



Weatherford®

**COMPOSITE LOG
RESISTIVITY - POROSITY
INDUCTION - SPECTRAL GAMMA**

COMPANY				WHITTING OIL AND GAS CORPORATION			
WELL				RAZOR 25N-2406			
FIELD				WILDCAT			
PROVINCE/COUNTY				WELD			
COUNTRY/STATE				U.S.A./ COLORADO			
LOCATION				SE SW 355' FSL & 2010' FWL			
SEC 25	TWP 10N	RGE 58W	Other Services				
Latitude		40.803414		Elevations: KB 4725.00 DF 4725.00 GL 4704.00			
Longitude		-103.815178					
API Number		05-123-42638-00					
Permanent Datum GL, Elevation 4704 feet							
Log Measured From KB							
Drilling Measured From KB @ 21 FT							
Date	23-AUG-2016						
Run Number	ONE						
Service Order	4052-159301716						
Depth Driller	16013.00			feet			
Depth Logger	16013.00			feet			
First Reading	15988.00			feet			
Last Reading	2024.50			feet			
Casing Driller	2021.00			feet			
Casing Logger	2024.50			feet			
Bit Size	8.500			inches			
Hole Fluid Type	OBM						
Density / Viscosity	9.40	lb/USg	41.00	sec/qt			
PH / Fluid Loss	---		5.60	ml/30Min			
Sample Source	N/A						
Rm @ Measured Temp	N/A						
Rmf @ Measured Temp	N/A						
Rmc @ Measured Temp	N/A						
Source Rmf / Rmc	N/A		N/A				
Rm @ BHT	N/A						
Time Since Circulation	0 HOURS						
Max Recorded Temp	230.00		deg F				
Equipment / Base	13045		CASPER				
Recorded By	Z. ALSUDANI						
Witnessed By	KENNY RAY			MARK ODEGRARD			
AFE#	16-0477						

BOREHOLE RECORD					Last Edited: 23-AUG-2016 02:14
Bit Size inches		Depth From feet		Depth To feet	
8.500		2021.00		16013.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURF.	9.625	0.00	2021.00	36.00	

REMARKS
SOFTWARE VERSION USED:16.01.9040 TOOLS CONVEYED VIA DRILL PIPE/COMPACT WELL SHUTTLE
LOGS RECORDED USING A 200V MEMORY LOGGING SYSTEM 200V EXTENDED BATTERIES USED TO POWER TOOLSTRING
ALL DEPTHS RECORDED WITH WEATHERFORD ADVANTAGE DEPTH SYSTEM IN CONJUNCTION WITH RIG PASON EDR SYSTEM ALL DEPTHS CORRECTED TO DRILLER'S STRAP DEPTH
NO REPEAT LOG AVAILABLE WITH SHUTTLE LOGGING OPERATION
TIGHT PULLS, BOREHOLE SIZE, AND RUGOSITY MAY AFFECT DATA QUALITY
TOOLS: SRT-A , SHA-J, SKJ-E, MBS-G, MMS-F, MTI-C, MGS-C, MCL-C, MSG-A, SKJ-E, SHA-J, MIS-D, MDN-C, MPD-C, MVC-A, SKJ-E, MIS-E, SKJ-E, MIS-D, MIS-D, MTC-B, MIS-D, MIS-D, MAI-B. RAN IN COMBINATION.
HARDWARE USED: MAI - INDUCTION IN LINE CENTRALIZER ASSEMBLY AT THE BOTTOM OF THE TOOL

HARDWARE USED: MTC- 2 INLINE CENTRALIZERS ON TOP AND 2 INLINE CENTRALIZERS ON BOTTOM
SKJ-MISE-SKJ : KNUCKLE - STANDOFF - KNUCKLE FOR SMOOTH TRANSITION TO THE CENTRALIZED

SECTION.

MPD - 4 INCH PROFILE PLATE.

MDN - INLINE-DUAL BOWSTRINGS DECENTRALIZER ON TOP OF THE TOOL.

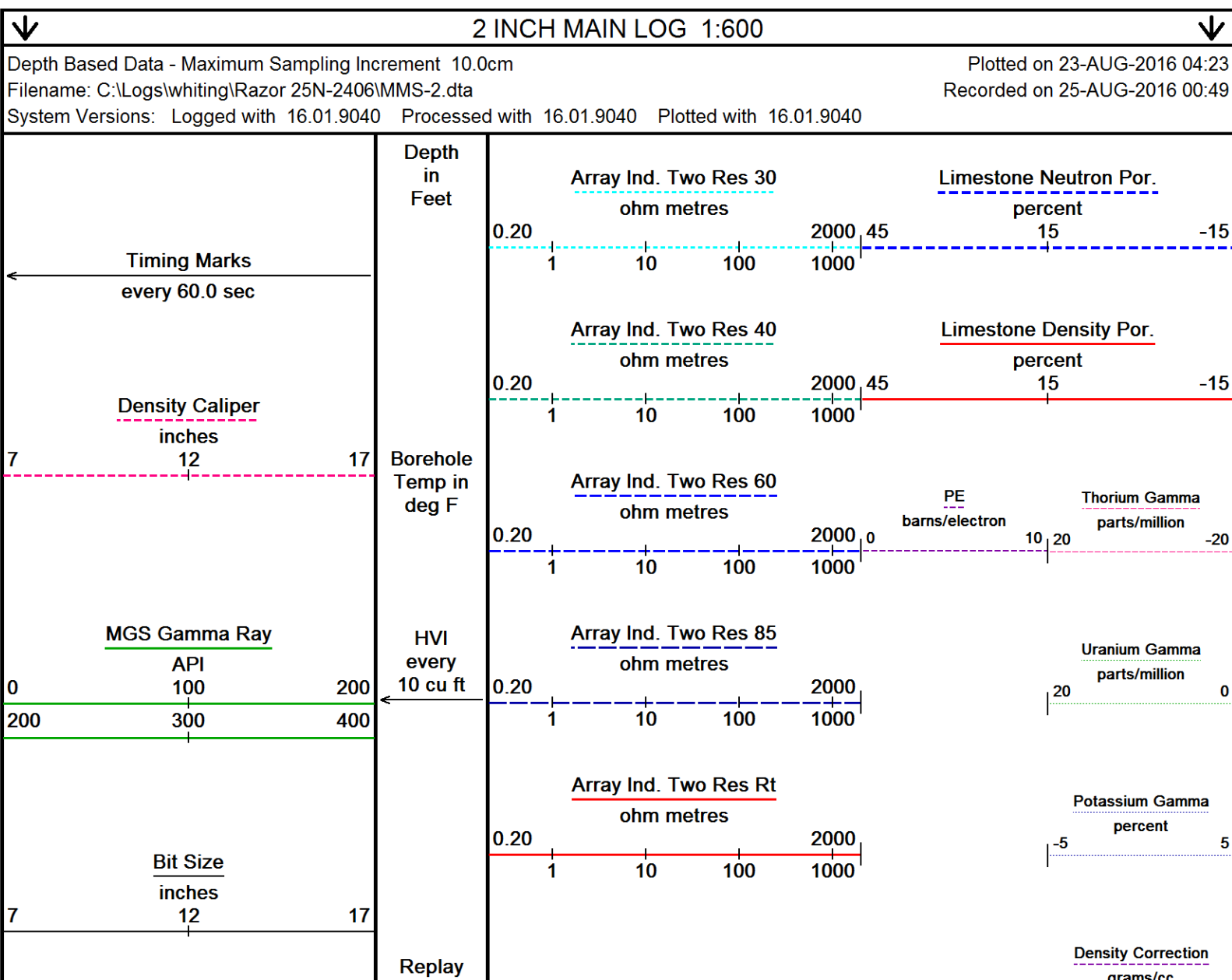
HOLE VOLUME FROM T.D. TO SURFACE CASING: 5805 CUBIC FEET

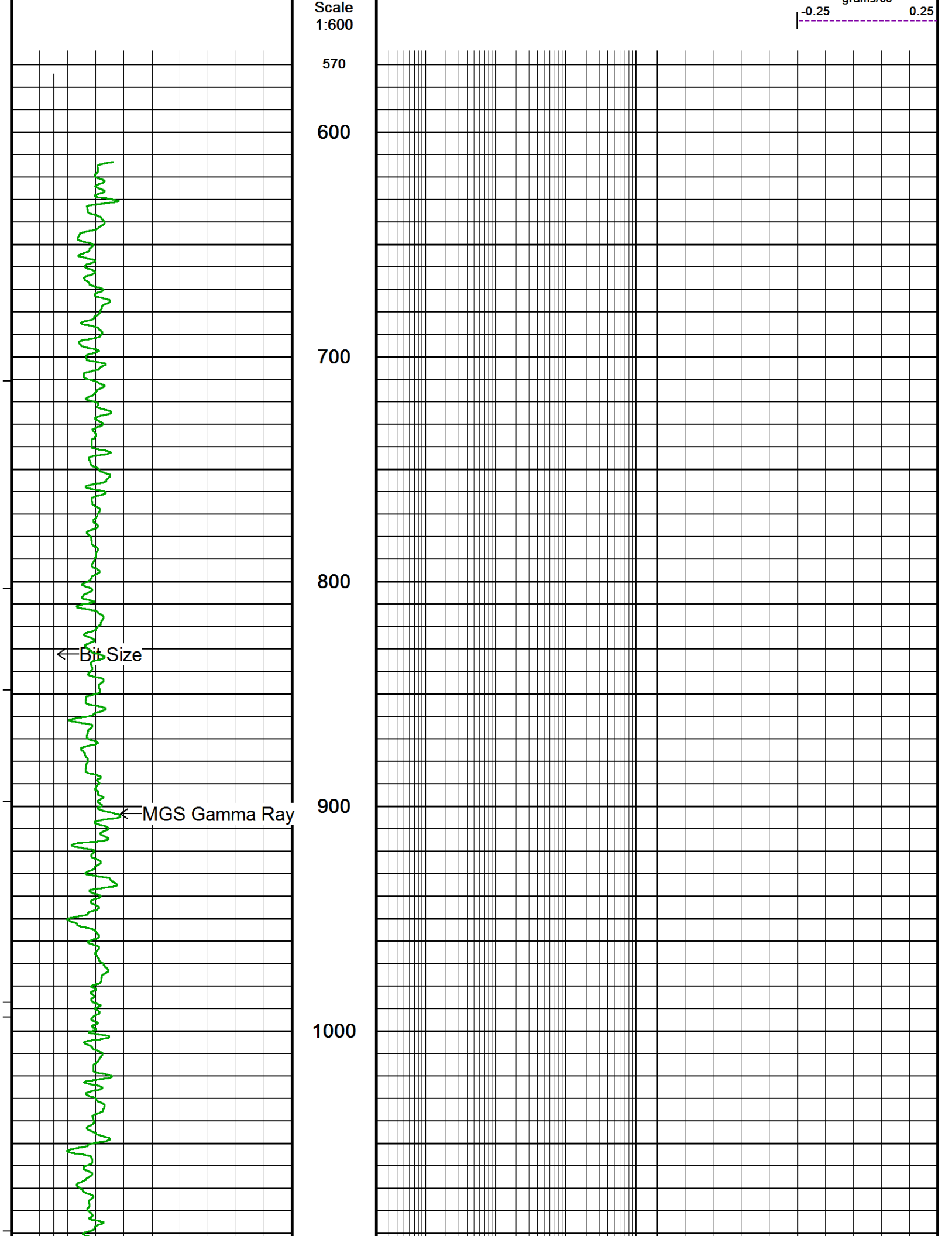
CHLORIDES CONCENTRATION (MG/L) : 245,069

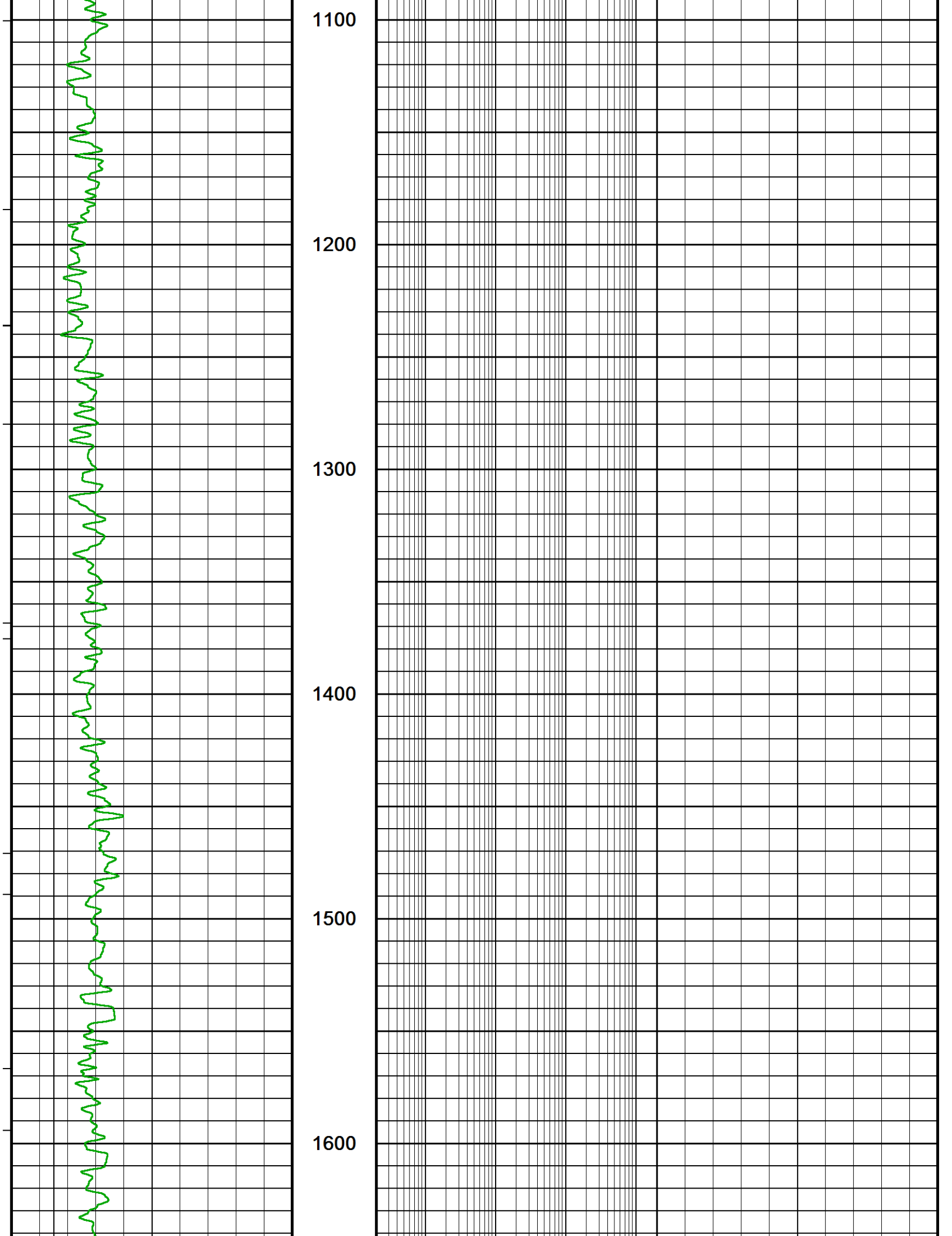
CREW:D. SMITH, D.BEANS.

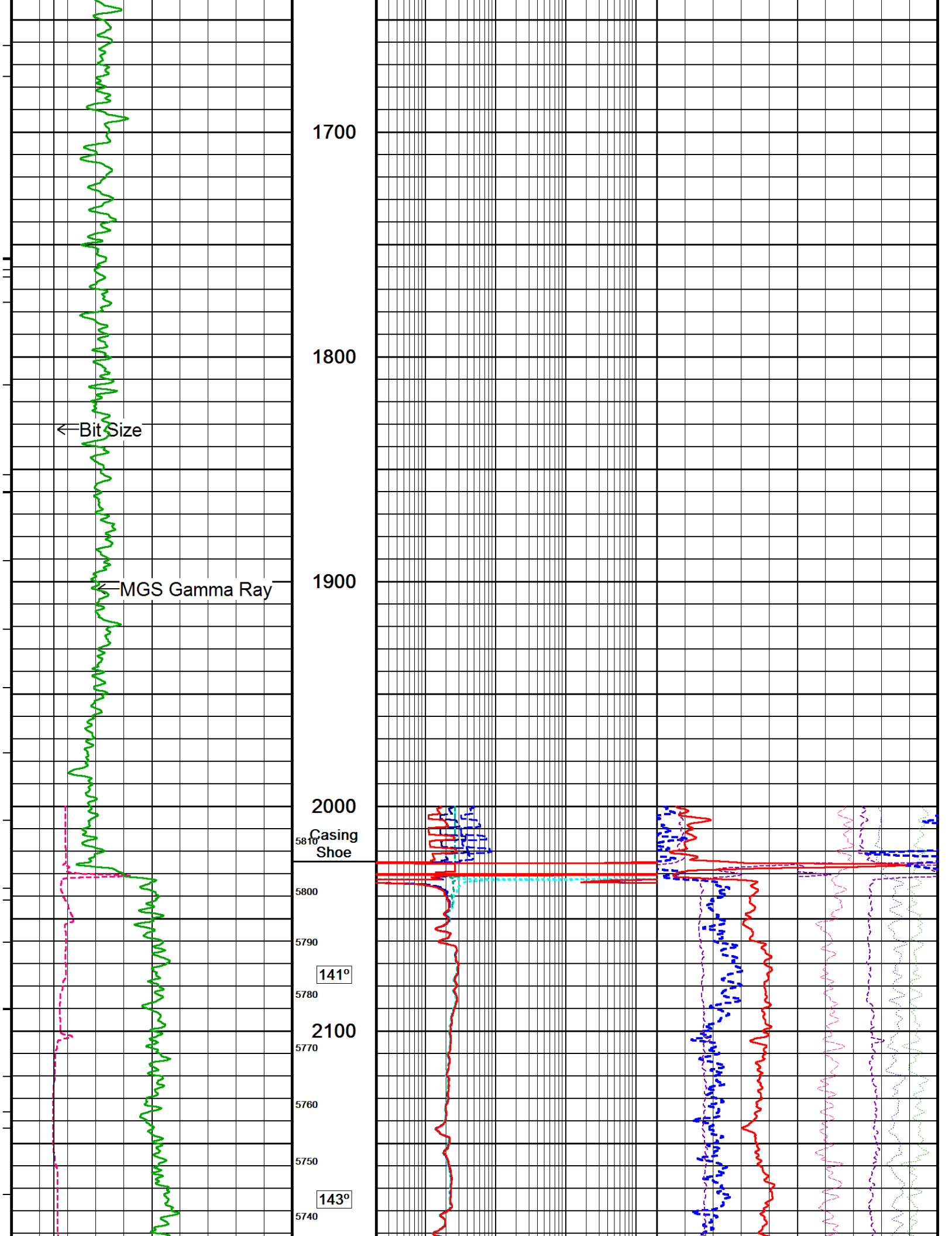
RIG: UNIT BOSS 409.

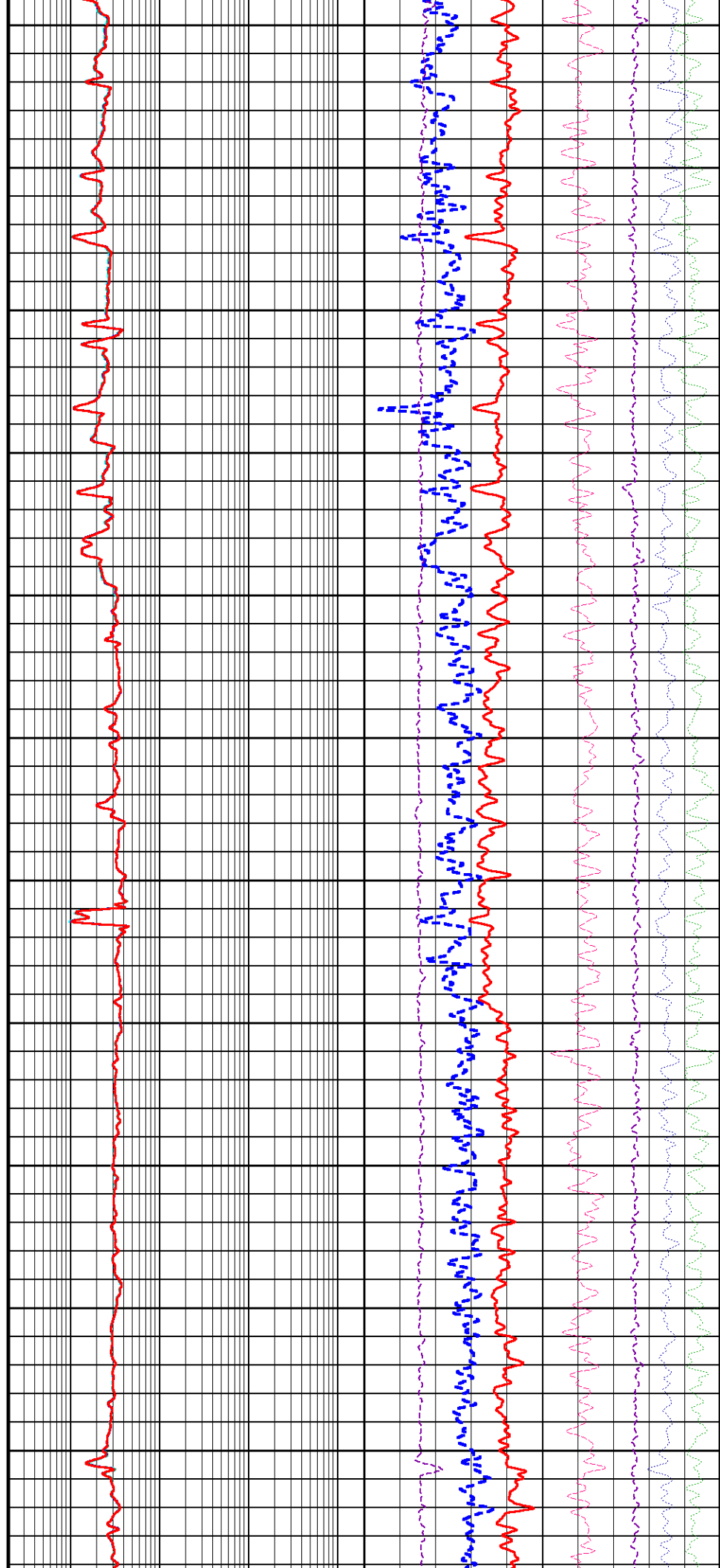
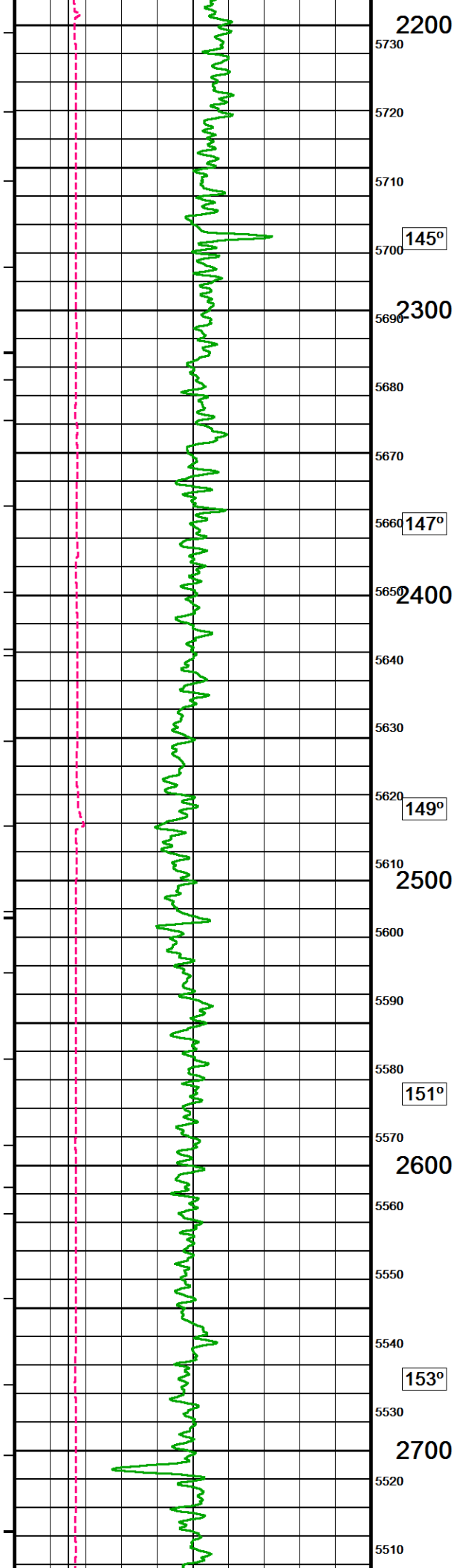
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

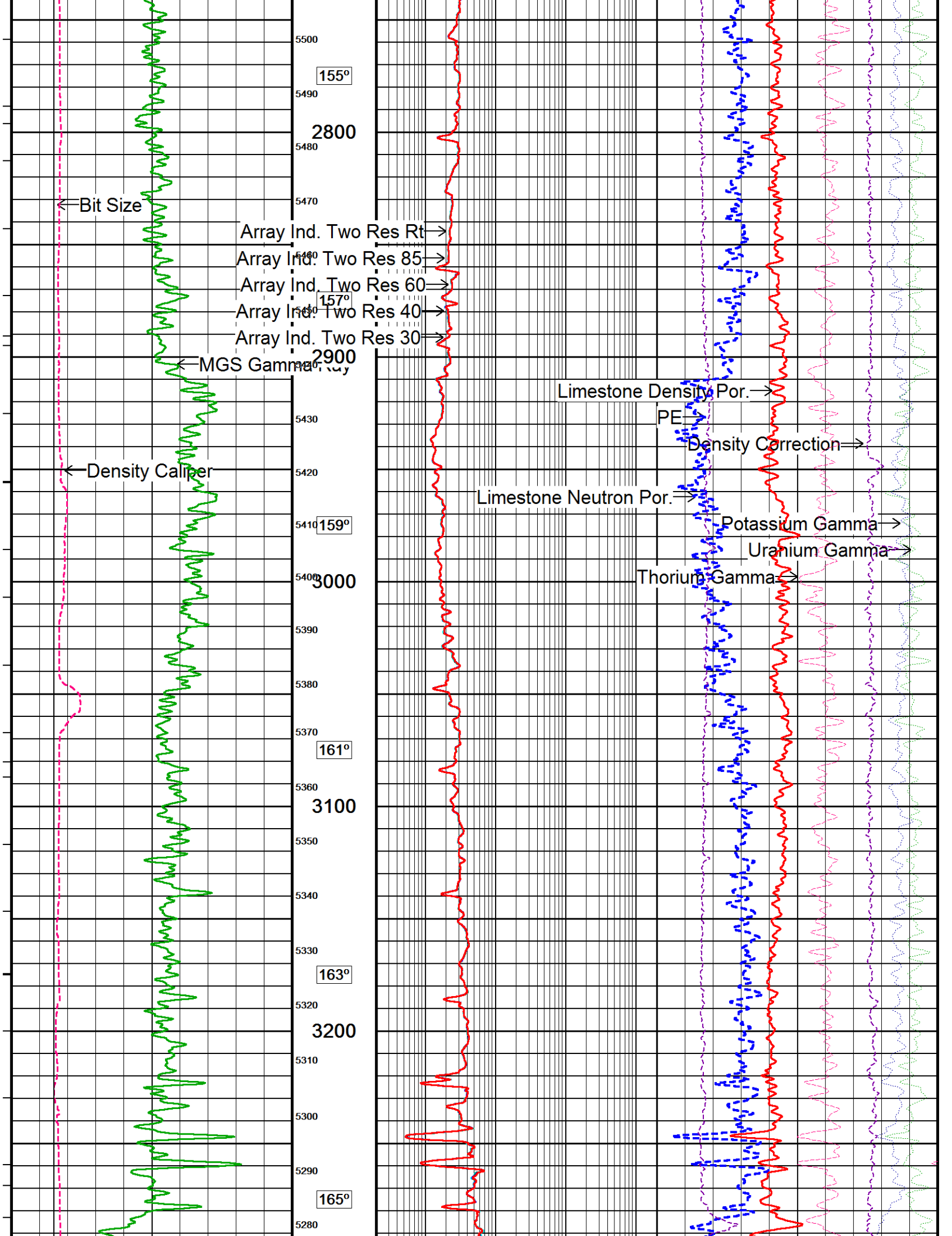


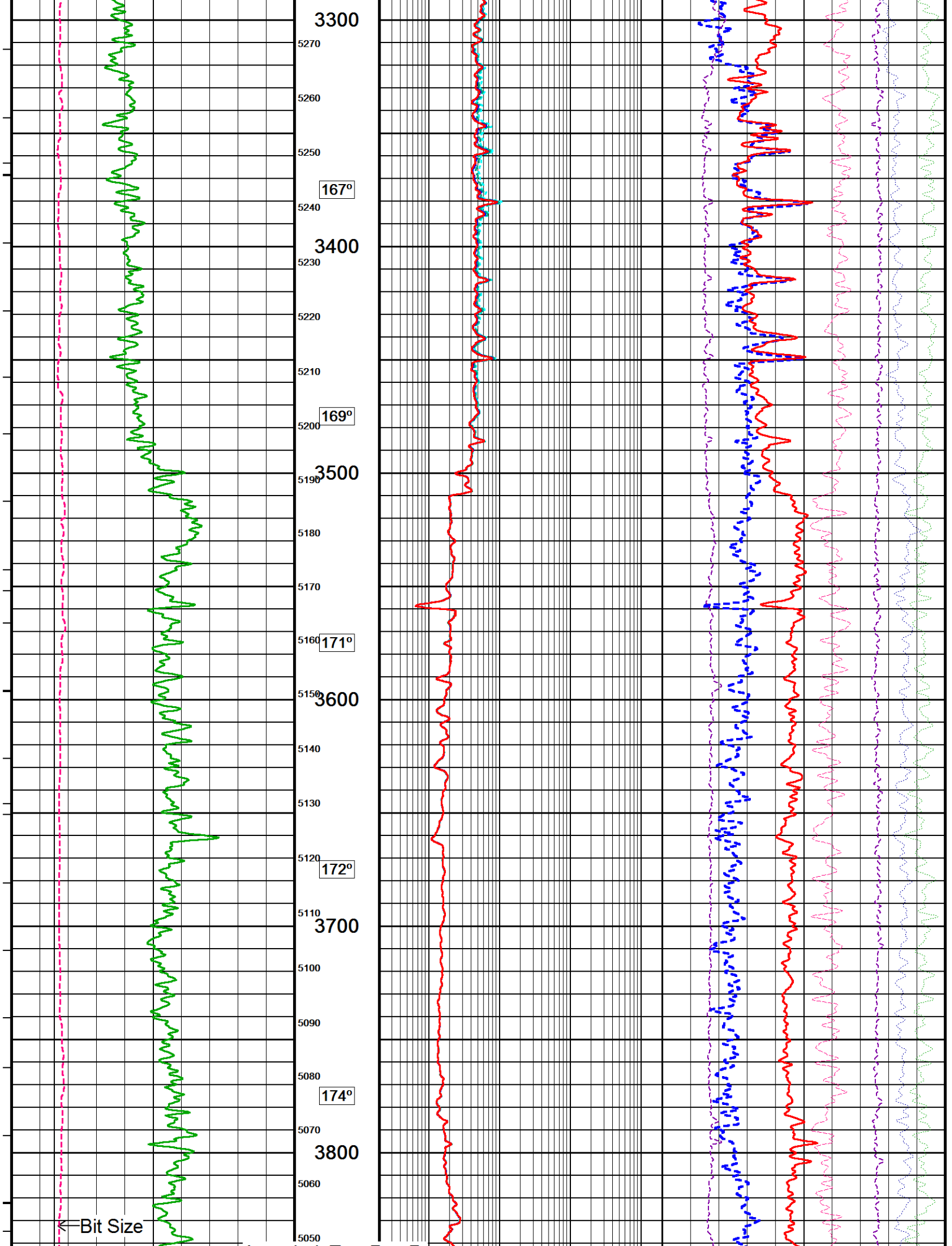


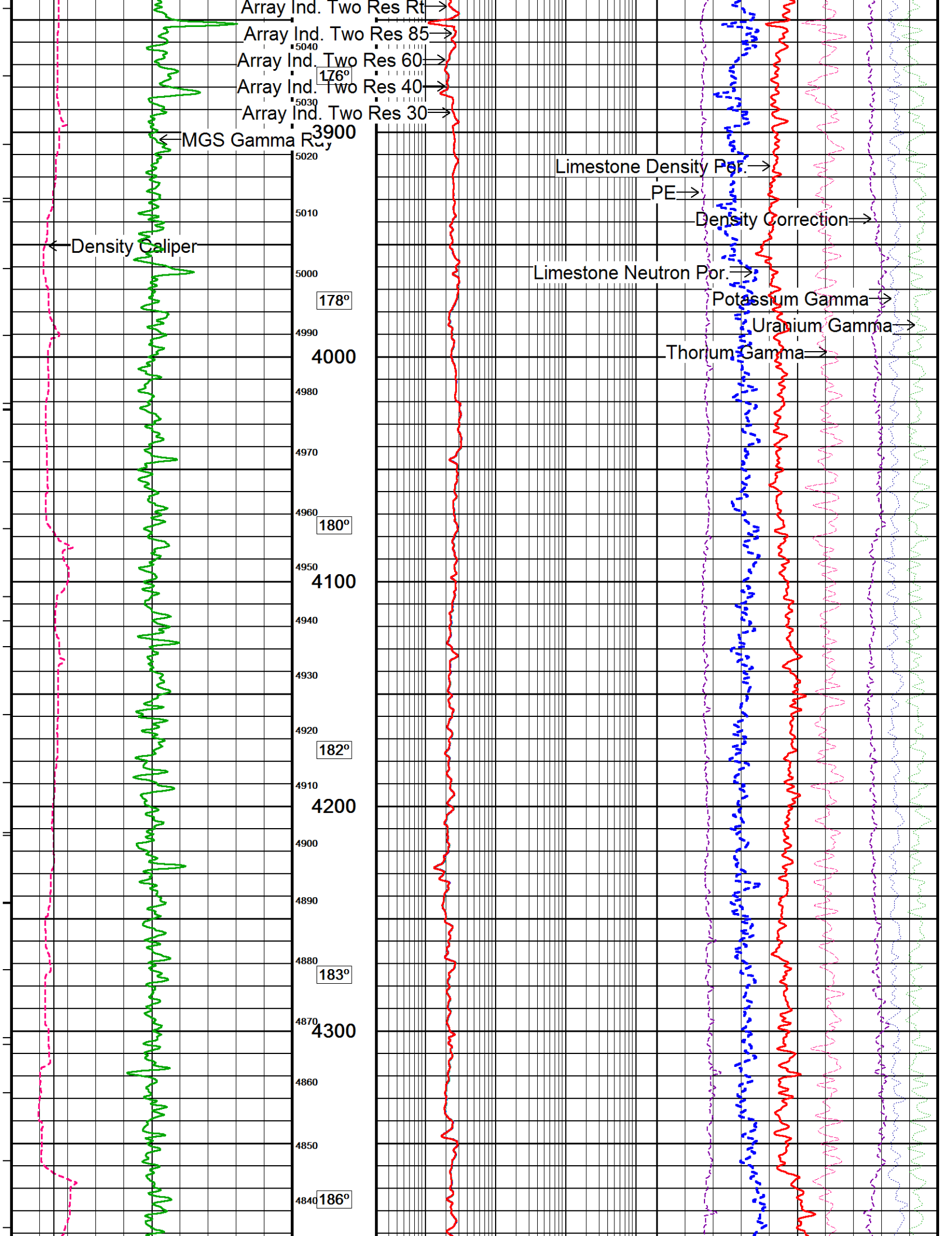


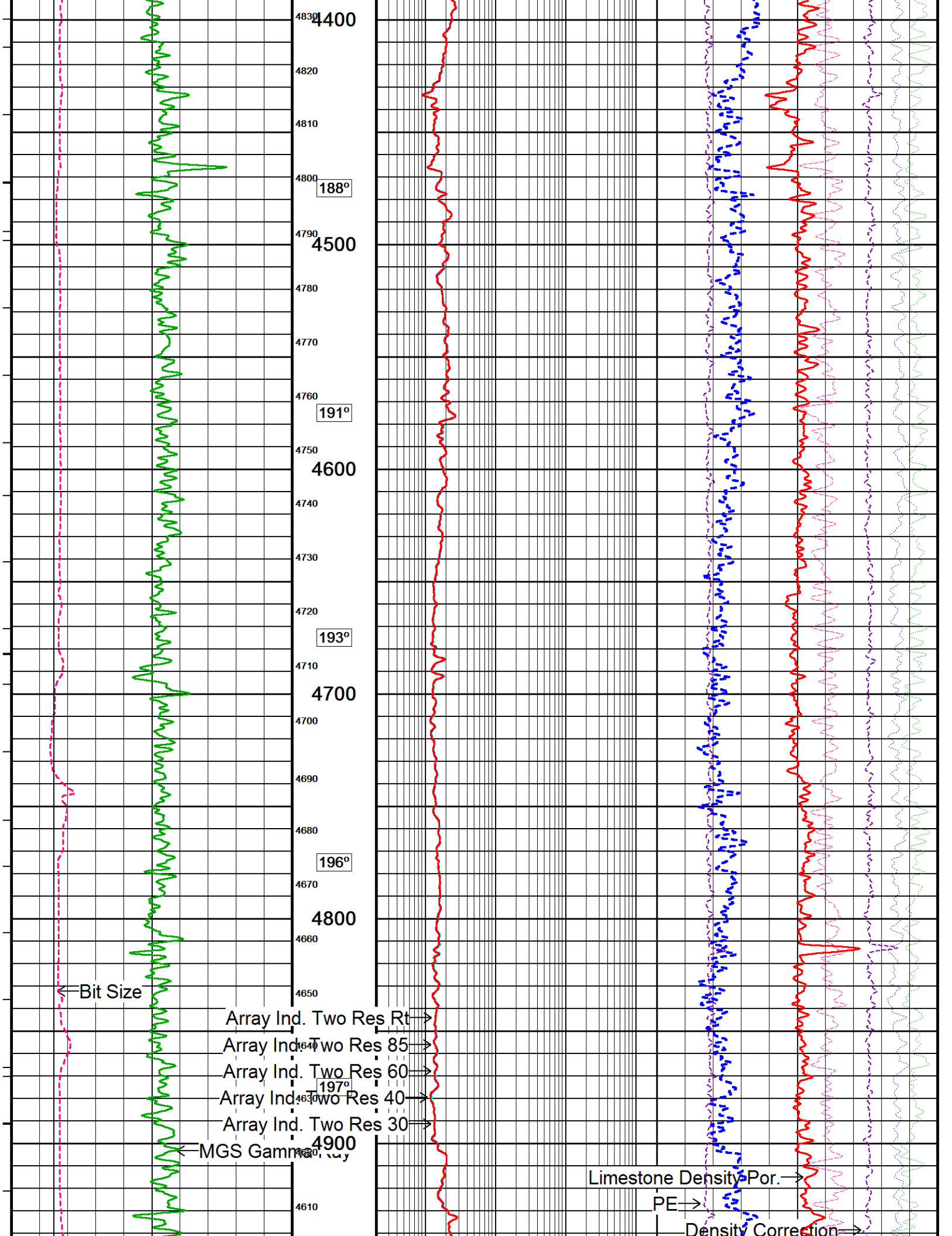


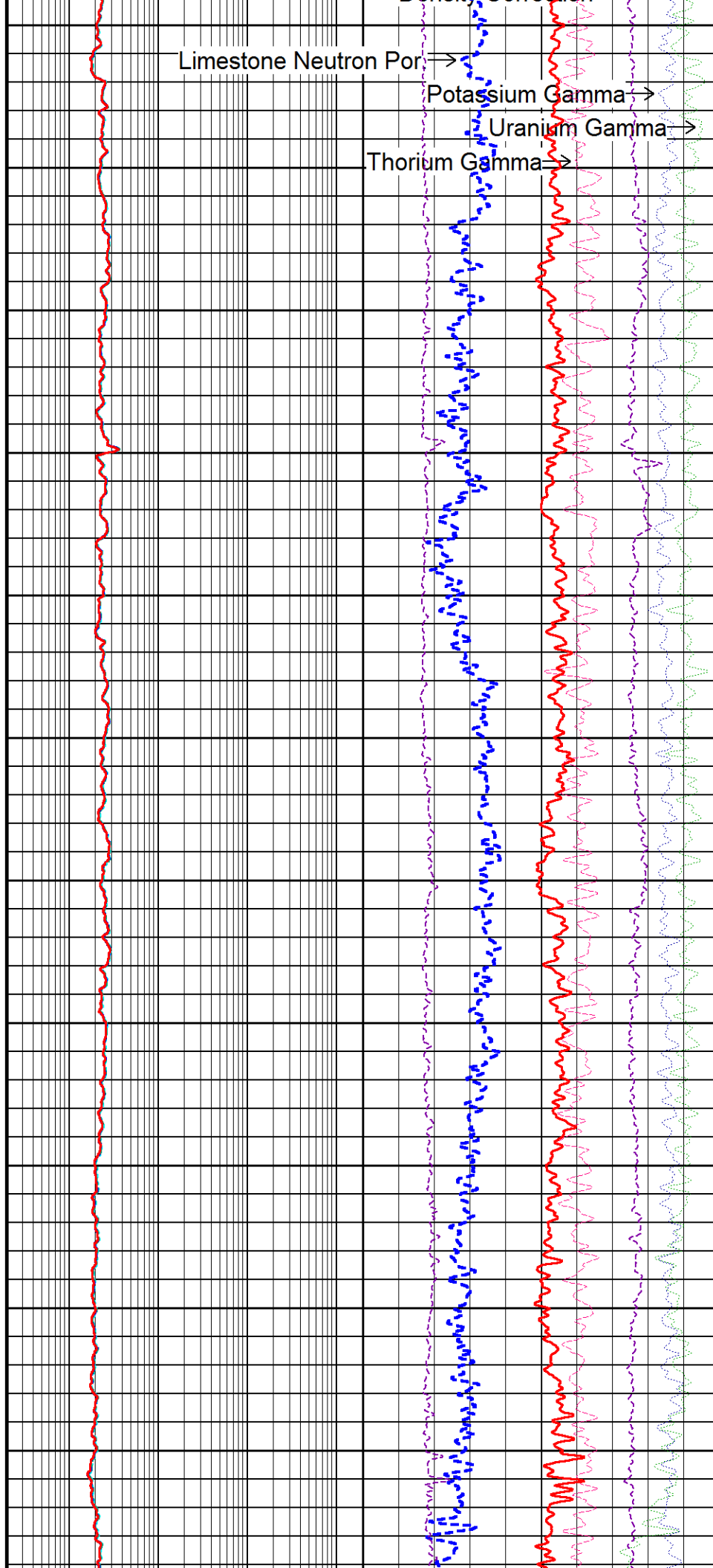
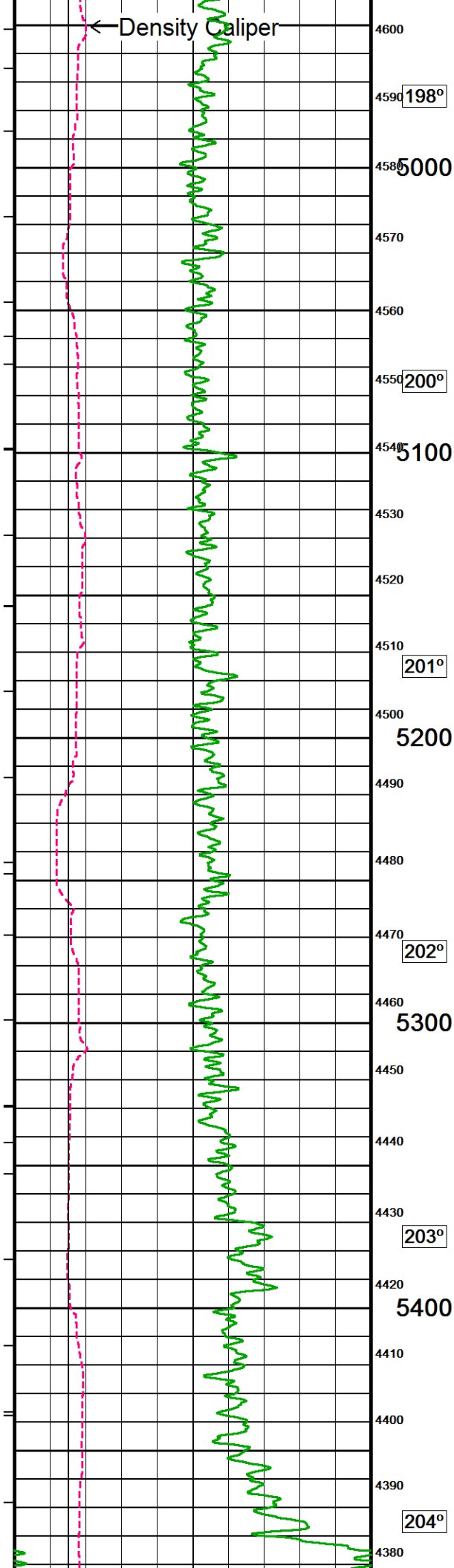


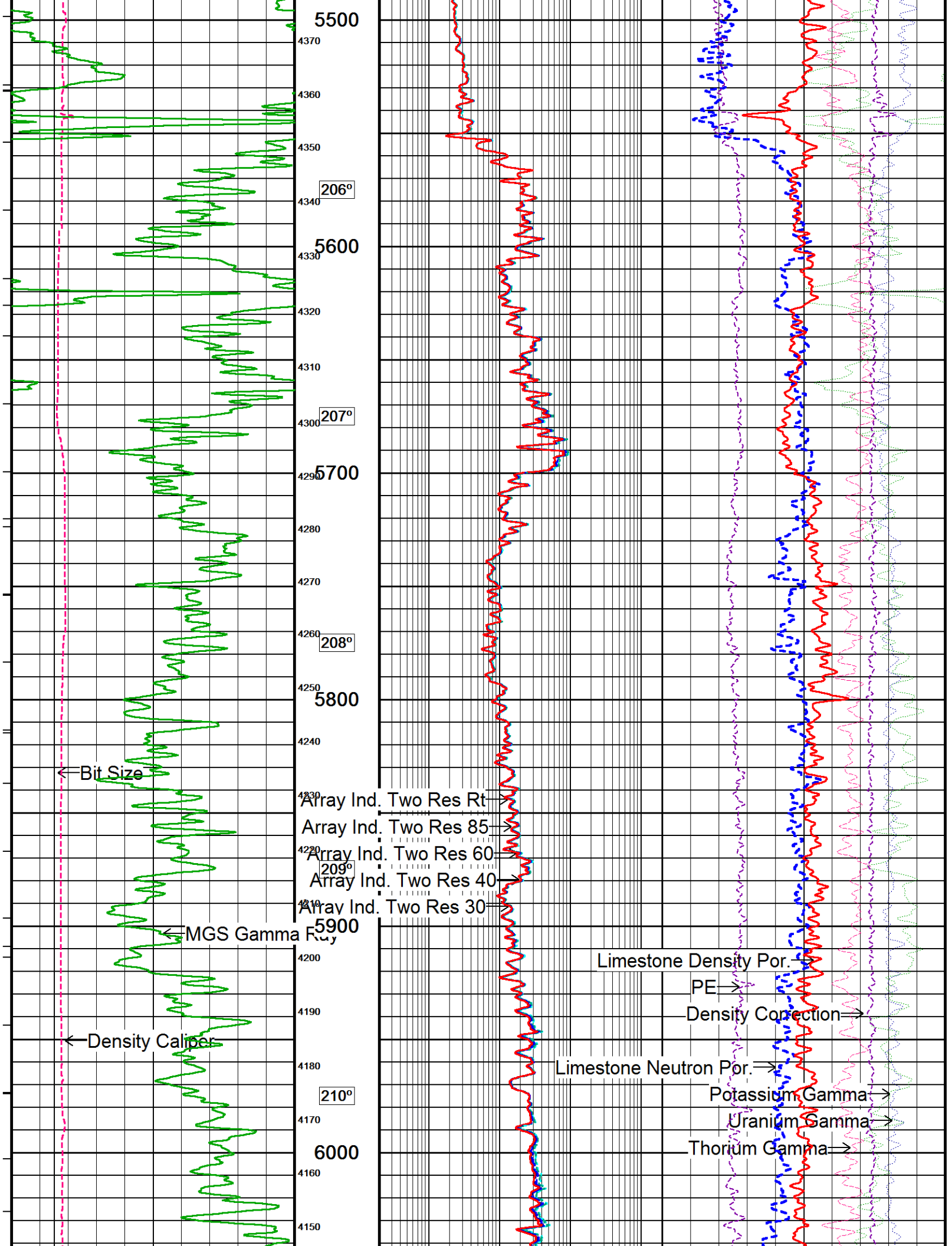


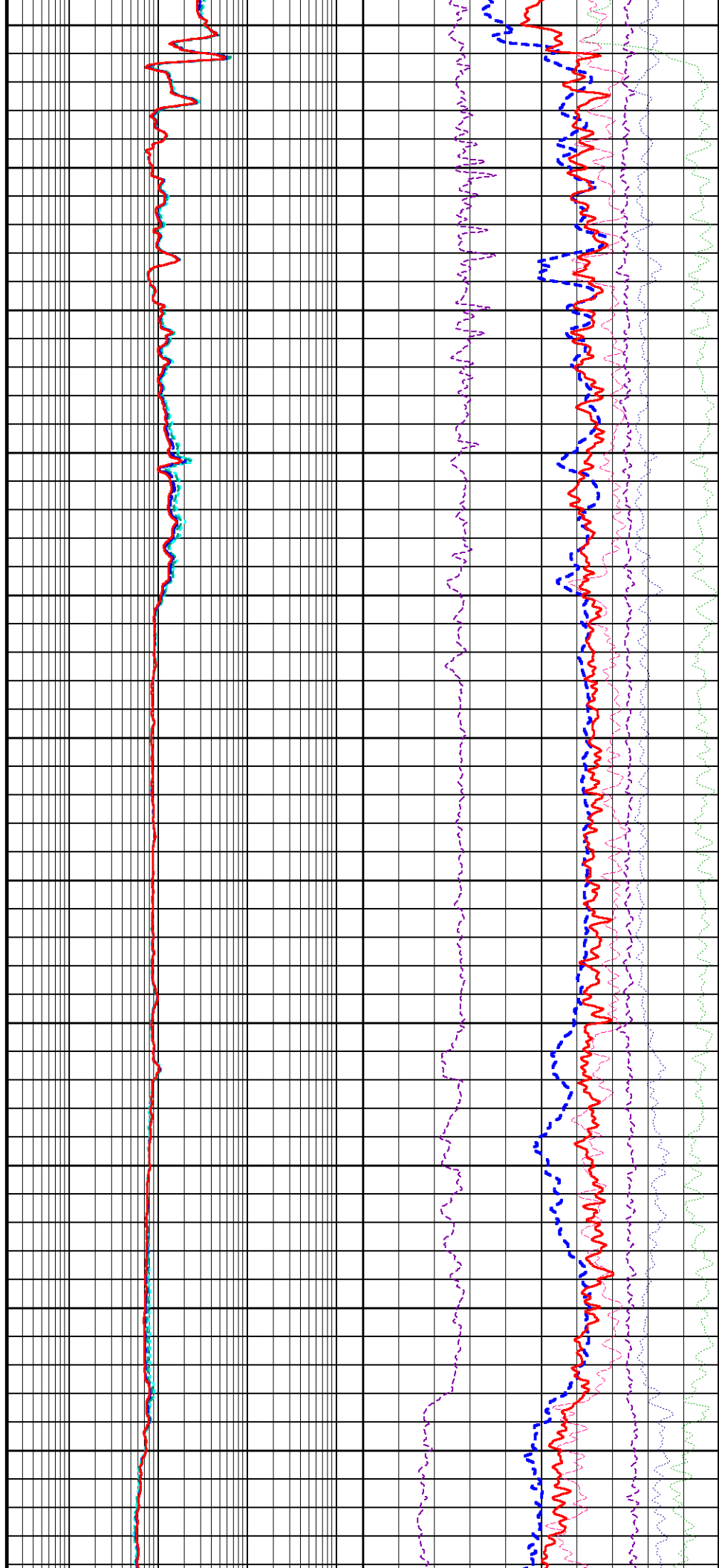
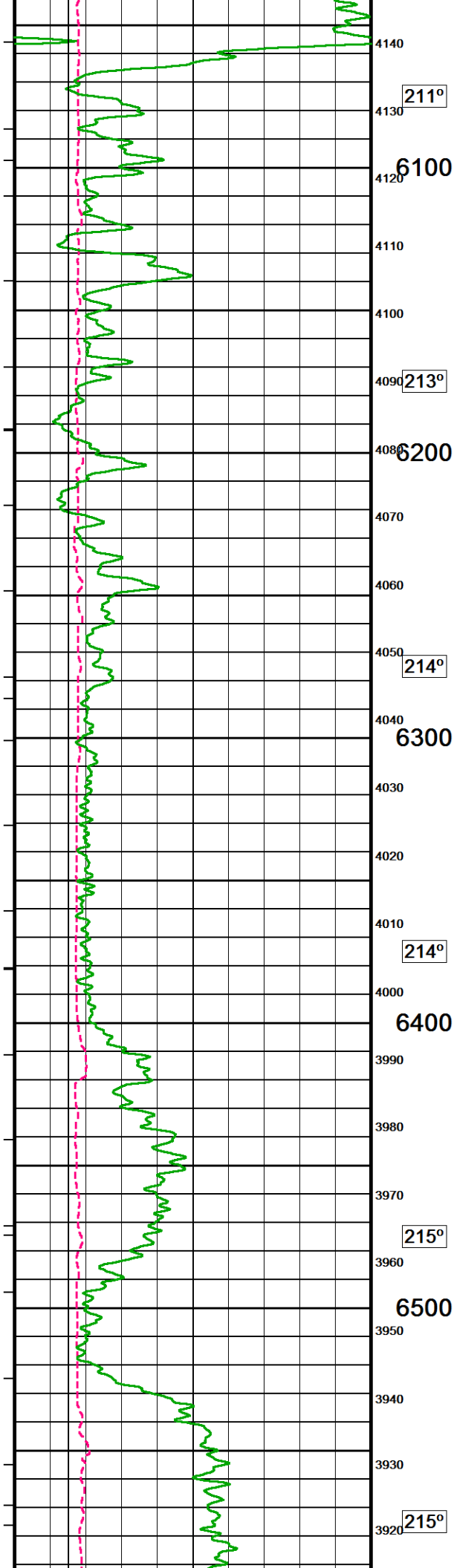


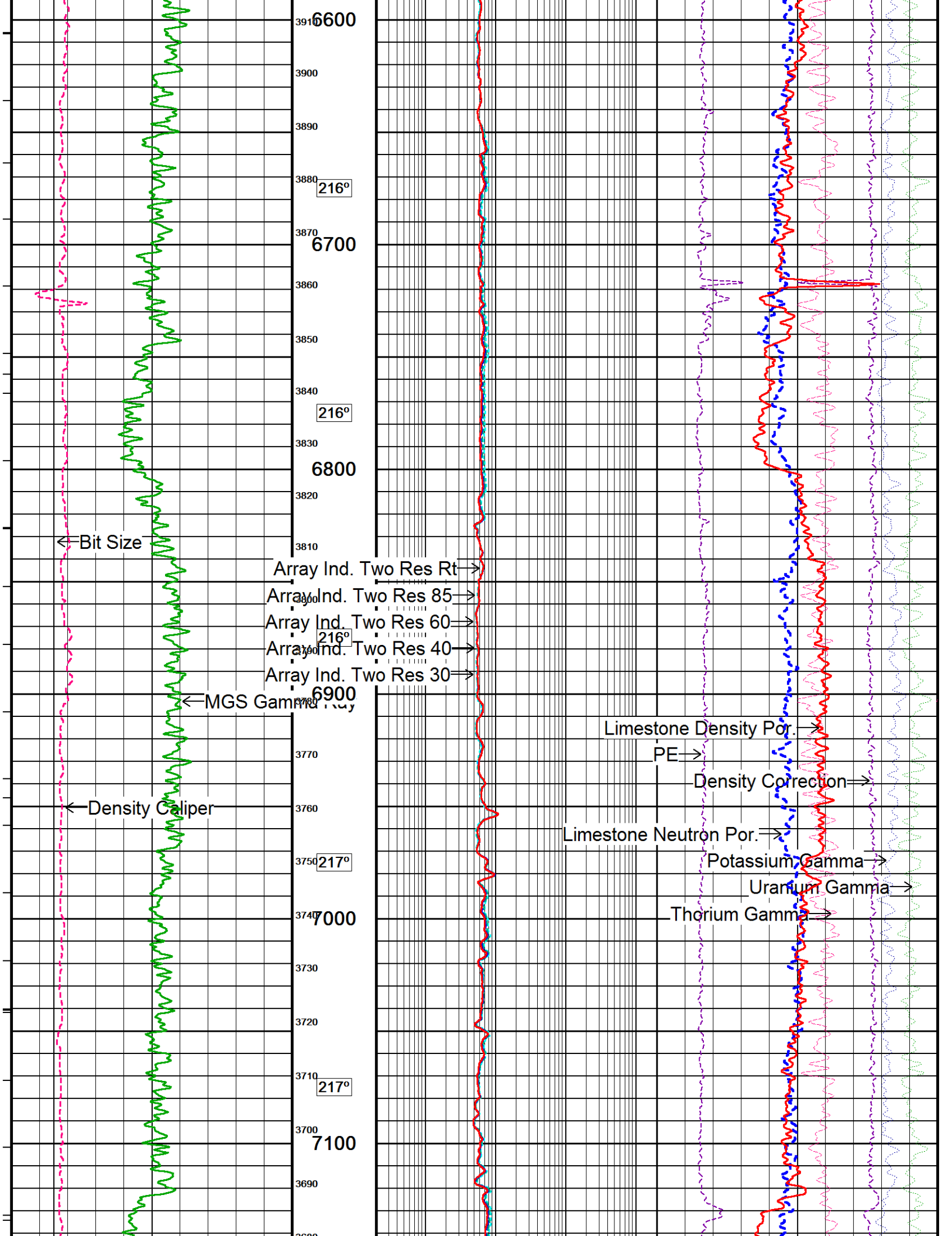


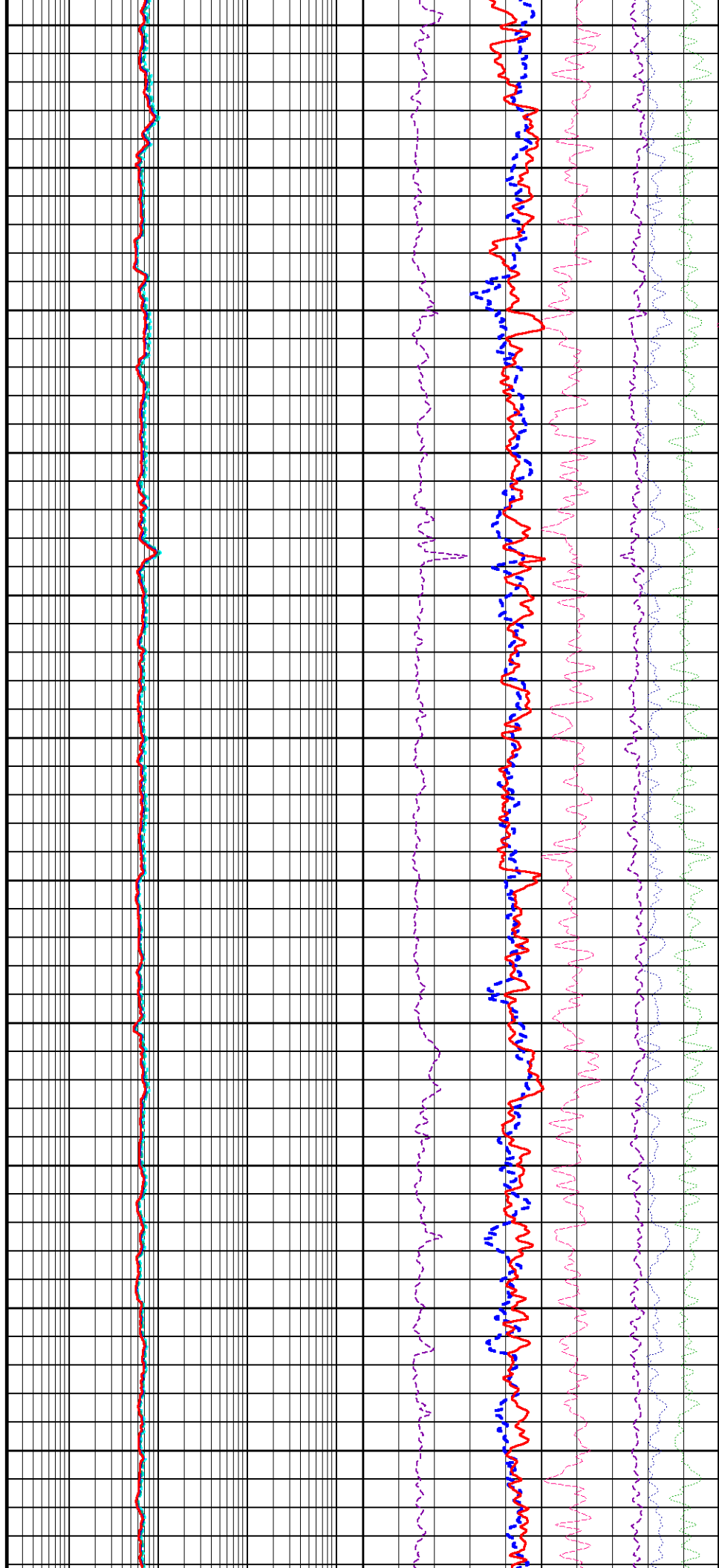
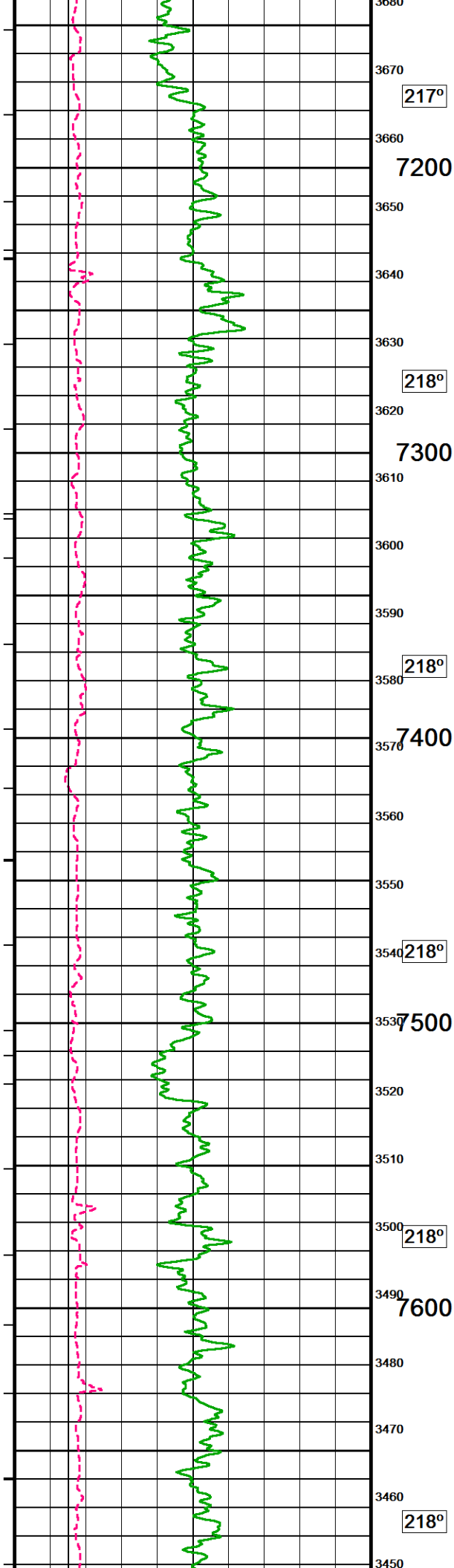


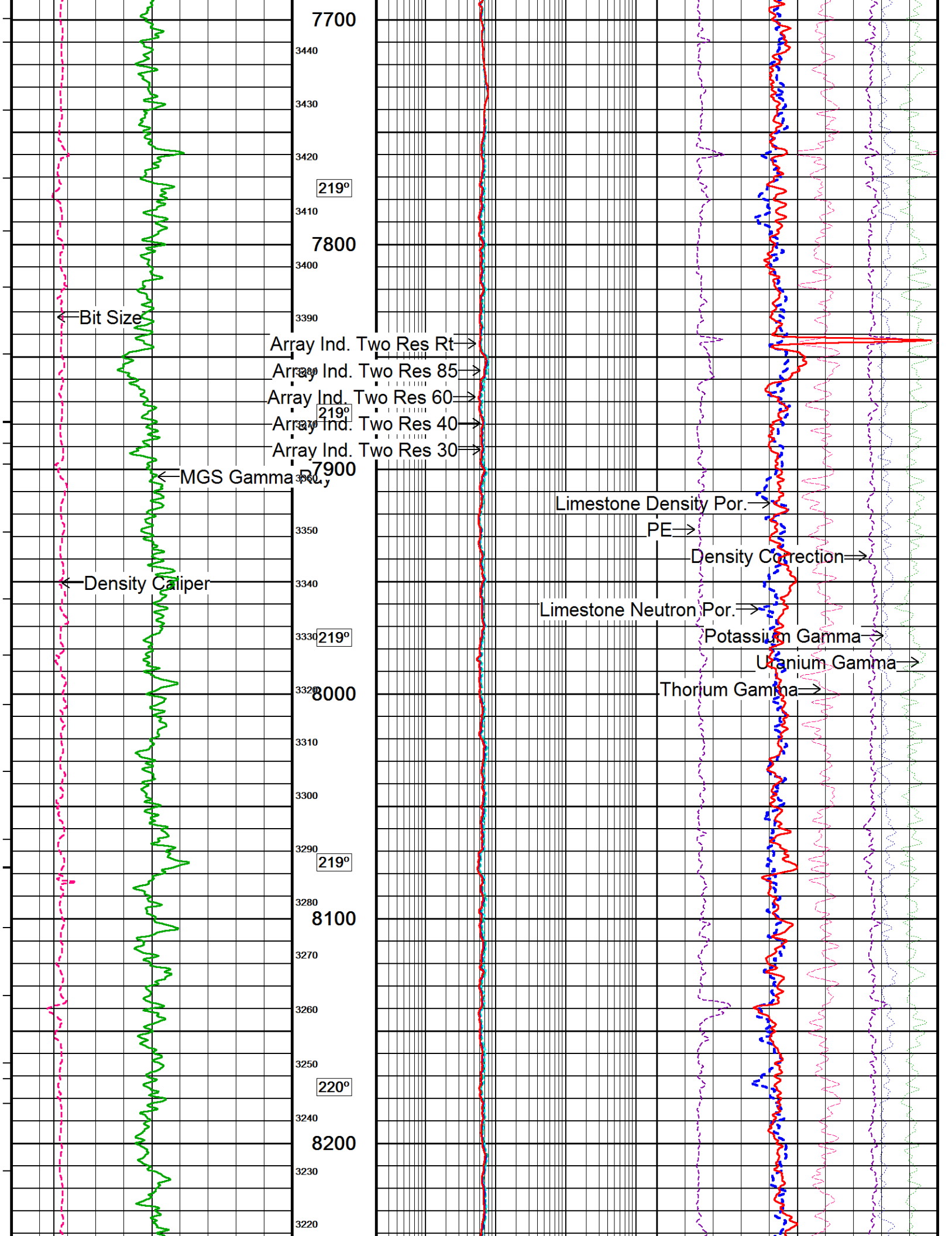


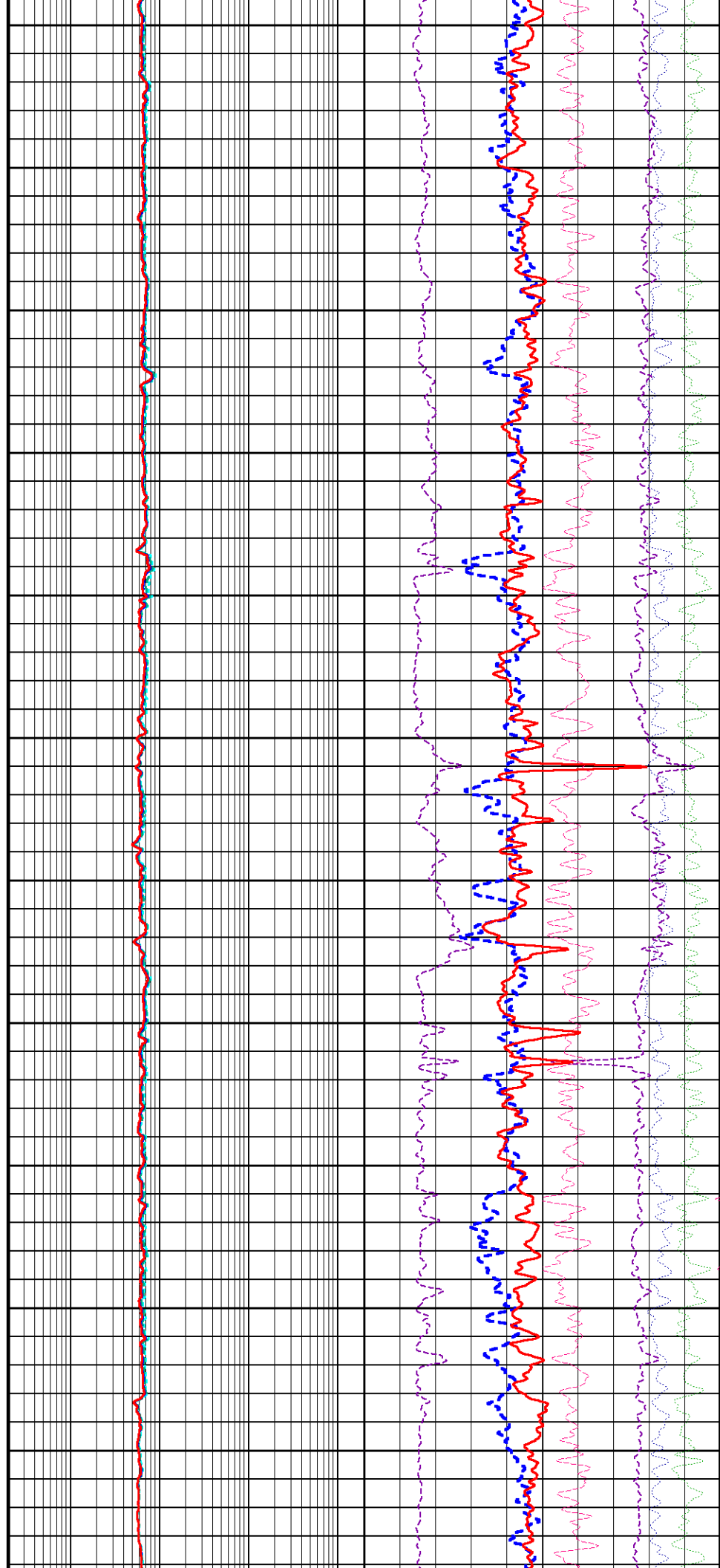
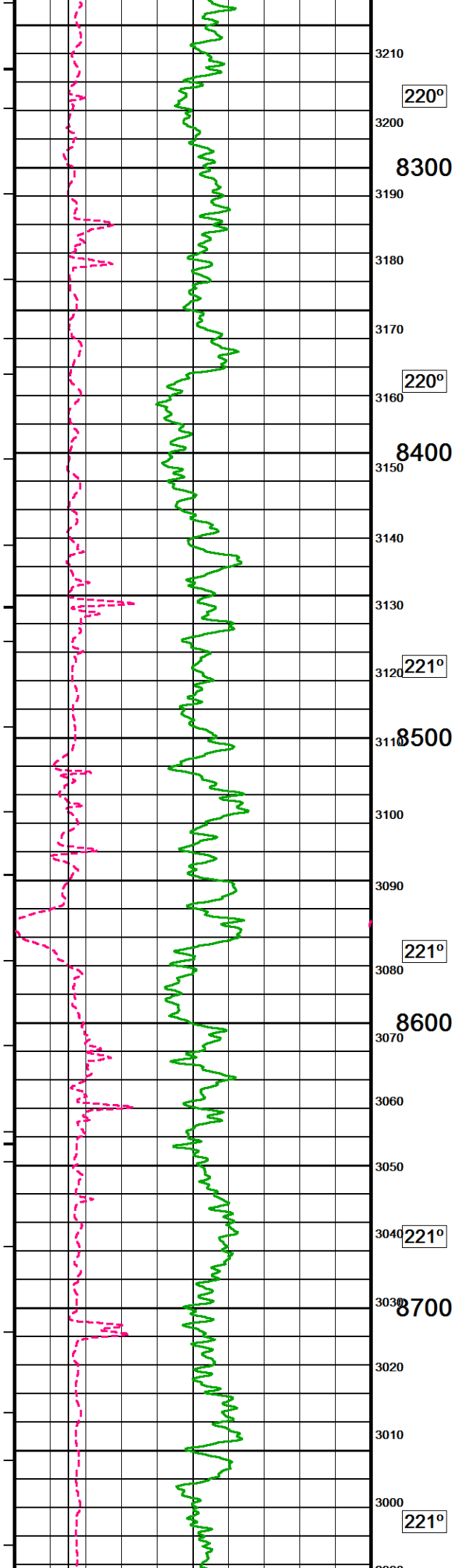


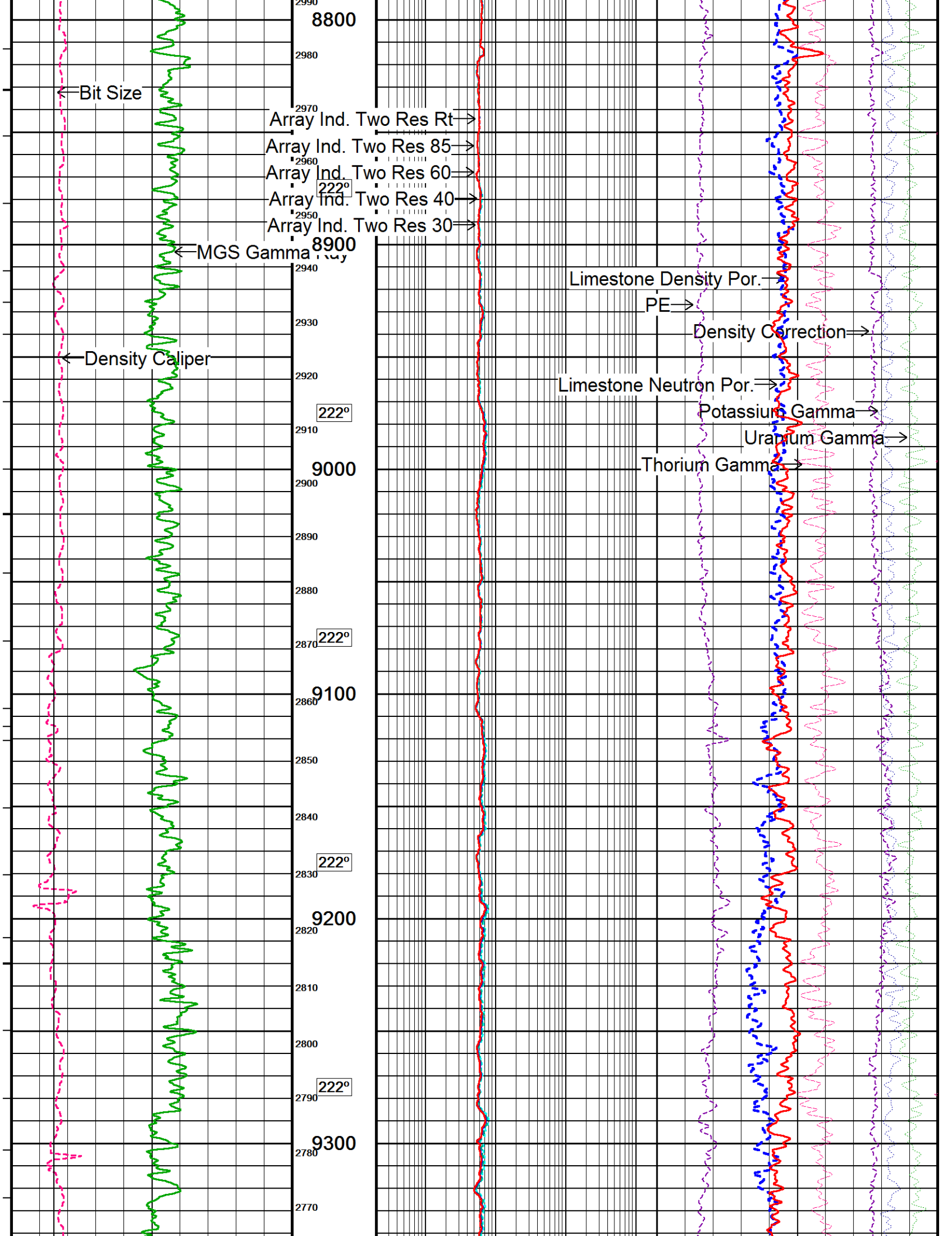


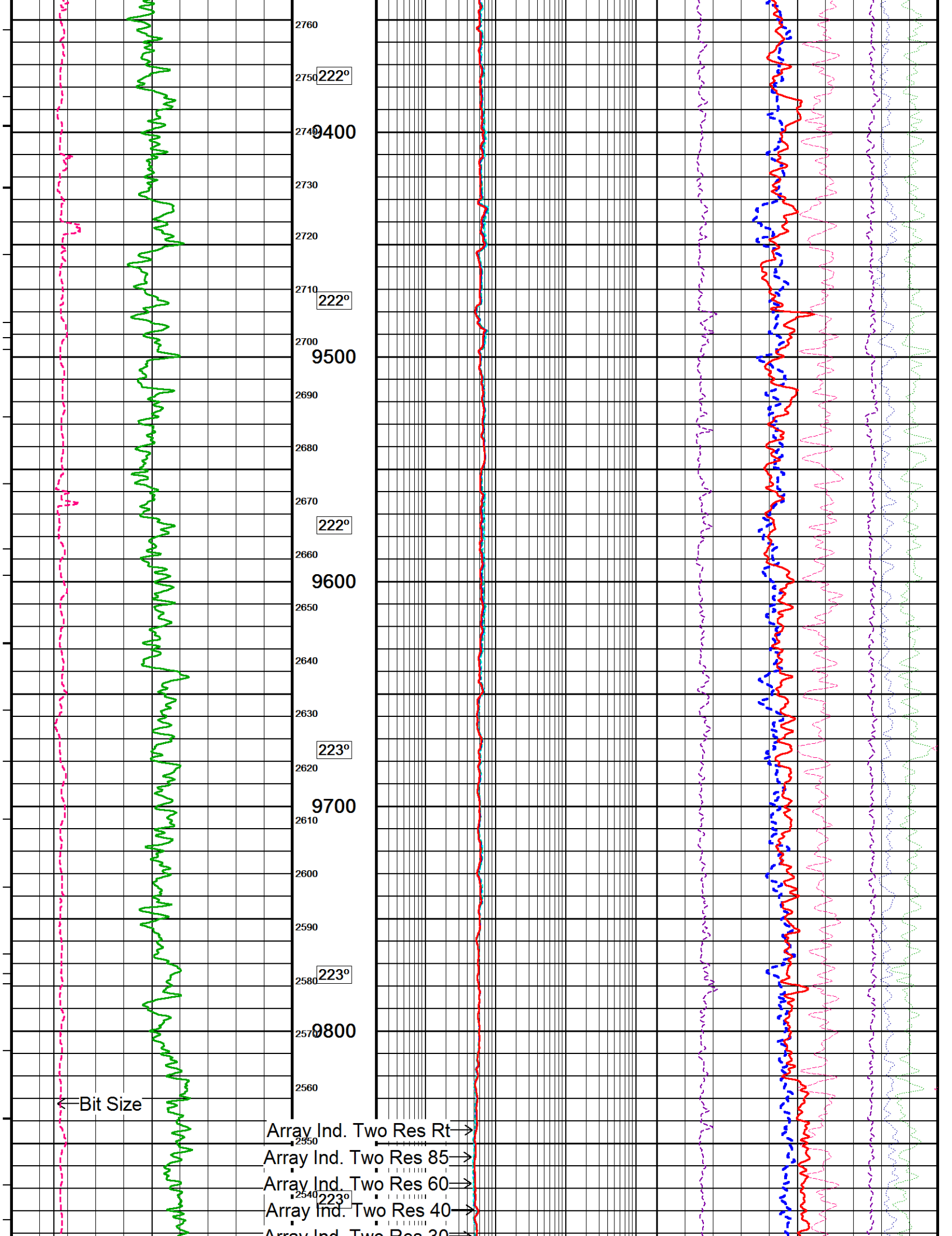


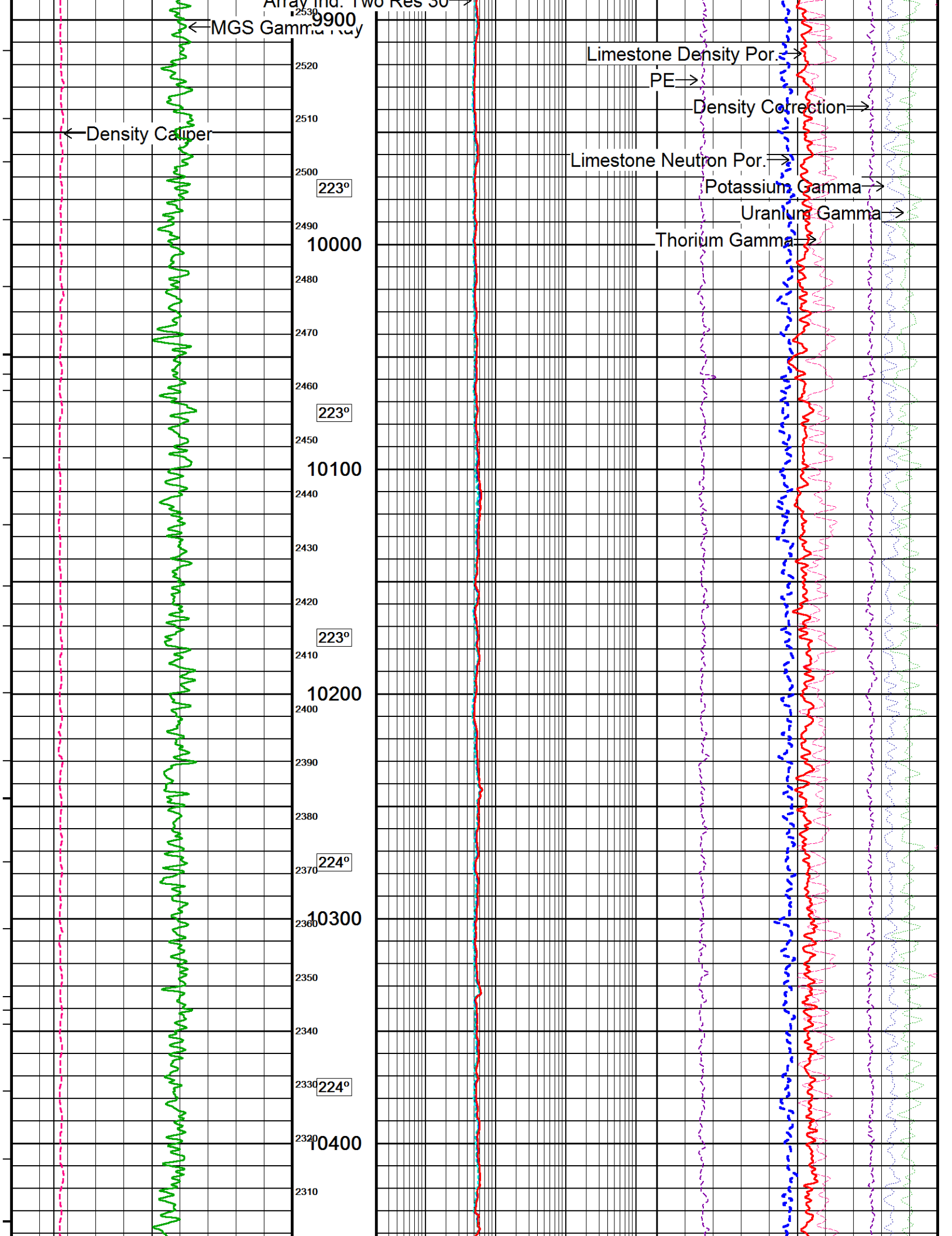


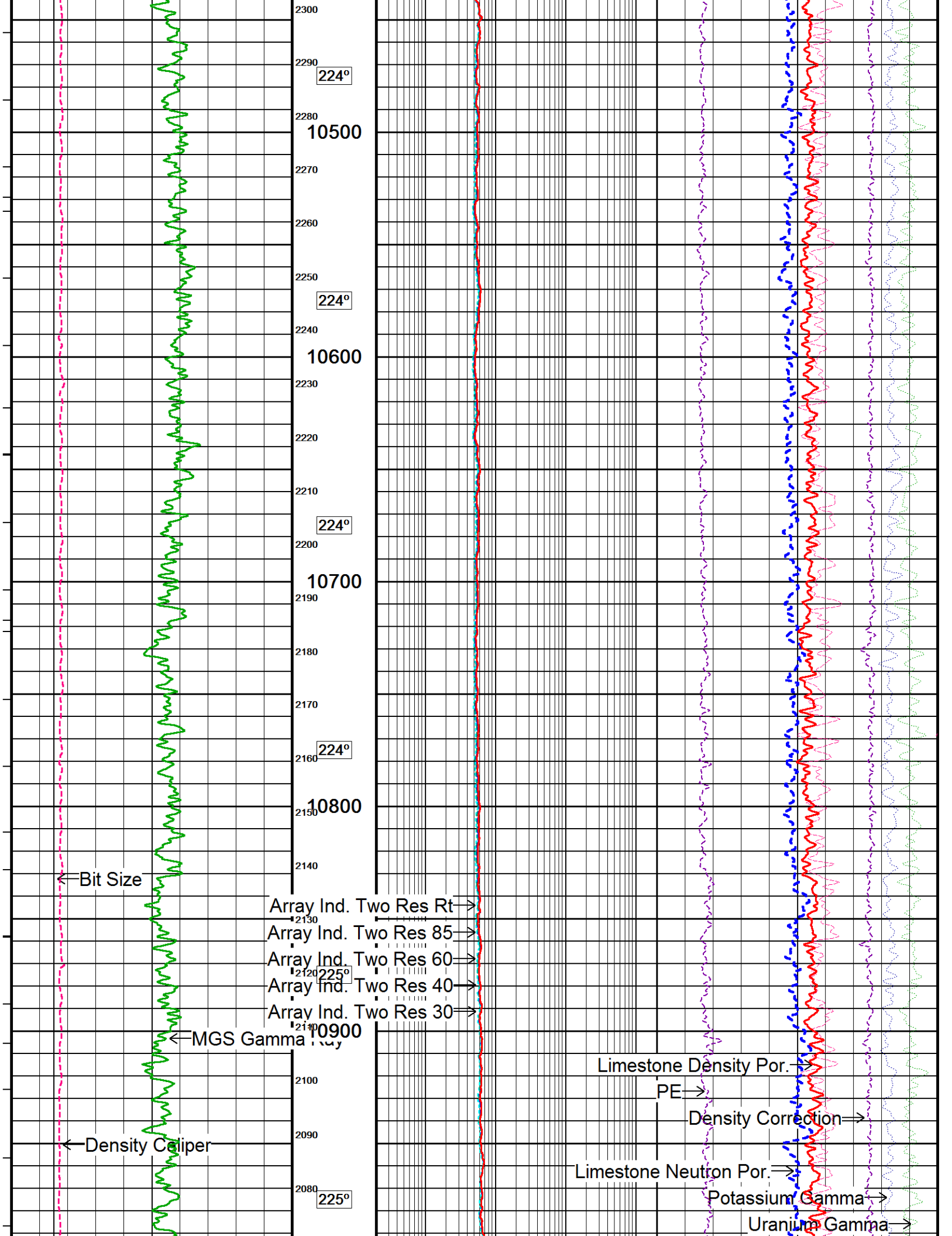


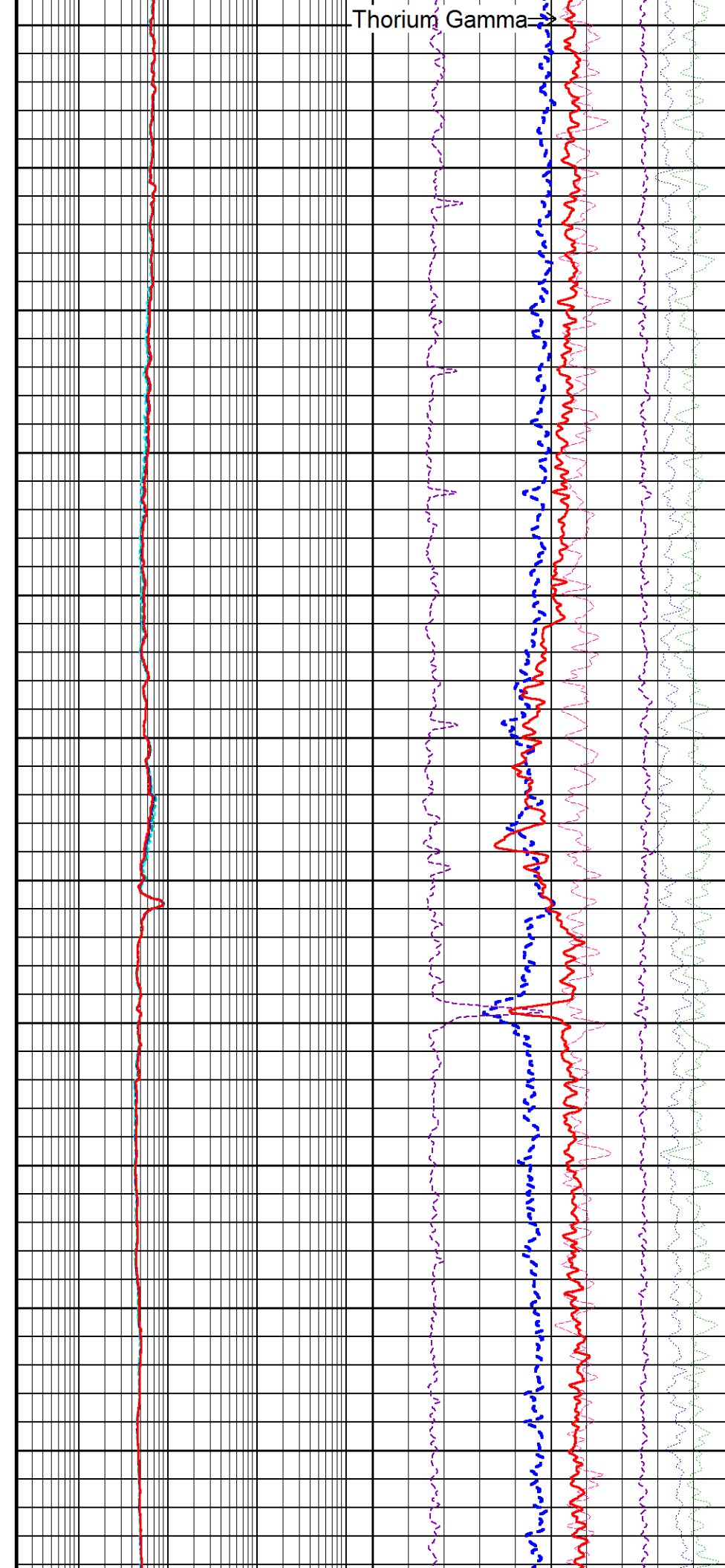
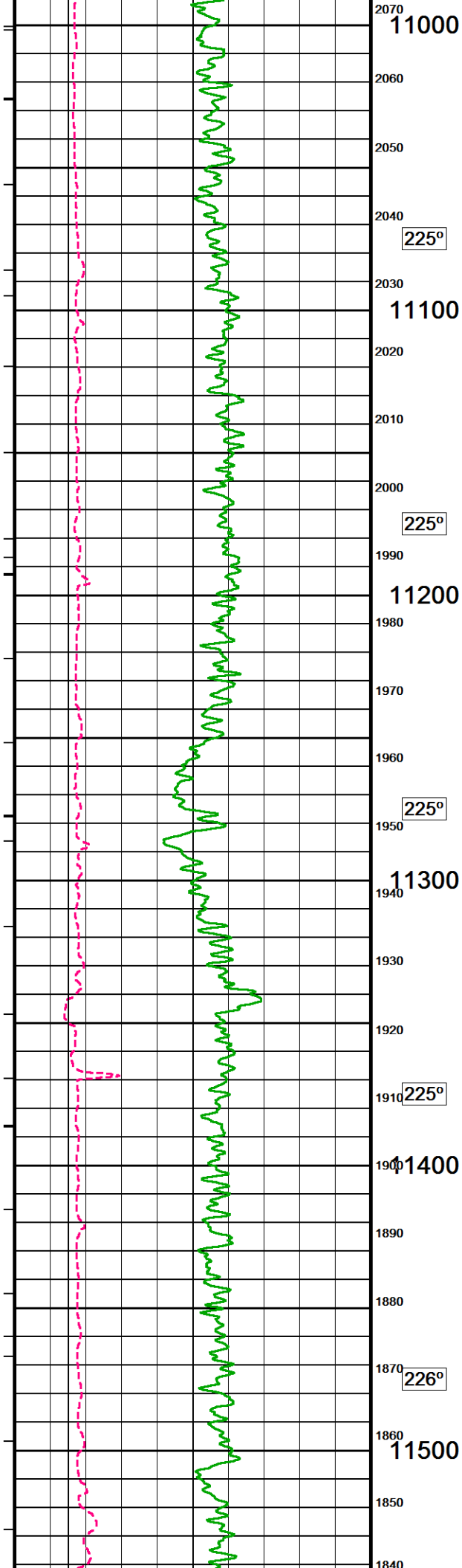


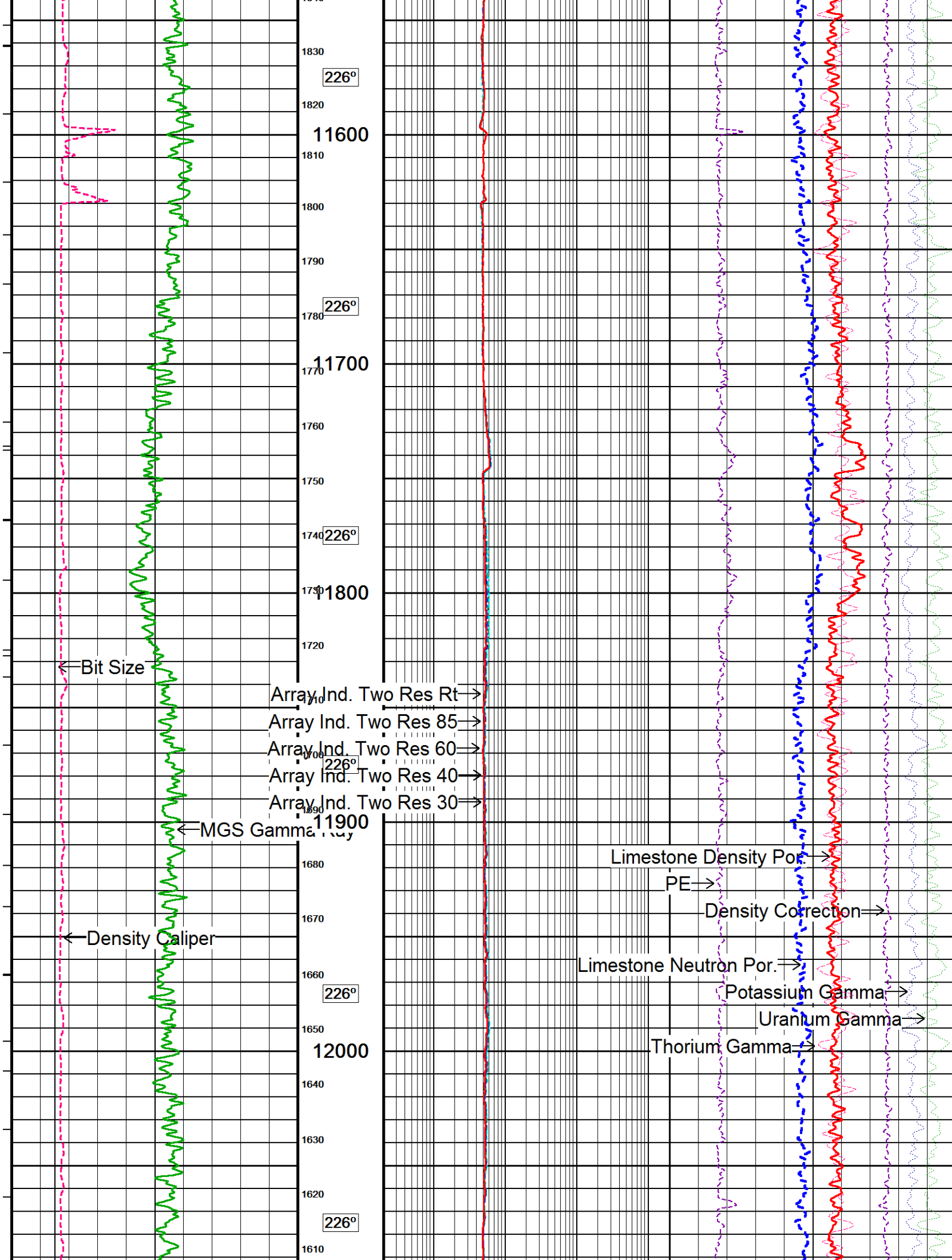


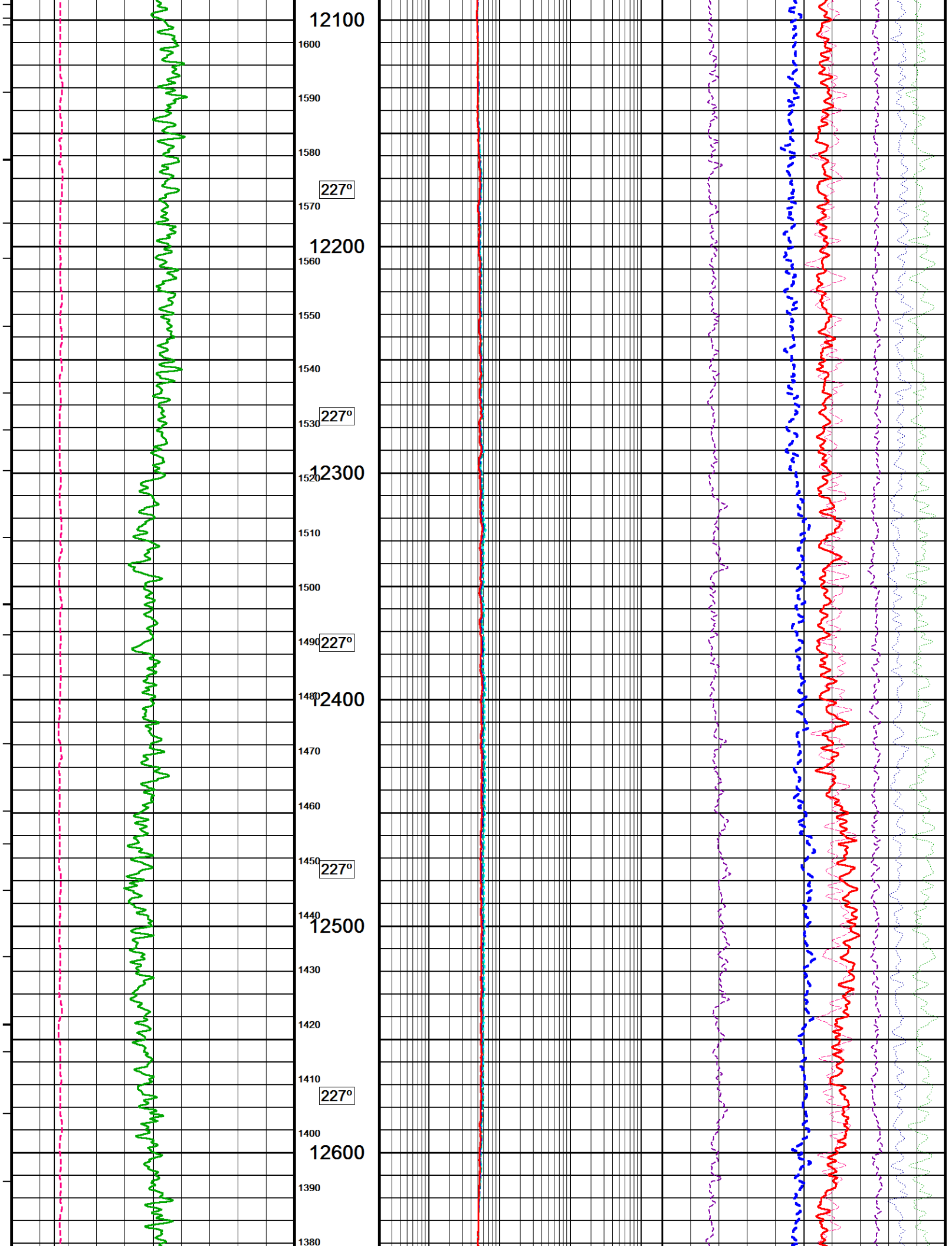


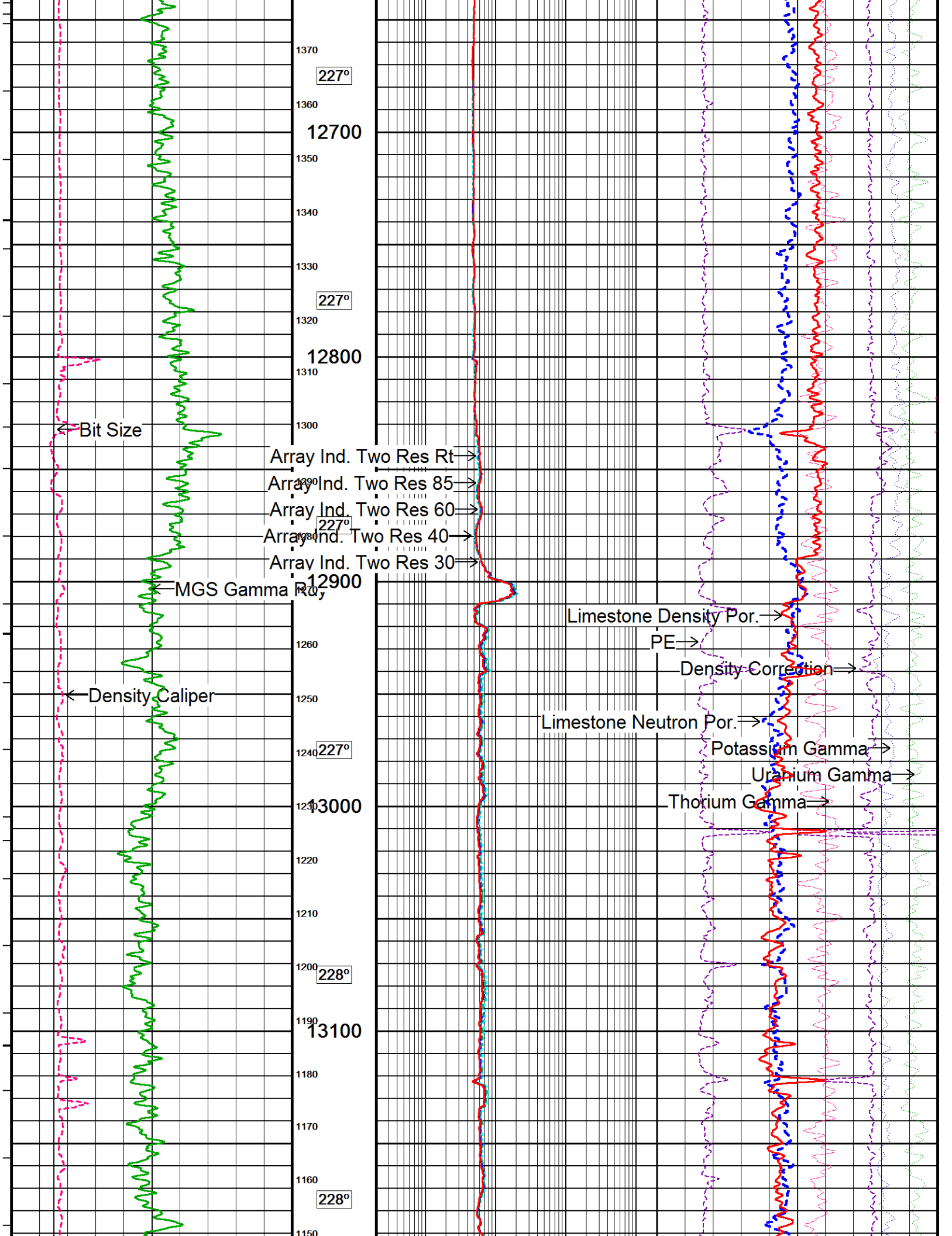


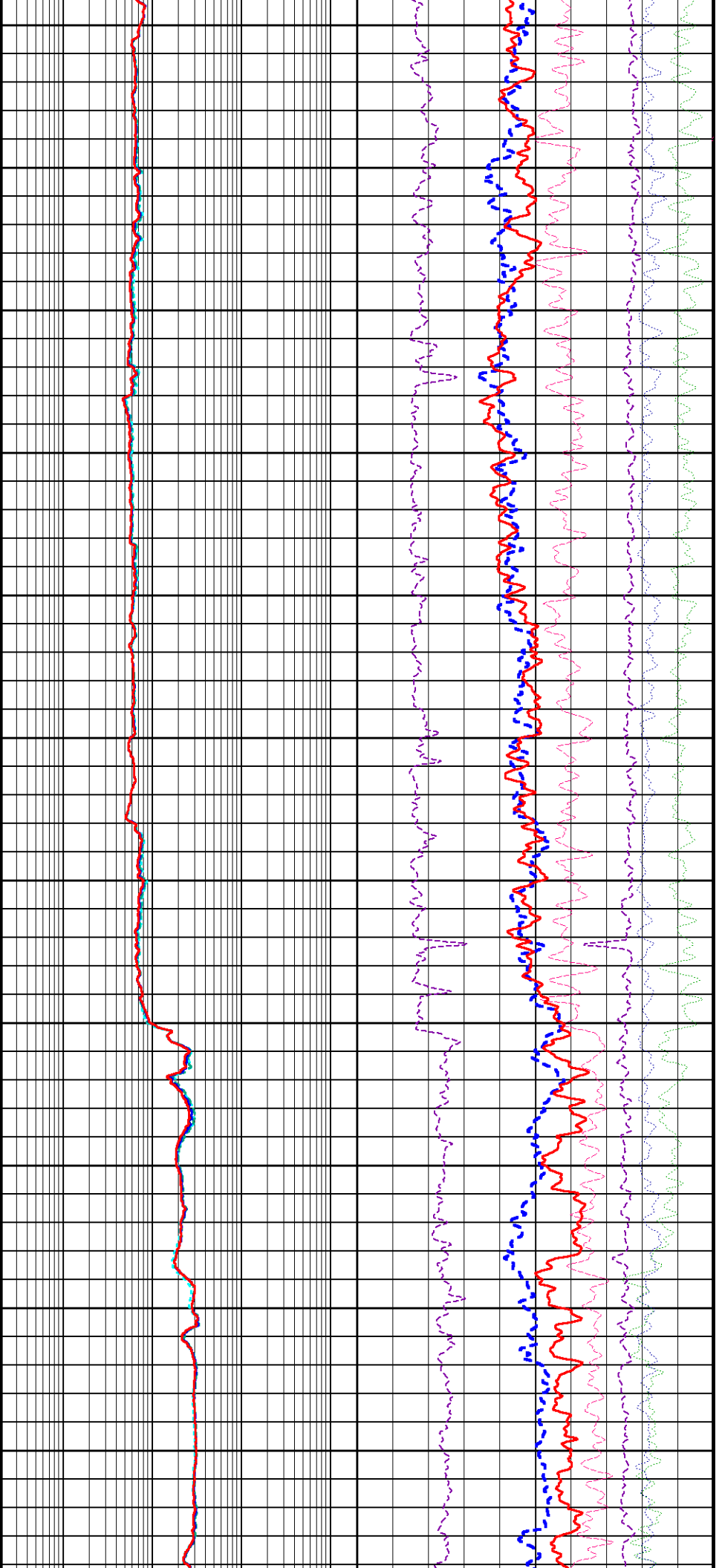
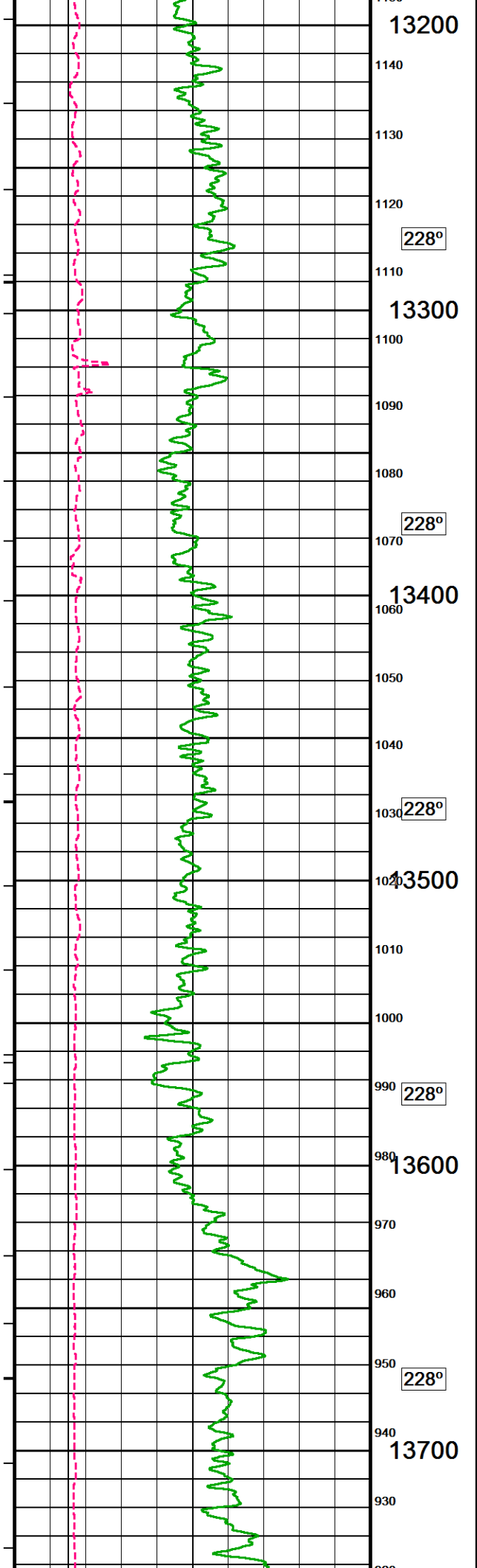


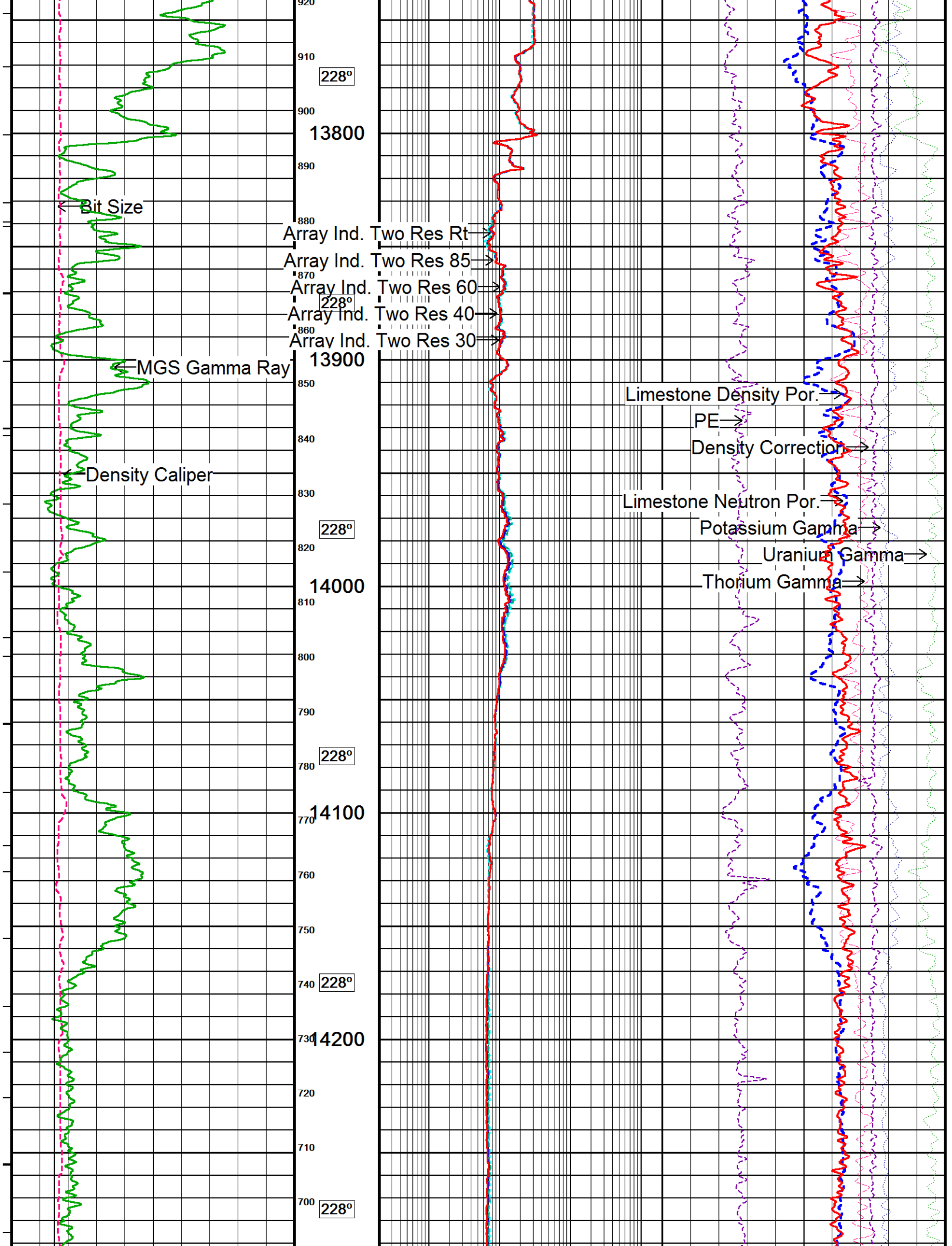


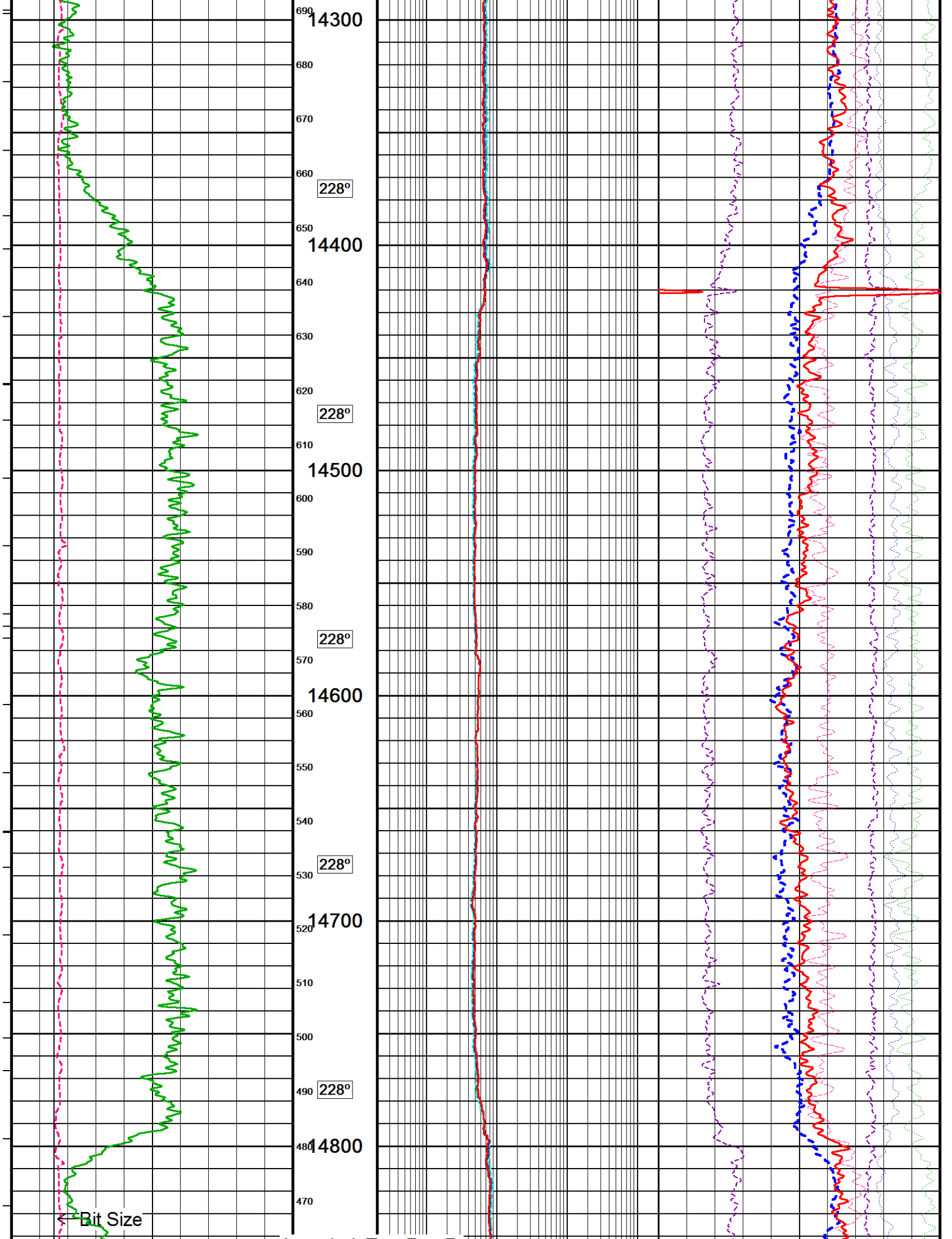


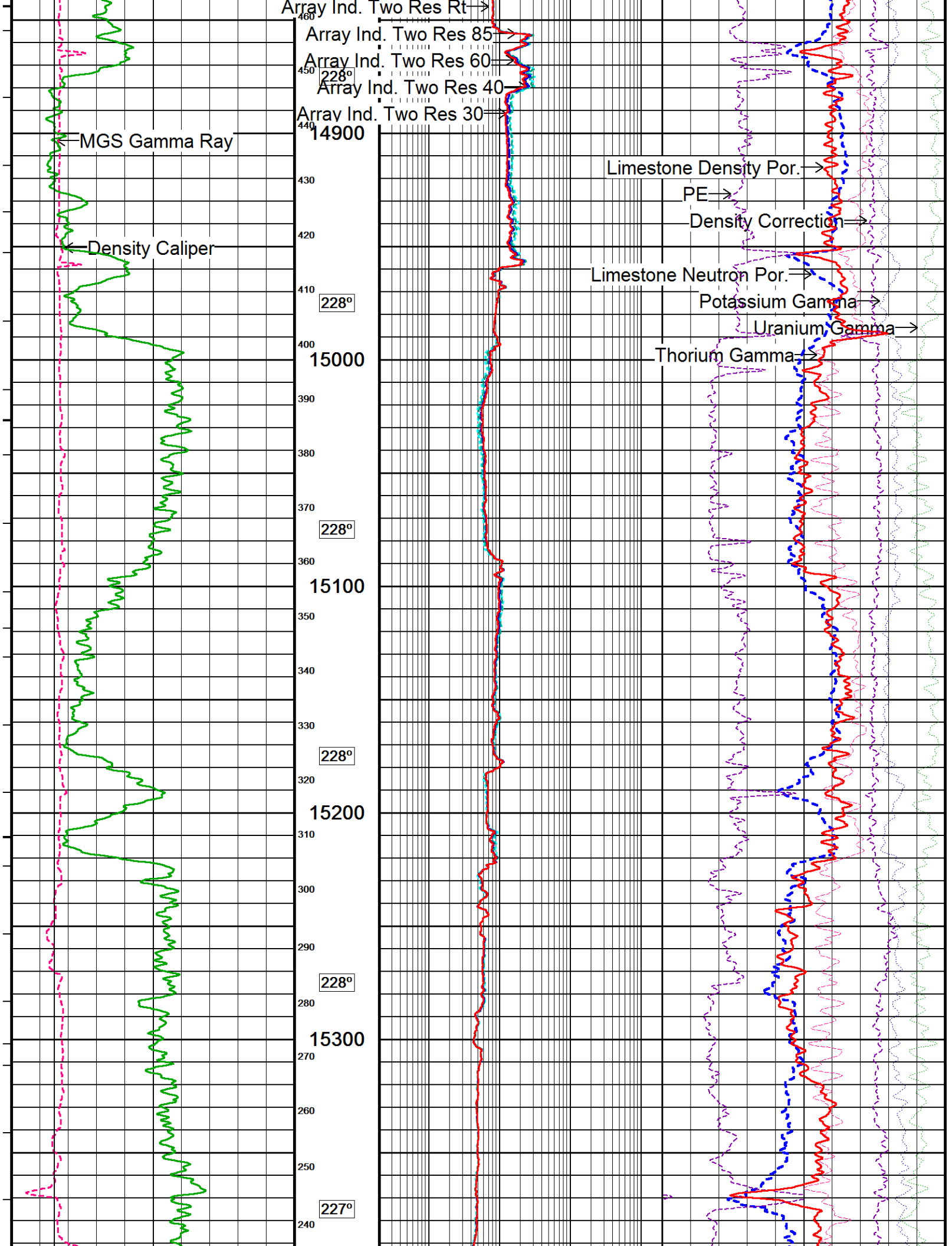


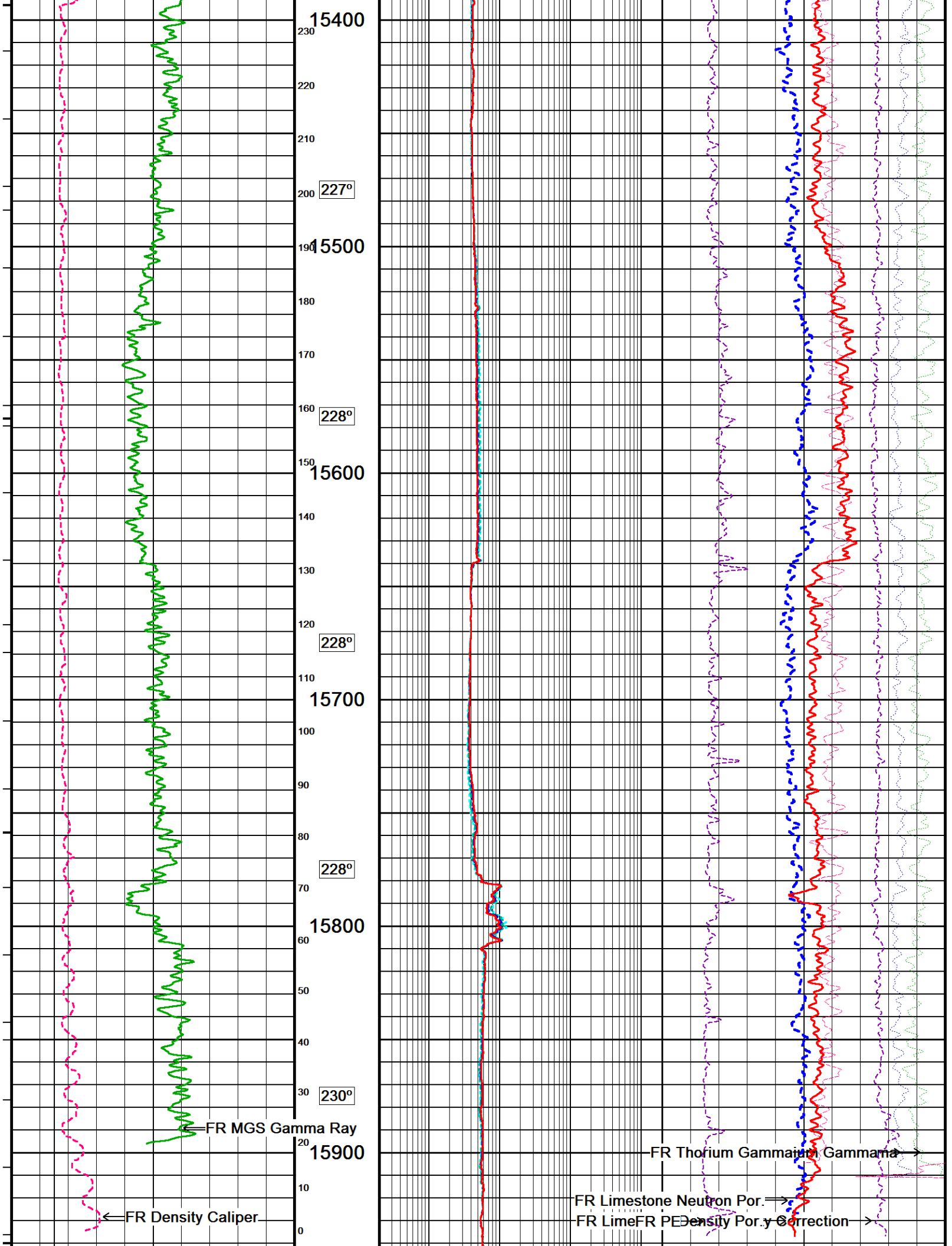


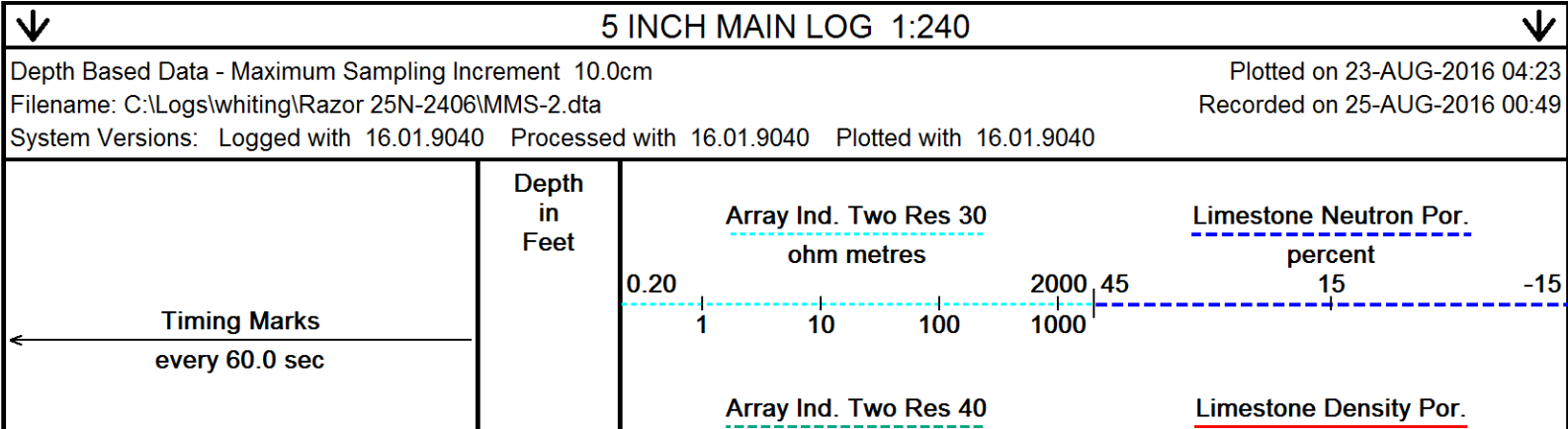
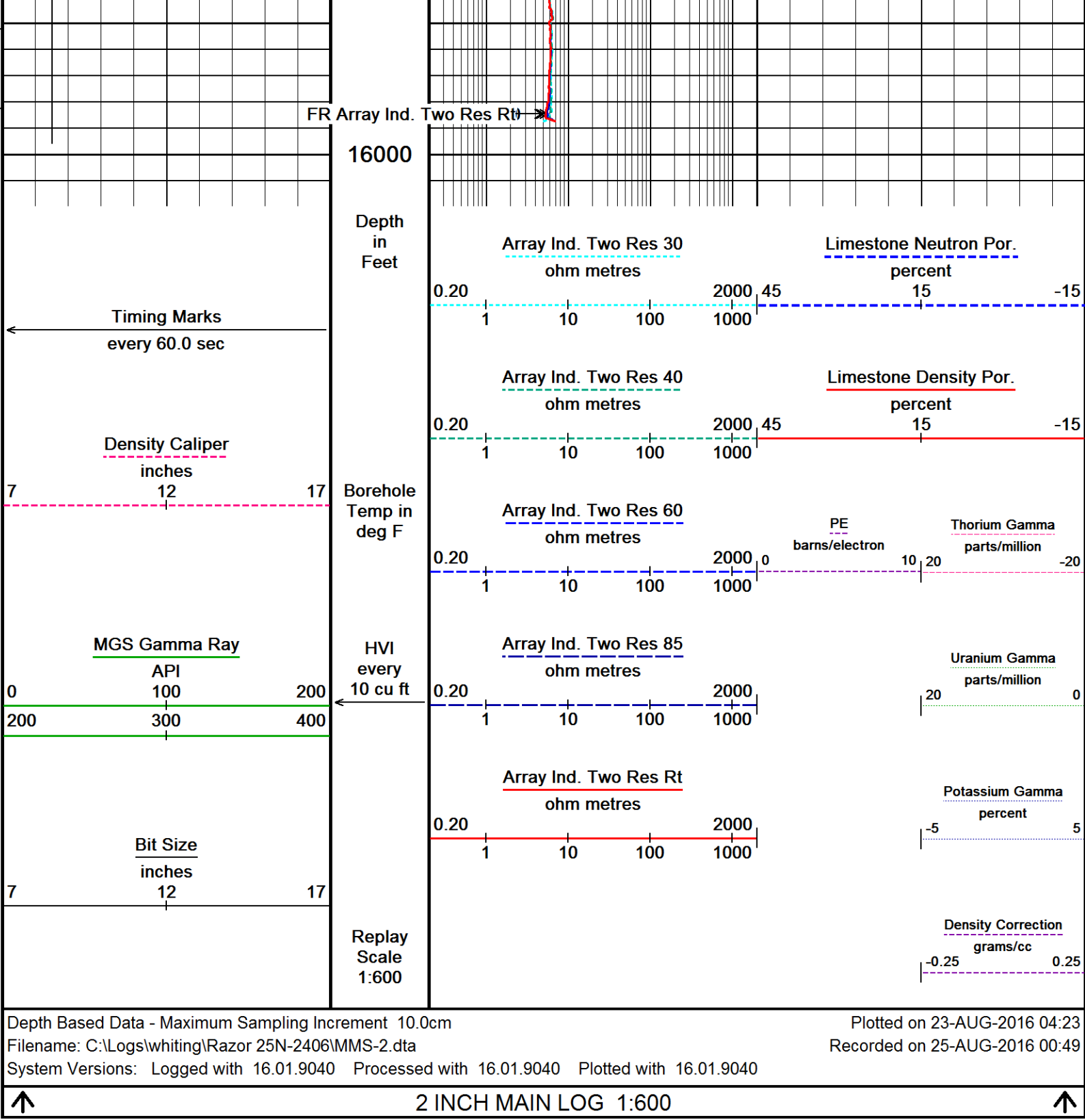


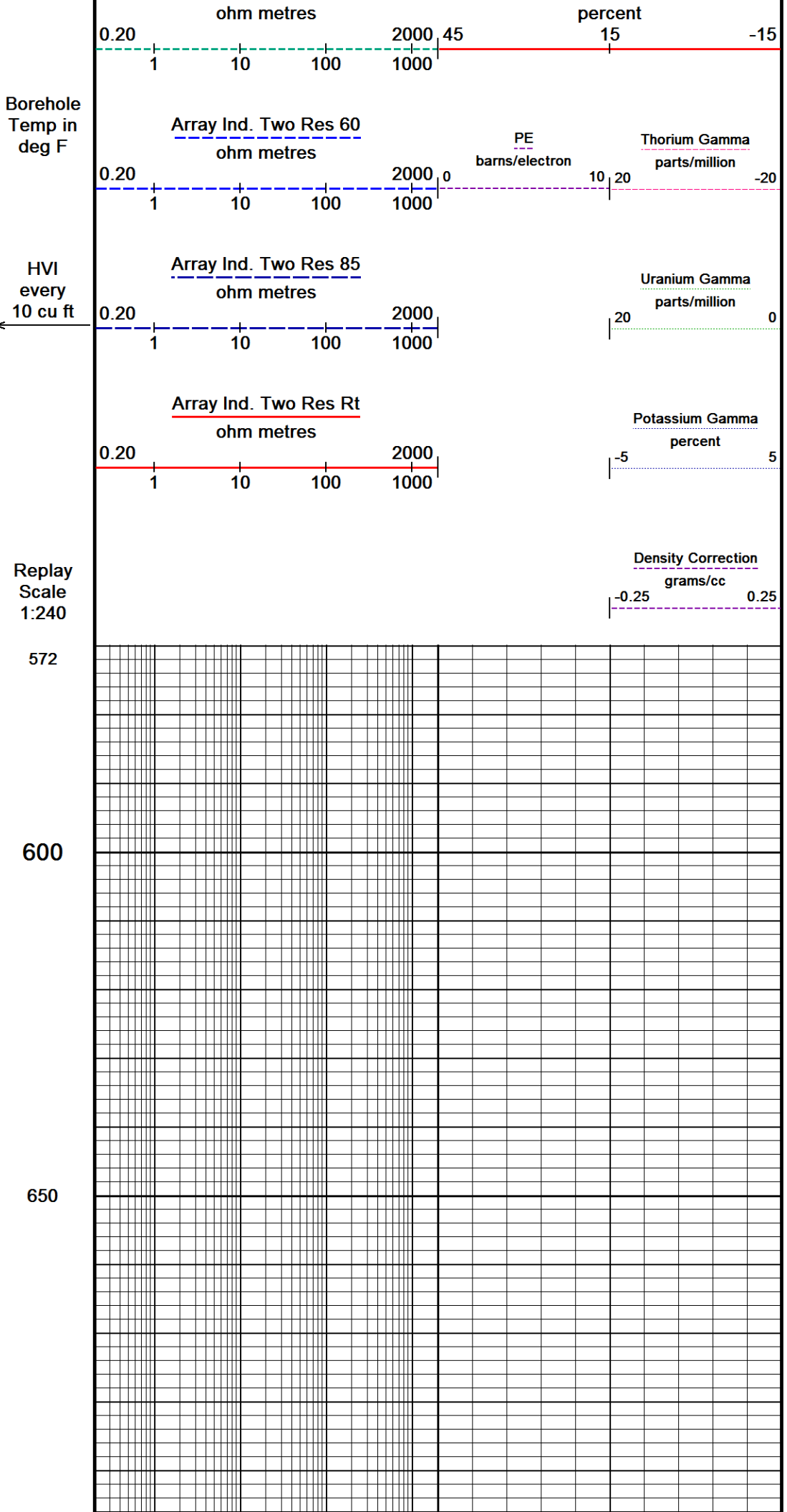
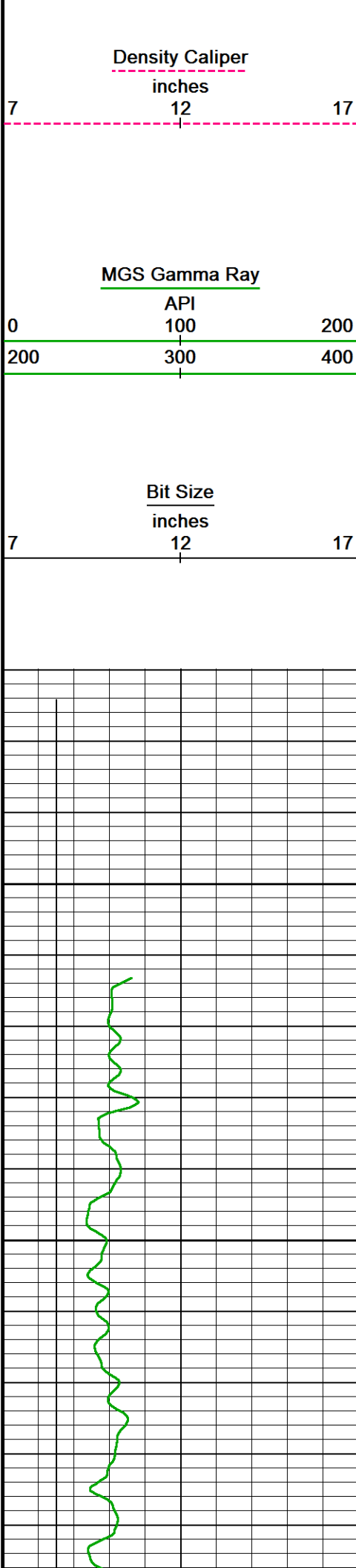


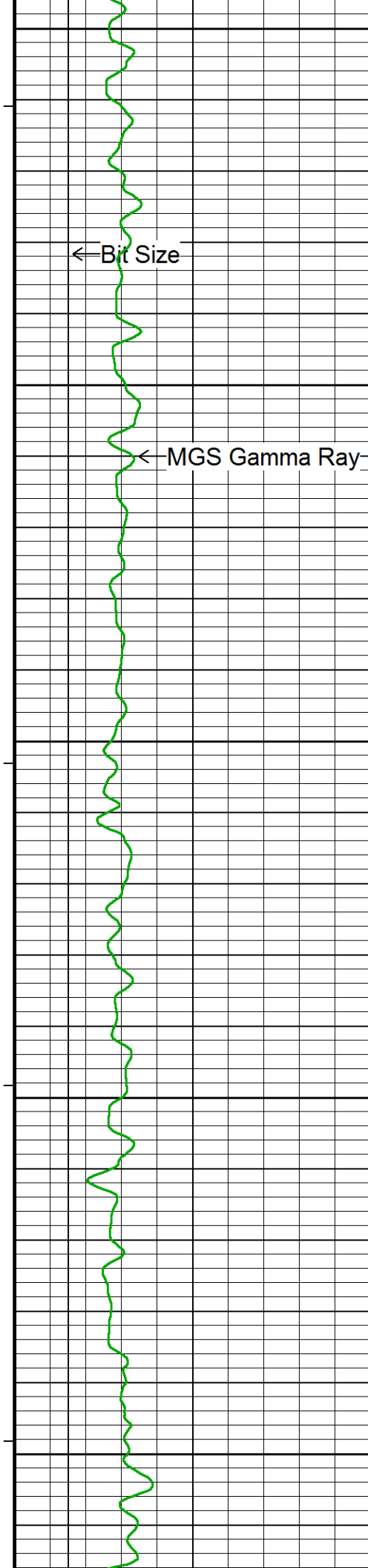












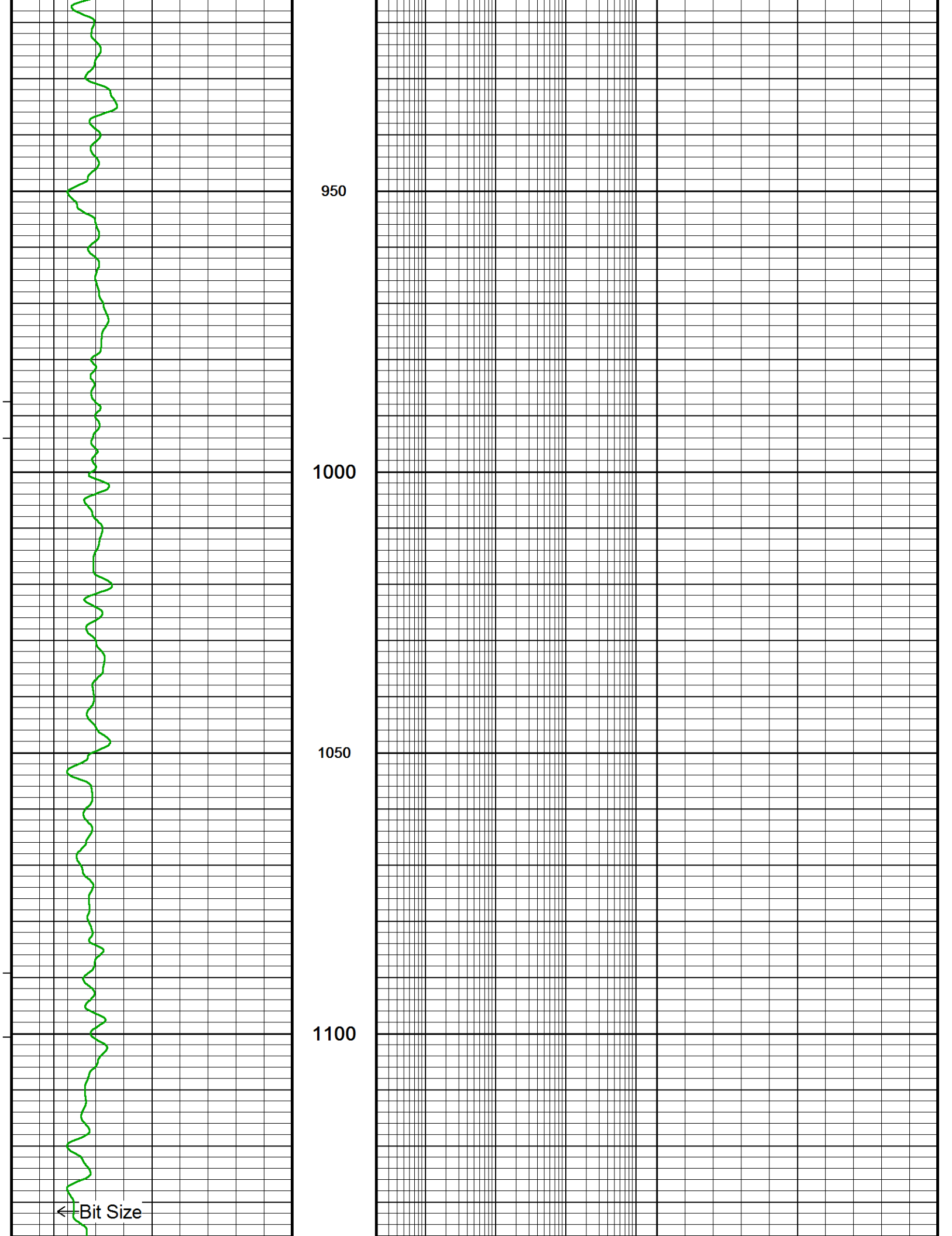
700

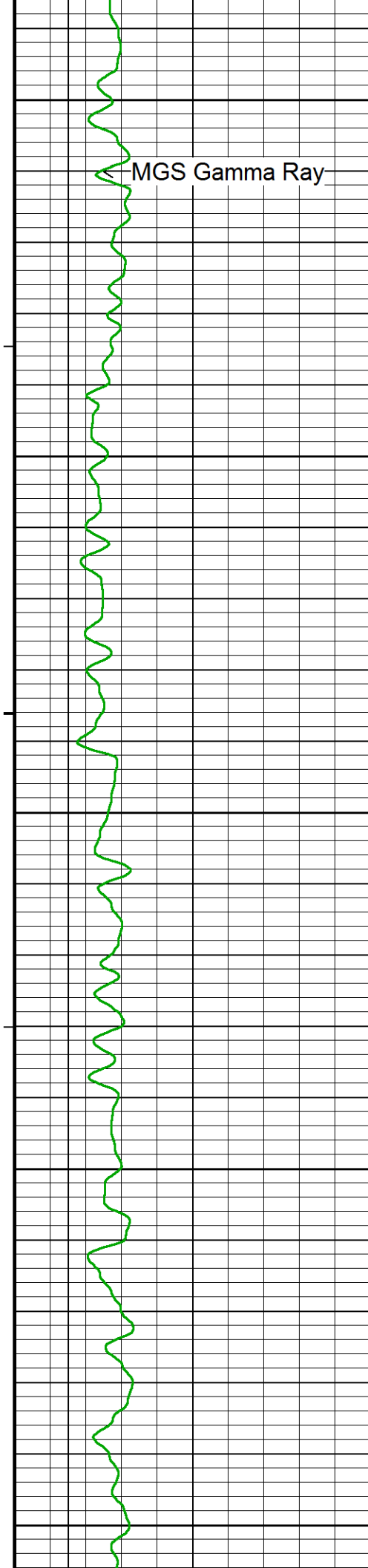
750

800

850

900





1150

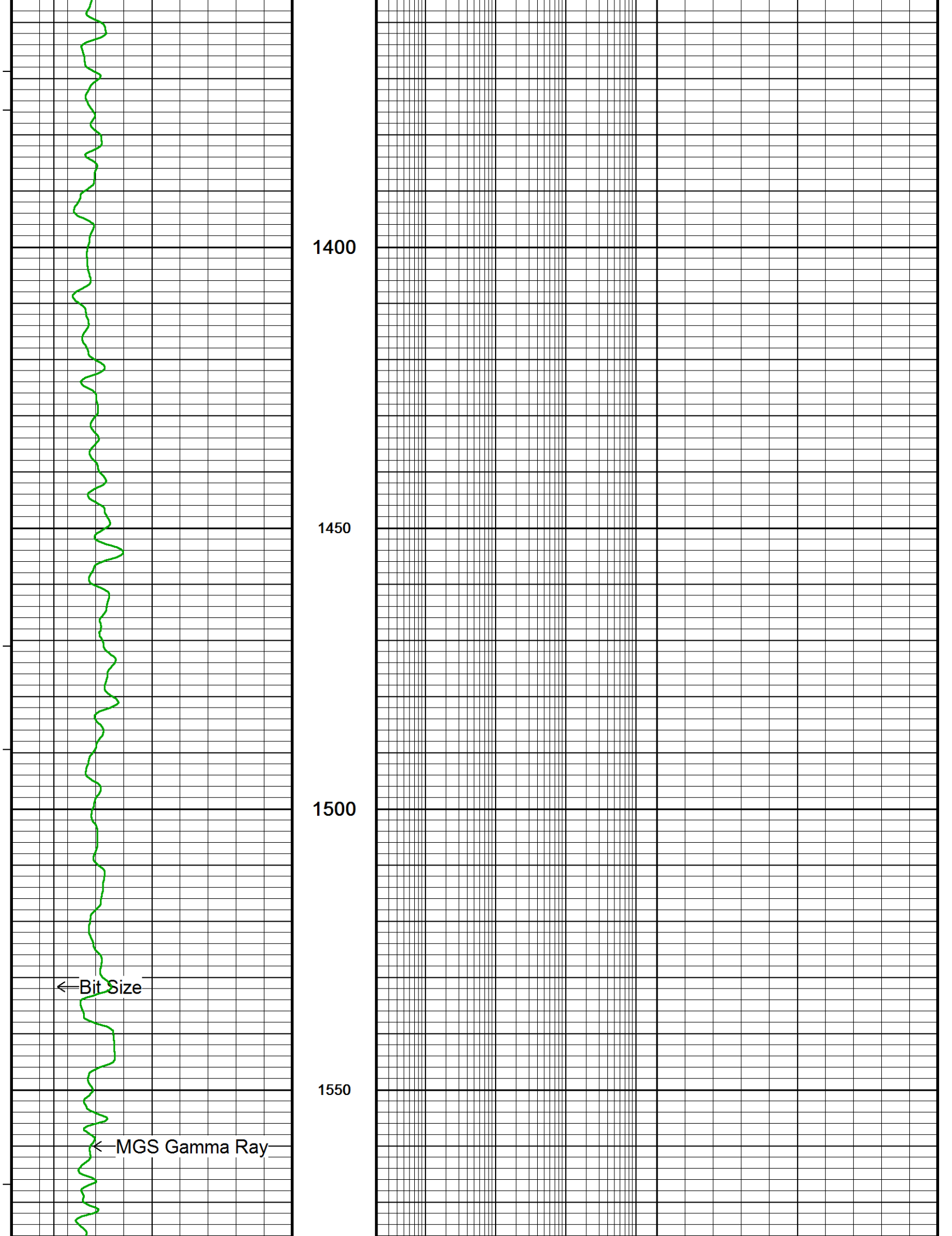
← MGS Gamma Ray

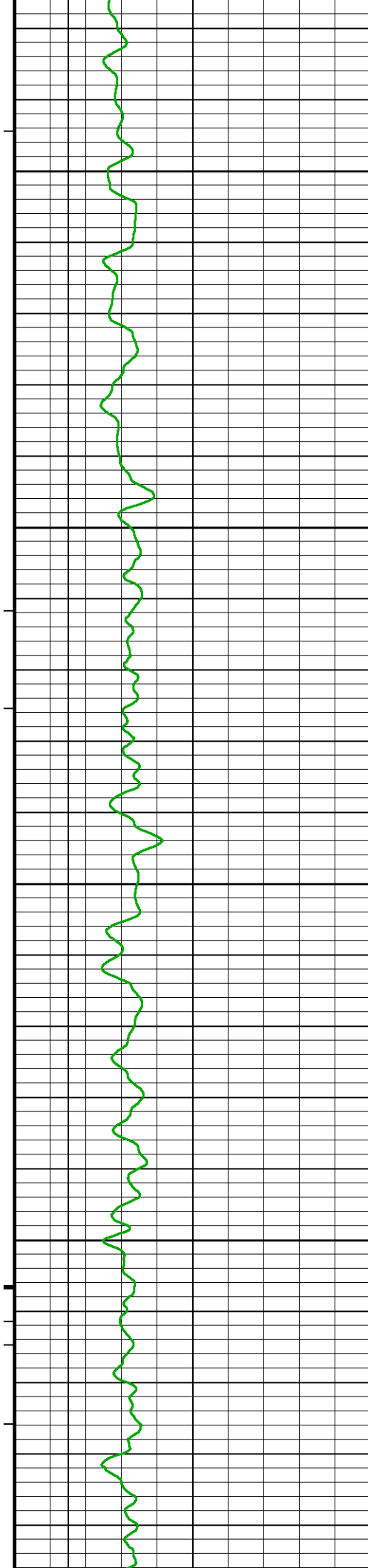
1200

1250

1300

1350



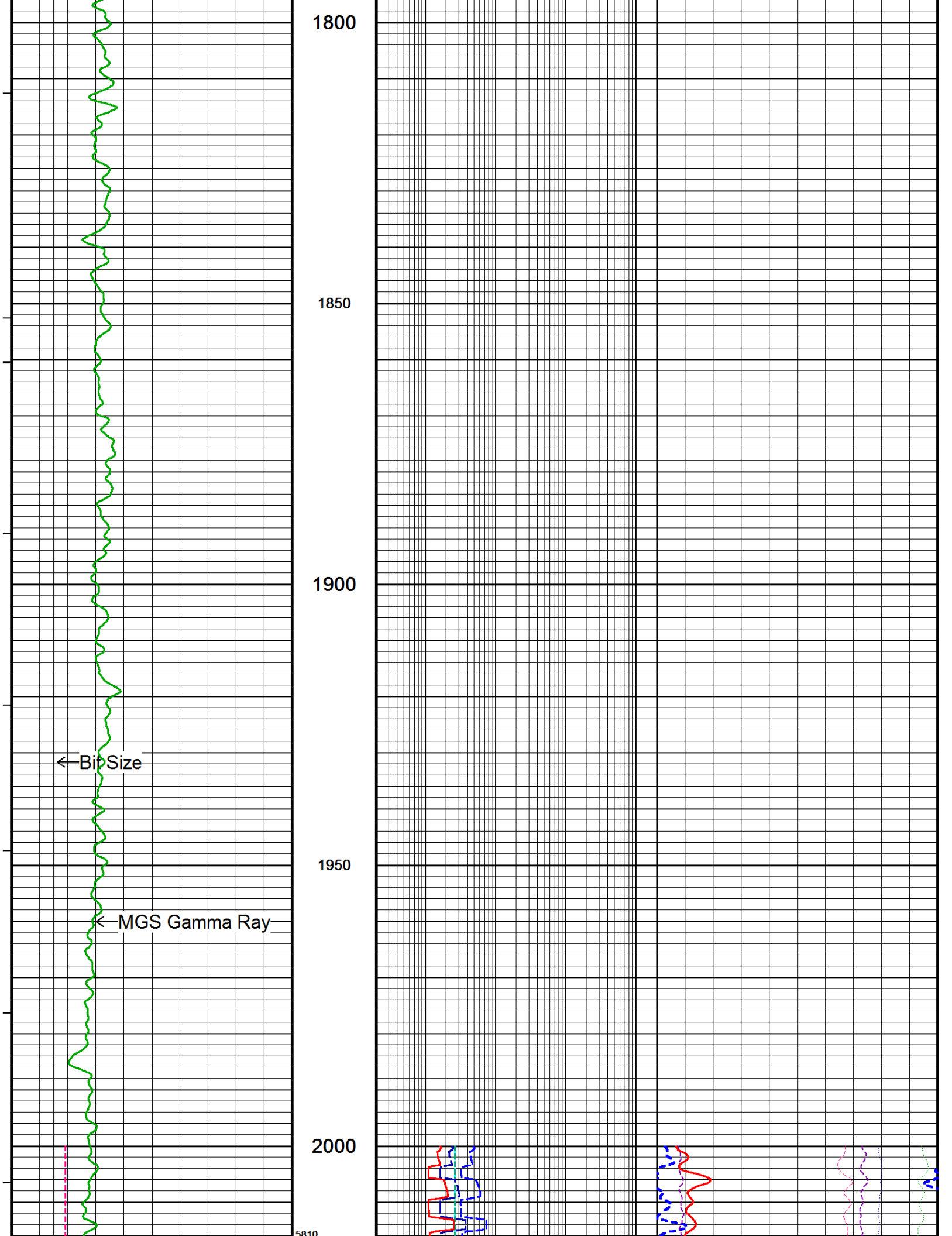


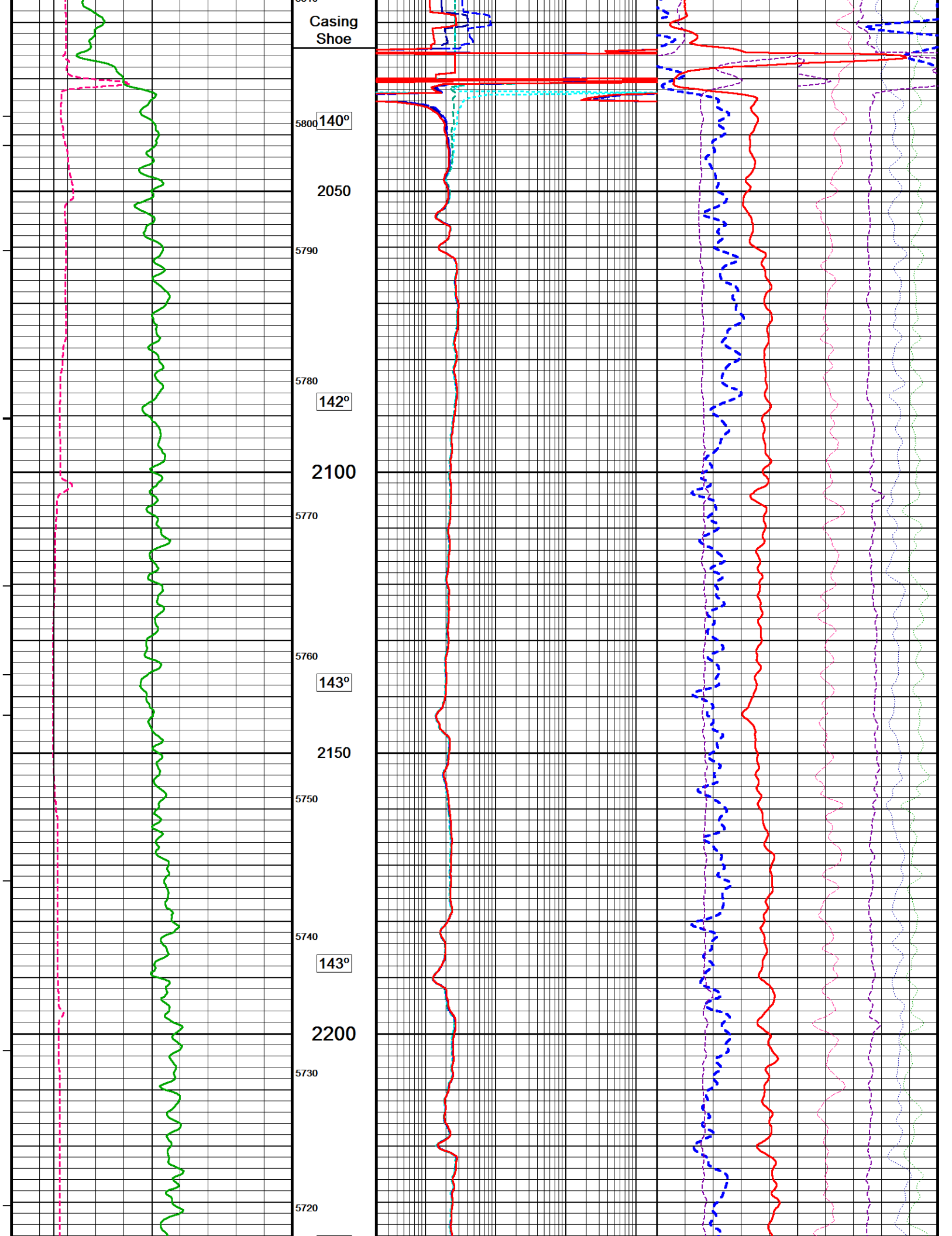
1600

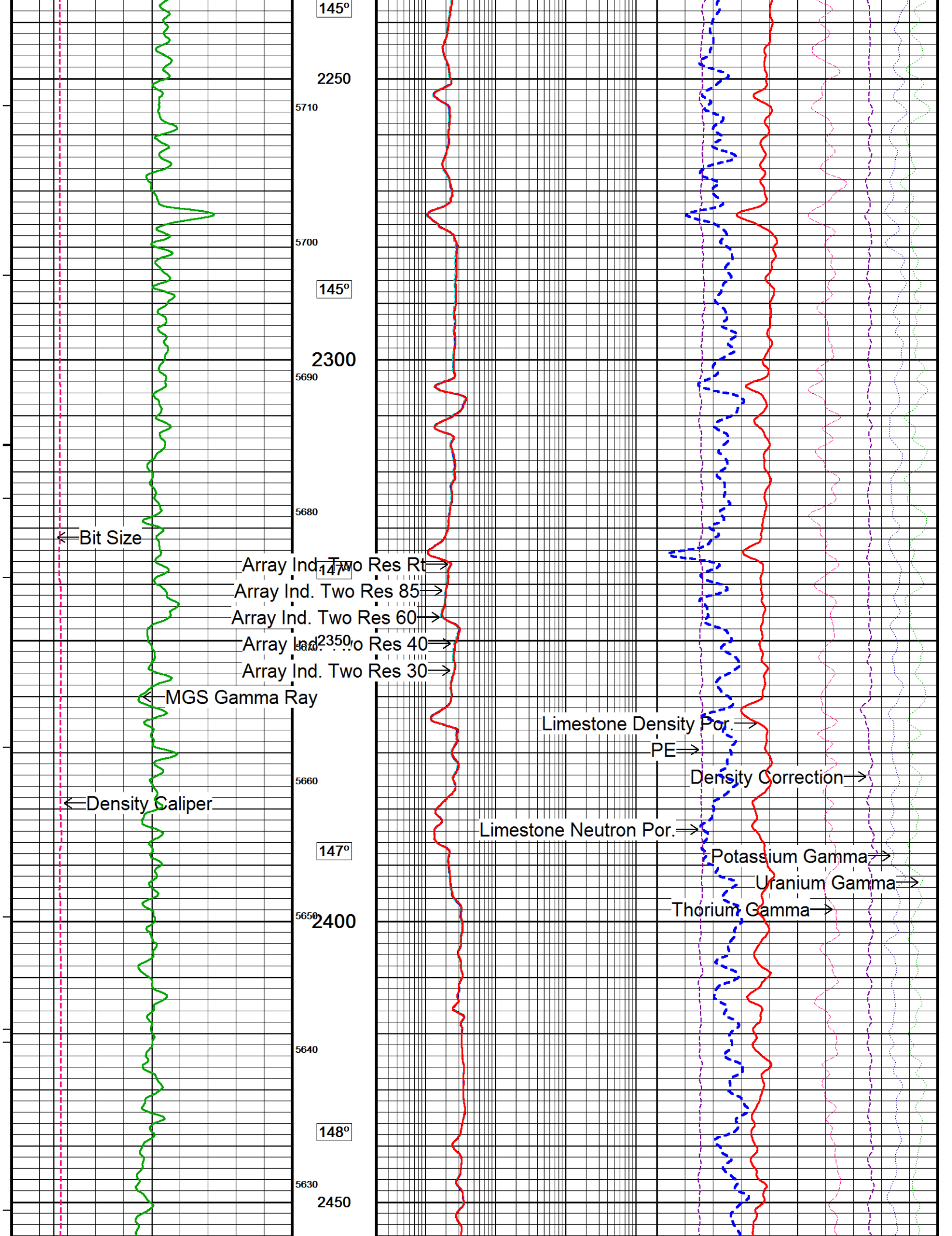
1650

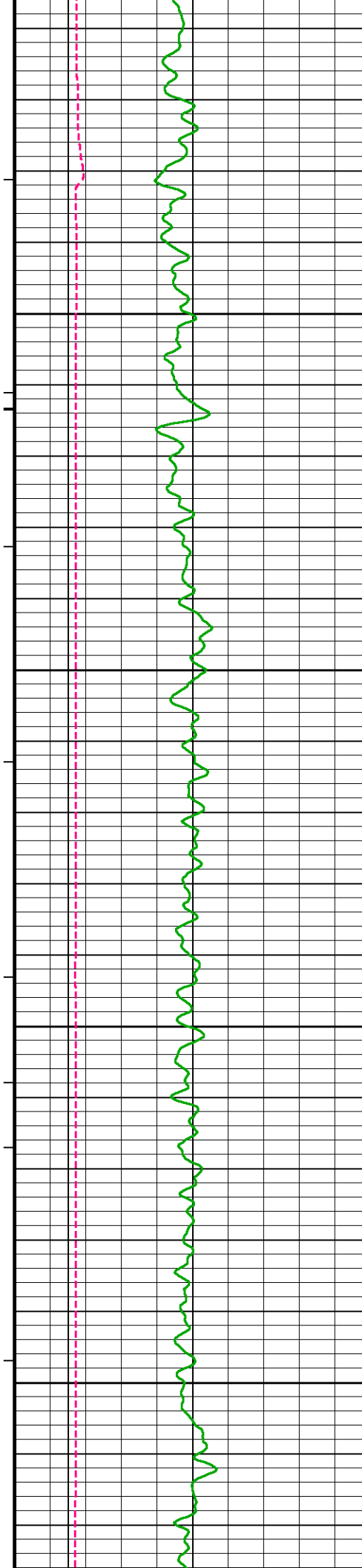
1700

1750

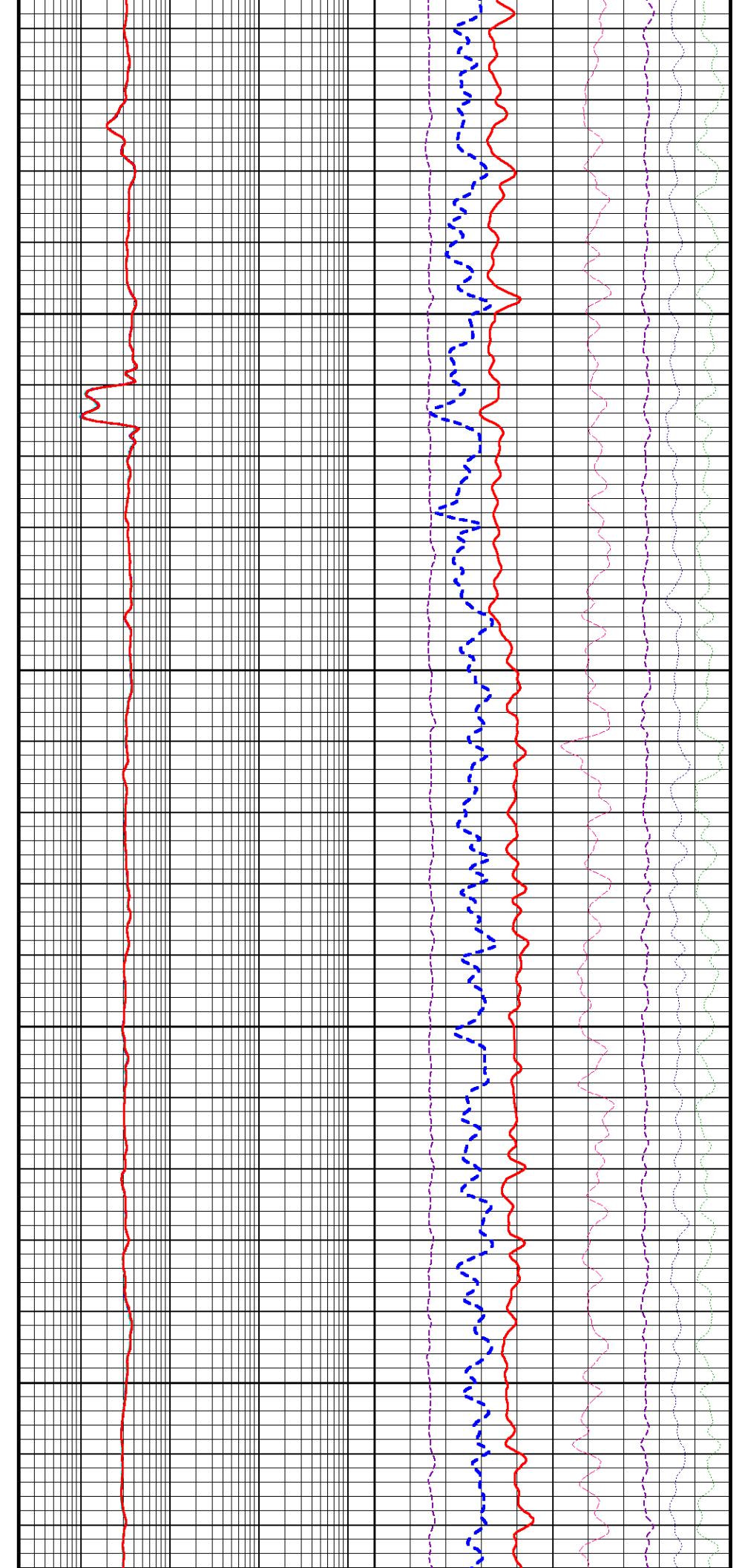


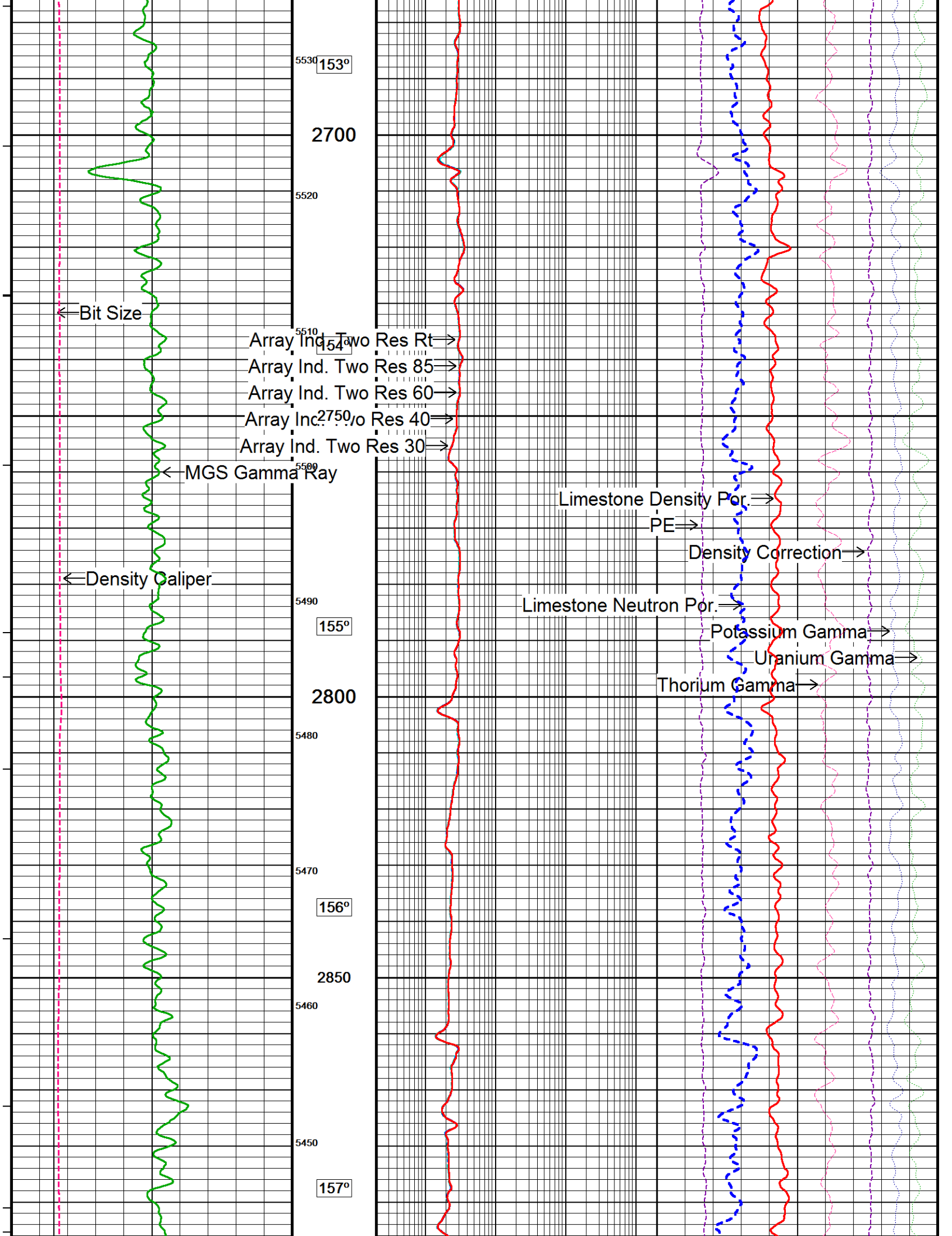


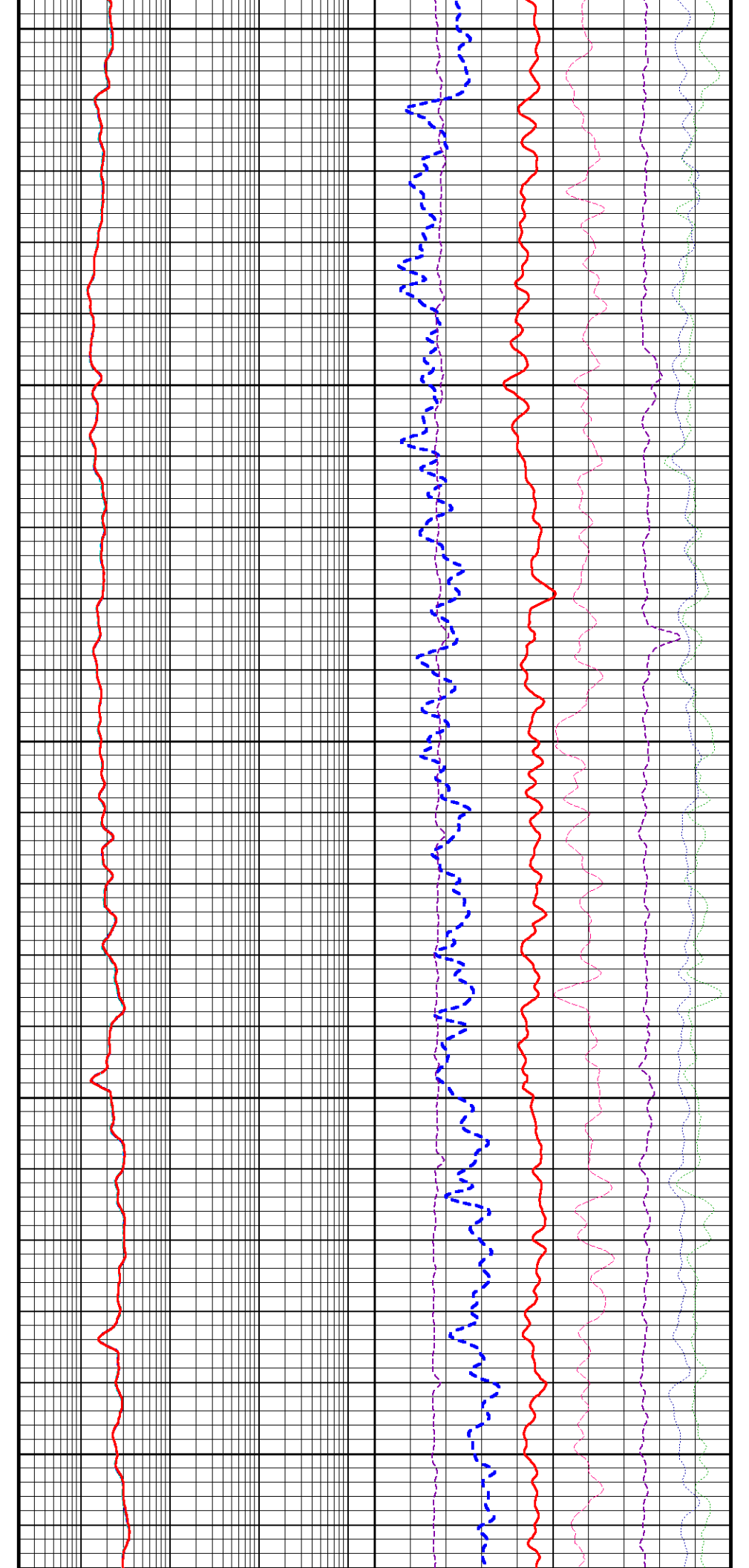
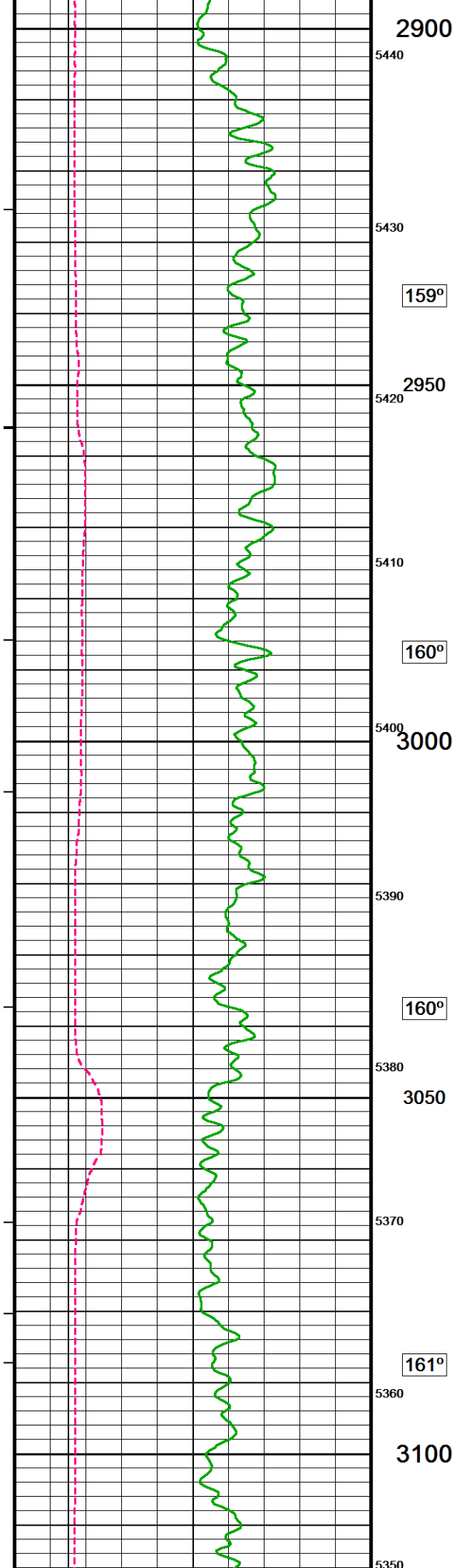


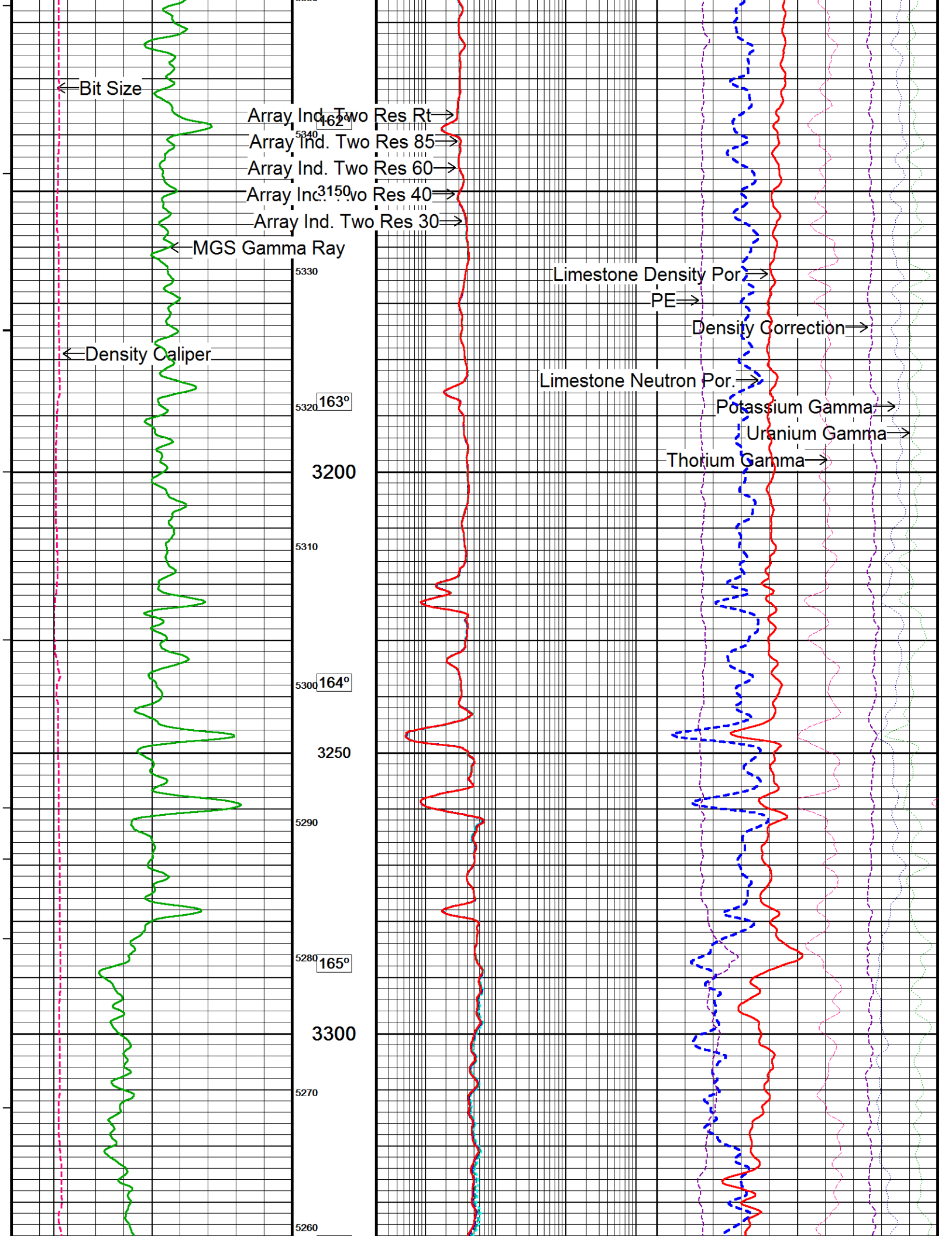


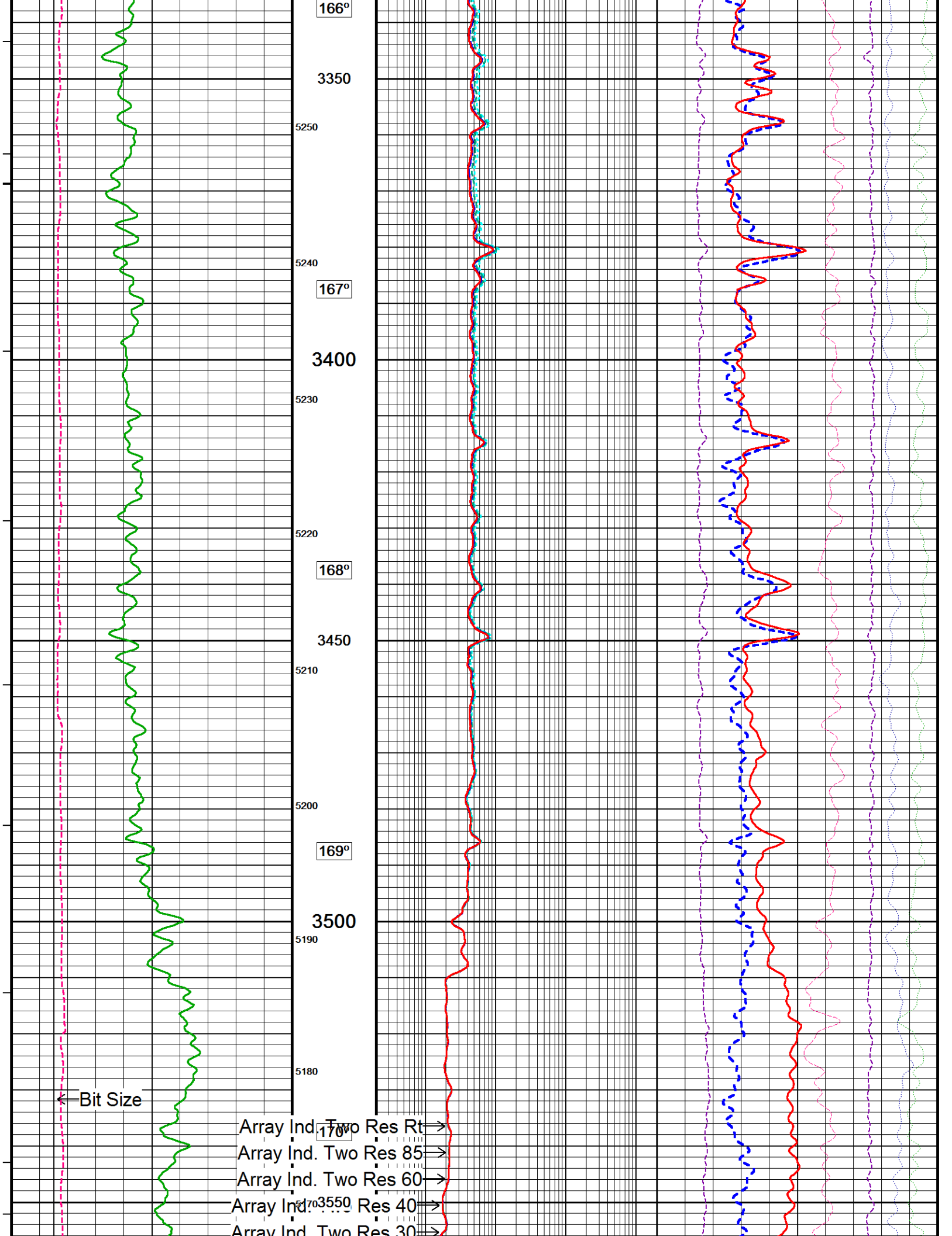
5620
149°
5610
2500
5600
150°
5590
2550
5580
151°
5570
2600
5560
152°
5550
2650
5540

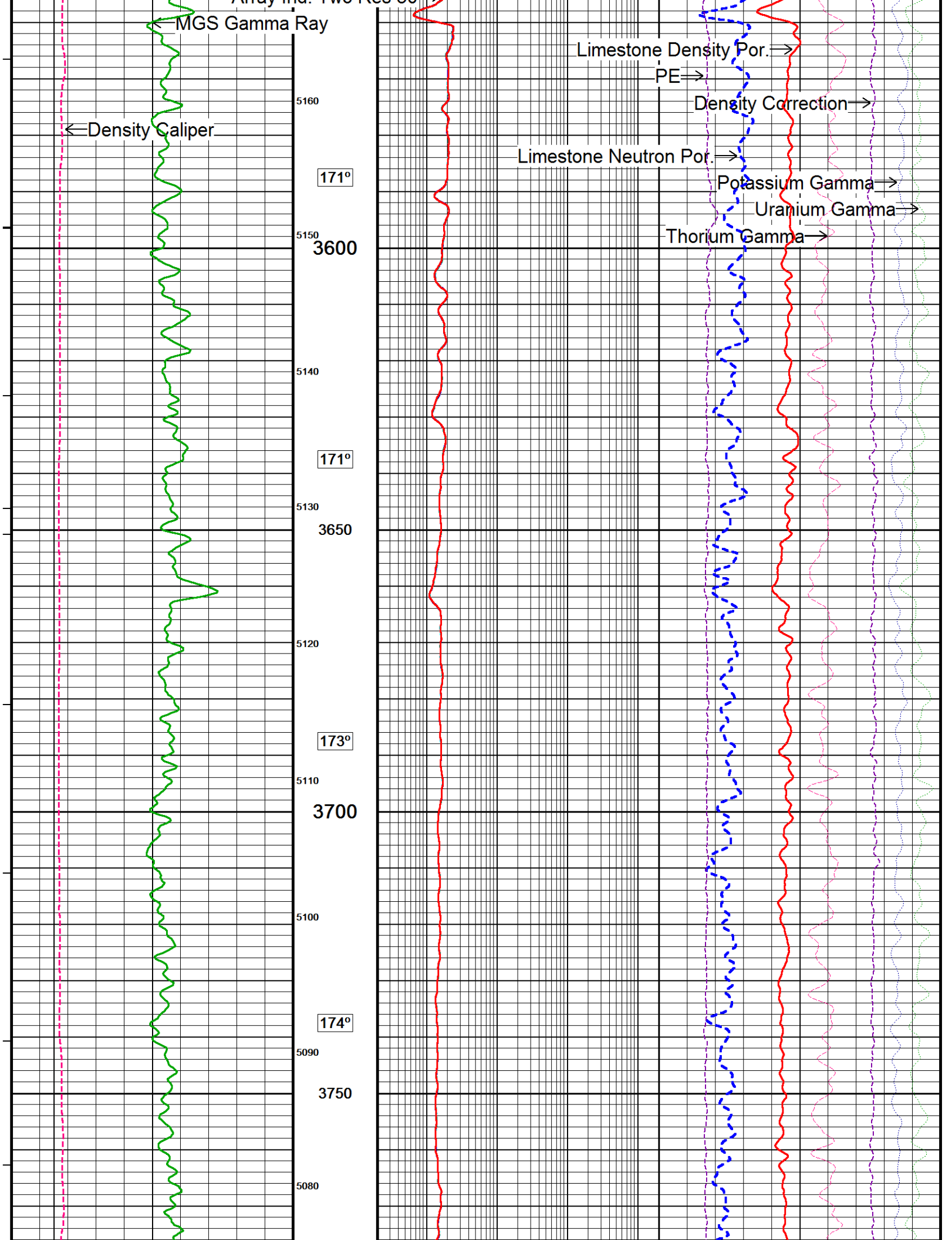


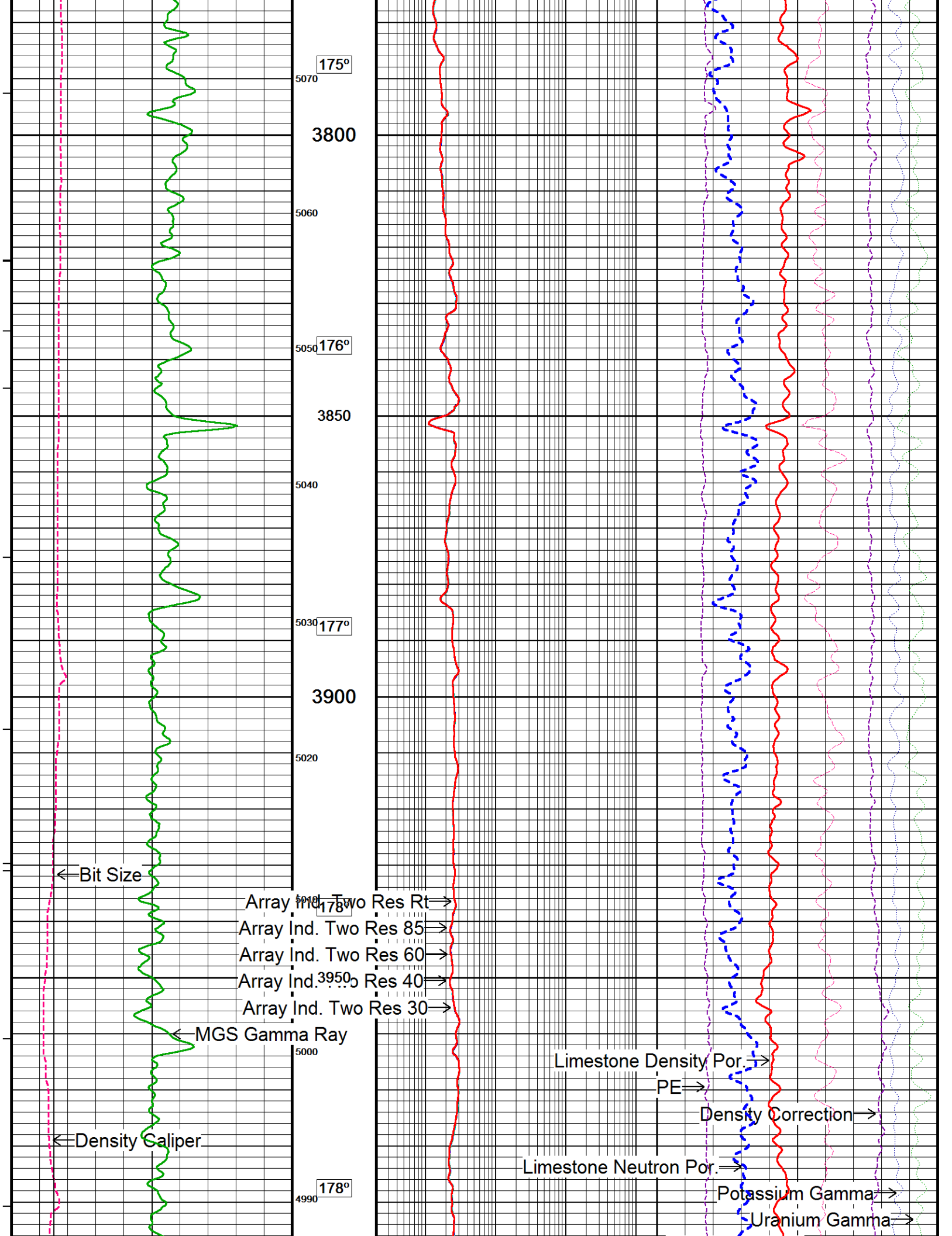


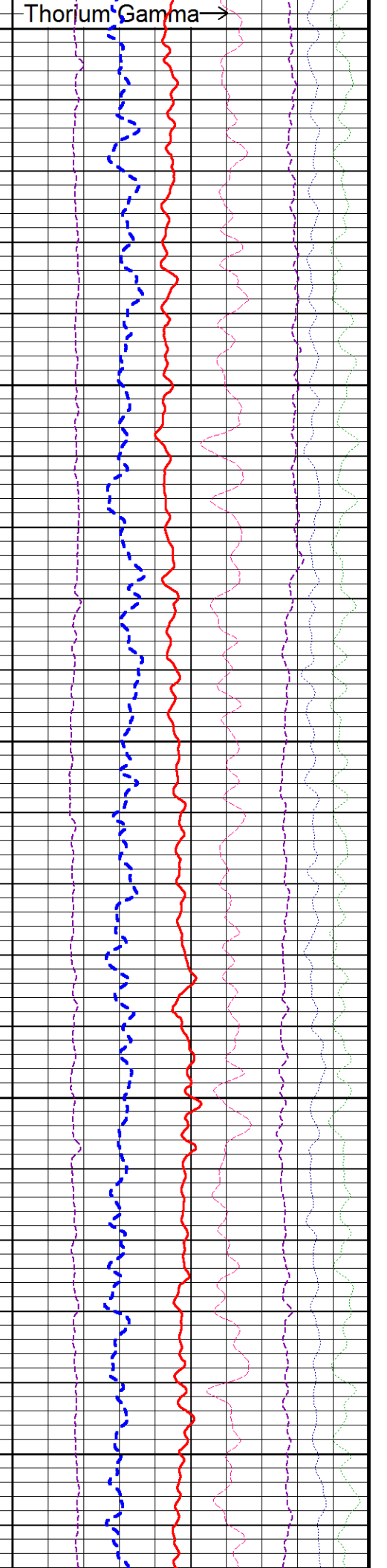
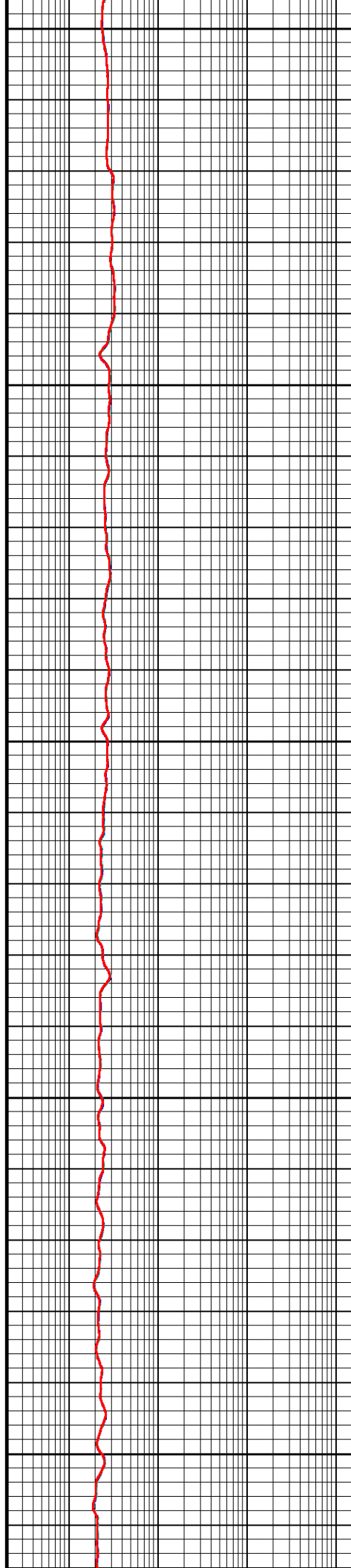
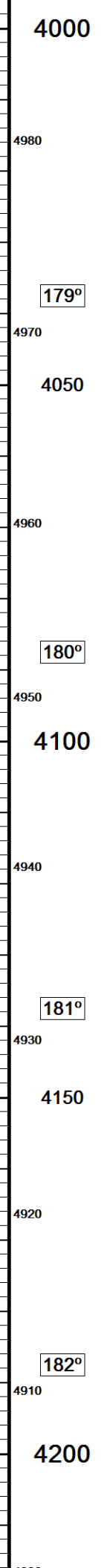
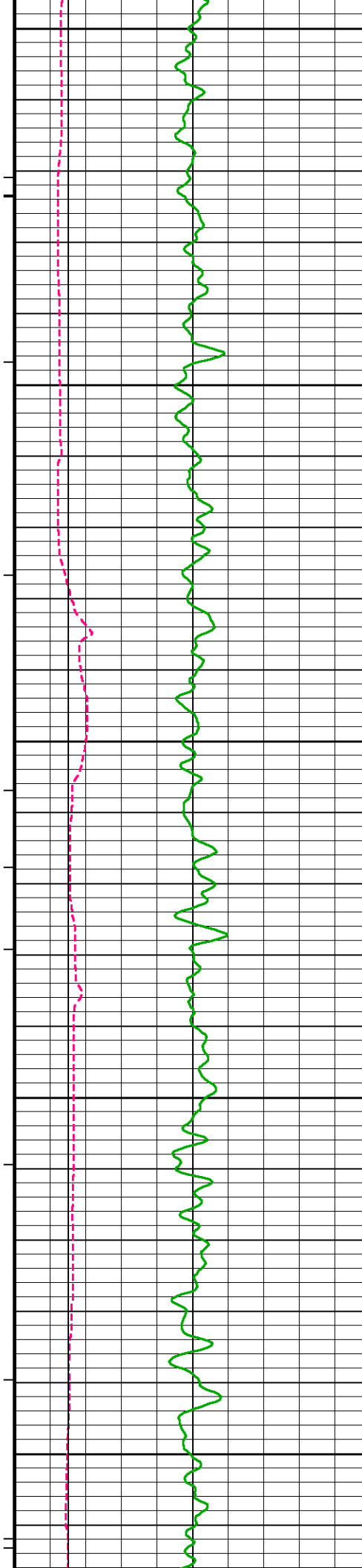




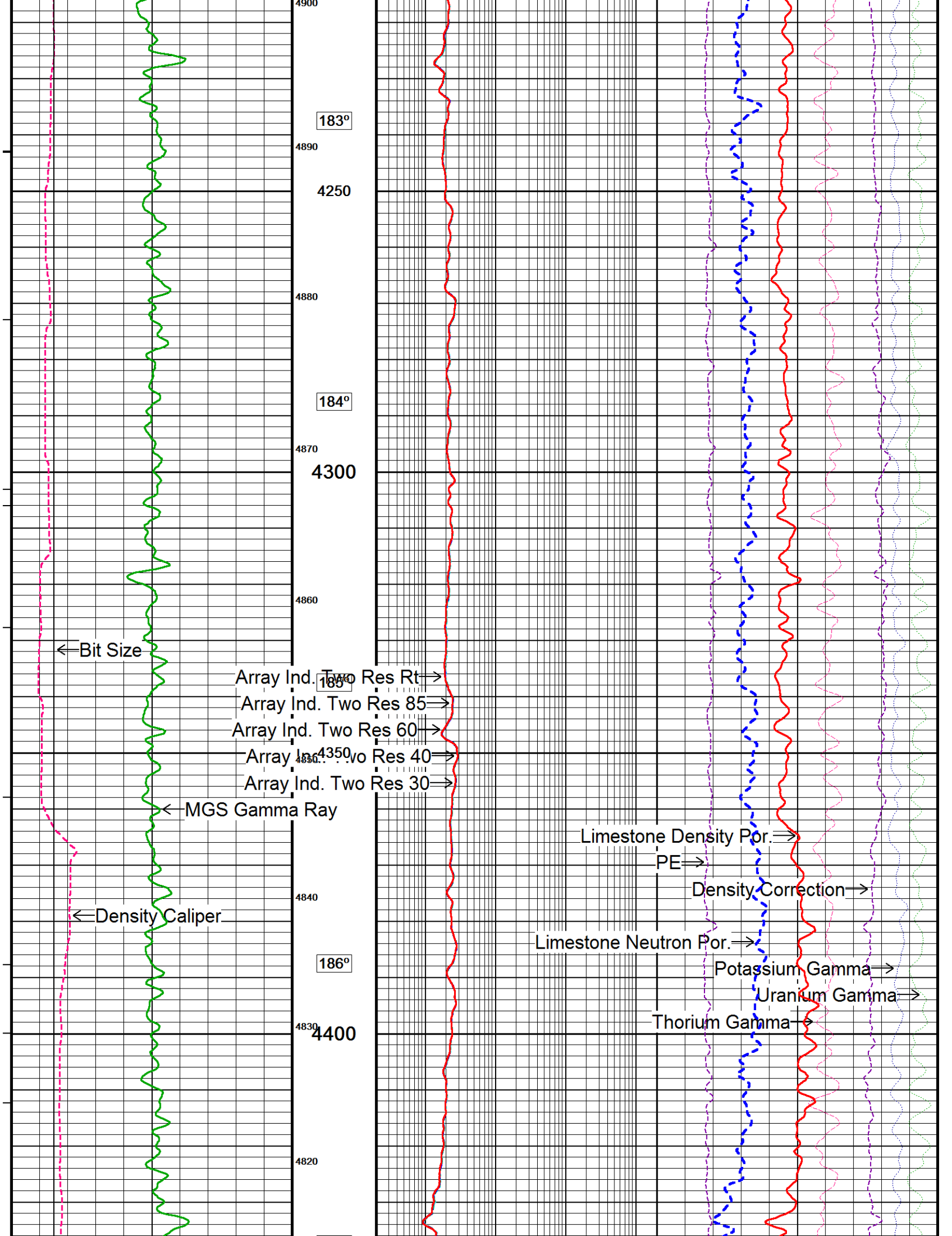


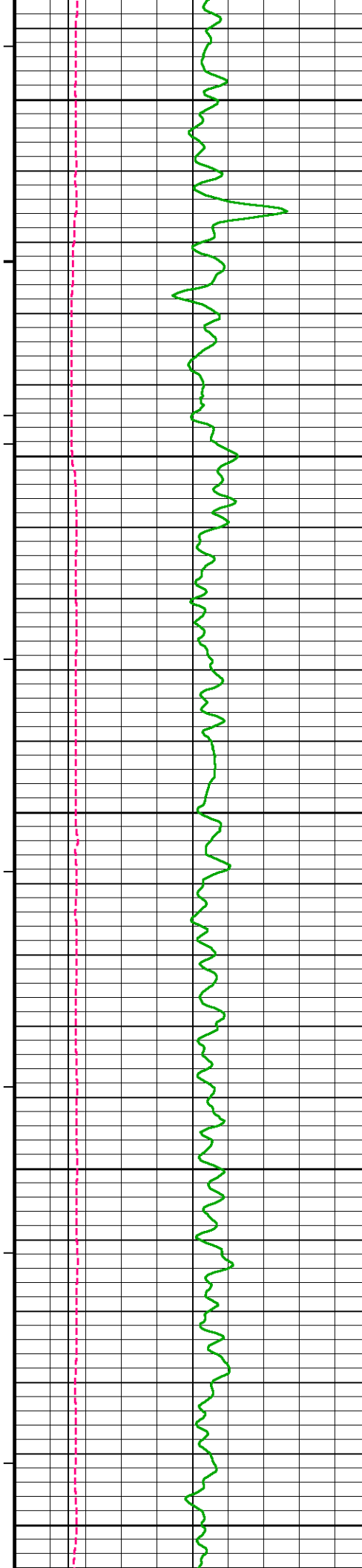




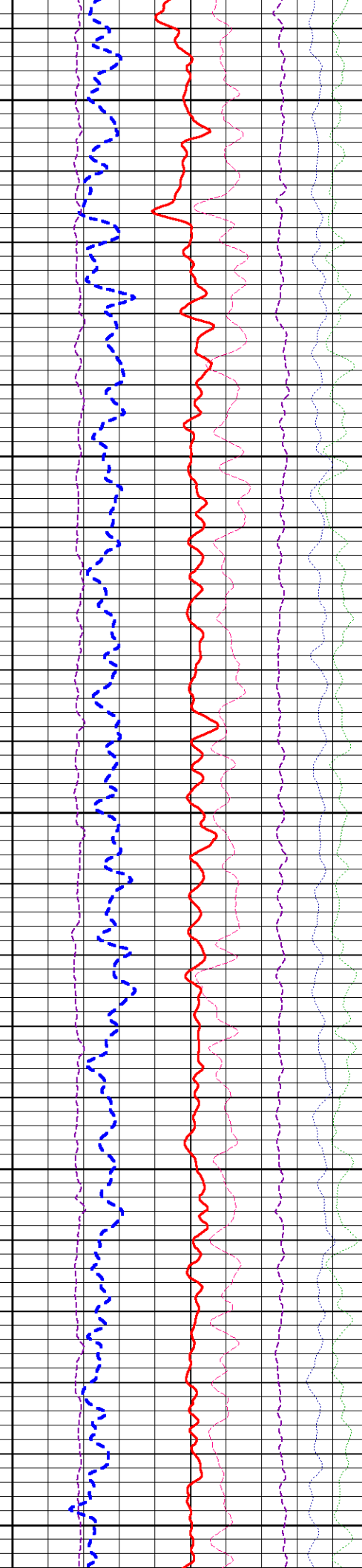
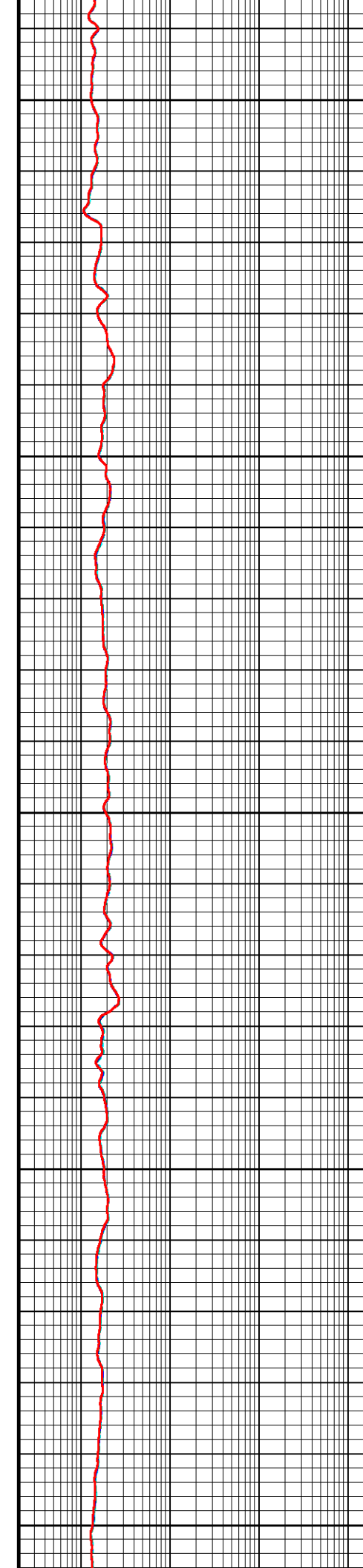


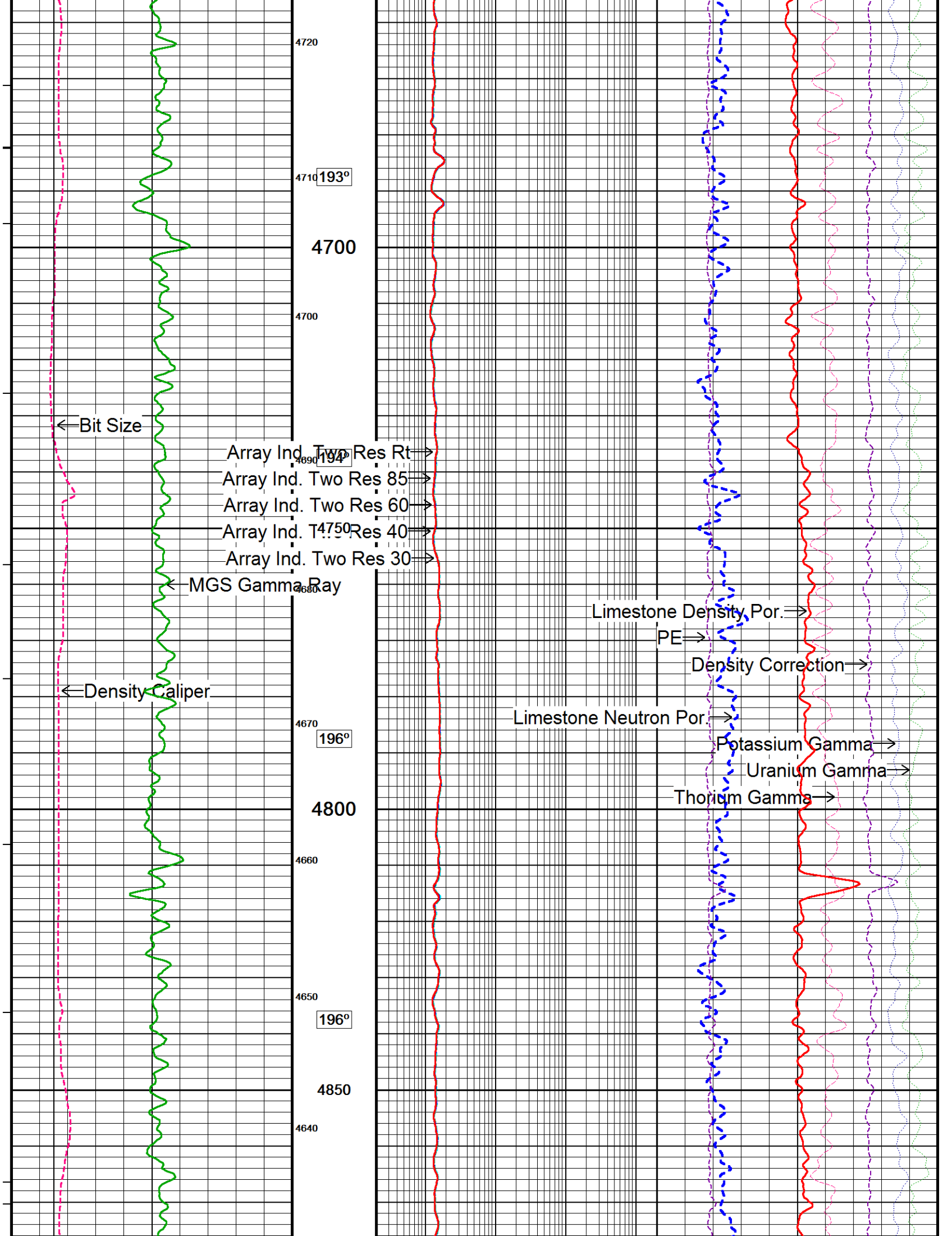
Thorium Gamma →

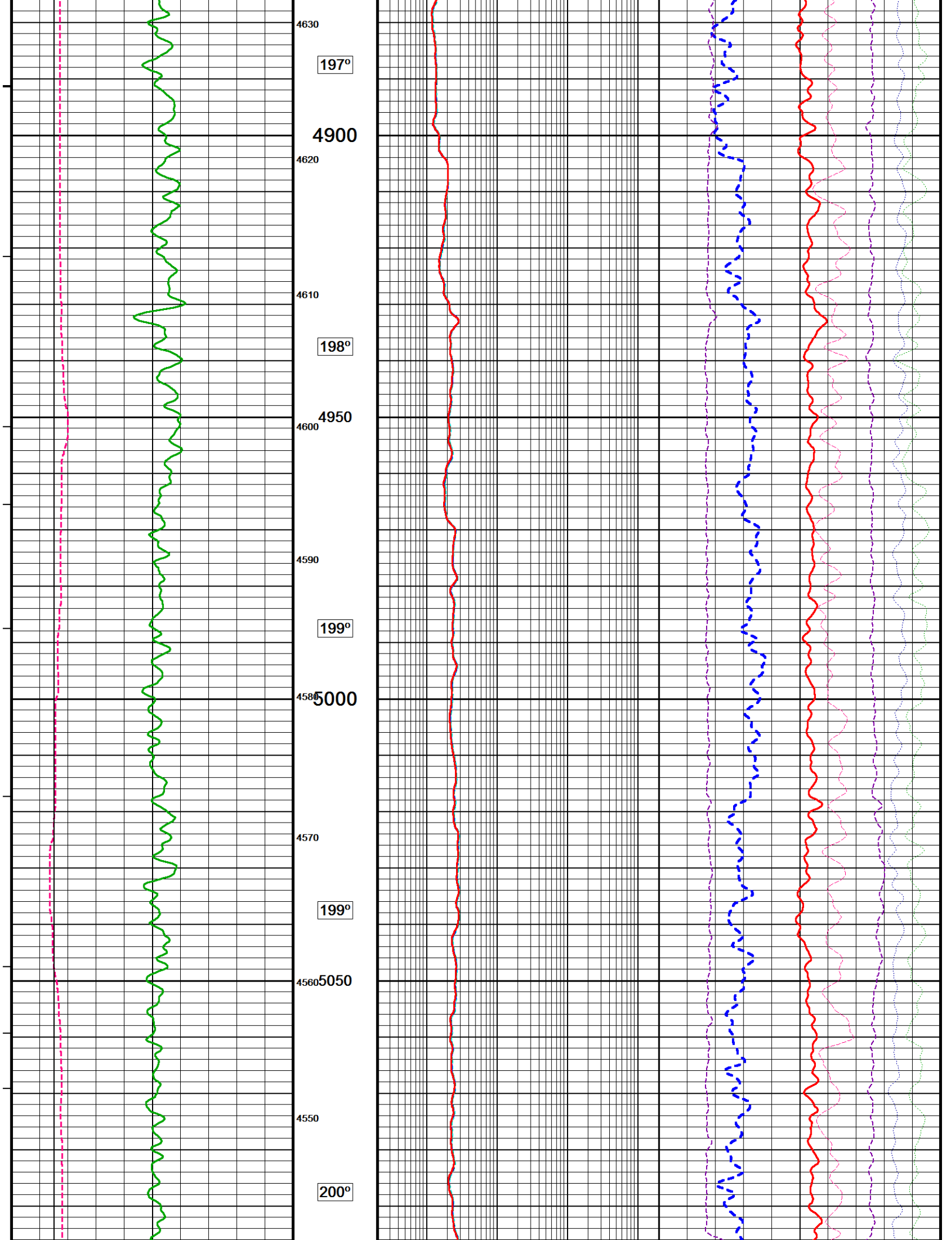


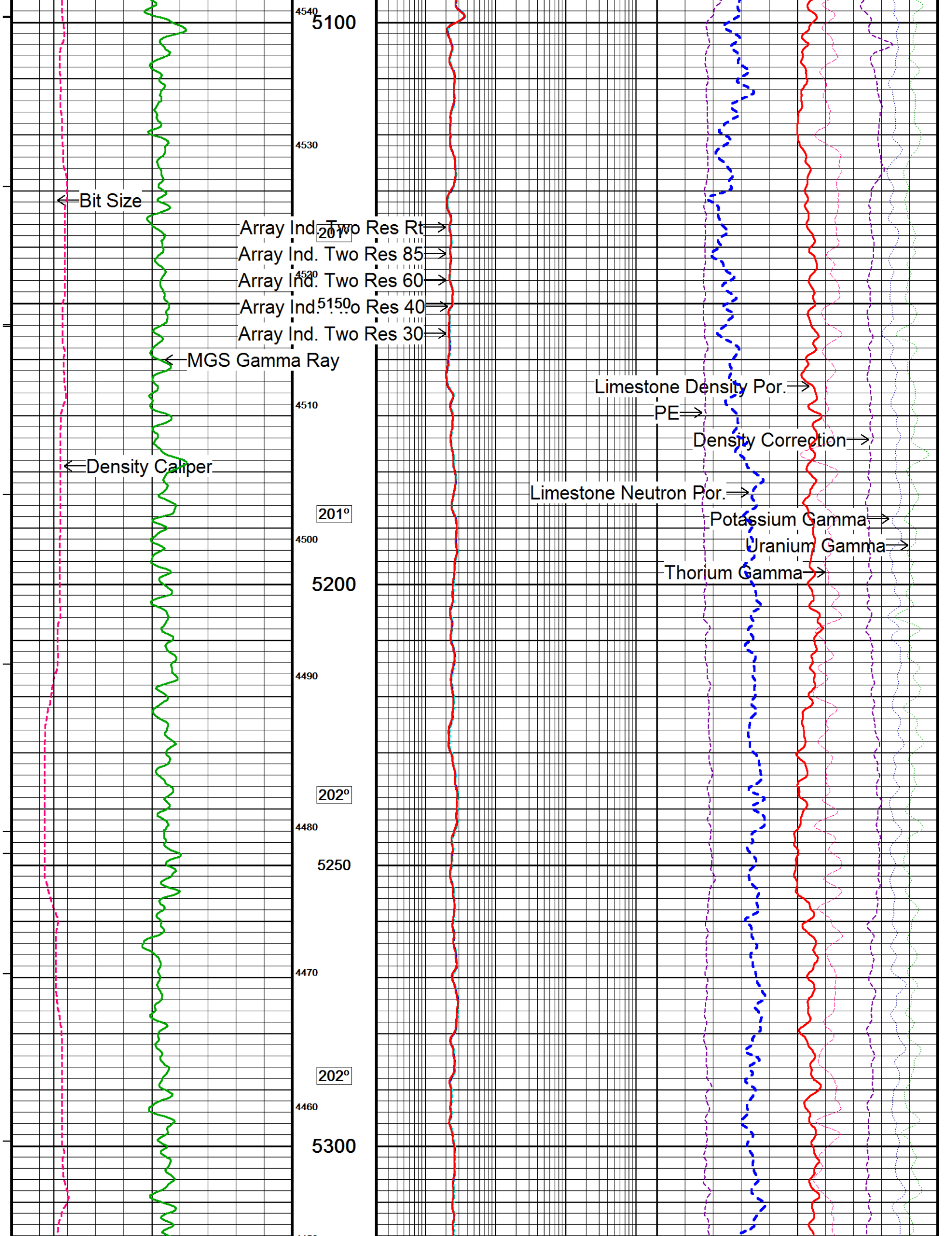


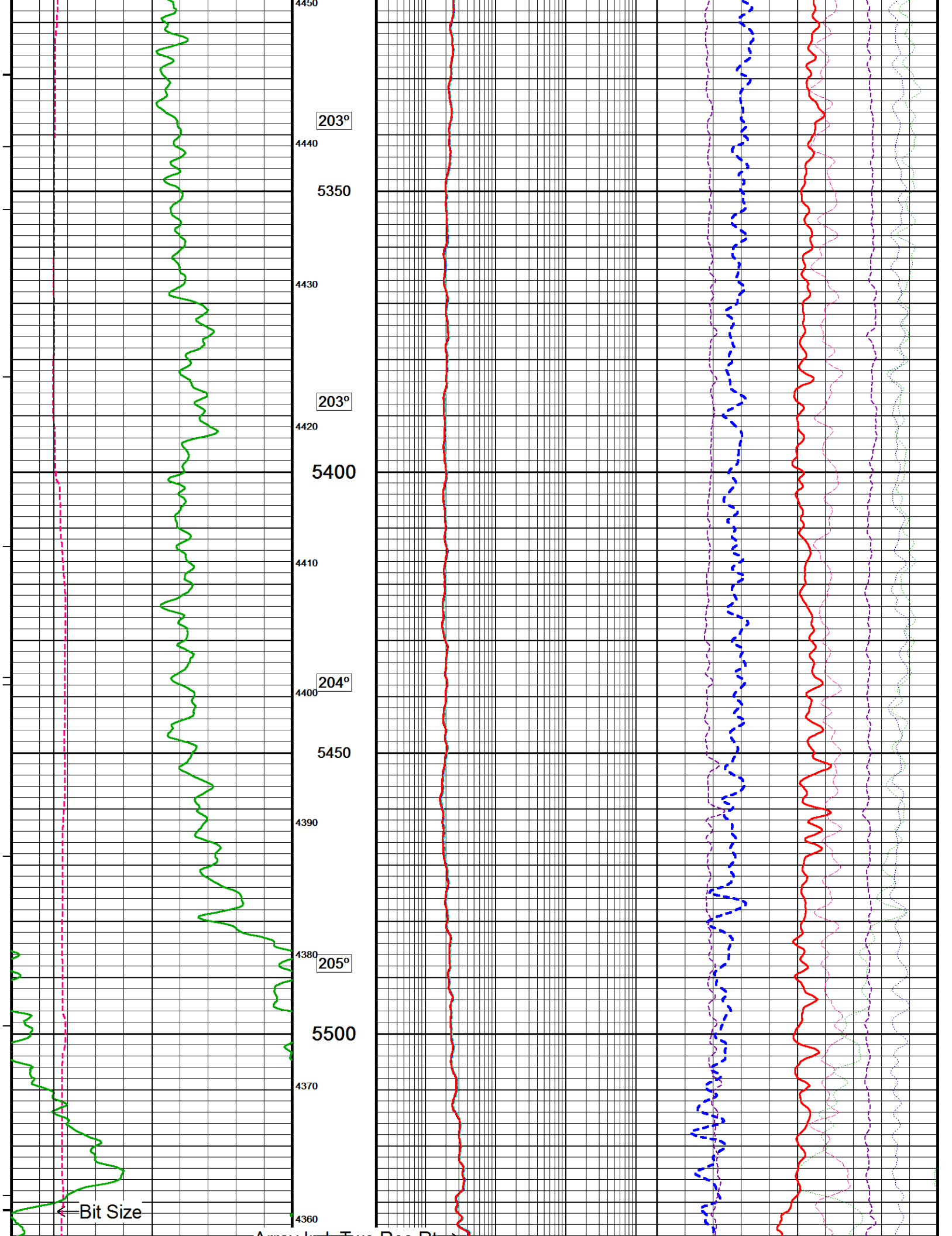
188°
4810
4450
4800
189°
4790
4500
4780
190°
4770
4550
4760
191°
4750
4600
4740
192°
4730
4650

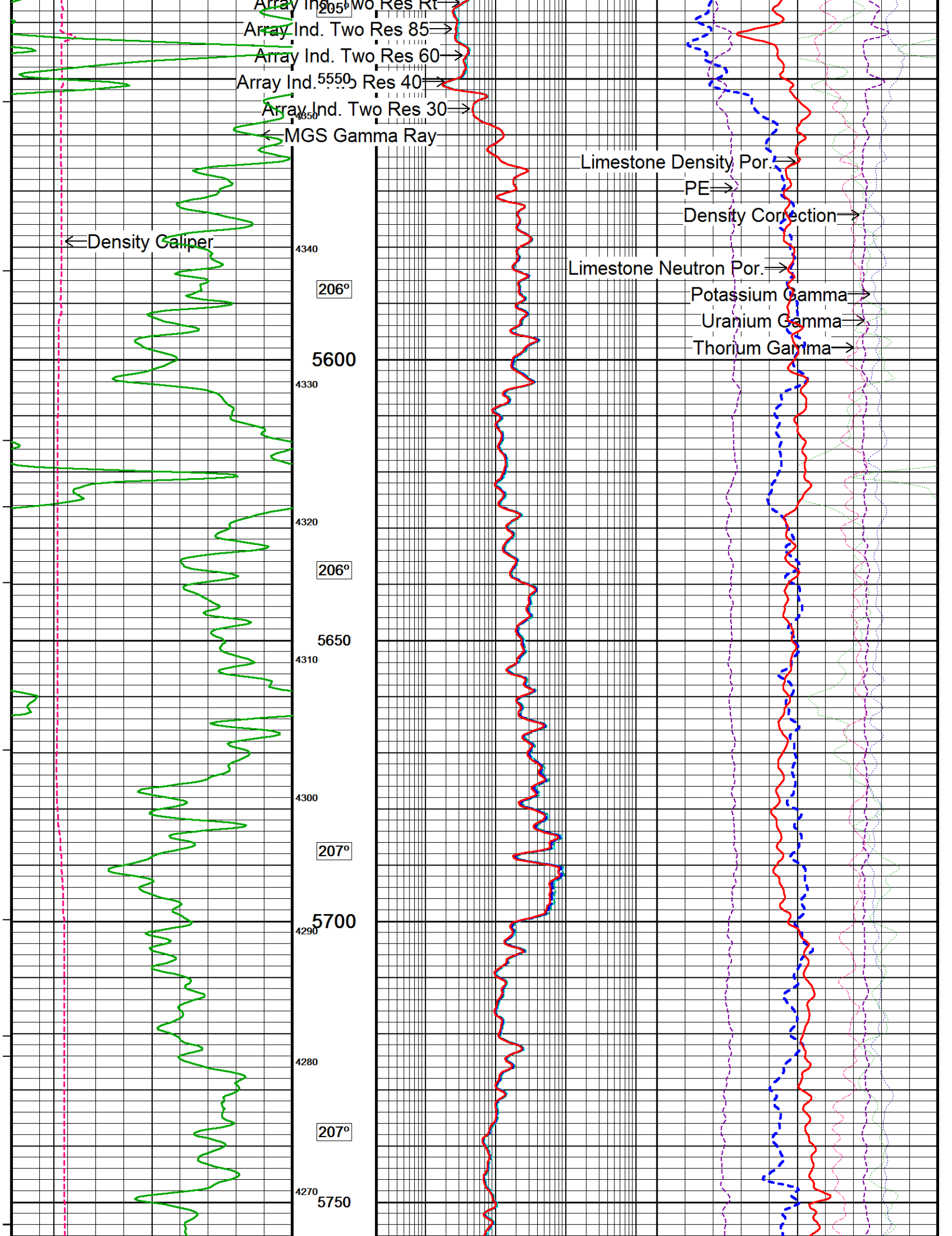


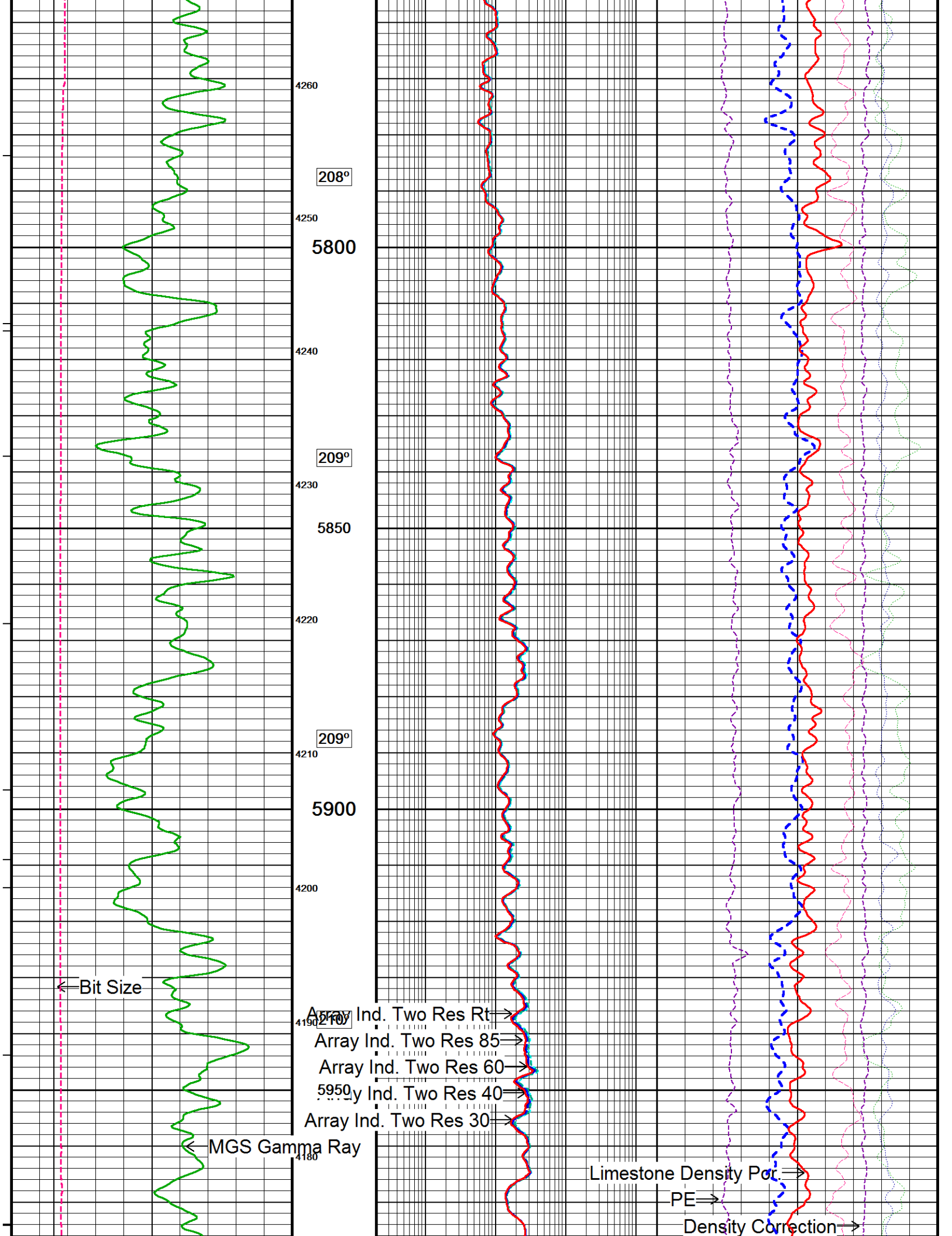


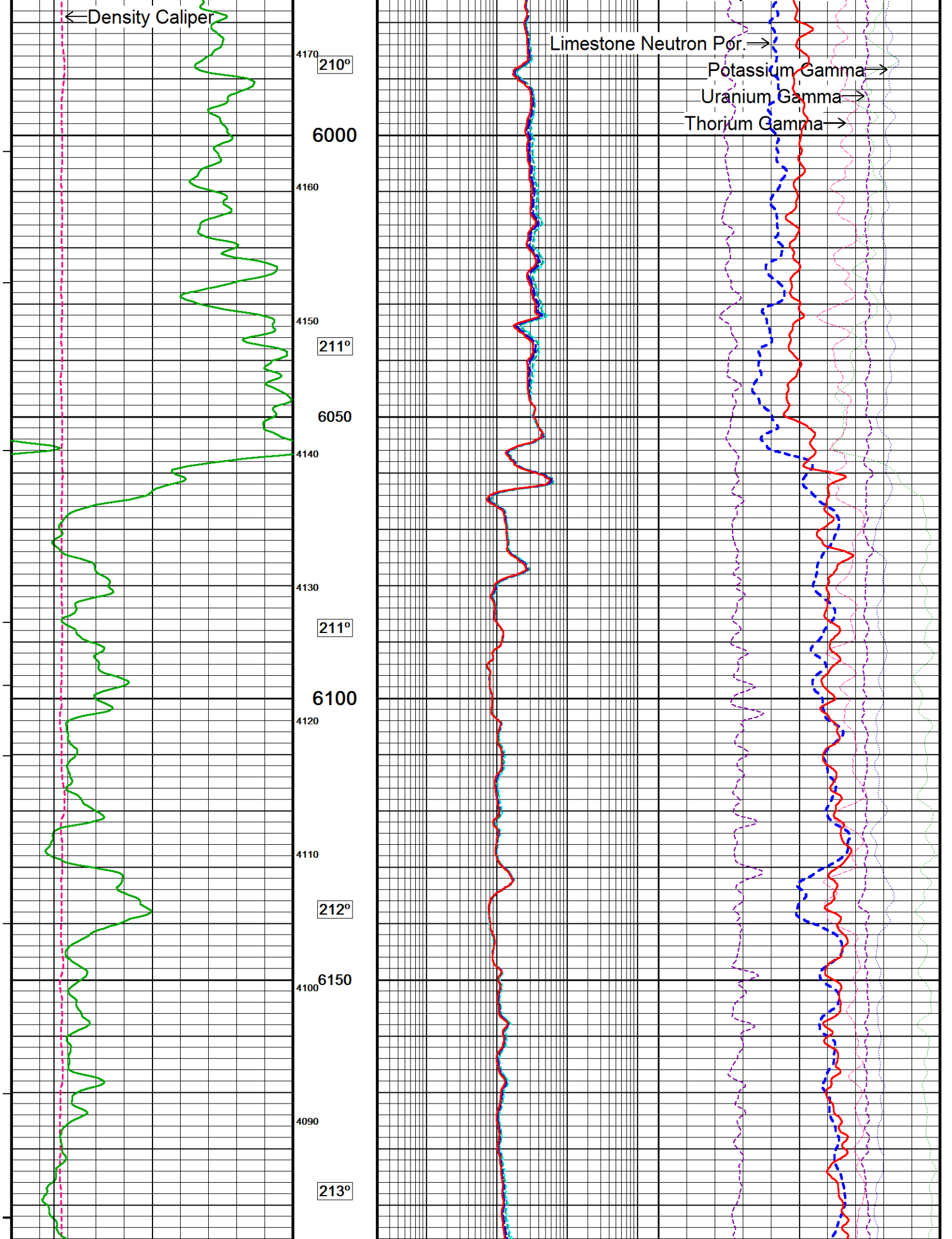


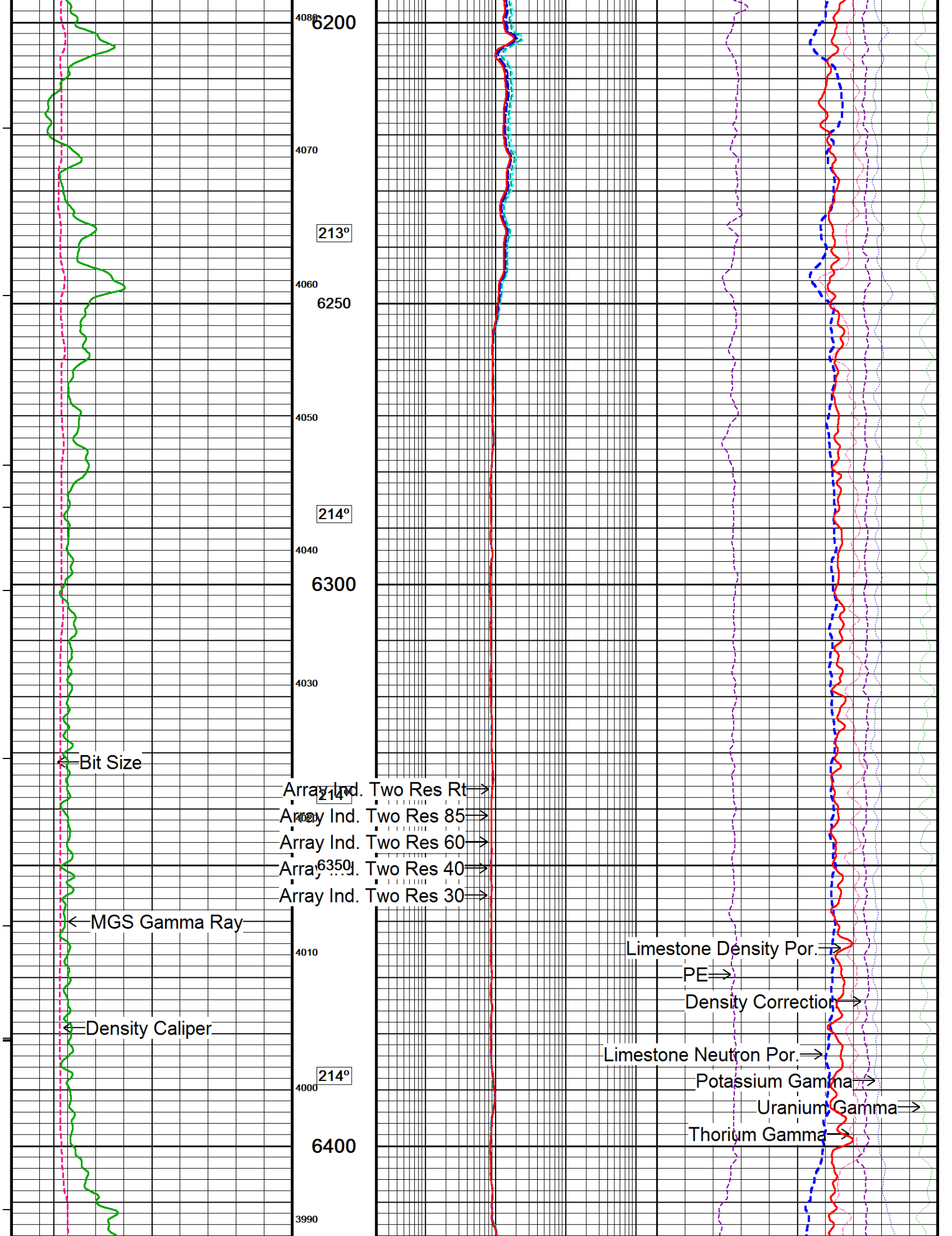


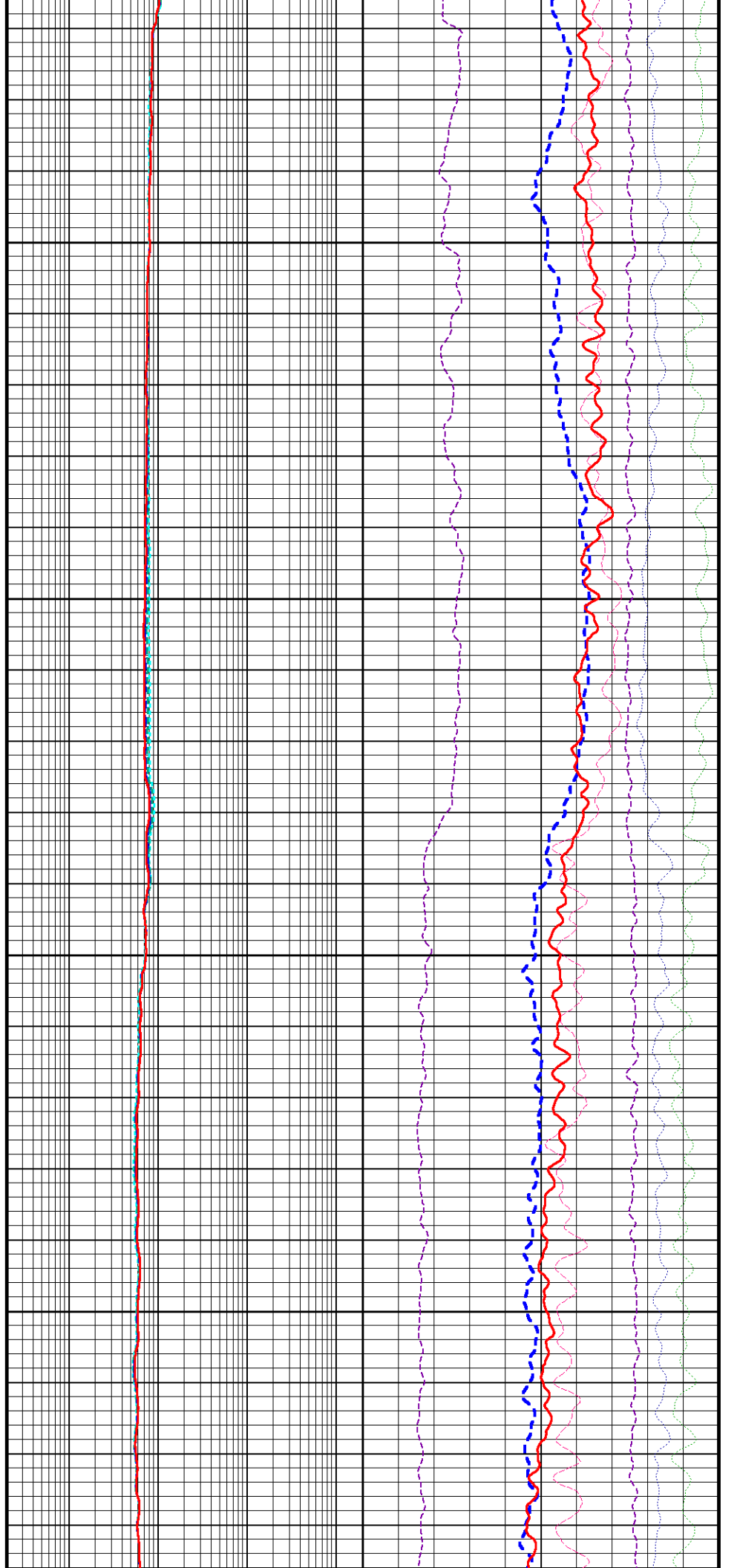
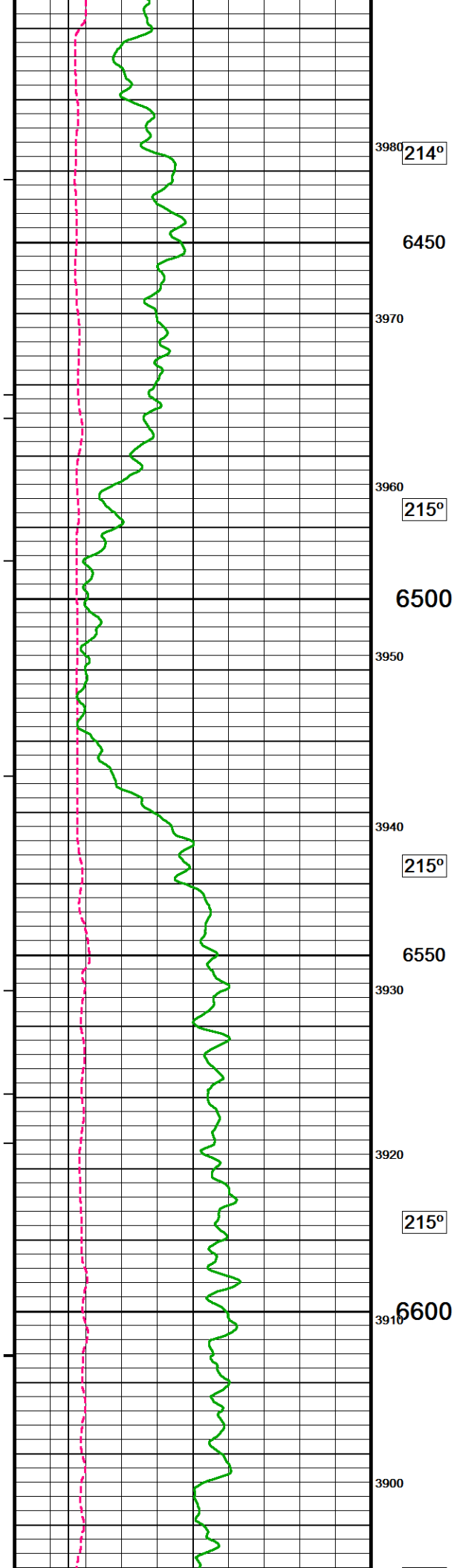


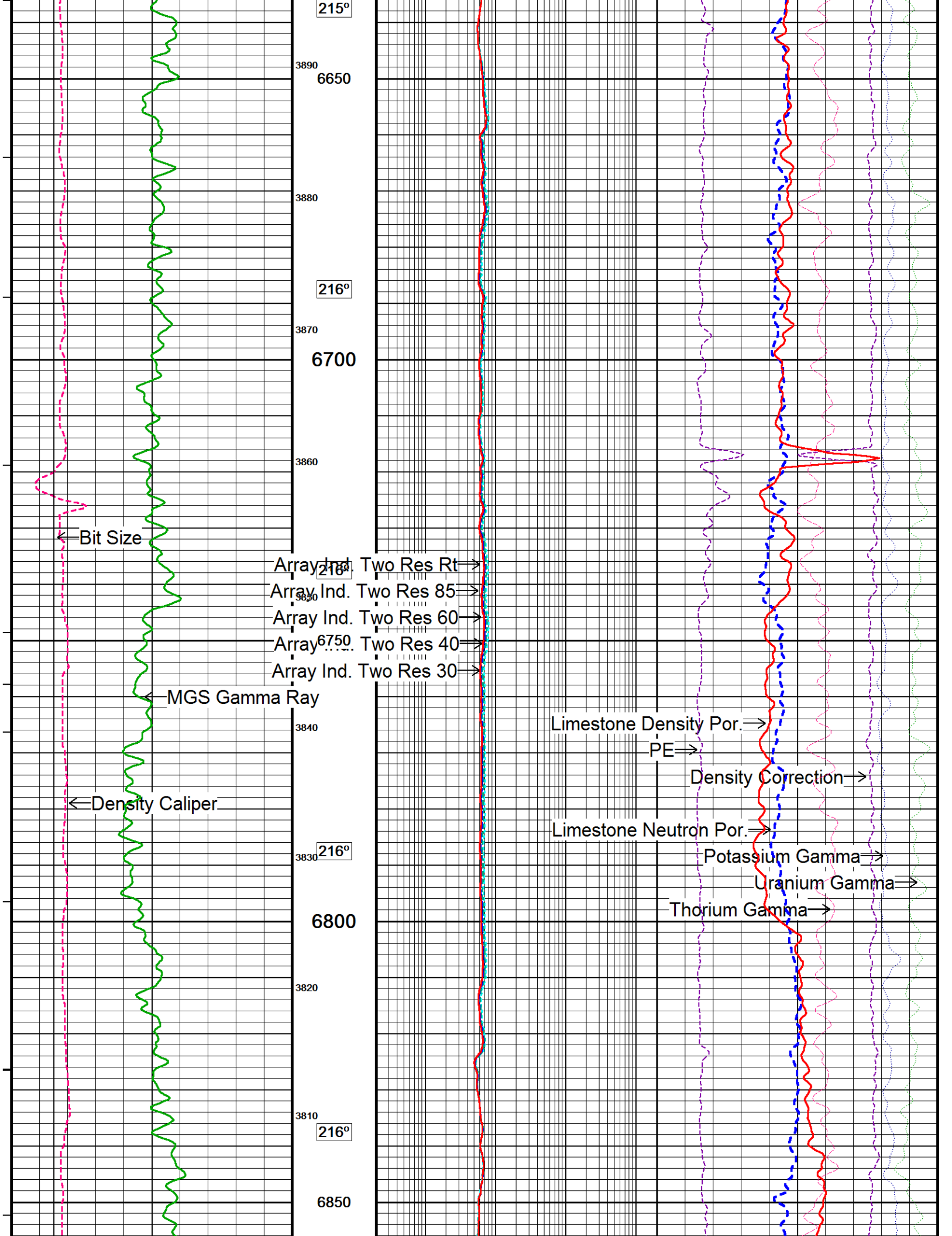


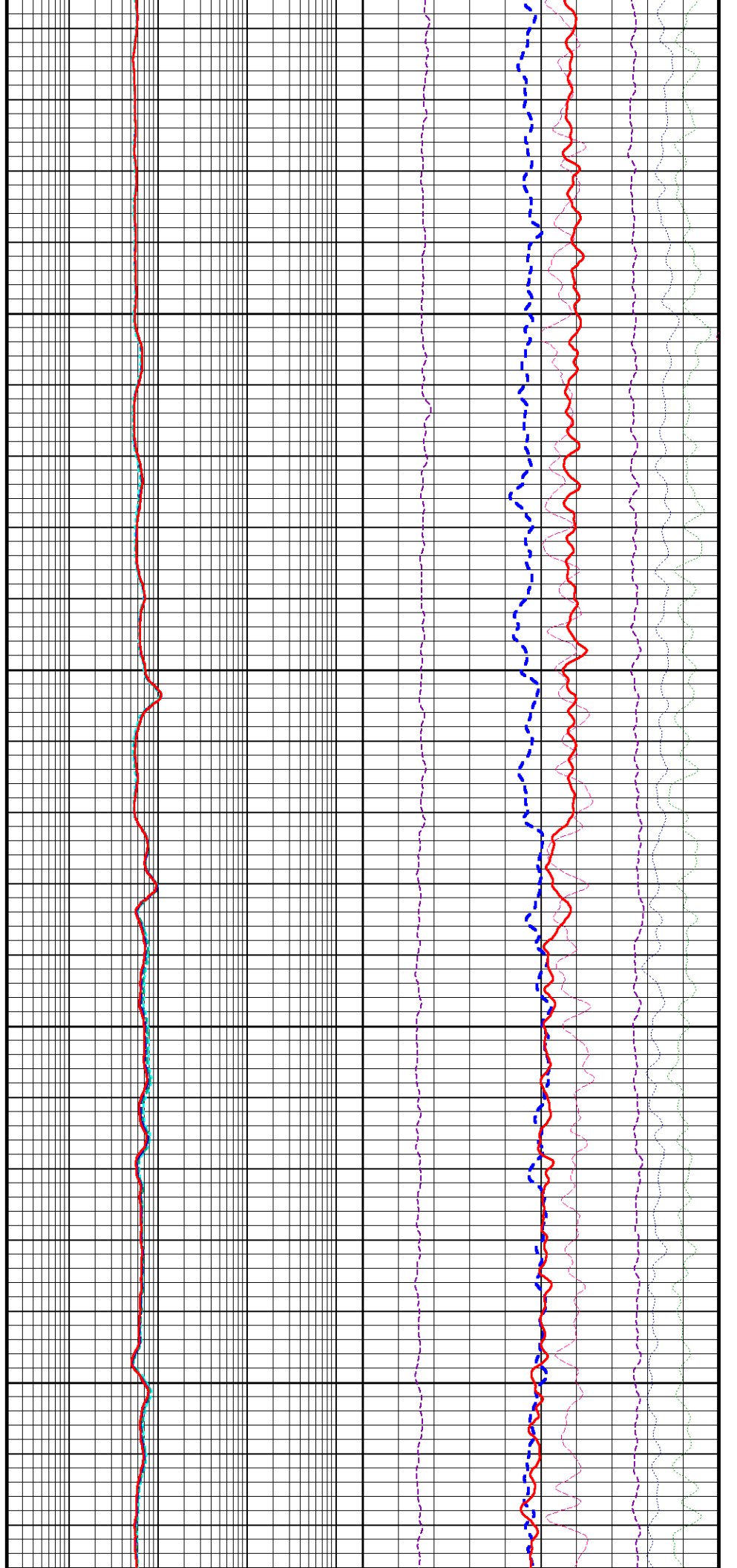
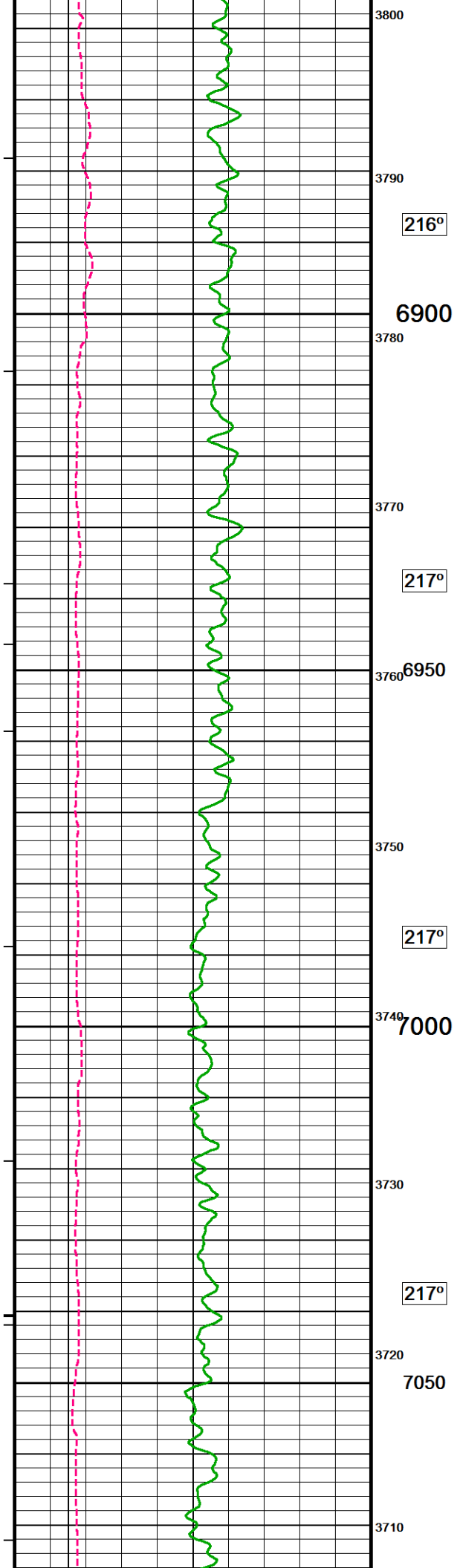


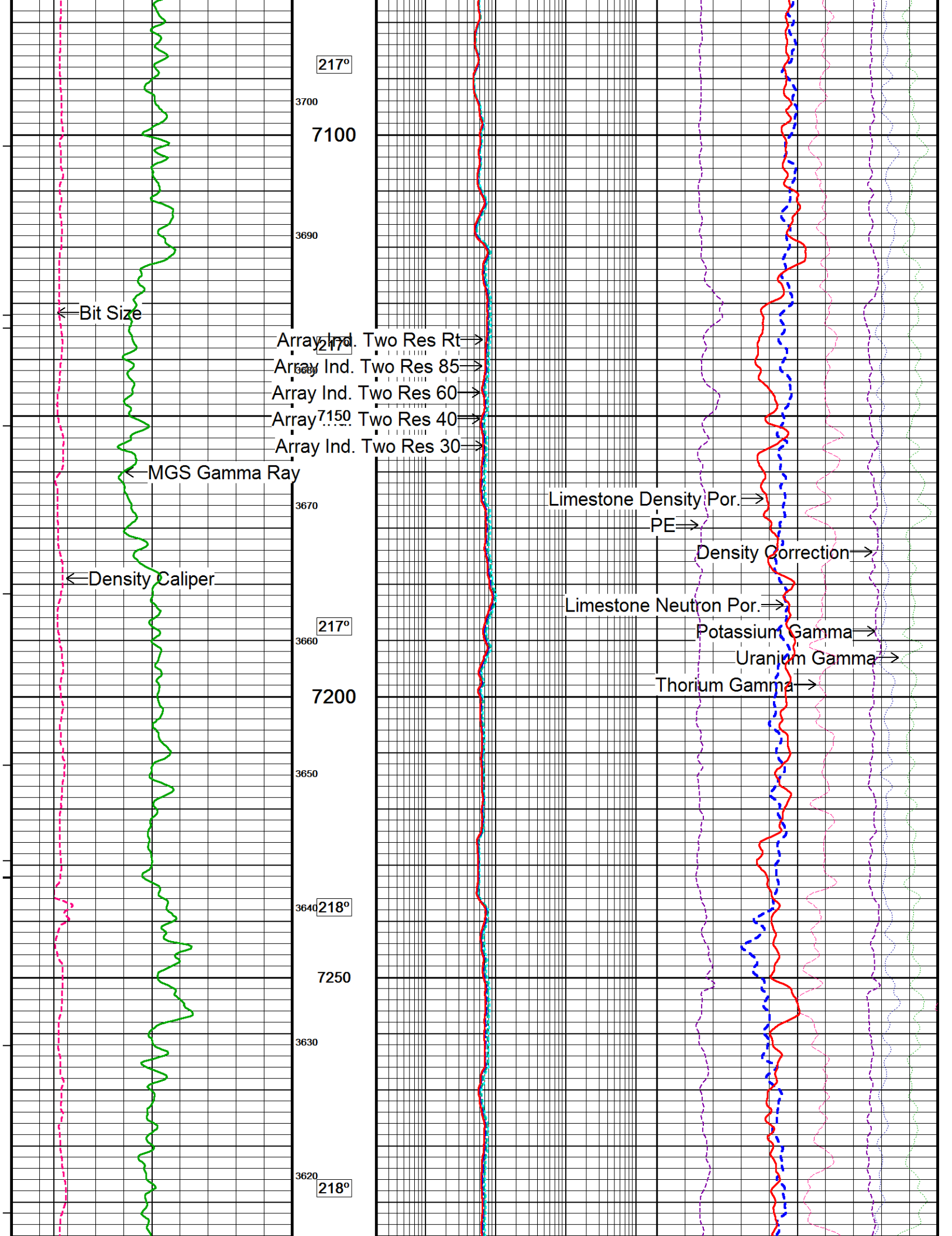


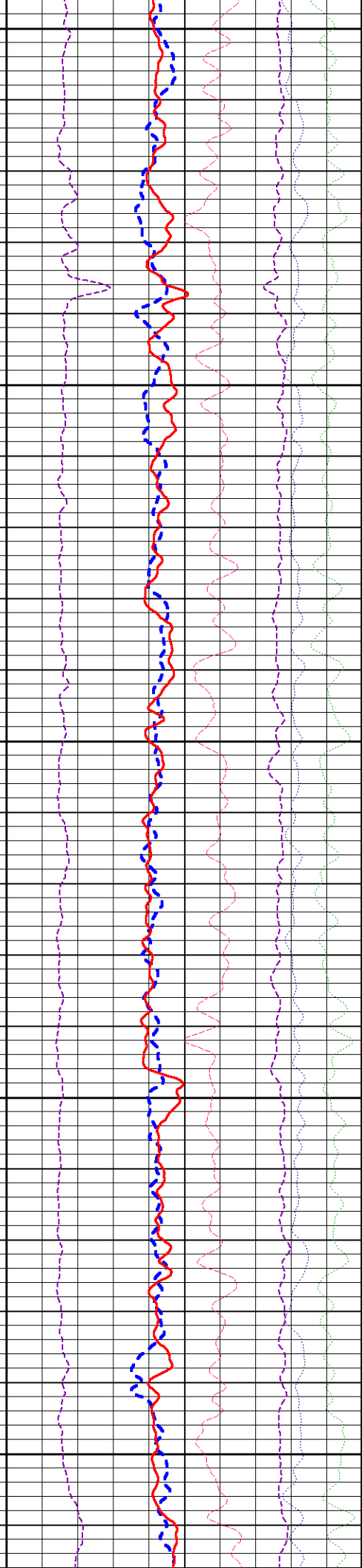
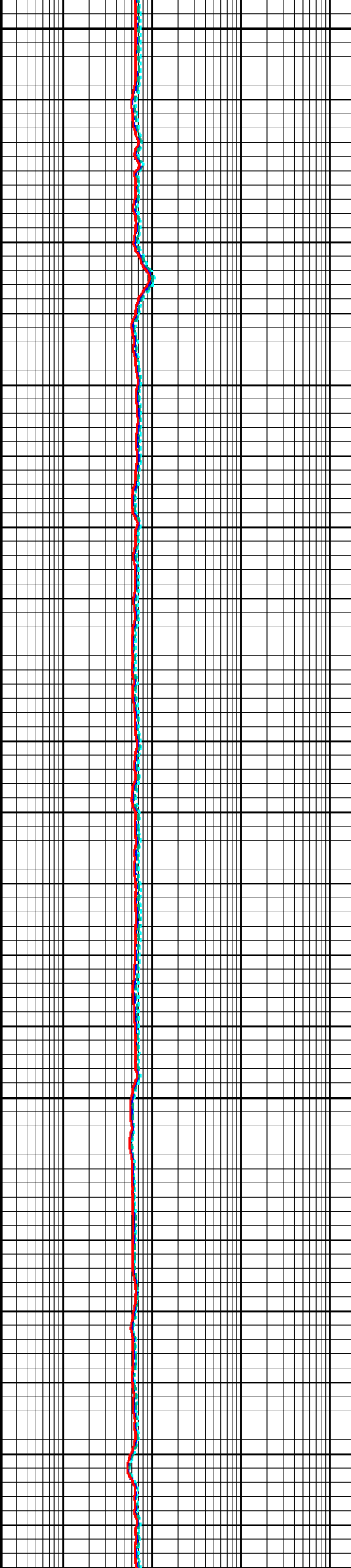
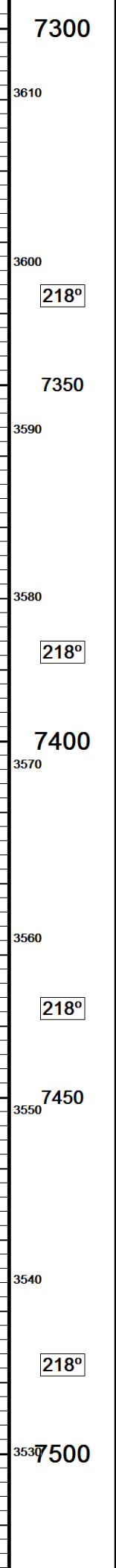
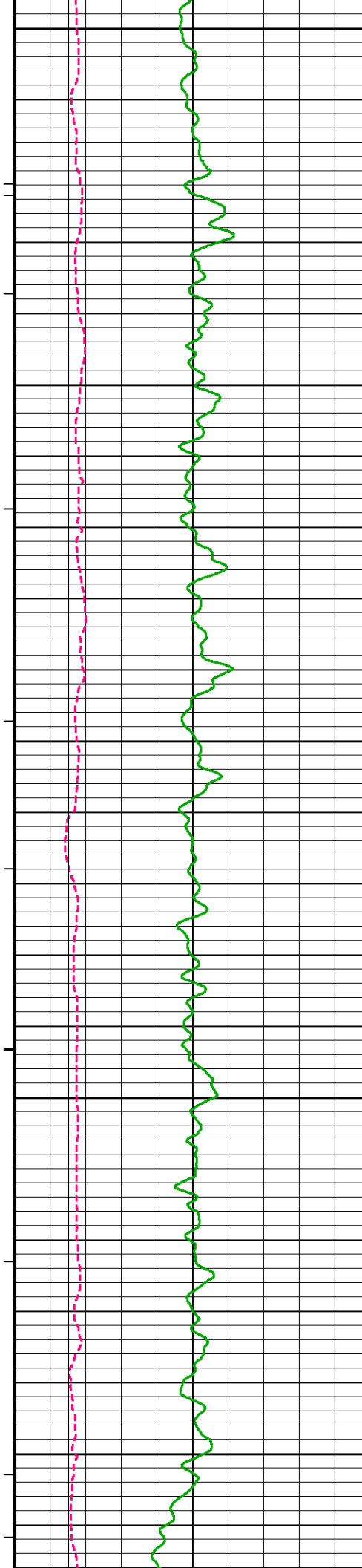


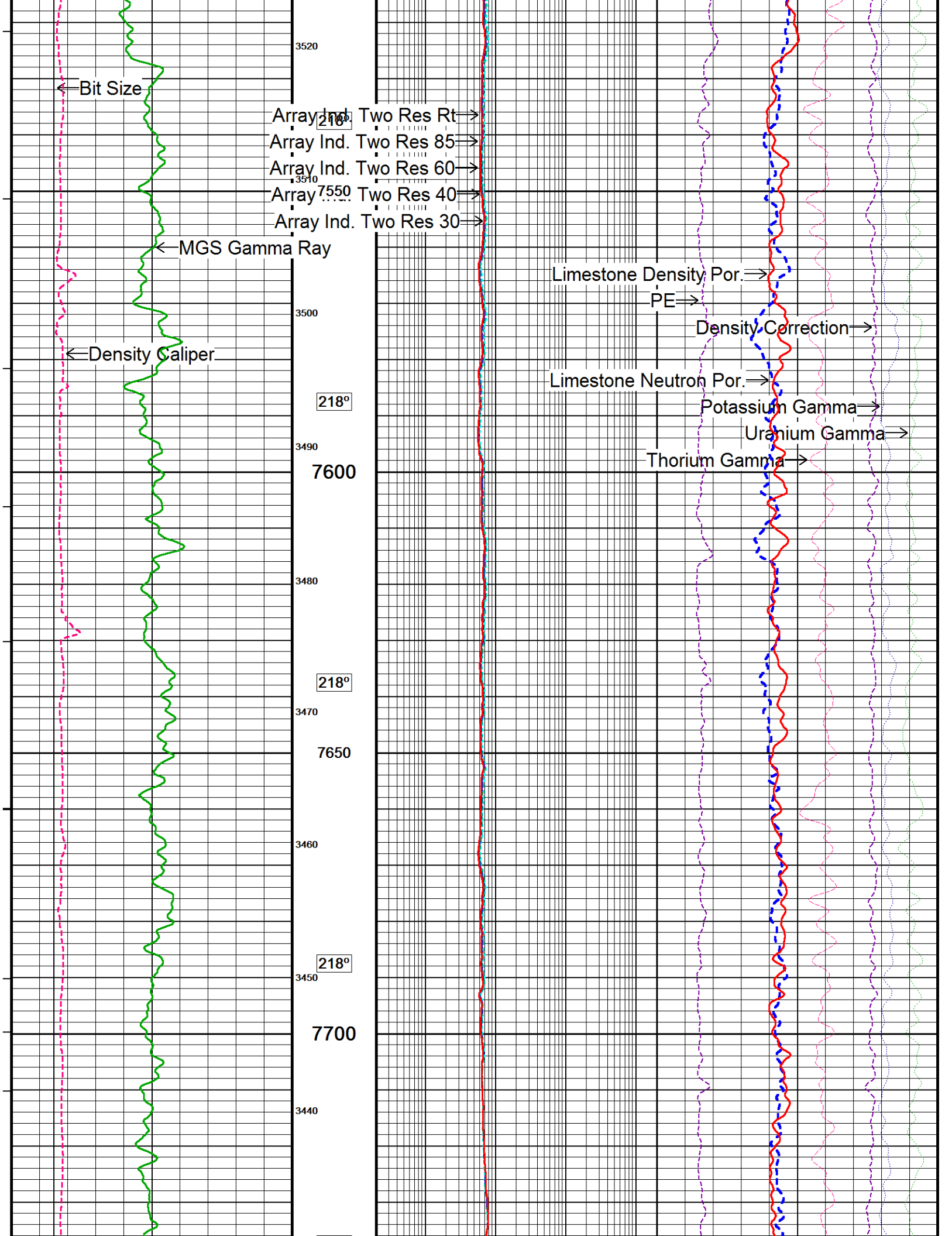


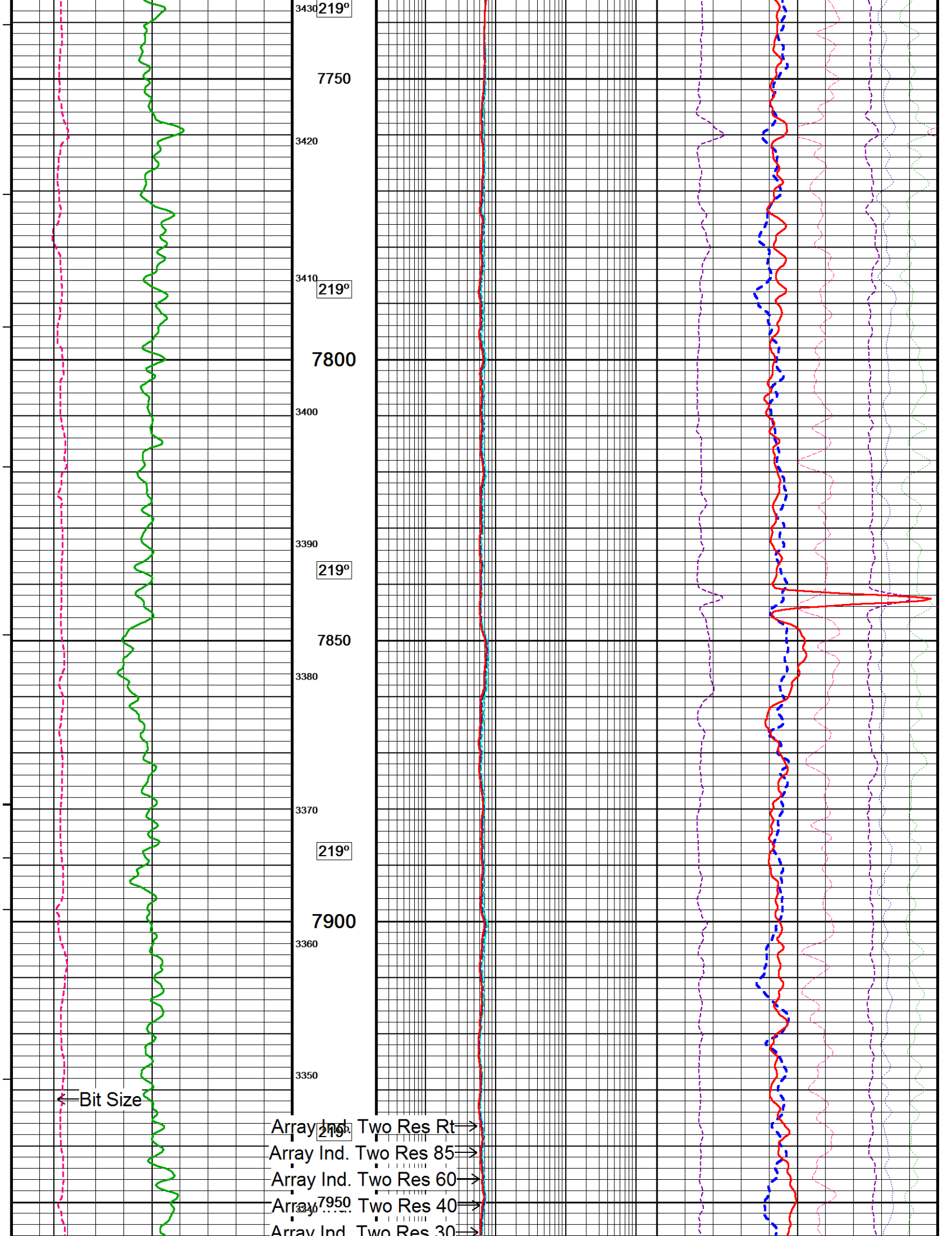


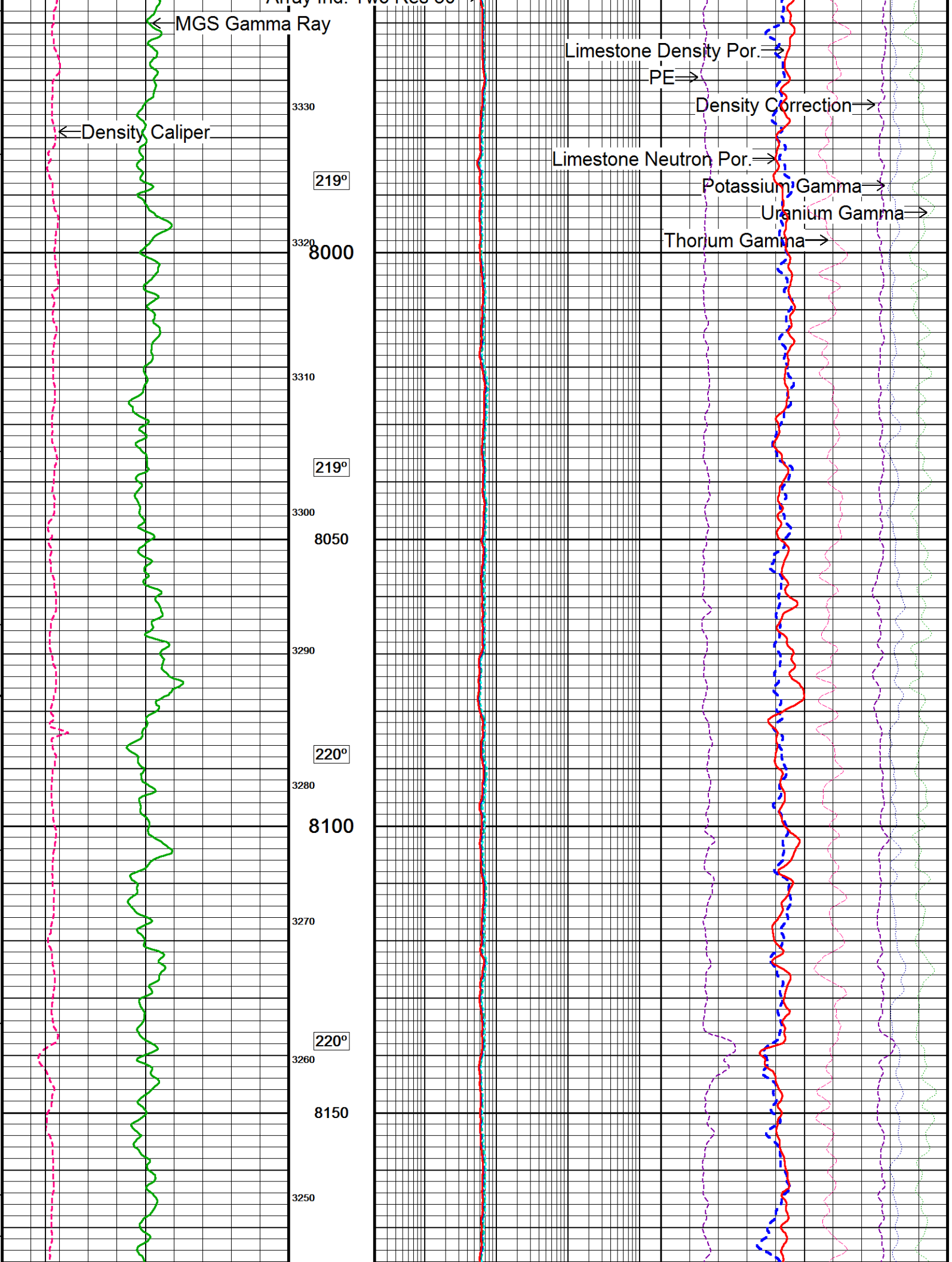


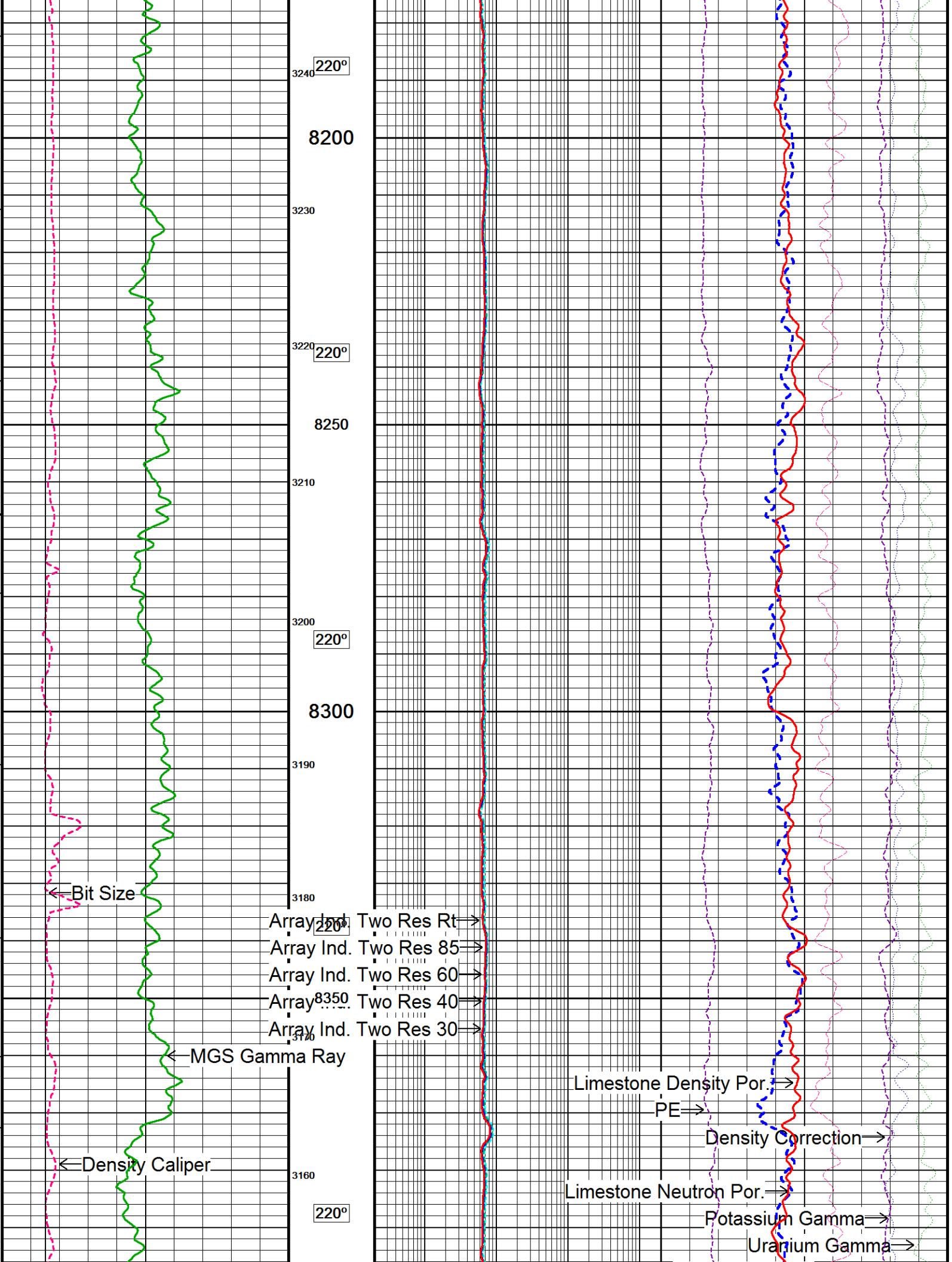


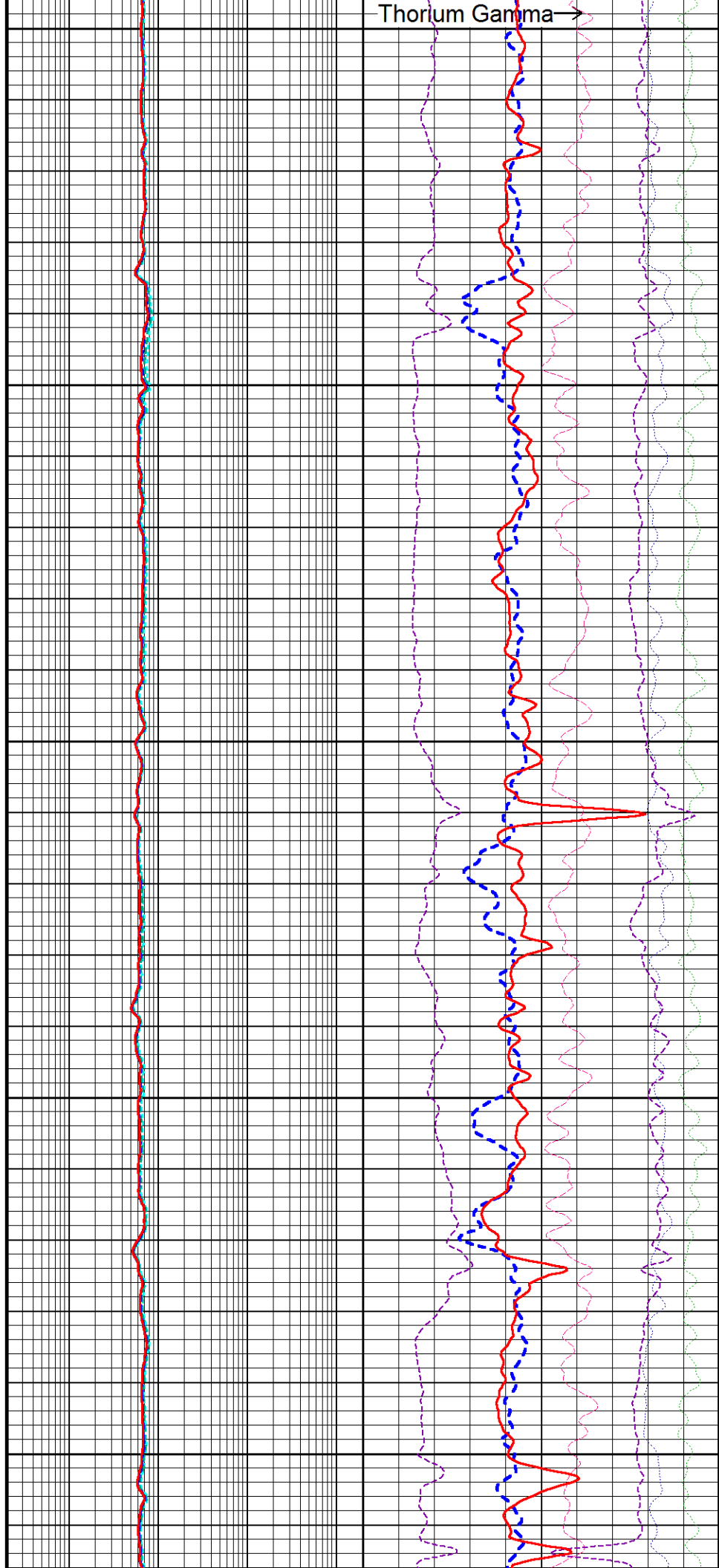
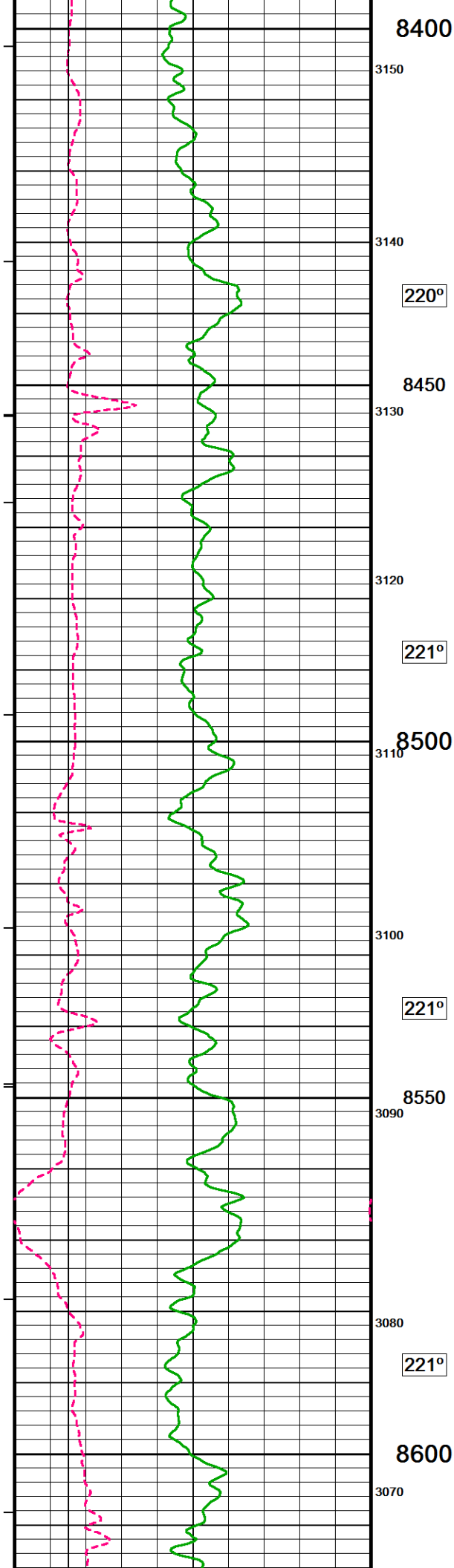


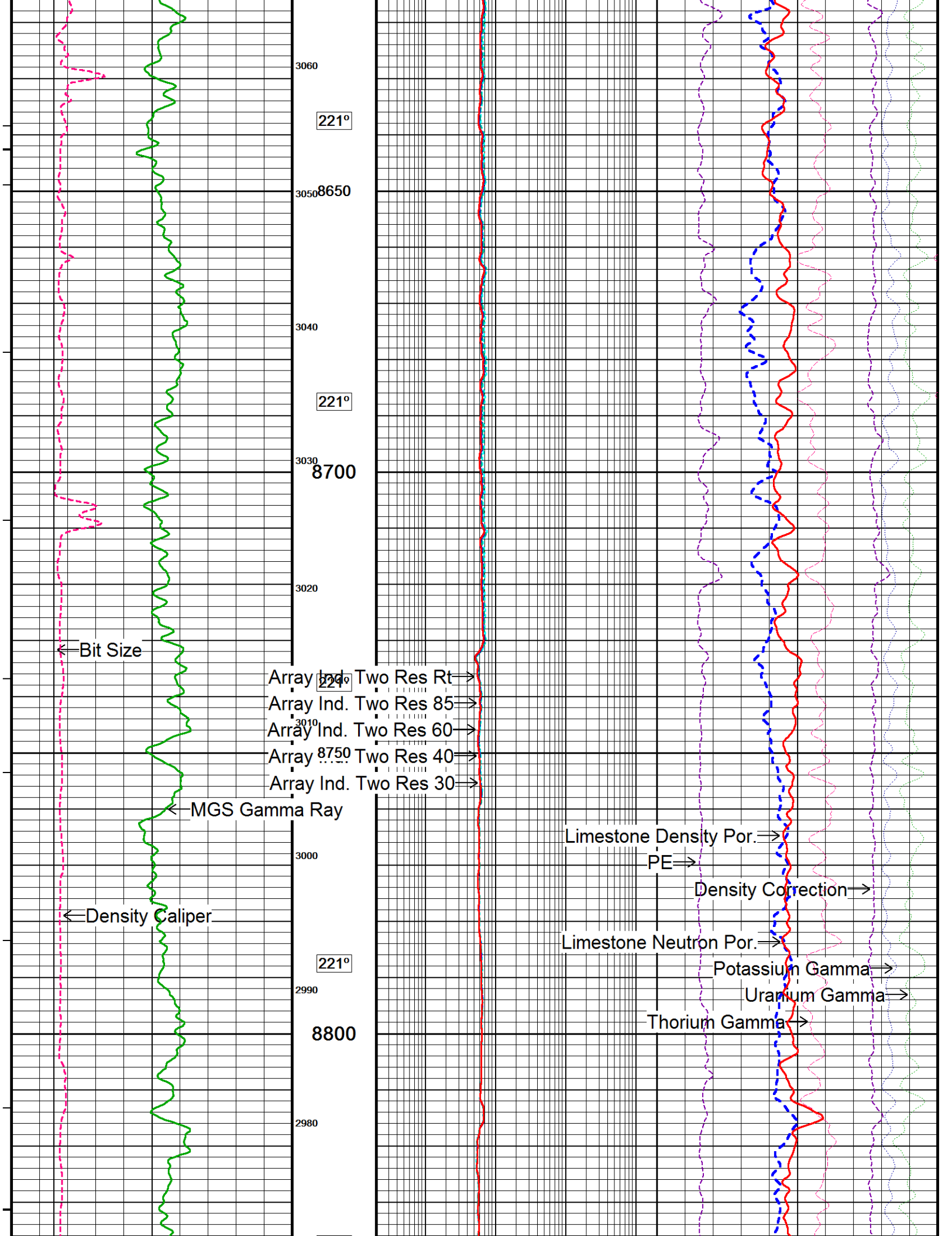


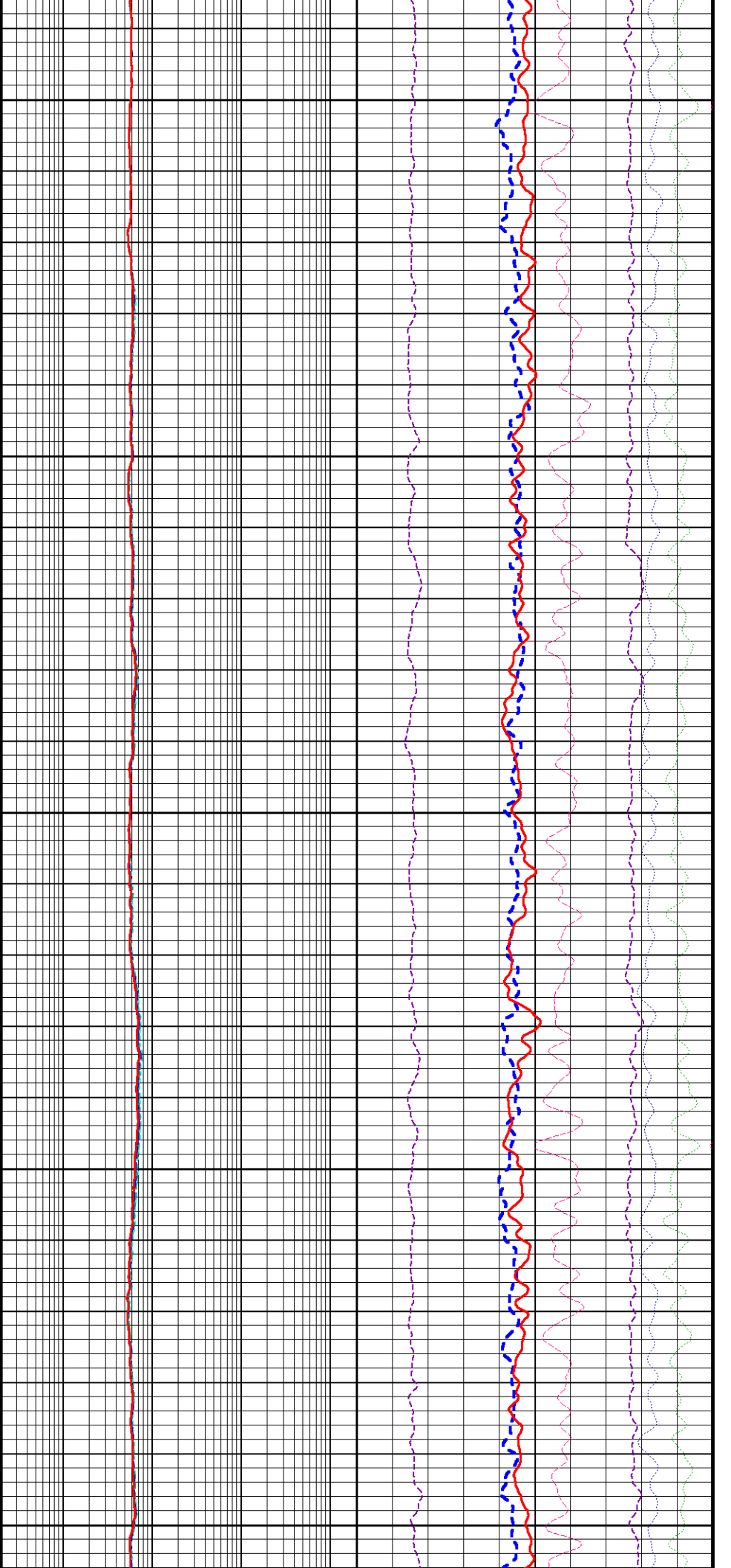
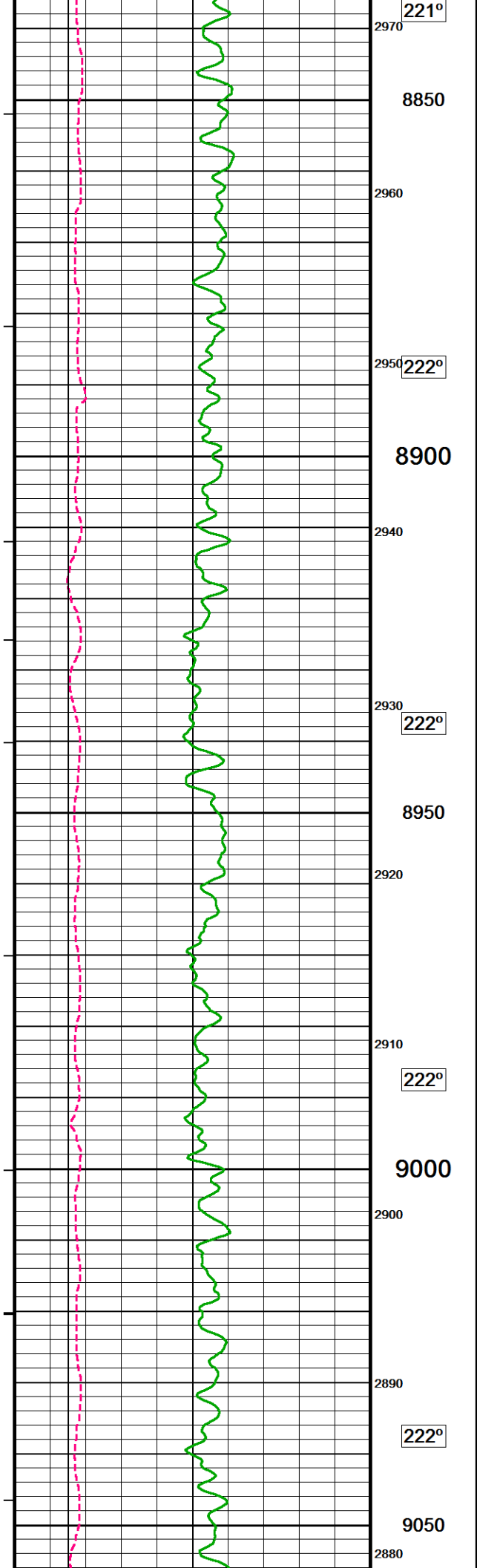


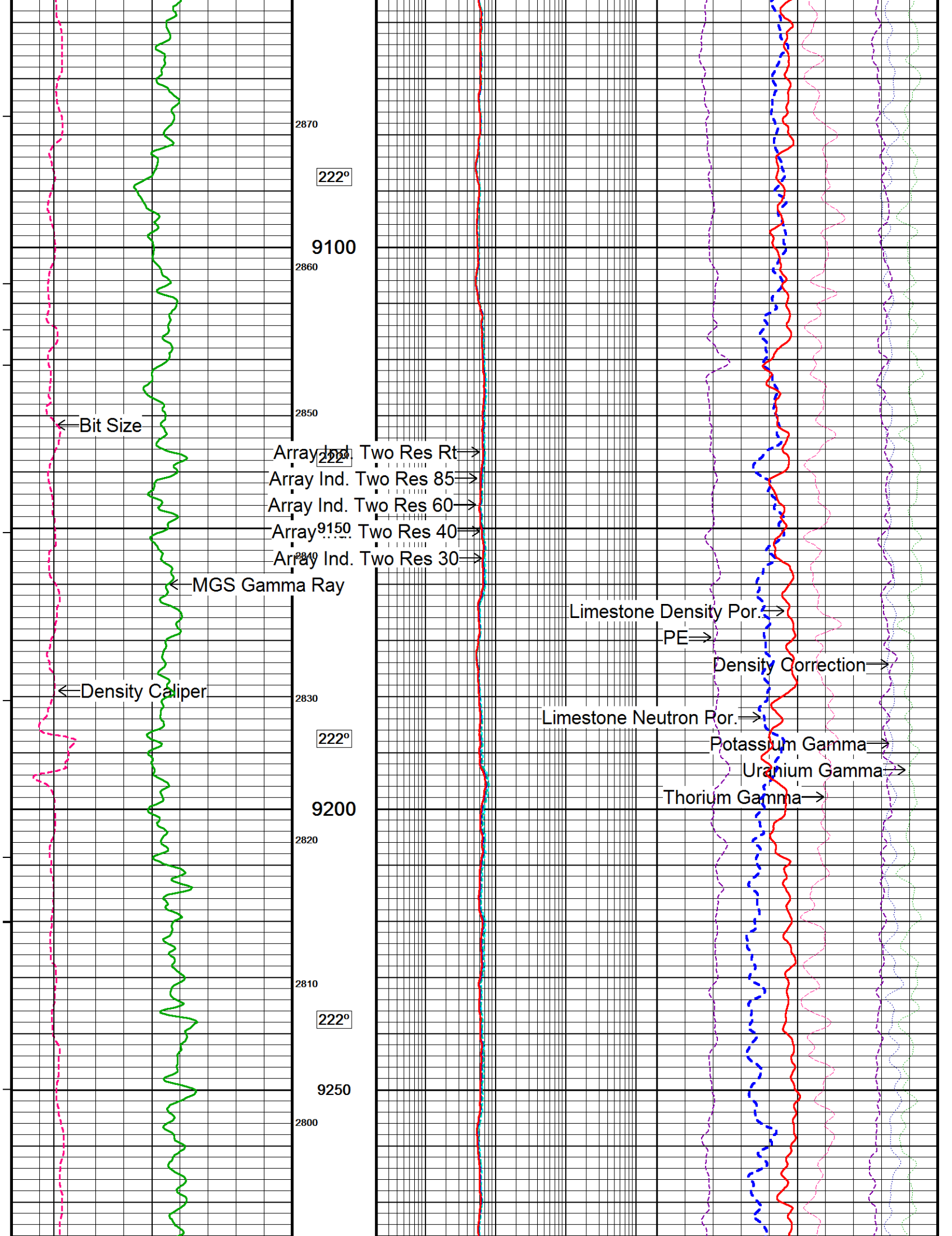


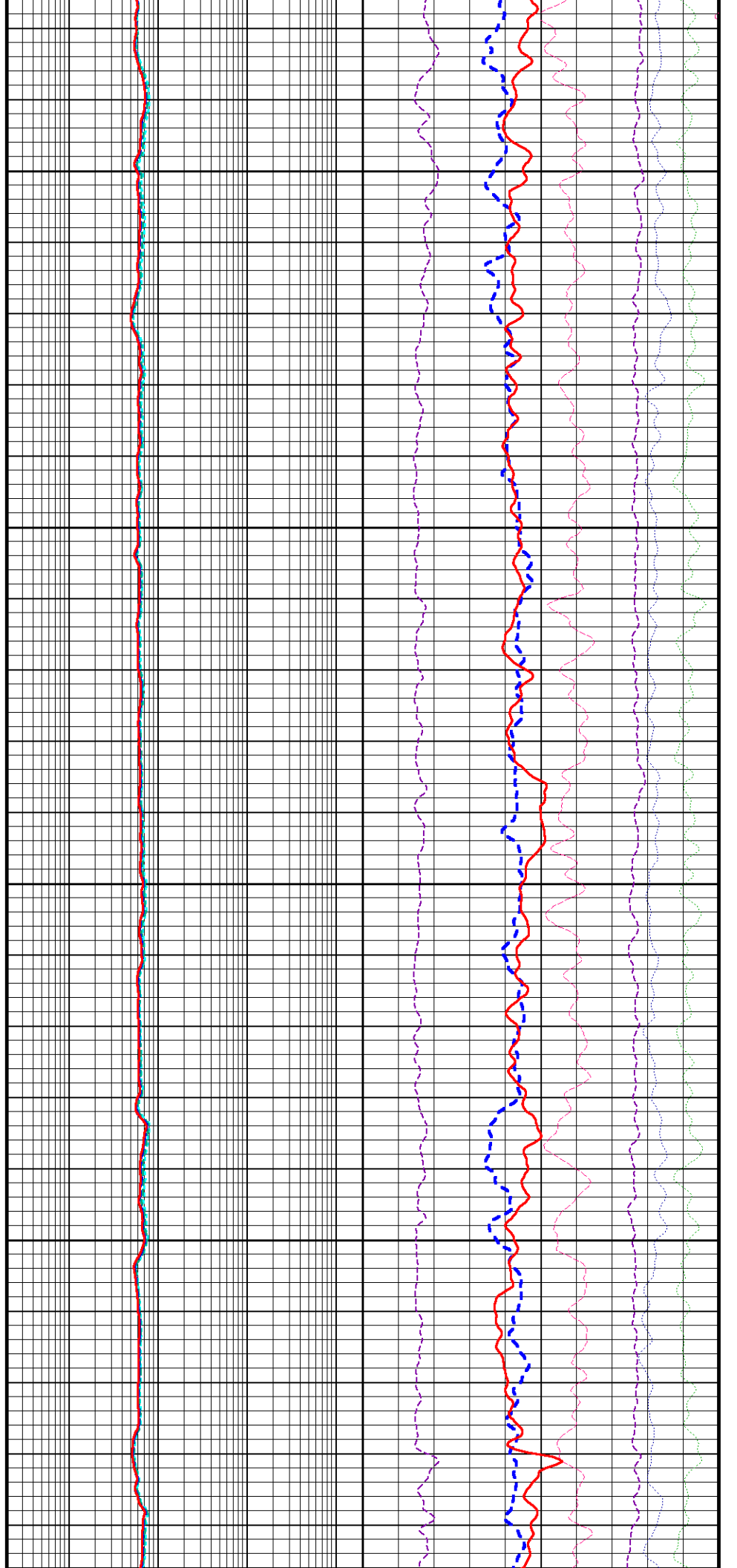
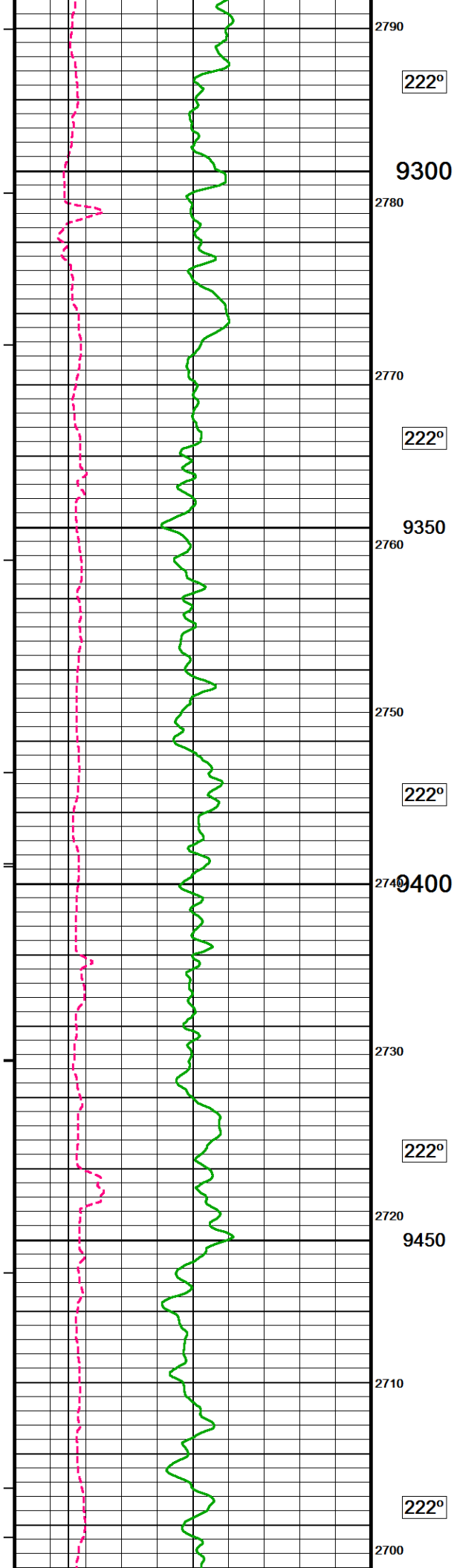


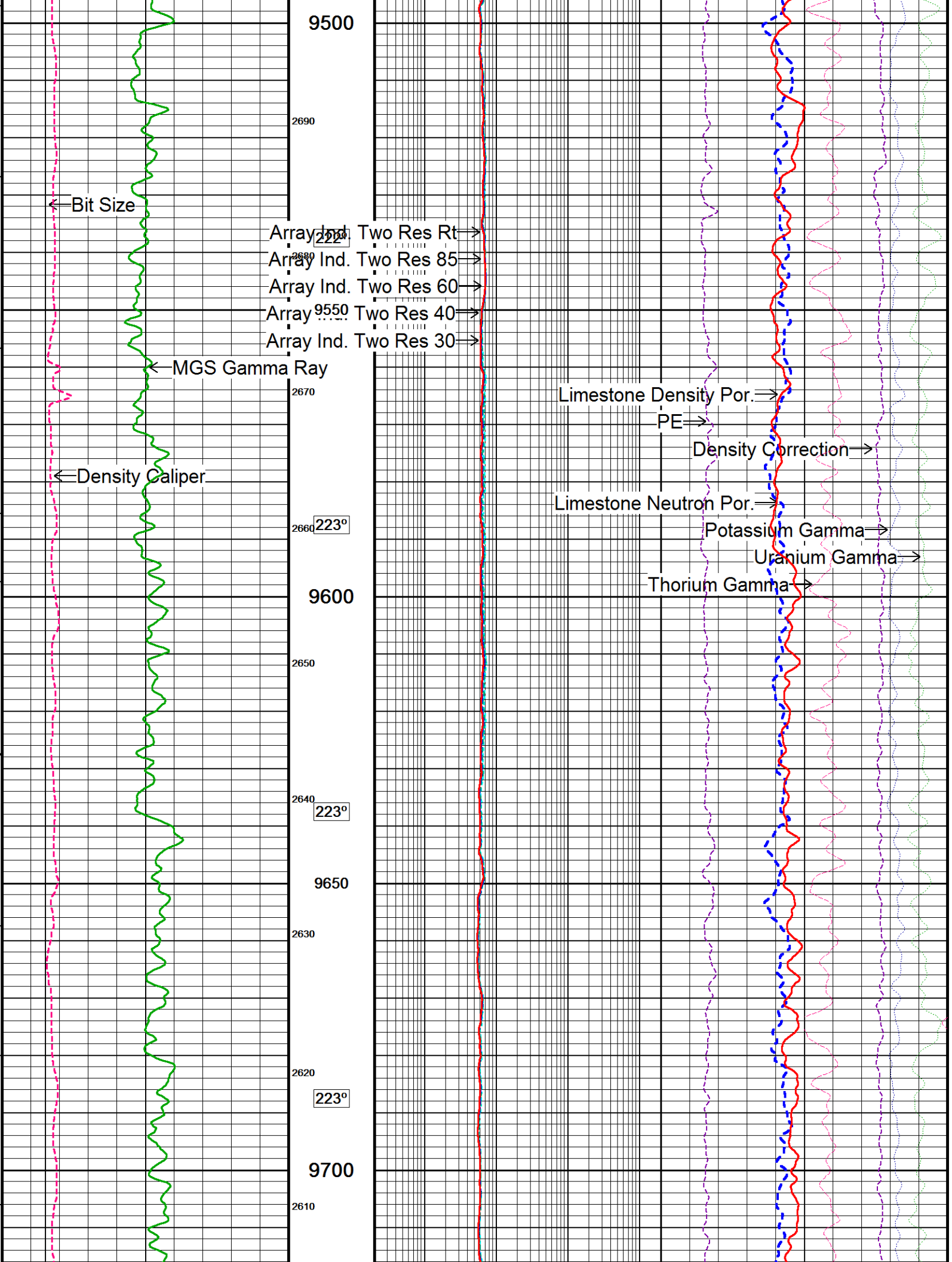


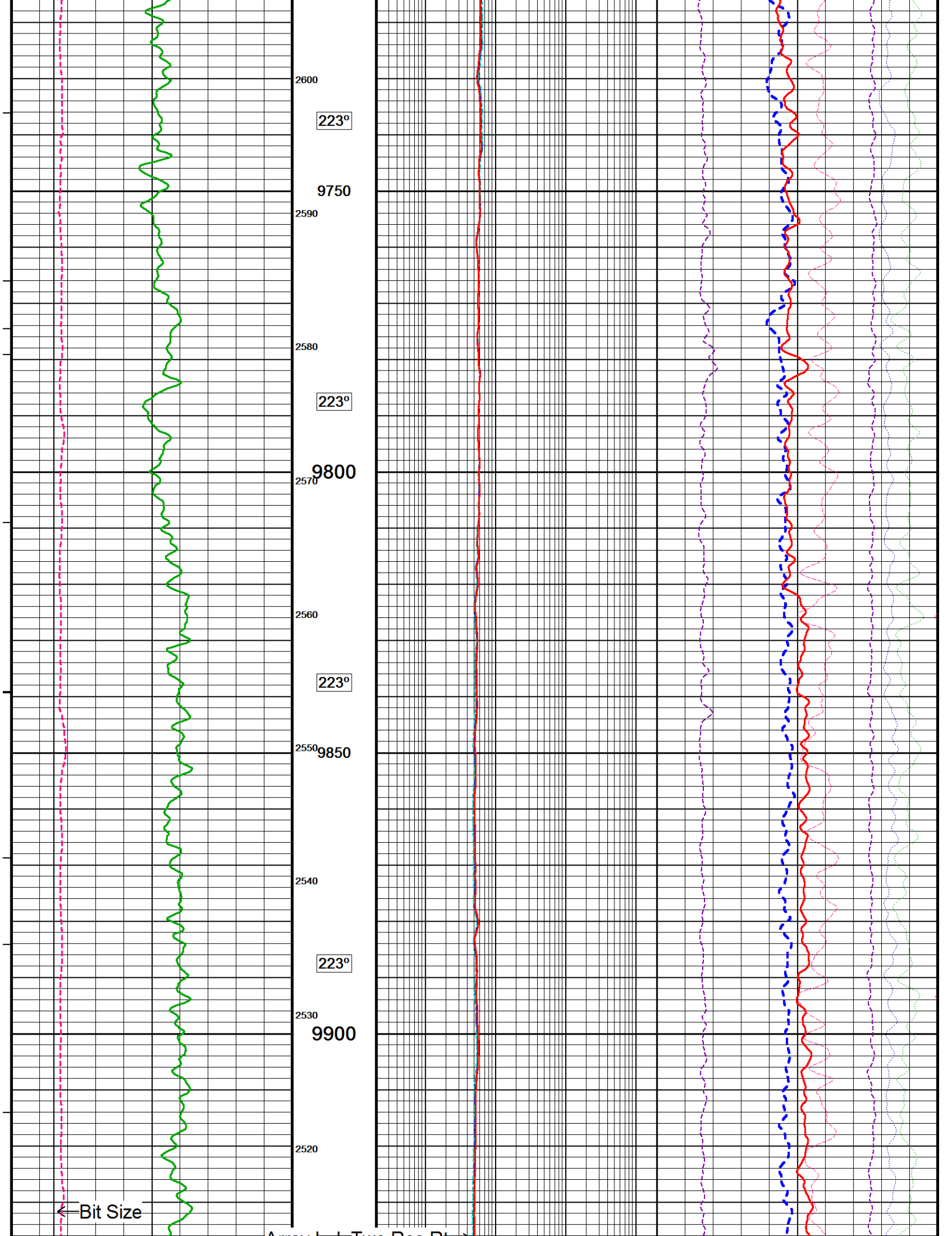


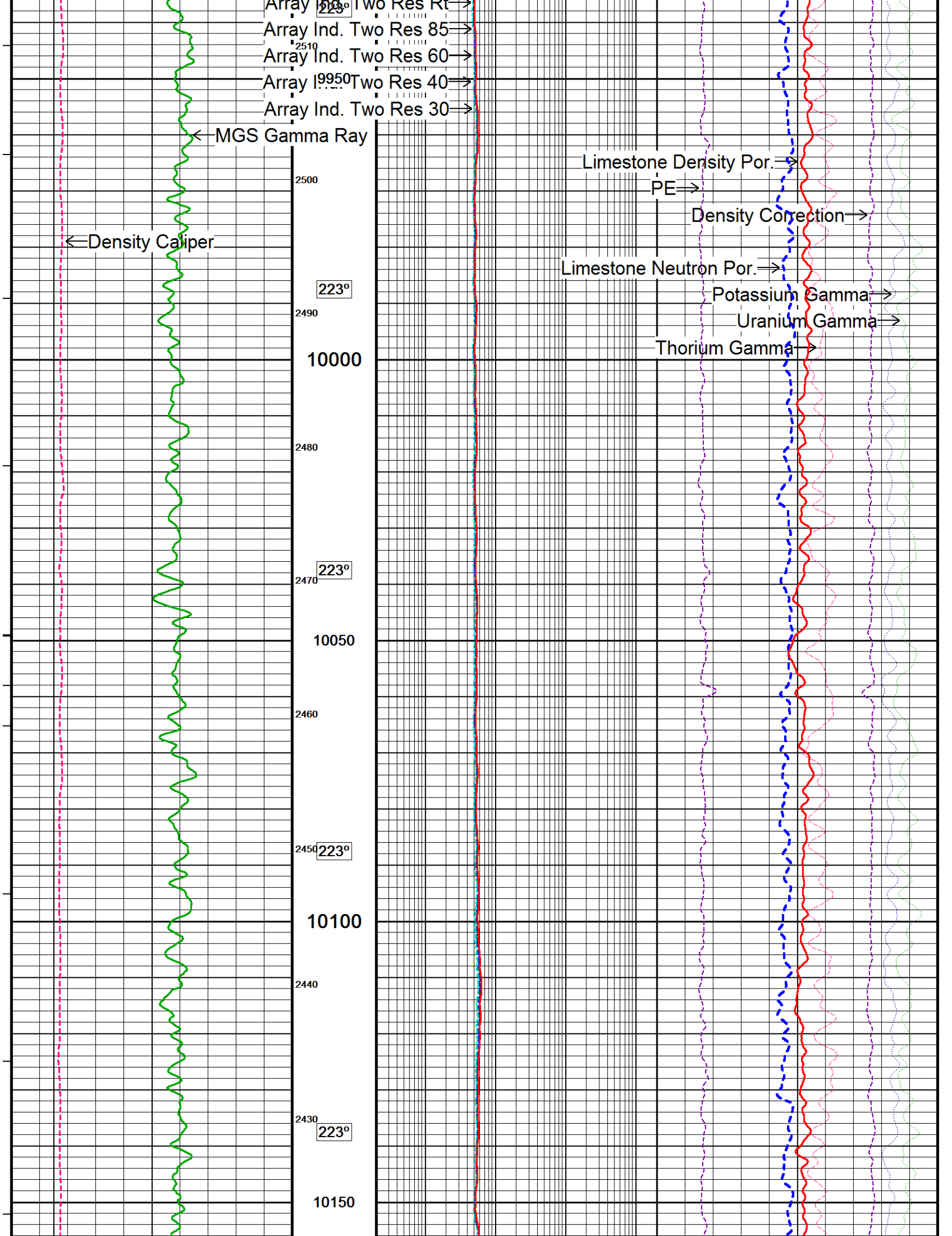


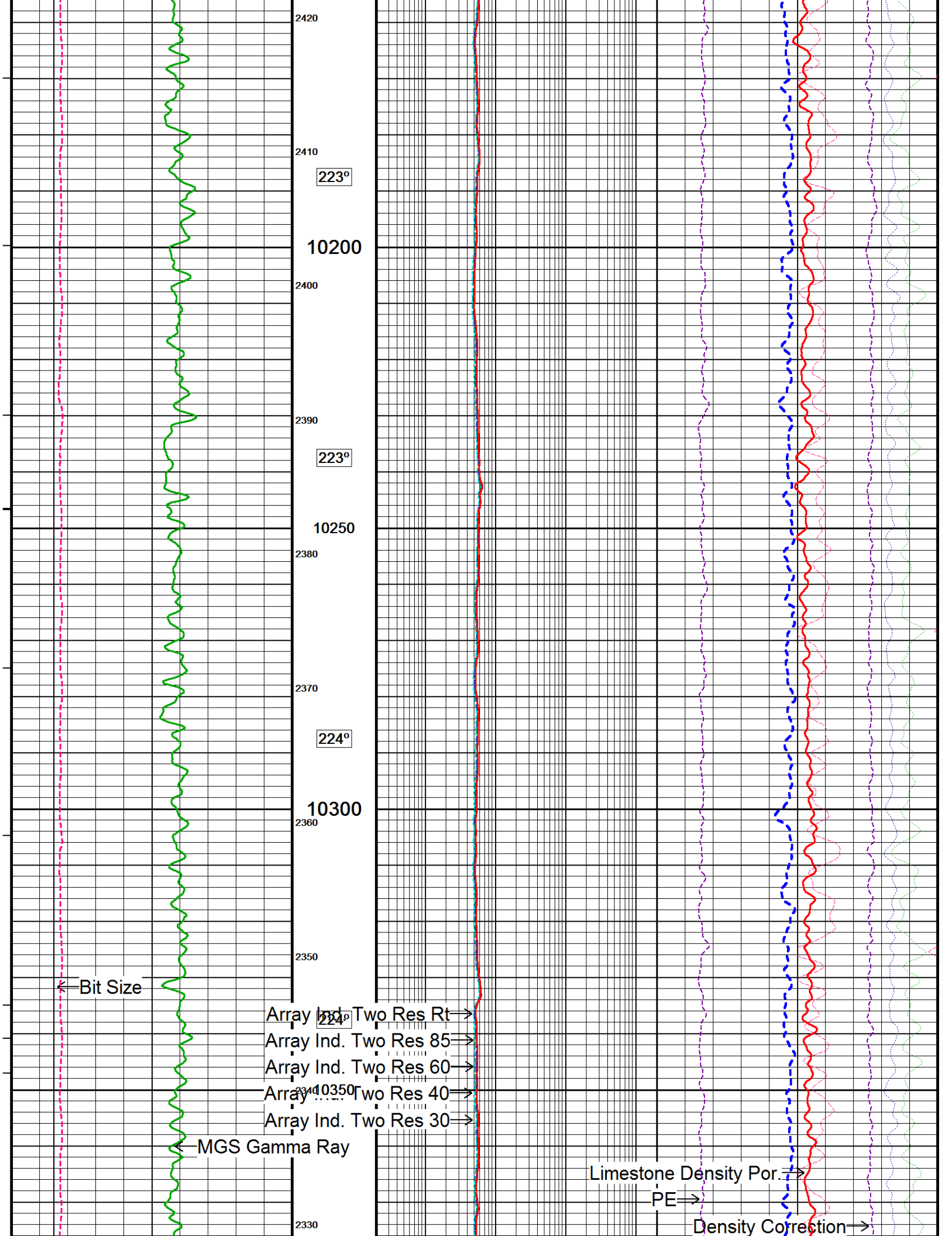


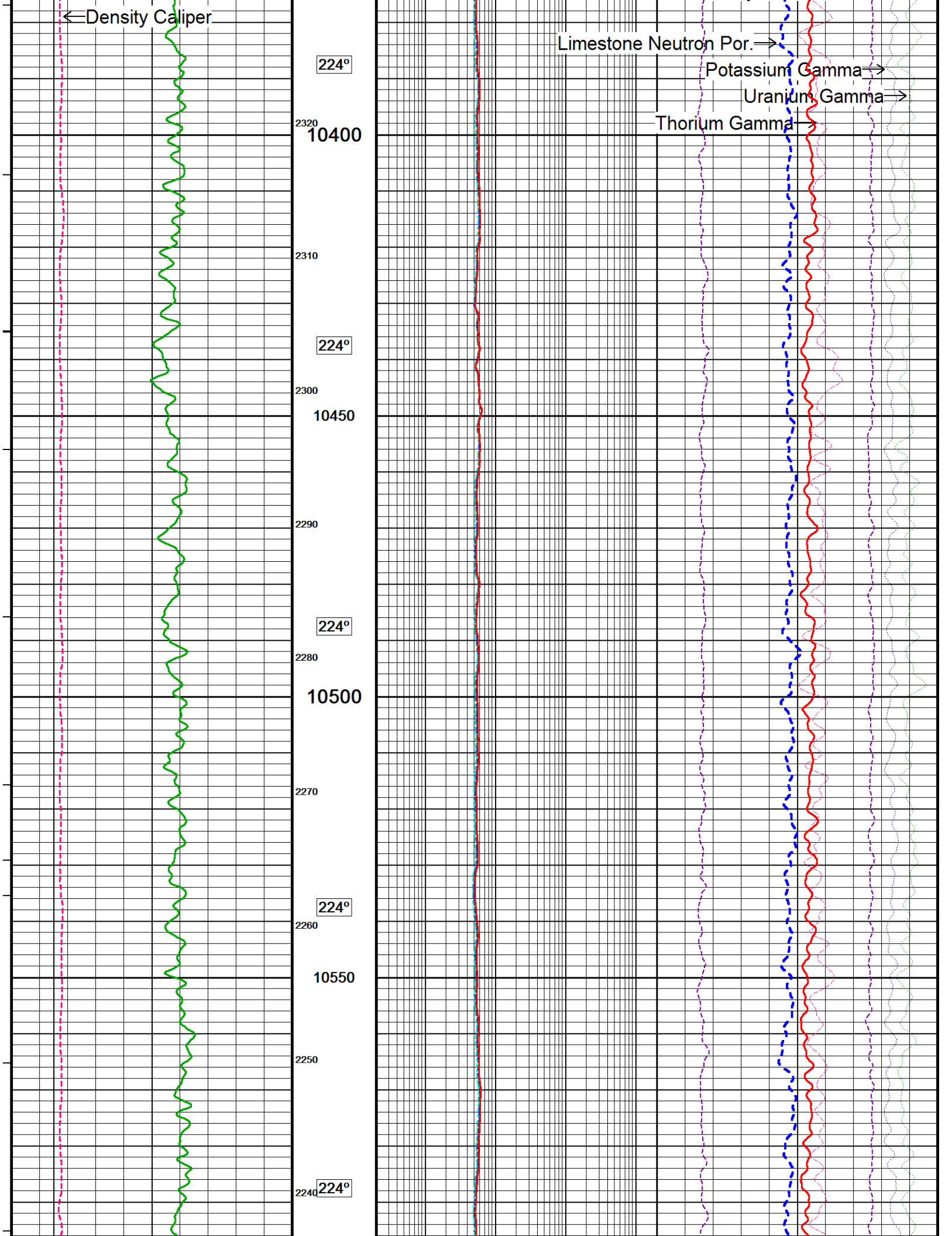


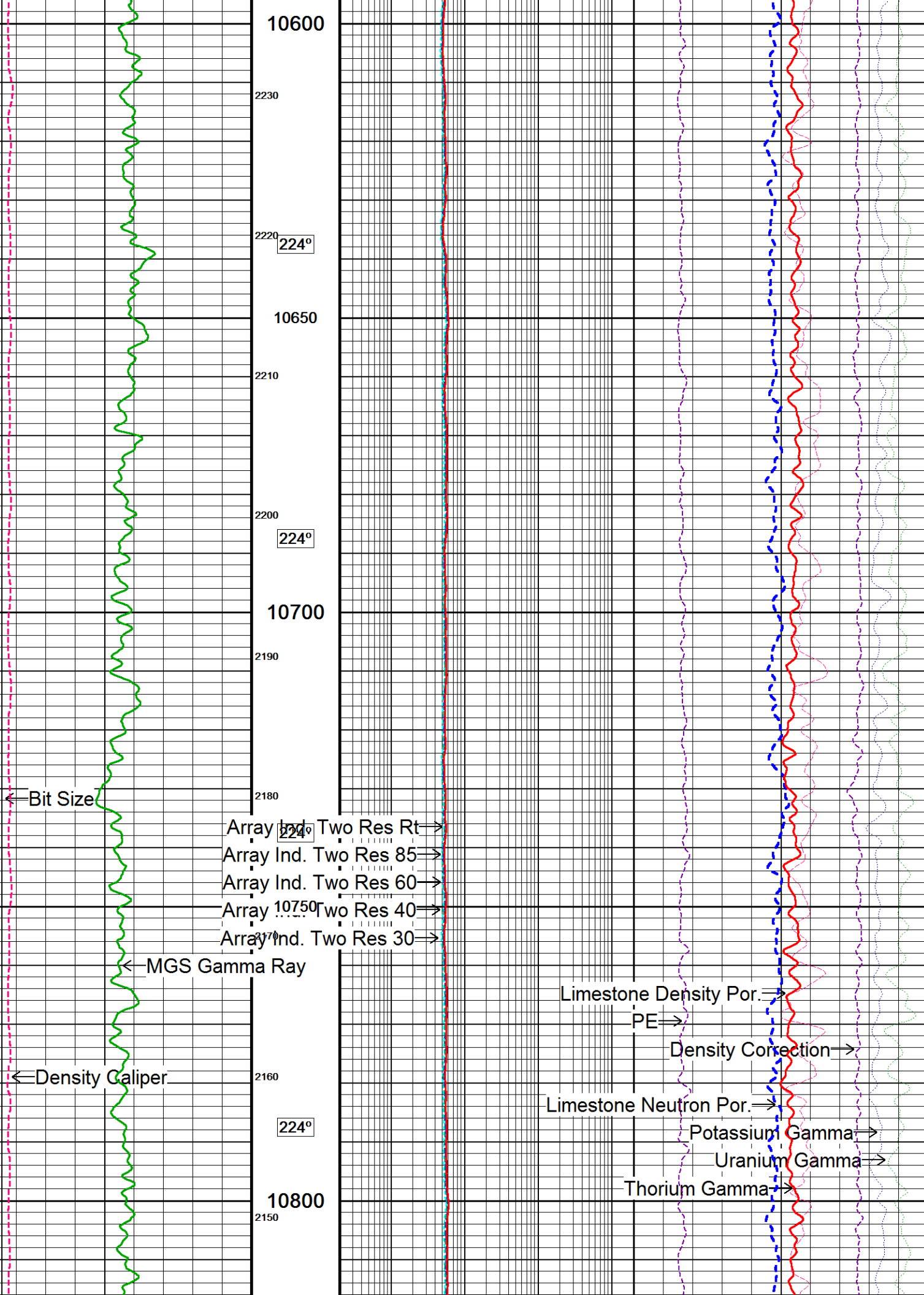


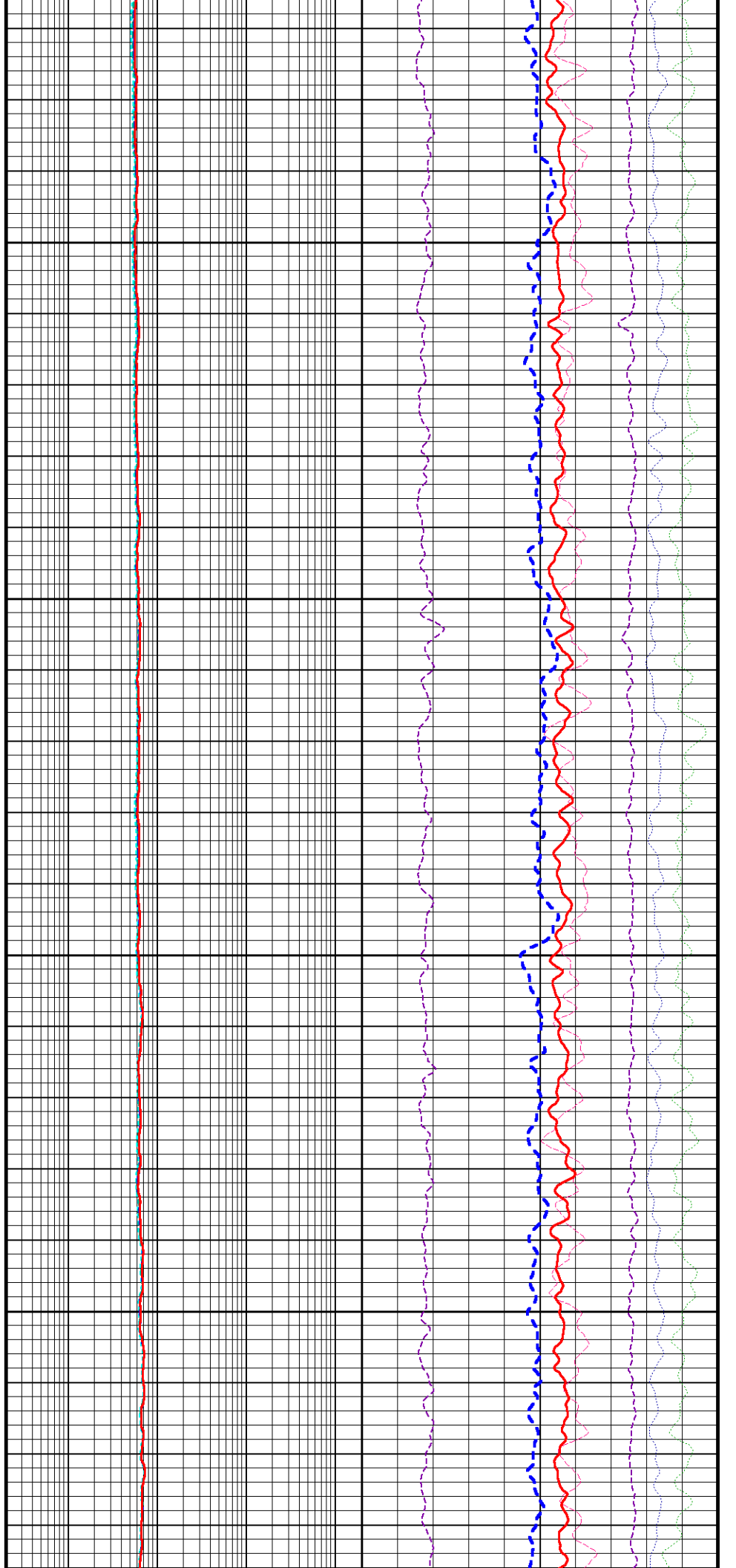
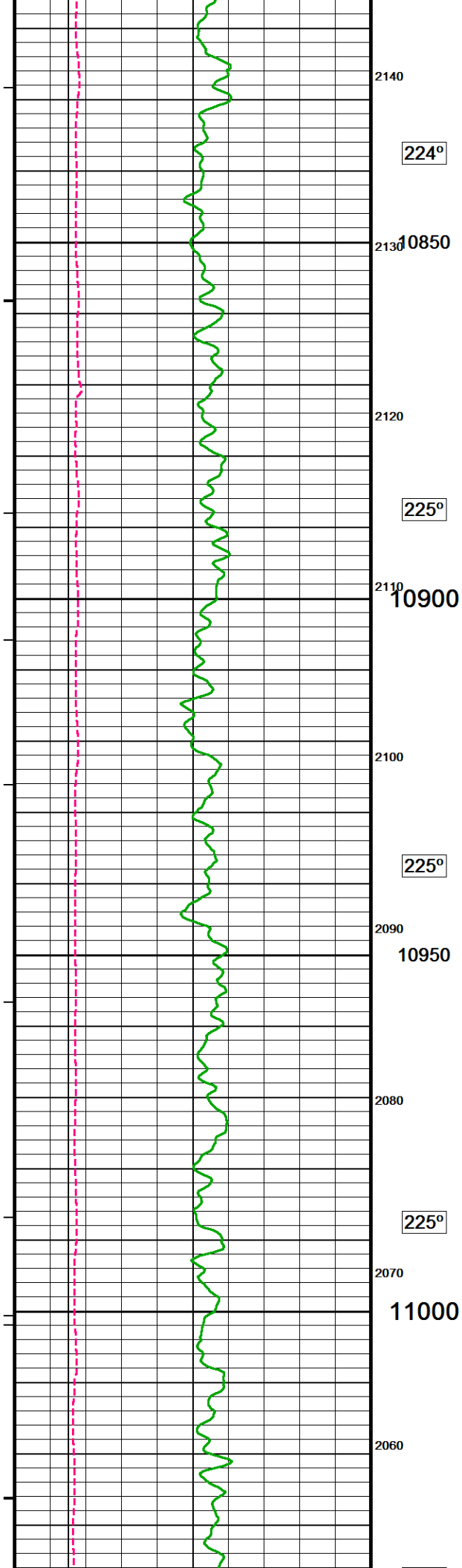


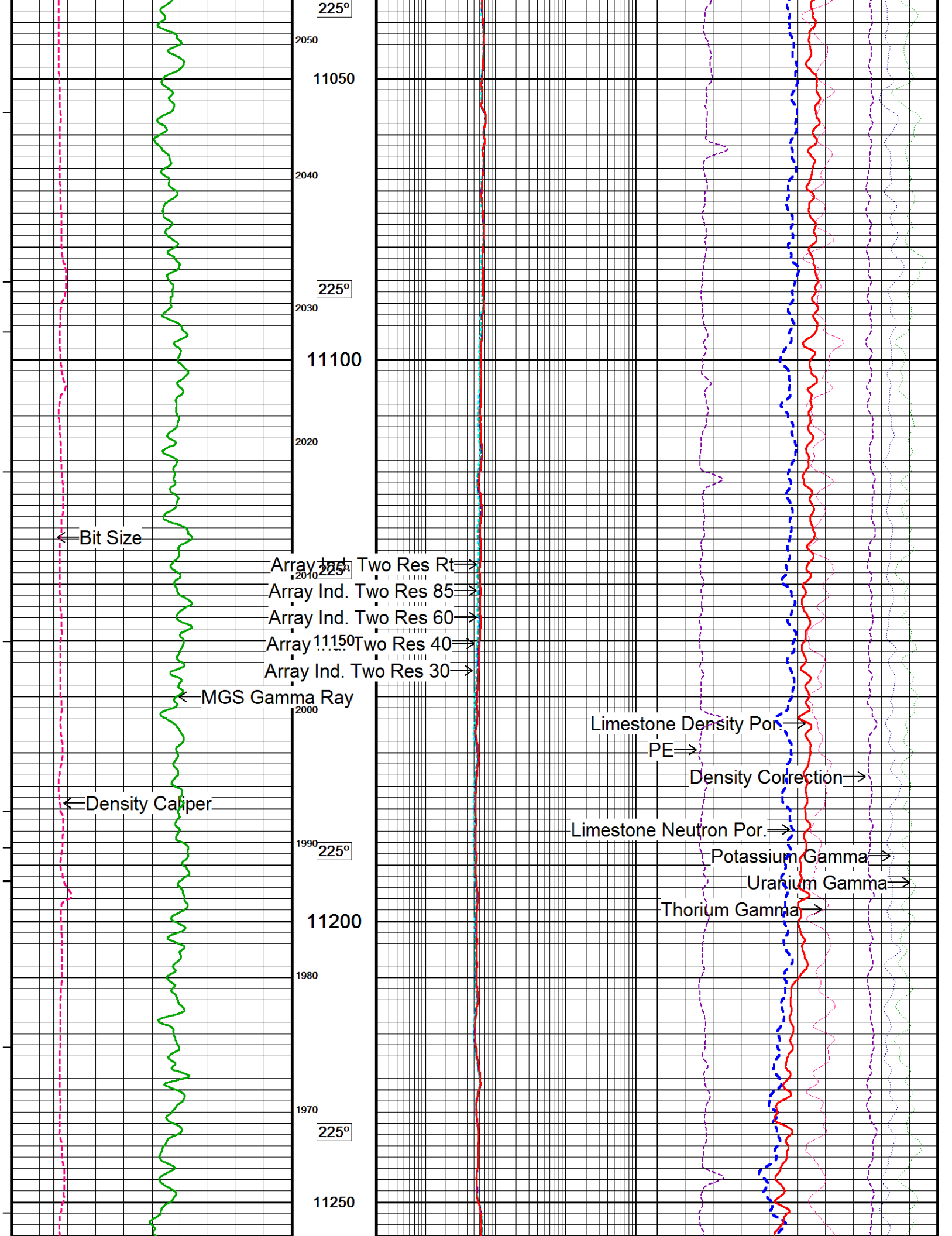


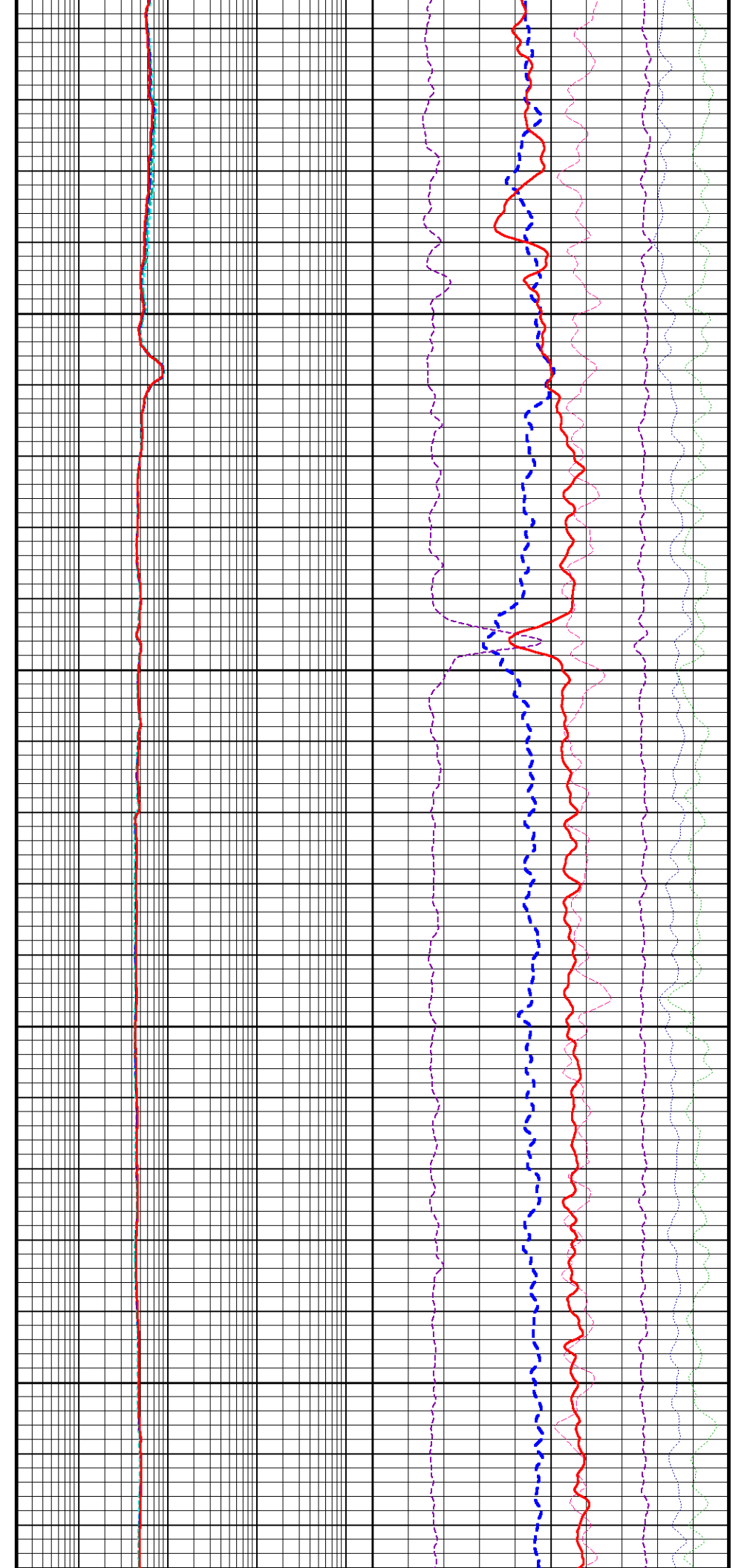
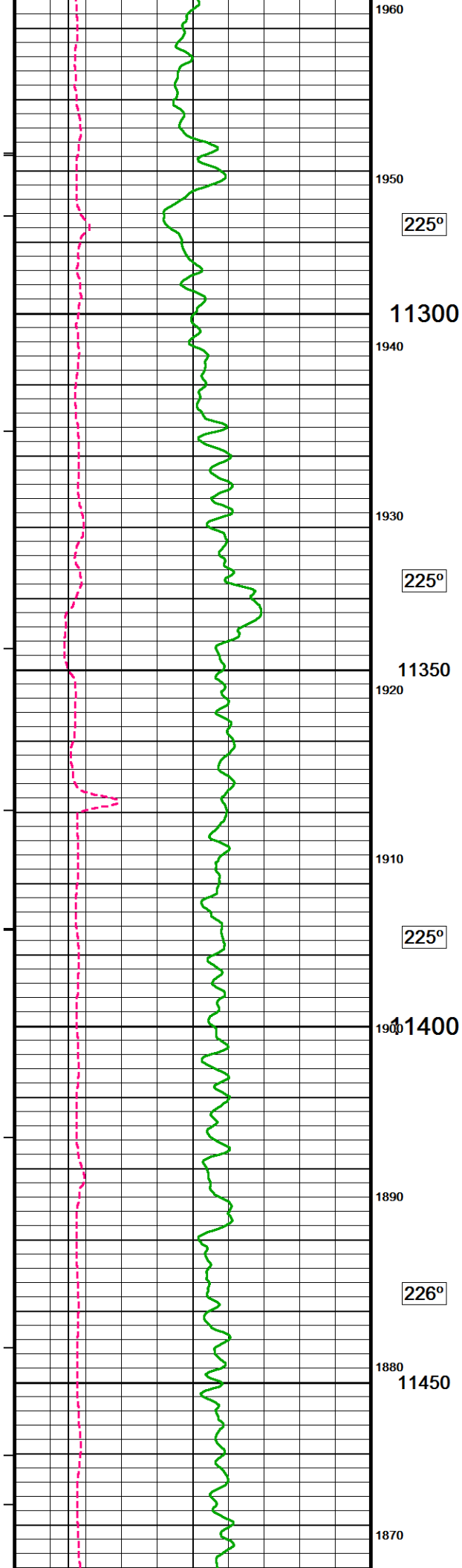


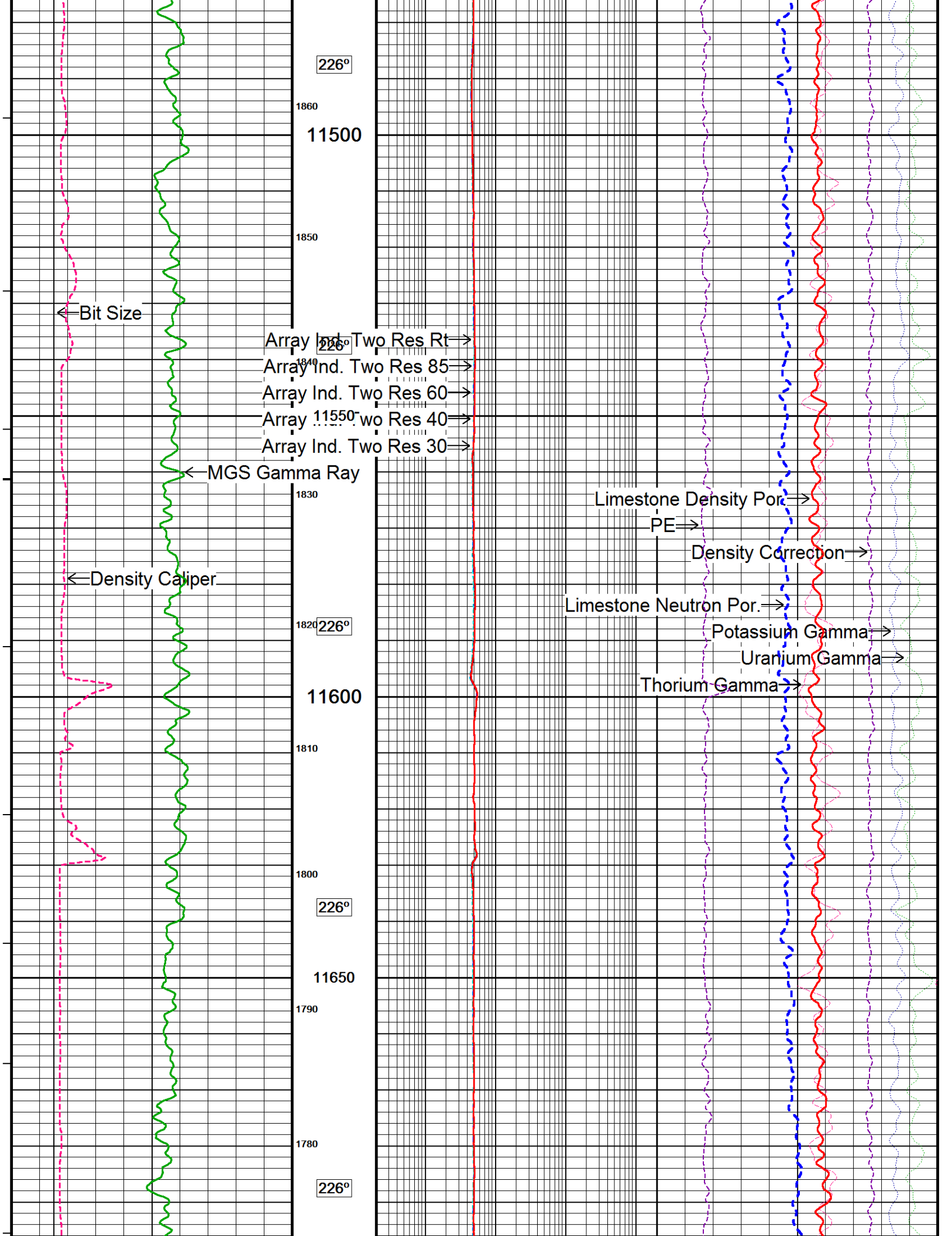


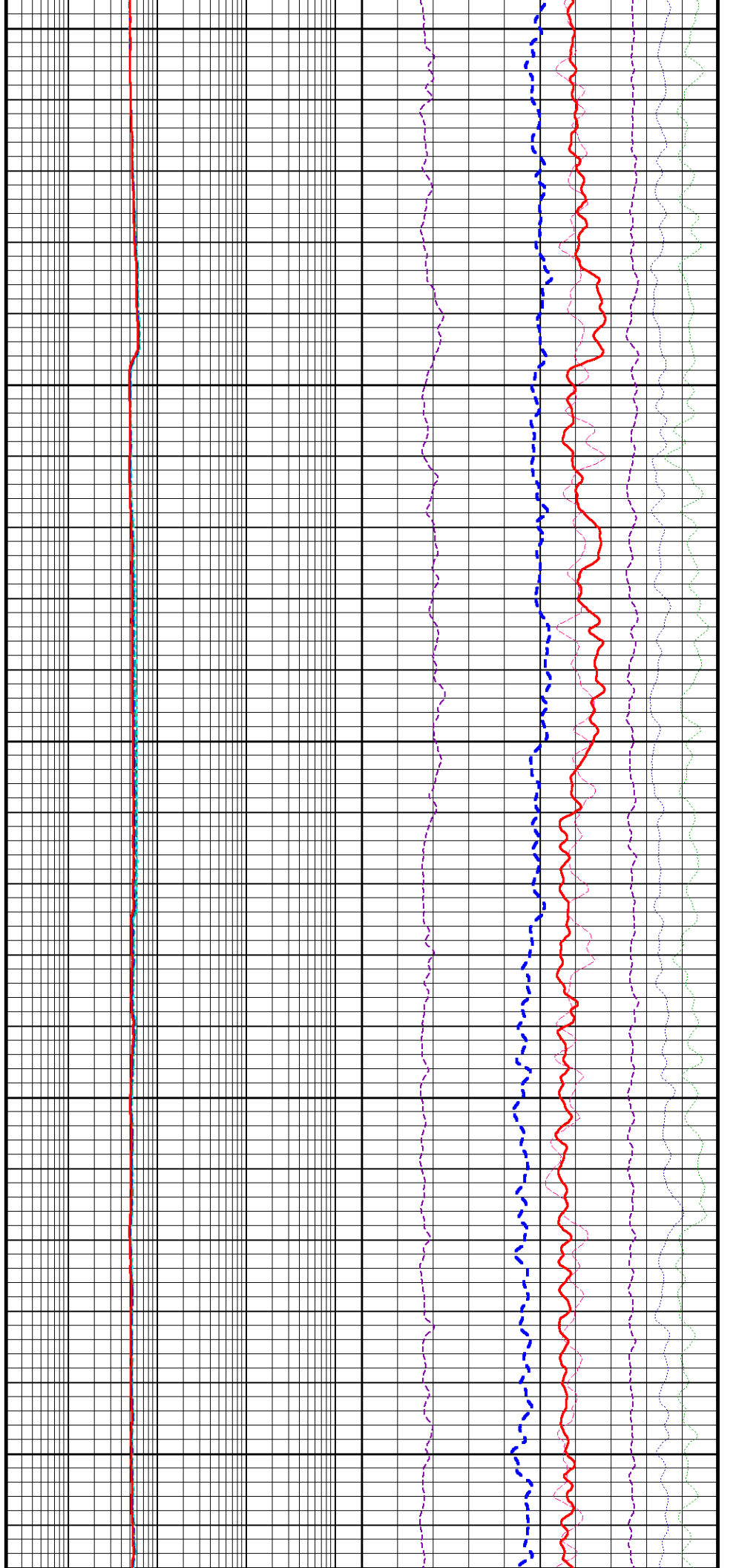
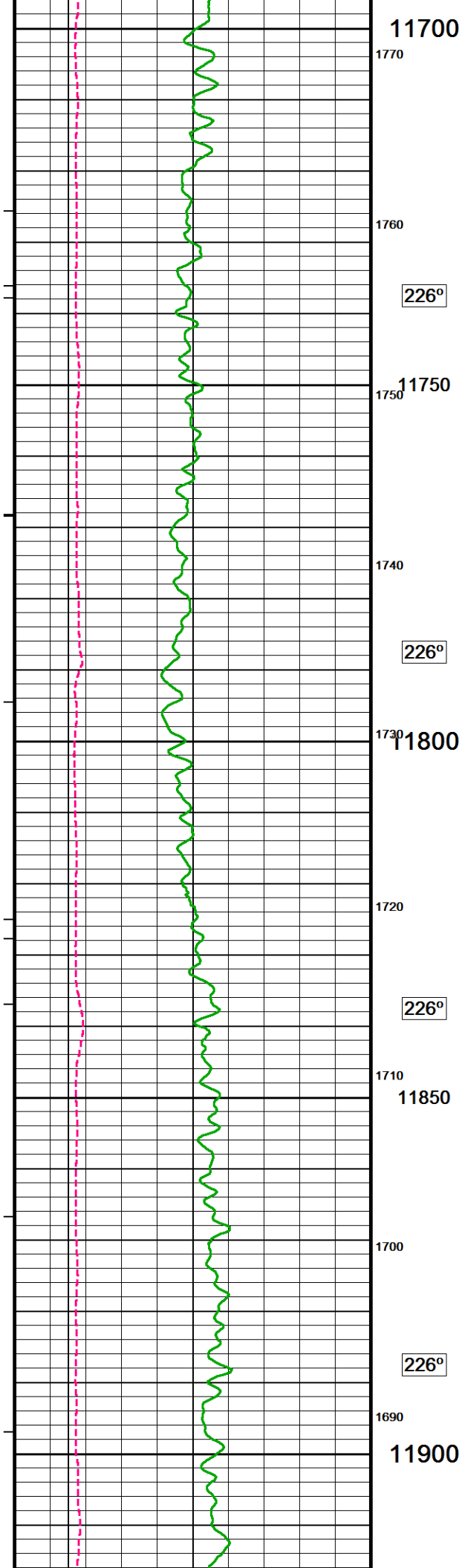


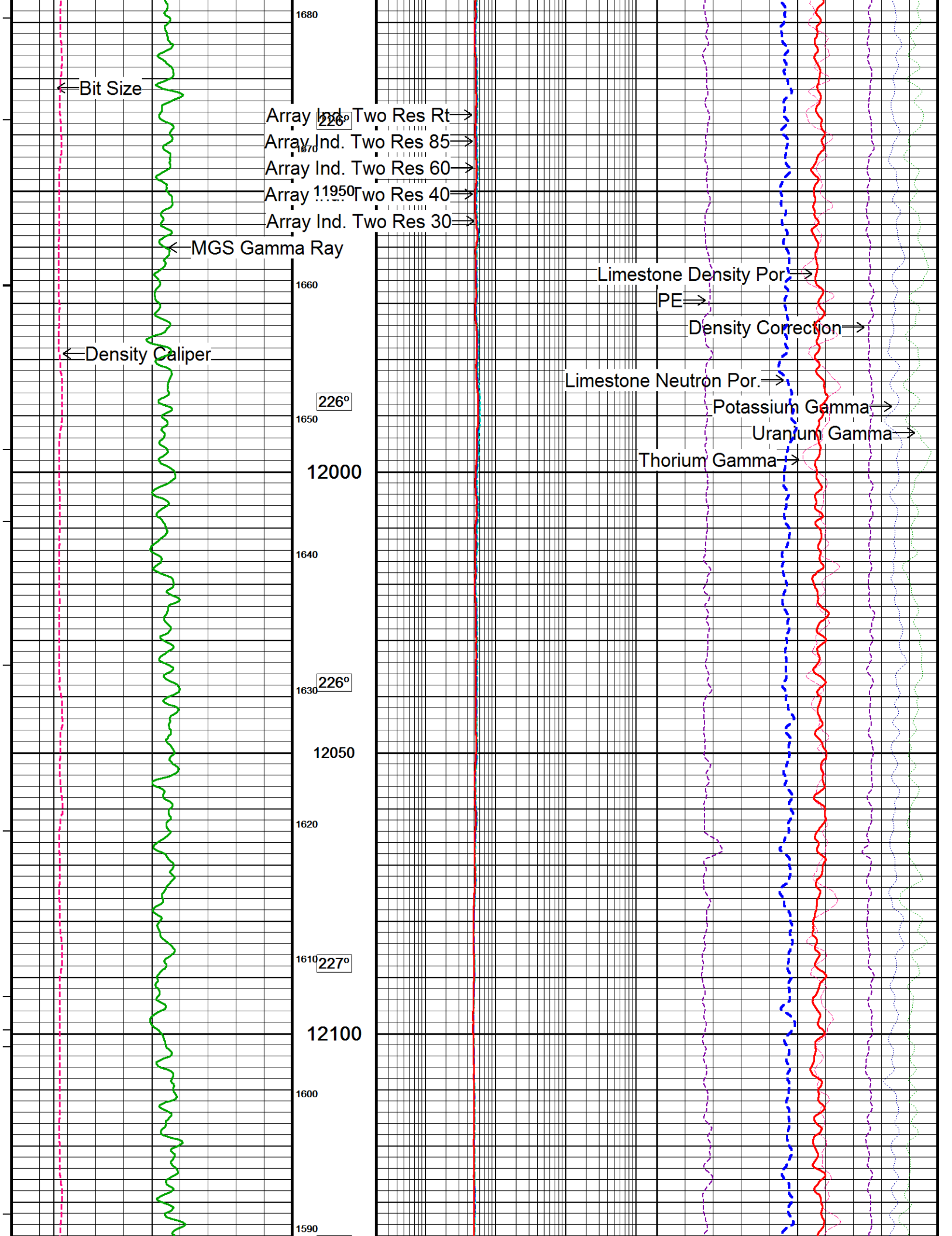


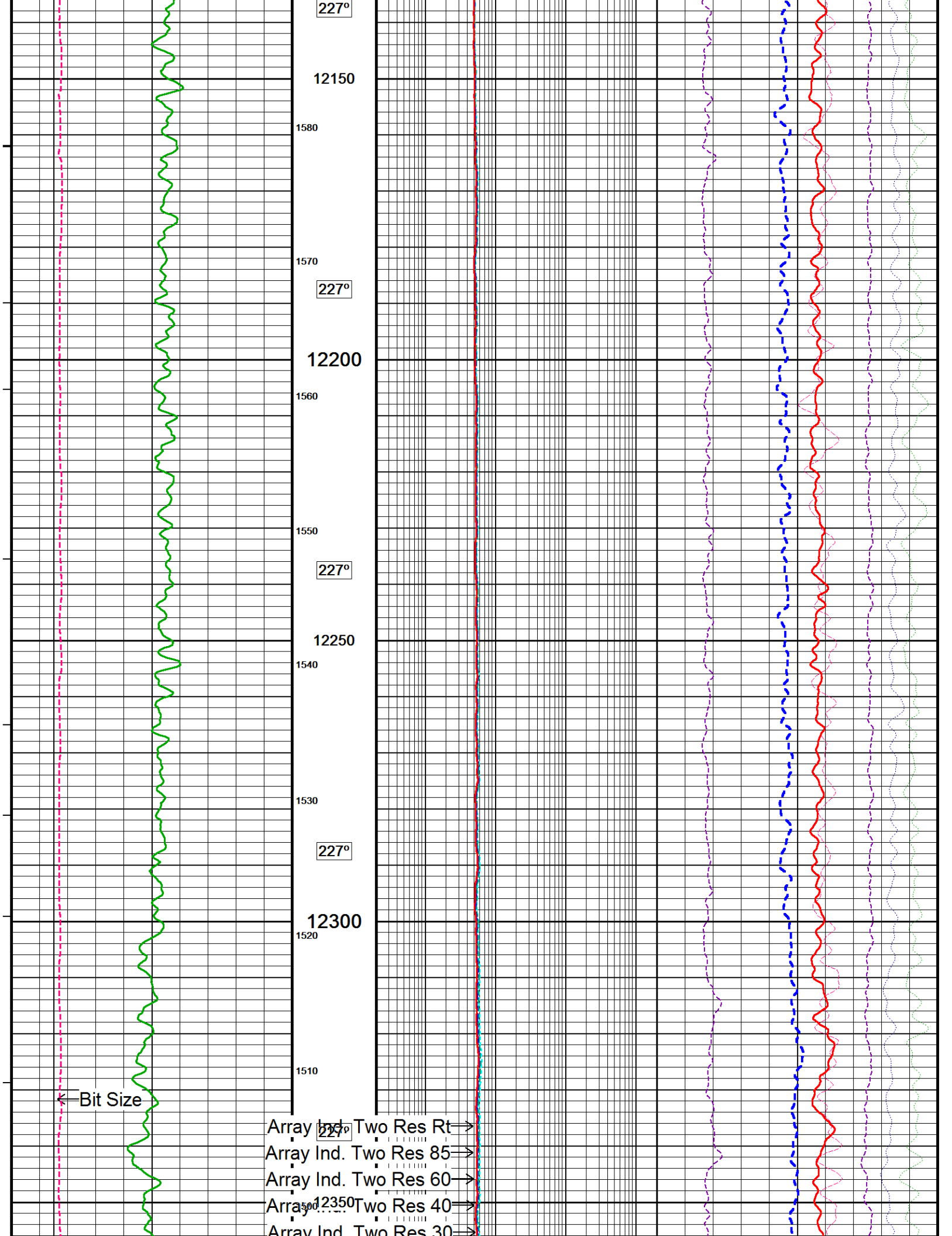


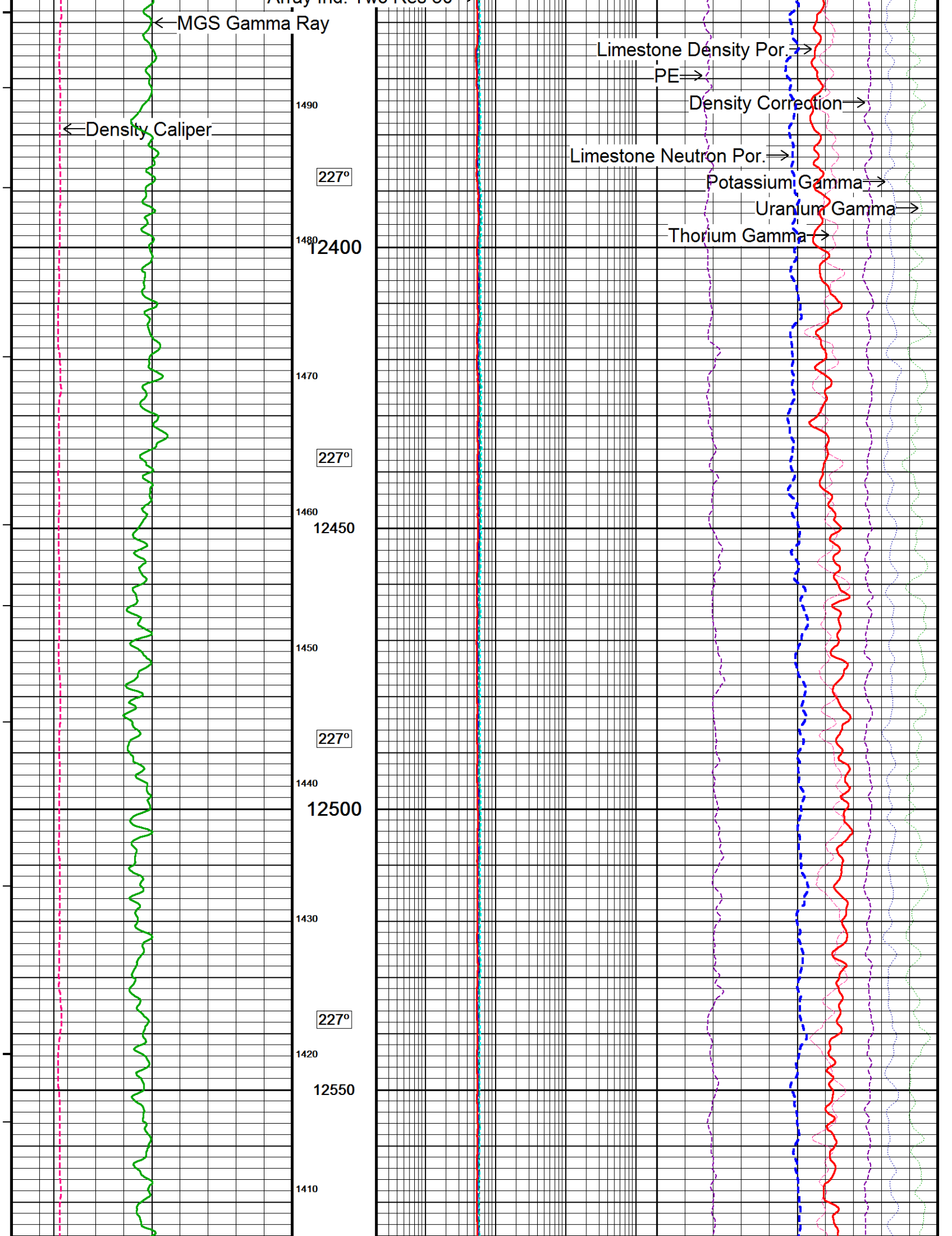


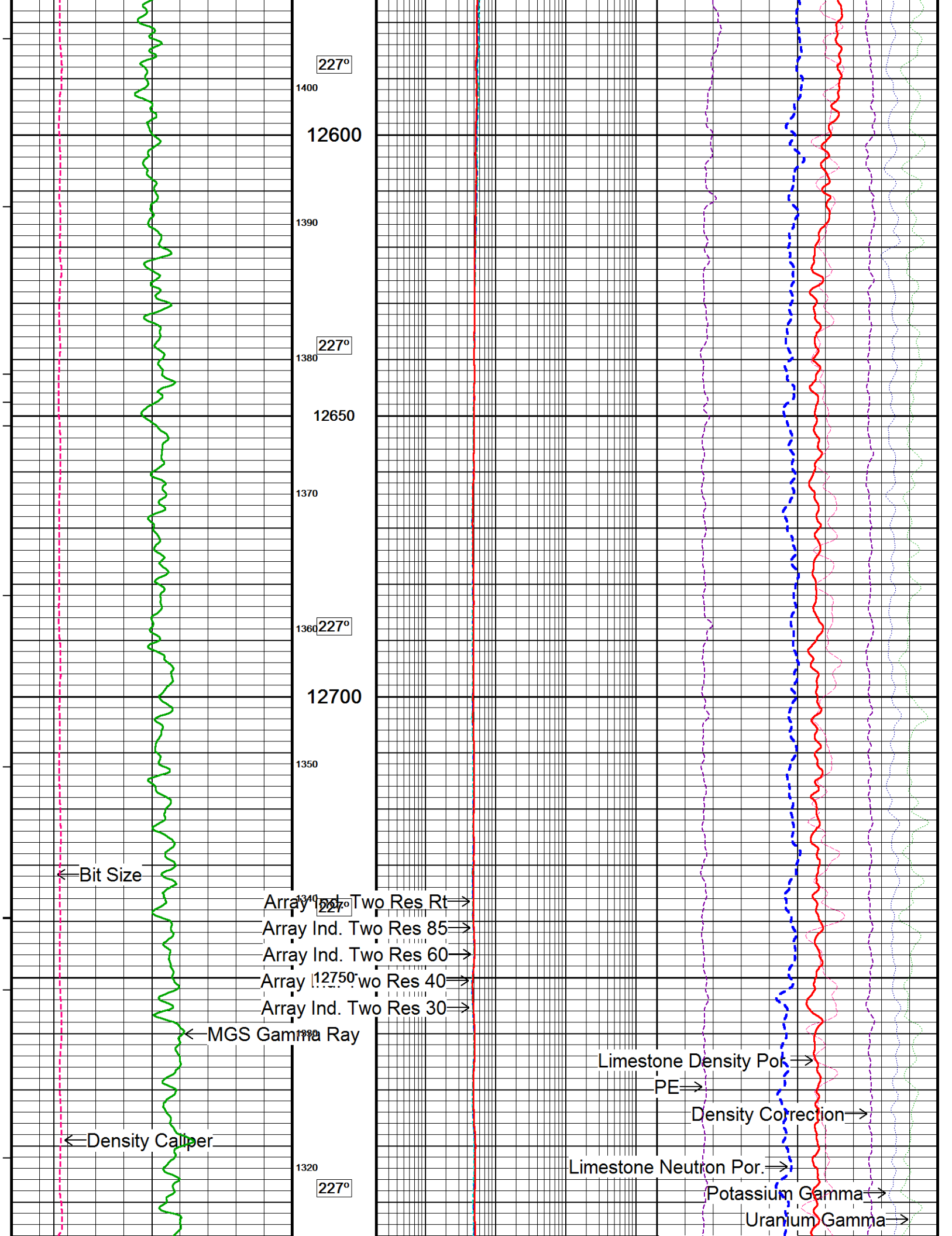


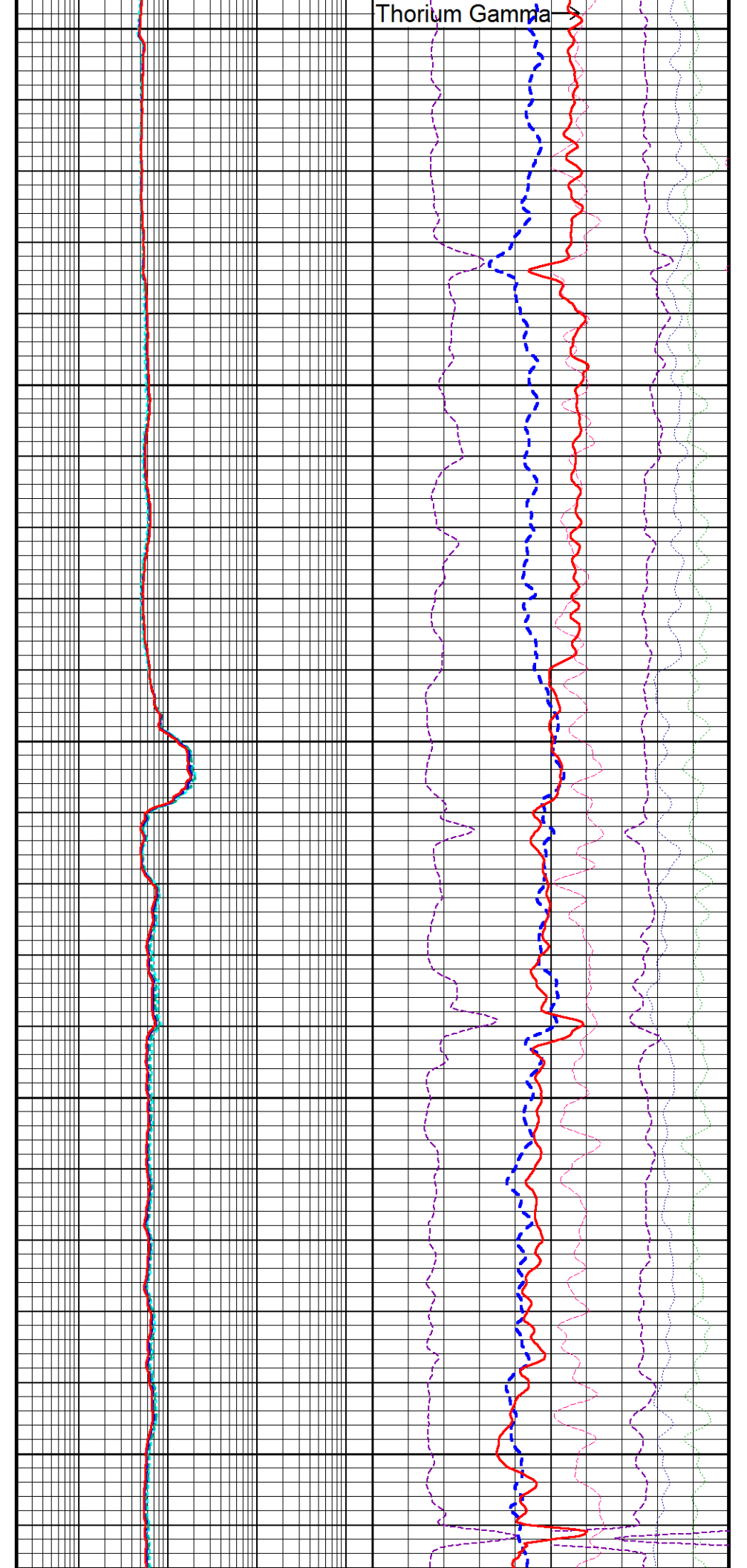
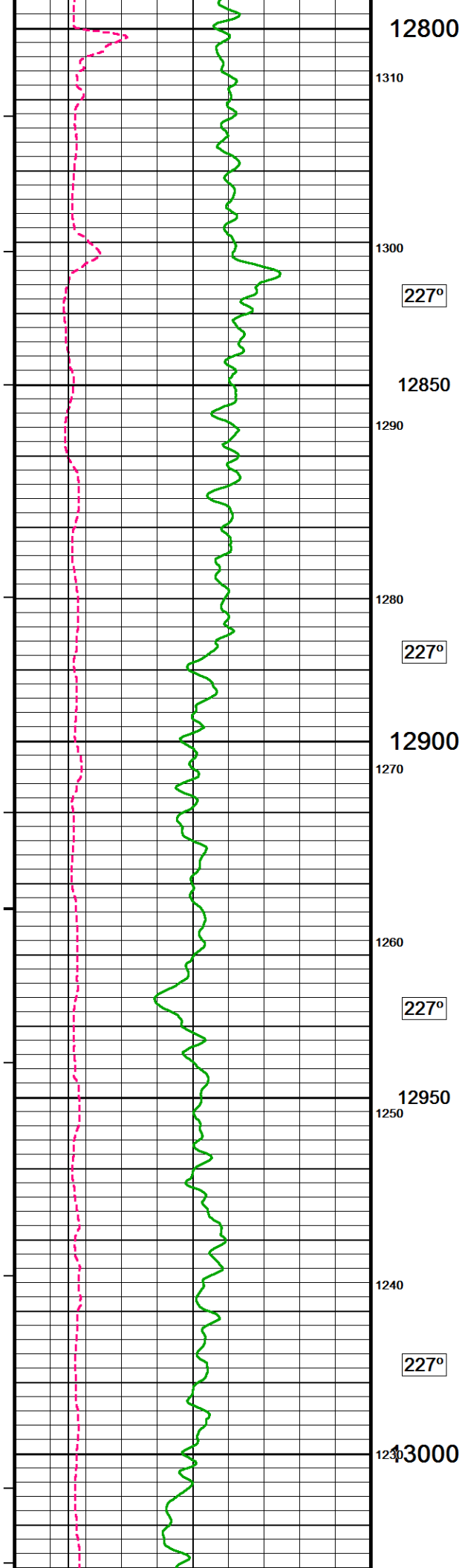


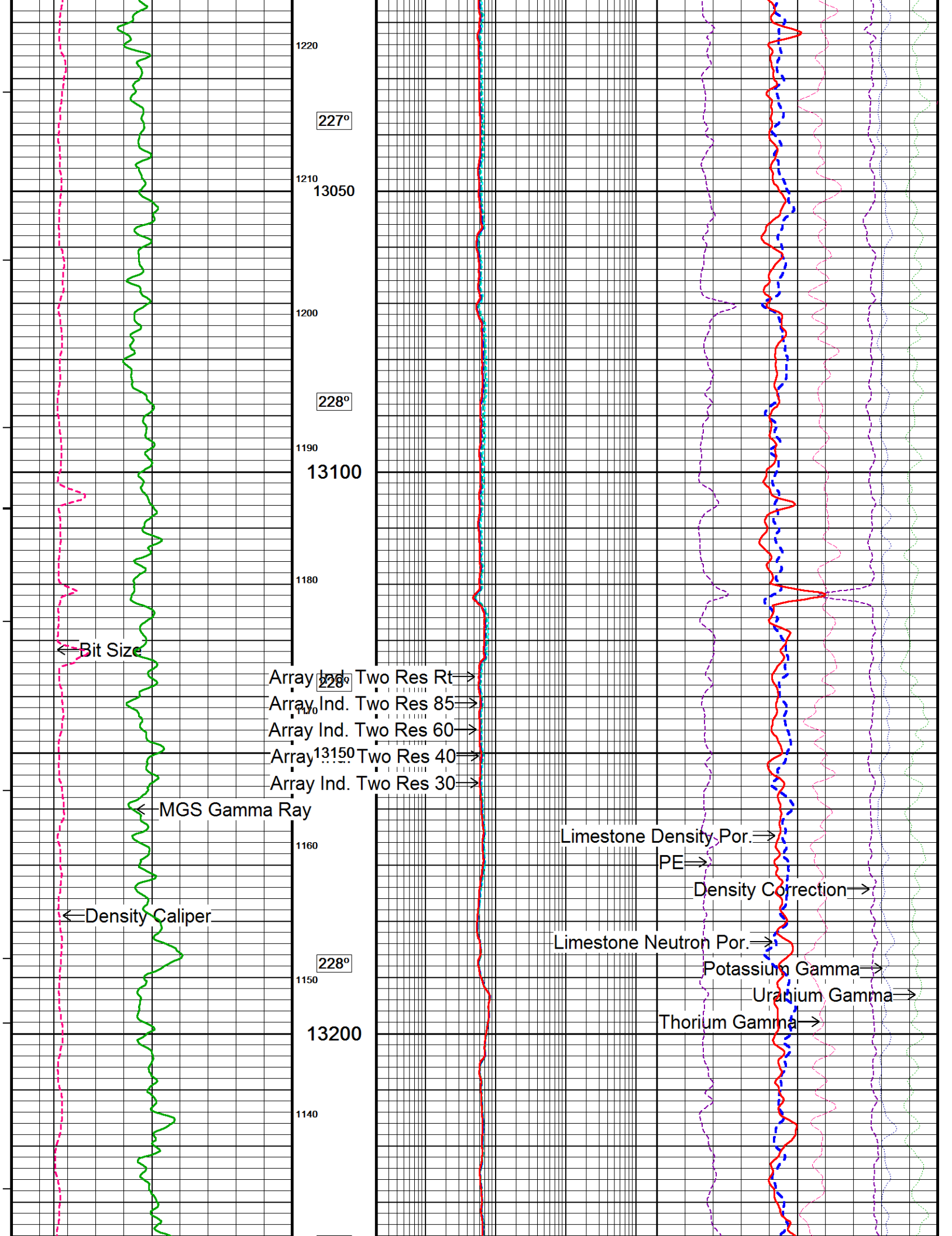


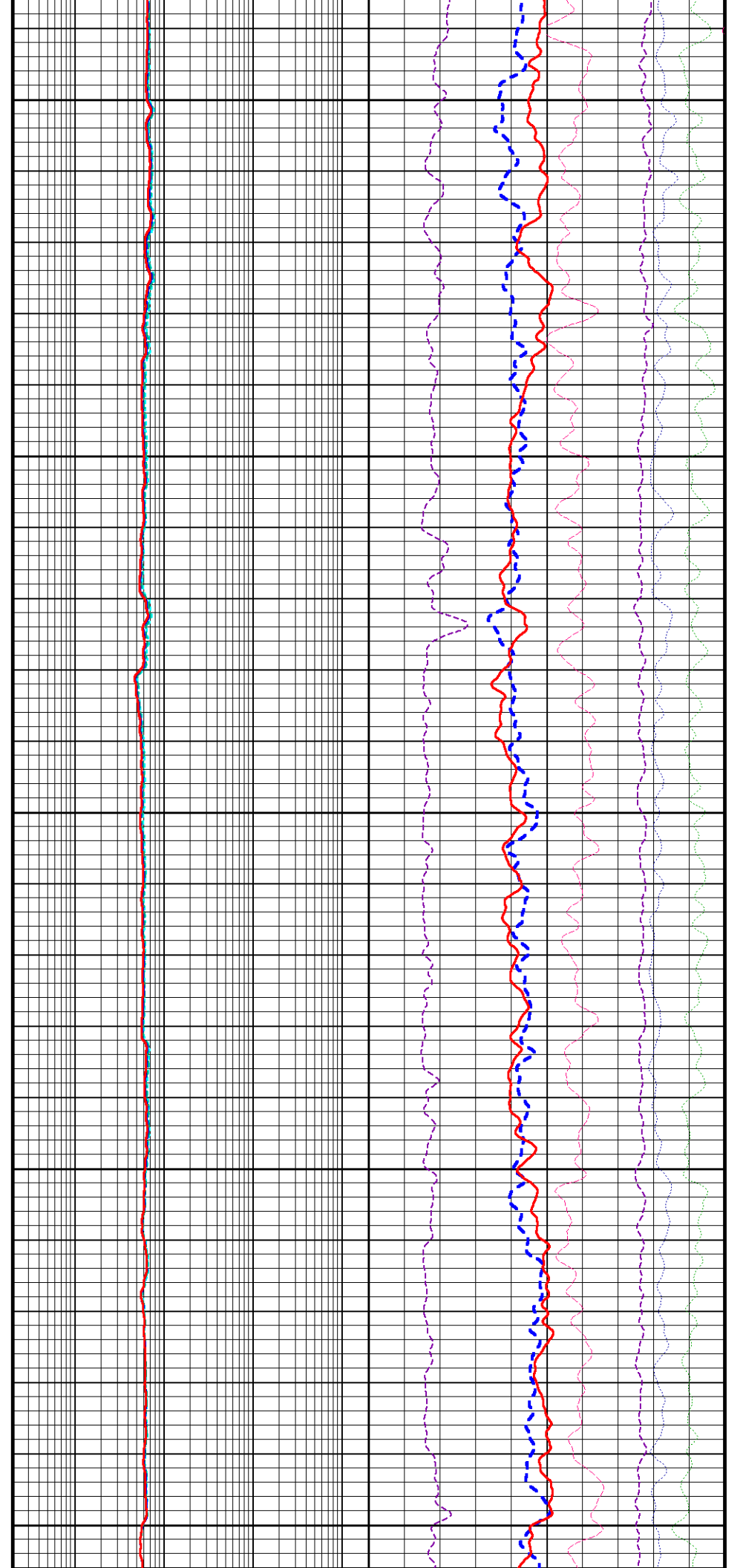
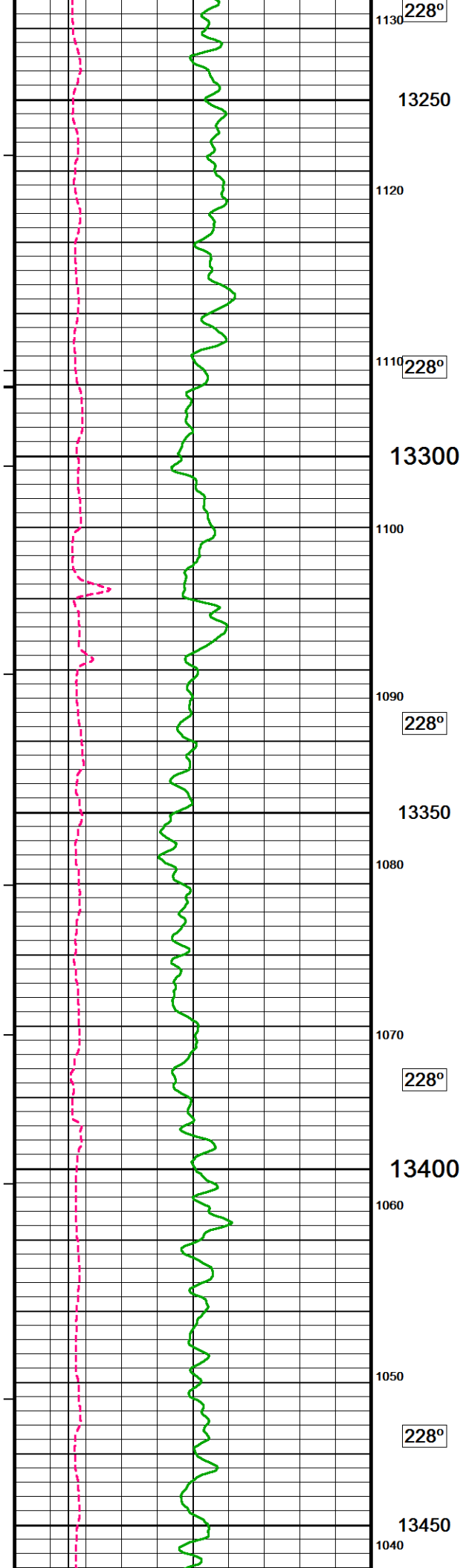


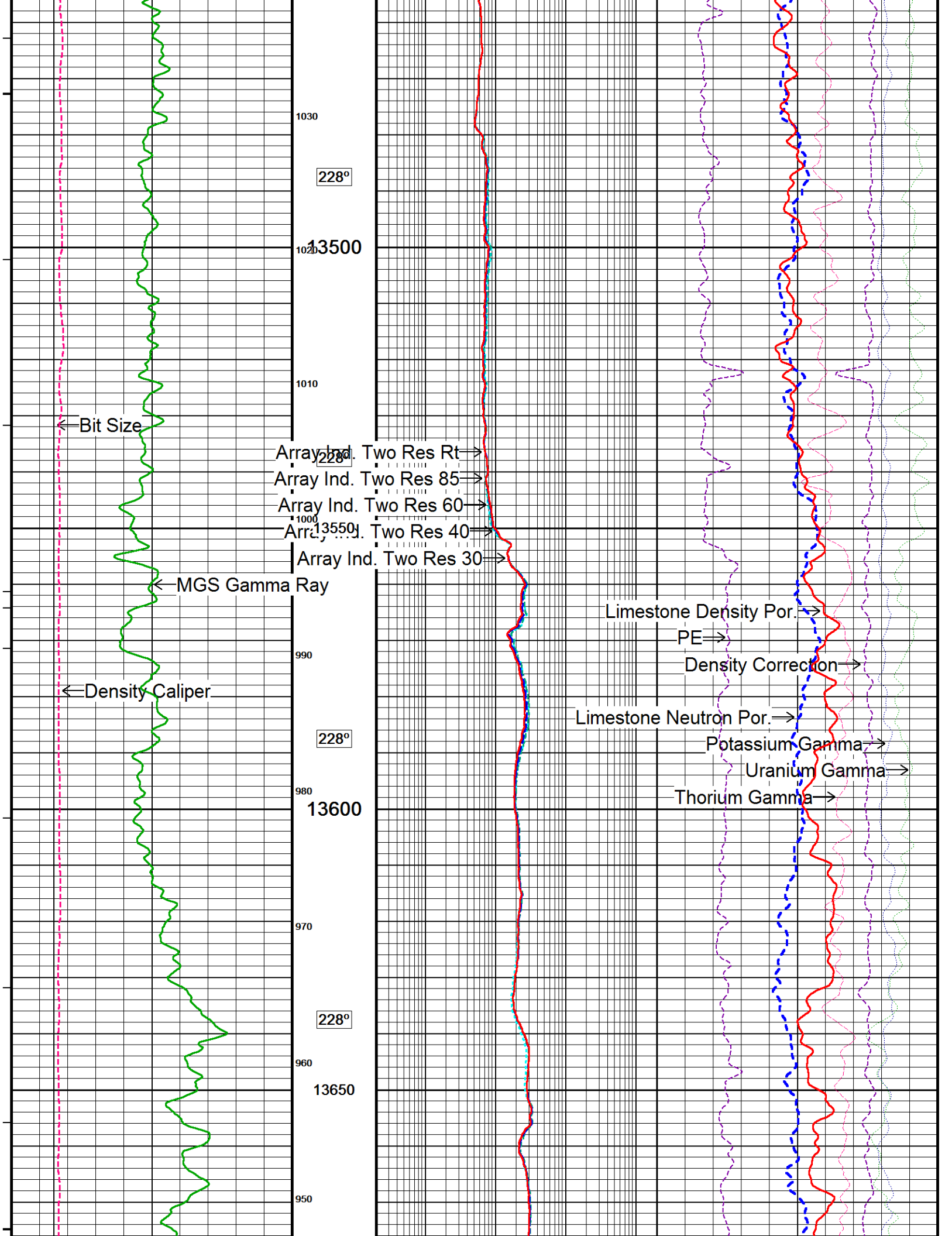


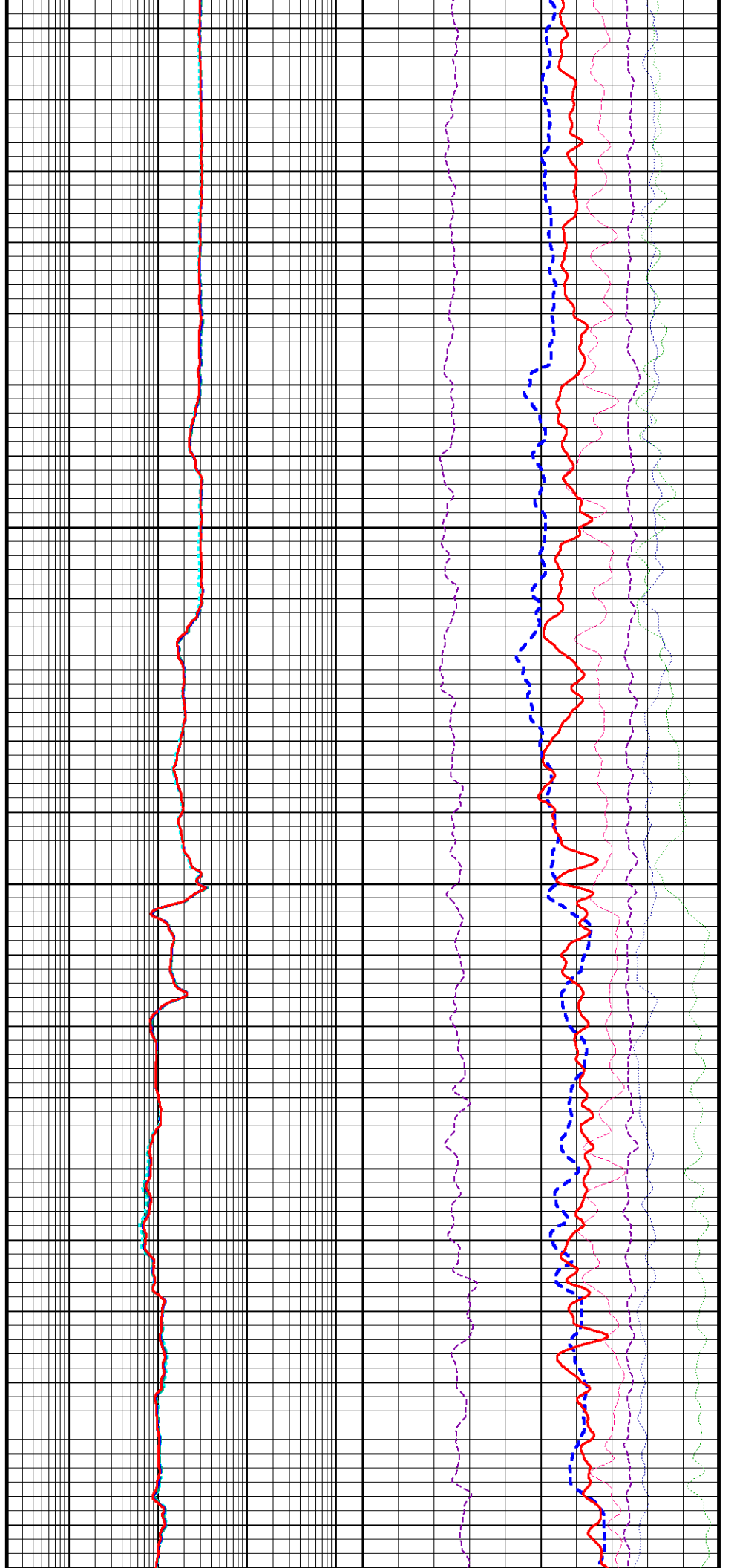
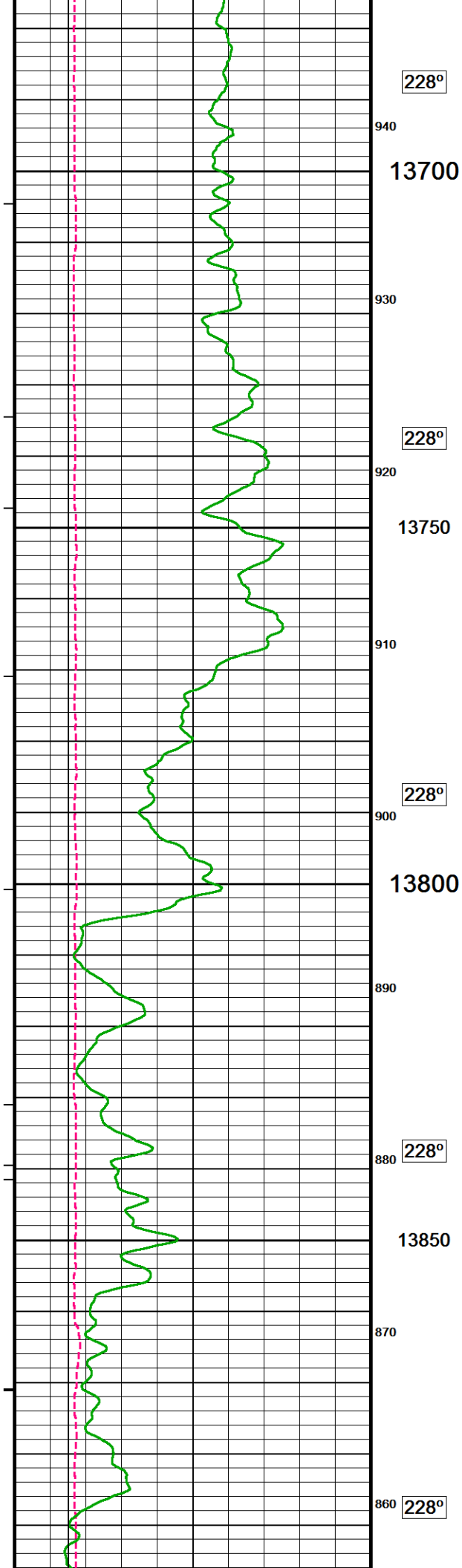


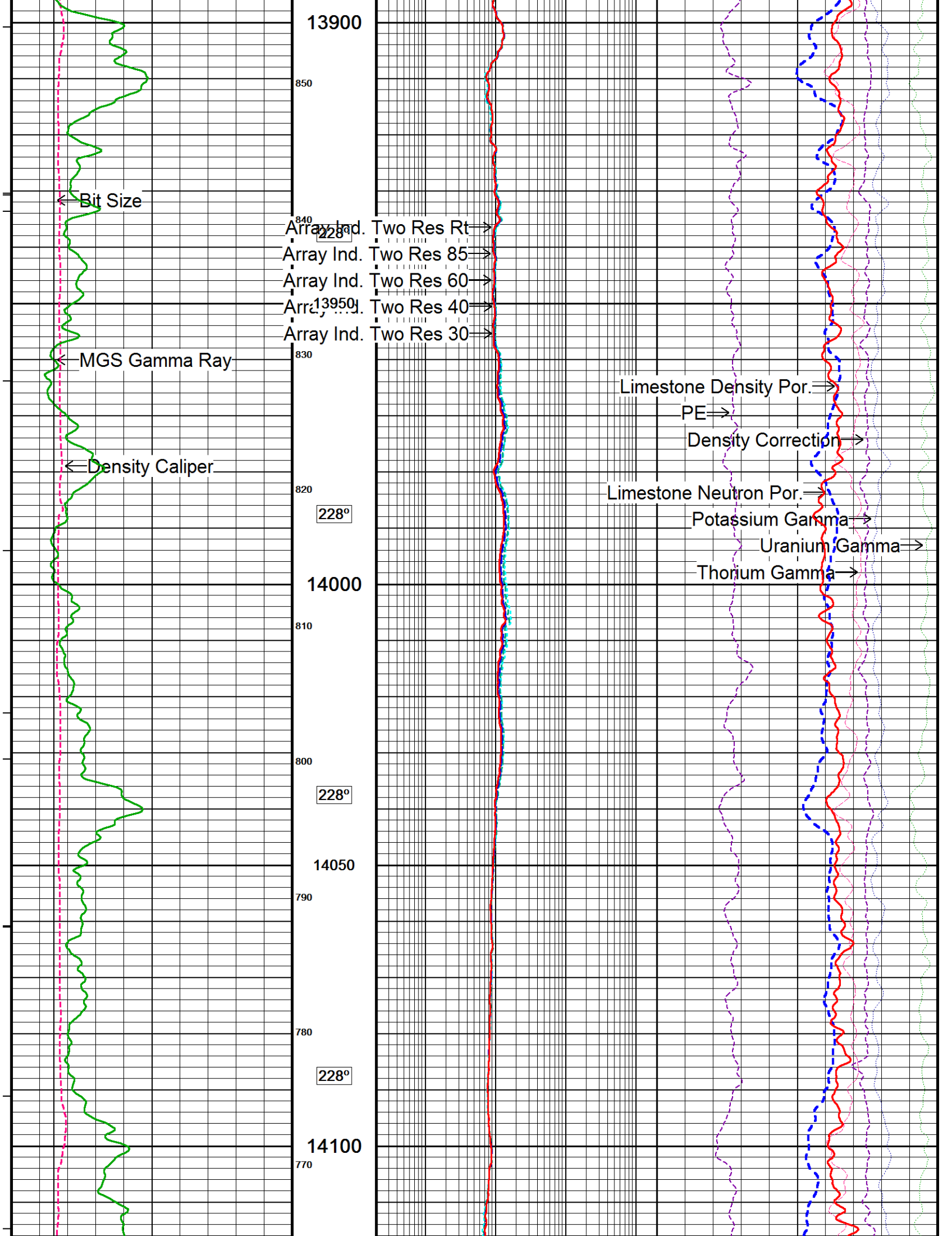


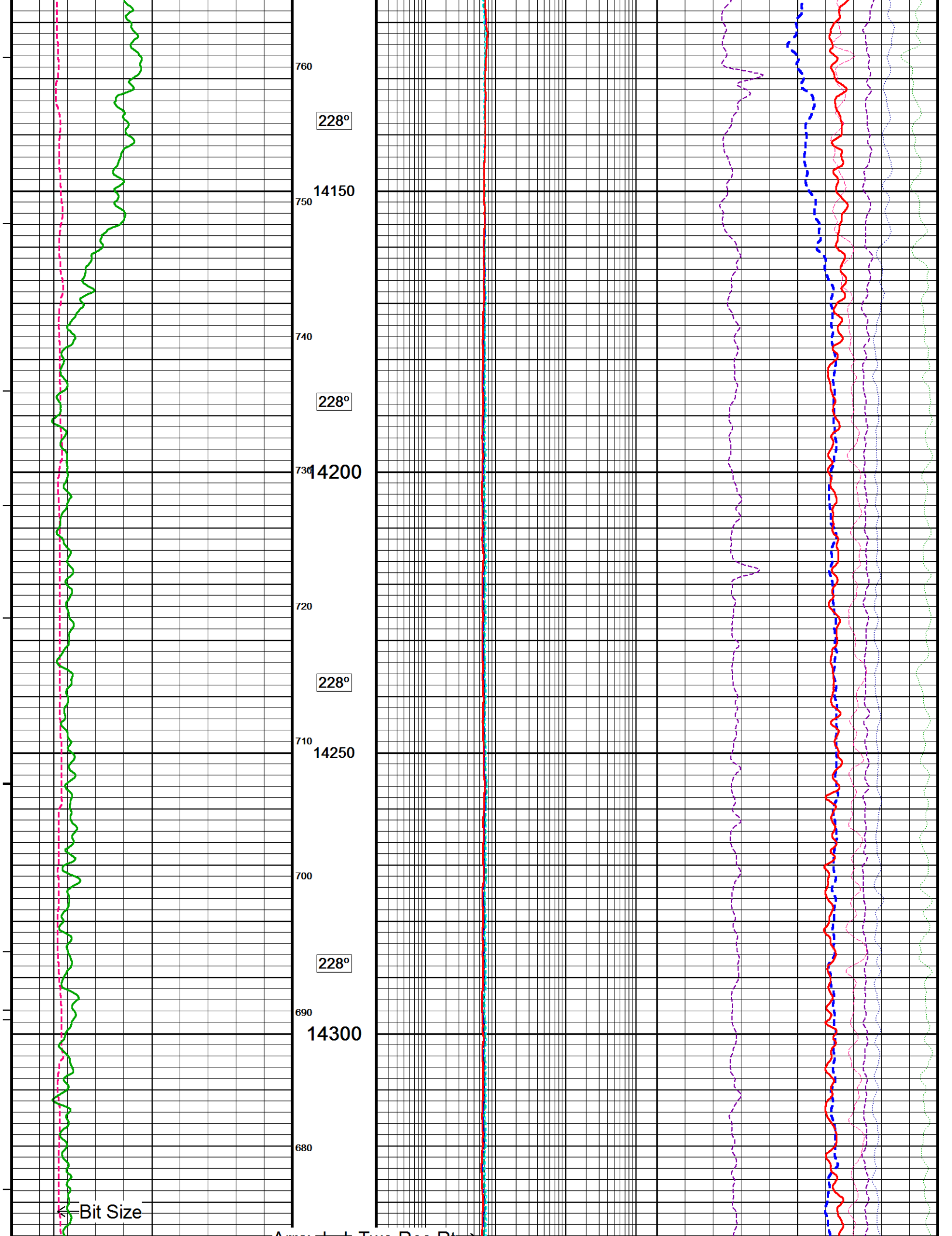


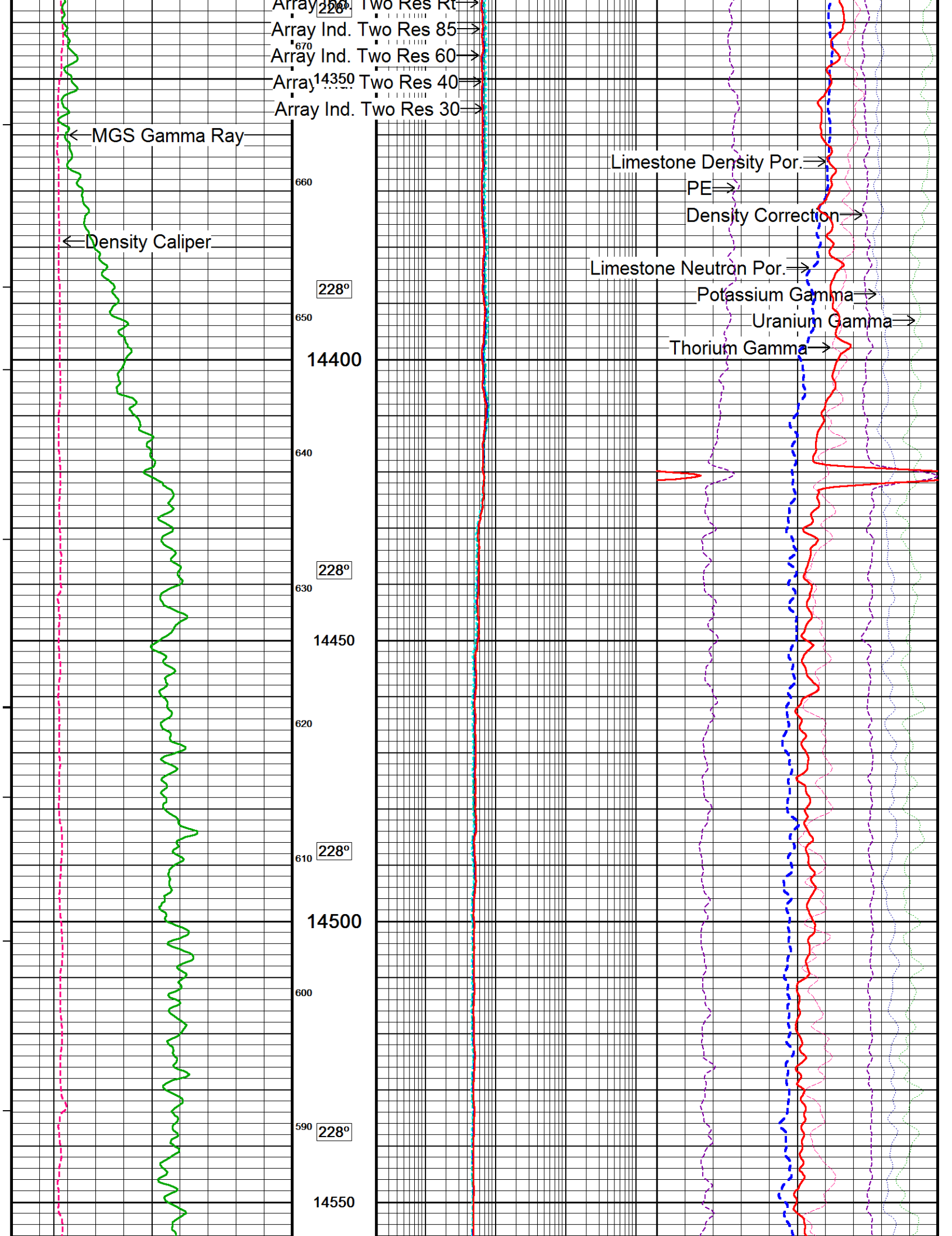


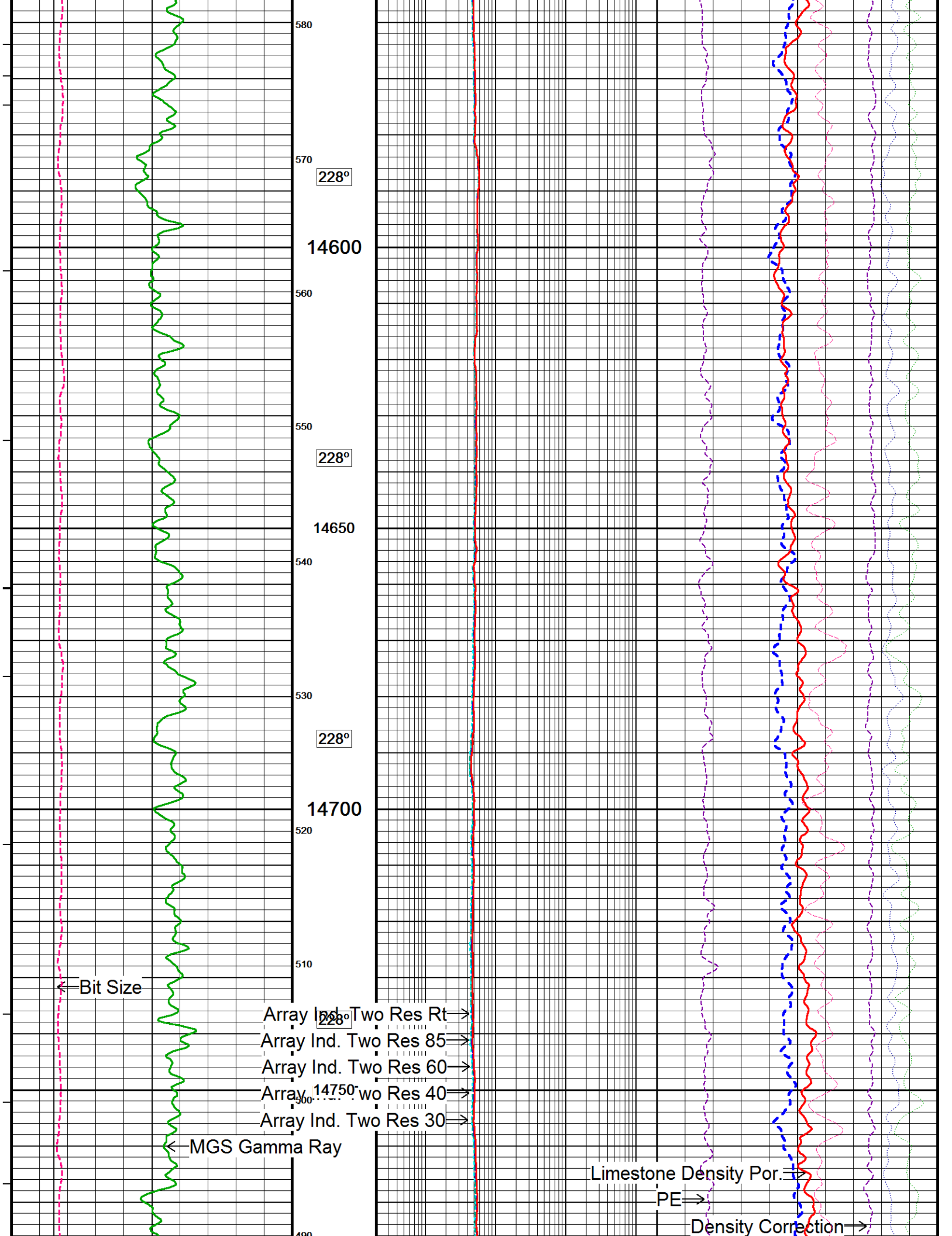


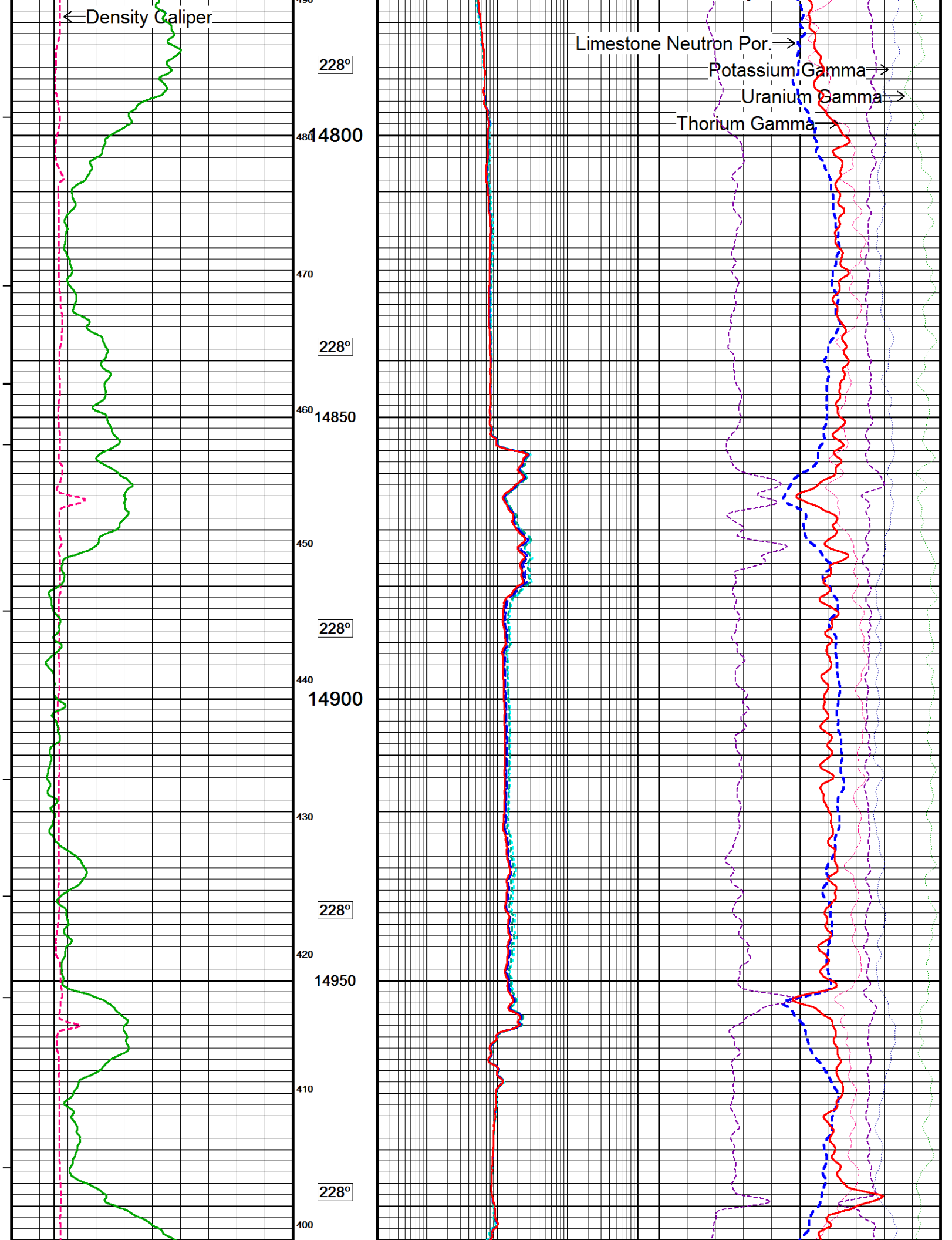


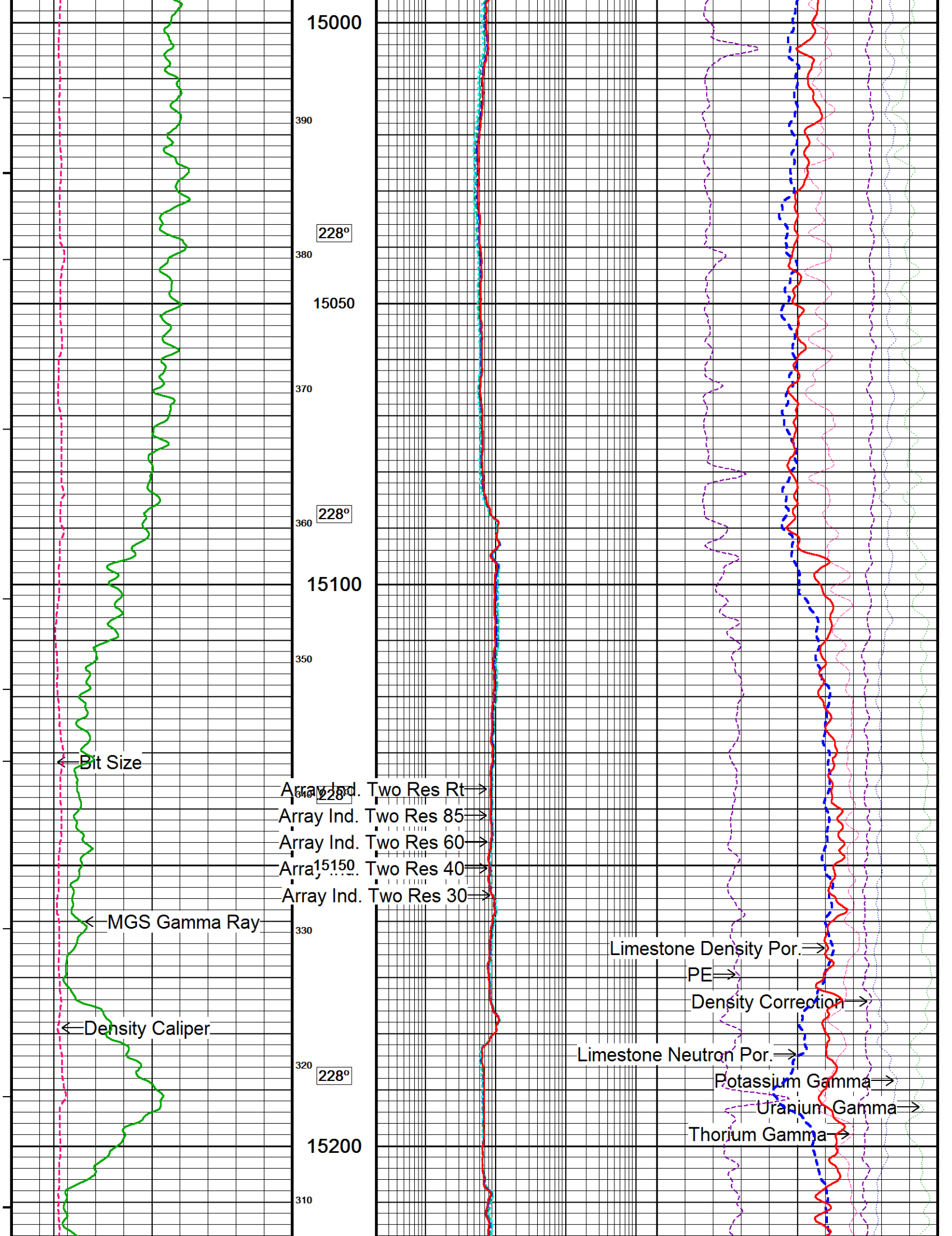


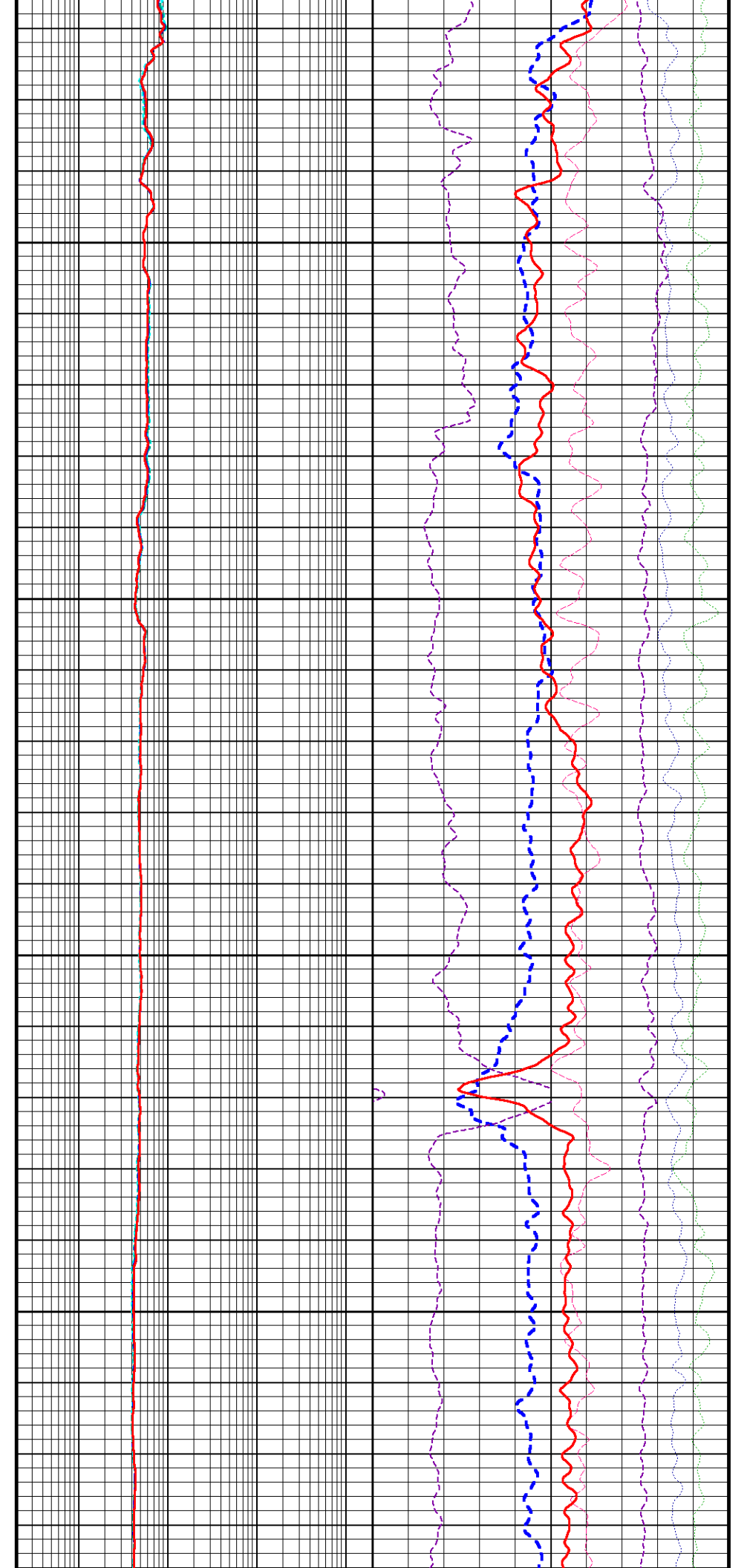
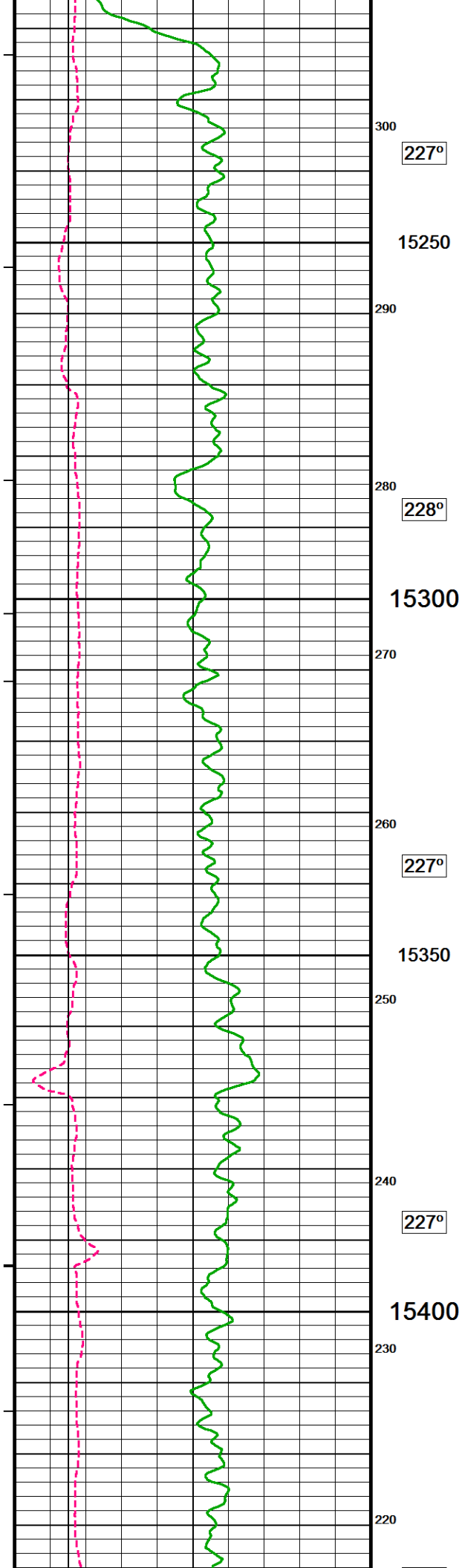


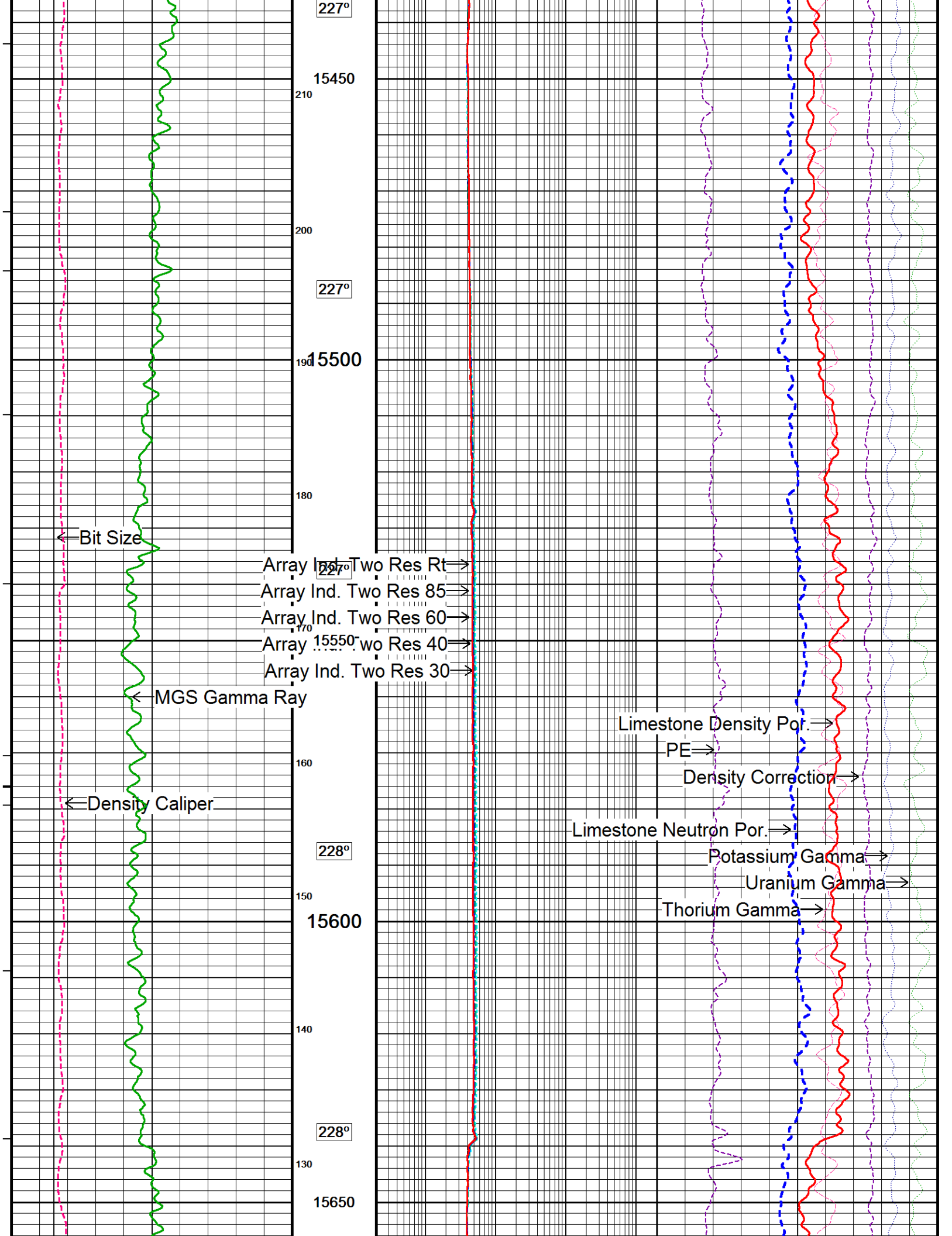


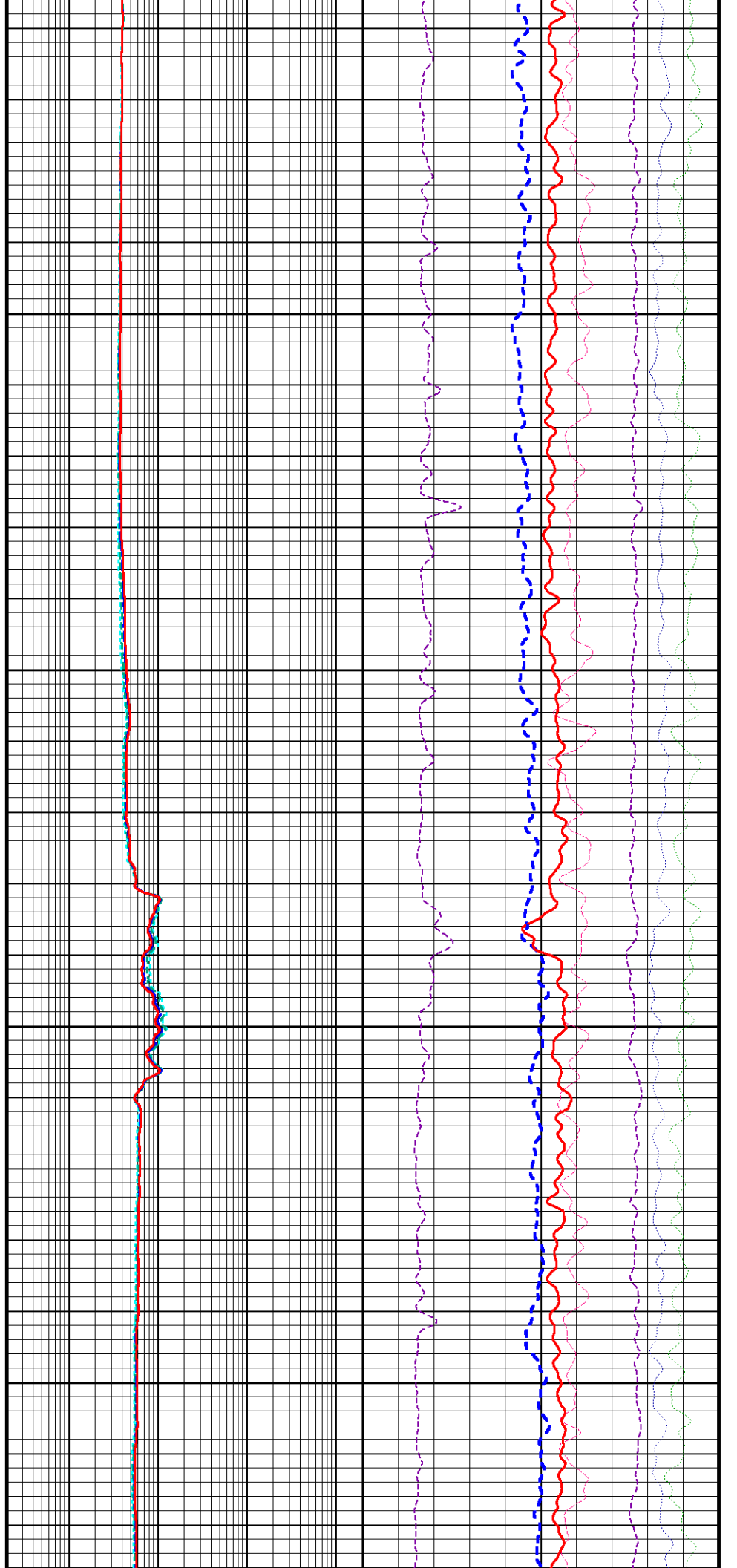
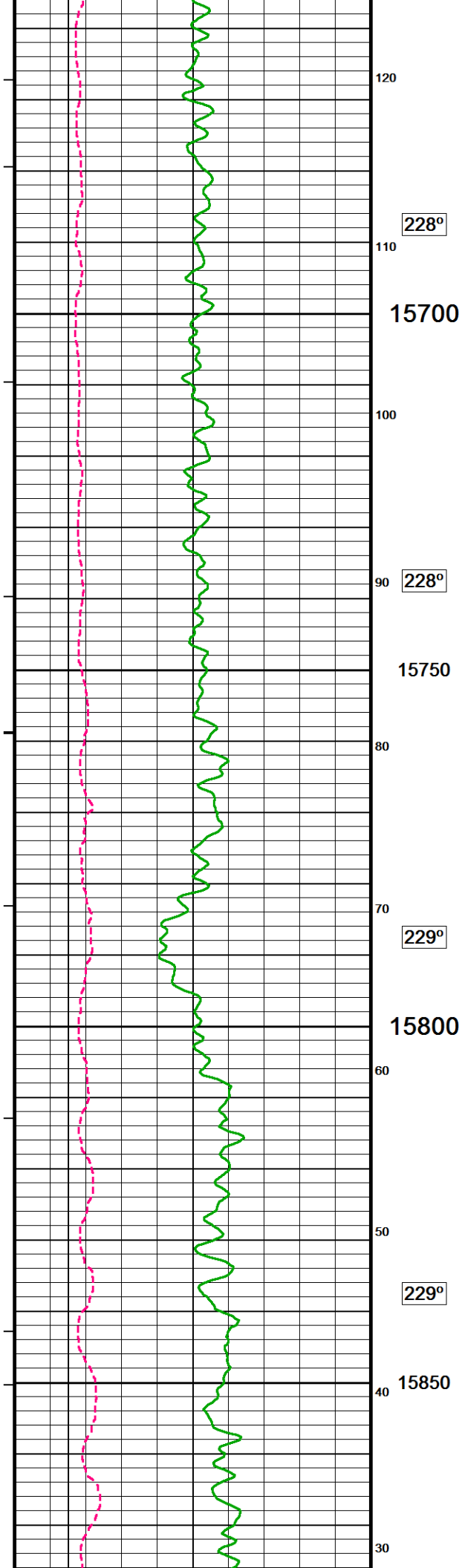


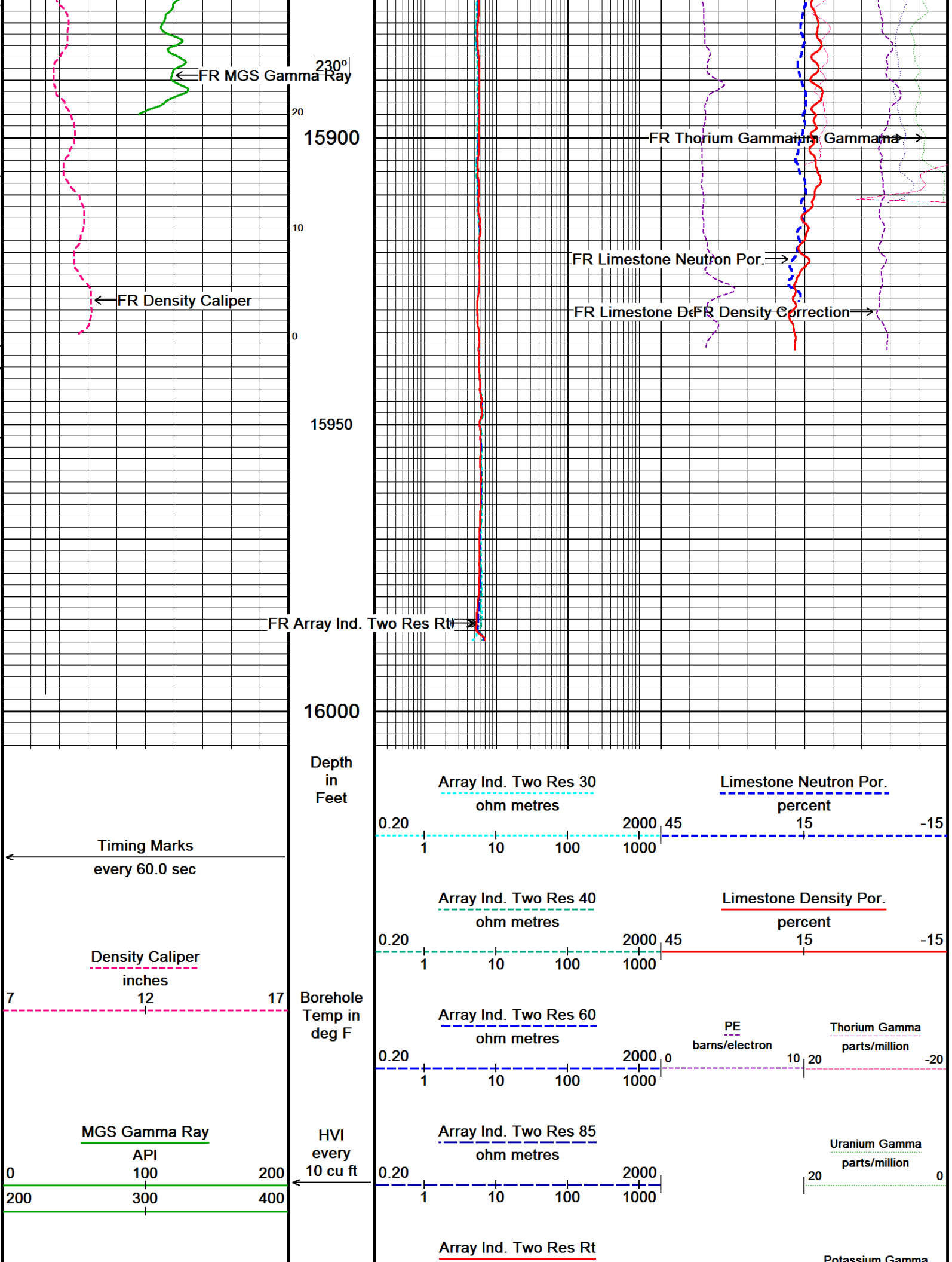












Compact Knuckle Joint

SKJ-E.A 203 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Swivel Head Adaptor

SHA-J.B 573 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Inline Bowspring sub

MIS-D.B 734 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Neutron

MDN-C.A 462 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper

MPD-C.J 380 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in

Compact Vee Arm Caliper

MVC-A.A 140 LG: 8.06 ft WT: 61.7 lb OD: 2.244 in

Compact Knuckle Joint

SKJ-E.B 588 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Inline Standoff sub

MIS-E.B 662 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

Compact Knuckle Joint

SKJ-E.A 409 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

Compact Inline Bowspring sub

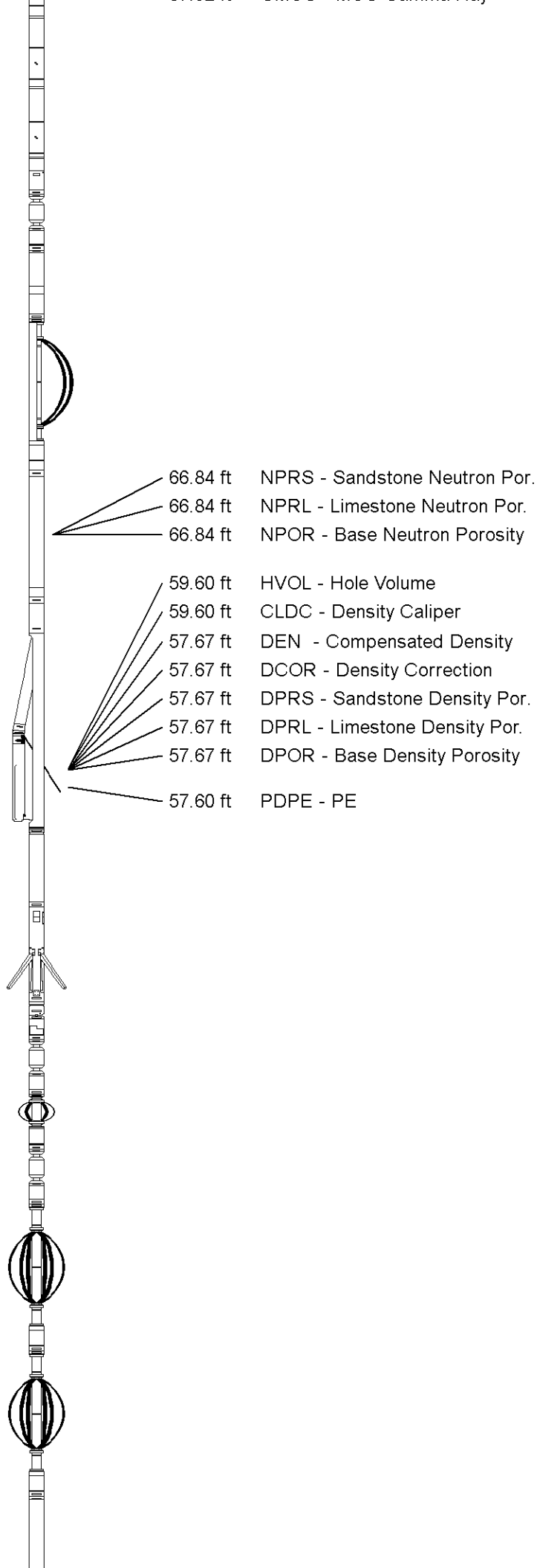
MIS-D.B 731 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Inline Bowspring sub

MIS-D.B 812 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Two Arm Caliper

MTC-B.J 203 LG: 7.11 ft WT: 61.7 lb OD: 2.244 in

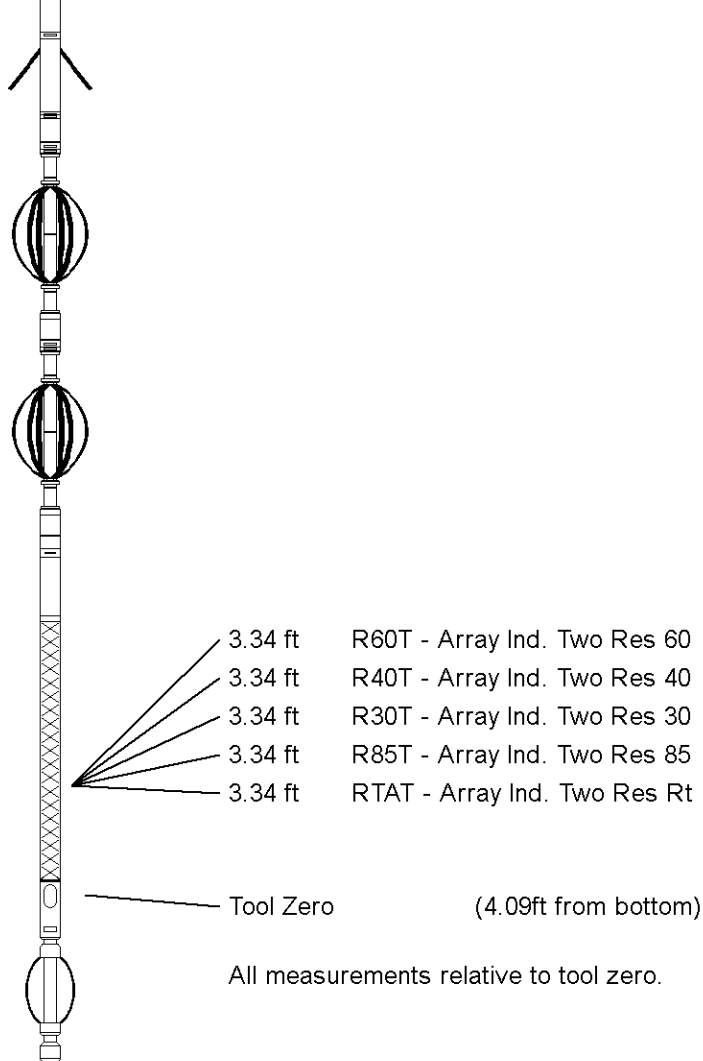


Compact Inline Bowspring sub
MIS-D.B 853 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Inline Bowspring sub
MIS-D.B 810 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Induction
MAI-B.J 362 LG: 14.76 ft WT: 48.5 lb OD: 2.240 in

Total Length: 138.57 ft Weight: 1011.9 lb



BEFORE SURVEY CALIBRATION

C:\Logs\whiting\Razor 25N-2406\MMS-2.dta

General Constants All 000

Last Edited on 23-AUG-2016,01:10

General Parameters

Mud Resistivity	1000.000	ohm-metres
Mud Resistivity Temperature	103.800	degrees F
Water Level	0.000	feet
Borehole Fluid 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	7.000	inches
Caliper for Differential Caliper	None	

Rwa Parameters

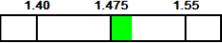
Porosity used	Base Density Porosity
Resistivity used	Deep Induction
RWA Constant A	0.610
RWA Constant M	2.150
SW/APOR Tool Source	0.000

Gamma Calibration MGS-C.J 139

Field Calibration on 21-JUL-2016 15:18

	Measured	Calibrated (API)
Background	56	37
Calibrator (Gross)	1421	949
Calibrator (Net)	1365	912

Gamma Calibration Tolerances MGS-C.J 139

Ratio 1.497  Counts/API

Gamma Constants MGS-C.J 139

Last Edited on 23-AUG-2016,01:20

Gamma Calibrator Number 072
 GRC-M Calibrator Jig in Use? NO
 Inactive Background Jig in Use? NO
 Mud Density 1.13 gm/cc
 Caliper Source for Processing Density Caliper
 Tool Position Eccentred
 Potassium Equivalence Chloride
 K Mud Concentration 0.00 %

High Resolution Temperature Calibration MGS-C.J 139

Field Calibration on 17-JUN-2016,14:23

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MGS-C.J 139

Last Edited on 17-JUN-2016,14:22

Pre-filter Length 11

Neutron Calibration MDN-C.A 462

Base Calibration on 29-JUL-2016 16:17

Field Check on 23-AUG-2016,01:17

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	2938	89	3714	110
	32.884		33.764	

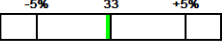
Field Calibrator at Base

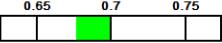
	Calibrated (cps)
Ratio	1395 2063
	0.676

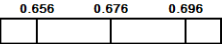
Field Check

	Calibrated (cps)
Ratio	1390 2056
	0.676

Neutron Calibration Tolerances MDN-C.A 462

Ratio 32.884 

Base Check 0.676 

Field Check 0.676 

Neutron Constants MDN-C.A 462

Last Edited on 23-AUG-2016,02:17

Neutron Source Id P44384B
 Neutron Jig Number 6532NK
 Air Hole Processing Modified Ratio
 Caliper Source for Processing Density Caliper
 Stand-off 0.00 inches
 Mud Density 1.00 gm/cc
 Limestone Sigma 7.10 cu
 Sandstone Sigma 7.00 cu
 Dolomite Sigma 4.70 cu
 Formation Pressure Source None
 Formation Pressure N/A kpsi
 Temperature Source None
 Temperature N/A degrees F
 Mud Salinity 0.00 kppm
 Salinity Correction Not Applied
 Formation Fluid Salinity Source None
 Formation Fluid Salinity N/A kppm
 Barite Mud Correction Not Applied

Induction Calibration MAI-B.J 362

Base Calibration on 17-SEP-2015,08:39

Field Check on 20-AUG-2016 00:20

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.0	468.7	9.3	966.2
2	6.2	374.5	7.6	821.4
3	3.6	258.3	5.2	566.0
4	1.8	133.1	2.6	279.2

Array Temperature 74.8 Deg F

Test Loop Calibration Verified 29-JUL-2016 14:34

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	18.2	3871.8	15.4	3872.6
2	32.5	3602.9	30.6	3604.2
3	30.1	3066.7	28.5	3067.5
4	20.8	2077.1	19.7	2077.8
Deep	18.6	1952.4	17.5	1952.7
Medium	43.1	4073.6	41.1	4074.8
Shallow	48.6	5396.6	45.7	5398.9
Array Temperature	82.7		68.0	
			Deg F	

Induction Calibration Tolerances MAI-B.J 362

Low Conductivity 1	16.0		mmho/m	High Conductivity 1	468.7		mmho/m
Low Conductivity 2	6.2		mmho/m	High Conductivity 2	374.5		mmho/m
Low Conductivity 3	3.6		mmho/m	High Conductivity 3	258.3		mmho/m
Low Conductivity 4	1.8		mmho/m	High Conductivity 4	133.1		mmho/m
Background Vx 1	0.0		mmho/m	Phase Check Loop 1	0.0		%
Background Vx 2	0.0		mmho/m	Phase Check Loop 2	0.0		%
Background Vx 3	0.0		mmho/m	Phase Check Loop 3	0.0		%
Background Vx 4	0.0		mmho/m	Phase Check Loop 4	0.0		%

Induction Constants MAI-B.J 362

Last Edited on 23-AUG-2016,01:47

Induction Model		RtAP-NC	
Borehole Correction Constants			
Tool Centred		Yes	
Hole Size Source		Density Caliper	
Hole Size Constant Value		N/A	inches
Stand-off Type		N/A	
Stand-off		N/A	inches
Number of Fins on Stand-off		N/A	
Stand-off Fin Angle		N/A	degrees
Stand-off Fin Width		N/A	inches
Rm Source	Global Value: Temperature Corrected		
Temp. for Rm Corr.	MGS External Temperature		
Squasher Start		0.0020	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Symmetrised Receiver Gains

Receiver 1	1.00
Receiver 2	1.00
Receiver 3	1.00
Receiver 4	1.00

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Compact Spectral Gamma Calibration MSG-A.A 106

Base Calibration on 23-JUN-2016 13:57

Field Calibration on 23-JUN-2016 15:46

Base Calibration

Gamma Ray

	Measured	Calibrated (API)
Background	67	29
Calibrator (Gross)	690	300
Calibrator (Net)	623	271

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	54.3	8.7	2.4	0.7	1.1
Calibrator (Gross)	546.9	96.0	29.0	7.9	10.1
Calibrator (Net)	492.6	87.4	26.6	7.2	9.1

	K %	U ppm	Th ppm
Concentrations	5.9	13.6	43.7

Potassium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	54.3	8.7	2.4	0.7	1.1
Calibrator (Gross)	127.6	38.0	16.0	0.7	1.0
Calibrator (Net)	73.3	29.3	13.6	-0.1	-0.0

	K %	U ppm	Th ppm
Concentrations	5.8	0.0	0.0

Uranium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	54.3	8.7	2.4	0.7	1.1
Calibrator (Gross)	330.2	46.5	11.2	5.9	2.7
Calibrator (Net)	275.9	37.8	8.9	5.2	1.6

	K %	U ppm	Th ppm
Concentrations	0.0	17.8	0.0

Thorium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	54.3	8.7	2.4	0.7	1.1
Calibrator (Gross)	250.0	36.0	7.4	3.9	8.9
Calibrator (Net)	195.7	27.4	5.0	3.2	7.8

	K %	U ppm	Th ppm
Concentrations	0.0	0.0	46.3

Field @ Base Calibration

Calibration Type

440
450

Gamma Ray

	Measured	Calibrated (API)
Background	67.1	29.2
Calibrator (Gross)	689.9	300.4
Calibrator (Net)	622.8	271.2

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	54.3	8.7	2.4	0.7	1.1
Calibrator (Gross)	546.9	96.0	29.0	7.9	10.1
Calibrator (Net)	492.6	87.4	26.6	7.2	9.1

Field Calibration

Calibration Type	SG Jigs
SGB Calibrator Serial Number	440
SGM Calibrator Serial Number	450

Gamma Ray

	Measured	Calibrated (API)
Background	62.3	27.2
Calibrator (Gross)	684.7	298.4
Calibrator (Net)	622.4	271.2

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	50.1	8.3	2.3	0.6	1.0
Calibrator (Gross)	542.2	96.0	28.6	7.8	10.1
Calibrator (Net)	492.1	87.7	26.3	7.2	9.1

Compact Spectral Gamma Calibration Tolerances MSG-A.A 106

Base Check K	6.03	<div><div></div><div></div><div></div><div></div><div></div></div>	%	Field @ Base Check K	0.00	<div><div></div><div></div><div></div><div></div><div></div></div>	%
Base Check U	14.33	<div><div></div><div></div><div></div><div></div><div></div></div>	ppm	Field @ Base Check U	0.00	<div><div></div><div></div><div></div><div></div><div></div></div>	ppm
Base Check T	45.85	<div><div></div><div></div><div></div><div></div><div></div></div>	ppm	Field @ Base Check T	0.00	<div><div></div><div></div><div></div><div></div><div></div></div>	ppm
Field Check K	6.01	<div><div></div><div></div><div></div><div></div><div></div></div>	%				
Field Check U	14.34	<div><div></div><div></div><div></div><div></div><div></div></div>	ppm				
Field Check T	45.84	<div><div></div><div></div><div></div><div></div><div></div></div>	ppm				

Compact Spectral Gamma Constants MSG-A.A 106

Last Edited on 23-AUG-2016,01:18

Background Calibrator Number	440	
Mixture Calibrator Number	450	
Potassium Calibrator Number	500	
Uranium Calibrator Number	506	
Thorium Calibrator Number	503	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Caliper Calibration MPD-C.J 380

Base Calibration on 29-JUL-2016 15:18
Field Calibration on 20-AUG-2016,09:25

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13776	3.98
2	22048	5.96
3	30528	7.97
4	38577	9.84
5	47858	11.91
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.92	7.97

Caliper Calibration Tolerances MPD-C.J 380

Short Arm Field Cal.	7.92	<div><div></div><div></div><div></div><div></div><div></div></div>	in
----------------------	------	--	----

Photo Density Calibration MPD-C.J 380

Base Calibration on 29-JUL-2016 15:03
Field Check on 23-AUG-2016,02:15

Density Calibration			
Base Calibration			
	Measured	Calibrated (sdu)	
	Near	Far	Near
Background	1258	1411	

Background	1230	1411		
Reference 1	53289	25798	59443	30683
Reference 2	22882	2624	24540	2525

Field Check at Base

	1258.0	1410.9
--	--------	--------

Field Check

	1260.0	1416.3
--	--------	--------

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	229	1136		
Reference 1	22697	53110	0.432	0.372
Reference 2	6512	22750	0.291	0.271

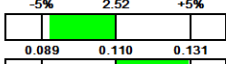
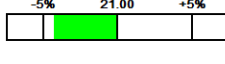

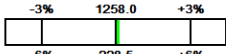
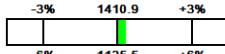
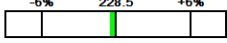
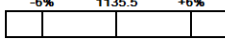
Field Check at Base

	228.5	1135.5
--	-------	--------

Field Check

	227.4	1136.0
--	-------	--------

Photo Density Calibration Tolerances MPD-C.J 380

Near Density Ratio	2.41		Far Density Ratio	20.10	
PE Calibration	0.131				
Near Den. Field Check	1260.0		Far Den. Field Check	1416.3	
PE WS Field Check	227.4		PE WH Field Check	1136.0	

Density Constants MPD-C.J 380

Last Edited on 23-AUG-2016,01:19

Density Source Id	P50562B	
Nylon Calibrator Number	DNC.E.652	
Aluminium Calibrator Number	DAC.C.631	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.13	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Precision Enhanced Density Processing	Not Applied	
Matrix Density (gm/cc)	Depth (ft)	
2.71	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

COMPANY	WHITING OIL AND GAS CORPORATION
WELL	RAZOR 25N-2406
FIELD	WILDCAT
PROVINCE/COUNTY	WELD
COUNTRY/STATE	U.S.A./ COLORADO

Elevation Kelly Bushing	4725.00	feet	First Reading	15988.00	feet
Elevation Drill Floor	4725.00	feet	Depth Driller	16013.00	feet



Weatherford®

COMPOSITE LOG

RESISTIVITY - POROSITY

INDUCTION - SPECTRAL GAMMA