



Weatherford

**COMPACT TRIPLE COMBO
QUICKLOOK
LOG**

COMPANY

BILL BARRETT CORPORATION

WELL

CB TG LAND 12D-20-692

FIELD

MAMM CREEK

PROVINCE/COUNTY

GARFIELD

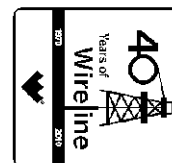
COUNTRY/STATE

U.S.A. / COLORADO

LOCATION

SHL: 720' FNL & 2555' FEL

BHL: 1401' FNL & 660' FWL



SEC

TWP

RGE

Other Services

20

6S

92W

API Number

05-045-19754

Permit Number

Permanent Datum G.L., Elevation 5530 feet

Log Measured From K.B. @ 23 FEET above Permanent Datum

Drilling Measured From K.B.

Elevations:

feet

KB

5553.00

DF

5553.00

GL

5530.00

Date

23-MAY-2011

Run Number

ONE

Depth Driller

8118.00 feet

Depth Logger

8115.00 feet

First Reading

8115.00

Last Reading

857.00

Casing Driller

860.00 feet

Casing Logger

857.00 feet

Bit Size

7.875 inches

Hole Fluid Type

LSND

Density / Viscosity

10.25 lb/USg

PH / Fluid Loss

9.80

Sample Source

FLOW LINE

Rm @ Measured Temp

2.40 @ 91.0 ohm-m

Rmf @ Measured Temp

1.92 @ 91.0 ohm-m

Rmc @ Measured Temp

2.88 @ 91.0 ohm-m

Source Rmf / Rmc

CALC

Rm @ BHT

1.11 @ 201.0 ohm-m

Time Since Circulation

5 HOURS

Max Recorded Temp

201.00 deg F

Equipment Name

COMPACT

Equipment / Base

13173 GD JCT

Recorded By

M.RICHINS

Witnessed By

CURTIS C.

BOREHOLE RECORD

Last Edited: 23-MAY-2011 07:49

| Bit Size inches | Depth From feet | Depth To feet |
|--------------------|--------------------|------------------|
| 8.750 | 860.00 | 4963.00 |
| 7.880 | 4963.00 | 8118.00 |

CASING RECORD

| Type | Size inches | Depth From feet | Shoe Depth feet | Weight pounds/ft |
|---------|----------------|--------------------|--------------------|---------------------|
| SURFACE | 9.625 | 0.00 | 860.00 | 36.00 |

REMARKS

TOOLS: MCG, MDN, MPD, SKJ, MFE AND MAI RAN IN COMBINATION.

HARDWARE: MPD: 8 INCH PROFILE PLATE USED.
TWO 0.5 INCH STANDOFFS USED ON INDUCTION.
DUAL BOWSPRING USED ON NEUTRON.

2.68 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.

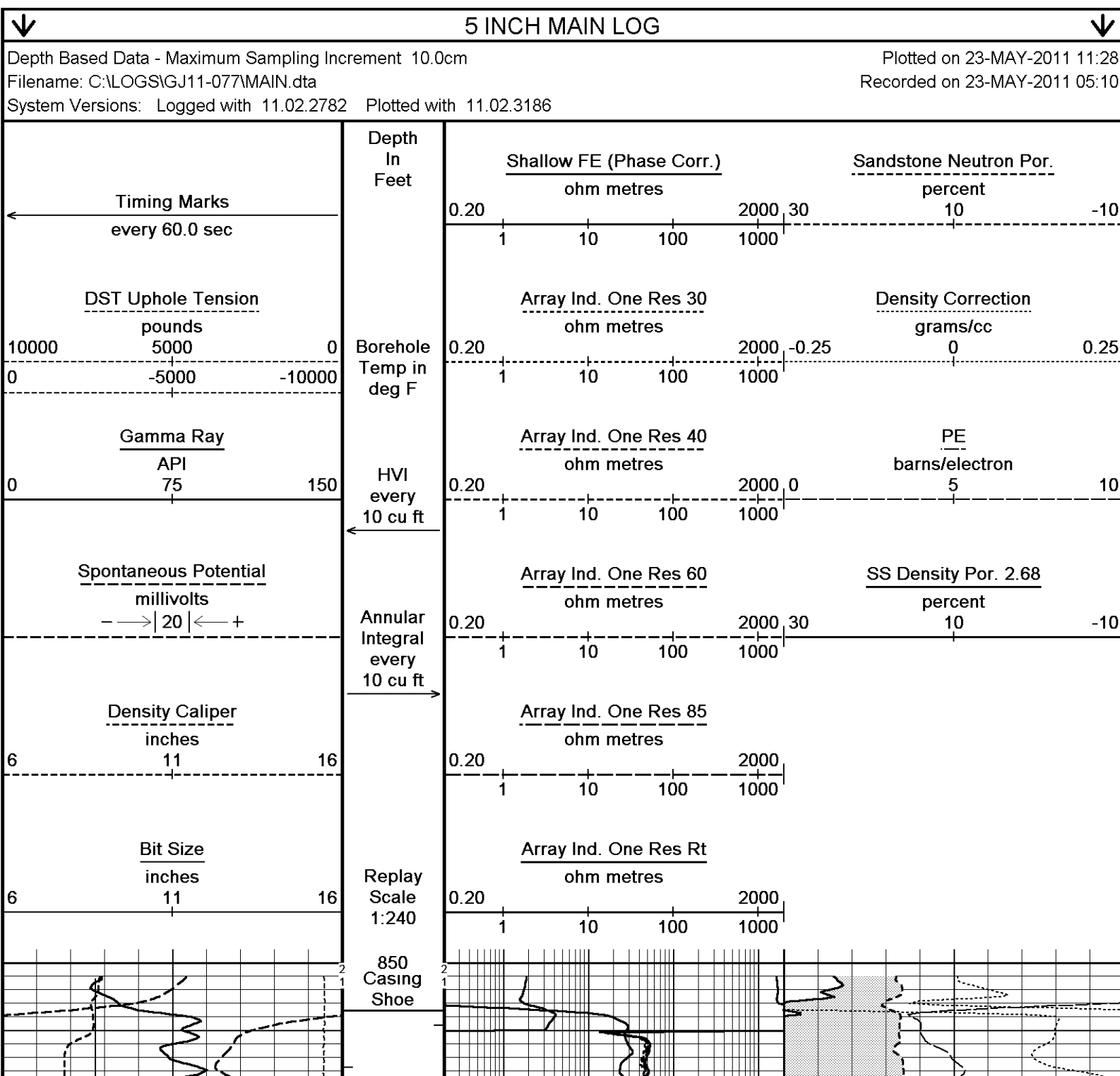
CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.94" (9 5/8", 36 LB/FT CASING).

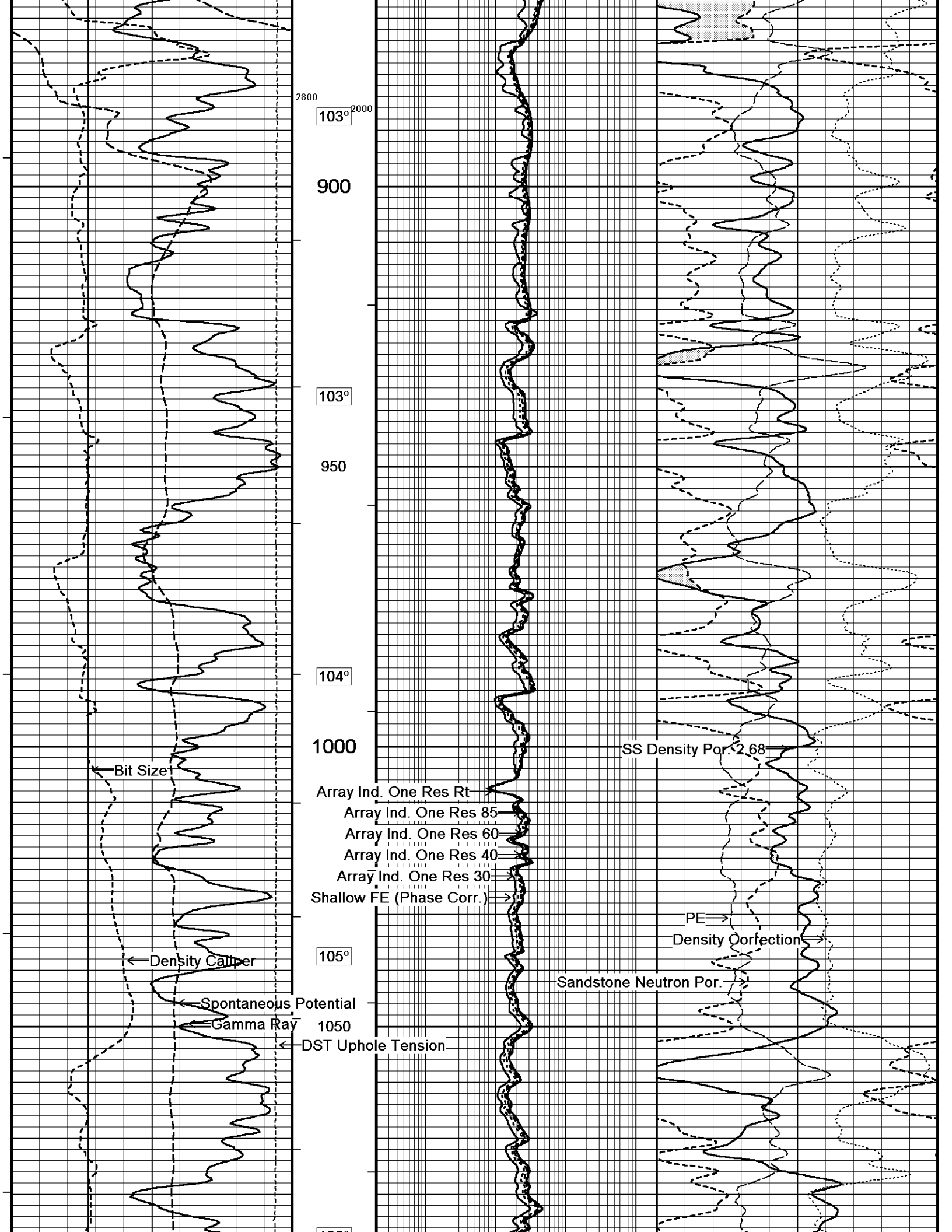
TIGHT SPOT ENCOUNTERED AT 2955, 5460, AND 7425 FEET.

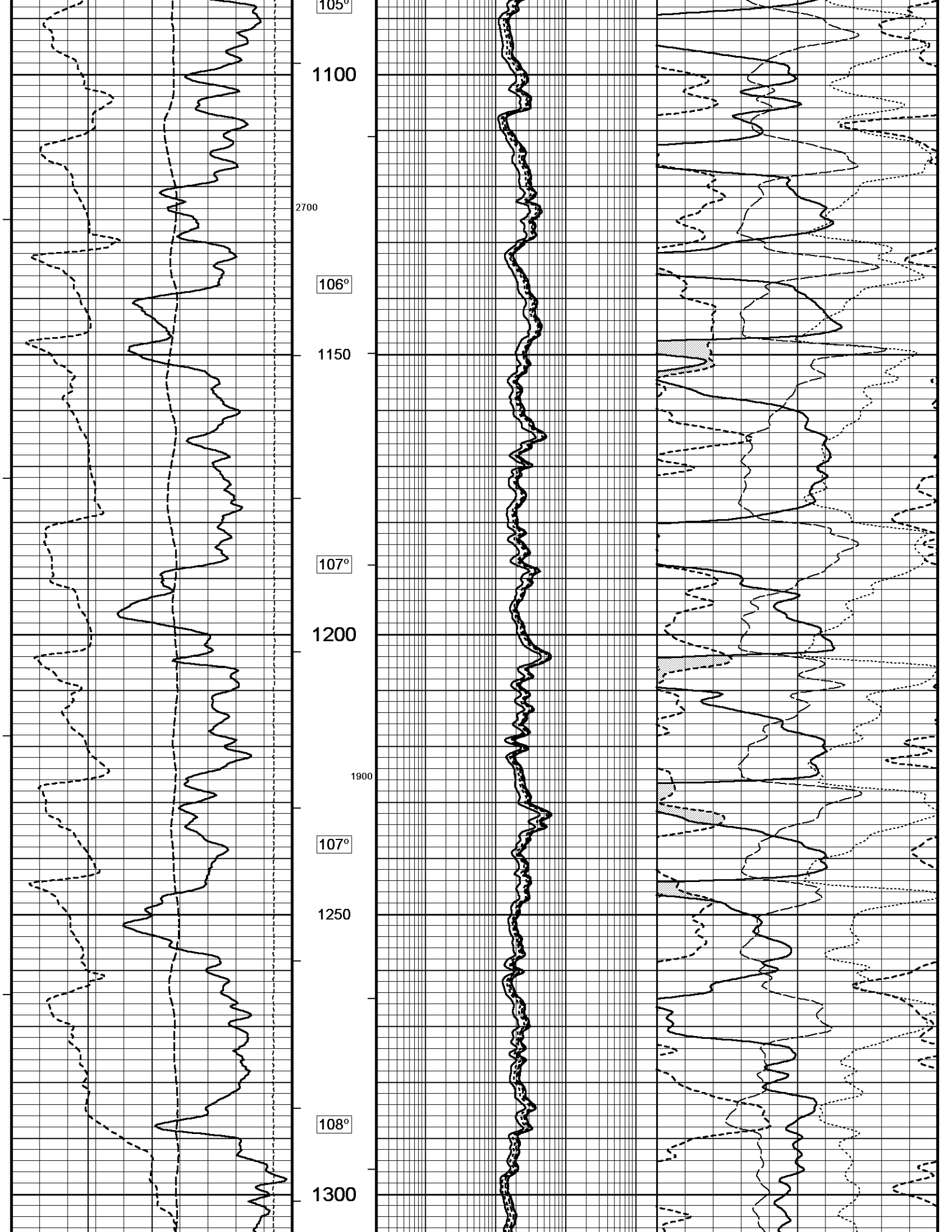
8.75 INCH BIT CHANGE AT 4895 FT

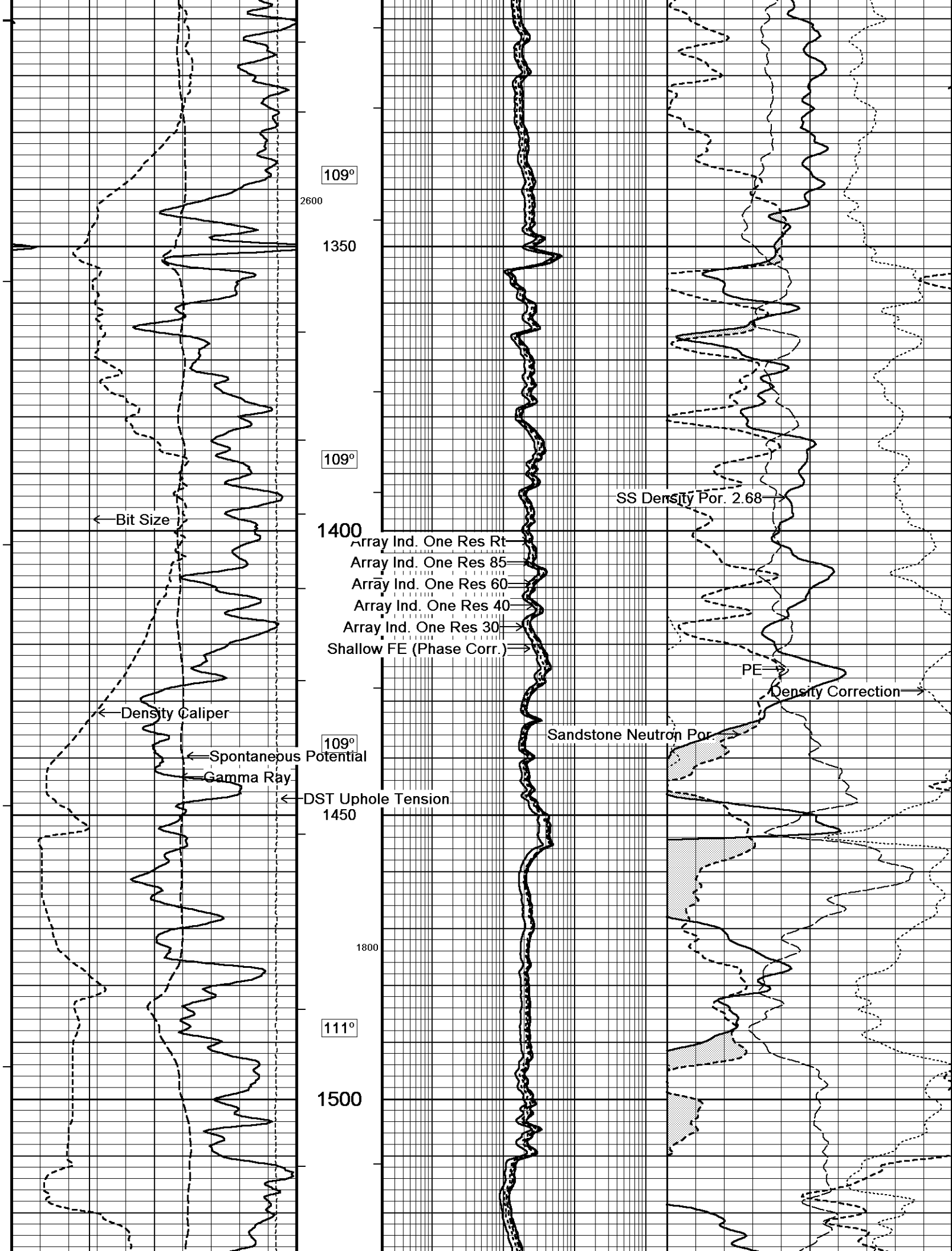
RIG: NABORS #37

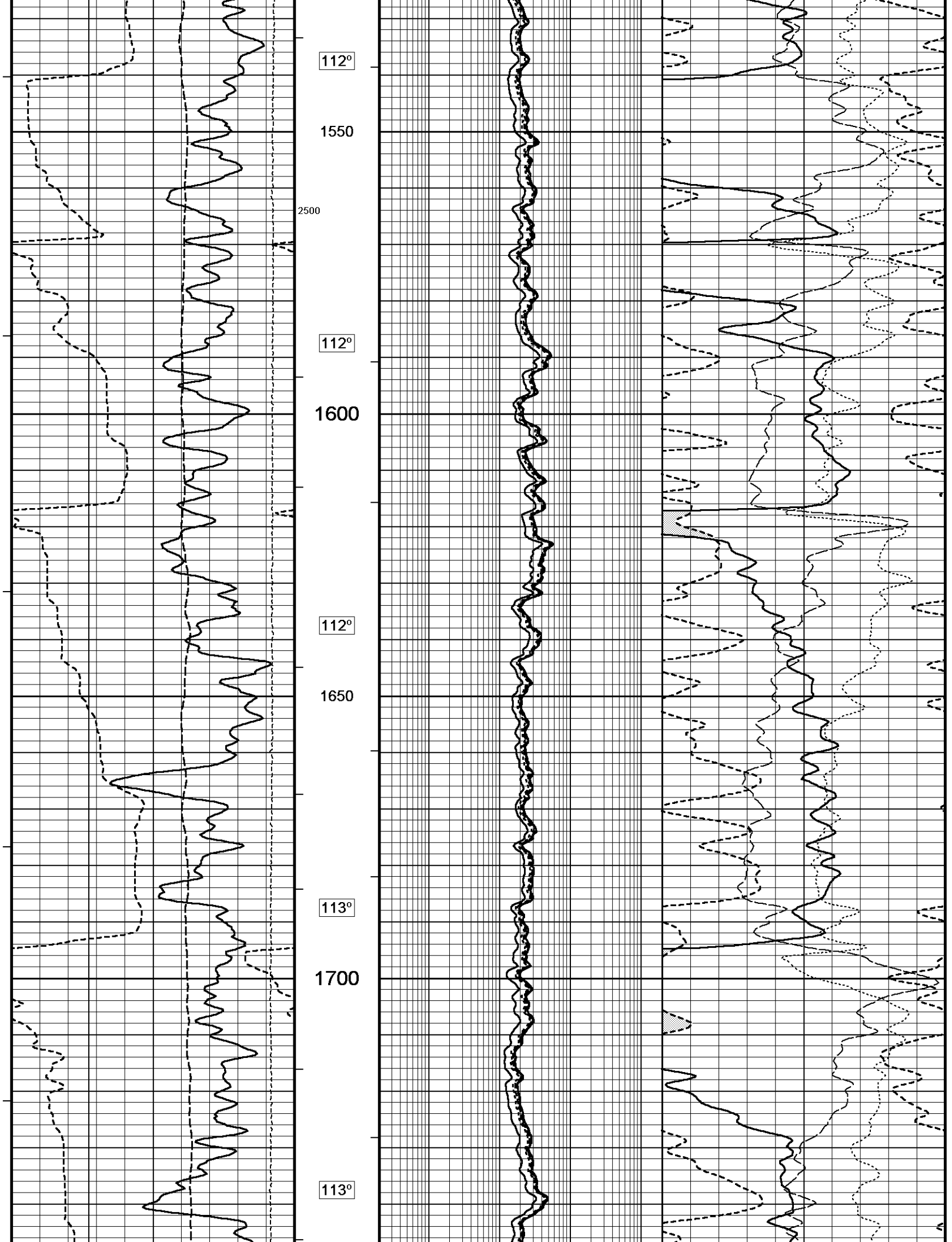
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

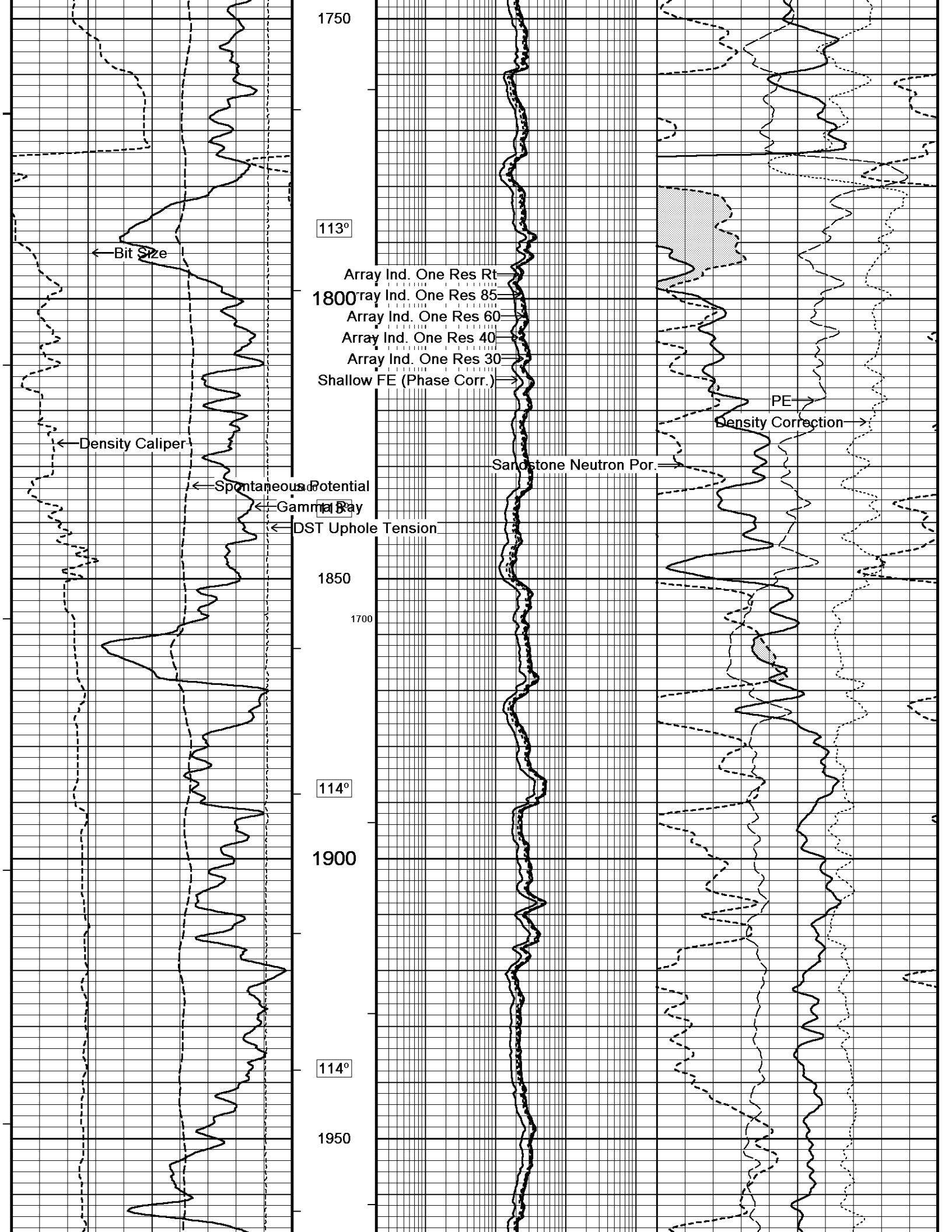


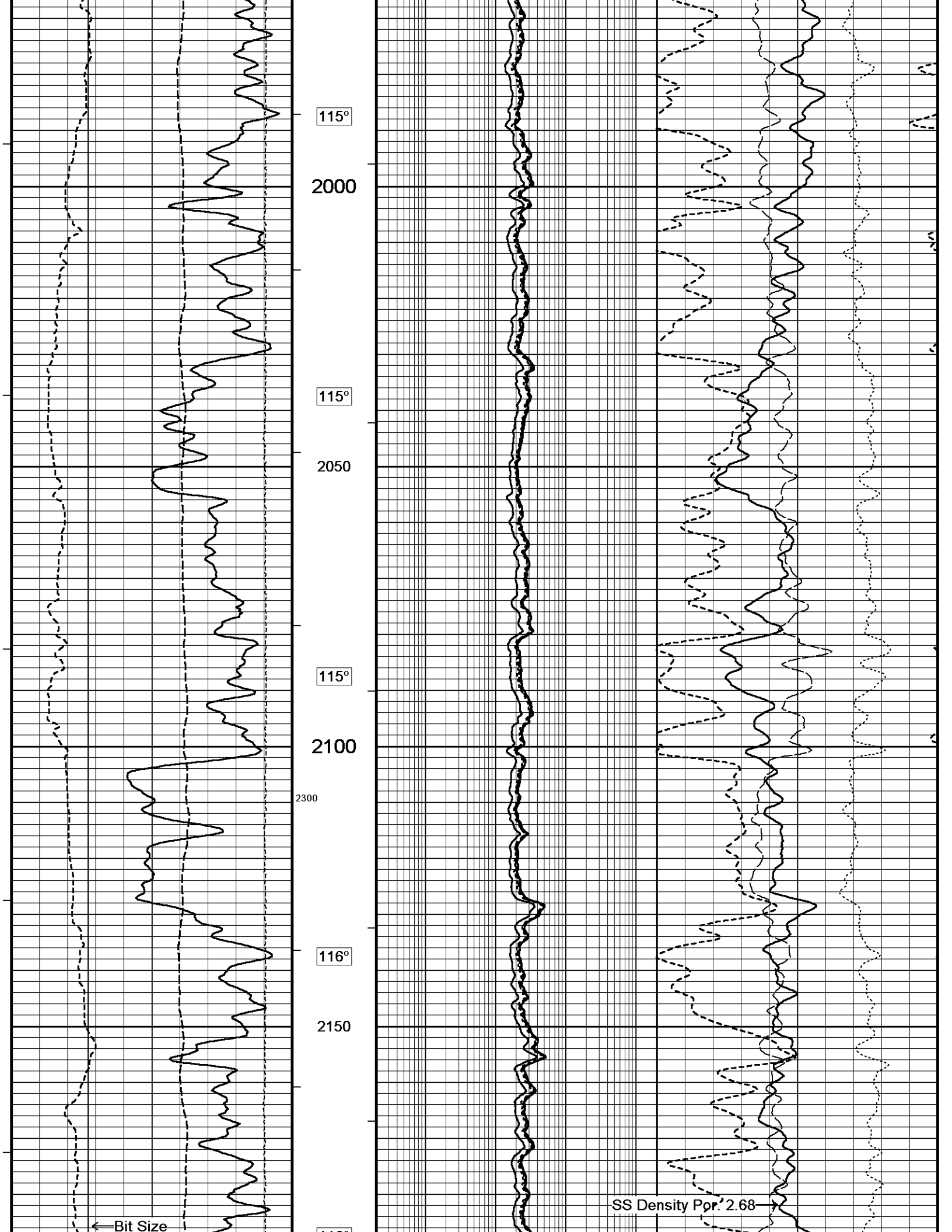


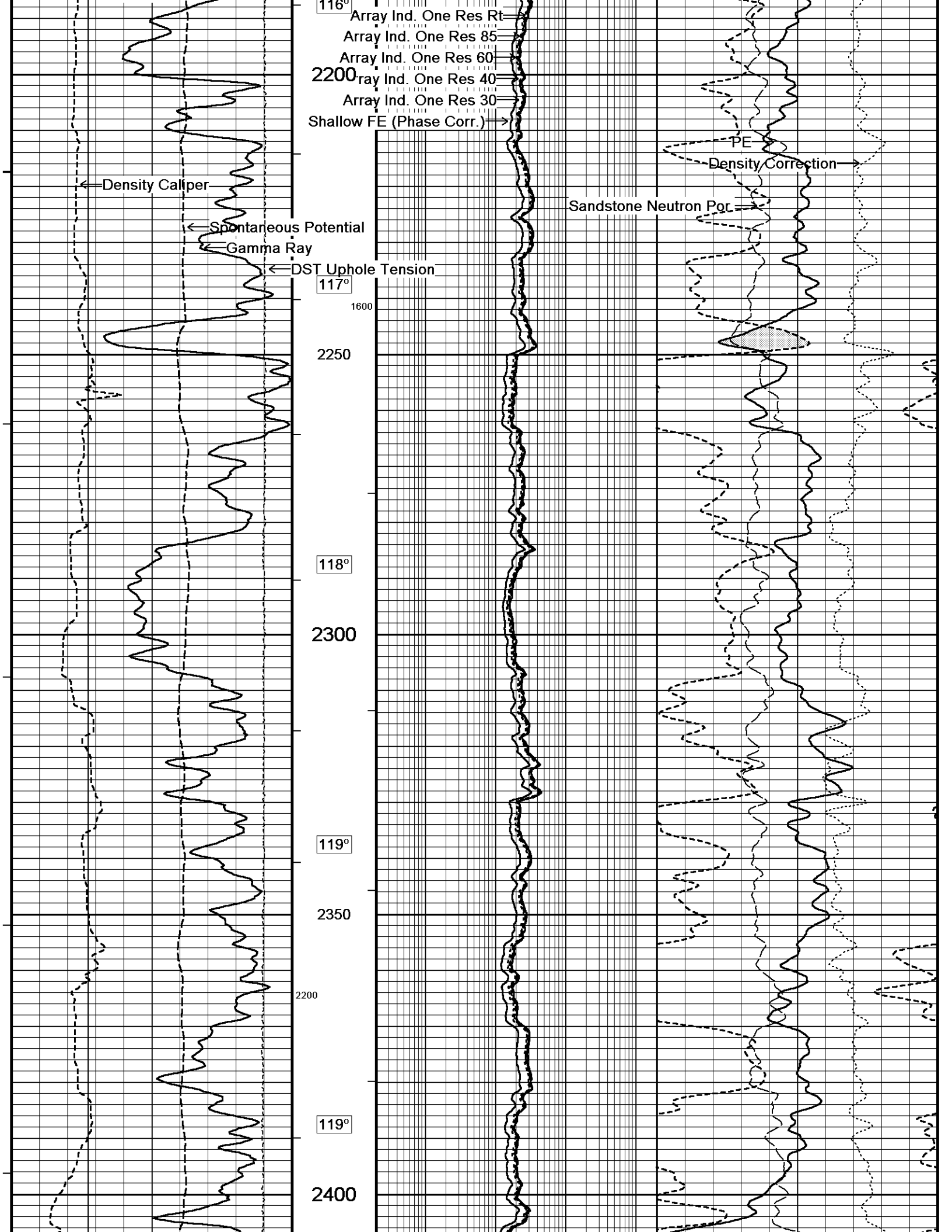


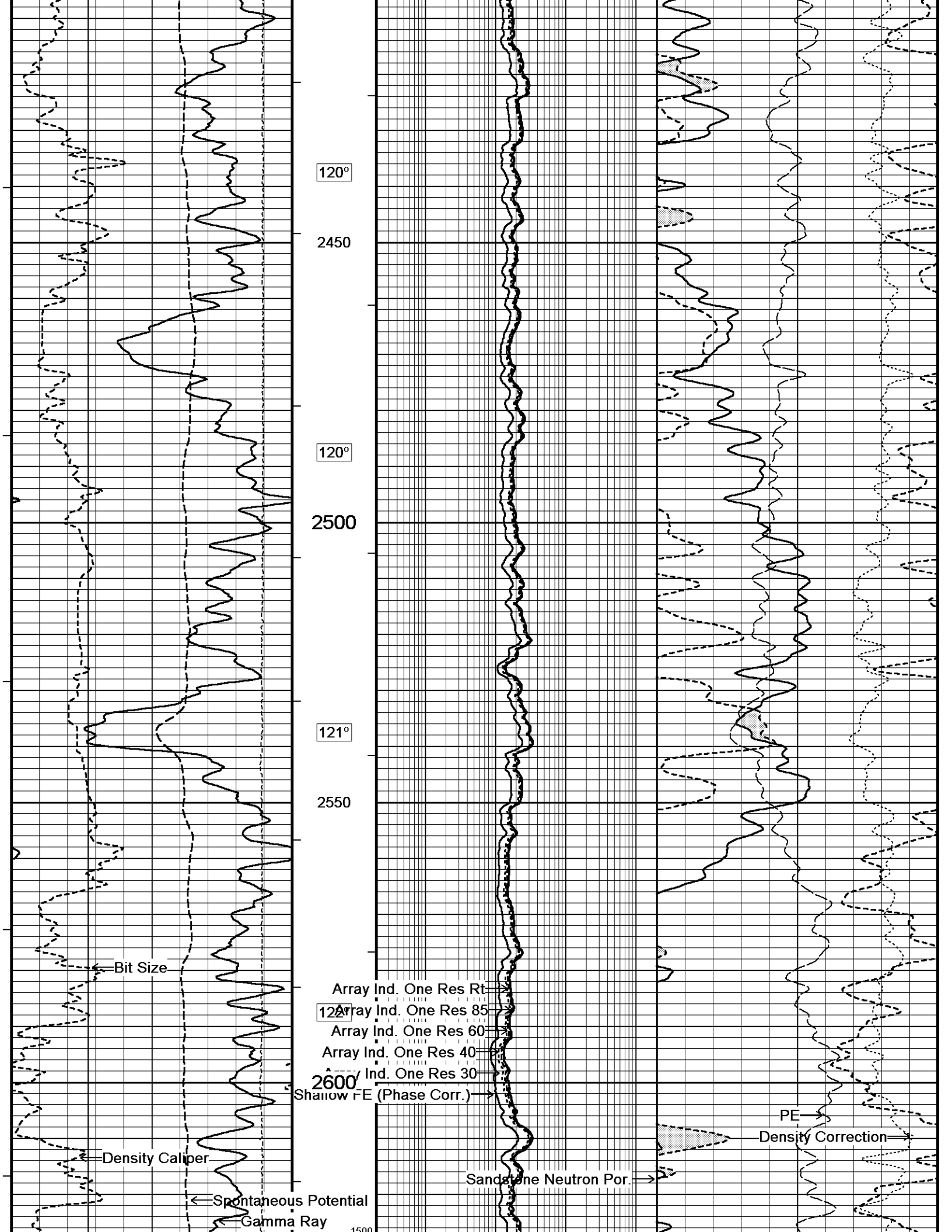


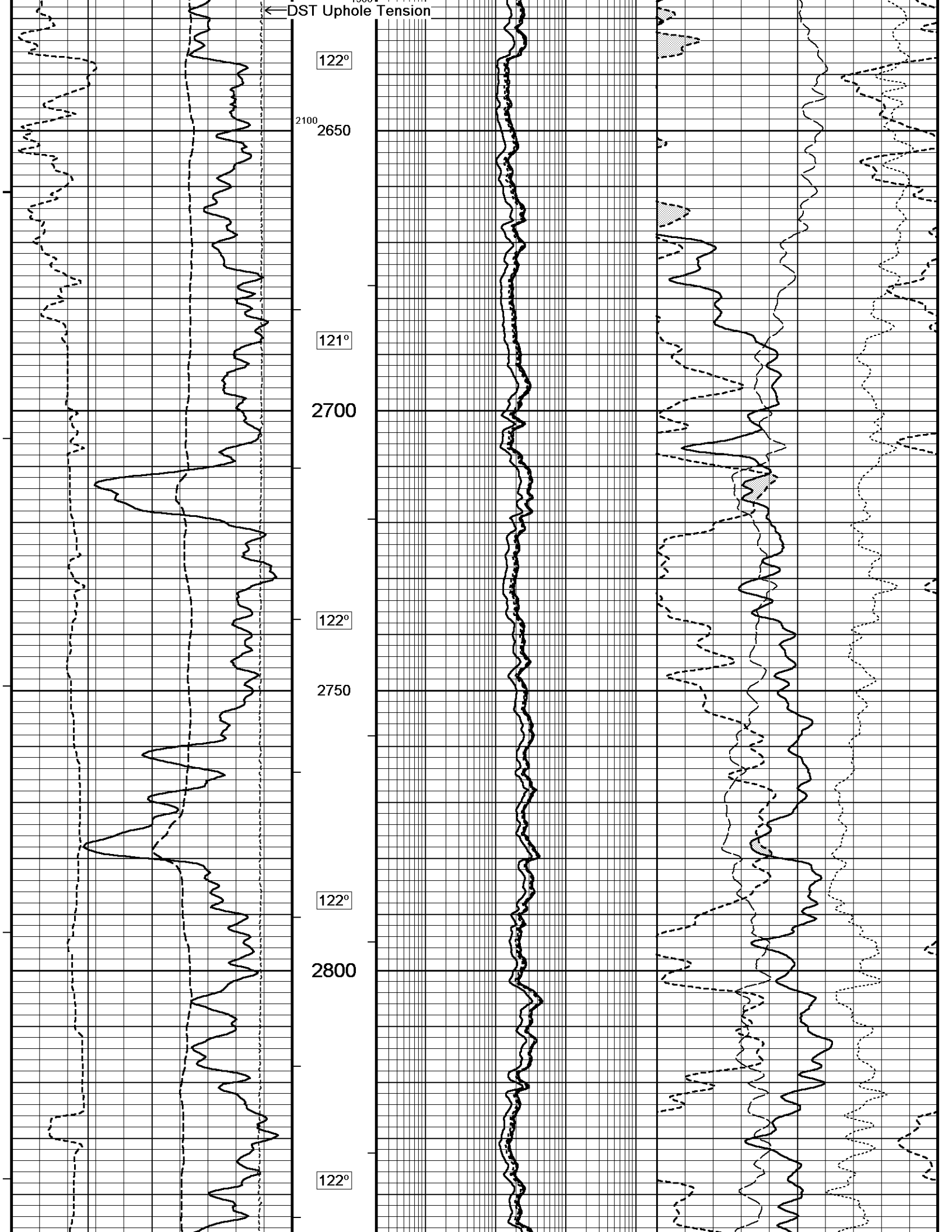


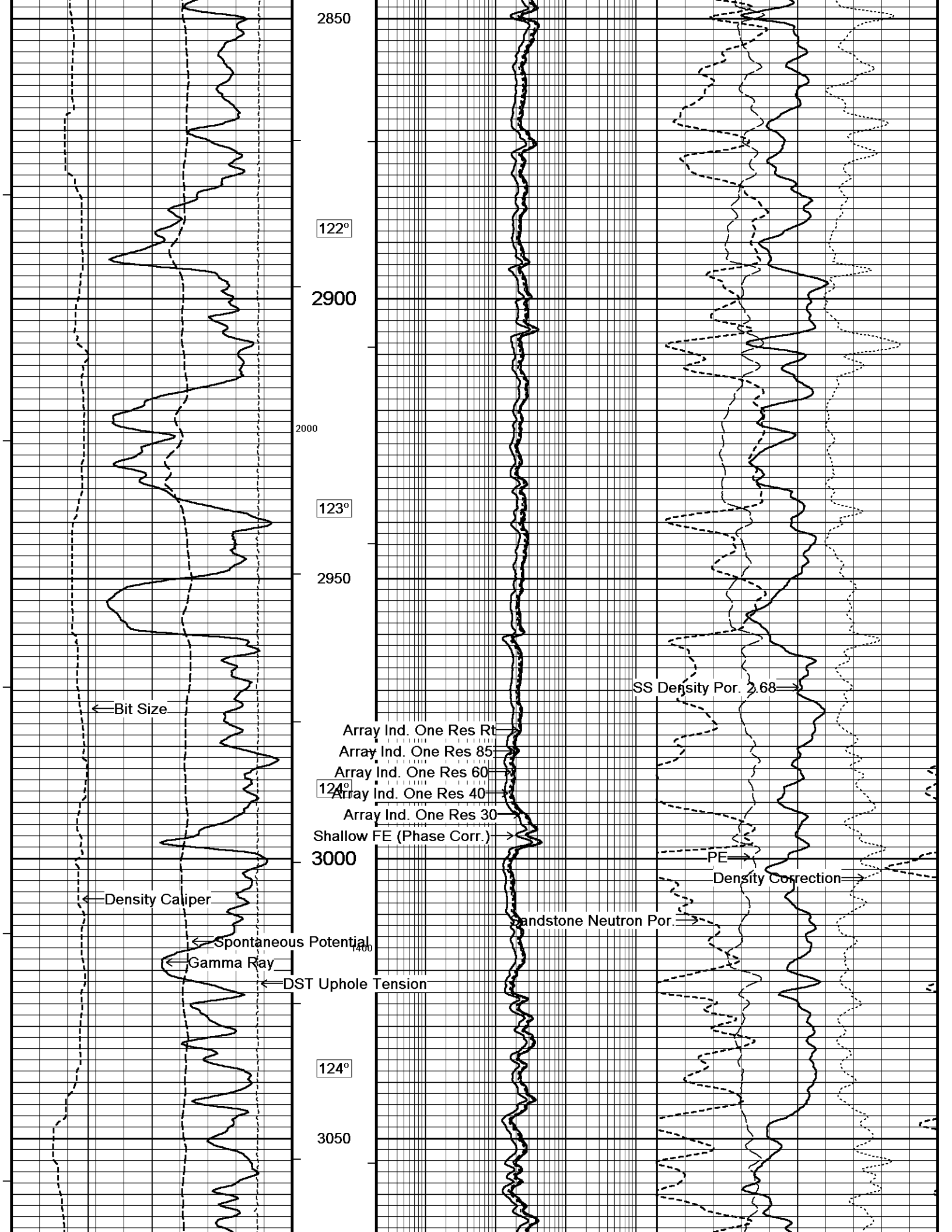


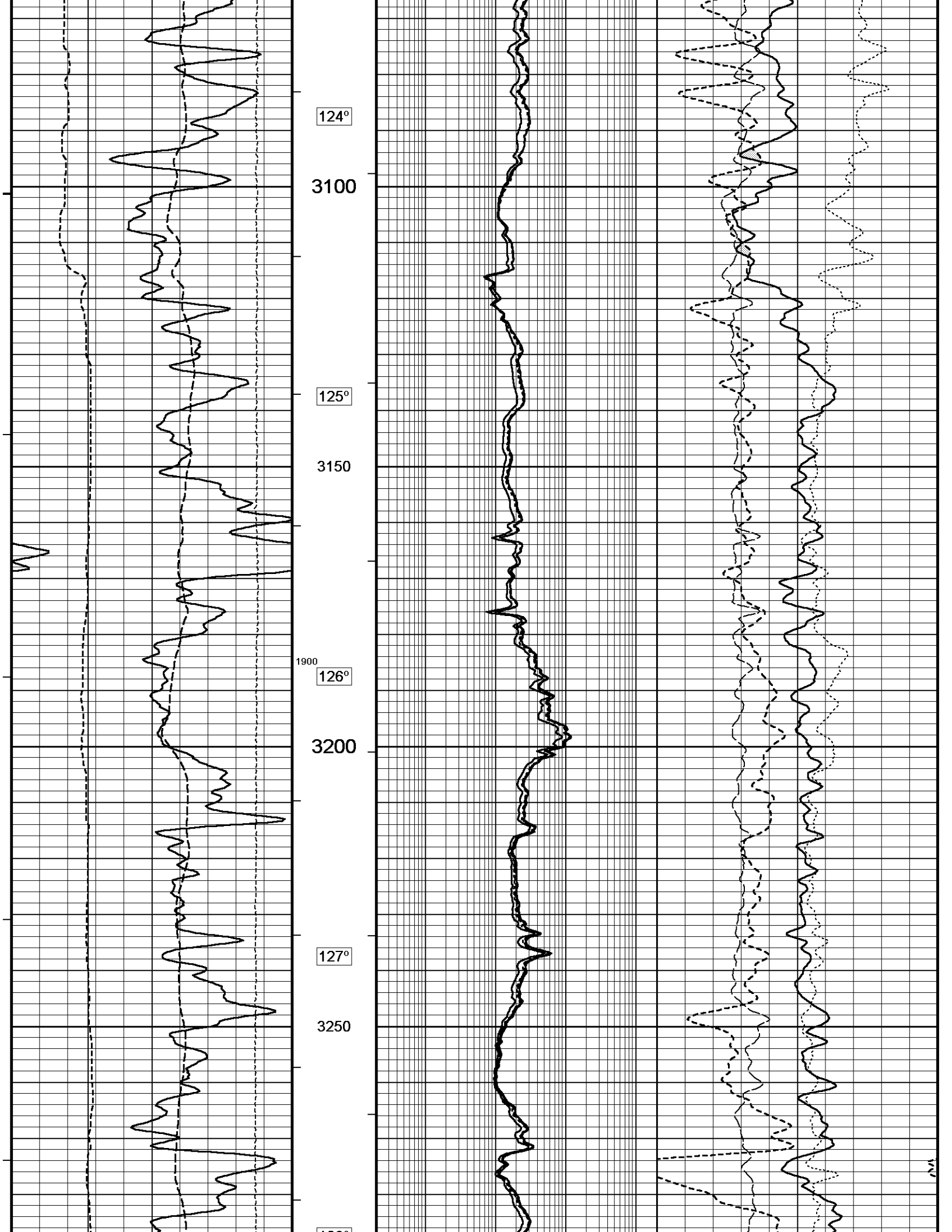


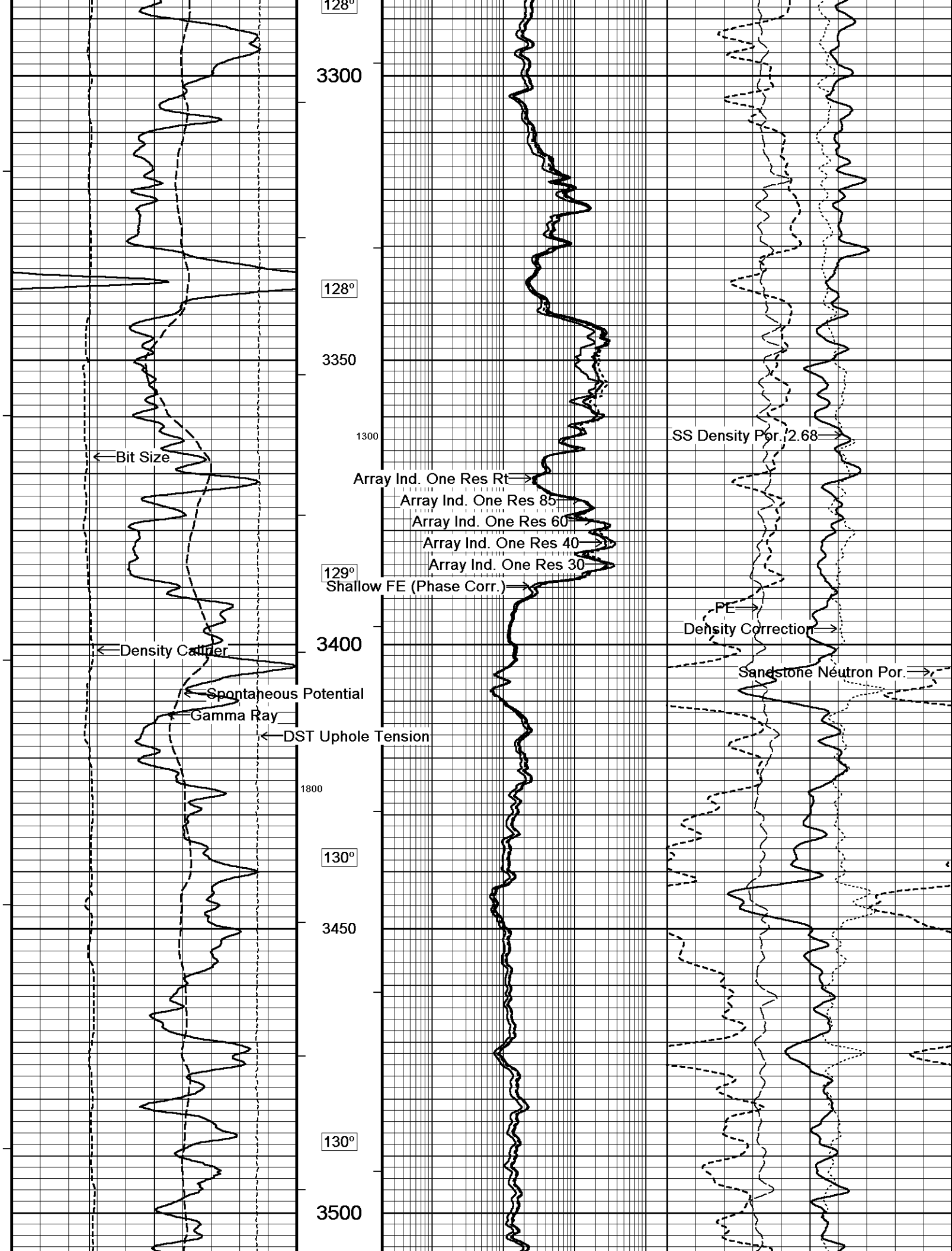


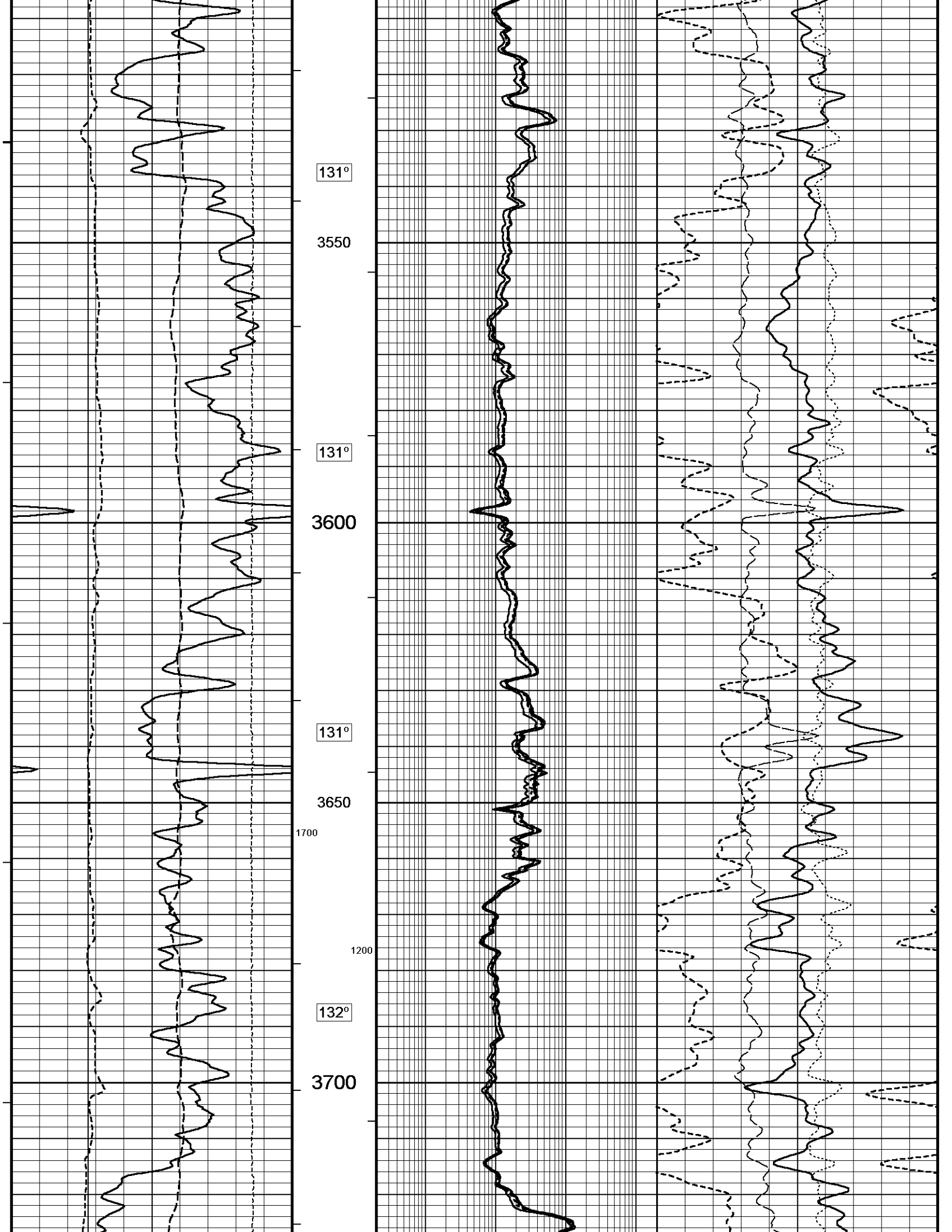


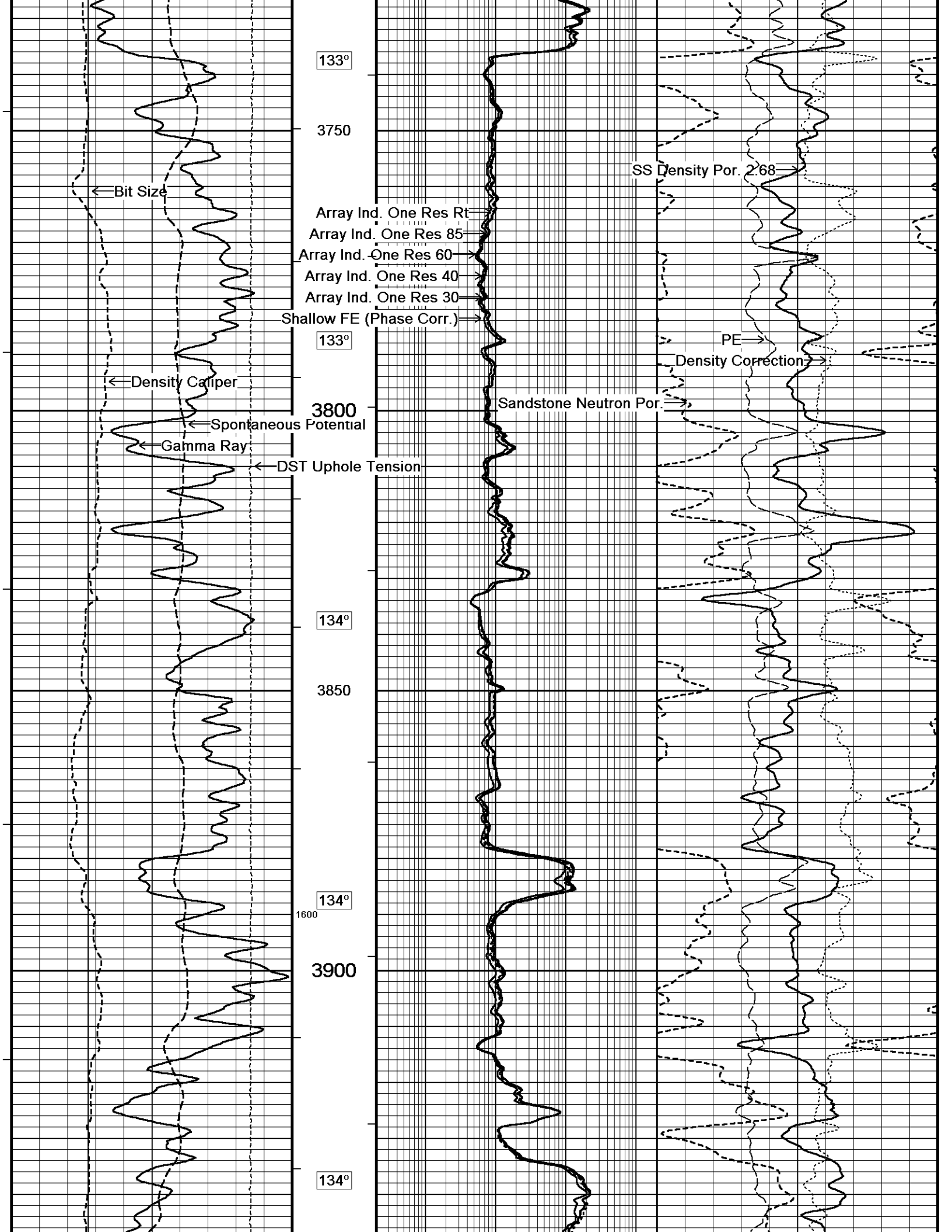


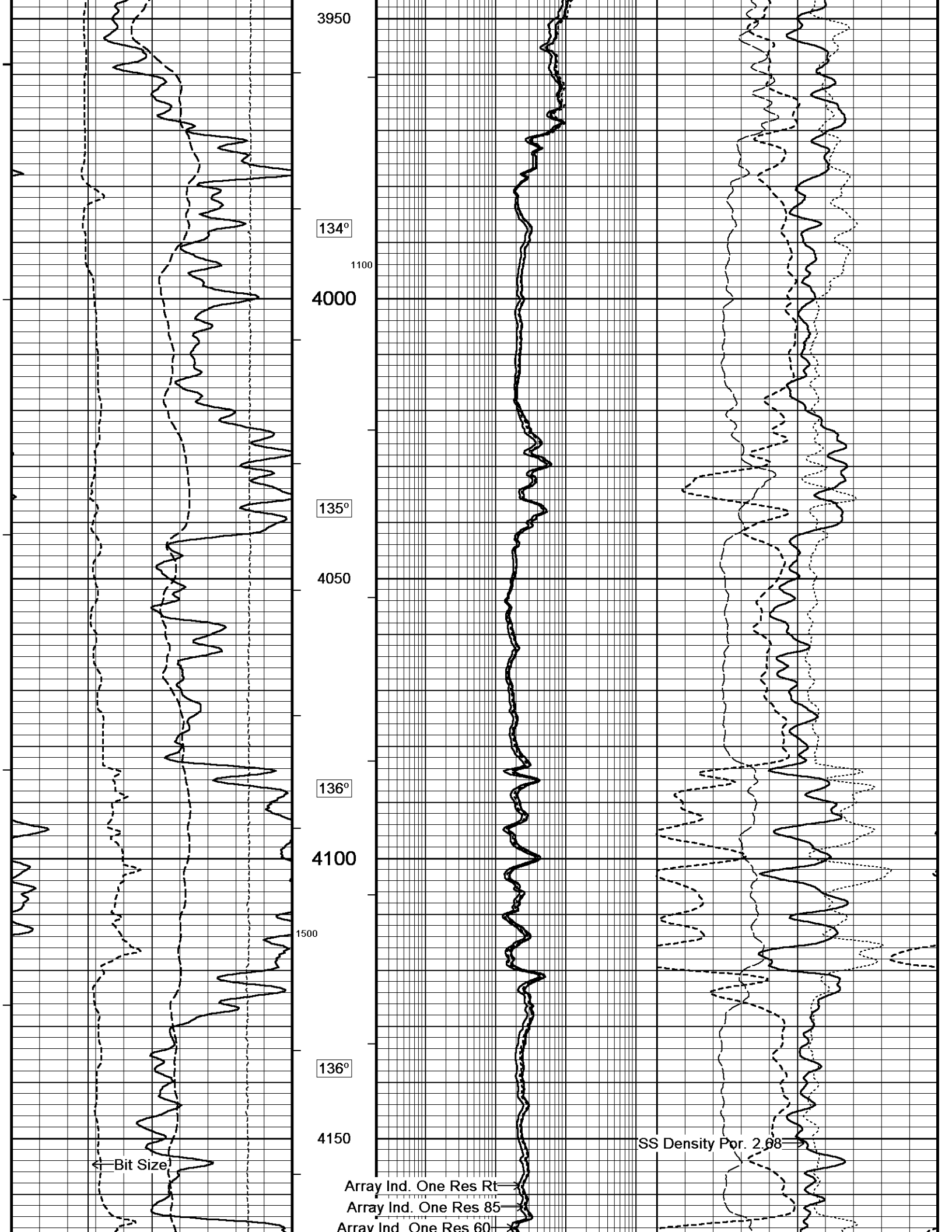


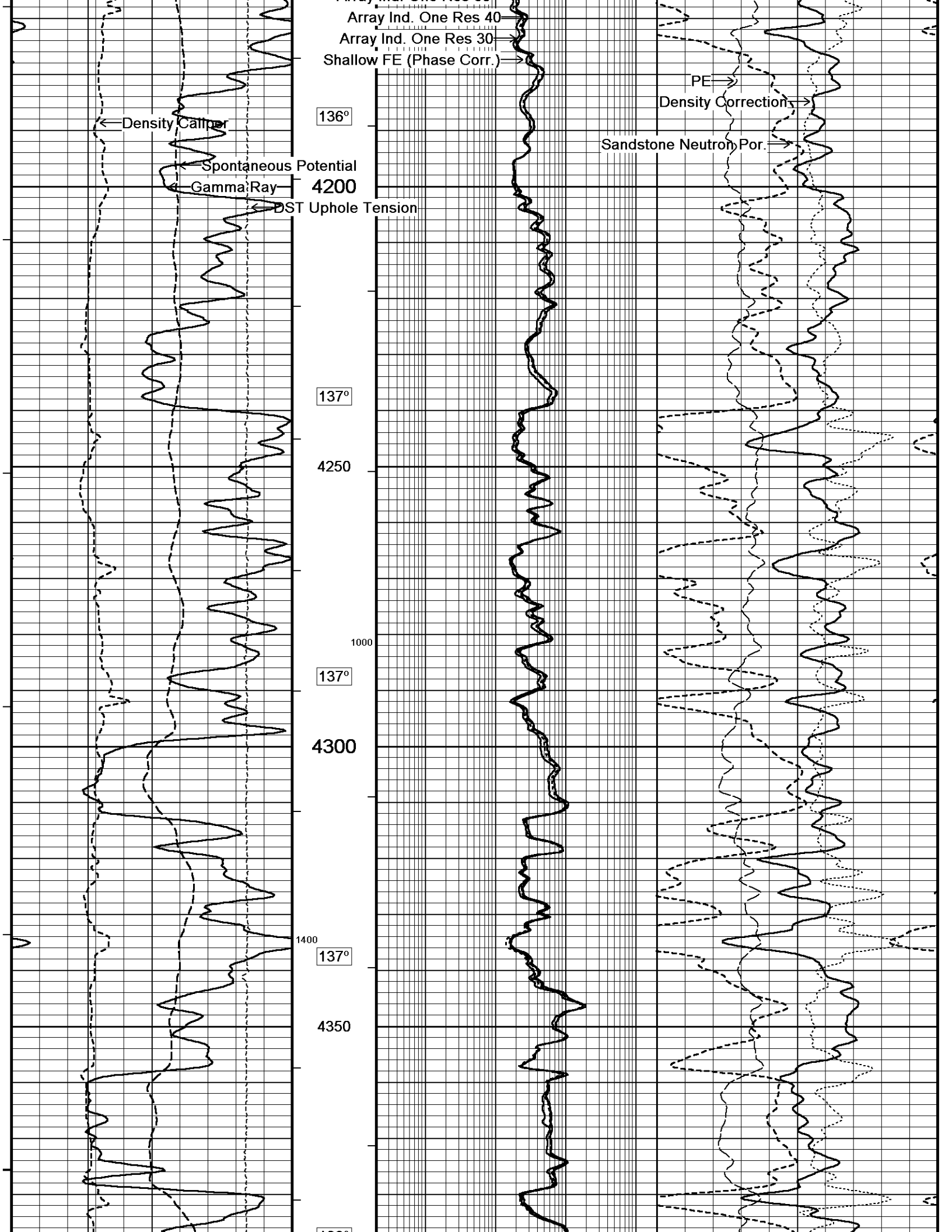


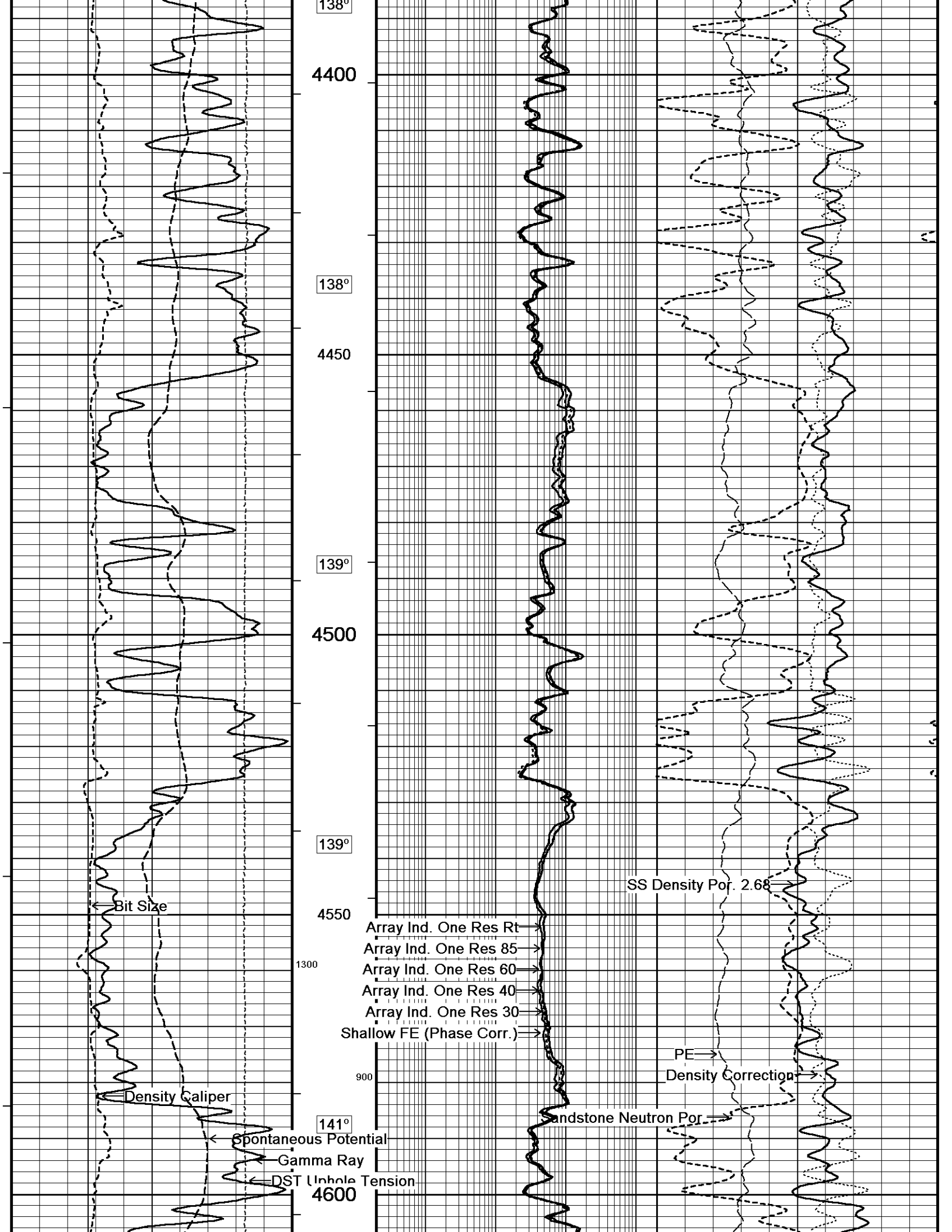


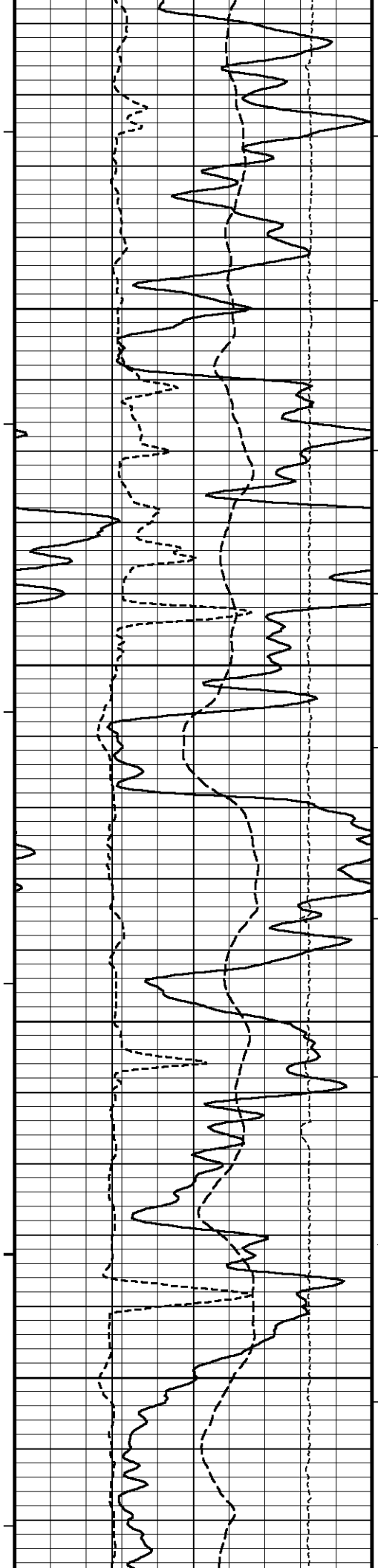












141°

4650

141°

4700

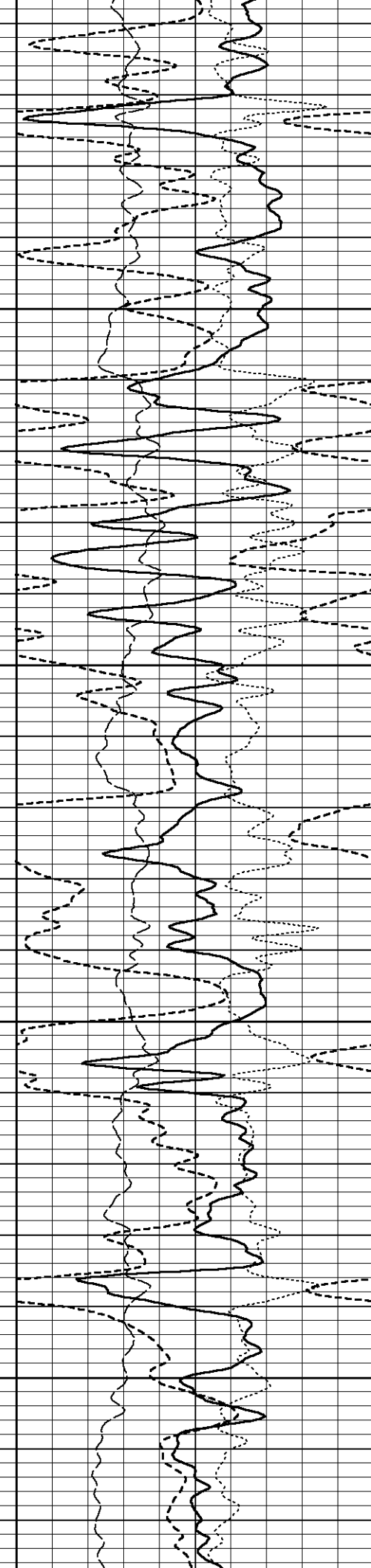
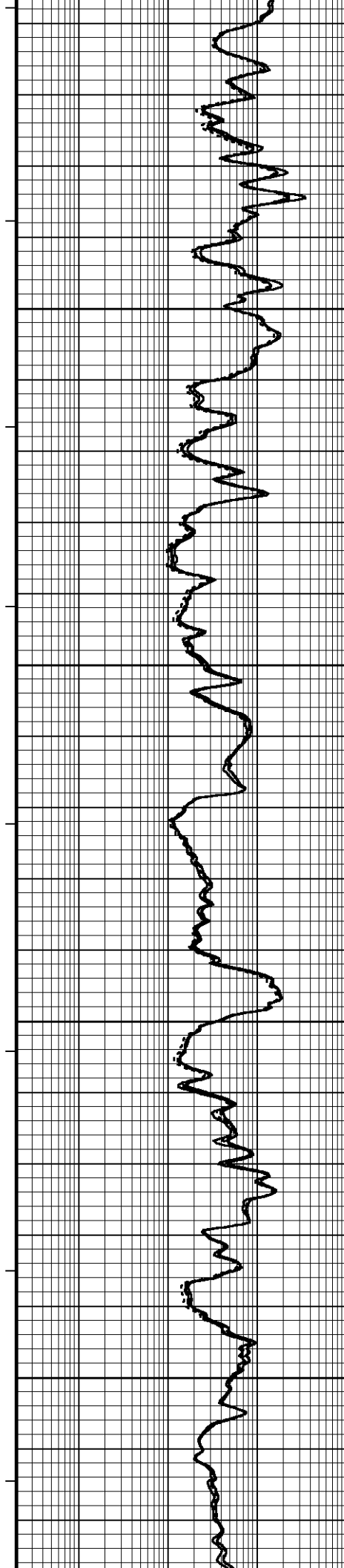
142°

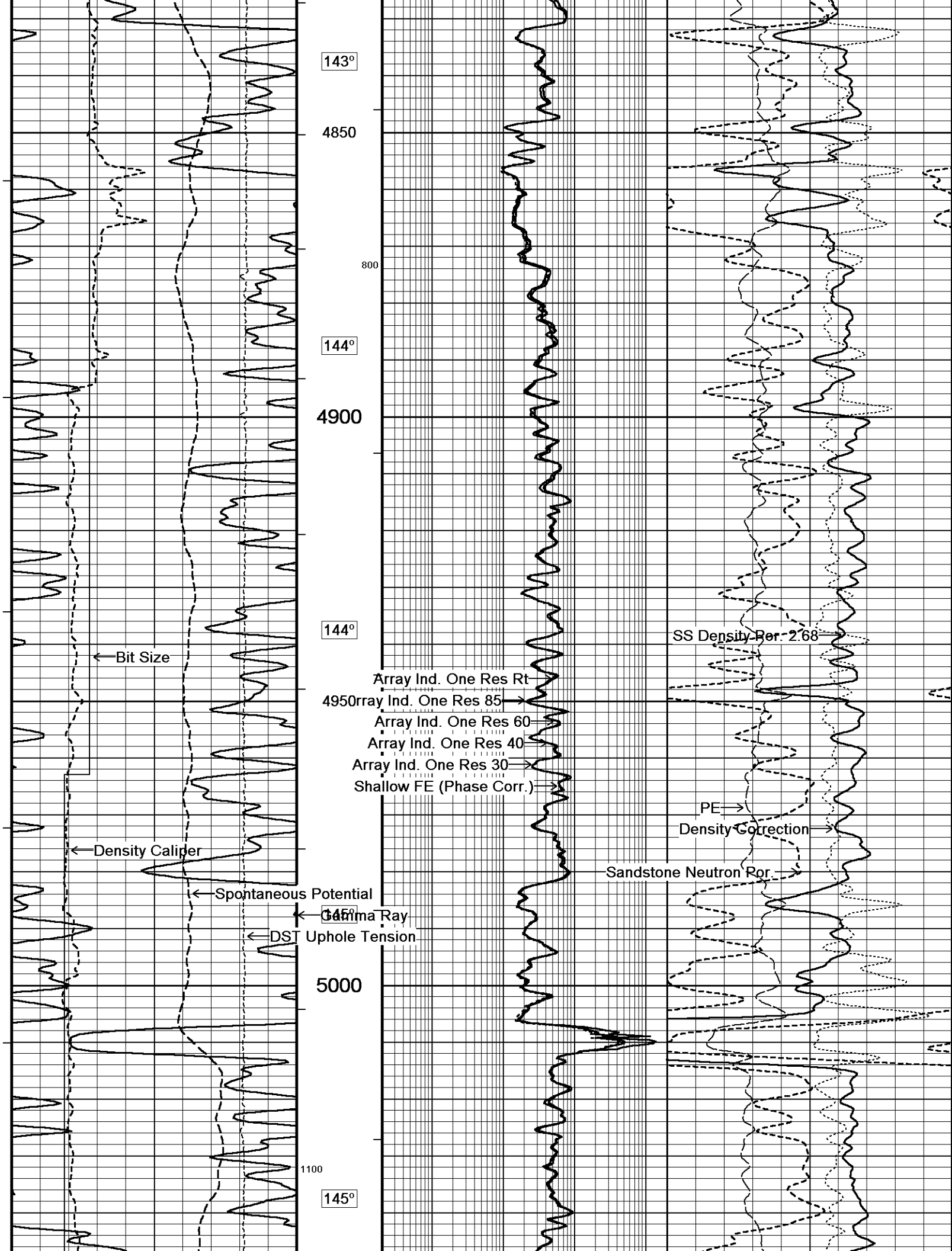
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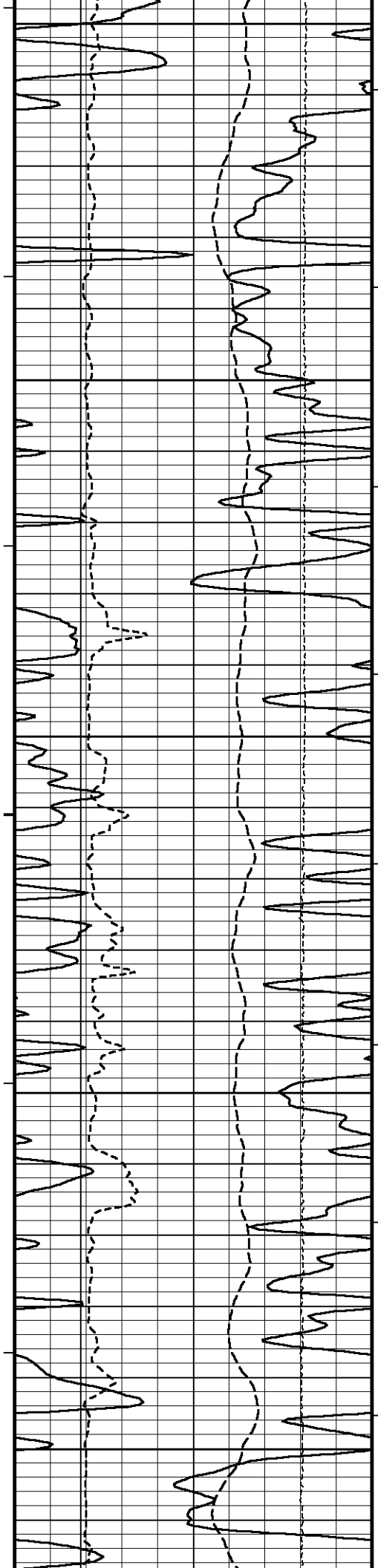
1200

142°

4800







5050

146°

5100

147°

5150

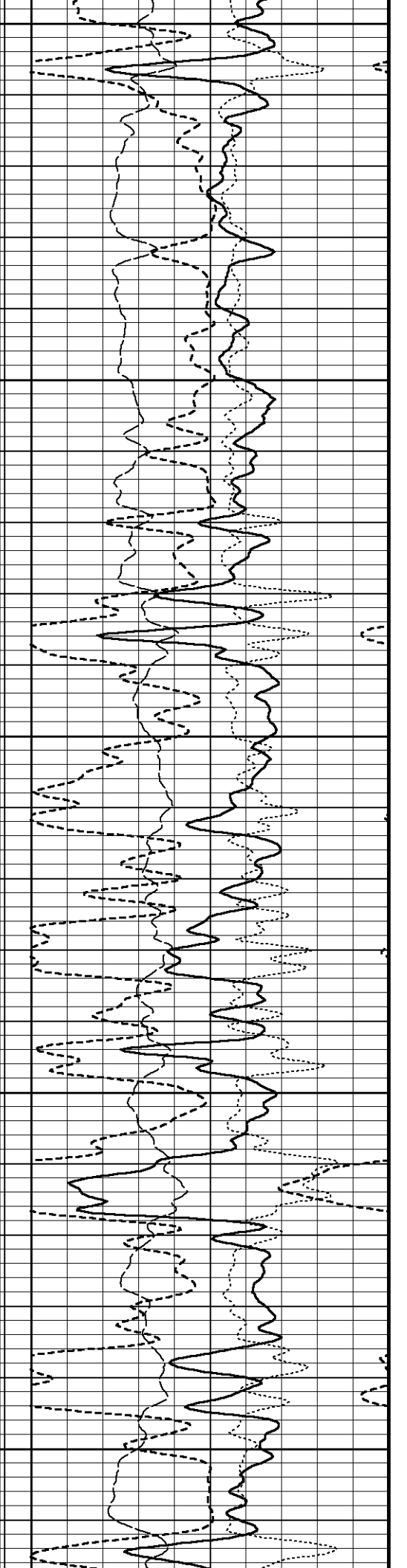
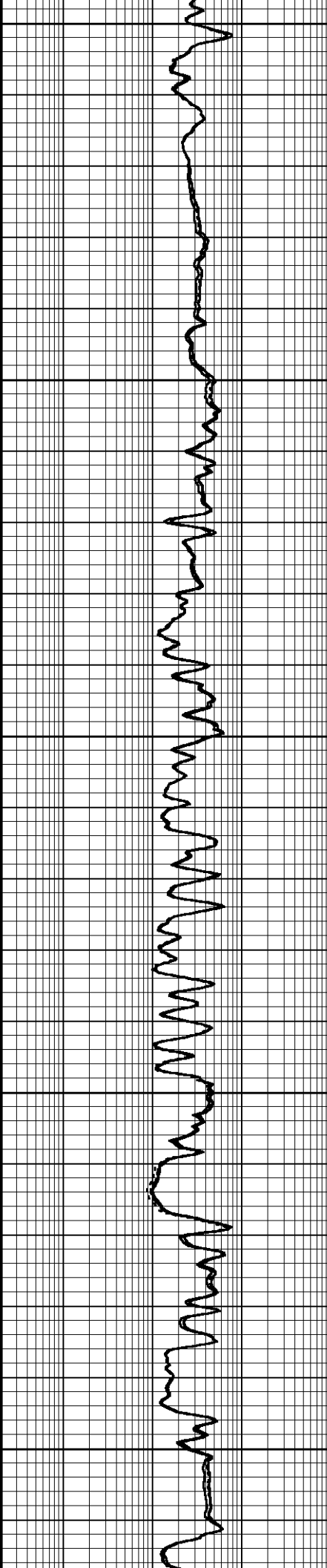
147°

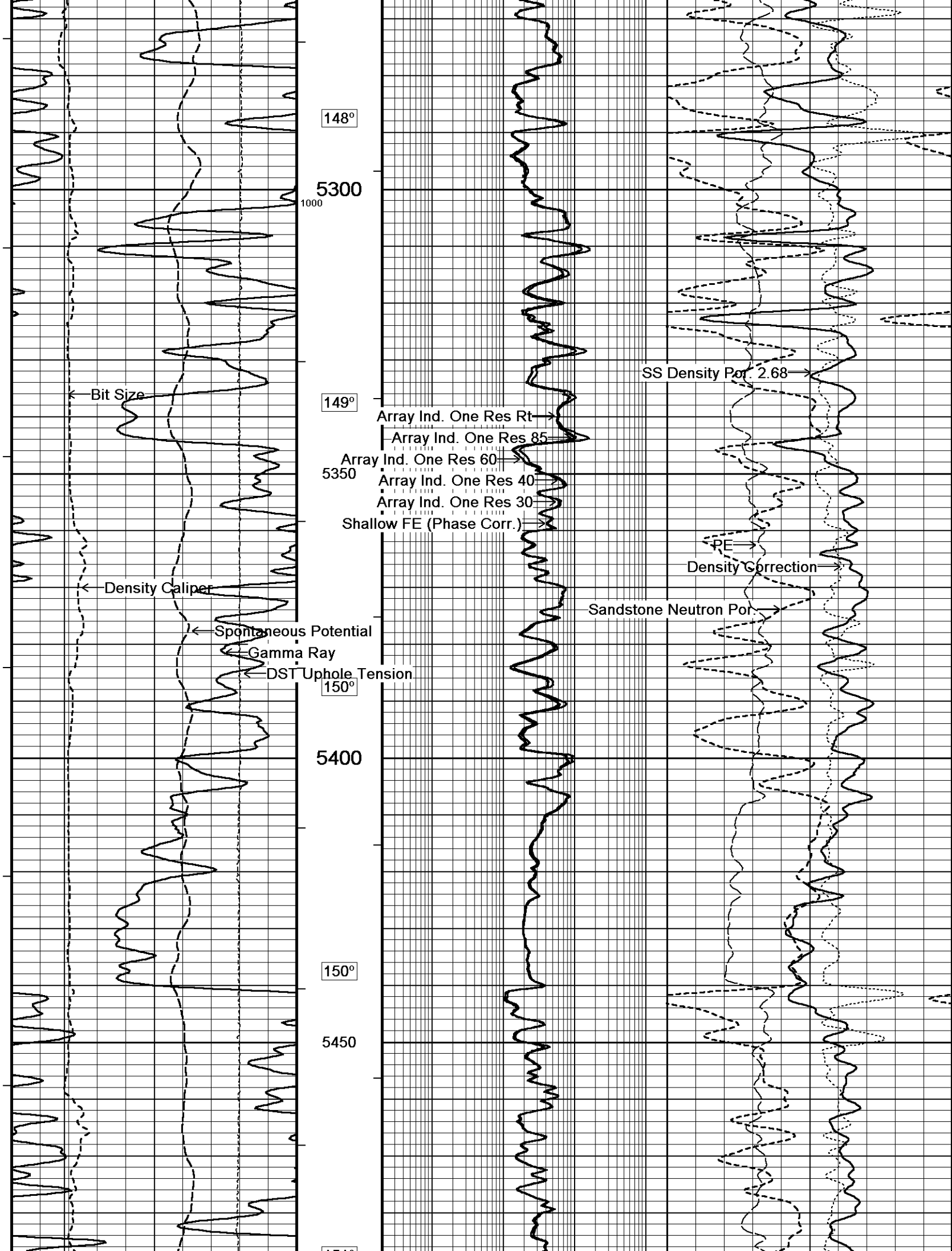
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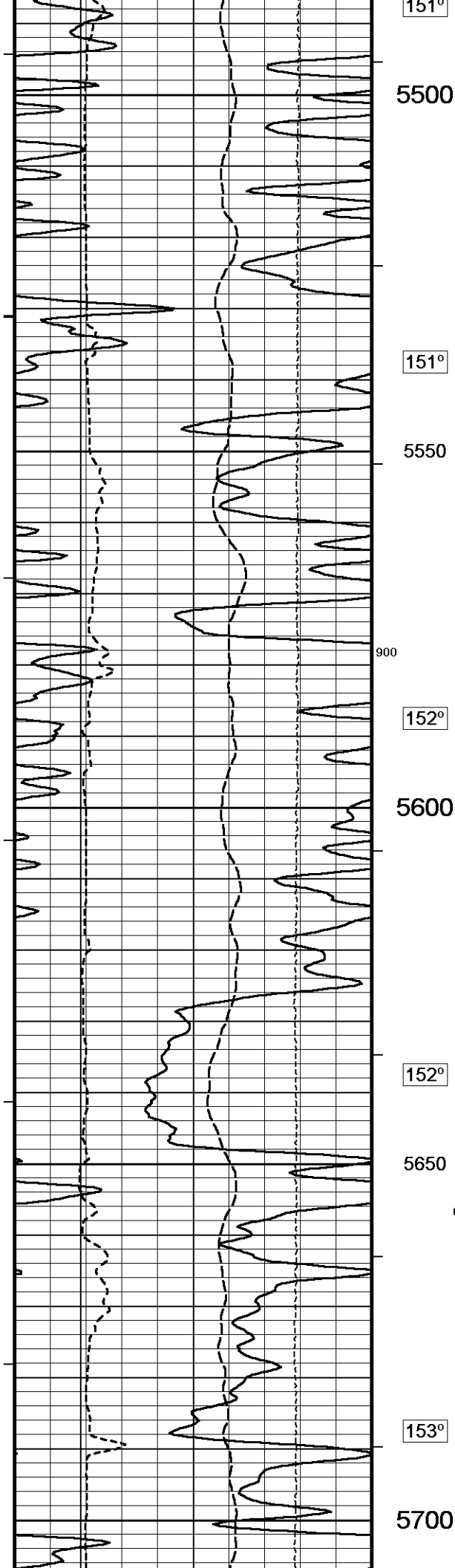
148°

5250

700







151°

5500

151°

5550

900

152°

5600

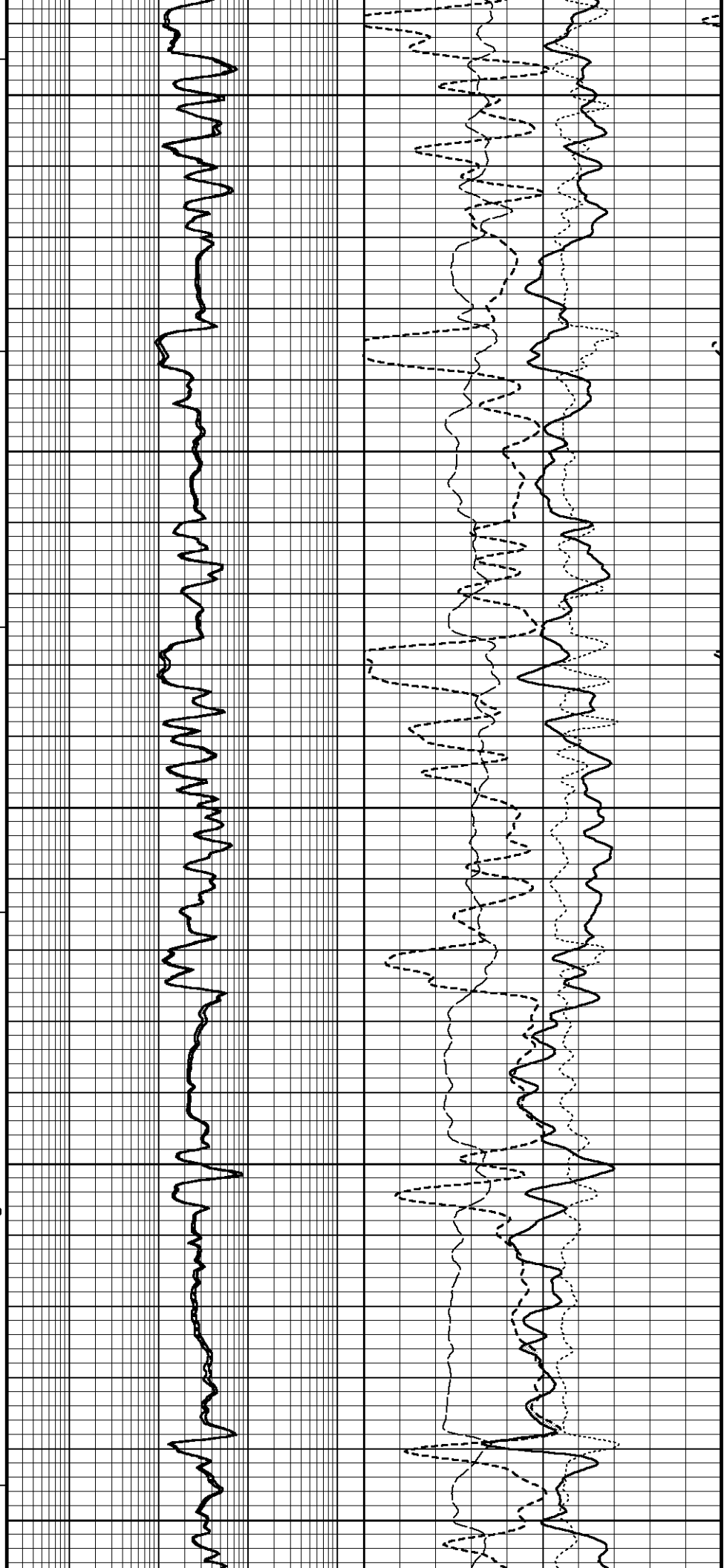
152°

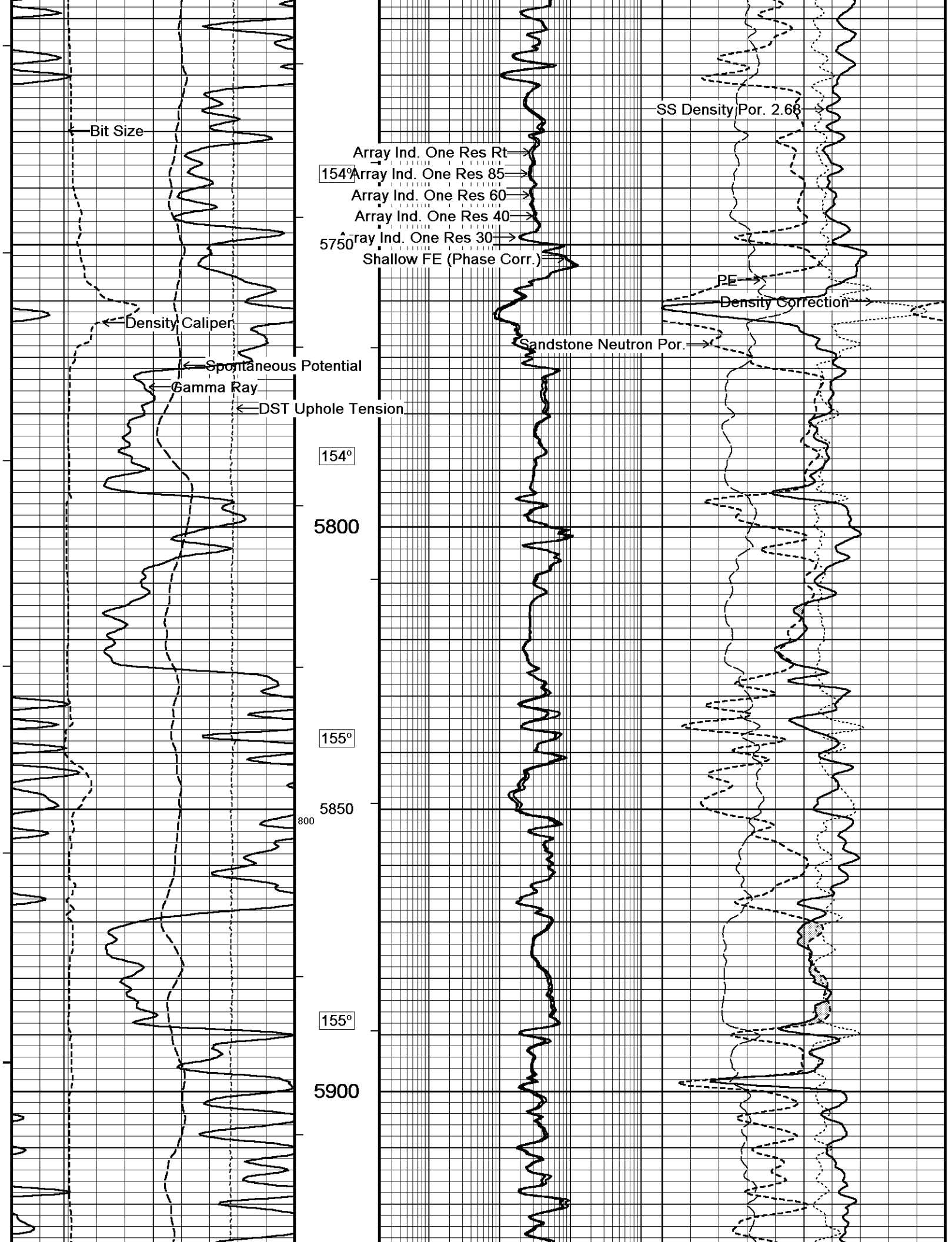
5650

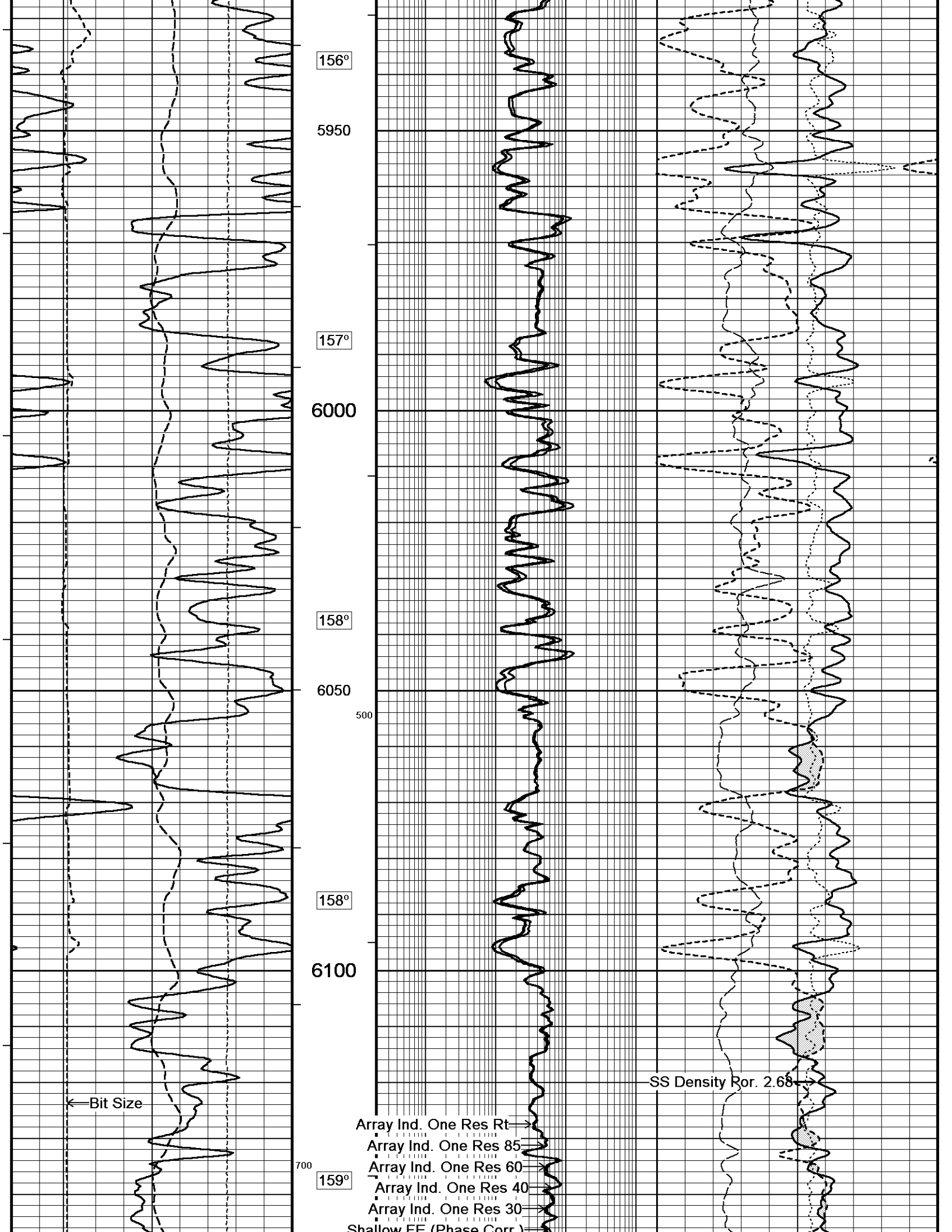
600

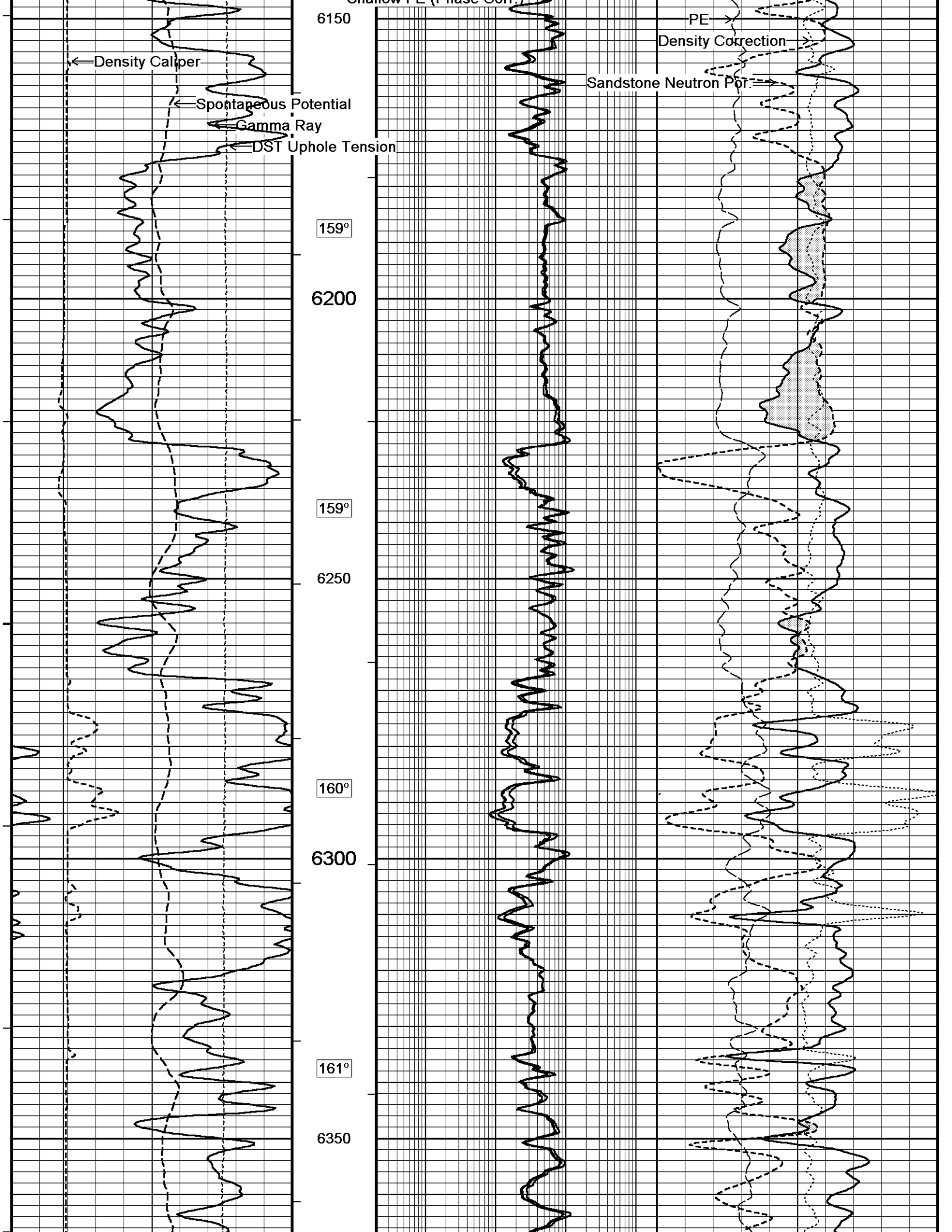
153°

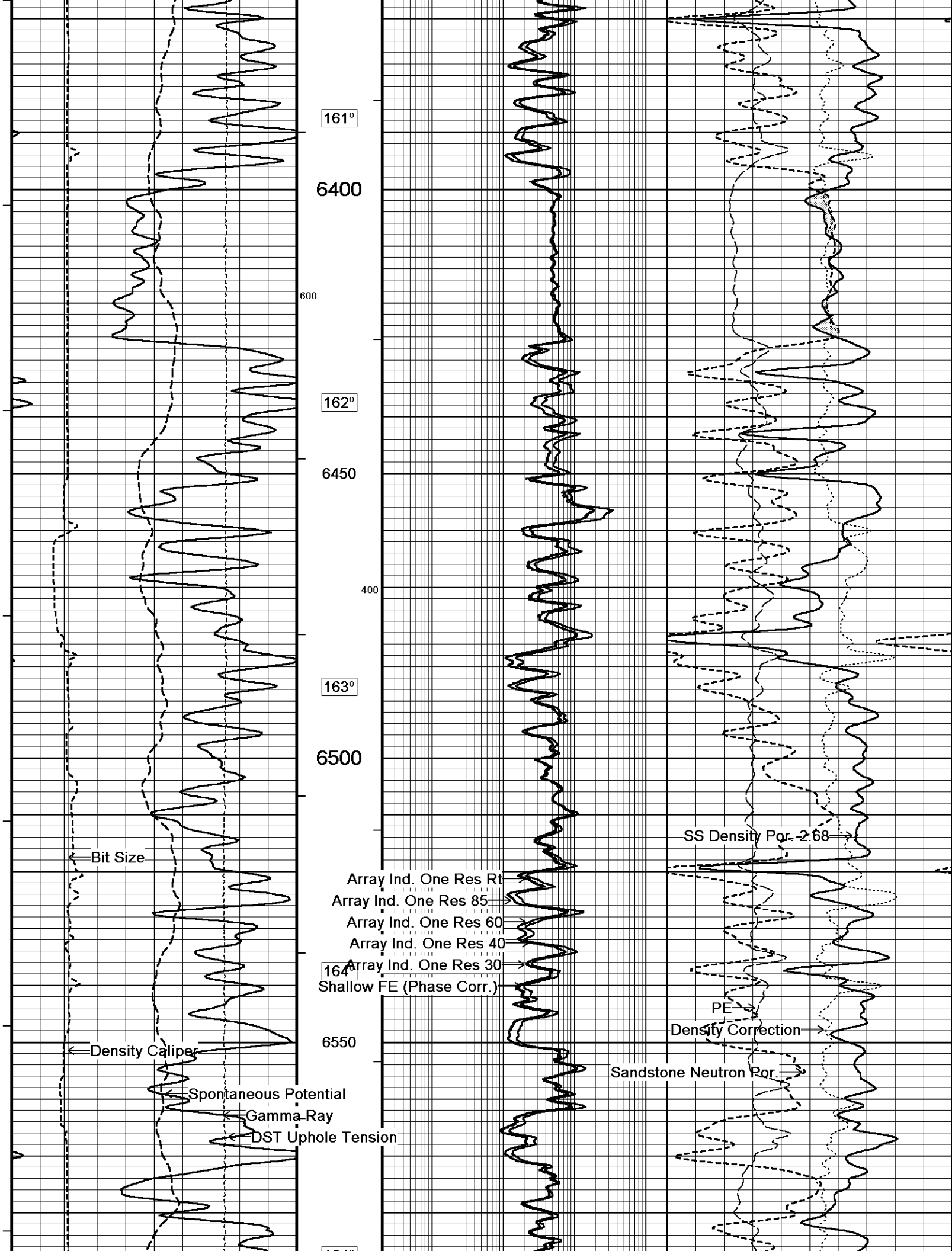
5700

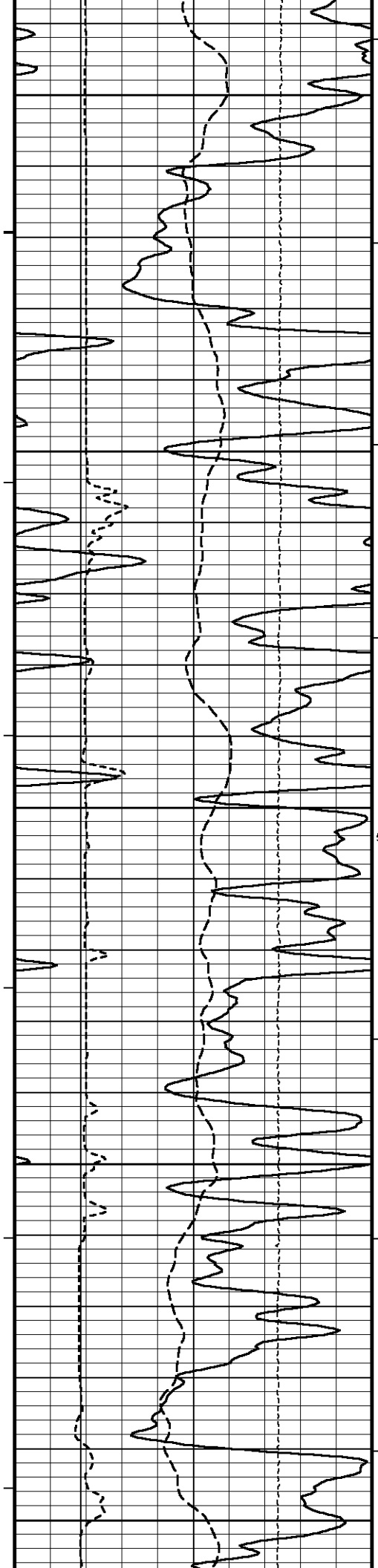




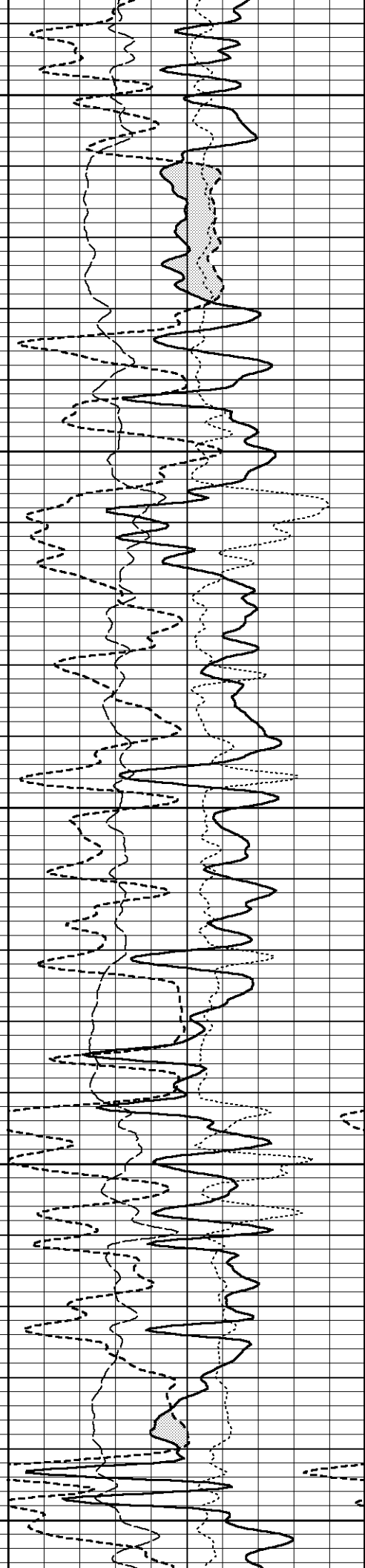
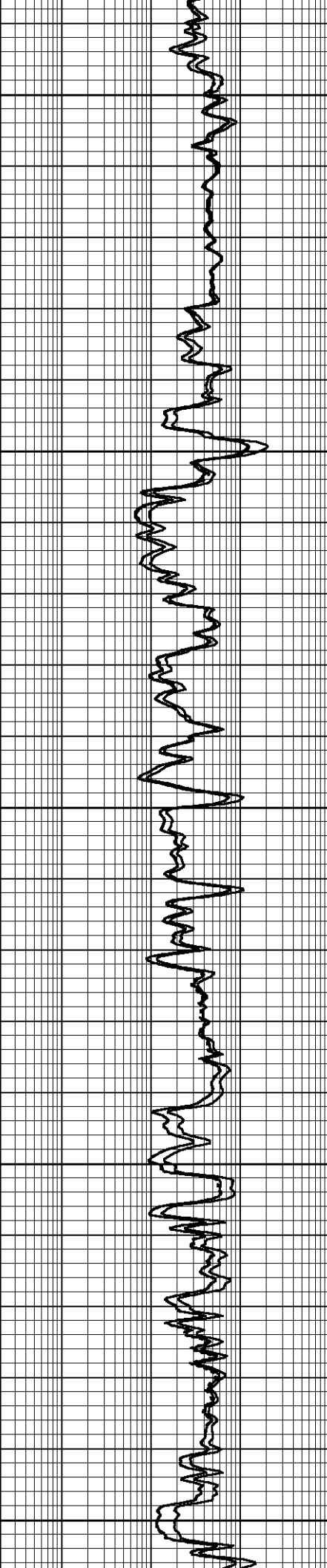


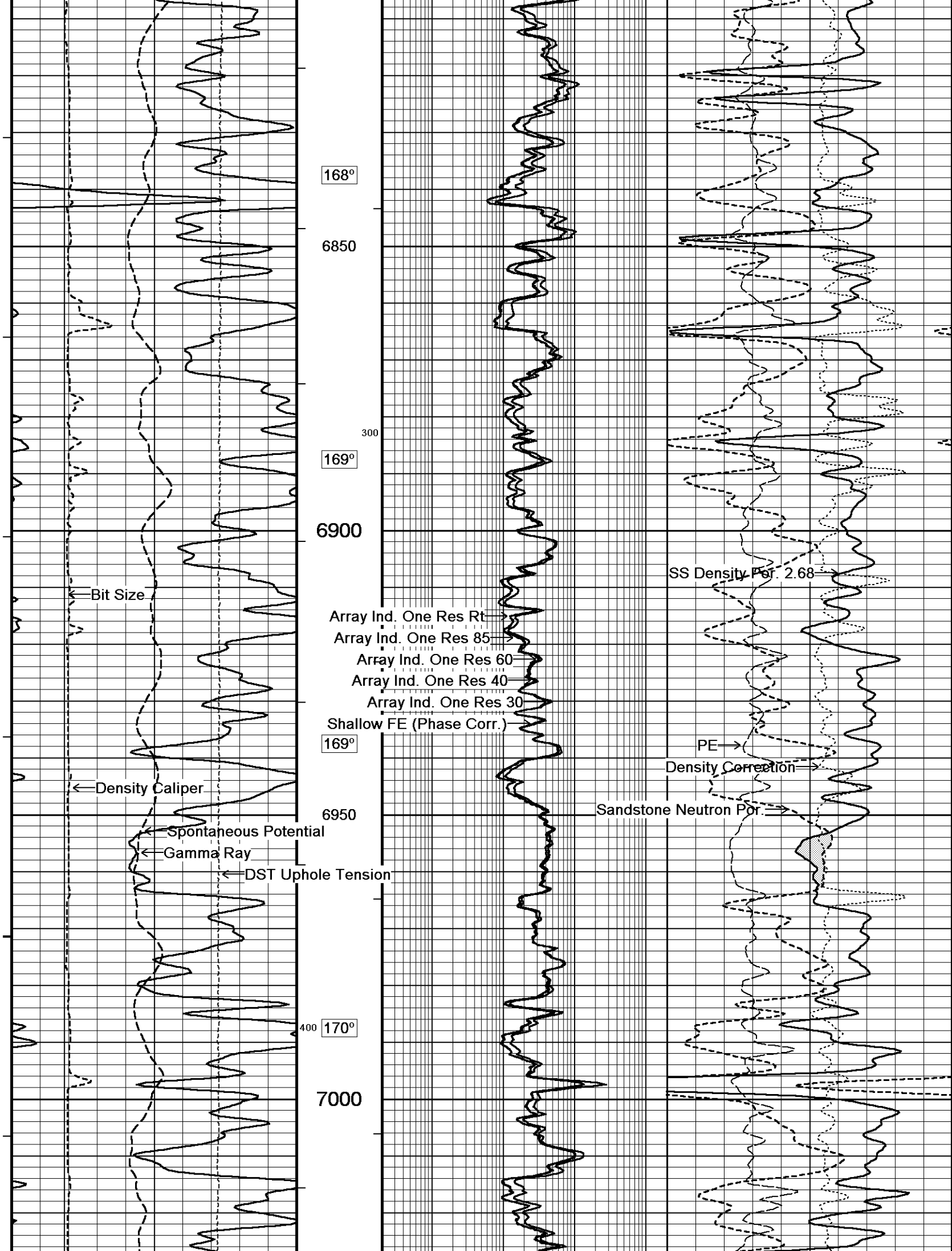


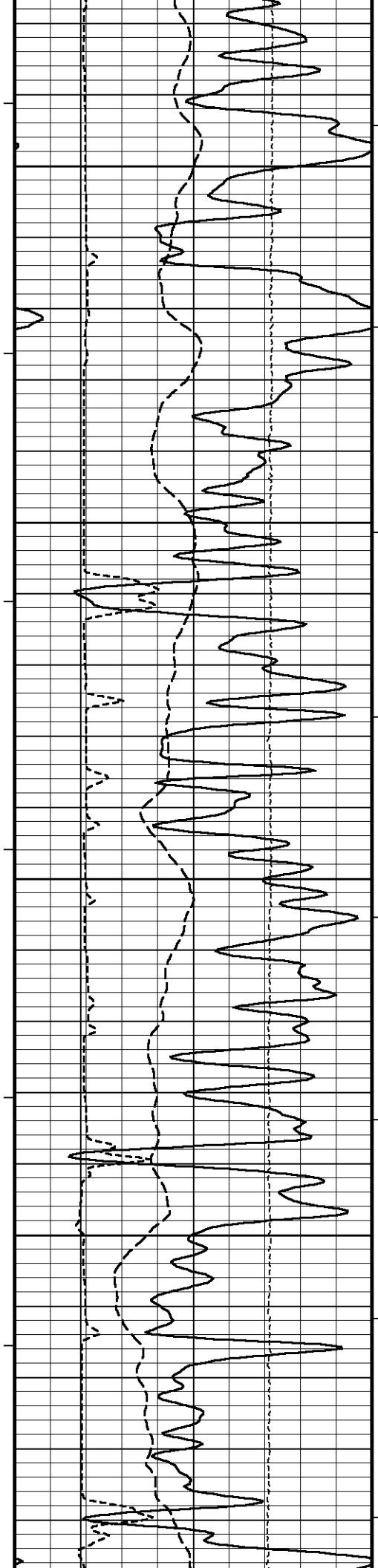




164°
6600
165°
6650
166°
6700
500
167°
6750
167°
6800







171°

7050

172°

7100

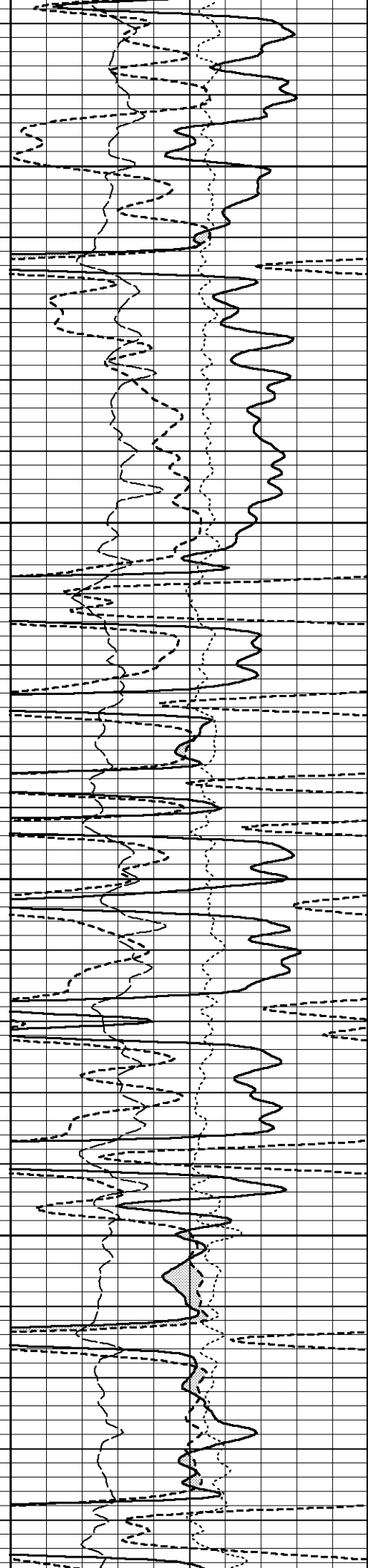
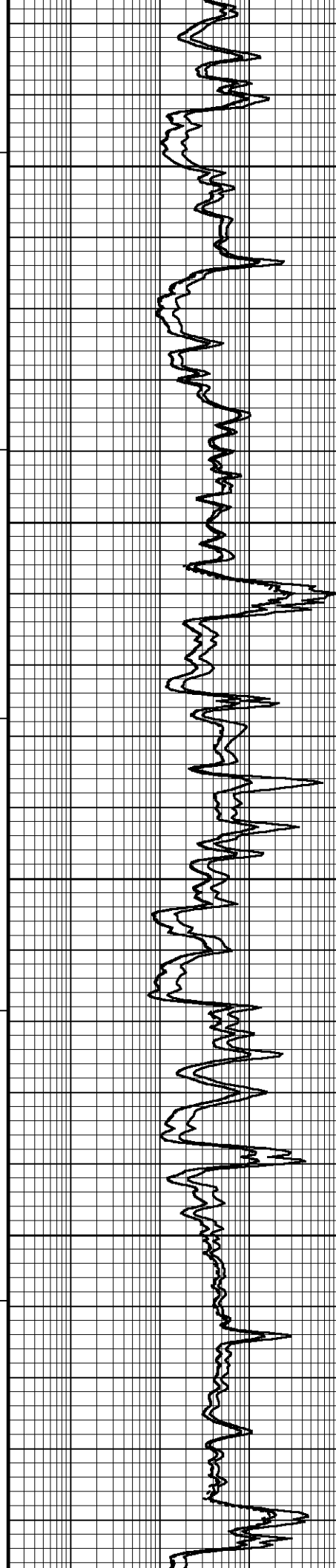
174°

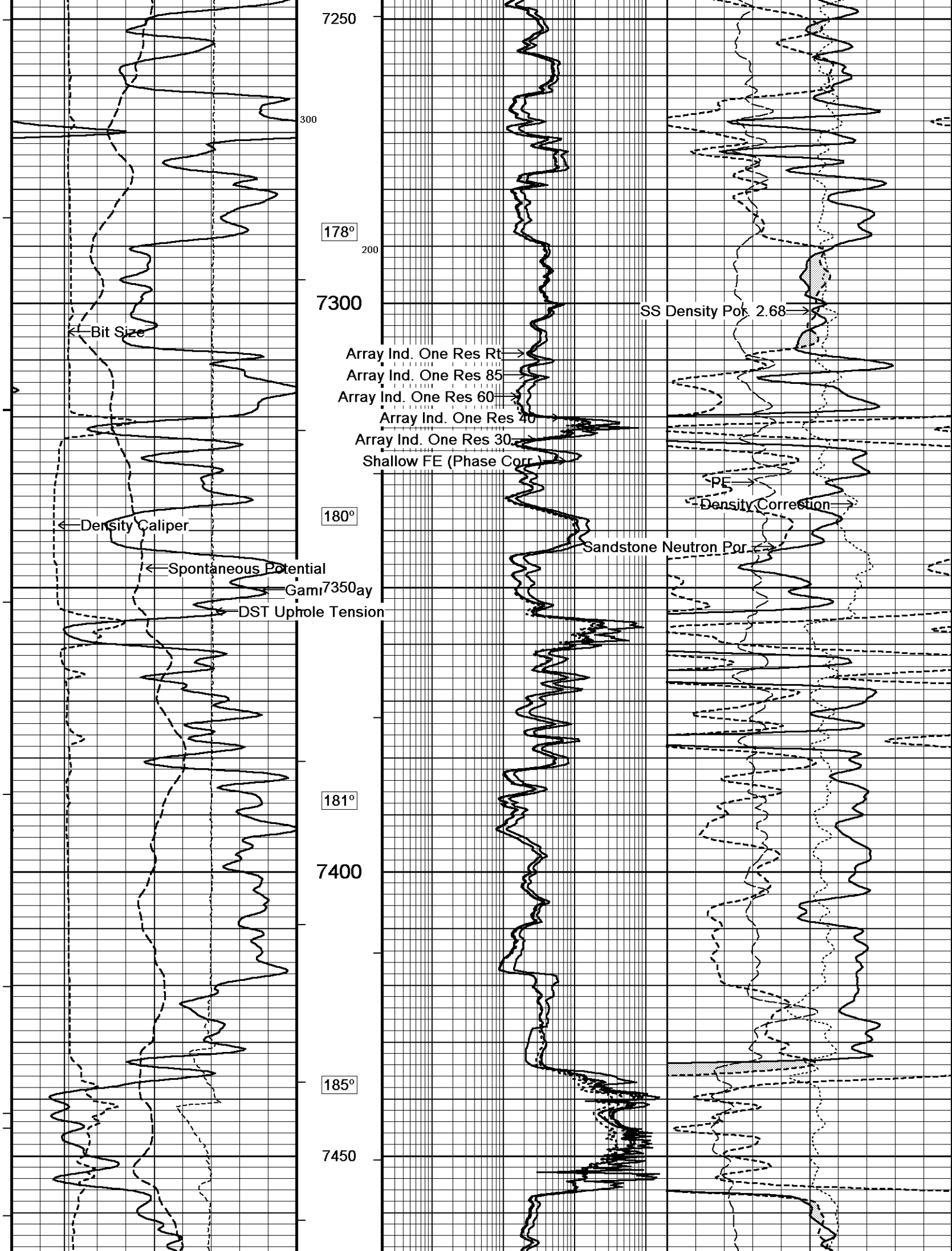
7150

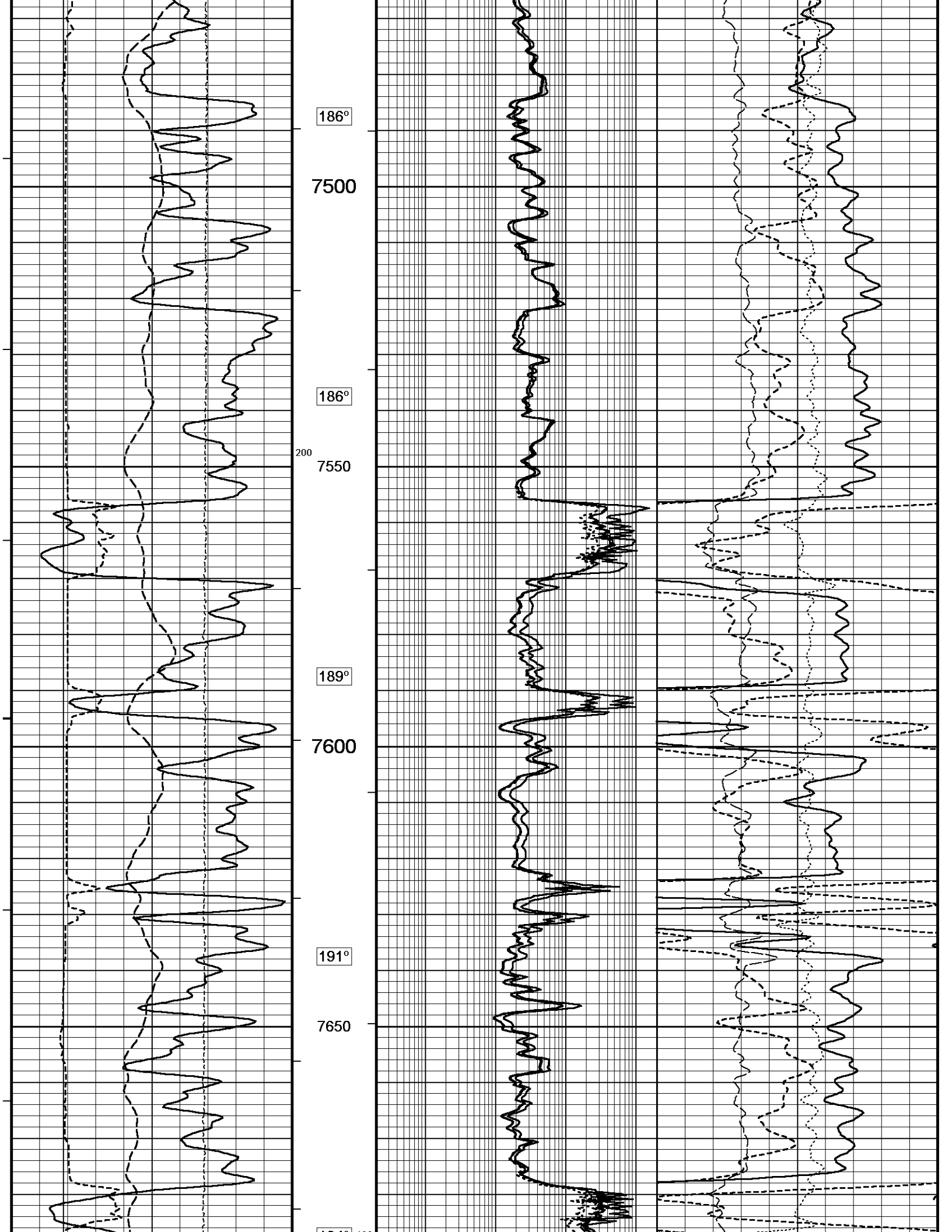
176°

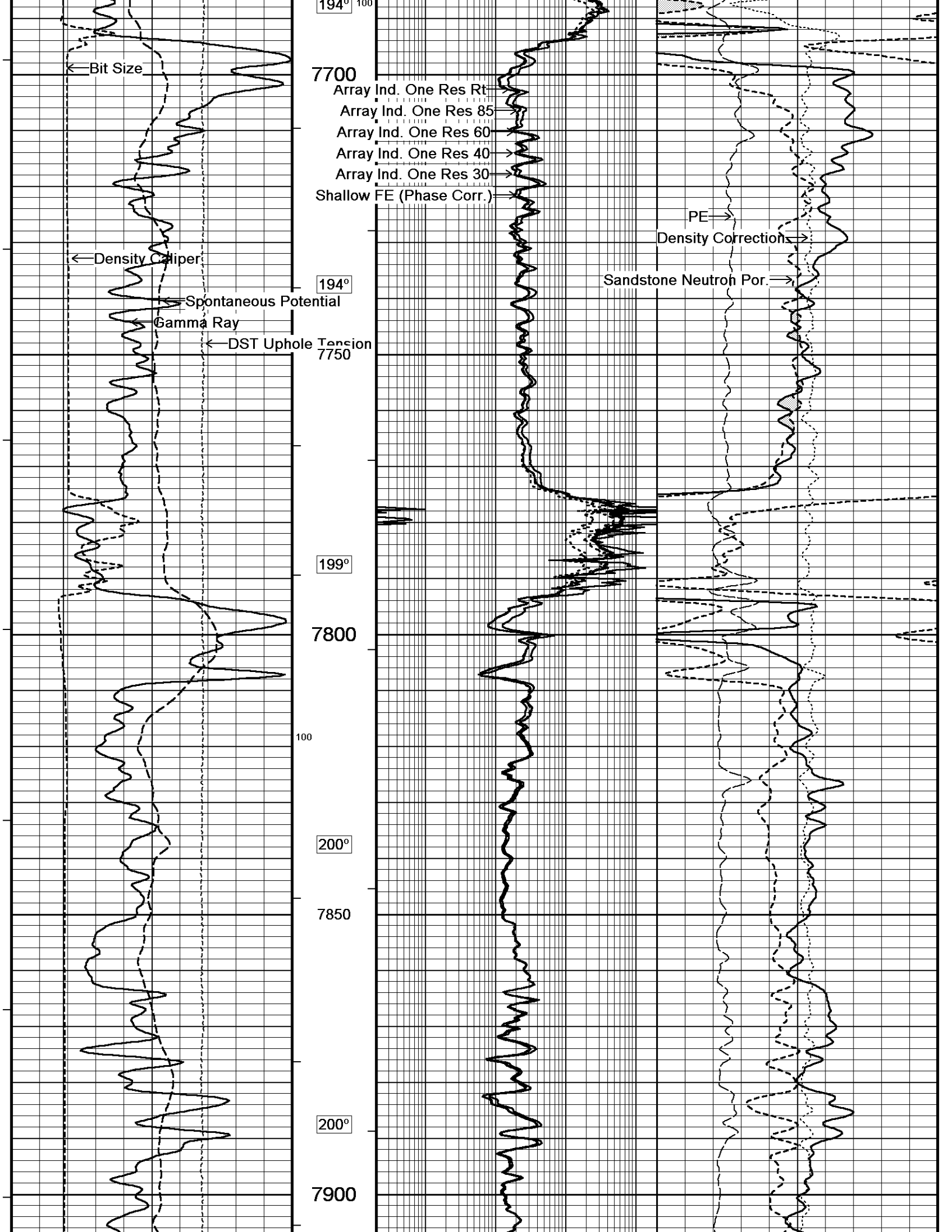
7200

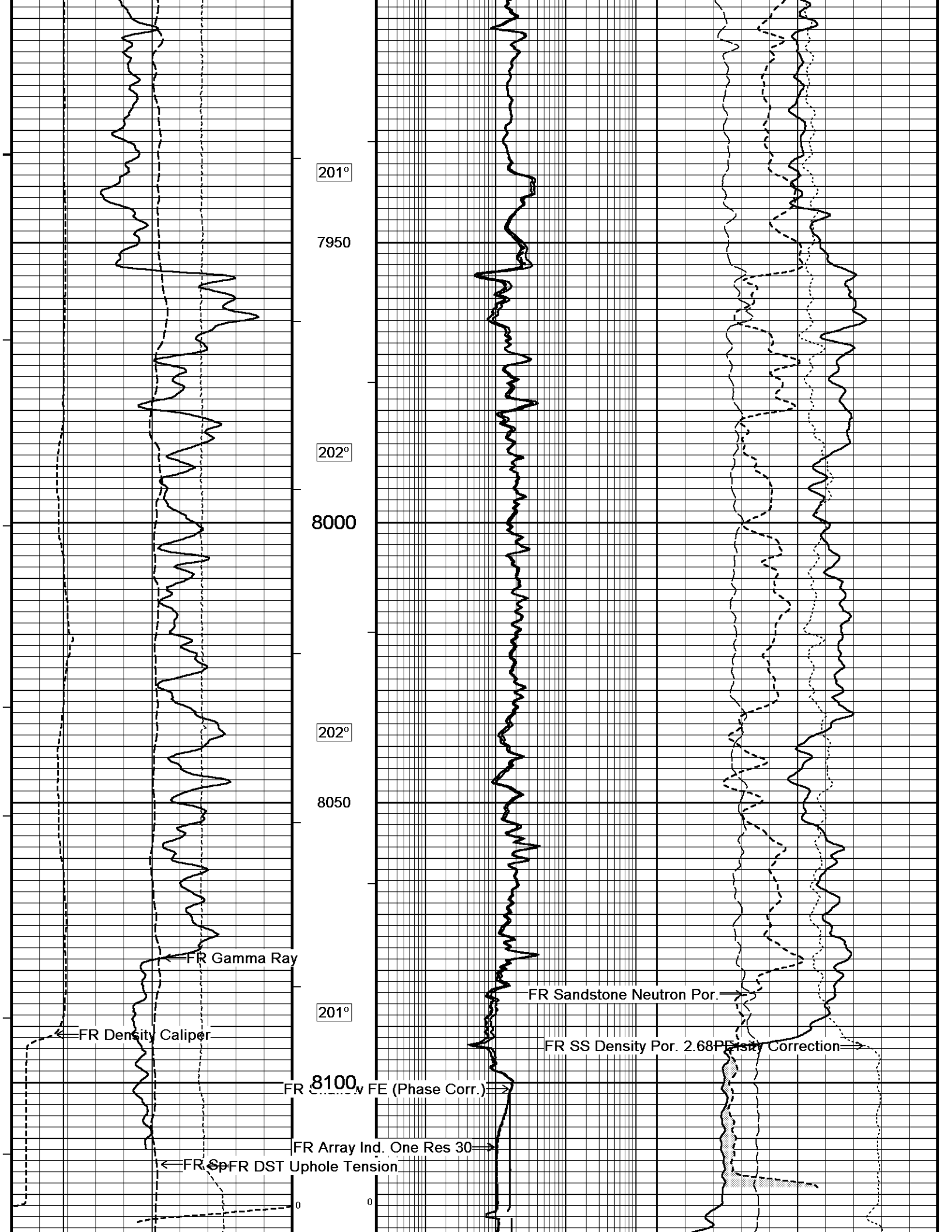
177°

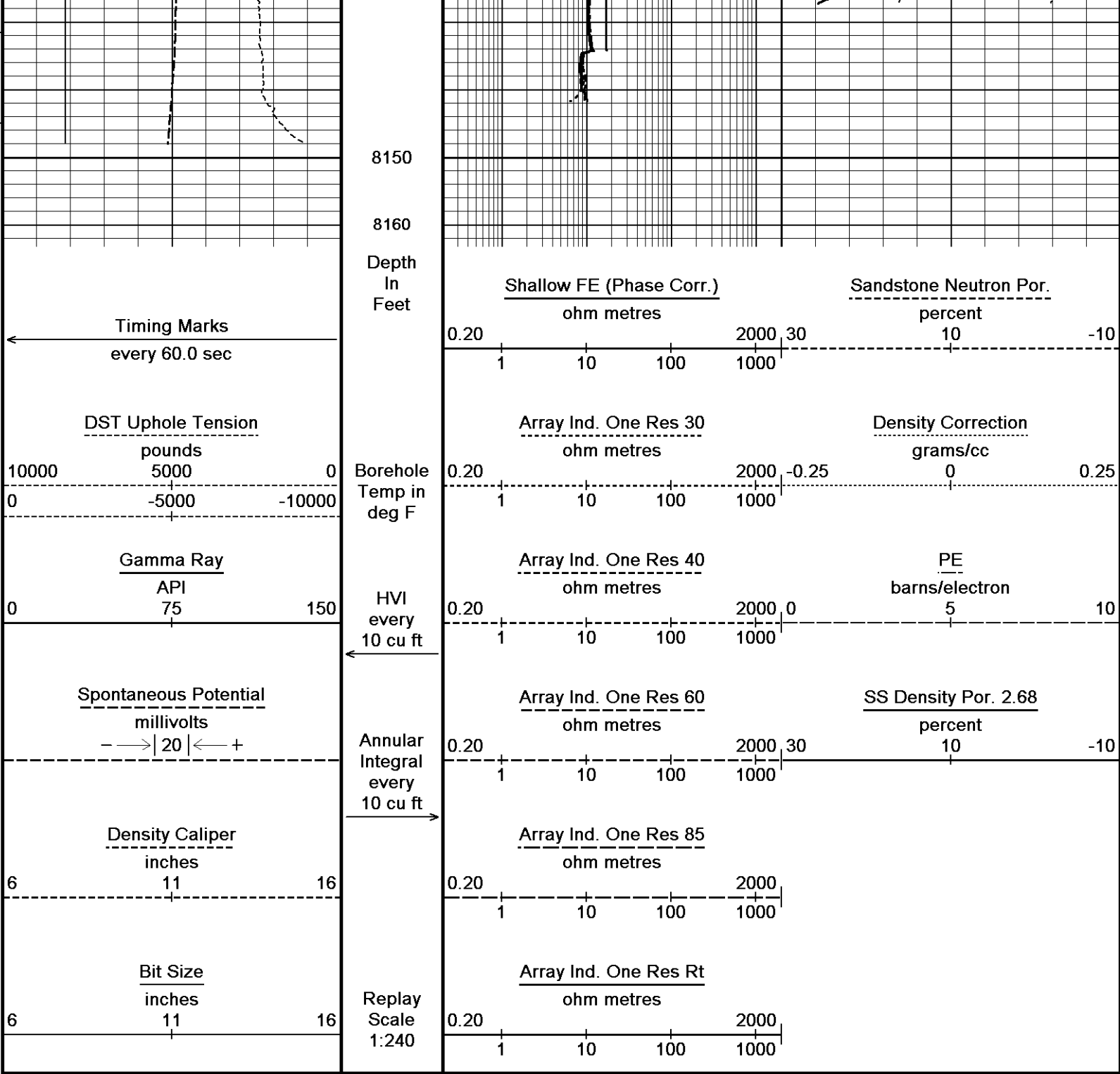








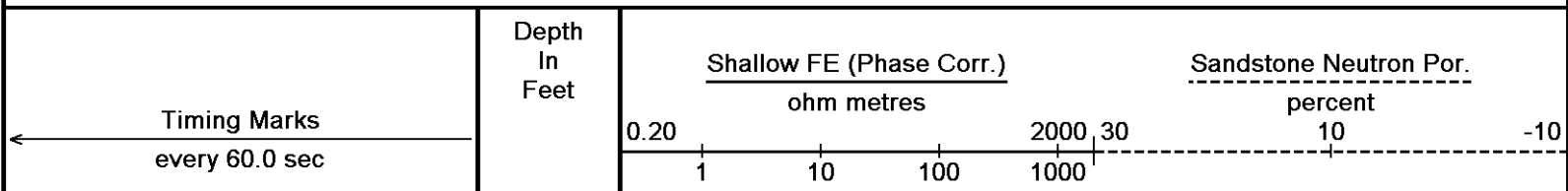


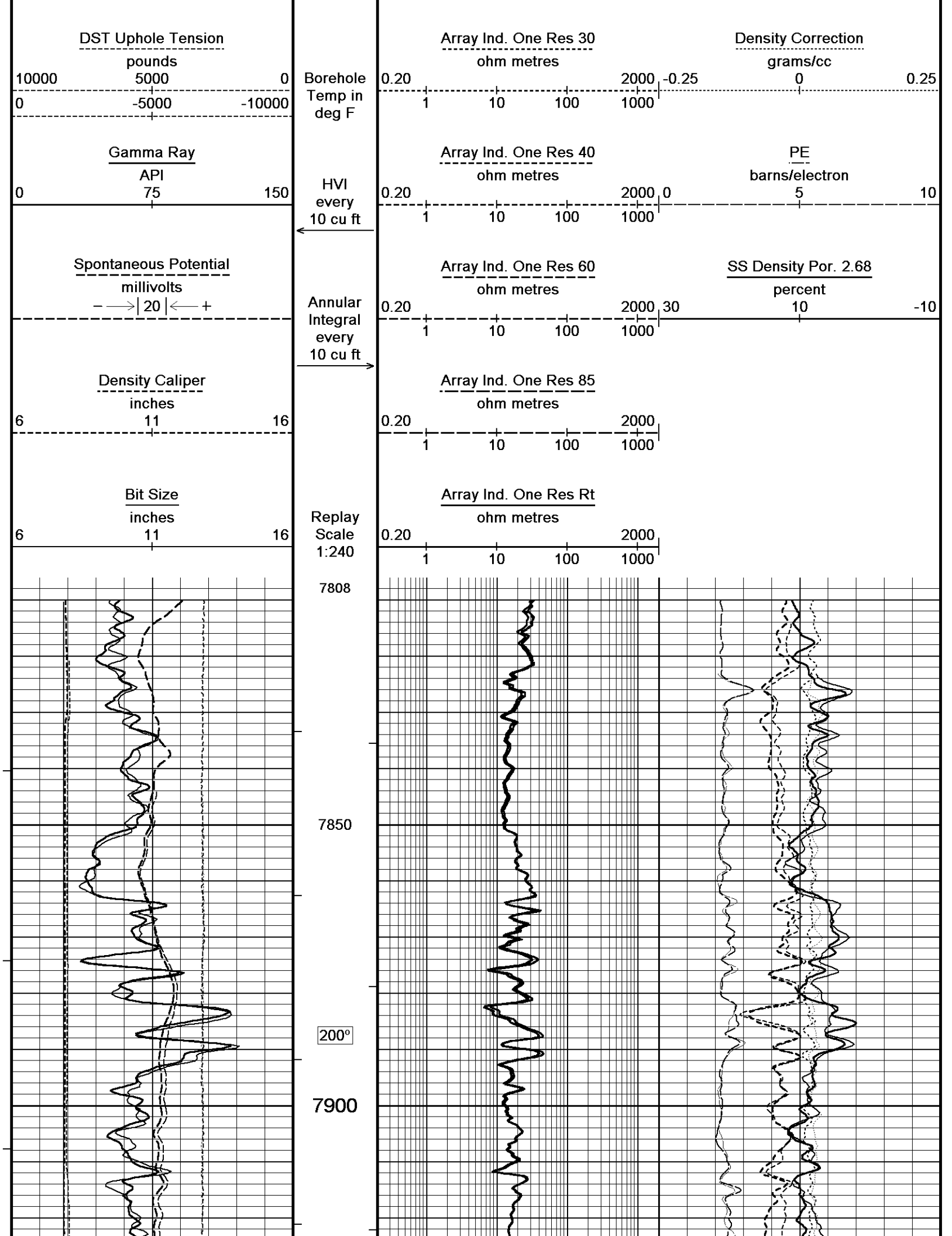


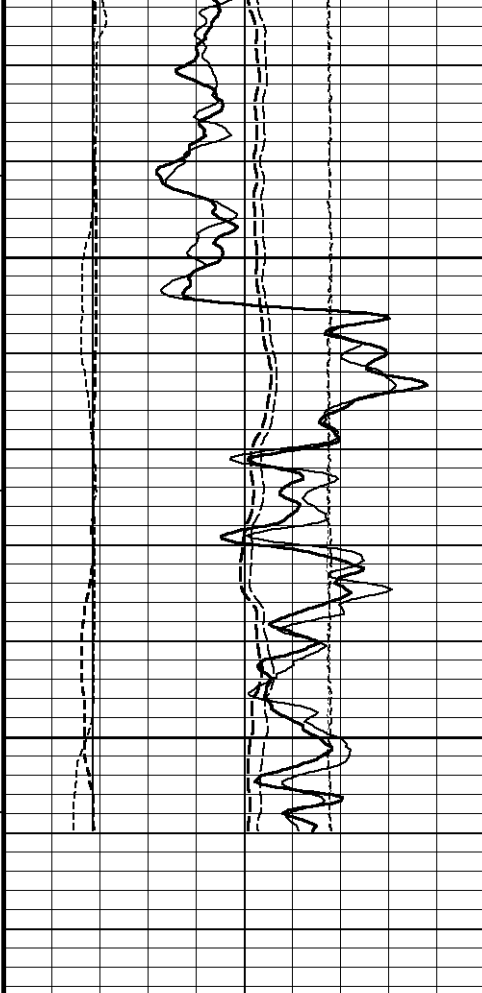
| | |
|---|-------------------------------|
| Depth Based Data - Maximum Sampling Increment 10.0cm | Plotted on 23-MAY-2011 11:28 |
| Filename: C:\LOGS\GJ11-077\MAIN.dta | Recorded on 23-MAY-2011 05:10 |
| System Versions: Logged with 11.02.2782 Plotted with 11.02.3186 | |

| | | |
|---|-----------------|---|
| ↑ | 5 INCH MAIN LOG | ↑ |
|---|-----------------|---|

| | | |
|---|-------------------------------|---|
| ↓ | OVERLAY | ↓ |
| Depth Based Data - Maximum Sampling Increment 10.0cm | Plotted on 23-MAY-2011 11:28 | |
| Filename: C:\LOGS\GJ11-077\MAIN.dta | Recorded on 23-MAY-2011 05:10 | |
| Filename: C:\LOGS\GJ11-077\REPEAT.dta | Recorded on 23-MAY-2011 04:55 | |
| System Versions: Logged with 11.02.2782 Plotted with 11.02.3186 | | |







201°

7950

202°

8000

8024

Depth
In
Feet

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds

10000 5000 0
0 -5000 -10000

Borehole
Temp in
deg F

Gamma Ray
API

0 75 150

HVI
every
10 cu ft

Spontaneous Potential
millivolts
—→ | 20 | ←— +

Annular
Integral
every
10 cu ft

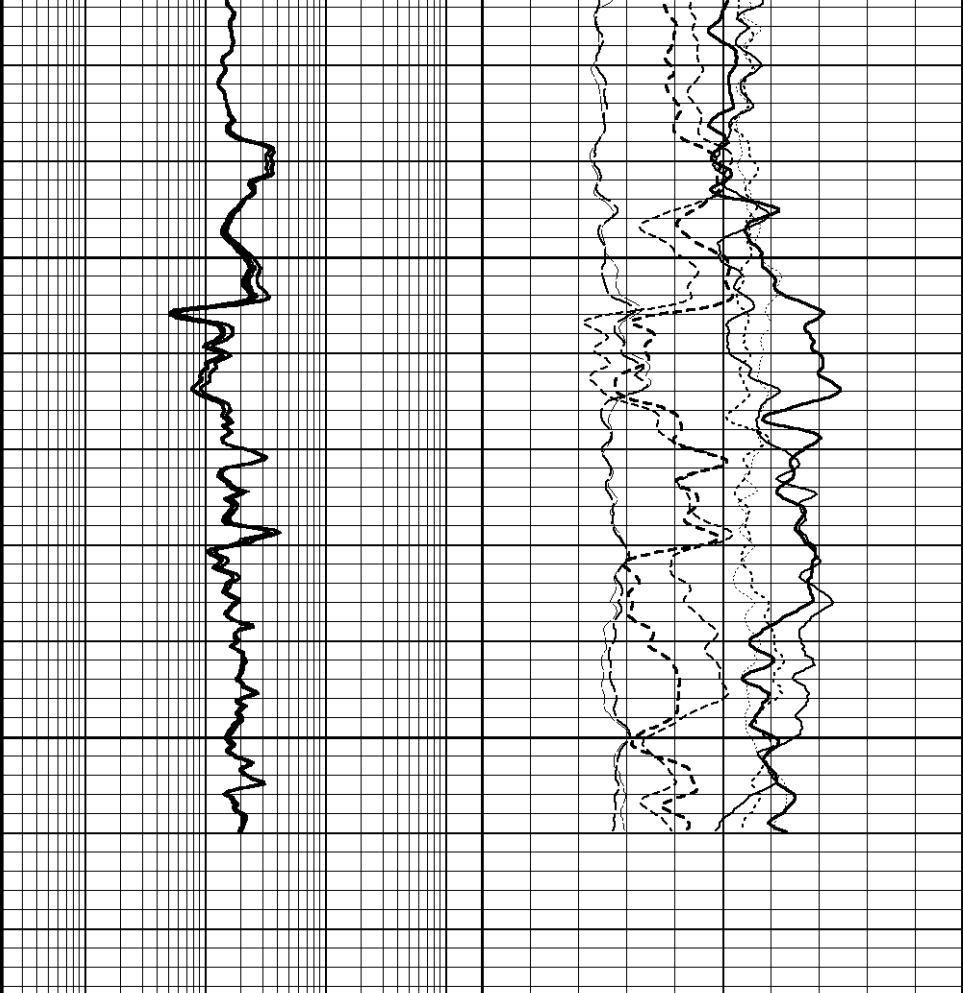
Density Caliper
inches

6 11 16

Bit Size
inches

6 11 16

Replay
Scale



Shallow FE (Phase Corr.)
ohm metres

0.20 1 10 100 1000 2000 30

Sandstone Neutron Por.
percent

10 -10

Array Ind. One Res 30
ohm metres

0.20 1 10 100 1000 2000 -0.25

Density Correction
grams/cc

0 0.25

Array Ind. One Res 40
ohm metres

0.20 1 10 100 1000 2000 0

PE
barns/electron

5 10

Array Ind. One Res 60
ohm metres

0.20 1 10 100 1000 2000 30

SS Density Por. 2.68
percent

10 -10

Array Ind. One Res 85
ohm metres

0.20 1 10 100 1000 2000

Array Ind. One Res Rt
ohm metres

0.20 2000

| | | | | | |
|--|---------|---|-------------------------------|-----|------|
| | 1:240 | 1 | 10 | 100 | 1000 |
| Depth Based Data - Maximum Sampling Increment 10.0cm | | | Plotted on 23-MAY-2011 11:28 | | |
| Filename: C:\LOGS\GJ11-077\MAIN.dta | | | Recorded on 23-MAY-2011 05:10 | | |
| Filename: C:\LOGS\GJ11-077\REPEAT.dta | | | Recorded on 23-MAY-2011 04:55 | | |
| System Versions: Logged with 11.02.2782 | | | Plotted with 11.02.3186 | | |
| ↑ | OVERLAY | | | | ↑ |

| BEFORE SURVEY CALIBRATION | | | | C:\LOGS\GJ11-077\SETUP.dta |
|---|-----------------------|-------------------|--|----------------------------|
| General Constants All 000 | | | Last Edited on 23-MAY-2011,03:38 | |
| General Parameters | | | | |
| Mud Resistivity | 2.400 | ohm-metres | | |
| Mud Resistivity Temperature | 91.000 | 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 | 4.500 | inches | | |
| Caliper for Differential Caliper | Density Caliper | | | |
| Rwa Parameters | | | | |
| Porosity used | Base Density Porosity | | | |
| Resistivity used | Array Ind. One Res Rt | | | |
| RWA Constant A | 0.610 | | | |
| RWA Constant M | 2.150 | | | |
| Down-hole Tension Calibration SMS 0 | | | Field Calibration on 23-MAY-2011 03:11 | |
| Reading No | Measured | Calibrated (lbs) | | |
| 1 | 15959.38 | 0.00 | | |
| 2 | 16537.00 | 320.00 | | |
| Gamma Calibration MCG-C 192 | | | Field Calibration on 23-MAY-2011 03:30 | |
| | Measured | Calibrated (API) | | |
| Background | 44 | 30 | | |
| Calibrator (Gross) | 1375 | 942 | | |
| Calibrator (Net) | 1330 | 912 | | |
| Gamma Constants MCG-C 192 | | | Last Edited on 23-MAY-2011,03:39 | |
| Gamma Calibrator Number | GRC-072 | | | |
| Mud Density | 1.23 | gm/cc | | |
| Caliper Source for Processing | Density Caliper | | | |
| Tool Position | Eccentred | | | |
| Concentration of KCl | 0.00 | kppm | | |
| High Resolution Temperature Calibration MCG-C 192 | | | Field Calibration on 23-MAY-2011,03:34 | |
| | Measured | Calibrated(Deg F) | | |
| Lower | 50.00 | 50.00 | | |
| Upper | 75.00 | 75.00 | | |
| High Resolution Temperature Constants MCG-C 192 | | | Last Edited on 11-MAR-2011,06:06 | |
| Pre-filter Length | 11 | | | |
| SP Calibration MCG-C 192 | | | Field Calibration on 23-MAY-2011,03:39 | |
| | Measured | Calibrated (mV) | | |
| Reference 1 | 100.9 | 100.0 | | |
| Reference 2 | -100.2 | -100.0 | | |
| Neutron Calibration MDN-A.B 160 | | | Base Calibration on 09-MAY-2011 11:52 | |
| | | | Field Check on 23-MAY-2011 03:26 | |

| | | | | | |
|--------------------------|--------|----------|--------|------------------|--|
| Base Calibration | | Measured | | Calibrated (cps) | |
| | Near | Far | Near | Far | |
| | 3186 | 99 | 3714 | 110 | |
| Ratio | 32.247 | | 33.764 | | |
| Field Calibrator at Base | | | | Calibrated (cps) | |
| | | | 1296 | 1921 | |
| Ratio | | | 0.675 | | |
| Field Check | | | | Calibrated (cps) | |
| | | | 1295 | 1919 | |
| Ratio | | | 0.675 | | |

| | | | | | |
|---------------------------------|-----------------|-----------|----------------------------------|--|--|
| Neutron Constants MDN-A.B 160 | | | Last Edited on 23-MAY-2011,03:39 | | |
| Neutron Source Id | 1056 | | | | |
| Neutron Jig Number | 5922 | | | | |
| Epithermal Neutron | No | | | | |
| 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 | | | |
| Formation Fluid Salinity Source | None | | | | |
| Formation Fluid Salinity | N/A | kppm | | | |
| Barite Mud Correction | Not Applied | | | | |

| | | | | | |
|---------------------------|-------|---|-------|--------------------|--|
| FE Calibration MFE-A.A 95 | | Base Calibration on 04-MAY-2011 16:25 Field Check on 23-MAY-2011 03:15 | | | |
| Base Calibration | | Measured | | Calibrated (ohm-m) | |
| Reference 1 | 0.0 | | 0.0 | | |
| Reference 2 | 966.7 | | 126.8 | | |
| Base Check | | | | 280.1 | |
| Field Check | | | | 279.0 | |

| | | | | | |
|----------------------------------|--------------------------|----------------------------------|--------|--|--|
| FE Constants MFE-A.A 95 | | Last Edited on 23-MAY-2011,03:41 | | | |
| Running Mode | No Sleeve | | | | |
| MFE K Factor | 0.1268 | | | | |
| Caliper Source for FE correction | Density Caliper | | | | |
| Caliper Value for FE correction | N/A | | inches | | |
| Rm Source for FE correction | Temperature Corr | | | | |
| Temp. for Rm Corr. | MCG External Temperature | | | | |
| Stand-off | 0.5 | | inches | | |

| | | | | | |
|---|----------|--|-------------------|--|--|
| High Resolution Temperature Calibration MAI-B.A 213 | | Field Calibration on 23-MAY-2011,03:35 | | | |
| | Measured | | Calibrated(Deg F) | | |
| Lower | 10.00 | | 10.00 | | |
| Upper | 100.00 | | 100.00 | | |

| | | | | | |
|---|----|----------------------------------|--|--|--|
| High Resolution Temperature Constants MAI-B.A 213 | | Last Edited on 13-DEC-2010,09:54 | | | |
| Pre-filter Length | 11 | | | | |

| | | | | | |
|-----------------------------------|------|---|-----|---------------------|--|
| Induction Calibration MAI-B.A 213 | | Base Calibration on 22-FEB-2011,05:28 Field Check on 23-MAY-2011 03:13 | | | |
| Base Calibration | | Measured | | Calibrated (mmho/m) | |
| Test Loop Calibration | | | | | |
| Channel | Low | High | Low | High | |
| 1 | 16.8 | 462.4 | 9.3 | 966.2 | |
| 2 | 6.2 | 381.7 | 7.6 | 821.4 | |
| 3 | 3.6 | 254.8 | 5.2 | 566.0 | |

| | | | | |
|-------------------|---------------------|-------|----------------------|--------|
| 3 | 0.0 | 234.0 | 0.2 | 333.0 |
| 4 | 2.3 | 132.3 | 2.6 | 279.2 |
| Array Temperature | | 73.6 | Deg F | |
| Channel | Base Check (mmho/m) | | Field Check (mmho/m) | |
| | Low | High | Low | High |
| 1 | 0.0 | 0.0 | 17.5 | 3937.5 |
| 2 | 0.0 | 0.0 | 32.6 | 3540.4 |
| 3 | 0.0 | 0.0 | 30.9 | 3114.7 |
| 4 | 0.0 | 0.0 | 20.4 | 2097.3 |
| Deep | 0.0 | 0.0 | 18.8 | 2079.1 |
| Medium | 0.0 | 0.0 | 45.1 | 4088.4 |
| Shallow | 0.0 | 0.0 | 48.9 | 5159.6 |
| Array Temperature | | 0.0 | 86.5 | Deg F |

| | | | | | |
|--|--------|--------------------------|-------------|----------------------------------|--|
| Induction Constants MAI-B.A 213 | | | | Last Edited on 23-MAY-2011,03:41 | |
| Induction Model | | RtAP-WBM | | | |
| Caliper for Borehole Corr. | | Density Caliper | | | |
| Hole Size for Borehole Correction | | N/A | | inches | |
| Tool Centred | | No | | | |
| Stand-off Type | | Fins | | | |
| Stand-off | | 0.50 | | inches | |
| Number of Fins on Stand-off | | 6.0000 | | | |
| Stand-off Fin Angle | | 60.00 | | degrees | |
| Stand-off Fin Width | | 0.5000 | | inches | |
| Borehole Corr. Rm Source | | Temperature Corr | | | |
| Temp. for Rm Corr. | | MCG 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 | | |
| 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 | | | | |

| | | | |
|-------------------------------|-----------------------|----------------------|--|
| Caliper Calibration MPD-B 167 | | | Base Calibration on 24-MAR-2011 14:48 |
| | | | Field Calibration on 23-MAY-2011,03:34 |
| Base Calibration | | | |
| Reading No | Measured | Calibrator Size (in) | |
| 1 | 18272 | 4.00 | |
| 2 | 26728 | 5.96 | |
| 3 | 35183 | 7.98 | |
| 4 | 43312 | 9.86 | |
| 5 | 52336 | 11.88 | |
| 6 | N/A | N/A | |
| Field Calibration | | | |
| | Measured Caliper (in) | Actual Caliper (in) | |
| | 7.99 | 7.98 | |

Density Calibration

Base Calibration

| | Measured | | Calibrated (sdu) | |
|-------------|----------|-------|------------------|-------|
| | Near | Far | Near | Far |
| Reference 1 | 48387 | 18472 | 53115 | 19186 |
| Reference 2 | 22628 | 3021 | 25020 | 2536 |

Field Check at Base

1161.5 1739.6

Field Check

1163.9 1740.1

PE Calibration

Base Calibration

| | WS | Measured | | Calibrated | |
|-------------|-------|----------|-------|------------|--|
| | | WH | Ratio | Ratio | |
| Background | 212 | 1037 | | | |
| Reference 1 | 14983 | 48216 | 0.313 | 0.320 | |
| Reference 2 | 5889 | 22492 | 0.265 | 0.272 | |

Field Check at Base

212.3 1037.3

Field Check

212.0 1039.6

Density Constants MPD-B 167

Last Edited on 23-MAY-2011,03:32

| | | |
|-------------------------------|-----------------|-------|
| Density Source Id | P50561B | |
| Nylon Calibrator Number | 507 | |
| Aluminium Calibrator Number | 507 | |
| Density Shoe Profile | 8 inch | |
| Caliper Source for Processing | Density Caliper | |
| PE Correction to Density | Not Applied | |
| Mud Density | 1.23 | 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 | |

DOWNHOLE EQUIPMENT

C:\LOGS\IGJ11-077\SETUP.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 192 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Neutron
MDN-A.B 160 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper



37.07 ft GRGC - Gamma Ray
34.16 ft CGXT - MCG External Temperature

30.61 ft NPRS - Sandstone Neutron Por.

23.37 ft AVOL - Annular Volume

MPD-B 167 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint

SKJ-D.A 114 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

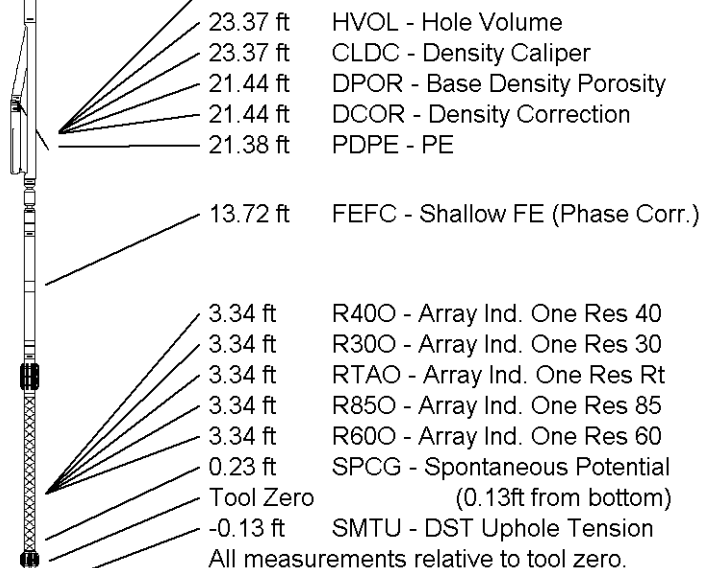
Compact Focussed Electric

MFE-A.A 95 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction

MAI-B.A 213 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 43.93 ft Weight: 341.7 lb



| | |
|-----------------|--------------------------|
| COMPANY | BILL BARRETT CORPORATION |
| WELL | CB TG LAND 12D-20-692 |
| FIELD | MAMM CREEK |
| PROVINCE/COUNTY | GARFIELD |
| COUNTRY/STATE | U.S.A. / COLORADO |

| | | | | | |
|-------------------------|---------|------|---------------|---------|------|
| Elevation Kelly Bushing | 5553.00 | feet | First Reading | 8115.00 | |
| Elevation Drill Floor | 5553.00 | feet | Depth Driller | 8118.00 | feet |
| Elevation Ground Level | 5530.00 | feet | Depth Logger | 8115.00 | feet |



Weatherford®

COMPACT TRIPLE COMBO
QUICKLOOK
LOG

