

HALLIBURTON										SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED RESISTIVITY									
COMPANY WELL FIELD COUNTY STATE										WILLIAMS PRODUCTION PA 31-31 PARACHUTE GARFIELD CO									
Permanent Datum Log measured from Drilling measured from										GL KB KB Elev. 5512.0 ft 26.0 ft above perm. Datum G.L.									
Date										27-Sep-08									
Run No.										ONE									
Depth - Driller										1108.0 ft									
Depth - Logger										1106.0 ft									
Bottom - Logged Interval										1105.0 ft									
Top - Logged Interval										100.0 ft									
Casing - Driller										@									
Casing - Logger										0.0 ft									
Bit Size										13,500 in									
Type Fluid in Hole										LSND									
Density										9.8 ppq									
Viscosity										137.00 s/qt									
PH										9.80 pH									
Fluid Loss										9.0 cph									
Source of Sample										MUD TANK									
Rm @ Meas. Temperature										1.74 ohmm									
Rmf @ Meas. Temperature										1.54 ohmm									
Rmc @ Meas. Temperature										2.08 ohmm									
Source Rmf										Rmc									
Rm @ BHT										1.22 ohmm									
Time Since Circulation										7.0 hr									
Time on Bottom										27-Sep-08 22:02									
Max. Rec. Temperature										107.0 degF									
Equipment										11014853									
Recorded By										J. GEISER									
Witnessed By										B. KLATT									

----- Fold here -----

Service Ticket No.: 6203618										API Serial No.: 05045158560000										PGM Version: WL INSITE R2.2 (Build 9)									
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		N/A		1.5" STANDOFF		N/A													
Rmc @ Meas. Temp.		@				@				90144319-																			
Source Rmf		Rmc		CALC		CALC				-E5554-S481																			
Rm @ BHT		1.22 ohmm		@ 107 degF		@				-3-13-08																			
Rmf @ BHT		1.08 ohmm		@ 107 degF		@																							
Rmc @ BHT		1.46 ohmm		@ 107 degF		@																							
EQUIPMENT DATA																													
GAMMA				ACOUSTIC				DENSITY				NEUTRON																	
Run No.		ONE		Run No.				Run No.		ONE		Run No.		ONE															
Serial No.		11005602		Serial No.				Serial No.		10951314		Serial No.		10993888															
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.		GTET		Spacing				Log Type		GAMMA-GAMMA		Log Type		THERMAL															
Type		SCINT						Source Type		Cs137		Source Type		Am241Be															
Length		8"		LSA [Y/N]				Serial No.		5123GW		Serial No.		DSN-388															
Distance to Source		10'		FWDA [Y/N ]				Strength		1.5 Ci		Strength		18.5 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	TD	SURF	REC	0 api	200 api				30 %	-10 %	2.68 g/cc	30 %	-10 %	SAND
DIRECTIONAL INFORMATION														
Maximum Deviation						@		KOP			@			
Remarks: RWCH-GTET-DSN-SDL-ACRT WERE RUN IN COMBINATION.														
HOLE RUGOSITY AND TENSION PULLS MAY AFFECT DATA QUALITY.														
ANNULAR HOLE VOLUME CALCULATED FOR 9.625" CASING.														
LATITUDE: 39.486 N // LONGITUDE: 108.034														
YOUR CREW TODAY IS: B. WATTS, M. ROSALES, AND T. CHANEY														
RIG: NABORS 574														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - GRAND JUNCTION, CO (970) 523-3600														
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.														
HALLIBURTON														

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	13.500	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDWT	Borehole Fluid Weight	9.800	ppg
	SHARED	RMUD	Mud Resistivity	1.740	ohmm
	SHARED	TRM	Temperature of Mud	73.3	degF
	SHARED	OBM	Oil Based Mud System?	No	
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	9.625	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	1108.00	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	
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		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	MDTP	Weighted Mud Correction Type?	Barite	
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	CIND	Casing Indicator Enabled?	Yes	
ACRt	RECE	Relative Caliper Error	0	%
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	RMC	Use RM Calculated for BHC?	Yes	
ACRt	TSEL	Calculate Temperature for Rmud Correction?	Yes	
ACRt	LTNM	Acrt Lateral Normalization	None	
ACRt	UTC	Use Temperature Correction	Yes	
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Standoff	
ACRt	BHCM	Borehole Compensation Type	Conventional	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	REC6	Record 6 in curves in ADI?	No	

BOTTOM

Data: WIL\_PA\_31\_31\0001 TRIPLE\_1\IDLE

Date: 27-Sep-08 23:52:29

**HALLIBURTON**

Plot Time: 28-Sep-08 00:12:09  
Plot Range: 70 ft to 1120 ft  
Data: WIL\_PA\_31\_31\Well Based\\*  
Plot File: \\...\\IQ\_ACRt\_1IN\_WILLIAMS

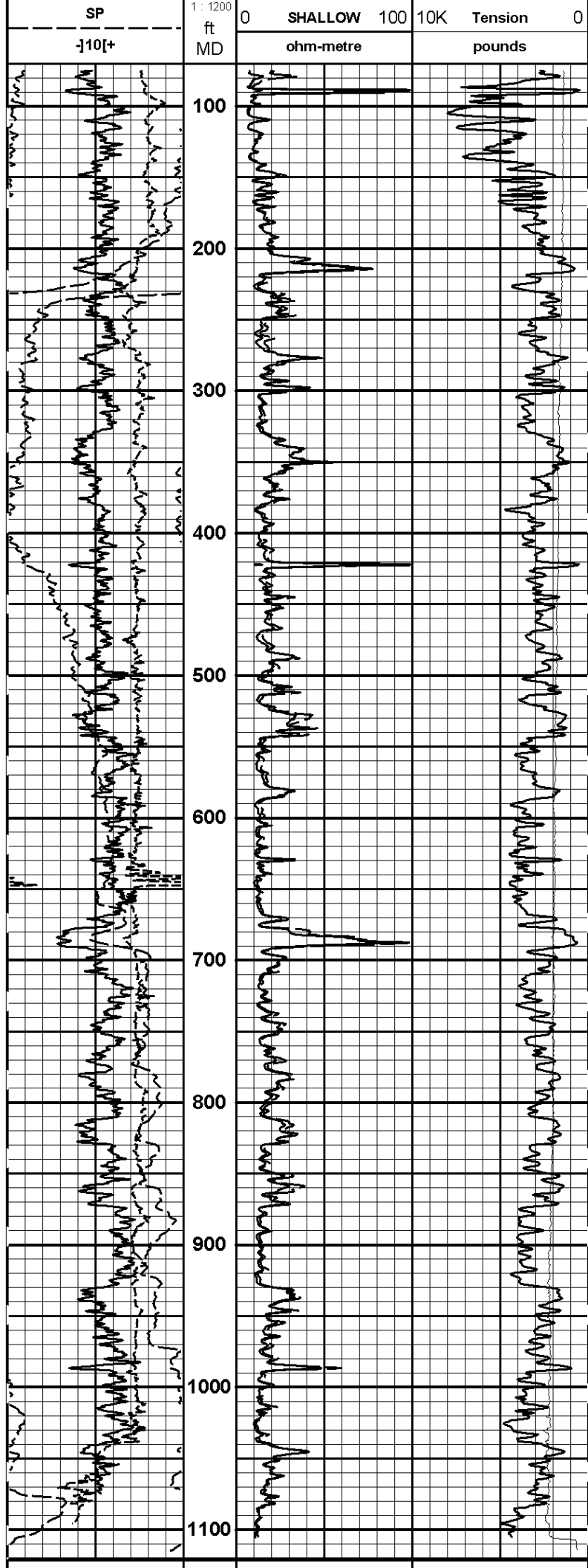
**MAIN PASS 1" = 100' (HALF SCALE)**

6 Caliper 16  
inches

0 Gamma API 200  
api

0 DEEP RES 100  
ohm-metre

DEEP COND 0  
nmho per metre



SP

-10[+

0

Gamma API

200

api

6

Caliper

16

inches

ft

MD

0

SHALLOW

100

10K

Tension

0

ohm-metre

pounds

0

DEEP RES

100

200

DEEP COND

0

ohm-metre

mmho per metre

HALLIBURTON

Plot Time: 28-Sep-08 00:12:11

Plot Range: 70 ft to 1120 ft

Data: WIL\_PA\_31\_31\Well Based\\*

Plot File: \\...\IQ\_ACRt\_1IN\_WILLIAMS

MAIN PASS 1" = 100' (HALF SCALE)

