

Tucker

ENERGY SERVICES

COMPOSITE LOG

Company PICKRELL DRILLING COMPANY, INC		File No : TUL 59749	
Well #3 MAPLE "K"		Company : PICKRELL DRILLING COMPANY, INC	
Field SPIVEY-GRABS-BASIL		Well : #3 MAPLE "K"	
County KINGMAN		Field : SPIVEY-GRABS-BASIL	
State KANSAS		County : KINGMAN	
Country USA		State : KANSAS	
API No. 15-095-22291-0000		Country : USA	
Location : 1980' FSL & 660' FEL C NE SE		API No : 15-095-22291-0000	
LSD :		Sect : 30 Twp : 29S Rge : 6W	
Permanent Datum:		Elevations:	
Drilling Measured From:		KB 1529.00 Ft	
Log Measured From:		DF 1527.00 Ft	
Above Permanent Datum: 10.00 Ft		GL 1519.00 Ft	
Date 10-06-2014		Services:	
		CNT PIT	
		LDT MLT	
Run Number	1		
Depth--Driller	4230.0 Ft		
Depth--Logger	4240.0 Ft		
First Reading	4240.0 Ft		
Last Reading	213.0 Ft		
Casing--Driller	213.0 Ft		
Casing--Logger	213.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	CHEM GEL		
Density	9.5 lb/gl		
Fluid Loss	9.0 ml/30min		
PH/Viscosity	10.0 53.0 sec/qt		
Sample Source	MEASURED		
RMF@Measured Temp.	2.000 @ 75 F		
RMF@Measured Temp	1.600 @ 75 F		
RMF@Measured Temp.	2.400 @ 75 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	1.670 @ 119 F		
Time Circulation Stopped	10-06-2014 6:00 pm		
Max Recorded Temp.	119 F		
Equipment/Base	127 TULSA		
Recorded By	SHELDON TYLER / AMOUR DUJO		
Witnessed By	JERRY SMITH		

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	4230.00	8.625	32.00	213.00	0.00

Run Number	1	
Date	10-06-2014	
Date/Time On Bottom	10-06-2014 9:30 pm	
Depth to Fluid	0.0 Ft	
Salinity	3000.000 ppm	
RMF@BHT	1.330 @ 119 F	
RMC@BHT	2.000 @ 119 F	

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 4.5" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED

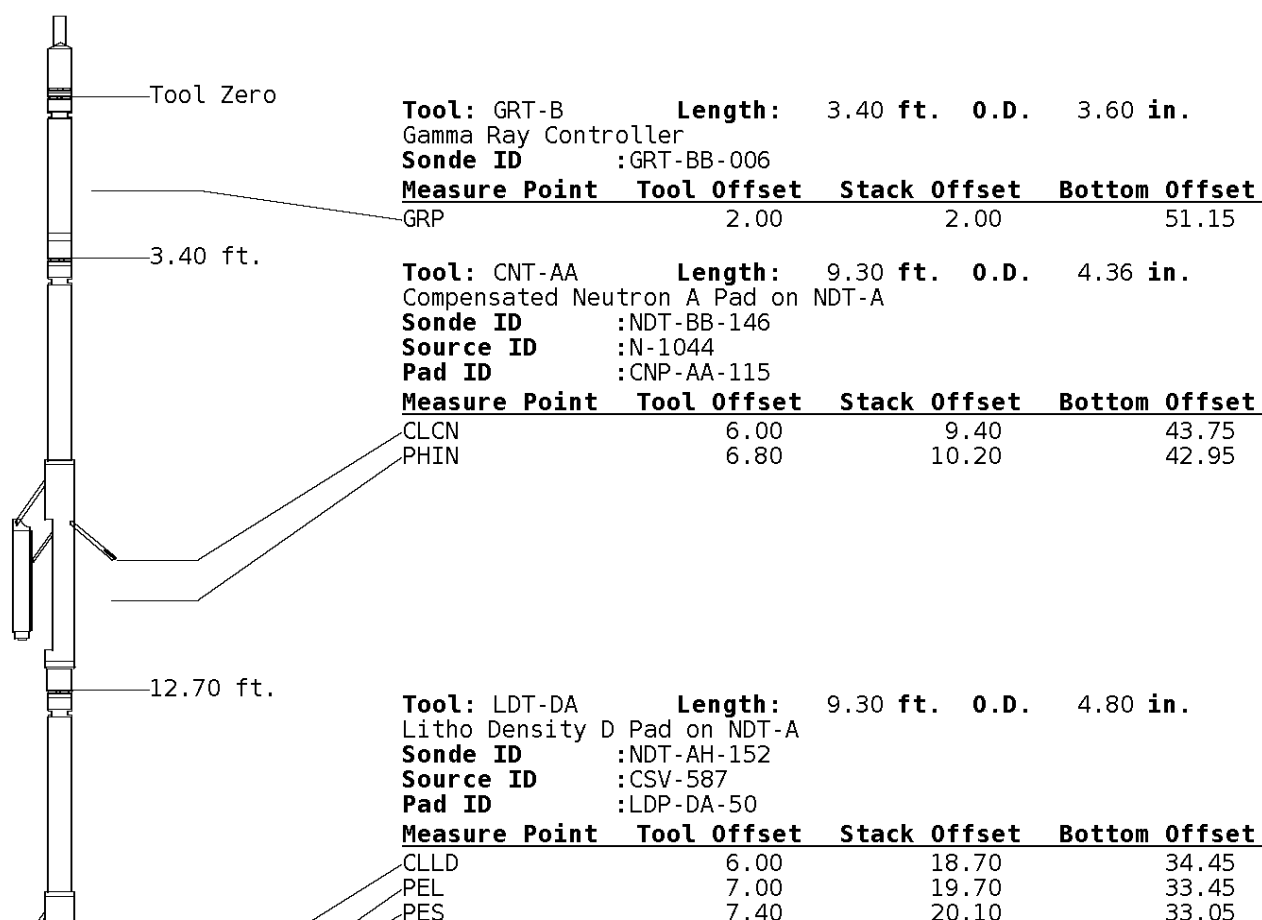
CUSTOMER REQUESTED DETAILS PULLED FROM TD TO 2800'

