

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY WELL FIELD/BLOCK COUNTY STATE Permanent Datum Log measured from Drilling measured from Date Run No. Depth - Driller Depth - Logger Bottom - Logged Interval Top - Logged Interval Casing - Driller Casing - Logger Bit Size Type Fluid in Hole Density PH Source of Sample Rm @ Meas. Temperature Rmf @ Meas. Temperature Rmc @ Meas. Temperature Source Rmf Rm @ BHT Time Since Circulation Time on Bottom Max. Rec. Temperature Equipment Location Recorded By Witnessed By	MERIT ENERGY GRIFFIN E-1 SANTA FE NORTH HASKELL KANSAS Sect. 11 Twp. 28S Rge. 33W Location (SHL) 915' FNL & 2260' FWL NW-SE-NE-NW Other Services: BSAT MICROLOG ACRT Elev.: K.B. 2997.0 ft D.F. 2996.0 ft G.L. 2982.0 ft
GL KB KB KB 18-Jul-14 ONE 5661.00 ft 5652.0 ft 5608.00 ft 4000.00 ft 8.625 in @ 1757.0 ft 1756.0 ft 7.875 in Water Based Mud 9.1 ppq 44.00 s/qt 9.00 PH 9.6 cphm MUD PIT 0.500 ohmm @ 92.00 degF 0.40 ohmm @ 92.00 degF 0.600 ohmm @ 92.00 degF CALCULATED 0.34 ohmm @ 140.0 degF 6.5000 hr 18-Jul-14 07:25 140.0 degF @ 5650.0 ft 11072142 LIBERAL SUHAIL BISHTI A.GARNER	COMPANY MERIT ENERGY WELL GRIFFIN E-1 FIELD/BLOCK SANTA FE NORTH COUNTY HASKELL STATE KANSAS

Fold here

Service Ticket No.: 901518124		API Serial No.: 15-081-22070-00-00		PGM Version: WL INSITE R4.2.0 (Build 2)				
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.		@	@	ONE	ACRT	N/A	1.5" S.O	N/A
Rmc @ Meas. Temp.		@	@		1059_S385			
Source Rmf	Rmc			ONE	MICRO	RUBBER	ADJ	N/A
Rm @ BHT		@	@		10685803			
Rmf @ BHT		@	@					
Rmc @ BHT		@	@					
EQUIPMENT DATA								
GAMMA		ACOUSTIC		DENSITY		NEUTRON		
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	
Serial No.	11048627	Serial No.	10747683	Serial No.	10844781	Serial No.	11019643	
Model No.	GTET	Model No.	BSAT	Model No.	SDLT-I	Model No.	DSNT-I	
Diameter	3.625"	No. of Cent.	2	Diameter	4.5"	Diameter	3.625"	
Detector Model No.	T-102	Spacing	0.5	Log Type	GAM-GAM	Log Type	NEU-NEU	
Type	SCINT			Source Type	CS137	Source Type	AM241BE	
Length	8'	LSA [Y/N]	Y	Serial No.	5168GW	Serial No.	DSN-424	
Distance to Source	10'	FWDA [Y/N]	Y	Strength	1.5 Ci	Strength	15 Ci	
LOGGING DATA								

GENERAL				GAMMA		ACOUSTIC		DENSITY			NEUTRON			
Run No.	Depth		Speed ft/min	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
	From	To		L	R	L	R		L	R		L	R	
ONE	TD	SURF	REC	0	150	30	-10	47.6	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 12000 MG/L

LCM REPORTED AT 8 LB/BBL

GTET-DSNT-SDLT-BSAT-ACRT RUN IN COMBINATION

TODAY'S CREW:F.VILLA & M.GRAHAM

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123

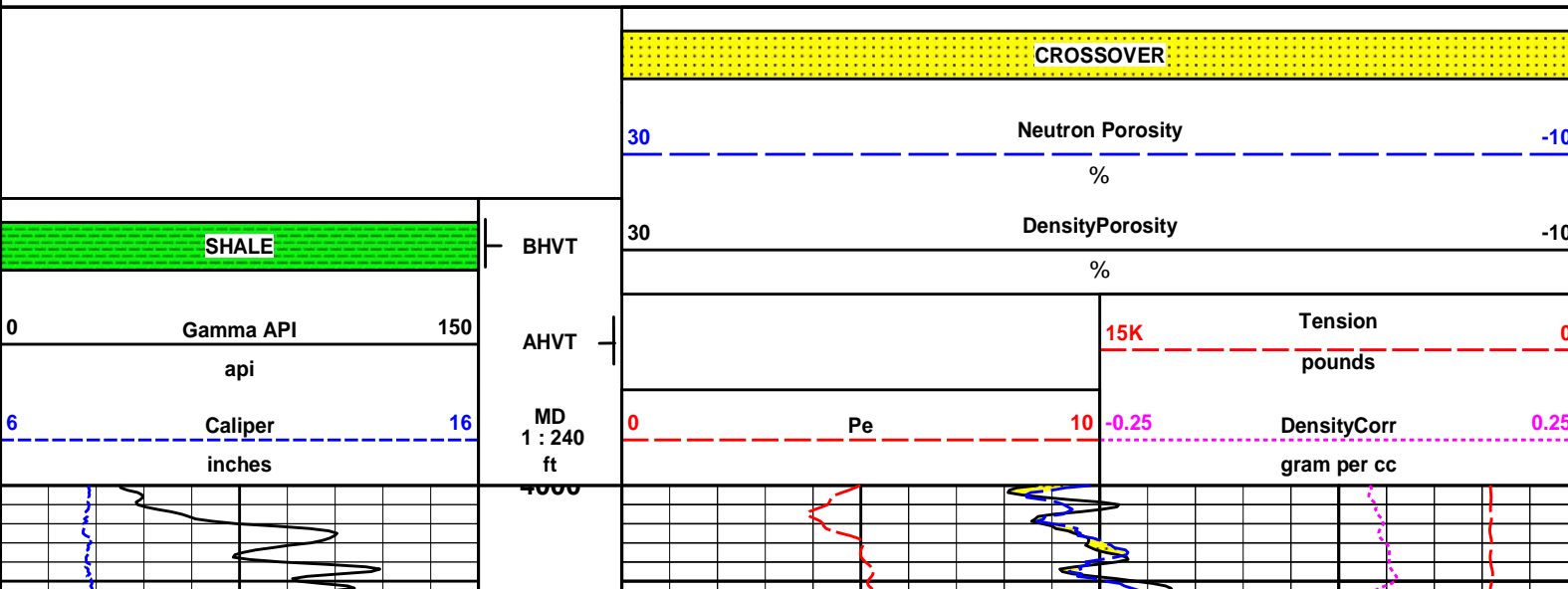
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR 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.

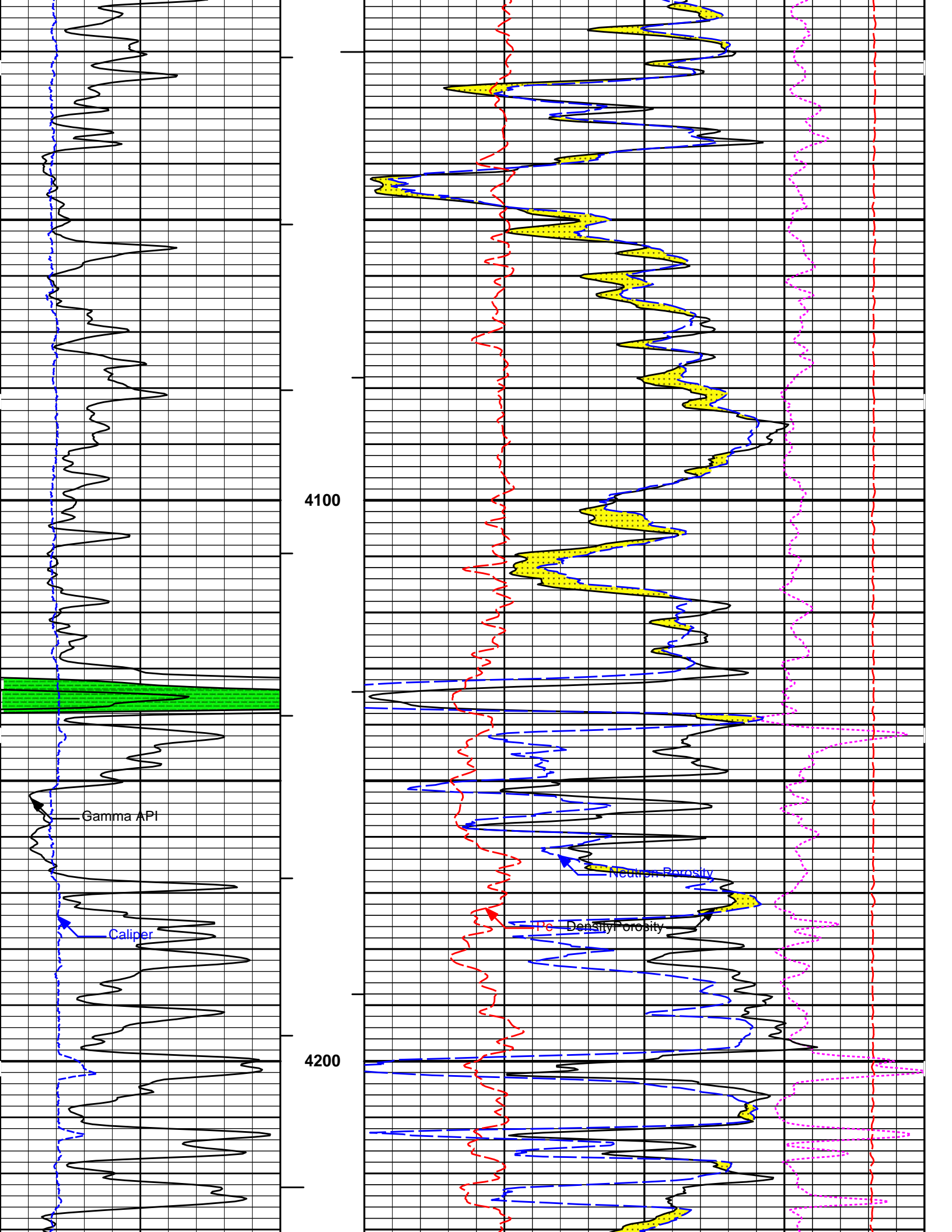
HALLIBURTON

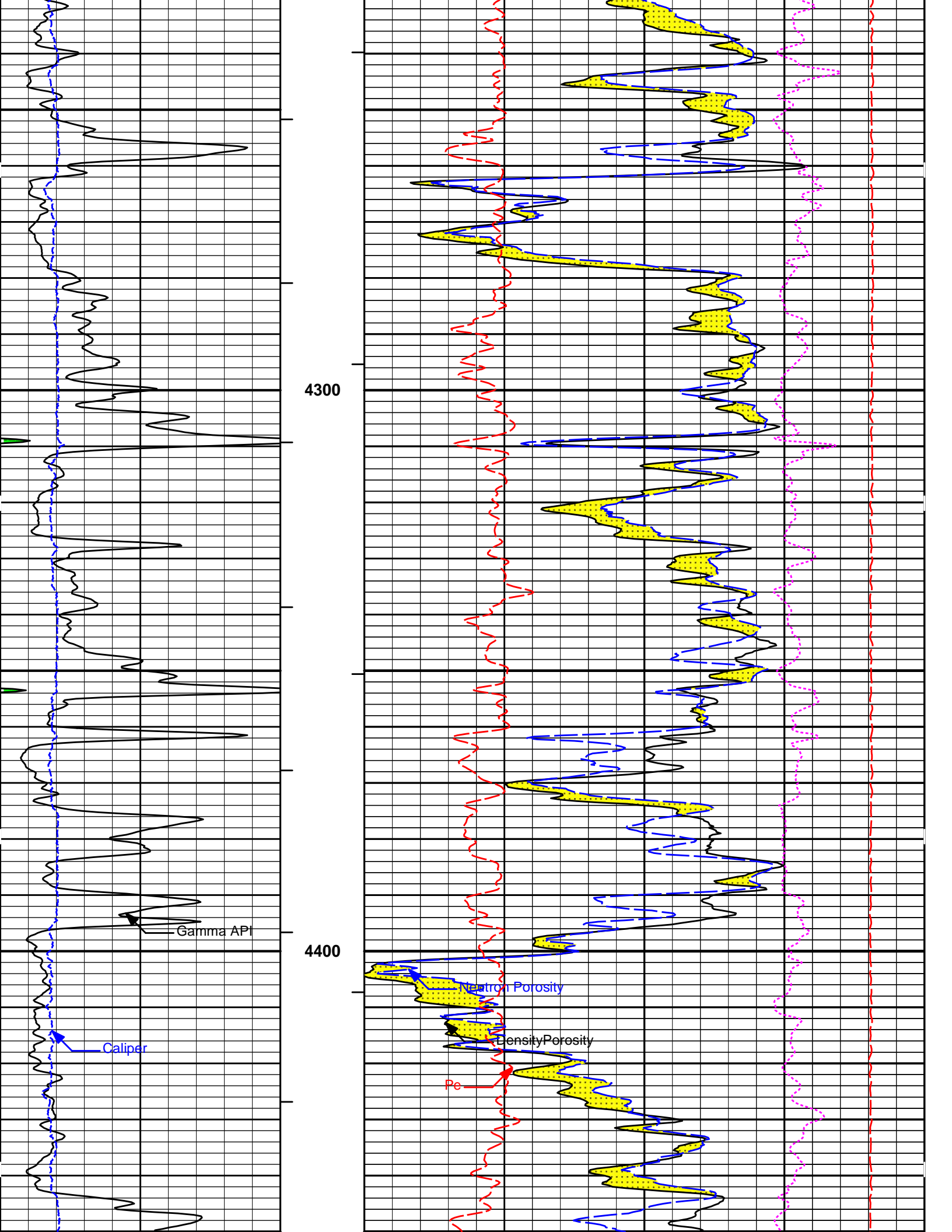
HALLIBURTON Plot Time: 18-Jul-14 17:34:14
 Plot Range: 4000 ft to 5658.08 ft
 Data: GRIFFIN E-1\Well Based\POROSITY\
 Plot File: \PORO\Poro_IQ_5_MAIN_LIB