HALLIBURTON

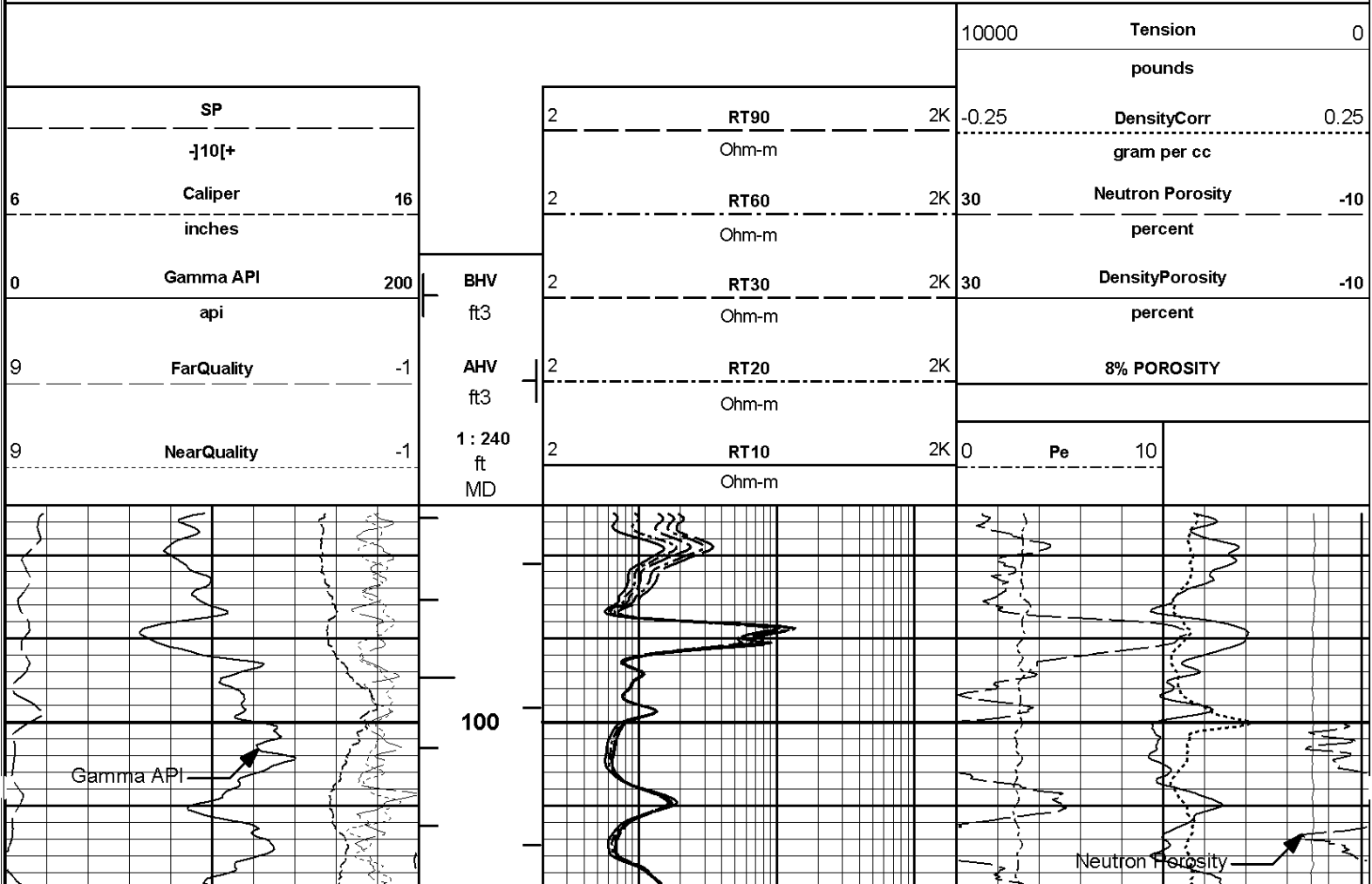
Plot Time: 28-Sep-08 00:12:11

Plot Range: 74 ft to 1116 ft

Data: WIL\_PA\_31\_31\Well Based\\*

Plot File: \\TRIPLE\IQ\_COMPOSITE\_5IN

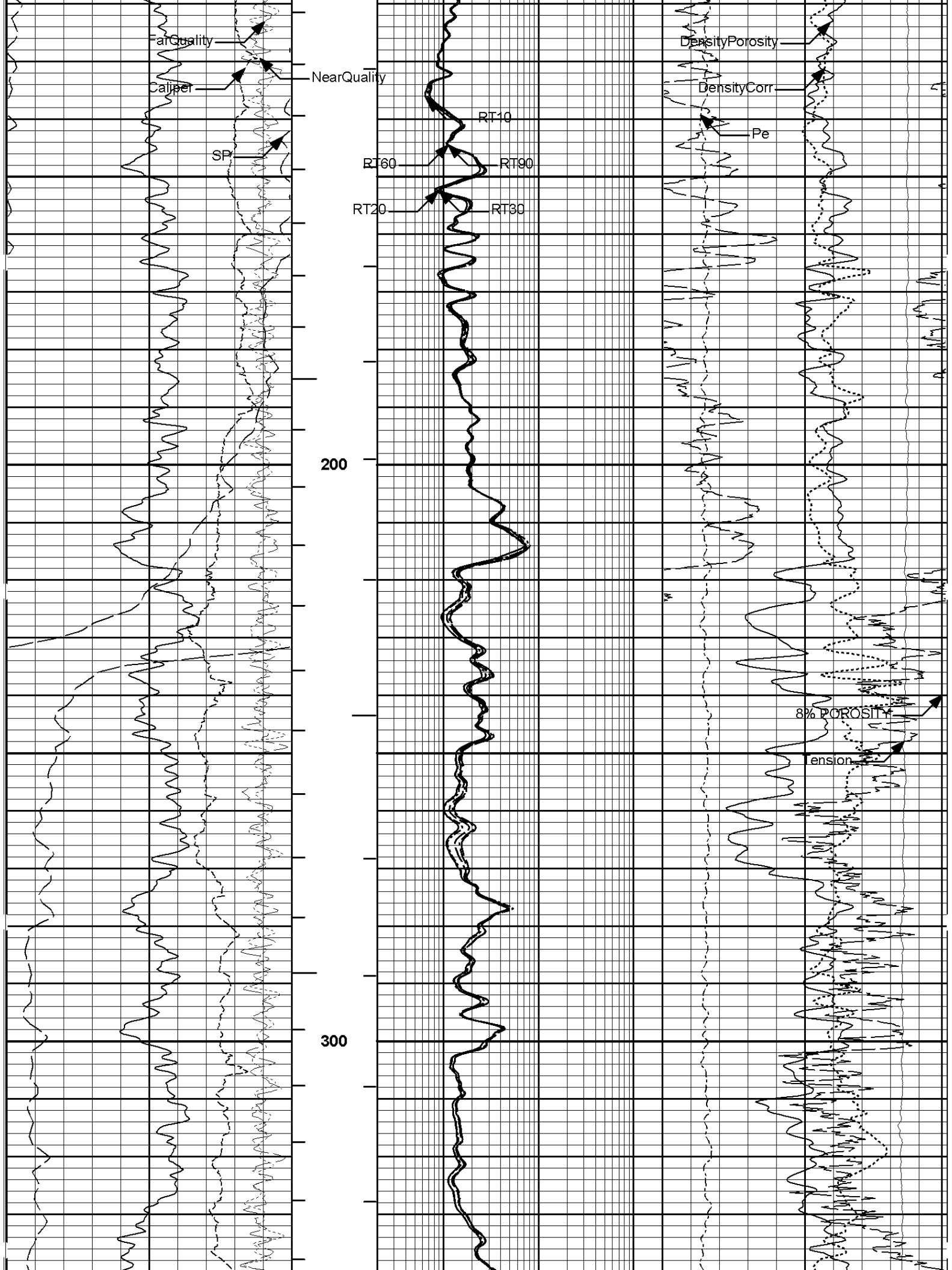
MAIN PASS 5" = 100'

