HALLIBURTON

ARRAY COMPENSATED TRUE RESISITIVITY LOG

COMPANY OXY USA INC
WELL ELIZABETH A COX #5
FIELD LEMON NW
COUNTY HASKELL
STATE KANSAS

COMPANY **OXY USA INC**

WELL **ELIZABETH A COX #5**

FIELD **LEMON NW**

COUNTY **HASKELL** STATE **KANSAS**

API No. 15-081-21942

Location 1455' FSL & 330' FEL

Sect. 8 Twp. 30S Rge. 33W

Other Services:
SDLT/DSNT
MICRO
BSAT

Permanent Datum	GL	Elev. 2969.0 ft	Elev.: K.B. 2980.0 ft
Log measured from	KB	11.0 ft above perm. Datum	D.F. 2978.0 ft
Drilling measured from	KB		G.L. 2969.0 ft

Date		09-Jun-11						
Run No.		ONE						
Depth - Driller		5560.00 ft						
Depth - Logger		5545.0 ft						
Bottom - Logged Interval		5535.0 ft						
Top - Logged Interval		1839.0 ft						
Casing - Driller		9.625 in	@ 1840.0 ft	@		@		
Casing - Logger		1839.0 ft						
Bit Size		8.750 in		@		@		
Type Fluid in Hole		WATER BASED MUD						
Density	Viscosity	9.1 ppg	41.00 s/qt					
PH	Fluid Loss	8.90 pH	6.6 cptm					
Source of Sample		FLOW LINE						
Rm @ Meas. Temperature		0.909 ohmm	@ 85.00 degF	@		@		
Rmf @ Meas. Temperature		0.80 ohmm	@ 81.00 degF	@		@		
Rmc @ Meas. Temperature		1.050 ohmm	@ 81.00 degF	@		@		
Source Rmf	Rmc	MEASURED	MEASURED					
Rm @ BHT		0.61 ohmm	@ 130.0 degF	@		@		
Time Since Circulation		7.0 hr						
Time on Bottom		09-Jun-11 23:31						
Max. Rec. Temperature		120.0 degF	@ 5545.0 ft	@		@		
Equipment	Location	10549592	LIBERAL					
Recorded By		C.PARKER						
Witnessed By		M.ATWOOD						

Fold here

PGM Version: WL INSITE R3.2.5 (Build 2)

Service Ticket No.: 8233459 API Serial No.: 15-081-21942

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down Hole
Date					
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Rm @ Meas. Temp	@	@			
Rmf @ Meas. Temp.	@	ONE	ACRT S0784	N/A	1.5 S.O.
Rmc @ Meas. Temp.	@	@			N/A
Source Rmf	Rmc				
Rm @ BHT	@	@			
Rmf @ BHT	@	@			
Rmc @ BHT	@	@			

EQUIPMENT DATA

LOGGING DATA

	GAMMA	ACOUSTIC	DENSITY	NEUTRON
	Run No. ONE	Run No.	Run No.	Run No.
Serial No.	10811258	Serial No.	Serial No.	Serial No.
Model No.	GTET	Model No.	Model No.	Model No.
Diameter	3.625	No. of Cent.	Diameter	Diameter
Detector Model No.	T-102	Spacing	Log Type	Log Type
Type	SCINT		Source Type	Source Type
Length	8"	LSA [Y/N]	Serial No.	Serial No.
Distance to Source	10'	FWDA [Y/N]	Strength	Strength

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	TD	CSG	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 7 INCH CASING

CHLORIDES 1500 MG/L: LCM 4 #/BBL

GPS COORDINATES: 37° 19' N, 100° 54' W

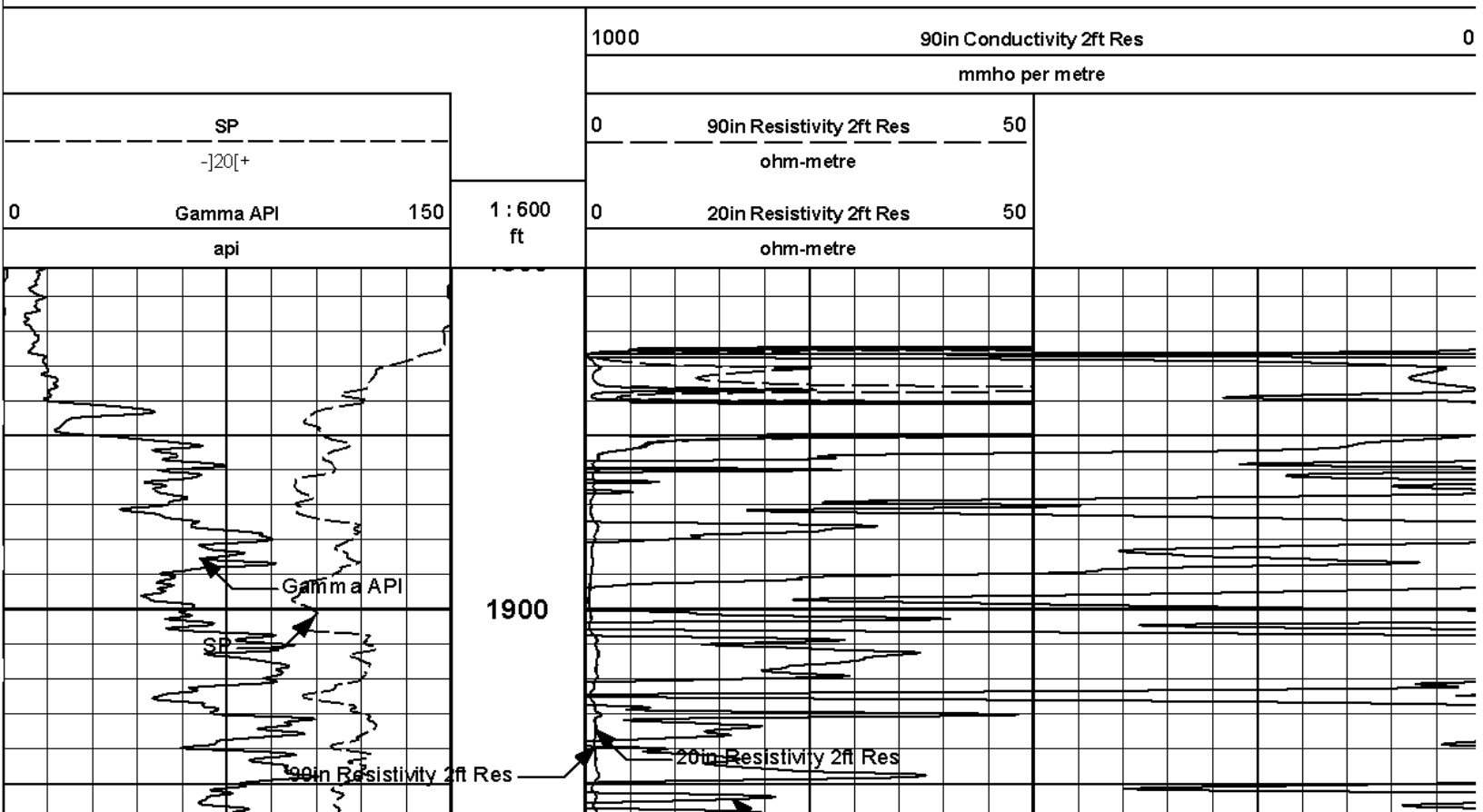
TODAY'S CREW: P.COBLE, A. VAQUERA

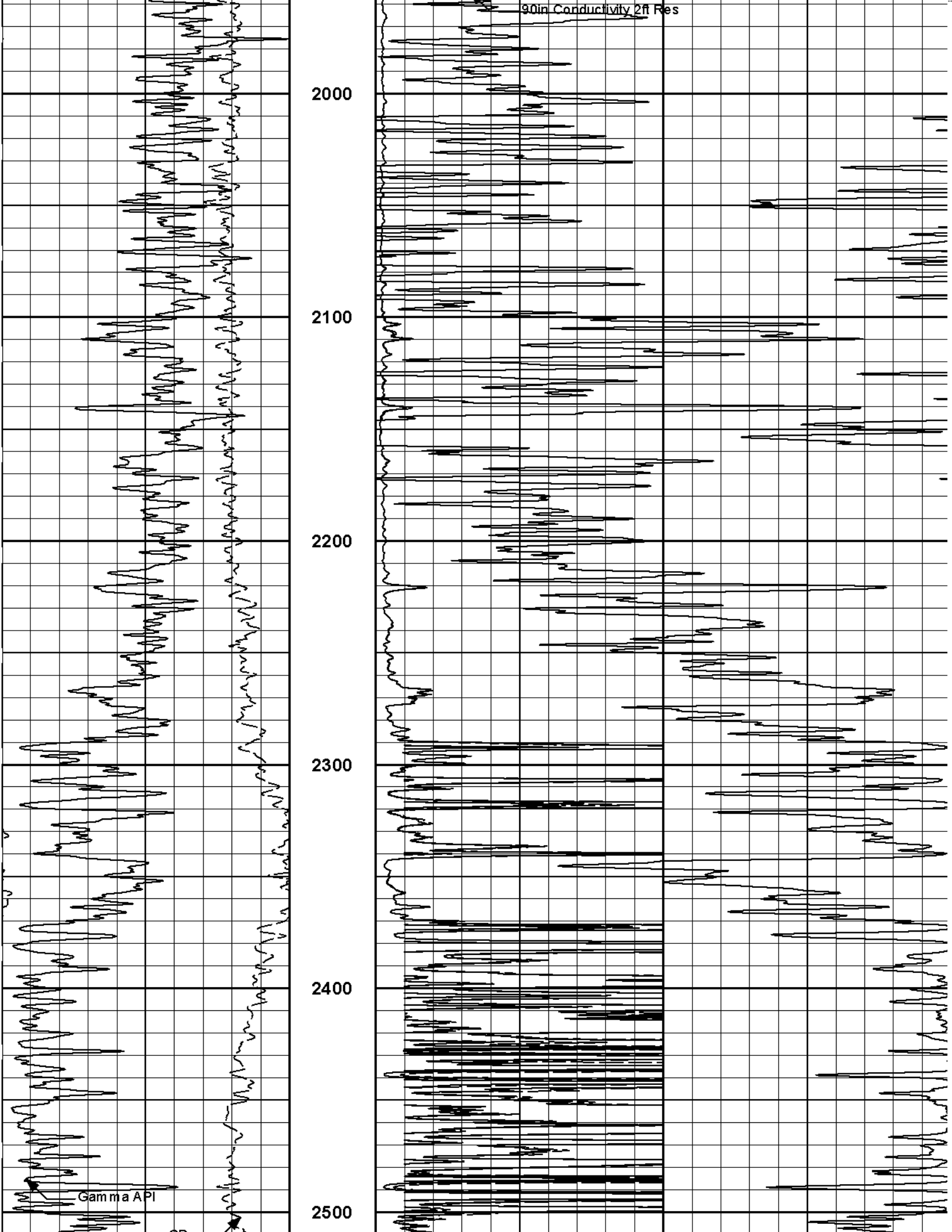
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 620 624 8123

