Schlumberger

Company: Peterson Energy Operating INC

Well: Nielsen 4-23

Field: Wattenberg

County: Weld State: Colorado

Platform Express

Triple Combo

County: Weld
Field: Wattenberg
Location: NWNW
Well: Nielsen 4-23
Company: Peterson Energy Operating INC

Location:	NWNW SHL: 662' FNL X 662' FWL	Elev.	K.B.	4987.00 ft
			G.L.	4974.00 ft
			D.F.	4986.00 ft

Permanent Datum:	Ground Level	Elev.:	4974.00 f
Log Measured From:	Kelly Bushing	13.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

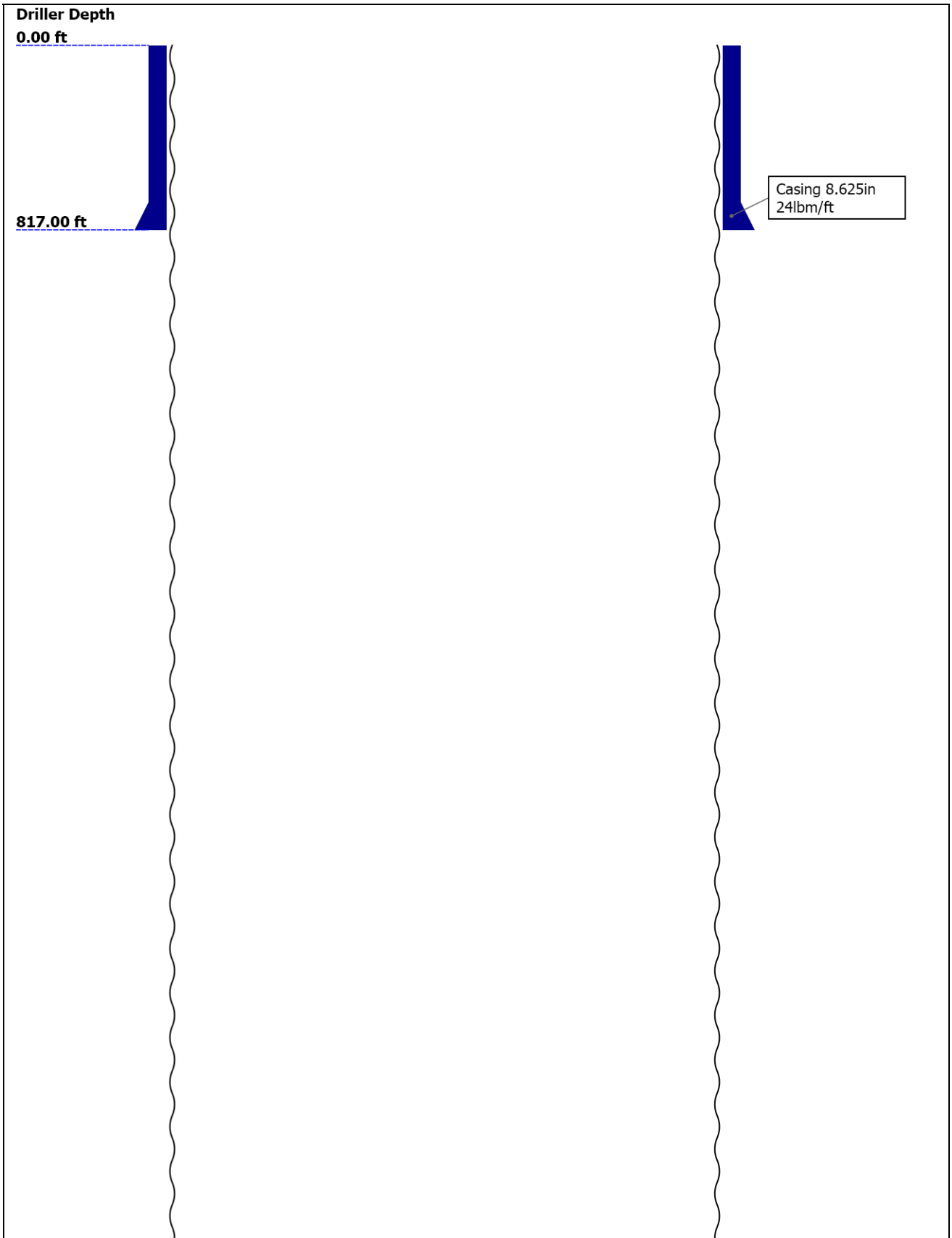
API Serial No.	Section:	Township:	Range:
05-123-34431-0000	23	1N	62W

Logging Date			17-Apr-2013			
Run Number			1			
Depth Driller			8500.00 ft			
Schlumberger Depth			8450.00 ft			
Bottom Log Interval			8442.00 ft			
Top Log Interval			815.00 ft			
Casing Driller Size @ Depth			8.625 in @ 817.00 ft			
Casing Schlumberger			815 ft			
Bit Size			7.875 in			
Type Fluid In Hole			Water			
MUD	Density	Viscosity	8.7 lbm/gal	54 s		
	Fluid Loss	PH	6.4 cm3	8		
	Source of Sample		Active Tank			
RM @ Meas Temp			1.24 ohm.m @ 46.2 degF			
RMF @ Meas Temp			0.93 ohm.m @ 46.2 degF			
RMC @ Meas Temp			1.86 ohm.m @ 46.2 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.33 @ 190	0.25 @ 190		
Max Recorded Temperatures			190 degF			
Circulation Stopped	Time		16-Apr-2013	18:00:00		
Logger on Bottom	Time		17-Apr-2013	03:00:00		
Unit Number	Location:		3022	Fort Morgan, CO		
Recorded By			Daniil Kholin/ Maxwell Pace			
Witnessed By			Bob Garvin/Louise Kiteley			

Disclaimer

Contents

Well Sketch



Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	8500					
Bottom Logger (ft)	8450					
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)	817					
Bottom Logger (ft)	815					

Remarks and Equipment Summary

1: Toolstring

Equip name	Length	MP name	Offset
LEH-QT	**64.21**		
LEH-QT			
DTC-H	**61.29**		
ECH-KC		**CTEM**	**60.39**
DTC-H		**HV**	**0.00**
		ToolStatus	**58.29**
		TelStatus	**58.29**
HGNS-H:4865	**58.29**	**Temperature**	**58.26**
HGNH:4817		**GR**	**57.55**
NPV-N			
NSR-F:2554			
HACCZ-H:6991			
HGNS-H:4865			
HMCA-H			
		CNL Porosity	**51.21**
		HGNS	**48.88**
		HMCA	**48.88**
		Accelerometer	**0.00**
HDRS-H:3863	**48.88**		
ECH-MEB:2898			
HRCC-H:3828			
HRMS-H:3863			

1: Remarks

Toolstring run as per toolsketch.

MATR=Sandstone, 2.65

Crew: Derrick Hunter, Jay Musgrave

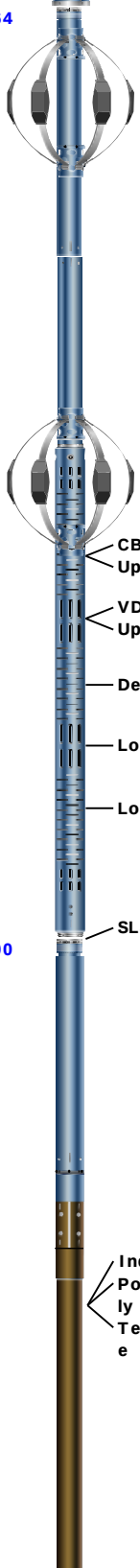
Bowspring wasn't used as per client request due to hole conditions.

AIT run slick as per client request due to hole conditions.

