

**Weatherford****ARRAY INDUCTION
LOGS**

COMPANY **EAST CHEYENNE GAS STORAGE LLC**
WELL **ECGS NO 6-13 WPD007-2**
FIELD **PEETZ WEST**
PROVINCE/COUNTY **LOGAN**
COUNTRY/STATE **US/COLORADO**
LOCATION **NENW 283' FNL & 2275' FEL**

SEC **6** TWP **11N** RGE **52W** Other Services
API Number **05-075-09411** MPD/MDN
Permit Number **CMI**

Permanent Datum GL, Elevation 4550 feet
Log Measured From KB
Drilling Measured From KB

Elevations:
KB 4564.00
DF 4563.00
GL 4550.00

Date **06-OCT-2012**

Run Number

ONE

Depth Driller

5265.00

feet

Depth Logger

5265.00

feet

First Reading

5262.00

feet

Last Reading

1222.00

feet

Casing Driller

1208.00

feet

Casing Logger

1222.00

feet

Bit Size

8.750

inches

Hole Fluid Type

WBM

Density / Viscosity

9.80 lb/USg

49.00 CP

PH / Fluid Loss

9.00

6.40 ml/10min

Sample Source

FLOWLINE

Rm @ Measured Temp

4.23 @ 84.7

ohm-m

Rmf @ Measured Temp

3.384 @ 84.7

ohm-m

Rmc @ Measured Temp

5.076 @ 84.7

ohm-m

Source Rmf / Rmc

CALC

CALC

Rm @ BHT

1.08 @166.0

ohm-m

Time Since Circulation

4 HOURS

Max Recorded Temp

166.00

deg F

Equipment Name

COMPACT

Equipment / Base

13144

RK SPR

Recorded By

J. PAULSON

T. BENICH

Witnessed By

J. ASHBY

L. CARRASCO

BOREHOLE RECORD

Last Edited: 06-OCT-2012 05:05

Bit Size inches	Depth From feet	Depth To feet
8.750	1222.00	5265.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	1222.00	36.00

REMARKS

SOFTWARE VERSION 13.03.7779

TOOLS RUN: SHA, MCG, MDN, MPD, MIS-A, SKJ, MIS-E, SKJ, SHA, MIM, MIE, MFE, MAI RUN IN COMBINATION.

HARDWARE: MPD: 8" PROFILE PLATE USED.
MAI: TWO 1 INCH STANDOFFS USED.
MDN: DUAL BOWSPRING USED.
MIM: ONE NONMETALIC CENTRALIZING BASKET USED.
MIE: ONE 1 INCH STANDOFF USED

2.65 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY FROM TD TO BOTTOM OF NIOBRARA FORMATION (5265 FT TO 4700 FT)

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY IN NIOBRARA FORMATION (4700 FT TO 4200 FT).

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

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

LAT/ LONG: 40.96296 N/103.22070 W

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING =1780 CUBIC FEET

ANNULAR VOLUME WITH 7 INCH PRODUCTION CASING FROM TD TO SURFACE CASING = 720 CUBIC FEET

TOTAL VOLUME FROM TD TO 4200 FT = 410 CUBIC FEET

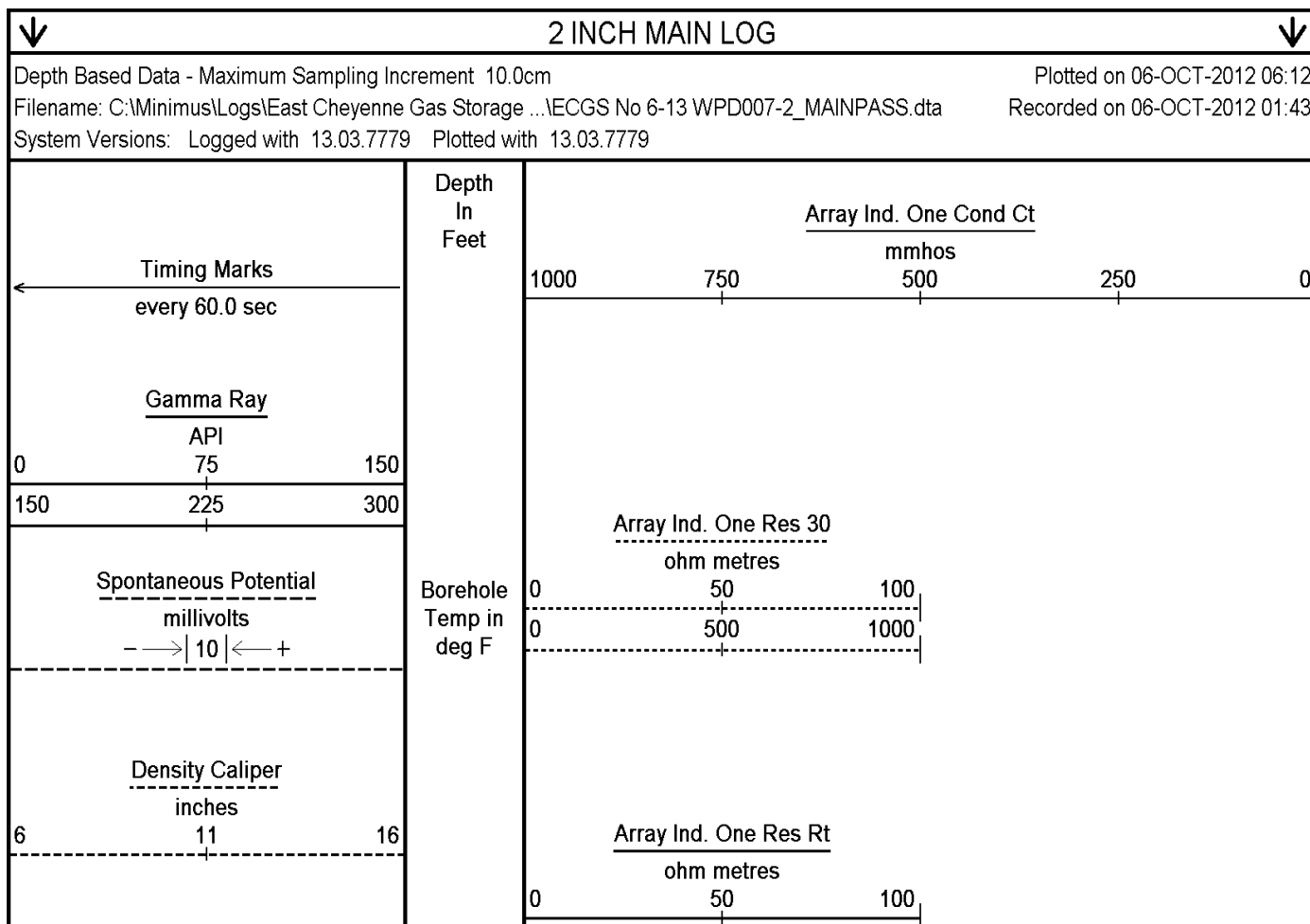
ANNULAR VOLUME WITH 7 INCH PRODUCTION CASING FROM TD TO 4200 FT = 140 CUBIC FEET

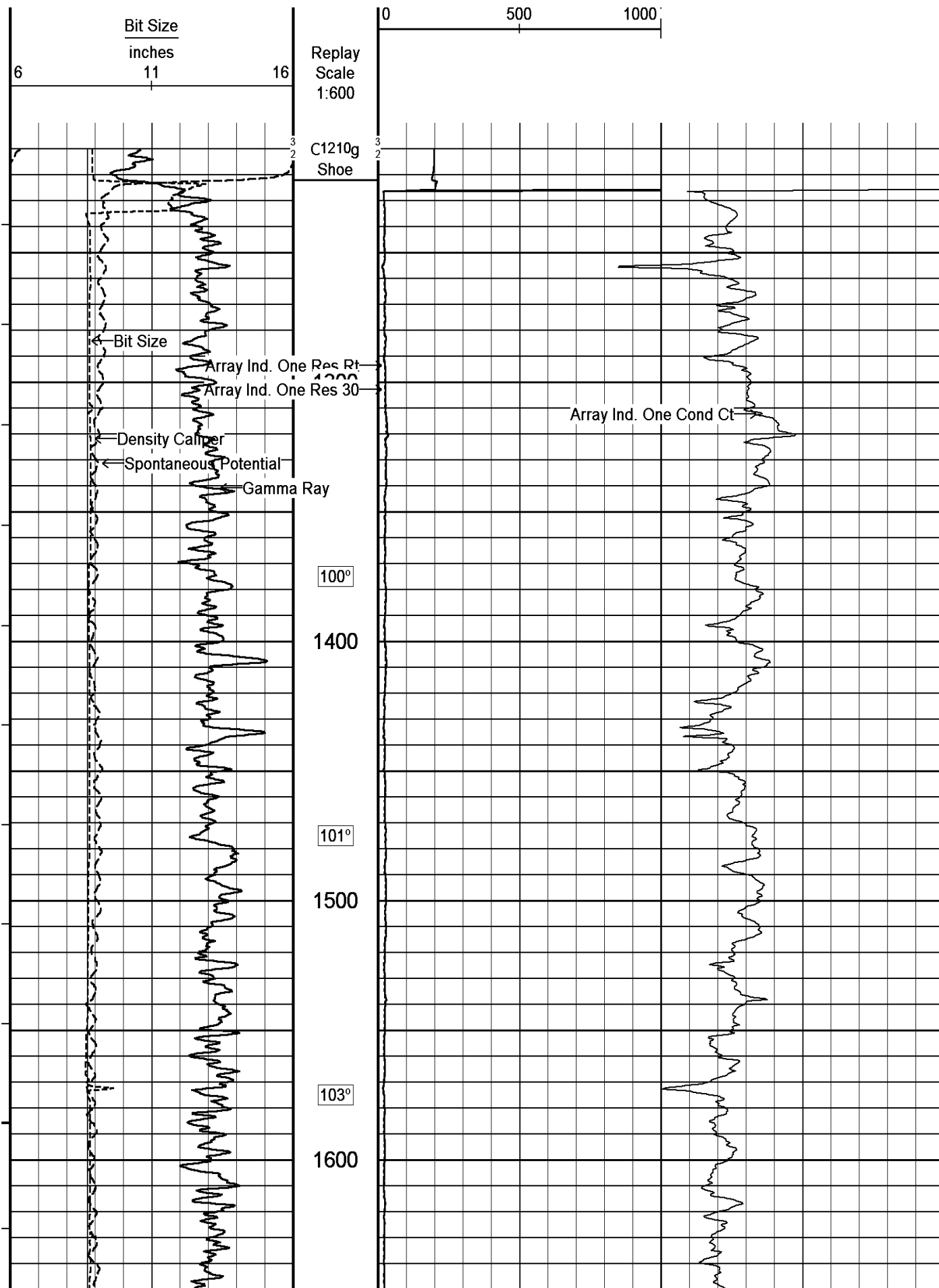
SERVICE ORDER: #3531930

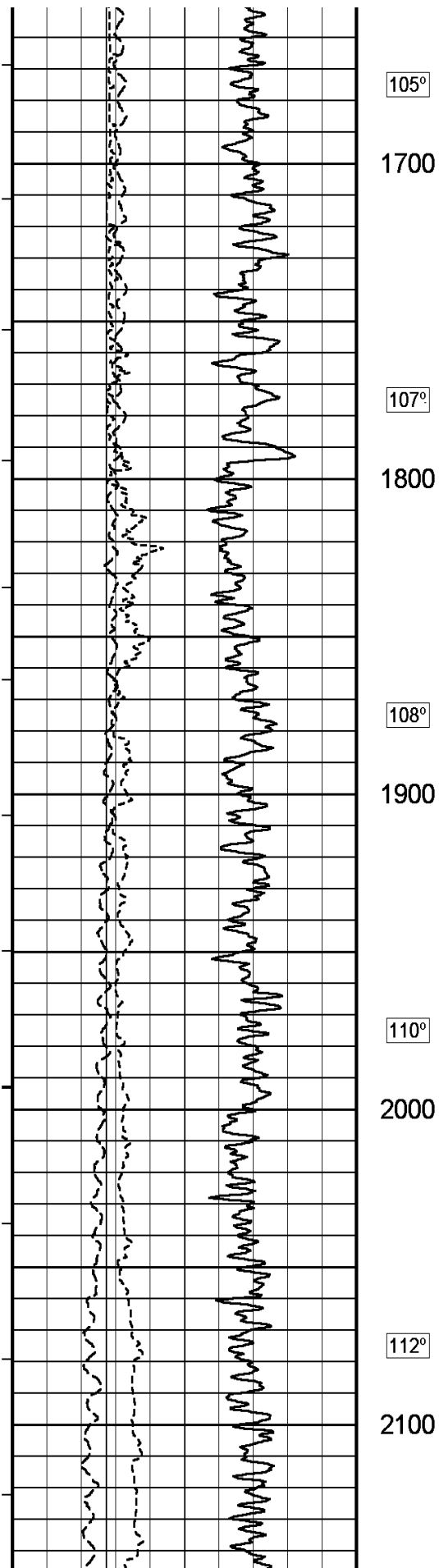
OPERATOR: M. LAMOREAUX
J. BAASSIRI

RIG: CADE 22

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.







105°

1700

107°

1800

108°

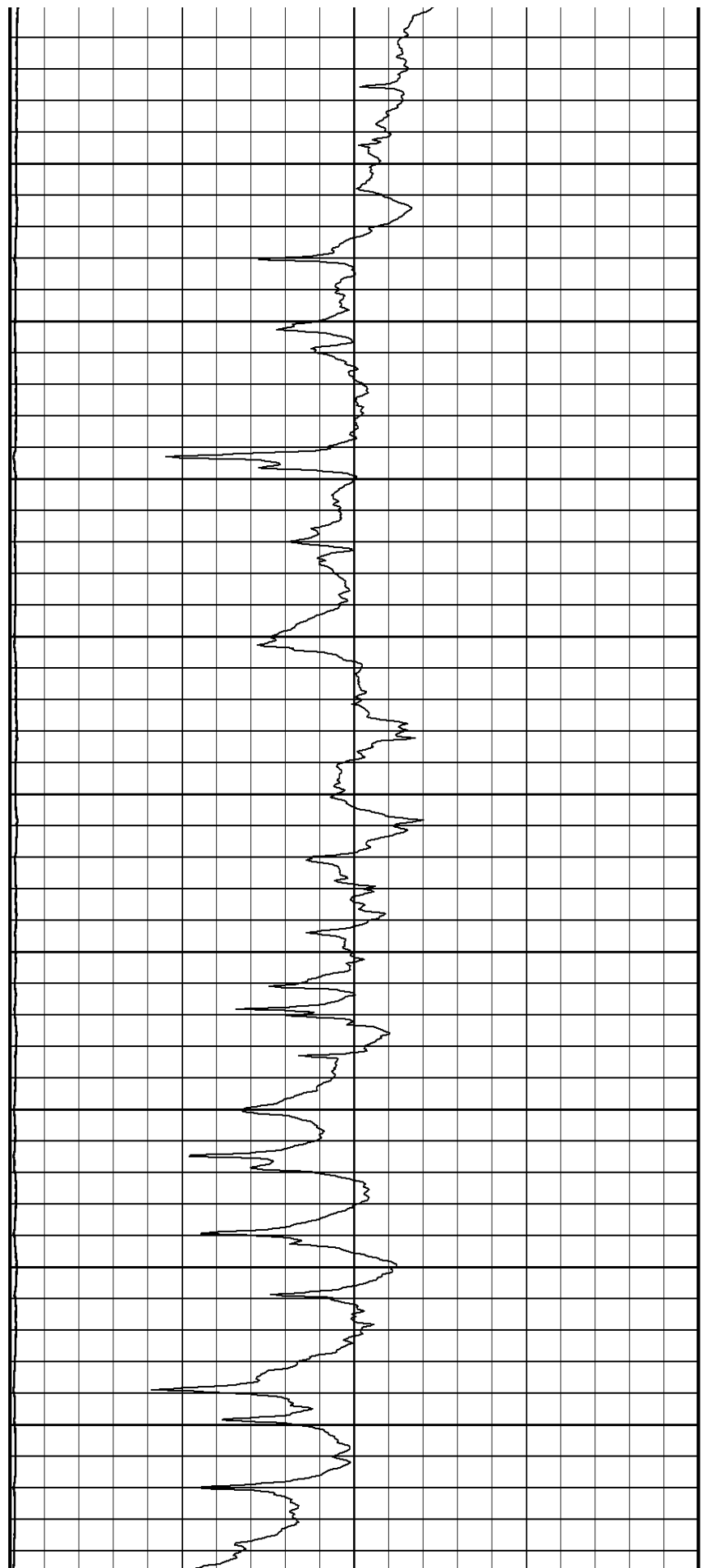
1900

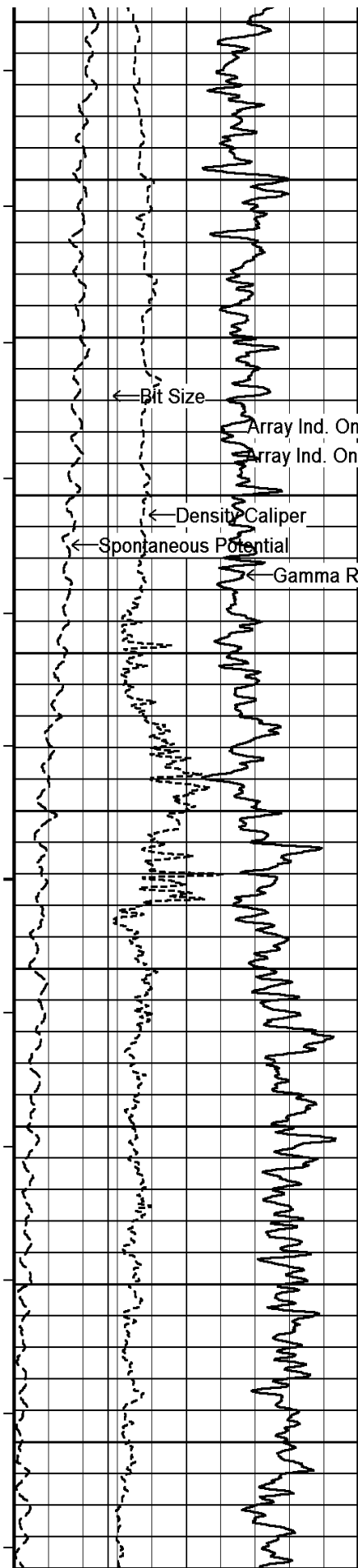
110°

2000

112°

2100





113°

2200

115°

2300

116°

2400

118°

2500

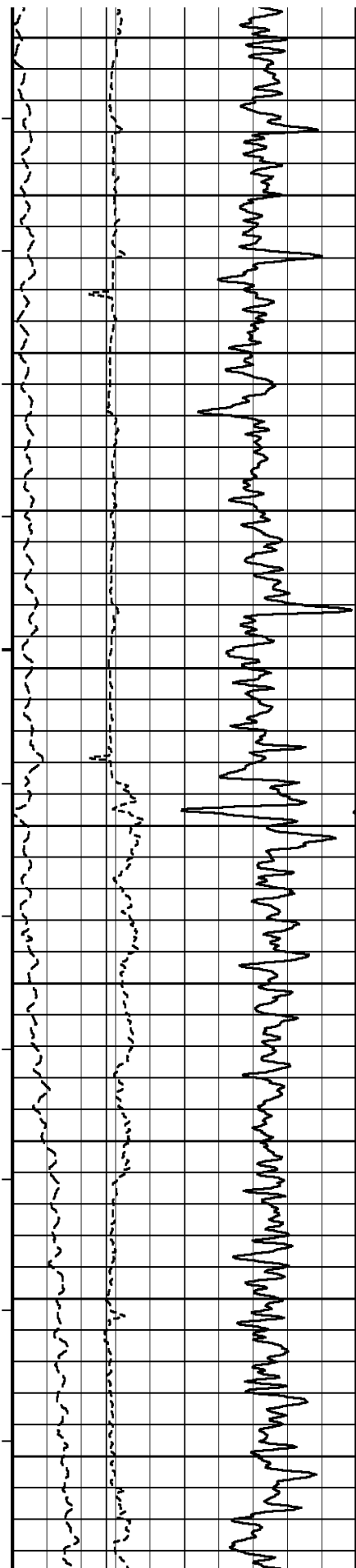
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2600

