

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY		HARTMAN OIL COMPANY, INC.			
WELL		GATTON B-4			
FIELD		RICHARDSON			
COUNTY		STAFFORD			
STATE		KANSAS			
Permanent Datum Log measured from Drilling measured from	GROUND LEVEL KELLY BUSHING KELLY BUSHING	Sect. 20	Twp. 22S	Rge. 11W	Elev. 1826.0 ft 8.0 ft above perm. Datum G.L. 1826.0 ft
Date	02-Sep-11				
Run No.	1				
Depth - Driller	3730.00 ft				
Depth - Logger	3734.0 ft				
Bottom - Logged Interval	3711.0 ft				
Top - Logged Interval	2900.0 ft				
Casing - Driller	8.625 in @ 333.0 ft				
Casing - Logger	332.0 ft				
Bit Size	7.875 in				
Type Fluid in Hole	WATER BASED MUD				
Density	9.3 ppg	52.00	s/qt		
PH	10.50 pH	9.2	cpm		
Source of Sample	FLOWLINE				
Rm @ Meas. Temperature	0.450 ohmm @ 80.00 degF				
Rmf @ Meas. Temperature	0.30 ohmm @ 78.00 degF				
Rmc @ Meas. Temperature	0.600 ohmm @ 78.00 degF				
Source Rmf	MEASURED	MEASURED			
Rm @ BHT	0.36 ohmm @ 108.0 degF				
Time Since Circulation	3.0 hr				
Time on Bottom	02-Sep-11 07:16				
Max. Rec. Temperature	108.0 degF @ 3734.0 ft				
Equipment	10782954	LIBERAL			
Recorded By	S. JUNG				
Witnessed By	K. NOAH				

Fold here

Service Ticket No.: 8420368				API Serial No.: 15-185-23698				PGM Version: WL INSITE R3.2.5 (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.	@		@																
Rmc @ Meas. Temp.	@		@																
Source Rmf	Rmc																		
Rm @ BHT	@		@																
Rmf @ BHT	@		@																
Rmc @ BHT	@		@																
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.	ONE		Run No.		Run No.	ONE		Run No.	ONE		Run No.	ONE							
Serial No.	10748374		Serial No.		Serial No.	I066_M85803_P45		Serial No.			Serial No.	10755066							
Model No.	GTET		Model No.		Model No.	SDLT		Model No.			Model No.	DSNT							
Diameter	3.625"		No. of Cent.		Diameter	4.75"		Diameter			Diameter	3.625"							
Detector Model No.	T-102		Spacing		Log Type	GAM-GAM		Log Type			Log Type	NEU-NEU							
Type	SCINT				Source Type	CS137		Source Type			Source Type	AM241BE							
Length	8"		LSA [Y/N]		Serial No.	5073GW		Serial No.			Serial No.	DSN-436							
Distance to Source	10'		FWDA [Y/N]		Strength	1.5 Ci		Strength			Strength	15 Ci							
LOGGING DATA																			
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			

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	TD	2900'	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														
GPS COORDINATES: LAT: 38.11 N & LONG: 98.54 W														
CHLORIDES REPORTED AT 8700 PPM LCM REPORTED AT 2 PPB														
TODAY'S CREW: F. VILLA, A. VAQUERA														
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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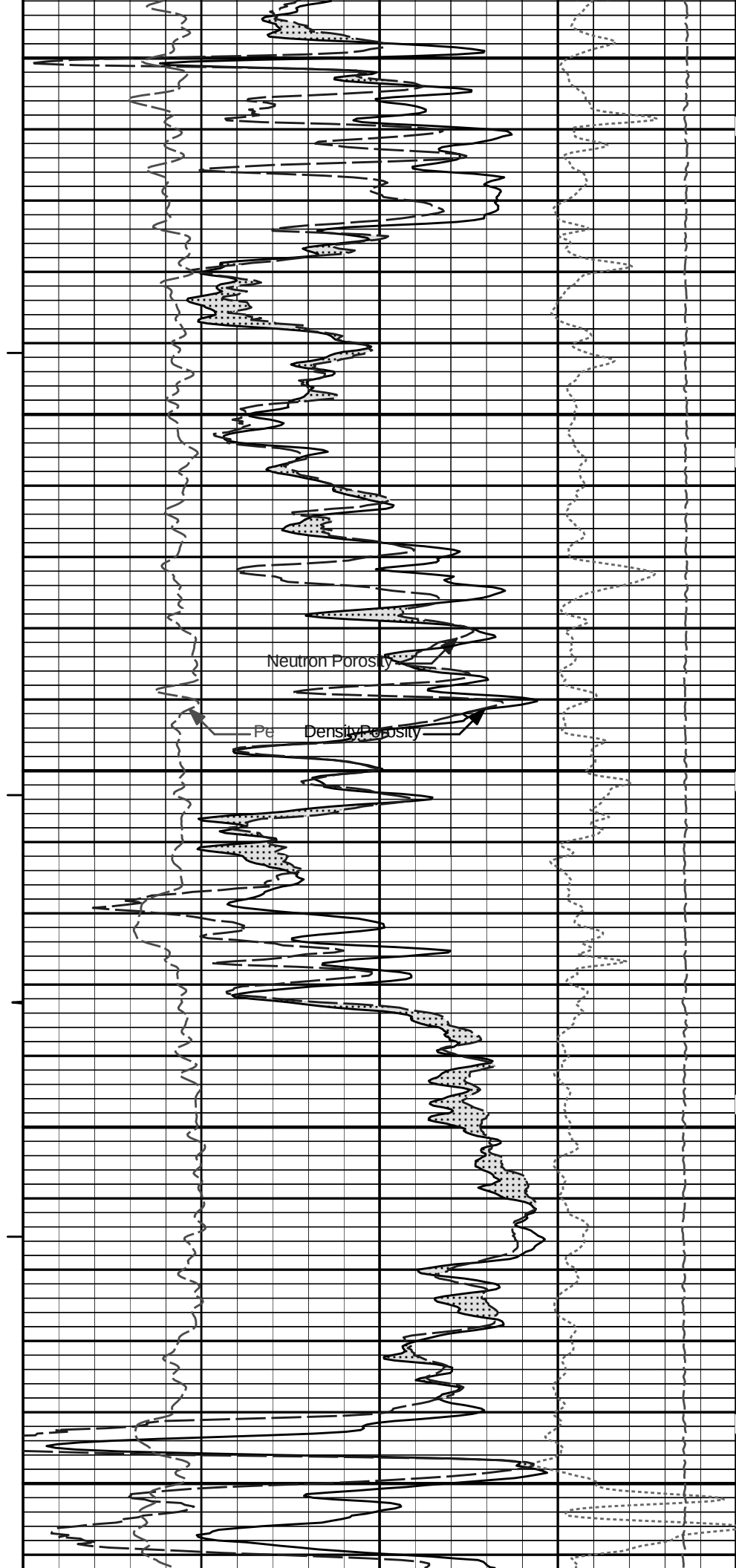
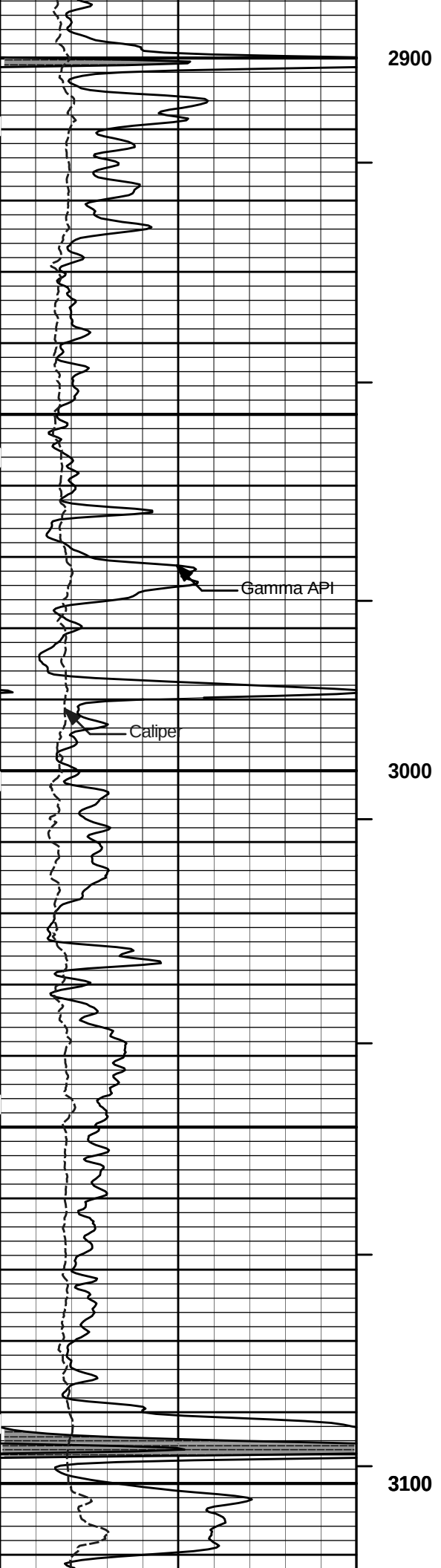
HALLIBURTON

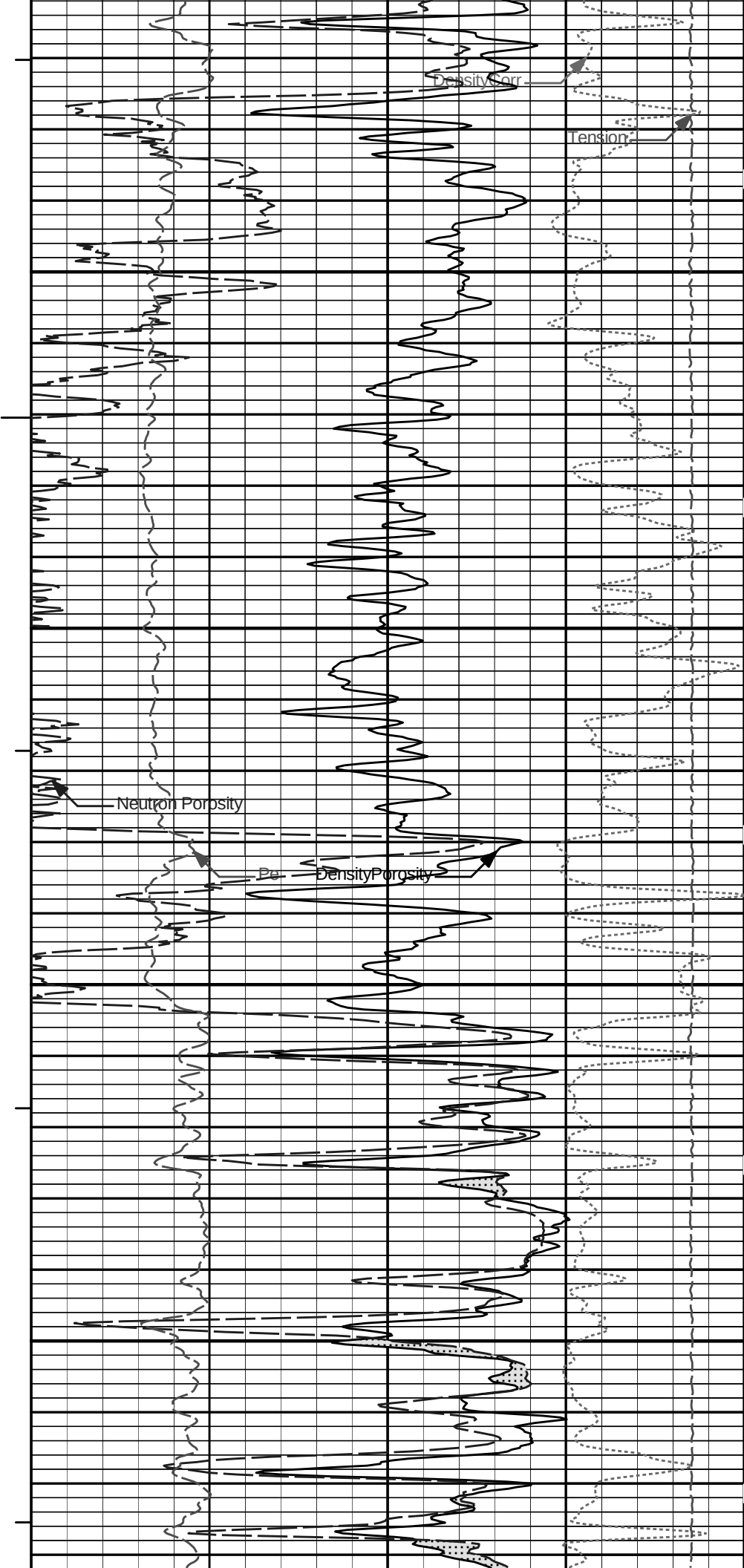
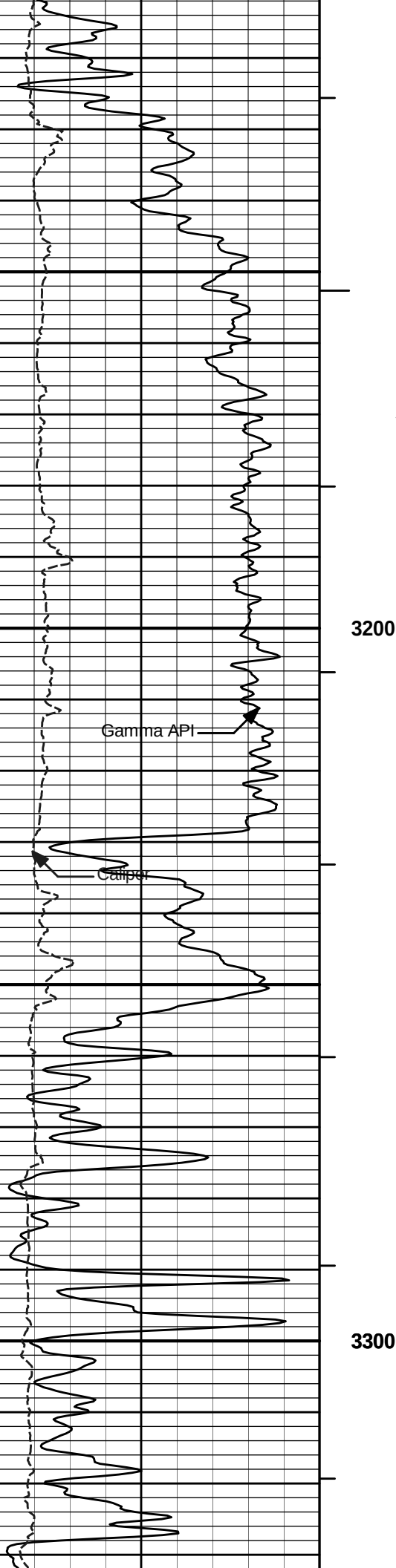
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Plot Range: 2850 ft to 3736.92 ft
Data: GATTON_B_4\Well Based\DAQ-0001-DETAIL\
Plot File: \\PORO\Porosity_IQ_5_MAIN_LIB

