

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY		OXY USA INC	
WELL		TURRENTINE A 4	
FIELD		AZAMON DITCH	
COUNTY		FINNEY	
STATE		KANSAS	
Permanent Datum Log measured from Drilling measured from	GL	API No. 15-055-22171	Other Services: MICRO BSAT ACRT HFDT
	KB	Location 980' FSL & 2220' FWL	
Sect. 23		Twp. 30S	Rge. 33W
Elev. 2990.0 ft		Elev. K.B. 3001.0 ft	
11.0 ft above perm. Datum		D.F. 3000.0 ft	
G.L. 2990.0 ft			
Date	12-Aug-12		
Run No.	ONE		
Depth - Driller	4920.00 ft		
Depth - Logger	4906.0 ft		
Bottom - Logged Interval	4862.0 ft		
Top - Logged Interval	3700.0 ft		
Casing - Driller	8.625 in @ 1813.0 ft		
Casing - Logger	1810.0 ft		
Bit Size	7.875 in @		
Type Fluid in Hole	WATER BASED MUD		
Density	9.6 ppq	32.00	s/qt
PH	8.50 pH	12.0	cpm
Source of Sample	FLOWLINE		
Rm @ Meas. Temperature	0.400 ohmm @ 89.00 degF		
Rmf @ Meas. Temperature	0.36 ohmm @ 77.00 degF		
Rmc @ Meas. Temperature	0.430 ohmm @ 77.00 degF		
Source Rmf	MEASURED	MEASURED	
Rm @ BHT	0.35 ohmm @ 128.0 degF		
Time Since Circulation	10.5 hr		
Time on Bottom	12-Aug-12 22:27		
Max. Rec. Temperature	128.0 degF @ 4906.0 ft		
Equipment	10782954	LIBERAL	
Recorded By	C. HAVERKAMP		
Witnessed By	A. HOWSON		

Fold here

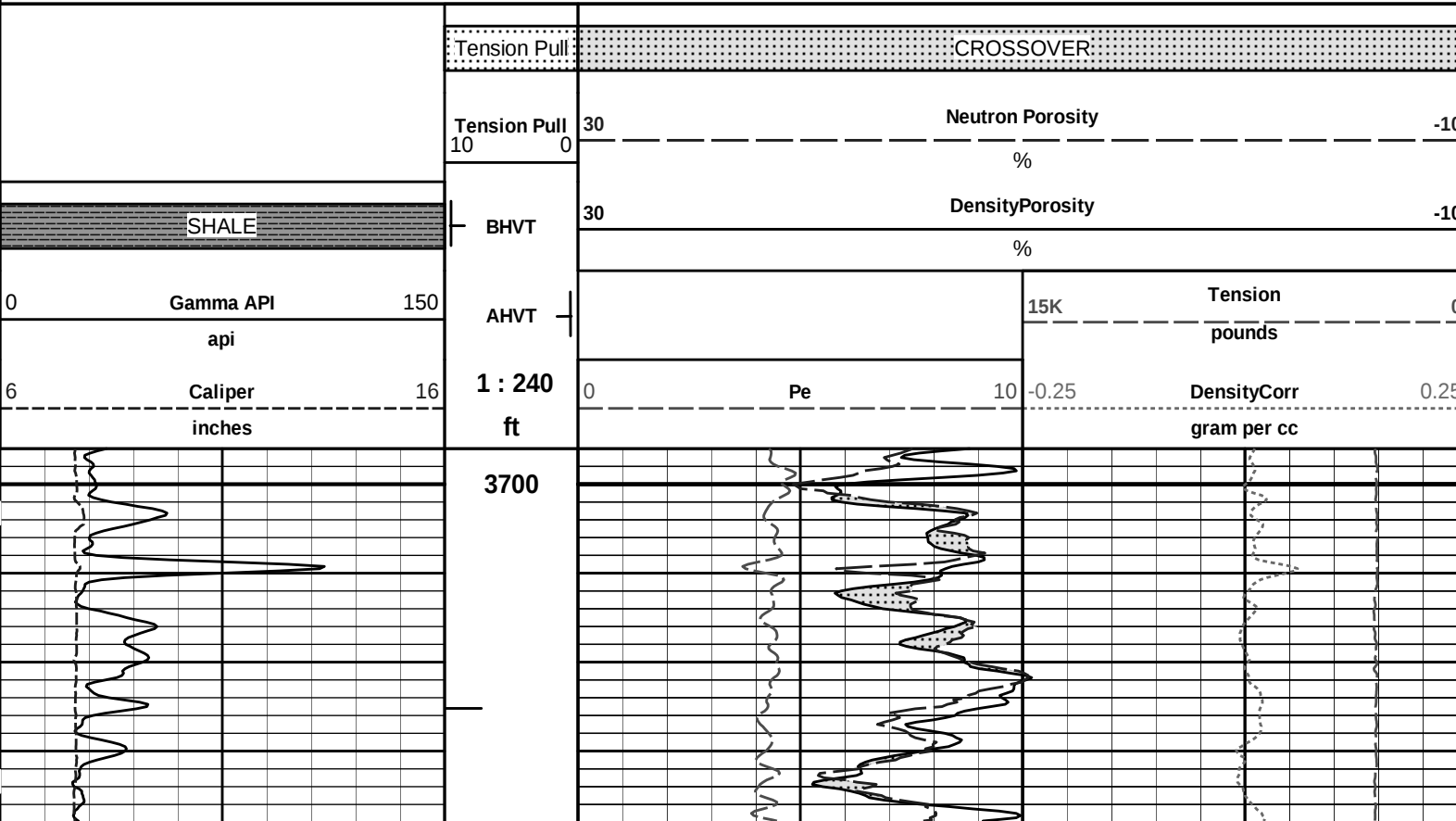
Service Ticket No.: 738587						API Serial No.: 15-055-22171						PGM Version: WL INSITE R3.6.0 (Build 3)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole									
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.		10811258				Serial No.						Serial No.		45				Serial No.		10755066									
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.		5073GW				Serial No.		DSN-436									
Distance to Source		10'				FWDA [Y/N]						Strength		1.5 CI				Strength		15 CI									

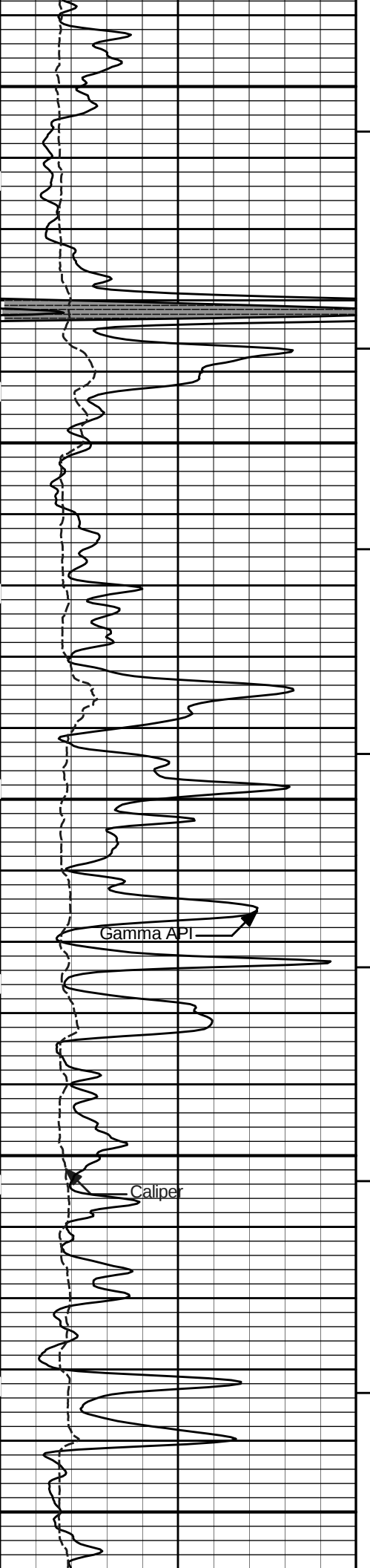
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix					
No.	From	To	ft/min	L	R	L	R		L	R		L	R						
ONE	4906'	3700'	REC	0	150					30		-10	2.71		30	-10	LIME		
DIRECTIONAL INFORMATION																			
Maximum Deviation @								KOP @											
Remarks: SP-GTET-HFDT-DSNT-SDLT-BSAT-ACRT RAN IN COMBINATION.																			
ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.																			
CHLORIDES REPORTED AT 8000 MG/L.																			
LCM REPORTED AT 2 LB/BBL.																			
POST TOOL SURVEYS NOT PERFORMED DUE TO WELLSITE CONDITIONS.																			
YOUR CREW: A. VAQUERA, B. TERRELL																			
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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Plot Time: 13-Aug-12 01:47:56
Plot Range: 3696 ft to 4909.83 ft
Data: TURRENTINE_A4\Well Based\R1_DETAIL\
Plot File: \\PORO\Poros_IQ_5_MAIN_LIB