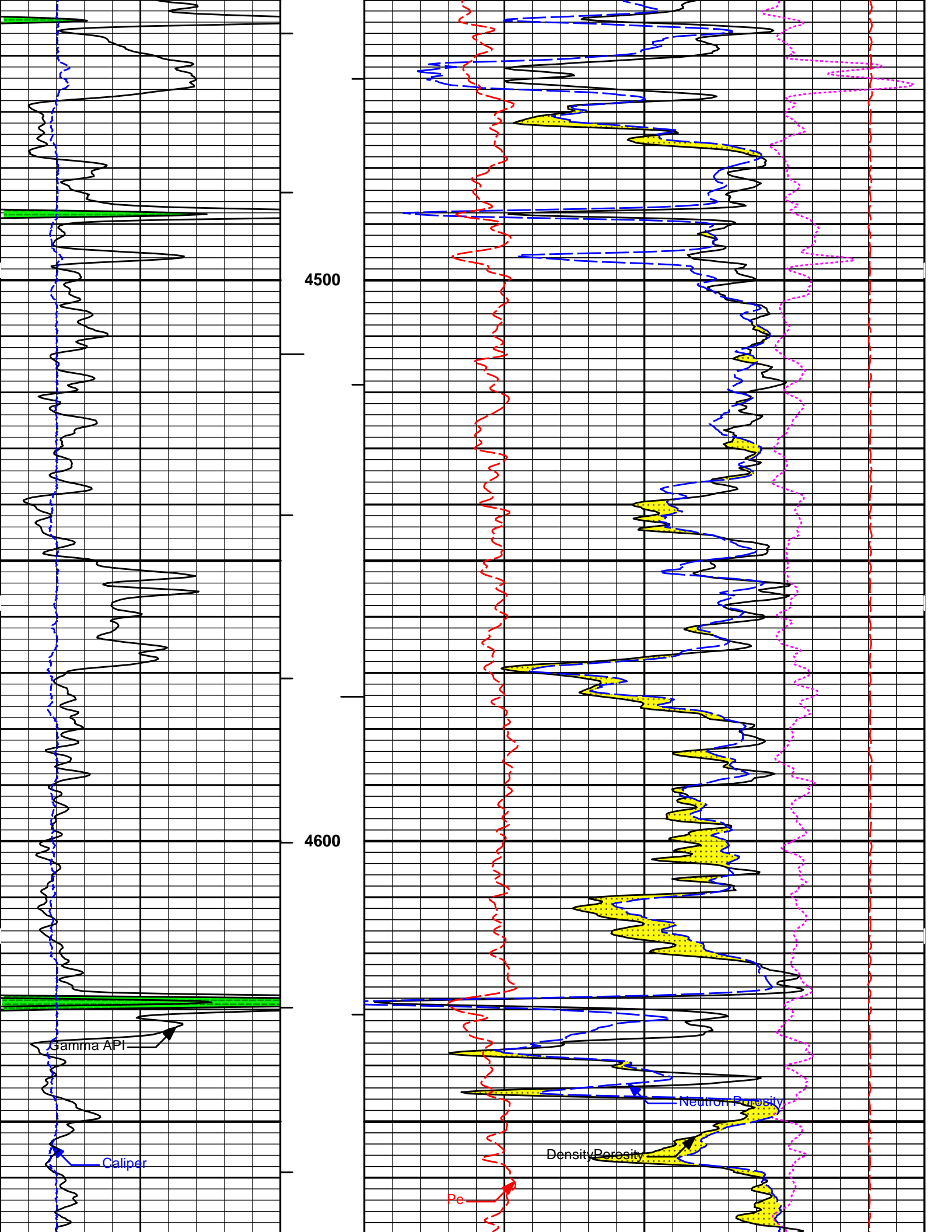
5 INCH MAIN LOG

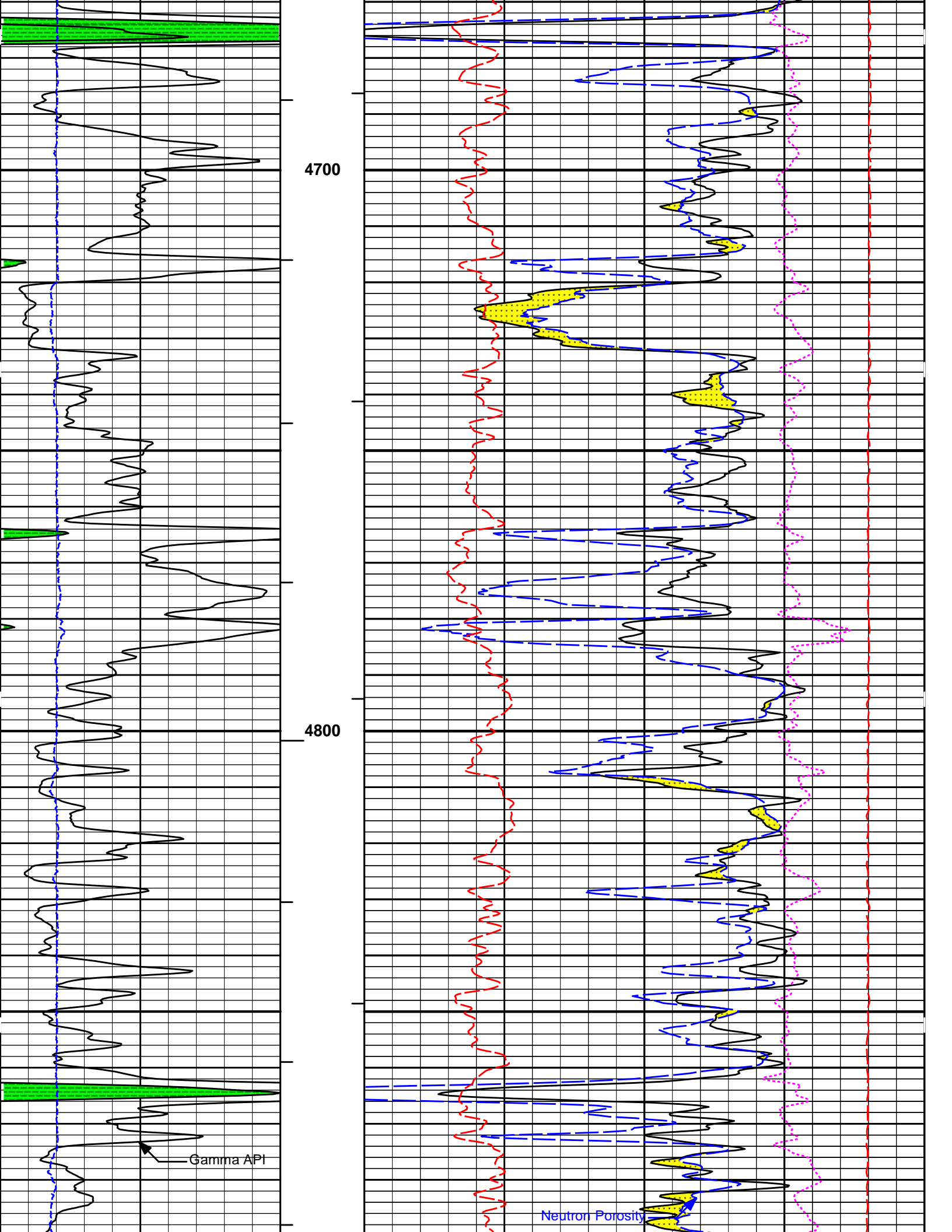
MEASURED DEPTH
 MAIN SECTION 5" PER 100'