GSR-J:5471
Backscatter
HRGD-H:3870
Short Spacing
GPV-Q
Long Spacing:28
620

HRCC 44.88
MCFL 39.45
Caliper 38.96
TLD Density 38.57

DSLT-H:8151 **36.64**
ECH-KH:8652
DSLC-H:8151
SLS-E:257



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-H:216 **16.00**
AHIS:216
AHRM:216

Induction 7.91
Power Supply 7.91
Temperature 7.91

Lengths are in ft
Maximum Outer Diameter = 4.750 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	1		
Conveyance Type	Wireline		
Log Sequence	Sunsequent run in hole.		
Rig Type	Land		
Depth Remark Parameters	**1**		
Depth Remark 1	All Schlumberger Depth Control		
Depth Remark 2	IDW used as Primary Depth		
Depth Remark 3	Z-chart used as Secondary Depth.		
Depth Measuring Device	**1**		
Type	IDW-JA		
Serial Number	6868A		
Calibration Date	23-OCT-2013		
Calibrator Serial Number	1153		
Calibration Cable Type	7-46P-XS		
Wheel Correction 1	-7		
Wheel Correction 2	-5		
Tension Device	**1**		
Type	CMTD-B/A		
Serial Number	1919		
Calibration Date	31-MAR-2013		
Calibrator Serial Number	78153A		
Calibration Points	10		
Calibration RMS	12		
Calibration Peak Error	22		
Logging Cable	**1**		
Type	7-39P-LXS		
Logging Cable Length (ft)	17100.00		

1

5" Triple Combo

Integration Summary

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

Software Version

Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20121221-3.1.9755.1574

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	
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	
AHIS	Array Induction Sonde - H	3.1.9755.1574	
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1	Main[3]:Up	Up	636.39 ft	8467.23 ft	17-Apr-2013 3:16:31 AM	17-Apr-2013 5:12:36 AM	0.00 ft	false
All depths are referenced to toolstring zero								

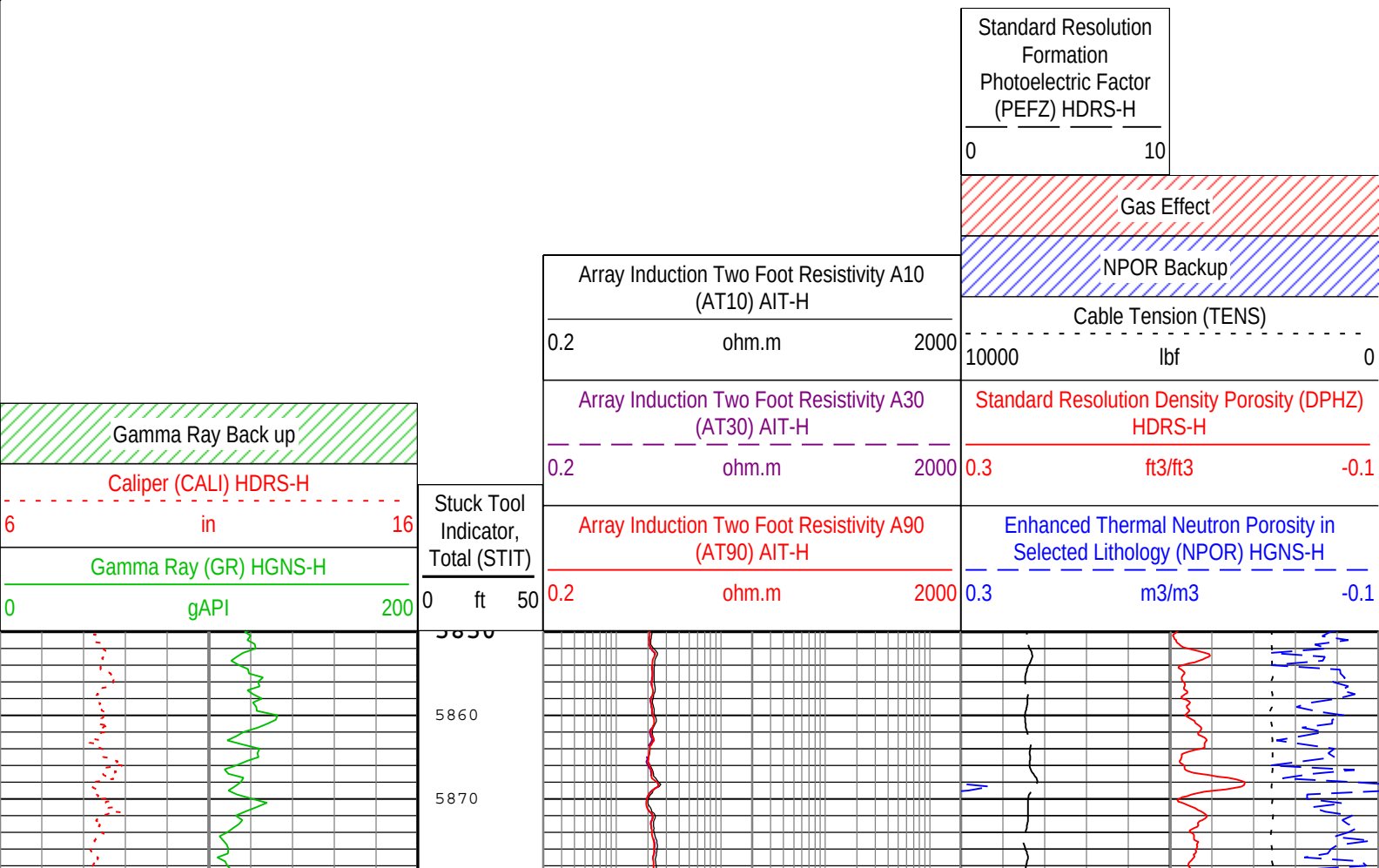
Log

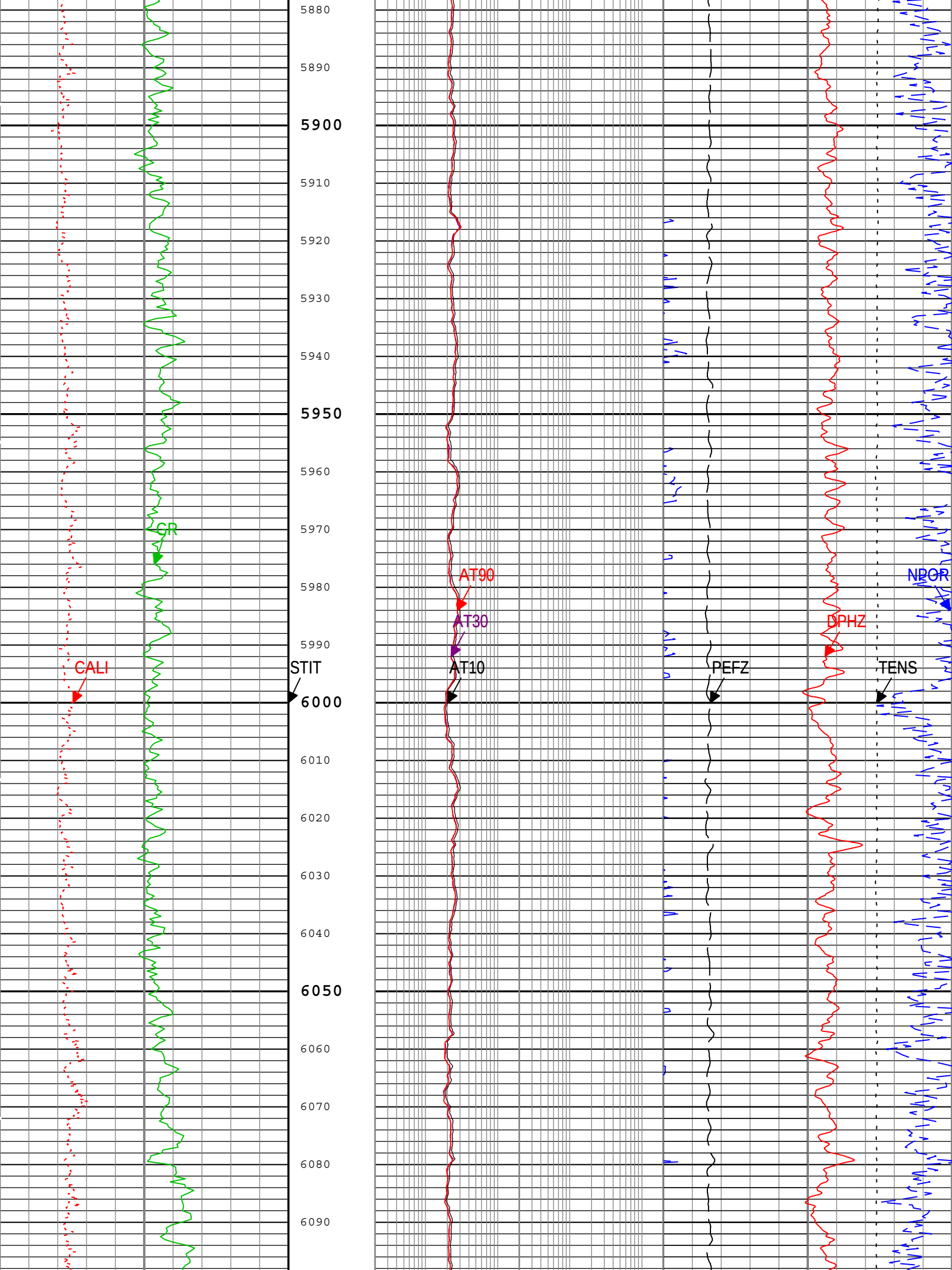
1: Main[3]:Up

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 18-Apr-2013 13:46:01

Channel	Source	Sampling
AT10	AIT-H:AHIS:AHIS	3in
AT30	AIT-H:AHIS:AHIS	3in
AT90	AIT-H:AHIS:AHIS	3in
CALI	HDRS-H:HRCC-H:HRCC-H	1in
DPHZ	HDRS-H:HRMS-H:HRGD-H	2in
GR	HGNS-H:HGNS-H:HGNS-H	6in
NPOR	HGNS-H:HGNS-H:HGNS-H	6in
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)