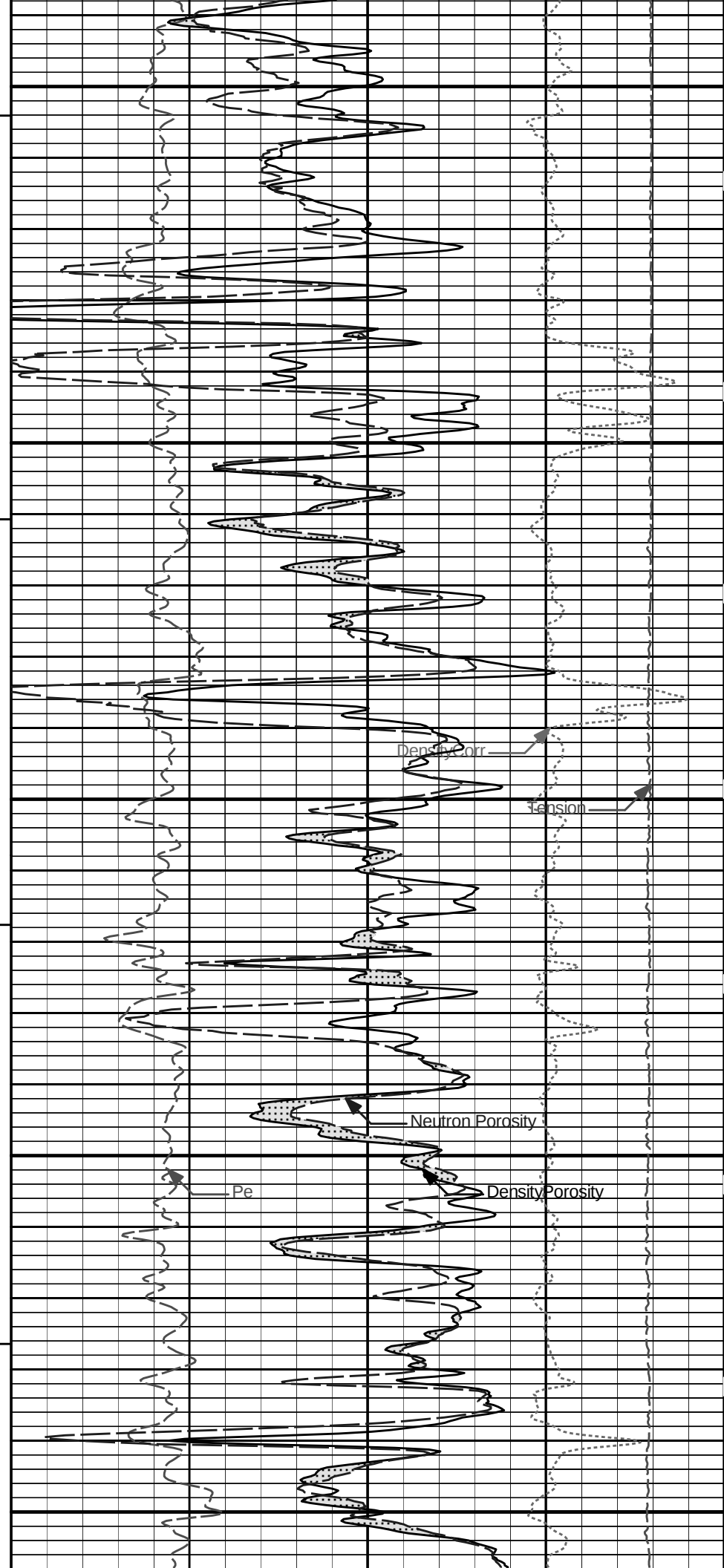
5 INCH MAIN LOG





3800

3900



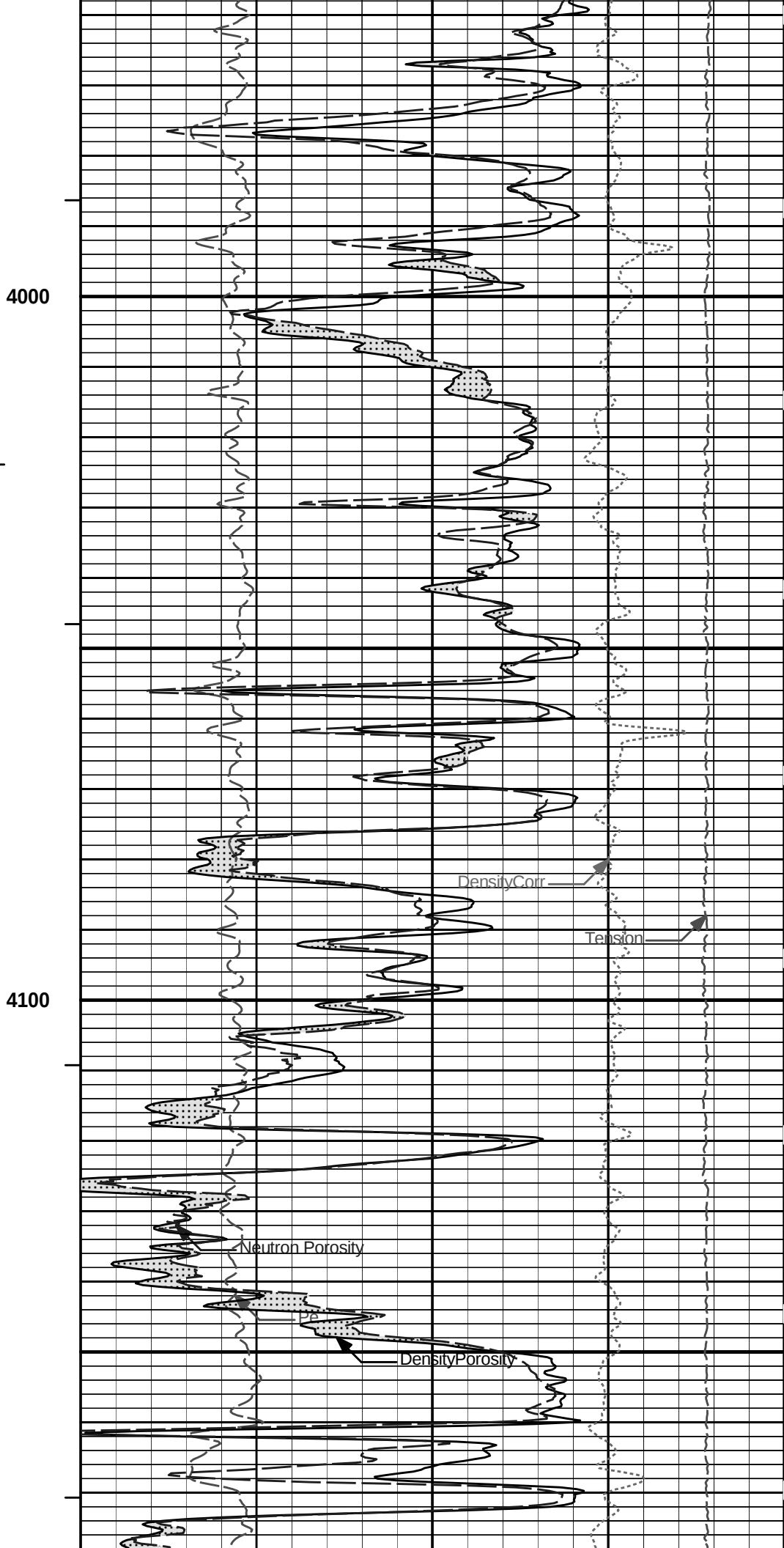
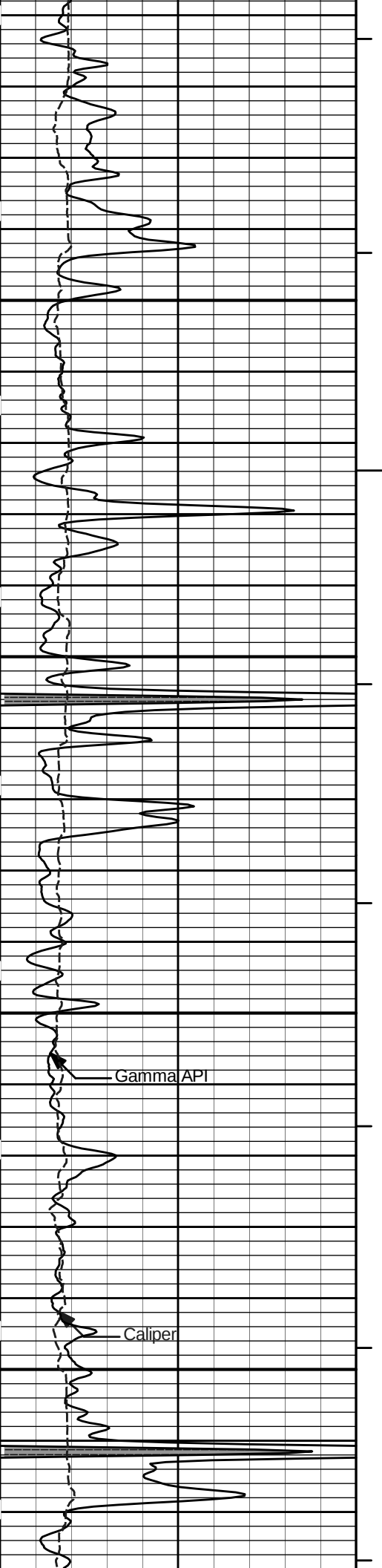
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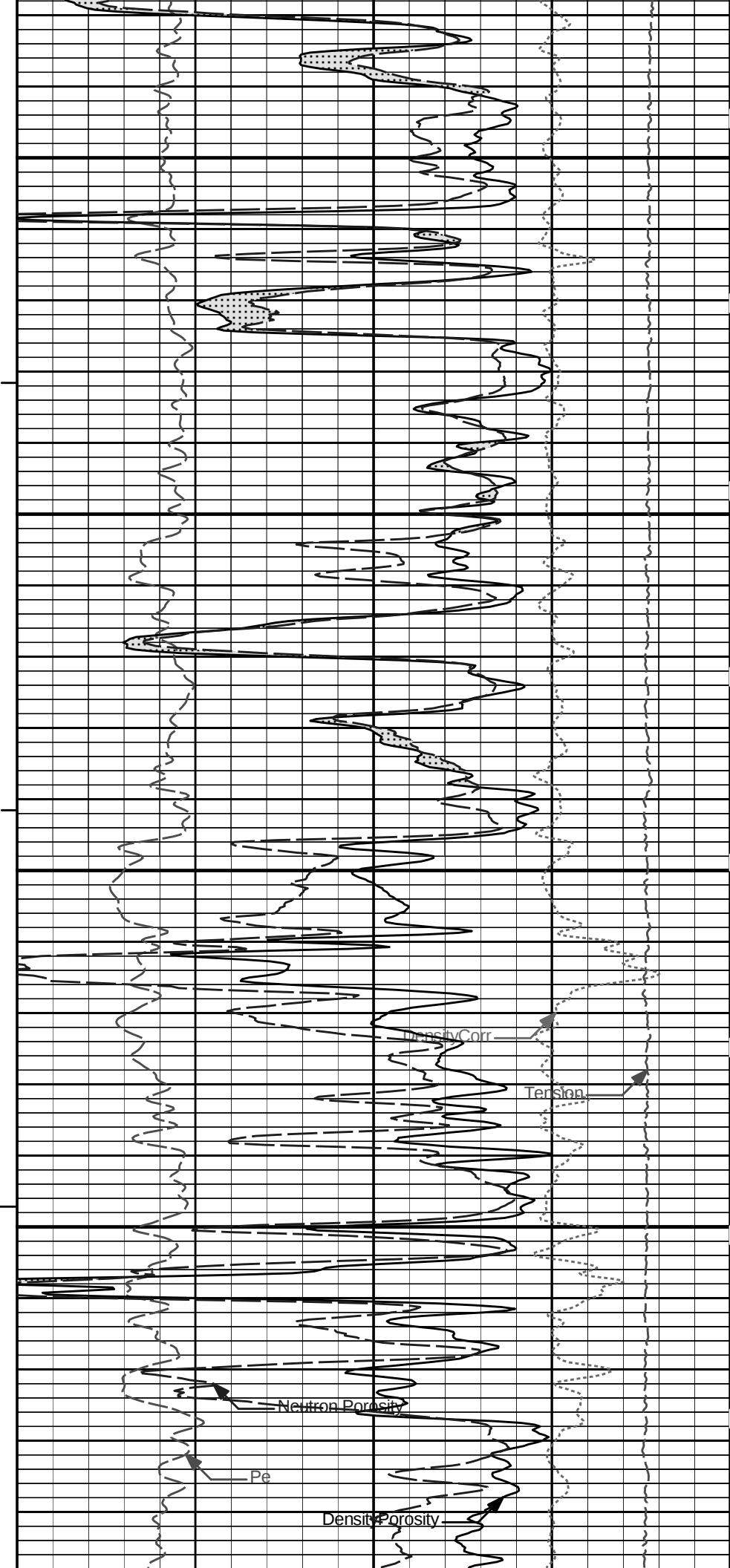
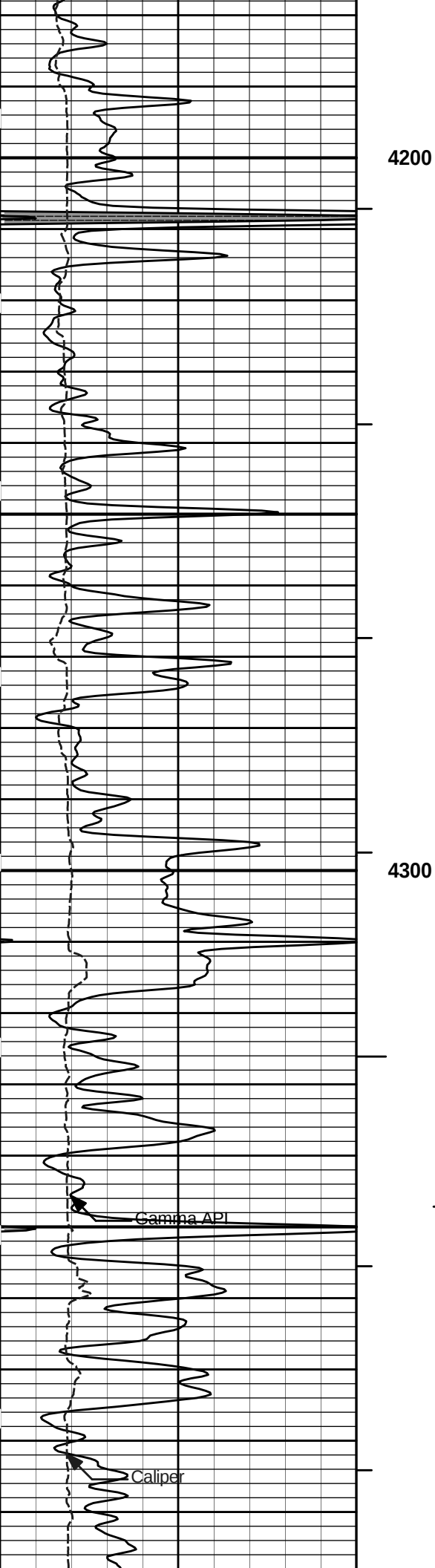
Tension

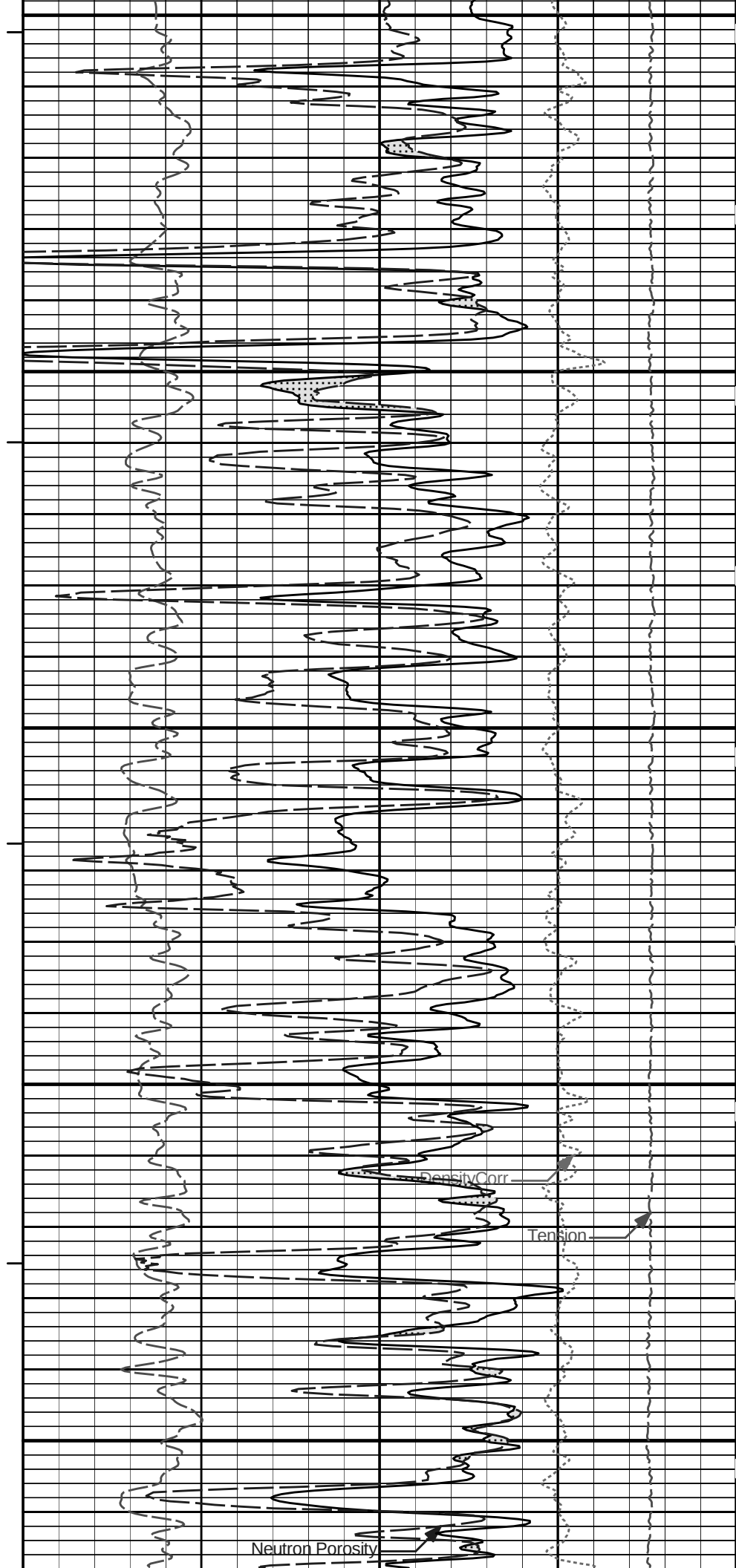
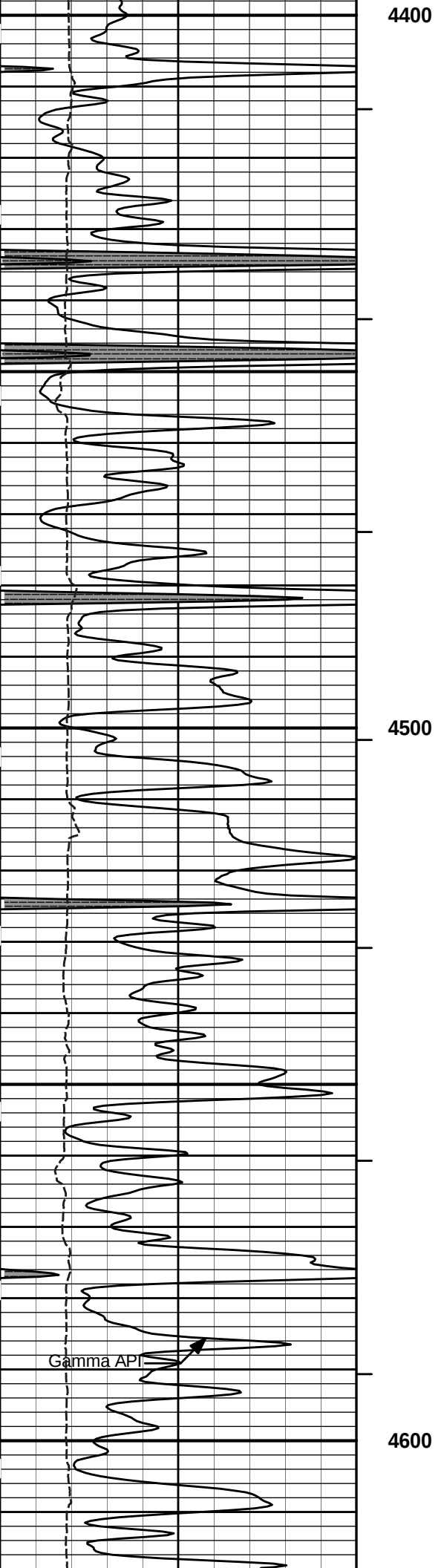
Neutron Porosity