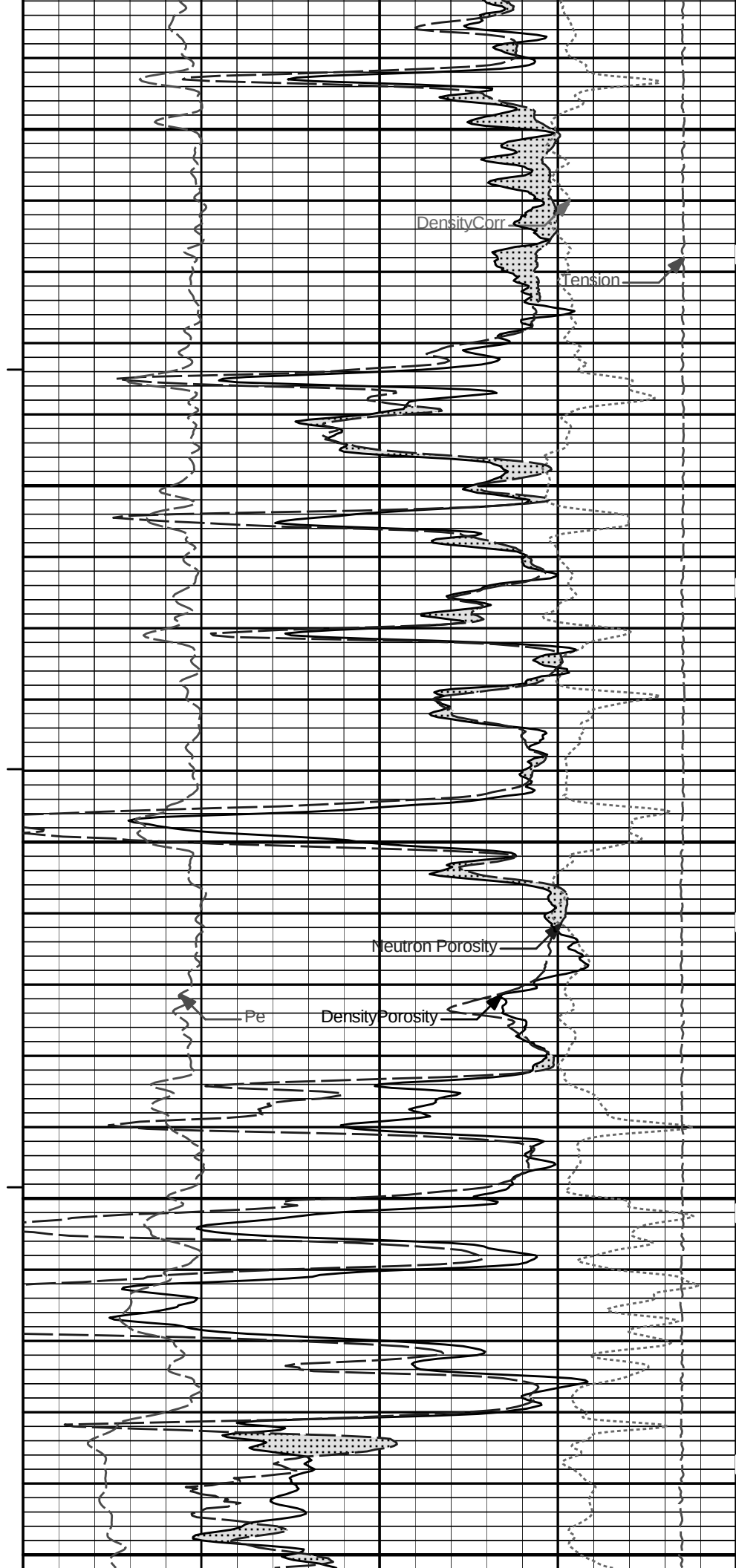
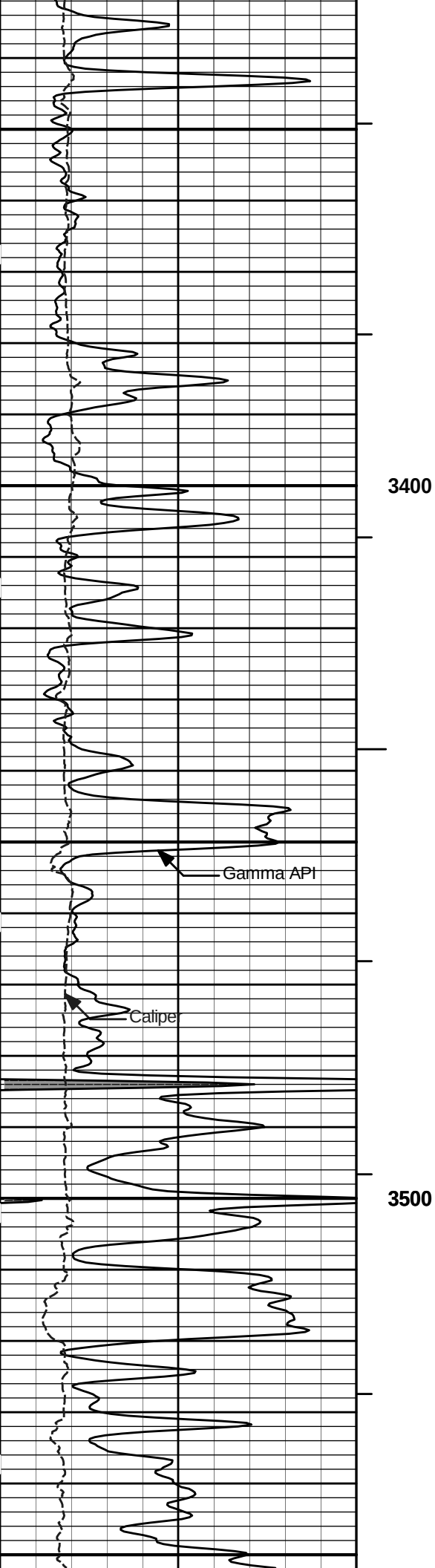
5 INCH MAIN LOG

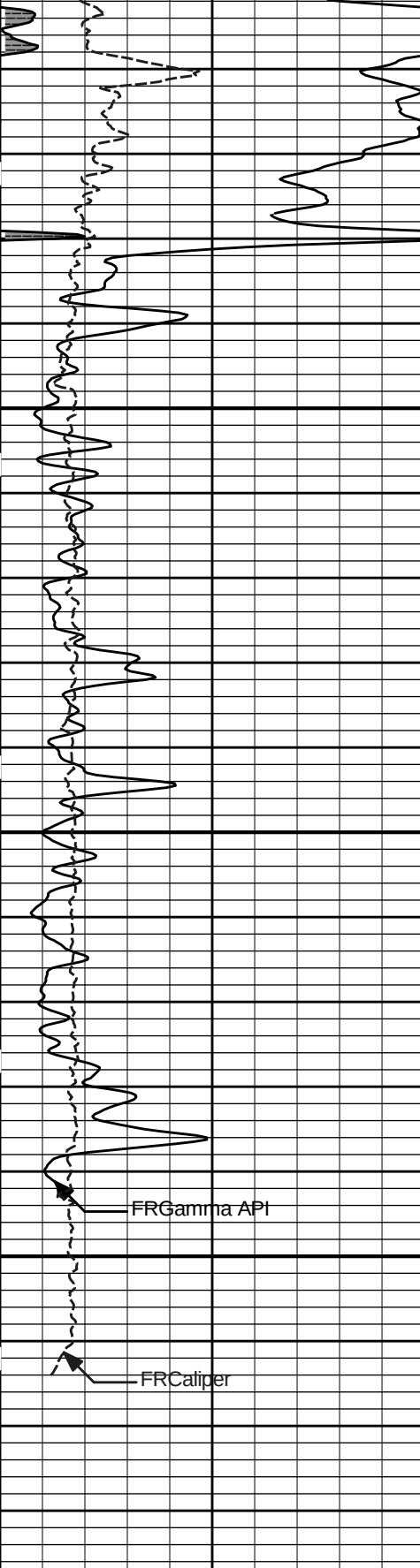
Tension Pull		CROSSOVER	
Tension Pull 10	0	30	-10
SHALE		Neutron Porosity	
BHVT		%	
AHVT		Density Porosity	
1 : 240 ft		%	
Gamma API		Tension	
api		pounds	
Caliper		Density Corr	
inches		gram per cc	

The plot displays several curves against depth (ft). The left side shows Gamma API (0 to 150) and Caliper (6 to 16 inches). The right side shows Neutron Porosity (30 to -10%), Density Porosity (30 to -10%), Tension (15K to 0 pounds), and Density Corr (0 to -0.25 gram per cc). A shaded region indicates a shale zone. A crossover line is shown between the Neutron Porosity and Density Porosity curves. The Tension curve shows a sharp peak near the bottom. The Density Corr curve shows a sharp dip near the bottom.









3600

3700

TD

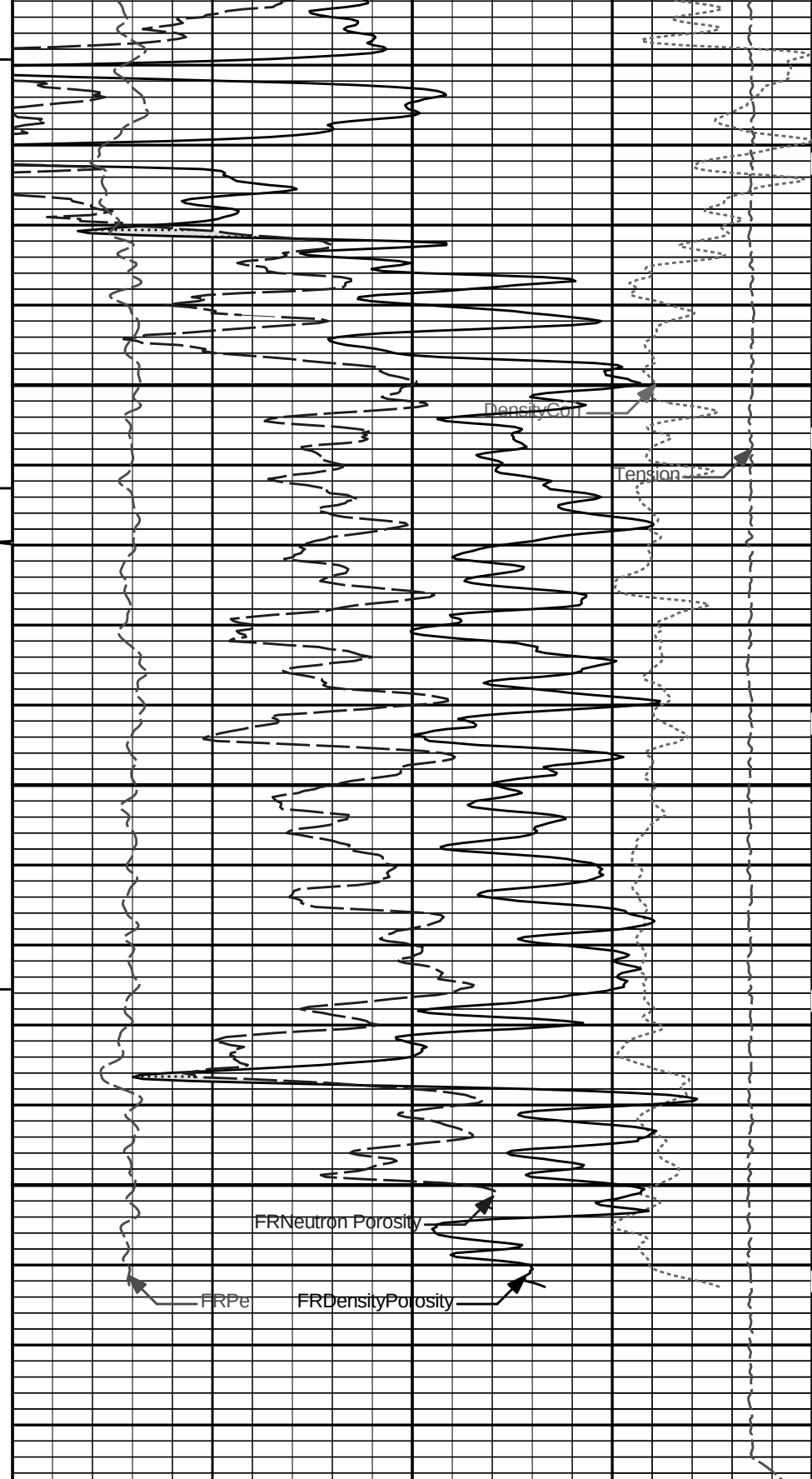
6	Caliper	16
inches		
0	Gamma API	150
api		
SHALE		

1 : 240
ft

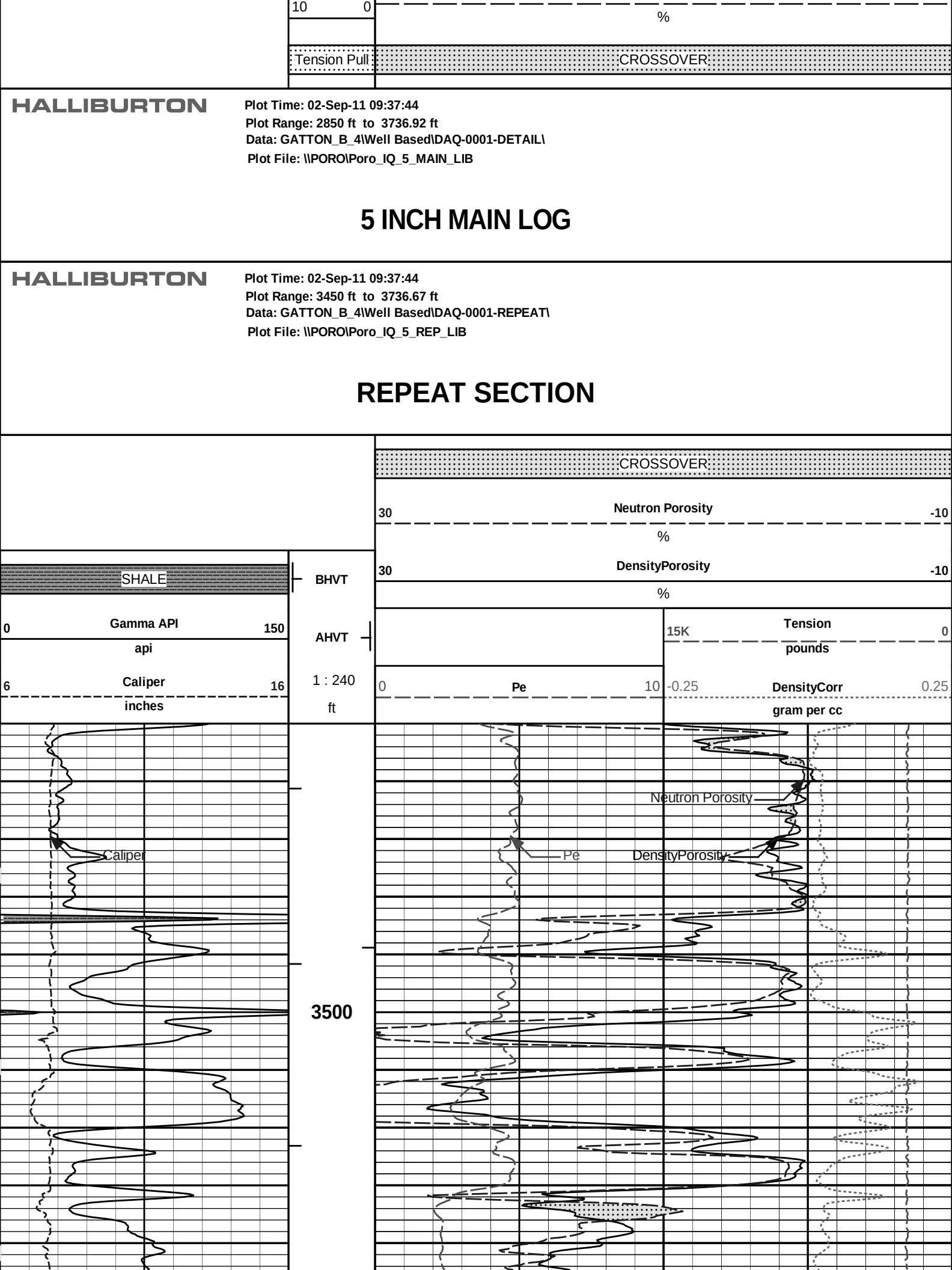
AHVT

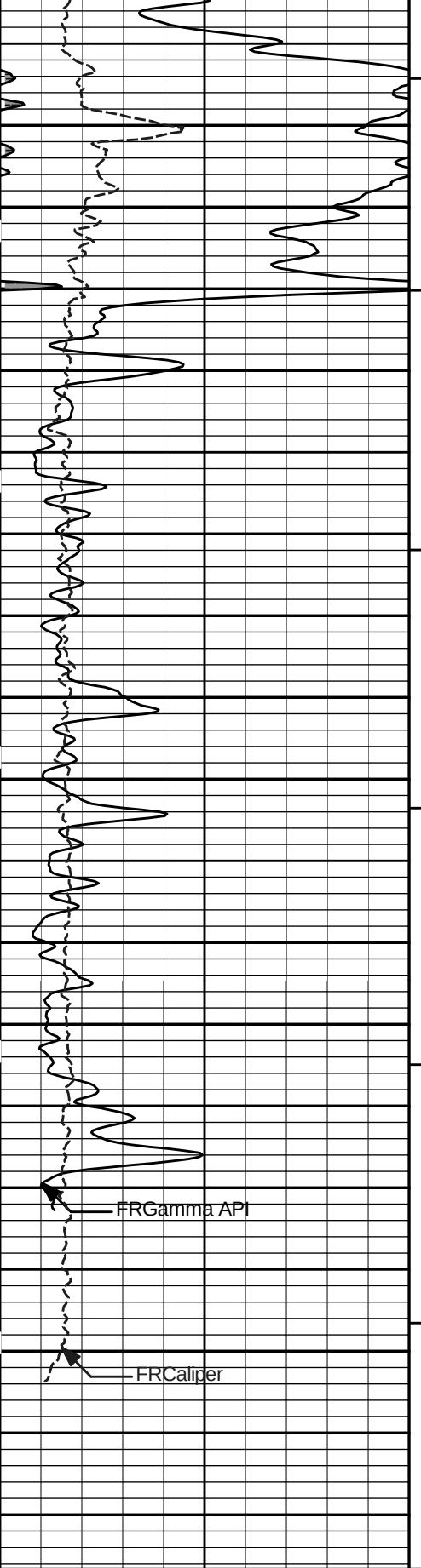
BHVT

Tension Pull



0	Pe	10
		-0.25
		DensityCorr
		gram per cc
		15K
		Tension
		pounds
30	DensityPorosity	-10
%		
30	Neutron Porosity	-10



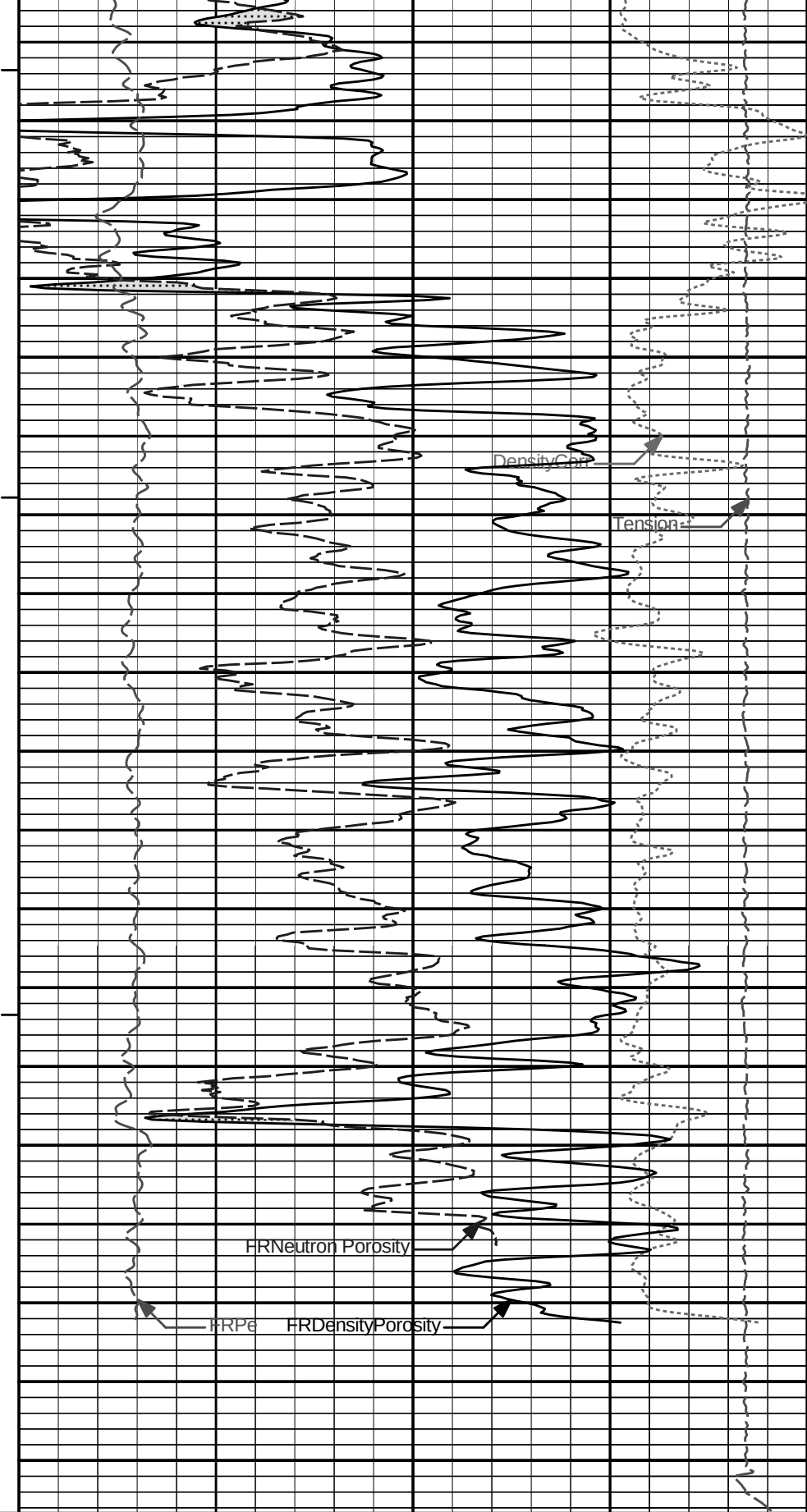


3600

3700

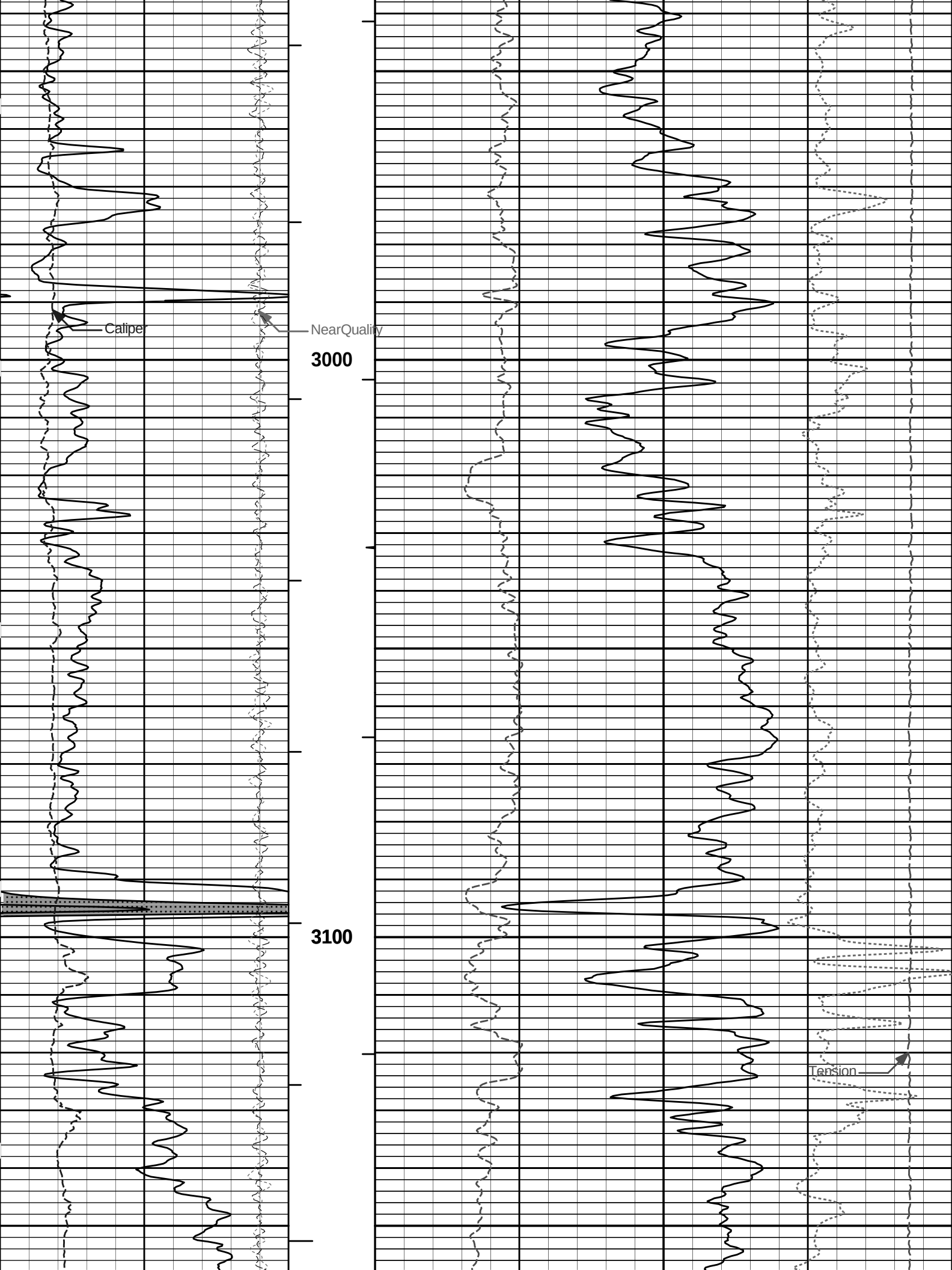
6	Caliper	16
inches		
0	Gamma API	150
api		
SHALE		

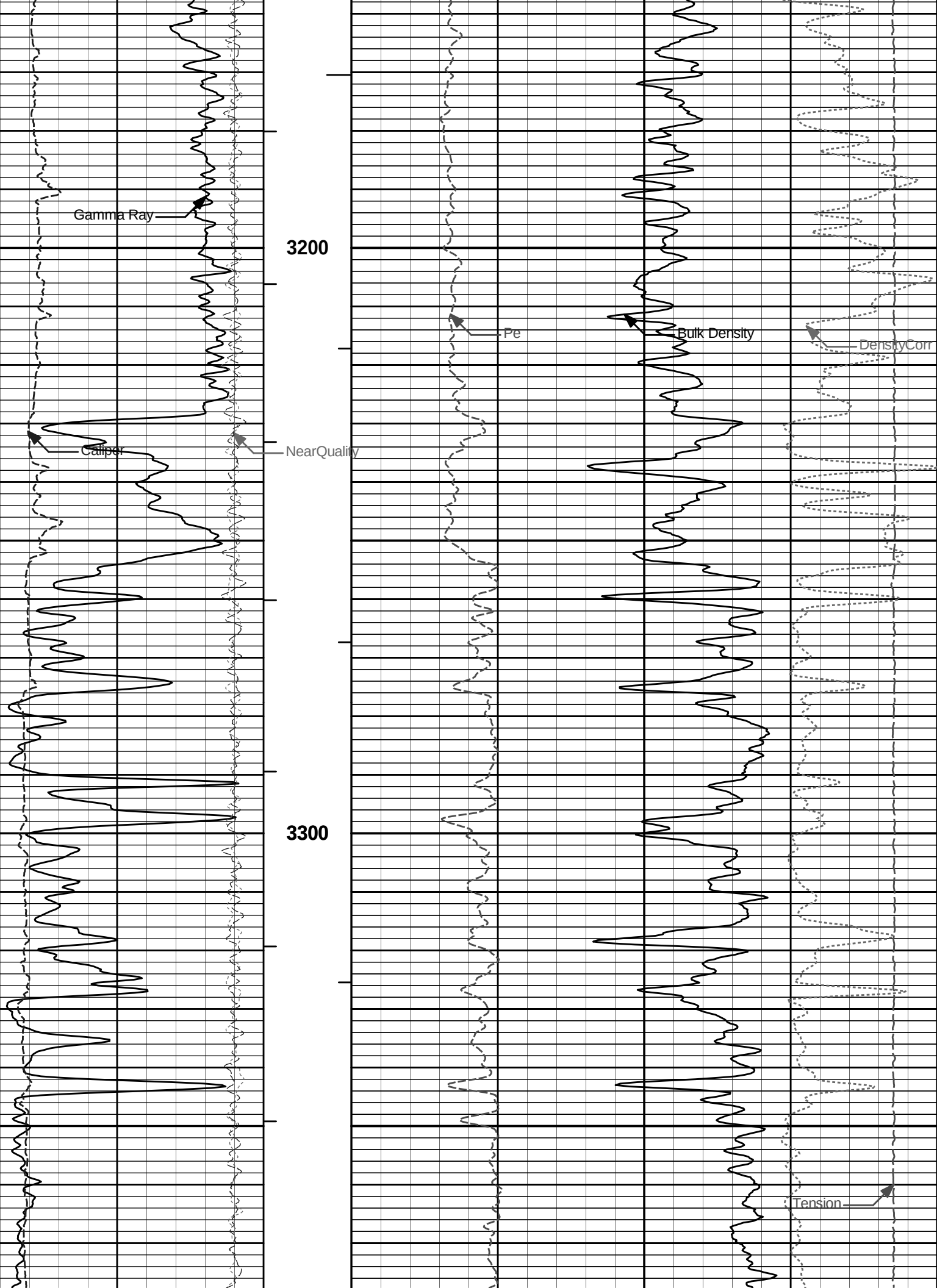
1 : 240
ft
AHVT
BHVT

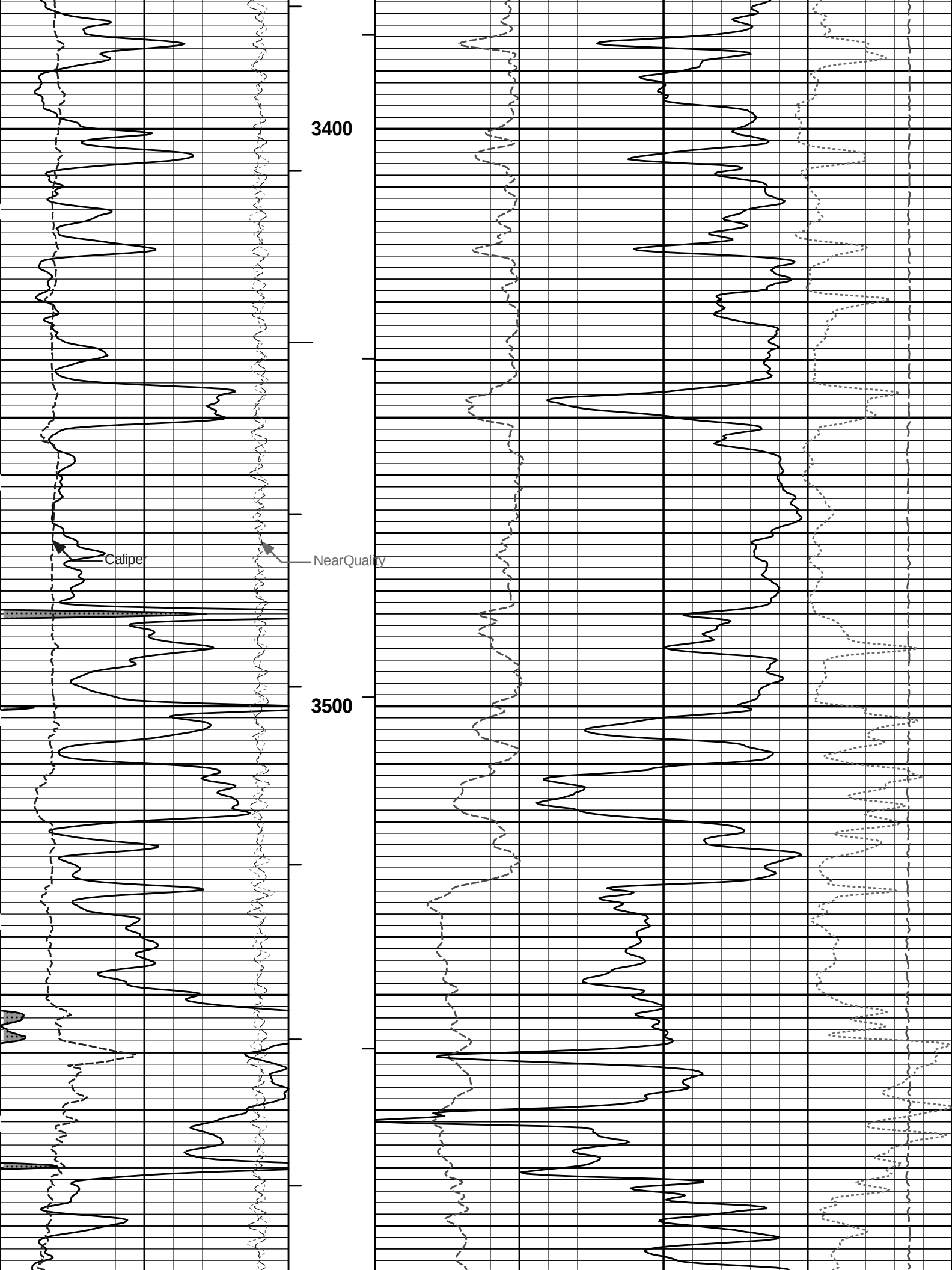


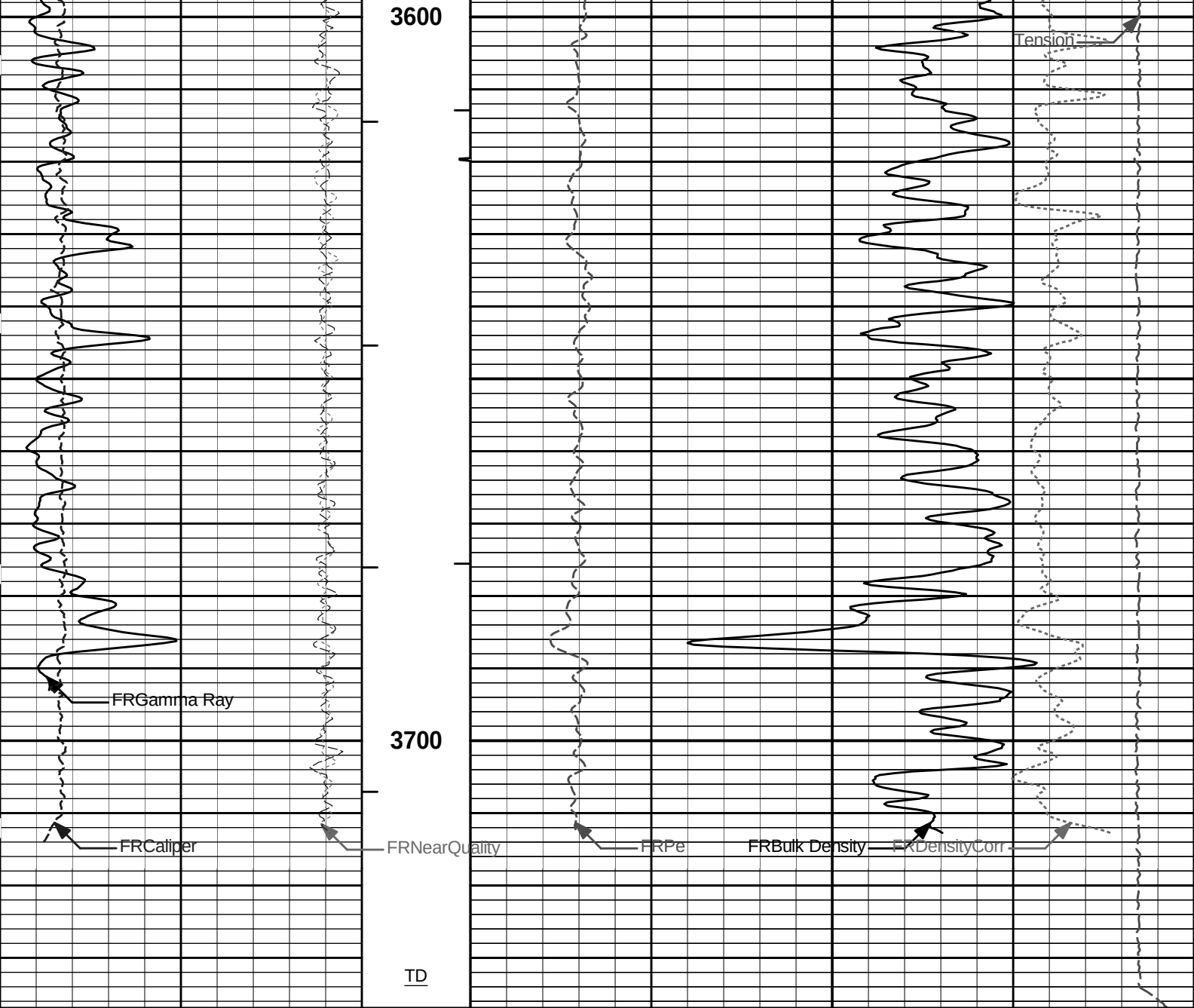
0	Pe	10	-0.25	DensityCorr	0.25
			gram per cc		
			15K	Tension	0
			pounds		
30	DensityPorosity		-10		
%					

SHALE		Tension Pull	
0	Gamma Ray	150	Tension Pull
	api		10 0
18	FarQuality	-2	AHV
			ft3
-18	NearQuality	2	BHV
			ft3
6	Caliper	16	1 : 240
	inches		ft
2900		2900	









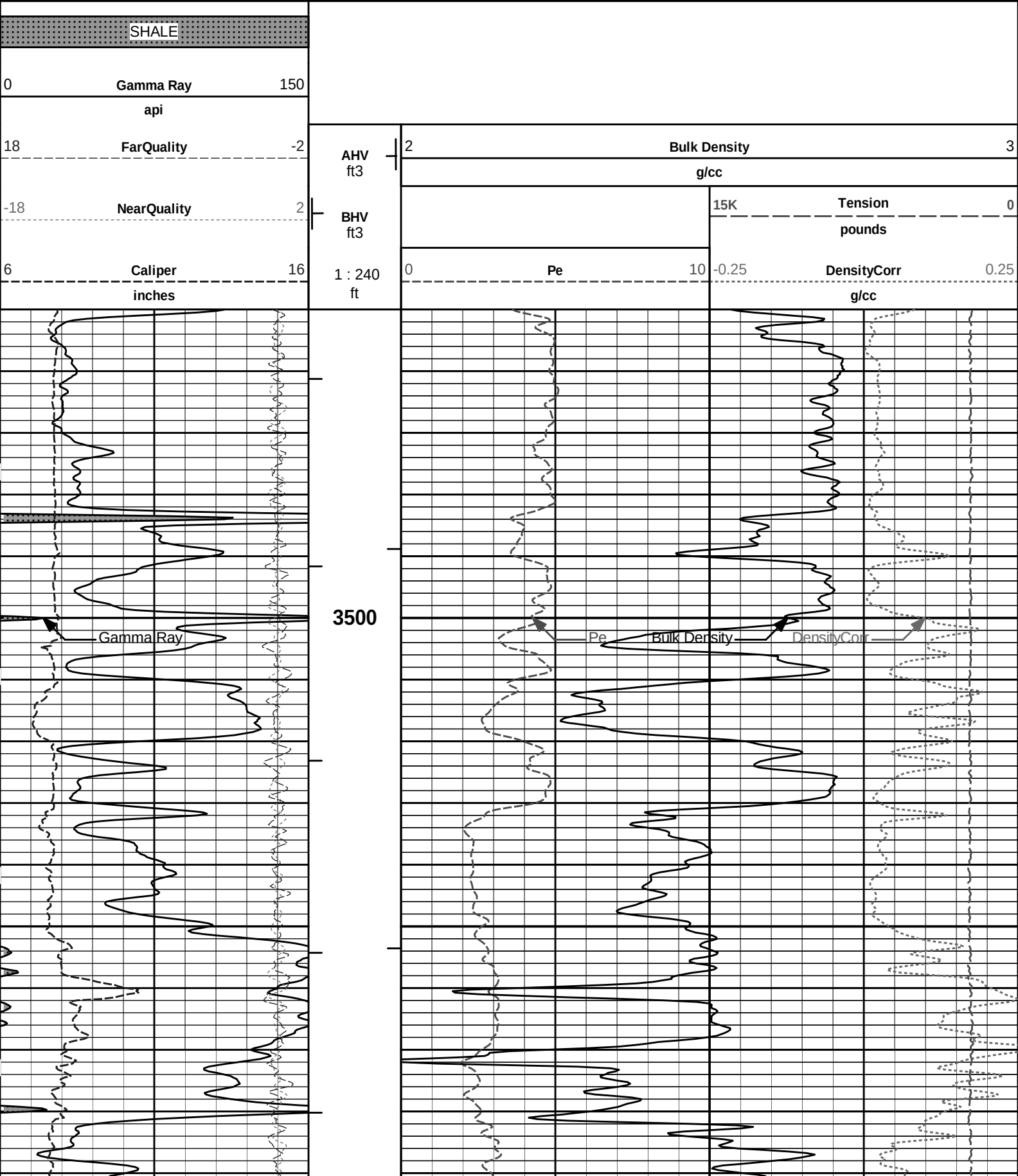
6	Caliper	16	1 : 240	0	Pe	10	-0.25	DensityCorr	0.25
	inches		ft					g/cc	
-18	NearQuality	2	BHV				15K	Tension	0
			ft3					pounds	
18	FarQuality	-2	AHV	2	Bulk Density				
			ft3		g/cc				
0	Gamma Ray	150	Tension Pull						
	api		10	0					
	SHALE		Tension Pull						

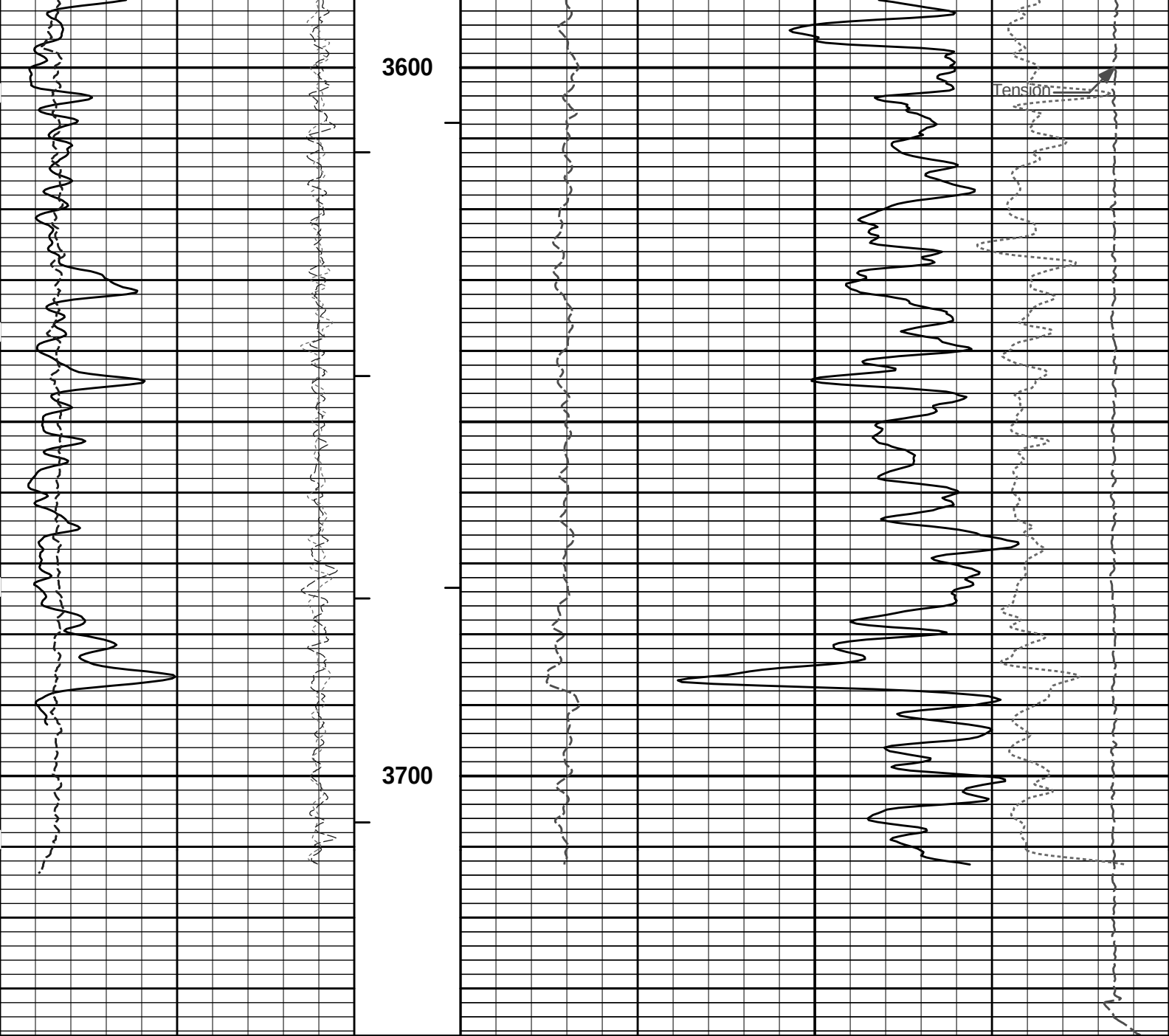
HALLIBURTON

Plot Time: 02-Sep-11 09:37:48
 Plot Range: 2850 ft to 3736.92 ft
 Data: GATTON_B_4\Well Based\DAQ-0001-DETAIL\
 Plot File: \\LOCAL-GATTON_B_4\0001 SP-GTET-DSN-SDL-ACRT-CHIPOROIBULKD_5_MAIN_LIB

5 INCH MAIN LOG

REPEAT SECTION





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

HALLIBURTON

Plot Time: 02-Sep-11 09:37:49
Plot Range: 3450 ft to 3736.67 ft
Data: GATTON_B_4\Well Based\DAQ-0001-REPEAT\
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REPEAT SECTION

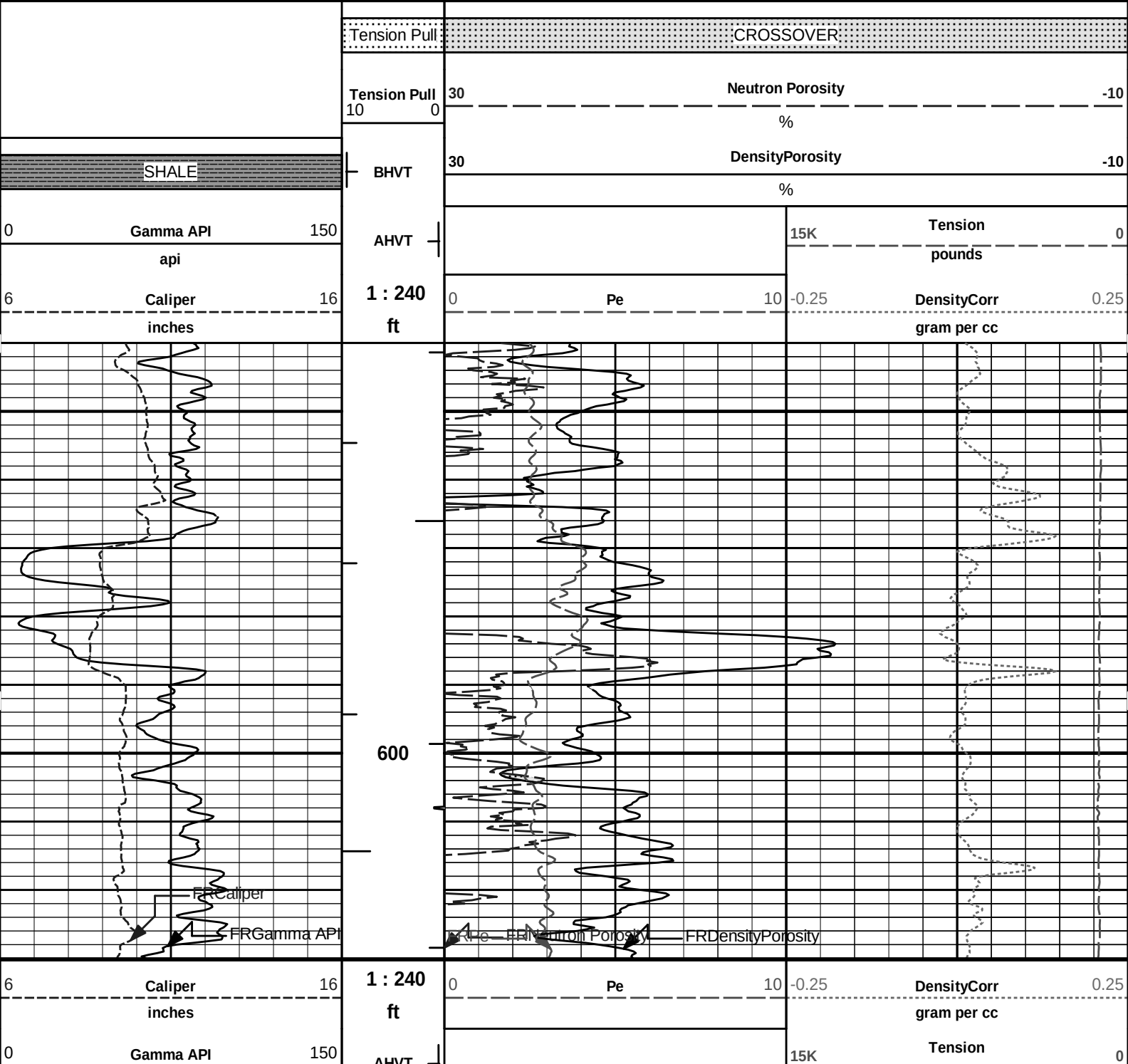
REPEAT SECTION

HALLIBURTON

Plot Time: 02-Sep-11 09:37:50
Plot Range: 540 ft to 630 ft
Data: GATTON_B_4\Well Based\DAQ-0001-ANH
Plot File: \\PORO\Porosity_Q_5_MAIN_LIB

5 INCH MAIN LOG

DETAIL OVER ANHYDRITE



api	ANVT		pounds
SHALE	BHVT	30	DensityPorosity -10
			%
	Tension Pull 10 0	30	Neutron Porosity -10
			%
	Tension Pull		CROSSOVER

HALLIBURTON

Plot Time: 02-Sep-11 09:37:51
Plot Range: 540 ft to 630 ft
Data: GATTON_B_4\Well Based\DAQ-0001-ANH
Plot File: \\PORO\Porosity_IQ_5_MAIN_LIB

5 INCH MAIN LOG

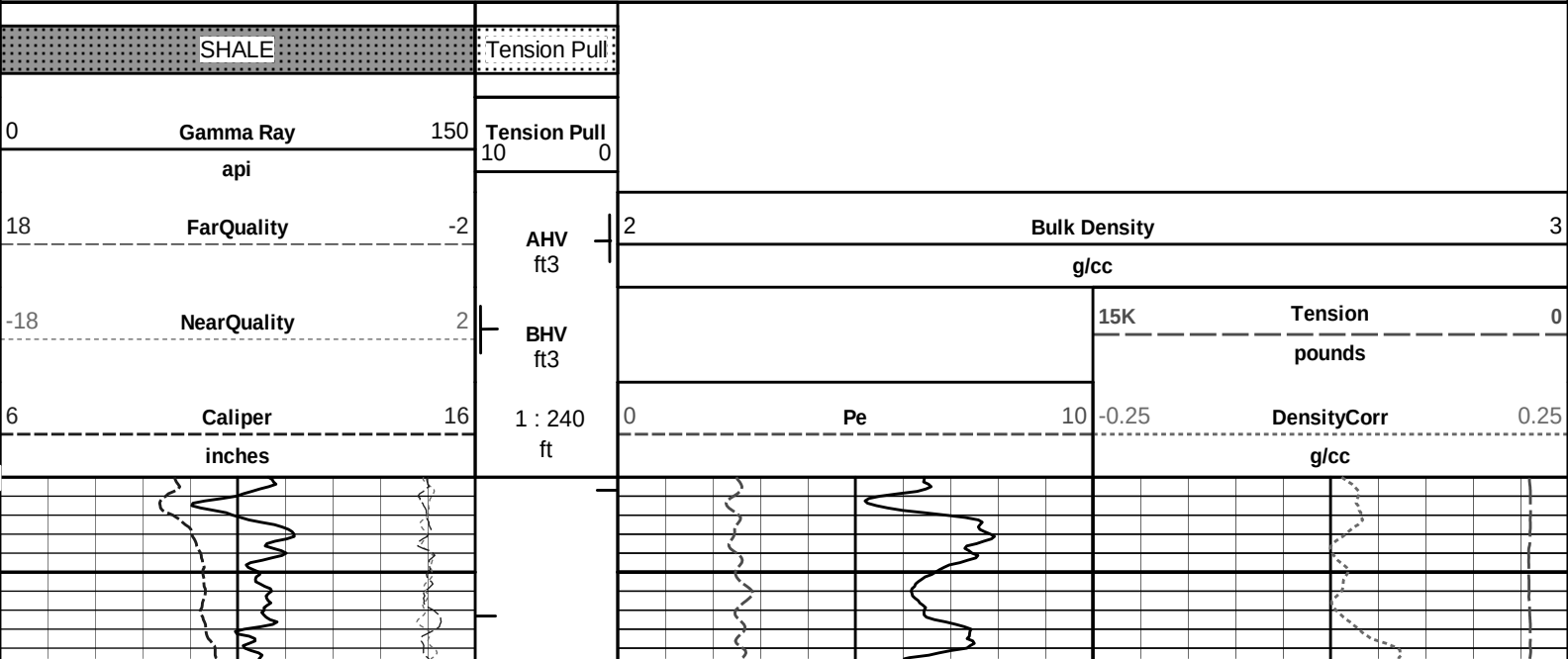
DETAIL OVER ANHYDRITE

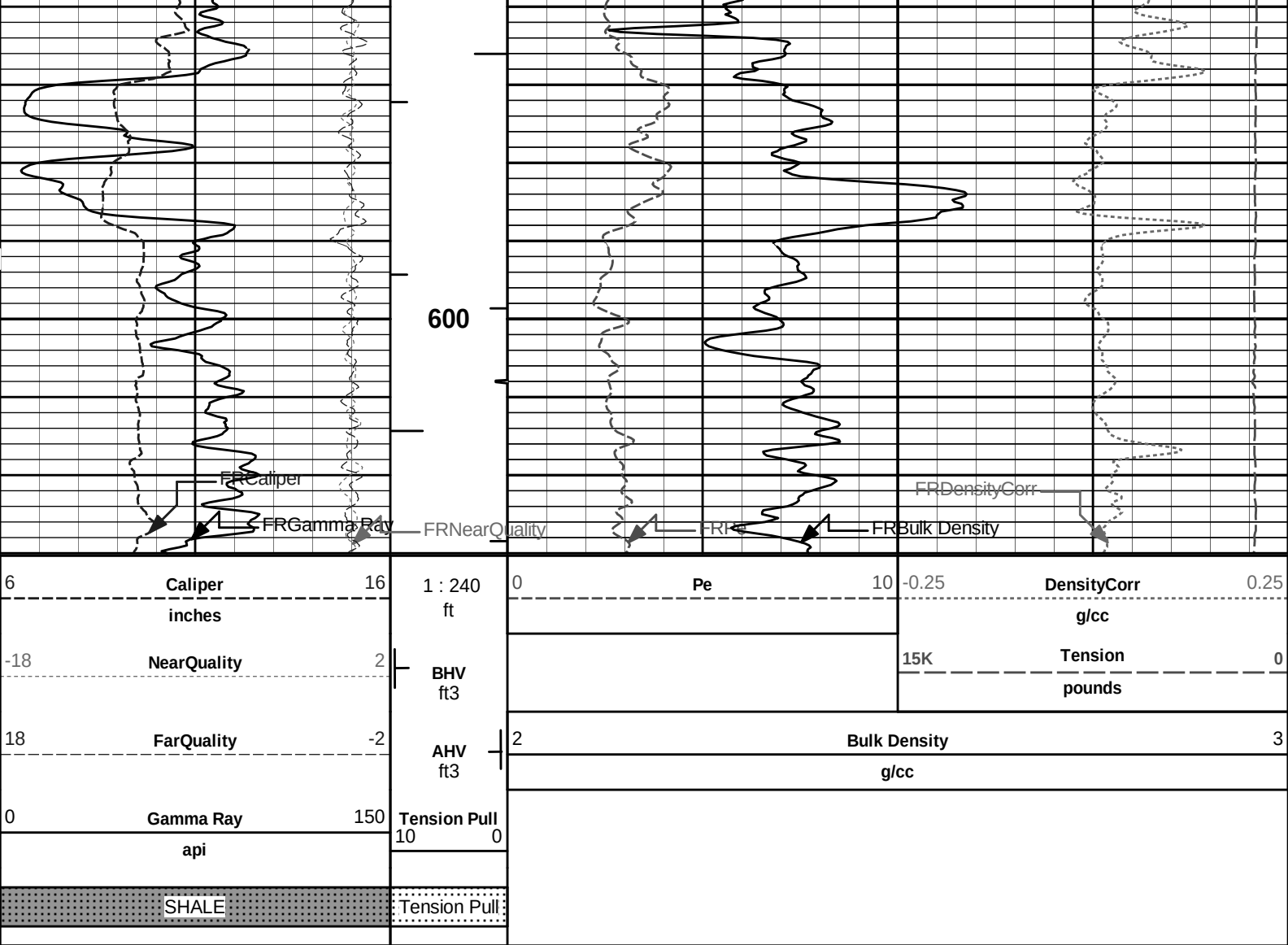
HALLIBURTON

Plot Time: 02-Sep-11 09:37:51
Plot Range: 540 ft to 630 ft
Data: GATTON_B_4\Well Based\DAQ-0001-ANH
Plot File: \\LOCAL-1\GATTON_B_4\0001 SP-GTET-DSN-SDL-ACRT-CHIPORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

DETAIL OVER ANHYDRITE





HALLIBURTON

Plot Time: 02-Sep-11 09:37:53
Plot Range: 540 ft to 630 ft
Data: GATTON_B_4\Well Based\DAQ-0001-ANH\
Plot File: \\LOCAL-IGATTON_B_4\0001 SP-GTET-DSN-SDL-ACRT-CHIPORO\BULKD_5_MAIN_LIB

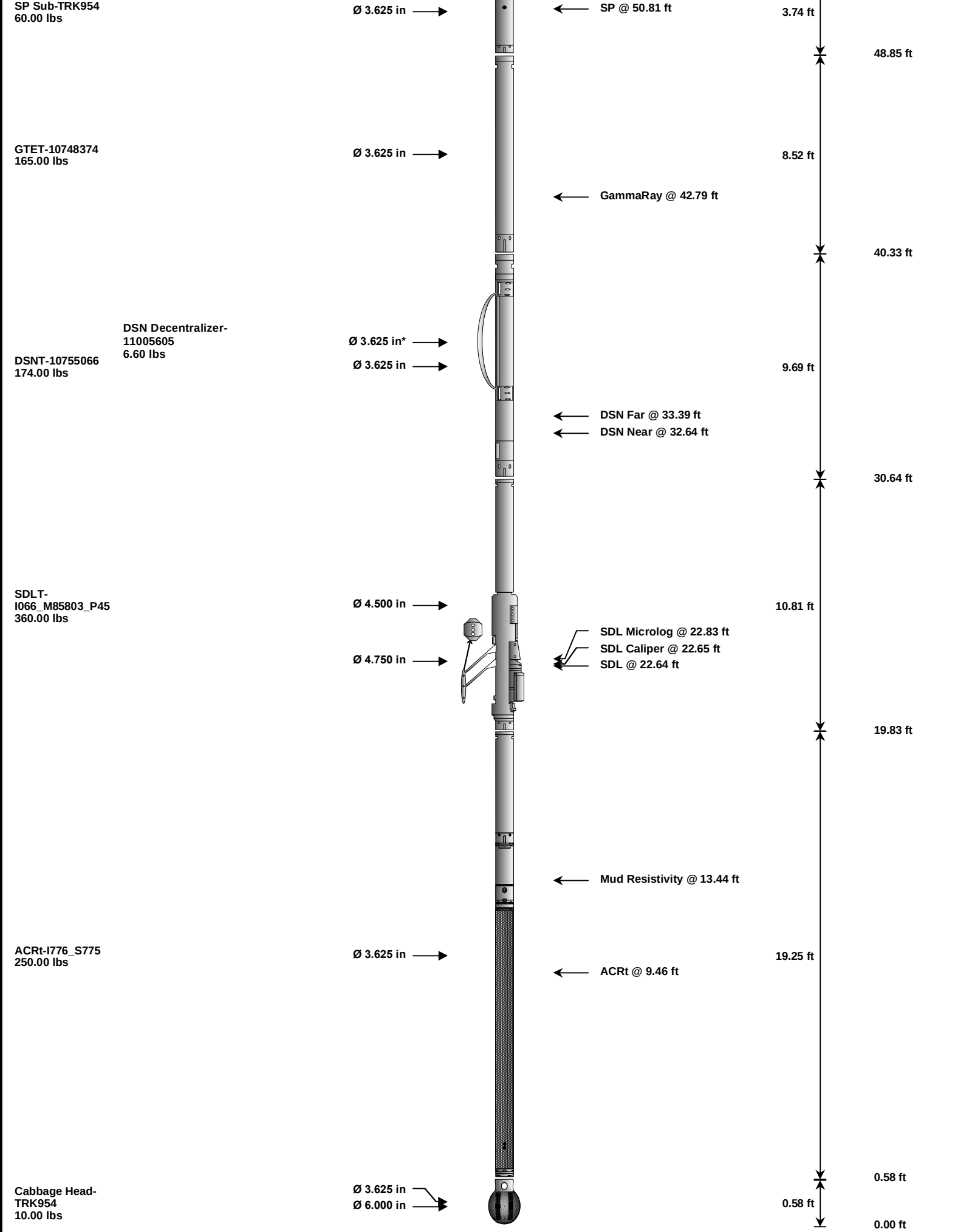
5 INCH MAIN LOG

DETAIL OVER ANHYDRITE

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	54.51 ft
						52.59 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
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CH	Standard OH Cable Head	PROT01	30.00	1.92	52.59	300.00
SP	SP Sub	TRK954	60.00	3.74	48.85	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	40.33	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	30.64	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13 *	33.97	300.00
SDLT	Spectral Density Tool	I066_M85803_P45	360.00	10.81	19.83	60.00
ACRT	Array Compensated True Resistivity	I776_S775	250.00	19.25	0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58	0.00	300.00
Total			1,055.60	54.51		
* Not included in Total Length and Length Accumulation.						
Data: GATTON_B_4I0001 SP-GTET-DSN-SDL-ACRT-CHIDLE				Date: 02-Sep-11 07:28:08		

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION						
Tool Name:	GTET - 10748374		Reference Calibration Date:	25-Apr-11 10:04:04		
Engineer:	C. MARLOWE		Calibration Date:	09-Aug-11 05:40:36		
Software Version:	WL INSITE R3.2.5 (Build 2)		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	34.4	35.2	api
Background + Calibrator	261.1	267.2	api
Calibrator	232.8	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION						
Tool Name:	GTET - 10748374		Reference Calibration Date:	09-Aug-11 05:40:36		
Engineer:	S. JUNG		Calibration Date:	02-Sep-11 05:50:36		
Software Version:	WL INSITE R3.2.5 (Build 2)		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	35.2	27.0	api
Background + Calibrator	267.2	259.3	api
Calibrator	232.0	232.3	api
Shop	Field	Difference	Tolerance
232.0	232.3	-0.3	+/- 9.00

NATURAL GAMMA RAY TOOL POST CALIBRATION						
Tool Name:	GTET - 10748374		Reference Calibration Date:	02-Sep-11 05:50:36		
Engineer:	S. JUNG		Calibration Date:	02-Sep-11 09:16:19		
Software Version:	WL INSITE R3.2.5 (Build 2)		Calibration Version:	1		

Calibrator Source S/N: TB-185			
Calibrator API Reference:228.00 api			
Calibrator API Reference:232.0 api			
Post Verification	Field	Post	Units
Background	27.0	26.8	api

Background	27.0	20.0	api
Background + Calibrator	259.3	262.9	
Calibrator	232.3	236.1	api

Shop	Field	Post	Difference	Tolerance
232.0	232.3	236.1	-3.8	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10755066 Reference Calibration Date: 18-Jun-11 10:14:15

Engineer: S. JUNG Calibration Date: 28-Jul-11 14:45:23

Software Version: WL INSITE R3.2.5 (Build 2) 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: 89 degF

Min. Tool Housing Outside Diameter: 3.615 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):	0.2103	0.2103	0.0000	+/- 0.0020
Calibrated Ratio:	9.70	9.70	0.001	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0612	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 - 10755066 Reference Calibration Date: 28-Jul-11 14:45:23

Engineer: S. JUNG Calibration Date: 02-Sep-11 05:54:33

Software Version: WL INSITE R3.2.5 (Build 2) 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):	0.0612	0.0622	0.0010	+/- 0.0150

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

DUAL SPACED NEUTRON POST CALIBRATION

Tool Name: DSNT - 10755066

Reference Calibration Date: 02-Sep-11 05:54:33

Engineer: S. JUNG

Calibration Date: 02-Sep-11 09:21:06

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN-436
Snow Block S/N: TRK_10782954

NEUTRON POST-CHECK SUMMARY				
	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0622	0.0607	-0.0016	+/- 0.0150

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - I066_M85803_P45

Reference Calibration Date: 15-Jun-11 13:49:07

Engineer: S. JUNG

Calibration Date: 28-Jul-11 17:09:21

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Logging Source S/N: 5073GW

Aluminum Block S/N: 63061

Density: 2.591g/cc

Pe: 3.170

Magnesium Block S/N: 63393

Density: 1.690g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9833	0.9683	0.90 - 1.10
Near Dens Gain	0.9718	0.9689	0.90 - 1.10
Near Peak Gain	0.9666	0.9709	0.90 - 1.10
Near Lith Gain	0.9589	0.9479	0.90 - 1.10
Far Bar Gain	0.9891	0.9872	0.90 - 1.10
Far Dens Gain	0.9804	0.9802	0.90 - 1.10
Far Peak Gain	0.9761	0.9761	0.90 - 1.10
Far Lith Gain	0.9511	0.9458	0.90 - 1.10
Near Bar Offset	0.3728	0.5164	NONE
Near Dens Offset	0.4435	0.4782	NONE
Near Peak Offset	0.4554	0.4313	NONE
Near Lith Offset	0.4791	0.5856	NONE
Far Bar Offset	0.2144	0.2328	NONE
Far Dens Offset	0.2716	0.2747	NONE
Far Peak Offset	0.2759	0.2737	NONE
Far Lith Offset	0.4034	0.4411	NONE
Near Bar Background	1017.14	1015.67	700 - 1450
Near Dens Background	336.72	338.63	230 - 480
Near Peak Background	147.16	147.35	100 - 210
Near Lith Background	180.00	177.87	125 - 260
Far Bar Background	524.89	518.02	450 - 900
Far Dens Background	201.71	200.61	175 - 345
Far Peak Background	79.21	77.97	70 - 140
Far Lith Background	83.74	83.63	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.681	1.690	0.009	+/- 0.015
Pe	2.622	2.563	-0.059	+/- 0.150
ALUMINUM				
Density (g/cc)	2.580	2.590	0.011	+/- 0.01500
Pe	3.179	3.138	-0.041	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0012	+/- 0.0110	-0.0004	+/- 0.0140
Magnesium Block	-0.0008	+/- 0.0110	-0.0022	+/- 0.0140
Aluminum Block	-0.0004	+/- 0.0110	0.0005	+/- 0.0140
Resolution	9.73	6.00 - 11.50	9.17	6.00 - 11.50
Internal Verifier(B+D+P+L)	1680	1200 - 2700	880	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 - I066_M85803_P45	Reference Calibration Date:	28-Jul-11 17:09:21
Engineer:	S. JUNG	Calibration Date:	02-Sep-11 05:50:45
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

Pad Temperature: 89.3 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1679.525	1679.613	0.088	16.455
Far (B+D+P+L) cps	880.233	876.796	-3.437	16.189
Near Resolution	9.73	9.86	0.130	0.50
Far Resolution	9.17	9.44	0.270	1.00

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

SPECTRAL DENSITY POST CHECK

Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	02-Sep-11 05:50:45
Engineer:	S. JUNG	Calibration Date:	02-Sep-11 09:16:27
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

Pad Temperature: 82.3 degF

DENSITY POST CALIBRATION SUMMARY

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1679.613	1677.065	-2.548	16.455
Far (B+D+P+L) cps	876.796	882.270	5.474	16.189
Near Resolution	9.86	9.94	0.080	0.50
Far Resolution	9.44	9.27	-0.170	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	12-Jul-11 04:19:15
Engineer:	S. JUNG	Calibration Date:	28-Jul-11 18:03:47
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-5270.37	-4918.14	-7000.00 - -1000.00
Pad Gain	0.0003721	0.0003691	0.000200 - 0.000600
Arm Offset	-579.04	-1490.50	-5000.00 - 3000.00
Arm Gain	0.0004414	0.0005216	0.000300 - 0.000700
Arm Power	-0.000000209	-0.000005938	-0.000010 - 0.000010

The ring diameter is computed from: $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	1.89	2.00	0.11	+/- 0.20
Medium Ring (in)	3.65	3.75	0.10	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.51	6.50	-0.01	+/- 0.20
Medium Ring (in)	8.09	8.25	0.16	+/- 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 - I066_M85803_P45	Reference Calibration Date:	28-Jul-11 18:03:47
Engineer:	S. JUNG	Calibration Date:	02-Sep-11 05:58:08
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.73	-0.02	+/- 0.10

Pad Extension	3.73	3.73	-0.02	+/- 0.10
Ring Diameter	8.25	8.23	-0.02	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

SDLT CALIPER POST CALIBRATION				
Tool Name:	SDLT - I066_M85803_P45		Reference Calibration Date:	02-Sep-11 05:58:08
Engineer:	S. JUNG		Calibration Date:	02-Sep-11 09:25:02
Software Version:	WL INSITE R3.2.5 (Build 2)		Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Field	Post	Change	Control Limit On New Value
Pad Extension	3.73	3.77	0.03	+/- 0.10
Ring Diameter	8.23	8.34	0.11	+/- 0.15

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

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	232.3	236.1	-3.8	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0612	0.0622	0.0607	0.0015	+/- 0.0150	decp
SDLT-I066_M85803_P45						
Near(B+D+P+L)	1679.525	1679.613	1677.065	2.548	+/-16.455	cps
Far(B+D+P+L)	880.233	876.796	882.270	-5.474	+/-16.189	cps
Pad Extension	3.75	3.73	3.77	-0.04	+/-0.10	in
Ring Diameter	8.25	8.23	8.34	-0.110	+/-0.15	in

Data: GATTON_B_4I0001 SP-GTET-DSN-SDL-ACRT-CHIDLE				Date: 02-Sep-11 09:25:36		
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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	9.300	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	0.450	ohmm
	SHARED	TRM	Temperature of Mud	80.0	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	3730.00	ft
	SHARED	BHT	Bottom Hole Temperature	108.0	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	
	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	Centered	
	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	DNOK	Process Density?	Yes	
	SDLT	DNOK	Process Density EVR?	No	
	SDLT	CB	Logging Calibration Blocks?	No	
	SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT	DTWN	Disable temperature warning	No	
	SDLT	DMA	Formation Density Matrix	2.710	g/cc
	SDLT	DFL	Formation Density Fluid	1.000	g/cc
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT	MLOK	Process MicroLog Outputs?	Yes	
	ACRt	RTOK	Process ACRT?	Yes	
	ACRt	MNSO	Minimum Tool Standoff	1.50	in
	ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
	ACRt	TPOS	Tool Position	Free Hanging	
	ACRt	RMOP	Rmud Source	Mud Cell	
	ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt	THQY	Threshold Quality	0.50	
BOTTOM					
Data: GATTON_B_4I0001 SP-GTET-DSN-SDL-ACRT-CHWDL				Date: 02-Sep-11 07:28:36	

HALLIBURTON					
INPUTS, DELAYS AND FILTERS TABLE					
Mnemonic		Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel					
TENS	Tension		0.00	NO	
SP Sub					
PLTC	Plot Control Mask		50.81	NO	
SP	Spontaneous Potential		50.81	BLK	1.250
SPR	Raw Spontaneous Potential		50.81	NO	
SPO	Spontaneous Potential Offset		50.81	NO	
GTET					

GTEI				
TPUL	Tension Pull	42.79	NO	
GR	Natural Gamma Ray API	42.79	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.79	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.79	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	32.54	NO	
RNDS	Near Detector Telemetry Counts	32.64	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.39	TRI	0.583
DNTT	DSN Tool Temperature	32.64	NO	
DSNS	DSN Tool Status	32.54	NO	
ERND	Near Detector Telemetry Counts EVR	32.64	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.39	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.64	NO	
SDLT				
TPUL	Tension Pull	22.64	NO	
NAB	Near Above	22.46	BLK	0.920
NHI	Near Cesium High	22.46	BLK	0.920
NLO	Near Cesium Low	22.46	BLK	0.920
NVA	Near Valley	22.46	BLK	0.920
NBA	Near Barite	22.46	BLK	0.920
NDE	Near Density	22.46	BLK	0.920
NPK	Near Peak	22.46	BLK	0.920
NLI	Near Lithology	22.46	BLK	0.920
NBAU	Near Barite Unfiltered	22.46	BLK	0.250
NLIU	Near Lithology Unfiltered	22.46	BLK	0.250
FAB	Far Above	22.81	BLK	0.250
FHI	Far Cesium High	22.81	BLK	0.250
FLO	Far Cesium Low	22.81	BLK	0.250
FVA	Far Valley	22.81	BLK	0.250
FBA	Far Barite	22.81	BLK	0.250
FDE	Far Density	22.81	BLK	0.250
FPK	Far Peak	22.81	BLK	0.250
FLI	Far Lithology	22.81	BLK	0.250
PTMP	Pad Temperature	22.65	BLK	0.920
NHV	Near Detector High Voltage	19.83	NO	
FHV	Far Detector High Voltage	19.83	NO	
ITMP	Instrument Temperature	19.83	NO	
DDHV	Detector High Voltage	19.83	NO	
TPUL	Tension Pull	22.65	NO	
PCAL	Pad Caliper	22.65	TRI	0.250
ACAL	Arm Caliper	22.65	TRI	0.250
TPUL	Tension Pull	22.83	NO	
MINV	Microlog Lateral	22.83	BLK	0.750
MNOR	Microlog Normal	22.83	BLK	0.750
ACRt				
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

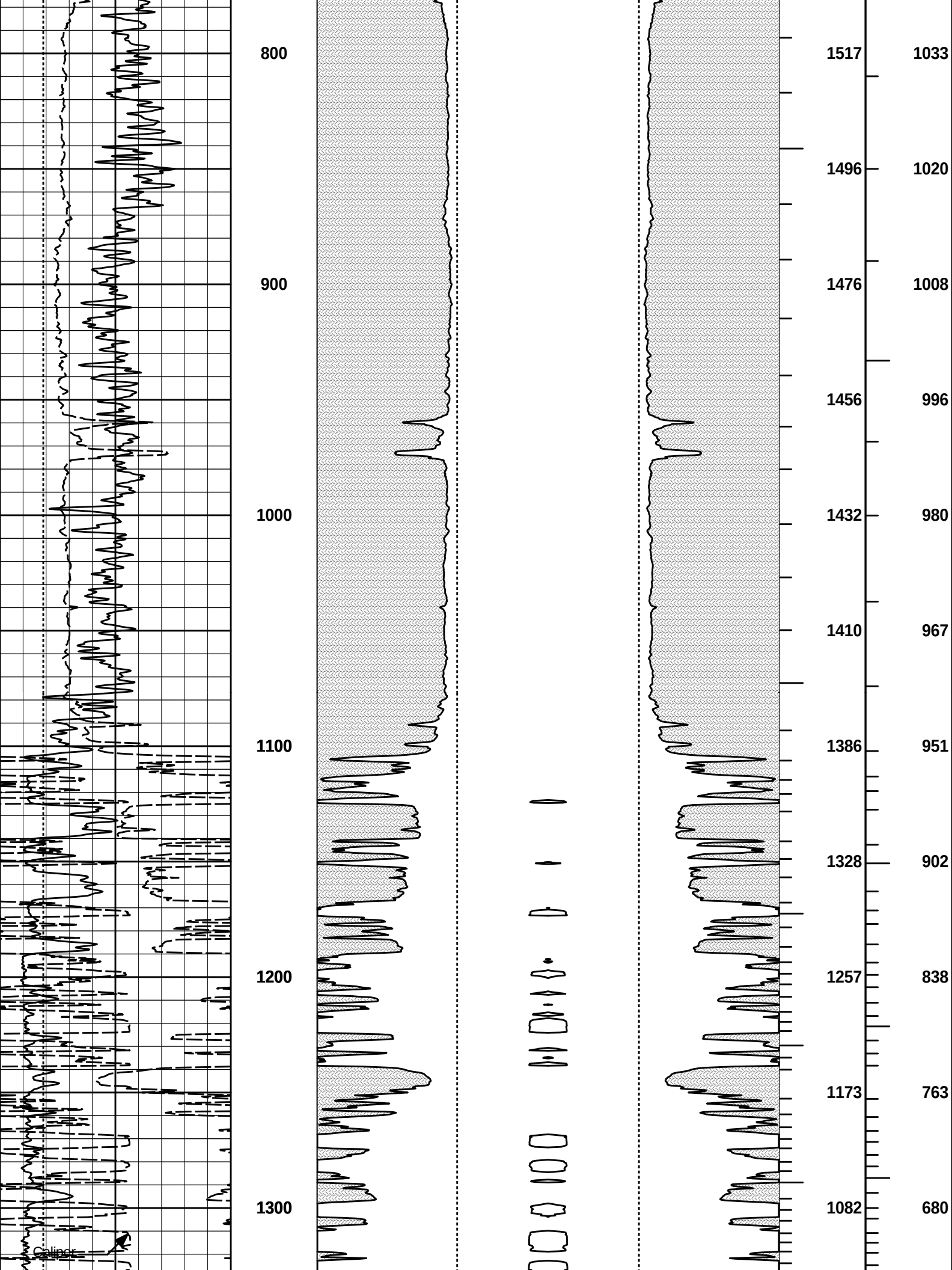
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	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	
Data: GATTON_B_4\0001 SP-GTET-DSN-SDL-ACRT-CHIIDLE				Date: 02-Sep-11 07:28:59

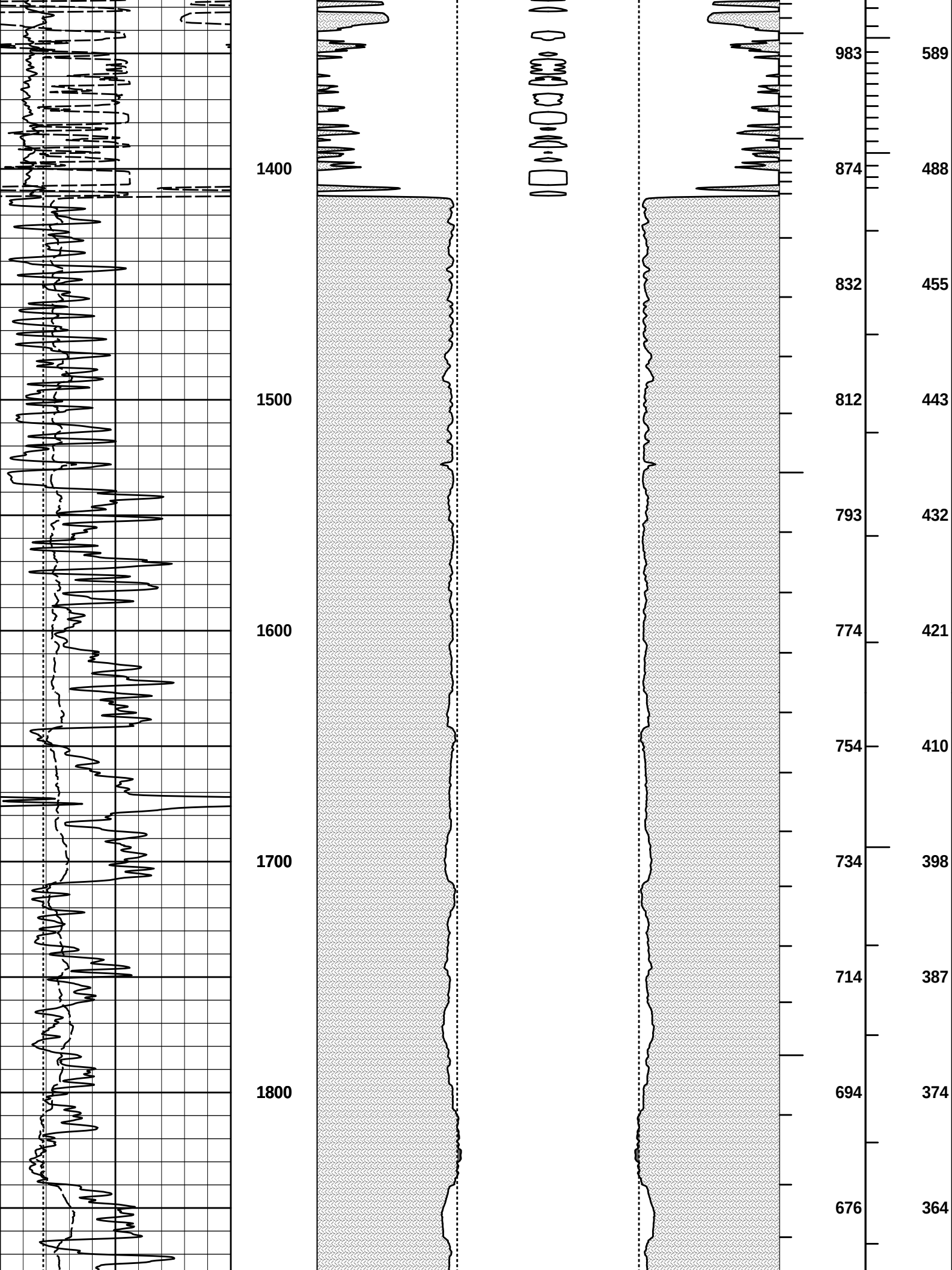
HALLIBURTON

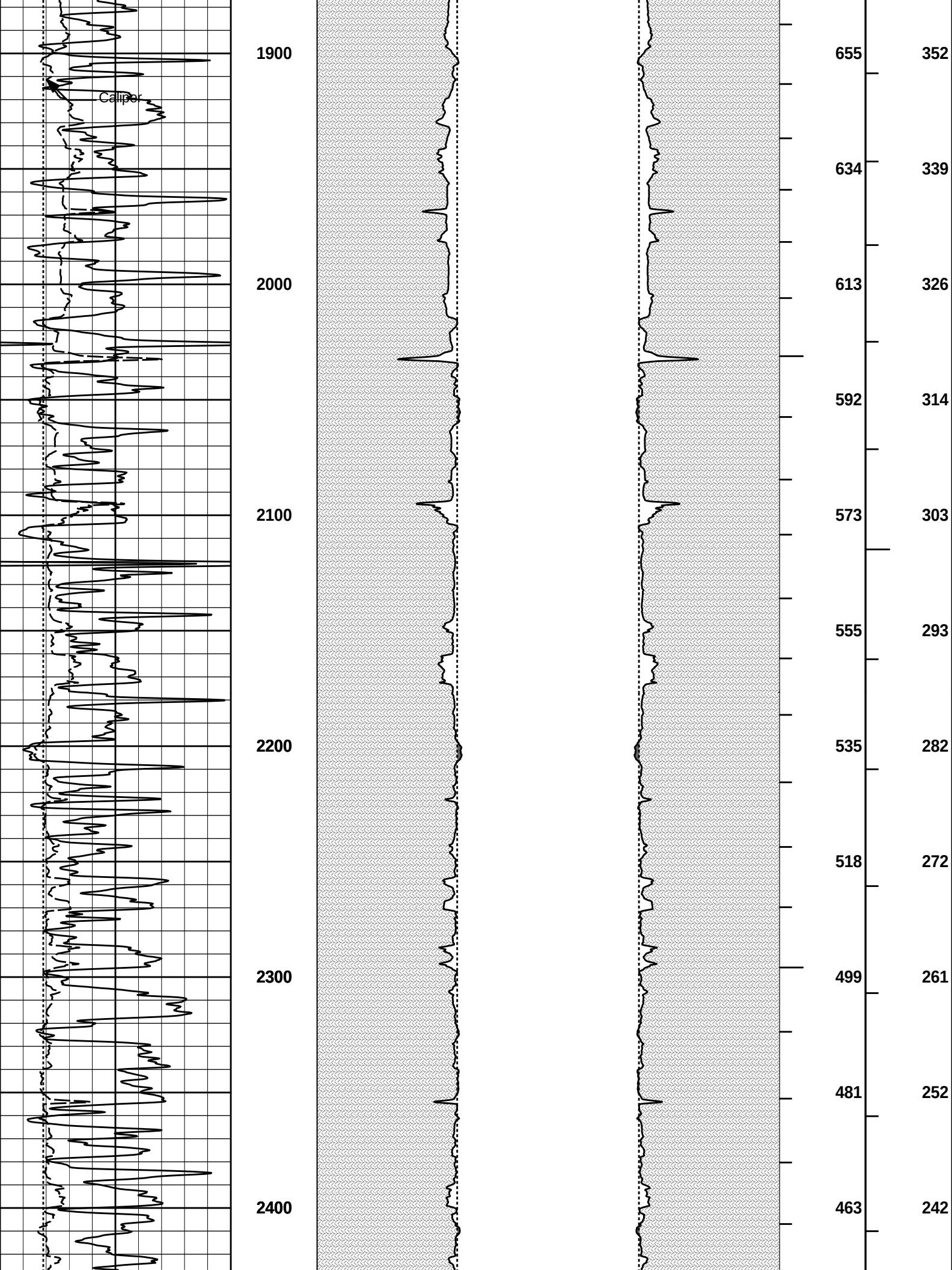
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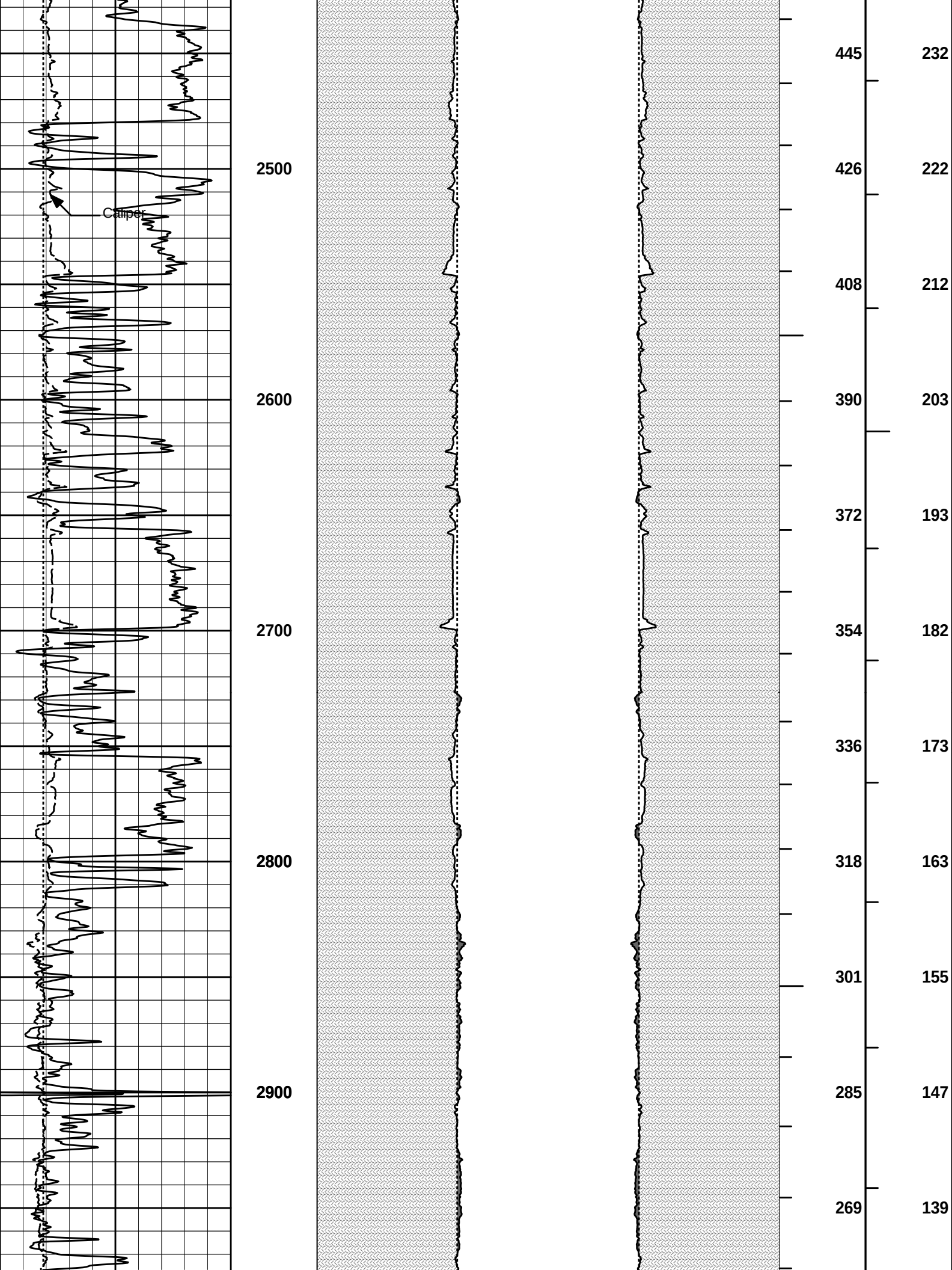
ANNULAR HOLE VOLUME PLOT (5.5 INCH)

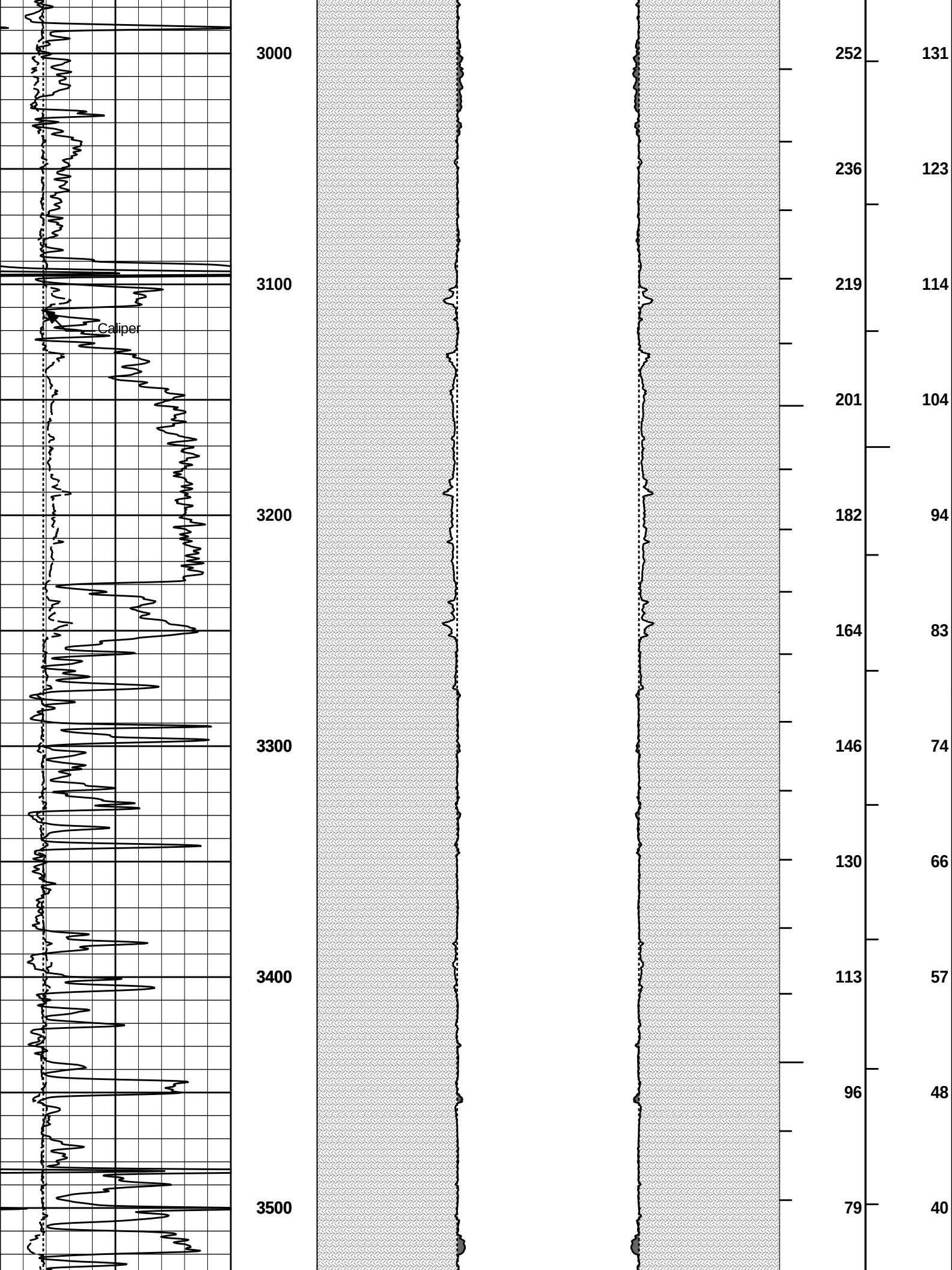
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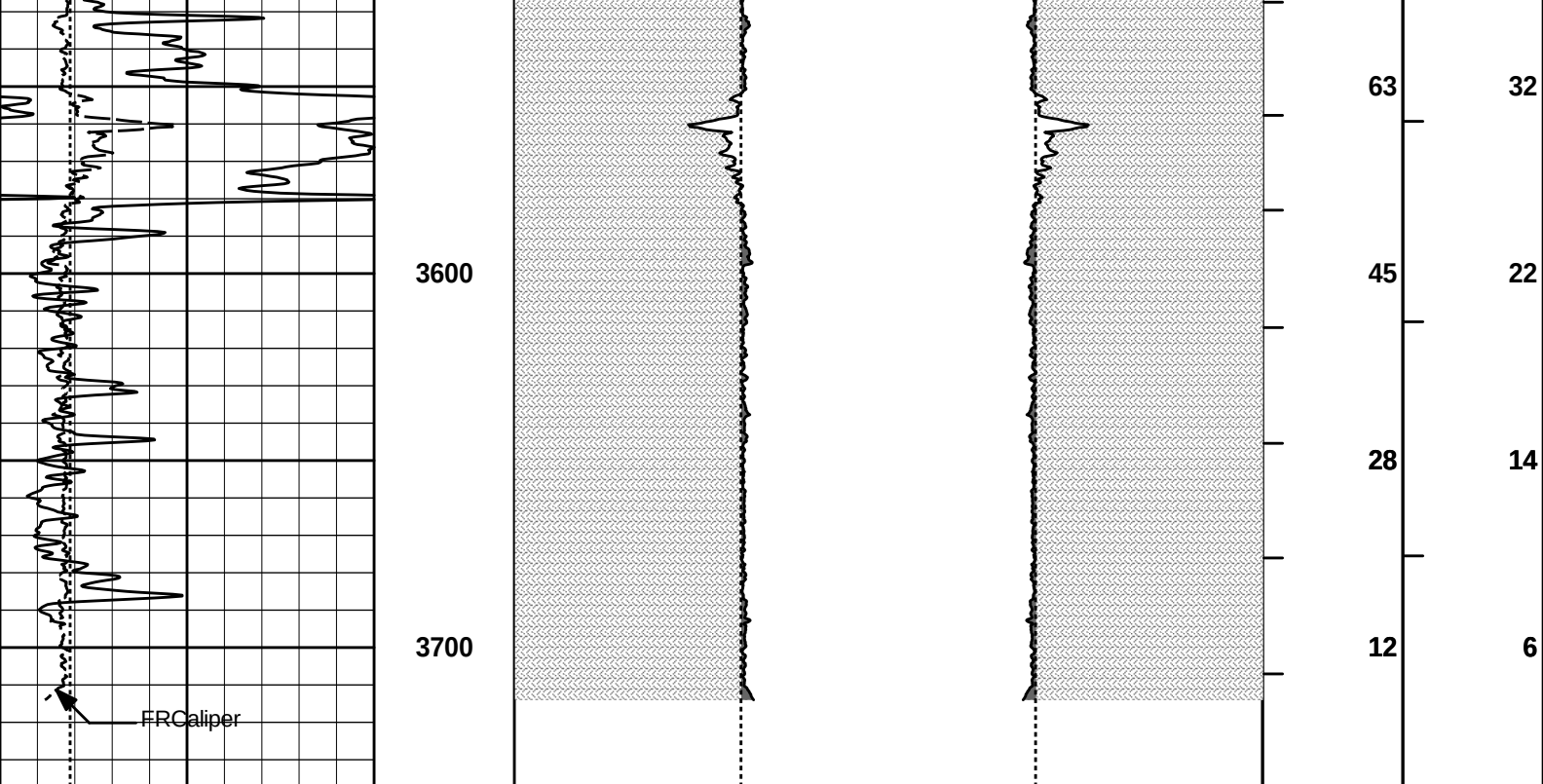












6	Caliper	16	1 : 600 ft	20	Caliper	0 0	20	BHVT	AHVT
	inches				inches				
6	BS	16		20	Bit Size	0 0	20		
	inches								
0	Gamma API	150			MUDCAKE		MUDCAKE		
	api								

HALLIBURTON

Plot Time: 02-Sep-11 09:38:02
Plot Range: 310 ft to 3736.92 ft
Data: GATTON_B_4\Well Based\DAQ-0001-CSG\
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ANNULAR HOLE VOLUME PLOT (5.5 INCH)

COMPANY	HARTMAN OIL COMPANY, INC.		
WELL	GATTON B-4		
FIELD	RICHARDSON		
COUNTY	STAFFORD	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON LOG	