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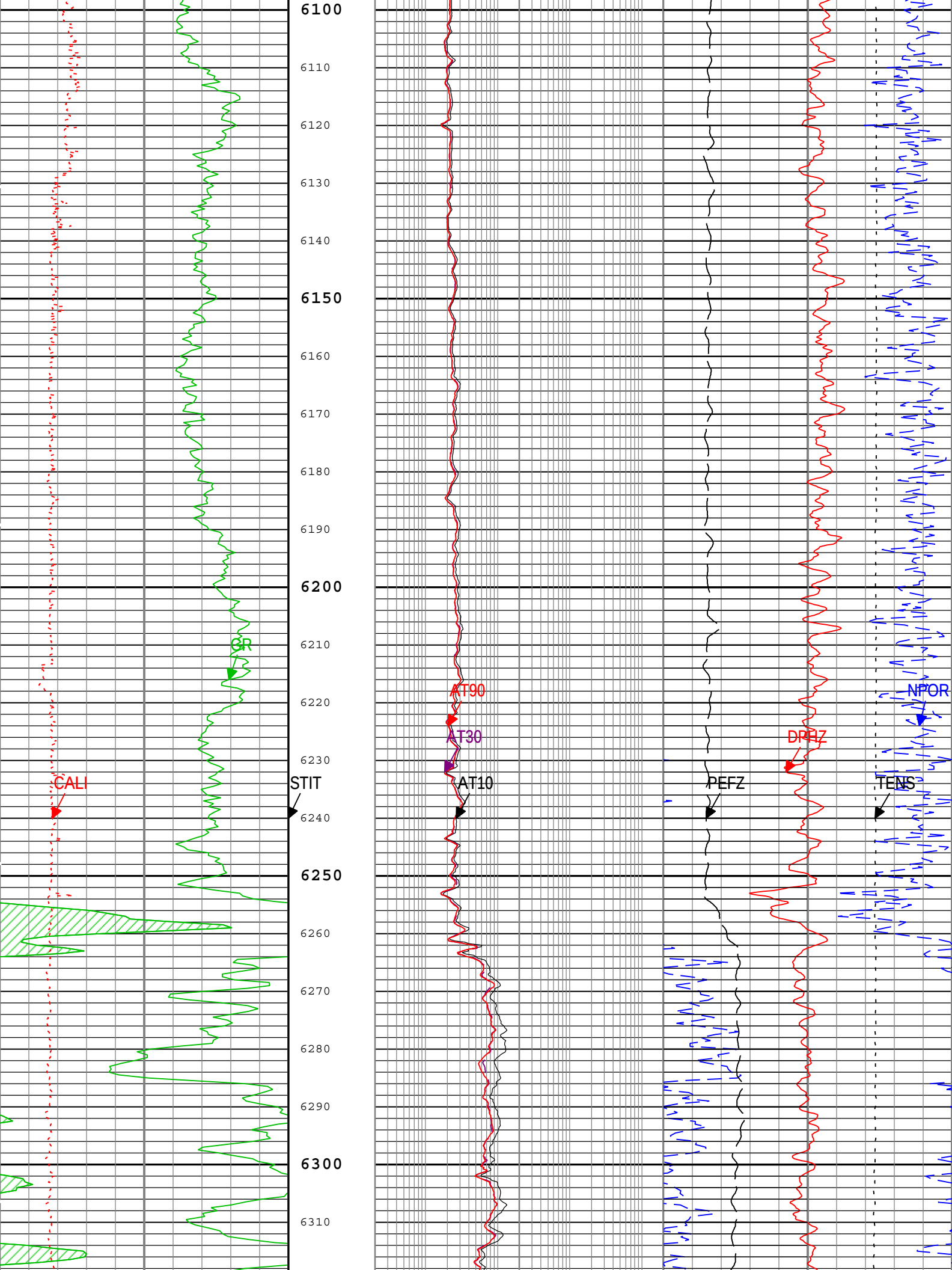
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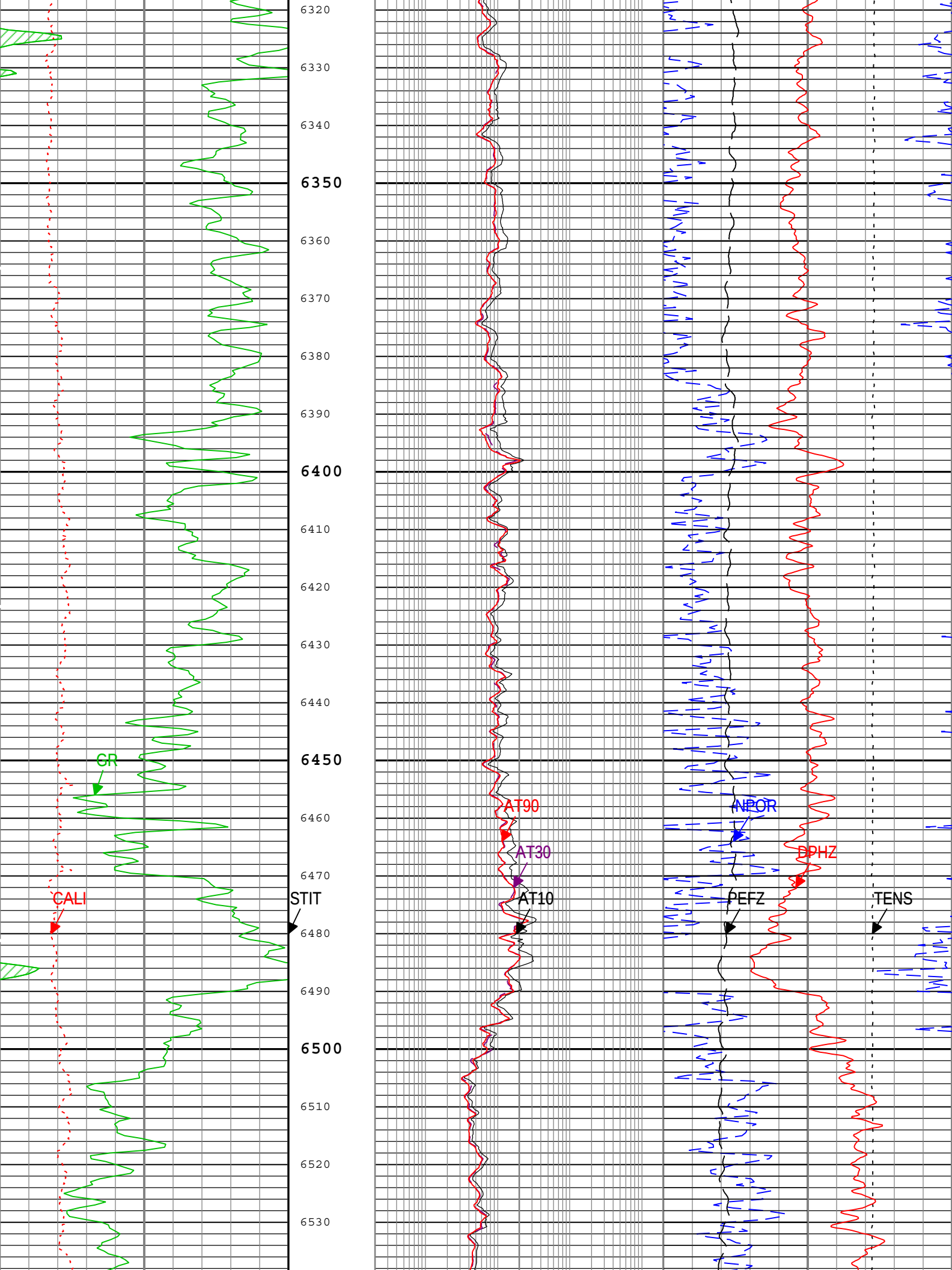