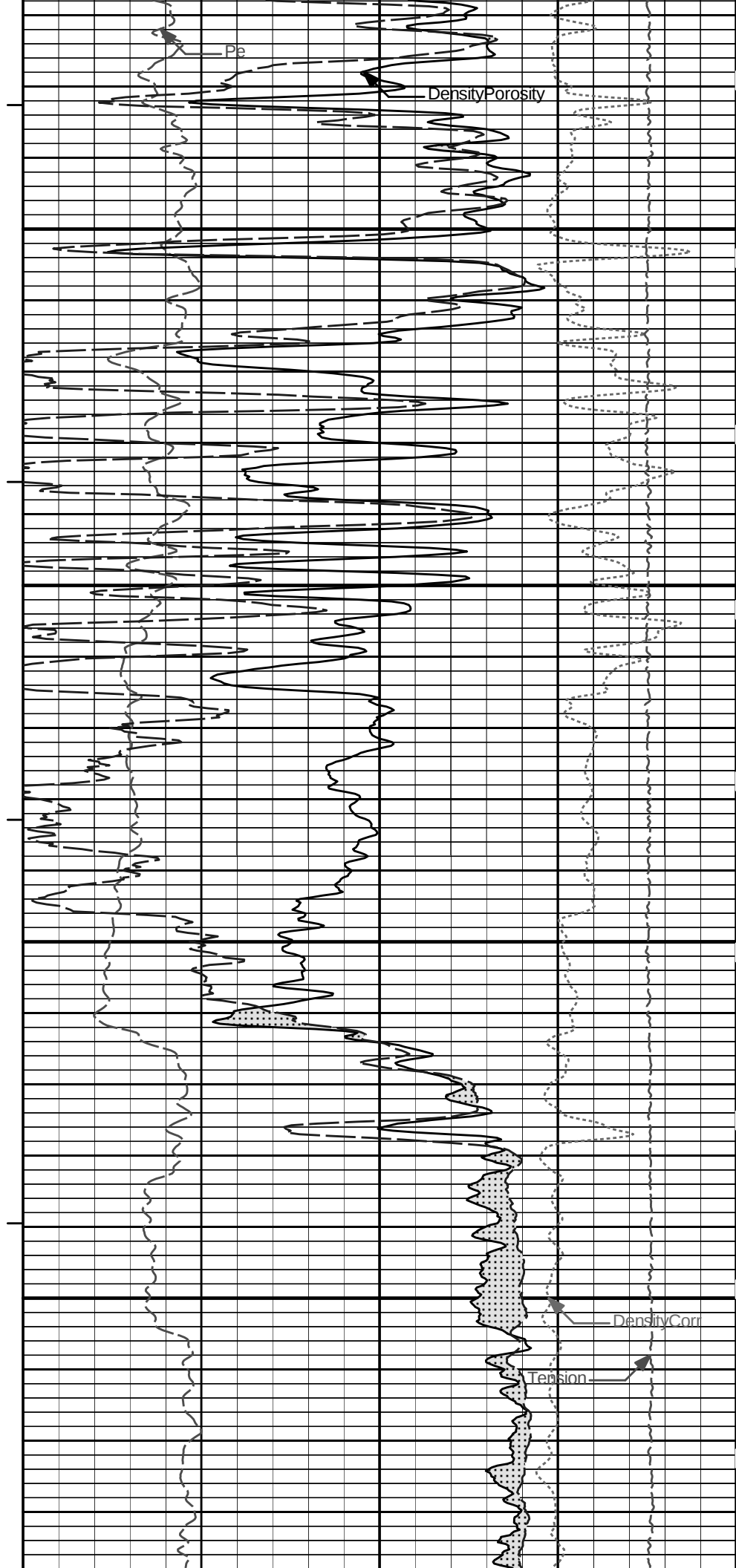
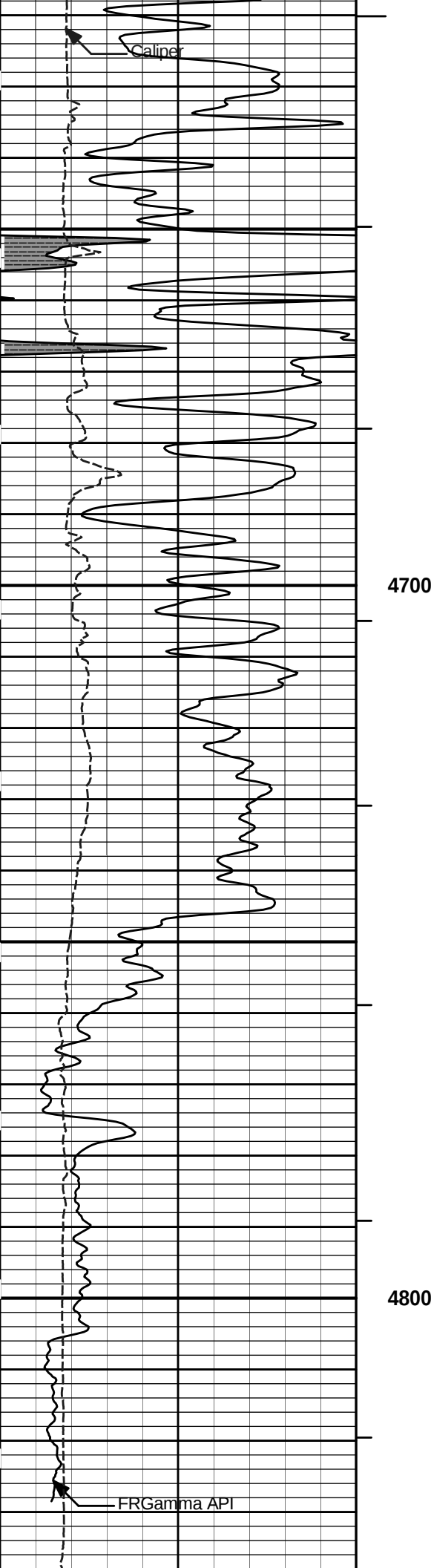
Density Porosity

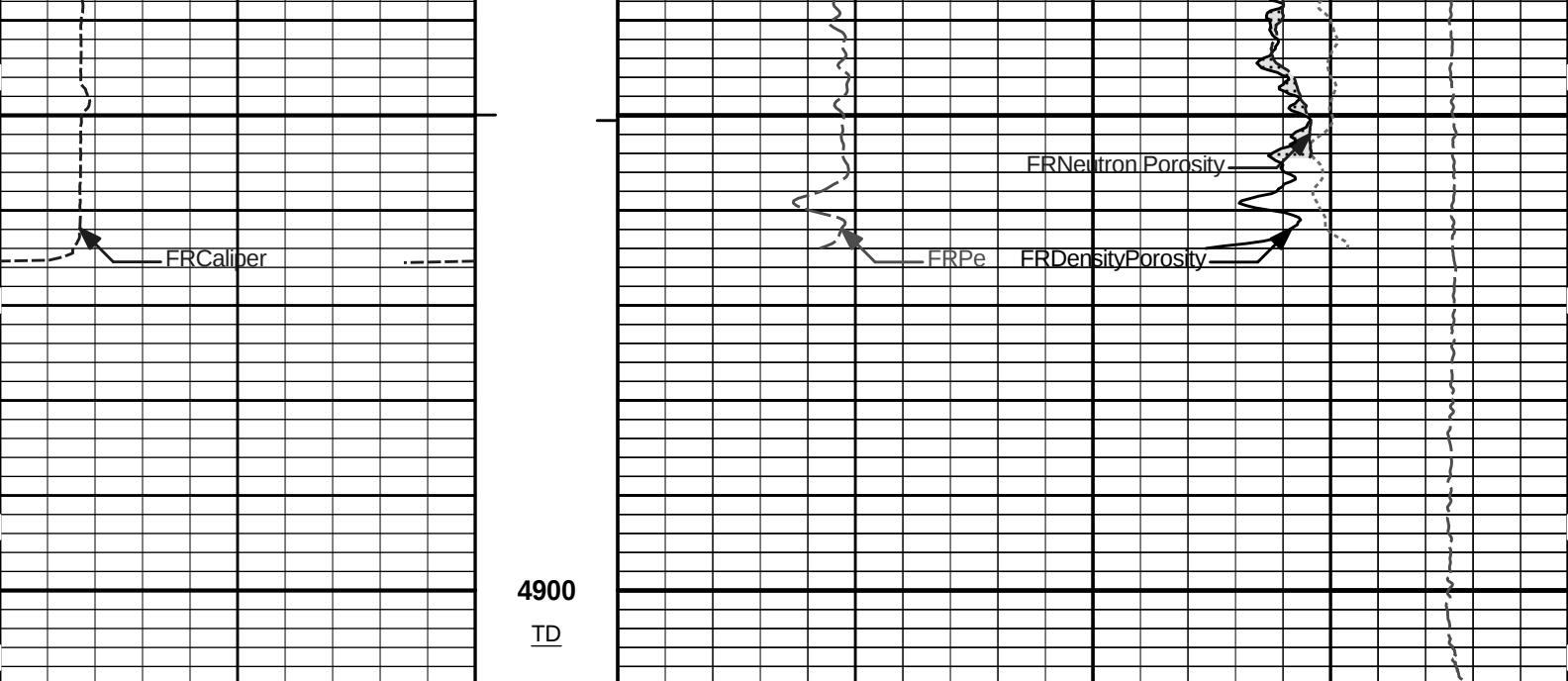
Pe











4900
TD

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

HALLIBURTON

Plot Time: 13-Aug-12 01:48:06
Plot Range: 3696 ft to 4909.83 ft
Data: TURRENTINE_A4\Well Based\R1_DETAIL\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

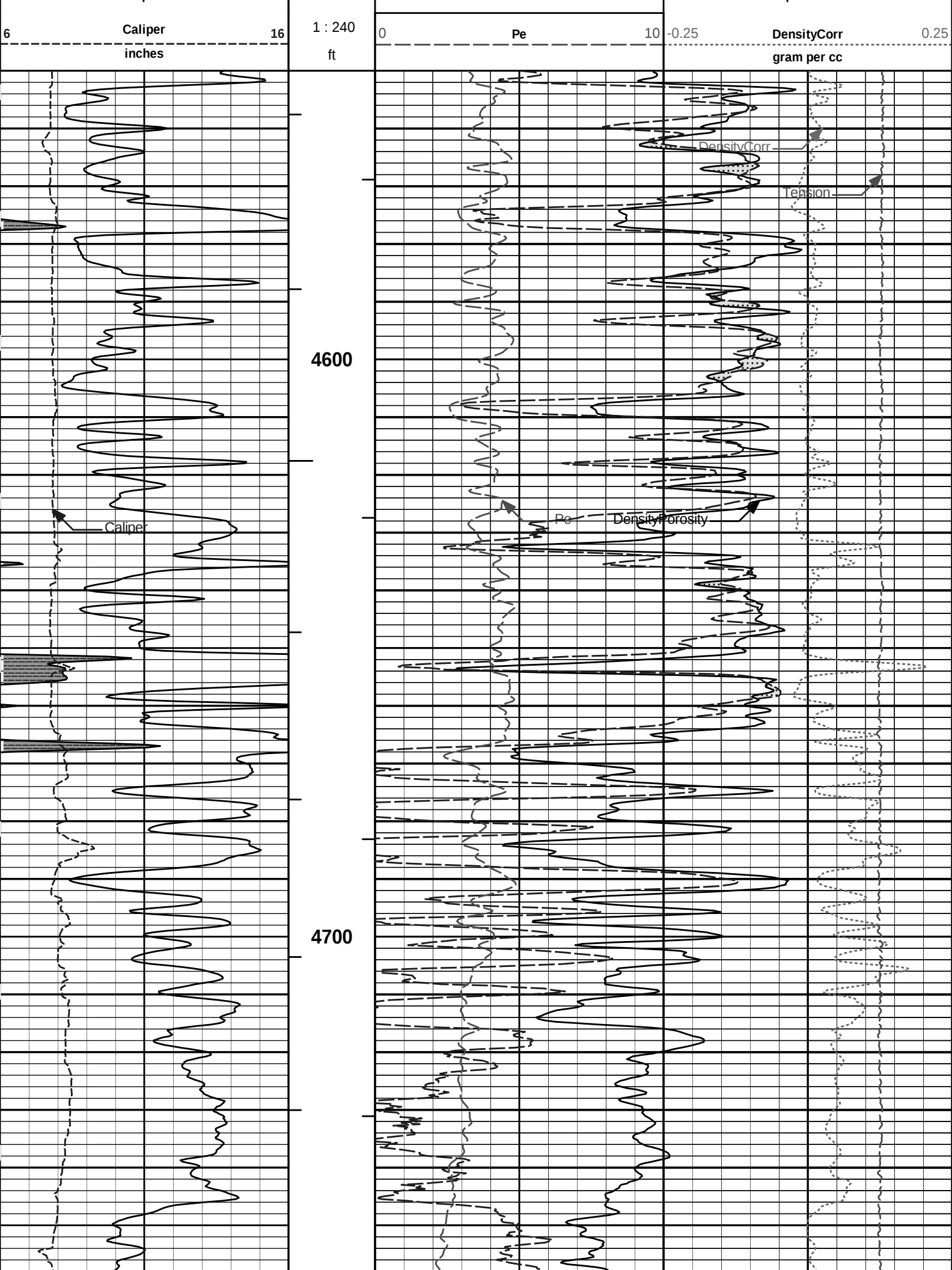
5 INCH MAIN LOG

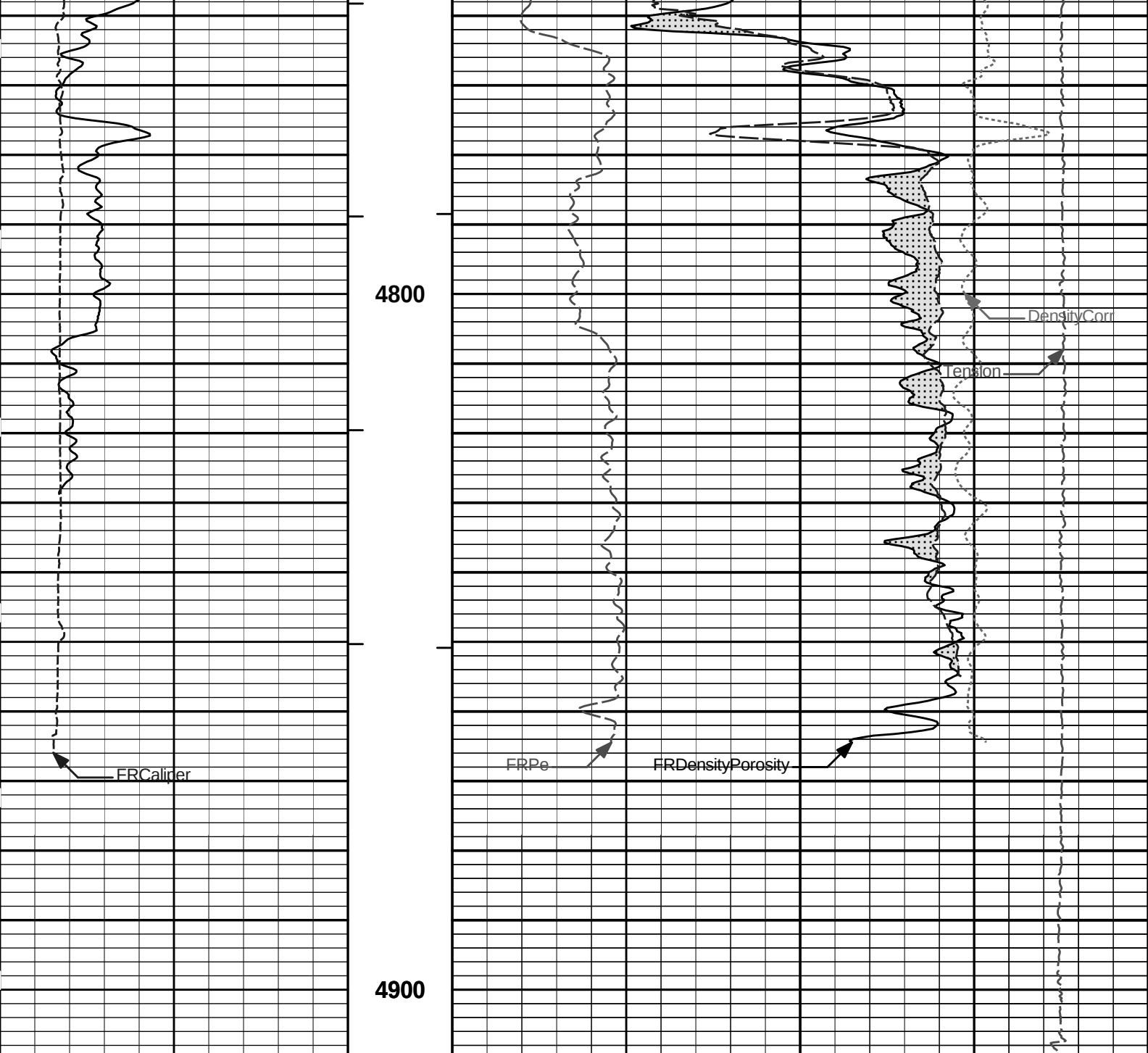
HALLIBURTON

Plot Time: 13-Aug-12 01:48:07
Plot Range: 4550 ft to 4909.42 ft
Data: TURRENTINE_A4\Well Based\R1_REPEAT\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION

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





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

HALLIBURTON

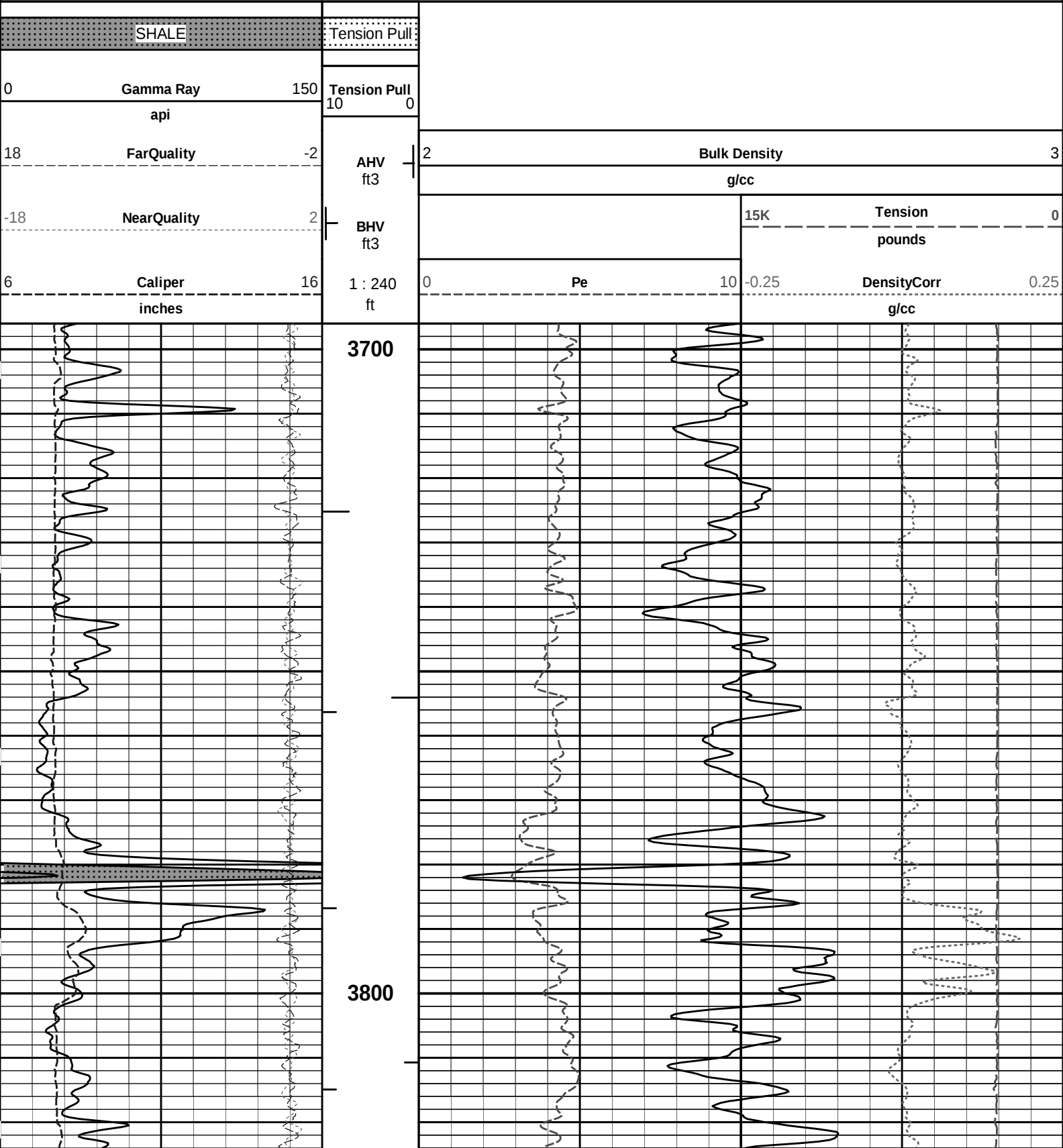
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Data: TURRENTINE_A4\Well Based\IR1_REPEAT\
Plot File: \\PORO\Porosity_Q5_REP_LIB

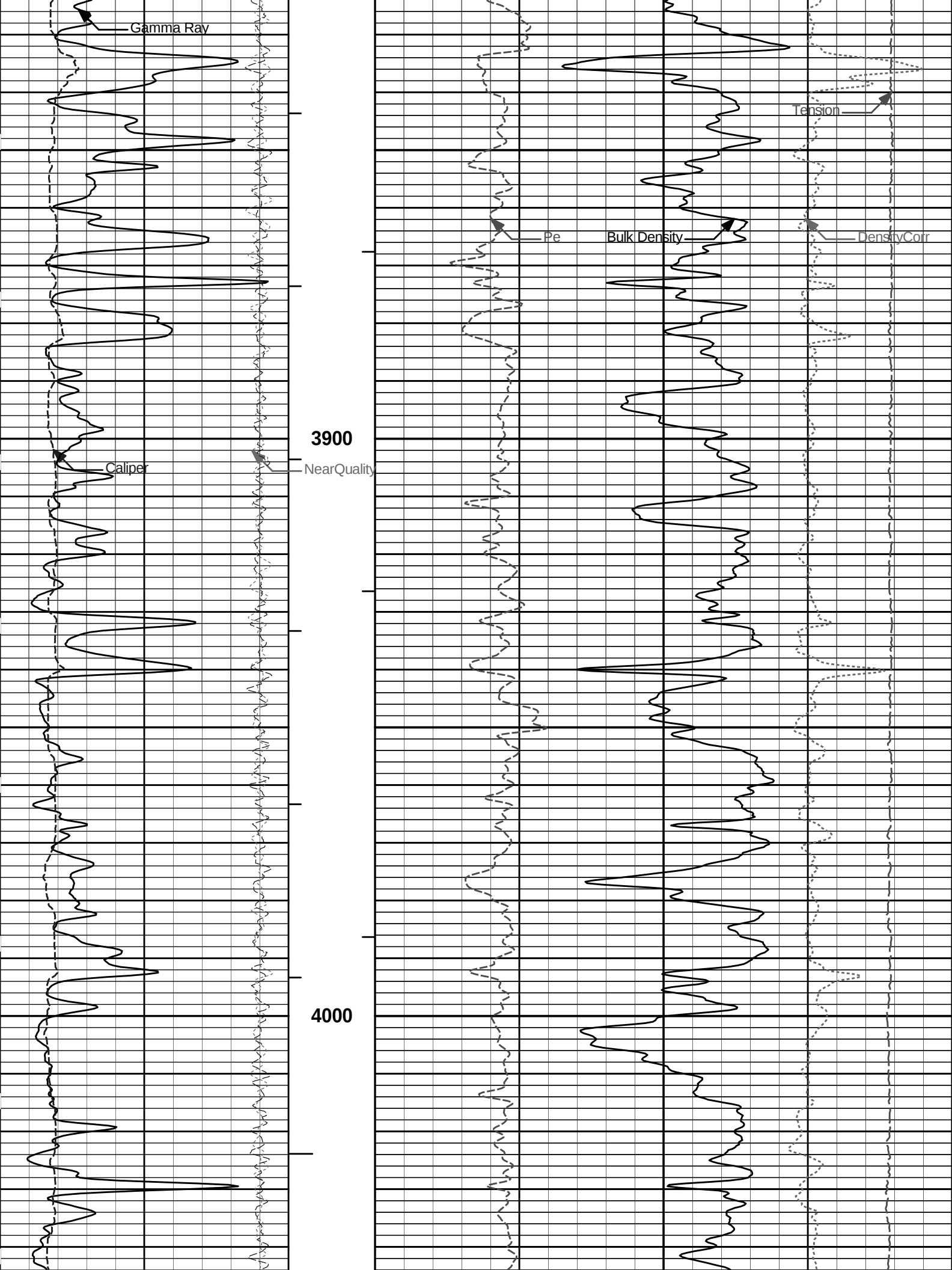
REPEAT SECTION

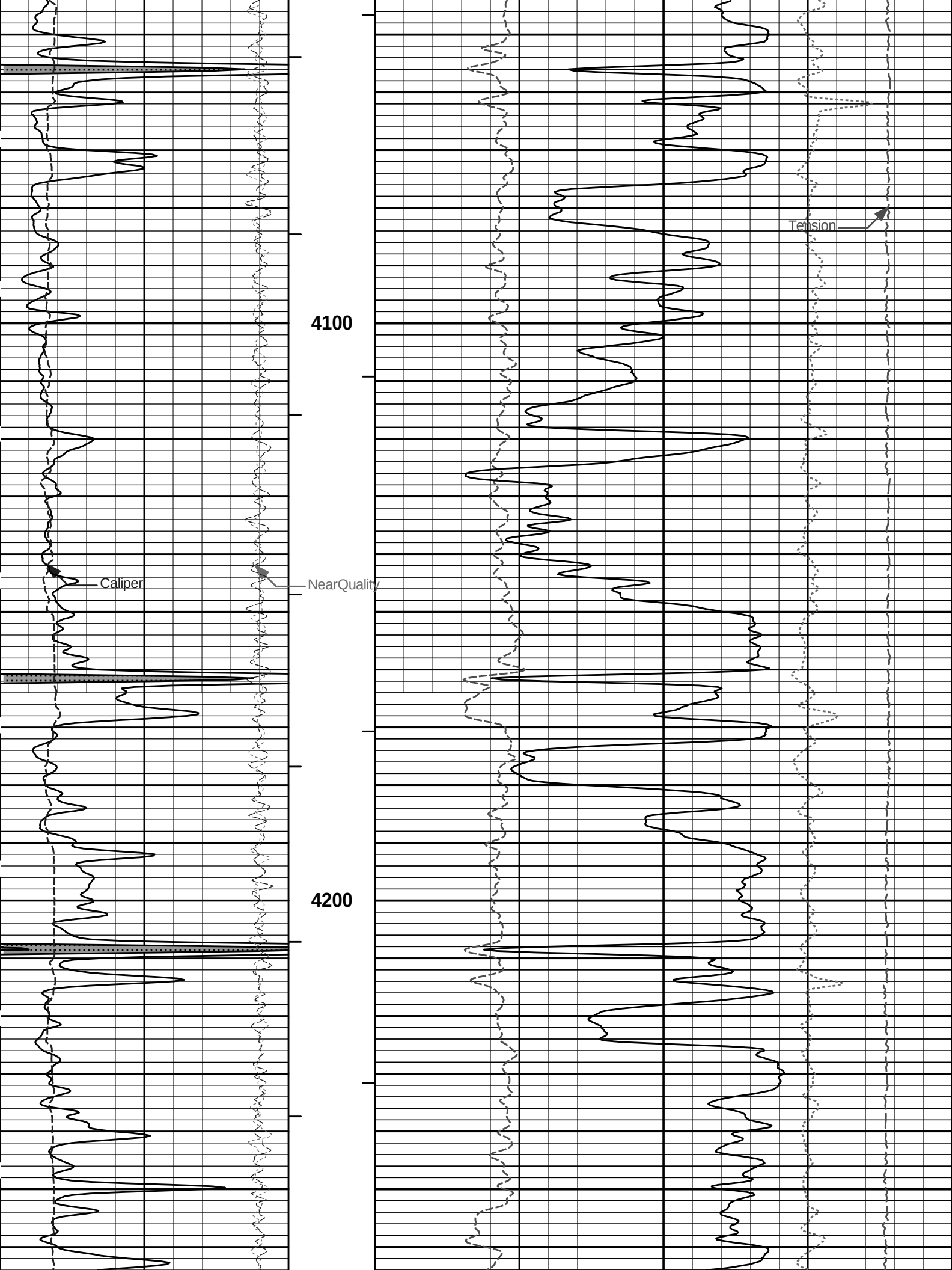
HALLIBURTON

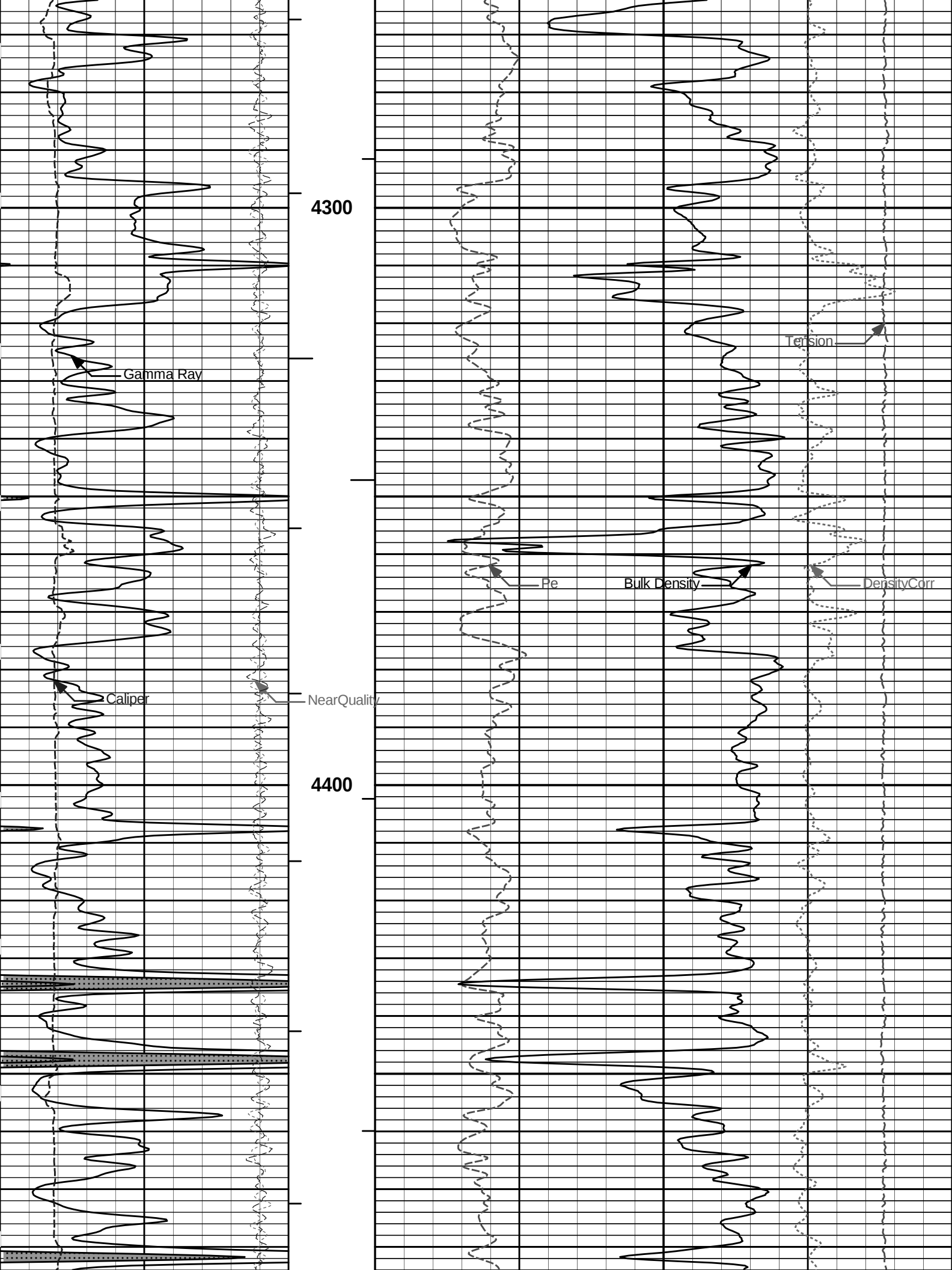
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Plot Range: 3696 ft to 4909.83 ft
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Plot File: \\LOCAL-TURRENTINE_A4\0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIPORO\BULKD_5_MAIN_LIB

