

HALLIBURTON

**DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY**

COMPANY	NOBLE		
WELL	FIVE RIVERS USX K09-02D		
FIELD	WATTENBERG		
COUNTY	WELD		
STATE	COLORADO		
COMPANY	NOBLE	WELL	FIVE RIVERS USX K09-02D
FIELD	WATTENBERG	COUNTY	WELD
COUNTY	WELD	STATE	COLORADO
API No.	05123305460000		
Location	SHL: 1561' FNL & 1526' FWL SEC. 9 BHL: 2205' FEL & 585' FNL SEC. 9		
Other Services:	RWCH IDT ICT CSNG		
Sect.	9	Twp.	4 N
Rge.	66 W		
Permanent Datum	GL	Elev.	4699.0 ft
Log measured from	KB	D.F.	4714.0 ft
Drilling measured from	KB	G.L.	4699.0 ft

Date	15-Jul-09	
Run No.	ONE	
Depth - Driller	7770.00 ft	
Depth - Logger	7763.0 ft	
Bottom - Logged Interval	7754.0 ft	
Top - Logged Interval	603.0 ft	
Casing - Driller	8.625 in @ 604.0 ft	
Casing - Logger	603.0 ft @	
Bit Size	7.875 in @	
Type Fluid in Hole	W/BM @	
Density	9.2 ppg	40.00 sg/qt
PH	8.50 pH	11.2 cp/m
Source of Sample	FLOWLINE	
Rm @ Meas. Temperature	1.03 ohmm	@ 79.00 degF @
Rmf @ Meas. Temperature	0.92 ohmm	@ 75.00 degF @
Rmc @ Meas. Temperature	0.97 ohmm	@ 75.00 degF @
Source Rmf	CHART	CHART
Rm @ BHT	0.39 ohmm	@ 222.0 degF @
Time Since Circulation	8.0 hr	
Time on Bottom	15-Jul-09 07:48	
Max. Rec. Temperature	222.0 degF	@ 7763.0 ft @
Equipment	10549597	BRIGHTON
Recorded By	W. MATSON	
Witnessed By	JOHN RODGERS	

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Service Ticket No.: N/A API Serial No.: 05123305460000 PGM Version: WL INSITE R2.4 (Build 11)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
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.
Rmf @ Meas. Temp.		@	@	ONE	ACRT 758-352	N/A	1.5" S.O.
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.	11277436	Serial No.		Serial No.	I132M275	Serial No.	11301132
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	102A	Spacing		Log Type	GAMMA/GAMMA	Log Type	THERM/THERM
Type	SCINT			Source Type	Cs-137	Source Type	Am241Be
Length	8"	LSA [Y/N]		Serial No.	2770 GW	Serial No.	DSN 434
Distance to Source	45'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

Run	GENERAL		Speed ft/min	GAMMA		ACOUSTIC		Matrix	DENSITY		NEUTRON			
	Depth			Scale		Scale			Scale		Matrix			
	No.	From		To	L	R	L		R	L	R	L	R	
ONE	7763	7606	REC	0	250				20%	0%	2.68 g/cc	20%	0%	SAND
ONE	7606	7270	REC	0	250				20%	0%	2.71 g/cc	20%	0%	LIME
ONE	7270	603	REC	0	250				20%	0%	2.68 g/cc	20%	0%	SAND

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@
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Remarks:

RWCH-GTET-IDT-ICT-CSNG-FLEX-DSNT-SDLT-ACRT RAN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED FOR 4.5 INCH PRODUCTION CASING

TENSION PULLS AFFECT TOOL RESPONSE

CREW: N. VERDEN, A. LEWIS

RIG: ENS 128

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

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PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	NLIT	Neutron Lithology	Sandstone	
	SDLT	DMA	Formation Density Matrix	2.680	g/cc
7570.00					
	DSNT	NLIT	Neutron Lithology	Limestone	
	SDLT	DMA	Formation Density Matrix	2.710	g/cc
7606.00					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	OBM	Oil Based Mud System?	No	
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	7770.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	

Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
IDT		Survey Writing Interval	30	ft
ICT	CLOK	Process Caliper Outputs?	Yes	
CSNG	CGOK	Process CSNG Data?	Yes	
CSNG	CENT	Is Tool Centralized?	No	
CSNG	MUDT	Mud Type?	Natural	
CSNG	KPCT	Percent K in Mud by Weight?	0.00	%
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.0	
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	0.000	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		Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	AD	Is Hole Air Drilled?	No	
SDLT	CB	Use Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	MOTP	Weighted Mud Correction Type?	None	
SDLT	DMA	Formation Density Matrix	2.680	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
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

