

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

Fold here

Service Ticket No.: 900724497						API Serial No.: 15081220330000						PGM Version: WL INSITE R3.8.4 (Build 5)					
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES											
Date	Sample No.					Type Log	Depth	Scale Up Hole		Scale Down Hole							
Depth-Driller																	
Type Fluid in Hole																	
Density	Viscosity																
Ph	Fluid Loss																
Source of Sample						RESISTIVITY EQUIPMENT DATA											
Rm @ Meas. Temp		@		@		Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other							
Rmf @ Meas. Temp.		@		@													
Rmc @ Meas. Temp.		@		@													
Source Rmf	Rmc																
Rm @ BHT		@		@													
Rmf @ BHT		@		@													
Rmc @ BHT		@		@													
EQUIPMENT DATA																	
GAMMA			ACOUSTIC			DENSITY			NEUTRON								
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE	Run No.	ONE								
Serial No.	11048627	Serial No.		Serial No.	10844781	Serial No.	10844781	Serial No.	11019643								
Model No.	GTET	Model No.		Model No.	SDLT-I	Model No.	SDLT-I	Model No.	DSNT-I								
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	4.5"	Diameter	3.625"								
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM	Log Type	GAM-GAM	Log Type	NEU-NEU								
Type	SCINT			Source Type	CS137	Source Type	CS137	Source Type	AM241BE								
Length	8'	LSA [Y/N]		Serial No.	5168GW	Serial No.	5168GW	Serial No.	DSN-424								
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 CI	Strength	1.5 CI	Strength	15 CI								

GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix		
No.	From	To	ft/min	L	R	L	R		L	R		L	R			
ONE	5706	4000	REC	0	150				30	-10	2.71	30	-10	LIME		
DIRECTIONAL INFORMATION																
Maximum Deviation								@	KOP							@
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING																
CHLORIDES REPORTED AT 3,200 MG/L																
LCM REPORTED AT 6 LB/BBL																
GTET-DSNT-SDLT-BSAT-ACRT RUN IN COMBINATION																
TODAY'S CREW: R. DODD & D. MILLER																
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123																
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.																
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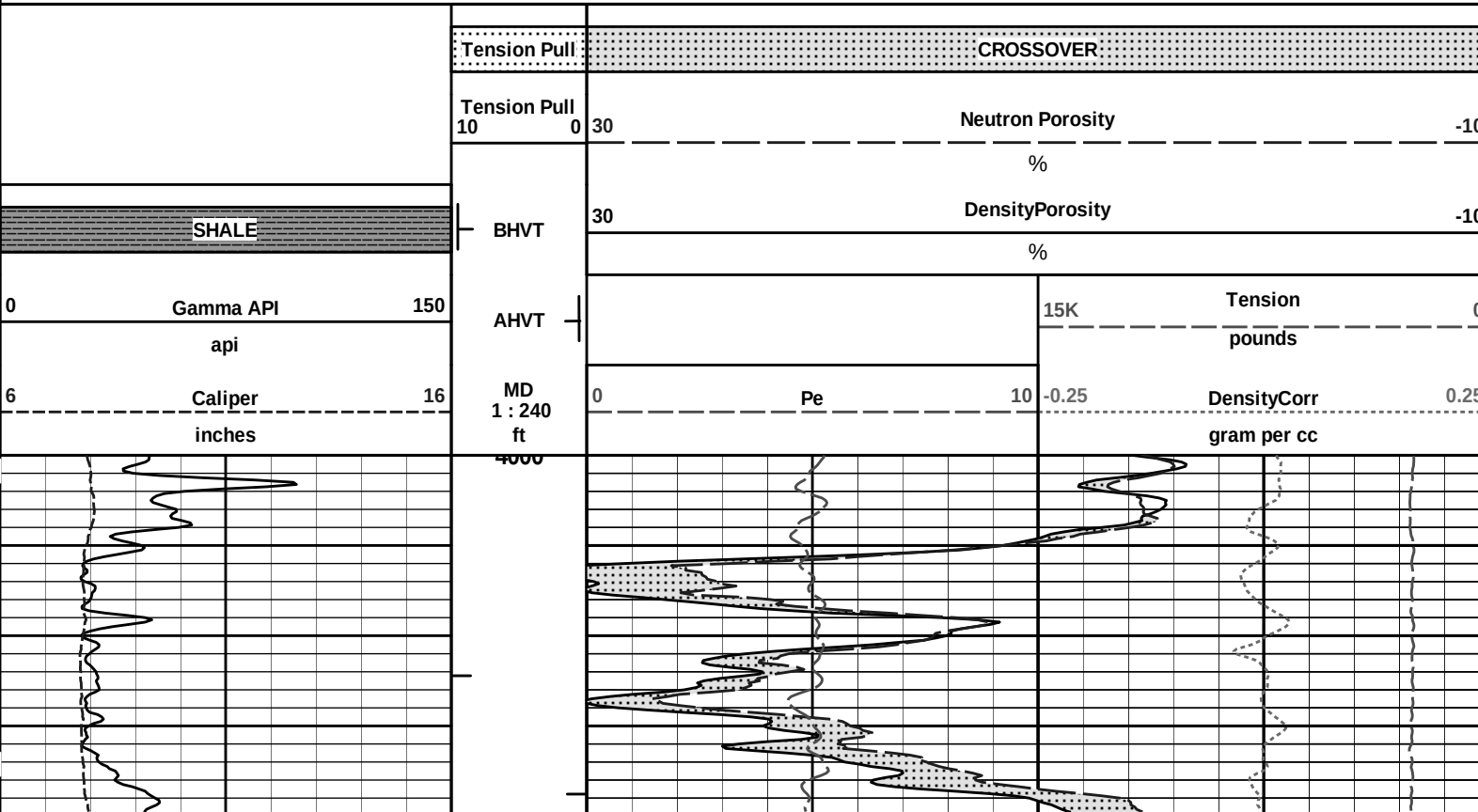
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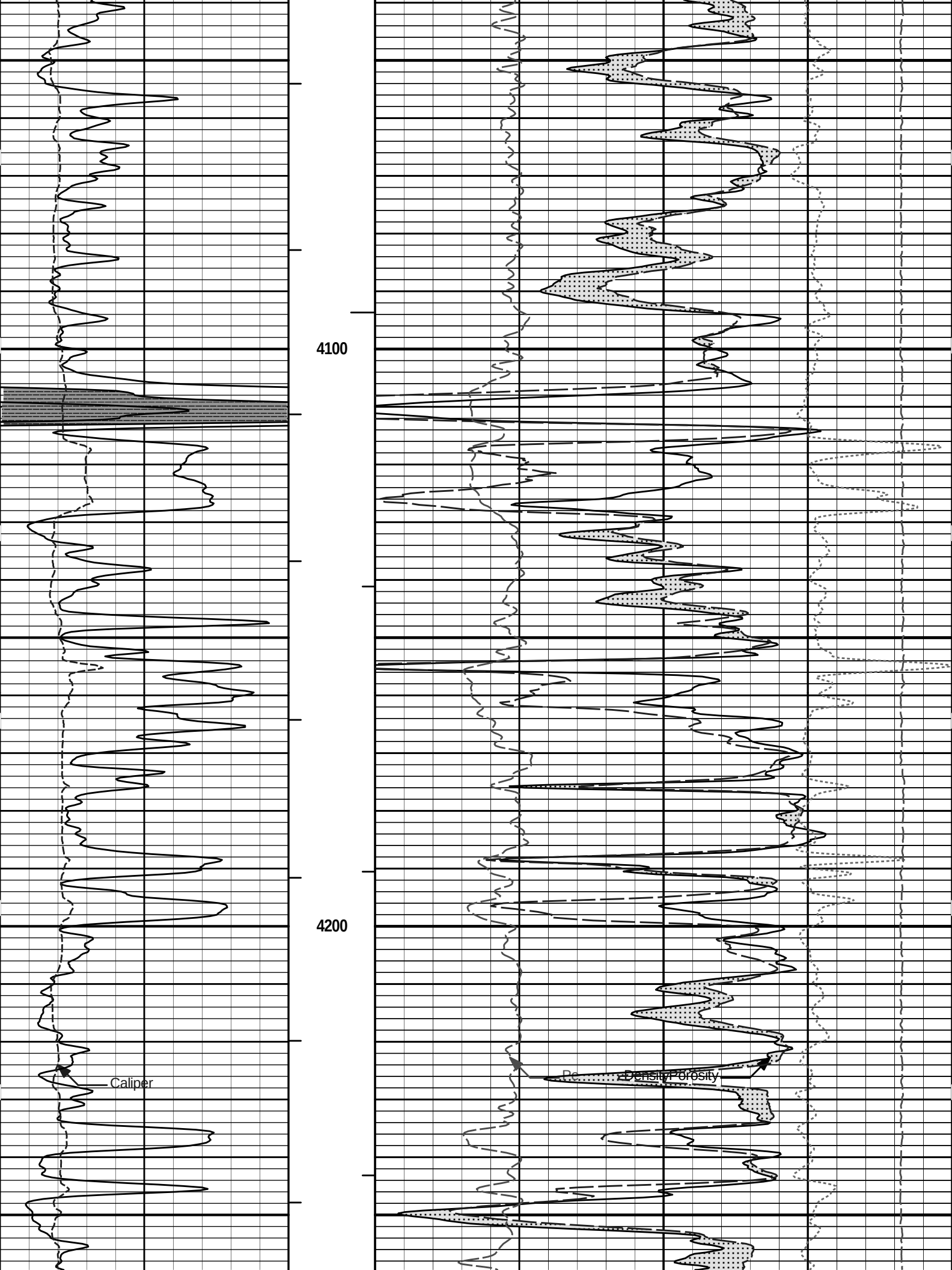
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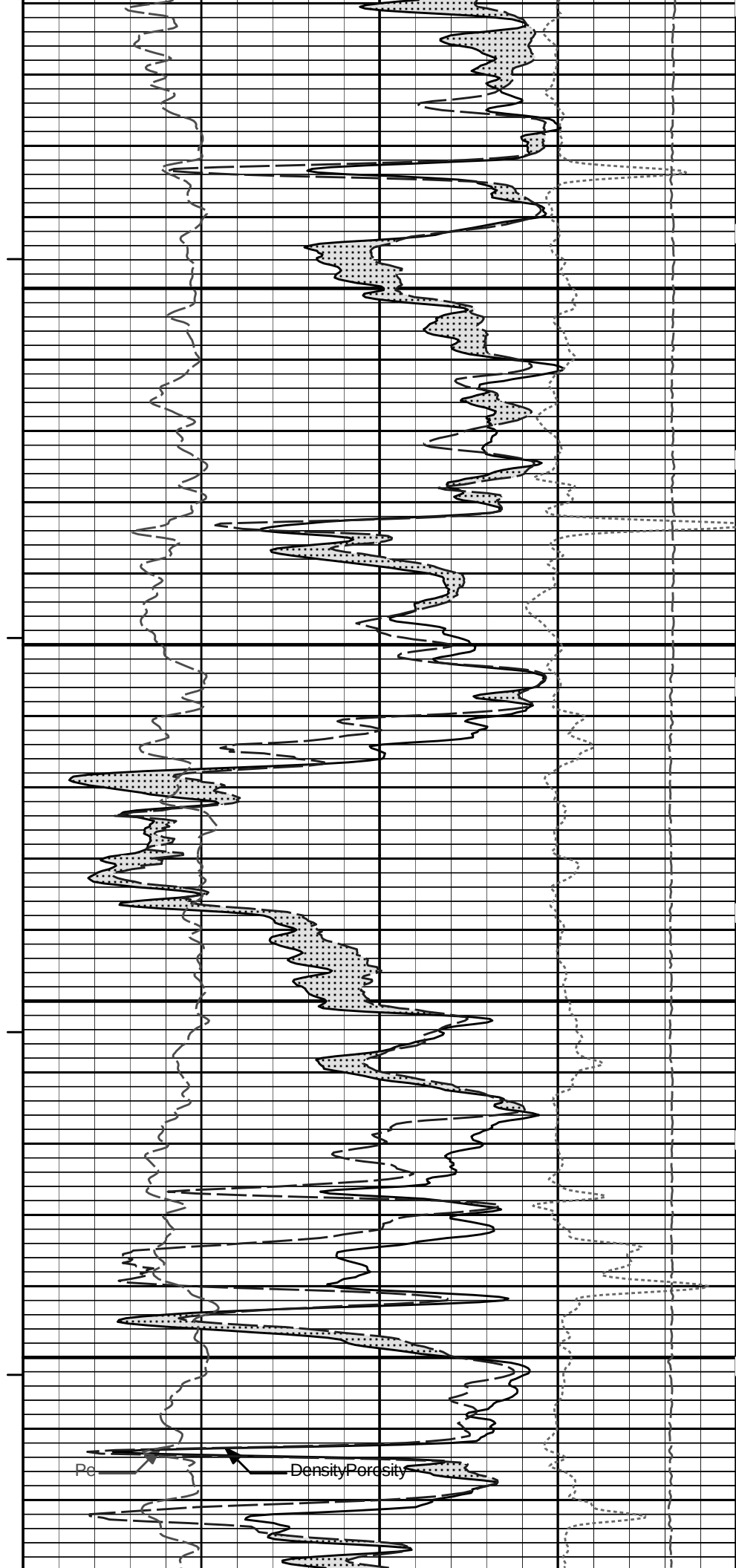
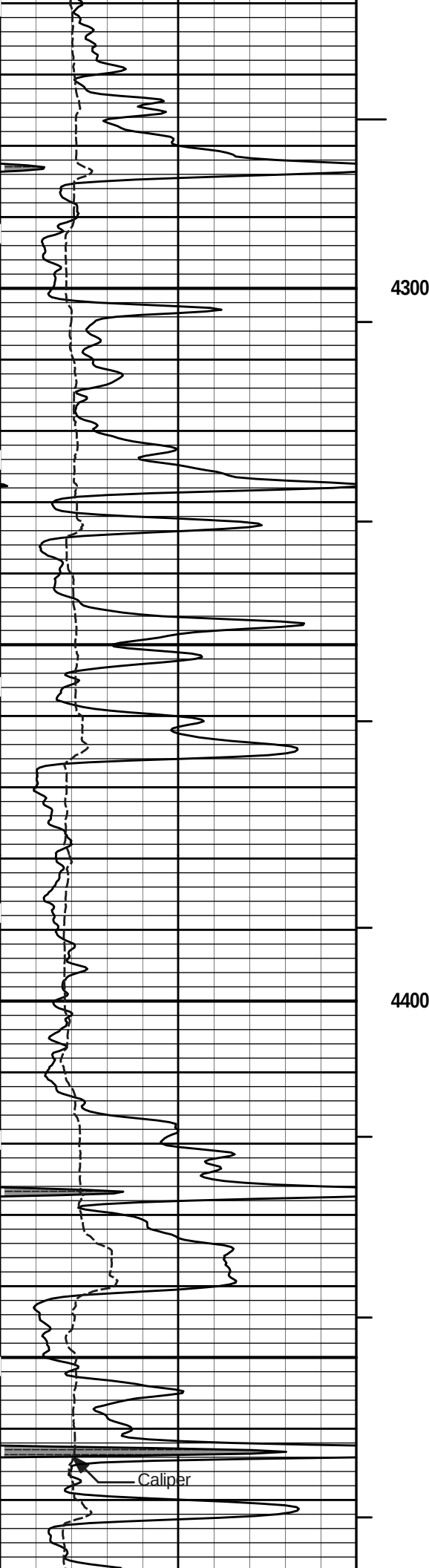
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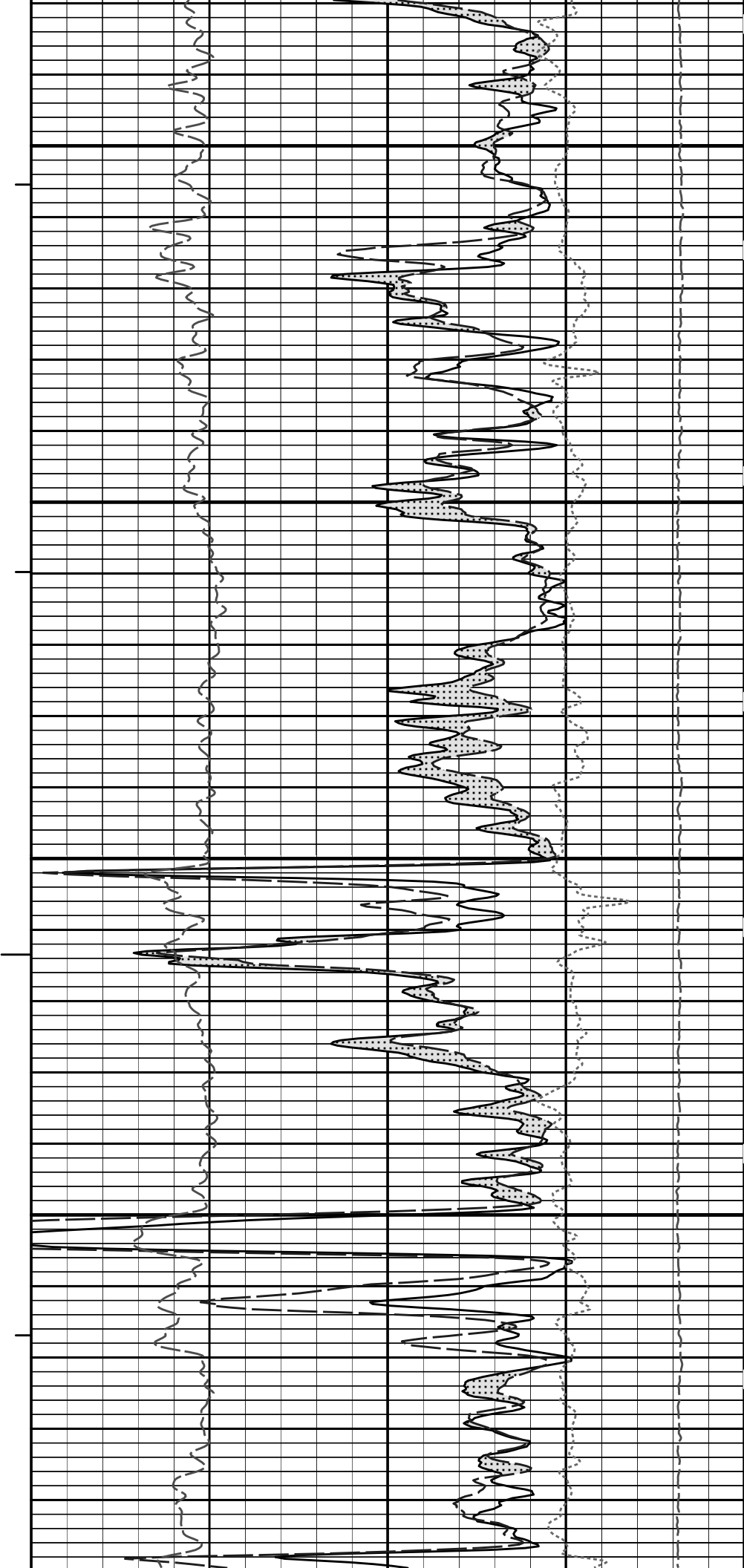
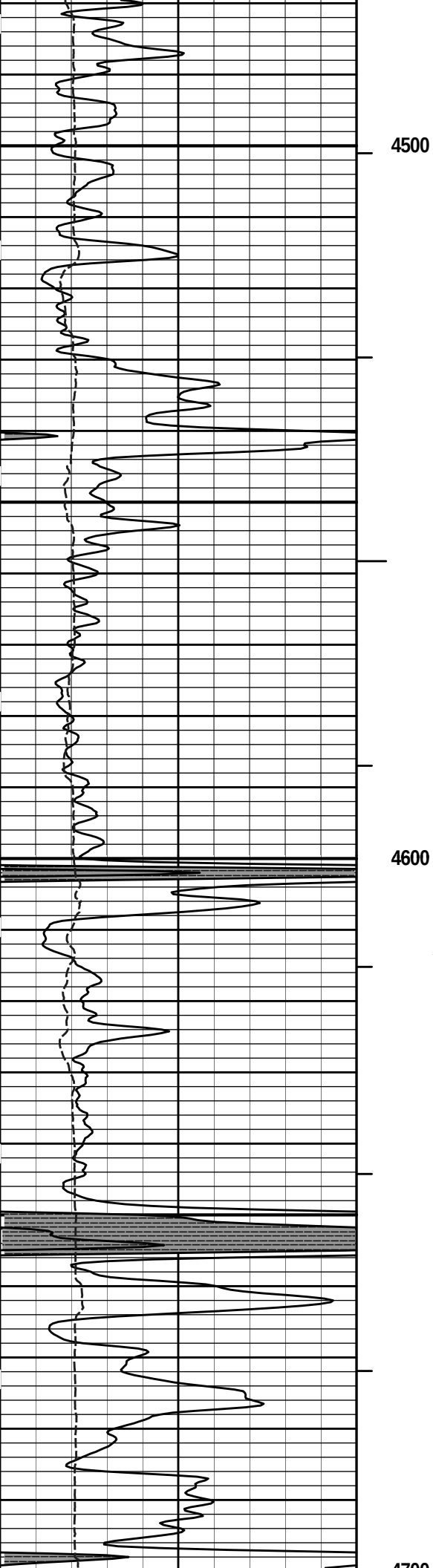
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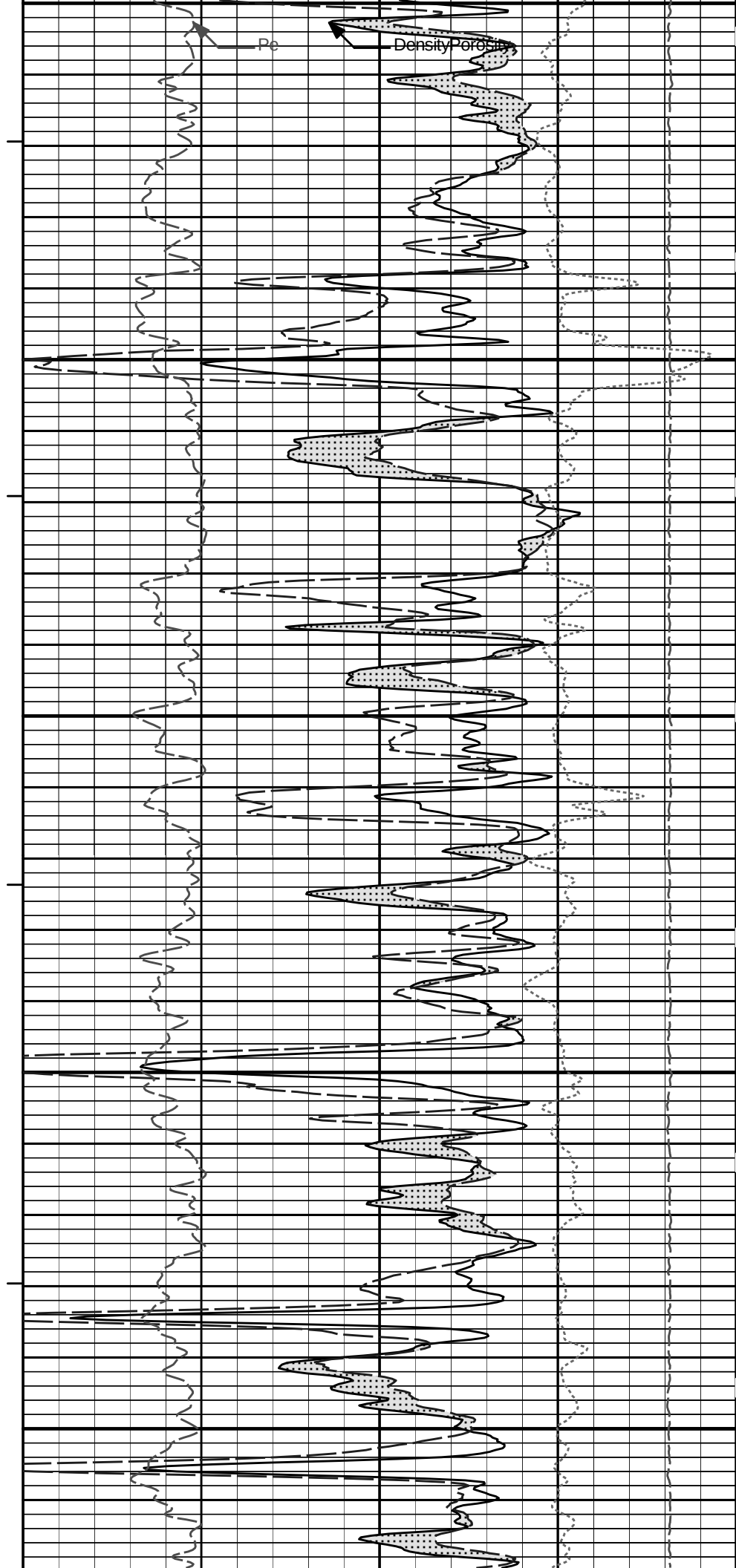
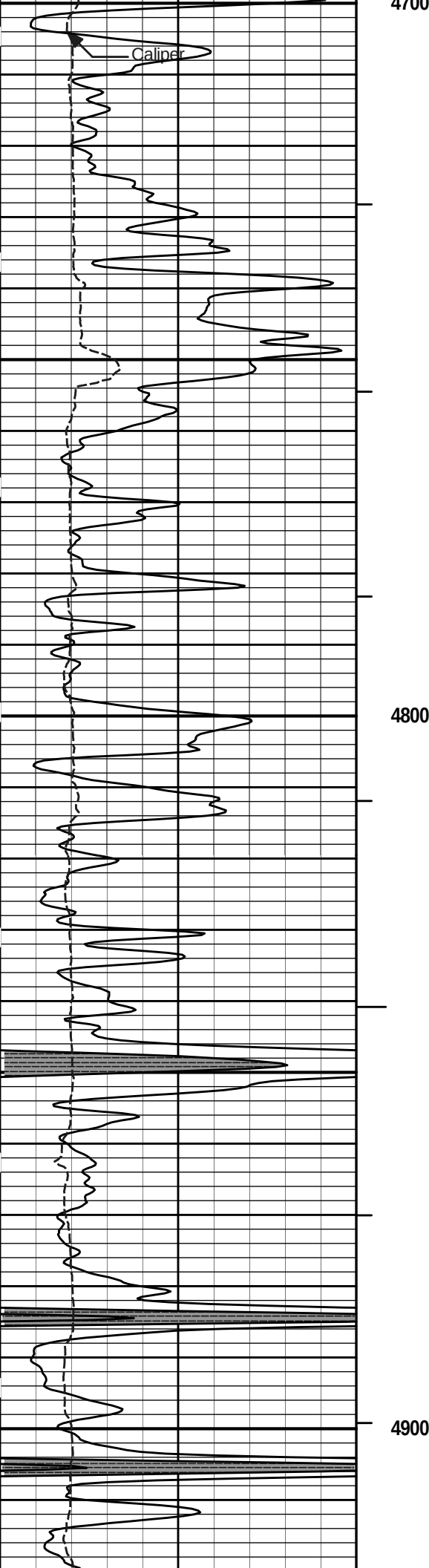
5 INCH MAIN LOG

