Schlumberger

Company: **Noble Energy, Inc.**

Well: **DF Ranch 1161−08−42**
Field: **Grover**
County: **Weld** State: **Colorado**

Platform Express
Triple Combo

County: Weld
Field: Grover
Location: NWSE Sec. 8, T11N, R61W
Well: DF Ranch 1161−08−42
Company: Noble Energy, Inc.

LOCATION

NWSE Sec. 8, T11N, R61W
SHL: 1980' FSL X 1980' FEL
Lat/Long: 40.9341 N / 104.22727 W

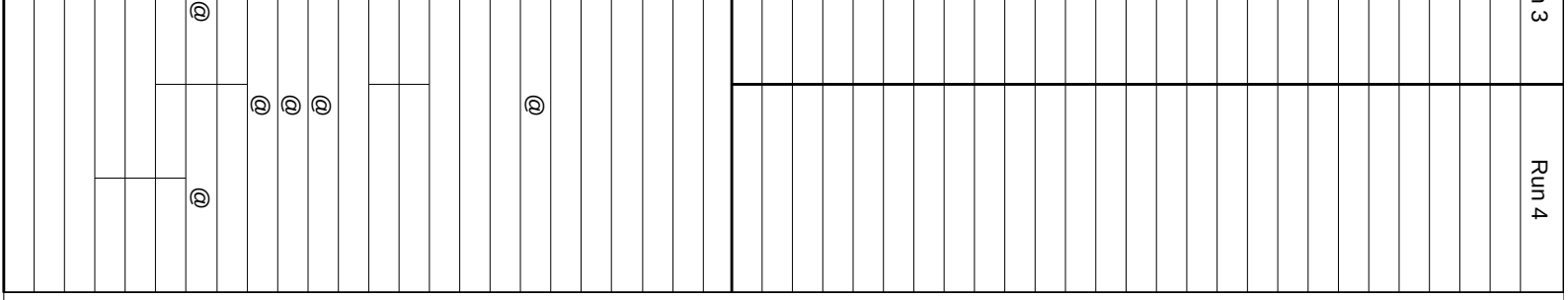
Elev.: K.B. 5286.00 ft
G.L. 5271.00 ft
D.F. 5285.00 ft

Permanent Datum: Ground Level Elev.: 5271.00 ft
Log Measured From: Kelly Bushing 15.00 ft above Perm. Datum
Drilling Measured From: Kelly Bushing

API Serial No.	Section	Township	Range
05−123−31074−0000	8	11N	61W

	Run 1	Run 2	Run
Logging Date	11−Oct−2010		
Run Number	1		
Depth Driller	7981 ft		
Schlumberger Depth	7986 ft		
Bottom Log Interval	7978 ft		
Top Log Interval	1267 ft		
Casing Driller Size @ Depth	8.625 in @ 1270 ft	@	@
Casing Schlumberger	1267 ft		
Bit Size	7.875 in		
Type Fluid In Hole	KCL Polymer		
MUD Density / Viscosity	8.8 lbm/gal / 58 s		
MUD Fluid Loss / PH	9.6 cm3 / 8		
MUD Source Of Sample	AIT Sensor		
RM @ Measured Temperature	0.622 ohm.m @ 191 degF	@	@
RMF @ Measured Temperature	0.467 ohm.m @ 191 degF	@	@
RMC @ Measured Temperature	0.933 ohm.m @ 191 degF	@	@
Source RMF / RMC	Calculated / Calculated		
RM @ MRT / RMF @ MRT	0.622 @ 191 / 0.467 @ 191	@ / @	@ / @
Maximum Recorded Temperatures	191 degF		
Circulation Stopped Time	11−Oct−2010 11:30		
Logger On Bottom Time	11−Oct−2010 17:35		
Unit Number / Location	3021 Ft. Morgan, CO		
Recorded By	Tim Hoffman		
Witnessed By	Steve Biggs		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ / @		
Maximum Recorded Temperatures			
Circulation Stopped Time			
Logger On Bottom Time			
Unit Number / Location			
Recorded By			
Witnessed By			



DEPTH SUMMARY LISTING

Date Created: 11−OCT−2010 18:39:37

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−39P LXS
Serial Number:		Serial Number:		Serial Number:	
Calibration Date:		Calibration Date:		Length:	18000 FT
Calibrator Serial Number:		Calibrator Serial Number:			
Calibration Cable Type:	7−46P	Number of Calibration Points:	0	Conveyance Method:	Wireline
Wheel Correction 1:				Rig Type:	LAND
Wheel Correction 2:					

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	6.50 FT
Tool Zero Check At Surface:	

Depth Control Remarks

1.
2.
3.
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: HNGS	OS1:
OS2: FMI	OS2:
OS3: MSIP	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in hole.	
Toolstring run as per tool sketch.	
Toolstring run with bowspring and standoffs	
Matrix changes are as noted on the porosity print	

Rig: Ensign 128

Crew: Mark Hoffman, Derrick Hunter

RUN 1		RUN 2	
SERVICE ORDER #:	BFN8−00041	SERVICE ORDER #:	
PROGRAM VERSION:	18C0−147	PROGRAM VERSION:	
FLUID LEVEL:	50 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

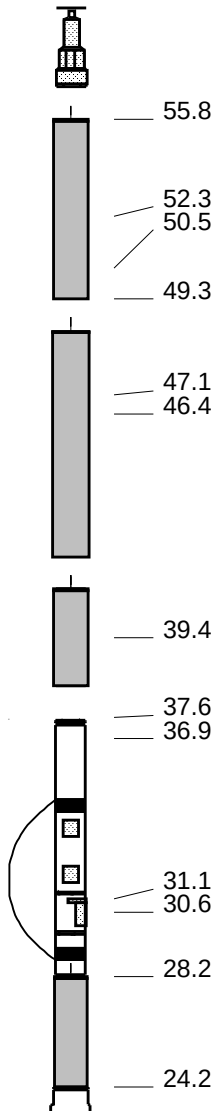
RUN 1 RUN 2

SURFACE EQUIPMENT

GSR−U/Y
NCT−B
CNB−AB
NCS−VB

GSR−U 1079
WITM (EDTS)−A

DOWNHOLE EQUIPMENT



LEH−QT
LEH−QT

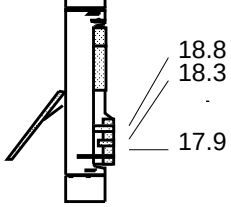
EDTC−B
EDTH−B
EDTC−B
EDTG−A/B

HNGS−BA
HNGS−BA 169
HNSH−BA 313

HNGC−B
HNGH−A 186
HNGC−B 292

HILTB−FTB
HGNSD−B 940
HMCA
HGNH
NLS−KL
NSR−F 5168
HACCZ 419
HCNT
HGR
HRCC−B
HRMS−B
HRGD−B 1748
GLS−VJ 5363
MCFL Device
HILT Nucl. LS 42767
HILT Nucl. SS 42767
HILT Nucl. BS 42767

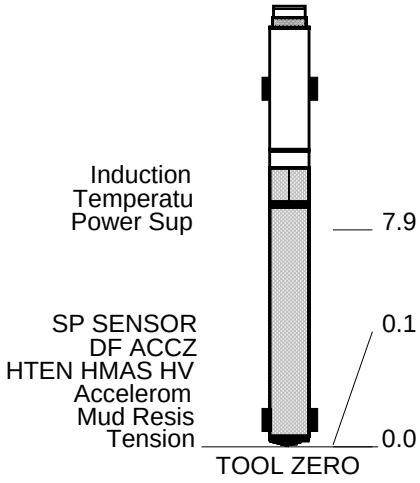
BOW−SPR
NPV−N



HAIT−H
AHIS−BA 216
AHRM−A

16.0

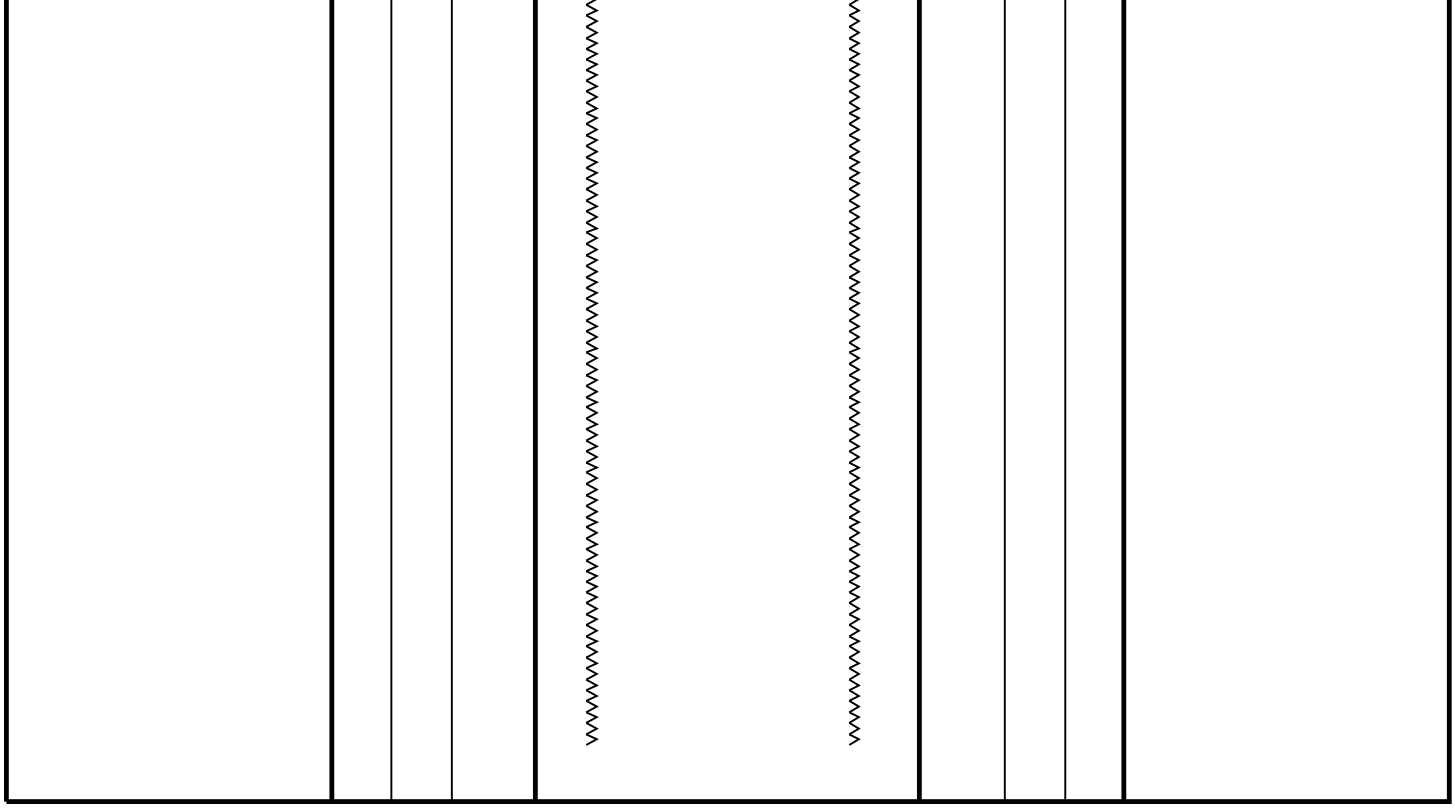
1.0 IN
Standoff



1.0 IN
Standoff

MAXIMUM STRING DIAMETER 5.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	8.625		Casing String
					1270.0	8.625		Casing Shoe
					1270.0	7.875		Borehole Segment



All Depths are Driller's Depths

Schlumberger

COMBO LOG 5" = 100'

MAXIS Field Log

Company: Noble Energy, Inc. **Well: DF Ranch 1161−08−42**

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_022L	FN:1	PRODUCER	11−Oct−2010 19:37	7995.0 FT	1102.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_024PUP	FN:21	PRODUCER	11−Oct−2010 19:41	7995.0 FT	1103.0 FT

OP System Version: 18C0−147

HAIT−H	18C0−147	HILTB−FTB	18C0−147
HNGC−B	18C0−147	HNGS−BA	18C0−147
EDTC−B	18C0−147		

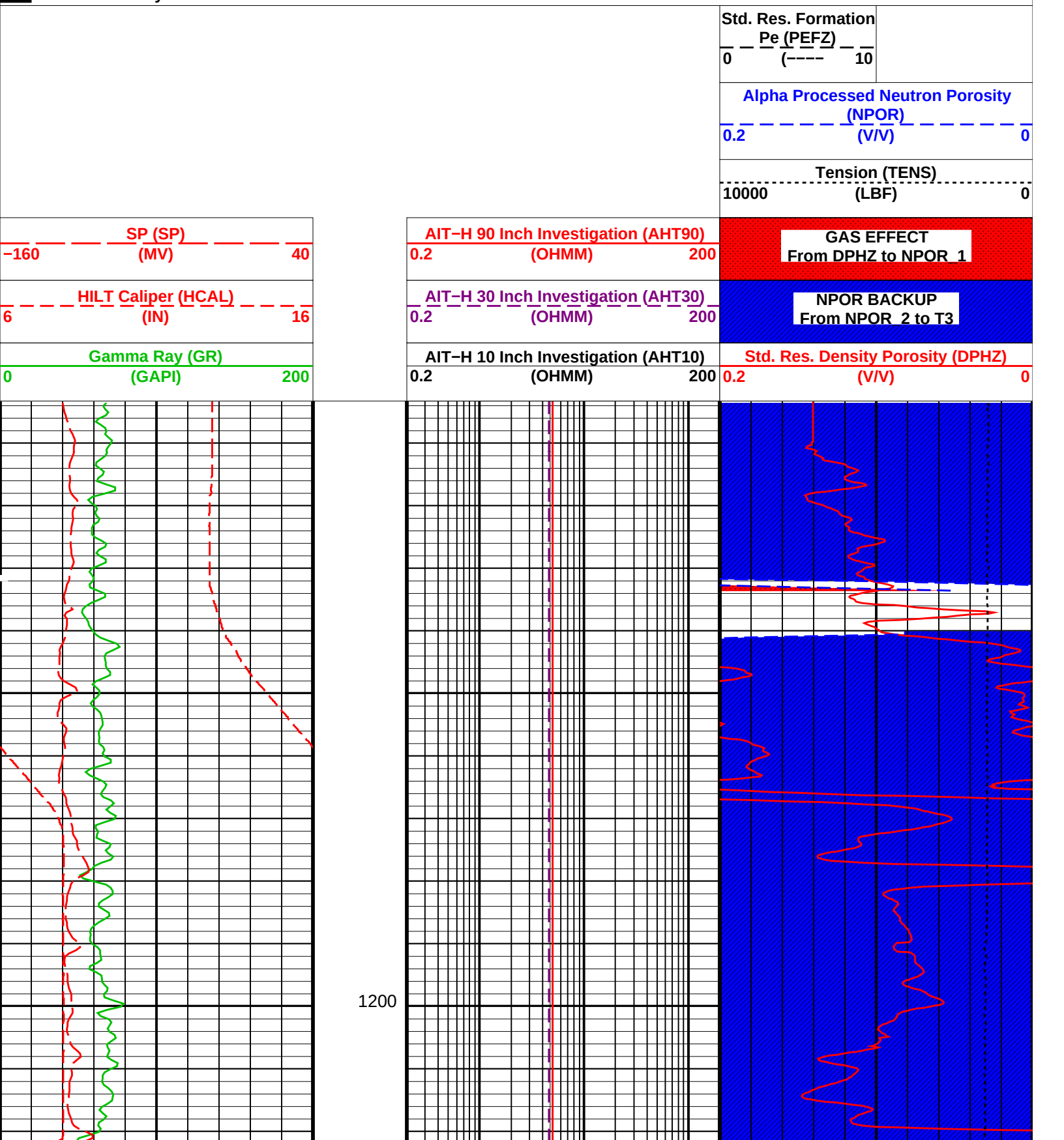
Changed Parameter Summary

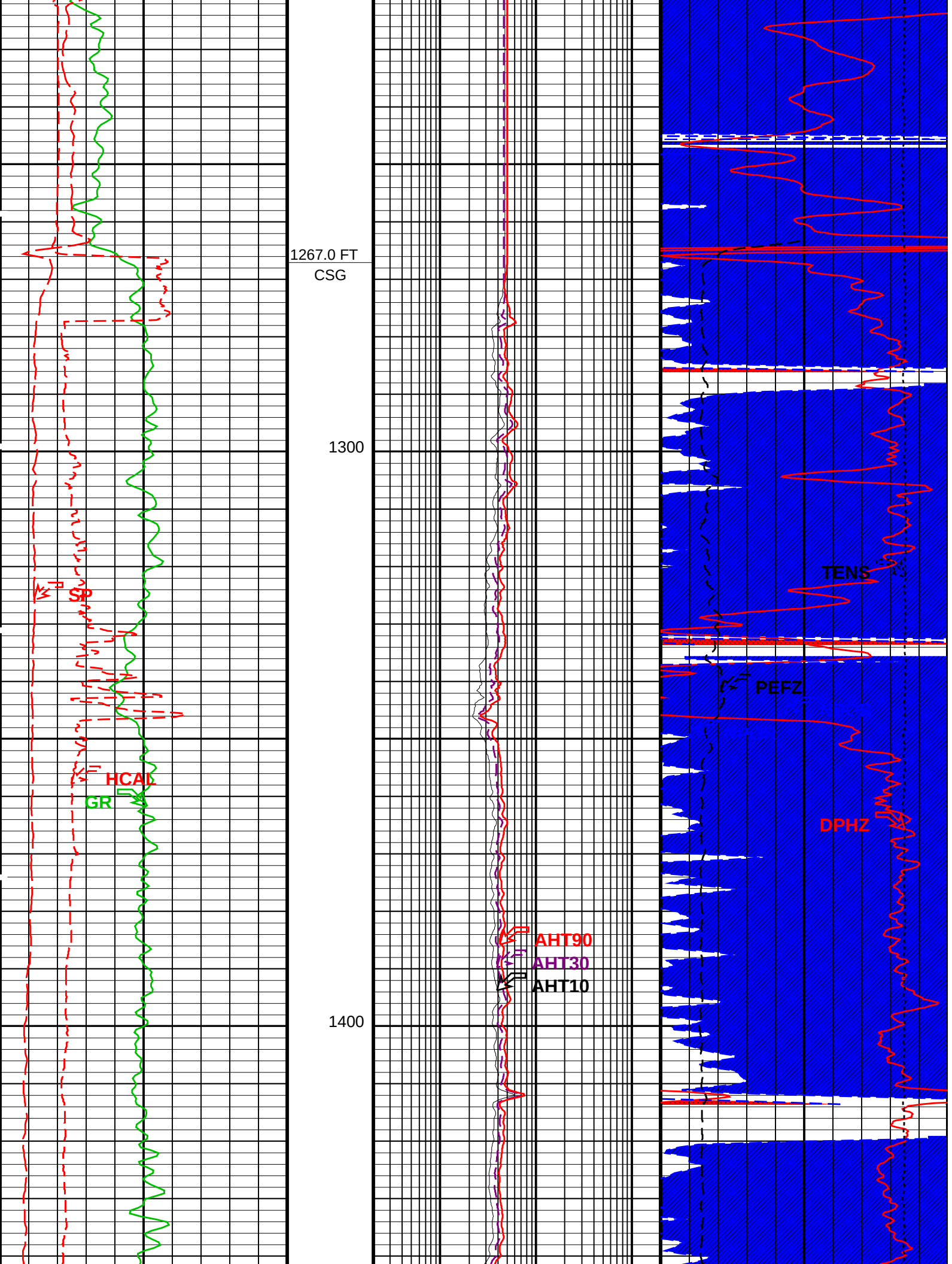
Changed Parameter Summary

DLIS Name	New Value		Previous Value		Depth & Time
MATR	SANDSTONE		SANDSTONE		7995.0 19:41:19
	SANDSTONE		SANDSTONE		7546.0 19:41:33
	LIMESTONE		SANDSTONE		7188.0 19:41:45
	SANDSTONE		LIMESTONE		6650.0 19:42:01
MDEN	2.65	G/C3	2.68	G/C3	7995.0 19:41:19
	2.68	G/C3	2.65	G/C3	7546.0 19:41:33
	2.71	G/C3	2.68	G/C3	7188.0 19:41:45
	2.68	G/C3	2.71	G/C3	6650.0 19:42:01