BOTTOM

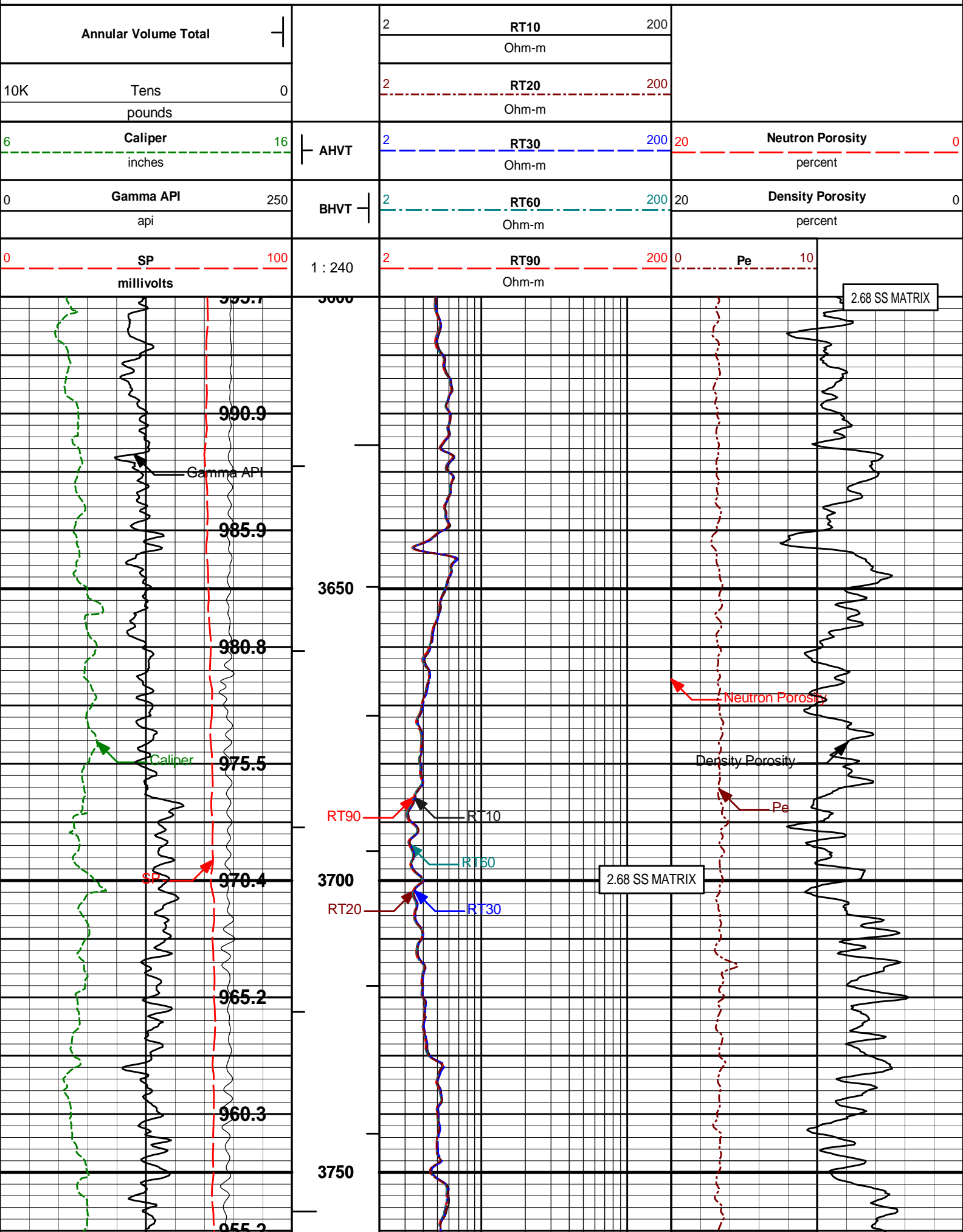
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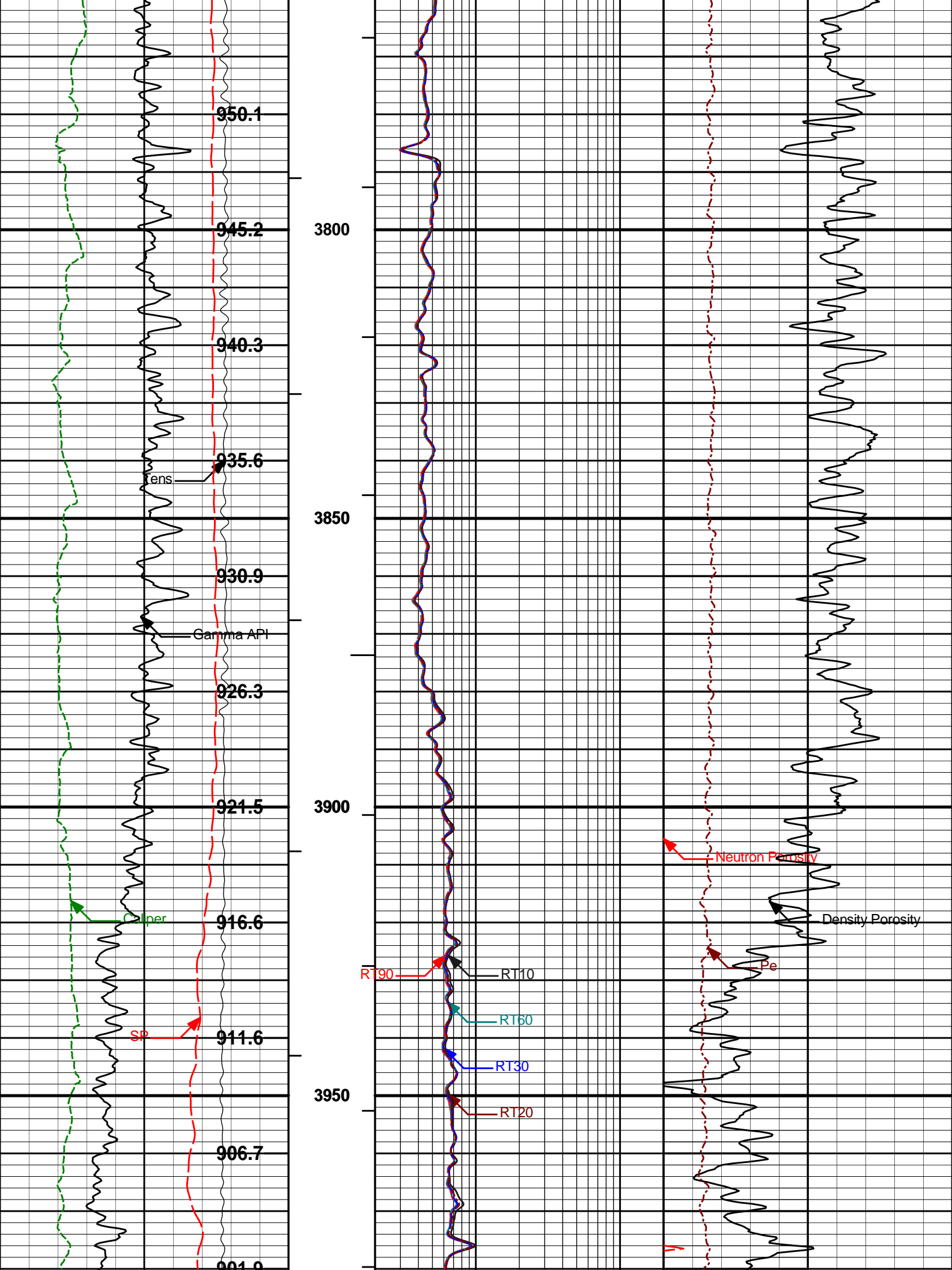
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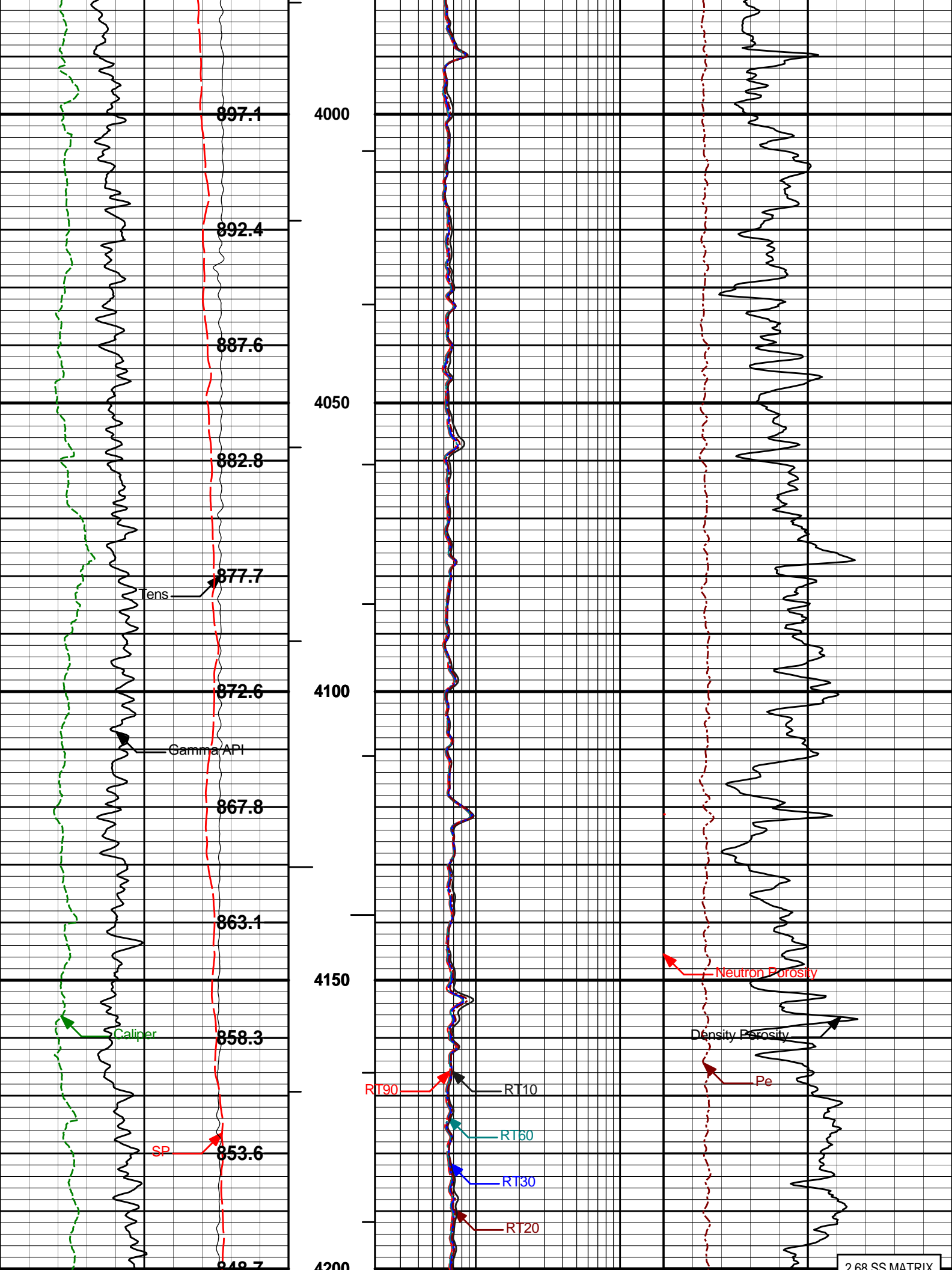
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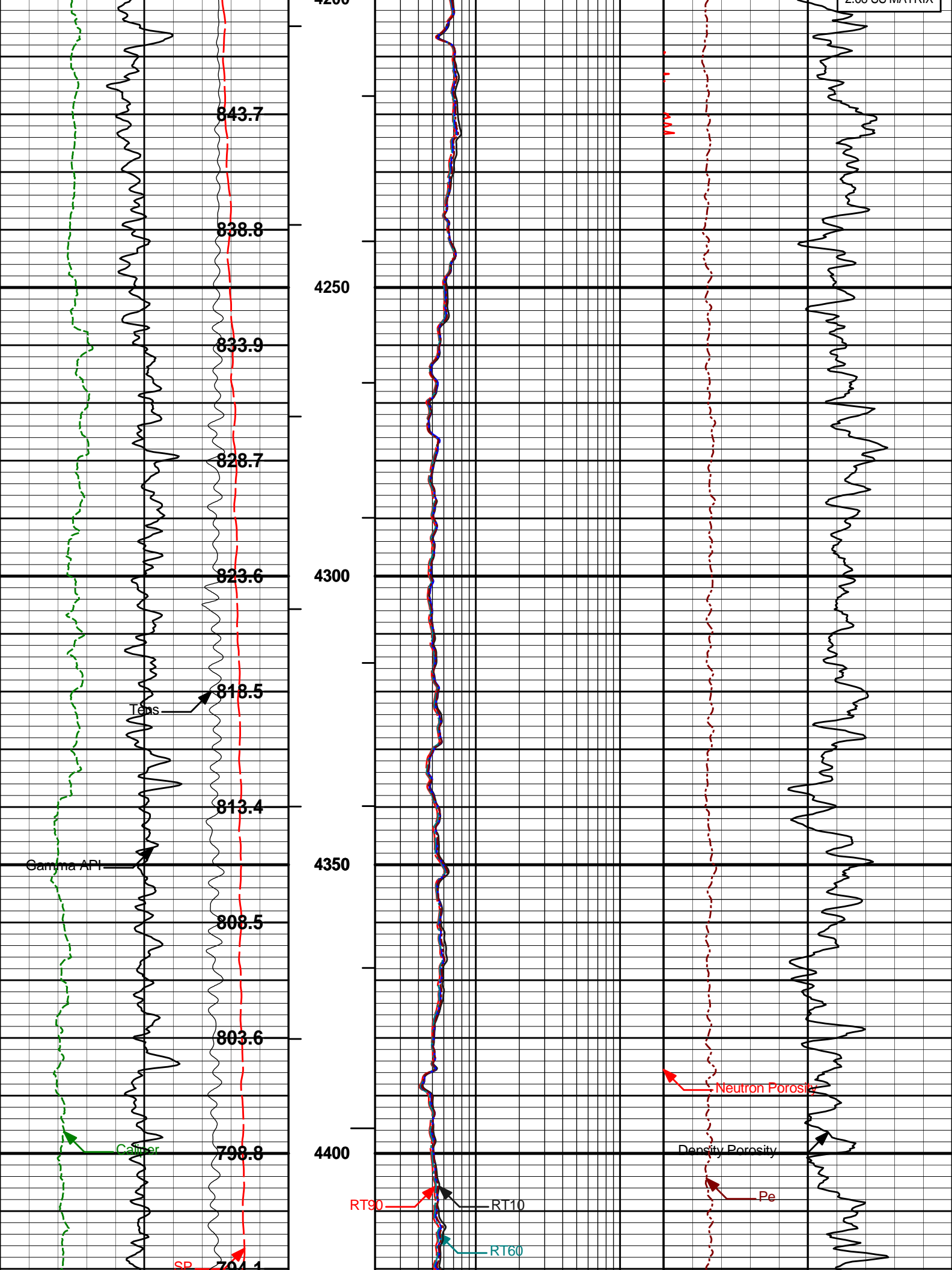
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Plot File: \COMPIQ_COMPOSITE_5IN_RM_NOBLE

