

HALLIBURTON

**SPECTRAL DENSITY
DUAL SPACED NEUTRON**

HALLIBURTON										SPECTRAL DENSITY DUAL SPACED NEUTRON									
HARTMAN OIL CO., INC.										HARTMAN OIL CO., INC.									
COMPANY					ROSE # 1-1					COMPANY					HARTMAN OIL CO., INC.				
WELL					WILDCAT					WELL					ROSE # 1-1				
FIELD					WICHITA					FIELD					WILDCAT				
COUNTY					KANSAS					COUNTY					WICHITA				
STATE					KANSAS					COUNTY					WICHITA				
STATE					KANSAS					STATE					KANSAS				
Permanent Datum					GL					API No.					15203201840000				
Log measured from					KB					Location					SURFACE HOLE LOCATION: 1330' FNL & 2280' FWL				
Drilling measured from					KB					Sect. 1					Twp. 16S				
Date					06-Oct-12					Rge.					35W				
Run No.					ONE					Elev.: K.B.					3154.0 ft				
Depth - Driller					4850.00 ft					Elev.: D.F.					3153.0 ft				
Depth - Logger					4847.0 ft					Elev.: G.L.					3143.0 ft				
Bottom - Logged Interval					4803.0 ft					11.0 ft above perm. Datum									
Top - Logged Interval					2450.0 ft														
Casing - Driller					8.625 in					@					@				
Casing - Logger					332.0 ft														
Bit Size					7.875 in					@					@				
Type Fluid in Hole					CHEMICAL														
Density					9.1 ppg					54.00 s/qt									
PH					10.80 pH					8.8 cpm									
Source of Sample					MUD TANK														
Rm @ Meas. Temperature					0.570 ohmm					@					@				
Rmf @ Meas. Temperature					0.43 ohmm					@					@				
Rmc @ Meas. Temperature					0.920 ohmm					@					@				
Source Rmf					MEASURED					MEASURED									
Rm @ BHT					0.33 ohmm					@					@				
Time Since Circulation					8.6 hr														
Time on Bottom					06-Oct-12 21:53														
Max. Rec. Temperature					129.0 degF					@					@				
Equipment					11170614					ROCK SPRING									
Recorded By					V. CREWS														
Witnessed By					K. NOAH														

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Service Ticket No.:					API Serial No.: 15203201840000					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.		@		@		ONE		ACRT -	N/A	1.5" S.O.	N/A			
Rmc @ Meas. Temp.		@		@				E6988-S8481						
Source Rmf	Rmc					ONE		MEL -	MICROLOG	ECCENTERED	N/A			
Rm @ BHT		@		@				10947725						
Rmf @ BHT		@		@										
Rmc @ BHT		@		@										
EQUIPMENT DATA														
GAMMA			ACOUSTIC				DENSITY			NEUTRON				
Run No.	ONE		Run No.	ONE		Run No.	ONE		Run No.	ONE				
Serial No.	11602914		Serial No.	10747633		Serial No.	11014275		Serial No.	10860047				
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.	102-A		Spacing	0.5'		Log Type	GAM-GAM		Log Type	THERM-THERM				
Type	SCINT					Source Type	Cs137		Source Type	Am241Be				
Length	8"		LSA [Y/N]	N/A		Serial No.	5235GW		Serial No.	08-018				
Distance to Source	10'		FWDA [Y/N]	N/A		Strength	1.78 Ci		Strength	15.0 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	4847'	2540'	REC	0	150	40%	0%	LIME	30%	-10%	2.71 g/cc	30%	-10%	LIME					
ONE	2540'	332'	REC	0	150														
DIRECTIONAL INFORMATION																			
Maximum Deviation								@	KOP							@			
Remarks: RWCH-GTET-DSNT-SDLT-FLEX-BSAT-ACRT RAN IN COMBINATION																			
BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY EFFECT LOG QUALITY																			
ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING																			
BOWSPRING AND STANDOFF RUN																			
TODAY'S CREW: G. HOOD, C. DAVIS & D. TREFILETTI															RIG: H2 DRILLING				
*** THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY (307) 352-8600 ***																			
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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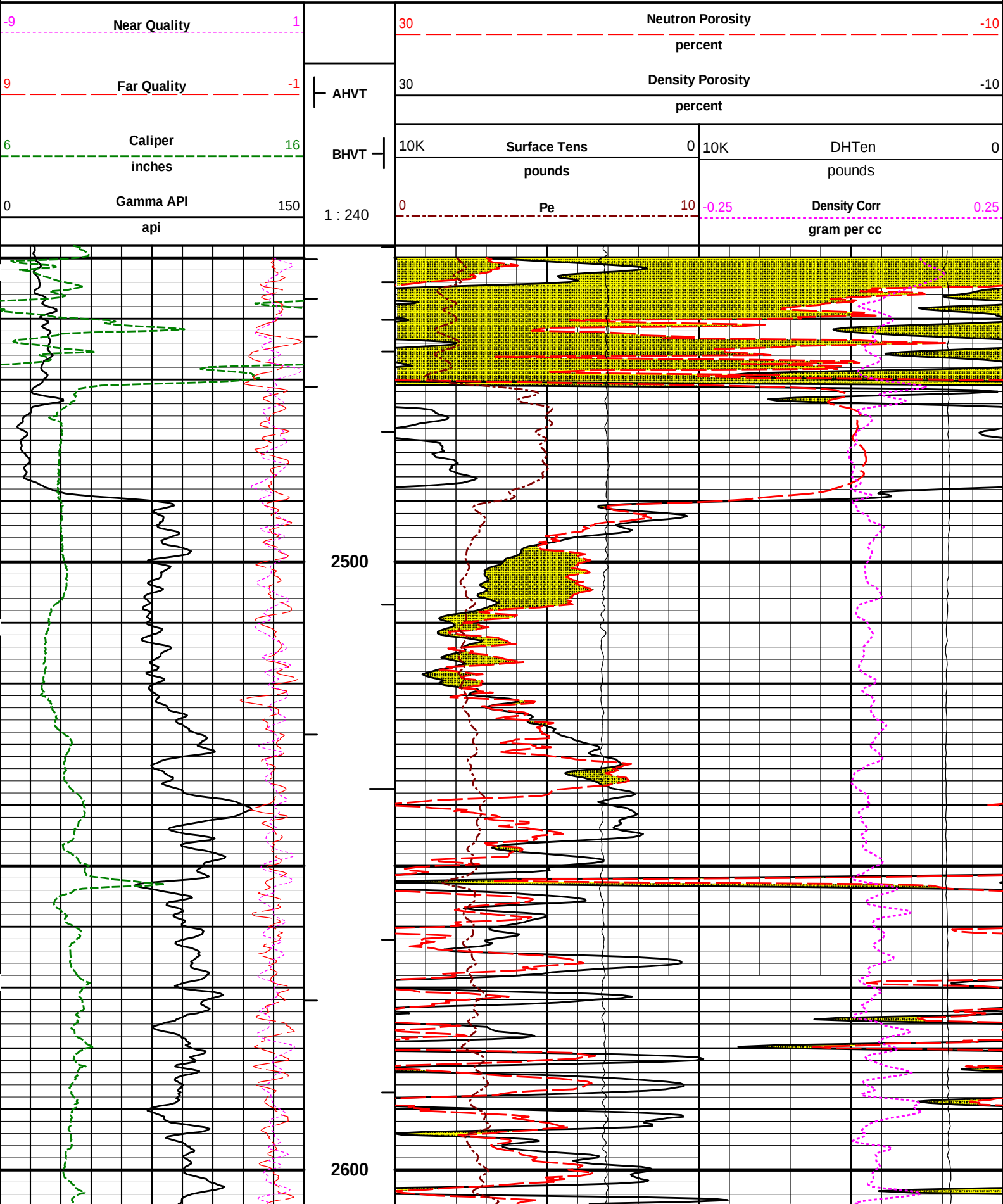
PARAMETERS REPORT

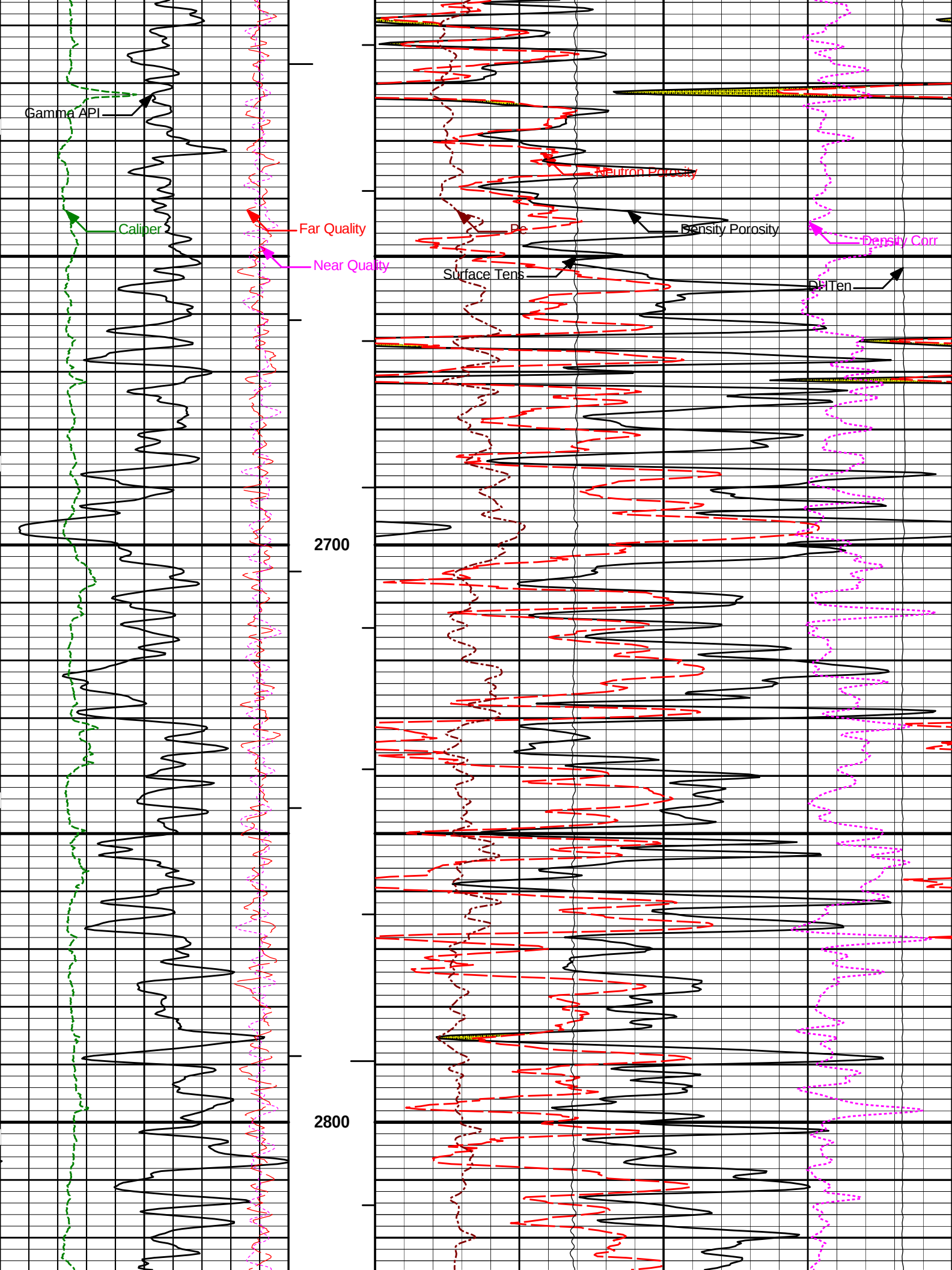
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.100	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	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	0.570	ohmm
	SHARED	TRM	Temperature of Mud	71.2	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	53.0	degF
	SHARED	TD	Total Well Depth	4847.00	ft
	SHARED	BHT	Bottom Hole Temperature	129.0	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	

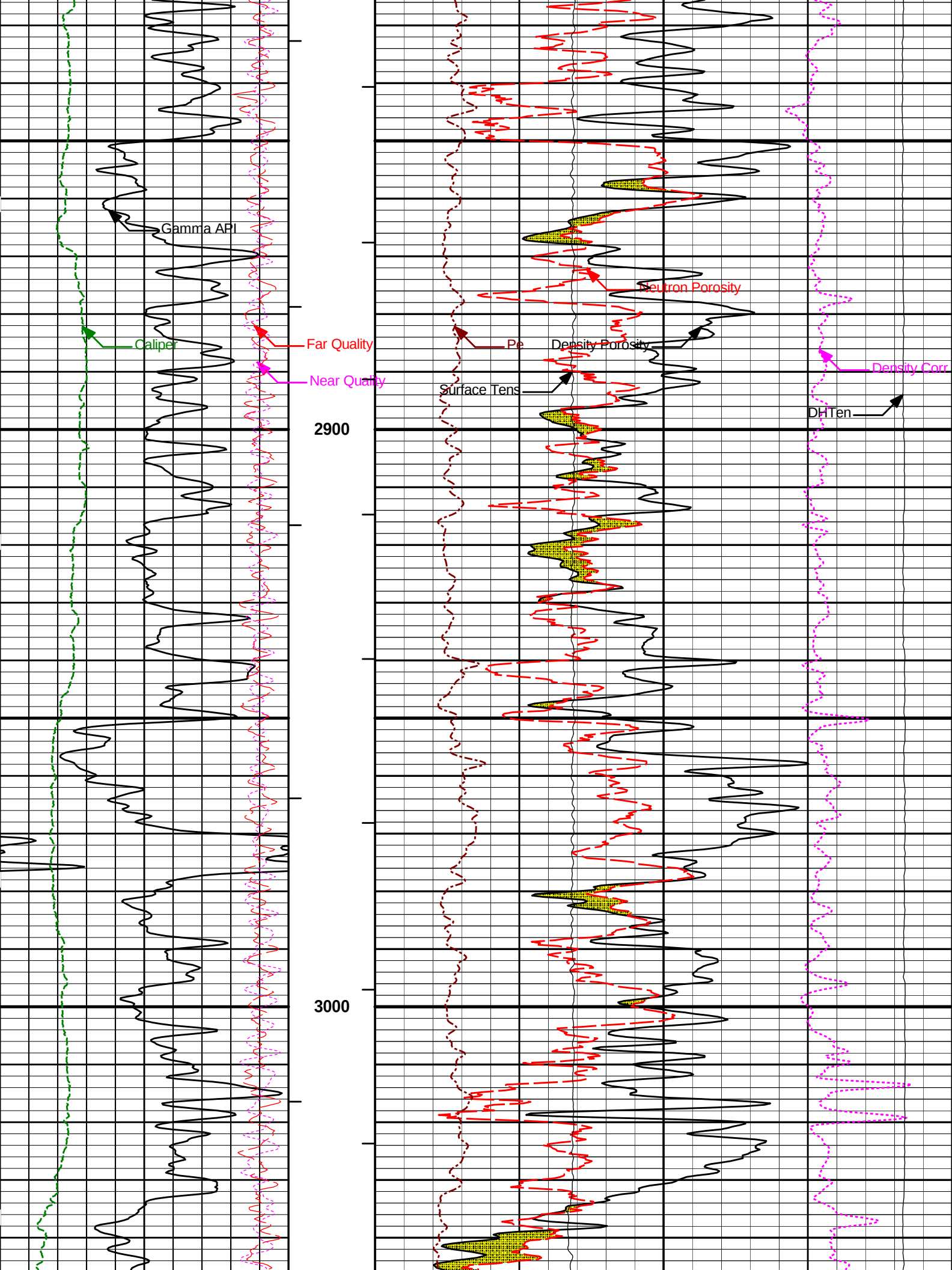
CrossPlot	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma 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	Limestone 47.5	
	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: HARTMN_ROSE_1_1\0003 QUAD_MEL_BSAT\004.01 06-Oct-12 23:23 Up				Date: 07-Oct-12 00:07:57	

