754	1551	9.0	9.3	953	890	42.3	48.5	41.9	383	183142	319	21.8	18	17	2.75	1.72	1.23	3.0	9.3	8.4
2116	1559	14.8	3.4	3.8	153	68.7	2722	1553	9.0	9.3	960	850	42.4	48.7	41.7	386	184693	321	22.0	13	17	2.77	1.62	1.27	4.5	9.3	8.3
2127	1561	10.4	2.7	4.0	153	52.9	2767	1555	9.0	9.3	958	912	42.5	48.4	41.9	381	186394	323	22.2	18	17	2.79	1.74	1.27	2.9	9.2	8.5
2138	1563	9.3	3.0	4.0	153	53.1	2775	1557	9.1	9.3	958	893	42.3	48.2	42.1	381	188103	325	22.3	20	17	2.81	1.75	1.26	2.7	9.2	8.4
2149	1565	10.1	2.8	4.6	153	53.4	2759	1559	9.1	9.4	956	920	42.4	48.3	42.2	387	189727	327	22.5	19	17	2.83	1.76	1.29	2.7	9.2	8.5
2204	1567	23.8	3.7	4.9	151	50.8	2598	1561	9.1	9.4	919	836	42.2	47.8	42.2	385	191231	329	22.7	8	17	2.85	1.46	1.26	7.1	9.2	8.4
2214	1569	10.0	3.3	5.0	150	54.9	2688	1563	9.1	9.4	954	914	42.2	48.3	42.3	386	192792	331	22.8	19	17	2.86	1.67	1.24	3.5	9.2	8.5
2224	1571	13.7	2.7	4.3	148	47.9	2731	1565	9.1	9.4	939	903	42.3	48.3	42.4	381	194181	333	23.0	14	17	2.88	1.61	1.24	4.4	9.2	8.5
2236	1573	12.0	3.3	4.5	150	48.3	2697	1568	9.1	9.4	941	888	42.2	48.2	42.4	388	196025	335	23.2	17	17	2.90	1.72	1.27	3.1	9.3	8.3
2250	1575	8.3	2.9	4.3	150	49.2	2721	1570	9.1	9.4	939	926	42.3	48.2	42.3	400	198139	337	23.4	23	17	2.92	1.77	1.26	2.6	9.3	8.4
2302	1577	9.1	3.6	4.2	150	62.4	2716	1572	9.1	9.4	947	848	42.3	48.5	42.2	391	199986	339	23.6	21	17	2.94	1.80	1.28	2.3	9.3	8.3
2323	1579	13.9	2.8	4.5	152	51.2	882	1575	9.2	9.4	483	396	42.1	47.6	42.1	409	202293	341	23.9	14	17	2.97	1.55	1.29	5.1	9.3	8.4
2337	1581	9.1	2.4	4.1	156	42.9	974	1576	9.1	9.3	516	499	41.2	46.2	42.2	416	204414	344	24.1	21	17	2.99	1.70	1.26	3.2	9.3	8.4
2350	1583	9.3	2.3	3.5	157	41.3	978	1577	9.1	9.3	526	479	40.5	45.7	42.2	409	206417	346	24.3	20	17	3.01	1.72	1.26	3.0	9.3	8.4
4	1585	8.9	3.1	3.9	154	55.9	974	1578	9.1	9.3	527	460	39.9	45.1	42.2	409	208574	348	24.6	21	17	3.03	1.76	1.29	2.7	9.3	8.4
BACK TO USING TWO PUMPS ON THE HOLE.																											
14	1588	12.0	3.2	3.7	157	420.1	2711	1591	9.2	9.6	964	901	40.4	45.5	40.4	349	211547	354	27.8	16	17	3.04	1.62	1.29	6.0	9.2	8.4
21	1590	9.0	2.9	3.9	157	41.2	2632	1591	9.2	9.6	946	898	12.0	13.7	12.1	343	212652	356	28.0	14	17	3.04	1.65	1.32	4.5	9.2	8.5
39	1592	10.4	3.1	3.9	157	4.0	2641	1591	9.2	9.6	960	861	12.0	13.7	12.1	346	212691	356	28.3	15	17	3.04	1.64	1.26	5.2	9.2	8.5
49	1594	12.0	3.0	3.9	157	41.5	2657	1591	9.2	9.6	963	884	12.0	13.7	12.1	342	212734	356	28.5	15	17	3.04	1.64	1.29	6.0	9.2	8.5
59	1596	10.4	2.8	3.7	158	4.5	2808	1591	9.2	9.4	929	935	40.4	46.1	40.4	338	214327	358	28.6	16	17	3.04	1.62	1.28	5.2	9.2	8.4
110	1597	11.7	2.7	3.9	160	39.1	2773	1592	9.2	9.3	931	906	40.4	45.7	40.3	340	[illegible]	360	[illegible]	16	18	3.04	1.62	1.36	5.9	9.2	8.3

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 15:56 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW	
123	1599	11.3	3.3	3.8	159	43.0	2763	1594	9.2	9.3	934	869	40.3	45.6	40.3	332	217685	362	29.0	17	18	3.04	1.61	1.25	5.7	9.2	8.5	
134	1600	9.6	3.0	3.8	159	40.3	2760	1594	9.2	9.3	932	906	40.2	45.7	40.3	333	218324	362	29.2	20	18	3.04	1.64	1.28	4.8	9.2	8.4	*
146	1603	10.1	3.0	3.7	159	41.1	2752	1597	9.2	9.3	920	861	39.9	45.9	40.3	321	221263	366	29.3	19	18	3.04	1.63	1.30	5.1	9.2	8.5	
208	1605	11.5	2.8	3.9	161	41.4	2756	1601	9.2	9.3	914	868	39.7	45.3	40.2	327	224148	368	29.5	17	18	3.04	1.63	1.30	5.8	9.2	8.4	
221	1607	6.8	3.0	4.2	163	44.7	2715	1604	9.2	9.3	924	893	39.9	45.6	40.0	317	226692	370	29.6	28	19	3.04	1.80	1.28	3.4	9.2	8.3	
234	1609	7.1	3.0	4.1	162	43.4	2690	1606	9.1	9.3	903	974	39.9	45.6	39.7	307	229885	372	29.7	27	20	3.04	1.72	1.31	3.6	9.2	8.5	
247	1611	7.4	3.3	3.8	162	54.1	2697	1607	9.1	9.2	936	962	40.0	45.7	39.8	302	232425	374	30.0	26	20	3.04	1.74	1.27	3.7	9.2	8.3	
302	1613	6.1	2.6	3.8	162	43.7	2689	1609	9.1	9.2	924	966	40.1	45.7	39.8	297	235530	376	30.3	31	20	3.04	1.79	1.30	3.1	9.2	8.4	
314	1615	2.6	2.6	3.9	162	48.7	2720	1612	9.1	9.2	926	982	40.1	45.9	39.9	311	239422	377	30.7	71	21	3.04	2.13	1.28	1.3	9.2	8.3	*
403	1615	2.6	2.6	3.9	162	48.7	2720	1612	9.1	9.2	926	982	40.1	45.9	39.9	311	239422	377	3.1	71	5	8.00	2.13	-24.08	0.0	9.2	-.3	*

SURVEY AT 1615 METRES 0 DEGREES
NB#5 HTC X3A 12.25",18,18,18.
START DEPTH 1615 METRES
TIGHT HOLE AT 1515 METRES ON TRIP IN

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW	
1045	1615	4.1	3.4	4.0	74	35.5	1023	1612	9.1	9.2	522	653	34.2	41.7	39.9	366	85	0	.0	46	3614	.00	1.84	.74	5.2	9.2	8.4	
1105	1617	9.5	3.7	6.4	74	45.0	970	1613	9.2	9.2	501	530	35.2	40.5	40.0	363	1216	2	.2	21	574	.01	1.38	.74	18.0	9.2	8.4	
1130	1619	13.6	3.6	4.2	155	42.2	882	1614	9.0	9.3	455	530	35.7	40.9	40.0	372	3390	4	.4	14	320	.07	1.54	.72	10.5	9.2	8.4	
1133	1619	12.6	3.5	3.7	40	44.5	2931	1614	9.0	9.3	932	876	35.7	40.6	40.0	348	53166	4	.5	15	330	.07	1.53	.69	11.3	9.2	8.4	↑
1134	1619	11.3	3.4	4.5	38	56.7	2620	1614	9.0	9.3	920	937	35.7	41.3	40.0	355	53212	4	.5	17	324	.07	1.51	.69	12.0	9.2	8.4	
1141	1621	18.1	3.8	4.5	134	53.1	2634	1615	9.0	9.4	923	914	36.4	42.6	40.0	346	53990	6	.6	11	225	.09	1.52	.71	8.0	9.2	8.4	
1144	1623	34.9	4.1	4.6	136	54.2	2745	1615	9.0	9.4	928	908	36.7	42.7	40.0	355	54478	8	.7	5	172	.11	1.34	.71	15.0	9.2	8.4	
1148	1625	33.3	3.6	4.5	128	58.3	2649	1616	9.0	9.5	917	913	37.0	42.9	40.0	353	54957	10	.7	6	141	.13	1.36	.71	13.6	9.2	8.4	
1154	1627	19.2	4.6	4.9	132	60.3	2734	1618	9.0	9.5	919	906	37.2	43.0	37.2	344	55696	12	.8	10	120	.16	1.54	.72	.6	9.2	8.4	
1159	1629	20.4	4.1	5.4	149	60.9	2727	1619	9.0	9.5	926	899	37.4	43.0	36.2	355	56449	14	.9	9	104	.19	1.56	.72	.5	9.1	8.4	
1204	1631	30.4	4.0	5.0	151	60.7	2700	1619	9.1	9.4	927	914	37.5	43.1	35.6	343	57155	16	1.0	7	93	.22	1.48	.72	.9	9.1	8.4	
1222	1633	16.6	4.0	5.1	150	51.3	2349	1625	9.1	9.4	858	908	37.3	43.1	35.7	336	58606	18	1.2	12	84	.27	1.50	.66	.7	9.1	8.4	↑
1224	1636	47.7	4.1	4.8	135	50.8	2557	1625	9.1	9.4	898	926	37.4	43.2	35.7	341	58923	20	1.2	4	76	.28	1.23	.75	12.3	9.1	8.4	
1230	1638	25.8	4.0	4.8	145	51.3	2513	1627	9.1	9.4	878	910	37.5	43.4	36.2	340	59476	22	1.3	7	70	.30	1.46	.74	17.8	9.1	8.4	
1234	1640	27.2	4.2	5.3	159	61.8	2609	1629	9.1	9.4	896	904	37.8	43.3	36.3	348	60324	24	1.4	7	65	.33	1.40	.74	15.3	9.1	8.4	
1240	1642	19.6	4.1	4.9	161	53.0	2648	1631	9.1	9.4	888	891	37.8	43.3	36.7	345	61262	26	1.5	9	61	.37	1.56	.74	8.2	9.1	8.4	
1243	1644	42.0	4.8	4.9	154	61.2	2513	1632	9.1	9.4	902	894	37.9	43.4	36.8	349	61710	29	1.5	4	57	.39	1.34	.75	32.8	9.1	8.4	
1256	1646	19.5	4.1	5.3	153	52.0	2828	1633	9.1	9.3	941	877	37.8	43.2	37.2	343	63015	31	1.7	9	54	.43	1.54	.75	10.1	9.2	8.4	↑
1259	1648	37.1	4.3	4.8	142	52.9	2657	1634	9.1	9.3	923	921	37.8	42.9	37.3	350	63437	33	1.7	5	51	.45	1.35	.75	30.8	9.2	8.4	
1303	1650	30.1	4.2	5.3	142	60.0	2666	1636	9.1	9.4	919	914	37.8	43.3	37.3	359	63998	35	1.8	6	48	.47	1.42	.75	20.9	9.2	8.4	
1306	1652	23.1	4.6	5.7	155	65.1	2794	1638	9.1	9.4	935	911	37.9	43.5	37.3	352	64660	37	1.9	6	46	.50	1.46	.76	10.7	9.2	8.4	
1312	1654	26.4	4.4	5.0	140	59.5	2596	1640	9.1	9.4	821	702	38.1	43.8	37.3	366	65343	39	1.9	7	44	.52	1.44	.76	19.4	9.2	8.4	
1316	1656	27.4	4.3	5.2	150	62.6	2826	1641	9.1	9.4	919	930	38.1	43.9	37.3	364	65949	41	2.0	7	42	.55	1.48	.76	14.9	9.2	8.4	
1321	1658	22.3	4.5	5.4	149	63.4	2848	1644	9.1	9.3	934	924	38.3	44.0	37.5	356	66597	43	2.1	8	41	.58	1.55	.77	9.5	9.2	8.4	
1333	1660	23.4	4.4	5.0	148	64.7	2826	1646	9.1	9.3	925	655	38.5	43.4	37.6	368	67590	45	2.2	8	39	.61	1.50	.77	12.6	9.2	8.4	
1338	1662	25.6	4.3	5.5	148	65.8	2842	1648	9.1	9.3	928	948	38.5	44.0	37.7	363	68219	47	2.3	7	38	.64	1.51	.77	12.3	9.2	8.4	
1344	1664	32.8	4.5	5.7	152	71.7	2803	1651	9.1	9.4	935	925	38.5	44.1	37.8	377	68869	49	2.4	7	37	.67	1.49	.78	16.9	9.2	8.4	↑
1348	1666	31.4	4.3	5.6	154	52.5	2750	1652	9.1	9.4	933	937	38.7	44.4	37.8	374	69527	51	2.4	6	36	.70	1.43	.78	18.1	9.2	8.4	
1352	1668	35.1	4.4	6.0	156	60.8	2792	1655	9.1	9.4	908	873	38.8	44.3	37.8	372	70084	53	2.5	5	35	.72	1.43	.80	18.3	9.2	8.4	
1356	1670	27.5	4.5	5.6	154	61.7	2788	1657	9.1	9.4	909	916	38.9	44.4	37.8	374	70765	55	2.6	7	34	.75	1.49	.79	13.4	9.2	8.4	
1400	1672	31.0	5.3	5.5	154	74.7	2761	1658	9.1	9.4	915	909	39.0	44.6	37.8	381	71315	57	2.6	6	33	.77	1.46	.80	15.2	9.2	8.4	
1412	1674	43.2	4.1	5.3	159	58.1	2771	1660	9.1	9.4	918	906	39.1	44.3	38.0	386	72220	59	2.7	4	32	.80	1.32	.81	32.6	9.2	8.4	↑
1416	1676	27.2	4.4	6.1	159	59.8	2735	1662	9.1	9.4	919	909	39.3	44.7	38.1	388	72641	61	2.8	7	31	.83	1.51	.81	11.5	9.2	8.4	
1419	1678	38.8	5.1	5.6	155	70.3	2754	1662	9.1	9.4	927	906	39.4	44.8	38.2	395	73295	63	2.8	5	30	.85	1.41	.82	21.5	9.2	8.4	
1425	1680	36.8	5.3	5.5	156	67.3	1972	1665	9.1	9.4	775	750	39.4	44.4	38.3	377	74061	65	2.9	5	29	.88	1.38	.83	23.2	9.2	8.4	↑
1431	1682	21.6	3.6	5.8	153	45.3	976	1666	9.1	9.4	495	532	39.4	44.5	38.3	381	74881	67	3.0	9	29	.91	1.50	.80	11.1	9.2	8.4	↑
1441	1684	25.3	4.4	5.7	150	53.8	974	1668	9.1	9.3	492	565	39.1	43.3	38.4	400	75863	69	3.1	7	28	.92	1.39	.85	20.0	9.2	8.4	↑
1452	1686	34.5	4.3	5.9	145	52.5	2554	1671	9.1	9.3	868	887	38.7	43.9	38.4	383	76775	71	3.2	6	28	.95	1.41	.85	21.2	9.2	8.4	

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:00 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	FTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NX-W
1455	1688	29.5	4.3	5.4	147	56.4	2586	1672	9.1	9.3	877	922	38.7	44.0	38.5	383	77313	73	3.2	6	27	.96	1.43	.86	17.0	9.2	8.4
1502	1690	15.8	4.3	5.8	151	54.0	2840	1674	9.1	9.3	933	968	38.9	44.9	38.6	379	78195	75	3.3	12	27	.99	1.64	.88	4.6	9.2	8.4
1504	1692	43.9	4.6	5.0	153	56.7	2874	1675	9.1	9.4	936	970	39.0	45.2	38.7	373	78595	77	3.4	4	26	1.00	1.34	.88	28.9	9.2	8.4
1508	1694	28.6	4.4	5.0	154	60.6	2862	1676	9.1	9.4	922	974	39.4	45.6	38.8	381	79154	79	3.5	7	26	1.02	1.47	.90	13.4	9.2	8.4
1510	1696	61.4	4.6	5.0	155	59.6	2728	1679	9.1	9.4	911	975	39.6	45.6	38.8	383	79533	81	3.5	4	25	1.03	1.28	.91	20.4	9.2	8.4
1512	1698	76.6	4.8	5.0	156	64.0	2747	1680	9.1	9.4	899	958	39.8	45.7	38.9	378	79807	83	3.5	2	25	1.04	1.15	.93	22.3	9.2	8.4
1522	1700	80.3	4.8	4.9	115	58.1	2699	1683	9.1	9.4	888	880	39.8	45.4	39.0	374	80306	85	3.6	3	24	1.05	1.10	.94	25.9	9.2	8.4 ↑
1525	1702	43.6	4.9	5.6	156	64.6	2754	1684	9.1	9.4	905	818	40.0	45.4	39.1	370	80713	87	3.6	4	24	1.07	1.33	.95	16.5	9.2	8.4
1527	1704	40.4	4.5	5.9	156	64.9	2779	1685	9.1	9.4	911	844	40.0	45.5	39.2	367	81133	89	3.7	5	23	1.08	1.36	.97	14.7	9.2	8.4
1530	1706	41.4	4.5	6.1	156	59.2	2773	1686	9.1	9.4	923	911	40.1	45.9	39.2	374	81554	91	3.7	5	23	1.10	1.38	.99	21.6	9.2	8.4
1533	1708	44.6	4.8	5.5	158	59.4	2735	1687	9.1	9.4	907	873	40.2	45.8	39.3	369	81967	93	3.8	4	22	1.11	1.34	1.01	26.7	9.2	8.4
1536	1710	36.6	4.8	5.6	158	62.6	2767	1689	9.1	9.4	912	892	40.2	45.9	39.2	371	82434	95	3.8	5	22	1.13	1.43	1.03	15.4	9.2	8.4
1547	1712	34.7	4.4	5.8	143	58.9	2753	1691	9.1	9.4	892	853	40.1	46.0	39.0	376	83095	97	3.9	5	22	1.15	1.39	1.05	18.1	9.2	8.4 ↑
1550	1714	40.0	5.2	5.8	152	69.5	2740	1693	9.1	9.4	915	855	40.2	45.0	39.0	374	83485	99	3.9	5	21	1.17	1.37	1.06	21.4	9.3	8.4
1553	1716	45.0	4.5	5.2	153	66.8	2766	1694	9.1	9.4	907	876	40.1	45.7	38.9	364	83923	101	4.0	4	21	1.18	1.34	1.08	24.7	9.3	8.4
1555	1718	52.2	4.8	6.1	153	68.4	2785	1697	9.1	9.4	907	938	40.1	46.2	38.8	361	84330	103	4.0	4	21	1.21	1.32	1.10	28.4	9.3	8.4
1558	1720	55.2	5.3	5.6	155	72.3	2763	1698	9.1	9.4	906	942	40.2	46.6	38.8	342	84716	105	4.1	4	21	1.22	1.31	1.11	30.7	9.3	8.4
1601	1722	43.7	5.3	5.8	153	77.6	2772	1699	9.1	9.4	917	953	40.4	46.6	38.9	352	85122	107	4.1	4	20	1.24	1.37	1.11	22.1	9.3	8.4
1603	1724	45.6	3.8	6.2	154	64.2	2738	1701	9.1	9.4	914	959	40.5	46.7	39.0	354	85511	109	4.2	4	20	1.26	1.37	1.12	22.4	9.3	8.4
1618	1726	30.7	4.5	5.6	166	63.3	2819	1707	9.2	9.4	924	762	40.6	46.0	39.4	348	86549	111	4.3	6	20	1.30	1.47	1.14	9.8	9.3	8.4
1620	1728	43.5	4.6	5.1	167	73.0	2808	1709	9.2	9.4	923	839	40.6	46.6	39.5	350	86952	113	4.3	4	20	1.31	1.37	1.14	21.9	9.3	8.4
1623	1730	44.5	4.6	5.3	166	66.9	2817	1711	9.2	9.4	918	853	40.7	47.1	39.6	343	87426	115	4.4	4	19	1.33	1.37	1.15	21.0	9.3	8.4
1625	1732	39.9	5.0	5.5	165	70.5	2813	1711	9.2	9.4	912	885	41.0	46.9	39.7	341	87844	117	4.4	5	19	1.35	1.40	1.14	16.7	9.3	8.4
1629	1734	37.8	4.2	5.2	166	59.2	2826	1714	9.2	9.4	913	912	41.2	47.2	39.8	347	88401	119	4.5	5	19	1.37	1.42	1.15	14.6	9.3	8.4
1631	1736	42.4	4.4	5.2	167	68.9	2792	1715	9.2	9.4	910	871	41.3	47.3	39.8	350	88812	121	4.5	4	19	1.39	1.39	1.16	18.7	9.3	8.4
1643	1738	33.1	4.1	5.4	153	54.4	2646	1720	9.2	9.4	874	844	41.4	47.5	40.0	358	89562	123	4.5	6	16	1.41	1.42	1.16	14.8	9.3	8.4 ↑
1645	1740	34.2	3.8	5.9	153	58.7	2816	1722	9.2	9.4	895	916	41.4	47.5	40.0	347	89997	125	4.6	5	15	1.43	1.43	1.14	13.6	9.3	8.4
1649	1742	47.2	4.3	5.4	165	66.0	2792	1724	9.2	9.4	909	930	41.3	47.4	40.1	341	90484	127	4.7	4	18	1.45	1.36	1.18	22.7	9.3	8.4
1652	1744	41.5	4.6	5.5	165	69.4	2779	1724	9.2	9.4	904	942	41.3	47.4	40.1	343	90976	129	4.8	4	18	1.47	1.42	1.19	14.9	9.3	8.4
1655	1746	40.4	5.0	5.5	166	79.6	2812	1725	9.2	9.4	906	931	41.5	47.9	40.1	345	91517	131	4.8	5	18	1.49	1.47	1.20	12.7	9.3	8.4
1659	1748	27.2	4.1	5.6	166	64.6	2782	1728	9.2	9.4	914	970	41.7	48.0	40.1	345	92239	133	4.9	7	17	1.53	1.58	1.21	5.2	9.3	8.4
1702	1750	51.0	4.9	5.6	164	69.8	2793	1729	9.2	9.4	906	972	41.8	47.9	40.2	347	92667	135	4.9	4	17	1.54	1.36	1.21	21.1	9.3	8.4
1713	1752	31.2	5.0	5.6	163	59.3	2611	1733	9.2	9.4	870	923	41.9	47.9	40.4	352	93447	137	5.0	6	17	1.56	1.46	1.20	10.7	9.3	8.4 ↑
1716	1754	33.5	3.9	5.5	154	49.9	2637	1736	9.2	9.4	855	960	41.9	47.9	40.4	345	94001	139	5.1	6	17	1.58	1.40	1.19	16.4	9.3	8.4
1720	1756	35.3	3.7	5.1	156	45.8	2638	1737	9.2	9.4	881	973	42.1	47.9	40.5	352	94576	141	5.1	5	17	1.59	1.33	1.18	20.9	9.3	8.4
1723	1758	33.6	3.8	4.3	162	49.4	2637	1739	9.2	9.4	883	866	42.4	47.9	40.6	347	95144	143	5.2	6	17	1.60	1.34	1.17	20.5	9.3	8.4
1727	1760	27.4	3.9	4.2	164	48.8	2662	1741	9.2	9.4	880	893	42.4	47.9	40.7	352	95806	145	5.3	7	17	1.62	1.41	1.17	13.3	9.3	8.4
1733	1762	21.5	3.8	4.5	163	46.5	2692	1744	9.2	9.4	864	973	42.7	47.9	41.0	353	96703	147	5.3	9	16	1.64	1.48	1.19	8.2	9.3	8.4
1742	1764	38.3	3.6	4.4	145	48.9	2585	1747	9.2	9.4	859	958	42.5	48.4	41.2	352	97341	149	5.4	5	16	1.65	1.30	1.18	28.1	9.3	8.4 ↑
1745	1766	37.1	3.7	4.4	154	46.5	2638	1749	9.2	9.4	860	973	42.7	48.4	41.2	349	97614	151	5.5	5	16	1.66	1.29	1.16	27.3	9.3	8.4
1748	1768	53.4	5.0	5.0	161	66.3	2594	1750	9.2	9.4	883	964	42.7	48.4	41.2	350	98198	153	5.5	3	16	1.67	1.20	1.16	42.7	9.3	8.4
1751	1770	52.5	5.3	5.3	164	68.7	2674	1751	9.2	9.4	889	969	42.8	48.4	41.2	355	98641	155	5.6	4	16	1.68	1.26	1.14	33.5	9.3	8.4
1754	1772	38.6	4.3	5.4	162	57.7	2684	1753	9.2	9.4	882	959	42.8	48.4	41.3	350	99152	157	5.6	5	16	1.69	1.36	1.13	18.1	9.3	8.4
1756	1774	44.9	5.2	5.3	164	67.4	2685	1754	9.2	9.4	898	949	42.8	48.4	41.3	348	99602	159	5.7	4	16	1.71	1.32	1.14	23.1	9.3	8.4
1759	1776	43.8	4.7	5.6	165	61.7	2732	1756	9.2	9.4	895	965	42.7	49.2	41.4	355	100037	161	5.7	4	15	1.72	1.39	1.14	15.3	9.3	8.4
1810	1778	24.3	4.0	5.5	158	53.5	2801	1760	9.2	9.4	909	959	42.9	49.8	41.6	347	100853	163	5.8	8	15	1.74	1.46	1.14	9.0	9.3	8.4
1813	1780	36.7	4.4	5.5	159	62.0	2777	1761	9.2	9.4	911	972	43.1	49.5	41.7	347	101321	165	5.8	5	15	1.76	1.41	1.15	13.0	9.3	8.4
1816	1782	37.8	4.7	5.5	160	64.1	2781	1762	9.2	9.4	901	974	43.0	49.5	41.7	343	101824	167	5.9	5	15	1.77	1.40	1.16	14.0	9.3	8.4
1819	1784	39.0	3.8	5.5	159	59.2	2777	1763	9.2	9.4	911	974	43.1	50.0	41.8	350	102302	169	5.9	5	15	1.79	1.39	1.16	14.4	9.3	8.4
1823	1786	29.5	4.0	6.0	159	58.5	2787	1765	9.2	9.4	902	972	43.0	50.3	42.0	352	102940	171	6.0	6	15	1.81	1.48	1.16	7.6	9.3	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:03 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	MINS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS HRS	BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1828	1788	19.6	3.6	5.3	159	56.0	2787	1769	9.2	9.4	910	975	43.3	49.9	42.2	357	103741	173	6.1	9	15	1.83	1.55	1.18	4.4	9.3	8.4
1832	1790	27.6	3.7	5.3	159	55.0	2812	1772	9.2	9.4	900	974	43.5	49.9	42.3	357	104350	175	6.2	7	15	1.85	1.45	1.19	9.3	9.3	8.4
1846	1792	20.0	4.9	6.6	163	71.8	861	1776	9.2	9.4	455	505	43.0	49.5	42.5	363	105369	177	6.3	10	15	1.88	1.62	1.24	2.9	9.3	8.4
1853	1794	20.1	3.9	6.0	162	56.7	1962	1777	9.2	9.4	675	547	42.6	50.0	42.5	361	106414	179	6.4	9	15	1.91	1.60	1.24	3.0	9.3	8.4
1857	1796	31.8	4.3	5.2	162	61.8	2854	1777	9.2	9.4	913	966	42.3	48.3	42.6	348	107035	181	6.4	6	15	1.93	1.45	1.25	8.8	9.3	8.4
1900	1798	35.3	4.1	4.9	162	66.4	2874	1780	9.2	9.4	927	968	42.2	49.0	42.6	347	107621	183	6.5	5	15	1.94	1.40	1.24	10.2	9.3	8.4
1904	1800	39.1	3.8	5.5	163	51.7	2731	1782	9.2	9.4	890	971	42.4	49.4	42.7	353	108173	185	6.6	5	14	1.96	1.39	1.23	13.0	9.3	8.4
1907	1802	32.6	5.0	5.5	163	72.5	2787	1784	9.2	9.4	890	965	42.6	49.3	42.7	348	108752	187	6.6	6	14	1.98	1.48	1.24	8.0	9.3	8.4
1916	1805	36.8	3.8	5.1	155	55.1	2743	1787	9.2	9.4	864	920	42.8	50.4	42.7	355	109302	190	6.7	5	14	1.99	1.37	1.23	14.4	9.3	8.4
1918	1806	37.9	4.3	4.8	157	60.2	2773	1788	9.2	9.4	869	973	43.0	50.3	42.7	355	109853	191	6.7	5	14	2.00	1.36	1.22	15.2	9.3	8.4
1922	1809	28.7	4.7	5.7	159	63.4	2751	1789	9.2	9.4	899	954	43.1	50.3	42.8	357	110246	193	6.8	7	14	2.02	1.52	1.22	5.7	9.3	8.4
1925	1811	56.6	4.8	5.1	159	73.9	2735	1790	9.2	9.4	887	964	43.2	50.2	42.9	357	110709	195	6.8	3	14	2.03	1.27	1.21	27.7	9.3	8.4
1929	1812	32.1	4.1	5.3	159	60.6	2749	1792	9.2	9.4	903	964	43.3	50.1	43.0	348	111334	197	6.9	6	14	2.05	1.45	1.20	8.2	9.3	8.4
1932	1815	33.4	4.3	5.1	161	67.2	2752	1794	9.2	9.4	879	961	43.6	49.9	43.0	352	111873	200	7.0	6	14	2.06	1.42	1.21	8.9	9.3	8.4
1936	1817	31.3	4.0	5.2	159	59.2	2746	1796	9.2	9.4	895	970	43.6	49.7	43.1	364	112423	202	7.0	6	14	2.08	1.47	1.20	7.4	9.3	8.4
1946	1819	23.6	4.0	5.6	159	60.0	2787	1800	9.2	9.4	862	850	43.6	50.2	43.1	357	113139	204	7.1	7	14	2.10	1.45	1.21	8.0	9.3	8.4
1949	1821	37.9	4.5	5.3	160	70.1	2754	1801	9.1	9.3	897	953	43.4	49.6	43.0	357	113628	206	7.2	5	14	2.11	1.39	1.20	12.5	9.3	8.4
1953	1823	33.2	4.6	5.1	161	67.2	2753	1803	9.1	9.3	886	962	43.0	50.7	42.8	369	114317	208	7.2	6	14	2.13	1.44	1.21	8.9	9.3	8.4
1955	1825	43.9	4.1	5.2	162	61.0	2729	1803	9.1	9.3	897	961	43.1	50.8	42.6	363	114694	210	7.3	4	13	2.14	1.36	1.20	13.8	9.3	8.4
1958	1826	47.9	5.1	5.3	162	64.9	2745	1805	9.1	9.3	886	958	43.1	50.7	42.6	366	115115	212	7.3	4	13	2.16	1.36	1.19	15.7	9.3	8.4
2002	1829	30.4	3.9	5.2	158	61.1	2730	1807	9.1	9.3	890	961	43.1	50.4	42.5	371	115758	214	7.4	6	13	2.18	1.49	1.19	5.6	9.3	8.4
2004	1831	54.9	4.6	4.8	161	62.5	2732	1809	9.1	9.4	885	946	43.2	50.2	42.5	376	116141	216	7.4	3	13	2.19	1.29	1.18	22.9	9.3	8.4
2016	1833	55.6	3.9	5.0	166	61.3	2730	1813	9.1	9.4	901	943	43.2	49.6	42.6	381	117009	218	7.5	4	13	2.21	1.35	1.19	14.9	9.3	8.4
2018	1835	48.3	5.0	5.3	167	55.0	2738	1814	9.1	9.4	898	945	43.1	50.5	42.7	381	117364	220	7.6	4	13	2.22	1.30	1.16	20.6	9.3	8.4
2021	1837	46.6	4.9	5.3	169	73.0	2762	1815	9.1	9.4	887	930	43.2	50.5	42.8	381	117792	222	7.6	4	13	2.23	1.38	1.16	12.5	9.3	8.4
2023	1839	47.2	4.7	5.4	168	71.0	2748	1817	9.1	9.4	868	937	43.1	50.2	42.8	386	118233	224	7.7	4	13	2.24	1.37	1.16	12.9	9.3	8.4
2026	1841	42.3	4.3	5.5	170	65.2	2730	1817	9.1	9.4	877	932	43.2	49.6	42.8	386	118747	226	7.7	5	13	2.26	1.43	1.16	10.4	9.3	8.4
2029	1843	37.9	4.2	5.6	167	60.7	2738	1819	9.1	9.4	884	924	43.3	50.5	42.9	389	119253	228	7.8	5	13	2.28	1.46	1.17	7.0	9.3	8.4
2039	1845	25.4	4.6	5.0	156	70.4	2723	1823	9.1	9.5	880	899	43.5	50.2	43.2	388	120053	230	7.8	7	13	2.30	1.52	1.18	4.3	9.3	8.4
2043	1847	36.8	3.6	5.1	156	57.1	2735	1825	9.1	9.5	894	950	43.4	49.3	43.3	388	120559	232	7.9	5	13	2.31	1.39	1.19	10.2	9.2	8.4
2046	1849	32.6	4.2	5.1	156	63.4	2714	1827	9.1	9.5	874	923	43.2	50.6	43.4	398	121118	234	8.0	6	13	2.32	1.46	1.20	6.5	9.2	8.4
2049	1851	40.8	4.0	5.5	156	64.1	2710	1829	9.2	9.5	897	916	43.2	50.6	43.4	395	121605	236	8.0	5	13	2.34	1.41	1.20	8.5	9.2	8.4
2053	1853	36.9	4.2	4.8	157	68.9	2714	1830	9.2	9.5	864	917	43.3	50.5	43.4	400	122113	238	8.1	5	13	2.35	1.42	1.20	8.7	9.2	8.4
2056	1855	34.7	4.3	5.2	171	62.8	2788	1831	9.2	9.5	867	917	43.3	50.4	43.2	406	122679	240	8.1	5	13	2.37	1.47	1.21	6.1	9.2	8.4
2059	1857	44.5	4.7	5.2	170	70.5	2750	1834	9.2	9.5	911	914	43.4	51.0	43.2	410	123129	242	8.2	4	12	2.39	1.40	1.20	10.2	9.2	8.4
2108	1859	61.0	4.6	5.5	164	68.0	2610	1838	9.2	9.4	867	862	43.4	51.5	43.2	417	123786	244	8.2	4	12	2.40	1.35	1.20	13.4	9.2	8.4
2110	1861	49.6	5.1	5.4	165	69.5	2583	1840	9.2	9.4	880	914	43.7	50.7	43.1	417	124253	246	8.3	4	12	2.41	1.32	1.18	15.4	9.2	8.4
2113	1863	41.6	5.3	6.0	167	70.5	2624	1842	9.2	9.4	857	906	43.8	51.0	43.1	412	124736	248	8.3	5	12	2.42	1.38	1.17	10.5	9.2	8.4
2116	1865	49.2	5.4	5.8	167	76.3	2725	1843	9.2	9.4	880	916	43.9	50.9	43.1	415	125170	250	8.4	4	12	2.44	1.37	1.17	12.7	9.3	8.4
2119	1867	37.0	4.6	5.6	168	62.0	2732	1843	9.2	9.4	894	906	44.0	50.9	43.1	414	125700	252	8.4	5	12	2.45	1.46	1.17	6.0	9.3	8.4
2122	1869	41.5	4.5	5.4	167	65.5	2726	1845	9.2	9.4	895	911	44.0	51.1	43.1	417	126192	254	8.5	5	12	2.47	1.41	1.17	8.3	9.3	8.4
2132	1871	27.1	4.3	5.1	167	56.5	2581	1849	9.2	9.4	818	680	44.0	51.1	43.1	422	126920	256	8.6	7	12	2.48	1.47	1.17	5.1	9.3	8.4
2135	1873	39.0	3.8	4.8	160	49.0	2628	1850	9.2	9.4	891	897	44.0	50.7	43.2	434	127425	258	8.6	5	12	2.50	1.38	1.17	9.8	9.3	8.4
2136	1875	35.4	3.9	4.9	160	52.1	2650	1852	9.2	9.4	890	907	44.0	51.0	43.2	436	127979	260	8.7	6	12	2.51	1.40	1.17	7.9	9.3	8.4
2141	1877	35.7	3.9	5.0	161	51.9	2627	1855	9.2	9.4	879	867	44.0	51.2	43.3	422	128501	262	8.7	5	12	2.52	1.40	1.17	8.4	9.3	8.4
2145	1879	37.3	4.5	5.0	162	63.4	2670	1856	9.2	9.5	863	904	44.0	50.9	43.3	437	129042	264	8.8	5	12	2.53	1.40	1.17	9.2	9.3	8.4
2148	1881	32.6	4.2	4.9	161	55.3	2660	1857	9.2	9.5	881	906	44.0	50.3	43.2	435	129641	266	8.8	6	12	2.54	1.41	1.17	7.4	9.3	8.4
2152	1883	32.2	4.1	4.9	161	54.9	2615	1860	9.2	9.5	882	905	44.1	51.1	43.2	442	130233	268	8.9	6	12	2.56	1.42	1.17	7.1	9.3	8.4
2209	1885	18.7	4.8	6.4	169	63.7	2727	1868	9.2	9.5	840	893	44.6	51.4	43.3	433	131998	270	9.1	10	12	2.60	1.64	1.18	1.3	9.3	8.4
2211	1887	43.2	5.0	5.5	170	64.9	2718	1869	9.2	9.5	862	890	44.9	52.1	43.3	442	132444	272	9.1	4	12	2.61	1.34	1.20	12.2	9.3	8.4

![EXPLORATION LOGGING]