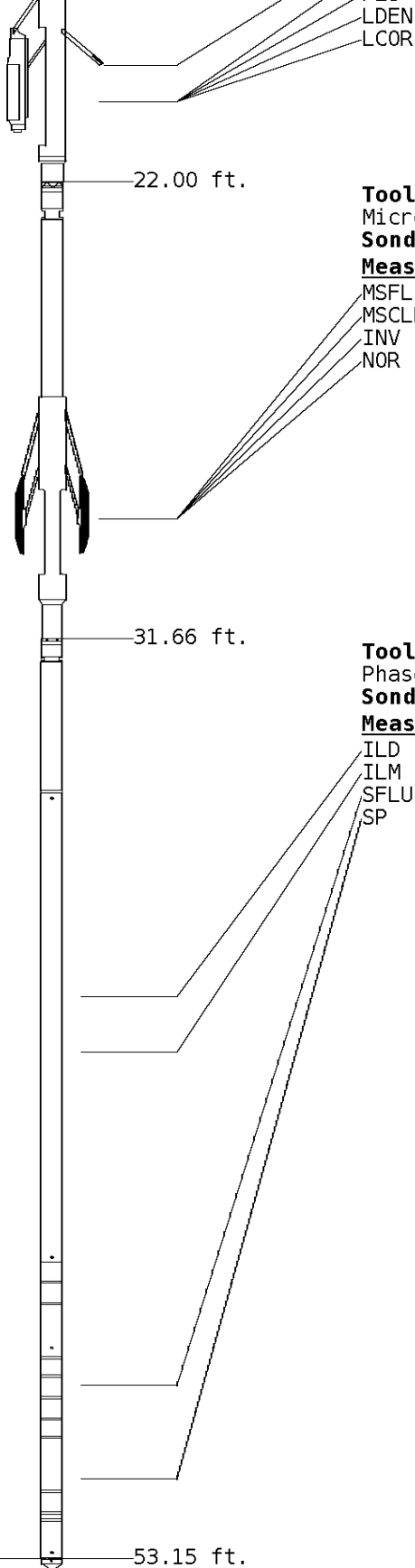
GRT: GRP, GRX
 CNT: PHIN, CLCNIN, PHXN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX
 MLT: NOR_RF, INV_RF, MSCLPIN
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS: +3
 B. BROWN
 D.DUNCAN

Tool String Schematic

Total Tool Length - 53.15 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.





Tool: MST-DA Length: 9.66 ft. O.D. 6.00 in.
 Micro Spherically Focused (IC)
 Sonde ID :MLT-DA-21

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55

Tool: PIT-CA Length: 21.49 ft. O.D. 3.62 in.
 Phased Dual Induction w/ RM & D
 Sonde ID :PIT-CA-062

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

Well File: PICKRELL MAPLE K 3 OCT6 MSTK

Scale: 1:240 Format: COMSAT

Segment: V1.D1.S5 Reprocess of MAIN

Acquired: 2014-10/06 21:15 3.4.0-13115

Reference: 0

Processed: 2014-10/06 22:22 3.4.0-13115

CALIPER MICRO
INCHES (IN)

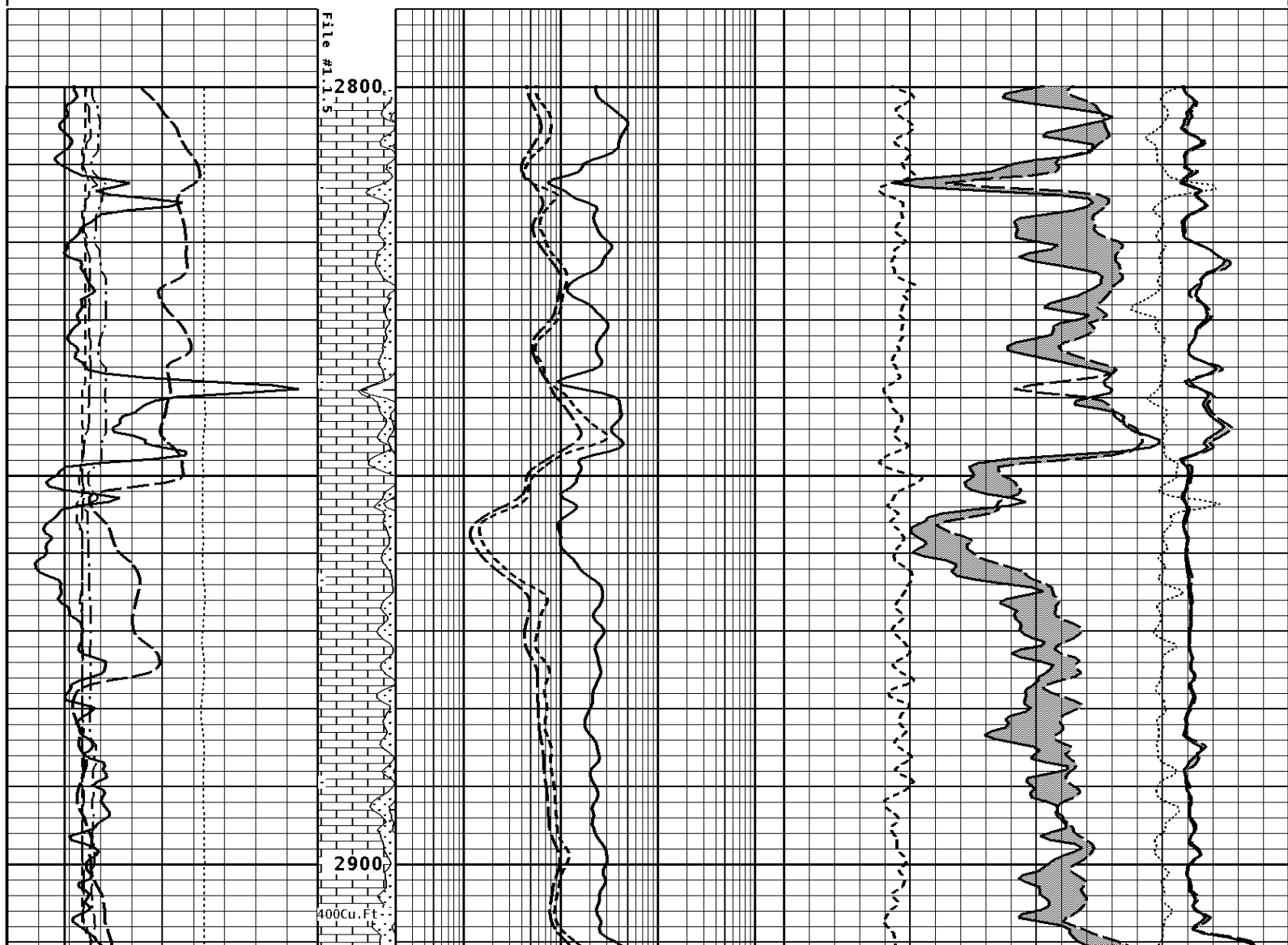
16 26
6 16

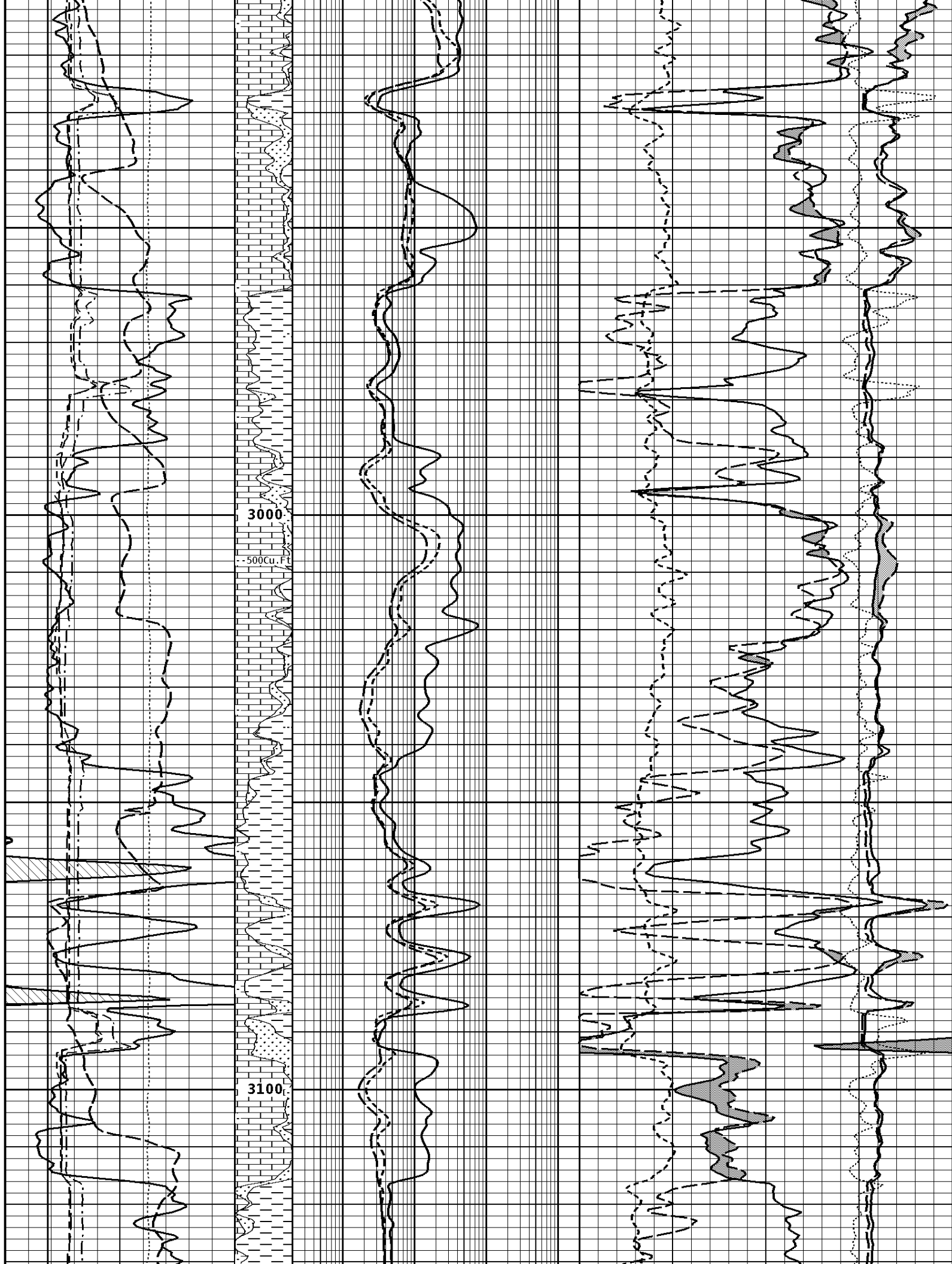
BIT SIZE
INCHES (IN)