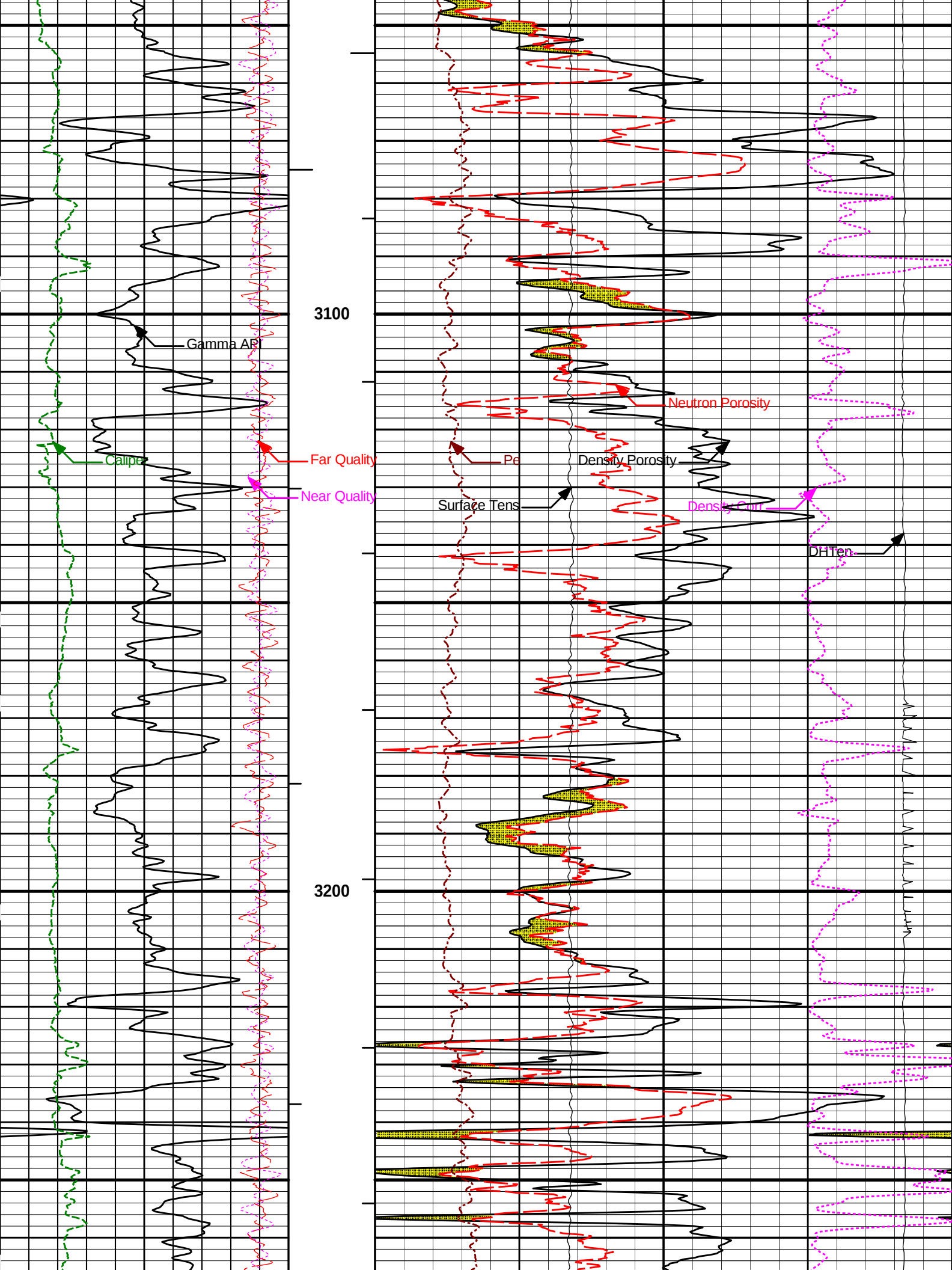


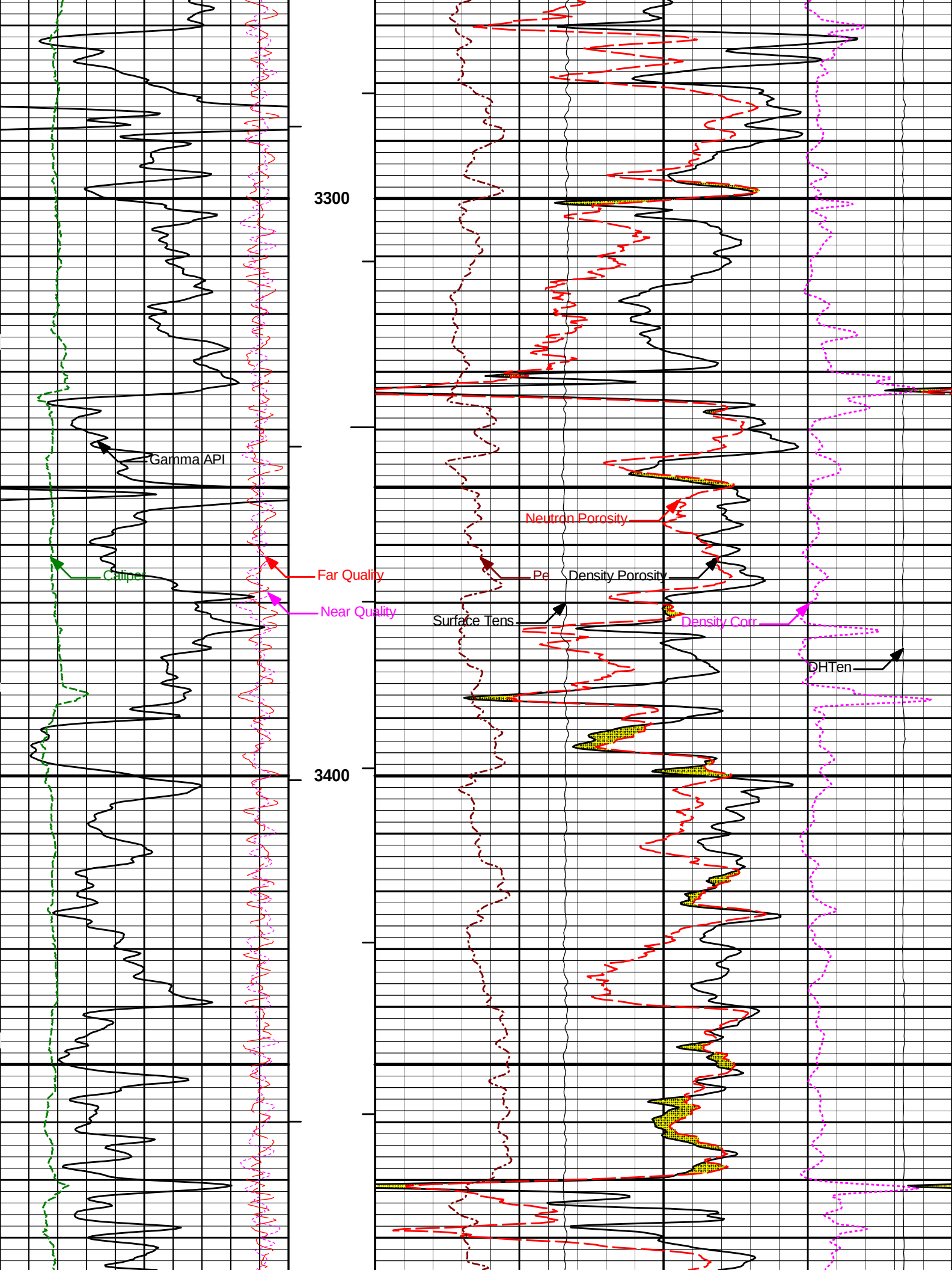
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Plot File: \\PORI\Q_BP_POROSITY_5IN_DHT