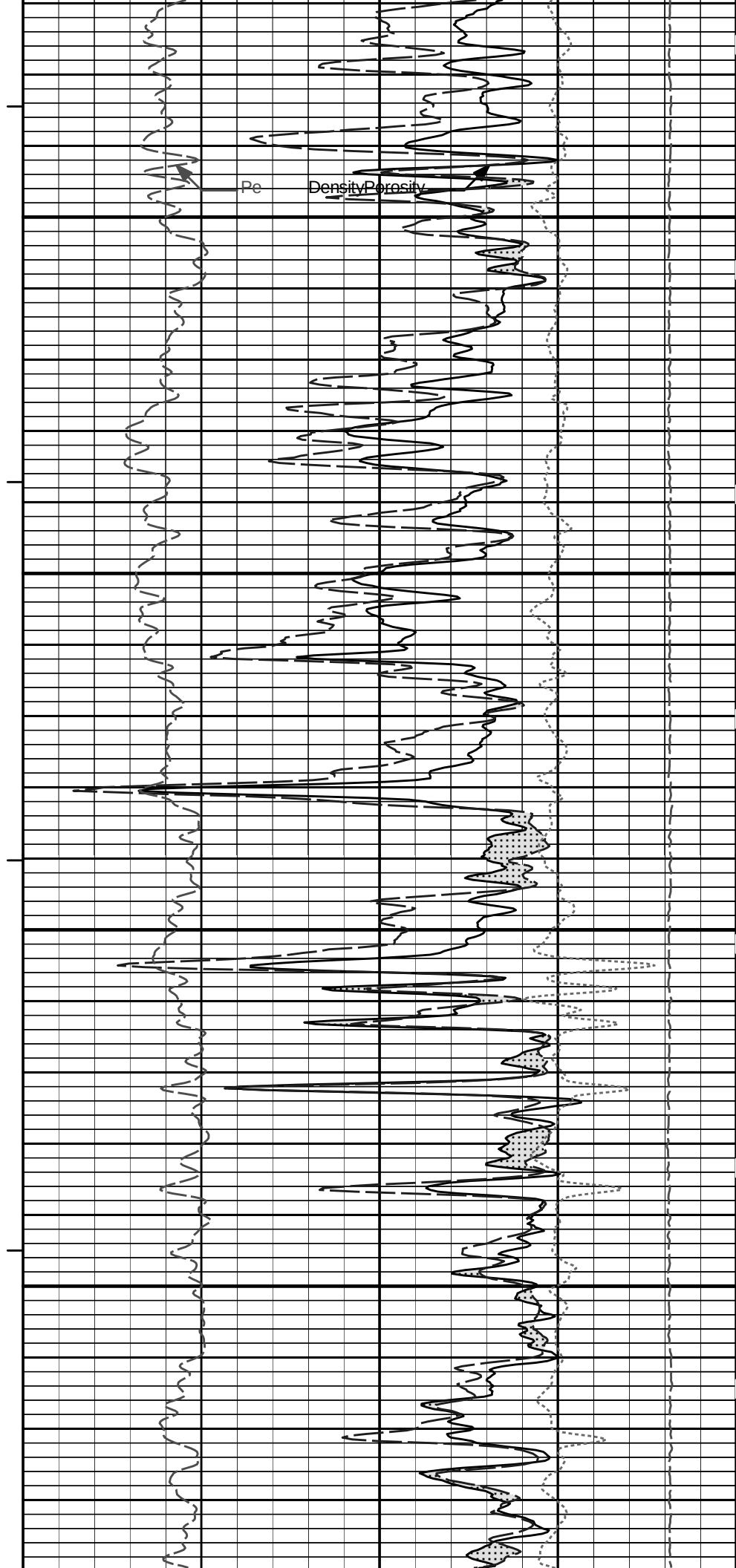
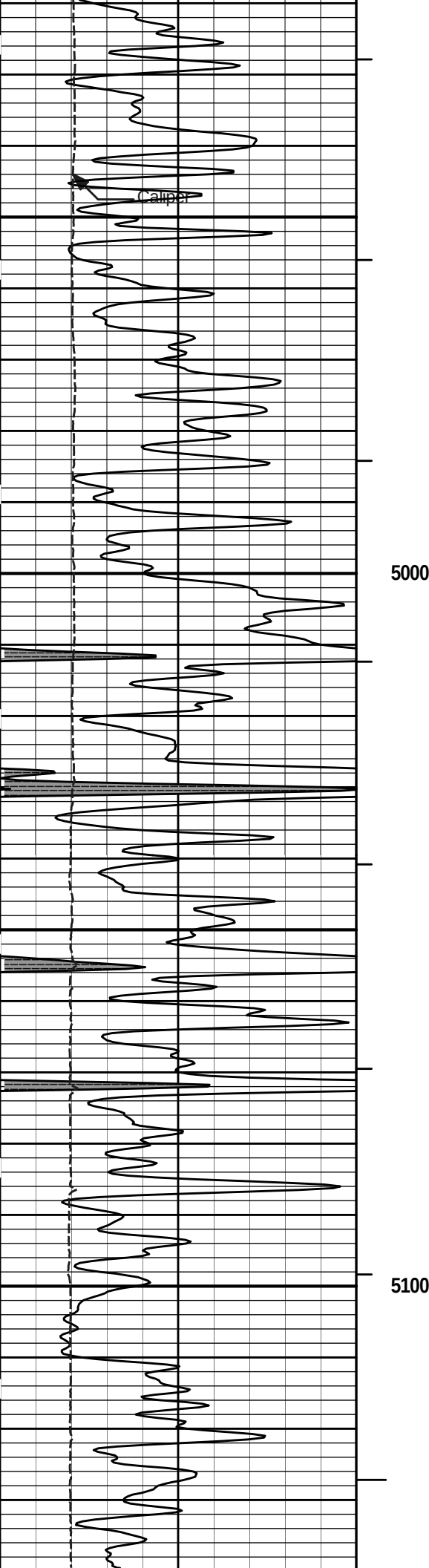