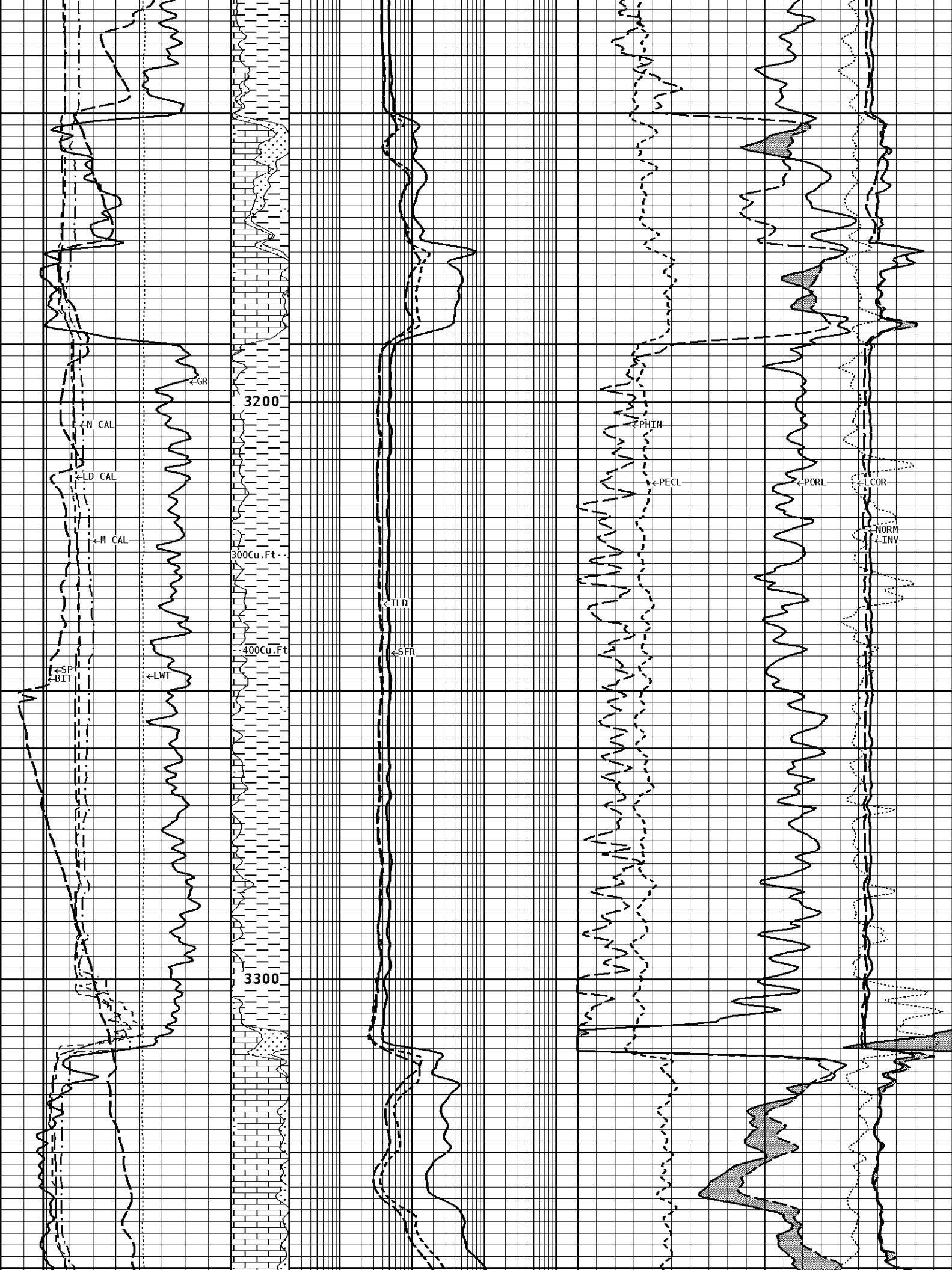
NORMAL
OHMM

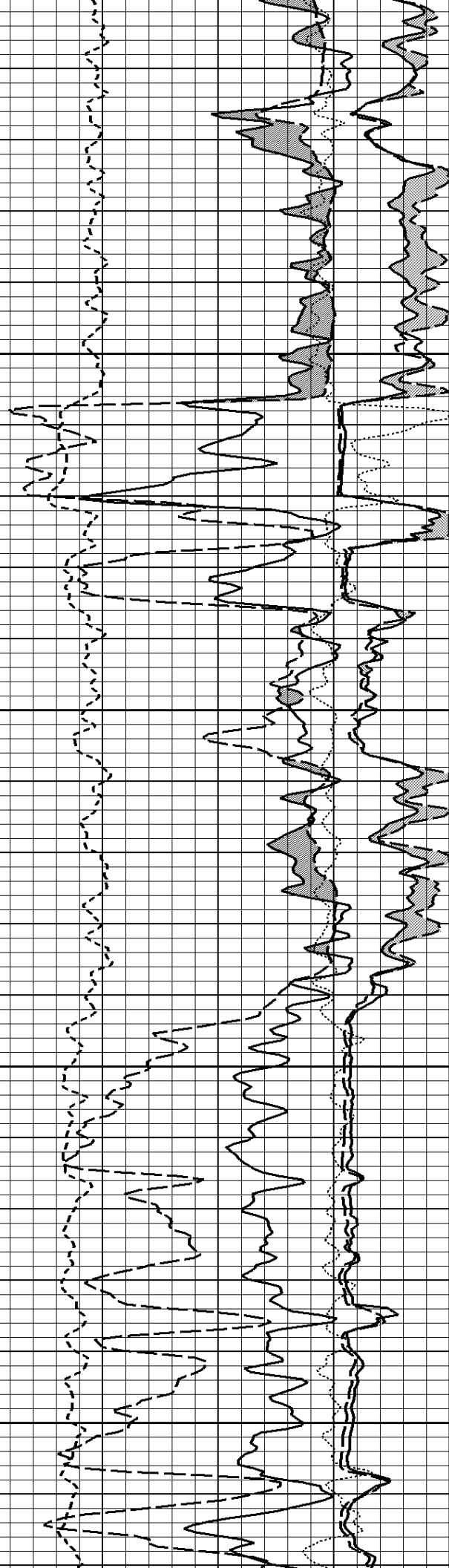
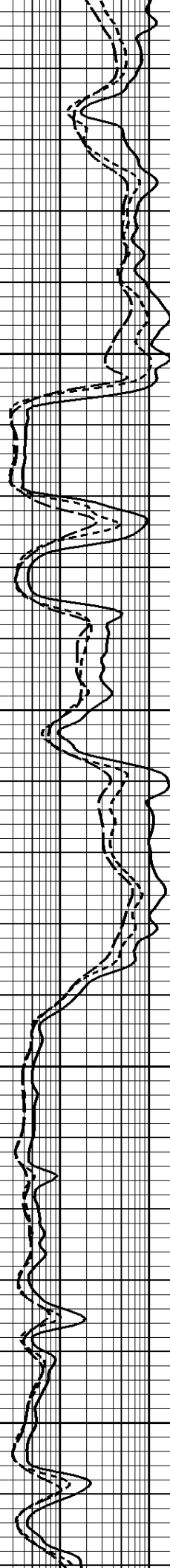
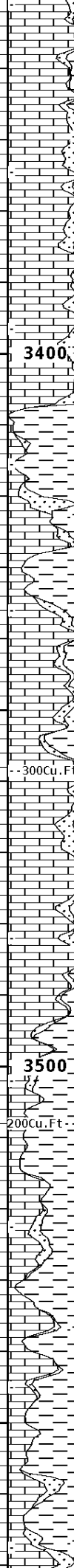
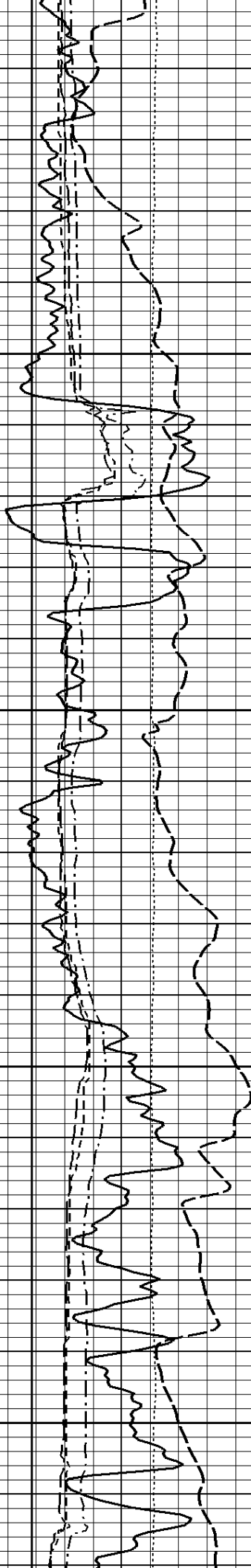
6	16				0	40
NEUTRON (Y) CALIPER INCHES (IN)					INVERSE OHMM	
16	26				0	40
6	16					
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz		DENSITY CORRECTION G/CC		
16	26			-0.75		0.25
6	16					
TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNs/ELECTRON		
10000	0		0.2	2000.0	0	20
SPONTANEOUS POTENTIAL mV		Volume Dolo/Shale	DEEP INDUCTION OHMM	DENSITY POROSITY (2.71g/cc) PERCENT		
→ ← 20			0.2	2000.0	70	30
					30	-10
					-10	-50
GAMMA RAY API UNITS		BHV AHV CU.FT	MEDIUM INDUCTION OHMM	NEUTRON POROSITY (LIMESTONE) PERCENT		
150	300		0.2	2000.0	30	-10
0	150					

1:240 MAIN SECTION

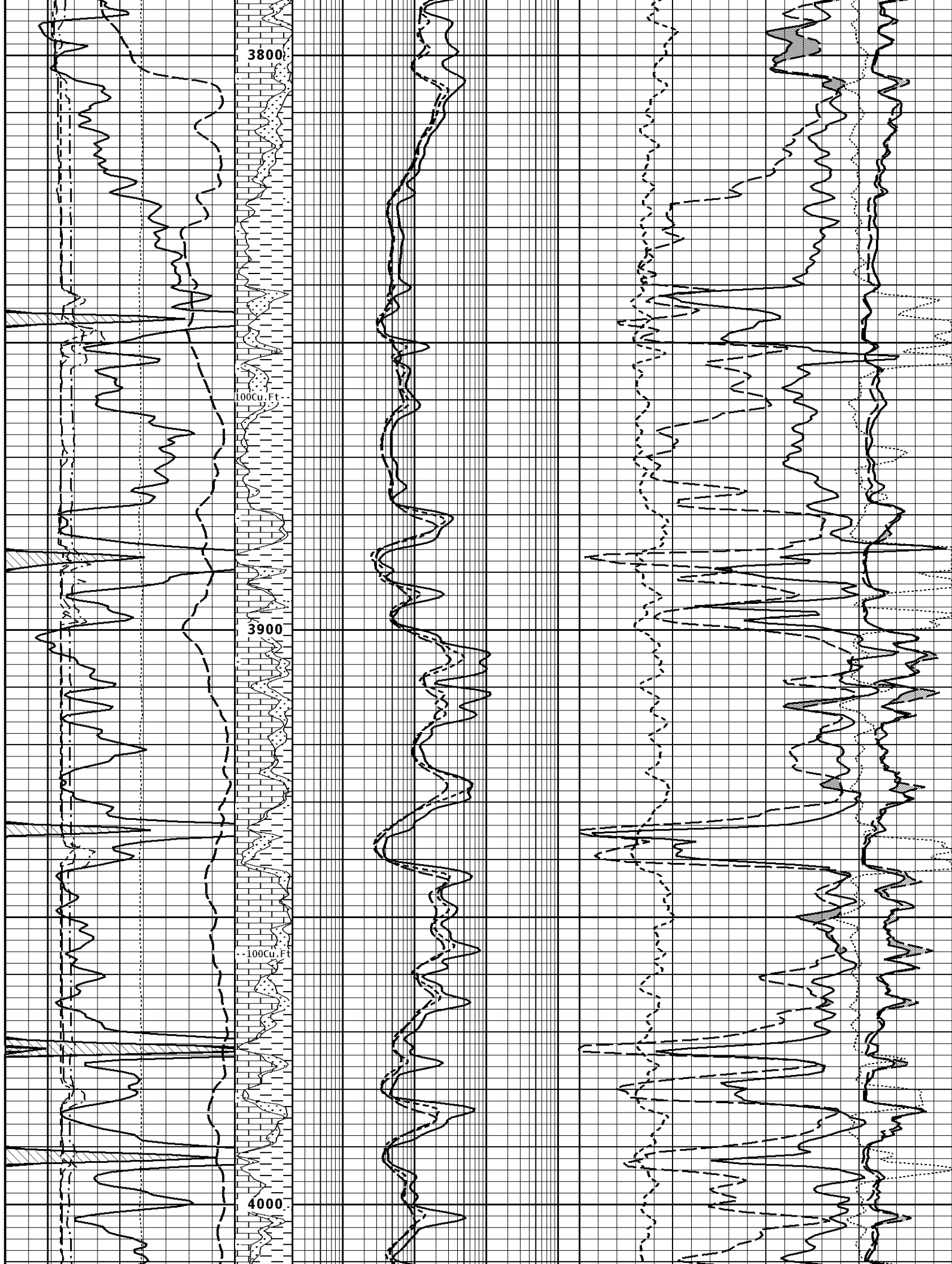


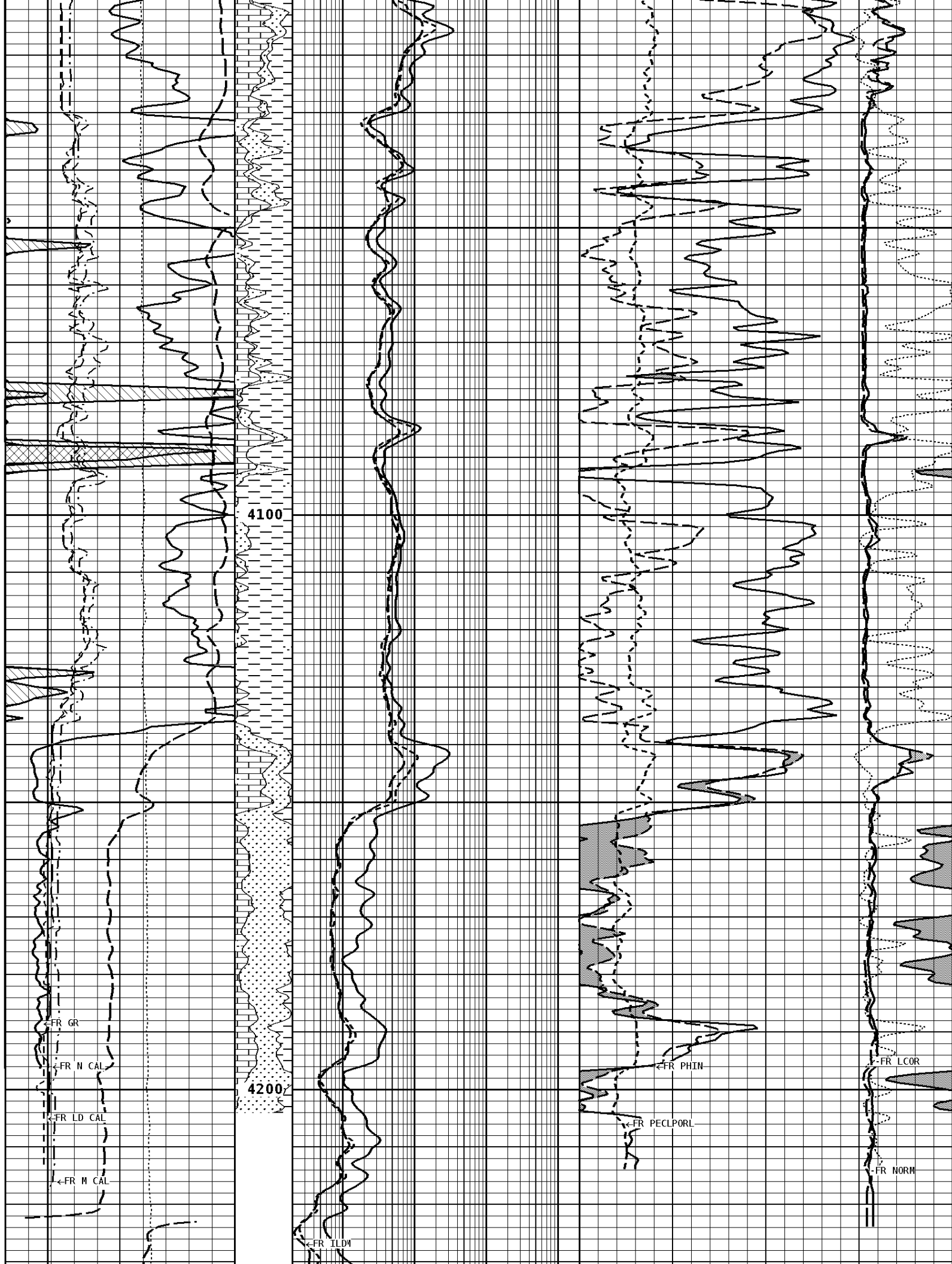


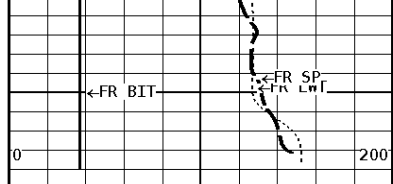




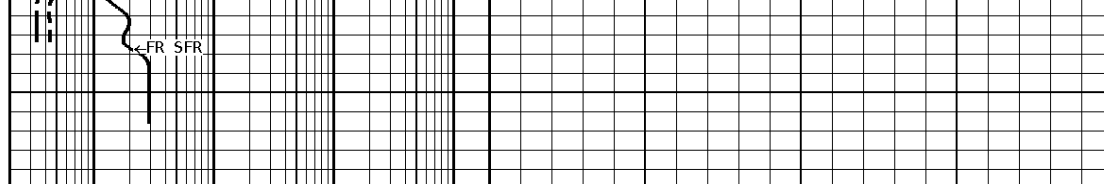








File #1.1.5
4240



1:240 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150	BHV AHV- CU. FT	MEDIUM INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10
SPONTANEOUS POTENTIAL mV → ← 20	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 -50
TENSION LBS 10000 0	Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0	PE CROSS-SECTION BARNS/ELECTRON 0 20
DENSITY (X) CALIPER INCHES (IN) 16 6 26 16	Volume Quartz		DENSITY CORRECTION G/CC -0.75 0.25
NEUTRON (Y) CALIPER INCHES (IN) 16 6 26 16			INVERSE OHMM 0 40
BIT SIZE INCHES (IN) 6 16			NORMAL OHMM 0 40
CALIPER MICRO INCHES (IN) 16 6 26 16			

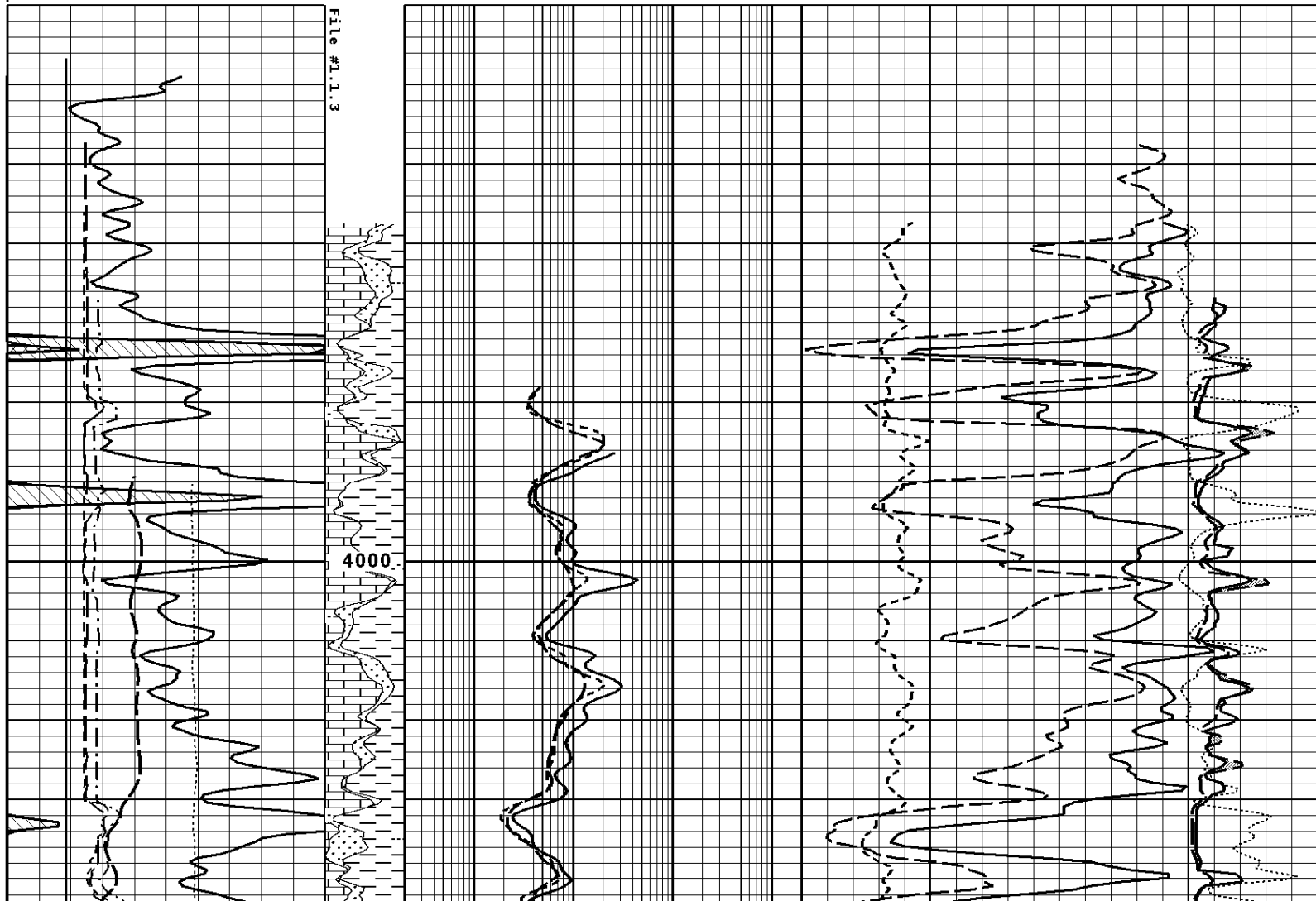
* Borehole Zone Factors *

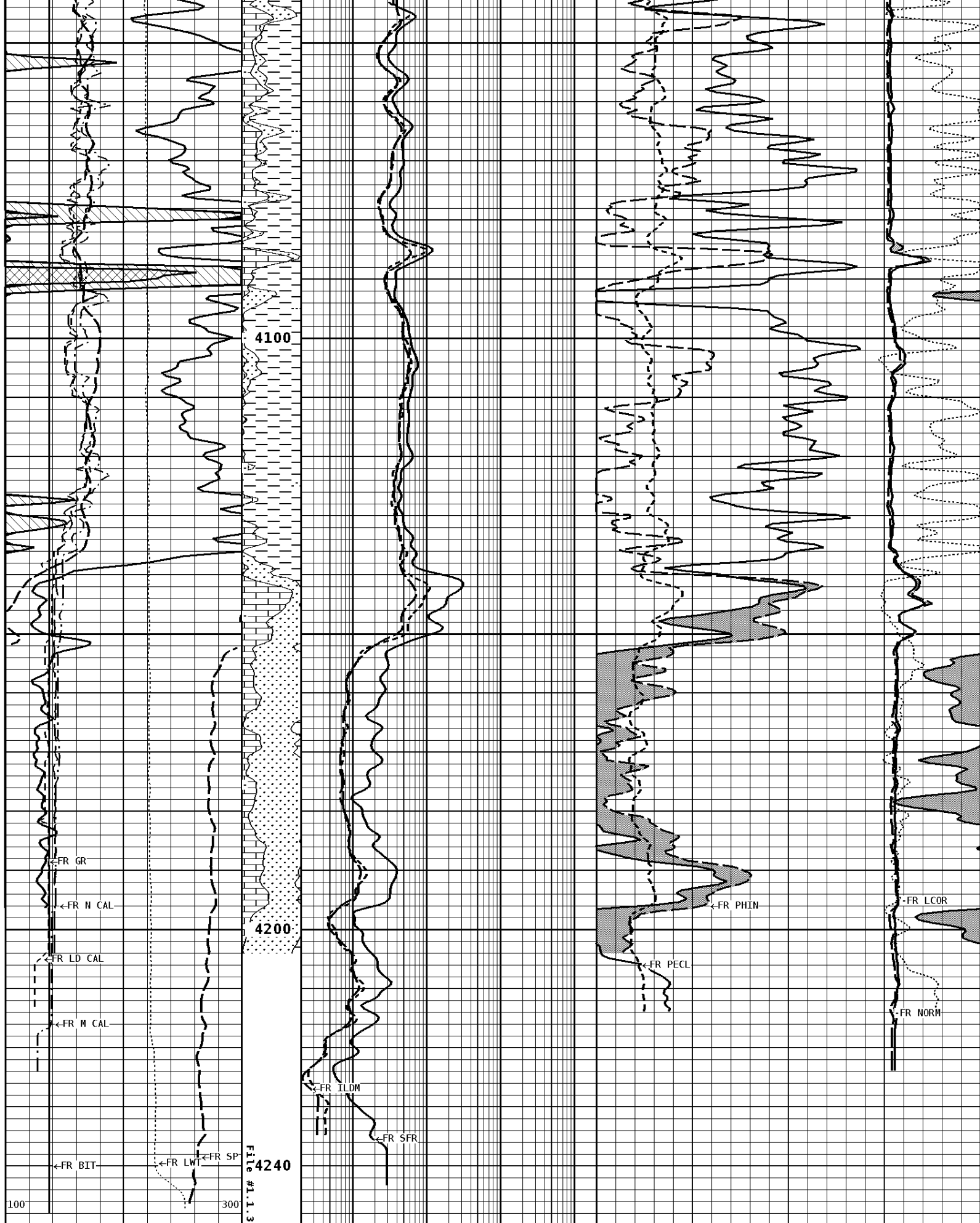
Zone 1 99999.0 to 0.0 Feet		
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	4.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	
Hole Substance	Fluid	
BHT Depth	4230.000	ft
Borehole Temperature	119.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.200	ohm/m
MSTNG Normal Correction	0.00	ohm/m
MSTNG Inverse Correction	1.20	ohm/m

Well File: PICKRELL MAPLE K 3 OCT6 MSTK Scale: 1:240 Format: COMSAT
Segment: V1.D1.S3 Reprocess of REPEAT Acquired: 2014-10/06 21:03 3.4.0-13115
Reference: 0 Processed: 2014-10/06 21:14 3.4.0-13115

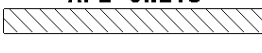
CALIPER MICRO INCHES (IN)	
16 6	26 16

1:240 REPEAT SECTION	
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1:240 REPEAT SECTION