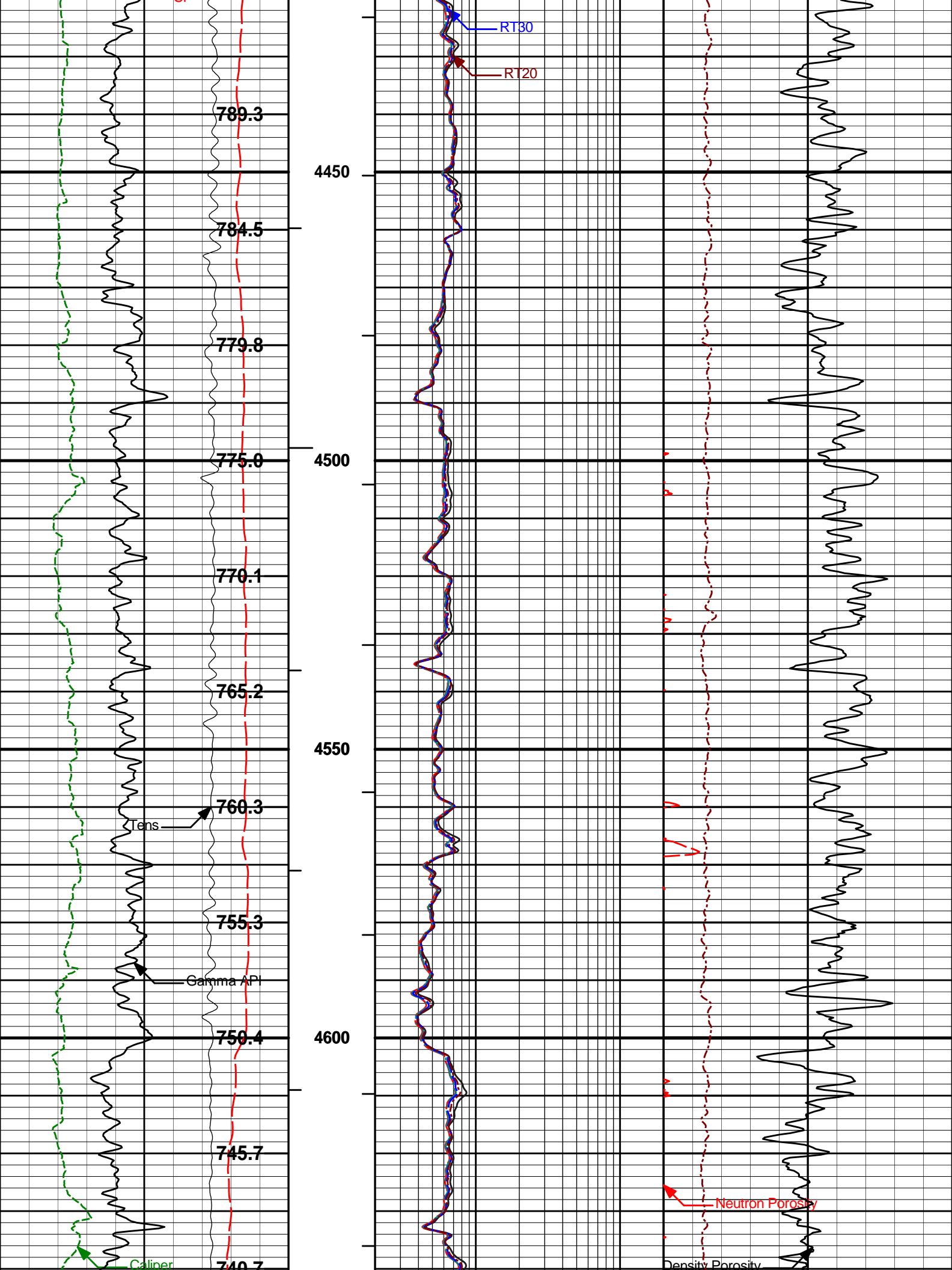
MAIN PASS 5" = 100'