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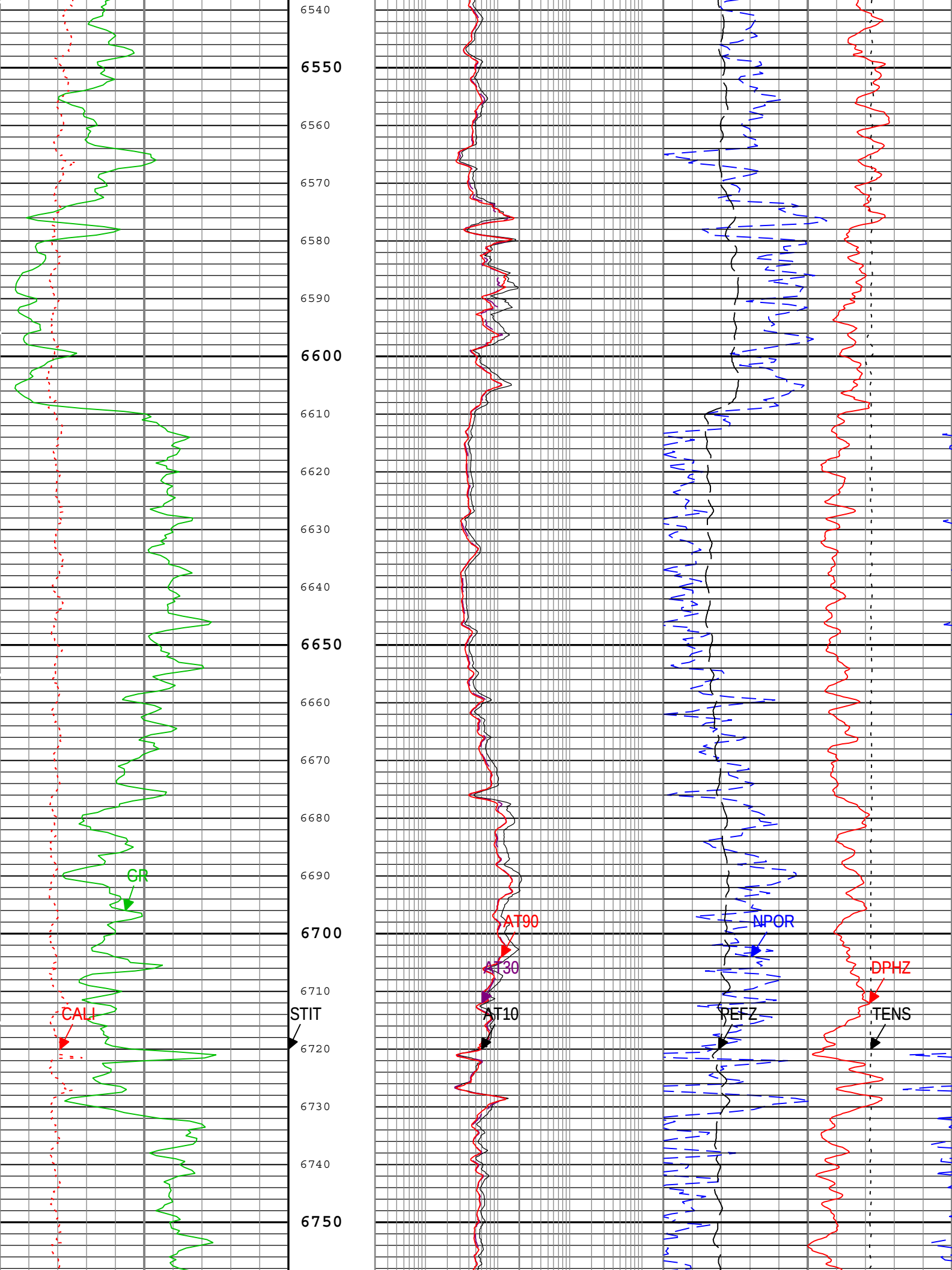
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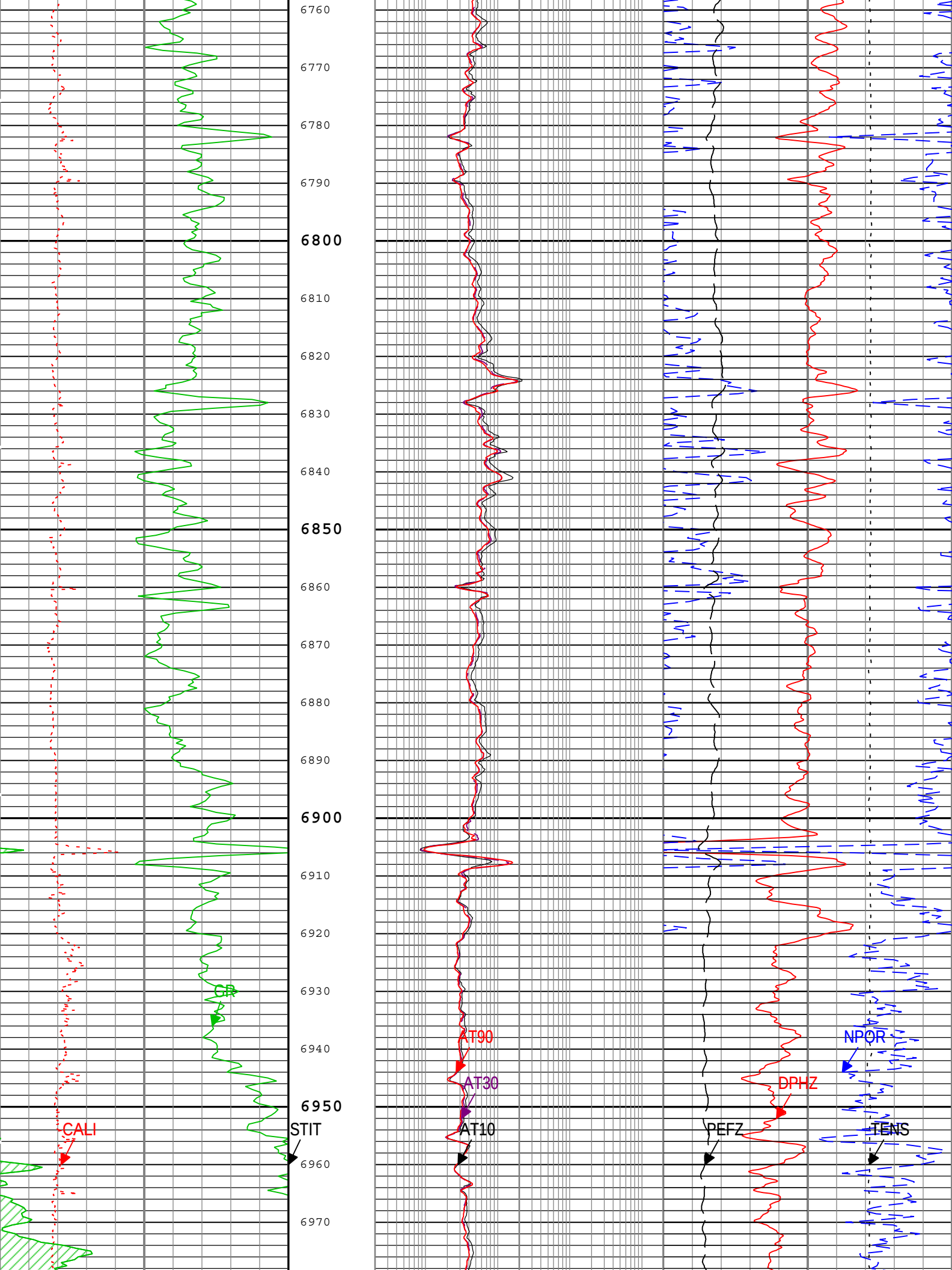
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