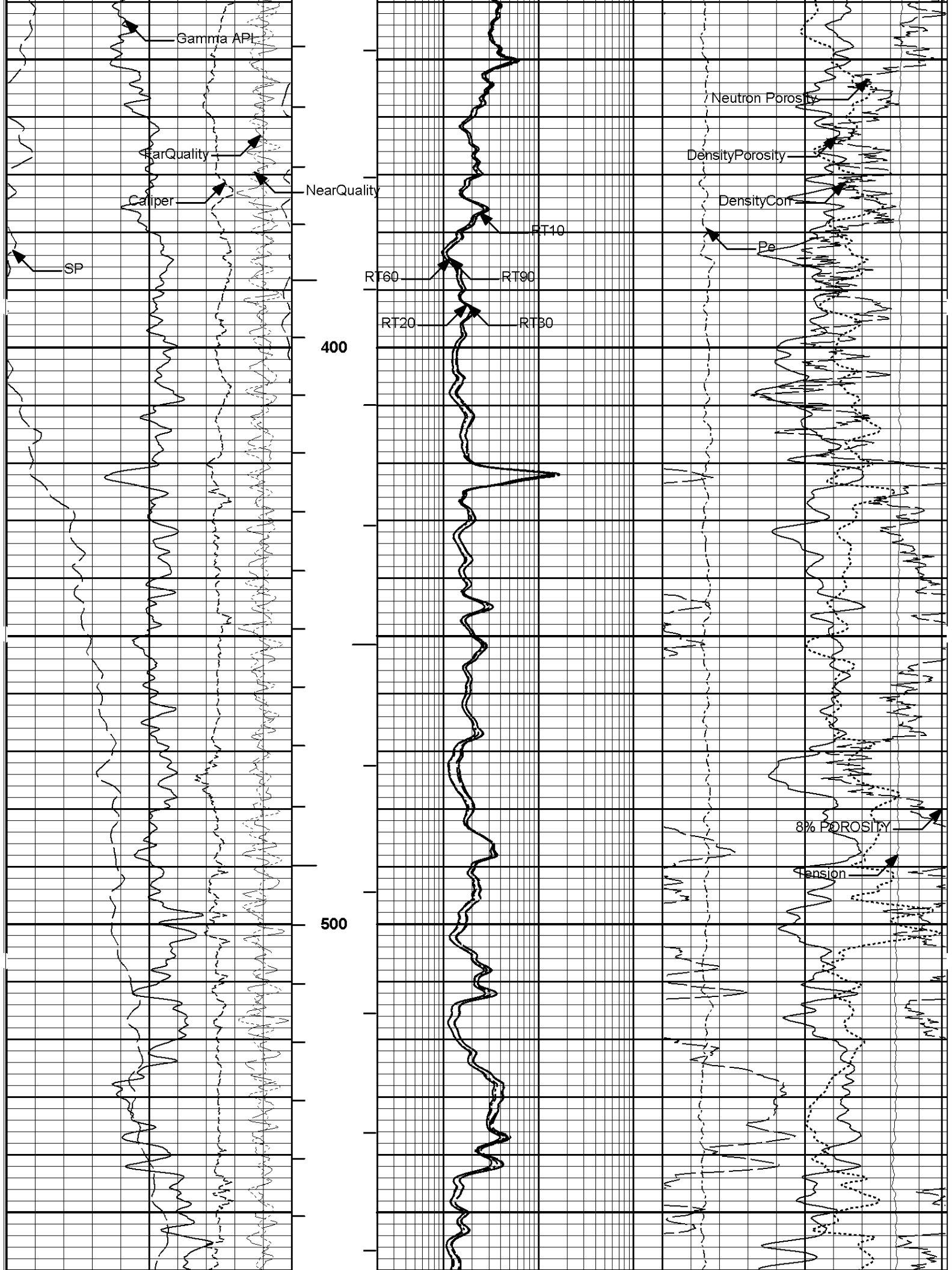


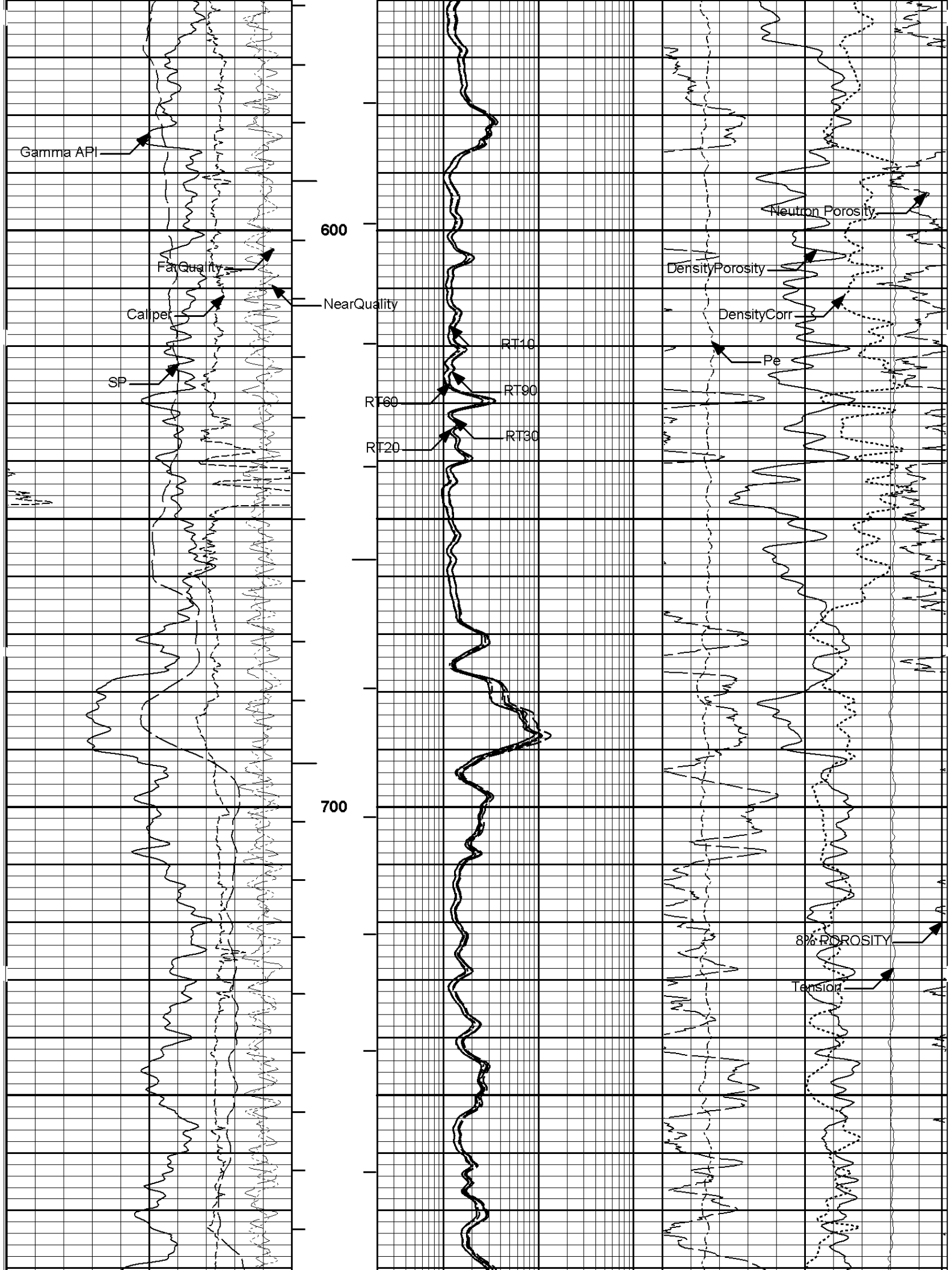
100

Gamma API

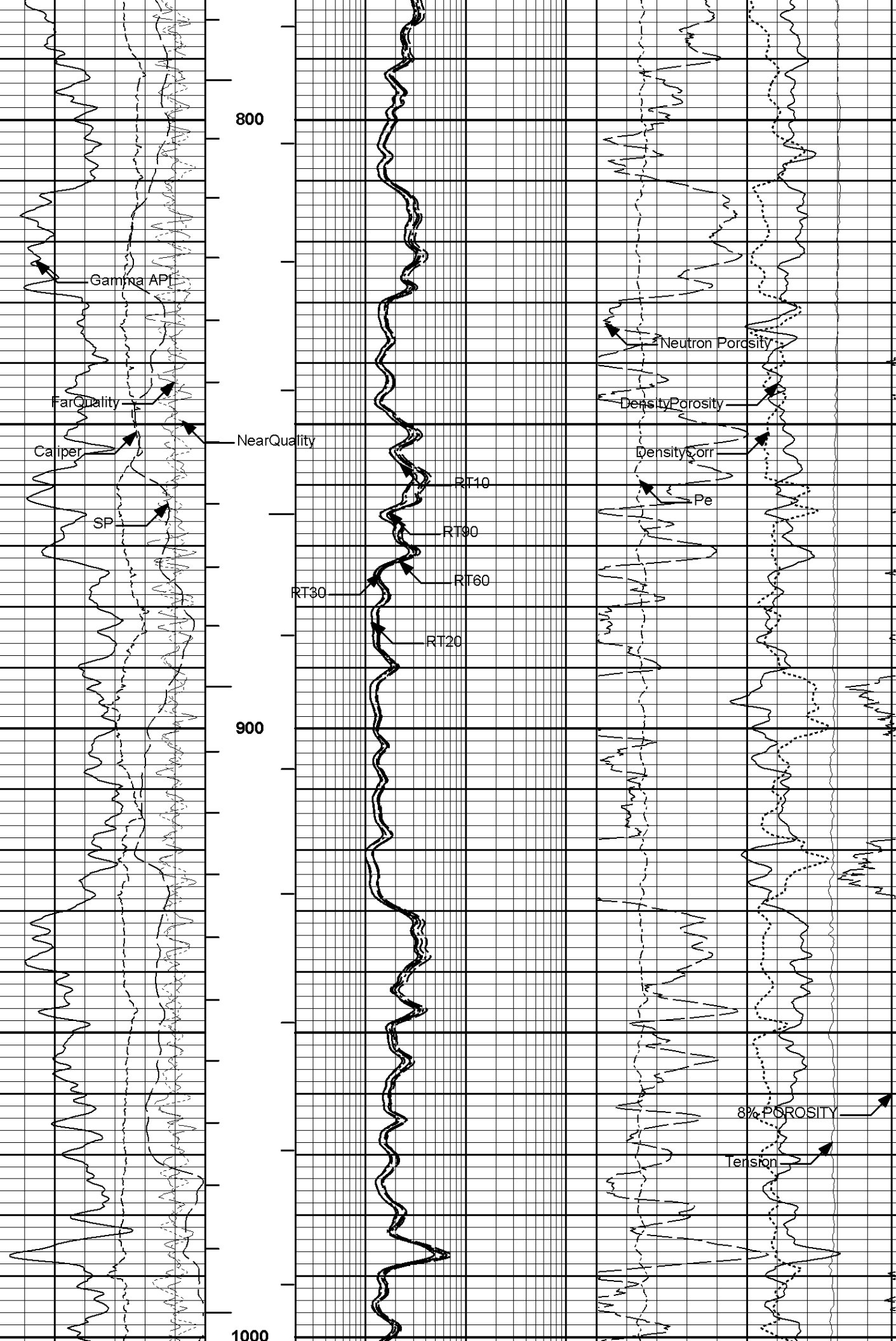
Neutron Porosity

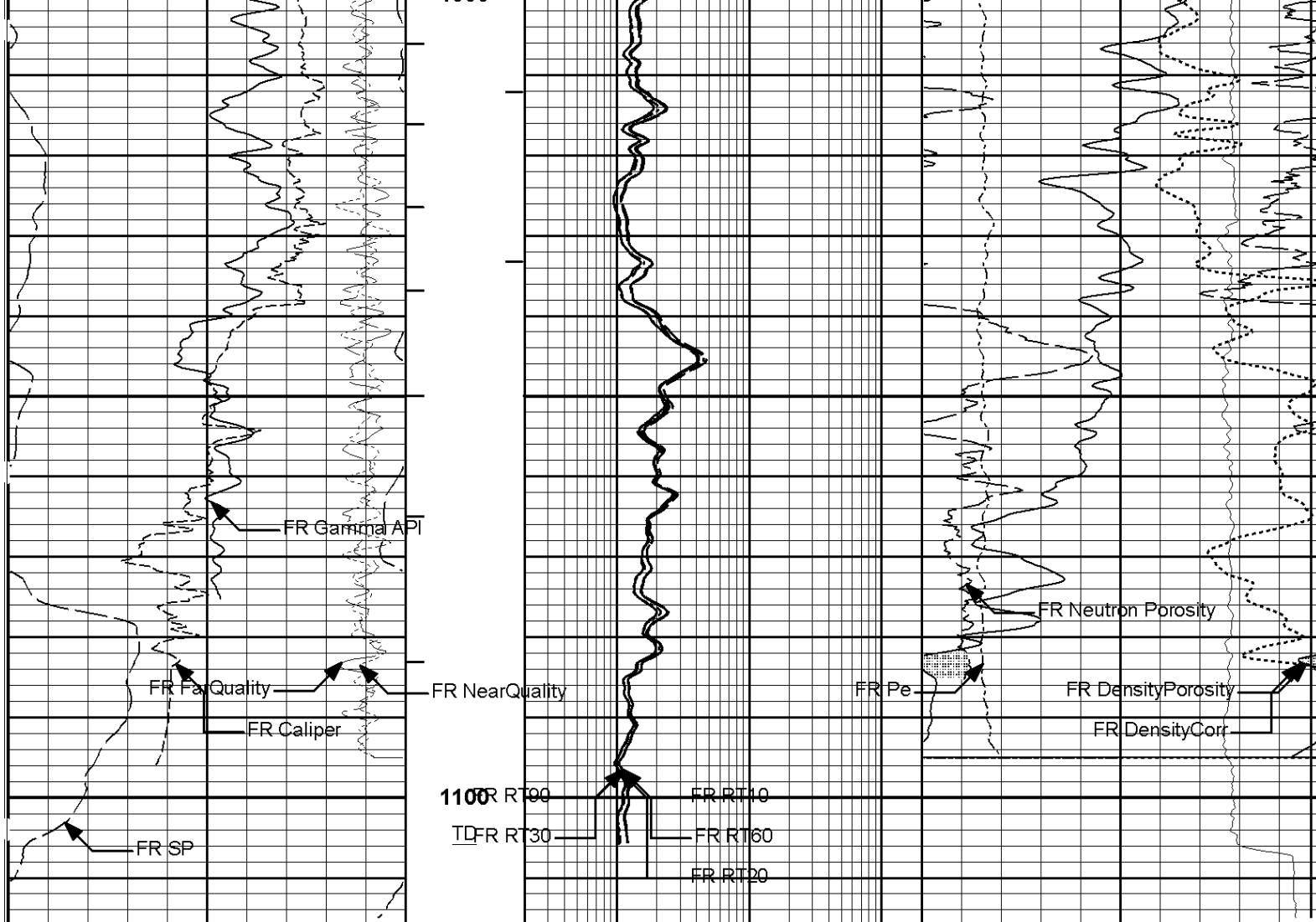












9	NearQuality	-1	1 : 240 ft MD	2	RT10	2K	0	Pe	10
9	FarQuality	-1	AHV ft3	2	RT20	2K	8% POROSITY		
0	Gamma API	200	BHV ft3	2	RT30	2K	30	DensityPorosity	-10
6	Caliper	16		2	RT60	2K	30	Neutron Porosity	-10
	api			2	RT90	2K	-0.25	DensityCorr	0.25
	inches							gram per cc	
	SP						10000	Tension	0
	-j10[+							pounds	