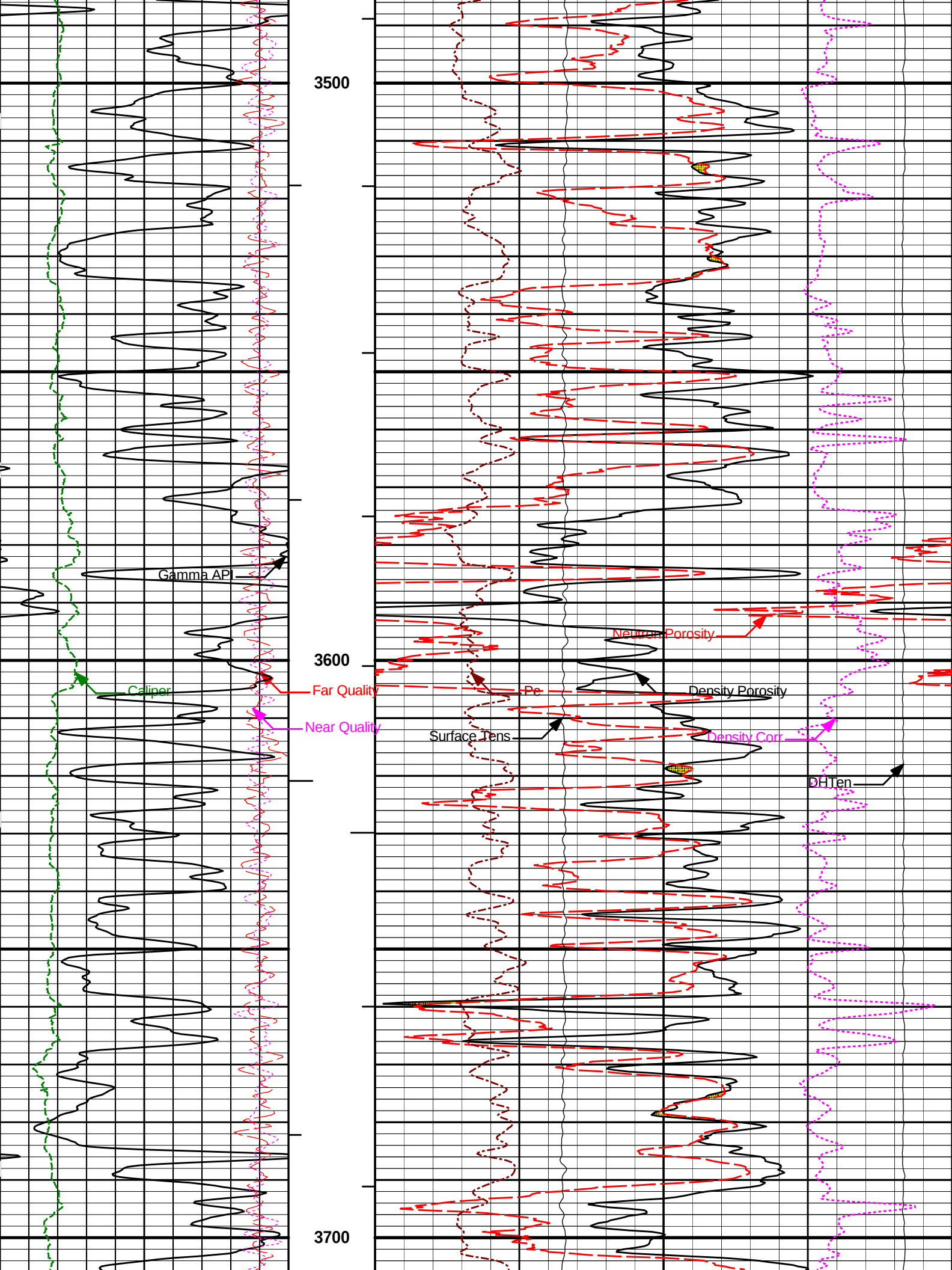


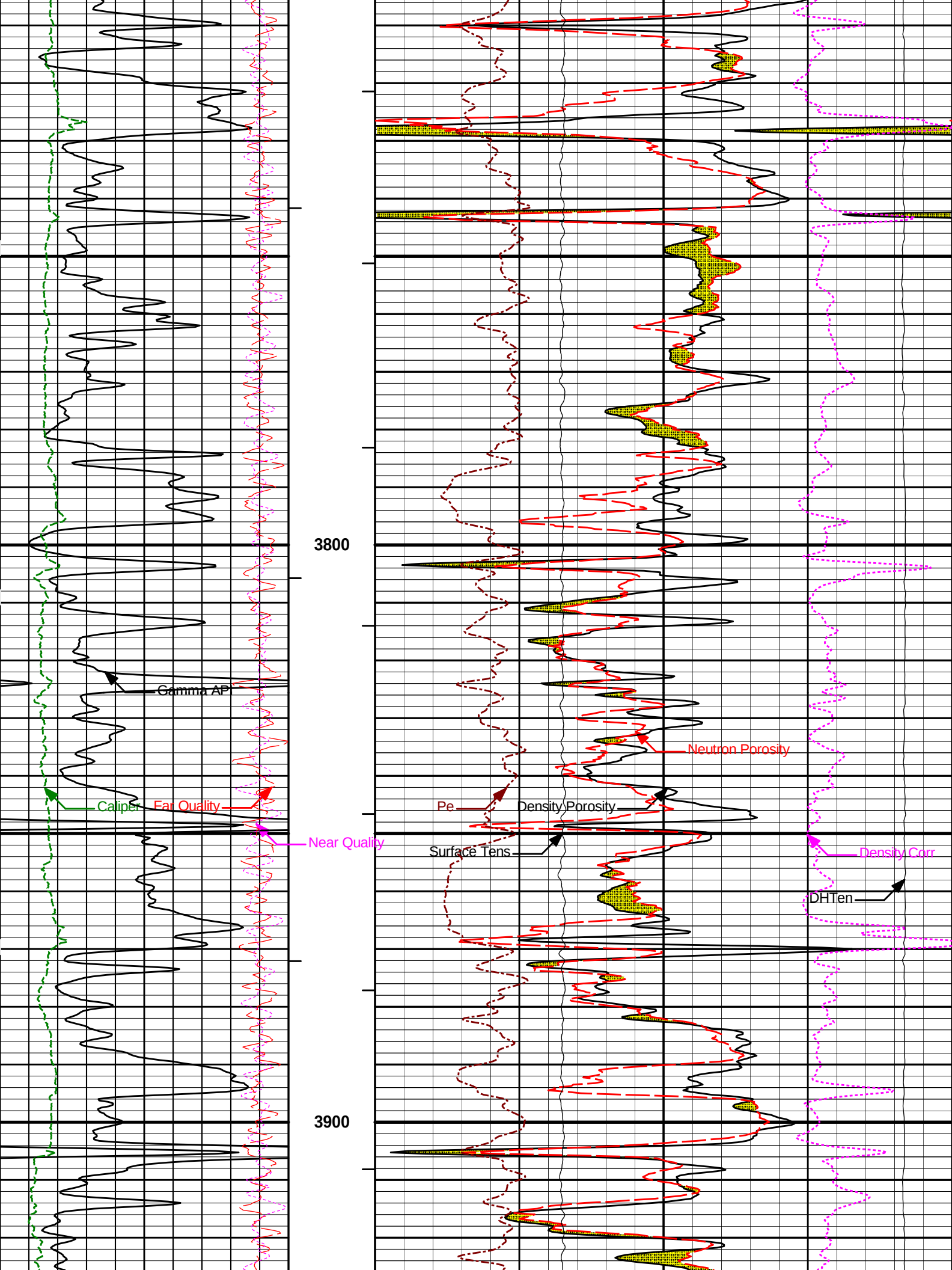


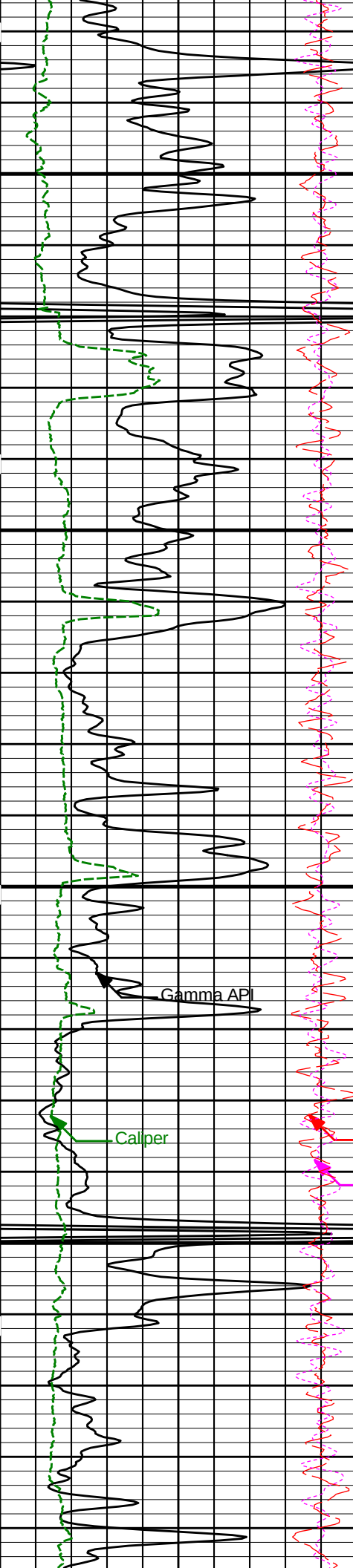












4000

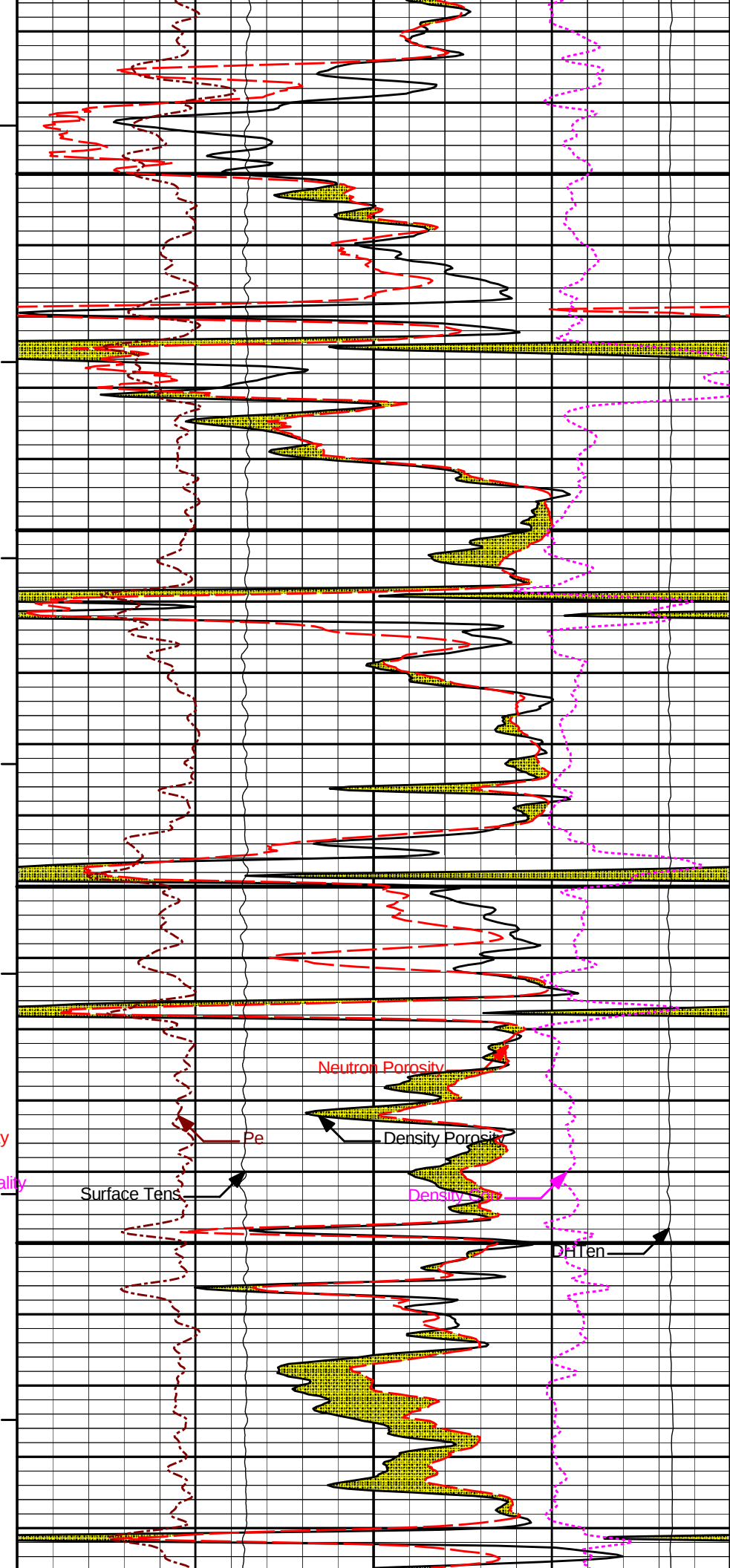
Gamma API

Caliper

Far Quality

Near Quality

4100



Neutron Porosity

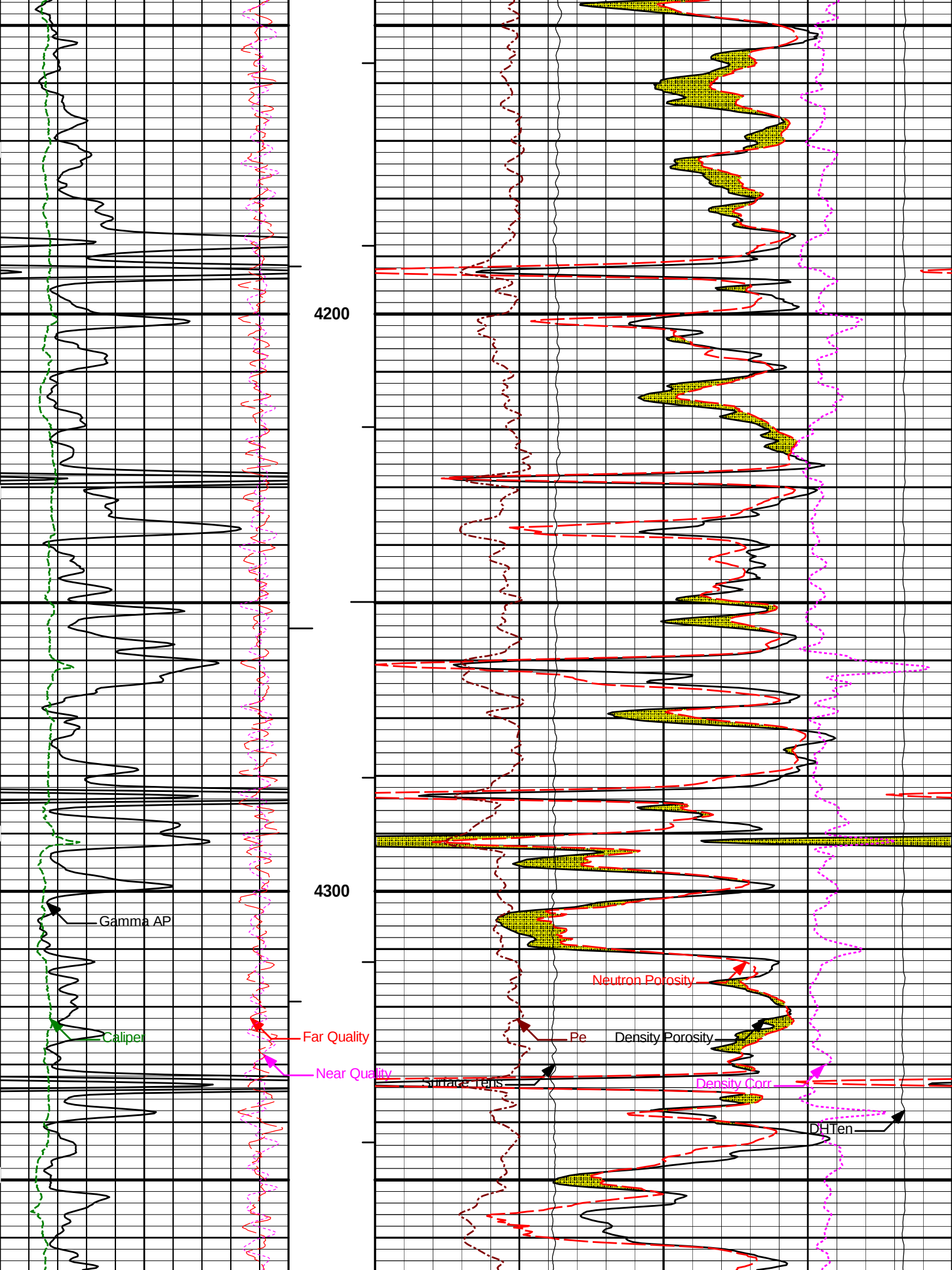
Density Porosity

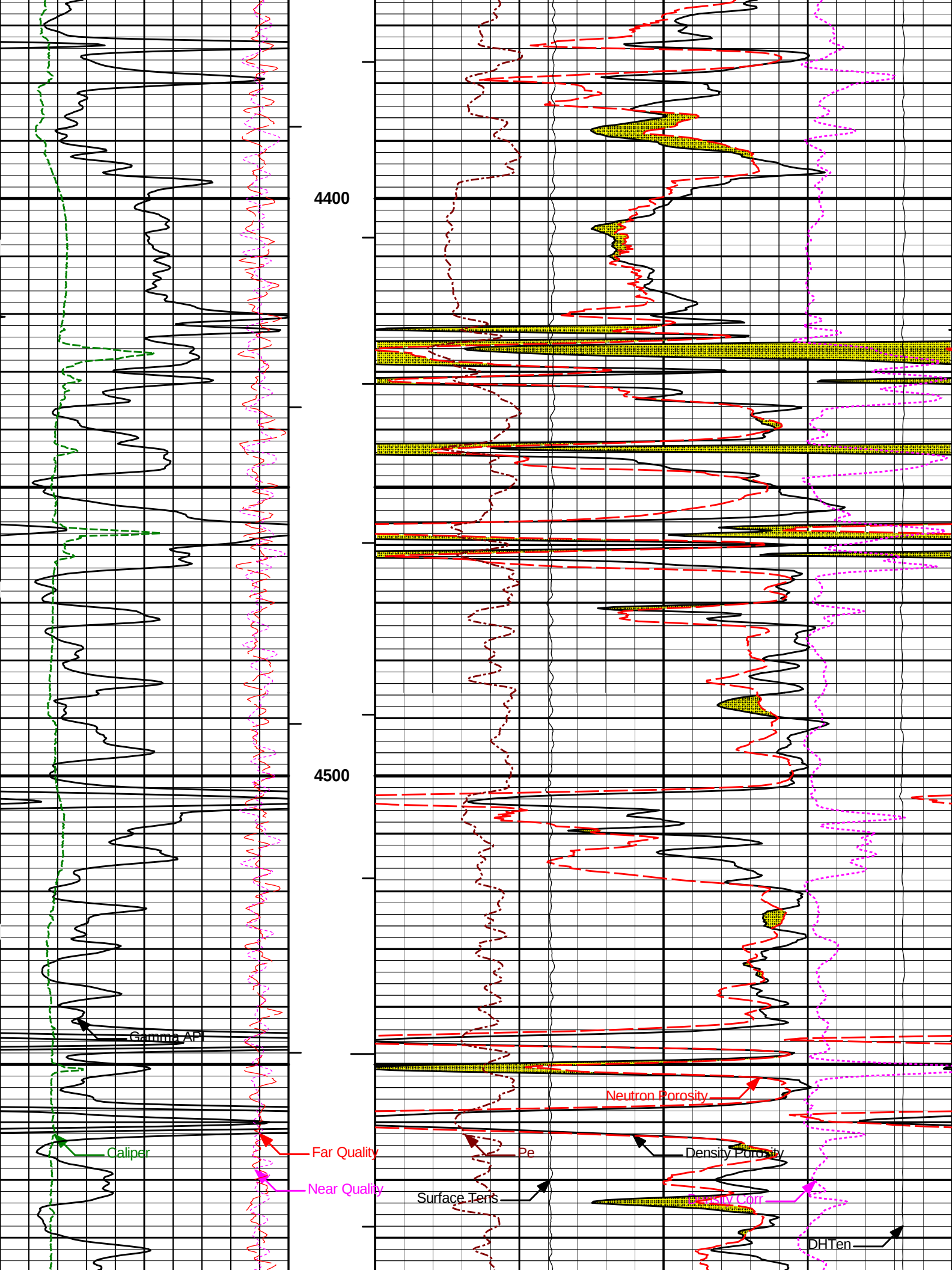
Density

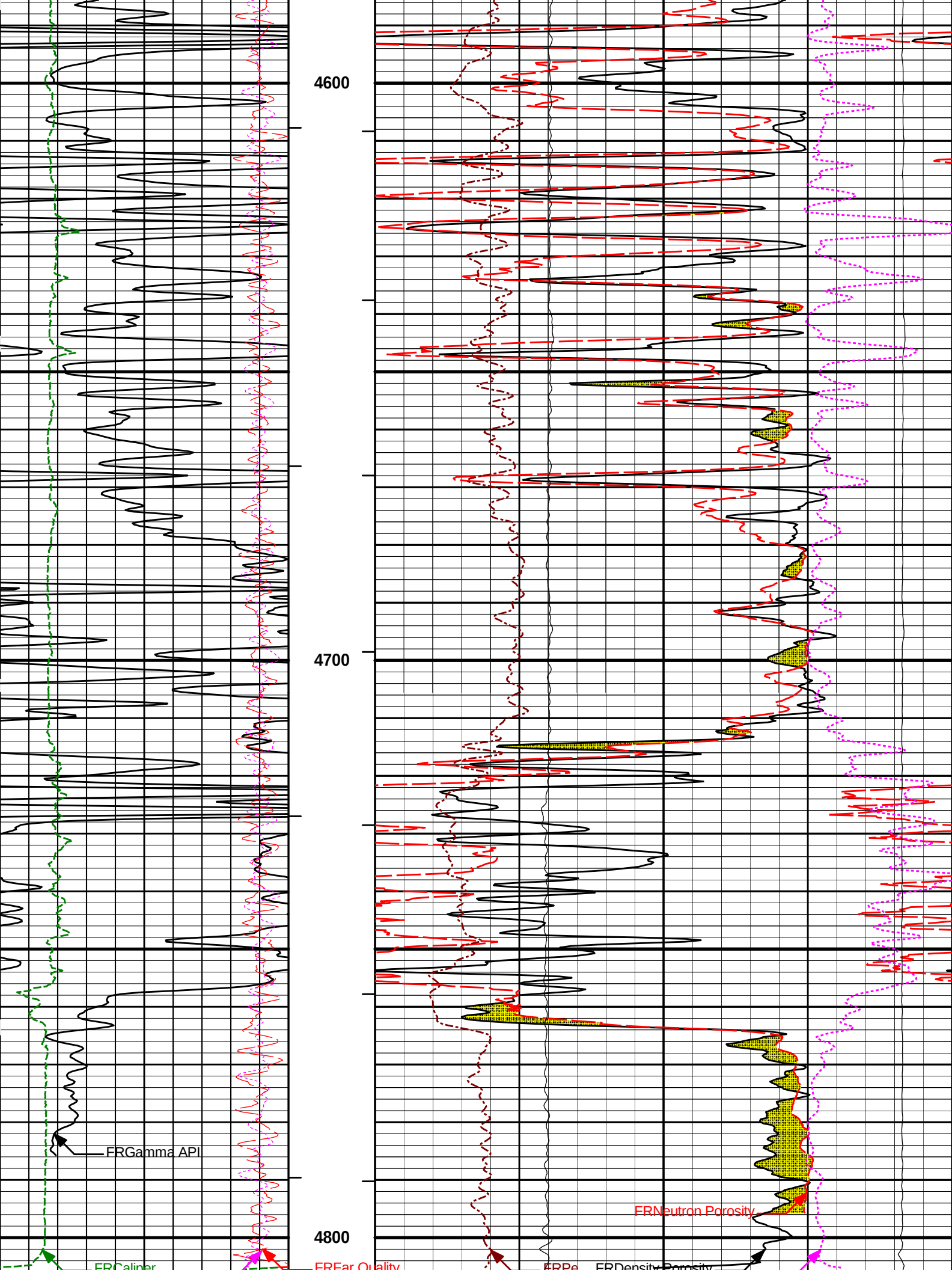
Pe

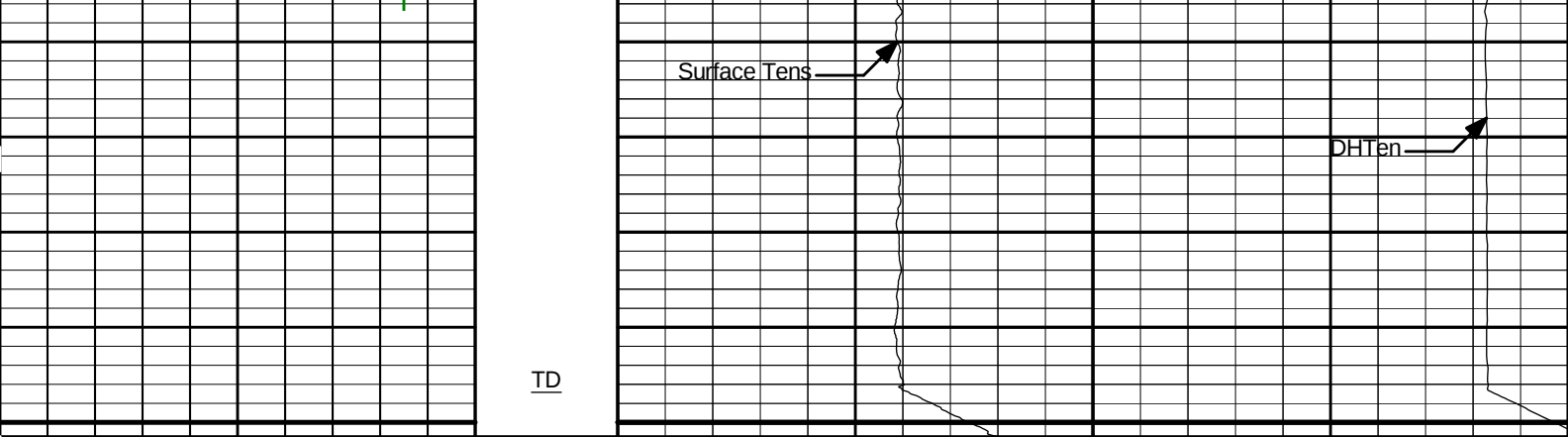
Surface Tens

DHten









0	Gamma API	150	1 : 240	0	Pe	10	-0.25	Density Corr	0.25
	api							gram per cc	
6	Caliper	16	BHVT	10K	Surface Tens	0	10K	DHTen	0
	inches				pounds			pounds	
9	Far Quality	-1	AHVT	30	Density Porosity				-10
					percent				
-9	Near Quality	1		30	Neutron Porosity				-10
					percent				

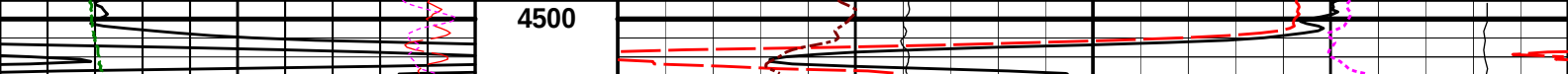
HALLIBURTON Plot Time: 07-Oct-12 00:23:36
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Plot File: \\POR\IQ_BP_POROSITY_5IN_DHT

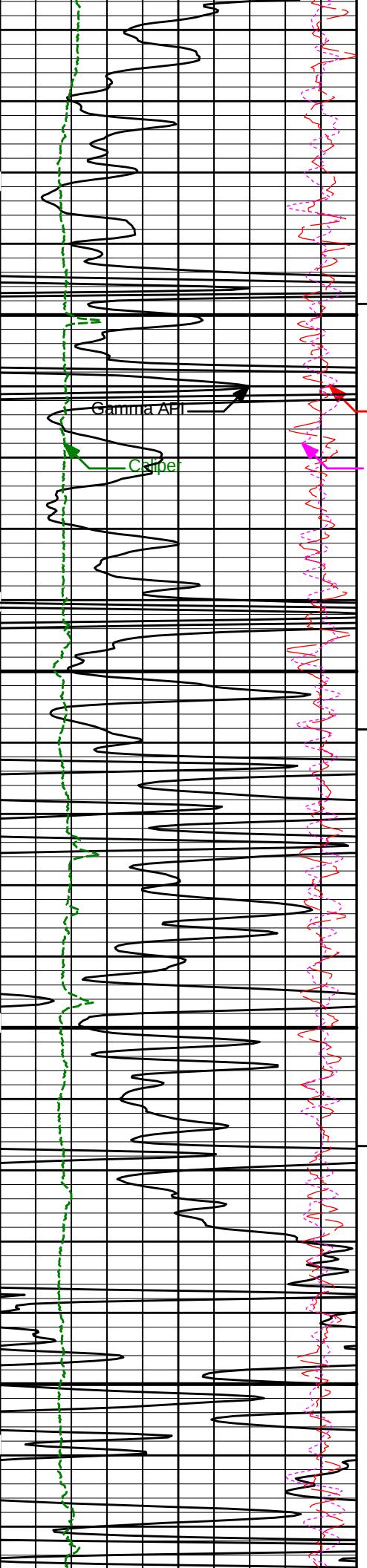
MAIN PASS 5" = 100'

HALLIBURTON Plot Time: 07-Oct-12 00:23:36
Plot Range: 4498 ft to 4851.92 ft
Data: HARTMN_ROSE_1_1\Well Based\RPT\
Plot File: \\POR\IQ_BP_POROSITY_5IN_DHT_RPT

REPEAT SECTION 5" = 100'

-9	Near Quality	1		30	Neutron Porosity				-10
					percent				
9	Far Quality	-1	AHVT	30	Density Porosity				-10
					percent				
6	Caliper	16	BHVT	10K	Surface Tens	0	10K	DHTen	0
	inches				pounds			pounds	
0	Gamma API	150	1 : 240	0	Pe	10	-0.25	Density Corr	0.25
	api							gram per cc	

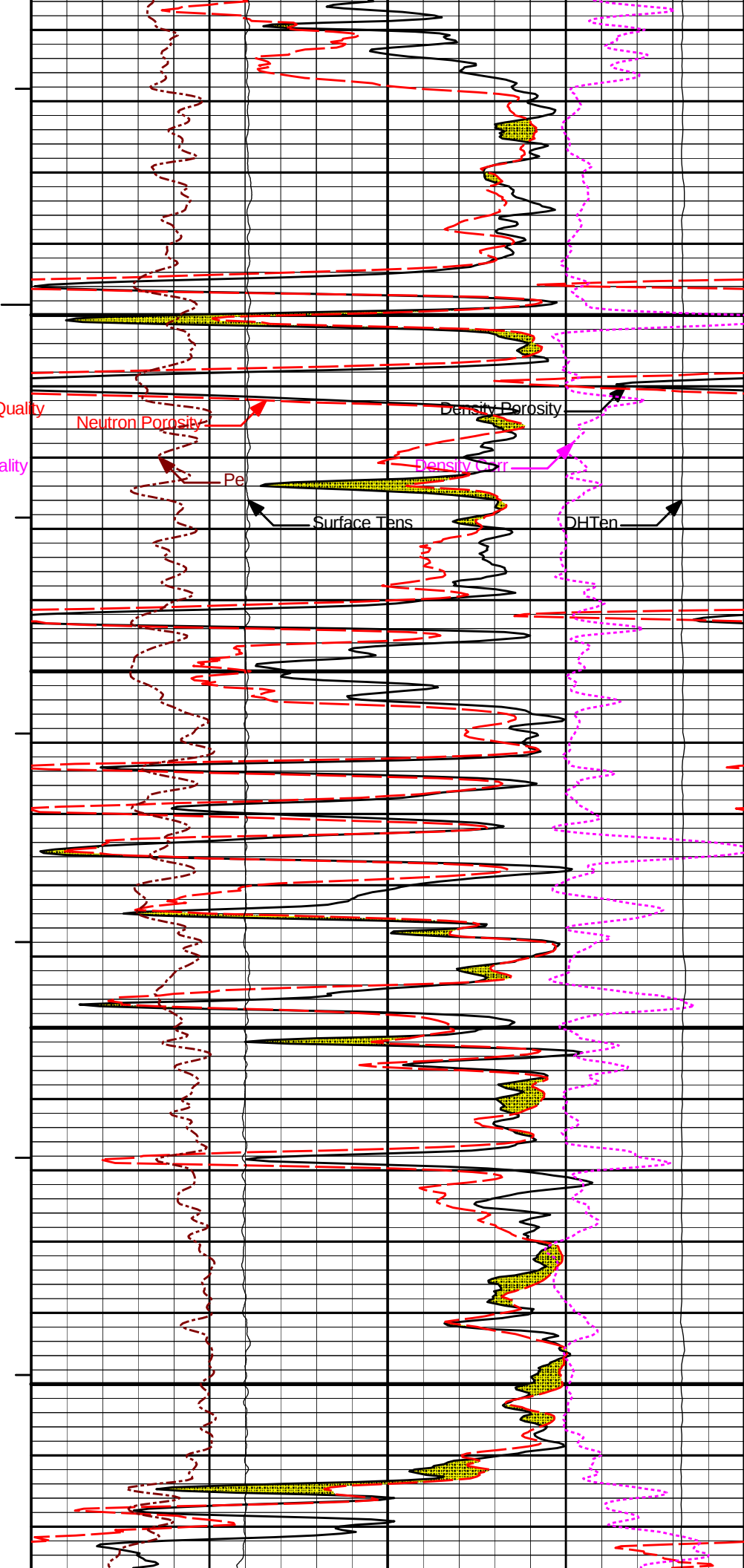




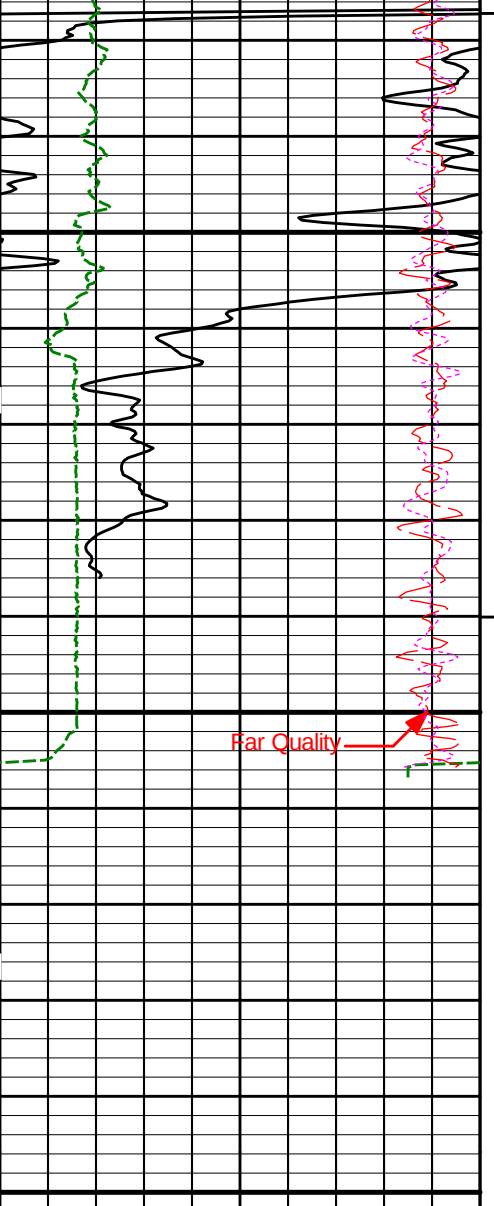
Gamma API
Casper
Far Quality
Near Quality

4600

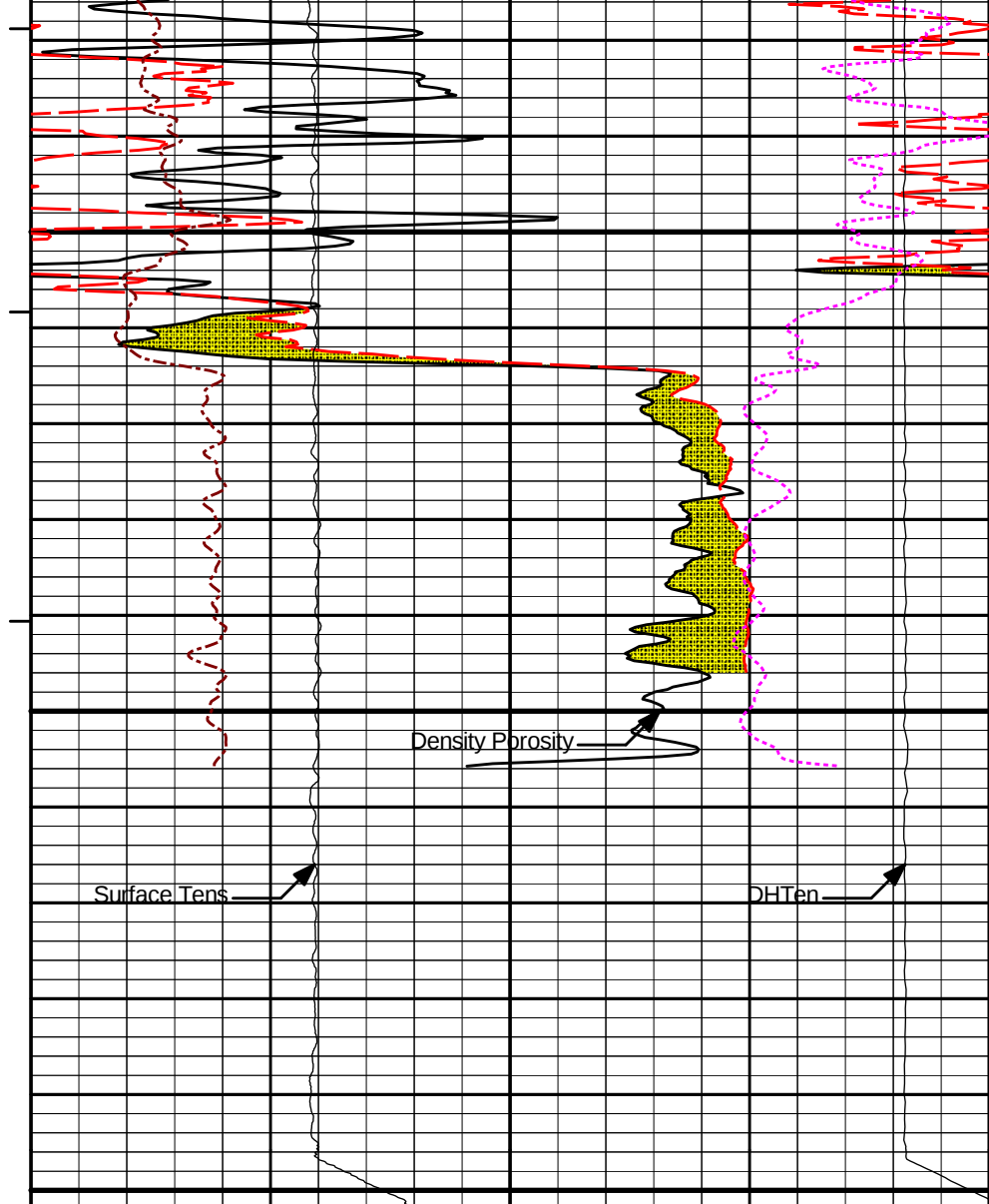
4700



Neutron Porosity
Pe
Surface Tens
Density Porosity
Density Corr
DHTen



4800



0	Gamma API	150
	api	
6	Caliper	16
	inches	
9	Far Quality	-1
-9	Near Quality	1

1 : 240

BHVT

AHVT

0	Pe	10	-0.25	Density Corr	0.25
				gram per cc	
10K	Surface Tens	0	10K	DHTen	0
	pounds			pounds	
30	Density Porosity				-10
	percent				
30	Neutron Porosity				-10
	percent				