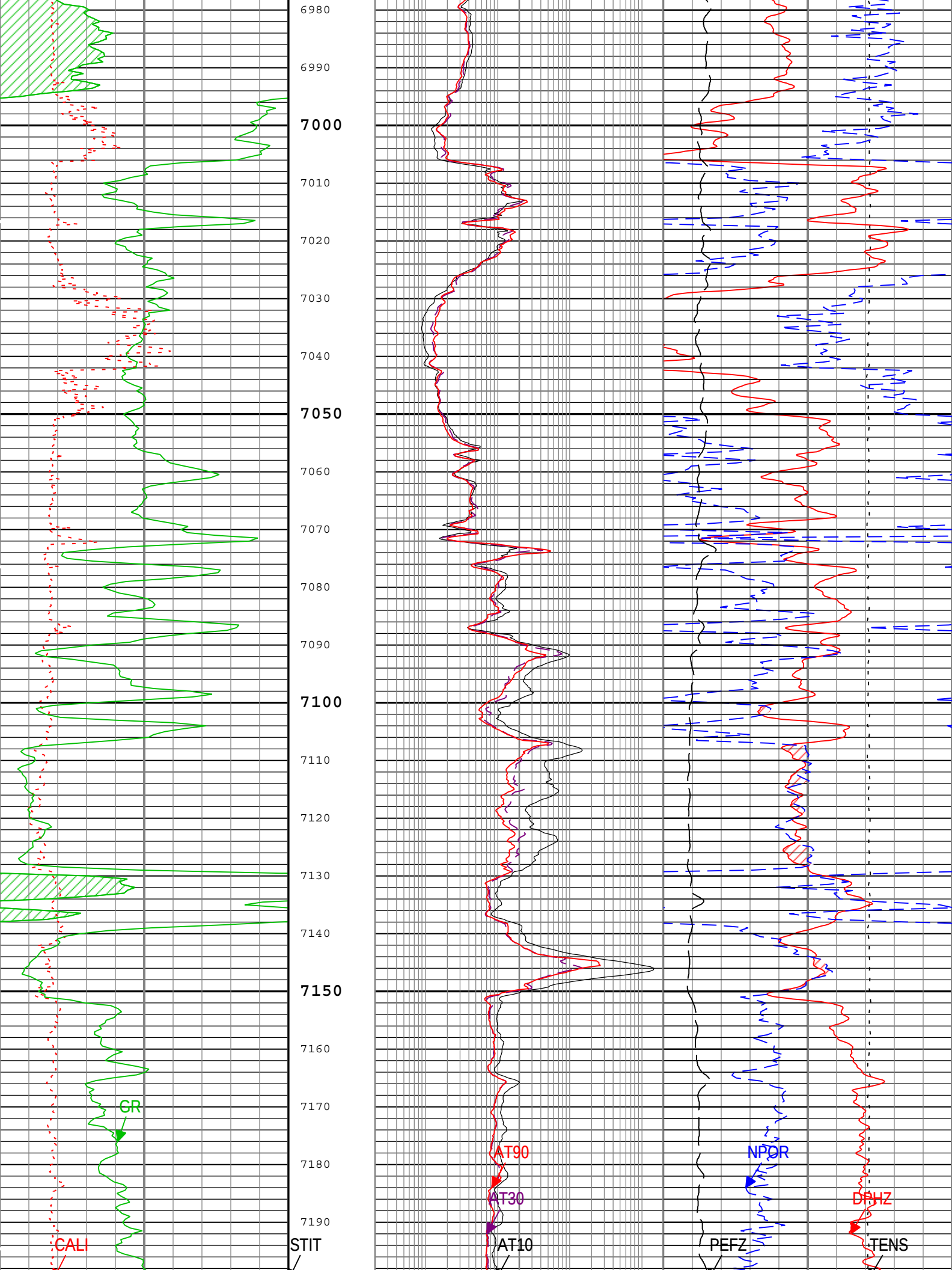
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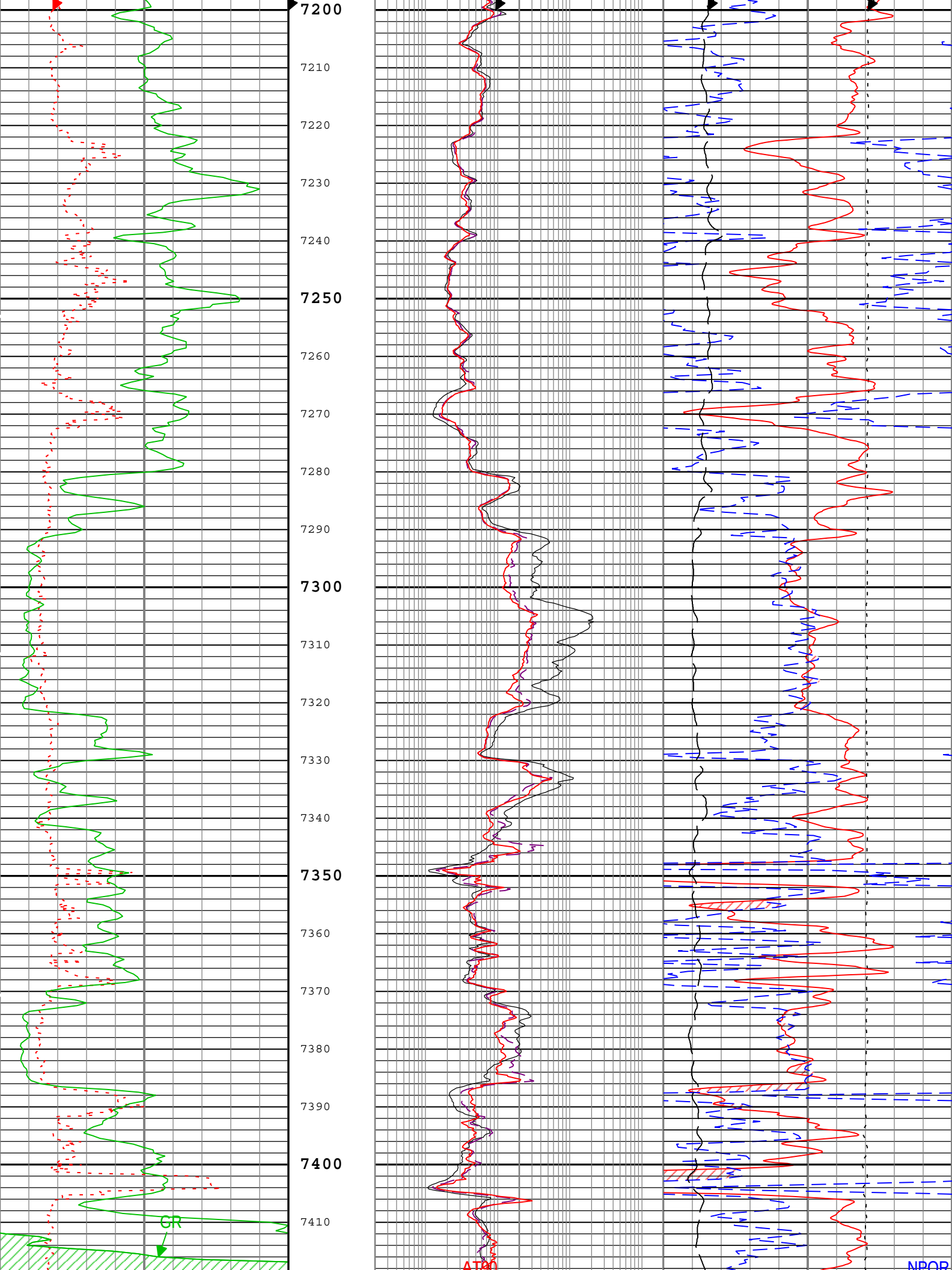
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