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:07 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
2213	1889	59.3	4.6	6.2	172	61.3	2709	1870	9.2	9.5	867	897	45.1	51.9	43.4	437	132738	274	9.2	3	12	2.63	1.29	1.17	18.2	9.3	8.4
2216	1891	39.0	5.1	5.8	171	69.7	2837	1871	9.2	9.5	912	899	45.3	51.0	43.5	433	133251	276	9.2	5	12	2.65	1.46	1.15	5.5	9.3	8.4
2219	1893	35.1	5.4	6.0	172	62.9	2787	1873	9.2	9.5	896	884	45.3	51.5	43.6	431	133819	278	9.3	5	12	2.67	1.50	1.19	4.2	9.3	8.4
2223	1895	34.8	4.8	5.8	170	60.0	2788	1875	9.2	9.5	904	887	45.1	52.0	43.7	426	134400	280	9.3	5	12	2.68	1.47	1.19	4.6	9.3	8.4
2234	1897	27.3	4.2	6.0	167	56.1	2569	1880	9.2	9.4	860	866	44.6	51.8	43.8	431	135444	282	9.4	7	12	2.71	1.48	1.20	4.0	9.3	8.4
2237	1899	39.0	5.3	5.3	169	71.0	2574	1881	9.2	9.4	881	915	44.5	50.9	43.9	430	135853	284	9.5	5	12	2.72	1.36	1.18	9.7	9.3	8.4
2337	1901	13.0	2.4	6.1	104	33.0	2371	1900	9.1	9.4	890	569	44.2	52.6	44.6	423	137596	286	9.7	14	12	2.74	1.40	.94	5.7	9.2	8.4
2344	1903	20.0	3.5	4.1	104	47.9	2374	1900	9.1	9.4	890	651	43.7	52.3	44.2	426	138305	288	9.8	10	12	2.74	1.33	1.20	10.0	9.2	8.4
2351	1905	18.4	3.2	4.1	105	43.1	2363	1900	9.1	9.4	890	694	43.5	52.0	43.7	448	139020	290	9.9	11	12	2.75	1.35	1.18	8.1	9.2	8.4
1	1907	11.1	3.4	3.9	104	43.1	2414	1900	9.1	9.4	883	708	43.2	51.7	43.2	467	140056	292	10.1	17	12	2.76	1.33	1.17	8.3	9.2	8.4
9	1909	14.2	2.7	3.9	104	34.4	2355	1900	9.1	9.4	866	752	43.1	52.1	43.4	488	140885	294	10.2	13	12	2.76	1.36	1.16	7.0	9.2	8.4
28	1911	15.1	3.1	3.9	105	45.3	2278	1901	9.1	9.4	870	955	42.9	51.1	44.0	528	141890	296	10.4	12	12	2.77	1.43	1.19	8.6	9.2	8.4
36	1913	15.5	3.0	4.0	104	41.6	2272	1904	9.1	9.4	871	966	42.4	33.8	44.2	381	142716	298	10.5	12	12	2.78	1.37	1.18	9.6	9.2	8.4
44	1915	15.1	3.0	3.8	107	43.1	2301	1906	9.1	9.4	875	931	42.5	51.1	44.2	327	143562	300	10.6	13	12	2.79	1.35	1.18	10.1	9.2	8.4
52	1917	15.9	2.6	3.9	106	32.7	2305	1908	9.1	9.4	880	889	43.4	50.2	43.9	337	144496	302	10.8	12	12	2.79	1.36	1.18	9.7	9.2	8.4
100	1919	16.0	3.0	3.9	107	45.3	2270	1908	9.2	9.4	867	888	43.5	51.4	43.6	351	145317	304	10.9	12	12	2.80	1.39	1.19	9.1	9.2	8.4
107	1921	18.6	3.7	4.2	115	50.9	2248	1910	9.1	9.4	880	911	43.9	50.9	43.4	354	146081	306	11.0	10	12	2.81	1.37	1.20	9.6	9.2	8.4
125	1923	17.2	3.7	4.1	116	45.1	2315	1913	9.1	9.3	906	900	43.8	50.0	43.1	375	147244	308	11.2	11	12	2.82	1.37	1.18	9.5	9.2	8.4
131	1925	19.0	2.6	4.0	115	23.3	2328	1915	9.1	9.3	905	885	43.9	51.4	42.9	382	147931	310	11.3	10	12	2.82	1.31	1.16	10.8	9.2	8.4
137	1927	20.5	2.9	3.9	115	43.8	2305	1916	9.1	9.3	904	868	44.1	51.6	42.9	394	148650	312	11.4	9	12	2.83	1.35	1.17	10.1	9.2	8.4
143	1929	22.8	3.4	4.1	154	49.1	2304	1918	9.1	9.3	900	875	44.1	51.9	42.3	409	149376	314	11.5	8	12	2.84	1.33	1.16	10.1	9.2	8.4
147	1931	30.6	4.2	4.3	117	44.3	2328	1919	9.1	9.3	913	866	44.1	51.6	42.3	416	149861	316	11.6	6	12	2.85	1.31	1.14	11.3	9.2	8.4
150	1933	30.8	3.4	4.2	116	40.7	2325	1920	9.1	9.3	918	857	44.2	51.5	42.4	421	150258	318	11.6	6	12	2.85	1.21	1.11	13.1	9.2	8.4
154	1935	26.5	3.7	4.3	115	42.3	2276	1921	9.1	9.3	912	877	44.4	51.5	42.6	420	150700	320	11.7	7	12	2.85	1.25	1.09	12.3	9.2	8.4
210	1937	22.1	3.7	4.5	114	43.3	2384	1923	9.1	9.3	938	839	44.6	51.4	43.1	432	151494	322	11.8	8	12	2.86	1.30	1.09	11.0	9.2	8.4
214	1939	25.2	4.2	5.4	118	44.5	2316	1924	9.1	9.3	921	901	44.3	51.4	43.5	418	151956	324	11.8	7	12	2.86	1.31	1.09	10.9	9.2	8.4
218	1941	39.5	3.6	5.1	158	45.5	2285	1925	9.1	9.3	927	915	44.5	51.4	43.5	416	152462	326	11.9	5	12	2.87	1.28	1.10	11.9	9.2	8.4
222	1943	30.9	3.9	5.1	158	43.7	2290	1927	9.1	9.3	920	934	44.5	51.3	43.8	418	153135	328	12.0	6	12	2.88	1.37	1.10	9.9	9.2	8.4
226	1945	29.7	4.1	4.8	158	46.7	2259	1928	9.3	9.3	937	909	44.2	51.3	43.8	416	153725	330	12.0	6	12	2.89	1.35	1.10	10.3	9.2	8.4
229	1947	33.1	3.8	4.4	157	43.3	2292	1930	9.2	9.3	910	937	43.9	51.3	43.8	412	154259	332	12.1	6	11	2.90	1.31	1.10	10.7	9.2	8.4
233	1949	33.9	4.1	4.5	158	48.1	2329	1932	9.2	9.3	933	930	43.7	51.1	43.8	414	154902	334	12.2	7	11	2.91	1.36	1.11	10.4	9.2	8.4
245	1950	44.3	4.3	4.6	158	53.2	2329	1935	9.1	9.3	923	939	43.6	49.3	43.9	407	155694	335	12.2	4	11	2.92	1.22	1.10	13.2	9.2	8.4
245	1950	47.4	4.2	4.2	157	48.2	2296	1935	9.1	9.3	923	939	43.6	49.3	43.9	402	155702	335	12.2	4	11	2.92	1.20	1.10	13.2	9.2	8.4
248	1951	36.3	4.2	4.3	158	47.6	2281	1935	9.1	9.3	931	936	43.4	49.3	43.9	395	156100	336	12.3	5	11	2.92	1.30	1.09	11.5	9.2	8.4
250	1953	47.9	4.8	5.4	159	54.9	2253	1935	9.0	9.3	929	916	43.4	49.5	43.9	393	156453	338	12.3	4	11	2.93	1.25	1.08	12.6	9.2	8.4
253	1955	34.1	4.6	5.5	161	60.1	2305	1936	9.0	9.3	927	933	43.3	49.7	44.0	389	157006	340	12.4	5	11	2.94	1.37	1.09	10.1	9.2	8.4
257	1957	33.2	3.9	5.1	158	52.8	2279	1939	9.0	9.3	929	915	43.3	49.8	44.0	395	157628	342	12.4	6	11	2.95	1.37	1.09	10.0	9.2	8.4
301	1959	30.5	4.3	5.0	159	56.8	2279	1940	9.0	9.3	929	949	43.4	49.7	44.1	399	158206	344	12.5	6	11	2.96	1.42	1.11	9.0	9.2	8.4
306	1961	18.4	3.9	5.5	160	50.3	2263	1943	9.0	9.3	926	944	43.5	50.2	44.2	392	159114	346	12.6	10	11	2.98	1.55	1.12	6.7	9.2	8.4
318	1963	40.7	4.3	4.8	163	50.8	2305	1947	9.0	9.3	913	928	43.7	50.3	44.4	374	159855	348	12.7	5	11	2.98	1.29	1.13	11.6	9.2	8.4
322	1965	38.4	3.9	4.5	159	46.5	2301	1948	9.0	9.3	938	941	43.7	49.4	44.4	376	160334	350	12.7	5	11	2.99	1.29	1.11	11.3	9.2	8.4
325	1967	35.5	4.6	4.9	158	61.3	2284	1948	9.0	9.3	927	936	43.6	49.3	44.4	373	160854	352	12.8	5	11	3.00	1.32	1.11	11.1	9.2	8.4
329	1969	27.3	4.4	5.3	159	52.4	2323	1951	9.0	9.3	938	926	43.6	49.7	44.5	365	161539	354	12.8	7	11	3.01	1.45	1.11	8.5	9.2	8.4
333	1971	28.2	3.9	5.1	161	50.2	2335	1954	9.0	9.3	928	909	43.5	49.7	44.3	367	162241	356	12.9	7	11	3.02	1.42	1.13	9.2	9.2	8.4
337	1973	31.5	4.3	4.8	160	53.8	2297	1956	9.0	9.3	923	914	43.5	49.9	44.1	361	162785	358	13.0	6	11	3.03	1.38	1.13	9.9	9.2	8.4
353	1976	24.2	4.4	5.1	159	53.3	2315	1961	9.1	9.3	920	929	43.5	49.3	43.7	365	164078	361	13.1	8	11	3.05	1.45	1.15	8.4	9.1	8.4
356	1978	36.4	4.2	4.6	161	50.8	2297	1961	9.1	9.3	914	948	43.4	49.4	43.6	361	164542	362	13.2	5	11	3.06	1.33	1.13	10.9	9.1	8.4
359	1979	42.8	3.9	4.5	159	45.9	2317	1962	9.1	9.3	926	949	43.3	49.5	43.6	356	165078	364	13.2	5	11	3.06	1.29	1.13	12.0	9.1	8.4
403	1982	35.9	4.2	4.5	161	50.1	2261	1964	9.1	9.3	915	930	43.3	49.4	43.5	364	165606	366	13.3	5	11	3.07	1.33	1.13	10.9	9.1	8.4
406	1984	39.8	4.1	4.5	159	51.8	2289	1966	9.1	9.3	937	927	43.3	49.4	43.4	356	166187	368	13.3	5	11	3.08	1.30	1.13	11.5	9.1	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:11 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	PTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS HRS	BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
411	1985	23.4	4.1	4.6	158	52.3	2283	1969	9.1	9.3	924	937	43.5	50.4	43.4	355	166970	370	13.4	8	11	3.09	1.47	1.13	8.2	9.1	8.4
415	1988	27.2	4.3	4.6	161	53.4	2251	1971	9.1	9.3	938	923	43.7	50.5	43.4	351	167606	373	13.5	7	11	3.10	1.42	1.13	9.0	9.1	8.4
429	1990	23.2	4.1	4.5	158	52.4	2258	1974	9.1	9.3	927	919	43.9	48.7	43.5	360	168670	375	13.6	8	11	3.12	1.47	1.15	7.9	9.1	8.4
433	1992	31.9	4.2	4.6	158	52.2	2274	1975	9.2	9.3	937	917	43.4	49.9	43.5	360	169362	377	13.7	6	11	3.13	1.36	1.15	10.0	9.2	8.4
437	1994	36.9	3.9	4.5	158	52.6	2252	1976	9.2	9.3	916	909	43.4	49.7	43.5	362	169888	379	13.7	5	11	3.14	1.32	1.14	10.9	9.2	8.4
440	1996	34.2	4.1	4.5	160	54.7	2275	1978	9.2	9.3	937	925	43.3	49.9	43.5	365	170458	381	13.8	5	11	3.15	1.35	1.14	10.4	9.2	8.4
444	1998	33.9	3.9	4.5	161	54.0	2310	1980	9.1	9.3	924	948	43.1	49.7	43.5	373	171012	383	13.8	5	11	3.15	1.35	1.13	10.1	9.2	8.4
447	2000	31.2	4.5	4.9	158	58.6	2255	1982	9.1	9.3	933	935	43.2	49.9	43.5	380	171574	385	13.9	6	11	3.16	1.39	1.14	9.6	9.2	8.4
452	2002	25.9	4.4	5.2	160	53.0	2232	1984	9.1	9.3	920	946	43.4	50.5	43.5	379	172277	387	14.0	8	11	3.18	1.49	1.15	7.7	9.2	8.4
510	2004	33.5	3.8	4.9	159	49.6	1035	1988	9.1	9.3	518	655	43.0	47.5	43.5	396	173624	389	14.1	6	11	3.19	1.32	1.14	10.8	9.2	8.4
514	2006	29.2	3.6	4.1	158	43.7	1014	1988	9.1	9.3	526	634	42.6	48.1	43.4	392	174280	391	14.2	6	11	3.20	1.34	1.13	10.5	9.2	8.4
518	2008	24.9	4.3	5.1	161	63.3	1022	1988	9.1	9.3	527	579	42.5	48.1	43.4	396	174993	393	14.3	7	11	3.22	1.47	1.15	8.1	9.2	8.4
523	2010	26.2	4.1	5.5	161	54.8	997	1989	9.1	9.3	529	588	42.3	47.8	43.4	396	175755	395	14.4	7	11	3.23	1.46	1.16	8.2	9.3	8.4
528	2012	22.8	4.1	5.3	159	51.7	1025	1990	9.1	9.3	518	461	42.2	48.4	43.3	394	176560	397	14.4	8	11	3.25	1.46	1.17	8.1	9.3	8.4
535	2014	17.4	3.5	5.1	142	46.4	1014	1992	9.1	9.3	518	562	42.1	48.0	43.4	396	177495	399	14.6	11	11	3.26	1.48	1.17	7.8	9.3	8.4
553	2016	17.7	3.5	4.3	143	50.6	968	1997	9.1	9.3	513	628	42.0	49.1	43.5	389	178853	401	14.7	11	11	3.28	1.44	1.18	8.3	9.3	8.4
559	2018	19.7	3.6	4.2	144	52.5	1017	1998	9.1	9.3	517	595	42.3	49.3	43.6	391	179646	403	14.8	9	11	3.29	1.42	1.17	8.6	9.3	8.4
606	2020	16.8	3.5	4.1	143	49.5	1015	2000	9.1	9.3	517	592	42.7	49.5	43.7	389	180598	405	14.9	11	11	3.30	1.47	1.17	7.8	9.3	8.4
611	2022	22.0	3.6	4.3	142	49.5	1029	2001	9.1	9.3	517	520	42.8	49.7	43.6	391	181347	407	15.0	8	11	3.31	1.39	1.17	9.2	9.3	8.4
616	2024	22.8	3.5	4.1	144	50.8	1032	2001	9.1	9.3	517	569	42.8	49.8	43.6	396	182070	409	15.1	8	11	3.32	1.36	1.16	9.5	9.3	8.4
622	2026	29.4	3.6	4.2	144	53.2	1018	2002	9.1	9.3	509	565	42.8	49.8	43.5	391	182910	411	15.2	7	11	3.33	1.31	1.17	11.1	9.3	8.4
628	2028	22.2	3.3	4.2	145	52.0	1022	2005	9.1	9.3	508	552	42.8	49.7	43.4	383	183800	413	15.3	9	11	3.35	1.39	1.17	9.4	9.3	8.4
654	2030	21.3	3.2	4.0	135	56.7	1081	2013	9.1	9.3	531	616	43.8	50.7	43.3	380	185572	415	15.6	9	11	3.37	1.41	1.20	8.9	9.3	8.4
700	2032	20.0	3.6	3.9	134	58.6	1083	2014	9.1	9.3	531	603	44.1	51.0	43.4	389	186437	417	15.7	10	11	3.38	1.47	1.20	7.9	9.3	8.4
706	2034	24.8	3.7	4.1	134	57.2	1077	2014	9.1	9.3	531	566	44.3	50.9	43.2	385	187162	419	15.8	8	11	3.39	1.39	1.20	9.4	9.3	8.4
710	2036	23.9	3.8	4.2	134	60.1	1085	2016	9.1	9.3	522	587	44.3	51.0	43.2	384	[illegible]	421	15.8	6	11	3.40	1.40	1.19	9.2	9.3	8.4
717	2038	23.8	3.4	4.4	136	57.6	1085	2018	9.1	9.3	532	593	44.4	50.9	42.8	387	188614	423	15.9	9	11	3.42	1.44	1.20	8.8	9.3	8.4
723	2040	19.9	3.8	5.1	136	52.7	1068	2021	9.1	9.3	532	566	44.4	50.9	42.6	386	189511	425	16.0	10	11	3.43	1.48	1.19	7.9	9.3	8.4
738	2042	19.4	3.5	5.8	125	37.4	1077	2025	9.1	9.3	521	606	44.0	50.8	42.2	387	190460	427	16.2	10	11	3.44	1.42	1.20	8.7	9.3	8.4
744	2044	21.3	4.1	5.3	128	51.2	1098	2027	9.1	9.3	533	613	43.6	49.7	42.2	394	191133	429	16.3	9	11	3.45	1.39	1.20	9.3	9.3	8.4
750	2046	20.4	4.8	5.1	128	61.7	1087	2027	9.1	9.3	532	506	43.4	49.8	42.1	396	191952	431	16.4	9	11	3.46	1.42	1.21	8.6	9.3	8.4
757	2048	21.6	5.0	5.6	127	58.1	1085	2027	9.1	9.3	524	566	43.3	49.0	42.1	395	[illegible]	433	16.5	10	11	3.47	1.43	1.21	8.7	9.3	8.4
805	2050	18.9	3.9	5.9	128	46.1	1110	2029	9.1	9.3	532	574	42.9	49.3	42.5	[illegible]	[illegible]	435	16.6	12	11	3.48	1.53	1.23	7.1	9.3	8.4
812	2052	19.9	4.7	5.6	127	46.1	1065	2031	9.1	9.3	524	560	42.8	49.5	42.6	394	194723	437	16.8	10	11	3.49	1.44	1.22	8.5	9.3	8.4
817	2054	19.6	4.7	5.6	130	63.8	1112	2033	9.1	9.3	533	552	42.8	50.2	42.6	387	195477	439	16.8	10	11	3.50	1.48	1.22	7.6	9.3	8.4
831	2056	40.6	4.8	5.7	170	63.1	1105	2036	9.1	9.3	535	572	42.9	50.0	42.8	387	196482	441	17.0	6	11	3.51	1.29	1.21	11.4	9.3	8.4
835	2058	25.5	4.2	6.1	167	54.6	1105	2038	9.1	9.3	525	612	42.9	49.1	42.8	373	197285	443	17.0	8	11	3.52	1.45	1.20	9.8	9.3	8.4
841	2060	22.3	3.9	5.3	169	53.5	1069	2040	9.1	9.3	527	566	42.9	49.8	43.0	366	198199	445	17.1	9	11	3.54	1.45	1.20	9.7	9.3	8.4
845	2062	25.0	3.9	4.9	169	58.0	1086	2041	9.1	9.3	537	529	42.9	49.7	43.2	370	[illegible]	447	17.2	8	11	3.55	1.45	1.20	9.8	9.3	8.4
851	2064	25.2	4.8	5.5	172	61.4	1100	2041	9.1	9.3	527	580	43.0	49.5	43.5	363	199958	449	17.3	7	11	3.56	1.46	1.23	9.7	9.3	8.4
856	2066	25.3	4.1	4.9	169	51.8	1078	2043	9.1	9.3	527	569	42.9	49.4	43.5	361	200818	451	17.4	7	11	3.58	1.43	1.21	9.5	9.3	8.4
910	2068	19.4	5.2	5.4	116	61.4	1030	2046	9.1	9.3	502	464	42.9	49.0	44.0	349	201960	453	17.5	10	11	3.59	1.53	1.22	8.6	9.3	8.4
916	2070	17.2	4.7	6.1	118	67.6	1047	2048	9.1	9.3	513	584	42.7	48.7	44.2	346	202740	455	17.6	12	11	3.60	1.54	1.23	8.2	9.3	8.4
922	2072	21.3	4.3	6.4	120	40.8	1099	2050	9.1	9.3	532	591	42.7	49.5	44.3	337	203485	457	17.7	9	11	3.61	1.38	1.21	11.2	9.3	8.4
928	2074	20.5	4.4	5.8	148	40.4	1109	2051	9.1	9.3	533	531	42.8	49.7	44.3	337	[illegible]	459	17.8	9	11	3.62	1.33	1.17	11.5	9.3	8.4
934	2076	22.9	5.2	6.1	153	54.9	1091	2053	9.1	9.3	530	554	42.9	49.6	44.2	[illegible]	[illegible]	461	17.9	8	11	3.63	1.45	1.20	10.0	9.3	8.4
940	2078	18.6	4.2	5.7	151	43.5	1074	2054	9.1	9.3	534	592	42.8	49.5	44.0	330	205921	463	18.0	10	11	3.64	1.44	1.18	9.8	9.3	8.4
945	2080	20.9	4.6	5.8	151	37.6	1081	2056	9.1	9.3	532	485	42.6	49.5	43.7	320	206726	465	18.1	9	11	3.65	1.43	1.20	10.2	9.3	8.4
958	2082	19.6	4.9	6.5	140	58.3	1042	2059	9.1	9.3	521	562	42.5	48.0	43.5	304	207523	467	18.2	9	11	3.66	1.46	1.20	9.7	9.3	8.4
1005	2084	19.9	4.2	6.6	140	32.9	1085	2061	9.1	9.3	534	566	42.3	48.4	43.3	294	208405	469	18.3	9	11	3.67	1.37	1.18	10.8	9.3	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:15 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	KTMS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1011	2086	24.6	4.7	5.5	142	52.4	1103	2064	9.1	9.3	529	569	42.2	48.8	43.0	294	209286	471	18.4	8	11	3.68	1.37	1.20	11.4	9.3	8.4
1017	2088	16.9	4.7	6.8	140	45.2	1063	2066	9.1	9.3	525	543	42.1	46.9	42.9	294	210189	473	18.5	11	11	3.69	1.43	1.18	10.2	9.3	8.4
1024	2090	17.2	3.7	5.7	139	35.7	1076	2067	9.1	9.3	535	566	42.0	48.4	42.6	294	211125	475	18.6	11	11	3.70	1.40	1.16	10.7	9.3	8.4
1030	2092	20.8	4.0	7.0	140	39.7	1090	2069	9.1	9.3	534	566	41.9	48.6	42.8	292	211926	477	18.7	9	11	3.71	1.36	1.17	11.4	9.3	8.4
1046	2094	14.7	3.7	6.3	139	59.9	1170	2073	9.1	9.3	534	553	41.9	48.8	42.9	280	213335	480	18.9	13	11	3.75	1.49	1.19	9.3	9.3	8.4
1049	2096	28.0	5.5	6.7	101	45.9	1093	2074	9.1	9.3	523	517	41.8	48.3	42.9	284	213804	481	19.0	7	11	3.76	1.33	1.18	12.4	9.3	8.4
1057	2098	21.3	4.6	7.0	142	45.9	1092	2077	9.1	9.3	525	560	41.6	49.2	42.9	283	214758	483	19.1	9	11	3.77	1.40	1.19	10.9	9.3	8.4
1103	2100	21.3	5.1	5.9	140	56.8	1094	2079	9.1	9.3	534	545	41.6	49.0	42.9	293	215655	485	19.2	9	11	3.78	1.41	1.20	10.8	9.3	8.4
1108	2102	24.7	5.3	6.3	145	56.6	1081	2080	9.1	9.3	535	467	41.5	49.2	42.9	293	216405	487	19.3	8	11	3.79	1.43	1.21	10.6	9.3	8.4
1116	2104	20.0	4.7	6.2	152	55.6	2256	2083	9.1	9.3	809	771	41.2	46.4	42.8	290	217360	489	19.4	9	11	3.80	1.54	1.23	8.7	9.3	8.4
1124	2106	19.5	4.6	5.9	153	51.2	2515	2087	9.1	9.3	860	838	41.5	48.9	42.7	290	218621	491	19.5	10	11	3.82	1.50	1.23	9.2	9.3	8.4
1142	2108	14.5	4.0	5.0	153	47.8	2434	2094	9.1	9.3	867	806	42.7	49.8	42.5	285	220431	493	19.7	13	11	3.85	1.61	1.25	7.3	9.3	8.4
1151	2110	15.4	4.3	4.9	153	24.5	2486	2097	9.1	9.3	876	860	43.2	49.8	42.3	290	221664	495	19.9	13	11	3.86	1.47	1.23	9.6	9.3	8.4
1154	2112	31.9	4.3	4.8	145	40.1	2481	2099	9.1	9.3	874	878	43.4	49.8	42.2	286	222178	497	19.9	6	11	3.86	1.26	1.20	14.4	9.3	8.4
1156	2114	44.0	4.7	5.5	144	40.0	2454	2100	9.1	9.3	867	861	43.4	49.7	42.1	290	222516	499	20.0	4	11	3.87	1.16	1.19	16.4	9.3	8.4
1201	2116	30.8	5.2	5.9	156	43.8	2478	2103	9.1	9.3	871	851	43.6	50.7	42.0	290	223248	501	20.0	6	11	3.87	1.31	1.17	13.1	9.3	8.4
1206	2118	23.7	5.3	6.1	158	45.6	2446	2104	9.1	9.3	883	855	43.9	50.9	41.9	295	224032	503	20.1	8	11	3.88	1.41	1.16	11.0	9.3	8.4
1222	2120	37.1	4.3	5.9	153	43.4	2521	2106	9.1	9.3	891	816	43.5	50.8	41.8	288	224950	505	20.2	6	11	3.89	1.30	1.16	13.3	9.3	8.4
1226	2122	28.1	4.7	6.4	154	42.1	2478	2106	9.1	9.3	896	847	43.6	50.2	41.6	278	225592	507	20.3	7	11	3.90	1.35	1.14	12.3	9.3	8.4
1231	2124	24.4	4.8	6.0	154	45.6	2507	2107	9.1	9.3	870	804	44.0	51.0	41.6	290	226343	509	20.4	6	11	3.91	1.38	1.14	11.6	9.3	8.4
1236	2126	26.3	5.1	6.3	154	48.1	2462	2108	9.1	9.3	882	807	44.2	51.8	41.5	292	227037	511	20.5	7	11	3.92	1.36	1.13	11.5	9.3	8.4
1242	2128	20.5	5.0	6.3	153	43.4	2431	2111	9.1	9.4	897	833	44.6	51.8	41.4	288	227977	513	20.6	9	11	3.93	1.42	1.14	10.7	9.3	8.4
1248	2130	18.9	4.7	6.1	153	41.6	2455	2115	9.1	9.4	873	837	44.9	51.9	41.5	294	228949	515	20.7	10	11	3.94	1.43	1.15	10.3	9.3	8.4
1254	2132	17.9	4.5	6.1	155	39.7	2422	2117	9.1	9.4	881	886	45.1	52.5	41.9	288	229905	517	20.8	11	11	3.95	1.47	1.15	9.8	9.3	8.4
1318	2134	17.6	5.9	6.4	154	47.9	1056	2121	9.1	9.3	482	573	44.5	51.8	42.8	293	231592	519	21.0	11	11	3.96	1.46	1.18	10.1	9.3	8.4
1330	2136	13.8	5.1	6.9	160	40.9	1054	2124	9.1	9.3	487	576	44.1	51.7	43.0	304	232850	521	21.1	10	11	3.97	1.45	1.19	10.3	9.3	8.4
1339	2138	13.6	3.7	6.0	152	43.3	1020	2126	9.1	9.3	488	545	43.9	51.2	43.2	304	234275	523	21.3	14	11	3.99	1.55	1.20	8.5	9.3	8.4
SURVEY AT 2142 METRES 1/2 DEGREE																											
NB#6 HTC X3A 12.25",18,18,20.											START DEPTH 2142 METRES																
2239	2142	7.2	5.7	6.0	100	39.3	2751	2133	9.1	9.4	856	906	32.0	37.9	44.0	315	412	0	.0	27	5120	.00	1.61	1.20	6.3	9.2	8.4
2249	2144	12.5	4.5	5.6	98	39.9	2692	2136	9.2	9.4	859	776	35.9	46.8	44.4	303	1356	2	.2	15	717	.03	1.36	1.21	10.0	9.2	8.5
2301	2146	9.7	3.8	4.9	96	42.7	2670	2139	9.2	9.4	869	943	38.7	45.8	45.0	286	2510	4	.4	19	402	.06	1.41	1.21	8.8	9.2	8.4
GUMBO BLOCKS FLOWLINE																											
151	2147	19.5	3.4	4.9	49	31.7	2749	2141	9.2	9.4	969	629	30.9	43.5	44.0	346	4692	5	.5	10	395	.09	1.19	1.19	13.5	9.3	8.3
151	2147	20.0	2.6	3.1	49	15.3	2712	2141	9.2	9.4	976	620	31.1	44.3	44.0	344	4695	5	.5	9	389	.09	1.17	1.18	13.9	9.3	8.4
212	2148	9.6	2.2	4.7	105	19.5	2782	2145	9.2	9.4	991	1076	38.0	47.8	44.5	342	6026	6	.8	20	289	.11	1.21	1.11	12.8	9.3	8.5
218	2150	18.3	3.1	4.4	106	30.6	2739	2146	9.2	9.4	977	990	39.9	47.2	39.0	345	6739	8	.9	11	225	.13	1.24	1.16	12.5	9.3	8.4
227	2152	15.7	3.8	4.6	106	40.1	2731	2146	9.2	9.4	969	1063	40.7	49.4	37.4	354	7607	10	1.0	13	184	.15	1.33	1.18	10.9	9.3	8.4
233	2155	16.5	3.6	4.8	107	33.0	2698	2146	9.2	9.4	985	1030	40.3	47.7	38.0	345	8289	12	1.1	10	155	.18	1.30	1.17	11.5	9.3	8.3
241	2156	15.5	3.6	4.4	105	37.1	2728	2148	9.2	9.4	964	976	40.0	47.2	37.7	352	9153	14	1.3	12	135	.20	1.29	1.16	11.6	9.3	8.4
248	2159	17.5	3.6	4.6	105	36.8	2660	2148	9.2	9.4	984	1016	40.0	48.2	32.7	361	9811	17	1.4	11	120	.22	1.31	1.17	11.3	9.3	8.5
251	2161	32.8	3.7	4.8	108	39.6	2732	2149	9.2	9.4	992	984	40.1	48.3	28.7	359	10192	19	1.4	6	108	.23	1.15	1.14	14.8	9.4	8.4
308	2163	15.4	4.1	4.9	114	42.9	2635	2152	9.0	9.3	966	1014	40.3	48.8	30.8	372	11231	21	1.6	12	99	.26	1.37	1.14	10.2	9.3	8.3
311	2165	36.0	4.1	4.9	115	43.3	2617	2153	9.0	9.3	973	1024	40.4	49.2	32.2	360	11616	23	1.6	5	91	.27	1.11	1.14	15.7	9.4	8.4
314	2167	51.3	4.1	4.8	135	38.3	2566	2154	9.0	9.3	962	1004	40.5	49.2	32.2	375	11921	25	1.7	4	83	.28	1.06	1.10	17.3	9.4	8.4
317	2168	37.7	4.4	5.6	135	38.9	2599	2155	9.0	9.3	967	997	40.7	49.9	33.5	384	12363	27	1.7	5	77	.30	1.16	1.07	14.4	9.4	8.4
321	2171	42.0	5.1	5.9	137	44.5	2597	2155	9.0	9.3	963	991	40.9	49.4	35.0	389	12873	29	1.8	4	72	.31	1.17	1.08	14.7	9.4	8.4
325	2173	30.9	5.2	6.0	137	51.7	2579	2157	9.0	9.3	965	1039	41.0	50.0	36.1	390	13488	31	1.9	6	68	.34	1.26	1.09	12.9	9.4	8.4
335	2175	23.7	4.4	6.3	122	46.9	2611	2159	9.0	9.3	952	1065	41.3	49.7	38.4	395	14131	33	1.9	8	64	.36	1.31	1.08	11.4	9.3	8.4
339	2177	25.4	4.8	5.8	123	46.4	2605	2161	9.0	9.3	975	1020	41.4	49.1	39.1	393	14689	35	2.0	7	61	.38	1.29	1.10	12.2	9.3	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:19 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	L3/GAL IN	L3/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
344	2179	22.1	4.3	6.1	123	44.1	2644	2161	9.0	9.3	973	1100	41.2	48.8	39.5	409	15299	37	2.1	8	58	.40	1.31	1.11	11.8	9.3	8.3
349	2181	24.6	3.9	6.3	123	40.0	2609	2162	9.0	9.3	963	976	41.0	49.6	39.7	405	15694	39	2.2	8	56	.42	1.31	1.11	11.8	9.3	8.3
353	2183	32.0	4.4	5.3	123	47.7	2576	2164	9.0	9.3	961	902	41.0	48.6	39.8	412	16337	41	2.2	6	53	.43	1.23	1.11	13.6	9.3	8.4
357	2185	27.7	4.4	6.1	157	42.5	2611	2167	9.0	9.3	973	974	41.1	49.0	39.8	426	16917	43	2.3	7	51	.45	1.32	1.11	11.6	9.3	8.5
359	2187	45.9	4.8	5.2	158	48.8	2618	2169	9.0	9.3	949	927	41.0	49.1	39.9	422	17320	45	2.4	4	49	.47	1.19	1.10	14.5	9.2	8.5
410	2189	75.7	4.3	6.2	157	39.0	2593	2172	9.0	9.3	968	1091	41.0	49.0	39.9	424	18020	47	2.4	3	47	.49	1.02	1.10	18.6	9.2	8.4
413	2191	41.0	4.4	5.5	159	44.0	2548	2173	9.0	9.3	967	968	41.0	48.1	40.0	426	18503	49	2.5	5	45	.51	1.21	1.08	14.4	9.2	8.4
416	2193	40.5	4.0	5.1	159	41.2	2590	2174	9.0	9.3	956	1068	40.9	49.0	40.0	431	18990	51	2.5	5	44	.53	1.22	1.06	14.3	9.2	8.5
420	2195	31.0	4.2	6.5	159	38.9	2595	2175	9.0	9.3	961	960	40.8	48.3	40.1	440	19536	53	2.6	6	42	.55	1.29	1.07	12.4	9.2	8.3
423	2197	36.3	4.3	5.5	162	45.3	2583	2177	9.0	9.3	969	991	40.9	49.1	40.1	434	20018	55	2.6	5	41	.57	1.28	1.08	12.8	9.2	8.5
426	2199	41.2	4.8	5.7	160	47.1	2517	2178	9.0	9.3	971	1051	40.9	49.3	40.2	434	20516	57	2.7	5	40	.59	1.25	1.08	13.4	9.2	8.4
437	2201	22.9	4.3	5.5	157	40.5	2626	2181	9.0	9.3	972	1036	41.1	50.0	40.5	441	21415	59	2.8	9	39	.62	1.36	1.09	11.1	9.2	8.5 ↑
440	2203	48.5	3.9	5.0	156	38.2	2610	2182	9.0	9.3	982	940	41.2	49.3	40.5	436	21772	61	2.8	4	38	.63	1.13	1.07	16.1	9.2	8.3
442	2205	42.1	4.1	5.9	160	41.4	2576	2184	9.0	9.3	984	1025	41.2	49.4	40.6	432	22158	63	2.9	4	37	.64	1.23	1.06	14.0	9.2	8.5
445	2207	41.7	4.3	5.9	160	42.8	2585	2186	9.1	9.3	970	1023	41.2	49.6	40.8	442	22675	65	2.9	5	36	.66	1.25	1.07	13.9	9.2	8.3
449	2209	31.4	3.9	6.1	160	41.5	2622	2187	9.1	9.4	968	989	41.3	49.6	40.8	437	23273	67	3.0	6	35	.69	1.34	1.07	11.8	9.2	8.4
452	2211	31.3	4.4	5.8	157	49.8	2597	2188	9.1	9.4	971	983	41.4	49.2	41.0	447	23816	69	3.1	6	34	.71	1.33	1.08	11.9	9.2	8.4
455	2213	33.1	4.4	6.1	159	56.2	2662	2190	9.1	9.4	977	1025	41.3	49.5	41.1	449	24287	71	3.1	6	33	.72	1.31	1.09	12.5	9.2	8.5
509	2215	26.2	4.3	6.2	157	43.8	2563	2195	9.1	9.4	944	1070	41.5	49.3	41.2	456	25474	73	3.2	10	33	.76	1.36	1.08	11.8	9.3	8.4 ↑
513	2217	31.5	4.4	5.2	159	41.0	2516	2195	9.1	9.4	968	1028	41.4	49.1	41.3	455	25979	75	3.3	6	32	.77	1.23	1.06	14.0	9.3	8.4
516	2219	34.4	4.2	5.0	156	36.1	2588	2196	9.1	9.4	958	997	41.5	49.4	41.3	453	26569	77	3.3	6	31	.79	1.22	1.06	14.5	9.3	8.5
520	2221	29.8	4.2	4.8	159	43.4	2684	2198	9.1	9.4	970	1059	41.7	49.3	41.3	465	27193	79	3.4	6	30	.81	1.25	1.06	13.6	9.3	8.4
524	2223	30.6	4.0	4.8	158	38.0	2636	2200	9.1	9.4	974	1213	41.8	49.5	41.3	457	27773	81	3.5	6	30	.82	1.24	1.05	13.8	9.3	8.5
527	2225	36.5	4.2	5.2	158	37.6	2672	2202	9.1	9.4	987	1169	41.9	49.5	41.3	465	28330	83	3.5	5	29	.84	1.21	1.05	14.7	9.3	8.4
541	2227	25.6	4.0	4.9	148	42.1	2565	2206	9.1	9.4	938	992	42.3	50.4	41.3	434	29293	85	3.6	7	29	.86	1.29	1.06	12.8	9.3	8.4 ↑
545	2229	28.5	3.5	4.7	149	39.3	2617	2208	9.1	9.4	961	991	42.5	50.1	41.3	397	29904	87	3.7	7	28	.88	1.24	1.07	13.4	9.3	8.4
548	2231	32.0	5.6	6.2	156	51.6	2617	2210	9.1	9.4	980	1048	42.6	50.3	41.3	405	30403	89	3.7	6	28	.90	1.26	1.07	13.1	9.3	8.4
553	2233	27.2	4.4	6.1	161	39.9	2633	2212	9.1	9.4	971	1038	42.7	50.6	41.3	400	31071	91	3.8	7	27	.92	1.36	1.08	11.6	9.3	8.4
557	2235	28.1	4.4	5.6	160	41.4	2626	2214	9.1	9.4	972	1077	42.9	50.3	41.3	408	31797	93	3.9	6	27	.94	1.34	1.10	12.0	9.3	8.3
602	2237	27.7	4.3	5.8	159	39.1	2648	2216	9.1	9.4	971	995	43.0	50.5	41.3	407	32548	95	4.0	8	27	.96	1.35	1.11	12.3	9.3	8.4
607	2239	25.8	3.9	6.0	159	42.0	2618	2219	9.1	9.4	970	1002	[illegible]	[illegible]	[illegible]	[illegible]	33304	97	4.0	8	26	.98	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	1.6	4.5	5.5	167	37.9	2640	2223	9.1	9.4	987	1018	43.2	51.0	41.4	411	34064	99	4.1	7	26	1.00	1.35	1.12	12.7	9.3	8.4
620	2243	48.0	4.3	6.1	166	37.8	2679	2224	9.1	9.4	963	970	43.3	50.9	41.5	405	34575	101	4.2	4	25	1.01	1.20	1.12	14.4	9.3	8.4
623	2245	38.7	4.2	6.1	169	47.3	2690	2225	9.1	9.4	975	973	43.4	51.0	41.5	405	35099	103	4.2	5	25	1.03	1.31	1.12	13.0	9.3	8.5
627	2247	34.0	5.4	6.4	169	54.3	2737	2225	9.1	9.4	980	1115	43.6	51.1	41.6	413	35685	105	4.3	6	25	1.05	1.36	1.12	11.9	9.3	8.4
631	2249	32.8	5.0	5.9	166	42.0	2690	2227	9.1	9.4	964	1043	43.8	51.2	41.7	415	36342	107	4.4	6	24	1.07	1.32	1.12	12.6	9.3	8.4
634	2251	38.1	4.2	6.1	167	43.4	2691	2229	9.1	9.4	963	1152	43.9	51.0	41.8	417	36965	109	4.4	6	24	1.09	1.31	1.11	13.0	9.3	8.4
659	2253	22.5	4.1	5.8	162	41.2	2787	2237	9.1	9.4	965	1091	44.8	53.3	42.5	424	38509	111	4.7	8	24	1.12	1.38	1.12	11.4	9.3	8.4 ↑
700	2255	66.6	4.4	5.1	161	43.7	2788	2238	9.1	9.4	965	978	44.9	52.7	42.5	417	38762	113	4.7	3	24	1.13	1.07	1.11	18.5	9.3	8.5
705	2257	24.3	5.1	6.0	163	55.5	2767	2238	9.1	9.4	966	947	45.0	52.2	42.7	427	39506	115	4.8	8	23	1.15	1.40	1.10	11.2	9.3	8.5
709	2259	26.7	4.1	6.0	163	39.5	2778	2241	9.1	9.4	967	932	45.0	52.2	42.8	427	40166	117	4.9	7	23	1.17	1.37	1.10	11.9	9.3	8.4
713	2261	30.0	3.9	6.1	163	38.8	2791	2243	9.1	9.4	969	851	45.1	52.6	43.0	425	40848	119	5.0	6	23	1.19	1.32	1.11	12.5	9.3	8.4
716	2263	41.0	5.3	5.9	166	55.7	2704	2245	9.1	9.4	967	900	45.1	52.4	43.0	427	41258	121	5.0	5	23	1.20	1.25	1.10	14.4	9.3	8.4
719	2265	32.0	5.5	6.3	167	55.2	2695	2247	9.1	9.4	980	932	45.1	52.3	43.1	438	41866	123	5.1	6	22	1.22	1.38	1.11	11.8	9.3	8.3
736	2265	15.8	4.0	6.4	124	30.8	1947	2251	9.1	9.4	652	745	44.6	52.4	43.3	456	42779	123	5.1	12	22	1.24	1.39	1.08	7.7	9.3	8.4 ↑
736	2265	16.1	3.9	4.0	133	32.0	2169	2251	9.1	9.4	684	761	44.6	52.4	43.3	447	42786	123	5.2	12	22	1.24	1.39	1.08	7.7	9.3	8.3
736	2267	59.7	4.4	4.8	134	37.4	2570	2251	9.1	9.4	944	922	44.6	49.4	43.4	440	43018	125	5.2	3	22	1.24	1.01	1.08	16.5	9.3	8.3
741	2269	37.6	5.5	6.4	146	56.9	2656	2251	9.1	9.4	941	973	44.4	50.7	43.4	428	43399	127	5.2	5	22	1.25	1.22	1.07	11.5	9.3	8.5
745	2271	27.7	4.1	5.7	158	36.0	2640	2251	9.1	9.4	950	884	43.3	48.4	43.7	414	44133	129	5.3	7	22	1.27	1.29	1.07	10.0	9.3	8.3
747	2273	44.5	5.5	6.3	160	55.8	2631	2251	9.1	9.4	967	911	43.2	51.2	43.7	421	44429	131	5.3	5	21	1.28	1.22	1.07	11.7	9.3	8.5

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:23 11/15/76

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	KINGS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NX/W
751	2275	34.3	4.3	6.0	160	42.6	2628	2251	9.1	9.4	967	865	43.1	50.3	43.8	419	45057	133	5.4	5	21	1.29	1.30	1.06	9.9	9.3	8.5
756	2277	26.4	4.2	6.0	158	44.7	2609	2254	9.1	9.4	967	904	42.6	51.1	43.9	421	45741	135	5.5	7	21	1.31	1.33	1.06	9.2	9.3	8.4
807	2279	31.0	4.5	5.9	167	52.8	2579	2257	9.1	9.4	937	850	42.5	49.2	44.1	412	46554	137	5.5	6	21	1.33	1.33	1.08	9.3	9.3	8.3
811	2281	36.9	5.3	6.4	170	61.5	2628	2259	9.1	9.4	953	836	42.4	46.5	44.3	415	47144	139	5.6	5	21	1.35	1.35	1.11	9.1	9.3	8.4
816	2283	26.9	4.2	6.7	169	50.6	2603	2262	9.1	9.4	970	835	41.9	51.1	44.6	421	48007	141	5.7	7	20	1.37	1.36	1.10	8.7	9.3	8.5
819	2285	30.3	5.0	6.5	170	54.9	2606	2264	9.1	9.4	957	874	42.2	51.7	44.7	429	48595	143	5.8	6	20	1.39	1.39	1.13	8.5	9.3	8.5
822	2287	36.3	5.3	6.6	171	60.4	2628	2264	9.1	9.4	959	903	42.5	50.9	44.8	426	49169	145	5.8	5	20	1.41	1.34	1.13	9.2	9.3	8.5
827	2289	31.7	5.5	6.1	171	59.4	2627	2266	9.1	9.4	968	957	42.7	51.2	44.9	434	49686	147	5.9	6	20	1.43	1.37	1.13	8.7	9.3	8.4
838	2292	24.7	5.8	6.7	152	56.5	1653	2271	9.1	9.4	704	905	43.0	51.4	45.0	444	50764	150	6.0	7	20	1.46	1.33	1.13	9.2	9.3	8.3 ↑
842	2293	22.3	4.3	6.0	161	44.3	2586	2273	9.1	9.4	967	975	43.2	50.6	44.9	455	51366	151	6.0	6	19	1.47	1.42	1.15	7.5	9.3	8.4
846	2295	29.6	4.1	6.2	161	42.5	2572	2275	9.1	9.4	967	980	43.2	51.1	44.8	450	52035	153	6.1	6	19	1.49	1.37	1.14	8.5	9.3	8.5
849	2297	28.9	5.3	6.1	161	61.3	2624	2277	9.1	9.4	956	982	43.4	51.2	44.5	450	52651	155	6.2	7	19	1.51	1.38	1.15	8.5	9.3	8.3
854	2299	27.7	5.0	6.5	162	60.2	2577	2278	9.1	9.4	967	981	43.5	51.8	44.1	448	53386	157	6.2	7	19	1.53	1.39	1.15	8.1	9.3	8.3
859	2301	24.7	5.1	6.1	164	57.9	2580	2280	9.1	9.3	958	976	43.6	51.9	43.5	449	54174	159	6.3	8	19	1.55	1.40	1.16	7.9	9.3	8.3
903	2303	29.5	4.9	6.5	161	46.6	2538	2282	9.1	9.3	967	962	43.7	51.0	43.2	447	54775	161	6.4	6	19	1.57	1.41	1.18	7.9	9.3	8.5
915	2305	24.9	4.3	5.5	161	41.7	2684	2286	9.1	9.4	978	979	43.5	51.5	42.8	458	55749	163	6.5	7	19	1.59	1.33	1.16	9.0	9.3	8.4
920	2307	26.0	4.5	6.0	164	48.4	2691	2289	9.1	9.4	971	978	43.5	51.4	42.6	459	56532	165	6.6	8	19	1.61	1.39	1.16	8.1	9.3	8.4
924	2310	27.4	4.3	6.2	163	49.1	2707	2291	9.1	9.4	970	978	43.5	50.5	42.3	463	57217	167	6.7	7	18	1.63	1.37	1.16	8.5	9.3	8.4
937	2312	27.0	4.3	6.0	112	38.1	2674	2294	9.1	9.4	960	883	42.8	45.2	42.5	441	58043	170	6.7	7	18	1.65	1.38	1.16	8.5	9.3	8.3 ↑
940	2313	26.2	4.6	6.1	146	50.3	2635	2296	9.1	9.4	970	870	42.5	52.1	42.6	432	58553	171	6.8	7	18	1.66	1.41	1.17	7.9	9.3	8.4
945	2315	25.6	4.6	5.9	145	53.7	2636	2298	9.1	9.4	961	903	42.8	52.6	42.7	434	59274	173	6.9	8	18	1.68	1.40	1.17	8.0	9.3	8.3
949	2317	26.3	5.2	5.9	149	63.0	2647	2300	9.1	9.4	961	909	43.1	52.5	42.9	440	59846	175	6.9	7	18	1.70	1.43	1.19	7.6	9.3	8.4
1000	2319	28.2	4.7	5.9	166	44.6	2737	2303	9.1	9.4	979	892	43.5	52.4	43.2	434	60731	177	7.0	7	18	1.72	1.40	1.18	8.2	9.3	8.3
1005	2321	27.8	4.5	5.7	167	47.3	2687	2304	9.1	9.4	976	812	43.7	50.5	43.3	442	61517	179	7.1	7	18	1.74	1.40	1.17	8.2	9.3	8.3
1010	2323	24.3	4.8	5.9	167	49.7	2605	2306	9.1	9.4	968	859	43.9	52.7	43.4	437	62390	181	7.2	8	18	1.76	1.35	1.16	8.6	9.3	8.4
1015	2326	35.1	4.2	6.1	167	41.5	2576	2308	9.1	9.4	970	869	44.3	52.6	43.4	425	63076	183	7.3	5	17	1.77	1.33	1.17	9.7	9.3	8.4
1018	2327	29.9	4.3	6.0	169	48.1	2604	2309	9.1	9.4	953	866	44.4	52.6	43.5	430	63665	185	7.3	6	17	1.79	1.40	1.17	8.2	9.3	8.3
1022	2330	32.3	4.8	5.9	169	65.9	2603	2311	9.1	9.4	960	872	44.4	52.6	43.5	425	64363	187	7.4	6	17	1.81	1.38	1.17	8.6	9.3	8.5
1036	2332	23.1	4.8	5.8	167	52.8	2743	2313	9.1	9.4	969	908	44.6	52.6	43.4	429	65375	190	7.5	8	17	1.83	1.42	1.16	7.7	9.3	8.4
1039	2334	25.4	5.1	5.8	169	53.1	2630	2315	9.1	9.4	962	917	44.7	52.5	43.3	427	65979	192	7.6	7	17	1.85	1.42	1.18	7.8	9.3	8.3
1045	2336	23.1	4.1	6.1	167	45.1	2633	2317	9.1	9.4	972	917	45.0	52.5	43.1	420	66980	194	7.7	8	17	1.87	1.41	1.14	7.3	9.3	8.5
1048	2338	31.0	5.5	6.3	170	66.4	2621	2318	9.1	9.4	964	919	45.1	52.5	42.9	423	67440	196	7.7	6	17	1.88	1.39	1.18	8.4	9.3	8.3
1052	2339	34.4	5.4	6.4	170	58.3	2663	2319	9.1	9.4	950	918	45.2	52.5	42.9	425	68107	198	7.8	5	17	1.91	1.37	1.18	8.8	9.3	8.5
1057	2342	26.5	5.5	5.8	171	65.9	2618	2321	9.1	9.4	958	920	45.3	52.4	42.9	418	68936	200	7.9	7	17	1.92	1.43	1.18	7.8	9.3	8.4
1101	2344	30.3	5.3	5.9	172	57.2	2618	2322	9.1	9.4	957	918	45.4	52.4	43.0	423	69590	202	7.9	6	17	1.94	1.41	1.19	7.9	9.3	8.3
1114	2346	27.5	4.2	5.8	166	42.7	2723	2327	9.1	9.4	983	918	45.6	52.3	43.3	421	70617	204	8.1	7	17	1.96	1.34	1.17	9.3	9.3	8.3 ↑
1117	2348	33.1	4.7	6.2	169	50.2	2652	2329	9.1	9.4	984	918	45.7	52.3	43.5	416	71157	206	8.1	6	16	1.98	1.36	1.16	9.0	9.3	8.4
1122	2350	27.2	5.3	6.0	171	44.0	2652	2331	9.1	9.4	973	920	45.9	52.5	43.7	411	71948	208	8.2	7	16	1.99	1.42	1.16	7.8	9.3	8.4
1128	2352	23.3	4.6	5.8	152	49.7	2698	2332	9.1	9.4	958	968	46.1	54.6	43.9	406	72897	210	8.3	8	16	2.02	1.43	1.17	7.7	9.3	8.5
1133	2354	21.1	4.3	6.0	153	42.0	2655	2334	9.1	9.4	972	965	46.1	54.6	44.2	410	73748	212	8.4	9	16	2.04	1.45	1.18	7.2	9.3	8.4
1139	2356	22.8	5.2	5.6	160	57.0	2667	2337	9.1	9.4	982	965	46.0	54.7	44.3	415	74542	214	8.5	8	16	2.05	1.44	1.19	7.3	9.3	8.3
1200	2358	15.2	4.2	5.5	160	35.8	2547	2344	9.1	9.4	944	965	46.1	54.6	44.9	421	76349	216	8.6	12	16	2.09	1.49	1.14	6.4	9.3	8.3 ↑
1205	2360	15.2	4.2	5.9	158	39.5	2521	2345	9.1	9.4	944	965	46.9	54.7	45.0	425	77229	218	8.7	12	16	2.10	1.49	1.17	6.4	9.3	8.5
1209	2362	22.2	5.1	5.7	161	54.1	2543	2347	9.1	9.4	920	963	47.3	54.7	45.1	428	77717	220	8.8	8	16	2.11	1.43	1.20	7.6	9.3	8.4
1214	2364	23.6	4.9	5.9	159	39.5	2501	2349	9.1	9.4	931	953	47.7	54.7	45.3	418	78517	222	8.9	8	16	2.13	1.43	1.21	7.6	9.3	8.5
1219	2366	22.2	4.3	5.9	162	47.6	2544	2351	9.1	9.4	932	966	48.0	54.7	45.4	426	79446	224	9.0	8	16	2.15	1.47	1.20	7.0	9.3	8.4
1225	2368	21.9	5.0	6.4	158	56.5	2509	2353	9.1	9.4	937	964	48.1	54.7	45.5	430	80349	226	9.1	9	16	2.17	1.46	1.20	7.2	9.3	8.5
1231	2370	22.4	4.6	5.9	162	50.9	2507	2355	9.1	9.4	919	962	48.2	54.7	45.6	423	81251	228	9.1	8	16	2.19	1.44	1.22	7.4	9.3	8.3
1247	2372	21.0	4.7	6.5	164	45.3	2505	2357	9.2	9.3	923	962	48.0	55.2	45.9	392	82328	230	9.3	9	16	2.21	1.42	1.20	7.7	9.3	8.4 ↑
1254	2374	17.1	4.2	6.0	166	40.7	2467	2357	9.2	9.3	938	966	47.8	56.3	46.0	363	83533	232	9.4	11	16	2.23	1.48	1.16	6.6	9.3	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 16:27 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	BITS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS HRS	BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXBW
1300	2376	16.9	4.6	5.4	160	37.5	2476	2360	9.2	9.3	929	964	47.9	55.7	46.0	335	84545	234	9.5	11	16	2.25	1.44	1.20	7.3	9.3	8.3
1306	2378	20.3	4.7	5.3	160	47.0	2512	2362	9.2	9.3	935	964	47.9	55.9	46.0	341	85481	236	9.6	9	16	2.27	1.43	1.21	7.6	9.3	8.4
1311	2380	22.5	4.7	5.6	162	42.4	2500	2364	9.2	9.3	931	964	48.0	56.0	46.1	342	86256	238	9.7	8	16	2.28	1.45	1.23	7.3	9.3	8.5
1317	2382	22.5	5.5	5.8	161	54.8	2454	2366	9.2	9.3	926	965	48.0	56.1	46.3	342	87157	240	9.8	8	15	2.30	1.44	1.21	7.5	9.3	8.4
1322	2384	23.3	4.9	6.4	161	55.3	2471	2367	9.2	9.3	930	963	48.1	56.4	47.0	344	87979	242	9.8	8	15	2.32	1.42	1.20	7.9	9.3	8.4
1349	2386	16.9	3.6	5.6	102	29.0	954	2371	9.2	9.3	542	860	46.9	56.3	47.7	361	89504	244	10.0	11	15	2.33	1.22	1.15	11.2	9.3	8.4
1410	2388	8.6	3.5	4.9	106	33.3	955	2374	9.2	9.3	548	820	46.8	56.2	48.1	369	91243	246	10.3	22	15	2.35	1.39	1.14	7.6	9.4	8.5
1425	2390	8.1	3.4	4.7	95	30.9	946	2377	9.2	9.3	548	610	46.8	56.3	48.0	378	92724	248	10.5	24	16	2.36	1.39	1.15	7.7	9.4	8.4
1439	2392	8.9	4.0	5.4	99	44.2	930	2380	9.3	9.3	549	603	46.8	56.3	47.9	383	94080	250	10.8	22	16	2.37	1.38	1.15	8.0	9.4	8.4
1452	2394	9.6	3.8	5.2	98	37.6	957	2382	9.3	9.3	542	578	46.8	56.2	47.9	393	95311	252	11.0	20	16	2.39	1.40	1.18	7.6	9.4	8.4
1504	2396	10.1	3.8	5.2	98	34.4	937	2383	9.3	9.3	550	555	46.8	56.2	47.9	401	96514	254	11.2	19	16	2.40	1.41	1.19	7.5	9.4	8.4
1537	2398	9.1	4.2	5.3	107	37.3	2647	2387	9.3	9.4	949	916	46.4	56.1	47.2	399	98748	256	11.6	20	16	2.42	1.38	1.17	14.3	9.4	8.5 ↑
1547	2400	10.9	4.1	4.7	123	42.0	2626	2390	9.3	9.4	967	937	47.0	56.0	47.0	409	99960	258	11.7	17	16	2.43	1.43	1.18	9.1	9.4	8.3
1556	2402	12.7	3.6	4.9	125	30.6	2599	2392	9.3	9.4	951	939	47.2	55.7	46.8	415	101313	260	11.9	15	16	2.45	1.40	1.17	9.6	9.4	8.5
CIRCULATE BOTTOMS UP AT 2403.5 METRES.																											
1717	2404	11.5	3.1	4.7	137	29.3	2462	2402	9.3	9.5	956	938	50.7	57.6	47.5	395	103437	262	12.3	16	16	2.46	1.28	1.19	11.7	9.4	8.4 ↑
1728	2406	11.4	3.9	4.4	142	43.4	2430	2402	9.3	9.5	966	938	50.6	57.6	48.2	412	104959	264	12.4	16	16	2.48	1.54	1.20	7.3	9.4	8.3
1739	2408	10.6	3.9	4.4	142	48.5	2437	2402	9.3	9.5	948	939	50.3	57.8	49.0	411	106522	266	12.6	18	16	2.51	1.55	1.22	7.1	9.4	8.4
1751	2410	10.3	3.3	4.5	109	33.4	2371	2402	9.3	9.5	955	934	50.1	57.8	49.8	416	108078	268	12.8	18	16	2.53	1.44	1.20	8.8	9.4	8.3
1819	2412	8.2	3.0	4.4	118	32.3	2371	2404	9.3	9.5	962	937	50.0	58.8	50.7	435	110161	270	13.1	23	16	2.55	1.42	1.21	8.9	9.4	8.4 ↑
1828	2414	11.2	3.1	4.8	123	32.5	2356	2406	9.3	9.5	952	939	50.3	58.9	50.7	437	111206	272	13.3	17	16	2.56	1.48	1.23	8.2	9.4	8.5
1840	2416	9.8	4.3	4.5	122	45.7	2381	2408	9.3	9.4	941	937	50.5	58.6	50.6	440	112687	274	13.5	19	16	2.58	1.52	1.24	7.5	9.4	8.3
1853	2418	10.1	3.3	4.6	123	32.8	2371	2409	9.3	9.4	957	937	50.6	58.7	50.4	441	114209	276	13.7	18	16	2.59	1.47	1.24	8.1	9.4	8.5

CIRCULATE RETURNS AT 2420 METRES.

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:20 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NX/W
PULLED OUT OF HOLE WITH CORE #1 97% RECOVERY.																											
RUN BACK IN TO CUT CORE #2.																											
RERUN CB #1 CHRISTENSEN C22, 16M/20.75HRS																											
2102	2436	.8	2.3	2.9	85	19.4	1014	2430	9.3	9.8	541	568	43.6	50.6	39.0	420	1671	0	.0	223	14199	.00	1.94	1.17	6.2	9.5	8.3
2104	2436	2.0	2.4	2.4	85	20.1	1033	2430	9.3	9.9	551	578	43.5	50.5	39.0	420	1828	0	.1	100	3798	.00	1.70	1.10	13.3	9.5	8.4
2105	2437	3.2	2.5	2.5	85	19.0	1020	2431	9.3	9.6	548	575	43.5	50.7	39.0	423	1943	1	.1	64	2371	.00	1.57	1.11	15.8	9.5	8.4
2106	2437	4.4	2.4	2.7	84	19.4	1045	2431	9.3	9.5	543	570	43.5	50.8	39.0	416	2054	1	.1	44	1637	.00	1.47	1.11	18.2	9.5	8.4
2121	2437	2.4	2.6	2.9	63	20.8	1051	2432	9.3	9.4	549	576	41.3	47.1	39.0	425	3169	1	.3	86	1336	.00	1.60	1.06	14.7	9.5	8.5
2132	2437	1.5	2.4	3.7	63	20.6	965	2432	9.3	9.4	538	564	40.7	46.4	38.9	432	3890	2	.5	139	1069	.00	1.71	1.10	14.3	9.5	8.4
2141	2438	1.7	2.8	3.2	65	19.4	971	2433	9.3	9.5	535	561	40.3	45.9	38.8	427	4454	2	.7	130	950	.00	1.69	.59	13.5	9.5	8.3
2156	2438	1.4	2.7	3.2	65	19.2	959	2434	9.3	9.5	532	558	39.5	45.1	38.7	427	5416	2	.9	143	831	.00	1.72	.60	12.2	9.5	8.3
2211	2438	1.3	2.0	3.5	64	22.4	999	2434	9.3	9.4	535	561	38.9	44.6	38.5	424	6407	3	1.2	159	752	.00	1.74	.60	11.9	9.5	8.4
2223	2439	1.6	2.1	3.0	63	19.1	970	2435	9.3	9.3	531	557	38.4	43.8	38.3	432	7164	3	1.4	139	693	.00	1.69	.59	12.8	9.5	8.5
2232	2439	1.9	2.4	3.1	64	18.5	919	2436	9.2	9.5	250	262	38.0	43.5	38.2	444	7740	3	1.5	115	629	.00	1.65	.97	14.6	9.5	8.5
2239	2439	2.6	2.7	2.9	63	22.4	970	2436	9.2	9.5	249	261	37.8	43.3	38.2	441	8182	3	1.6	76	581	.00	1.57	.97	15.7	9.5	8.5
2252	2440	1.9	2.5	3.1	75	20.5	943	2436	9.3	9.9	244	256	37.5	45.6	38.1	453	9147	4	1.9	109	545	.00	1.70	.98	13.5	9.5	8.4
2302	2440	2.0	1.7	3.2	76	21.3	1043	2437	9.3	9.8	250	262	37.8	46.3	38.9	449	9886	4	2.0	92	512	.00	1.66	.98	13.6	9.5	8.4
2316	2440	1.5	2.3	2.7	82	20.9	997	2437	9.3	9.9	249	261	37.8	46.1	41.1	467	10991	4	2.2	128	486	.00	1.78	.99	11.9	9.5	8.4
2325	2441	2.0	2.2	2.6	56	23.2	1066	2437	9.3	9.9	250	262	35.1	45.2	41.8	456	11650	5	2.4	113	467	.00	1.65	.93	14.1	9.5	8.4
2340	2441	1.0	2.2	2.8	76	19.6	1029	2437	9.3	9.6	250	262	38.0	45.6	41.7	474	12579	5	2.7	304	446	.00	1.95	.96	8.9	9.5	8.4
2354	2441	1.3	2.0	2.6	85	23.4	979	2437	9.3	9.5	535	561	38.1	44.4	41.4	449	13762	5	2.9	323	438	.00	1.99	.99	9.3	9.5	8.5
5	2441	2.2	2.0	2.8	85	22.5	1000	2437	9.3	9.2	529	555	37.1	41.2	41.0	456	14665	6	3.1	102	411	.00	1.75	.99	13.3	9.5	8.4
24	2442	.2	2.0	3.0	84	19.7	1008	2438	9.3	9.5	260	273	36.2	41.5	40.0	461	16273	6	3.4	1439	397	.00	2.39	.95	5.5	9.5	8.4
43	2442	.4	2.6	2.8	84	24.4	1015	2438	9.3	9.5	250	262	35.7	42.9	38.3	[illegible]	[illegible]	6	3.7	1072	[illegible]	.00	2.29	.96	4.7	9.5	8.4
52	2442	1.5	2.1	2.8	85	22.8	952	2438	9.3	9.5	245	257	35.6	43.0	39.3	486	18587	7	3.9	153	375	.00	1.60	.97	13.2	9.5	8.4
55	2443	2.7	2.3	3.0	85	20.6	956	2438	9.3	9.5	249	261	35.8	42.7	39.3	481	18822	7	3.9	73	358	.00	1.62	.97	16.1	9.5	8.4
56	2443	3.7	2.4	3.0	84	28.3	1002	2438	9.3	9.7	251	263	35.9	42.4	39.3	480	18984	7	3.9	54	345	.00	1.54	.97	18.0	9.5	8.5
103	2443	4.3	2.4	3.7	84	21.4	996	2438	9.3	9.7	241	253	35.7	43.2	39.0	483	19560	7	4.0	45	334	.00	1.55	1.00	18.1	9.5	8.4
114	2444	2.0	2.5	3.1	85	25.2	1092	2439	9.3	9.5	247	259	35.7	42.7	38.8	490	20466	8	4.2	102	325	.00	1.71	.93	14.4	9.5	8.4
117	2444	3.2	2.6	3.3	85	25.5	1090	2439	9.3	9.6	246	258	35.8	42.6	38.8	493	20671	8	4.3	65	314	.00	1.65	1.00	16.2	9.5	8.4
132	2444	1.4	2.0	3.1	85	22.2	912	2439	9.3	9.7	251	263	35.7	42.6	38.5	457	21951	8	4.5	147	307	.00	1.81	.95	12.5	9.5	8.3
140	2444	1.3	2.2	3.4	85	19.6	1035	2439	9.3	9.6	249	261	35.6	42.4	38.5	452	22665	9	4.7	151	299	.00	1.82	.97	12.9	9.5	8.4
142	2445	2.7	2.6	3.1	85	23.5	1017	2439	9.3	9.6	248	260	35.6	42.3	38.1	450	22834	9	4.7	76	290	.00	1.64	.98	16.1	9.5	8.3
151	2445	2.7	2.4	3.4	85	23.2	948	2440	9.3	9.7	249	261	35.5	42.1	38.1	459	23559	9	4.8	73	283	.00	1.69	1.00	15.9	9.5	8.5
156	2445	3.2	2.3	3.4	82	29.6	1044	2440	9.3	9.6	248	260	35.4	42.3	37.6	462	24002	10	4.9	59	276	.00	1.61	.99	17.2	9.5	8.5
204	2446	2.7	2.2	3.7	85	34.1	1046	2440	9.3	9.6	239	250	35.7	42.5	37.6	457	[illegible]	10	[illegible]	[illegible]	275	.00	1.75	1.00	15.6	9.5	8.3
213	2446	2.4	3.0	3.7	74	22.9	866	2440	9.3	9.4	581	610	35.4	43.3	37.8	450	25392	10	5.2	80	265	.00	1.65	.96	16.1	9.6	8.3
213	2446	3.5	2.6	3.5	76	17.7	910	2440	9.3	9.3	577	605	35.6	43.4	37.6	441	25400	10	5.2	56	256	.00	1.57	.99	16.5	9.6	8.4
214	2447	4.7	2.6	3.6	74	26.5	846	2440	9.3	9.4	575	603	35.7	43.7	37.8	451	25500	11	5.2	41	250	.00	1.50	1.00	19.7	9.6	8.3
217	2447	5.6	3.4	4.5	76	29.4	904	2440	9.3	9.2	582	611	35.8	38.3	37.9	458	25667	11	5.3	33	244	.00	1.50	.99	20.0	9.6	8.5
221	2447	5.2	3.3	3.8	74	35.9	868	2441	9.3	9.3	585	614	35.1	38.6	37.9	450	26028	11	5.3	36	240	.00	1.49	.98	20.2	9.6	8.4
227	2447	5.4	2.6	3.5	76	175.7	874	2441	9.3	9.3	590	619	34.5	39.1	38.0	462	26441	12	5.4	34	235	.00	2.93	1.92	4.9	9.6	8.5
228	2448	6.3	2.9	3.5	76	162.1	884	2441	9.3	9.5	573	601	34.5	39.1	38.0	461	26500	12	5.4	30	228	.00	3.01	1.14	5.0	9.6	8.4
233	2448	5.1	2.5	4.2	77	27.9	850	2441	9.3	9.4	577	605	34.1	39.4	38.0	460	26885	12	5.5	39	224	.00	1.91	.66	14.7	9.6	8.5
236	2448	4.9	2.4	4.8	74	34.4	854	2441	9.3	9.4	577	605	34.1	39.7	38.0	458	27129	13	5.6	40	220	.00	1.70	.91	17.7	9.6	8.4
238	2449	6.1	2.7	3.2	74	37.3	838	2441	9.3	9.4	577	605	34.1	39.7	38.0	458	27237	13	5.6	34	215	.00	1.64	1.00	18.8	9.6	8.3
242	2449	5.4	3.0	3.8	74	39.4	787	2441	9.3	9.5	290	304	34.1	39.4	37.8	464	27567	13	5.7	36	211	.01	1.69	1.02	18.1	9.5	8.3
244	2449	5.5	3.2	4.1	74	40.7	640	2441	9.3	9.5	255	267	34.1	39.3	37.8	471	27748	14	5.7	34	206	.01	1.69	1.01	18.1	9.5	8.5
246	2450	6.4	3.7	4.2	74	41.4	556	2441	9.3	9.5	253	265	31.0	39.3	37.6	476	27853	14	5.8	30	203	.01	1.66	1.01	16.8	9.5	8.4
251	2450	6.0	3.6	5.0	74	41.9	865	2441	9.3	9.5	250	262	33.9	39.1	37.8	478	28215	14	5.8	33	200	.01	1.70	1.02	16.2	9.5	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:24 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
253	2450	6.5	3.0	4.1	73	41.6	683	2441	9.3	9.6	229	240	33.8	39.0	37.8	485	28356	14	5.9	29	185	.01	1.66	1.01	19.1	9.5	8.4
302	2451	3.3	2.7	4.1	74	28.6	648	2441	9.3	9.6	182	191	33.5	38.1	37.3	494	29038	15	6.0	58	193	.01	1.67	.89	17.7	9.5	8.5
312	2451	.3	2.2	4.6	74	28.3	569	2441	9.3	9.7	183	192	33.4	19.5	37.3	503	29778	15	6.2	547	195	.01	2.27	.89	7.0	9.5	8.5 *

PULLED OUT OF HOLE WITH CORE #2 71% RECOVERY.
RUN BACK IN TO CUT CORE #3.
RERUN OF CB #1 CHRISTENSEN C22, 13M/4HRS

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1418	2452	2.7	2.0	7.0	68	18.3	1053	2430	9.3	9.6	251	262	41.8	47.8	36.9	4600	883	0	.0	21	236	0.00	1.30	.84	19.7	9.6	8.3
1418	2452	3.0	2.0	7.0	68	18.0	1020	2432	9.3	9.6	247	238	41.6	47.8	36.9	4580	887	1	.0	19	241	0.00	1.29	.85	21.3	9.5	8.4
1434	2453	3.3	2.8	8.1	68	23.9	1062	2442	9.3	9.6	245	257	41.9	47.9	36.9	458	891	2	.0	56	761	.00	1.28	.83	23.0	9.6	8.3 ↑
1434	2453	3.3	2.9	3.0	68	25.6	1119	2442	9.3	9.6	252	264	41.9	47.9	36.9	451	895	2	.0	56	761	.00	1.28	.83	23.0	9.6	8.4
1445	2453	1.4	3.4	4.6	84	24.3	1070	2443	9.3	9.6	547	574	41.4	46.7	36.5	451	1750	2	.2	150	747	.00	1.82	1.00	14.4	9.7	8.4
1451	2453	1.8	3.3	4.4	84	26.2	1068	2443	9.3	9.6	543	570	40.5	40.6	36.0	447	2205	3	.3	109	661	.00	1.74	.89	15.4	9.7	8.4
1454	2454	3.2	2.8	4.1	82	16.9	1003	2443	9.3	9.6	539	565	39.8	42.2	36.0	449	2466	3	.4	64	598	.00	1.57	.90	19.3	9.7	8.4
1457	2454	4.3	3.2	3.9	82	15.7	764	2444	9.3	9.6	492	516	39.4	42.7	35.8	447	2710	3	.4	44	546	.00	1.44	.90	21.6	9.6	8.4
1459	2454	5.2	3.6	3.9	85	17.6	643	2444	9.3	9.6	496	520	39.3	42.9	35.8	456	2839	4	.5	37	506	.00	1.37	.88	22.9	9.6	8.3
1500	2455	6.2	3.3	4.1	84	13.2	604	2444	9.3	9.6	470	493	39.2	42.9	35.8	456	2957	4	.5	32	467	.00	1.31	.88	24.0	9.6	8.5
1500	2455	7.3	3.8	4.1	85	15.2	567	2444	9.3	9.6	453	475	39.2	42.9	35.8	464	2978	4	.5	28	443	.00	1.28	.89	24.7	9.6	8.3
1502	2456	9.7	3.5	6.0	82	22.1	1090	2444	9.3	9.6	508	533	39.1	42.7	35.8	449	3141	5	.5	19	368	.00	1.19	.89	26.3	9.7	8.4 ↑
1502	2456	9.7	3.7	3.6	82	27.9	1112	2444	9.3	9.6	506	531	39.0	42.7	35.8	456	3145	5	.5	19	368	.00	1.19	.89	26.3	9.7	8.3
1508	2456	9.2	2.5	4.3	84	16.5	1111	2445	9.3	9.4	554	581	38.7	42.2	35.7	461	3589	5	.6	21	358	.00	1.23	.86	25.8	9.7	8.3
1510	2456	9.5	3.7	4.1	83	16.5	988	2445	9.3	9.4	522	548	38.5	42.0	35.7	463	3775	5	.6	20	341	.00	1.20	.86	26.2	9.7	8.5
1514	2456	8.2	3.2	4.9	82	23.1	987	2445	9.3	9.5	528	554	38.2	42.1	35.7	461	4081	6	.7	23	325	.00	1.36	.93	24.3	9.7	8.3
1519	2457	4.5	2.9	4.6	82	23.6	937	2446	9.3	9.3	522	548	37.8	41.5	35.6	465	4491	6	.8	43	311	.00	1.51	.92	21.3	9.7	8.4
1523	2457	4.8	3.3	4.1	82	25.1	962	2446	9.3	9.3	535	561	37.5	41.0	35.5	453	4652	6	.8	39	297	.00	1.49	.86	21.8	9.7	8.4
1527	2457	4.0	2.6	4.3	82	25.5	948	2446	9.3	9.4	530	556	37.3	40.9	35.5	463	5164	7	.9	48	285	.00	1.55	.87	20.7	9.7	8.5
1531	2458	4.3	3.5	4.0	83	23.6	986	2447	9.3	9.4	524	550	37.0	41.0	35.4	460	5490	7	1.0	45	275	.00	1.53	.86	21.2	9.7	8.3
1535	2458	4.5	3.1	4.2	82	22.4	943	2447	9.3	9.5	241	253	36.7	40.9	35.4	481	5842	7	1.0	43	266	.00	1.54	.88	21.2	9.6	8.4
1542	2458	4.1	2.7	3.9	82	23.8	944	2447	9.3	9.5	240	252	36.6	40.3	35.4	476	6399	8	1.2	47	257	.00	1.55	.88	21.0	9.6	8.4
1549	2459	3.3	2.7	3.4	82	24.5	976	2448	9.3	9.6	247	259	36.2	39.3	35.4	484	6988	8	1.3	69	251	.00	1.65	.88	19.0	9.6	8.3
1551	2459	3.9	3.0	3.2	81	24.3	990	2448	9.3	9.6	247	259	36.0	39.8	35.4	487	7150	8	1.3	50	242	.00	1.59	.88	20.8	9.6	8.4
1600	2459	3.3	3.0	3.8	82	23.1	950	2448	9.3	9.7	249	261	35.9	42.7	35.4	486	7930	8	1.5	59	236	.00	1.62	.89	19.8	9.6	8.4
1603	2459	3.8	3.2	3.8	84	29.2	944	2448	9.3	9.7	248	250	36.0	43.1	35.4	484	8163	9	1.5	51	229	.00	1.57	.89	20.8	9.6	8.4
1611	2460	3.2	2.5	4.1	82	40.1	964	2448	9.3	9.7	241	253	36.2	42.8	35.4	491	8808	9	1.6	57	224	.00	1.75	.97	18.3	9.6	8.5
1617	2460	2.8	2.8	4.2	82	37.7	984	2449	9.3	9.5	247	259	36.1	42.9	35.0	486	9289	9	1.7	70	219	.00	1.94	.93	15.7	9.6	8.5
1624	2460	2.8	2.3	3.4	83	38.3	953	2450	9.3	9.7	241	253	36.2	42.5	35.0	498	9879	10	1.9	70	214	.00	1.90	.88	16.3	9.6	8.4
1631	2461	2.6	2.6	3.5	82	35.7	939	2450	9.3	9.7	245	257	36.2	41.9	34.6	484	10459	10	2.0	74	210	.00	1.88	.89	16.4	9.6	8.4
1636	2461	3.0	2.7	3.3	83	35.0	961	2450	9.3	9.7	248	260	36.1	41.7	34.6	487	10871	10	2.1	68	206	.00	1.86	.90	17.4	9.6	8.4
1647	2461	2.0	2.4	3.2	82	34.6	977	2451	9.3	9.5	248	260	36.1	42.4	34.4	493	11803	11	2.3	112	203	.00	1.97	.90	15.8	9.6	8.3
1652	2462	2.5	2.2	3.3	82	34.4	949	2451	9.3	9.6	249	261	36.1	42.5	34.4	490	12192	11	2.3	81	199	.00	1.85	.91	17.4	9.6	8.4
1704	2462	2.2	2.5	3.2	82	30.1	928	2451	9.3	9.6	248	260	36.1	42.4	34.0	490	13167	11	2.5	84	196	.00	1.85	.90	16.7	9.6	8.4
1711	2462	2.0	2.4	3.8	82	27.7	961	2451	9.3	9.5	247	259	36.2	42.5	33.5	500	13760	12	2.6	106	194	.00	1.90	.89	16.0	9.6	8.5
1717	2462	2.6	2.9	4.0	81	31.0	985	2451	9.3	9.5	247	259	36.1	42.7	33.5	508	14283	12	2.8	75	190	.00	1.79	.90	18.0	9.6	8.4
1724	2463	3.0	2.9	3.7	81	30.8	972	2451	9.3	9.5	248	260	36.1	42.4	33.5	507	14790	12	2.9	64	187	.00	1.74	.91	18.9	9.6	8.4
1730	2463	3.0	3.1	4.3	81	29.0	954	2452	9.3	9.3	248	260	36.1	42.4	39.1	509	15289	12	3.0	67	184	.00	1.76	.91	19.0	9.6	8.4
1737	2463	2.8	2.8	4.1	81	31.5	958	2453	9.3	9.5	248	260	36.1	42.4	39.1	507	15855	13	3.1	69	181	.00	1.76	.92	18.7	9.6	8.5
1751	2464	1.4	2.7	3.3	82	28.8	968	2454	9.3	9.3	248	260	35.9	41.7	40.2	493	17013	13	3.3	128	180	.00	1.89	.92	15.8	9.6	8.4
1757	2464	2.1	2.5	3.2	81	28.4	967	2454	9.3	9.3	249	261	35.8	42.0	40.3	495	17551	13	3.4	93	178	.00	1.81	.92	17.7	9.6	8.5

PULLED OUT OF HOLE WITH CORE #3 81% RECOVERY.
RUN BACK IN TO CUT CORE #4
USING A CHRISTENSEN C20, 16M/4.25HRS

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:27 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	THIS BIT CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
2203	2464	1.0	2.4	6.9	57	25.2	1197	2464	9.2	9.4	257	269	42.6	50.0	42.8	445	267	0	.0	182	26725	.00	.76	14.22	26.1	9.4	8.3
2204	2464	1.0	2.1	2.5	55	22.6	1174	2464	9.2	9.4	264	277	42.7	50.0	42.8	445	271	0	.0	183	26729	.00	.85	15.02	27.2	9.4	8.3
2230	2464	.6	2.4	4.3	83	25.5	1236	2464	9.2	9.4	262	275	41.8	50.1	42.8	413	2203	0	.5	382	6019	.00	2.12	23.70	12.1	9.4	8.4
2235	2465	1.8	3.0	4.1	84	22.0	1173	2464	9.2	9.4	260	273	41.5	50.2	42.8	418	2584	1	.6	109	3030	.00	1.76	.67	18.4	9.4	8.5
2240	2465	3.0	5.0	5.3	85	24.6	959	2464	9.2	9.5	255	267	41.3	49.6	42.8	417	2986	1	.6	64	2036	.00	1.59	.67	21.4	9.4	8.4
2243	2465	4.0	3.1	5.9	74	19.8	1061	2464	9.2	9.5	260	273	41.2	48.5	42.8	420	3299	1	.7	48	1537	.00	1.52	.69	22.5	9.4	8.4
2249	2465	3.7	2.5	4.1	95	19.1	1193	2464	9.1	9.4	260	273	40.9	48.3	42.8	425	3837	1	.8	55	1293	.00	1.56	.76	21.8	9.4	8.5
2252	2466	4.3	3.2	4.0	96	28.4	1229	2464	9.1	9.4	253	265	40.8	48.1	42.8	430	4107	2	.9	43	1039	.00	1.52	.70	22.6	9.4	8.4
2258	2466	3.8	3.3	4.3	93	19.2	1222	2464	9.2	9.4	261	274	40.6	47.3	42.8	435	4707	2	1.0	53	913	.00	1.58	.58	21.9	9.4	8.4
2302	2466	4.2	3.3	4.1	93	20.5	1215	2464	9.2	9.4	253	265	40.5	47.2	42.8	439	5049	2	1.0	46	792	.00	1.53	.58	22.7	9.4	8.3
2302	2467	5.2	3.7	4.0	96	19.8	1172	2464	9.2	9.4	253	265	40.5	47.2	42.8	437	5101	3	1.0	36	721	.00	1.48	.58	23.7	9.4	8.5
2303	2467	6.3	3.4	4.3	94	21.9	1150	2464	9.2	9.4	254	266	40.5	47.3	42.8	431	5147	3	1.0	31	648	.00	1.43	.58	24.7	9.4	8.4
2304	2467	7.9	3.8	4.3	95	21.4	833	2464	9.2	9.4	229	240	40.4	47.4	42.8	442	5294	3	1.1	26	589	.00	1.41	.59	25.1	9.4	8.4
2307	2468	11.6	5.1	5.8	95	22.6	591	2464	9.2	9.3	190	199	40.4	47.6	42.8	454	5530	4	1.1	16	532	.00	1.26	.56	27.0	9.4	8.4
INTERPRETATION OF ROP NECESSARY DUE TO VERTICAL MOVEMENT OF RIG OF 1M, UP AND DOWN, BY BARGE CONTROL.																											
2327	2468	1.2	2.8	6.1	88	20.4	1357	2464	9.2	9.3	252	264	39.4	46.1	42.8	440	7333	4	1.4	255	511	.00	1.96	.59	15.3	9.4	8.5
2332	2468	2.1	2.2	3.3	87	20.9	1297	2464	9.1	9.4	253	265	39.3	46.0	42.8	452	7712	4	1.5	95	474	.00	1.70	.59	20.2	9.4	8.4
2335	2469	3.3	2.3	3.0	87	21.5	1364	2464	9.1	9.4	254	277	39.3	46.2	42.8	445	7965	5	1.6	59	445	.00	1.56	.59	22.0	9.4	8.4
2339	2469	4.3	2.6	2.9	89	22.1	1213	2464	9.1	9.4	251	263	39.1	46.2	42.8	454	8374	5	1.6	44	422	.00	1.51	.60	23.4	9.4	8.3
2342	2469	4.8	1.7	3.2	89	20.7	1255	2464	9.1	9.4	248	260	39.1	46.1	42.8	452	8649	5	1.7	40	397	.00	1.46	.59	23.9	9.4	8.3
2345	2469	5.4	2.9	3.0	87	23.4	1183	2464	9.1	9.3	250	262	39.1	46.1	42.8	457	8887	5	1.7	36	376	.00	1.46	.60	24.3	9.4	8.4
2347	2470	5.8	2.8	3.4	87	21.3	1243	2464	9.1	9.4	257	269	39.0	45.9	42.8	461	9089	6	1.8	33	360	.00	1.43	.60	24.9	9.4	8.4
2350	2470	6.2	2.9	3.3	87	20.1	1234	2464	9.1	9.3	247	259	39.0	46.1	42.8	464	9309	6	1.8	30	341	.00	1.41	.60	25.1	9.4	8.4
2354	2470	6.0	3.0	3.5	90	18.0	1216	2464	9.1	9.2	247	259	38.8	45.9	42.8	464	9699	6	1.9	31	327	.00	1.42	.60	25.0	9.4	8.4
2359	2471	5.2	2.6	3.5	89	21.7	1114	2464	9.1	9.3	249	261	38.7	45.3	42.8	471	10151	7	2.0	35	315	.00	1.45	.60	24.4	9.4	8.4
0	2471	5.9	2.3	3.4	89	19.3	1126	2464	9.1	9.2	255	267	38.8	45.3	42.8	471	10234	7	2.0	33	303	.00	1.42	.60	25.2	9.4	8.4
3	2471	5.6	2.5	3.7	89	22.0	1086	2464	9.1	9.4	249	261	38.7	45.4	42.8	471	10502	7	2.0	36	295	.00	1.45	.60	24.7	9.4	8.4
4	2472	6.8	2.9	3.3	88	17.7	1168	2464	9.1	9.4	255	267	38.7	45.4	42.8	473	10551	8	2.0	27	279	.00	1.38	.61	25.5	9.4	8.4
5	2472	9.4	4.3	4.3	90	23.8	912	2464	9.1	9.4	215	225	38.7	45.5	42.8	476	10636	8	2.1	22	269	.00	1.33	.61	26.6	9.4	8.4
11	2472	6.8	5.1	6.5	80	21.6	863	2464	9.1	9.4	253	265	38.6	45.4	42.8	473	11144	8	2.2	29	262	.00	1.36	.61	25.9	9.4	8.3
18	2473	4.6	3.0	5.0	83	27.2	1169	2464	9.1	9.5	250	262	38.5	45.7	42.8	478	11641	8	2.3	42	255	.00	1.55	.65	23.5	9.4	8.5
22	2473	3.3	3.0	4.1	84	23.7	1144	2464	9.1	9.5	257	269	38.6	45.9	42.8	490	12047	9	2.4	65	249	.00	1.68	.61	21.6	9.4	8.4
24	2473	4.3	3.2	4.1	88	23.4	942	2464	9.1	9.4	256	268	38.5	45.8	42.8	490	12223	9	2.4	45	240	.00	1.59	.59	23.1	9.4	8.3
32	2473	4.1	2.3	4.9	85	28.8	946	2464	9.1	9.4	252	264	38.4	45.6	42.8	490	12826	9	2.5	46	234	.00	1.60	.60	22.7	9.4	8.5
39	2474	2.6	2.8	4.0	84	27.3	1169	2464	9.1	9.5	248	260	38.3	45.6	42.8	502	13432	10	2.6	78	230	.00	1.74	.59	20.6	9.4	8.4
44	2474	3.2	3.6	4.4	85	26.0	1163	2464	9.1	9.5	248	260	38.4	45.4	42.8	504	13669	10	2.7	66	224	.00	1.70	.60	21.5	9.4	8.3
47	2474	3.4	4.6	6.0	74	27.0	865	2464	9.1	9.5	258	270	38.3	45.2	42.8	504	14139	10	2.8	56	216	.00	1.62	.59	22.6	9.4	8.4
54	2475	3.8	3.1	6.5	85	24.2	1358	2464	9.1	9.5	245	257	38.1	45.1	42.8	511	14645	11	2.9	51	214	.00	1.63	.61	22.9	9.4	8.4
57	2475	4.5	3.0	4.0	85	27.1	1299	2464	9.1	9.5	246	258	38.1	45.1	42.8	511	14950	11	2.9	42	209	.00	1.57	.59	23.6	9.4	8.4
103	2475	3.6	2.6	4.0	82	26.1	1251	2464	9.1	9.5	248	260	38.0	44.8	42.8	513	15448	11	3.0	54	205	.00	1.63	.60	22.7	9.4	8.3
106	2476	4.3	2.4	3.7	85	26.4	1273	2464	9.1	9.5	247	259	38.0	44.7	42.8	518	15722	12	3.1	44	201	.00	1.57	.60	23.7	9.4	8.3
108	2476	5.3	2.7	3.4	85	24.3	1210	2464	9.1	9.5	247	259	38.0	44.6	42.8	521	15852	12	3.1	35	196	.00	1.50	.60	24.5	9.4	8.4
110	2476	5.9	2.6	3.5	85	25.7	1216	2464	9.1	9.5	247	259	37.9	44.7	42.8	523	16009	12	3.1	34	192	.00	1.49	.61	25.1	9.4	8.4
112	2477	6.5	2.9	4.2	86	22.1	1259	2464	9.1	9.5	253	265	38.0	44.9	42.8	523	16209	12	3.2	29	187	.00	1.45	.61	25.6	9.4	8.5
116	2477	6.8	3.4	5.2	85	25.5	1192	2464	9.1	9.5	246	258	38.0	44.9	42.8	533	16588	13	3.3	29	184	.00	1.45	.61	25.6	9.4	8.5
119	2477	6.7	4.6	5.5	84	24.4	1381	2464	9.1	9.5	252	264	37.8	45.1	42.8	530	16824	13	3.3	28	180	.00	1.44	.61	25.8	9.4	8.3
122	2477	6.4	3.8	4.9	85	28.3	1297	2464	9.1	9.5	253	265	37.9	45.0	42.8	528	17047	13	3.4	30	177	.00	1.47	.62	25.5	9.4	8.5
124	2478	6.3	3.5	4.4	85	22.7	1280	2464	9.1	9.5	253	265	37.9	44.9	42.8	533	17241	14	3.4	30	174	.00	1.46	.61	25.5	9.4	8.4
128	2478	6.1	3.6	7.5	85	23.9	1386	2464	9.1	9.5	254	266	37.8	44.9	42.8	540	17545	14	3.5	30	170	.00	1.46	.61	25.5	9.4	8.3
130	2478	6.9	4.2	4.6	84	25.6	1379	2464	9.1	9.5	253	265	37.8	44.6	42.8	537	17697	14	3.5	27	167	.00	1.44	.62	26.0	9.4	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:31 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
131	2479	7.8	4.6	5.1	87	22.4	1403	2464	9.1	9.5	246	253	37.7	44.5	42.8	540	17799	15	3.5	24	164	.00	1.41	.62	26.5	9.4	8.5
140	2479	5.1	2.9	6.8	84	27.3	1354	2465	9.1	9.5	254	259	37.5	44.4	42.8	546	18497	15	3.7	37	162	.00	1.53	.63	24.9	9.4	8.5
142	2479	5.5	3.8	4.5	84	26.0	1391	2465	9.1	9.5	254	259	37.6	44.2	42.8	550	18645	15	3.7	34	159	.00	1.52	.62	25.1	9.4	8.4
202	2480	.7	1.5	3.8	84	23.8	897	2466	9.1	9.5	260	265	37.5	36.4	42.1	559	20348	15	4.0	255	161	.00	2.05	.62	16.7	9.4	8.4 *

PULLED OUT OF HOLE WITH CORE #4, 88% RECOVERY.
RUN BACK IN TO REAM OUT RAT HOLE AND DRILL 12.25" HOLE.
BIT #11 HTC XDG, 15,15,15. 120M/11.25HRS.

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1231	2481	3.4	4.6	6.1	115	39.3	2735	2467	9.1	9.5	672	685	36.7	44.0	42.1	448	5958	1	.0	55	2056	.00	1.47	.96	19.4	9.5	8.4
1231	2481	4.8	5.1	5.4	118	44.6	2747	2467	9.2	9.5	672	685	36.8	44.0	42.1	446	6003	1	.0	39	1206	.00	1.43	.97	20.2	9.5	8.3
1232	2481	9.0	5.3	6.1	117	42.7	2703	2467	9.2	9.5	663	676	36.8	44.0	42.1	457	6047	1	.0	26	854	.00	1.39	.97	21.9	9.5	8.4
1232	2481	13.1	4.9	5.5	118	44.3	2698	2467	9.2	9.5	661	674	36.8	44.1	42.1	457	6090	1	.0	14	746	.01	1.27	1.00	22.9	9.5	8.4
1410	2482	15.2	4.6	5.5	114	35.2	2689	2472	9.3	9.5	648	660	37.2	45.4	39.5	472	8047	2	.1	12	439	.02	1.17	.96	24.6	9.5	8.4
1410	2482	15.1	4.6	4.6	114	37.0	2675	2472	9.3	9.5	638	650	37.3	45.4	39.5	468	8052	2	.1	12	439	.02	1.17	.96	24.5	9.5	8.4
1411	2483	13.5	3.5	4.6	112	34.4	2680	2472	9.3	9.5	663	676	37.3	45.5	39.1	465	8146	3	.1	14	434	.02	1.20	.96	24.1	9.5	8.5
1411	2483	16.2	5.2	5.2	113	51.4	2674	2472	9.3	9.5	649	661	37.3	45.5	39.1	465	8157	3	.1	12	400	.02	1.17	.96	24.6	9.5	8.3
1411	2483	37.7	3.7	5.8	114	32.2	2660	2472	9.3	9.5	656	669	37.4	45.5	39.1	454	8222	3	.1	6	340	.02	1.06	.96	26.2	9.5	8.4
1411	2484	41.2	5.1	5.5	115	42.3	2636	2472	9.3	9.5	651	664	37.4	45.4	39.1	463	8239	4	.2	5	311	.02	.98	.95	27.3	9.6	8.3
1413	2484	27.3	3.0	5.8	114	16.6	2674	2473	9.3	9.5	645	657	37.6	45.9	39.1	466	8403	4	.2	7	287	.03	1.09	.96	25.9	9.6	8.4
1413	2484	30.6	4.7	4.7	112	42.4	2608	2473	9.3	9.5	648	660	37.6	45.8	39.1	461	8431	4	.2	7	276	.03	1.08	.95	26.3	9.6	8.5
1414	2484	27.7	4.5	4.9	112	38.5	2685	2473	9.3	9.5	649	661	37.7	45.7	39.1	466	8526	4	.2	7	254	.03	1.08	.93	26.1	9.6	8.3
1414	2485	35.6	5.6	6.0	117	51.6	2606	2473	9.3	9.5	663	676	37.7	45.7	39.1	465	8558	5	.2	6	221	.03	1.04	.94	26.8	9.6	8.4
1414	2485	32.4	5.8	6.0	118	51.8	2667	2473	9.3	9.5	648	660	37.7	45.8	39.1	454	8587	5	.2	6	215	.03	1.06	.96	26.6	9.6	8.4
1415	2485	46.8	6.2	6.5	118	45.8	2666	2473	9.3	9.5	649	661	37.8	45.8	39.1	454	8608	5	.2	4	206	.03	.99	.94	27.2	9.6	8.4
1416	2486	57.7	5.3	6.3	115	45.9	2644	2473	9.3	9.5	650	663	37.9	46.0	39.1	453	8752	6	.2	5	196	.04	1.02	.93	28.4	9.6	8.4
1416	2486	37.9	5.4	5.2	115	54.2	2627	2473	9.3	9.5	664	677	37.9	46.0	33.8	456	8776	6	.2	5	189	.04	1.07	.93	26.6	9.6	8.4
1416	2486	37.6	5.1	5.9	117	58.9	2683	2473	9.3	9.5	660	673	38.1	46.0	38.8	454	8815	6	.2	5	180	.04	1.09	.94	26.5	9.6	8.5
1418	2487	25.1	4.9	6.3	115	46.3	2635	2474	9.3	9.5	652	665	38.1	46.2	38.8	464	8983	7	.3	7	170	.04	1.18	.91	25.2	9.6	8.4
1418	2487	26.9	5.6	5.8	117	45.8	2654	2474	9.3	9.5	659	672	38.2	46.2	38.8	467	8993	7	.3	7	162	.04	1.16	.91	25.3	9.6	8.4
1418	2487	33.5	4.8	5.6	117	41.9	2671	2474	9.3	9.5	651	664	38.2	46.2	38.8	455	9029	7	.3	6	155	.04	1.13	.93	26.1	9.6	8.5
1419	2487	55.8	6.3	6.3	115	50.9	2615	2474	9.3	9.5	648	660	38.2	46.2	38.8	479	9066	7	.3	6	151	.04	1.13	.93	26.0	9.6	8.5
1419	2488	30.5	5.5	5.8	116	48.3	2709	2474	9.3	9.5	661	674	38.3	46.2	38.8	461	9164	8	.3	6	145	.05	1.16	.93	25.7	9.6	8.5
1420	2488	33.6	5.6	5.8	117	54.8	2725	2474	9.3	9.5	653	666	38.3	46.2	38.8	456	9197	8	.3	5	138	.05	1.11	.93	26.6	9.6	8.3
1421	2488	29.8	4.8	6.3	114	42.6	2751	2474	9.3	9.5	663	676	38.4	46.3	38.8	472	9359	8	.3	6	135	.05	1.14	.92	26.0	9.6	8.5
1421	2489	34.3	5.4	5.5	114	54.9	2756	2474	9.3	9.5	652	665	38.4	46.3	38.8	461	9368	9	.3	6	133	.05	1.14	.92	26.1	9.6	8.5
1421	2489	35.6	5.8	6.1	117	47.3	2738	2474	9.3	9.5	666	679	38.4	46.3	38.8	468	9384	9	.3	5	125	.05	1.10	.93	26.6	9.6	8.4
1422	2489	37.6	6.2	6.4	121	49.9	2760	2474	9.3	9.5	672	685	38.5	46.3	38.6	467	9433	9	.3	5	121	.05	1.11	.93	26.6	9.6	8.4
1422	2490	36.9	6.1	6.1	119	54.1	2707	2474	9.3	9.5	661	674	38.5	46.4	38.6	450	9485	10	.3	5	117	.06	1.12	.92	26.5	9.6	8.3
1423	2490	47.7	5.1	6.1	90	43.8	2691	2474	9.3	9.5	665	678	38.6	46.3	38.6	467	9536	10	.3	5	114	.06	1.11	.93	26.7	9.6	8.3
1424	2490	30.5	4.1	6.2	117	30.8	2759	2475	9.3	9.5	673	686	38.8	46.4	38.6	465	9699	10	.4	6	111	.06	1.16	.90	26.0	9.6	8.4
1425	2491	28.2	3.9	4.9	114	36.9	2769	2475	9.3	9.5	659	672	38.8	46.4	38.6	465	9769	11	.4	7	109	.06	1.18	.91	25.9	9.6	8.5
1425	2491	27.6	5.5	5.6	118	49.2	2774	2475	9.3	9.5	668	681	38.9	46.4	38.6	461	9814	11	.4	7	105	.06	1.17	.92	25.9	9.6	8.4
1425	2491	29.0	5.7	5.9	118	50.7	2716	2475	9.3	9.5	669	682	38.9	46.3	38.6	471	9839	11	.4	6	102	.06	1.16	.93	26.0	9.6	8.5
1426	2491	26.2	4.4	6.1	117	45.9	2774	2475	9.3	9.5	670	683	39.0	46.3	38.6	458	9943	11	.4	7	100	.07	1.23	.94	25.3	9.6	8.3
1429	2492	18.3	3.7	4.7	115	49.6	2735	2476	9.3	9.5	654	667	39.1	46.4	38.5	470	10257	12	.4	10	98	.08	1.29	.90	24.6	9.6	8.5
1429	2492	19.3	4.3	4.4	116	52.7	2750	2476	9.3	9.5	667	680	39.2	46.5	38.5	463	10316	12	.5	10	96	.08	1.29	.94	24.6	9.6	8.5
1431	2492	16.0	4.2	4.5	115	51.0	2712	2476	9.3	9.5	660	673	39.3	46.4	38.5	462	10446	12	.5	12	94	.08	1.37	.93	23.6	9.6	8.3
1431	2493	16.8	4.2	4.6	115	52.7	2754	2476	9.3	9.5	671	684	39.3	46.4	38.5	463	10490	13	.5	11	91	.08	1.37	.94	23.7	9.6	8.5
1431	2493	19.3	4.2	4.5	115	49.4	2712	2476	9.3	9.5	665	678	39.3	46.4	38.5	465	10537	13	.5	11	89	.08	1.36	.94	23.8	9.6	8.3
1453	2494	14.7	4.3	7.4	123	51.8	2670	2479	9.3	9.5	641	653	39.5	47.0	38.0	436	11944	14	.7	15	83	.12	1.34	.94	24.8	9.6	8.4 ↑
1453	2495	31.1	4.9	4.8	123	59.4	2674	2479	9.3	9.5	639	651	39.6	47.0	37.6	449	11951	15	.7	15	83	.12	1.34	.94	24.8	9.6	8.4

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:35 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	KINS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1453	2495	81.7	5.0	5.0	125	56.7	2631	2479	9.3	9.5	640	652	39.6	47.0	37.8	435	11959	15	.7	6	81	.12	1.10	.94	29.2	9.6	8.5
1454	2495	89.0	5.0	6.0	123	51.5	2606	2479	9.3	9.5	652	665	39.6	46.8	37.8	434	12008	15	.7	2	79	.12	.86	.96	29.8	9.6	8.4
1455	2495	39.0	5.1	5.6	117	48.2	2715	2480	9.3	9.5	668	681	39.6	46.6	37.8	441	12201	15	.7	5	78	.12	1.12	.95	27.1	9.6	8.3
1456	2496	28.6	5.0	5.5	116	54.5	2715	2480	9.3	9.5	659	672	39.7	46.5	37.8	450	12316	16	.7	6	76	.13	1.22	.94	26.0	9.6	8.5
1457	2496	23.8	4.4	4.7	117	49.1	2689	2480	9.3	9.5	652	665	39.8	46.5	37.8	438	12403	16	.7	8	75	.13	1.28	.94	25.3	9.6	8.4
1459	2496	16.4	5.2	6.2	119	56.4	2731	2481	9.3	9.5	666	679	39.8	46.6	37.6	438	12624	16	.8	11	75	.14	1.40	.94	23.9	9.7	8.4
1500	2497	13.8	4.8	5.7	121	45.8	2725	2481	9.3	9.5	659	672	39.9	46.7	37.6	445	12808	17	.8	14	73	.14	1.46	.94	23.2	9.7	8.4
1501	2497	15.0	5.0	5.7	119	46.7	2672	2481	9.3	9.5	655	668	40.0	46.8	37.6	437	12899	17	.8	12	72	.15	1.42	.94	23.7	9.7	8.5
1502	2497	16.6	5.0	5.6	119	49.6	2658	2481	9.3	9.5	657	670	40.0	46.8	37.6	434	12957	17	.8	11	71	.15	1.40	.94	24.0	9.7	8.4
1502	2498	17.5	5.0	6.0	119	56.5	2695	2481	9.3	9.5	655	668	40.0	46.8	37.6	441	13010	18	.8	11	70	.15	1.38	.95	24.3	9.7	8.3
1503	2498	21.4	3.7	5.7	115	46.7	2683	2481	9.3	9.5	659	672	40.1	47.1	37.6	449	13158	18	.8	9	68	.15	1.32	.95	25.2	9.7	8.5
1504	2498	25.7	3.6	4.6	116	49.6	2699	2481	9.3	9.5	655	668	40.1	47.1	37.6	450	13236	18	.8	7	67	.16	1.27	.95	25.8	9.7	8.4
1505	2498	23.1	5.4	5.8	117	52.8	2702	2481	9.3	9.5	659	672	40.1	47.1	37.5	445	13354	18	.9	6	67	.16	1.31	.95	25.4	9.7	8.3
1505	2499	25.4	5.1	5.6	118	49.6	2735	2481	9.3	9.5	661	674	40.0	47.1	37.5	436	13376	19	.9	7	66	.16	1.27	.96	25.6	9.7	8.4
1507	2499	17.5	4.4	5.7	116	48.4	2694	2481	9.3	9.5	654	667	40.1	47.3	37.5	454	13621	19	.9	11	65	.17	1.38	.95	24.6	9.7	8.5
1511	2499	12.4	3.8	6.3	117	38.4	2748	2481	9.3	9.5	657	670	40.3	47.2	37.2	443	13994	19	1.0	15	64	.17	1.30	.85	25.0	9.7	8.3
1511	2500	13.0	4.6	4.8	117	48.7	2772	2481	9.3	9.5	668	681	40.4	47.1	37.2	447	14031	20	1.0	14	63	.18	1.31	.96	25.1	9.7	8.4
1512	2500	13.5	3.6	5.0	116	50.4	2744	2481	9.3	9.5	660	673	40.4	47.1	37.2	445	14127	20	1.0	14	63	.18	1.35	.97	24.8	9.7	8.4
1513	2500	11.5	3.7	4.1	117	41.4	2711	2481	9.3	9.5	668	681	40.5	47.1	37.2	456	14272	20	1.0	16	62	.18	1.43	1.00	23.9	9.7	8.4
1513	2500	11.1	3.4	4.2	116	43.1	2703	2481	9.3	9.5	669	682	40.4	47.1	37.2	450	14313	20	1.0	17	62	.18	1.45	1.01	23.7	9.7	8.5
1521	2501	24.5	4.3	4.8	117	46.4	2599	2481	9.3	9.5	642	654	40.5	47.5	37.2	463	14580	21	1.0	8	60	.19	1.22	.97	26.5	9.7	8.5 ↑
1521	2502	168	5.3	5.3	118	60.0	2615	2481	9.3	9.5	658	671	40.5	47.6	37.2	450	14615	22	1.0	1	57	.19	.70	.95	31.4	9.7	8.4
1527	2503	13.6	3.9	6.2	119	53.7	2655	2482	9.3	9.5	656	669	40.7	46.8	37.4	451	15394	23	1.1	14	55	.21	1.44	.95	24.3	9.7	8.5
1533	2504	9.0	4.3	4.9	117	51.8	2617	2485	9.3	9.5	652	665	40.7	46.5	37.9	413	15874	24	1.2	22	54	.23	1.56	.95	22.9	9.7	8.4
1539	2505	11.0	3.6	6.9	120	44.4	2708	2488	9.3	9.5	665	678	40.6	46.9	38.0	414	16812	25	1.3	18	53	.25	1.52	.96	23.6	9.7	8.4
1542	2506	14.8	3.7	5.3	117	47.6	2748	2490	9.3	9.5	680	693	40.6	46.9	38.0	414	17130	26	1.4	15	51	.26	1.48	.97	24.3	9.7	8.5
1602	2510	10.6	3.7	5.2	118	53.5	2625	2493	9.3	9.5	647	659	40.9	37.7	38.3	393	18372	30	1.5	18	46	.29	1.52	.97	24.4	9.7	8.3 ↑
1602	2510	12.6	4.1	4.1	118	64.1	2626	2493	9.3	9.5	639	651	40.9	37.2	38.3	420	18378	30	1.5	18	46	.29	1.52	.97	24.4	9.7	8.3
1603	2510	17.2	3.5	4.8	116	48.6	2614	2493	9.3	9.5	643	655	40.9	47.0	38.3	382	18432	30	1.5	12	45	.29	1.40	.97	25.8	9.7	8.4
1613	2511	8.2	4.1	5.6	117	53.7	2680	2494	9.3	9.5	653	666	41.0	47.9	39.0	376	19658	31	1.7	23	45	.32	1.59	.98	23.8	9.7	8.4
1620	2512	9.4	3.8	4.6	118	48.0	2665	2497	9.3	9.5	659	672	41.3	47.7	39.3	382	20366	32	1.8	20	44	.34	1.56	.98	24.2	9.7	8.4
1625	2513	8.8	4.3	5.6	118	48.7	2675	2498	9.3	9.5	656	669	41.3	47.7	39.4	375	21071	33	1.9	21	43	.36	1.57	.99	24.3	9.7	8.3
1630	2514	12.8	3.9	5.4	118	48.7	2718	2499	9.3	9.5	669	682	41.4	48.0	39.5	361	21666	34	2.0	15	42	.37	1.42	.99	26.0	9.7	8.4
1635	2515	16.4	3.8	4.6	119	51.7	2681	2500	9.3	9.5	653	666	41.5	47.9	39.7	382	22214	35	2.1	12	42	.39	1.40	1.01	26.3	9.7	8.4
1638	2516	15.9	3.7	6.2	118	47.9	2675	2502	9.3	9.5	656	669	41.5	47.9	39.7	391	22562	36	2.1	12	41	.40	1.40	1.01	26.4	9.7	8.4
1640	2517	25.4	3.9	4.8	118	46.2	2650	2502	9.3	9.5	657	670	41.5	48.1	39.9	384	22832	37	2.2	8	40	.40	1.29	1.02	27.6	9.7	8.4
1645	2518	15.4	4.2	4.7	120	56.3	2672	2503	9.3	9.5	654	667	43.2	48.1	40.1	373	23358	38	2.2	12	39	.42	1.40	1.02	26.6	9.7	8.4
1651	2519	9.7	4.1	4.9	120	65.7	2716	2504	9.3	9.5	666	679	43.5	48.3	40.3	390	24081	39	2.3	20	39	.44	1.58	1.04	25.0	9.7	8.4
1654	2520	16.2	3.5	5.6	118	48.7	2700	2504	9.3	9.5	667	680	43.7	48.2	40.3	384	24520	40	2.4	14	38	.45	1.45	1.03	26.7	9.7	8.4
1707	2522	10.4	3.9	4.9	92	50.7	2684	2506	9.3	9.5	655	668	43.5	48.0	40.5	386	25311	42	2.5	18	37	.47	1.52	1.04	26.0	9.7	8.5 ↑
1711	2522	8.1	3.5	5.1	115	52.3	2808	2506	9.3	9.5	680	693	43.8	48.4	40.5	388	25794	42	2.6	23	37	.48	1.59	1.03	25.3	9.7	8.5
1718	2523	8.2	3.7	5.1	115	50.5	2763	2506	9.3	9.5	664	677	43.8	48.2	40.6	374	26543	43	2.7	23	37	.50	1.61	1.06	25.3	9.7	8.5
1728	2524	6.8	4.7	4.9	115	55.5	2742	2508	9.3	9.5	681	694	44.0	48.4	40.7	394	27697	44	2.9	27	36	.53	1.65	1.05	25.0	9.7	8.5
1738	2525	5.8	4.6	5.8	115	57.4	2728	2509	9.3	9.5	678	691	44.3	48.3	40.8	390	28868	45	3.0	34	36	.55	1.71	1.05	24.7	9.7	8.3
1740	2526	21.0	3.5	5.3	115	48.3	2787	2510	9.3	9.5	677	690	45.3	48.4	40.8	390	29089	46	3.1	9	36	.56	1.35	1.08	27.8	9.6	8.4
1746	2527	11.8	4.6	5.7	117	45.1	2715	2511	9.3	9.5	683	696	44.7	48.4	40.9	387	29841	47	3.2	16	35	.58	1.50	1.08	26.8	9.6	8.4
1749	2528	15.0	5.1	5.5	115	46.1	2759	2512	9.3	9.5	678	691	44.9	48.4	41.0	399	30192	48	3.2	12	35	.59	1.35	1.03	28.1	9.6	8.5
1751	2529	24.8	5.1	5.3	117	52.8	2713	2513	9.3	9.5	688	701	44.9	48.6	41.0	390	30409	49	3.2	8	34	.59	1.22	1.07	29.1	9.6	8.4
1752	2530	38.4	5.4	5.6	120	57.6	2763	2513	9.3	9.5	675	686	44.9	48.6	41.0	385	30521	50	3.3	5	34	.59	1.11	1.06	29.9	9.6	8.5
1753	2531	67.2	4.6	5.6	118	51.4	2769	2513	9.3	9.5	684	697	45.0	48.6	41.0	386	30606	51	3.3	3	33	.59	.97	1.04	30.9	9.6	8.3

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:39 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	KTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1754	2532	70.5	4.6	5.6	120	46.2	2757	2514	9.3	9.5	668	701	46.3	48.4	41.0	397	30715	52	3.3	3	33	.60	.98	1.03	30.8	9.6	8.4
1755	2533	50.1	5.2	6.2	119	45.6	2736	2514	9.3	9.5	687	700	44.9	48.3	41.1	396	30903	53	3.3	4	32	.60	1.10	1.01	30.3	9.6	8.5
1813	2535	14.2	4.8	5.8	115	45.5	2735	2517	9.3	9.5	654	667	46.1	48.1	41.3	399	31768	55	3.4	13	31	.62	1.39	.96	28.3	9.6	8.4
1814	2535	14.8	5.3	5.4	115	48.5	2744	2517	9.3	9.5	678	691	46.1	48.3	41.3	393	31807	55	3.4	13	31	.62	1.40	1.01	28.3	9.6	8.5
1815	2536	46.2	5.0	5.7	117	50.3	2710	2517	9.3	9.5	668	681	46.0	48.5	41.3	386	31948	56	3.4	4	31	.62	1.08	1.02	29.9	9.6	8.3
1816	2537	52.3	4.9	6.3	119	46.9	2718	2517	9.3	9.5	666	679	45.5	48.5	41.5	398	32078	57	3.5	4	30	.62	1.07	1.01	30.7	9.6	8.5
1820	2538	21.7	5.1	5.5	119	58.6	2766	2517	9.3	9.5	674	687	45.6	48.3	41.5	388	32494	58	3.5	9	30	.63	1.30	.99	29.2	9.6	8.3
1821	2539	41.5	4.9	5.6	120	55.3	2739	2517	9.3	9.5	681	694	45.7	48.5	41.5	393	32622	59	3.5	4	29	.64	1.12	.99	30.4	9.6	8.5
1821	2540	89.2	4.8	5.6	120	51.8	2736	2517	9.3	9.5	668	681	45.7	48.5	42.3	396	32705	60	3.5	2	29	.64	.93	.98	31.5	9.6	8.4
1822	2541	84.2	5.5	6.0	119	53.6	2732	2517	9.3	9.5	659	672	45.8	48.4	42.3	386	32809	61	3.6	2	29	.64	.93	.97	31.4	9.6	8.4
1824	2542	36.8	4.6	6.5	112	53.5	2727	2518	9.3	9.5	676	689	45.8	48.7	42.3	377	33021	62	3.6	5	28	.65	1.18	.95	30.3	9.6	8.4
1826	2543	31.7	4.7	6.3	110	47.6	2767	2518	9.3	9.5	676	689	45.8	48.7	42.3	409	33199	63	3.6	6	28	.65	1.21	.95	30.1	9.6	8.4
1827	2544	45.1	4.9	6.0	109	47.2	2752	2518	9.3	9.5	680	693	45.9	48.8	42.9	400	33348	64	3.6	4	27	.65	1.12	.94	30.6	9.6	8.5
1828	2545	38.0	5.0	5.8	109	46.5	2680	2518	9.3	9.5	666	679	46.0	48.9	42.9	391	33502	65	3.7	5	27	.66	1.15	.94	30.5	9.6	8.3
1830	2546	43.9	4.7	6.3	110	51.5	2706	2518	9.3	9.5	672	685	45.9	48.8	42.9	389	33691	66	3.7	5	27	.66	1.14	.92	30.8	9.6	8.4
1848	2549	14.3	4.2	5.6	116	48.6	2709	2520	9.3	9.5	668	681	45.3	49.3	43.5	391	34575	69	3.8	13	26	.67	1.31	.93	29.8	9.6	8.3
1848	2549	17.0	4.6	4.9	116	58.0	2690	2520	9.3	9.5	672	685	45.4	49.2	43.5	402	34593	69	3.8	11	26	.67	1.27	.94	29.8	9.6	8.4
1849	2549	20.4	4.2	4.7	118	53.7	2717	2520	9.3	9.5	662	675	45.4	49.1	43.5	391	34643	69	3.8	10	26	.68	1.29	.96	30.1	9.6	8.4
1854	2550	15.4	3.7	5.2	117	50.8	2751	2520	9.3	9.5	680	693	45.6	48.8	43.6	396	35263	70	3.9	12	26	.69	1.44	.95	29.2	9.6	8.4
1906	2551	5.7	5.0	5.9	120	51.7	2716	2523	9.3	9.5	678	691	45.7	48.9	43.8	401	36714	71	4.1	35	26	.73	1.71	.92	27.5	9.6	8.4
1907	2552	9.9	5.6	5.6	120	49.1	2711	2523	9.3	9.5	683	696	45.7	48.8	43.8	398	36812	72	4.1	21	26	.73	1.56	.94	28.6	9.6	8.3
1908	2553	64.1	4.8	5.5	120	54.6	2764	2524	9.3	9.5	664	677	45.6	48.7	43.8	400	36924	73	4.1	3	25	.73	1.04	.94	31.4	9.6	8.5
1910	2554	37.9	4.7	5.7	120	45.0	2724	2524	9.3	9.5	679	692	45.6	48.7	44.0	402	37147	74	4.2	5	25	.74	1.16	.93	30.9	9.6	8.5
1912	2555	36.3	3.8	5.4	119	53.9	2725	2526	9.3	9.5	670	683	45.4	48.6	44.0	399	37332	75	4.2	6	25	.74	1.21	.92	30.7	9.6	8.4
1916	2556	16.7	3.7	5.3	120	56.8	2741	2529	9.3	9.5	672	685	45.3	48.8	44.1	403	37471	76	4.3	11	25	.75	1.41	.93	29.7	9.6	8.4
1926	2557	6.6	3.6	5.2	118	43.9	2753	2529	9.3	9.2	670	683	45.4	49.0	44.3	402	39092	77	4.4	30	25	.76	1.67	.92	28.4	9.6	8.5
1931	2558	9.3	4.1	5.3	120	40.7	2762	2531	9.3	9.4	671	684	45.5	49.0	44.6	400	39619	78	4.5	21	25	.79	1.50	.91	29.4	9.6	8.4
2002	2561	3.3	3.7	5.3	116	33.7	2768	2542	9.3	9.4	664	677	44.9	48.8	45.6	433	42178	81	4.8	57	25	.84	1.68	.93	28.5	9.6	8.4
2002	2561	4.2	3.4	3.4	116	38.4	2729	2542	9.3	9.5	663	676	45.0	48.8	45.6	429	42184	81	4.8	57	25	.84	1.68	.93	28.5	9.6	8.5
2009	2562	11.6	2.9	5.9	119	11.6	2696	2544	9.4	9.3	651	664	44.8	48.8	45.8	433	43005	82	5.0	16	25	.85	1.36	.93	30.2	9.6	8.5
2011	2563	11.1	4.8	4.9	118	44.3	2733	2544	9.4	9.1	654	667	45.1	49.0	45.8	423	43261	83	5.0	17	24	.85	1.28	.95	30.6	9.6	8.4
2012	2564	51.8	4.6	5.1	118	35.6	2722	2544	9.4	9.0	660	673	45.1	49.0	45.8	432	43344	84	5.0	4	24	.85	.92	.95	31.7	9.6	8.3
2015	2565	32.5	4.2	5.3	117	33.3	2716	2544	9.4	8.9	665	678	45.3	49.0	45.8	437	43642	85	5.1	6	24	.86	1.01	.89	31.7	9.6	8.4
2015	2566	32.6	4.5	5.0	120	36.5	2729	2544	9.4	9.1	668	681	45.3	49.0	45.8	439	43709	86	5.1	6	24	.86	1.03	.91	31.6	9.6	8.4
2017	2567	34.7	5.2	5.2	120	42.0	2724	2545	9.4	9.1	668	681	45.3	49.0	45.6	438	43980	87	5.1	5	23	.86	.98	.91	31.8	9.6	8.5
2021	2568	22.0	3.3	5.1	119	29.0	2701	2545	9.4	9.0	666	679	45.3	48.9	45.6	444	44413	88	5.2	5	23	.77	1.11	.92	31.4	9.6	8.4
2023	2569	21.6	3.5	4.2	118	39.2	2727	2545	9.4	9.4	665	678	44.8	48.7	45.6	441	44635	89	5.2	9	23	.67	1.17	.91	31.2	9.6	8.4
2027	2570	16.6	3.7	4.8	119	40.8	2711	2548	9.4	9.4	661	674	45.3	49.0	45.6	419	45160	90	5.3	11	23	.88	1.27	.91	30.9	9.6	8.4
2034	2571	11.0	3.4	4.6	118	51.6	2748	2550	9.4	9.3	663	676	45.3	48.7	45.6	397	45985	91	5.4	17	23	.90	1.45	.93	30.3	9.6	8.5
2042	2572	7.5	4.1	4.8	120	66.9	2689	2551	9.4	9.2	656	669	45.3	49.1	45.6	401	46904	92	5.5	27	23	.92	1.62	.93	29.7	9.6	8.3
2107	2574	4.0	3.3	6.3	115	39.4	2755	2552	9.3	9.3	662	675	45.4	49.5	45.4	386	48869	94	5.8	46	23	.95	1.58	.91	29.8	9.7	8.3
2108	2574	5.6	3.4	3.6	113	38.0	2716	2552	9.3	9.3	668	681	45.4	49.4	45.4	395	48901	94	5.8	38	23	.95	1.53	.91	30.1	9.7	8.4
2112	2575	19.7	3.4	4.5	115	52.3	2686	2552	9.3	9.3	670	683	45.3	49.1	45.4	395	49382	95	5.8	10	23	.96	1.27	.93	31.2	9.7	8.3
2117	2576	9.8	3.5	5.0	115	43.7	2741	2552	9.3	9.3	663	676	45.3	49.6	45.4	377	50002	96	5.9	19	23	.97	1.45	.92	30.6	9.7	8.3
2126	2577	8.6	3.2	5.1	114	42.2	2694	2555	9.3	10.2	678	691	45.4	49.9	45.3	372	50979	97	6.1	22	23	.99	1.49	.93	30.4	9.7	8.4
2133	2578	8.1	3.2	4.1	115	40.9	2733	2558	9.3	10.2	671	684	45.3	49.8	45.2	379	51798	98	6.2	24	23	1.00	1.51	.93	30.4	9.7	8.5
2140	2579	8.7	3.5	4.4	116	49.6	2661	2561	9.3	9.6	666	679	45.5	49.9	45.1	376	52579	99	6.3	21	23	1.01	1.51	.93	30.5	9.6	8.4
2146	2580	9.5	3.6	4.5	115	54.1	2707	2562	9.3	9.4	660	673	45.5	49.8	45.3	374	53298	100	6.4	23	23	1.03	1.53	.93	30.5	9.6	8.4
2152	2581	10.3	3.5	4.4	116	50.1	2672	2563	9.3	9.3	670	683	44.7	49.9	45.1	368	53977	101	6.5	18	23	1.04	1.46	.95	30.8	9.6	8.3
2200	2582	6.7	3.4	4.4	116	49.7	2661	2564	9.3	9.2	672	685	45.5	50.0	45.1	376	54990	102	6.6	22	23	1.06	1.55	.95	30.5	9.6	8.3

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:43 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
2209	2583	7.3	3.3	4.4	114	49.4	2664	2565	9.3	9.4	671	684	45.6	50.2	45.2	359	55941	103	6.6	25	23	1.06	1.60	.96	30.3	9.6	8.4
2220	2584	5.3	3.3	4.6	115	46.3	2692	2566	9.3	9.3	664	677	45.7	49.9	45.2	360	57204	104	7.0	35	23	1.10	1.69	.96	30.6	9.6	8.4
2226	2585	7.5	3.4	5.2	115	38.3	2690	2567	9.3	9.2	675	688	45.4	49.9	45.3	361	57924	105	7.1	25	23	1.11	1.56	.96	30.6	9.6	8.5
2255	2588	12.3	4.1	5.9	115	50.6	2712	2570	9.3	9.6	671	684	45.1	49.4	45.3	364	59724	108	7.3	15	23	1.13	1.34	.96	31.4	9.6	8.3 ↑
2255	2588	13.0	3.4	3.6	116	44.8	2747	2570	9.3	9.6	669	682	45.1	49.4	45.3	363	59730	108	7.3	15	23	1.13	1.34	.96	31.4	9.6	8.3
2303	2589	10.4	3.3	5.8	118	52.8	2703	2571	9.3	9.7	676	669	45.4	50.5	45.3	355	60649	109	7.5	16	23	1.15	1.47	.97	31.0	9.6	8.5
2312	2590	6.5	3.4	4.3	117	43.9	2703	2573	9.3	9.9	675	686	45.9	50.6	45.3	366	61636	110	7.6	29	23	1.17	1.60	.98	30.6	9.6	8.4
2323	2591	5.7	3.3	4.3	117	55.3	2669	2574	9.3	10.3	671	684	45.7	50.3	45.4	358	63018	111	7.8	33	23	1.19	1.64	.99	30.6	9.6	8.4
2336	2592	5.2	3.1	4.0	119	43.3	2693	2575	9.3	9.8	674	687	45.8	50.3	45.3	377	64486	112	8.0	38	23	1.22	1.63	.96	30.6	9.6	8.5
2341	2593	9.1	3.3	4.5	118	44.3	2720	2576	9.3	9.8	664	677	45.6	50.3	45.4	386	65072	113	8.1	22	23	1.23	1.50	.98	31.1	9.6	8.5
2344	2594	15.8	3.5	4.8	119	49.6	2667	2576	9.3	10.0	677	690	45.7	50.3	45.5	379	65507	114	8.2	12	23	1.23	1.37	1.00	31.4	9.6	8.3
2355	2595	7.1	3.5	4.2	116	47.3	2697	2576	9.3	9.3	656	669	[illegible]	50.1	45.6	377	66777	115	8.3	27	23	1.26	1.61	1.01	30.8	9.6	8.3
8	2596	5.1	4.1	5.1	118	64.3	2740	2577	9.3	9.0	672	685	45.7	50.1	45.5	408	68233	116	8.5	37	23	1.28	1.60	1.00	30.8	9.6	8.4
19	2597	4.7	3.7	4.6	119	50.5	2725	2578	9.3	9.3	673	686	45.8	50.3	45.5	418	69529	117	8.7	41	23	1.30	1.73	1.01	30.6	9.6	8.5
32	2598	4.6	3.2	4.3	117	38.2	2758	2580	9.3	9.6	668	681	45.6	50.3	45.4	429	71055	118	8.9	41	23	1.33	1.65	1.00	30.8	9.7	8.5
36	2599	3.9	3.4	4.6	117	53.1	2737	2580	9.3	9.5	655	668	45.6	50.0	45.4	434	71594	119	9.0	48	23	1.34	1.77	1.03	30.5	9.7	8.4
42	2599	4.4	3.1	4.2	117	37.4	2785	2581	9.3	2.3	671	684	45.7	48.9	45.5	456	72308	119	9.1	42	24	1.35	1.78	.99	30.5	9.7	8.4 *
BIT #12 HTC XDG, 15,16,16																											
1020	2602	36.5	4.8	5.4	115	64.0	2695	2581	9.3	9.6	683	799	38.3	46.9	45.7	387	2672	2	.0	5	706	.02	1.16	1.01	32.1	9.6	8.5
1023	2603	22.0	4.9	6.1	115	59.7	2735	2582	9.3	9.6	674	729	38.8	47.1	45.7	386	3046	2	.1	8	472	.10	1.36	1.01	31.7	9.6	8.5
1032	2604	11.1	4.8	6.0	115	66.7	2707	2584	9.3	9.6	672	802	39.8	47.1	45.7	391	4052	4	.2	18	299	.30	1.60	1.01	31.1	9.6	8.5
1042	2606	8.6	4.4	5.9	115	58.2	2735	2584	9.3	9.6	678	795	39.9	46.8	45.7	395	5214	5	.4	22	224	.48	1.63	1.01	31.0	9.6	8.4
1044	2607	46.8	4.2	5.3	114	47.6	2657	2585	9.3	9.6	675	783	39.9	46.9	45.6	387	5370	7	.4	5	176	.51	1.17	1.01	32.2	9.6	8.4
1048	2609	19.1	4.8	5.3	115	53.5	2658	2585	9.3	9.6	679	659	40.2	47.3	45.6	385	5525	8	.5	10	146	.59	1.39	1.01	31.8	9.6	8.4
1052	2610	27.1	4.1	5.7	115	58.5	2712	2586	9.3	9.6	679	738	40.0	47.3	45.6	387	6385	10	.6	9	125	.66	1.35	1.01	32.0	9.6	8.5
1100	2612	11.2	4.5	5.9	115	59.8	2700	2586	9.3	9.6	687	[illegible]	40.1	47.3	45.6	392	7302	11	.7	17	111	.78	1.56	1.01	31.5	9.6	8.5
1123	2614	13.2	4.9	6.1	112	51.8	2688	2588	9.3	9.5	671	676	40.2	47.9	45.7	391	8836	14	.9	14	91	.96	1.40	1.01	31.9	9.6	8.5 ↑
1123	2615	16.6	4.7	4.7	112	52.6	2681	2588	9.3	9.5	682	724	40.2	47.9	45.7	391	8842	14	.9	14	91	.96	1.40	1.01	31.9	9.6	8.5
1128	2616	17.8	5.7	6.5	109	51.8	2703	2588	9.3	9.5	691	701	40.5	47.7	45.7	403	9422	16	1.0	10	83	1.02	1.38	1.02	32.0	9.6	8.5
1132	2617	18.5	4.5	6.5	118	38.8	2684	2588	9.3	9.5	680	718	40.6	46.1	45.7	415	9937	17	1.1	11	78	1.07	1.31	1.01	32.1	9.6	8.4
1135	2619	34.9	5.7	6.6	118	57.8	2671	2589	9.3	9.5	677	613	40.6	46.3	45.6	404	10252	18	1.1	6	72	1.10	1.16	1.01	32.4	9.6	8.5
1137	2620	36.7	5.3	6.3	119	52.0	2674	2589	9.3	9.5	683	709	40.7	46.4	45.6	407	10527	20	1.2	5	67	1.13	1.15	1.00	32.4	9.6	8.5
1140	2622	36.1	5.7	6.8	120	55.3	2675	2590	9.3	9.5	679	599	40.8	48.1	45.6	407	10833	21	1.2	5	63	1.16	1.19	1.00	32.4	9.6	8.4
1143	2623	34.1	5.5	6.6	116	56.7	2654	2591	9.3	9.5	689	764	40.8	48.2	45.6	413	11169	23	1.2	5	59	1.19	1.17	.98	32.4	9.6	8.4
1145	2625	39.6	5.1	6.2	118	48.5	2644	2591	9.3	9.5	684	713	40.9	48.0	45.6	416	11414	24	1.3	5	56	1.22	1.15	.98	32.5	9.6	8.4
1158	2626	25.1	4.7	6.3	115	39.7	2682	2593	9.3	9.5	689	726	40.6	46.1	45.2	413	11994	26	1.4	7	53	1.26	1.21	.98	32.4	9.6	8.5
1202	2628	26.9	5.7	6.2	118	51.1	2689	2593	9.3	9.5	693	790	40.8	47.7	45.2	416	12409	27	1.4	7	51	1.30	1.22	.98	32.4	9.6	8.4
1209	2629	13.3	5.1	6.1	119	45.3	2727	2596	9.3	9.6	683	782	41.0	48.4	41.0	404	13228	29	1.5	14	49	1.37	1.39	.96	32.2	9.6	8.4
1214	2631	16.0	4.1	5.8	117	25.1	2654	2598	9.3	9.7	690	775	41.1	48.6	41.0	409	13813	30	1.6	12	47	1.41	1.31	.97	32.3	9.6	8.5
1219	2632	16.2	5.0	6.1	128	39.5	2673	2599	9.3	9.6	697	802	41.2	48.6	40.5	406	14478	32	1.7	11	45	1.46	1.29	.98	32.3	9.6	8.5
1222	2634	28.3	5.4	6.6	128	53.7	2679	2600	9.2	9.6	690	795	41.3	48.4	40.3	415	14875	33	1.6	7	44	1.50	1.21	.98	32.5	9.6	8.4
1226	2635	26.2	6.0	6.7	130	49.7	2689	2600	9.2	9.6	682	773	41.4	48.5	40.3	420	15260	35	1.8	7	42	1.53	1.26	.98	32.4	9.6	8.4
1230	2636	18.4	4.8	6.4	129	41.8	2666	2600	9.2	9.6	685	793	41.4	48.5	40.1	424	15651	36	1.9	10	41	1.58	1.32	.97	32.4	9.6	8.4
1235	2638	20.0	5.0	5.9	99	40.0	2723	2601	9.2	9.6	687	795	41.5	48.4	40.0	419	16424	37	2.0	10	40	1.63	1.29	.96	32.4	9.6	8.4
1248	2639	14.2	5.3	6.0	117	40.1	2593	2603	9.2	9.7	674	797	41.4	48.7	40.0	407	17312	39	2.1	14	39	1.68	1.30	1.02	32.4	9.6	8.4
1253	2641	18.6	4.0	6.1	127	30.6	2650	2604	9.2	9.7	673	794	41.6	48.4	40.0	407	17909	40	2.2	10	38	1.72	1.26	.98	32.5	9.6	8.4
1256	2642	28.3	5.5	6.2	130	41.9	2655	2605	9.2	9.7	676	704	41.6	48.8	40.1	410	18254	42	2.2	7	37	1.75	1.22	.99	32.5	9.6	8.5
1260	2644	22.4	6.1	6.5	131	51.0	2658	2608	9.2	9.6	676	[illegible]	41.7	49.0	40.1	419	18766	43	2.3	8	36	1.79	1.30	1.00	32.5	9.6	8.5
1304	2545	22.6	5.0	6.5	129	45.8	2657	2610	9.2	9.6	679	794	41.9	48.9	40.2	404	19276	45	2.3	8	35	1.84	1.28	.99	32.5	9.6	8.5
1308	2647	19.5	4.2	6.3	130	30.6	2615	2612	9.2	9.6	685	737	42.0	48.4	40.2	414	19866	46	2.4	10	34	1.88	1.28	1.00	32.5	9.6	8.5

EXPLORATION LOGGING

ESSO AUSTRALIA FORTESCUE NO.2
UNIT #101 17:47 11/15/78

TIME	DEPTH	ROP M/H	TORQUE INST	TORQUE MAX	RPM	BIT WT	PUMP PSI	RTNS DEPTH	LB/GAL IN	LB/GAL OUT	GAL/MIN IN	GAL/MIN OUT	TEMP(C) IN	TEMP(C) OUT	TEMP(C) LAG	PVT	REVS	MT	THIS BIT HRS	THIS BIT CPMI	CPMB	EST TW	DXC	NXB	%P	ECD	NXMW
1312	2649	23.4	4.7	5.9	131	50.1	2687	2613	9.2	9.6	679	794	42.3	49.2	40.4	400	20333	48	2.5	6	33	1.91	1.27	1.00	32.6	9.6	8.4
1319	2650	13.5	4.3	5.9	129	41.9	2671	2615	9.2	9.6	681	727	43.7	49.3	40.5	403	21199	49	2.6	14	33	1.97	1.39	.99	32.5	9.6	8.4
1323	2651	19.9	4.6	5.8	129	56.8	2657	2616	9.2	9.6	691	781	43.9	49.8	40.5	410	21771	51	2.7	10	32	2.02	1.36	1.00	32.5	9.6	8.4
1326	2652	14.2	3.4	5.6	128	47.2	2686	2617	9.2	9.5	681	796	44.9	49.7	40.6	395	22158	51	2.7	13	32	2.05	1.45	1.00	32.4	9.6	8.4*

P.O.O.H. AT 2653M WITH BIT #12 FOR WIRELINE LOGS.

(ii) BOREHOLE HYDRAULICS PRESSURE LOSS DATA PRINTOUT

EXPLORATION LOGGING

FORTESCUE #2

FORTESCUE No. 2 - 390m 1 NOVEMBER 1978.

