



Weatherford

COMBINED LOG
MDL-MGS-MDN-MPD
SCALE 5":100

COMPANY

SAVIA PERU S.A

WELL

LO06-29D

FIELD

LOBITOS

PROVINCE/COUNTY

PIURA

COUNTRY/STATE

Peru

LOCATION

N: 9 508 656.13 m
E: 459 052.36 m

Other Services

Permanent Datum SEA LEVEL, Elevation 50.000 feet

Log Measured From KB

Drilling Measured From KB

Elevations:

KB 50.00
DF 50.00
GL -335.00

Date 17-SEPT-2013

Run Number 1

Service Order

Depth Driller 846 feet

Depth Logger 8691.00 feet

First Reading 8676.00 feet

Last Reading 8649.00 feet

Casing Driller 4892.00 feet

Casing Logger 4982.00 feet

Bit Size 4982.00 feet

Hole Fluid Type 8.500 inches

Density / Viscosity WATER BASED

PH / Fluid Loss 11.50 lb/USg 17.00 CP

Sample Source 9.00 5.00 ML/30MIN

Rm @ Measured Temp MUD PIT

Rmf @ Measured Temp 0.27 @ 75.0 ohm-m

Rmc @ Measured Temp 0.16 @ 75.0 ohm-m

Source Rmf / Rmc 0.50 @ 75.0 ohm-m

Rm @ BHT PRESS FILTER

Time Since Circulation 0.18 @117.0 ohm-m

Max Recorded Temp 08:00 16SEPT deg F

Equipment / Base 117.00 TAL

Recorded By YANINA MENDEZ

Witnessed By AUGUSTO ORTEGA

REMARKS

1. Objective: to obtain accurate open hole Gamma Ray, 1 arm Caliper , Nuclear and Resistivity (Dual Laterolog) log in 8.5" section.
2. This is the first run on the hole and on Compact Well Shuttle - Messenger Conveyance.
3. Maximum recorded temperature measured by Gamma Ray External Temperature sensor: 137 °F.
4. Mud resistivity measurements: Rm= 0.27@ 75 °F, Rmf= 0.16 @ 75 °F, Rmc= 0.50 @ 75 °F.
5. Mud resistivity measurements at BHT: Rm= 0.18 @ 117 °F, Rmf = 0.10 @ 117 °F, Rmc= 0.33 @ 117 °F.
6. Deviated well with a maximum deviation of 62.70° @ 4031 ft MD and a maximum dogleg of 5.53 @ 1306 ft MD.
7. Well sketch as per driller's depth.
8. Bottom not tagged due to nature of the conveyance. Maximun depth recorded in Log header (8676ft) is the maximun depth reached by the induction tool in the run.
9. Logging speed below 30ft/min (following operational procedures)
10. Main section from 8676ft to 4982ft, as requested.
11. No repeat section performed due to the method used for this job.
12. Resistivities curves (Dual Laterolog) presented in this log are not corrected for borehole conditions.
13. Neutron log is corrected by temperature and borehole size by the density caliper.
14. Density log is corrected for mud density and borehole size by the density caliper.
15. Density matrix = 2.72g/cc. from TD to 7200ft (Mogollon) and 2.68g/cc from 7200ft to Casing Shoe (Rio Bravo) as per client request.
16. Hole volume= 1918 ft^3
17. Annular volume= 945 ft^3 for a casing of 7"
18. Caliper Average 9.85 in
19. Flow test were done at the following depths: 300ft, 1000ft, 2000ft, 3000ft, 4000ft, 5000ft, 6000ft, 7000ft, 8000ft, 8620ft

Crew at your service:

Y. Mendez, J. Guerrero, G. Robladillo, J. Jimenez, C. Viera.

BOREHOLE RECORD

Last Edited: 17-SEP-2013 11:40

Bit Size
inches

17.000

Depth From
feet

0.00

Depth To
feet

1994.00

17.000	0.00	1994.00
12.250	1994.00	4982.00
8.500	4982.00	8691.00

CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
k55	13.380	0.00	1994.00	54.50
N80	9.625	0.00	4982.00	43.50

WELL DIAGRAM

13.38 in Casing: 0.00 ft

9.63 in Casing: 0.00 ft

17.00 in Bit size: 0.00 - 1994.00 ft

13.38 in Casing shoe: 1994.00 ft

12.25 in Bit size: 1994.00 - 4982.00 ft

9.63 in Casing shoe: 4982.00 ft

8.50 in Bit size: 4982.00 - 8691.00 ft

Total bit depth: 8691.00 ft

Temperature: 117.00 Degrees F

DOWNHOLE EQUIPMENT

C:\YANINA'S INFORMATION\playing_well mgr\Savia\LO6-29D\New Folder2\Final_Data.dta

Shuttle Running Tool 3.5" (SRT A)
SRT-A 10 LG: 6.47 ft WT: 37.5 lb OD: 2.52 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 168 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub
MBS-F.A 71 LG: 17.06 ft WT: 123.5 lb OD: 2.24 in

Compact Memory Sub E.B
MMS-E.B 148 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 99 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Stiff Bridle Electrode Sub.
MBE-C.B 259 LG: 12.33 ft WT: 77.2 lb OD: 2.28 in

Compact Stiff Bridle Electrode Sub.

Compact Stiff Bridge Electrode Sub.
MBE-D.A 136 LG: 12.33 ft WT: 77.2 lb OD: 2.24 in

Compact Stiff Bridge Electrode Sub.
MBE-A.A 56 LG: 12.33 ft WT: 77.2 lb OD: 2.24 in

MIS-B Compact Inline Standoff sub
MIS-B 98 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Short Gamma
MGS-C.A 43 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

Compact Collar Locator
MCL-B.J 57 LG: 3.17 ft WT: 26.5 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 171 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 486 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 236 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-C.A 441 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.A 197 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 756 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

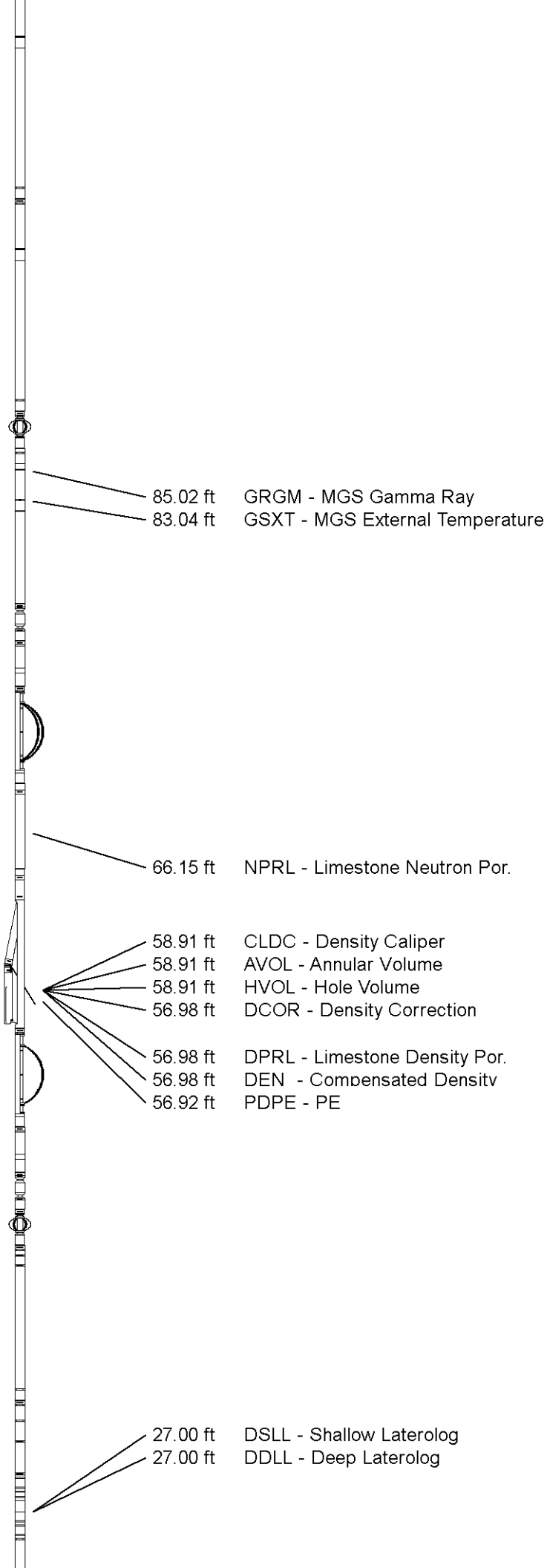
SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 479 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 180 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

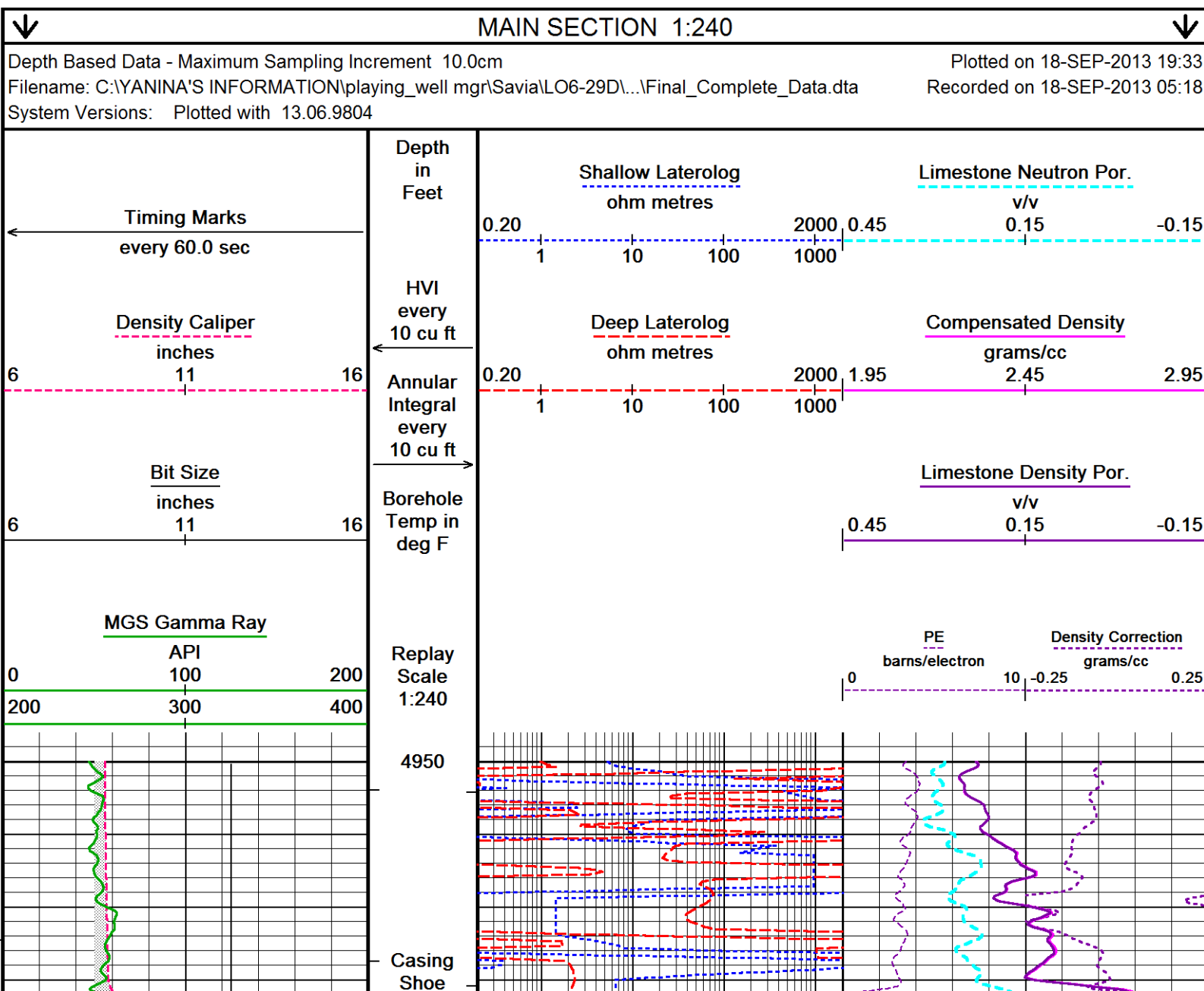
MIS-E.B Compact Inline Standoff sub
MIS-E.B 641 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

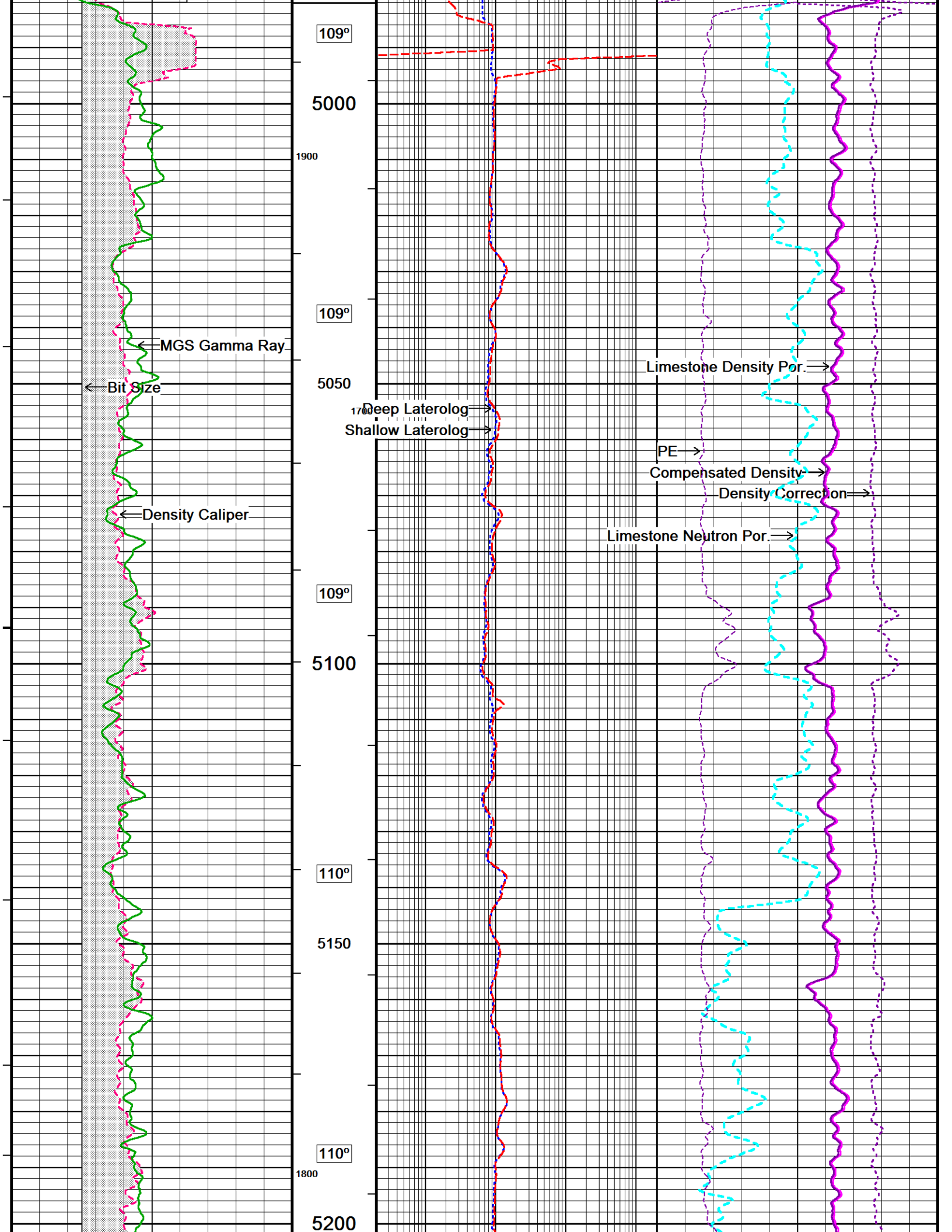
Compact Upper Guard sub
MUG-B.B 260 LG: 8.98 ft WT: 68.3 lb OD: 2.24 in

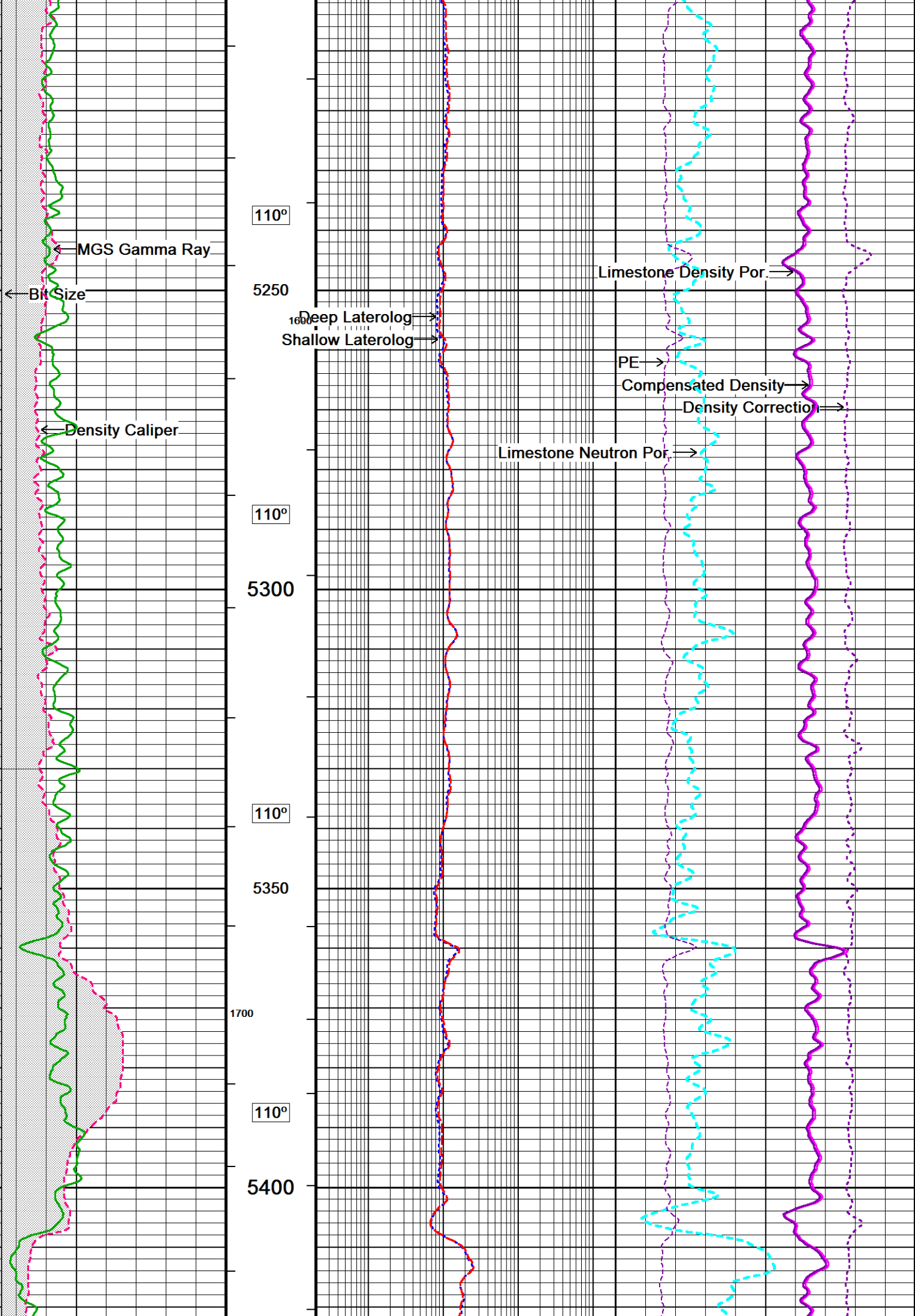
Compact Laterolog Electrode Sub.
MLE-D.A 228 LG: 12.34 ft WT: 92.6 lb OD: 2.24 in

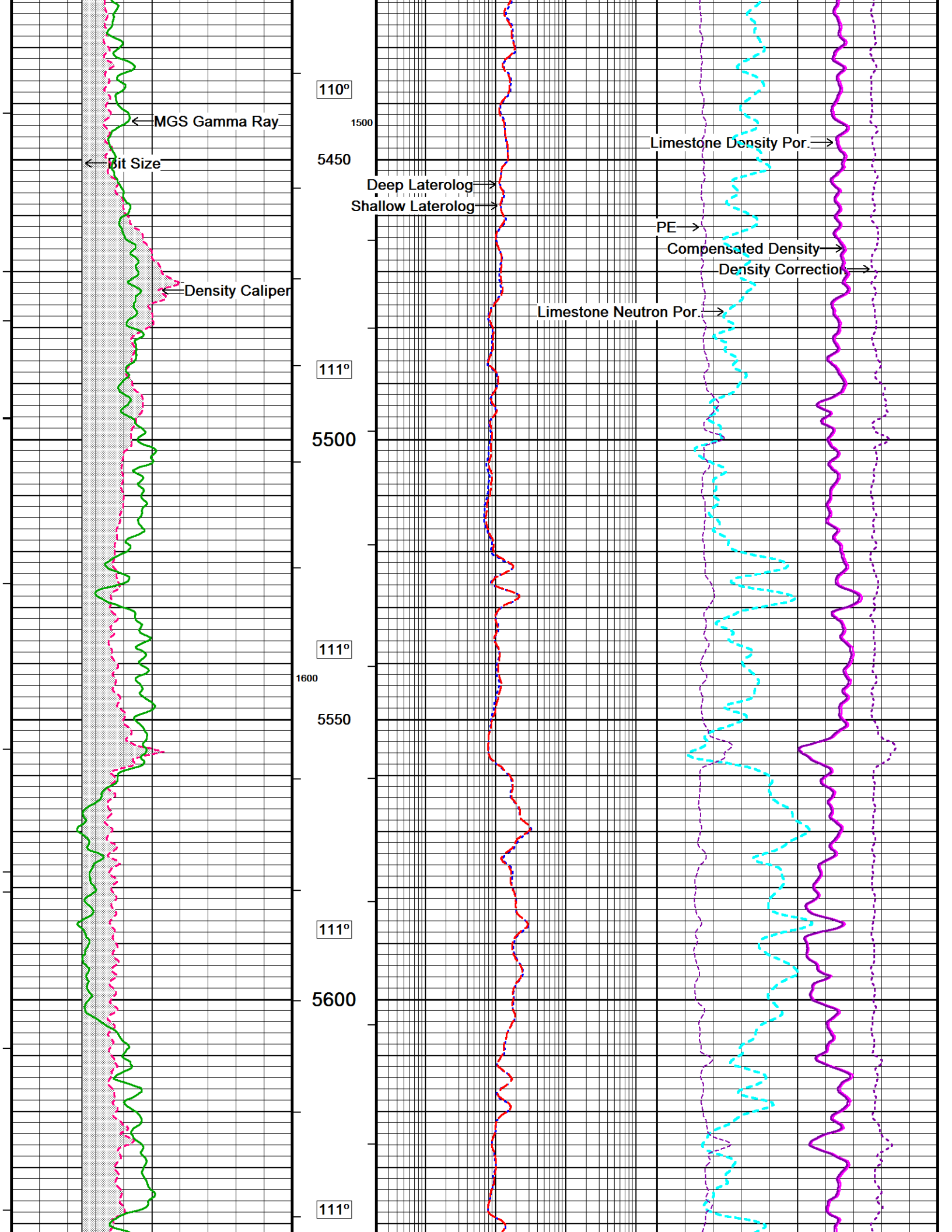


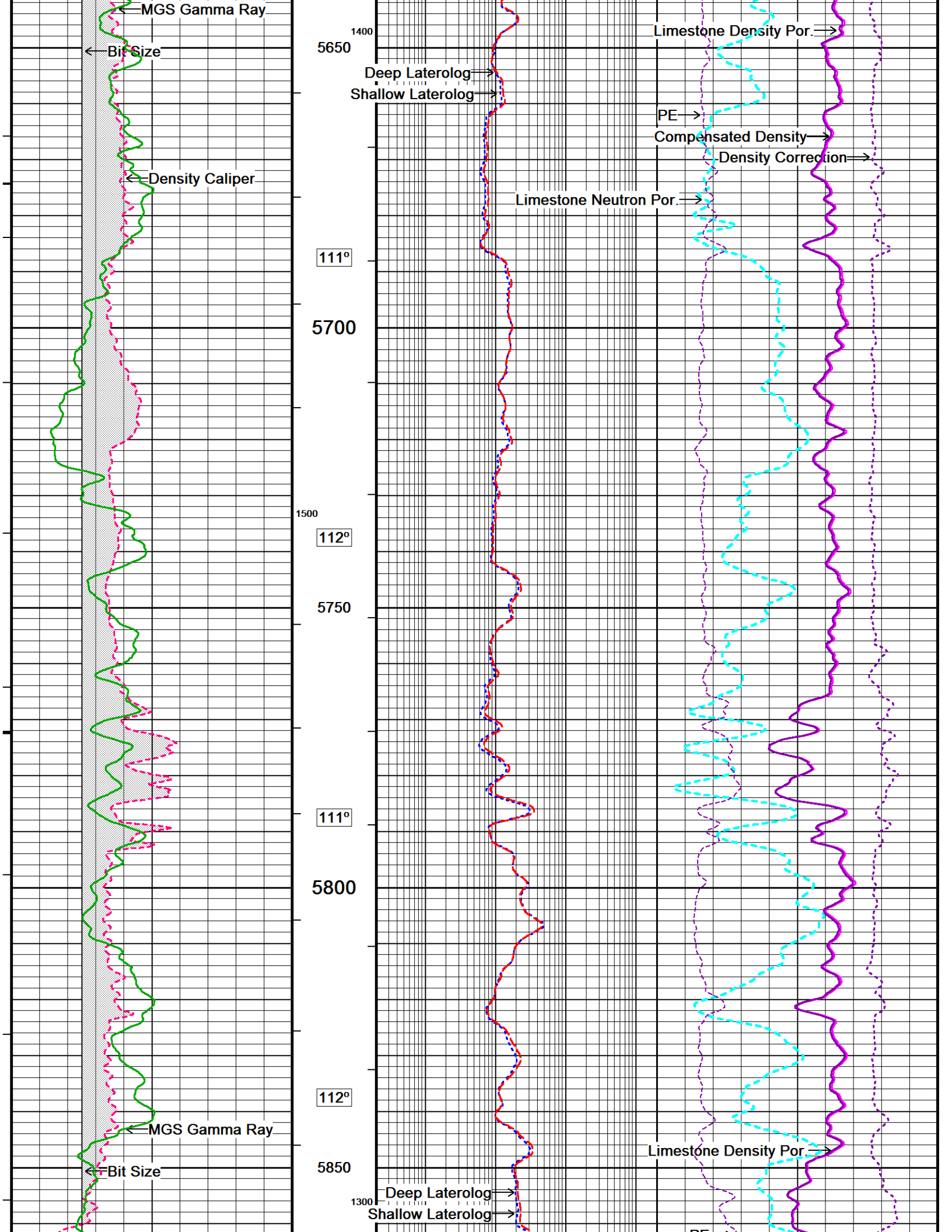
• Tool Zero (0.13ft from bottom)
All measurements relative to tool zero.

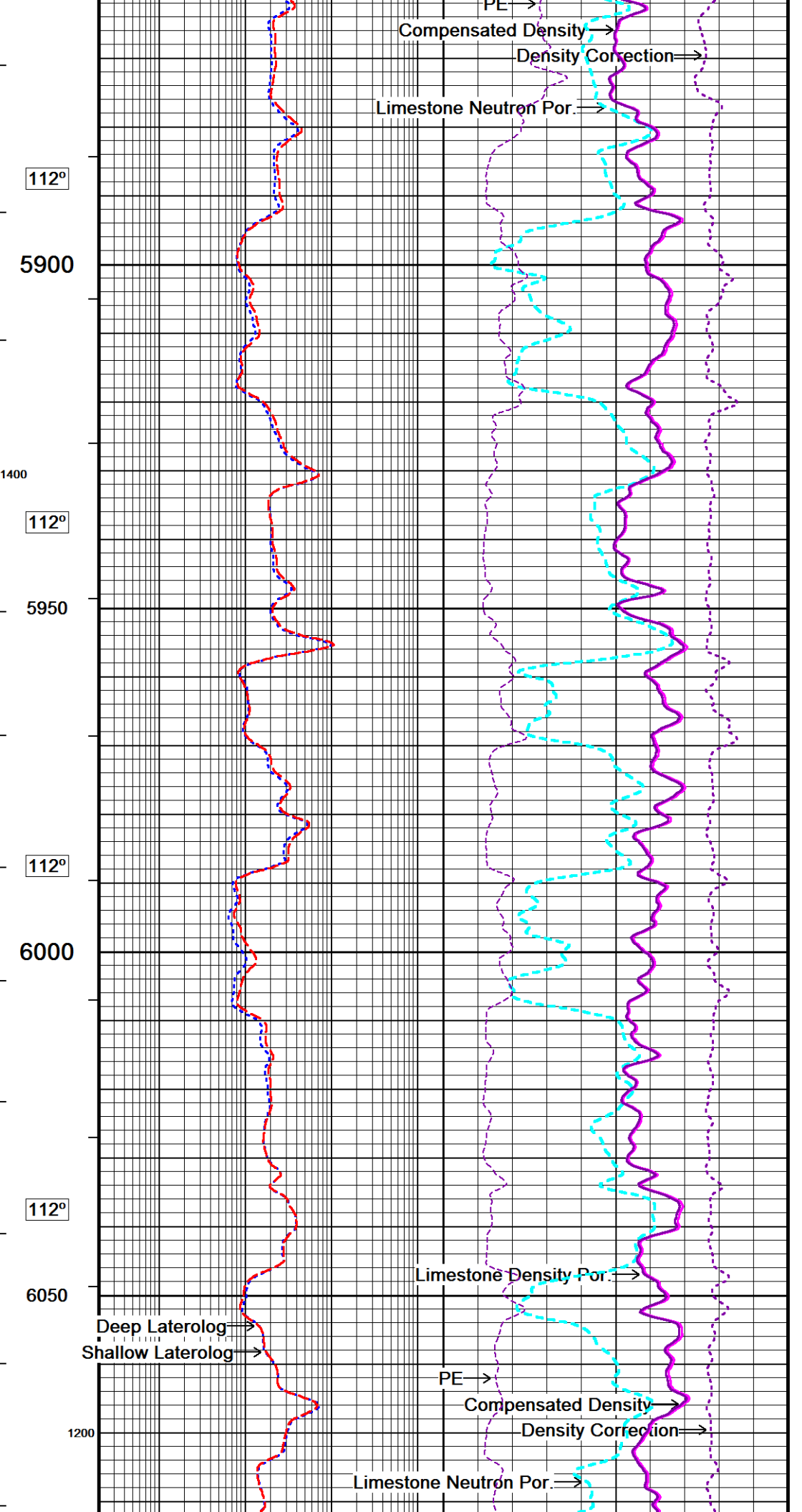
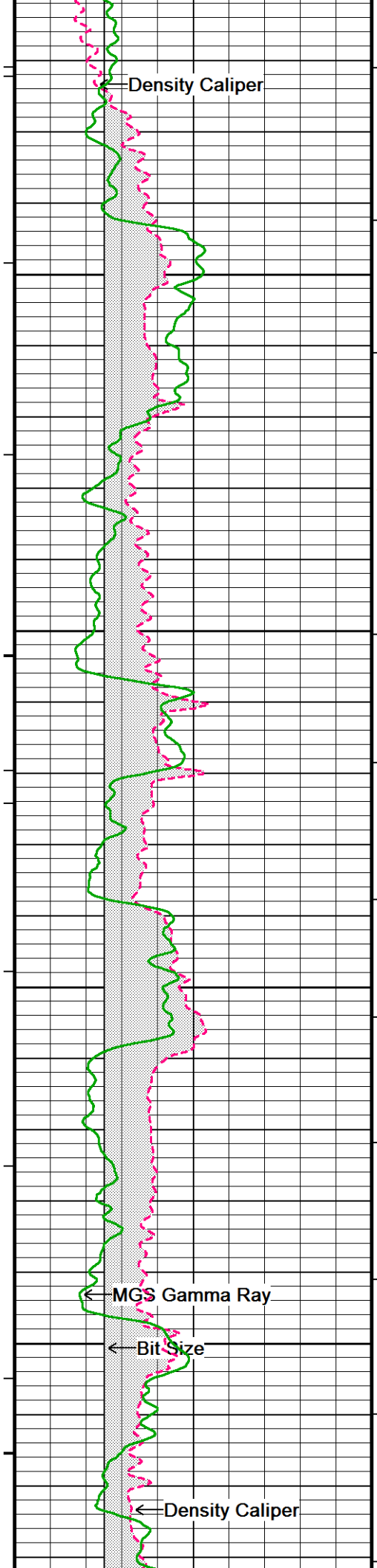


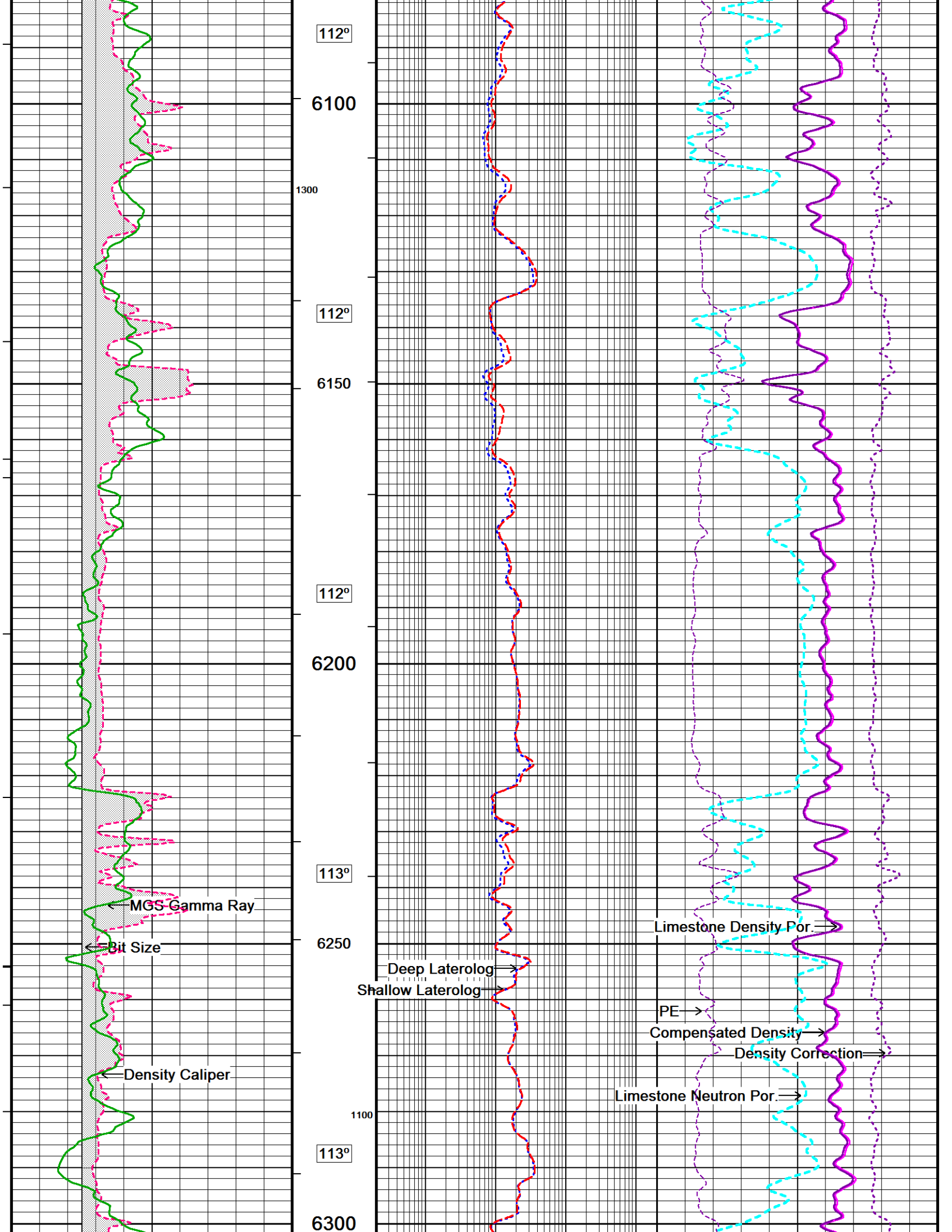


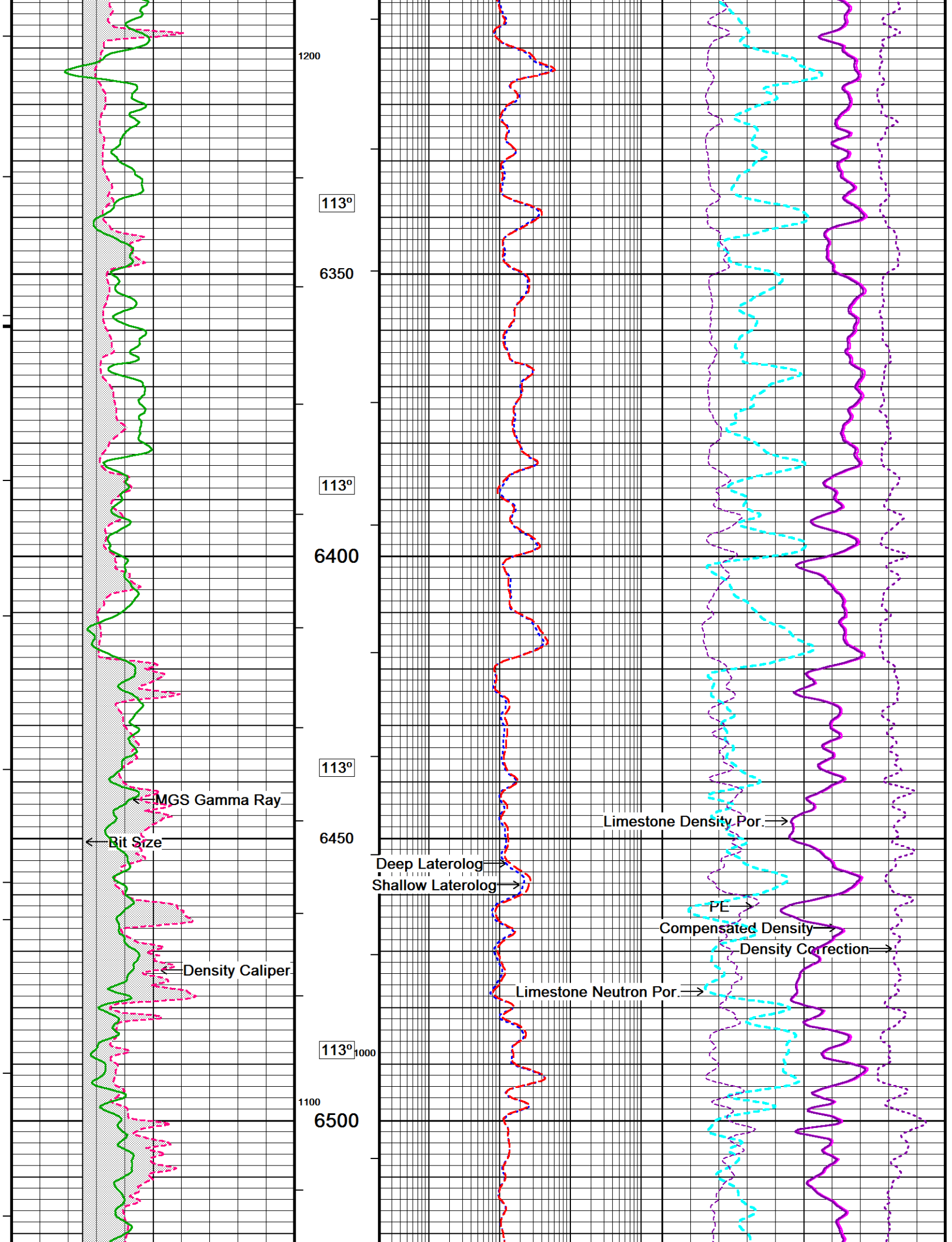


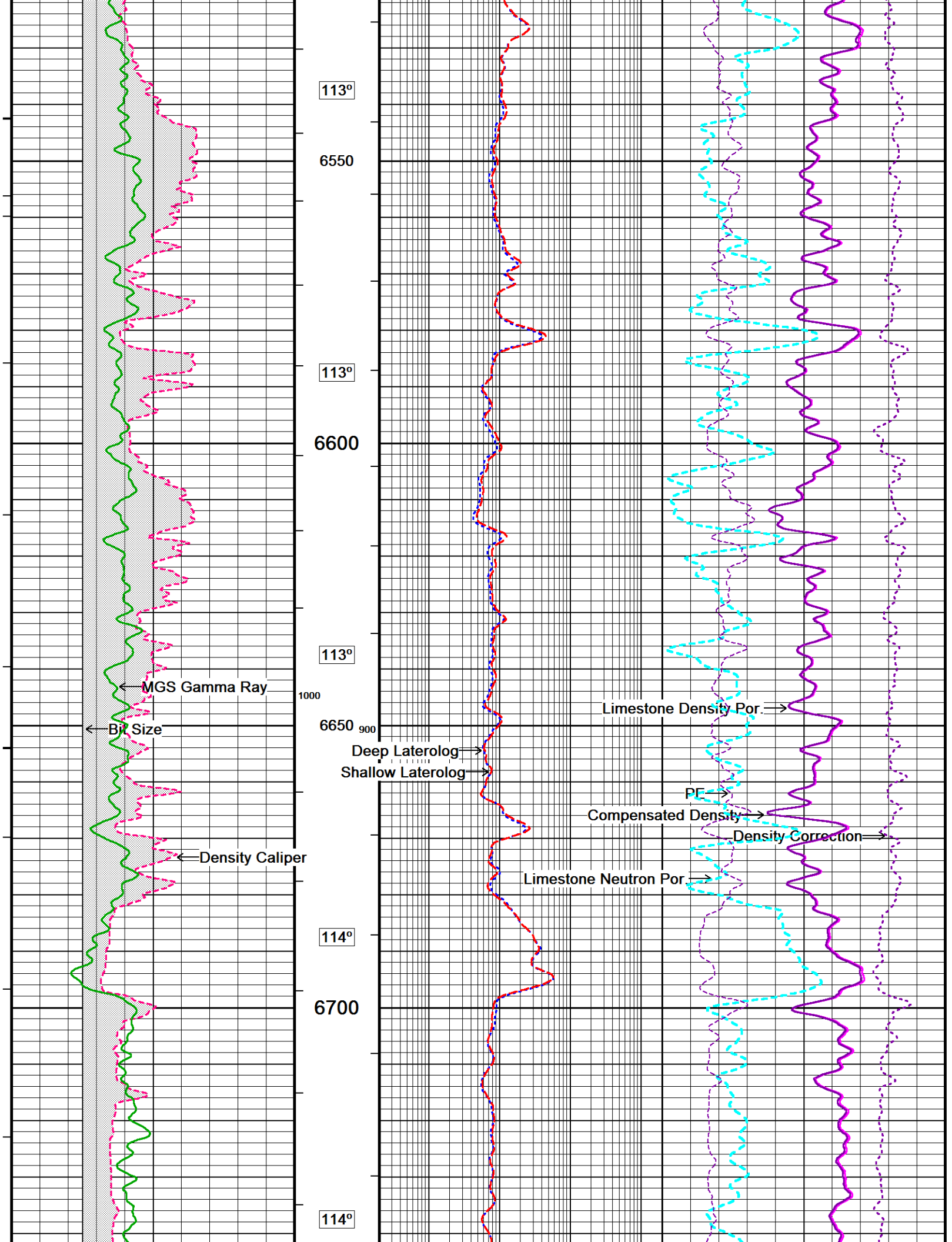


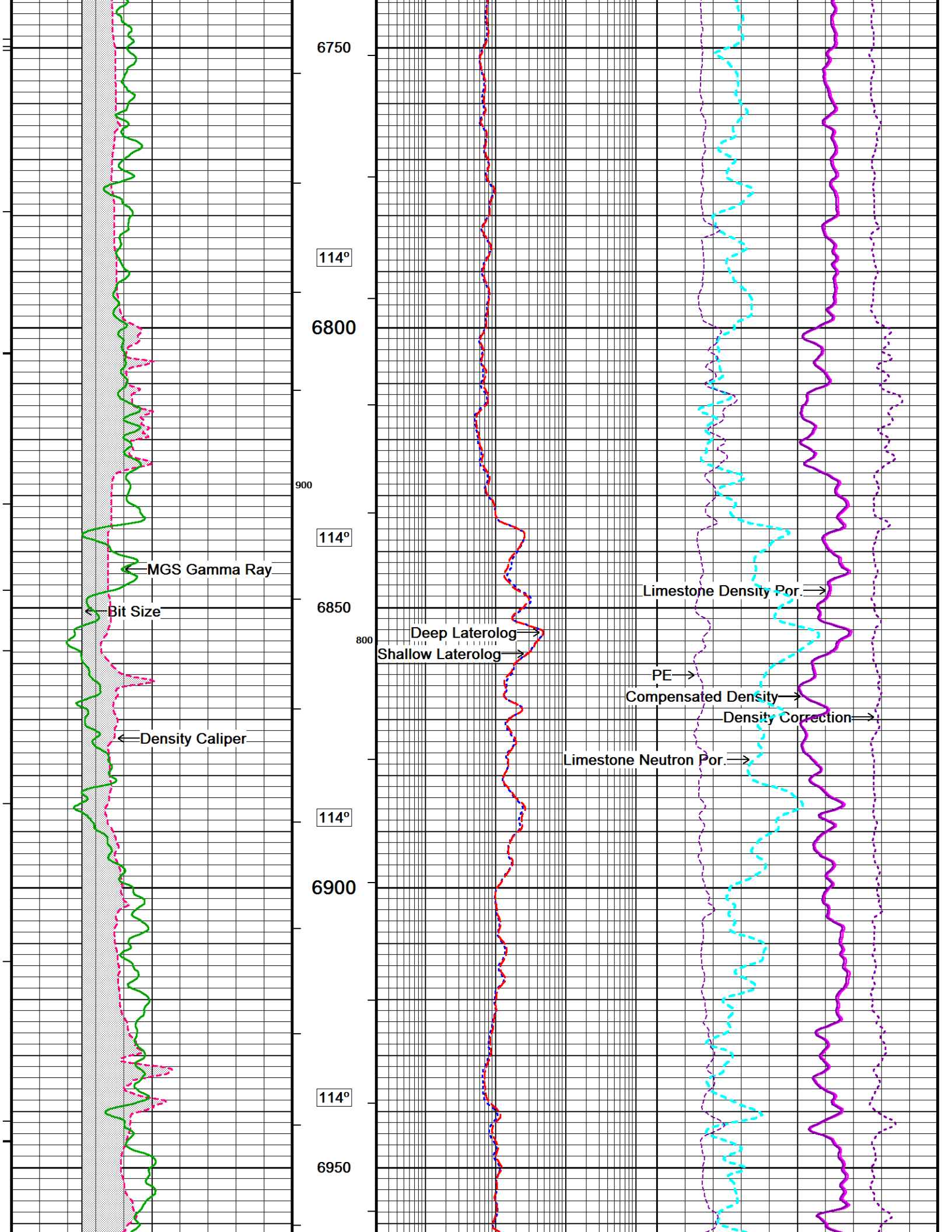


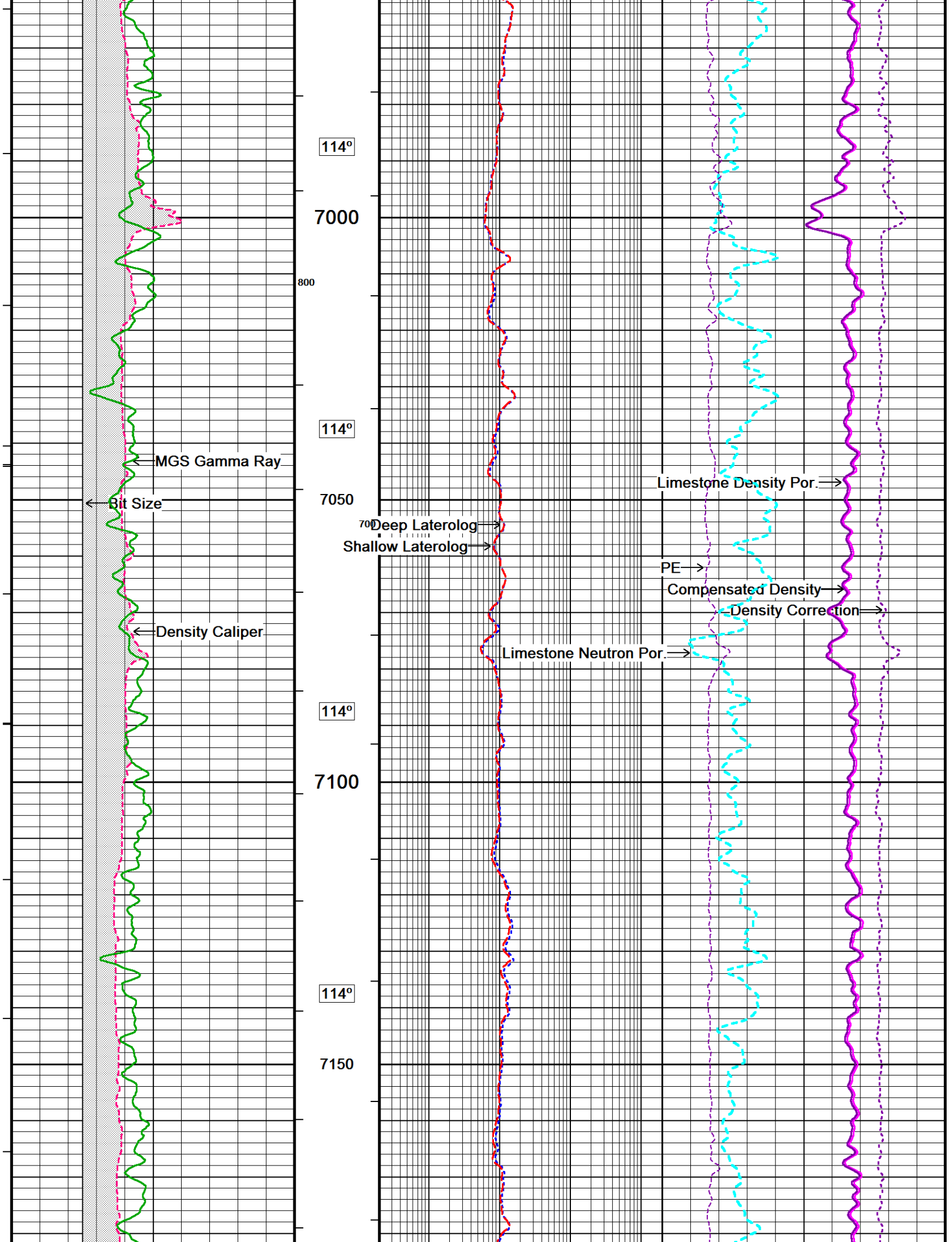


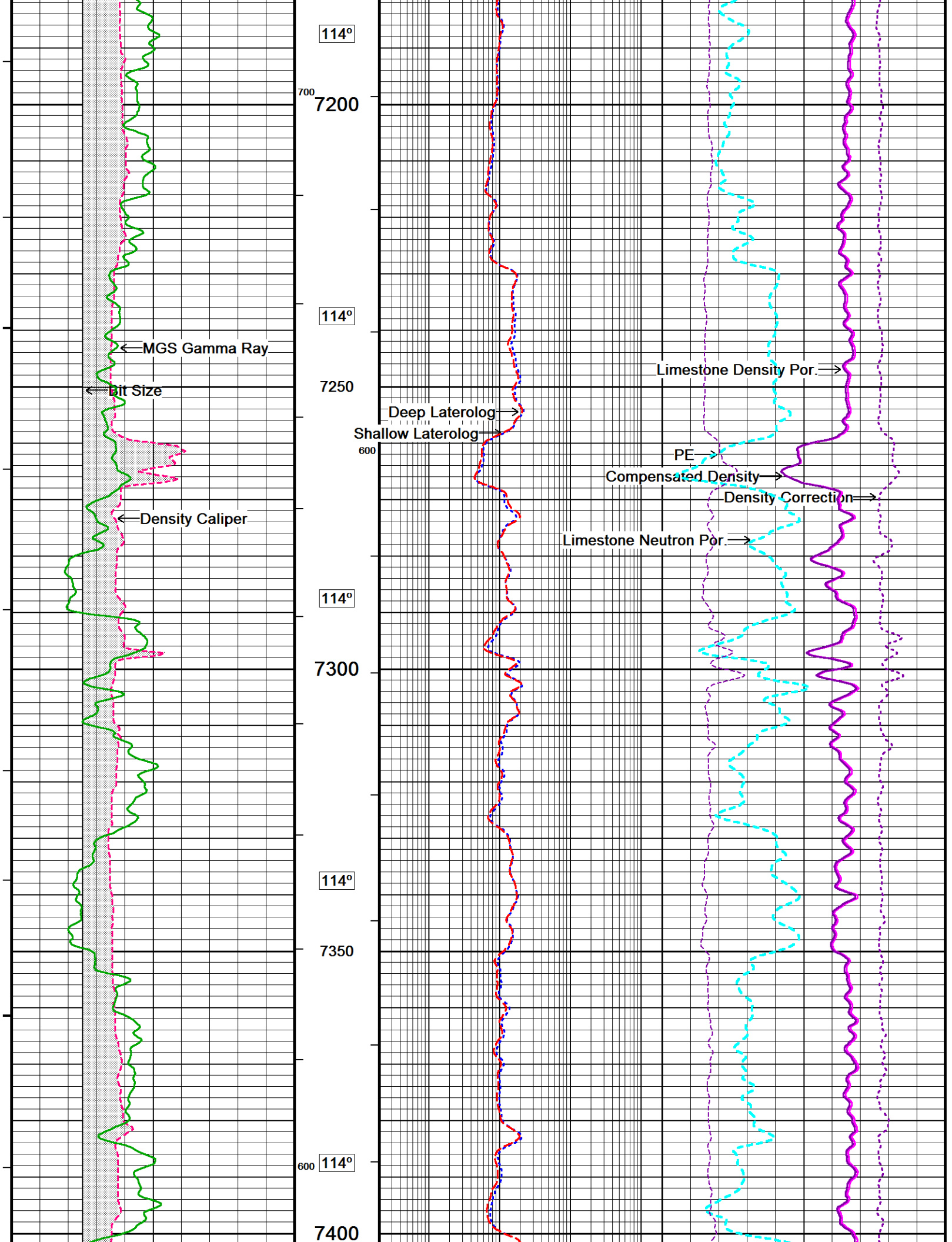


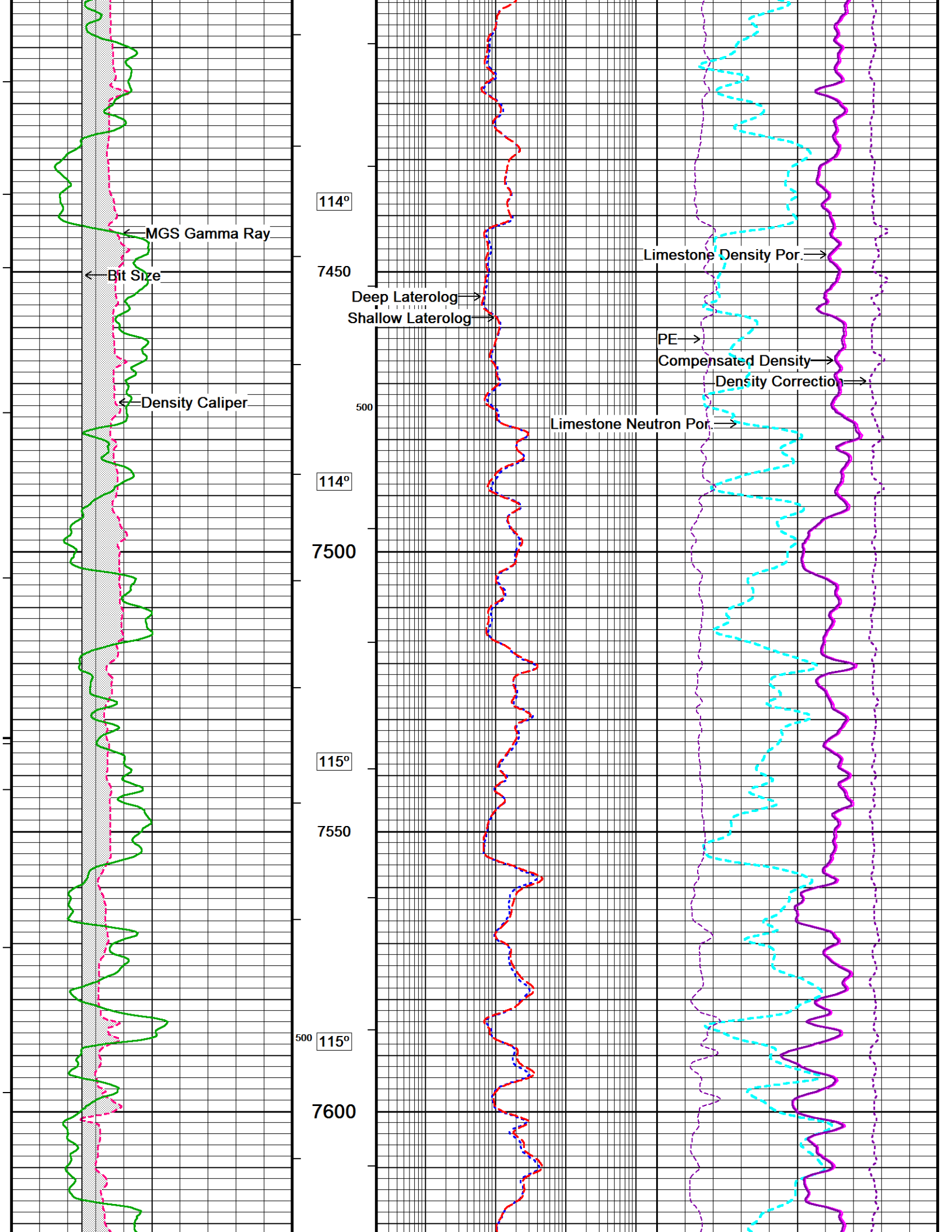


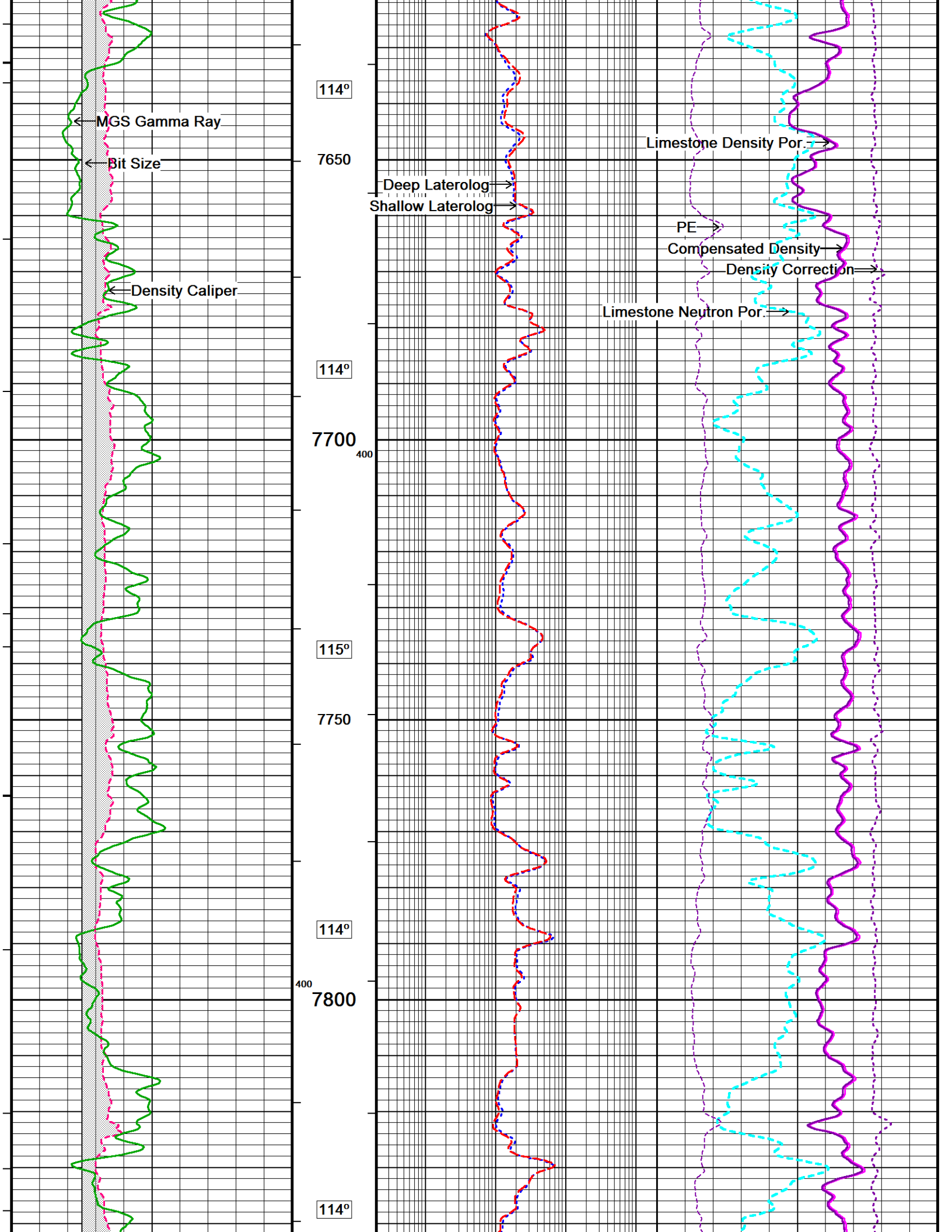


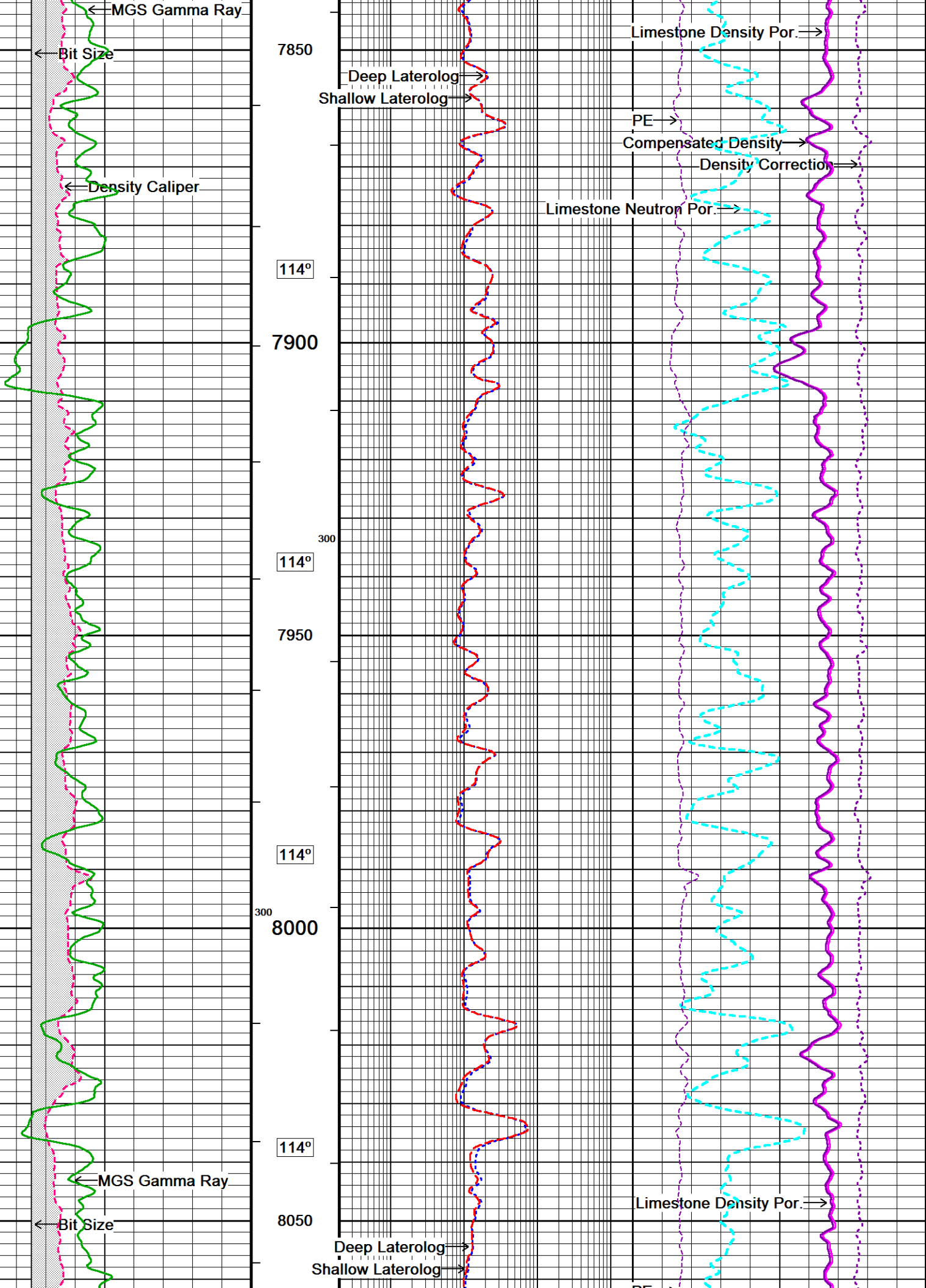


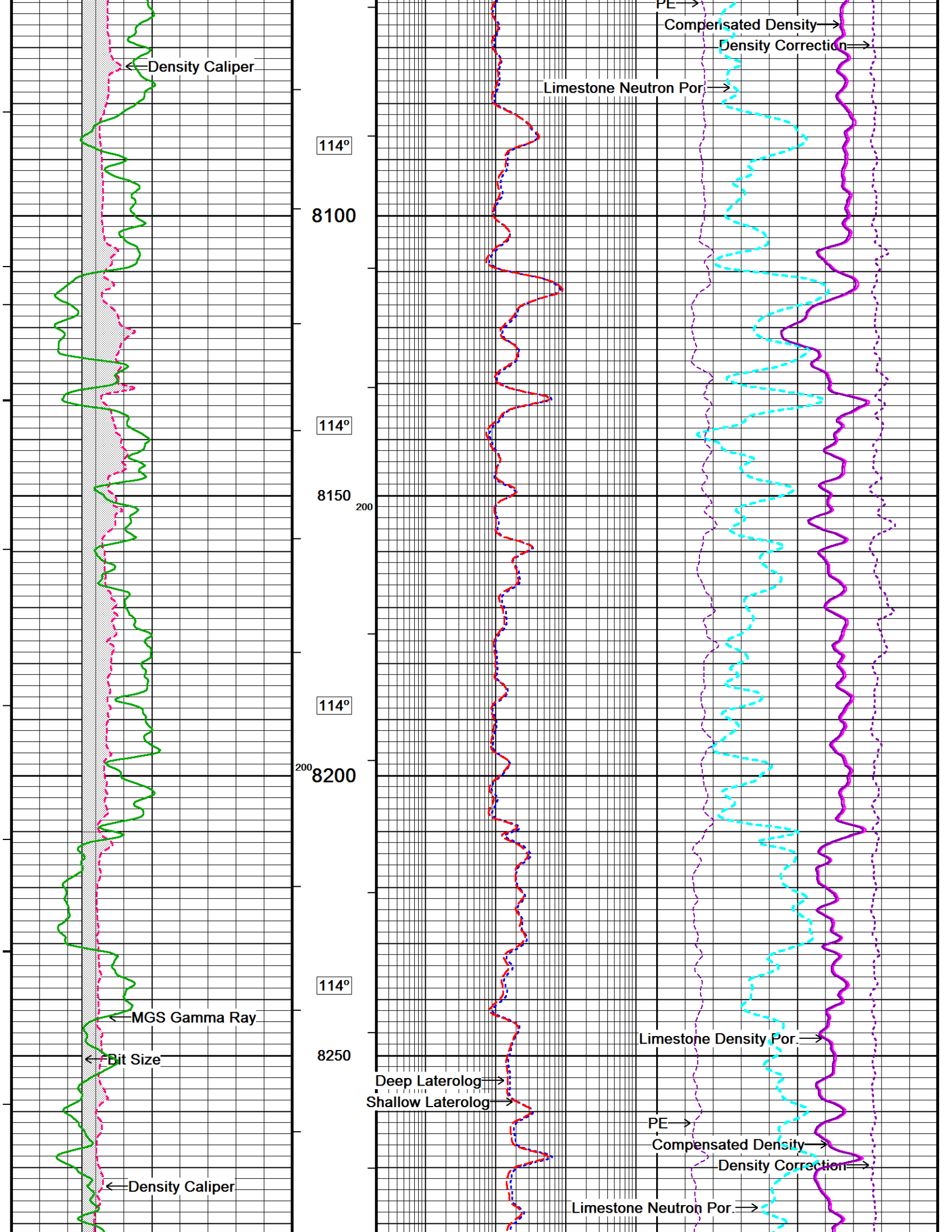


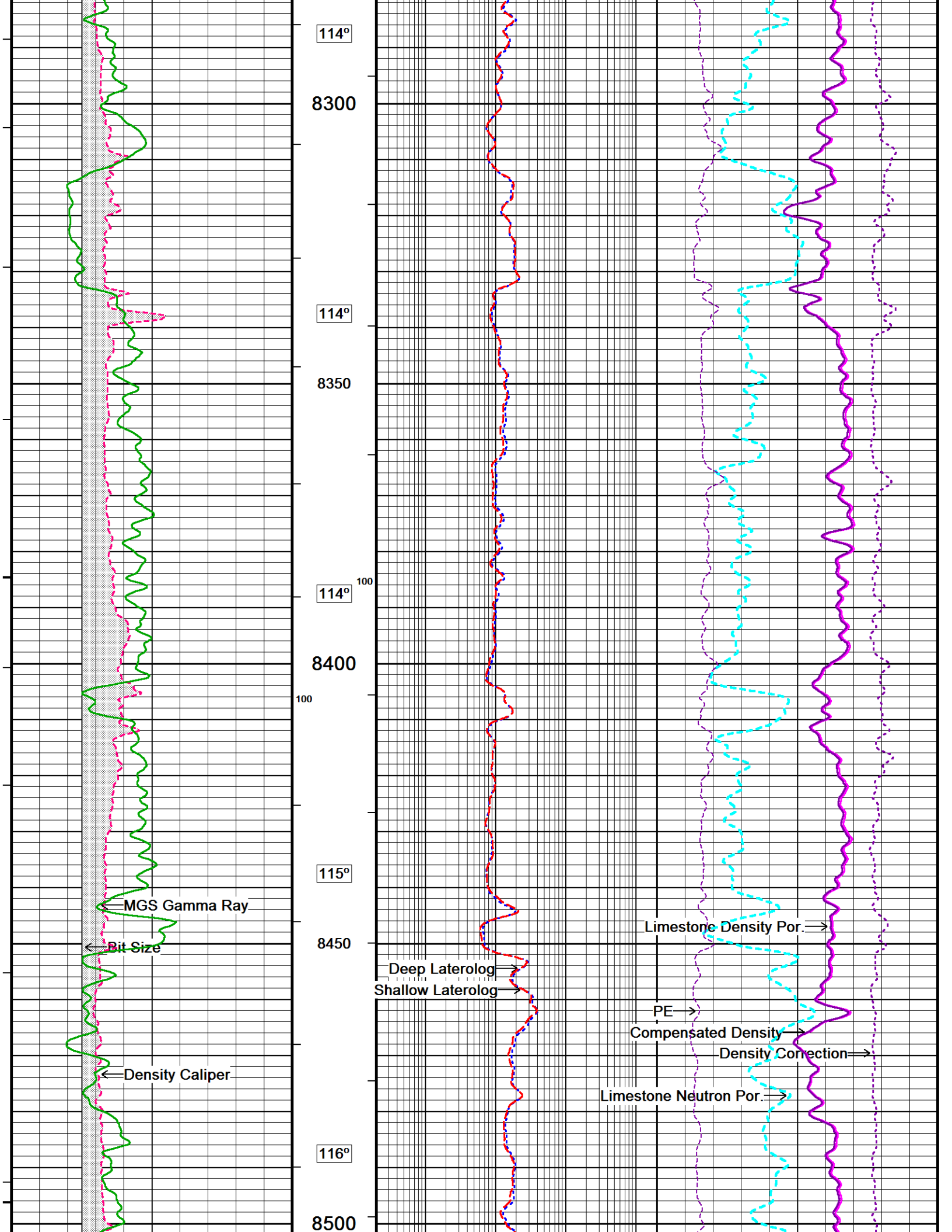


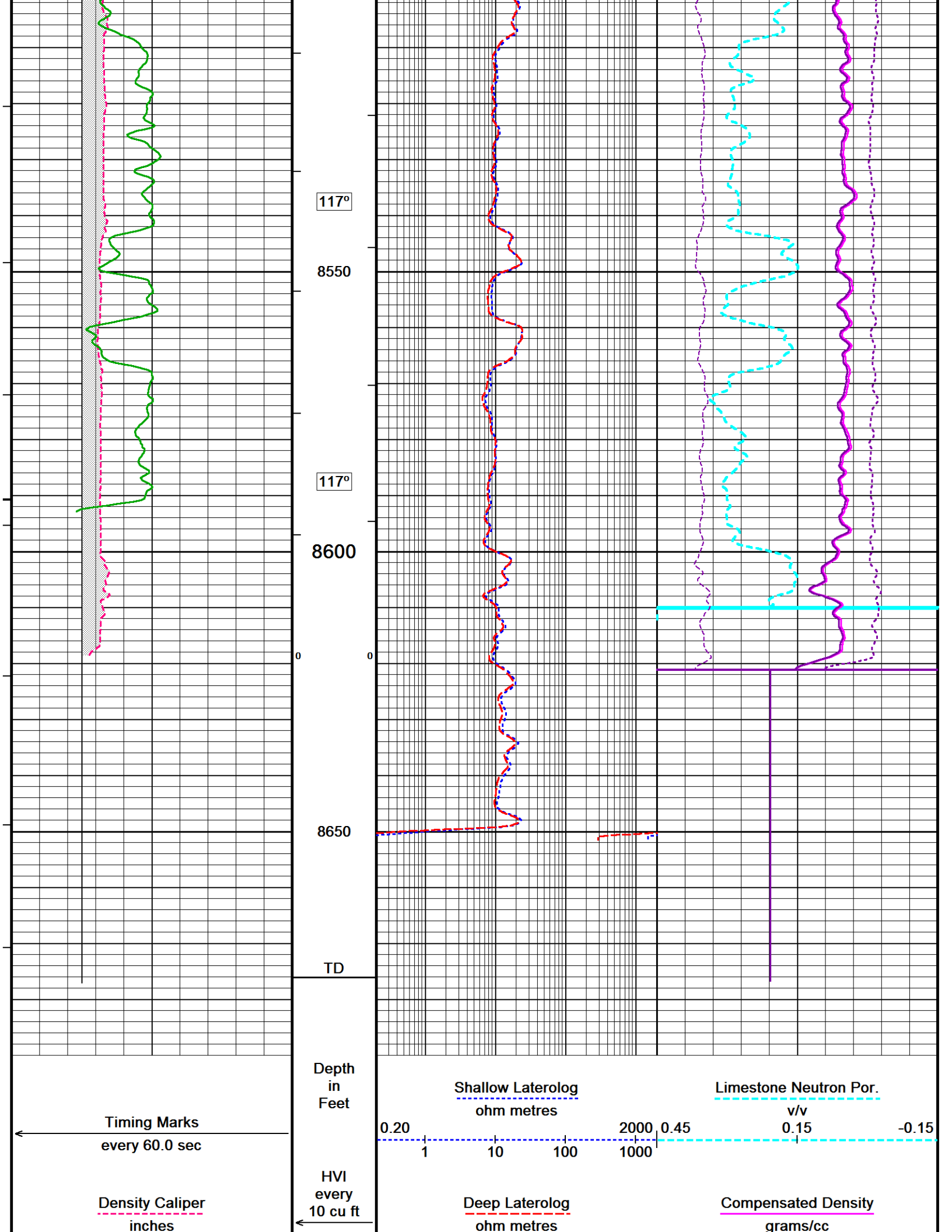


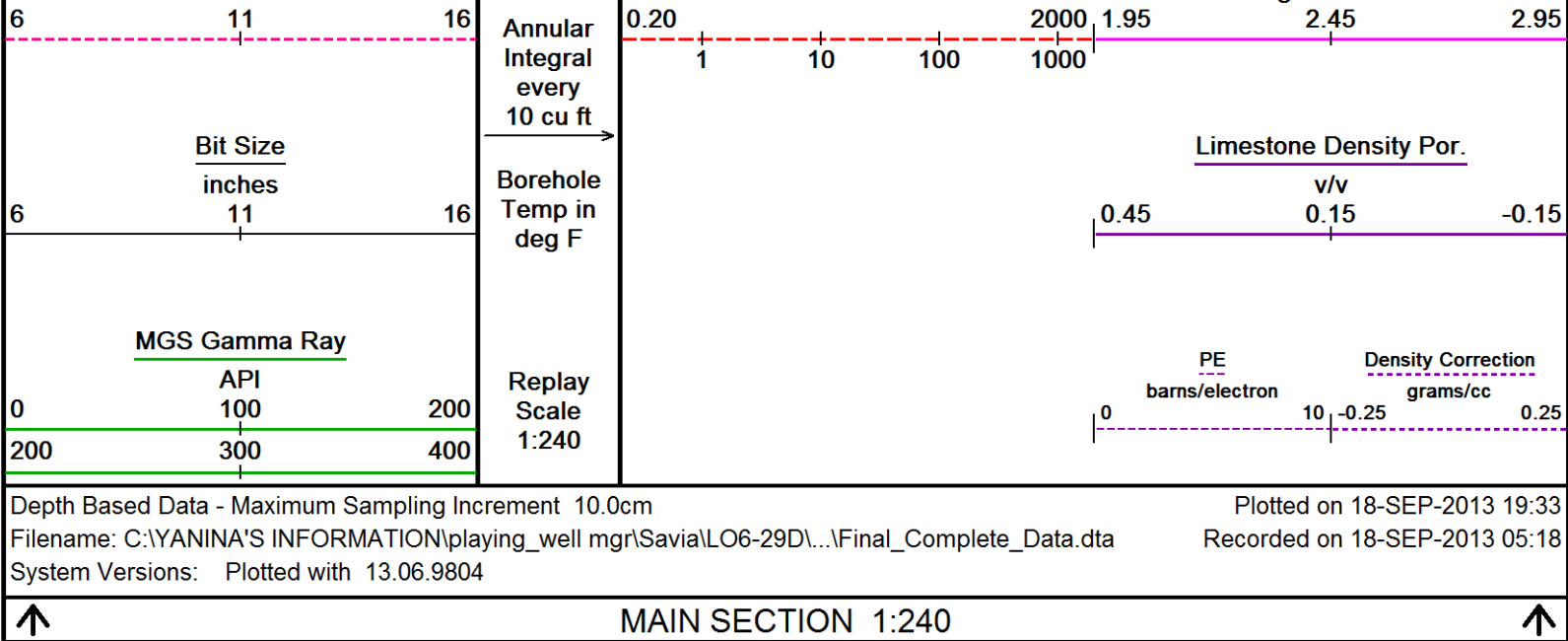












BEFORE SURVEY CALIBRATION

C:\YANINA'S INFORMATION\playing_well mgr\Savia\LO6-29D\New Folder2\Final_Data.dta

General Constants All 000			Last Edited on 17-SEP-2013,05:31		
General Parameters					
Mud Resistivity	0.270		ohm-metres		
Mud Resistivity Temperature	75.000		degrees F		
Water Level	0.000		feet		
Borehole Fluid Processing	N/A				
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	Density Caliper				
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				

MMS Parameters MMS-E.B 148		Last Edited on 17-SEP-2013 05:33	
Logging Parameters			
Firmware Version	2v40		
Caliper Open On	MAI		
Caliper Open Delay		minutes	
Caliper Closed On	Unknown		
Caliper Closed Delay	N/A	minutes	
Sample Rate	1.00	seconds	
Use Deep Sleep	Yes		
Delay Deep Sleep	No		
Deep Sleep Wake Time	360.0	minutes	
Deep Sleep Wake on Temperature	No		
Deep Sleep Wake Temperature	N/A	degrees C	
Deep Sleep Wake on Pressure	No		
Deep Sleep Wake Pressure	N/A	psi	
MMI Pad Pressure	0.0		
Release Parameters			
Pulse Duration Base Level	10.0	seconds	
Pulse Duration Transition Time	20.0	seconds	

Pulse Duration Status Pulse From	10.0	seconds
Pulse Duration Caliper Close From	60.0	seconds
Pulse Duration Caliper Open From	65.0	seconds
Pulse Duration Release Pulse From	90.0	seconds
Pulse Duration Release Pulse To	120.0	seconds
Pulse Release Duration	80.0	seconds
Pulse Discriminator Pressure Band	852.0	seconds
Pulse Pressure Discriminator	1765.0	seconds
Use Negative Pulsing	No	
Good Status Reply Open Hole	65535.0	seconds
Good Status Reply Cased Hole	40.0	seconds
Bad Status Reply	60.0	seconds
Status Pulse To	30.0	seconds
Caliper Close To		seconds
Caliper Open To	85.0	seconds

Configuration

MMS,MGS,MDN,MPD,MPD,MLE,MAI

Gamma Calibration MGS-C.A 43

Field Calibration on 16-SEP-2013 09:35

	Measured	Calibrated (API)
Background	93	62
Calibrator (Gross)	945	630
Calibrator (Net)	851	568

Gamma Constants MGS-C.A 43

Last Edited on 17-SEP-2013,02:44

Gamma Calibrator Number	145	
Mud Density	1.38	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MGS-C.A 43

Field Calibration on 16-SEP-2013,09:36

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	200.00	200.00

High Resolution Temperature Constants MGS-C.A 43

Last Edited on 16-SEP-2013,09:35

Pre-filter Length	11
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Neutron Calibration MDN-C.A 441

Base Calibration on 09-MAR-2013 15:27

Field Check on 17-MAR-2013 17:51

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
Ratio	3122	96	3714	110
	32.488		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2097	3067
Ratio	0.684	

Field Check

	Calibrated (cps)	
	2091	3058
Ratio	0.681	

Neutron Constants MDN-C.A 441

Last Edited on 18-SEP-2013,10:33

Neutron Source Id	P62419B	
Neutron Jig Number	NJ5737	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.38	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu

Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	MGS External Temperature	
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	

Laterolog Calibration MLE-D.A 228				Base Calibration on 29-JUN-2013 11:22	
				Field Check on 16-SEP-2013,21:28	
Base Calibration					
		Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2	
Shallow	0.0	1009.8	0.0	1284.6	
Deep	0.0	1008.9	0.0	747.1	
Groningen	0.0	1008.4	0.0	796.8	
Channel	Base Check (ohm-m)		Field Check (ohm-m)		
Shallow	45.8		45.8		
Deep	26.6		26.6		
Groningen	227.3		227.4		

Laterolog Constants MLE-D.A 228			Last Edited on 17-SEP-2013,02:31		
Squasher Start	40000	ohm-m			
Shallow Laterolog K Factor	1.2846				
Deep Laterolog K Factor	0.7471				
Groningen Laterolog K Factor	0.7968				
Interference Rejection	50 Hz				
SP Connection	SP Bridle Electrode (Lower)				
Groningen Connection	Groningen Electrode (Upper)				
Borehole Correction Constants					
Bridle Type	Shuttle				
Stand-off	0.50	inches			
Caliper Source	Density Caliper				
Hole Size	N/A	inches			
Mud Resistivity Source	Temperature Corrected				
Temp. for Rm Corr.	MGS External Temperature				
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	1.00	v/v			
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				

Caliper Calibration MPD-C.A 197			Base Calibration on 17-SEP-2013 02:30
			Field Calibration on 17-SEP-2013 02:31
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	16753	3.98	
2	26256	5.96	
3	45952	9.86	
4	57280	11.93	
5	0	0.00	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	11.93	11.93	

Photo Density Calibration MPD-C.A 197			Base Calibration on 10-AUG-2013 12:59 Field Check on 16-SEP-2013 09:19	
Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	

	Near	Far	Near	Far
Reference 1	61917	30390	59536	30850
Reference 2	25055	2770	24833	2521

Field Check at Base

1289.0 1390.9

Field Check

1279.6 1389.1

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	229	1151		
Reference 1	24812	61696	0.406	0.371
Reference 2	6993	24903	0.285	0.270

Field Check at Base

229.0 1150.9

Field Check

227.2 1143.2

Density Constants MPD-C.A 197

Last Edited on 18-SEP-2013,10:33

Density Source Id	P74838B
Nylon Calibrator Number	DNCE694
Aluminium Calibrator Number	DACD697
Density Shoe Profile	4 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied
Mud Density	1.38 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
Matrix Density (gm/cc)	Depth (ft)
2.68	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 SAVIA PERU S.A

WELL LO06-29D

FIELD LOBITOS

PROVINCE/COUNTY PIURA

COUNTRY/STATE Peru

Elevation Kelly Bushing	50.00	feet	First Reading	8649.00	feet
Elevation Drill Floor	50.00	feet	Depth Driller	8691.00	feet
Elevation Ground Level	-335.00	feet	Depth Logger	8676.00	feet



COMBINED LOG

MDL-MGS-MDN-MPD

SCALE 5":100

Weatherford®