PIP SUMMARY

Time Mark Every 60 S




1267.0 FT
CSG
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1400
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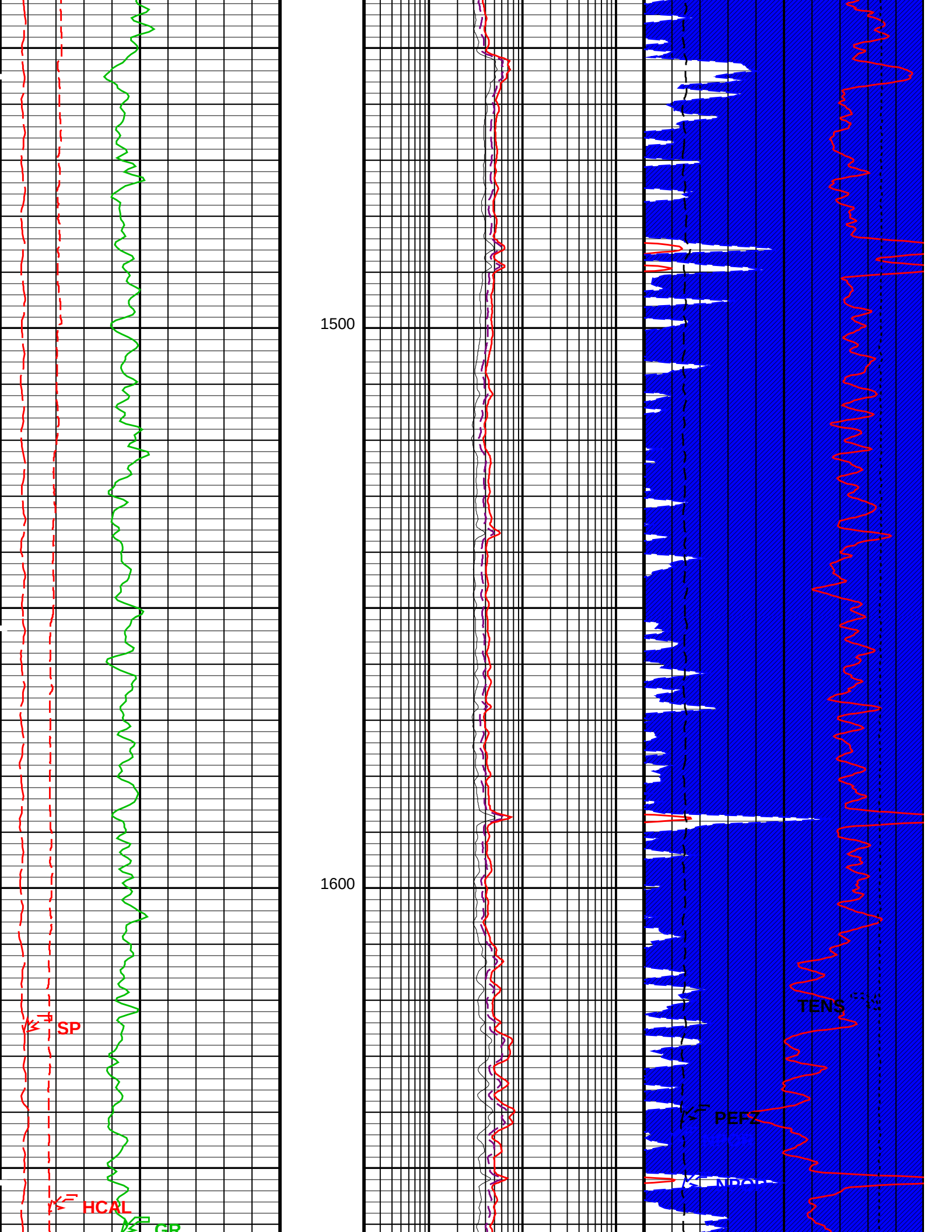
AHT90
AHT30
AHT10
TENS
PEFZ
DPHZ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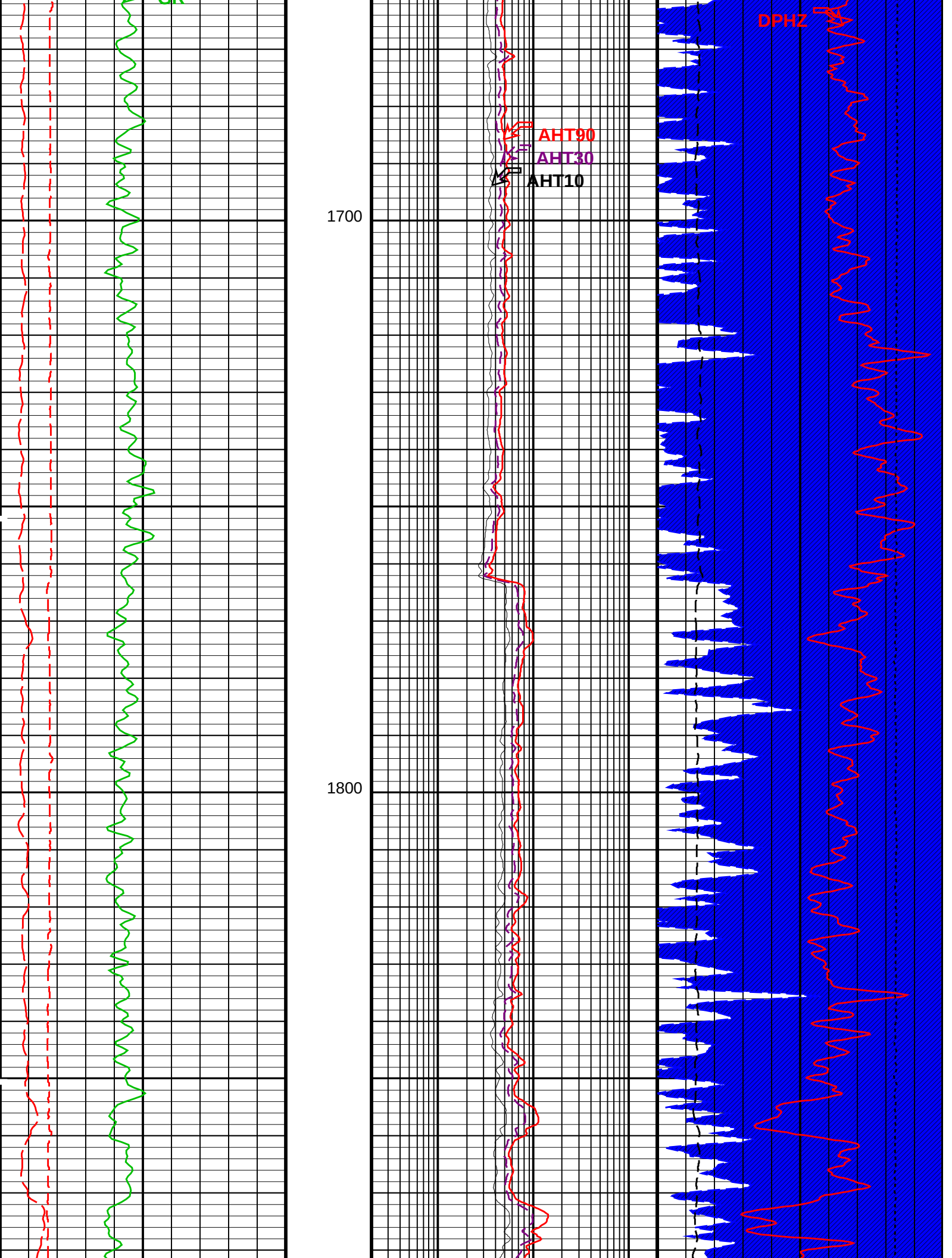
1600
SP
HCAL
GR
TENS
PEFZ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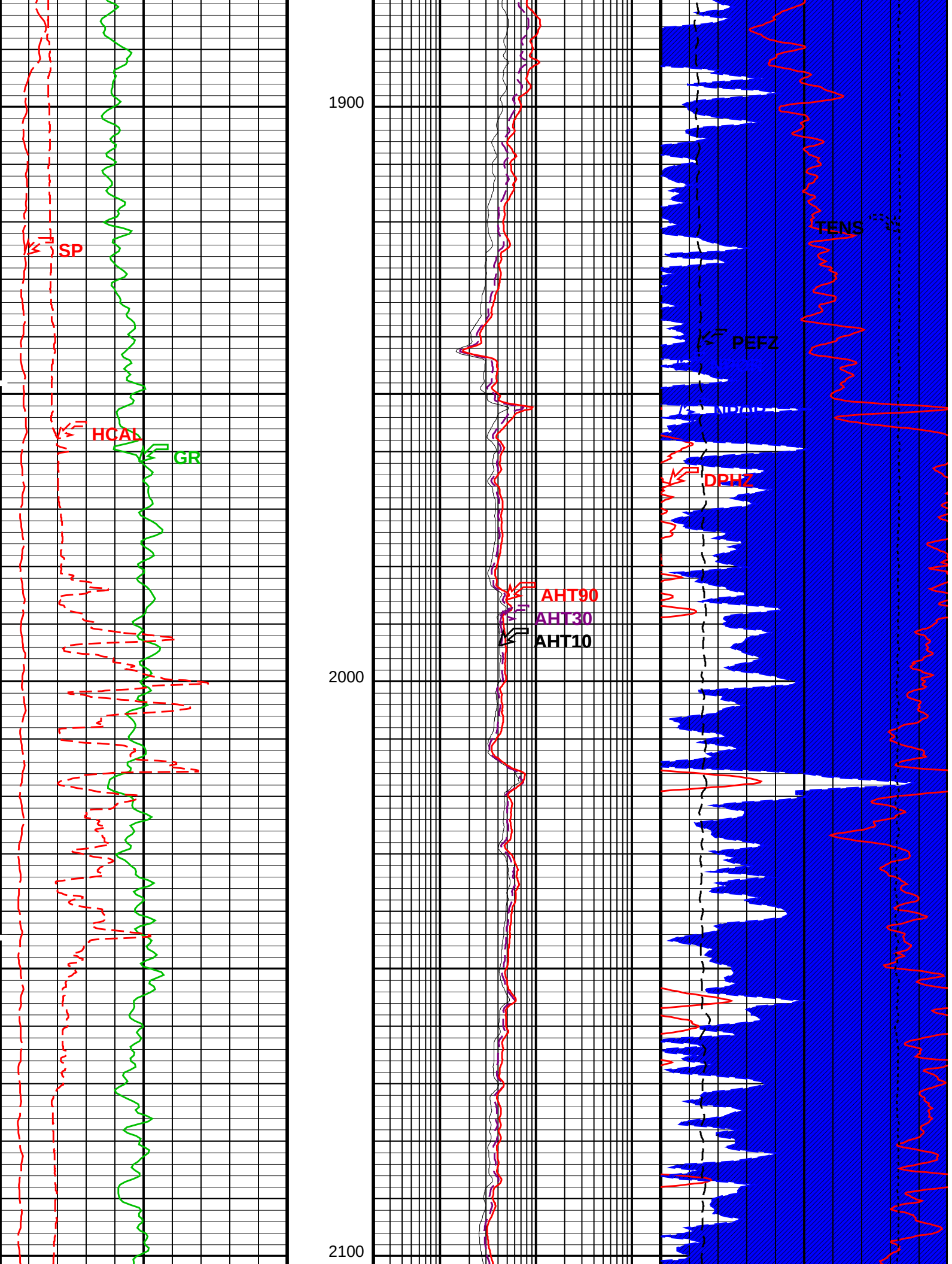
AHT10
DPHZ
1700