PRESSURE LOSS ANALYSIS

DATA: DEPTH = 1283.0 (VERTICAL = 1283.0), RPM = 120
PUMP PSI = 2580, MUD WEIGHT = 9.30
MUD FLOW RATE = 1030, DRILL RATE = 600.0, BULK GM/CC = 2.50

RHEOLOGY: K n
LOW 1.955 .399
MID 1.955 .399
PV = 7.0, YP = 15.0

SURFACE PRESSURE LOSS COEFFICIENT = 3
BASIC RESULTS:

HOLE VOLUME	453 BBLS,		2543 CUBIC FT.
ANNULAR VOLUME	407		2283
VERTICAL DEPTH	1283		
MUD HYDROSTATIC DEPTH	1283		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	610		
MUD CYCLE TIME (MIN)	17		
NOZZLES (1/32 INCH):	20.00	20.00	20.00
JET VELOCITY	359 FT/SEC		
JET PRESSURE DROP	1073		
BIT HYDRAULIC HP	645		
IMPACT FORCE (LB)	1780		
SURFACE PSI LOSS	112		

FROM DEPTH OF 835 TO 1283 ft

LENGTH: 448 ft

DIAMETERS: ANNULUS = 17.500, PIPE ID, OD, JD = 2.813 7 750 7 750 inches

DOWNHOLE . .
VELOCITY: 53.2 ft/sec, 3190.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		164465	110453
CRITICAL VELOCITY:	fpm	306.4	357.9
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	660.4	324.1
	psi/100ft	147.414	72.347

ANNULUS...
VELOCITY: 1.7 ft/sec, 102.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		20550	611
CRITICAL VELOCTIY:	fpm	293.6	295.2
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	3.1	1.3
	psi/100ft	.692	.283

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 768 TO 835 ft

LENGTH: 67 ft

DIAMETERS: ANNULUS = 17.500, PIPE ID, OD, JD = 4.276 5.000 6.500 inches
DOWNHOLE...
VELOCITY: 23.0 ft/sec, 1380.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		121352	34132
CRITICAL VELOCITY:	fpm	300.2	322.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	13.2	8.6
	psi/100ft	19.750	12.785

ANNULUS...
VELOCITY: 1.5 ft/sec, 89.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		23062	552
CRITICAL VELOCTIY:	fpm	292.5	275.5
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	.4	.1
	psi/100ft	.538	.187

FROM DEPTH OF 331 TO 768 ft

LENGTH: 437 ft

DIAMETERS: ANNULUS = 19.124, PIPE ID, OD, JD = 4.276 5.000 6.500 inches
DOWNHOLE...
VELOCITY: 23.0 ft/sec, 1380.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		121352	34132
CRITICAL VELOCITY:	fpm	300.2	322.5

PRESSURE LOSS: psi 86.3 55.9

psi/100ft 19.750 12.785

ANNULUS...

VELOCITY: 1.2 ft/sec, 74.1 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		21510	427
CRITICAL VELOCTIY:	fpm	292.0	266.7
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	2.1	.6
	psi/100ft	.475	.146

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 23.0 ft/sec, 1380.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		121352	34132
CRITICAL VELOCITY:	fpm	300.2	322.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	65.4	42.3
	psi/100ft	19.750	12.785

ANNULUS...

VELOCITY: 1.0 ft/sec, 59.5 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		19805	319
CRITICAL VELOCTIY:	fpm	291.6	257.2
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	1.4	.4
	psi/100ft	.413	.110

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	112	112
TOTAL DOWNHOLE LOSS	825	431
TOTAL BIT LOSS	1073	1073
TOTAL ANNULAR LOSS	7	2
PUMP PRESSURE	2580	2580
UNACCOUNTED LOSSES	563	962
CIRCULATING PSI AT BIT	617	612
EQUIVALENT CIRC. DENSITY, lb/gal	9.26	9.19
ECD W/CUTTINGS EFFECT, lb/gal	9.26	9.19
FOR MUD WT	9.30	9.30

EXPLORATION LOGGING
A SUBSIDIARY OF

878M. FORTESCUE #2

FORTESCUE No. 2 - 878 m 2 NOVEMBER 1978

PRESSURE LOSS ANALYSIS

DATA: DEPTH = 2880.0 (VERTICAL = 2880.0), RPM = 120
PUMP PSI = 2320, MUD WEIGHT = 9.30
MUD FLOW RATE = 1040, DRILL RATE = 131.0, BULK GM/CC = 2.50

RHEOLOGY: K n
LOW 1.955 .399
MID 1.955 .399
PV = 7.0, YP = 15.0

SURFACE PRESSURE LOSS COEFFICIENT = 3
BASIC RESULTS:

HOLE VOLUME	928 BBLS,	5211 CUBIC FT.	
ANNULAR VOLUME	843	4732	
VERTICAL DEPTH	2880		
MUD HYDROSTATIC DEPTH	2860		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	1380		
MUD CYCLE TIME (MIN)	36		
NOZZLES (1/32 INCH):	20.00	20.00	20.00
JET VELOCITY	363 FT/SEC		
JET PRESSURE DROP	1094		
BIT HYDRAULIC HP	664		
IMPACT FORCE (LB)	1614		
SURFACE PSI LOSS	114		

FROM DEPTH OF 2432 TO 2880 ft

LENGTH: 448 ft

DIAMETERS: ANNULUS = 17.500, PIPE ID, OD, JD = 2.813 7.750 7.750 inches

DOWN HOLE...

VELOCITY: 53.7 ft/sec, 3221.5 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	186256	112176
CRITICAL VELOCITY: fpm	306.4	357.9
FLOW REGIME:	TURBULENT	TURBULENT
PRESSURE LOSS: psi	672.0	328.9
psi/100ft	150.001	73.409

ANNULUS...

VELOCITY: 1.7 ft/sec, 103.5 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	20750	621
CRITICAL VELOCITY: fpm	293.6	295.2
FLOW REGIME:	LAMINAR	LAMINAR

psi/100ft	.692	.284

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EXPLORATION LOGGING

A SUBSIDIARY OF

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 768 TO 2432 ft

LENGTH: 1664 ft

DIAMETERS: ANNULUS = 17.500, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 23.2 ft/sec, 1394.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		122530	34664
CRITICAL VELOCITY:	fpm	300.2	322.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	334.4	215.9
	psi/100ft	20.097	12.972

ANNULUS...

VELOCITY: 1.5 ft/sec, 90.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		23286	561
CRITICAL VELOCTIY:	fpm	292.5	275.5
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	8.9	3.1
	psi/100ft	.538	.188

FROM DEPTH OF 331 TO 768 ft

LENGTH: 437 ft

DIAMETERS: ANNULUS = 19.124, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 23.2 ft/sec, 1394.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		122530	34664
CRITICAL VELOCITY:	fpm	300.2	322.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	87.8	56.7
	psi/100ft	20.097	12.972

ANNULUS...

VELOCITY: 1.2 ft/sec, 74.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		21719	434
CRITICAL VELOCTIY:	fpm	292.0	266.7
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	2.1	.6
	psi/100ft	.475	.146

EXPLORATION LOGGING
A SUBSIDIARY OF ... INTERNATIONAL

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 23.2 ft/sec, 1394.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		122530	34664
CRITICAL VELOCITY:	fpm	300.2	322.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	66.5	42.9
	psi/100ft	20.097	12.972

ANNULUS...

VELOCITY: 1.0 ft/sec, 60.1 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		19998	324
CRITICAL VELOCITY:	fpm	291.6	257.2
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	1.4	.4
	psi/100ft	.413	.110

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	114	114
TOTAL DOWNHOLE LOSS	1161	644
TOTAL BIT LOSS	1094	1094
TOTAL ANNULAR LOSS	15	5
PUMP PRESSURE	2320	2320
UNACCOUNTED LOSSES	-64	463
CIRCULATING PSI AT BIT	1396	1386
EQUIVALENT CIRC. DENSITY, lb/gal	9.34	9.27
ECD W/CUTTINGS EFFECT, lb/gal	9.34	9.27
FOR MUD WT	9.30	9.30

FORTESCUE NO. 2 - 1135 m 4 NOVEMBER 1978

PRESSURE LOSS ANALYSIS

FORTESCUE #2 4 Nov.

DATA: DEPTH = 3772.0 (VERTICAL = 3772.0), RPM = 118
PUMP PSI = 850, MUD WEIGHT = 9.15
MUD FLOW RATE = 505, DRILL RATE = 50.0, BULK GM/CC = 2.25

RHEOLOGY:	K	n
LOW	1.228	.466
MID	1.228	.466

PV = 8.0, YP = 13.0

SURFACE PRESSURE LOSS COEFFICIENT = 3
BASIC RESULTS:

HOLE VOLUME	668	BBLS,	3751 CUBIC FT.
ANNULAR VOLUME	558		3134
VERTICAL DEPTH	3772		
MUD HYDROSTATIC DEPTH	3752		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	1782		
MUD CYCLE TIME (MIN)	52		
NOZZLES (1/32 INCH):	18.00	18.00	18.00
JET VELOCITY	217	FT/SEC	
JET PRESSURE DROP	387		
BIT HYDRAULIC HP	114		
IMPACT FORCE (LB)	520		
SURFACE PSI LOSS	29		

FROM DEPTH OF 3234 TO 3772 ft

LENGTH: 538 ft

DIAMETERS: ANNULUS = 12.250 PIPE ID OD ID = 2.813 7.750 7.750 inches

DOWNHOLE...

VELOCITY: 26.1 ft/sec, 1564.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		77860	35386
CRITICAL VELOCITY:	fpm	291.7	328.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	222.9	147.2
	psi/100ft	41.429	27.367

ANNULUS...

VELOCITY: 2.3 ft/sec, 137.5 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		10951	848
CRITICAL VELOCTIY:	fpm	283.7	329.0
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	7.2	4.2
	psi/100ft	1.344	.781

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 2824 TO 3234 ft

LENGTH: 410 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 11.3 ft/sec, 677.0 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		51221	11897
CRITICAL VELOCITY:	fpm	284.4	289.6
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	22.8	19.1
	psi/100ft	5.551	4.663

ANNULUS...

VELOCITY: 1.6 ft/sec, 99.0 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		12697	645
CRITICAL VELOCTIY:	fpm	278.7	283.0
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	3.3	1.4
	psi/100ft	.814	.330

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 11.3 ft/sec, 677.0 ft/min

BINGHAM POWER LAW

REYNOLDS NUMBER: 51221 11897
CRITICAL VELOCITY: fpm 284.4 289.6
FLOW REGIME: TURBULENT TURBULENT
PRESSURE LOSS: psi 138.4 116.3
psi/100ft 5.551 4.663

ANNULUS...

VELOCITY: 1.5 ft/sec, 92.3 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	12434	593
CRITICAL VELOCTIY: fpm	278.4	278.7
FLOW REGIME:	LAMINAR	LAMINAR
PRESSURE LOSS: psi	19.3	7.4
psi/100ft	.773	.297

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 11.3 ft/sec, 677.0 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	51221	11897
CRITICAL VELOCITY: fpm	284.4	289.6
FLOW REGIME:	TURBULENT	TURBULENT
PRESSURE LOSS: psi	18.4	15.4
psi/100ft	5.551	4.663

ANNULUS...

VELOCITY: .5 ft/sec, 29.2 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	8360	146
CRITICAL VELOCTIY: fpm	274.3	219.3
FLOW REGIME:	LAMINAR	LAMINAR
PRESSURE LOSS: psi	1.2	.2
psi/100ft	.358	.057

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	29	29
TOTAL DOWNHOLE LOSS	402	298
TOTAL BIT LOSS	387	387
TOTAL ANNULAR LOSS	31	13
PUMP PRESSURE	850	850
UNACCOUNTED LOSSES	1	123
CIRCULATING PSI AT BIT	1813	1795

EQUIVALENT CIRC. DENSITY, lb/gal	9.26	9.17
ECD W/CUTTINGS EFFECT, lb/gal	9.26	9.17
FOR MUD WT	9.15	9.15

EXPLORATION LOGGING

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EXPLORATION LOGGING
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FORTESCUE #2 5 [illegible]

FORTESCUE No. 2 - 1374 m 5 NOVEMBER 1978

PRESSURE LOSS ANALYSIS

DATA: DEPTH = 4508.0 (VERTICAL = 4508.0), RPM = 120
PUMP PSI = 2730, MUD WEIGHT = 9.10
MUD FLOW RATE = 950, DRILL RATE = 55.0, BULK GM/CC = 2.20

RHEOLOGY:	K	n
LOW	1.684	.415
MID	1.684	.415

PV = 7.0, YP = 14.0

SURFACE PRESSURE LOSS COEFFICIENT = 2
BASIC RESULTS:

HOLE VOLUME	775 BBLS,	4354 CUBIC FT.	
ANNULAR VOLUME	648	3636	
VERTICAL DEPTH	4508		
MUD HYDROSTATIC DEPTH	4488		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	2120		
MUD CYCLE TIME (MIN)	32		
NOZZLES (1/32 INCH):	18.00	18.00	18.00
JET VELOCITY	409 FT/SEC		
JET PRESSURE DROP	1361		
BIT HYDRAULIC HP	754		
IMPACT FORCE (LB)	1829		
SURFACE PSI LOSS	63		

FROM DEPTH OF 3970 TO 4508 ft

LENGTH: 538 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 7.750 7.750 inches
DOWNHOLE...
VELOCITY: 49.0 ft/sec, 2942.8 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	166479	97771
CRITICAL VELOCITY: fpm	300.1	347.0
FLOW REGIME:	TURBULENT	TURBULENT
PRESSURE LOSS: psi	673.9	347.9
psi/100ft	125.251	64.674

ANNULUS...
VELOCITY: 4.3 ft/sec, 258.7 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		23415	2063
CRITICAL VELOCITY:	fpm	293.1	348.1
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	8.0	6.1
	psi/100ft	1.482	1.131

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 2824 TO 3970 ft

LENGTH: 1146 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...
VELOCITY: 21.2 ft/sec, 1273.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		109519	30845
CRITICAL VELOCITY:	fpm	293.7	311.0
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	192.3	129.8
	psi/100ft	16.781	11.323

ANNULUS...
VELOCITY: 3.1 ft/sec, 186.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		27148	1505
CRITICAL VELOCITY:	fpm	288.8	305.6
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	10.2	5.7
	psi/100ft	.886	.498

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...
VELOCITY: 21.2 ft/sec, 1273.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		109519	30845
CRITICAL VELOCITY:	fpm	293.7	311.0
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	418.3	282.3
	psi/100ft	16.781	11.323

ANNULUS...
VELOCITY: 2.9 ft/sec, 173.6 ft/min

BINGHAM POWER LAW

REYNOLDS NUMBER:	26586	1376
CRITICAL VELOCTIY: fpm	288.4	301.5
FLOW REGIME:	LAMINAR	LAMINAR
PRESSURE LOSS: psi	21.0	11.2
psi/100ft	.840	.451

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PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.2 ft/sec, 1273.6 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	109519	30845
CRITICAL VELOCITY: fpm	293.7	311.0
FLOW REGIME:	TURBULENT	TURBULENT
PRESSURE LOSS: psi	55.5	37.5
psi/100ft	16.781	11.323

ANNULUS...

VELOCITY: .9 ft/sec, 54.9 ft/min

	BINGHAM	POWER LAW
REYNOLDS NUMBER:	17874	308
CRITICAL VELOCTIY: fpm	284.9	245.0
FLOW REGIME:	LAMINAR	LAMINAR
PRESSURE LOSS: psi	1.3	.3
psi/100ft	.386	.095

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	63	63
TOTAL DOWNHOLE LOSS	1340	797
TOTAL BIT LOSS	1361	1361
TOTAL ANNULAR LOSS	40	23
PUMP PRESSURE	2730	2730
UNACCOUNTED LOSSES	-74	485
CIRCULATING PSI AT BIT	2160	2143
EQUIVALENT CIRC. DENSITY, lb/gal	9.23	9.16
ECD W/CUTTINGS EFFECT, lb/gal	9.23	9.16
FOR MUD WT	9.10	9.10

EXPLORATION LOGGING
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FORTESCUE #2

FORTESCUE No. 2 - 1615 m 6 NOVEMBER 1978

PRESSURE LOSS ANALYSIS

DATA: DEPTH = 5298.6 (VERTICAL = 5298.6), RPM = 158
PUMP PSI = 2760, MUD WEIGHT = 9.10
MUD FLOW RATE = 930, DRILL RATE = 20.0, BULK GM/CC = 2.20

RHEOLOGY: K n
LOW 2.483 .387
MID 2.483 .387
PV = 8.0, YP = 18.0

SURFACE PRESSURE LOSS COEFFICIENT = 2
BASIC RESULTS:

HOLE VOLUME	891 BBLS,	5001 CUBIC FT.	
ANNULAR VOLUME	744	4175	
VERTICAL DEPTH	5299		
MUD HYDROSTATIC DEPTH	5279		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	2493		
MUD CYCLE TIME (MIN)	38		
NOZZLES (1/32 INCH):	18.00	18.00	18.00
JET VELOCITY	400 FT/SEC		
JET PRESSURE DROP	1304		
BIT HYDRAULIC HP	708		
IMPACT FORCE (LB)	1753		
SURFACE PSI LOSS	60		

FROM DEPTH OF 4761 TO 5299 ft

LENGTH: 538 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.613 7.750 7.750 inches
DOWNHOLE...
VELOCITY: 48.0 ft/sec, 2880.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		142602	78583
CRITICAL VELOCITY:	fpm	340.4	406.6
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	666.1	336.5
	psi/100ft	123.808	62.544

ANNULUS...

VELOCITY: 4.2 ft/sec, 253.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		20057	1545
CRITICAL VELOCITY:	fpm	332.4	408.4
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	10.2	7.8
	psi/100ft	1.889	1.446

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 2824 TO 4761 ft

LENGTH: 1937 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 20.8 ft/sec, 1246.7 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		93812	23934
CRITICAL VELOCITY:	fpm	333.1	367.7
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	321.2	215.5
	psi/100ft	16.588	11.126

ANNULUS...

VELOCITY: 3.0 ft/sec, 182.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		23254	1103
CRITICAL VELOCITY:	fpm	327.5	362.4
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	22.0	12.6
	psi/100ft	1.134	.652

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 20.8 ft/sec, 1246.7 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		93812	23934
CRITICAL VELOCITY:	fpm	333.1	367.7
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	413.5	277.4
	psi/100ft	16.588	11.126

ANNULUS...

VELOCITY: 2.8 ft/sec, 169.9 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		22773	1004
CRITICAL VELOCITY:	fpm	327.1	357.9
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	26.8	14.8
	psi/100ft	1.077	.592

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PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 20.8 ft/sec, 1246.7 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		93812	23934
CRITICAL VELOCITY:	fpm	333.1	367.7
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	54.9	36.8
	psi/100ft	16.588	11.126

ANNULUS...

VELOCITY: .9 ft/sec, 53.7 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		15311	213
CRITICAL VELOCITY:	fpm	323.1	295.8
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	1.6	.4
	psi/100ft	.496	.131

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	60	60
TOTAL DOWNHOLE LOSS	1456	866
TOTAL BIT LOSS	1304	1304
TOTAL ANNULAR LOSS	61	36
PUMP PRESSURE	2760	2760
UNACCOUNTED LOSSES	-121	494
CIRCULATING PSI AT BIT	2554	2529
EQUIVALENT CIRC. DENSITY, lb/gal	9.29	9.20
ECD W/CUTTINGS EFFECT, lb/gal	9.29	9.20
FOR MUD WT	9.10	9.10

EXPLORATION LOGGING
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FORTESCUE #2

FORTESCUE No. 2 - 2017m 7 NOVEMBER 1978

PRESSURE LOSS ANALYSIS

DATA: DEPTH = 6618.0 (VERTICAL = 6618.0), RPM = 160
PUMP PSI = 1025, MUD WEIGHT = 9.10
MUD FLOW RATE = 525, DRILL RATE = 66.0, BULK GM/CC = 2.25

RHEOLOGY:

	K	n
LOW	.667	.585
MID	.667	.585

PV = 12.0, YP = 12.0

SURFACE PRESSURE LOSS COEFFICIENT = 2

BASIC RESULTS:

HOLE VOLUME	1083 BBLS,		6080 CUBIC FT.
ANNULAR VOLUME	901		5058
VERTICAL DEPTH	6618		
MUD HYDROSTATIC DEPTH	6598		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	3116		
MUD CYCLE TIME (MIN)	81		
NOZZLES (1/32 INCH):	18.00	18.00	18.00
JET VELOCITY	226 FT/SEC		
JET PRESSURE DROP	416		
BIT HYDRAULIC HP	127		
IMPACT FORCE (LB)	559		
SURFACE PSI LOSS	21		

FROM DEPTH OF 5991 TO 6618 ft

LENGTH: 627 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 7.750 7.750 inches

DOWNHOLE...

VELOCITY: 27.1 ft/sec, 1626.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		53667	31126
CRITICAL VELOCITY:	fpm	293.0	316.3
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	300.8	227.9
	psi/100ft	47.971	36.352

ANNULUS...

VELOCITY: 2.4 ft/sec, 143.0 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		7548	1009
CRITICAL VELOCITY:	fpm	280.6	313.8
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	8.0	4.4
	psi/100ft	1.279	.706

EXPLORATION LOGGING

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 2824 TO 5991 ft

LENGTH: 3167 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 11.7 ft/sec, 703.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		35306	12156
CRITICAL VELOCITY:	fpm	281.6	266.1
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	203.5	185.1
	psi/100ft	6.427	5.846

ANNULUS...

VELOCITY: 1.7 ft/sec, 102.9 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8752	845
CRITICAL VELOCTIY:	fpm	272.9	256.0
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	24.1	8.6
	psi/100ft	.762	.271

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 11.7 ft/sec, 703.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		35306	12156
CRITICAL VELOCITY:	fpm	281.6	266.1
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	160.2	145.7
	psi/100ft	6.427	5.846

ANNULUS...

VELOCITY: 1.6 ft/sec, 95.9 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8570	788
CRITICAL VELOCTIY:	fpm	272.4	250.7
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	18.0	6.0
	psi/100ft	.722	.240

EXPLORATION LOGGING
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PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 11.7 ft/sec, 703.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		35306	12156
CRITICAL VELOCITY:	fpm	261.6	266.1
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	21.3	19.3
	psi/100ft	6.427	5.846

ANNULUS...

VELOCITY: .5 ft/sec, 30.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		5762	244
CRITICAL VELOCTIY:	fpm	266.2	181.3
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	1.1	.1
	psi/100ft	.331	.036

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	21	21
TOTAL DOWNHOLE LOSS	686	578
TOTAL BIT LOSS	416	416
TOTAL ANNULAR LOSS	51	19
PUMP PRESSURE	1025	1025
UNACCOUNTED LOSSES	-149	-9
CIRCULATING PSI AT BIT	3167	3135
EQUIVALENT CIRC. DENSITY, lb/gal	9.22	9.13
ECD W/CUTTINGS EFFECT, lb/gal	9.22	9.13
FOR MUD WT	9.10	9.10

FORTESCUE No. 2 - 2235m 8 NOVEMBER 1978

FORTES

DATA: DEPTH = 7333.0 (VERTICAL = 7333.0), RPM = 160
PUMP PSI = 2660, MUD WEIGHT = 9.10
MUD FLOW RATE = 970, DRILL RATE = 124.0, BULK GM/CC = 2.20

RHEOLOGY: K n
LOW 1.003 .526
MID 1.003 .526
PV = 11.0, YP = 14.0

SURFACE PRESSURE LOSS COEFFICIENT = 2
BASIC RESULTS:

HOLE VOLUME	1187 BBLS		6666 CUBIC FT.
ANNULAR VOLUME	988		5546
VERTICAL DEPTH	7333		
MUD HYDROSTATIC DEPTH	7313		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	3454		
MUD CYCLE TIME (MIN)	48		
NOZZLES (1/32 INCH):	18.00	18.00	20.00
JET VELOCITY	387 FT/SEC		
JET PRESSURE DROP	1220		
BIT HYDRAULIC HP	691		
IMPACT FORCE (LB)	1769		
SURFACE PSI LOSS	65		

FROM DEPTH OF 6706 TO 7333 ft

LENGTH: 627 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 7.750 7.750 inches

DOWNHOLE...

VELOCITY: 50.1 ft/sec, 3004.7 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		108171	75616
CRITICAL VELOCITY:	fpm	311.0	347.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	892.5	555.0
	psi/100ft	142.340	88.509

ANNULUS...

VELOCITY: 4.4 ft/sec, 264.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		15214	2111
CRITICAL VELOCTIY:	fpm	299.7	346.5
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	9.7	7.2
	psi/100ft	1.542	1.152

PRESSURE LOSS ANALYSIS

EXPLORATION LOGGING

FROM DEPTH OF 2824 TO 6706 ft

LENGTH: 3882 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.7 ft/sec, 1300.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		71161	27426
CRITICAL VELOCITY:	fpm	300.7	299.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	740.3	568.0
	psi/100ft	19.070	14.632

ANNULUS...

VELOCITY: 3.2 ft/sec, 190.1 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		17640	1686
CRITICAL VELOCITY:	fpm	292.8	290.6
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	35.0	18.0
	psi/100ft	.902	.464

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.7 ft/sec, 1300.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		71161	27426
CRITICAL VELOCITY:	fpm	300.7	299.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	475.4	364.8
	psi/100ft	19.070	14.632

ANNULUS...

VELOCITY: 3.0 ft/sec, 177.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		17274	1561
CRITICAL VELOCTIY:	fpm	292.3	285.3
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	21.3	10.3
	psi/100ft	.854	.414

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.7 ft/sec, 1300.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		71161	27426
CRITICAL VELOCITY:	fpm	300.7	299.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	63.1	48.4
	psi/100ft	19.070	14.632

ANNULUS...

VELOCITY: .9 ft/sec, 56.0 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		11614	432
CRITICAL VELOCITY:	fpm	266.7	215.5
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	1.3	.2
	psi/100ft	.387	.070

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	65	65
TOTAL DOWNHOLE LOSS	2171	1536
TOTAL BIT LOSS	1220	1220
TOTAL ANNULAR LOSS	67	36
PUMP PRESSURE	2660	2660
UNACCOUNTED LOSSES	-864	-198
CIRCULATING PSI AT BIT	3521	3490
EQUIVALENT CIRC. DENSITY, lb/gal	9.25	9.17
ECD W/CUTTINGS EFFECT, lb/gal	9.25	9.17
FOR MUD WT	9.10	9.10

EXPLORATION LOGGING
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FORTES

PRESSURE LOSS ANALYSIS

FORTESCUE No. 2 - 2420m 9 NOVEMBER 1978

DATA: DEPTH = 7939.6 (VERTICAL = 7939.6), RPM = 125
PUMP PSI = 2370, MUD WEIGHT = 9.30
MUD FLOW RATE = 955, DRILL RATE = 35.0, BULK GM/CC = 2.20

RHEOLOGY:

	K	n
LOW	1.020	.553
MID	1.020	.553

PV = 14.0, YP = 16.0

SURFACE PRESSURE LOSS COEFFICIENT = 2
BASIC RESULTS:

HOLE VOLUME	1276 BBLS,		7162 CUBIC FT
ANNULAR VOLUME	1061		5960
VERTICAL DEPTH	7940		
MUD HYDROSTATIC DEPTH	7920		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	3823		
MUD CYCLE TIME (MIN)	53		
NOZZLES (1/32 INCH):	18.00	18.00	20.00
JET VELOCITY	361 FT/SEC		
JET PRESSURE DROP	1209		
BIT HYDRAULIC HP	674		
IMPACT FORCE (LB)	1752		
SURFACE PSI LOSS	65		

FROM DEPTH OF 7313 TO 7940 ft

LENGTH: 627 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 7.750 7.750 inches

DOWNHOLE...

VELOCITY: 49.3 ft/sec, 2958.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		85516	61286
CRITICAL VELOCITY:	fpm	334.6	377.5
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	926.6	607.7
	psi/100ft	147.790	96.929

ANNULUS...

VELOCITY: 4.3 ft/sec, 260.1 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		12028	1830
CRITICAL VELOCITY:	fpm	320.4	375.4
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	11.2	8.3
	psi/100ft	1.786	1.316

EXPLORATION LOGGING
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PRESSURE LOSS ANALYSIS

FROM DEPTH OF 2824 TO 7313 ft

LENGTH: 4489 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.3 ft/sec, 1280.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		56258	22981
CRITICAL VELOCITY:	fpm	321.7	321.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	888.8	710.2
	psi/100ft	19.801	15.823

ANNULUS...

VELOCITY: 3.1 ft/sec, 187.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		13945	1493
CRITICAL VELOCITY:	fpm	311.8	311.1
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	46.5	23.3
	psi/100ft	1.036	.519

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.3 ft/sec, 1280.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		56258	22981
CRITICAL VELOCITY:	fpm	321.7	321.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	493.6	394.5
	psi/100ft	19.801	15.823

ANNULUS...

VELOCITY: 2.9 ft/sec, 174.5 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		13656	1387
CRITICAL VELOCITY:	fpm	311.1	305.1
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	24.4	11.5
	psi/100ft	.981	.462

EXPLORATION LOGGING
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PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 21.3 ft/sec, 1280.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		56258	22981
CRITICAL VELOCITY:	fpm	321.7	321.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	65.5	52.4
	psi/100ft	19.801	15.823

ANNULUS...

VELOCITY: .9 ft/sec, 55.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		9182	404
CRITICAL VELOCITY:	fpm	304.1	226.0
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	1.5	.2
	psi/100ft	.442	.074

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	65	65
TOTAL DOWNHOLE LOSS	2375	1765
TOTAL BIT LOSS	1209	1209
TOTAL ANNULAR LOSS	84	43
PUMP PRESSURE	2370	2370
UNACCOUNTED LOSSES	-1362	-712
CIRCULATING PSI AT BIT	3906	3866
EQUIVALENT CIRC. DENSITY, lb/gal	9.48	9.38
ECD W/CUTTINGS EFFECT, lb/gal	9.48	9.38
FOR MUD WT	9.30	9.30

FORTESCUE No. 2 - 2600m - 14 NOVEMBER 1978

FORTESCU

DATA: DEPTH = 8531.4 (VERTICAL = 8531.4) RPM = 120
PUMP PSI = 2710, MUD WEIGHT = 9.20
MUD FLOW RATE = 660, DRILL RATE = 20.0, BULK GM/CC = 2.20

RHEOLOGY:

	K	n
LOW	2.032	.480
MID	2.032	.480

PV = 15.0, YP = 23.0

SURFACE PRESSURE LOSS COEFFICIENT = 2

BASIC RESULTS:

HOLE VOLUME	1362 BBLS		7647 CUBIC FT
ANNULAR VOLUME	1132		6355
VERTICAL DEPTH	8531		
MUD HYDROSTATIC DEPTH	8511		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	4064		
MUD CYCLE TIME (MIN)	81		
NOZZLES (1/32 INCH):	15.00	15.00	15.00
JET VELOCITY	409 FT/SEC		
JET PRESSURE DROP	1377		
BIT HYDRAULIC HP	530		
IMPACT FORCE (LB)	1285		
SURFACE PSI LOSS	32		

FROM DEPTH OF 8319 TO 8531 ft

LENGTH: 212 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 6 500 6.500 inches

DOWNHOLE...

VELOCITY: 34.1 ft/sec, 2044.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		54567	29372
CRITICAL VELOCITY:	fpm	398.7	476.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	162.0	107.8
	psi/100ft	76.393	50.833

ANNULUS..

VELOCITY: 2.5 ft/sec, 150.1 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8167	626
CRITICAL VELOCITY:	fpm	378.1	440.2
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	3.9	2.1
	psi/100ft	1.853	.992

PRESSURE LOSS ANALYSIS

EXPLORATION LOGGING

FROM DEPTH OF 7754 TO 8319 ft

LENGTH: 565 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 7.750 7.750 inches

DOWNHOLE...

VELOCITY: 34.1 ft/sec, 2044.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		54567	29372
CRITICAL VELOCITY:	fpm	398.7	476.8
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	431.6	287.2
	psi/100ft	76.393	50.833

ANNULUS...

VELOCITY: 3.0 ft/sec, 179.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		7675	730
CRITICAL VELOCITY:	fpm	383.4	476.5
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	13.7	8.8
	psi/100ft	2.420	1.559

FROM DEPTH OF 2824 TO 7754 ft

LENGTH: 4930 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 14.7 ft/sec, 884.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		35898	10054
CRITICAL VELOCITY:	fpm	384.8	417.7
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	504.6	423.9
	psi/100ft	10.235	8.598

ANNULUS...

VELOCITY: 2.2 ft/sec, 129.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8698	561
CRITICAL VELOCITY:	fpm	374.1	407.6
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	71.5	32.1
	psi/100ft	1.451	.652

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 14.7 ft/sec, 884.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		35898	10054
CRITICAL VELOCITY:	fpm	384.8	417.7
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	255.2	214.4
	psi/100ft	10.235	8.598

ANNULUS...

VELOCITY: 2.0 ft/sec, 120.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8714	517
CRITICAL VELOCITY:	fpm	373.4	401.1
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	34.3	14.6
	psi/100ft	1.377	.585

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 14.7 ft/sec, 884.8 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		35898	10054
CRITICAL VELOCITY:	fpm	384.8	417.7
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	33.9	28.5
	psi/100ft	10.235	8.598

ANNULUS...

VELOCITY: .6 ft/sec, 38.1 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		5859	131
CRITICAL VELOCITY:	fpm	365.8	312.6
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	2.1	.4
	psi/100ft	.633	.108

PRESSURE LOSS ANALYSIS

SUMMARY: EXPLORATION LOGGING

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	32	32
TOTAL DOWNHOLE LOSS	1387	1062
TOTAL BIT LOSS	1377	1377
TOTAL ANNULAR LOSS	126	58
PUMP PRESSURE	2710	2710
UNACCOUNTED LOSSES	-212	181
CIRCULATING PSI AT BIT	4190	4122
EQUIVALENT CIRC. DENSITY, lb/gal	9.46	9.31
ECD W/CUTTINGS EFFECT, lb/gal	9.46	9.31
FOR MUD WT	9.20	9.20

EXPLORATION LOGGING

FORTESCUE No. 2 - 2653m 15 NOVEMBER 1978

PRESSURE LOSS ANALYSIS

DATA: DEPTH = 8699.0 (VERTICAL = 8699.0), RPM = 128
PUMP PSI = 2680, MUD WEIGHT = 9.30
MUD FLOW RATE = 680, DRILL RATE = 60.0, BULK GM/CC = 2.40

RHEOLOGY:	K	n
LOW	1.605	.522
MID	1.605	.522

PV = 17.0, YP = 22.0

SURFACE PRESSURE LOSS COEFFICIENT = 3
BASIC RESULTS:

HOLE VOLUME	1386 BBLS,		7784 CUBIC FT.
ANNULAR VOLUME	1159		6505
VERTICAL DEPTH	8699		
MUD HYDROSTATIC DEPTH	8679		
FORMATION FLUID DEPTH	102		
HYDROSTATIC PSI	4189		
MUD CYCLE TIME (MIN)	81		
NOZZLES (1/32 INCH):	15.00	15.00	16.00
JET VELOCITY	403 FT/SEC		
JET PRESSURE DROP	1351		
BIT HYDRAULIC HP	536		
IMPACT FORCE (LB)	1318		
SURFACE PSI LOSS	52		

FROM DEPTH OF 8215 TO 8699 ft

LENGTH: 484 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 2.813 7.750 7.750 inches

DOWNHOLE...

VELOCITY: 35.1 ft/sec, 2106.4 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		50146	29427
CRITICAL VELOCITY:	fpm	394.0	465.0
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	403.5	281.2
	psi/100ft	83.372	58.092

ANNULUS...

VELOCITY: 3.1 ft/sec, 185.2 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		7053	813
CRITICAL VELOCTIY:	fpm	376.7	463.5
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	11.4	7.3
	psi/100ft	2.346	1.502

EXPLORATION LOGGING

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 2824 TO 8215 ft

LENGTH: 5391 ft

DIAMETERS: ANNULUS = 12.250, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 15.2 ft/sec, 911.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		32989	10618
CRITICAL VELOCITY:	fpm	378.2	401.1
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	602.2	518.8
	psi/100ft	11.170	9.623

ANNULUS...

VELOCITY: 2.2 ft/sec, 133.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8177	647
CRITICAL VELOCTIY:	fpm	366.1	389.3
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	75.3	32.7
	psi/100ft	1.397	.607

FROM DEPTH OF 331 TO 2824 ft

LENGTH: 2493 ft

DIAMETERS: ANNULUS = 12.615, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 15.2 ft/sec, 911.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		32989	10618
CRITICAL VELOCITY:	fpm	378.2	401.1
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	278.5	239.9
	psi/100ft	11.170	9.623

ANNULUS...

VELOCITY: 2.1 ft/sec, 124.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		8008	599
CRITICAL VELOCTIY:	fpm	365.3	382.4
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	33.0	13.5
	psi/100ft	1.324	.542

EXPLORATION LOGGING

PRESSURE LOSS ANALYSIS

FROM DEPTH OF 0 TO 331 ft

LENGTH: 331 ft

DIAMETERS: ANNULUS = 21.200, PIPE ID, OD, JD = 4.276 5.000 6.500 inches

DOWNHOLE...

VELOCITY: 15.2 ft/sec, 911.6 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		32989	10618
CRITICAL VELOCITY:	fpm	378.2	401.1
FLOW REGIME:		TURBULENT	TURBULENT
PRESSURE LOSS:	psi	37.0	31.9
	psi/100ft	11.170	9.623

ANNULUS...

VELOCITY: .7 ft/sec, 39.3 ft/min

		BINGHAM	POWER LAW
REYNOLDS NUMBER:		5384	165
CRITICAL VELOCTIY:	fpm	356.8	289.6
FLOW REGIME:		LAMINAR	LAMINAR
PRESSURE LOSS:	psi	2.0	.3
	psi/100ft	.606	.093

SUMMARY:

	BINGHAM	POWER LAW
TOTAL SURFACE LOSS	52	52
TOTAL DOWNHOLE LOSS	1321	1072
TOTAL BIT LOSS	1351	1351
TOTAL ANNULAR LOSS	122	54
PUMP PRESSURE	2680	2680
UNACCOUNTED LOSSES	-165	152
CIRCULATING PSI AT BIT	4311	4243
EQUIVALENT CIRC. DENSITY, lb/gal	9.55	9.40
ECD W/CUTTINGS EFFECT, lb/gal	9.55	9.40
FOR MUD WT	9.30	9.30

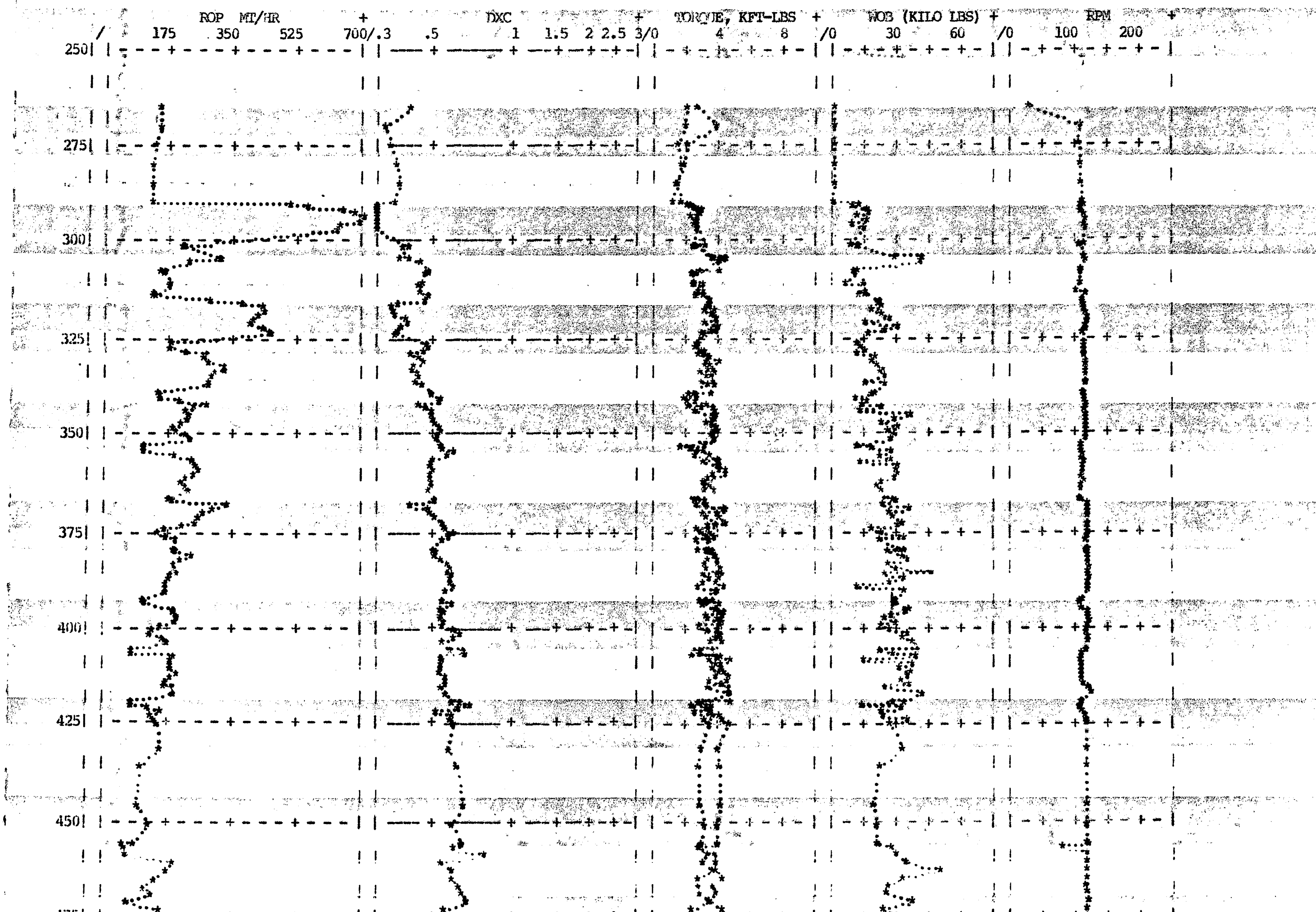
(iii) DRILLING DATA PLOT 1:1000

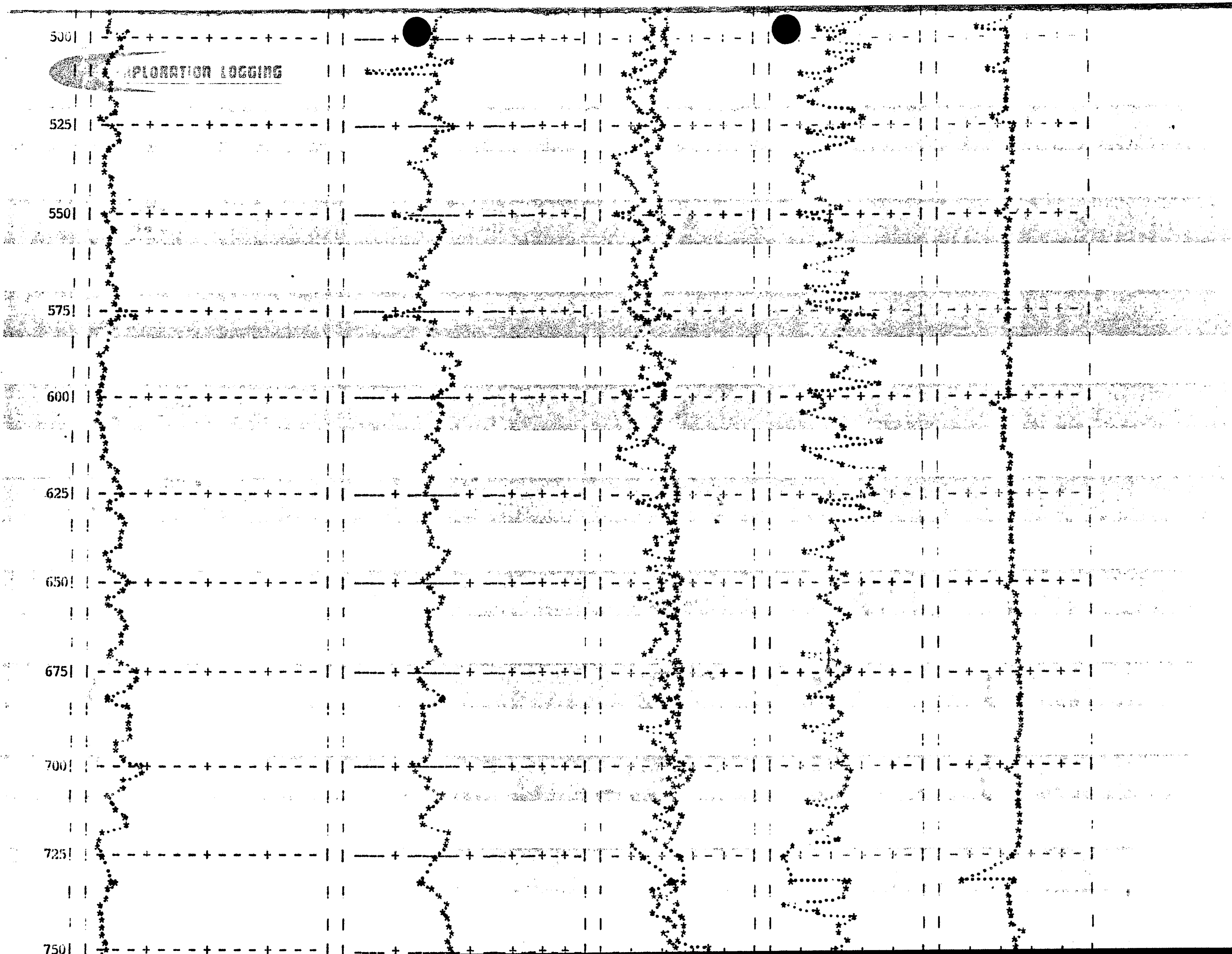
(a) ROP, Dxc, Torque, WOB, RPM

EXPLORATION LOGGING

ESSO AUSTRALIA - FORTESCUE No. 2 - NOVEMBER 1978

OFFLINE PLOT: SCALE OF 1 TO 1000





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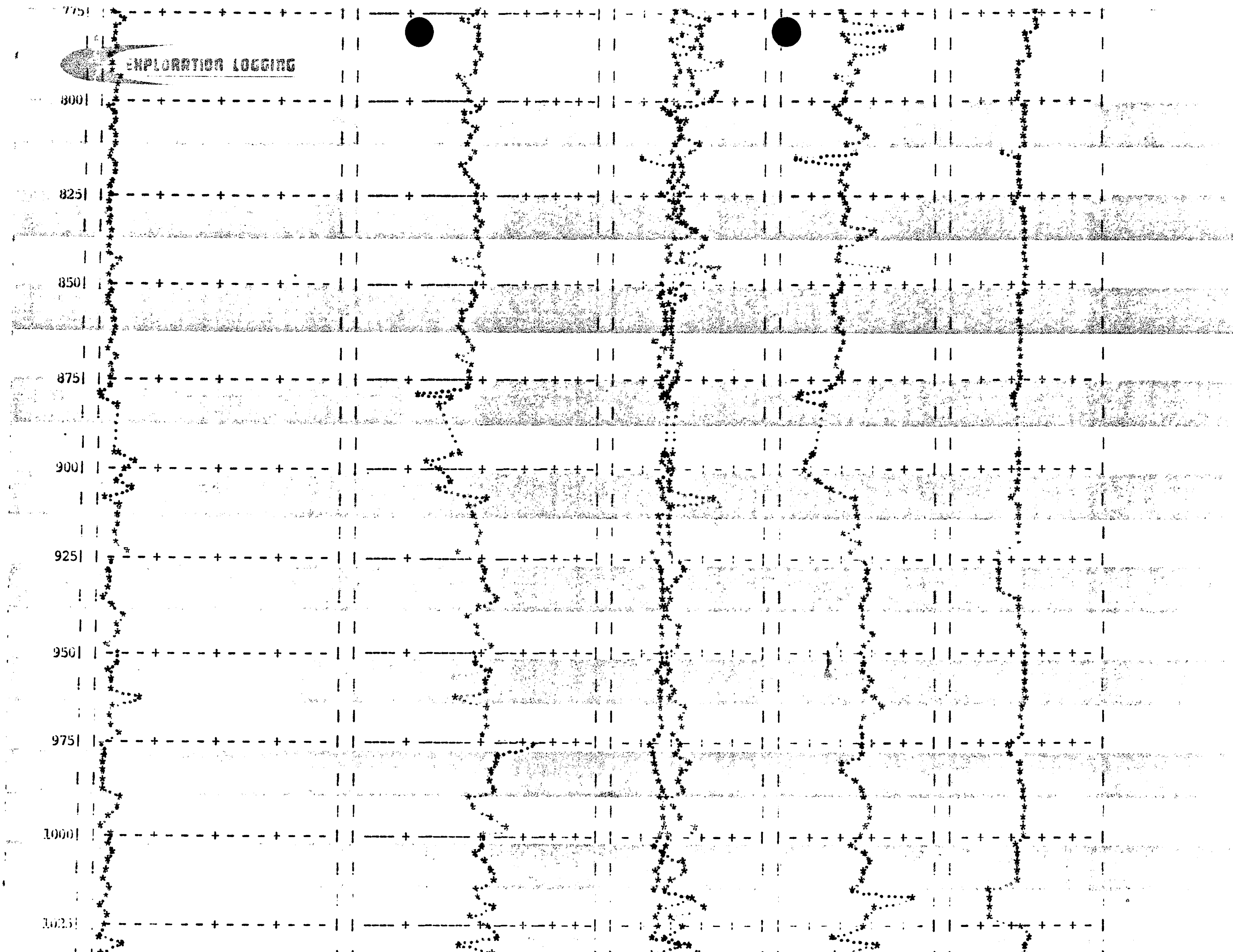
675
700
725
750
EXPLORATION LOGGING


