Schlumberger

Company: Nighthawk Production LLC

Well: Silverton 16-10

Field: Jolly Ranch

County: Lincoln State: Colorado

County: Lincoln
Field: Jolly Ranch
Location: Lat/Long : 39.539/-103.42
Well: Silverton 16-10
Company: Nighthawk Production LLC

Platform Express

Triple Combo

Location:				
Lat/Long : 39.539/-103.42 SHL : 1183' FSL X 922' FEL SESE	Elev.	K.B.	5242.00 ft
		G.L.	5227.00 ft
		D.F.	5241.00 ft

Permanent Datum:	Ground Level	Elev.:	5227.00 f
Log Measured From:	Kelly Bushing	15.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
05-073-06528-00	10	6S	54W

Logging Date			12-Jun-2013			
Run Number			Run 1			
Depth Driller			8450.00 ft			
Schlumberger Depth			8460.00 ft			
Bottom Log Interval			8460.00 ft			
Top Log Interval			345.00 ft			
Casing Driller Size @ Depth			8.625 in @ 334.00 ft			
Casing Schlumberger			345 ft			
Bit Size			7.875 in			
Type Fluid In Hole			Chemical Gel			
MUD	Density	Viscosity	9 lbm/gal	68 s		
	Fluid Loss	PH		7.3		
	Source of Sample		Flowline			
RM @ Meas Temp			0.58 ohm.m @ 80 degF			
RMF @ Meas Temp			0.44 ohm.m @ 80 degF			
RMC @ Meas Temp			0.72 ohm.m @ 80 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.25 @ 196	0.19 @ 196		
Max Recorded Temperatures			196 degF	196	196	
Circulation Stopped	Time		12-Jun-2013	13:30:00		
Logger on Bottom	Time		13-Jun-2013	21:40:23		
Unit Number	Location:		2135	Fort Morgan		
Recorded By			Arvin Shi			
Witnessed By			Anders Elgerd / Jim Wier			

Disclaimer

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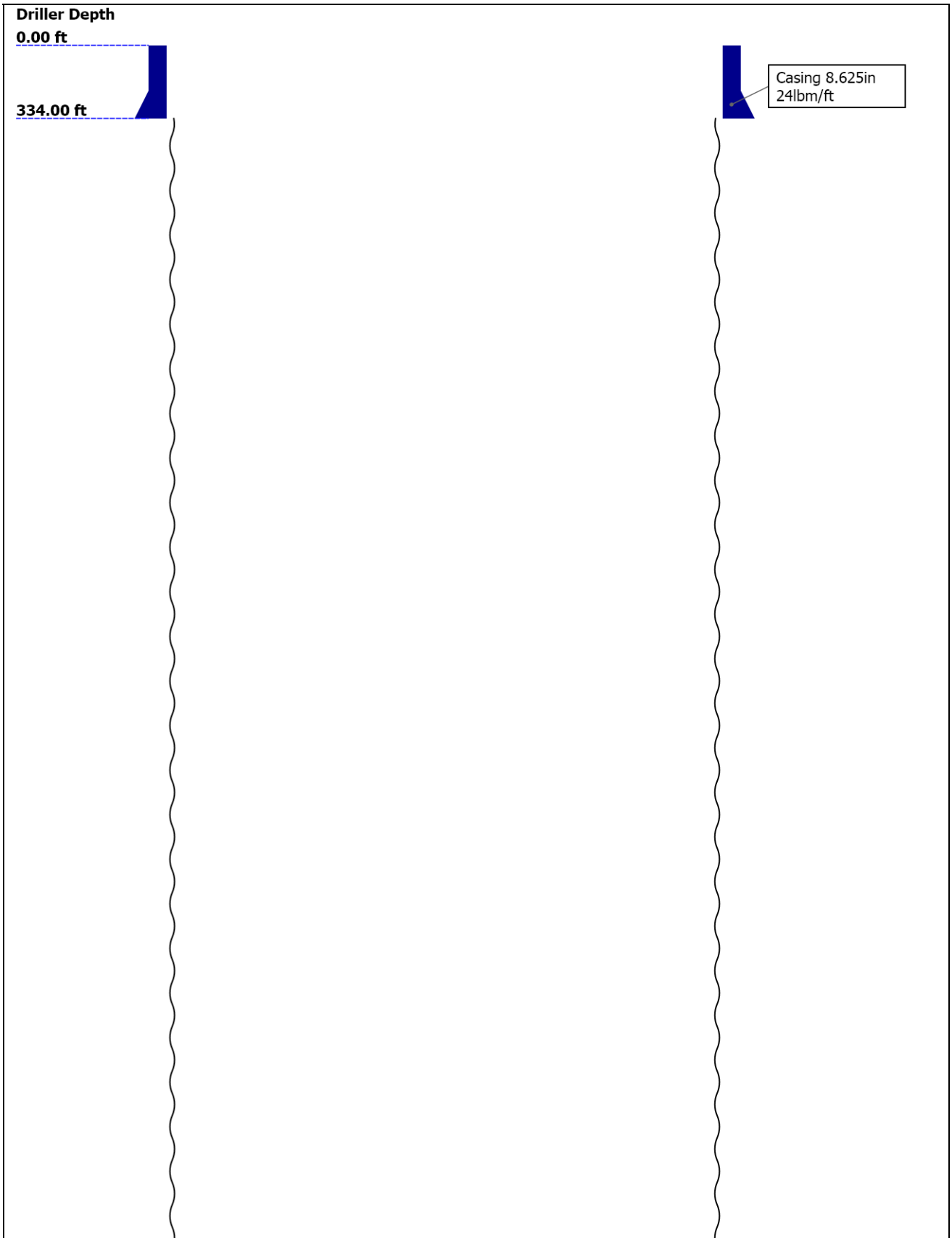
Well Sketch



Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	334					
Top Logger (ft)	345					
Bottom Driller (ft)	8450					
Bottom Logger (ft)	8460					
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)	334					
Bottom Logger (ft)	345					

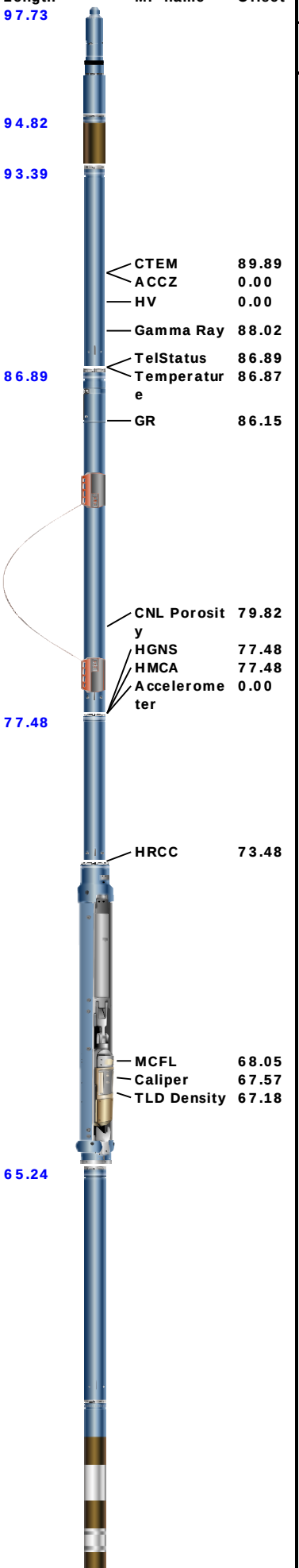
Operational Run Summary

Parameter (unit)	Run 1					
Date Log Started	12-Jun-2013					
Time Log Started	22:42:13					
Date Log Finished	14-Jun-2013					
Time Log Finished	00:03:34					
Top Log Interval (ft)	345.00					
Bottom Log Interval (ft)	8460.00					
Total Depth (ft)	8460.00					
Max Hole Deviation (deg)	NaN					
Azimuth of Max Deviation (deg)	NaN					
Bit Size (in)	7.875					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan					
Recorded By	Arvin Shi					
Witnessed By	Anders Elgerd / Jim Wier					
Service Order Number	C6VJ-00060					

Remarks and Equipment Summary

Run 1: Toolstring

Equip name	Length	MP name	Offset
LEH-QT	**97.73**		
LEH-QT			
AH-369	**94.82**		
EDTC-B:8593	**93.39**		
EDTH-B:8625			
EDTG-B:77756			
EDTC-B:8593			
		CTEM	**89.89**
		ACCZ	**0.00**
		HV	**0.00**
		Gamma Ray	**88.02**
		TelStatus	**86.89**
HGNS-H:4865	**86.89**	**Temperature**	**86.87**
HGNH:4817			
NPV-N			
NSR-F:2554			
HMCA-H			
HACCZ-H:6991			
HGNS-H:4865			
		GR	**86.15**
		CNL Porosity	**79.82**
		HGNS	**77.48**
		HMCA	**77.48**
		Accelerometer	**0.00**
HDRS-H:3863	**77.48**		
ECH-MEB:2898			
HRCC-H:3828			
HRMS-H:3863			
Backscatter			
Short Spacing			
GPV-Q			
GSR-J:5471			
Long Spacing:28620			
HRGD-H:3870			
		HRCC	**73.48**
		MCFL	**68.05**
		Caliper	**67.57**
		TLD Density	**67.18**
HRLT-B	**65.24**		
HRUH-B			
HRUC-B			
HRLS-B			
HRLH-B			
HRLC-B			
AH-270			



Run 1: Remarks

All Schlumberger depth measurement policies followed

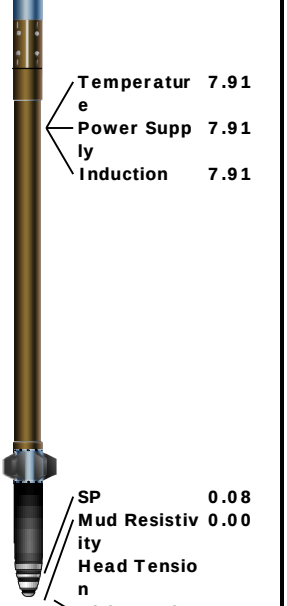
IDW used as primary depth measurement and Z-Chart as secondary depth measurement

AH-184[2]:28 41.04
29

MAST-B:8506 39.04
ECH-SF:8081
MAPC-BA:8081
MAMS-CA:8506

AH-184[1]:75 18.00
7

AIT-H:398 16.00
AHIS:398
AHRM



Lengths are in ft
Maximum Outer Diameter = 9.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	Run 1		
Conveyance Type	Wireline		
Rig Type	Land		
Depth Measuring Device	**Run 1**		
Type	IDW-B		
Wheel Correction 1	-7		
Wheel Correction 2	-5		
Tension Device	**Run 1**		
Type	CMTD-B/A		
Calibration Date	17-May-2013		
Calibrator Serial Number	78135		
Calibration Points	10		
Calibration RMS	13		
Calibration Peak Error	24		
Logging Cable	**Run 1**		
Type	7-46NT-XS		
Logging Cable Length (ft)	24000.00		

Run 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-20130325-3.1.9755.1799

Computation	Description	Version
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections	3.1.9755.0
DepthCorrection	DepthCorrection	3.1.9755.1799

Tool Elements	Description	Software Version	Firmware Version

HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0
AHIS	Array Induction Sonde - H	3.1.9755.1799	
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
Run 1	Log[7]:Up	Up	105.88 ft	8480.06 ft	13-Jun-2013 9:41:24 PM	14-Jun-2013 12:02:54 AM	0.00 ft	
All depths are referenced to toolstring zero								

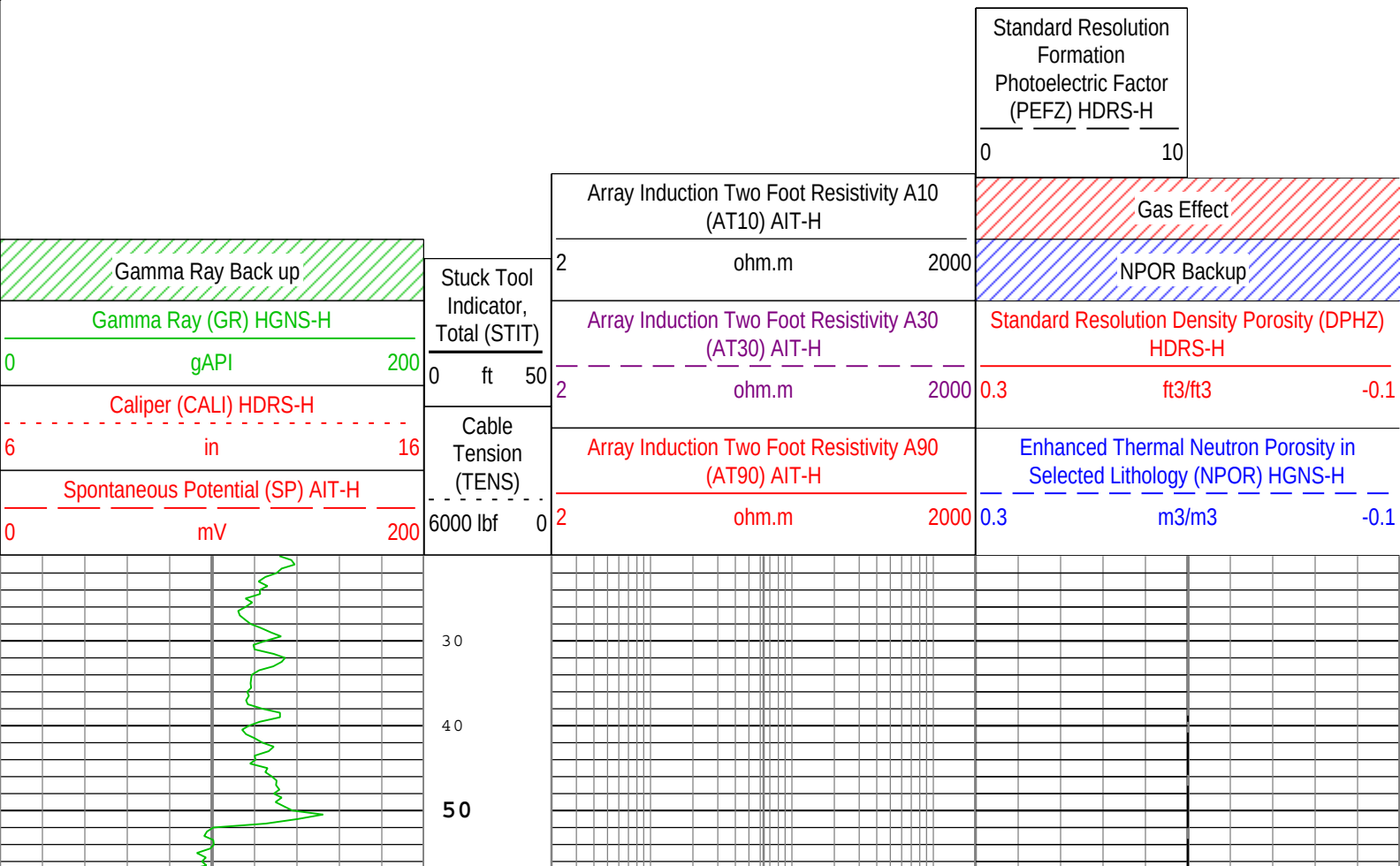
Log

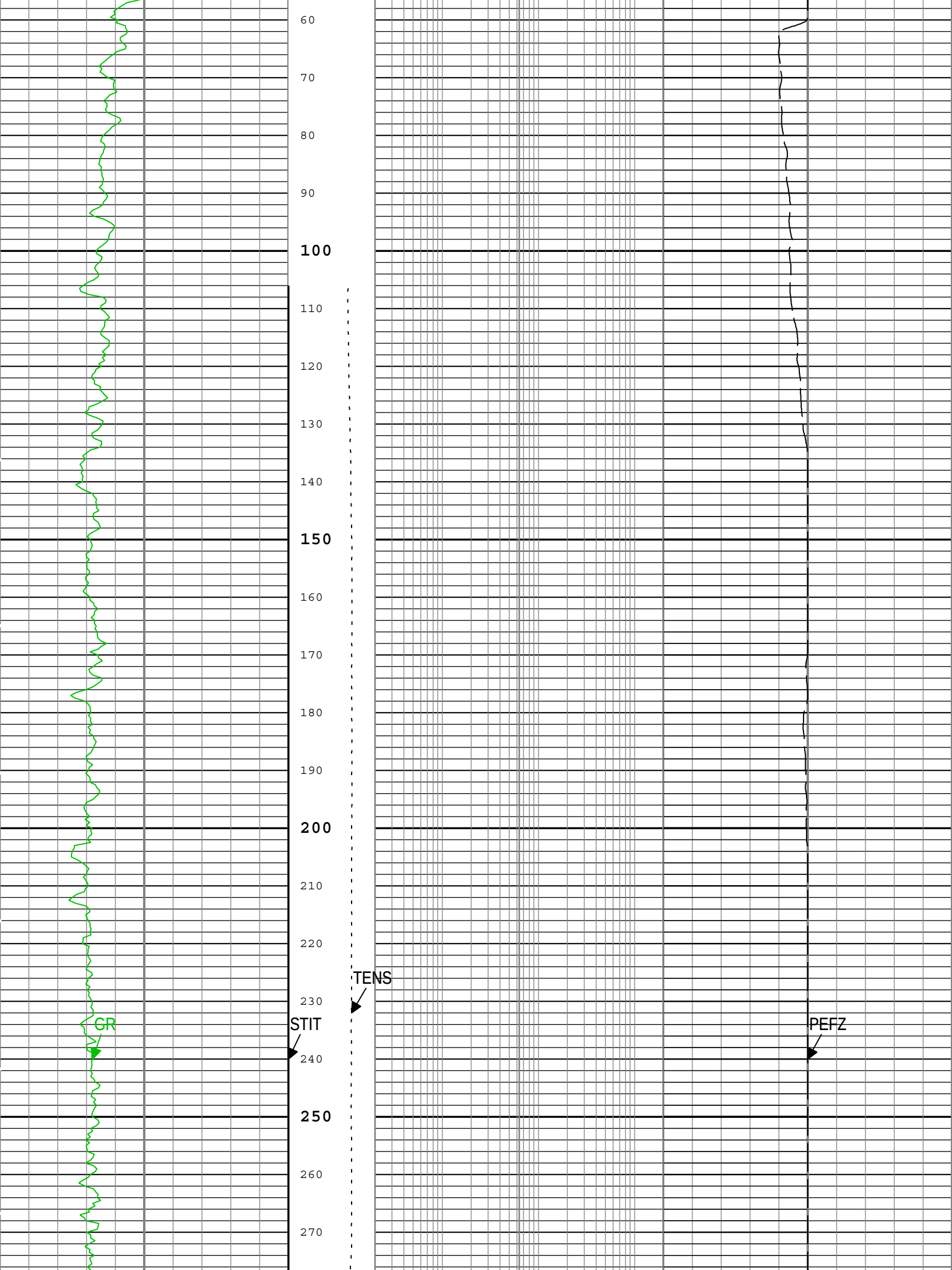
Run 1: Log[7]:Up

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: 14-Jun-2013 00:54:15

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
SP	AIT-H:AHIS:AHIS	6in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)

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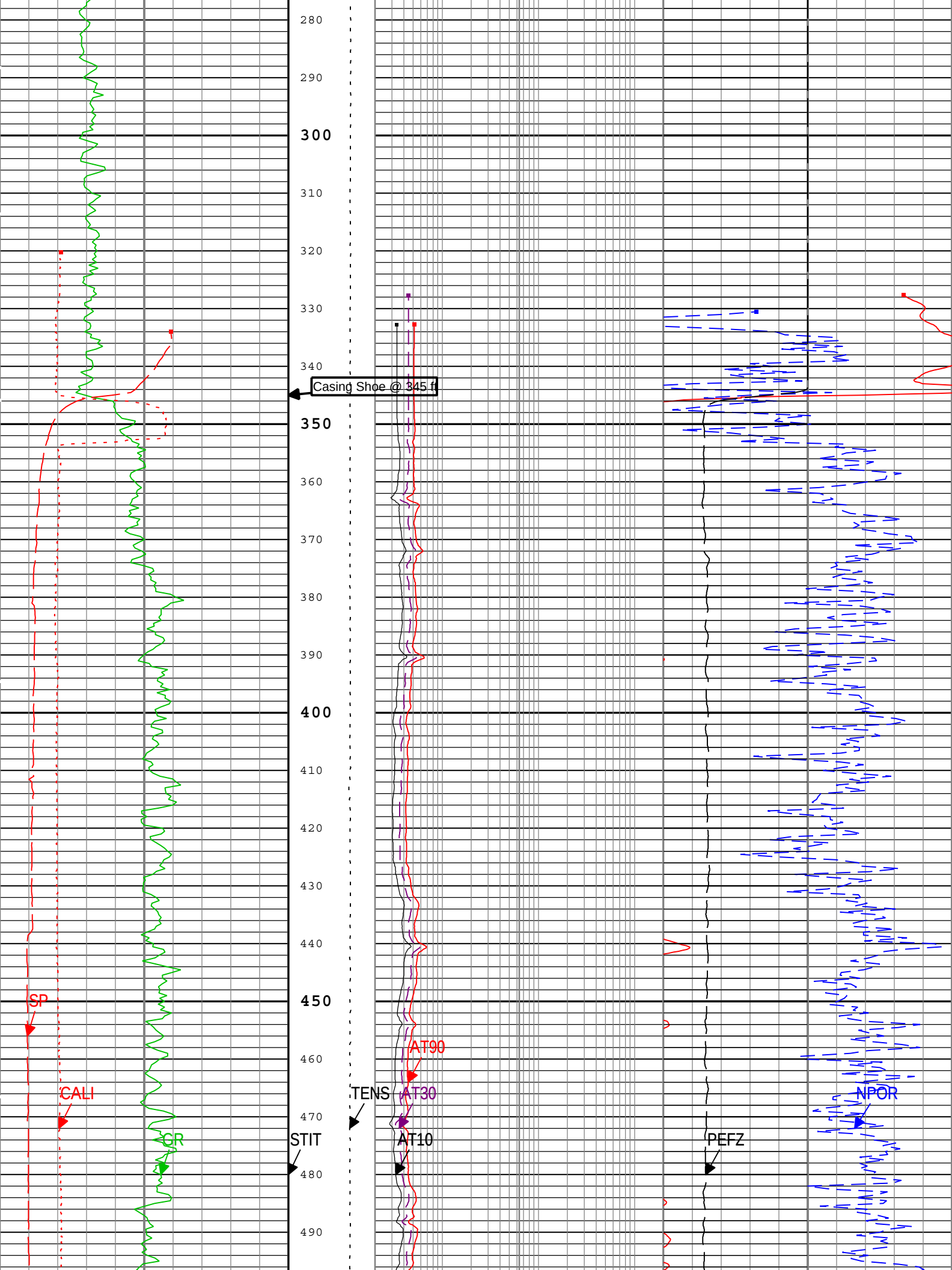
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Casing Shoe @ 345 ft
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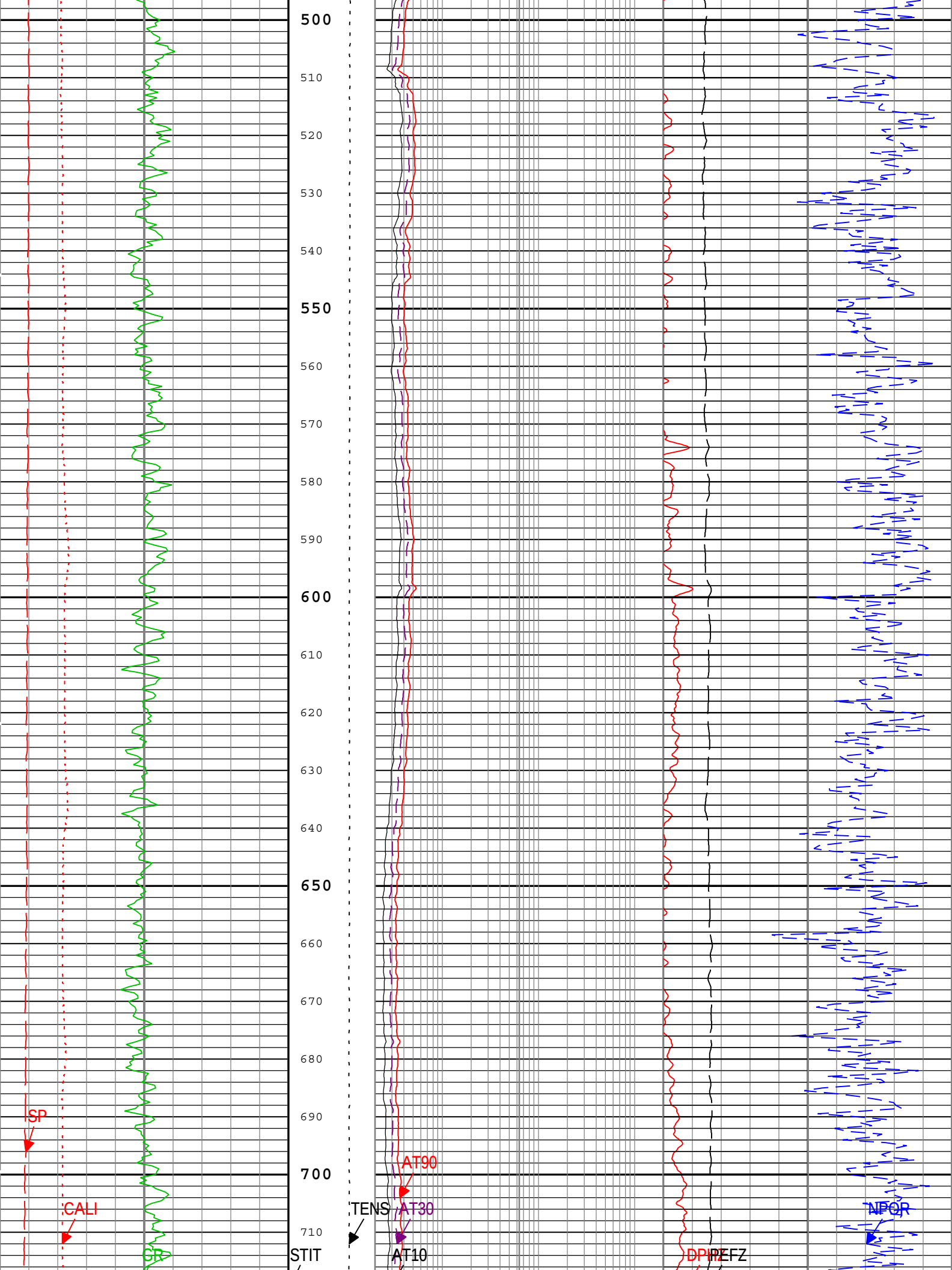
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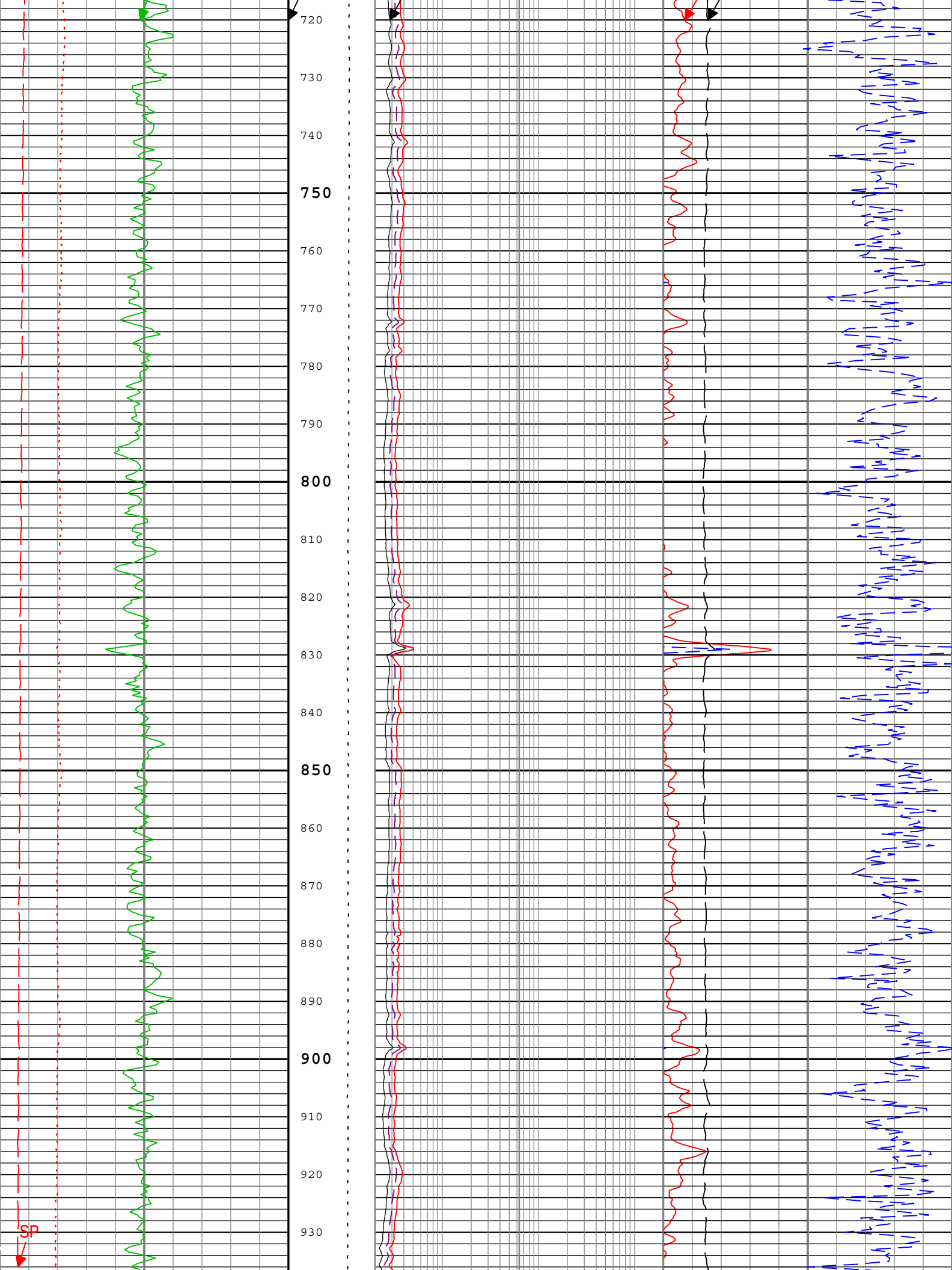
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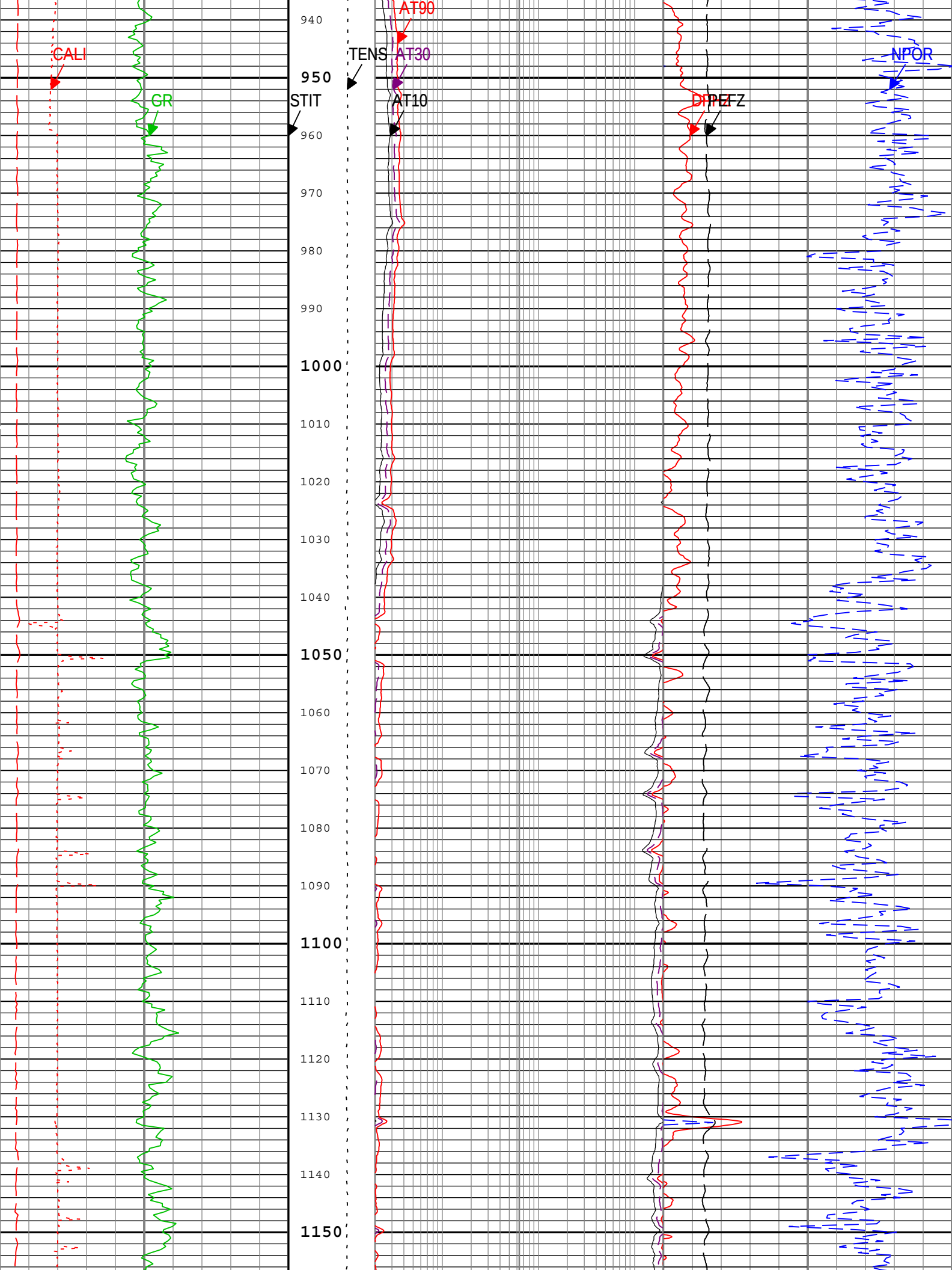
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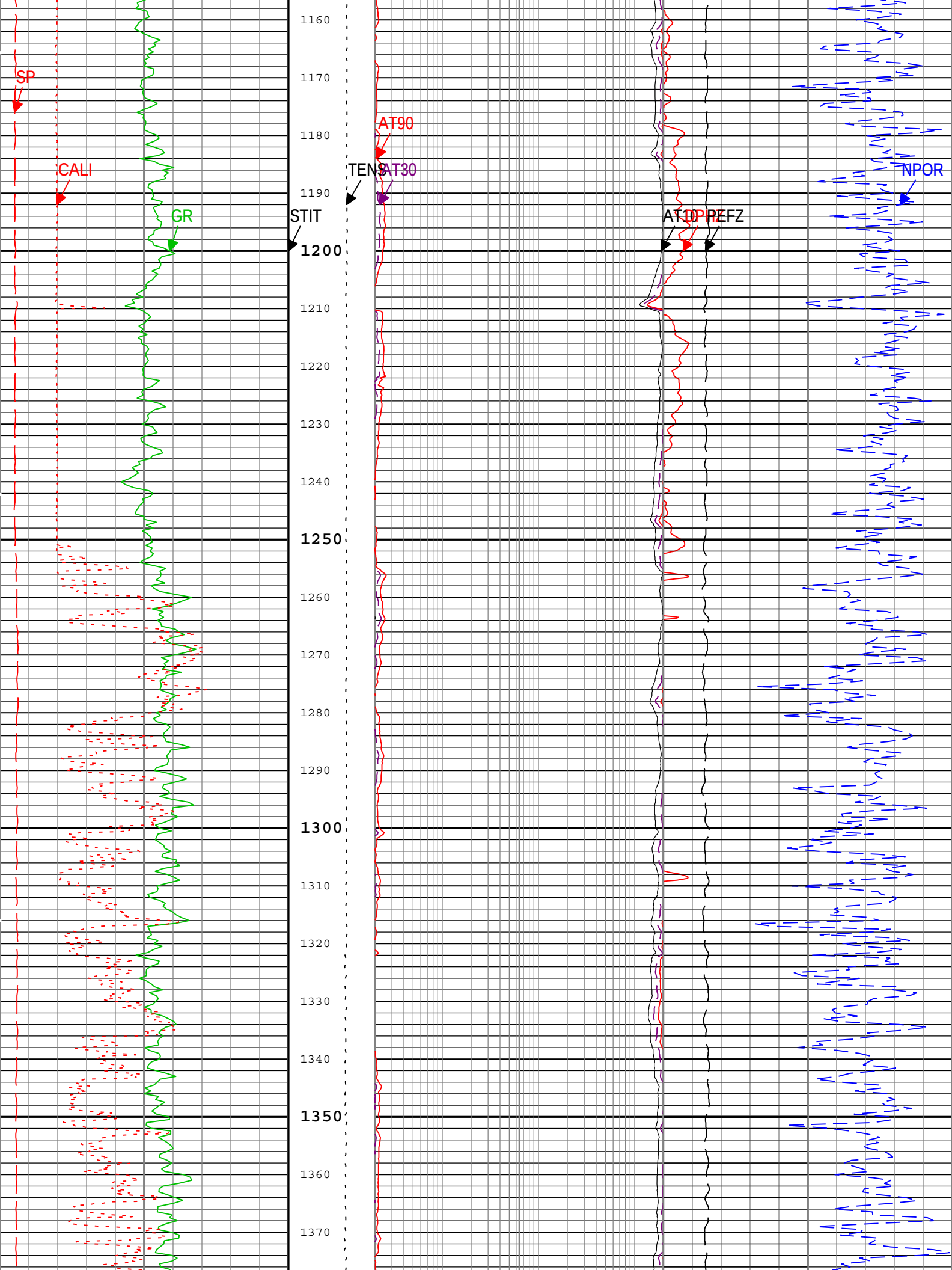
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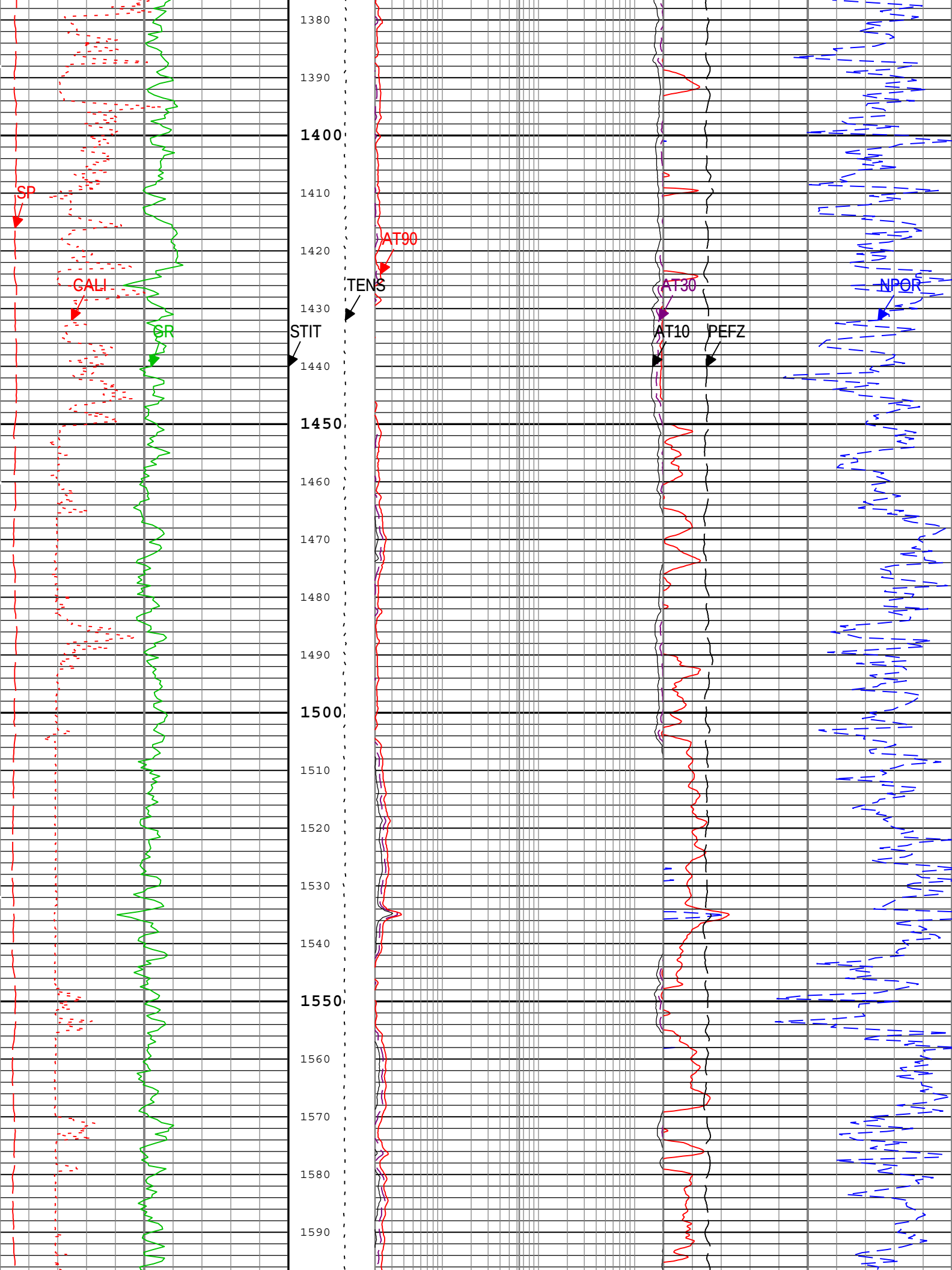
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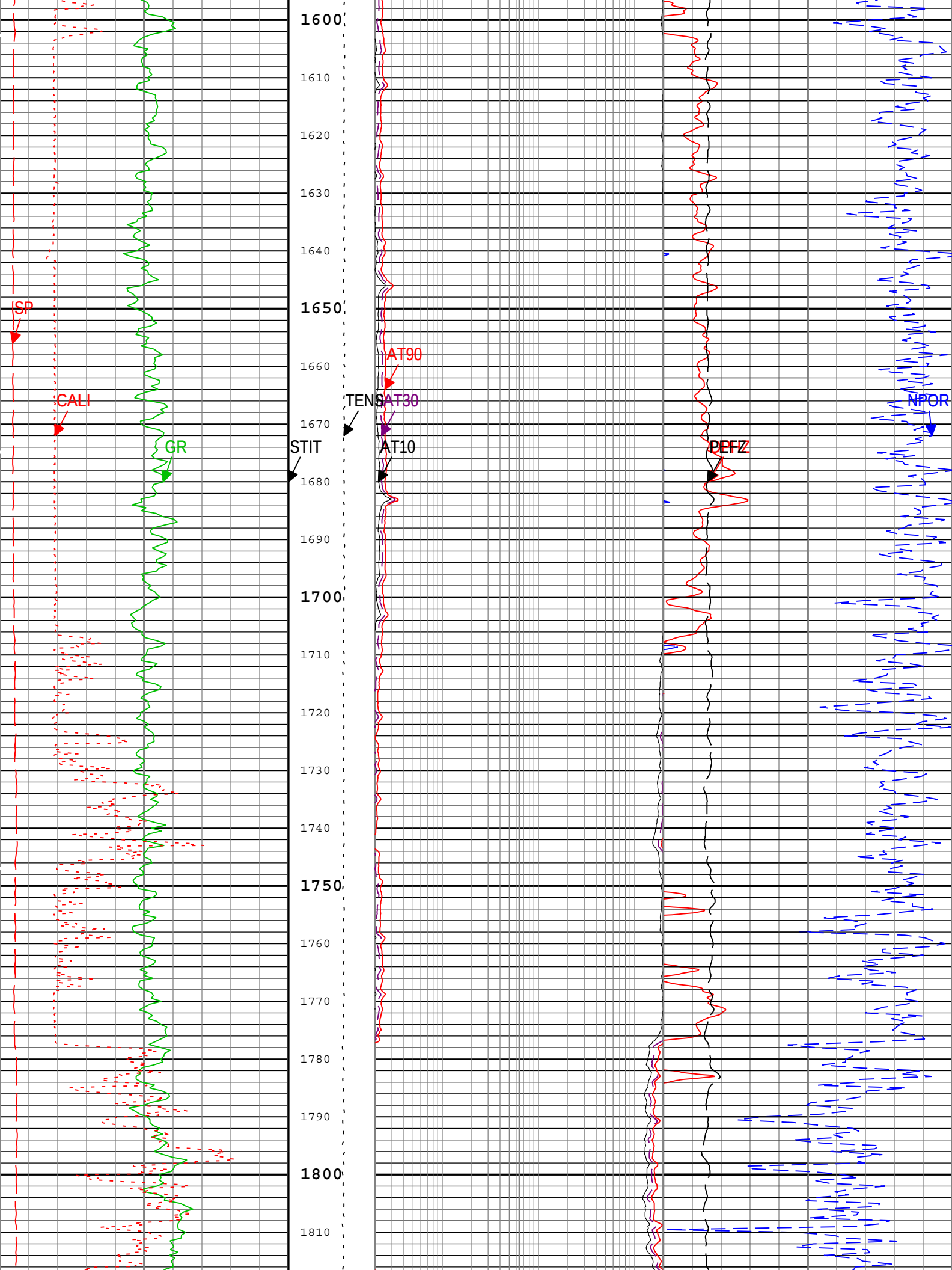
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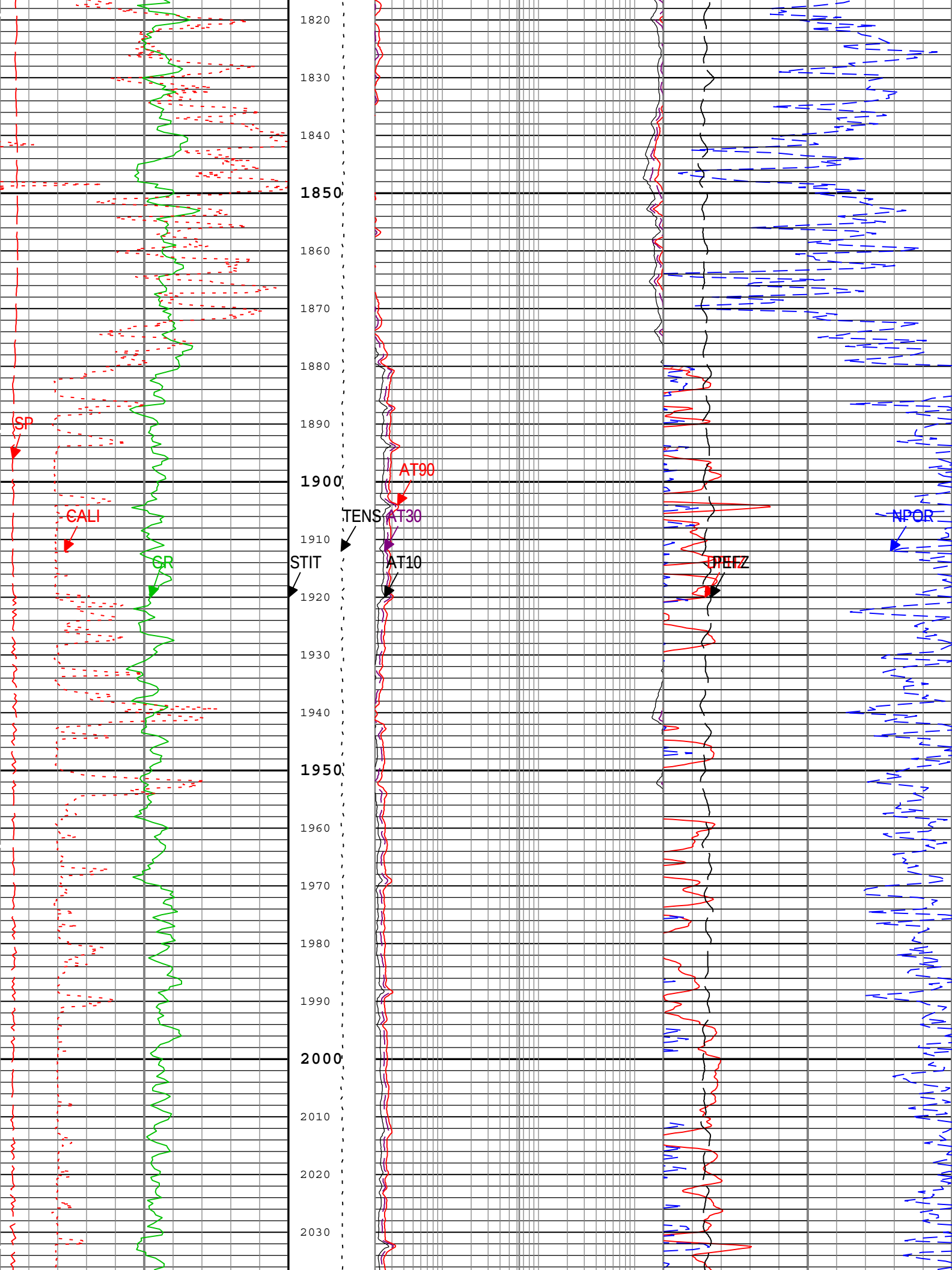
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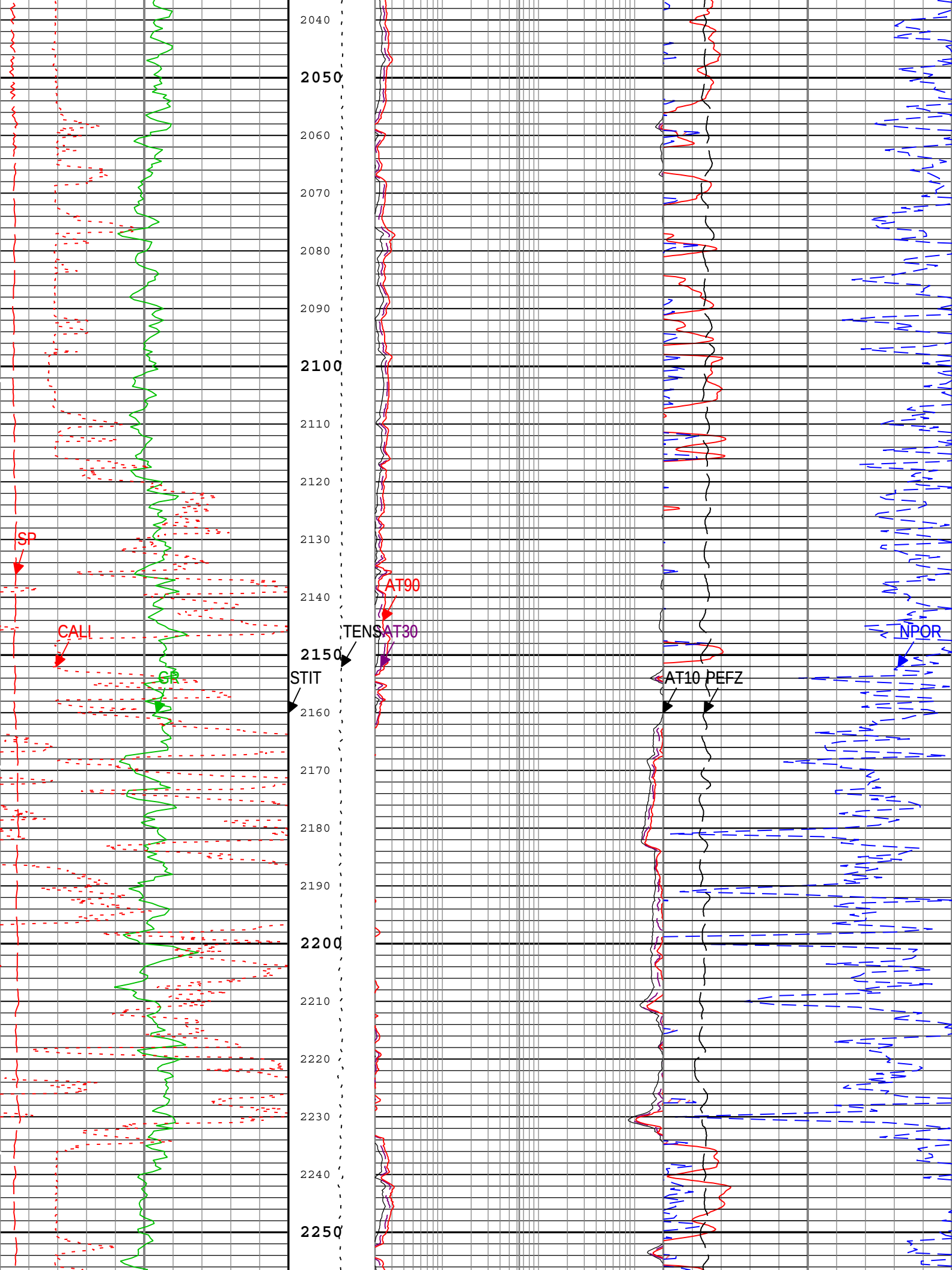
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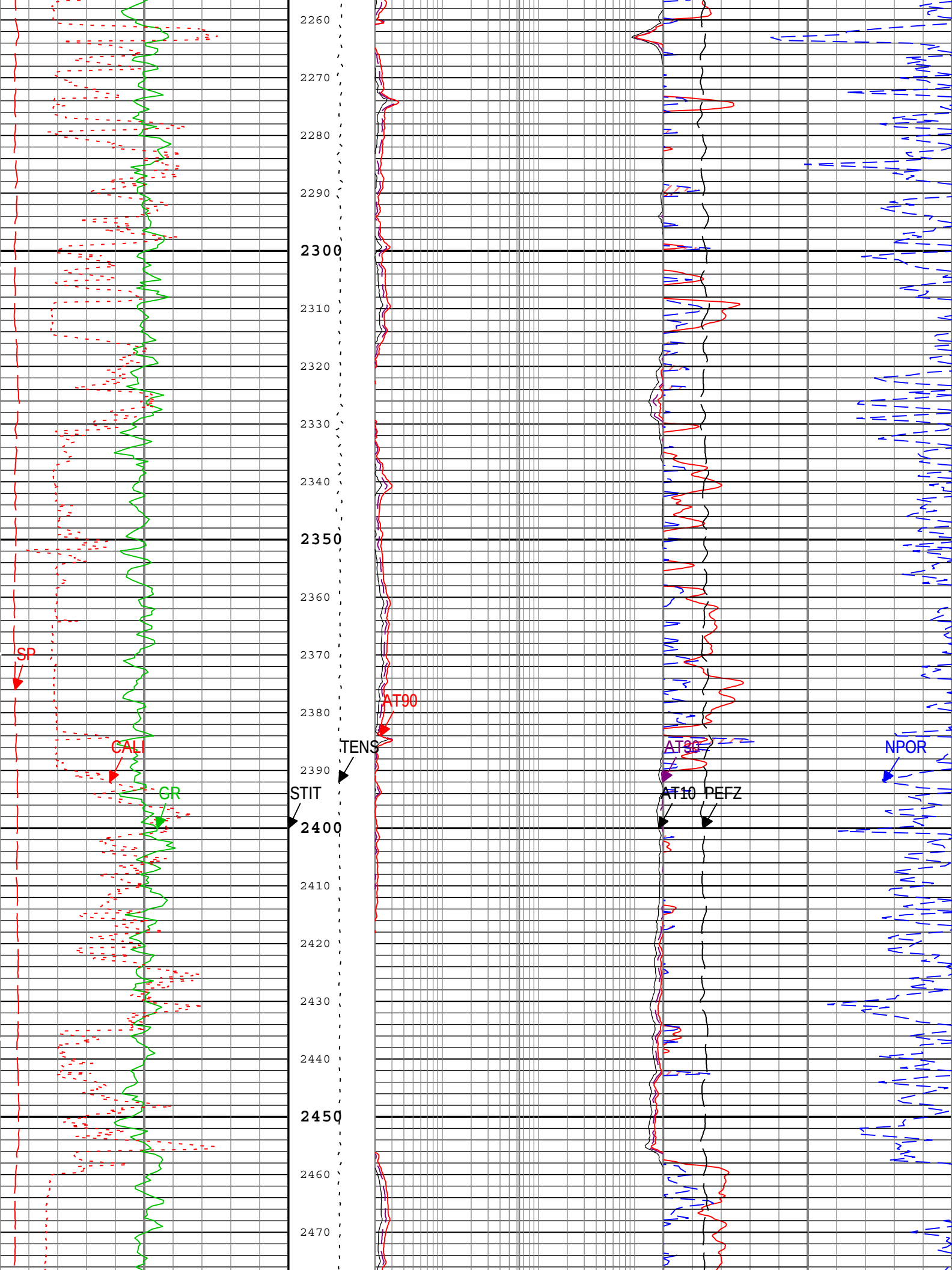
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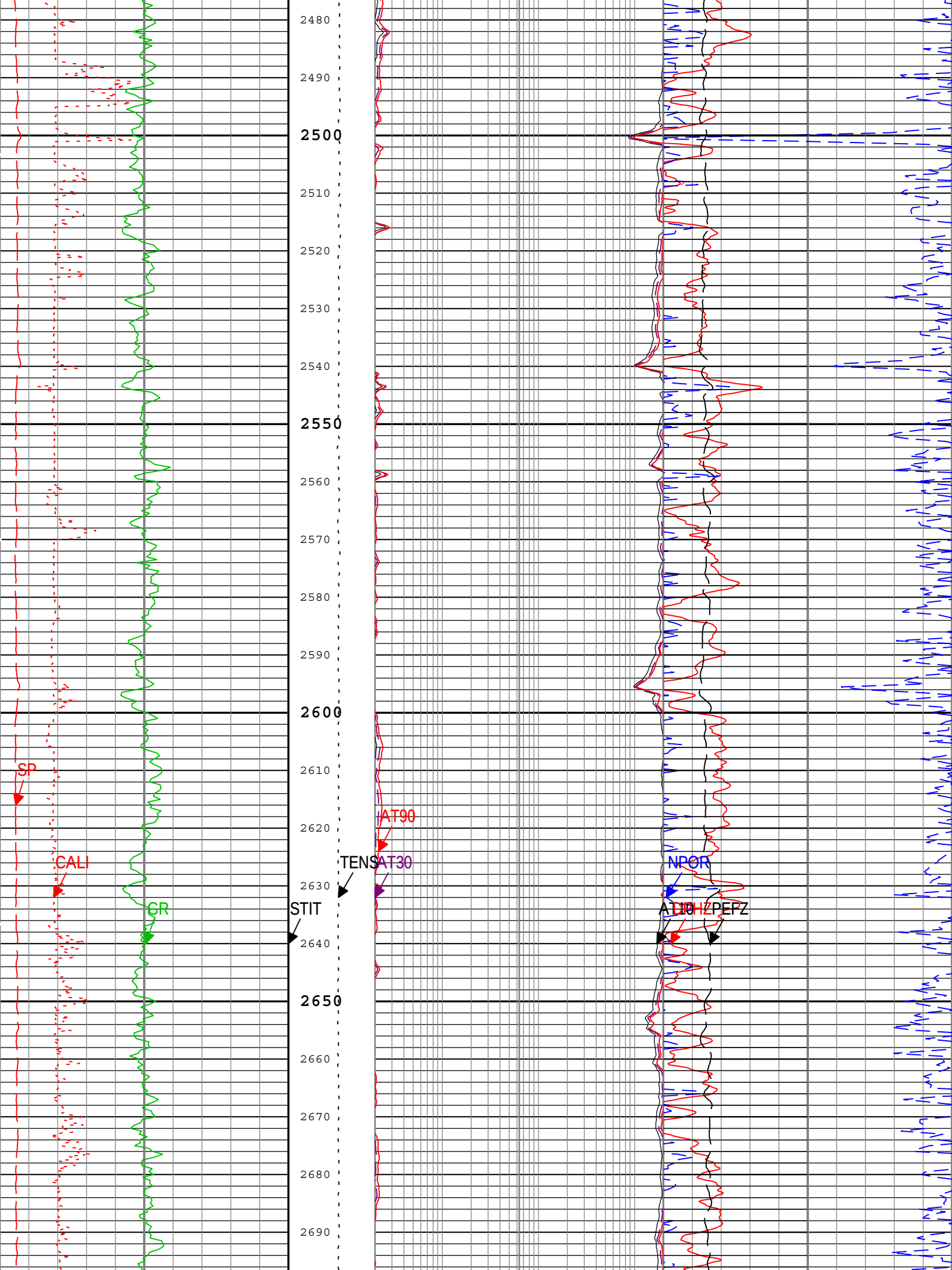
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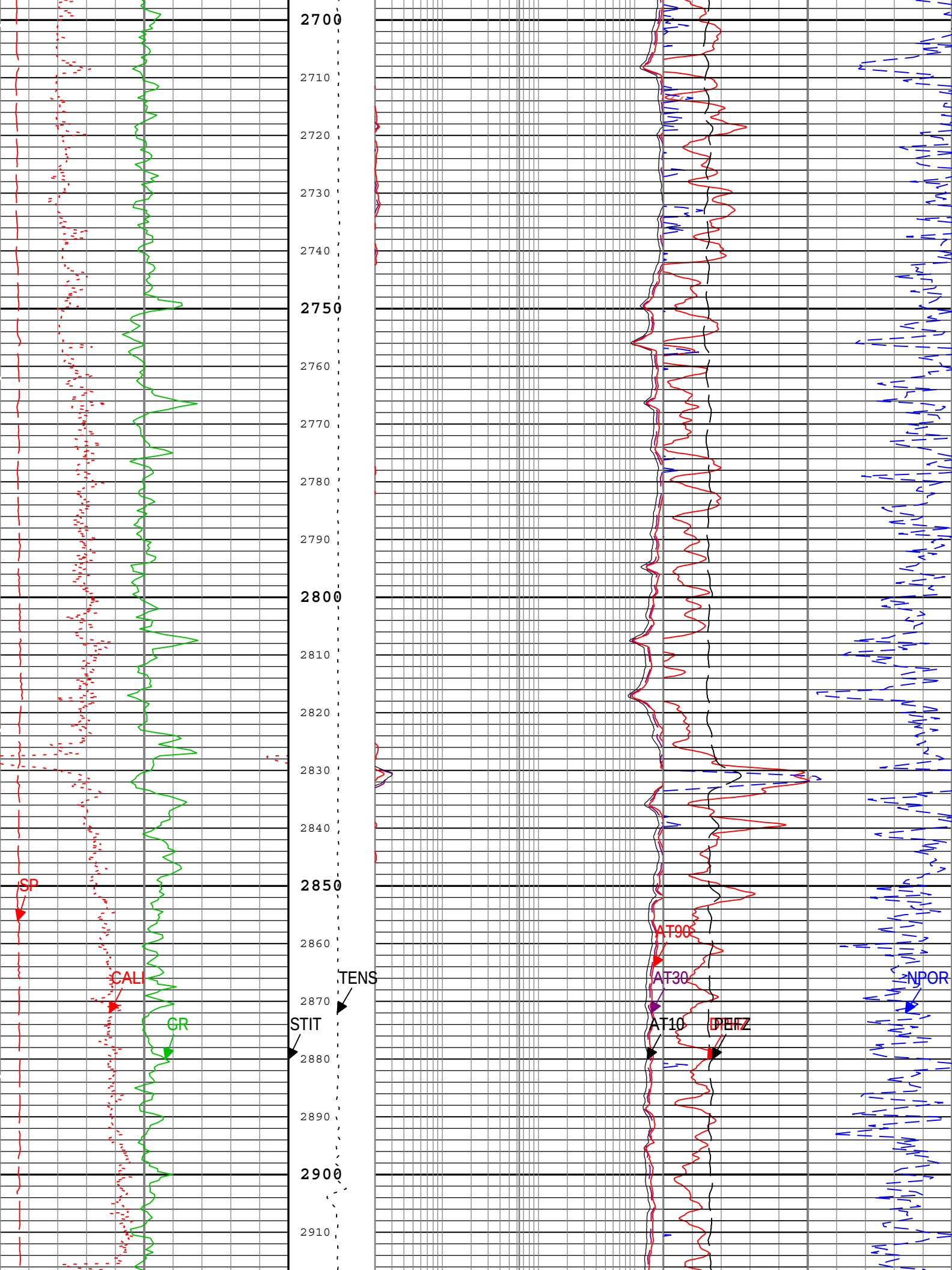
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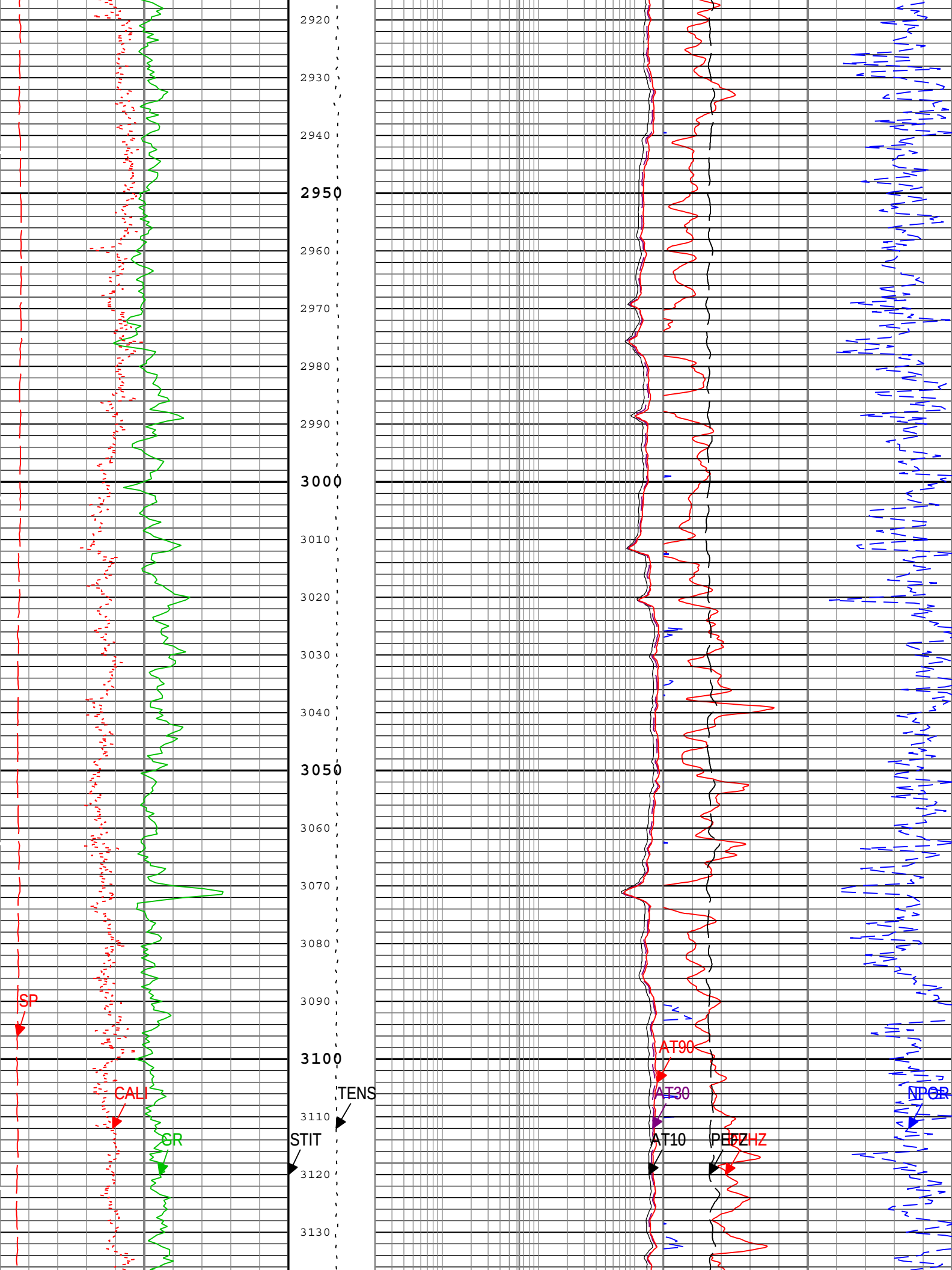
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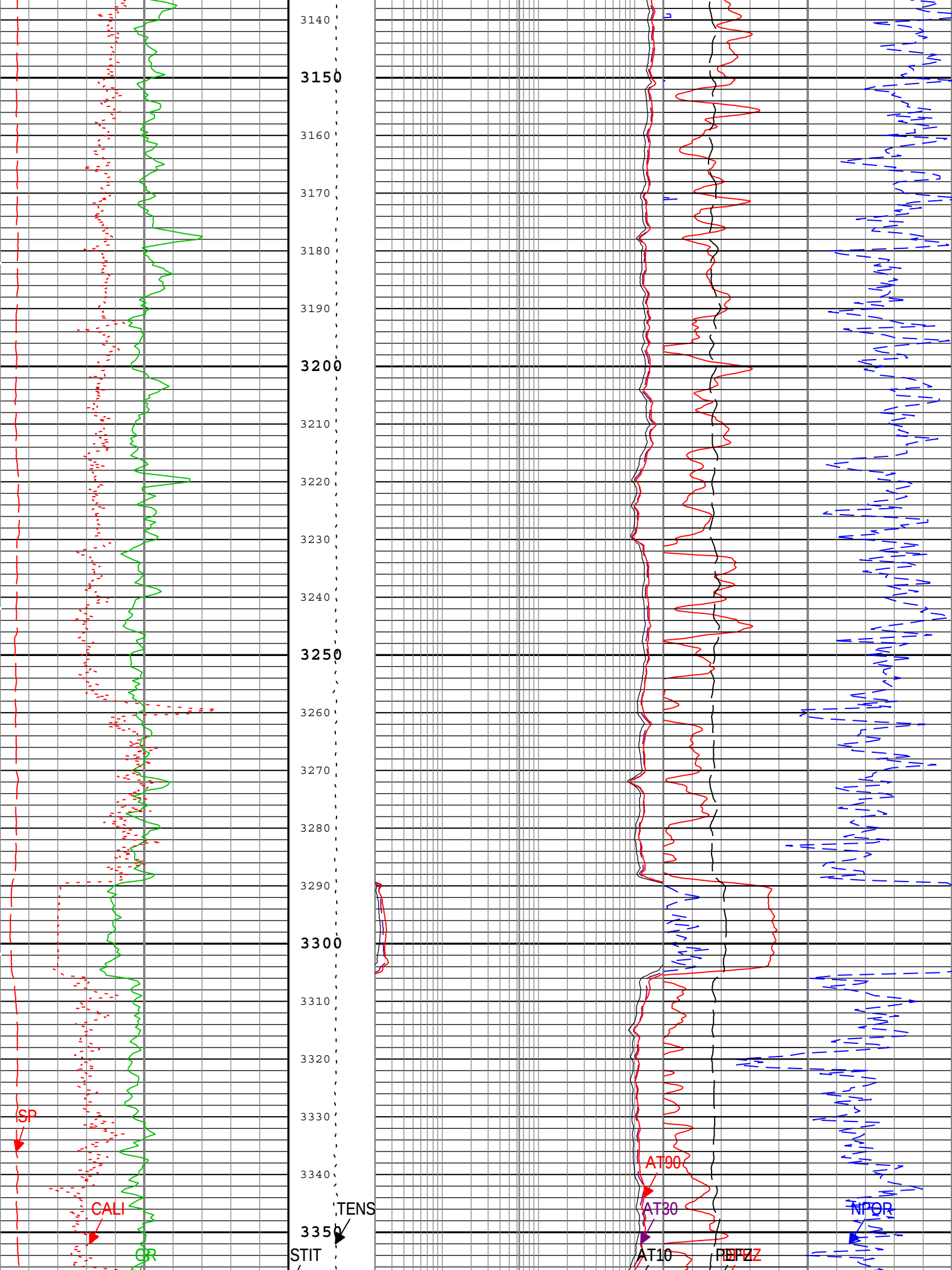
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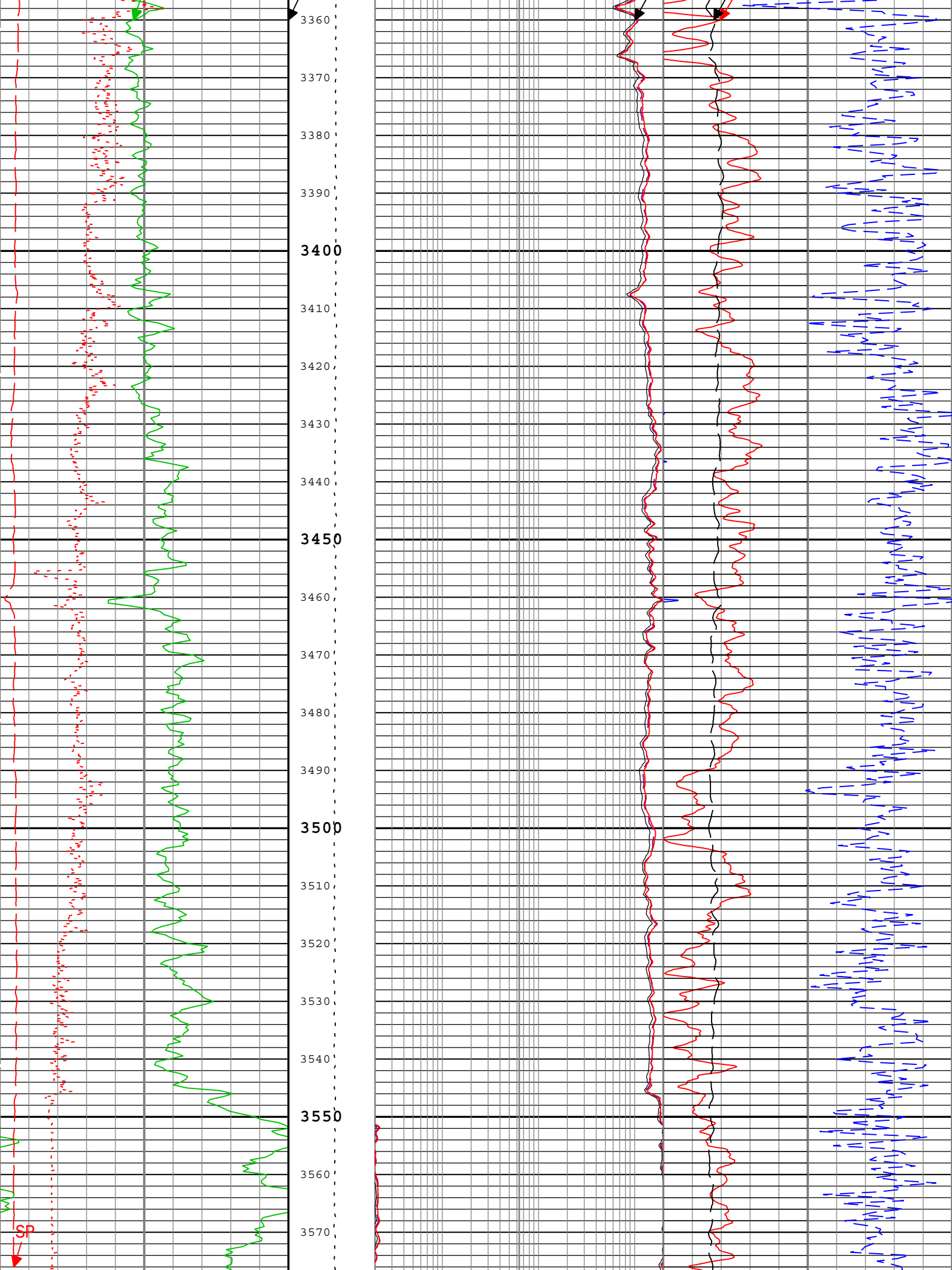
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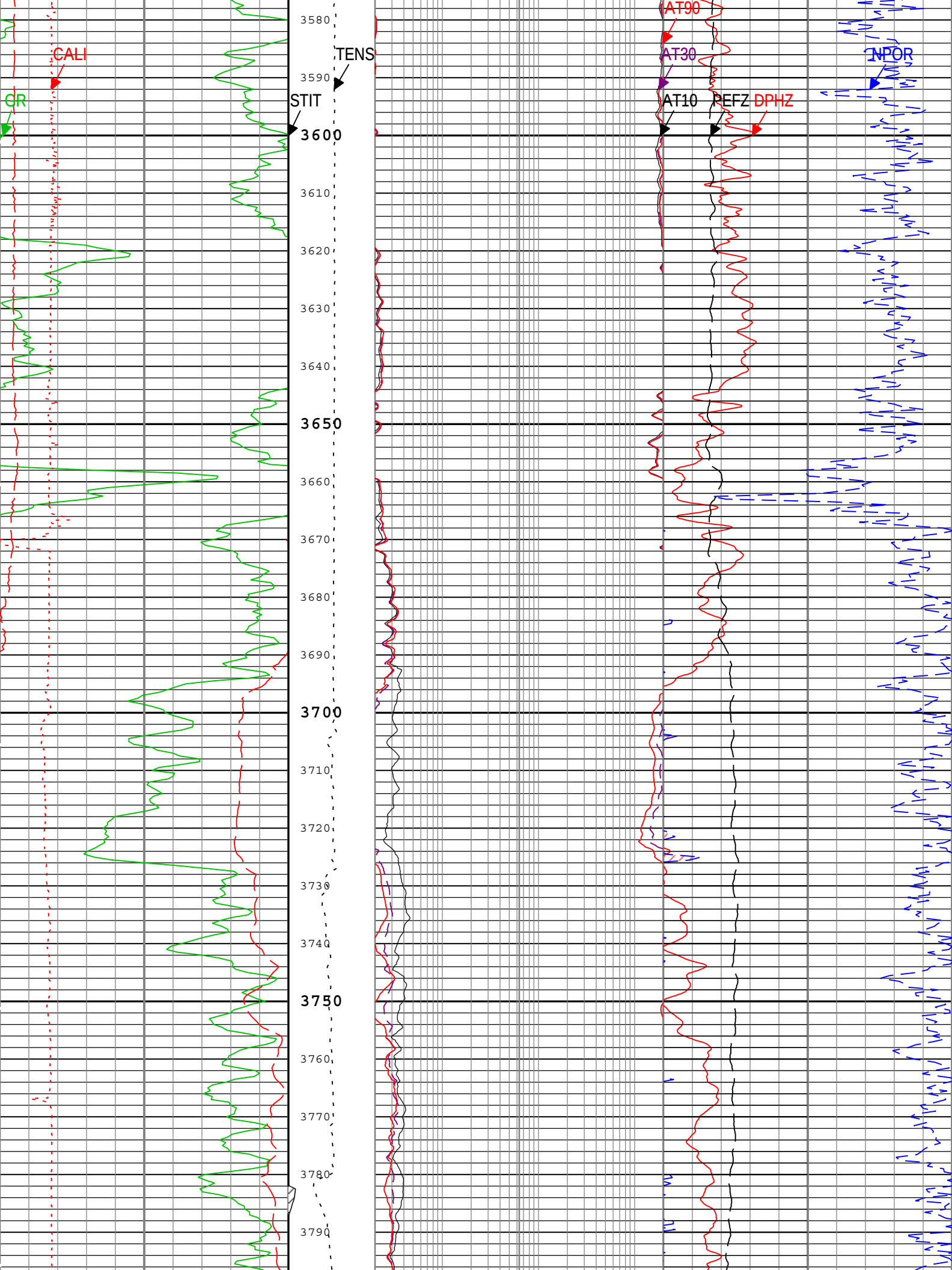
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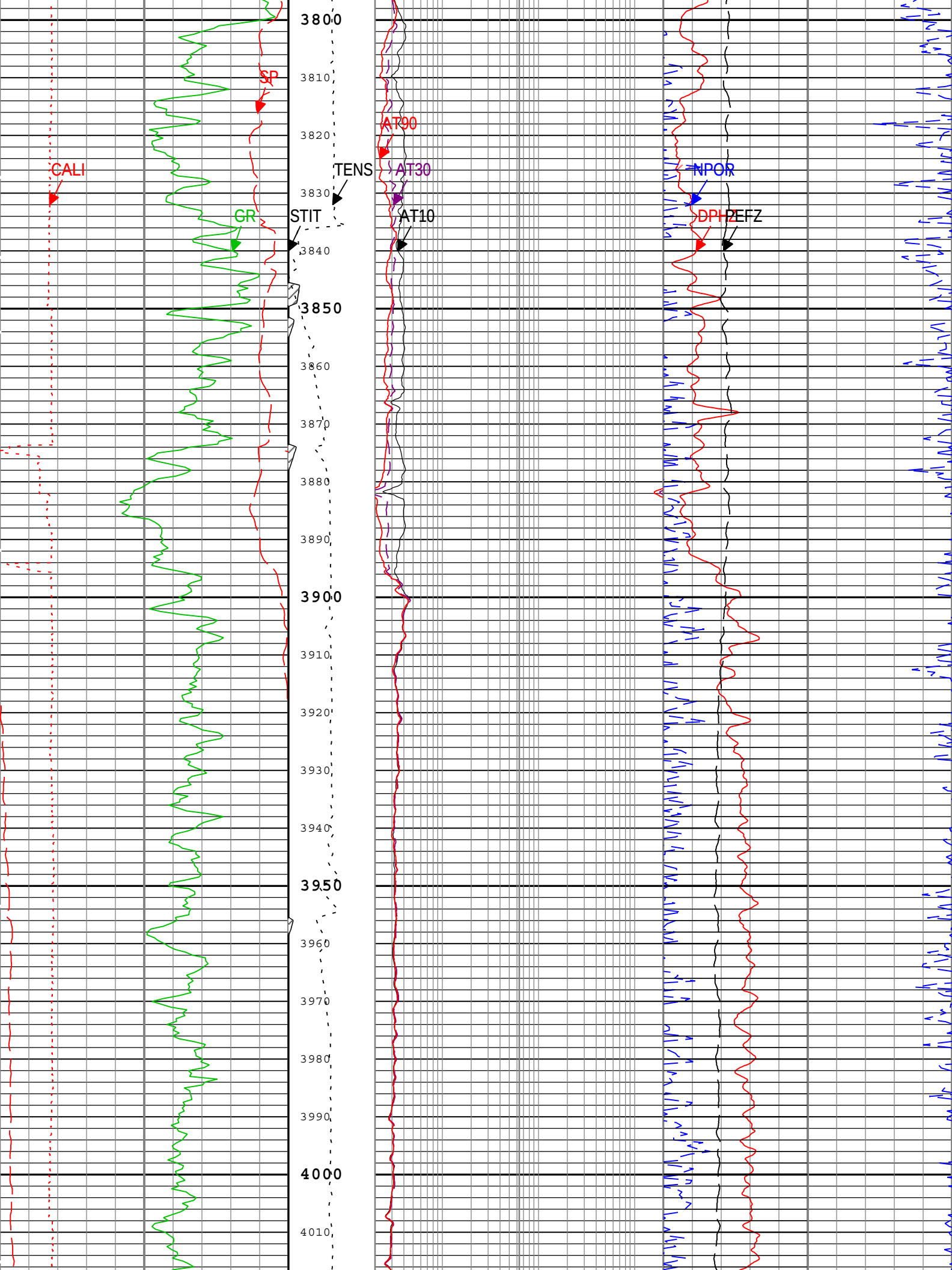
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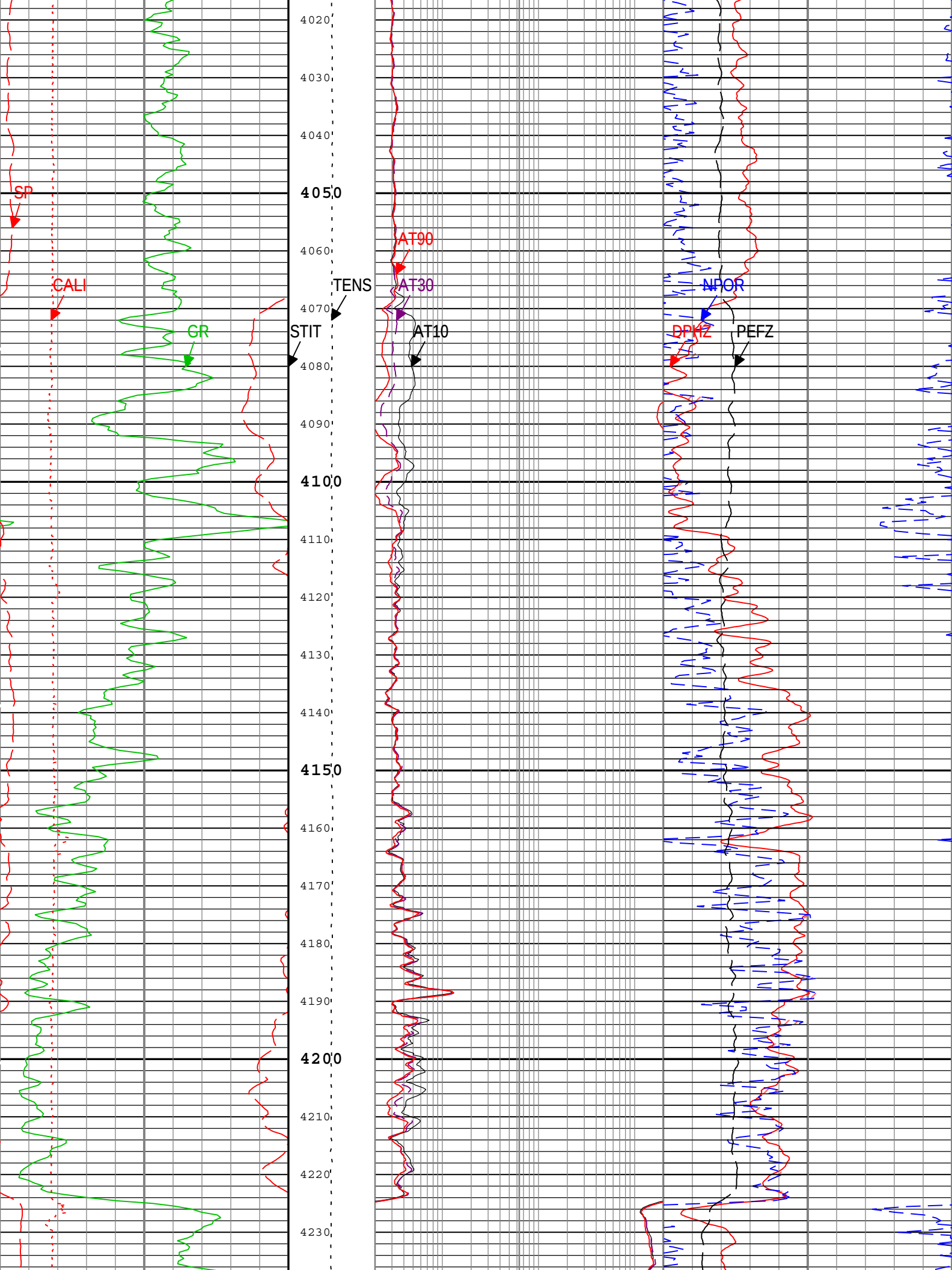
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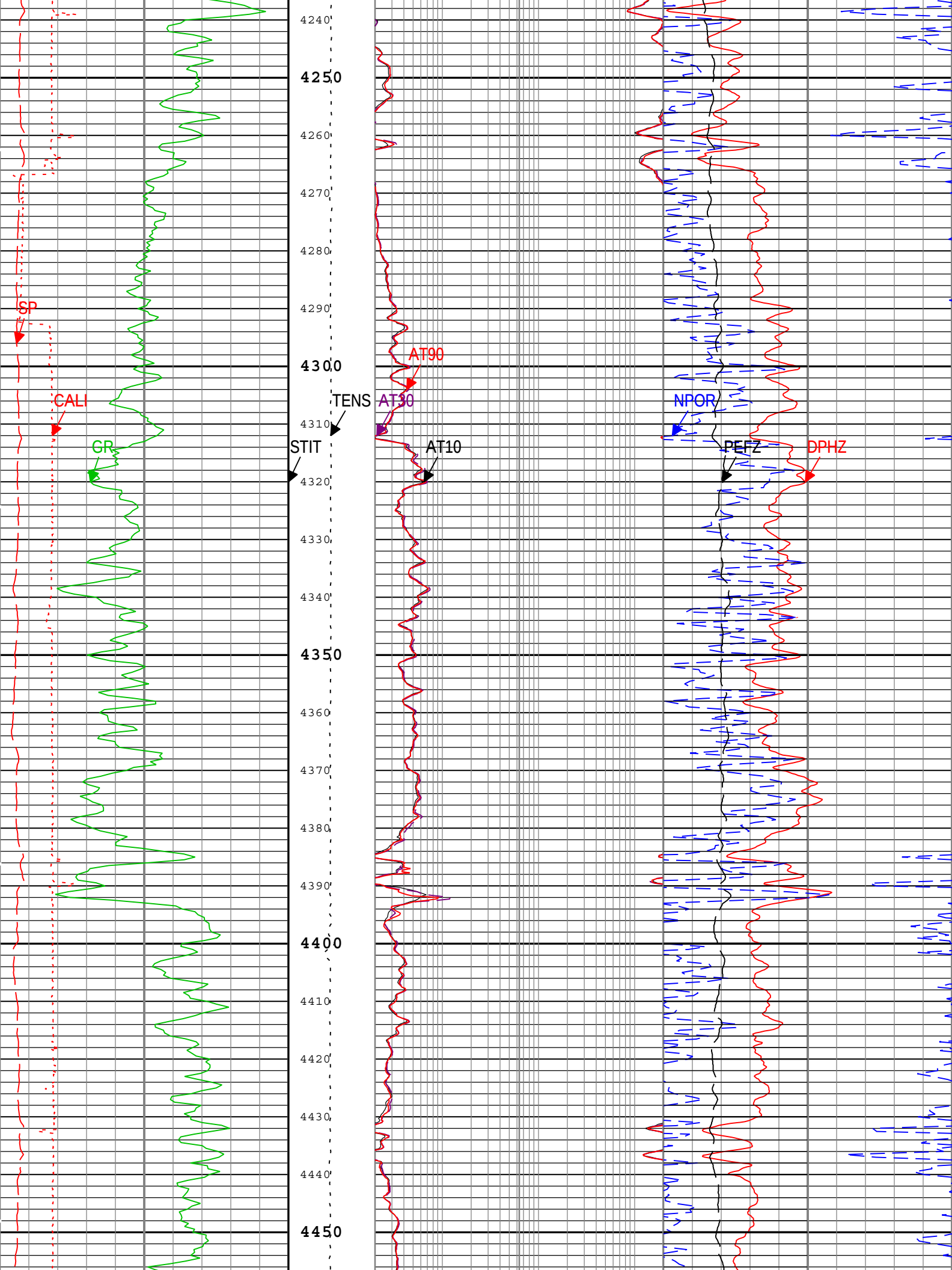
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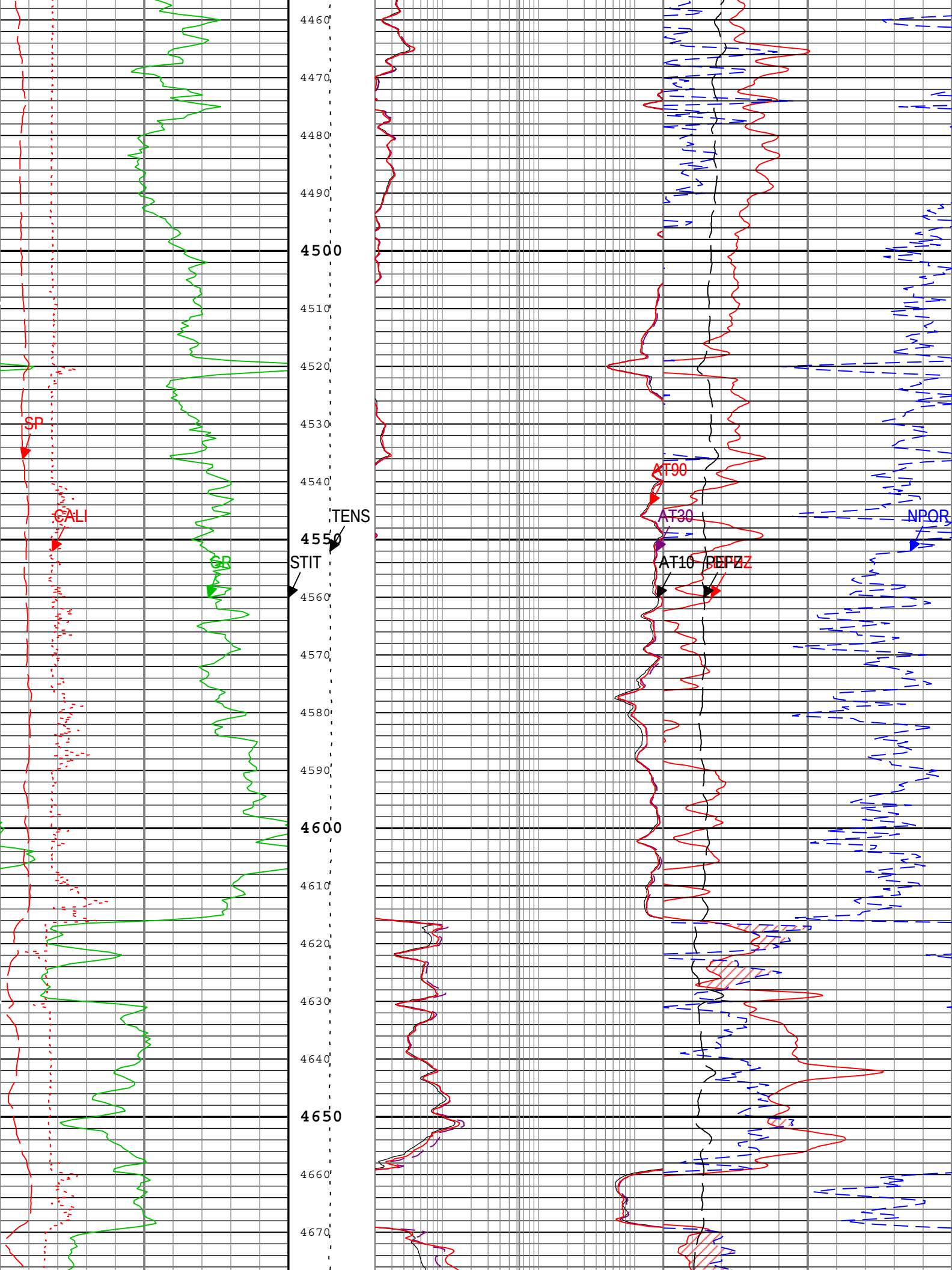
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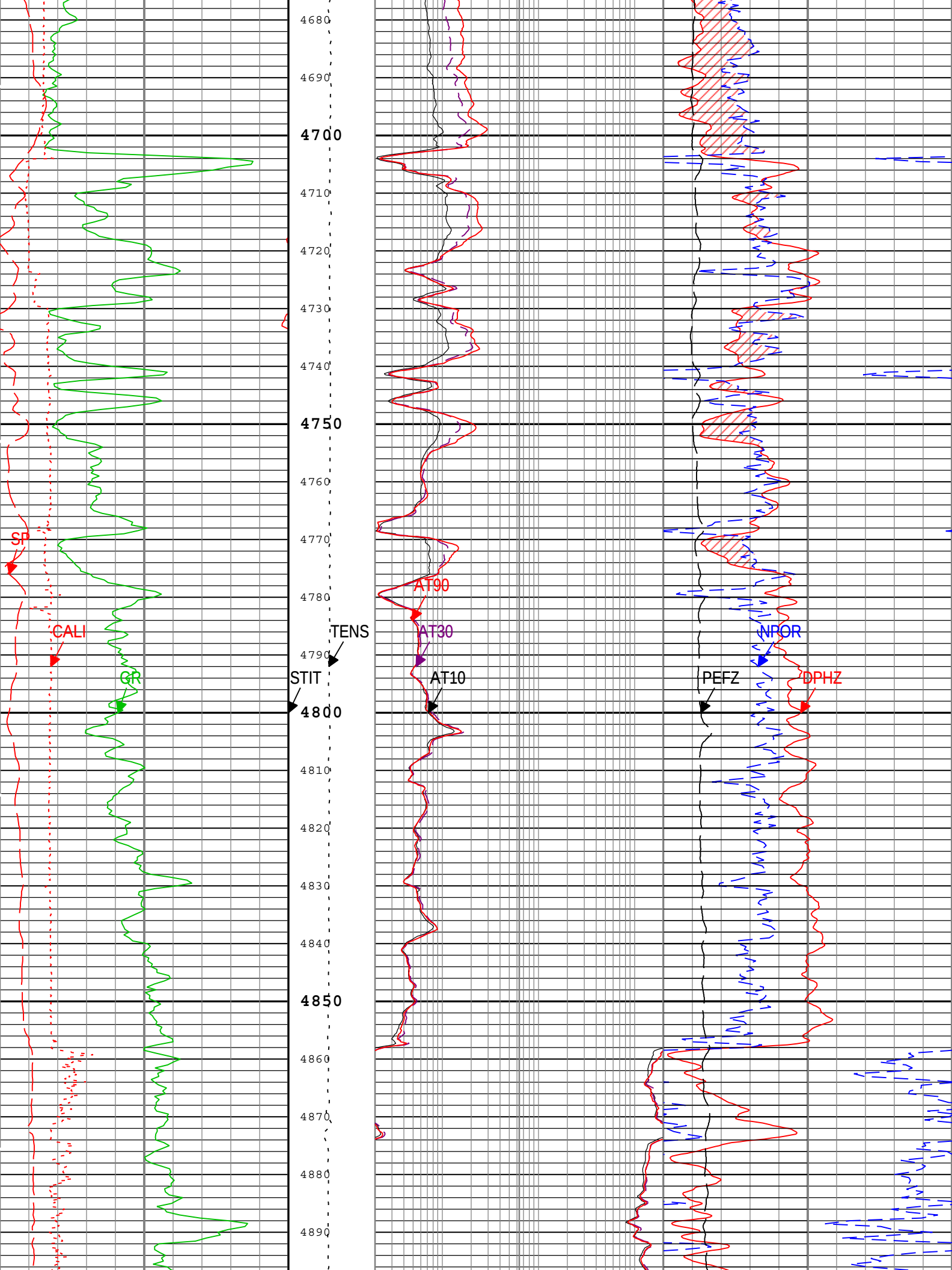
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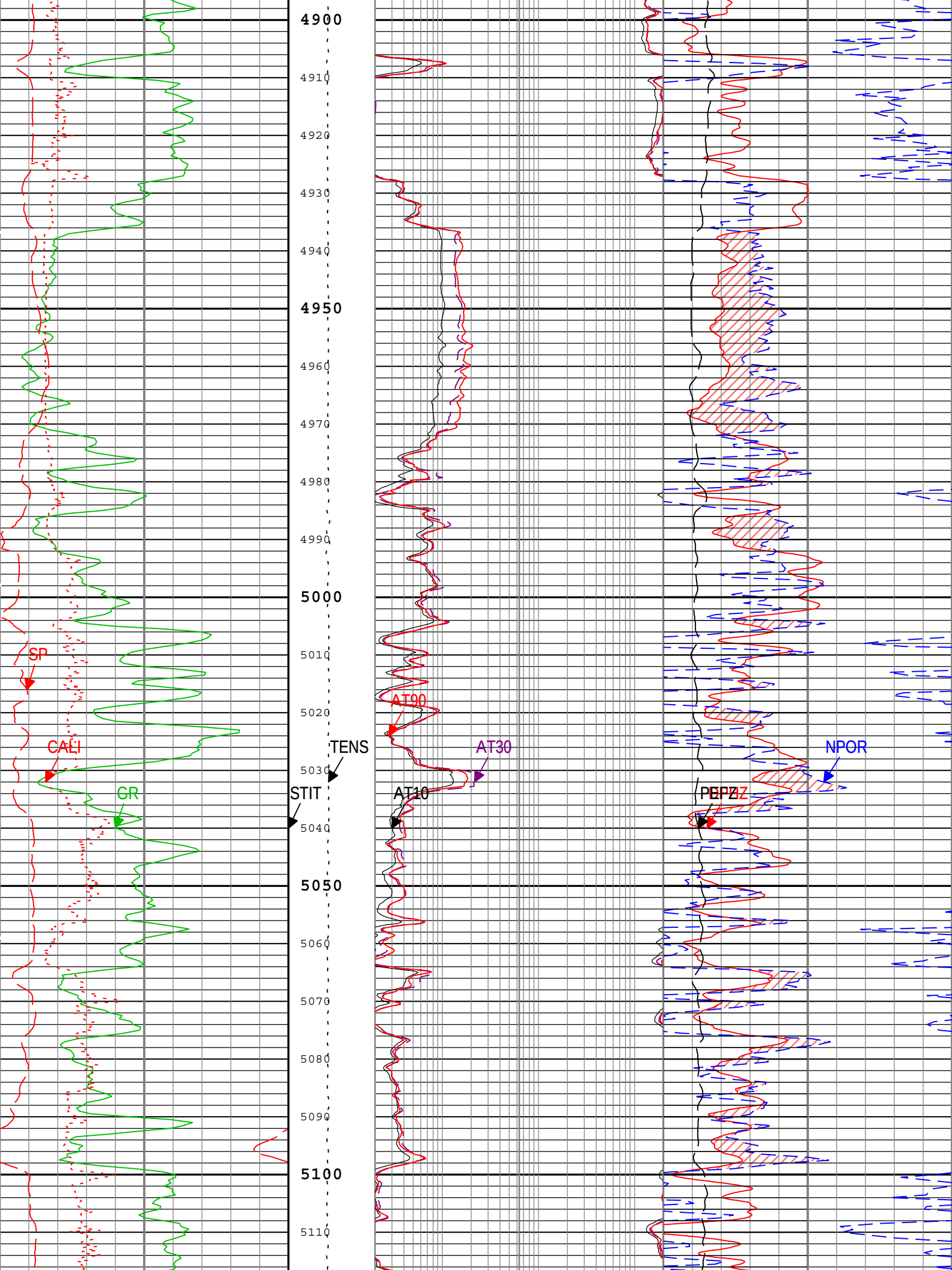
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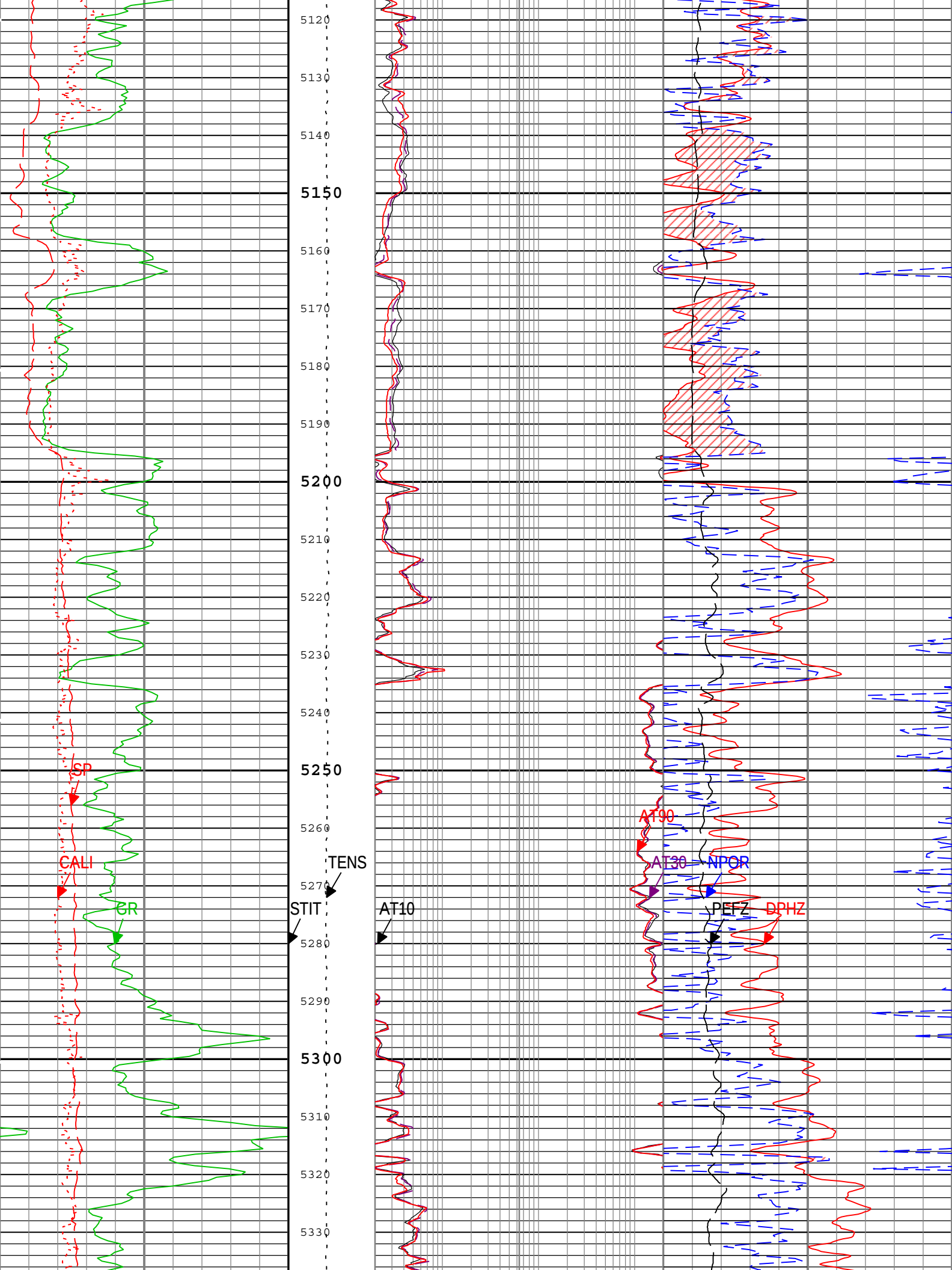
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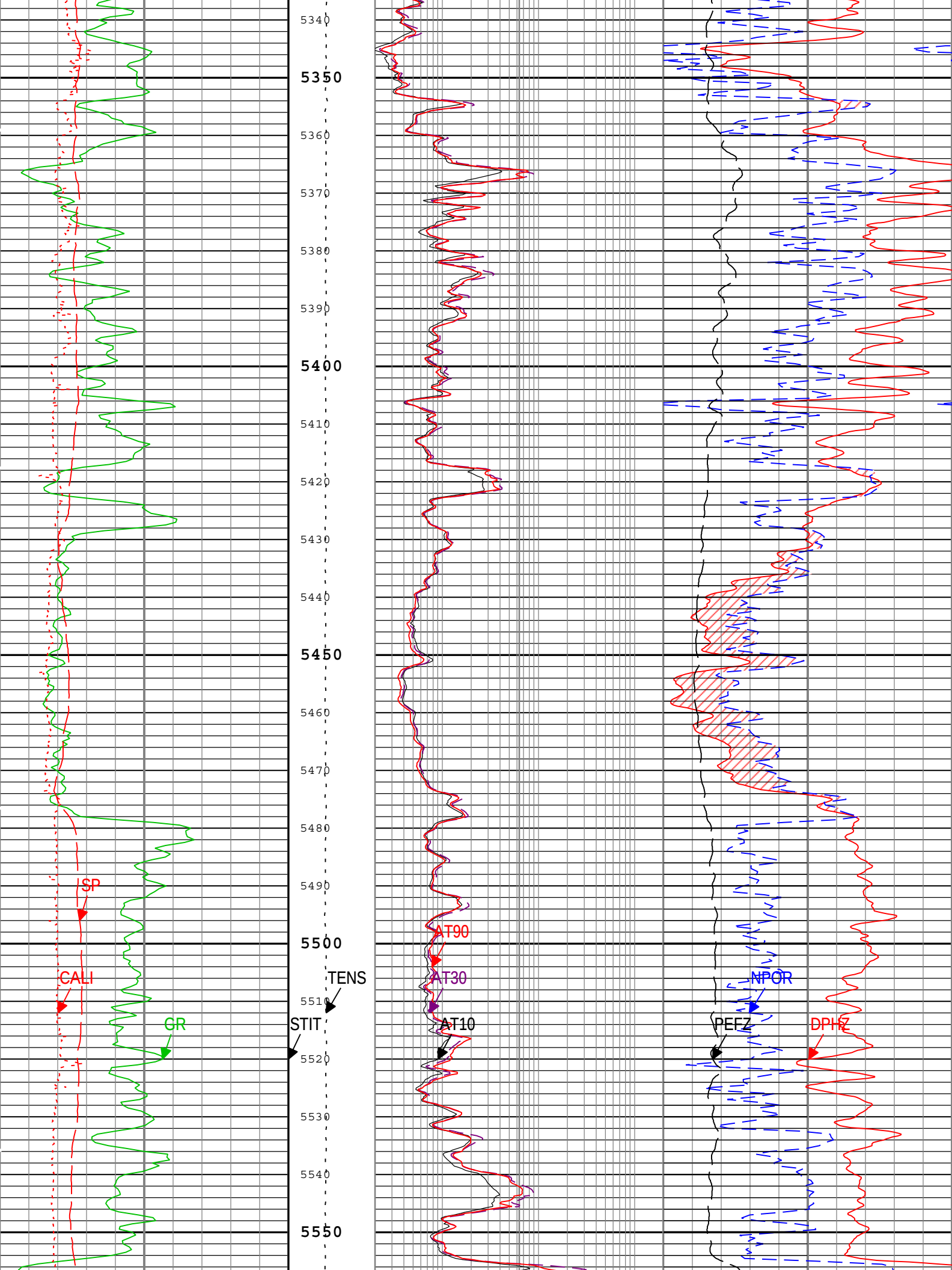
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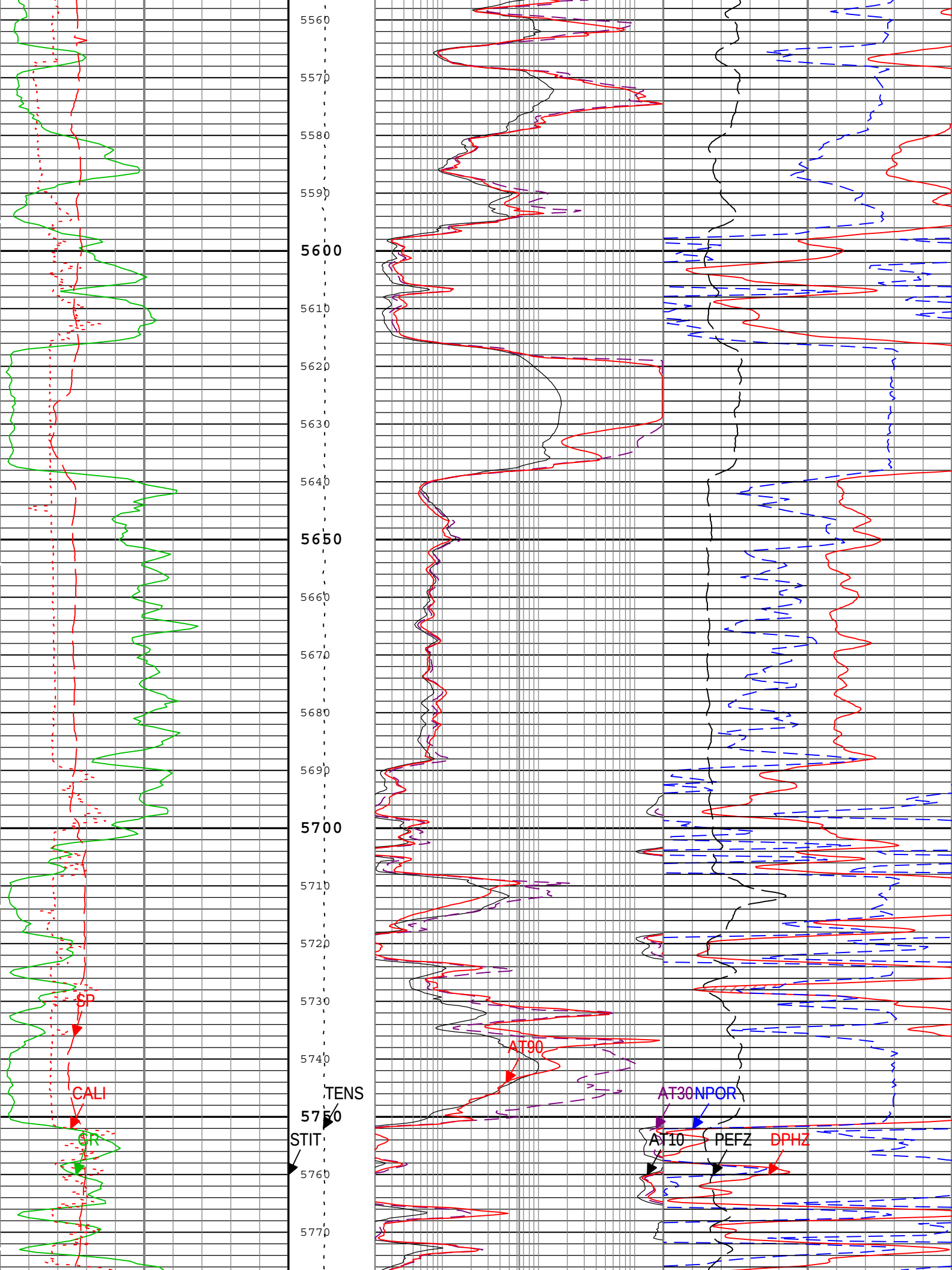
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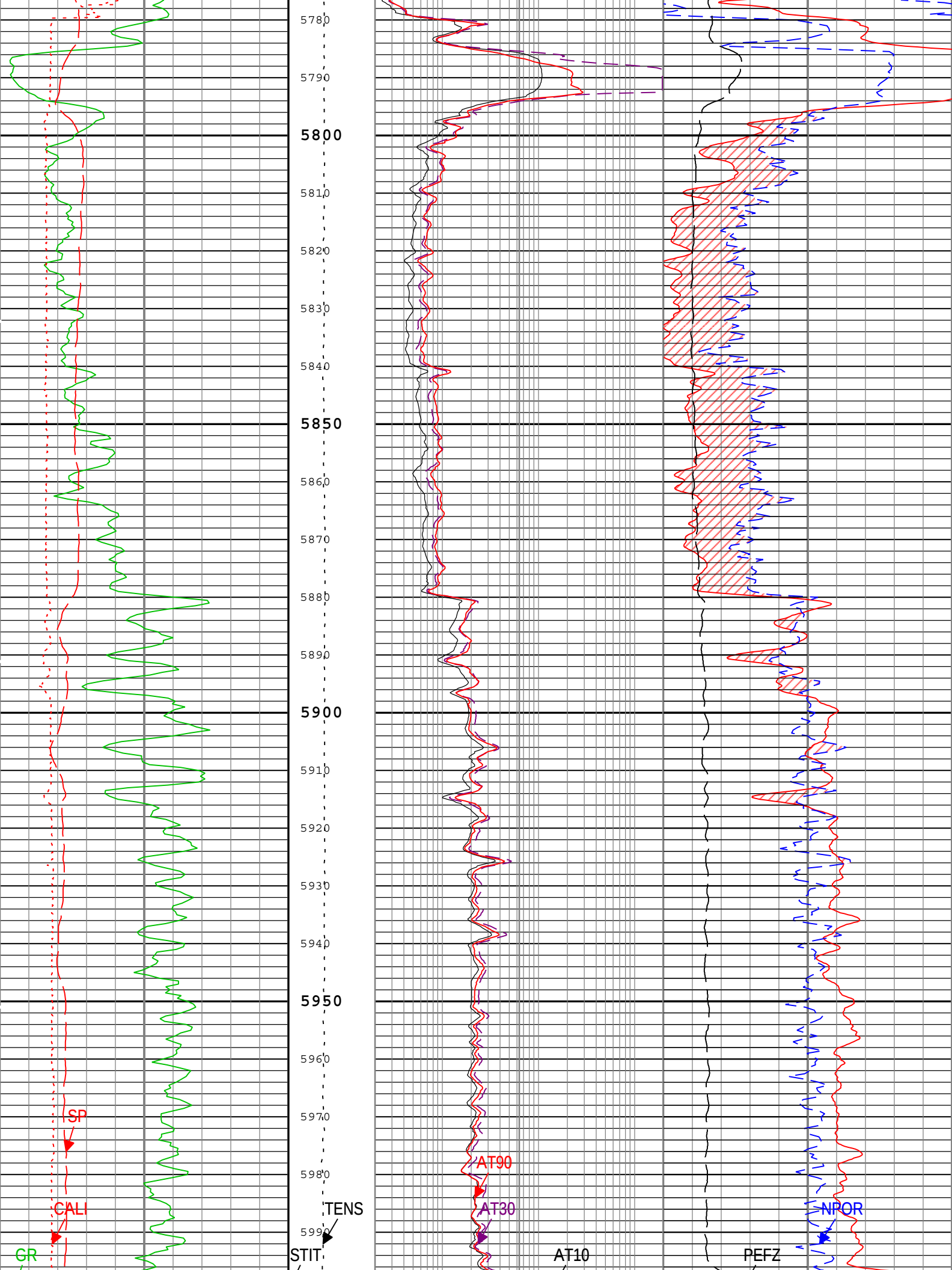
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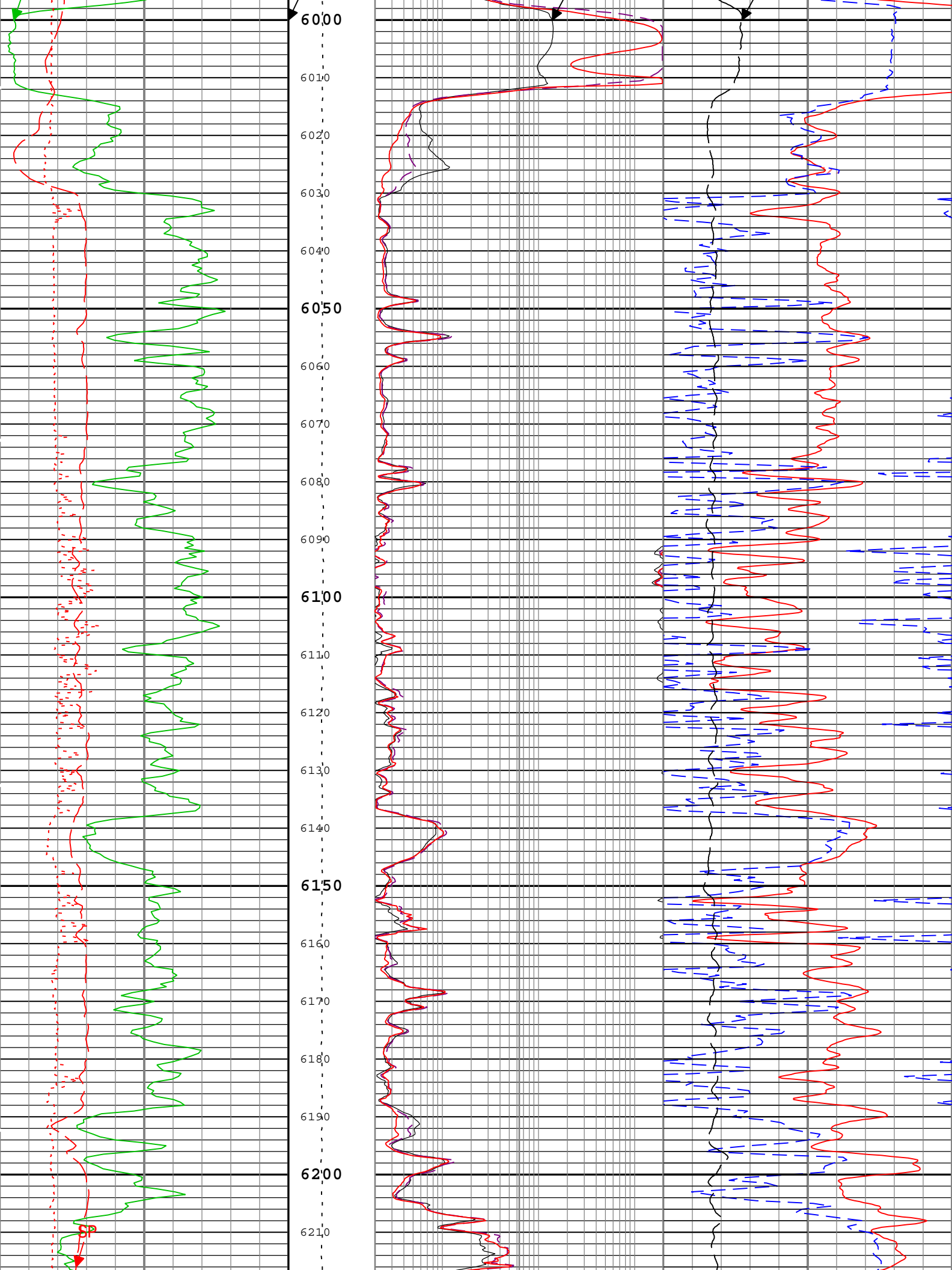
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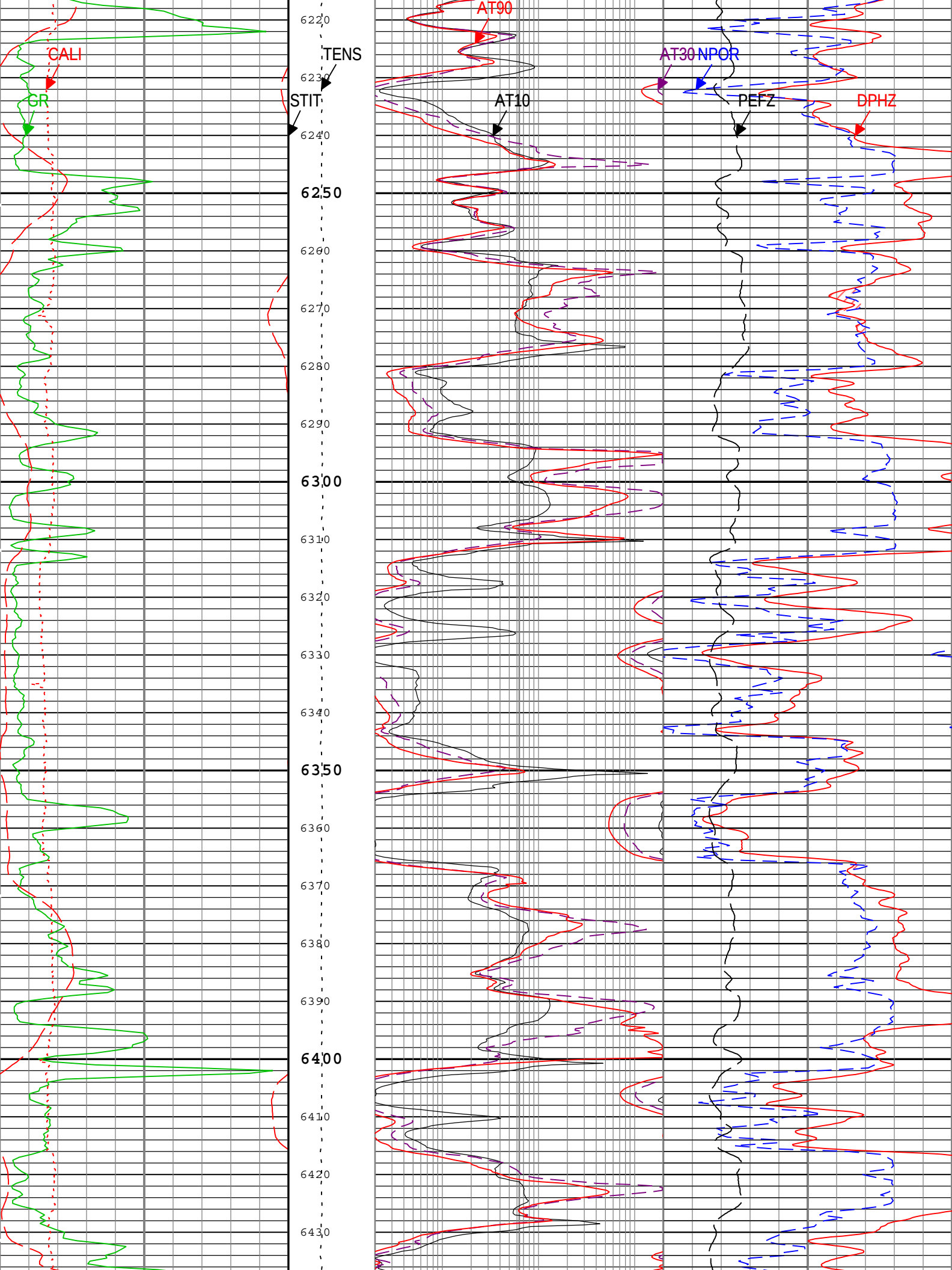
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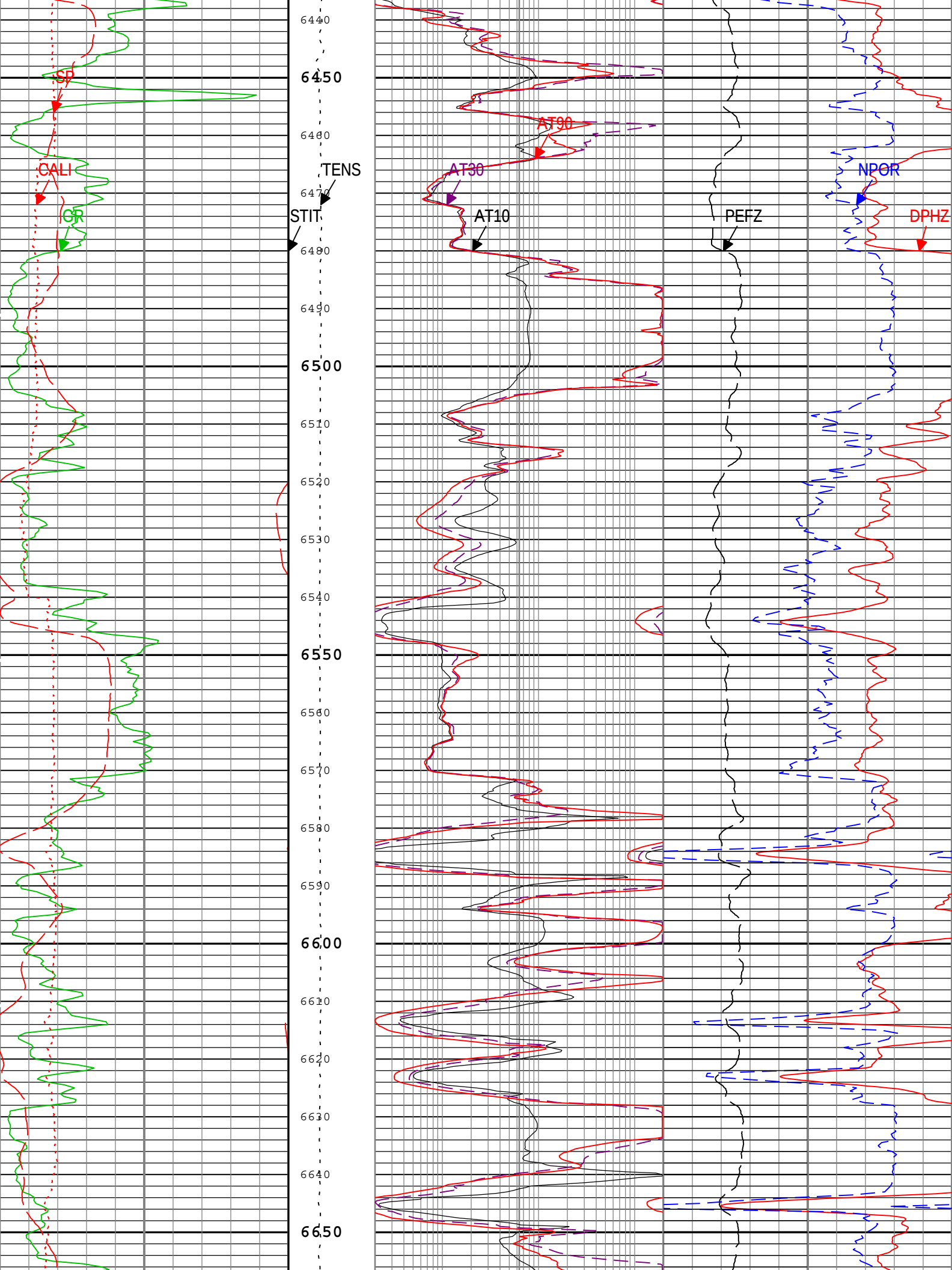
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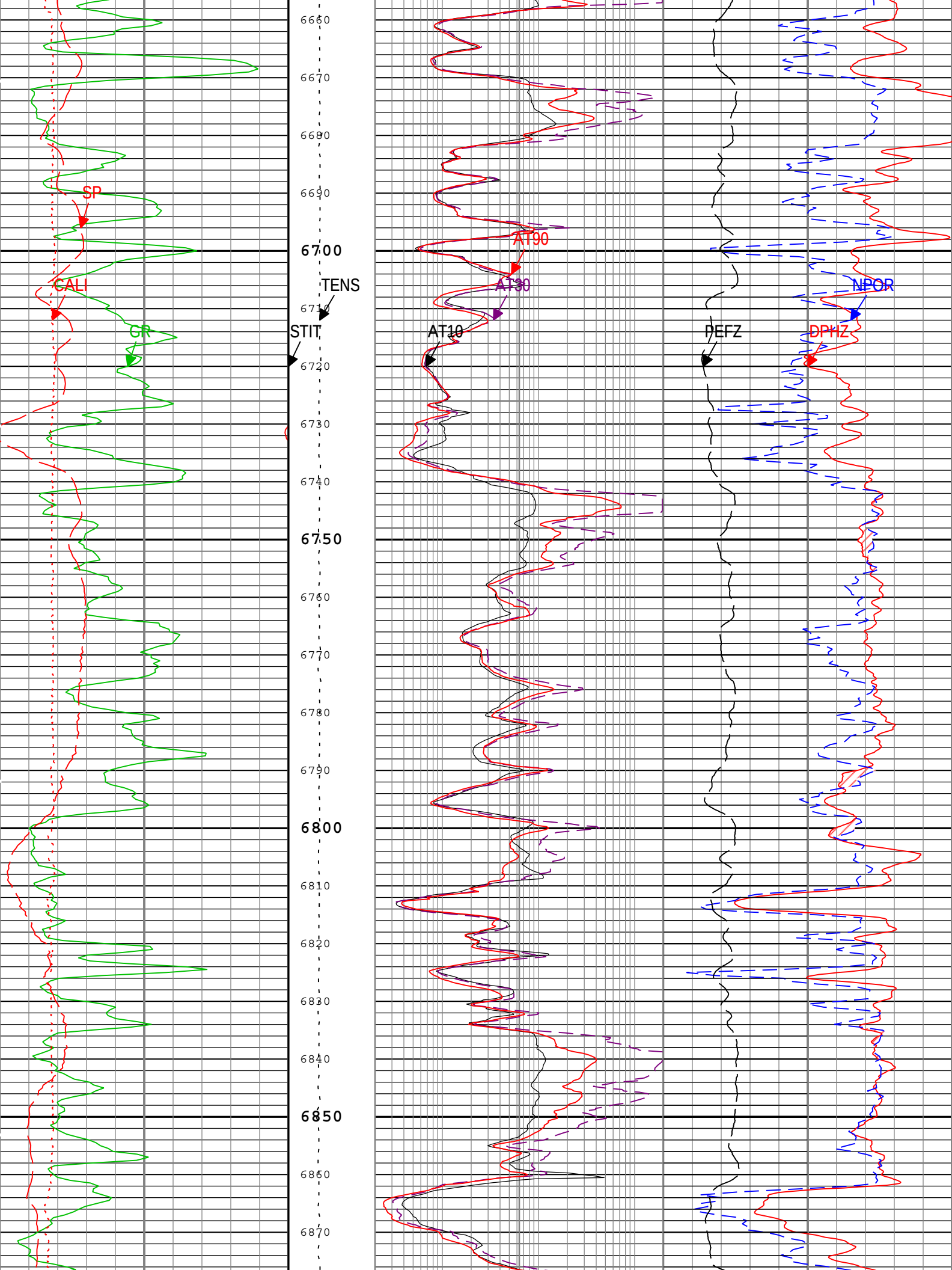
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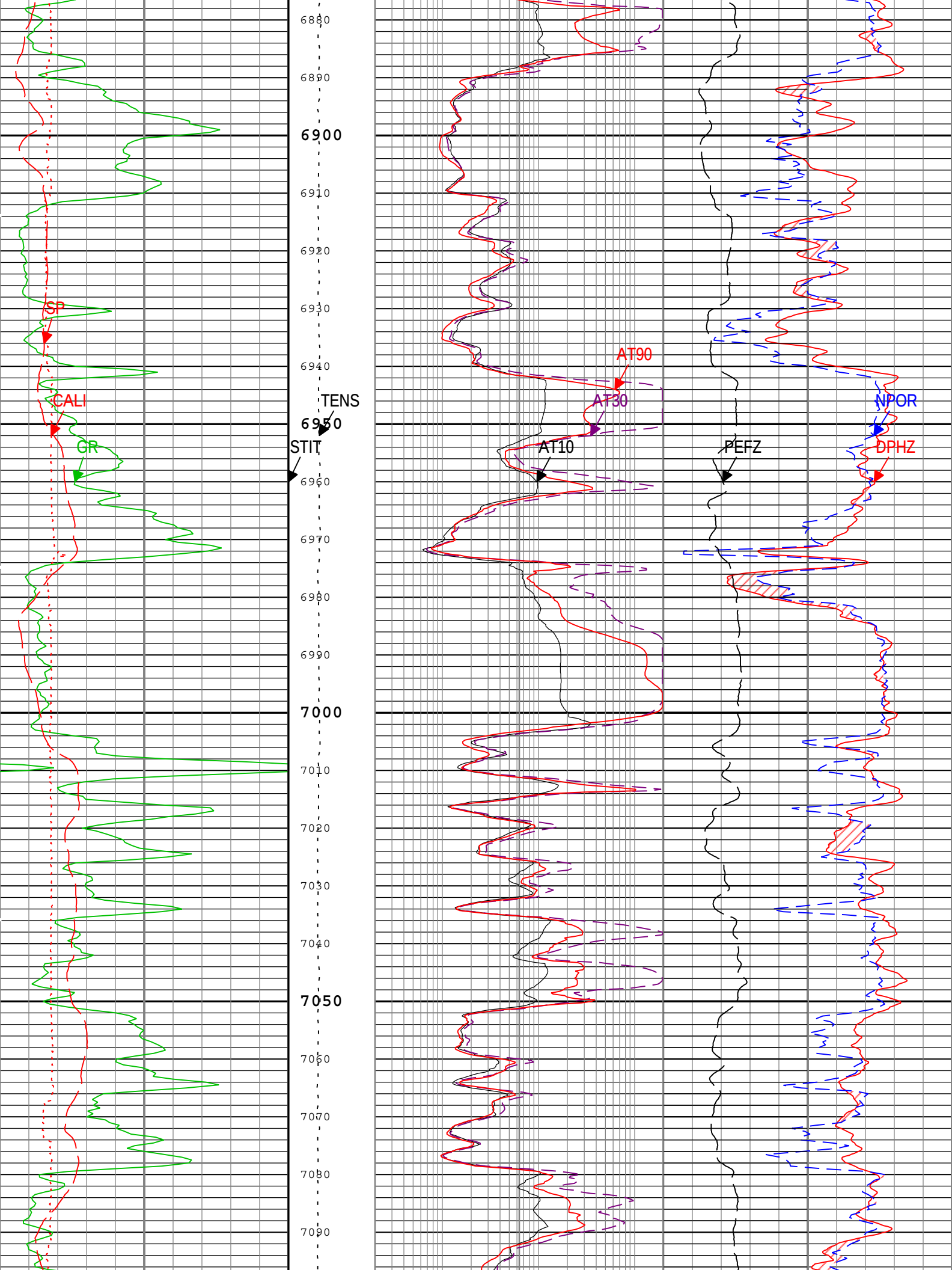
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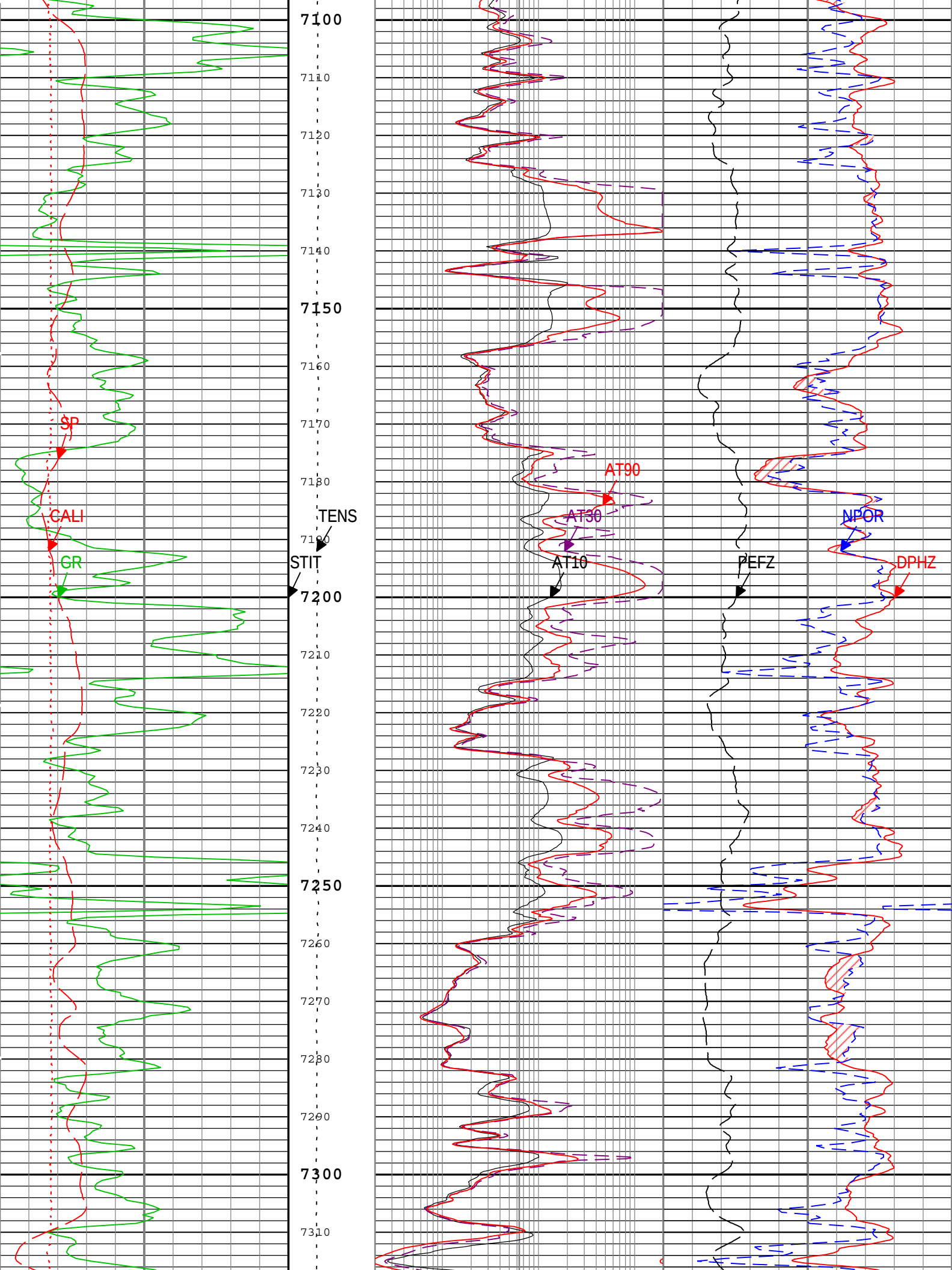
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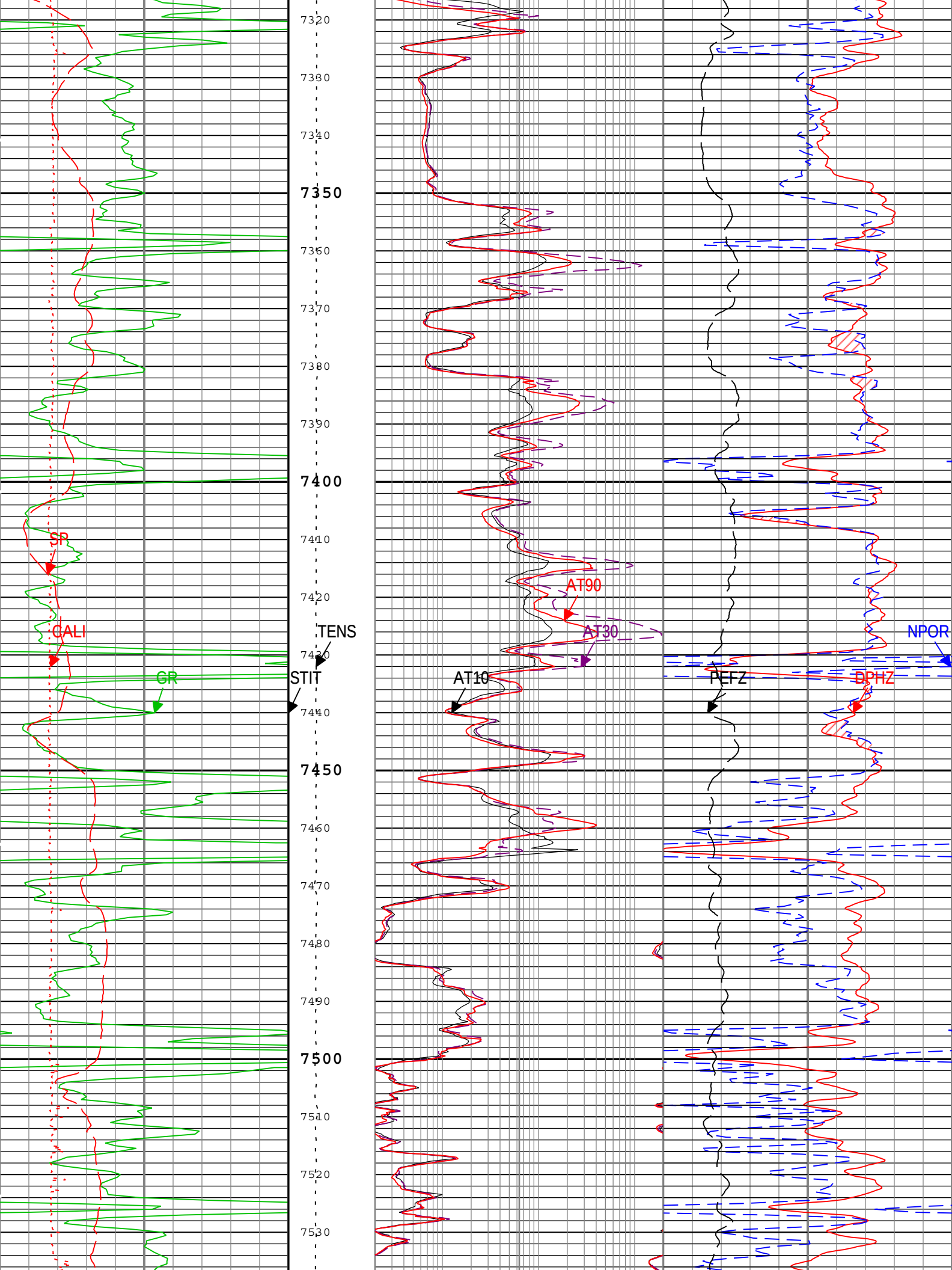
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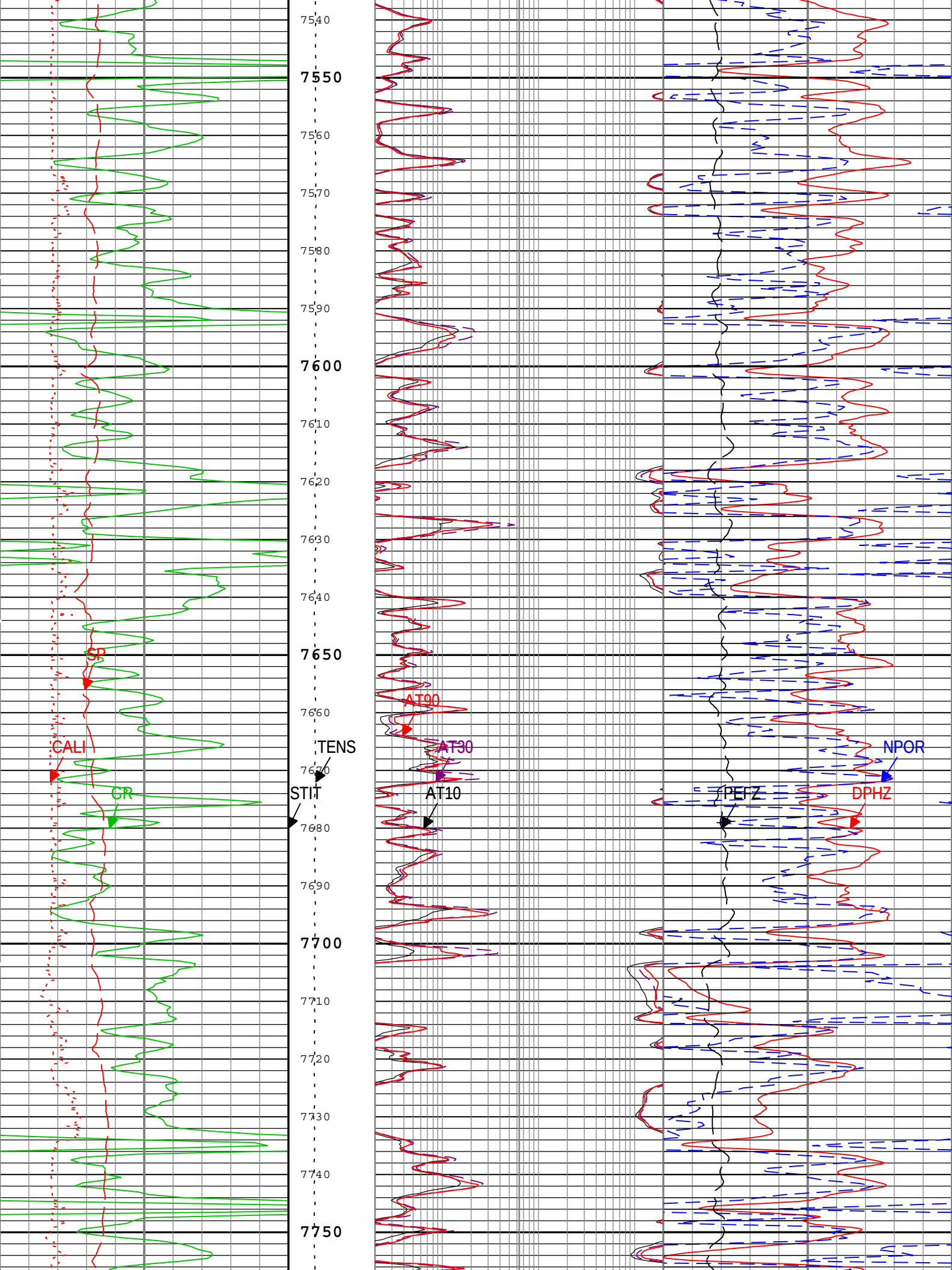
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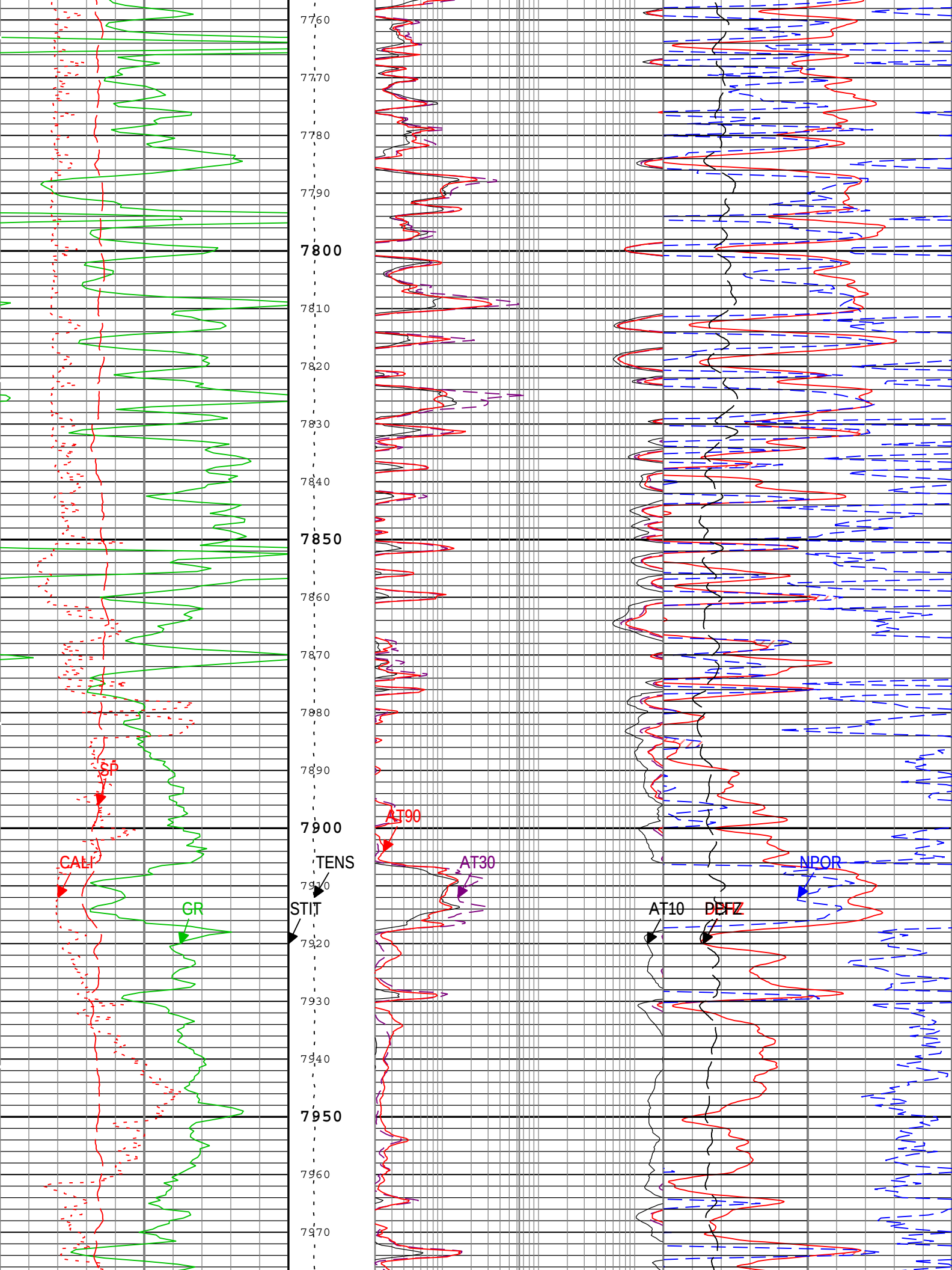
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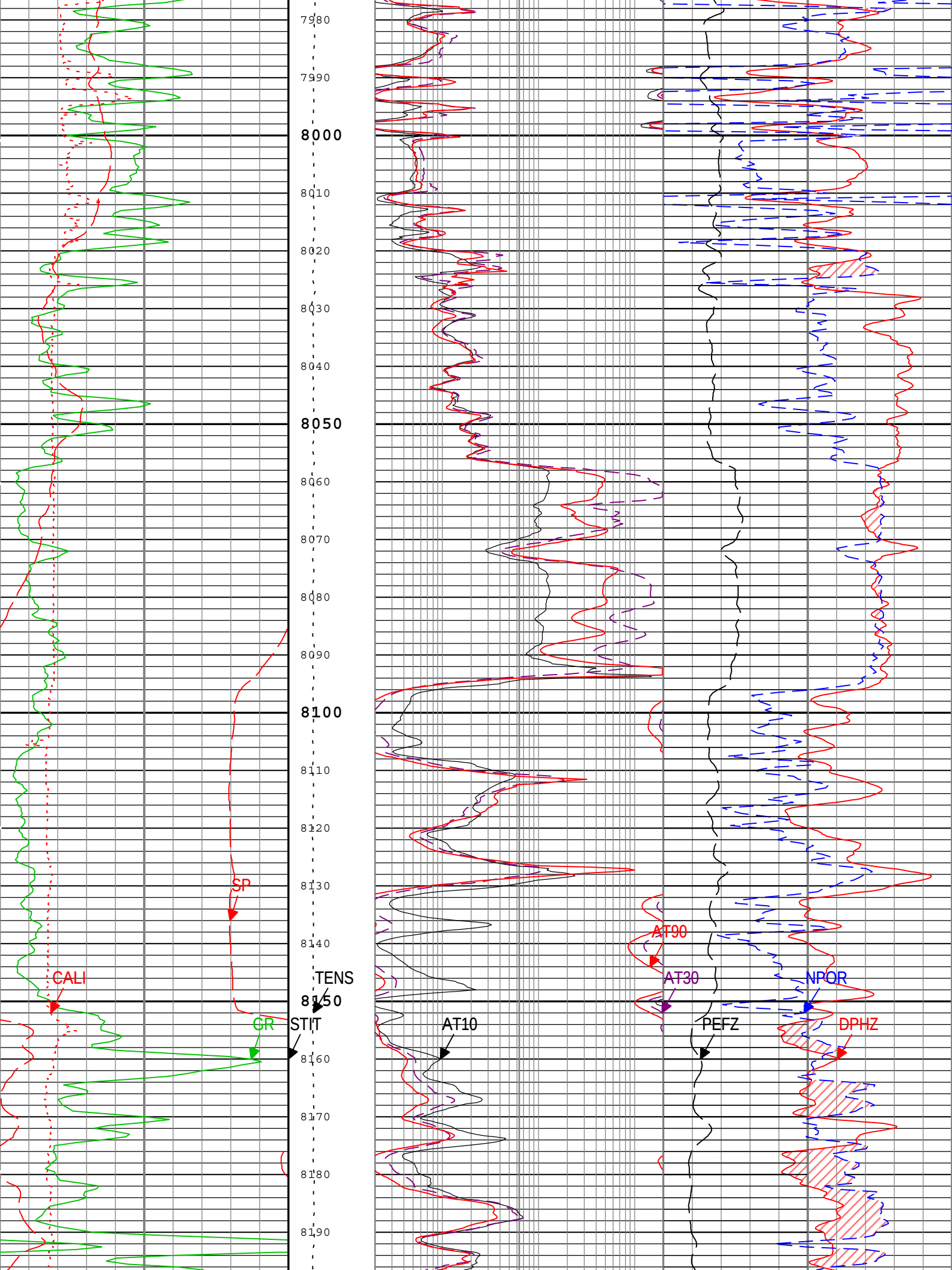
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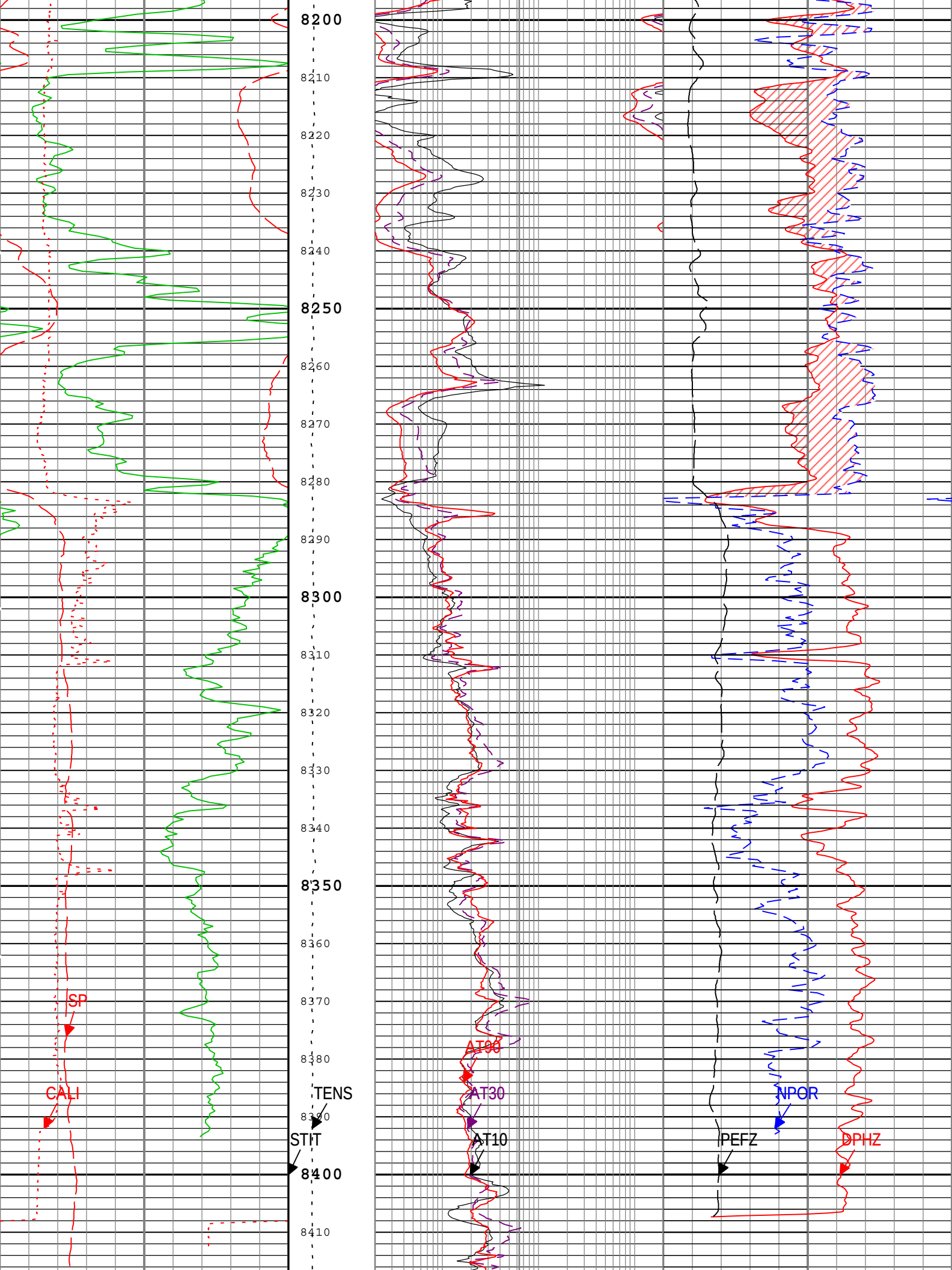
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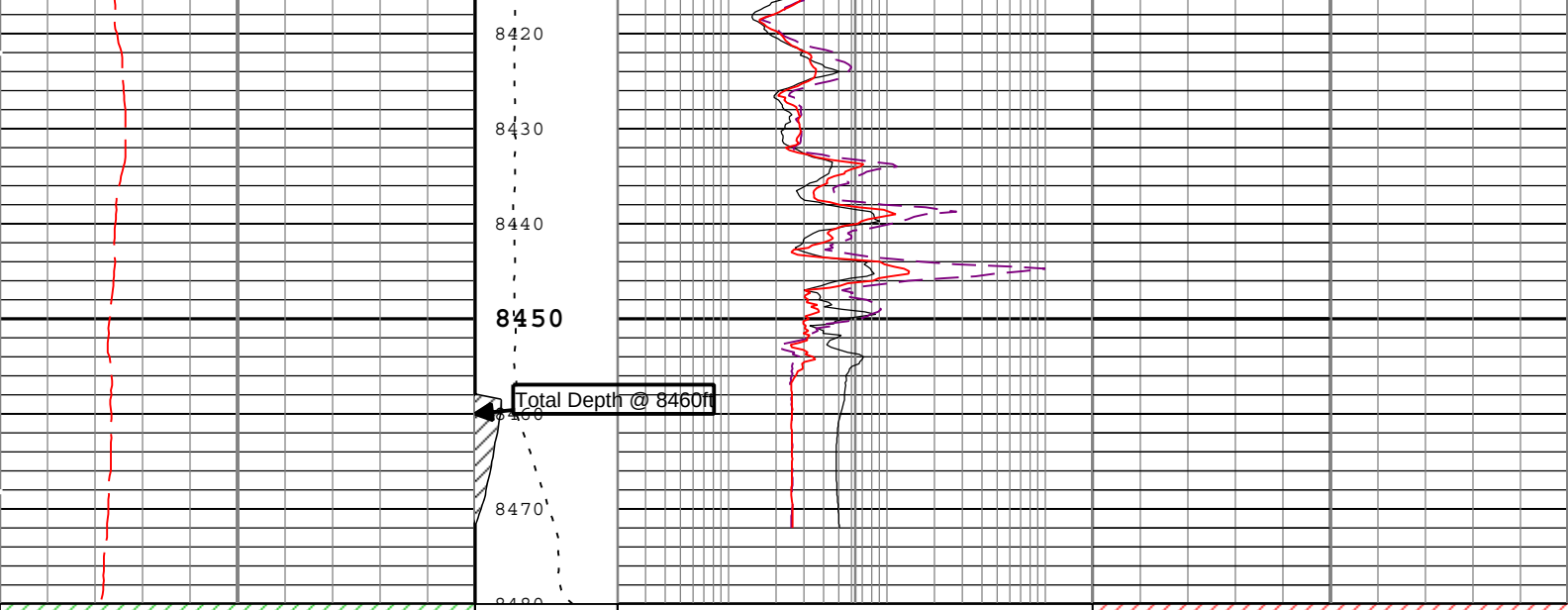

Gamma Ray Back up

Gamma Ray (GR) HGNS-H
0 gAPI 200

Caliper (CALI) HDRS-H
6 in 16

Spontaneous Potential (SP) AIT-H
0 mV 200

Stuck Tool Indicator, Total (STIT)
0 ft 50

Cable Tension (TENS)
6000 lbf 0

Array Induction Two Foot Resistivity A10 (AT10) AIT-H
2 ohm.m 2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-H
2 ohm.m 2000

Array Induction Two Foot Resistivity A90 (AT90) AIT-H
2 ohm.m 2000

Gas Effect

NPOR Backup

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

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H
0 10

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: 14-Jun-2013 00:54:15

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	
ASTA	Array Induction Tool Standoff	AIT-H	1.625	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	9358.74	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.07	in
CBLO	Casing Bottom (Logger)	WLSESSION	345	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	Chemical Gel	
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	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	80	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.44	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft
TD	Total Measured Depth	Borehole	8460	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	0	20	345
BS	7.875	345	8480

All depth are actual.

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	398

Auxiliary Equipment :

AITH Rm/SP Bottom Nose	AHRM

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 10:47:15 03-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.016	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.382	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.015	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.500	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.017	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	-0.006	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.017	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	-0.023	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.998	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.007	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.995	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.242	3.000
Test Loop Gain - 6		Master	1.000	0.950	1.003	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	0.103	3.000
Test Loop Gain - 7		Master	1.000	0.950	1.034	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	0.276	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 10:47:15 03-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit

Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-88.865	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	95.088	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	166.249	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	142.475	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	110.473	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	32.875	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	58.060	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	50.732	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	21.554	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	-8.558	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	13.166	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	1.624	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	8.970	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	6.001	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.698	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	3.466	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 10:47:15 03-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	0.801	1.200
Fine Gain		Master	1.000	0.800	0.802	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 10:47:15 03-Jun-2013 Before (Measured): 22:50:23 12-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.626	0.847
		Before	-----	0.363	0.636	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.010	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	74.127	131.000
		Before	-----	11.000	74.543	131.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.416	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.283	1.778
		Before	-----	0.762	1.304	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.021	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	73.098	130.000
		Before	-----	10.000	73.506	130.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.408	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.636	0.872
		Before	-----	0.374	0.647	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.011	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	68.889	126.000
		Before	-----	6.000	69.270	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.381	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.722	0.986
		Before	-----	0.422	0.734	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.012	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	67.986	125.000
		Before	-----	5.000	68.364	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.378	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.802	1.345	1.872
		Before	-----	0.802	1.367	1.872

		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.022	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	60.992	119.000
		Before	-----	-1.000	61.340	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.348	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.944	2.737
		Before	-----	1.173	1.975	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.031	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	58.785	117.000
		Before	-----	-3.000	59.097	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.312	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.939	2.737
		Before	-----	1.173	1.970	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.031	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	58.848	117.000
		Before	-----	-3.000	59.160	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.312	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.849	1.376	1.981
		Before	-----	0.849	1.396	1.981
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.020	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	-7.000	53.000	113.000
		Before	-----	-7.000	53.072	113.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.072	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master		-50.000	-0.036	50.000
		Before		-50.000	-0.038	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.002	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master		941.000	992.434	1040.000
		Before		941.000	992.116	1040.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.318	-----
		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	0.919	0.960
		Before		0.870	0.919	0.960
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----

MAST-B (Multimode Array Sonic Service Tool) Calibration - Run 1

Primary Equipment :

MAMS-CA Multimode Array Sonic Minimum Service Sonde MAMS-CA 8506

MAST Master Characterization Coefficients - Characterization Coefficients Summary

Master (EEPROM): 14:36:00 12-Mar-2013 Expired by 2 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit

Sensor Sensitivity Correction Factor Minimum		Master	1.000	0.500	0.934	1.700	
Sensor Sensitivity Correction Factor Maximum		Master	1.000	0.500	1.116	1.700	
Sensor Time Delay Factor Minimum	us	Master	0	-2.000	-0.470	2.000	
Sensor Time Delay Factor Maximum	us	Master	0	-2.000	0.417	2.000	
Sensor Sensitivity Correction Factor Low Frequency to High Frequency Ratio Minimum		Master	1.000	0.900	0.919	1.700	
Sensor Sensitivity Correction Factor Low Frequency to High Frequency Ratio Maximum		Master	1.000	0.900	1.077	1.700	

Characterization Coefficients

Master (EEPROM): 14:36:00 12-Mar-2013 Expired by 2 days

CALI_SSCF (Master) Sensor Sensitivity Correction Factor

Minimum/Nominal/Maximum 0.500/1.000/1.700 **Unit**

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	1.025	0.983	1.034	0.977	1.033	1.037	1.001	1.083
SO2	1.100	1.000	0.998	1.035	1.003	1.000	1.079	0.950
SO3	1.007	1.003	0.953	1.064	0.981	0.949	0.987	0.996
SO4	0.991	0.965	1.021	0.996	0.955	0.993	1.004	0.975
SO5	1.027	0.982	0.961	1.024	0.995	0.997	0.945	1.086
SO6	1.019	0.974	0.979	1.005	0.960	1.018	0.983	1.006
SO7	0.996	1.005	0.945	1.044	0.979	0.992	1.048	1.008
SO8	1.008	1.022	1.017	0.998	1.065	0.992	1.013	1.023
SO9	1.024	1.028	0.934	0.988	0.982	1.022	1.014	1.039
SO10	1.011	0.956	1.000	0.970	1.105	0.982	1.004	0.987
SO11	1.009	0.987	0.962	1.013	1.027	0.984	0.980	0.946
SO12	1.116	0.991	0.993	0.962	1.006	1.010	1.061	0.946
SO13	1.026	0.971	0.970	1.012	0.957	1.000	0.984	1.028

CALI_STDF (Master) Sensor Time Delay Factor

Minimum/Nominal/Maximum -2.000/0/2.000 **Unit** us

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	-0.118	-0.295	-0.235	-0.135	0.204	0.297	0.132	0.118
SO2	-0.041	-0.200	-0.380	-0.102	0.056	0.359	0.150	0.041
SO3	-0.150	-0.210	-0.049	-0.196	0.169	0.257	0.139	0.049
SO4	0.038	-0.294	-0.470	0.079	-0.069	0.039	0.157	0.011
SO5	-0.087	-0.275	-0.133	0.149	0.107	0.060	0.011	0.006
SO6	-0.118	0.102	0.032	0.300	0.029	0.032	-0.127	-0.155
SO7	-0.279	-0.179	-0.093	0.067	0.182	0.187	0.042	-0.041
SO8	-0.204	-0.179	-0.068	0.110	0.062	0.036	0.069	0.022
SO9	-0.206	-0.067	-0.134	0.058	0.037	0.208	0.043	-0.033
SO10	-0.035	0.037	-0.134	-0.024	0.124	-0.012	-0.088	0.029
SO11	-0.101	-0.083	-0.289	-0.023	0.105	0.261	0.191	0.023
SO12	-0.016	-0.096	-0.239	-0.114	0.104	0.417	0.016	0.035
SO13	-0.199	-0.137	-0.203	0.015	0.043	0.378	0.276	-0.015

CALI_SSCR (Master) Sensor Sensitivity Correction Factor Low Frequency to High Frequency Ratio

Minimum/Nominal/Maximum 0.900/1.000/1.700 **Unit**

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	1.049	0.999	0.972	0.949	0.960	0.974	1.017	1.053
SO2	1.077	1.043	1.015	0.978	0.978	1.019	1.046	1.065
SO3	1.025	1.004	0.977	0.919	0.926	0.954	0.998	1.008
SO4	1.056	1.008	0.989	0.965	0.962	0.983	1.014	1.044
SO5	1.050	1.004	0.999	0.985	0.979	0.982	1.017	1.041

SO5	1.030	1.004	0.999	0.985	0.979	0.982	1.017	1.041
SO6	1.021	1.003	1.007	0.981	0.963	0.971	0.992	1.016
SO7	0.991	1.008	1.030	1.023	1.015	0.995	0.986	0.986
SO8	0.999	1.001	1.016	1.014	1.000	0.988	0.988	0.980
SO9	1.009	0.999	1.022	1.021	1.010	1.003	0.997	0.986
SO10	0.994	0.995	1.015	1.010	1.011	0.998	0.986	0.986
SO11	1.000	1.005	1.016	1.009	1.003	1.005	0.991	0.994
SO12	1.007	1.000	1.006	0.994	0.999	0.992	0.978	0.993
SO13	1.001	1.009	1.022	1.013	1.004	1.003	0.997	1.002

CALI_SSCTF (Master)	Sensor Sensitivity Correction Transmitter Failure Flag	
Minimum/Nominal/Maximum	0/0/0	Unit
Monopole Upper Transmitter	0	
Monopole Lower Transmitter	0	

CALI_SSCHF (Master)	Sensor Sensitivity Correction High Frequency Diagnostic Failure Flag							
Minimum/Nominal/Maximum	0/0/0						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	0	0	0	0	0	0	0	0
SO2	0	0	0	0	0	0	0	0
SO3	0	0	0	0	0	0	0	0
SO4	0	0	0	0	0	0	0	0
SO5	0	0	0	0	0	0	0	0
SO6	0	0	0	0	0	0	0	0
SO7	0	0	0	0	0	0	0	0
SO8	0	0	0	0	0	0	0	0
SO9	0	0	0	0	0	0	0	0
SO10	0	0	0	0	0	0	0	0
SO11	0	0	0	0	0	0	0	0
SO12	0	0	0	0	0	0	0	0
SO13	0	0	0	0	0	0	0	0

CALI_SSCLF (Master)	Sensor Sensitivity Correction Low Frequency Diagnostic Failure Flag							
Minimum/Nominal/Maximum	0/0/0						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	0	0	0	0	0	0	0	0
SO2	0	0	0	0	0	0	0	0
SO3	0	0	0	0	0	0	0	0
SO4	0	0	0	0	0	0	0	0
SO5	0	0	0	0	0	0	0	0
SO6	0	0	0	0	0	0	0	0
SO7	0	0	0	0	0	0	0	0
SO8	0	0	0	0	0	0	0	0
SO9	0	0	0	0	0	0	0	0
SO10	0	0	0	0	0	0	0	0
SO11	0	0	0	0	0	0	0	0
SO12	0	0	0	0	0	0	0	0
SO13	0	0	0	0	0	0	0	0

CALI_SSCHA (Master)	Sensor Sensitivity Correction High Frequency Normalized Amplitudes							
Minimum/Nominal/Maximum	-----/1.000/-----						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8

SO1	1.004	1.047	0.996	1.053	0.996	0.992	1.028	0.950
SO2	0.911	1.001	1.004	0.968	0.999	1.002	0.928	1.054
SO3	0.985	0.989	1.041	0.932	1.011	1.045	1.004	0.996
SO4	1.001	1.028	0.971	0.996	1.039	0.999	0.988	1.018
SO5	0.970	1.014	1.036	0.973	1.001	0.999	1.054	0.917
SO6	0.975	1.021	1.016	0.989	1.036	0.976	1.011	0.988
SO7	1.005	0.996	1.059	0.959	1.023	1.009	0.955	0.994
SO8	1.007	0.994	0.998	1.017	0.953	1.023	1.002	0.993
SO9	0.992	0.988	1.087	1.028	1.035	0.994	1.002	0.978
SO10	0.981	1.038	0.993	1.023	0.898	1.010	0.989	1.006
SO11	0.977	0.999	1.024	0.973	0.960	1.001	1.005	1.041
SO12	0.895	1.008	1.007	1.038	0.993	0.989	0.942	1.056
SO13	0.967	1.022	1.023	0.980	1.037	0.992	1.008	0.965

CALI_SSCLA (Master)	Sensor Sensitivity Correction Low Frequency Normalized Amplitudes		
Minimum/Nominal/Maximum	-----/1.000/-----	Unit	

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	1.053	1.046	0.967	0.999	0.957	0.966	1.046	1.001
SO2	0.981	1.044	1.019	0.947	0.977	1.020	0.971	1.122
SO3	1.010	0.992	1.018	0.856	0.937	0.997	1.003	1.004
SO4	1.056	1.036	0.961	0.961	0.999	0.982	1.001	1.062
SO5	1.019	1.018	1.035	0.958	0.979	0.982	1.072	0.955
SO6	0.996	1.024	1.023	0.971	0.997	0.947	1.003	1.003
SO7	0.996	1.004	1.091	0.981	1.038	1.005	0.943	0.980
SO8	1.006	0.994	1.014	1.031	0.953	1.010	0.989	0.973
SO9	1.001	0.987	1.112	1.050	1.045	0.997	0.999	0.964
SO10	0.976	1.033	1.008	1.034	0.908	1.008	0.976	0.992
SO11	0.976	1.004	1.040	0.982	0.963	1.007	0.996	1.035
SO12	0.901	1.008	1.013	1.032	0.992	0.982	0.921	1.048
SO13	0.968	1.032	1.046	0.993	1.042	0.995	1.005	0.967

CALI_SSTRS (Master)	Sensor Sensitivity Correction Transmitter-Receiver Spacing		
Minimum/Nominal/Maximum	-----/4.000/-----	Unit	ft
Monopole Upper Transmitter	2.000		
Monopole Lower Transmitter	2.000		

CALI_TTMUH (Master)	Sensor Sensitivity Transit Time from Monopole Upper Transmitter High Frequency Firing		
Minimum/Nominal/Maximum	0/0/5000.000	Unit	us

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	502.102	502.280	502.219	502.119	501.780	501.687	501.853	501.867
SO2	473.038	473.197	473.376	473.099	472.941	472.638	472.847	472.956
SO3	444.242	444.302	444.141	444.288	443.923	443.835	443.953	444.043
SO4	415.256	415.411	415.406	415.072	415.064	414.972	415.026	415.129
SO5	386.185	386.419	386.198	386.053	385.914	385.957	386.019	386.046
SO6	357.173	356.940	356.950	356.720	356.810	356.889	357.130	357.176
SO7	328.311	328.244	328.153	328.017	327.917	327.929	328.068	328.112
SO8	299.107	299.167	299.064	298.988	298.888	298.968	298.940	298.900
SO9	270.011	270.000	270.088	269.893	269.907	269.801	269.916	269.934
SO10	240.833	240.869	241.047	240.937	240.816	241.005	241.022	240.860
SO11	211.934	211.996	212.282	212.136	212.030	211.992	211.831	211.885
SO12	182.927	182.995	183.183	183.054	182.957	182.731	183.034	182.891

SO13	153.638	153.666	153.712	153.352	153.349	153.074	153.211	153.489

CALI_TTMLH (Master)	Sensor Sensitivity Transit Time from Monopole Lower Transmitter High Frequency Firing							
Minimum/Nominal/Maximum	0/0/5000.000						Unit	us
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	153.363	153.418	153.344	153.296	152.959	152.788	153.000	153.201
SO2	182.279	182.319	182.581	182.306	182.233	181.945	182.163	182.225
SO3	211.335	211.095	211.251	211.154	210.889	210.700	211.156	211.134
SO4	239.625	240.135	240.491	239.727	240.032	239.908	239.618	239.805
SO5	269.246	269.386	269.323	268.904	269.127	269.178	269.214	269.197
SO6	298.103	297.897	298.028	297.722	298.172	298.089	298.165	298.176
SO7	327.382	327.248	327.169	326.984	326.854	326.831	326.984	327.105
SO8	356.352	356.242	356.122	355.844	356.039	356.011	355.972	356.107
SO9	385.407	385.140	385.187	384.998	385.025	384.790	385.005	385.139
SO10	414.303	414.123	414.288	414.178	414.003	414.086	414.220	414.148
SO11	443.273	443.254	443.461	443.194	443.066	442.911	442.981	443.149
SO12	472.198	472.278	472.421	472.297	472.078	471.766	472.167	472.147
SO13	501.398	501.335	501.402	501.184	501.156	500.821	500.923	501.214

CALI_AMPMUH (Master)	Sensor Sensitivity First Break Amplitude from Monopole Upper Transmitter High Frequency Firing							
Minimum/Nominal/Maximum	-50000.000/0/50000.000						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	4637.729	4836.199	4599.694	4864.912	4603.192	4582.315	4751.253	4388.811
SO2	4533.373	4984.456	4994.616	4817.715	4969.925	4984.966	4618.322	5245.438
SO3	5191.226	5209.413	5486.745	4909.907	5329.997	5506.958	5293.091	5245.740
SO4	5540.549	5700.082	5350.627	5522.776	5776.915	5556.789	5481.986	5650.716
SO5	5584.584	5840.605	5944.959	5618.962	5749.240	5740.361	6029.171	5265.590
SO6	5884.147	6121.570	6074.512	5961.322	6211.662	5865.889	6047.527	5954.539
SO7	6332.084	6276.490	6684.692	6073.633	6491.595	6420.737	6060.915	6295.006
SO8	6623.438	6529.060	6543.059	6702.810	6258.513	6734.589	6584.247	6515.600
SO9	6786.355	6816.911	7496.808	7096.775	7114.918	6867.907	6900.408	6751.592
SO10	7178.708	7622.322	7265.273	7492.401	6564.726	7443.020	7287.747	7400.528
SO11	7600.045	7757.581	7917.736	7518.603	7369.559	7706.757	7705.093	8106.874
SO12	7233.408	8089.869	7977.606	8023.804	7638.644	7602.986	7355.080	8413.431
SO13	7591.281	8024.294	7857.272	7291.851	7532.692	7114.380	7458.377	7476.190

CALI_AMPMLH (Master)	Sensor Sensitivity First Break Amplitude from Monopole Lower Transmitter High Frequency Firing							
Minimum/Nominal/Maximum	-50000.000/0/50000.000						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	8676.473	9038.938	8664.773	8981.316	8212.273	8185.718	8553.927	8244.391
SO2	8215.014	8973.128	9026.359	8537.448	8768.354	8804.325	8191.096	9426.092
SO3	8519.947	8536.414	8973.634	7887.465	8578.498	8797.123	8579.199	8490.371
SO4	8156.441	8366.086	7958.138	8104.326	8431.566	8111.998	8029.031	8271.210
SO5	7531.215	7871.552	8071.958	7525.140	7784.850	7774.975	8234.082	7142.507
SO6	7250.104	7628.316	7615.394	7356.564	7741.774	7278.877	7576.604	7348.276
SO7	7036.029	6973.330	7403.898	6677.733	7103.518	6995.637	6641.687	6919.024
SO8	6559.021	6480.580	6525.283	6613.417	6221.853	6659.732	6531.510	6480.208
SO9	6200.773	6118.190	6743.779	6367.785	6433.365	6151.728	6219.740	6055.195
SO10	5996.923	6319.688	6063.000	6249.226	5490.937	6132.469	5999.383	6110.571
SO11	5707.669	5836.707	5988.146	5685.690	5609.998	5853.246	5876.897	6086.263
SO12	4916.028	5536.552	5527.228	5700.650	5452.918	5431.554	5171.157	5797.465

SO13	5092.788	5382.439	5387.868	5161.310	5461.814	5224.695	5307.476	5080.088

CALI_AMPMUL (Master)	Sensor Sensitivity First Break Amplitude from Monopole Upper Transmitter Low Frequency Firing							
Minimum/Nominal/Maximum	-50000.000/0/50000.000						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	-7844.002	-7700.390	-6874.581	-6980.052	-6732.769	-6777.919	-7545.204	-7230.719
SO2	-8087.202	-8557.882	-7975.743	-7580.461	-7732.985	-8038.153	-7947.273	-9225.392
SO3	-10217.120	-10240.240	-10511.520	-8753.467	-9416.266	-10064.750	-10285.350	-10182.160
SO4	-11692.240	-11579.900	-10967.610	-10855.820	-11145.150	-10792.880	-11358.160	-11786.970
SO5	-12025.410	-12447.710	-12671.710	-11733.080	-11983.260	-11426.940	-12604.690	-11074.600
SO6	-14273.310	-14744.630	-14095.000	-13829.670	-14585.870	-13451.970	-13779.800	-14024.650
SO7	-20461.260	-20618.080	-22403.100	-20146.010	-21326.810	-20632.880	-19359.520	-20119.990
SO8	-18943.310	-18729.280	-19096.200	-19419.630	-17960.000	-19030.810	-18638.230	-18331.270
SO9	-19939.230	-19659.790	-22149.120	-20923.890	-20814.300	-19870.960	-19912.290	-19205.750
SO10	-20707.380	-21930.500	-21393.880	-21938.200	-19277.270	-21398.300	-20708.380	-21059.380
SO11	-21914.790	-22536.170	-23352.990	-22037.410	-21610.250	-22601.210	-22356.510	-23224.310
SO12	-22347.390	-24993.550	-25116.180	-25590.500	-24593.710	-24338.290	-22838.960	-25992.250
SO13	-27574.550	-29388.130	-29787.270	-28281.170	-29666.930	-28339.250	-28625.460	-27542.960

CALI_AMPMLL (Master)	Sensor Sensitivity First Break Amplitude from Monopole Lower Transmitter Low Frequency Firing							
Minimum/Nominal/Maximum	-50000.000/0/50000.000						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	-28563.700	-28369.810	-26248.310	-27116.300	-25956.290	-26213.120	-28377.750	-27147.910
SO2	-23626.900	-25154.060	-24543.690	-22808.970	-23528.300	-24575.400	-23377.030	-27021.020
SO3	-23290.050	-22890.720	-23474.200	-19752.250	-21608.910	-23003.540	-23132.670	-23151.520
SO4	-21654.640	-21243.160	-19694.260	-19693.290	-20474.120	-20128.570	-20520.590	-21772.990
SO5	-18204.220	-18204.050	-18502.440	-17129.490	-17502.600	-17543.040	-19152.550	-17063.150
SO6	-19698.880	-20252.290	-20237.180	-19200.280	-19726.490	-18738.410	-19833.760	-19848.610
SO7	-14037.700	-13522.930	-14140.530	-12719.470	-13507.790	-13226.890	-12484.940	-13543.120
SO8	-12154.010	-11752.910	-11695.500	-11676.650	-11022.890	-11921.830	-11772.380	-11572.660
SO9	-10205.170	-10160.180	-11729.950	-10757.950	-10853.260	-10522.480	-10390.990	-9968.689
SO10	-9240.199	-9806.224	-10188.040	-10213.920	-8912.082	-10231.230	-9808.033	-9580.605
SO11	-8561.320	-8893.088	-9696.621	-9542.580	-9341.609	-9560.236	-9006.564	-9094.437
SO12	-7952.144	-8671.613	-9329.637	-10094.240	-9807.089	-9130.136	-8270.372	-8796.250
SO13	-6812.325	-7424.063	-8234.141	-8174.165	-8582.120	-7880.891	-7327.297	-6659.665

Vertical Casing Check Coefficients

Before: After:

CALI_SVCNA (Before)	Sensor Vertical Casing Check Normalized Amplitudes (Before/After/BAChange)							
Minimum/Nominal/Maximum	-----/-----/-----						Unit	
	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO2	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO3	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO4	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO5	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO6	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO7	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO8	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO10	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO11	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO12	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO13	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

CALI_SVCNA (After) Sensor Vertical Casing Check Normalized Amplitudes (Before/After/BAChange)

Minimum/Nominal/Maximum -----/-----/----- Unit

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO2	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO3	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO4	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO5	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO6	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO7	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO8	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO10	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO11	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO12	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO13	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

CALI_SVCTDF (Before) Sensor Vertical Casing Check Time (Before/After/BAChange)

Minimum/Nominal/Maximum -----/-----/----- Unit us

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO2	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO3	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO4	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO5	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO6	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO7	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO8	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO10	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO11	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO12	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO13	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

CALI_SVCTDF (After) Sensor Vertical Casing Check Time (Before/After/BAChange)

Minimum/Nominal/Maximum -----/-----/----- Unit us

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO2	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO3	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO4	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO5	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO6	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO7	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO8	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO10	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO11	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO12	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO13	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

CALI_SVCLF (Before) Sensor Vertical Casing Check Low Frequency Diagnostics Failure Flag (Before/After/BAChange)

Minimum/Nominal/Maximum -----/-----/----- Unit

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO2	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO3	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO4	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO5	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO6	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO7	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO8	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO10	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO11	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO12	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO13	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

CALI_SVCLF (After) Sensor Vertical Casing Check Low Frequency Diagnostics Failure Flag (Before/After/BAChange)

Minimum/Nominal/Maximum -----/-----/----- Unit

	RB1	RB2	RB3	RB4	RB5	RB6	RB7	RB8
SO1	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO2	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO3	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO4	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO5	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO6	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO7	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO8	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO9	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO10	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO11	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO12	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE
SO13	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE	NOT DONE

HRLT-B (High Resolution Laterolog Array) Calibration - Run 1

Primary Equipment :

HRLT-B Sonde HRLS-B

HRLT-B Calibration - HRLT M0-M1 Voltage Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT M01 - 0	uV	Before	-322.7	-379.6	-317.5	-280.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT M01 - 1	uV	Before	-322.7	-379.6	-339.0	-280.6
		After	-----	-----	-----	-----

		After-Before	-----	-----	-----	-----	
HRLT M01 - 2	uV	Before	-322.7	-379.6	-357.3	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M01 - 3	uV	Before	-322.7	-379.6	-342.1	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M01 - 4	uV	Before	-322.7	-379.6	-314.9	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M01 - 5	uV	Before	-322.7	-379.6	-330.4	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M01 - 6	uV	Before	322.7	280.6	345.3	379.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HRLT-B Calibration - HRLT M1-M2 Voltage Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT M12 - 0	uV	Before	1781.0	1548.7	1764.7	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M12 - 1	uV	Before	1781.0	1548.7	1886.0	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M12 - 2	uV	Before	1781.0	1548.7	1982.4	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M12 - 3	uV	Before	1781.0	1548.7	1897.5	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M12 - 4	uV	Before	1781.0	1548.7	1747.7	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M12 - 5	uV	Before	1781.0	1548.7	1834.8	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M12 - 6	uV	Before	-1781.0	-2095.3	-1929.2	-1548.7	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HRLT-B Calibration - HRLT M2-M3 Voltage Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT M23 - 0	uV	Before	1781.0	1548.7	1742.3	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M23 - 1	uV	Before	1781.0	1548.7	1872.5	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M23 - 2	uV	Before	1781.0	1548.7	1969.7	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M23 - 3	uV	Before	1781.0	1548.7	1889.3	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M23 - 4	uV	Before	1781.0	1548.7	1734.0	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M23 - 5	uV	Before	1781.0	1548.7	1821.9	2095.3	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT M23 - 6	uV	Before	-1781.0	-2095.3	-1903.6	-1548.7	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HRLT-B Calibration - HRLT A3-A4 Voltage Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT V34 - 0	uV	Before	70000.0	60869.6	68829.3	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V34 - 1	uV	Before	70000.0	60869.6	74047.9	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V34 - 2	uV	Before	70000.0	60869.6	78140.7	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V34 - 3	uV	Before	70000.0	60869.6	75155.4	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V34 - 4	uV	Before	70000.0	60869.6	68863.9	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V34 - 5	uV	Before	70000.0	60869.6	72325.8	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V34 - 6	uV	Before	-70000.0	-82352.9	-74186.7	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HRLT-B Calibration - HRLT A4-A5 Voltage Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT V45 - 0	uV	Before	70000.0	60869.6	68771.7	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V45 - 1	uV	Before	70000.0	60869.6	74145.4	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V45 - 2	uV	Before	70000.0	60869.6	78201.5	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V45 - 3	uV	Before	70000.0	60869.6	75158.4	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V45 - 4	uV	Before	70000.0	60869.6	68814.4	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V45 - 5	uV	Before	70000.0	60869.6	72258.8	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V45 - 6	uV	Before	-70000.0	-82352.9	-74301.3	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HRLT-B Calibration - HRLT A5-A6 Voltage Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT V56 - 0	uV	Before	70000.0	60869.6	68739.6	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V56 - 1	uV	Before	70000.0	60869.6	74093.0	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V56 - 2	uV	Before	70000.0	60869.6	78155.3	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V56 - 3	uV	Before	70000.0	60869.6	75132.9	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V56 - 4	uV	Before	70000.0	60869.6	68790.0	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V56 - 5	uV	Before	70000.0	60869.6	72230.0	82352.9

		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT V56 - 6	uV	Before	-70000.0	-82352.9	-74256.8	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HRLT-B Calibration - HRLT Torpedo-M0 Voltage

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT VTP - 0	uV	Before	-70000.0	-82352.9	-68348.6	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VTP - 1	uV	Before	-70000.0	-82352.9	-73923.1	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VTP - 2	uV	Before	-70000.0	-82352.9	-77988.8	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VTP - 3	uV	Before	-70000.0	-82352.9	-75033.6	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VTP - 4	uV	Before	-70000.0	-82352.9	-68789.6	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VTP - 5	uV	Before	-70000.0	-82352.9	-72264.7	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VTP - 6	uV	Before	70000.0	60869.6	74018.5	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HRLT-B Calibration - HRLT Bridle#9-M0 Voltage

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT VBD - 0	uV	Before	-70000.0	-82352.9	-68411.2	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VBD - 1	uV	Before	-70000.0	-82352.9	-74171.1	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VBD - 2	uV	Before	-70000.0	-82352.9	-78244.3	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VBD - 3	uV	Before	-70000.0	-82352.9	-75232.0	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VBD - 4	uV	Before	-70000.0	-82352.9	-68896.0	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VBD - 5	uV	Before	-70000.0	-82352.9	-72337.9	-60869.6
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT VBD - 6	uV	Before	70000.0	60869.6	74267.5	82352.9
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HRLT-B Calibration - HRLT Source Current Plus

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
HRLT ISO - 0	uA	Before	284.0	247.0	285.1	334.1
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT ISO - 1	uA	Before	281.1	244.4	281.1	330.7
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
HRLT ISO - 2	uA	Before	281.1	244.4	281.1	330.7
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HRLT ISO - 3	uA	Before	281.1	244.4	281.1	330.7	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT ISO - 4	uA	Before	281.1	244.4	281.1	330.7	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT ISO - 5	uA	Before	281.1	244.4	281.1	330.7	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT ISO - 6	uA	Before	281.1	244.4	281.1	330.7	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HRLT-B Calibration - HRLT Vertical Voltage PI

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT MV - 0	uV	Before	-322.7	-379.6	-320.8	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT MV - 1	uV	Before	-322.7	-379.6	-335.6	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT MV - 2	uV	Before	-322.7	-379.6	-352.5	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT MV - 3	uV	Before	-322.7	-379.6	-335.6	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT MV - 4	uV	Before	-322.7	-379.6	-305.9	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT MV - 5	uV	Before	-322.7	-379.6	-336.2	-280.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
HRLT MV - 6	uV	Before	322.7	280.6	355.9	379.6	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HRLT-B Calibration - HRLT Calibration Temperature

Before (Measured): 21:15:14 13-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CTEM_HRLT	degF	Before			164.0		
		After	-----	-----	-----	-----	
		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): 02:35:29 10-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	

Small Ring	in	Before	8.00	6.00	7.82	10.00
Large Ring	in	Before	12.00	9.00	12.05	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 16:35:40 22-May-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	1.686	1.696
Pe Aluminum		Master	2.570	2.470	2.538	2.670
Pe Magnesium		Master	2.650	2.550	2.621	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 16:35:40 22-May-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.3449	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.8435	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.1995	1.0000
SS Max Deviation	%	Master	0	-2.5000	0.7392	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.6463	1.5000
LS Max Deviation	%	Master	0	-3.5000	2.0573	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 16:35:40 22-May-2013 Before (Measured): 02:35:02 10-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7427	
		Before	0.7427	0.7056	0.7379	0.7798
		Before-Master	-----	-----	-0.0048	-----
BS Window Sum	1/s	Master	1		24245	
		Before	24245	23033	24306	25458
		Before-Master	-----	-----	61	-----
SS Window Ratio		Master	1.0000		0.4930	
		Before	0.4930	0.4683	0.4920	0.5176
		Before-Master	-----	-----	-0.0010	-----
SS Window Sum	1/s	Master	1		13934	
		Before	13934	13237	13931	14630
		Before-Master	-----	-----	-3	-----
LS Window Ratio		Master	1.0000		0.3055	
		Before	0.3055	0.2902	0.2997	0.3207
		Before-Master	-----	-----	-0.0058	-----
LS Window Sum	1/s	Master	1		1252	
		Before	1252	1189	1243	1315
		Before-Master	-----	-----	-9	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 16:35:40 22-May-2013 Before (Measured): 02:35:02 10-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1658	2400
		Before		1000	1680	2400
		Before-Master	-----	-100	22	100
SS PM High Voltage	V	Master		1000	1705	2400
		Before		1000	1714	2400
		Before-Master	-----	-100	9	100
LS PM High Voltage	V	Master		1000	1327	2400
		Before		1000	1328	2400
		Before-Master	-----	-100	1	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 16:35:40 22-May-2013 Before (Measured): 02:35:02 10-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	11.40	25.00
		Before		5.00	11.67	25.00
		Before-Master	-----	-1.00	0.27	1.00
SS Crystal Resolution	%	Master		5.00	10.15	20.00
		Before		5.00	10.05	20.00
		Before-Master	-----	-1.00	-0.10	1.00
LS Crystal Resolution	%	Master		5.00	8.27	20.00
		Before		5.00	8.20	20.00
		Before-Master	-----	-1.00	-0.07	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 02:35:13 10-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3915	4185
Deep Resistivity	ohm.m	Before	3830	3524	3856	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3875	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): 22:49:04 12-Jun-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): 14:28:08 17-May-2013 Before (Measured): 02:31:55 10-Jun-2013 Expired by 1 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	27.4	40.0
		Before	0	5.0	27.3	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.1	-0.1	4.1
		After-Before	-----	-----	-----	-----
Far Zero Measurement	1/s	Master	0	5.0	27.3	40.0
		Before	0	5.0	30.0	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.1	2.7	4.1
		After-Before	-----	-----	-----	-----
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	6004.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2543.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----

Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5686.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2326.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 02:42:50 10-Jun-2013 Expired by 1 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	30.0	0	29.7	120.0
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	185.4	157.1	172.0	206.3
		After			NOT DONE	
		After-Before	-----	-----	-----	-----
GR Calibration Gain		Before	0.89	0.80	0.96	1.05
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run 1

Primary Equipment :

Enhanced Digital Telemetry Cartridge - B EDTC-B 8593

Calibration Parameter :

Plus Reference (Jig minus background reference) 165

EDTC-B Accelerometer Calibration - EDTC-B Accelerometer Calibration

Before (Measured): 22:48:11 12-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	ft/s2	Before	32.19	31.53	32.11	32.84

EDTC-B Memory Data - EDTC-B Memory Data

Master (EEPROM): 20:07:02 13-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Initial PMT HV	V	Master			1686.000	
Accelerometer Serial Number		Master			659	
Accelerometer Coefficients - 0		Master	-----	-----	2.925	-----
Accelerometer Coefficients - 1		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 2		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	-0.005	-----
Accelerometer Coefficients - 8		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 10		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 11		Master	-----	-----	0.000	-----
Gamma-Ray Detector Serial Number		Master			7756	

EDTC-B Gamma-Ray Calibration - Gamma Ray Coefficients

Before (Measured): 18:26:52 10-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Gamma Ray Gain		Before	1.000	0.900	1.045	1.100
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

EDTC-B Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured): 18:26:52 10-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before		0	23.414	120.000
		After	-----	-----	-----	-----

		After-Before	-----	-----	-----	-----	
RGR Plus Measurement	gAPI	Before	165.000	150.000	157.883	180.000	
		After			NOT DONE		
		After-Before	-----	-----	-----	-----	

LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run 1

Primary Equipment :

Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor	LEH-QT

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: Nighthawk Production LLC

Schlumberger

Well: Silverton 16-10

Field: Jolly Ranch

County: Lincoln

State: Colorado

Platform Express

Triple Combo