Schlumberger

Company: Carrizo Oil & Gas Inc

Well: WEP 4-28-11-3-64

Field: Wildcat

County: Adams State: Colorado

Platform Express

Triple Combo

High Resolution

County: Adams
Field: Wildcat
Location: Sec. 28, T3S, R64W
Well: WEP 4-28-11-3-64
Company: Carrizo Oil & Gas Inc

Location:			
Sec. 28, T3S, R64W SHL: 369 FNL X 1164 FWL NWNW	Elev.	K.B.	5596.00 ft
		G.L.	5579.00 ft
		D.F.	5595.00 ft

Permanent Datum:	Ground Level	Elev.:	5579.00 f
Log Measured From:	Kelly Bushing	17.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

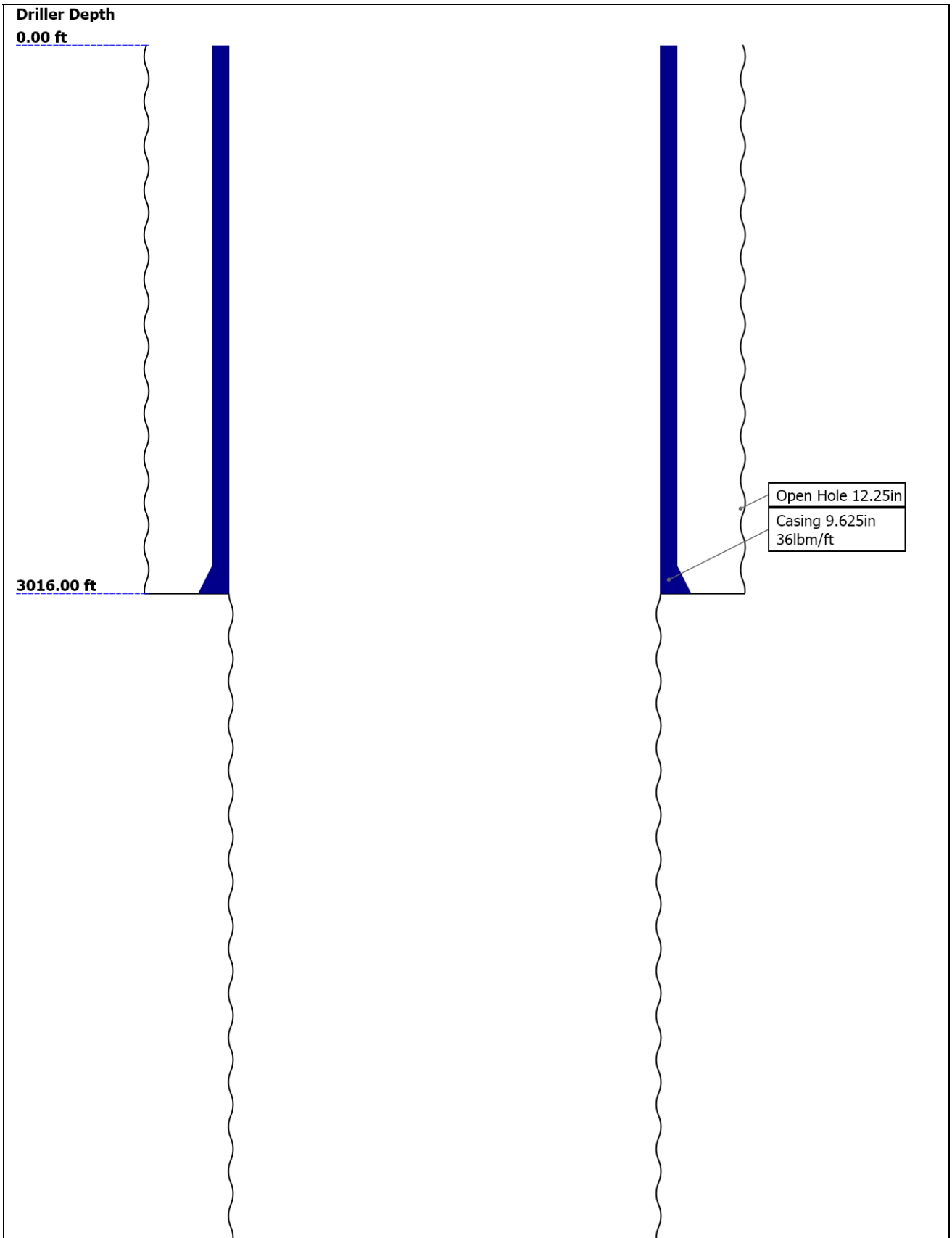
API Serial No.	Section:	Township:	Range:
05-001-09753-0000	28	3S	64W

Logging Date			15-Dec-2012			
Run Number			Run 1: PEX-HNGS-ECS			
Depth Driller			8273.00 ft			
Schlumberger Depth			8275.00 ft			
Bottom Log Interval			8275.00 ft			
Top Log Interval			3016.00 ft			
Casing Driller Size @ Depth			9.625 in @ 3016.00 ft			
Casing Schlumberger			3010 ft			
Bit Size			8.75 in			
Type Fluid In Hole			Chemical Gel			
MUD	Density	Viscosity	9.3 lbm/gal	41 s		
	Fluid Loss	PH	7.9 cm3	10		
	Source of Sample		Active Tank			
RM @ Meas Temp			1.03 ohm.m @ 58.6 degF			
RMF @ Meas Temp			0.82 ohm.m @ 58.6 degF			
RMC @ Meas Temp			1.23 ohm.m @ 58.6 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.33 @ 195.4	0.27 @ 195.4		
Max Recorded Temperatures			195.4 degF			
Circulation Stopped	Time		15-Dec-2012	12:00:00		
Logger on Bottom	Time		15-Dec-2012	23:00:00		
Unit Number	Location:		2135	Ft. Morgan, CO		
Recorded By			Allison Johnston			
Witnessed By			Paul Fears			

Disclaimer

Contents

Well Sketch

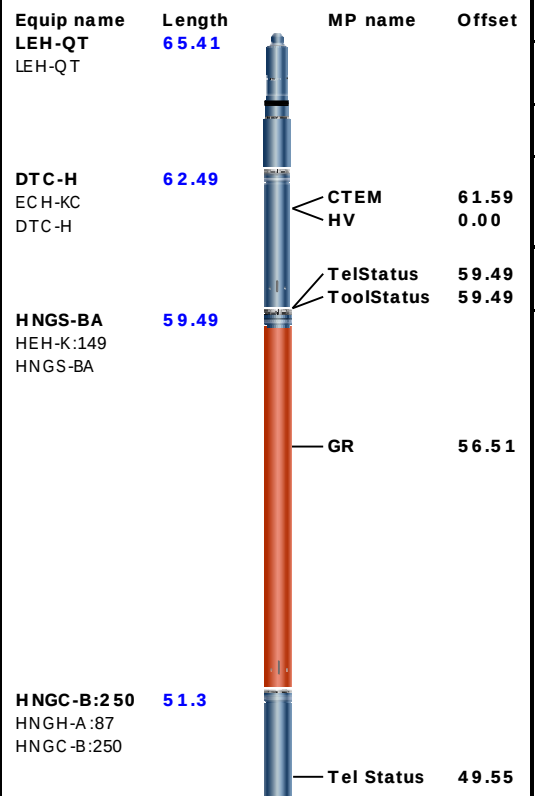

Driller Depth
0.00 ft
3016.00 ft
Open Hole 12.25in
Casing 9.625in
36lbm/ft

Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	8.75				
Top Driller (ft)	0	3016				
Top Logger (ft)	0	3016				
Bottom Driller (ft)	3016	8273				
Bottom Logger (ft)	3016	8275				
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.914					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	3016					
Bottom Logger (ft)	3010					

Remarks and Equipment Summary

Run 1: PEX-HNGS-ECS: Toolstring



Run 1: PEX-HNGS-ECS: Remarks

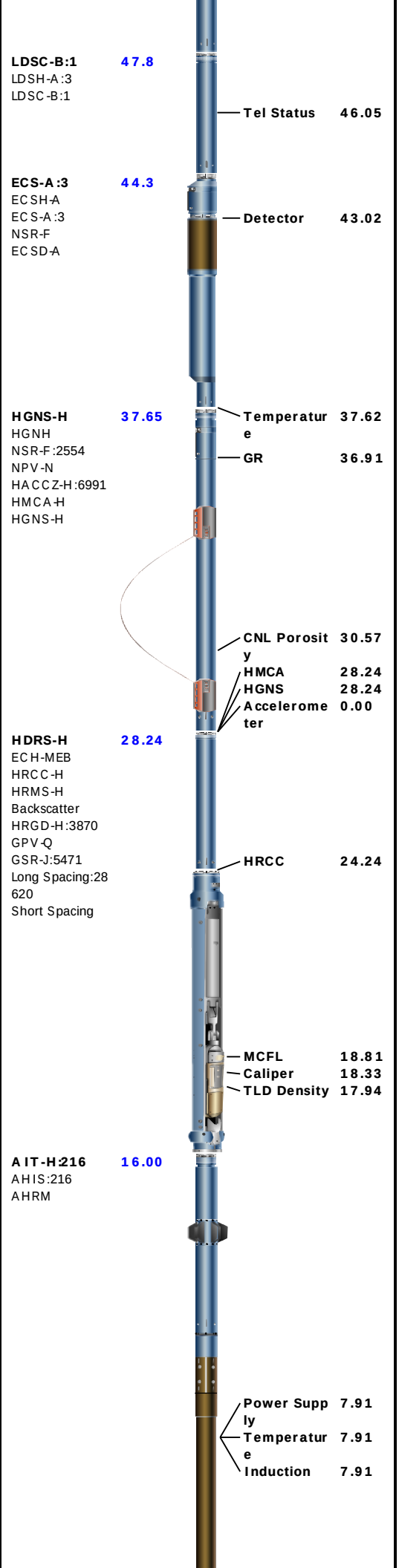
Toolstring run as per tool sketch.

Schlumbeger Crew: Matt Rocha and Alonzo Carrera

Rig: Xtreme 19

Calculated on a sandstone matrix (2.68 g/cc) from TD to 7766'. Calculated on a limestone matrix from 7766' to casing.

Caliper closed from 6640' to 6642' because of high tension.


LDSC-B:1 47.8
LDSH-A:3
LDSC-B:1
Tel Status 46.05
ECS-A:3 44.3
ECSH-A
ECS-A:3
NSR-F
ECSD-A
Detector 43.02
HGNS-H 37.65
HGNH
NSR-F:2554
NPV-N
HACCZ-H:6991
HMCA-H
HGNS-H
Temperatur e 37.62
GR 36.91
CNL Porosit y 30.57
HMCA 28.24
HGNS 28.24
Accelerome ter 0.00
HDRS-H 28.24
ECH-MEB
HRCC-H
HRMS-H
Backscatter
HRGD-H:3870
GPV-Q
GSR-J:5471
Long Spacing:28
620
Short Spacing
HRCC 24.24
MCFL 18.81
Caliper 18.33
TLD Density 17.94
AIT-H:216 16.00
AHIS:216
AHRM
Power Supp ly 7.91
Temperatur e 7.91
Induction 7.91

Lengths are in ft
Maximum Outer Diameter = 5.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	Run 1: PEX-HNGS-ECS		
Conveyance Type	Wireline		
Rig Type	Land		
Depth Measuring Device	**Run 1: PEX-HNGS-ECS**		
Type	IDW-B		
Serial Number	6515A		
Calibration Date	23-Oct-2012		
Calibration Cable Type	7-46-PXS		
Wheel Correction 1	-7		
Wheel Correction 2	-5		
Tension Device	**Run 1: PEX-HNGS-ECS**		
Type	CMTD-B/A		
Serial Number	1919		
Calibration Date	10-Nov-2012		
Calibrator Serial Number	78135A		
Calibration Points	10		
Calibration RMS	6		
Calibration Peak Error	11		
Logging Cable	**Run 1: PEX-HNGS-ECS**		
Type	7-46P-XS		
Logging Cable Length (ft)	24000.00		

Run 1: PEX-HNGS-ECS

High Resolution Triple Combo

Integration Summary

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

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
Run 1: PEX-HNGS-ECS	Log[5]:Up	Up	5143.29 ft	8297.35 ft	15-Dec-2012 11:30:28 PM	16-Dec-2012 1:00:07 AM	0.00 ft	true

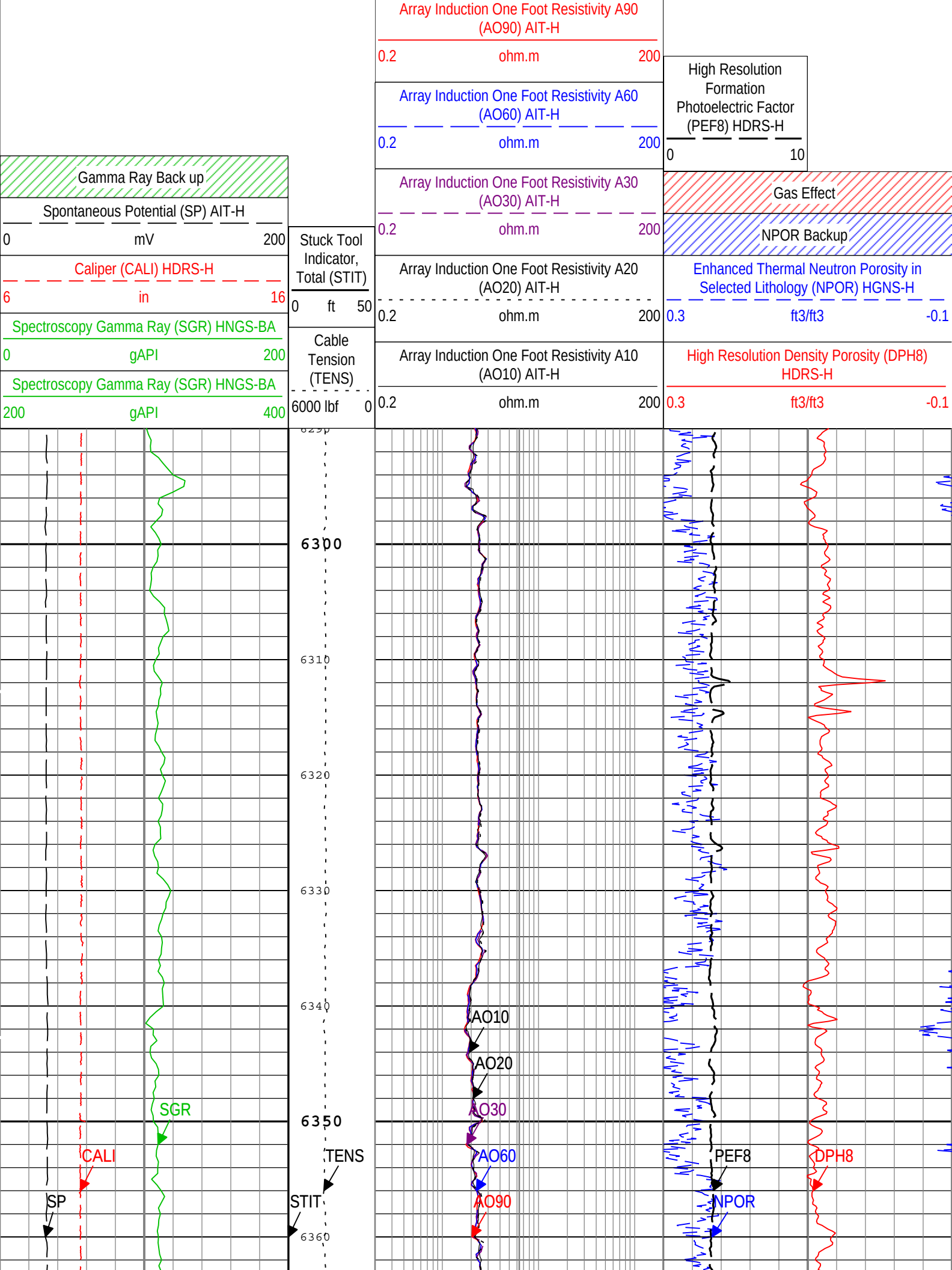
All depths are referenced to toolstring zero

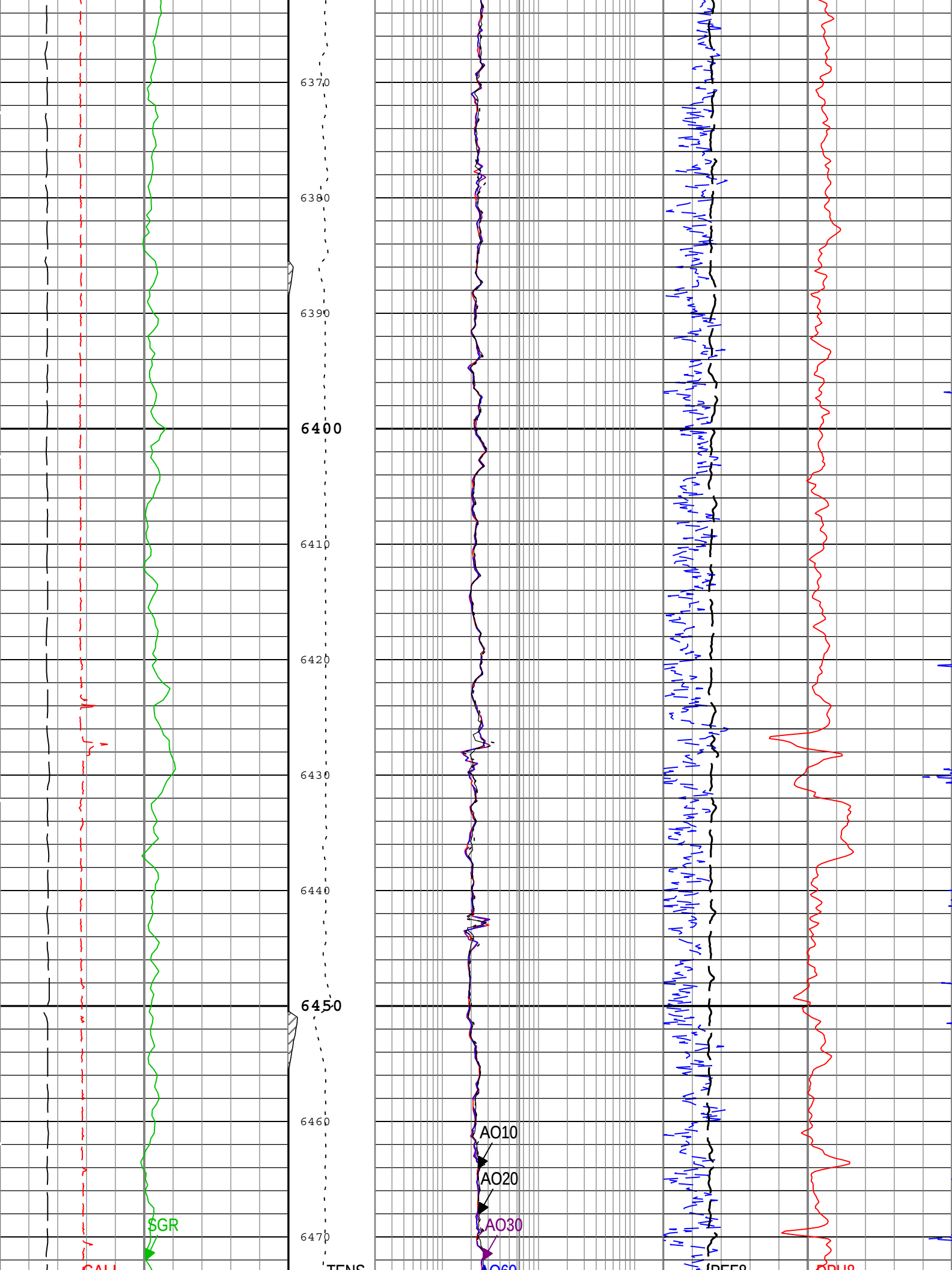
Log

Run 1: PEX-HNGS-ECS: Log[5]:Up

Description: HGNS standard resolution porosities for Platform Express Format: Log (HiRes EMD 5in Triple Combo) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Dec-2012 11:40:02

TIME_1900 - Time Marked every 60.00 (s)


Array Induction One Foot Resistivity A90 (AO90) AIT-H
0.2
ohm.m
200
Array Induction One Foot Resistivity A60 (AO60) AIT-H
0.2
ohm.m
200
High Resolution Formation Photoelectric Factor (PEF8) HDRS-H
0
10
Gamma Ray Back up
Array Induction One Foot Resistivity A30 (AO30) AIT-H
0.2
ohm.m
200
Gas Effect
NPOR Backup
Spontaneous Potential (SP) AIT-H
0
mV
200
Stuck Tool Indicator, Total (STIT)
0
ft
50
Array Induction One Foot Resistivity A20 (AO20) AIT-H
0.2
ohm.m
200
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H
0.3
ft3/ft3
-0.1
Caliper (CALI) HDRS-H
6
in
16
Cable Tension (TENS)
6000 lbf
0
Array Induction One Foot Resistivity A10 (AO10) AIT-H
0.2
ohm.m
200
High Resolution Density Porosity (DPH8) HDRS-H
0.3
ft3/ft3
-0.1
Spectroscopy Gamma Ray (SGR) HNGS-BA
0
gAPI
200
Spectroscopy Gamma Ray (SGR) HNGS-BA
200
gAPI
400
6300
6310
6320
6330
6340
6350
6360
SGR
CALI
TENS
SP
STIT
AO10
AO20
AO30
AO60
AO90
PEF8
DPH8
NPOR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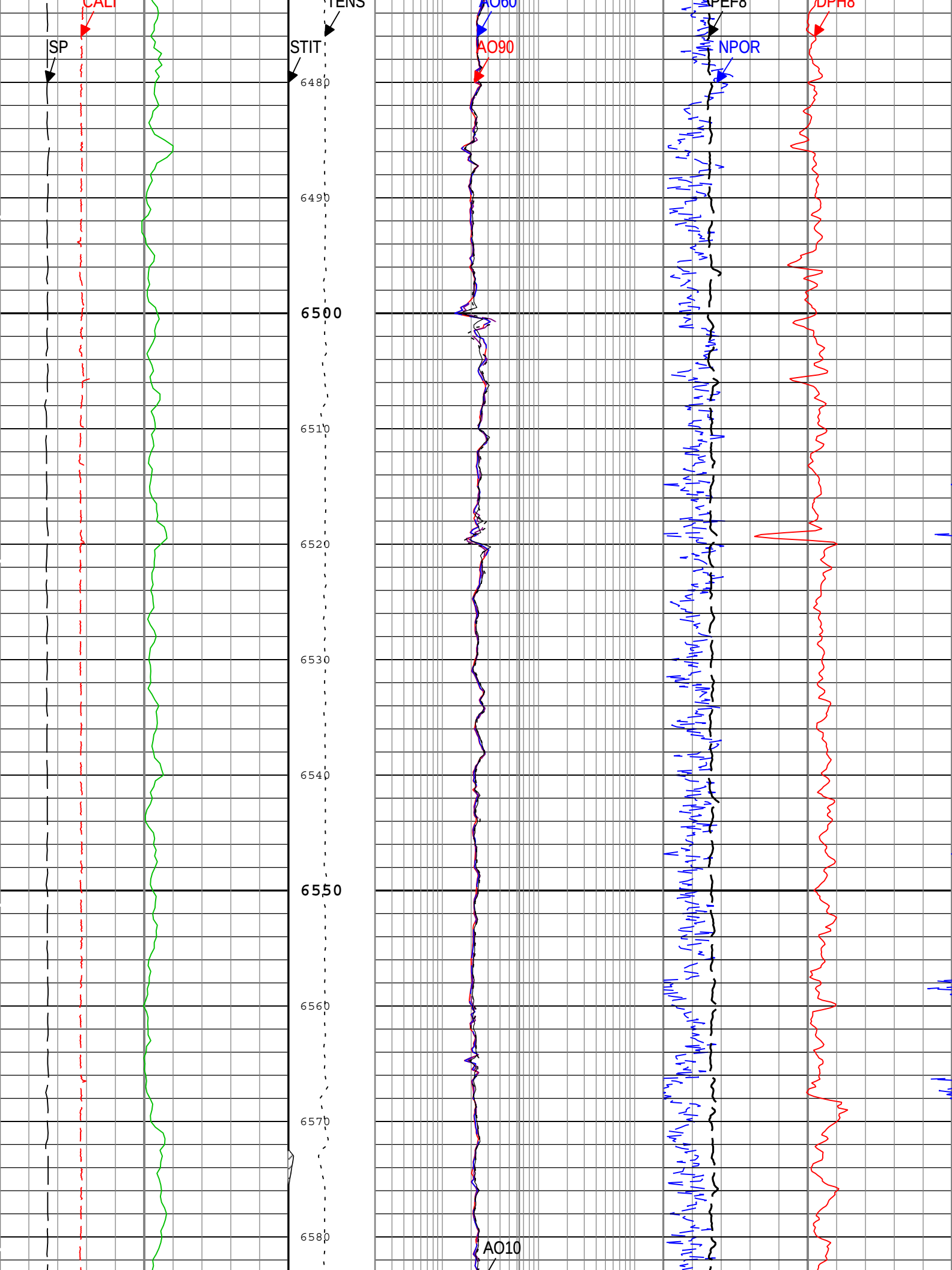
6470
SGR
AO10
AO20
AO30


CALI
TENS
AO60
PEF8
DPH8
SP
STIT
AO90
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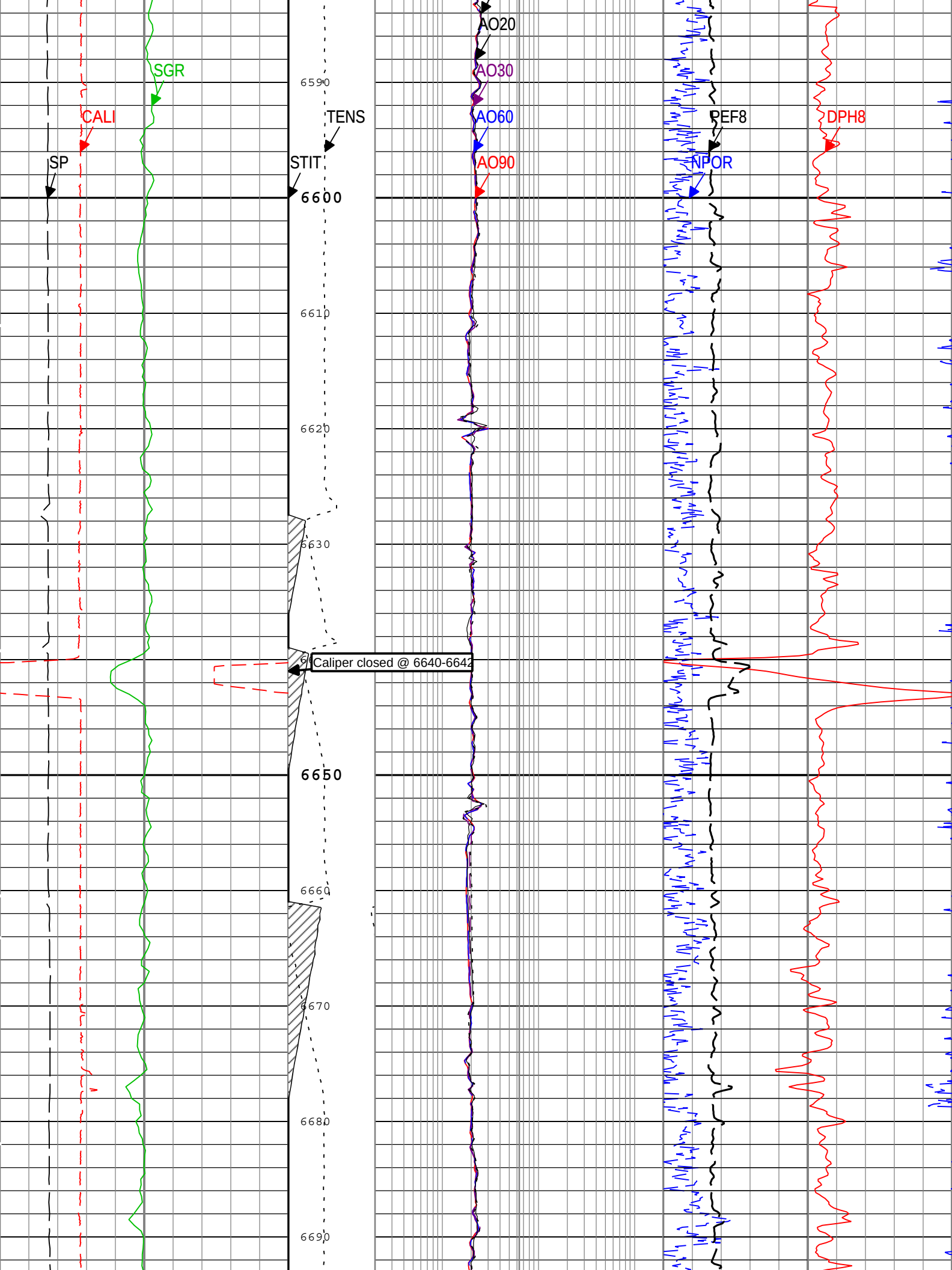
6580
AO10


SP
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SGR
TENS
STIT
AO20
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AO60
AO90
PEF8
NPOR
DPH8
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6630
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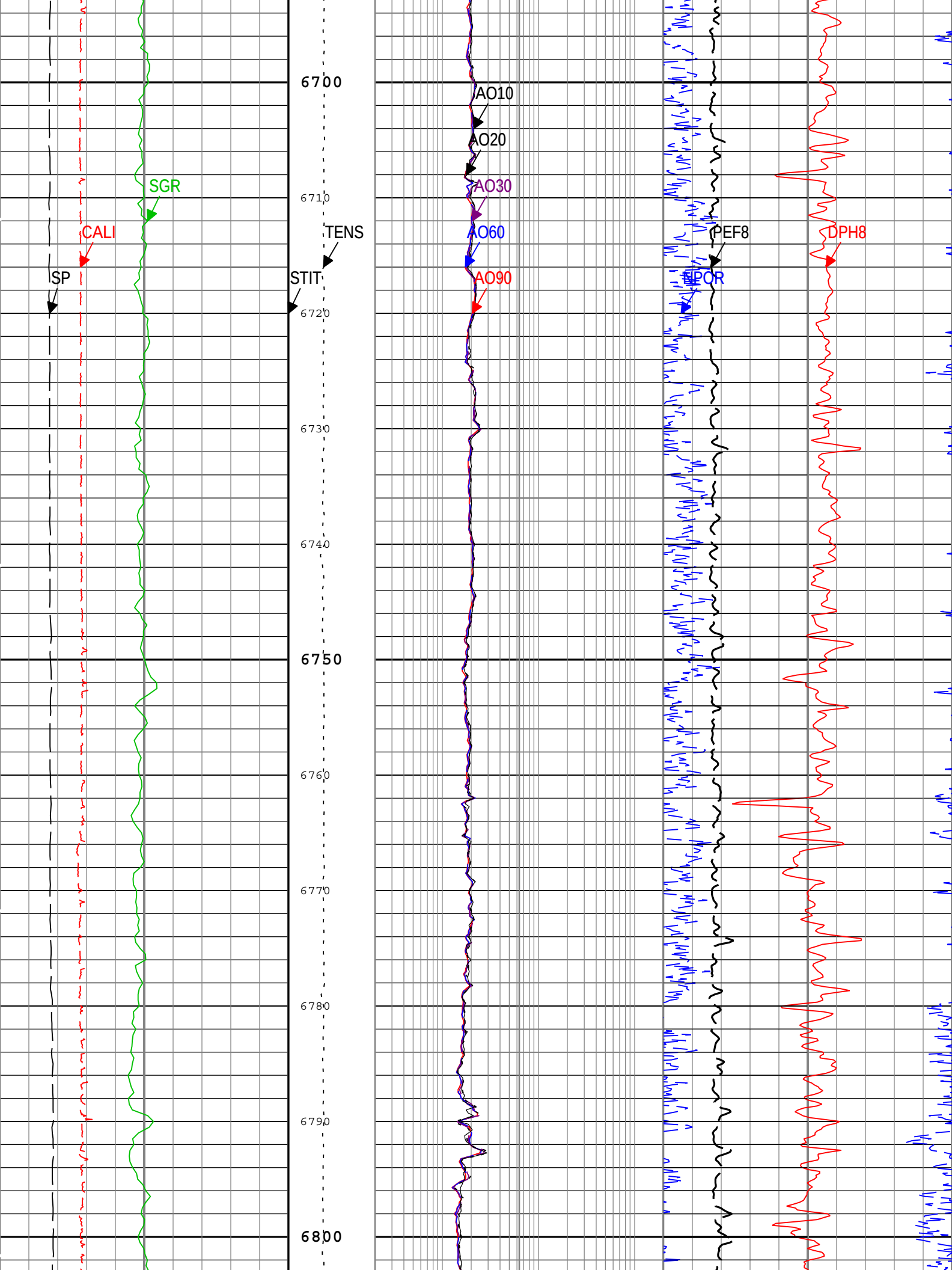
6660
6670
6680
6690
Caliper closed @ 6640-6642


SP
CALI
SGR
STIT
TENS
AO10
AO20
AO30
AO60
AO90
PEF8
DPH8
6700
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6780
6790
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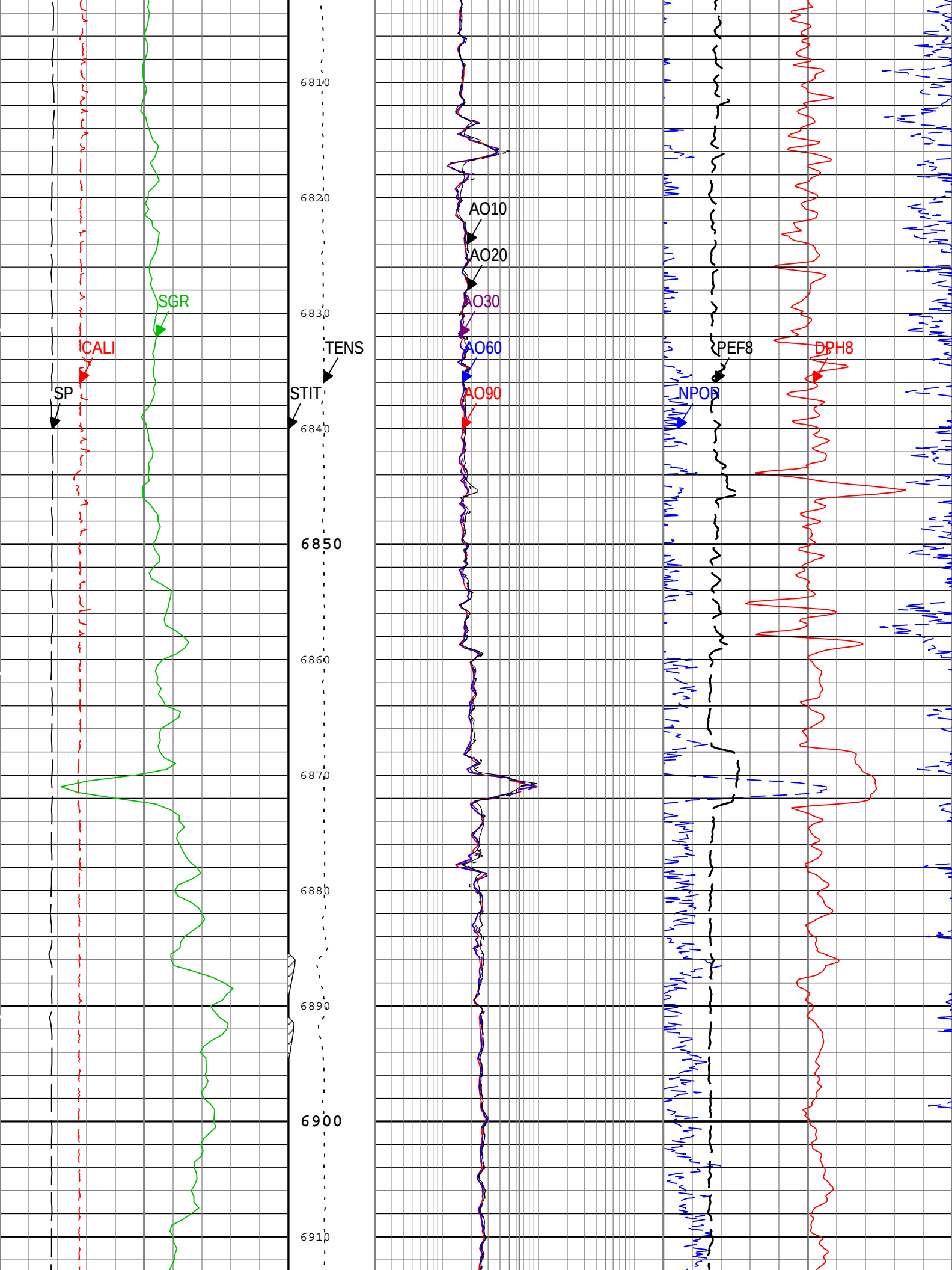
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SGR
STIT
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AO10
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AO60
AO90
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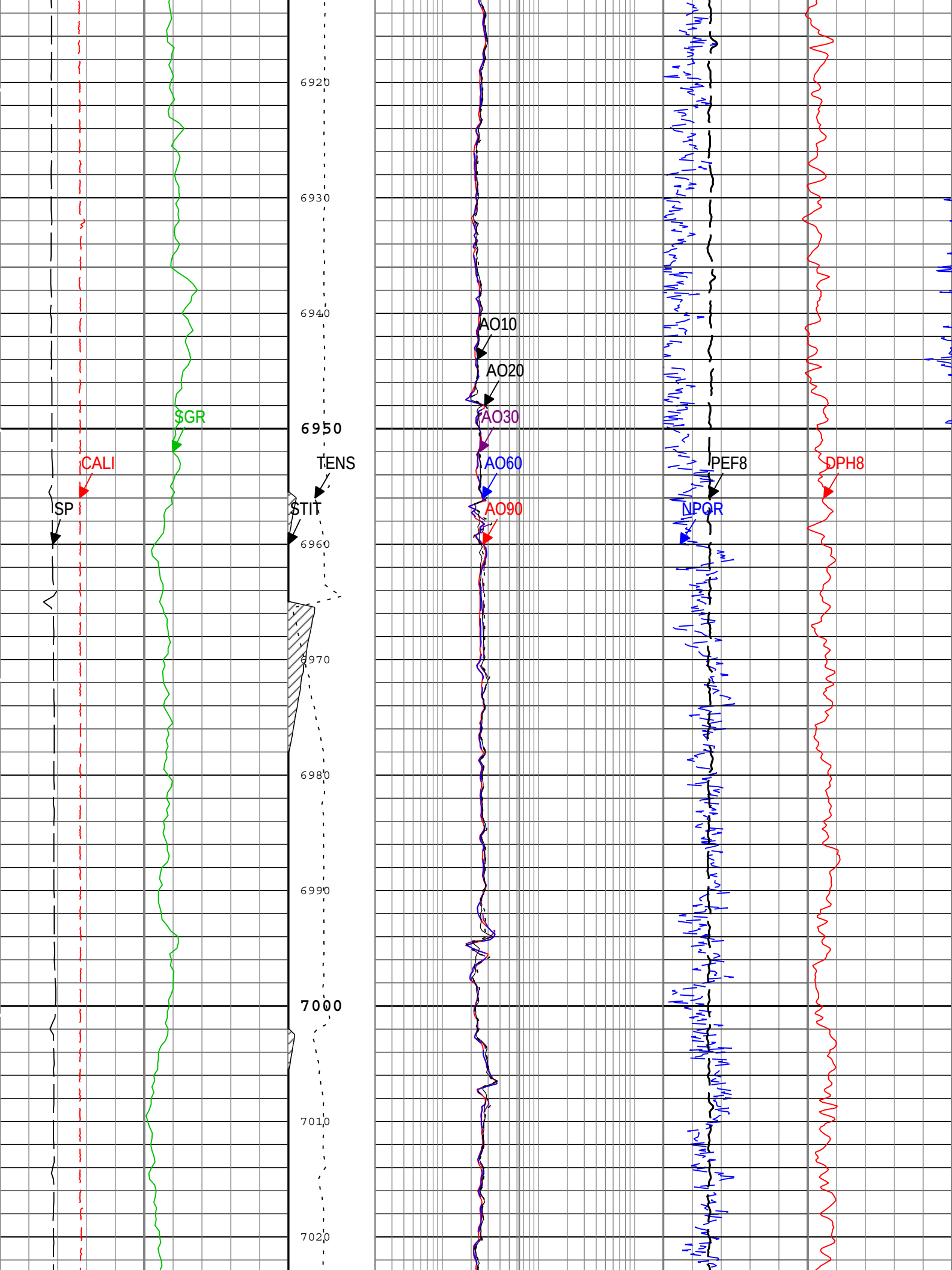
PEF8
DPH8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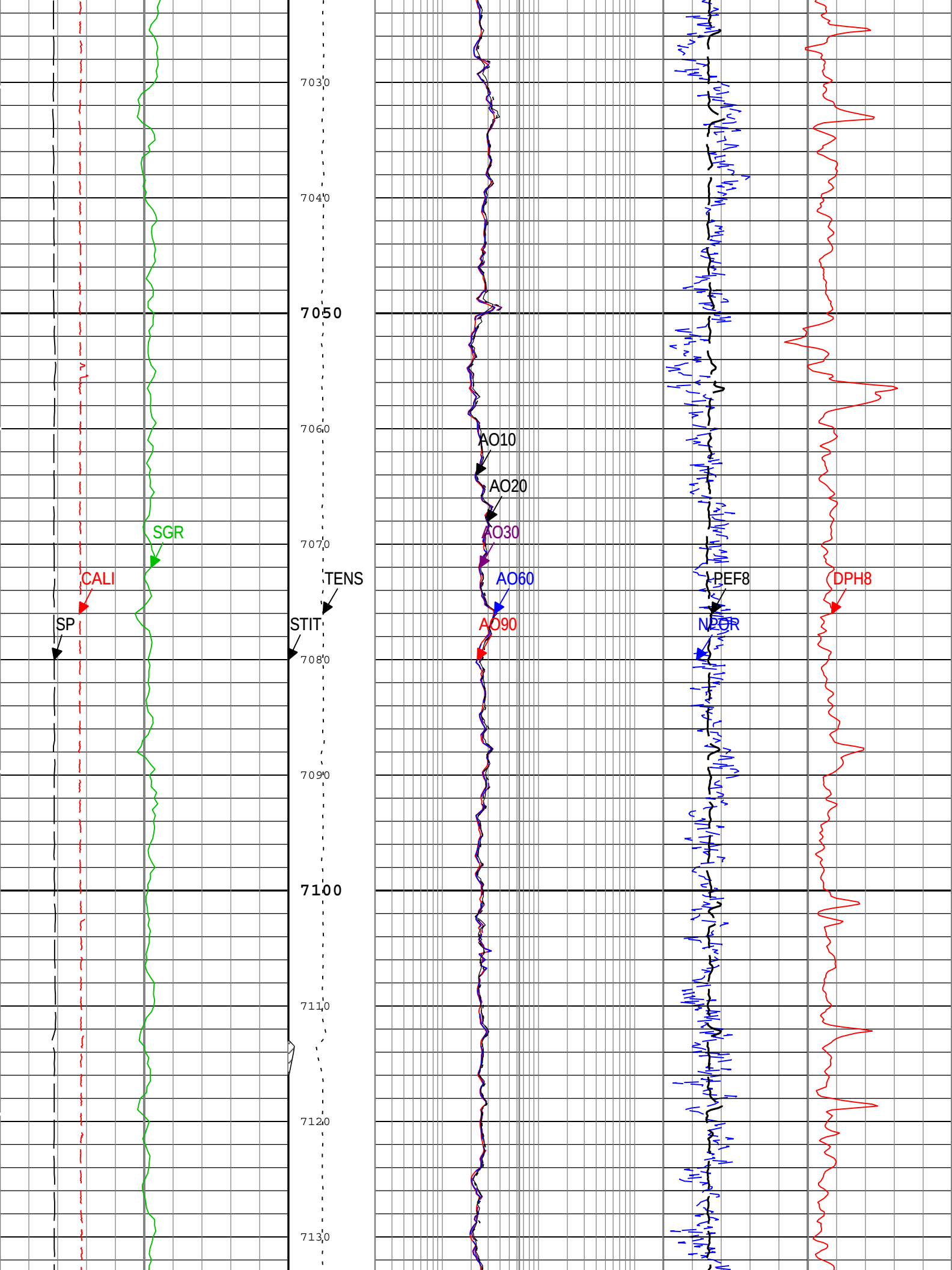
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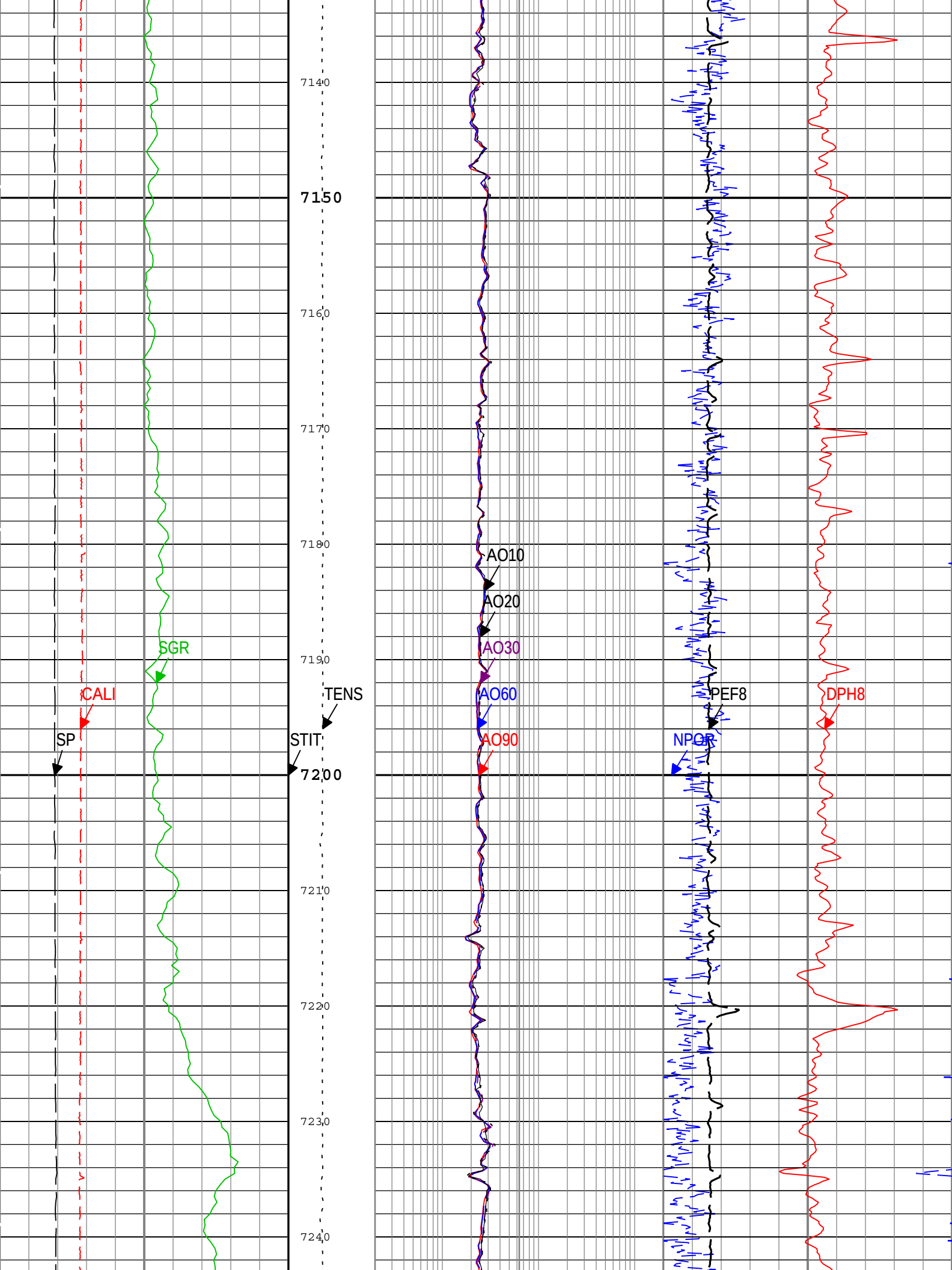
DPH8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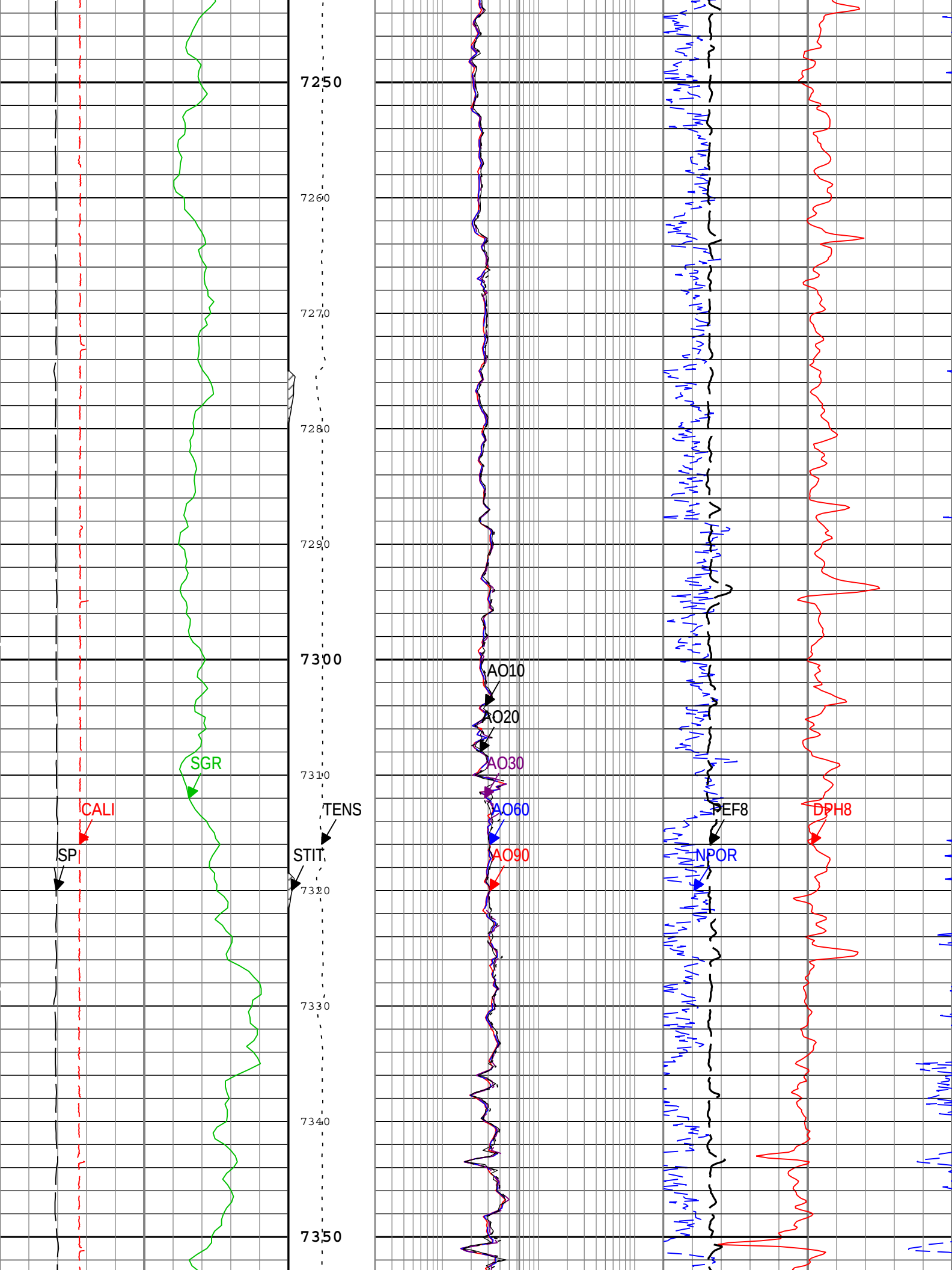
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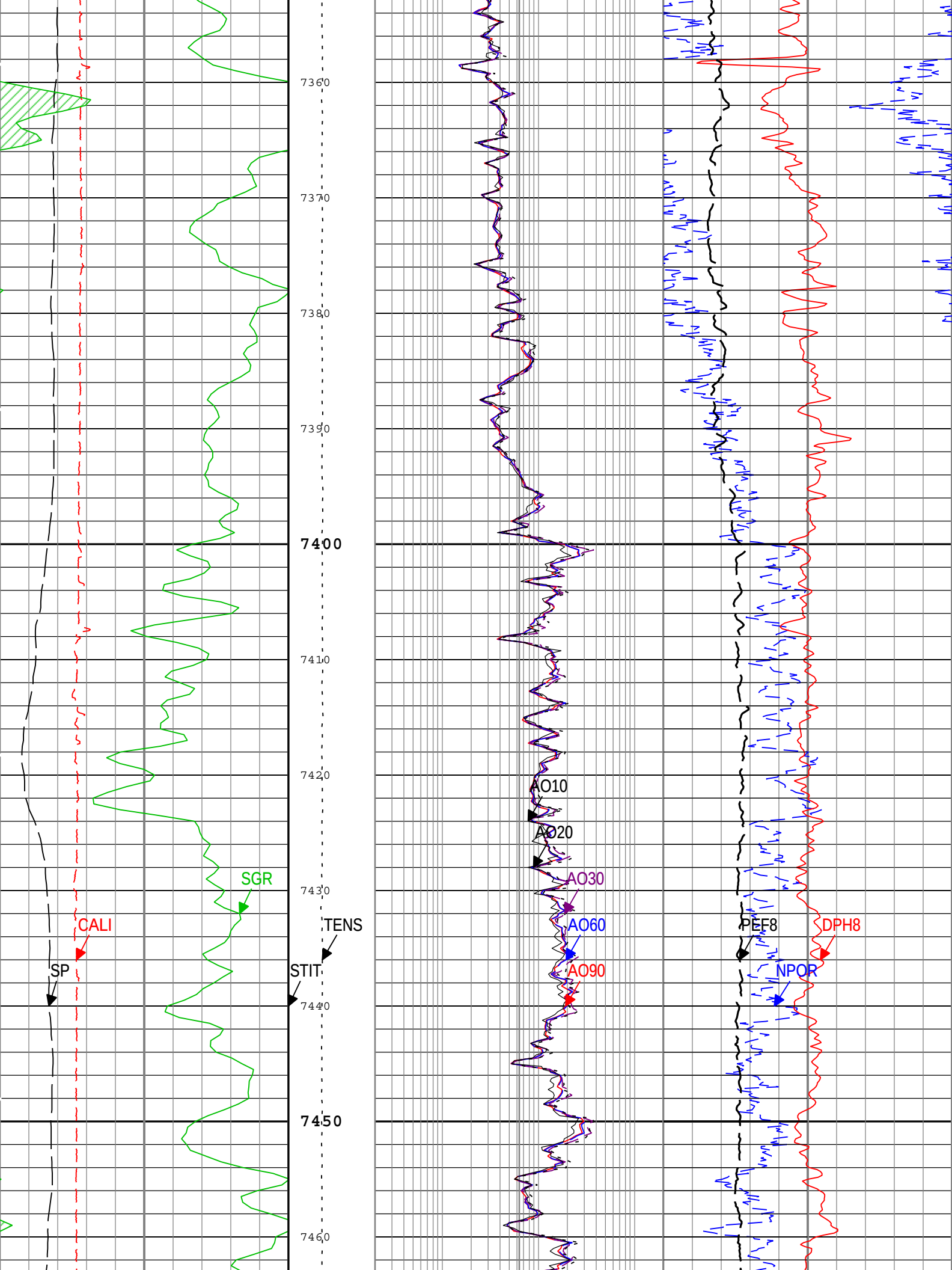
DPH8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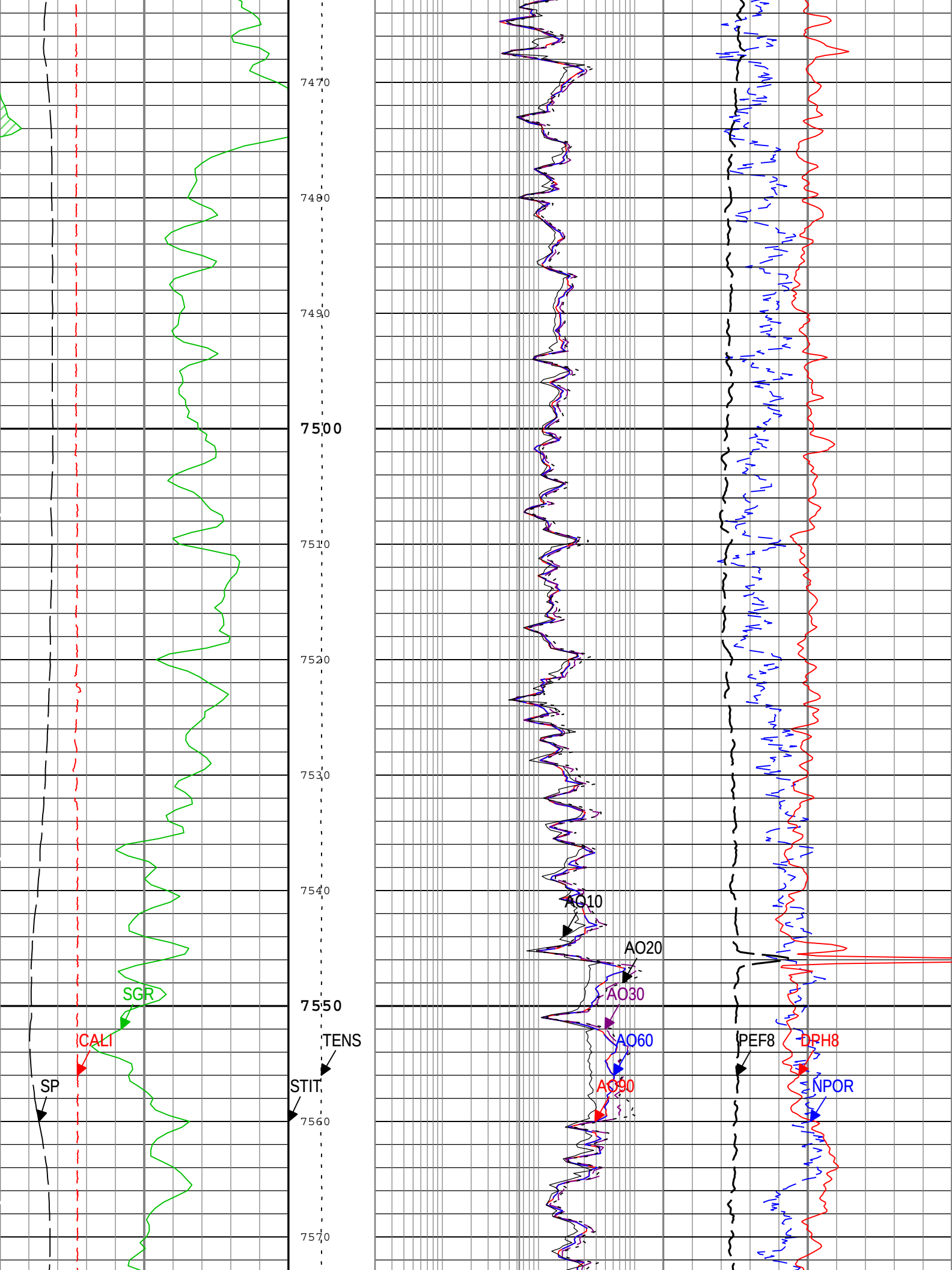
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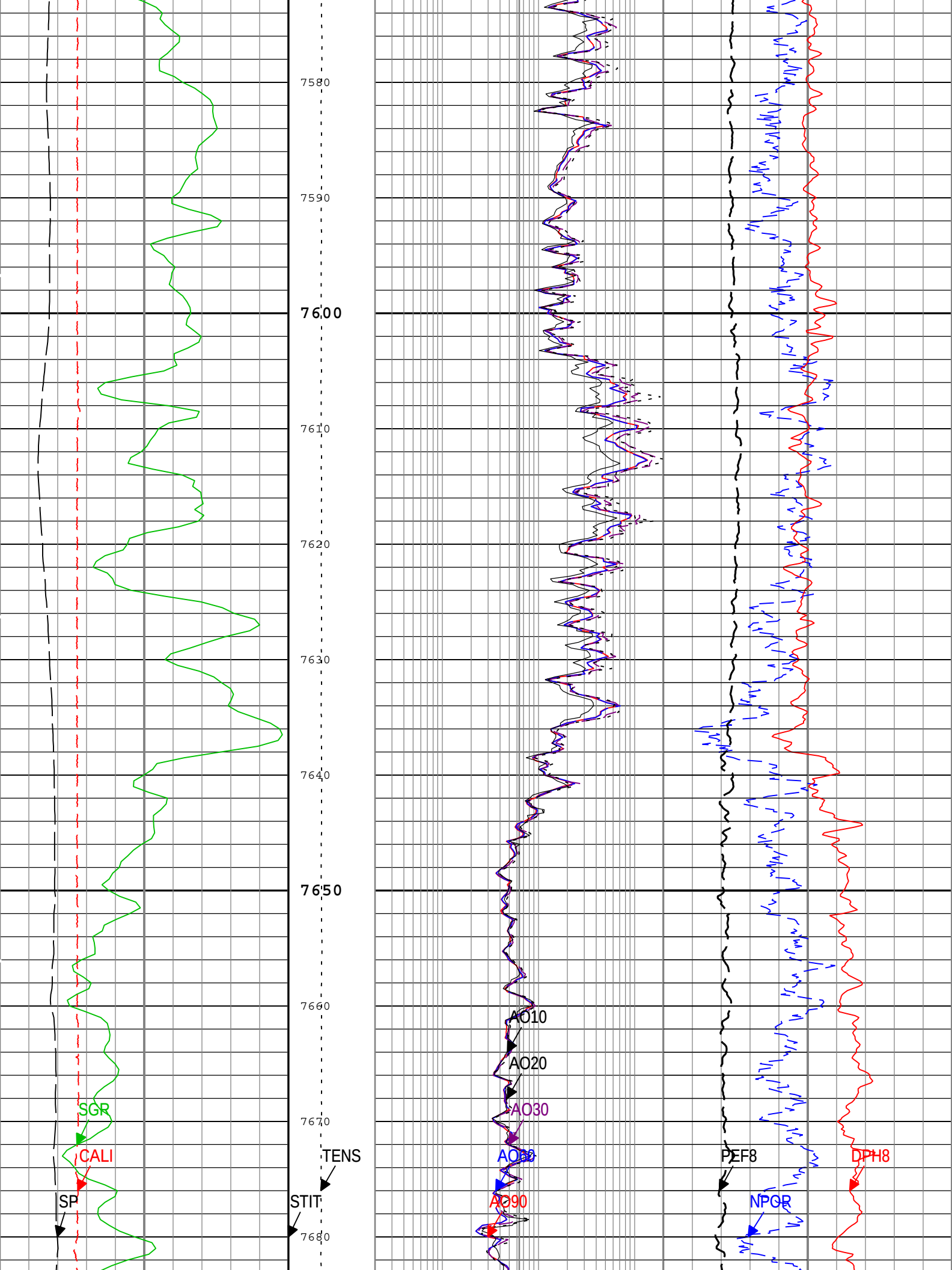
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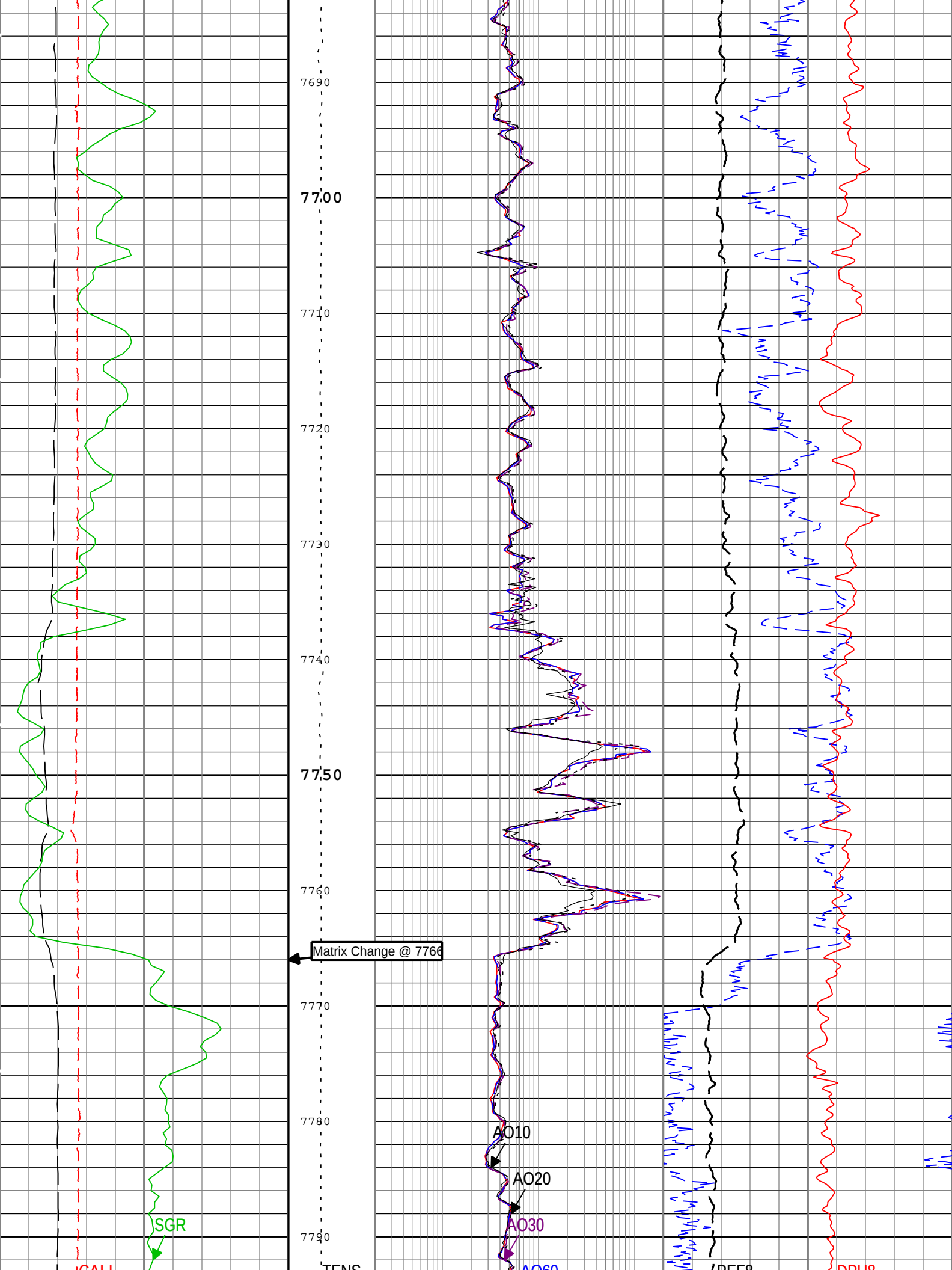
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Matrix Change @ 7766
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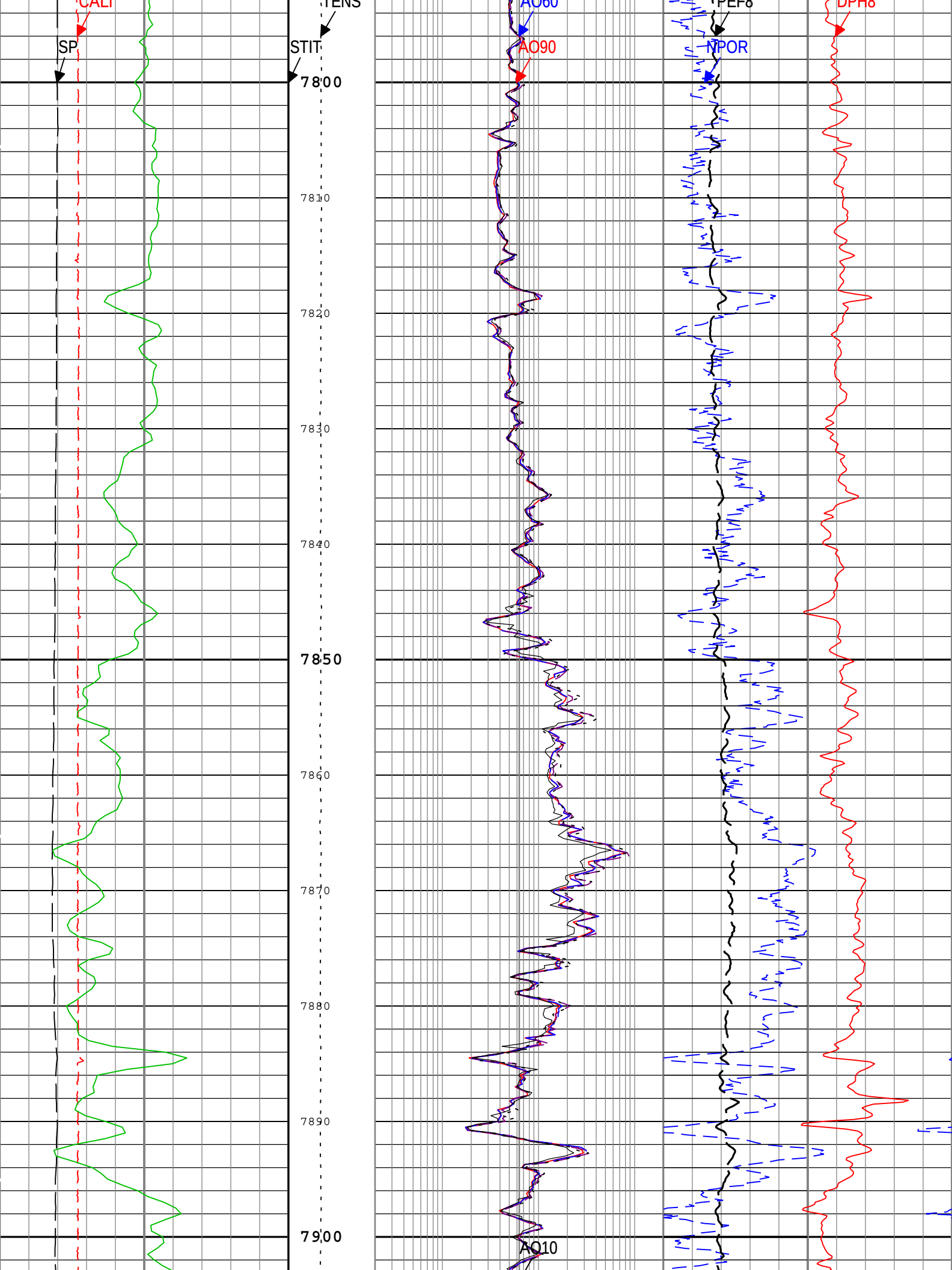
AO10
AO20
AO30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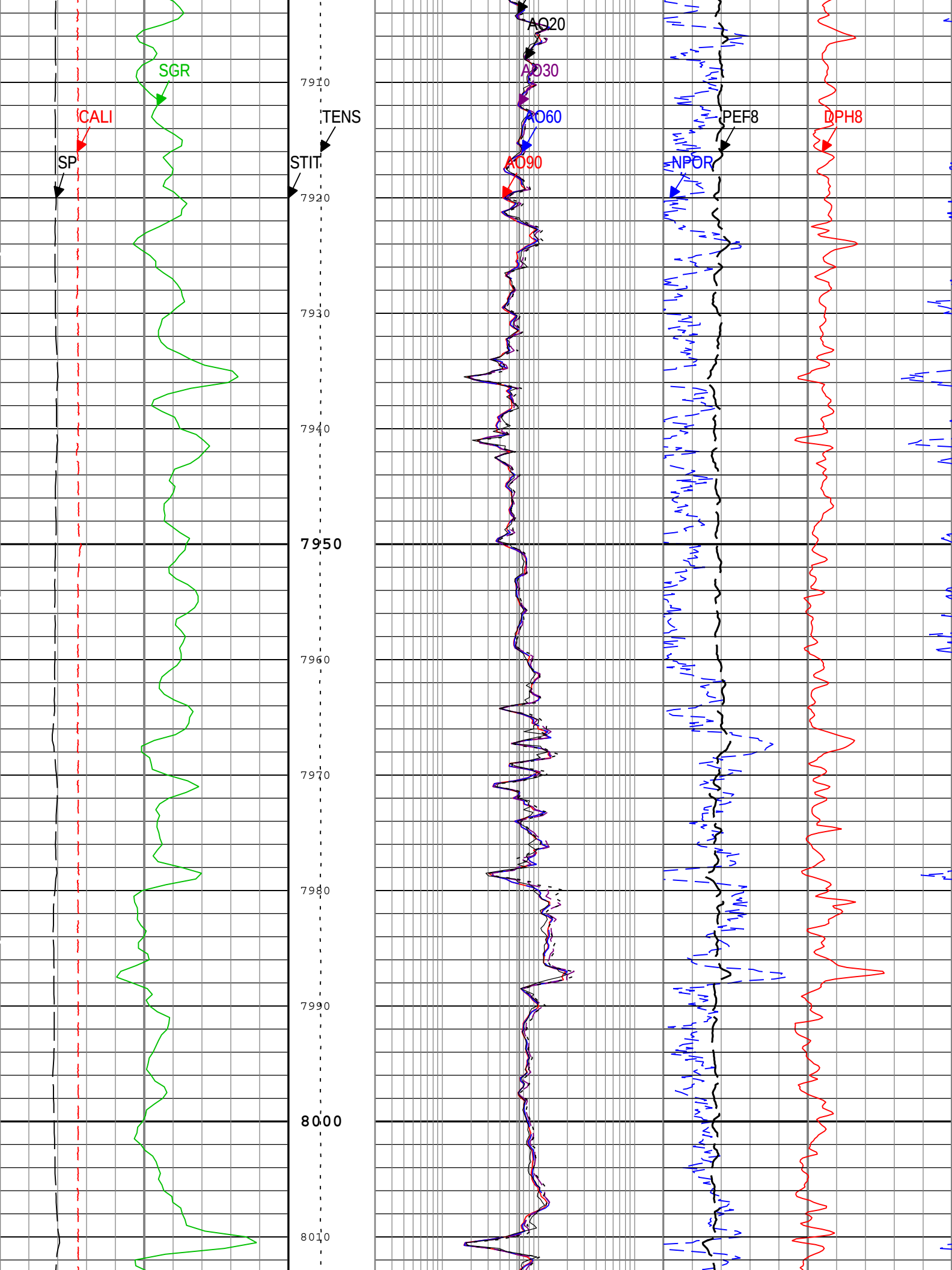
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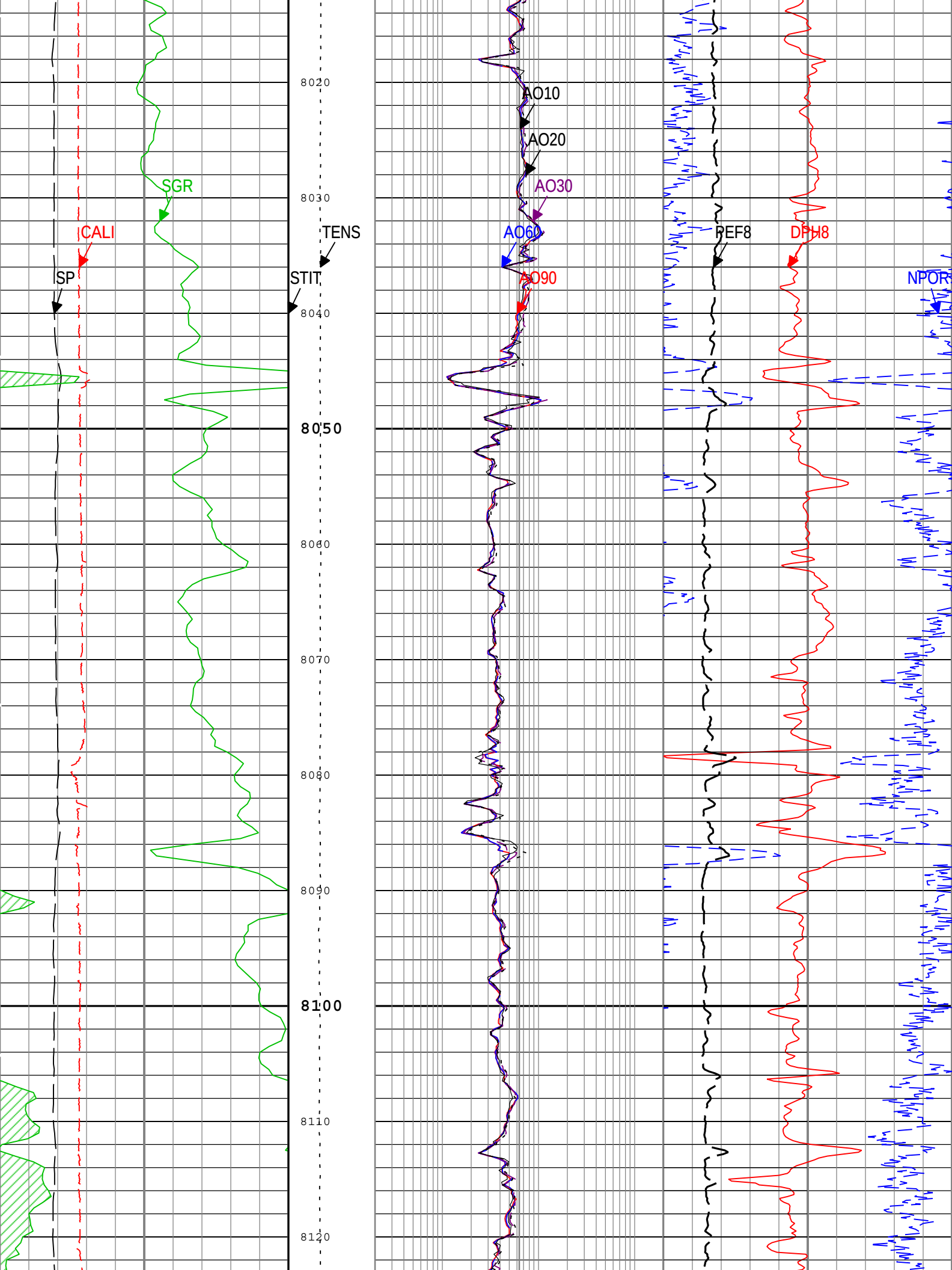
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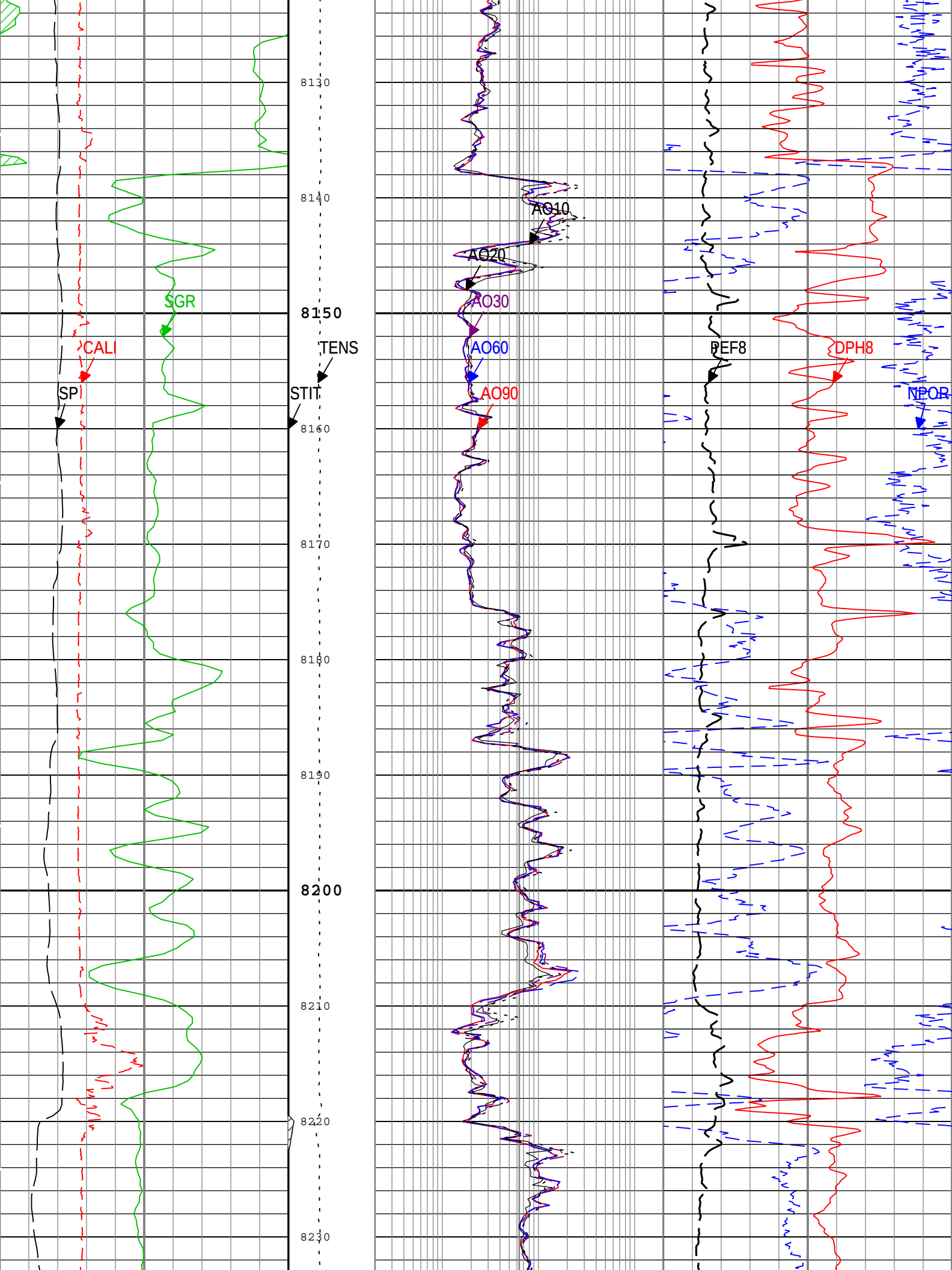
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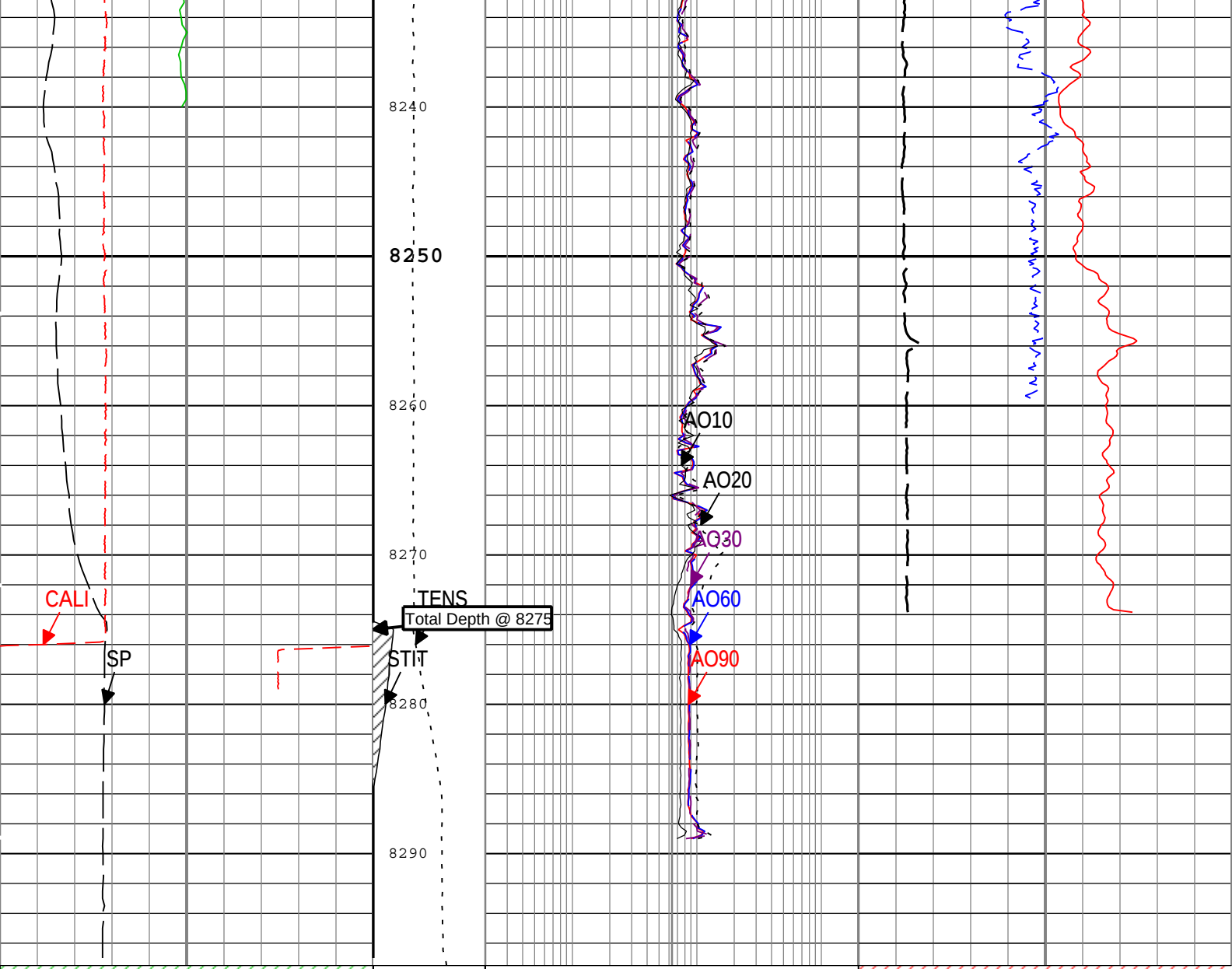

Gamma Ray Back up

Spontaneous Potential (SP) AIT-H

0 mV 200

Caliper (CALI) HDRS-H

6 in 16

Spectroscopy Gamma Ray (SGR) HNGS-BA

0 gAPI 200

Spectroscopy Gamma Ray (SGR) HNGS-BA

200 gAPI 400

Stuck Tool Indicator, Total (STIT)

0 ft 50

Cable Tension (TENS)

6000 lbf 0

Array Induction One Foot Resistivity A90 (AO90) AIT-H

0.2 ohm.m 200

Array Induction One Foot Resistivity A60 (AO60) AIT-H

0.2 ohm.m 200

Array Induction One Foot Resistivity A30 (AO30) AIT-H

0.2 ohm.m 200

Array Induction One Foot Resistivity A20 (AO20) AIT-H

0.2 ohm.m 200

Array Induction One Foot Resistivity A10 (AO10) AIT-H

0.2 ohm.m 200

Gas Effect

NPOR Backup

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

0.3 ft3/ft3 -0.1

High Resolution Density Porosity (DPH8) HDRS-H

0.3 ft3/ft3 -0.1

High Resolution Formation Photoelectric Factor (PEF8) HDRS-H

0 10

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (HiRes EMD 5in Triple Combo) Index Scale: 10 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 18-Dec-2012 11:40:02

Channel Processing Parameters

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	No	
ASTA	Array Induction Tool Standoff	AIT-H	1	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHK	Drilling Fluid Potassium Concentration	Borehole	0	%
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.75	in
BSAL	Borehole Salinity	Borehole	6799.73	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.21	in
CBLO	Casing Bottom (Logger)	WLSESSION	3010	ft
DBCC	Barite Constant Correction Flag	HNGS-BA	None	
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.3	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	
HCRB	Apply Borehole Potassium Correction	HNGS-BA	None	
HEMA	Hematite Presence Flag	Borehole	No	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	Depth Zoned	
MDEN	Matrix Density for Density Porosity	Borehole	Depth Zoned	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	58.6	degF
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.82	ohm.m
SGRC	Standard Gamma Ray Correction Flag	HNGS-BA	Yes	
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft
TD	Total Measured Depth	Borehole	8275	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
MATR	LIMESTONE	6290	7766
MATR	SANDSTONE	7766	8297.5
MDEN	2.71	6290	7766
MDEN	2.68	7766	8297.5

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	1800	ft/h

Calibration Report

AIT-H (Array Induction Tool - H) Calibration - Run Run 1: PEX-HNGS-ECS

Primary Equipment :

Array Induction Sonde - H	AHIS	216

Auxiliary Equipment :

AITH Rm/SP Bottom Nose	AHRM

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 07:05:49 10-Dec-2012

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	0.555	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.009	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.353	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.011	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	-0.040	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.010	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	0.091	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.993	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.048	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.986	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.240	3.000
Test Loop Gain - 6		Master	1.000	0.950	0.988	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	1.333	3.000
Test Loop Gain - 7		Master	1.000	0.950	0.999	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.235	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 07:05:49 10-Dec-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-92.597	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-167.839	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	165.455	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	0.770	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	114.233	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-176.552	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	59.629	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	-64.057	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	26.319	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	-12.336	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	14.027	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-14.788	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	10.456	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	-4.003	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-0.491	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	1.926	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 07:05:49 10-Dec-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	0.850	1.200
Fine Gain		Master	1.000	0.800	0.849	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 07:05:49 10-Dec-2012 Before (Measured): 22:55:29 09-Dec-2012 Expired by 4 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.628	0.847
		Before	-----	0.363	0.629	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	51.537	131.000
		Before	-----	11.000	51.394	131.000
		After	-----	-----	-----	-----

		Before-Master	-----	-----	-0.143	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.288	1.778
		Before	-----	0.762	1.289	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	50.510	130.000
		Before	-----	10.000	50.366	130.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.144	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.639	0.872
		Before	-----	0.374	0.639	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	46.742	126.000
		Before	-----	6.000	46.598	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.144	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.721	0.986
		Before	-----	0.422	0.722	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	45.953	125.000
		Before	-----	5.000	45.810	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.143	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.802	1.357	1.872
		Before	-----	0.802	1.358	1.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	39.574	119.000
		Before	-----	-1.000	39.426	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.148	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.970	2.737
		Before	-----	1.173	1.971	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	37.668	117.000
		Before	-----	-3.000	37.517	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.151	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.969	2.737
		Before	-----	1.173	1.970	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	37.662	117.000
		Before	-----	-3.000	37.511	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.151	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.849	1.408	1.981
		Before	-----	0.849	1.408	1.981
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	-7.000	33.836	113.000

		Before	-----	-7.000	33.650	113.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.186	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master		-50.000	-0.041	50.000
		Before		-50.000	-0.028	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.013	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master		941.000	993.255	1040.000
		Before		941.000	992.990	1040.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.265	-----
		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	0.921	0.960
		Before		0.870	0.921	0.960
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----

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

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	
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	
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	

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): 23:01:28 09-Dec-2012 Expired by 4 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	12.16	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 18:30:40 10-Dec-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Rho Aluminum	g/cm3	Master	2.596	2.586	2.600	2.606
Rho Magnesium	g/cm3	Master	1.686	1.676	1.685	1.696
Pe Aluminum		Master	2.570	2.470	2.541	2.670
Pe Magnesium		Master	2.650	2.550	2.634	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 18:30:40 10-Dec-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.4370	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.8253	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.2034	1.0000
SS Max Deviation	%	Master	0	-2.5000	0.4570	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.6498	1.5000
LS Max Deviation	%	Master	0	-2.5000	1.0543	2.5000

LS Max Deviation	%	Master	0	-3.5000	1.9543	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 18:30:40 10-Dec-2012 Before (Measured): 22:56:21 09-Dec-2012 Expired by 4 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7401	
		Before	0.7401	0.7031	0.7410	0.7771
		Before-Master	-----	-----	0.0009	-----
BS Window Sum	1/s	Master	1		24741	
		Before	24741	23504	24706	25978
		Before-Master	-----	-----	-35	-----
SS Window Ratio		Master	1.0000		0.4908	
		Before	0.4908	0.4662	0.4912	0.5153
		Before-Master	-----	-----	0.0004	-----
SS Window Sum	1/s	Master	1		14068	
		Before	14068	13365	14057	14771
		Before-Master	-----	-----	-11	-----
LS Window Ratio		Master	1.0000		0.3024	
		Before	0.3024	0.2873	0.3009	0.3176
		Before-Master	-----	-----	-0.0015	-----
LS Window Sum	1/s	Master	1		1261	
		Before	1261	1198	1257	1324
		Before-Master	-----	-----	-4	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 18:30:40 10-Dec-2012 Before (Measured): 22:56:21 09-Dec-2012 Expired by 4 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1538	2400
		Before		1000	1566	2400
		Before-Master	-----	-100	28	100
SS PM High Voltage	V	Master		1000	1639	2400
		Before		1000	1657	2400
		Before-Master	-----	-100	18	100
LS PM High Voltage	V	Master		1000	1330	2400
		Before		1000	1332	2400
		Before-Master	-----	-100	2	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 18:30:40 10-Dec-2012 Before (Measured): 22:56:21 09-Dec-2012 Expired by 4 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	11.19	25.00
		Before		5.00	11.27	25.00
		Before-Master	-----	-1.00	0.08	1.00
SS Crystal Resolution	%	Master		5.00	10.48	20.00
		Before		5.00	10.39	20.00
		Before-Master	-----	-1.00	-0.09	1.00
LS Crystal Resolution	%	Master		5.00	8.18	20.00
		Before		5.00	8.16	20.00
		Before-Master	-----	-1.00	-0.02	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 22:56:38 09-Dec-2012 Expired by 4 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3912	4185
Deep Resistivity	ohm.m	Before	3830	3524	3858	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3874	4136

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

Primary Equipment :

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

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): 22:17:39 15-Dec-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.1	32.8

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-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): 12:30:16 29-Oct-2012 Before (Measured): 22:07:45 09-Dec-2012 Expired by 4 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	28.2	40.0
		Before	0	5.0	27.5	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.2	-0.7	4.2
		After-Before	-----	-----	-----	-----
Far Zero Measurement	1/s	Master	0	5.0	28.8	40.0
		Before	0	5.0	27.8	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.3	-1.0	4.3
		After-Before	-----	-----	-----	-----
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5706.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2371.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5780.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2407.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 23:11:18 09-Dec-2012 Expired by 4 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	30.0	0	84.4	120.0
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	185.4	157.1	184.0	206.3
		After			NOT DONE	

		After-Before	-----	-----	-----	-----	
GR Calibration Gain		Before	0.89	0.80	0.90	1.05	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

Company: Carrizo Oil & Gas Inc

Schlumberger

Well: WEP 4-28-11-3-64

Field: Wildcat

County: Adams

State: Colorado

Platform Express

Triple Combo

High Resolution