

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

COMPANY		NOBLE ENERGY INC	
WELL		DECHANT USX X29-06	
FIELD		WATTENBERG	
COUNTY		WELD	
STATE		CO	
Permanent Datum Log measured from Drilling measured from	GL	Elev. 4925.0 ft	
	KB	Elev. K.B. 4938.0 ft	
	KB	D.F. 4938.0 ft	
	KB	G.L. 4925.0 ft	
	KB	G.L. 4925.0 ft	
Date	06-Nov-11		
Run No.	ONE		
Depth - Driller	7914.00 ft		
Depth - Logger	7898.0 ft		
Bottom - Logged Interval	7885 ft		
Top - Logged Interval	953 ft		
Casing - Driller	8.625 in @ 959.0 ft		
Casing - Logger	953.0 ft		
Bit Size	7.875 in		
Type Fluid in Hole	WATER BASED MUD		
Density	9.3 ppq	41.00	s/qt
PH	7.00 pH	15.2	cp/m
Source of Sample	MUD CELL		
Rm @ Meas. Temperature	1.500 ohmm @ 78.00 degF		
Rmf @ Meas. Temperature	1.36 ohmm @ 75.00 degF		
Rmc @ Meas. Temperature	1.341 ohmm @ 75.00 degF		
Source Rmf	CHART	CHART	
Rm @ BHT	0.56 ohmm @ 220.0 degF		
Time Since Circulation	6.0 hr		
Time on Bottom	06-Nov-11 09:10		
Max. Rec. Temperature	220.0 degF @ 7898.0 ft		
Equipment	11454566	BRIGHTON	
Recorded By	F. LODER		
Witnessed By	B. FRANK		

COMPANY NOBLE ENERGY INC
WELL DECHANT USX X29-06
FIELD WATTENBERG
COUNTY WELD
STATE CO

API No. 05123329280000
Location SURFACE: 2055' FNL & 2059' FWL
LATITUDE: 40.111115°
LONGITUDE: -104.689876°

Other Services:
RWCH
CSNG

Fold here

Service Ticket No.: 9043659						API Serial No.: 05123329280000						PGM Version: WL INSITE R3.4.2 (Build 2)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole									
Depth-Driller																													
Type Fluid in Hole																													
Density		Viscosity																											
Ph		Fluid Loss																											
Source of Sample												RESISTIVITY EQUIPMENT DATA																	
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.				Pad Type				Tool Pos.				Other			
Rmf @ Meas. Temp.				@				@				ONE		ACRt 758-352				N/A				1.5" S.O.				N/A			
Rmc @ Meas. Temp.				@				@																					
Source Rmf		Rmc																											
Rm @ BHT				@				@																					
Rmf @ BHT				@				@																					
Rmc @ BHT				@				@																					
EQUIPMENT DATA																													
GAMMA						ACOUSTIC						DENSITY						NEUTRON											
Run No.		ONE				Run No.						Run No.		ONE				Run No.		ONE									
Serial No.		11294346				Serial No.						Serial No.		M335-P470				Serial No.		11301132									
Model No.		GTET				Model No.						Model No.		SDLT				Model No.		DSNT									
Diameter		3625"				No. of Cent.						Diameter		4.5"				Diameter		3.625"									
Detector Model No.		2G8BICORN				Spacing						Log Type		GAM-GAM				Log Type		NEU-NEU									
Type		SCINT										Source Type		Cs137				Source Type		Am241Be									
Length		8"				LSA [Y/N]						Serial No.		2770GW				Serial No.		DSN434									
Distance to Source		18'				FWDA [Y/N]						Strength		1.5 Ci				Strength		15 Ci									

GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix			
No.	From	To	ft/min	L	R	L	R		L	R	L	R		
ONE	953'	6984'	REC	0 API	250 API				20 %	0 %	2.68 g/cc	20 %	0 %	SAND
ONE	6984'	7265'	REC	0 API	250 API				20 %	0 %	2.71 g/cc	20 %	0 %	LIME
ONE	7265'	7679'	REC	0 API	250 API				20 %	0 %	2.68 g/cc	20 %	0 %	SAND
ONE	7679'	7898'	REC	0 API	250 API				20 %	0 %	2.65 g/cc	20 %	0 %	SAND
DIRECTIONAL INFORMATION														
Maximum Deviation @									KOP @					
Remarks: RWCH-GTET-CSNG-DSNT-SDLT-ACRT-MS RAN IN COMBINATION														
TENSION PULLS AND BOREHOLE RUGOSITY AFFECT LOG RESPONSE														
ANNULAR HOLE VOLUME CALCULATED USING 4.5-INCH PRODUCTION CASING														
CHLORIDES REPORTED AT 1150 PPM														
YOUR CREW TODAY: A. DUNCAN, B. ELTRICH														
RIG: ENSIGN 126														
THANK YOU FOR USING HALLIBURTON ENERGY SERVICES -- BRIGHTON, CO -- 3036.825.4346														
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.														
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PARAMETERS REPORT

Depth ((ft))	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	NLIT	Neutron Lithology	Sandstone	
	SDLT Pad	DMA	Formation Density Matrix	2.680	g/cc
6984.00					
	DSNT	NLIT	Neutron Lithology	Limestone	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
7265.00					
	SDLT Pad	DMA	Formation Density Matrix	2.680	g/cc
7679.00					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.300	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	1.500	ohmm
	SHARED	TRM	Temperature of Mud	78.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	31.0	degF
	SHARED	TD	Total Well Depth	7914.00	ft
	SHARED	BHT	Bottom Hole Temperature	220.0	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 for Gamma Ray Tools.	Eccentered	
CSNG	CGOK	Process CSNG Data?	Yes	
CSNG	CENT	Is Tool Centralized?	No	
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.00	
CSNG	ORDG	Use Fixed Gain	No	
CSNG	ORDO	Use Fixed Offset	No	
CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Sandstone	
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	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.650	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	

BOTTOM

Data: DCHNTUSX_X29_06\0001 NOBLE\002.01 06-Nov-11 10:35 UpDate: 06-Nov-11 10:41:53

HALLIBURTON

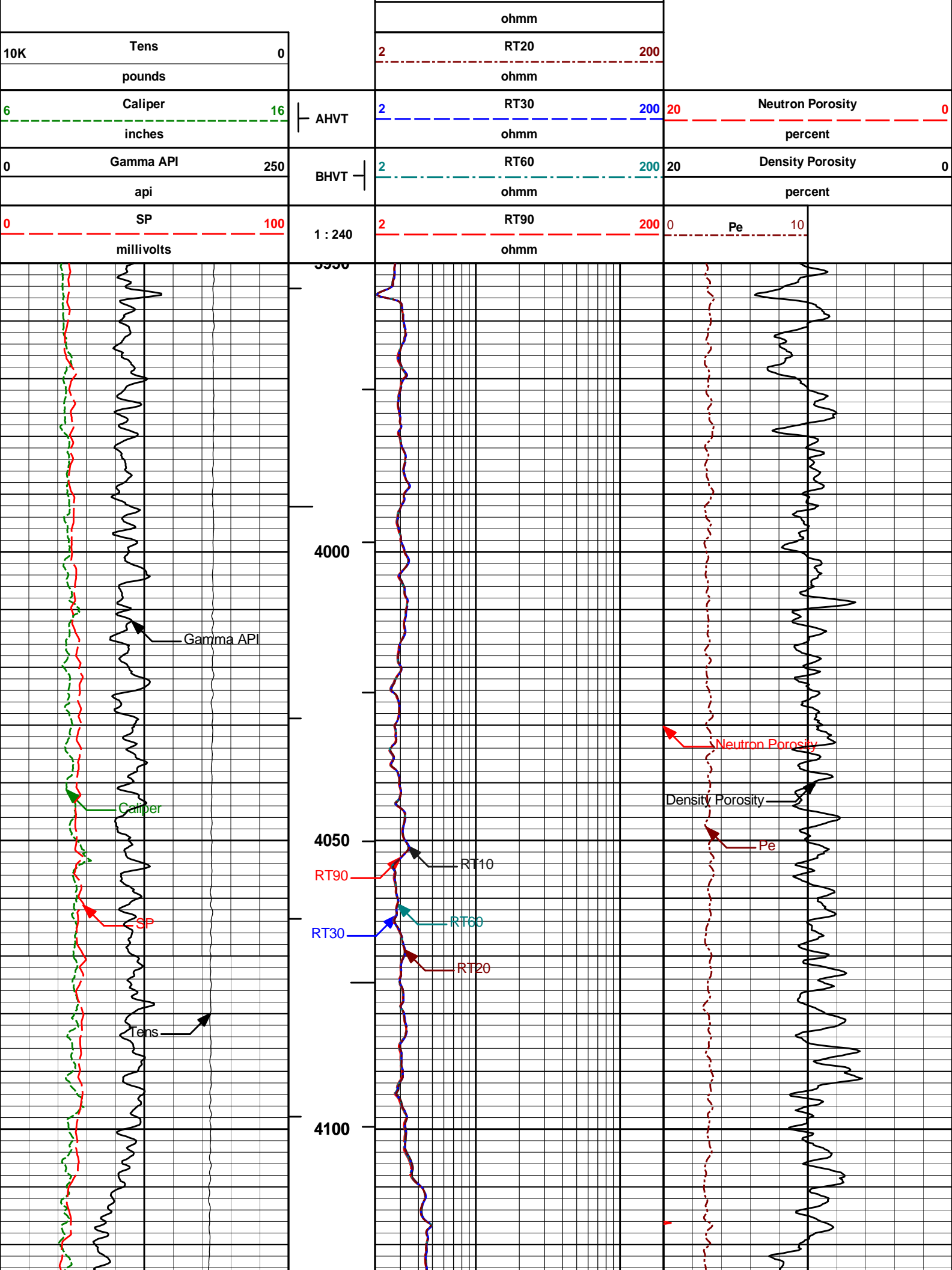
Plot Time: 06-Nov-11 11:08:18

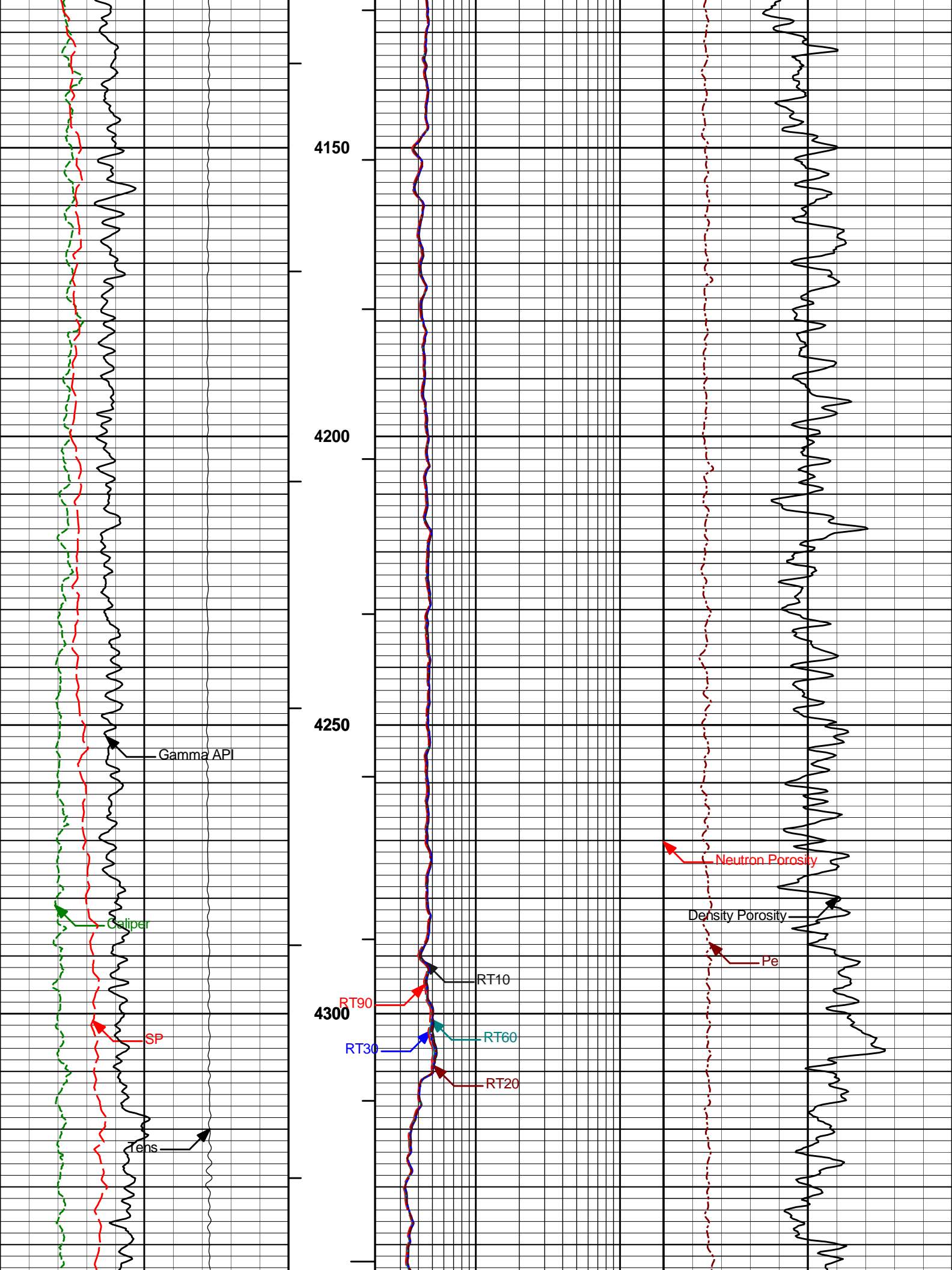
Plot Range: 3950 ft to 4800 ft

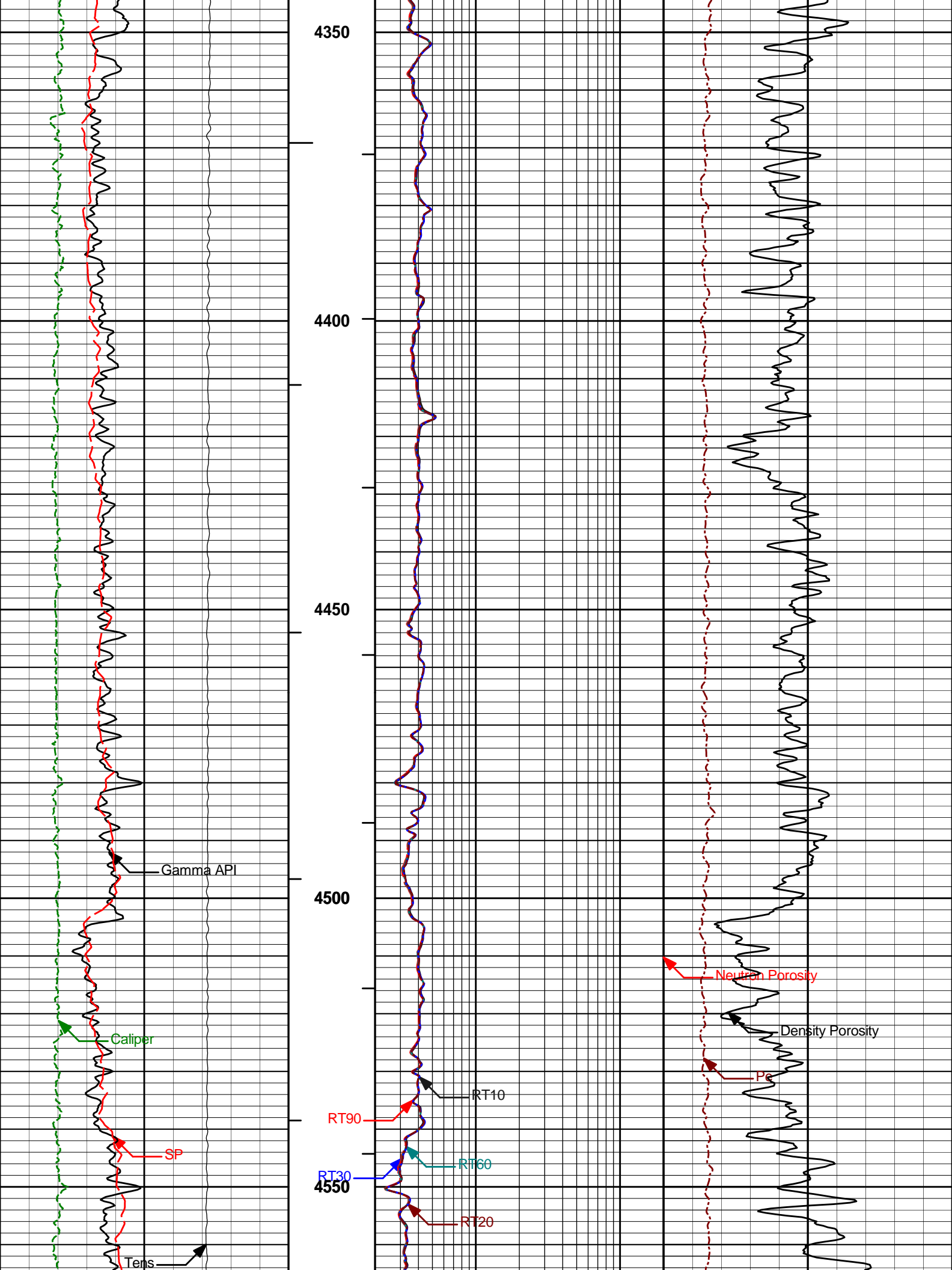
Data: {ActiveWell}\Well Based\MAIN*

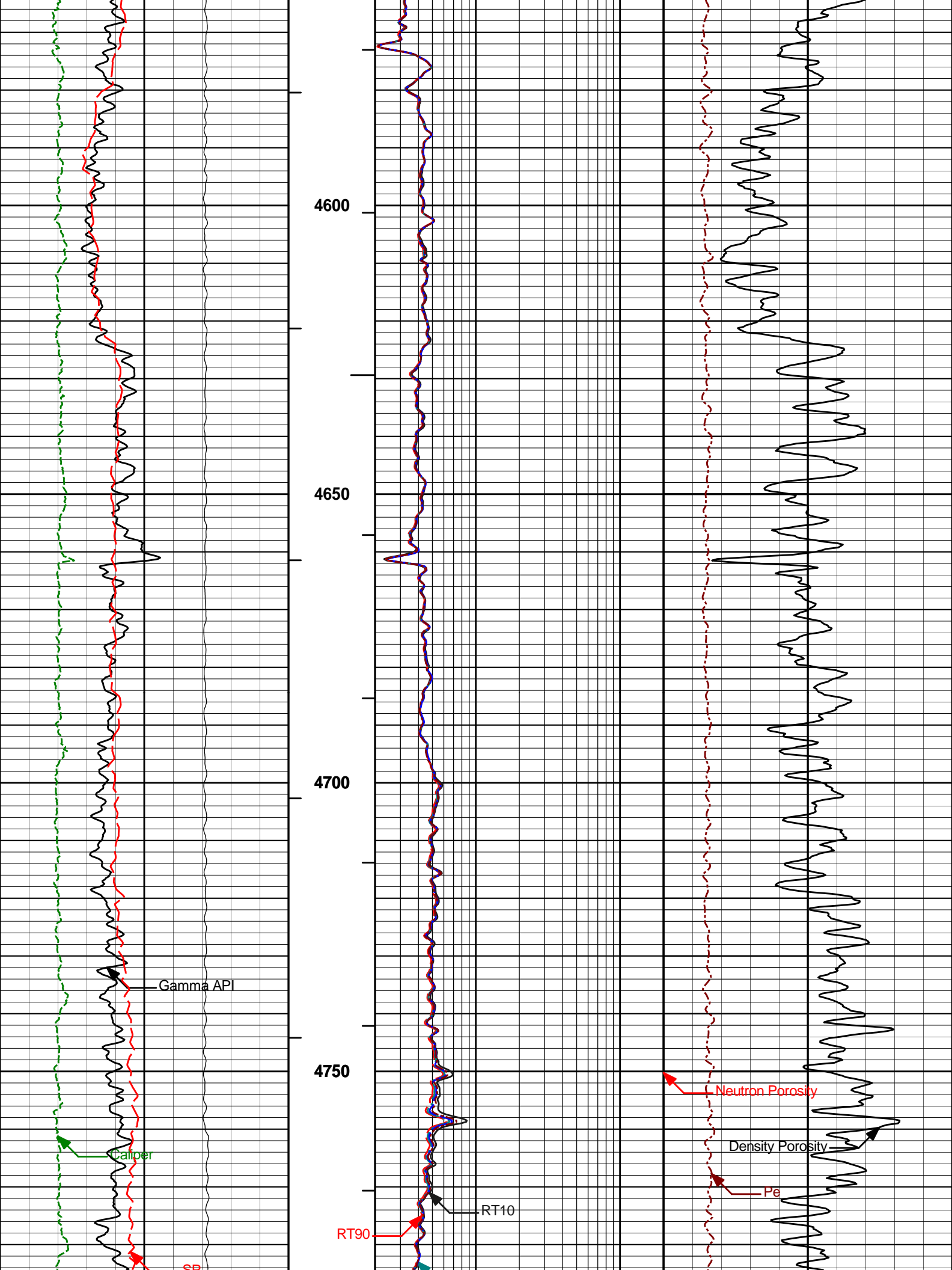
Plot File: \COMP\SUSX-PARK

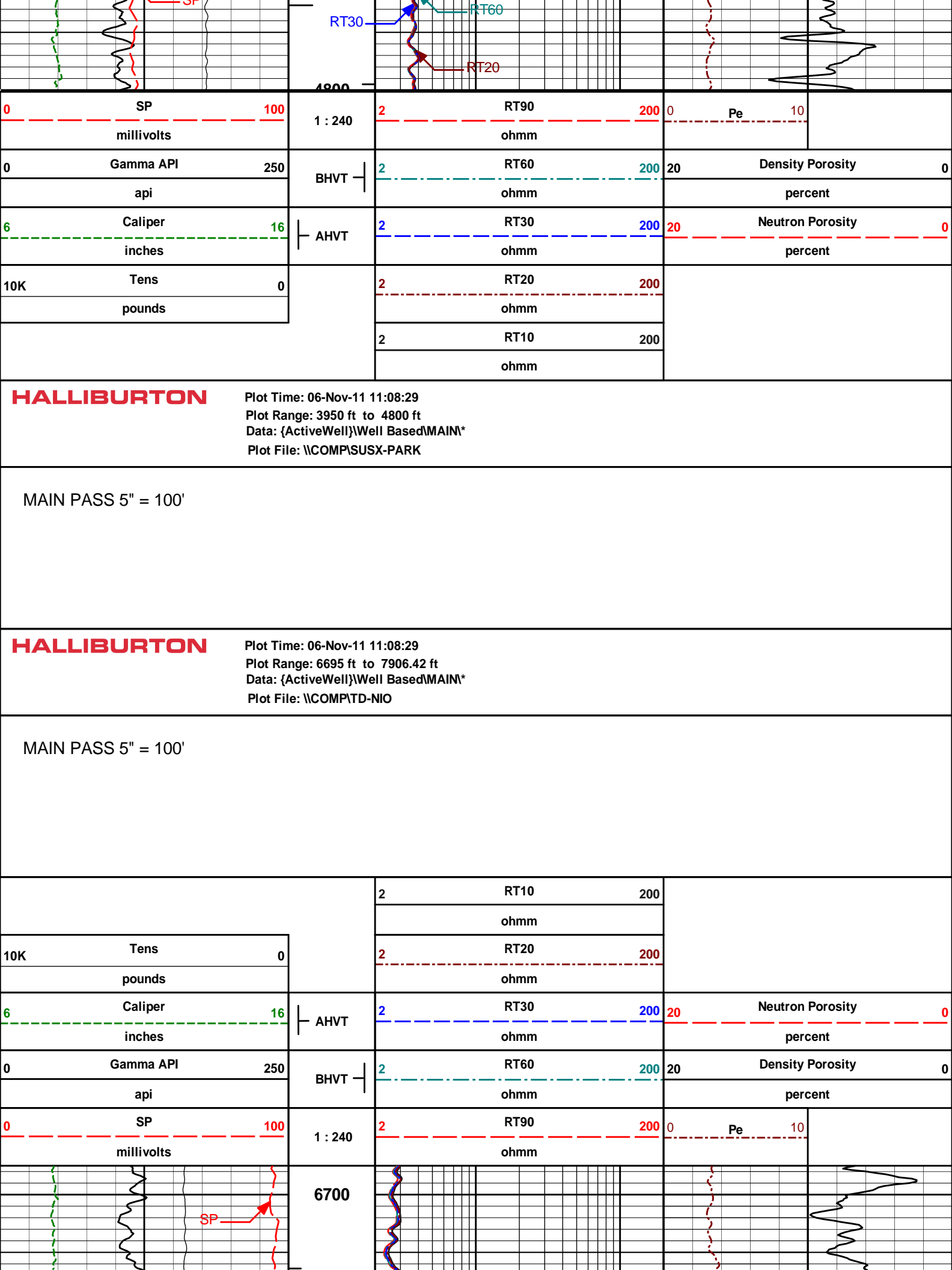
MAIN PASS 5" = 100'

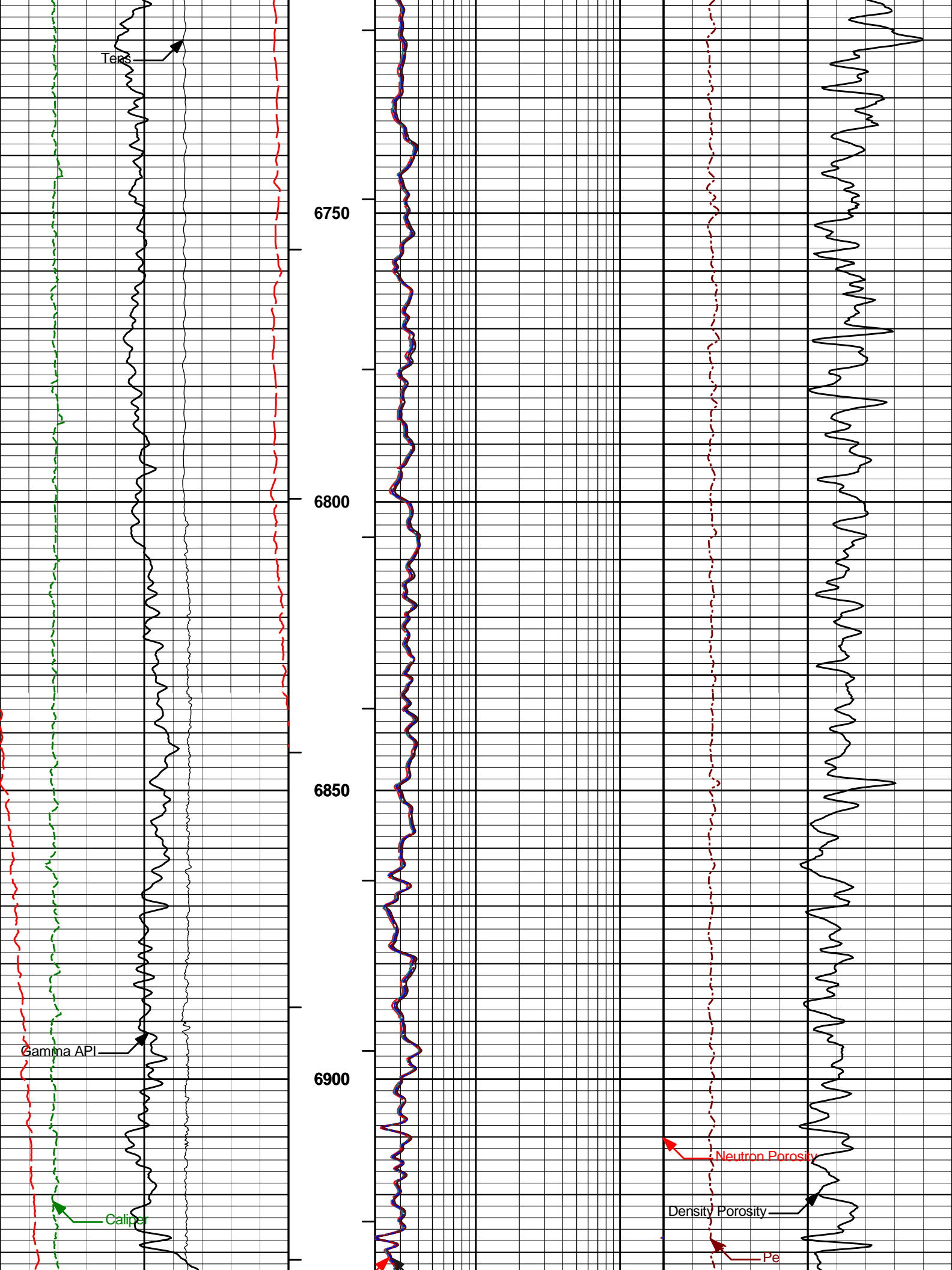


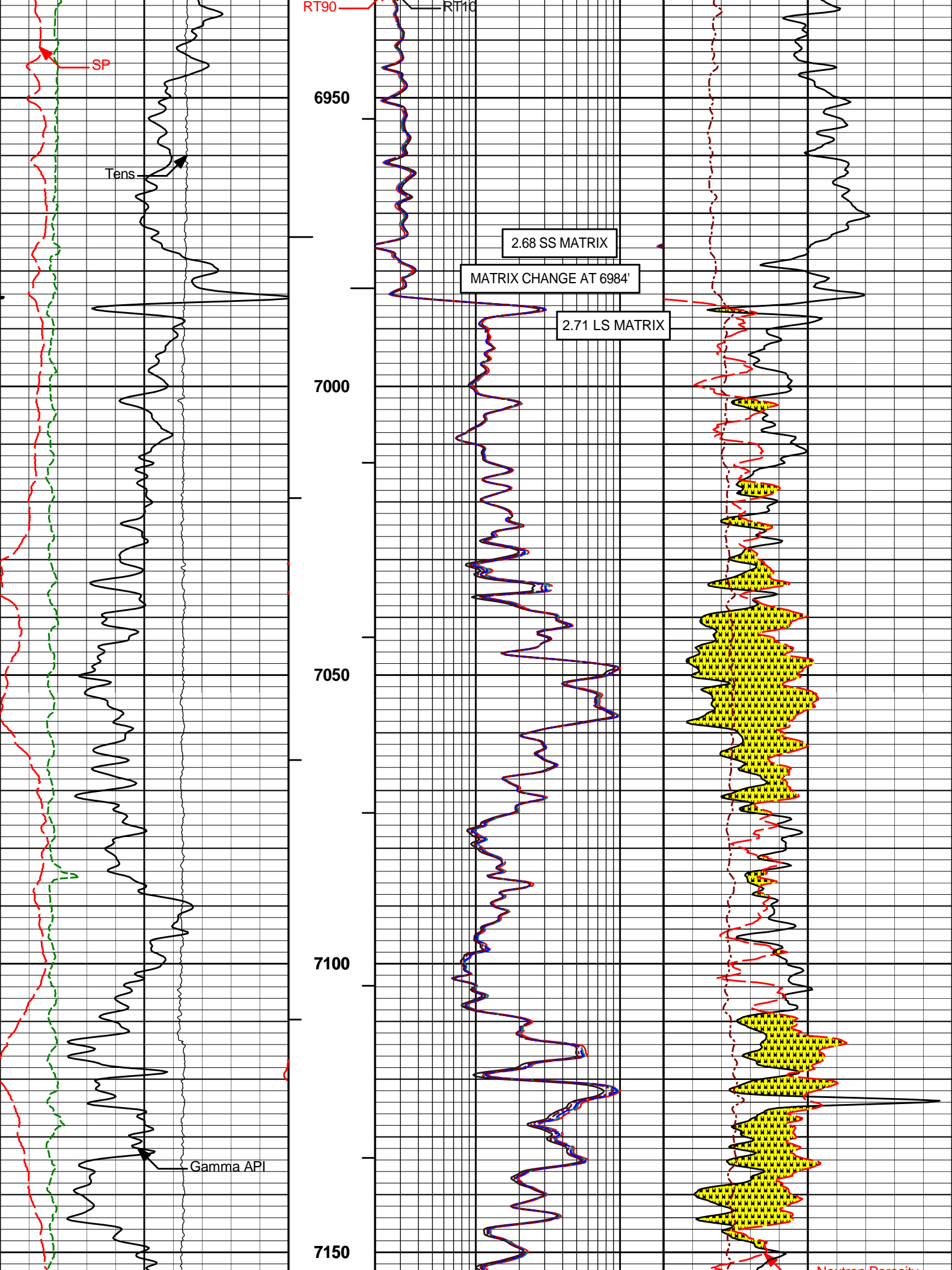


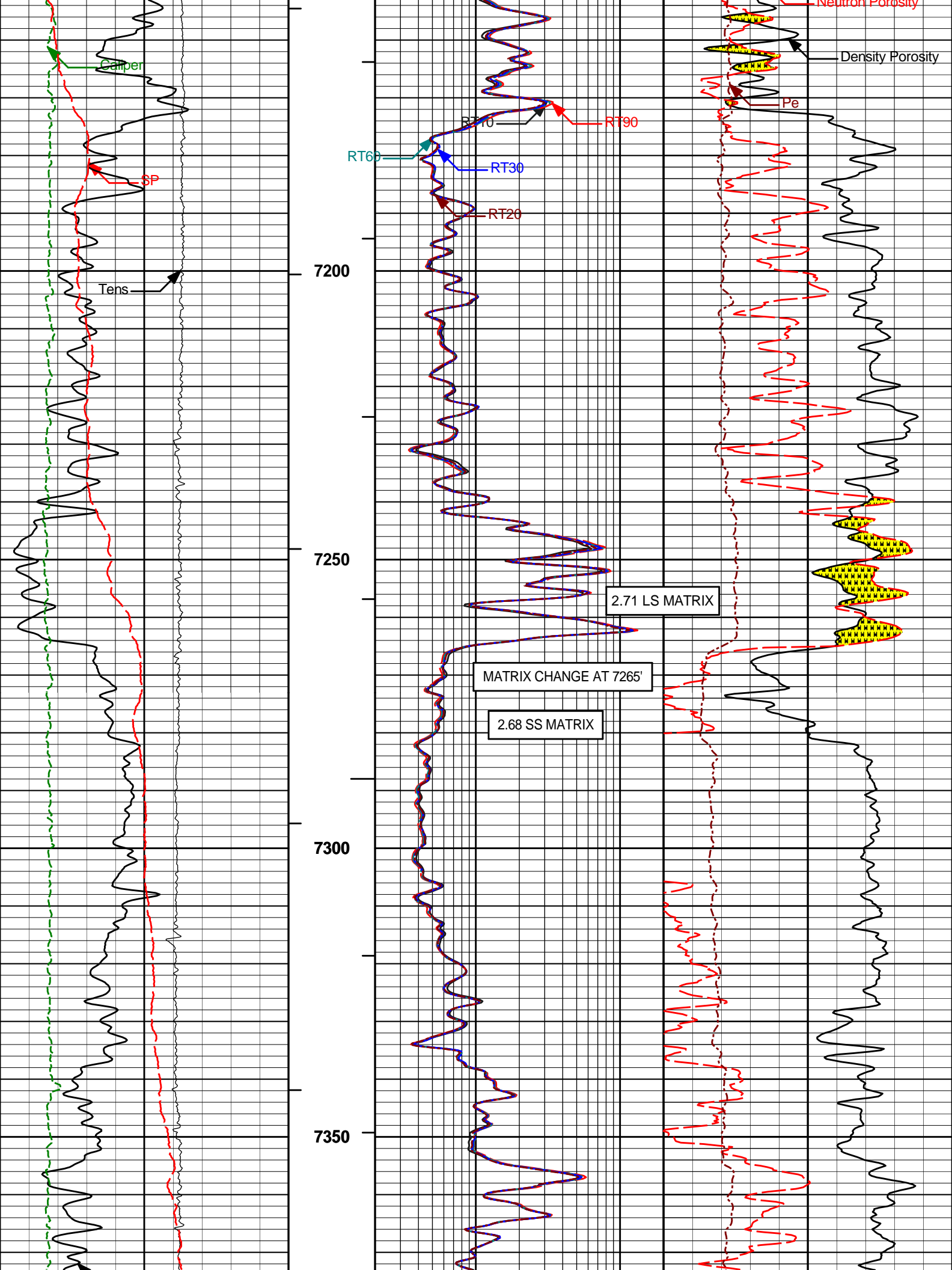


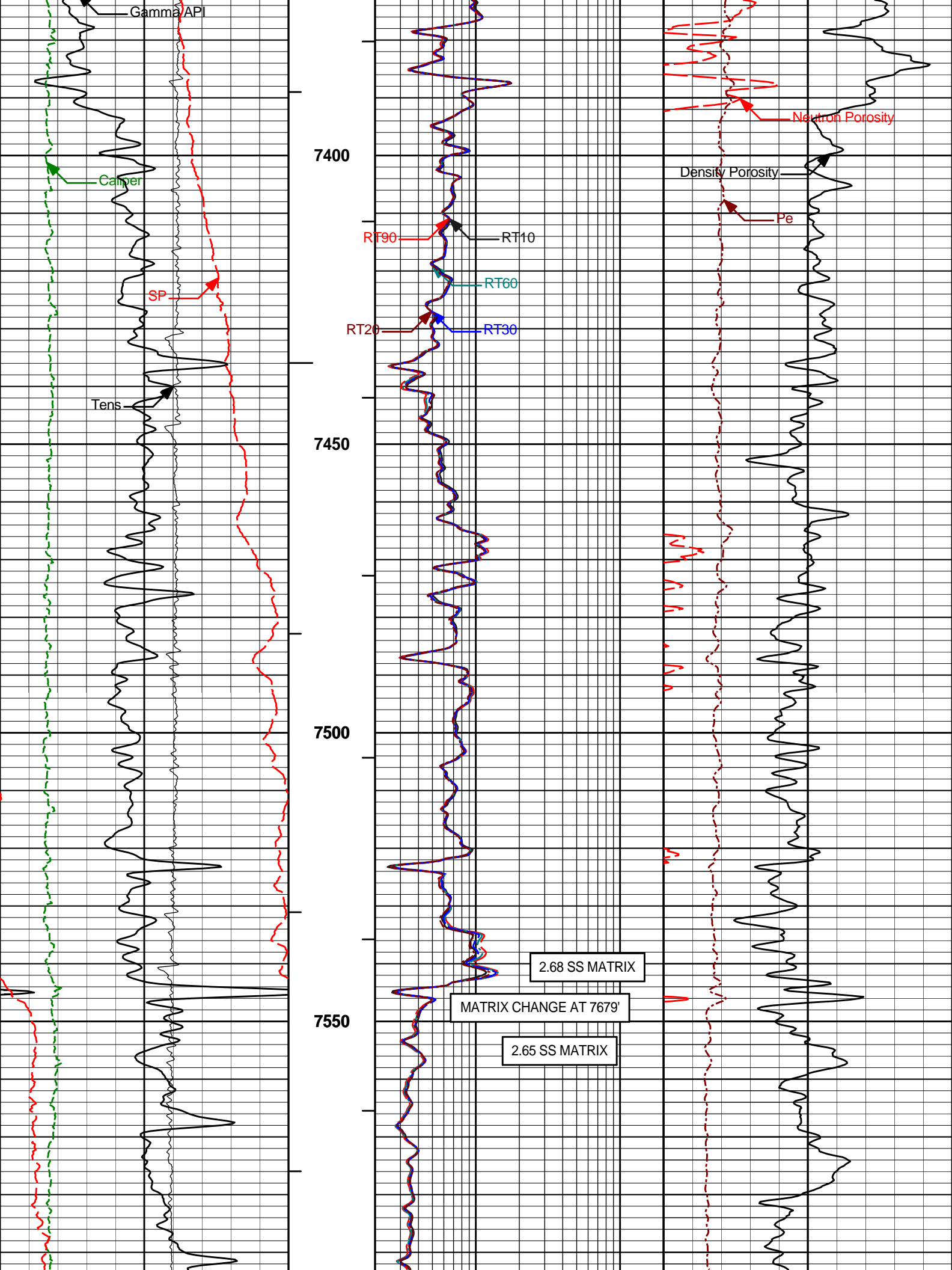


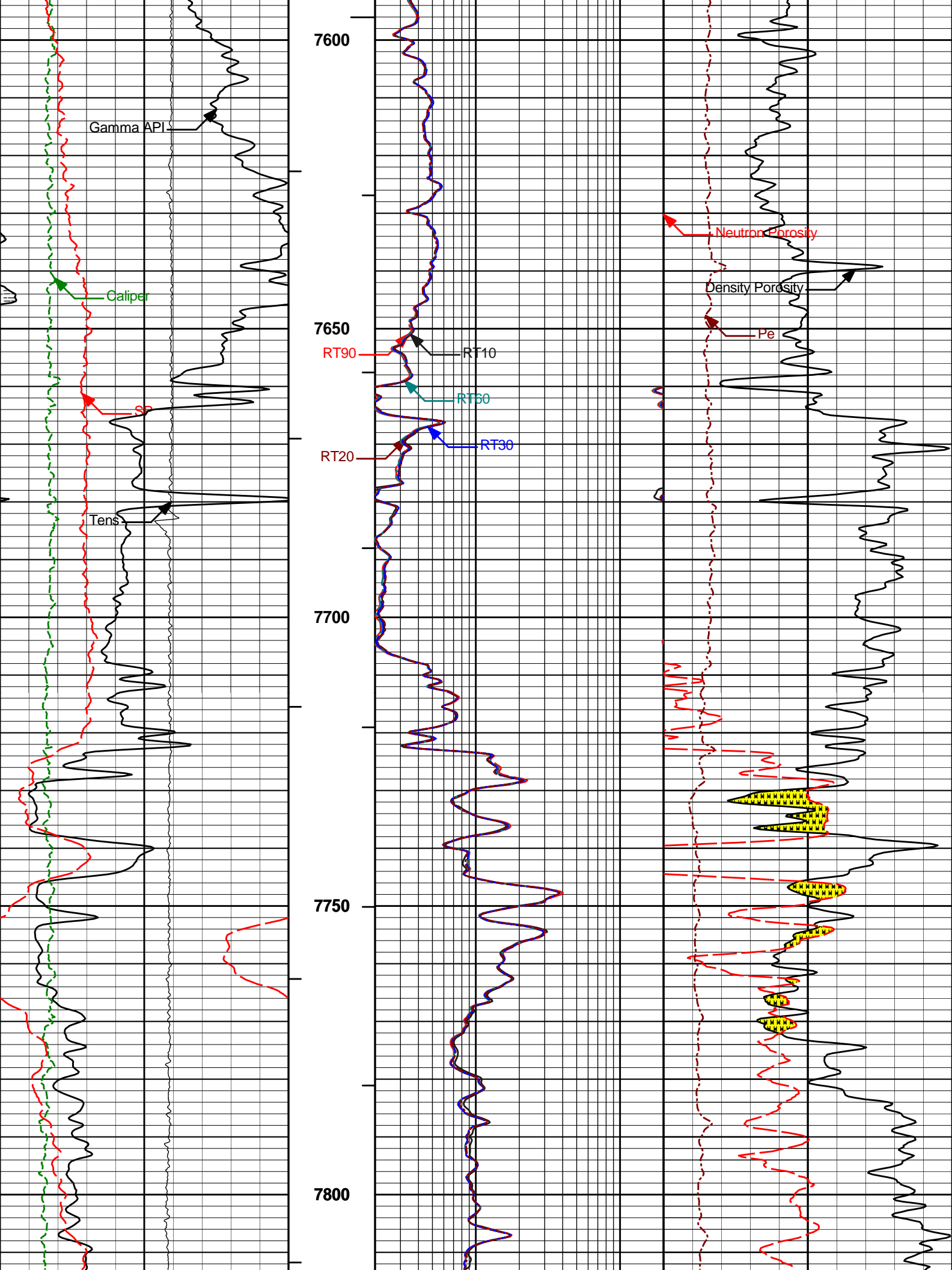


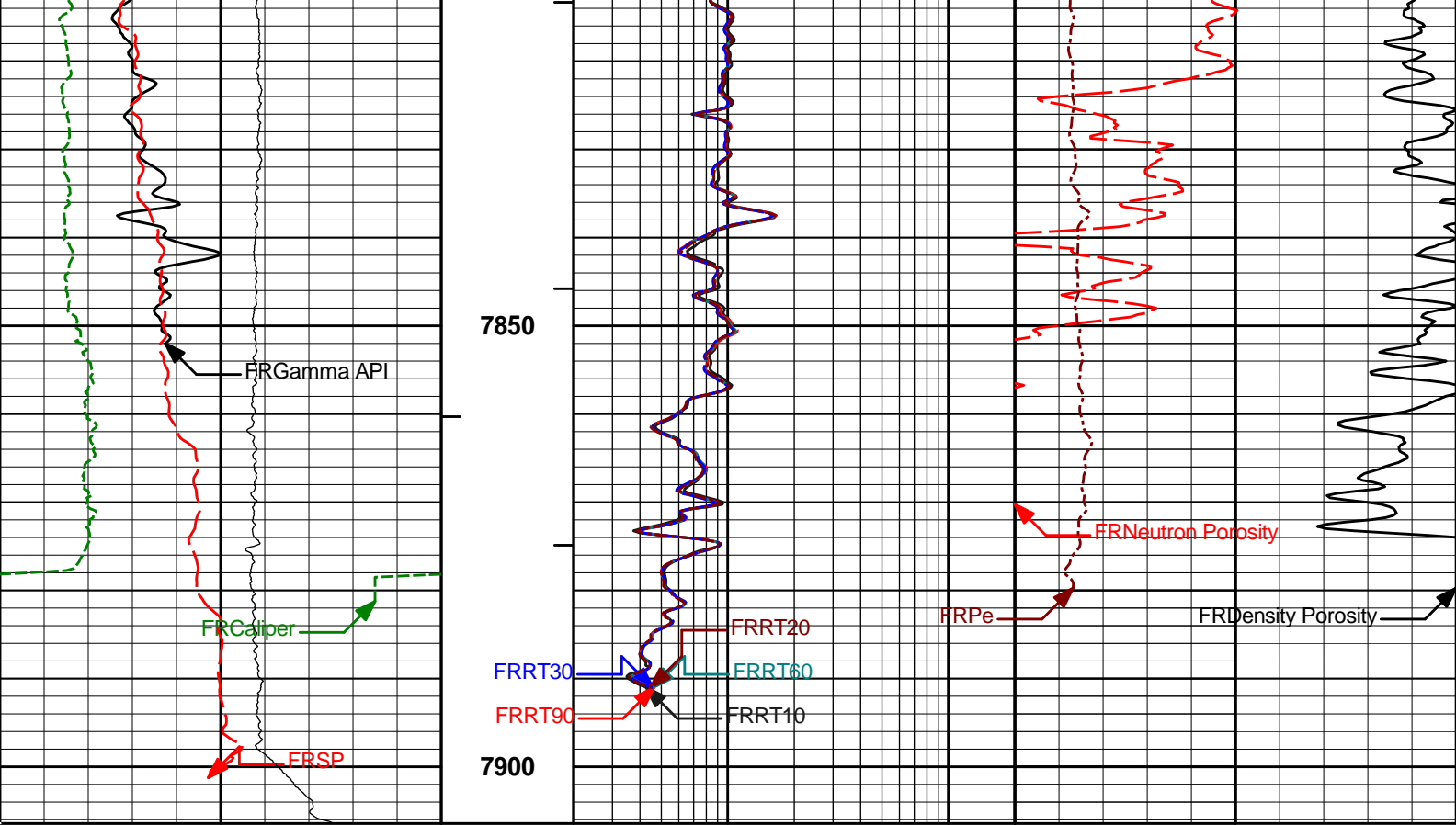












0	SP	100	1 : 240	2	RT90	200	0	Pe	10
	millivolts				ohmm				
0	Gamma API	250	BHVT	2	RT60	200	20	Density Porosity	0
	api				ohmm			percent	
6	Caliper	16	AHVT	2	RT30	200	20	Neutron Porosity	0
	inches				ohmm			percent	
10K	Tens	0		2	RT20	200			
	pounds				ohmm				
				2	RT10	200			
					ohmm				

HALLIBURTON Plot Time: 06-Nov-11 11:08:33
Plot Range: 6695 ft to 7906.42 ft
Data: {ActiveWell}\Well Based\MAIN*
Plot File: \COMP\TD-NIO

MAIN PASS 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11294346_RED	Reference Calibration Date:	10-Sep-11 06:19:26
Engineer:	V. CREWS	Calibration Date:	15-Oct-11 17:34:04

Calibrator Source S/N: TB-289

Calibrator API Reference:243.00 api

Equivalent Calibrator API Reference:247.3 api

Measurement	Measured	Calibrated	Units
Background	61.5	63.5	api
Background + Calibrator	301.2	310.7	api
Calibrator	239.6	247.3	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11294346_RED

Reference Calibration Date: 15-Oct-11 17:34:04

Engineer: R. TWEETEN

Calibration Date: 06-Nov-11 06:15:07

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB-289

Calibrator API Reference:243.00 api

Equivalent Calibrator API Reference:247.3 api

Field Verification	Shop	Field	Units
Background	63.5	67.6	api
Background + Calibrator	310.7	313.2	api
Calibrator	247.3	245.6	api

Shop	Field	Difference	Tolerance
247.3	245.6	1.7	+/- 9.00

CSNG-FS SHOP CALIBRATION

Tool Name: CSNG - 10965402

Reference Calibration Date: 15-Sep-11 02:14:36

Engineer: R. TWEETEN

Calibration Date: 12-Oct-11 08:45:37

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Source SN: TB-289

TITANIUM CASE	Measured	Calibrated	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	22.7	23.0	Channel #
583 KEV Peak Channel #	51.1	51.2	Channel #
2614 KEV Peak Channel #	210.2	211.0	Channel #
Calibrate Temperature	87.6	80.0	degF

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

Blanket Reference Value: 243.00 API

Calibrator Value: 276.0 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1795.9	CPS	323.5	335.1	API
Background	316.8	CPS	62.3	59.1	API

Gamma Ray Gain: 0.94

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

CSNG-FS FIELD CALIBRATION

Tool Name: CSNG - 10965402 **Reference Calibration Date:** 12-Oct-11 08:45:37
Engineer: R. TWEETEN **Calibration Date:** 06-Nov-11 06:21:38
Software Version: WL INSITE R3.4.2 (Build 2) **Calibration Version:** 1
Source SN:

TITANIUM CASE	Shop	Field	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	23.0	22.8	Channel #
583 KEV Peak Channel #	51.2	51.3	Channel #
2614 KEV Peak Channel #	211.0	211.2	Channel #
Calibrate Temperature	80.0	71.9	degF

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

Blanket Reference Value: 243.00 API

Calibrator Value: 276.0 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1795.4	CPS	335.1	334.1	API
Background	312.5	CPS	59.1	58.2	API

Gamma Ray Gain: 0.94

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11301132_BLACK **Reference Calibration Date:** 21-Sep-11 16:55:42
Engineer: R. TWEETEN **Calibration Date:** 21-Sep-11 17:12:29
Software Version: WL INSITE R3.4.2 (Build 2) **Calibration Version:** 1

Logging Source S/N: DSN434

Tank Serial Number: 11068236

Reference value assigned to Tank: 53.720

Snow Block S/N: BRIGHTON

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.996	0.998	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):	0.2217	0.2224	0.0007	+/- 0.0020
Calibrated Ratio:	10.09	10.11	0.023	+/- 0.050

VERIFIER

VERIFIER		MEASUREMENT		VALUE		CONTROL LIMIT	
		Snow-Block Porosity (decp):		0.0853		0.02000 - 0.09000	
PASS/FAIL SUMMARY							
		Background Check:		Passed			
		Gain-Range Check:		Passed			
		Snow-Block Check:		Passed			

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 11301132_BLACK

Reference Calibration Date: 21-Sep-11 17:12:29

Engineer: R. TWEETEN

Calibration Date: 06-Nov-11 06:34:36

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN434

Snow Block S/N: BRIGHTON

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0853	0.0802	-0.0051	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:

Snow Block Stat Check:

Temperature Check:

Passed

Passed

Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - M335_P470_BLACK

Reference Calibration Date: 06-Nov-11 06:23:17

Engineer: R. TWEETEN

Calibration Date: 06-Nov-11 06:27:31

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3558.96	-3363.47	-7000.00 - -1000.00
Pad Gain	0.0003885	0.0003808	0.000200 - 0.000600
Arm Offset	-4068.01	-4212.60	-5000.00 - 3000.00
Arm Gain	0.0005581	0.0005599	0.000300 - 0.000700
Arm Power	-0.000005238	-0.000005430	-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)	1.96	2.00	0.04	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.24	8.25	0.01	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:

Ring-Measurement Check:

Passed

Passed

PASS/FAIL SUMMARY																													
Calibration-Coefficients Range Check:					Passed																								
SDLT CALIPER FIELD CALIBRATION																													
Tool Name: SDLT - M335_P470_BLACK					Reference Calibration Date: 06-Nov-11 06:27:31																								
Engineer: R. TWEETEN					Calibration Date: 06-Nov-11 06:29:26																								
Software Version: WL INSITE R3.4.2 (Build 2)					Calibration Version: 1																								
<table><tr><th colspan="5">MEASURED CALIPER VALUES</th></tr><tr><th>Measurement</th><th>Shop</th><th>Field</th><th>Change</th><th>Control Limit On New Value</th></tr><tr><td>Pad Extension</td><td>3.75</td><td>3.75</td><td>-0.00</td><td>+/- 0.10</td></tr><tr><td>Ring Diameter</td><td>8.25</td><td>8.22</td><td>-0.03</td><td>+/- 0.15</td></tr></table>										MEASURED CALIPER VALUES					Measurement	Shop	Field	Change	Control Limit On New Value	Pad Extension	3.75	3.75	-0.00	+/- 0.10	Ring Diameter	8.25	8.22	-0.03	+/- 0.15
MEASURED CALIPER VALUES																													
Measurement	Shop	Field	Change	Control Limit On New Value																									
Pad Extension	3.75	3.75	-0.00	+/- 0.10																									
Ring Diameter	8.25	8.22	-0.03	+/- 0.15																									
<table><tr><th colspan="5">PASS/FAIL SUMMARY</th></tr><tr><td colspan="3">Pad Extension Check:</td><td colspan="2">Passed</td></tr><tr><td colspan="3">Diameter Check:</td><td colspan="2">Passed</td></tr></table>										PASS/FAIL SUMMARY					Pad Extension Check:			Passed		Diameter Check:			Passed						
PASS/FAIL SUMMARY																													
Pad Extension Check:			Passed																										
Diameter Check:			Passed																										
ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION																													
Tool Name: ACRt Sonde - E6758-S4352_BLK					Reference Calibration Date: 30-Mar-11 17:55:22																								
Engineer: F. LODER					Calibration Date: 25-Aug-11 15:55:48																								
Software Version: WL INSITE R3.4.2 (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	0.9901	1.05	0.95	0.9958	1.05	0.95	0.9928	1.05																				
A2 (50")	0.95	0.9949	1.05	0.95	1.0010	1.05	0.95	1.0001	1.05																				
A3 (29")	0.95	0.9960	1.05	0.95	0.9995	1.05	0.95	0.9971	1.05																				
A4 (17")	0.95	1.0044	1.05	0.95	1.0055	1.05	0.95	1.0047	1.05																				
A5 (10")	N/A	N/A	N/A	0.95	0.9980	1.05	0.95	0.9966	1.05																				
A6 (6")	N/A	N/A	N/A	0.95	0.9787	1.05	0.95	0.9757	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	-1.494	2	-6	-3.982	-2	-8	-4.283	-2																				
A2 (50")	-7	-3.247	-1	-6	-3.938	-2	-7	-4.224	-2																				
A3 (29")	-27	-13.938	-9	-9	-3.943	-3	-7	-2.988	-1																				
A4 (17")	-180	-98.155	-60	-45	-31.951	-15	-39	-25.455	-13																				
A5 (10")	N/A	N/A	N/A	-150	-92.229	-50	-80	-45.352	-10																				
A6 (6")	N/A	N/A	N/A	175	299.783	525	90	150.888	270																				
TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION																								
Signal	Lower		R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)																					
12K		0.6	0.9246	1.3	Mud Cell	0.95	1.009	1.05																					
36K		1.0	1.8754	2.0																									
72K		1.0	1.1579	2.0																									
SPECTRAL DENSITY SHOP CALIBRATION																													
Tool Name: SDLT Pad - M335_P470_BLACK					Reference Calibration Date: 20-Sep-11 13:44:03																								
Engineer: R. TWEETEN					Calibration Date: 20-Sep-11 14:05:14																								
Software Version: WL INSITE R3.4.2 (Build 2)					Calibration Version: 1																								



DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0856	1.0769	0.90 - 1.10
Near Dens Gain	1.0529	1.0446	0.90 - 1.10
Near Peak Gain	1.0584	1.0277	0.90 - 1.10
Near Lith Gain	0.9919	0.9752	0.90 - 1.10
Far Bar Gain	1.0166	1.0170	0.90 - 1.10
Far Dens Gain	1.0038	1.0037	0.90 - 1.10
Far Peak Gain	0.9961	0.9954	0.90 - 1.10
Far Lith Gain	0.9653	0.9652	0.90 - 1.10
Near Bar Offset	-0.5403	-0.4625	NONE
Near Dens Offset	-0.2010	-0.1319	NONE
Near Peak Offset	-0.2259	0.0240	NONE
Near Lith Offset	0.3012	0.4369	NONE
Far Bar Offset	0.0634	0.0615	NONE
Far Dens Offset	0.1602	0.1601	NONE
Far Peak Offset	0.2125	0.2180	NONE
Far Lith Offset	0.4173	0.4187	NONE
Near Bar Background	1052.39	1052.73	700 - 1450
Near Dens Background	344.67	343.81	230 - 480
Near Peak Background	151.45	151.08	100 - 210
Near Lith Background	183.57	184.07	125 - 260
Far Bar Background	548.23	550.53	450 - 900
Far Dens Background	216.71	213.70	175 - 345
Far Peak Background	83.86	83.98	70 - 140
Far Lith Background	88.89	88.40	75 - 145

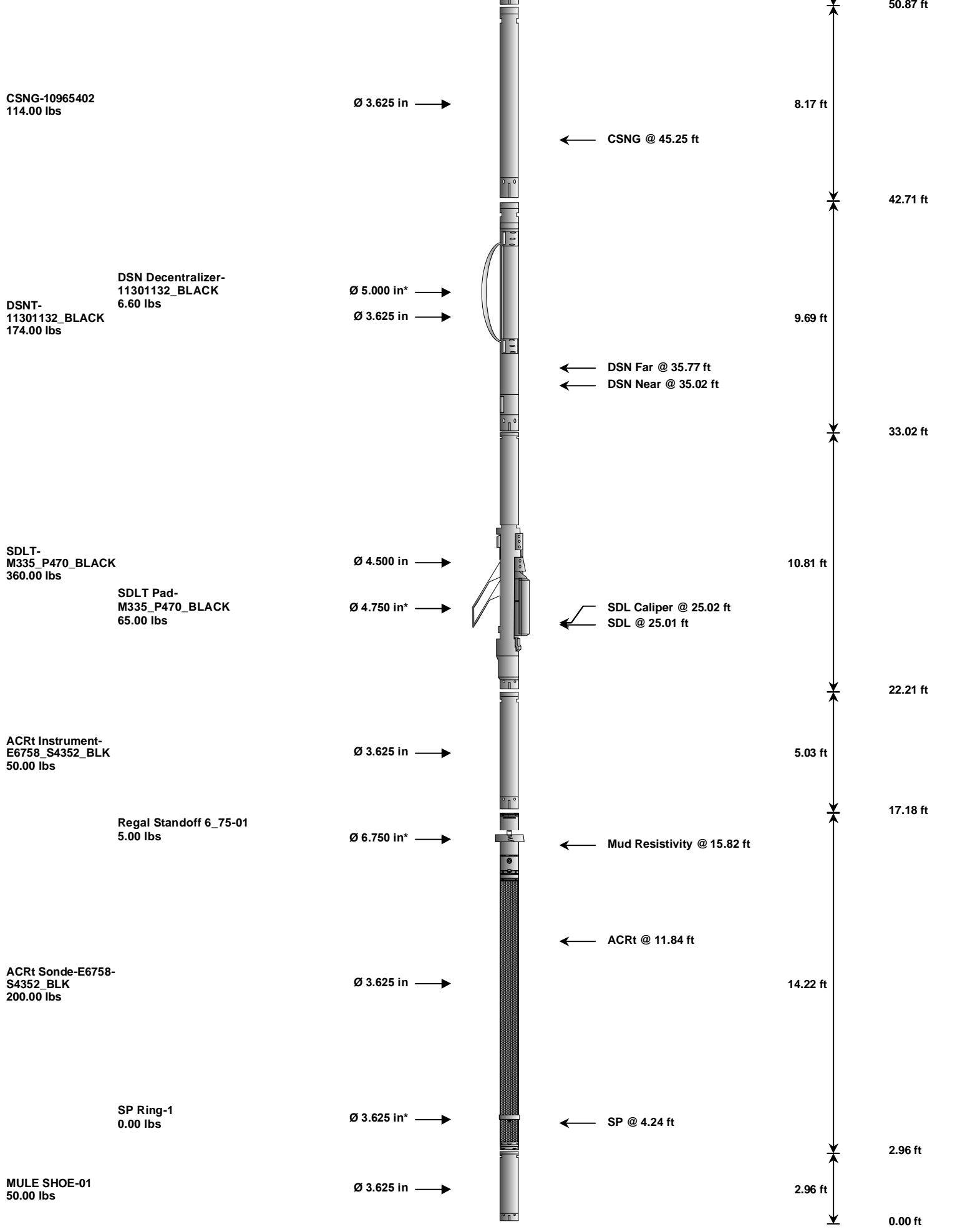
CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.694	1.690	-0.004	+/- 0.015
Pe	2.585	2.603	0.018	+/- 0.150
ALUMINUM				
Density (g/cc)	2.603	2.602	-0.001	+/- 0.01500
Pe	3.063	3.063	0.000	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0010	+/- 0.0110	-0.0008	+/- 0.0140
Magnesium Block	-0.0003	+/- 0.0110	-0.0015	+/- 0.0140
Aluminum Block	-0.0006	+/- 0.0110	-0.0012	+/- 0.0140
Resolution	9.02	6.00 - 11.50	9.62	6.00 - 11.50
Internal Verifier(B+D+P+L)	1732	1200 - 2700	937	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

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11294346_RED						
Gamma Ray Calibrator	247.3	245.6	-----	1.7	+/- 9.00	api
CSNG-10965402						
60 KEV Peak Channel #	48.0	48.0	-----	0.0	-----	Channel #
239 KEV Peak Channel #	23.0	22.8	-----	0.2	-----	Channel #
583 KEV Peak Channel #	51.2	51.3	-----	-0.1	-----	Channel #
2614 KEV Peak Channel #	211.0	211.2	-----	-0.2	-----	Channel #
DSNT-11301132_BLACK						
Snow-Block Porosity	0.0853	0.0802	-----	0.0051	+/- 0.0150	decp
SDLT-M335_P470_BLACK						
Pad Extension	3.75	3.75	-----	0.00	+/-0.10	in
Ring Diameter	8.25	8.22	-----	0.030	+/-0.15	in
ACRt Sonde-E6758-S4352_BLK						
Mud Cell	1.009	-----	-----	0.000	-----	ohm-m
SDLT Pad-M335_P470_BLACK						
Near(B+D+P+L)	1731.691	-----	-----	0.000	+/-14.591	cps
Far(B+D+P+L)	936.618	-----	-----	0.000	+/-14.995	cps
Data: DCHNTUSX_X29_06\0001 NOBLE\002 06-Nov-11 09:10 Up @7906.5f				Date: 06-Nov-11 10:23:52		

<div>HALLIBURTON</div> <div>TOOL STRING DIAGRAM REPORT</div>						
Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-11078326 135.00 lbs		Ø 3.625 in →		← Load Cell @ 61.96 ft	6.25 ft	65.64 ft
				← BH Temperature @ 61.39 ft		
GTET-11294346_RED 165.00 lbs		Ø 3.625 in →				59.39 ft
				← GammaRay @ 53.33 ft	8.52 ft	



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		11078326	135.00	6.25	59.39	300.00
DSNT	Downhole Sensor Tool		11301132_BLACK	174.00	9.69	69.08	300.00

GTEL	Gamma Telemetry Tool	11294346_RED	165.00	8.52	50.87	60.00
CSNG	Compensated Spectral Natural Gamma	10965402	114.00	8.17	42.71	15.00
DSNT	Dual Spaced Neutron	11301132_BLACK	174.00	9.69	33.02	60.00
DCNT	DSN Decentralizer	11301132_BLACK	6.60	5.13 *	36.35	300.00
SDLT	Spectral Density Tool	M335_P470_BLACK	360.00	10.81	22.21	60.00
SDLP	Density Insite Pad	M335_P470_BLACK	65.00	2.55 *	24.42	60.00
ACRt	Array Compensated True Resistivity Instrument Section	E6758_S4352_BLK	50.00	5.03	17.18	300.00
ACRt	Array Compensated True Resistivity	E6758-S4352_BLK	200.00	14.22	2.96	300.00
SP	SP Ring	1	0.00	0.25 *	4.24	300.00
RSOF	Regal Standoff 6.75in	01	5.00	0.52 *	15.86	300.00
MS	MULE SHOE	01	50.00	2.96	0.00	100.00
Total			1,324.60	65.64		
* Not included in Total Length and Length Accumulation.						
Data: DCHNTUSX_X29_06\0001 NOBLE\002 06-Nov-11 09:10 Up @7906.5f					Date: 06-Nov-11 10:15:03	

COMPANY	NOBLE ENERGY INC		
WELL	DECHANT USX X29-06		
FIELD	WATTENBERG		
COUNTY	WELD	STATE	CO
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY ARRAY COMPENSATED TRUE RESISTIVITY LOG	