

HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

COMPANY				OXY USA INC			
WELL				LOOMIS B2			
FIELD				AMAZON DITCH			
COUNTY				FINNEY			
STATE				KANSAS			
COMPANY				OXY USA INC			
WELL				LOOMIS B2			
FIELD				AMAZON DITCH			
COUNTY				FINNEY			
STATE				KANSAS			
Permanent Datum				GL			
Log measured from				KB			
Drilling measured from				KB			
Date				18-Aug-12			
Run No.				ONE			
Depth - Driller				4911.00 ft			
Depth - Logger				4890.0 ft			
Bottom - Logged Interval				4846.0 ft			
Top - Logged Interval				3650.0 ft			
Casing - Driller				8.625 in @ 1784.0 ft			
Casing - Logger				1780.0 ft			
Bit Size				7.875 in @			
Type Fluid in Hole				WATER BASED MUD			
Density				9.4 ppg 42.00 s/qt			
PH				9.70 pH 16.0 cp/m			
Source of Sample				FLOW LINE			
Rm @ Meas. Temperature				0.900 ohmm @ 73.00 degF @			
Rmf @ Meas. Temperature				0.77 ohmm @ 72.00 degF @			
Rmc @ Meas. Temperature				1.030 ohmm @ 72.00 degF @			
Source Rmf				MEASURED MEASURED			
Rm @ BHT				0.58 ohmm @ 118.0 degF @			
Time Since Circulation				8.0 hr			
Time on Bottom				18-Aug-12 17:07			
Max. Rec. Temperature				118.0 degF @ 4890.0 ft @			
Equipment				10546696 LIBERAL			
Recorded By				T. HYDE			
Witnessed By				D. READY			

API No. 15-055-22173
Location 1180' FSL 330' FWL

Other Services:
MICRO
BSAT
ACRT

Fold here

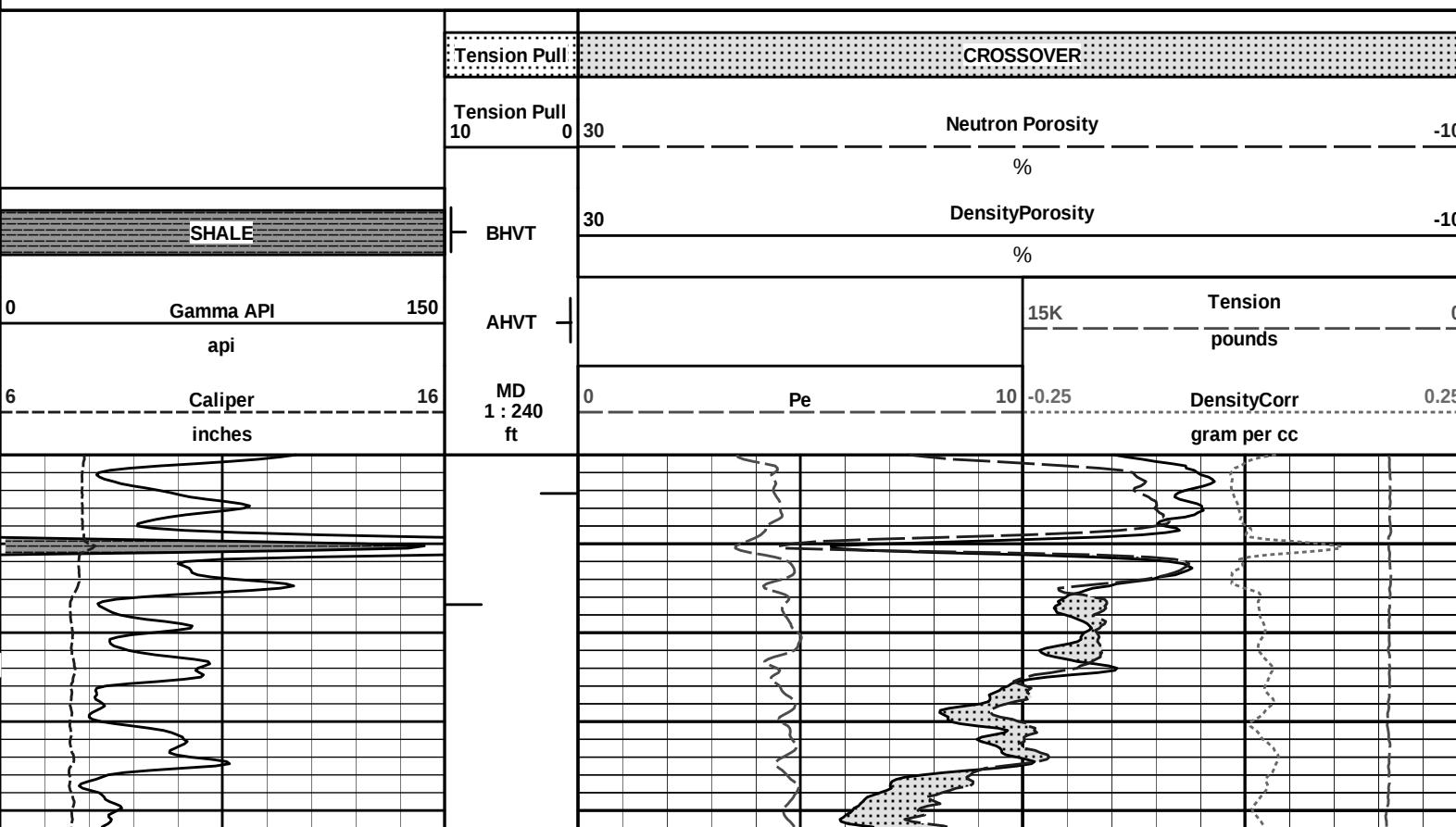
Service Ticket No.: 9754248						API Serial No.: 15-055-22173						PGM Version: WL INSITE R3.6.0 (Build 3)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole									
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									
Serial No.		11048627				Serial No.						Serial No.		143_M489				Serial No.		11019643									
Model No.		GTET				Model No.						Model No.		SDLT				Model No.		DSNT									
Diameter		3.625"				No. of Cent.						Diameter		4.5"				Diameter		3.625"									
Detector Model No.		T-102				Spacing						Log Type		GAM-GAM				Log Type		NEU-NEU									
Type		SCINT										Source Type		Cs137				Source Type		Am241Be									
Length		8"				LSA [Y/N]						Serial No.		5168GW				Serial No.		DSN-424									
Distance to Source		10'				FWDA [Y/N]						Strength		1.5 Ci				Strength		15 Ci									

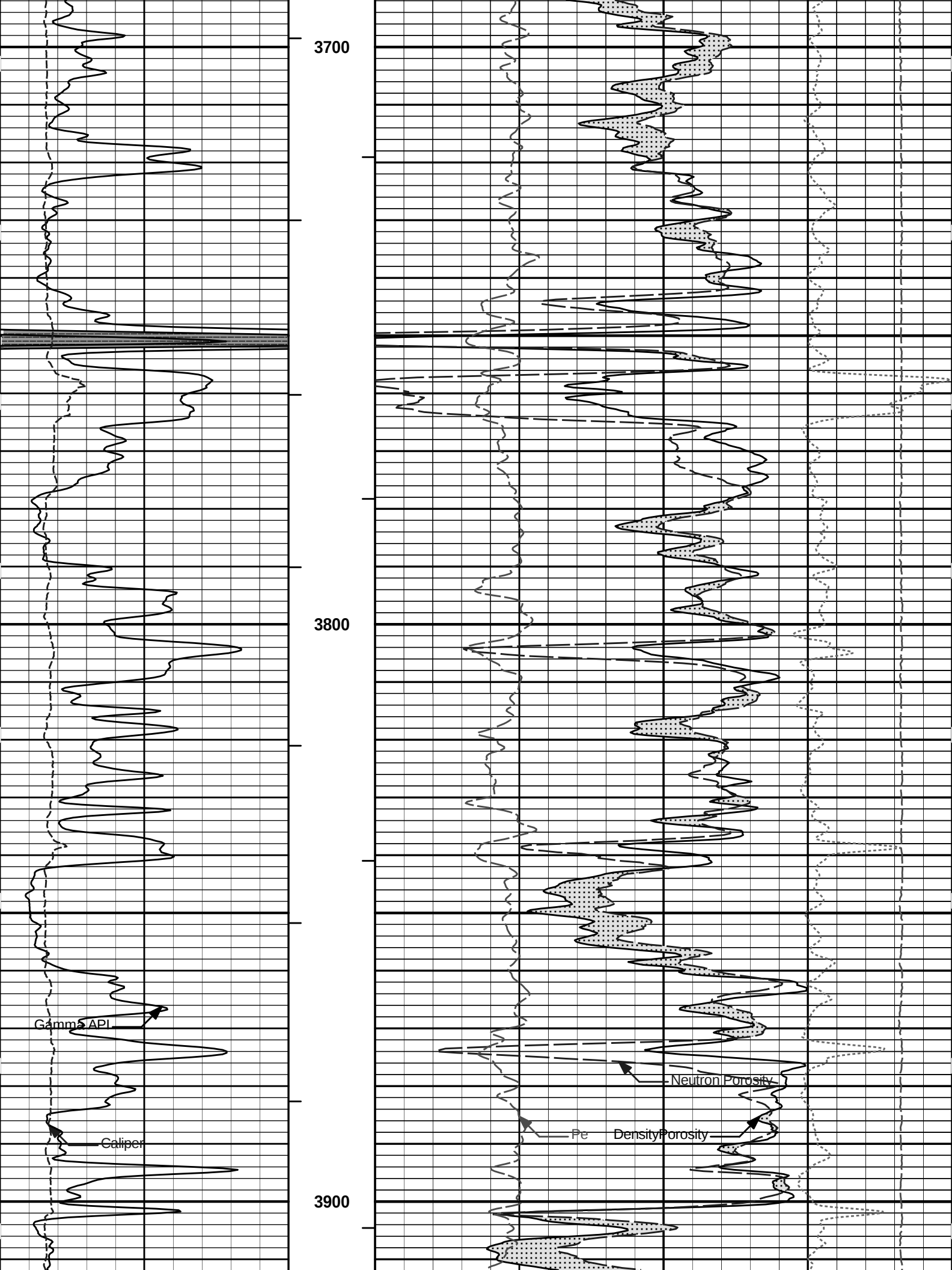
GENERAL				GAMMA		ACOUSTIC		DENSITY		NEUTRON				
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	4890	3650	REC	0	150				30	-10	2.71	30	-10	LIME
DIRECTIONAL INFORMATION														
Maximum Deviation @									KOP @					
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING														
CHLORIDES REPORTED AT 10000MG/L														
LCM REPORTED AT 4 PPB														
TODAY'S CREW V. JAIME P. COBLE														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 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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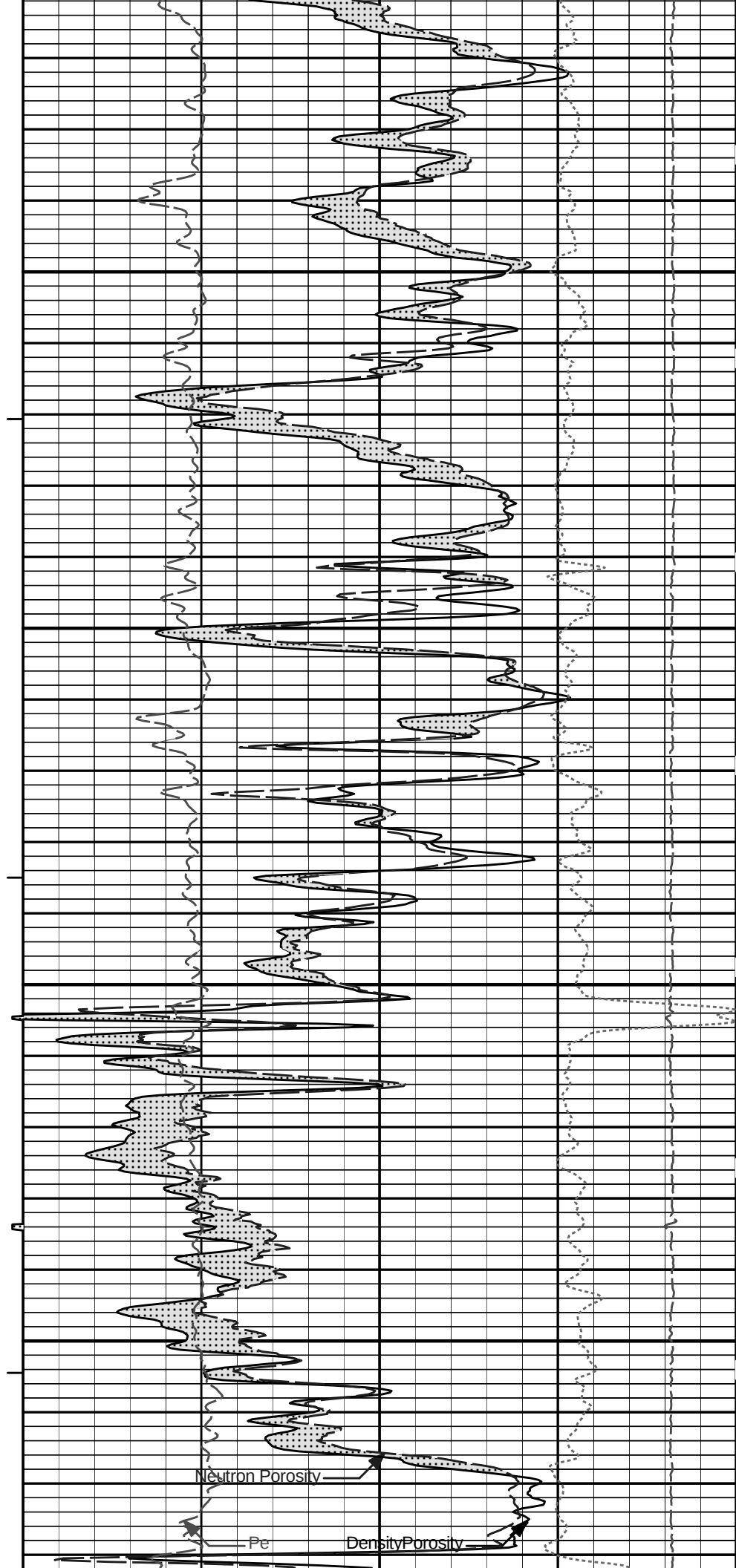
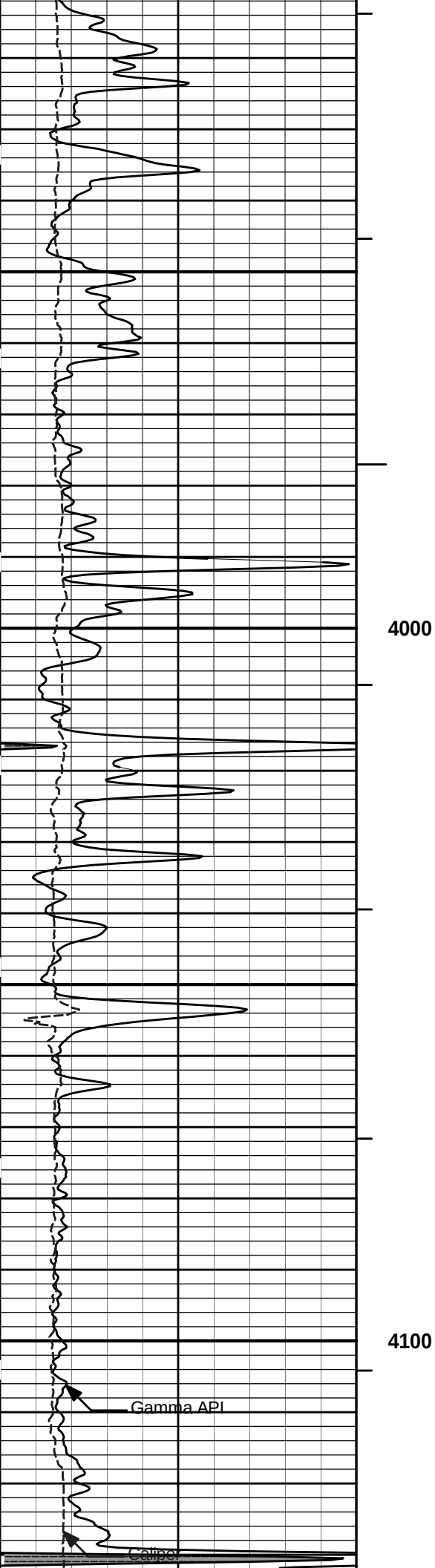
HALLIBURTON Plot Time: 18-Aug-12 17:51:49

