



**PRECISION**  
ENERGY SERVICES

**DUAL LATEROLOG - GR**  
**DENSITY - NEUTRON**

**Compact**

**1:500 MD**

COMPANY			ESSO AUSTRALIA PTY LTD		
WELL			BREAM A19A		
FIELD			BREAM		
PROVINCE/COUNTY			BASS STRAIT		
COUNTRY/STATE			AUSTRALIA		
LOCATION			S 38 29 58.893, E 147 46 19.968		
			N 5738458.220 m, E 567336.120 m		
			<b>FIELD PRINT</b>		
LSD	SEC	TWP	RGE	Other Services	
				COMPENSATED SONIC	
API Number					
Permit Number					
Permanent Datum MSL			, Elevation 0.0 metres		
Log Measured From RT @ 32.82 M			above Permanent Datum		
Drilling Measured From RT					
Date	30-Nov-2005				
Run Number	ONE				
Depth Driller	2804.00		metres		
Depth Logger	2801.00		metres		
First Reading	2787.60		metres		
Last Reading	1434.00		metres		
Casing Driller	1434.00		metres		
Casing Logger	1434.00		metres		
Bit Size	8.50		inches		
Hole Fluid Type	KCL/GYL/POLY				
Density / Viscosity	10.15 lb/USg		62.00 CP		
PH / Fluid Loss	9.00		2.60		
Sample Source	FLOWLINE				
Rm @ Measured Temp	0.228 @ 25.0		ohm-m		
Rmf @ Measured Temp	0.091 @ 25.0		ohm-m		
Rmc @ Measured Temp	0.359 @ 25.0		ohm-m		
Source Rmf / Rmc	PRESS		PRESS		
Rm @ BHT	0.119 @ 67.5		ohm-m		
Time Since Circulation	27.5 HOURS				
Max Recorded Temp	70.60		deg C		
Equipment Name	5" CWS/CML				
Equipment / Base	1		SALE		
Recorded By	R. TENCH, B. MOSS				
Witnessed By	TREVOR LOBO				
CIRC STOPPED	00:15 29/NOV				

BOREHOLE RECORD				
Bit Size inches		Depth From metres		Depth To metres
8.500		1434.00		2804.00
CASING RECORD				
Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K-55	10.750	0.00	1434.00	40.50

REMARKS
RIG: NABORS 453
5" SHUTTLE/MEMORY COMPACT OPERATION. CREW: R TENCH , B MOSS , B GOODWIN, M KOLCZE.
FIELD FINAL LOGS TO BE CORRELATED TO ANADRILL GAMMA LOG. FIELD FINALS REQUIRE CORRECTION TO TIME DEPTH CORRELATION ABOVE 1800mMD.
BRIDGED OF AT 2786mMD ON TRIP IN, REQUIRED 60RPM AND 10BBL/MIN TO ALLOW PIPE TO BE WASHED TO TD.
MAX. TEMPERATURE: 70.6 DEG C AT 2379m MD MAX. INCLINATION: 60.56 DEG AT 1478.37m MD MAX. DOGLEG SERVERITY: 6.78DEG/30m AT 1478.37m MD DEPLOYMENT ANGLE: 32.90DEG
HVOL: 2524 FT^3 AVOL: 1346 FT^3

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

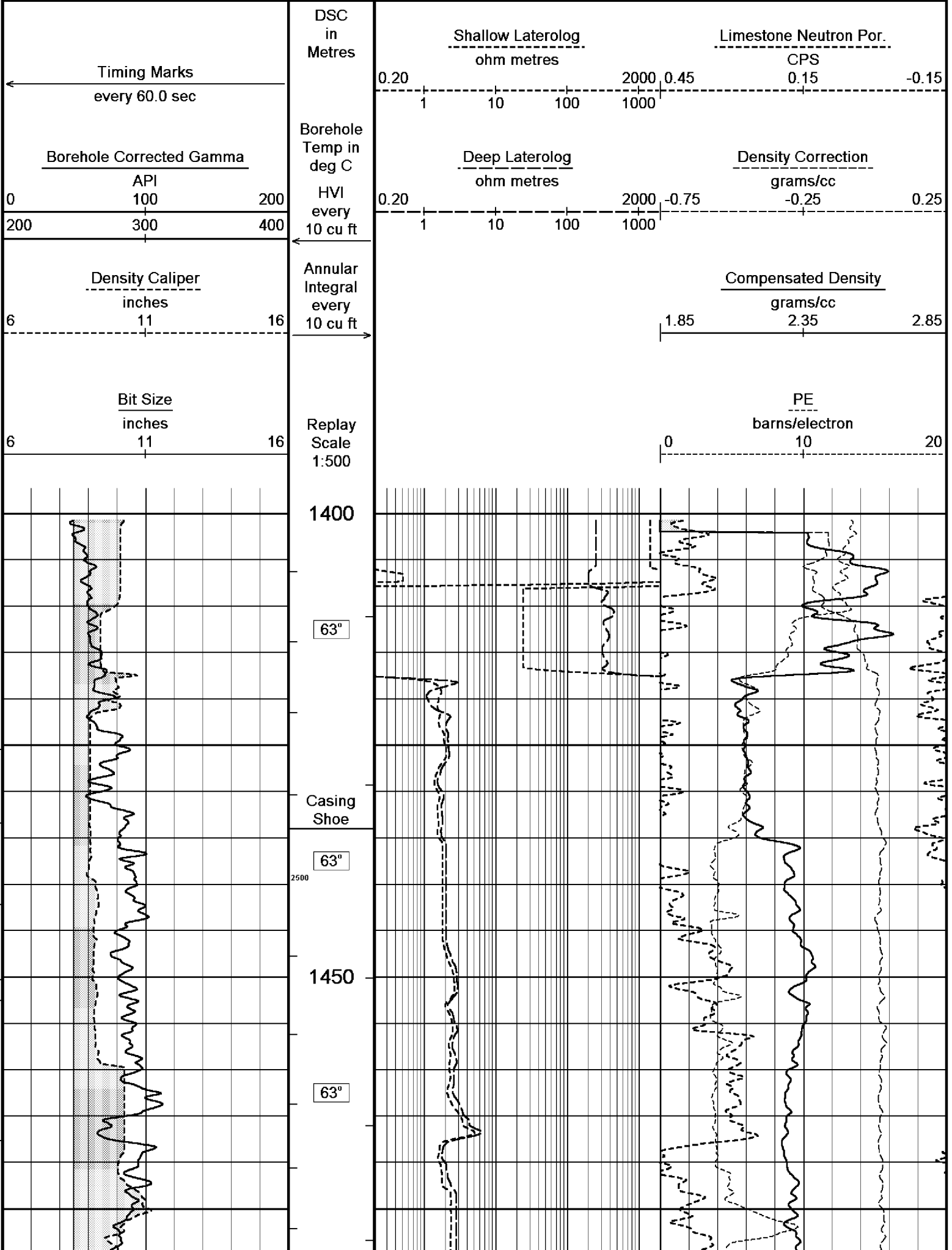
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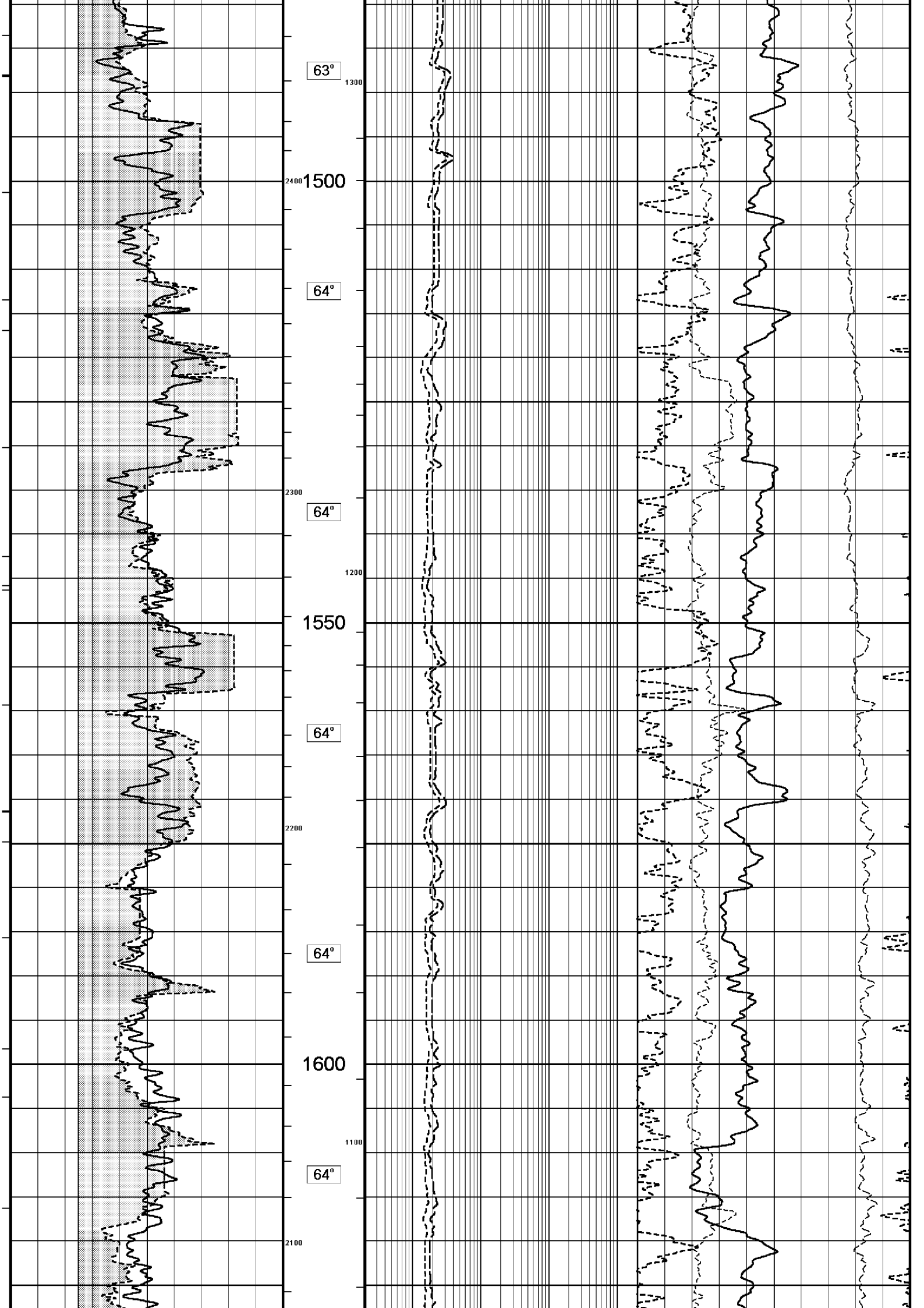
MAIN LOG 1:500