Array Ind. One Res Rt

Array Ind. One Res 30

Array Ind. One Cond Ct



121°

2700

123°

2800

124°

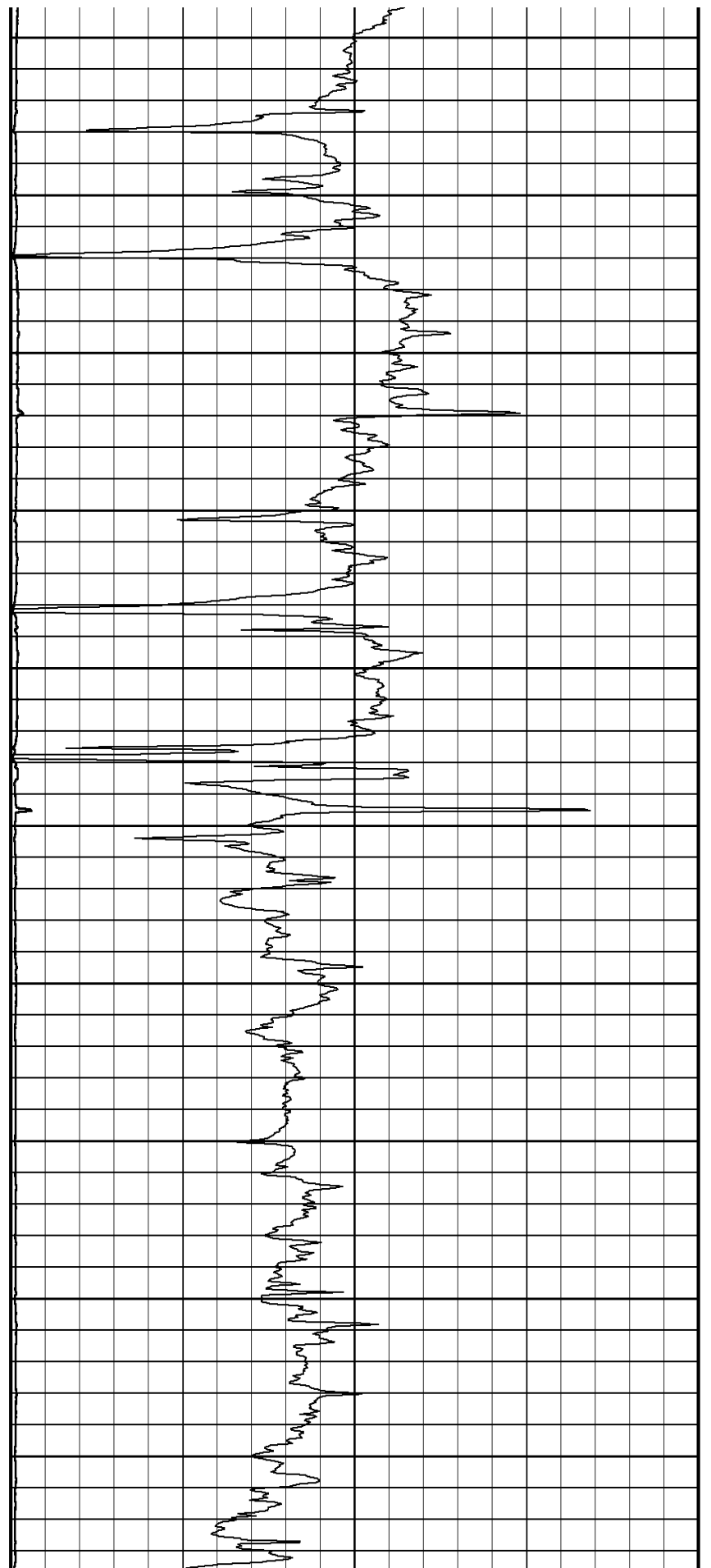
2900

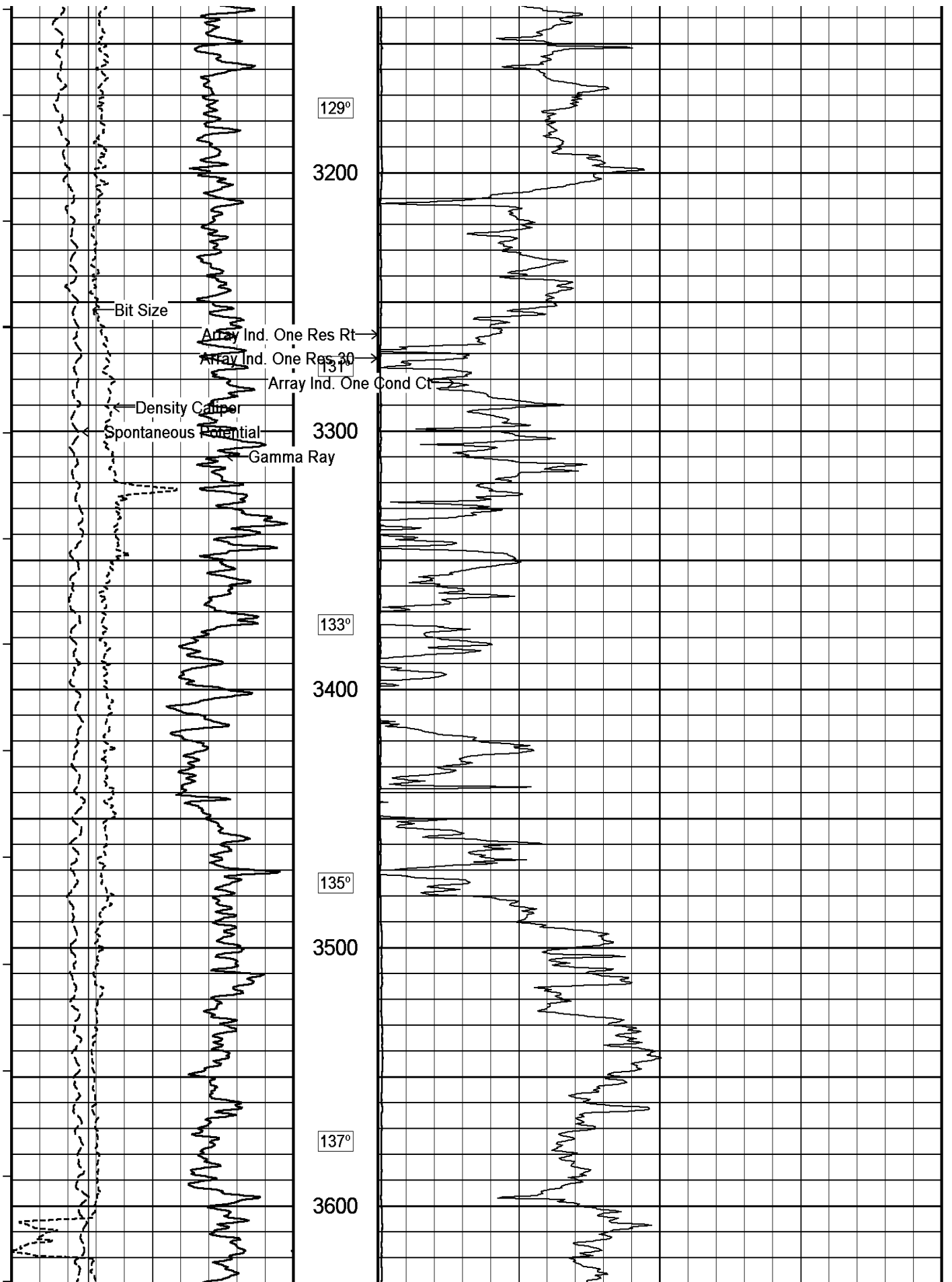
126°

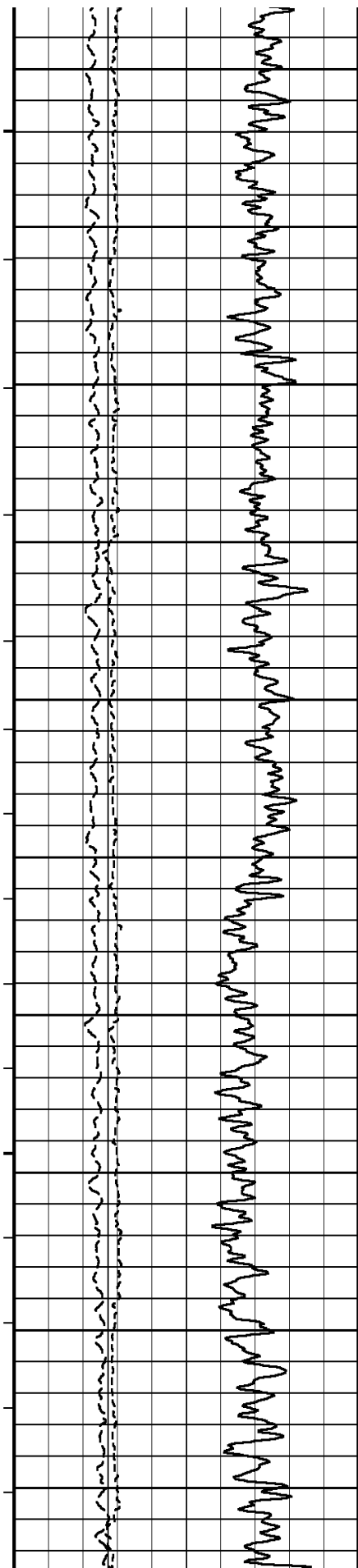
3000

127°

3100







139°

3700

140°

3800

141°

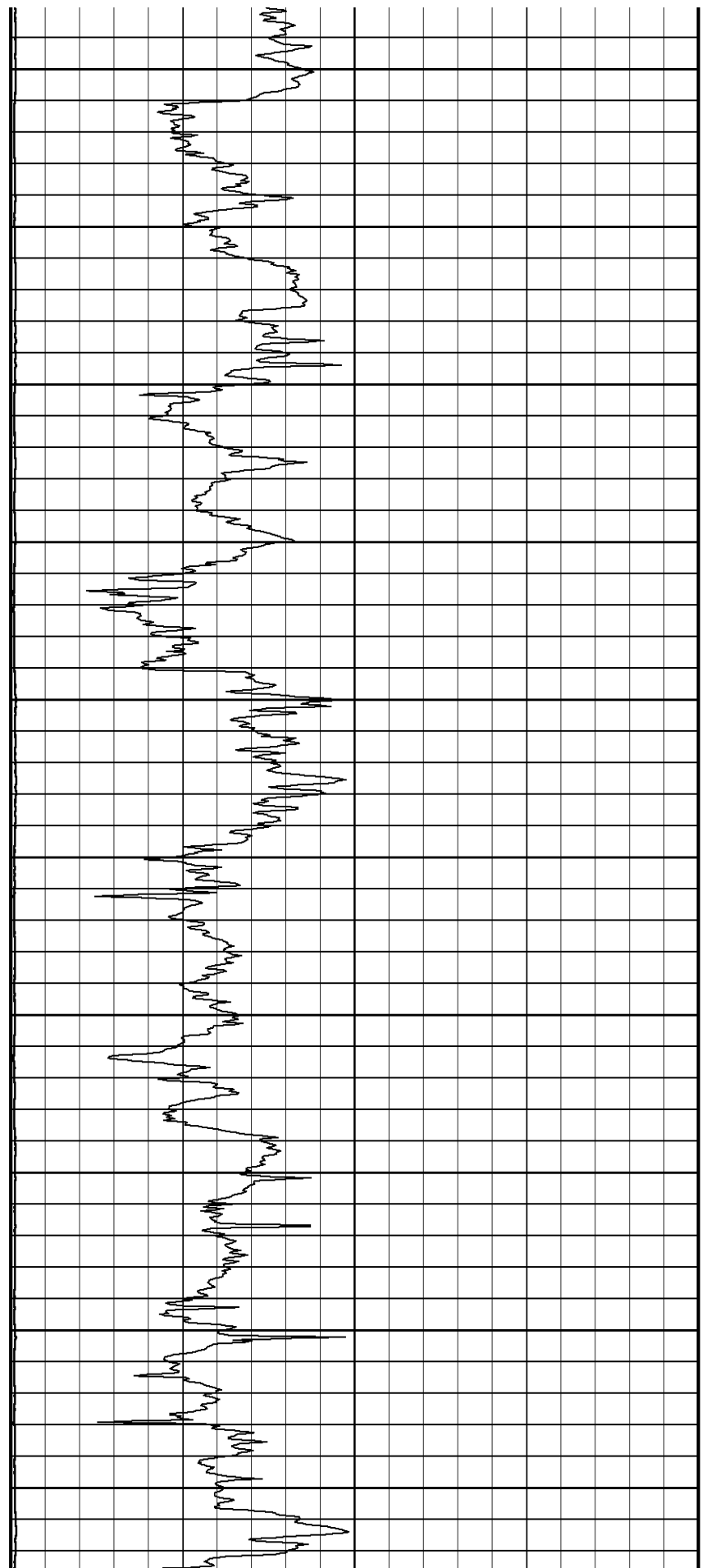
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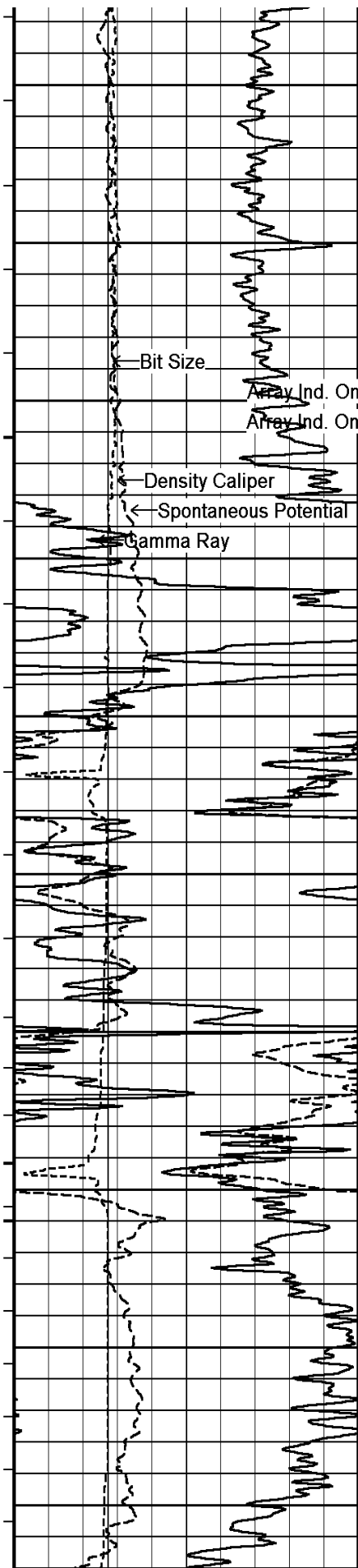
143°

4000

145°

4100





147°

4200

Array Ind. One Res Rt

Array Ind. One Res 30

Array Ind. One Cond Ct

149°

4300

150°

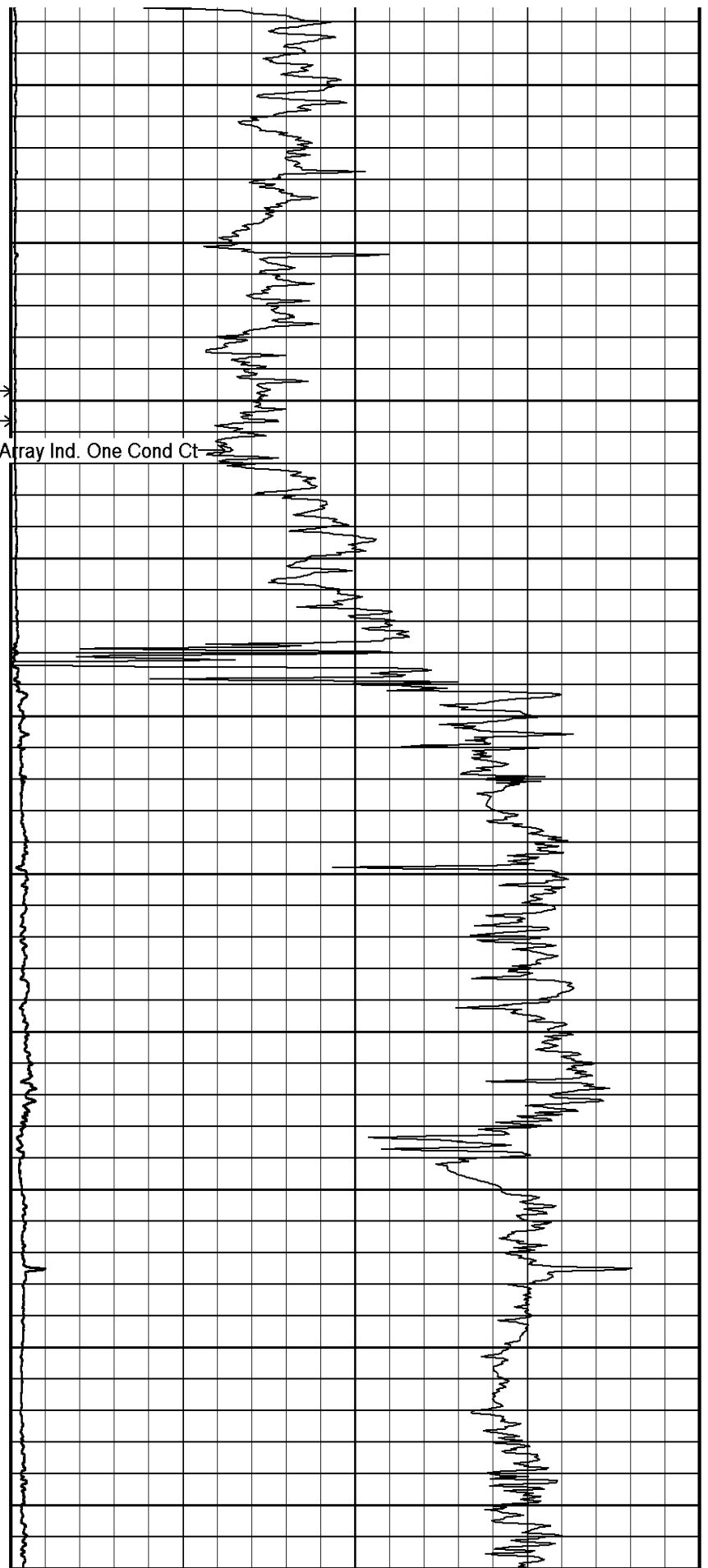
4400

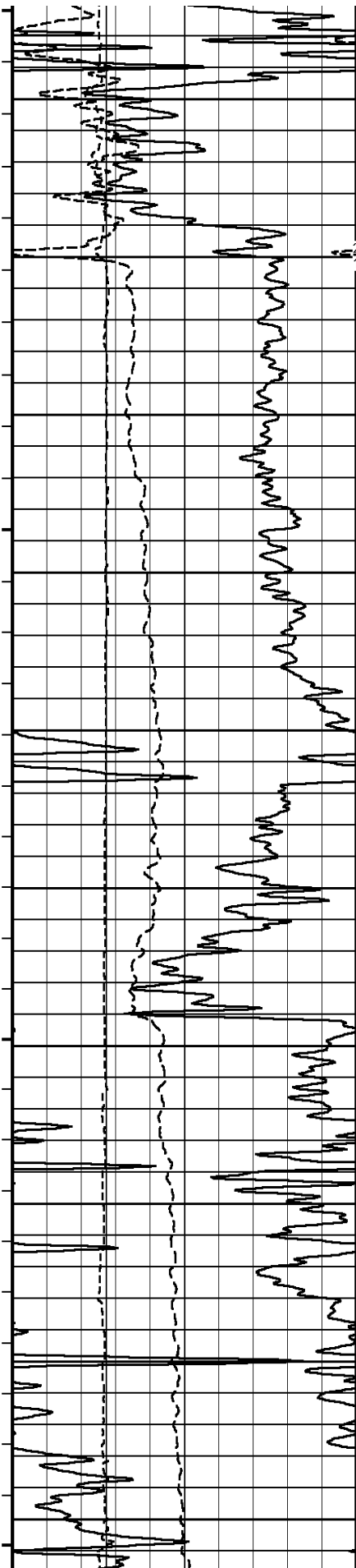
152°

4500

154°

4600





156°

4700

158°

4800

159°

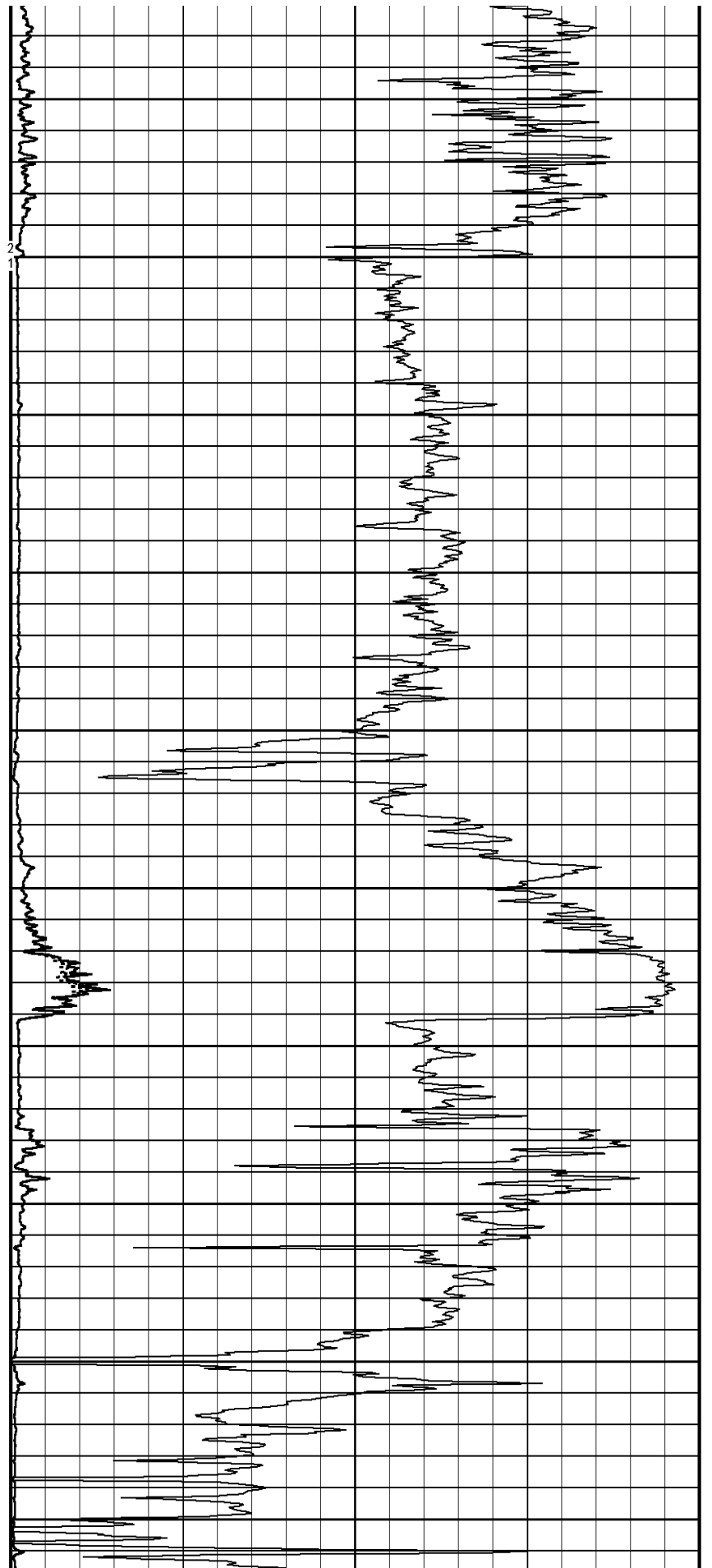
4900

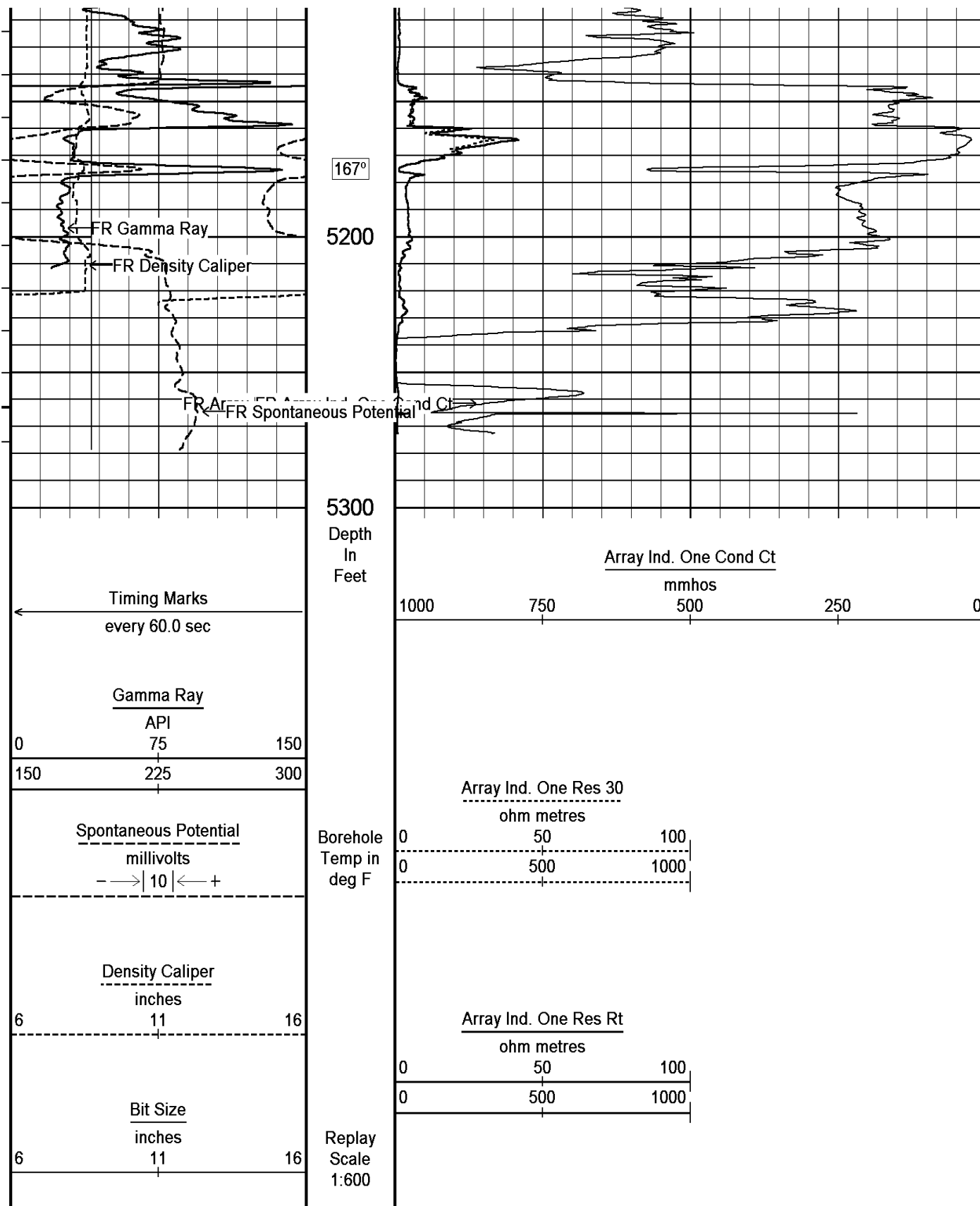
161°

5000

166°

5100





Depth Based Data - Maximum Sampling Increment 10.0cm

Filename: C:\Minimus\Logs\East Cheyenne Gas Storage ...IECGS No 6-13 WPD007-2_MAINPASS.dta

System Versions: Logged with 13.03.7779 Plotted with 13.03.7779

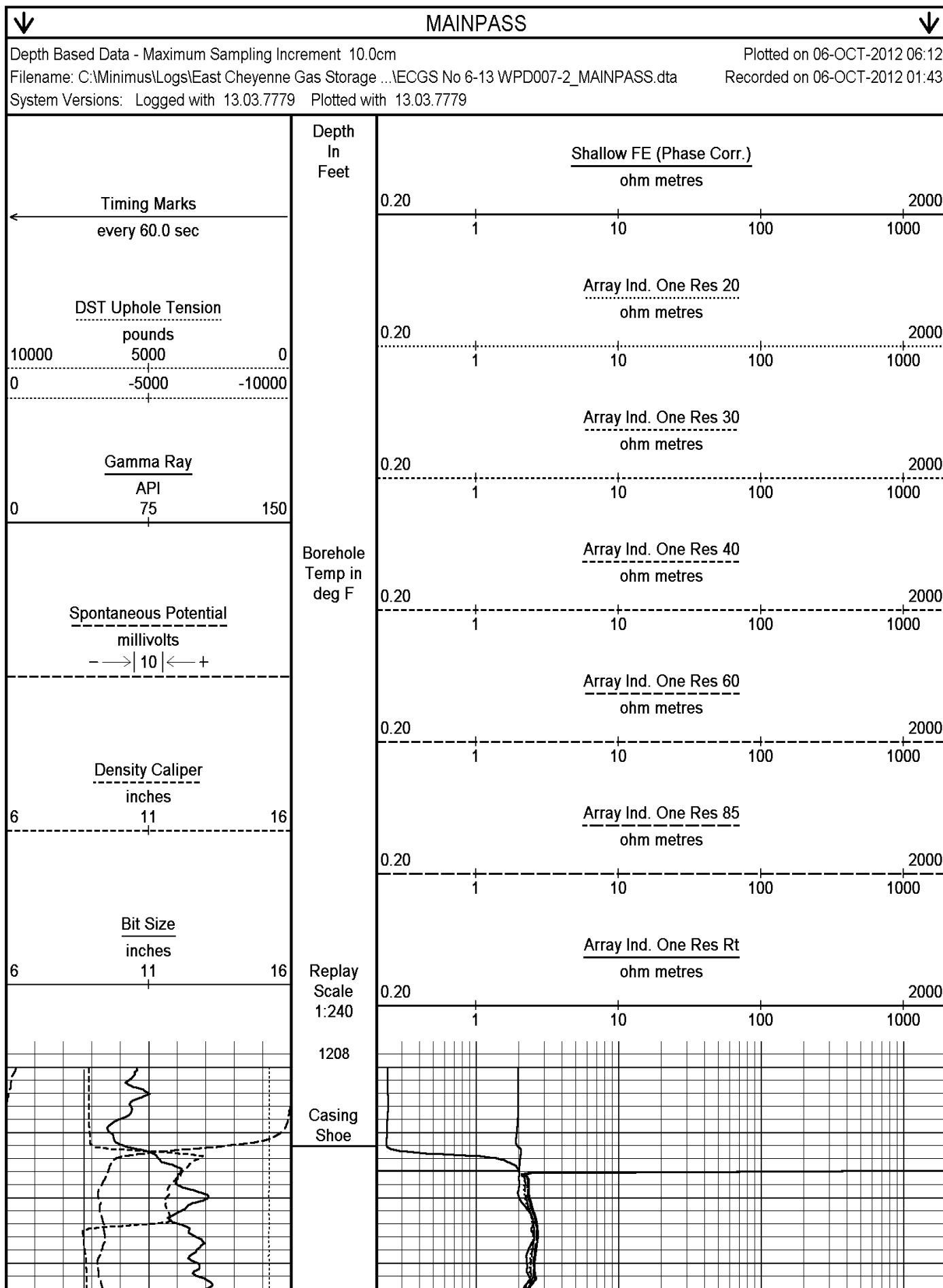
Plotted on 06-OCT-2012 06:12

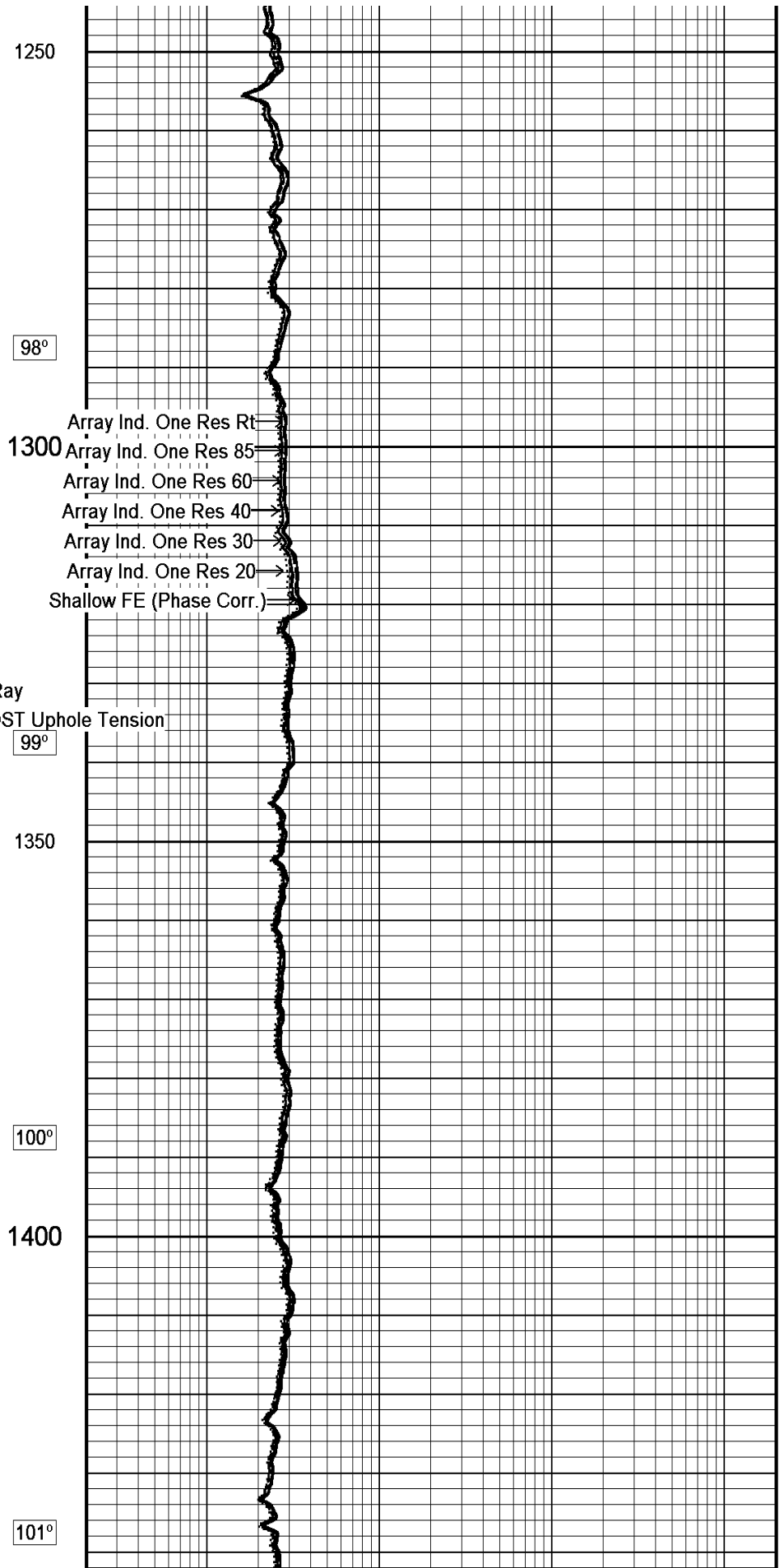
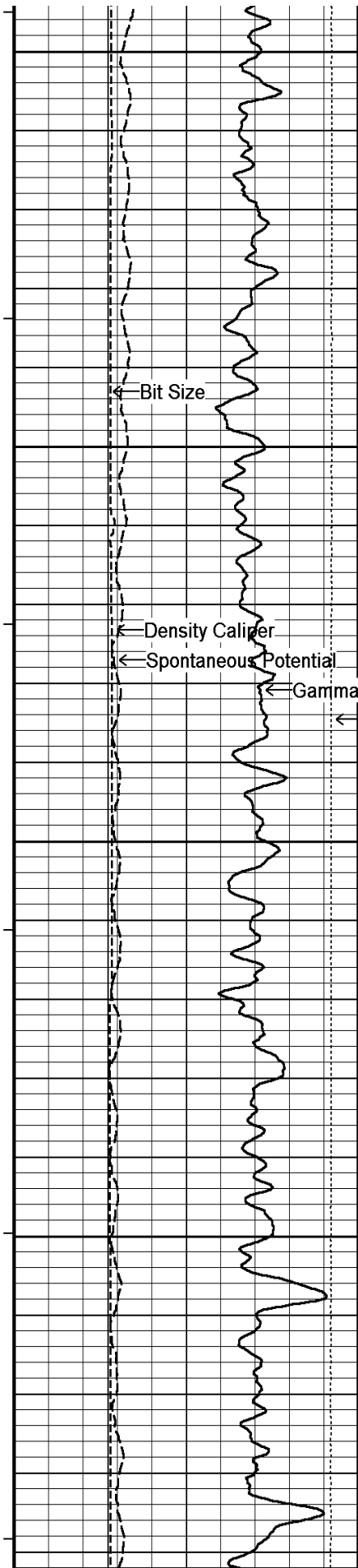
Recorded on 06-OCT-2012 01:43

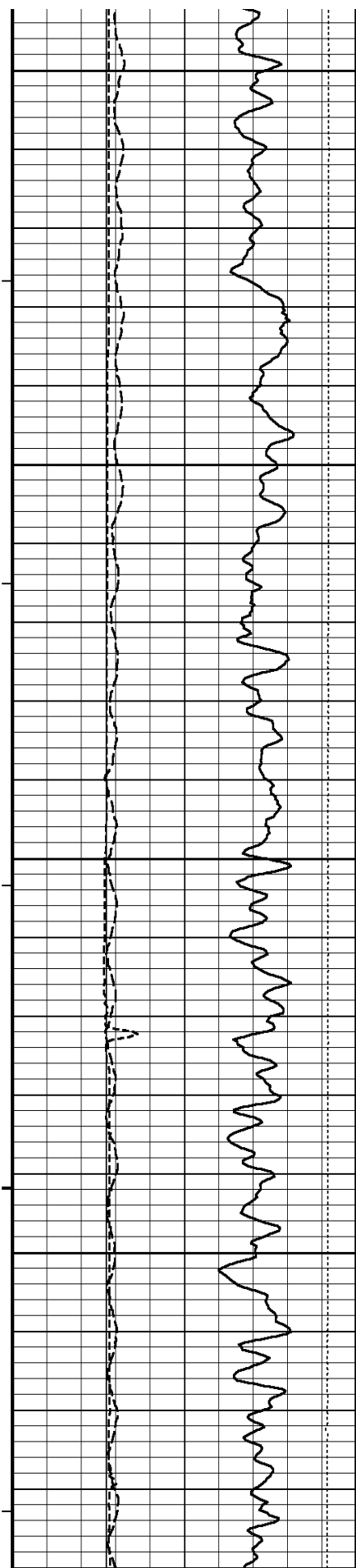


2 INCH MAIN LOG









1450

102°

1500

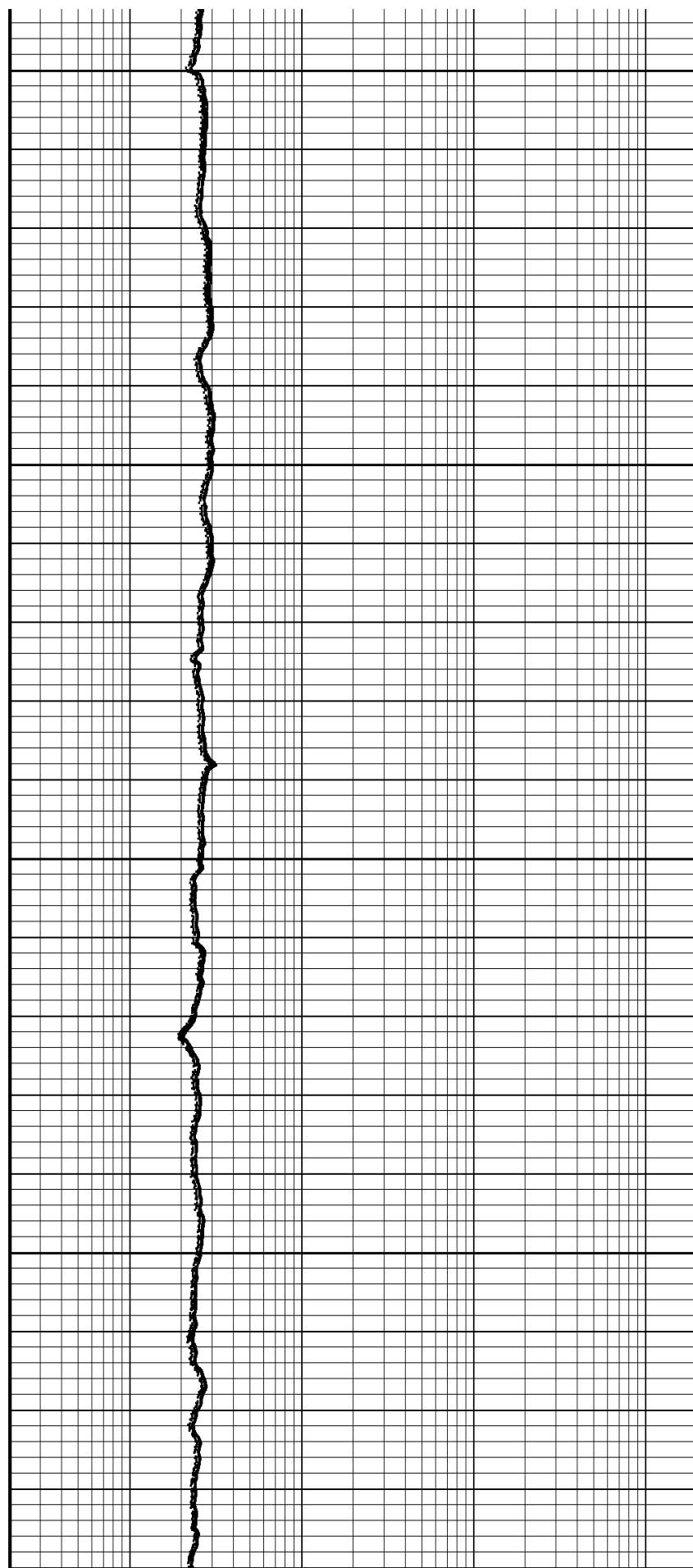
102°

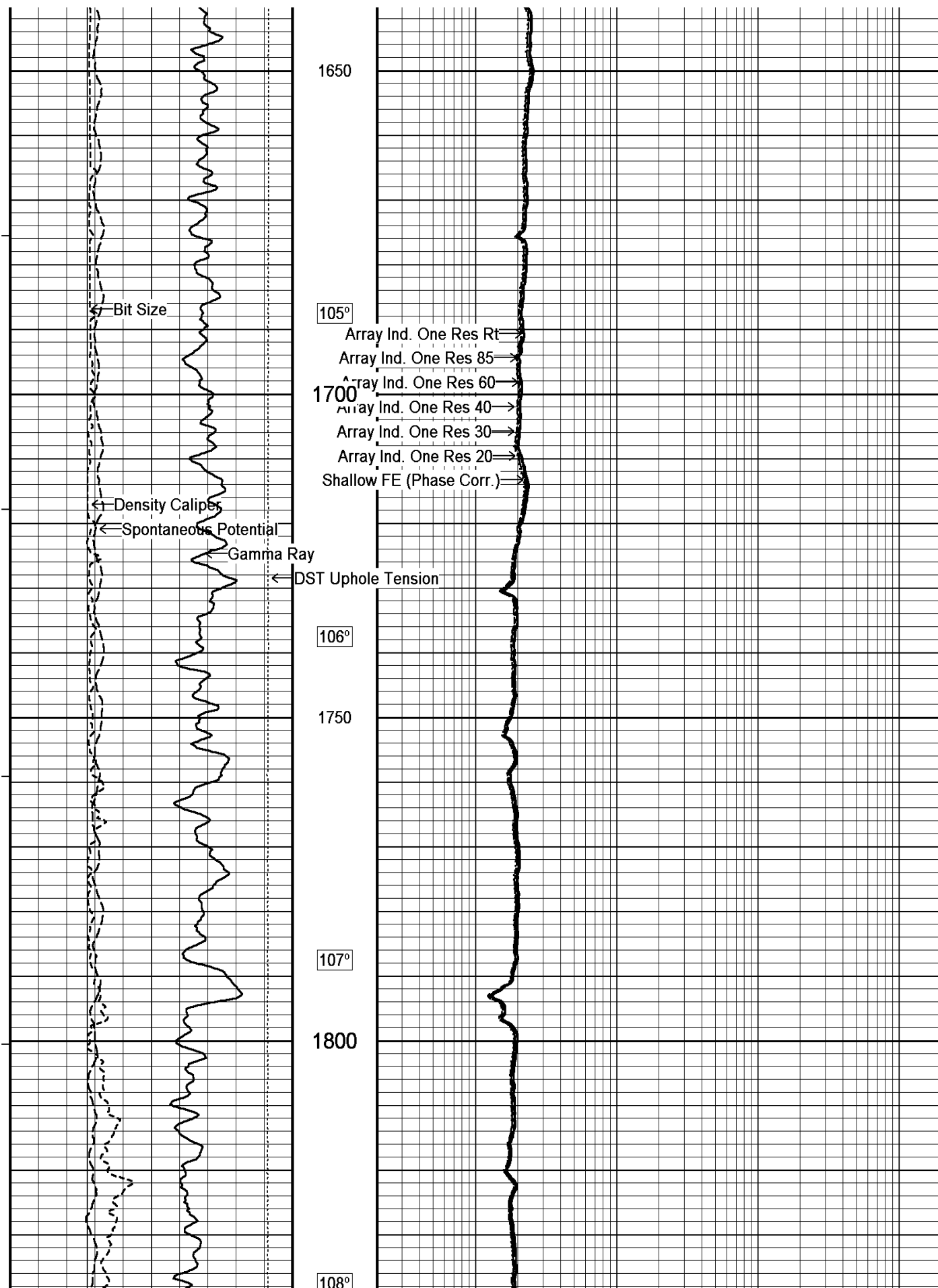
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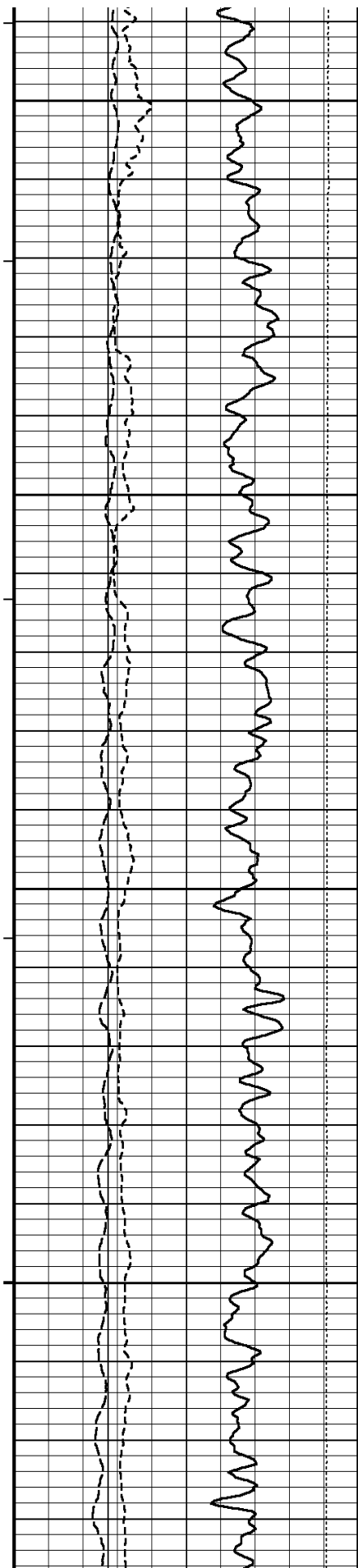
103°

1600

104°







1850

109°

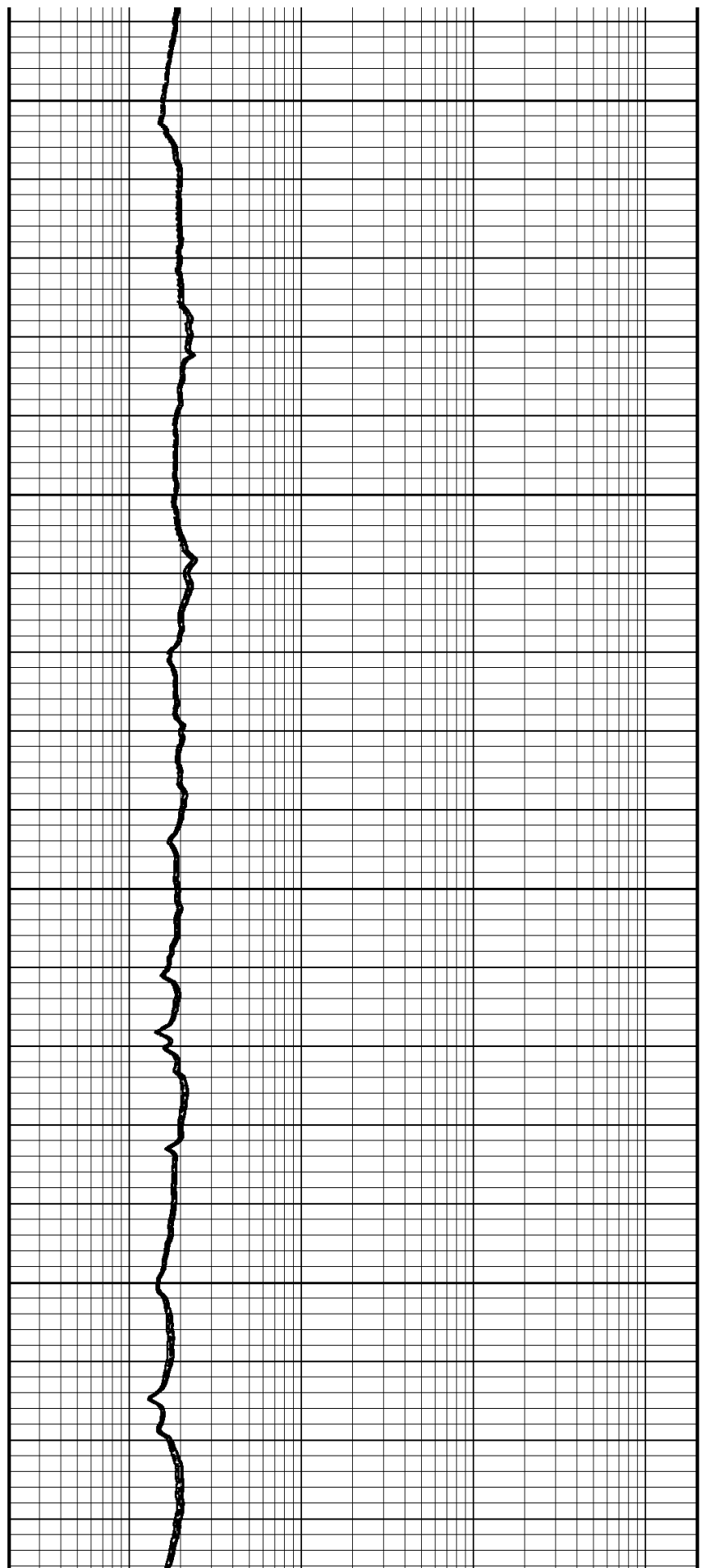
1900

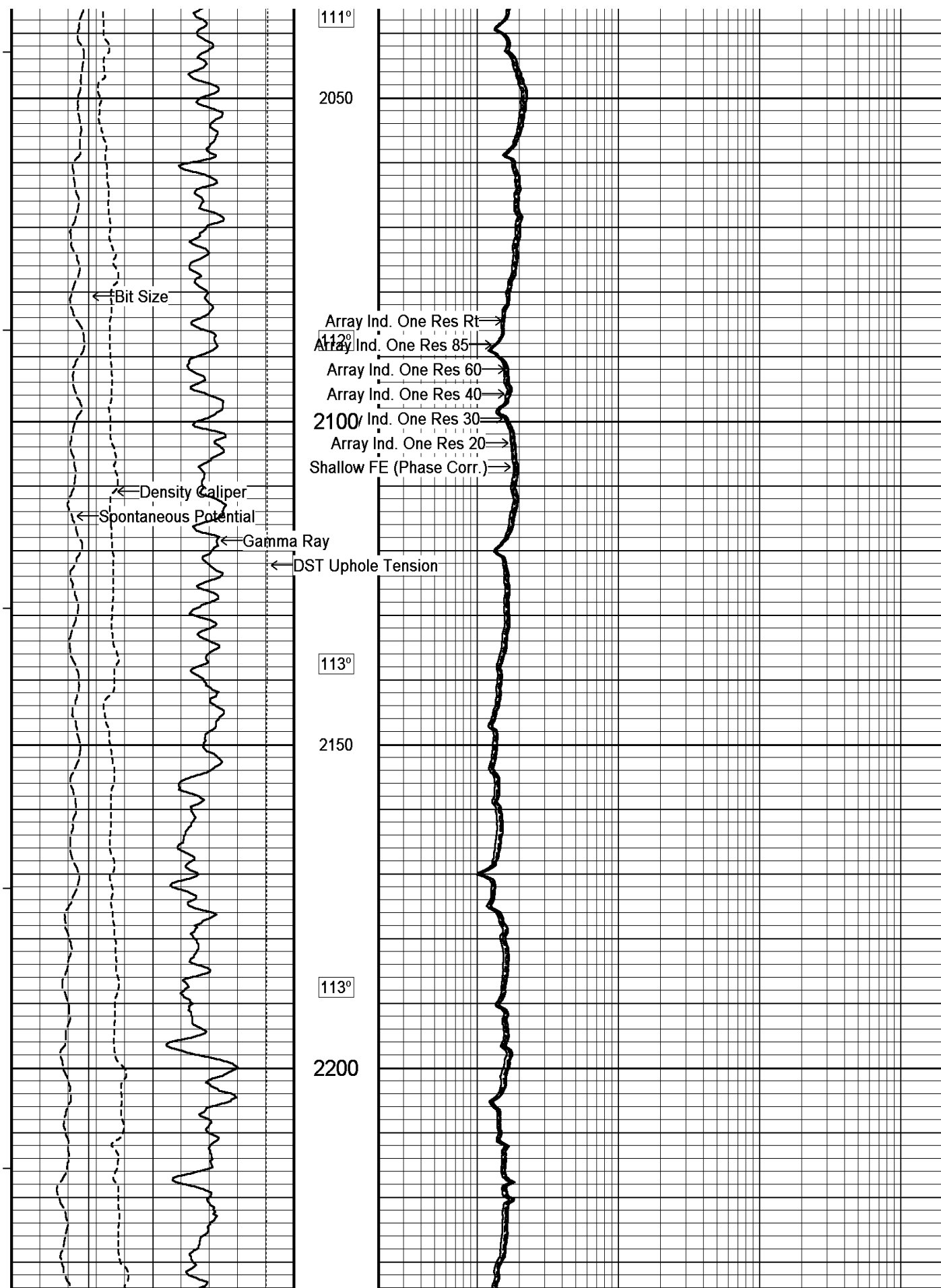
109°

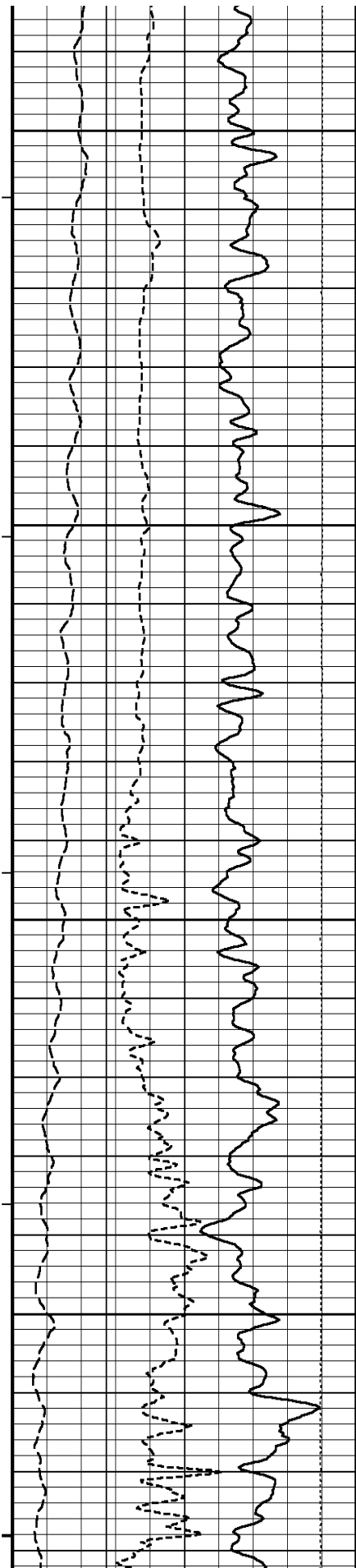
1950

110°

2000







114°

2250

115°

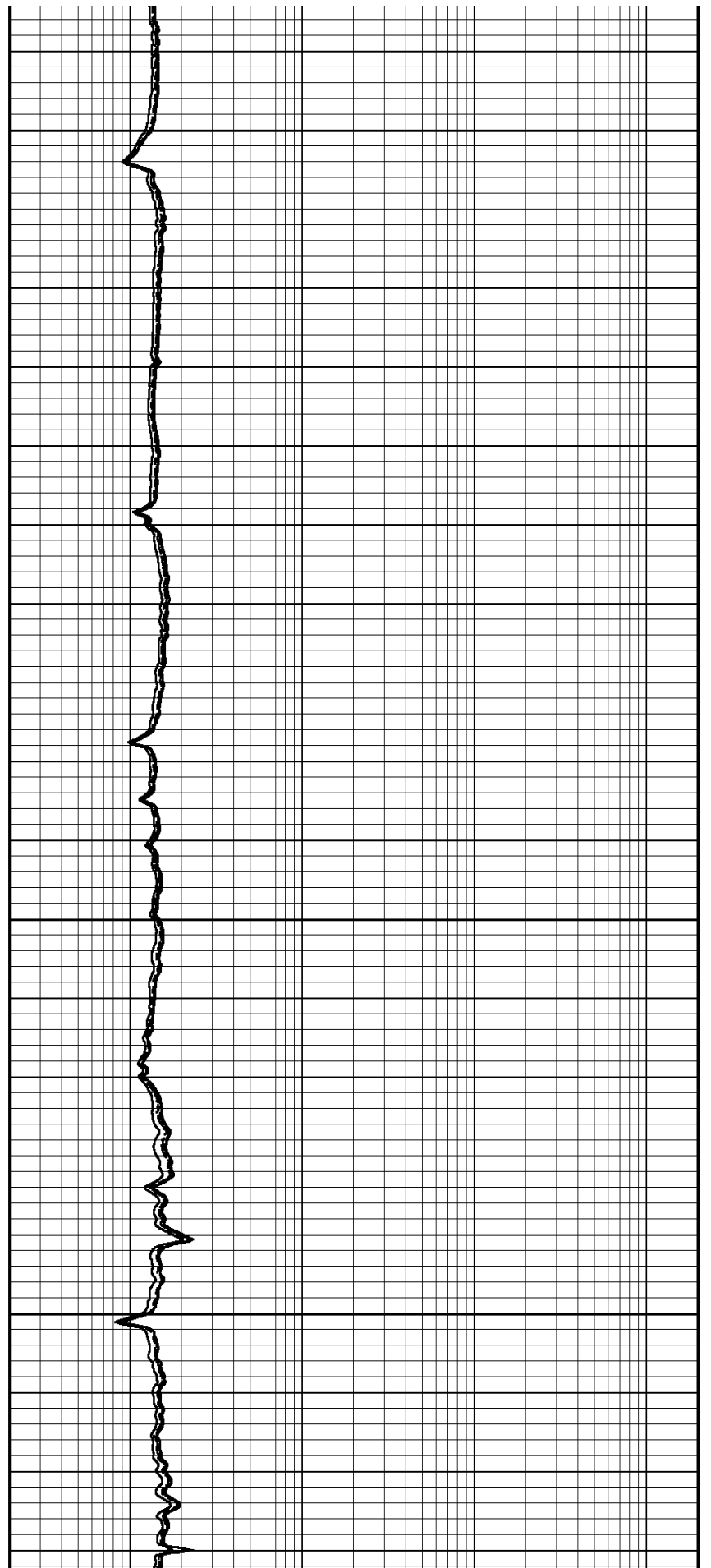
2300

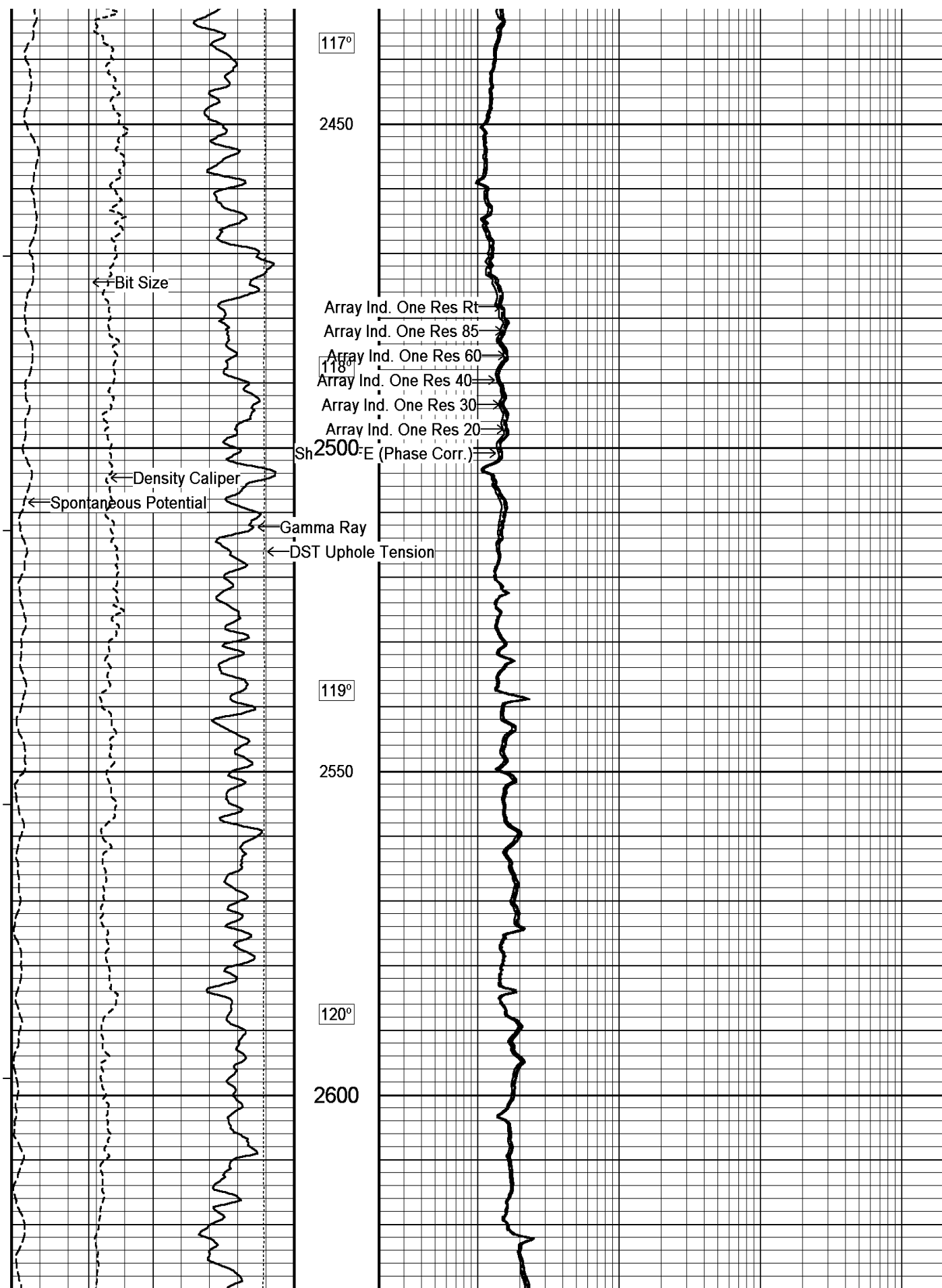
116°

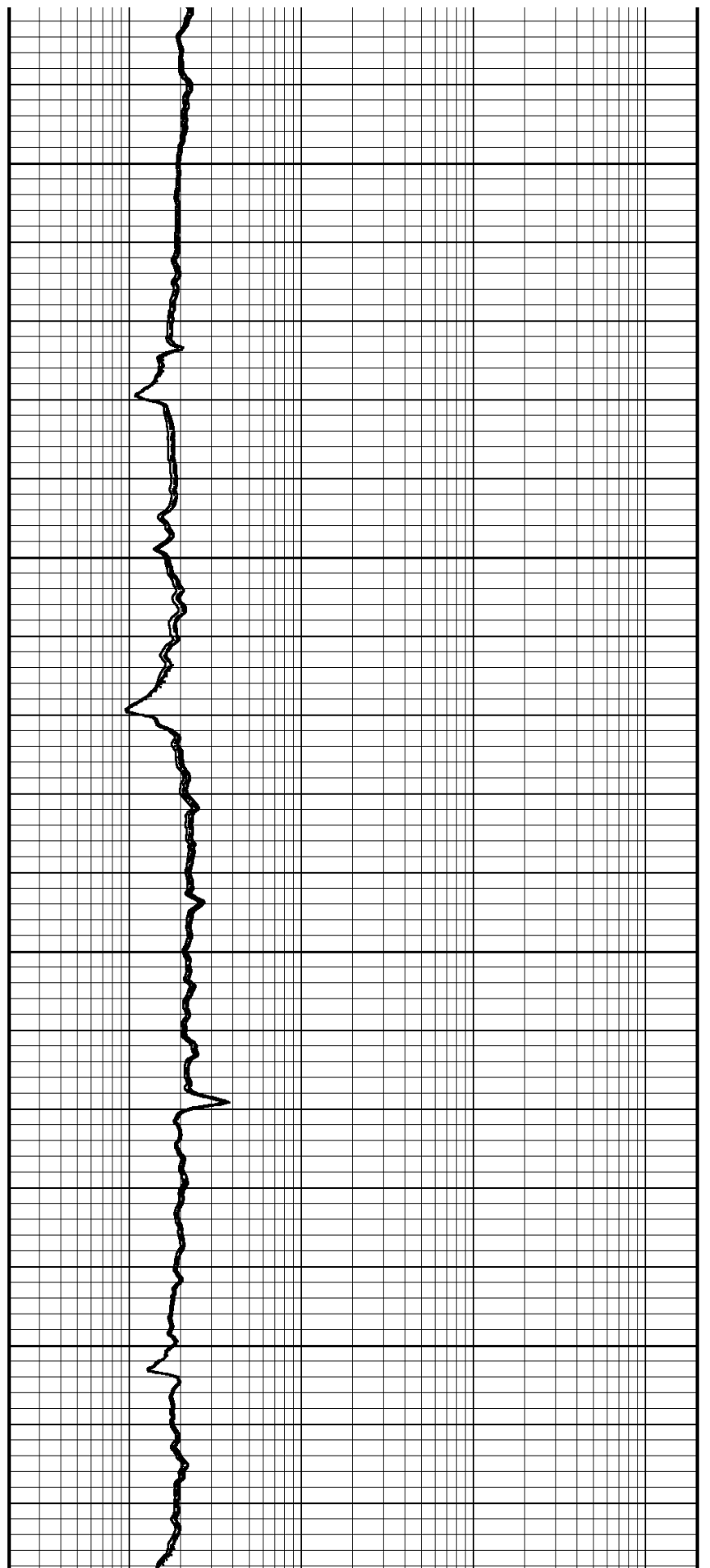
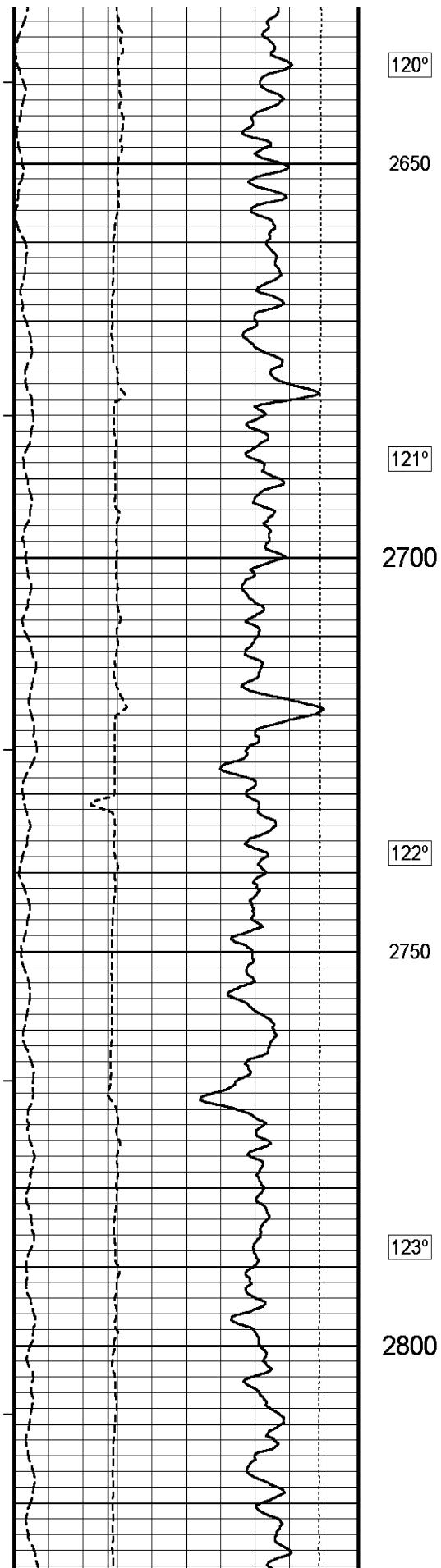
2350

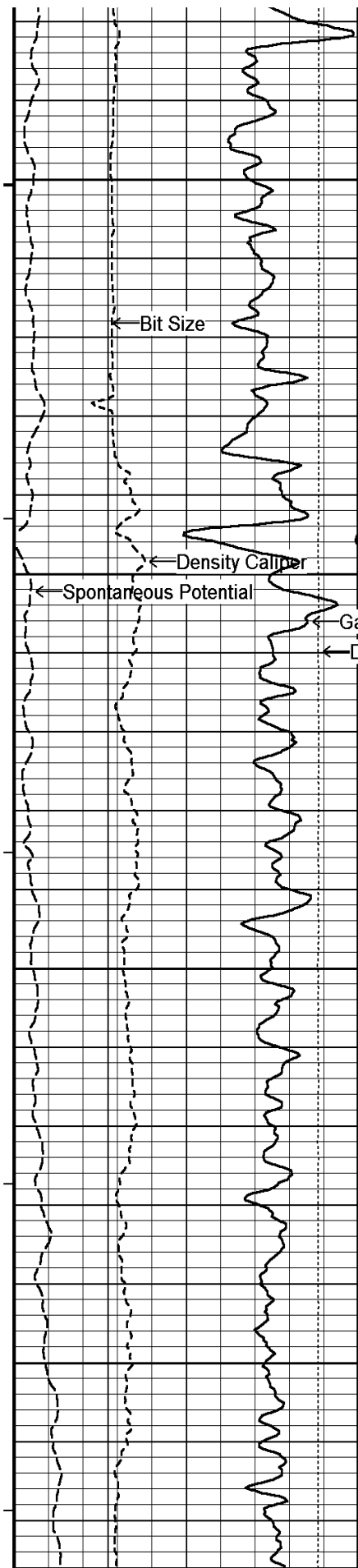
117°

2400









124°

2850

Bit Size

Density Caliper

Spontaneous Potential

Gamma Ray

DST Uphole Tension

2900

125°

2950

126°

3000

Array Ind. One Res Rt

Array Ind. One Res 85

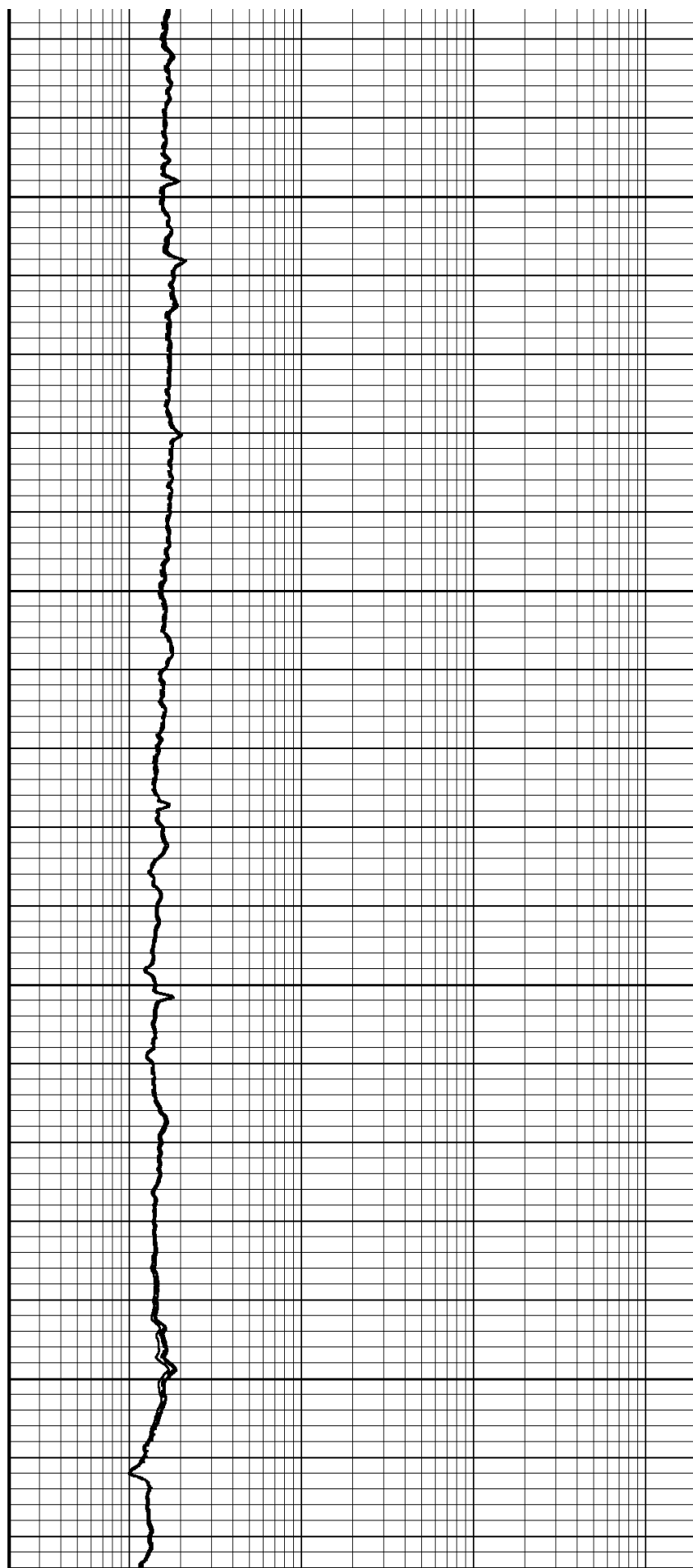
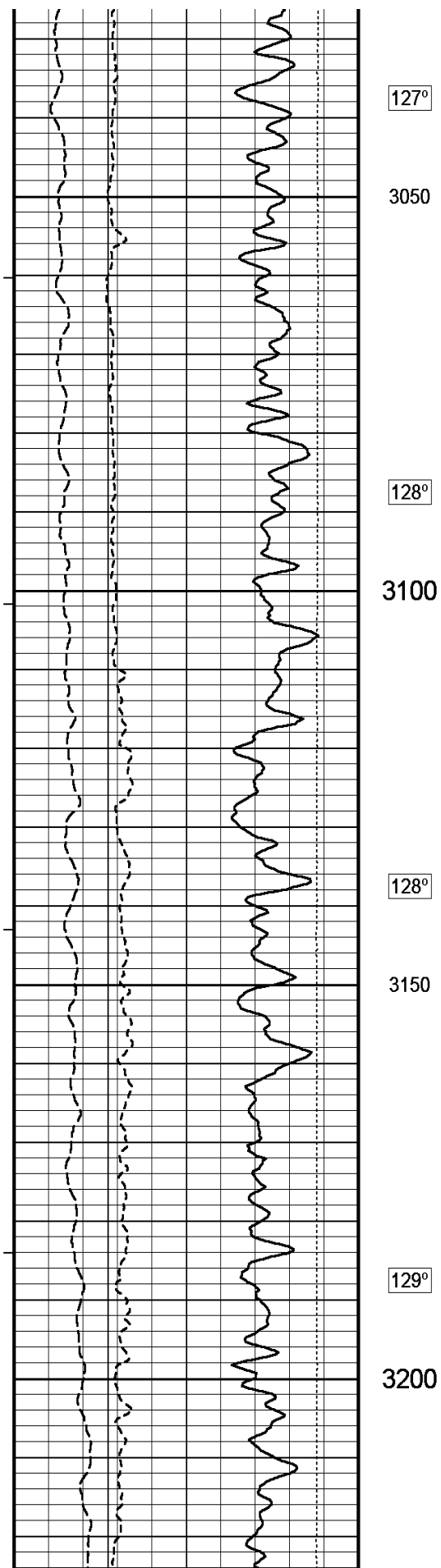
Array Ind. One Res 60

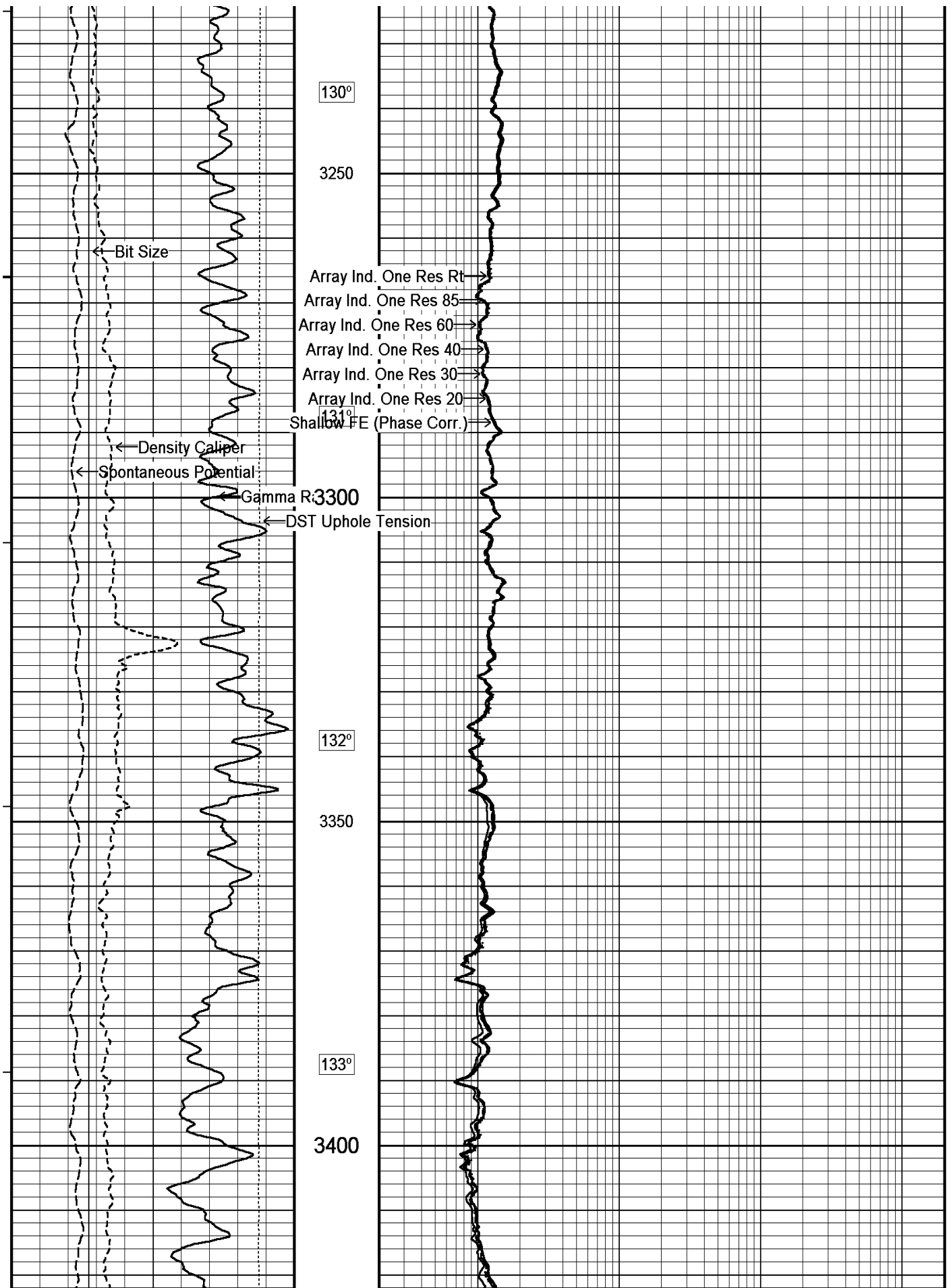
Array Ind. One Res 40

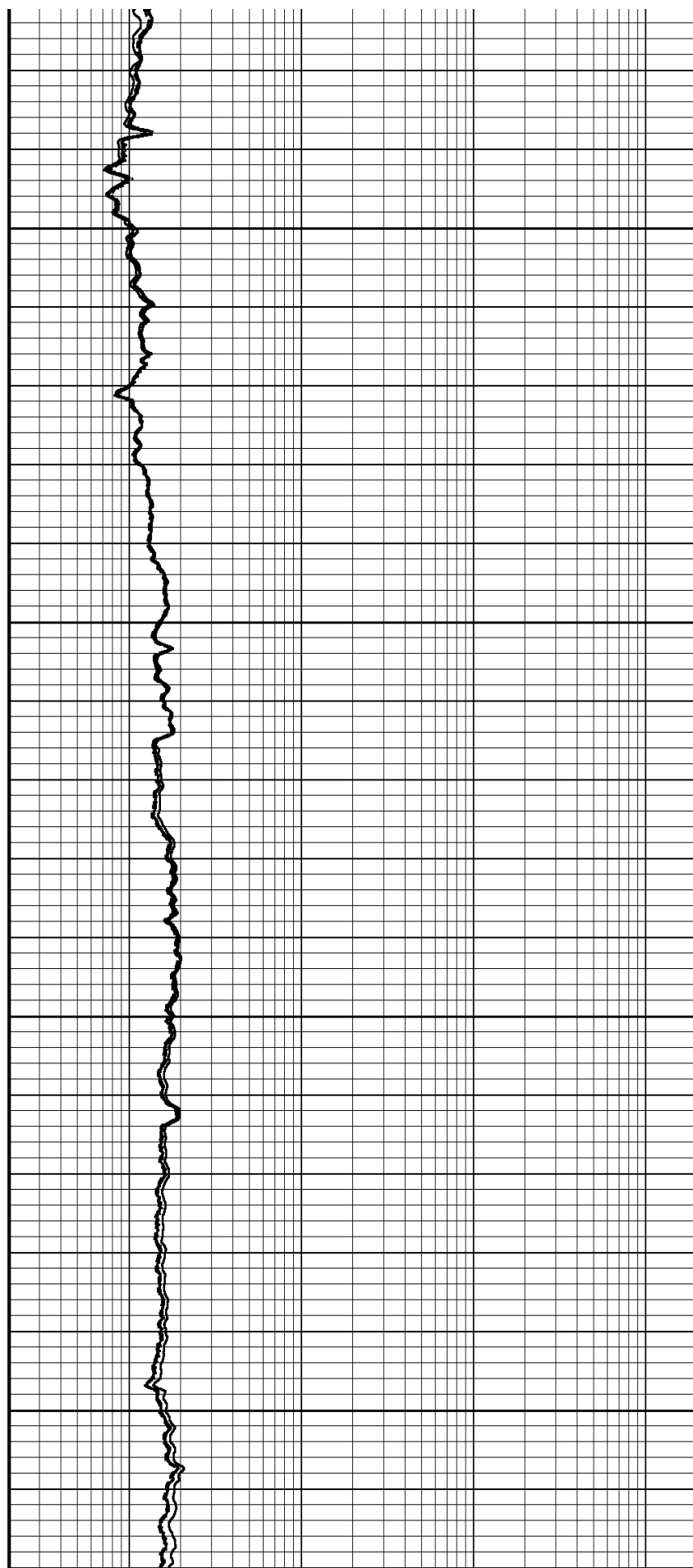
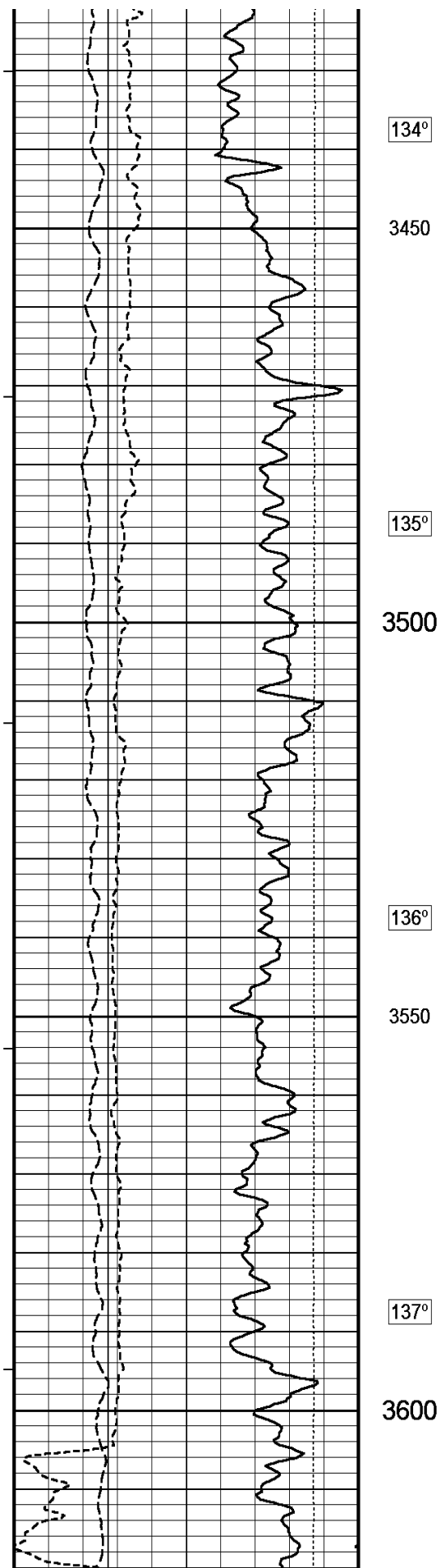
Array Ind. One Res 30

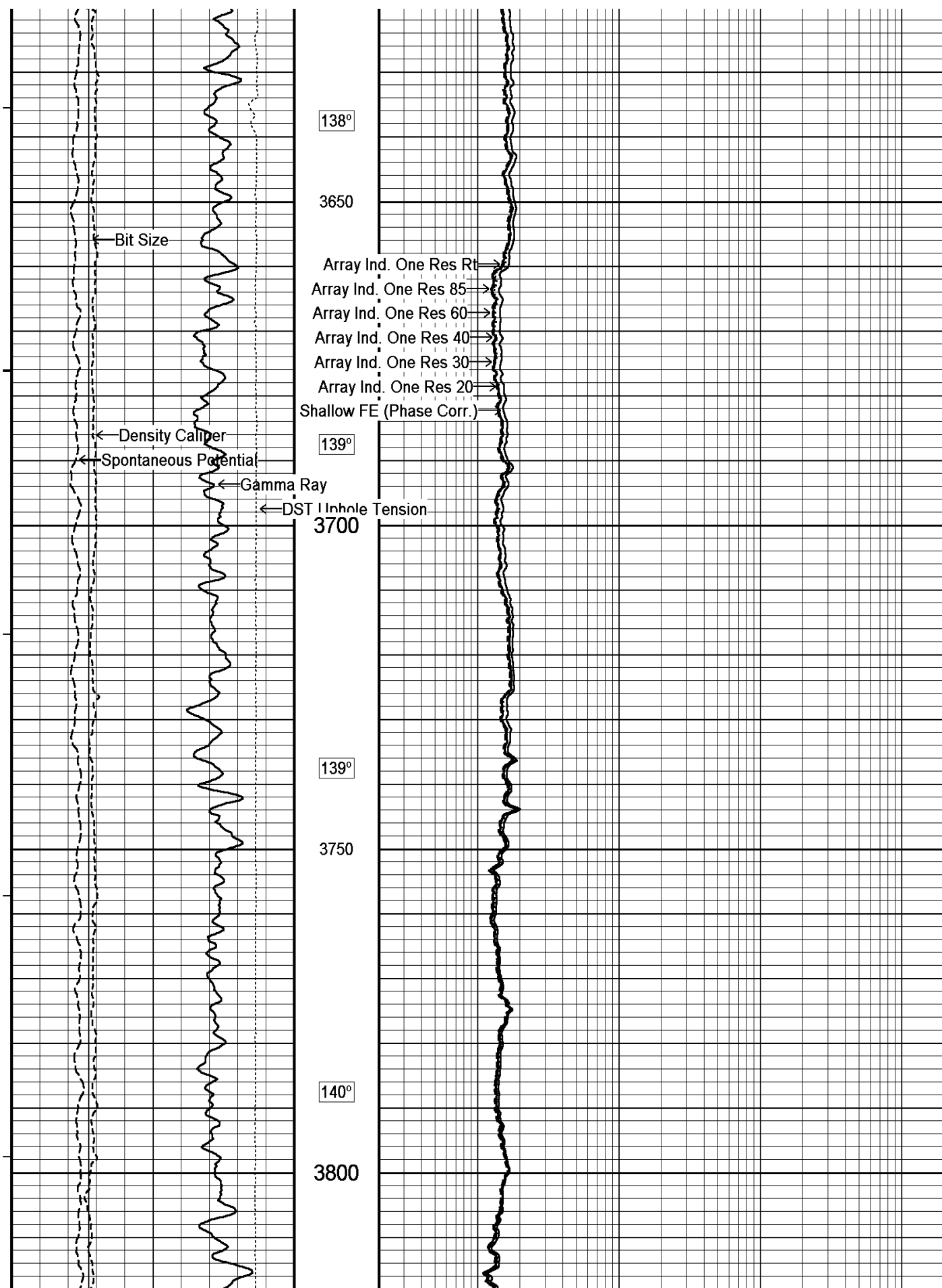
Array Ind. One Res 20

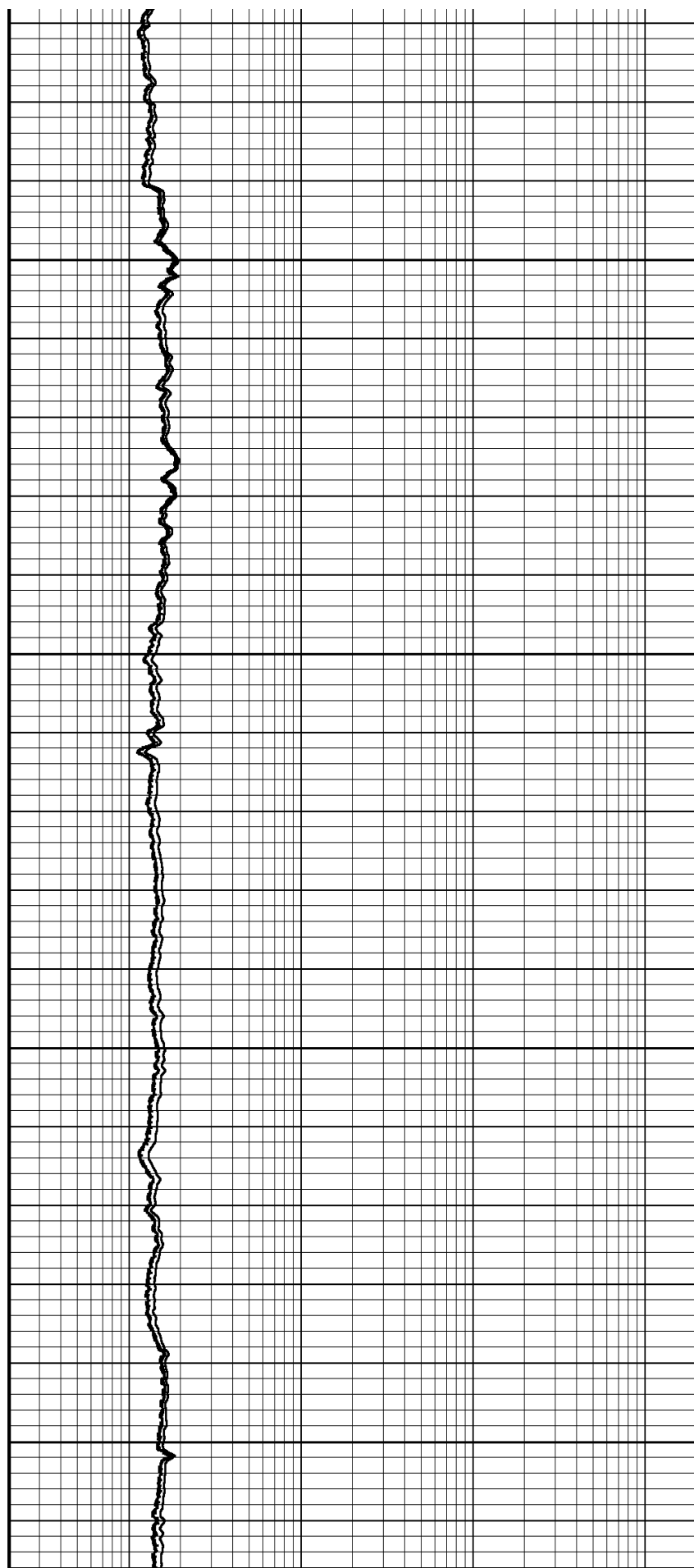
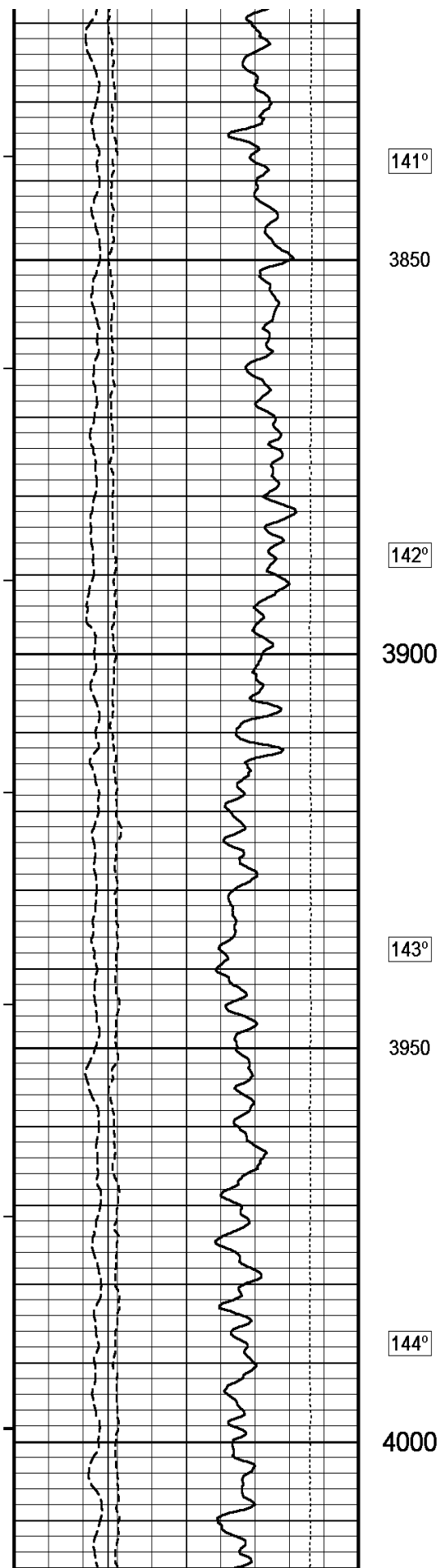
Shallow FE (Phase Cor.)

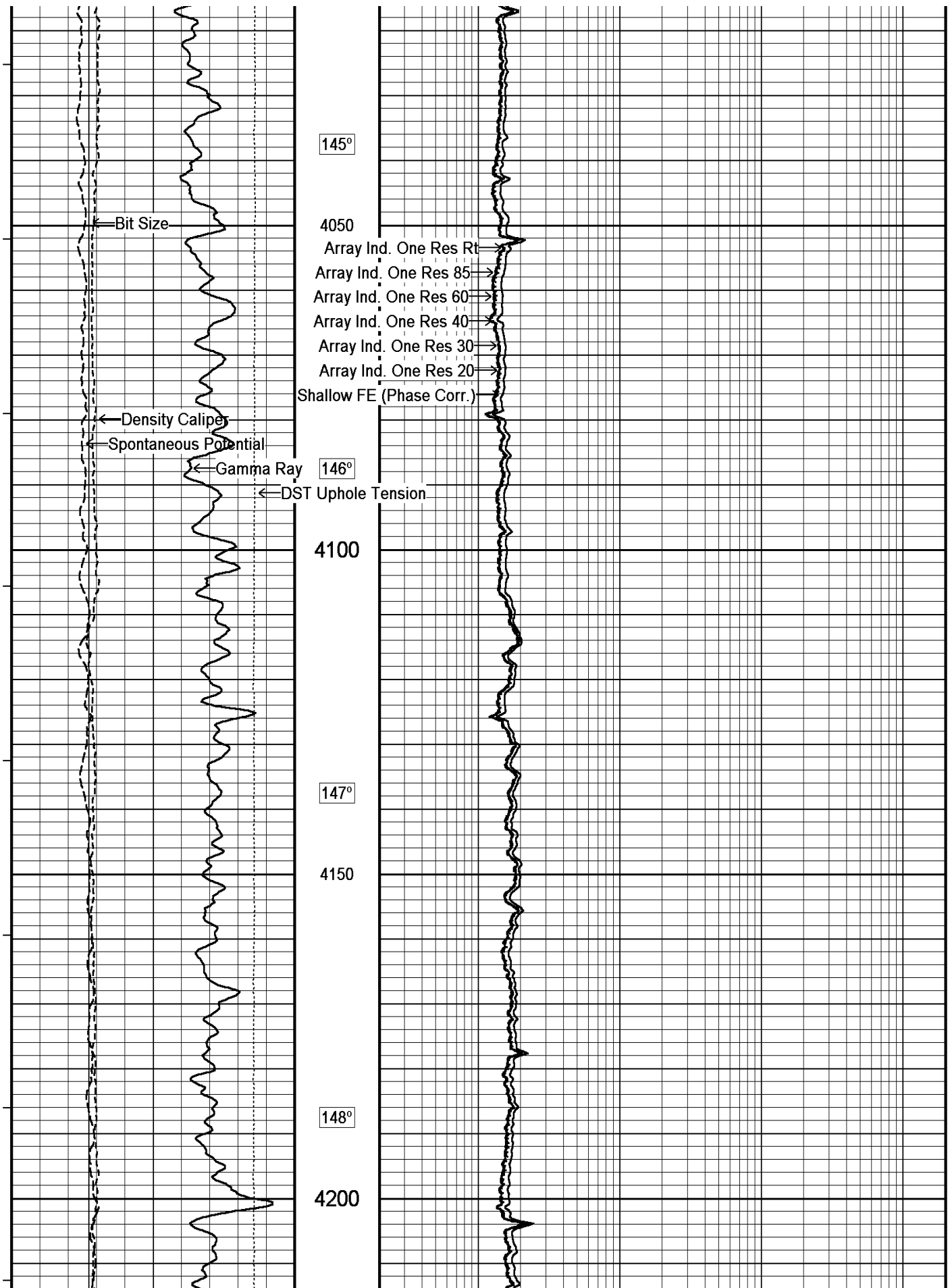


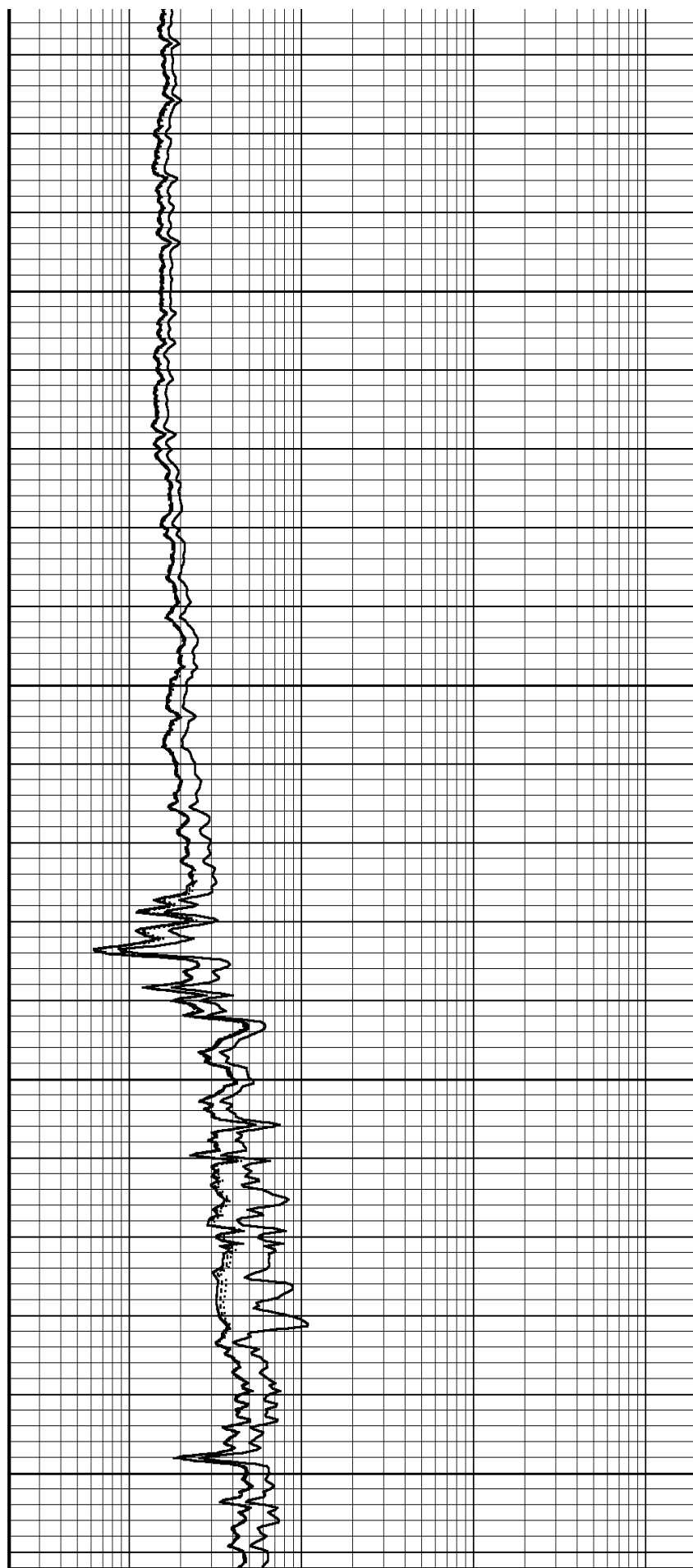
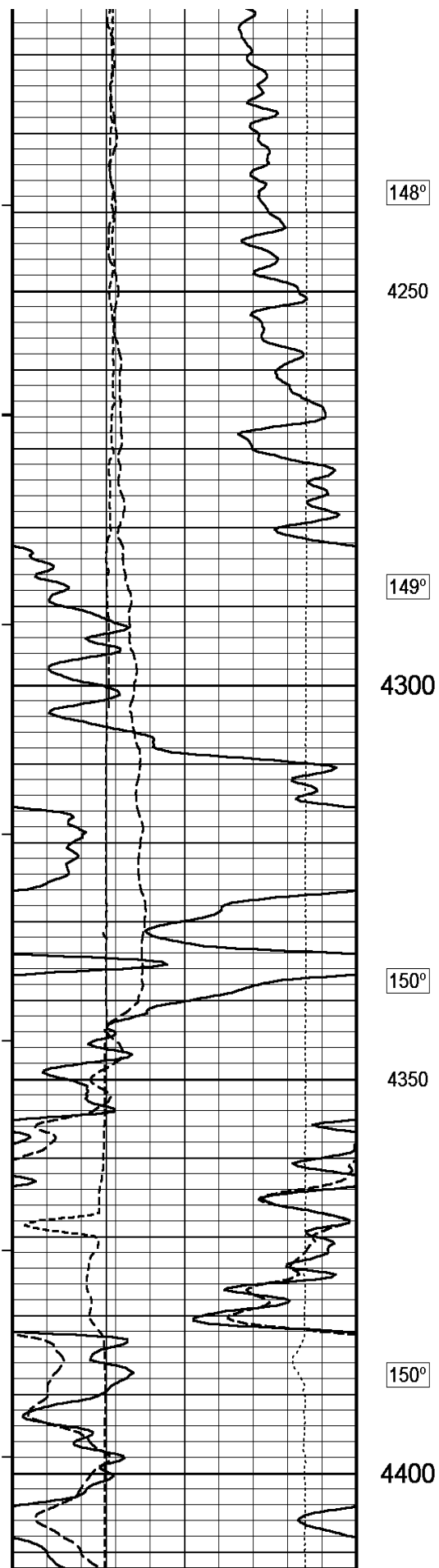


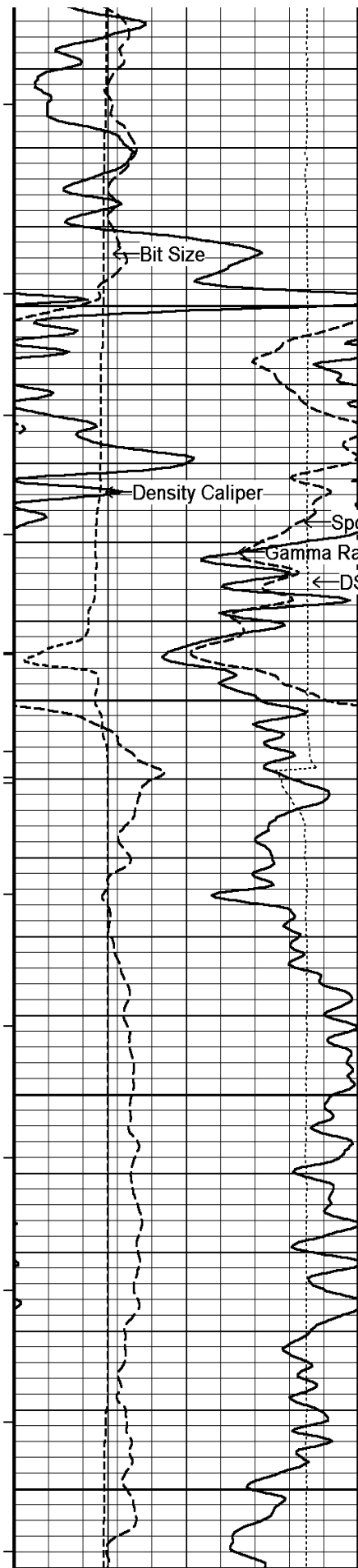












151°

4450

Spontaneous Potential

Gamma Ray

DST Uphole Tension

152°

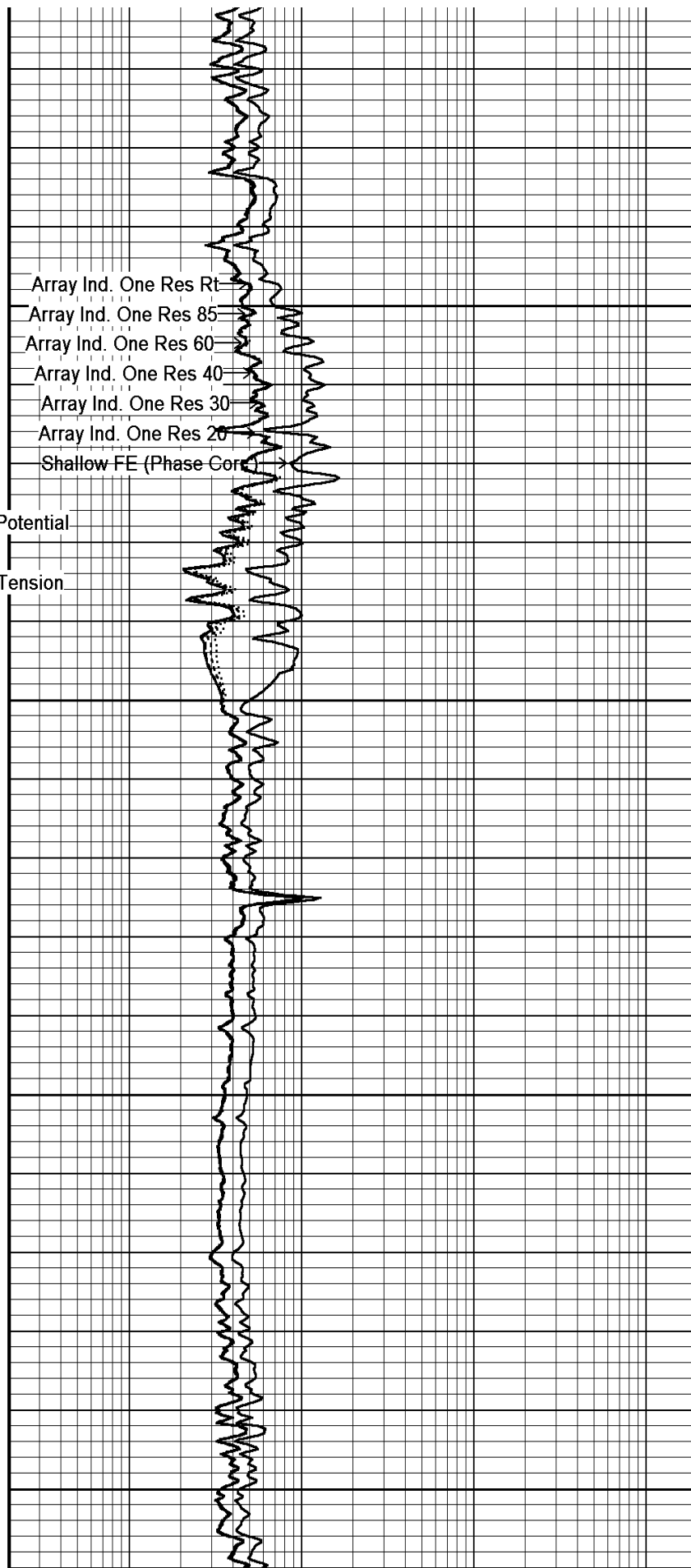
4500

153°

4550

155°

4600



Array Ind. One Res Rt

Array Ind. One Res 85

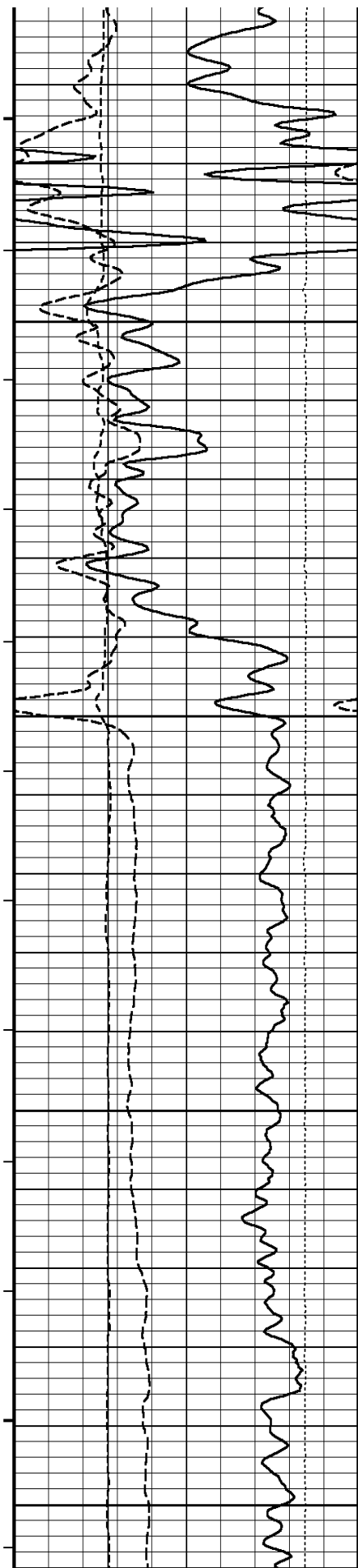
Array Ind. One Res 60

Array Ind. One Res 40

Array Ind. One Res 30

Array Ind. One Res 20

Shallow FE (Phase Cor)



156°

4650

157°

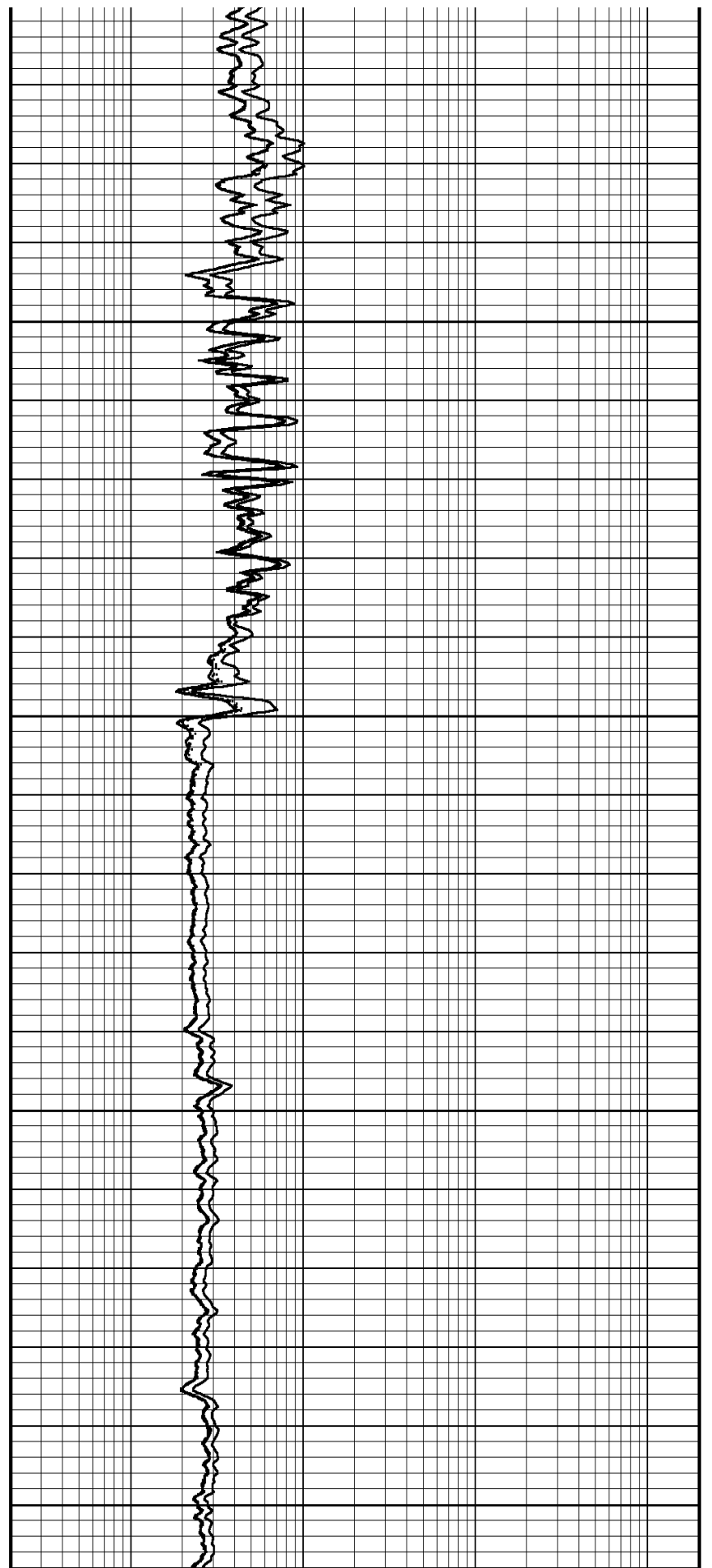
4700

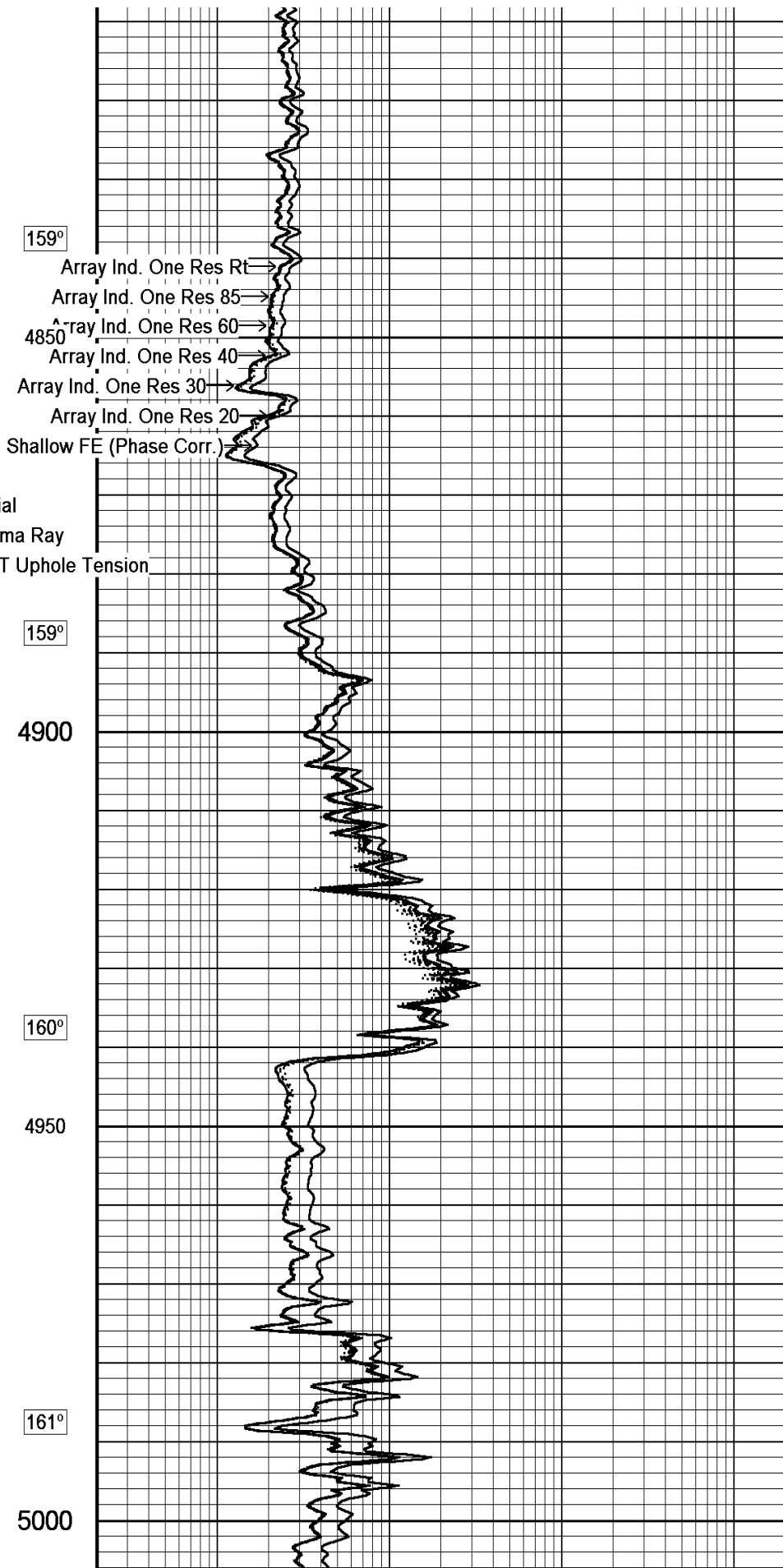
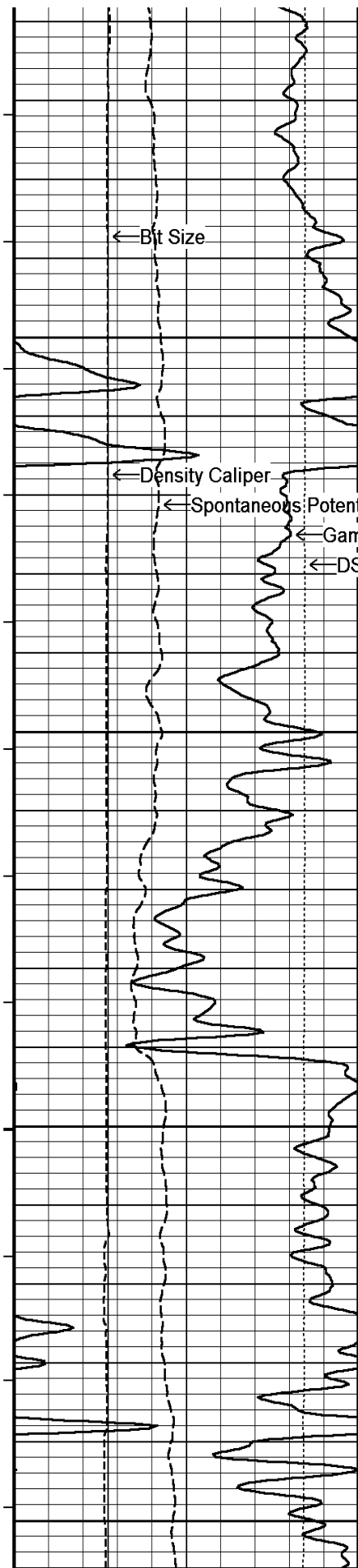
157°

4750

158°

4800





← Bit Size

159°

Array Ind. One Res Rt →

Array Ind. One Res 85 →

4850 Array Ind. One Res 60 →

Array Ind. One Res 40 →

Array Ind. One Res 30 →

Array Ind. One Res 20 →

Shallow FE (Phase Corr.) →

← Density Caliper

← Spontaneous Potential

← Gamma Ray

← DST Uphole Tension

159°

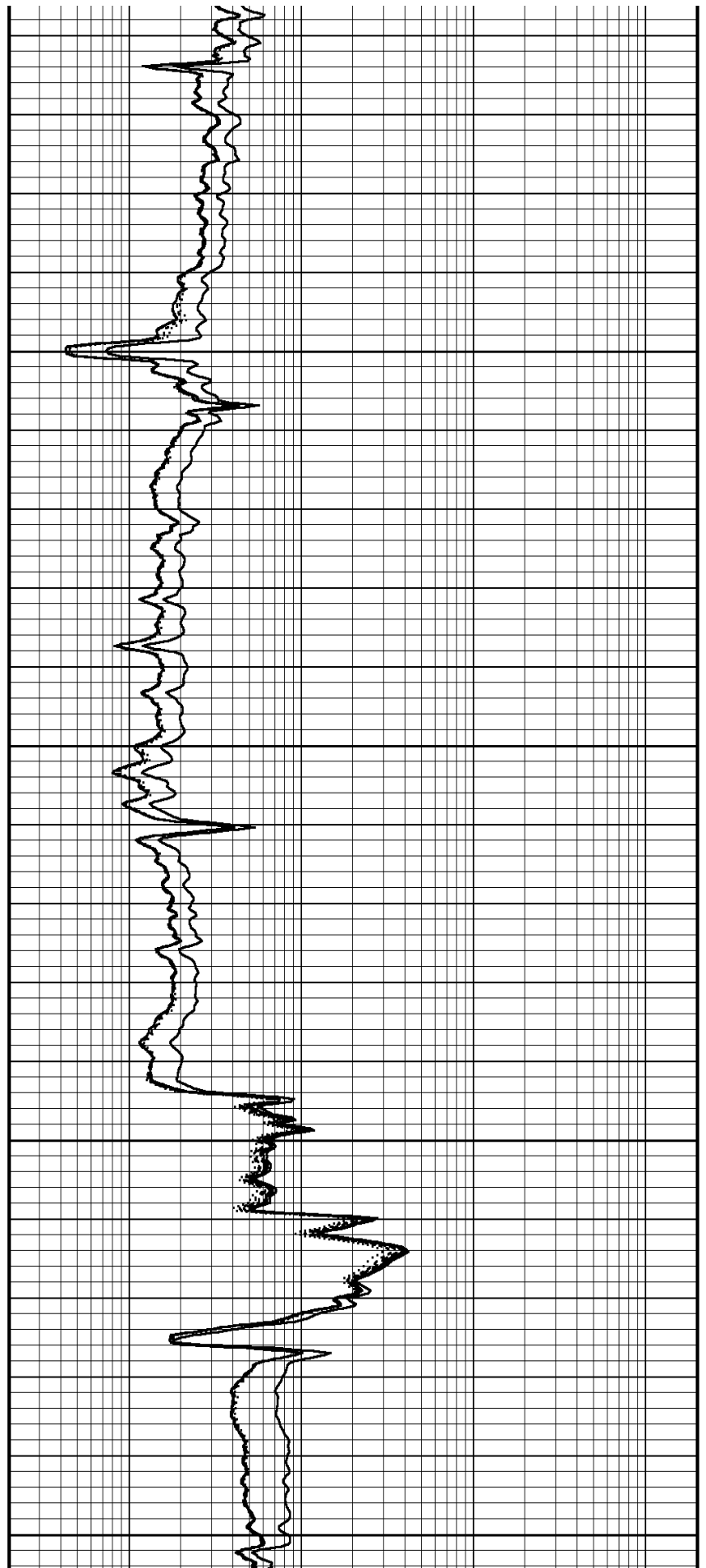
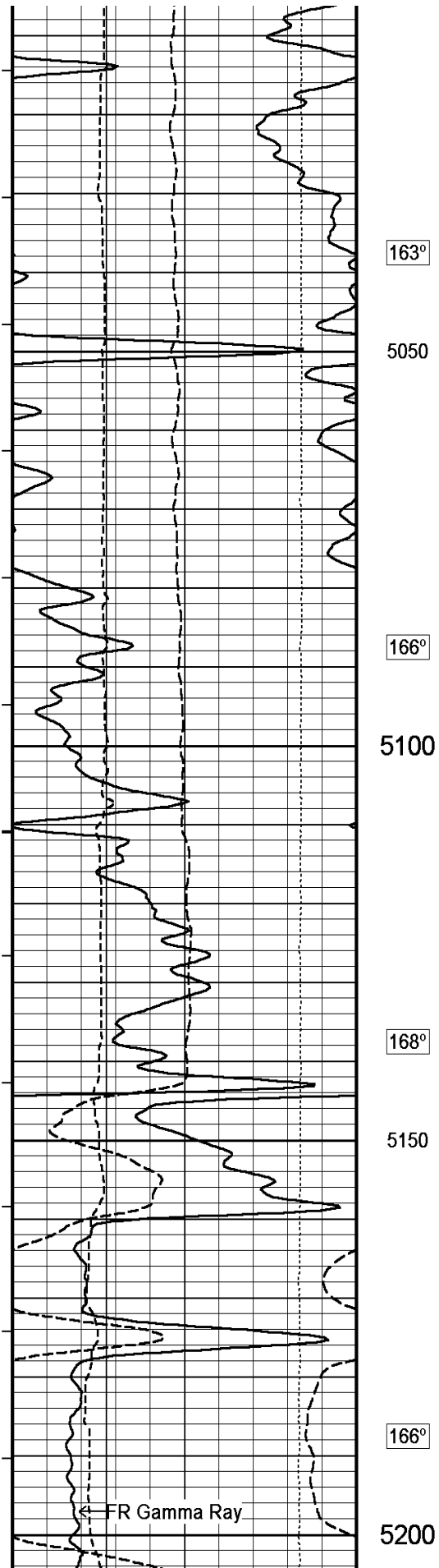
4900

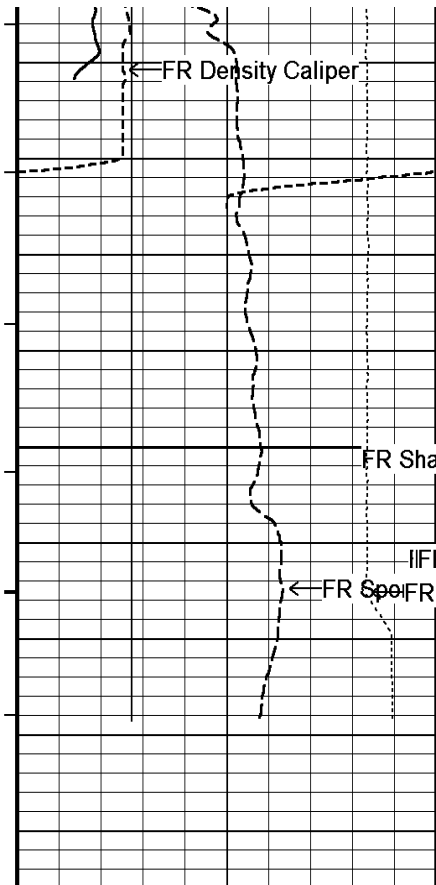
160°

4950

161°

5000





166°

5250
FR Shallow (Phase Corr.)

IFR Array Ind. One Res Rt

FR DST Uphole Tension

Depth
In
Feet

Timing Marks
every 60.0 sec

DST Uphole Tension

pounds

10000 5000 0
0 -5000 -10000

Gamma Ray

API

0 75 150

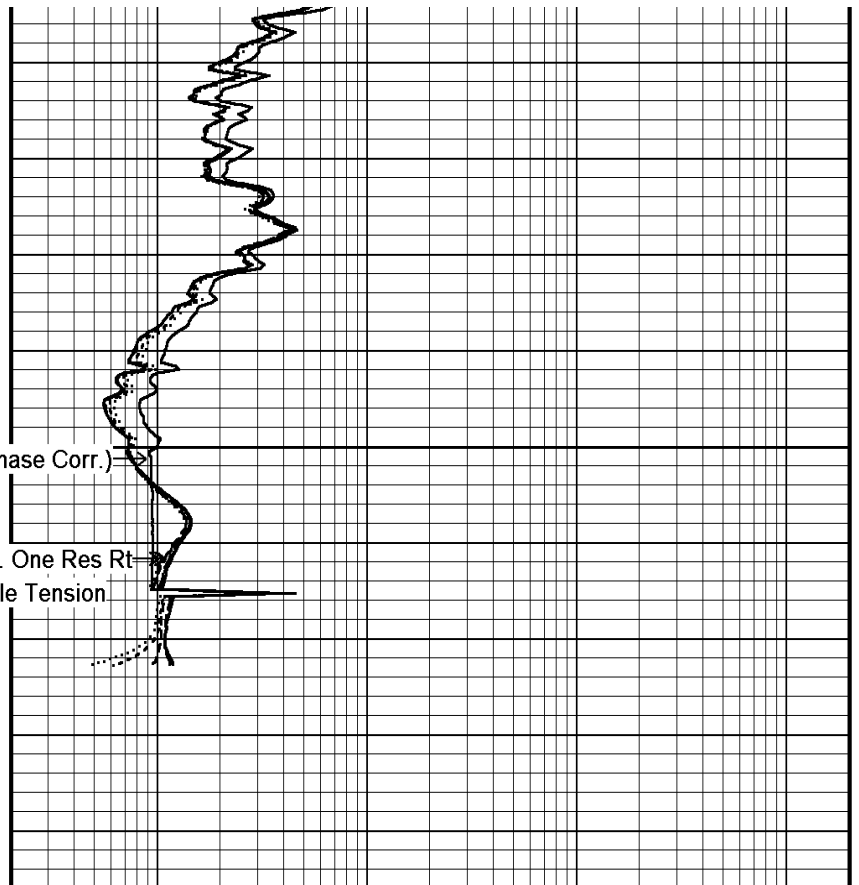
Spontaneous Potential

millivolts

- -> 10 | <- +

Density Caliper

inches



Shallow FE (Phase Corr.)
ohm metres

0.20 1 10 100 1000 2000

Array Ind. One Res 20
ohm metres

0.20 1 10 100 1000 2000

Array Ind. One Res 30
ohm metres

0.20 1 10 100 1000 2000

Array Ind. One Res 40
ohm metres

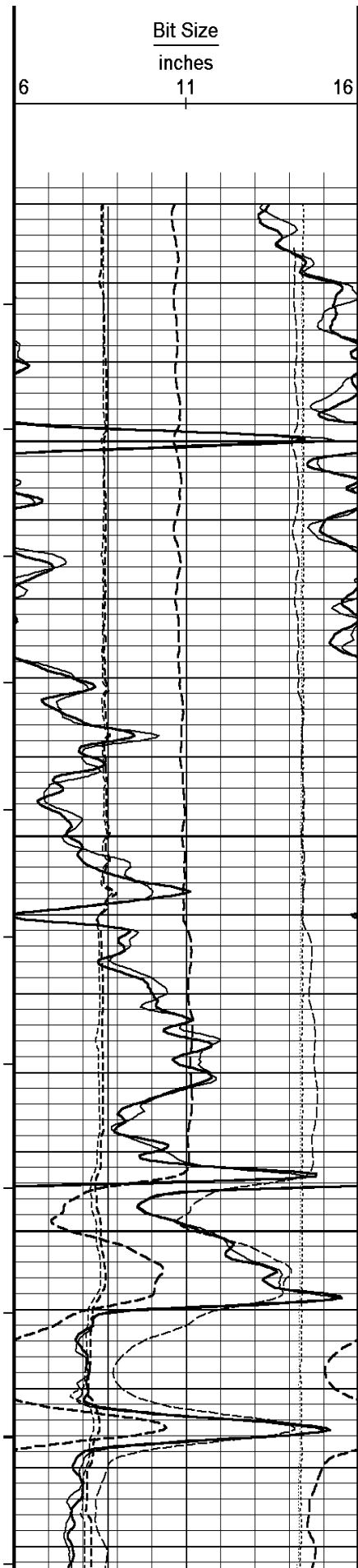
0.20 1 10 100 1000 2000

Array Ind. One Res 60
ohm metres

0.20 1 10 100 1000 2000

Borehole
Temp in
deg F

Array Ind. One Res 95



Replay
Scale
1:240

5018

5050

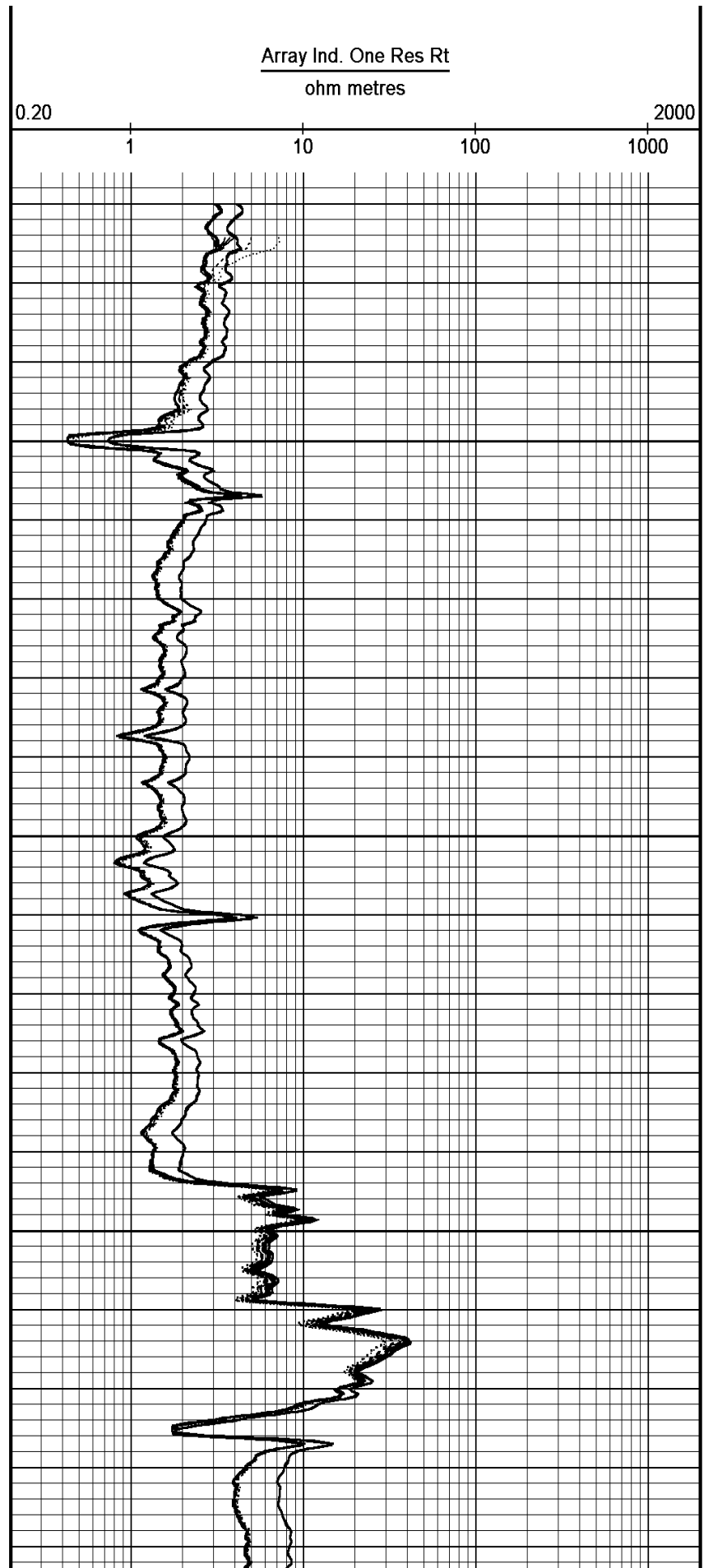
166°

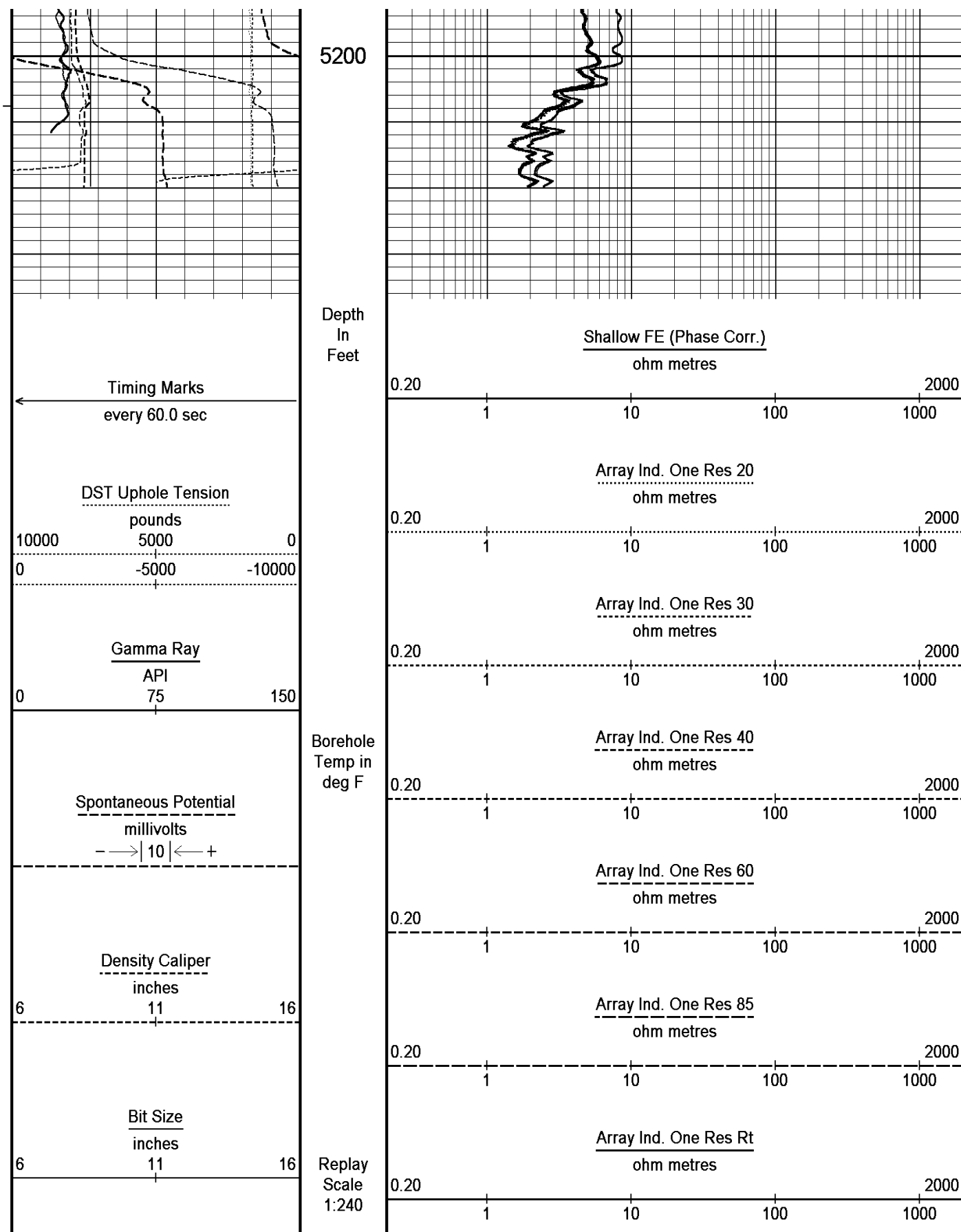
5100

168°

5150

166°





Depth Based Data - Maximum Sampling Increment 10.0cm

Filename: C:\Minimus\Logs\East Cheyenne Gas Storage LL\IECGS No 6-13 WPD007-2_MAINPASS.dta

Filename: C:\Minimus\Logs\East Cheyenne Gas Storage LL\IECGS No 6-13 WPD007-2_REPEAT.dta

Custom Marker: Length: 40.00 7776 Plot: 40.00 7776

Plotted on 06-OCT-2012 06:12

Recorded on 06-OCT-2012 01:43

Recorded on 05-OCT-2012 23:35



OVERLAY SECTION



BEFORE SURVEY CALIBRATION

C:\Minimus\Logs\East Cheyenne Gas Storage LLC\ECGS No 6-13 WPD007-2\ECGS No 6-13 WPD007-2_MAINPASS.dta

Down-hole Tension Calibration All 000

Field Calibration on 24-OCT-2010 03:34

Reading No	Measured	
1	15659.85	0.00
2	15734.68	370.00

General Constants All 000

Last Edited on 05-OCT-2012,17:12

General Parameters		
Mud Resistivity	4.230	ohm-metres
Mud Resistivity Temperature	84.700	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	7.000	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 05-OCT-2012 16:38

Reading No	Measured	Calibrated (lbs)
1	15464.68	0.00
2	16668.93	515.00

Gamma Calibration MCG-D.K 483

Field Calibration on 05-OCT-2012 04:32

	Measured	Calibrated (API)
Background	76	51
Calibrator (Gross)	851	570
Calibrator (Net)	776	519

Gamma Constants MCG-D.K 483

Last Edited on 05-OCT-2012,14:10

Gamma Calibrator Number	GRCC119	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-D.K 483

Field Calibration on 23-SEP-2012,10:15

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

High Resolution Temperature Calibration MCG-D.K 483

Field Calibration on 30-SEP-2012,04:09

	Measured	Calibrated(Deg F)
Lower	50.00	50.00

Upper	75.00	75.00		
High Resolution Temperature Constants MCG-D.K 483			Last Edited on 02-OCT-2012,09:19	
Pre-filter Length	11			
Neutron Calibration MDN-B.J 372			Base Calibration on 11-SEP-2012 10:37 Field Check on 05-OCT-2012 04:43	
Base Calibration				
		Measured	Calibrated (cps)	
	Near	Far	Near	Far
	2935	90	3714	110
Ratio	32.738		33.764	
Field Calibrator at Base			Calibrated (cps)	
			2265	3365
Ratio	0.673			
Field Check			Calibrated (cps)	
			2313	3388
Ratio				
Neutron Constants MDN-B.J 372			Last Edited on 05-OCT-2012,14:11	
Neutron Source Id	P31115B			
Neutron Jig Number	NJ5299			
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	MCG 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			
Accelerometer Parameters MIE-A.J 244				
Date Of Last Accelerometer Calibration	05-OCT-2012,13:09			
	X Accelerometer	Y Accelerometer	Z Accelerometer	
Slope	-1.102009	-1.108690	-1.102611	
Offset	-0.007164	0.008495	-0.004580	
Accelerometer Constants MIE-A.J 244			Last Edited on 05-OCT-2012,13:10	
Accelerometer Calibrator Number	000			
Accelerometer Temperature Characterisation				
X Accelerometer				
Serial Number	1016			
Calibration Date	12-Apr-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.93698e-005	-7.60293e-010	6.54727e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.59257e-004	6.13375e-007	-3.90888e-010
Y Accelerometer				
Serial Number	973			
Calibration Date	12-Apr-2011			

Calibration Date		19-Jan-2011		
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.95276e-005	-1.88058e-008	2.74122e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.75268e-004	3.53140e-007	7.52116e-010
Z Accelerometer				
Serial Number	1032			
Calibration Date	18-Apr-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-1.14960e-005	3.94288e-009	8.97135e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.88058e-004	2.44833e-007	8.38007e-010
Magnetometer Parameters MIE-A.J 244				
Date Of Last Magnetometer Calibration		05-OCT-2012,13:13		
	X Magnetometer	Y Magnetometer	Z Magnetometer	
Slope	-1.000000	-1.000925	-0.993497	
Offset	0.008903	-0.008749	0.009457	
Magnetometer Constants MIE-A.J 244				Last Edited on
Magnetometer Calibrator Number		000		
Compact Micro Imager Constants MIE-A.J 244				Last Edited on
Sonde Configuration		Imager Mode		
Arm-Pad Kit	Normal Pads (12.25 in)			
Arm-Pad Kit Serial Number				
Centre Pad 1 Rotational Offset	0.00	degrees		
Image/Borehole Ovality Reference	Azimuth of Pad 1			
Non Active Buttons	Omit			
Search Angle	0.00	degrees		
Correlation Interval	3.28	feet		
Correlation Step	1.64	feet		
Current Offset	0.0000	mAmp		
Squasher Start	0.0500	mAmp		
Image Processing	Enabled			
Caliper Calibration MIE-A.J 244		Base Calibration on 05-OCT-2012 13:33 Field Calibration on 05-OCT-2012 13:37		
Base Calibration				
Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)	
1	25476	26124	5.97	
2	35871	36979	7.96	
3	44943	46748	9.87	
4	59347	57917	11.92	
5	0	0	0.00	
Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas. Calibrator Size (in)
1	22282	27314	24804	22108 5.97
2	33535	36001	32513	31768 7.96
3	41769	44988	41324	39908 9.87
4	54189	52954	48629	51823 11.92
5	0	0	0	0 0.00
Field Calibration				
	Measured	Measured	Actual	
	Pads 1-5 Caliper(in)	Pads 3-7 Caliper(in)	Caliper(in)	
	8.47	7.99	7.96	
	Measured	Measured	Measured	Actual
	Pad 2 Caliper(in)	Pad 4 Caliper(in)	Pad 6 Caliper(in)	Pad 8 Caliper(in) Caliper(in)
	4.26	3.72	3.77	4.34 7.96
Caliper Constants MIE-A.J 244				Last Edited on 05-OCT-2012 13:36

Caliper Constants MIE-A.J 244				Last Edited on 05-OCT-2012,10:20	
Caliper Difference for BRKT		0.120	inches		
Navigation Constants MIE-A.J 244				Last Edited on 05-OCT-2012,14:15	
Magnetic Declination		7.85	degrees	East	
FE Calibration MFE-A.A 76				Base Calibration on 10-SEP-2012 11:36 Field Check on 05-OCT-2012 04:36	
Base Calibration					
	Measured	Calibrated (ohm-m)			
Reference 1	0.0	0.0			
Reference 2	964.4	126.8			
Base Check		279.9			
Field Check		280.3			
FE Constants MFE-A.A 76				Last Edited on 05-OCT-2012,14:15	
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		1.0 inches			
High Resolution Temperature Calibration MAI-B.A 219				Field Calibration on 10-AUG-2011,00:10	
	Measured	Calibrated(Deg F)			
Lower	50.00	50.00			
Upper	75.00	75.00			
High Resolution Temperature Constants MAI-B.A 219				Last Edited on 30-SEP-2012,04:08	
Pre-filter Length		11			
Induction Calibration MAI-B.A 219				Base Calibration on 08-MAY-2012,15:56 Field Check on 05-OCT-2012 04:26	
Base Calibration					
Test Loop Calibration					
Channel	Low	High	Low	High	
1	17.4	478.1	9.3	966.2	
2	5.8	380.3	7.6	821.4	
3	3.5	258.5	5.2	566.0	
4	1.9	136.0	2.6	279.2	
Array Temperature		77.2	Deg F		
Channel					
Base Check (mmho/m)		Field Check (mmho/m)			
	Low	High	Low	High	
1	0.0	0.0	11.5	3793.9	
2	0.0	0.0	30.8	3537.8	
3	0.0	0.0	28.6	3056.6	
4	0.0	0.0	19.3	2028.9	
Deep		16.5 1949.2			
Medium		42.7 4089.1			
Shallow		47.4 5284.2			
Array Temperature		0.0	52.9 Deg F		
Induction Constants MAI-B.A 219				Last Edited on 05-OCT-2012,14:16	
Induction Model		RtAP-WBM			
Caliper for Borehole Corr.		Density Caliper			
Units Size for Borehole Correction		N/A inches			

Hole Size for Borehole Correction	N/A	inches			
Tool Centred	No				
Stand-off Type	Fins				
Stand-off	1.00	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-C.J 378		Base Calibration on 29-SEP-2012 18:35 Field Calibration on 05-OCT-2012 04:53			
Base Calibration					
Reading No	Measured	Calibrator Size (in)			
1	14193	3.99			
2	22768	5.97			
3	31248	7.96			
4	39297	9.87			
5	48452	11.92			
6	N/A	N/A			
Field Calibration					
	Measured Caliper (in)	Actual Caliper (in)			
	7.86	7.96			
Photo Density Calibration MPD-C.J 378		Base Calibration on 27-SEP-2012 12:49 Field Check on 05-OCT-2012 04:51			
Density Calibration					
Base Calibration		Measured		Calibrated (sdu)	
	Near	Far	Near	Far	
Reference 1	39385	12332	52994	19128	
Reference 2	18690	2207	25185	2558	
Field Check at Base					
	1201.6	1277.5			
Field Check					
	1197.1	1283.9			

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	219	1074		
Reference 1	13507	39225	0.348	0.309
Reference 2	5341	18558	0.293	0.274

Field Check at Base

219.0 1074.2

Field Check

220.3 1075.4

Density Constants MPD-C.J 378

Last Edited on 05-OCT-2012,14:12

Density Source Id	P15771B
Nylon Calibrator Number	DNC-D-527
Aluminium Calibrator Number	DAC-D-527
Density Shoe Profile	8 inch
Caliper Source for Processing	Density Caliper
PE Correction to Density	Not Applied
Mud Density	1.17 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	0.00

DOWNHOLE EQUIPMENT

C:\Minimus\Logs\East Cheyenne Gas Storage LLC\ECGS No 6-13 WPD007-2\ECGS No 6-13 WPD007-2_MAINPASS.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

SHA-H Compact Swivel Head Adaptor

SHA-H 142 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

Compact Comms Gamma

MCG-D.K 483 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Neutron

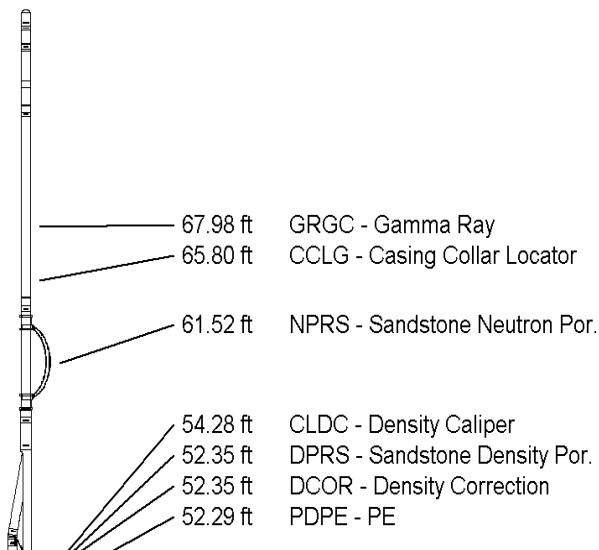
MDN-B.J 372 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-C.J 378 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

MIS-A.A Compact Inline Bowspring sub

MIS-A.A 70 LG: 5.70 ft WT: 22.1 lb OD: 2.24 in



MIS-A.A 70 LG: 5.70 ft WT: 55.1 lb OD: 2.24 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 112 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.A Compact Inline Standoff sub
MIS-E.A 334 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 143 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.B Compact Swivel Head Adaptor
SHA-J.B 574 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

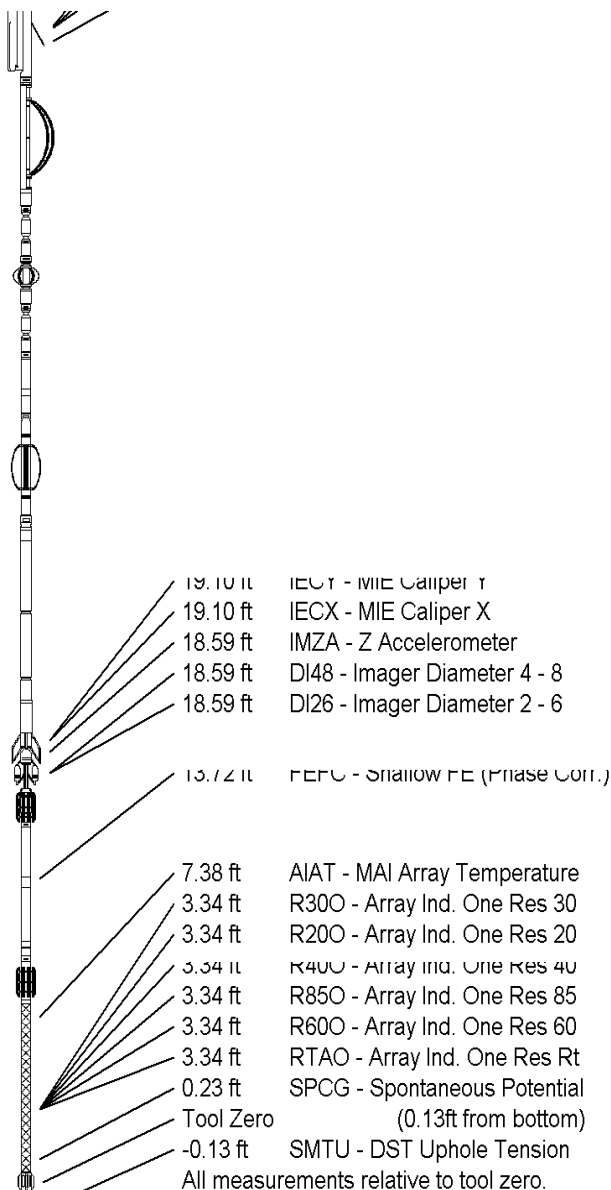
Compact MMI Memory Section
MIM-A.A 125 LG: 4.65 ft WT: 26.5 lb OD: 2.24 in

Compact MMI Electrode Section
MIE-A.J 244 LG: 13.96 ft WT: 99.2 lb OD: 4.09 in

Compact Focussed Electric
MFE-A.A 76 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-B.A 219 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 77.14 ft Weight: 584.2 lb



COMPANY	EAST CHEYENNE GAS STORAGE LLC
WELL	ECGS NO 6-13 WPD007-2
FIELD	PEETZ WEST
PROVINCE/COUNTY	LOGAN
COUNTRY/STATE	USA/COLORADO

Elevation Kelly Bushing	4564.00	feet	First Reading	5262.00	feet
Elevation Drill Floor	4563.00	feet	Depth Driller	5265.00	feet
Elevation Ground Level	4550.00	feet	Depth Logger	5265.00	feet



Weatherford®

ARRAY INDUCTION
LOGS