**HALLIBURTON**

Plot Time: 28-Sep-08 00:12:16  
 Plot Range: 74 ft to 1116 ft  
 Data: WIL\_PA\_31\_31\Well Based%\n  
 Plot File: \\TRIPLEIQ\_COMPOSITE\_5IN

**MAIN PASS 5" = 100'**

## CALIBRATION REPORT

## NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11005602

Reference Calibration Date: 12-Sep-08 18:25:16

Engineer: K. WOOD

Calibration Date: 12-Sep-08 18:28:24

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Calibrator Source S/N: MP051807-04

Calibrator API Reference:239.00 api

Measurement	Measured	Calibrated	Units
Background	69.2	68.5	api
Background + Calibrator	310.6	307.5	api
Calibrator	238.3	239.0	api

## NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11005602

Reference Calibration Date: 12-Sep-08 18:28:24

Engineer: G. BOOK

Calibration Date: 27-Sep-08 14:57:48

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Calibrator Source S/N: MP051807-04

Calibrator API Reference:239.00 api

Field Verification	Shop	Field	Units
Background	68.5	92.4	api
Background + Calibrator	307.5	328.4	api
Calibrator	239.0	236.1	api

Shop	Field	Difference	Tolerance
239.0	236.1	2.9	+/- 9.00

## NATURAL GAMMA RAY TOOL POST CALIBRATION

Tool Name: GTET - 11005602

Reference Calibration Date: 27-Sep-08 14:57:48

Engineer: J. GEISER

Calibration Date: 27-Sep-08 23:34:23

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Calibrator Source S/N: MP051807-04

Calibrator API Reference:239.00 api

Post Verification	Field	Post	Units
Background	92.4	81.5	api
Background + Calibrator	328.4	319.2	api
Calibrator	236.1	237.7	api

Shop	Field	Post	Difference	Tolerance
239.0	236.1	237.7	-1.6	+/- 9.00

## DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10993888

Reference Calibration Date: 12-Sep-08 18:03:38

Engineer: K. WOOD

Calibration Date: 12-Sep-08 18:17:55

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Logging Source S/N: DSN-388

Tank Serial Number: GJ TANK

Reference value assigned to Tank: 52.750

Snow Block S/N: 110 SNOW BLOCK

Calibration Tank Water Temperature: 71 degF

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.967	0.963	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):	0.2184	0.2169	0.0014	+/- 0.0020
Calibrated Ratio:	9.98	9.93	0.049	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0699	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 - 10993888	Reference Calibration Date:	12-Sep-08 18:17:55
Engineer:	G. BOOK	Calibration Date:	27-Sep-08 14:45:19
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Logging Source S/N: DSN-388  
Snow Block S/N: 110 SNOW BLOCK

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0699	0.0652	-0.0047	+/- 0.0150

PASS/FAIL SUMMARY

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT - 10951314	Reference Calibration Date:	23-Jun-08 10:00:34
Engineer:	K. WOOD	Calibration Date:	13-Sep-08 11:03:11
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Logging Source S/N: 5123GW  
Aluminum Block S/N: GJ ALUMINIUM                      Density: 2.610g/cc  
Magnesium Block S/N: GJ MAGNESIUM                      Density: 1.685g/cc

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9240	1.0139	0.90 - 1.10
Near Dens Gain	0.9500	1.0115	0.90 - 1.10
Near Peak Gain	0.9326	1.0310	0.90 - 1.10
Near Lith Gain	0.9087	1.0193	0.90 - 1.10

Far Bar Gain	0.9879	1.0053	0.90 - 1.10
Far Dens Gain	0.9817	0.9956	0.90 - 1.10
Far Peak Gain	0.9760	0.9908	0.90 - 1.10
Far Lith Gain	0.9541	0.9670	0.90 - 1.10
Near Bar Offset	0.8888	0.0789	NONE
Near Dens Offset	0.6257	0.0950	NONE
Near Peak Offset	0.7606	-0.0439	NONE
Near Lith Offset	0.9365	0.0370	NONE
Far Bar Offset	0.2248	0.0901	NONE
Far Dens Offset	0.2638	0.1562	NONE
Far Peak Offset	0.2771	0.1695	NONE
Far Lith Offset	0.4045	0.3204	NONE
Near Bar Background	1005.67	1002.40	700 - 1450
Near Dens Background	329.78	327.30	230 - 480
Near Peak Background	141.51	141.83	100 - 210
Near Lith Background	175.47	175.81	125 - 260
Far Bar Background	612.55	611.80	450 - 900
Far Dens Background	236.84	237.12	175 - 345
Far Peak Background	94.02	93.51	70 - 140
Far Lith Background	98.21	98.82	75 - 145

#### CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.680	1.685	0.005	+/- 0.015
Pe	2.605	2.520	-0.085	+/- 0.150
ALUMINUM				
Density (g/cc)	2.609	2.610	0.001	+/- 0.01500
Pe	3.210	3.210	0.000	+/- 0.150

#### TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0014	+/- 0.0110	0.0015	+/- 0.0140
Magnesium Block	0.0007	+/- 0.0110	-0.0001	+/- 0.0140
Aluminum Block	0.0003	+/- 0.0110	-0.0005	+/- 0.0140
Resolution	9.69	6.00 - 11.50	9.48	6.00 - 11.50
Internal Verifier(B+D+P+L)	1647	1200 - 2700	1041	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 - 10951314

Reference Calibration Date: 13-Sep-08 11:03:11

Engineer: G. BOOK

Calibration Date: 27-Sep-08 14:35:03

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Aluminum Block S/N: GJ ALUMINIUM

Density: 2.610g/cc

Magnesium Block S/N: GJ MAGNESIUM

Density: 1.685g/cc

Pad Temperature: 71.6 degF

**DENSITY FIELD CALIBRATION SUMMARY**

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1647.338	1642.994	-4.344	16.306
Far (B+D+P+L) cps	1041.245	1047.343	6.098	17.169
Near Resolution	9.69	9.66	-0.030	0.50
Far Resolution	9.58	9.48	0.100	1.00

**PASS/FAIL SUMMARY**

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

**SPECTRAL DENSITY POST CHECK**

Tool Name: SDLT - 10951314

Reference Calibration Date: 27-Sep-08 14:35:03

Engineer: J. GEISER

Calibration Date: 27-Sep-08 23:30:49

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Aluminum Block S/N: GJ ALUMINIUM

Density: 2.610g/cc

Magnesium Block S/N: GJ MAGNESIUM

Density: 1.685g/cc

Pad Temperature: 71.5 degF

**DENSITY POST CALIBRATION SUMMARY**

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1642.994	1641.022	-1.972	16.306
Far (B+D+P+L) cps	1047.343	1050.680	3.337	17.169
Near Resolution	9.66	9.66	0.000	0.50
Far Resolution	9.81	9.58	0.230	1.00

**PASS/FAIL SUMMARY**

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

**MICRO LOG SHOP CALIBRATION**

Tool Name: SDLT - 10951314

Reference Calibration Date: 10-Oct-07 14:50:31

Engineer: M. CARPENTER

Calibration Date: 10-Oct-07 15:01:58

Software Version: WL INSITE R2.0 (Build 12)

Calibration Version: 1

**CALIBRATION COEFFICIENT SUMMARY**

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.05	-0.11	0.00	-0.01	ohmm
Calibration Point #1	0.06	0.00	0.01	0.00	ohmm
Calibration Point #2	20.00	20.00	20.01	20.00	ohmm
Internal Reference	19.93	19.93	19.99	19.98	ohmm

Measurement	Micro Log Normal		Micro Log Lateral		Units
-------------	------------------	--	-------------------	--	-------

Measurement	Tool Value	Tool Value	Units
Tool Zero	-1.74	-0.42	V
Calibration Point #1	26.84	2.40	V
Calibration Point #2	5305.27	6960.98	V
Internal Reference	5286.31	6953.71	V

MICRO LOG FIELD CHECK			
Tool Name:	SDLT - 10951314	Reference Calibration Date:	10-Oct-07 15:01:58
Engineer:	M. CARPENTER	Calibration Date:	15-Oct-07 19:23:52
Software Version:	WL INSITE R2.0 (Build 12)	Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.11	-0.11	-0.01	-0.01	ohmm
Internal Reference	19.93	19.89	19.98	19.94	ohmm
Summary					
Signal	Shop	Field	Difference	Tolerance	
Microlog Normal	19.93	19.89	0.040	+/- 0.80	
Microlog Lateral	19.98	19.94	0.040	+/- 0.80	

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - 10951314	Reference Calibration Date:	13-Sep-08 11:39:44
Engineer:	G. BOOK	Calibration Date:	27-Sep-08 14:48:42
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1236.58	-1567.62	-7000.00 - -1000.00
Pad Gain	0.0003751	0.0003799	0.000200 - 0.000600
Arm Offset	-1238.29	-2092.00	-5000.00 - 3000.00
Arm Gain	0.0004310	0.0005306	0.000300 - 0.000700
Arm Power	0.000003554	-0.000003442	-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)	2.10	2.00	-0.1000	+/- 0.200
Medium Ring (in)	3.83	3.75	-0.0800	+/- 0.200
RING DIAMETER:				
Small Ring (in)	6.67	6.500	-0.1700	+/- 0.200
Medium Ring (in)	8.21	8.250	0.0400	+/- 0.200
Large Ring (in)	14.95	15.000	0.0500	+/- 0.200

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

SDLT CALIPER FIELD CALIBRATION			
Tool Name:	SDLT - 10951314	Reference Calibration Date:	27-Sep-08 14:48:42

Engineer: G. BOOK

Calibration Date: 27-Sep-08 14:51:27

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

**MEASURED CALIPER VALUES**

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.73	-0.02	+/- 0.10
Ring Diameter	8.250	8.30	0.05	+/- 0.15

**PASS/FAIL SUMMARY**

Pad Extension Check:	Passed
Diameter Check:	Passed

**SDLT CALIPER POST CALIBRATION**

Tool Name: SDLT - 10951314

Reference Calibration Date: 27-Sep-08 14:51:27

Engineer: J. GEISER

Calibration Date: 27-Sep-08 23:43:50

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

**MEASURED CALIPER VALUES**

Measurement	Field	Post	Change	Control Limit On New Value
Pad Extension	3.73	3.78	0.05	+/- 0.10
Ring Diameter	8.303	8.30	-0.00	+/- 0.15

**PASS/FAIL SUMMARY**

Pad Extension Check:	Passed
Diameter Check:	Passed

**ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION**

Tool Name: ACRT - 90144319-E554-S481-3-13-08

Reference Calibration Date: 17-Sep-08 14:49:56

Engineer: T. MCKEE

Calibration Date: 17-Sep-08 15:02:10

Software Version: WL INSITE R2.2 (Build 9)

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	1.0094	1.05	0.95	1.0119	1.05	0.95	1.0114	1.05
A2 (50")	0.95	1.0083	1.05	0.95	1.0101	1.05	0.95	1.0079	1.05
A3 (29")	0.95	1.0014	1.05	0.95	1.0035	1.05	0.95	1.0026	1.05
A4 (17")	0.95	1.0013	1.05	0.95	1.0011	1.05	0.95	1.0026	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9972	1.05	0.95	0.9959	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9868	1.05	0.95	0.9866	1.05

**TYPICAL SONDE OFFSET RANGE**

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-3	-0.224	-1	-6	-4.406	-2	-6	-4.960	-2
A2 (50")	-6	-3.120	-2	-6	-4.546	-2	-6	-4.379	-2
A3 (29")	-27	-14.081	-9	-9	-5.391	-3	-9	-2.788	-3
A4 (17")	-180	-96.840	-60	-45	-31.142	-15	-39	-24.329	-13
A5 (10")	N/A	N/A	N/A	-150	-101.205	-50	-90	-50.510	-30
A6 (6")	N/A	N/A	N/A	175	300.862	525	90	147.470	270

**TRANSMITTER CURRENT GAIN****R-MUD VERIFICATION**




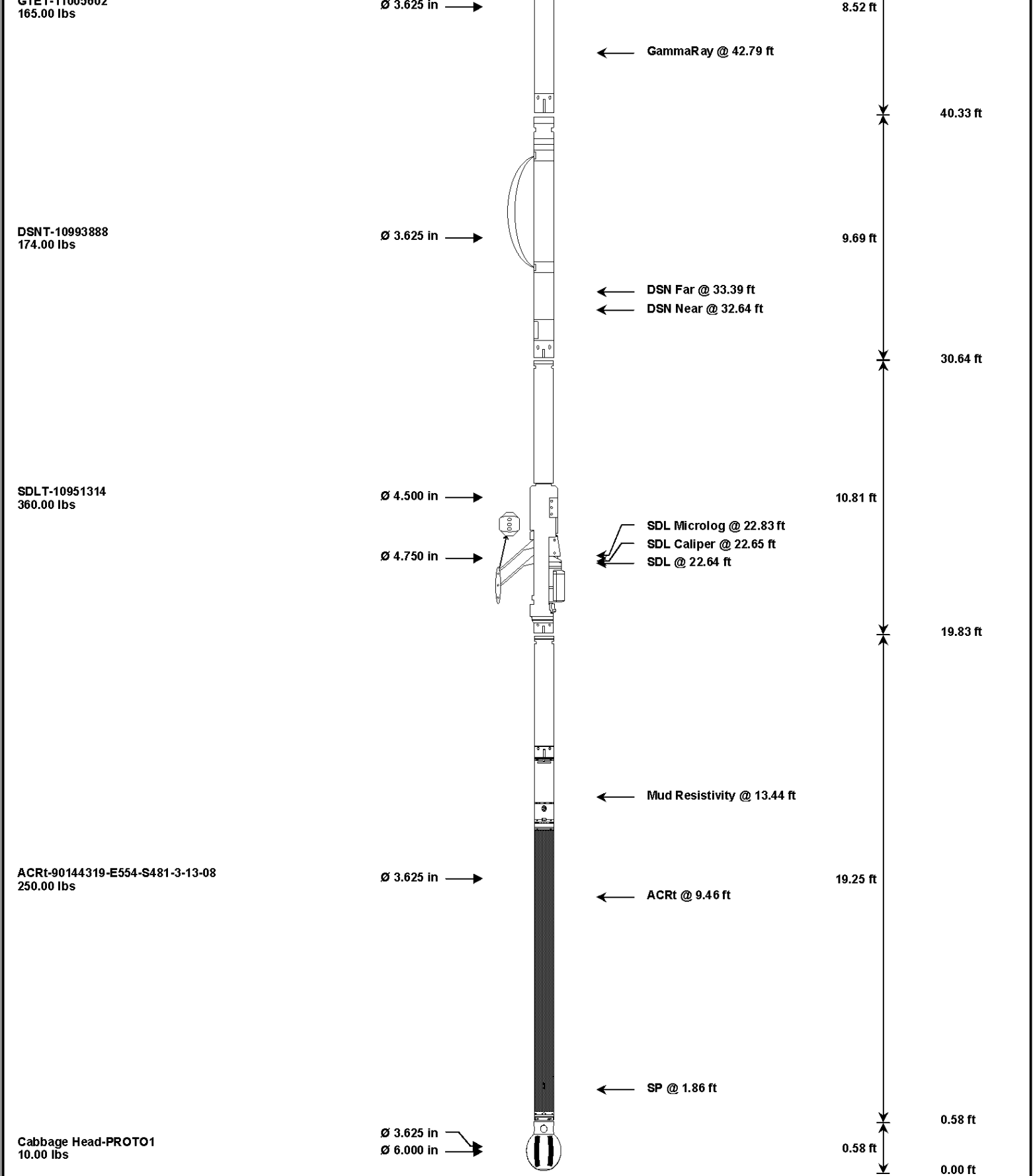
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohmm)	Upper (ohm-m)
12K	0.75	0.8305	1.4	Mud Cell	0.95	1.001	1.05
36K	1.0	1.7602	2.4				
72K	1.25	1.2601	2.5				