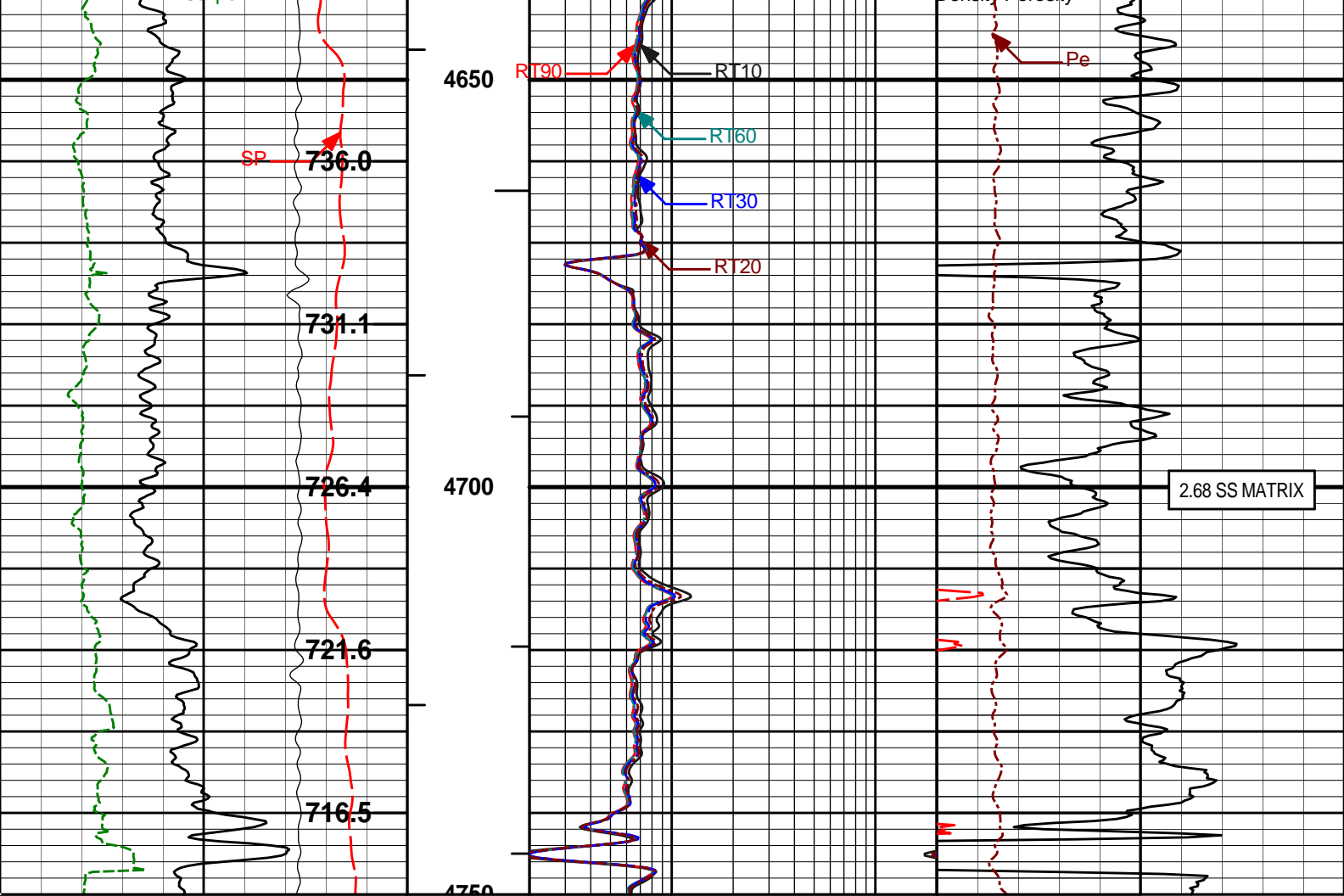












0	SP	100	1 : 240	2	RT90	200	0	Pe	10
	millivolts				Ohm-m				
0	Gamma API	250	BHVT	2	RT60	200	20	Density Porosity	0
	api				Ohm-m			percent	
6	Caliper	16	AHVT	2	RT30	200	20	Neutron Porosity	0
	inches				Ohm-m			percent	
10K	Tens	0		2	RT20	200			
	pounds				Ohm-m				
	Annular Volume Total			2	RT10	200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

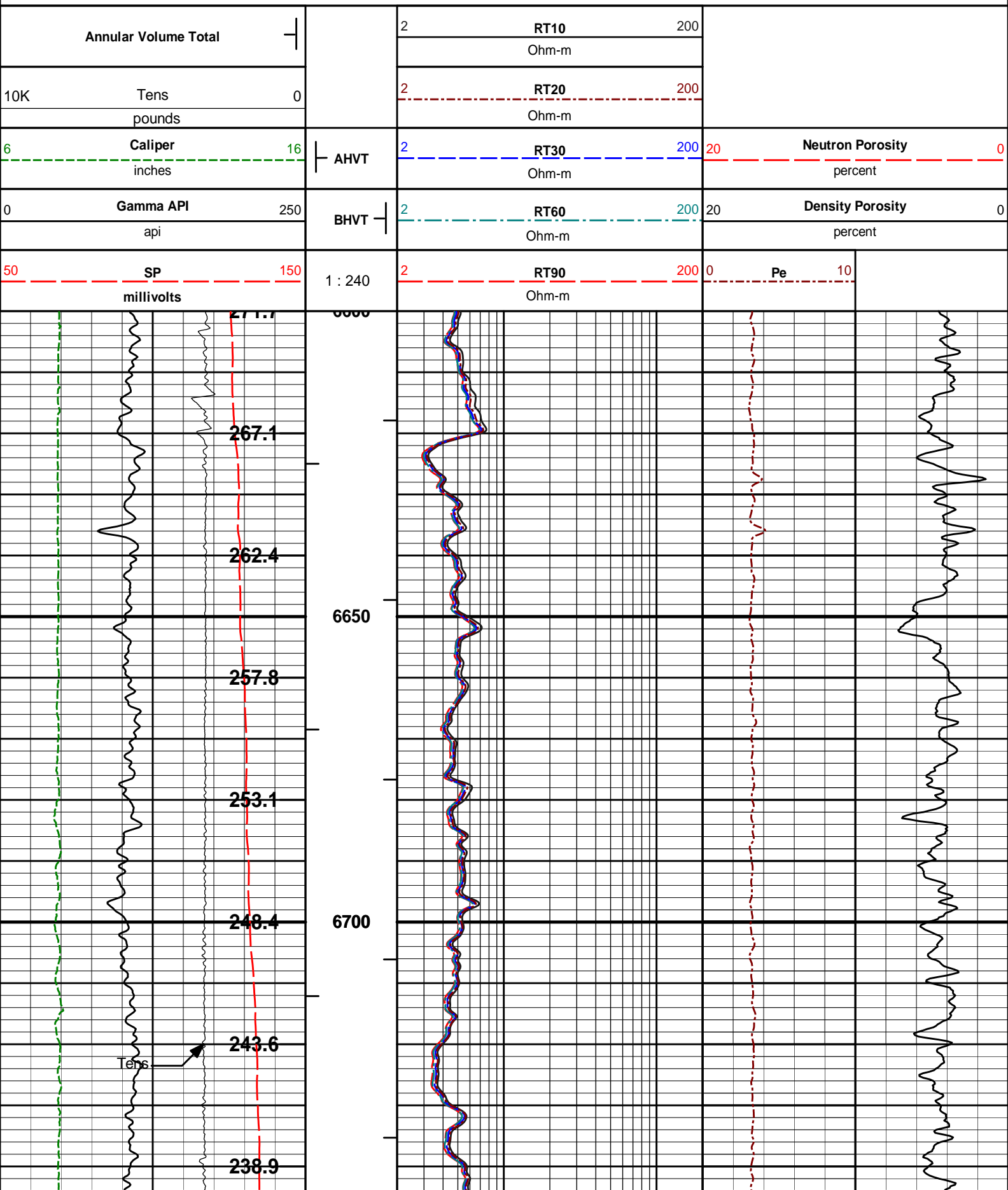
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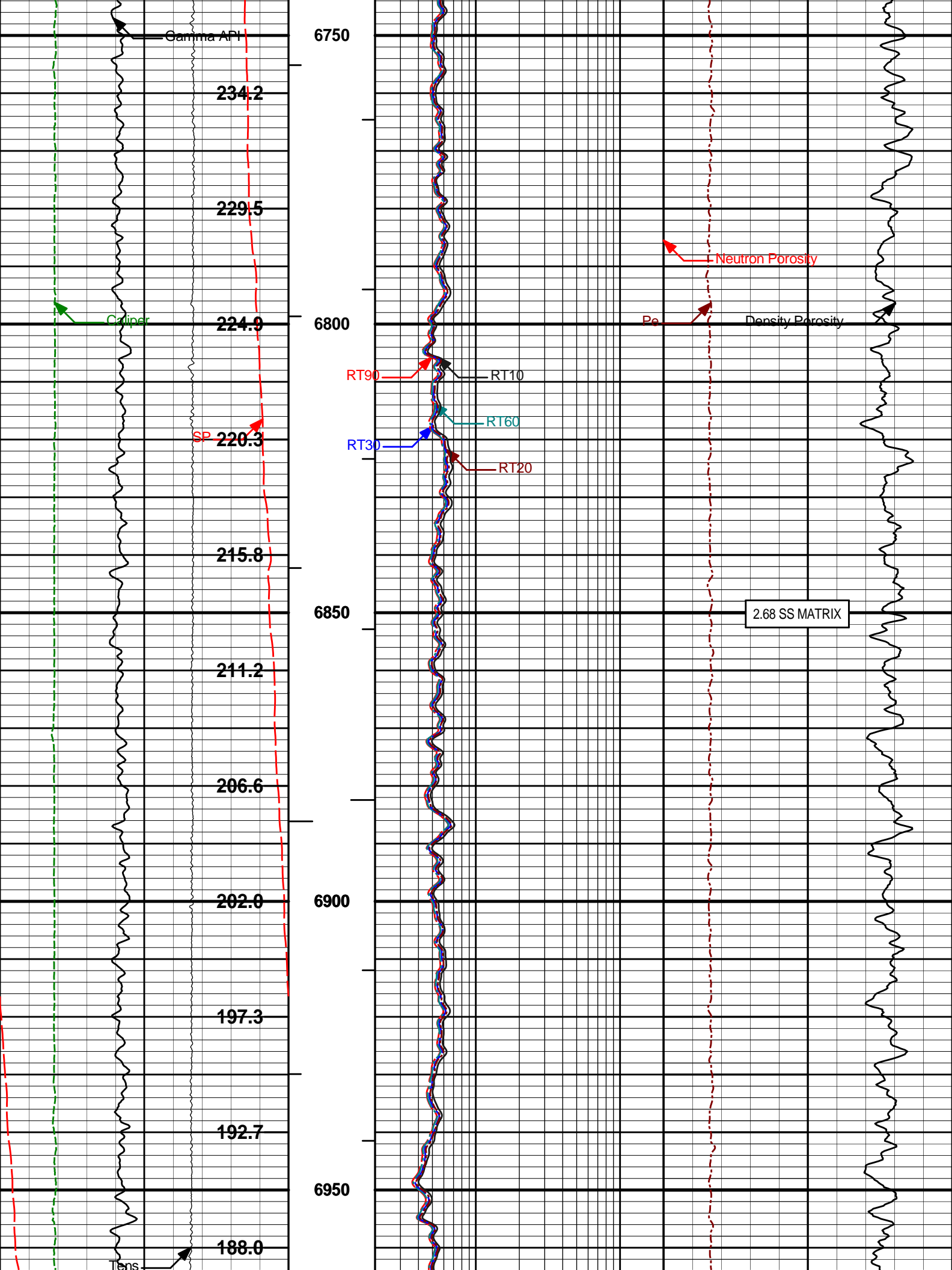
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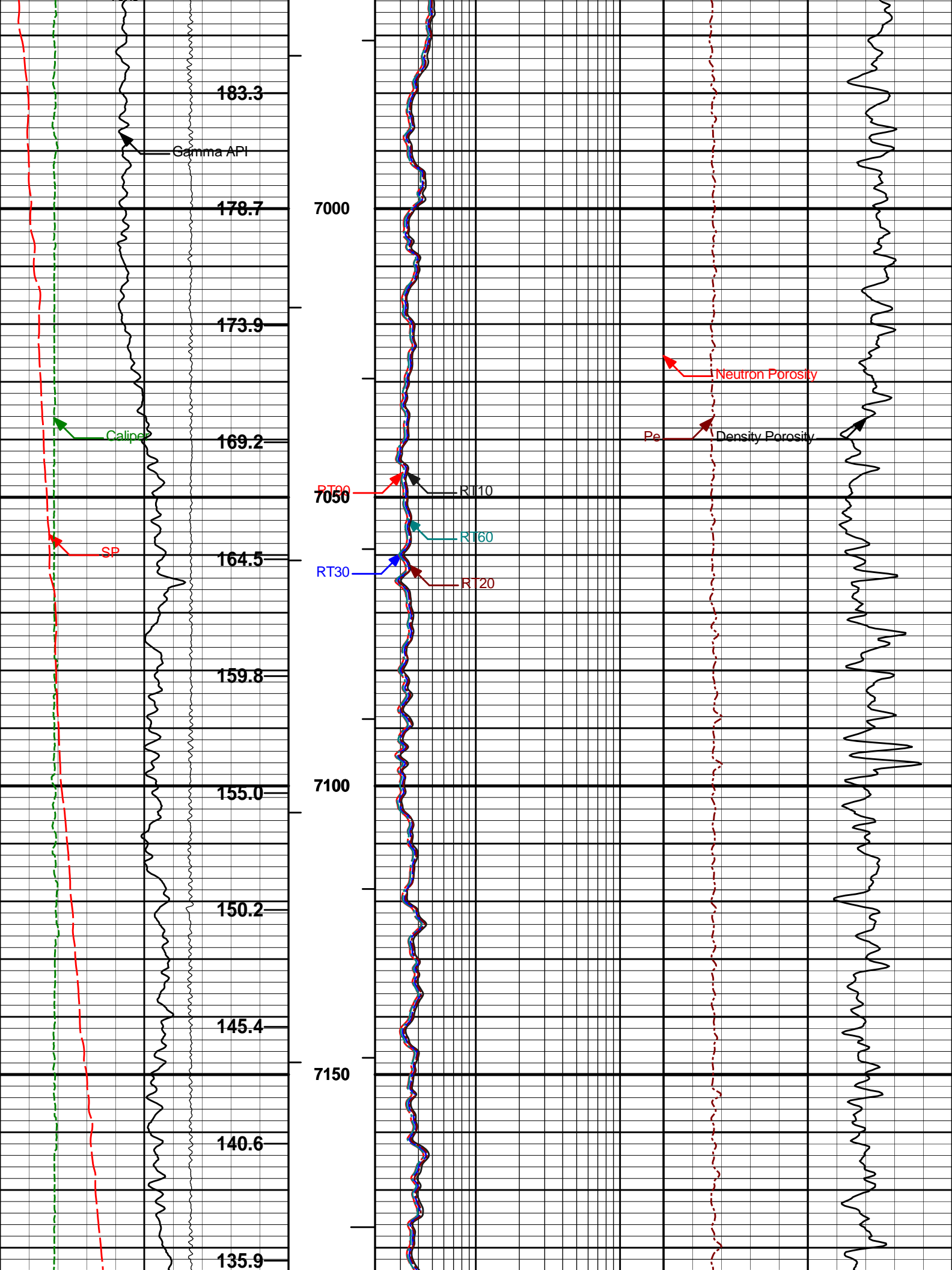
MAIN PASS 5" = 100'

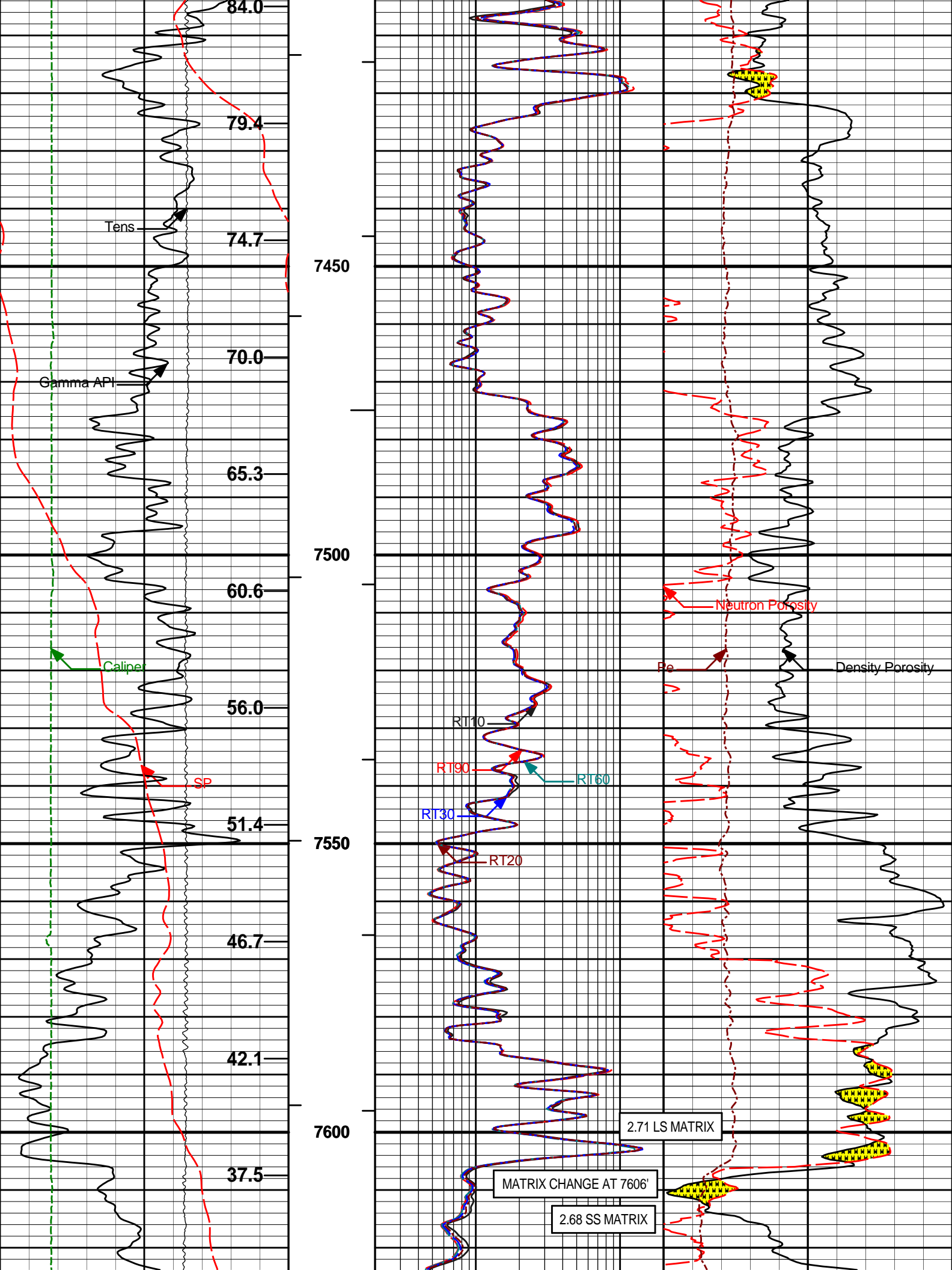
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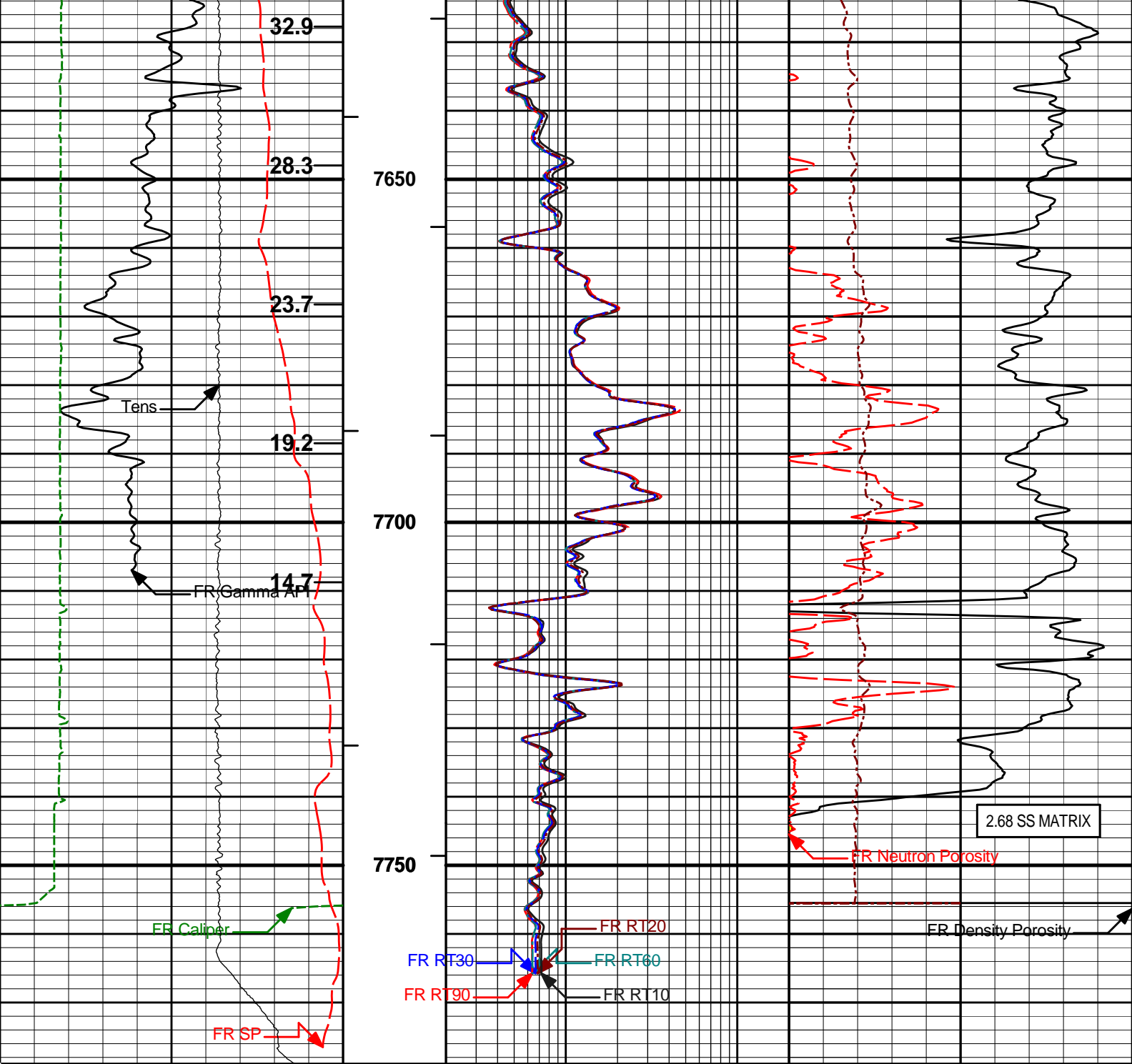
Plot Time: 15-Jul-09 10:03:51
 Plot Range: 6600 ft to 7778.92 ft
 Data: FIVE_RIVERSSSSSWell Based\MAIN\
 Plot File: \COMP\IQ_COMPOSITE_5IN_RM_NOBLE











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				
	Annular Volume Total			2	RT10	200			
					Ohm-m				

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Plot Time: 15-Jul-09 10:03:57
 Plot Range: 6600 ft to 7778.92 ft
 Data: FIVE_RIVERSSSSSWell Based\MAIN*
 Plot File: \COMPIQ_COMPOSITE_5IN_RM_NOBLE

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11277436 Reference Calibration Date: 03-Jun-09 10:20:43
 Engineer: F. LODER Calibration Date: 02-Jul-09 13:27:13
 Software Version: WL INSITE R2.4 (Build 11) Calibration Version: 1

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

Measurement	Measured	Calibrated	Units
Background	145.6	143.5	api
Background + Calibrator	379.1	373.5	api
Calibrator	227.9	230.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11277436 Reference Calibration Date: 02-Jul-09 13:27:13
 Engineer: W. MATSON Calibration Date: 13-Jul-09 16:35:15
 Software Version: WL INSITE R2.4 (Build 11) Calibration Version: 1

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

Field Verification	Shop	Field	Units
Background	143.5	145.1	api
Background + Calibrator	373.5	377.6	api
Calibrator	230.0	232.5	api

Shop	Field	Difference	Tolerance
230.0	232.5	-2.5	+/- 9.00

ACCELEROMETER SHOP CALIBRATION

Tool Name: GTET - 11277436 Reference Calibration Date: 25-Feb-09 10:23:32
 Engineer: F. LODER Calibration Date: 25-Feb-09 10:27:28
 Software Version: WL INSITE R2.4 (Build 1) Calibration Version: 1

Horizontal-1 Telemetry	Horizontal-2 Telemetry	Vertical Telemetry	Units
-229.00	-168.64	-16316.18	cnts

Coefficient	Coefficient Value	Tolerance
Gain	-0.000062	0.0100 - -0.0100
Offset	-0.012	-----

Orientation	Measured	Calibrated
Horizontal	0.01	0.00
Vertical	1.00	1.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11301132

Reference Calibration Date: 03-Jun-09 11:59:51

Engineer: F. LODER

Calibration Date: 02-Jul-09 13:37:58

Software Version: WL INSITE R2.4 (Build 11)

Calibration Version: 1

Logging Source S/N: CASPER 434

Tank Serial Number: 11068236

Reference value assigned to Tank: 53.720

Snow Block S/N: CASPER IQ

Calibration Tank Water Temperature: 76 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.005	1.002	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):	0.2233	0.2224	0.0009	+/- 0.0020
Calibrated Ratio:	10.14	10.11	0.031	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0807	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

Reference Calibration Date: 02-Jul-09 13:37:58

Engineer: W. MATSON

Calibration Date: 13-Jul-09 16:08:43

Software Version: WL INSITE R2.4 (Build 11)

Calibration Version: 1

Logging Source S/N: CASPER 434

Snow Block S/N: CASPER IQ

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0807	0.0695	-0.0112	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - I132M275

Reference Calibration Date: 03-Jun-09 11:27:23

Engineer: F. LODER

Calibration Date: 02-Jul-09 12:53:05

Software Version: WL INSITE R2.4 (Build 11)

Calibration Version: 1

Logging Source S/N: 2770 GW

DENSITY CALIBRATION SUMMARY				
Measurement	Previous Value	New Value	Control Limit	
Near Bar Gain	1.0980	1.0805	0.90 - 1.10	
Near Dens Gain	1.0644	1.0472	0.90 - 1.10	
Near Peak Gain	1.0604	1.0358	0.90 - 1.10	
Near Lith Gain	1.0292	1.0058	0.90 - 1.10	
Far Bar Gain	1.0256	1.0243	0.90 - 1.10	
Far Dens Gain	1.0087	1.0092	0.90 - 1.10	
Far Peak Gain	1.0025	0.9983	0.90 - 1.10	
Far Lith Gain	0.9773	0.9745	0.90 - 1.10	
<hr/>				
Near Bar Offset	-0.7230	-0.5498	NONE	
Near Dens Offset	-0.3673	-0.2085	NONE	
Near Peak Offset	-0.2986	-0.0939	NONE	
Near Lith Offset	-0.0570	0.1293	NONE	
Far Bar Offset	-0.0902	-0.0704	NONE	
Far Dens Offset	0.0571	0.0578	NONE	
Far Peak Offset	0.1108	0.1474	NONE	
Far Lith Offset	0.2935	0.3058	NONE	
<hr/>				
Near Bar Background	1115.31	1115.00	700 - 1450	
Near Dens Background	365.73	364.62	230 - 480	
Near Peak Background	158.40	157.85	100 - 210	
Near Lith Background	192.61	192.49	125 - 260	
Far Bar Background	583.37	583.25	450 - 900	
Far Dens Background	225.98	226.45	175 - 345	
Far Peak Background	88.01	88.10	70 - 140	
Far Lith Background	93.59	92.59	75 - 145	