775
EXPLORATION LOGGING
800
825
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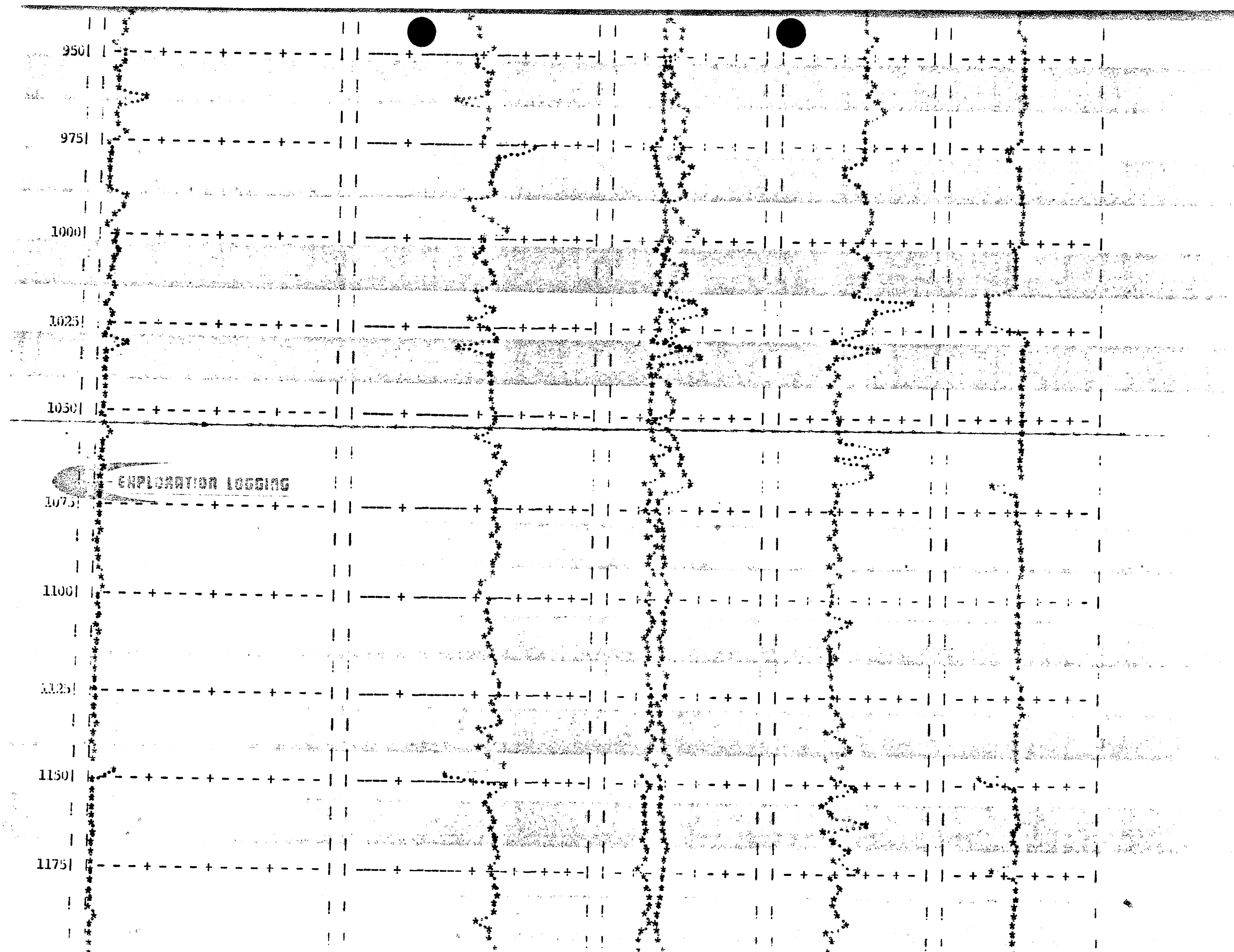
875
900
925
950
975
1000
1025



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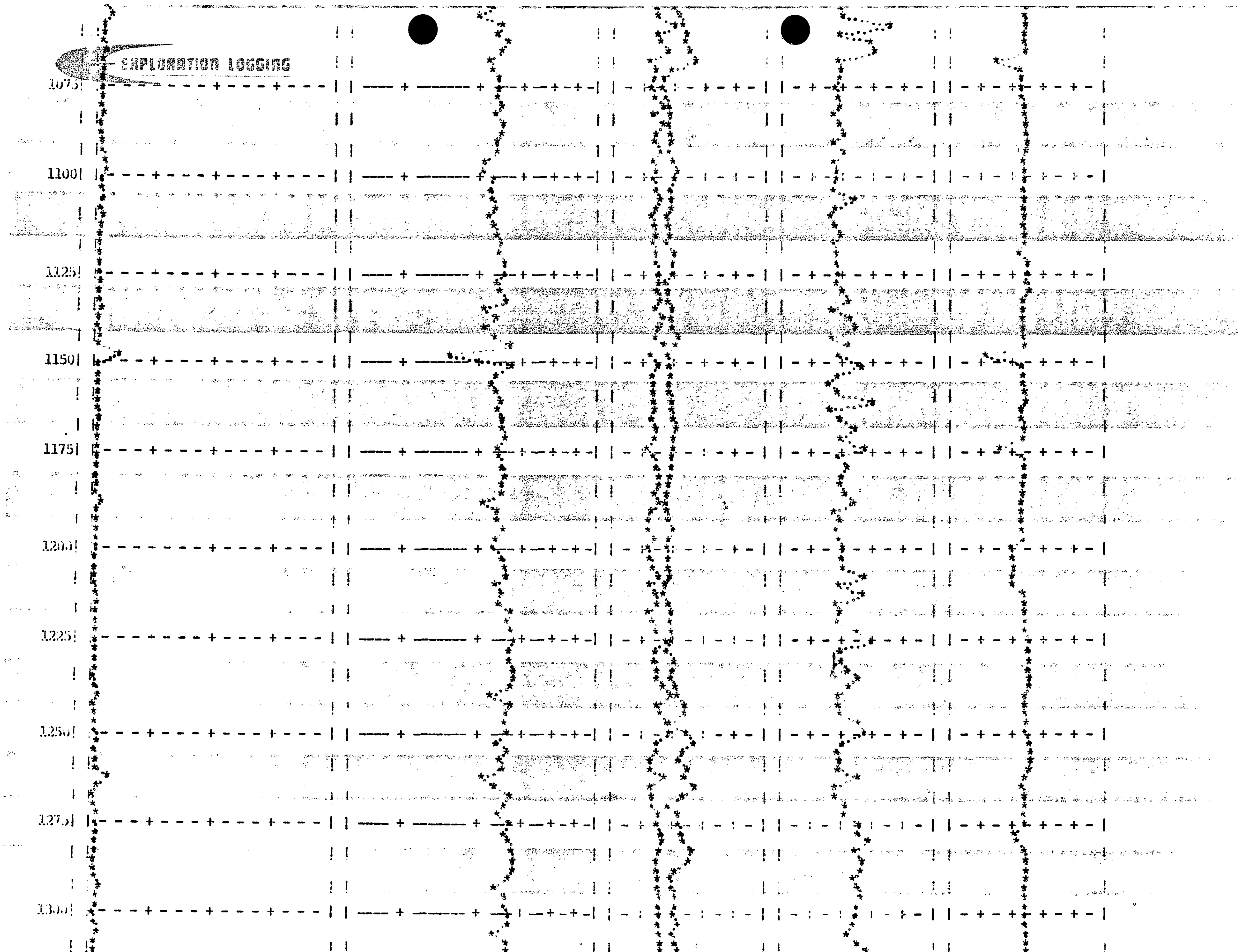
1150
1175
EXPLORATION LOGGING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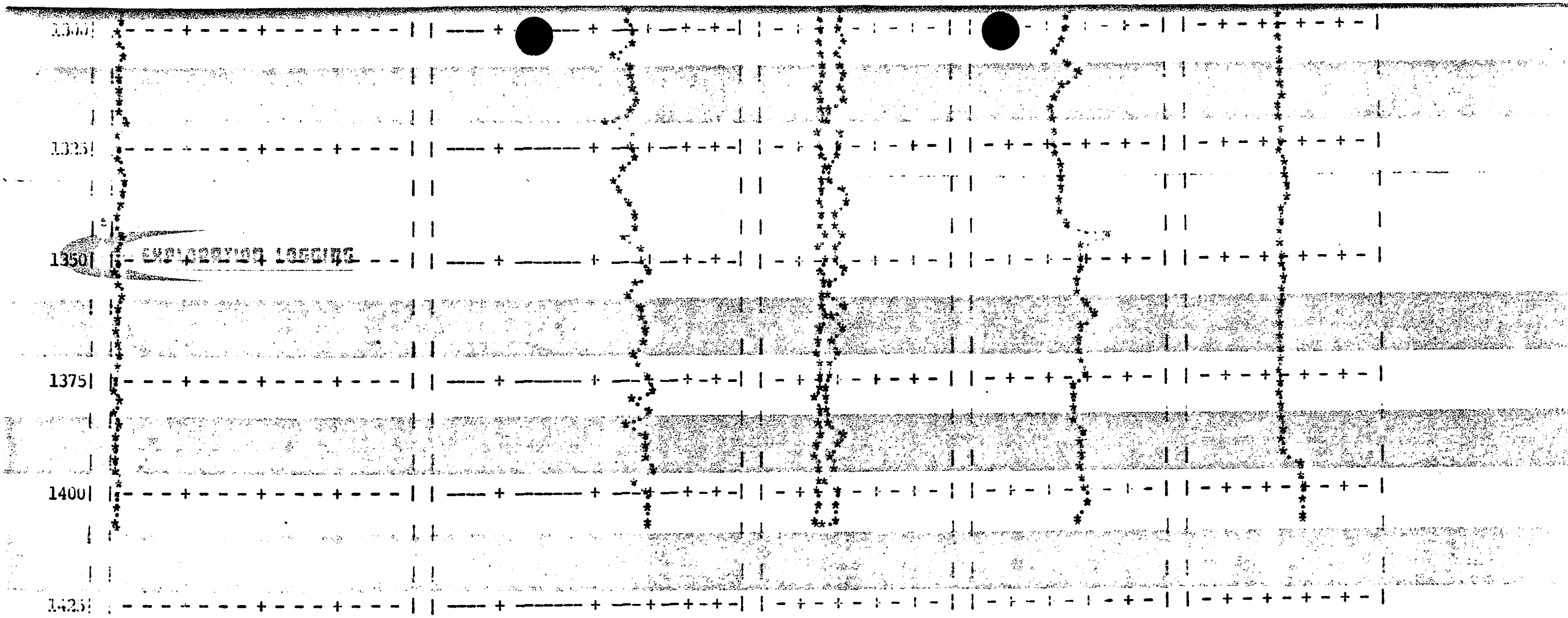
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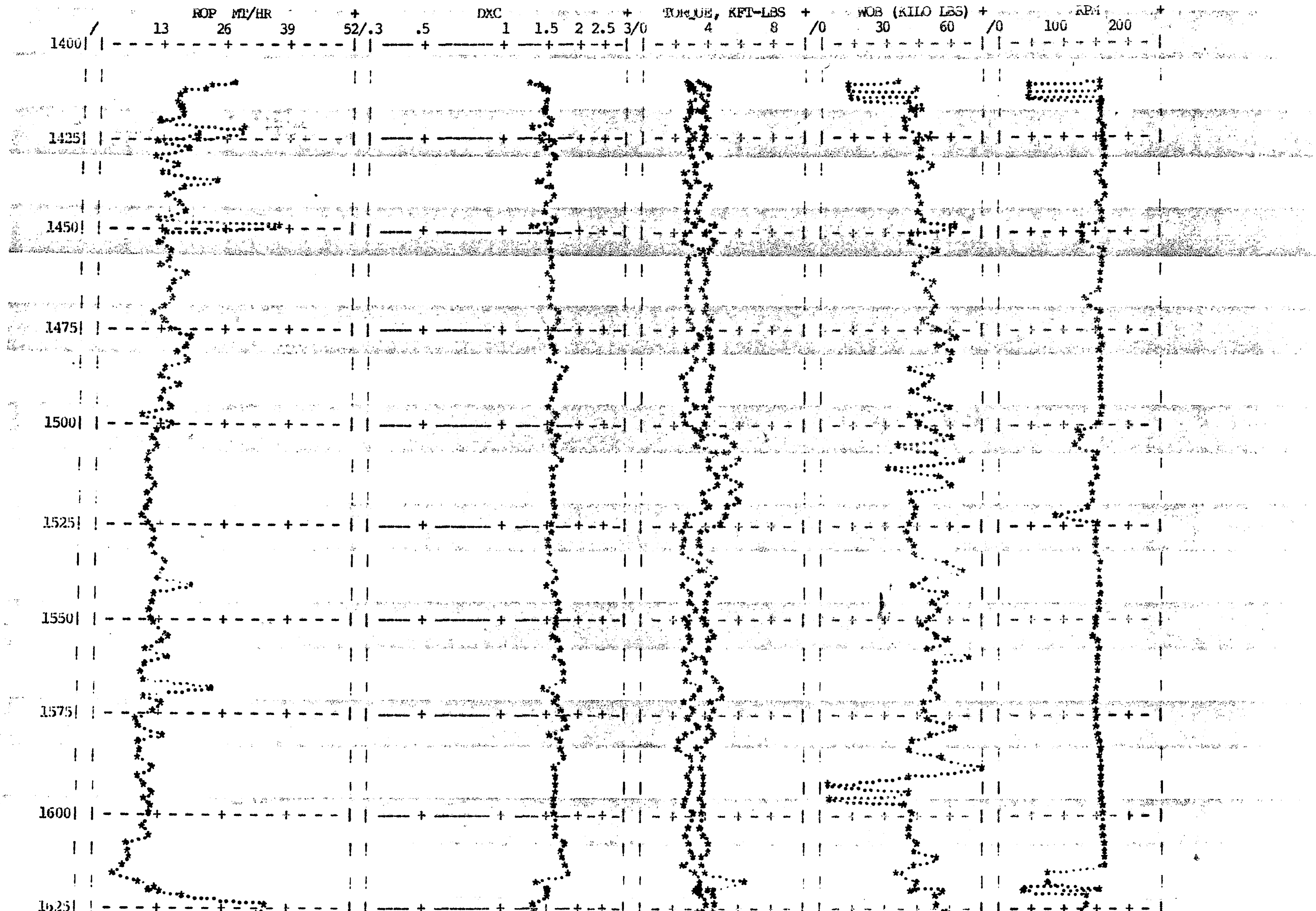
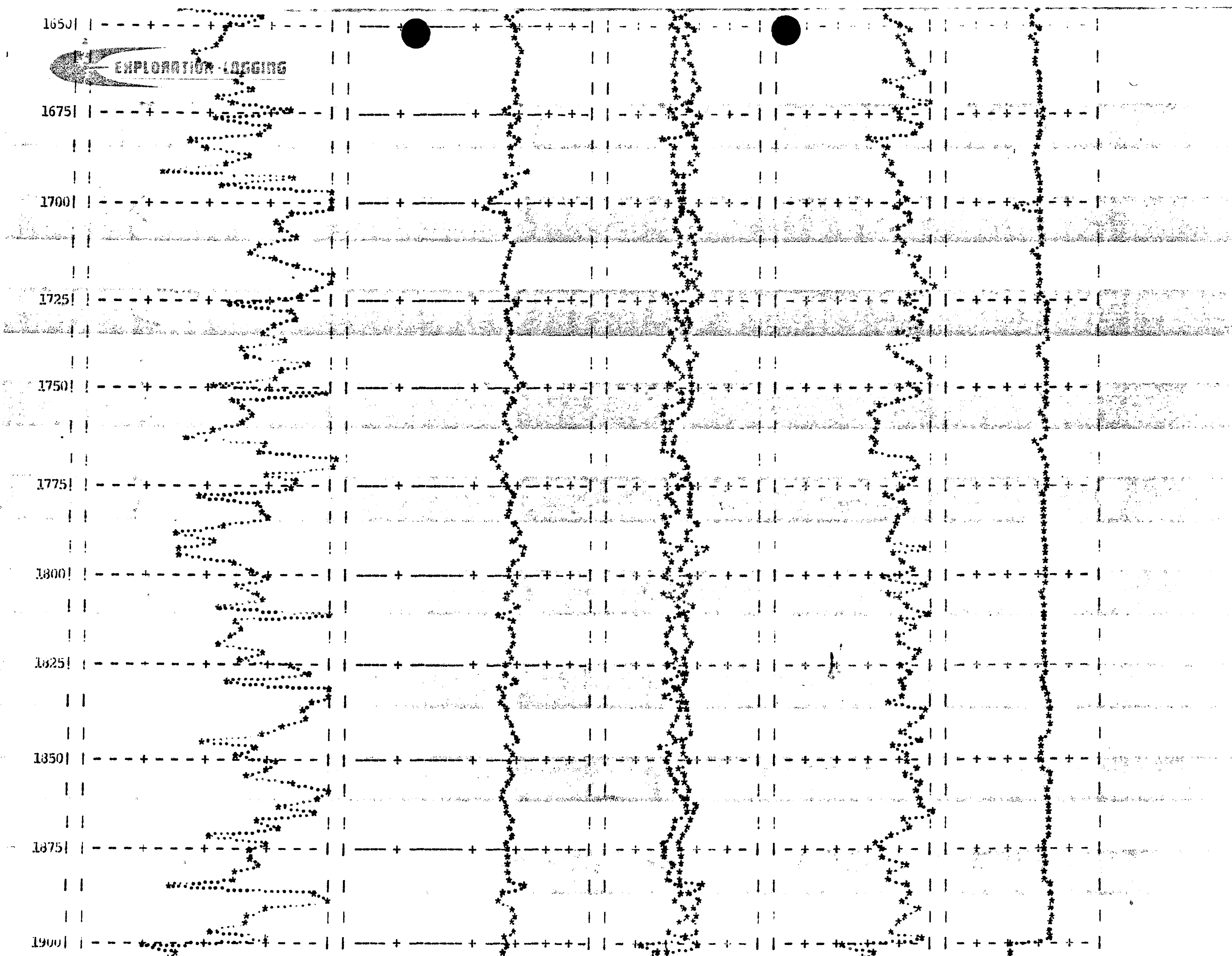
1425

OFFLINE PLOT: SCALE OF 1 TO 1000





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1850
1875
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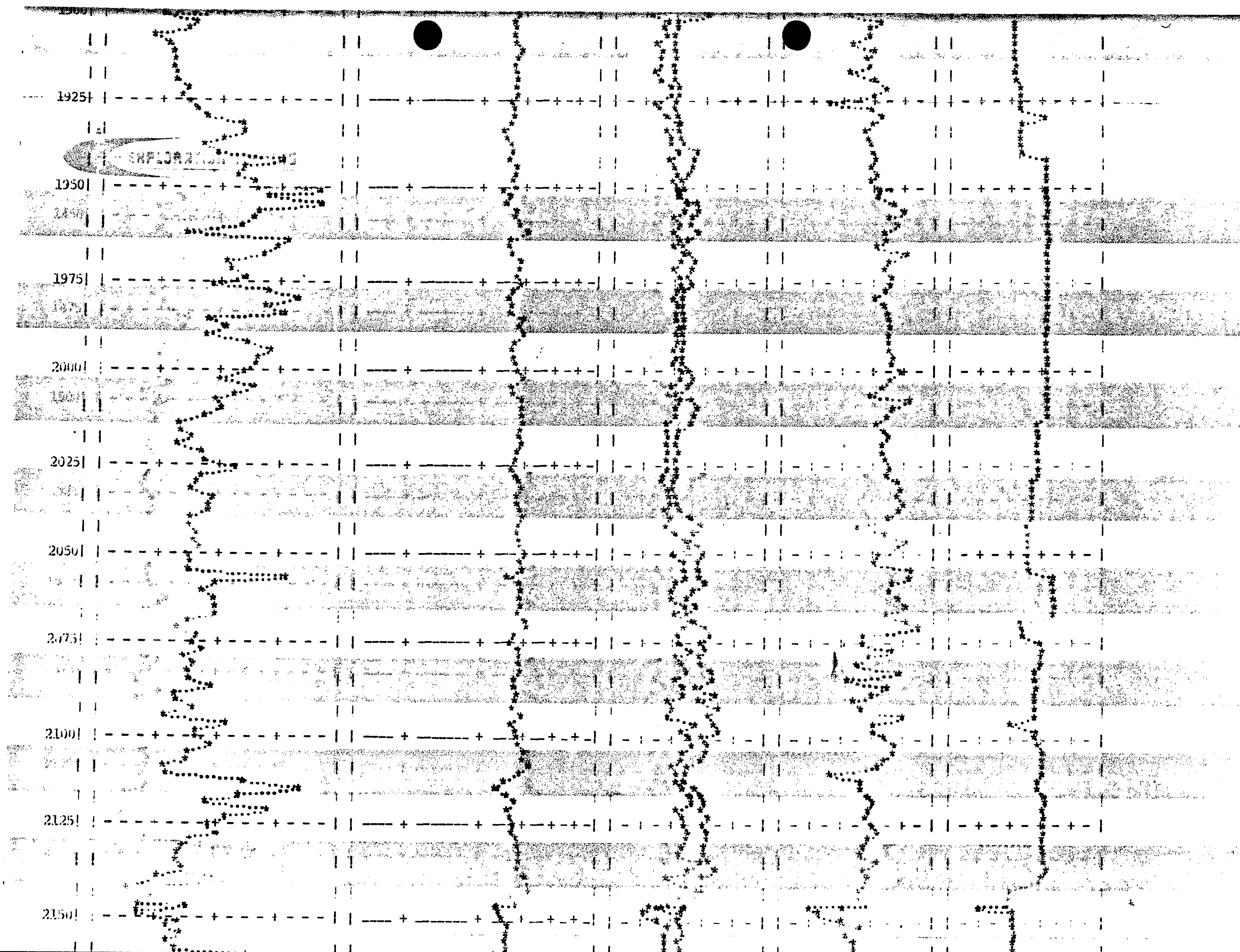

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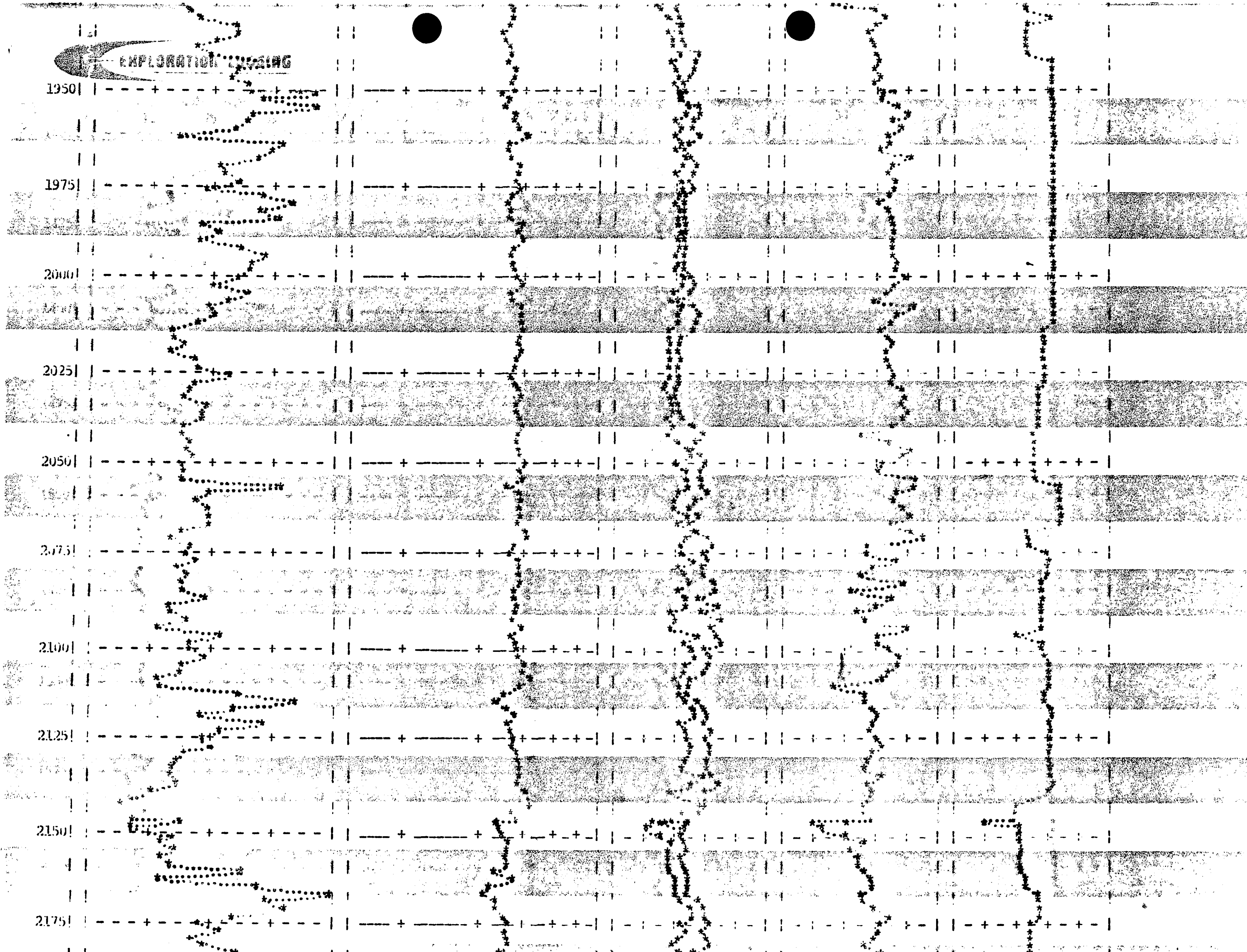
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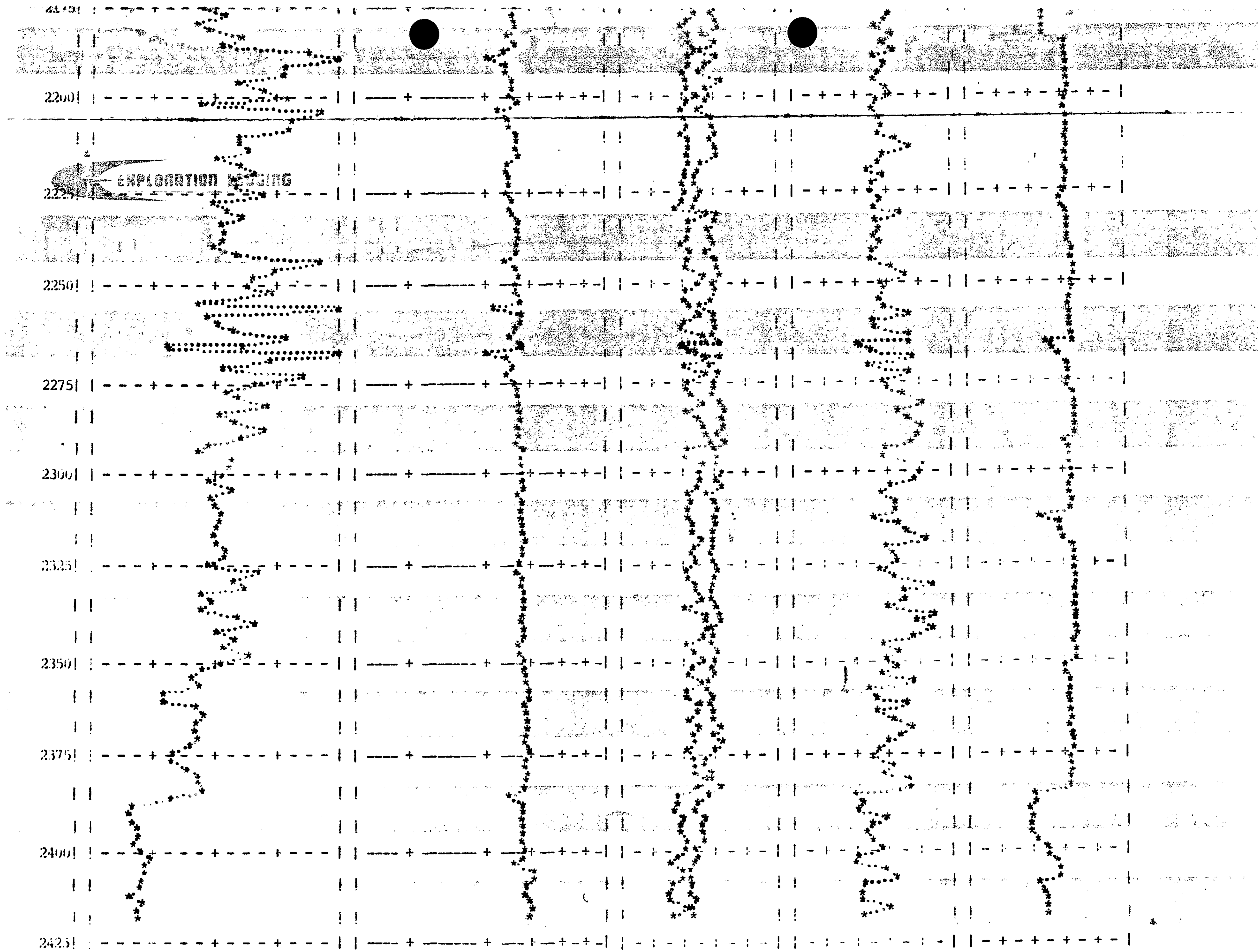

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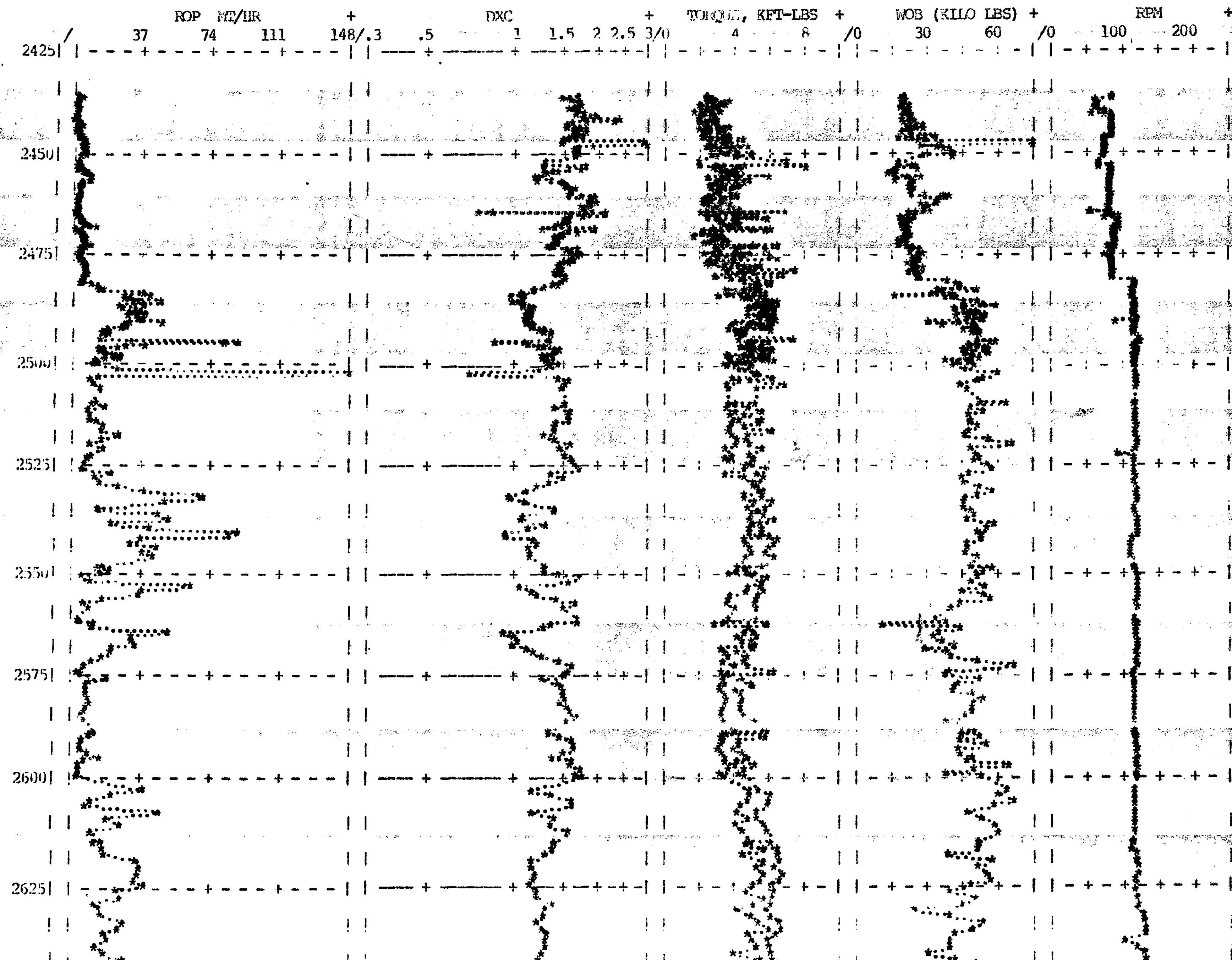
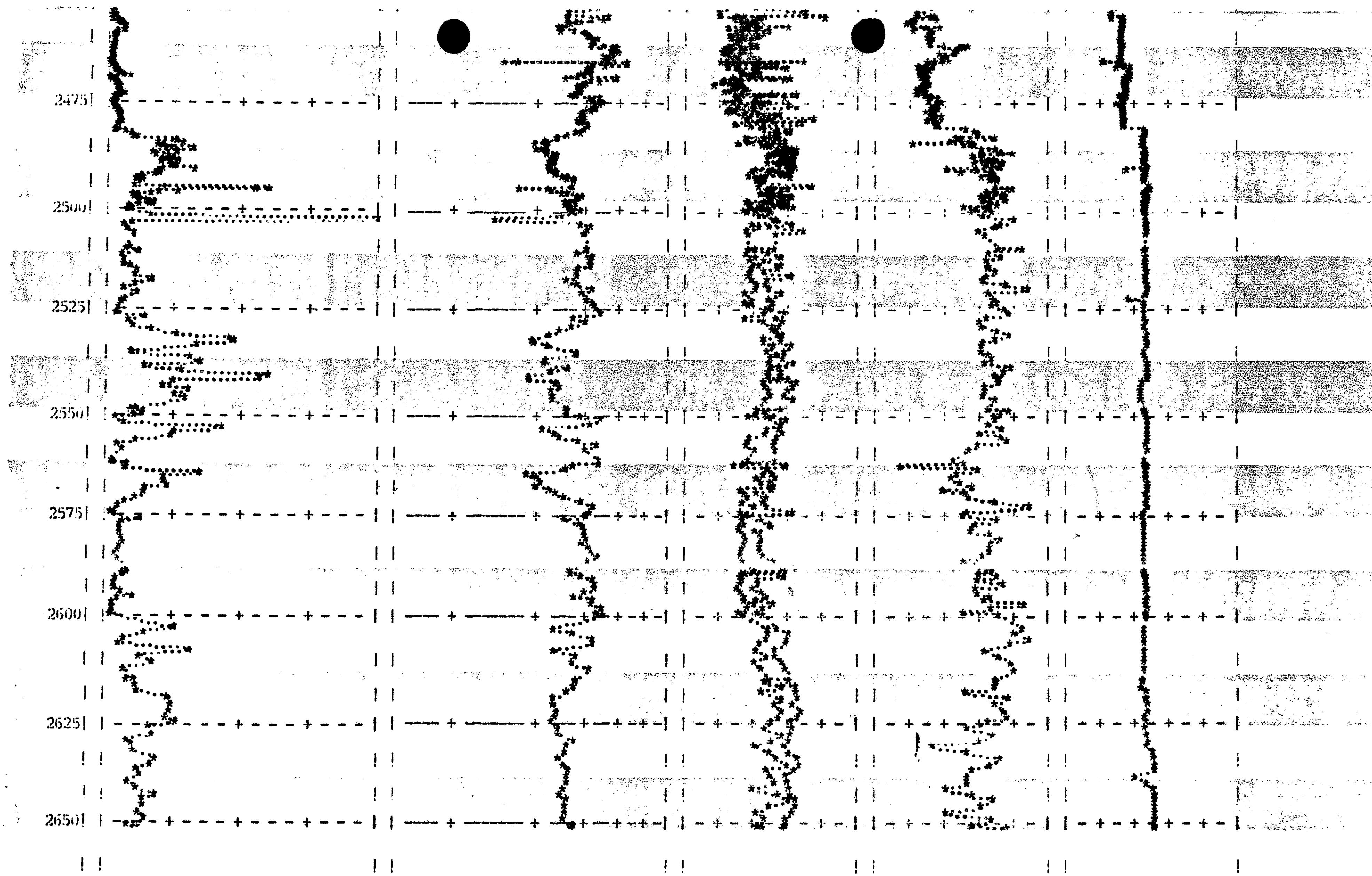
2300
2325
2350
2375
2400
2425