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	239.0	236.1	237.7	-1.6	+/- 9.00	api
DSNT-10993888						
Snow-Block Porosity	0.0699	0.0652	-----	0.0047	+/- 0.0150	decg
SDLT-10951314						
Near(B+D+P+L)	1647.338	1642.994	1641.022	1.972	+/-16.306	cps
Far(B+D+P+L)	1041.245	1047.343	1050.680	-3.337	+/-17.169	cps
MicroLog Normal	19.93	19.89	-----	0.04	+/-0.00	ohmm
MicroLog Lateral	19.98	19.94	-----	0.04	+/-0.00	ohmm
Pad Extension	3.75	3.73	3.78	-0.05	+/-0.10	in
Ring Diameter	8.250	8.30	8.30	0.000	+/-0.15	in
ACRt-90144319-E554-S481-3-13-08						
Mud Cell	1.001	-----	-----	0.000	-----	ohmm

# HALLIBURTON

Event Type	Time & Date	Depth (ft)	Event Description
	27-Sep-08 21:52:20	45.00	Logging 001 27-Sep-08 21:52 Dn @45.8f
	27-Sep-08 22:02:06	1110.95	Halting 001 27-Sep-08 21:52 Dn @45.8f
	27-Sep-08 22:02:33	1119.75	Logging 002 27-Sep-08 22:02 Up @1119.5f
	27-Sep-08 22:22:53	57.18	Halting 002 27-Sep-08 22:02 Up @1119.5f
	27-Sep-08 23:11:15	1119.25	Relogging 002.01 27-Sep-08 23:10 Up
	27-Sep-08 23:12:18	57.18	Halting 002.01 27-Sep-08 23:10 Up
Data: WIL_PA_31_31\0001 TRIPLE 1\HWI0159			Date: 27-Sep-08 23:48:05

Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-C11013846 135.00 lbs	Ø 3.625 in →		← Load Cell @ 51.42 ft ← BH Temperature @ 50.85 ft	6.25 ft 48.85 ft	55.10 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	C11013846	135.00	6.25	48.85	300.00
GTET	Natural Gamma Ray Tool	11005602	165.00	8.52	40.33	60.00
DSNT	Dual Spaced Neutron	10993888	174.00	9.69	30.64	60.00
SDLT	Spectral Density Tool	10951314	360.00	10.81	19.83	60.00
ACRT	Array Compensated True Resistivity	90144319-E554-S481-3-13-08	250.00	19.25	0.58	300.00
SP	SP Ring	PROTO1	0.00	0.00	*	1.86
CBHD	Cabbage Head	PROTO1	10.00	0.58	0.00	300.00

COMPANY	WILLIAMS PRODUCTION		
WELL	PA 31-31		
FIELD	PARACHUTE		
COUNTY	GARFIELD	STATE	CO

HALLIBURTON

SPECTRAL DENSITY  
DUAL SPACED NEUTRON  
ARRAY COMPENSATED  
RESISTIVITY

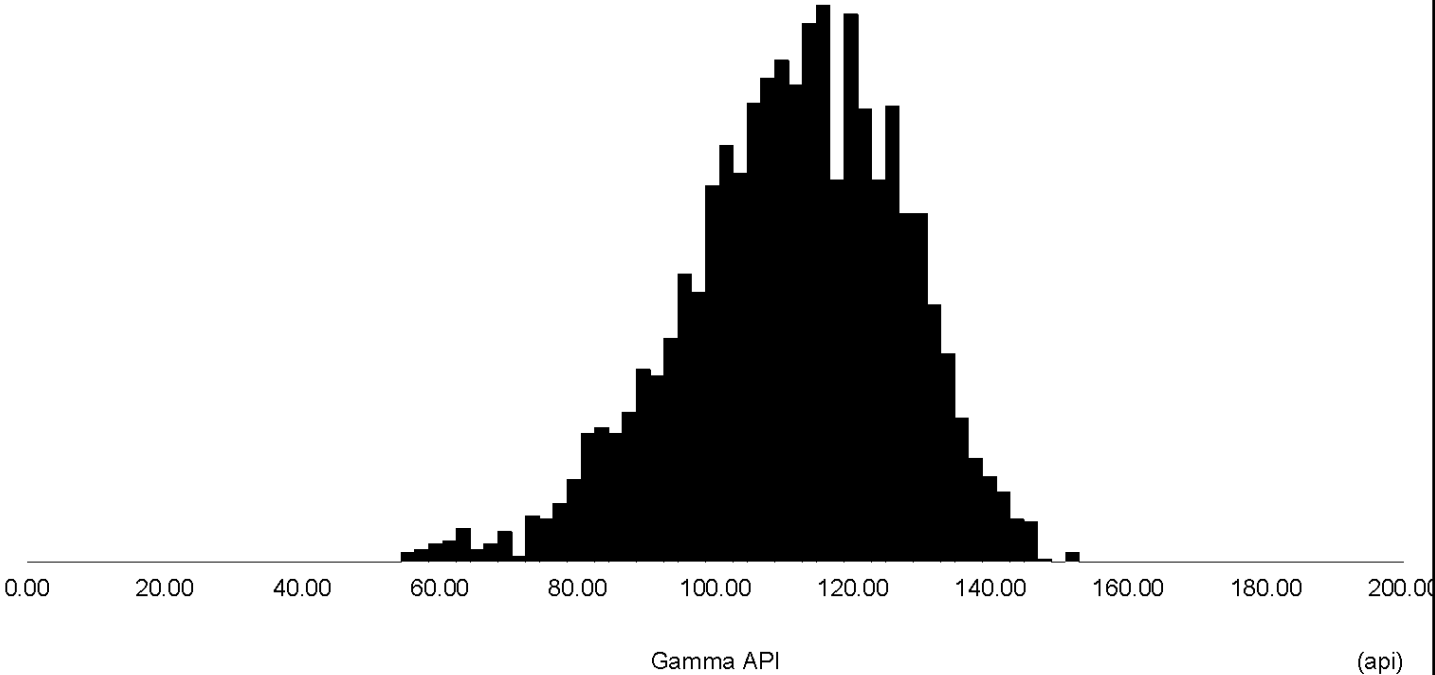
HALLIBURTON

GR HISTOGRAM

WILLIAMS PRODUCTION RMT COMPANY

PA 31-31

Depth Interval : 175.00 ft - 1006.00 ft



All Points

Curve	Units	Max	Min	Mean	Median	Mode	StdDev	10%	90%
Gamma Ray	api	152.8	55.25	110.9	112.2	MultiMode	16.05	89.43	130.5
Depth	feet	1006	175	590.5	590.5	MultiMode	240	258	923
Depth	feet	1006	175						
Samples	3325								

HALLIBURTON

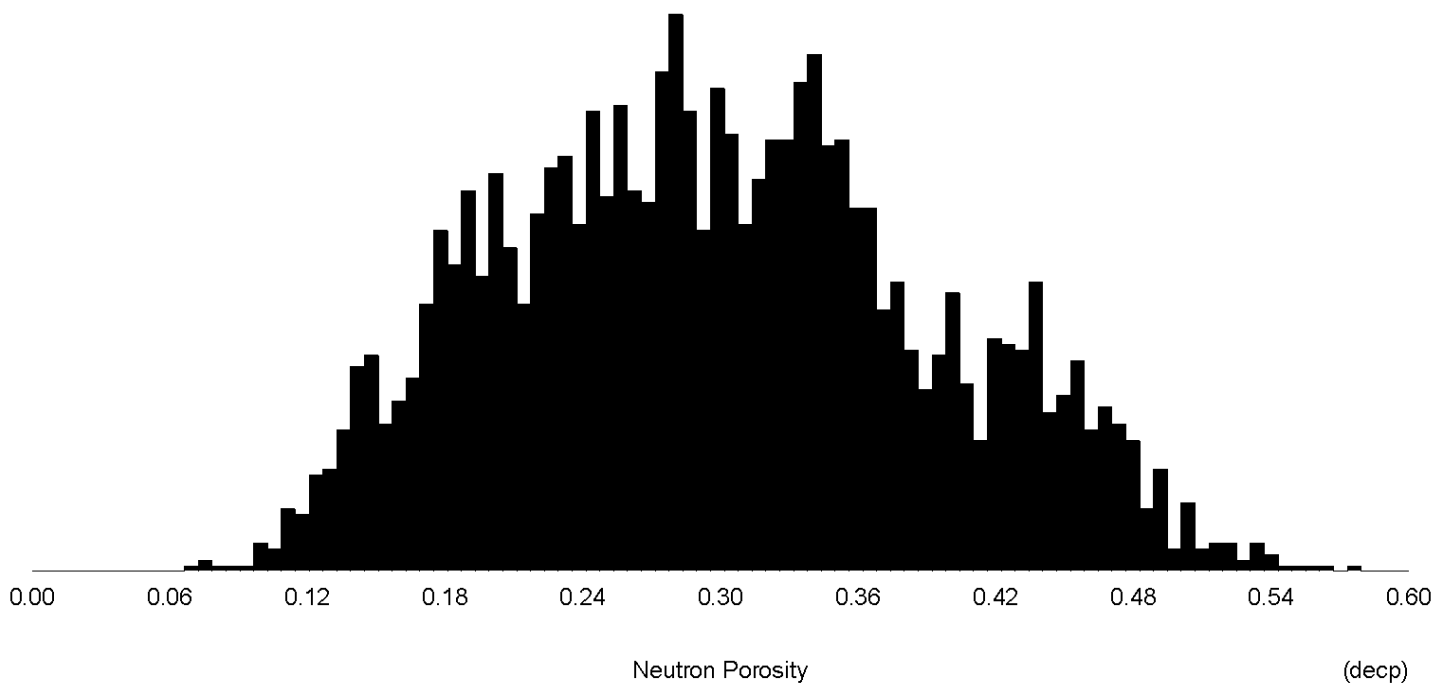
NPHI HISTOGRAM

WILLIAMS PRODUCTION RMT COMPANY

PA 31-31

Depth Interval : 175.00 ft - 1006.00 ft

Depth Interval : 175.00 ft - 1006.00 ft



#### All Points

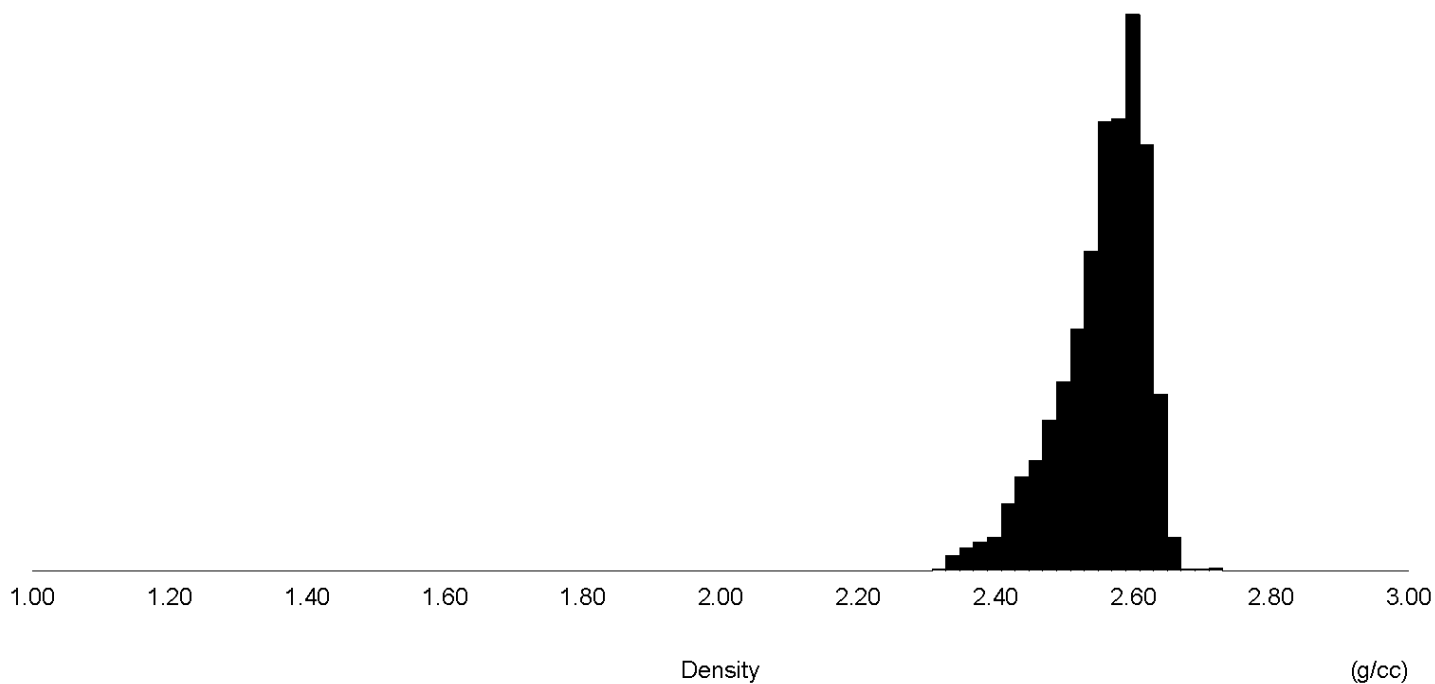
Curve	Units	Max	Min	Mean	Median	Mode	StdDev	10%	90%
Neu Porosity	decp	0.576	0.07119	0.2986	0.295	MultiMode	0.09359	0.1778	0.4334
Depth	feet	1006	175	590.5	590.5	MultiMode	240	258	923
Depth	feet	1006	175						
Samples	3325								

**HALLIBURTON**

## RHOB HISTOGRAM

WILLIAMS PRODUCTION RMT COMPANY  
PA 31-31

Depth Interval : 175.00 ft - 1006.00 ft



## All Points

Curve	Units	Max	Min	Mean	Median	Mode	StdDev	10%	90%
RHOB	gram per cc	2.723	2.325	2.554	2.567	MultiMode	0.06373	2.462	2.621
Depth	feet	1006	175	590.5	590.5	MultiMode	240	258	923
Depth	feet	1006	175						
Samples	3325								