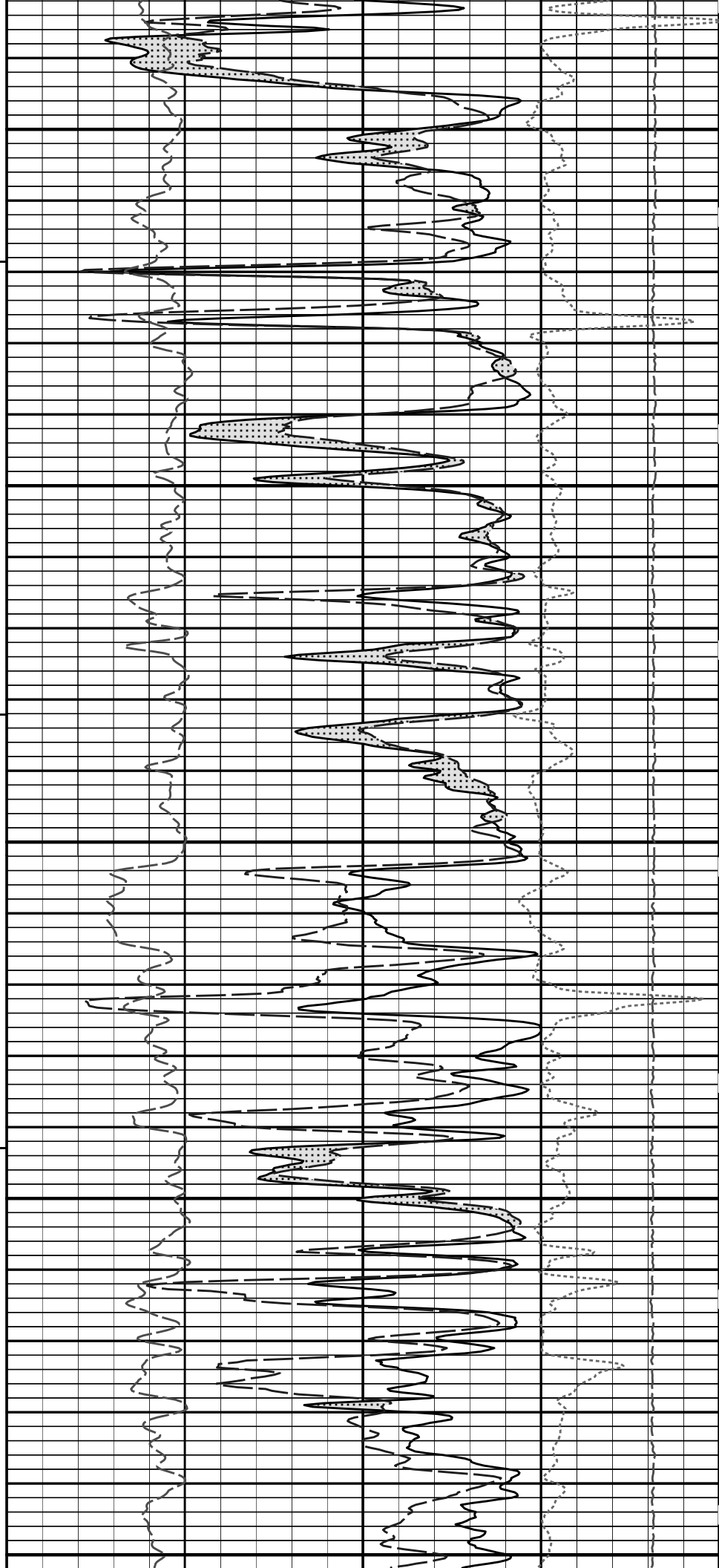
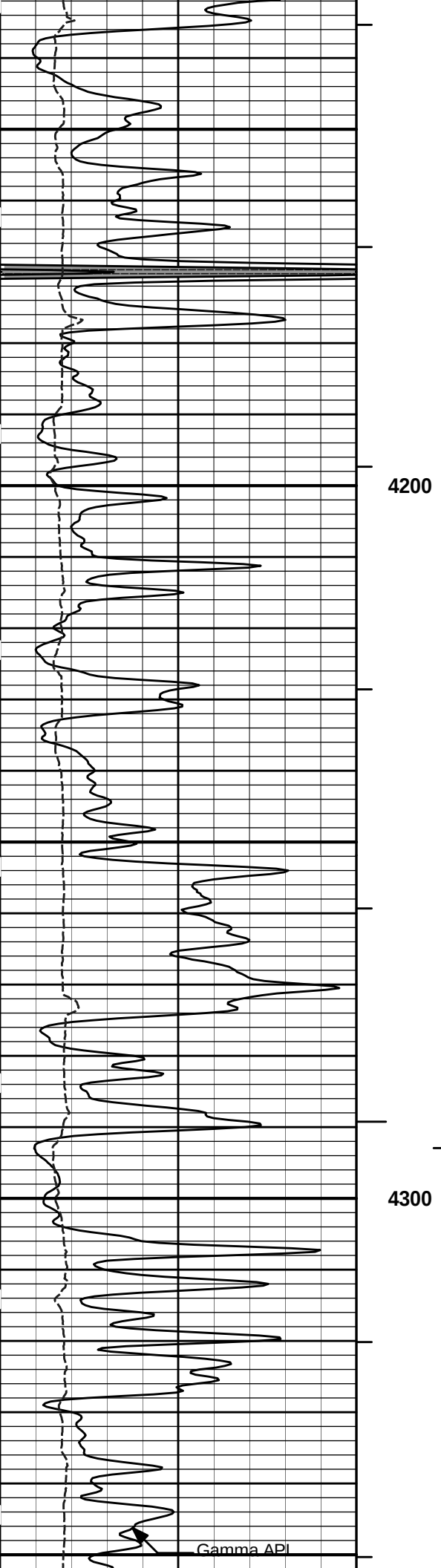
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Plot File: \\PORO\Poro IQ 5 MAIN LIB

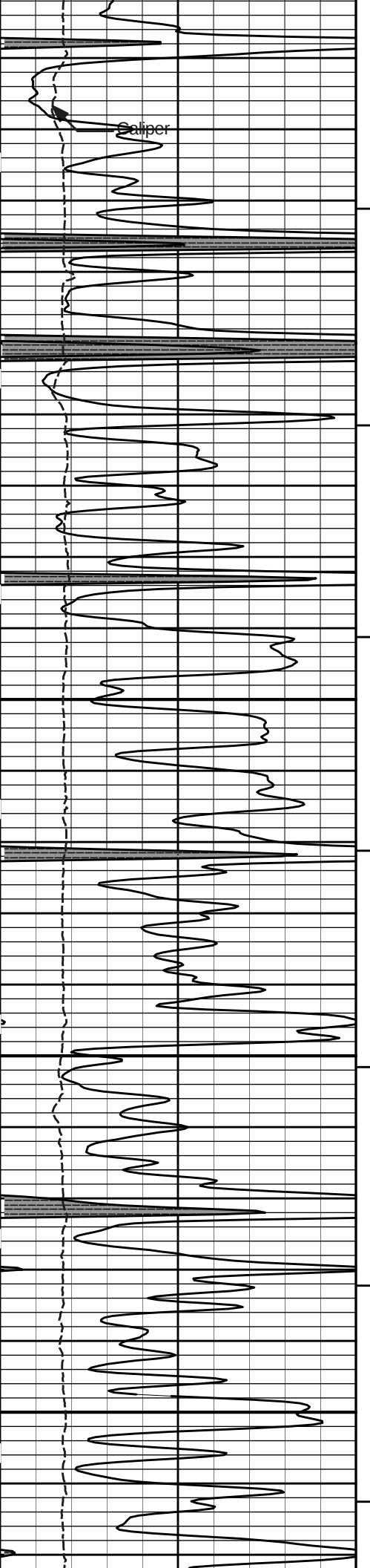
5 INCH MAIN LOG





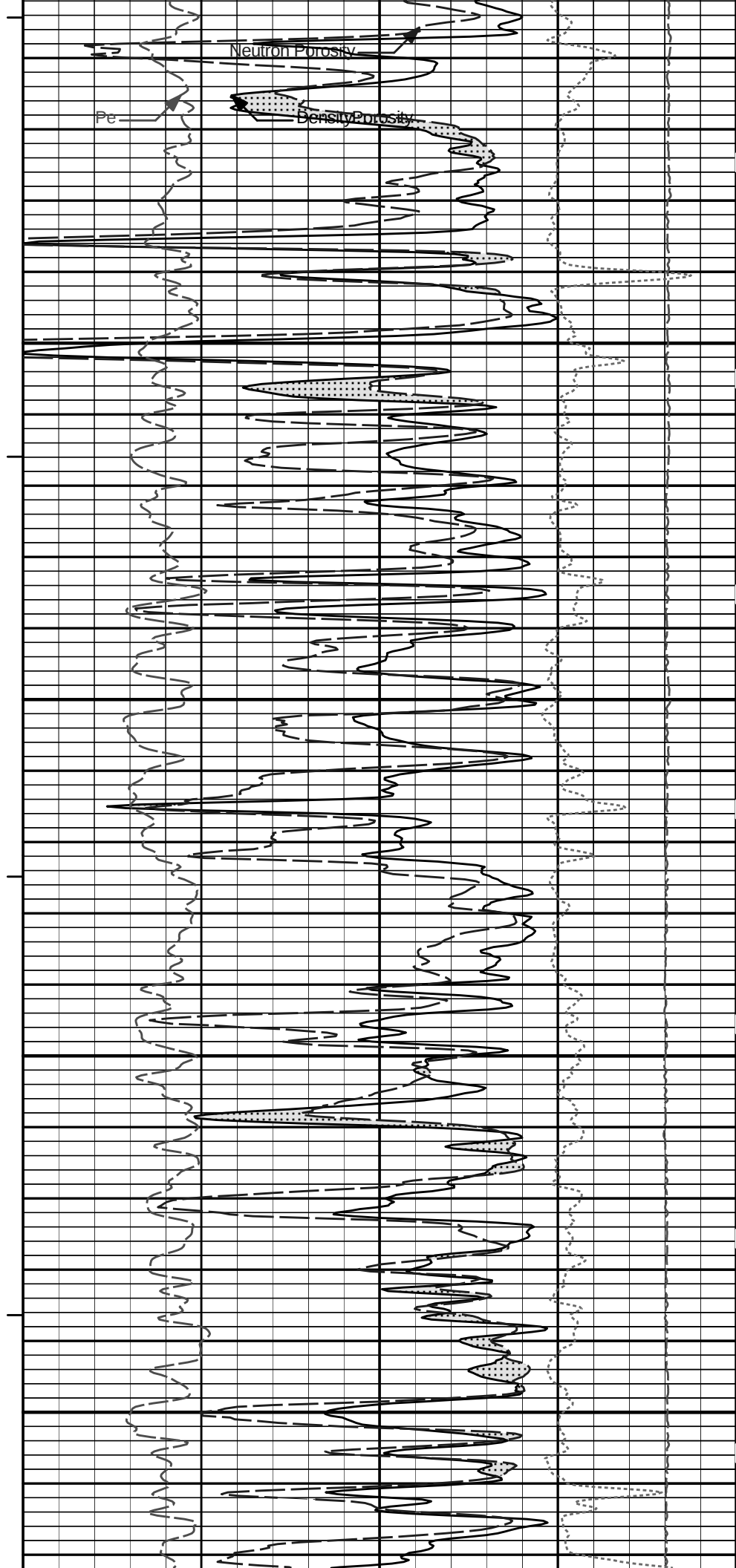


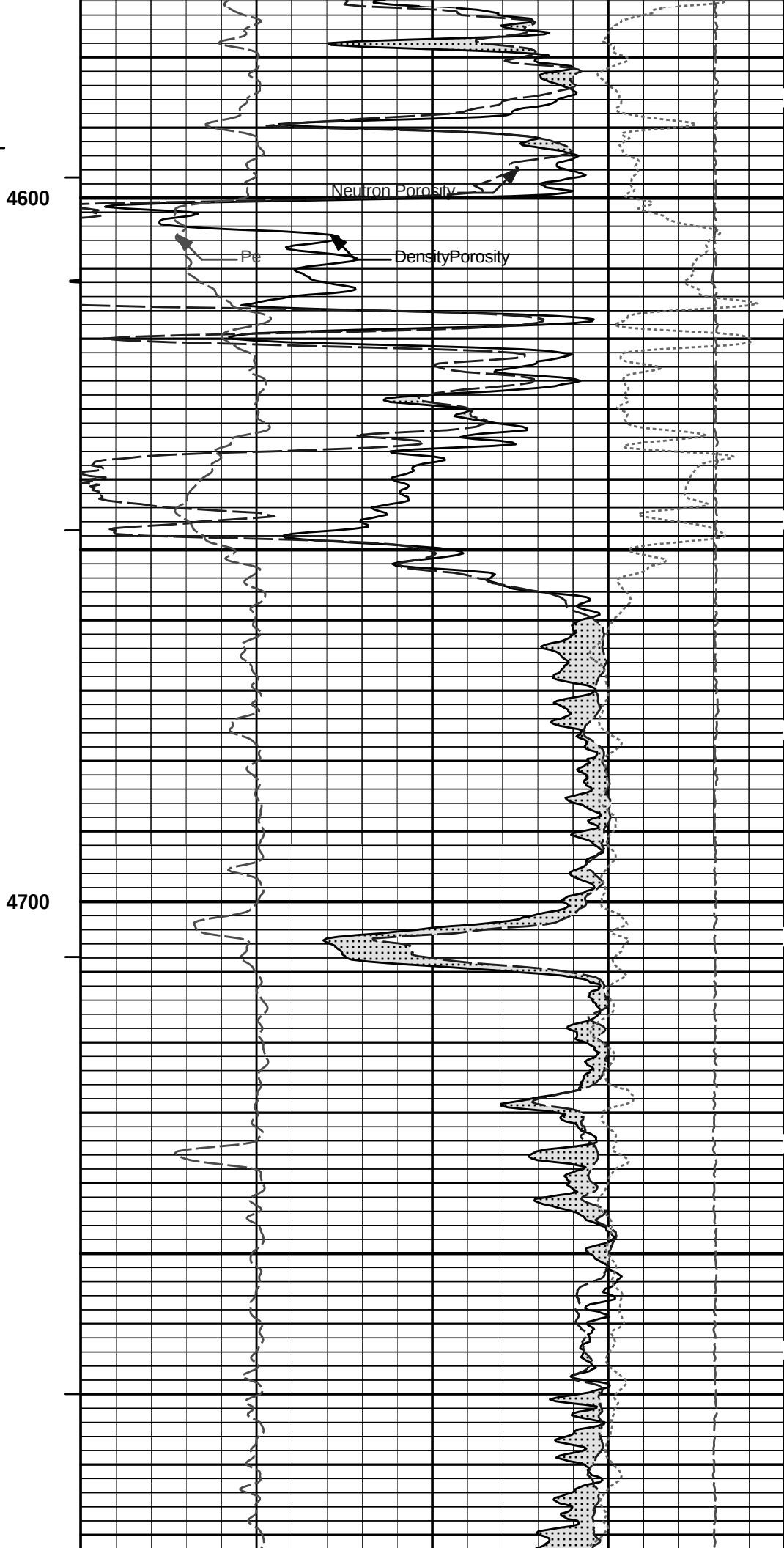
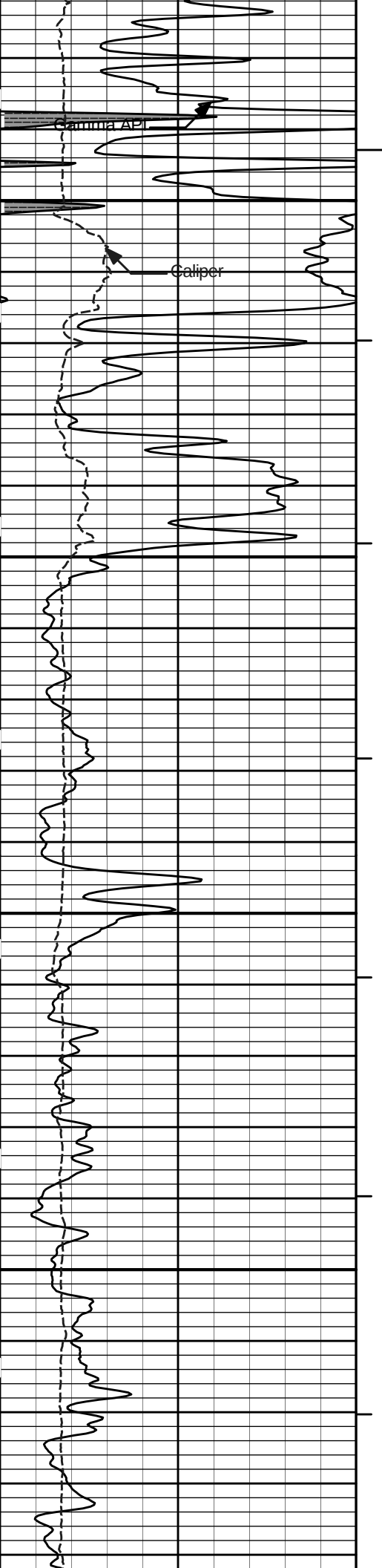


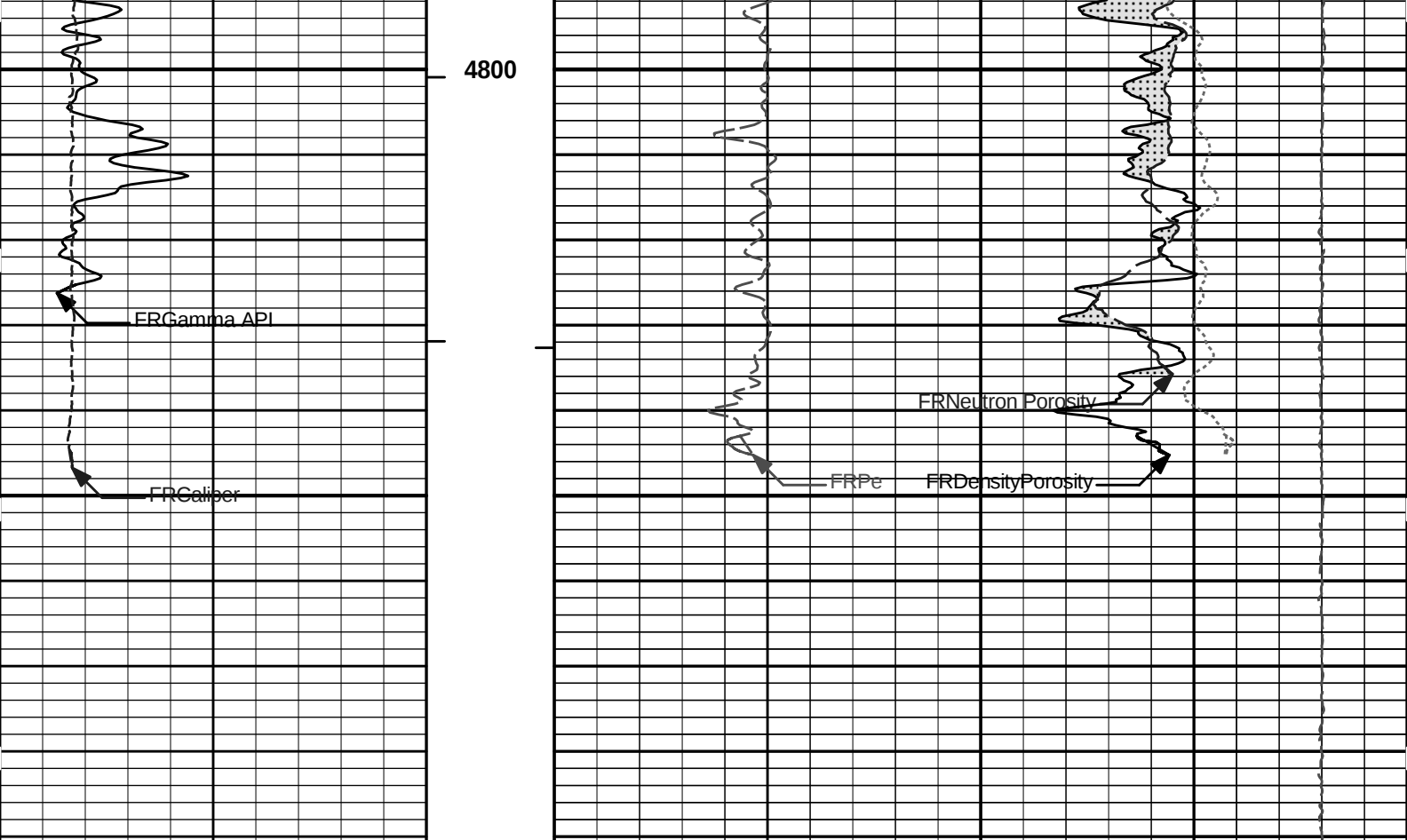


4400

4500







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

HALLIBURTON

Plot Time: 18-Aug-12 17:51:52
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Data: LOOMIS_B2\Well Based\DAQ-0003-003\
Plot File: \\PORO\Poros_IQ_5_MAIN_LIB