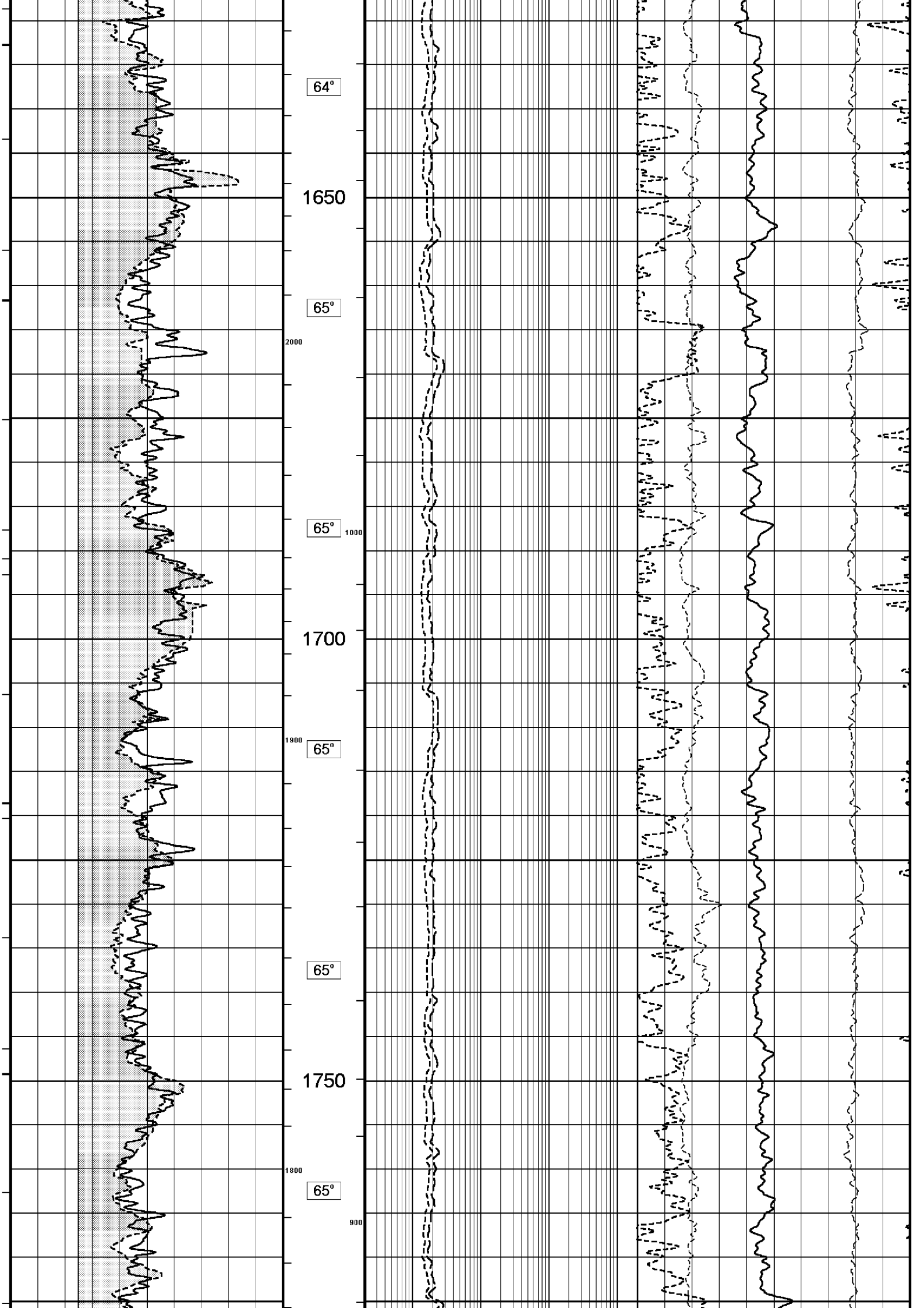
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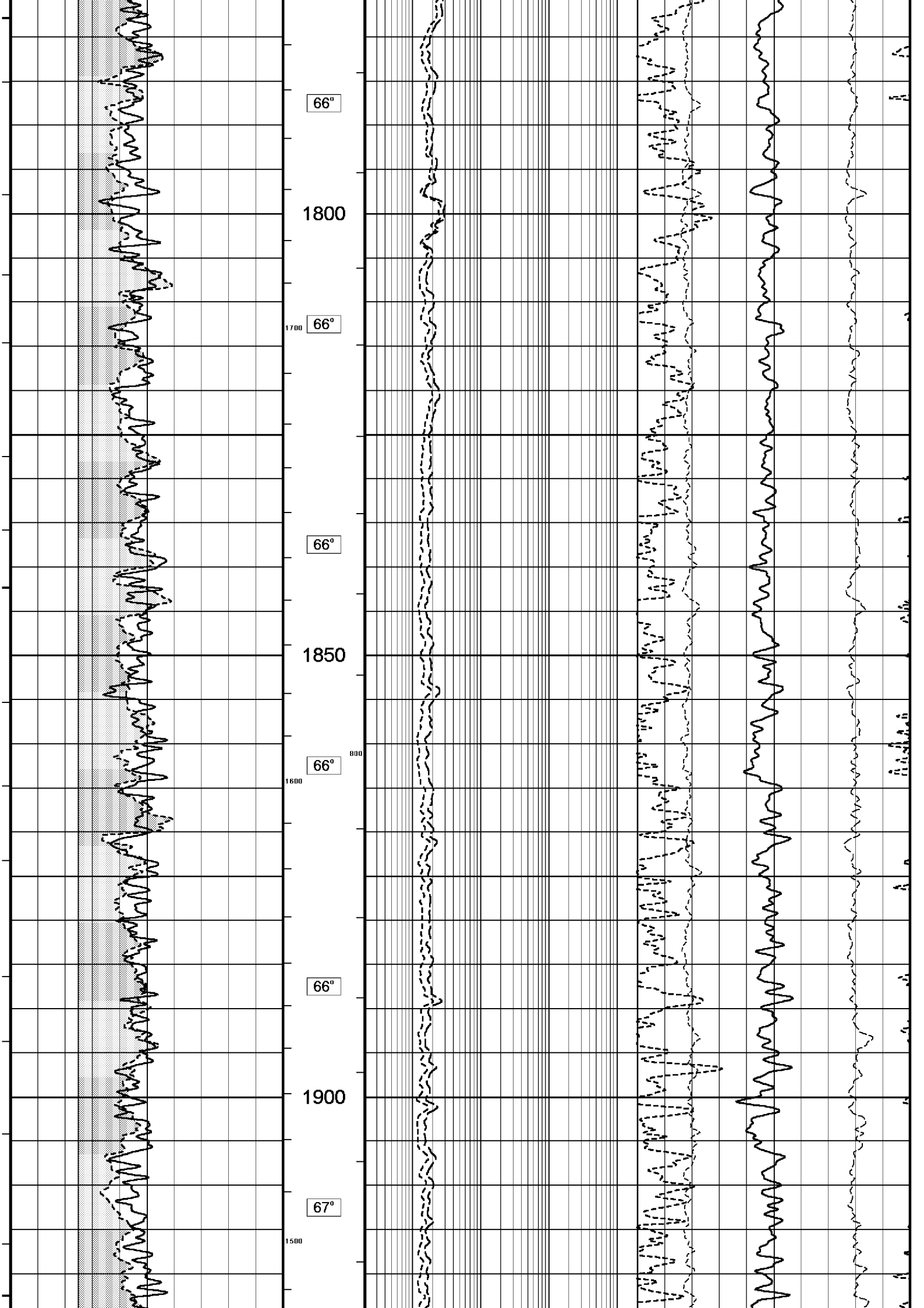
Depth Based Data - Maximum Sampling Increment 10.0cm  
Filename: C:\logs\BMA\_A19A\FIELD DATA\BMA\_A19A\_TRIPLE\_COMBO.dta  
System Configuration Dates: Logged 17-JUN-2004: Processed 17-JUN-2004: Plotted 17-JUN-2004:

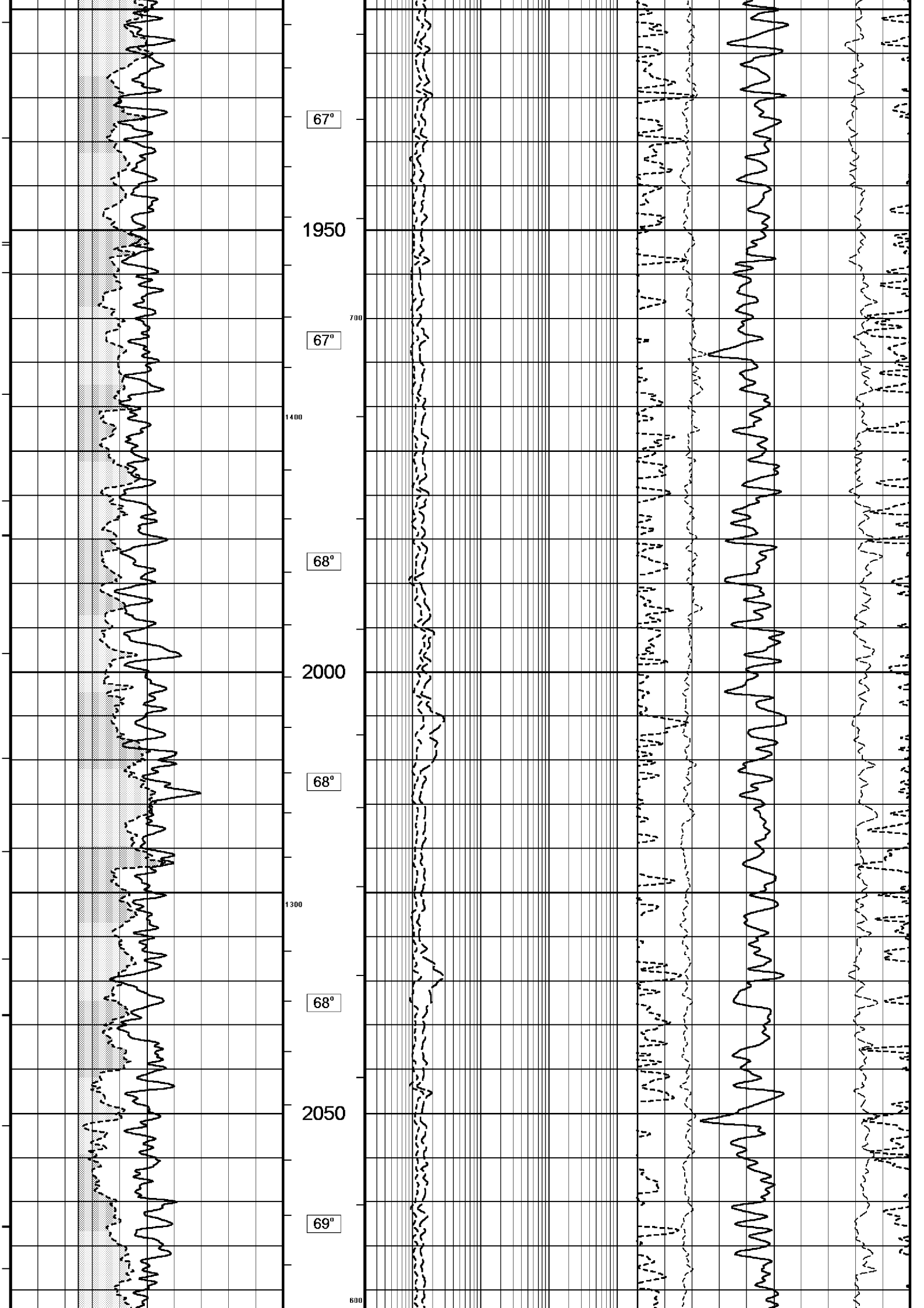
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Recorded on 30-NOV-2005 14:16

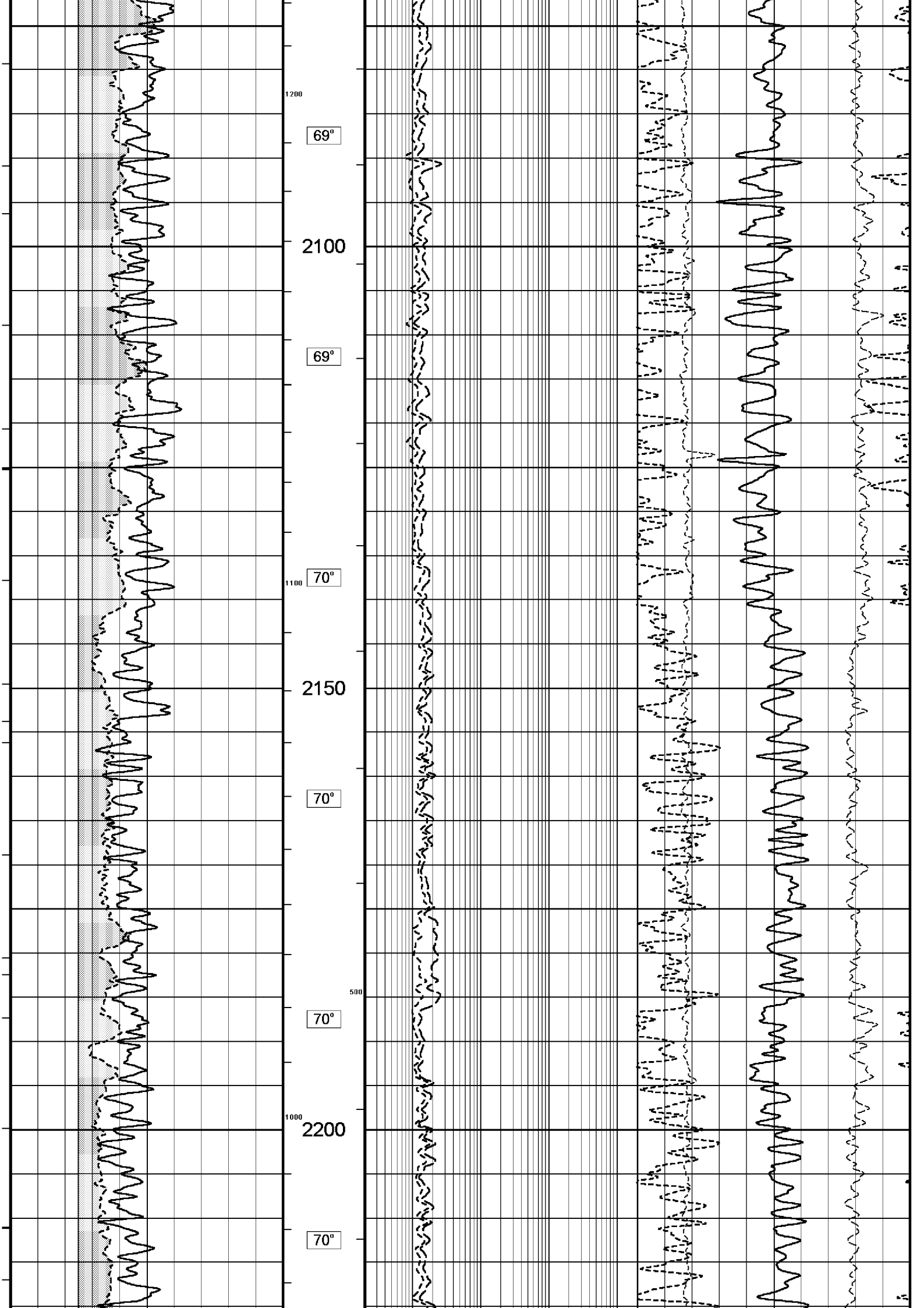


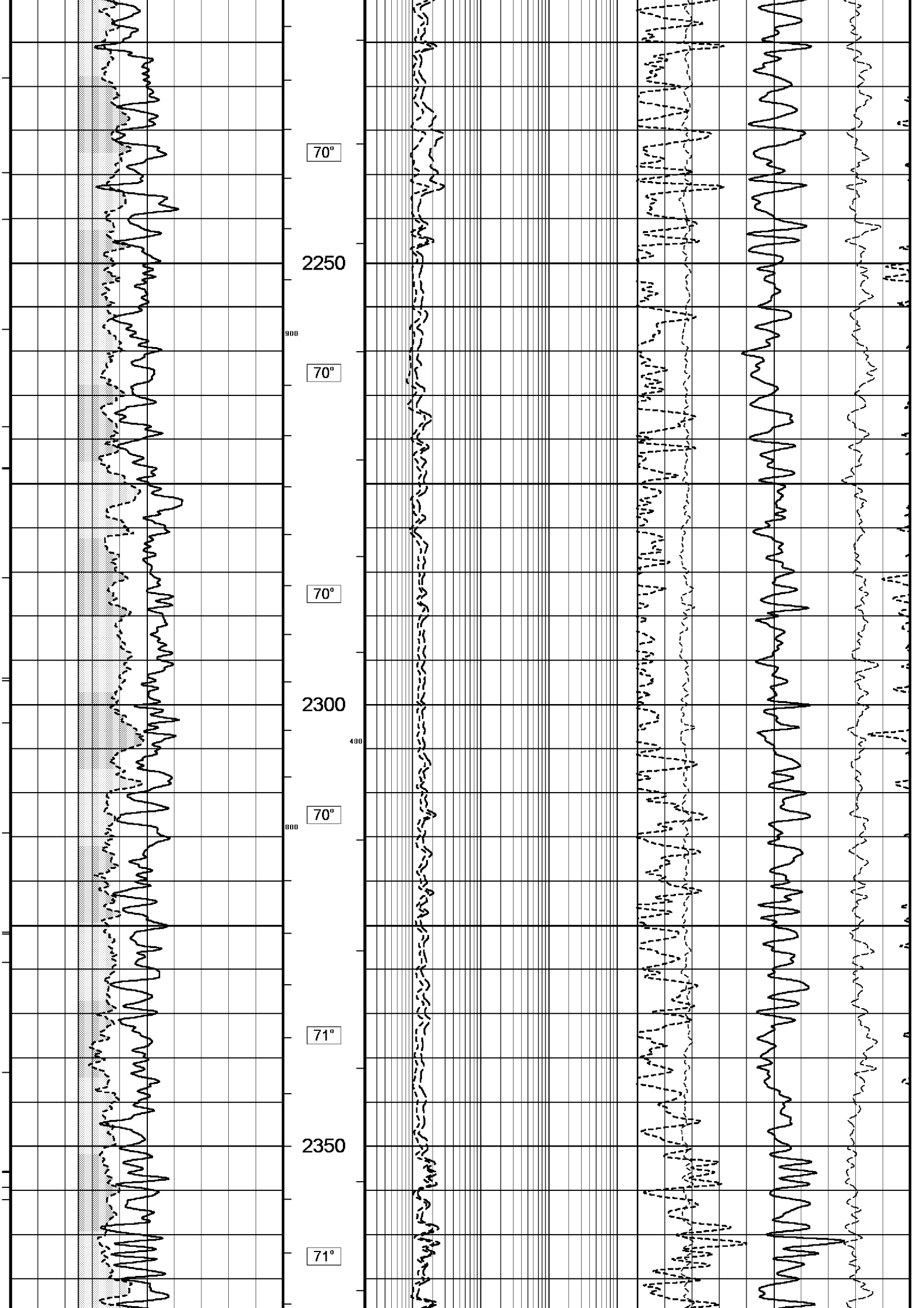