HALLIBURTON

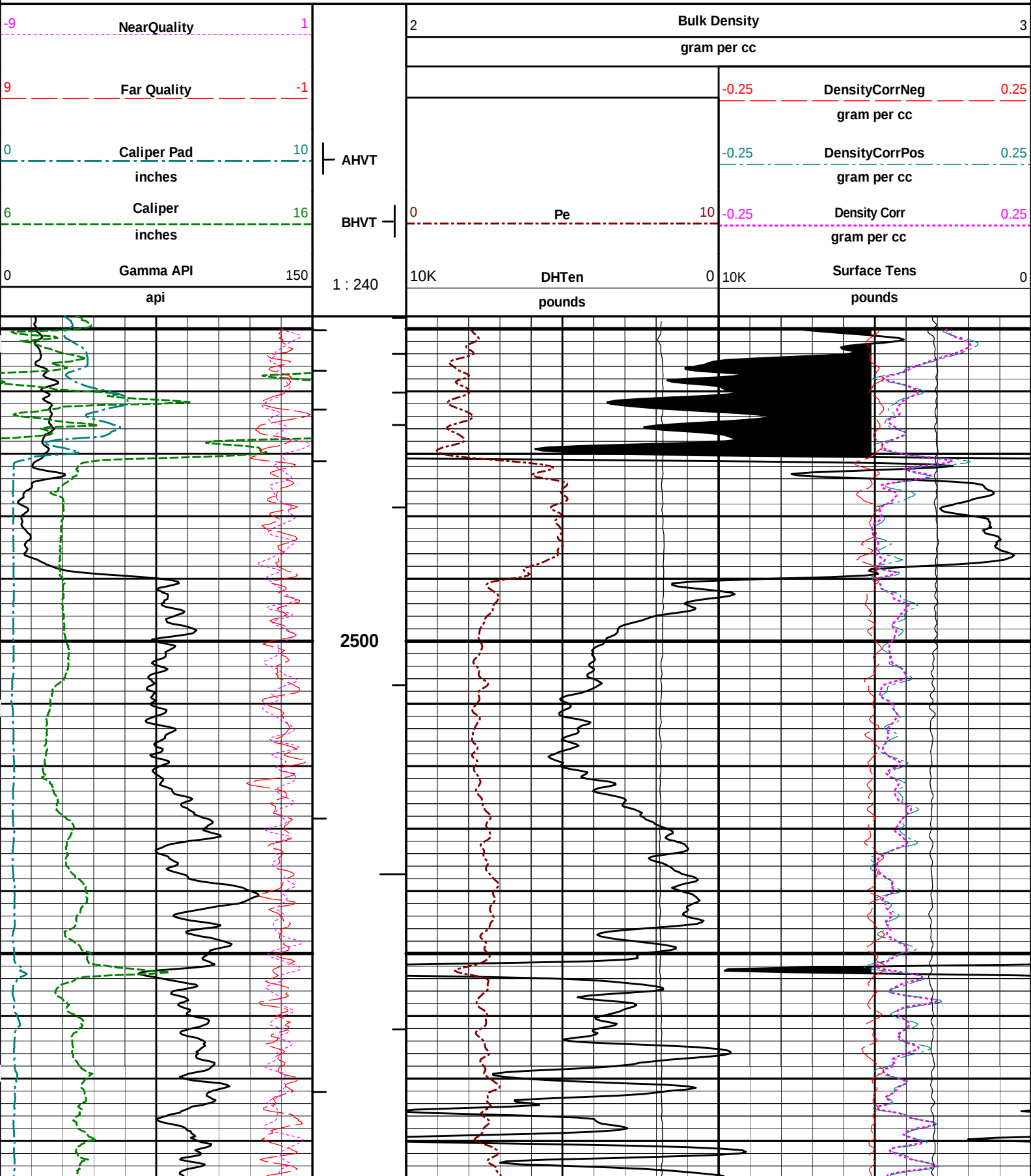
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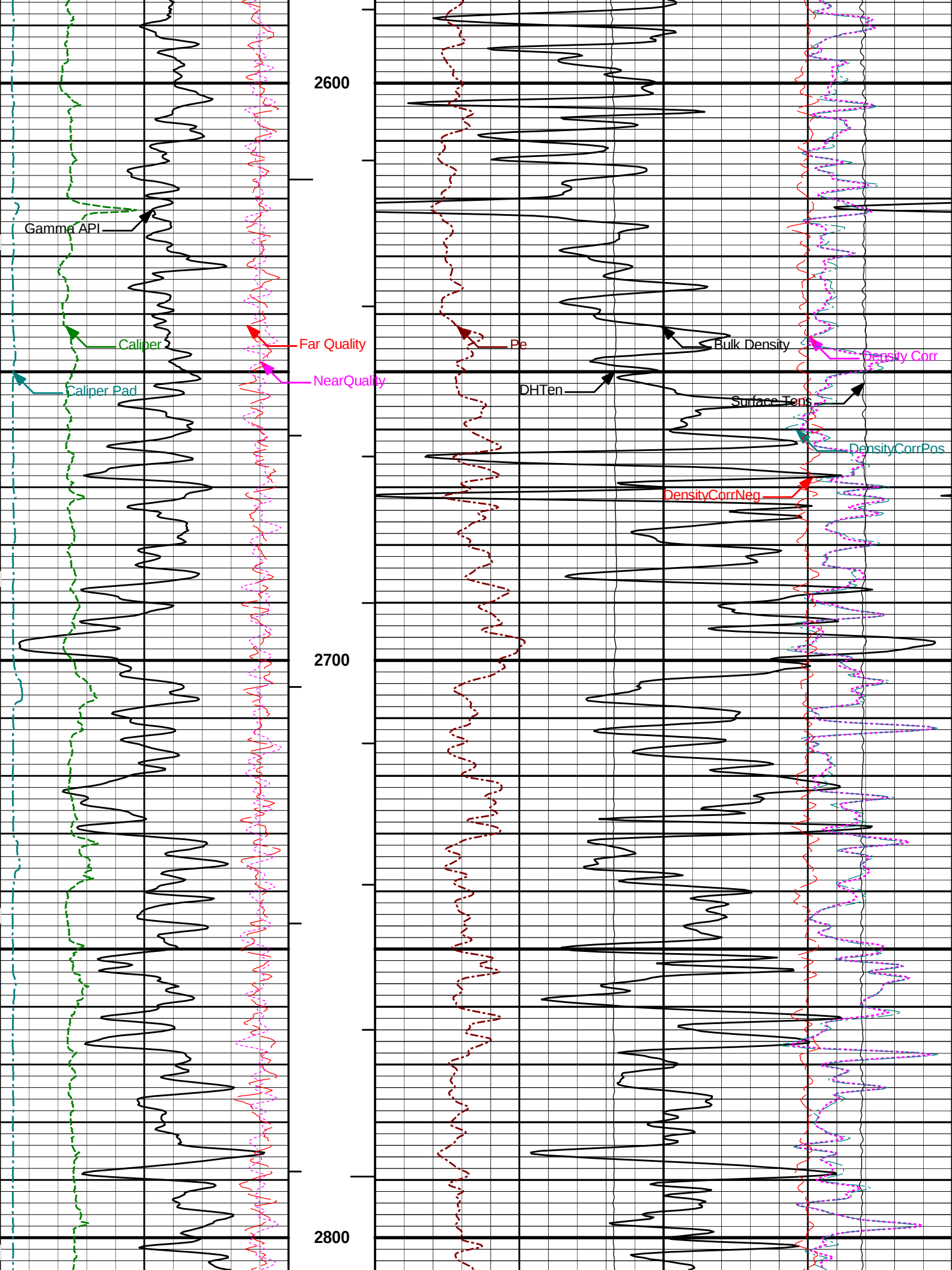
REPEAT SECTION 5" = 100'

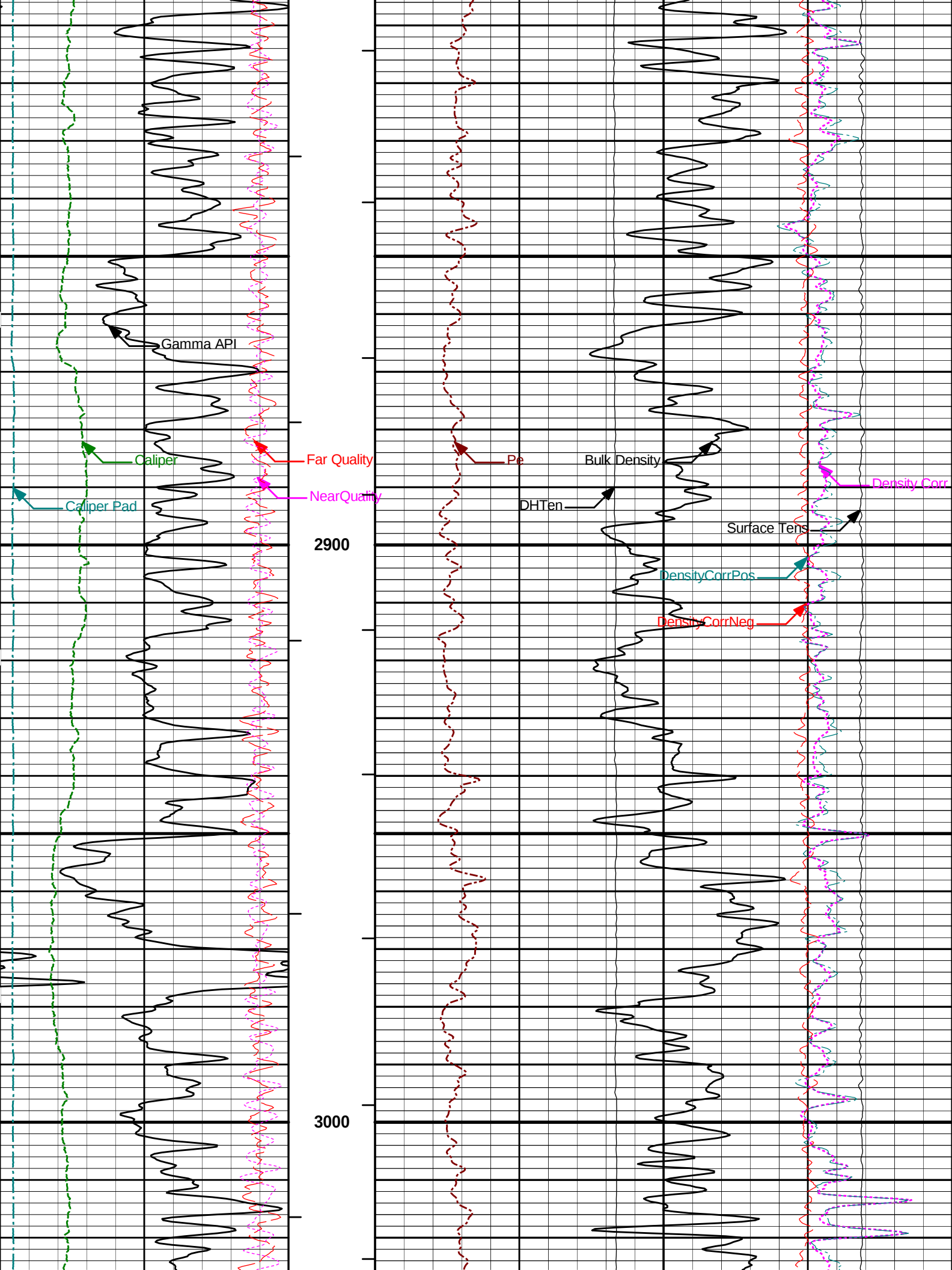
HALLIBURTON

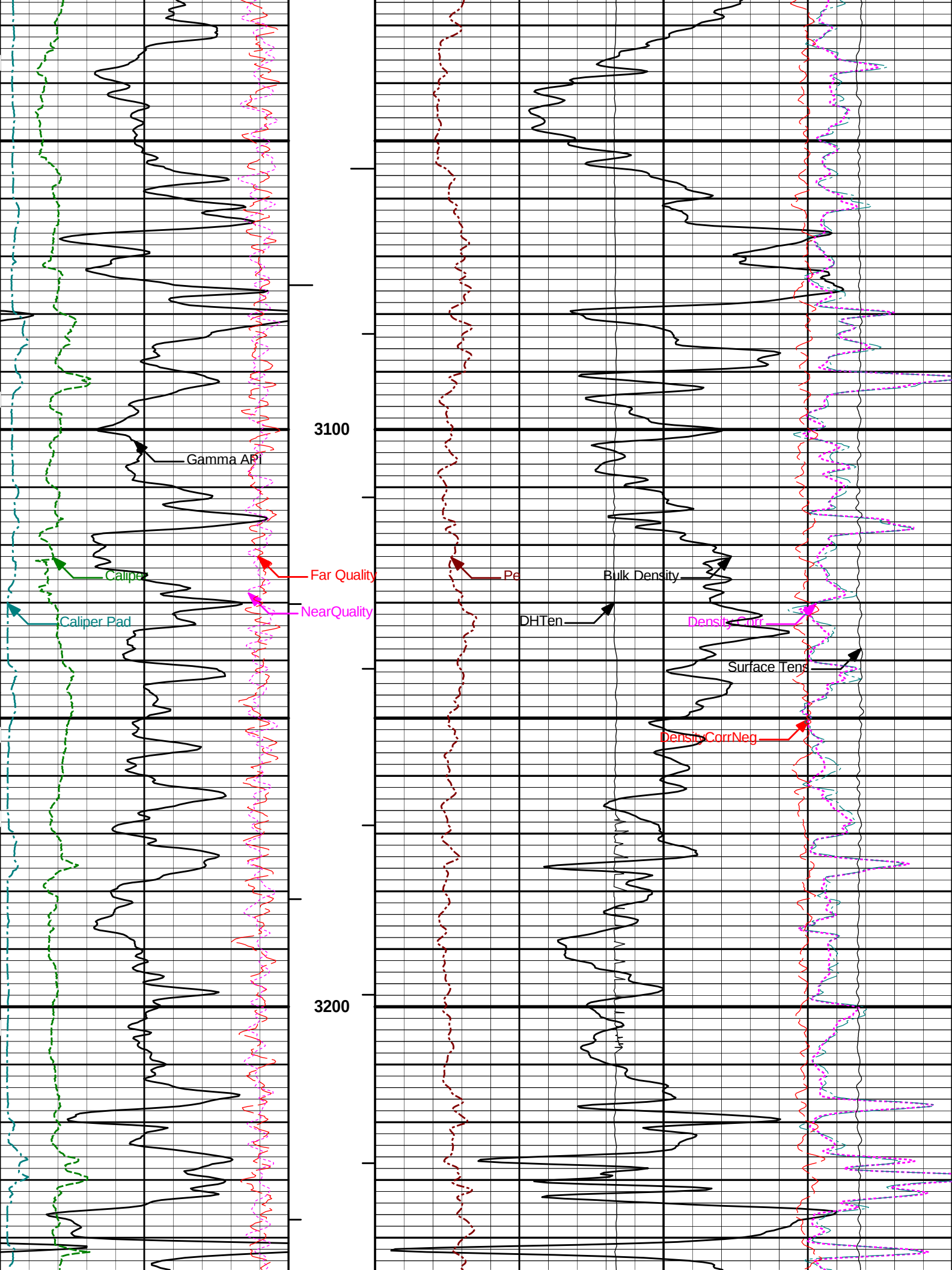
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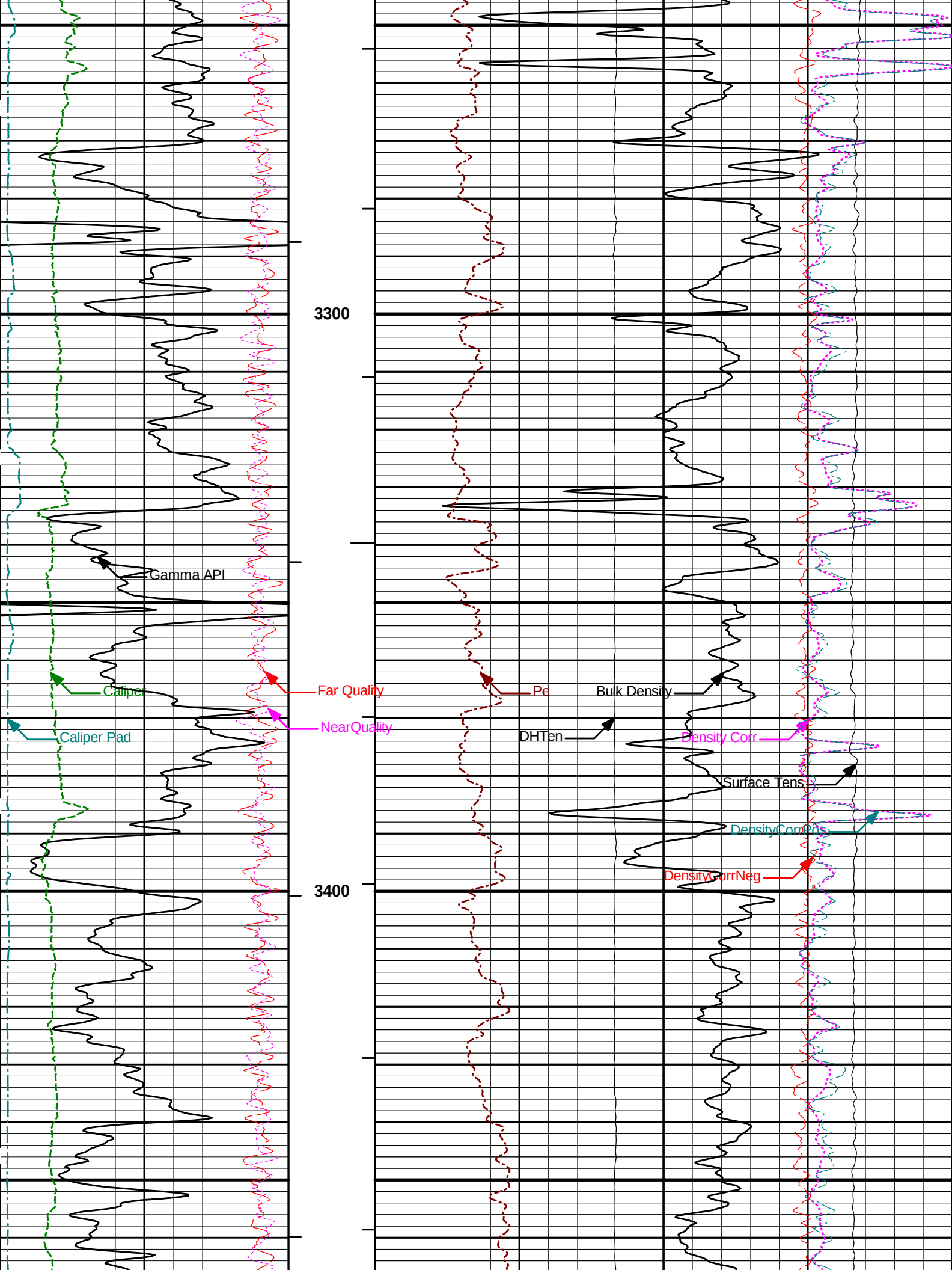
MAIN PASS 5" = 100'