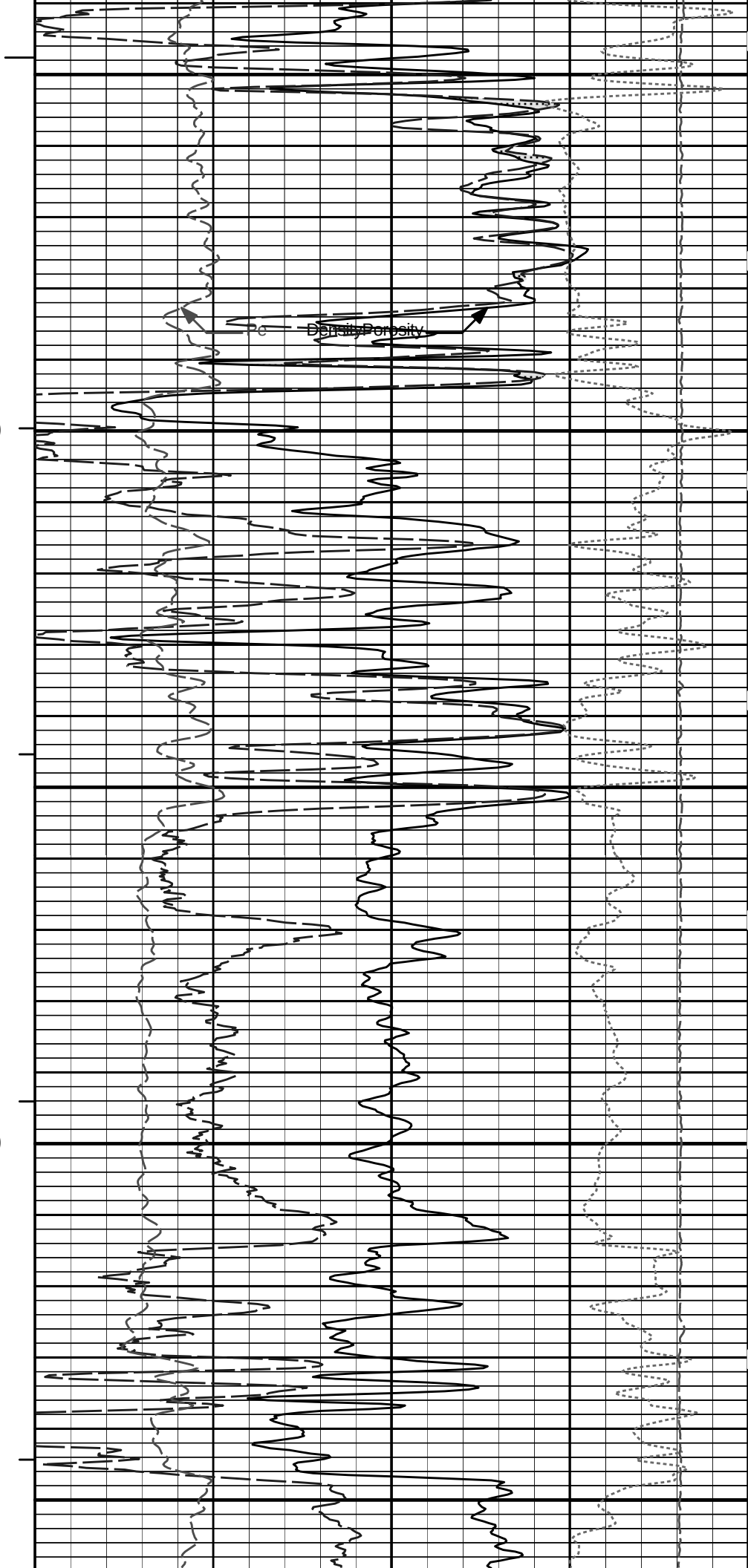




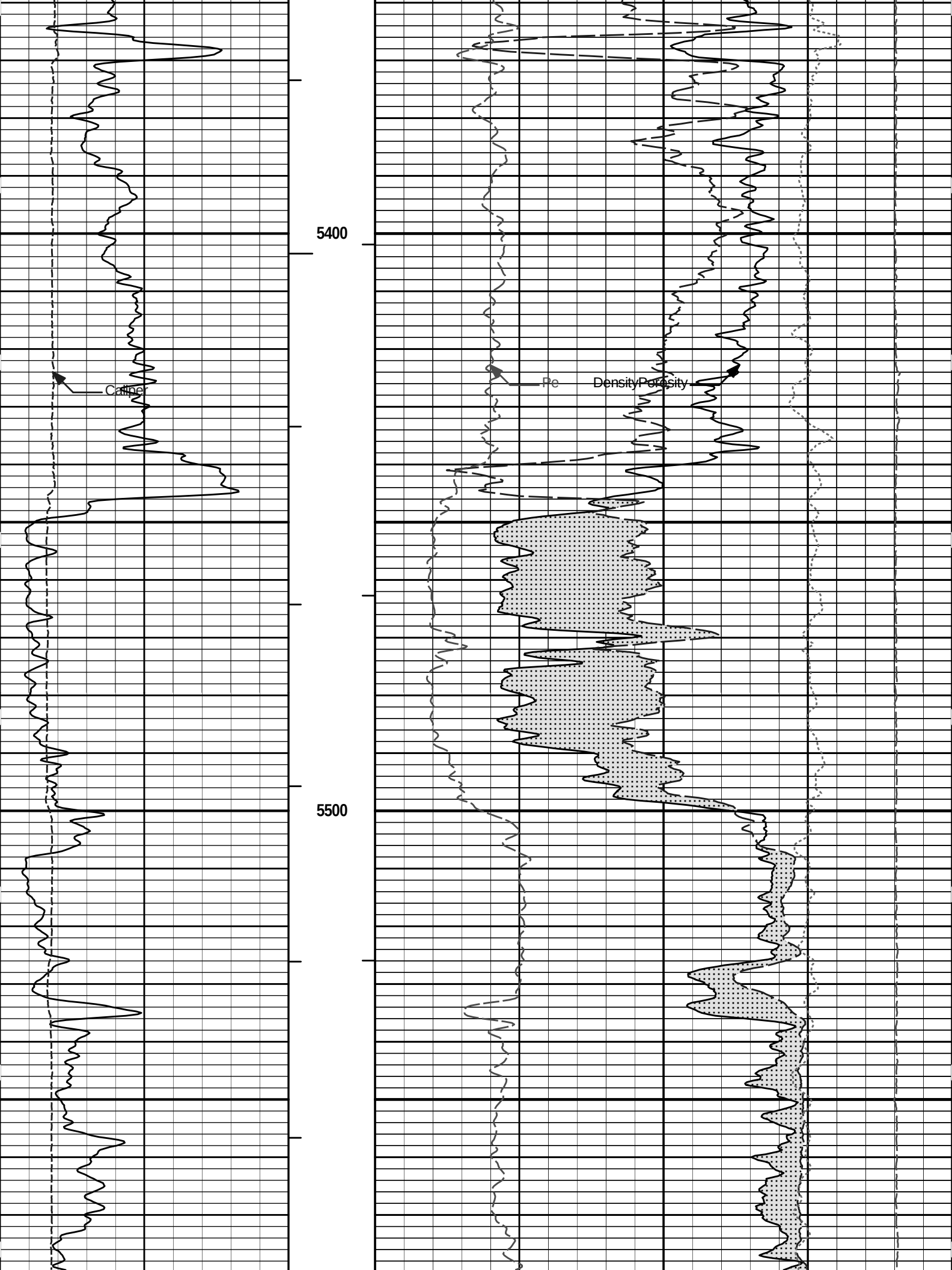
Caliper

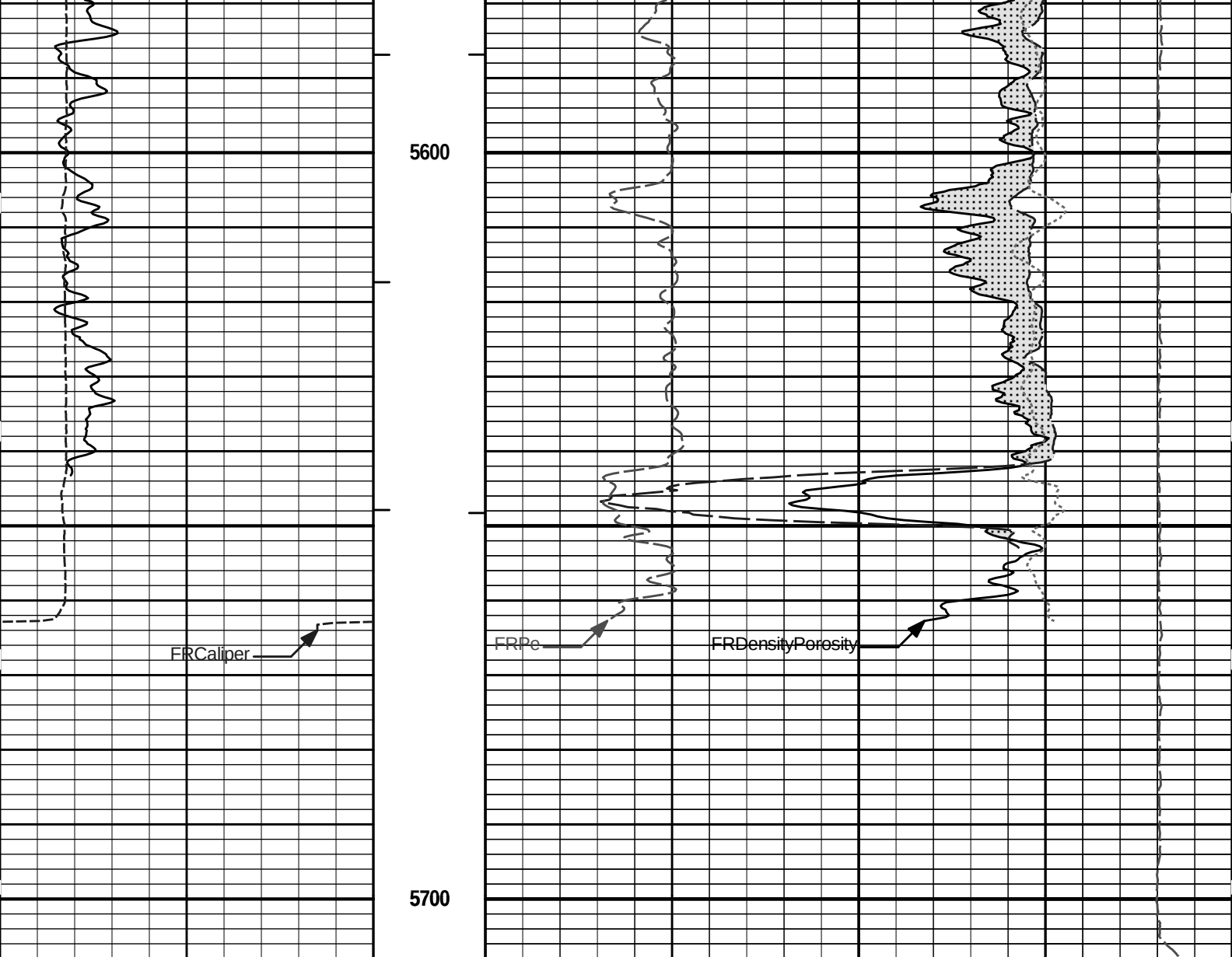
5200

5300



Density Porosity





6	Caliper	16	MD	0	Pe	10	-0.25	DensityCorr	0.25
	inches		1 : 240					gram per cc	
0	Gamma API	150	ft					Tension	0
	api		AHVT				15K	pounds	
			BHVT	30		DensityPorosity			-10
						%			
			Tension Pull	10	0	30		Neutron Porosity	-10
								%	
			Tension Pull					CROSSOVER	

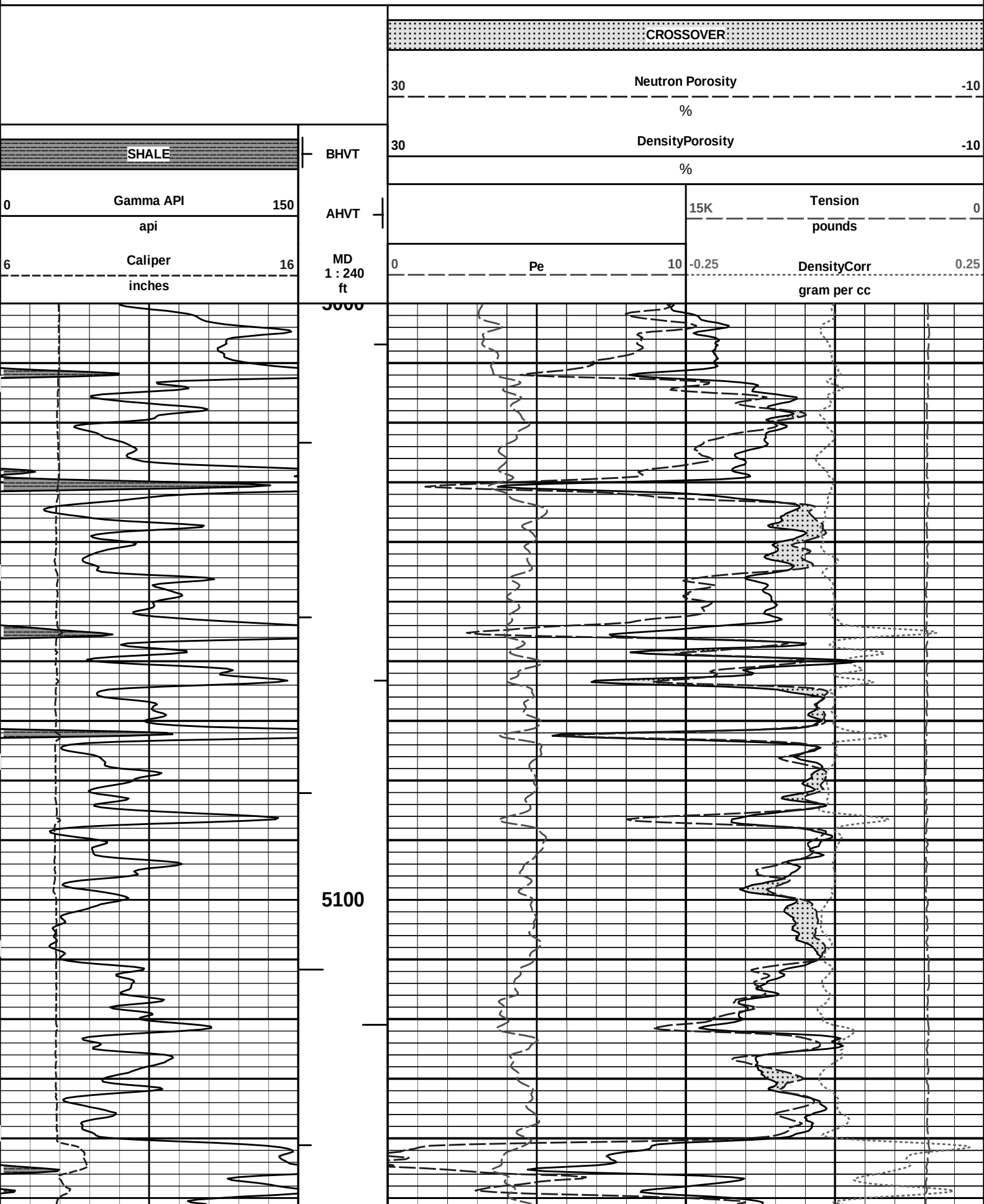
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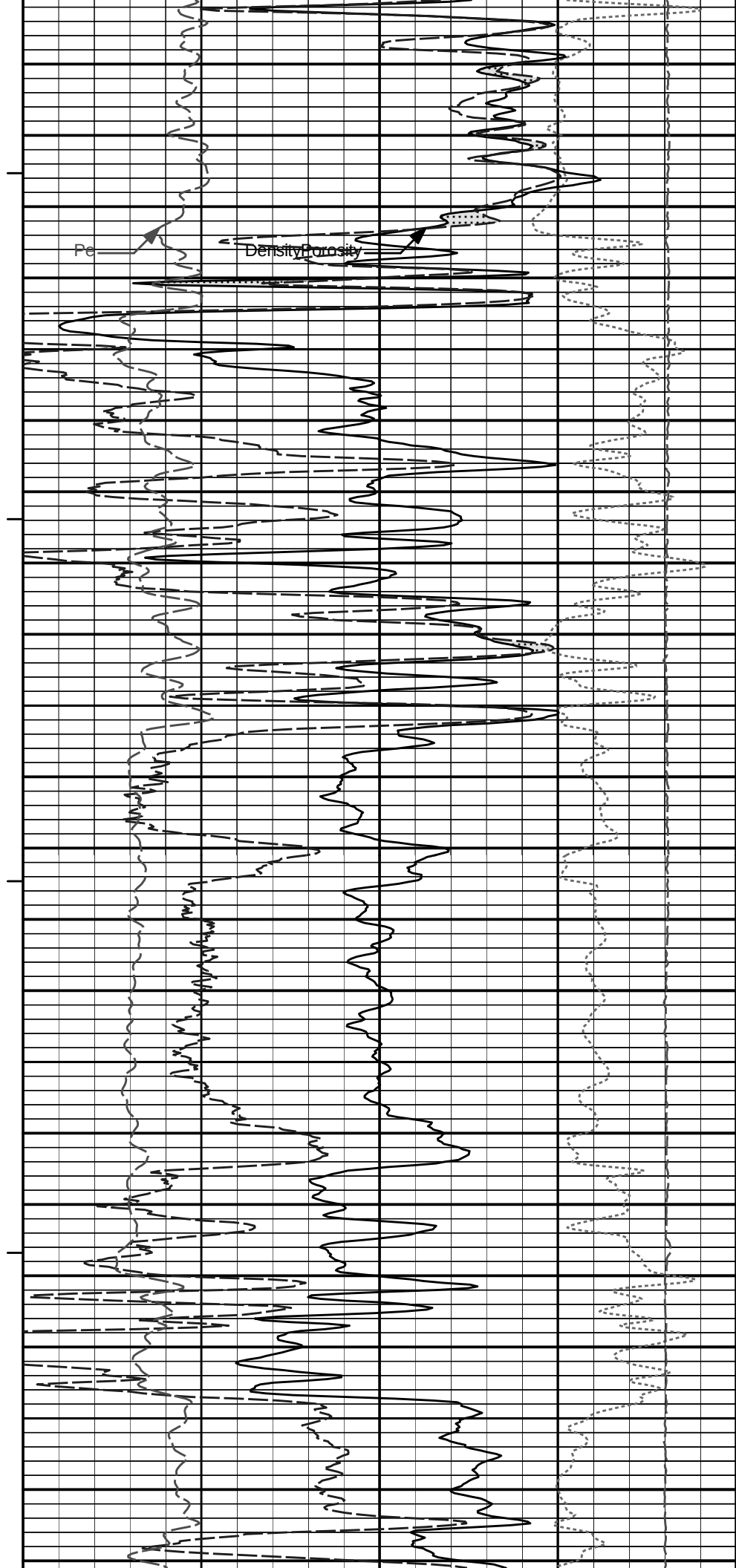
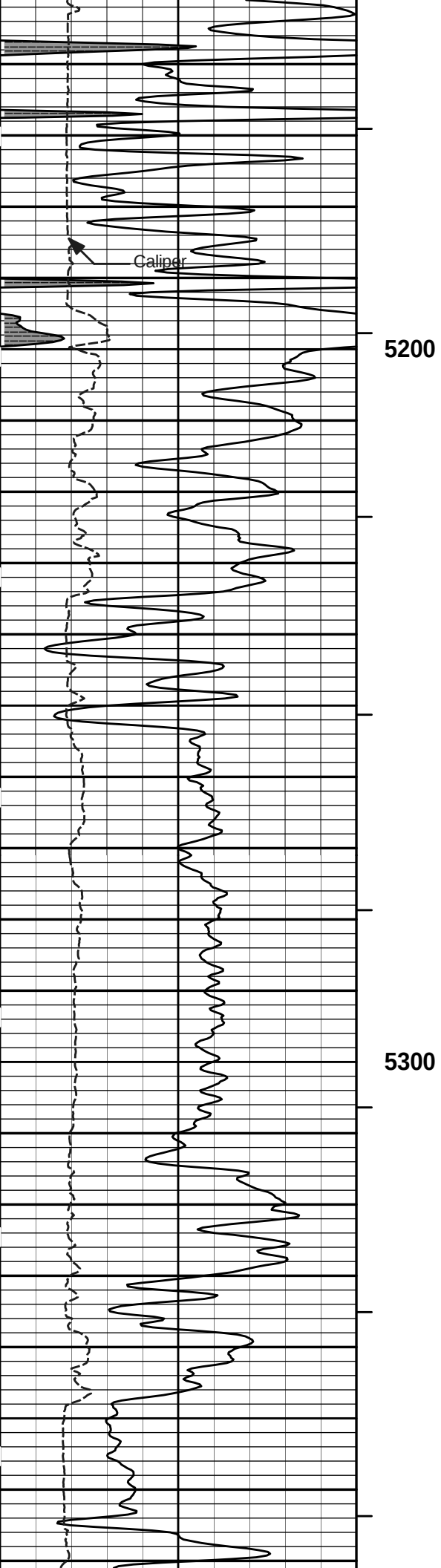
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Plot Range: 4000 ft to 5708.25 ft
Data: MOSBARGER_B-2\Well Based\DETAIL\
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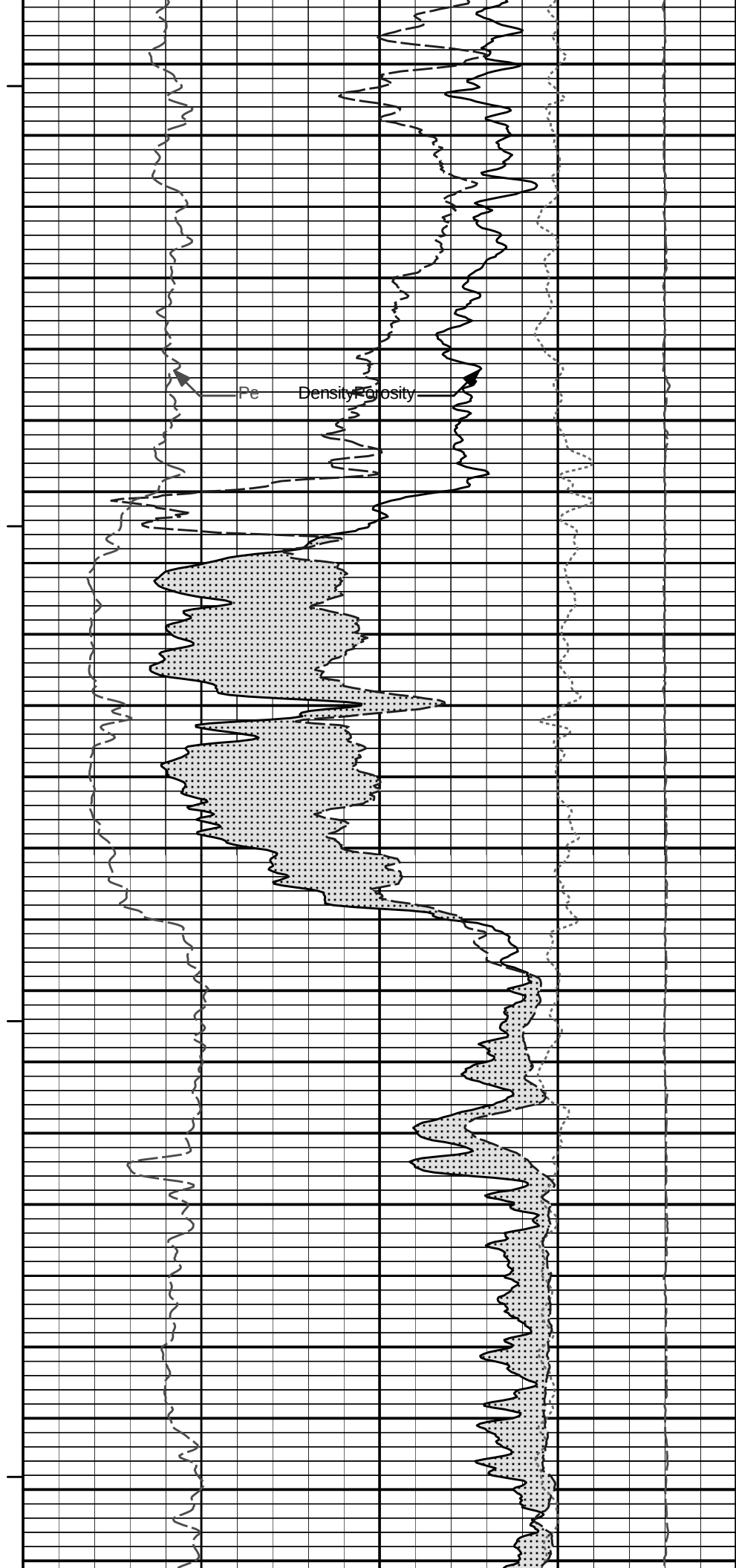
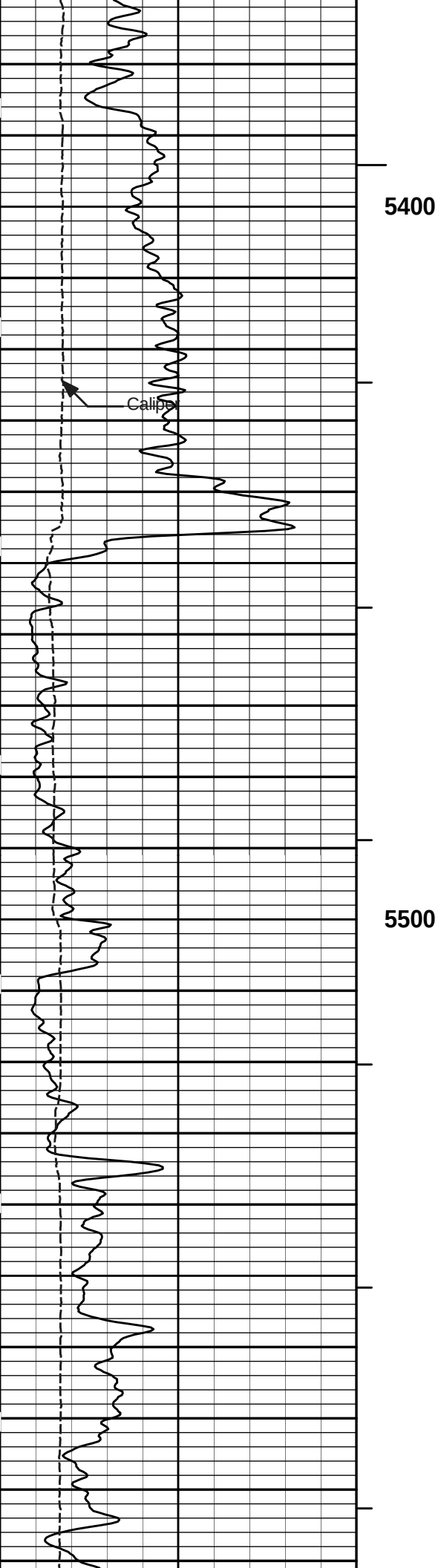
5 INCH MAIN LOG