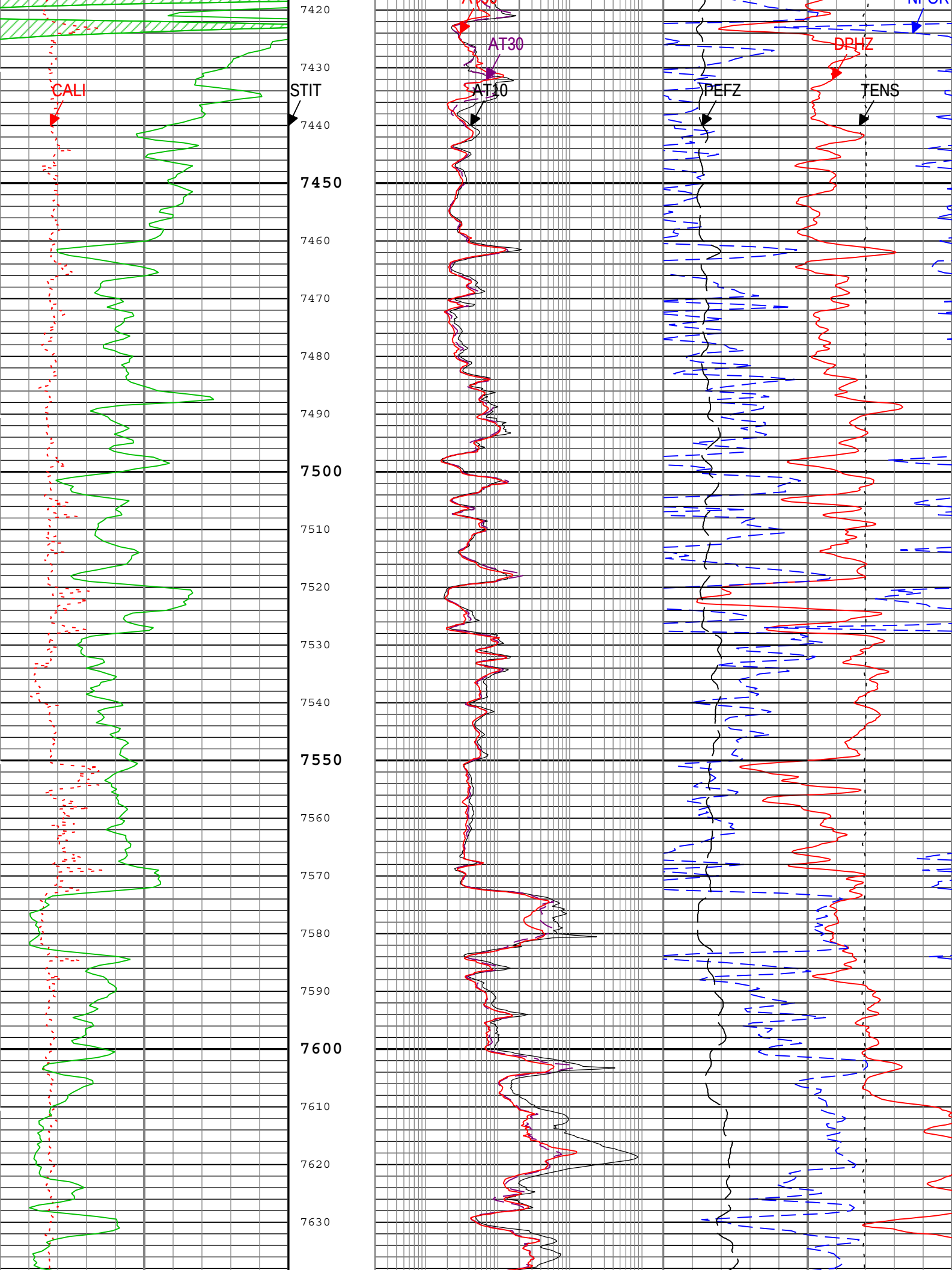
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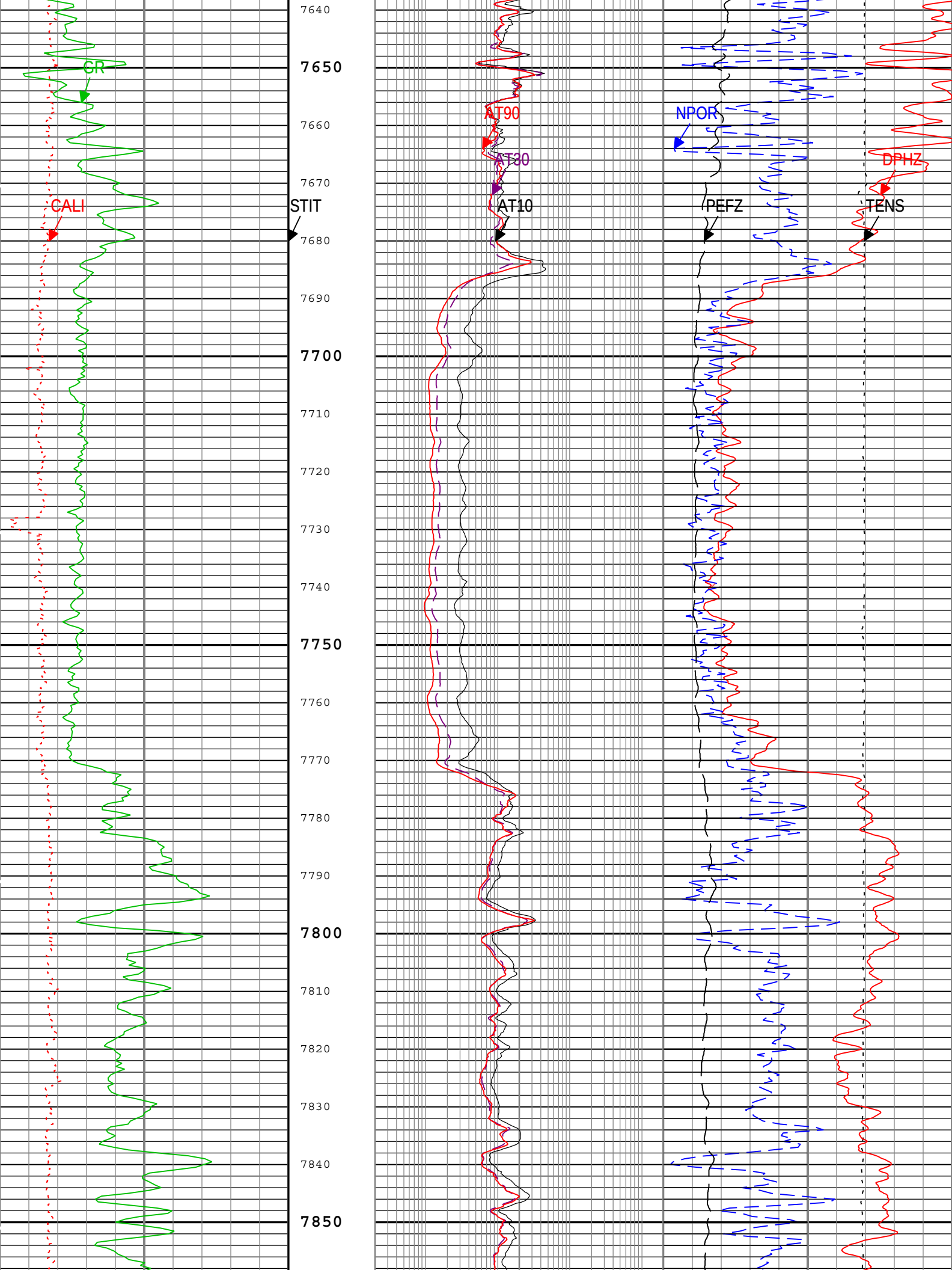
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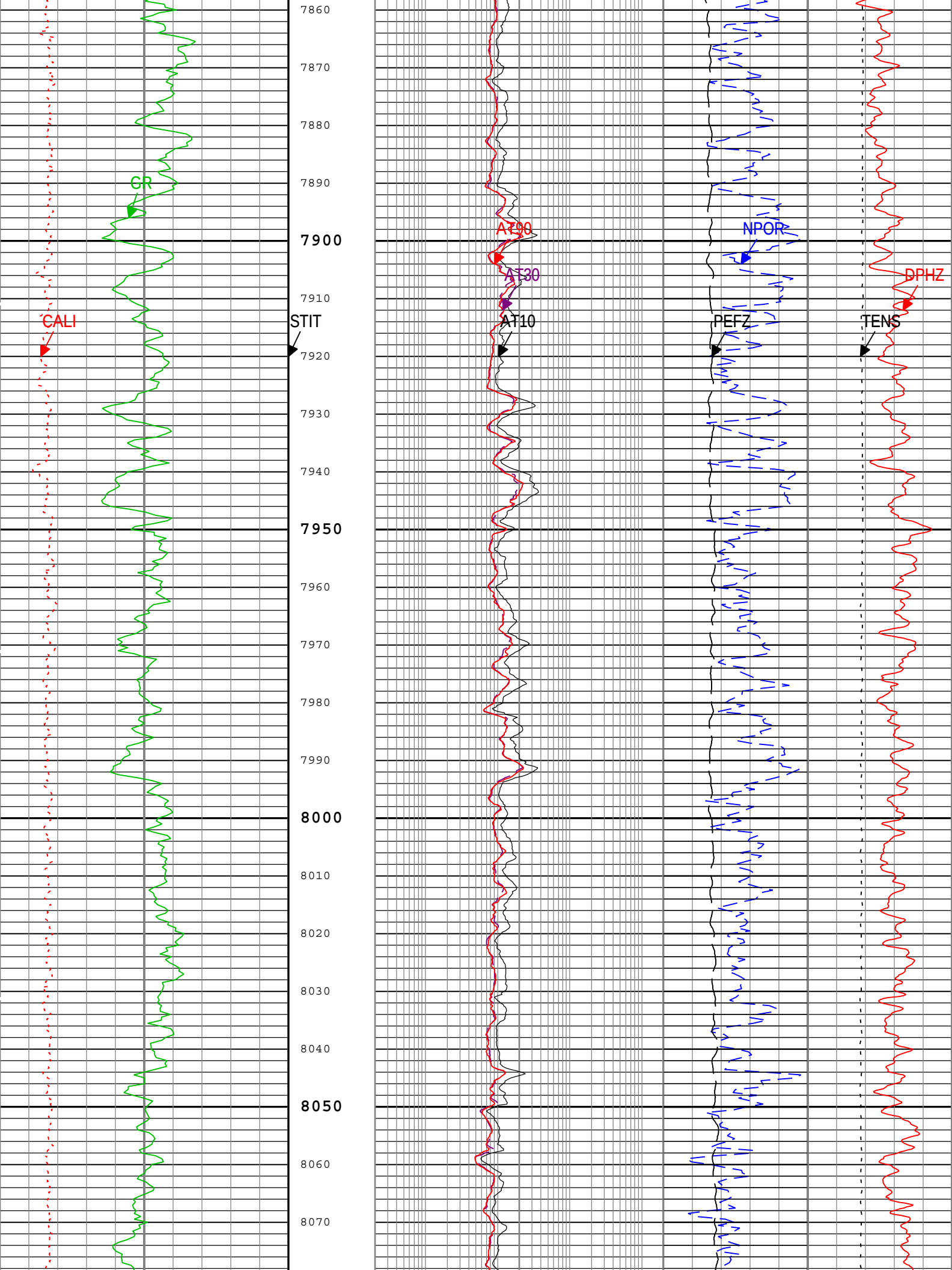