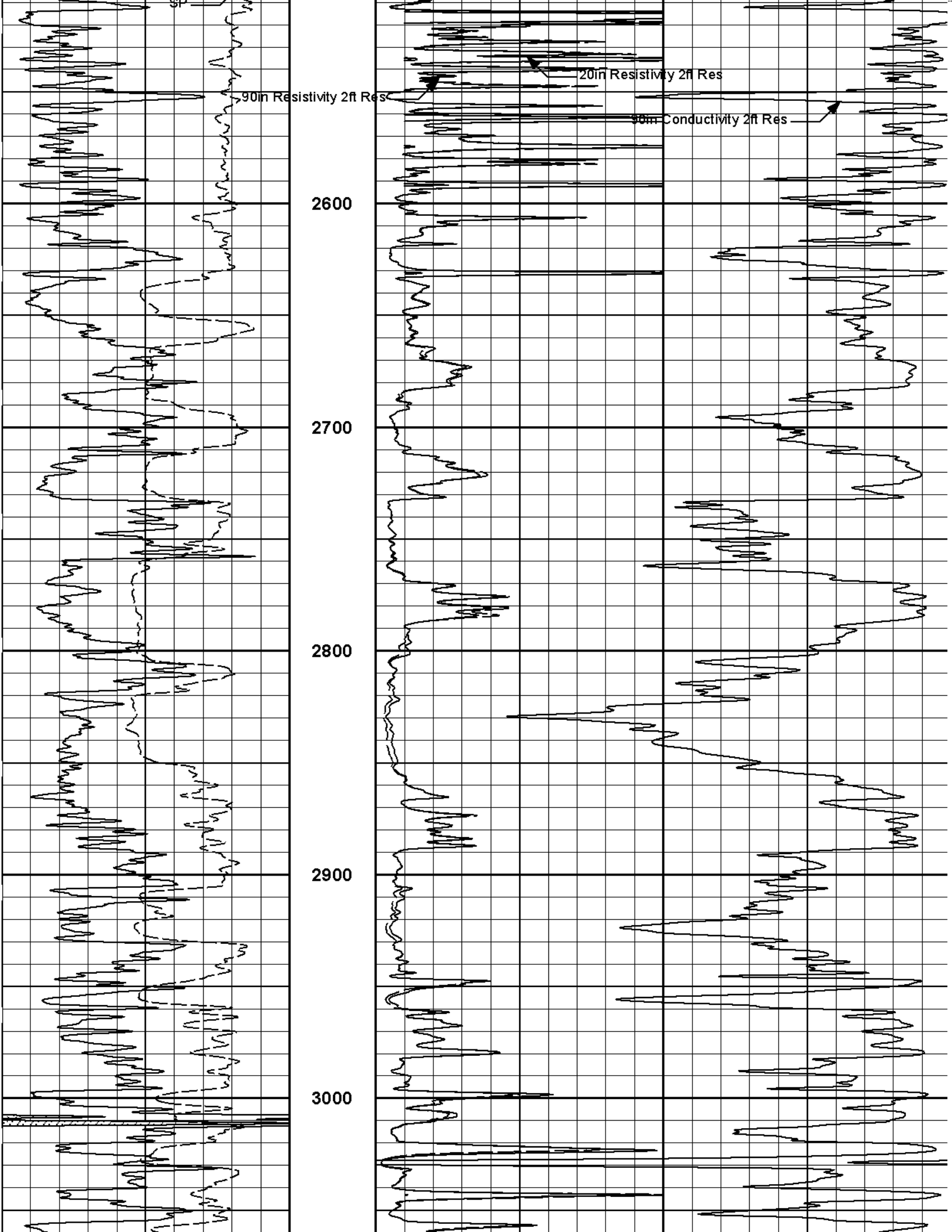
HALLIBURTON

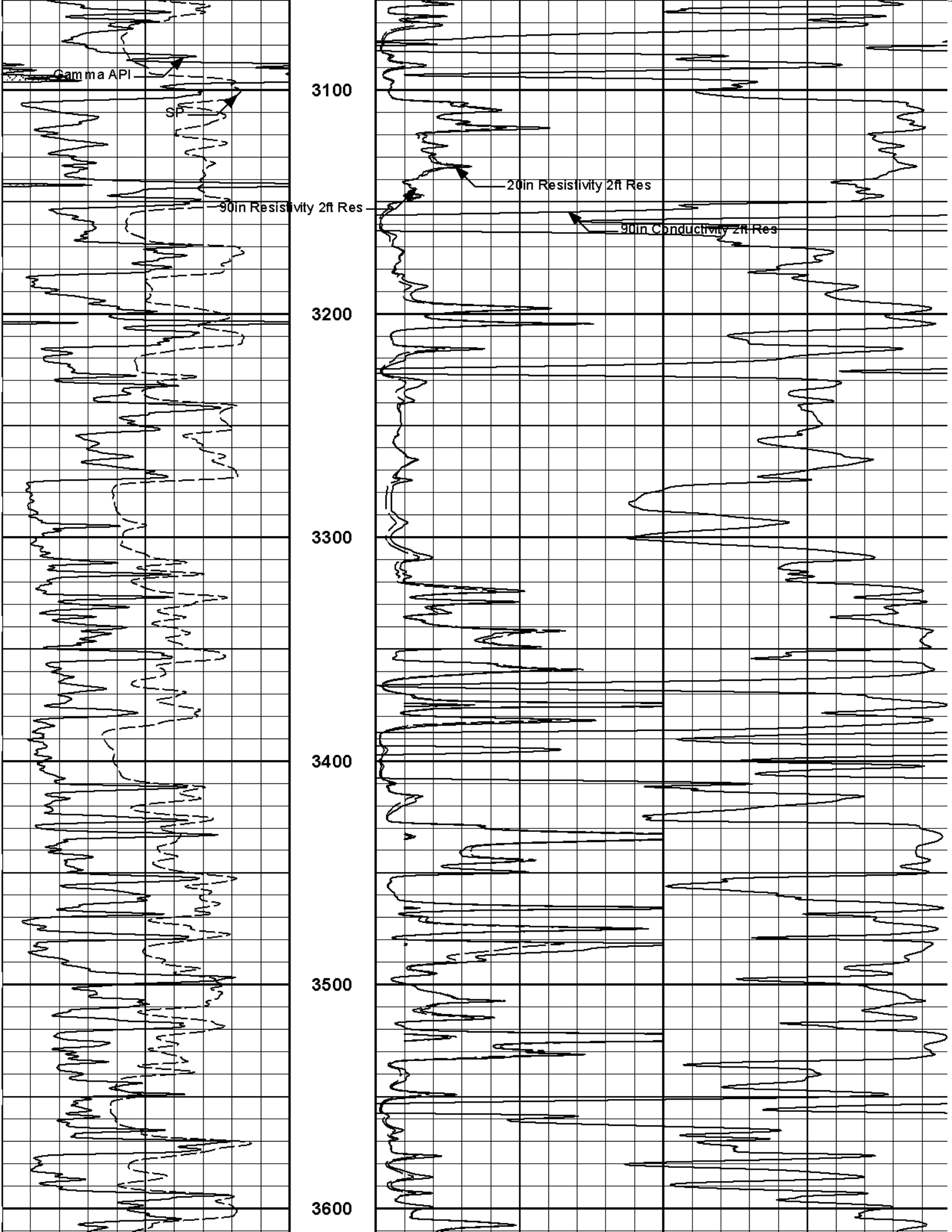
Plot Time: 10-Jun-11 01:18:00
Plot Range: 1802 ft to 5548.42 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\ACRT\ACRT_2_lib