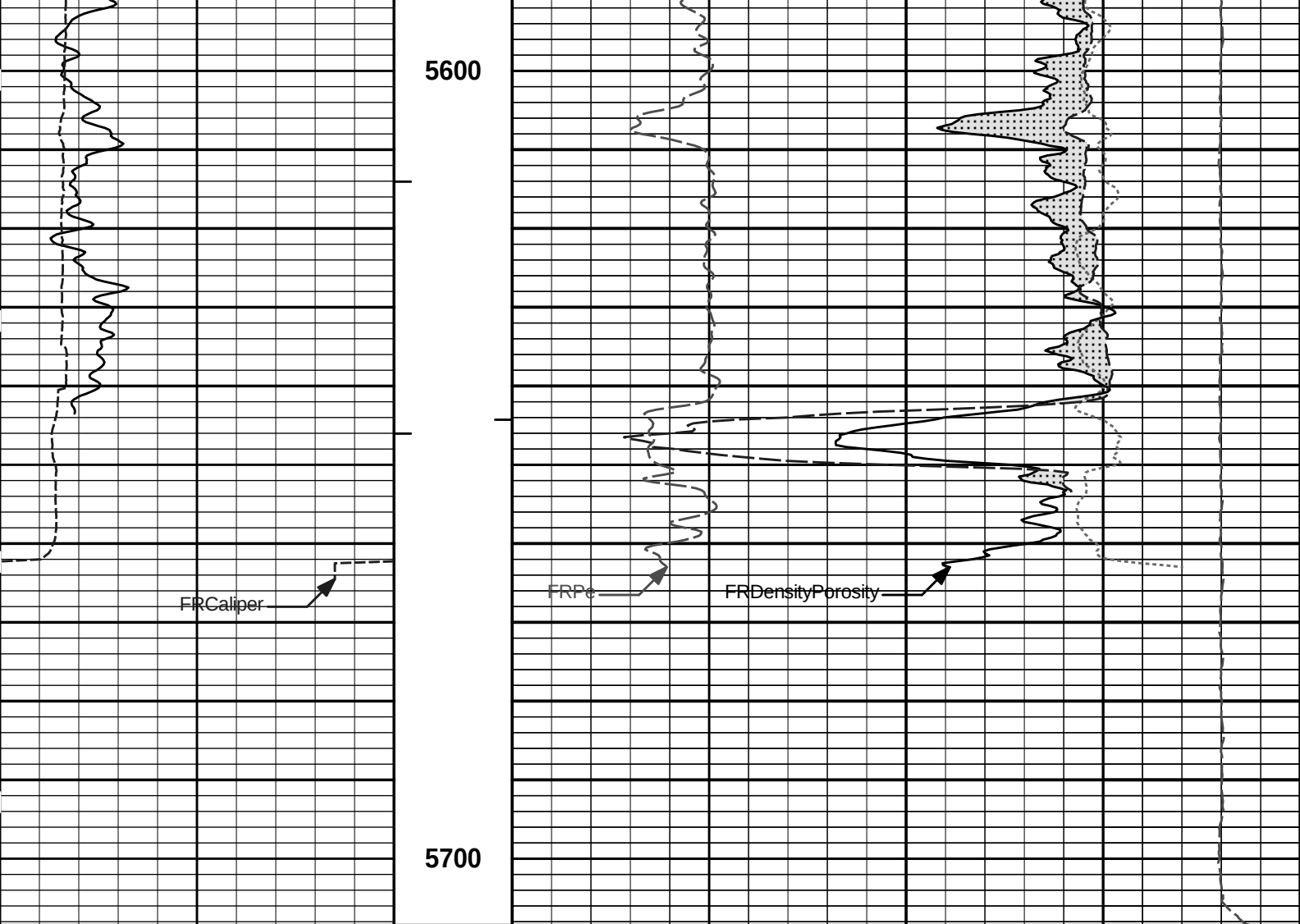
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Plot Range: 5000 ft to 5708.42 ft
Data: MOSBARGER_B-2\Well Based\REPEAT\
Plot File: \\PORO\Poros_IQ_5_MAIN_LIB









6	Caliper	16	MD	0	Pe	10	-0.25	DensityCorr	0.25
	inches		1 : 240					gram per cc	
0	Gamma API	150	ft					Tension	0
	api		AHVT				15K	pounds	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

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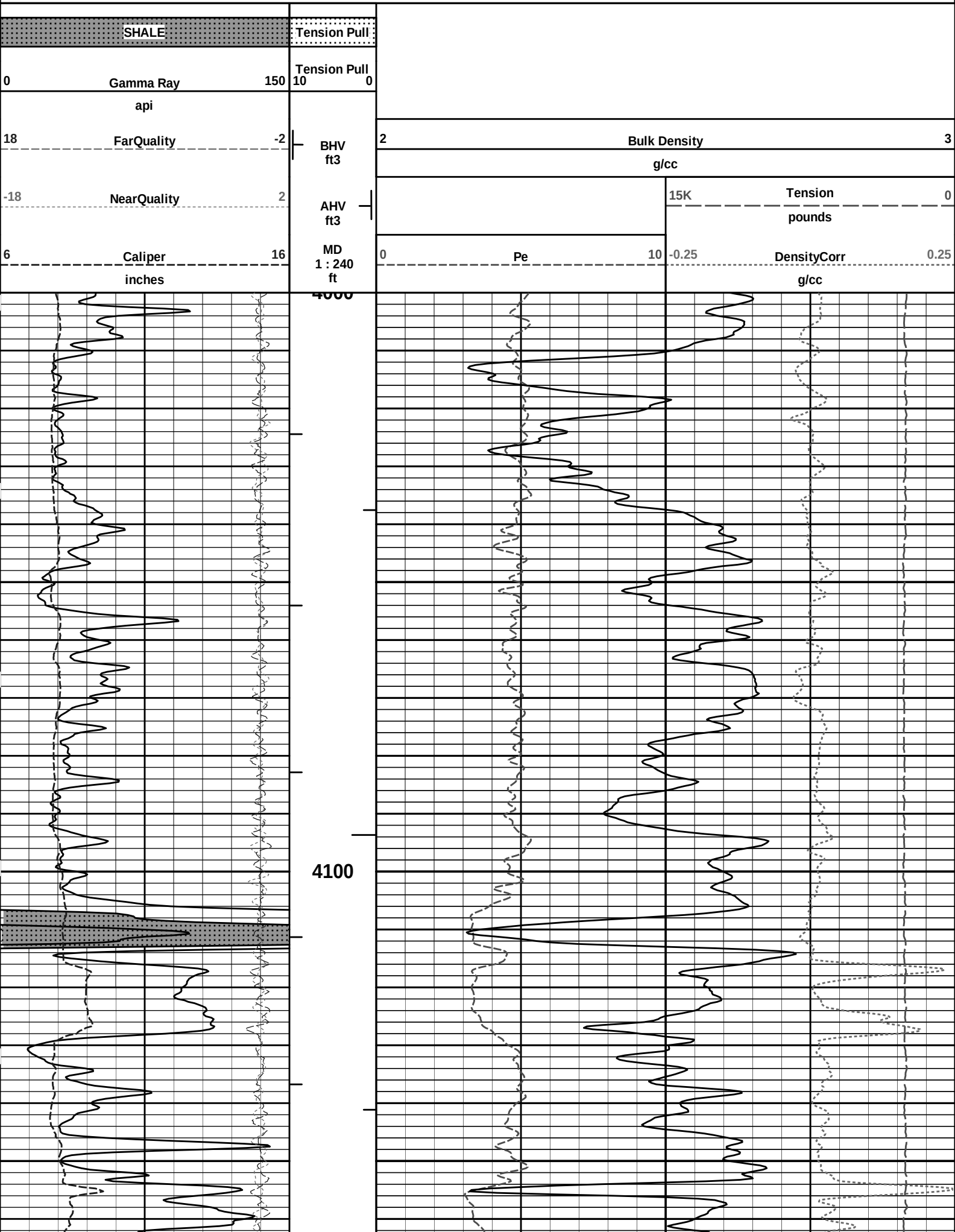
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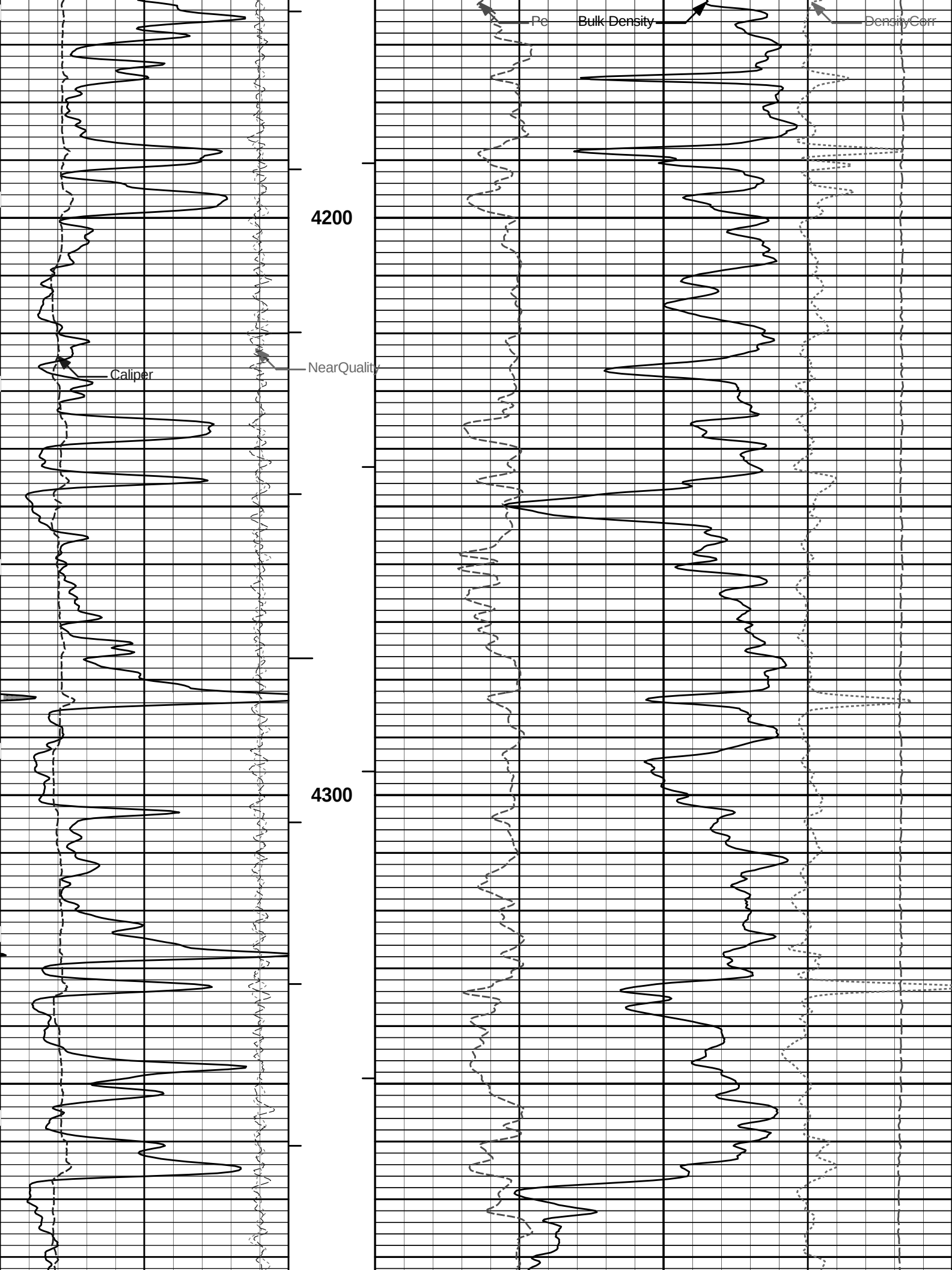
REPEAT SECTION

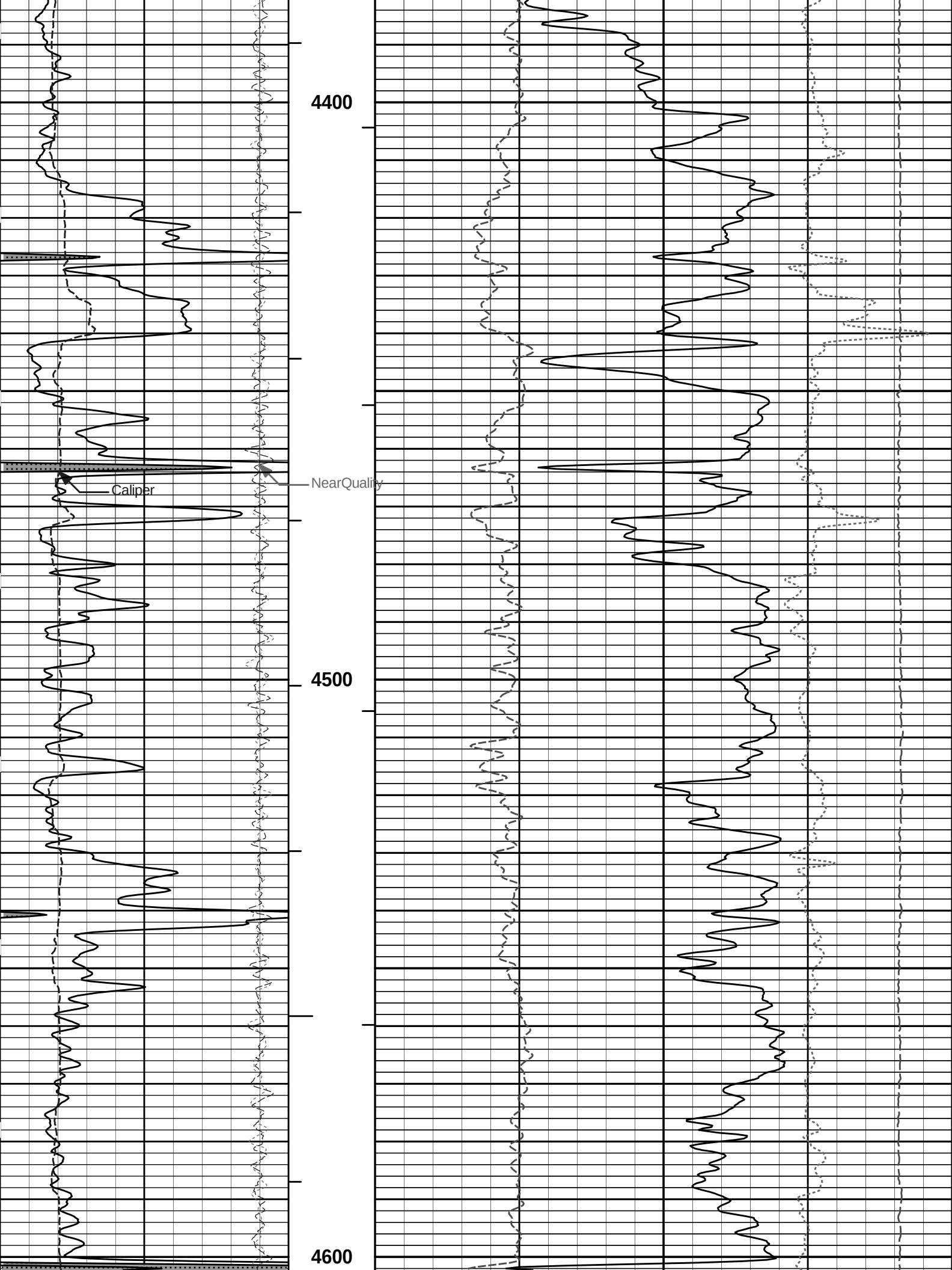
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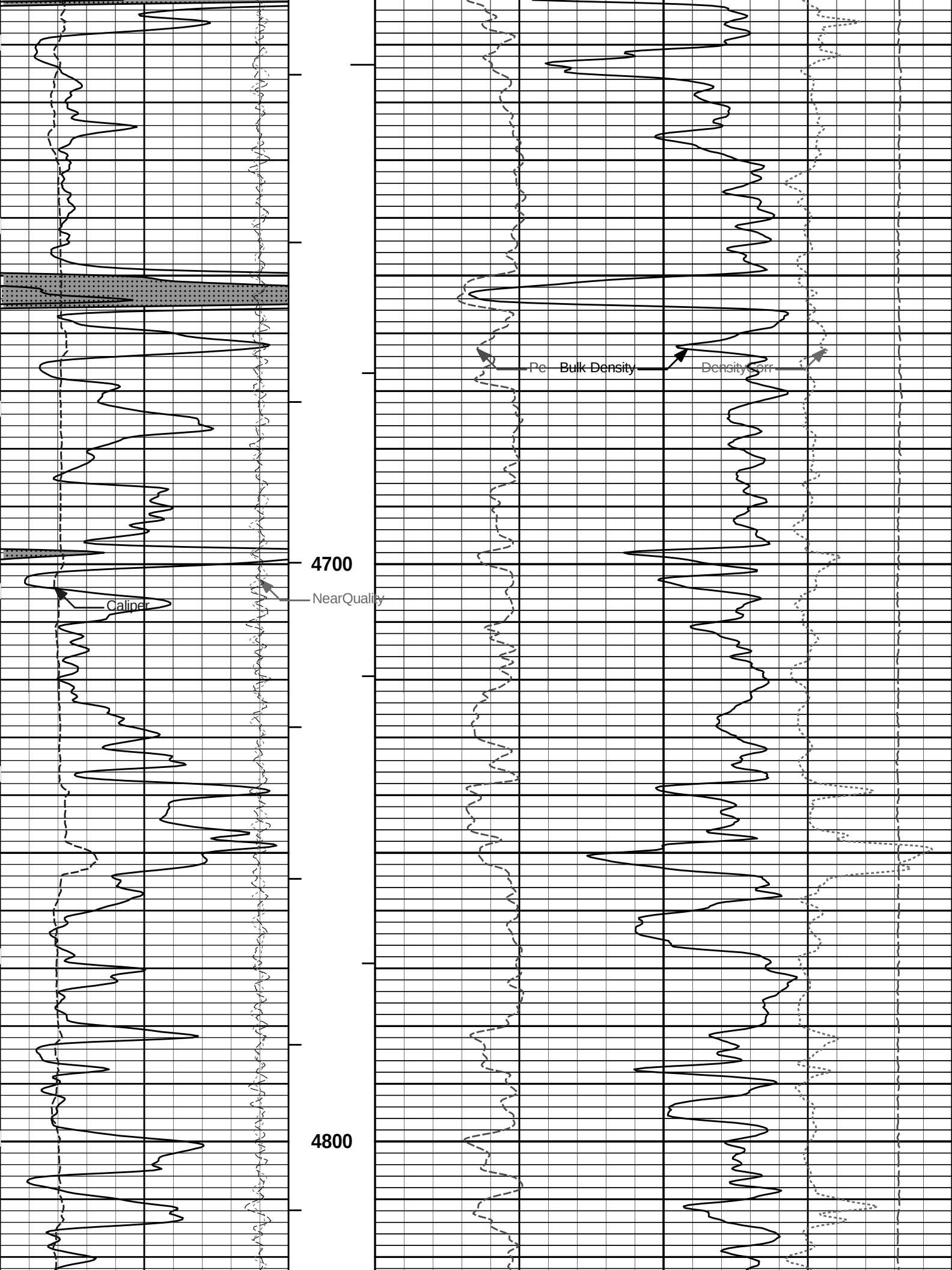
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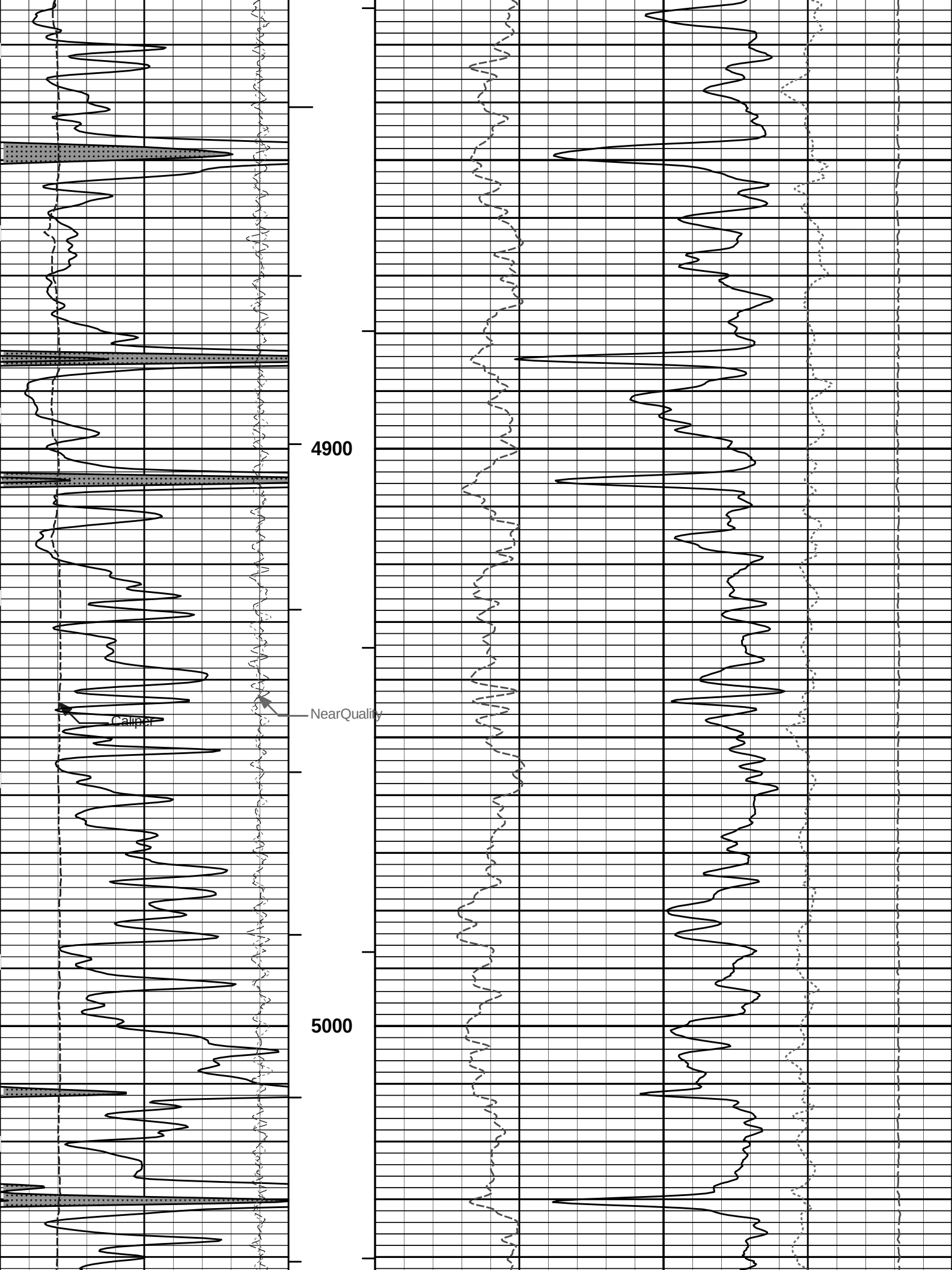
5 INCH MAIN LOG

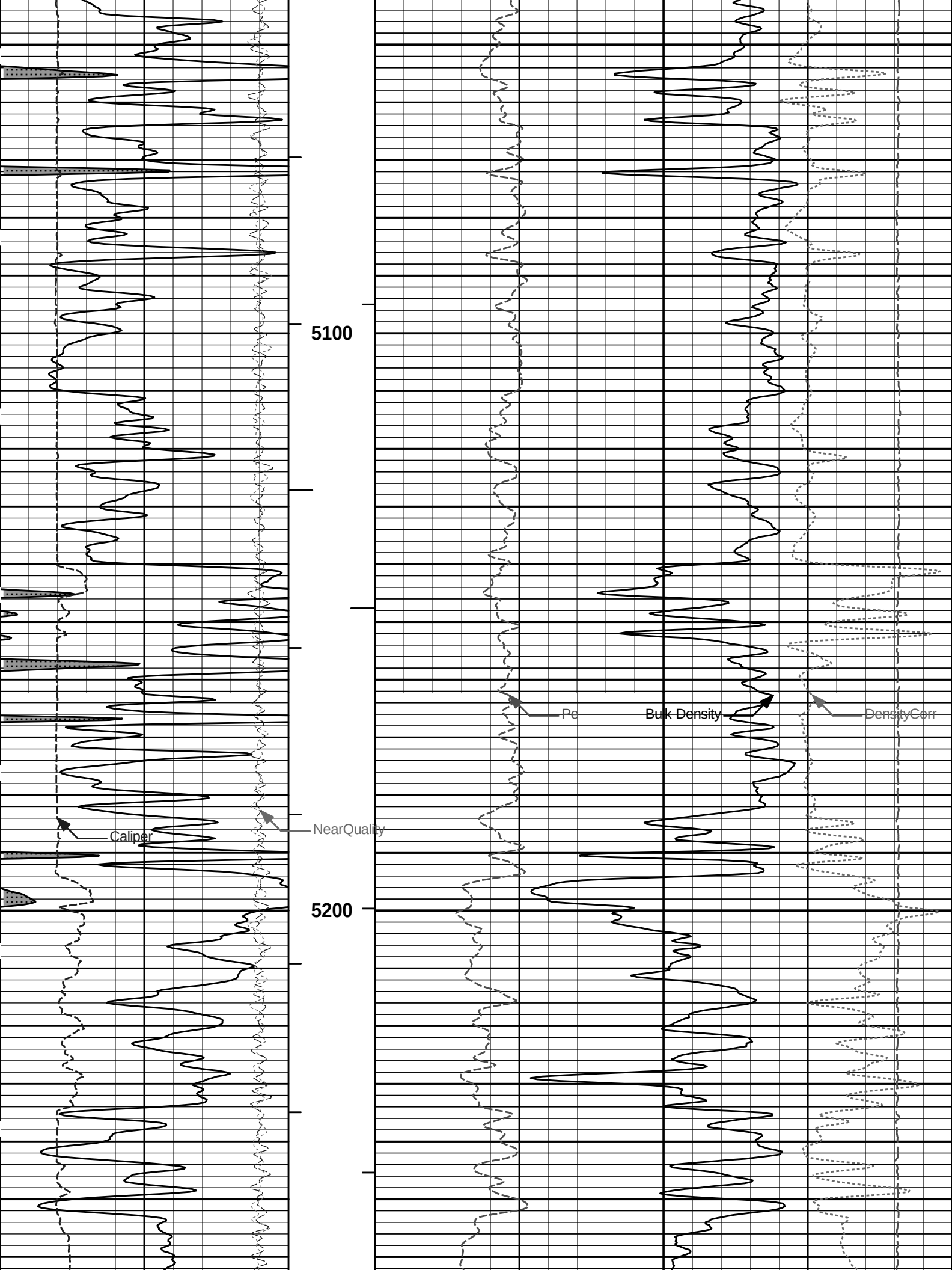


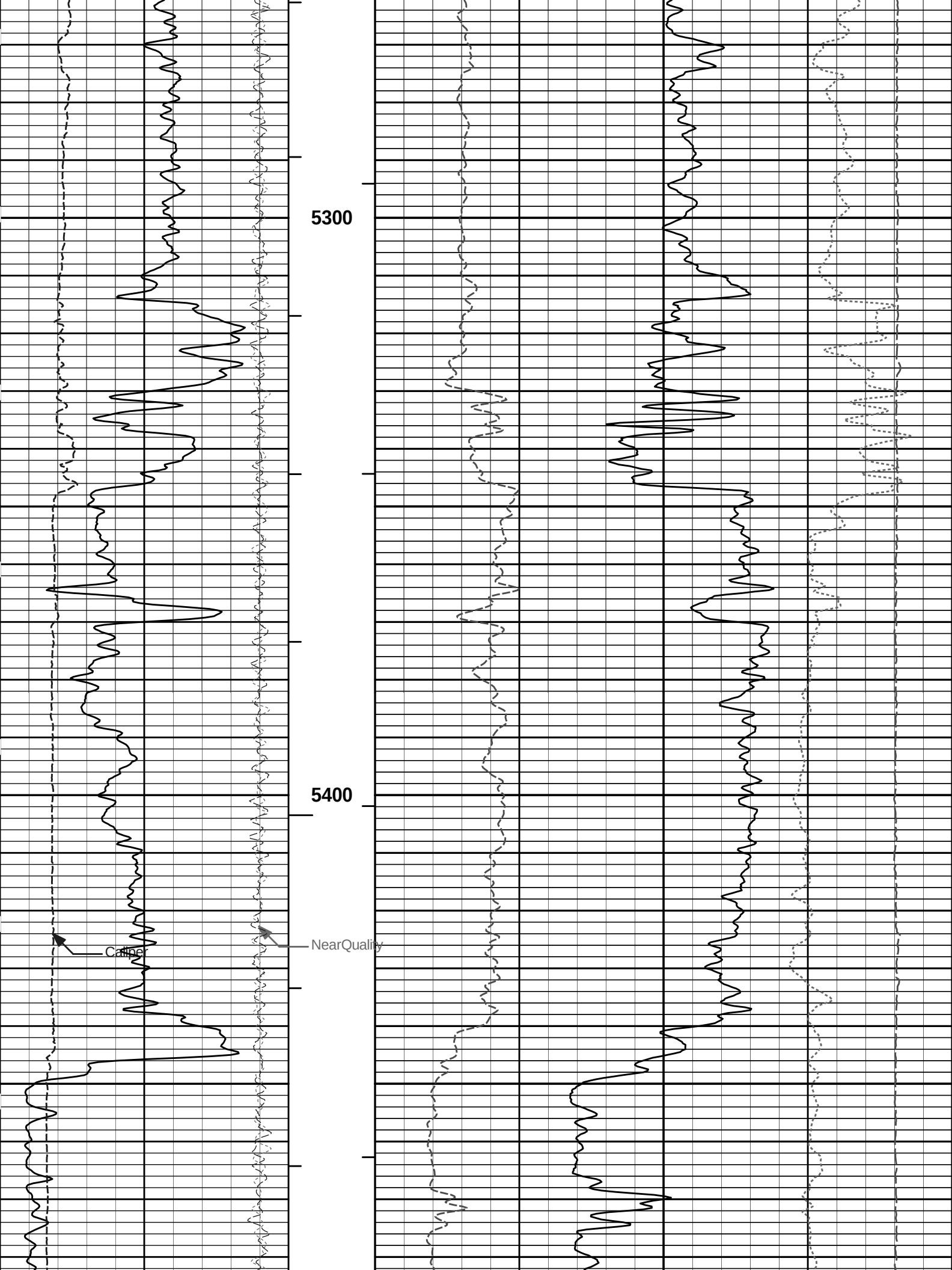


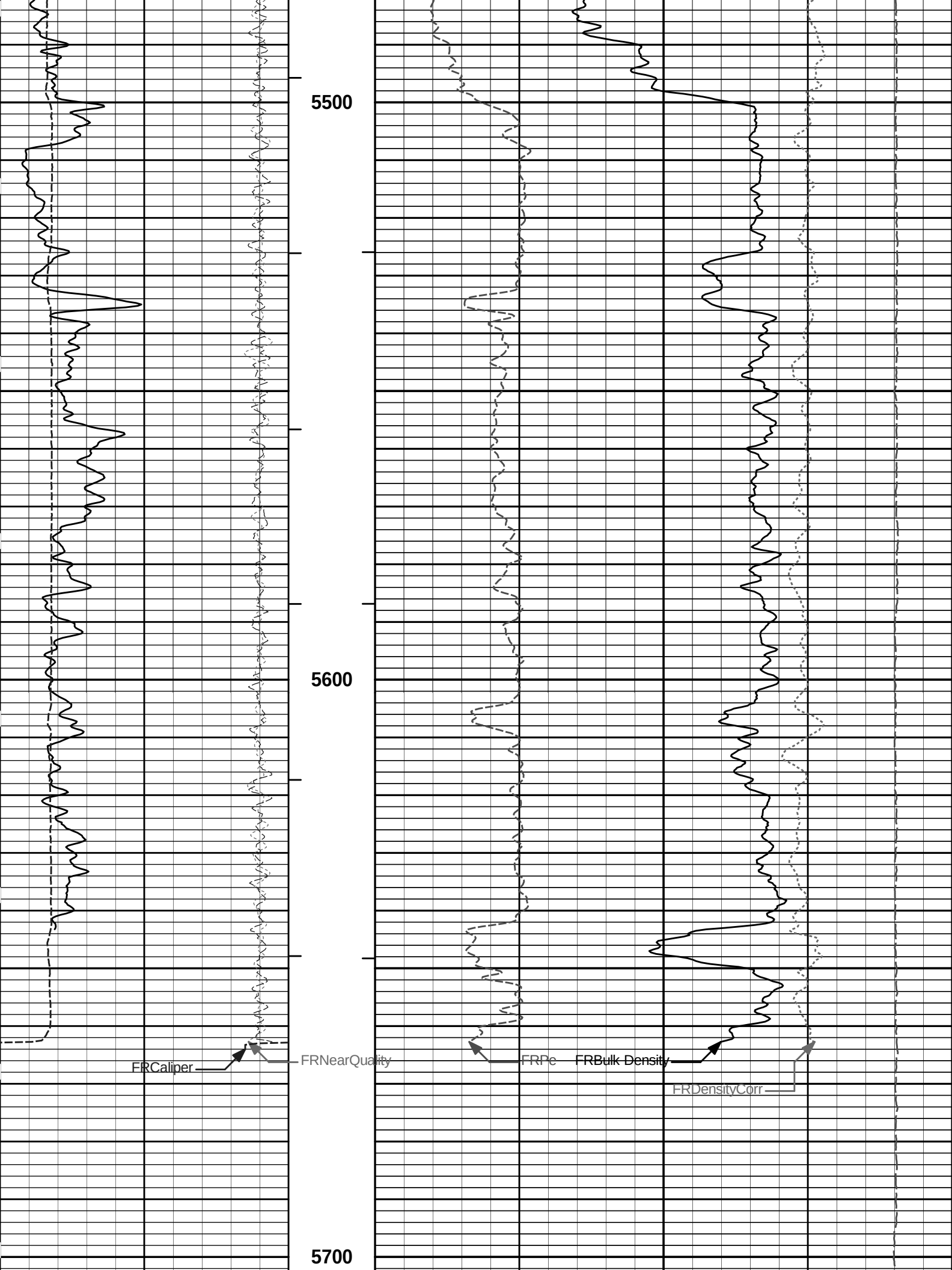












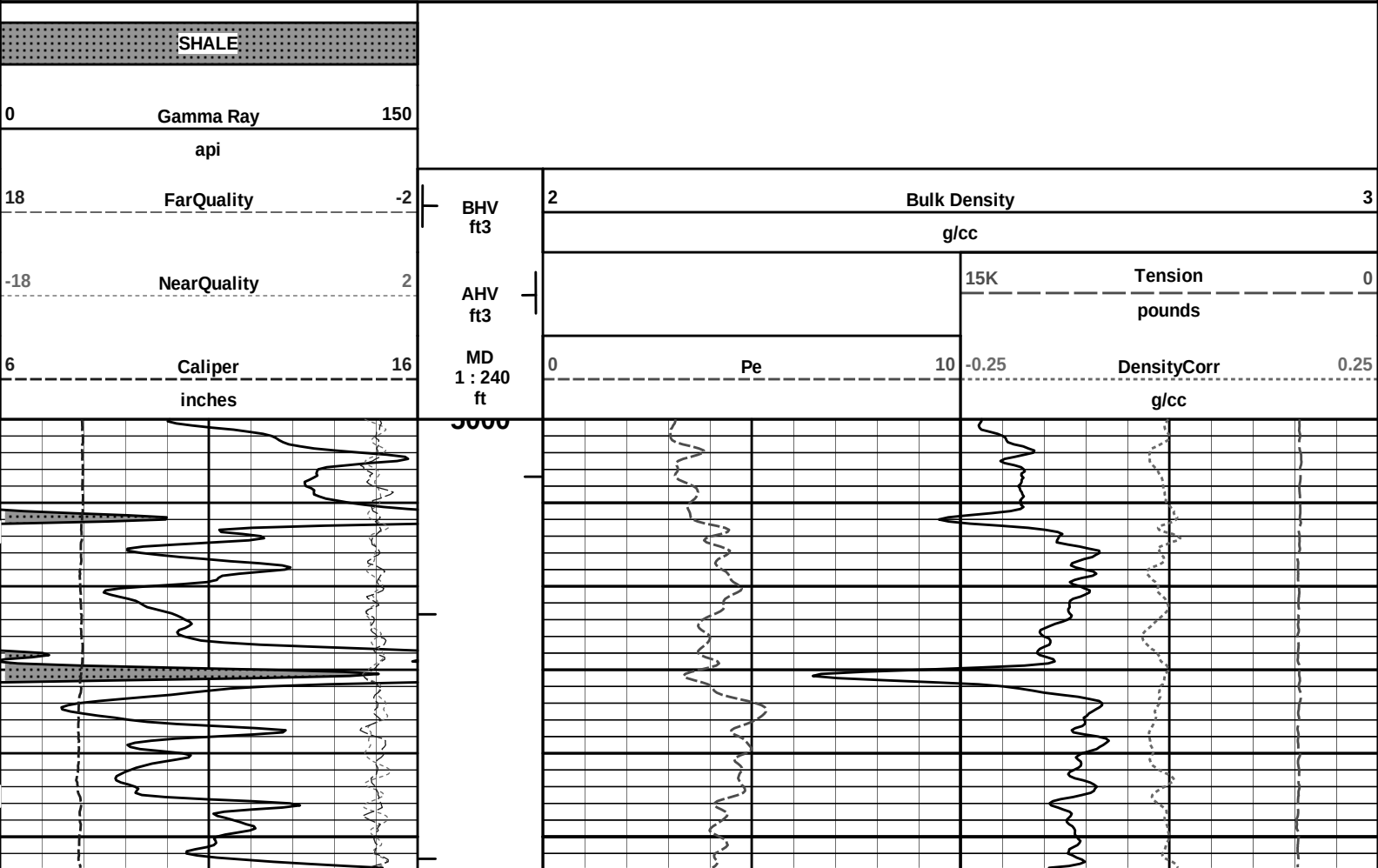
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	inches		1 : 240					g/cc	
-18	NearQuality	2	AHV				15K	Tension	0
			ft3					pounds	
18	FarQuality	-2	BHV	2	Bulk Density				3
			ft3		g/cc				
0	Gamma Ray	150	Tension Pull						
	api		10	0					
SHALE			Tension Pull						

