

Company: Vecta Oil & Gas Ltd

Well: Bierstadt 32-33

Field: Wildcat

County: Cheyenne State: Colorado

County: Cheyenne		State: Colorado	
Well: Bierstadt 32-33			
Field: Wildcat			
County: Cheyenne			
Platform Express			
Triple Combo			
Location:			
SWNE, Sec. 33, T.13S		Elev. K.B. 4341.00 ft	
1562 FNL X 2055 FEL R47W		G.L. 4330.00 ft	
		D.F. 4340.00 ft	
Permanent Datum:		Ground Level	
Log Measured From:		Kelly Bushing	
Drilling Measured From:		Kelly Bushing	
API Serial No.		Section: 33	
05-017-07733-0000		Township: 13S	
		Range: 47W	
Logging Date		11-Dec-2012	
Run Number		PEX-AIT	
Depth Driller		5565.00 ft	
Schlumberger Depth		5565.00 ft	
Bottom Log Interval		5561.00 ft	
Top Log Interval		442.00 ft	
Casing Driller Size @ Depth		8.625 in @ 441.00 ft	
Casing Schlumberger		441 ft	
Bit Size		7.875 in	
Type Fluid In Hole		Water	
Density		9.3 lbm/gal	
Viscosity		61 s	
Fluid Loss		PH	
Source of Sample		Active Tank	
RM @ Meas Temp		1.12 ohm.m @ 90.6 degF	
RMF @ Meas Temp		0.84 ohm.m @ 68 degF	
RMC @ Meas Temp		1.68 ohm.m @ 68 degF	
Source RMF		RMC	
RM @ BHT		0.74 @ 140 0.43 @ 140	
Max Recorded Temperatures		140 degF	
Circulation Stopped		11-Dec-2012 08:00:00	
Logger on Bottom		11-Dec-2012 17:00:00	
Unit Number		3022	
Recorded By		Heather Bennett	
Witnessed By		Ryan Scribner	

Disclaimer

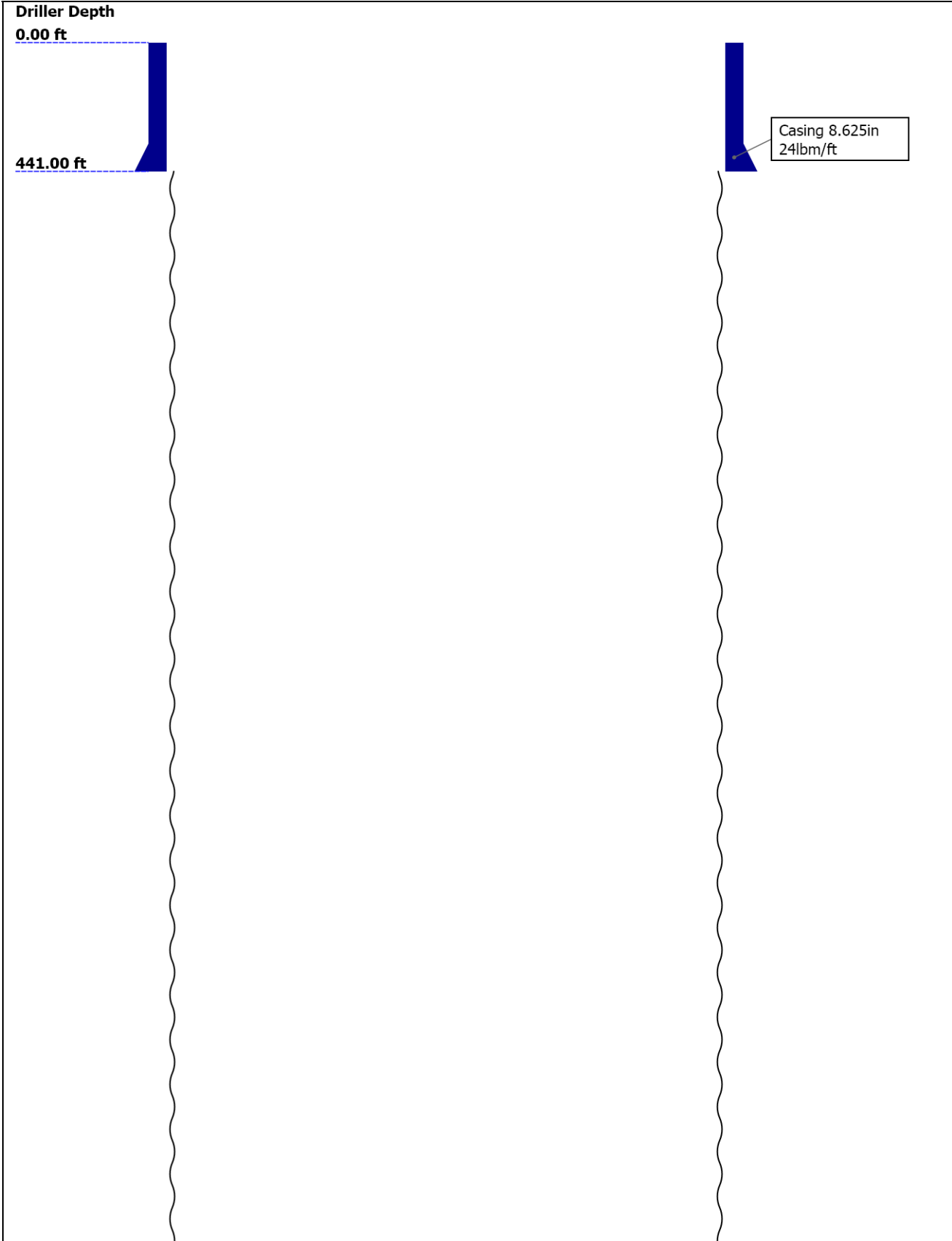
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Well Sketch



5565.00 ft

Open Hole 7.875in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	441					
Top Logger (ft)	441					
Bottom Driller (ft)	5565					
Bottom Logger (ft)	5565					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	24					
Inner Diameter (in)	8.099					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	441					
Bottom Logger (ft)	441					

Remarks and Equipment Summary

PEX-AIT: Toolstring				PEX-AIT: Remarks	
Equip name	Length	MP name	Offset	This is the first run in hole	
LEH-QT	64.21			Toolstring run as per tool sketch	
LEH-QT				Matrix: Limestone 2.71 (g/cc)	
DTC-H:9236	61.29			Crew:Ian Derry, Jake Jump	
ECH-KC:10316		CTEM	60.39		
DTC-H:9236		HV	0.00		
		TelStatus	58.29		
		ToolStatus	58.29		
		Temperature	58.26		
HGNS-H:4779	58.29				
HGNH:3826					
NPV-N		GR	57.55		
NSR-F:5215					
HMCA-H					
HGNS-H:4779					
HACCZ-H:5736					
		CNL Porosity	51.21		
		HGNS	48.88		
		HMCA	48.88		
		Accelerometer	0.00		
HDRS-H:4826	48.88				
ECH-MEB					
HRCC-H:3712					
HRMS-H:4826					

Long Spacing:28
926
HRGD-H:3775
GPV-Q
Backscatter:2640
4
Short Spacing
GSR-J:5240

HRCC 44.88

MCFL 39.45
Caliper 38.96
TLD Density 38.57

DSLT-H:8318 36.64
ECH-KH
DSLH-H:8318
SLS-E:165

CBL 3ft 24.17
Upper-Near 24.17

VDL 5ft 23.17
Upper-Far 23.17

Delta-T 21.79

Lower-Far 20.42

Lower-Near 19.42

SLS-E 16.00

AIT-M:1372 16.00
AMIS:1372
AMRM:1372

Temperatur 7.91
e
Induction 7.91
Power Supply 7.91

			
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Depth Summary			
Depth Control Parameters	PEX-AIT		
Conveyance Type	Wireline		
Depth Measuring Device	PEX-AIT		
Type	IDW-B		
Wheel Correction 1	1		
Wheel Correction 2	0		
Tension Device	PEX-AIT		
Type	CMTD-B/A		
Calibration Points	0		
Logging Cable	PEX-AIT		
Type	7-46NT-XS		
Logging Cable Length (ft)	24000.00		

PEX-AIT

5" Triple Combo

Integration Summary				
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Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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Software Version				
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Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20120723-3.1.9755.1112
	EXP_APL-MASTAXIS-3.1.9755.1221

Computation	Description		Version
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections		3.1.9755.0
DepthCorrection	DepthCorrection		3.1.9755.0
Tool Elements	Description	Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0
AMIS	Array Induction Sonde - M	3.1.9755.1112	1

Pass Summary								
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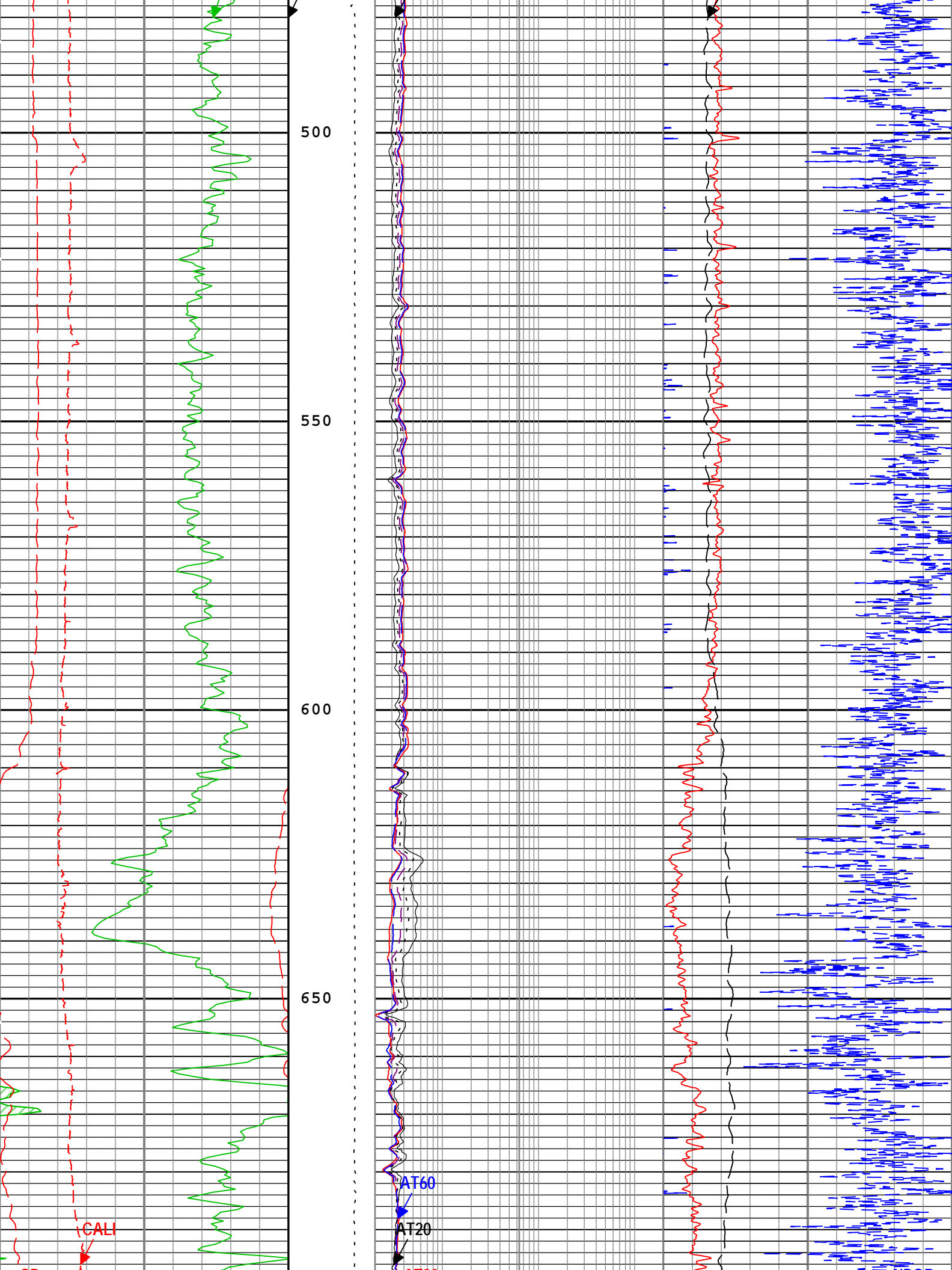
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
PEX-AIT	Log[3]:Up	Up	365.61 ft	5571.09 ft	11-Dec-2012 4:54:22 PM	11-Dec-2012 6:41:38 PM	5.00 ft	

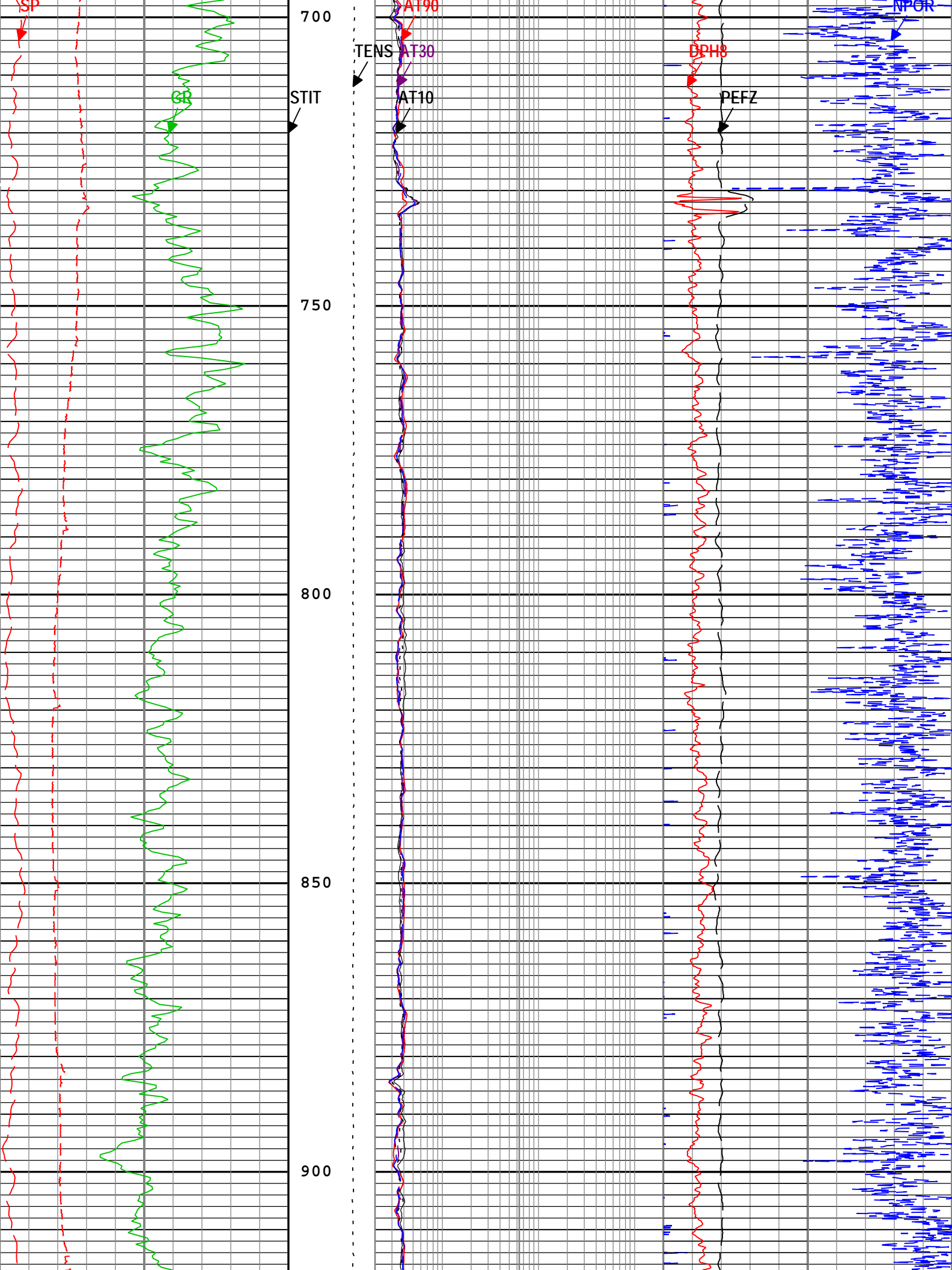
All depths are referenced to toolstring zero
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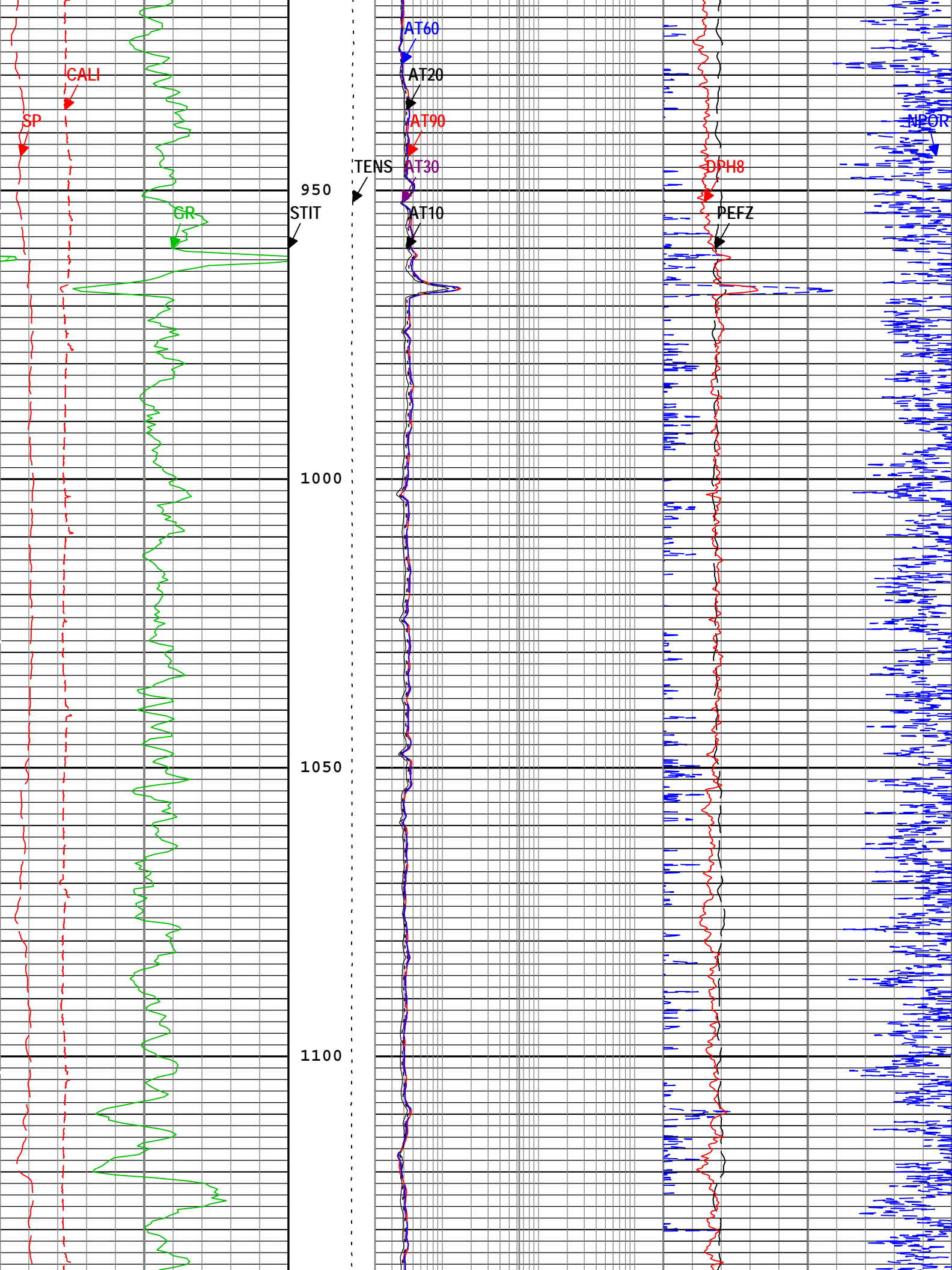
Log	PEX-AIT: Log[3]:Up
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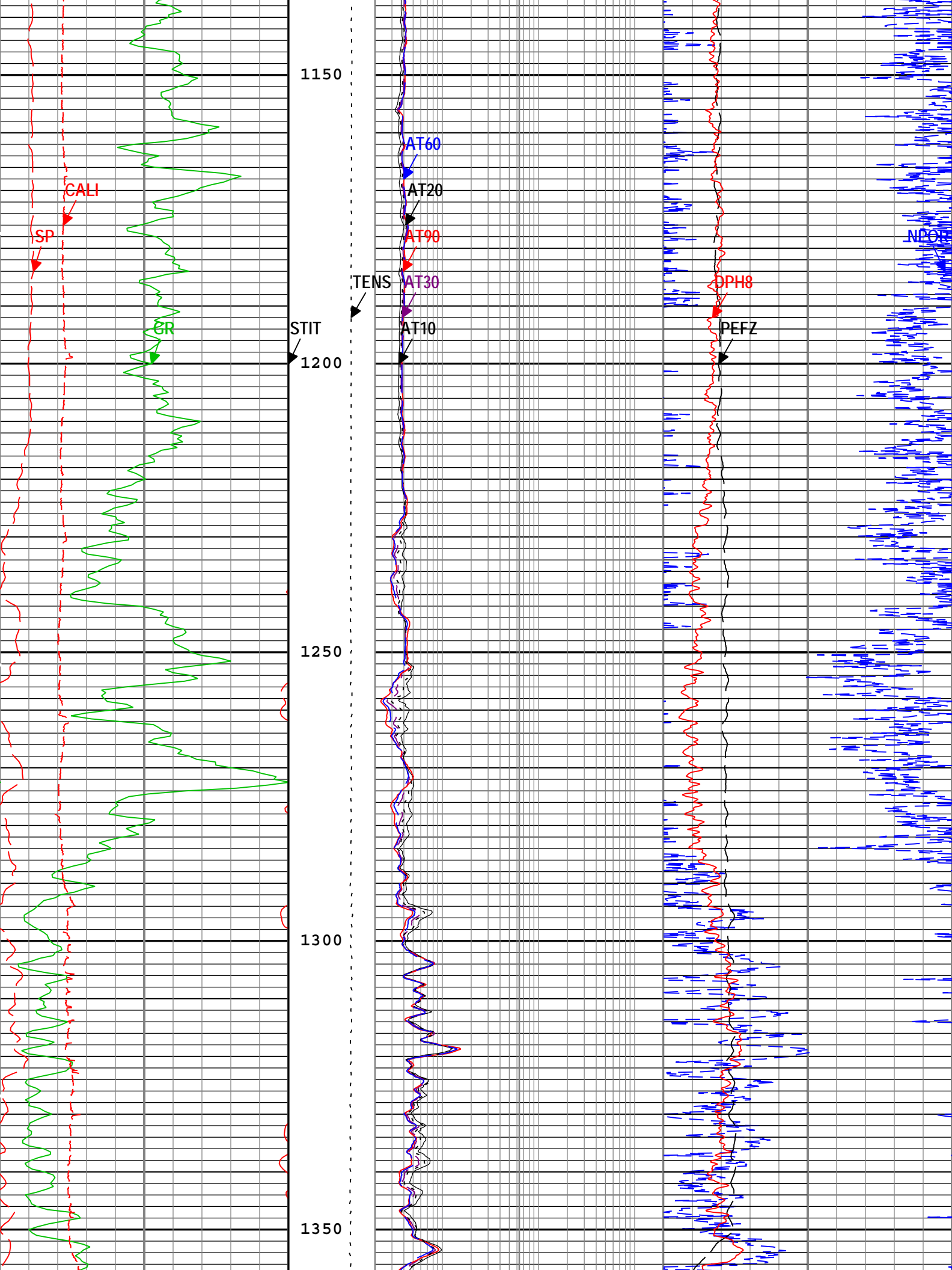
Description: HGNS standard resolution porosities for Platform Express	Format: Log (EMD 5in Triple Combo)	Index Scale: 5 in per 100 ft	Index Unit: ft
Index Type: Measured Depth	Creation Date: 11-Dec-2012 19:23:43		

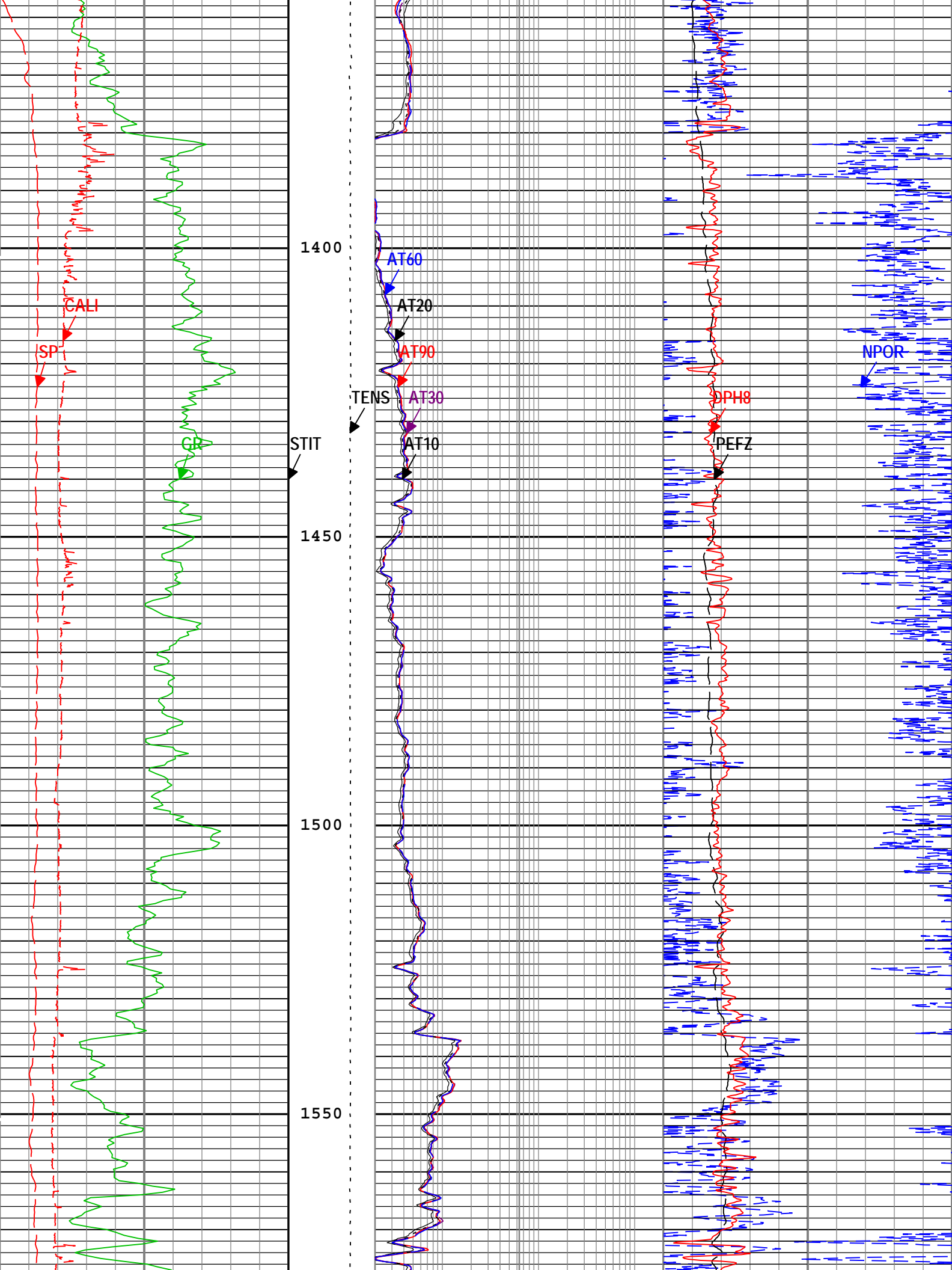
Channel	Source	Sampling
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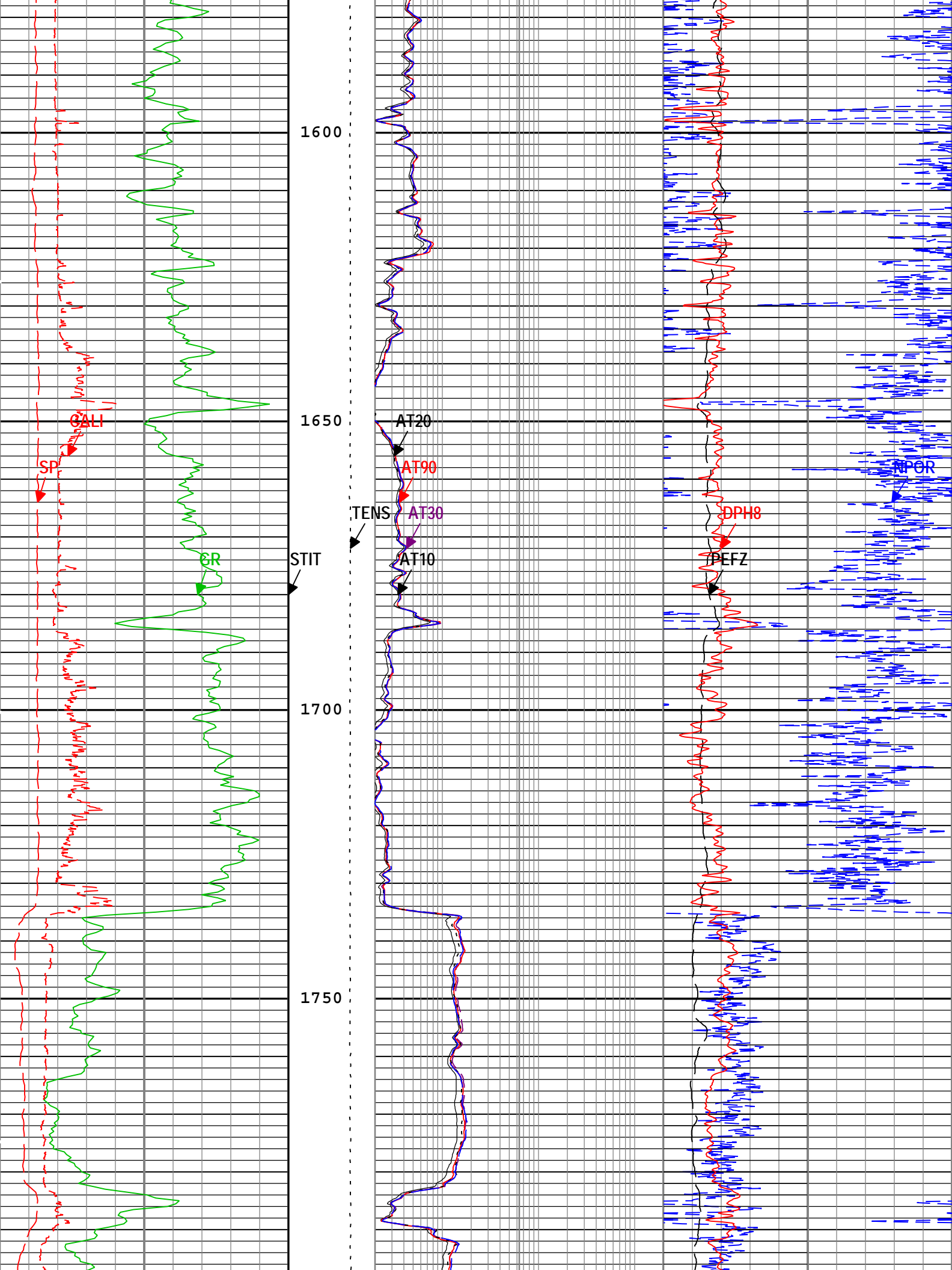


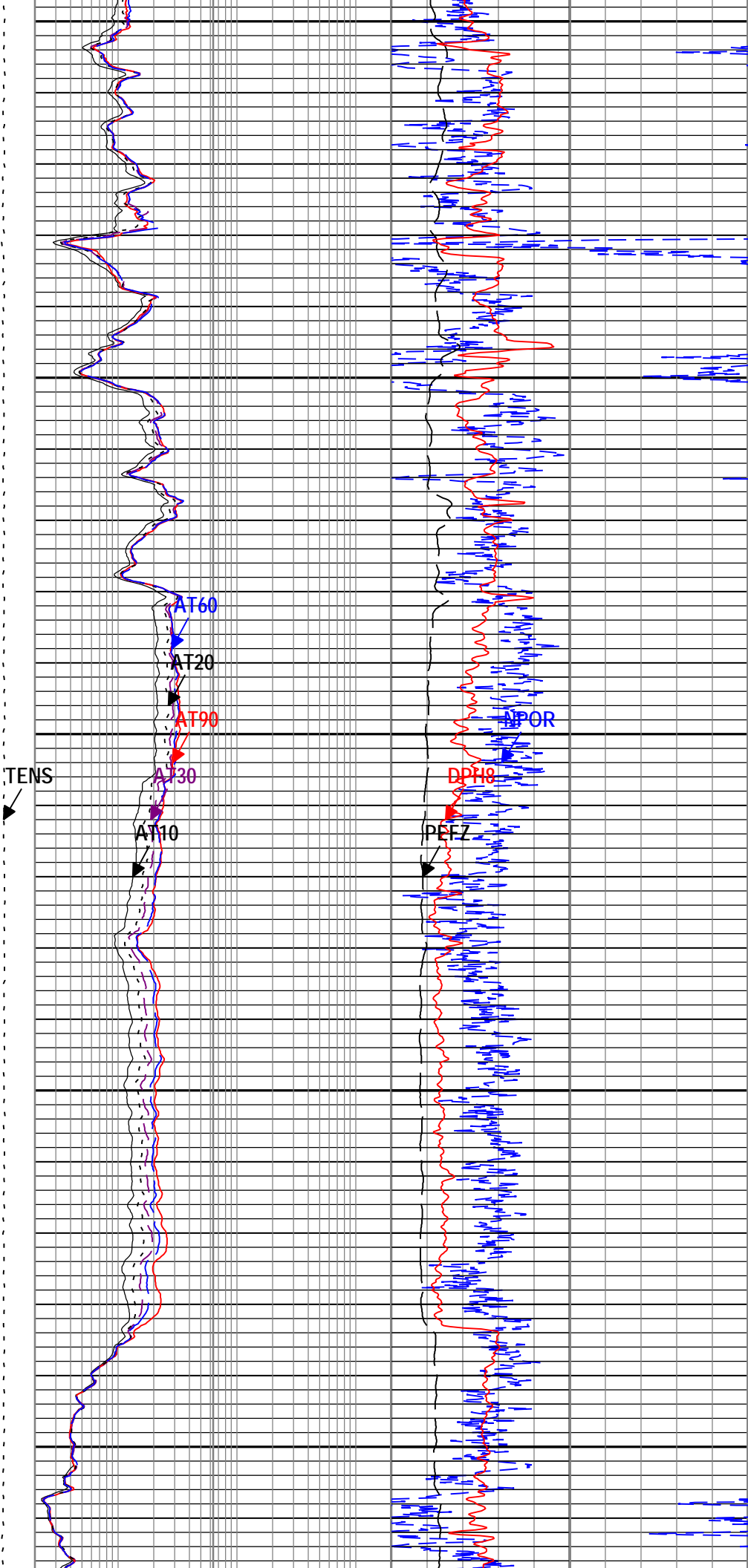
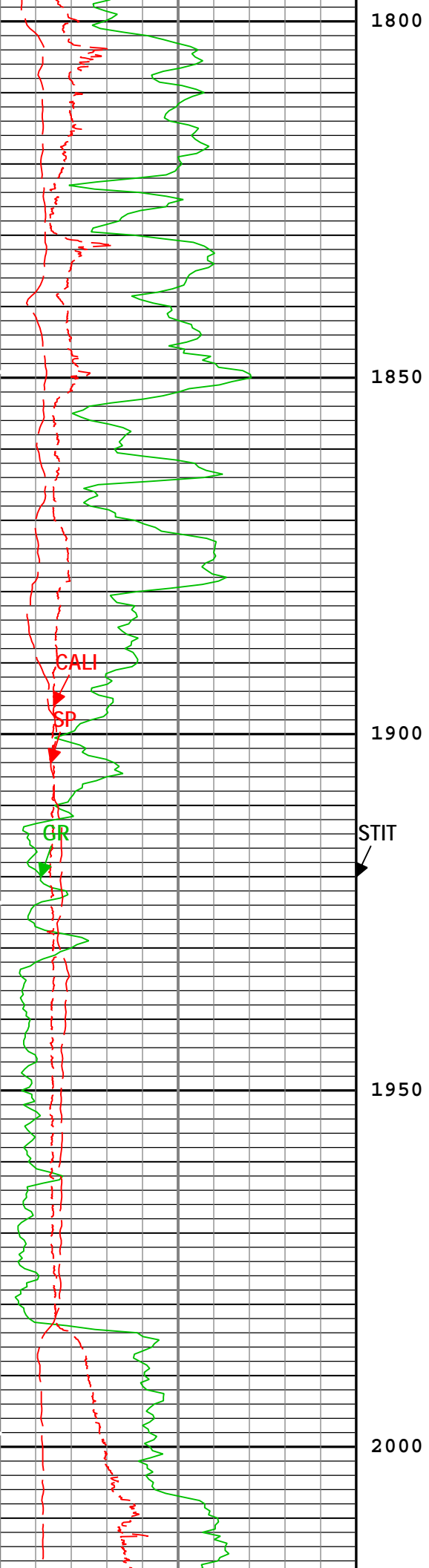


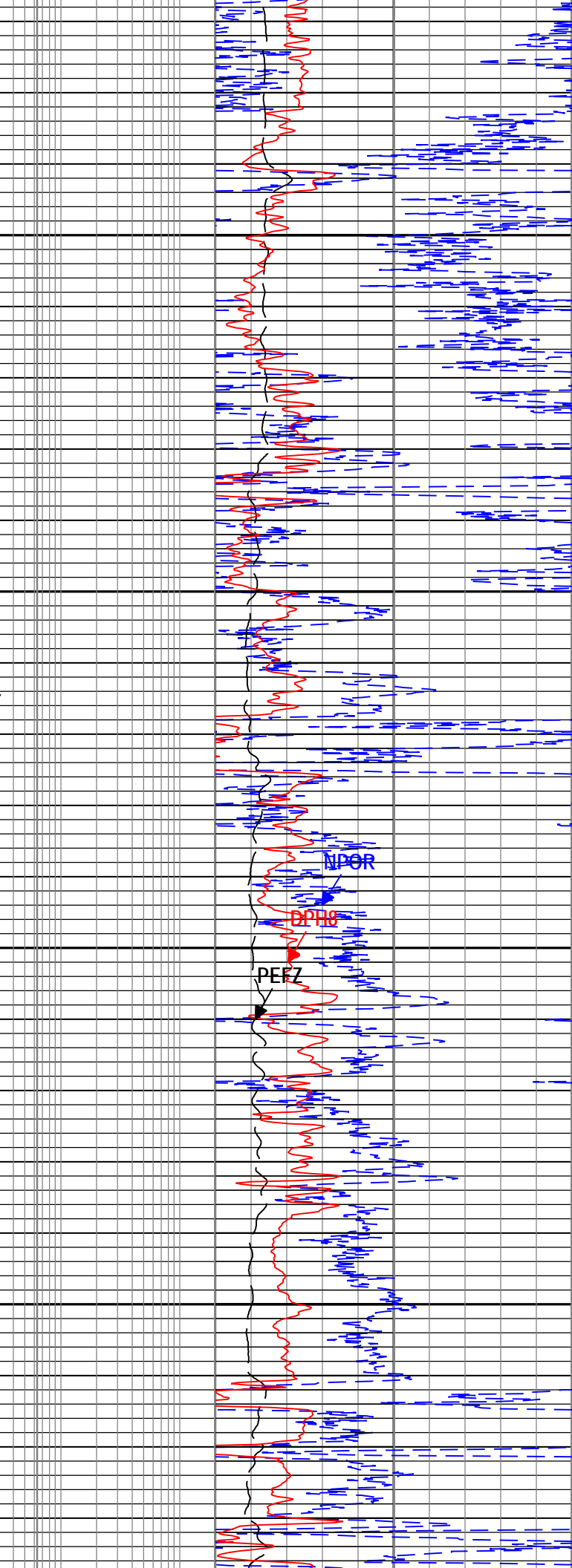
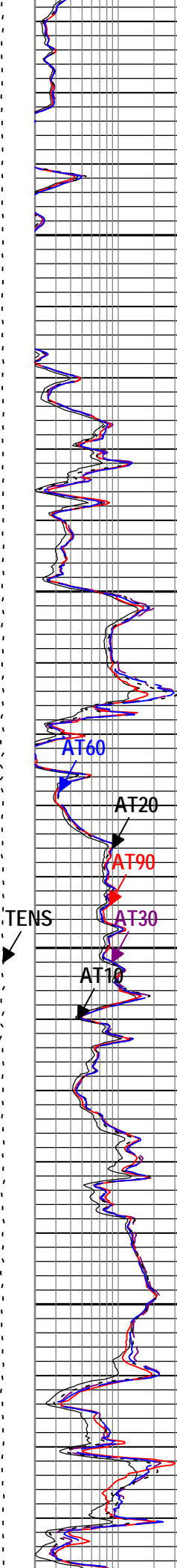
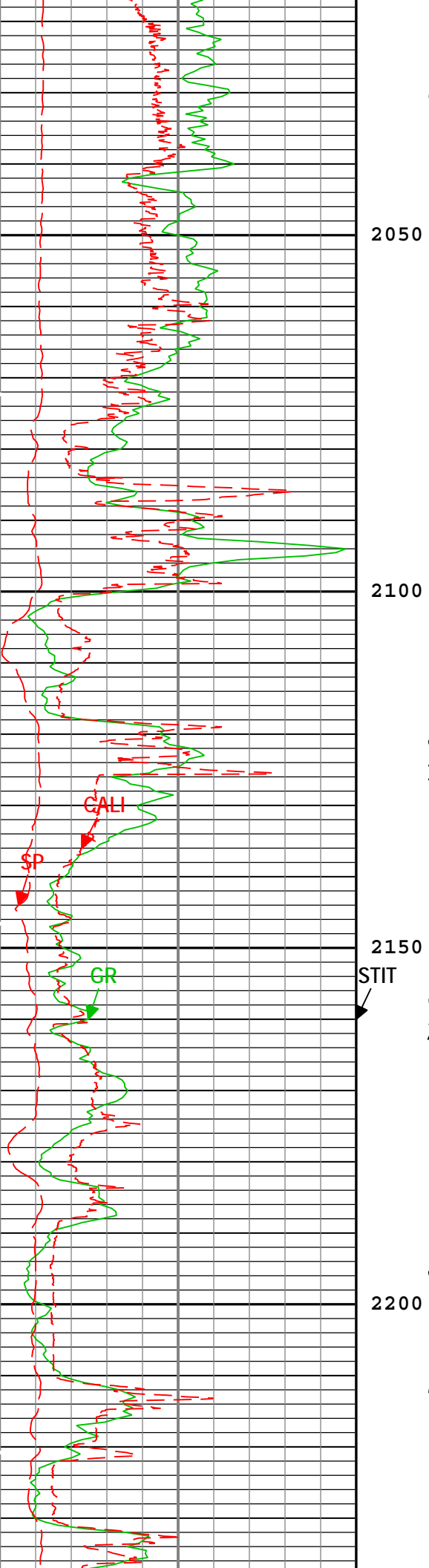


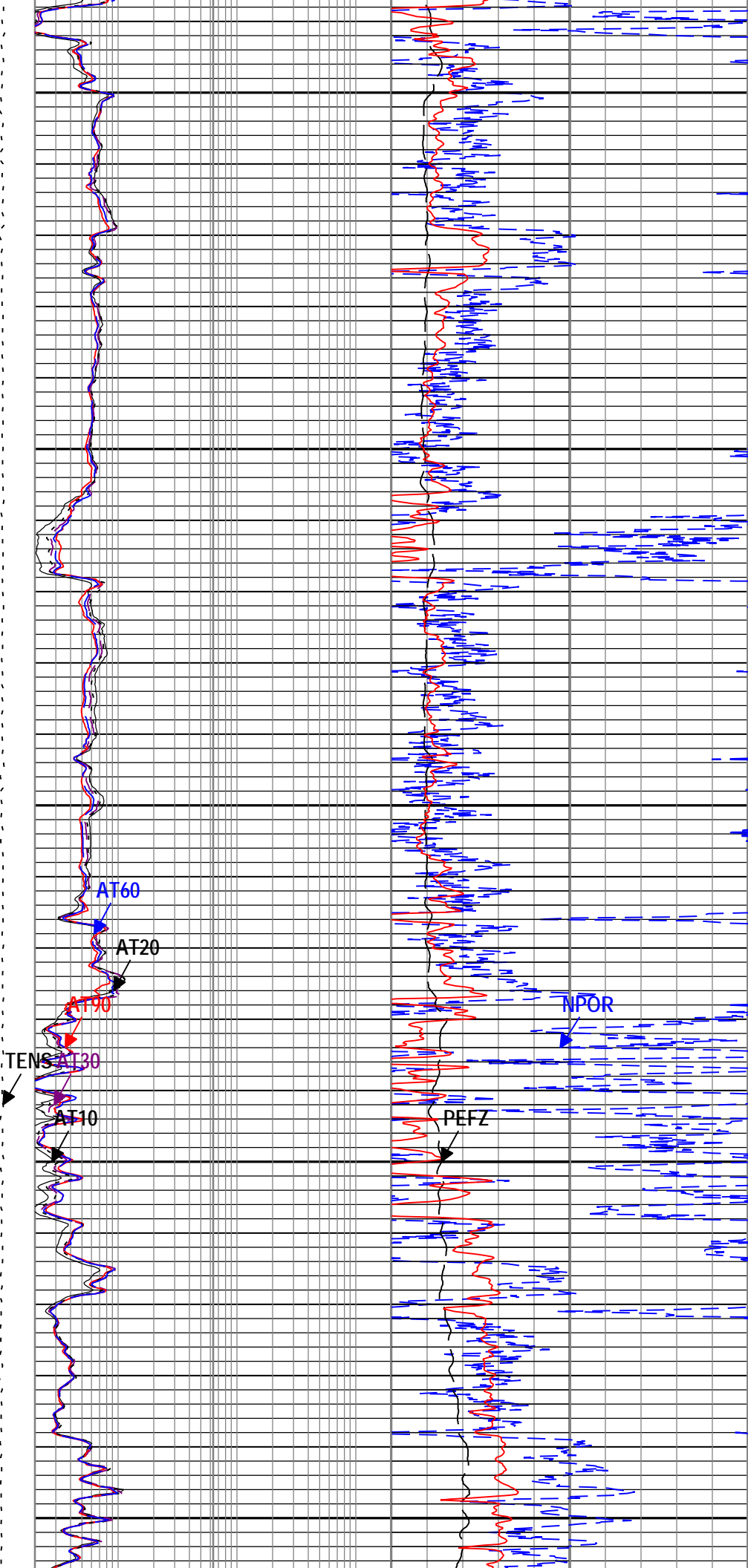
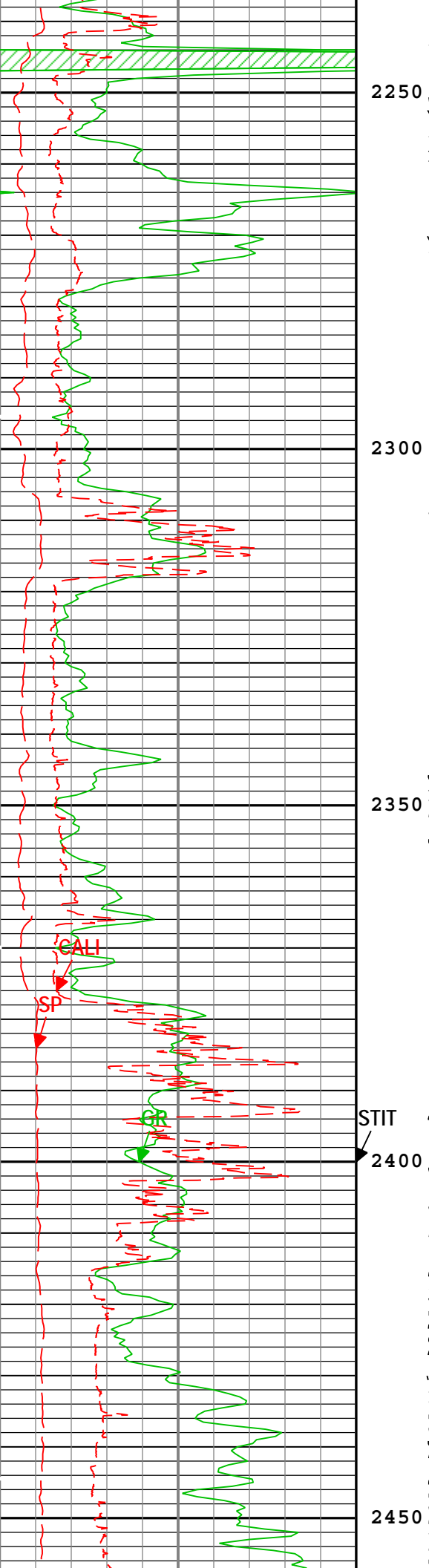


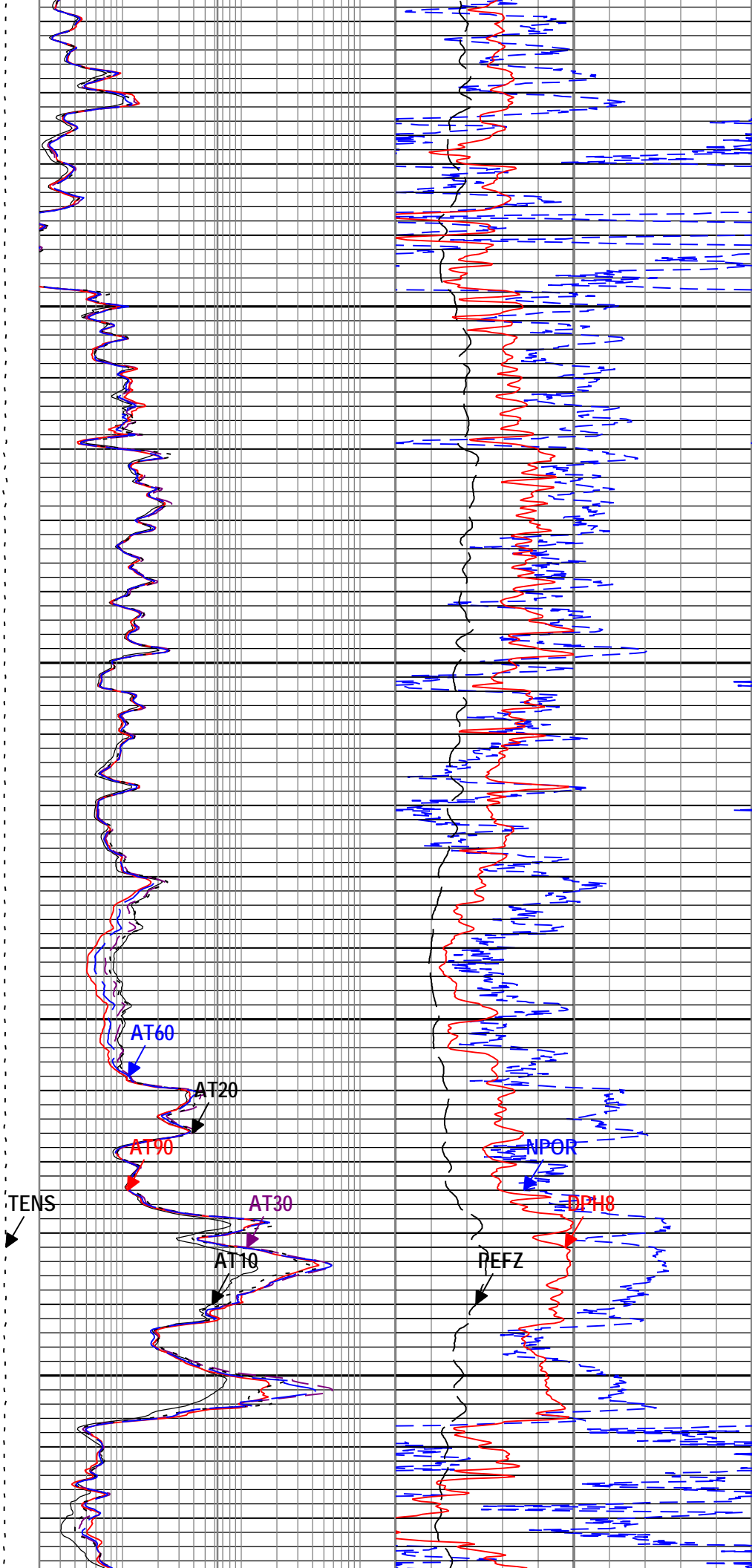
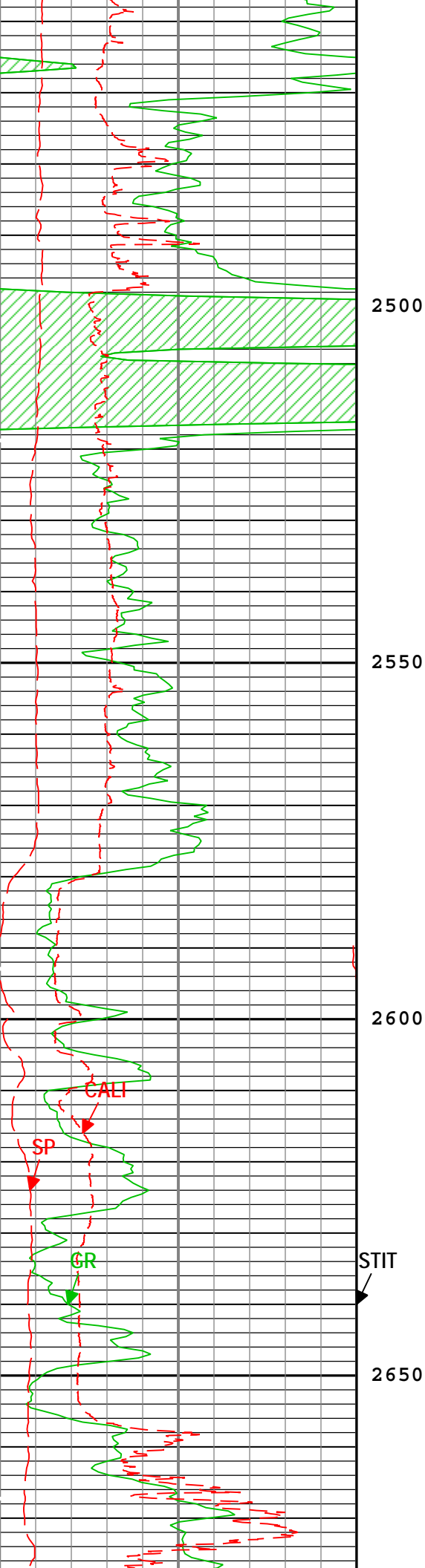


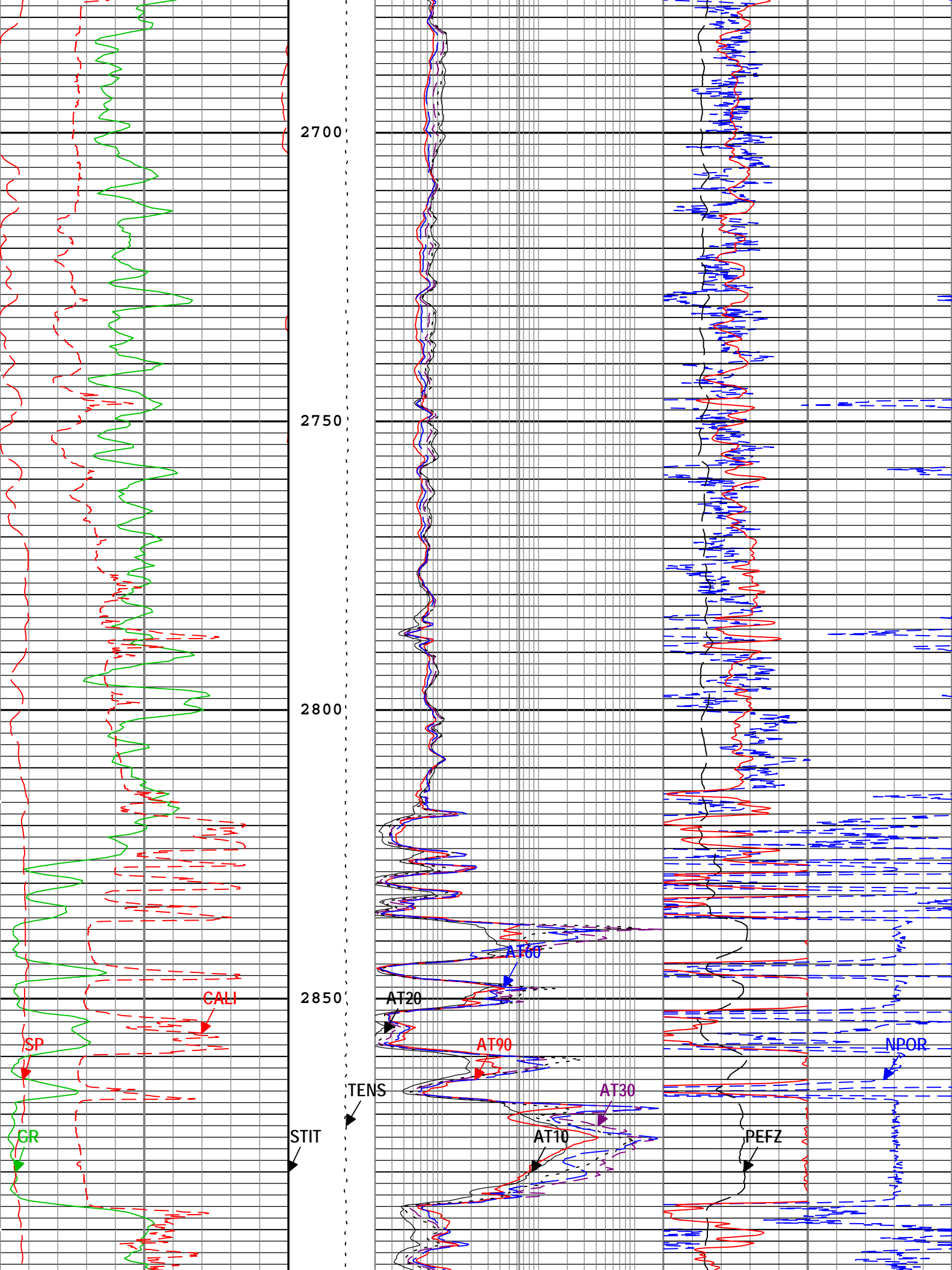


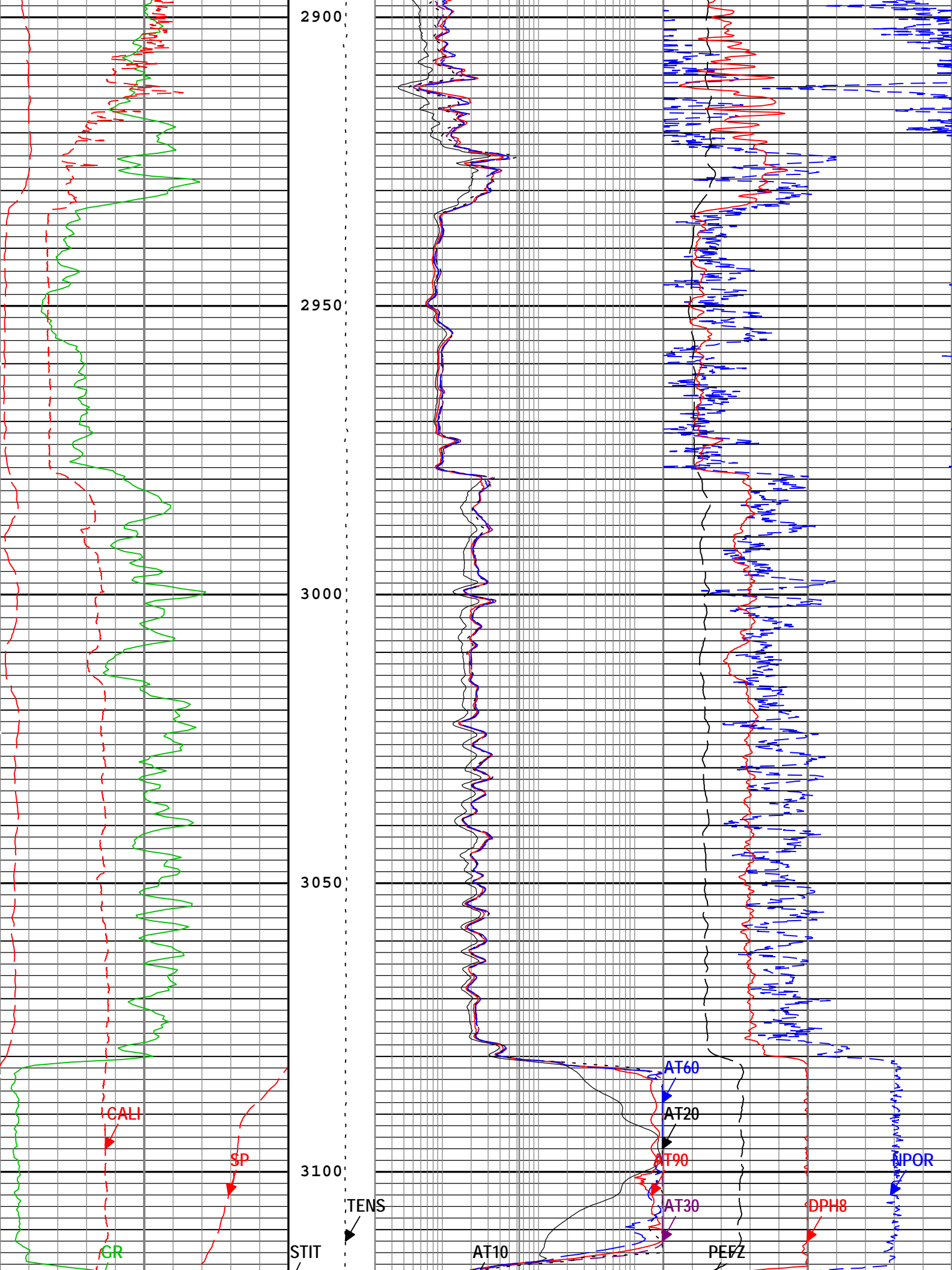


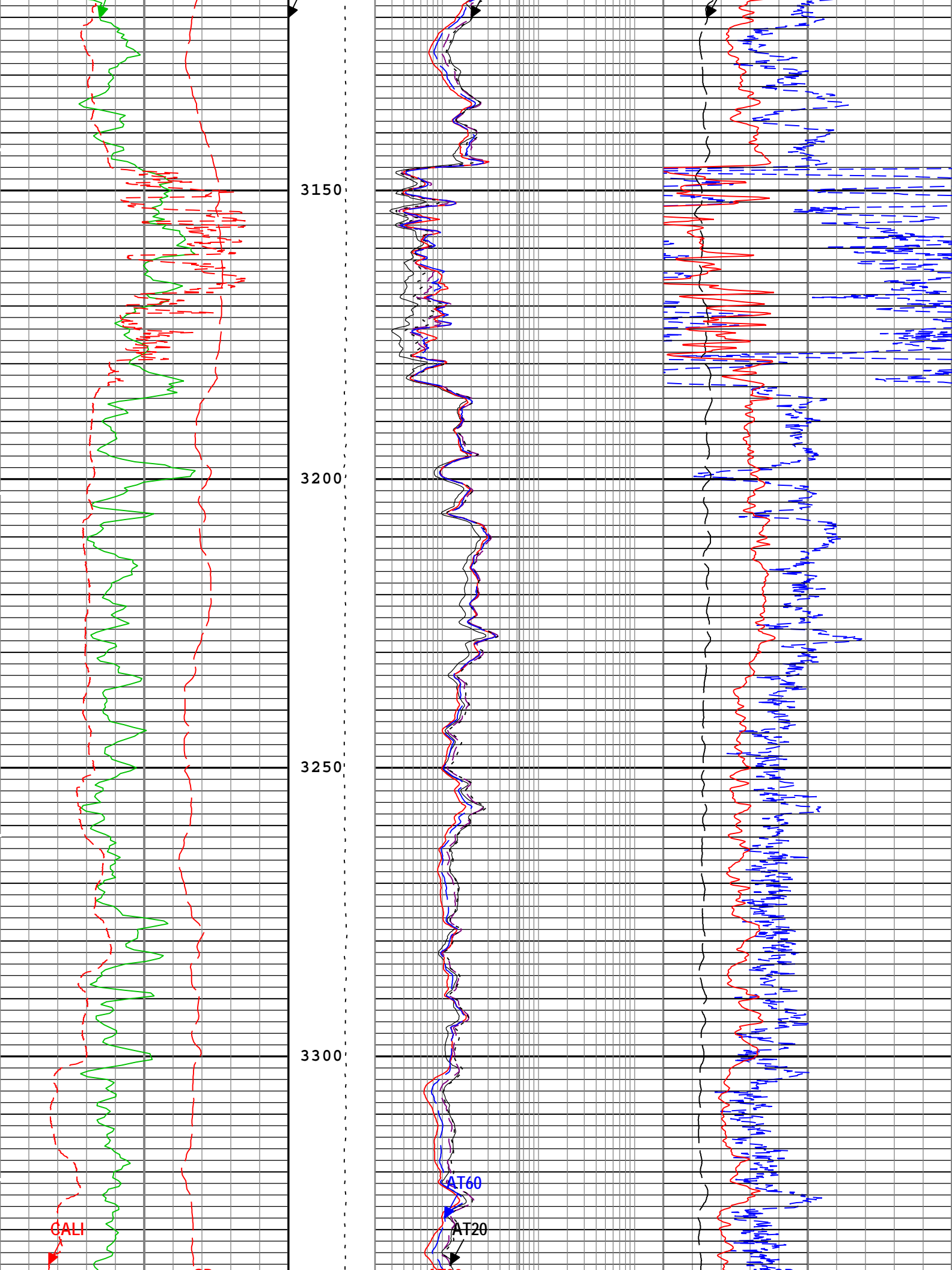


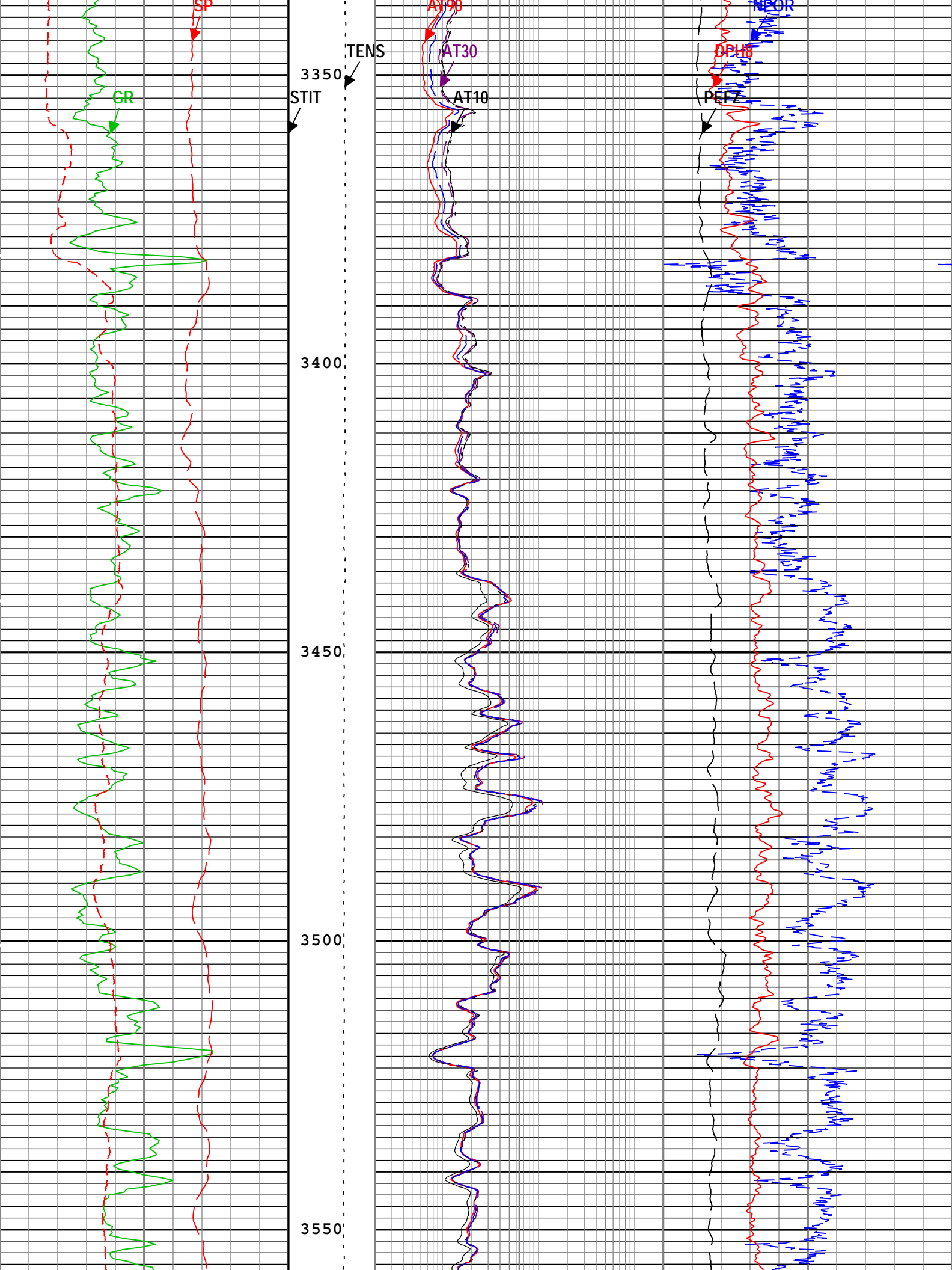


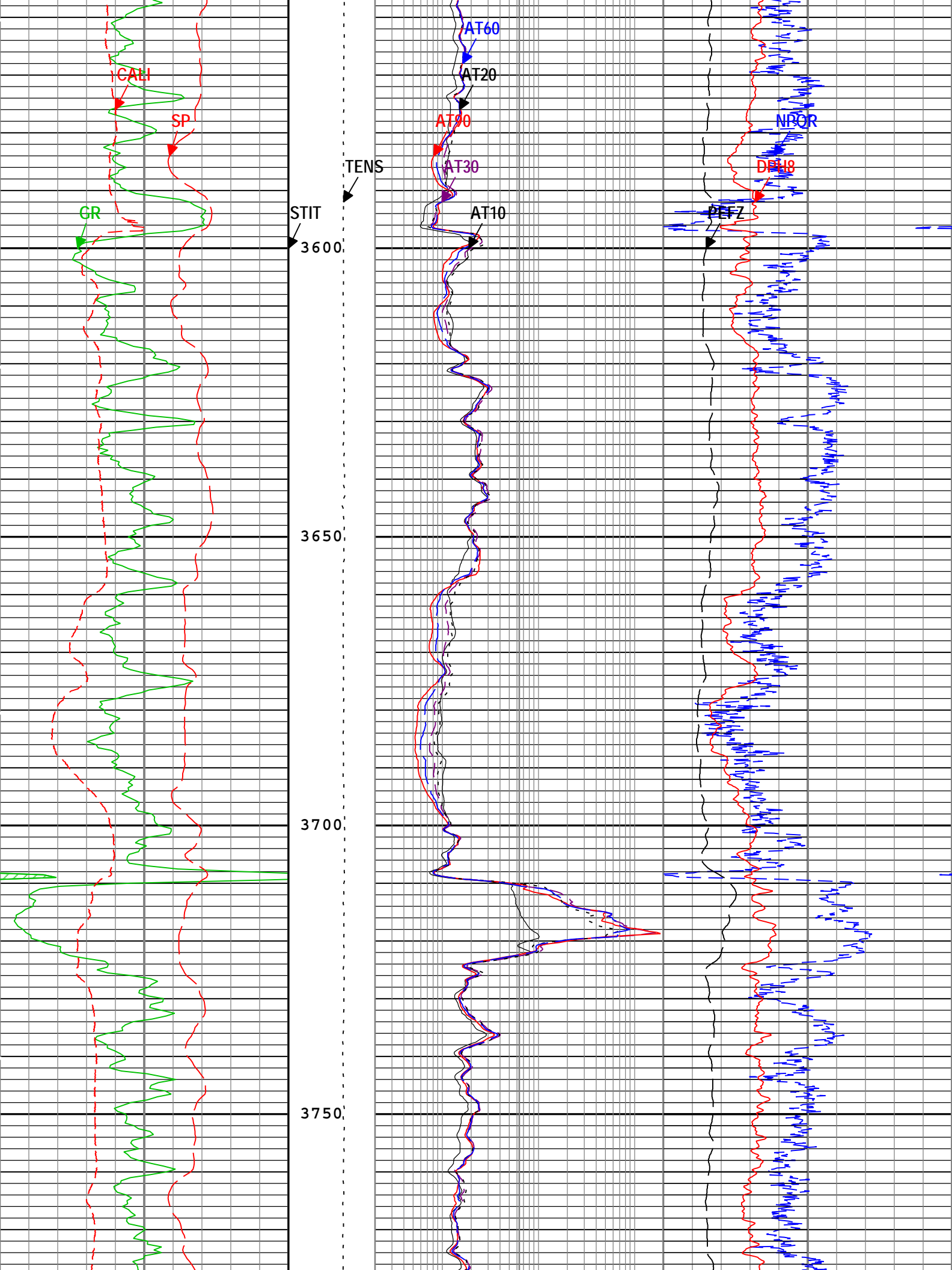


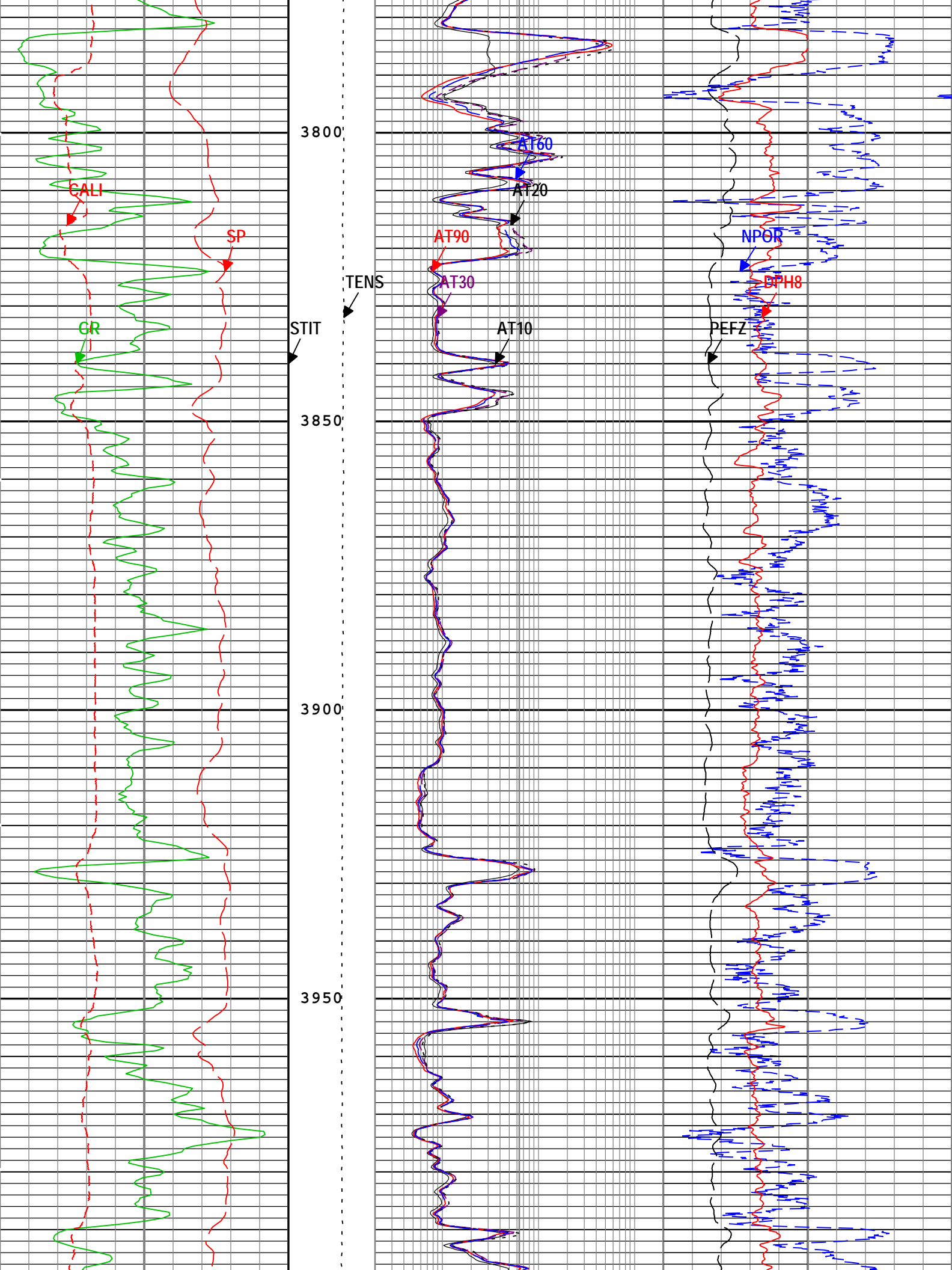


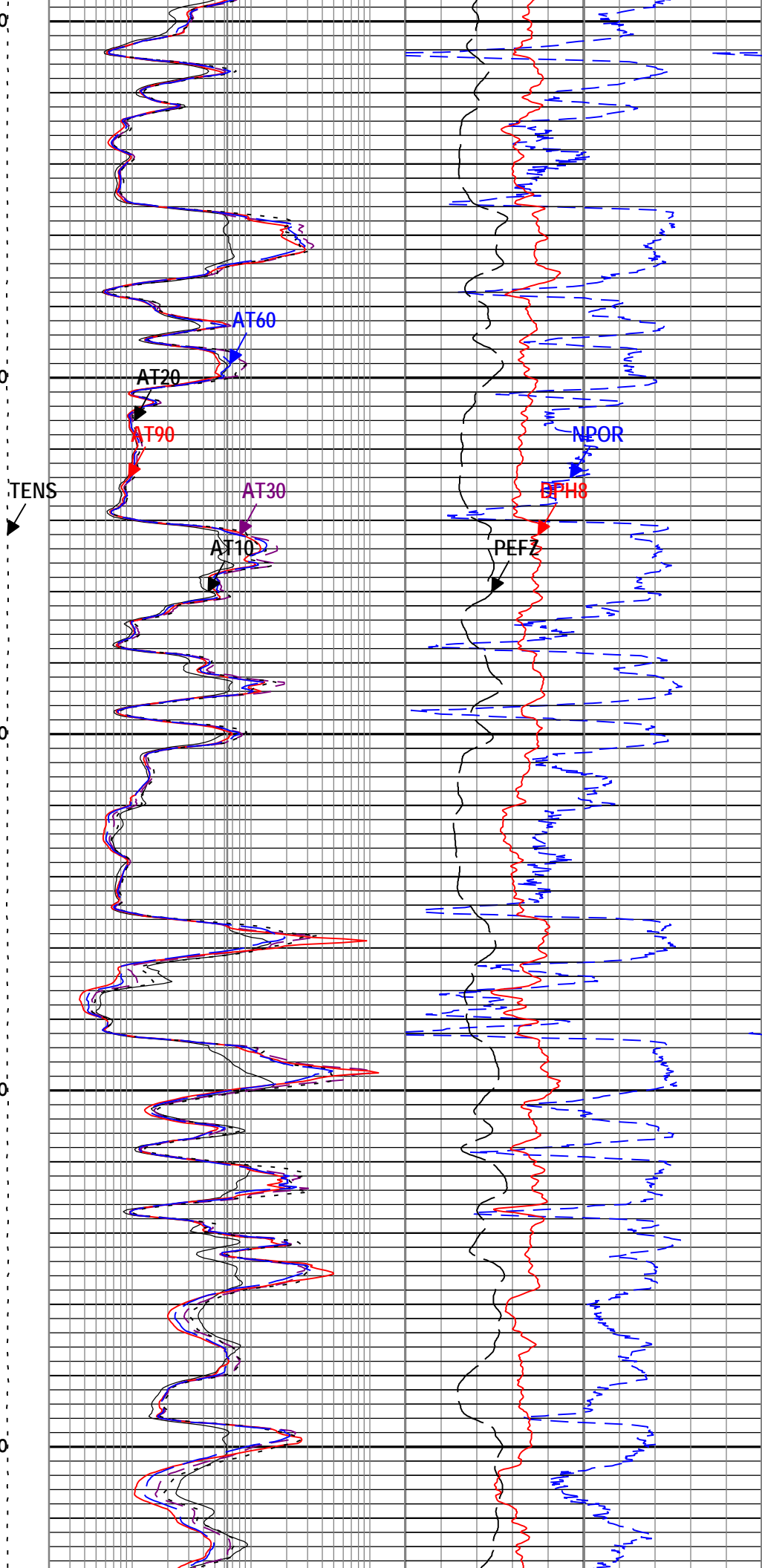
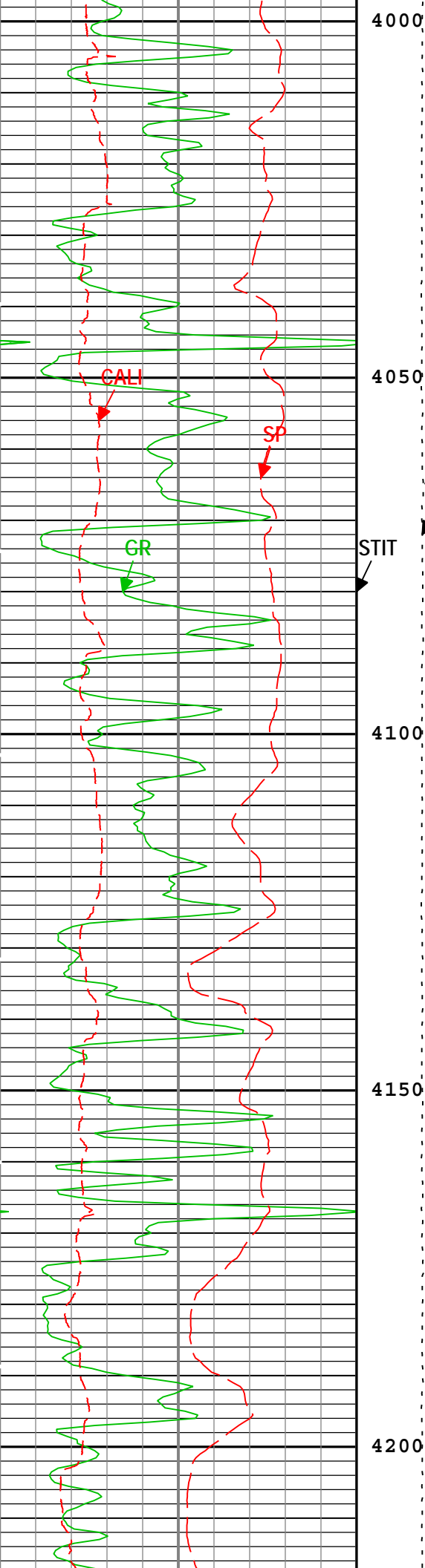


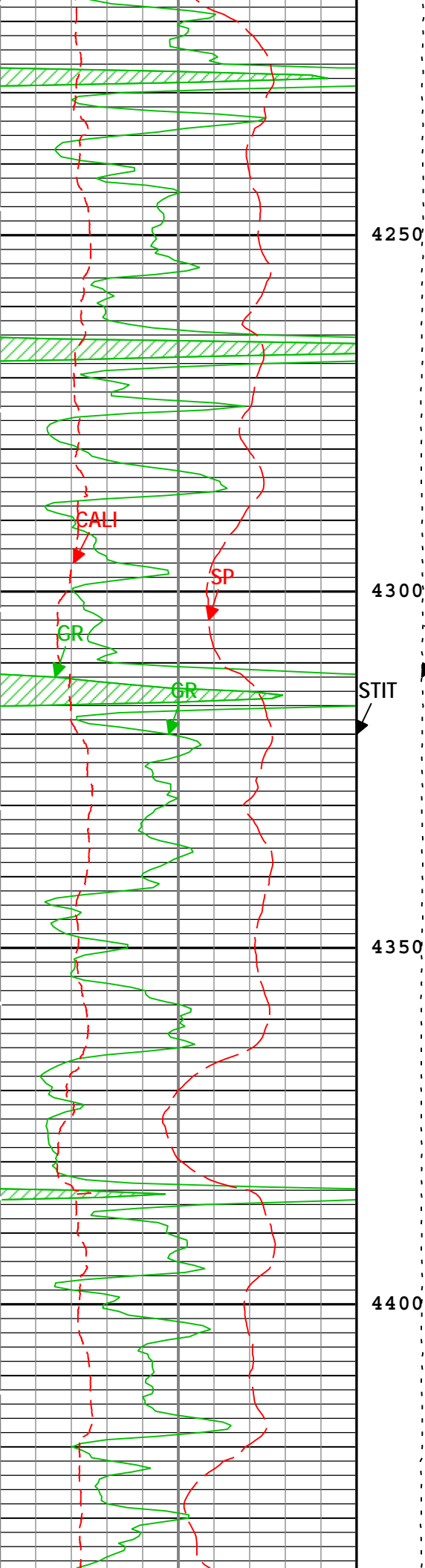












4250

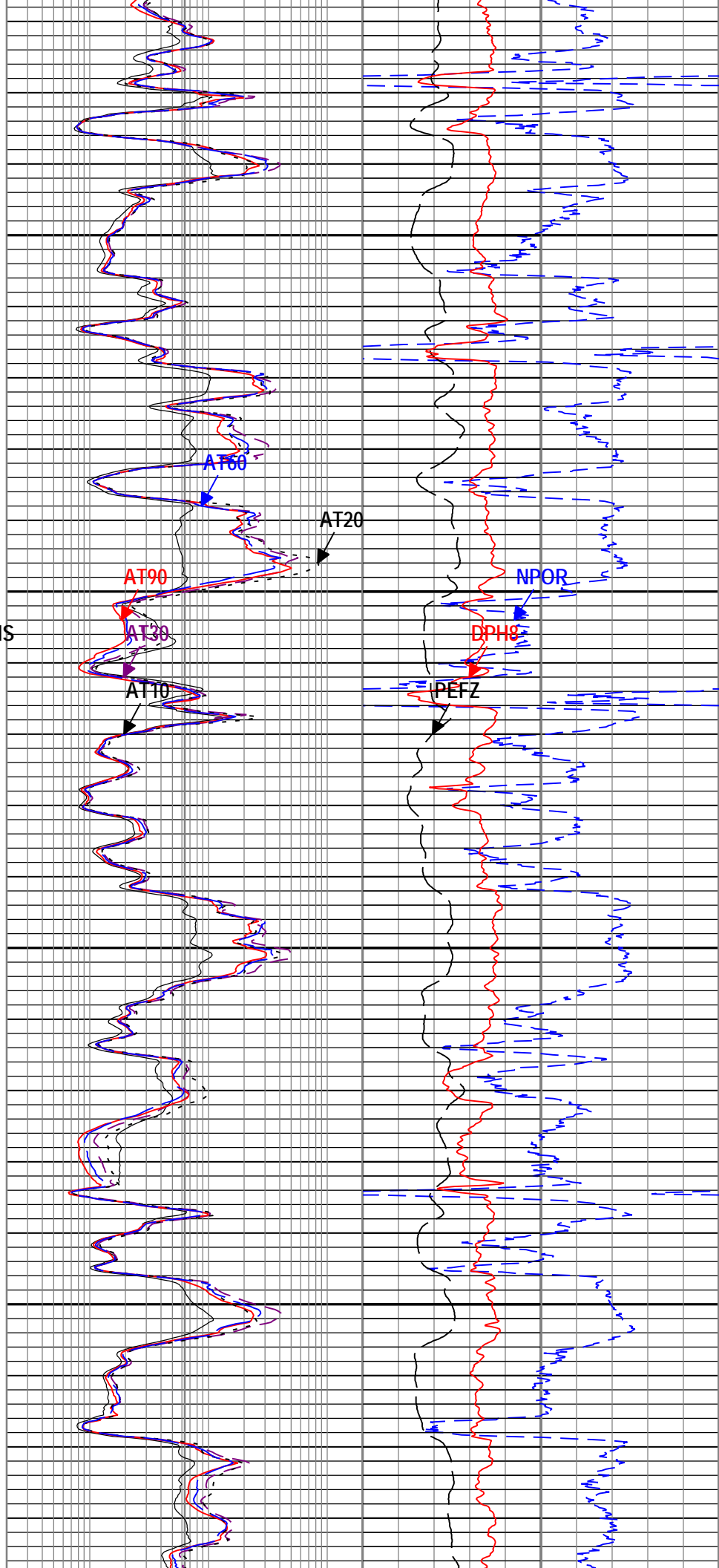
4300

4350

4400

TENS

STIT



AT60

AT20

AT90

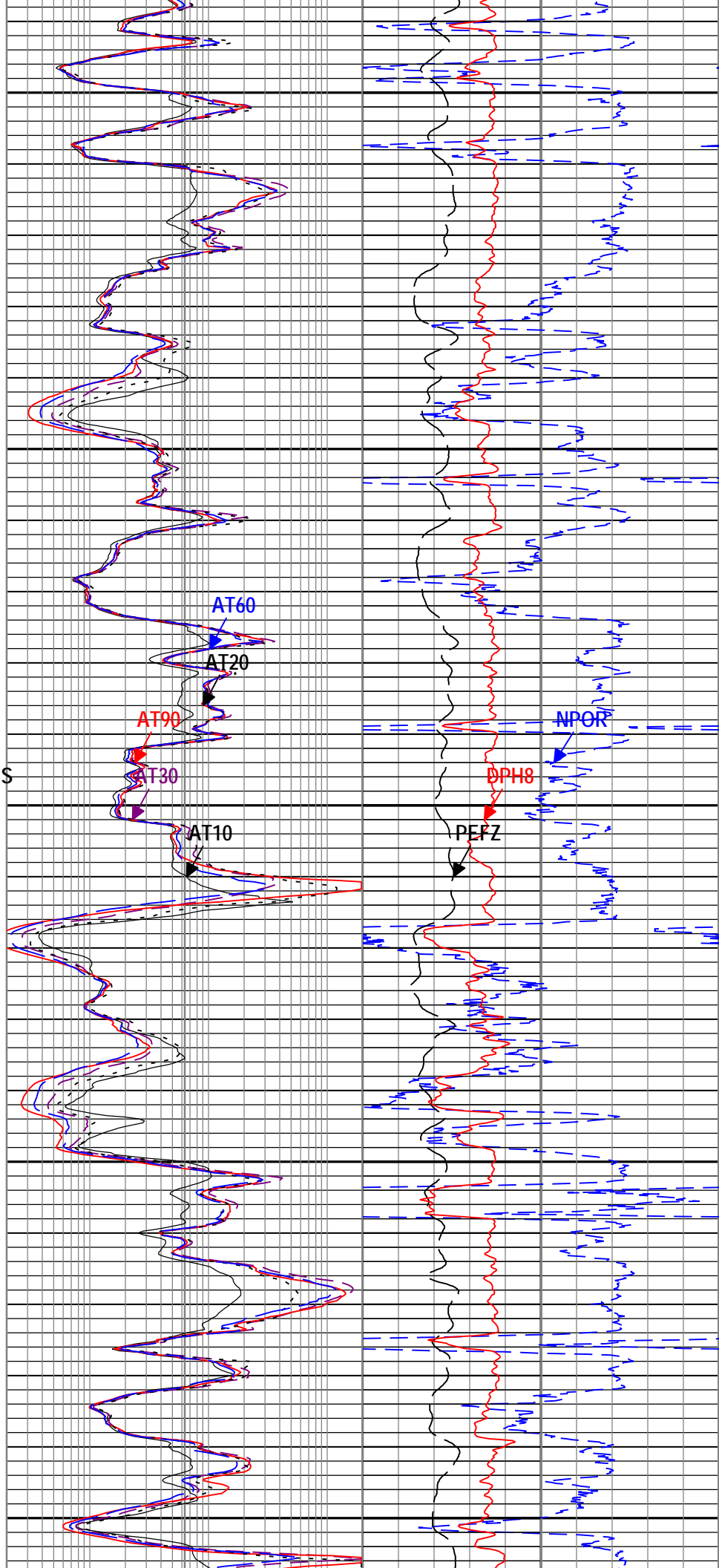
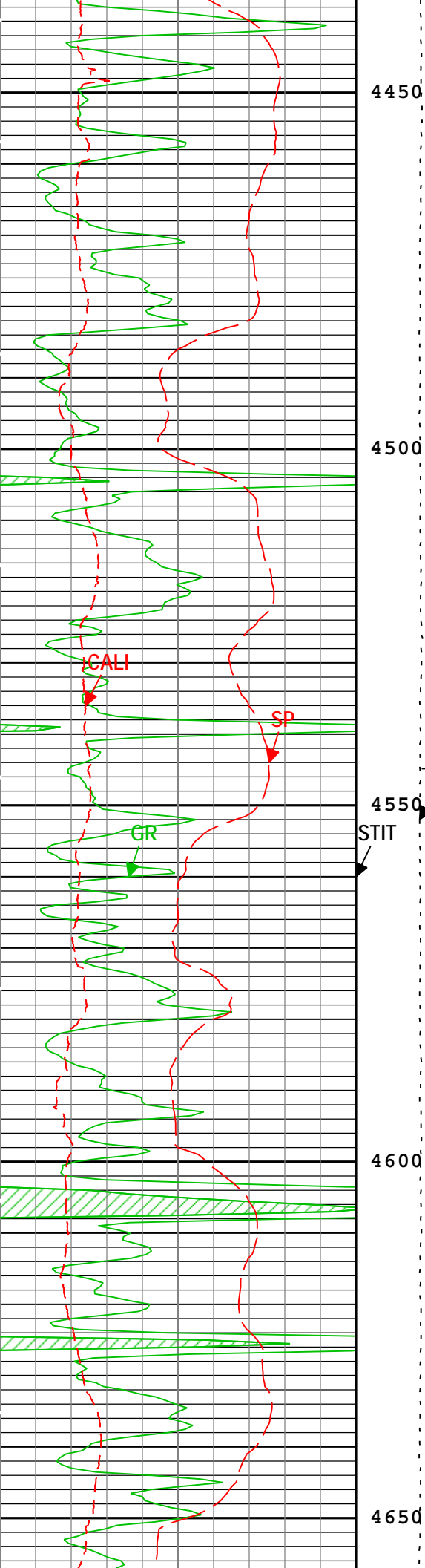
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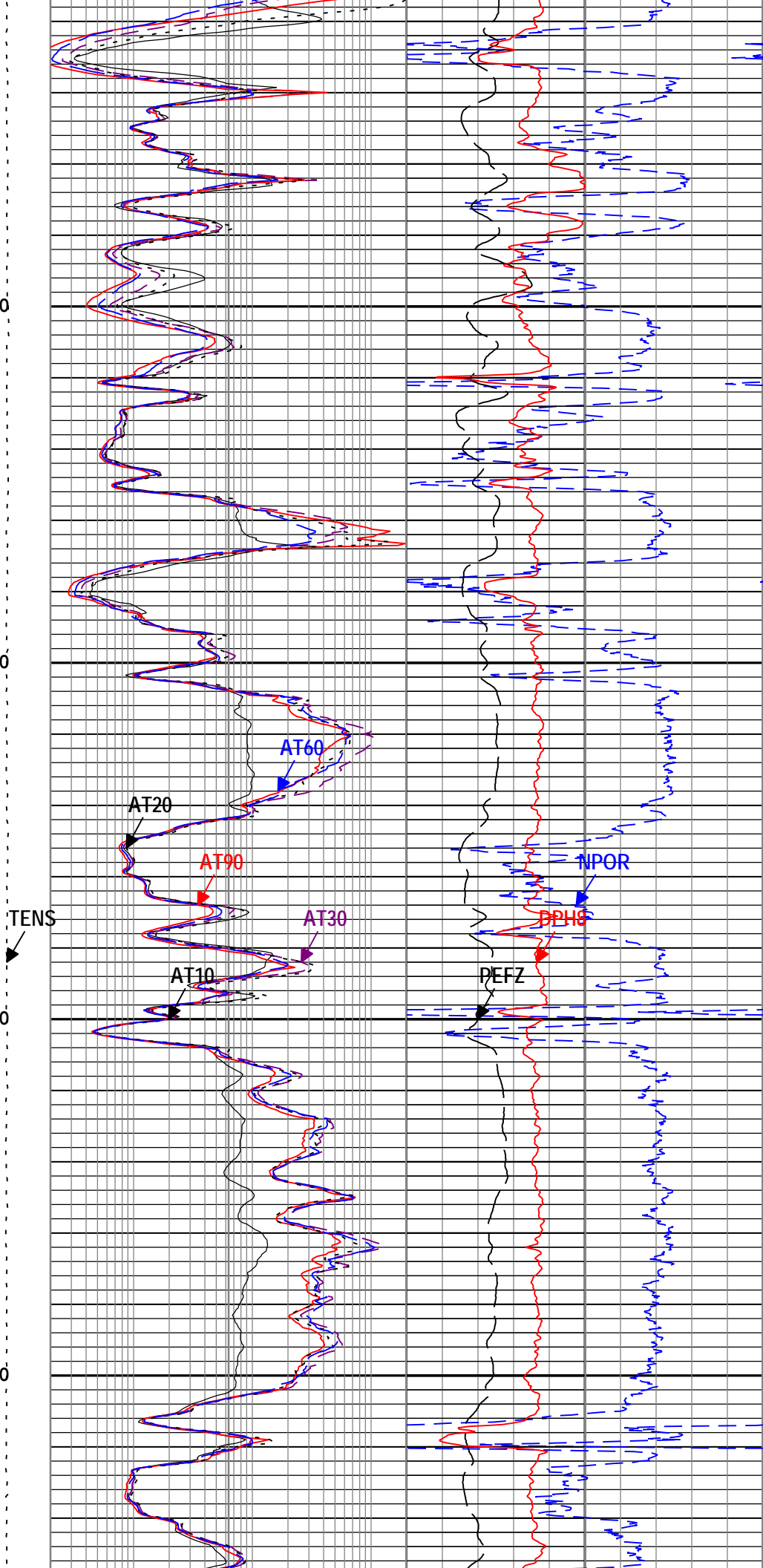
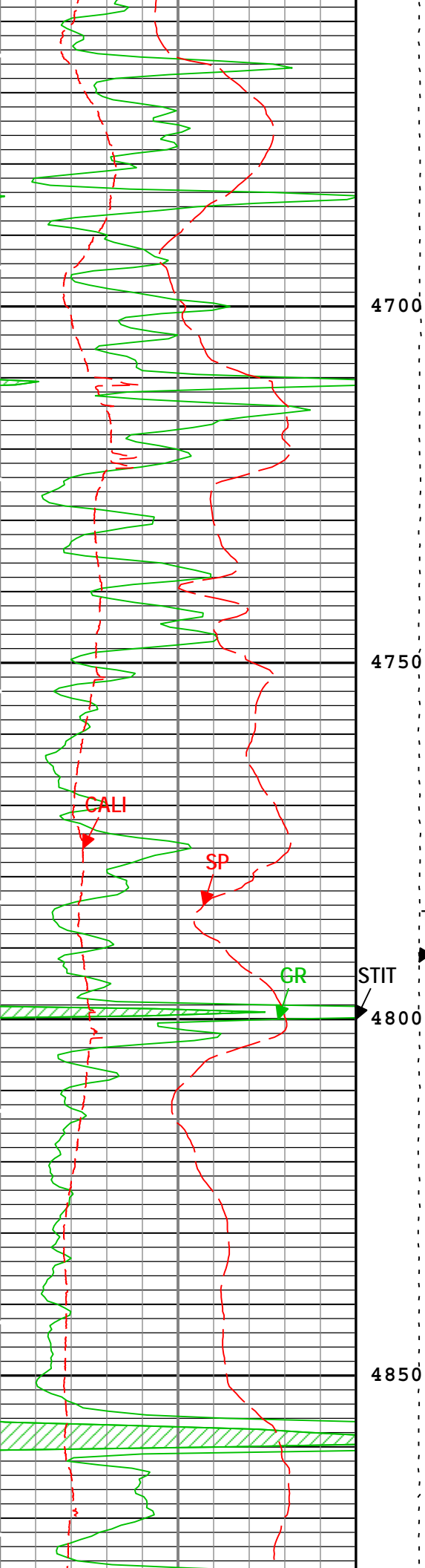
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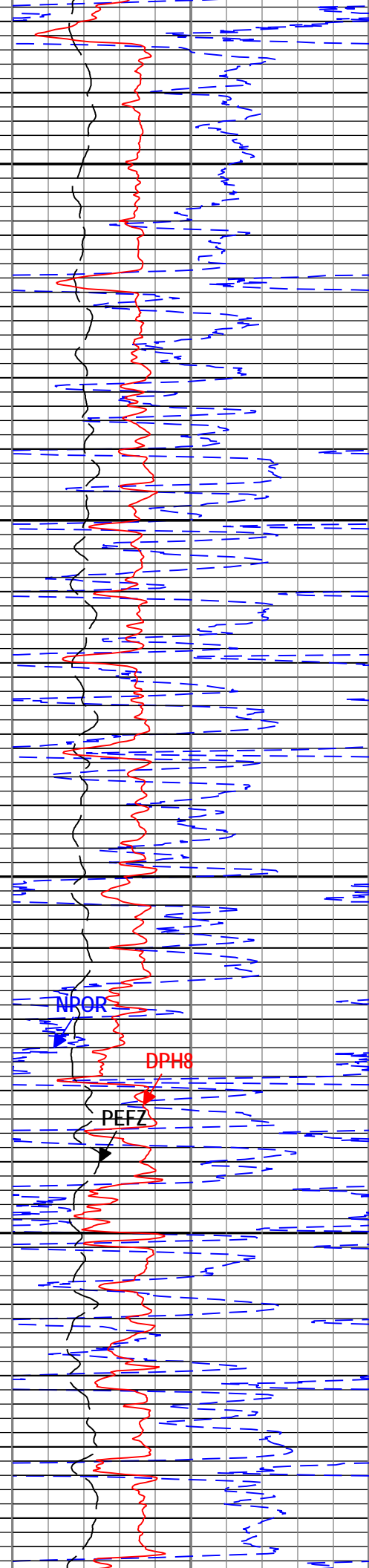
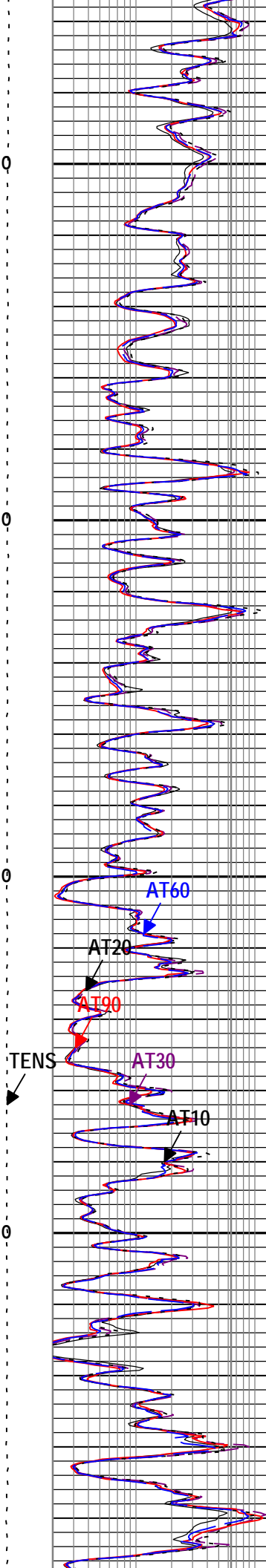
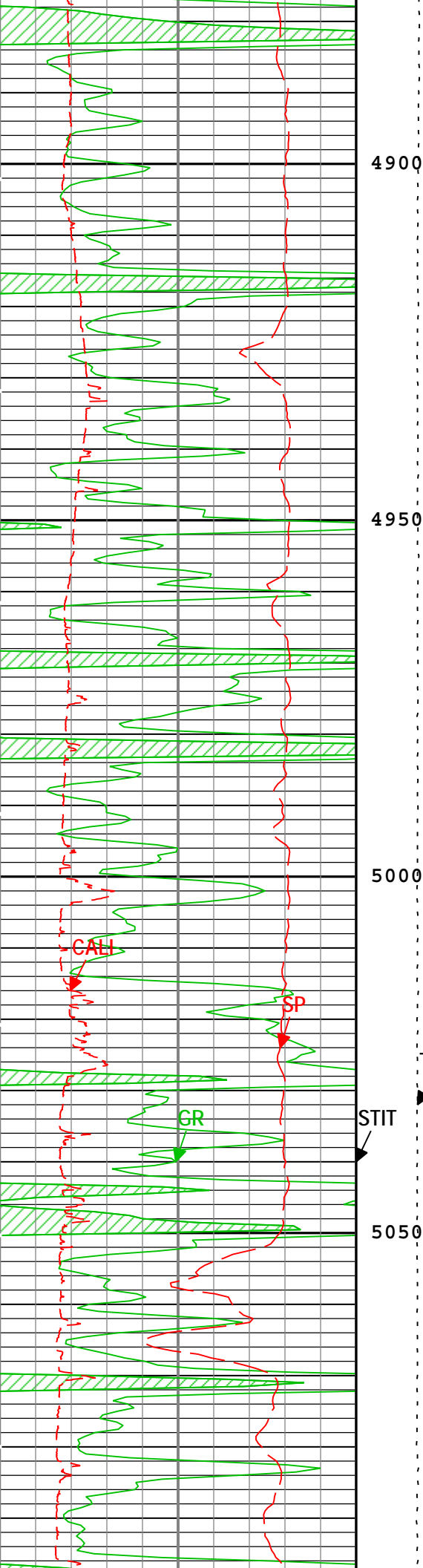
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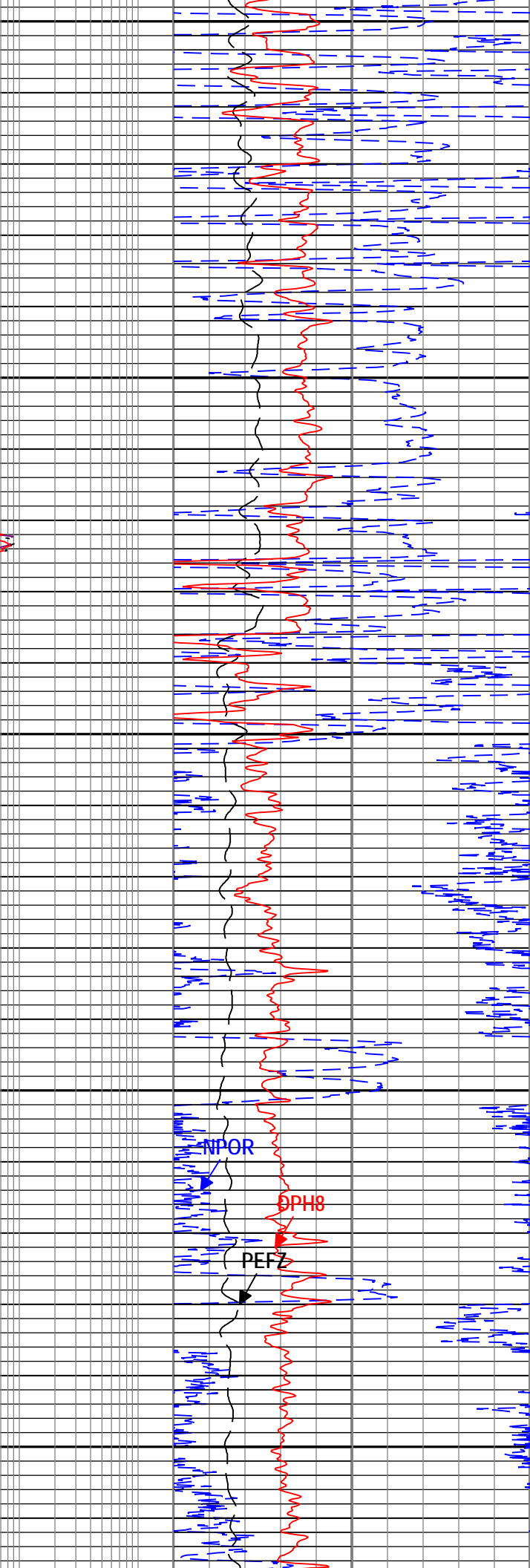
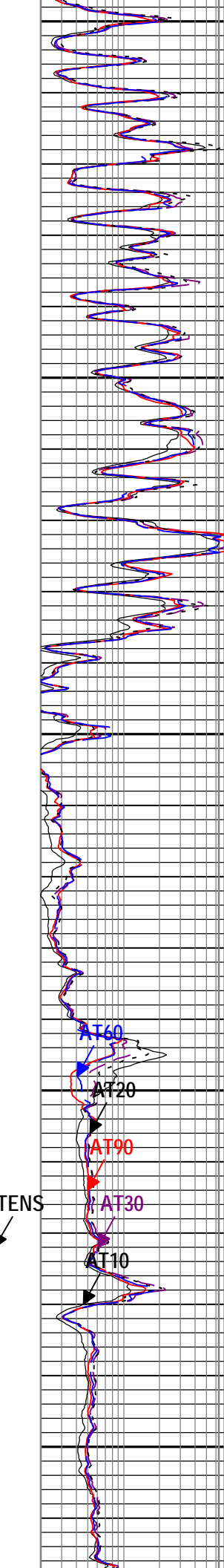
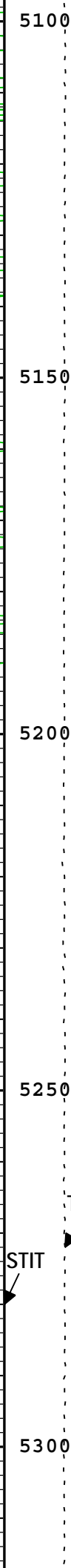
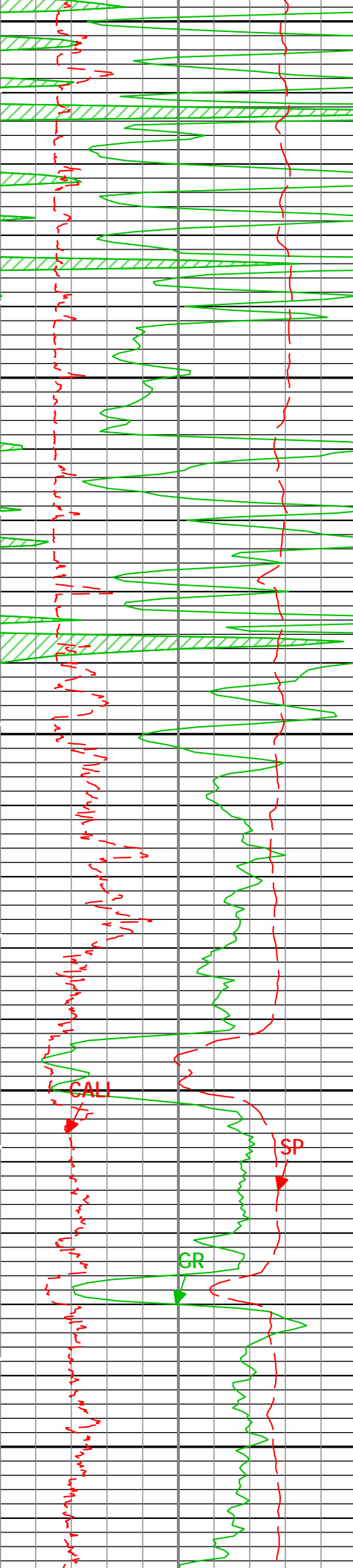
DPH8

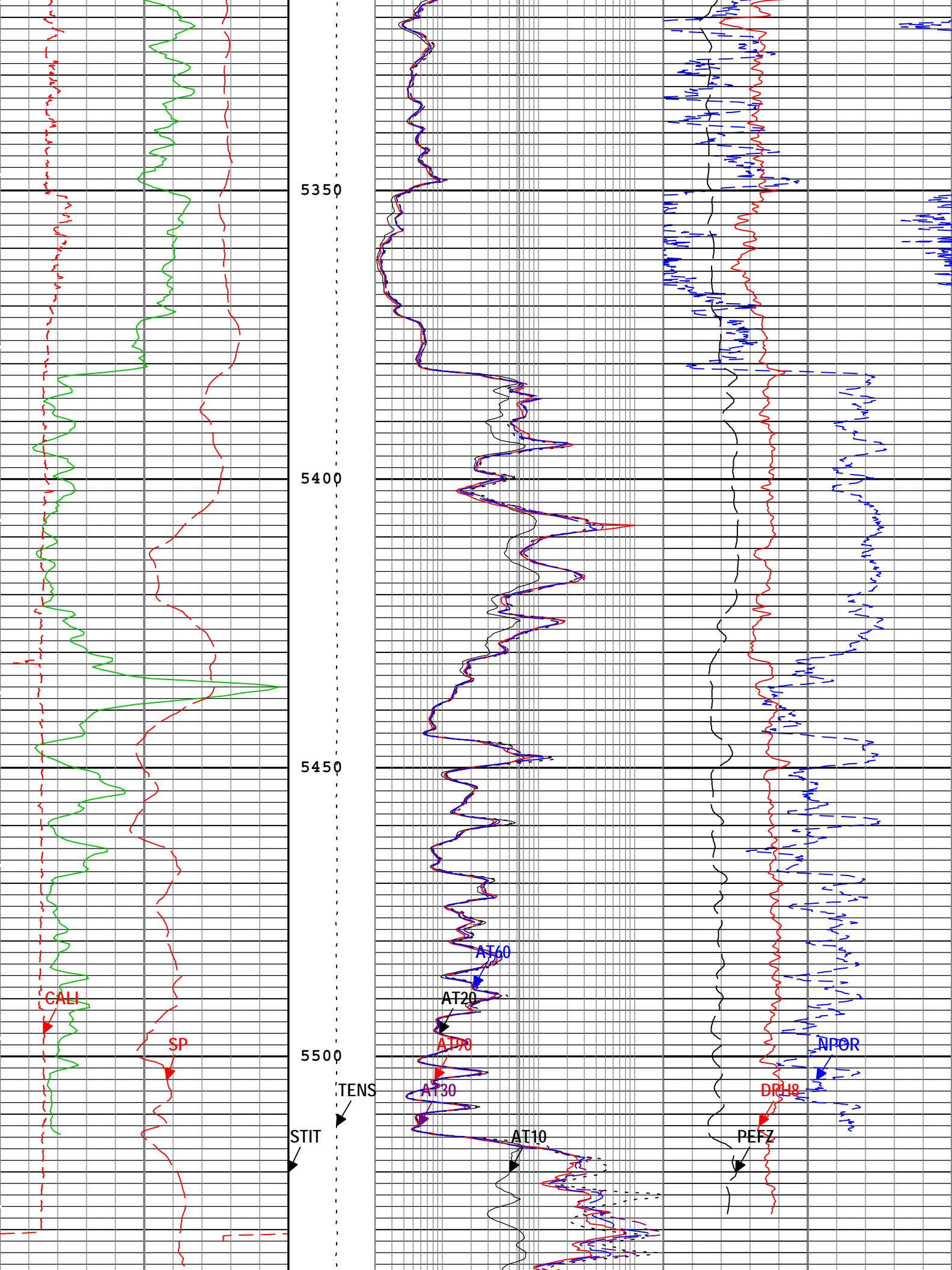
PEFZ

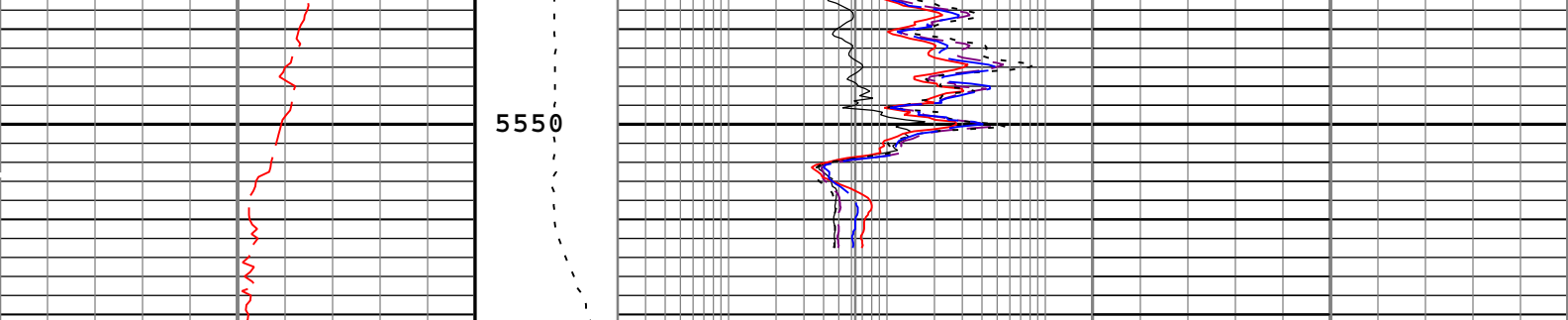












Gamma Ray Back up			Stuck Tool Indicator, Total (STIT)	Array Induction Two Foot Resistivity A10 (AT10) AIT-M			Gas Effect			
Gamma Ray (GR) HGNS-H				2 ohm.m 2000			NPOR Backup			
0	gAPI		200	0	ft	50	Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H			
Spontaneous Potential (SP) AIT-M				Cable Tension (TENS)	Array Induction Two Foot Resistivity A30 (AT30) AIT-M			0.3 ft3/ft3 -0.1		
0	mV		200		2 ohm.m 2000					
Caliper (CALI) HDRS-H				6000 lbf	0			Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H		
6	in		16	Array Induction Two Foot Resistivity A90 (AT90) AIT-M			0 10			
				2 ohm.m 2000			High Resolution Density Porosity (DPH8) HDRS-H			
				Array Induction Two Foot Resistivity A20 (AT20) AIT-M			0.45 ft3/ft3 -0.15			
				2 ohm.m 2000						
				Array Induction Two Foot Resistivity A60 (AT60) AIT-M						
				2 ohm.m 2000						

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 11-Dec-2012 19:23:43

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ASTA	Array Induction Tool Standoff	AIT-M	0.75	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	4092.61	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.005	in
CBLO	Casing Bottom (Logger)	WLSESSION	441	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	9.3	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
FSAL	Formation Salinity	Borehole	0	ppm
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	

	Computed Temperature			
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	68	degF
MST	Mud Sample Temperature	Borehole	90.6	degF
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.84	ohm.m
RMS	Resistivity of Mud Sample	Borehole	1.12	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	5561	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	0	400	441
BS	7.875	441	5571

All depth are actual.

Tool Control Parameters	
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Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

PEX-AIT

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[illegible]

Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
PEX-AIT	Log[3]:Up	Up	365.61 ft	5571.09 ft	11-Dec-2012 4:54:22 PM	11-Dec-2012 6:41:38 PM	5.00 ft	

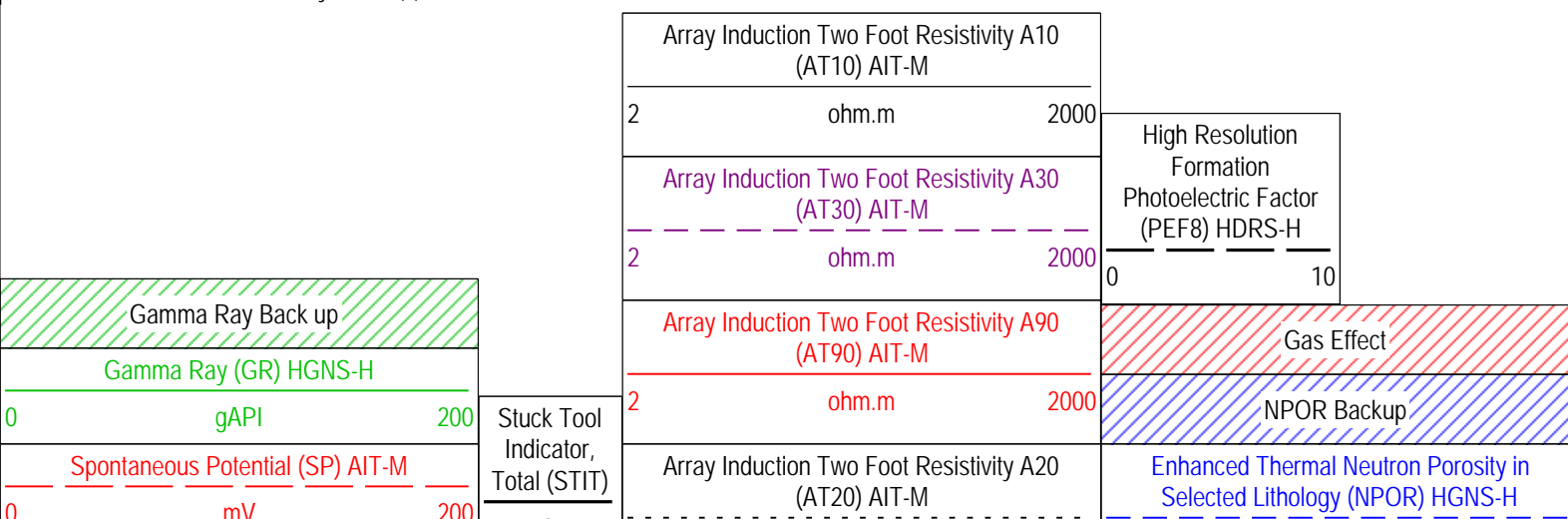
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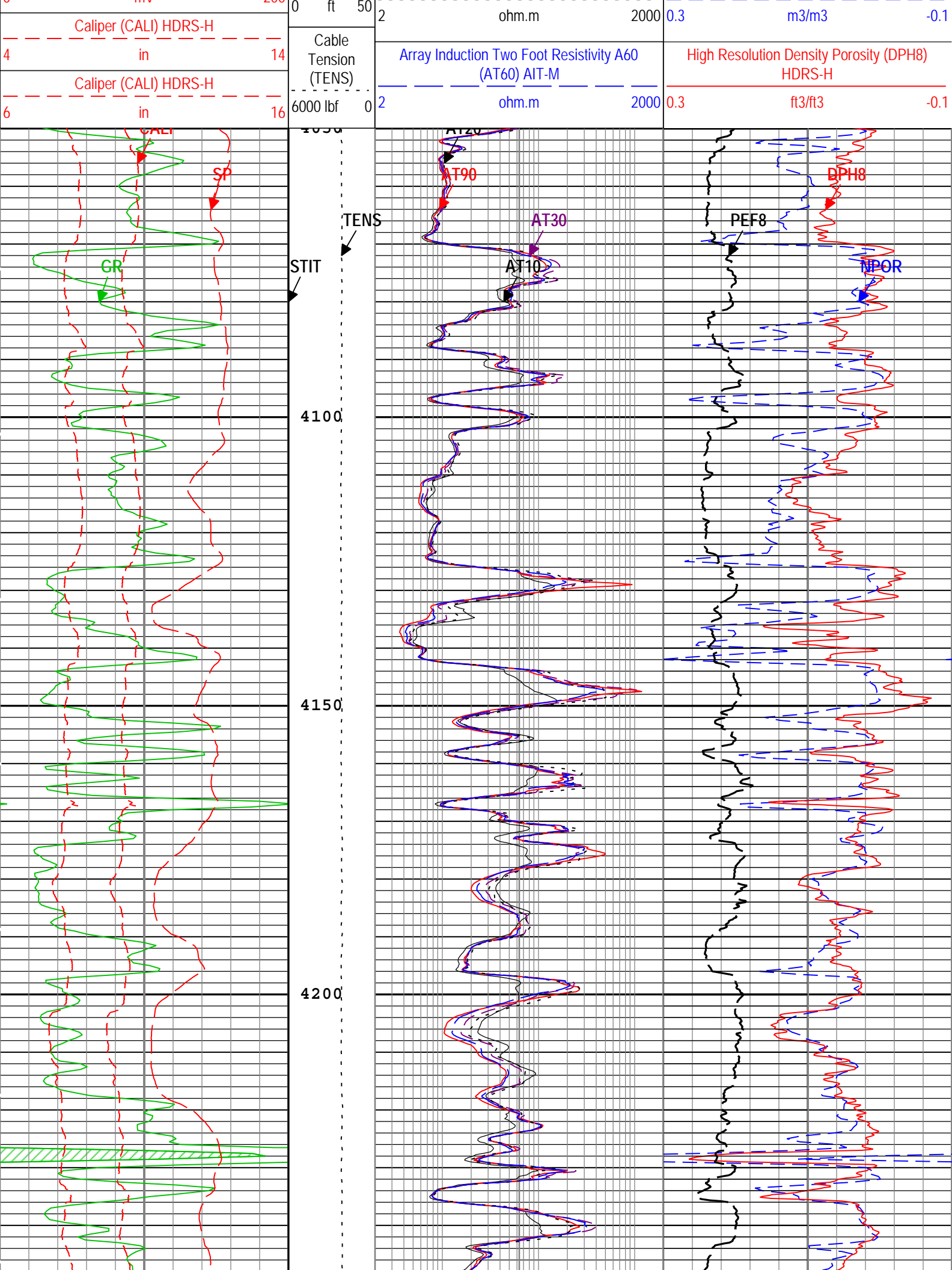
Log

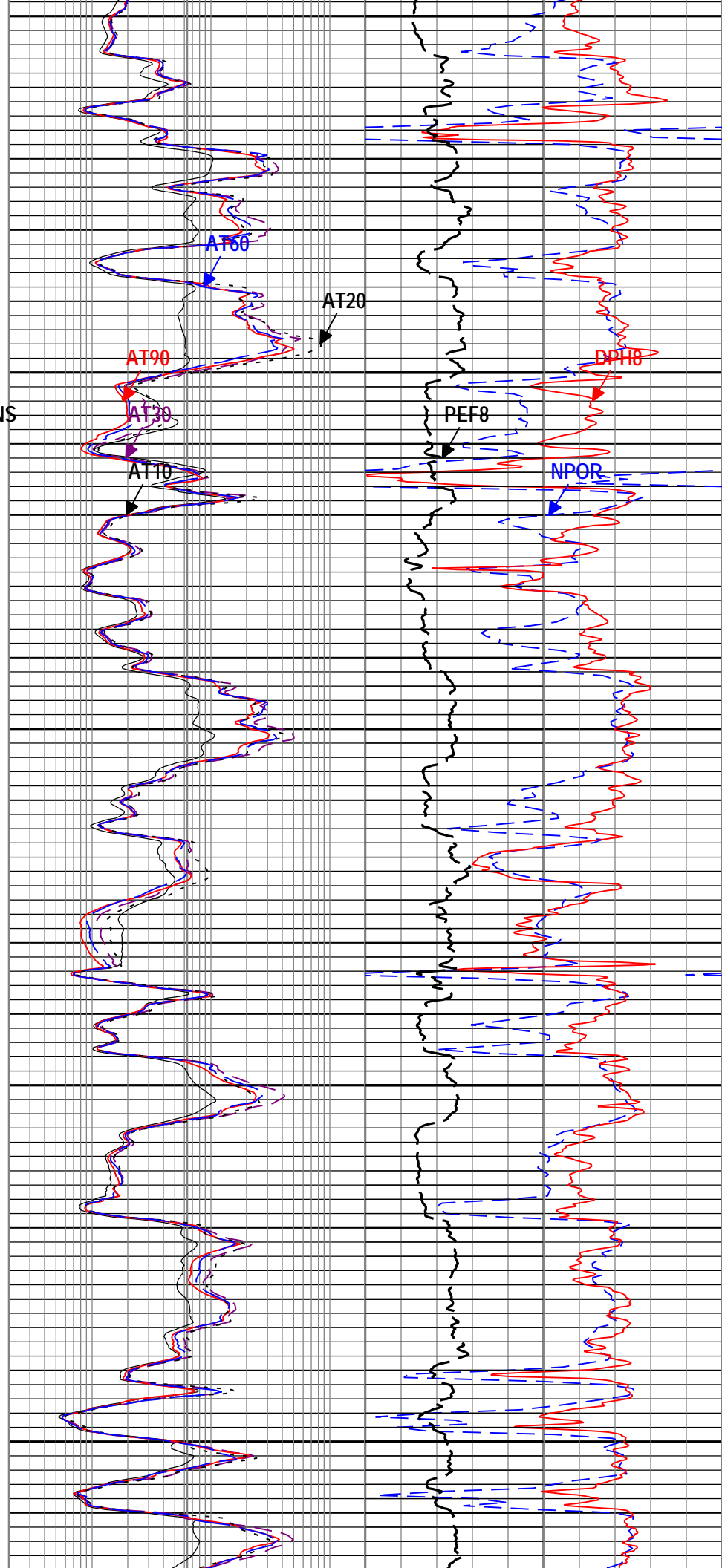
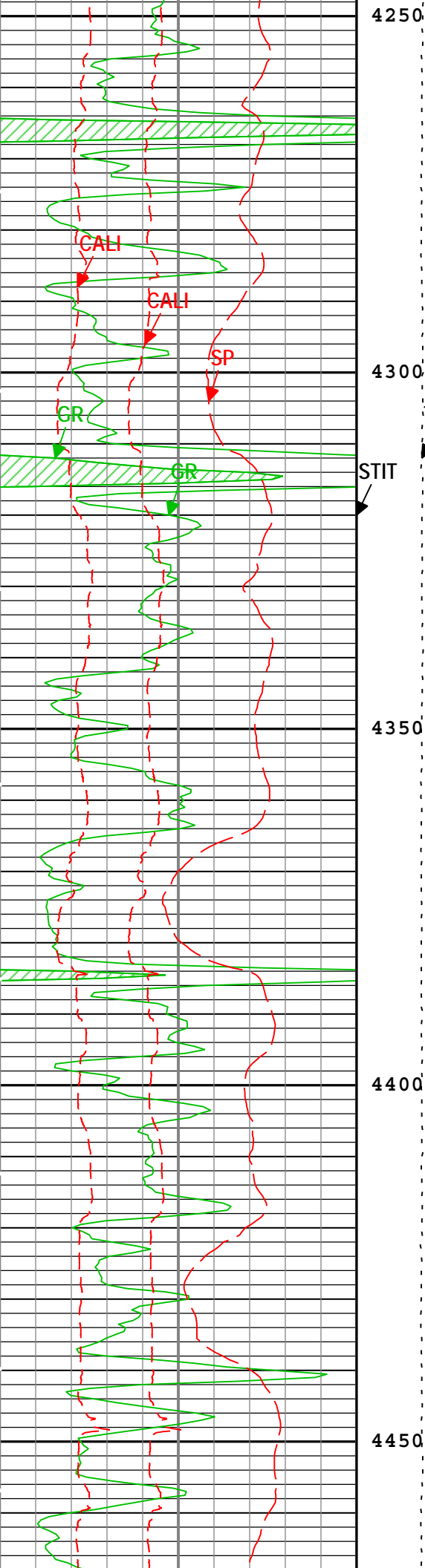
PEX-AIT: Log[3]:Up

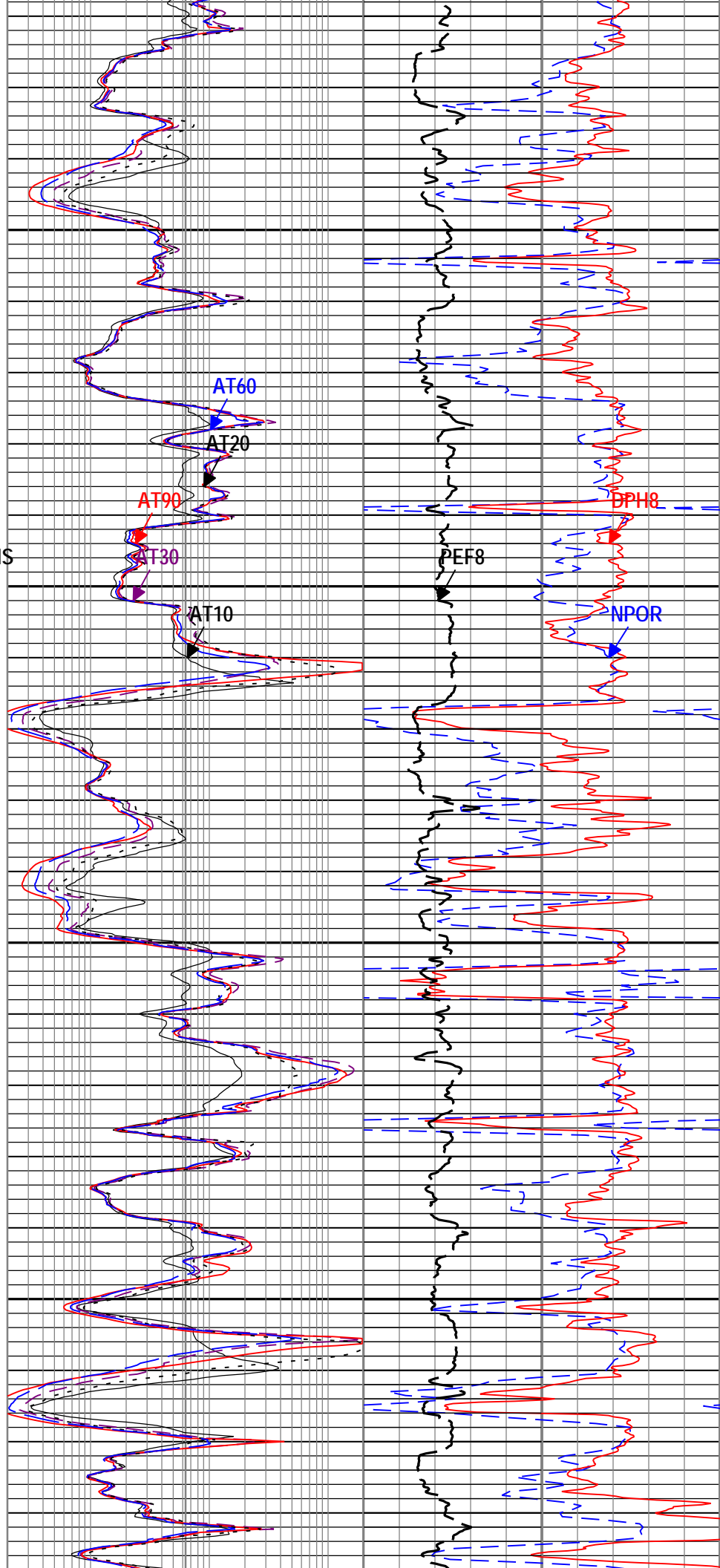
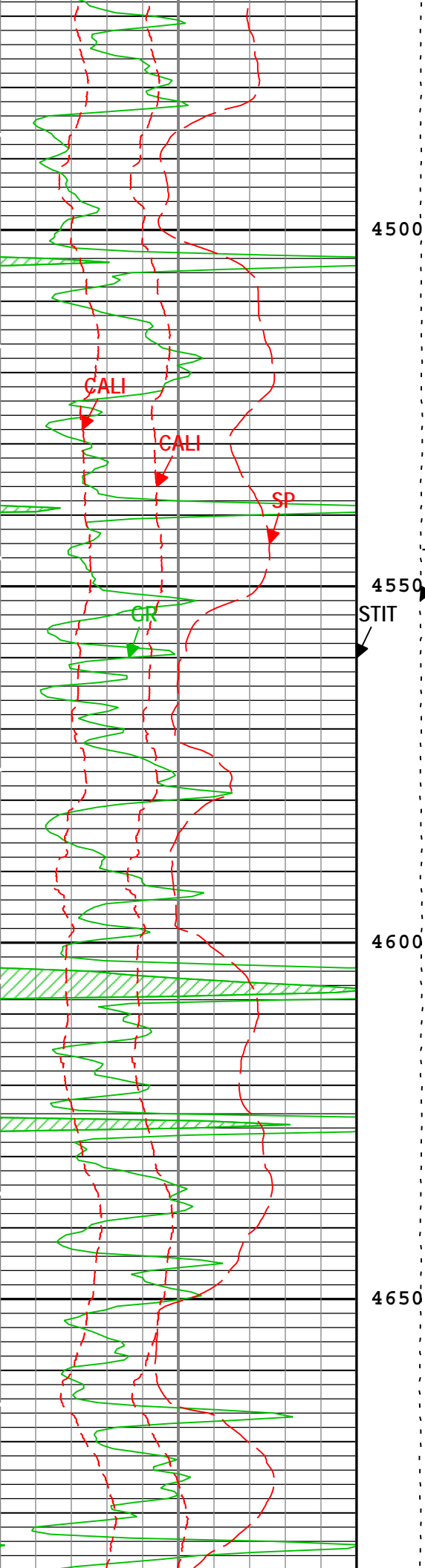
Description: HGNS standard resolution porosities for Platform Express Format: Log (HiRes EMD 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Dec-2012 19:23:47

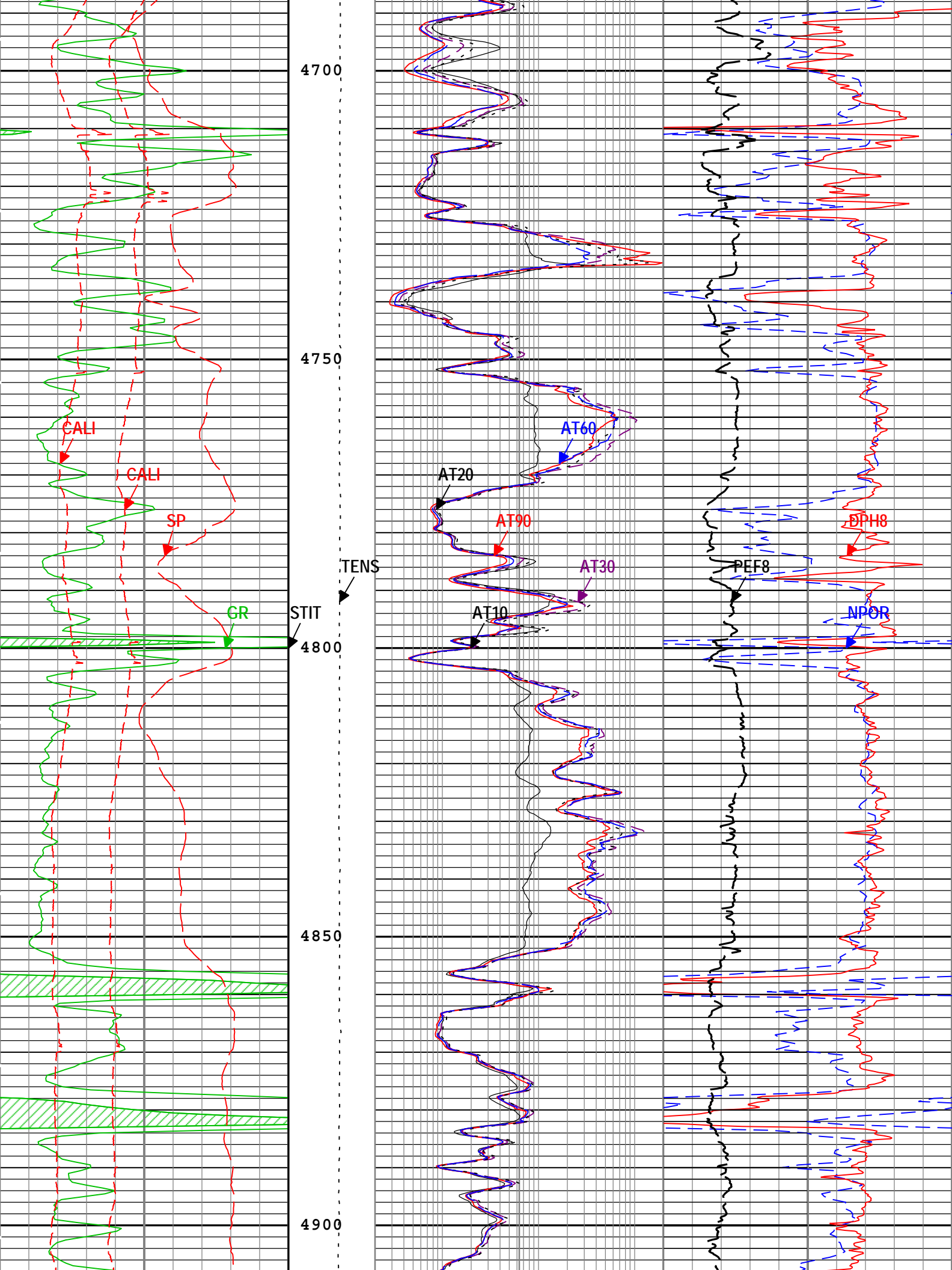
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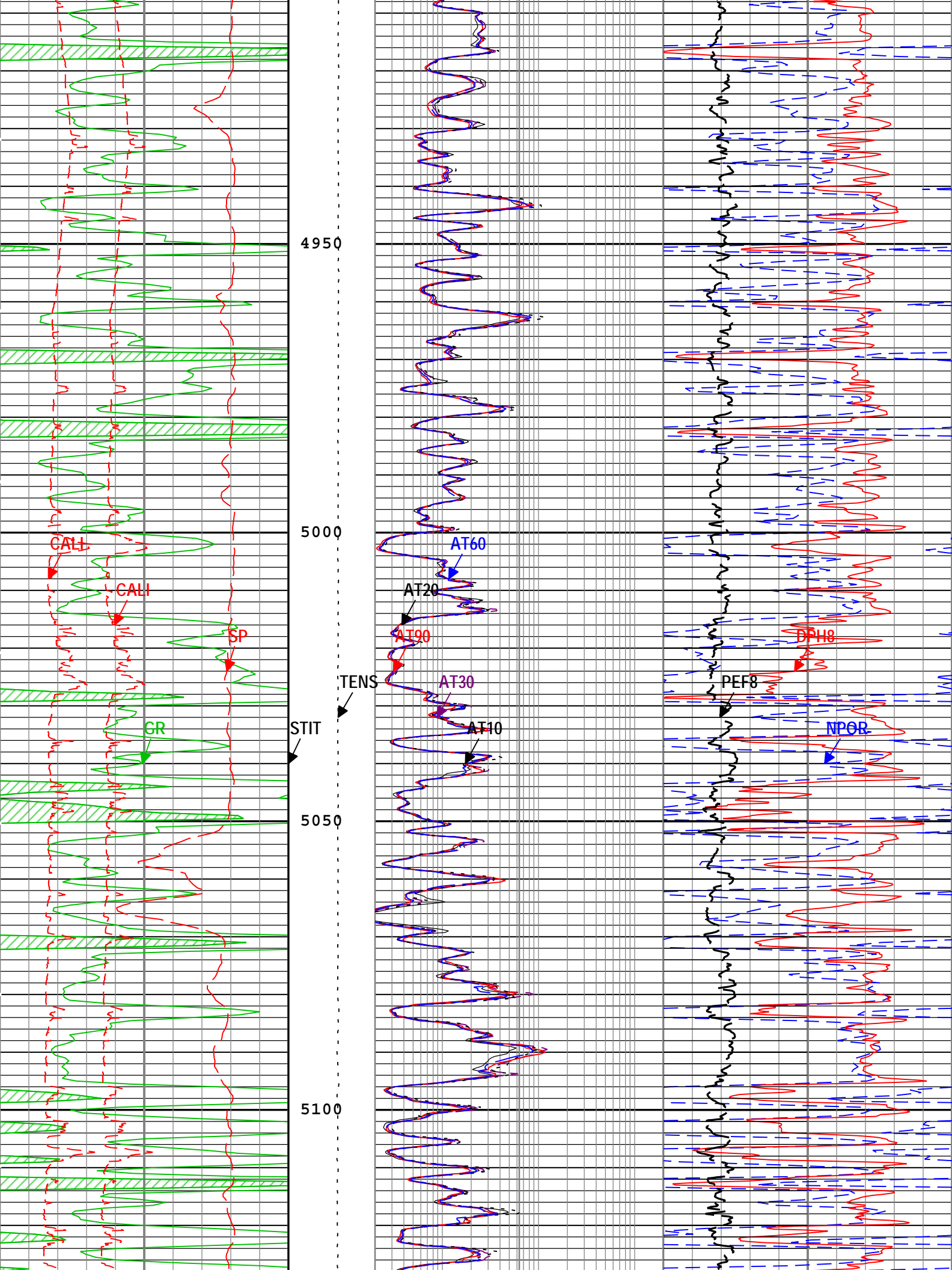


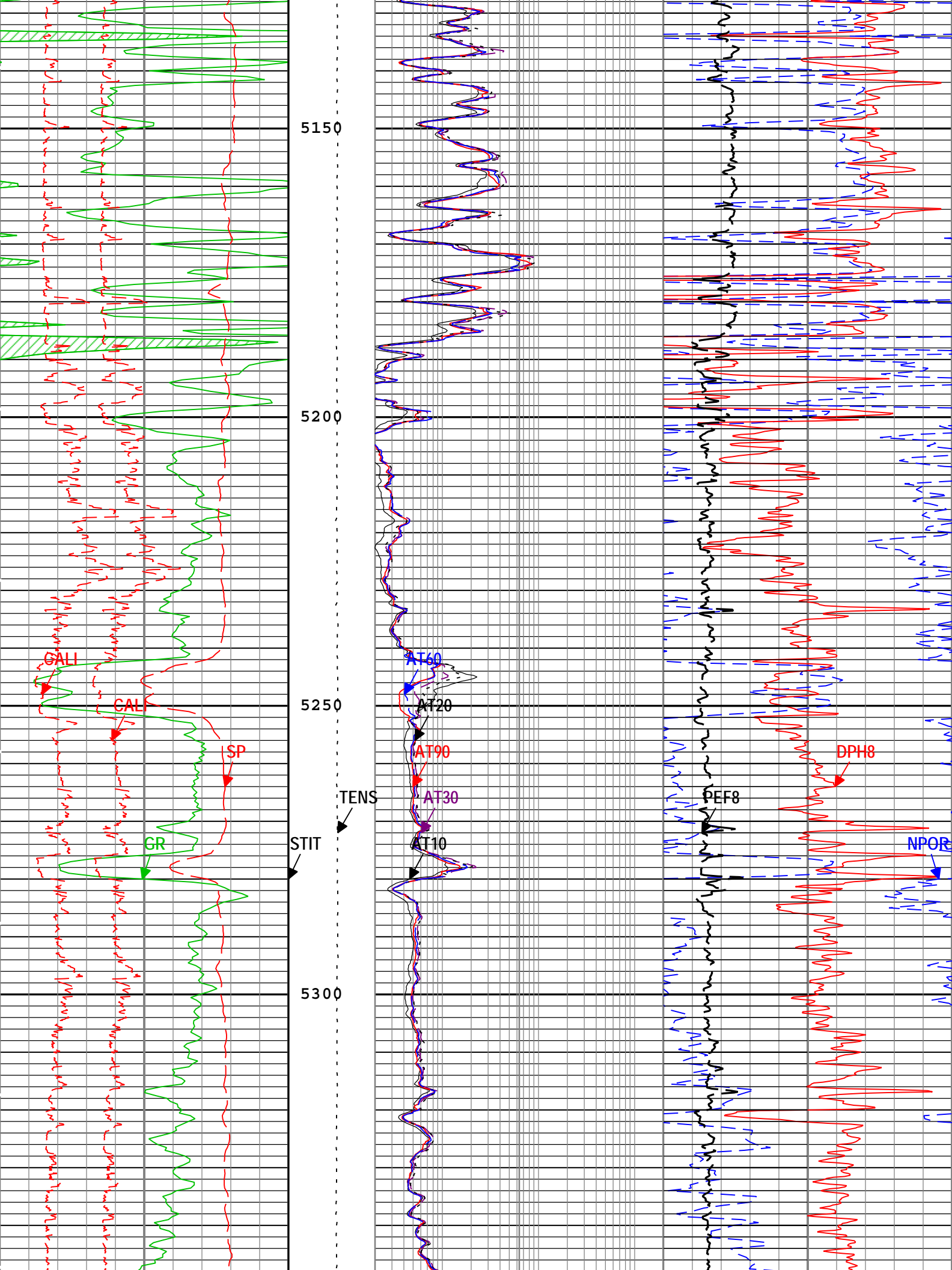


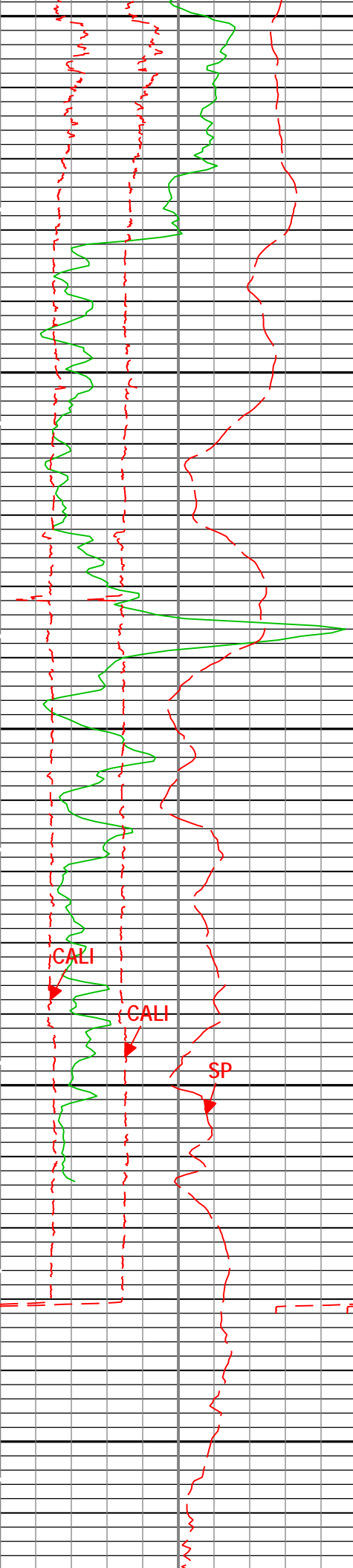




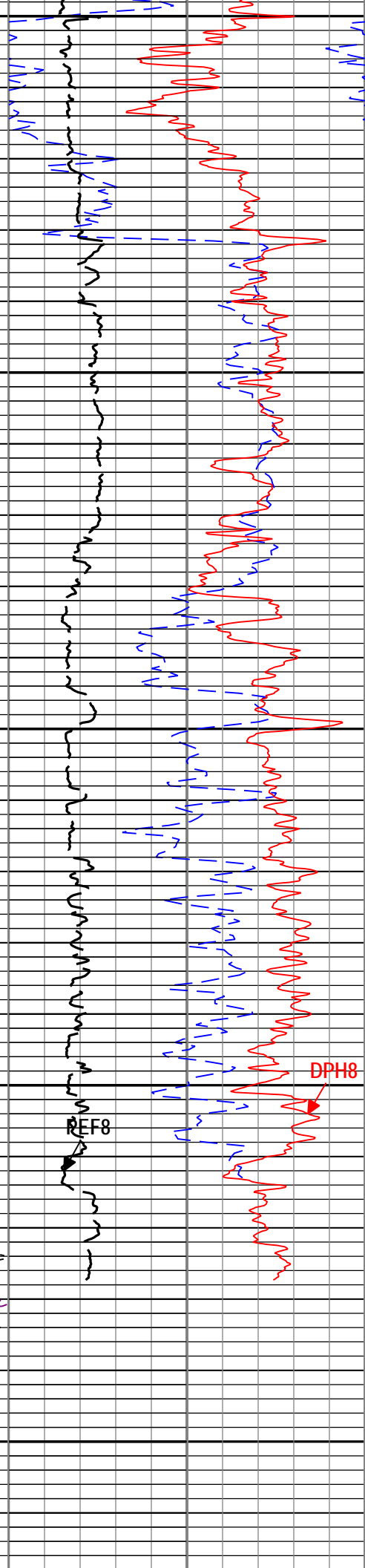
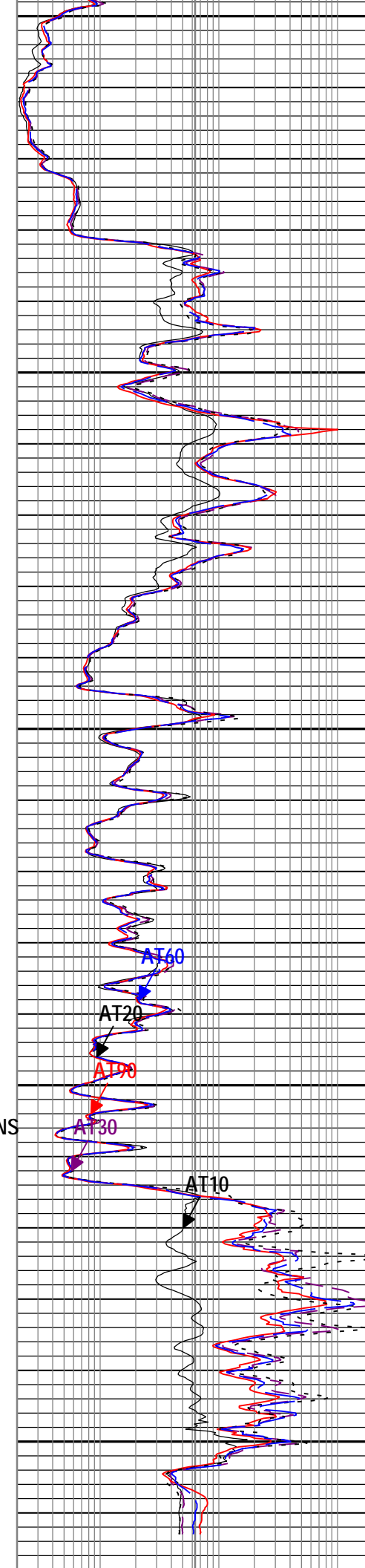








5350
5400
5450
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5550



Gamma Ray Back up			Stuck Tool Indicator, Total (STIT)	Array Induction Two Foot Resistivity A10 (AT10) AIT-M			Gas Effect					
Gamma Ray (GR) HGNS-H				2 ohm.m 2000			NPOR Backup					
0	gAPI		200	0	ft	50	Array Induction Two Foot Resistivity A30 (AT30) AIT-M			Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H		
Spontaneous Potential (SP) AIT-M			Cable Tension (TENS)	2 ohm.m 2000			0.3 m3/m3 -0.1					
0	mV			200	2 ohm.m 2000			0.3 m3/m3 -0.1				
Caliper (CALI) HDRS-H			6000 lbf 0	Array Induction Two Foot Resistivity A90 (AT90) AIT-M			High Resolution Density Porosity (DPH8) HDRS-H					
4	in			14	2 ohm.m 2000			0.3 ft3/ft3 -0.1				
Caliper (CALI) HDRS-H				Array Induction Two Foot Resistivity A20 (AT20) AIT-M			High Resolution Formation Photoelectric Factor (PEF8) HDRS-H					
6	in			16	2 ohm.m 2000			0 10				
					Array Induction Two Foot Resistivity A60 (AT60) AIT-M							
				2 ohm.m 2000								

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (HiRes EMD 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Dec-2012 19:23:47

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ASTA	Array Induction Tool Standoff	AIT-M	0.75	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
BSAL	Borehole Salinity	Borehole	4092.61	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.005	in
CBLO	Casing Bottom (Logger)	WLSESSION	441	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	9.3	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
FSAL	Formation Salinity	Borehole	0	ppm
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	68	degF
MST	Mud Sample Temperature	Borehole	90.6	degF
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.84	ohm.m

RMS	Resistivity of Mud Sample	Borehole	1.12	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	5561	ft

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

Calibration Report

AIT-M (Array Induction Tool - M) Calibration - Run PEX-AIT

Primary Equipment :	Array Induction Sonde - M	AMIS	1372
Auxiliary Equipment :	AITM Rm/SP Bottom Nose	AMRM	1372

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM):		15:21:45 19-Nov-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>
Test Loop Gain - 0		Master	1.000	0.950	1.017	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 0	deg	Master	0	-3.000	0.558	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 1		Master	1.000	0.950	1.012	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 1	deg	Master	0	-3.000	0.586	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 2		Master	1.000	0.950	1.015	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 2	deg	Master	0	-3.000	0.039	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 3		Master	1.000	0.950	1.011	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 3	deg	Master	0	-3.000	0.110	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 4		Master	1.000	0.950	0.993	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 4	deg	Master	0	-3.000	0.086	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 5		Master	1.000	0.950	0.988	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 5	deg	Master	0	-3.000	-0.130	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 6		Master	1.000	0.950	1.004	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 6	deg	Master	0	-3.000	0.258	3.000	<div><div></div><div></div><div></div></div>
Test Loop Gain - 7		Master	1.000	0.950	1.006	1.050	<div><div></div><div></div><div></div></div>
Test Loop Phase - 7	deg	Master	0	-3.000	-0.057	3.000	<div><div></div><div></div><div></div></div>

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM):		15:21:45 19-Nov-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div><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AIT Mud Calibration - Mud Calibration Gain

Coarse Gain		Master	1.000	0.800	1.126	1.200	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></d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-------------	--	--------	-------	-------	-------	-------	--

		Before-Master	----	----	-0.288	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 6	V	Master	----	1.176	1.951	2.744	
		Before	----	1.176	1.950	2.744	
		After	----	----	----	----	

		Before-Master After-Before	----- -----	----- -----	-0.001 -----	----- -----	<div></div>
Thru Cal Phase - 6	deg	Master	-----	121.000	167.455	-119.000	<div></div>
		Before	-----	121.000	167.167	-119.000	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	-0.288	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>
Thru Cal Mag - 7	V	Master	-----	0.846	1.423	1.974	<div></div>
		Before	-----	0.846	1.424	1.974	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	0.001	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>
Thru Cal Phase - 7	deg	Master	-----	115.000	166.651	-125.000	<div></div>
		Before	-----	115.000	166.356	-125.000	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	-0.295	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>
SPA Zero	mV	Master		-50.000	0.168	50.000	<div></div>
		Before		-50.000	0.145	50.000	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	-0.023	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>
SPA Plus	mV	Master		941.000	991.929	1040.000	<div></div>
		Before		941.000	991.853	1040.000	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	-0.076	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>
Temperature Zero	V	Master		-0.050	0.000	0.050	<div></div>
		Before		-0.050	0.000	0.050	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	0.000	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>
Temperature Plus	V	Master		0.870	0.919	0.960	<div></div>
		Before		0.870	0.919	0.960	<div></div>
		After	-----	-----	-----	-----	<div></div>
		Before-Master	-----	-----	0.000	-----	<div></div>
		After-Before	-----	-----	-----	-----	<div></div>

DSLT-H (Digitizing Sonic Logging Tool - H) Calibration - Run PEX-AIT							
Primary Equipment :							
Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL				SLS-E	165		
CBL Normalization - CBL Accumulations							
Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>
Upper Far Amplitude - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Upper Near Raw Amplitude - 0	mV	Master	----	----	----	----	<div><div></div><div></div></div>
Lower Far Amplitude - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Lower Near Raw Amplitude - 0	mV	Master	----	----	----	----	<div><div></div><div></div></div>
CBL Normalization - CBL/VDL Coefficients							
Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>
CBL Correction Factor for UT		Master	3.500	2.700	NOT DONE	4.300	<div><div></div><div></div><div></div><div></div></div>
CBL Correction Factor for LT		Master	2.500	1.700	NOT DONE	4.300	<div><div></div><div></div><div></div><div></div></div>
VDL Ratio between UT and LT for CBLB Mode		Master	1.000		NOT DONE		<div><div></div><div></div></div>
CBL Free Pipe Adjustment - Free Pipe Measurement							
Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>
CBL Amplitude - 0	mV	Before	----	----	----	----	<div><div></div><div></div></div>
CBL Reference Amplitude (CBRA) - 0	mV	Before	----	----	----	----	<div><div></div><div></div></div>
Measurement Depth - 0	ft	Before	----	----	----	----	<div><div></div><div></div></div>
CBL Free Pipe Adjustment - CBL Amplitude Coefficient							
Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>

CBL Adjustment Factor		Before	1.000	0.200	NOT DONE	5.000	
Depth of Before Calibration	ft	Before			NOT DONE		

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run PEX-AIT

Primary Equipment :							
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3712				
	HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	3775				
Auxiliary Equipment :							
	HRDD Backscatter Detector	Backscatter	26404				
	HRDD Long Spacing Detector	Long Spacing	28926				
	HRDD Short Spacing Detector	Short Spacing					
	Cesium 137 Gamma-Ray Logging Source	GSR-J	5240				
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3712				
	HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	4826				
Calibration Parameter :							
	Small Ring Size (Caliper Calibration Small Ring)	8.00					
	Large Ring Size (Caliper Calibration Large Ring)	12.00					

HDRS Caliper Calibration - Caliper Accumulations

Before (Measured): 09:38:28 11-Dec-2012							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring	in	Before	8.00	6.00	8.32	10.00	
Large Ring	in	Before	12.00	9.00	12.50	15.00	

HDRS Density Calibration - Inversion Results

Master (EEPROM): 20:14:00 09-Dec-2012							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Rho Aluminum	g/cm3	Master	2.596	2.586	2.599	2.606	
Rho Magnesium	g/cm3	Master	1.686	1.676	1.686	1.696	
Pe Aluminum		Master	2.570	2.470	2.547	2.670	
Pe Magnesium		Master	2.650	2.550	2.632	2.750	

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 20:14:00 09-Dec-2012							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Average Deviation	%	Master	0	-0.6000	0.2389	0.6000	
BS Max Deviation	%	Master	0	-1.6000	0.8046	1.6000	
SS Average Deviation	%	Master	0	-1.0000	0.2825	1.0000	
SS Max Deviation	%	Master	0	-2.5000	0.6831	2.5000	
LS Average Deviation	%	Master	0	-1.5000	0.5659	1.5000	
LS Max Deviation	%	Master	0	-3.5000	1.1242	3.5000	

HDRS Density Calibration - Background Summary

Master (EEPROM): 20:14:00 09-Dec-2012		Before (Measured): 09:40:39 11-Dec-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Window Ratio		Master	1.0000		0.7540		
		Before	0.7540	0.7163	0.7552	0.7917	
		Before-Master	-----	-----	0.0012	-----	
BS Window Sum	1/s	Master	1		25277		
		Before	25277	24013	25272	26541	
		Before-Master	-----	-----	-5	-----	
SS Window Ratio		Master	1.0000		0.4895		
		Before	0.4895	0.4650	0.4900	0.5140	
		Before-Master	-----	-----	0.0005	-----	
SS Window Sum	1/s	Master	1		11345		
		Before	11345	10778	11314	11913	
		Before-Master	-----	-----	-31	-----	
LS Window Ratio		Master	1.0000		0.3047		
		Before	0.3047	0.2894	0.3056	0.3199	
		Before-Master	-----	-----	0.0009	-----	
LS Window Sum	1/s	Master	1		1153		
		Before	1153	1096	1152	1211	
		Before-Master	-----	-----	-1	-----	

HDRS Density Calibration - Photo-multiplier High Voltages							
Master (EEPROM):		20:14:00 09-Dec-2012		Before (Measured):		09:40:39 11-Dec-2012	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1477	2400	
		Before		1000	1476	2400	
		Before-Master	-----	-100	-1	100	
SS PM High Voltage	V	Master		1000	1426	2400	
		Before		1000	1412	2400	
		Before-Master	-----	-100	-14	100	
LS PM High Voltage	V	Master		1000	1440	2400	
		Before		1000	1440	2400	
		Before-Master	-----	-100	0	100	

HDRS Density Calibration - Crystal Quality Resolutions							
Master (EEPROM):		20:14:00 09-Dec-2012		Before (Measured):		09:40:39 11-Dec-2012	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	10.55	25.00	
		Before		5.00	10.62	25.00	
		Before-Master	-----	-1.00	0.07	1.00	
SS Crystal Resolution	%	Master		5.00	9.74	20.00	
		Before		5.00	9.86	20.00	
		Before-Master	-----	-1.00	0.12	1.00	
LS Crystal Resolution	%	Master		5.00	8.61	20.00	
		Before		5.00	8.64	20.00	
		Before-Master	-----	-1.00	0.03	1.00	

HDRS MCFL Calibration - MCFL Accumulations							
Before (Measured):		09:40:55 11-Dec-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3879	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3833	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3841	4136	

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run PEX-AIT			
Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC	HGNS-H		4779
Auxiliary Equipment :			
HGNS Accelerometer, 150 degC	HACCZ-H		5736
AmBe Neutron Logging Source	NSR-F		5215
Calibration Parameter :			
Water Temperature			
Housing Size			
JIG-BKG (Jig minus background reference)		165	

HGNS Accelerometer Calibration - Accelerometer Accumulations							
Before (Measured):		15:55:58 11-Dec-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.1	32.8	

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read							
Master (EEPROM):		00:00:00 15-Mar-2006					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Accelerometer Manufacturer		Master			QAT_160		
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0	
Accelerometer Coefficients - 0		Master	-----	-----	8084.000	-----	
Accelerometer Coefficients - 1		Master	-----	-----	-8.467	-----	
Accelerometer Coefficients - 2		Master	-----	-----	0.009	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	2.722	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----	

Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 8		Master	-----	-----	298.700	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.995	-----	

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 10:52:24 11-Oct-2012		Before (Measured): 09:37:02 11-Dec-2012		After:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	25.2	40.0	
		Before	0	5.0	24.8	40.0	
		After	-----	-----	-----	-----	
		Before-Master	-----	-3.8	-0.4	3.8	
		After-Before	-----	-----	-----	-----	
Far Zero Measurement	1/s	Master	0	5.0	28.4	40.0	
		Before	0	5.0	27.4	40.0	
		After	-----	-----	-----	-----	
		Before-Master	-----	-4.3	-1.0	4.3	
		After-Before	-----	-----	-----	-----	
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5278.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2189.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5228.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2143.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 09:42:32 11-Dec-2012		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	83.1	120.0	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
RGR Plus Measurement	gAPI	Before	185.4	157.1	174.5	206.3	
		After	-----	-----	NOT DONE	-----	
		After-Before	-----	-----	-----	-----	
GR Calibration Gain		Before	0.89	0.80	0.95	1.05	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run PEX-AIT

Primary Equipment :		Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor	LEH-QT
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HTEN Master Calibration - HTEN Master Calibration

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HTEN Shop Gain		Master	1.000	0.800	NOT DONE	4.500	
HTEN Shop Offset	lbf	Master	0	-1000.000	NOT DONE	1000.000	

HTEN Before Calibration - HTEN Before Calibration

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RHTE Zero Measurement - 0	lbf	Before	-----	-----	-----	-----	
RHTE Plus Measurement - 0	lbf	Before	-----	-----	-----	-----	

HTEN Gain - 0		Before	----	----	----	----		
HTEN Offset - 0	lbf	Before	----	----	----	----		

Company:

Vecta Oil & Gas Ltd

Schlumberger

Well:

Bierstadt 32-33

Field:

Wildcat

County:

Cheyenne

State:

Colorado

Platform Express

Triple Combo