HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY

COMPANY	NOBLE ENERGY
WELL	WALCKER USX AB01-14P
FIELD	WATTENBERG
COUNTY	WELD
STATE	CO

COMPANY NOBLE ENERGY
WELL WALCKER USX AB01-14P
FIELD WATTENBERG
COUNTY WELD STATE CO

API No. 05123311710000
Location SHL: 660' FSL & 1980' FWL SESW
LAT: 40.59687°
LONG: -104.49953°

Other Services:
RWCH
GTET
CSNG
BSAT

Sect. 1 Twp. 7N Rge. 64W

Permanent Datum GL Elev. 4828.0 ft
Log measured from KB 13.0 ft above perm. Datum
Drilling measured from KB

Elev.: K.B. 4841.0 ft
D.F. 4841.0 ft
G.L. 4828.0 ft

Date	14-Aug-10		
Run No.	ONE		
Depth - Driller	7200.00 ft		
Depth - Logger	7205.0 ft		
Bottom - Logged Interval	7196 ft		
Top - Logged Interval	808 ft		
Casing - Driller	8.625 in @ 808.0 ft	@	@
Casing - Logger	808.0 ft		
Bit Size	7.875 in	@	@
Type Fluid in Hole	WBM		
Density / Viscosity	9.5 ppg / 45.00 s/qt		
PH / Fluid Loss	8.00 pH / 12.0 cptm		
Source of Sample	FLOW LINE		
Rm @ Meas. Temperature	1.250 ohmm @ 84.50 degF	@	@
Rmf @ Meas. Temperature	1.21 ohmm @ 75.00 degF	@	@
Rmc @ Meas. Temperature	1.218 ohmm @ 75.00 degF	@	@
Source Rmf / Rmc	CHART / CHART		
Rm @ BHT	0.56 ohmm @ 196.0 degF	@	@
Time Since Circulation	5.0 hr		
Time on Bottom	15-Aug-10 00:17		
Max. Rec. Temperature	196.0 degF @ 7205.0 ft	@	@
Equipment / Location	11454566 / BRIGHTON		
Recorded By	C. BLUE		
Witnessed By	R. BOYLES		

Fold here

Service Ticket No.: N/A API Serial No.: 05123311710000 PGM Version: WL INSITE R3.0.4 (Build 6)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE					
Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@		@	
Rmf @ Meas. Temp.		@		@	
Rmc @ Meas. Temp.		@		@	
Source Rmf	Rmc				
Rm @ BHT		@		@	
Rmf @ BHT		@		@	
Rmc @ BHT		@		@	

RESISTIVITY SCALE CHANGES			
Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA				
Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
ONE	ACRT 817-353	N/A	1.5" S.O.	N/A

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11294346	Serial No.	1105780`	Serial No.	I132M275	Serial No.	11301132
Model No.	GTET	Model No.	BSAT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	2	Diameter	4.5"	Diameter	3.625"
Detector Model No.	102A	Spacing	0.5'	Log Type	GAM/GAM	Log Type	NEU/NEU
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]	N	Serial No.	2770 GW	Serial No.	DSN 434
Distance to Source	17'	FWDA [Y/N]	N	Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

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	7205	7020	REC	0	250	30%	-10%	55.5 us/ft	20%	0%	2.68 g/cc	20%	0%	SAND
ONE	7020	6714	REC	0	250	30%	-10%	47.6 us/ft	20%	0%	2.71 g/cc	20%	0%	LIME
ONE	6714	808	REC	0	250	30%	-10%	55.5 us/ft	20%	0%	2.68 g/cc	20%	0%	SAND

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks:

RWCH/GTET/CSNG/DSNT/SDLT/BSAT/ACRT RAN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED FOR 4.5 INCH PRODUCTION CASING

TENSION PULLS AFFECT TOOL RESPONSE

CREW: A. LEWIS, J. WALKER, M. BURNETT RIG: ENSIGN 126

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES -- BRIGHTON, CO -- (303) 825-4346

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PARAMETERS REPORT

Depth (ft)	Tool Name	Description	Value	Units
TOP				
	DSNT	Neutron Lithology	Sandstone	
	SDLT	Formation Density Matrix	2.680	g/cc
	BSAT	Delta -T Matrix Type	Sandstone 55.5	
6714.00				
	DSNT	Neutron Lithology	Limestone	
	SDLT	Formation Density Matrix	2.710	g/cc
	BSAT	Delta -T Matrix Type	Limestone 47.5	
7020.00				
	SHARED	Bit Size	7.875	in
	SHARED	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	Borehole Fluid Weight	9.500	ppg
	SHARED	Oil Based Mud System?	No	
	SHARED	Mud Resistivity	1.250	ohmm
	SHARED	Temperature of Mud	84.5	degF
	SHARED	Logging Interval is Cased?	No	
	SHARED	AHV Casing OD	4.500	in
	SHARED	Surface Temperature	65.0	degF
	SHARED	Total Well Depth	7205.00	ft
	SHARED	Bottom Hole Temperature	196.0	degF
	SHARED	Navigation and Survey Master Tool	NONE	
	SHARED	High Res Z Accelerometer Master Tool	GTET	
	SHARED	Temperature Master Tool	NONE	
	SHARED	Borehole Size Master Tool	NONE	

GTET	Process Gamma Ray?	Yes	
GTET	Gamma Tool Standoff	0.000	in
GTET	Process Gamma Ray EVR?	No	
GTET	Potassium	0.00	%
GTET	Mud Type	Natural	
GTET	Tool Position	Standoff	
CSNG	Process CSNG Data?	Yes	
CSNG	Is Tool Centralized?	No	
CSNG	Mud Type?	Natural	
CSNG	Percent K in Mud by Weight?	0.00	%
CSNG	Gamma Enviromental Corrections?	Yes	
CSNG	Barite Correction Factor	1.00	
DSNT	Process DSN?	Yes	
DSNT	Process DSN EVR?	No	
DSNT	Neutron Lithology	Sandstone	
DSNT	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.000	in
DSNT	Temperature Correction Type	None	
DSNT	DSN Pressure Correction Type	None	
DSNT	View More Correction Options	No	
DSNT	Use TVD for Gradient Corrections?	No	
DSNT	Logging Horizontal Water Tank?	No	
SDLT	Process Density?	Yes	
SDLT	Process Density EVR?	No	
SDLT	Is Hole Air Drilled?	No	
SDLT	Logging Calibration Blocks?	No	
SDLT	SDLT Pad Temperature Valid?	Yes	
SDLT	Disable temperature warning	No	
SDLT	Weighted Mud Correction Type?	None	
SDLT	Formation Density Matrix	2.680	g/cc
SDLT	Formation Density Fluid	1.000	g/cc
SDLT	Process Caliper Outputs?	Yes	
SDLT	Process MicroLog Outputs?	Yes	
BSAT	Compute BCAS Results?	Yes	
BSAT	Semblance Filter Low Pass Value?	5000	Hz
BSAT	Semblance Filter High Pass Value?	27000	Hz
BSAT	Delta -T Fluid	189.00	uspf
BSAT	Delta -T Matrix Type	Sandstone 55.5	
BSAT	Delta -T Shale	100.00	uspf
BSAT	Acoustic Porosity Equation	Wylie	
ACRt	Process ACRt?	Yes	
ACRt	Minimum Tool Standoff	1.50	in
ACRt	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	Tool Position	Free Hanging	
ACRt	Rmud Source	Mud Cell	
ACRt	Minimum Resistivity for MAP	0.20	ohmm
ACRt	Maximum Resistivity for MAP	200.00	ohmm
ACRt	Threshold Quality	0.50	

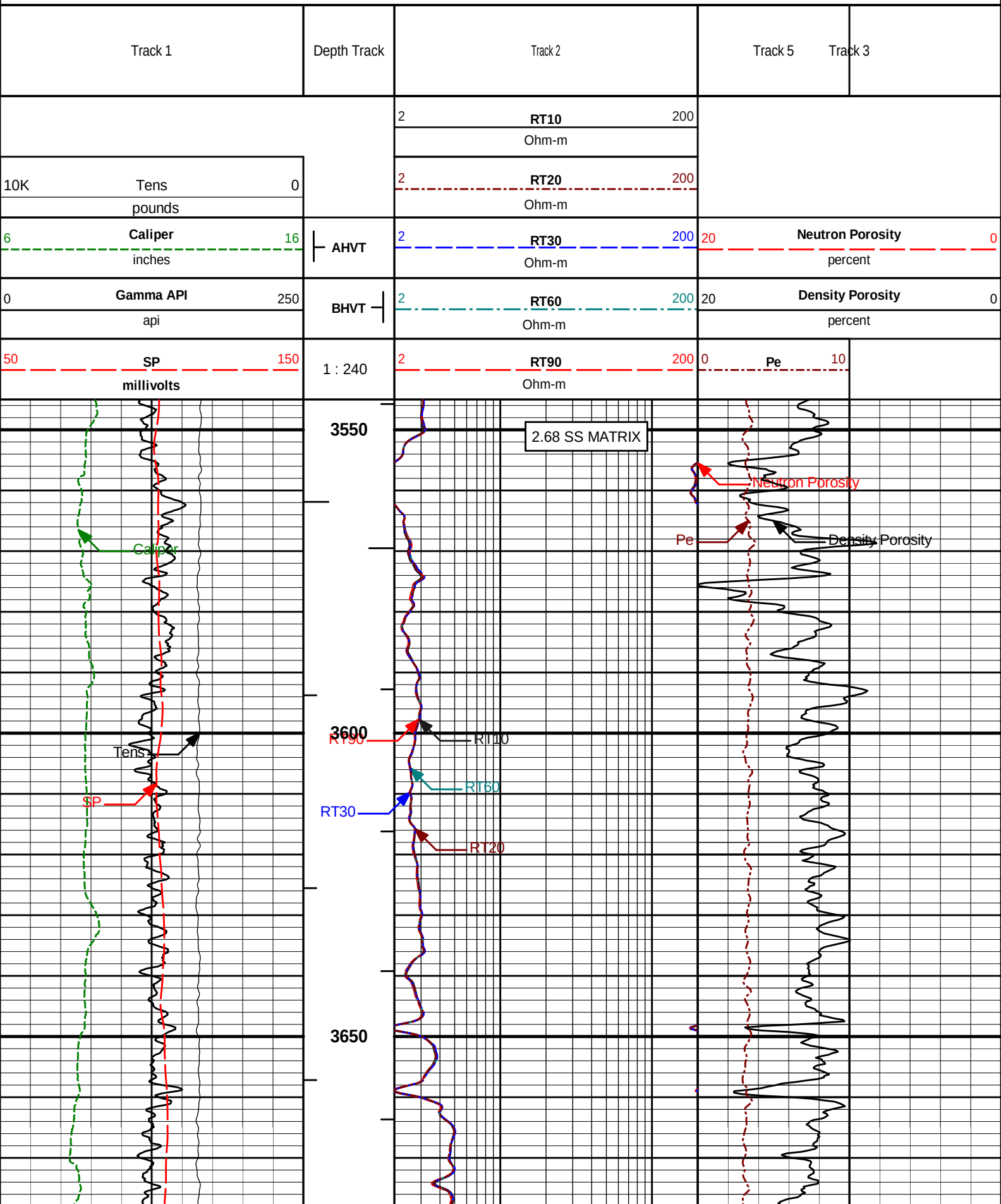
BOTTOM

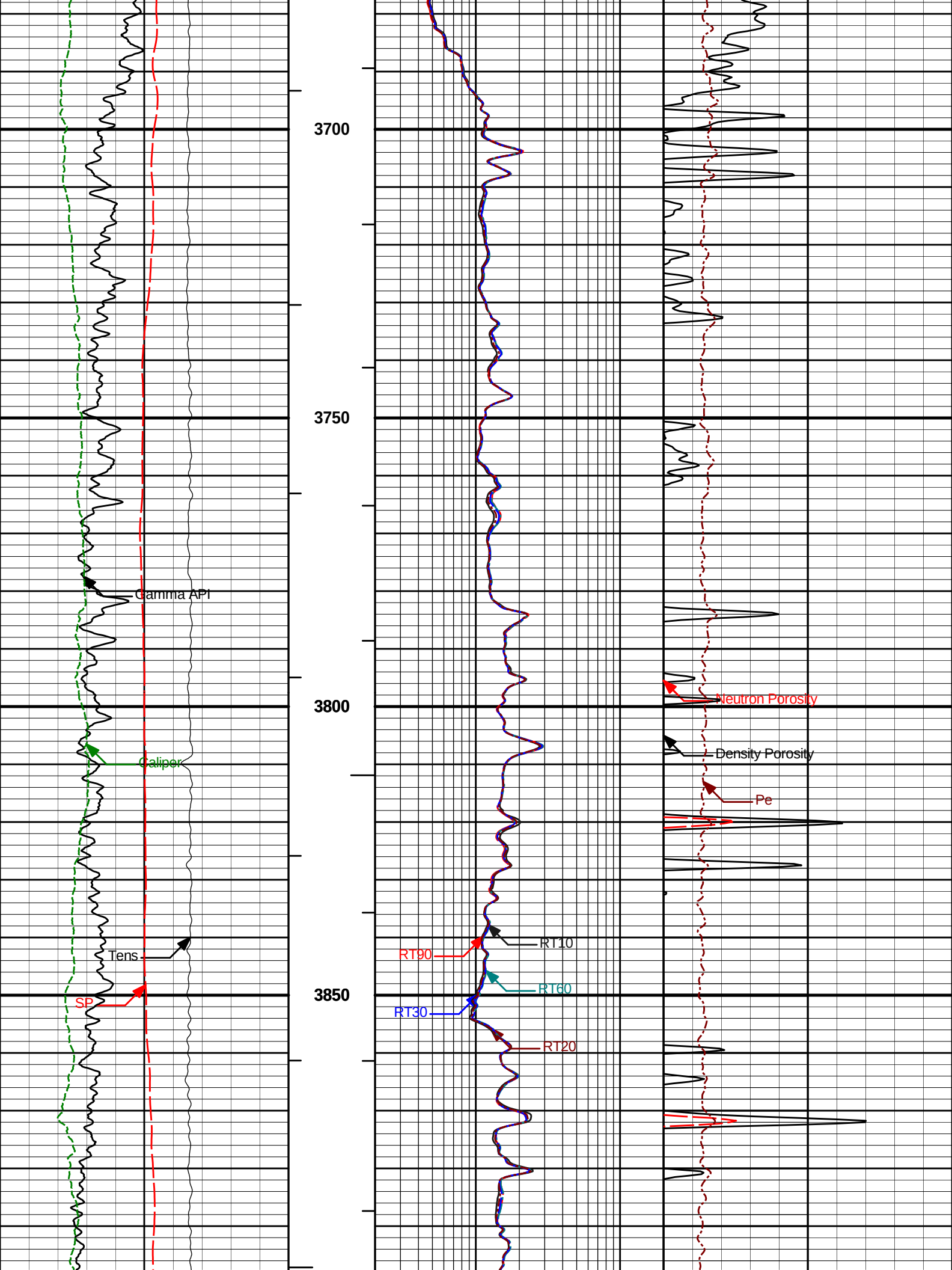
HALLIBURTON

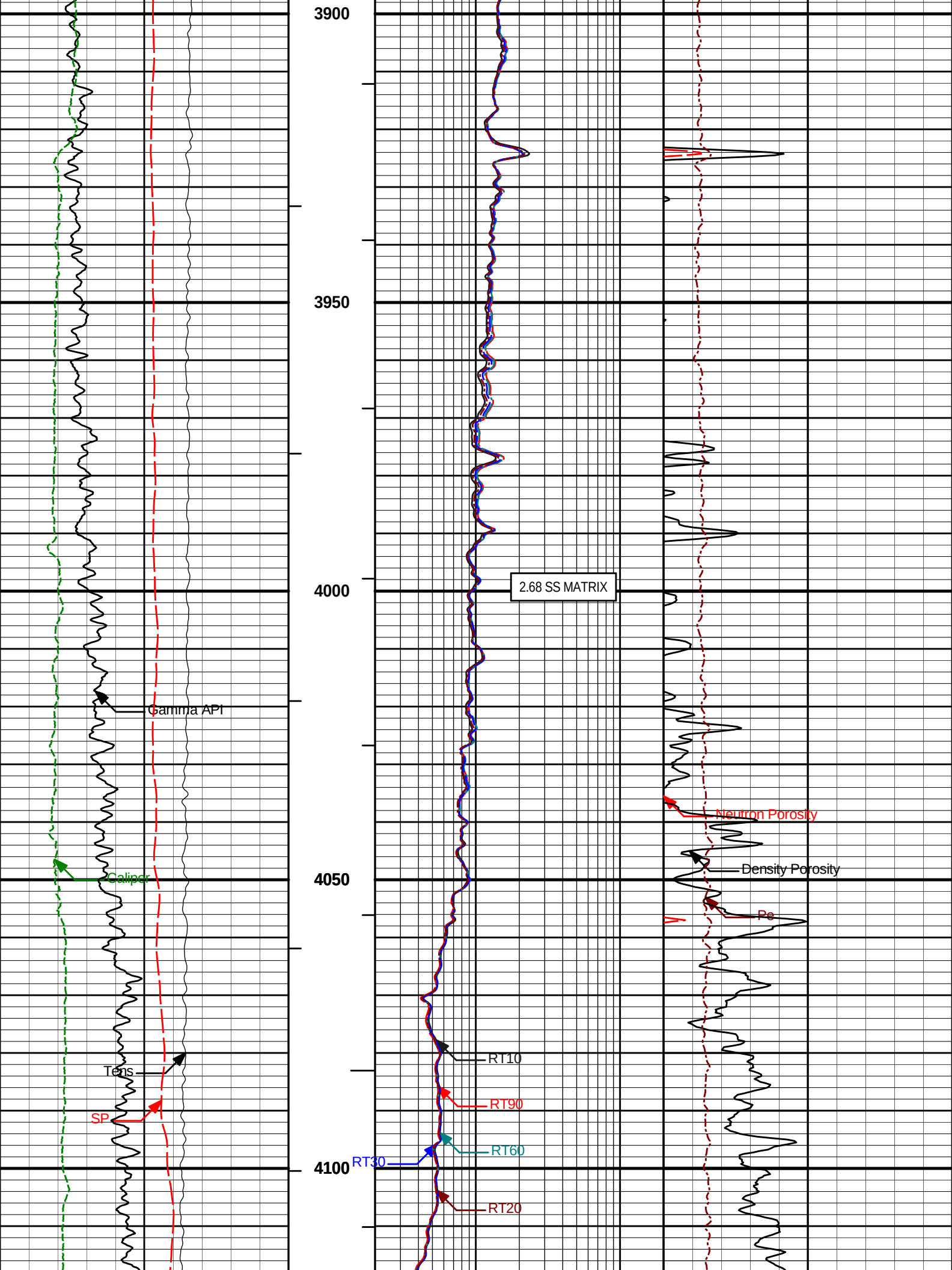
Plot Time: 15-Aug-10 02:03:57
Plot Range: 3545 ft to 5155 ft
Data: WALCKER_USX_AB\Well Based\MAIN*
Plot File: \\COMP\PARK_SUS

MAIN PASS 5" = 100'