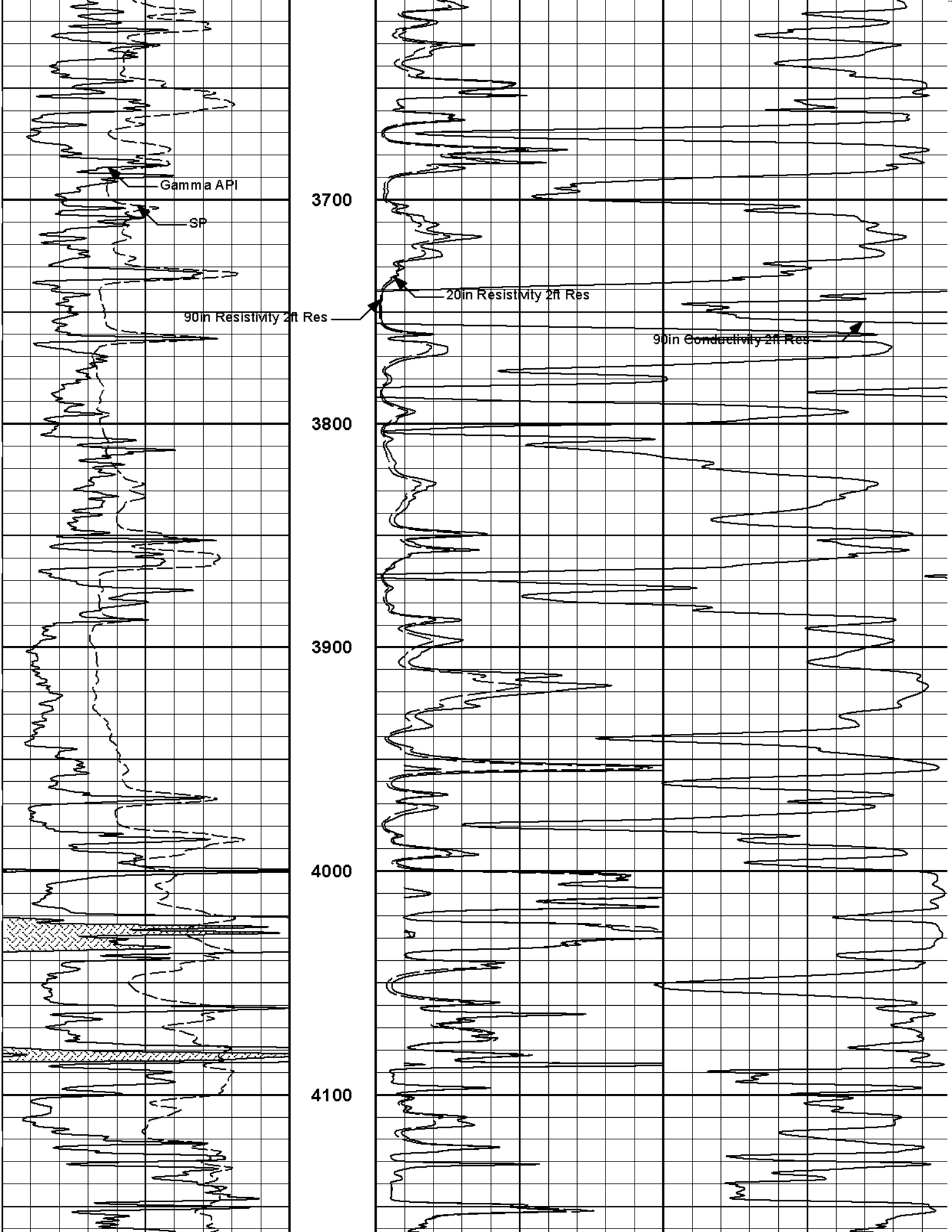
2 INCH MAIN LOG

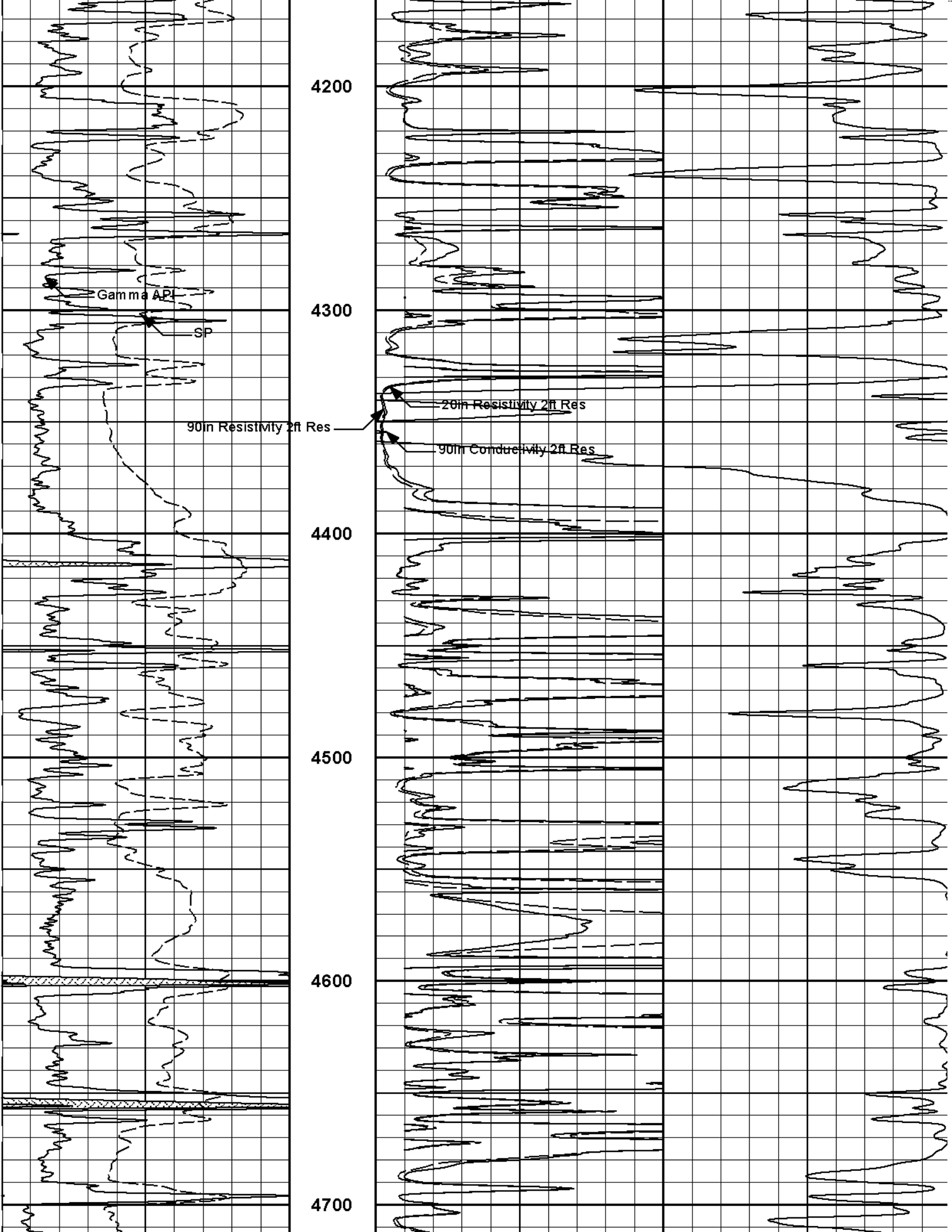


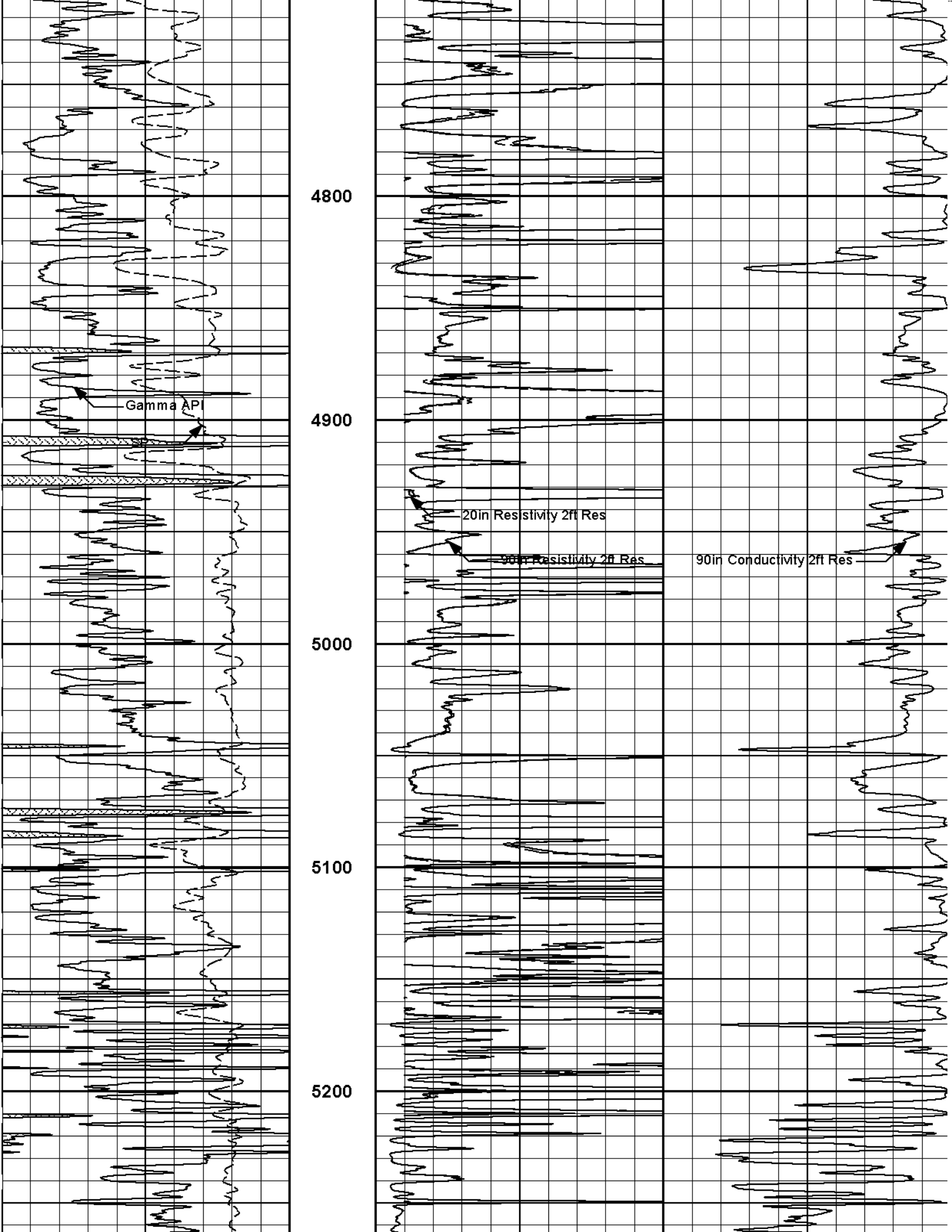

90in Conductivity 2ft Res
2000
2100
2200
2300
2400
2500
Gamma API

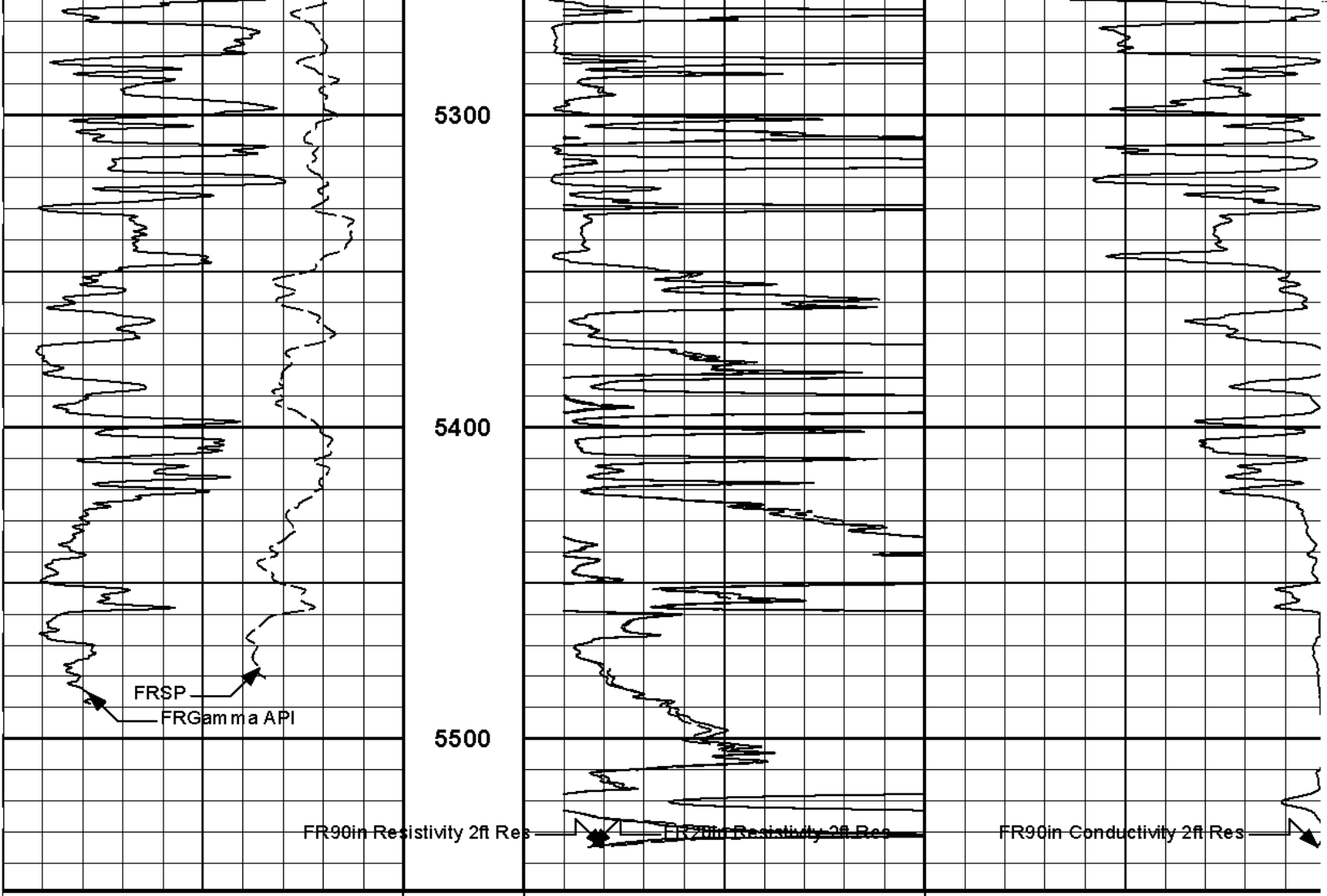

SP
90in Resistivity 2ft Res
20in Resistivity 2ft Res
90in Conductivity 2ft Res
2600
2700
2800
2900
3000


Gamma API
SP
90in Resistivity 2ft Res
20in Resistivity 2ft Res
90in Conductivity 2ft Res
3100
3200
3300
3400
3500
3600


Gamma API
SP
3700
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res
3800
3900
4000
4100


4200
4300
4400
4500
4600
4700
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res


4800
4900
5000
5100
5200
Gamma API
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res



0 Gamma API 150	1 : 600 ft	0 20in Resistivity 2ft Res 50
api		ohm-metre
SP		0 90in Resistivity 2ft Res 50
-]20[+		ohm-metre
		1000 90in Conductivity 2ft Res 0
		mmho per metre

HALLIBURTON

Plot Time: 10-Jun-11 01:18:02
Plot Range: 1802 ft to 5548.42 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\ACRT\ACRT_2_lib

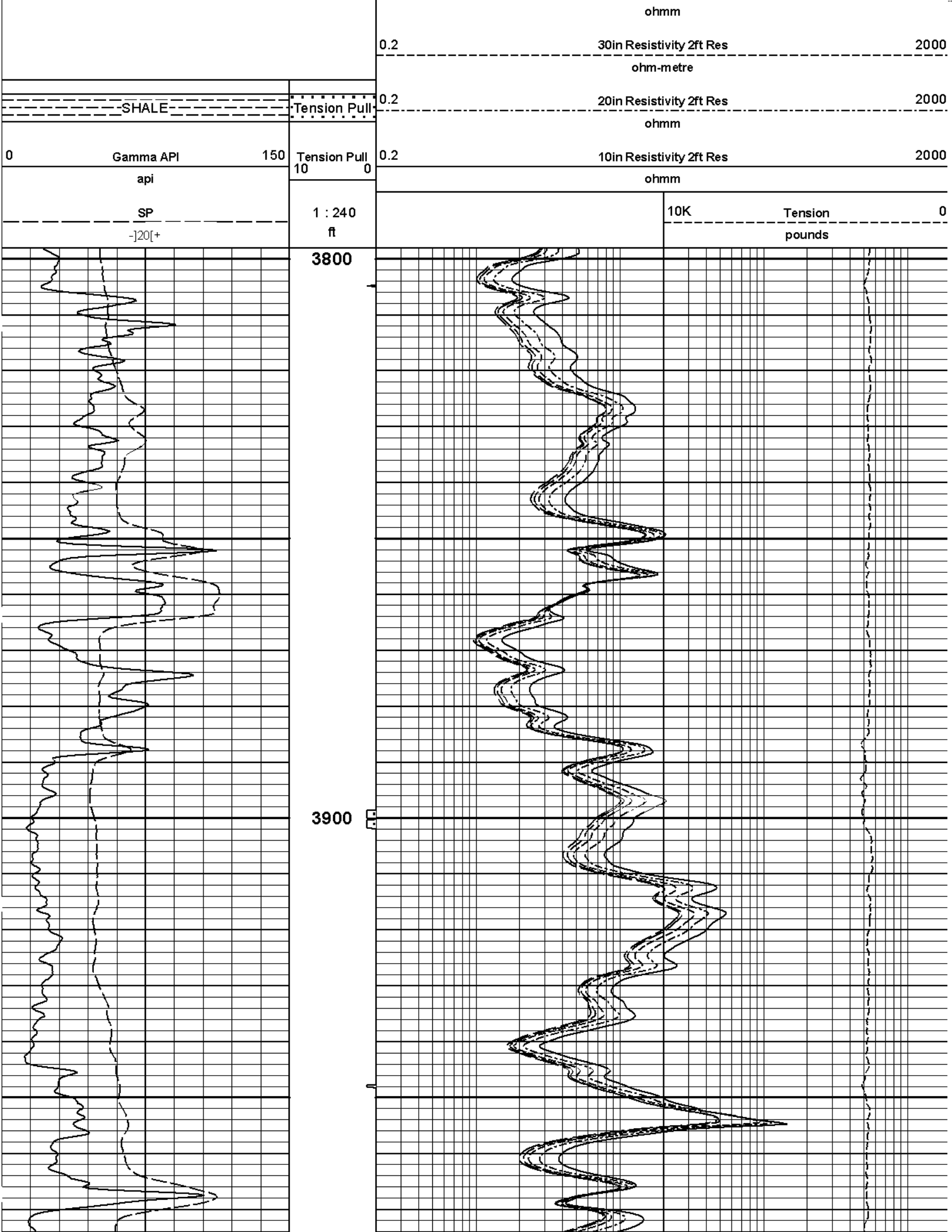
2 INCH MAIN LOG

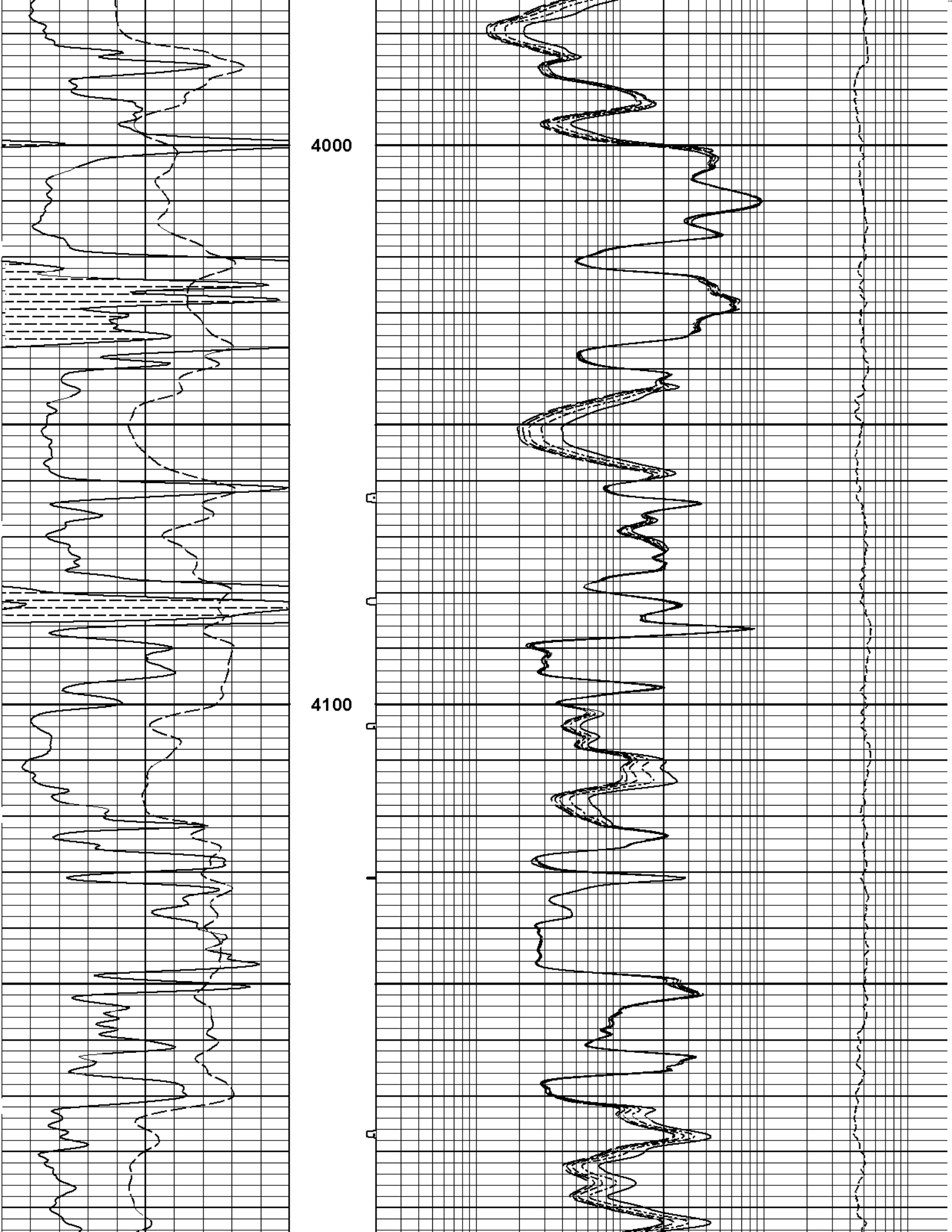
HALLIBURTON

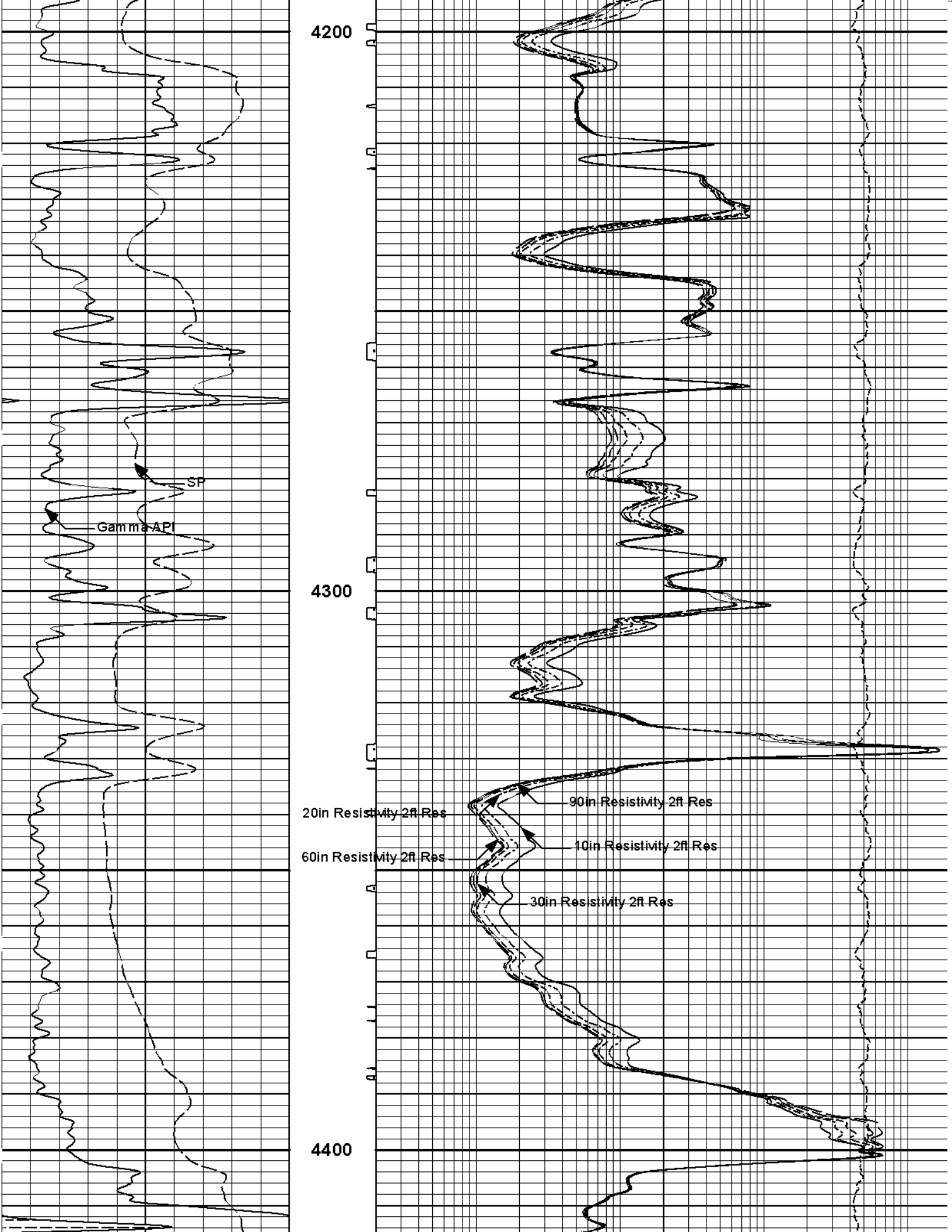
Plot Time: 10-Jun-11 01:18:02
Plot Range: 3798 ft to 5548.42 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\ACRT\ACRT_5_main_lib

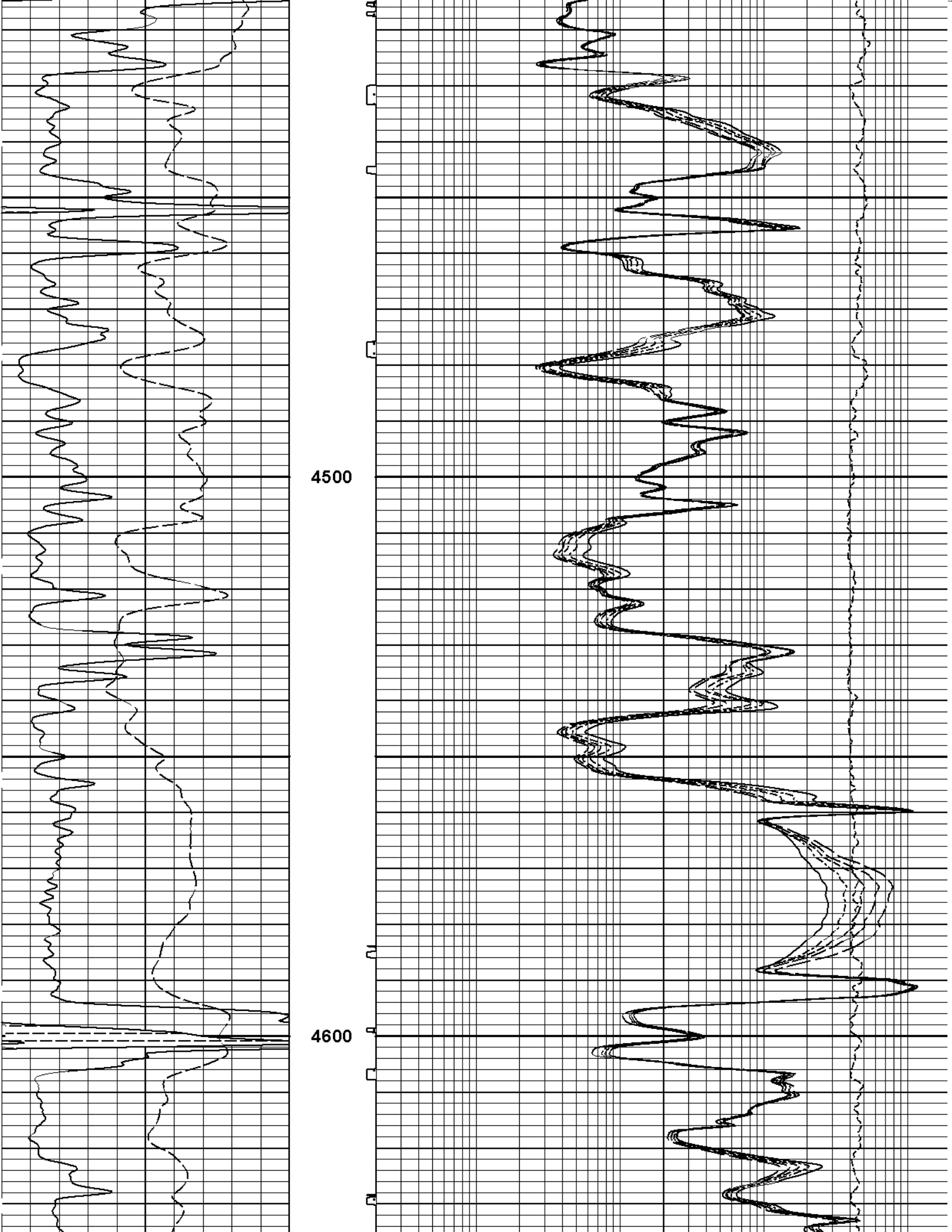
5 INCH MAIN LOG

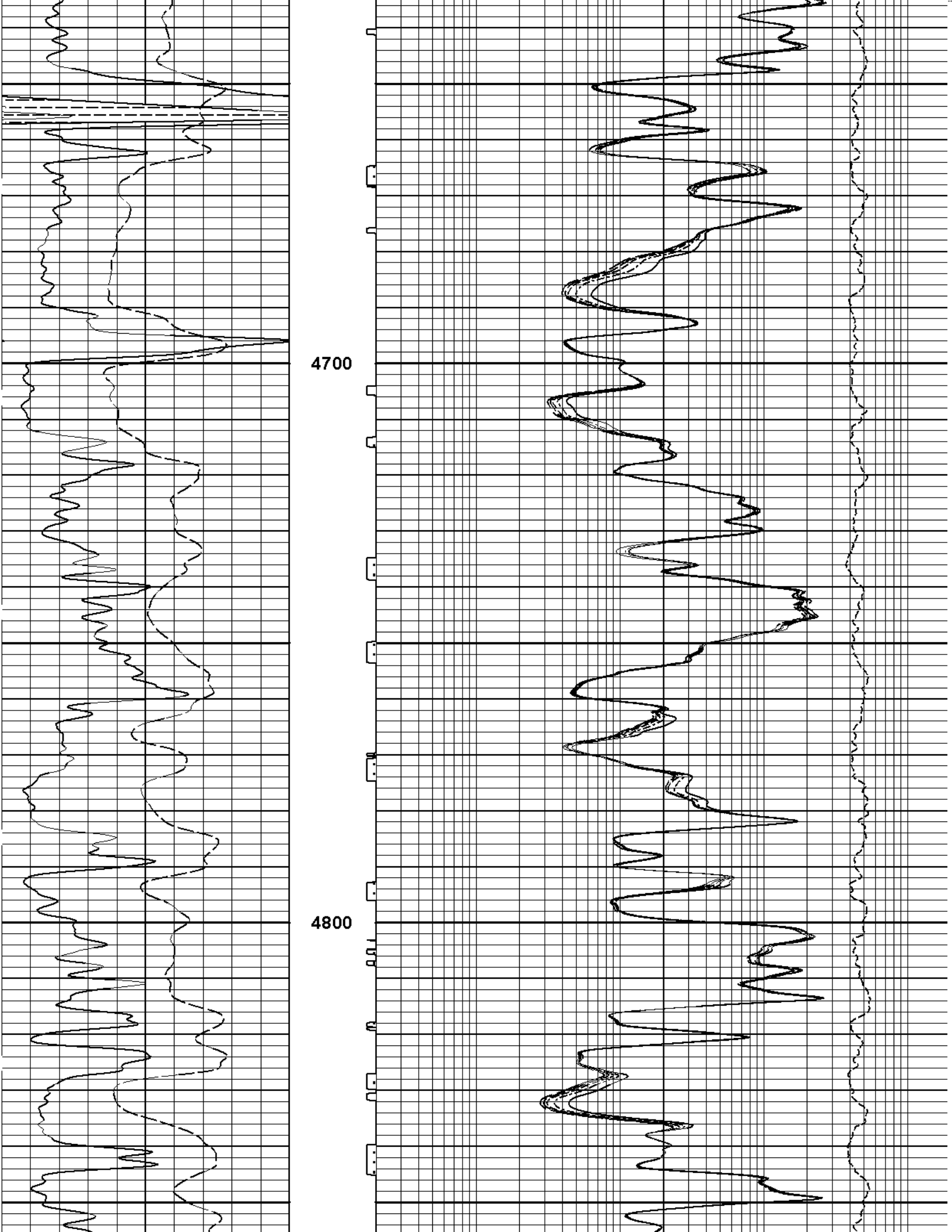
	0.2 90in Resistivity 2ft Res 2000
	ohmm
	0.2 60in Resistivity 2ft Res 2000

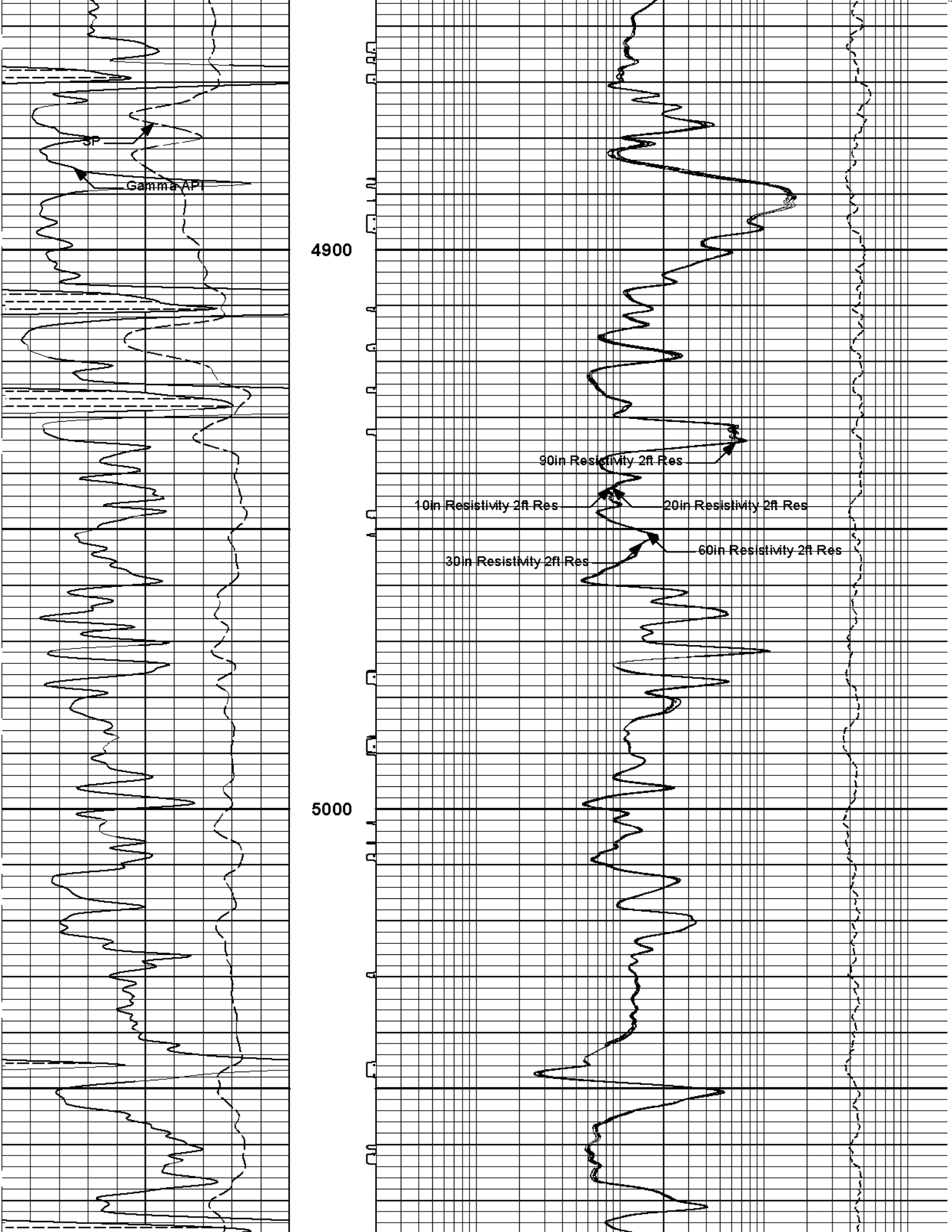

ohmm
0.2
30in Resistivity 2ft Res
2000
ohm-metre
0.2
20in Resistivity 2ft Res
2000
ohmm
0.2
10in Resistivity 2ft Res
2000
ohmm
SHALE
Tension Pull
0
Gamma API
150
api
SP
-]20[+
Tension Pull
10
0
1 : 240
ft
10K
Tension
0
pounds
3800
3900

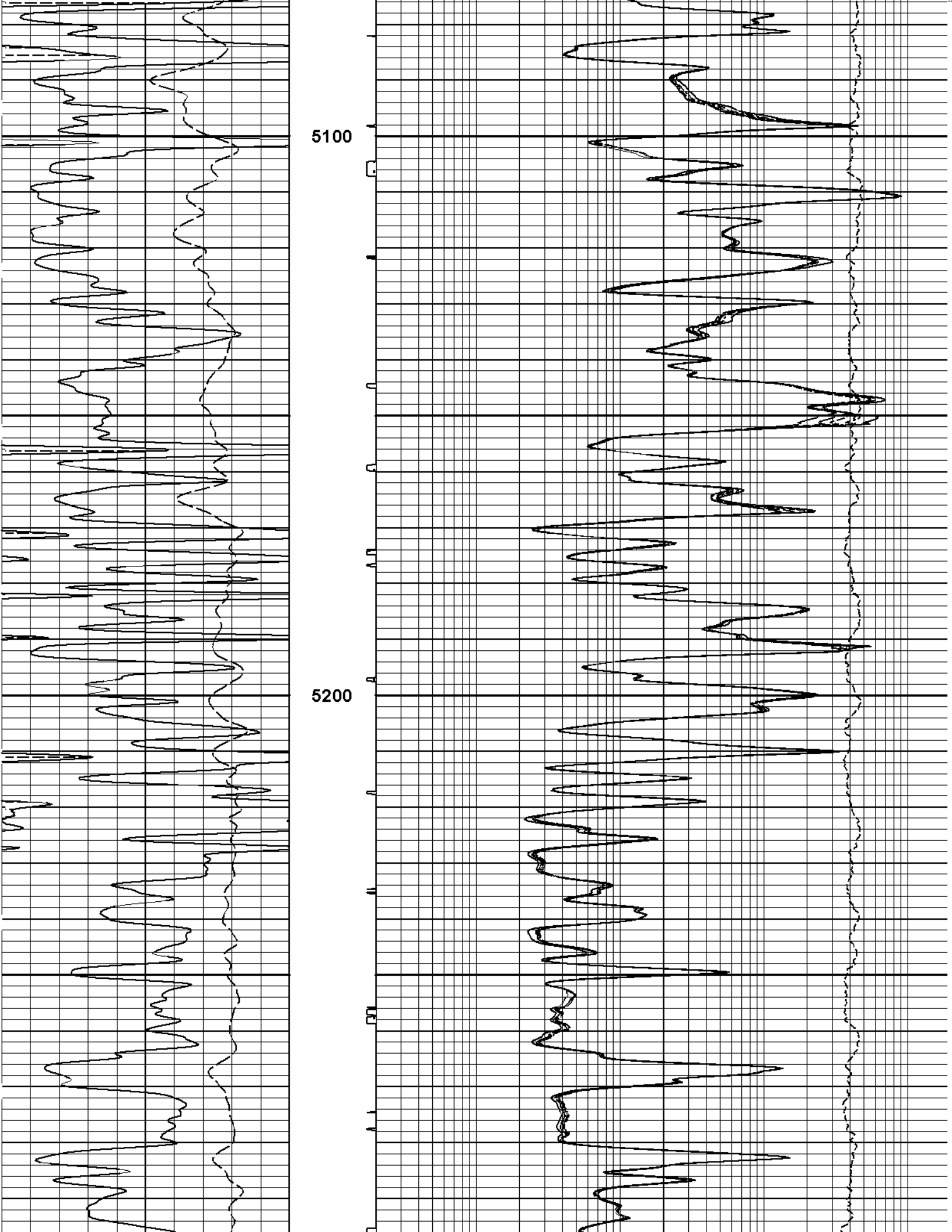

4000
4100

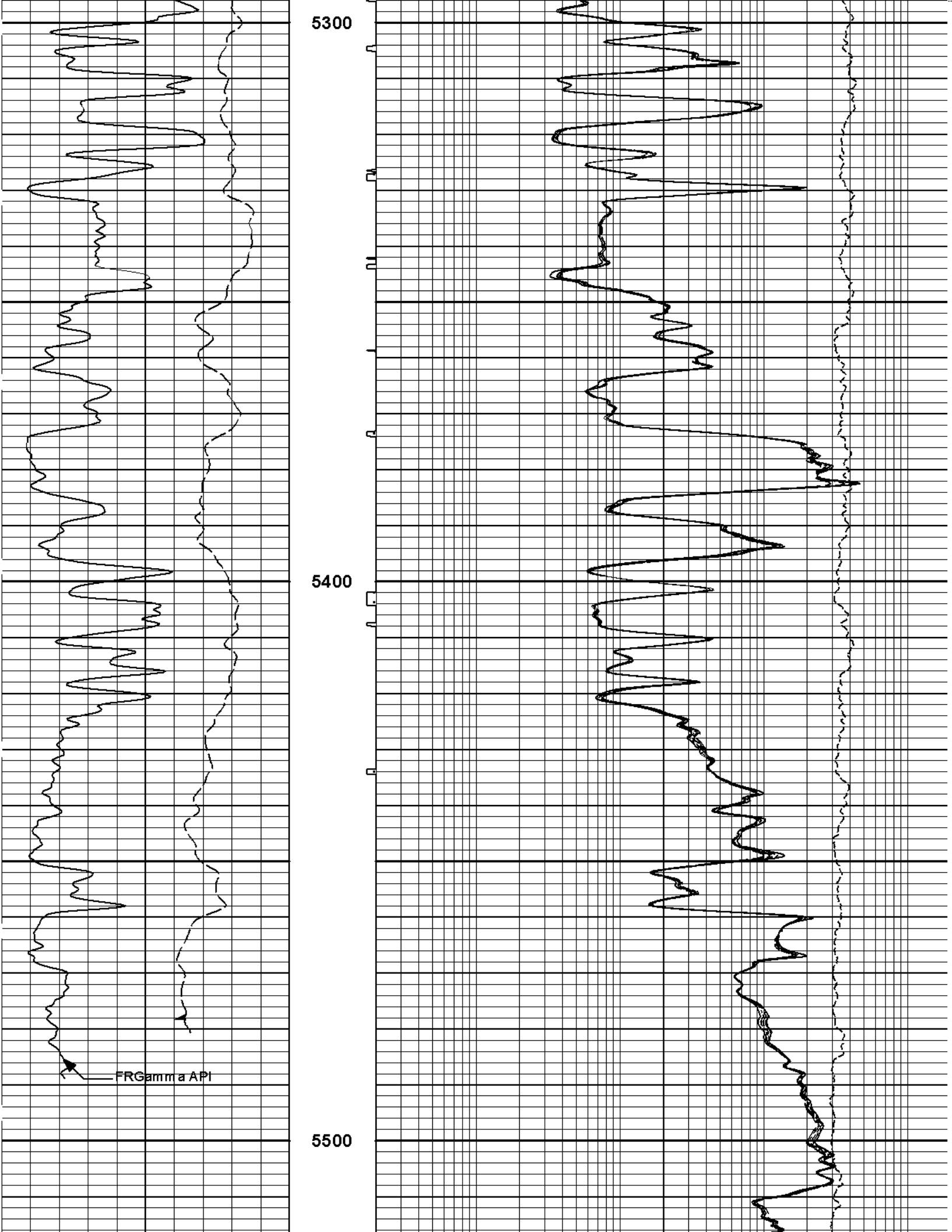

4200
4300
4400
SP
Gamma API
20in Resistivity 2ft Res
60in Resistivity 2ft Res
90in Resistivity 2ft Res
10in Resistivity 2ft Res
30in Resistivity 2ft Res

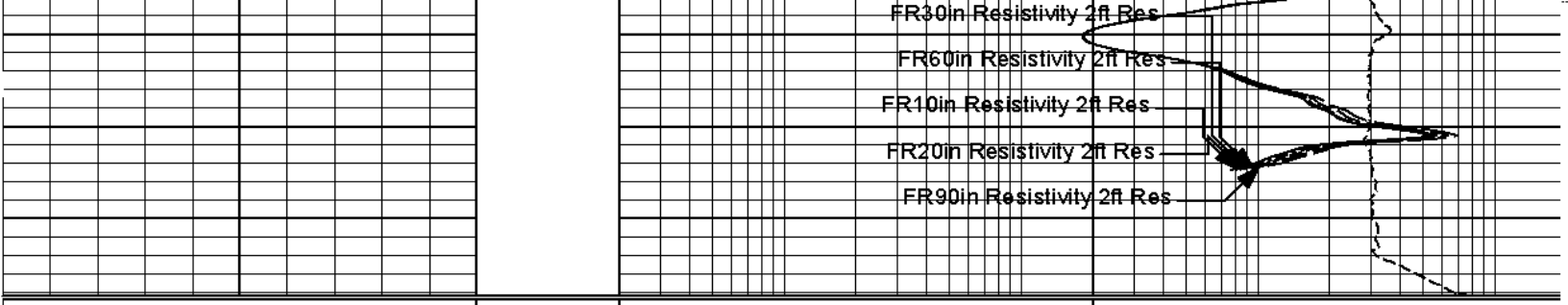

4500
4600


4700
4800


SP
Gamma API
4900
90in Resistivity 2ft Res
10in Resistivity 2ft Res
20in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res
5000


5100
5200


5300
5400
5500
FRGamma API



SP
-]20[+
0 Gamma API 150
api

1 : 240
ft

Tension Pull
10 0

SHALE

Tension Pull

10K Tension 0
pounds

0.2 10in Resistivity 2ft Res 2000
ohmm

0.2 20in Resistivity 2ft Res 2000
ohmm

0.2 30in Resistivity 2ft Res 2000
ohm-metre

0.2 60in Resistivity 2ft Res 2000
ohmm

0.2 90in Resistivity 2ft Res 2000
ohmm

HALLIBURTON

Plot Time: 10-Jun-11 01:18:04
Plot Range: 3798 ft to 5548.42 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 10-Jun-11 01:18:05
Plot Range: 5250 ft to 5548.5 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

0.2 90in Resistivity 2ft Res 2000
ohmm

0.2 60in Resistivity 2ft Res 2000
ohmm

0.2 30in Resistivity 2ft Res 2000
ohm-metre

0.2 20in Resistivity 2ft Res 2000
ohmm

0.2 10in Resistivity 2ft Res 2000
ohmm

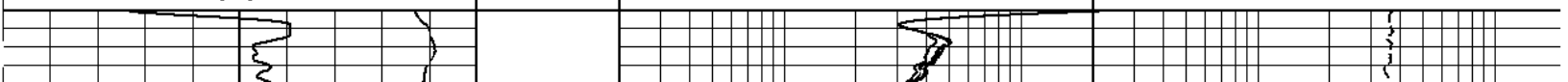
SHALE

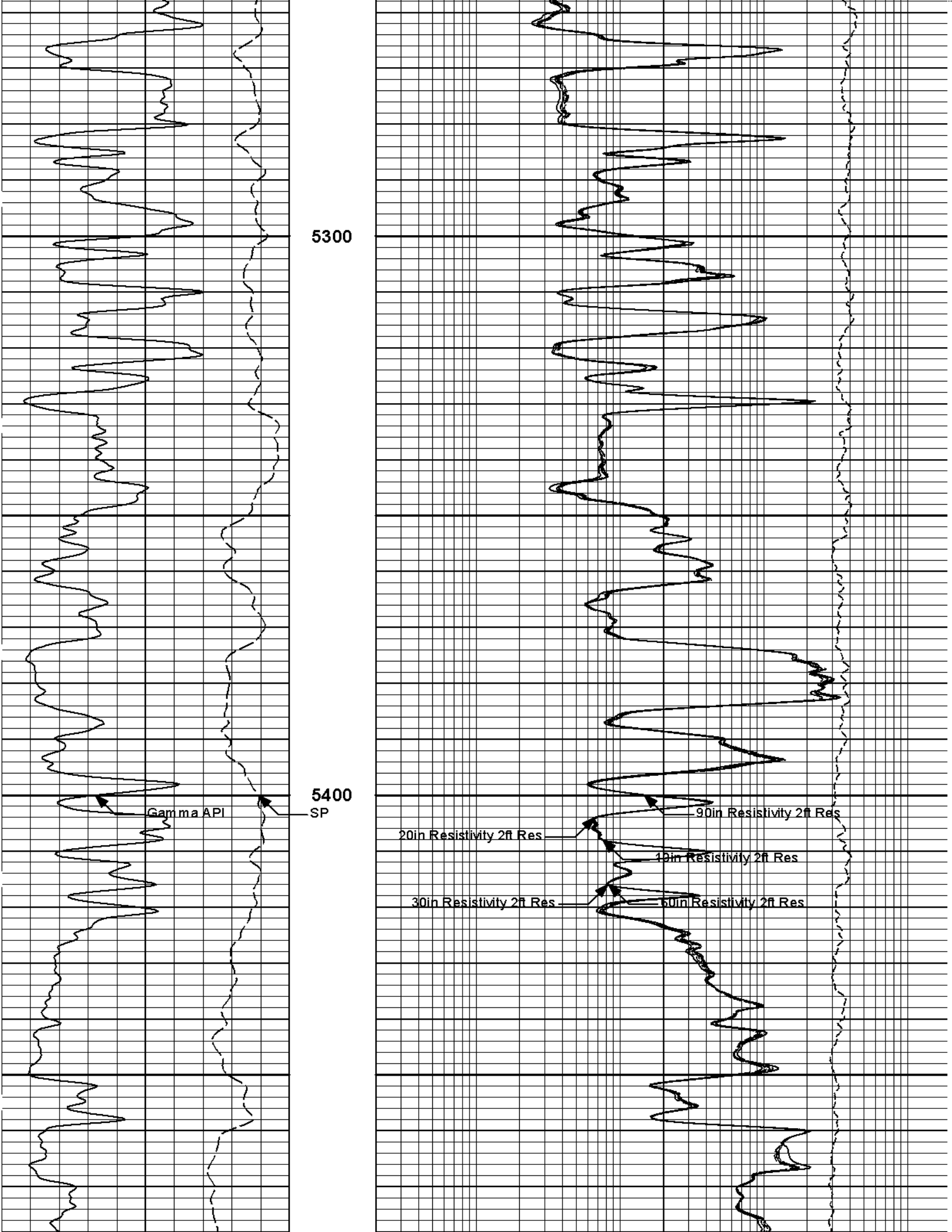
0 Gamma API 150
api

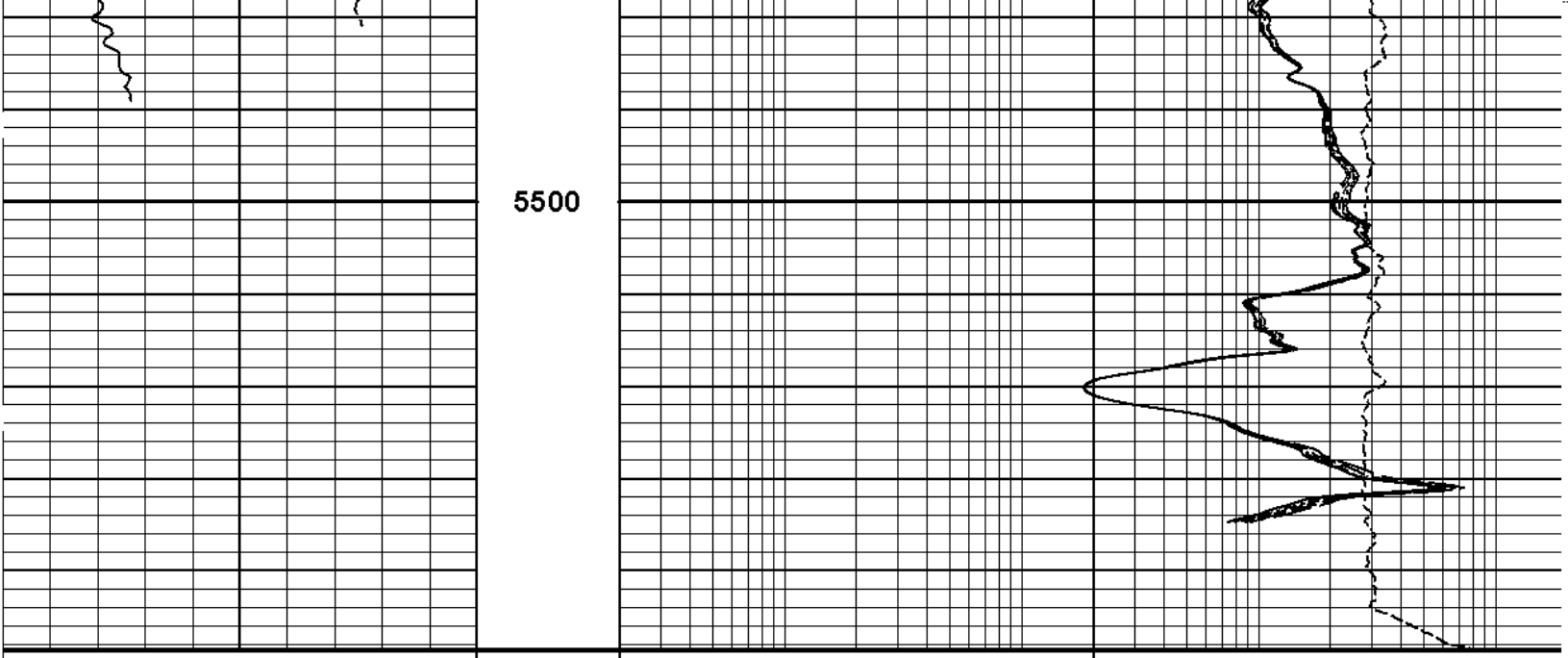
SP
-]20[+

1 : 240
ft

10K Tension 0
pounds




5300
5400
Gamma API
SP
90in Resistivity 2ft Res
20in Resistivity 2ft Res
10in Resistivity 2ft Res
30in Resistivity 2ft Res
60in Resistivity 2ft Res



SP		1 : 240 ft		10K Tension 0
-]20[+				pounds
0 Gamma API 150			0.2 10in Resistivity 2ft Res 2000	
api			ohmm	
SHALE			0.2 20in Resistivity 2ft Res 2000	
			ohmm	
			0.2 30in Resistivity 2ft Res 2000	
			ohm-metre	
			0.2 60in Resistivity 2ft Res 2000	
			ohmm	
			0.2 90in Resistivity 2ft Res 2000	
			ohmm	

HALLIBURTON

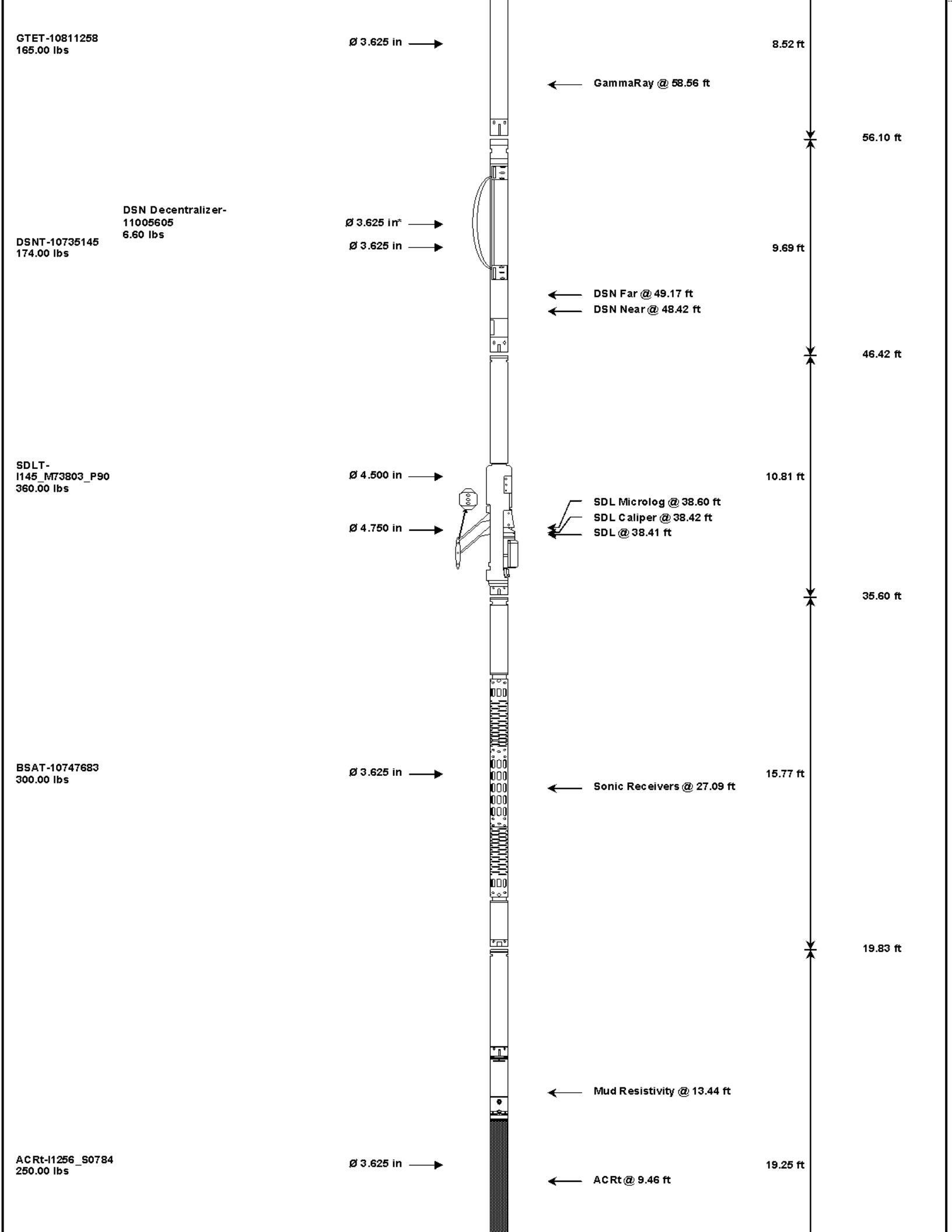
Plot Time: 10-Jun-11 01:18:06
Plot Range: 5250 ft to 5548.5 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\ACRT\ACRT_5_repeat_lib

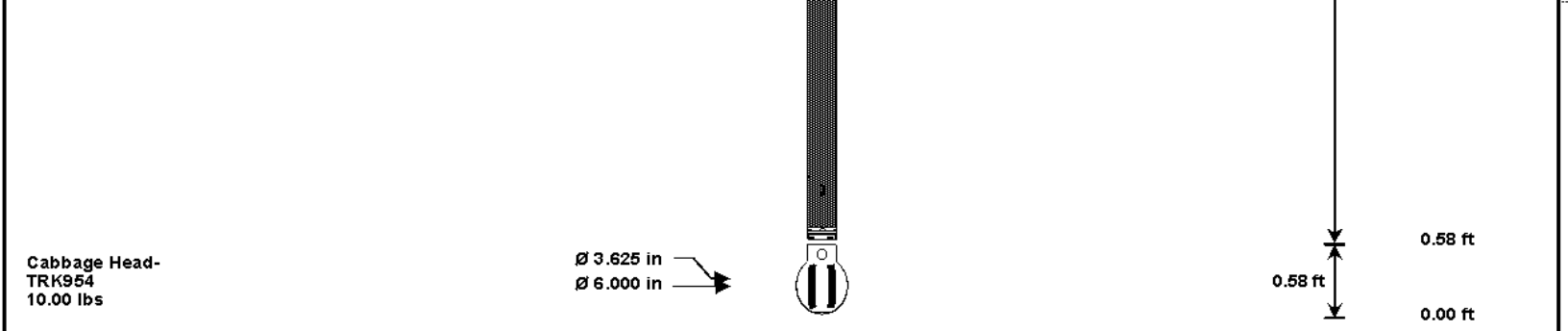
REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head-PROT01 30.00 lbs		Ø 3.625 in →				70.28 ft
					1.92 ft	
						68.36 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft		
					3.74 ft	
						64.63 ft


GTET-10811258
165.00 lbs
Ø 3.625 in
8.52 ft
GammaRay @ 58.56 ft
56.10 ft
DSN Decentralizer-
11005605
6.60 lbs
Ø 3.625 in*
DSNT-10735145
174.00 lbs
Ø 3.625 in
9.69 ft
DSN Far @ 49.17 ft
DSN Near @ 48.42 ft
46.42 ft
SDLT-
I145_M73803_P90
360.00 lbs
Ø 4.500 in
10.81 ft
SDL Microlog @ 38.60 ft
SDL Caliper @ 38.42 ft
Ø 4.750 in
SDL @ 38.41 ft
35.60 ft
BSAT-10747683
300.00 lbs
Ø 3.625 in
15.77 ft
Sonic Receivers @ 27.09 ft
19.83 ft
Mud Resistivity @ 13.44 ft
ACRt-I1256_S0784
250.00 lbs
Ø 3.625 in
19.25 ft
ACRt @ 9.46 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92		68.36	300.00
SP	SP Sub	TRK954	60.00	3.74		64.63	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52		56.10	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69		46.42	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13	*	49.75	300.00
SDLT	Spectral Density Tool	I145_M73803_P90	360.00	10.81		35.60	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77		19.83	60.00
ACRt	Array Compensated True Resistivity	I1256_S0784	250.00	19.25		0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58		0.00	300.00
Total			**1,355.60**	**70.28**			

* Not included in Total Length and Length Accumulation.

Data: ELIZABETH_A_COX\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE **Date: 09-Jun-11 22:26:51**

HALLIBURTON

CALIBRATION REPORT

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt - I1256_S0784**	**Reference Calibration Date:**	**11-Mar-11 10:35:27**
Engineer:	**C. MARLOWE**	**Calibration Date:**	**02-May-11 11:01:06**
Software Version:	**WL INSITE R3.3.2 (Build 2)**	**Calibration Version:**	**1**

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0393	1.05	0.95	1.0401	1.05	0.95	1.0311	1.05
A2 (50")	0.95	1.0357	1.05	0.95	1.0369	1.05	0.95	1.0296	1.05
A3 (29")	0.95	1.0145	1.05	0.95	1.0153	1.05	0.95	1.0072	1.05
A4 (17")	0.95	1.0332	1.05	0.95	1.0325	1.05	0.95	1.0282	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0341	1.05	0.95	1.0295	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0122	1.05	0.95	1.0074	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.098	2	-6	-3.757	-2	-8	-4.959	-2
A2 (50")	-7	-2.035	-1	-6	-3.659	-2	-7	-4.367	-2
A3 (29")	-27	-16.083	-9	-9	-4.498	-3	-7	-3.317	-1
A4 (17")	-180	-101.806	-60	-45	-33.271	-15	-39	-27.176	-13
A5 (10")	N/A	N/A	N/A	-150	-101.345	-50	-80	-50.623	-10
A6 (6")	N/A	N/A	N/A	175	318.737	525	90	168.760	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8424	1.3
36K	1.0	1.1777	2.0
72K	1.0	1.5045	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.001	1.05

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
ACRt-I1256_S0784						
Mud Cell	1.001	----------	----------	0.000	----------	ohm-m

Data: ELIZABETH_A_COX\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE

Date: 09-Jun-11 23:06:17

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	DNOK	Process DSN?	No	
	SDLT	DNOK	Process Density?	No	
	SDLT	MLOK	Process MicroLog Outputs?	No	
3740.00					
	SHARED	BS	Bit Size	8.750	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.100	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.909	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	7.000	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5560.00	ft
	SHARED	BHT	Bottom Hole Temperature	130.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position	Centered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	

DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Free Hanging	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	SP Sub			
PLTC	Plot Control Mask	66.58	NO	
SP	Spontaneous Potential	66.58	BLK	1.250
SPR	Raw Spontaneous Potential	66.58	NO	
SPO	Spontaneous Potential Offset	66.58	NO	
	GTET			
TPUL	Tension Pull	58.56	NO	
GR	Natural Gamma Ray API	58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			
TPUL	Tension Pull	48.32	NO	

RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	

SDLT

TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	35.60	NO	
FHV	Far Detector High Voltage	35.60	NO	
ITMP	Instrument Temperature	35.60	NO	
DDHV	Detector High Voltage	35.60	NO	
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750

BSAT

TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	

ACRt

TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000

F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

HALLIBURTON

CALIBRATION REPORT

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt - I1256_S0784**	**Reference Calibration Date:**	**11-Mar-11 10:35:27**
Engineer:	**C. MARLOWE**	**Calibration Date:**	**02-May-11 11:01:06**
Software Version:	**WL INSITE R3.3.2 (Build 2)**	**Calibration Version:**	**1**

Software Version: WL INSITE R5.3.2 (Build 2) Calibration Version: 1

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0393	1.05	0.95	1.0401	1.05	0.95	1.0311	1.05
A2 (50")	0.95	1.0357	1.05	0.95	1.0369	1.05	0.95	1.0296	1.05
A3 (29")	0.95	1.0145	1.05	0.95	1.0153	1.05	0.95	1.0072	1.05
A4 (17")	0.95	1.0332	1.05	0.95	1.0325	1.05	0.95	1.0282	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0341	1.05	0.95	1.0295	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0122	1.05	0.95	1.0074	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.098	2	-6	-3.757	-2	-8	-4.959	-2
A2 (50")	-7	-2.035	-1	-6	-3.659	-2	-7	-4.367	-2
A3 (29")	-27	-16.083	-9	-9	-4.498	-3	-7	-3.317	-1
A4 (17")	-180	-101.806	-60	-45	-33.271	-15	-39	-27.176	-13
A5 (10")	N/A	N/A	N/A	-150	-101.345	-50	-80	-50.623	-10
A6 (6")	N/A	N/A	N/A	175	318.737	525	90	168.760	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8424	1.3
36K	1.0	1.1777	2.0
72K	1.0	1.5045	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.001	1.05

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
ACRt-I1256_S0784						
Mud Cell	1.001	----------	----------	0.000	----------	ohm-m

Data: ELIZABETH_A_COX\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE Date: 09-Jun-11 23:06:17

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Plot Time: 10-Jun-11 01:18:06
Plot Range: 1802 ft to 5488.75 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\ACRT\ACRT_1_lib

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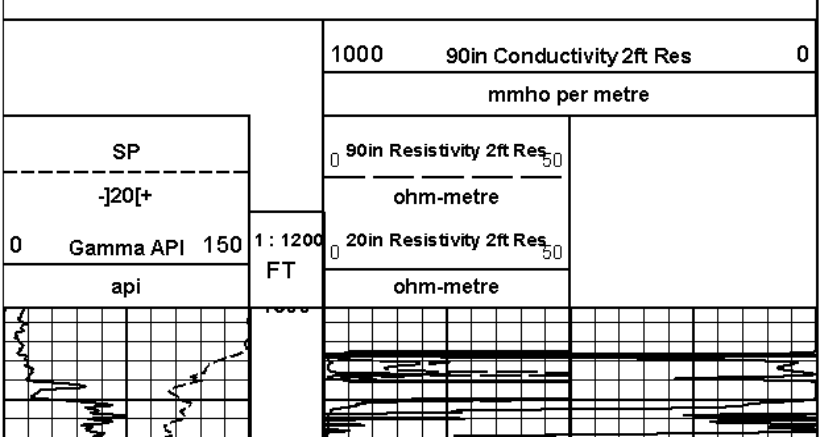

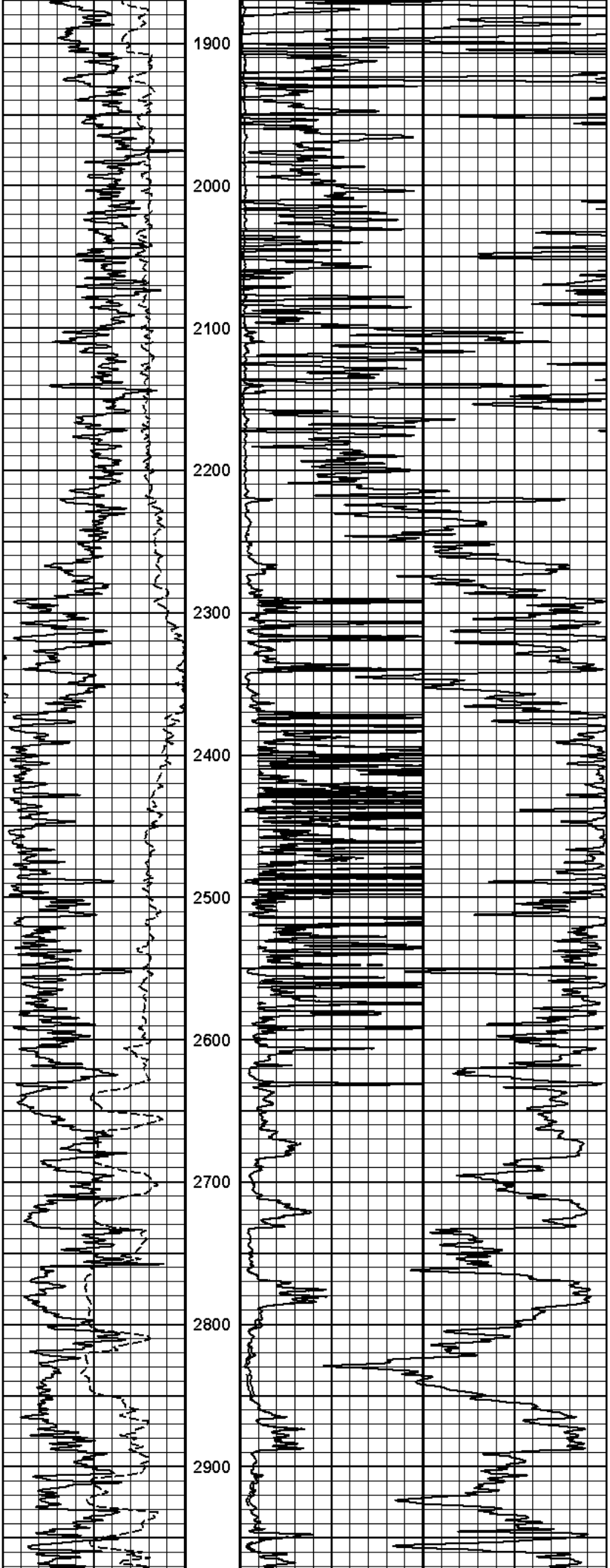
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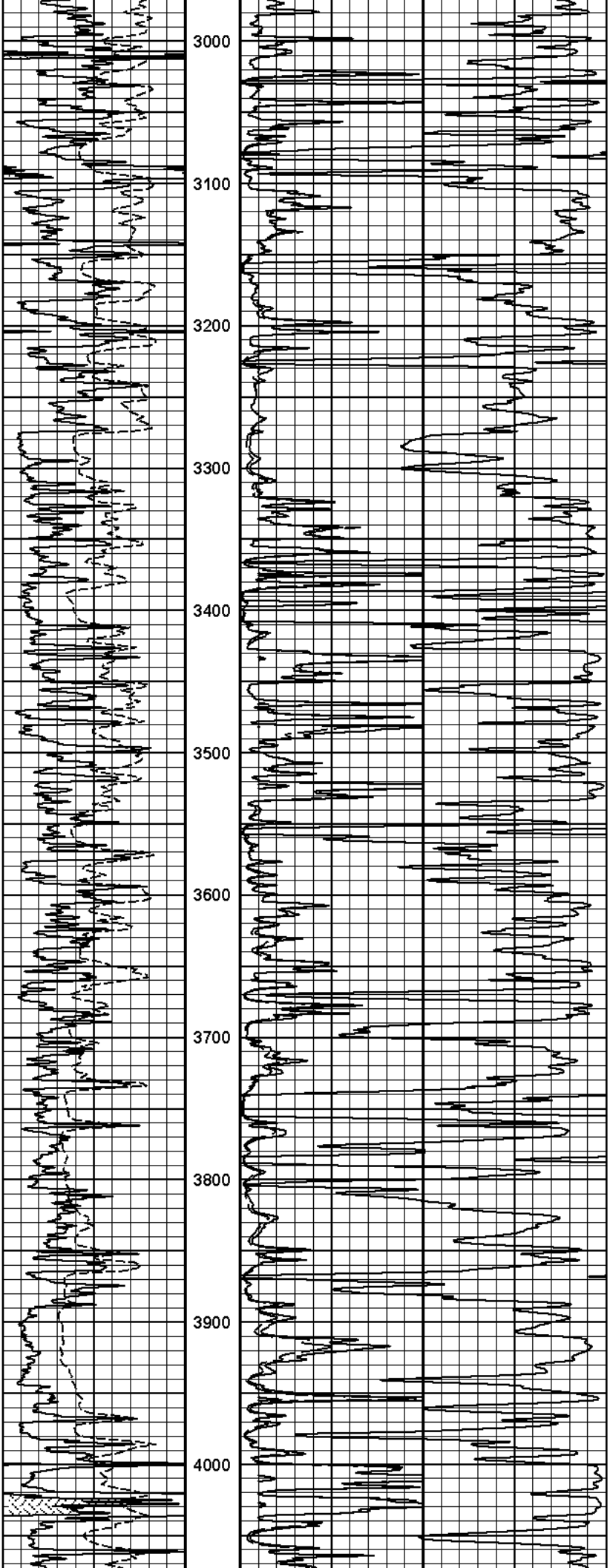
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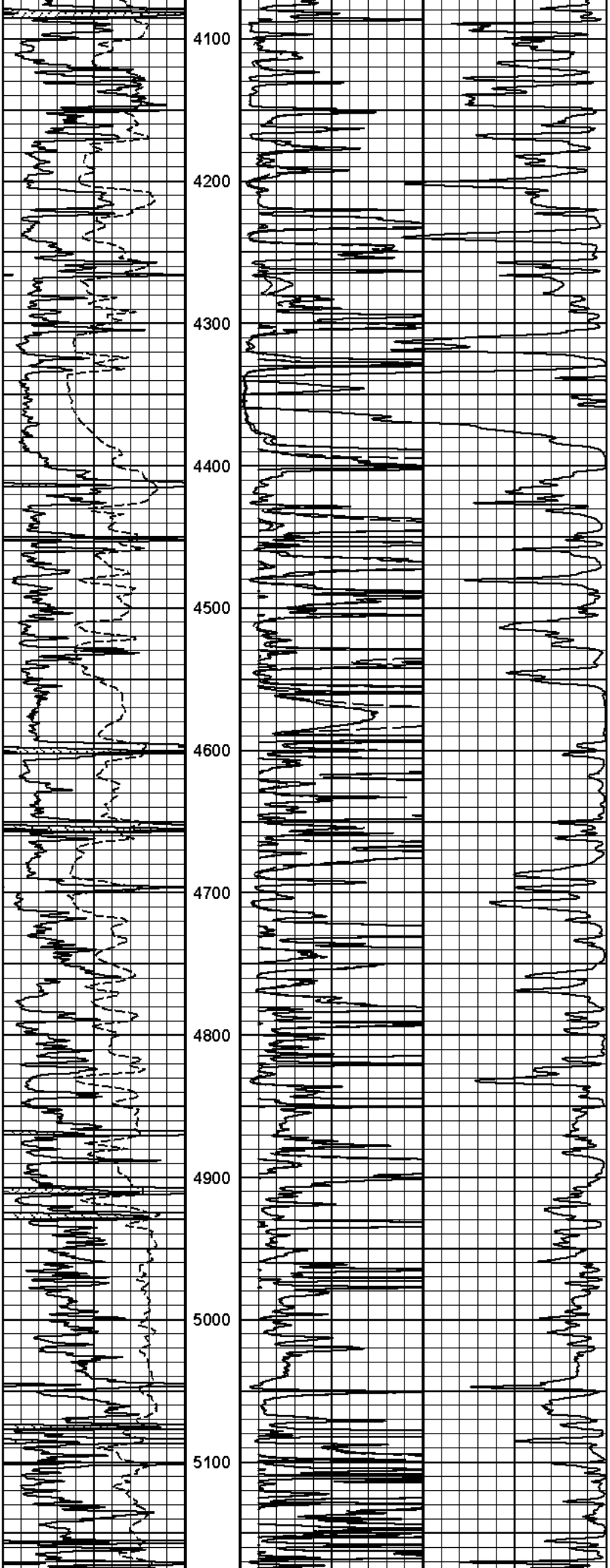
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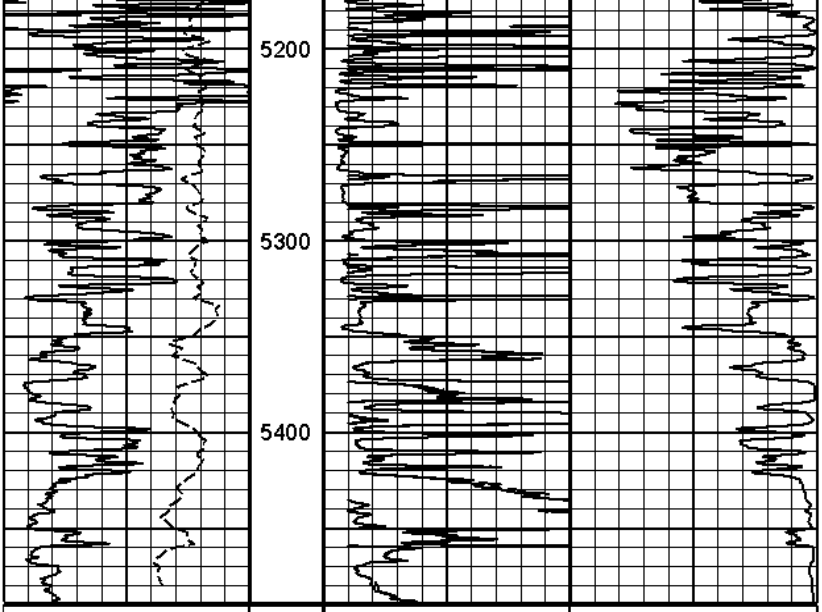

0 Gamma API 150	1 : 1200 FT	0 20in Resistivity 2ft Res 50
api		ohm-metre
SP		0 90in Resistivity 2ft Res 50
-]20[+		ohm-metre
		1000 90in Conductivity 2ft Res 0
		mmho per metre

HALLIBURTON

Plot Time: 10-Jun-11 01:18:08
Plot Range: 1802 ft to 5488.75 ft
Data: ELIZABETH_A_COX\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\ACRT\ACRT_1_lib

1 INCH MAIN LOG