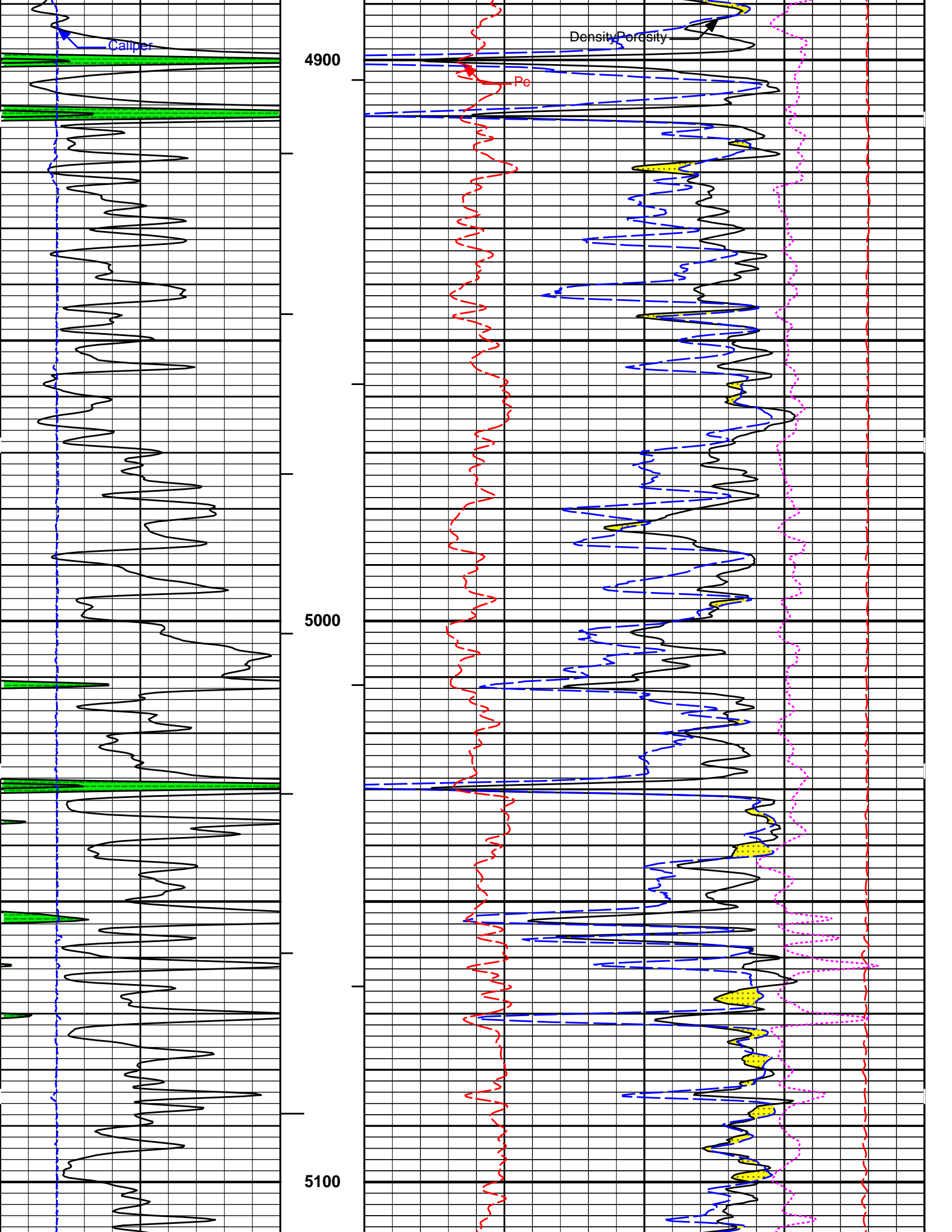


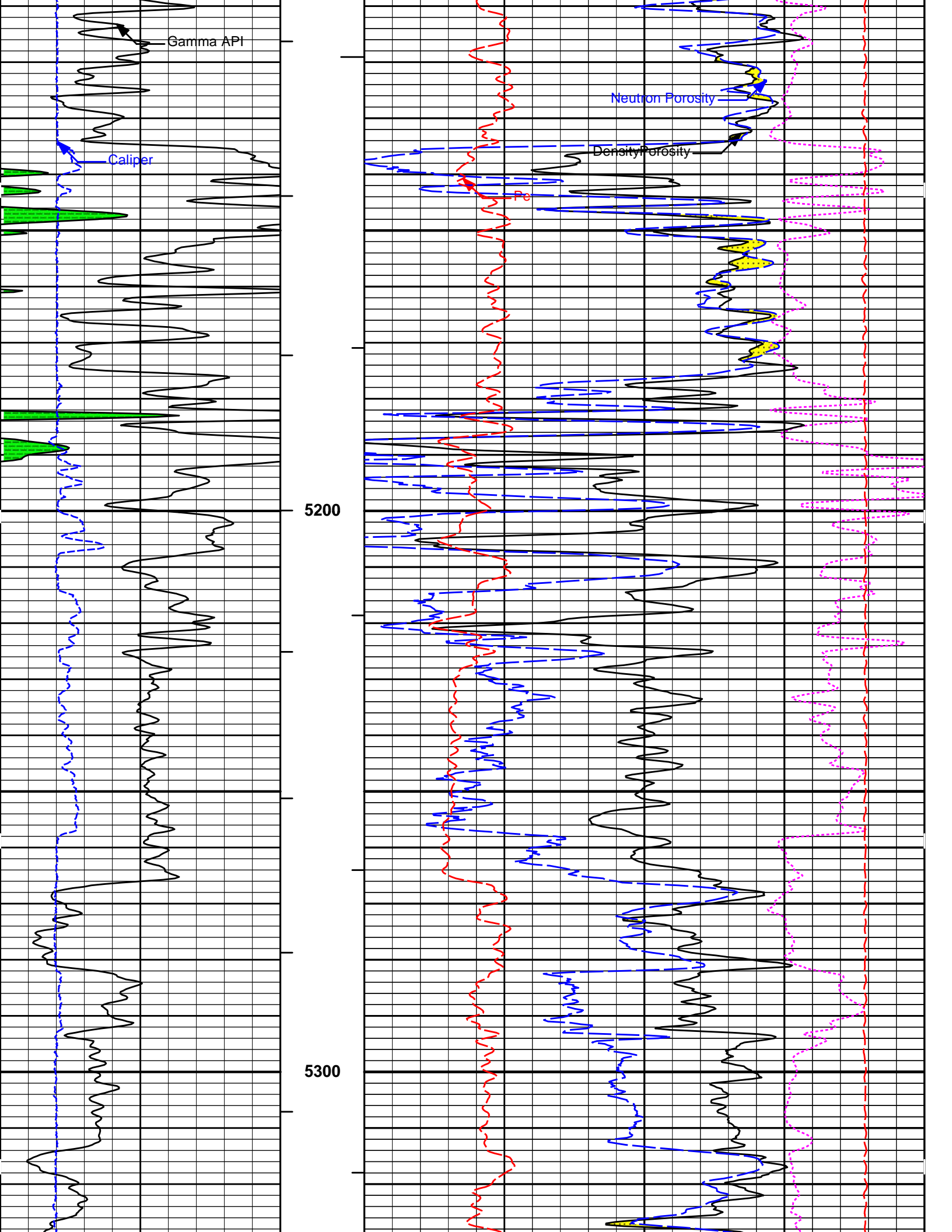


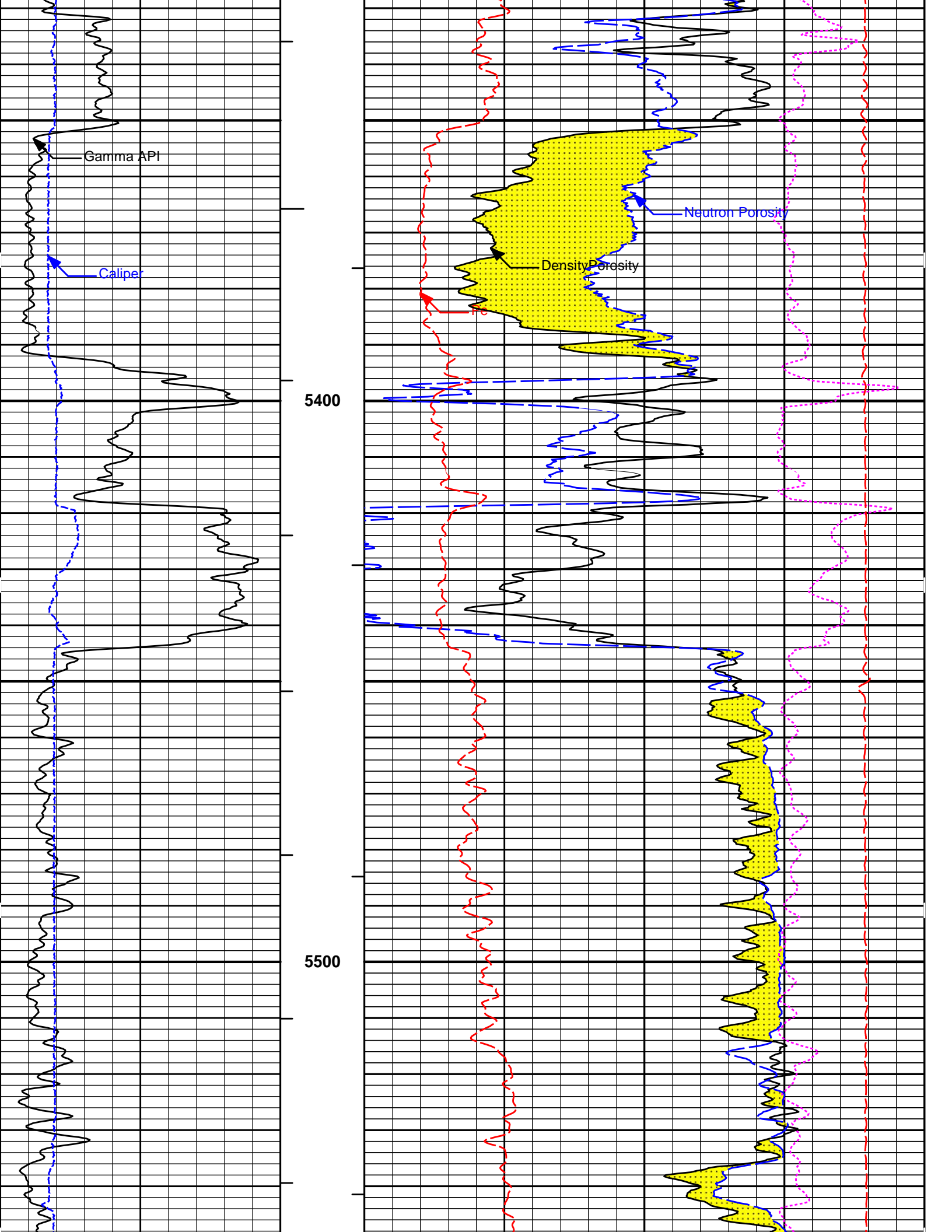


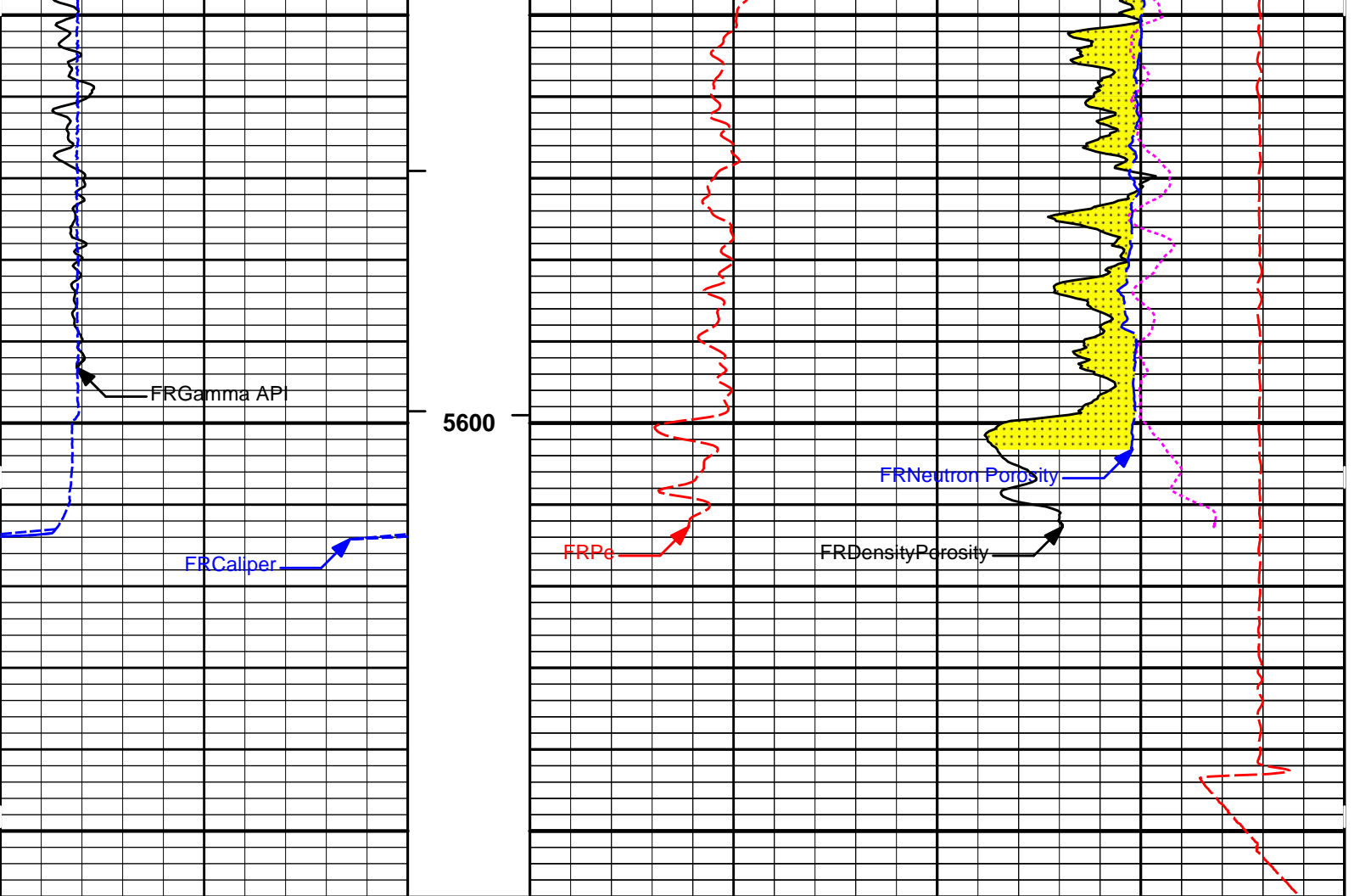












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches							gram per cc	
0	Gamma API	150	AHVT				15K	Tension	0
	api							pounds	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

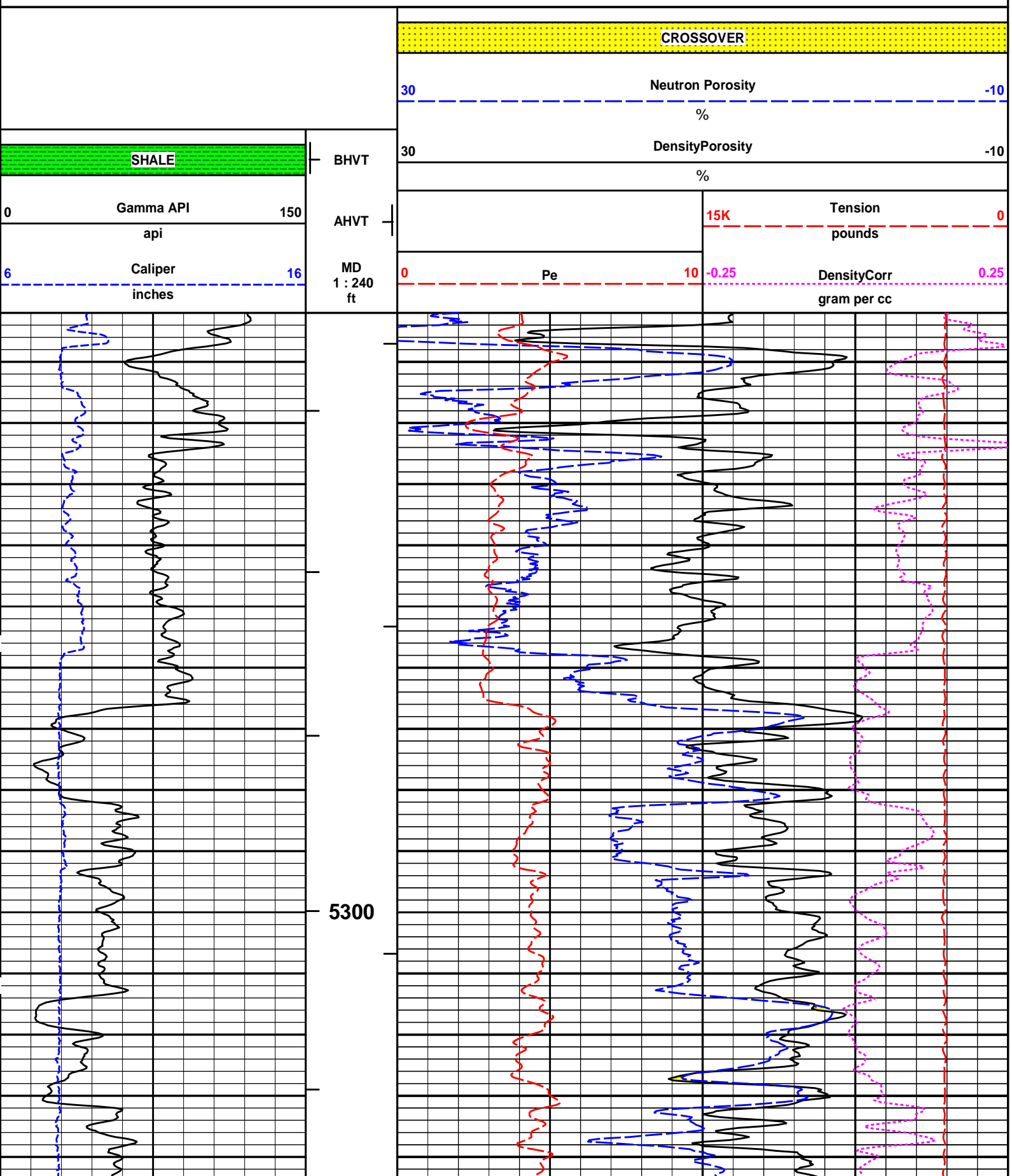
HALLIBURTON

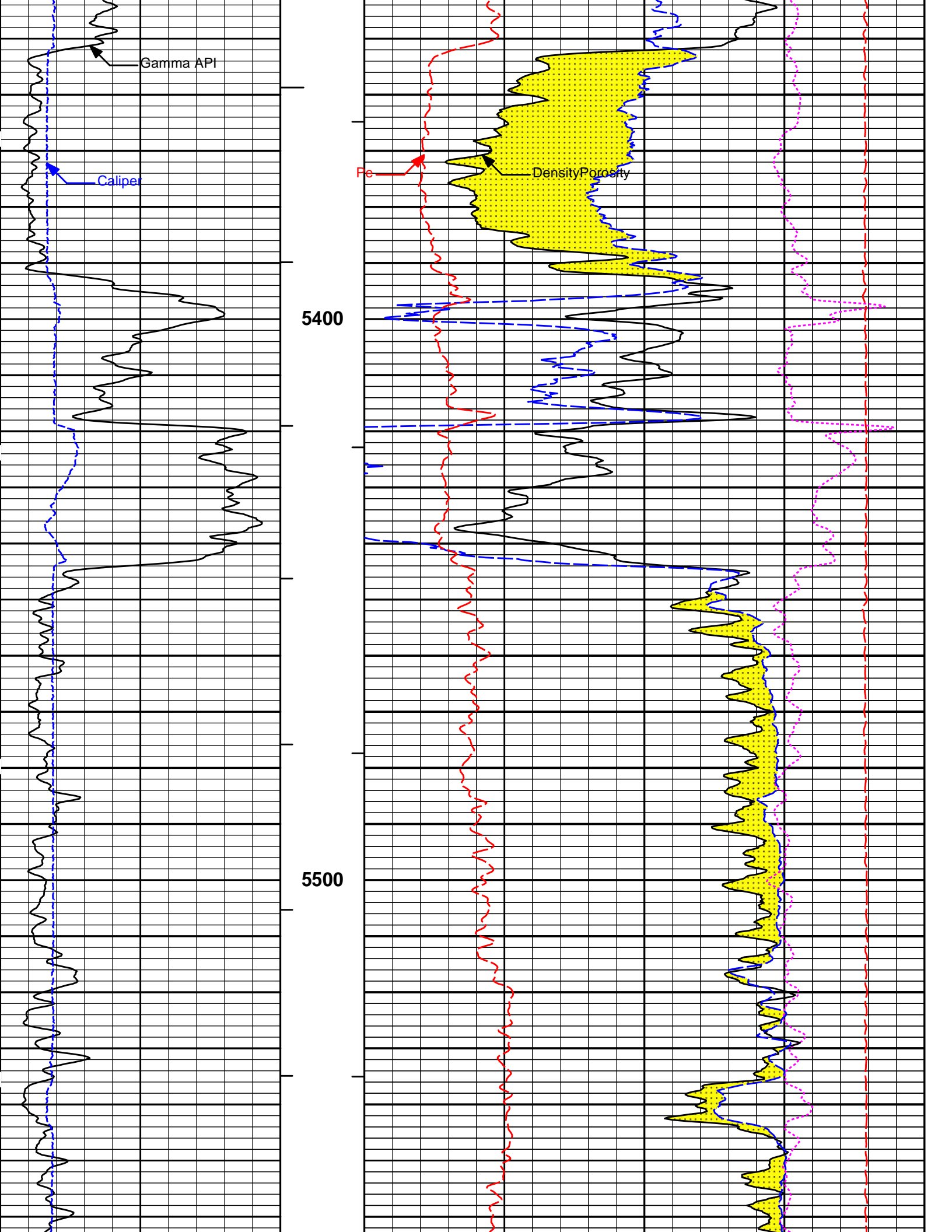
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 Data: GRIFFIN E-1\Well Based\POROSITY\
 Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

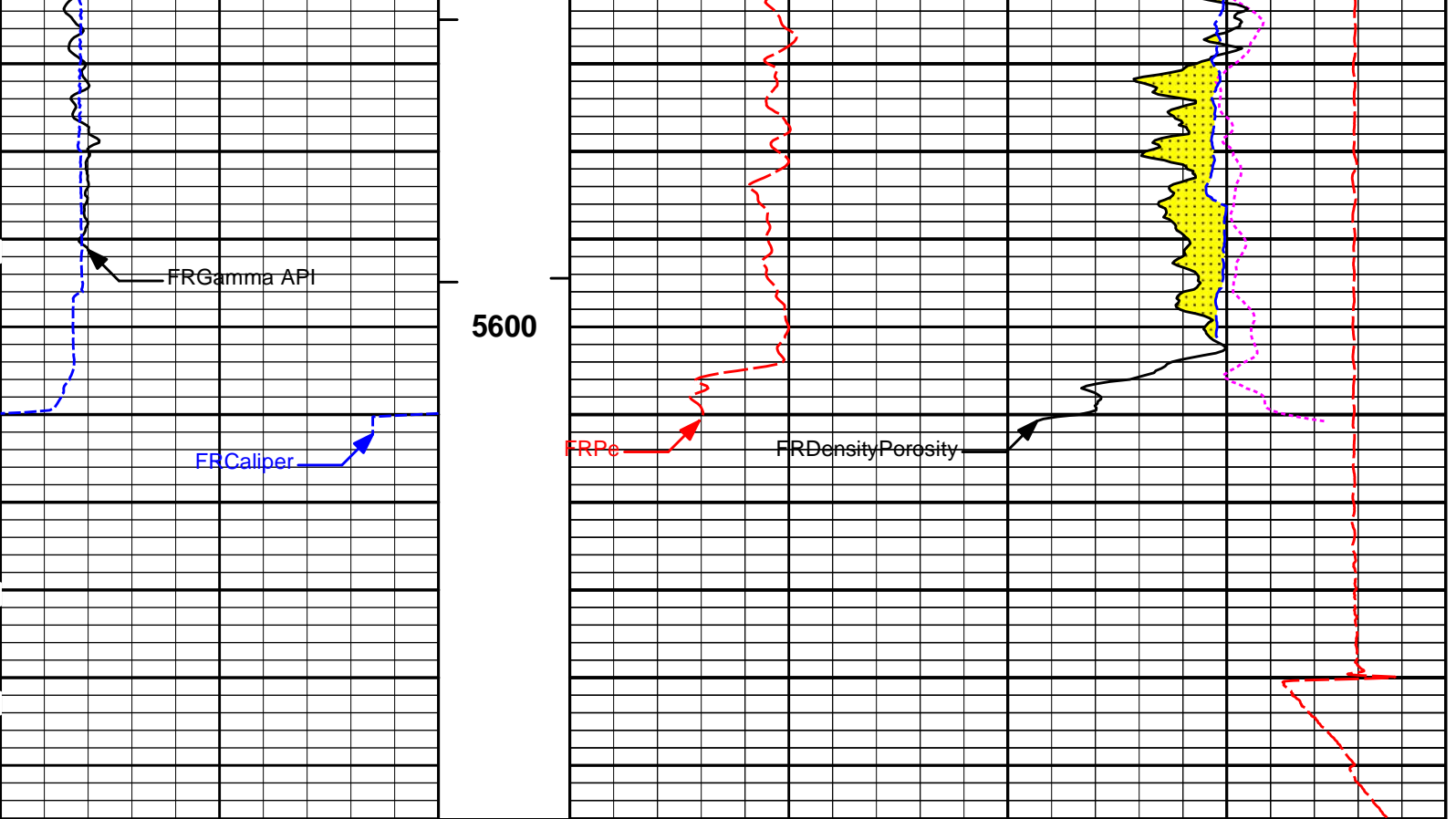
5 INCH MAIN LOG

MEASURED DEPTH
 MAIN SECTION 5" PER 100'

REPEAT SECTION







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
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

HALLIBURTON Plot Time: 18-Jul-14 17:34:19
 Plot Range: 5202 ft to 5656.17 ft
 Data: GRIFFIN E-1\Well Based\REPEAT\
 Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION

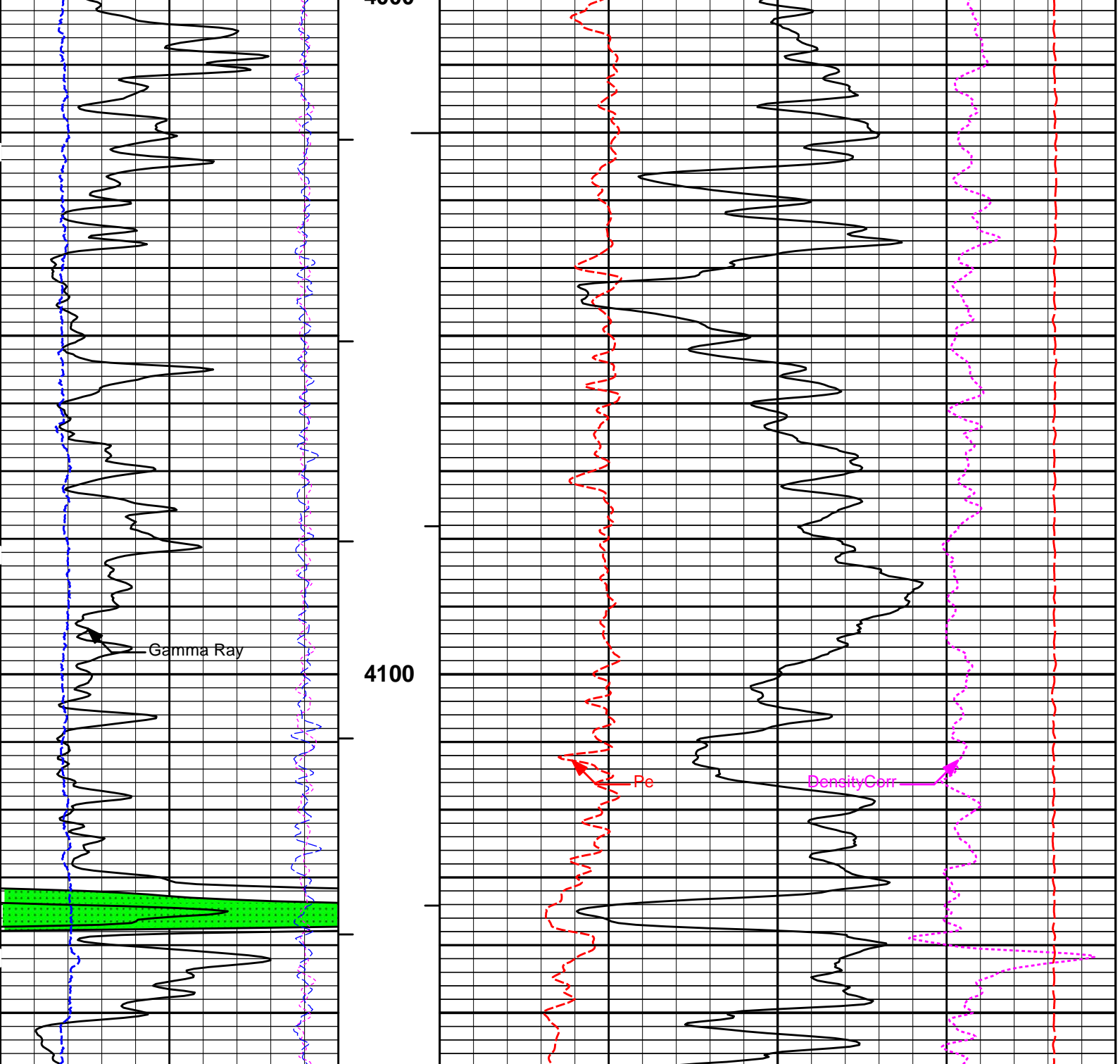
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 Plot Range: 4000 ft to 5658.08 ft
 Data: GRIFFIN E-1\Well Based\POROSITY\
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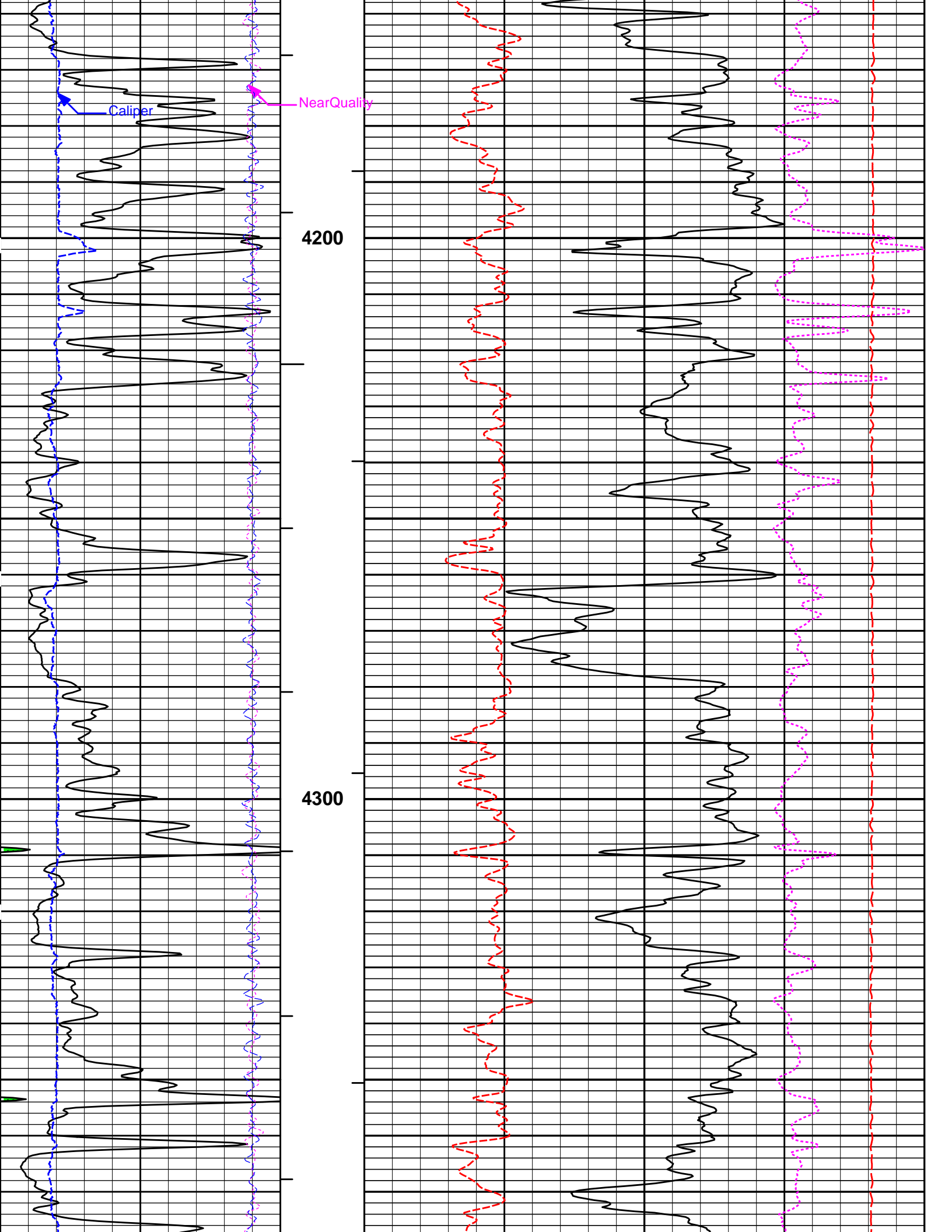
5 INCH MAIN LOG

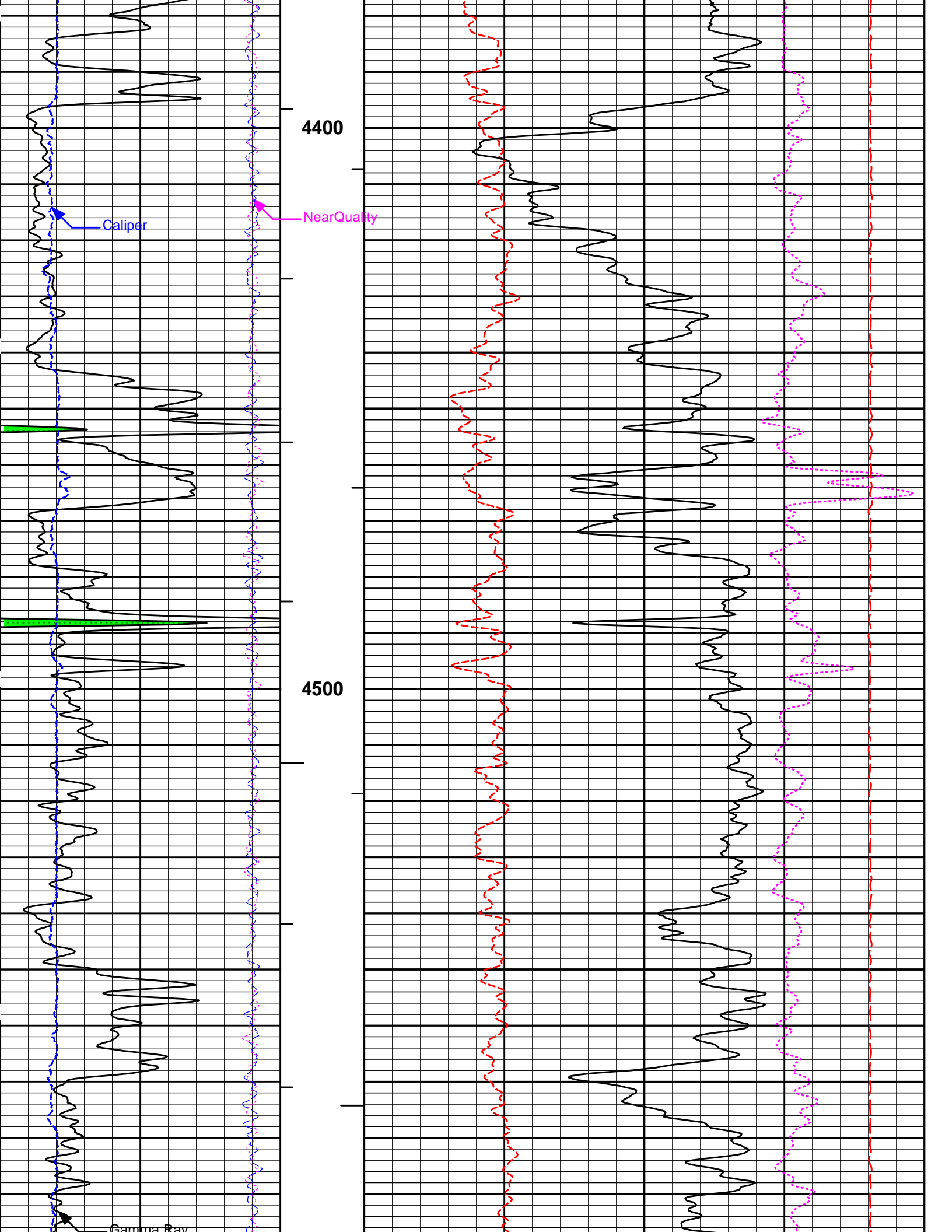
MEASURED DEPTH
 MAIN SECTION 5" PER 100'

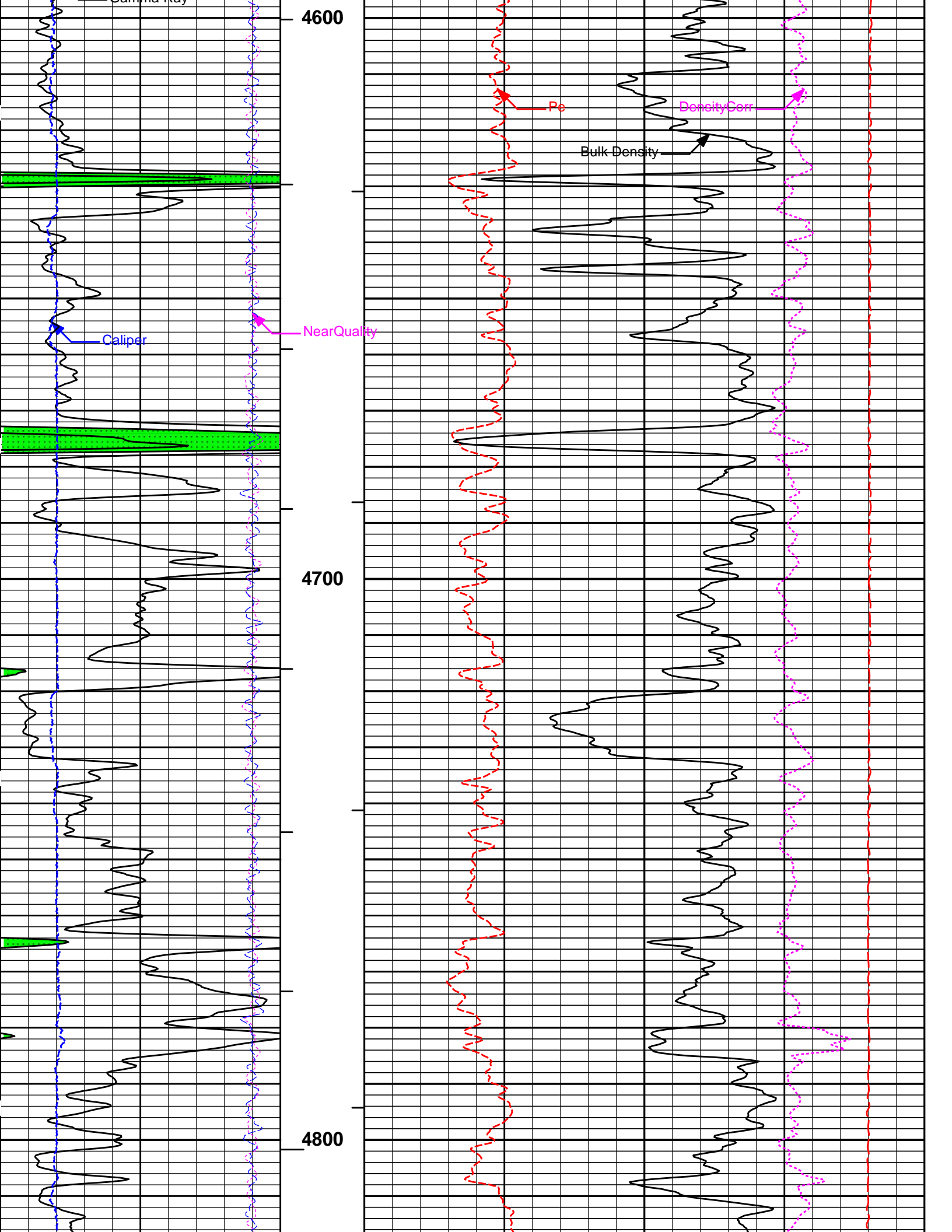
SHALE		
0	Gamma Ray api	150
18	FarQuality	-2
-18	NearQuality	2
6	Caliper inches	16

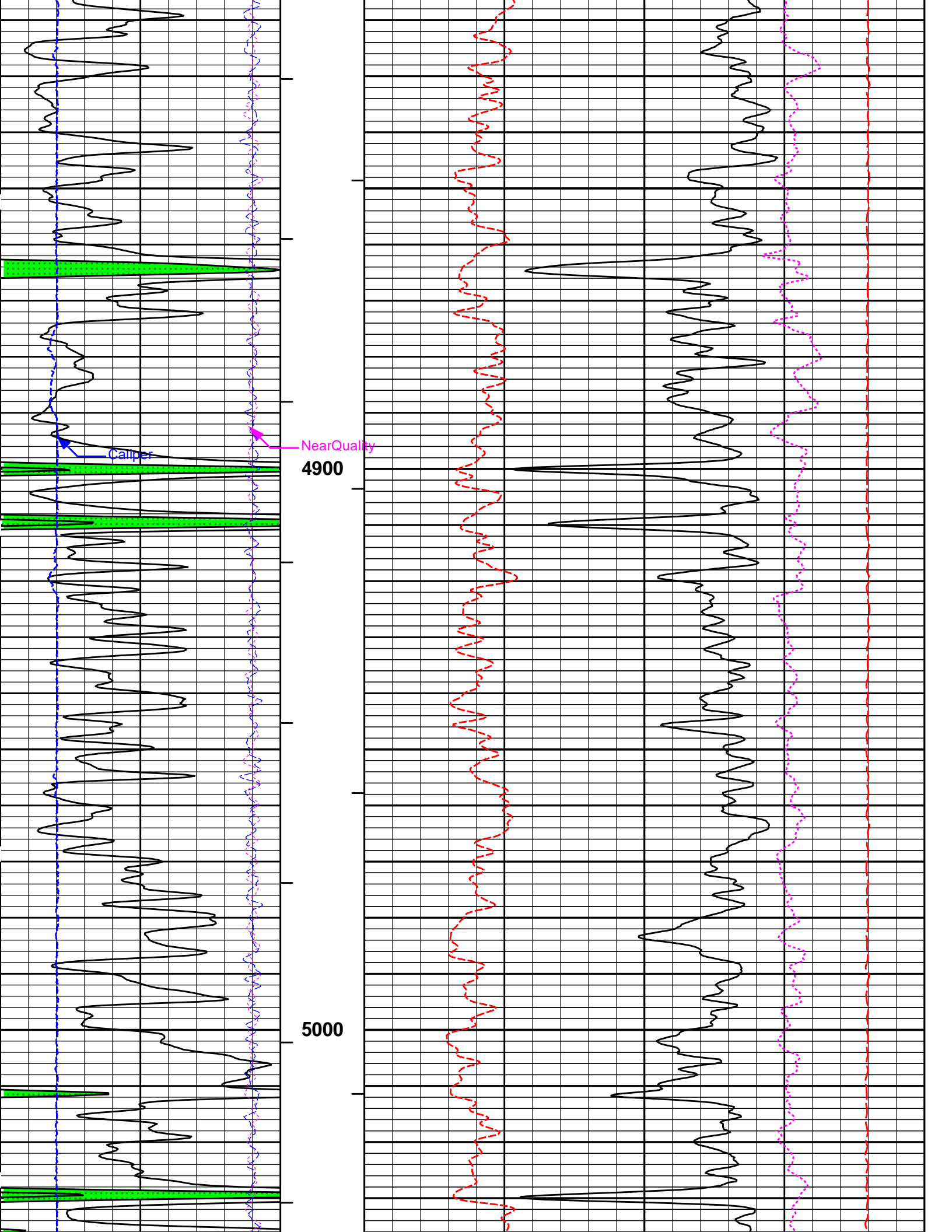
BHV ft3	Bulk Density g/cc		3
AHV ft3	15K	Tension pounds	0
MD 1 : 240 ft	0	Pe	10
	-0.25	DensityCorr g/cc	0.25

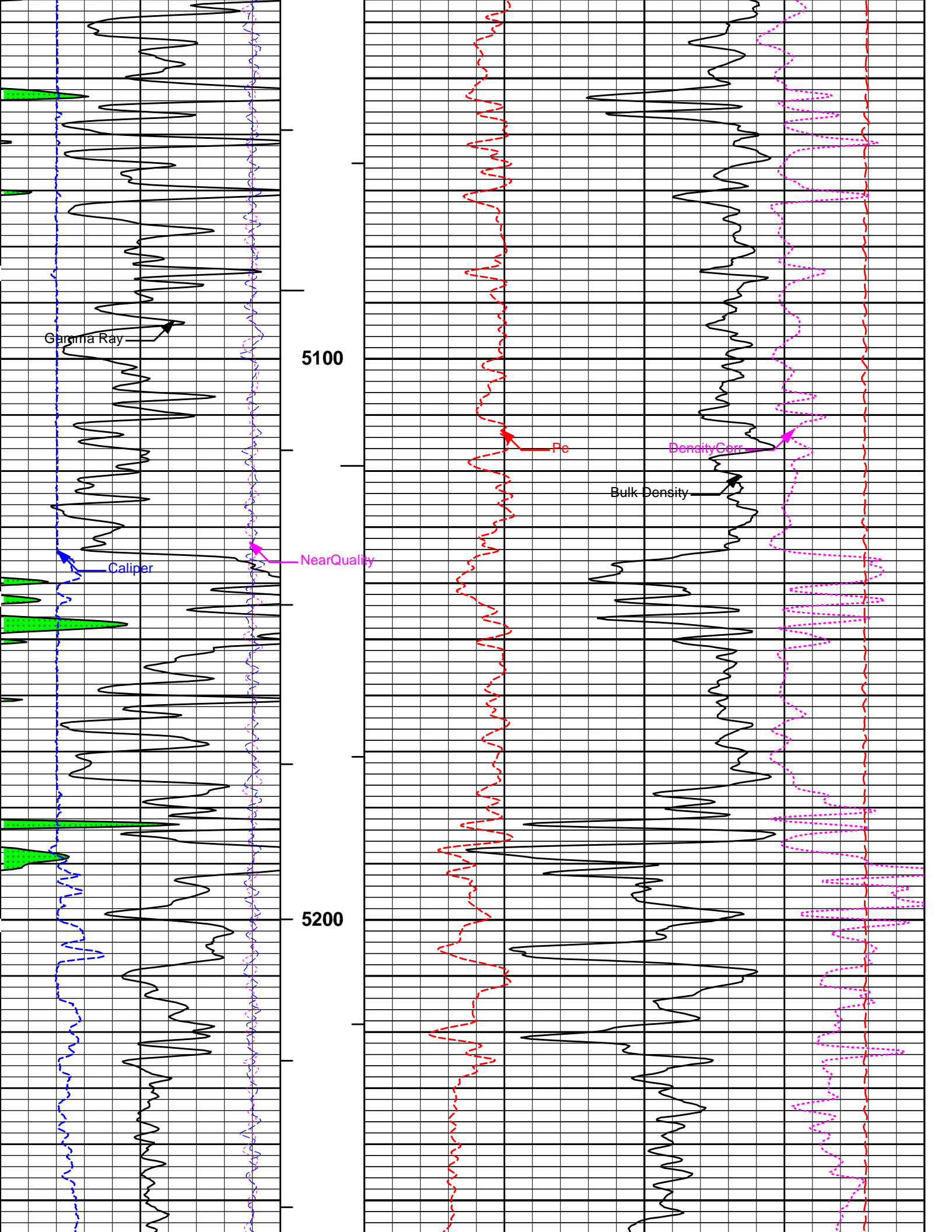


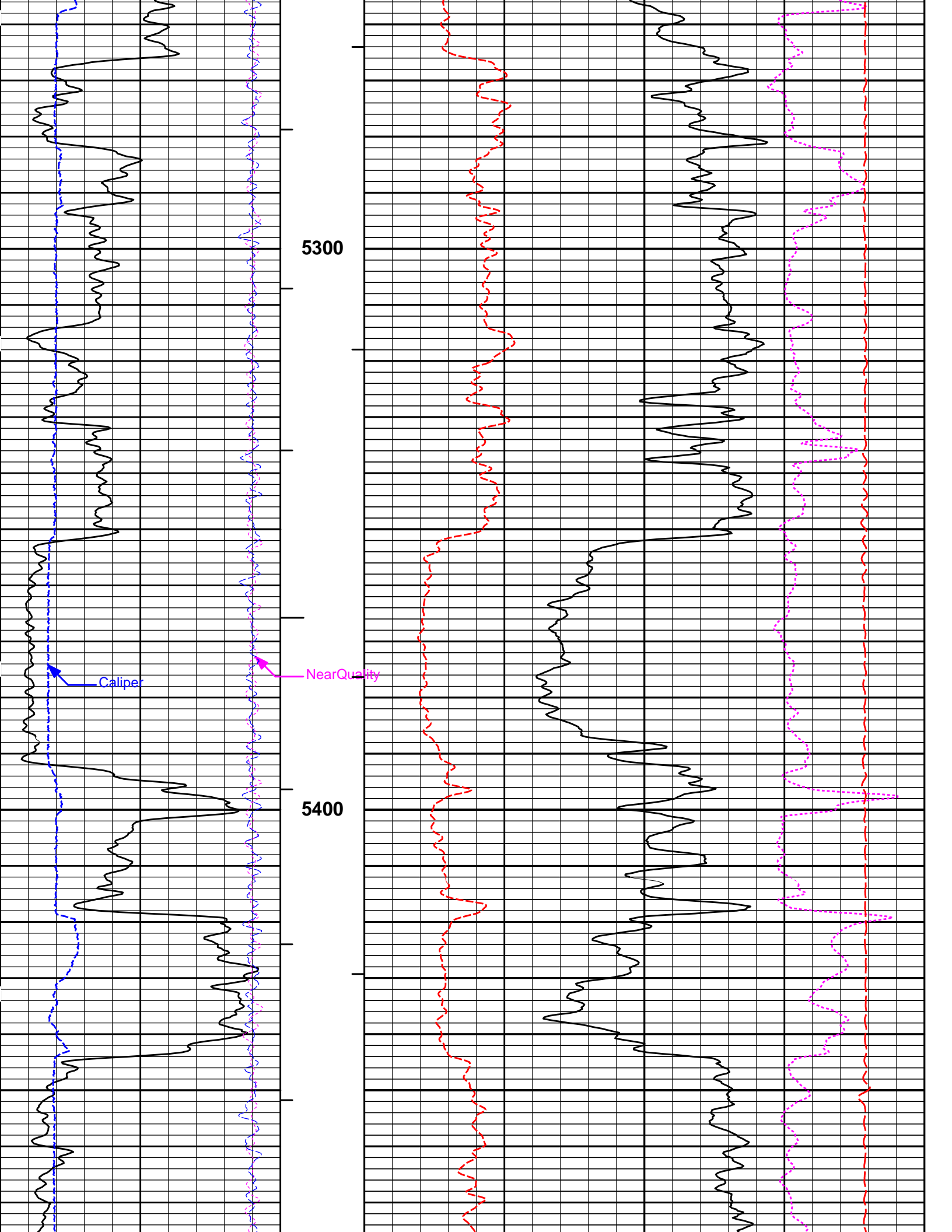


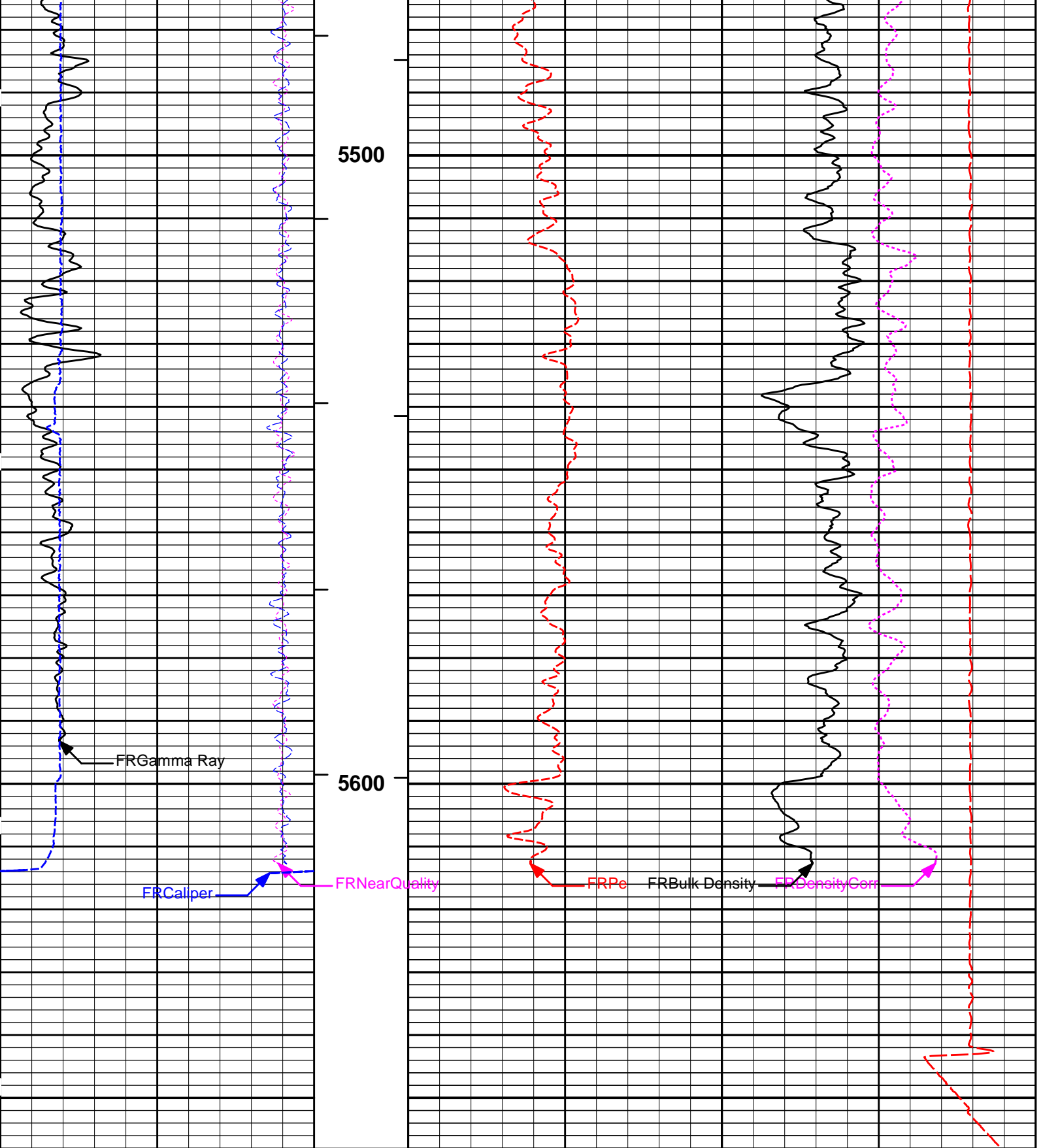












6	Caliper	16	MD	0	10	-0.25	DensityCorr	0.25
	inches		1 : 240				g/cc	
-18	NearQuality	2	AHV			15K	Tension	0
			ft3				pounds	
18	FarQuality	-2	BHV	2	Bulk Density			3
			ft3		g/cc			
0	Gamma Ray	150						

SHALE

HALLIBURTON

Plot Time: 18-Jul-14 17:34:21
Plot Range: 4000 ft to 5658.08 ft
Data: GRIFFIN E-1\Well Based\POROSITY\
Plot File: \\LOCAL-GRIFFIN E-1\Well Based\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'

HALLIBURTON

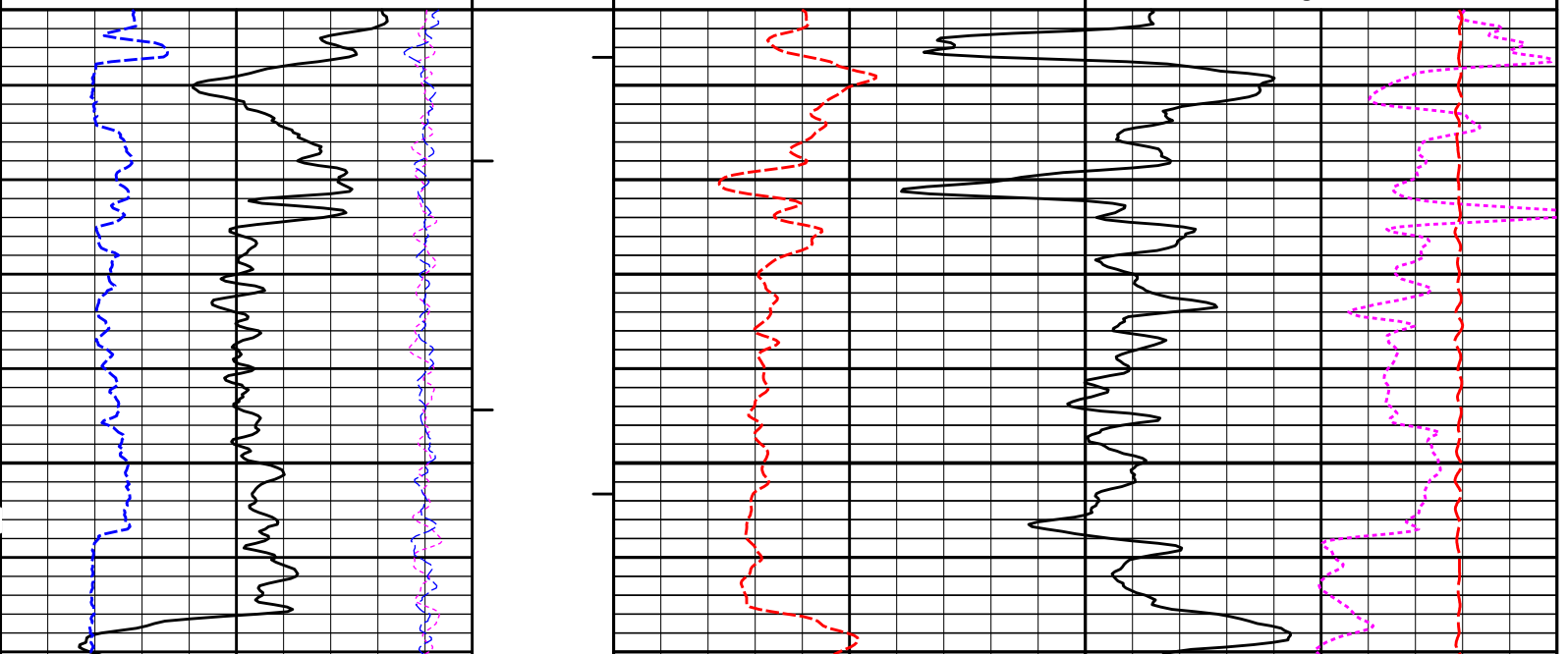
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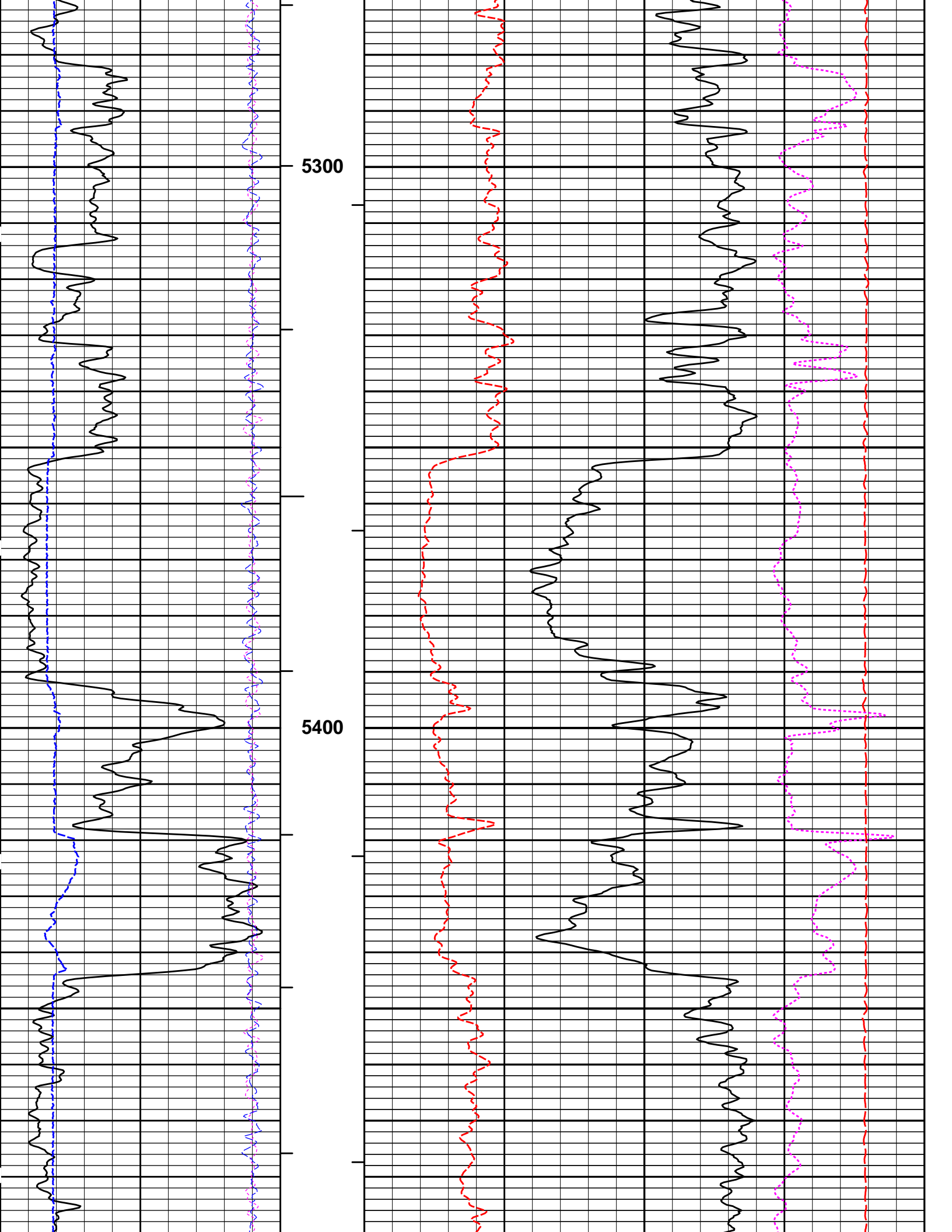
REPEAT SECTION

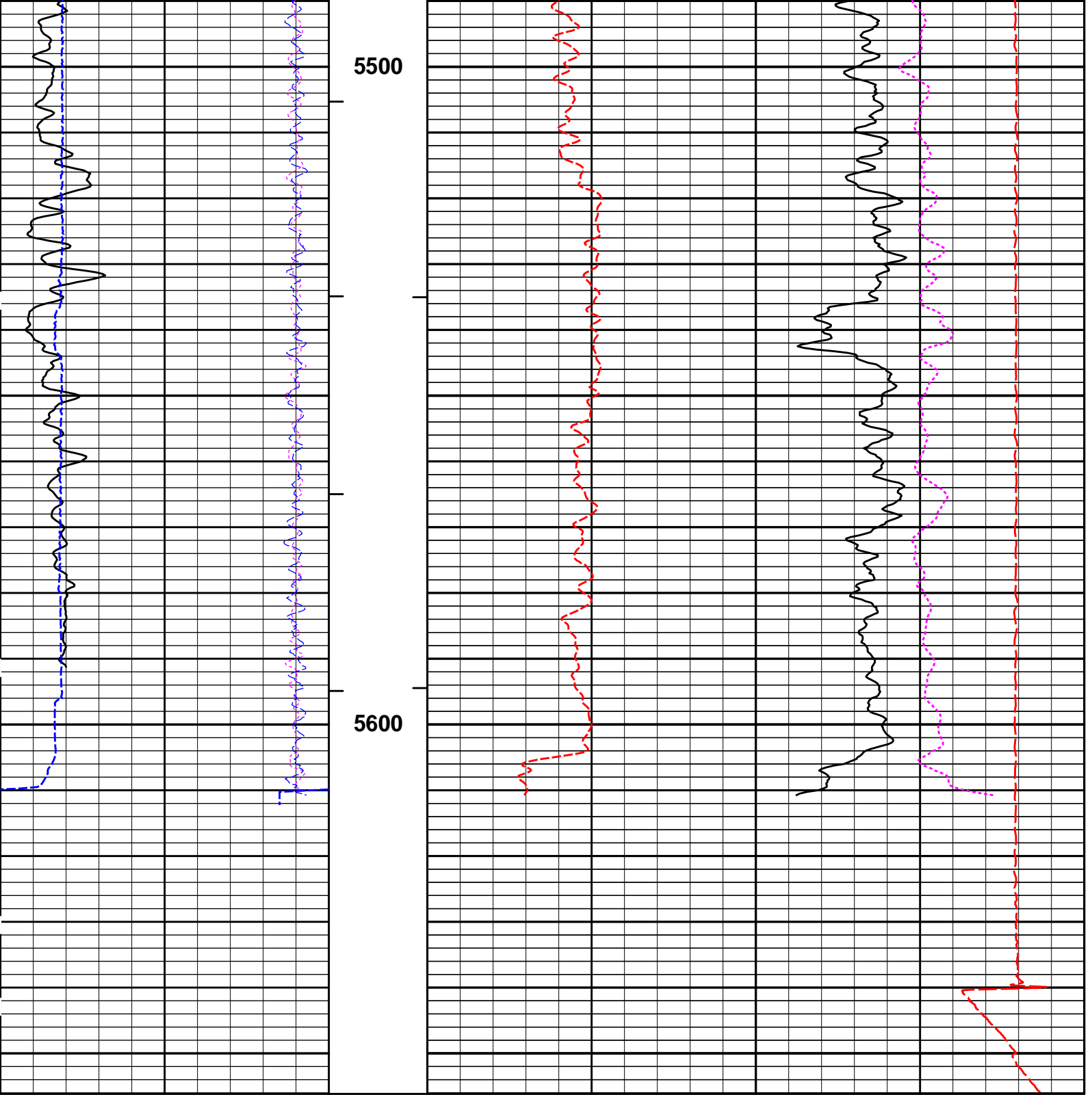
SHALE

0	Gamma Ray	150
	api	
18	FarQuality	-2
-18	NearQuality	2
6	Caliper	16
	inches	

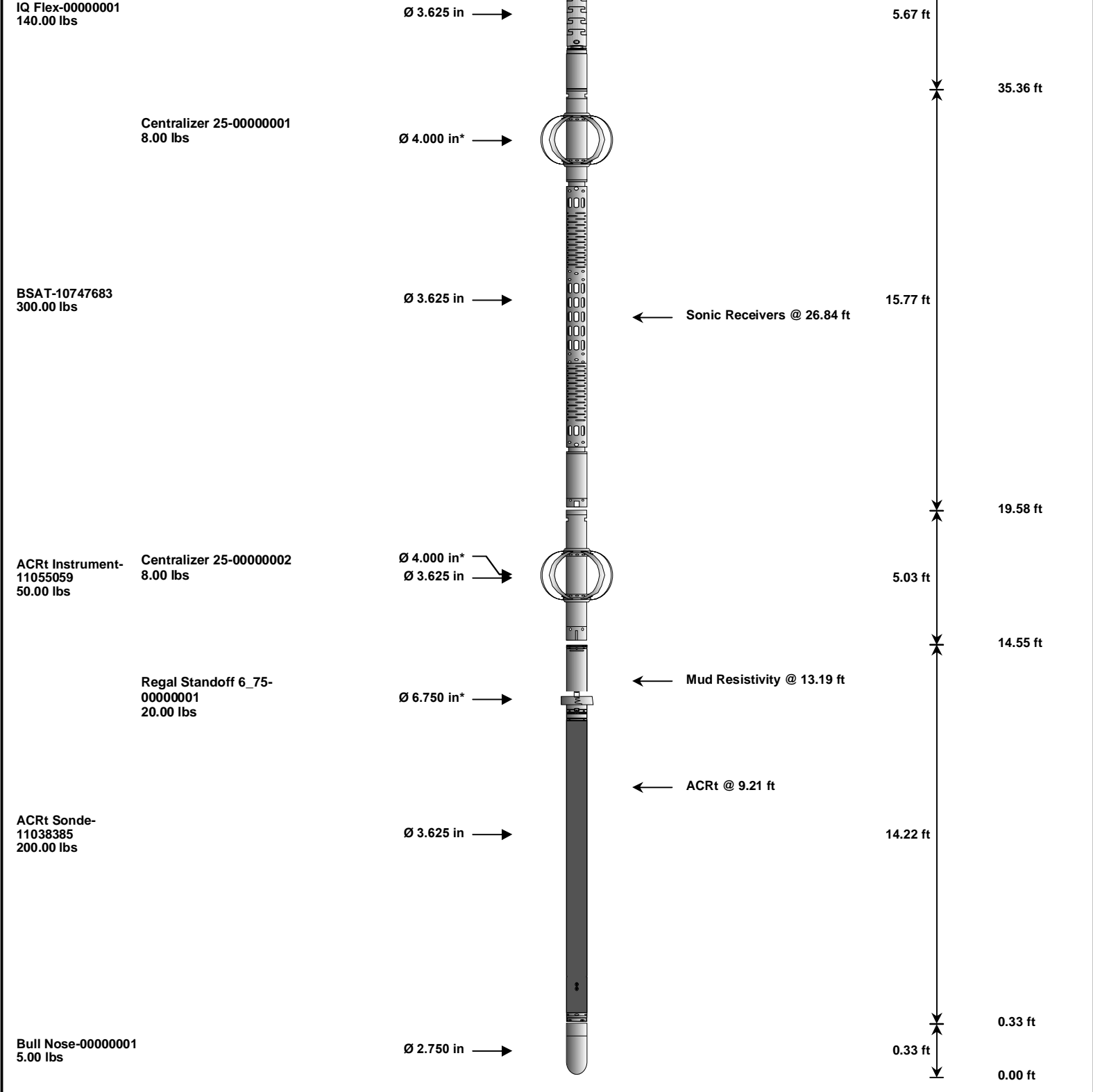
BHV ft3	2	Bulk Density	3
		g/cc	
AHV ft3		15K	Tension pounds 0
MD 1 : 240 ft	0	Pe	10
		-0.25	DensityCorr g/cc 0.25







6	Caliper	16	MD	0	10	-0.25	DensityCorr	0.25
	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						
	api							
	SHALE							



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max. Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25	73.79	300.00
SP	SP Sub	12345678	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	11019643	6.60	5.13	55.17	300.00
SDLT	Spectral Density Tool	10950489	360.00	10.81	41.03	60.00
SDLP	Density Insite Pad	10844781	65.00	2.55	43.24	60.00
MICP	Microlog Pad	10950489	8.00	1.00	43.53	60.00
IQF	IQ Flex tool	00000001	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	00000001	8.00	2.08	32.43	300.00
ACRt	Array Compensated True Resistivity Instrument Section	11055059	50.00	5.03	14.55	120.00
OBCEN	Centralizer - 25 in. Overbody	00000002	8.00	2.08	16.06	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11038385	200.00	14.22	0.33	120.00
BSOF	Regal Standoff 6.75in	00000001	20.00	0.52	12.25	300.00

RSCF	Regal Standard 6.75in	00000001	20.00	0.32	12.25	300.00
BLNS	Bull Nose	00000001	5.00	0.33	0.00	300.00

Total			1,704.60	80.04		
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* Not included in Total Length and Length Accumulation.

Data: GRIFFIN E-1\0001 GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIDLE Date: 18-Jul-14 07:21:48

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	03-Jul-14 08:43:55
Engineer:	J. BOLLLOM	Calibration Date:	09-Jul-14 10:31:38
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Calibrator Source S/N: Error
 Calibrator API Reference:265.00 api
 Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	51.6	52.0	api
Background + Calibrator	319.4	321.6	api
Calibrator	267.8	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	09-Jul-14 10:31:38
Engineer:	SUHAIL BISHTI	Calibration Date:	18-Jul-14 06:57:26
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Calibrator Source S/N: Error
 Calibrator API Reference:265.00 api
 Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	52.0	52.3	api
Background + Calibrator	321.6	321.8	api
Calibrator	269.6	269.5	api

Shop	Field	Difference	Tolerance
269.6	269.5	0.1	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 11019643	Reference Calibration Date:	09-Jul-14 13:15:21
Engineer:	J. BOLLLOM	Calibration Date:	09-Jul-14 13:28:09
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-424
 Tank Serial Number: LIBERAL WATER TANK
 Reference value assigned to Tank: 51.680
 Snow Block S/N: 10013313
 Calibration Tank Water Temperature: 68 degF
 Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value

Gain:

0.951

0.953

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):	0.2105	0.2110	0.0005	+/- 0.0020
Calibrated Ratio:	9.71	9.73	0.017	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0575	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: 09-Jul-14 13:28:09
Engineer: SUHAIL BISHTI	Calibration Date: 18-Jul-14 06:59:43
Software Version: WL INSITE R4.2.0 (Build 2)	Calibration Version: 1

Logging Source S/N: DSN-424

Snow Block S/N: 10013313

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0575	0.0706	0.0131	+/- 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-Jul-14 15:32:03
Engineer: J. BOLLLOM	Calibration Date: 14-Jul-14 15:38:06
Software Version: WL INSITE R4.2.0 (Build 2)	Calibration Version: 1
Host Tool Name: DSNT - 11019643	

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2524.97	-2588.19	-7000.00 - -1000.00
Pad Gain	0.0004133	0.0004204	0.000200 - 0.000600
Arm Offset	-466.67	-281.60	-5000.00 - 3000.00
Arm Gain	0.0005330	0.0005221	0.000300 - 0.000700
Arm Power	-0.000006116	-0.000005512	-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
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PAD EXTENSION:

Small Ring (in)	1.99	2.00	0.01	+/- 0.20
Medium Ring (in)	3.71	3.75	0.04	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20
Medium Ring (in)	8.26	8.25	-0.01	+/- 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
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SDLT CALIPER FIELD CALIBRATION

Tool Name:	SDLT - 10950489	Reference Calibration Date:	14-Jul-14 15:38:06
Engineer:	SUHAIL BISHTI	Calibration Date:	18-Jul-14 07:07:26
Software Version:	WL INSITE R4.2.0 (Build 2)	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	8.24	-0.01	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 10844781	Reference Calibration Date:	11-Jun-14 10:04:39
Engineer:	J. BOLLLOM	Calibration Date:	09-Jul-14 10:55:18
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Logging Source S/N: 5168 GW
 Aluminum Block S/N: LIBERAL ALUMINUM Density: 2.598g/cc Pe: 3.170
 Magnesium Block S/N: LIBERAL MAGNESIUM Density: 1.684g/cc Pe: 2.598

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0482	1.0693	0.90 - 1.10
Near Dens Gain	1.0393	1.0462	0.90 - 1.10
Near Peak Gain	1.0324	1.0750	0.90 - 1.10
Near Lith Gain	1.0200	1.0566	0.90 - 1.10
Far Bar Gain	1.0140	1.0150	0.90 - 1.10
Far Dens Gain	1.0024	1.0021	0.90 - 1.10
Far Peak Gain	0.9968	0.9976	0.90 - 1.10
Far Lith Gain	0.9668	0.9644	0.90 - 1.10

Near Bar Offset	-0.2254	-0.4099	NONE
Near Dens Offset	-0.1439	-0.1993	NONE
Near Peak Offset	-0.0674	-0.4208	NONE
Near Lith Offset	0.0254	-0.2826	NONE
Far Bar Offset	0.0134	0.0077	NONE
Far Dens Offset	0.1004	0.1043	NONE
Far Peak Offset	0.0070	0.0007	NONE
Far Lith Offset	0.0000	0.0000	NONE

Far Peak Offset	0.0970	0.0927	NONE
Far Lith Offset	0.2744	0.2898	NONE
Near Bar Background	782.99	783.30	700 - 1450
Near Dens Background	257.43	258.23	230 - 480
Near Peak Background	111.64	111.97	100 - 210
Near Lith Background	138.52	137.78	125 - 260
Far Bar Background	509.97	507.54	450 - 900
Far Dens Background	200.32	199.87	175 - 345
Far Peak Background	80.66	79.51	70 - 140
Far Lith Background	82.33	82.79	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.678	1.684	0.006	+/- 0.015
Pe	2.508	2.564	0.056	+/- 0.150
ALUMINUM				
Density (g/cc)	2.596	2.598	0.002	+/- 0.01500
Pe	3.044	3.133	0.089	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0013	+/- 0.0110	-0.0022	+/- 0.0140
Magnesium Block	-0.0011	+/- 0.0110	-0.0020	+/- 0.0140
Aluminum Block	-0.0004	+/- 0.0110	0.0002	+/- 0.0140
Resolution	9.37	6.00 - 11.50	8.85	6.00 - 11.50
Internal Verifier(B+D+P+L)	1291	1200 - 2700	870	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:	09-Jul-14 10:55:18
Engineer:	SUHAIL BISHTI	Calibration Date:	18-Jul-14 07:11:20
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Pad Temperature: 64.7 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1291.272	1289.090	-2.182	14.552
Far (B+D+P+L) cps	869.704	874.013	4.309	16.122

Near Resolution	9.37	9.38	0.010	0.50
Far Resolution	8.85	9.05	0.200	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	269.5	-----	0.1	+/- 9.00	api
DSNT-11019643						
Snow-Block Porosity	0.0575	0.0706	-----	-0.0131	+/- 0.0150	decp
SDLT-10950489						
Pad Extension	3.75	3.80	-----	-0.05	+/-0.10	in
Ring Diameter	8.25	8.24	-----	0.01	+/-0.15	in
SDLT Pad-10844781						
Near(B+D+P+L)	1291.272	1289.090	-----	2.182	+/-14.552	cps
Far(B+D+P+L)	869.704	874.013	-----	-4.309	+/-16.122	cps

Data: GRIFFIN E-10001 GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIDLE

Date: 18-Jul-14 07:23:22

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	9.100	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	5661.00	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	
	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	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
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	
GTET	BHSM	Borehole Size Source Tool	SDLT	
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	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
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
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
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	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
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	

BOTTOM

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
Rwa / CrossPlot				
TPUL	Tension Pull	80.04	NO	
BS	Bit Size	80.04	NO	
HDIA	Measured Hole Diameter	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
HDIA	Measured Hole Diameter	0.00	NO	
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	
HDIA	Measured Hole Diameter	0.00	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 Reference 12 KHz Real Signal	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	
HDIA	Measured Hole Diameter	0.00	NO	

SDLT Pad

TPUL	Tension Pull	43.83	NO	
NAB	Near Above	43.66	BLK	0.920
NHI	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	
HDIA	Measured Hole Diameter	0.00	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

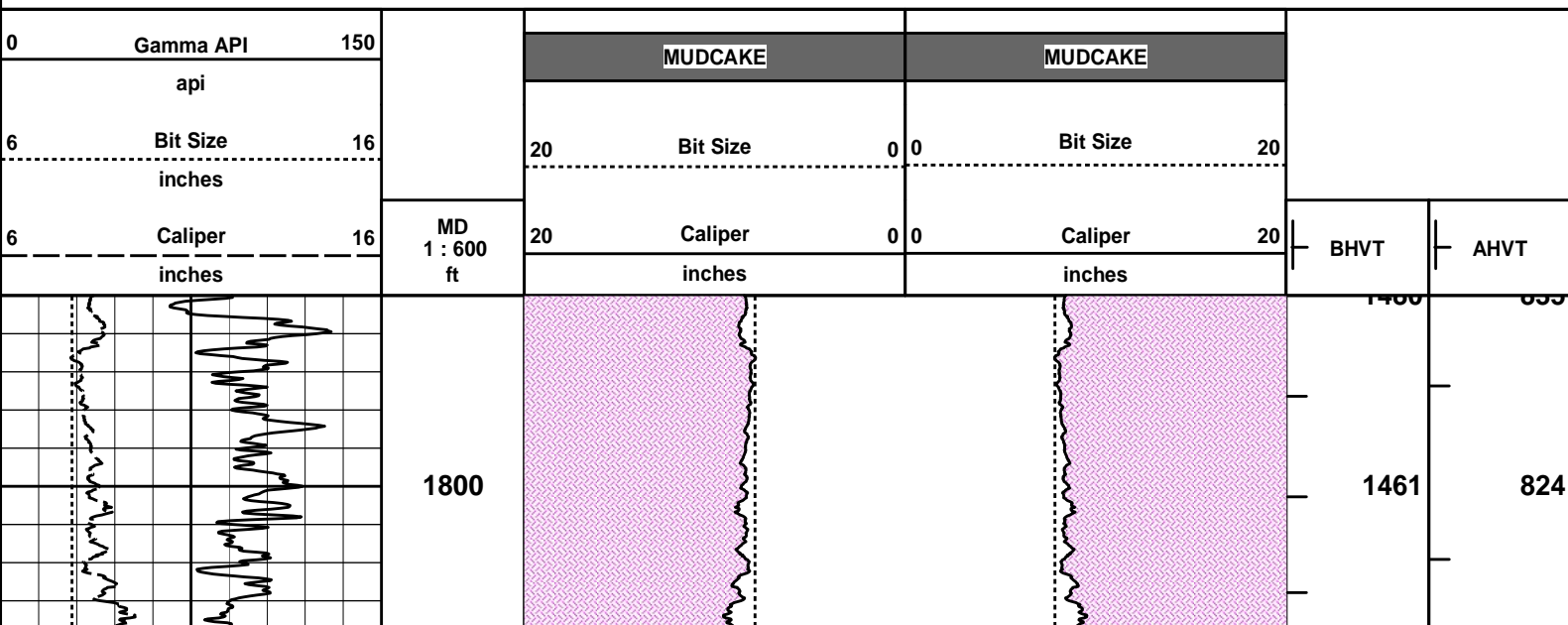
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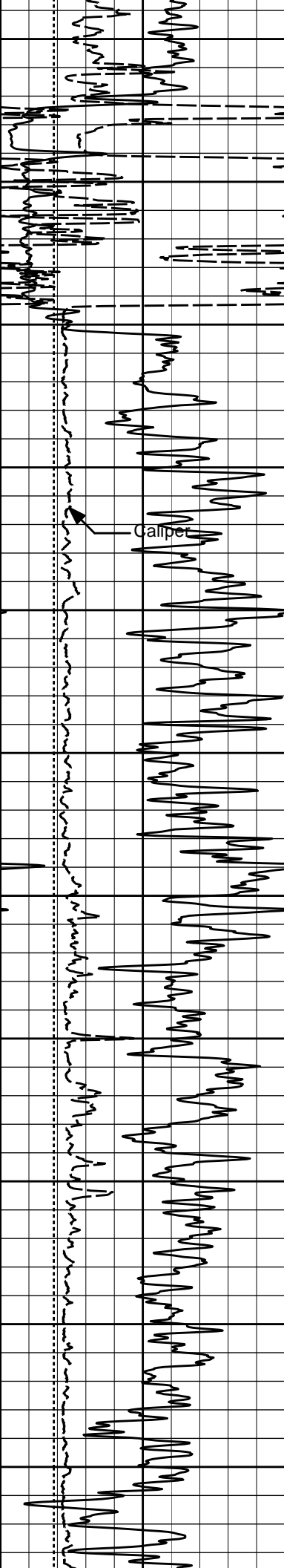
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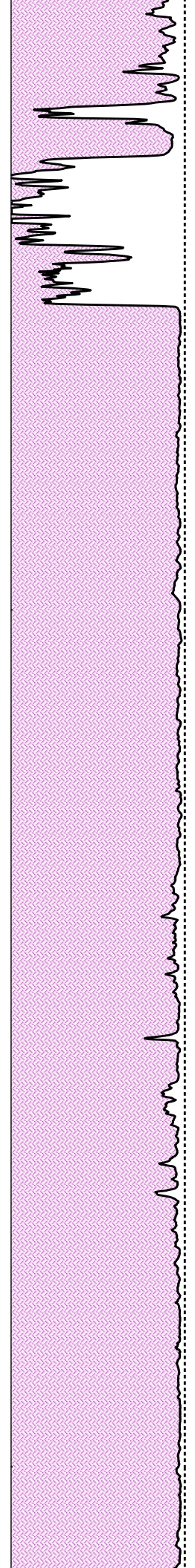
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ANNULAR HOLE VOLUME PLOT

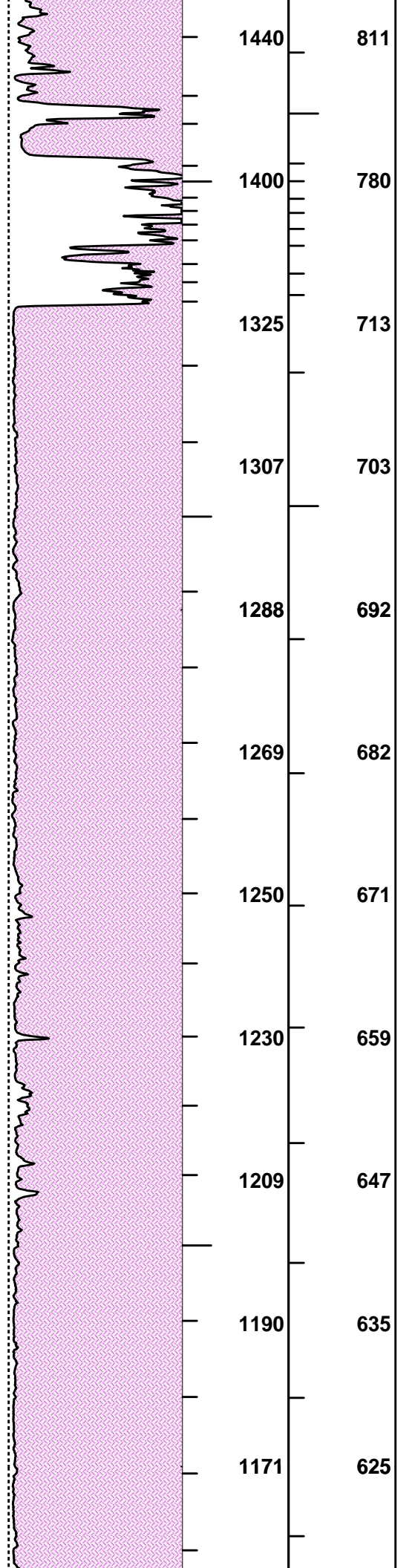


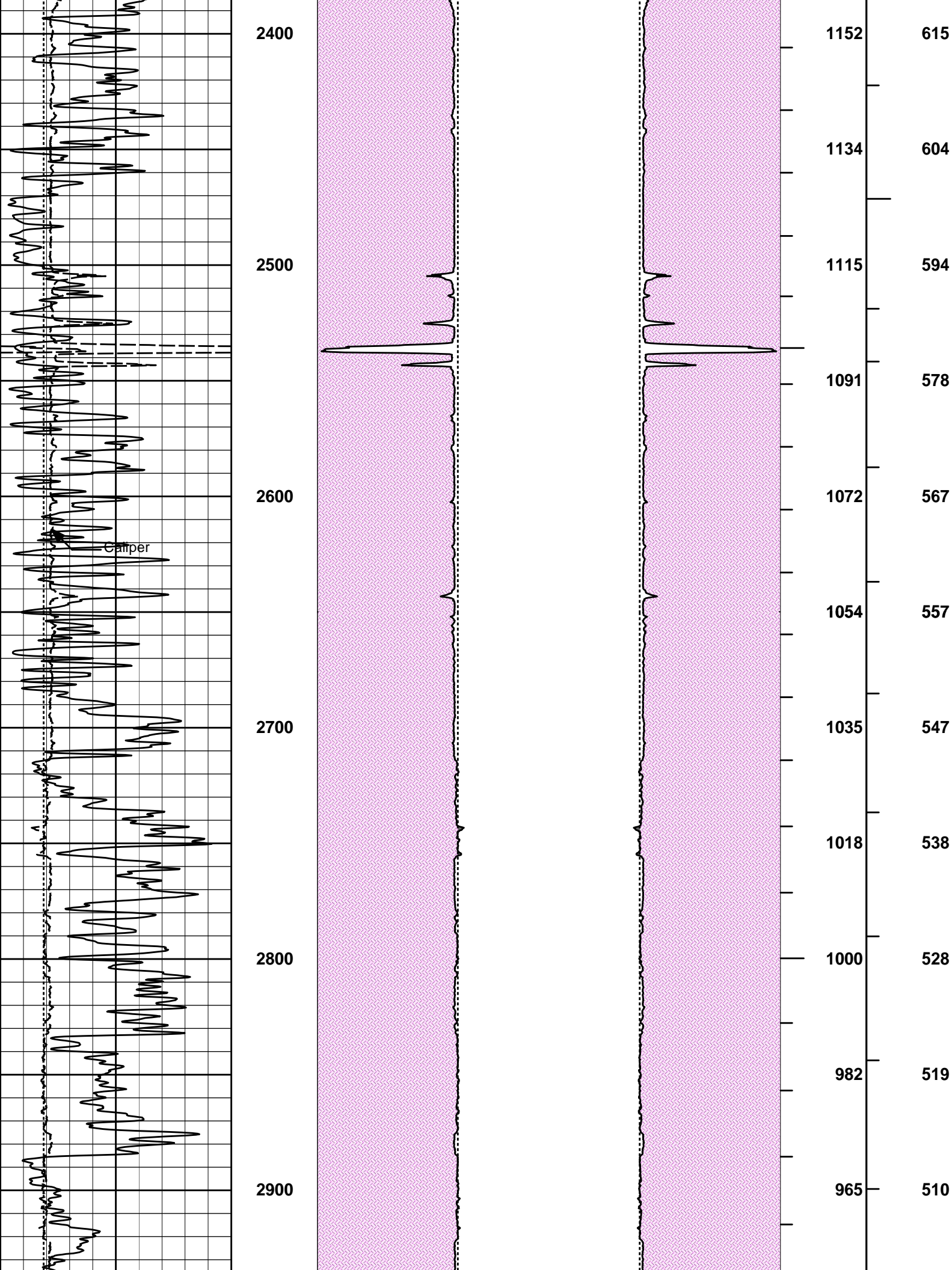


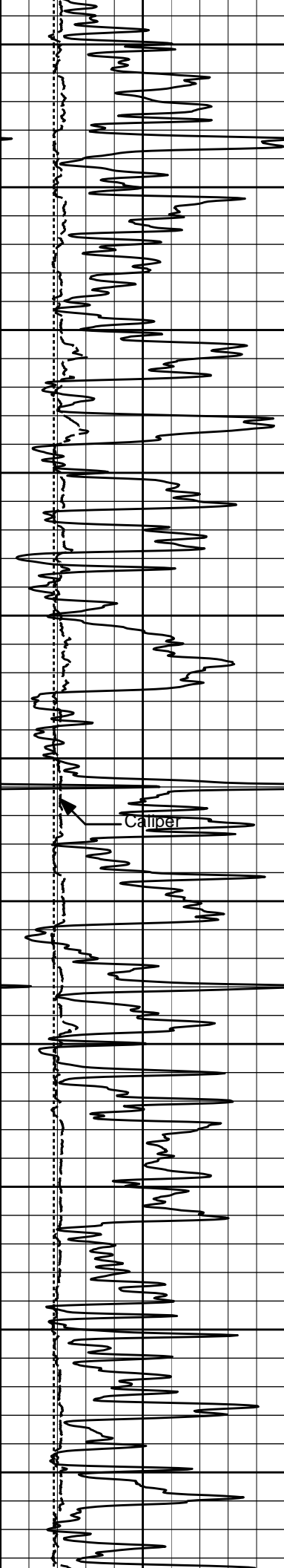
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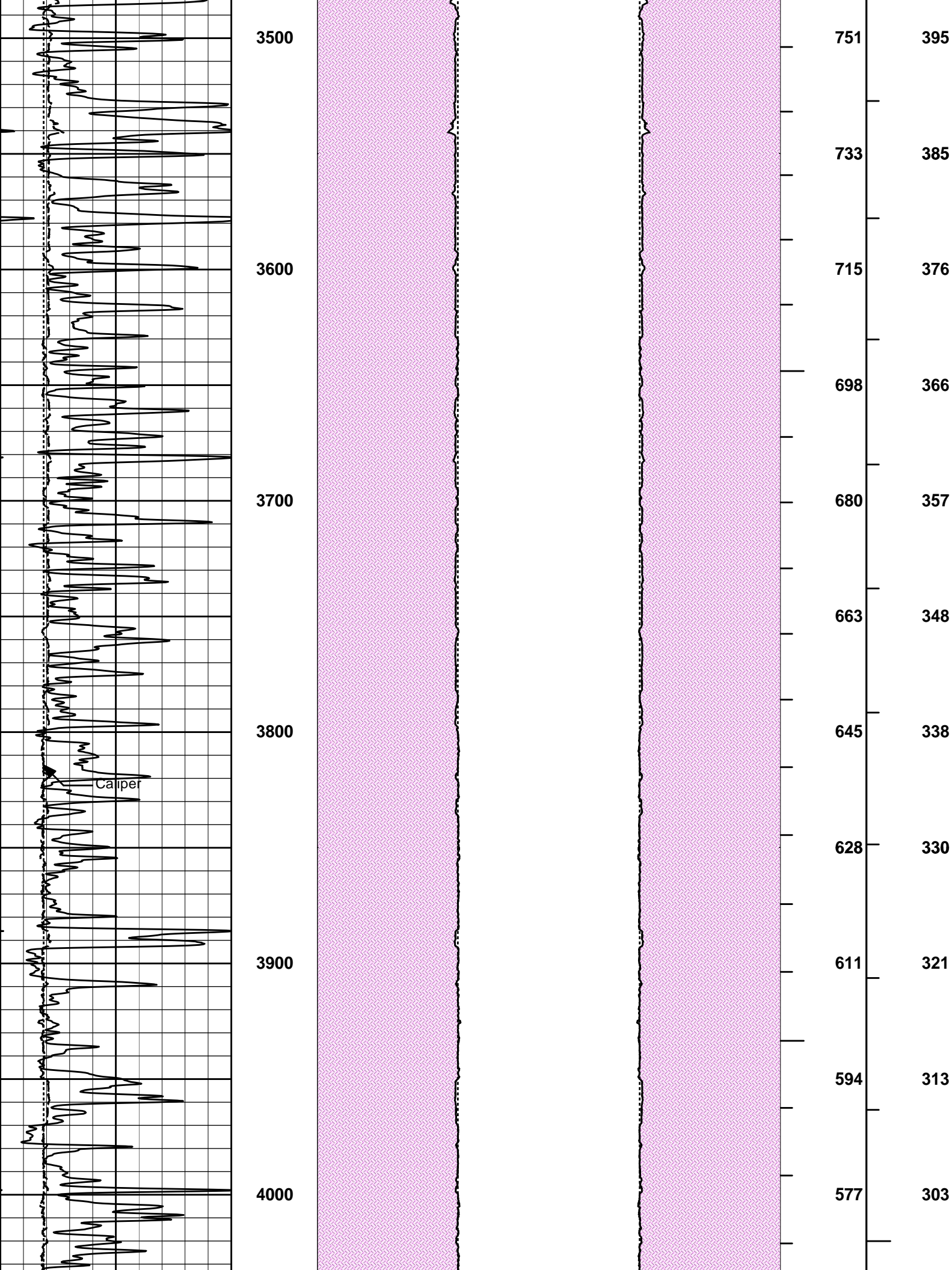
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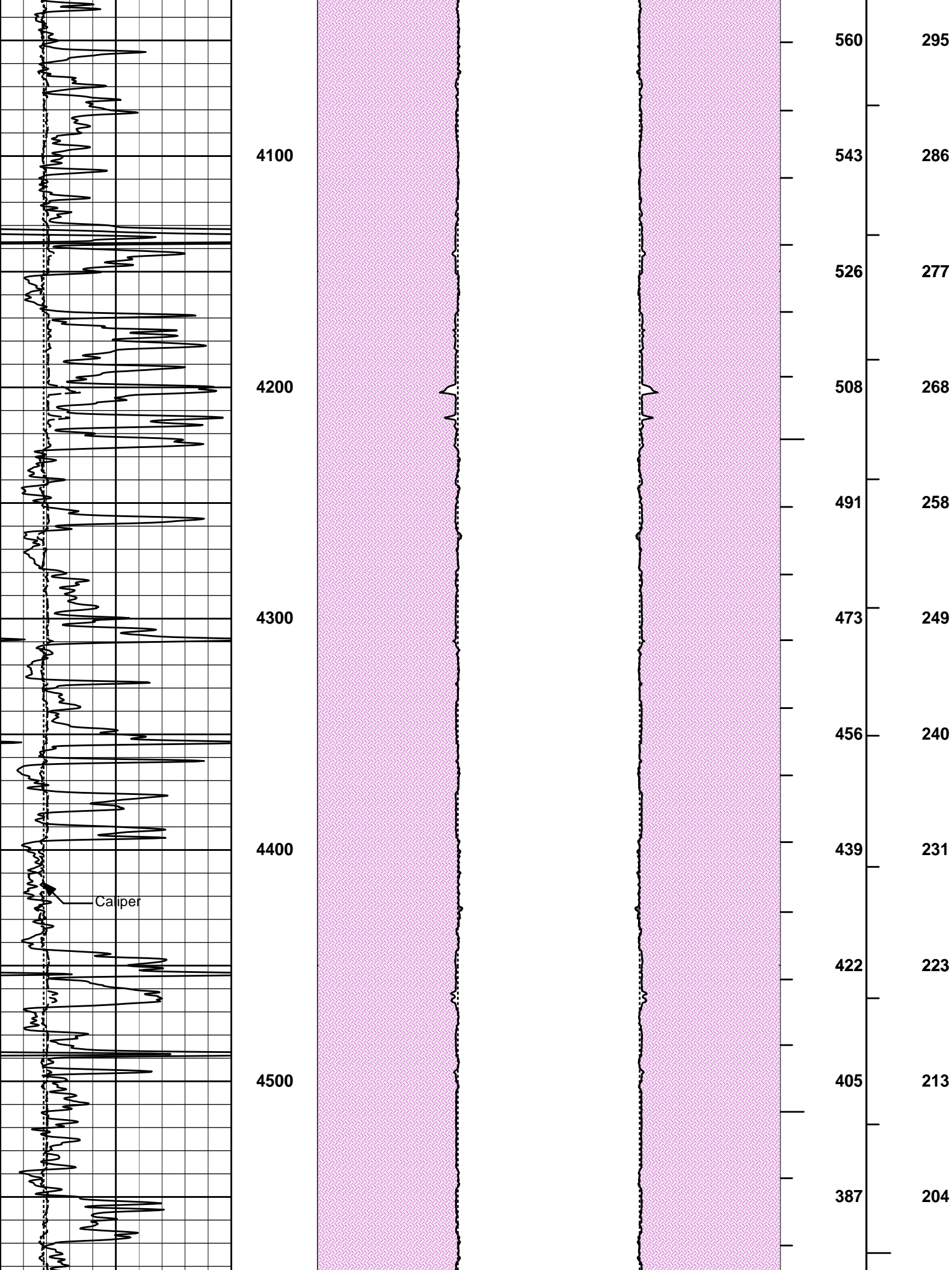
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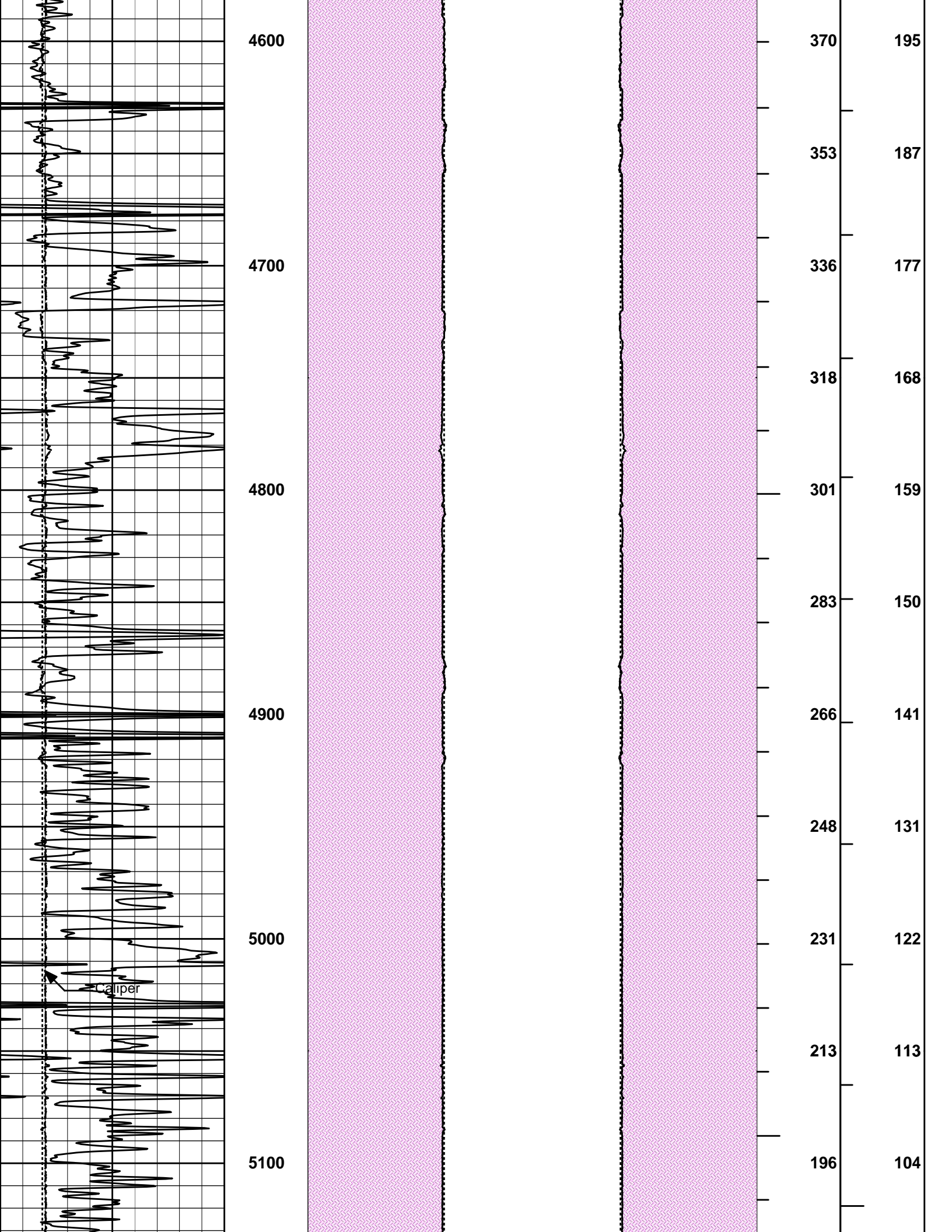
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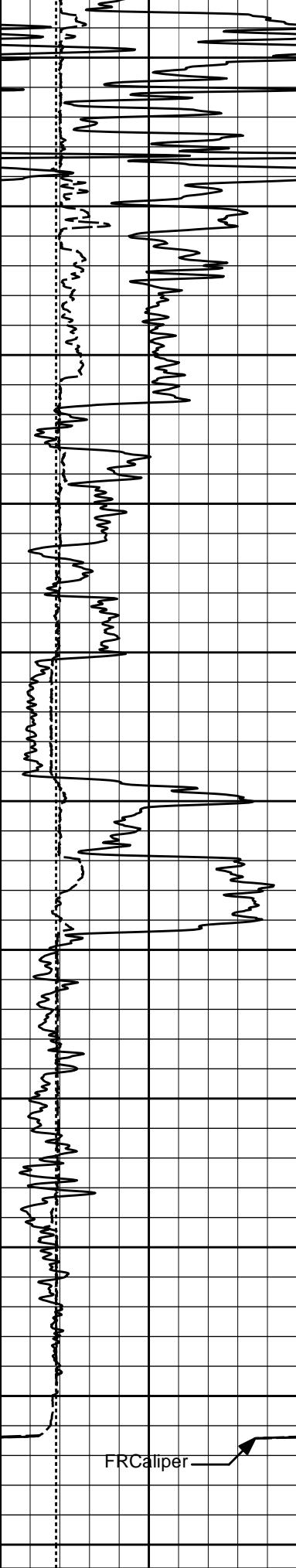
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5300

5400

5500

5600

178 94

160 84

141 73

122 63

105 54

89 46

71 36

53 27

36 19

20 10

FRCaliper

6 Caliper 16
inches

MD
1 : 600
ft

20 Caliper 0 0
inches

Caliper 20
inches

BHVT AHVT