MAIN PASS 5" = 100




3700
3750
3800
3850
Gamma API
Caliper
Tens
SP
RT90
RT30
RT10
RT60
RT20
Neutron Porosity
Density Porosity
Pe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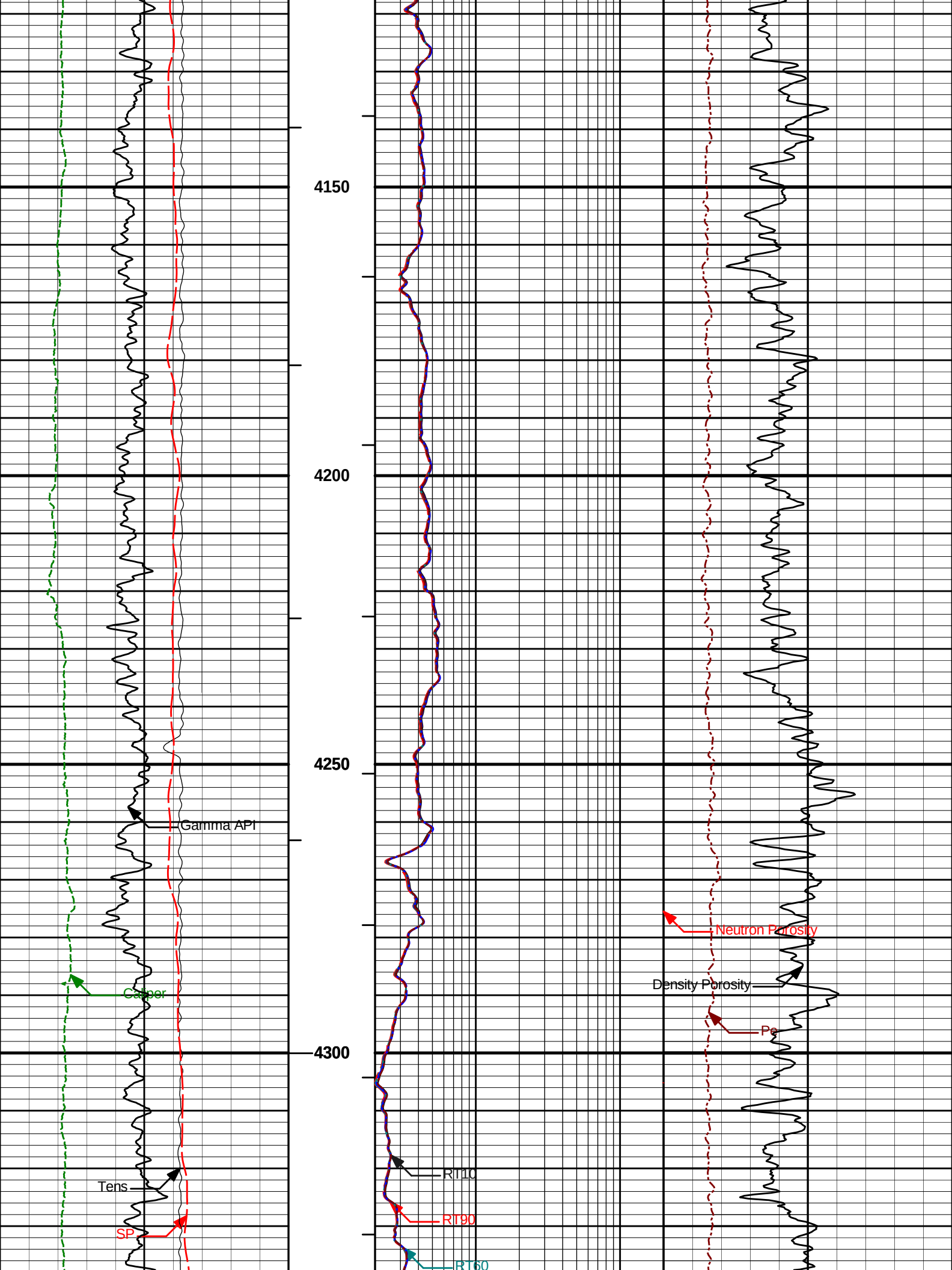
3950
4000
4050
4100
2.68 SS MATRIX
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe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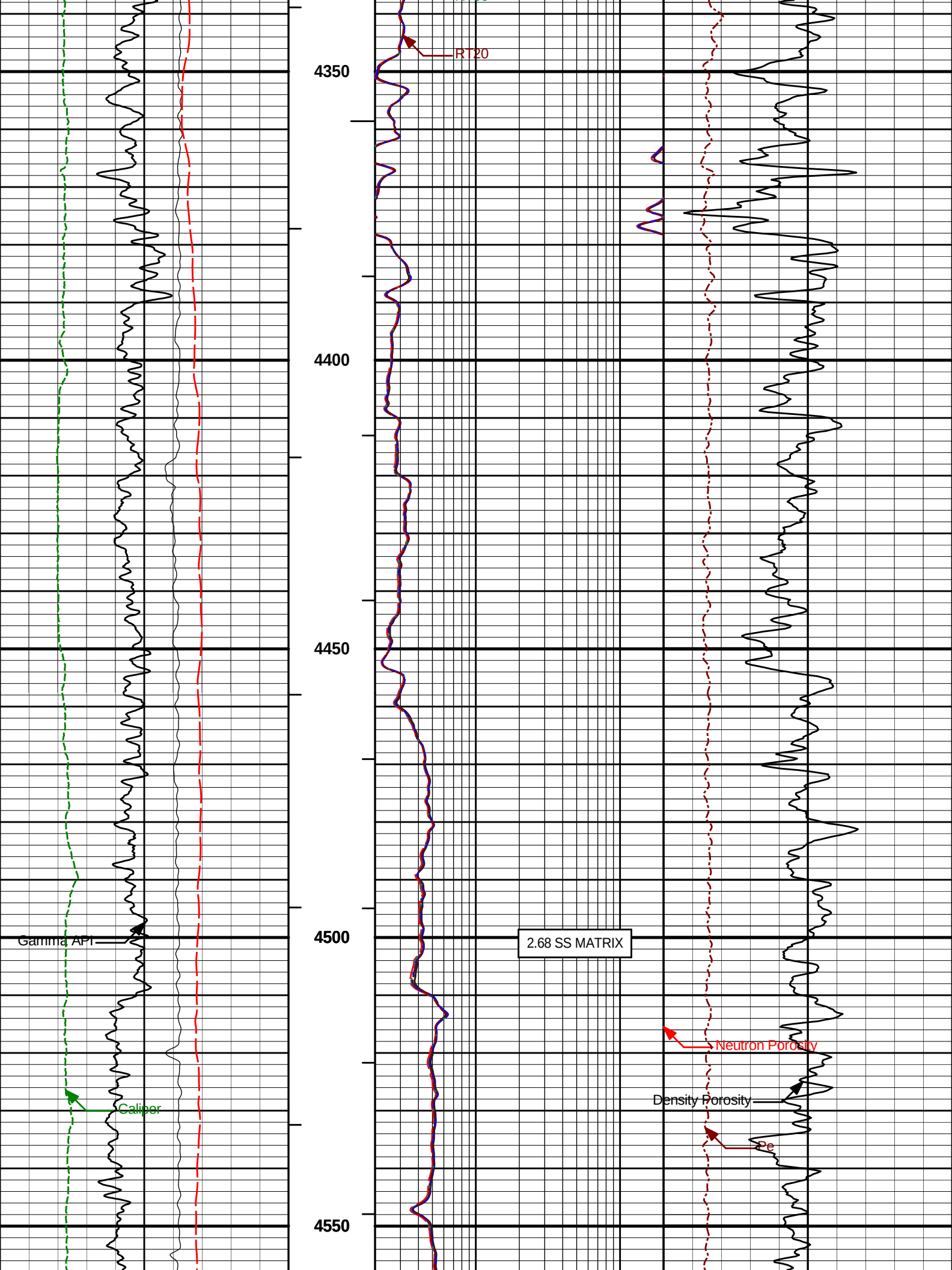
4200
4250
4300
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
Neutron Porosity
Density Porosity
Pe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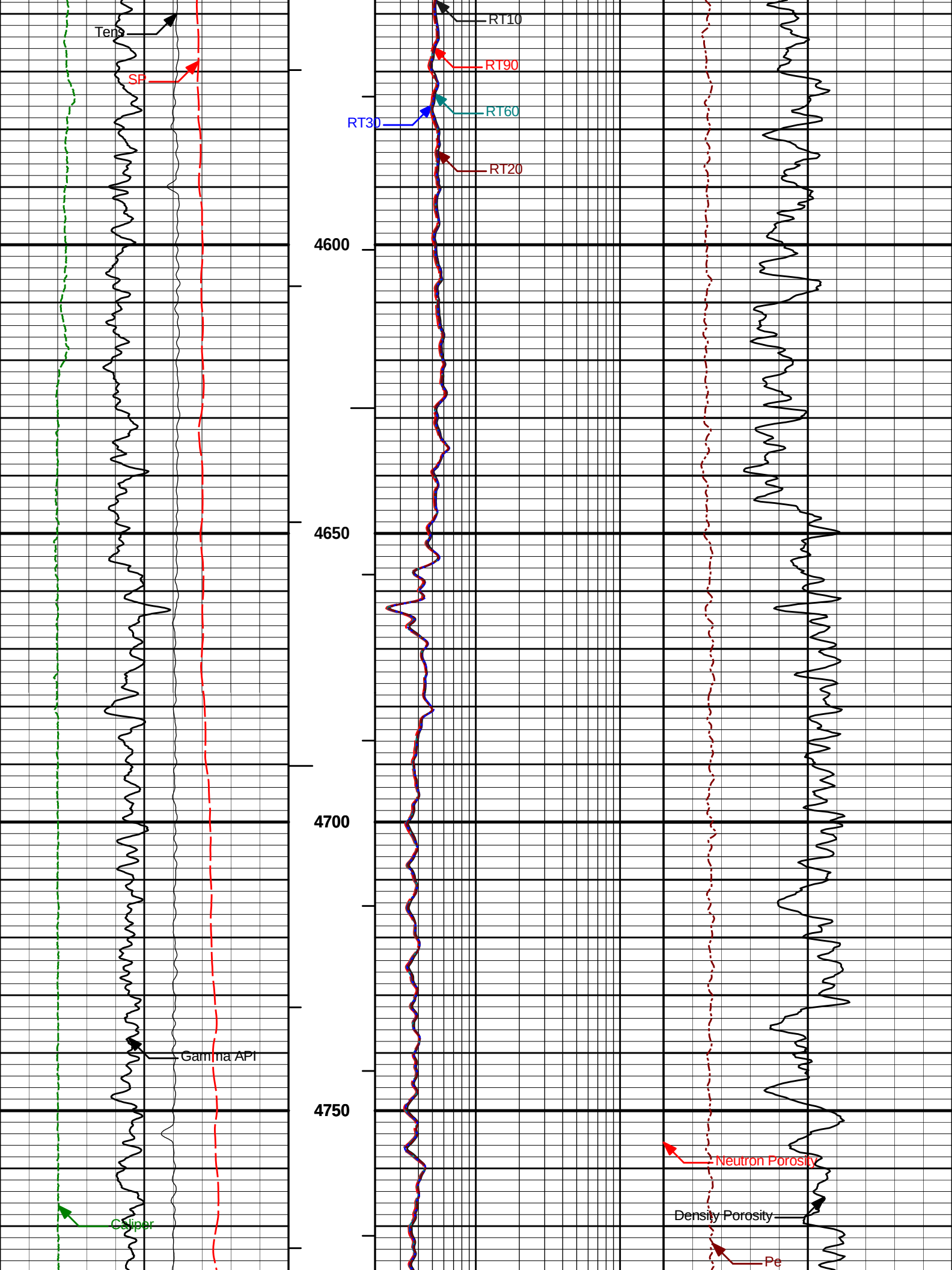
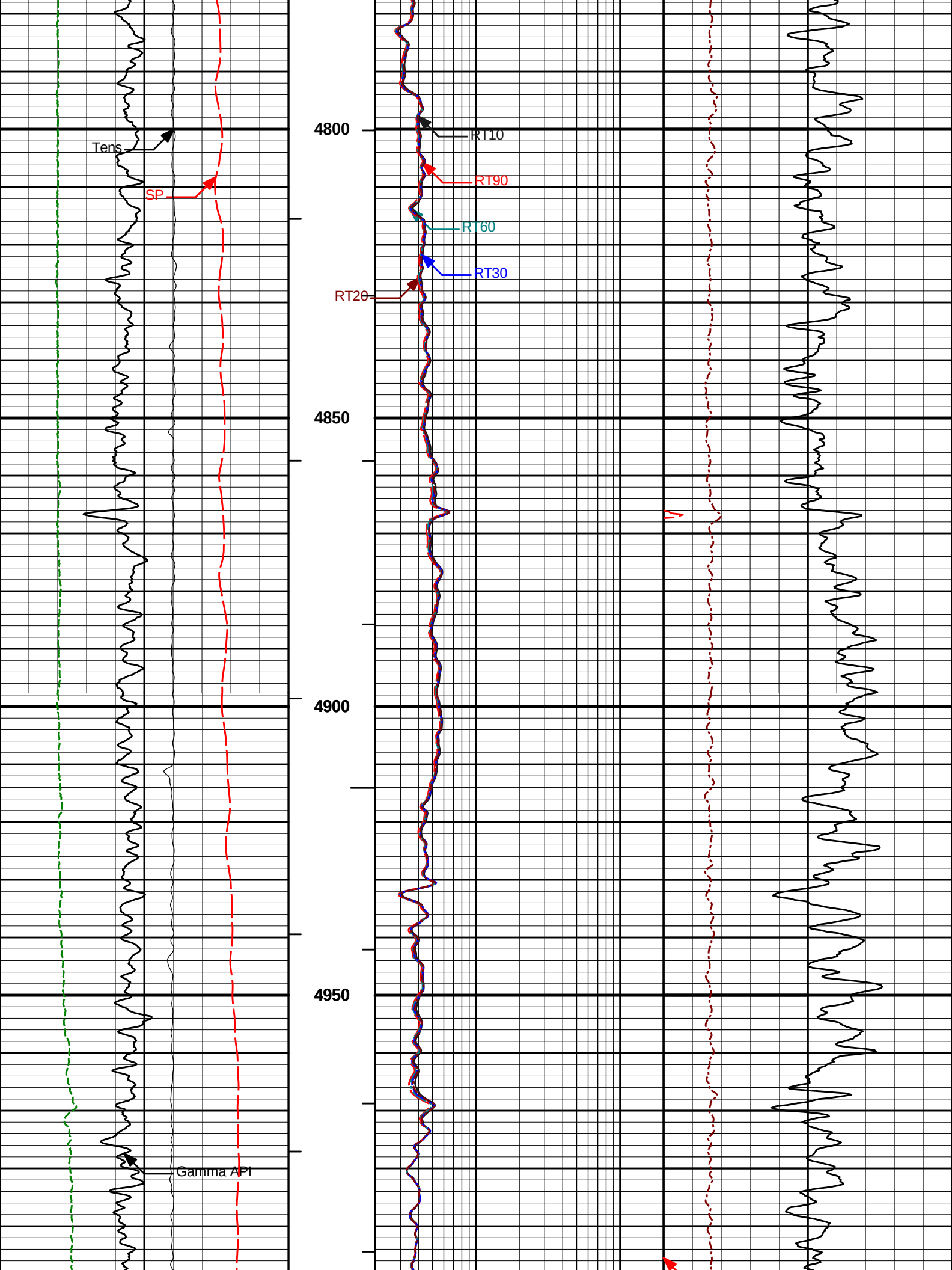
4350
4400
4450
4500
4550
Gamma API
Caliper
2.68 SS MATRIX
Neutron Porosity
Density Porosity
Pe