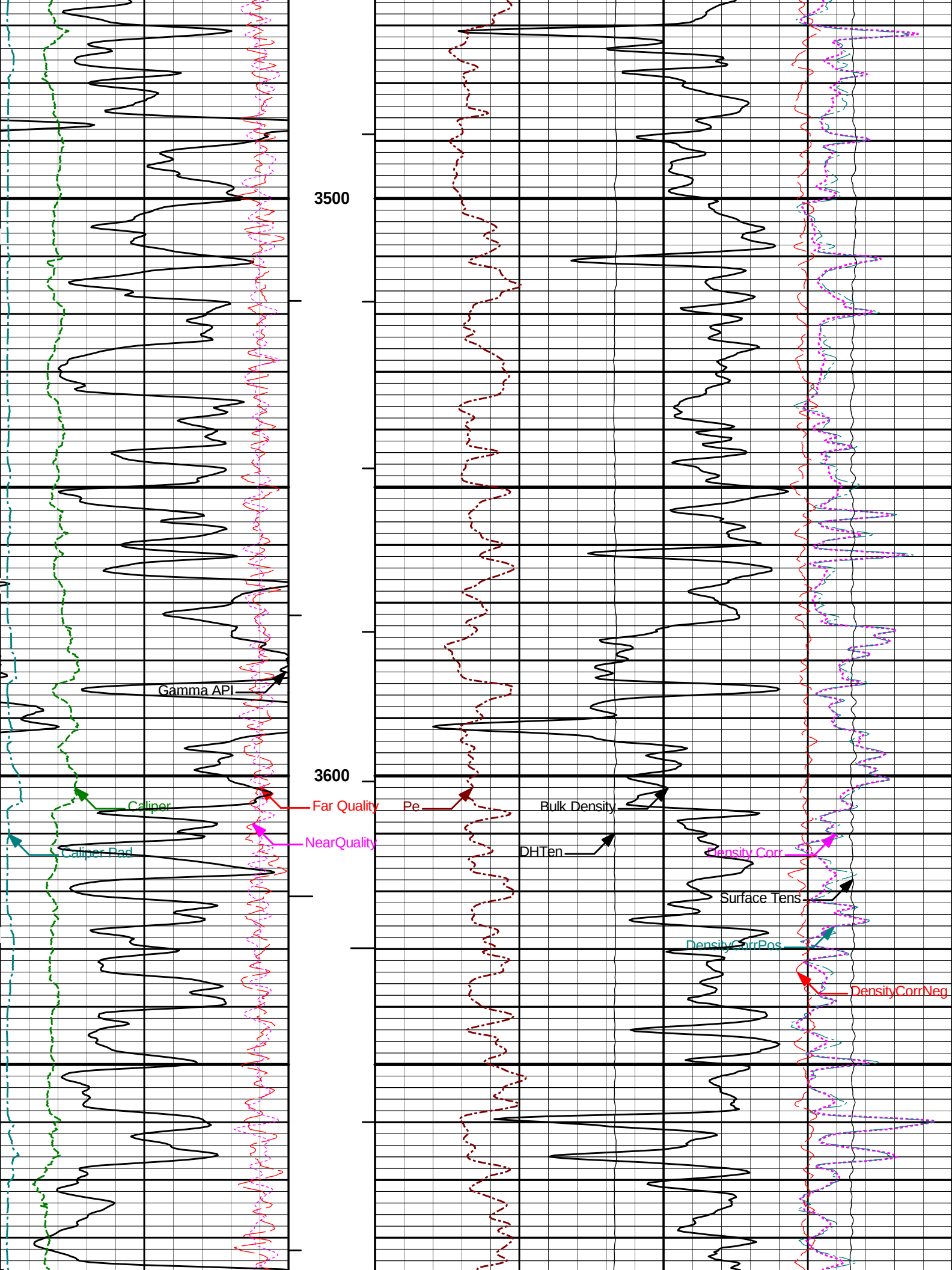


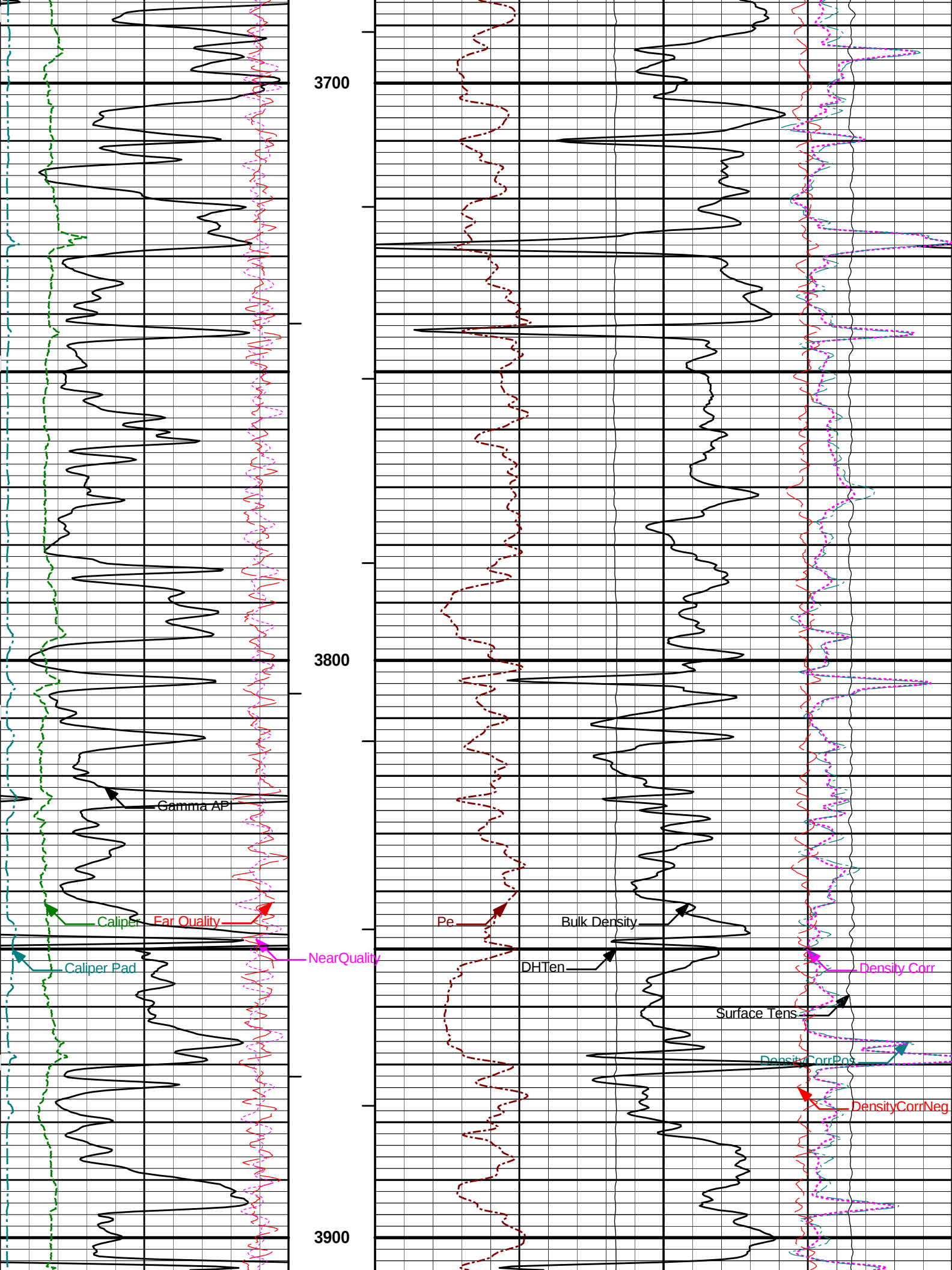


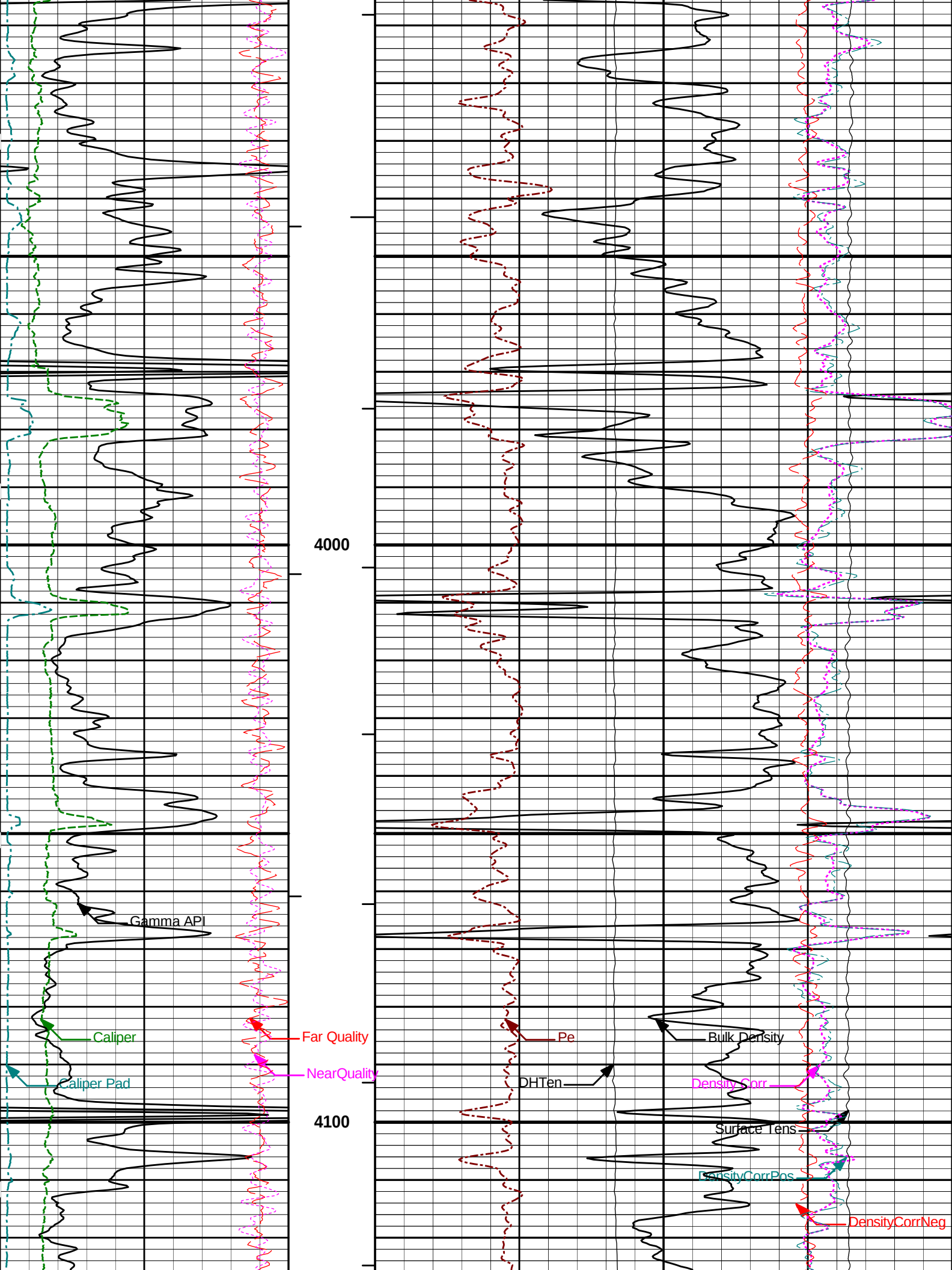


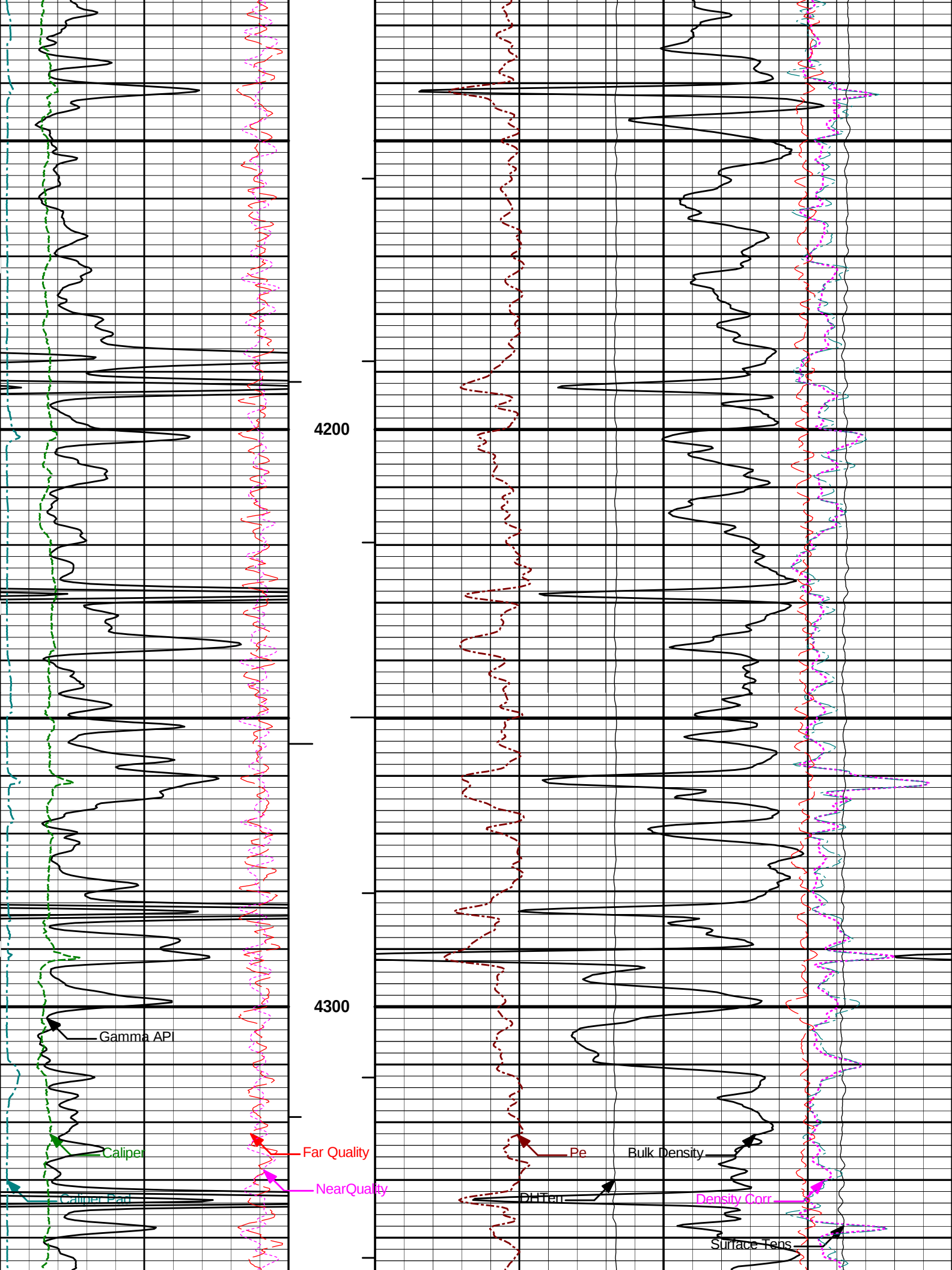


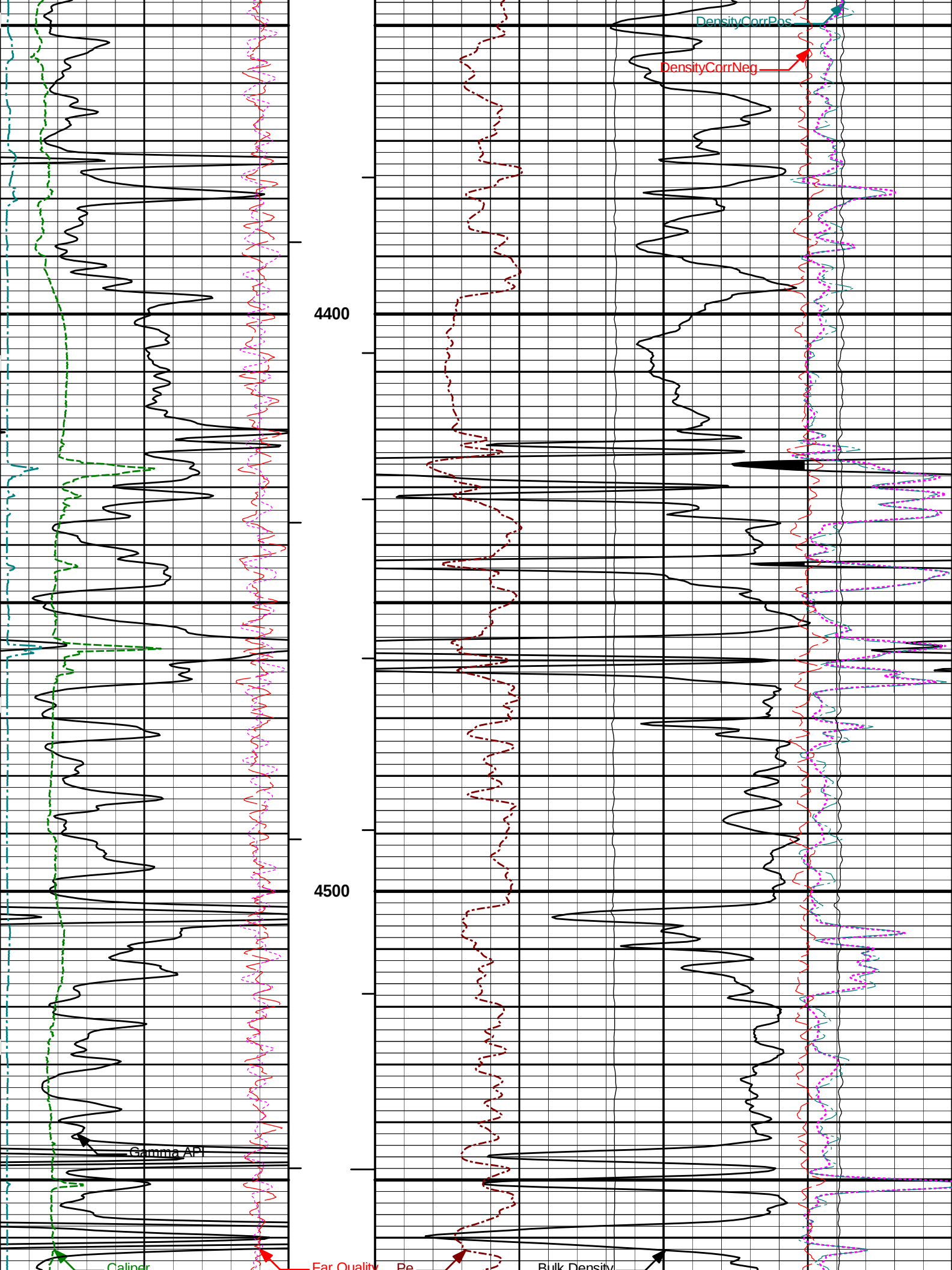


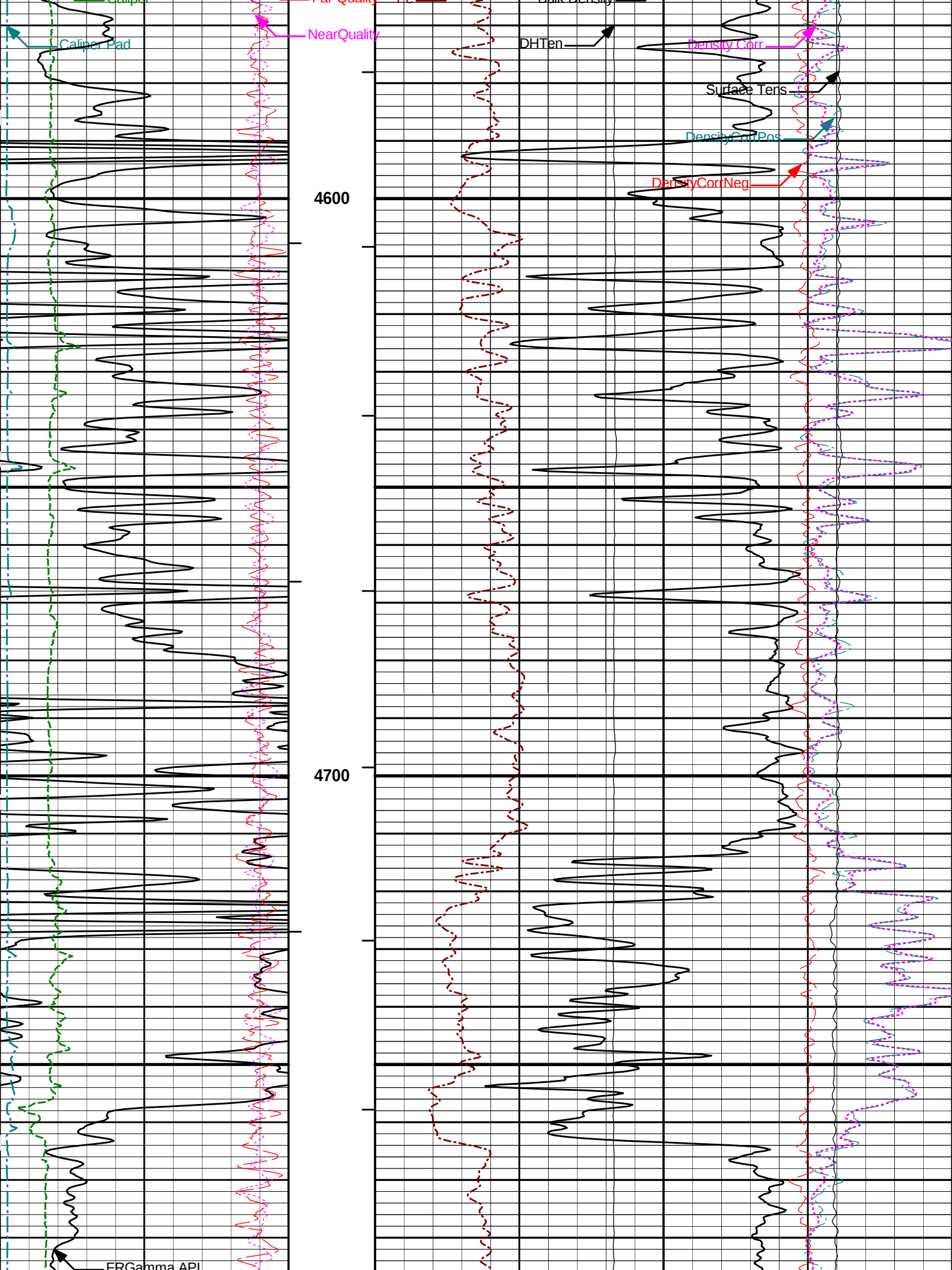


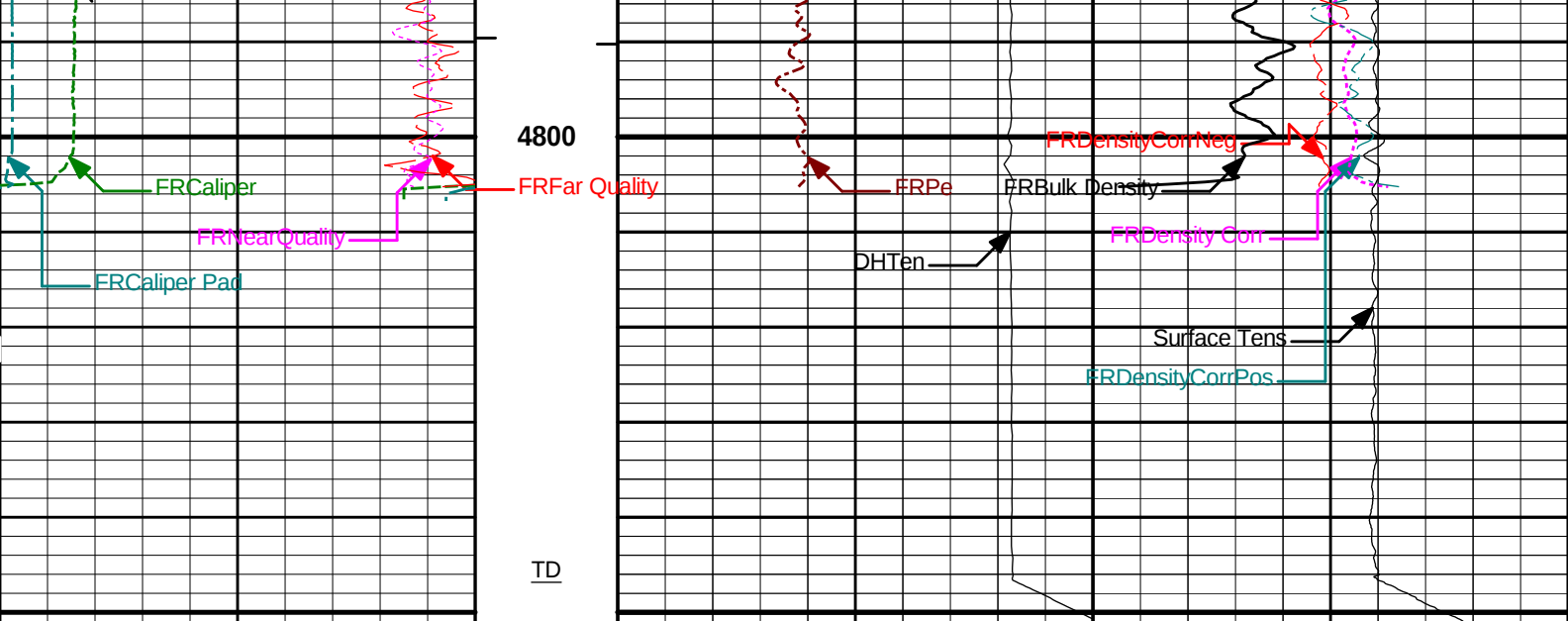












0	Gamma API	150	1 : 240	10K	DHTen	0	10K	Surface Tens	0
	api				pounds			pounds	