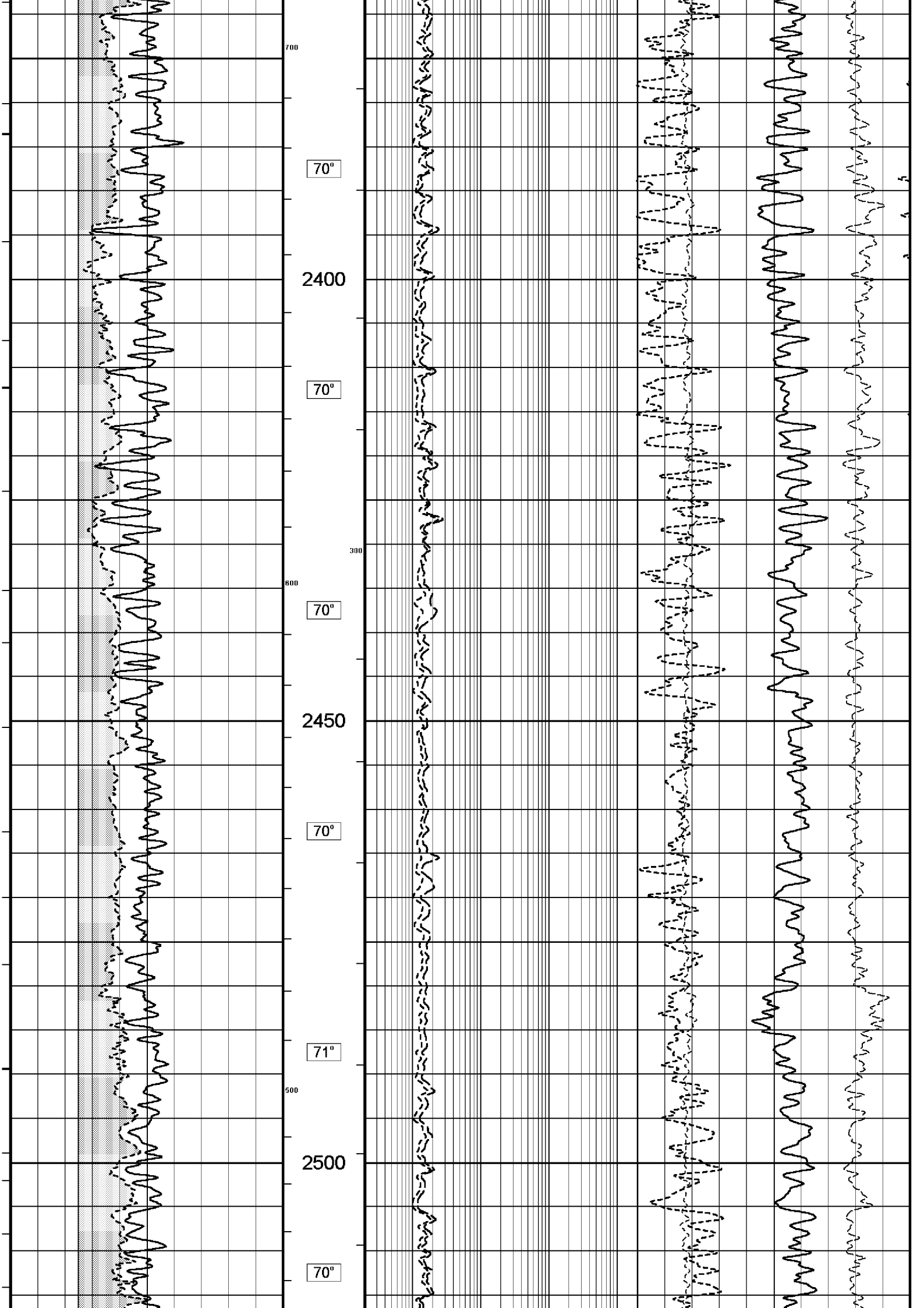


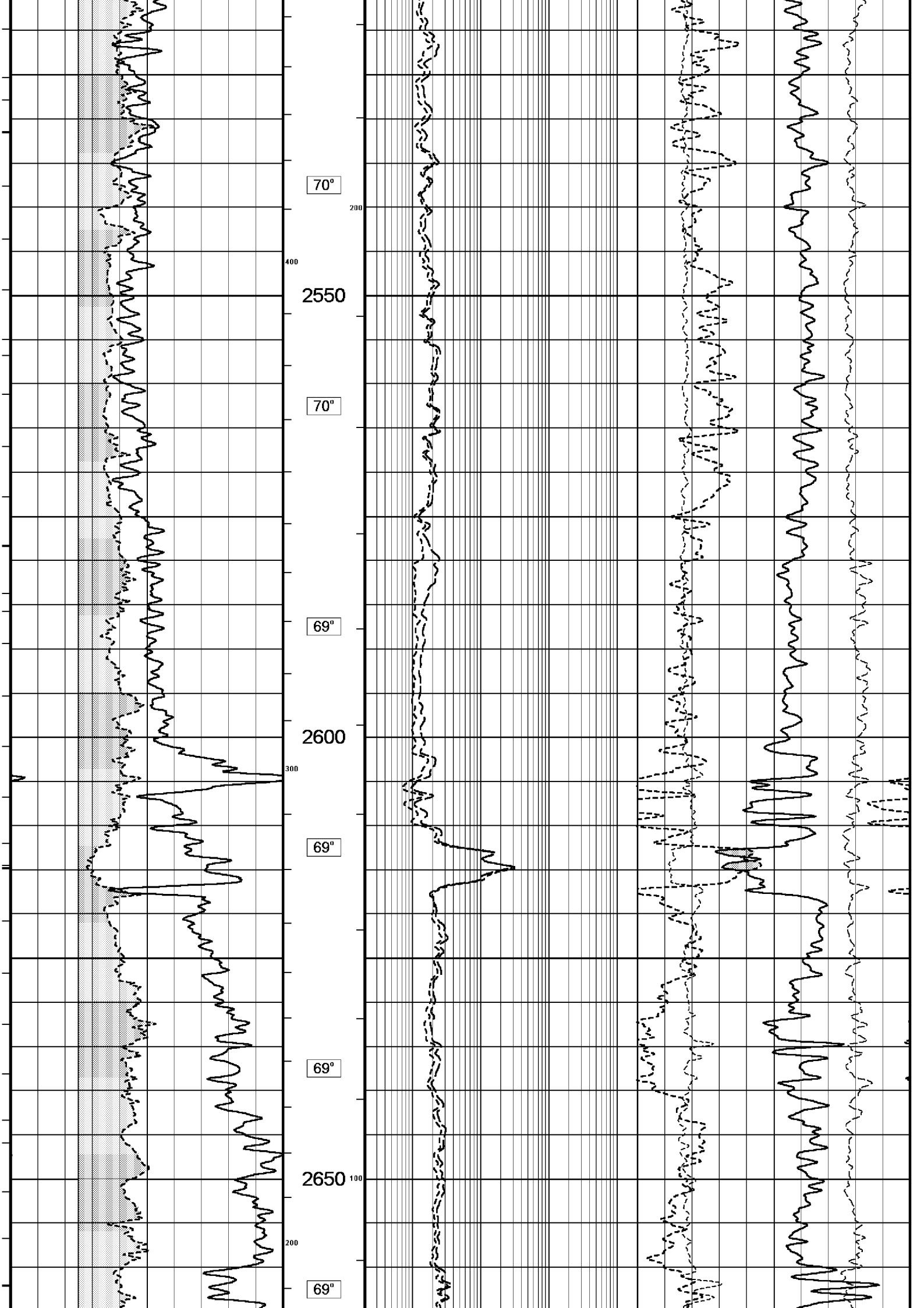