EXPLORATION LOGGING @ X mNf@

OFFLINE PLOT: SCALE OF 1 TO 1000

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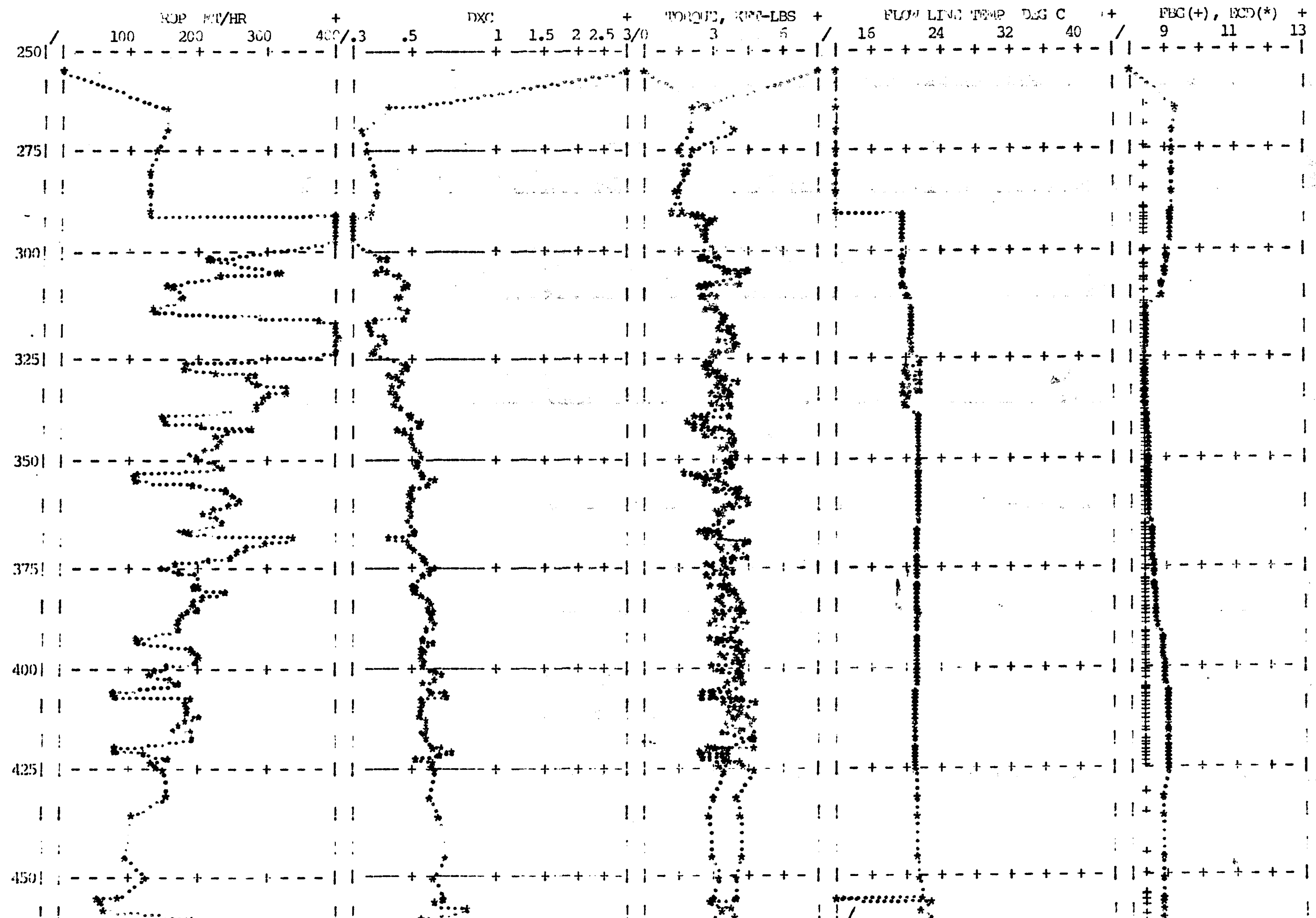
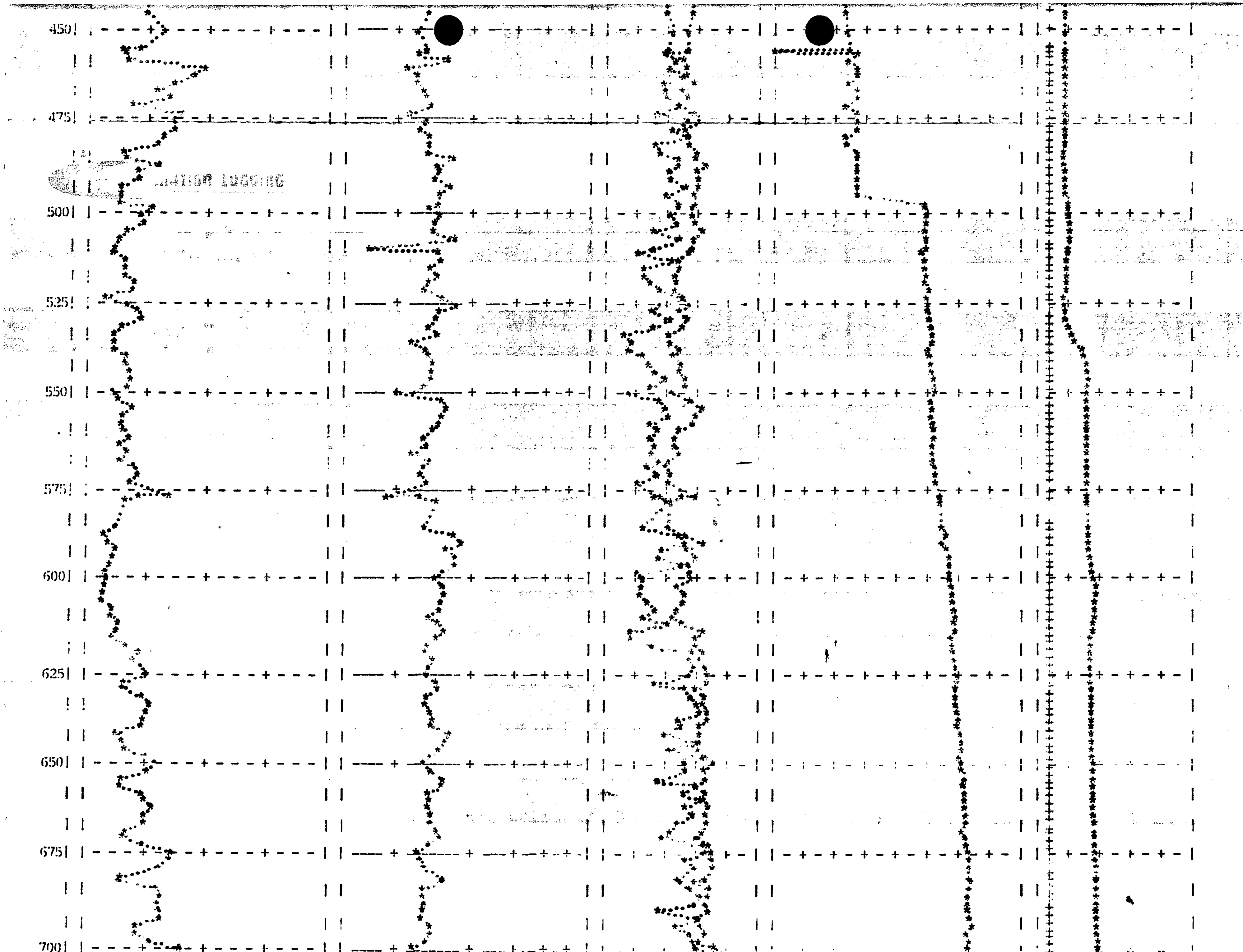
2525
2550
2575
2600
2625
2650

(iii) DRILLING DATA PLOT 1:1000

(b) ROP, Dxc, Torque, Flowline Temp, Pore Pressure, ECD y@ X

OFFLINE PLOT: SCALE OF 1 TO 1000





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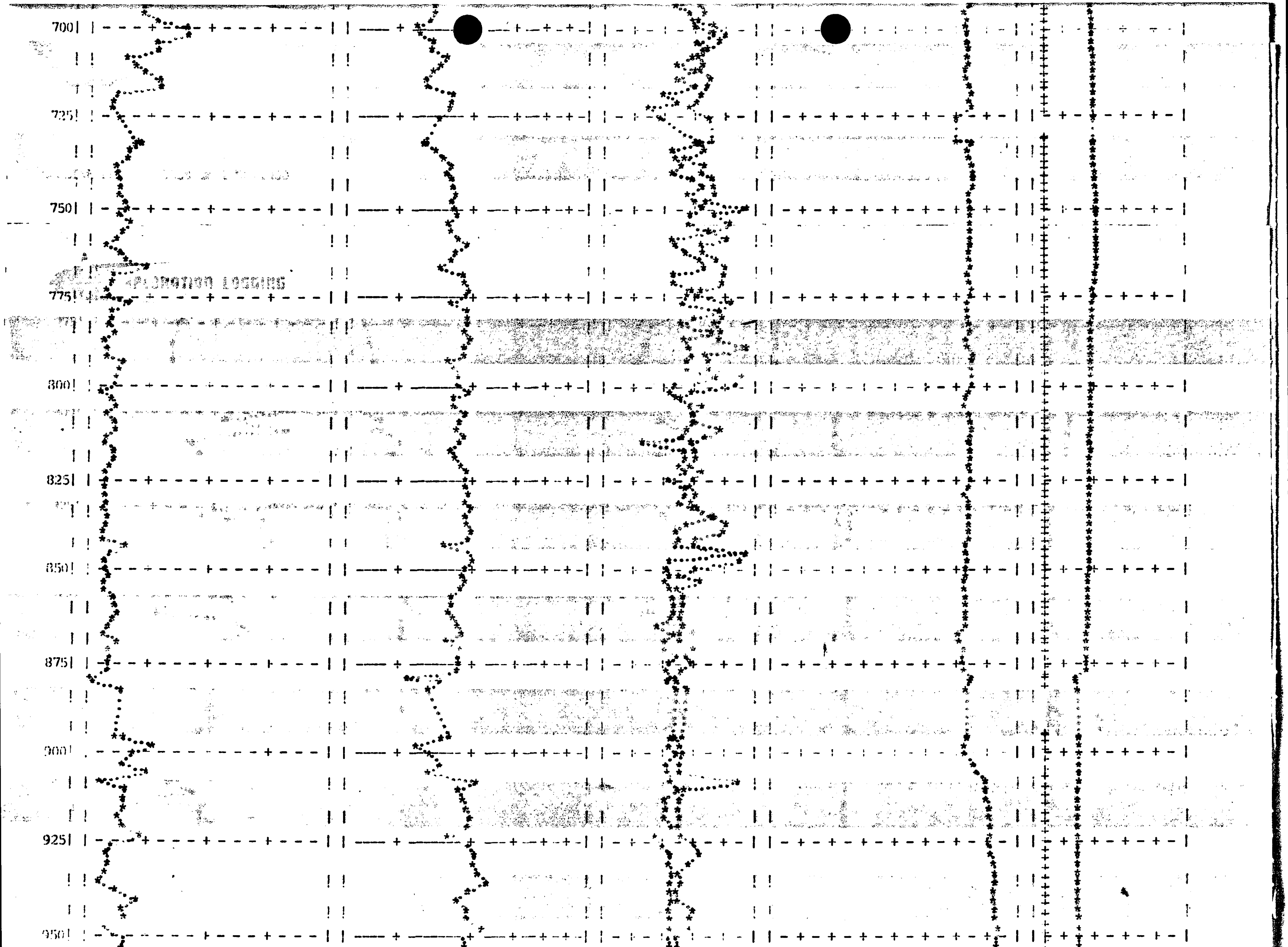
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PLORATION LOGGING
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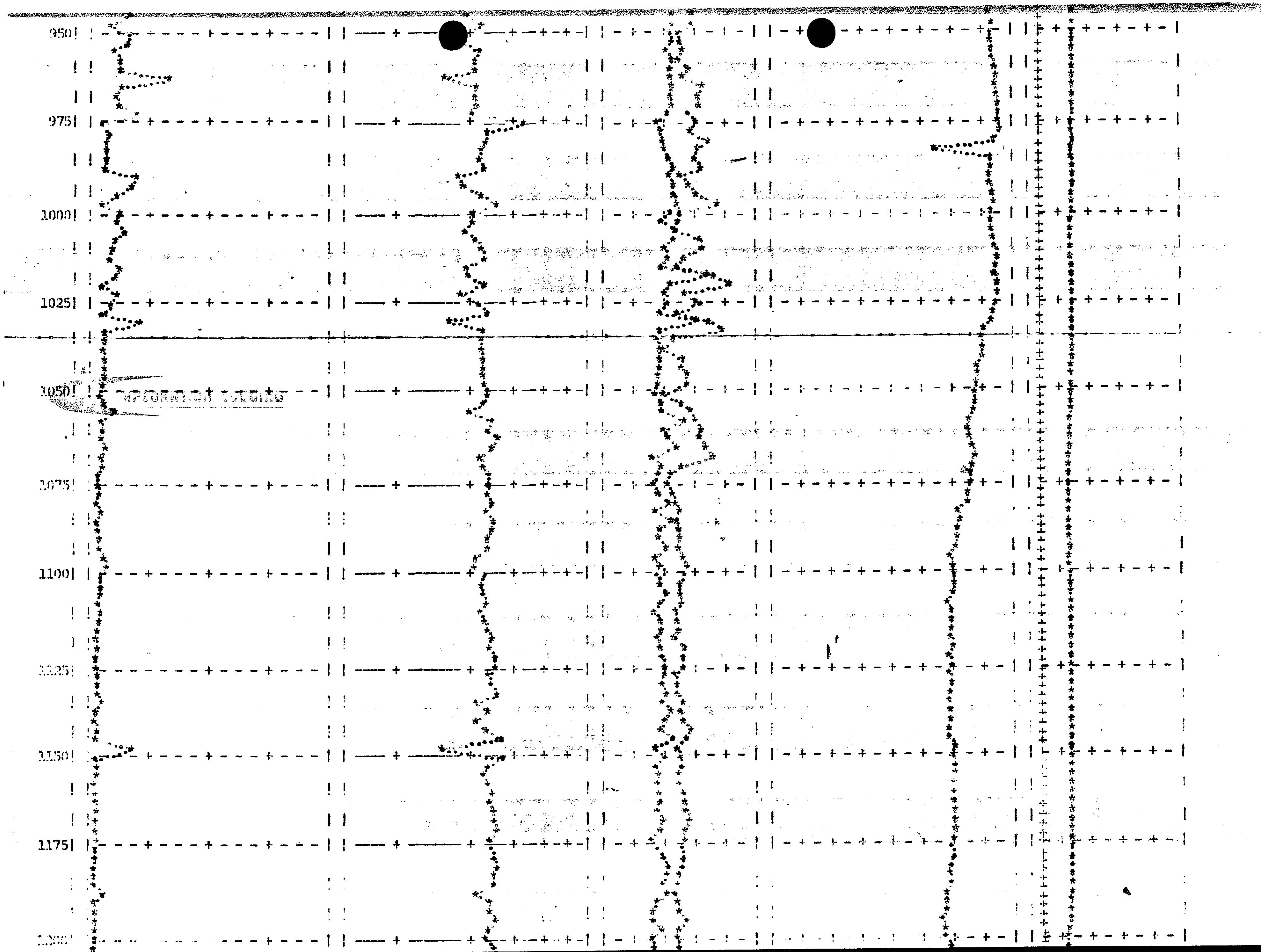
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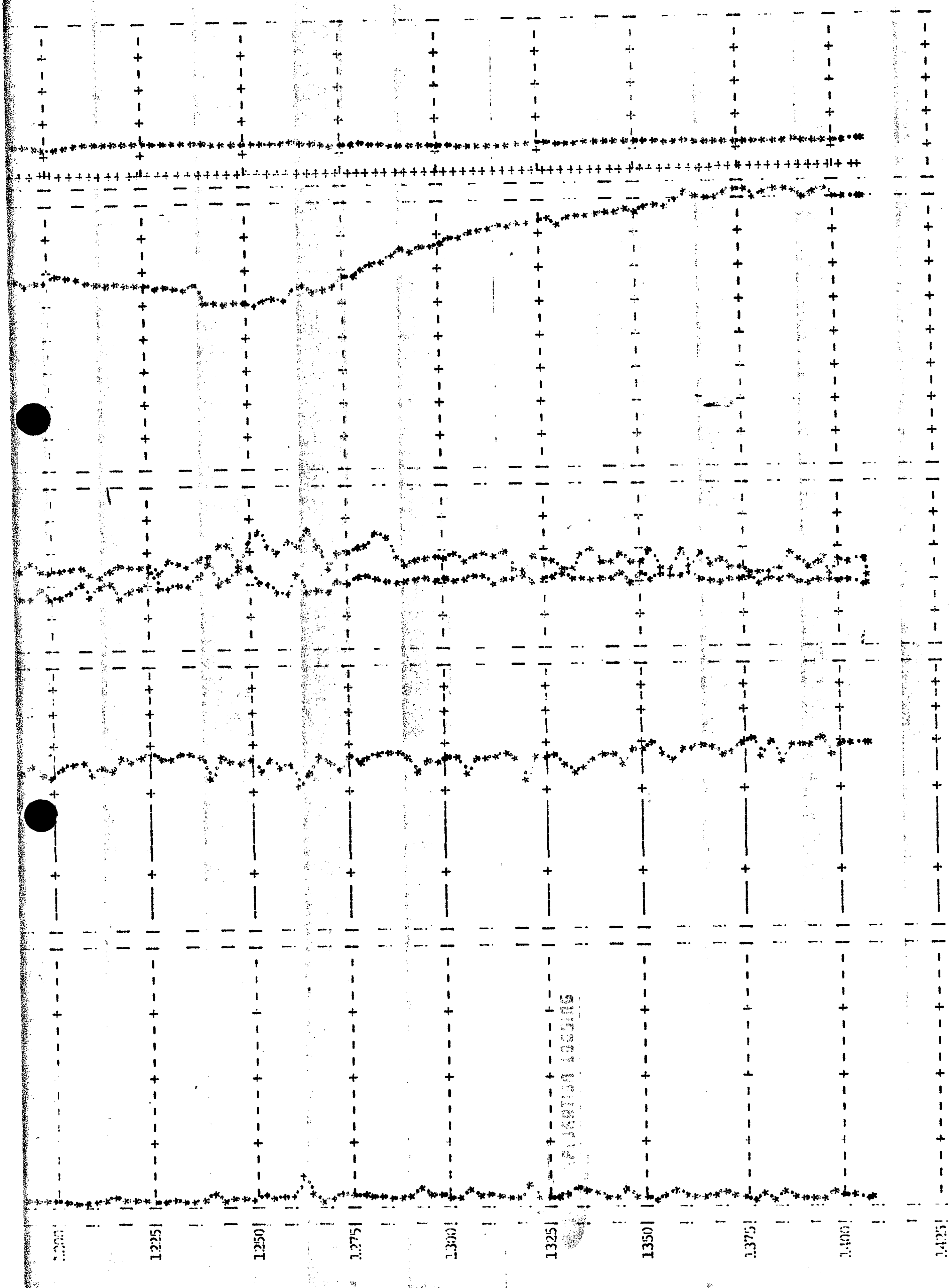

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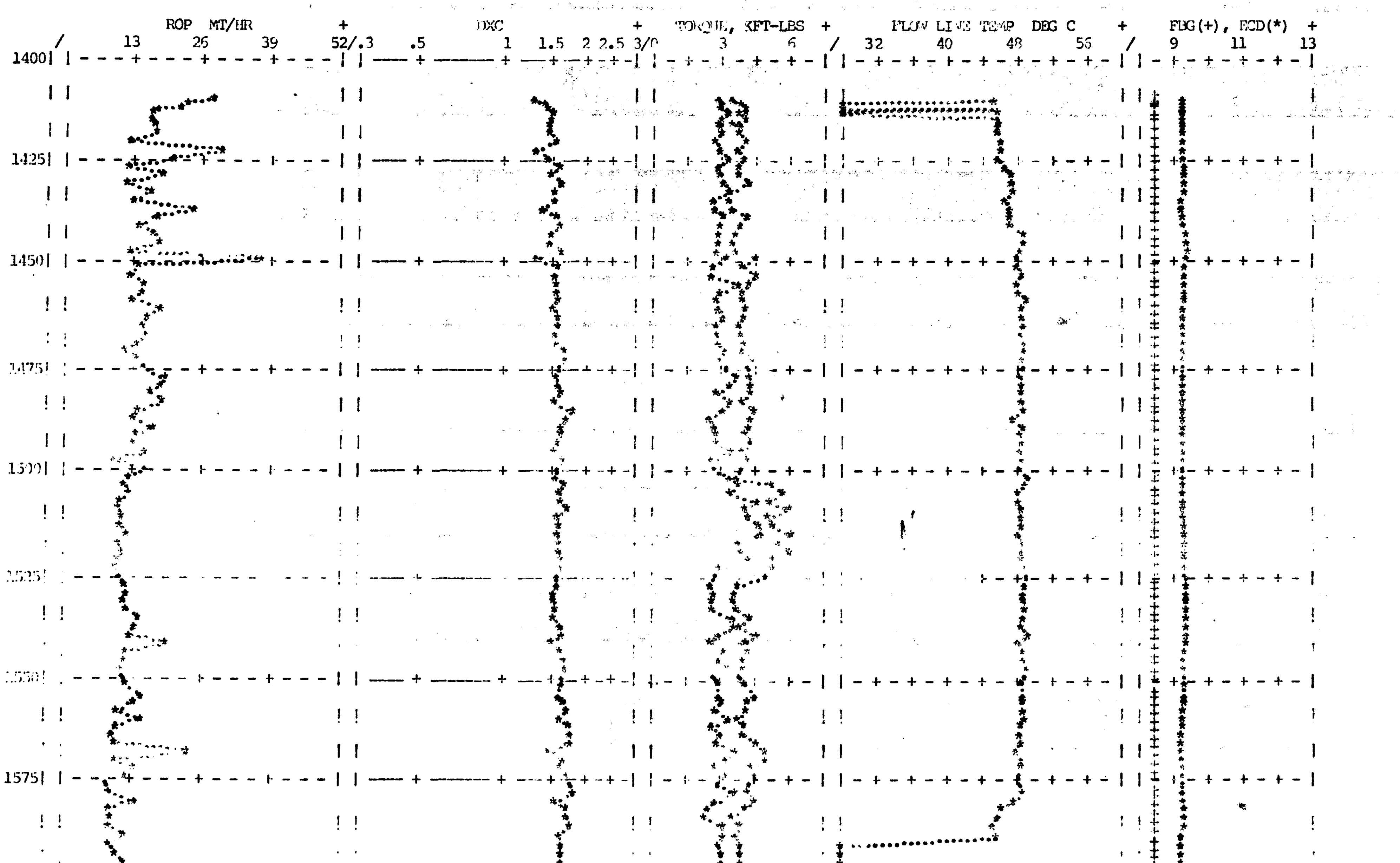
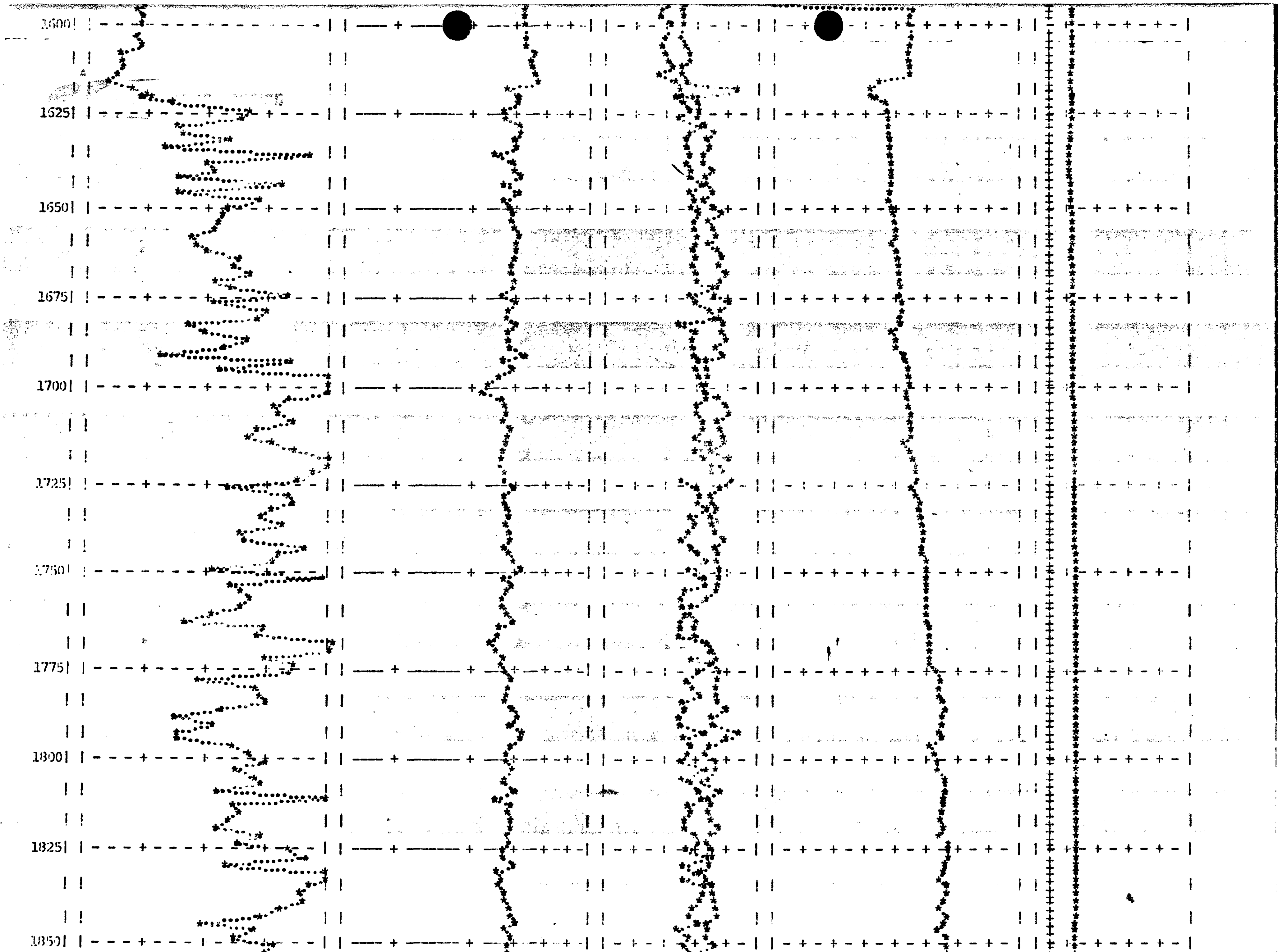
EXPLORATION LOGGING

OFFLINE PLOT: SCALE OF 1 TO 1000





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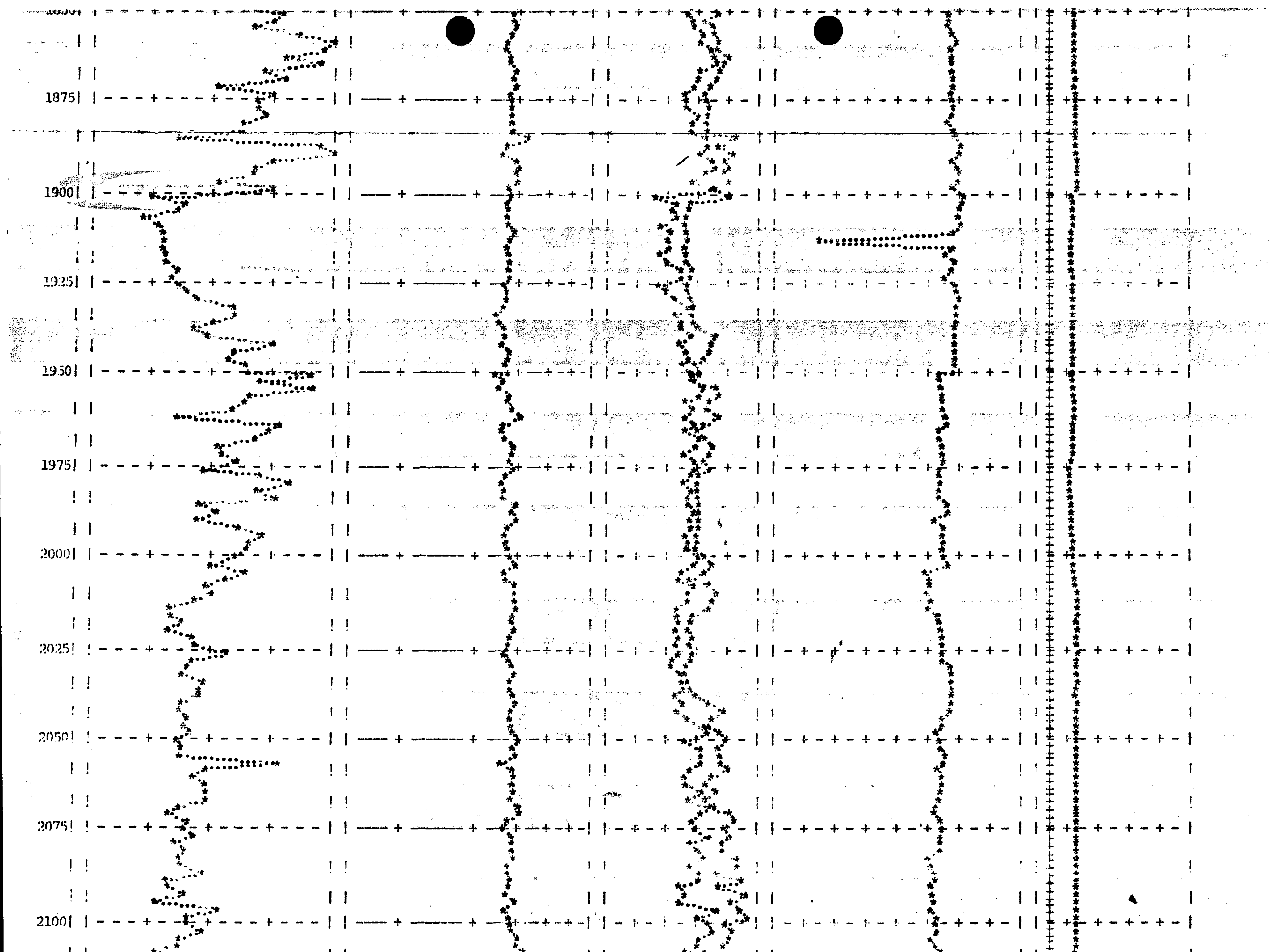

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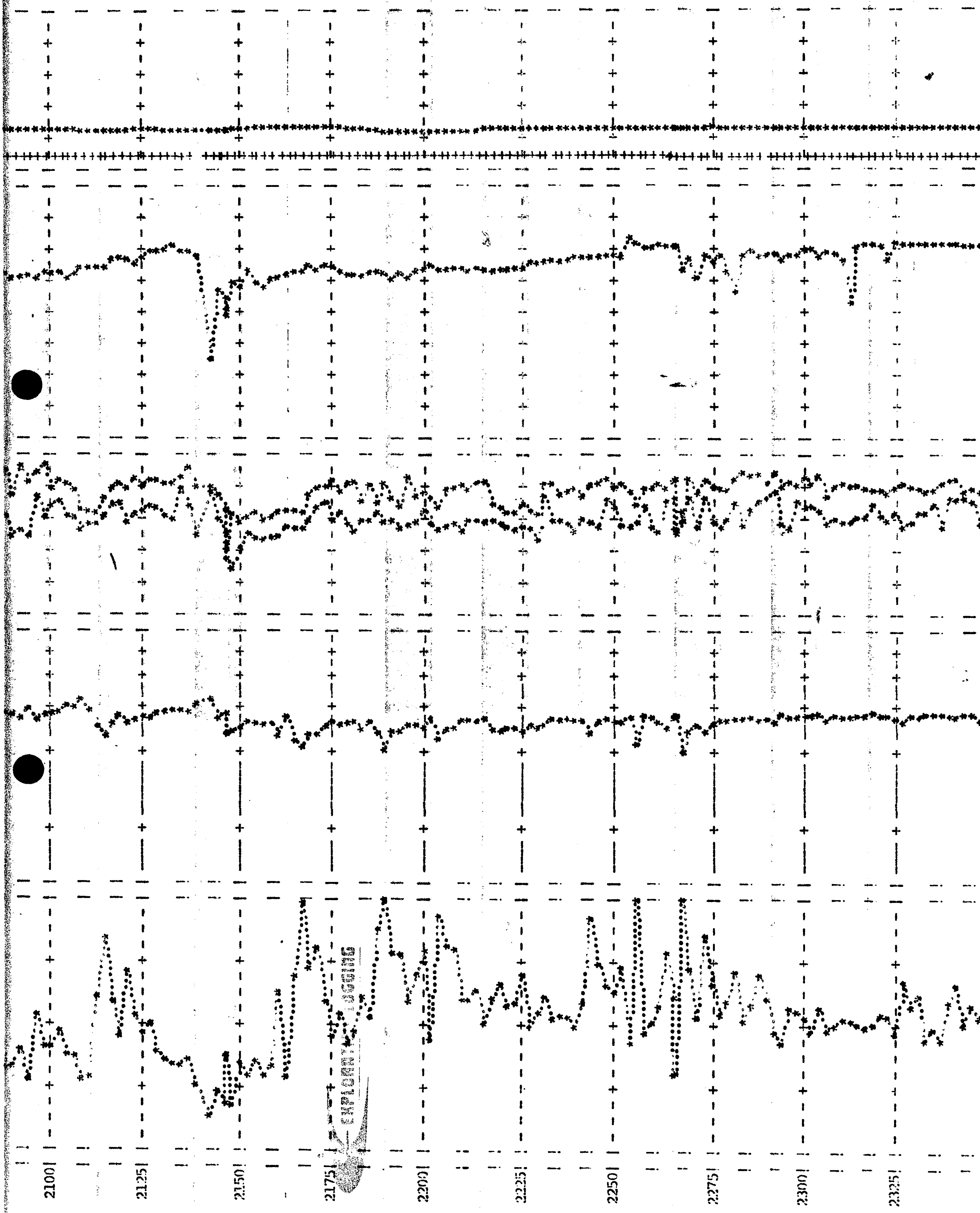
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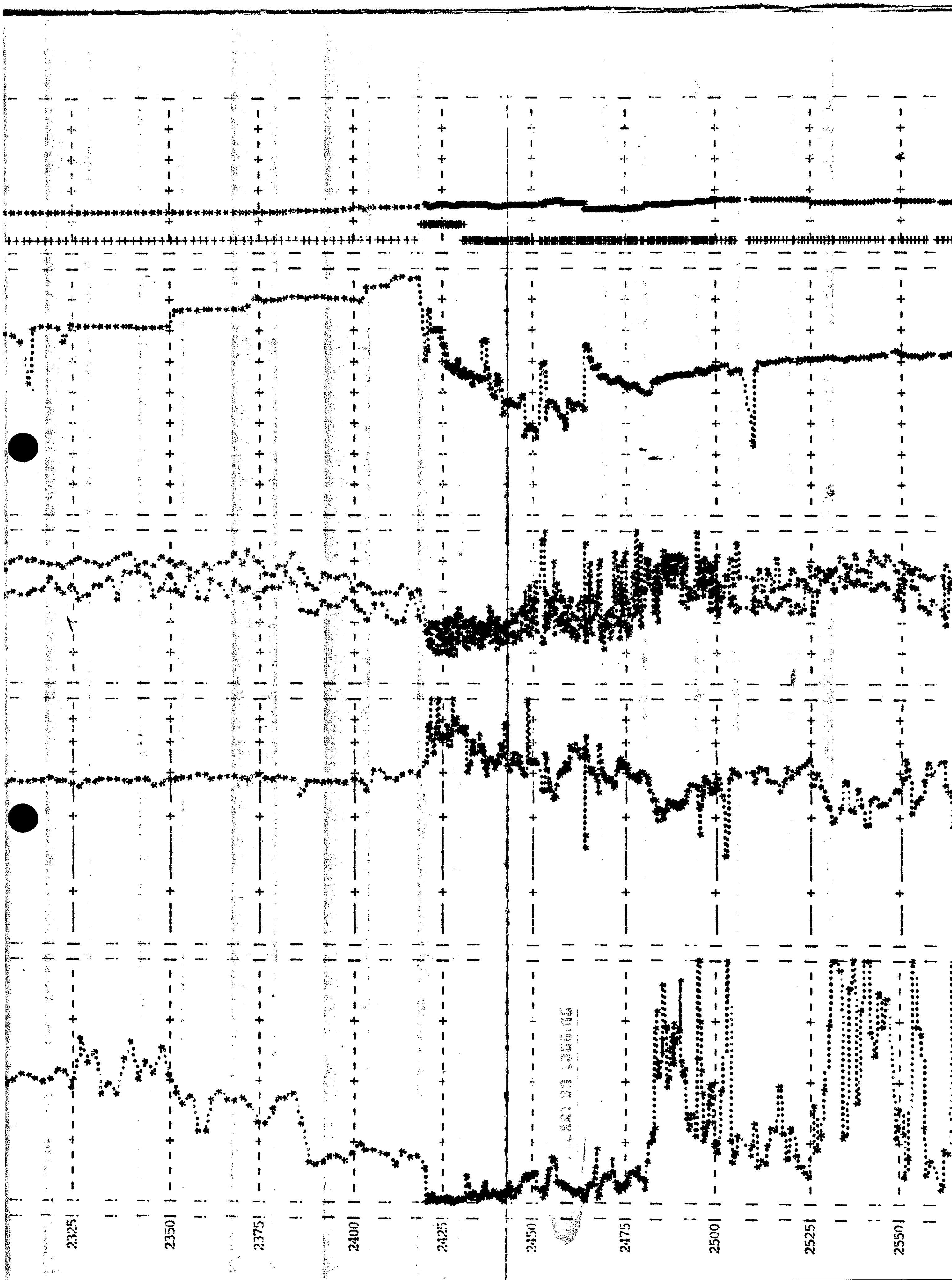
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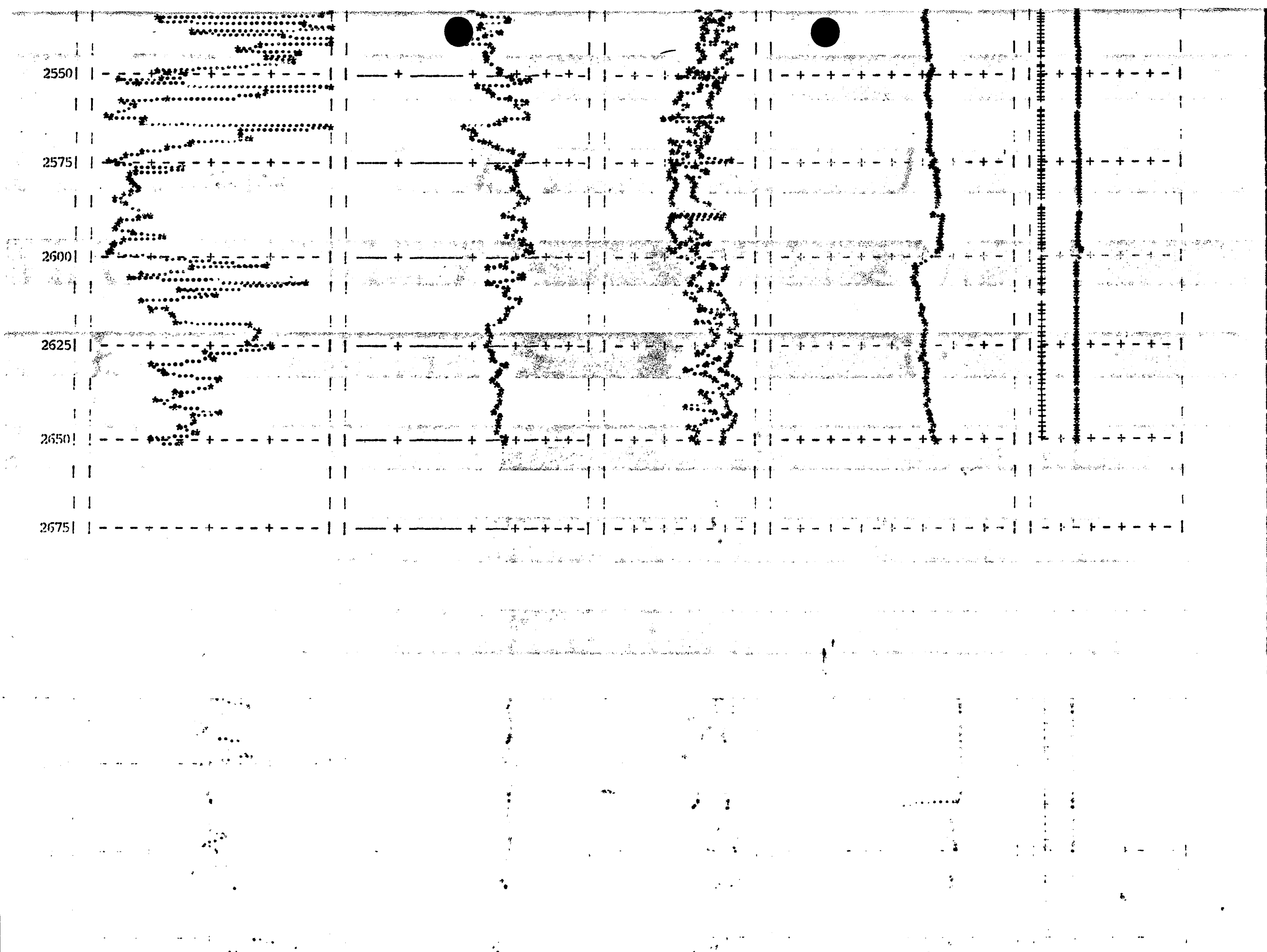
2550
2575
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2650
2675

A P P E N D I X   E

MORNING AND WEEKLY REPORTS

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: ESSO AUSTRALIA
WELL NAME: FORTESCUE No2.
DATE: 7. NOV. 1978 TIME: 0600
DEPTH: 2017M LAST REPORT DEPTH: 1615M

DRILL RATE	20 m/HR average	SPM	61
CORRECTED D EXPONENT	1·37@ 1920M 1·48@2015M	GPM	~~1025~~ 525
FLOWLINE TEMPERATURE	49·7°C	DP AN VEL	95·9 FT/MIN
SHALE DENSITY	–	DC AN VEL	143 FT/MIN
SHALE FACTOR	–	CRITICAL VEL	280·6 FT/MIN
MAX. FORMATION GAS	8 units @ 1790M	PRESS(TOTAL)	1174 PSI
BACKGROUND GAS	4 units to 3units	PRESS(BIT)	3167 PSI
CONNECTION GAS	nil	PRESS(SYSTEM)	1025PSI
TRIP GAS	12 units @ 1615m.	BIT NOZ VEL	226 FT/SEC
LITHOLOGY:	CALCAREOUS MUDSTONE / CALCISILTITE.	HOLE VOL	1083 BBl
		AN. VOL	901 BBl
		PIPE VOL	109 BBl
		PIPE DISPL.	74 BBl
		BIT TYPE	HTC X3A.
		JETS	3 x 18

MUD WT. IN	9·1 lb/GAl	PV/YP	12/12	AV. WOB	52000 lb
MUD WT. OUT	9·3 lb/GAl	CL-	3000	AV. RPM	158
ECD	9·2+ lb/GAl	% SOLIDS	10	AV. TORQUE	4500 FT lb

ESTIMATED PORE PRESS	8·5 lb/GAL	TIGHT HOLE	ON TRIP IN @ 1615M
MAX. ESTIMATED PORE PRESS IN OPEN HOLE	8·5	FILL	
ESTIMATED FRACTURE PRESS	15·7 lb/GAl	Δ LAG	–
MIN. EST. FRAC. PRESS. IN OPEN HOLE	14·0 lb/GAl	EST. % CAVINGS	–

COMMENTS:

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY ESSO AUSTRALIA

WELL NAME FORTESCUE # 2

DATE 6. NOV. 1978 TIME 0600

DEPTH 1615 LAST REPORT DEPTH 1374

DRILL RATE	8
CORRECTED D EXPONENT	1.58 @ 1515m 1.82 @ 1615m
FLOWLINE TEMPERATURE	49.9 °C
SHALE DENSITY	-
SHALE FACTOR	-
MAX. FORMATION GAS	40 units @ 1564
BACKGROUND GAS	4 units
CONNECTION GAS	nil
TRIP GAS	-
LITHOLOGY:	CALCILUTITE.

SPM	108
GPM	930
DP AN VEL	182.3 FT/MIN
DC AN VEL	253.3 FT/MIN
CRITICAL VEL	332.4 FT/MIN
PRESS(TOTAL)	2891 PSI
PRESS(BIT)	2554 PSI
PRESS(SYSTEM)	2760 PSI
BIT NOZ VEL	400 FT/SEC
HOLE VOL	891
AN. VOL	744
PIPE VOL	89
PIPE DISPL.	64
BIT TYPE	HTC X3A
JETS	3×18

MUD WT. IN	9.1	PV/YP	8/13
MUD WT. OUT	9.3	CL-	600
ECD	9.3	% SOLIDS	6

AV. WOB	40
AV. RPM	158
AV. TORQUE	4000

ESTIMATED PORE PRESS	8.5 lb/gal
MAX. ESTIMATED PORE PRESS IN OPEN HOLE	8.5
ESTIMATED FRACTURE PRESS	15.7 lb/gal
MIN. EST. FRAC. PRESS. IN OPEN HOLE	14.0 lb/gal

TIGHT HOLE	-
FILL	-
Δ LAG	+ 120 STROKES
EST. % CAVINGS	-

COMMENTS:

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: ESSO AUSTRALIA

WELL NAME: FORTESCUE No. 2

DATE: 5.th NOV. 1978 TIME: 0600

DEPTH: 1374 M LAST REPORT DEPTH: 1135 M

DRILL RATE	15 M/HR average.
CORRECTED D EXPONENT	1.27 @ 1260 M 1.45 @ 1365 M
FLOWLINE TEMPERATURE	45.2 °C
SHALE DENSITY	–
SHALE FACTOR	–
MAX. FORMATION GAS	16 units @ 1135 M
BACKGROUND GAS	5 To 8 units
CONNECTION GAS	nil
TRIP GAS	60 units @ 1237 M
LITHOLOGY:	CALCISILTITE.