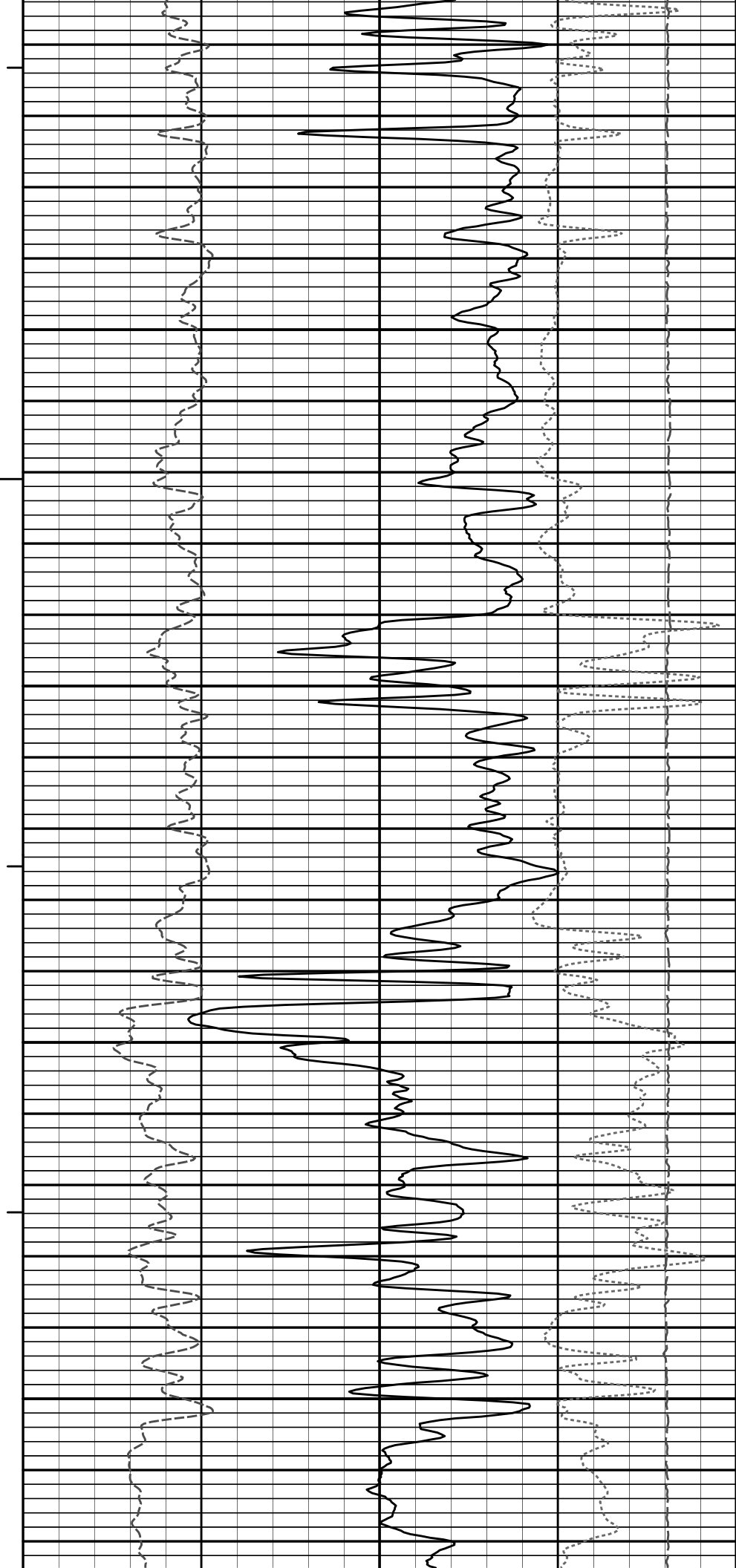
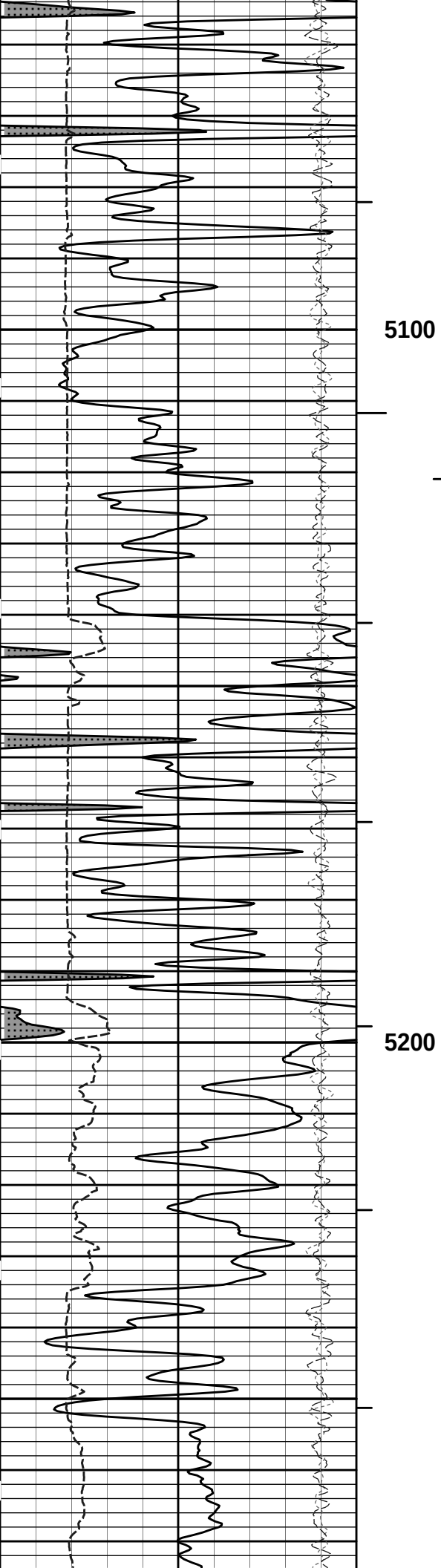
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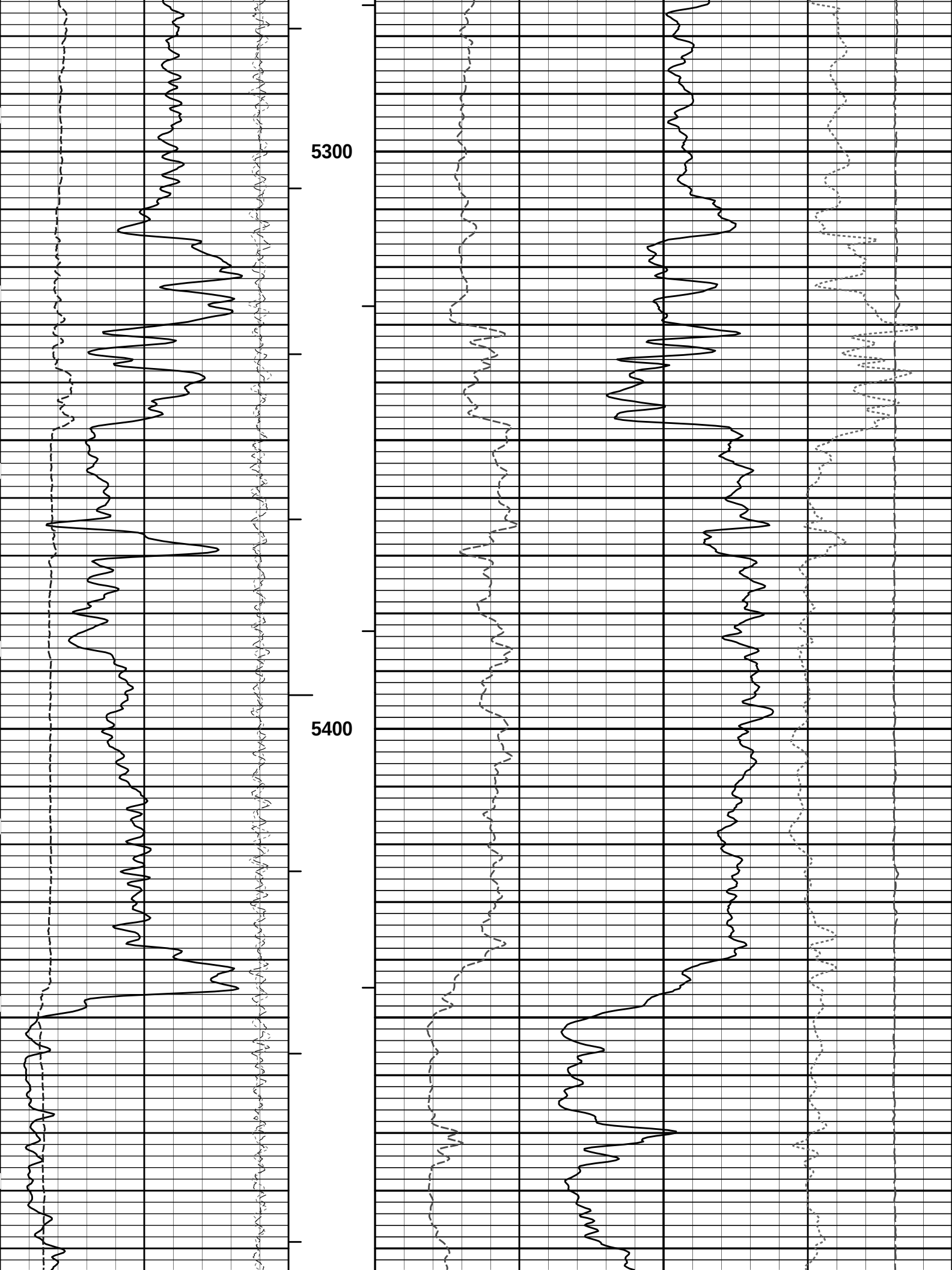
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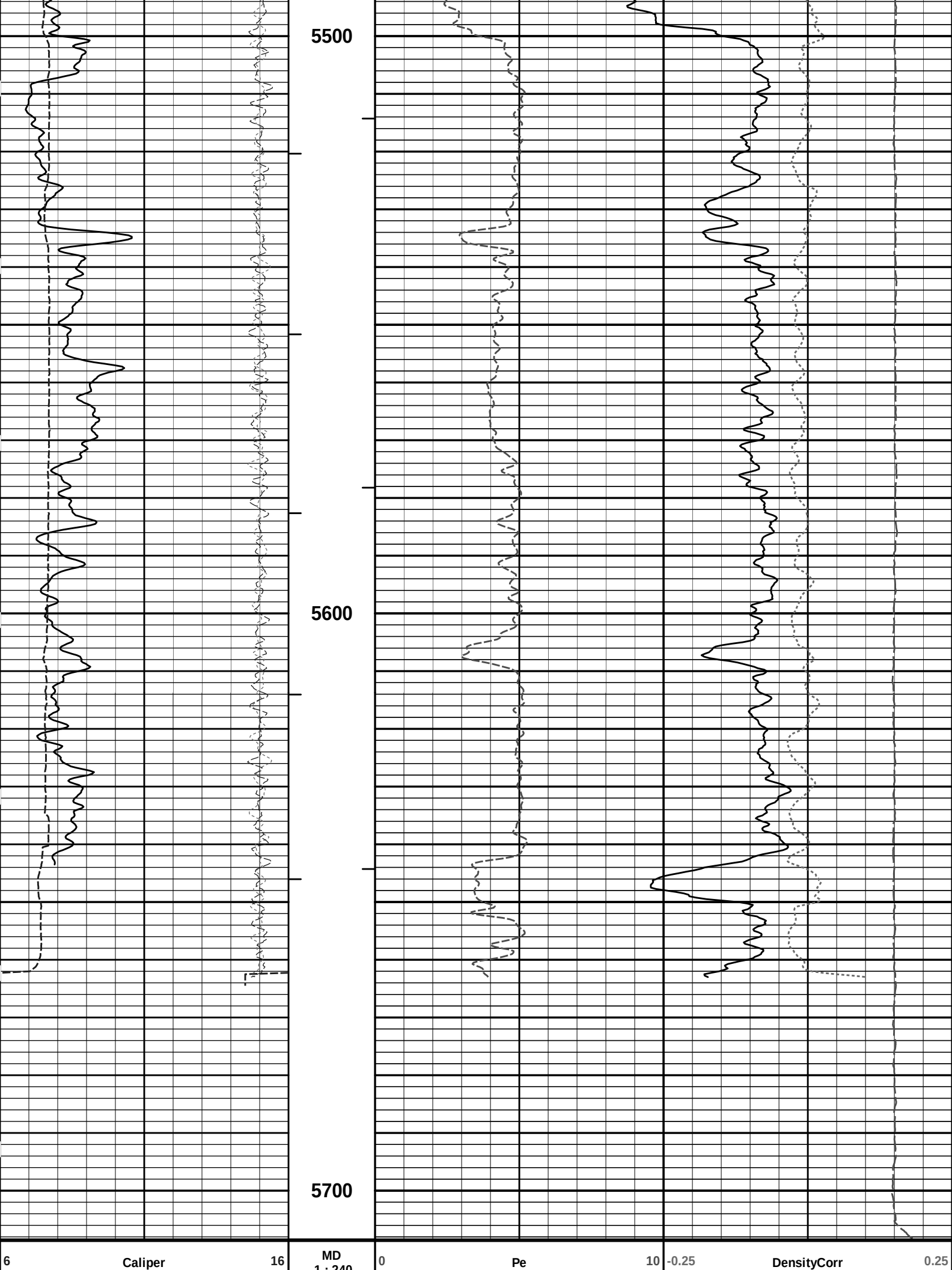
5 INCH MAIN LOG

HALLIBURTON	Plot Time: 10-Sep-13 07:58:13 Plot Range: 5000 ft to 5708.42 ft Data: MOSBARGER_B-2\Well Based\REPEAT\ Plot File: \\-LOCAL-\\MOSBARGER_B-2\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\PORO\BULKD_5_REP_LIB
REPEAT SECTION	









inches	ft		g/cc
-18	NearQuality	2	15K
	AHV		Tension
	ft3		pounds
18	FarQuality	-2	
	BHV	2	Bulk Density
	ft3		g/cc
0	Gamma Ray	150	
	api		
	SHALE		

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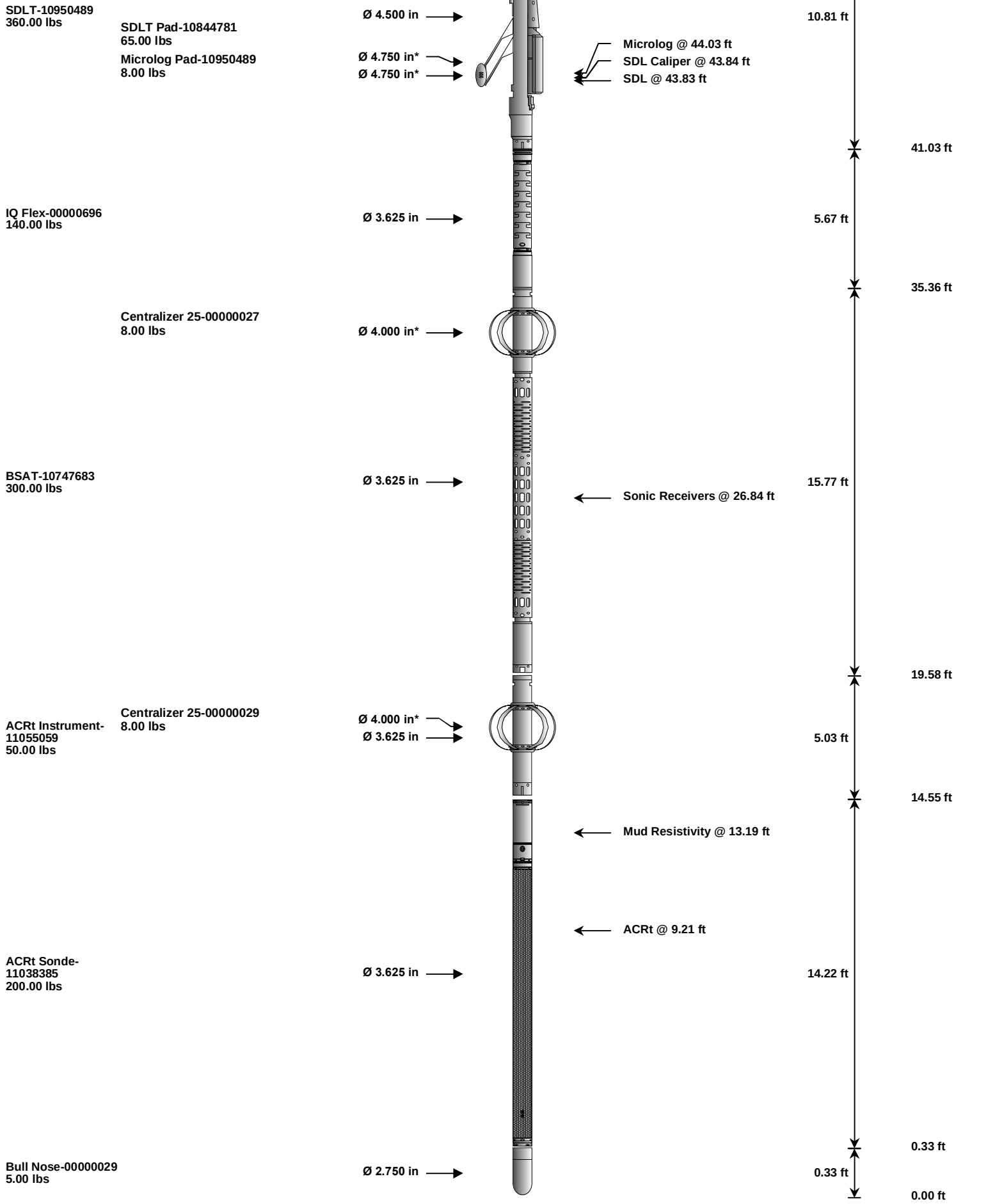
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REPEAT SECTION

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						80.04 ft
RWCH-12156658 135.00 lbs		Ø 3.625 in →		← Load Cell @ 76.35 ft ← BH Temperature @ 75.79 ft	6.25 ft	
SP Sub-11441455 60.00 lbs		Ø 3.625 in →		← SP @ 72.01 ft	3.74 ft	73.79 ft
GTET-11048627 165.00 lbs		Ø 3.625 in →		← GammaRay @ 63.99 ft	8.52 ft	70.05 ft
DSN Decentralizer-10755066 6.60 lbs		Ø 5.000 in* →				61.53 ft
DSNT-11019643 174.00 lbs		Ø 3.625 in →		← DSN Far @ 54.59 ft ← DSN Near @ 53.84 ft	9.69 ft	51.84 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
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RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25	73.79	300.00
SP	SP Sub	11441455	60.00	3.74	70.05	300.00
GTET	Gamma Telemetry Tool	11048627	165.00	8.52	61.53	60.00
DSNT	Dual Spaced Neutron	11019643	174.00	9.69	51.84	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	55.17
SDLT	Spectral Density Tool	10950489	360.00	10.81	41.03	60.00
MICP	Microlog Pad	10950489	8.00	1.00	*	43.53
SDLP	Density Insite Pad	10844781	65.00	2.55	*	43.24
IQF	IQ Flex tool	00000696	140.00	5.67	35.36	300.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.58	60.00
OBCEN	Centralizer - 25 in. Overbody	00000027	8.00	2.08	*	32.52
ACRt	Array Compensated True Resistivity Instrument Section	11055059	50.00	5.03	14.55	300.00
OBCEN	Centralizer - 25 in. Overbody	00000029	8.00	2.08	*	16.39
ACRt	Array Compensated True Resistivity Sonde Section	11038385	200.00	14.22	0.33	300.00
BLNS	Bull Nose	00000029	5.00	0.33	0.00	300.00
Total			1,684.60	80.04		
* Not included in Total Length and Length Accumulation.						
Data: MOSBARGER_B-2I0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE						Date: 10-Sep-13 04:05:20

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:GTET - 11048627

Engineer:THOMAS HYDE

Software Version:WL INSITE R3.8.4 (Build 5)

Reference Calibration Date:02-Jul-13 07:19:00

Calibration Date:14-Aug-13 07:16:10

Calibration Version:1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	51.1	50.6	api
Background + Calibrator	323.4	320.2	api
Calibrator	272.3	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:GTET - 11048627

Engineer:SHELDON INGERSOLL

Software Version:WL INSITE R3.8.4 (Build 5)

Reference Calibration Date:14-Aug-13 07:16:10

Calibration Date:10-Sep-13 01:11:07

Calibration Version:1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	50.6	57.0	api
Background + Calibrator	320.2	318.0	api
Calibrator	269.6	261.0	api

Shop	Field	Difference	Tolerance
269.6	261.0	8.6	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:DSNT - 11019643

Engineer:J. BOLLUM

Reference Calibration Date:03-Jul-13 10:31:49

Calibration Date:08-Aug-13 10:49:53

Logging Source S/N: 696

Tank Serial Number: LIBERAL_NEUTRON

Reference value assigned to Tank: 51.680

Snow Block S/N: 696

Calibration Tank Water Temperature: 72 degF

Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.952	0.951	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)

Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2108	0.2107	0.0002	+/- 0.0020
Calibrated Ratio:	9.72	9.72	0.006	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0610	0.02000 - 0.09000

PASS/FAIL SUMMARY

Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name:	DSNT - 11019643	Reference Calibration Date:	08-Aug-13 10:49:53
Engineer:	SHELDON INGERSOLL	Calibration Date:	10-Sep-13 01:18:14
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

Logging Source S/N: 696

Snow Block S/N: 696

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0610	0.0673	0.0063	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10950489	Reference Calibration Date:	14-Aug-13 08:53:05
Engineer:	THOMAS HYDE	Calibration Date:	14-Aug-13 08:57:28
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1
Host Tool Name:	DSNT - 11019643		

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
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Pad Offset	-2554.79	-2495.11	-7000.00 - -1000.00
Pad Gain	0.0004067	0.0004034	0.000200 - 0.000600
Arm Offset	-926.62	-1424.54	-5000.00 - 3000.00
Arm Gain	0.0004885	0.0005585	0.000300 - 0.000700
Arm Power	-0.000004102	-0.000008458	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	1.99	2.00	0.01	+/- 0.20
Medium Ring (in)	3.76	3.75	-0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.47	6.50	0.03	+/- 0.20
Medium Ring (in)	8.08	8.25	0.17	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed
PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

SDLT CALIPER FIELD CALIBRATION			
Tool Name:	SDLT - 10950489	Reference Calibration Date:	14-Aug-13 08:57:28
Engineer:	SHELDON INGERSOLL	Calibration Date:	10-Sep-13 01:15:53
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.80	0.05	+/- 0.10
Ring Diameter	8.25	8.11	-0.14	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name:	SDLT Pad - 10844781	Reference Calibration Date:	14-Aug-13 08:04:01
Engineer:	THOMAS HYDE	Calibration Date:	14-Aug-13 08:21:45
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

Logging Source S/N: 5168GW

Aluminum Block S/N: LIBERAL

Density: 2.598g/cc

Pe: 3.170

Magnesium Block S/N: LIBERAL

Density: 1.684g/cc

Pe: 2.598

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0335	1.0418	0.90 - 1.10
Near Dens Gain	1.0169	1.0162	0.90 - 1.10
Near Peak Gain	0.9990	1.0059	0.90 - 1.10
Near Lith Gain	0.9872	0.9783	0.90 - 1.10
Far Bar Gain	1.0128	1.0130	0.90 - 1.10

Far Bar Gain	1.0009	1.0002	0.90 - 1.10
Far Peak Gain	0.9928	0.9937	0.90 - 1.10
Far Lith Gain	0.9692	0.9663	0.90 - 1.10
Near Bar Offset	-0.1146	-0.1911	NONE
Near Dens Offset	0.0225	0.0299	NONE
Near Peak Offset	0.1675	0.1100	NONE
Near Lith Offset	0.2484	0.3218	NONE
Far Bar Offset	0.0191	0.0166	NONE
Far Dens Offset	0.1093	0.1166	NONE
Far Peak Offset	0.1392	0.1304	NONE
Far Lith Offset	0.2744	0.2996	NONE
Near Bar Background	802.49	796.49	700 - 1450
Near Dens Background	260.59	260.68	230 - 480
Near Peak Background	114.10	113.78	100 - 210
Near Lith Background	141.57	140.91	125 - 260
Far Bar Background	521.79	521.17	450 - 900
Far Dens Background	203.52	206.44	175 - 345
Far Peak Background	81.77	82.11	70 - 140
Far Lith Background	84.28	85.11	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.682	1.684	0.002	+/- 0.015
Pe	2.548	2.562	0.014	+/- 0.150
ALUMINUM				
Density (g/cc)	2.597	2.598	0.002	+/- 0.01500
Pe	3.138	3.131	-0.007	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0009	+/- 0.0110	0.0001	+/- 0.0140
Magnesium Block	-0.0002	+/- 0.0110	-0.0019	+/- 0.0140
Aluminum Block	0.0004	+/- 0.0110	-0.0008	+/- 0.0140
Resolution	9.42	6.00 - 11.50	8.81	6.00 - 11.50
Internal Verifier(B+D+P+L)	1312	1200 - 2700	895	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK						
Tool Name: SDLT Pad - 10844781		Reference Calibration Date: 14-Aug-13 08:21:45				
Engineer: SHELDON INGERSOLL		Calibration Date: 10-Sep-13 01:11:05				
Software Version: WL INSITE R3.8.4 (Build 5)		Calibration Version: 1				
Pad Temperature: 82.3 degF						
DENSITY FIELD CALIBRATION SUMMARY						
Measurement	Shop	Field	Change	Control Limit +/-		
Near (B+D+P+L) cps	1311.852	1311.113	-0.739	14.659		
Far (B+D+P+L) cps	894.829	890.164	-4.665	16.281		
Near Resolution	9.42	9.32	-0.100	0.50		
Far Resolution	8.81	8.91	0.100	1.00		
PASS/FAIL SUMMARY						
Bkg Quality Check:			Passed			
Bkg Resolution Check:			Passed			
Bkg Verification Check:			Passed			
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11048627						
Gamma Ray Calibrator	269.6	261.0	-----	8.6	+/- 9.00	api
DSNT-11019643						
Snow-Block Porosity	0.0610	0.0673	-----	-0.0063	+/- 0.0150	decp
SDLT-10950489						
Pad Extension	3.75	3.80	-----	-0.05	+/-0.10	in
Ring Diameter	8.25	8.11	-----	0.14	+/-0.15	in
SDLT Pad-10844781						
Near(B+D+P+L)	1311.852	1311.113	-----	0.739	+/-14.659	cps
Far(B+D+P+L)	894.829	890.164	-----	4.665	+/-16.281	cps
Data: MOSBARGER B-210001 SP-GTET-DSN-SDI -FLEX-BSAT-ACRT-BNIDLE						
Date: 10-Sep-13 04:08:05						
HALLIBURTON						
PARAMETERS REPORT						
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units	
TOP-----						
	SHARED	BS	Bit Size	7.875	in	
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No		
	SHARED	MDBS	Mud Base	Water		
	SHARED	MDWT	Borehole Fluid Weight	9.400	ppg	
	SHARED	WAGT	Weighting Agent	Natural		
	SHARED	BSAL	Borehole salinity	0.00	ppm	
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm	
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%	
	SHARED	RMUD	Mud Resistivity	2.000	ohmm	
	SHARED	TRM	Temperature of Mud	75.0	degF	
	SHARED	CSD	Logging Interval is Cased?	No		
	SHARED	ICOD	AHV Casing OD	5.500	in	
	SHARED	ST	Surface Temperature	75.0	degF	
	SHARED	TD	Total Well Depth	5706.00	ft	
	SHARED	BHT	Bottom Hole Temperature	200.0	degF	

	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	
	DSNT	UTVD	Use TVD for Gradient Corrections?	No	
	DSNT	LHWT	Logging Horizontal Water Tank?	No	
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT Pad	DNOK	Process Density?	Yes	
	SDLT Pad	DNOK	Process Density EVR?	No	
	SDLT Pad	CB	Logging Calibration Blocks?	No	
	SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT Pad	DTWN	Disable temperature warning	No	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
	SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
	Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
	BSAT	MBOK	Compute BCAS Results?	Yes	
	BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
	BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
	BSAT	DTFL	Delta -T Fluid	189.00	uspf
	BSAT	DTMT	Delta -T Matrix Type	User define	
	BSAT	DTMA	Delta -T Matrix	47.60	uspf
	BSAT	DTSH	Delta -T Shale	100.00	uspf
	BSAT	SPEQ	Acoustic Porosity Equation	Wyllie	
	ACRt Sonde	RTOK	Process ACRt?	Yes	
	ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
	ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
	ACRt Sonde	TPOS	Tool Position	Free Hanging	
	ACRt Sonde	RMOP	Rmud Source	Mud Cell	
	ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt Sonde	THQY	Threshold Quality	0.50	
	ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
RWCH				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	72.01	NO	
SP	Spontaneous Potential	72.01	BLK	1.250
SPR	Raw Spontaneous Potential	72.01	NO	
SPO	Spontaneous Potential Offset	72.01	NO	
GTET				
TPUL	Tension Pull	63.99	NO	
GR	Natural Gamma Ray API	63.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	63.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	63.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	53.74	NO	
RNDS	Near Detector Telemetry Counts	53.84	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.59	TRI	0.583
DNTT	DSN Tool Temperature	53.84	NO	
DSNS	DSN Tool Status	53.74	NO	
ERND	Near Detector Telemetry Counts EVR	53.84	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.59	BLK	0.000
ENTM	DSN Tool Temperature EVR	53.84	NO	
SDLT				
TPUL	Tension Pull	43.84	NO	
PCAL	Pad Caliper	43.84	TRI	0.250
ACAL	Arm Caliper	43.84	TRI	0.250
BSAT				
TPUL	Tension Pull	26.84	NO	
STAT	Status	26.84	NO	
DLYT	Delay Time	26.84	NO	
SI	Sample Interval	26.84	NO	
TXRX	Raw Telemetry 10 Receivers	26.84	NO	
FRMC	Tool Frame Count	26.84	NO	
GMOD	Gain processing mode	19.58	NO	
ACRt Sonde				
TPUL	Tension Pull	2.73	NO	

F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Current Raw 12K X Receiver	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	
SDLT Pad				
TPUL	Tension Pull	43.83	NO	
NAB	Near Above	43.66	BLK	0.920
NHL	Near Cesium High	43.66	BLK	0.920

NLO	Near Cesium Low	43.66	BLK	0.920
NVA	Near Valley	43.66	BLK	0.920
NBA	Near Barite	43.66	BLK	0.920
NDE	Near Density	43.66	BLK	0.920
NPK	Near Peak	43.66	BLK	0.920
NLI	Near Lithology	43.66	BLK	0.920
NBAU	Near Barite Unfiltered	43.66	BLK	0.250
NLIU	Near Lithology Unfiltered	43.66	BLK	0.250
FAB	Far Above	44.01	BLK	0.250
FHI	Far Cesium High	44.01	BLK	0.250
FLO	Far Cesium Low	44.01	BLK	0.250
FVA	Far Valley	44.01	BLK	0.250
FBA	Far Barite	44.01	BLK	0.250
FDE	Far Density	44.01	BLK	0.250
FPK	Far Peak	44.01	BLK	0.250
FLI	Far Lithology	44.01	BLK	0.250
PTMP	Pad Temperature	43.84	BLK	0.920
NHV	Near Detector High Voltage	43.24	NO	
FHV	Far Detector High Voltage	43.24	NO	
ITMP	Instrument Temperature	43.24	NO	
DDHV	Detector High Voltage	43.24	NO	

Microlog Pad

TPUL	Tension Pull	44.03	NO	
MINV	Microlog Lateral	44.03	BLK	0.750
MNOR	Microlog Normal	44.03	BLK	0.750

Data: MOSBARGER_B-210001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIDLE

Date: 10-Sep-13 04:06:02

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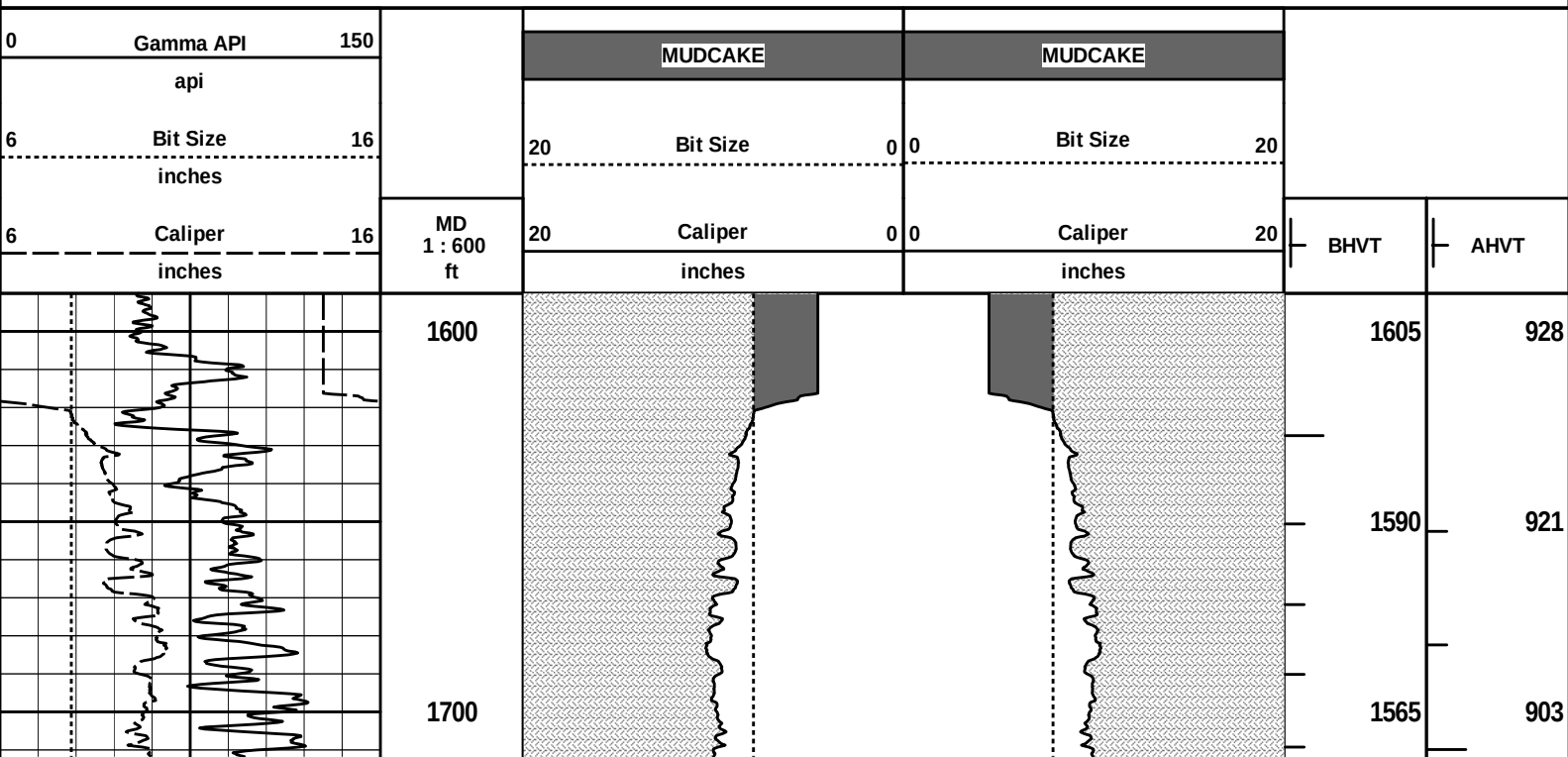
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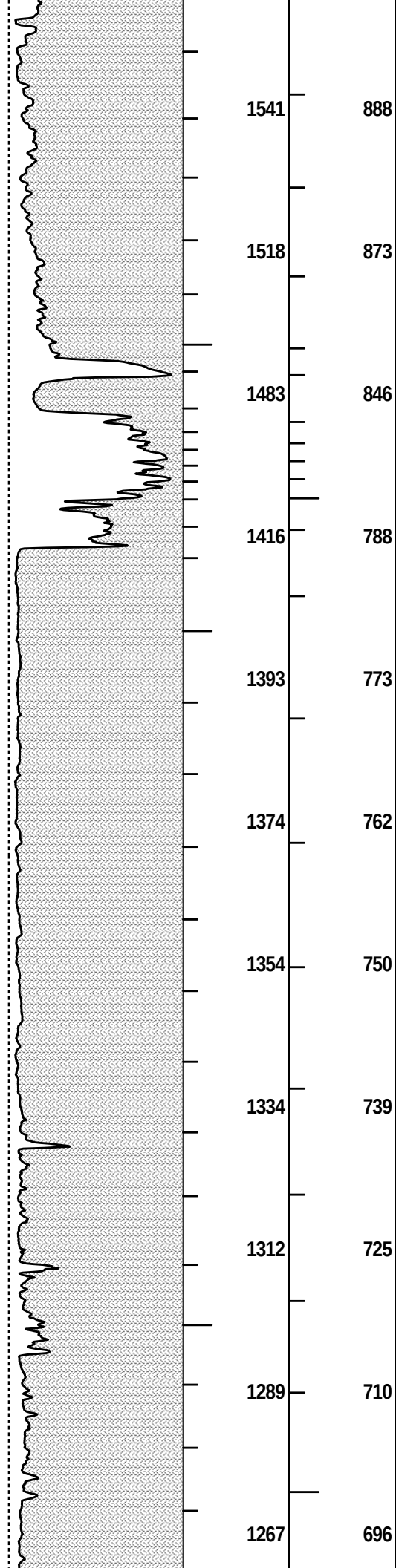
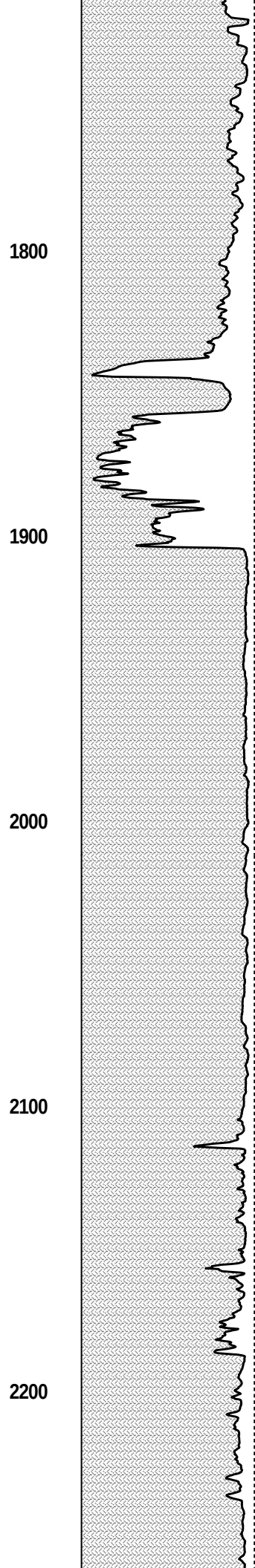
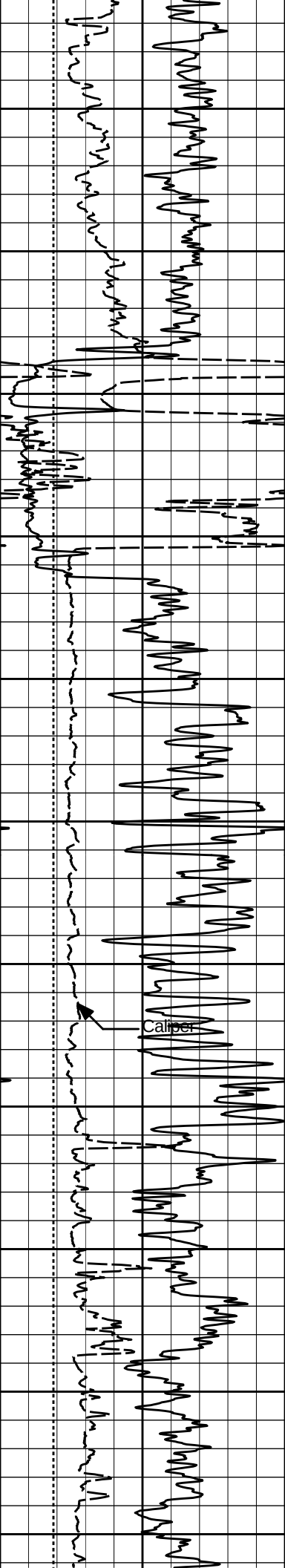
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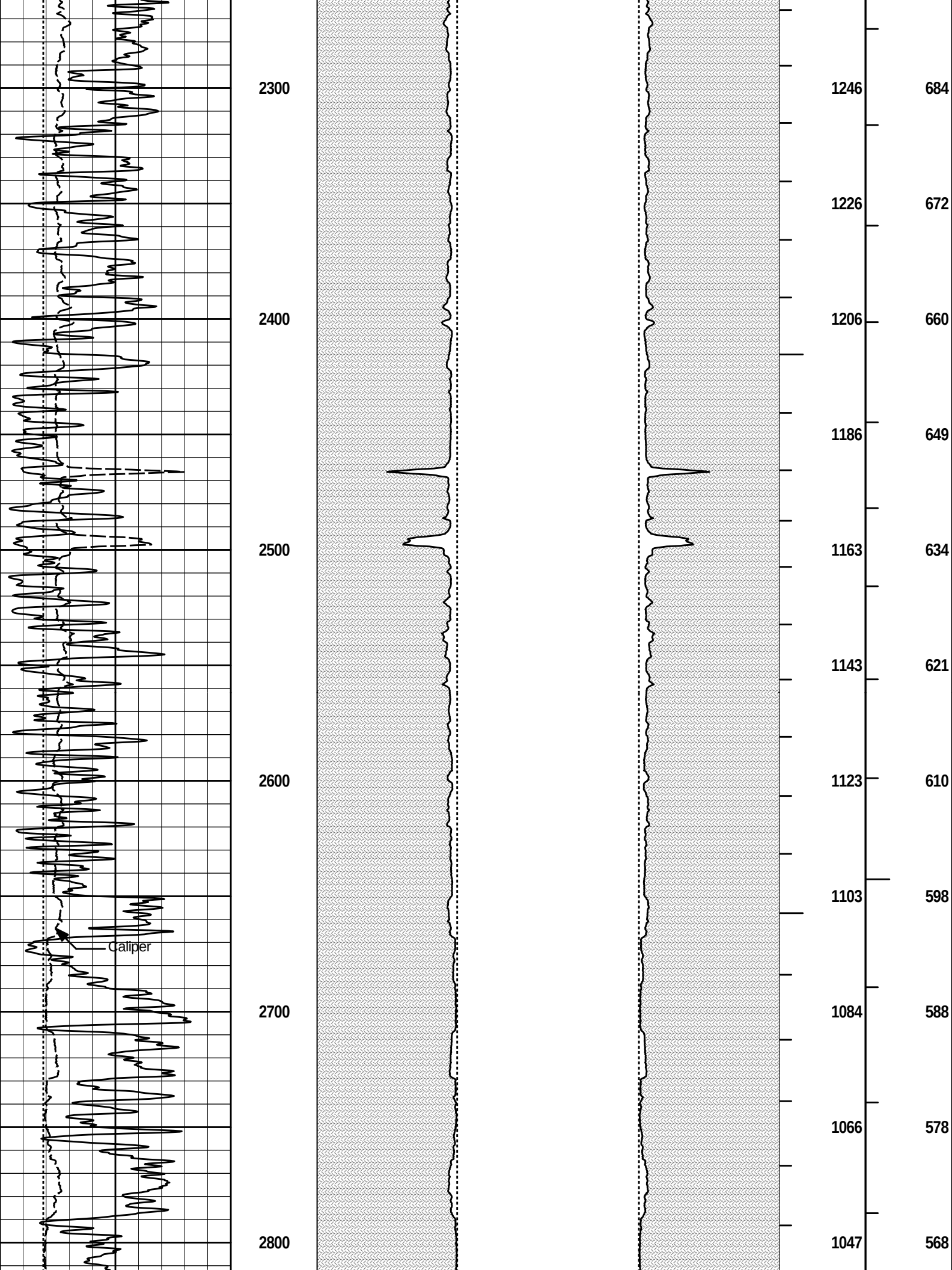
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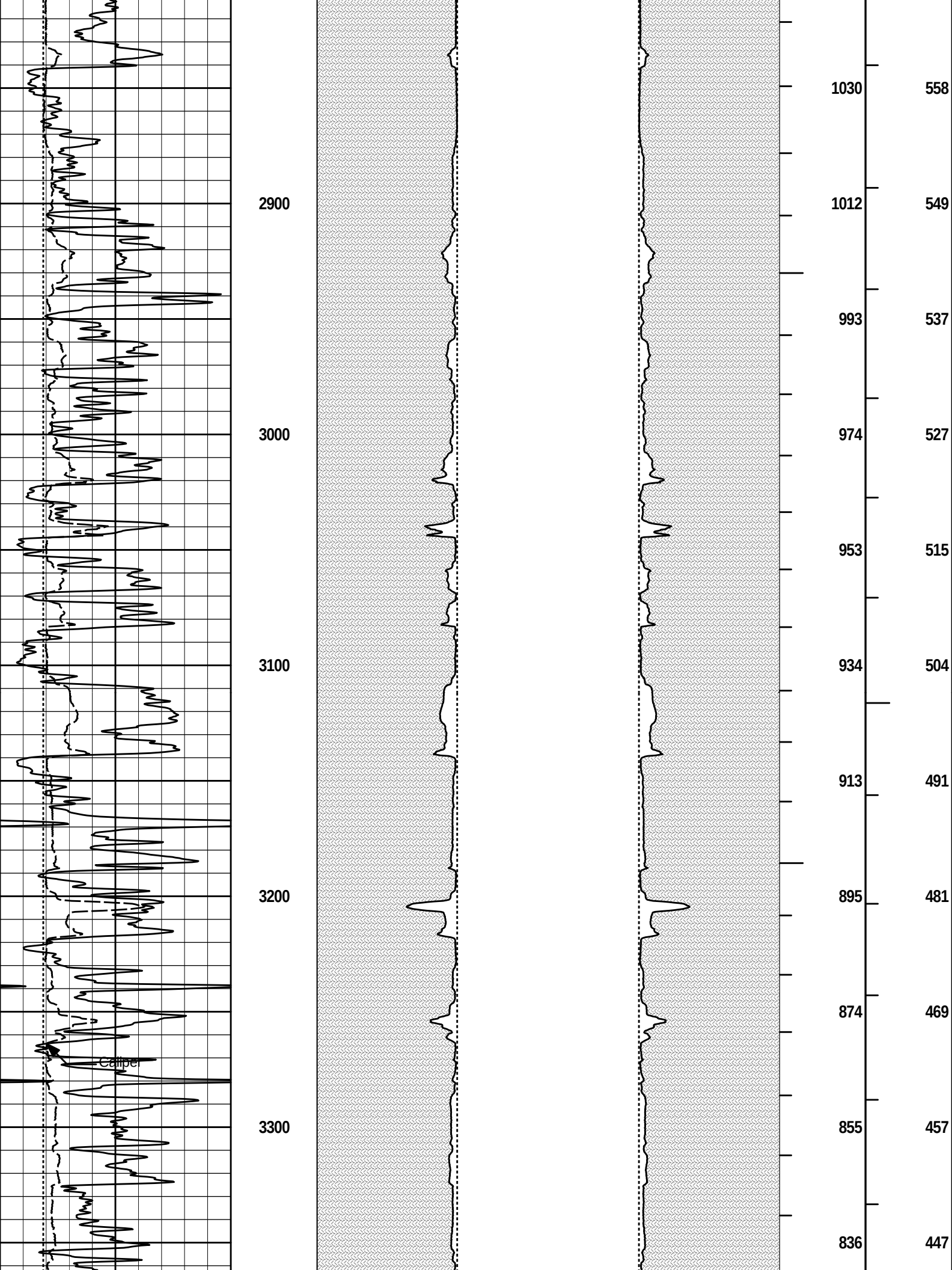
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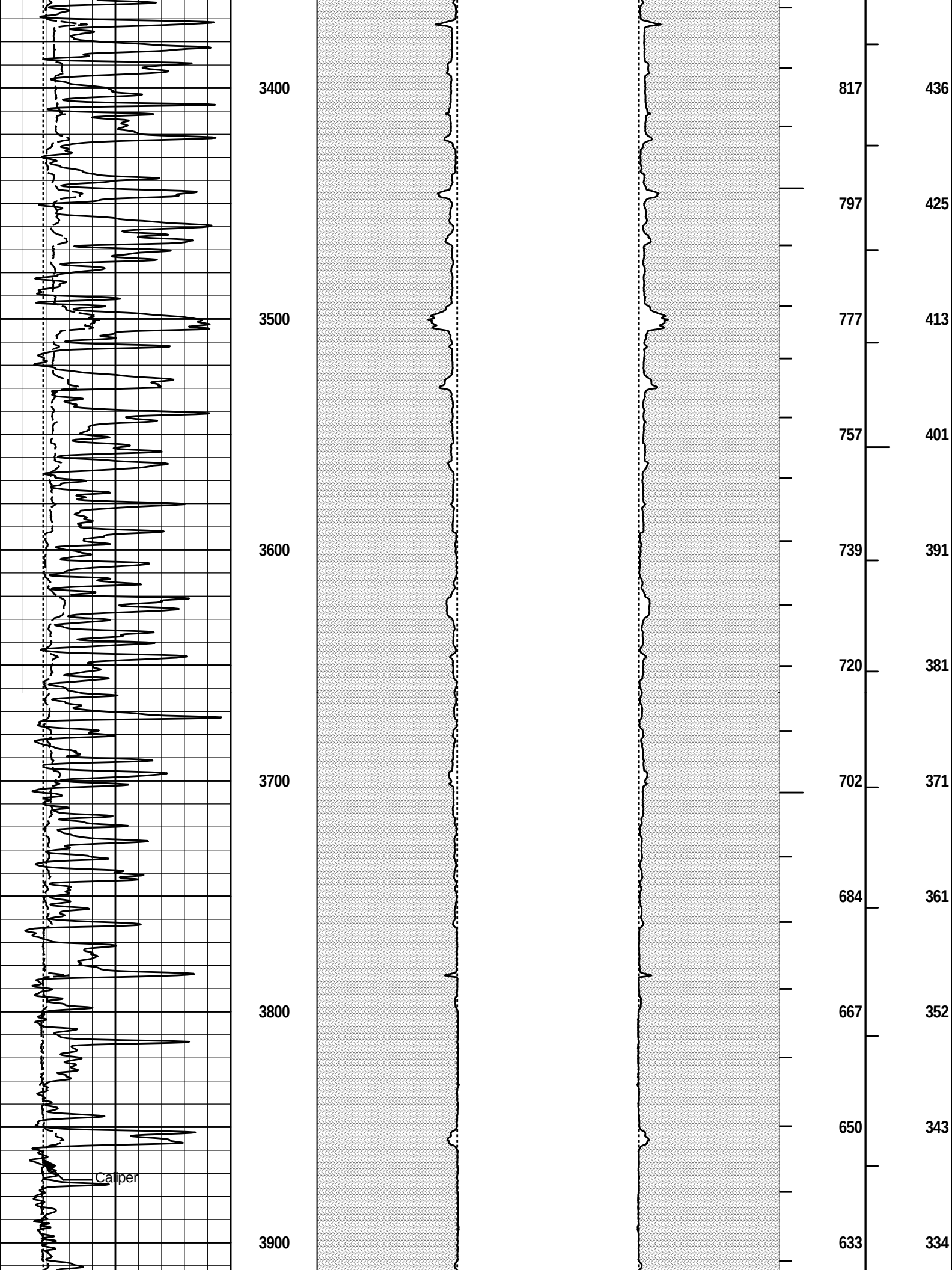
ANNULAR HOLE VOLUME PLOT

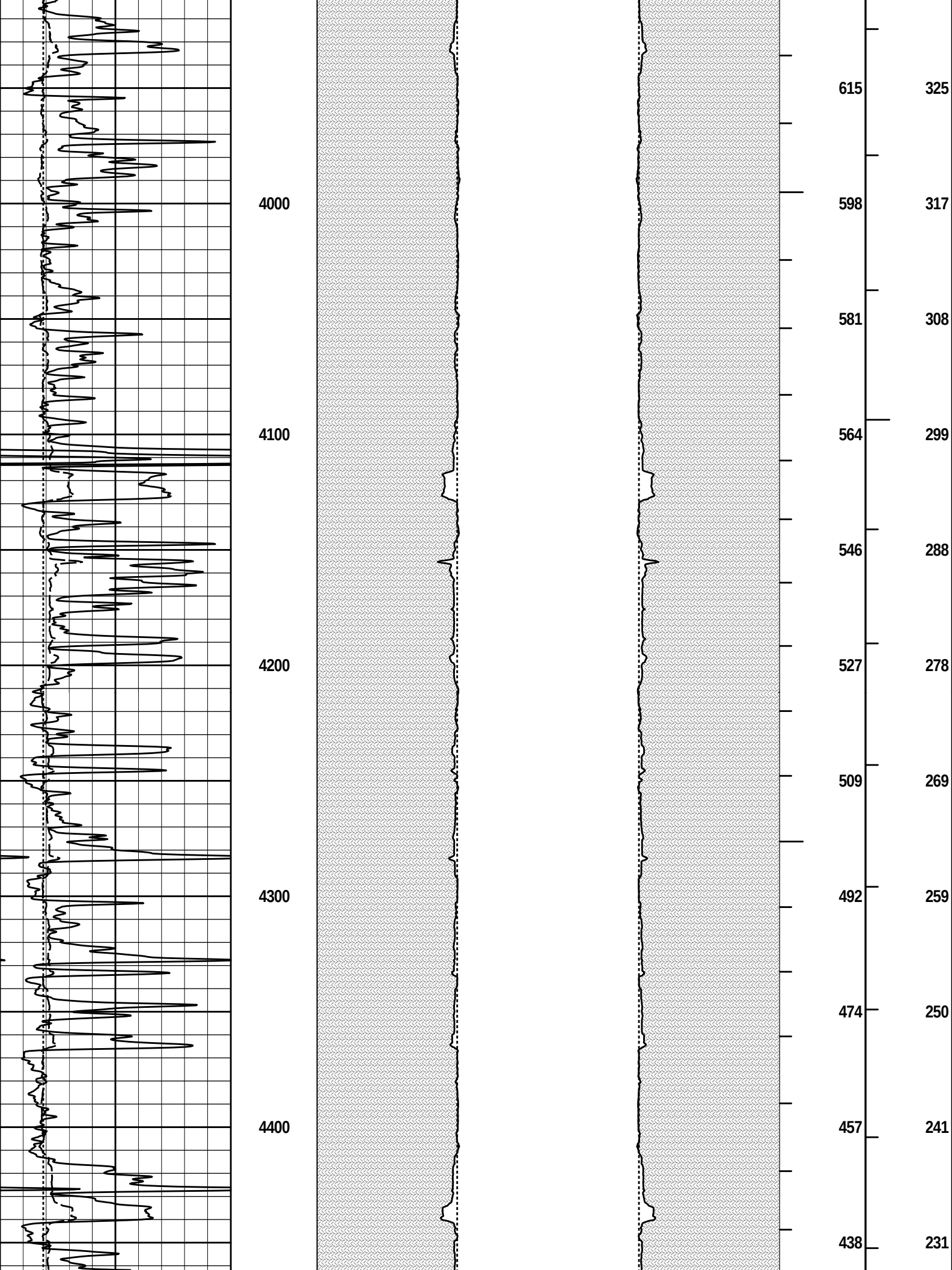


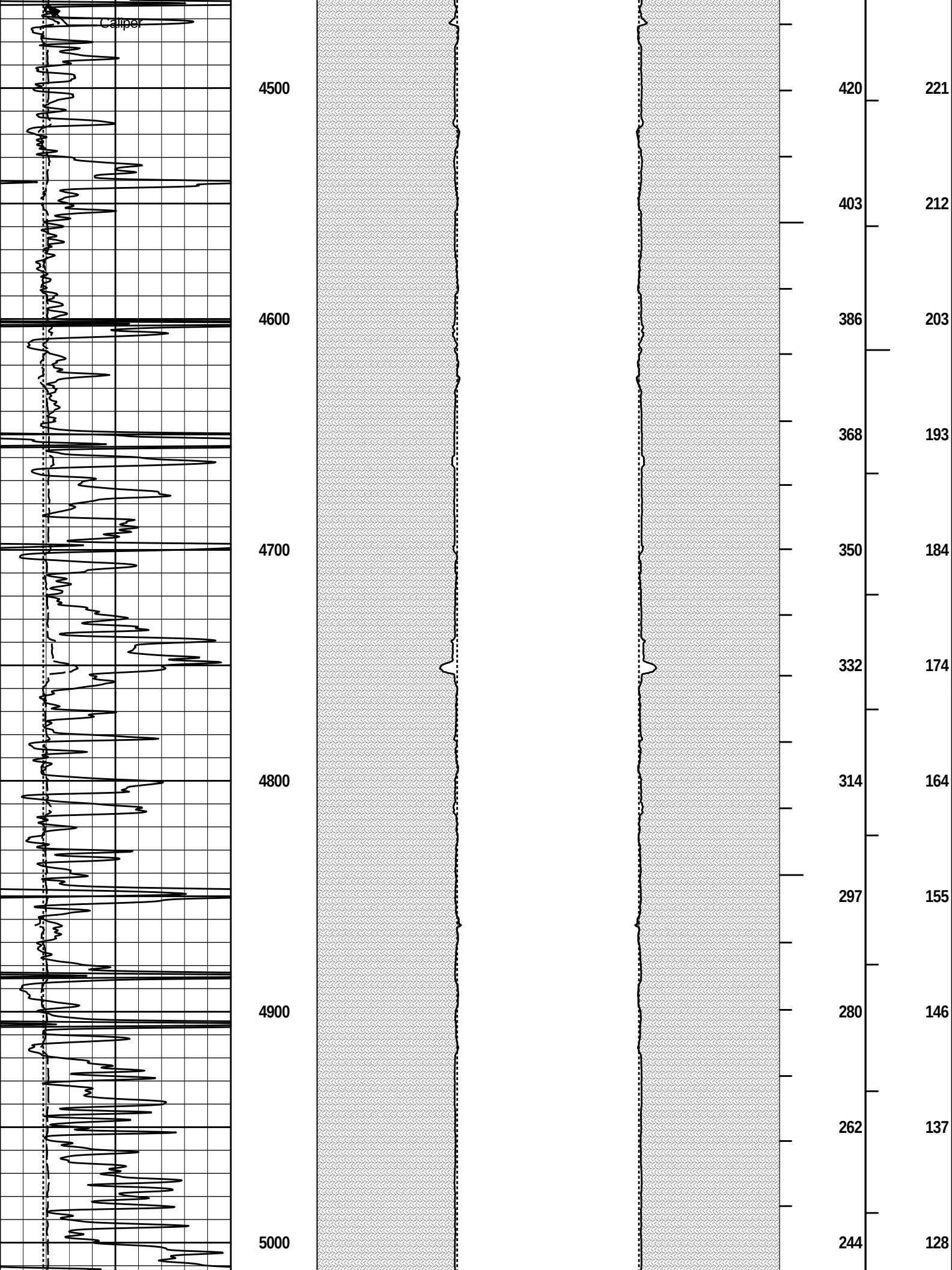


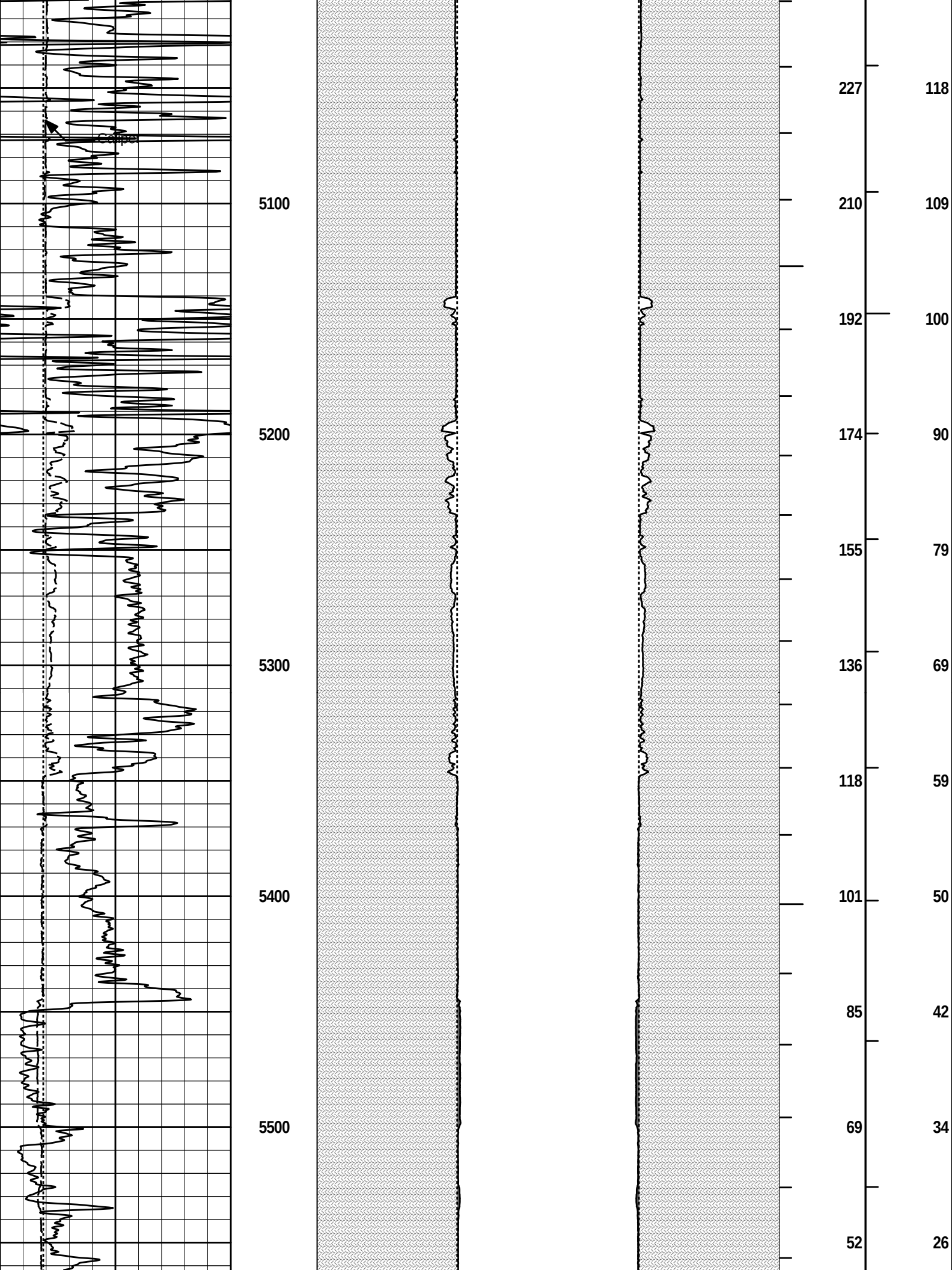


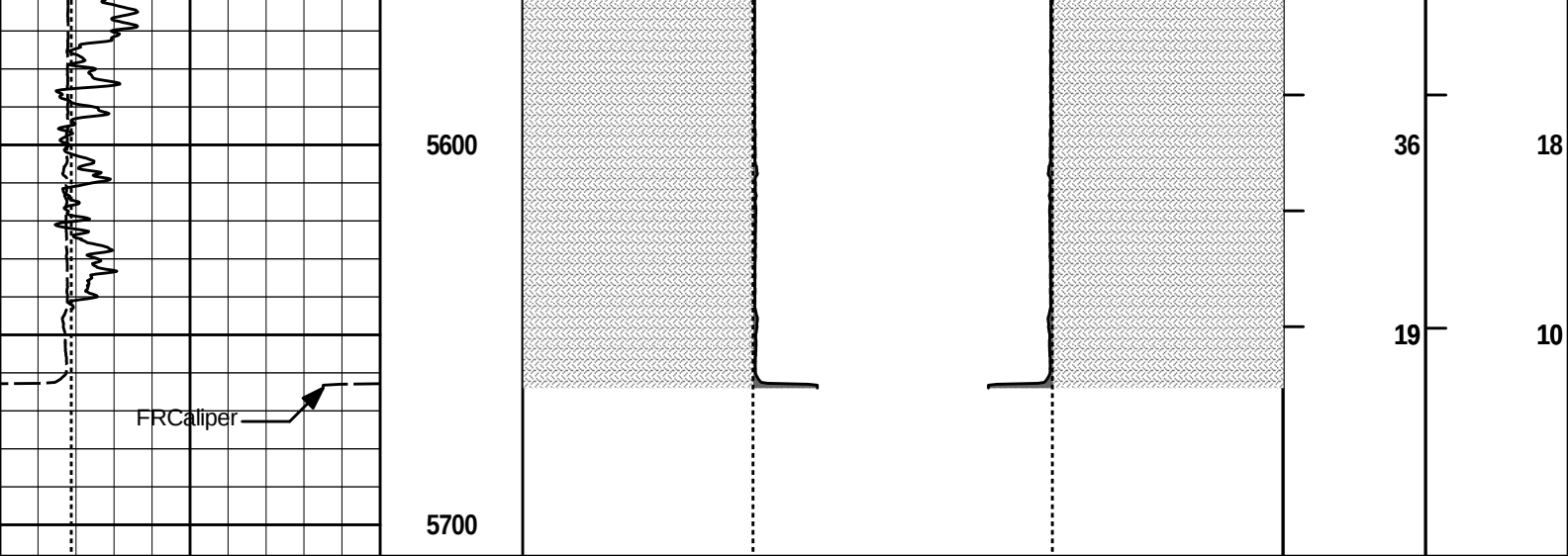












6	Caliper	16	MD	20	Caliper	0 0	Caliper	20	BHVT	AHVT
	inches		1 : 600		inches		inches			
6	Bit Size	16		20	Bit Size	0 0	Bit Size	20		
	inches									
0	Gamma API	150								
	api									

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Plot Time: 10-Sep-13 07:58:20
Plot Range: 1590 ft to 5708.25 ft
Data: MOSBARGER_B-2\Well Based\CASING\
Plot File: \\-LOCAL-\\MOSBARGER_B-2\\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIPORO\\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	OXY USA INC.		
WELL	MOSBARGER B-2		
FIELD	HUGOTON GAS AREA		
COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON LOG	