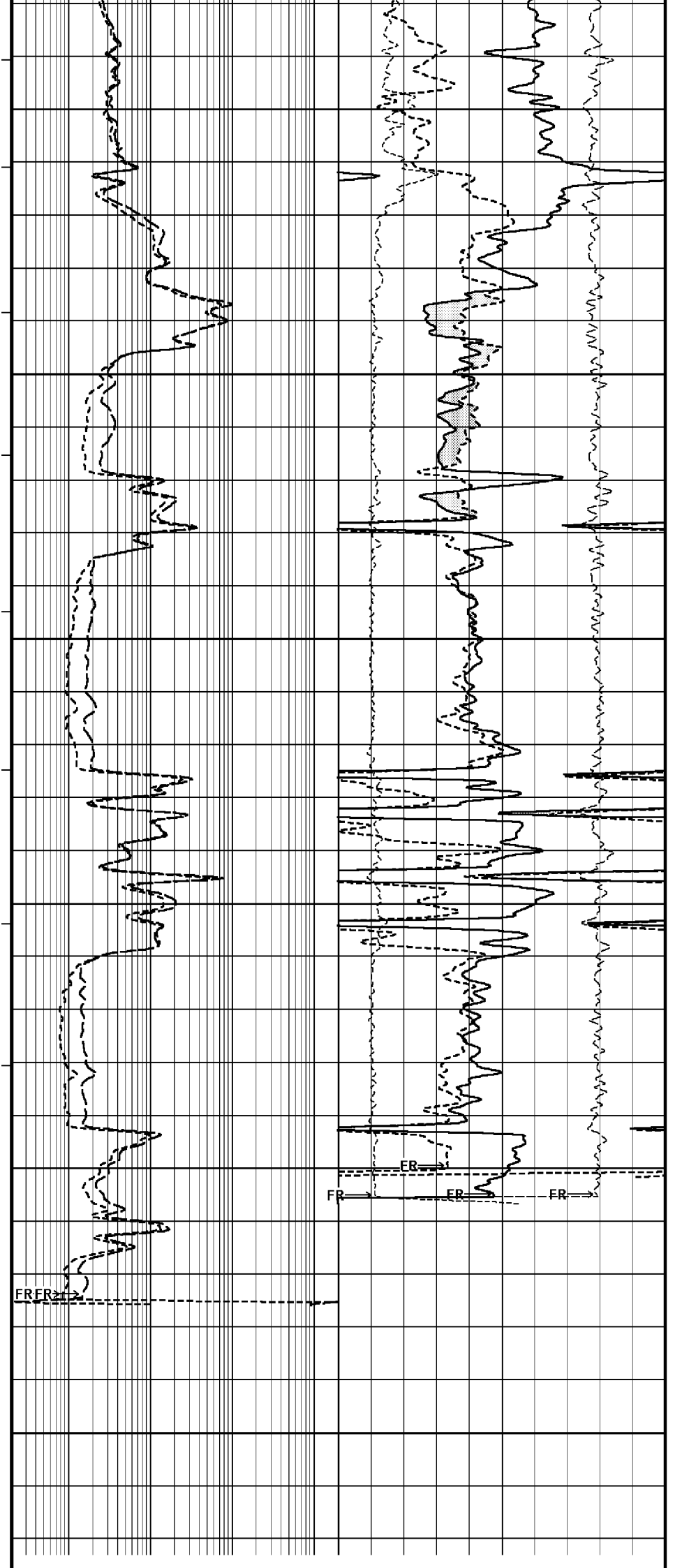
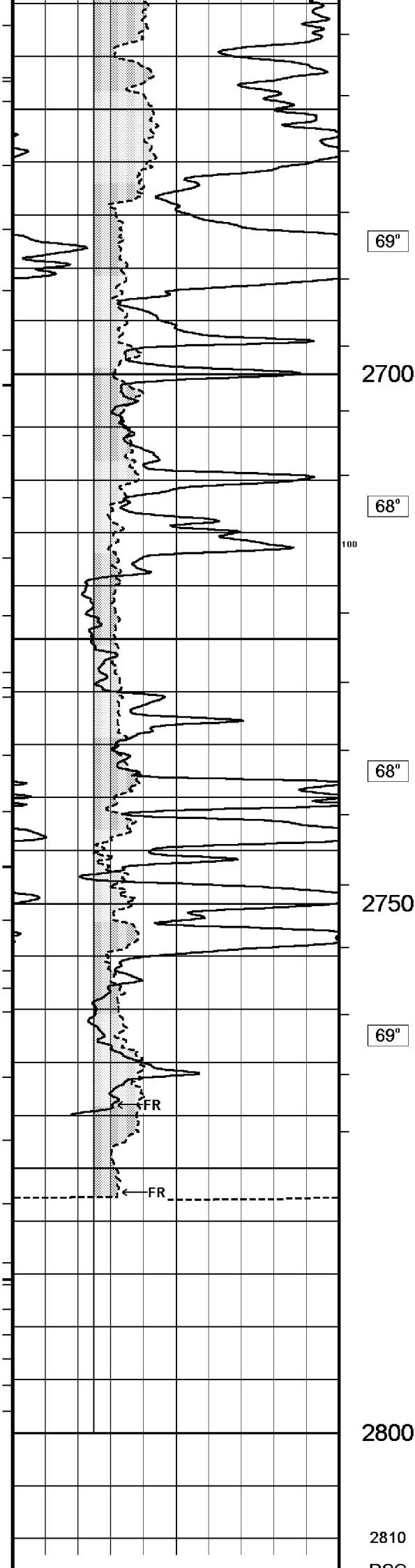