6	Caliper	16	BHVT	0	Pe	10	-0.25	Density Corr	0.25
	inches							gram per cc	
0	Caliper Pad	10	AHVT				-0.25	DensityCorrPos	0.25
	inches							gram per cc	
9	Far Quality	-1					-0.25	DensityCorrNeg	0.25
								gram per cc	
-9	NearQuality	1		2	Bulk Density				3
					gram per cc				

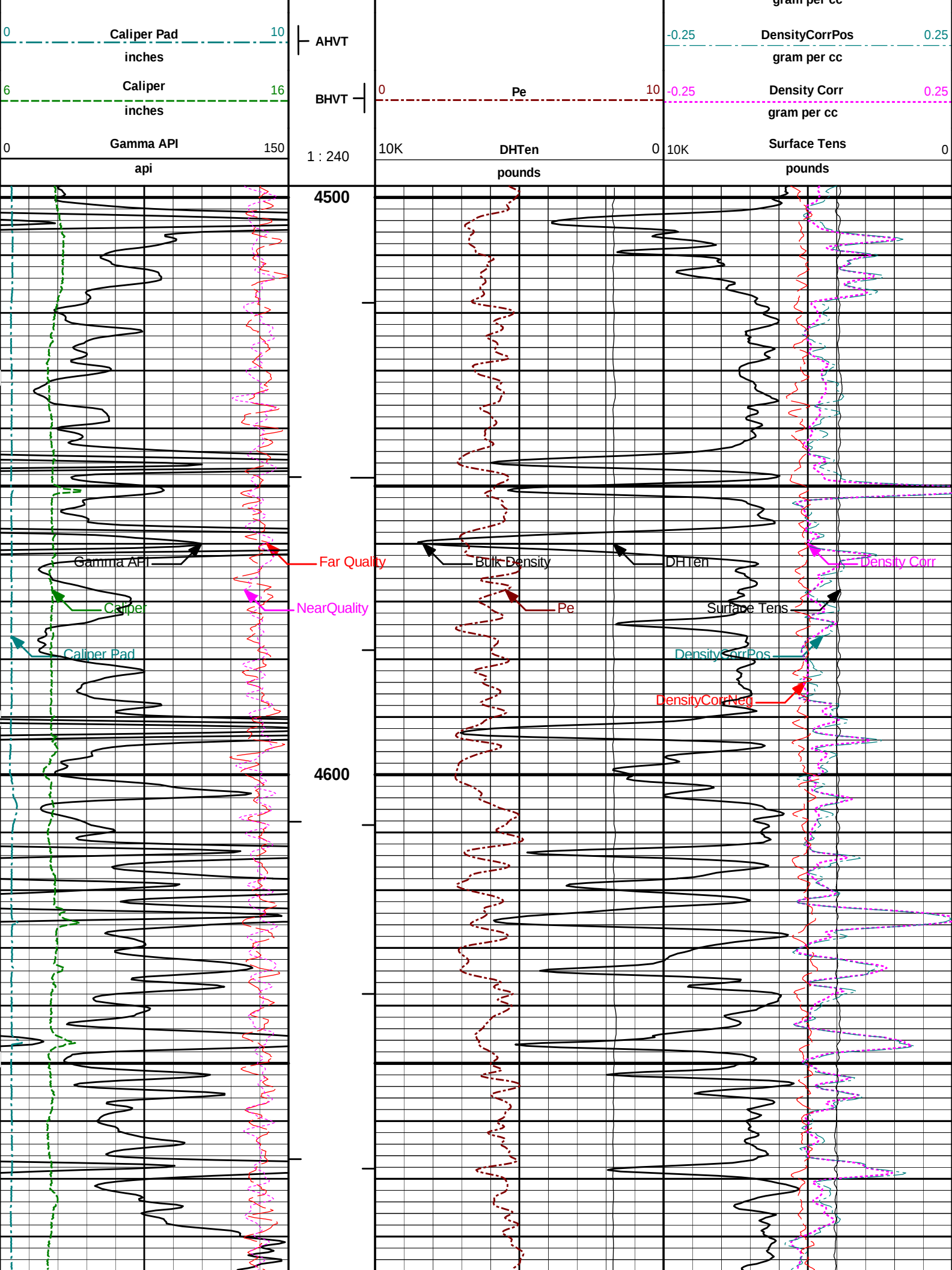
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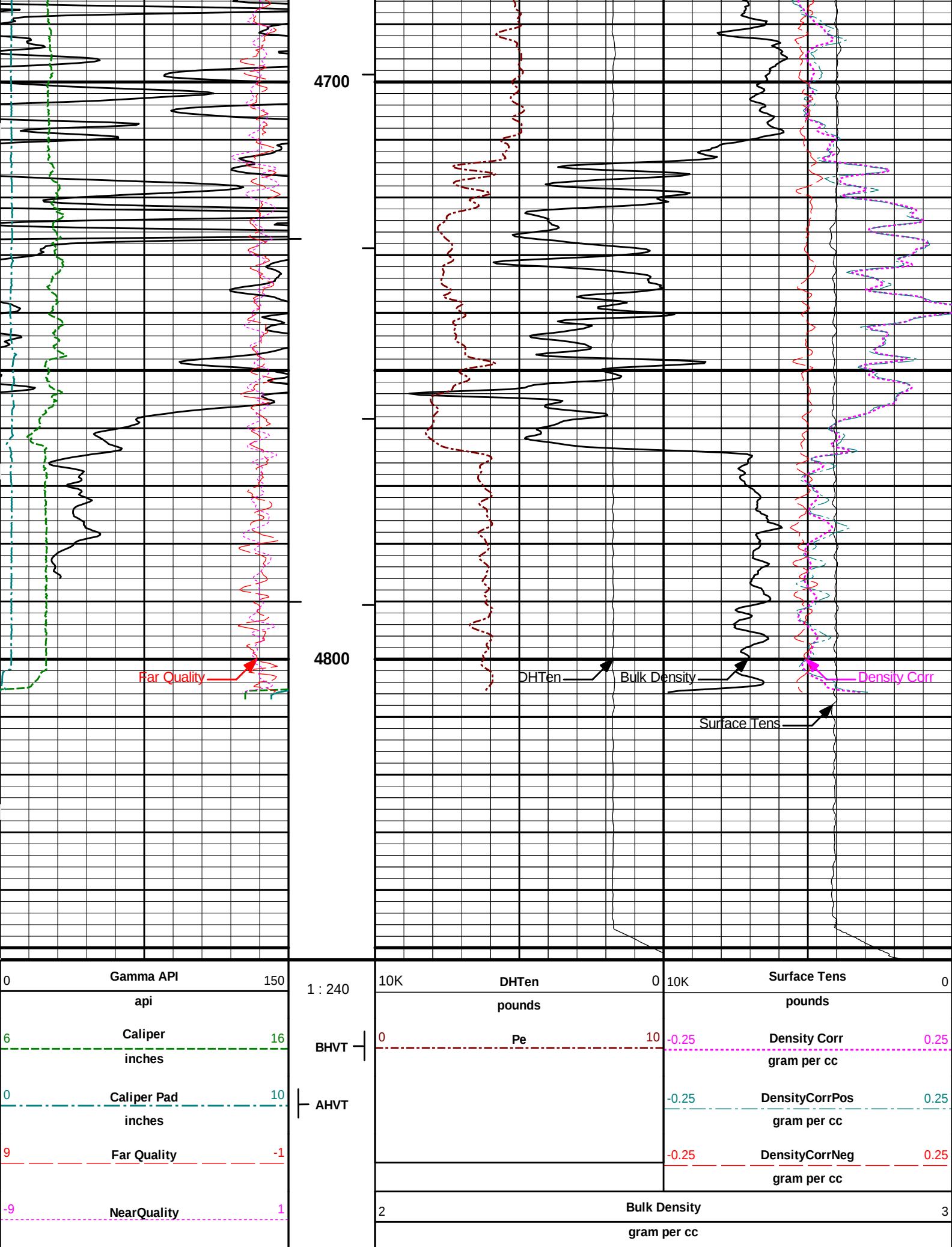
MAIN PASS 5" = 100'