SPM	110
GPM	950
DP AN VEL	186.2 FT/MIN
DC AN VEL	258.7 FT/MIN
CRITICAL VEL	293.1 FT/MIN
PRESS (TOTAL)	2656 PSI
PRESS (BIT)	2160 PSI
PRESS (SYSTEM)	2730 PSI
BIT NOZ VEL	409 FT/SEC
HOLE VOL	777 BBl
AN. VOL	649 BBl
PIPE VOL	74 BBl
PIPE DISPL.	56 BBl
BIT TYPE	#4. HTC X3A
JETS	3×18.

MUD WT. IN	9.1 lb/GAl	PV/YP	7/14
MUD WT. OUT	9.2 lb/GAl	CL-	8600
ECD	9.2 lb/GAl	% SOLIDS	7

Av. WOB	38000 lb
Av. RPM	121
Av. TORQUE	3800 FT lb
TIGHT HOLE	–
FILL	–
Δ LAG	–
EST. % CAVINGS	–

ESTIMATED PORE PRESS: 8.5 lb/GAl

MAX. ESTIMATED PORE PRESS IN OPEN HOLE: 8.5

ESTIMATED FRACTURE PRESS: 15.7 lb/GAl

MIN. EST. FRAC. PRESS. IN OPEN HOLE: 14.0 lb/GAl

COMMENTS:

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: ESSO AUSTRALIA
WELL NAME: FORTESCUE #2
DATE: 4. NOV. 1978 TIME: 0600
DEPTH: 1135m LAST REPORT DEPTH: 878m

DRILL RATE	15m/HR
CORRECTED D EXPONENT	1.14 @ 1020m ; 1.22 @ 1135m
FLOWLINE TEMPERATURE	36.1°C
SHALE DENSITY	-
SHALE FACTOR	-
MAX. FORMATION GAS	66 units @ 910m
BACKGROUND GAS	12-20 units
CONNECTION GAS	NIL
TRIP GAS	34 units @ 879m
LITHOLOGY:	CALCISILTITE

SPM	59
GPM	505
DP AN VEL	99 FT/MIN
DC AN VEL	137.5 FT/MIN
CRITICAL VEL	283.7 FT/MIN
PRESS (TOTAL)	849 PSI
PRESS (BIT)	1813 PSI
PRESS (SYSTEM)	850 PSI
BIT NOZ VEL	217 FT/SEC
HOLE VOL	668 BBl
AN. VOL	558 BBl
PIPE VOL	60 BBl
PIPE DISPL.	50 BBl
BIT TYPE	HTC X3A
JETS	3 x 18
AV. WOB	28000 lb
AV. RPM	120
AV. TORQUE	3500 FT lb
TIGHT HOLE	-
FILL	-
Δ LAG	- 150 STROKES
EST. % CAVINGS	-

MUD WT. IN	9.1+ lb/GAl	PV/YP	8/13
MUD WT. OUT	9.3 lb/GAl	CL-	8000
ECD	9.3 lb/GAl	% SOLIDS	7

ESTIMATED PORE PRESS: 8.5 lb/GAl
MAX. ESTIMATED PORE PRESS IN OPEN HOLE: 8.5
ESTIMATED FRACTURE PRESS: 15.7 lb/GAl
MIN. EST. FRAC. PRESS. IN OPEN HOLE: 14 lb/GAl

COMMENTS:

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY ESSO AUSTRALIA

WELL NAME FORTESCUE #2

DATE 2. NOV. 1978 TIME 0600

DEPTH 878M LAST REPORT DEPTH 390M

DRILL RATE	40M/HR AVE.
CORRECTED D EXPONENT	0.60 TO 0.94
FLOWLINE TEMPERATURE	36.9° C
SHALE DENSITY	–
SHALE FACTOR	–
MAX. FORMATION GAS	74 UNITS
BACKGROUND GAS	30 TO 40 UNITS
CONNECTION GAS	NIL
TRIP GAS	NO TRIPS
LITHOLOGY:	CALCARENITE TO 450M CALCISILTITE/CALCILUTITE TO 878M

SPM	120
GPM	1040
DP AN VEL	90.6 FT/MIN
DC AN VEL	103.5 FT/MIN
CRITICAL VEL	293.6 FT/MIN
PRESS (TOTAL)	2256 PSI
PRESS (BIT)	1396 PSI
PRESS (SYSTEM)	2320 PSI
BIT NOZ VEL	363 FT/SEC
HOLE VOL	928 BBl
AN. VOL	843 BBl
PIPE VOL	46 BBl
PIPE DISPL.	39 BBl
BIT TYPE	HTC OSC 3AJ
JETS	3×20
AV. WOB	29000 lb
AV. RPM	120
AV. TORQUE	4000 FT lb
TIGHT HOLE	–
FILL	–
Δ LAG	–
EST. % CAVINGS	–

MUD WT. IN	9.4 lb/GAl	PV/YP	7/15
MUD WT. OUT	10.0 lb/GAl	CL-	
ECD	9.8 lb/GAl	% SOLIDS	

ESTIMATED PORE PRESS 8.5 lb/GAl

MAX. ESTIMATED PORE PRESS IN OPEN HOLE 8.5

ESTIMATED FRACTURE PRESS –

MIN. EST. FRAC. PRESS. IN OPEN HOLE –

COMMENTS: DRILLING WITH SEAWATER/SOLIDS

BACKGROUND GAS INCREASED STEADILY FROM 3 UNITS AT 450M TO AN AVERAGE OF 40 UNITS AT 878M

POOH @ 878M TO RUN SCHLUMBERGER LOGS AND 13 3/8" CASING.

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY ESSO AUSTRALIA

WELL NAME FORTESCUE #2

DATE 1. NOV. 1978 TIME 0600

DEPTH 390 M LAST REPORT DEPTH —

DRILL RATE	180 M/HR AVE
CORRECTED D EXPONENT	0.47 TO 0.60
FLOWLINE TEMPERATURE	21.2°C
SHALE DENSITY	-
SHALE FACTOR	-
MAX. FORMATION GAS	10 UNITS
BACKGROUND GAS	3 TO 6 UNITS
CONNECTION GAS	NIL
TRIP GAS	NO TRIPS
LITHOLOGY:	CALCARENITE WITH MINOR CALCAREOUS SILTSTONE

SPM	119
GPM	1030
DP AN VEL	89.8 FT/MIN
DC AN VEL	102.6 FT/MIN
CRITICAL VEL	293.6 FT/MIN
PRESS(TOTAL)	1757 PSI
PRESS(BIT)	617 PSI
PRESS(SYSTEM)	2320 PSI
BIT NOZ VEL	359 FT/SEC
HOLE VOL	453 BBl
AN. VOL	407 BBl
PIPE VOL	29 BBl
PIPE DISPL.	17 BBl
BIT TYPE	HTC OSC 3AJ
JETS	3 x 20
AV. WOB	25000 lb
AV. RPM	120
AV. TORQUE	3500 FT lb
TIGHT HOLE	-
FILL	-
Δ LAG	-
EST. % CAVINGS	-

MUD WT. IN	8.5 To 9.3 lb/GAl	PV/YP	7/15
MUD WT. OUT	8.6 To 9.4 lb/GAl	CL-	-
ECD	9.2 lb/GAl	% SOLIDS	-

ESTIMATED PORE PRESS 8.5 lb/GAl

MAX. ESTIMATED PORE PRESS IN OPEN HOLE 8.5

ESTIMATED FRACTURE PRESS —

MIN. EST. FRAC. PRESS. IN OPEN HOLE —

COMMENTS: Drilling with SEAWATER/Solids.

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: ESSO AUSTRALIA

WELL NAME: FORTESCUE #2

DATE: 9. NOV. 1978 TIME: 0600

DEPTH: 2235M LAST REPORT DEPTH: 2017M

DRILL RATE: 36m/HR average
CORRECTED D EXPONENT: 1.21 @ 2225M
FLOWLINE TEMPERATURE: 50.8°C
SHALE DENSITY: –
SHALE FACTOR: –
MAX. FORMATION GAS: 9 UNITS
BACKGROUND GAS: 7 TO 8 UNITS
CONNECTION GAS: NIL
TRIP GAS: 5 UNITS @ 2142M
LITHOLOGY: CALCAREOUS MUDSTONE

SPM: 112
GPM: 970
DP AN VEL: 190.1 FT/MIN
DC AN VEL: 264.2 FT/MIN
CRITICAL VEL: 299.7 FT/MIN
PRESS(TOTAL): 3524 PSI
PRESS(BIT): 3521 PSI
PRESS(SYSTEM): 2660 PSI
BIT NOZ VEL: 387 FT/SEC
HOLE VOL: 1188 BBl
AN. VOL: 988 BBl
PIPE VOL: 120 BBl
PIPE DISPL.: 80 BBl

BIT TYPE	HTC X3A
JETS	18, 18, 20
AV. WOB	42000 lb
AV. RPM	155
AV. TORQUE	6000 FTlb
TIGHT HOLE	–
FILL	–
Δ LAG	+613 STROKES
EST. % CAVINGS	–

MUD WT. IN: 9.1 lb/GAl | PV/YP: 11/14
MUD WT. OUT: 9.4 lb/GAl | Cl⁻: 4100
ECD: 9.3 lb/GAl | % SOLIDS: 11

ESTIMATED PORE PRESS: 8.5
MAX. ESTIMATED PORE PRESS IN OPEN HOLE: 8.5
ESTIMATED FRACTURE PRESS: 15.7 lb/GAl
MIN. EST. FRAC. PRESS. IN OPEN HOLE: 14 lb/GAl

COMMENTS: Blocked flowline @ 2146m.

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: ESSO AUSTRALIA

WELL NAME: FORTESCUE NO. 2

DATE: 9. NOV. 1978 TIME: 0600

DEPTH - 2420M LAST REPORT DEPTH: 2235M

DRILL RATE	10 m/HR average Controlled	SPM	110
CORRECTED D EXPONENT	1.48 @ 2420m	GPM	955
FLOWLINE TEMPERATURE	58.7°C	DP AN VEL	187.2 ft/min
SHALE DENSITY	-	DC AN VEL	260.1 ft/min
SHALE FACTOR	-	CRITICAL VEL	320.4 ft/min
MAX. FORMATION GAS	8 units	PRESS(TOTAL)	3732 PSI
BACKGROUND GAS	3 to 4 units	PRESS(BIT)	3906 PSI
CONNECTION GAS	nil	PRESS(SYSTEM)	2370 PSI
TRIP GAS	12 units from 2420m	BIT NOZ VEL	381 ft/sec
LITHOLOGY:		HOLE VOL	1276 bbl
Calcareous Mudstone/Marl.		AN. VOL	1061 bbl
		PIPE VOL	135 bbl
		PIPE DISPL.	80 bbl.
		BIT TYPE	HTC X3A
		JETS	18, 18, 20

MUD WT. IN	9.3 lb/gal	PV/YP	14/16	AV. WOB	35000 lb
MUD WT. OUT	9.4 lb/gal	CL-	3900	AV. RPM	155
ECD	9.4+ lb/gal	% SOLIDS	20	AV. TORQUE	5500 ft lbs

ESTIMATED PORE PRESS	8.5 lb/gal	TIGHT HOLE	
MAX. ESTIMATED PORE PRESS IN OPEN HOLE	8.5	FILL	-
ESTIMATED FRACTURE PRESS	15.7 lb/gal	Δ LAG	+ 613 strokes
MIN. EST. FRAC. PRESS. IN OPEN HOLE	14.0 lb/gal	EST. % CAVINGS	-

COMMENTS: Stripped out of hole @ 2420m. Made up core barrell
Currently circulating bottoms up prior to cutting
Core #1

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PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY ESSO AUSTRALIA

WELL NAME FORTESCUE NO. 2

DATE 10. NOV. 1978 TIME 0600

DEPTH 2436m LAST REPORT DEPTH 2420m

DRILL RATE	0.8 m/Hr average	SPM	30
CORRECTED D EXPONENT	2.27	GPM	260
FLOWLINE TEMPERATURE	47°.0C	DP AN VEL	
SHALE DENSITY	–	DC AN VEL	
SHALE FACTOR	–	CRITICAL VEL	
MAX. FORMATION GAS	2 units	PRESS(TOTAL)	
BACKGROUND GAS	1 to 2 units	PRESS(BIT)	
CONNECTION GAS	nil	PRESS(SYSTEM)	970 PSI
TRIP GAS	12 units @ 2420m	BIT NOZ VEL	
LITHOLOGY:		HOLE VOL	1279 bbl
	Calcareous mudstone / Marl	AN. VOL	1062 bbl
		PIPE VOL	136.5 bbl
		PIPE DISPL.	80.5 bbl
		BIT TYPE	Chris C22
		JETS	O

MUD WT. IN	9.3 lb/gal	PV/YP	14/16	AV. WOB	2800 lb
MUD WT. OUT	9.6 lb/gal	CL-	3900	AV. RPM	85
ECD	9.5 lb/gal	% SOLIDS	13	AV. TORQUE	3100 ft lb

ESTIMATED PORE PRESS	8.5	TIGHT HOLE	–
MAX. ESTIMATED PORE PRESS IN OPEN HOLE	8.5	FILL	–
ESTIMATED FRACTURE PRESS	15.7 lb/gal	Δ LAG	+ 613 strokes
MIN. EST. FRAC. PRESS. IN OPEN HOLE	14 lb/gal	EST. % CAVINGS	–

COMMENTS: Cut Core #1 from 2420m to 2436m. POOH with core barrel.

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY ESSO AUSTRALIA

WELL NAME FORTESCUE NO. 2

DATE 12. NOV. 1978 TIME 0600

DEPTH 2464M. LAST REPORT DEPTH 2436 m.

DRILL RATE	Reaming @ 23m/HR.
CORRECTED D EXPONENT	–
FLOWLINE TEMPERATURE	43.3°C
SHALE DENSITY	–
SHALE FACTOR	–
MAX. FORMATION GAS	4 units
BACKGROUND GAS	1½ units.
CONNECTION GAS	nil
TRIP GAS	35 units @ 2464m.
LITHOLOGY:	Sand.

SPM	74
GPM	640
DP AN VEL	
DC AN VEL	
CRITICAL VEL	
PRESS (TOTAL)	
PRESS (BIT)	–
PRESS (SYSTEM)	2550 PSI.
BIT NOZ VEL	
HOLE VOL	1296 bbl
AN. VOL	1073 bbl
PIPE VOL	137 bbl
PIPE DISPL.	86 bbl
BIT TYPE	HTC XDG
JETS	14, 15, 15
AV. WOB	30000 lb.
AV. RPM	120
AV. TORQUE	3000 ft lb.
TIGHT HOLE	–
FILL	–
Δ LAG	+613 stokes
EST. % CAVINGS	–

MUD WT. IN	9.3 lb/gal	PV/YP	13/15
MUD WT. OUT	9.6+ lb/gal	CL-	3900
ECD	9.5 lb/gal	% SOLIDS	12

ESTIMATED PORE PRESS 8.5 lb/gal

MAX. ESTIMATED PORE PRESS IN OPEN HOLE 8.5

ESTIMATED FRACTURE PRESS 15.7 lb/gal

MIN. EST. FRAC. PRESS. IN OPEN HOLE 14 lbs/gal.

COMMENTS: Reamed out rat hole from 2420m to 2464m. POOH to cut Core #3.

PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: Esso Australia

WELL NAME: Fortescue No. 2

DATE: 14th Nov. 1968 TIME: 0600

DEPTH: 2600 LAST REPORT DEPTH: 2464m

DRILL RATE	3½ m/Hr. @ TD.
CORRECTED D EXPONENT	1.16 @ 2490m to 1.78 @ 2600m
FLOWLINE TEMPERATURE	50.2°C
SHALE DENSITY	–
SHALE FACTOR	–
MAX. FORMATION GAS	4 units
BACKGROUND GAS	1 to 2 units
CONNECTION GAS	nil
TRIP GAS	22 units @ 2480m
LITHOLOGY:	Siltstone & Coal @ 2590m

SPM	76
GPM	660
DP AN VEL	129.4 ft/min
DC AN VEL	179.8 ft/min
CRITICAL VEL	383.4 ft/min
PRESS (TOTAL)	2922 PSI
PRESS (BIT)	4190 PSI
PRESS (SYSTEM)	2710 PSI
BIT NOZ VEL	409 ft/sec
HOLE VOL	1360.4 bbl.
AN. VOL	1124.7 bbl
PIPE VOL	143.5 bbl
PIPE DISPL.	92.2 bbl
BIT TYPE	HTC XDG
JETS	3x15.
AV. WOB	43000 lb.
AV. RPM	120
AV. TORQUE	4500 FT lbs.
TIGHT HOLE	–
FILL	–
Δ LAG	–
EST. % CAVINGS	–

MUD WT. IN	9.2 lb/gal	PV/YP	15/23
MUD WT. OUT	9.6 lb/gal	Cl⁻	3900
ECD	9.6 lb/gal	% SOLIDS	12

ESTIMATED PORE PRESS: 8.5 lb/gal

MAX. ESTIMATED PORE PRESS IN OPEN HOLE: 8.5

ESTIMATED FRACTURE PRESS: 15.7 lb/gal

MIN. EST. FRAC. PRESS. IN OPEN HOLE: 14 lb/gal.

COMMENTS: POOH @ 2600m for new bit.

EXPLORATION LOGGING
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PETROLEUM ENGINEERING SUMMARY REPORT

COMPANY: ESSO AUSTRALIA
WELL NAME: FORTESCUE No 2
DATE: 15th Nov 78 TIME: 06⁰⁰ am
DEPTH: 2653 LAST REPORT DEPTH: 2600

DRILL RATE: Average 18 m/hr
CORRECTED D EXPONENT: 1·15 at 2620 to 1·63 at 2604
FLOWLINE TEMPERATURE: 49·7 °C
SHALE DENSITY: -
SHALE FACTOR: -
MAX. FORMATION GAS: 3 units
BACKGROUND GAS: 1-2 units
CONNECTION GAS: -
TRIP GAS: 18 units at 2600 m
LITHOLOGY: 70% sandstone
30% siltstone/shale

SPM: 79
GPM: 680
DP AN VEL: 133 ft/min
DC AN VEL: 185 ft/min
CRITICAL VEL: 366 ft/min
PRESS (TOTAL): 2680
PRESS (BIT): [redacted] 1351
PRESS (SYSTEM): 1329
BIT NOZ VEL: 403 ft/sec
HOLE VOL: 1388 bbl
AN. VOL: 1153 bbls
PIPE VOL: 150
PIPE DISPL.: 85
BIT TYPE: NB #12 HTC XDG
JETS: 15, 15, 16

MUD WT. IN: 9·2
MUD WT. OUT: 9·5
ECD: 9·6
PV/YP: 17/22
Cl-: 3900
% SOLIDS: 13

AV. WOB: 40,000 lb
AV. RPM: 128
AV. TORQUE: 5,000 ft lb

ESTIMATED PORE PRESS: 8.5 lb/gal
MAX. ESTIMATED PORE PRESS IN OPEN HOLE: 8.5
ESTIMATED FRACTURE PRESS: 16.0
MIN. EST. FRAC. PRESS. IN OPEN HOLE: 14.0

TIGHT HOLE: -
FILL: -
Δ GAS: -
EST. % CAVINGS: -

COMMENTS: RIH with NB #12 HTC XDG and drill from 2600 m to 2653 m.
Pooh to log at 2653m.
Present operation wireline logging.

EXPLORATION LOGGING
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REPLY TO: EXPLORATION LOGGING INTERNATIONAL INC.
2006, ORCHARD TOWERS,
400 ORCHARD ROAD, SINGAPORE 9.,
TELEPHONE: 2354544 (4 LINES)
TELEX: RS 21084

REGISTERED ADDRESS:
APARTADO 850
PANAMA
REPUBLIC OF PANAMA

ESSO AUSTRALIA, FORTESCUE NO.2
EXPLORATION LOGGING, UNIT 101, OCEAN DIGGER.
WEEKLY REPORT NO.1 : 256 TO 879M 2400 HRS 2ND NOV. 1978

DRILLING SUMMARY

THE WELL WAS SPUDDED ON THE 30TH OF OCTOBER 1978. 26" HOLE WAS DRILLED TO 256 METRES WITHOUT A MARINE RISER. A HTC OSC 3AJ WAS USED AND DRILLING TIME WAS 7¼ HOURS.

20" CASING WAS SET AT 236 METRES AND THE MARINE RISER AND STACK WERE RUN. THE CASING SHOE AND CEMENT WERE DRILLED OUT WITH A 17½" HTC OSC 3AJ WHICH WAS ALSO USED TO DRILL 17½" HOLE TO 879 METRES. AT 878 METRES THE BIT WAS PULLED AND THE FOLLOWING SCHLUMBERGER LOGS WERE RUN: ISF-SONIC, FDC-GR, AND CALIPER. 13 3/8" CASING WAS THEN RUN.

A SEAWATER/SOLIDS AND GEL MUD SYSTEM WAS USED TO DRILL THE SECTION. BECAUSE OF THE HIGH DRILLING RATE AND THE NATURE OF THE FORMATION. A LARGE AMOUNT OF SOLIDS WERE CONTRIBUTED TO THE SYSTEM BY THE FORMATION. AS A RESULT THE MUD WEIGHT INCREASED RAPIDLY FROM 8.6 LB/GAL TO 10 LB/GAL. DESPITE THE ADDITION OF WATER TO THE SYSTEM THE WEIGHT MAINTAINED ITSELF AT ABOUT 9.4 LB/GAL.

DRILLING PARAMETERS

LITHOLOGY: OVER THE SECTION THE FORMATION CONSISTED OF A FAIRLY MONOTONOUS SEQUENCE OF SOFT ARENACEOUS AND ARGILLACEOUS LIMESTONES. THESE WERE NAMED ACCORDING TO GRAIN SIZE AND THE TERMS CALCARENITE, CALCISILTITE AND CALCILUTITE WERE USED. THESE LIMESTONES CONTAINED ABUNDANT FORAMS AND OTHER FOSSIL FRAGMENTS.

DRILL RATE: DRILL RATES WERE EXTREMELY FAST WITH 400 TO 500 M/HR BEEN COMMON IN THE TOPMOST SECTION WHICH CONSISTED OF COARSE ARENACEOUS LIMESTONE. A STEADY DECREASE IN DRILL RATE BECAME APPARENT AS THE ROCKS BECAME MORE COMPACTED WITH DEPTH. AT 725 METRES AN ATEMPT WAS MADE TO CONTROL THE DRILL RATE AND WAS MAINTAINED AT 25 TO 30 M/HR UNTIL 879M.

DXC : AS A RESULT OF THE HOMOGENITY OF THE FORMATION IN THE SECTION THE DXC SHOWS A GOOD COMPACTION TREND. HOWEVER DUE TO THE ABSENSE OF CLEAN SHALES IN THE SECTION THE USE OF DXC FOR PRESSURE DETERMINATION IS LIMITED.

GAS : READINGS WERE TYPICALLY ½ UNIT DOWN TO 450 METRES WHERE FOLLOWING A DRILLING BREAK THE BACK GROUND INCREASED TO 10 UNITS. FURTHER DRILLING BREAKS AT 600 METRES RESULTED IN A BACKGROUND OF 30 TO 40 UNITS. THE MAXIMUM GAS RECORDED WAS 74 UNITS AT 717 METRES. A WIPER TRIP PRIOR TO RUNNING 20" CASING GAVE TRIP GAS OF 15 UNITS ABOVE THE BACKGROUND.

CHROMATAGRAPH ANALYSIS INDICATED THAT THE GAS WAS C1 (METHANE) WITH NO HEAVIER HYDROCARBONS PRESENT.

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REPUBLIC OF PANAMA

TEMPERATURE: THE TEMPERATURE PLOT SHOWS A STEADY INCREASE OVER THE INTERVAL WITH NO ANOMOLOUS TRENDS APPARENT.

HOLE CONDITION

THE HOLE CONDITION REMAINED GOOD WITH NO NOTEABLE DRAG ON CONNECTIONS OR ON TRIPS. THE CALIPER LOG SHOWED THE HOLE TO BE WASHED OUT AT 200 METRES, GENERALLY THE HOLE REMAINED IN GAUGE THROUGHOUT THE REST OF THE SECTION, HOWEVER SOME WASH OUT WAS APPARENT AT CONNECTIONS.

PRESSURE INDICATORS

NO ABNORMAL PRESSURE IS INDICATED BY THE DXC AND TEMPERATURE PLOTS. THIS TOGETHER WITH THE LACK OF CONNECTION GAS DESPITE A HIGH BACKGROUND INDICATES THAT THE PRESSURE GRADIENT REMAINS NORMAL AT 8.4 TO 8.5 LB/GAL.

S.R./J.H.

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ESSO AUSTRALIA, FORTESCUE NO.2
EXPLORATION LOGGING, UNIT 101, OCEAN DIGGER.
WEEKLY REPORT NO.2 : 879M TO 2436M

10TH NOV. 1978

DRILLING SUMMARY

THE 13 3/8" CASING WAS RUN AND CEMENTED AT 861 METRES. NB #3 A HTC X3A WAS RUN INTO THE HOLE AND USED TO DRILL OUT THE CEMENT AND CASING SHOE. NEW HOLE WAS DRILLED TO 894 METRES WHERE A PRESSURE INTEGRITY TEST WAS PERFORMED. THE HOLE WAS PRESSURED TO AN EQUIVALENT MUD WIEGHT OF 13.5 LB/GAL WITHOUT ANY LEAK OFF OCCURRING. THE FRACTURE PRESSURE AT THE SHOE IS ESTIMATED TO BE 15.7 LB/GAL EMW. BIT #3 DRILLED TO 1238M AT AN AVERAGE ROP OF 19.4 M/HR, NB #4 ALSO A HTC X3A DRILLED TO 1615M AT AN AVERAGE ROP OF 12.2M/HR, NB #5 ANOTHER HTC X3A DRILLED TO 2142M AT AN AVERAGE ROP OF 19.9M/HR, NB #6 ANOTHER HTC X3A DRILLED TO 2420M AT AN AVERAGE ROP OF 16.6 M/HR. AT 2420M CORE BARRELL #1 WITH A CHRISTENSEN C22 WAS RUN INTO THE HOLE AND A CORE CUT FROM 2420M TO 2436M. THE AVERAGE CORING RATE WAS 0.8 M/HR.SURVEYS WERE RUN AT EACH BIT CHANGE AND THE FOLLOWING RESULTS OBTAINED; 0° AT 879M , 2 $3/4^{\circ}$ AT 1238M, 0° AT 1615M , $\frac{1}{2}^{\circ}$ AT 2142M , AND 2° AT 2420M. MUD WIEGHT WAS KEPT AT 9.1 LB/GAL UNTIL 2345M WHERE IT WAS BUILT UP TO 9.3 LB/GAL.

AFTER THE TRIP AT 2142M THE FLOW LINE BECAME BLOCKED AND TOOK APPROXIMATELY TWO HOURS TO CLEAR. IT AGAIN BECAME PARTIALLY BLOCKED AT 2311M AND WAS CLEARED AGAIN IN A FEW MINUTES.

DRILLING PARAMETERS

LITHOLOGY: FROM 879 TO 1690M : CALCISITITE , SOFT TO FIRM.WITH A MINOR INVASION OF MARL FROM 980M TO 1120M, WITH SOME SPARRY MICRITE AND CALCARENITE INTERBEDS.

FROM 1690 TO 1850M: MEDIUM GREY CALCAREOUS SILTSTONE

FROM 1850 TO 2420M: CALCAREOUS MUDSTONE GRADING LOCALLY TO MARL.

DXC : TREND VARIATIONS ARE DIVIDABLE INTO THREE SECTIONS RELATED TO THE LITHOLOGY IN EACH SECTION. UP TO 1615M A COMPACTION TREND FOR THE ARENACEOUS LIMESTONES IS PRESENT. FROM 1615 TO 1725M IS A TRANSITION ZONE OVER WHICH THE FORMATION CHANGES FROM A CALCAREOUS SILTSTONE TO CALCAREOUS MUDSTONE. FROM 1725 TO 2420 METRES A COMPACTION TREND IN THE MUDSTONE IS EVIDENT. IT IS NOT BELIEVED THAT THE KICKBACK IN TREND AT 1615 IS AN INDICATION OF ABNORMAL PRESSURE BUT RATHER A REFLECTION OF THE TRANSITIONAL NATURE OF THE LITHOLOGY IN THE INTERVAL.

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TEMPERATURE : A PLOT OF THE FLOWLINE TEMPERATURE GIVES A GRADIENT OF 1.21° C PER 100 METRES. FROM 1000 TO 1375M THE TREND FIRST DECREASES THEN SHARPLY INCREASES. THE DECREASE WAS CAUSED BY LARGE ADDITIONS OF WATER TO THE MUD SYSTEM AND THE INCREASE IS DUE TO RESTABILIZATION AFTER A TRIP. A SECOND LARGE DEVIATION OCCURRED OVER THE INTERVAL, 1615 TO 1725M. THIS IS BELIEVED TO HAVE BEEN CAUSED BY THE CHANGE IN LITHOLOGY AND FURTHER ACCENTUATED BY THE ADDITION OF WATER TO THE SYSTEM AND RESTABILIZATION AFTER A TRIP.

GAS : THERE HAS BEEN A STEADY OVERALL DECREASE IN FROM 879M TO TD, FROM 50 UNITS TO 4 UNITS. THERE WERE NO NOTABLE PEAKS AND NO CONNECTION GASES. TRIP GASES WERE 34,60,12,5, AND 12 UNITS. CHROMATAGRAPH ANALYSIS INDICATED THAT THE GAS WAS PREDOMINANTLY C1 WITH TRACE AMOUNTS OF C2 .

HOLE CONDITION

A CARBIDE RUN AFTER THE BLOCKED FLOW LINE WAS CLEARED GAVE A DIFFERENCE OF +613 STROKES AS COMPARED TO THE THEORETICAL LAG. BEFORE THIS THE DIFFERENCE HAD BEEN 120 STROKES. THIS SUGGESTS THAT THE HOLE MAY BE WASHED OUT AT AROUND 2143M WITH POSSIBLY AS MUCH AS 126 BBLS INCREASE IN VOLUME.

PRESSURE INDICATORS

ALL DEVIATIONS IN PRESSURE PARAMETER TRENDS ARE READILY ACCOUNTED FOR BY SURFACE ACTIVITY SUCH AS ADDING WATER TO THE MUD SYSTEM AND BY LITHOLOGICAL VARIATIONS. THE PRESSURE GRADIENT IS BELIEVED TO REMAIN NORMAL AT 8.4 TO 8.5 LB/GAL.

S.R./S.D.

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APARTADO 850
PANAMA
REPUBLIC OF PANAMA

ESSO AUSTRALIA FORTESCUE No.2
EXPLORATION LOGGING UNIT #101 ODECO OCEAN DIGGER
WEEKLY REPORT #3 2436M - 2653M

17 NOVEMBER 1978

DRILLING SUMMARY

	BIT	START	FINISH	AV.ROP	RECOVERY	TRIP GAS
CORE#1	C22	2420M	2436M	0.8M/HR	97%	52U
CORE#2	C22	2436M	2451M	2.3M/HR	79%	2U
CORE#3	C22	2451M	2464M	3.3M/HR	81%	10U
CORE#4	C20	2464M	2480M	3.8M/HR	87.5%	22U

A REAMING TRIP WAS CONDUCTED WITH A 12¼" BIT AT 2464M. NEW BIT #8, A 12¼"HTC XDG, REAMED THE RAT-HOLE AND DRILLED ON TO 2600M AT AN AVERAGE PENETRATION RATE OF 13.1M/HR. BIT#9, ANOTHER 12¼"HTC XDG DRILLED TO T.D. AT 2653M AT AN AVERAGE PENETRATION RATE OF 18.8M/HR. THE AVERAGE MUD WEIGHTS USED THROUGHOUT THE INTERVAL WAS 9.4PPG. AFTER A WIPER TRIP THE HOLE WAS CIRCULATED CLEAN IN PREPARATION FOR WIRELINE LOGGING. LOGS RUN AT T.D. WERE IES/SONIC, FDC/CNL, HDT, CIS, RFT, CST.

DRILLING PARAMETERS

LITHOLOGY: OIL SAND WAS FOUND IN CORE#2 AND CORE#3, WITH THE OIL/WATER CONTACT THOUGHT TO BE IN THE BASE OF CORE#3. NO OIL FLUORESCENCE WAS SEEN IN CORE#4. FROM 2480M TO TD THE SECTION CONSISTED OF COARSE SANDS IN THE UPPER PART, WITH MODERATELY FINE SANDS AND SILTSTONES WITH SHALES AND MINOR COAL IN THE LOWER PART OF THE INTERVAL. NO OIL SHOWS WERE DETECTED OTHER THAN THOSE IN THE CORES.

DXC: THE HIGHLY VARIABLE LITHOLOGY WAS REFLECTED IN THE DRILLING RATES, CONSEQUENTLY DXC VALUES VARIED ACCORDINGLY. OVER THE SECTION DRILLED THERE WAS NO INDICATION OF TREND DEVIATION AS A RESULT OF GEOPRESSURES.

TEMPERATURE: A TEMPERATURE TREND DURING CORING OPERATIONS WAS NOT OBTAINABLE DUE TO THE RELATIVELY SHORT PERIODS OF DRILLING AND CIRCULATION. HOWEVER, UPON RESUMING DRILLING AFTER CORING, THE FLOWLINE TEMPERATURE STABILISED, PRODUCING A CONTINUING TREND OF °C /100M.

EXPLORATION LOGGING
A SUBSIDIARY OF BAKER INTERNATIONAL

REPLY TO: EXPLORATION LOGGING INTERNATIONAL INC.
2006, ORCHARD TOWERS,
400 ORCHARD ROAD, SINGAPORE 9.
TELEPHONE: 2354544 (4 LINES)
TELEX: RS 21084

REGISTERED ADDRESS:
APARTADO 850
PANAMA
REPUBLIC OF PANAMA

GAS: THROUGHOUT THE INTERVAL THE MAXIMUM DITCH GAS RECORDED WAS 4U, THE AVERAGE BACKGROUND BEING 2U. THE LOW RECORDINGS ARE A FUNCTION OF THE HIGH OVERBALANCE IN THE BOREHOLE.

HOLE CONDITION

CAVINGS IN THE SAMPLES TO 2490M WERE LESS THAN 5% IN THE CUTTINGS COLLECTED. BELOW 2490M COARSE SAND CAVED CONSISTANTLY FROM THE LATROBE GROUP. ALSO FROM 2600M TO TD THERE WAS A CONSISTANT 2-5% SHALE CAVINGS IN THE SAMPLE. THE SAND CAVING IS DUE TO THE LACK OF COHESION BETWEEN THE GRAINS IN THE FORMATION, AND IT IS THOUGHT THAT THE SHALE CAVINGS WERE FROM 2140M APPROX.

PRESSURE INDICATORS

GAS, DXC, QUALITY OF SAMPLE AND GEOLOGICAL PARAMETERS INDICATE THAT THE SECTION DRILLED HAS A NORMAL HYDROSTATIC PORE PRESSURE OF APPROX 8.5PPGEMW. LOW TRIP GASES AND NEGLIGIBLE BACKGROUND GAS IS A RESULT OF THE OVERBALANCE OF 1PPG (ECD WAS 9.5-9.6PPG), WHICH WOULD ALSO CAUSE EXTENSIVE FLUSHING OF FORMATION FLUIDS.

S.DAINES / J.NOLAN

PE603445

This is an enclosure indicator page.
The enclosure PE603445 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603445 has the following characteristics:

ITEM_BARCODE =	PE603445
CONTAINER_BARCODE =	PE906133
NAME =	Temperature Data Log
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	WELL_LOG
DESCRIPTION =	Temperature Data Log for Fortescue-2.
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603446

This is an enclosure indicator page.
The enclosure PE603446 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603446 has the following characteristics:

ITEM_BARCODE = PE603446
CONTAINER_BARCODE = PE906133
NAME = Pressure Analysis Log
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Pressure Analysis Log for Fortescue-2 showing overburden gradient and fracture pressure curves.
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603447

This is an enclosure indicator page.
The enclosure PE603447 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603447 has the following characteristics:

ITEM_BARCODE =	PE603447
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 1 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 1 of 27 for Fortescue-2 (in separate pages) legend and title
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603448

This is an enclosure indicator page.
The enclosure PE603448 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603448 has the following characteristics:

ITEM_BARCODE = PE603448
CONTAINER_BARCODE = PE906133
NAME = Mud Log 2 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 2 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603449

This is an enclosure indicator page.
The enclosure PE603449 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603449 has the following characteristics:

ITEM_BARCODE =	PE603449
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 3 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 3 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603450

This is an enclosure indicator page.
The enclosure PE603450 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603450 has the following characteristics:

ITEM_BARCODE = PE603450
CONTAINER_BARCODE = PE906133
NAME = Mud Log 4 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 4 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603451

This is an enclosure indicator page.
The enclosure PE603451 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603451 has the following characteristics:

ITEM_BARCODE = PE603451
CONTAINER_BARCODE = PE906133
NAME = Mud Log 5 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 5 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603452

This is an enclosure indicator page.
The enclosure PE603452 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603452 has the following characteristics:

ITEM_BARCODE = PE603452
CONTAINER_BARCODE = PE906133
NAME = Mud Log 6 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 6 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603453

This is an enclosure indicator page.
The enclosure PE603453 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603453 has the following characteristics:

ITEM_BARCODE =	PE603453
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 7 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 7 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603454

This is an enclosure indicator page.
The enclosure PE603454 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603454 has the following characteristics:

```
     ITEM_BARCODE = PE603454
CONTAINER_BARCODE = PE906133
             NAME = Mud Log 8 of 27
            BASIN = GIPPSLAND
           PERMIT = VIC/L5
             TYPE = WELL
          SUBTYPE = MUD_LOG
      DESCRIPTION = Mud Log 8 of 27 for Fortescue-2 (in
                    separate pages)
          REMARKS =
     DATE_CREATED = 30/11/1978
    DATE_RECEIVED = 26/04/1979
             W_NO = W709
        WELL_NAME = FORTESCUE-2
       CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
     CLIENT_OP_CO = ESSO AUSTRALIA LIMITED
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE603455

This is an enclosure indicator page.
The enclosure PE603455 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603455 has the following characteristics:

ITEM_BARCODE =	PE603455
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 9 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 9 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603456

This is an enclosure indicator page.
The enclosure PE603456 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603456 has the following characteristics:

ITEM_BARCODE = PE603456
CONTAINER_BARCODE = PE906133
NAME = Mud Log 10 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 10 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603457

This is an enclosure indicator page.
The enclosure PE603457 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603457 has the following characteristics:

ITEM_BARCODE = PE603457
CONTAINER_BARCODE = PE906133
NAME = Mud Log 11 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 11 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603458

This is an enclosure indicator page.
The enclosure PE603458 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603458 has the following characteristics:

ITEM_BARCODE =	PE603458
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 12 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 12 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603459

This is an enclosure indicator page.
The enclosure PE603459 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603459 has the following characteristics:

ITEM_BARCODE =	PE603459
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 13 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 13 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603460

This is an enclosure indicator page.
The enclosure PE603460 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603460 has the following characteristics:

ITEM_BARCODE = PE603460
CONTAINER_BARCODE = PE906133
NAME = Mud Log 14 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 14 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603461

This is an enclosure indicator page.
The enclosure PE603461 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603461 has the following characteristics:

ITEM_BARCODE =	PE603461
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 15 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 15 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603462

This is an enclosure indicator page.
The enclosure PE603462 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603462 has the following characteristics:

ITEM_BARCODE = PE603462
CONTAINER_BARCODE = PE906133
NAME = Mud Log 16 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 16 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603463

This is an enclosure indicator page.
The enclosure PE603463 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603463 has the following characteristics:

ITEM_BARCODE = PE603463
CONTAINER_BARCODE = PE906133
NAME = Mud Log 17 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 17 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603464

This is an enclosure indicator page.
The enclosure PE603464 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603464 has the following characteristics:

ITEM_BARCODE =	PE603464
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 18 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 18 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603465

This is an enclosure indicator page.
The enclosure PE603465 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603465 has the following characteristics:

ITEM_BARCODE = PE603465
CONTAINER_BARCODE = PE906133
NAME = Mud Log 19 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 19 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603466

This is an enclosure indicator page.
The enclosure PE603466 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603466 has the following characteristics:

```
     ITEM_BARCODE = PE603466
CONTAINER_BARCODE = PE906133
             NAME = Mud Log 20 of 27
            BASIN = GIPPSLAND
           PERMIT = VIC/L5
             TYPE = WELL
          SUBTYPE = MUD_LOG
      DESCRIPTION = Mud Log 20 of 27 for Fortescue-2 (in
                    separate pages)
          REMARKS =
     DATE_CREATED = 30/11/1978
    DATE_RECEIVED = 26/04/1979
             W_NO = W709
        WELL_NAME = FORTESCUE-2
       CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
     CLIENT_OP_CO = ESSO AUSTRALIA LIMITED
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE603467

This is an enclosure indicator page.
The enclosure PE603467 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603467 has the following characteristics:

ITEM_BARCODE =	PE603467
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 21 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 21 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603468

This is an enclosure indicator page.
The enclosure PE603468 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603468 has the following characteristics:

ITEM_BARCODE =	PE603468
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 22 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 22 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603469

This is an enclosure indicator page.
The enclosure PE603469 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603469 has the following characteristics:

ITEM_BARCODE =	PE603469
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 23 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 23 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603470

This is an enclosure indicator page.
The enclosure PE603470 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603470 has the following characteristics:

ITEM_BARCODE = PE603470
CONTAINER_BARCODE = PE906133
NAME = Mud Log 24 of 27
BASIN = GIPPSLAND
PERMIT = VIC/L5
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log 24 of 27 for Fortescue-2 (in separate pages)
REMARKS =
DATE_CREATED = 30/11/1978
DATE_RECEIVED = 26/04/1979
W_NO = W709
WELL_NAME = FORTESCUE-2
CONTRACTOR = EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603471

This is an enclosure indicator page.
The enclosure PE603471 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603471 has the following characteristics:

ITEM_BARCODE =	PE603471
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 25 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 25 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603472

This is an enclosure indicator page.
The enclosure PE603472 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603472 has the following characteristics:

ITEM_BARCODE =	PE603472
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 26 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 26 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603473

This is an enclosure indicator page.
The enclosure PE603473 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603473 has the following characteristics:

ITEM_BARCODE =	PE603473
CONTAINER_BARCODE =	PE906133
NAME =	Mud Log 27 of 27
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	MUD_LOG
DESCRIPTION =	Mud Log 27 of 27 for Fortescue-2 (in separate pages)
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603474

This is an enclosure indicator page.
The enclosure PE603474 is enclosed within the container PE906133 at this location in this document.

The enclosure PE603474 has the following characteristics:

ITEM_BARCODE =	PE603474
CONTAINER_BARCODE =	PE906133
NAME =	Drilling Pressure Log
BASIN =	GIPPSLAND
PERMIT =	VIC/L5
TYPE =	WELL
SUBTYPE =	WELL_LOG
DESCRIPTION =	Drilling Data Pressure Log including rate of penetration drilling exponent and gas units for Fortescue-2.
REMARKS =	
DATE_CREATED =	30/11/1978
DATE_RECEIVED =	26/04/1979
W_NO =	W709
WELL_NAME =	FORTESCUE-2
CONTRACTOR =	EXPLORATION LOGGING OF AUSTRALIA INC.
CLIENT_OP_CO =	ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)