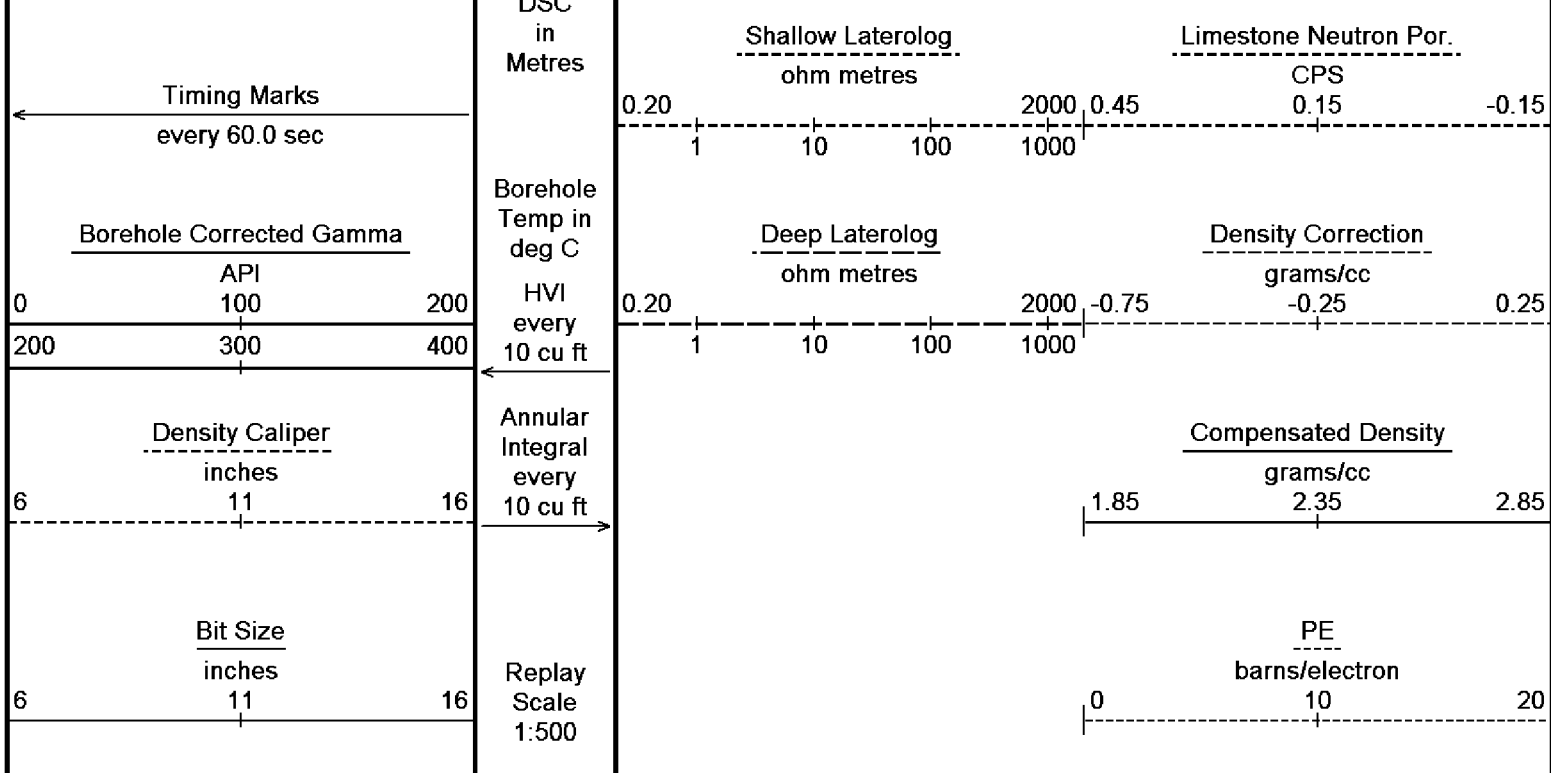












Depth Based Data - Maximum Sampling Increment 10.0cm  
 Filename: C:\logs\BMA\_A19A\FIELD DATA\BMA\_A19A\_TRIPLE\_COMBO.dta  
 System Configuration Dates: Logged 17-JUN-2004: Processed 17-JUN-2004: Plotted 17-JUN-2004:

Plotted on 30-NOV-2005 22:06  
 Recorded on 30-NOV-2005 14:16

MAIN LOG 1:500

BEFORE SURVEY CALIBRATION			
C:\logs\BMA_A19A\FIELD DATA\BMA_A19A_TRIPLE_COMBO.dta			
General Constants All 000			
General Parameters			
Mud Resistivity	0.113	ohm-metres	
Mud Resistivity Temperature	25.000	degrees C	
Water Level	0.000	metres	
Density/Neutron Processing	Wet Hole		
Hole/Annular Volume and Differential Caliper Parameters			
HVOL Caliper 1	Density Caliper		
HVOL Caliper 2	Density Caliper		
Annular Volume Diameter	7.000	inches	
Caliper for Differential Caliper	None		
Rwa Parameters			
Porosity used	Limestone Sonic Porosity		
Resistivity used	Deep Induction		
RWA Constant A	0.610		
RWA Constant M	2.150		
High Resolution Temperature Calibration MCG 142			
	Measured	Calibrated(Deg C)	Field Calibration on 7-NOV-2005,03:12
Lower	0.00	0.00	
Upper	100.00	100.00	
High Resolution Temperature Constants MCG 142			
Pre-filter Length	11		
Gamma Calibration MCG 142			
	Measured	Calibrated (API)	Field Calibration on 7-NOV-2005 03:17
Background	21	14	
Calibrator (Gross)	1367	923	
Calibrator (Net)	1346	909	
Gamma Constants MCG 142			
Gamma Constant N	222		

Gamma Calibrator Number	060	
Mud Density	1.21	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Centred	
Concentration of KCl	0.00	kppm

Neutron Calibration MDN 085				Base Calibration on 28-OCT-2005 16:16	
				Field Check on 7-NOV-2005 03:32	
Base Calibration					
		Measured		Calibrated (cps)	
		Near	Far	Near	Far
		3202	100	3714	110
Ratio		32.170		33.764	
Field Calibrator at Base					
				Calibrated (cps)	
				1608	2344
Ratio				0.686	
Field Check					
				Calibrated (cps)	
				1577	2339
Ratio				0.674	

Neutron Constants MDN 085		
Neutron Source Id	NSN-E-729	
Neutron Jig Number	NEC-C-052	
Epithermal Neutron	No	
Caliper Source for Processing	Bit Size	
Stand-off	0.00	inches
Mud Density	1.21	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	MCG External Temperature	
Temperature	N/A	degrees C
Mud Salinity	59.40	kppm
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

Caliper Calibration MPD 083			Base Calibration on 28-OCT-2005 18:13	
			Field Calibration on 7-NOV-2005 03:20	
Base Calibration				
Reading No		Measured	Calibrator Size (in)	
1		13616	4.01	
2		21847	5.99	
3		30336	7.98	
4		38762	9.94	
5		47872	12.01	
6		N/A	N/A	
Field Calibration				
		Measured Caliper (in)	Actual Caliper (in)	
		7.94	7.98	

Photo Density Calibration MPD 083				Base Calibration on 28-OCT-2005 18:32	
				Field Check on 7-NOV-2005 03:25	
Density Calibration					
Base Calibration		Measured		Calibrated (sdu)	
		Near	Far	Near	Far
	Reference 1	54504	18779	53111	19310
	Reference 2	25530	2542	24951	2530
Field Check at Base					
		949.8	1099.0		
Field Check					
		950.3	1097.1		
PE Calibration					
Base Calibration		Measured		Calibrated	
	WS	WH	Ratio	Ratio	
	Background	181	815		
	Reference 1	17171	54310	0.320	
	Reference 2	22410	25220	0.270	

## Field Check at Base

181.2 815.4

## Field Check

181.0 813.6

## Density Constants MPD 083

Density Source Id	NSD-L-242	
Nylon Calibrator Number	DNC-D-536	
Aluminium/Fe Calibrator Number	DNC-D-536	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.21	gm/cc
Mud Density Z/A Correction	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc

Matrix Density (gm/cc)	Depth (m)
2.71	
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

## Laterolog Constants MLE 031

Squasher Start	40000	ohm-m
Shallow Laterolog K Factor	1.3210	
Deep Laterolog K Factor	0.7550	
Groningen Laterolog K Factor	0.8540	
Interference Rejection	50 Hz	
SP Connection	SP Bridle Electrode	
Groningen Connection	Groningen Electrode	

## DOWNHOLE EQUIPMENT

C:\logs\BMA\_A19A\FIELD DATA\BMA\_A19A\_TRIPLE\_COMBO.dta

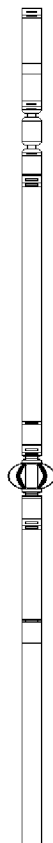
Compact Swivel Head Adaptor F  
SHA 71 Length: 0.83 m Weight: 26.5 lb

Compact Knuckle Joint  
SKJ 100 Length: 0.66 m Weight: 24.3 lb

Compact Battery Sub.  
MBS 99 Length: 4.41 m Weight: 44.1 lb

Compact Inline Standoff B  
MIS 73 Length: 0.65 m Weight: 15.4 lb

Compact Stiff Bridle Electrode Sub.  
MBE 18 Length: 3.76 m Weight: 94.8 lb



Compact Inline Standoff B  
MIS 138 Length: 0.65 m Weight: 15.4 lb

Compact Stiff Bridle Electrode Sub.  
MBE 19 Length: 3.76 m Weight: 94.8 lb

Compact Inline Standoff B  
MIS 136 Length: 0.65 m Weight: 15.4 lb

MBE21 - THIRD BRIDLE  
MLK 111 Length: 3.76 m Weight: 30.9 lb

Compact Inline Standoff B  
MIS 133 Length: 0.65 m Weight: 15.4 lb

Compact Gamma  
MCG 142 Length: 2.65 m Weight: 63.9 lb

32.22 m GGCE - Borehole Corrected Gamma  
31.33 m CGXT - MCG External Temperature

Compact Memory Sub A.C  
MMS 38 Length: 0.95 m Weight: 30.9 lb

Compact Knuckle Joint  
SKJ 45 Length: 0.66 m Weight: 24.3 lb

Compact Swivel Head Adaptor F  
SHA 64 Length: 0.83 m Weight: 26.5 lb

Compact Inline Bowspring A  
MIS 94 Length: 1.74 m Weight: 33.1 lb

Compact Neutron  
MDN 85 Length: 1.53 m Weight: 50.7 lb

26.17 m NPRL - Limestone Neutron Por.

Compact Density/Caliper  
MPD 83 Length: 2.92 m Weight: 90.4 lb

23.48 m AVOL - Annular Volume  
23.48 m HVOL - Hole Volume  
23.48 m CLDC - Density Caliper  
23.27 m DEN - Compensated Density

Compact Inline Bowspring A  
MIS 24 Length: 1.74 m Weight: 33.1 lb

23.27 m DCOR - Density Correction

Compact Swivel Head Adaptor  
SHA 28    Length: 0.83 m    Weight: 26.5 lb

Compact Knuckle Joint  
SKJ 110    Length: 0.66 m    Weight: 24.3 lb

Compact Inline Standoff B  
MIS 72    Length: 0.65 m    Weight: 15.4 lb

Compact Upper Guard Sub.  
MUG 30    Length: 2.74 m    Weight: 68.3 lb

Compact Inline Standoff B  
MIS 141    Length: 0.65 m    Weight: 15.4 lb

Compact Laterolog Electrode Sub.  
MLE 31    Length: 3.76 m    Weight: 92.6 lb

Compact Inline Standoff B  
MIS 127    Length: 0.65 m    Weight: 15.4 lb

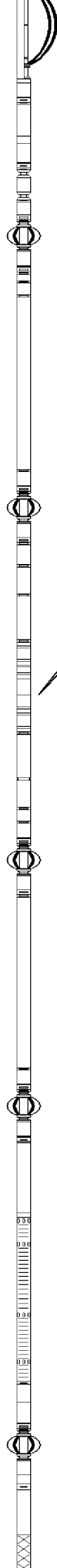
Compact Lower Guard Sub.  
MLG 7    Length: 2.44 m    Weight: 55.1 lb

Compact Inline Standoff B  
MIS 129    Length: 0.65 m    Weight: 15.4 lb

Compact Sonic  
MSS 66    Length: 3.82 m    Weight: 72.8 lb

Compact Inline Standoff B  
MIS 126    Length: 0.65 m    Weight: 15.4 lb

Compact Induction  
MAI 39    Length: 3.29 m    Weight: 48.5 lb



13.35 m    DSLL - Shallow Laterolog  
13.35 m    DDLL - Deep Laterolog

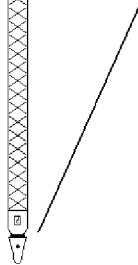
Tool Zero    (0.44m from bottom)

23.25 m    PDPE - PE



Pressure Bung + Hole Finder  
HFS 4      Length: 0.40 m      Weight: 6.6 lb

Total      Length: 54.01 m      Weight: 1201.5 lb



All measurements relative to tool zero.

COMPANY	ESSO AUSTRALIA PTY LTD
WELL	BREAM A19A
FIELD	BREAM
PROVINCE/COUNTY	BASS STRAIT
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing		metres	First Reading	2787.60	metres
Elevation Drill Floor	32.82	metres	Depth Driller	2804.00	metres
Elevation Ground Level	-59.40	metres	Depth Logger	2801.00	metres



DUAL LATEROLOG - GR  
DENSITY - NEUTRON  
1:500 MD