1800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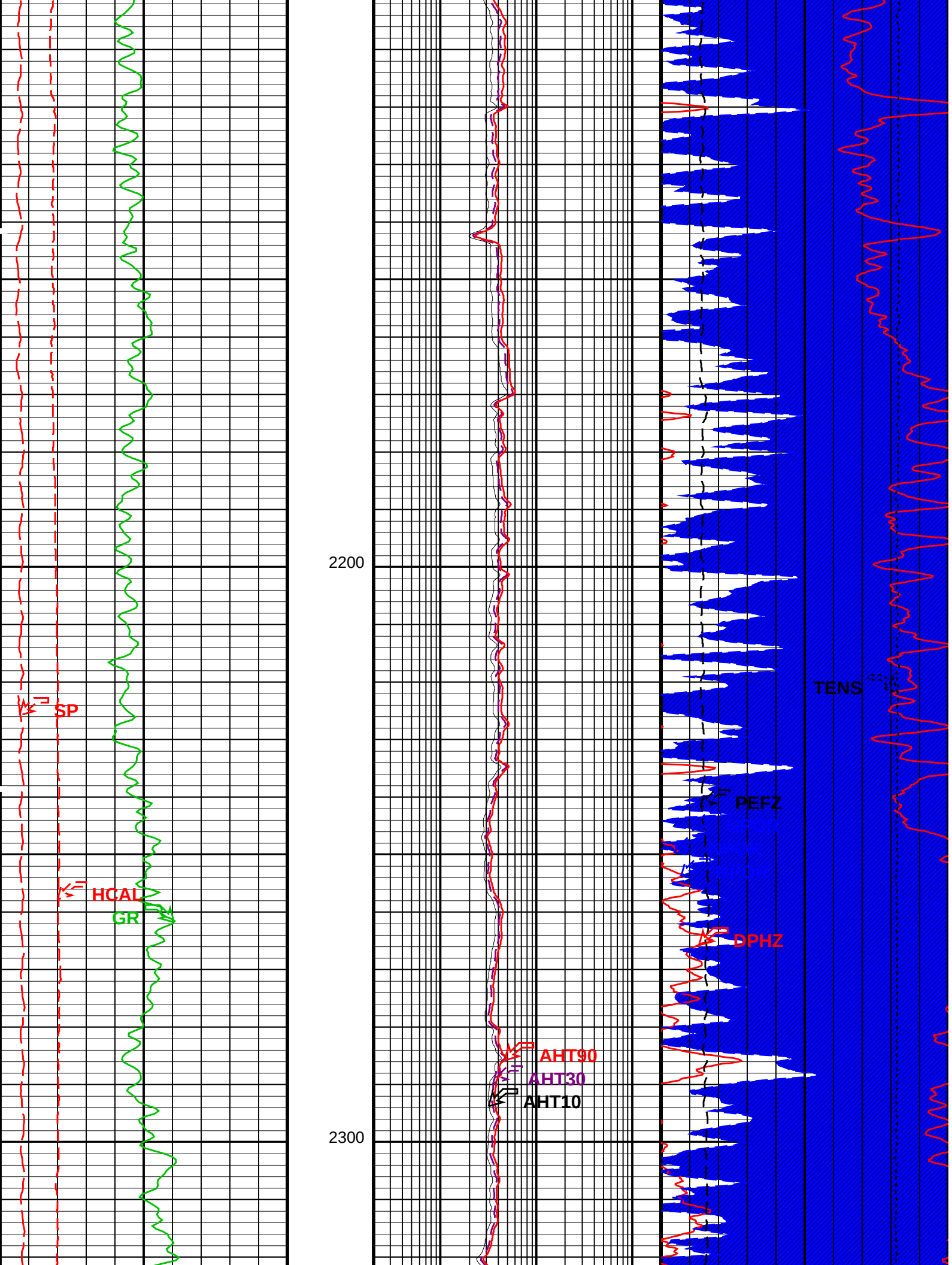
2100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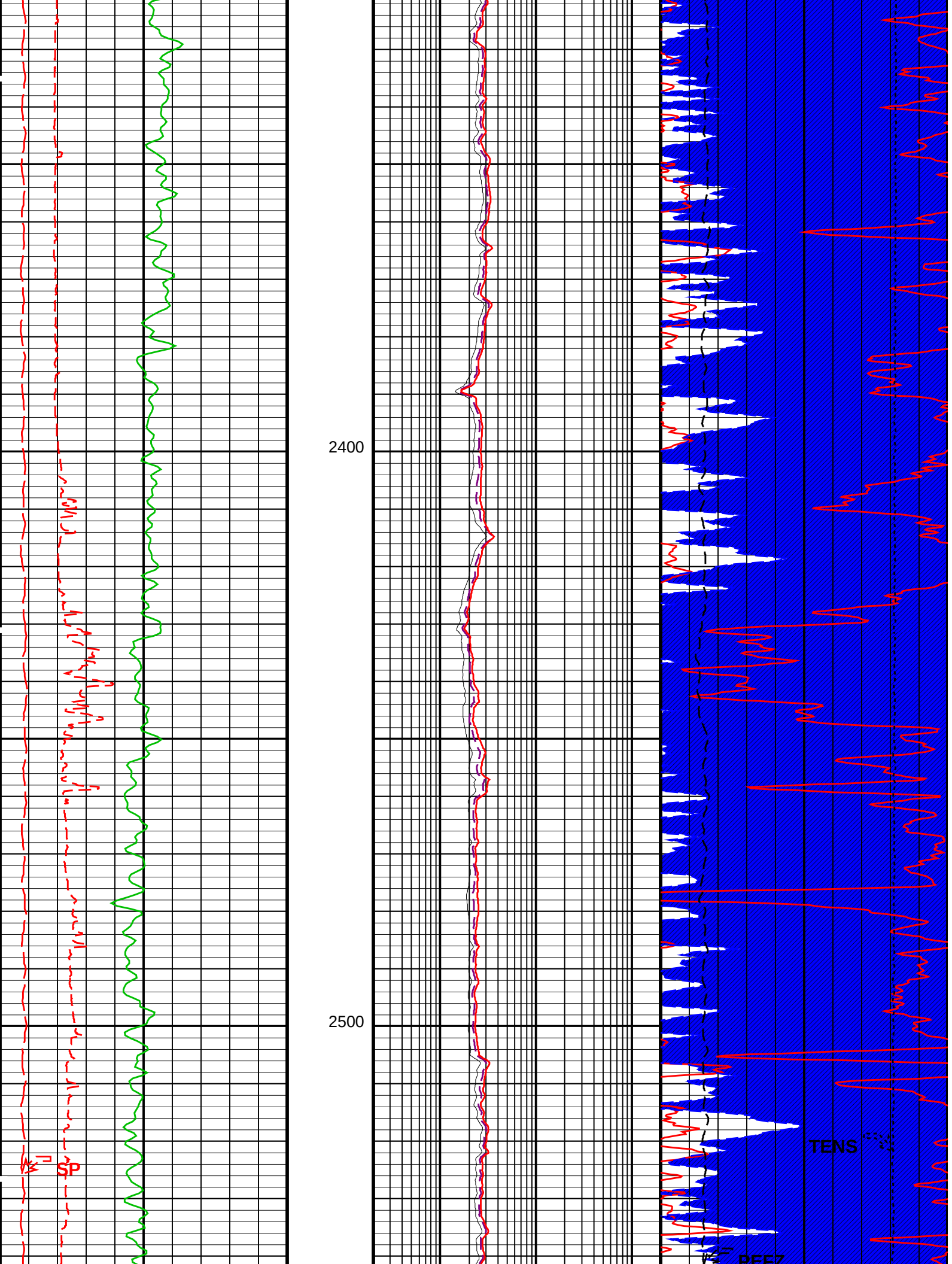
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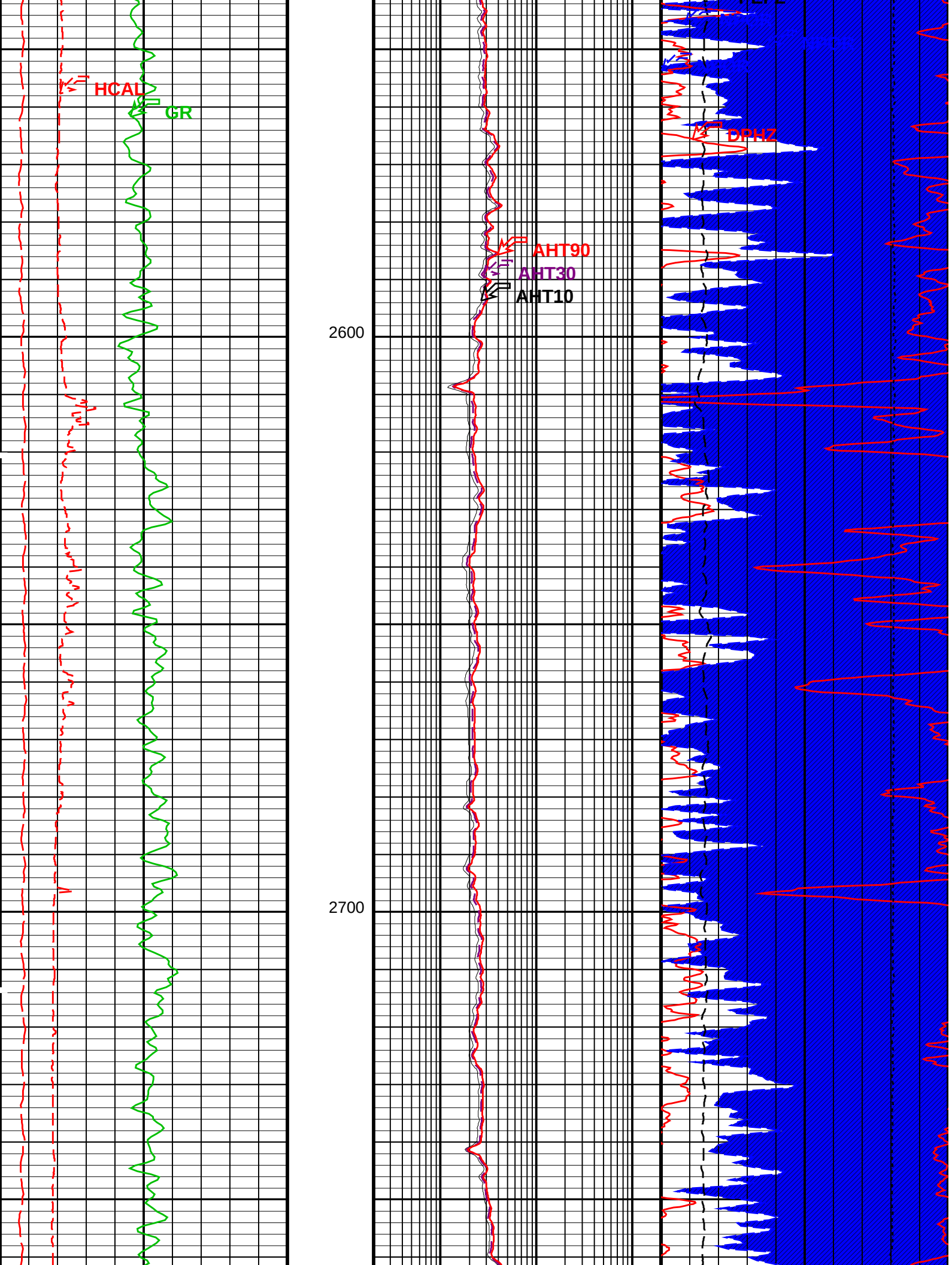
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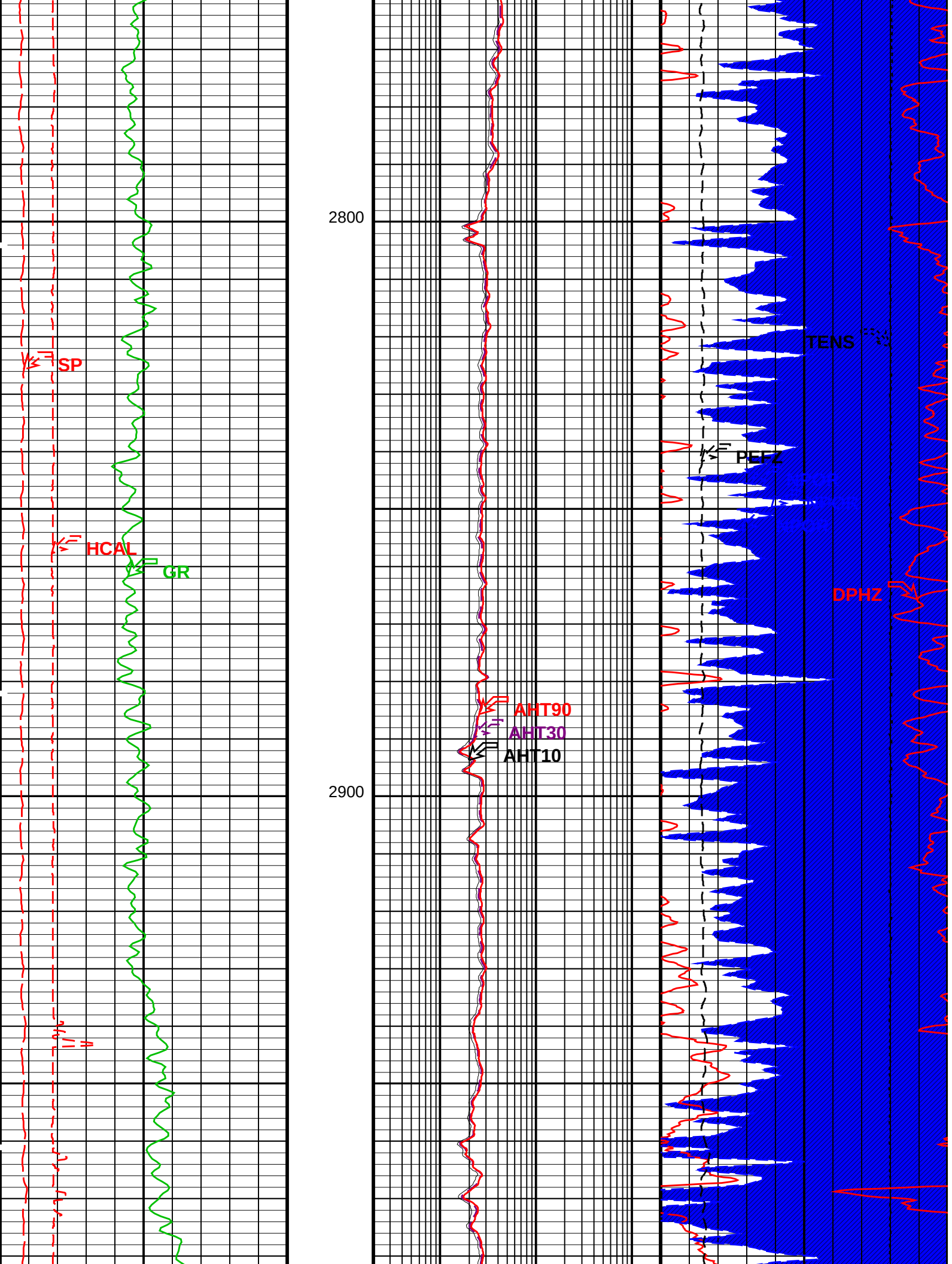
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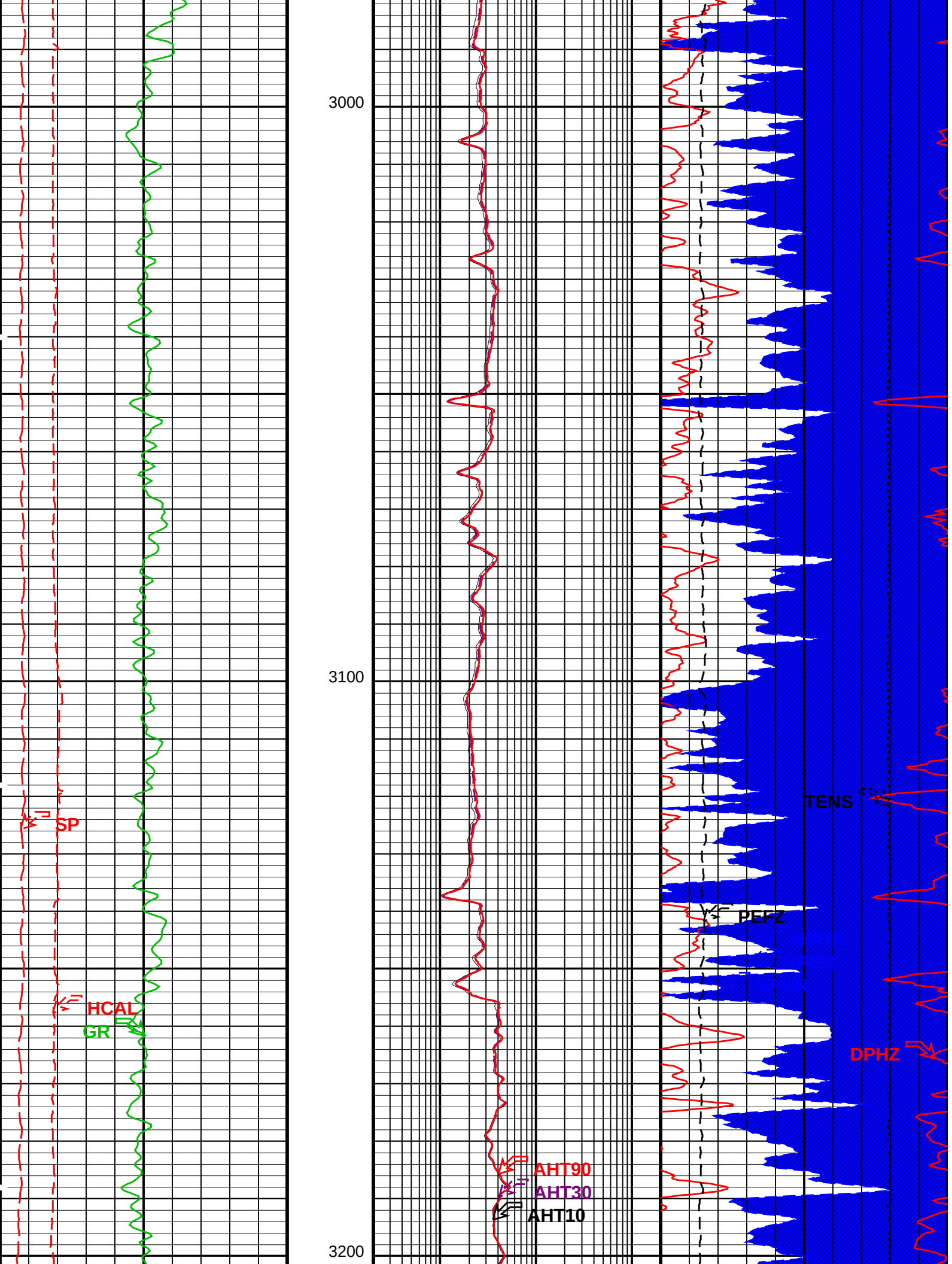
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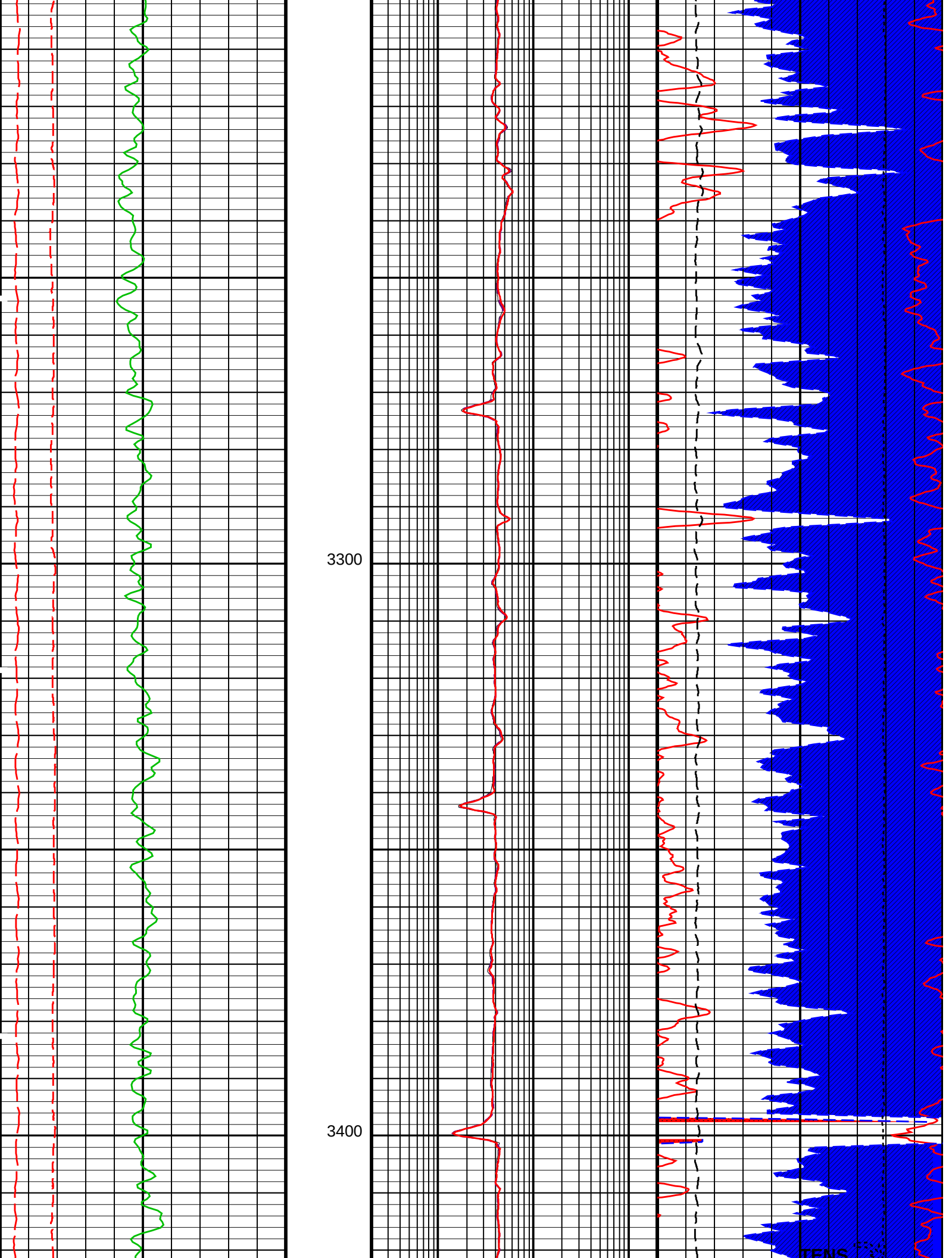
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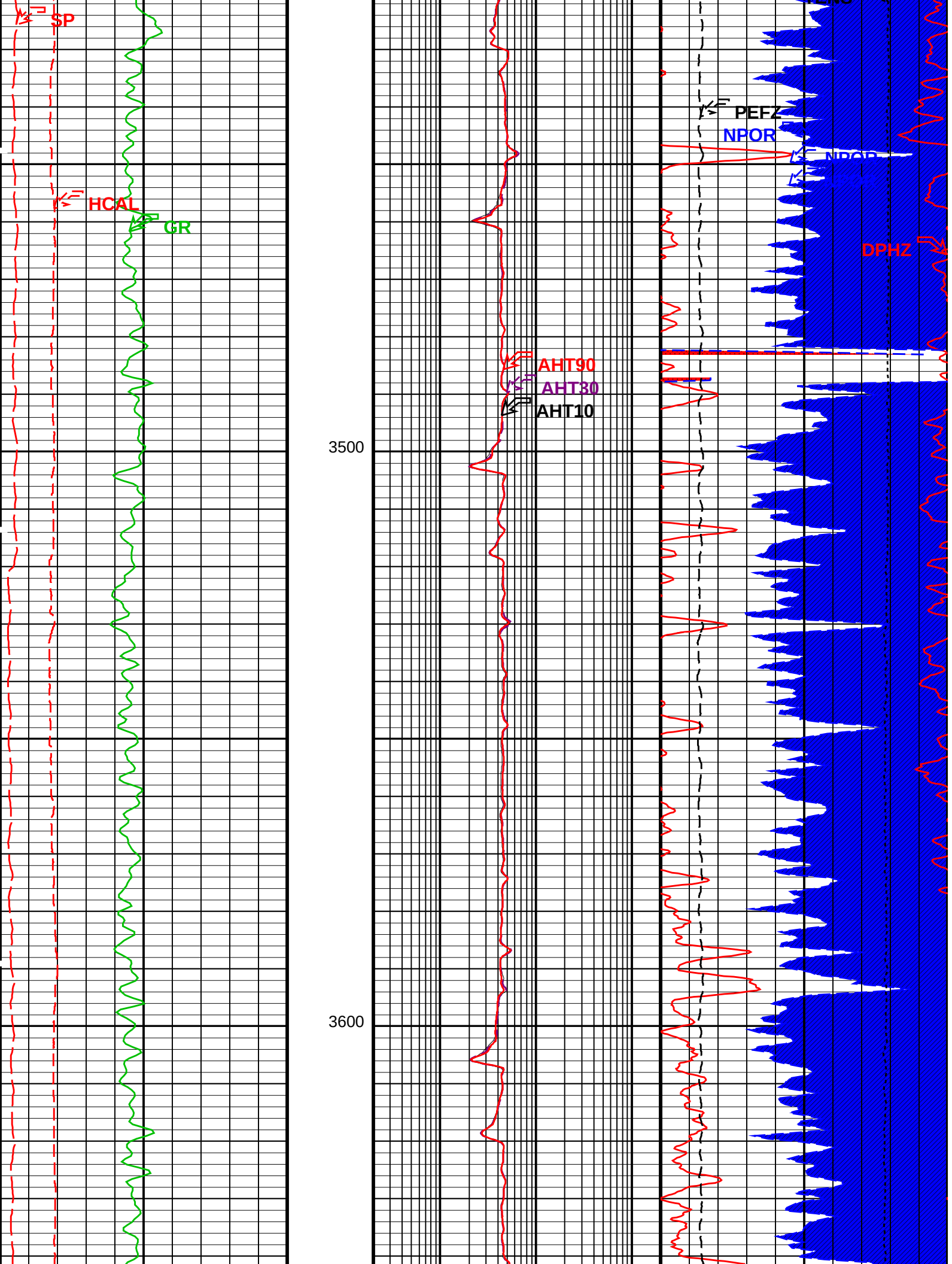
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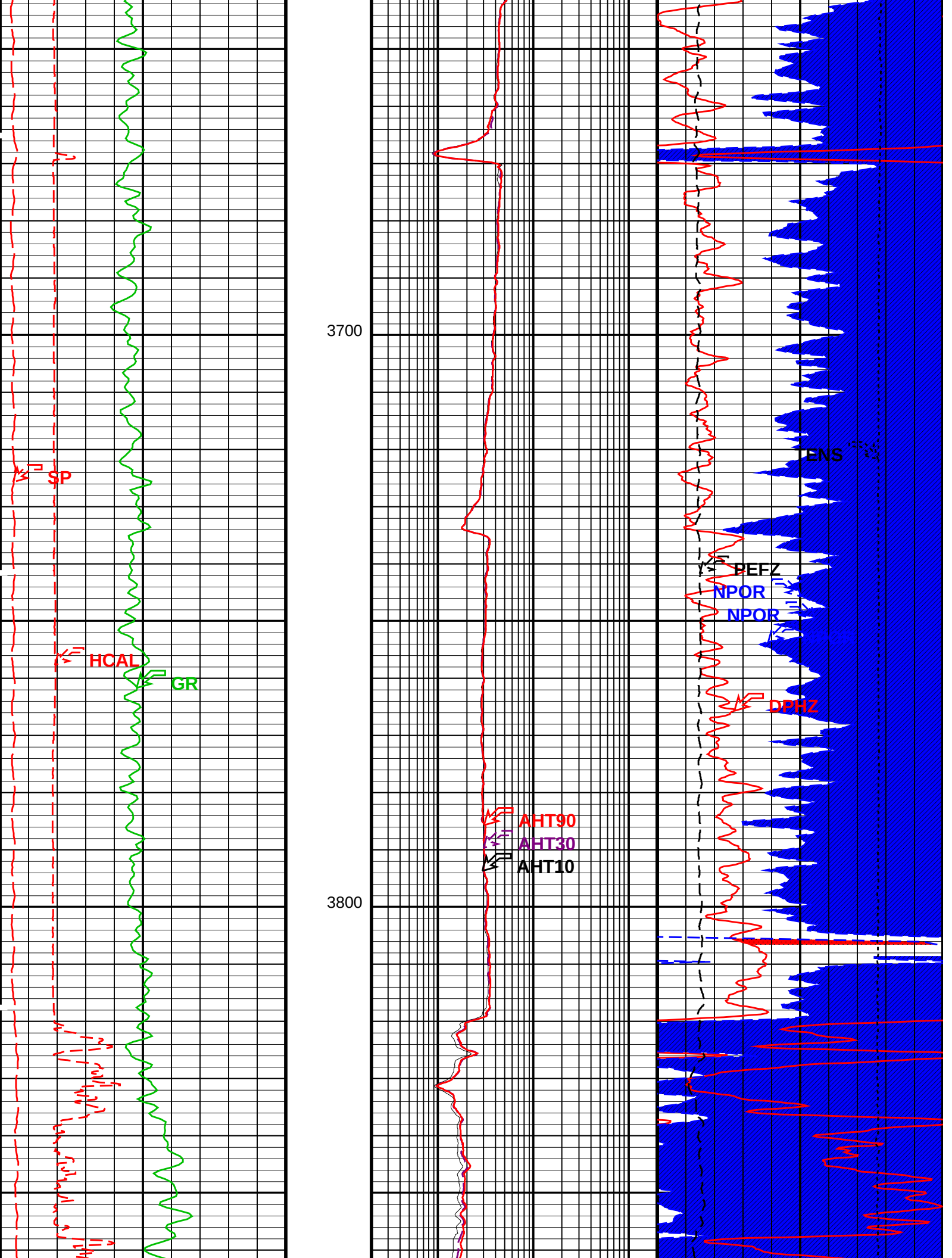
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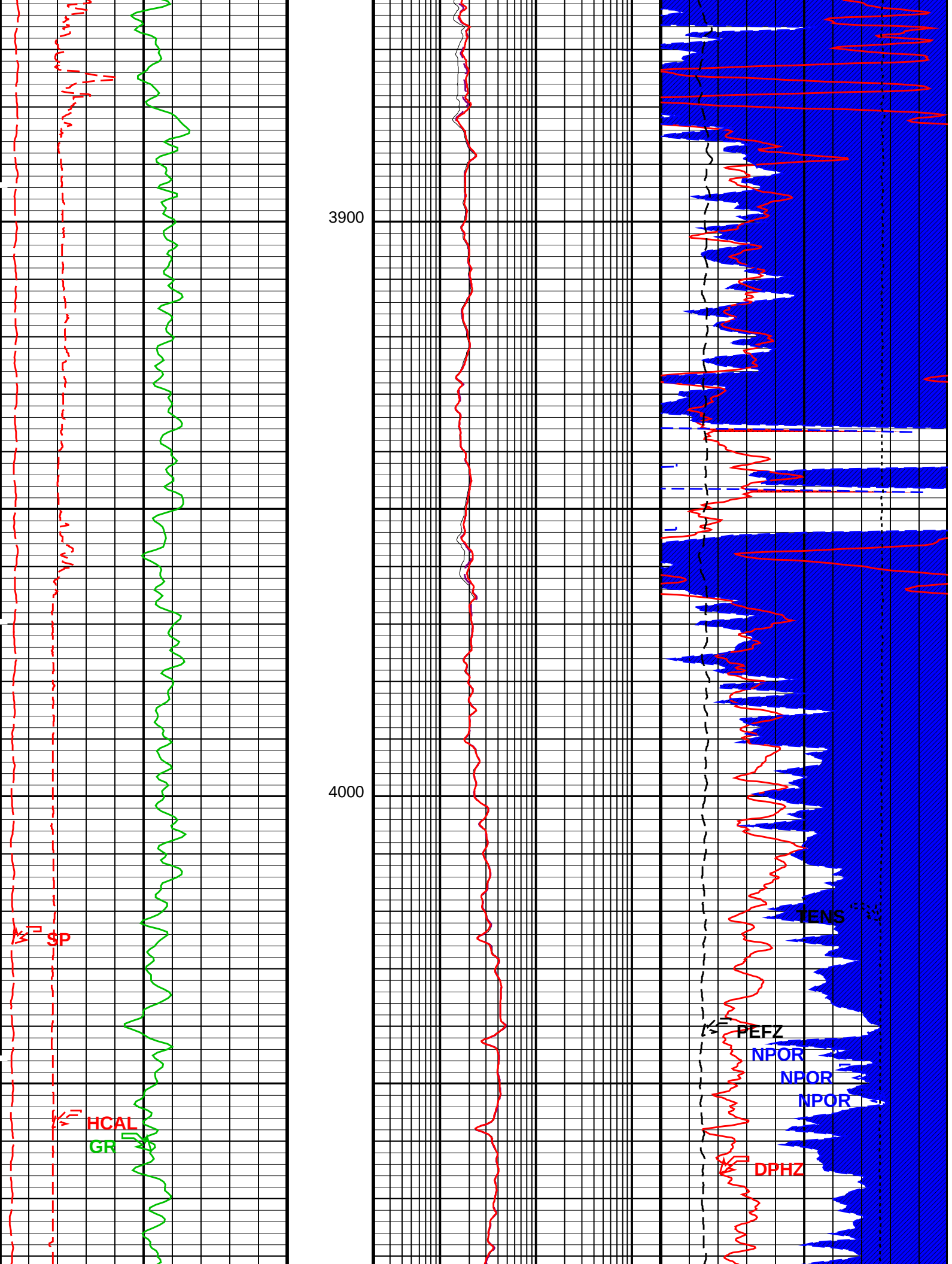
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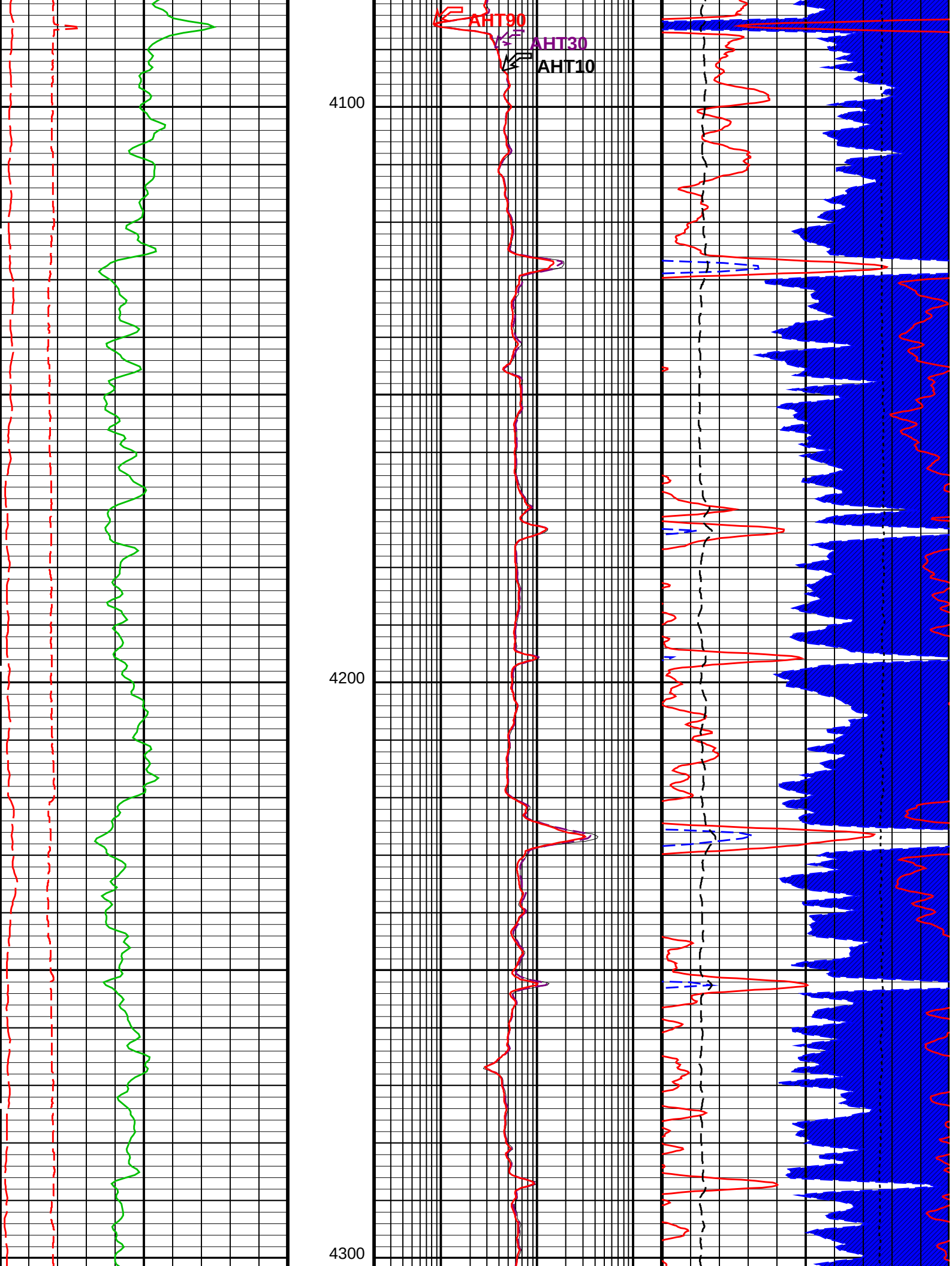
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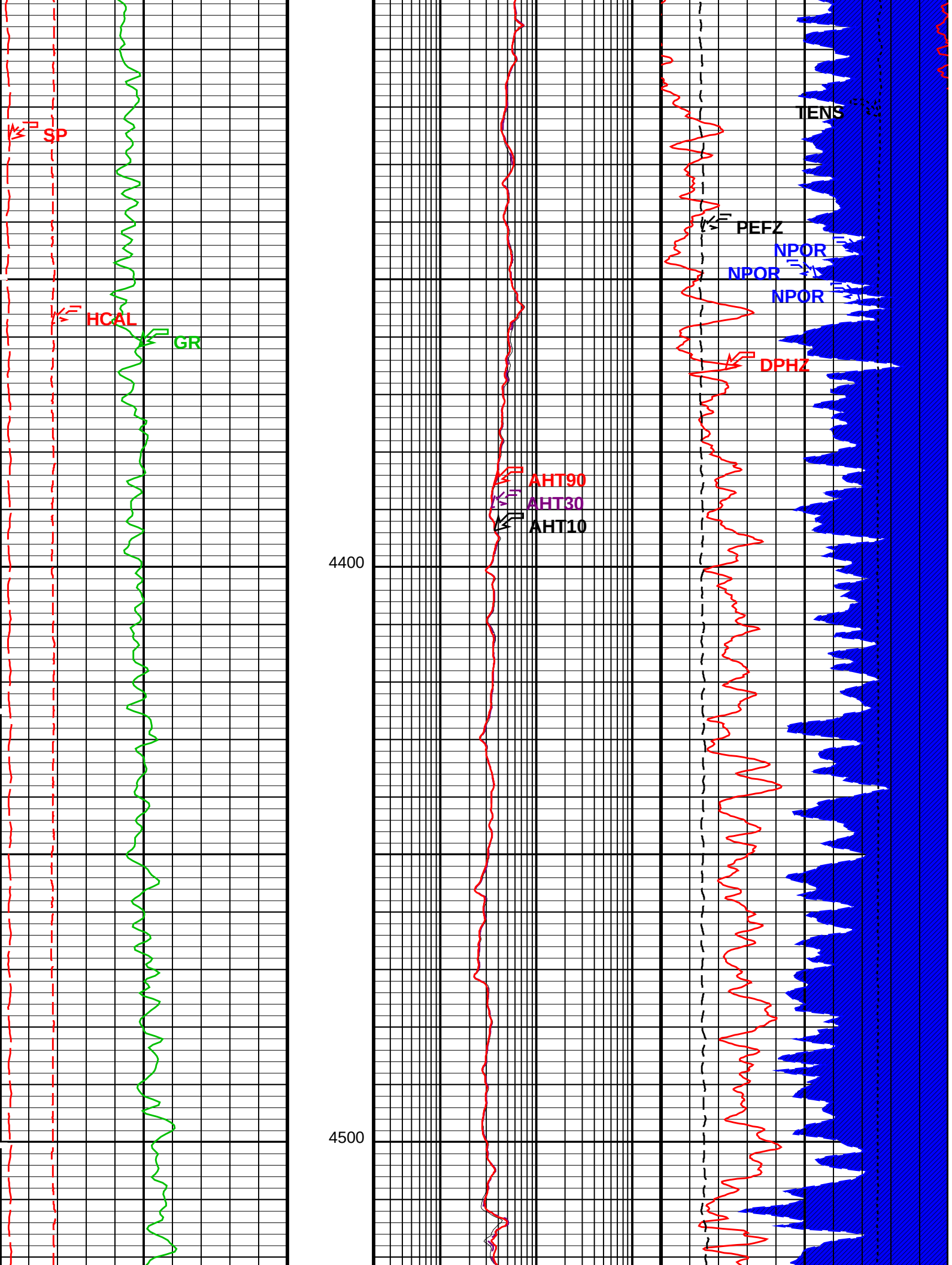
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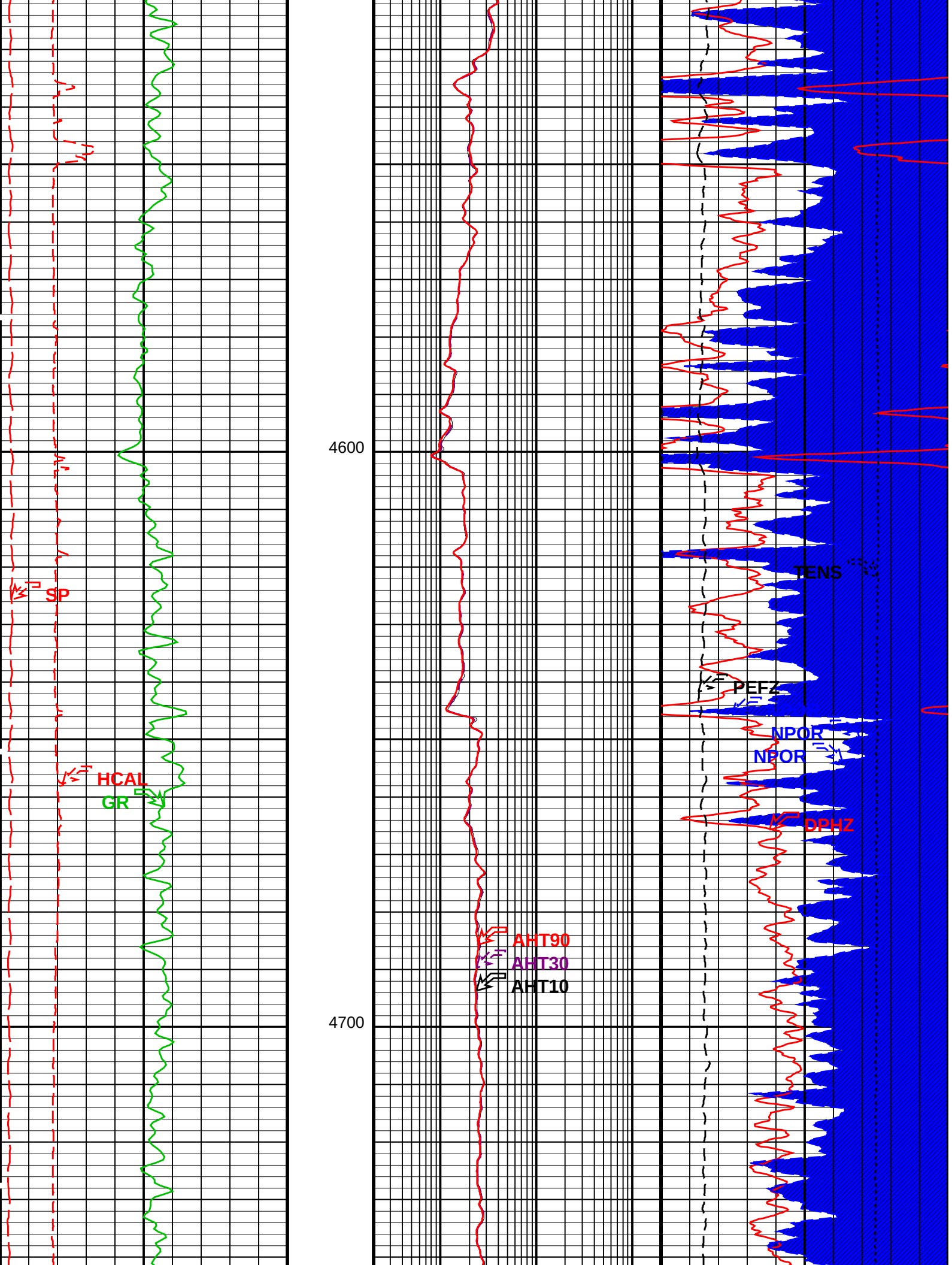
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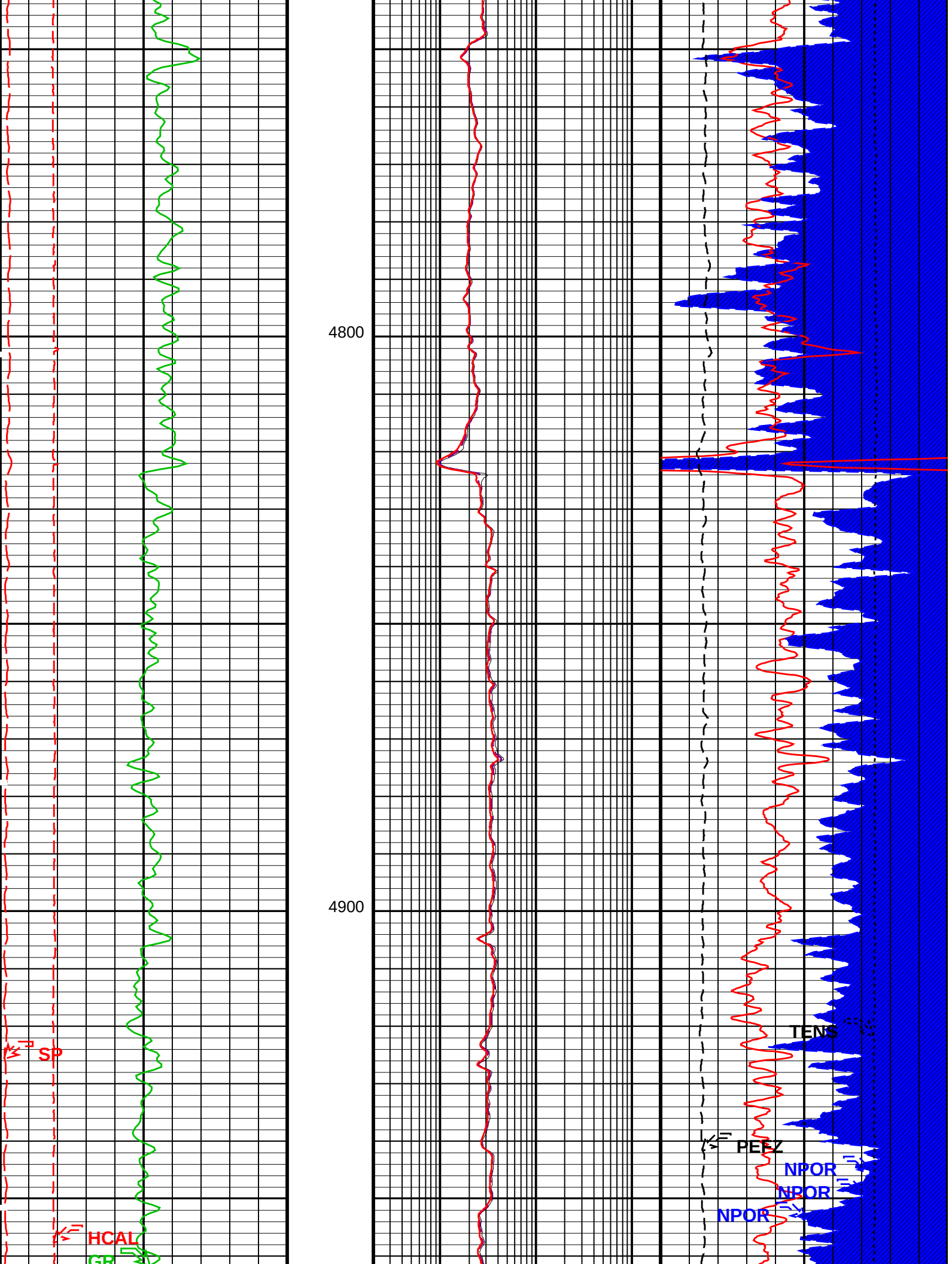
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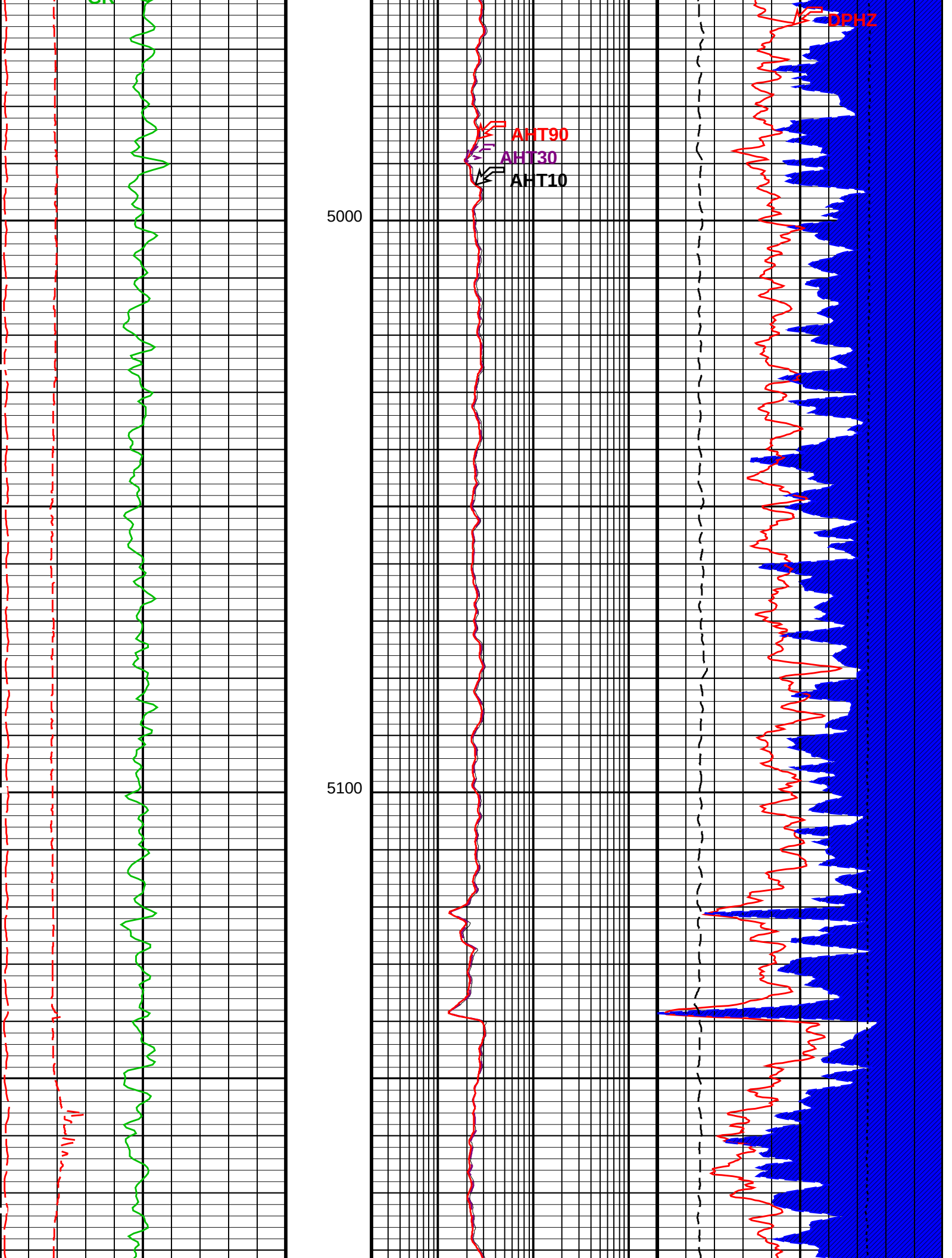
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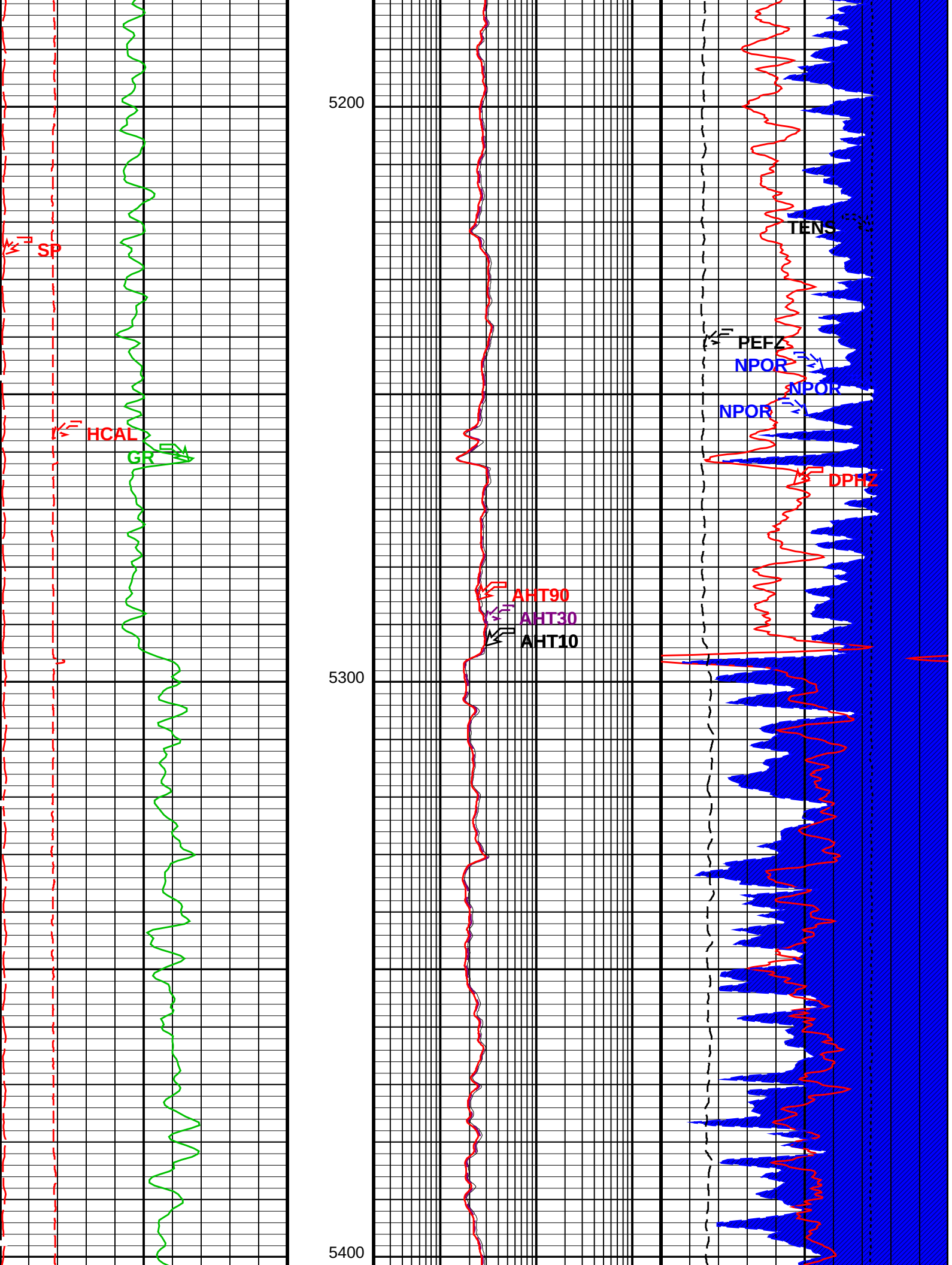
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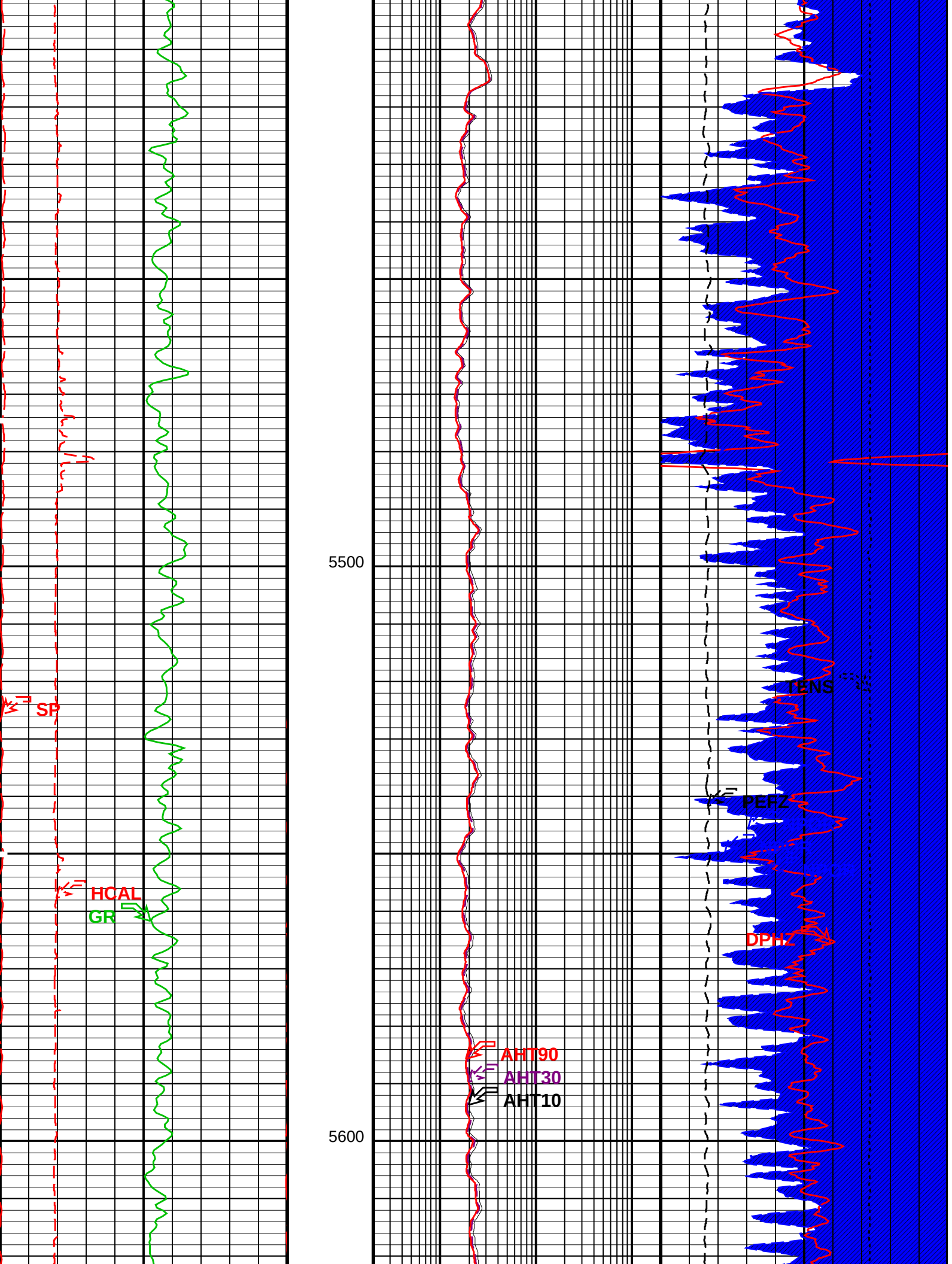