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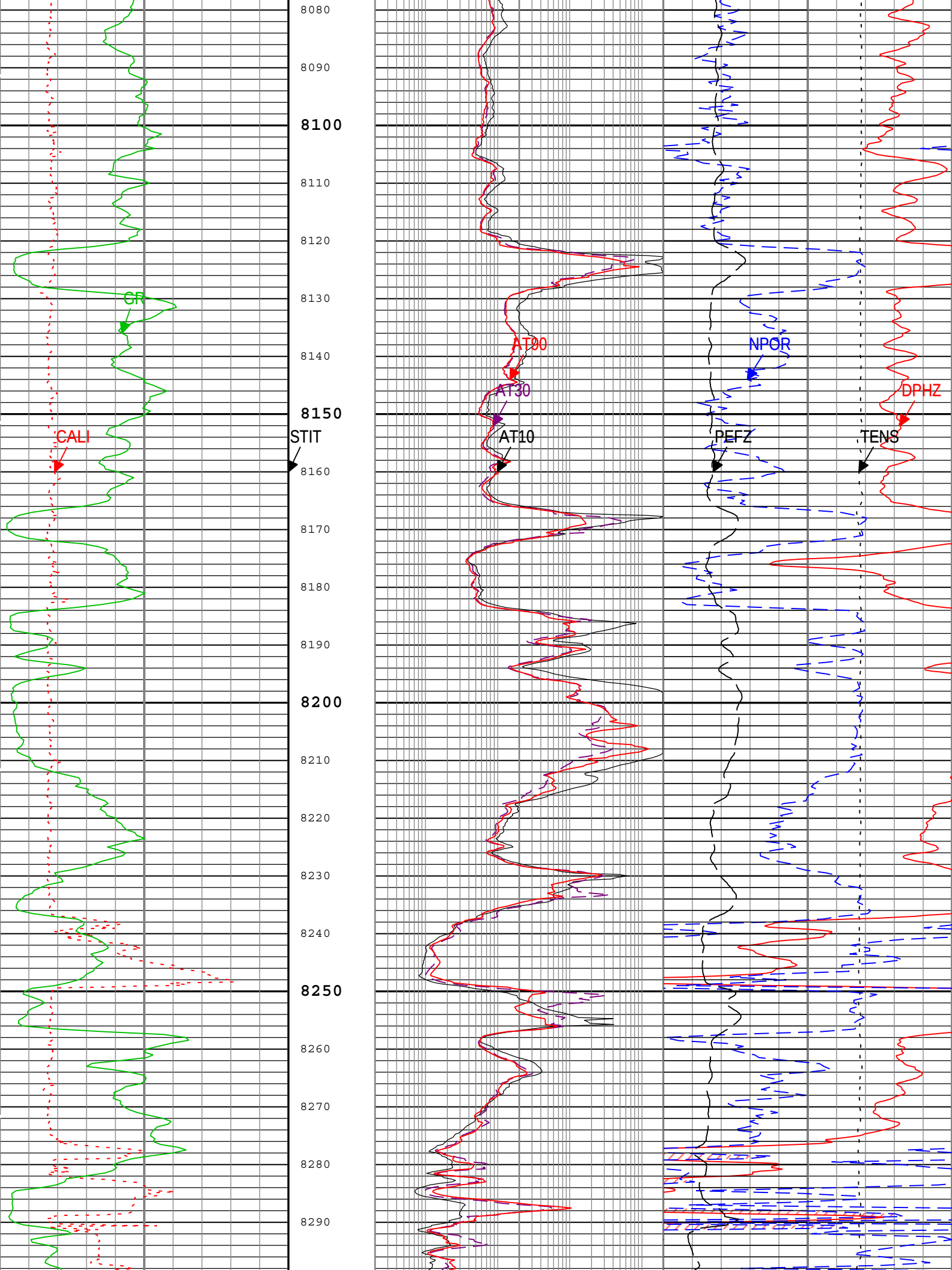
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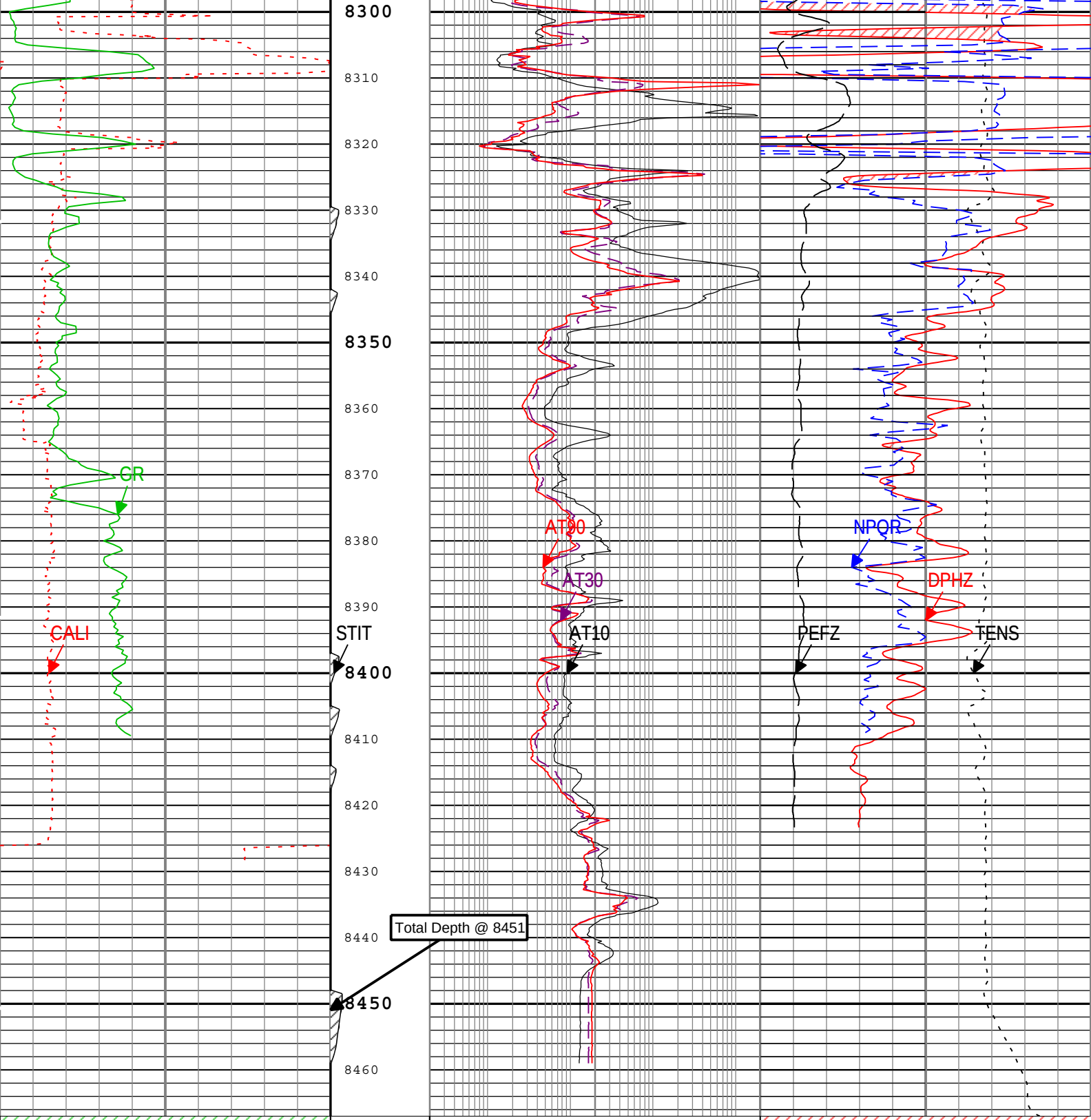