HALLIBURTON	Plot Time: 07-Oct-12 00:23:42 Plot Range: 4498 ft to 4851.92 ft Data: HARTMN_ROSE_1_1\Well Based\RPT* Plot File: \\PORI\BP_RHOB_5IN_DHT_RPT
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REPEAT SECTION 5" = 100'

-9	NearQuality	1	2	Bulk Density		3	
				gram per cc			
9	Far Quality	-1			-0.25	DensityCorrNeg	0.25
						gram per cc	





REPEAT SECTION 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 11602914	Reference Calibration Date:	03-Sep-12 14:11:39
Engineer:	D. CULVER	Calibration Date:	19-Sep-12 17:02:22
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: TB-270

Calibrator API Reference:259.00 api

Equivalent Calibrator API Reference:263.5 api

Measurement	Measured	Calibrated	Units
Background	43.0	43.2	api
Background + Calibrator	305.9	306.7	api
Calibrator	262.8	263.5	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11602914	Reference Calibration Date:	19-Sep-12 17:02:22
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 20:50:47
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: TB-270

Calibrator API Reference:259.00 api

Equivalent Calibrator API Reference:263.5 api

Field Verification	Shop	Field	Units
Background	43.2	116.6	api
Background + Calibrator	306.7	383.1	api
Calibrator	263.5	266.4	api

Shop	Field	Difference	Tolerance
263.5	266.4	-2.9	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10860047	Reference Calibration Date:	21-Aug-12 11:15:06
Engineer:	D. CULVER	Calibration Date:	19-Sep-12 14:13:35
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: 08-018

Tank Serial Number: 105039

Reference value assigned to Tank: 49.230

Snow Block S/N: 11170614

Calibration Tank Water Temperature: 72 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.941	0.938	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):	0.1982	0.1974	0.0008	+/- 0.0020
Calibrated Ratio:	9.29	9.27	0.026	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0735	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 - 10860047	Reference Calibration Date:	19-Sep-12 14:13:35
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:38:23
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: 08-018				
Snow Block S/N: 11170614				
NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0735	0.0606	-0.0129	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:			Passed	
Snow Block Stat Check:			Passed	
Temperature Check:			Passed	

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - 10947725	Reference Calibration Date:	06-Oct-12 12:06:34
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:10:52
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10860047		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1342.92	-1398.94	-7000.00 - -1000.00
Pad Gain	0.0003750	0.0003752	0.000200 - 0.000600
Arm Offset	-1039.27	-1052.18	-5000.00 - 3000.00
Arm Gain	0.0004958	0.0005057	0.000300 - 0.000700
Arm Power	-0.000002083	-0.000002847	-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)	2.02	2.00	-0.02	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20
Medium Ring (in)	8.23	8.25	0.02	+/- 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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 11014275	Reference Calibration Date:	19-Sep-12 10:23:41
Engineer:	V. CREWS	Calibration Date:	05-Oct-12 09:24:27
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: 5235GW		
Aluminum Block S/N: ROCK SPRINGS	Density: 2.602g/cc	Pe: 3.110
Magnesium Block S/N: ROCK SPRINGS	Density: 1.690g/cc	Pe: 2.610

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0476	1.0337	0.90 - 1.10
Near Dens Gain	1.0107	1.0071	0.90 - 1.10
Near Peak Gain	1.0119	1.0184	0.90 - 1.10
Near Lith Gain	1.0110	1.0231	0.90 - 1.10
Far Bar Gain	1.0113	1.0121	0.90 - 1.10
Far Dens Gain	1.0022	1.0016	0.90 - 1.10
Far Peak Gain	0.9983	0.9989	0.90 - 1.10
Far Lith Gain	0.9748	0.9806	0.90 - 1.10
Near Bar Offset	-0.4135	-0.2834	NONE
Near Dens Offset	-0.0803	-0.0470	NONE
Near Peak Offset	-0.0904	-0.1464	NONE
Near Lith Offset	-0.0834	-0.1771	NONE
Far Bar Offset	-0.1673	-0.1720	NONE
Far Dens Offset	-0.0711	-0.0593	NONE
Far Peak Offset	-0.0874	-0.0840	NONE
Far Lith Offset	0.0241	-0.0069	NONE
Near Bar Background	905.33	902.03	700 - 1450
Near Dens Background	301.28	302.87	230 - 480
Near Peak Background	130.47	129.77	100 - 210
Near Lith Background	158.05	157.75	125 - 260
Far Bar Background	478.41	477.90	450 - 900
Far Dens Background	190.19	190.67	175 - 345
Far Peak Background	75.21	74.54	70 - 140
Far Lith Background	77.72	77.56	75 - 145

CALIBRATION BLOCK SUMMARY

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.694	1.690	-0.004	+/- 0.015
Pe	2.618	2.556	-0.062	+/- 0.150
ALUMINUM				
Density (g/cc)	2.604	2.602	-0.002	+/- 0.01500
Pe	3.090	3.061	-0.029	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0008	+/- 0.0110	-0.0022	+/- 0.0140
Magnesium Block	-0.0011	+/- 0.0110	-0.0009	+/- 0.0140
Aluminum Block	0.0006	+/- 0.0110	0.0010	+/- 0.0140
Resolution	9.15	6.00 - 11.50	10.14	6.00 - 11.50
Internal Verifier(B+D+P+L)	1492	1200 - 2700	821	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 - 11014275	Reference Calibration Date:	05-Oct-12 09:24:27
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:24:34
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Pad Temperature: 56.9 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1492.432	1496.326	3.894	15.569
Far (B+D+P+L) cps	820.674	824.912	4.238	15.804
Near Resolution	9.15	9.11	-0.040	0.50
Far Resolution	10.14	10.41	0.270	1.00

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

MICRO LOG SHOP CALIBRATION

Tool Name:	Microlog Pad - 10947725	Reference Calibration Date:	06-Oct-12 12:20:37
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:22:08
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Tool Name: ACRt Sonde - E6988-S8481				Reference Calibration Date: 11-Feb-12 12:56:56					
Engineer: J.MAYNE				Calibration Date: 25-Sep-12 12:13:40					
Software Version: WL INSITE R3.6.0 (Build 3)				Calibration Version: 1					
Host Tool Name: ACRt Instrument - E6988-S8481									
TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.05	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A2 (50")	0.95	1.06	1.05	0.95	1.03	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.03	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A4 (17")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.99	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.99	1.05
TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	1.55	2	-6	-4.36	-2	-8	-6.36	-2
A2 (50")	-7	-1.34	0	-7	-4.84	0	-7	-5.76	0
A3 (29")	-27	-13.41	-9	-9	-5.12	-3	-7	-3.79	-1
A4 (17")	-180	-98.44	-60	-45	-30.17	-15	-39	-24.25	-13
A5 (10")	N/A	N/A	N/A	-150	-101.38	-50	-80	-48.71	-10
A6 (6")	N/A	N/A	N/A	175	304.71	525	90	152.90	270
TRANSMITTER CURRENT GAIN						R-MUD VERIFICATION			
Signal	Lower	R		Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K		0.6	0.81	1.3		Mud Cell	0.95	1.00	1.05
36K		1.0	1.24	2.0					
72K		1.0	1.43	2.0					
PASS/FAIL SUMMARY									
GAIN RANGE CHK						FAIL			
SONDE OFFSET RANGE CHK						PASS			
Tx CURRENT GAIN						PASS			
Rmud VERIFICATION						PASS			
TOOL OUT OF TOLERANCE									
CALIBRATION SUMMARY									
Sensor		Shop	Field	Post	Difference	Tolerance		Units	
GTET-11602914									
Gamma Ray Calibrator		263.5	266.4	-----	-2.9	+/- 9.00		api	
DSNT-10860047									
Snow-Block Porosity		0.0735	0.0606	-----	0.0129	+/- 0.0150		decp	
SDLT-10947725									
Pad Extension		3.75	3.77	-----	-0.02	+/-0.10		in	
Ring Diameter		8.25	8.32	-----	-0.07	+/-0.15		in	
SDLT Pad-11014275									
Near(B+D+P+L)		1492.432	1496.326	-----	-3.894	+/-15.569		cps	
Far(B+D+P+L)		820.674	824.912	-----	-4.238	+/-15.804		cps	

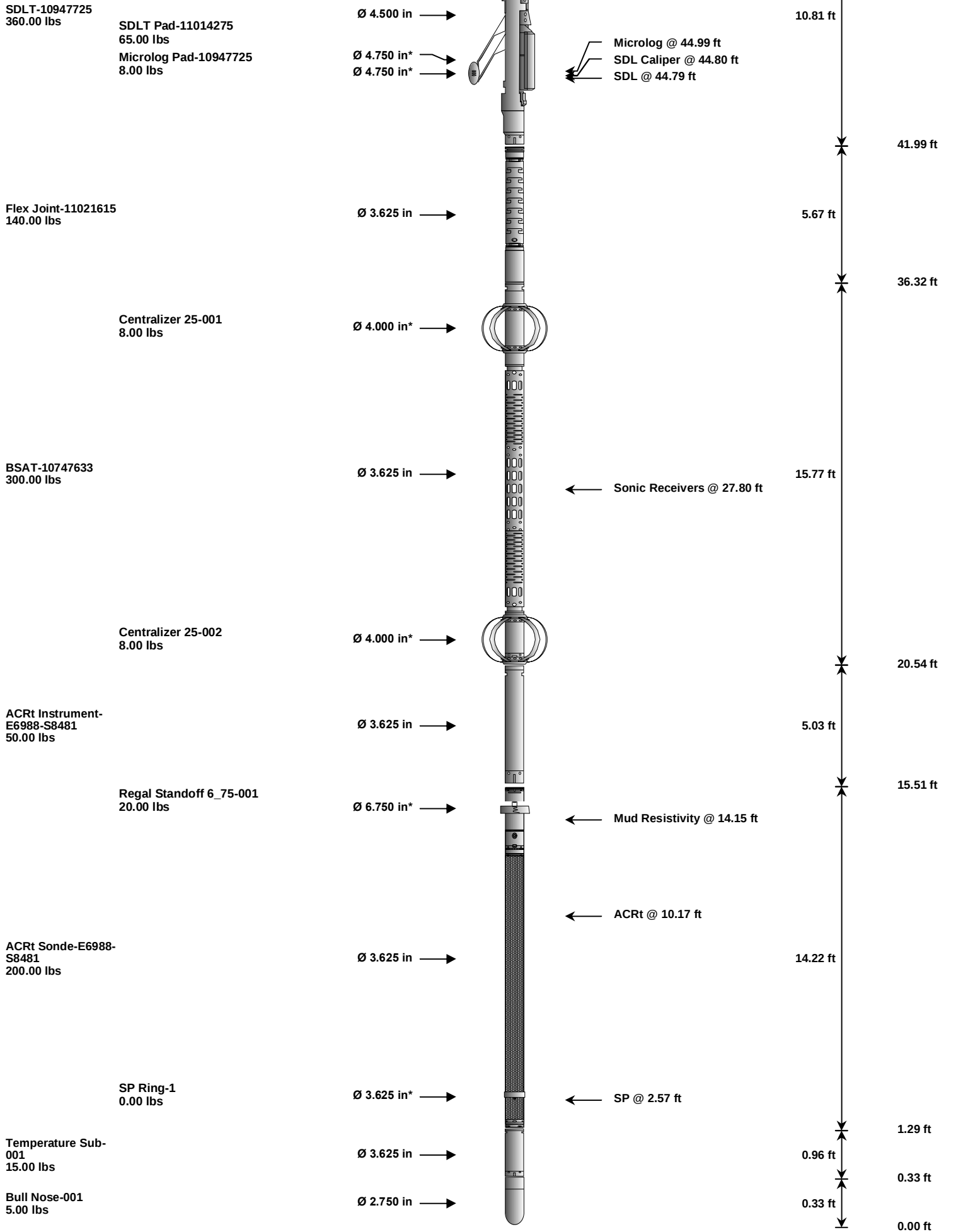
Microlog Pad-10947725						
MicroLog Normal	20.09	20.09	-----	0.00	+/-0.80	ohmm
MicroLog Lateral	20.24	20.24	-----	0.00	+/-0.80	ohmm
ACRt Sonde-E6988-S8481						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m

Data: HARTMN ROSE 1 1\0003 QUAD MEL BSAT\IDLE	Date: 06-Oct-12 23:22:45
HALLIBURTON CUSTOMER EVENT LOG	

Event Type	Time & Date	Depth (ft)	Event Description
	06-Oct-12 21:23:20	655.75	Logging 001 06-Oct-12 21:23 Dn @655.8f
	06-Oct-12 21:36:29	3831.58	Halting 001 06-Oct-12 21:23 Dn @655.8f
	06-Oct-12 21:37:19	3771.75	Logging 002 06-Oct-12 21:37 Dn @3771.8f
	06-Oct-12 21:43:27	4832.07	Halting 002 06-Oct-12 21:37 Dn @3771.8f
	06-Oct-12 21:44:39	4852.25	Logging 003 06-Oct-12 21:44 Up @4852.3f
	06-Oct-12 21:51:25	4485.66	Halting 003 06-Oct-12 21:44 Up @4852.3f
	06-Oct-12 21:53:59	4852.00	Logging 004 06-Oct-12 21:53 Up @4852.0f
	06-Oct-12 23:18:43	78.10	Halting 004 06-Oct-12 21:53 Up @4852.0f
Data: HARTMN_ROSE_1_1\0003 QUAD_MEL_BSAT\HW11433			Date: 06-Oct-12 23:20:42

HALLIBURTON TOOL STRING DIAGRAM REPORT	
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Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-11103904 135.00 lbs		Ø 3.625 in →		← Load Cell @ 73.57 ft ← BH Temperature @ 73.01 ft	6.25 ft	77.26 ft
GTET-11602914 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.95 ft	8.52 ft	71.01 ft
DSNT-10860047 174.00 lbs	DSN Decentralizer-10860047 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 55.55 ft ← DSN Near @ 54.80 ft	9.69 ft	62.49 ft
						52.80 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		11103904	135.00	6.25	71.01	300.00
GTET	Gamma Telemetry Tool		11602914	165.00	8.52	62.49	60.00
DSNT	Dual Spaced Neutron		10860047	174.00	9.69	52.80	60.00
DCNT	DSN Decentralizer		10860047	6.60	5.13	*	56.13
SDLT	Spectral Density Tool		10947725	360.00	10.81	41.99	60.00
SDLP	Density Insite Pad		11014275	65.00	2.55	*	44.20
MICP	Microlog Pad		10947725	8.00	1.00	*	44.49
FLEX	Flex Joint		11021615	140.00	5.67	36.32	300.00
BSAT	Borehole Sonic Array Tool		10747633	300.00	15.77	20.54	60.00
OBCEN	Centralizer - 25 in. Overbody		002	8.00	2.08	*	20.55
OBCEN	Centralizer - 25 in. Overbody		001	8.00	2.08	*	33.42
ACRt	Array Compensated True Resistivity Instrument Section		E6988-S8481	50.00	5.03	15.51	300.00
ACRt	Array Compensated True Resistivity Sonde Section		E6988-S8481	200.00	14.22	1.29	300.00
SP	SP Ring		1	0.00	0.25	*	2.57
RSOF	Regal Standoff 6.75in		001	20.00	0.52	*	14.36
TMAX	Temperature Sub - 3_625 OD		001	15.00	0.96	0.33	300.00
BLNS	Bull Nose		001	5.00	0.33	0.00	300.00
Total				1,659.60	77.26		
* Not included in Total Length and Length Accumulation.							
Data: HARTMN_ROSE_1_1\0003 QUAD_MEL_BSAT\IDLE							
Date: 07-Oct-12 00:07:25							

COMPANY	HARTMAN OIL CO., INC.		
WELL	ROSE # 1-1		
FIELD	WILDCAT		
COUNTY	WICHITA	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON	