



# SPECTRAL GAMMA RAY LOG

COMPANY				PATARA OIL & GAS LLC			
WELL				ANDY'S MESA FEDERAL #76			
FIELD				ANDY'S MESA			
PROVINCE/COUNTY				SAN MIGUEL			
COUNTRY/STATE				U.S.A. / COLORADO			
LOCATION				SHL: 1467' FSL & 528' FEL BHL: 1791' FSL & 895' FEL			
SEC	TWP	RGE	Other Services				
20	44N	16W	MPD/MDN				
API Number	05-113-06251		MAI/MFE				
Permit Number			MSS				
Permanent Datum G.L., Elevation 6417 feet							Elevations: KB 6434.00 DF 6433.00 GL 6417.00
Log Measured From K.B. @ 17 FEET above Permanent Datum							
Drilling Measured From K.B.							
Date	20-AUG-2010						
Run Number	ONE						
Depth Driller	7118.00		feet				
Depth Logger	7104.00		feet				
First Reading	7050.00		feet				
Last Reading	2571.00		feet				
Casing Driller	2575.00		feet				
Casing Logger	2571.00		feet				
Bit Size	8.750		inches				
Hole Fluid Type	WATER BASED						
Density / Viscosity	9.00 lb/USg		47.00 CP				
PH / Fluid Loss	7.50		6.50 ml/30Min				
Sample Source	FLOW LINE						
Rm @ Measured Temp	1.24 @ 97.2		ohm-m				
Rmf @ Measured Temp	0.99 @ 97.2		ohm-m				
Rmc @ Measured Temp	1.50 @ 97.2		ohm-m				
Source Rmf / Rmc	CALC		CALC				
Rm @ BHT	0.94 @121.0		ohm-m				
Time Since Circulation	6 HOURS						
Max Recorded Temp	121.00		deg F				
Equipment Name	COMPACT						
Equipment / Base	13173		GD JCT				
Recorded By	R. BROWN		M. GOODMAN				
Witnessed By	L. GIRNDT						

## REMARKS

TOOLS: SHA, MCG, SGS, MDN, MPD, MSS, SKJ, MFE, AND MAI RAN IN COMBINATION

HARDWARE: MPD: (1) 8 INCH PROFILE PLATE  
MAI: (1) 0.5 INCH STANDOFF  
MDN: (1) DUAL BOWSPRING  
MSS: (2) 0.5 ONCH STANDOFF

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TIGHT PULLS, BOREHOLE SIZE, AND RUGOSITY WILL AFFECT REPEATABILITY AND DATA QUALITY.

RUN 1: BRIDGED ENCOUNTERED AT APPROXIMATELY 5577 FEET. LOGS WERE THEN PULLED FROM THIS DEPTH UP TO ATTEMPT ANOTHER LOGGING RUN ONCE RIG PERFORMED WIPER TRIP.

RUN 2: LOGS WENT TO BOTTOM.

RUN 3: FORMATION TESTER.

TOTAL HOLE VOLUME FROM T.D. TO SURFACE CASING = 2074 CU.FT.

ANNULAR VOLUME WITH 5.5 INCH PRODUCTION CASING FROM T.D. TO SURFACE CASING = 1375 CU.FT.

SERVICE ORDER: #3526101

RIG: LW # 1

## BOREHOLE RECORD

Last Edited: 19-AUG-2010 14:01

Bit Size inches	Depth From feet	Depth To feet
8.750	2571.00	7118.00

## CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	2571.00	36.00

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.



## 2 INCH MAIN LOG



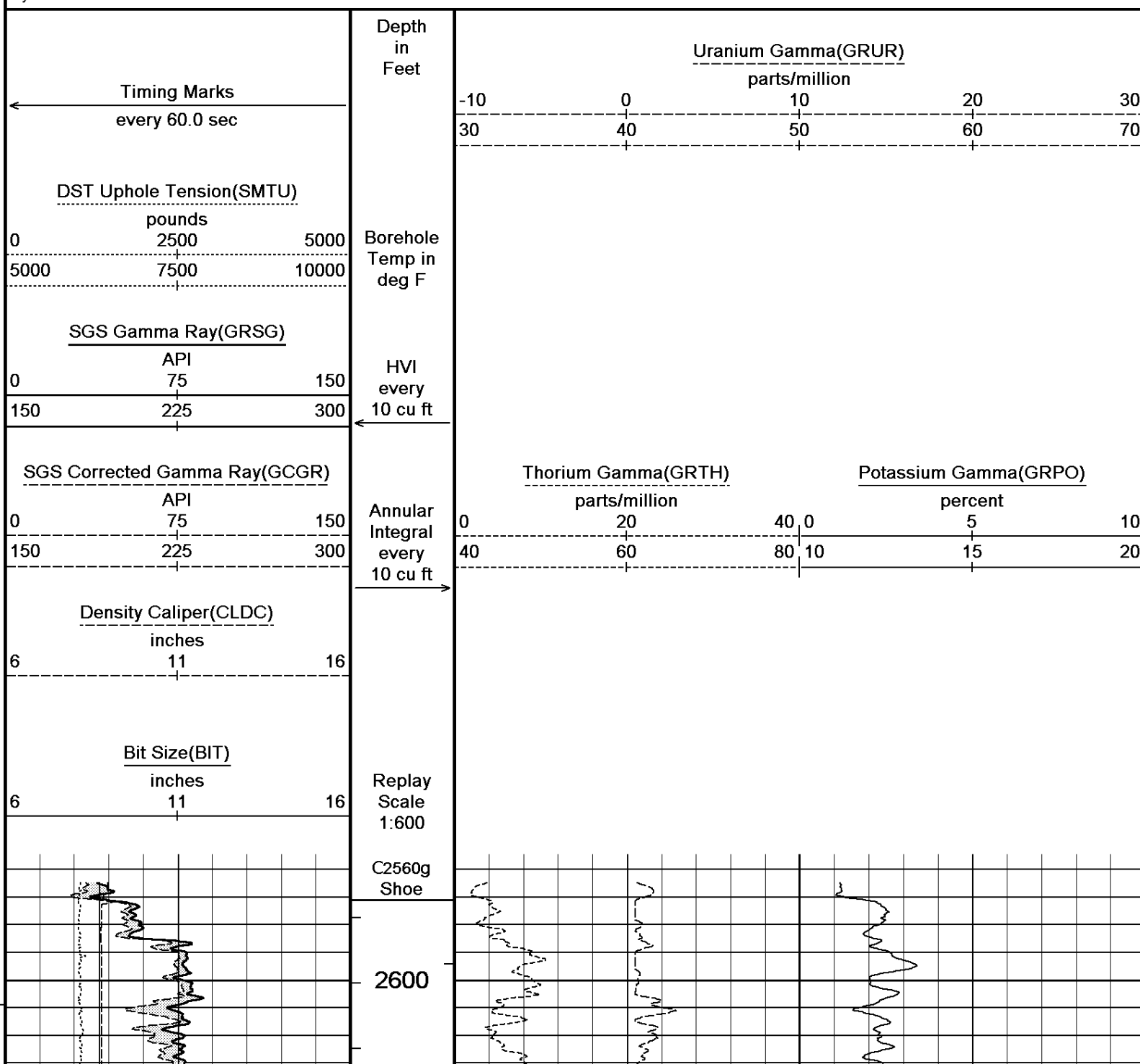
Depth Based Data - Maximum Sampling Increment 10.0cm

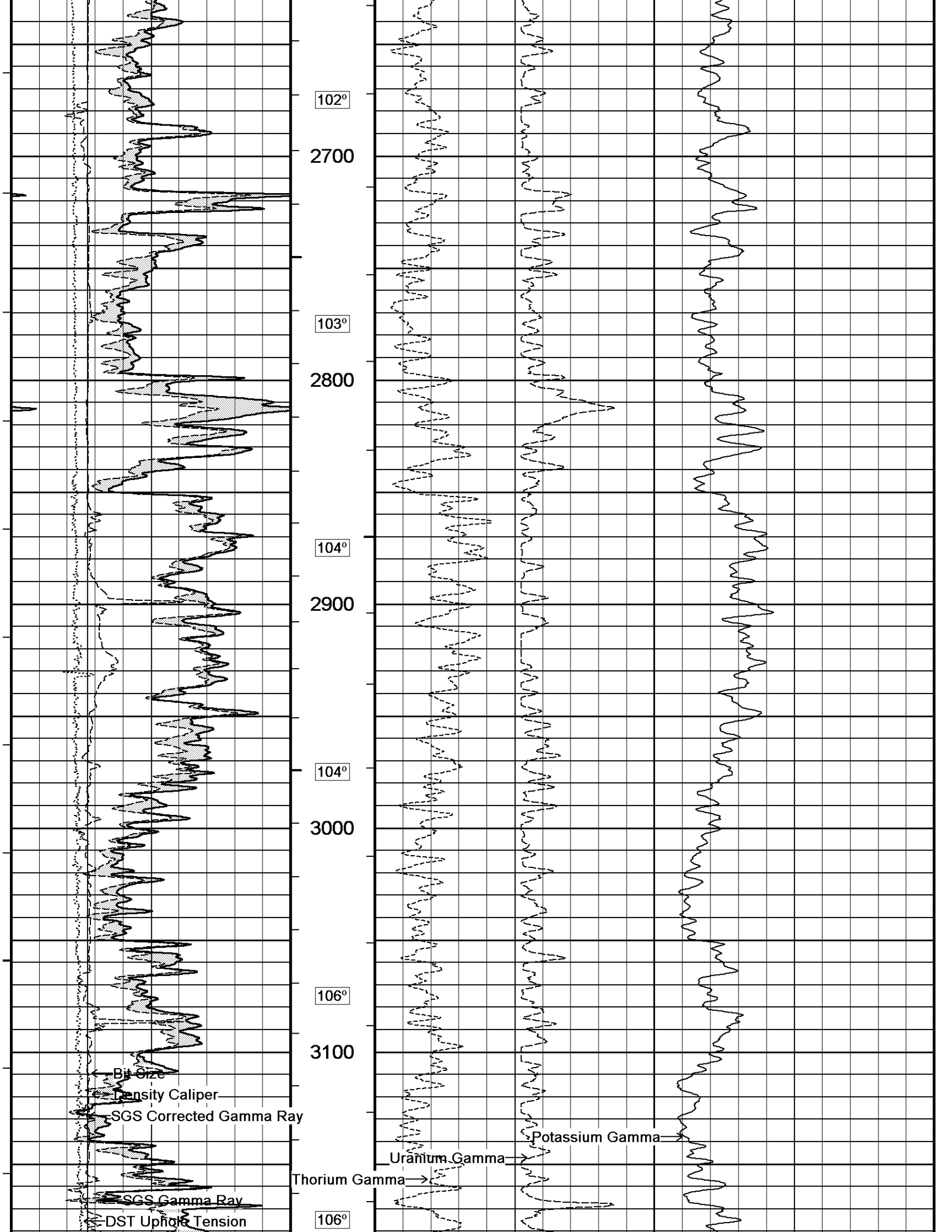
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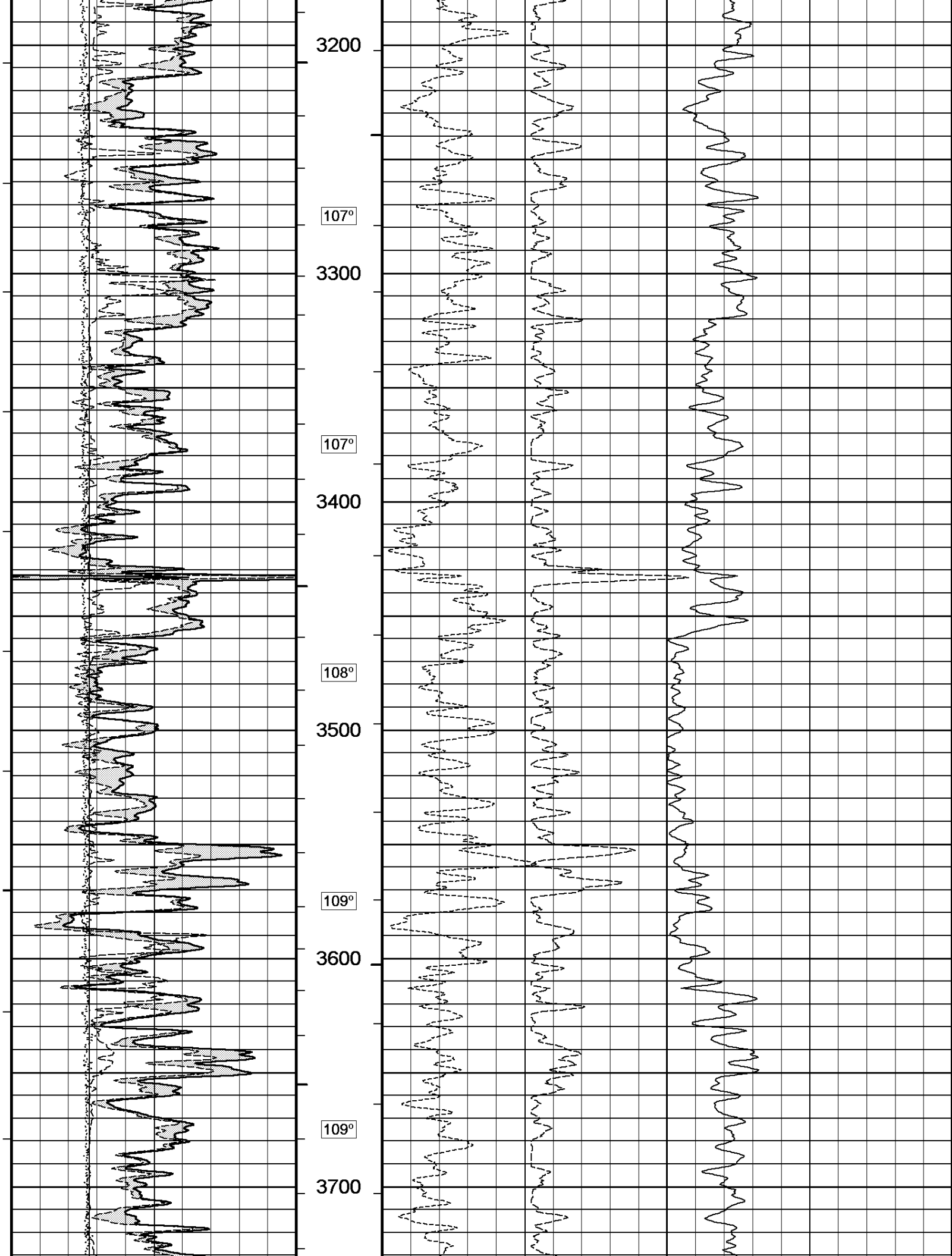
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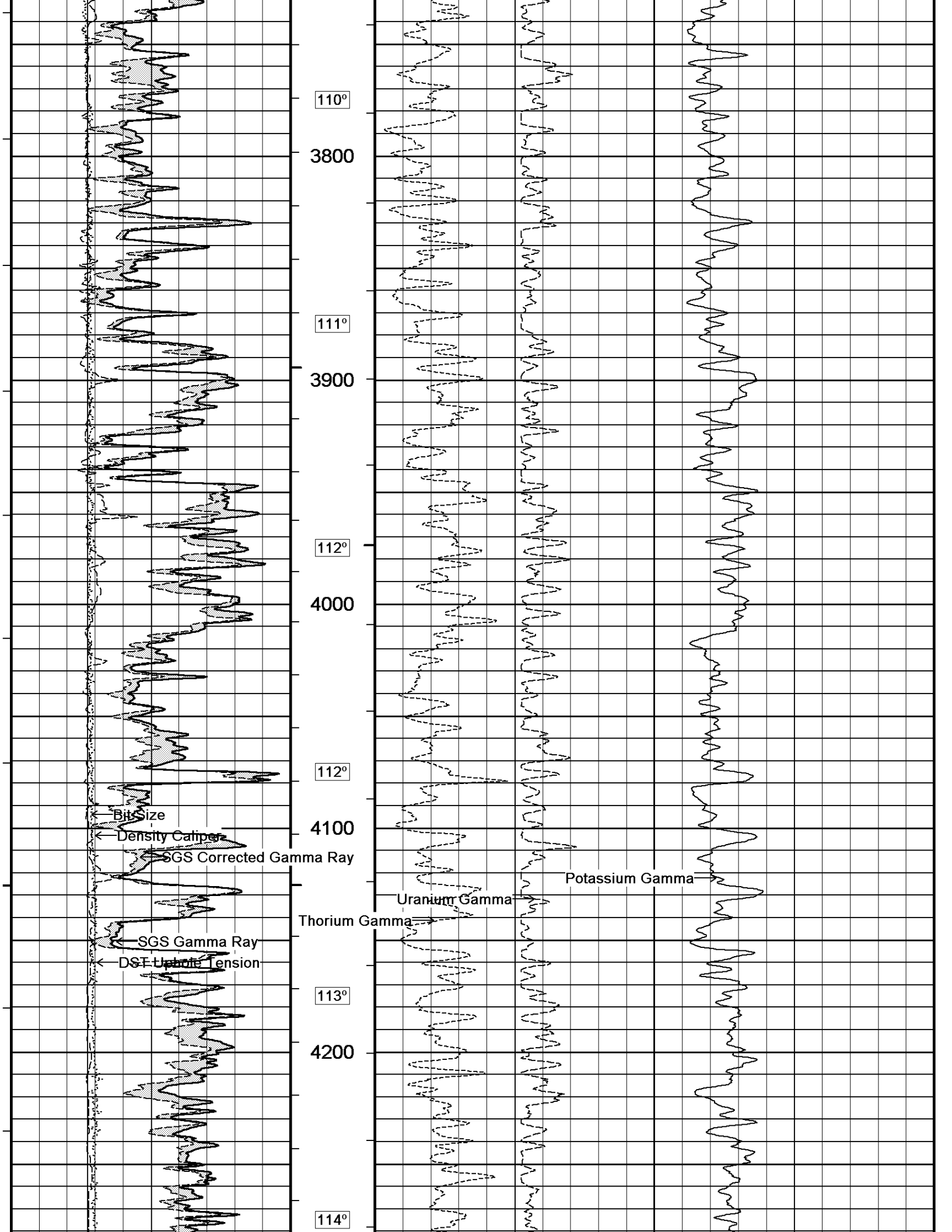
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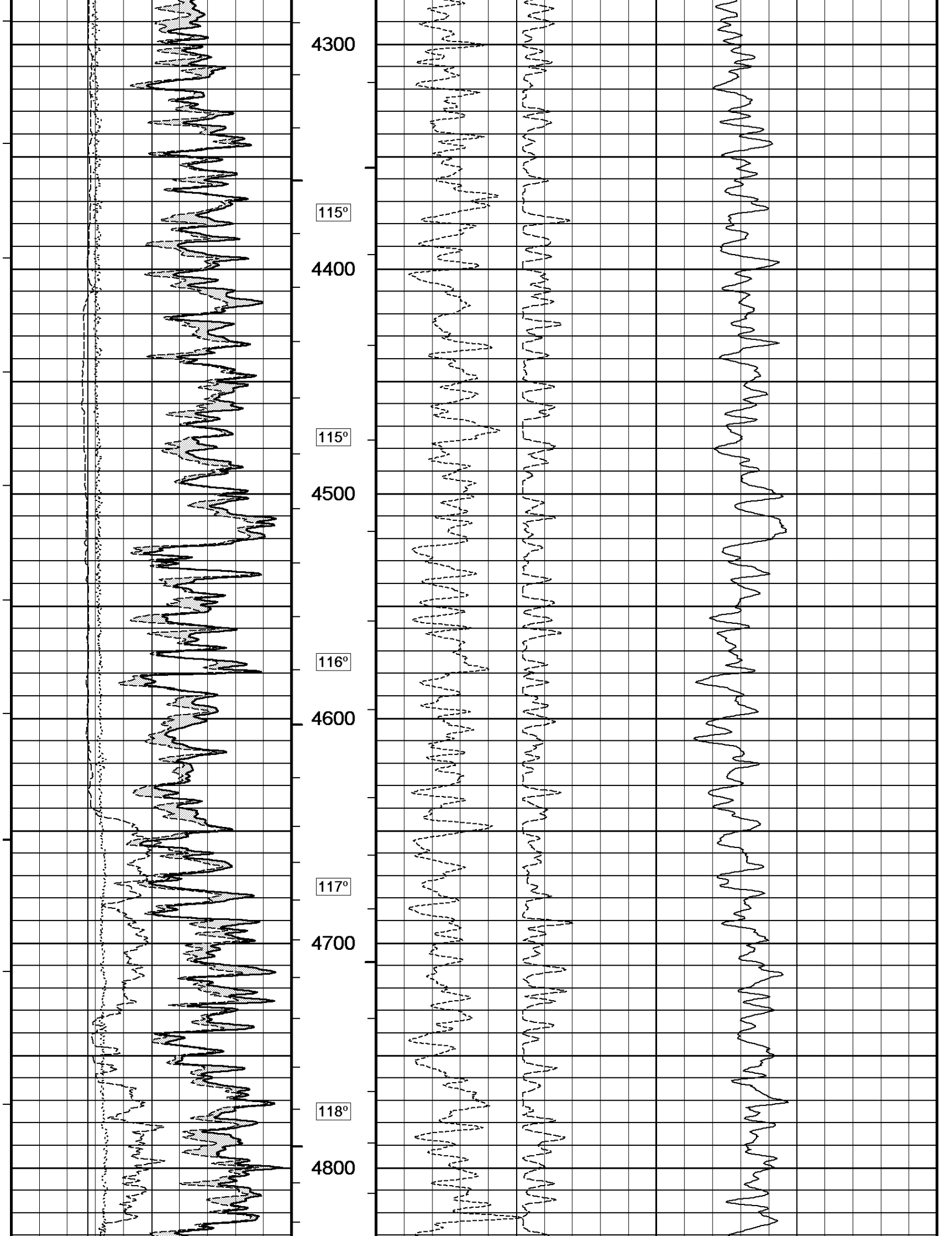
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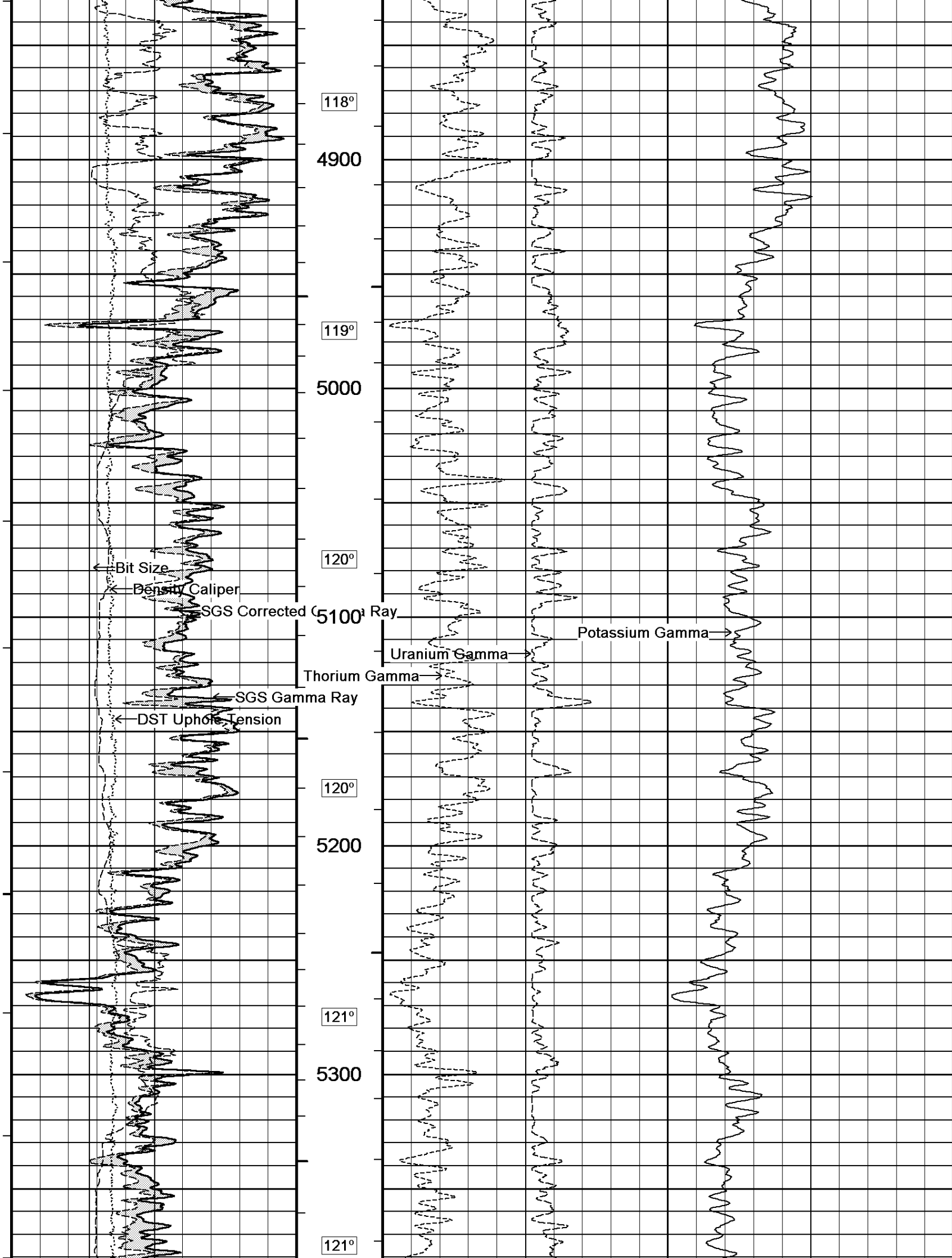


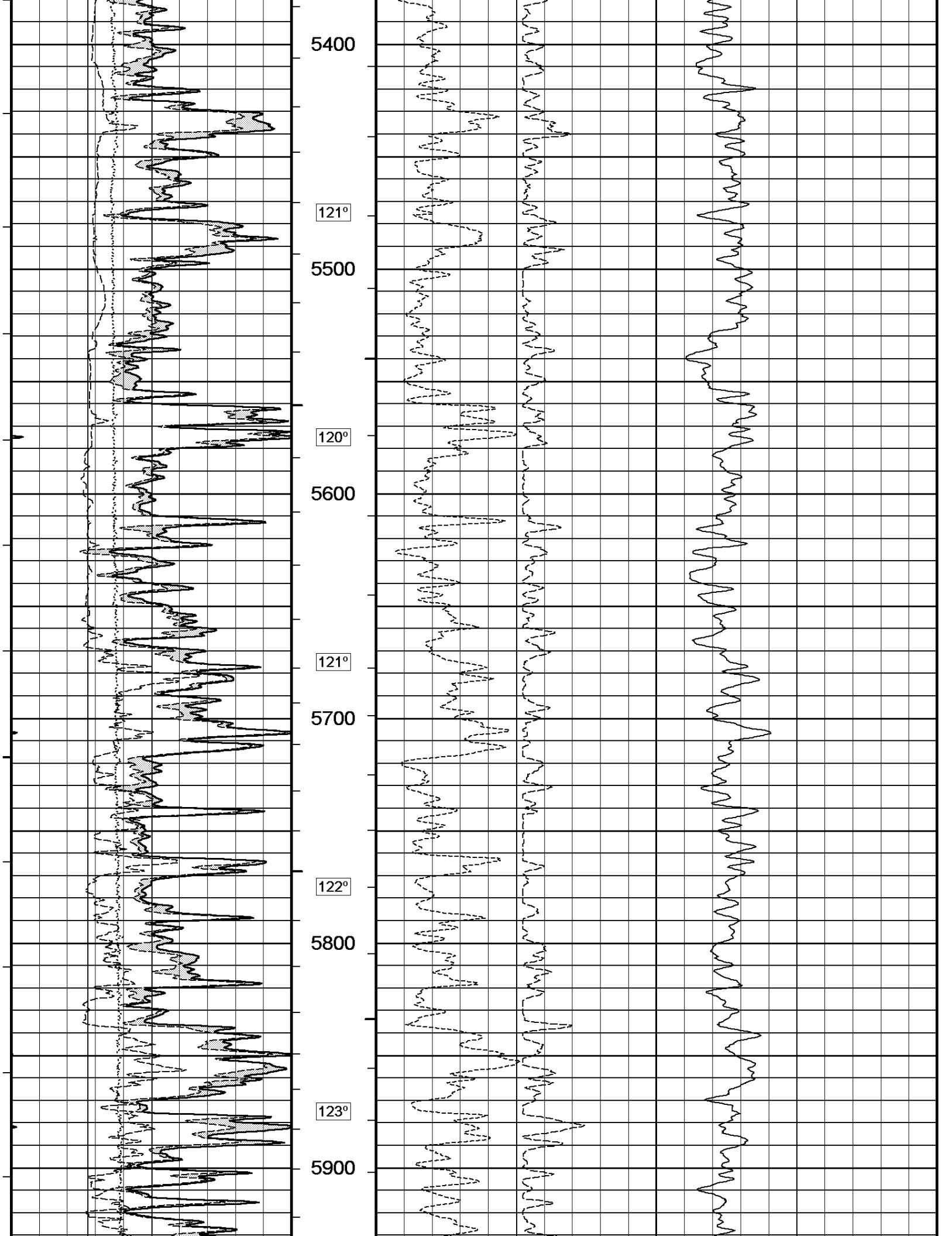


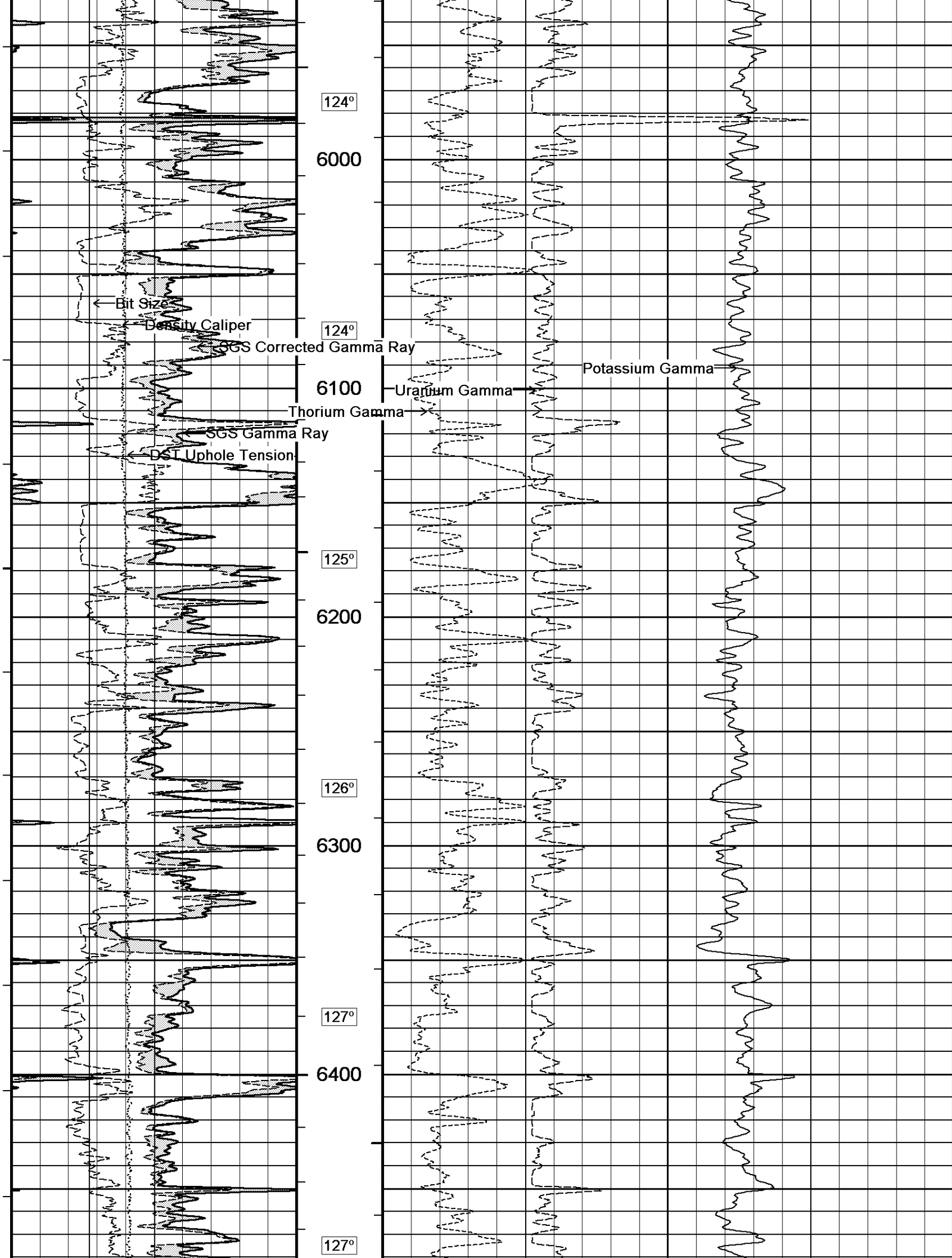


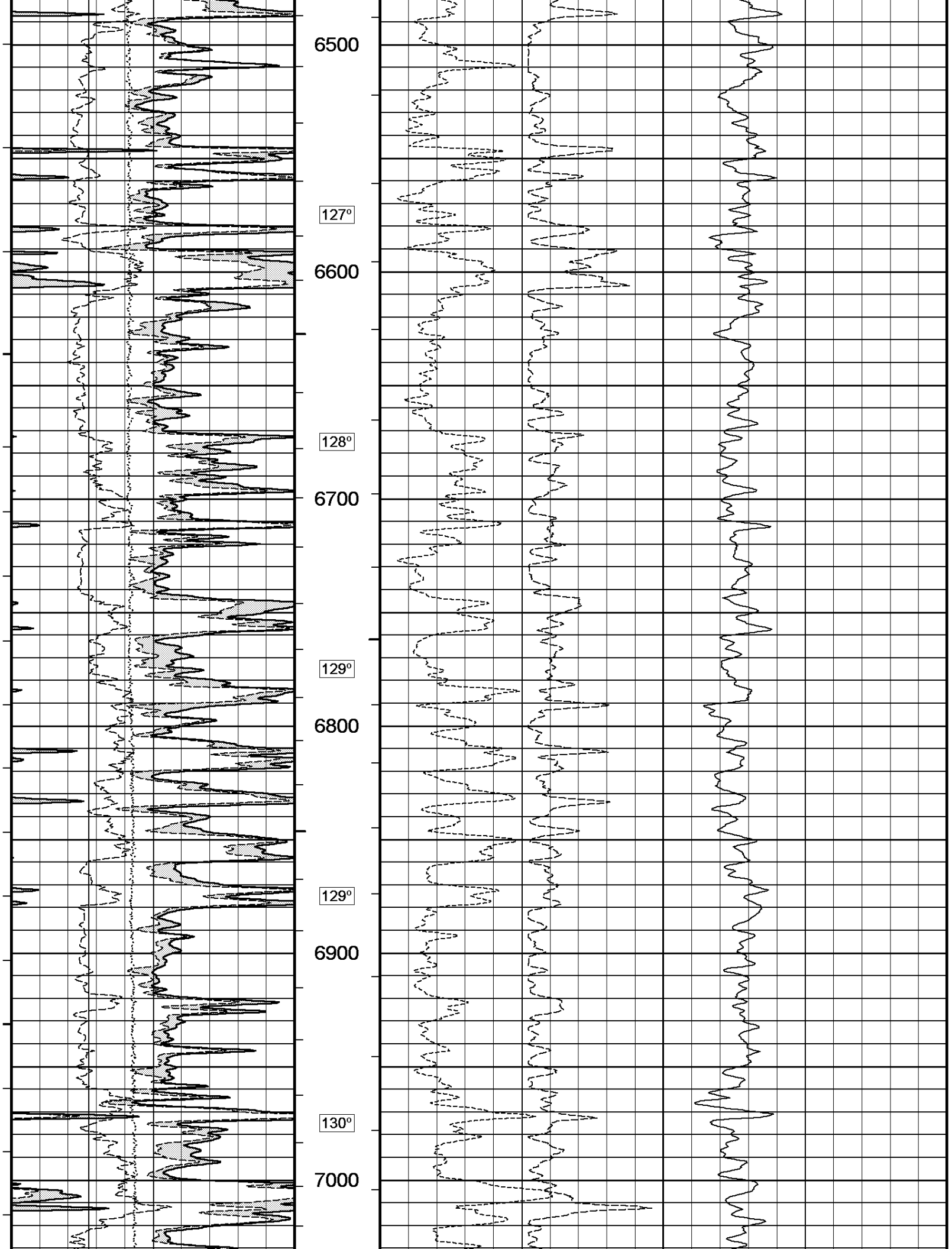


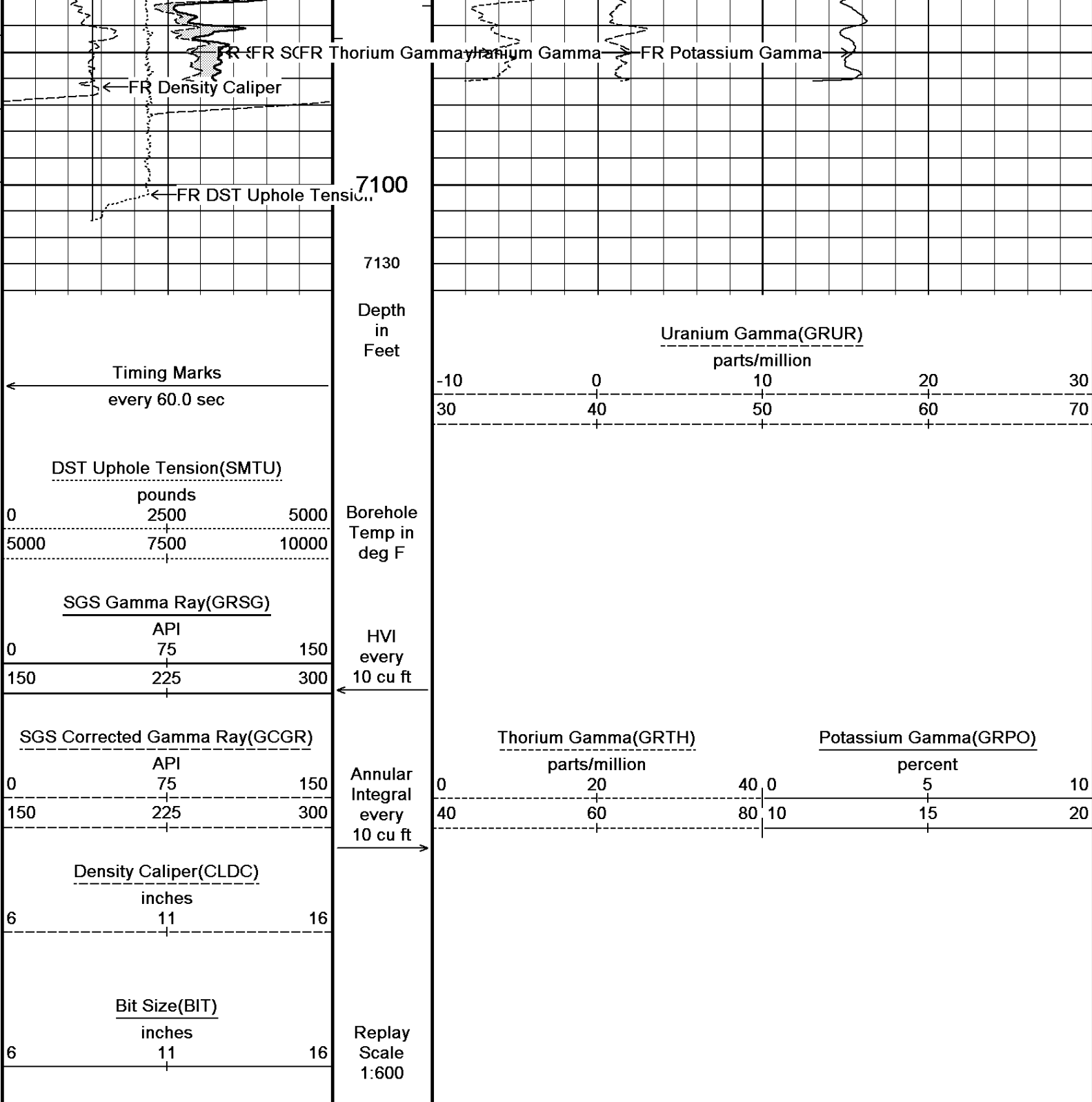












Depth Based Data - Maximum Sampling Increment 10.0cm  
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System Versions: Plotted with 10.08.1568

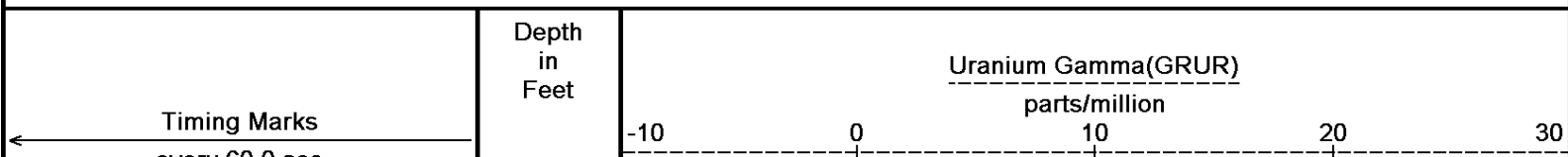
Plotted on 20-AUG-2010 16:44  
Recorded on 20-AUG-2010 09:22

2 INCH MAIN LOG

5 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm  
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every 60.0 sec

DST Uphole Tension(SMTU)

pounds

0	2500	5000
5000	7500	10000

Borehole  
Temp in  
deg F

SGS Gamma Ray(GRSG)

API

0	75	150
150	225	300

HVI  
every  
10 cu ft

SGS Corrected Gamma Ray(GCGR)

API

0	75	150
150	225	300

Annular  
Integral  
every  
10 cu ft

Density Caliper(CLDC)

inches

6	11	16
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Bit Size(BIT)

inches

6	11	16
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Replay  
Scale  
1:240

2564  
Casing  
Shoe

2600

102°

2650

30

40

50

60

70

Thorium Gamma(GRTH)

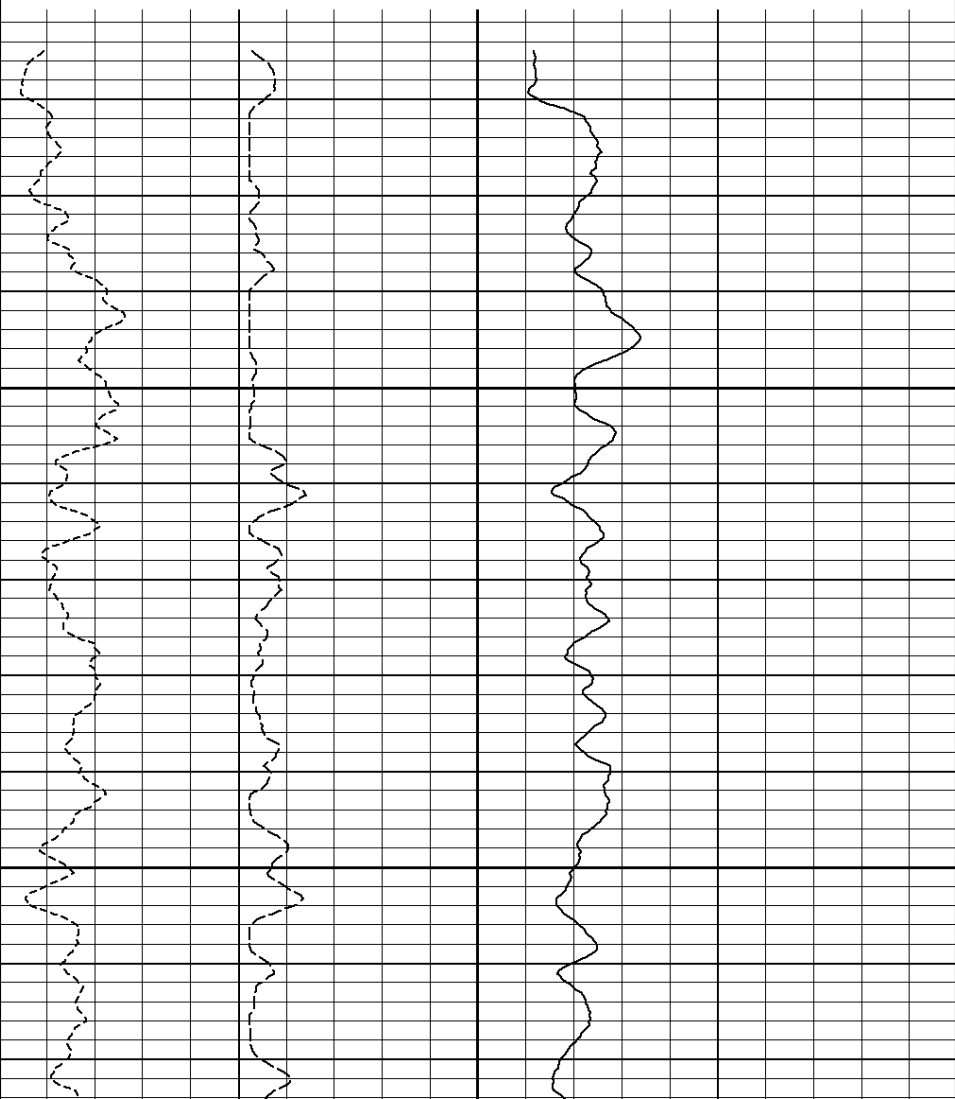
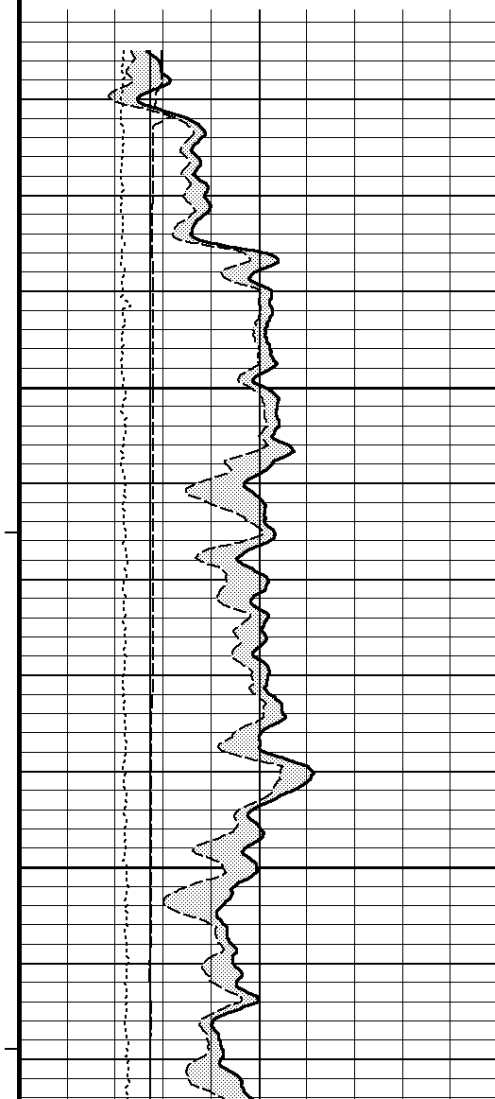
parts/million

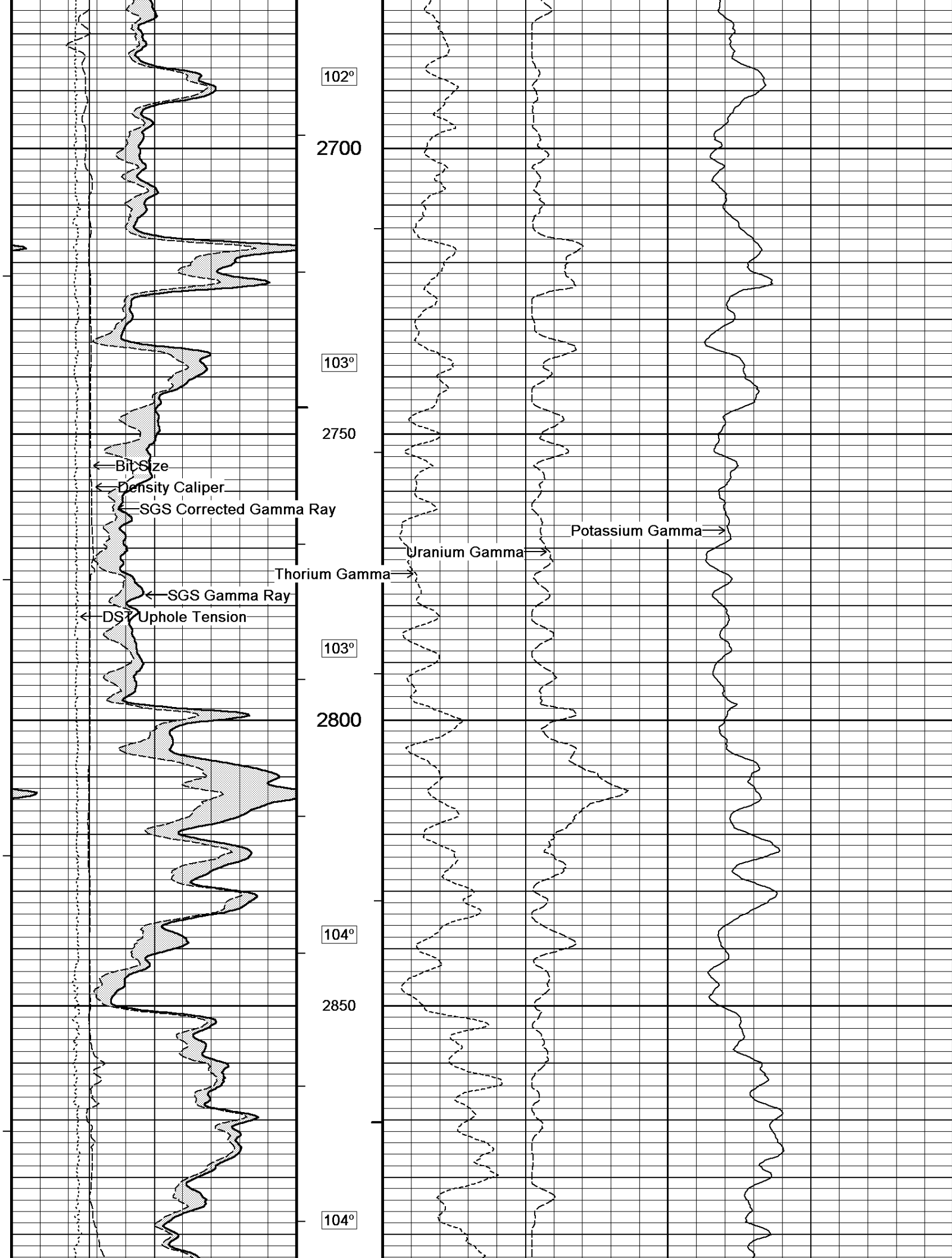
0	20	40
40	60	80

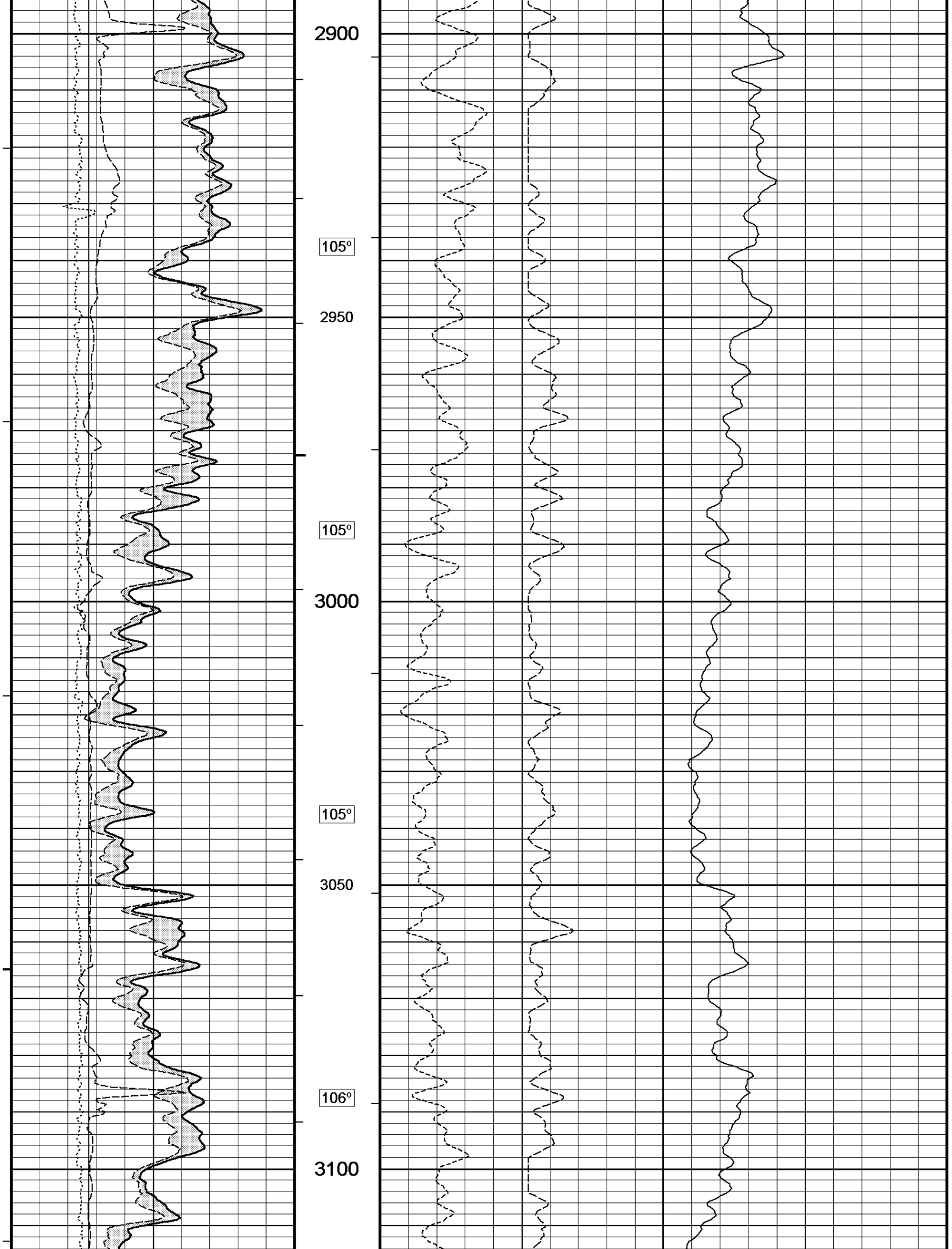
Potassium Gamma(GRPO)

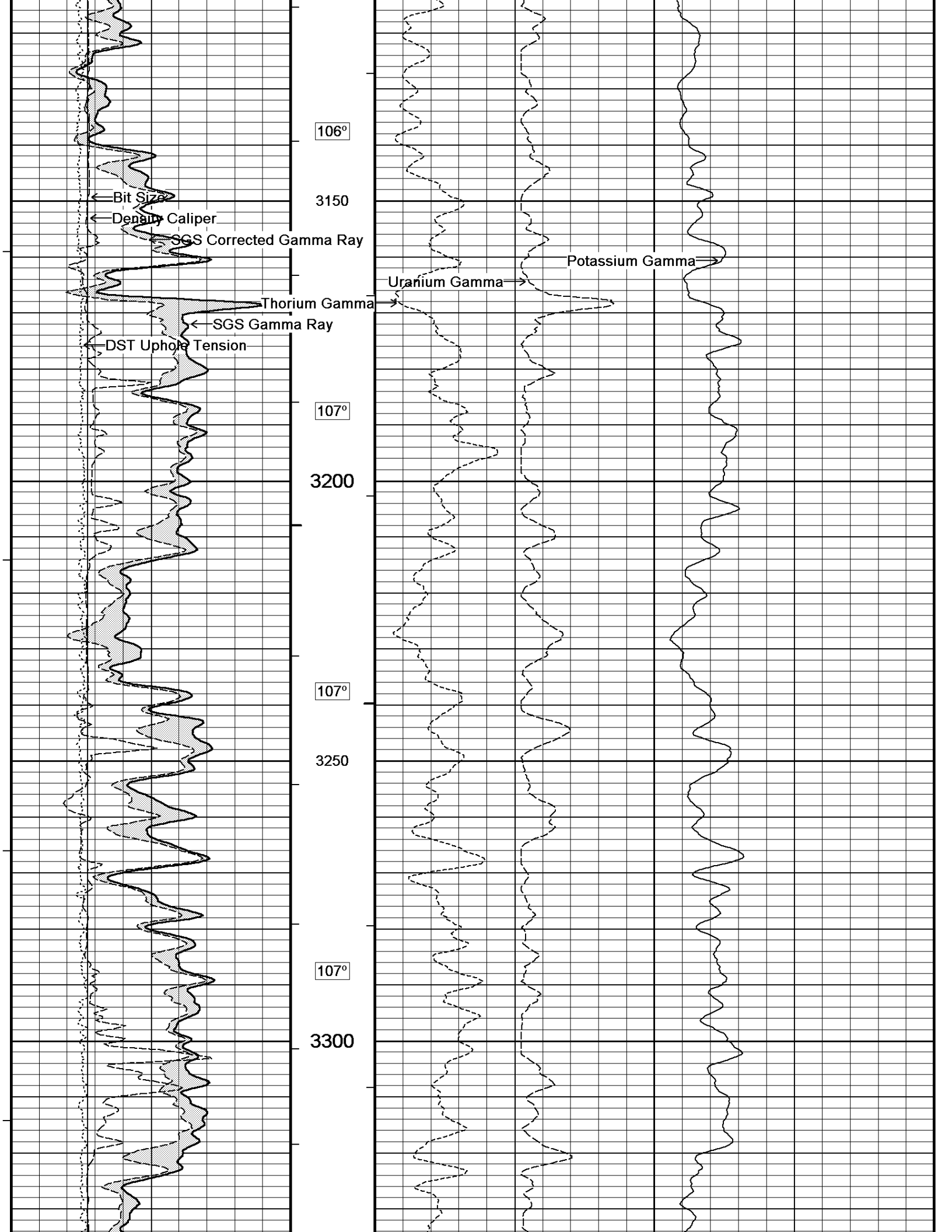
percent

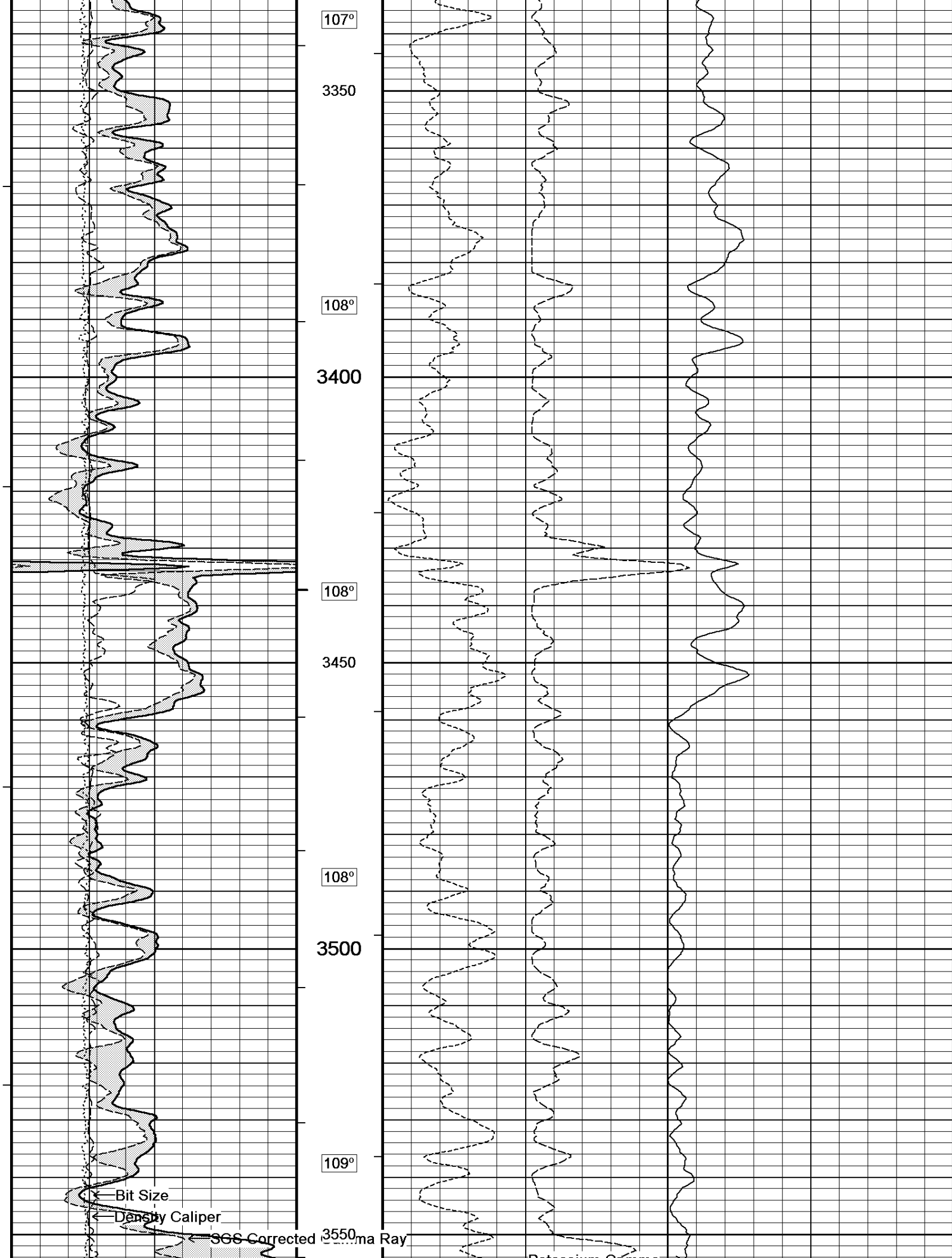
0	5	10
10	15	20

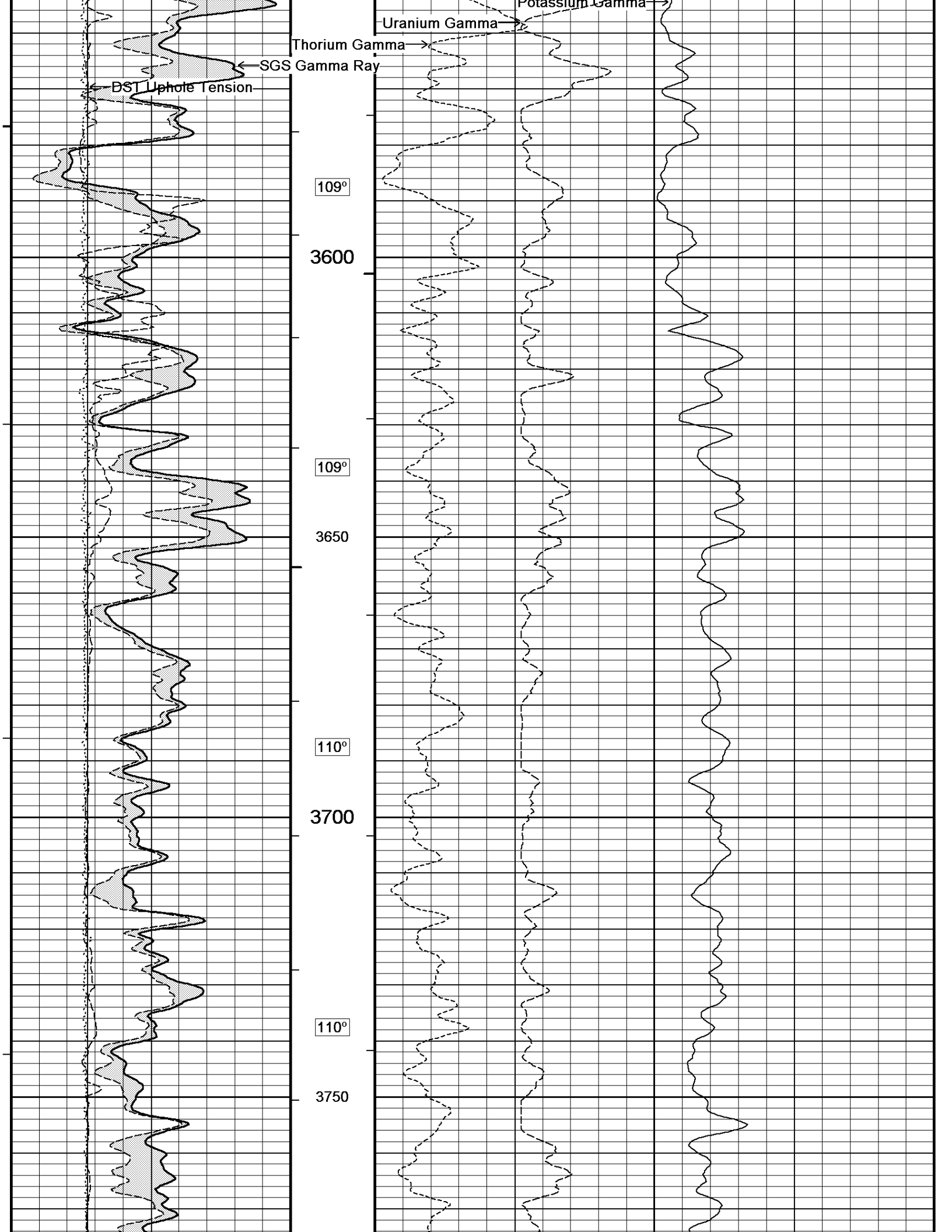


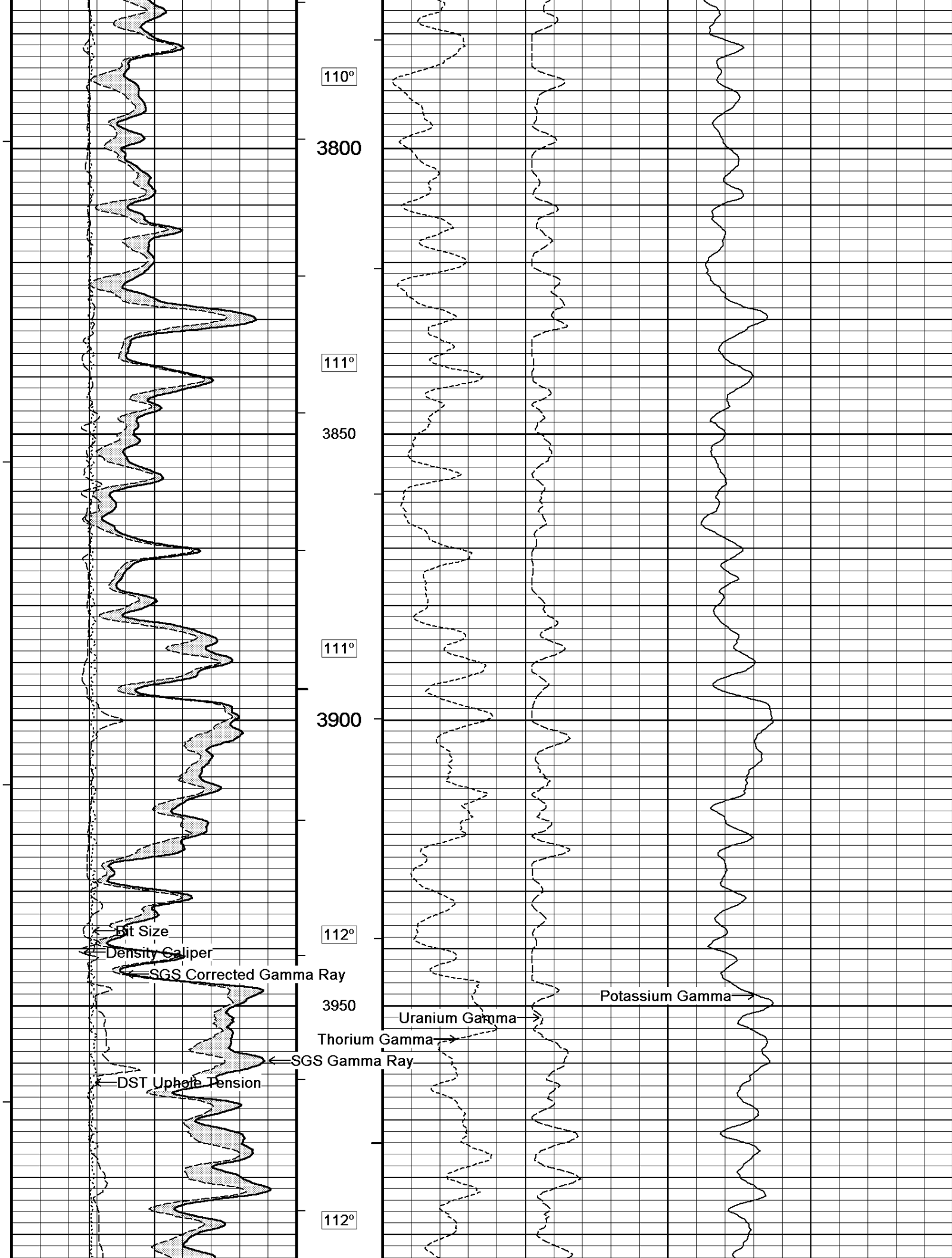


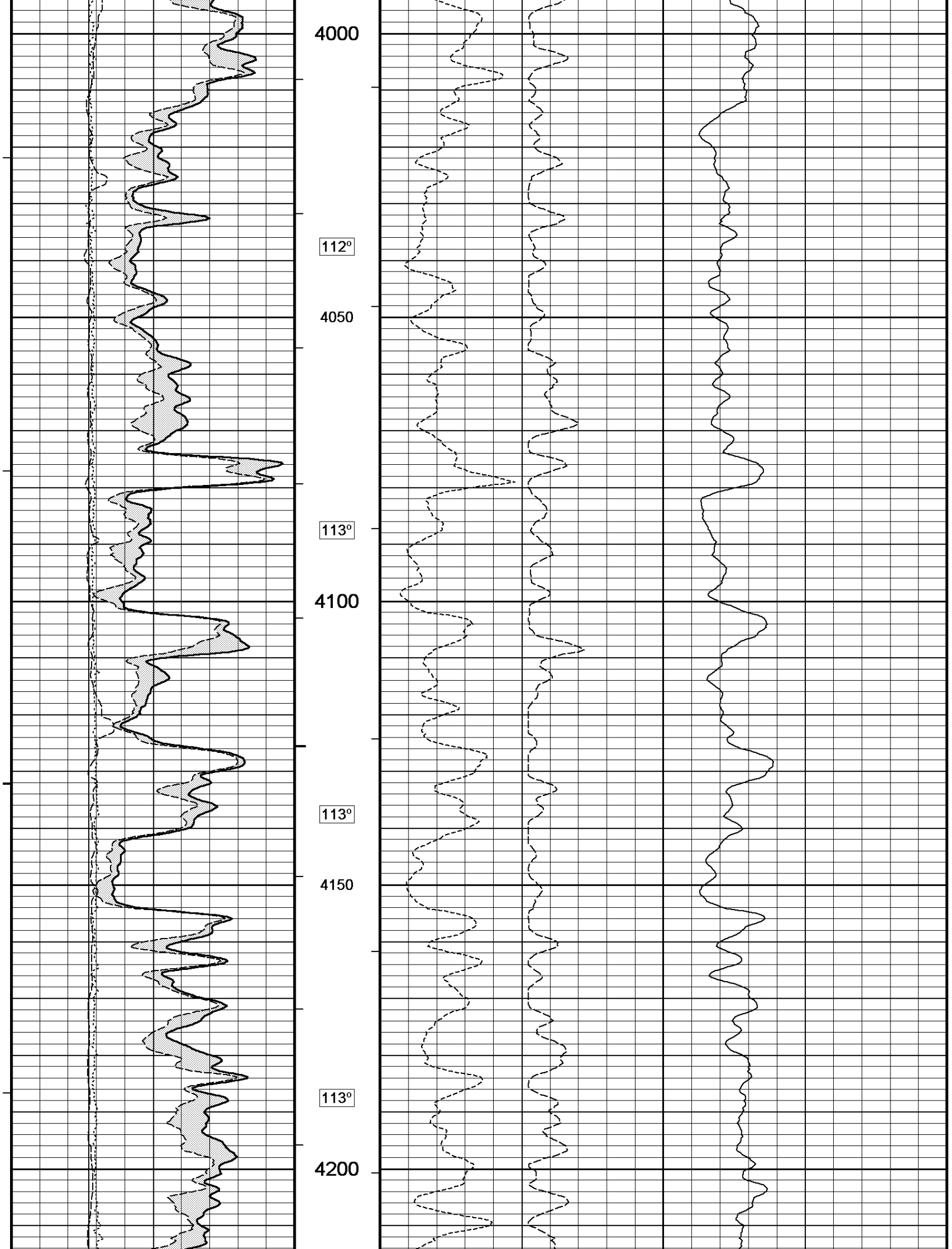


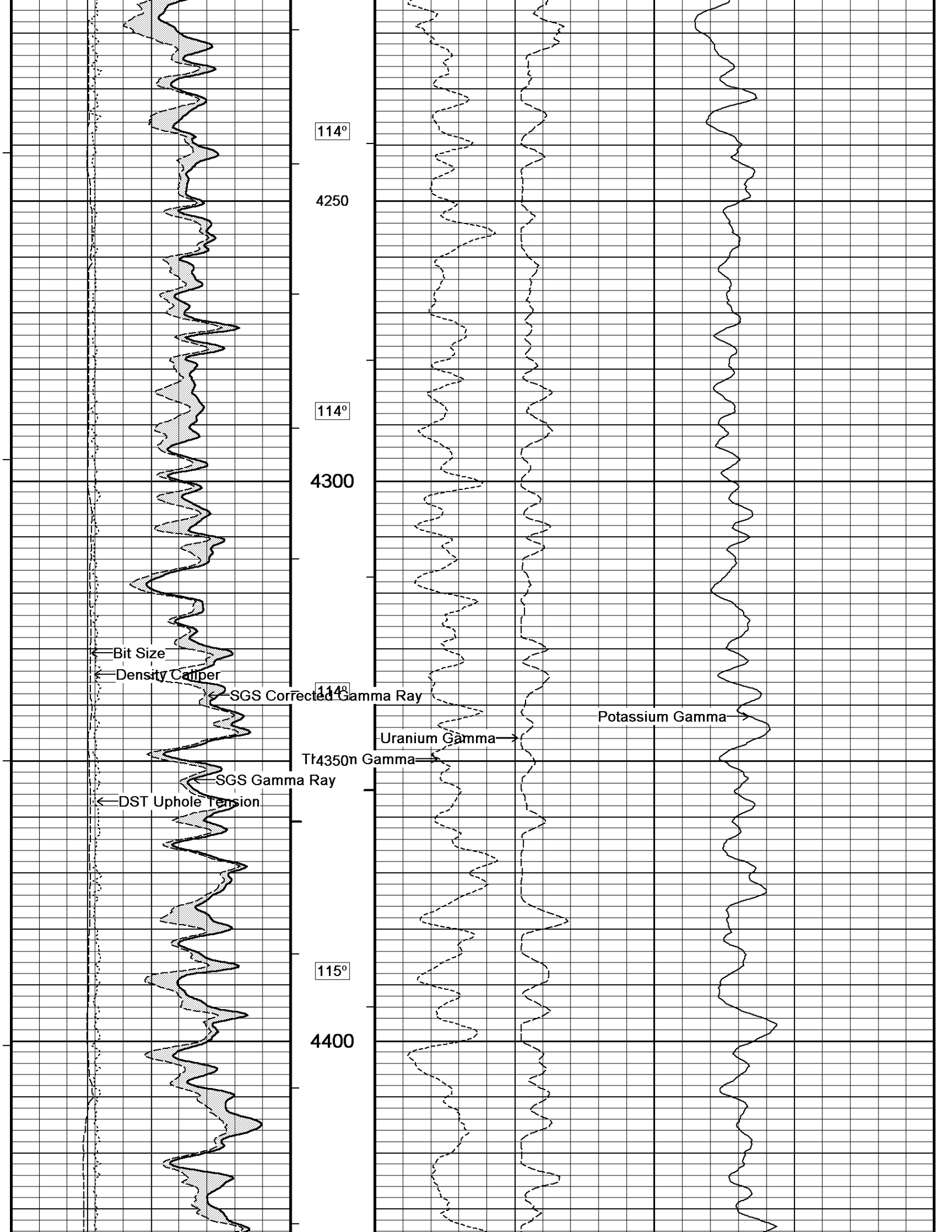


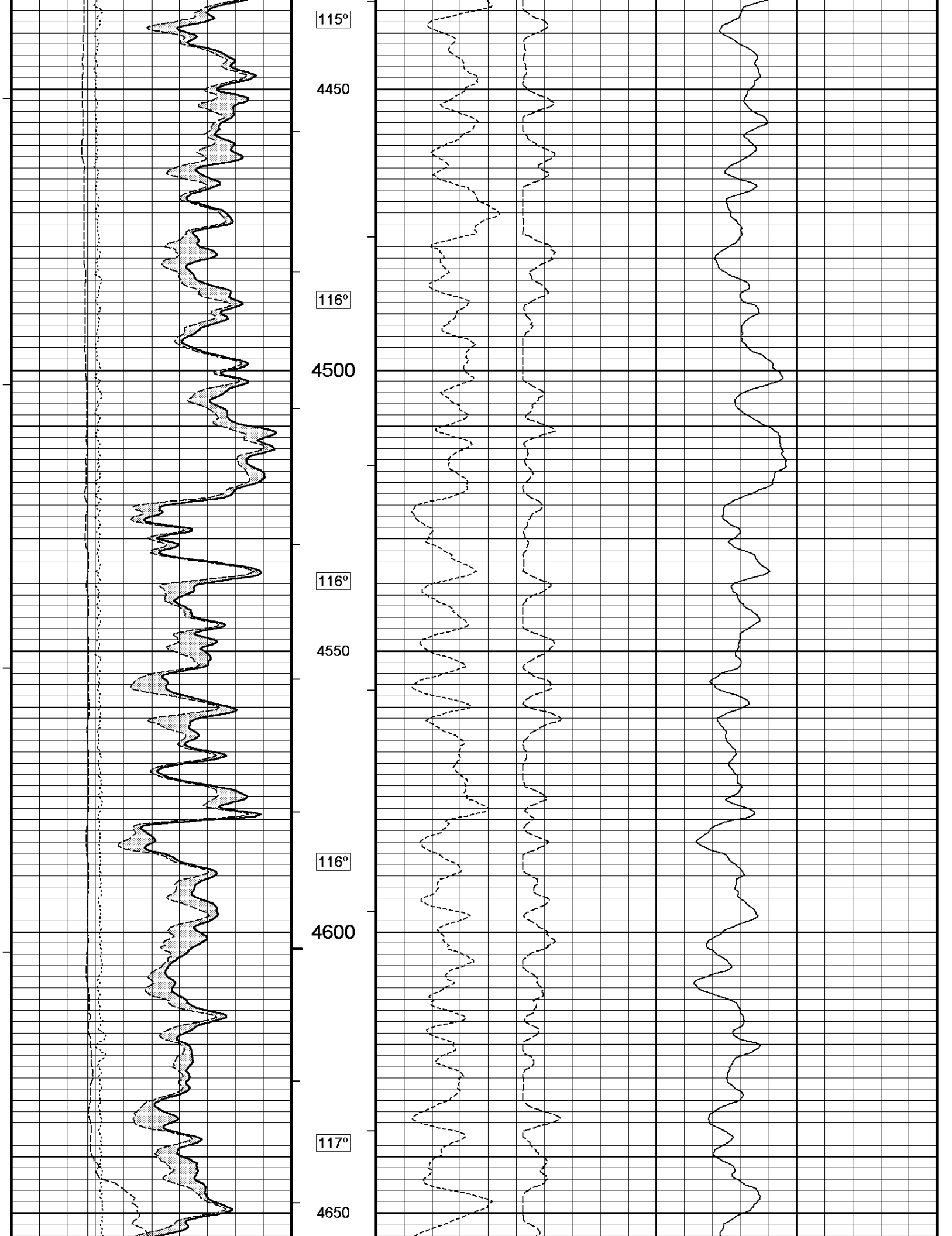


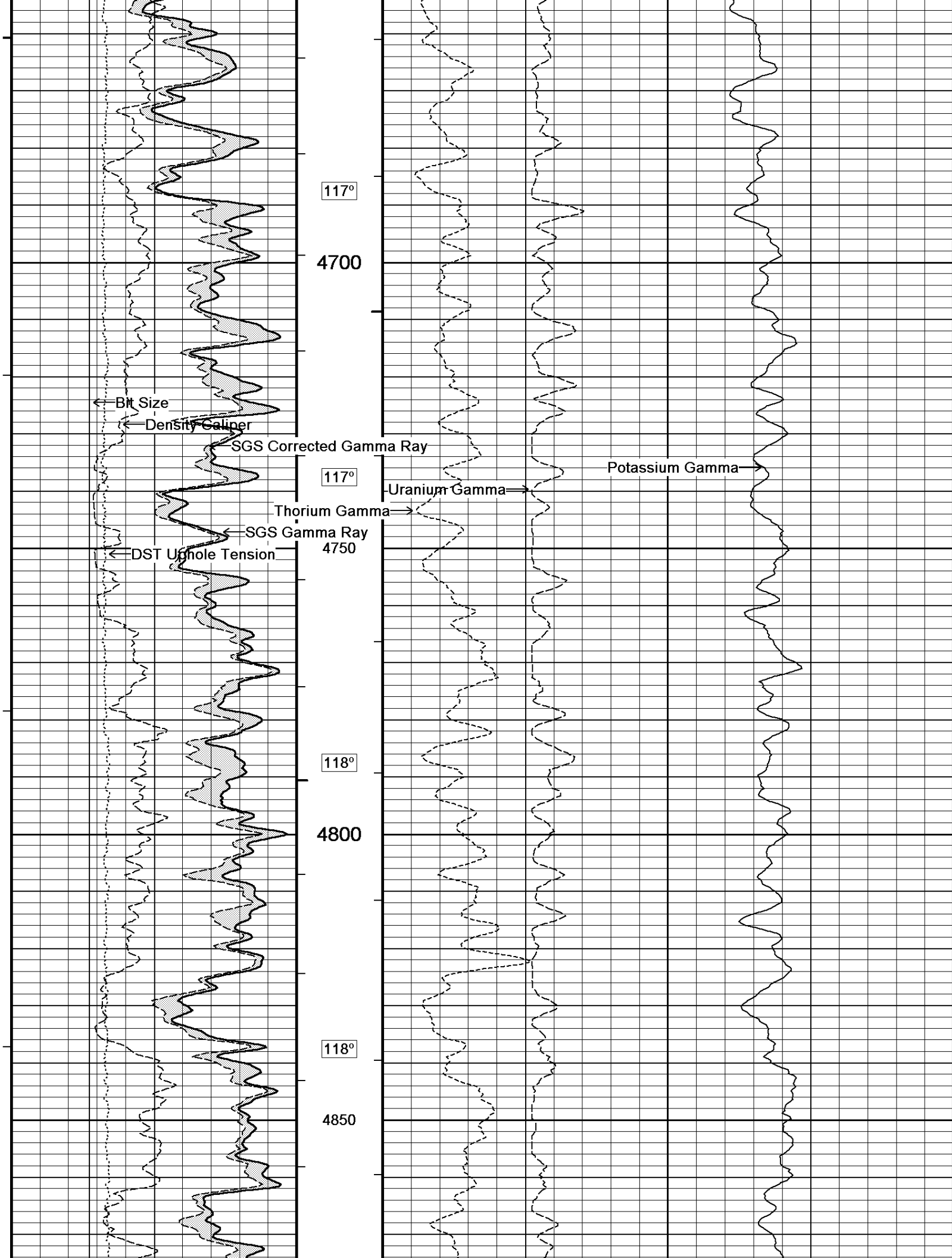


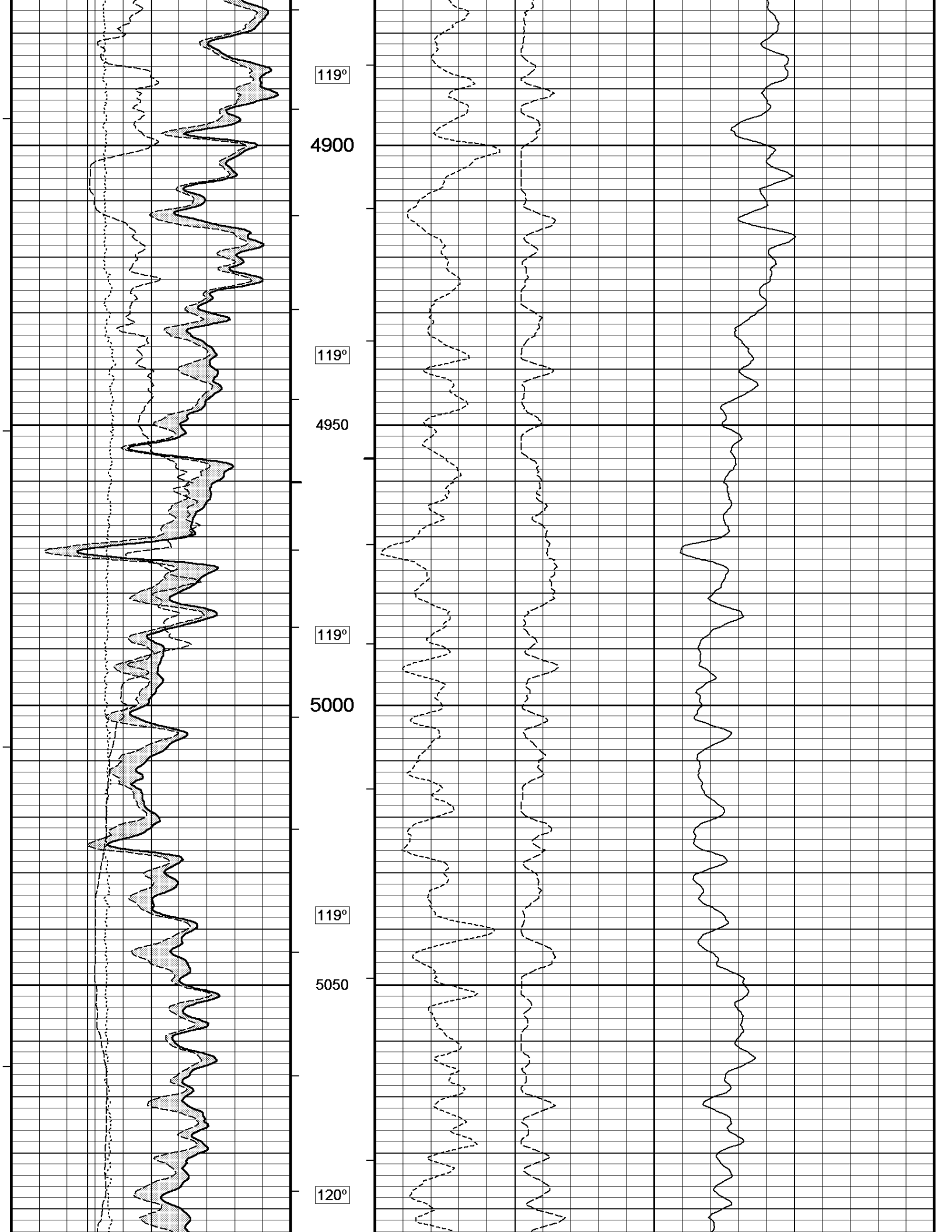


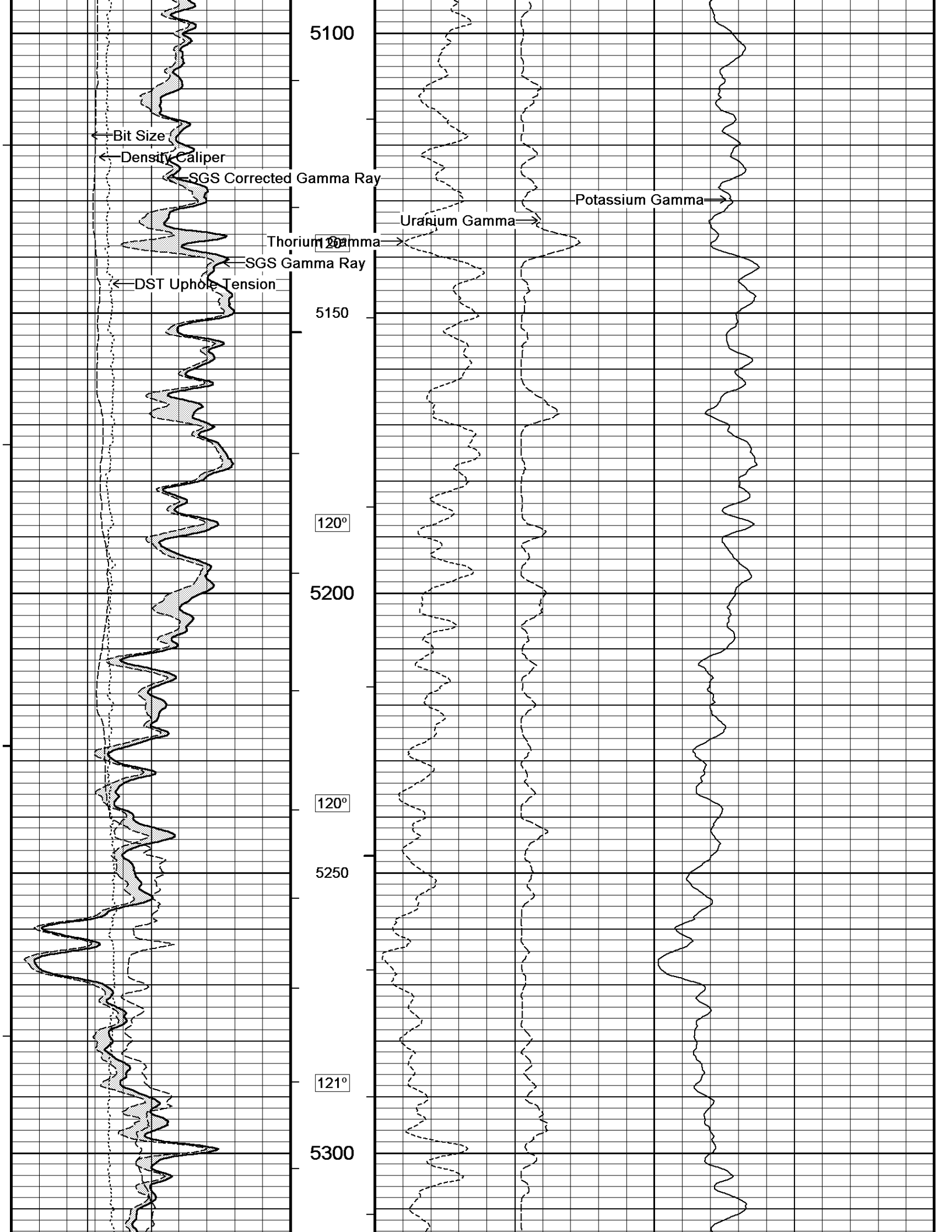


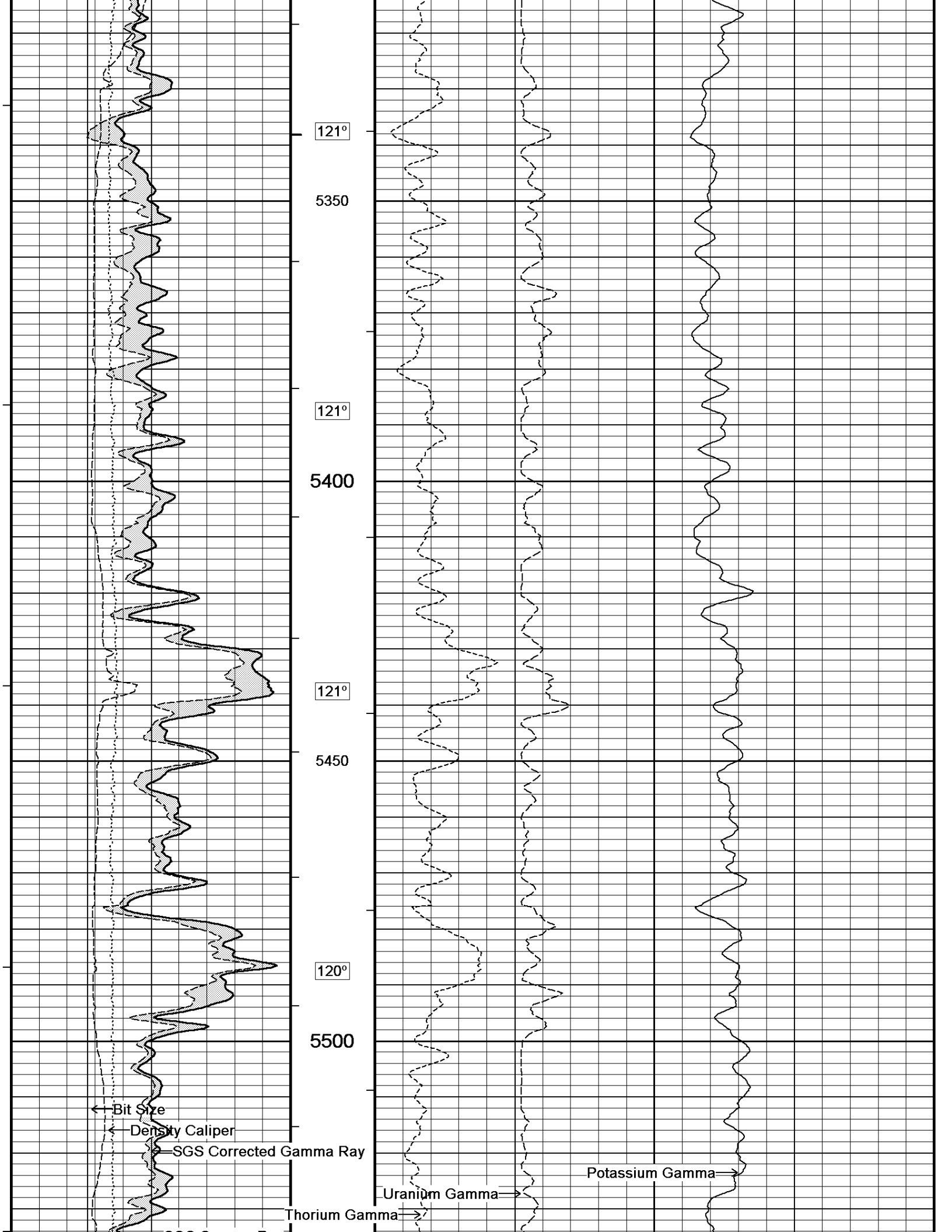


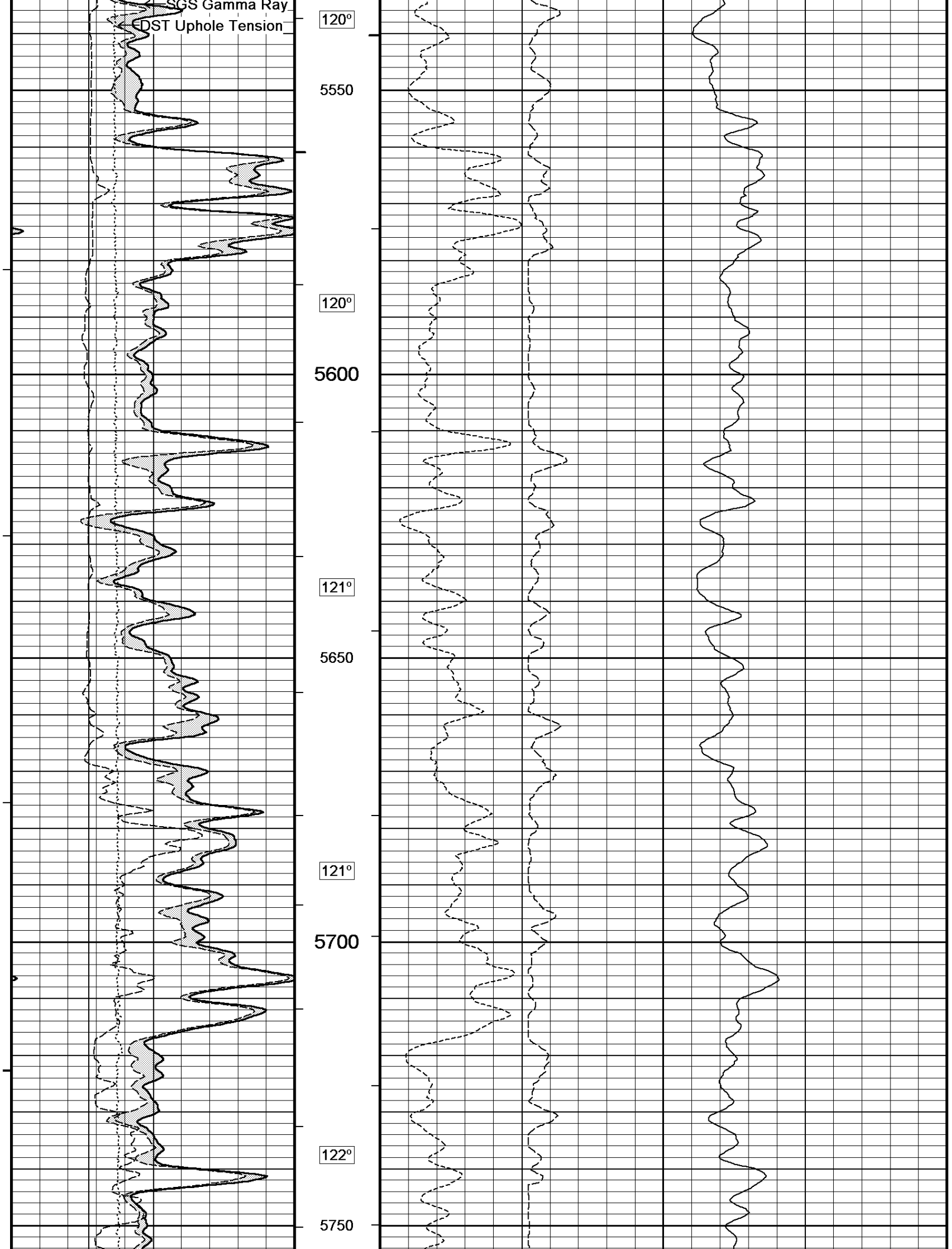


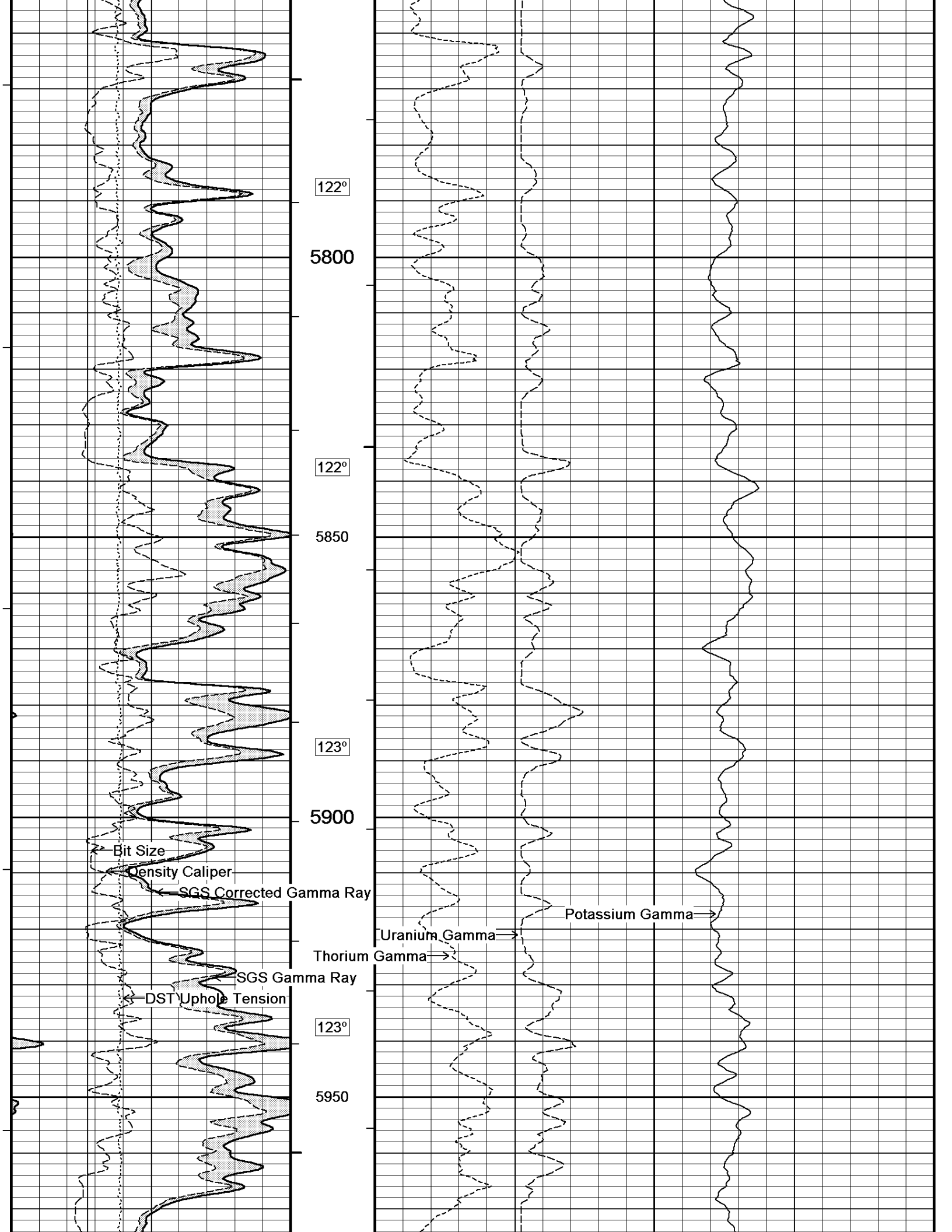


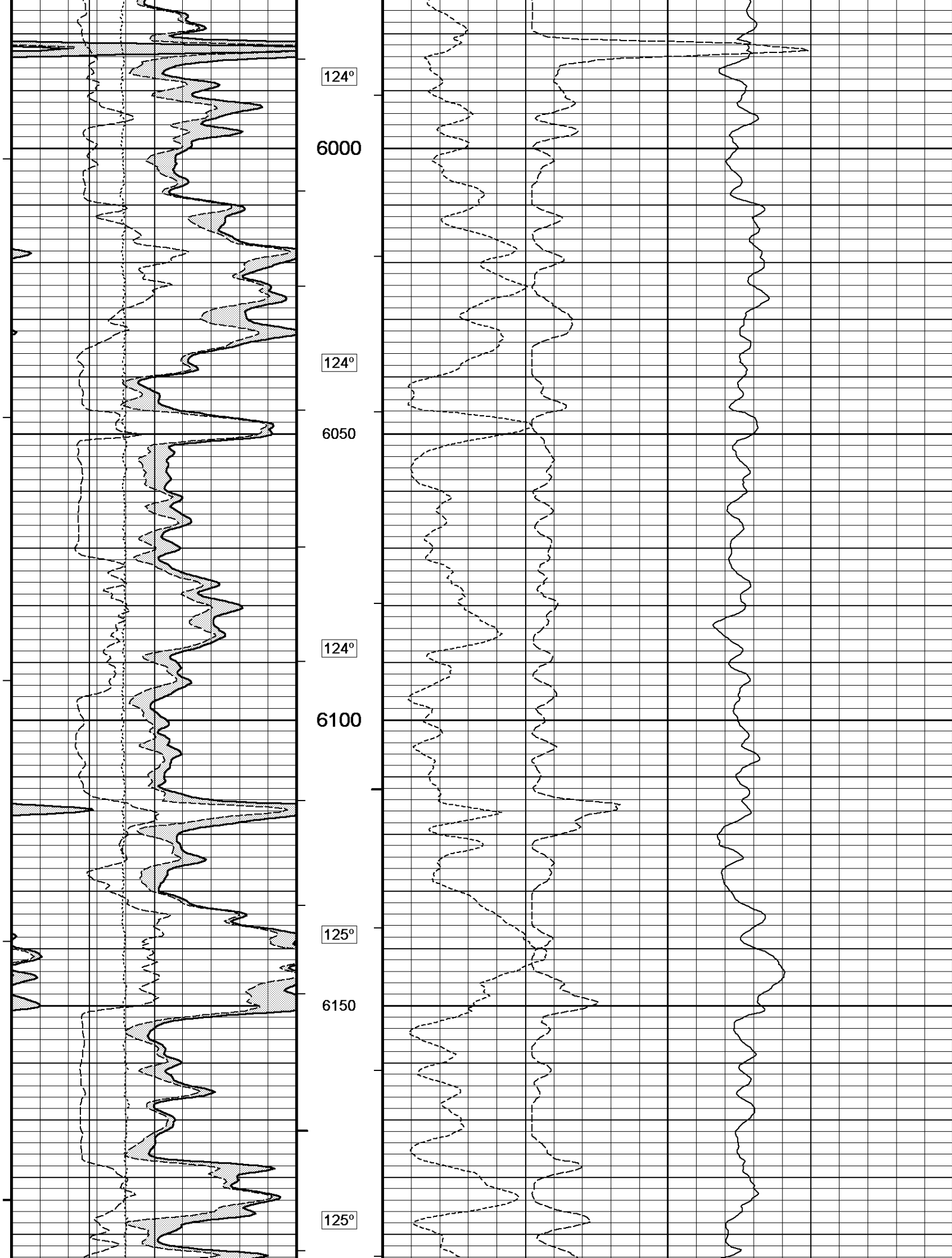


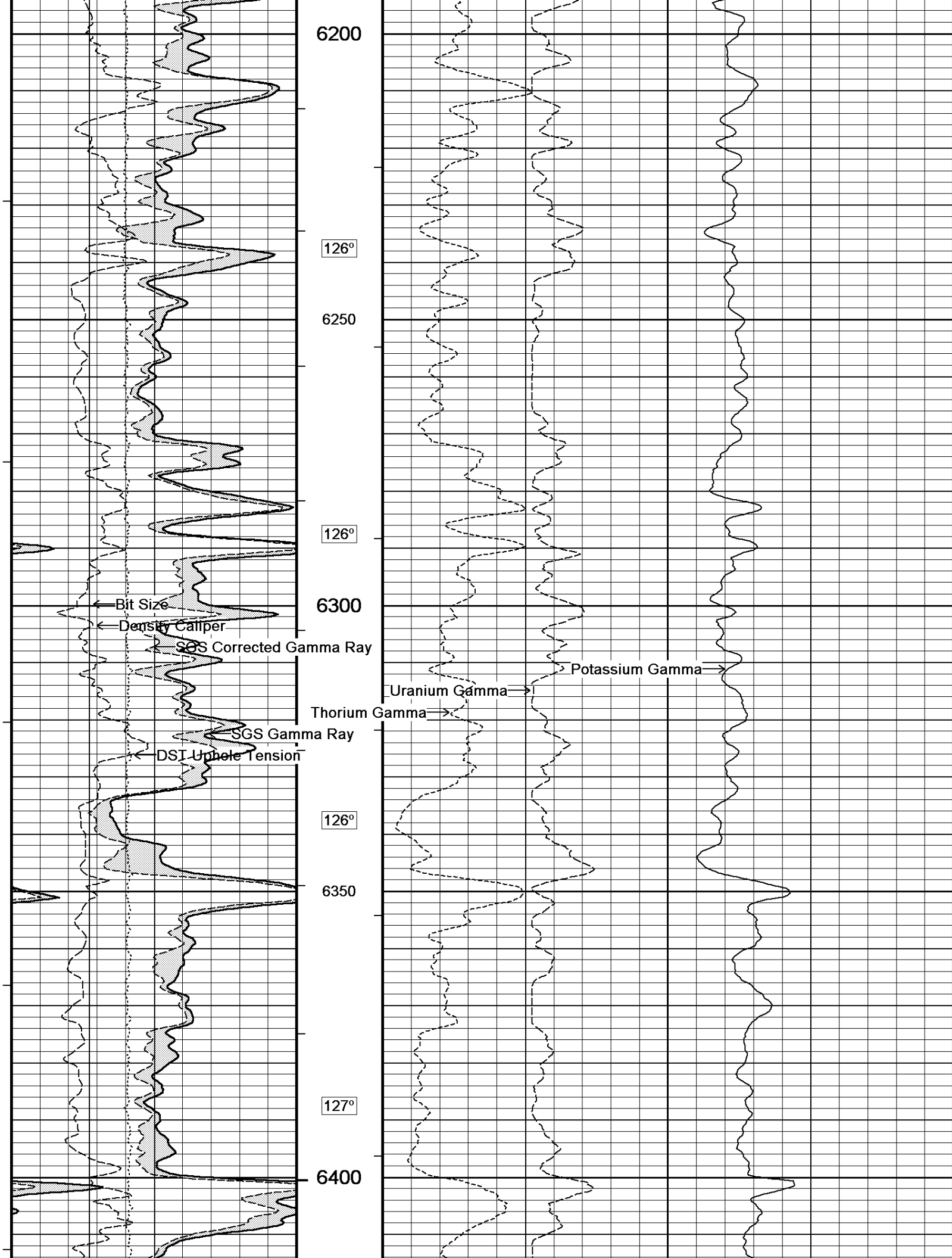


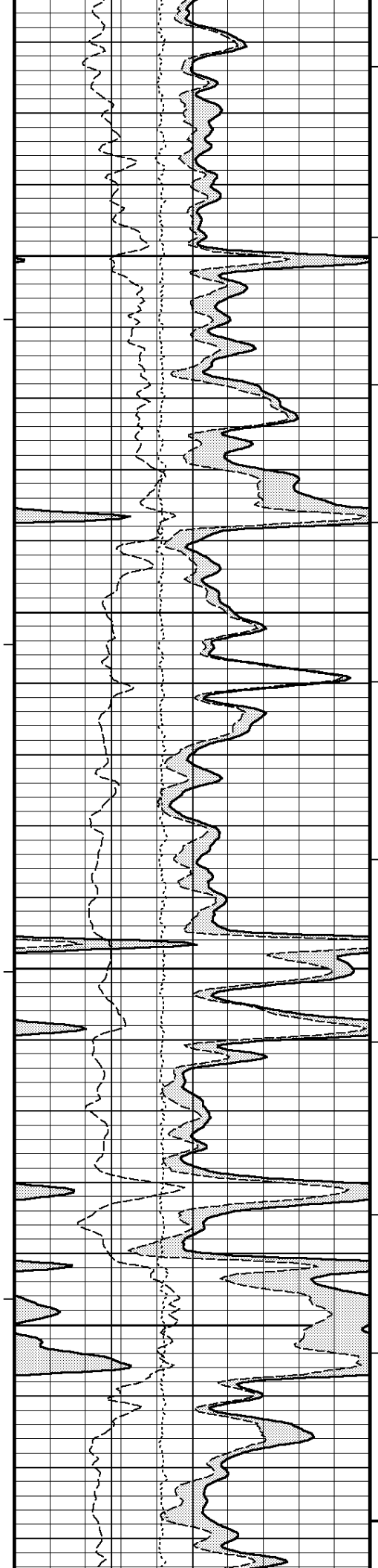












127°

6450

127°

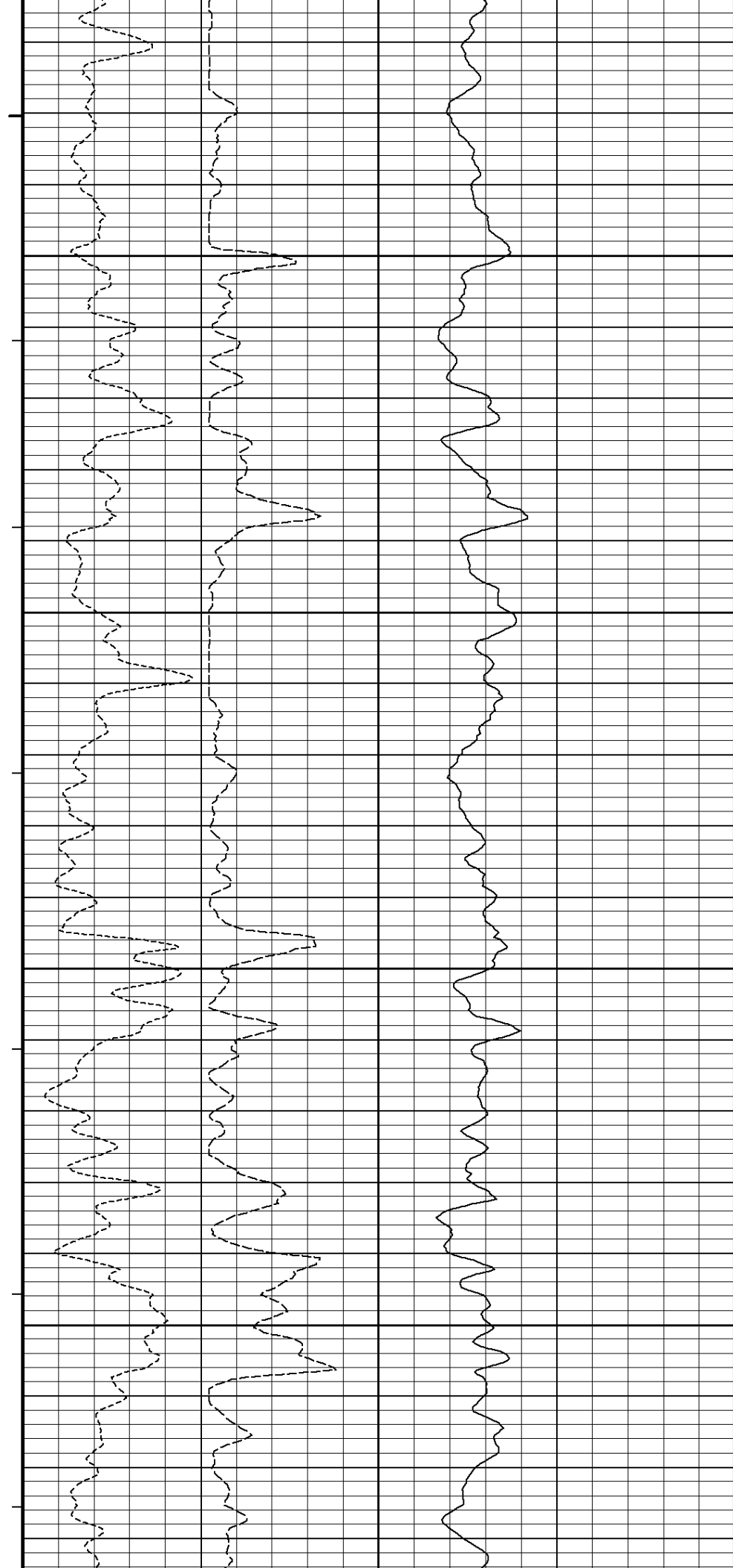
6500

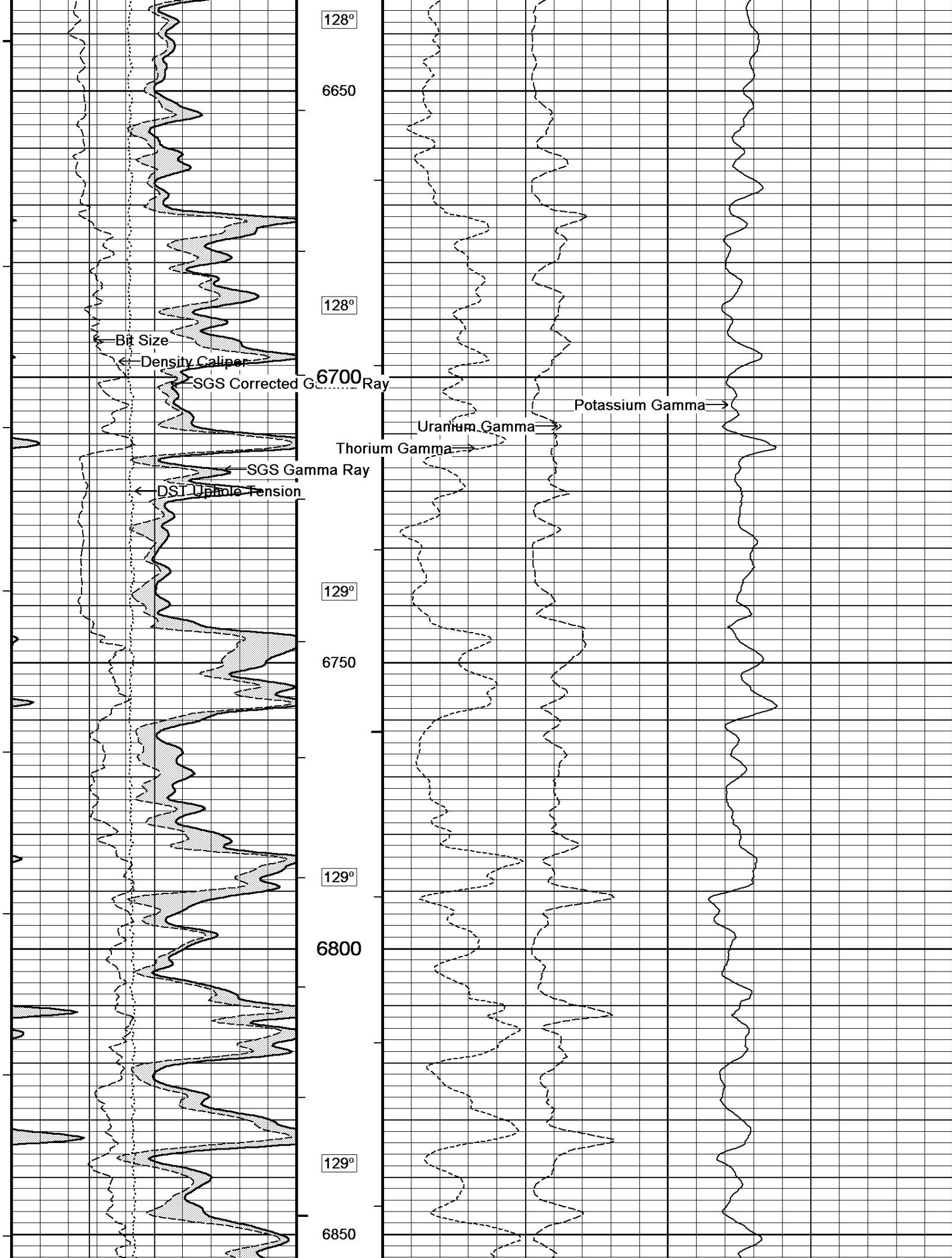
127°

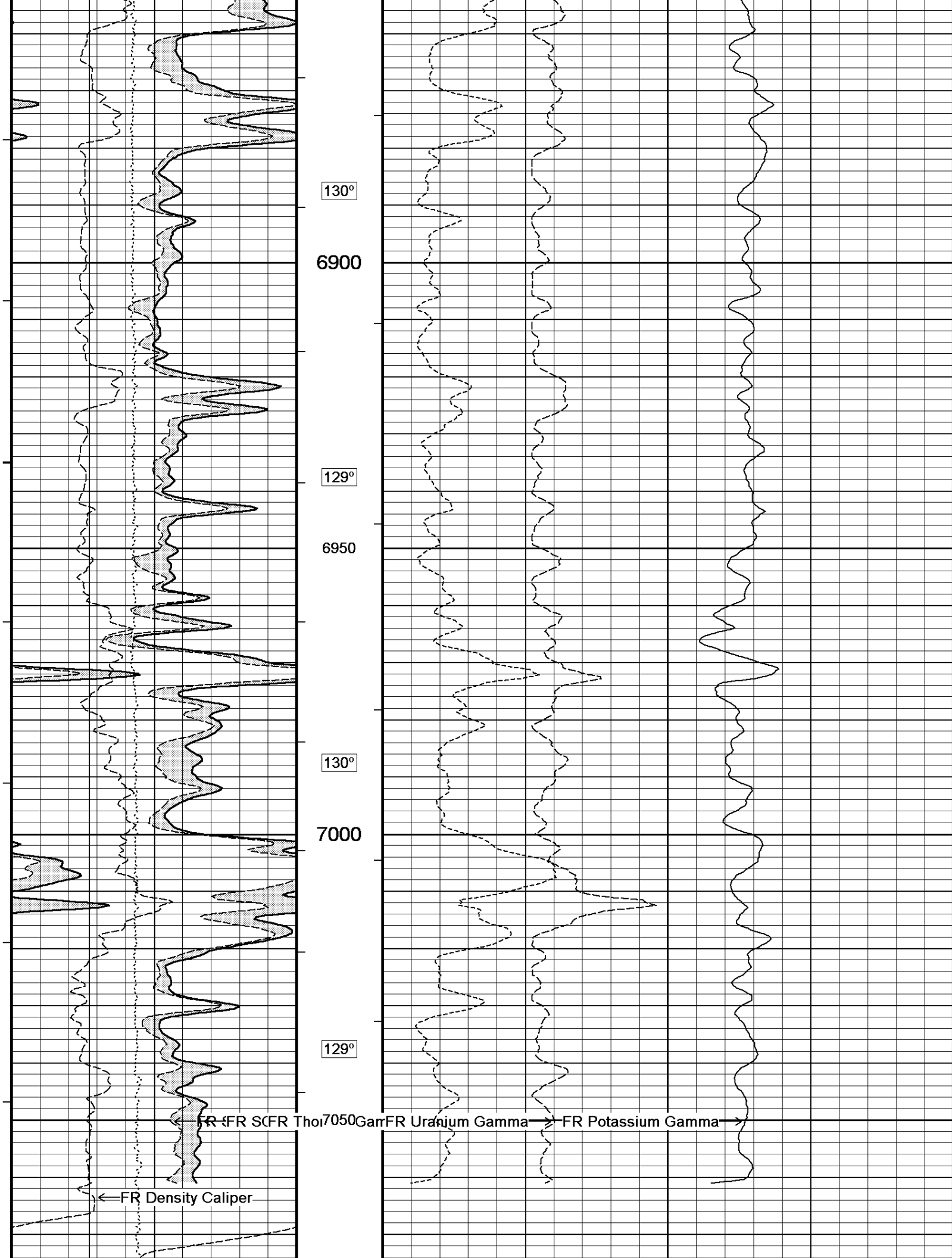
6550

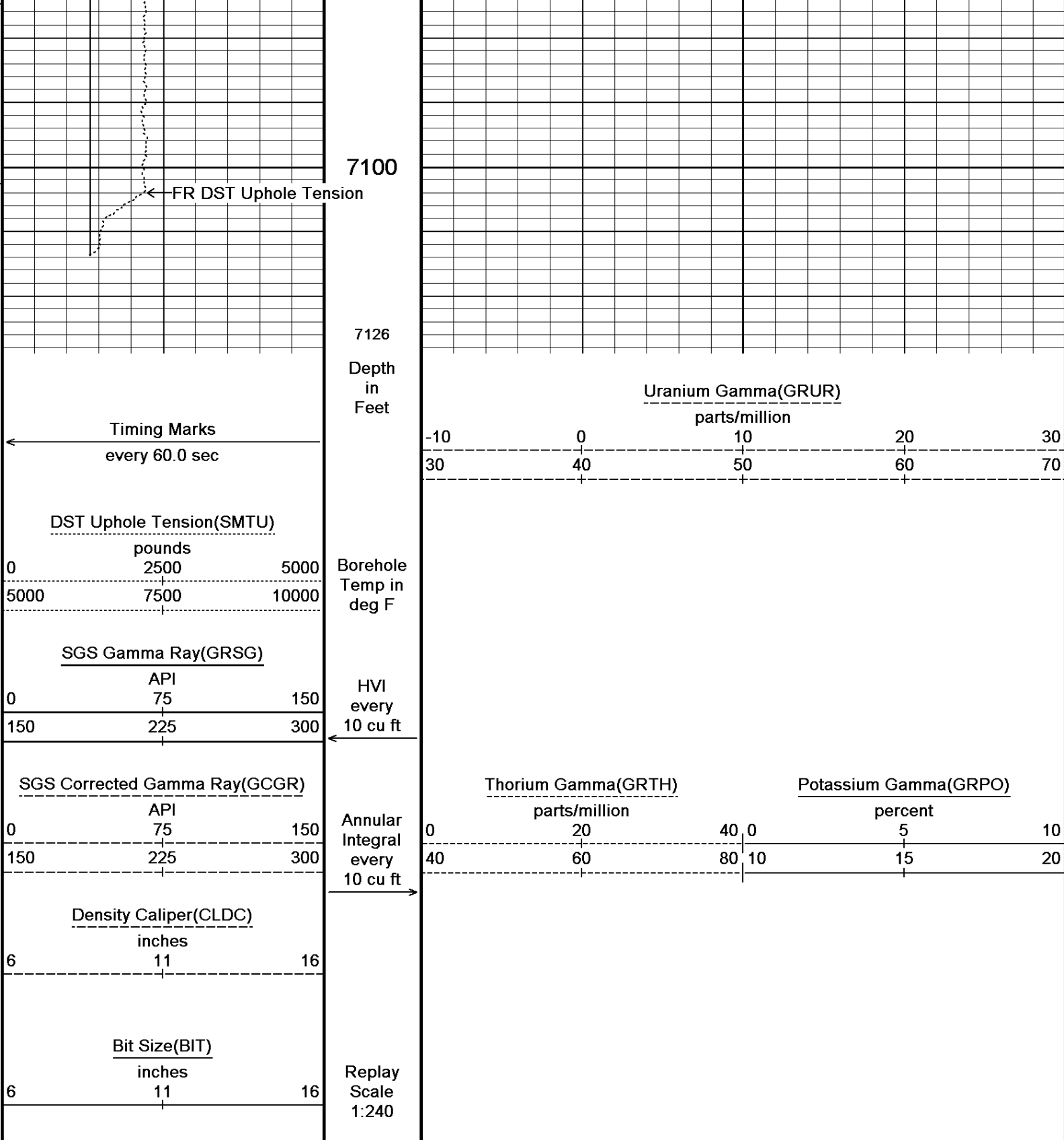
127°

6600









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Plotted on 20-AUG-2010 16:44  
Recorded on 20-AUG-2010 09:22

Mud Resistivity	1.240	ohm-metres
Mud Resistivity Temperature	97.200	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	

Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.000	inches
Caliper for Differential Caliper	None	

Rwa Parameters	
Porosity used	Base Density Porosity
Resistivity used	Array Ind. One Res Rt
RWA Constant A	0.610
RWA Constant M	2.150

# High Resolution Temperature Calibration MCG 247

Field Calibration on 19-AUG-2010,08:19

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

# High Resolution Temperature Constants MCG 247

Last Edited on 01-AUG-2010,13:09

Pre-filter Length	11
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# Caliper Calibration MPD 296

Base Calibration on 16-JUL-2010 10:35

Field Calibration on 19-AUG-2010,08:20

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	17267	4.00
2	25312	5.96
3	33397	7.98
4	41456	9.86
5	50656	11.88
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.98	7.98

# Spectral Gamma Calibration SGS 010

Base Calibration on 16-JUN-2010 10:33

Field Calibration on 19-AUG-2010,08:19

Base Calibration					
Potassium Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	102.2	37.2	4.2	2.2	4.4
Calibrator (Gross)	228.2	123.3	29.1	2.1	4.1
Calibrator (Net)	125.9	86.1	25.0	-0.1	-0.3

	K %	U ppm	Th ppm
Concentrations	4.4	-0.7	3.0

Uranium Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	102.2	37.2	4.2	2.2	4.4
Calibrator (Gross)	489.9	179.2	16.2	11.7	7.2
Calibrator (Net)	387.7	142.0	12.0	9.6	2.8

	K %	U ppm	Th ppm
Concentrations	1.0	10.7	2.8

Thorium Calibrator					
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	102.2	37.2	4.2	2.2	4.4
Calibrator (Gross)	419.4	159.8	12.4	7.6	19.3
Calibrator (Net)	317.1	122.6	8.2	5.5	14.9

	K %	U ppm	Th ppm
Concentrations	0.6	-2.3	31.5

# Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	102.2	37.2	4.2	2.2	4.4
Calibrator (Gross)	907.0	376.8	49.4	16.2	21.6
Calibrator (Net)	804.8	339.6	45.2	14.0	17.3

# Field Calibration

## Gamma Ray

	Measured	Calibrated (API)
Background	160	29
Calibrator (Gross)	1381	254
Calibrator (Net)	1221	225

# Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	102.2	37.2	4.2	2.2	4.4
Calibrator (Gross)	907.0	376.8	49.4	16.2	21.6
Calibrator (Net)	804.8	339.6	45.2	14.0	17.3

# Spectral Gamma Constants SGS 010

Last Edited on 06-AUG-2010,05:07

Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

## DOWNHOLE EQUIPMENT

C:\Minimus\Logs\Patara\Andy's Mesa Federal #76\SETUP.dta

SHA-J.A Compact Swivel Head Adaptor

SHA 214 Length: 2.30 ft Weight: 22.0 lb

Compact Gamma

MCG 247 Length: 8.70 ft Weight: 63.9 lb

Spectral Gamma Ray Sub

SGS 10 Length: 7.78 ft Weight: 105.8 lb

Compact Neutron

MDN 143 Length: 5.04 ft Weight: 50.7 lb

Compact Density/Caliper

MPD 296 Length: 9.59 ft Weight: 90.4 lb

MIS-D.A Compact Inline Bowspring sub

MIS 442 Length: 5.70 ft Weight: 33.1 lb

SKJ-D.A Compact Knuckle Joint

SKJ 172 Length: 2.17 ft Weight: 24.3 lb

Compact Focussed Electric

MFE 178 Length: 6.03 ft Weight: 48.5 lb

Compact Sonic

MSS 96 Length: 12.52 ft Weight: 72.8 lb

Compact Induction

MAI 213 Length: 10.81 ft Weight: 48.5 lb

Total Length: 70.63 ft Weight: 560.0 lb