GAMMA RAY API UNITS 150  300 0 150	BHV AHV CU. FT	MEDIUM INDUCTION OHMM 0.2 ----- 2000.0		NEUTRON POROSITY (LIMESTONE) PERCENT 30 ----- -10	
SPONTANEOUS POTENTIAL mV → ← 20	Volume Dolo/Shale 	DEEP INDUCTION OHMM 0.2 ----- 2000.0		DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 ----- -50	
TENSION LBS 10000 ----- 0	Volume Calcite 	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 ----- 2000.0		PE CROSS-SECTION BARNs/ELECTRON 0 ----- 20	
DENSITY (X) CALIPER INCHES (IN) 16 6 ----- 16	Volume Quartz 			DENSITY CORRECTION G/CC -0.75 ----- 0.25	
NEUTRON (Y) CALIPER INCHES (IN) 16 6 ----- 16				INVERSE OHMM 0 ----- 40	
BIT SIZE INCHES (IN) 6 ----- 16				NORMAL OHMM 0 ----- 40	
CALIPER MICRO INCHES (IN) 16 6 ----- 16					

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet			
Matrix Density	2.71	g/cc	
Fluid Density	1.00	g/cc	
Formation Matrix	Limestone		
Drill Bit Size	7.875	in	
Casing Diameter	4.500	in	
Casing Thickness	0.250	in	
Casing Correction (PHI N)	Disable		
Hole Substance	Fluid		
BHT Depth	4230.000	ft	
Borehole Temperature	119.0	degF	
Temperature Gradient	1.00	DFHF	
Resistivity Of Mud	0.200	ohm/m	
MSTNG Normal Correction	0.00	ohm/m	
MSTNG Inverse Correction	1.20	ohm/m	

*** Calibration Summary ***

Shop Calibration GRT-B					
Performed : 22-SEP-2014			Time : 09:30		
Sensor Suite : GR-GR5			ID : GRT-BB-006		
	Measured	Units	Calibrated	Units	
GR	Background Jig		Jig		
	62 374	CPS	175	GRAPI	
Shop Calibration CNT-AA					
Performed : 18-SEP-2014			Time : 17:15		
Sensor Suite : CALI-BCN			ID : NDT-BB-146		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1 Ring#2		Ring#1 Ring#2		
CL # 1	9.2 14.0		6.0 12.0	IN.	
Performed : 18-Sep-2014			Time : 09:49		

Performed : 18-Sep-2014		Time : 09:49		ID : CNP-AA-115	
Sensor Suite : BHC NEUT					
Source ID : N-1044					
	Tank		Verification		Units
	Measured	Calibrated	Jig		
N/F	4.0236	3.6893	3.7013		
Porosity	25.9	20.5	20.7		%
Shop Calibration					
LDT-DA					
Performed : 18-SEP-2014		Time : 16:47			
Sensor Suite : CALI-LTH		ID : NDT-AH-152			
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.4	10.7	6.0	12.0	IN.
Performed : 18-Sep-2014		Time : 11:25			
Sensor Suite : BHCPELNG		ID : LDP-DA-50			
Source ID : CSV-587					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	72	478	767	325	CPS
LSW2	76	543	860	409	CPS
LSW3	280	1302	2026	1138	CPS
LSW4	340	1235	1702	1115	CPS
LSW5	31	40	41	38	CPS
LSW6	95	95	93	96	CPS
LSW7	56	59	57	59	CPS
LSW8	1	3	3	2	CPS
QS	0.257	0.235	0.239	0.238	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	102	567	2352	371	CPS
LLW2	115	888	3622	682	CPS
LLW3	429	1761	6311	1548	CPS
LLW4	547	1061	2629	994	CPS
LLW5	65	69	78	67	CPS
LLW6	169	169	164	171	CPS
LLW7	114	108	109	111	CPS
LLW8	5	6	10	6	CPS
QL	0.196	0.221	0.199	0.212	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC
Shop Calibration					
MST-DA					
Performed : 21-MAR-2013		Time : 13:53			
Sensor Suite : CALI-MSN		ID : MLT-DA-21			
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.5	11.9	6.0	12.0	IN.
Performed : 21-MAR-2013		Time : 13:53			
Sensor Suite : MSTDA-NI		ID : MLT-DA-21			
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
INV-V	0.0	29815.7	0.00	1946.00	MV
NOR-V	49.2	30179.6	0.00	1546.00	MV
IN-C	0.0	60547.2	0.00	15.46	UA
INV-R				40.71	OHMM
NOR-R				55.11	OHMM
Shop Calibration					
PIT-CA					
Performed : 22-Sep-2014		Time : 12:08			
Sensor Suite : P-IND-T		ID : PIT-CA-062			
Medium					
	Measured		Calibrated		
	R	X	R	X	Units
Air	130580	130694	-0.6	-0.9	MMHOS
Zero	131070	131068	26.0	5.8	MMHOS
Reference	253403	250257	5026.0	5005.8	MMHOS
Loop	130399	221825	3815.0	3829.4	MMHOS
Sonde Error			-1.9	-16.4	MMHOS

Cond				5026.0	5005.8	MMHOS
Deep						
		Measured		Calibrated		
		R	X	R	X	Units
Air		129101	131419	1.1	0.3	MMHOS
Zero		131069	131067	41.2	-16.3	MMHOS
Reference		233843	231793	2041.2	1983.7	MMHOS
Loop		128983	222342	1804.2	1807.9	MMHOS
Sonde Error				-8.5	-11.5	MMHOS
Cond				2041.2	1983.7	MMHOS
Temperature						
		Measured		Calibrated		
		Low	High	Low	High	Units
		16980.0	56920.0	70.0	350.0	DEGF
Performed : 22-Sep-2014 Time : 11:59 Sensor Suite : SFL ID : PIT-CA-062						
Internal						
		Measured		Calibrated		
		Zero	Reference	Zero	Reference	Units
Im		32760.0	48929.8	0.0	7028.0	uA
Ib		32766.9	48730.4	0.0	1750.0	mA
MOM1		32746.3	57508.7	0.0	175.0	mV
Equivalent SFL					43.97	OHMM
Performed : 22-SEP-2014 Time : 11:56 Sensor Suite : P-SP ID : PIT-CA-062						
Internal						
		Measured		Calibrated		
		Zero	Reference	Zero	Reference	Units
		32765.9	58980.4	0.0	1000.0	mV



Tucker
ENERGY SERVICES

Company: PICKRELL DRILLING COMPANY, INC
 Well: #3 MAPLE "K"
 Location: 1980' FSL & 660' FEL
 Logged: 10-06-2014
 K.B. Elev: 1529.0 Ft