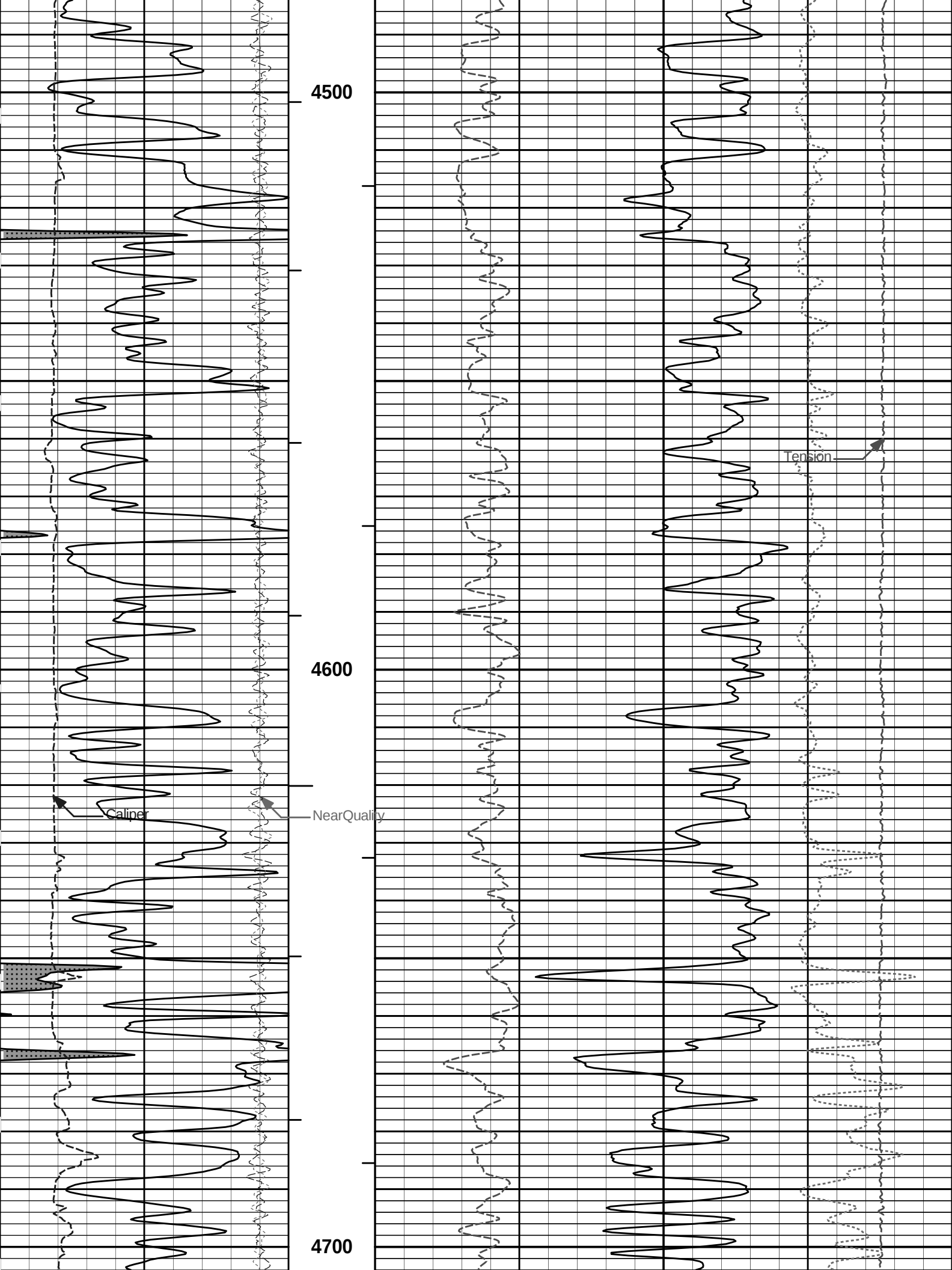
5 INCH MAIN LOG

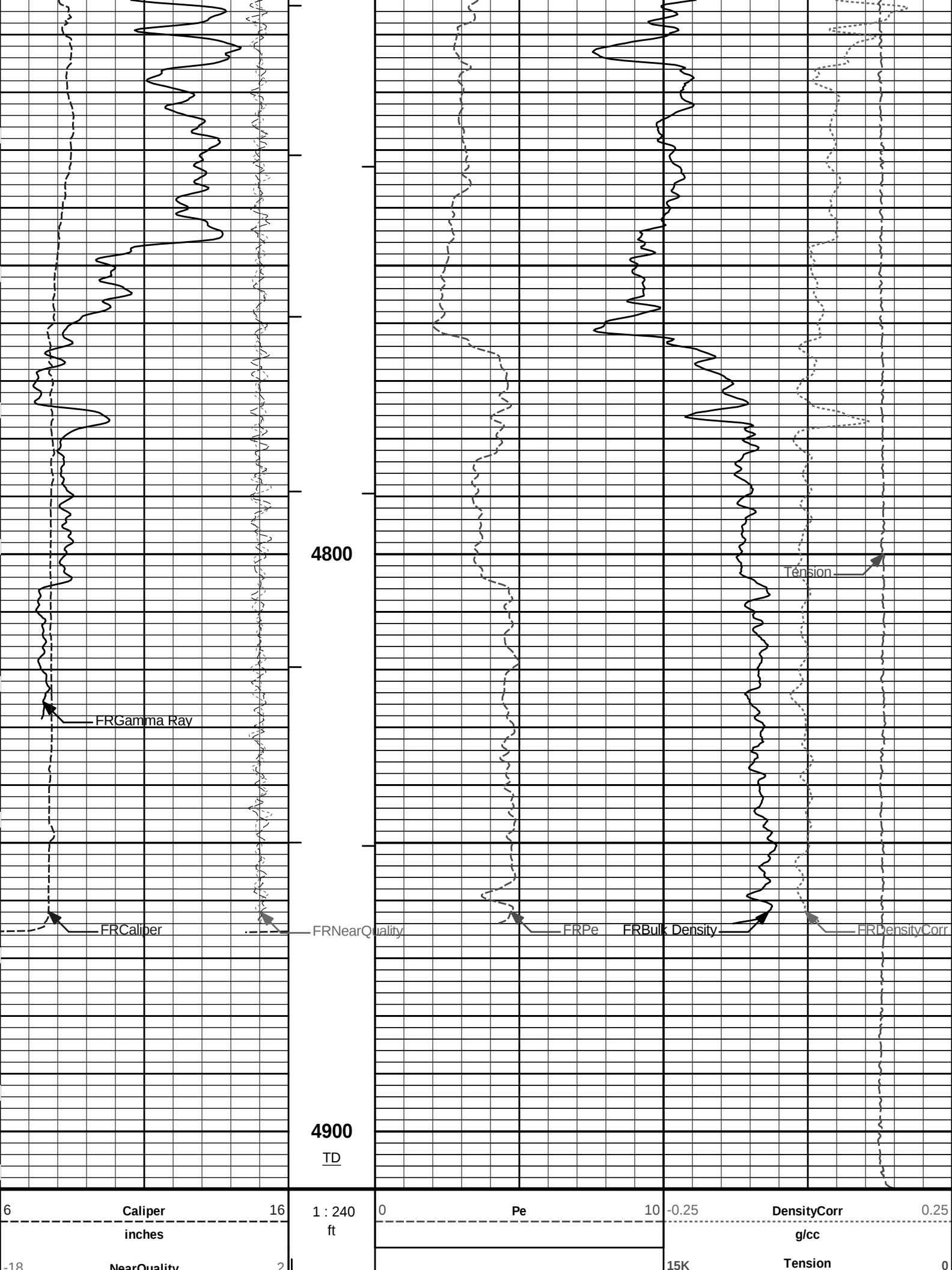












NearQuality		BHV ft3		pounds		
18	FarQuality	-2	AHV ft3	Bulk Density		3
				g/cc		
0	Gamma Ray	150	Tension Pull			
api		10 0				
SHALE		Tension Pull				

HALLIBURTON

Plot Time: 13-Aug-12 01:48:17
Plot Range: 3696 ft to 4909.83 ft
Data: TURRENTINE_A4\Well Based\R1_DETAIL\
Plot File: \\-LOCAL-\\TURRENTINE_A4\0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIPORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 13-Aug-12 01:48:17

Plot Range: 4550 ft to 4909.42 ft

Data: TURRENTINE_A4\Well Based\IR1_REPEAT\

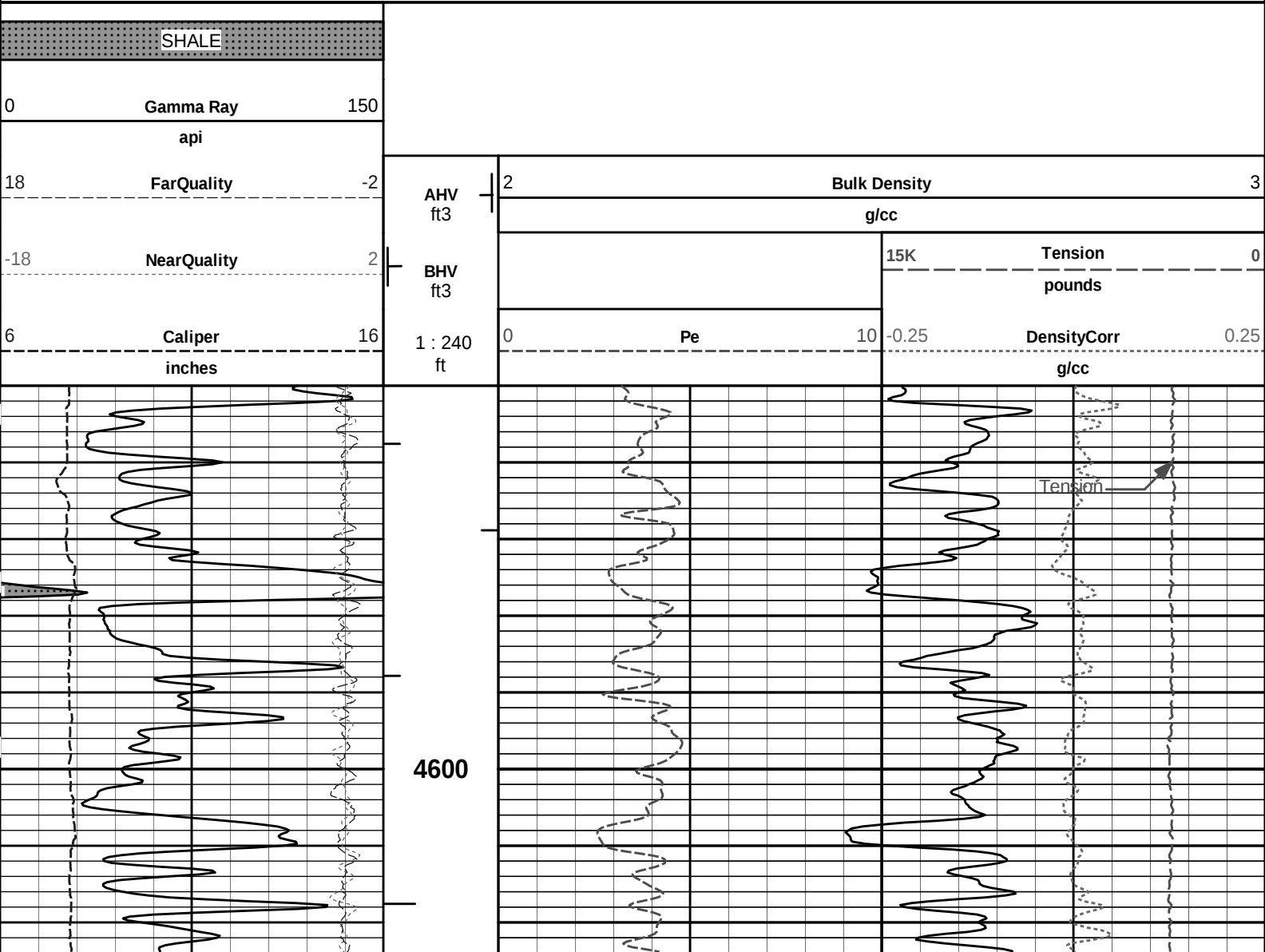
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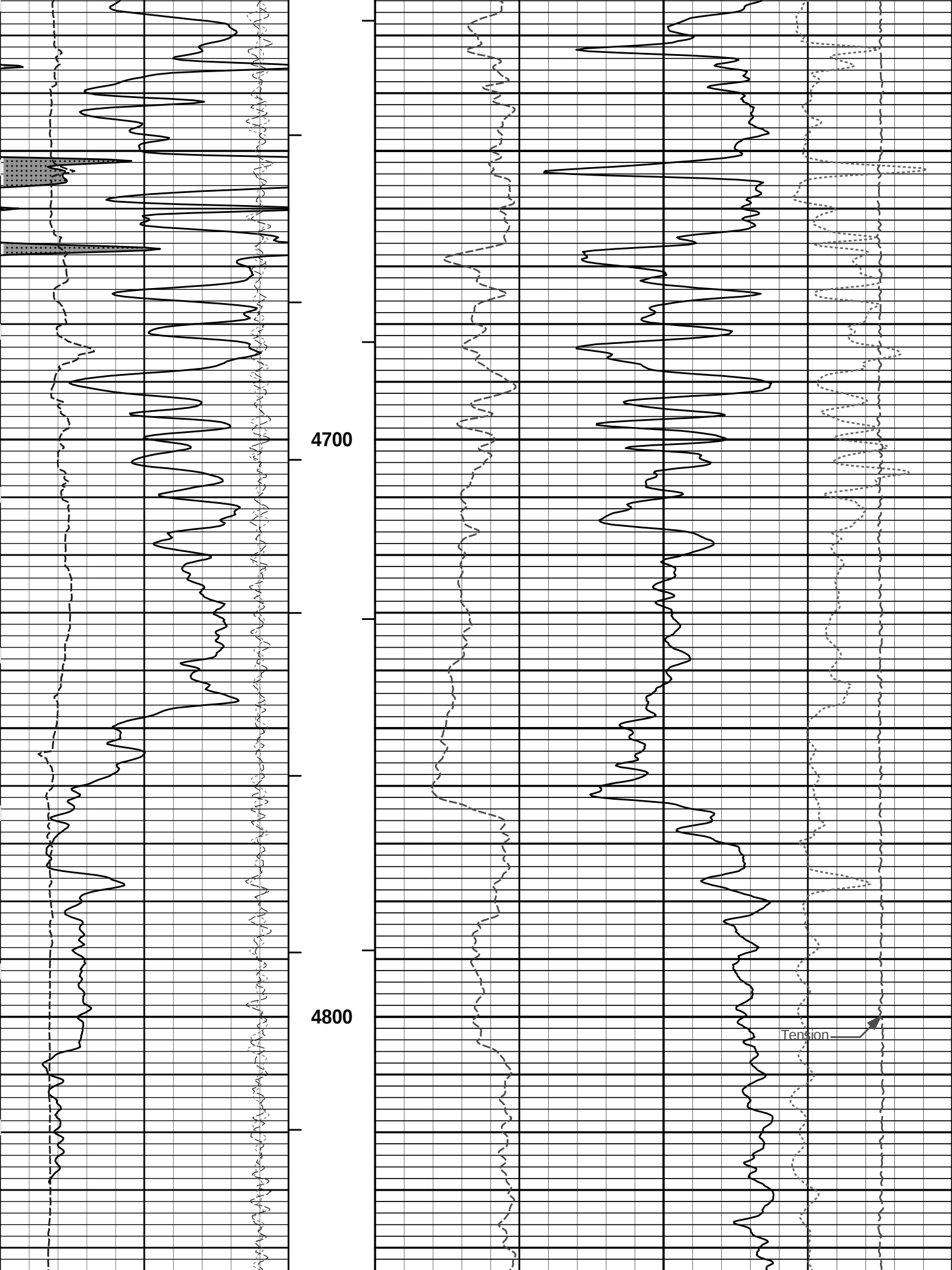
REPEAT SECTION