Gamma Ray Back up

Caliper (CALI) HDRS-H

6 in 16

Gamma Ray (GR) HGNS-H

0 gAPI 200

Stuck Tool Indicator, Total (STIT)

0 ft 50

Array Induction Two Foot Resistivity A10 (AT10) AIT-H

0.2 ohm.m 2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-H

0.2 ohm.m 2000

Array Induction Two Foot Resistivity A90 (AT90) AIT-H

0.2 ohm.m 2000

Gas Effect

NPOR Backup

Cable Tension (TENS)

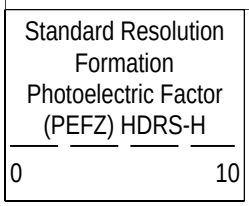
10000 lbf 0

Standard Resolution Density Porosity (DPHZ) HDRS-H

0.3 ft3/ft3 -0.1

Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H

0.3 m3/m3 -0.1



TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 18-Apr-2013 13:46:01

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
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	6731.26	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0	in
CBLO	Casing Bottom (Logger)	WLSESSION	815	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.7	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	AMF	
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	SANDSTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.65	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	46.2	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.93	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
TD	Total Measured Depth	Borehole	8500	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	3600	ft/h

Calibration Report

AIT-H (Array Induction Tool - H) Calibration - Run 1

Primary Equipment :

Array Induction Sonde - H	AHIS	216

Auxiliary Equipment :

AITH Rm/SP Bottom Nose	AHRM	216

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 12:07:47 14-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.012	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.562	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.012	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	1.066	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.011	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	-0.134	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.012	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	0.159	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.995	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.357	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.989	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.252	3.000
Test Loop Gain - 6		Master	1.000	0.950	0.990	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	1.211	3.000
Test Loop Gain - 7		Master	1.000	0.950	0.982	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.571	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 12:07:47 14-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-89.891	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-191.401	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	166.036	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	2.040	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.491	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-171.291	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	59.914	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	-46.880	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.904	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	-18.471	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	14.161	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-16.687	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	10.468	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	-3.050	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-3.198	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	-0.651	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 12:07:47 14-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	0.821	1.200
Fine Gain		Master	1.000	0.800	0.828	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 12:07:47 14-Mar-2013 Before (Measured): 14:57:46 16-Apr-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.629	0.847
		Before	-----	0.363	0.630	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	51.962	131.000
		Before	-----	11.000	52.311	131.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.349	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.288	1.778
		Before	-----	0.762	1.291	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.003	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	50.938	130.000
		Before	-----	10.000	51.288	130.000
		After	-----	-----	-----	-----

		Before-Master	-----	-----	0.350	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.639	0.872
		Before	-----	0.374	0.640	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	47.178	126.000
		Before	-----	6.000	47.536	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.358	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.722	0.986
		Before	-----	0.422	0.723	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	46.388	125.000
		Before	-----	5.000	46.748	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.360	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.802	1.357	1.872
		Before	-----	0.802	1.361	1.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.004	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	40.026	119.000
		Before	-----	-1.000	40.397	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.371	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.970	2.737
		Before	-----	1.173	1.975	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.005	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	38.130	117.000
		Before	-----	-3.000	38.508	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.378	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.969	2.737
		Before	-----	1.173	1.975	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.006	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	38.121	117.000
		Before	-----	-3.000	38.499	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.378	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.849	1.409	1.981
		Before	-----	0.849	1.413	1.981
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.004	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	-7.000	34.383	113.000
		Before	-----	-7.000	34.834	113.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.451	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master		-50.000	-0.037	50.000
		Before		-50.000	-0.055	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.018	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master		941.000	993.677	1040.000

		Before		941.000	993.739	1040.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.062	-----	
		After-Before	-----	-----	-----	-----	
Temperature Zero	V	Master		-0.050	0.000	0.050	
		Before		-0.050	0.000	0.050	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.000	-----	
		After-Before	-----	-----	-----	-----	
Temperature Plus	V	Master		0.870	0.922	0.960	
		Before		0.870	0.922	0.960	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.000	-----	
		After-Before	-----	-----	-----	-----	

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run 1

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3828
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	3870

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter	
HRDD Long Spacing Detector	Long Spacing	28620
HRDD Short Spacing Detector	Short Spacing	
Cesium 137 Gamma-Ray Logging Source	GSR-J	5471
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3828
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	3863

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): 14:59:54 16-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Small Ring	in	Before	8.00	6.00	7.83	10.00
Large Ring	in	Before	12.00	9.00	12.29	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 13:54:40 27-Mar-2013

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	1.685	1.696
Pe Aluminum		Master	2.570	2.470	2.515	2.670
Pe Magnesium		Master	2.650	2.550	2.648	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 13:54:40 27-Mar-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.4991	0.6000
BS Max Deviation	%	Master	0	-1.6000	1.0083	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.2197	1.0000
SS Max Deviation	%	Master	0	-2.5000	0.4989	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.6393	1.5000
LS Max Deviation	%	Master	0	-3.5000	2.5356	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 13:54:40 27-Mar-2013 Before (Measured): 15:03:27 16-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7415	
		Before	0.7415	0.7044	0.7381	0.7785
		Before-Master	-----	-----	-0.0034	-----
BS Window Sum	1/s	Master	1		24640	
		Before	24640	23408	24259	25872
		Before-Master			-381	

Before-Master		-----	-----	-381	-----	
SS Window Ratio		Master	1.0000		0.4903	
		Before	0.4903	0.4658	0.4918	0.5148
		Before-Master	-----	-----	0.0015	-----
SS Window Sum	1/s	Master	1		13981	
		Before	13981	13282	13945	14680
		Before-Master	-----	-----	-36	-----
LS Window Ratio		Master	1.0000		0.3051	
		Before	0.3051	0.2899	0.3024	0.3204
		Before-Master	-----	-----	-0.0027	-----
LS Window Sum	1/s	Master	1		1257	
		Before	1257	1194	1246	1320
		Before-Master	-----	-----	-11	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 13:54:40 27-Mar-2013 Before (Measured): 15:03:27 16-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1655	2400
		Before		1000	1650	2400
		Before-Master	-----	-100	-5	100
SS PM High Voltage	V	Master		1000	1722	2400
		Before		1000	1714	2400
		Before-Master	-----	-100	-8	100
LS PM High Voltage	V	Master		1000	1328	2400
		Before		1000	1331	2400
		Before-Master	-----	-100	3	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 13:54:40 27-Mar-2013 Before (Measured): 15:03:27 16-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	11.43	25.00
		Before		5.00	11.58	25.00
		Before-Master	-----	-1.00	0.15	1.00
SS Crystal Resolution	%	Master		5.00	10.44	20.00
		Before		5.00	10.35	20.00
		Before-Master	-----	-1.00	-0.09	1.00
LS Crystal Resolution	%	Master		5.00	8.18	20.00
		Before		5.00	8.27	20.00
		Before-Master	-----	-1.00	0.09	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 14:59:32 16-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3910	4185
Deep Resistivity	ohm.m	Before	3830	3524	3858	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3869	4136

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run 1

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC	HGNS-H	4865

Auxiliary Equipment :

HGNS Accelerometer, 150 degC	HACCZ-H	6991
AmBe Neutron Logging Source	NSR-F	2554

Calibration Parameter :

Water Temperature	
Housing Size	
JIG-BKG (Jig minus background reference)	165

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 02:16:21 17-Apr-2013

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-May-2007

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	-----	-----	-4298.000	-----
Accelerometer Coefficients - 1		Master	-----	-----	50.180	-----
Accelerometer Coefficients - 2		Master	-----	-----	-0.002	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.754	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	300.500	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.994	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 22:07:24 05-Feb-2013 Before (Measured): 14:56:48 16-Apr-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	28.3	40.0
		Before	0	5.0	27.3	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.2	-1.0	4.2
		After-Before	-----	-----	-----	-----
Far Zero Measurement	1/s	Master	0	5.0	28.1	40.0
		Before	0	5.0	28.4	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.2	0.3	4.2
		After-Before	-----	-----	-----	-----
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5629.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2309.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5734.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2366.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 15:00:49 16-Apr-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	30.0	0	76.3	120.0
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	185.4	157.1	175.4	206.3
		After			NOT DONE	
		After-Before	-----	-----	-----	-----
GR Calibration Gain		Before	0.89	0.80	0.94	1.05
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

Well:	Nielsen 4-23
Field:	Wattenberg
County:	Weld
State:	Colorado

Platform Express

Triple Combo