Tens
SP
RT10
RT90
RT60
RT30
RT20
4600
4650
4700
4750
Gamma API
Caliper
Neutron Porosity
Density Porosity
Pe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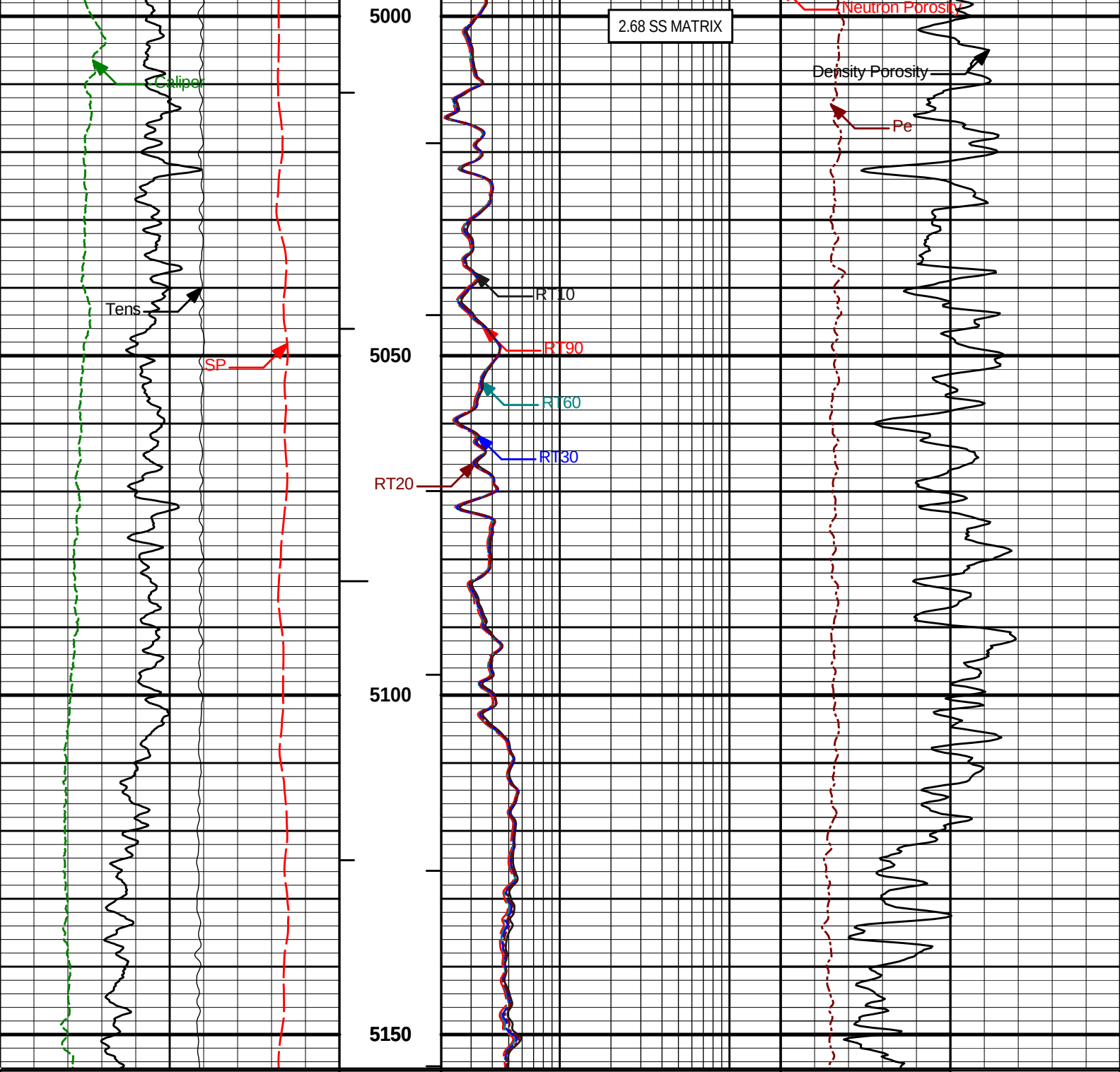
SP
4800
RT10
RT90
RT60
RT30
RT20
4850
4900
4950
Gamma API



50 **SP** 150 millivolts	1 : 240	2 **RT90** 200 Ohm-m
0 **Gamma API** 250 api	**BHVT**	2 **RT60** 200 Ohm-m
6 **Caliper** 16 inches	**AHVT**	2 **RT30** 200 Ohm-m
10K Tens 0 pounds		2 **RT20** 200 Ohm-m
		2 **RT10** 200 Ohm-m

0 **Pe** 10
20 **Density Porosity** 0 percent
20 **Neutron Porosity** 0 percent

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Plot Time: 15-Aug-10 02:04:00
Plot Range: 3545 ft to 5155 ft
Data: WALCKER_USX_AB\Well Based\MAIN*
Plot File: \\COMP\PARK_SUS

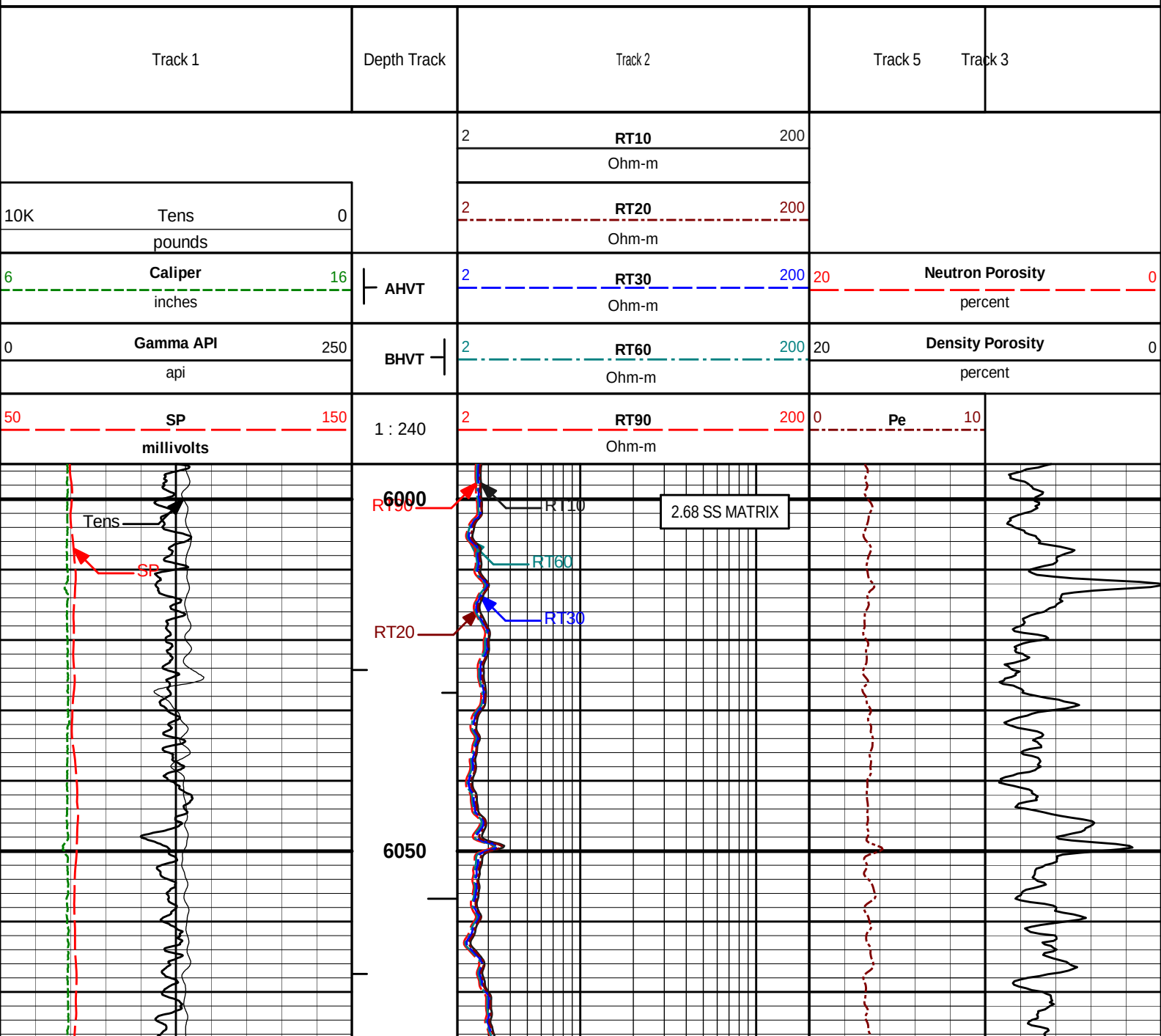
Plot File: \\COMP\PARK_SOS

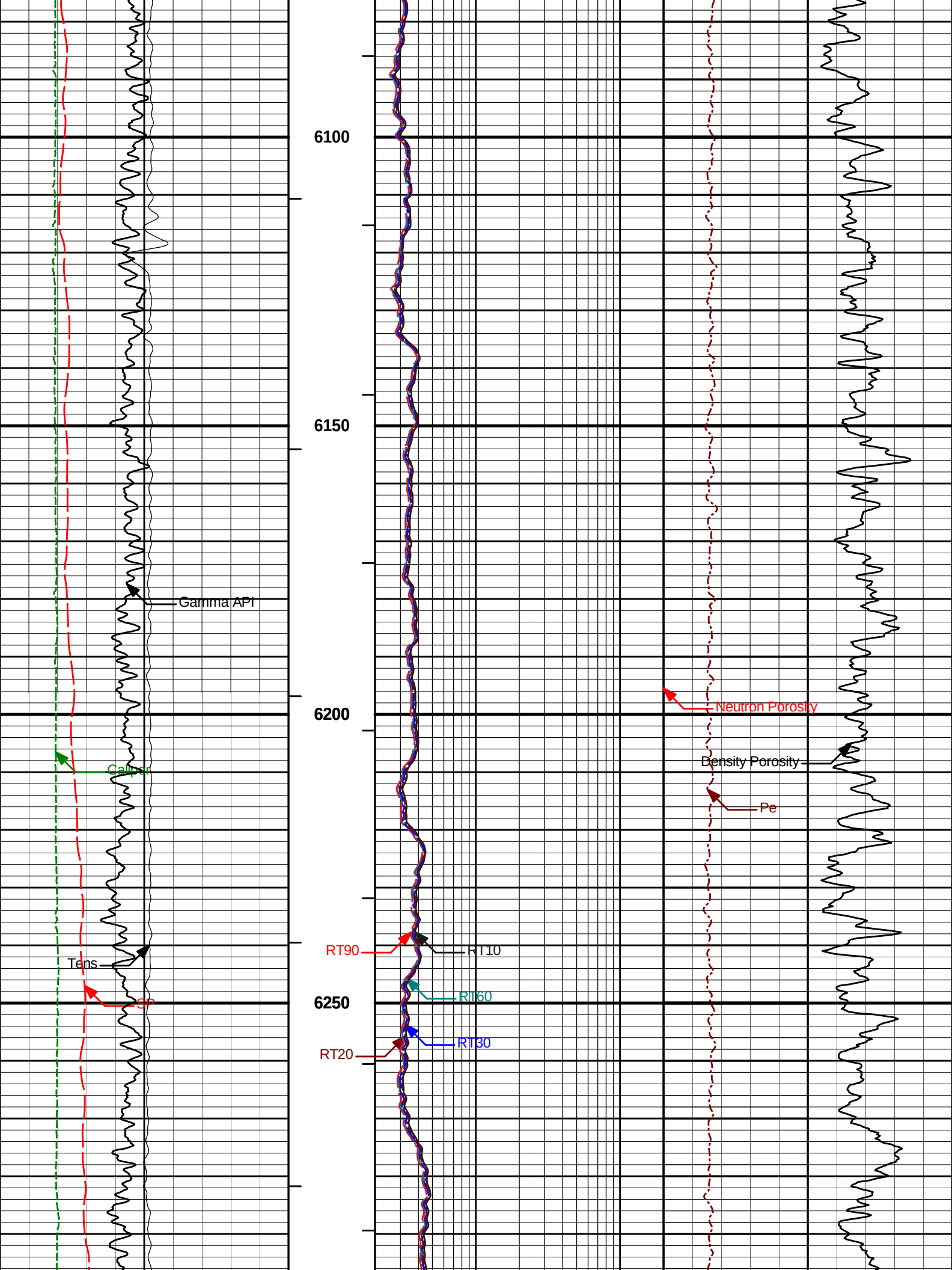
MAIN PASS 5" = 100'

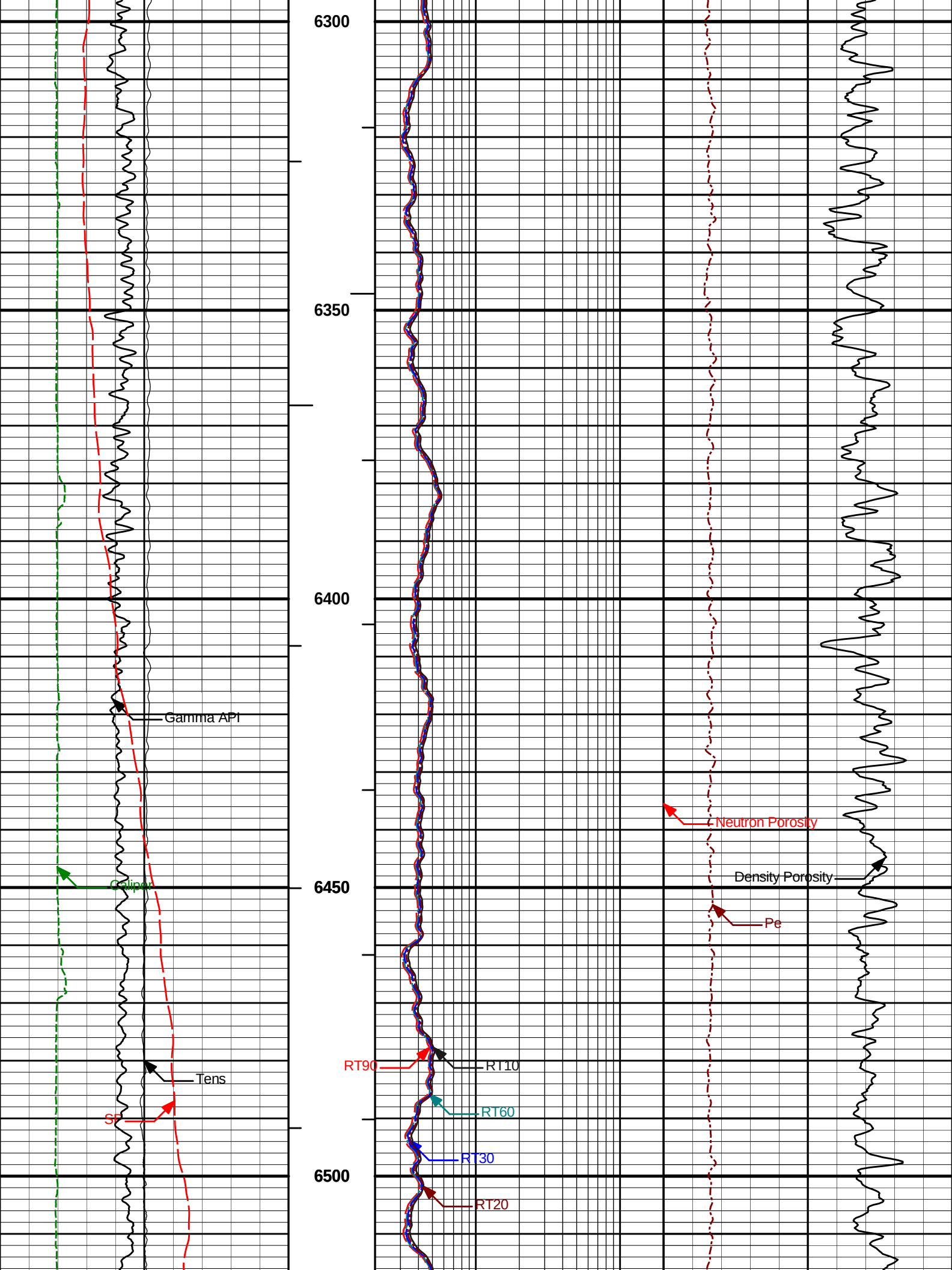
HALLIBURTON

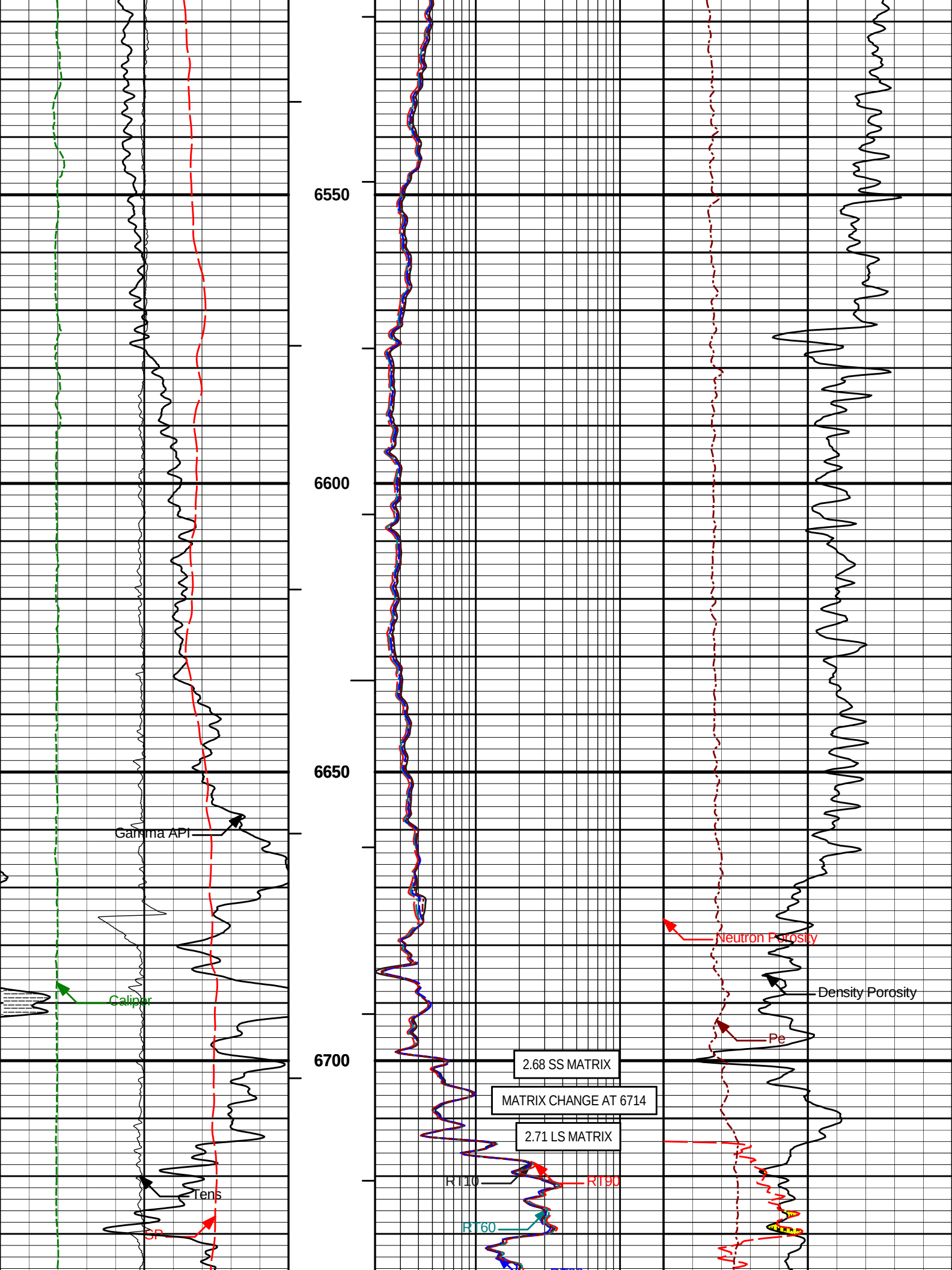
Plot Time: 15-Aug-10 02:04:01
Plot Range: 5995 ft to 7211.08 ft
Data: WALCKER_USX_AB\Well Based**
Plot File: \\COMP\NIO_COD

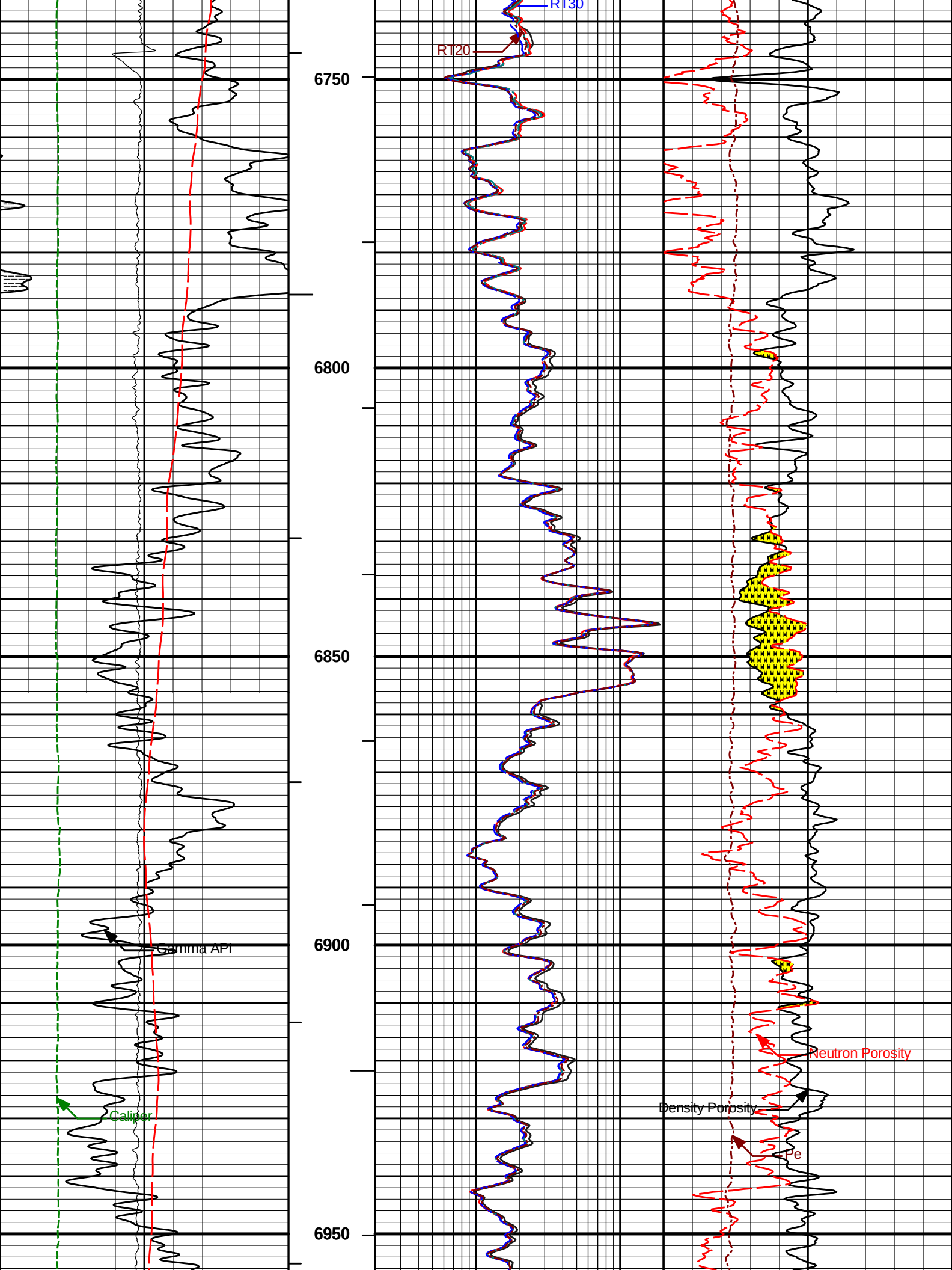
REPEAT SECTION 5" = 100'

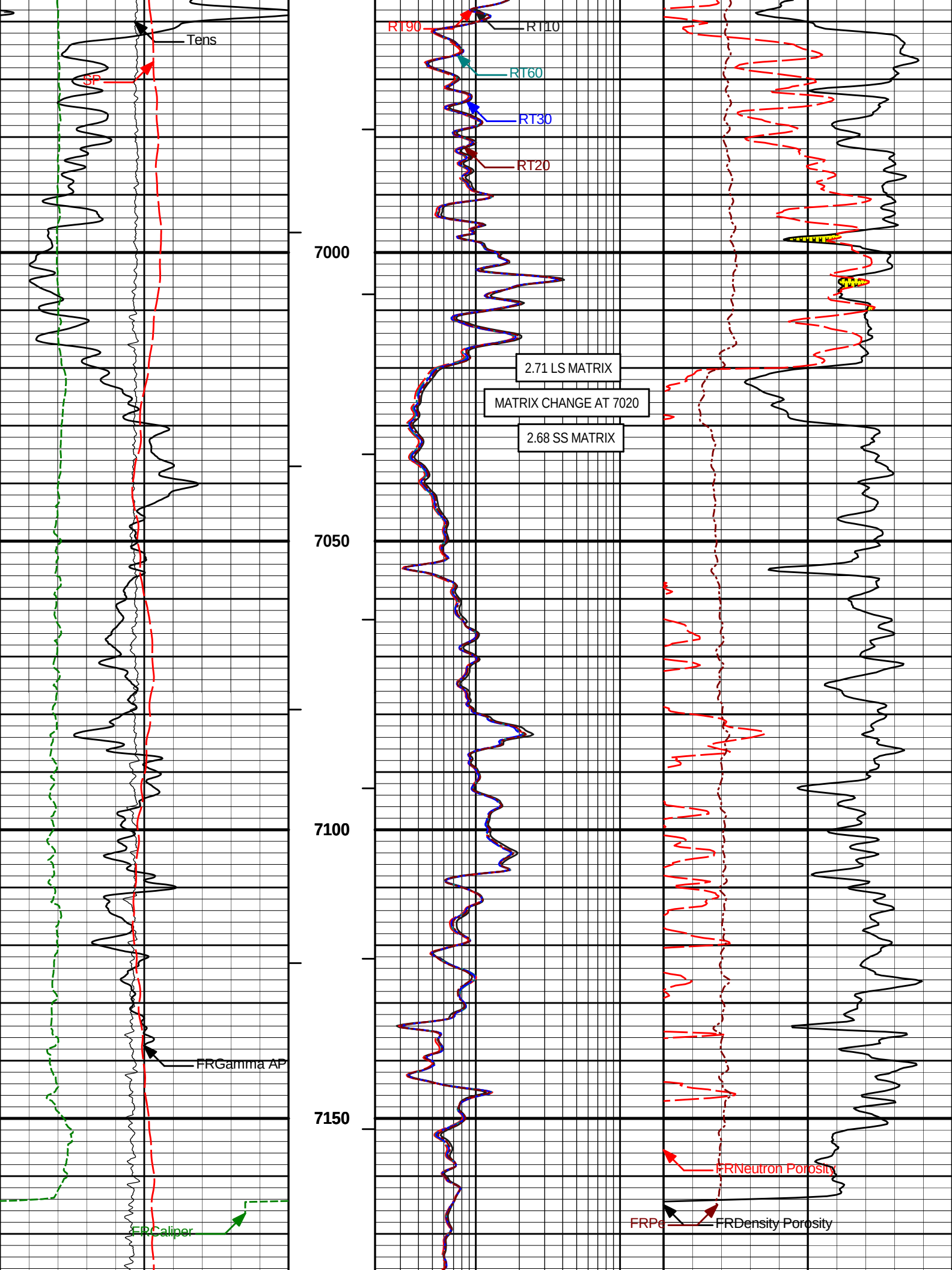


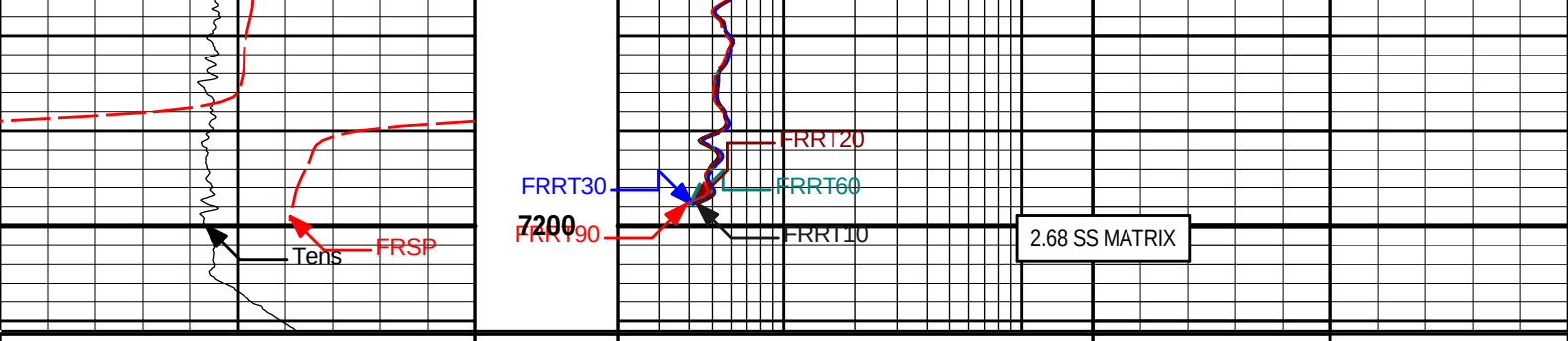

6100
6150
6200
6250
Gamma API
Caliper
Tens
SP
RT90
RT10
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe


6300
6350
6400
6450
6500
Gamma API
Caliper
Tens
SP
RT90
RT10
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe


6550
6600
6650
6700
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
2.68 SS MATRIX
MATRIX CHANGE AT 6714
2.71 LS MATRIX
Neutron Porosity
Density Porosity
Pe


RT30
RT20
6750
6800
6850
6900
6950
Gamma API
Caliper
Neutron Porosity
Density Porosity
Pe


Tens
SP
RT90
RT10
RT60
RT30
RT20
7000
2.71 LS MATRIX
MATRIX CHANGE AT 7020
2.68 SS MATRIX
7050
7100
7150
FRGamma API
FRCaliper
FRNeutron Porosity
FRPe
FRDensity Porosity



50	SP	150	1 : 240	2	RT90	200	0 Pe 10
	millivolts				Ohm-m		
0	Gamma API	250	BHVT	2	RT60	200	20 Density Porosity 0
	api				Ohm-m		percent
6	Caliper	16	AHVT	2	RT30	200	20 Neutron Porosity 0
	inches				Ohm-m		percent
10K	Tens	0		2	RT20	200	
	pounds				Ohm-m		
				2	RT10	200	
					Ohm-m		

HALLIBURTON

Plot Time: 15-Aug-10 02:04:03
Plot Range: 5995 ft to 7211.08 ft
Data: WALCKER_USX_AB\Well Based***
Plot File: \\COMP\NIO_COD

REPEAT SECTION 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11294346**	**Reference Calibration Date:**	**14-Jul-10 10:36:31**
Engineer:	**W. MATSON**	**Calibration Date:**	**20-Jul-10 12:00:55**
Software Version:	**WL INSITE R3.0.4 (Build 6)**	**Calibration Version:**	**1**

Calibrator Source S/N: KW-290
Calibrator API Reference:230.00 api

Measurement	Measured	Calibrated	Units
Background	79.1	79.2	api
Background + Calibrator	312.8	313.2	api
Calibrator	234.1	234.0	api

CSNG-FS SHOP CALIBRATION

Tool Name:	**CSNG - 10965402**	**Reference Calibration Date:**	**21-Jun-10 16:17:35**
Engineer:	**W. MATSON**	**Calibration Date:**	**20-Jul-10 12:11:34**
Software Version:	**WL INSITE R3.0.4 (Build 6)**	**Calibration Version:**	**1**
Source SN:	**KW-290**		

TITANIUM CASE	Measured	Calibrated	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	22.7	22.7	Channel #
583 KEV Peak Channel #	51.2	51.1	Channel #
2614 KEV Peak Channel #	210.3	209.6	Channel #
Calibrate Temperature	110.9	124.3	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 230.00 API
Calibrator Value: 261.2 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1635.1	CPS	328.8	321.8	API
Background	307.9	CPS	67.6	60.6	API

Gamma Ray Gain: 0.99
Gamma Gain Check: Passed

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 11301132**	**Reference Calibration Date:**	**22-Jun-10 16:34:25**
Engineer:	**C. BLUE**	**Calibration Date:**	**22-Jun-10 16:50:38**
Software Version:	**WL INSITE R3.0.4 (Build 6)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-434
Tank Serial Number: BRIGHTONWATERTANK
Reference value assigned to Tank: 55.000
Snow Block S/N: BRIGHTON
Calibration Tank Water Temperature: 70 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	**Prev. Value**	**New Value**	**Control Limit On New Value**
Gain:	1.013	1.018	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	**Current Reading (Previous Coef.)**	**Calibrated (New Coef.)**	**Change**	**Control Limit On Change**
Porosity (decp):	0.2283	0.2296	0.0012	+/- 0.0020
Calibrated Ratio:	10.31	10.35	0.041	+/- 0.050

VERIFIER		
Measurement	**Value**	**Control Limit**
Snow-Block Porosity (decp):	0.0866	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	**SDLT - I132M275**	**Reference Calibration Date:**	**21-Jun-10 13:03:40**
Engineer:	**F. LODER**	**Calibration Date:**	**20-Jul-10 15:11:00**
Software Version:	**WL INSITE R3.0.4 (Build 6)**	**Calibration Version:**	**1**

Logging Source S/N: 2770GW

Aluminum Block S/N: BRIGHTON_AL Density: 2.600g/cc Pe: 3.100

Magnesium Block S/N: BRIGHTON_MG Density: 1.680g/cc Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0646	1.0642	0.90 - 1.10
Near Dens Gain	1.0263	1.0244	0.90 - 1.10
Near Peak Gain	1.0385	1.0404	0.90 - 1.10
Near Lith Gain	1.0161	1.0149	0.90 - 1.10
Far Bar Gain	1.0229	1.0194	0.90 - 1.10
Far Dens Gain	1.0076	1.0054	0.90 - 1.10
Far Peak Gain	1.0002	0.9965	0.90 - 1.10
Far Lith Gain	0.9722	0.9661	0.90 - 1.10
Near Bar Offset	-0.3448	-0.3458	NONE
Near Dens Offset	-0.0119	0.0006	NONE
Near Peak Offset	-0.1195	-0.1399	NONE
Near Lith Offset	0.0440	0.0515	NONE
Far Bar Offset	-0.0002	0.0262	NONE
Far Dens Offset	0.1163	0.1296	NONE
Far Peak Offset	0.1507	0.1721	NONE
Far Lith Offset	0.2987	0.3386	NONE
Near Bar Background	956.86	956.41	700 - 1450
Near Dens Background	316.67	316.89	230 - 480
Near Peak Background	136.92	137.59	100 - 210
Near Lith Background	166.23	167.00	125 - 260
Far Bar Background	502.62	505.28	450 - 900
Far Dens Background	201.83	199.86	175 - 345
Far Peak Background	78.15	78.21	70 - 140
Far Lith Background	81.94	81.91	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.678	1.680	0.002	+/- 0.015
Pe	2.589	2.593	0.004	+/- 0.150
ALUMINUM				
Density (g/cc)	2.600	2.600	-0.000	+/- 0.01500
Pe	3.102	3.099	-0.003	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0017	+/- 0.0110	-0.0024	+/- 0.0140

Magnesium Block	0.0001	+/- 0.0110	-0.0014	+/- 0.0140
Aluminum Block	-0.0009	+/- 0.0110	-0.0005	+/- 0.0140
Resolution	8.78	6.00 - 11.50	9.76	6.00 - 11.50
Internal Verifier(B+D+P+L)	1578	1200 - 1700	865	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - I132M275 **Reference Calibration Date:** 28-Jul-10 22:05:38

Engineer: C. BLUE **Calibration Date:** 28-Jul-10 22:10:07

Software Version: WL INSITE R3.0.4 (Build 6) **Calibration Version:** 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2229.74	-2333.87	-7000.00 - -1000.00
Pad Gain	0.0003920	0.0003958	0.000200 - 0.000600
Arm Offset	-1200.06	-1329.91	-5000.00 - 3000.00
Arm Gain	0.0005231	0.0005358	0.000300 - 0.000700
Arm Power	-0.000006027	-0.000006602	-0.000010 - 0.000010

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.02	2.00	-0.02	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.56	6.50	-0.06	+/- 0.20
Medium Ring (in)	8.28	8.25	-0.03	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt - 90199477-E2817-S4353 **Reference Calibration Date:** 04-Jun-10 17:05:07

Engineer: C. BLUE **Calibration Date:** 13-Aug-10 20:06:47

Software Version: WL INSITE R3.0.4 (Build 6) **Calibration Version:** 1

TYPICAL GAIN RANGE

Subarray	R12KHz	R36KHz	R72KHz

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0167	1.05	0.95	1.0163	1.05	0.95	1.0146	1.05
A2 (50")	0.95	1.0118	1.05	0.95	1.0132	1.05	0.95	1.0128	1.05
A3 (29")	0.95	1.0069	1.05	0.95	1.0085	1.05	0.95	1.0057	1.05
A4 (17")	0.95	1.0150	1.05	0.95	1.0133	1.05	0.95	1.0143	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0000	1.05	0.95	0.9992	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9881	1.05	0.95	0.9862	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	-0.995	2	-6	-4.514	-2	-8	-4.963	-2
A2 (50")	-7	-1.354	-1	-6	-2.867	-2	-7	-4.762	-2
A3 (29")	-27	-13.303	-9	-9	-3.580	-3	-7	-3.628	-1
A4 (17")	-180	-90.373	-60	-45	-29.209	-15	-39	-25.034	-13
A5 (10")	N/A	N/A	N/A	-150	-90.980	-50	-80	-43.898	-10
A6 (6")	N/A	N/A	N/A	175	329.261	525	90	166.175	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.9189	1.3
36K	1.0	1.8306	2.0
72K	1.0	1.1584	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	0.996	1.05

CALIBRATION SUMMARY

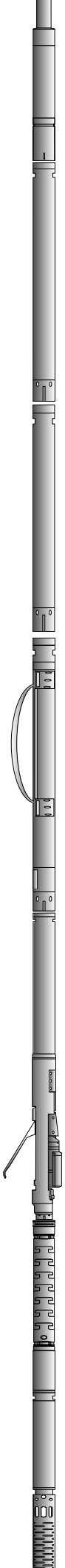
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11294346						
Gamma Ray Calibrator	234.0	----------	----------	0.0	+/- 9.00	api
CSNG-10965402						
60 KEV Peak Channel #	48.0	----------	----------	0.0	----------	Channel #
239 KEV Peak Channel #	22.7	----------	----------	0.0	----------	Channel #
583 KEV Peak Channel #	51.1	----------	----------	0.0	----------	Channel #
2614 KEV Peak Channel #	209.6	----------	----------	0.0	----------	Channel #
DSNT-11301132						
Snow-Block Porosity	0.0866	----------	----------	0.0000	+/- -.--	decp
SDLT-I132M275						
Near(B+D+P+L)	1577.897	----------	----------	0.000	+/-13.973	cps
Far(B+D+P+L)	865.263	----------	----------	0.000	+/-14.607	cps
Pad Extension	3.75	----------	----------	0.00	+/-0.20	in
Ring Diameter	8.25	----------	----------	0.00	+/-0.20	in
ACRt-90199477-E2817-S4353						
Mud Cell	0.996	----------	----------	0.000	----------	ohm-m

Data: WALCKER_USX_AB\0001 NOBLE_RED_BSAT\IDLE **Date: 14-Aug-10 23:53:10**

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						85.01 ft



RWCH-A094
135.00 lbs

Ø 3.625 in

Load Cell @ 81.33 ft
BH Temperature @ 80.76 ft

6.25 ft

78.76 ft

GTET-11294346
165.00 lbs

Ø 3.625 in

8.52 ft

GammaRay @ 72.70 ft

70.24 ft

CSNG-10965402
114.00 lbs

Ø 3.625 in

8.17 ft

CSNG @ 64.61 ft

62.07 ft

DSN Decentralizer-
10860047
6.60 lbs

Ø 3.625 in*

DSNT-11301132
174.00 lbs

Ø 3.625 in

9.69 ft

DSN Far @ 55.14 ft
DSN Near @ 54.39 ft

52.39 ft

SDLT-I132M275
360.00 lbs

Ø 4.500 in

Ø 4.750 in

10.81 ft

SDL Microlog @ 44.57 ft
SDL Caliper @ 44.39 ft
SDL @ 44.38 ft

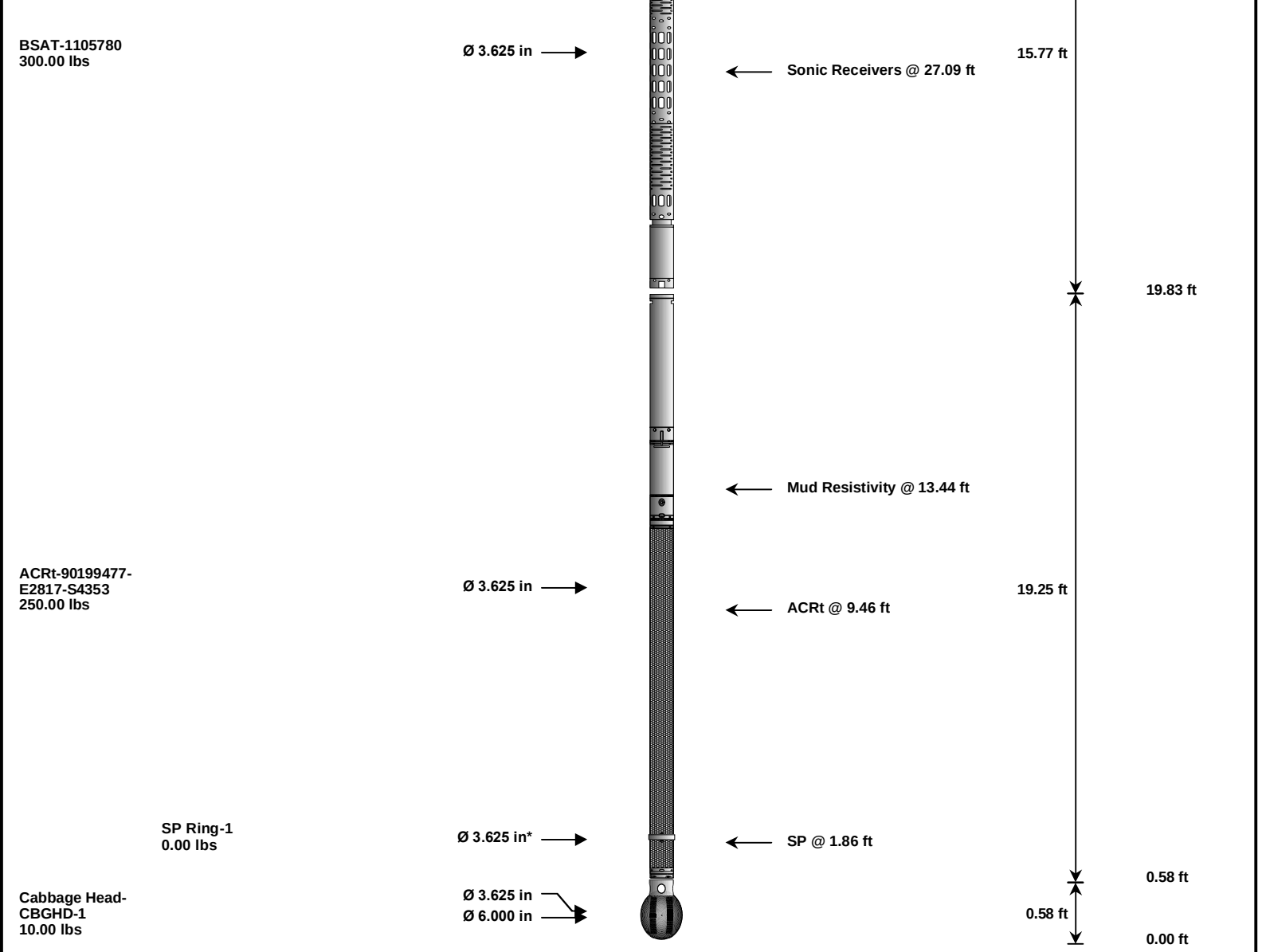
41.57 ft

Flex Joint -
Pressure Comp-
FLEX-BLACK
140.00 lbs

Ø 3.625 in

5.97 ft

35.60 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	A094	135.00	6.25		78.76	300.00
GTET	Gamma Telemetry Tool	11294346	165.00	8.52		70.24	60.00
CSNG	Compensated Spectral Natural Gamma	10965402	114.00	8.17		62.07	15.00
DSNT	Dual Spaced Neutron	11301132	174.00	9.69		52.39	60.00
DCNT	DSN Decentralizer	10860047	6.60	5.13	*	55.72	300.00
SDLT	Spectral Density Tool	I132M275	360.00	10.81		41.57	60.00
FLEX	Flex Joint - Pressure Compensated	FLEX-BLACK	140.00	5.97		35.60	300.00
BCAS	Borehole Sonic Array Tool	1105780	300.00	15.77		19.83	60.00
ACRt	Array Compensated True Resistivity	90199477-E2817-S4353	250.00	19.25		0.58	300.00
SP	SP Ring	1	0.00	0.25	*	1.86	300.00
CBHD	Cabbage Head	CBGHD-1	10.00	0.58		0.00	300.00
Total			**1,654.60**	**85.01**			

* Not included in Total Length and Length Accumulation.

Data: WALCKER_USX_AB\0001 NOBLE_RED_BSAT\IDLE **Date: 14-Aug-10 23:09:26**

COMPANY	**NOBLE ENERGY**
WELL	**WALCKER USX AB01-14P**
FIELD	**WATTENBERG**
COUNTY	**WELD** STATE **CO**

COUNTY WELD STATE CO

HALLIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
ARRAY COMPENSATED
TRUE RESISTIVITY