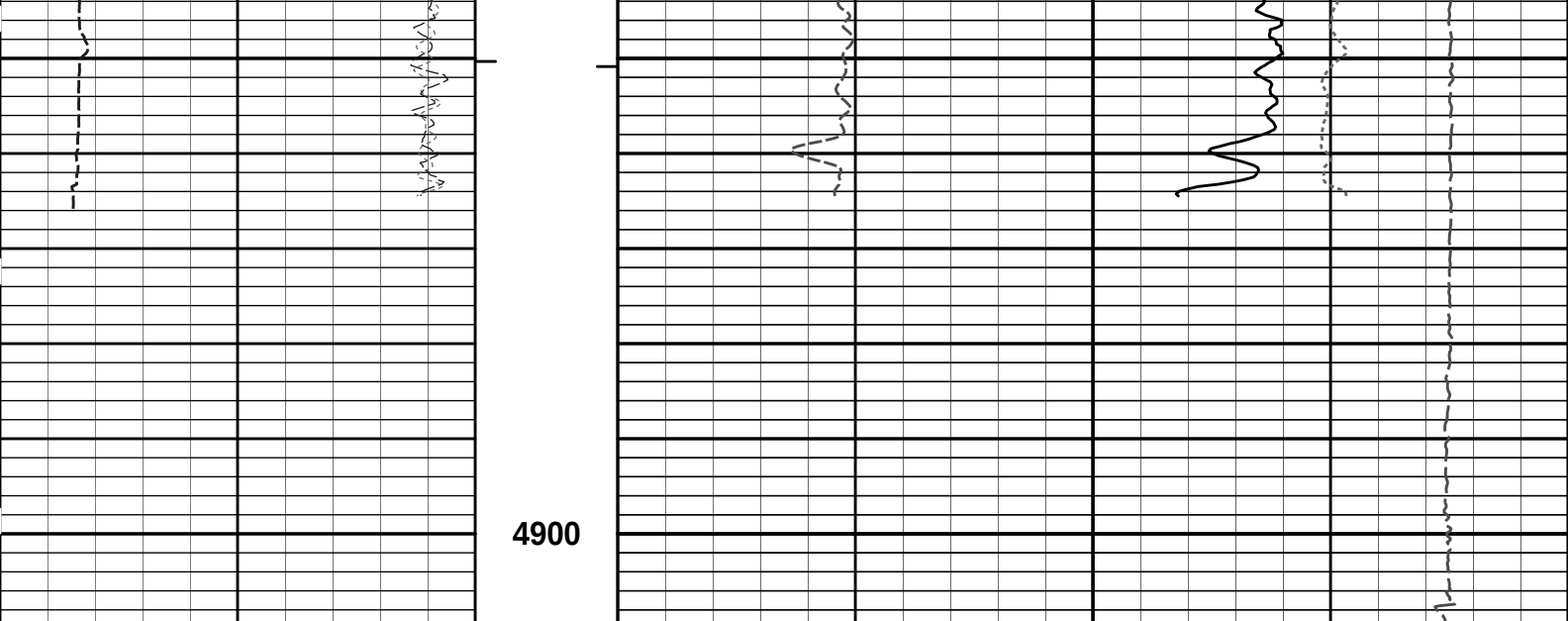
HALLIBURTON

Plot Time: 13-Aug-12 01:48:17
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Plot File: \\-LOCAL-\\TURRENTINE_A4\0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIPORO\BULKD_5_REP_LIB

REPEAT SECTION







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

HALLIBURTON

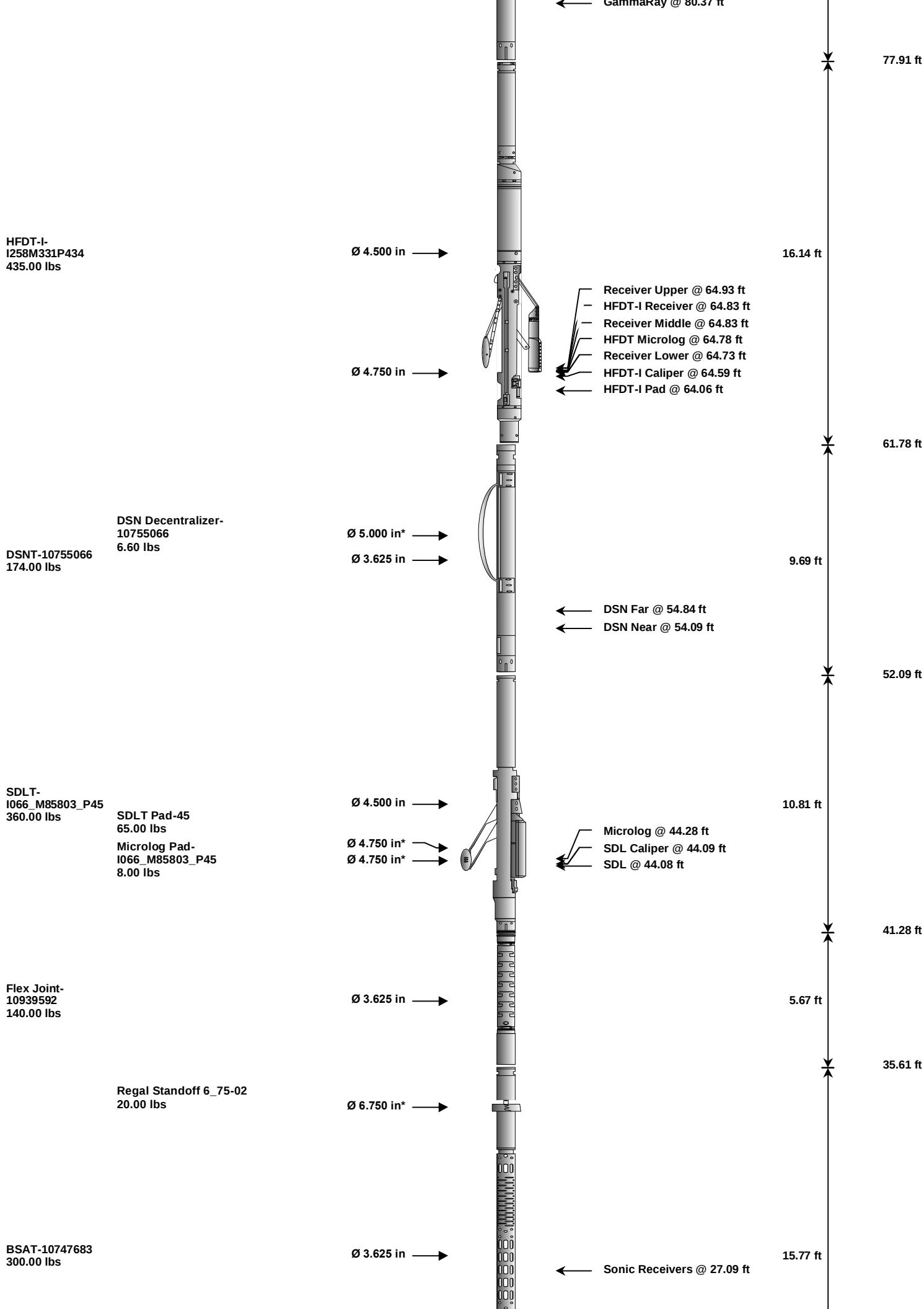
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Plot Range: 4550 ft to 4909.42 ft
Data: TURRENTINE_A4\Well Based\R1_REPEAT\
Plot File: \\LOCAL-TURRENTINE_A4\0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIPORO\BULKD_5_REP_LIB

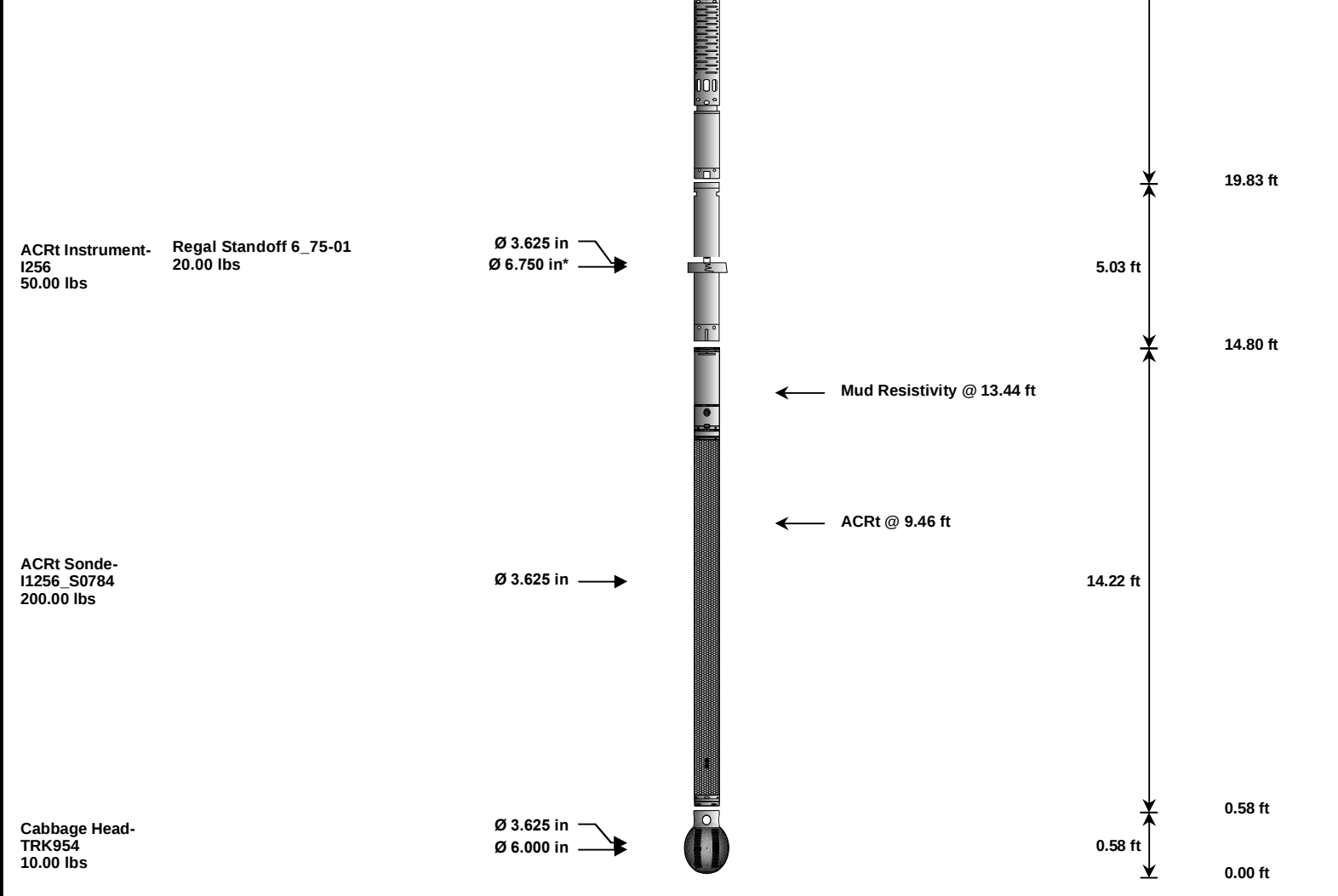
REPEAT SECTION

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	92.09 ft
SP Sub-11441709 60.00 lbs		Ø 3.625 in →		← SP @ 88.39 ft	3.74 ft	90.17 ft
						86.43 ft
GTET-10811258 165.00 lbs		Ø 3.625 in →			8.52 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	90.17	300.00
SP	SP Sub		11441709	60.00	3.74	86.43	300.00
GTET	Gamma Telemetry Tool		10811258	165.00	8.52	77.91	60.00
HFDT	High Frequency Dielectric Tool		I258M331P434	435.00	16.14	61.78	30.00
DSNT	Dual Spaced Neutron		10755066	174.00	9.69	52.09	60.00
DCNT	DSN Decentralizer		10755066	6.60	5.13	* 55.42	300.00
SDLT	Spectral Density Tool		I066_M85803_P45	360.00	10.81	41.28	60.00
MICP	Microlog Pad		I066_M85803_P45	8.00	1.00	* 43.78	60.00
SDLP	Density Insite Pad		45	65.00	2.55	* 43.49	60.00
FLEX	Flex Joint		10939592	140.00	5.67	35.61	300.00
BSAT	Borehole Sonic Array Tool		10747683	300.00	15.77	19.83	60.00
RSOF	Regal Standoff 6.75in		02	20.00	0.52	* 33.69	300.00
ACRt	Array Compensated True Resistivity Instrument Section		I256	50.00	5.03	14.80	300.00
RSOF	Regal Standoff 6.75in		01	20.00	0.52	* 17.02	300.00
ACRt	Array Compensated True Resistivity Sonde Section		I1256_S0784	200.00	14.22	0.58	300.00
CBHD	Cabbage Head		TRK954	10.00	0.58	0.00	300.00
Total				2,043.60	92.09		
* Not included in Total Length and Length Accumulation.							
Data: TURRENTINE_A4I0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIIDLE						Date: 12-Aug-12 21:23:08	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 10811258	Reference Calibration Date:	29-Jun-12 10:47:38

Engineer: C. HAVERKAMP

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Date: 11-Aug-12 06:02:48

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	33.3	33.0	api
Background + Calibrator	267.7	265.0	api
Calibrator	234.4	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10811258

Engineer: C. HAVERKAMP

Software Version: WL INSITE R3.6.0 (Build 3)

Reference Calibration Date: 11-Aug-12 06:02:48

Calibration Date: 11-Aug-12 06:05:37

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	33.0	32.8	api
Background + Calibrator	265.0	265.1	api
Calibrator	232.0	232.3	api

Shop	Field	Difference	Tolerance
232.0	232.3	-0.3	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10755066

Engineer: THOMAS HYDE

Software Version: WL INSITE R3.6.0 (Build 3)

Reference Calibration Date: 25-Jul-12 12:25:59

Calibration Date: 25-Jul-12 12:41:38

Calibration Version: 1

Logging Source S/N: DSN-436

Tank Serial Number: 105060

Reference value assigned to Tank: 51.680

Snow Block S/N: TRK_10782954

Calibration Tank Water Temperature: 85 degF

Min. Tool Housing Outside Diameter: 3.620 in

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.938	0.943	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):	0.2092	0.2107	0.0015	+/- 0.0020
Calibrated Ratio:	9.67	9.72	0.050	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0645	0.02000 - 0.09000

PASS/FAIL SUMMARY

PASS/FAIL SUMMARY				
Background Check:		Passed		
Gain-Range Check:		Passed		
Snow-Block Check:		Passed		
DUAL SPACED NEUTRON FIELD CALIBRATION				
Tool Name:	DSNT - 10755066		Reference Calibration Date:	25-Jul-12 12:41:38
Engineer:	C. HAVERKAMP		Calibration Date:	11-Aug-12 06:11:10
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1
Logging Source S/N: DSN-436				
Snow Block S/N: TRK_10782954				
NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0645	0.0557	-0.0089	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:		Passed		
Snow Block Stat Check:		Passed		
Temperature Check:		Passed		
DENSITY CALIPER SHOP CALIBRATION				
Tool Name:	SDLT - I066_M85803_P45		Reference Calibration Date:	28-Jul-12 20:05:58
Engineer:	C. HAVERKAMP		Calibration Date:	28-Jul-12 20:22:18
Software Version:	WL INSITE R3.6.0 (Build 3)		Calibration Version:	1
Host Tool Name:	DSNT - 10755066			
CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-5255.25	-5222.66	-7000.00 - -1000.00	
Pad Gain	0.0003793	0.0003763	0.000200 - 0.000600	
Arm Offset	-1825.48	-2303.24	-5000.00 - 3000.00	
Arm Gain	0.0005413	0.0005791	0.000300 - 0.000700	
Arm Power	-0.000006383	-0.000008766	-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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.62	6.50	-0.12	+/- 0.20
Medium Ring (in)	8.29	8.25	-0.04	+/- 0.20
Large Ring (in)	15.14	15.00	-0.14	+/- 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 - 45		Reference Calibration Date: 29-Jun-12 11:17:55	
Engineer: C. HAVERKAMP		Calibration Date: 05-Aug-12 09:06:17	
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1	

Logging Source S/N: 5073GW

Aluminum Block S/N: 63061

Magnesium Block S/N: 63393

Density: 2.591g/cc

Density: 1.690g/cc

Pe: 3.170

Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9811	0.9522	0.90 - 1.10
Near Dens Gain	0.9831	0.9524	0.90 - 1.10
Near Peak Gain	0.9806	0.9418	0.90 - 1.10
Near Lith Gain	0.9781	0.9284	0.90 - 1.10
Far Bar Gain	0.9863	0.9872	0.90 - 1.10
Far Dens Gain	0.9793	0.9793	0.90 - 1.10
Far Peak Gain	0.9722	0.9732	0.90 - 1.10
Far Lith Gain	0.9481	0.9473	0.90 - 1.10
Near Bar Offset	0.4083	0.6663	NONE
Near Dens Offset	0.3635	0.6290	NONE
Near Peak Offset	0.3620	0.6787	NONE
Near Lith Offset	0.3425	0.7501	NONE
Far Bar Offset	0.2498	0.2408	NONE
Far Dens Offset	0.2849	0.2903	NONE
Far Peak Offset	0.3024	0.3017	NONE
Far Lith Offset	0.4066	0.4262	NONE
Near Bar Background	994.27	991.23	700 - 1450
Near Dens Background	330.82	328.82	230 - 480
Near Peak Background	143.88	143.64	100 - 210
Near Lith Background	176.25	176.36	125 - 260
Far Bar Background	509.49	505.01	450 - 900
Far Dens Background	197.73	197.12	175 - 345
Far Peak Background	78.43	78.32	70 - 140
Far Lith Background	81.21	81.23	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.700	1.690	-0.010	+/- 0.015
Pe	2.511	2.558	0.047	+/- 0.150
ALUMINUM				
Density (g/cc)	2.592	2.591	-0.001	+/- 0.01500
Pe	3.148	3.133	-0.015	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0005	+/- 0.0110	-0.0014	+/- 0.0140
Magnesium Block	-0.0006	+/- 0.0110	-0.0012	+/- 0.0140
Aluminum Block	-0.0005	+/- 0.0110	-0.0003	+/- 0.0140

Aluminum Block		0.0005	+/- 0.0110	0.0008	+/- 0.0140	
Resolution	9.88	6.00 - 11.50		9.09	6.00 - 11.50	
Internal Verifier(B+D+P+L)	1640	1200 - 2700		862	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 - 45		Reference Calibration Date: 05-Aug-12 09:06:17				
Engineer: C. HAVERKAMP		Calibration Date: 11-Aug-12 06:05:52				
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1				
Pad Temperature: 75.2 degF						
DENSITY FIELD CALIBRATION SUMMARY						
Measurement	Shop	Field	Change	Control Limit +/-		
Near (B+D+P+L) cps	1640.053	1637.066	-2.987	16.273		
Far (B+D+P+L) cps	861.681	865.077	3.396	16.070		
Near Resolution	9.88	9.72	-0.160	0.50		
Far Resolution	9.09	9.63	0.540	1.00		
PASS/FAIL SUMMARY						
Bkg Quality Check:				Passed		
Bkg Resolution Check:				Passed		
Bkg Verification Check:				Passed		
SDLT CALIPER FIELD CALIBRATION						
Tool Name: SDLT - I066_M85803_P45		Reference Calibration Date: 28-Jul-12 20:22:18				
Engineer: C. HAVERKAMP		Calibration Date: 11-Aug-12 06:15:40				
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	3.76	0.01	+/- 0.10		
Ring Diameter	8.25	8.32	0.07	+/- 0.15		
PASS/FAIL SUMMARY						
Pad Extension Check:				Passed		
Diameter Check:				Passed		
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10811258						
Gamma Ray Calibrator	232.0	232.3	-----	-0.3	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0645	0.0557	-----	0.0088	+/- 0.0150	decp

SDLT-I066_M85803_P45						
Pad Extension	3.75	3.76	-----	-0.01	+/-0.10	in
Ring Diameter	8.25	8.32	-----	-0.07	+/-0.15	in
SDLT Pad-45						
Near(B+D+P+L)	1640.053	1637.066	-----	2.987	+/-16.273	cps
Far(B+D+P+L)	861.681	865.077	-----	-3.396	+/-16.070	cps
Data: TURRENTINE_A4I0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIDLE						
Date: 12-Aug-12 21:28:05						

HALLIBURTON

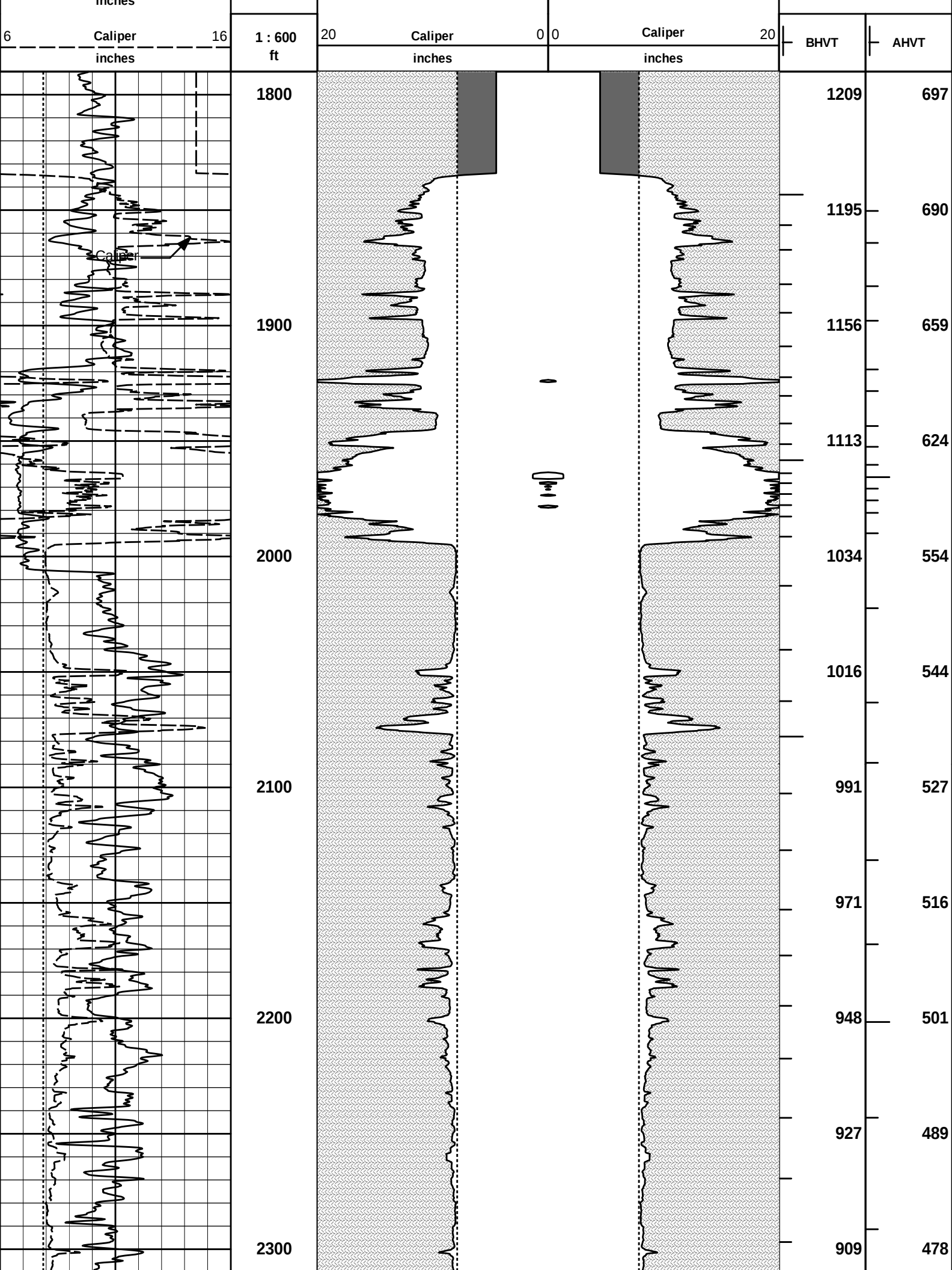
PARAMETERS REPORT

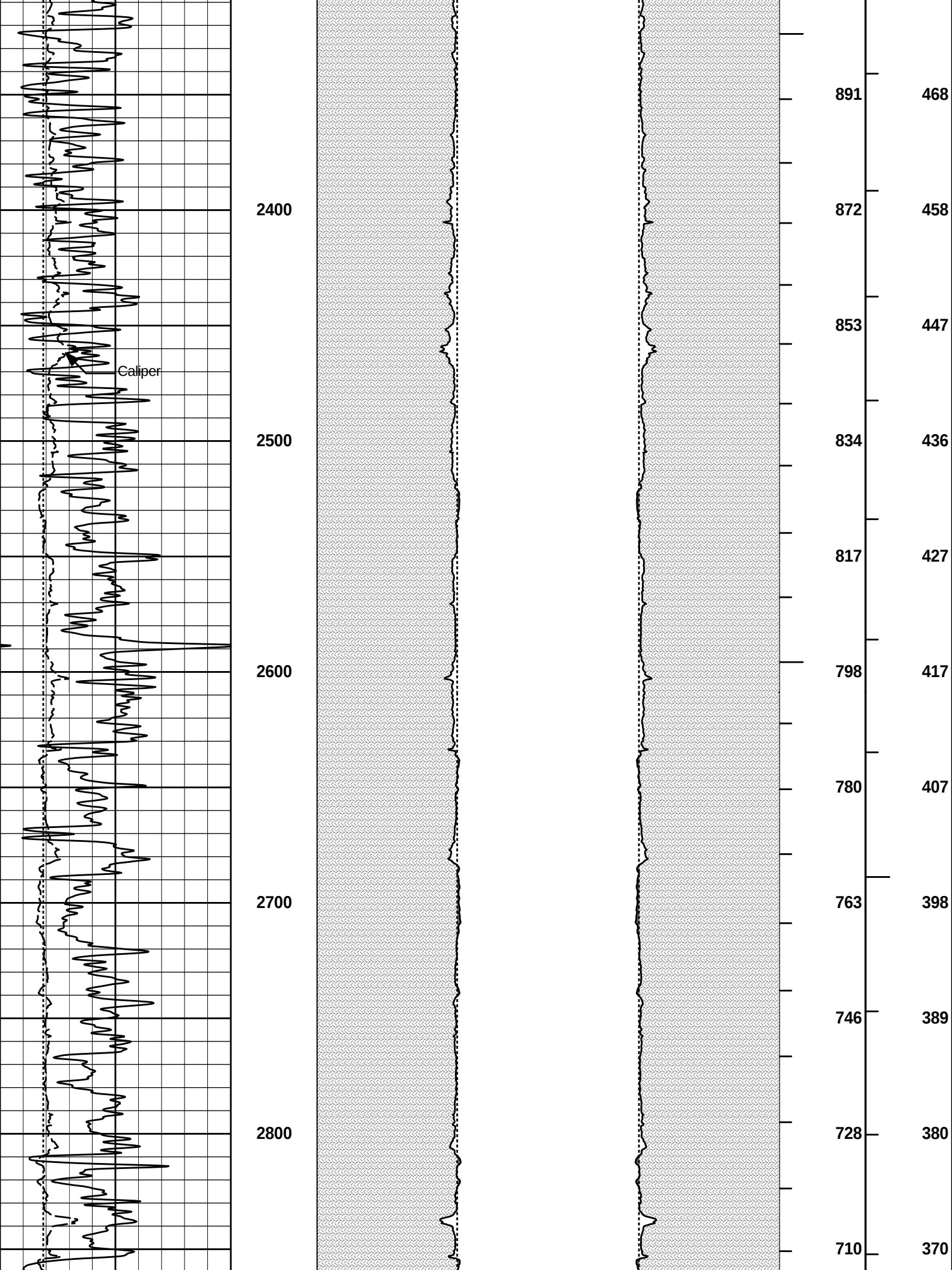
Depth (ft))	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.600	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	8000.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.400	ohmm
	SHARED	TRM	Temperature of Mud	89.0	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	4920.00	ft
	SHARED	BHT	Bottom Hole Temperature	120.0	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	
	HFDT-I	HFOK	Do HFDT Calculations?	Yes	
	HFDT-I	RMF	Mud Filtrate Resistivity	0.10	ohmm
	HFDT-I	RMFT	Temperature of Mud Filtrate	175.00	degF
	HFDT-I	MDIL	Matrix Dielectric Constant	4.650	
	HFDT-I	HRTC	HEDT Insite Temperature Correction Source	PADTEMP1	

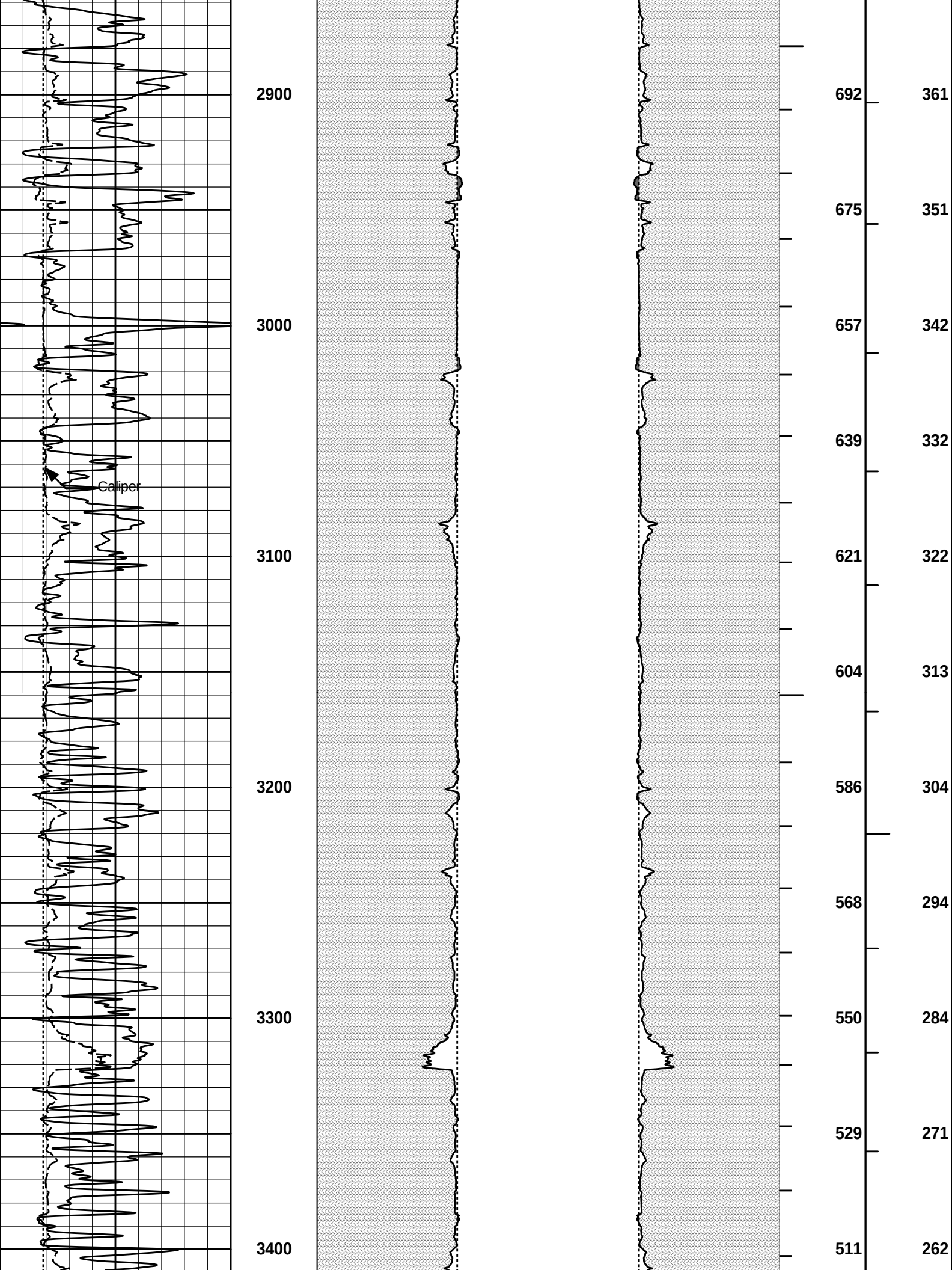
Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
SP Sub				

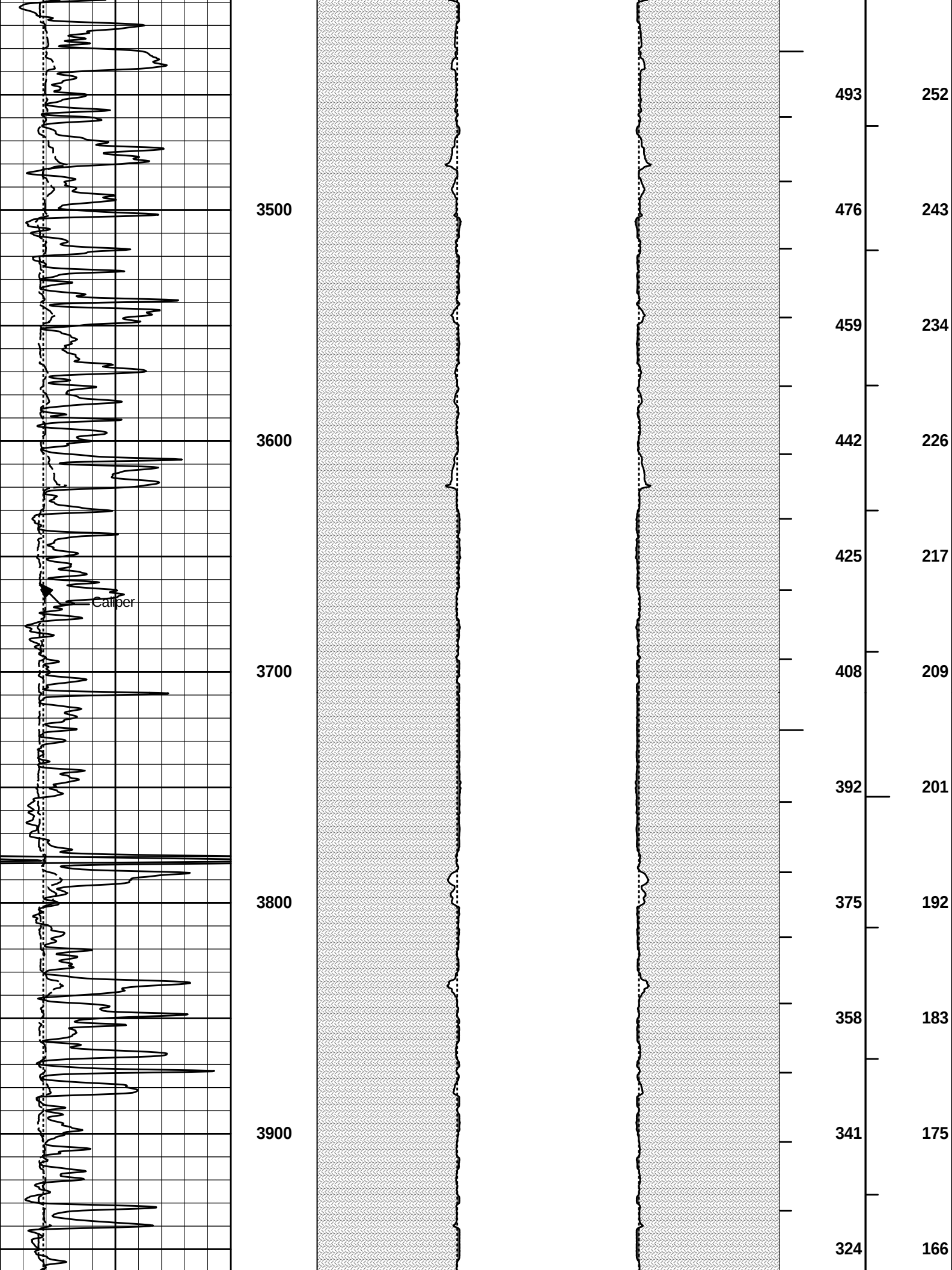
PLTC	Plot Control Mask	88.39	NO	
SP	Spontaneous Potential	88.39	BLK	1.250
SPR	Raw Spontaneous Potential	88.39	NO	
SPO	Spontaneous Potential Offset	88.39	NO	
GTET				
TPUL	Tension Pull	80.37	NO	
GR	Natural Gamma Ray API	80.37	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	80.37	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	80.37	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
HFDT-I				
TPUL	Tension Pull	64.83	NO	
IUXU	HFDT Insite In-phase Component of Upper Receiver - TXUon TXLoff	64.83	NO	
QUXU	HFDT Insite Quadrture Component of Upper Receiver - TXUon TXLof	64.83	NO	
IMXU	HFDT Insite In-phase Component of Middle Receiver TXUon TXLoff	64.83	NO	
QMXU	HFDT Insite Quadrture Component of Middle Receiver TXUon TXLof	64.83	NO	
ILXU	HFDT Insite In-phase Component of Lower Receiver TXUon TXLoff	64.83	NO	
QLXU	HFDT Insite Quadrture Component of Lower Receiver TXUon TXLoff	64.83	NO	
IUXL	HFDT Insite In-phase Component of Upper Receiver TXUoff TXLon	64.83	NO	
QUXL	HFDT Insite Quadrture Component of Upper Receiver TXUoff TXLon	64.83	NO	
IMXL	HFDT Insite In-phase Component of Middle Receiver TXUoff TXLon	64.83	NO	
QMXL	HFDT Insite Quadrture Component of Middle Receiver TXUoff TXLo	64.83	NO	
ILXL	HFDT Insite In-phase Component of Lower Receiver TXUoff TXLon	64.83	NO	
QLXL	HFDT Insite Quadrture Component of Lower Receiver TXUoff TXLon	64.83	NO	
TEX1	HFDTInsite External Pad Temperature Measurement 1	64.06	NO	
TEX2	HFDTInsite External Pad Temperature Measurement 2	64.06	NO	
STAT	HFDT Insite Pad Status Word	64.83	NO	
TPUL	Tension Pull	64.59	NO	
PCAL	Pad Caliper	64.59	TRI	0.250
ACAL	Arm Caliper	64.59	TRI	0.250
TPUL	Tension Pull	64.78	NO	
MINV	Microlog Lateral	64.78	BLK	0.750
MNOR	Microlog Normal	64.78	BLK	0.750
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

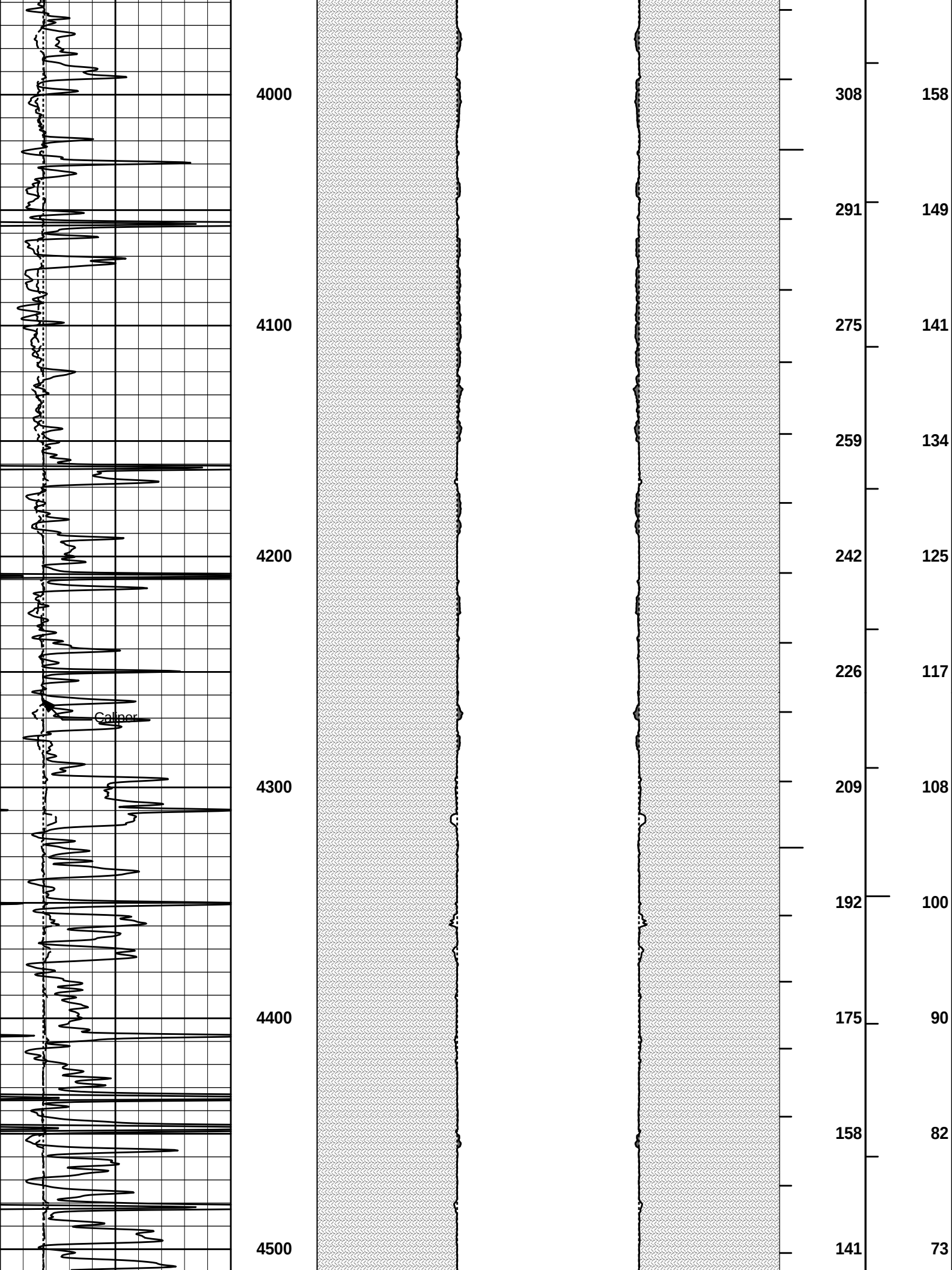
ACAL	Arm Caliper	44.09	TRI	0.250
BSAT				
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	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

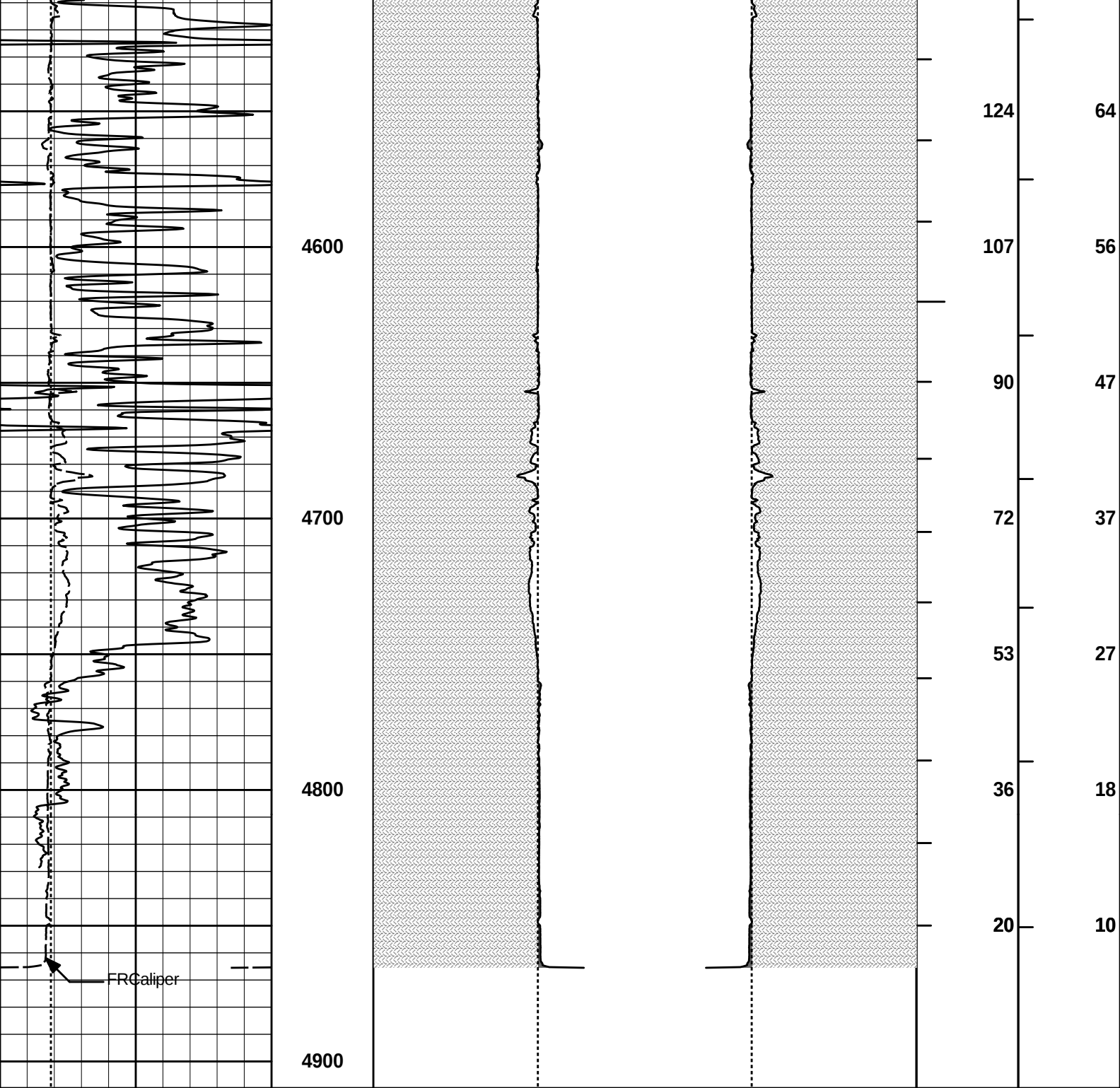












6	Caliper	16	1 : 600 ft	20	Caliper	0 0	20	BHVT	AHVT
	inches				inches				
6	BS	16		20	Bit Size	0 0	20		
	inches								
0	Gamma API	150			MUDCAKE		MUDCAKE		
	api								

HALLIBURTON

Plot Time: 13-Aug-12 01:48:35
 Plot Range: 1790 ft to 4909.83 ft
 Data: TURRENTINE_A4\Well Based\IR1_CASING\
 Plot File: \\-LOCAL-TURRENTINE_A4\0001 SP-GTET-HFDT-DSNT-SDLT-FLEX-BSAT-ACRT-CHIPOROI\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

COMPANY	OXY USA INC		
WELL	TURRENTINE A 4		
FIELD	AZAMON DITCH		
COUNTY	FINNEY	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON LOG	