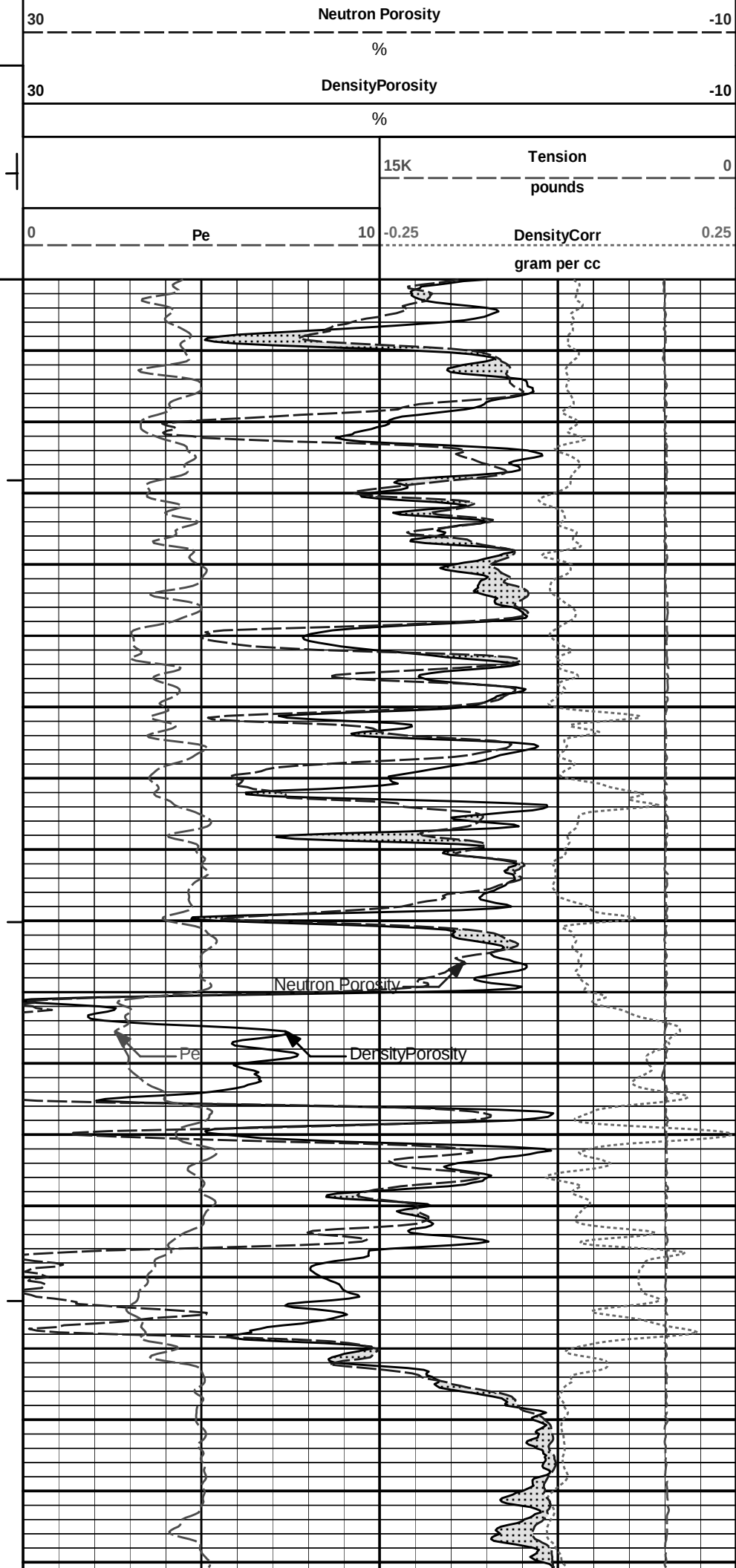
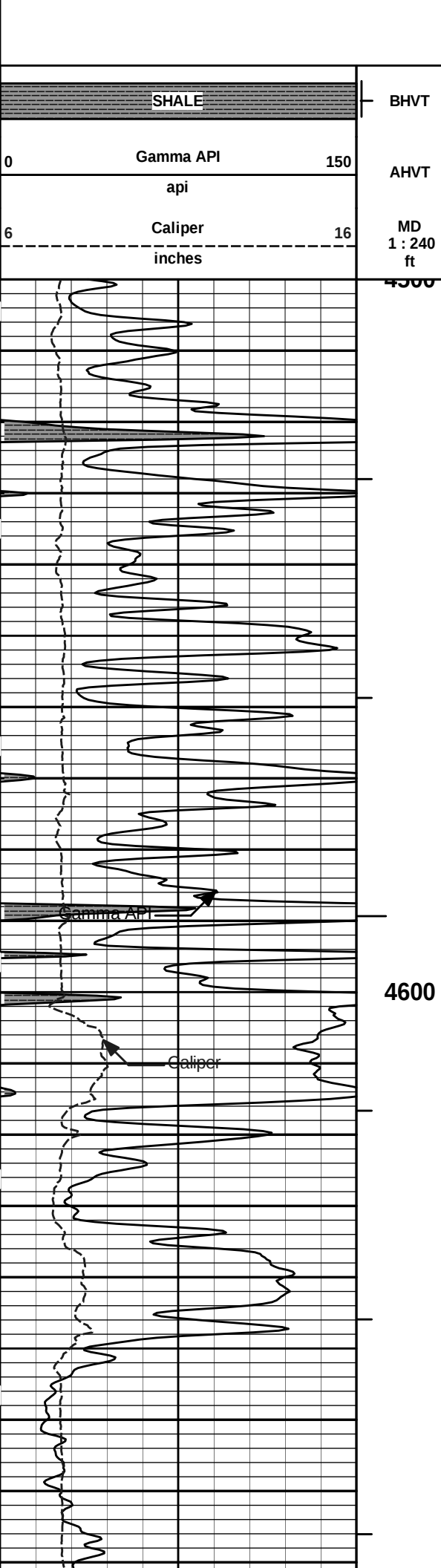
5 INCH MAIN LOG

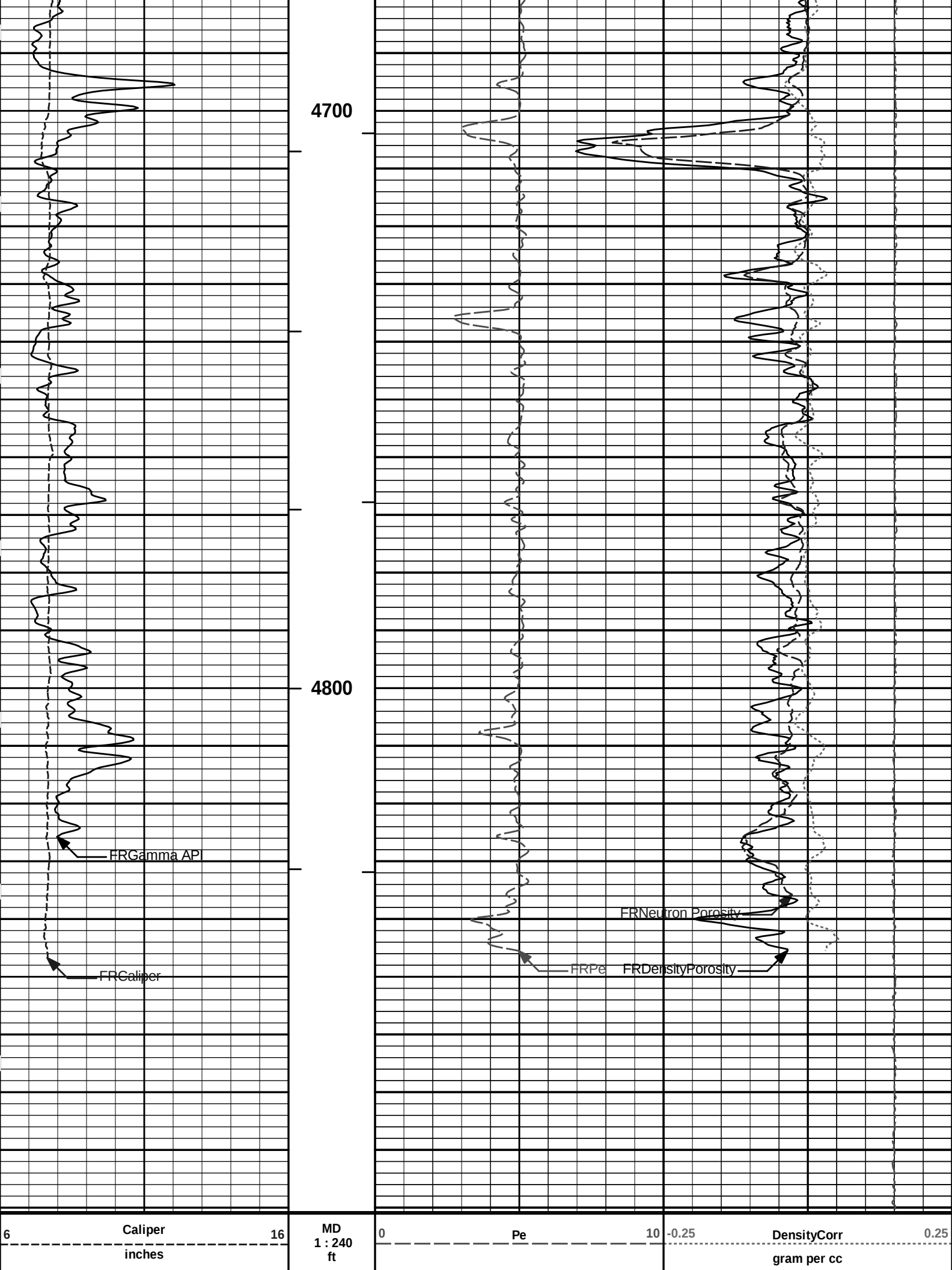
HALLIBURTON

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Data: LOOMIS_B2\Well Based\DAQ-0003-002\
Plot File: \\PORO\Poros_IQ_5_REP_LIB

REPEAT SECTION

	CROSSOVER
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0	Gamma API	150	AHVT		15K	Tension	0
	api					pounds	
	SHALE		BHVT	30	DensityPorosity		-10
					%		
				30	Neutron Porosity		-10
					%		
					CROSSOVER		

HALLIBURTON

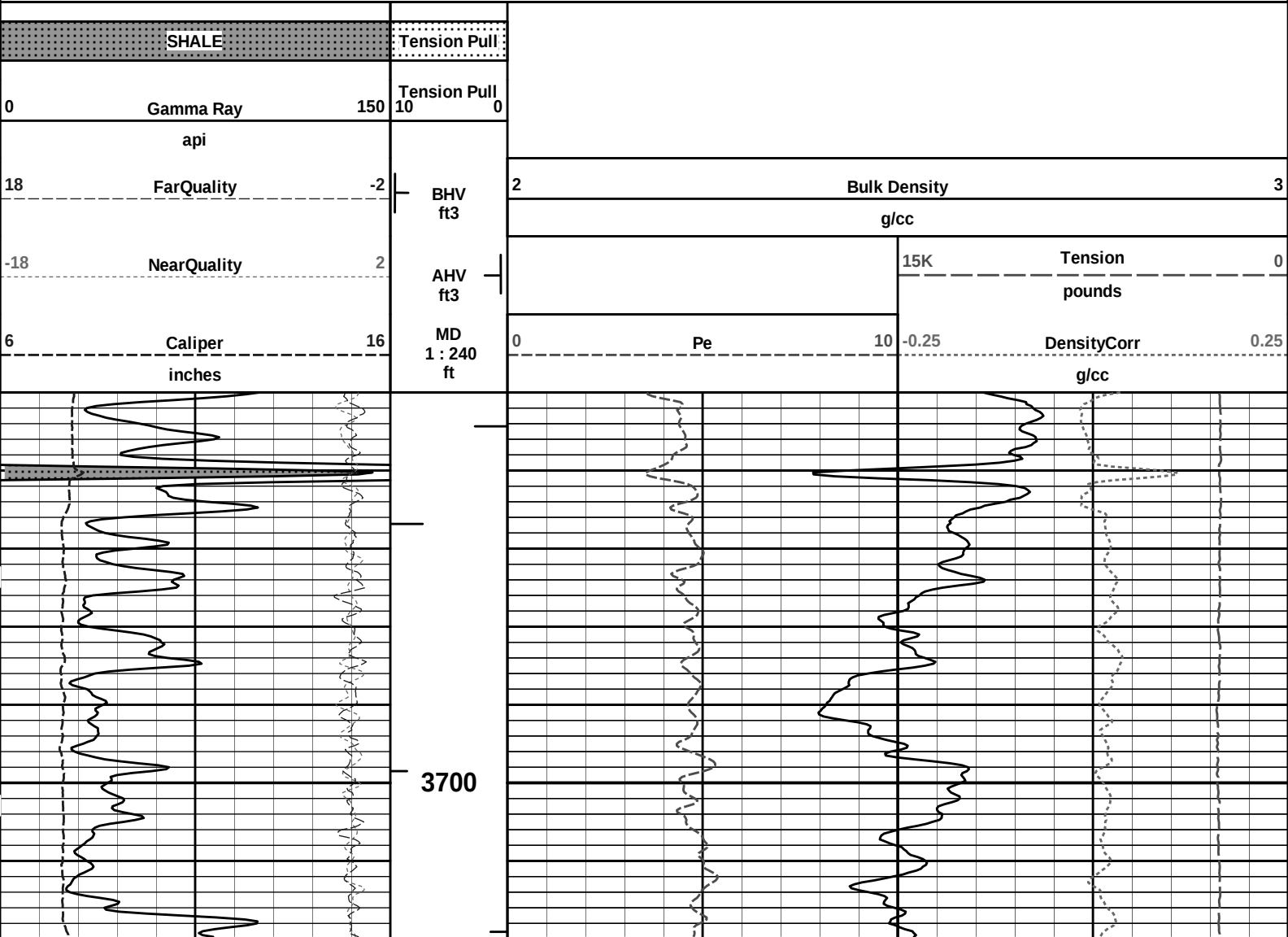
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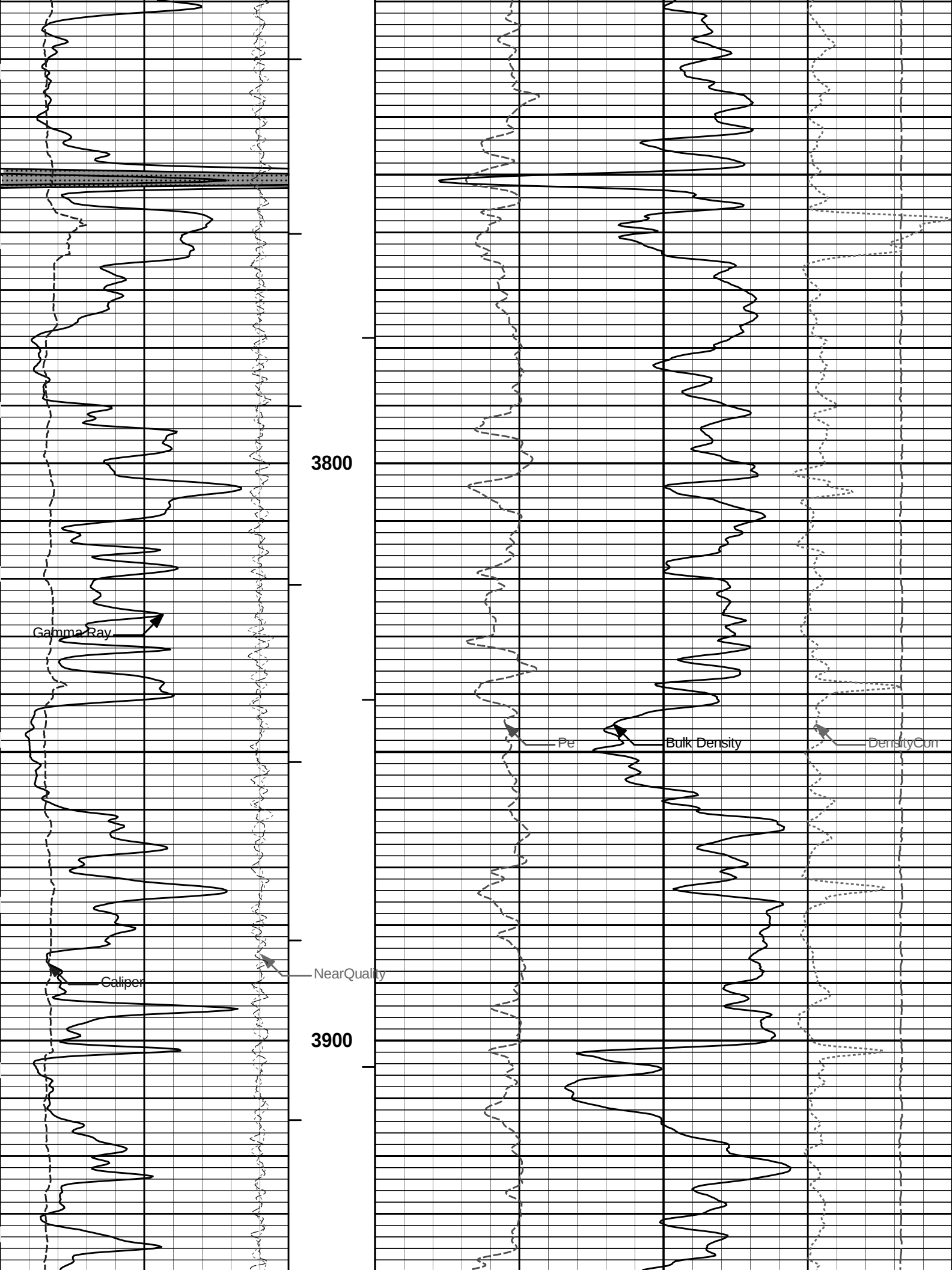
REPEAT SECTION

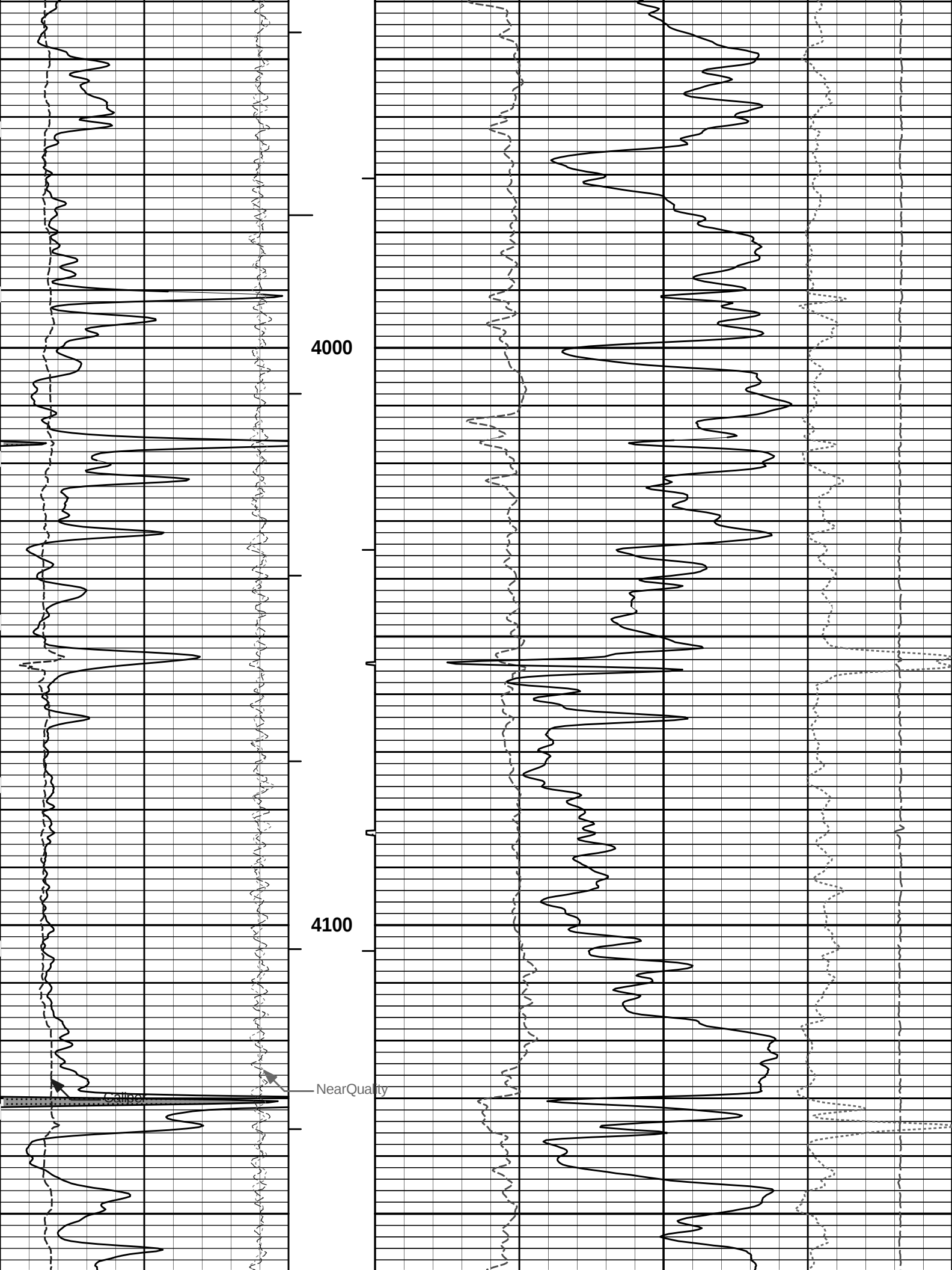
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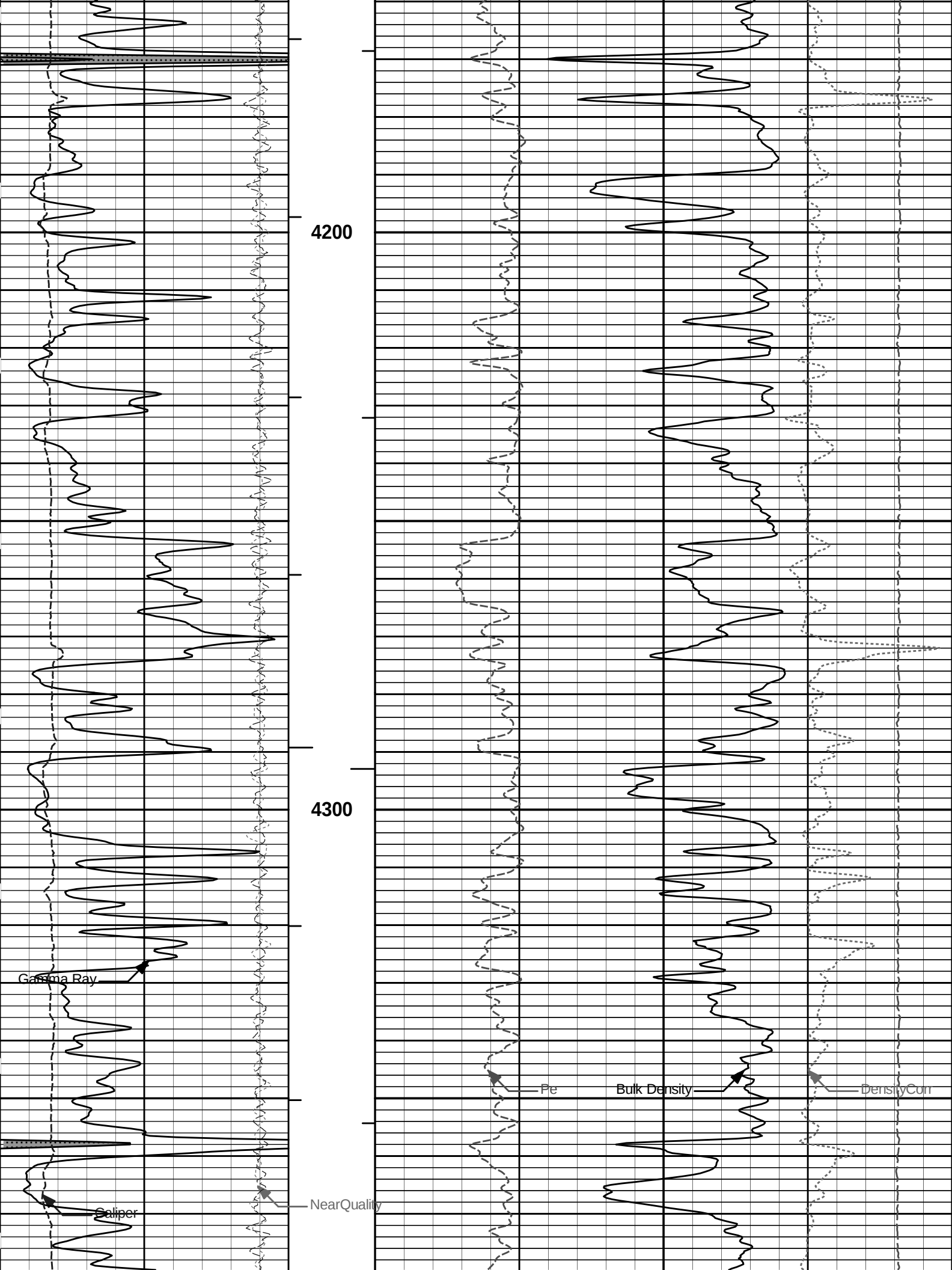
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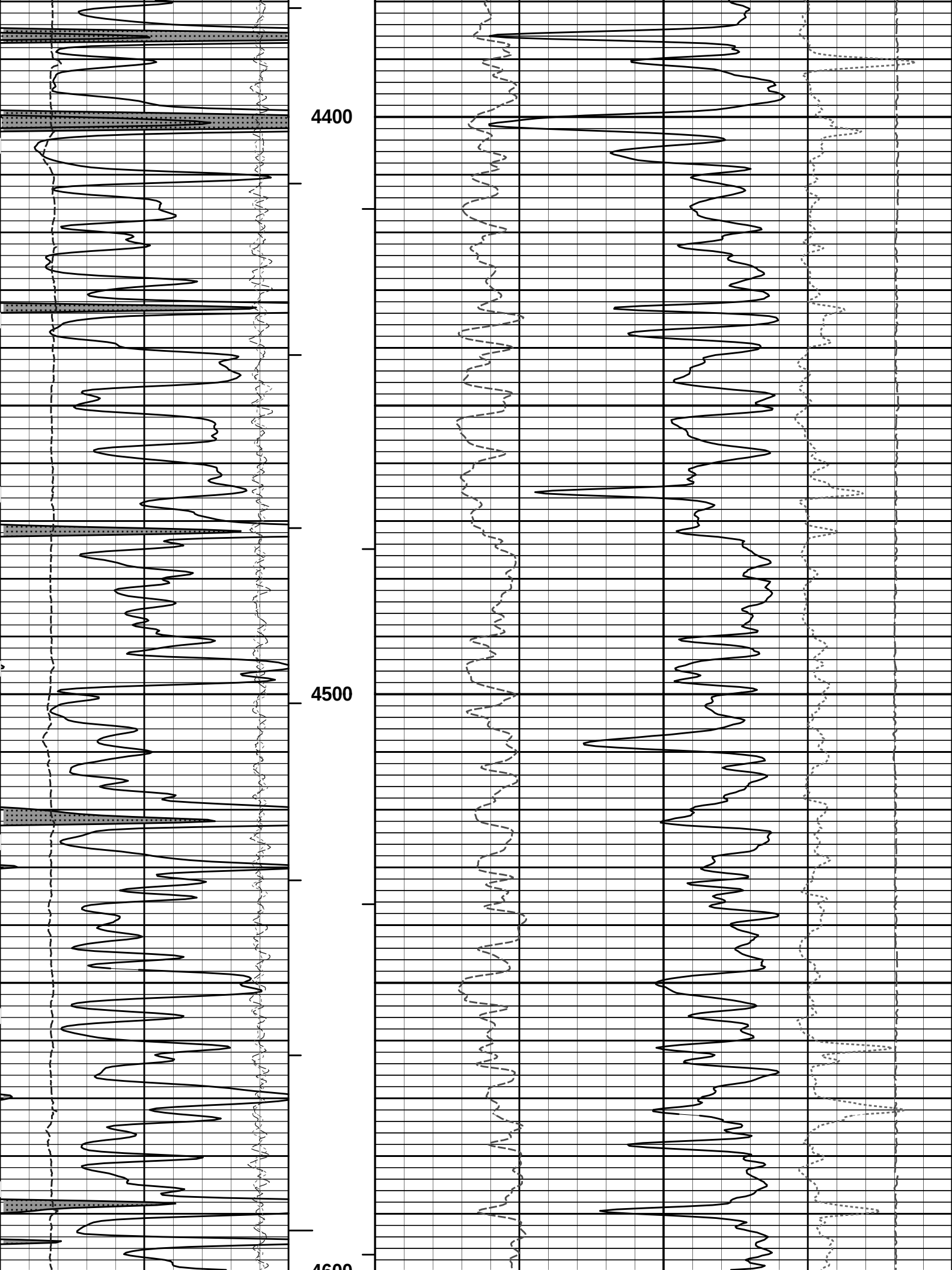
5 INCH MAIN LOG

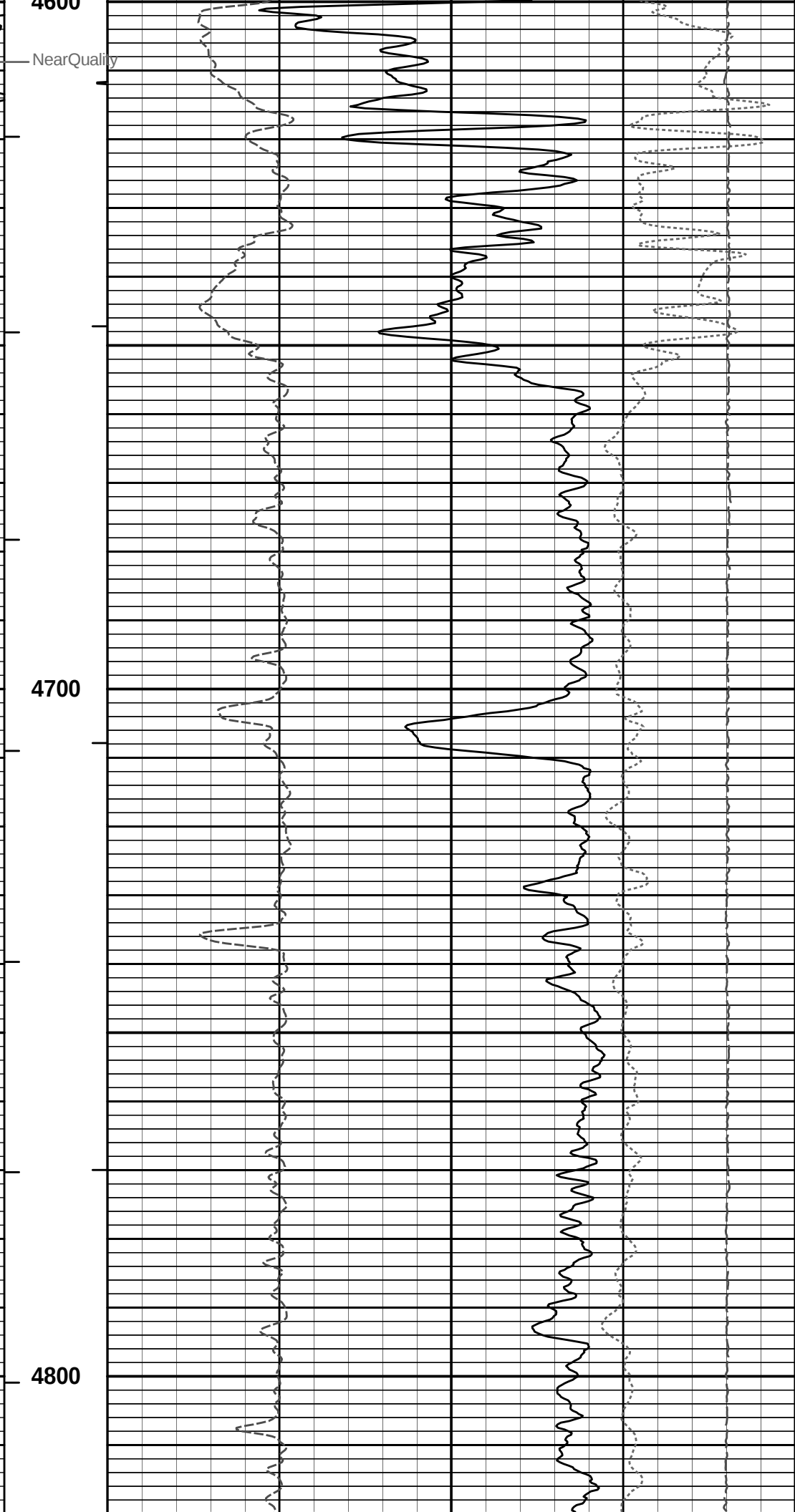
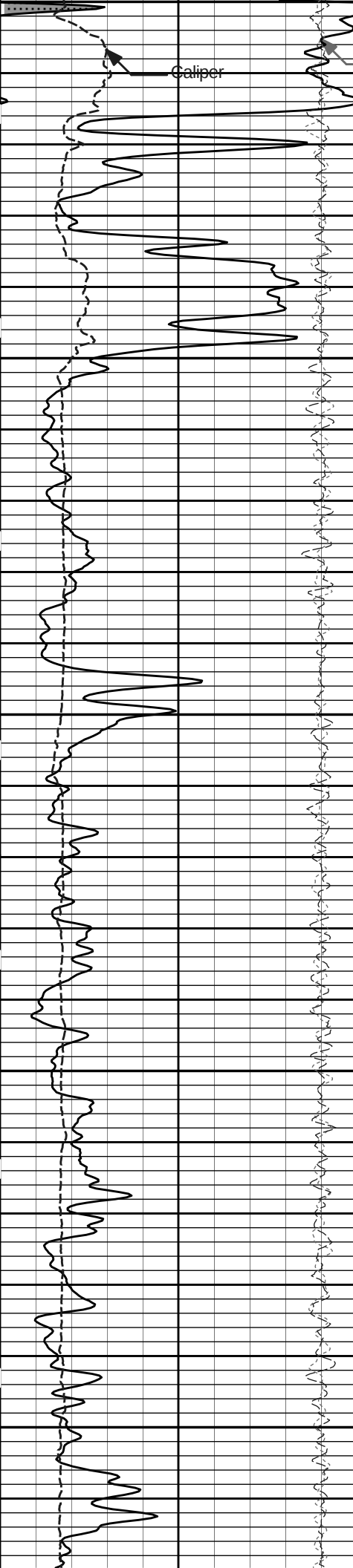












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25	
	inches							g/cc		
-18	NearQuality	2	AHV ft3				15K	Tension	0	
								pounds		
18	FarQuality	-2	BHV ft3	2	Bulk Density					3
					g/cc					
0	Gamma Ray	150	Tension Pull 10 0							
	api									
	SHALE		Tension Pull							

HALLIBURTON

Plot Time: 18-Aug-12 17:51:58
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Data: LOOMIS_B2\Well Based\DAQ-0003-003\
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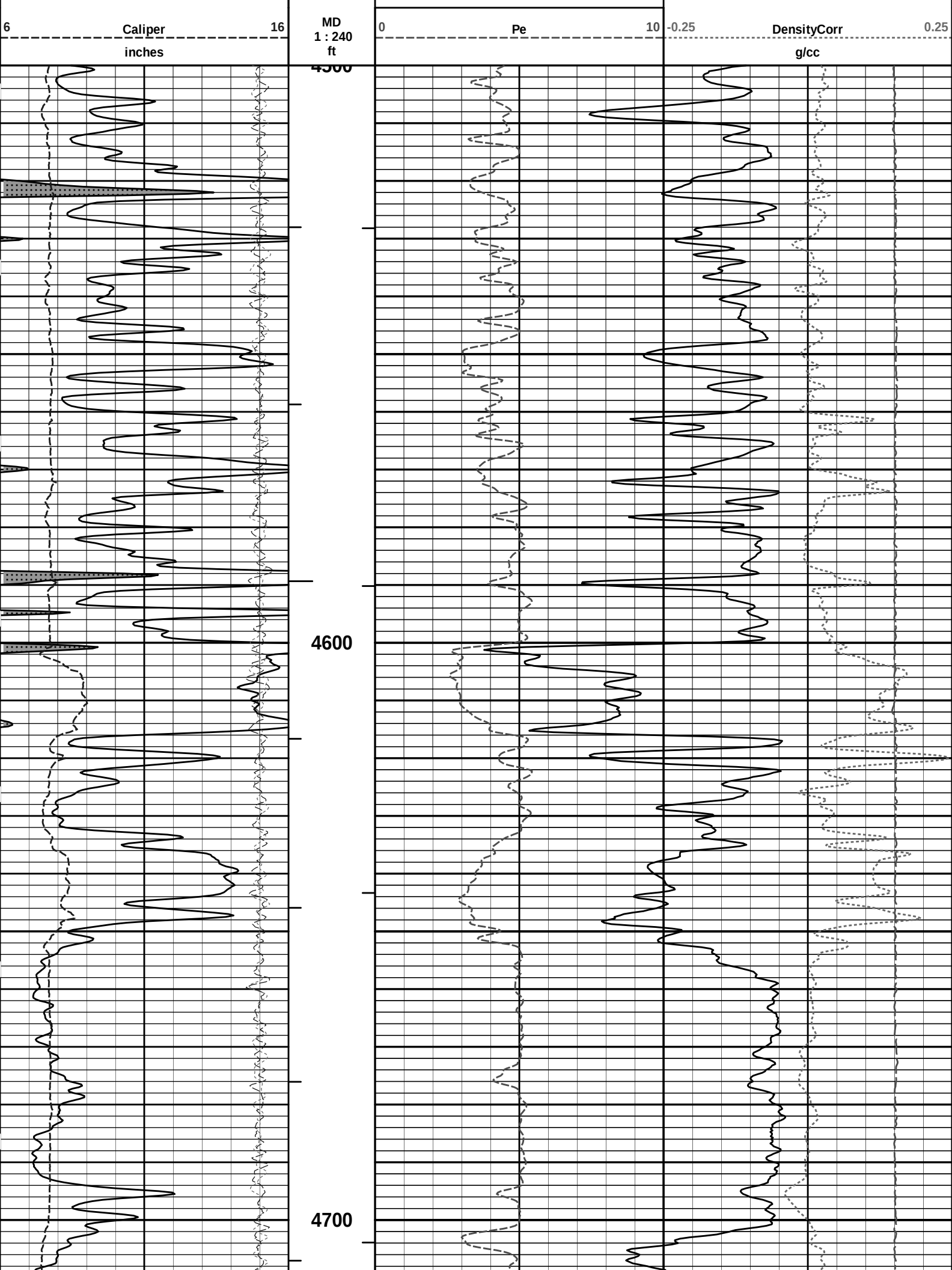
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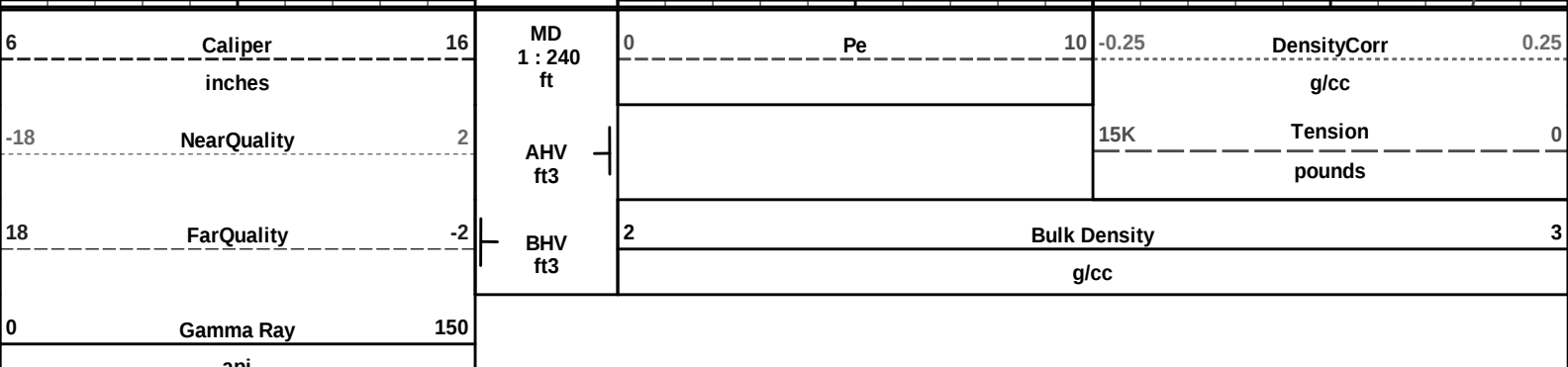
HALLIBURTON

Plot Time: 18-Aug-12 17:51:58
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Plot File: \\LOCAL-LOOMIS_B2\0003 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CHIPORO\BULKD_5_REP_LIB

REPEAT SECTION

SHALE							
0	Gamma Ray	150					
api							
18	FarQuality	-2	BH ft3	Bulk Density			3
				g/cc			
-18	NearQuality	2	AHV ft3	15K	Tension	0	
				pounds			





api

SHALE

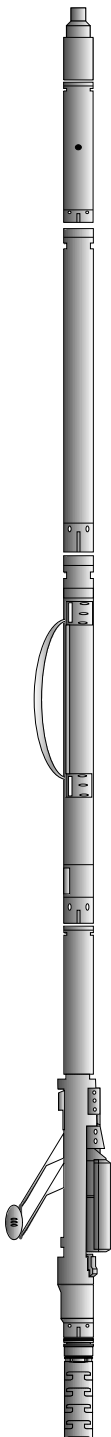
HALLIBURTON

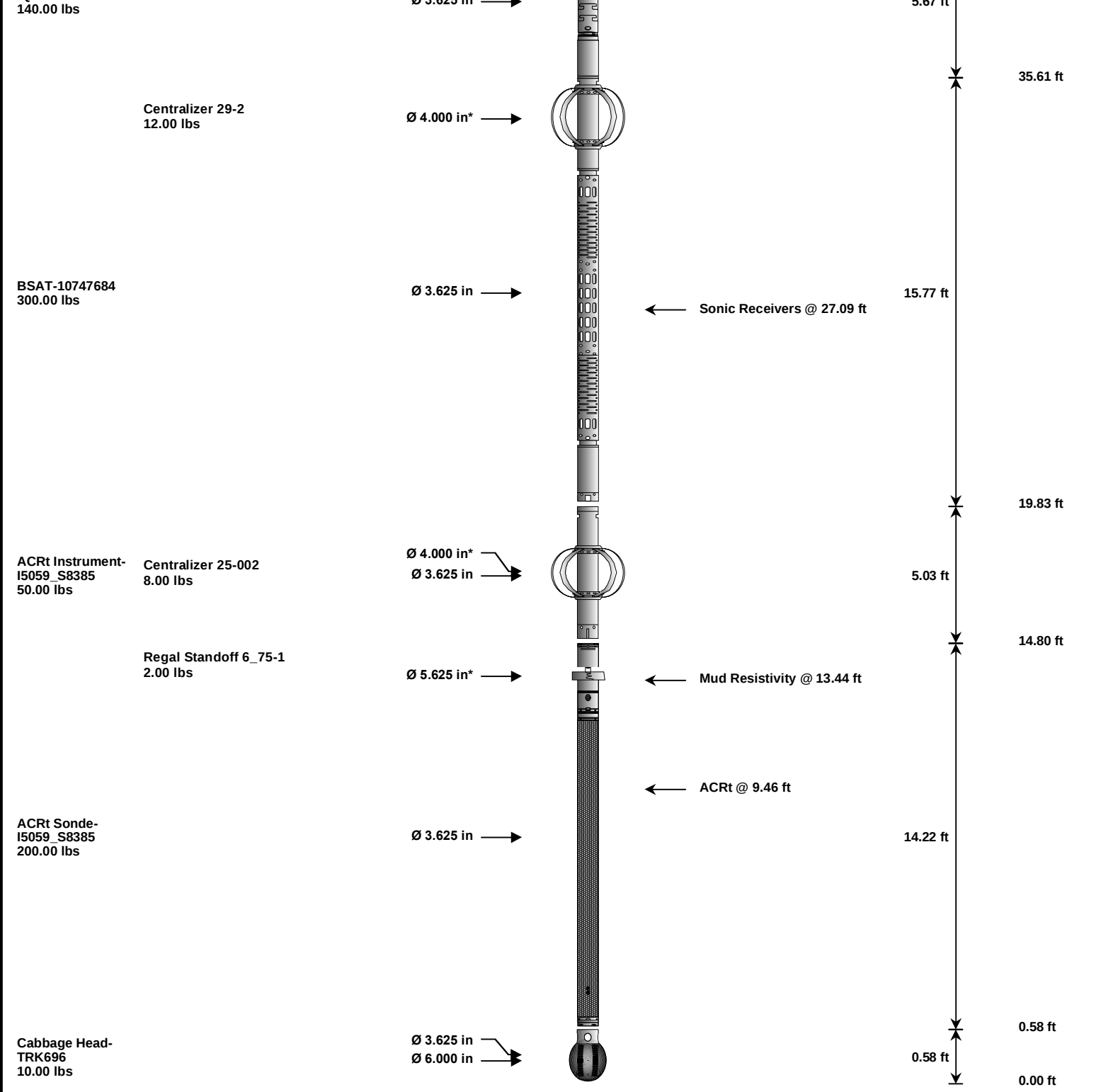
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REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	75.95 ft
SP Sub-001 60.00 lbs		Ø 3.625 in →		← SP @ 72.26 ft	3.74 ft	74.03 ft
GTET-11048627 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.23 ft	8.52 ft	70.30 ft
DSNT-11019643 174.00 lbs	DSN Decentralizer- 11005605 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 54.84 ft ← DSN Near @ 54.09 ft	9.69 ft	61.78 ft
						52.09 ft
SDLT-I43_M489 360.00 lbs	SDLT Pad-P81 65.00 lbs Microlog Pad-M489 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 44.28 ft SDL Caliper @ 44.09 ft SDL @ 44.08 ft	10.81 ft	41.28 ft
IO Flex-696		Ø 3.625 in →			5.67 ft	



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head		PROT01	30.00	1.92	74.03	300.00
SP	SP Sub		001	60.00	3.74	70.30	300.00
GTET	Gamma Telemetry Tool		11048627	165.00	8.52	61.78	60.00
DSNT	Dual Spaced Neutron		11019643	174.00	9.69	52.09	60.00
DCNT	DSN Decentralizer		11005605	6.60	5.13	55.42	300.00
SDLT	Spectral Density Tool		I43_M489	360.00	10.81	41.28	60.00
SDLP	Density Insite Pad		P81	65.00	2.55	43.49	60.00
MICP	Microlog Pad		M489	8.00	1.00	43.78	60.00
IQF	IQ Flex tool		696	140.00	5.67	35.61	300.00
BSAT	Borehole Sonic Array Tool		10747684	300.00	15.77	19.83	60.00
OBCEN	Centralizer - 29 in.Overbody		2	12.00	2.42	32.88	300.00
ACRt	Array Compensated True Resistivity Instrument Section		I5059_S8385	50.00	5.03	14.80	300.00
OBCEN	Centralizer - 25 in. Overbody		002	8.00	2.08	16.30	300.00
ACRt	Array Compensated True Resistivity Sonde Section		I5059_S8385	200.00	14.22	0.58	300.00
RSOF	Regal Standoff 6.75in		1	2.00	0.52	13.38	300.00
CBHD	Cabbage Head		TRK696	10.00	0.58	0.00	300.00

CBHD	Cabbage Head	TRK696	10.00	0.58	0.00	300.00
Total			1,590.60	75.95		
						* Not included in Total Length and Length Accumulation.
Data: LOOMIS_B2\0003 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH\003 18-Aug-12 17:07 Up @4890.8f					Date: 18-Aug-12 17:16:18	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	09-Aug-12 10:44:30
Engineer:	T. HYDE	Calibration Date:	09-Aug-12 10:50:33
Software Version:	WL INSITE R3.6.0 (Build 3)	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	57.5	57.1	api
Background + Calibrator	328.7	326.8	api
Calibrator	271.3	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	09-Aug-12 10:50:33
Engineer:	T. HYDE	Calibration Date:	16-Aug-12 22:29:50
Software Version:	WL INSITE R3.6.0 (Build 3)	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	57.1	23.4	api
Background + Calibrator	326.8	295.0	api
Calibrator	269.6	271.6	api
Shop	Field	Difference	Tolerance
269.6	271.6	-2.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 11019643	Reference Calibration Date:	10-Aug-12 09:44:57
Engineer:	T. HYDE	Calibration Date:	10-Aug-12 09:57:43
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

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: 78 degF			
Min. Tool Housing Outside Diameter: 3.620 in			

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.952	0.952	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):	0.2107	0.2107	0.0000	+/- 0.0020
Calibrated Ratio:	9.72	9.72	0.002	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0647	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:	10-Aug-12 09:57:43
Engineer:	T. HYDE	Calibration Date:	16-Aug-12 22:32:42
Software Version:	WL INSITE R3.6.0 (Build 3)	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):	0.0647	0.0627	-0.0020	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - I43_M489	Reference Calibration Date:	12-Jul-12 11:56:20
Engineer:	T. HYDE	Calibration Date:	10-Aug-12 13:20:46
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 11019643		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2130.51	-2529.58	-7000.00 - -1000.00
Pad Gain	0.0004016	0.0004215	0.000200 - 0.000600
Arm Offset	-714.63	1187.04	-5000.00 - 3000.00
Arm Gain	0.0005524	0.0004034	0.000300 - 0.000700
Arm Power	-0.000007671	0.000002094	-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) 2.07 2.00 -0.07 +/- 0.20

	Medium Ring (in)	3.73	3.75	0.02	+/- 0.20
RING DIAMETER:					
	Small Ring (in)	6.38	6.50	0.12	+/- 0.20
	Medium Ring (in)	8.44	8.25	-0.19	+/- 0.20
	Large Ring (in)	15.08	15.00	-0.08	+/- 0.20
PASS/FAIL SUMMARY					
	Calibration-Coefficients Range Check:			Passed	
	Ring-Measurement Check:			Passed	
PASS/FAIL SUMMARY					
	Calibration-Coefficients Range Check:			Passed	

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDLT Pad - P81		Reference Calibration Date:	10-Aug-12 11:31:26	
Engineer:	T. HYDE		Calibration Date:	10-Aug-12 11:49:11	
Software Version:	WL INSITE R3.6.0 (Build 3)		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	1.0481	1.0562	0.90 - 1.10
Near Dens Gain	1.0278	1.0364	0.90 - 1.10
Near Peak Gain	1.0245	1.0524	0.90 - 1.10
Near Lith Gain	1.0006	1.0234	0.90 - 1.10
Far Bar Gain	1.0186	1.0128	0.90 - 1.10
Far Dens Gain	1.0024	1.0012	0.90 - 1.10
Far Peak Gain	0.9960	0.9928	0.90 - 1.10
Far Lith Gain	0.9724	0.9721	0.90 - 1.10
Near Bar Offset	-0.2447	-0.3186	NONE
Near Dens Offset	-0.0693	-0.1422	NONE
Near Peak Offset	-0.0351	-0.2659	NONE
Near Lith Offset	0.1493	-0.0358	NONE
Far Bar Offset	-0.0284	0.0226	NONE
Far Dens Offset	0.1035	0.1123	NONE
Far Peak Offset	0.1312	0.1570	NONE
Far Lith Offset	0.2924	0.2917	NONE
Near Bar Background	816.13	814.50	700 - 1450
Near Dens Background	266.21	267.82	230 - 480
Near Peak Background	117.08	115.74	100 - 210
Near Lith Background	143.90	144.47	125 - 260
Far Bar Background	532.29	535.49	450 - 900
Far Dens Background	209.58	211.26	175 - 345
Far Peak Background	84.04	84.43	70 - 140
Far Lith Background	86.02	87.66	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				

Density (g/cc)	1.679	1.684	0.005	+/- 0.015
Pe	2.603	2.564	-0.039	+/- 0.150
ALUMINUM				
Density (g/cc)	2.599	2.598	-0.001	+/- 0.01500
Pe	3.142	3.133	-0.009	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0014	+/- 0.0110	0.0016	+/- 0.0140
Magnesium Block	-0.0003	+/- 0.0110	-0.0021	+/- 0.0140
Aluminum Block	0.0000	+/- 0.0110	-0.0003	+/- 0.0140
Resolution	9.31	6.00 - 11.50	8.82	6.00 - 11.50
Internal Verifier(B+D+P+L)	1343	1200 - 2700	919	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 - P81	Reference Calibration Date:	10-Aug-12 11:49:11
Engineer:	T. HYDE	Calibration Date:	16-Aug-12 22:30:13
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Pad Temperature: 83.4 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1342.531	1347.068	4.537	14.818
Far (B+D+P+L) cps	918.840	907.630	-11.210	16.432
Near Resolution	9.31	9.50	0.190	0.50
Far Resolution	8.82	9.07	0.250	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

SDLT CALIPER FIELD CALIBRATION			
Tool Name:	SDLT - I43_M489	Reference Calibration Date:	10-Aug-12 13:20:46
Engineer:	T. HYDE	Calibration Date:	16-Aug-12 22:34:54
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.70	-0.05	+/- 0.10

Ring Diameter		8.25	8.11	-0.14	+/- 0.15	
PASS/FAIL SUMMARY						
Pad Extension Check:			Passed			
Diameter Check:			Passed			
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11048627						
Gamma Ray Calibrator	269.6	271.6	-----	-2.0	+/- 9.00	api
DSNT-11019643						
Snow-Block Porosity	0.0647	0.0627	-----	0.0020	+/- 0.0150	decp
SDLT-I43_M489						
Pad Extension	3.75	3.70	-----	0.05	+/-0.10	in
Ring Diameter	8.25	8.11	-----	0.14	+/-0.15	in
SDLT Pad-P81						
Near(B+D+P+L)	1342.531	1347.068	-----	-4.537	+/-14.818	cps
Far(B+D+P+L)	918.840	907.630	-----	11.210	+/-16.432	cps
Data: LOOMIS_B2I0003 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CHIDLE				Date: 18-Aug-12 17:18:02		
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	0.900	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	4911.00	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	DSNO	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	
	Microlog Pad	MLOK	Process MicroLog 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
	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	Wylie	
	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
BOTTOM					
Data: LOOMIS_B2I0003 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CHIDLE				Date: 18-Aug-12 17:18:34	

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	

TENS	Tension	0.00	NO	
SP Sub				
PLTC	Plot Control Mask	72.25	NO	
SP	Spontaneous Potential	72.25	BLK	1.250
SPR	Raw Spontaneous Potential	72.25	NO	
SPO	Spontaneous Potential Offset	72.25	NO	
GTET				
TPUL	Tension Pull	64.23	NO	
GR	Natural Gamma Ray API	64.23	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	64.23	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	64.23	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	53.99	NO	
RNDS	Near Detector Telemetry Counts	54.09	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.84	TRI	0.583
DNTT	DSN Tool Temperature	54.09	NO	
DSNS	DSN Tool Status	53.99	NO	
ERND	Near Detector Telemetry Counts EVR	54.09	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.84	BLK	0.000
ENTM	DSN Tool Temperature EVR	54.09	NO	
SDLT				
TPUL	Tension Pull	44.09	NO	
PCAL	Pad Caliper	44.09	TRI	0.250
ACAL	Arm Caliper	44.09	TRI	0.250
BSAT				
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000

F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	
Microlog Pad				
TPUL	Tension Pull	44.28	NO	
MINV	Microlog Lateral	44.28	BLK	0.750
MNOR	Microlog Normal	44.28	BLK	0.750
SDLT Pad				
TPUL	Tension Pull	44.08	NO	
NAB	Near Above	43.90	BLK	0.920
NHI	Near Cesium High	43.90	BLK	0.920
NLO	Near Cesium Low	43.90	BLK	0.920
NVA	Near Valley	43.90	BLK	0.920
NBA	Near Barite	43.90	BLK	0.920
NDE	Near Density	43.90	BLK	0.920
NPK	Near Peak	43.90	BLK	0.920
NLI	Near Lithology	43.90	BLK	0.920
NBAU	Near Barite Unfiltered	43.90	BLK	0.250
NLIU	Near Lithology Unfiltered	43.90	BLK	0.250
FAB	Far Above	44.26	BLK	0.250
FHI	Far Cesium High	44.26	BLK	0.250

FLO	Far Cesium Low	44.26	BLK	0.250
FVA	Far Valley	44.26	BLK	0.250
FBA	Far Barite	44.26	BLK	0.250
FDE	Far Density	44.26	BLK	0.250
FPK	Far Peak	44.26	BLK	0.250
FLI	Far Lithology	44.26	BLK	0.250
PTMP	Pad Temperature	44.09	BLK	0.920
NHV	Near Detector High Voltage	43.49	NO	
FHV	Far Detector High Voltage	43.49	NO	
ITMP	Instrument Temperature	43.49	NO	
DDHV	Detector High Voltage	43.49	NO	
Data: LOOMIS_B2\0003 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CHI\IDLE			Date: 18-Aug-12 17:18:45	

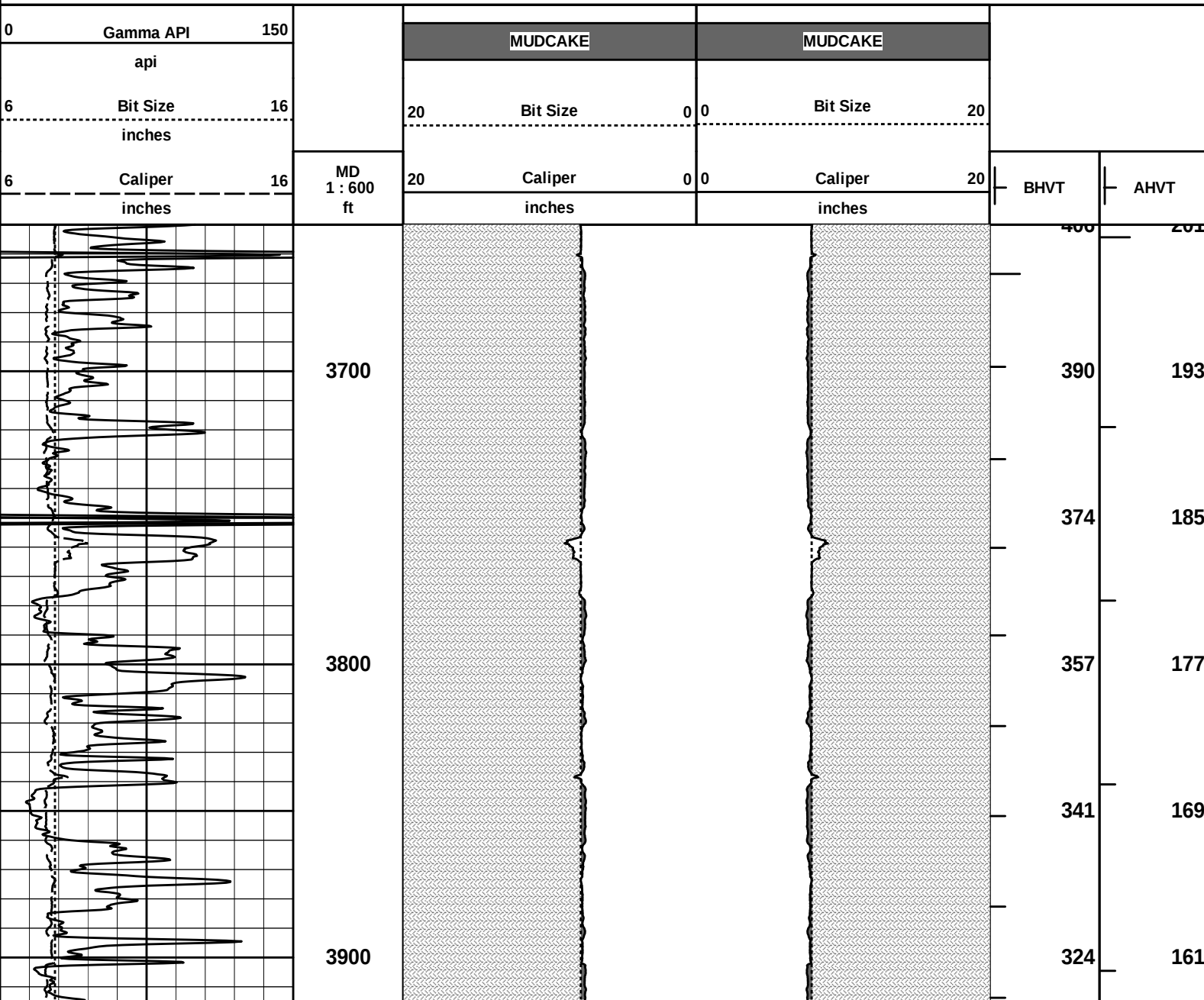
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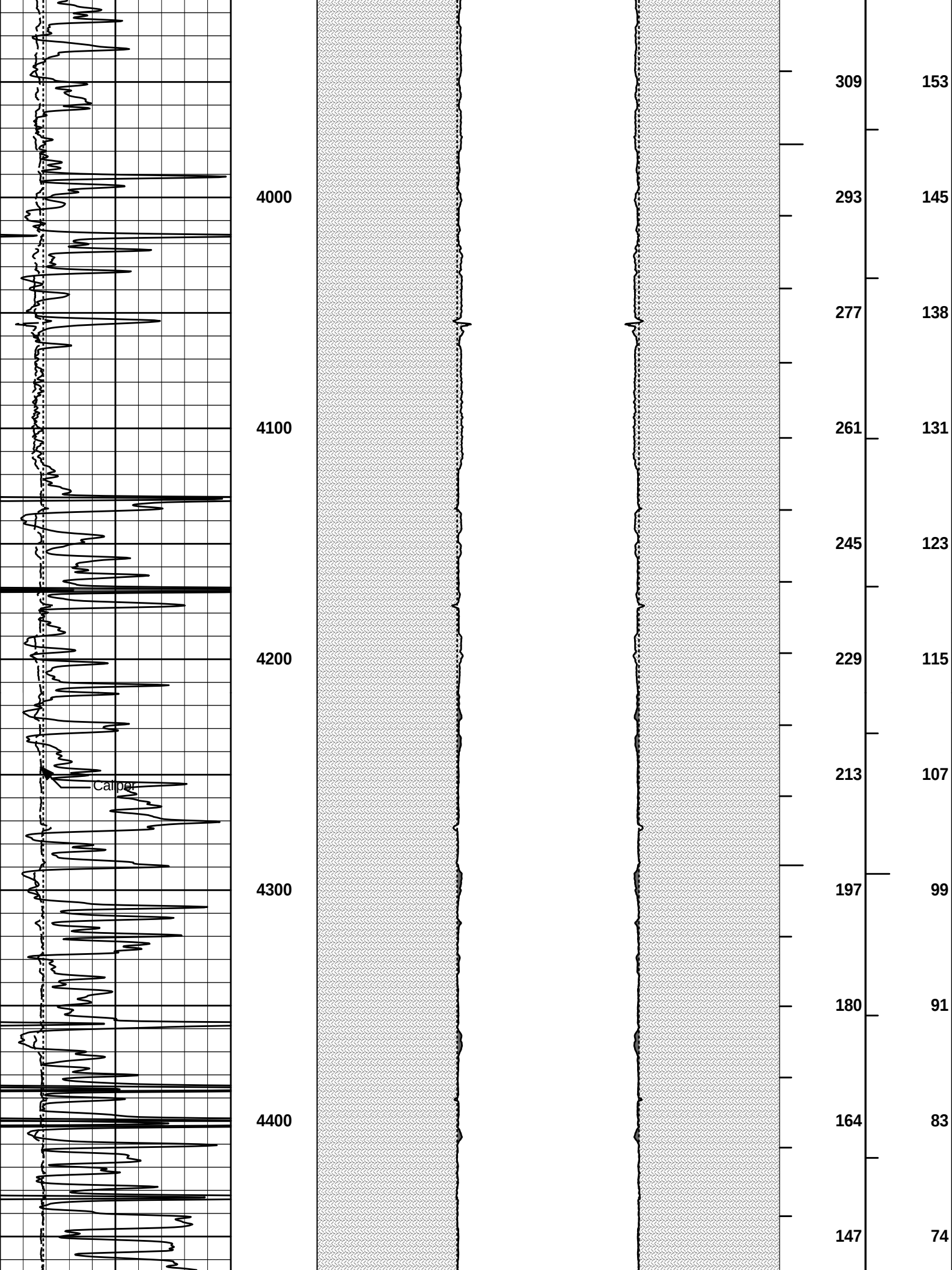
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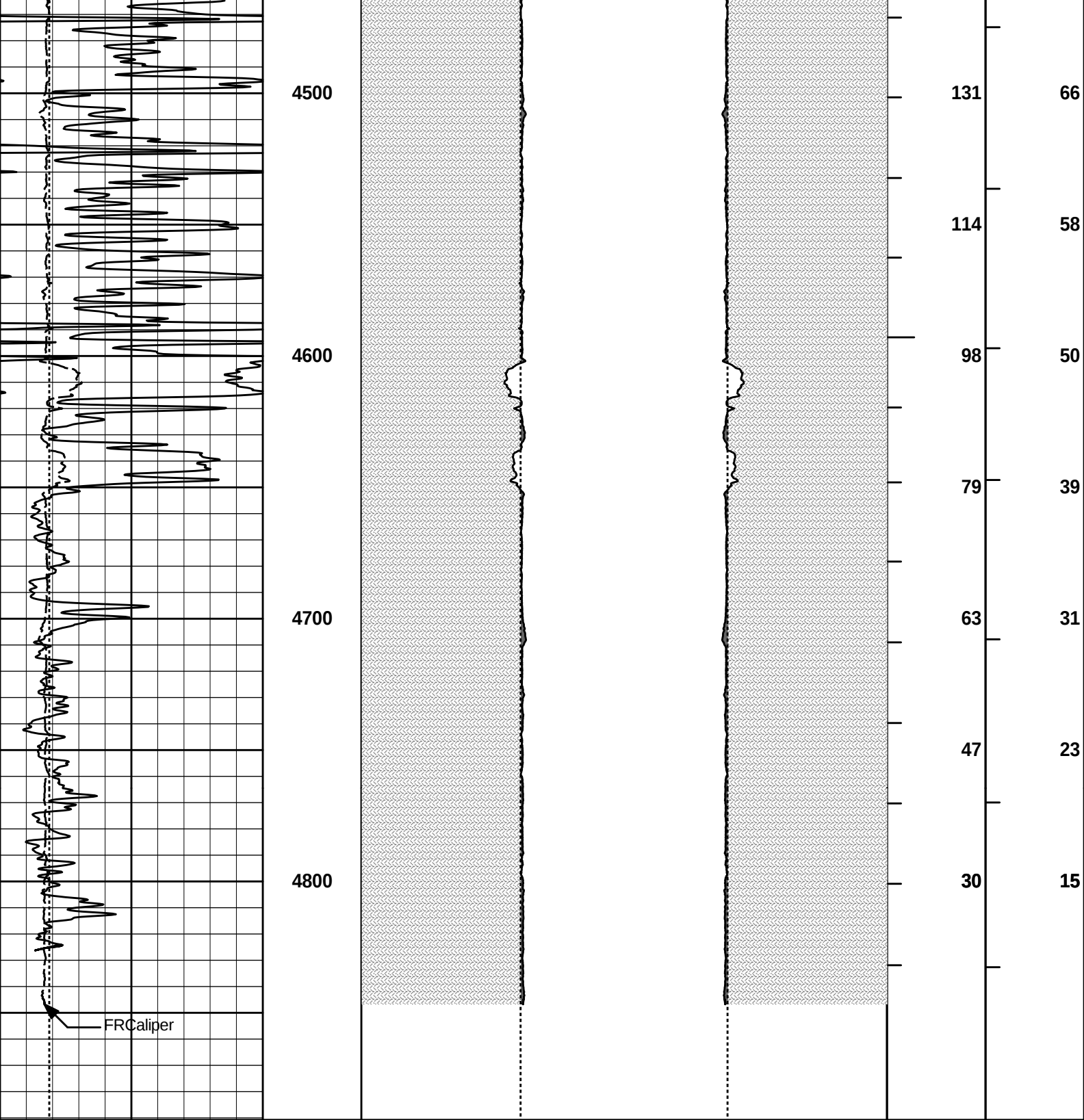
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Plot File: \\LOCAL-LOOMIS_B2\0003 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CHI\PORO\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT







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

ANNULAR HOLE VOLUME PLOT

COMPANY	OXY USA INC		
WELL	LOOMIS B2		
FIELD	AMAZON DITCH		
COUNTY	FINNEY	STATE	KANSAS

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
LOG