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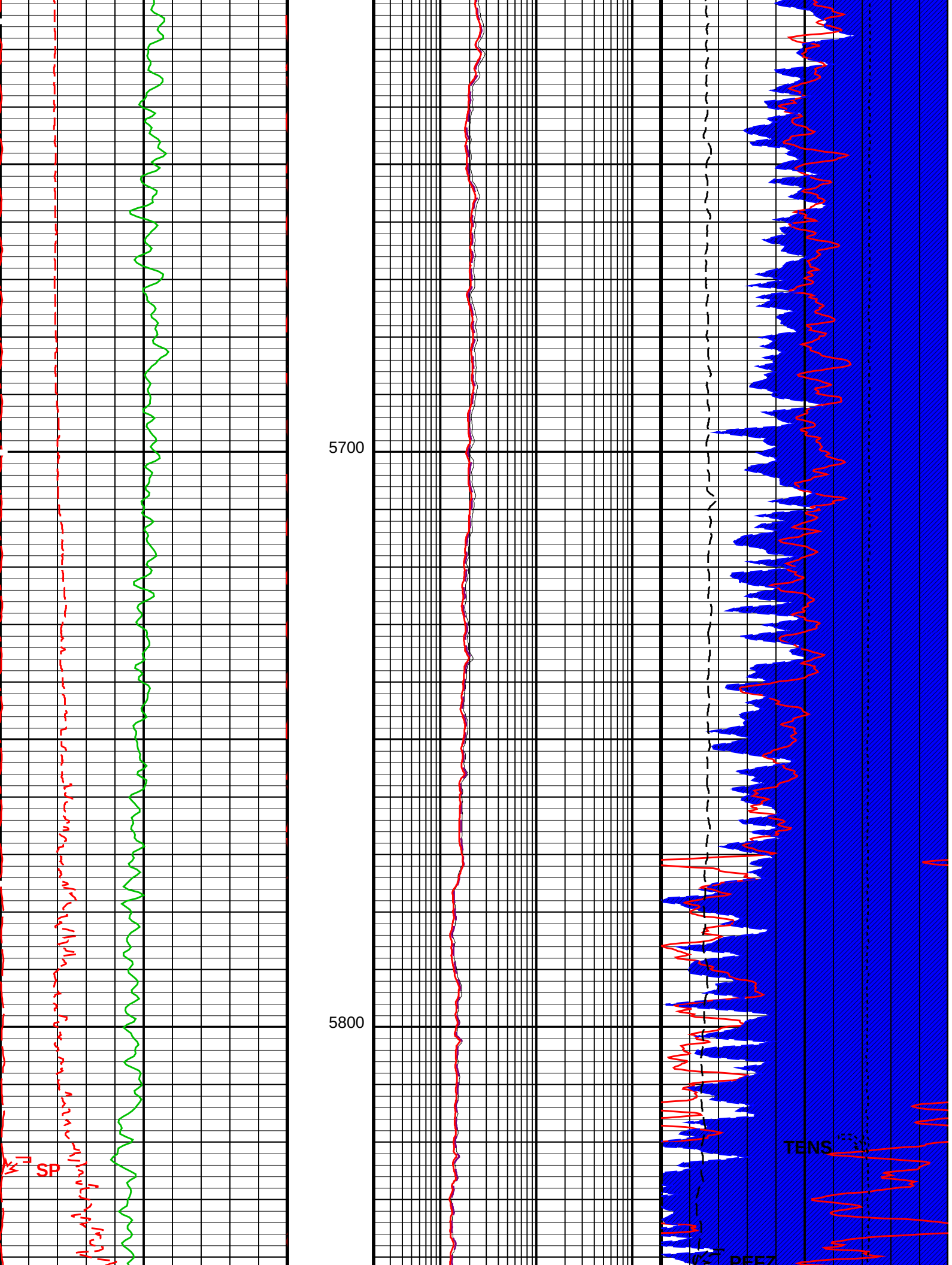
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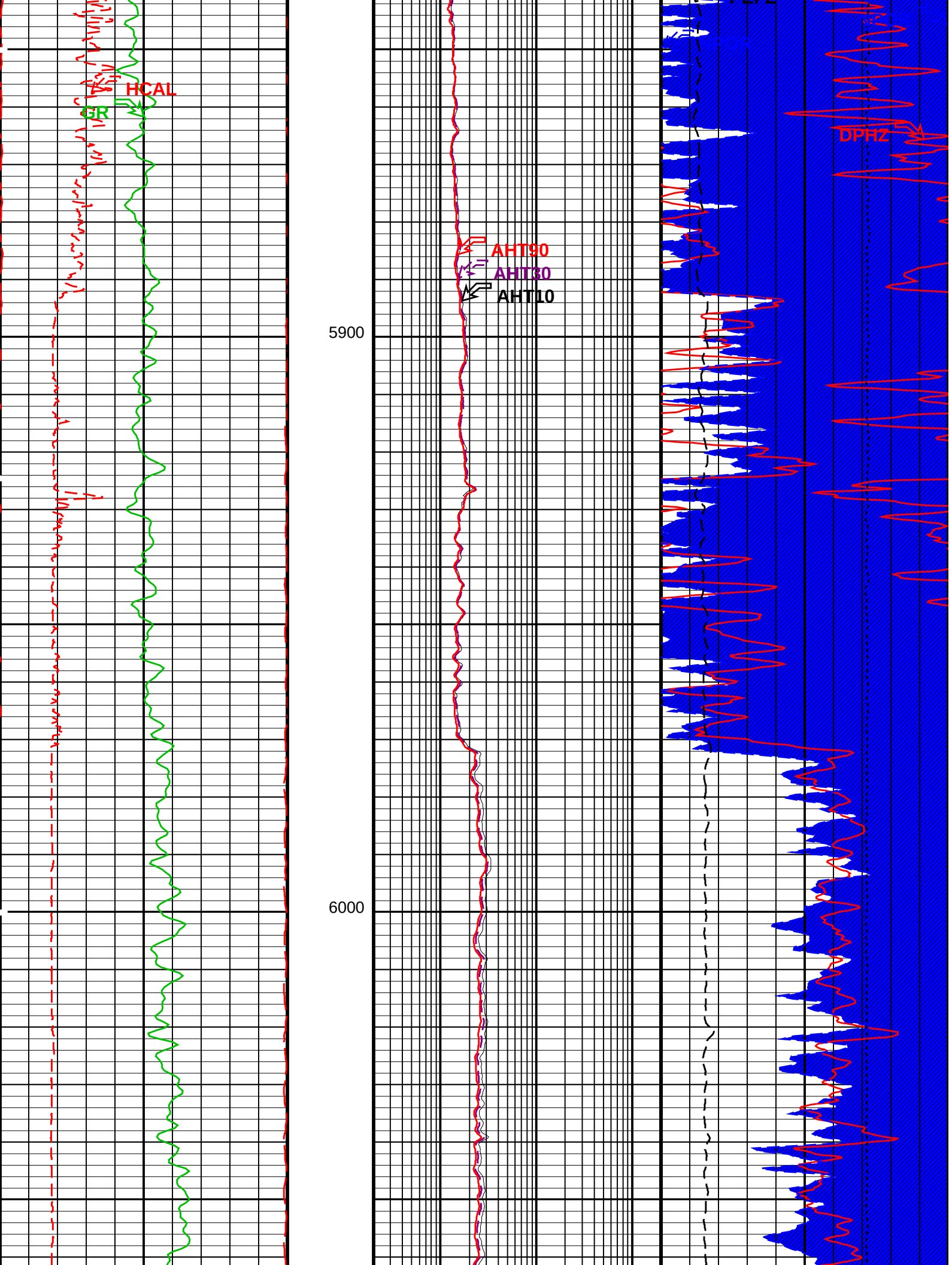
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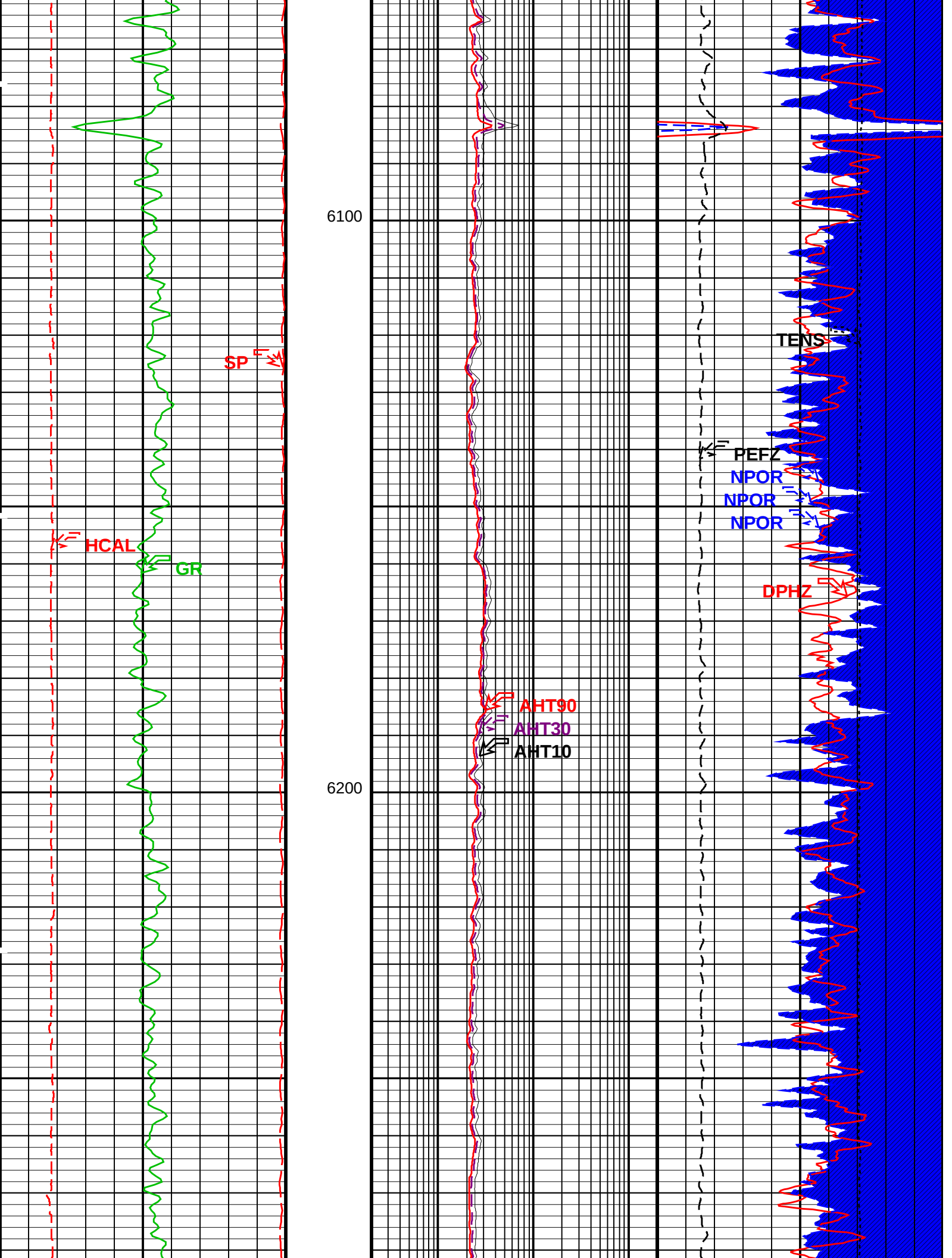
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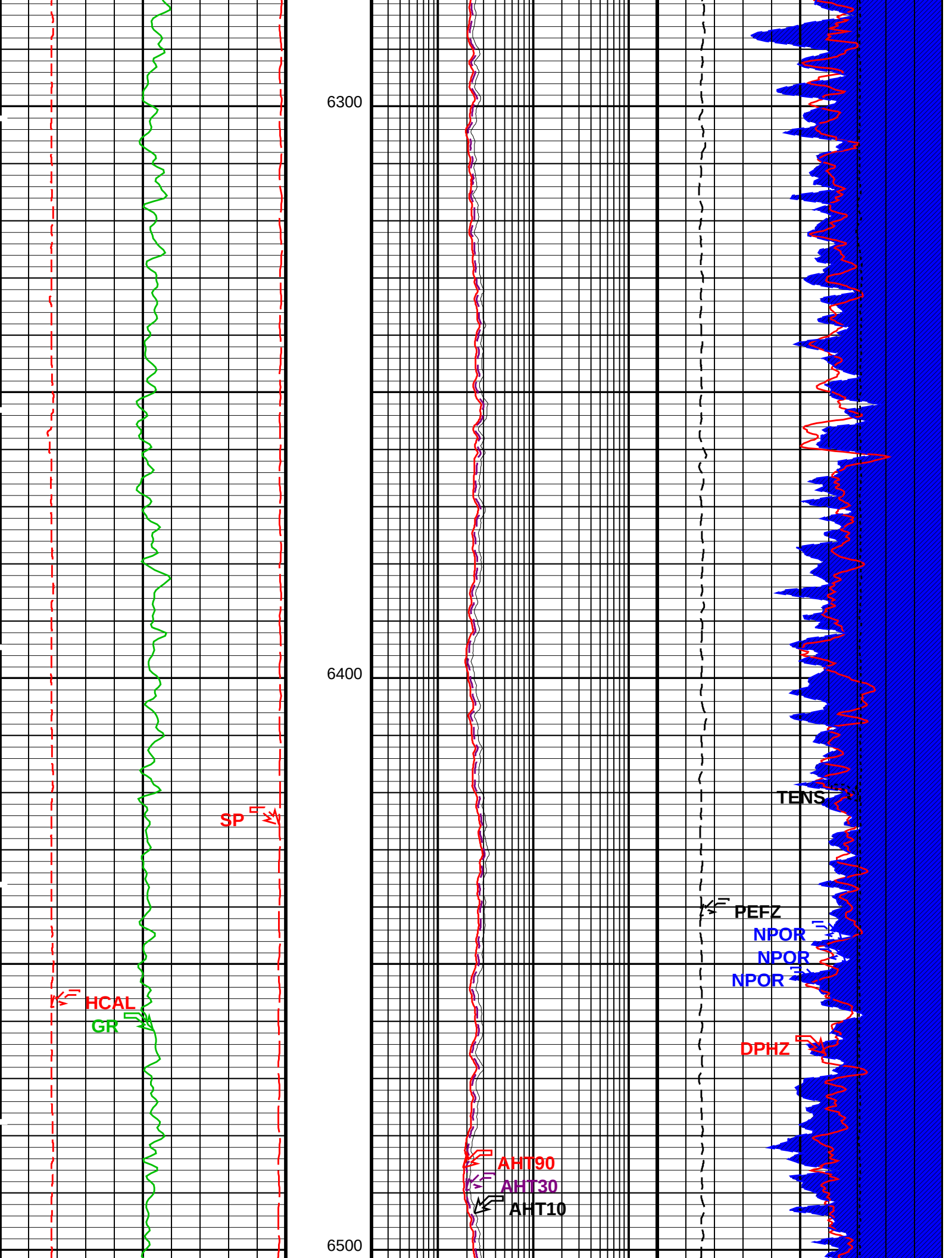
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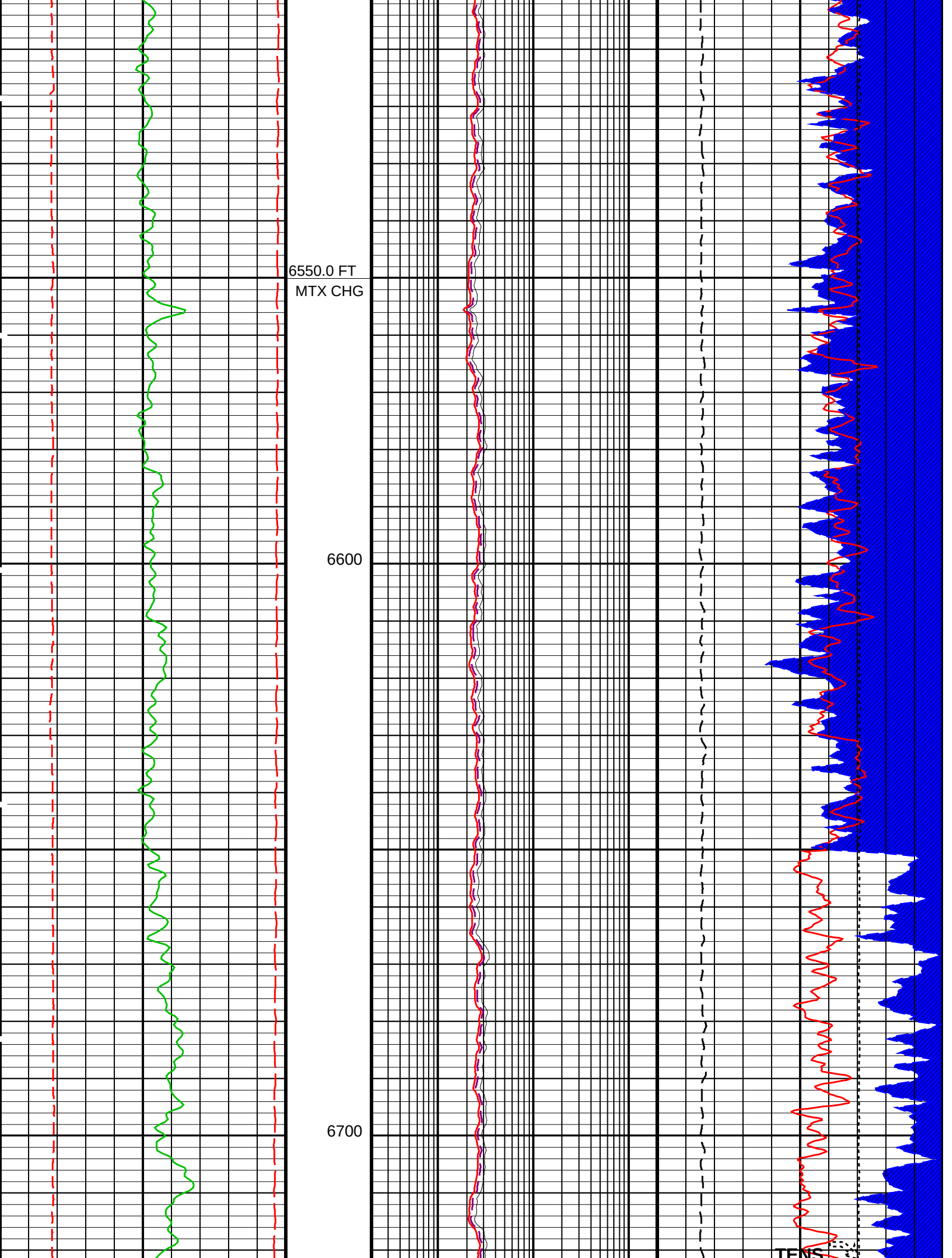
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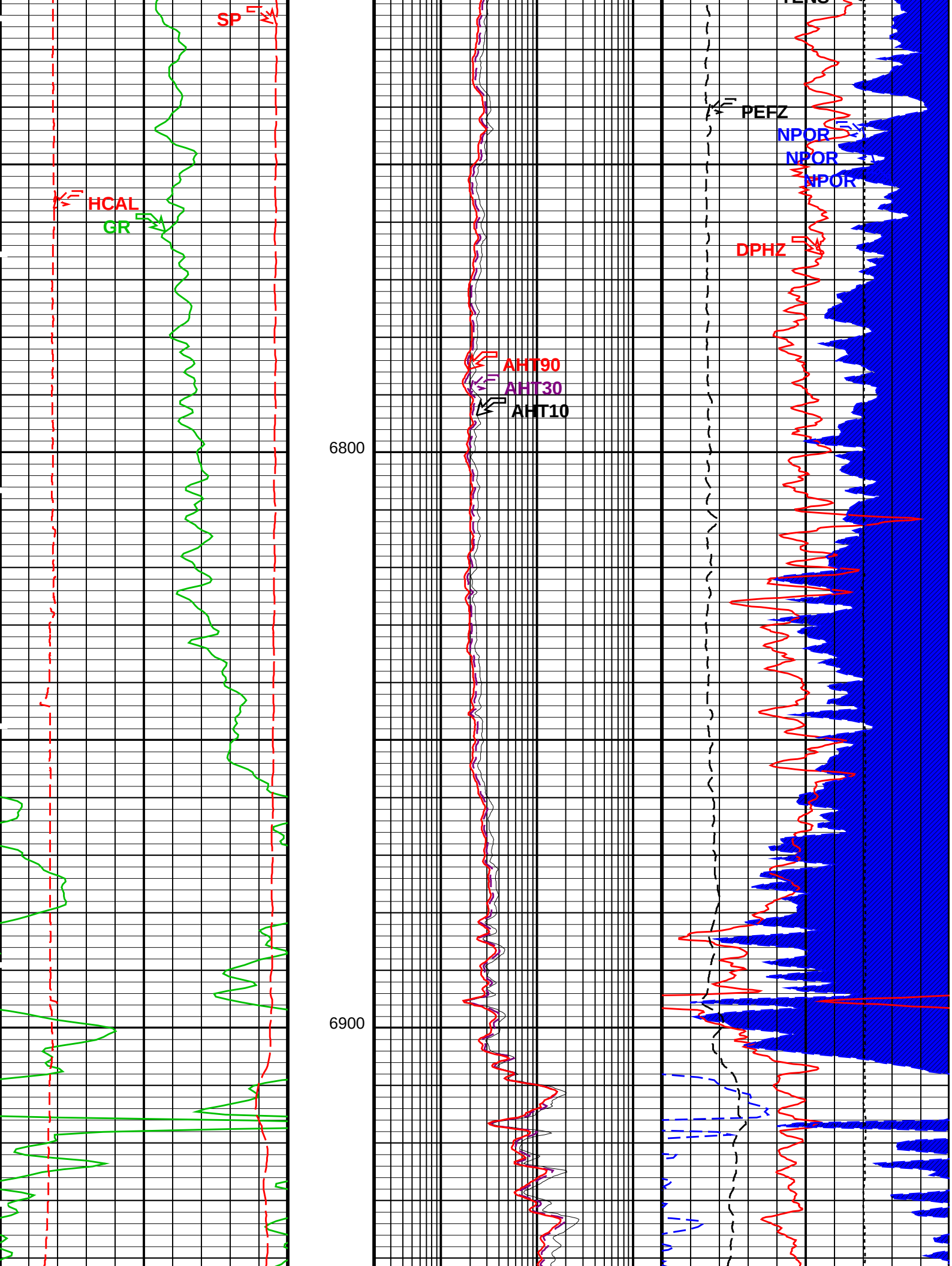
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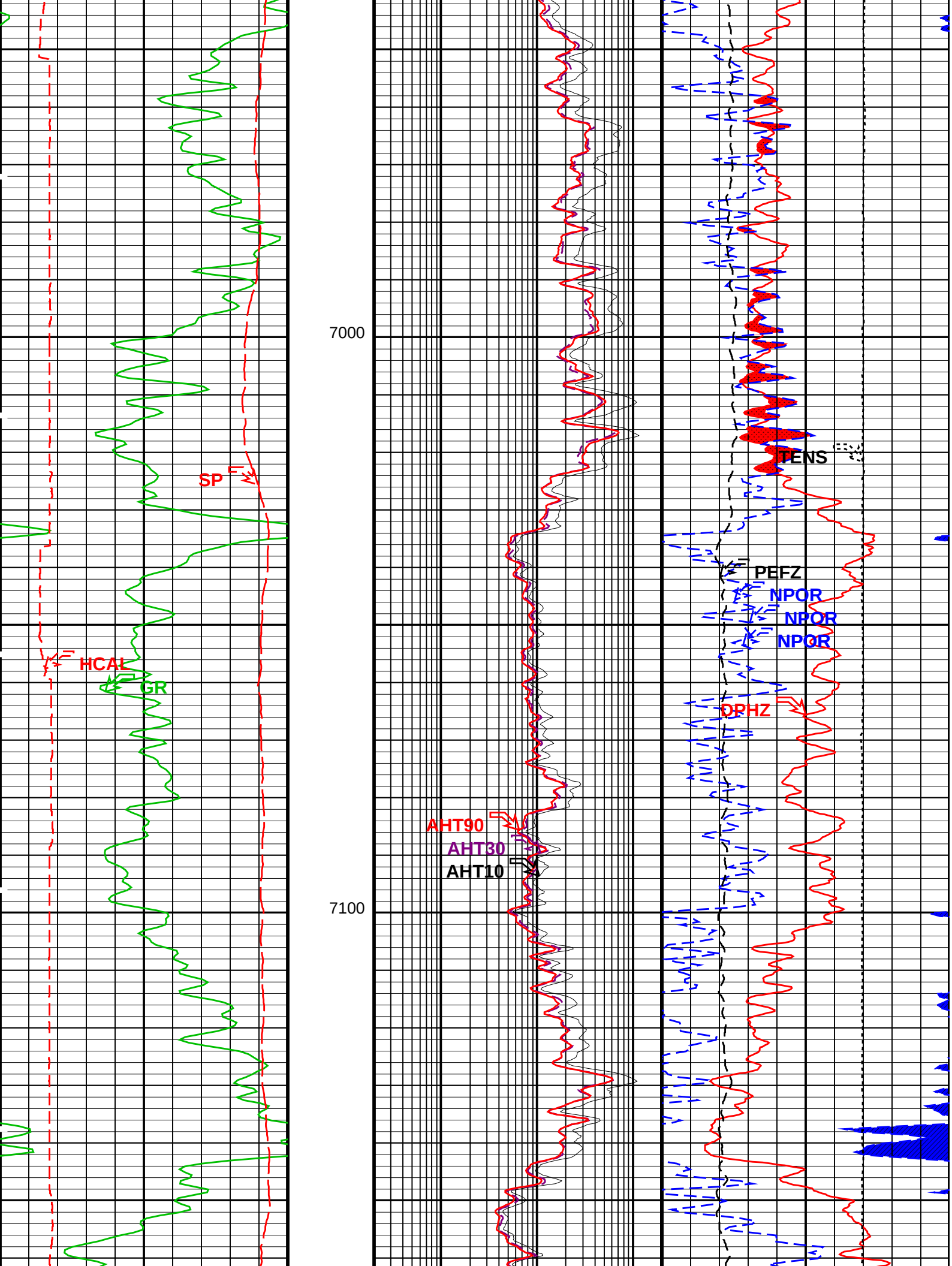
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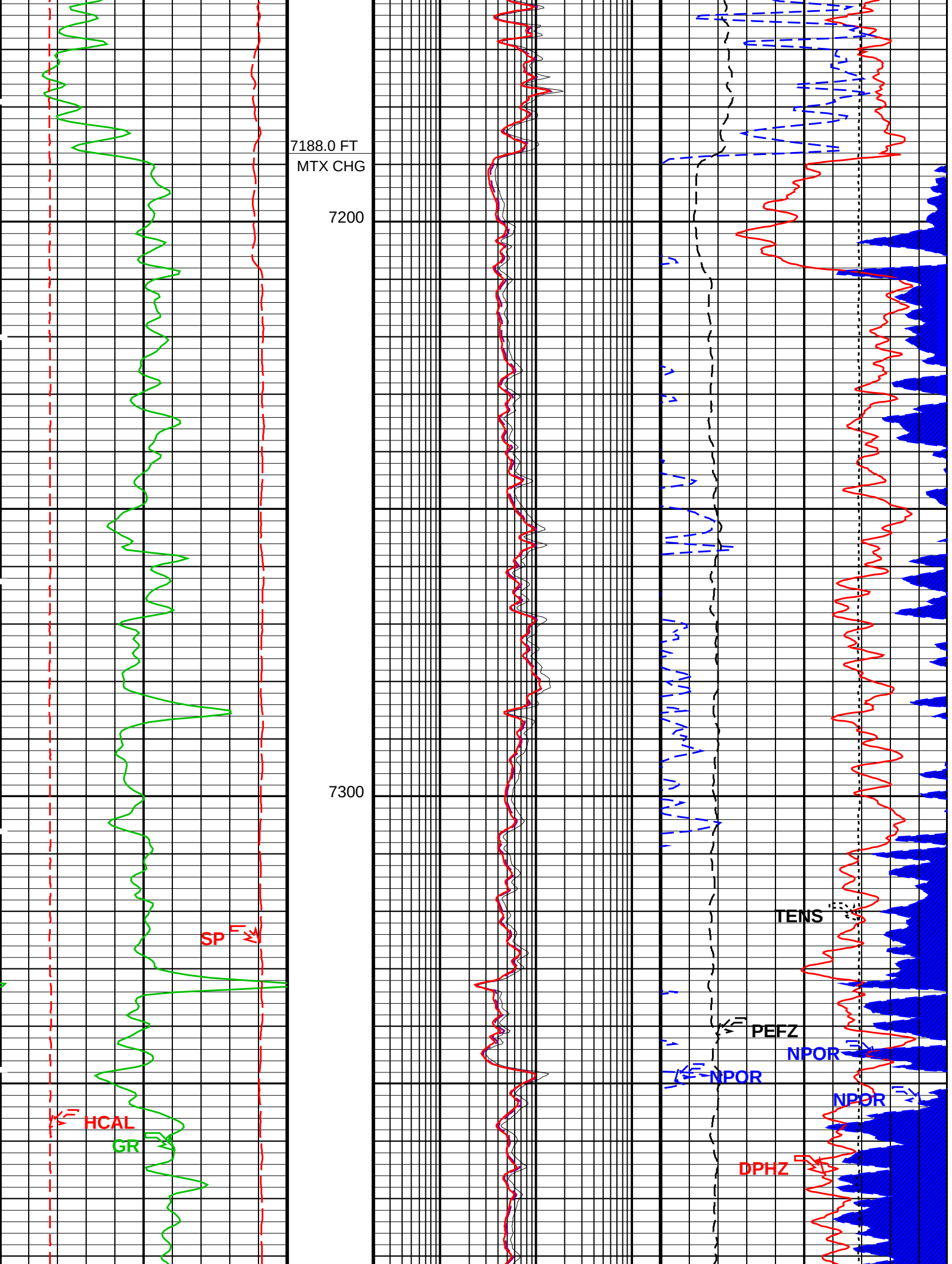
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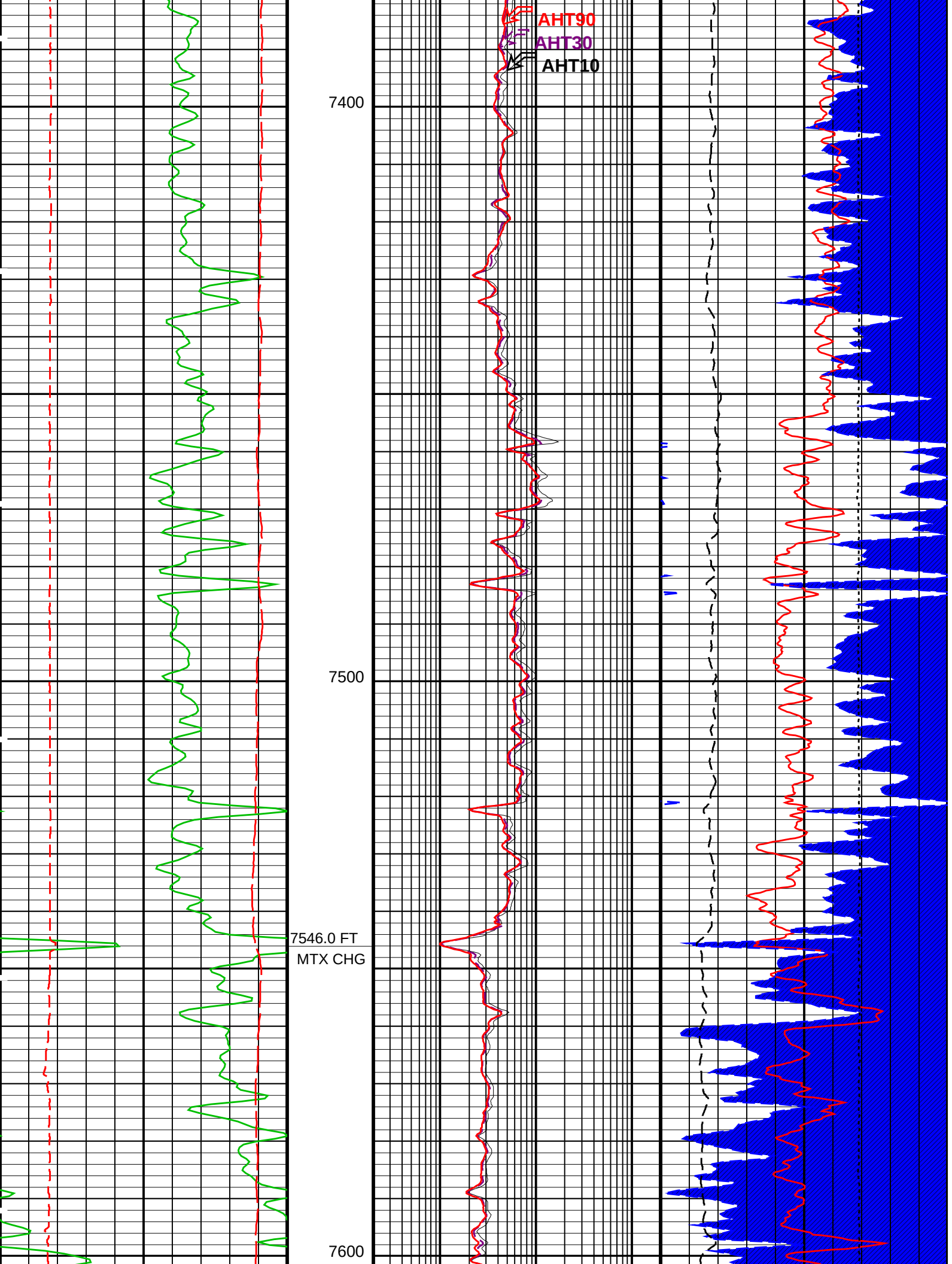
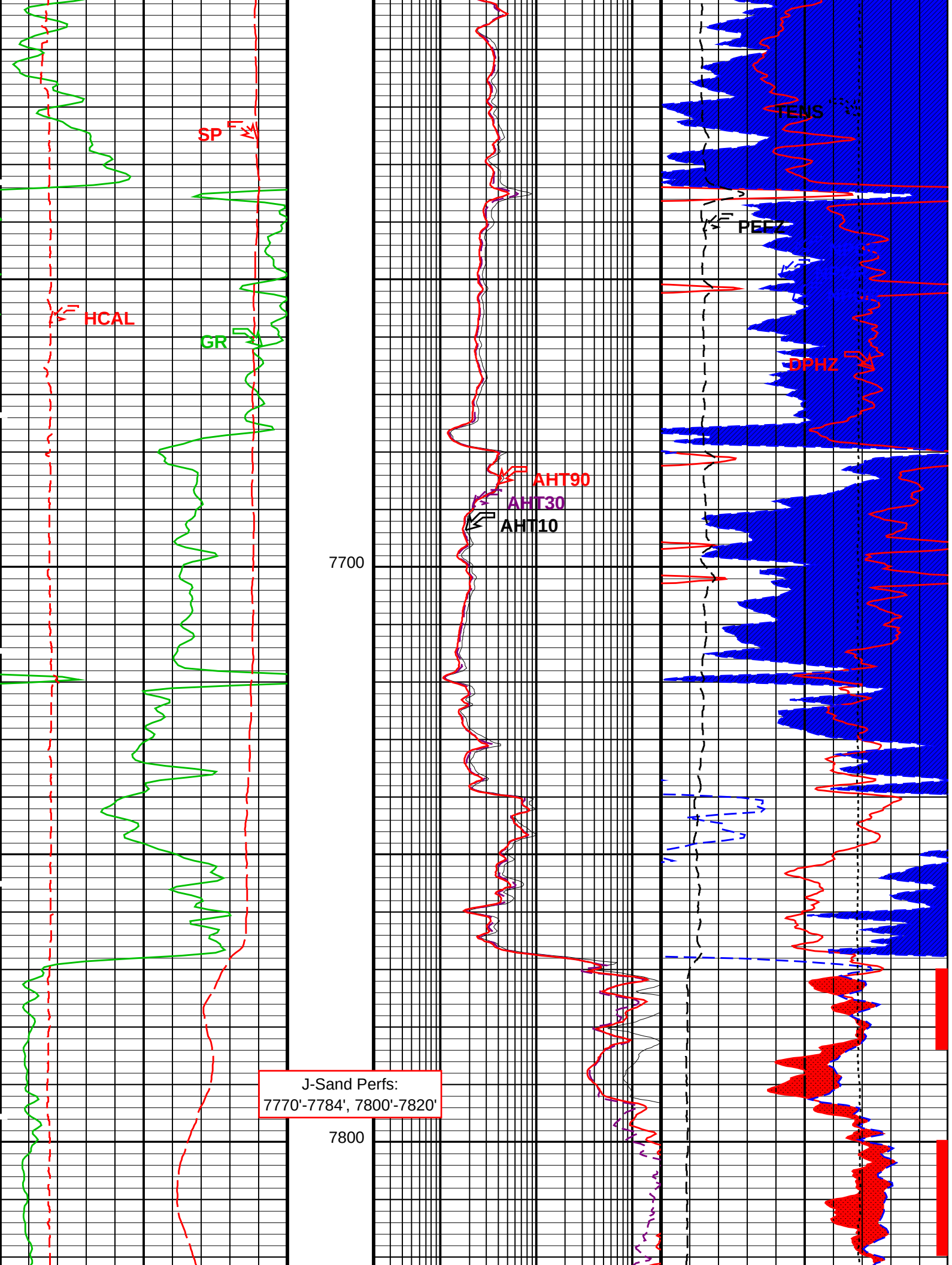
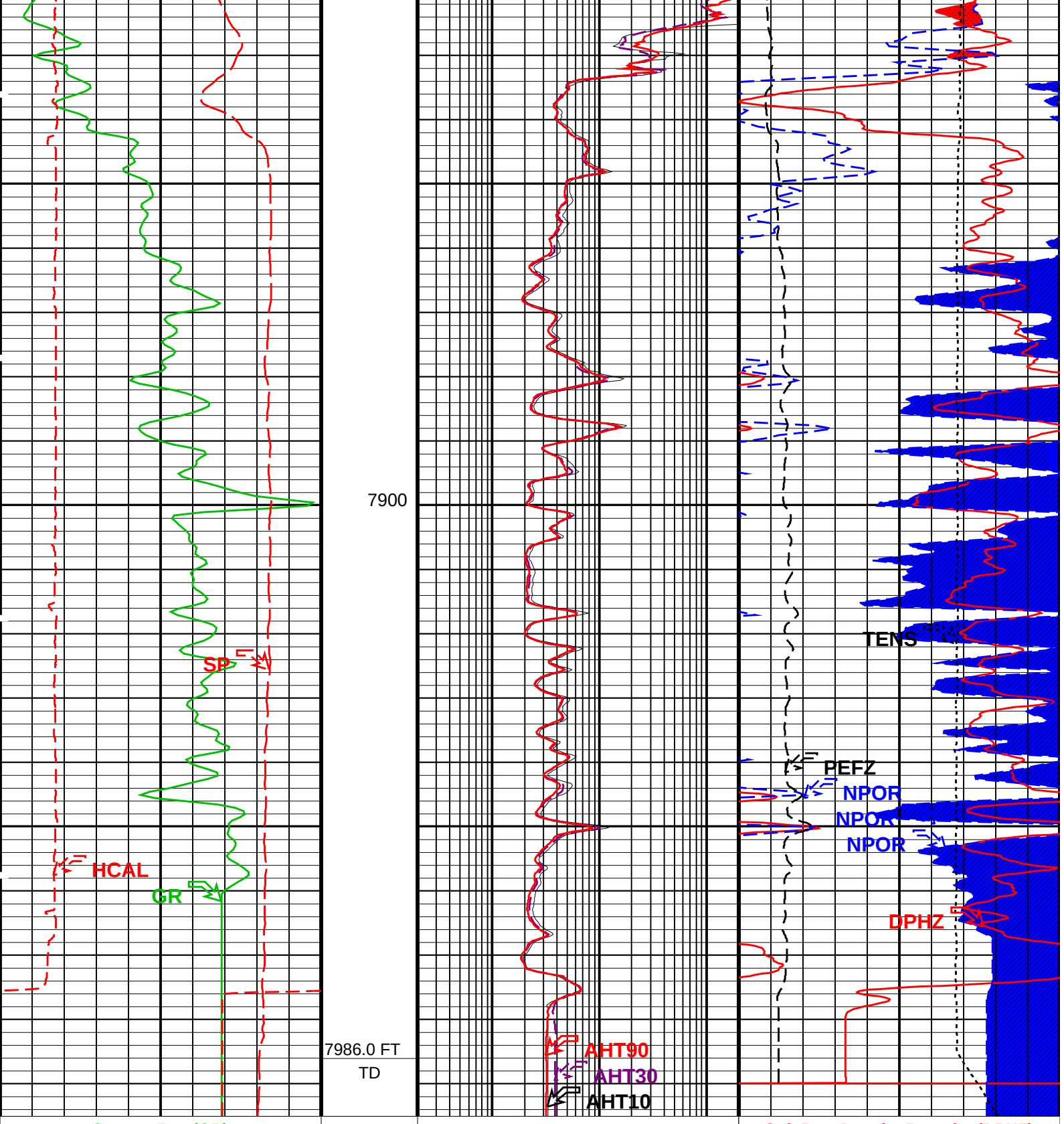

AHT90
AHT30
AHT10
7400
7500
7546.0 FT
MTX CHG
7600


SP
HCAL
GR
TENS
PEFZ
DPHZ
AHT90
AHT30
AHT10
7700
J-Sand Perfs:
7770'-7784', 7800'-7820'
7800



Gamma Ray (GR)
0 (GAPI) 200

HILT Caliper (HCAL)
6 (IN) 16

SP (SP)
−160 (MV) 40

AIT−H 10 Inch Investigation (AHT10)
0.2 (OHMM) 200

AIT−H 30 Inch Investigation (AHT30)
0.2 (OHMM) 200

AIT−H 90 Inch Investigation (AHT90)
0.2 (OHMM) 200

Std. Res. Density Porosity (DPHZ)
0.2 (V/V) 0

NPOR BACKUP
From NPOR_2 to T3

GAS EFFECT
From DPHZ to NPOR_1

Tension (TENS)
10000 (LBF) 0

Alpha Processed Neutron Porosity (NPOR)

0.2	(V/V)	0

Std. Res. Formation	
Pe (PEFZ)	
0 (----	10

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HAIT−H: Array Induction Tool − H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	900	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	223	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	1.25	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.68	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	

SHT	Surface Hole Temperature	68	DEGF
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation − Real Time			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
TDL	Total Depth − Logger	7986.00	FT
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	8.80	LB/G
DO	Depth Offset for Playback	0.0	FT
FLEV	Fluid Level	50.00	FT
MST	Mud Sample Temperature	191.00	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.4665	OHMM
TD	Total Depth	7986	FT

Format: COMBO Vertical Scale: 5" per 100’ Graphics File Created: 11−Oct−2010 19:41

OP System Version: 18C0−147

HAIT−H	18C0−147	HILTB−FTB	18C0−147
HNGC−B	18C0−147	HNGS−BA	18C0−147
EDTC−B	18C0−147		

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_022L	FN:1	PRODUCER	11−Oct−2010 19:37	7995.0 FT	1102.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_024PUP	FN:21	PRODUCER	11−Oct−2010 19:41

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Company: Noble Energy, Inc. **Well: DF Ranch 1161−08−42**

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009PUP	FN:8	PRODUCER	11−Oct−2010 17:40	8016.0 FT	7520.0 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_010LUP	FN:9	PRODUCER	11−Oct−2010 17:41

OP System Version: 18C0−147

HAIT−H	18C0−147	HILTB−FTB	18C0−147
HNGC−B	18C0−147	HNGS−BA	18C0−147
EDTC−B	18C0−147		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7995.0 17:42:11
	SANDSTONE	SANDSTONE	7546.0 17:53:19
MDEN	2.65 G/C3	2.68 G/C3	7995.0 17:42:11
	2.68 G/C3	2.65 G/C3	7546.0 17:53:19

PIP SUMMARY

Time Mark Every 60 S

PEFZ_REP Curve (PEFZ_REP)
0 (−−−− 10

TENS_REP Curve (TENS_REP)
10000 (LBF) 0

NPOR_2_REP Curve (NPOR_REP)
0.4 (V/V) 0.2

SP_REP Curve (SP_REP)
−160 (MV) 40

AHT90_REP Curve (AHT90_REP)
0.2 (OHMM) 200

NPOR_1_REP Curve (NPOR_REP)
0.2 (V/V) 0

HCAL_REP Curve (HCAL_REP)
6 (IN) 16

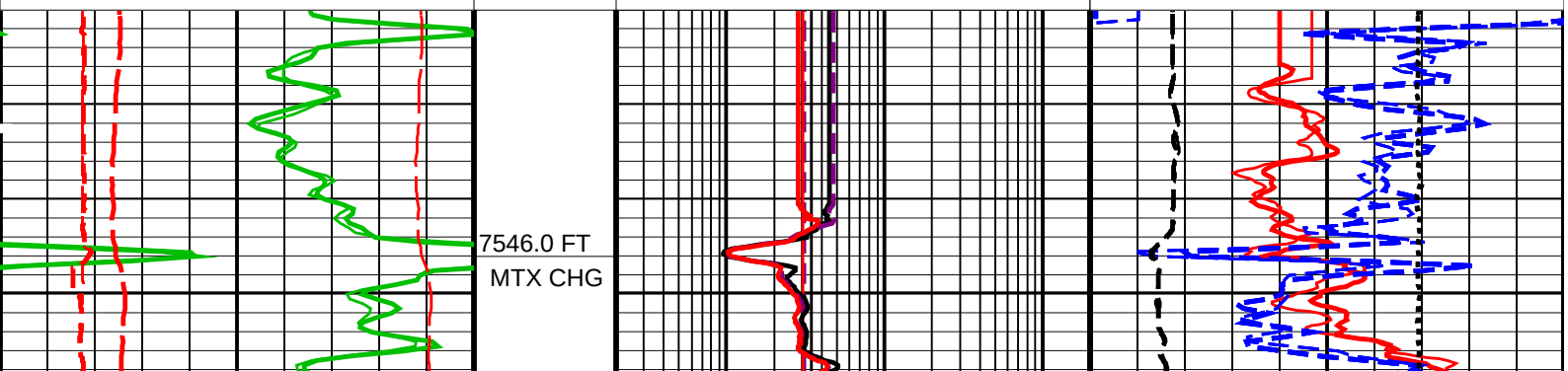
AHT30_REP Curve (AHT30_REP)
0.2 (OHMM) 200

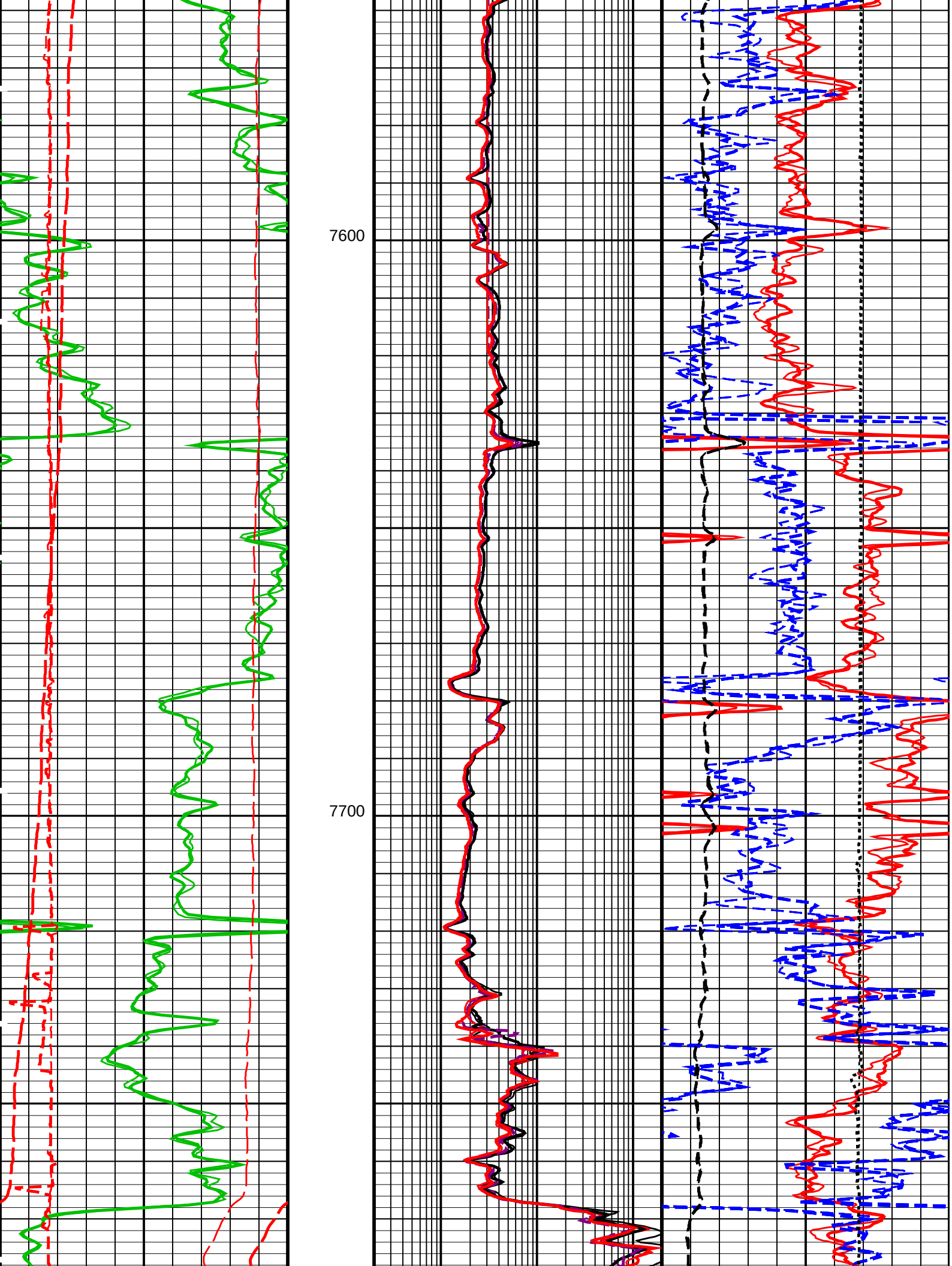
NPOR_REP Curve (NPOR_REP)
0.2 (V/V) 0

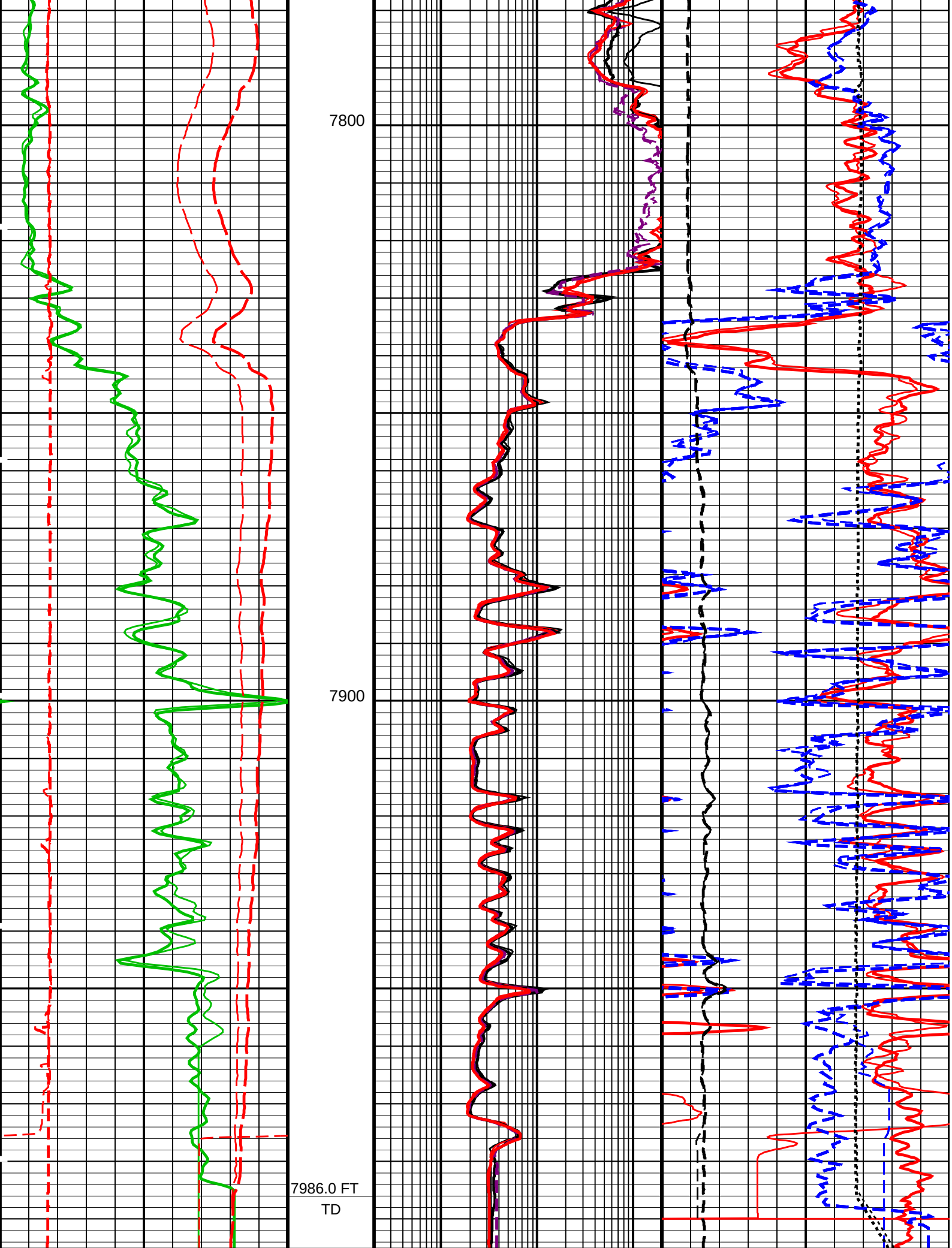
GR_REP Curve (GR_REP)
0 (GAPI) 200

AHT10_REP Curve (AHT10_REP)
0.2 (OHMM) 200

DPHZ_REP Curve (DPHZ_REP)
0.2 (V/V) 0




7600
7700


7800
7900
7986.0 FT
TD
GR_REP Curve (GR_REP)
AHT10_REP Curve (AHT10_REP)
DPHZ_REP Curve (DPHZ_REP)

0	(GAPI)	200

HCAL_REP Curve (HCAL_REP)		
6	(IN)	16

SP_REP Curve (SP_REP)		
−160	(MV)	40

0.2	(OHMM)	200

AHT30_REP Curve (AHT30_REP)		
0.2	(OHMM)	200

AHT90_REP Curve (AHT90_REP)		
0.2	(OHMM)	200

0.2	(V/V)	0

NPOR_REP Curve (NPOR_REP)		
0.2	(V/V)	0

NPOR_1_REP Curve (NPOR_REP)		
0.2	(V/V)	0

NPOR_2_REP Curve (NPOR_REP)		
0.4	(V/V)	0.2

TENS_REP Curve (TENS_REP)		
10000	(LBF)	0

PEFZ_REP Curve (PEFZ_REP)		
0	(−−−−	10

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HAIT−H: Array Induction Tool − H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	900	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	223	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	1.25	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.68	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	

NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	EDTC−B: Enhanced DTS Cartridge		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	FEQL: Formation Evaluation Quick Look		
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	PERT: Preliminary Evaluation − Real Time		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	191	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	STI: Stuck Tool Indicator		
TDL	Total Depth − Logger	7986.00	FT
	System and Miscellaneous		
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	8.80	LB/G
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	50.00	FT
MST	Mud Sample Temperature	191.00	DEGF
RMFS	Resistivity of Mud Filtrate Sample	0.4665	OHMM
TD	Total Depth	7986	FT

Format: COMBO_REP **Vertical Scale: 5" per 100'** **Graphics File Created: 11−Oct−2010 17:41**

OP System Version: 18C0−147

HAIT−H	18C0−147	HILTB−FTB	18C0−147
HNGC−B	18C0−147	HNGS−BA	18C0−147

EDTC−B	**18C0−147**

Input DLIS Files

DEFAULT	**AIT_TLD_MCFL_CNL_009PUP**	**FN:8**	**PRODUCER**	**11−Oct−2010 17:40**	**8016.0 FT**	**7520.0 FT**

Output DLIS Files

DEFAULT	**AIT_TLD_MCFL_CNL_010LUP**	**FN:9**	**PRODUCER**	**11−Oct−2010 17:41**

Company: **Noble Energy, Inc.**

Schlumberger

Well: **DF Ranch 1161−08−42**
Field: **Grover**
County: **Weld**
State: **Colorado**

Platform Express
Triple Combo