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.677	1.680	0.003	+/- 0.015
Pe	2.473	2.594	0.121	+/- 0.150
ALUMINIUM				
Density (g/cc)	2.592	2.600	0.008	+/- 0.01500
Pe	2.989	3.100	0.111	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0013	+/- 0.0110	-0.0010	+/- 0.0140
Magnesium Block	0.0000	+/- 0.0110	-0.0005	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	-0.0001	+/- 0.0140
Resolution	8.91	6.00 - 11.50	9.53	6.00 - 11.50
Internal Verifier(B+D+P+L)	1830	1200 - 2700	990	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

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT - I132M275	Reference Calibration Date: 02-Jul-09 12:53:05
Engineer: W. MATSON	Calibration Date: 13-Jul-09 16:05:53
Software Version: WL INSITE R2.4 (Build 11)	Calibration Version: 1

Aluminum Block S/N: BRIGHTON ALUMINUM BLOCK Density: 2.600g/cc
 Magnesium Block S/N: BRIGHTON MAGNESIUM BLOCK Density: 1.680g/cc
 Pad Temperature: 82.3 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1829.962	1826.453	-3.509	17.133
Far (B+D+P+L) cps	990.400	989.209	-1.191	16.868
Near Resolution	8.91	8.95	0.040	0.50
Far Resolution	9.53	9.79	0.260	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - I132M275	Reference Calibration Date: 27-Jun-09 12:00:35
Engineer: W. MATSON	Calibration Date: 27-Jun-09 12:05:24
Software Version: WL INSITE R2.4 (Build 11)	Calibration Version: 1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2764.02	-2998.38	-7000.00 - -1000.00
Pad Gain	0.0003965	0.0003982	0.000200 - 0.000600
Arm Offset	-3414.15	-3367.23	-5000.00 - 3000.00
Arm Gain	0.0005549	0.0005712	0.000300 - 0.000700
Arm Power	-0.000005236	-0.000006176	-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)	2.08	2.00	-0.08	+/- 0.20
Medium Ring (in)	3.83	3.75	-0.08	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.52	6.50	-0.02	+/- 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: Passed
 Ring-Measurement Check: Passed

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check: Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt - 90199007-E6758-S4352

Reference Calibration Date: 12-May-09 11:36:24

Engineer: W.MATSON

Calibration Date: 05-Jun-09 11:35:58

Software Version: WL INSITE R2.4 (Build 11)

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	0.9984	1.05	0.95	0.9954	1.05	0.95	0.9898	1.05
A2 (50")	0.95	1.0284	1.05	0.95	1.0150	1.05	0.95	1.0076	1.05
A3 (29")	0.95	1.0059	1.05	0.95	0.9989	1.05	0.95	0.9926	1.05
A4 (17")	0.95	1.0112	1.05	0.95	1.0030	1.05	0.95	0.9985	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0128	1.05	0.95	1.0081	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9818	1.05	0.95	0.9753	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	-0.345	2	-6	-4.043	-2	-8	-4.976	-2
A2 (50")	-7	-1.135	-2	-6	-3.843	-2	-7	-4.874	-2
A3 (29")	-27	-13.972	-9	-9	-4.224	-3	-7	-3.363	-1
A4 (17")	-180	-98.632	-60	-45	-32.094	-15	-39	-25.692	-13
A5 (10")	N/A	N/A	N/A	-150	-85.358	-50	-80	-42.236	-10
A6 (6")	N/A	N/A	N/A	175	287.349	525	90	150.176	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8966	1.3
36K	1.0	1.8963	2.0
72K	1.0	1.1342	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohmm)	Upper (ohm-m)
Mud Cell	0.95	1.009	1.05

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11277436						
Gamma Ray Calibrator	230.0	232.5	-----	-2.5	+/- 9.00	api
DSNT-11301132						
Snow-Block Porosity	0.0807	0.0695	-----	0.0112	+/- 0.0150	decp
SDLT-I132M275						
Near(B+D+P+L)	1829.962	1826.453	-----	3.509	+/-17.133	cps
Far(B+D+P+L)	990.400	989.209	-----	1.191	+/-16.868	cps
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
ACRt-90199007-E6758-S4352						
Mud Cell	1.009	-----	-----	0.000	-----	ohmm

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-B097 135.00 lbs	Ø 3.625 in →		← Load Cell @ 80.00 ft ← BH Temperature @ 79.43 ft	6.25 ft	83.68 ft
GTET-11277436 165.00 lbs	Ø 3.625 in →		← GammaRay @ 71.37 ft	8.52 ft	77.43 ft
IDT-11277453 150.00 lbs	Ø 3.625 in →			7.58 ft	68.91 ft
ICT-11294350 330.00 lbs	Ø 3.625 in →		← ICT Caliper @ 51.29 ft	12.83 ft	61.33 ft
CSNG-10846351 114.00 lbs	Ø 3.625 in →		← CSNG @ 42.87 ft	8.17 ft	48.50 ft
					8.17 ft

DSNT-11301132
174.00 lbs

Ø 3.625 in →

9.69 ft

← DSN Far @ 33.39 ft
← DSN Near @ 32.64 ft

30.64 ft

SDLT-1132M275
360.00 lbs

Ø 4.500 in →

10.81 ft

Ø 4.750 in →

← SDL Microlog @ 22.83 ft
← SDL Calliper @ 22.65 ft
← SDL @ 22.64 ft

19.83 ft

ACRt-90199007-E6758-S4352
250.00 lbs

Ø 3.625 in →

19.25 ft

← Mud Resistivity @ 13.44 ft

← ACRt @ 9.46 ft

Cabbage Head-CABBAGE
10.00 lbs

Ø 3.625 in →
Ø 6.000 in →

0.58 ft

← SP @ 1.86 ft

0.58 ft

0.00 ft

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	B097	135.00	6.25	77.43	300.00
GTET	Natural Gamma Ray Tool	11277436	165.00	8.52	68.91	60.00
IDT	Insite Directional Tool	11277453	150.00	7.58	61.33	30.00
ICT	Six Independent Arm Caliper	11294350	330.00	12.83	48.50	30.00
CSNG	Compensated Spectral Natural Gamma	10846351	114.00	8.17	40.33	15.00
DSNT	Dual Spaced Neutron	11301132	174.00	9.69	30.64	60.00
DCNT	DSN Decentralizer	11301132	50.00	5.13	33.97	300.00
SDLT	Spectral Density Tool	1132M275	360.00	10.81	19.83	60.00
ACRt	Array Compensated True Resistivity	90199007-E6758-S4352	250.00	19.25	0.58	300.00
SP	SP Ring	PROTO1	0.00	0.25	1.86	300.00
CBHD	Cabbage Head	CABBAGE	10.00	0.58	0.00	300.00
Total			1,738.00	83.68		

* Not included in Total Length and Length Accumulation.

COMPANY	NOBLE		
WELL	FIVE RIVERS USX K09-02D		
FIELD	WATTENBERG		
COUNTY	WELD	STATE	COLORADO

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY