HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

COMPANY	OXY USA, INC.
WELL	STANFORD C-2
FIELD	WILBURTON EAST
COUNTY	MORTON
STATE	KANSAS

COMPANY **OXY USA, INC.**
WELL **STANFORD C-2**
FIELD **WILBURTON EAST**
COUNTY **MORTON** STATE **KANSAS**

API No. 15-129-21939
Location 2335' FSL & 1400' FWL

Other Services:
BSAT
ML
ACRT

Sect. 26 Twp. 34S Rge. 41W

Permanent Datum	GL	Elev. 3410.0 ft	Elev.: K.B. 3424.0 ft
Log measured from	KB	14.0 ft above perm. Datum	D.F. 2423.0 ft
Drilling measured from	KB		G.L. 2410.0 ft

Date	01-May-12		
Run No.	ONE		
Depth - Driller	6428.00 ft		
Depth - Logger	6402.0 ft		
Bottom - Logged Interval	6358 ft		
Top - Logged Interval	3700 ft		
Casing - Driller	8.625 in @ 1677.0 ft	@	@
Casing - Logger	1677.0 ft		
Bit Size	7.875 in	@	@
Type Fluid in Hole	WATER		
Density / Viscosity	9.2 ppg / 50.00 s/qt		
PH / Fluid Loss	10.00 pH / 8.0 cptm		
Source of Sample	FLOWLINE		
Rm @ Meas. Temperature	2.200 ohmm @ 110.00 degF	@	@
Rmf @ Meas. Temperature	1.80 ohmm @ 100.00 degF	@	@
Rmc @ Meas. Temperature	2.500 ohmm @ 100.00 degF	@	@
Source Rmf / Rmc	MEAS / MEAS		
Rm @ BHT	1.75 ohmm @ 140.0 degF	@	@
Time Since Circulation	8.3 hr		
Time on Bottom	01-May-12 14:59		
Max. Rec. Temperature	140.0 degF @ 6402.0 ft	@	@
Equipment / Location	336 / LIBERAL		
Recorded By	C. MARLOWE		
Witnessed By	K. THREADGILL		

Fold here

Service Ticket No.: 9465969 API Serial No.: 15-129-21939 PGM Version: WL INSITE R3.4.2 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@		@	
Rmf @ Meas. Temp.		@		@	
Rmc @ Meas. Temp.		@		@	
Source Rmf	Rmc				
Rm @ BHT		@		@	
Rmf @ BHT		@		@	
Rmc @ BHT		@		@	

RESISTIVITY SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11021138	Serial No.		Serial No.	i947m315p774	Serial No.	11023947
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.	5155GW	Serial No.	DSN 439
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 CI	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	3700'	REC	0	150				30	-10	2.71	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: GTET/DSNT/SDLT/BSAT/ACRT RUN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING

CHLORIDES REPORTED AT 300 MG/L

POST JOB TOOL VERIFICATIONS NOT PERFORMED AT CUSTOMER REQUEST

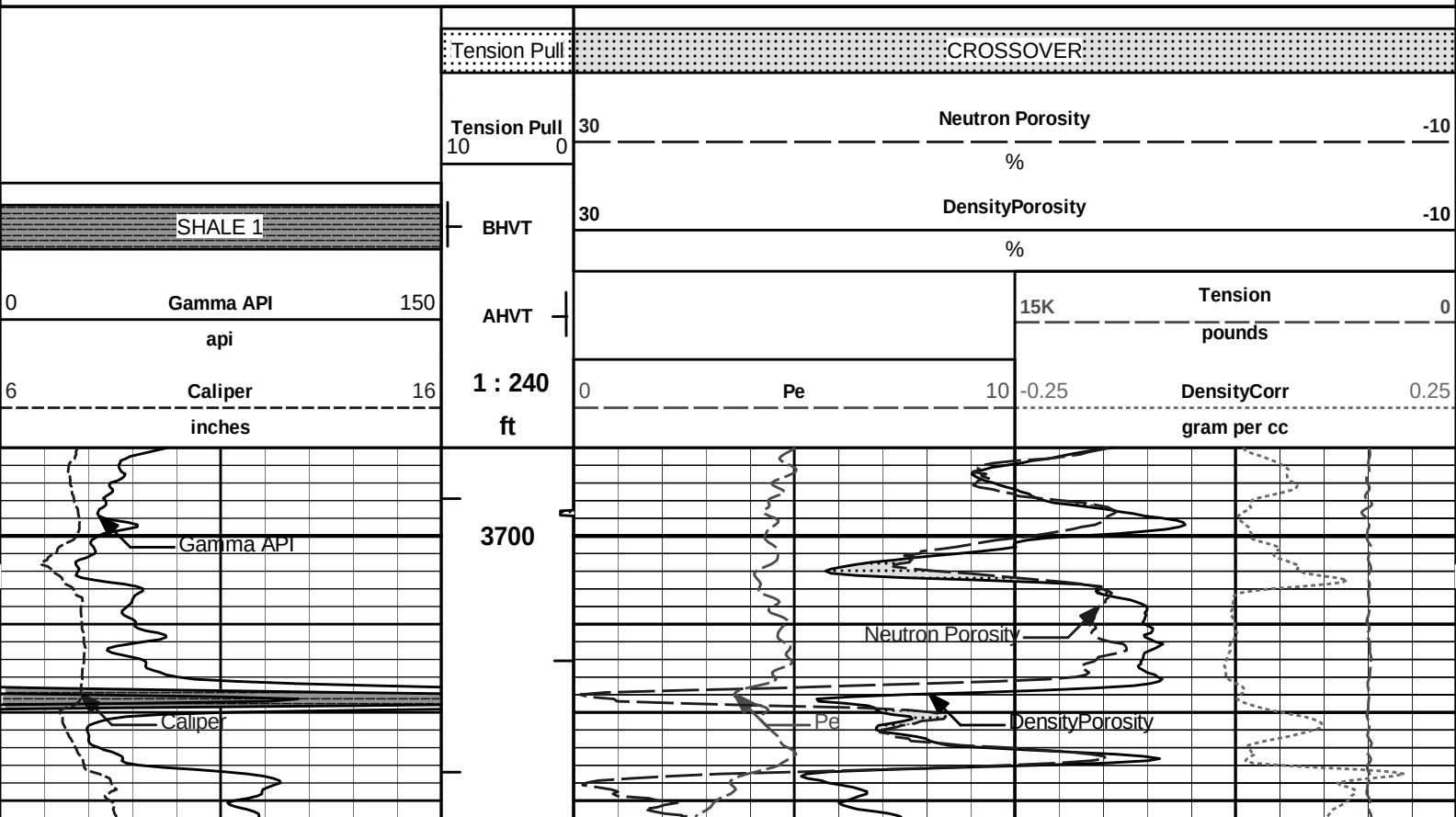
TODAY'S CREW: F. VILLA, M. DUNAWAY

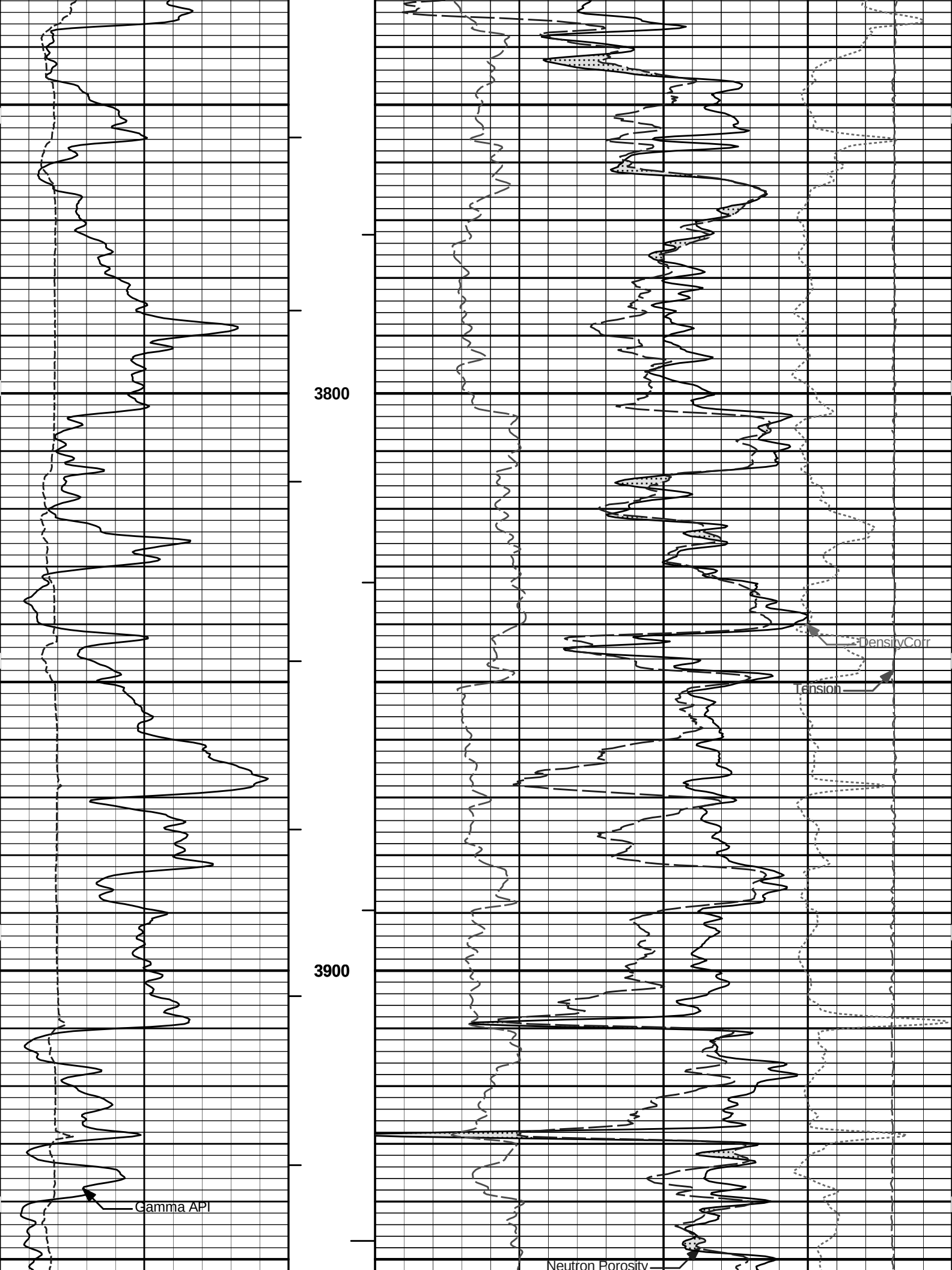
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES: LIBERAL, KS 620-624-8123

HALLIBURTON

Plot Time: 01-May-12 17:06:24
Plot Range: 3690 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\DETAIL
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG

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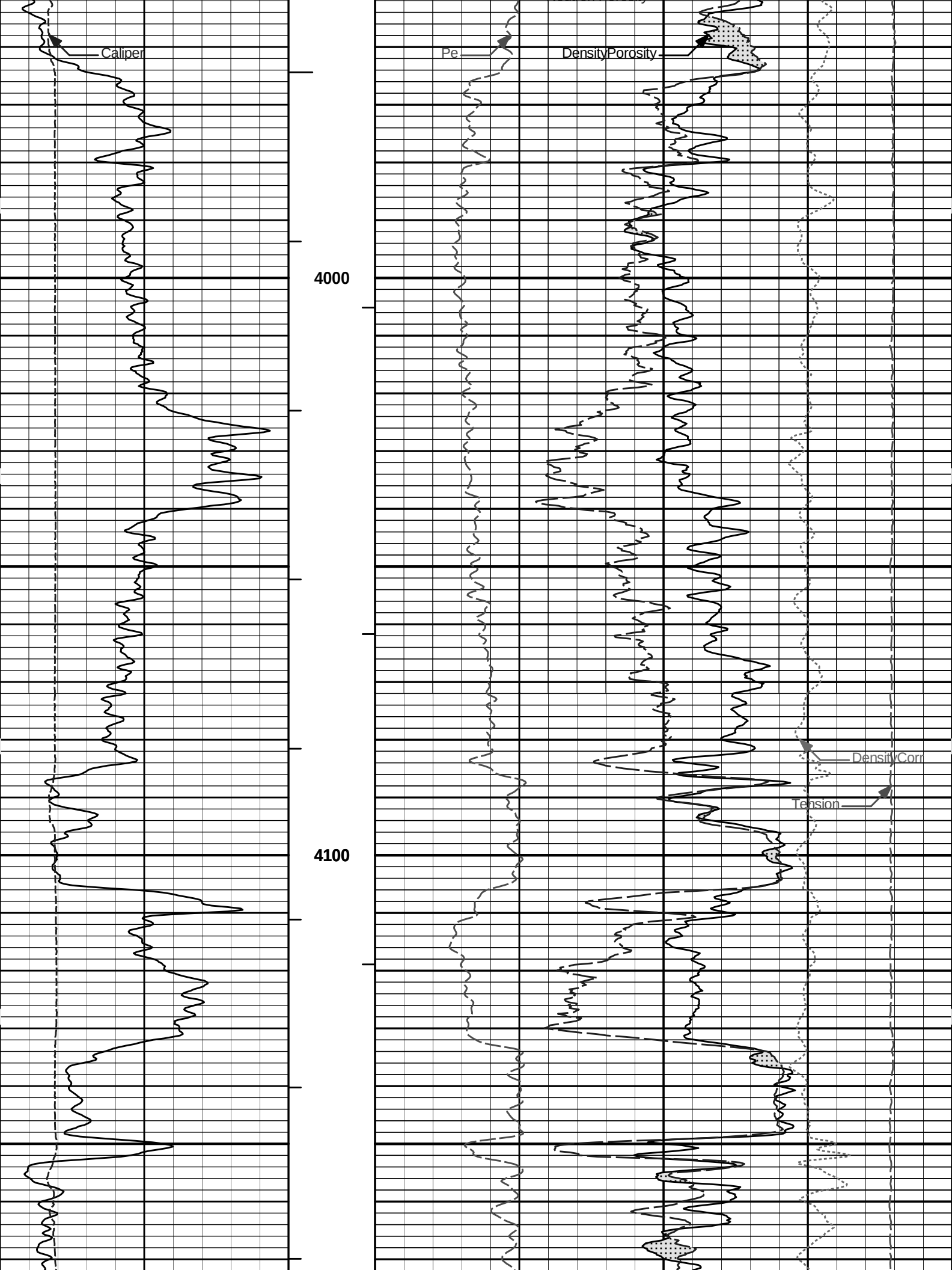
DensityCorr
Tension
Gamma API
Neutron Porosity


Caliper
Pe
DensityPorosity
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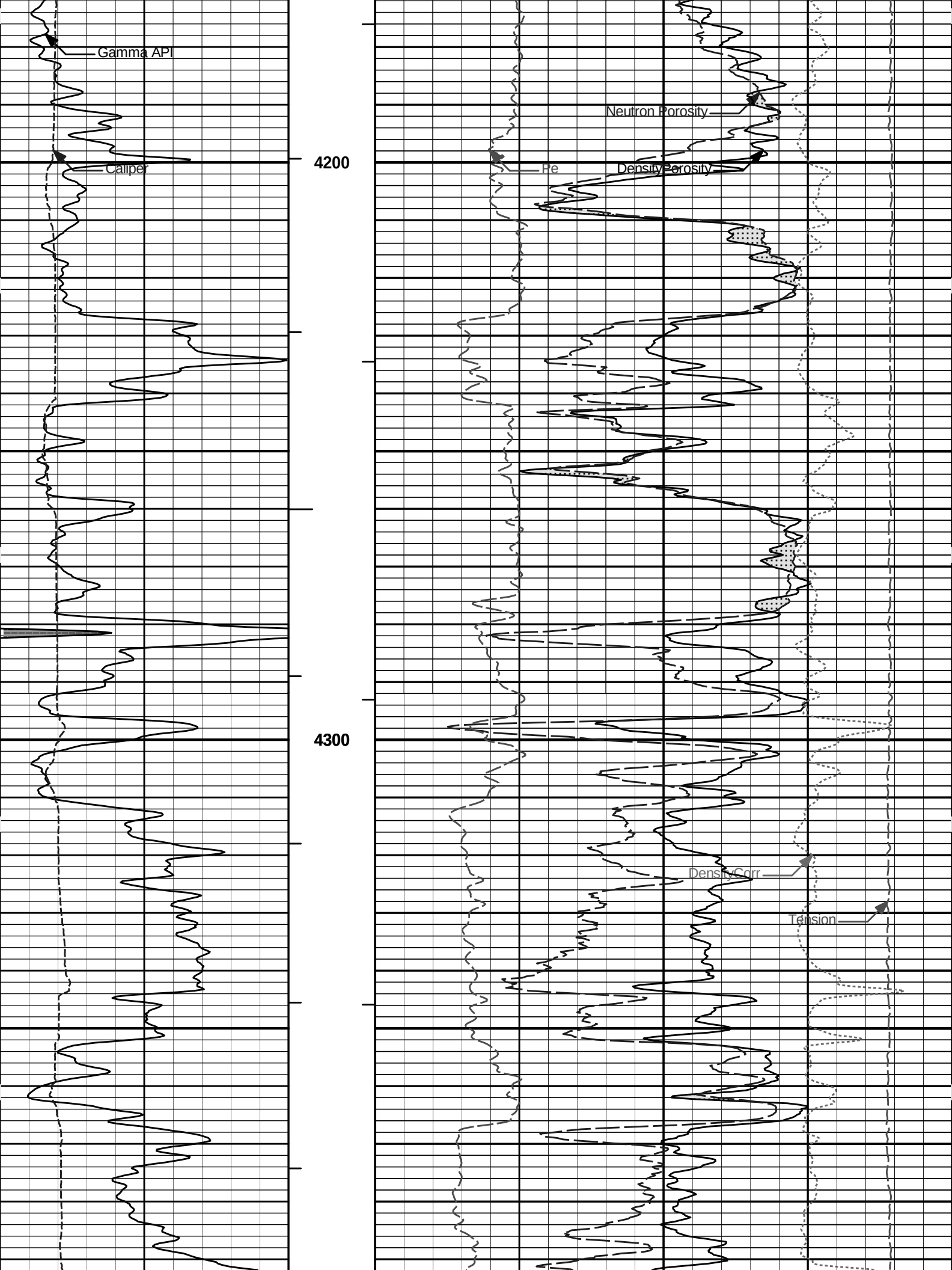
DensityCorr
Tension
4100


Gamma API
Caliper
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Neutron Porosity
Pe
DensityPorosity
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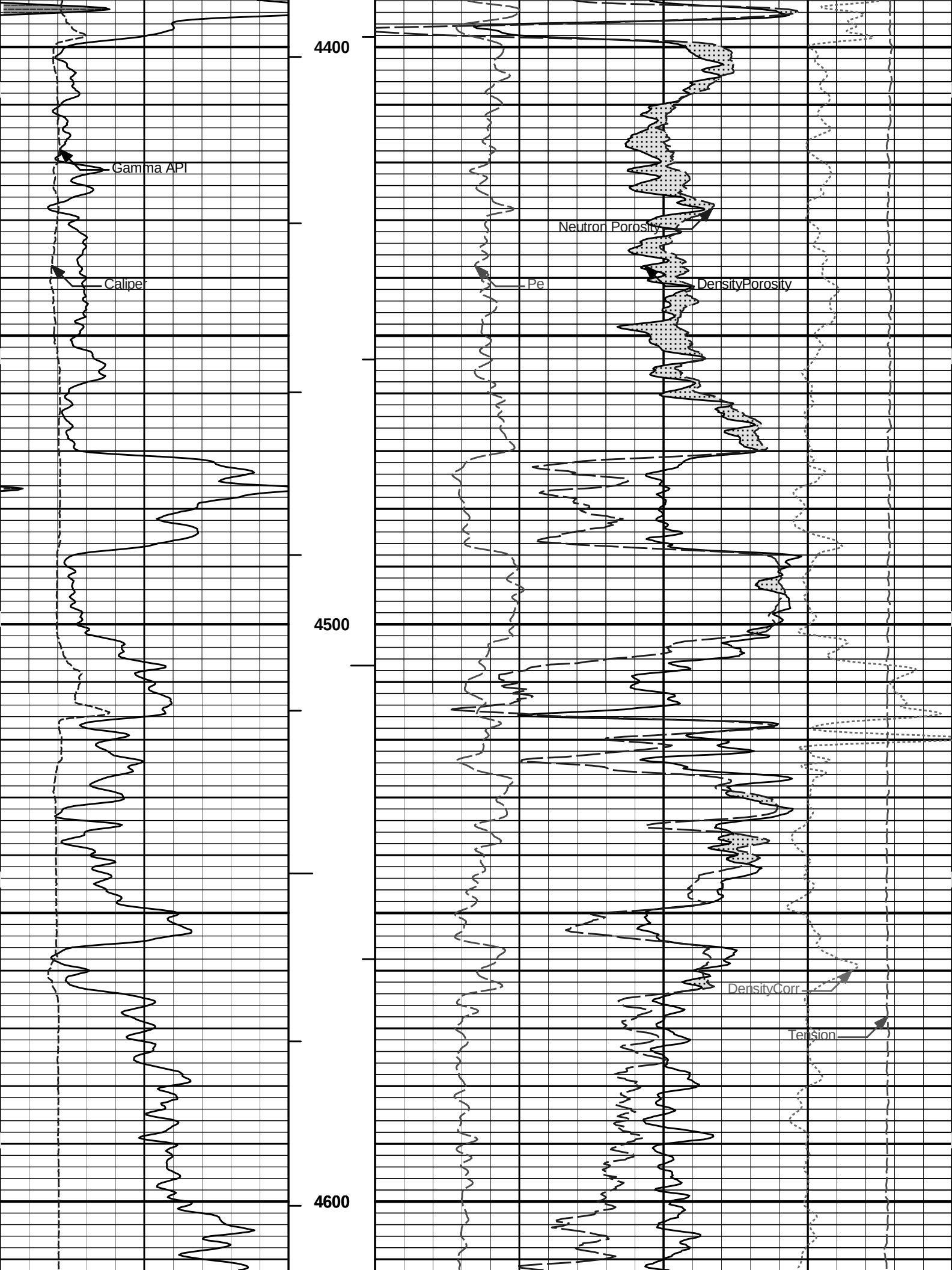
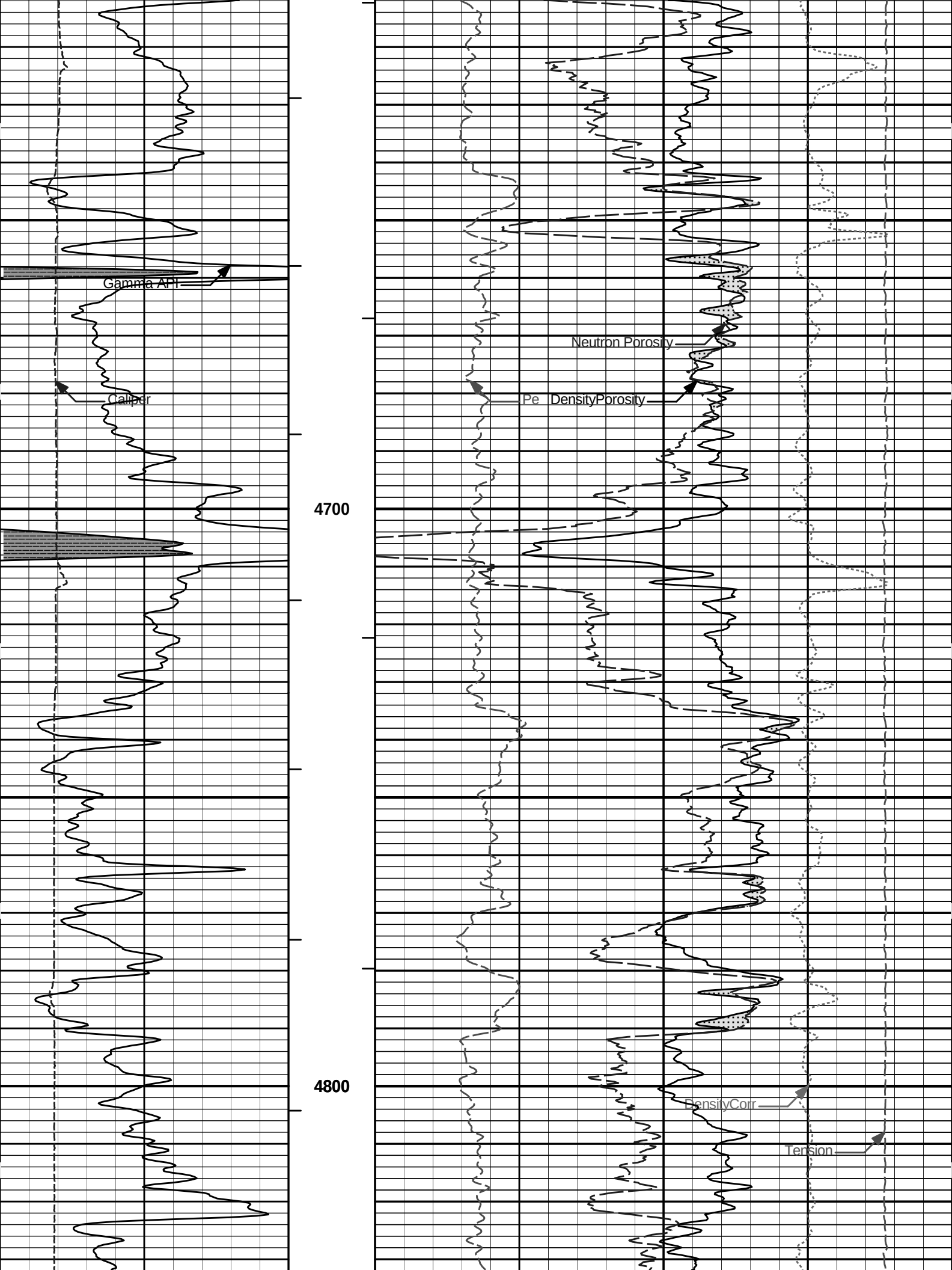
DensityCorr
Tension


4400
4500
4600
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension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Caliper
Neutron Porosity
Pe
DensityPorosity
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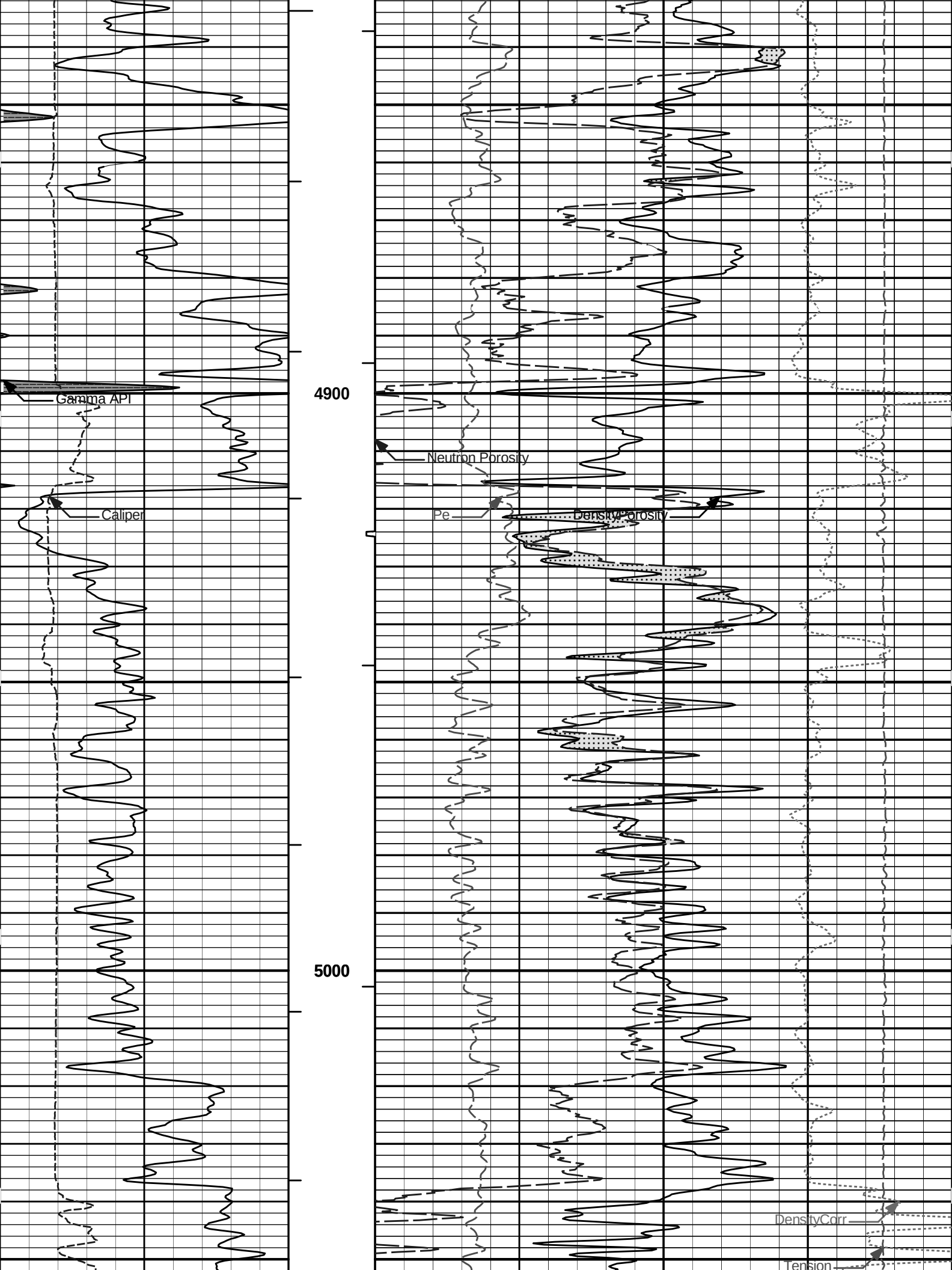
4800
DensityCorr
Tension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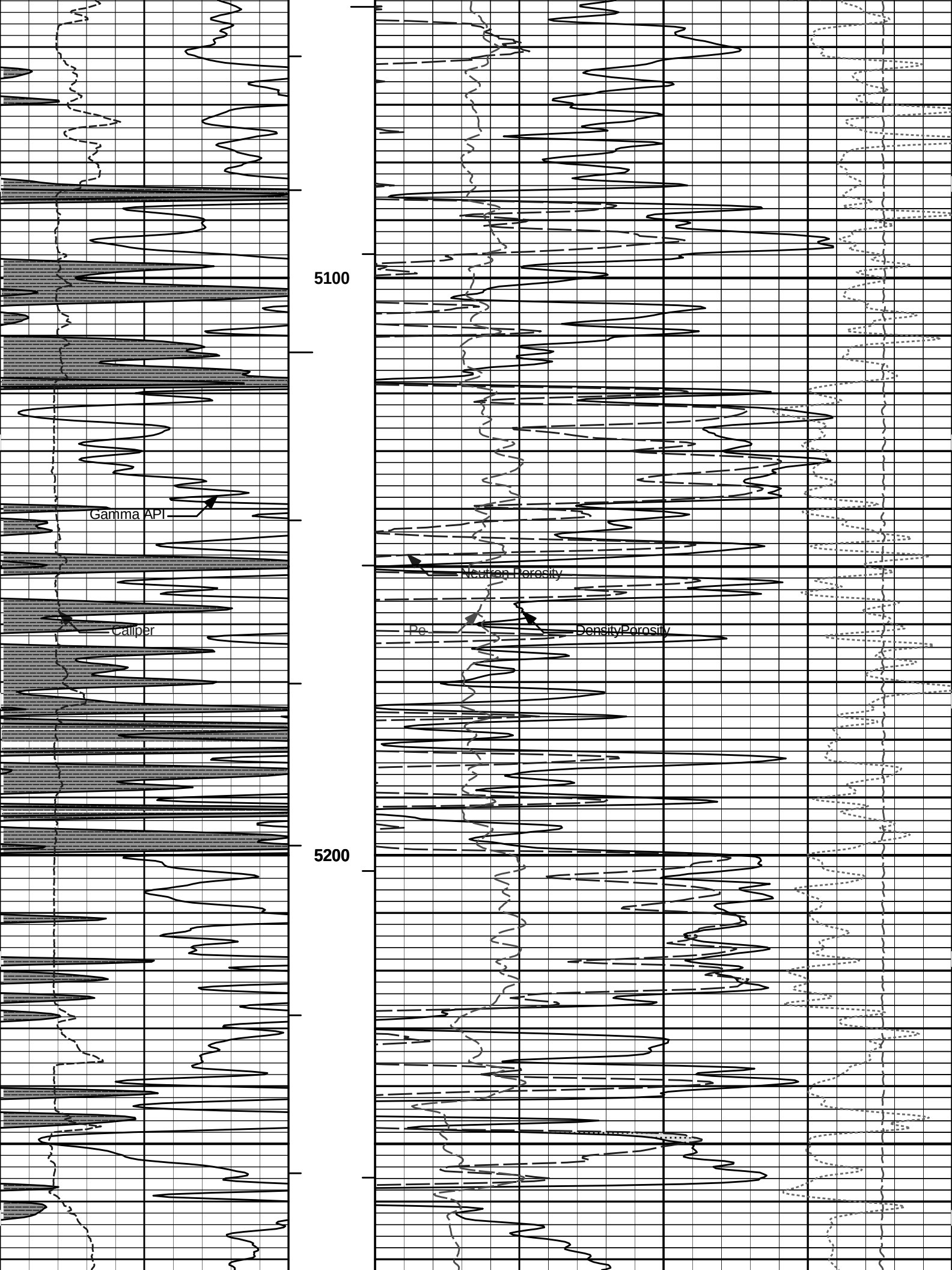
Caliper
4900
Neutron Porosity
Pe
Density Porosity
5000
DensityCorr
Tension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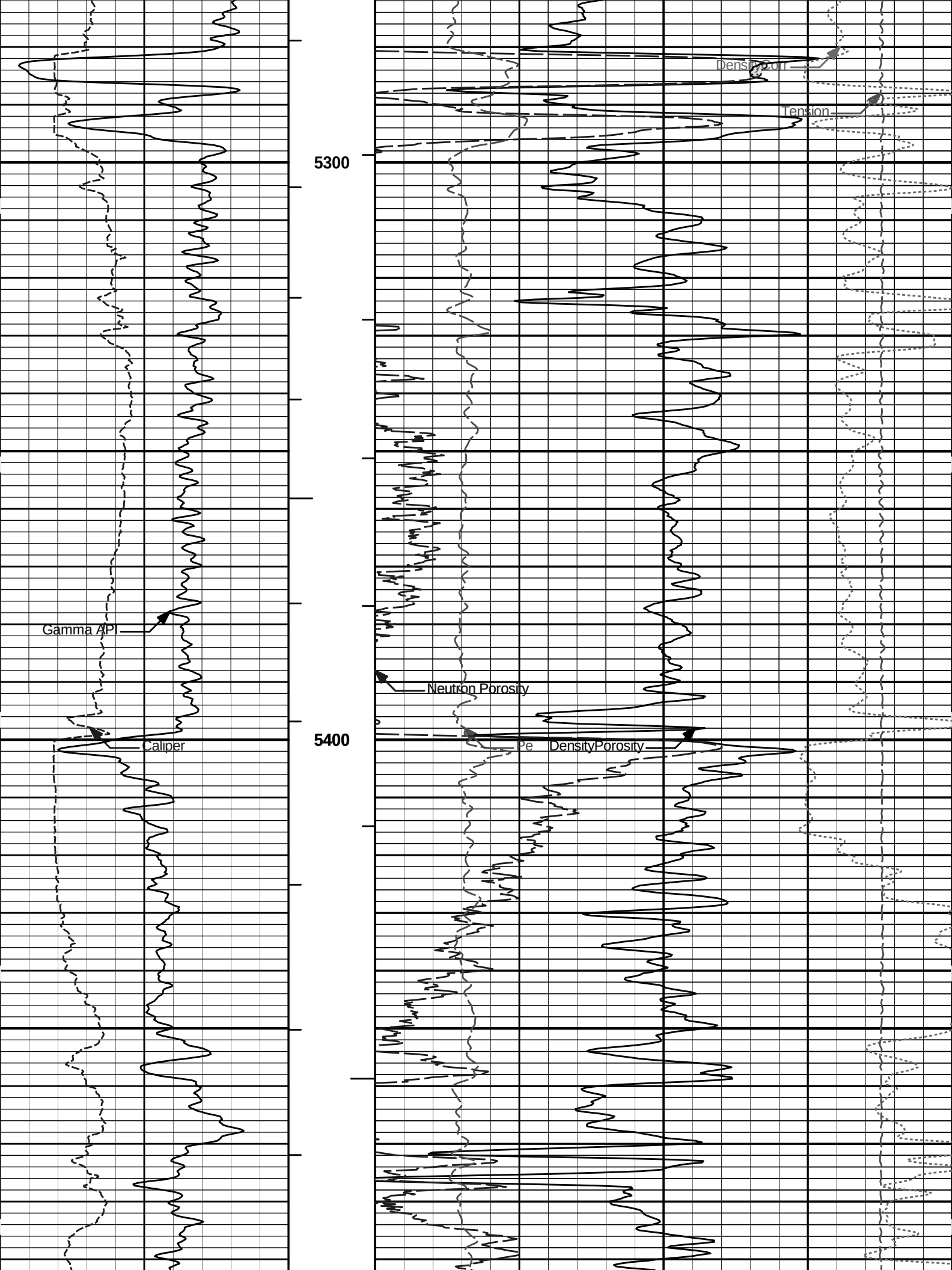
5200
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity


Density Corr
Tension
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Gamma API
Neutron Porosity
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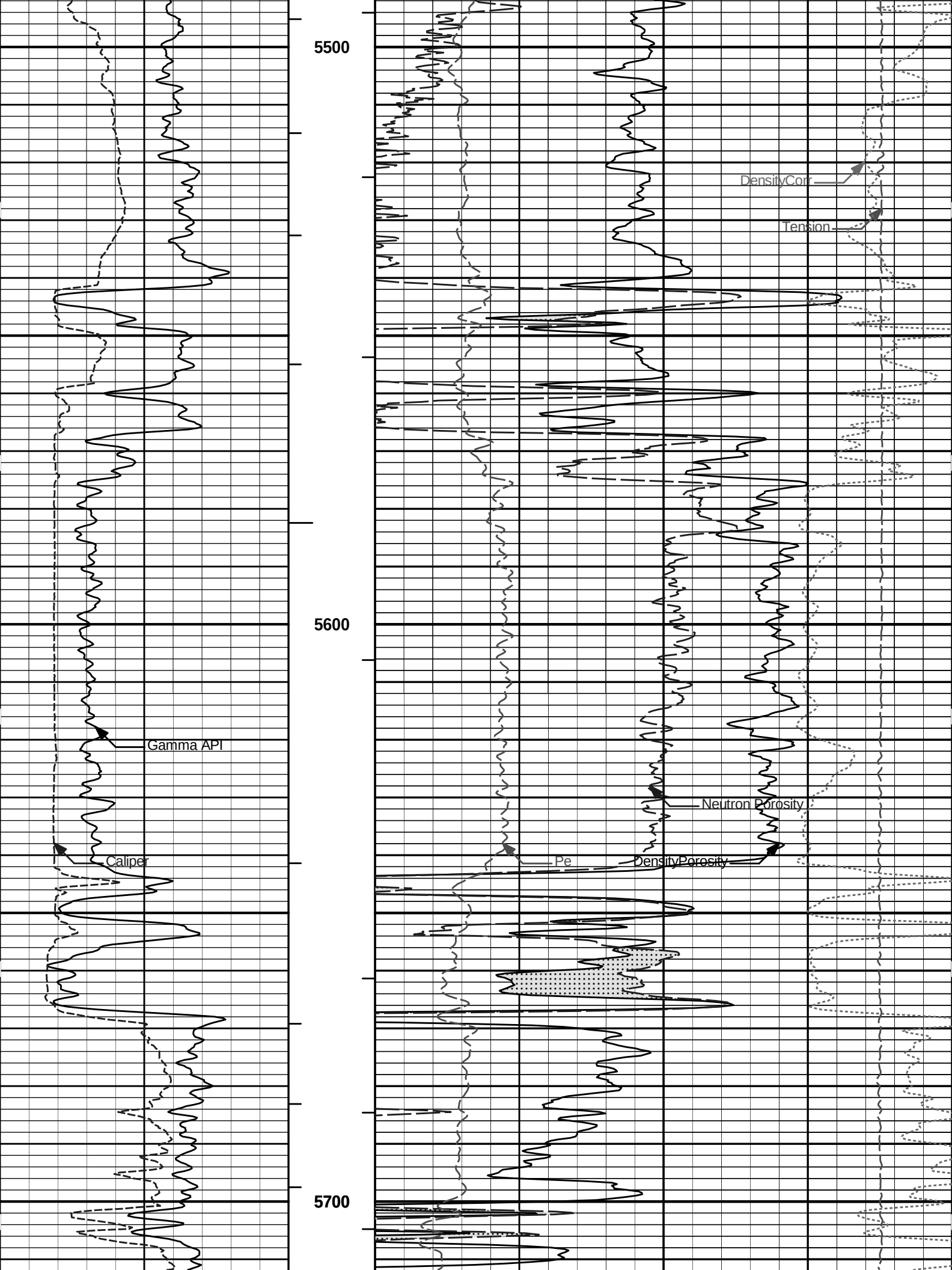
Caliper
Pe
DensityPorosity


5500
5600
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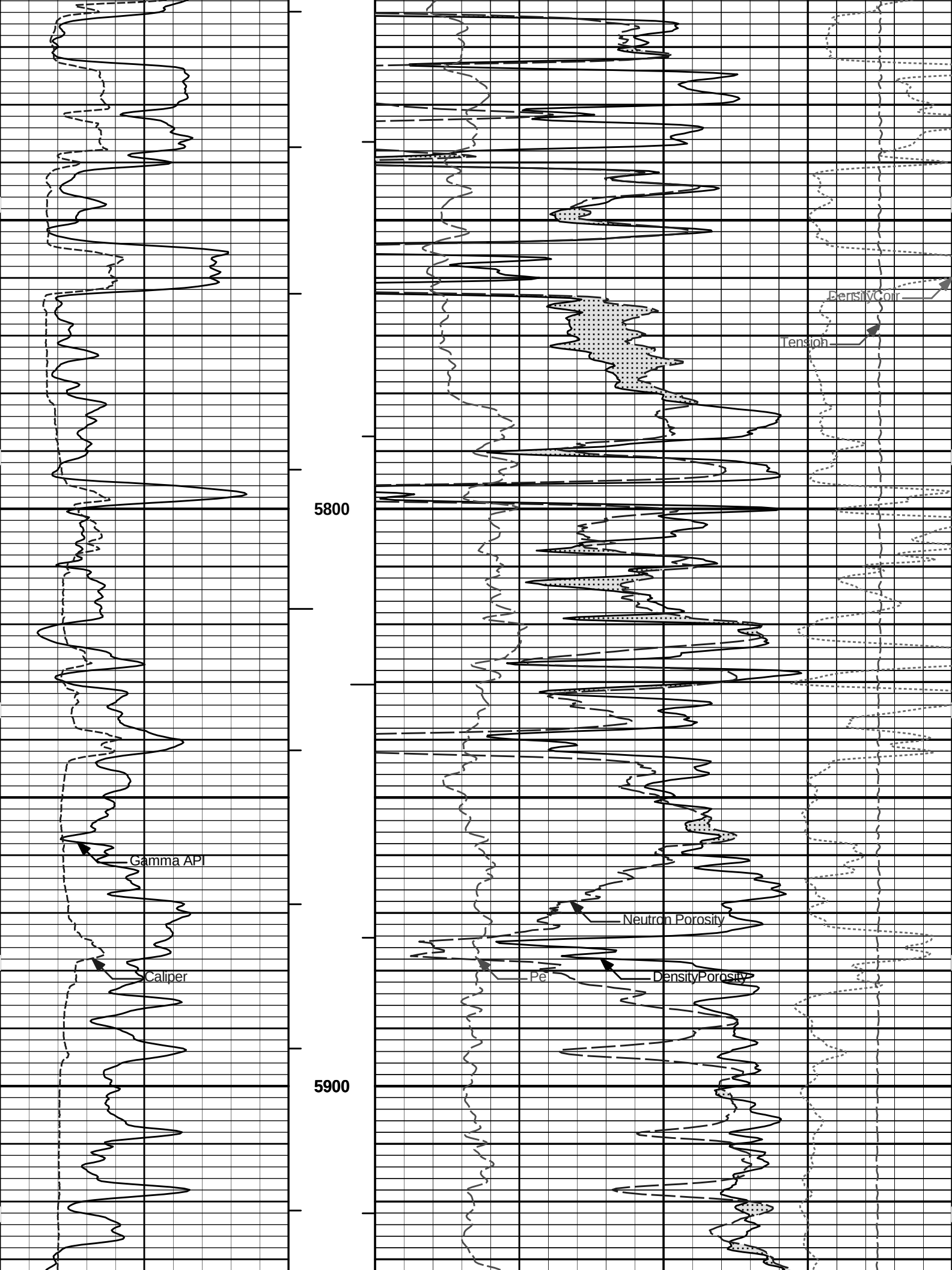
DensityCorr
Tension
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity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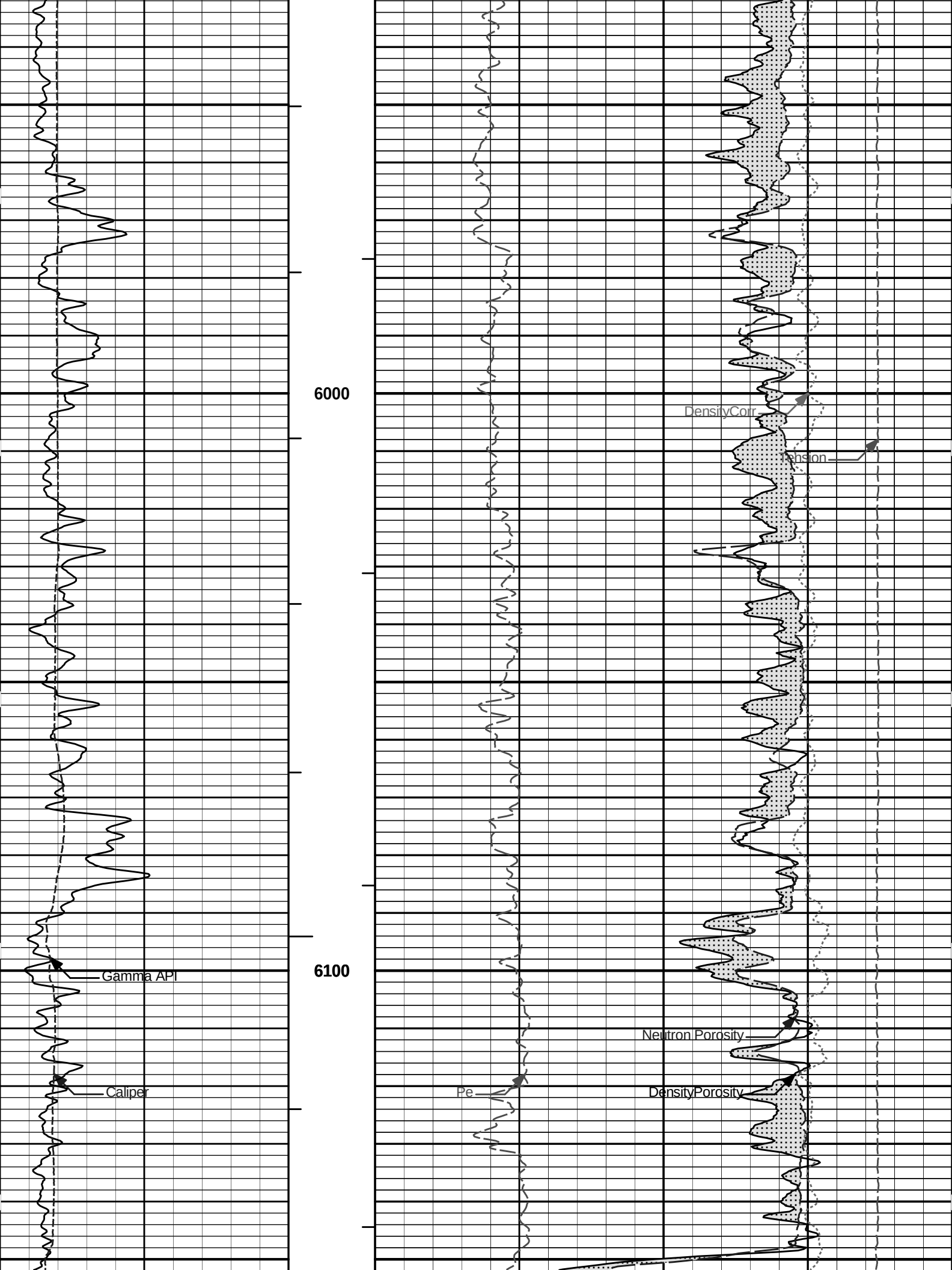
5900
Gamma API
Caliper
Pe
DensityPorosity
Neutron Porosity
DensityCorr
Tension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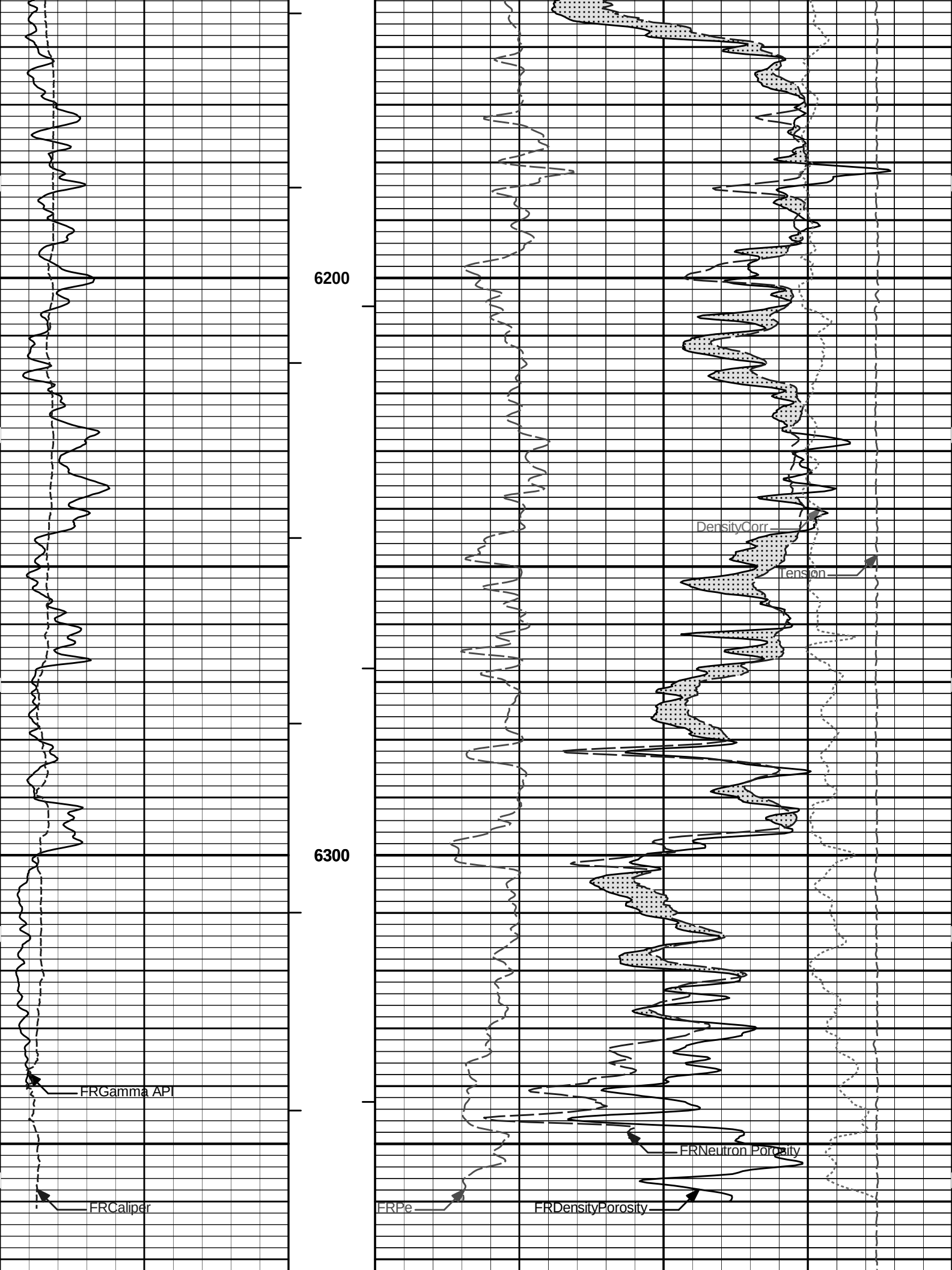
6100
Gamma API
Caliper
Pe
DensityCorr
Tension
Neutron Porosity
DensityPorosity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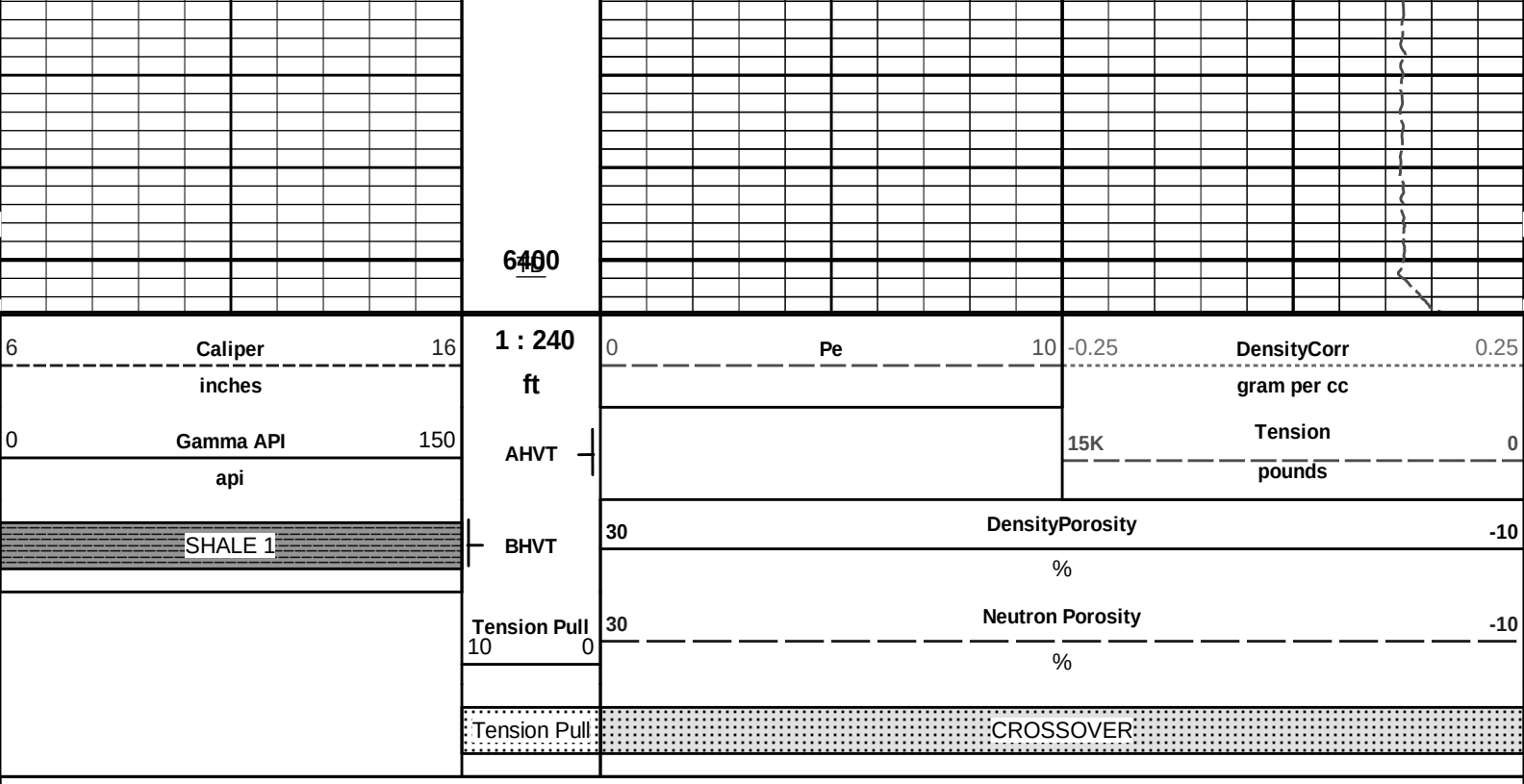
6300
DensityCorr
Tension
FRGamma API
FRCaliper
FRPe
FRNeutron Porosity
FRDensityPorosity



HALLIBURTON

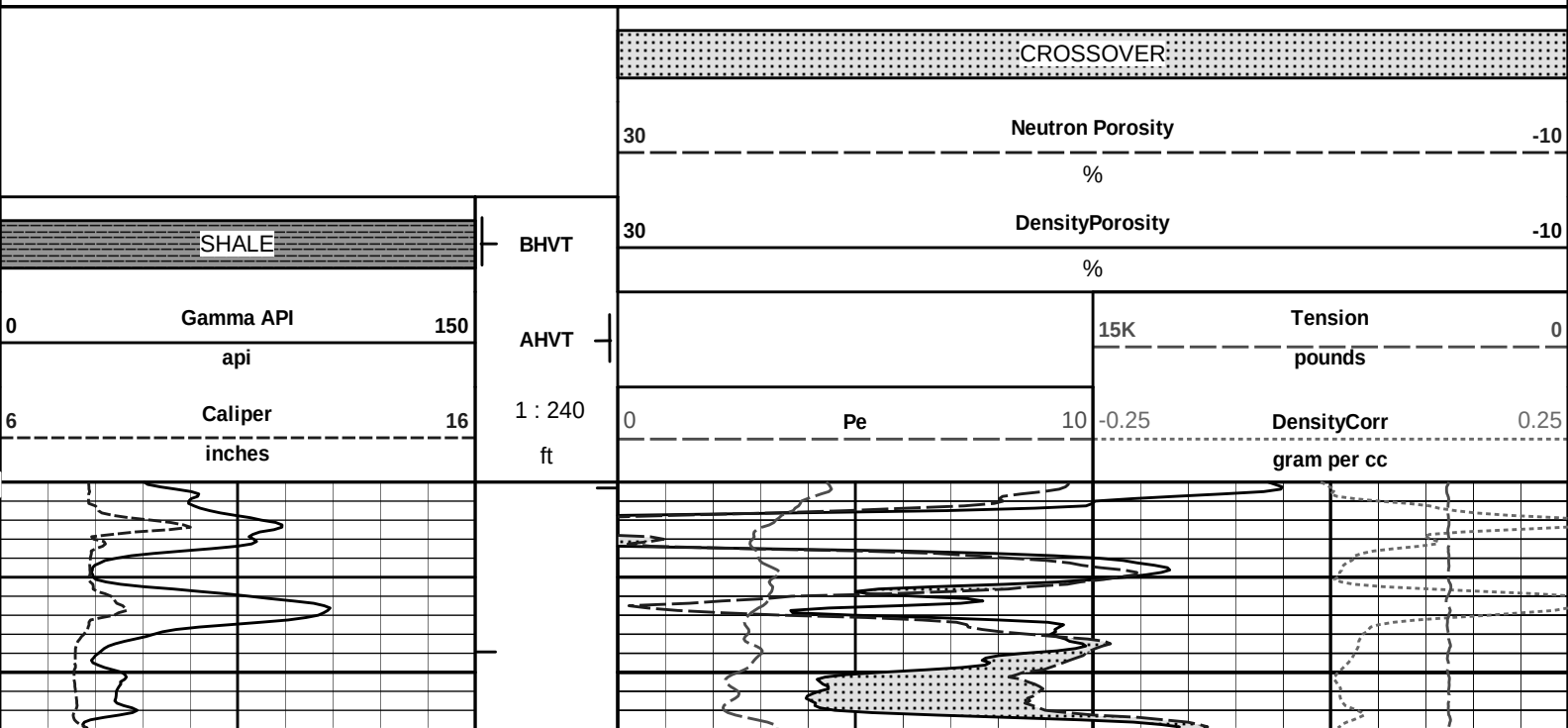
Plot Time: 01-May-12 17:06:35
Plot Range: 3690 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\DETAIL
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

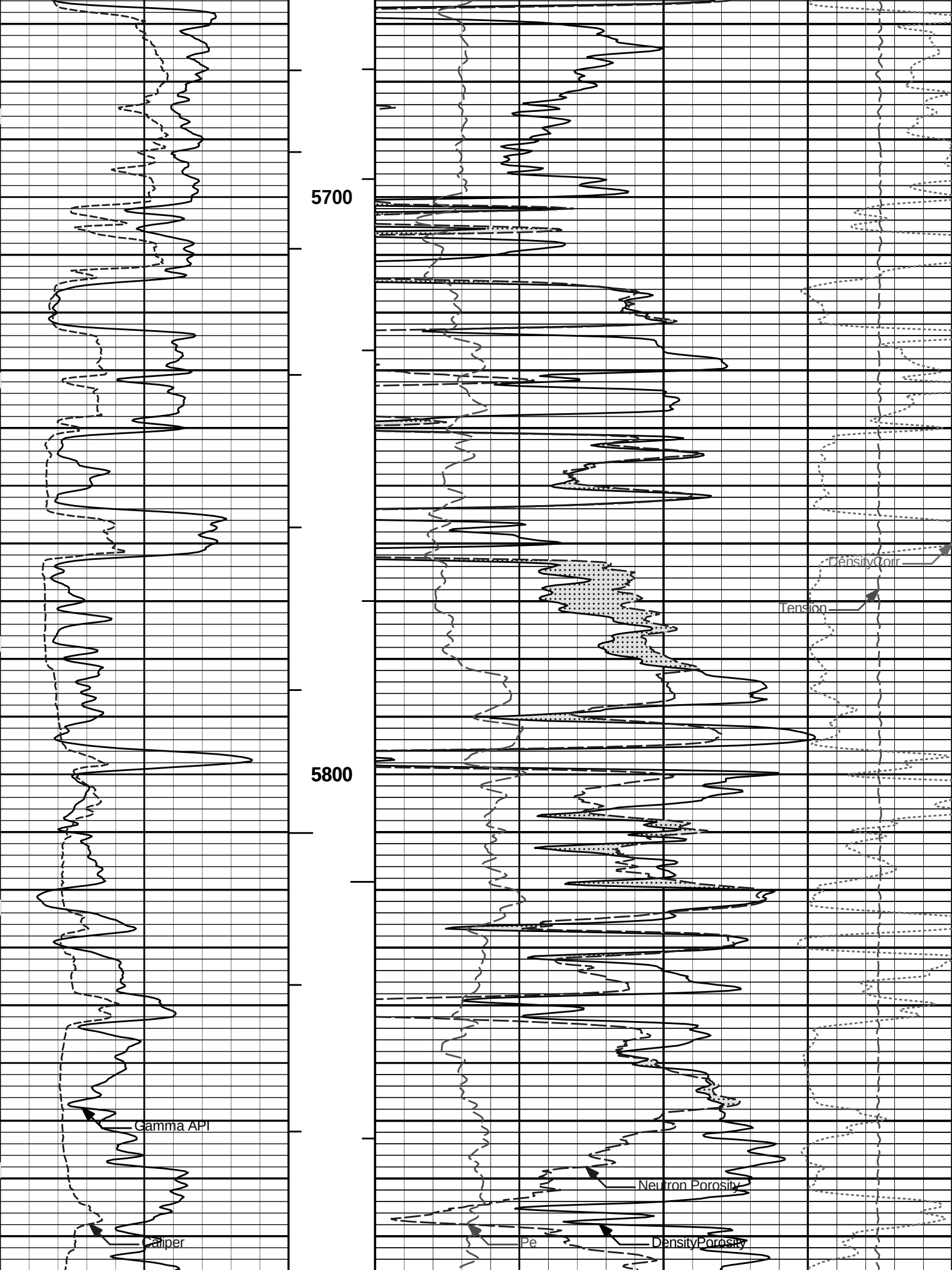
5 INCH MAIN LOG

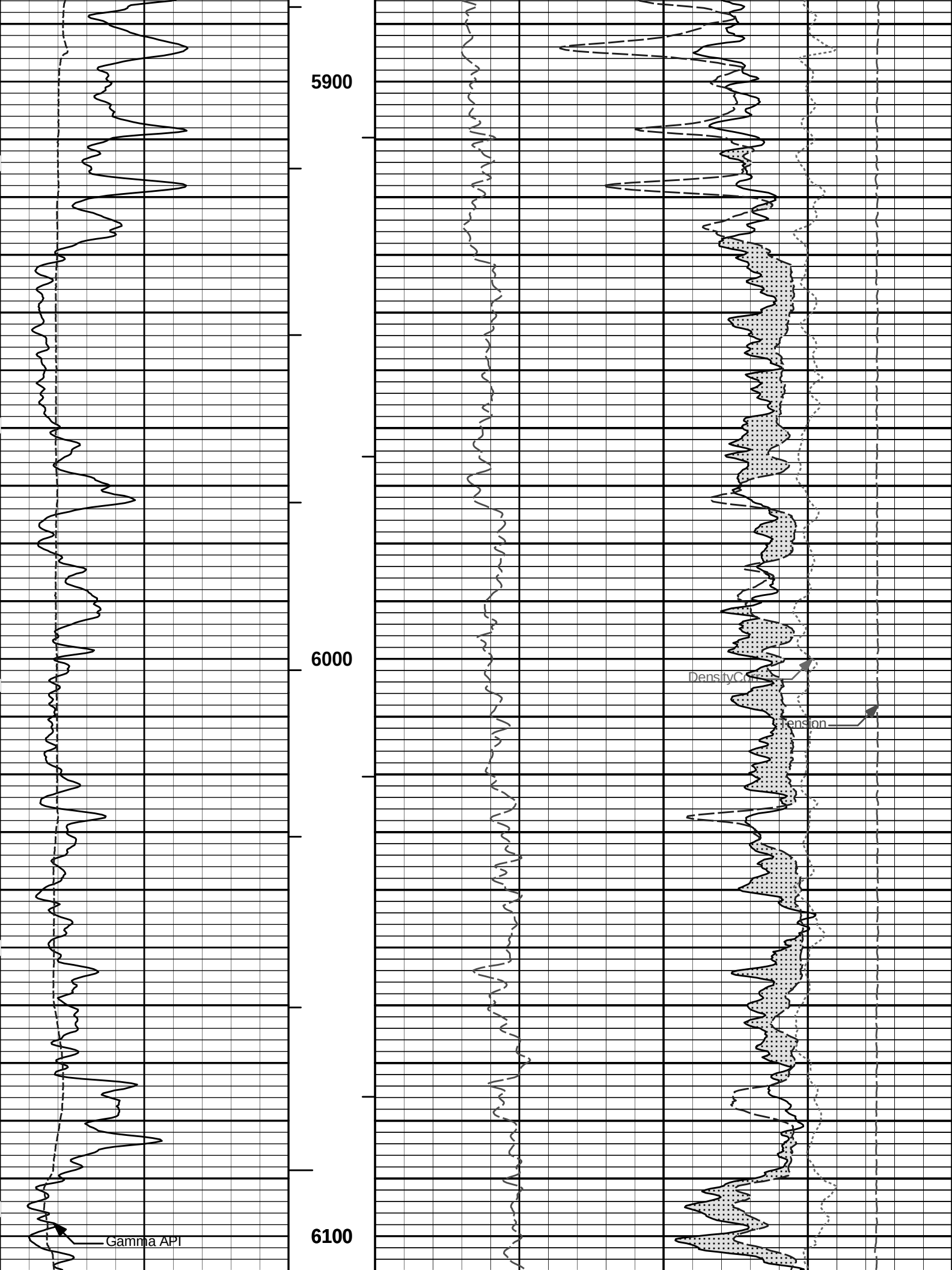
HALLIBURTON

Plot Time: 01-May-12 17:06:35
Plot Range: 5640 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\REPEAT
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION




5700
5800
DensityCorr
Tension
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity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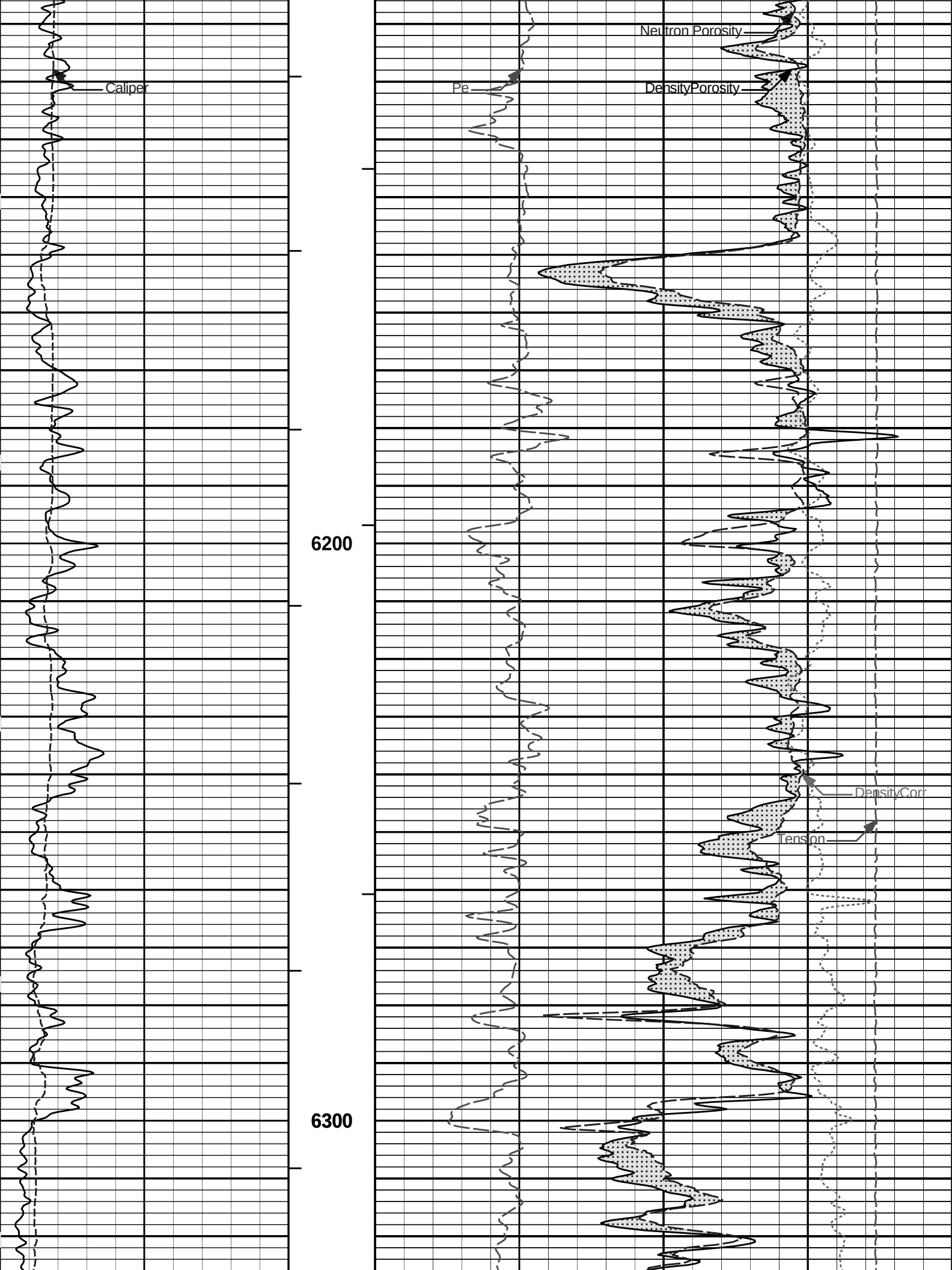
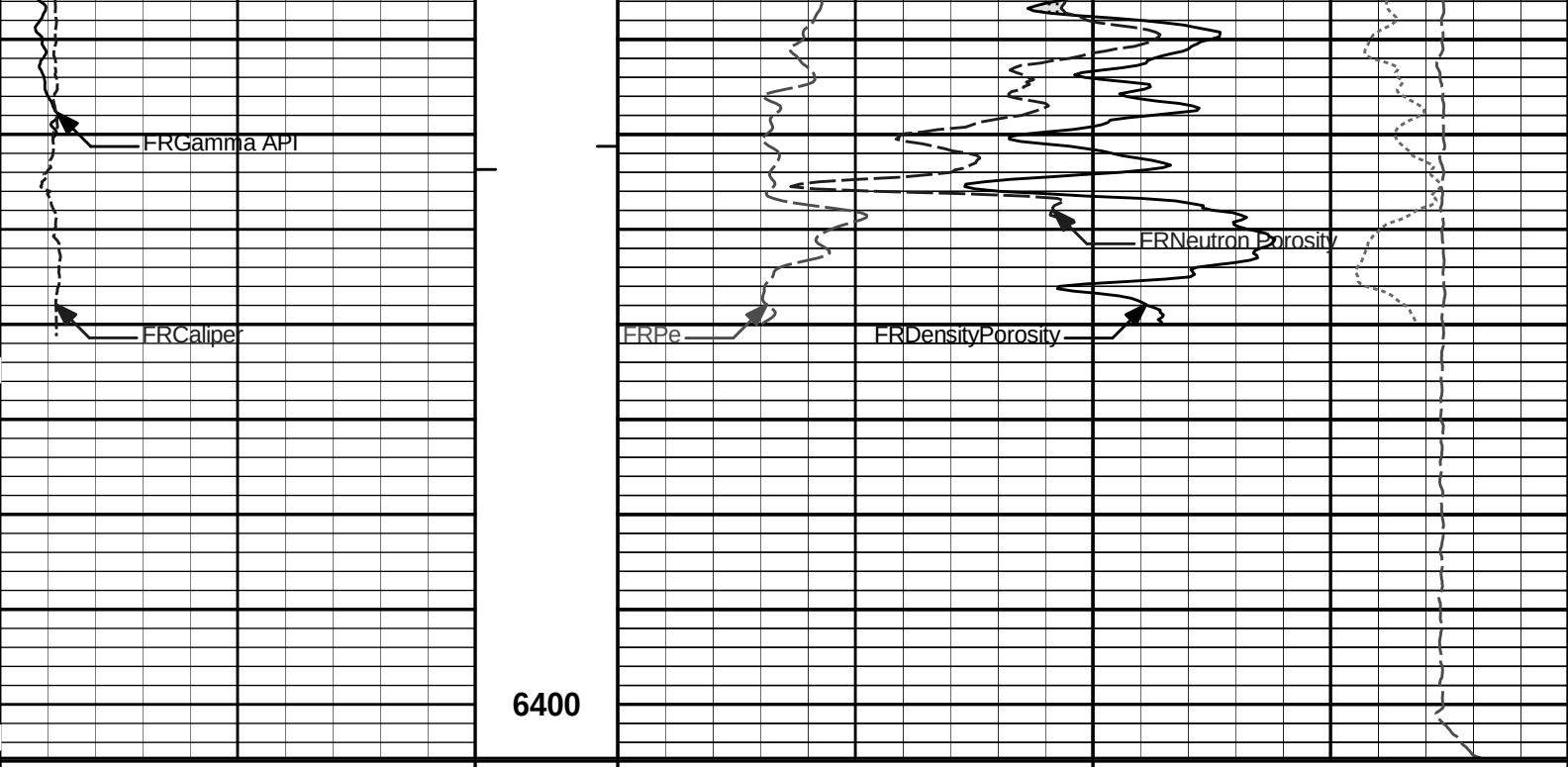
6000
6100
Gamma API
DensityCor
Tension


Caliper
Pe
Neutron Porosity
DensityPorosity
DensityCorr
Tension
6200
6300



6 Caliper 16 inches	1 : 240 ft	0 Pe 10
0 Gamma API 150 api	AHVT	
SHALE	BHVT	

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

HALLIBURTON

Plot Time: 01-May-12 17:06:39
Plot Range: 5640 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\REPEAT
Plot File: \\PORO\Poro_IQ_5_REP_LIB

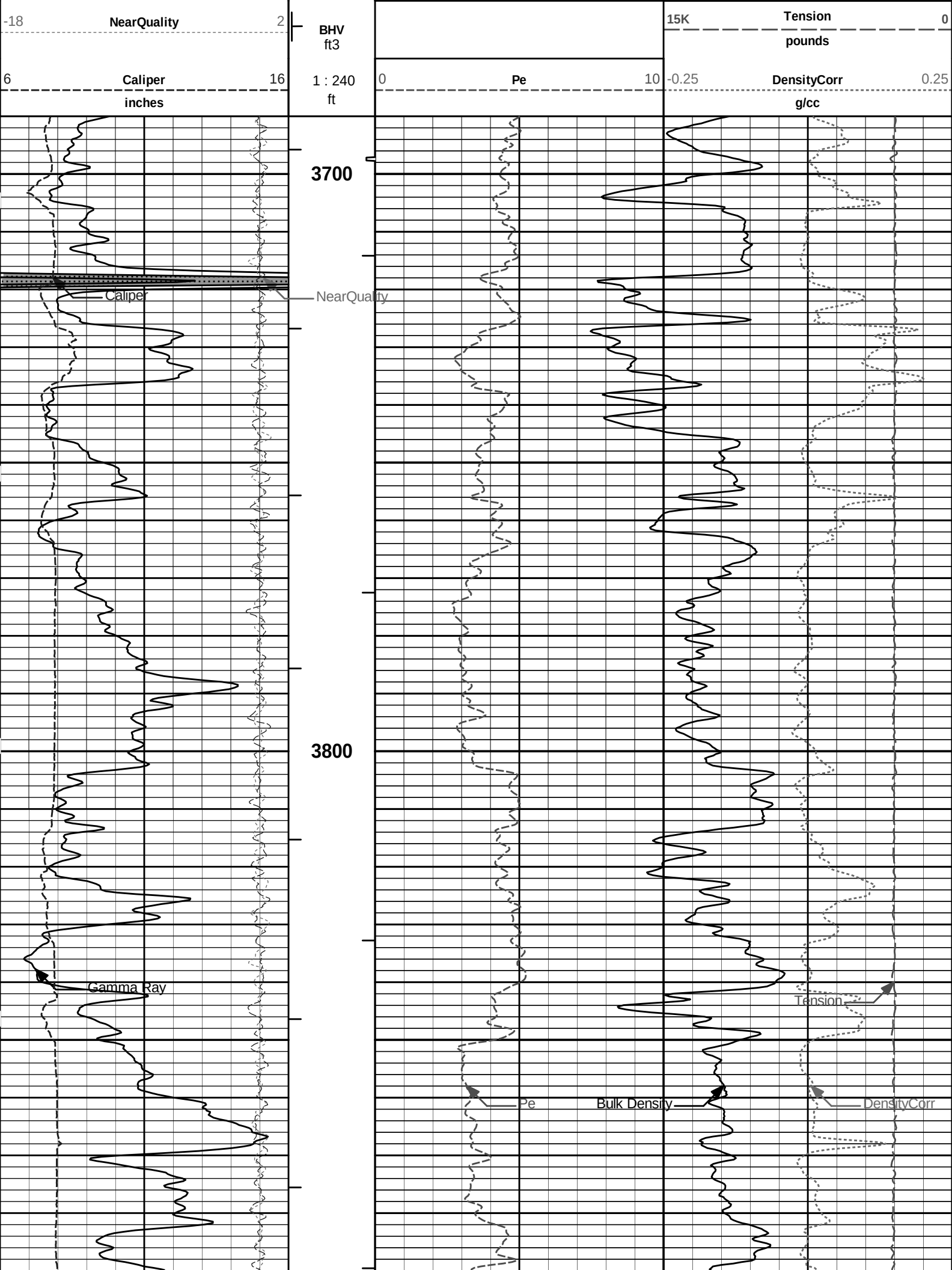
REPEAT SECTION

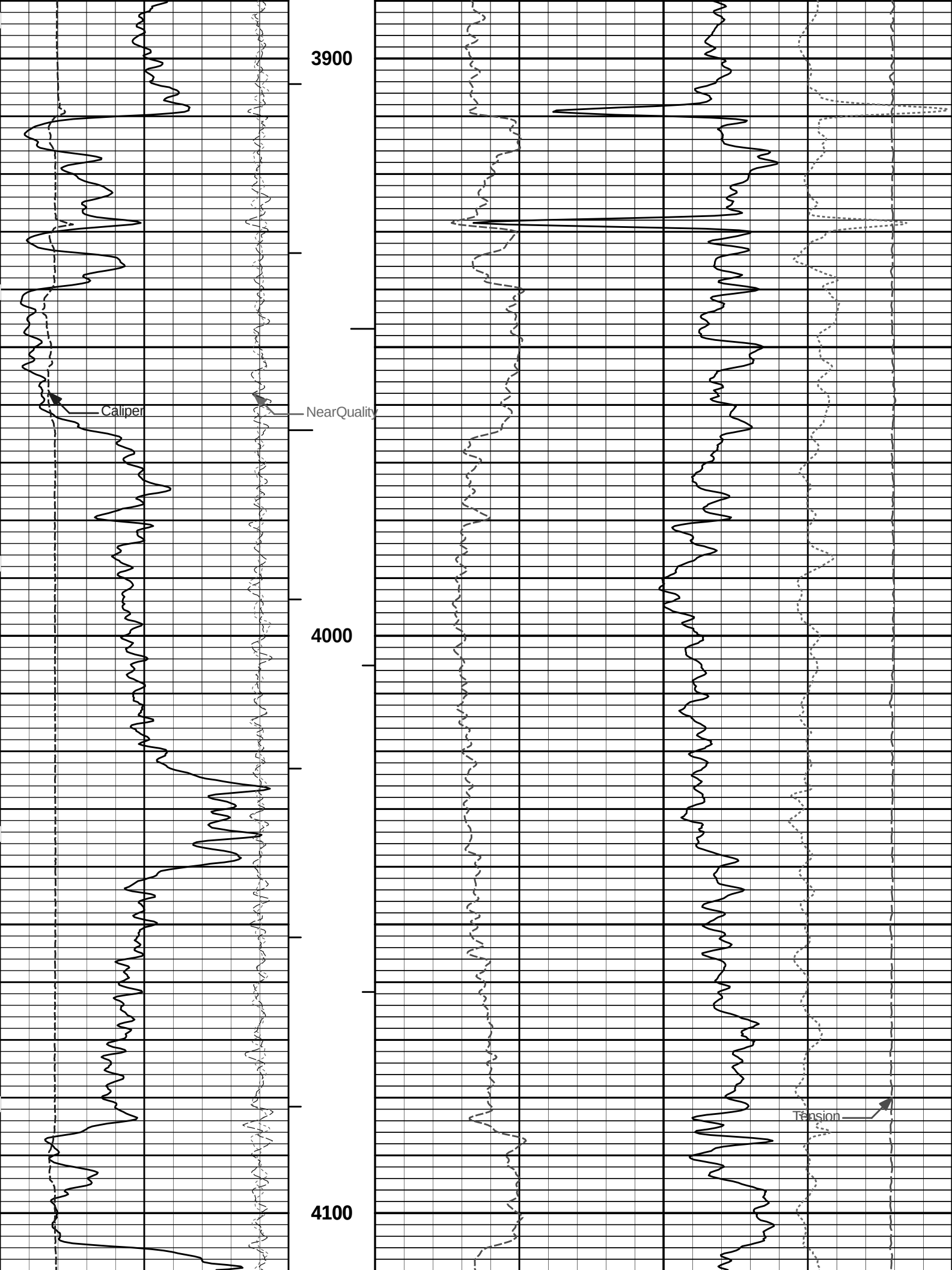
HALLIBURTON

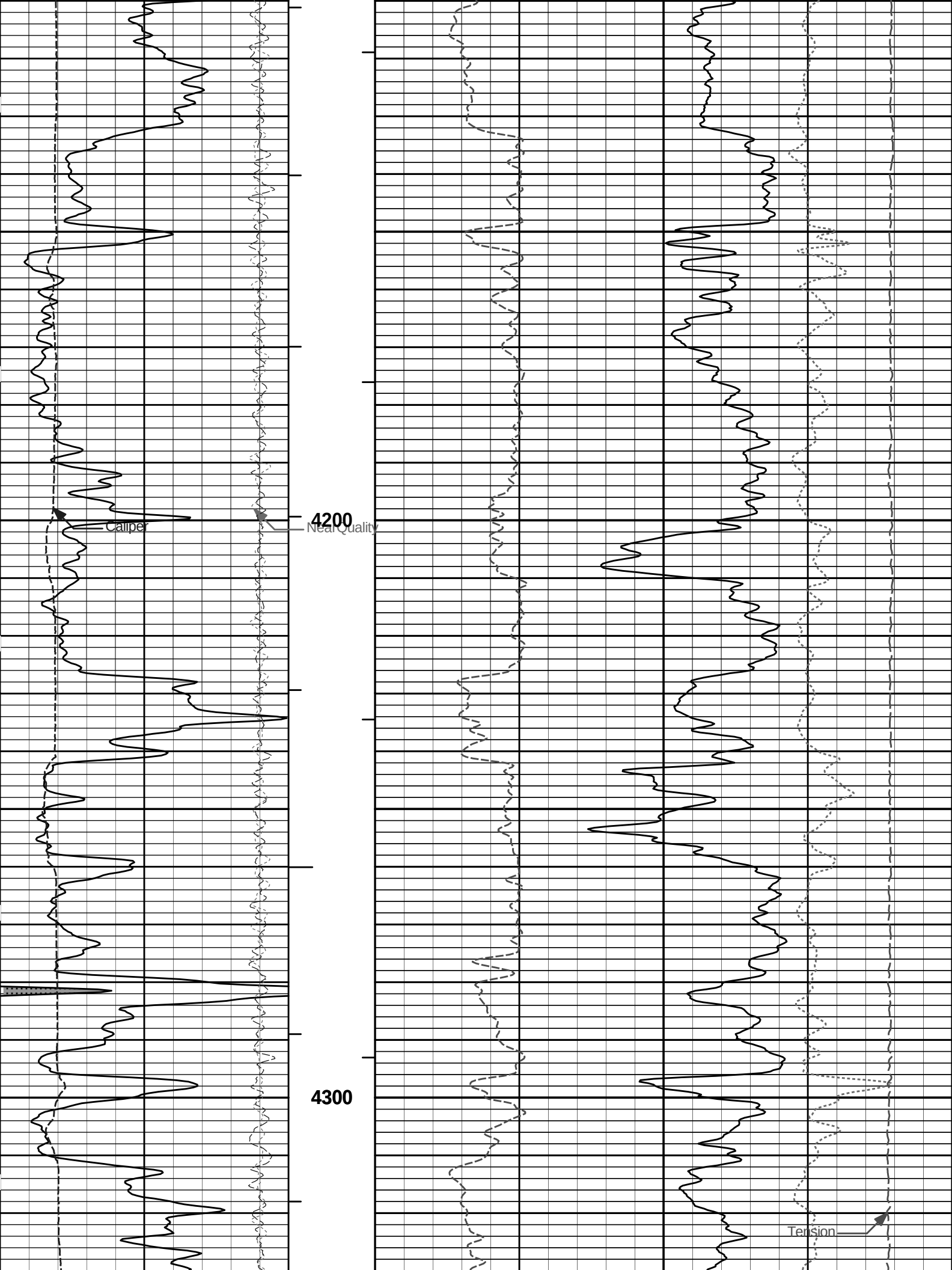
Plot Time: 01-May-12 17:06:39
Plot Range: 3690 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\DETAIL
Plot File: \\-LOCAL-\STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\PORO\BULKD_5_MAIN_LIB

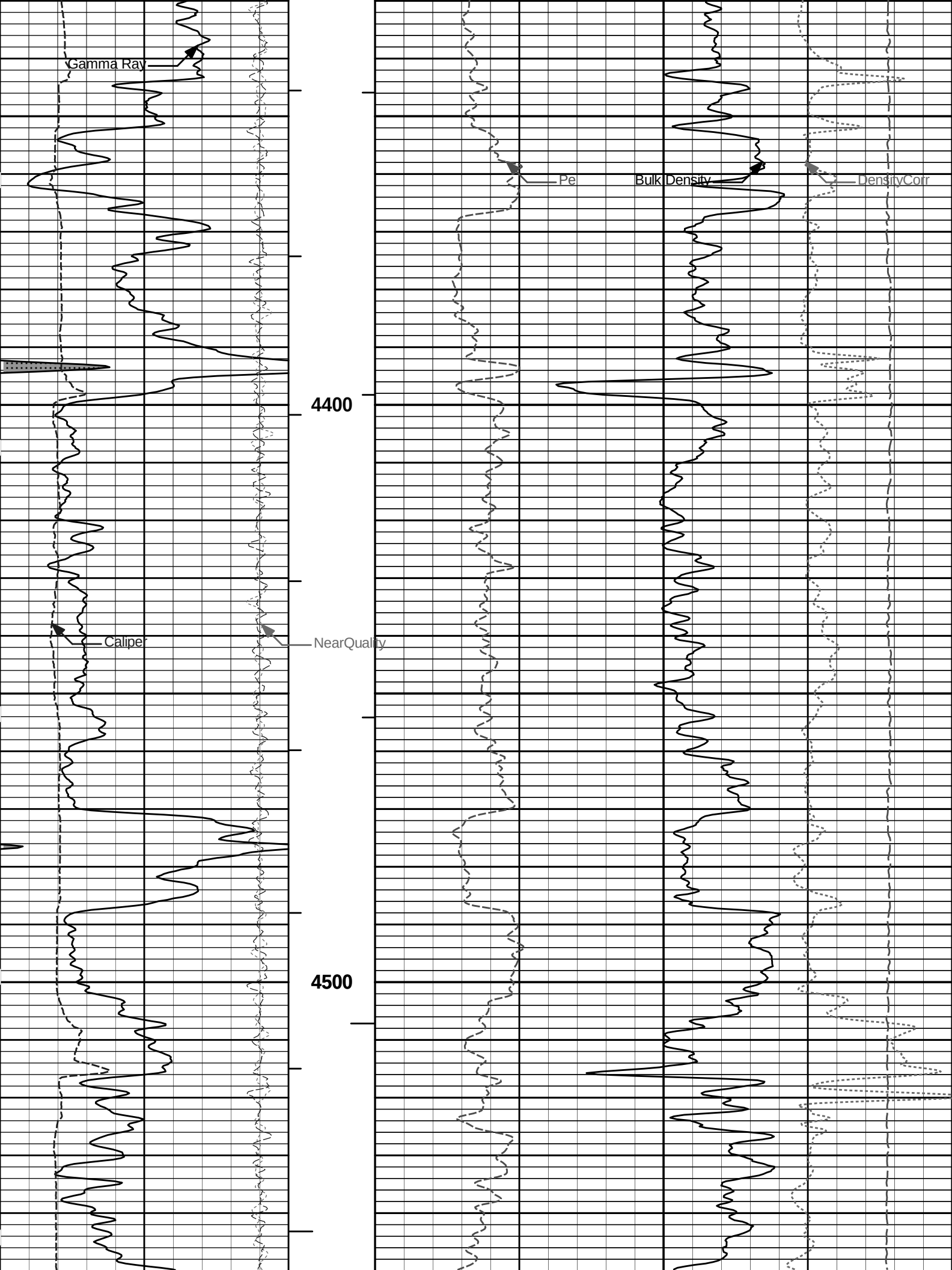
5 INCH MAIN LOG

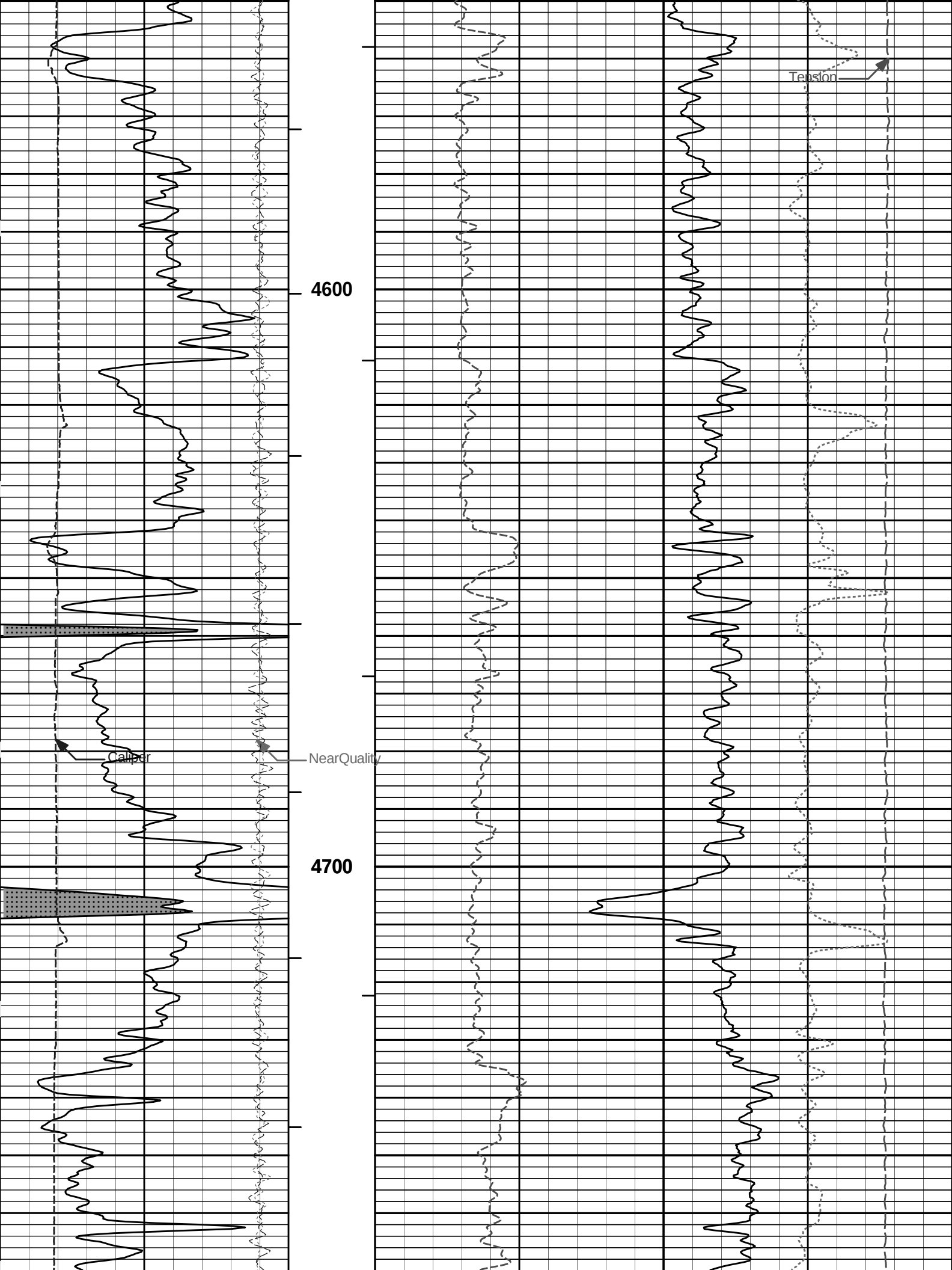
SHALE	Tension Pull	
0 Gamma Ray 150 api	Tension Pull 10 0	
18 FarQuality -2	AHV ft3	2 Bulk Density 3 g/cc


-18
NearQuality
2
BHV
ft3
15K
Tension
0
pounds
6
Caliper
16
1 : 240
ft
0
Pe
10
-0.25
DensityCorr
0.25
g/cc
inches
3700
3800
Caliper
NearQuality
Gamma Ray
Tension
Pe
Bulk Density
DensityCorr


3900
4000
4100
Caliper
NearQuality
Tension


Caliper
Near Quality
4200
4300
Tension


Gamma Ray
Pe
Bulk Density
DensityCorr
4400
Caliper
NearQuality
4500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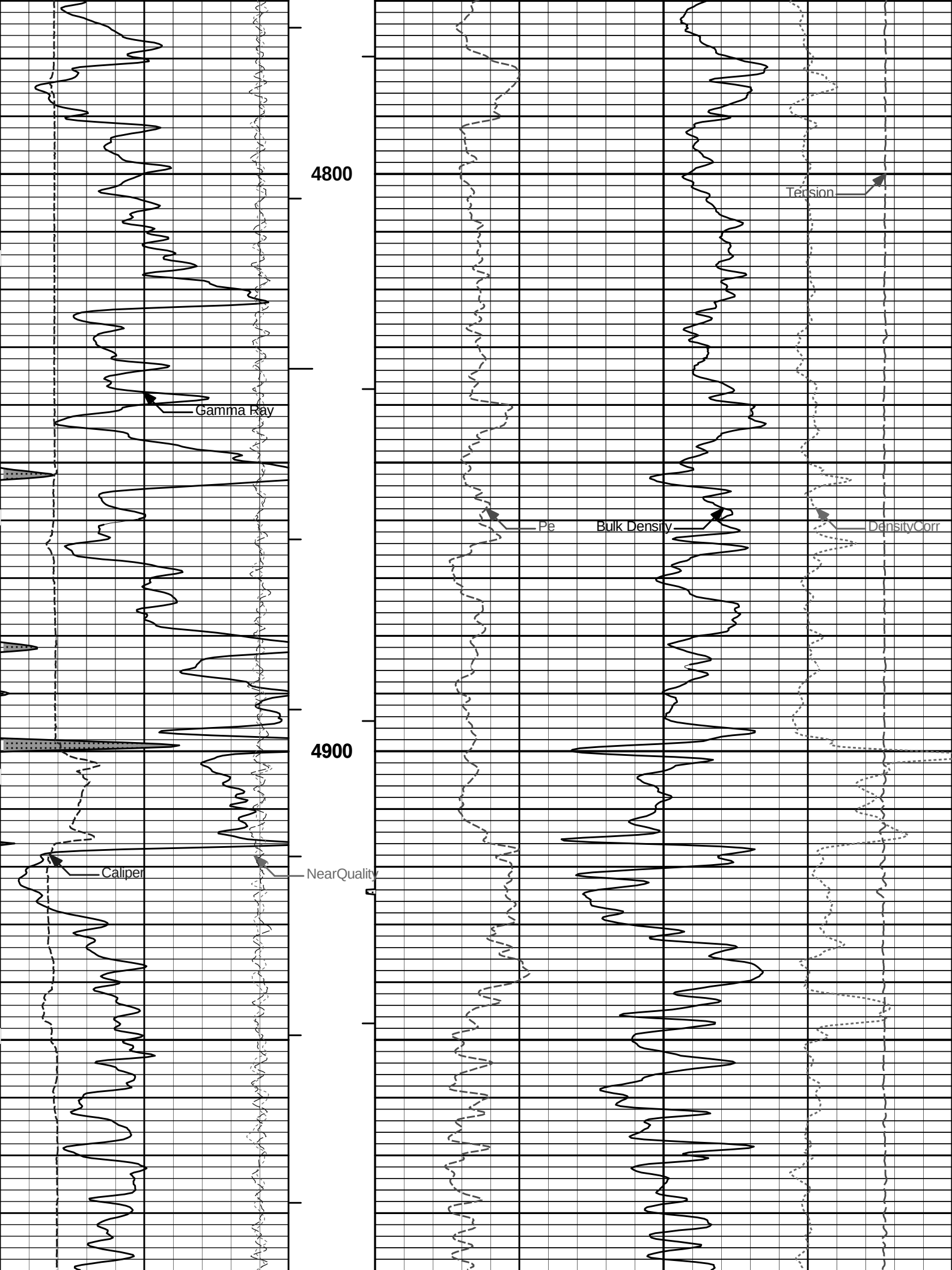
4700
Caliper
NearQuality
Tension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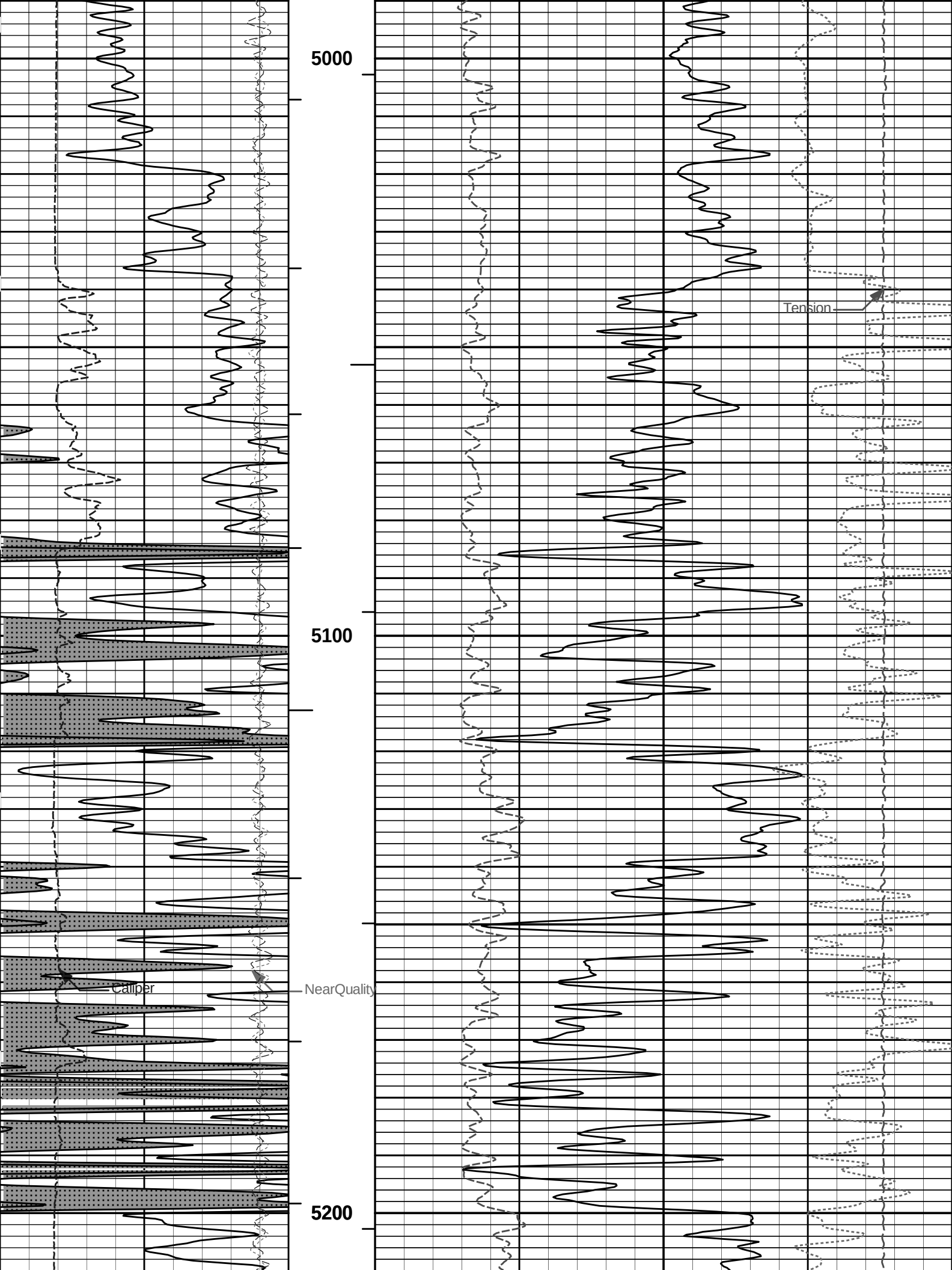
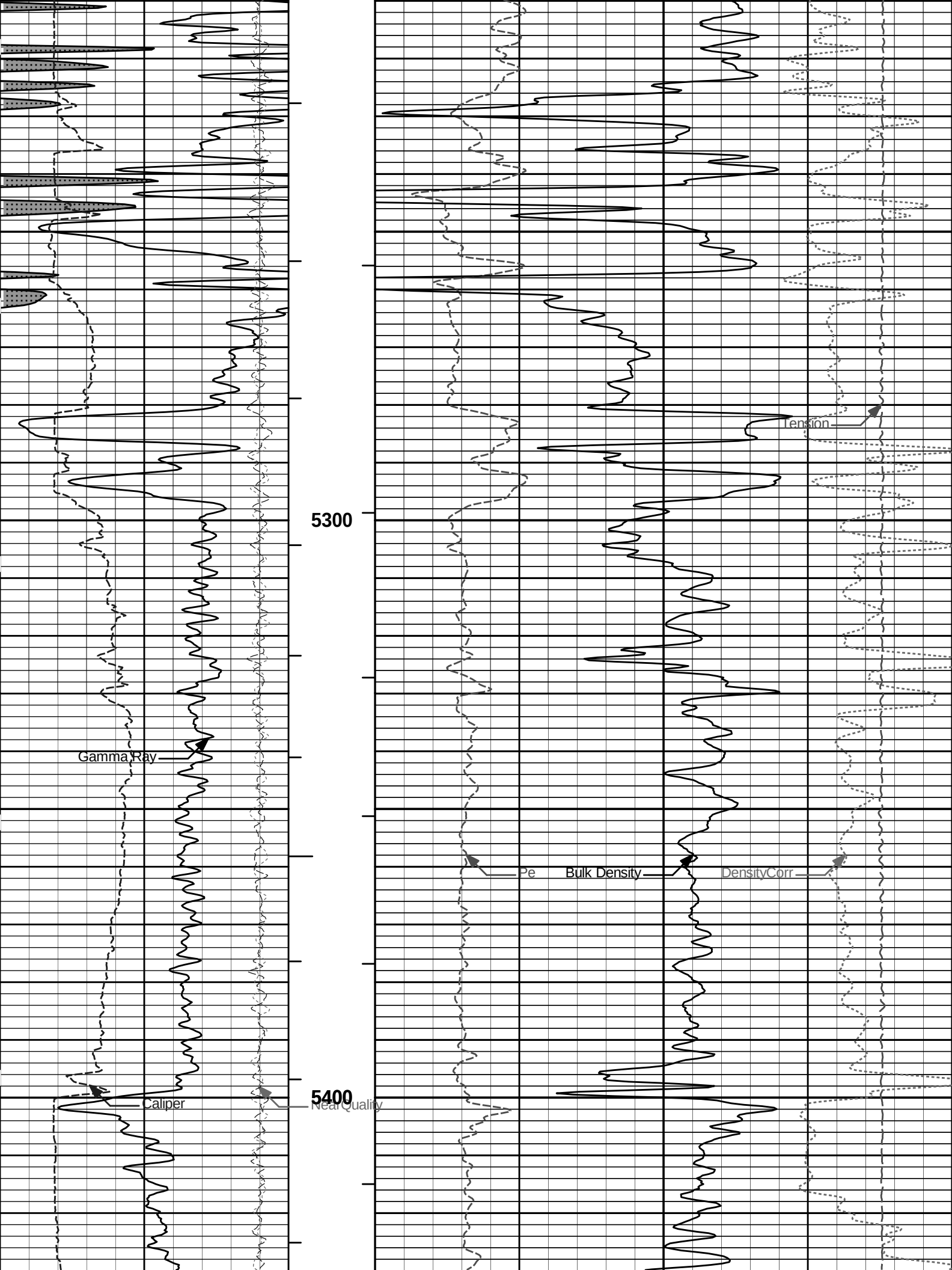
Gamma Ray
Caliper
NearQuality
Tension
Pe
Bulk Density
DensityCorr


5000
5100
5200
Tension
Caliper
NearQuality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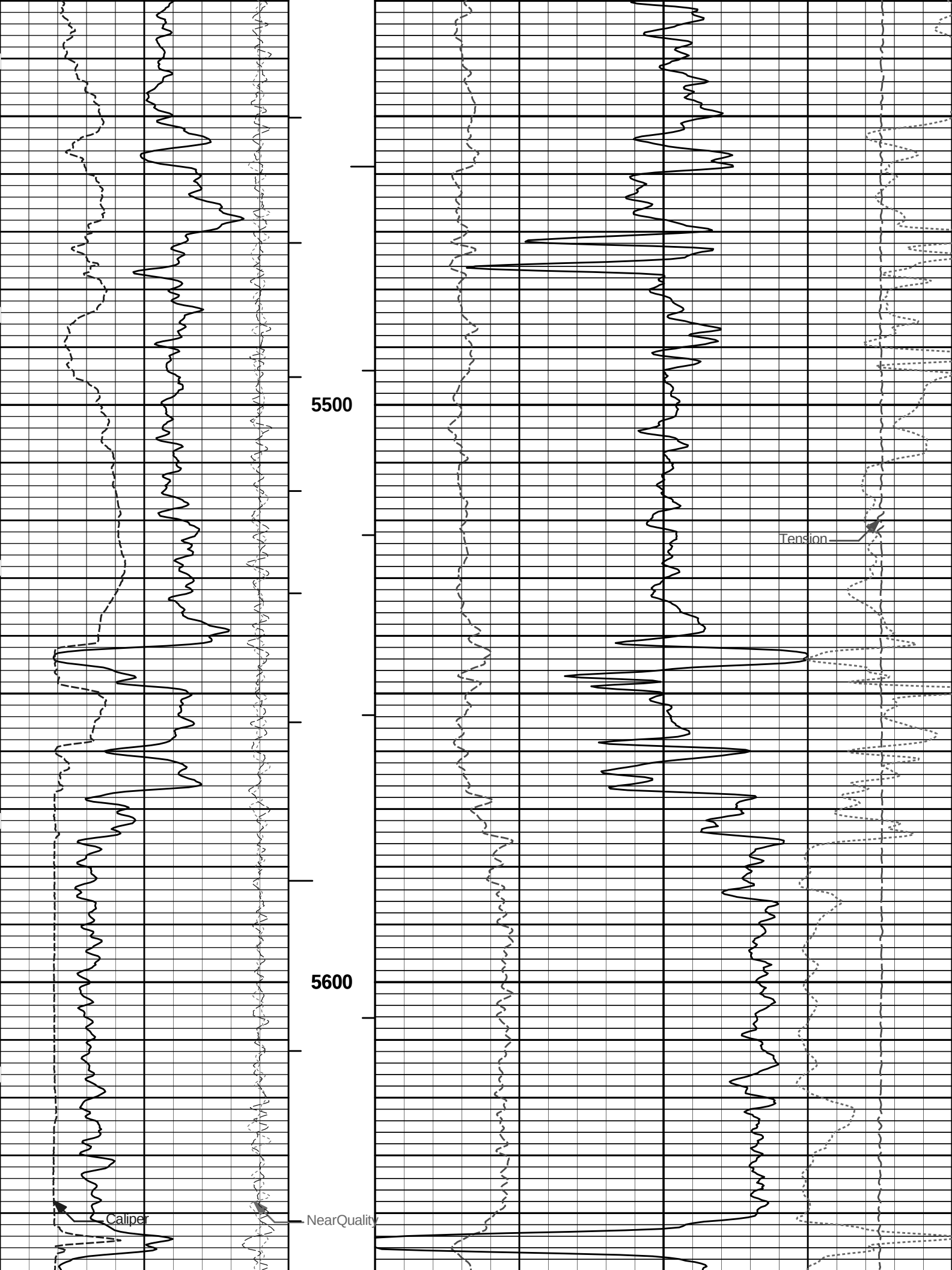
Caliper
NearQuality
Tension
Pe
Bulk Density
DensityCorr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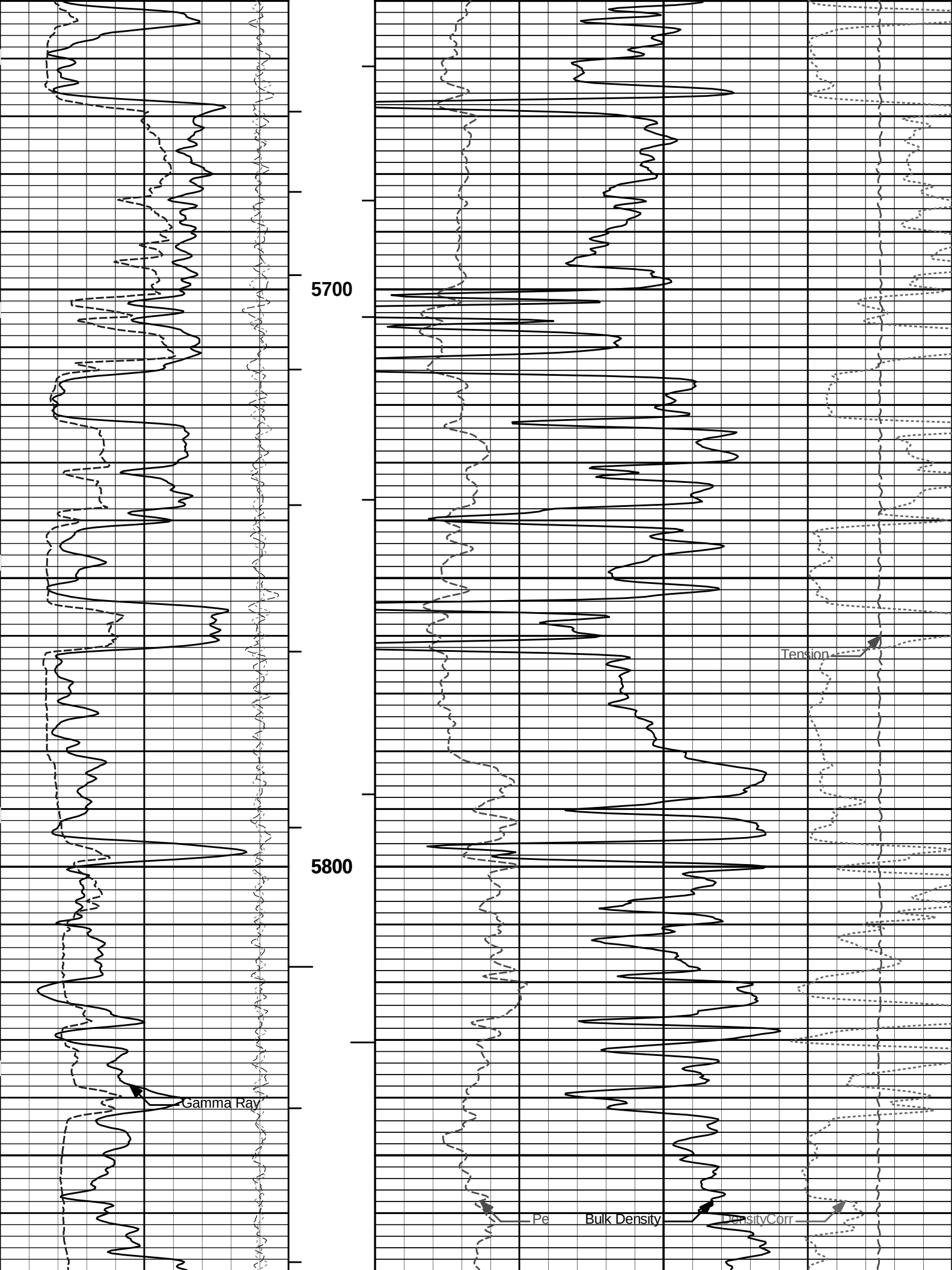
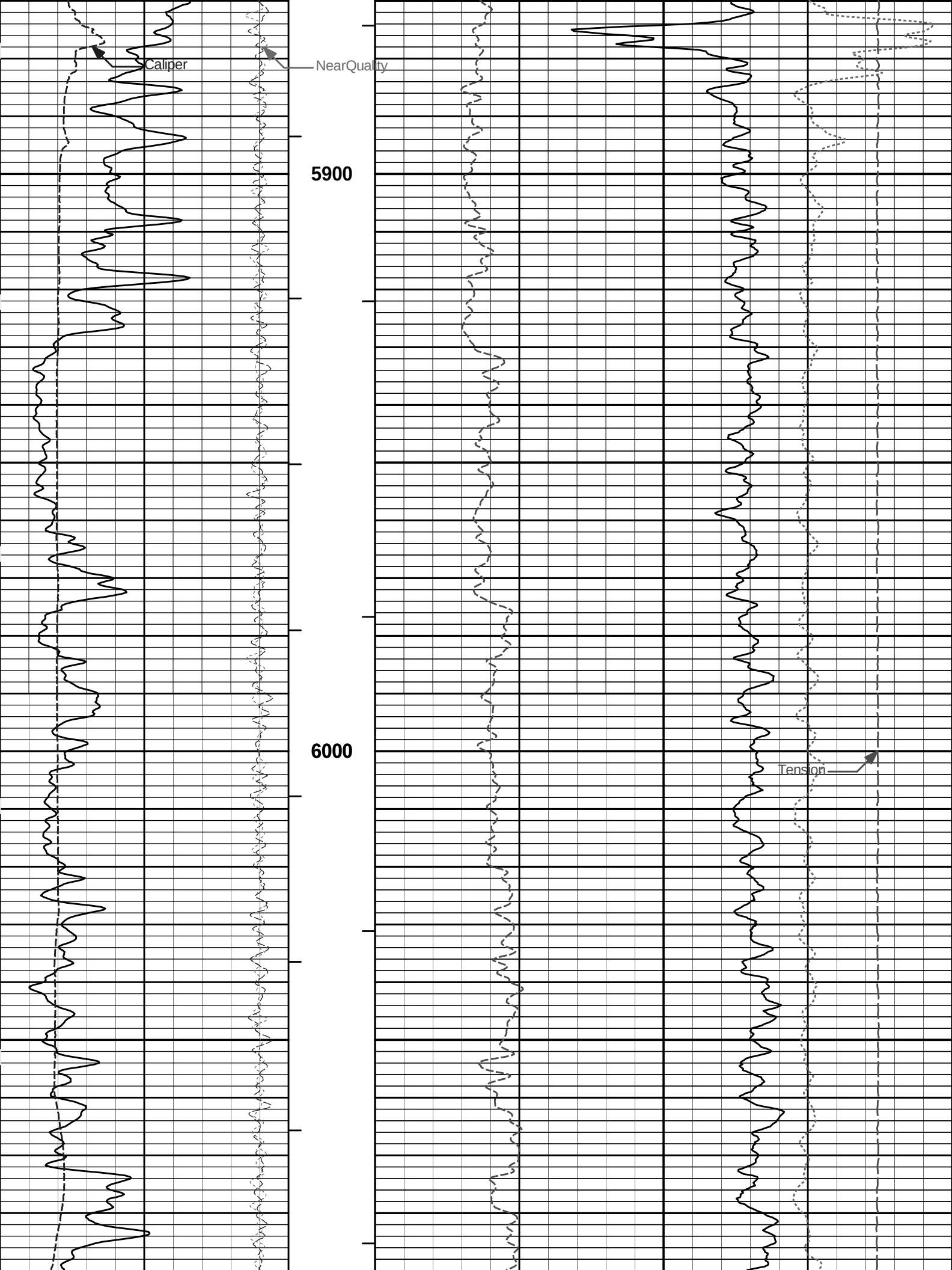
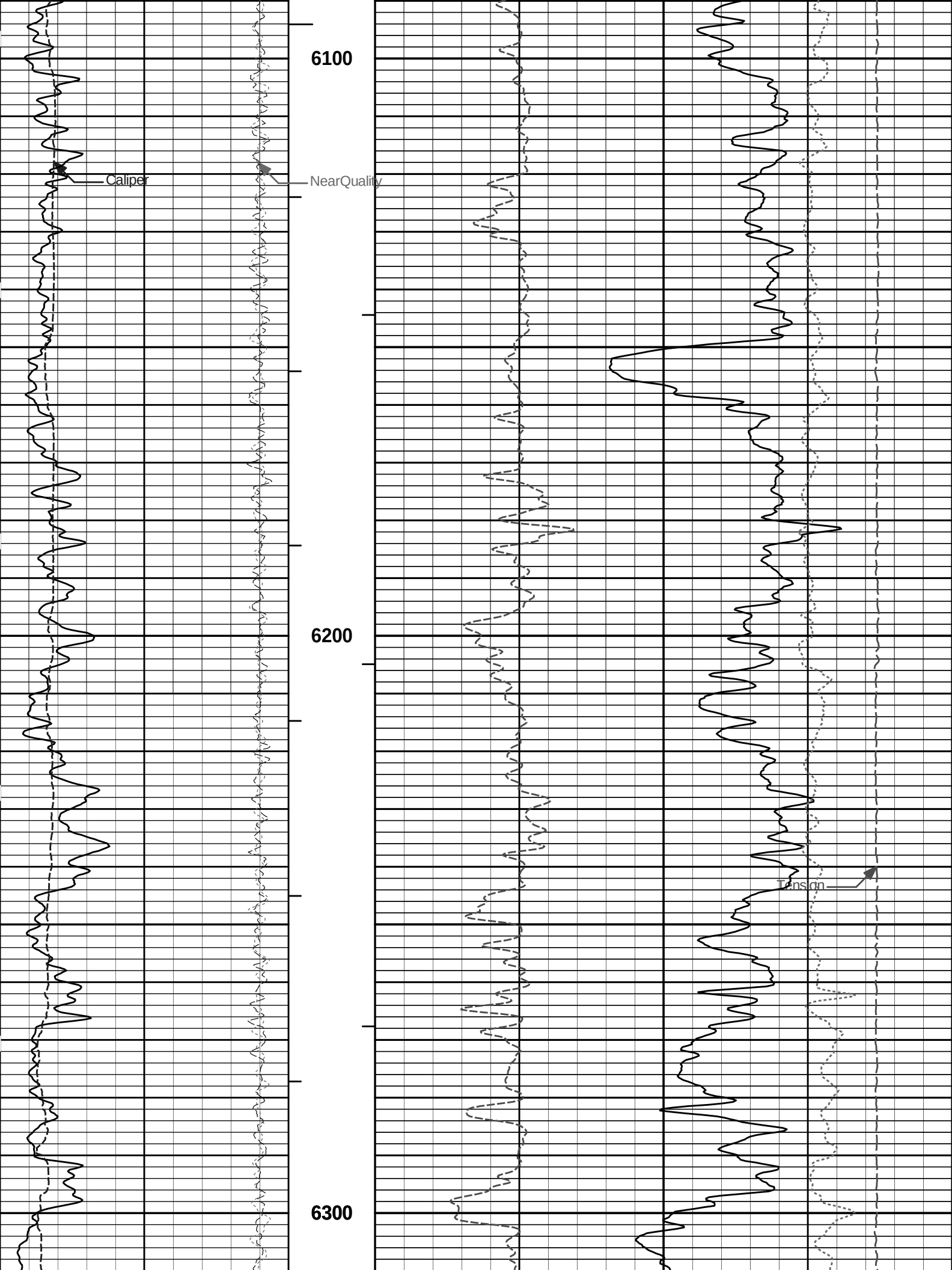
5600
Tension
Caliper
NearQuality


5700
5800
Gamma Ray
Tension
Pe
Bulk Density
DensityCorr


Caliper
NearQuality
5900
6000
Tension


6100
6200
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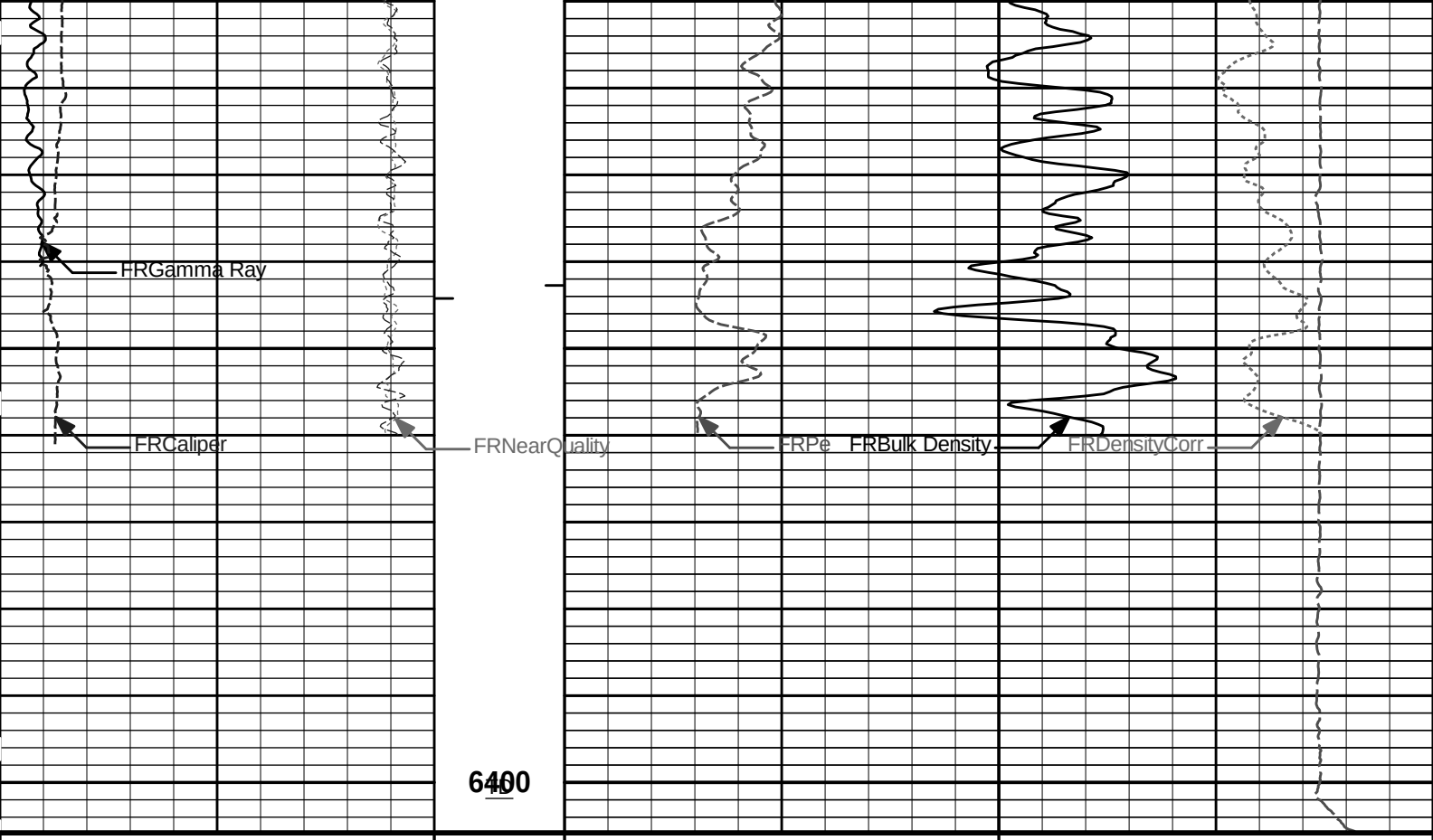
Caliper
NearQuality
Tension



6 Caliper 16 inches		1 : 240 ft	0 Pe 10	-0.25 DensityCorr 0.25 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		Tension Pull 10 0		
SHALE		Tension Pull		

HALLIBURTON

Plot Time: 01-May-12 17:06:42
Plot Range: 3690 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\DETAIL\
Plot File: \\-LOCAL-\STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 01-May-12 17:06:42
Plot Range: 5640 ft to 6405.67 ft
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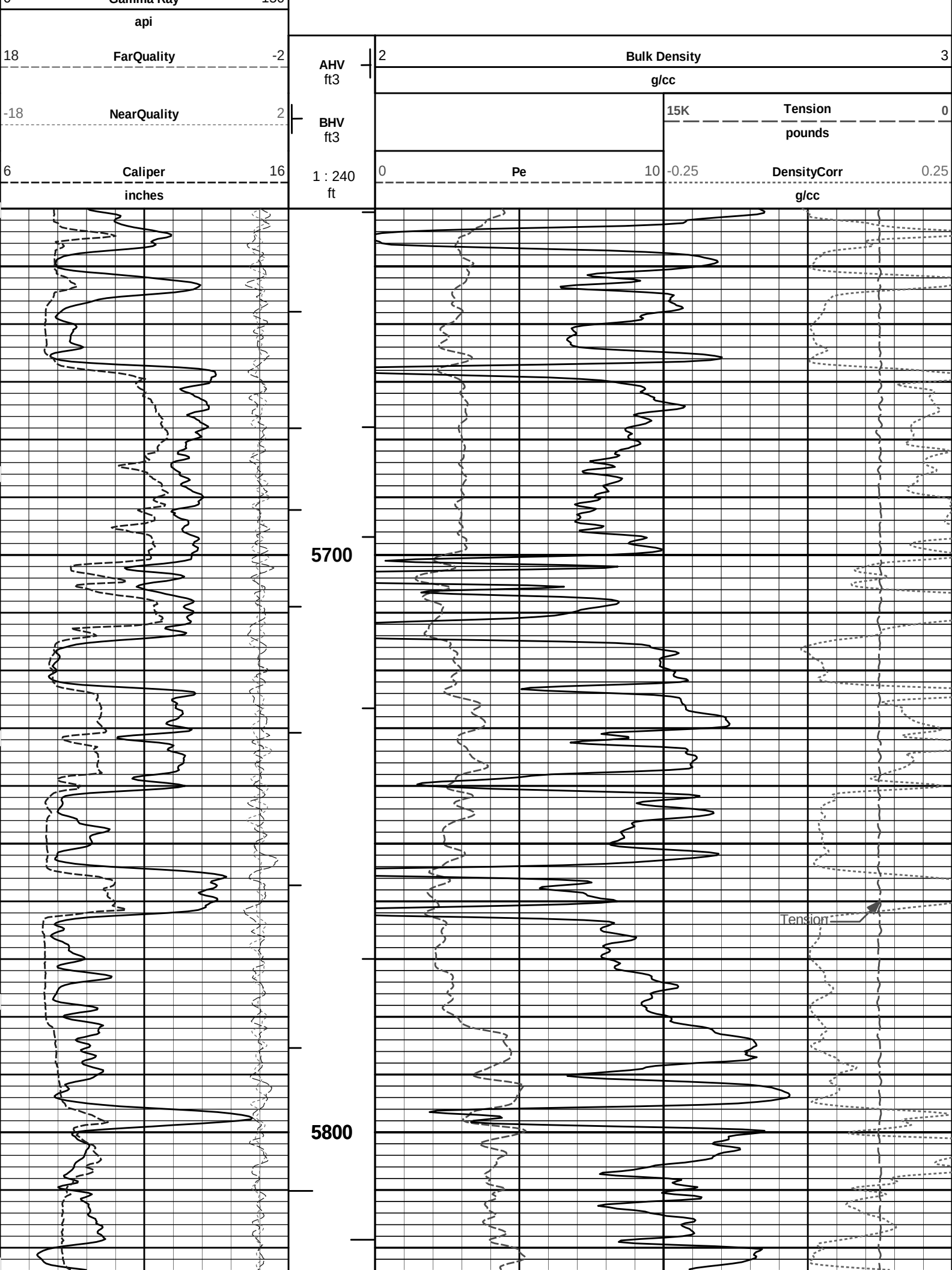
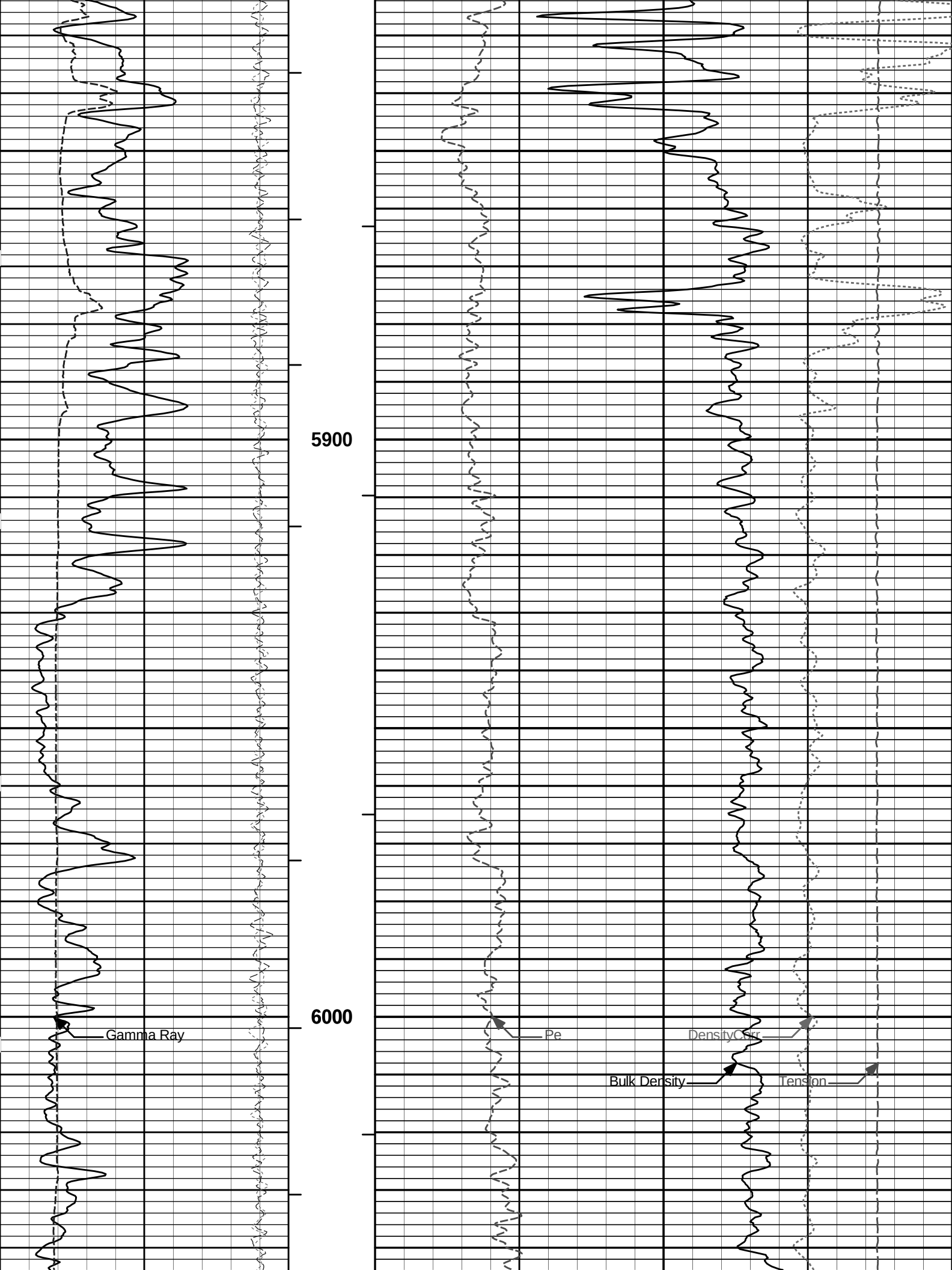
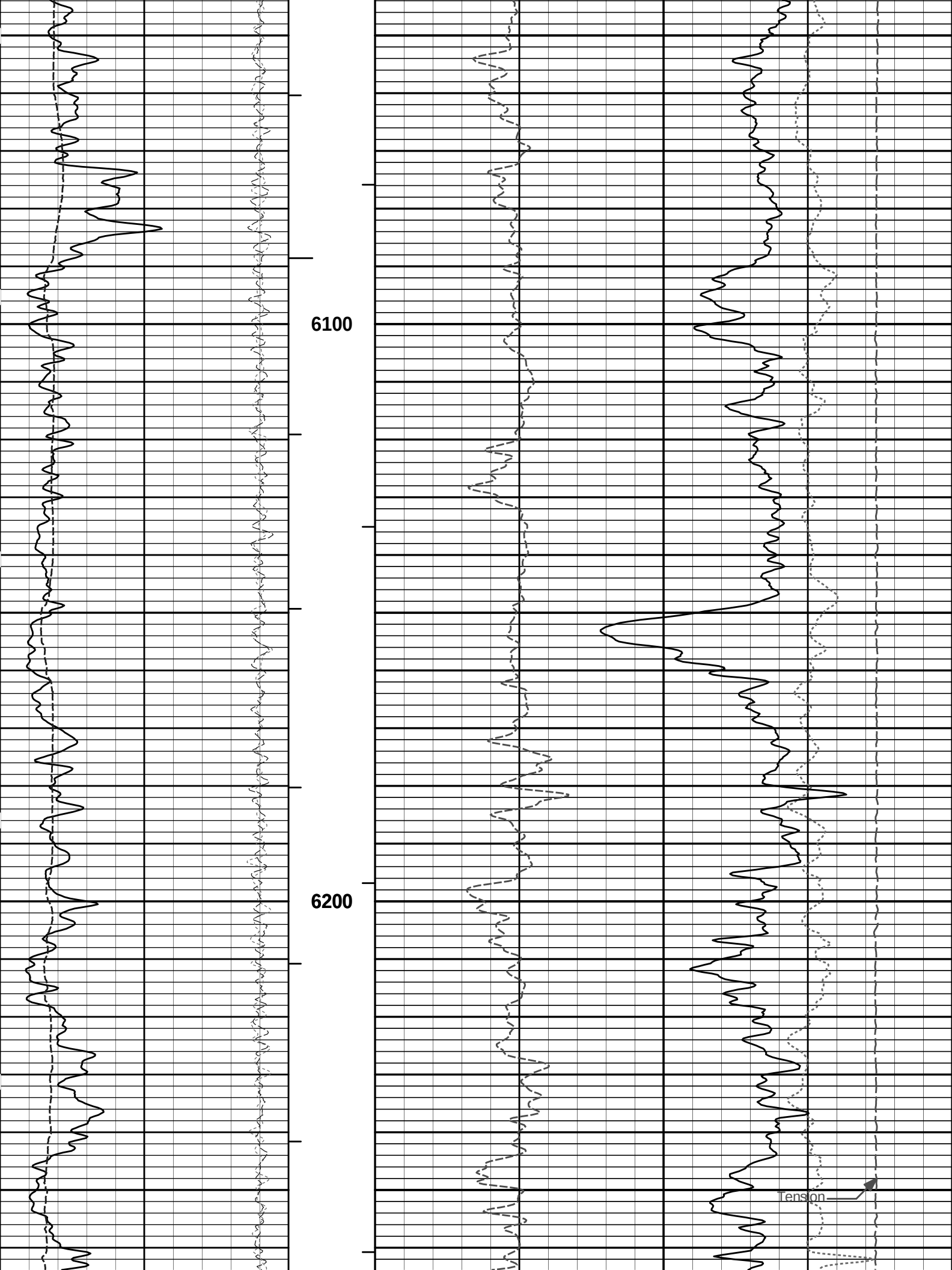
Plot File: \\-LOCAL-\STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\PORO\BULKD_5_REP_LIB

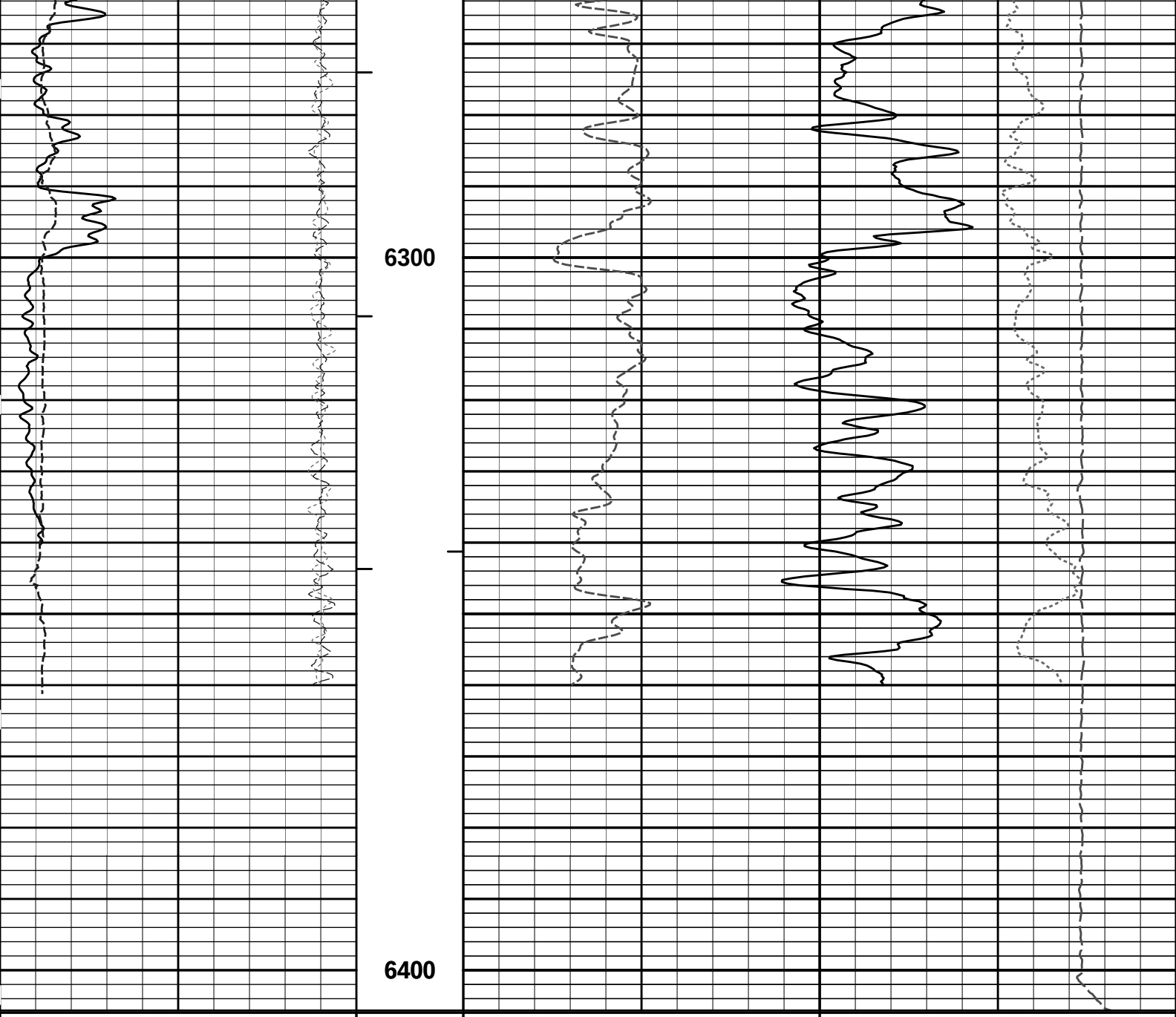
REPEAT SECTION

SHALE				
0 Gamma Ray 150				


Gamma Ray
api
18
FarQuality
-2
-18
NearQuality
2
6
Caliper
16
inches
AHV
ft3
BHV
ft3
1 : 240
ft
2
Bulk Density
3
g/cc
15K
Tension
0
pounds
0
Pe
10
-0.25
DensityCorr
0.25
g/cc
5700
5800
Tension


5900
6000
Gamma Ray
Pe
DensityCorr
Bulk Density
Tension


6100
6200
Tension



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

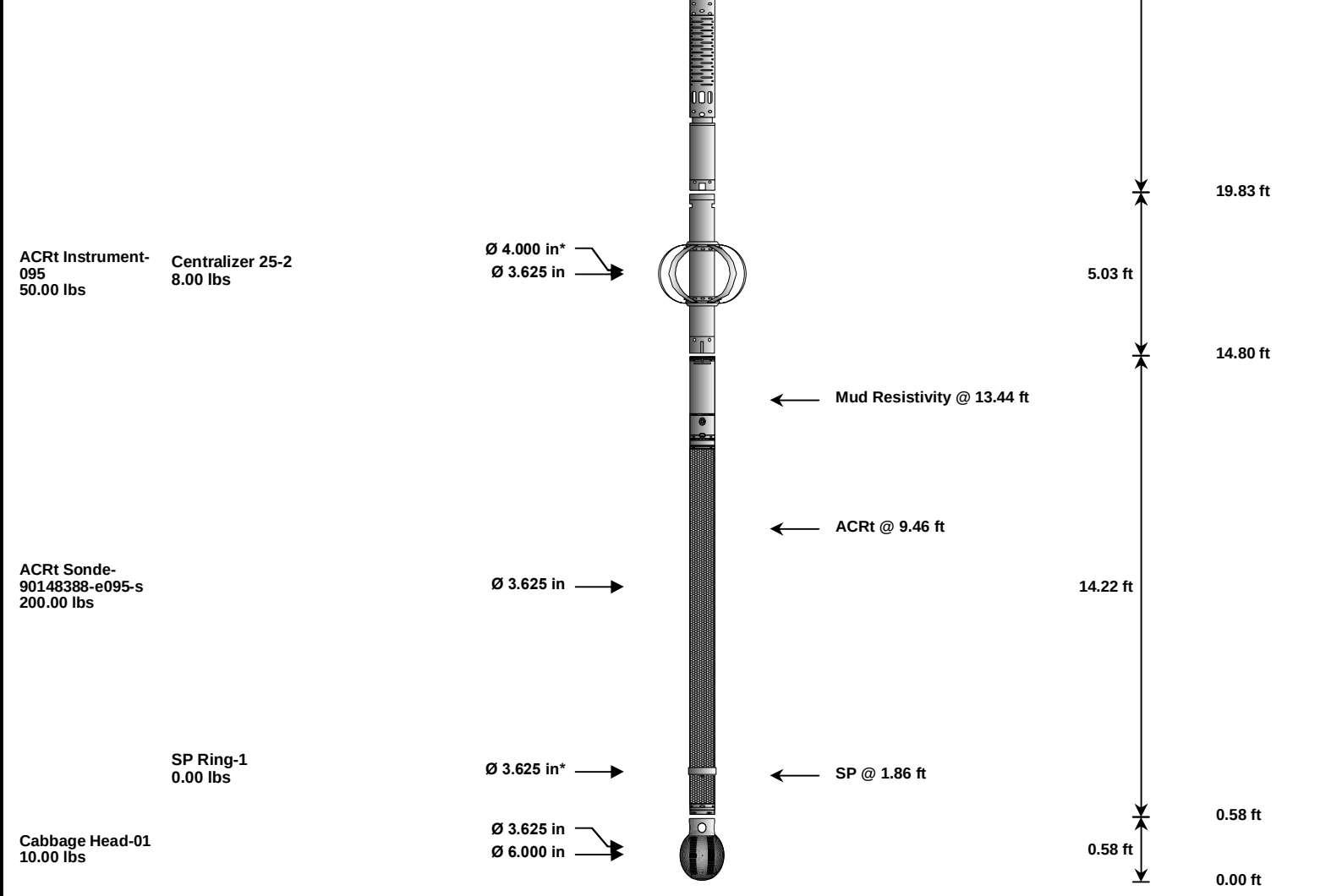
Plot Time: 01-May-12 17:06:43
Plot Range: 5640 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\REPEAT\
Plot File: \\-LOCAL-\STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\PORO\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						73.32 ft
CH_HOS-336-I 37.50 lbs		Ø 2.750 in		Temperature @ 72.30 ft	3.03 ft	
						70.30 ft
GTET-11021138 165.00 lbs		Ø 3.625 in		GammaRay @ 64.23 ft	8.52 ft	
						61.78 ft
	DSN Decentralizer-PROT01 6.60 lbs	Ø 5.000 in*				
DSNT-11023947 174.00 lbs		Ø 3.625 in		DSN Far @ 54.84 ft DSN Near @ 54.09 ft	9.69 ft	
						52.09 ft
SDLT-I947M315P774 360.00 lbs	SDLT Pad-I947M315P774 65.00 lbs	Ø 4.500 in			10.81 ft	
	Microlog Pad-I947M315P774 8.00 lbs	Ø 4.750 in* Ø 4.750 in*		Microlog @ 44.28 ft SDL Caliper @ 44.09 ft SDL @ 44.08 ft		
						41.28 ft
IQ Flex-1 140.00 lbs		Ø 3.625 in			5.67 ft	
						35.61 ft
	Centralizer 25-1 8.00 lbs	Ø 4.000 in*				
BSAT-10747686 300.00 lbs		Ø 3.625 in		Sonic Receivers @ 27.09 ft	15.77 ft	



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	336-I	37.50	3.03		70.30	300.00
GTET	Gamma Telemetry Tool	11021138	165.00	8.52		61.78	60.00
DSNT	Dual Spaced Neutron	11023947	174.00	9.69		52.09	60.00
DCNT	DSN Decentralizer	PROT01	6.60	5.13	*	55.42	300.00
SDLT	Spectral Density Tool	I947M315P774	360.00	10.81		41.28	60.00
SDLP	Density Insite Pad	I947M315P774	65.00	2.55	*	43.49	60.00
MICP	Microlog Pad	I947M315P774	8.00	1.00	*	43.78	60.00
IQF	IQ Flex tool	1	140.00	5.67		35.61	300.00
BSAT	Borehole Sonic Array Tool	10747686	300.00	15.77		19.83	60.00
OBCEN	Centralizer - 25 in. Overbody	1	8.00	2.08	*	32.82	300.00
ACRt	Array Compensated True Resistivity Instrument Section	095	50.00	5.03		14.80	300.00
OBCEN	Centralizer - 25 in. Overbody	2	8.00	2.08	*	16.30	300.00
ACRt	Array Compensated True Resistivity	90148388-e095-s	200.00	14.22		0.58	300.00
SP	SP Ring	1	0.00	0.25	*	1.86	300.00
CBHD	Cabbage Head	01	10.00	0.58		0.00	300.00
Total			**1,532.10**	**73.32**			

* Not included in Total Length and Length Accumulation.

Data: STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\IDLE **Date: 01-May-12 13:21:38**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11021138 **Reference Calibration Date:** 22-Apr-12 21:03:46

Engineer:	**BOMAR**	**Calibration Date:**	**22-Apr-12 21:06:30**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: MP051807-02

Calibrator API Reference:234.00 api

Equivalent Calibrator API Reference:238.1 api

Measurement	Measured	Calibrated	Units
Background	73.1	73.3	api
Background + Calibrator	310.4	311.4	api
Calibrator	237.3	238.1	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11021138**	**Reference Calibration Date:**	**22-Apr-12 21:06:30**
Engineer:	**C. MARLOWE**	**Calibration Date:**	**01-May-12 13:00:32**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: MP051807-02

Calibrator API Reference:234.00 api

Equivalent Calibrator API Reference:238.1 api

Field Verification	Shop	Field	Units
Background	73.3	72.9	api
Background + Calibrator	311.4	307.5	api
Calibrator	238.1	234.5	api

Shop	Field	Difference	Tolerance
238.1	234.5	3.6	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 11023947**	**Reference Calibration Date:**	**29-Mar-12 10:32:54**
Engineer:	**BOMAR**	**Calibration Date:**	**27-Apr-12 10:28:11**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN_439

Tank Serial Number: FTSM

Reference value assigned to Tank: 56.100

Snow Block S/N: 336

Calibration Tank Water Temperature: 65 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.998	1.002	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):	0.2346	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.52	10.56	0.038	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0835	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 - 11023947**	**Reference Calibration Date:**	**27-Apr-12 10:28:11**
Engineer:	**C. MARLOWE**	**Calibration Date:**	**01-May-12 12:57:58**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN_439

Snow Block S/N: 336

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0835	0.0791	-0.0045	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	**SDLT - I947M315P774**	**Reference Calibration Date:**	**22-Apr-12 22:04:02**
Engineer:	**BOMAR**	**Calibration Date:**	**22-Apr-12 22:09:21**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1841.81	-1782.38	-7000.00 - -1000.00
Pad Gain	0.0003752	0.0003738	0.000200 - 0.000600
Arm Offset	-801.46	-810.35	-5000.00 - 3000.00
Arm Gain	0.0005124	0.0005071	0.000300 - 0.000700
Arm Power	-0.000004895	-0.000004564	-0.000010 - 0.000010

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)	1.99	2.00	0.01	+/- 0.20
Medium Ring (in)	3.74	3.75	0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 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

SDLT CALIPER FIELD CALIBRATION

Tool Name:	**SDLT - I947M315P774**	**Reference Calibration Date:**	**22-Apr-12 22:09:21**

Engineer:	**C. MARLOWE**	**Calibration Date:**	**01-May-12 13:06:56**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	-0.00	+/- 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 - I947M315P774**	**Reference Calibration Date:**	**22-Apr-12 21:22:42**
Engineer:	**BOMAR**	**Calibration Date:**	**22-Apr-12 21:41:22**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: 5155GW

Aluminum Block S/N: FTSM Density: 2.581g/cc Pe: 3.170

Magnesium Block S/N: FTSM Density: 1.687g/cc Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0272	1.0694	0.90 - 1.10
Near Dens Gain	1.0112	1.0392	0.90 - 1.10
Near Peak Gain	1.0148	1.0759	0.90 - 1.10
Near Lith Gain	1.0312	1.0696	0.90 - 1.10
Far Bar Gain	1.0071	1.0141	0.90 - 1.10
Far Dens Gain	0.9946	1.0004	0.90 - 1.10
Far Peak Gain	0.9935	0.9968	0.90 - 1.10
Far Lith Gain	0.9769	0.9832	0.90 - 1.10
Near Bar Offset	-0.0345	-0.4249	NONE
Near Dens Offset	0.1079	-0.1425	NONE
Near Peak Offset	0.0659	-0.4461	NONE
Near Lith Offset	-0.0848	-0.4076	NONE
Far Bar Offset	0.0469	-0.0184	NONE
Far Dens Offset	0.1515	0.0965	NONE
Far Peak Offset	0.1480	0.1189	NONE
Far Lith Offset	0.2684	0.2153	NONE
Near Bar Background	965.72	965.05	700 - 1450
Near Dens Background	317.86	316.79	230 - 480
Near Peak Background	139.53	138.63	100 - 210
Near Lith Background	167.79	170.51	125 - 260
Far Bar Background	522.89	523.46	450 - 900
Far Dens Background	204.89	202.03	175 - 345
Far Peak Background	80.59	80.91	70 - 140
Far Lith Background	84.14	83.68	75 - 145

CALIBRATION BLOCK SUMMARY

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

MAGNESIUM				
Density (g/cc)	1.687	1.687	0.000	+/- 0.015
Pe	2.553	2.553	0.000	+/- 0.150
ALUMINUM				
Density (g/cc)	2.580	2.581	0.001	+/- 0.01500
Pe	3.117	3.125	0.008	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0005	+/- 0.0110	0.0001	+/- 0.0140
Magnesium Block	0.0001	+/- 0.0110	0.0009	+/- 0.0140
Aluminum Block	0.0004	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.34	6.00 - 11.50	9.11	6.00 - 11.50
Internal Verifier(B+D+P+L)	1591	1200 - 2700	890	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 - I947M315P774
Reference Calibration Date: 22-Apr-12 21:41:22
Engineer: C. MARLOWE
Calibration Date: 01-May-12 13:06:12
Software Version: WL INSITE R3.4.2 (Build 2)
Calibration Version: 1

Pad Temperature: 71.7 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1590.987	1593.044	2.057	16.042
Far (B+D+P+L) cps	890.080	894.336	4.256	16.251
Near Resolution	9.34	9.43	0.090	0.50
Far Resolution	9.11	9.08	-0.030	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-11021138						
Gamma Ray Calibrator	238.1	234.5	----------	3.6	+/- 9.00	api
DSNT-11023947						
Snow-Block Porosity	0.0835	0.0791	----------	0.0044	+/- 0.0150	decp
SDLT-I947M315P774						

Pad Extension	3.75	3.75	----------	0.00	+/-0.10	in
Ring Diameter	8.25	8.24	----------	0.010	+/-0.15	in
SDLT Pad-I947M315P774						
Near(B+D+P+L)	1590.987	1593.044	----------	-2.057	+/-16.042	cps
Far(B+D+P+L)	890.080	894.336	----------	-4.256	+/-16.251	cps

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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	9.200	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	2.200	ohmm
	SHARED	TRM	Temperature of Mud	110.0	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	6428.00	ft
	SHARED	BHT	Bottom Hole Temperature	140.0	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	1.80	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	100.00	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	CHOO	View Map Correction Option	No	

	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	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 Upr	
	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	
BOTTOM					

Data: STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\IDLE **Date: 01-May-12 15:23:37**

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	CH_HOS			
DHTN	DownholeTension	0.00	BLK	0.000
	GTET			
TPUL	Tension Pull	64.23	NO	
GR	Natural Gamma Ray API	64.23	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	64.23	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	64.23	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			
TPUL	Tension Pull	53.99	NO	
RNDS	Near Detector Telemetry Counts	54.09	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.84	TRI	0.583

DNTT	DSN Tool Temperature	54.09	NO	
DSNS	DSN Tool Status	53.99	NO	
ERND	Near Detector Telemetry Counts EVR	54.09	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.84	BLK	0.000
ENTM	DSN Tool Temperature EVR	54.09	NO	
	SDLT			
TPUL	Tension Pull	44.09	NO	
PCAL	Pad Caliper	44.09	TRI	0.250
ACAL	Arm Caliper	44.09	TRI	0.250
	BSAT			
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
	ACRt Sonde			
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000

F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

SDLT Pad

TPUL	Tension Pull	44.08	NO	
NAB	Near Above	43.90	BLK	0.920
NHI	Near Cesium High	43.90	BLK	0.920
NLO	Near Cesium Low	43.90	BLK	0.920
NVA	Near Valley	43.90	BLK	0.920
NBA	Near Barite	43.90	BLK	0.920
NDE	Near Density	43.90	BLK	0.920
NPK	Near Peak	43.90	BLK	0.920
NLI	Near Lithology	43.90	BLK	0.920
NBAU	Near Barite Unfiltered	43.90	BLK	0.250
NLIU	Near Lithology Unfiltered	43.90	BLK	0.250
FAB	Far Above	44.26	BLK	0.250
FHI	Far Cesium High	44.26	BLK	0.250
FLO	Far Cesium Low	44.26	BLK	0.250
FVA	Far Valley	44.26	BLK	0.250
FBA	Far Barite	44.26	BLK	0.250
FDE	Far Density	44.26	BLK	0.250
FPK	Far Peak	44.26	BLK	0.250
FLI	Far Lithology	44.26	BLK	0.250
PTMP	Pad Temperature	44.09	BLK	0.920
NHV	Near Detector High Voltage	43.49	NO	
FHV	Far Detector High Voltage	43.49	NO	
ITMP	Instrument Temperature	43.49	NO	
DDHV	Detector High Voltage	43.49	NO	

Microlog Pad

TPUL	Tension Pull	44.28	NO	
MINV	Microlog Lateral	44.28	BLK	0.750
MNOR	Microlog Normal	44.28	BLK	0.750

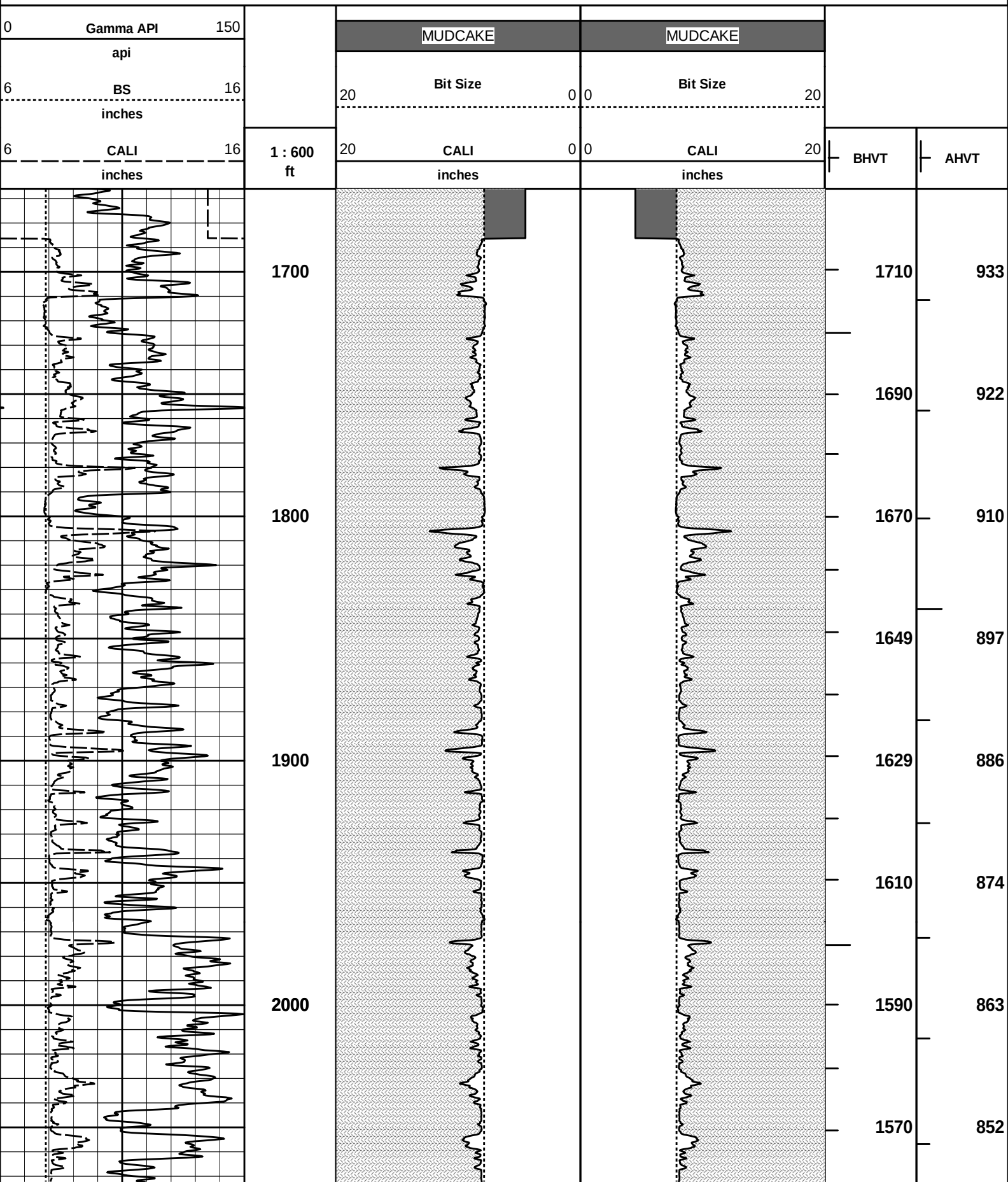
SP Ring

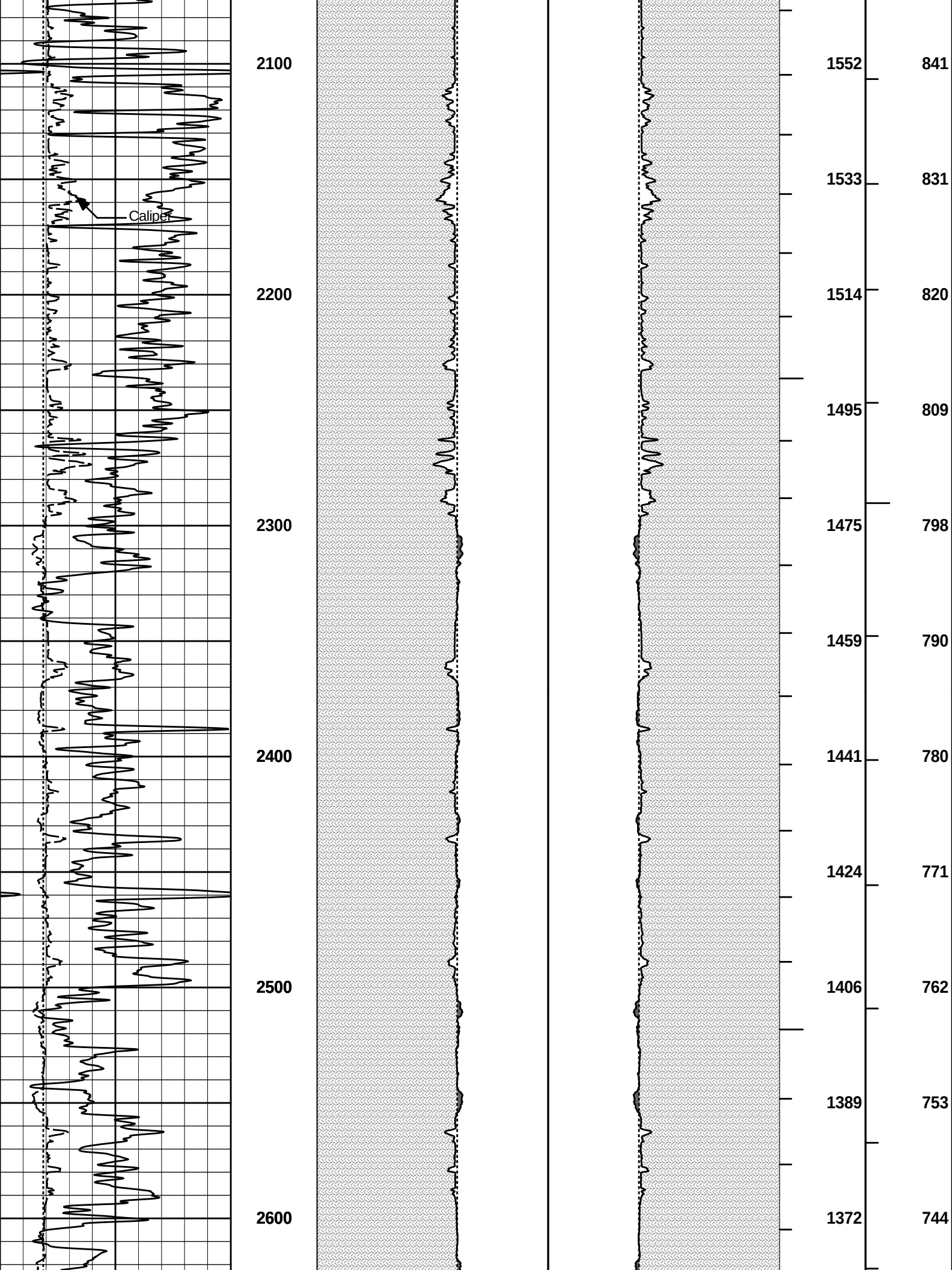
PLTC	Plot Control Mask	1.86	NO	
SP	Spontaneous Potential	1.86	BLK	1.250
SPR	Raw Spontaneous Potential	1.86	NO	
SPO	Spontaneous Potential Offset	1.86	NO	

HALLIBURTON

Plot Time: 01-May-12 17:06:44
Plot Range: 1666 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\CASING\
Plot File: \\-LOCAL-\STANFORD_C_2\0001 GTET-BSAT-FLEX-DSNT-SDLT-ACRT-CBGHD\PORO\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)




Caliper
2100
2200
2300
2400
2500
2600
1552
1533
1514
1495
1475
1459
1441
1424
1406
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1372
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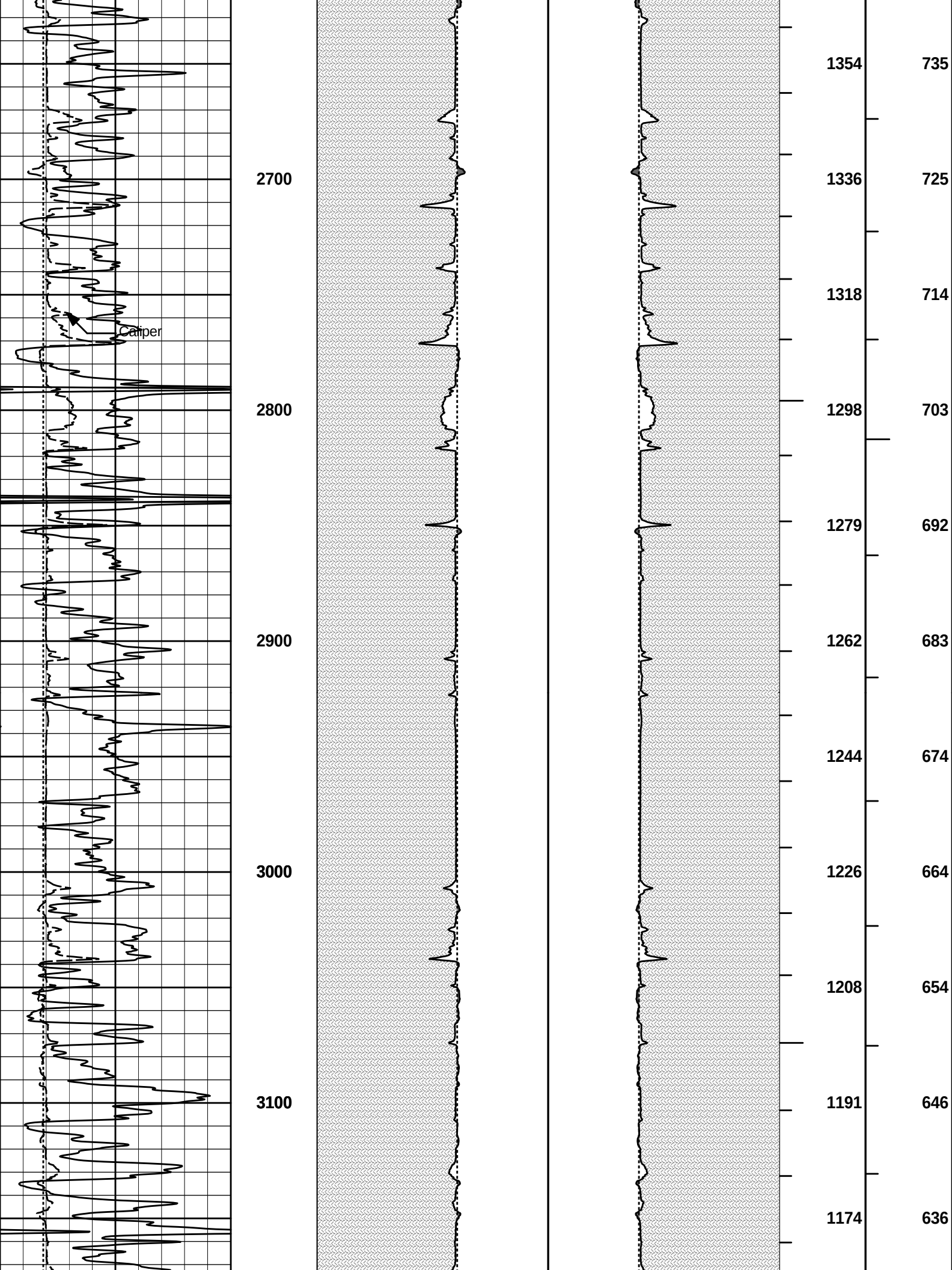
831
820
809
798
790
780
771
762
753
744


Caliper
2700
2800
2900
3000
3100
1354
1336
1318
1298
1279
1262
1244
1226
1208
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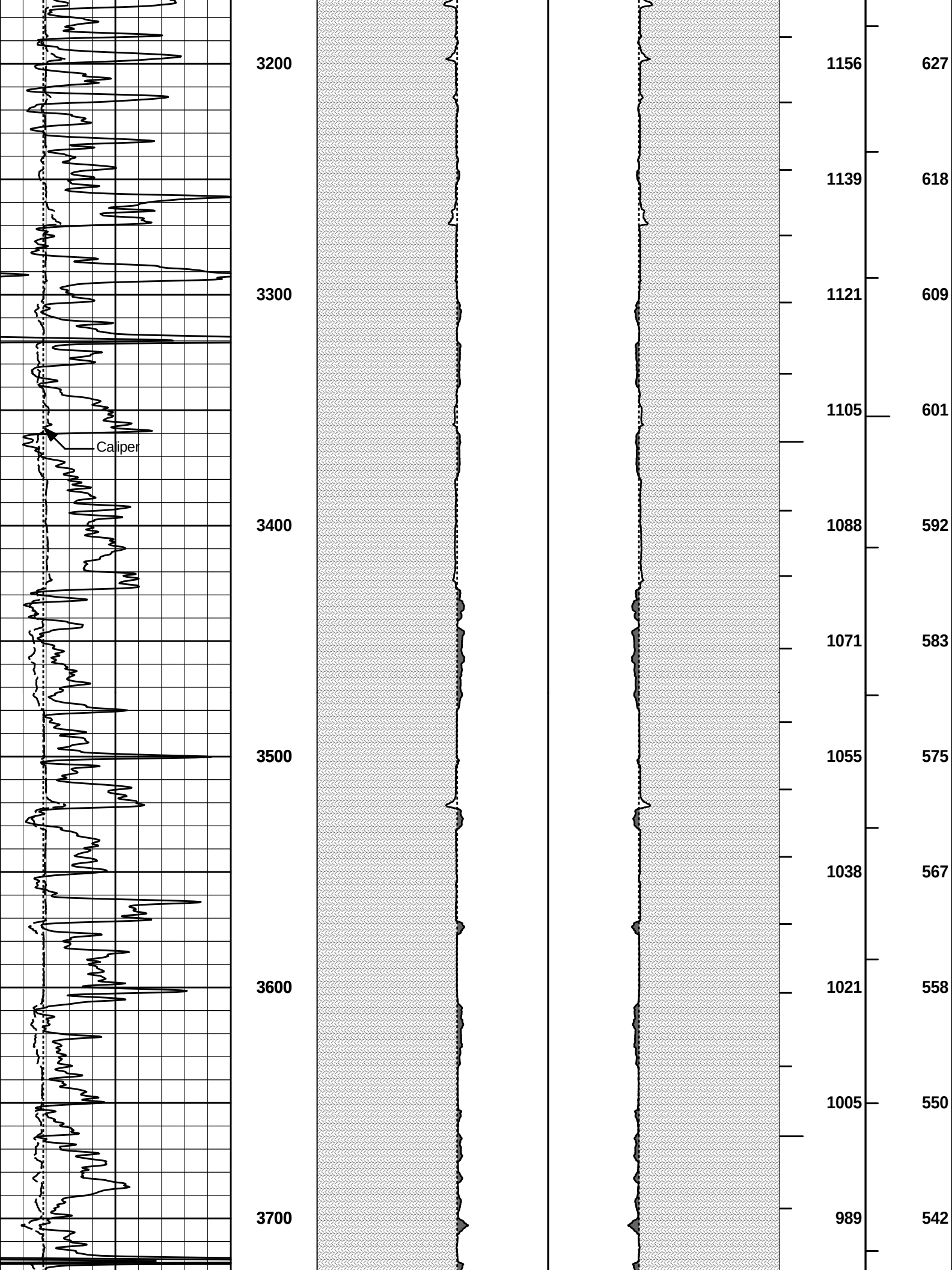
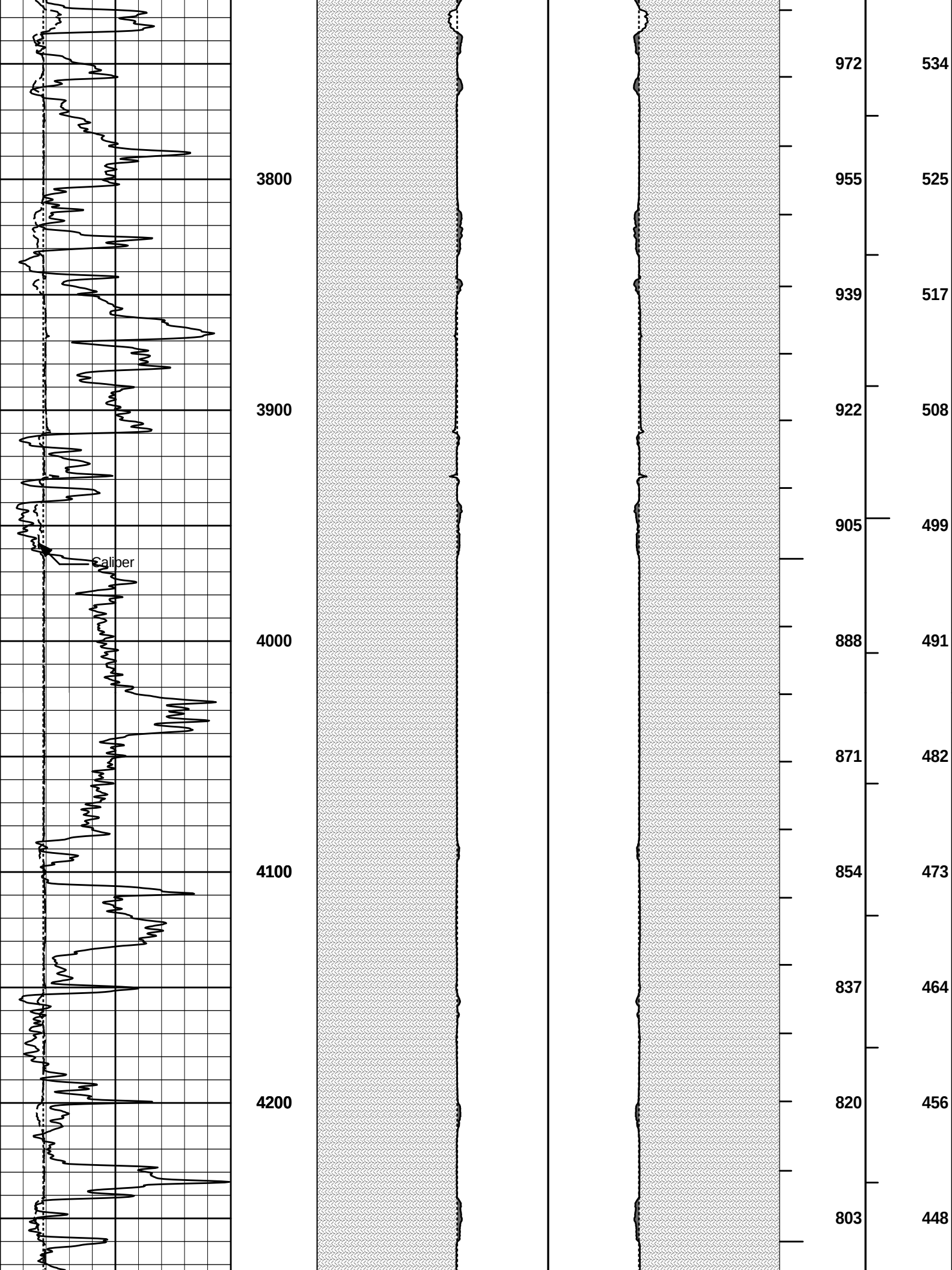
714
703
692
683
674
664
654
646
636


3200
3300
3400
3500
3600
3700
Caliper
1156
1139
1121
1105
1088
1071
1055
1038
1021
1005
989
627
618
609
601
592
583
575
567
558
550
542


Caliber
3800
3900
4000
4100
4200
972
955
939
922
905
888
871
854
837
820
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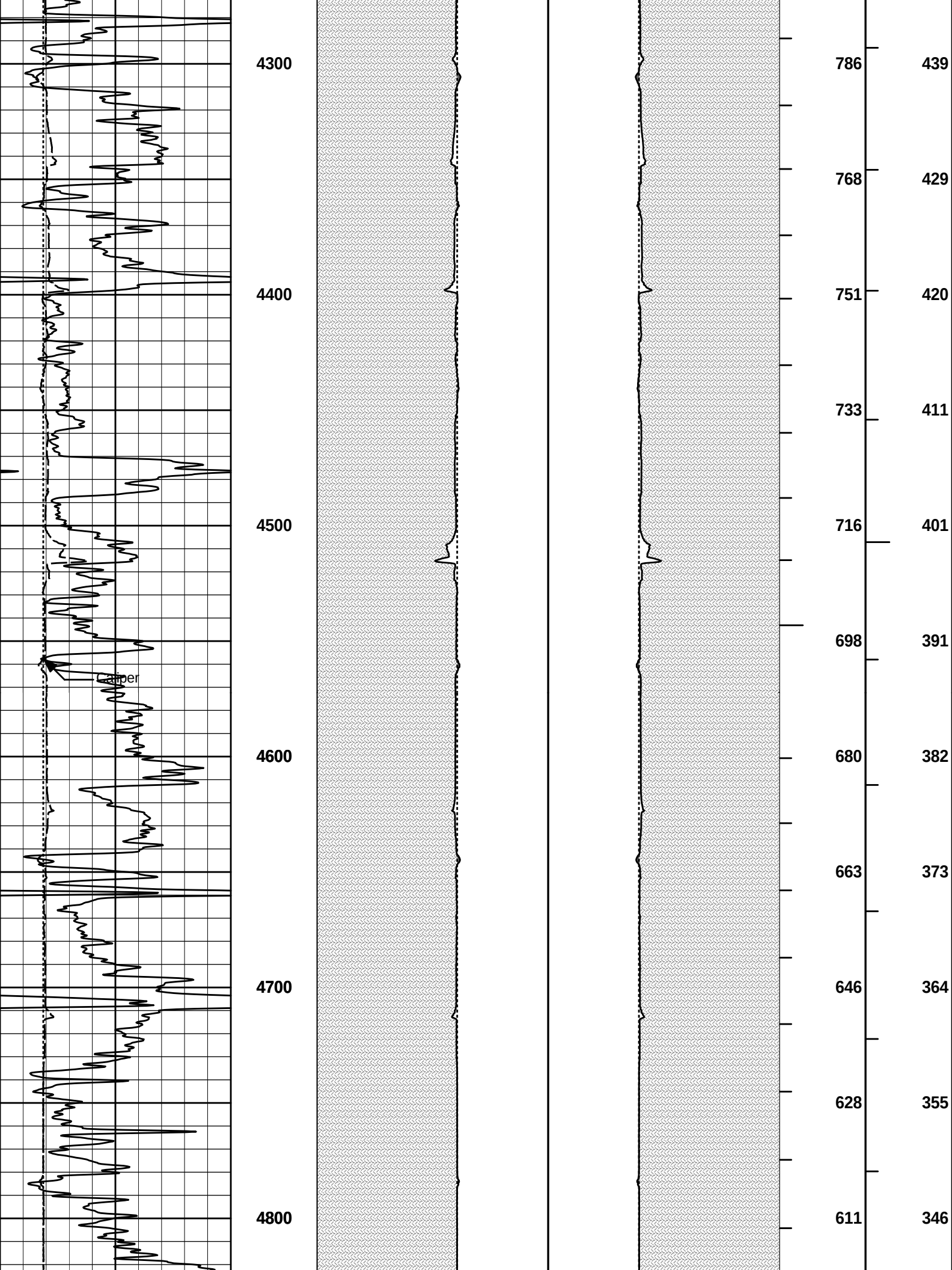
525
517
508
499
491
482
473
464
456
448


4300
4400
4500
4600
4700
4800
Caliper
786
768
751
733
716
698
680
663
646
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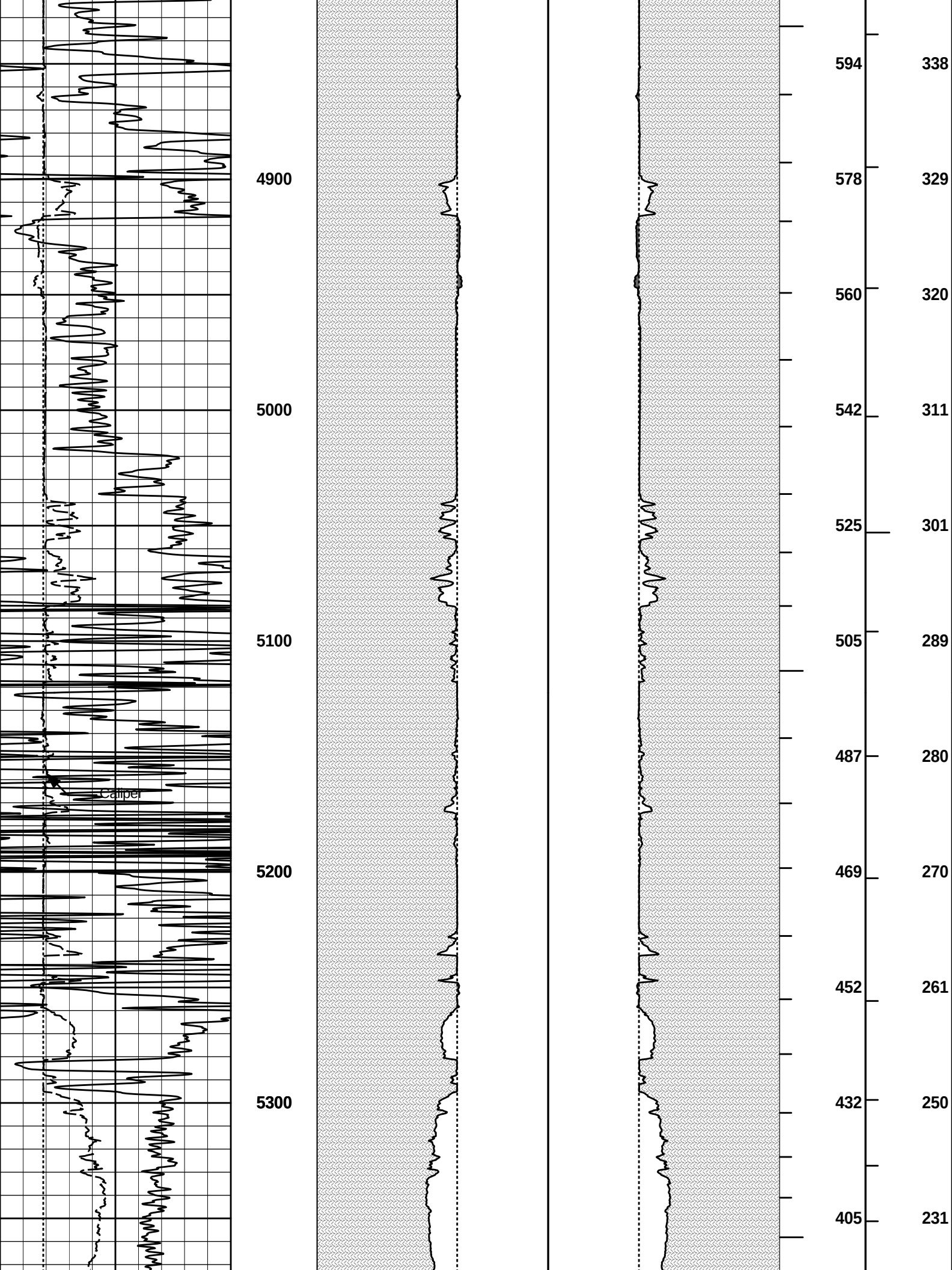
429
420
411
401
391
382
373
364
355
346


4900
5000
5100
5200
5300
Caliper
594
578
560
542
525
505
487
469
452
432
405
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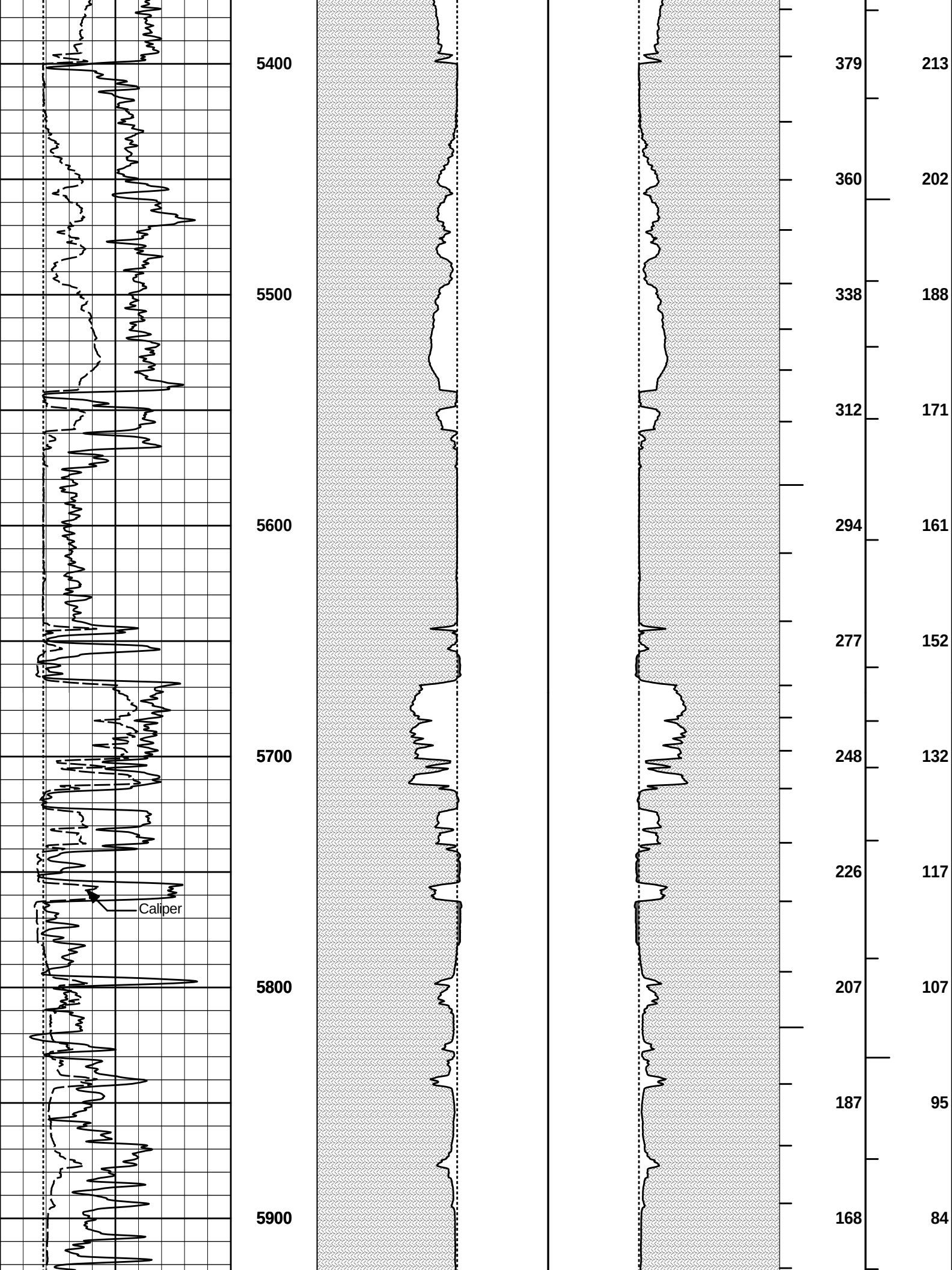
329
320
311
301
289
280
270
261
250
231


5400
5500
5600
5700
5800
5900
Caliper
379
360
338
312
294
277
248
226
207
187
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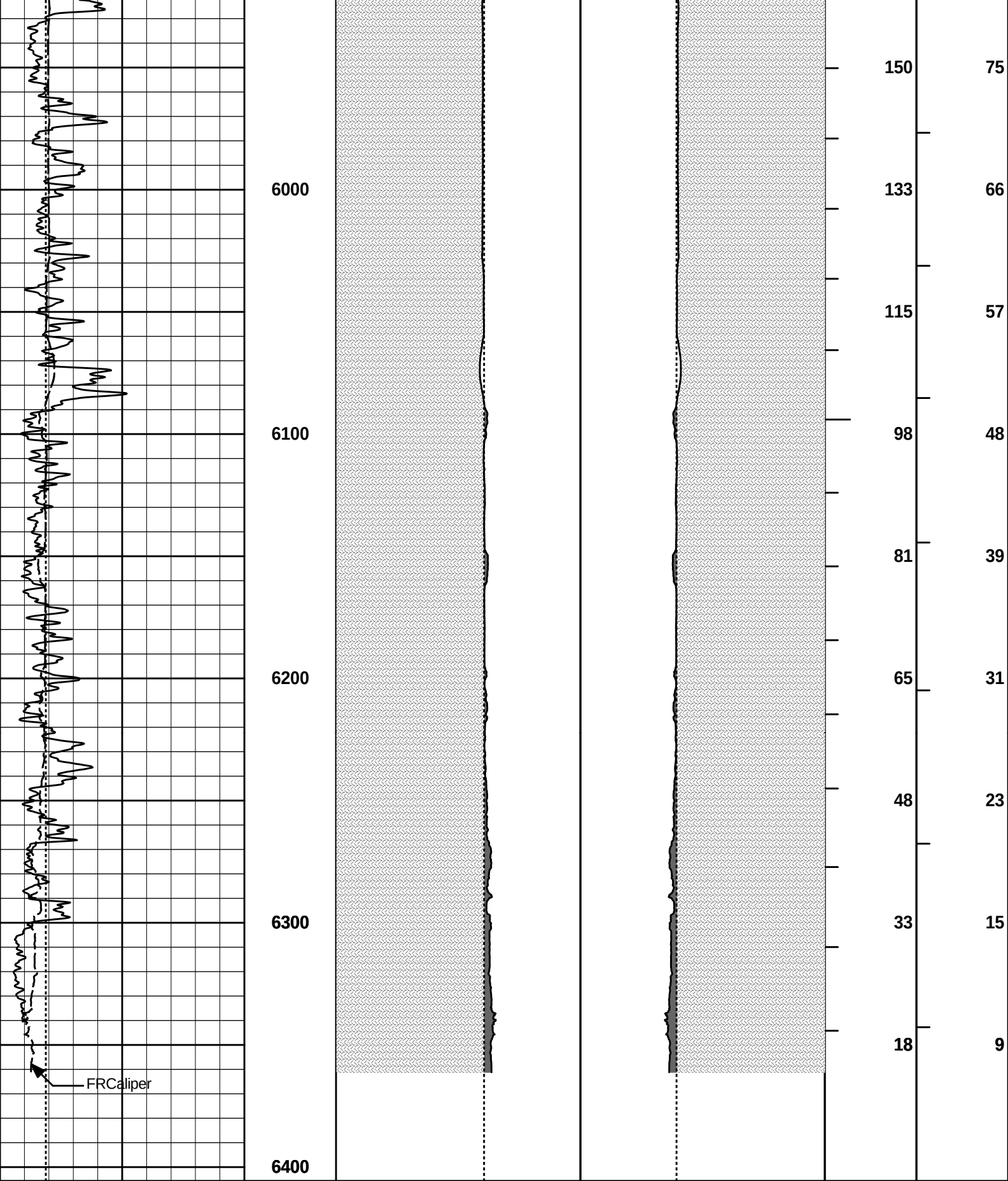
202
188
171
161
152
132
117
107
95
84



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

api				

HALLIBURTON

Plot Time: 01-May-12 17:06:51
Plot Range: 1666 ft to 6405.67 ft
Data: STANFORD_C_2\Well Based\CASING
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ANNULAR HOLE VOLUME PLOT (5.5 INCH)

COMPANY	**OXY USA, INC.**		
WELL	**STANFORD C-2**		
FIELD	**WILBURTON EAST**		
COUNTY	**MORTON**	STATE	**KANSAS**

HALLIBURTON	**DUAL SPACED NEUTRON SPECTRAL DENSITY LOG**