Schlumberger

Company: NGL Water Solutions DJ LLC

Well: NGL C3B

Field: Hambert

County: Weld State: Colorado

Platform Express

Triple Combo

County: Weld
Field: Hambert
Location: NENE Sec.29, T4N, R65W
Well: NGL C3B
Company: NGL Water Solutions DJ LLC

Location:				
NENE Sec.29, T4N, R65W		Elev.:	K.B.	4897.50 ft
SHL: 1061' FNL x 322' FEL			G.L.	4875.00 ft
Lat: 40.287762/Long: -104.678962			D.F.	4896.50 ft
Permanent Datum:	Ground Level	Elev.:		4875.00 f
Log Measured From:	Kelly Bushing	22.50 ft		above Perm.Datum
Drilling Measured From:	Kelly Bushing			

API Serial No.	Section:	Township:	Range:
05-123-42811	29	4N	65W

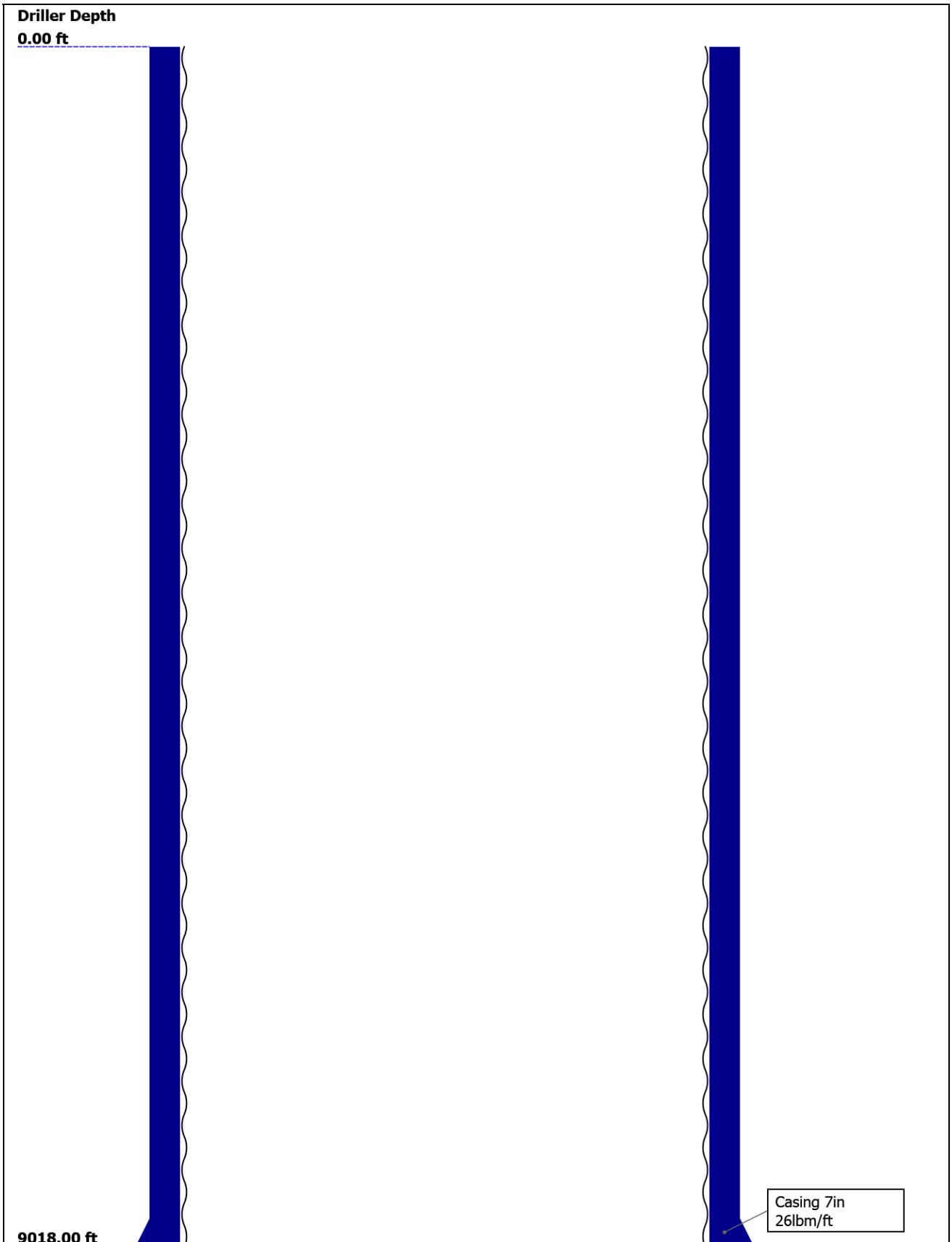
Logging Date			13-Mar-2016			
Run Number			Run 1			
Depth Driller			10640.00 ft			
Schlumberger Depth			10640.00 ft			
Bottom Log Interval			10640.00 ft			
Top Log Interval			9009.00 ft			
Casing Driller Size @ Depth			7 in @ 9018.00 ft			
Casing Schlumberger			9009 ft			
Bit Size			6.125 in			
Type Fluid In Hole			WBM			
MUD	Density	Viscosity	10.2 lbm/gal	48 s		
	Fluid Loss	PH	5.5 cm3	9.7		
	Source of Sample		Flowline			
RM @ Meas Temp			0.38 ohm.m @ 62 degF			
RMF @ Meas Temp			0.28 ohm.m @ 62 degF			
RMC @ Meas Temp			0.48 ohm.m @ 62 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.09 @ 289.5	0.07 @ 289.5		
Max Recorded Temperatures			289.5 degF			
Circulation Stopped	Time		14-Mar-2016	02:30:00		
Logger on Bottom	Time		14-Mar-2016	09:05:00		
Unit Number	Location:		9115	Ft. Morgan, CO		
Recorded By			Aleksei Bekhterev			
Witnessed By			Red Benge			

Disclaimer

Contents

11.2 Log (KM 5in Triple Combo RA)
12. Calibration Report
13. Tail

Well Sketch



Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	6.125					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	10640					
Bottom Logger (ft)	10640					
Casing						
Size (in)	7					
Weight (lbm/ft)	26					
Inner Diameter (in)	6.276					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	9018					
Bottom Logger (ft)	9009					

Operational Run Summary

Parameter (unit)	Run 1					
Date Log Started	13-Mar-2016					
Time Log Started	13:17:55					
Date Log Finished	14-Mar-2016					
Time Log Finished	10:05:17					
Top Log Interval (ft)	9009.00					
Bottom Log Interval (ft)	10640.00					
Total Depth (ft)	10640.00					
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	6.125					
Logging Unit Number	9115					
Logging Unit Location	Ft. Morgan, CO					
Recorded By	Aleksei Bekhterev					

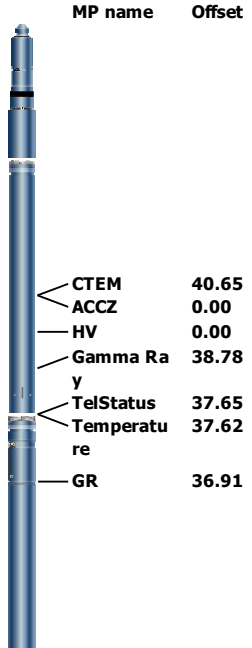
Witnessed By	Red Benge					
Service Order Number	DJZF-00008					

Borehole Fluids

Parameter(unit)	Run 1					
Fluid Type	Water					
Fluid Name	WBM					
Max Recorded Temperatures (degF)	289.5					
Source of Sample	Flowline					
Salinity (ppm)	0					
Density (lbm/gal)	10.2					
Funnel Viscosity (s)	48					
Fluid Loss (cm3)	5.5					
PH	9.7					
Date/Time Circulation Stopped	14-Mar-2016 02:30:00					
Date Logger on Bottom	14-Mar-2016					
Time Logger on Bottom	09:05:00					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degF)	0.38 @ 62					
RMF @ Meas Temp (ohm.m@degF)	0.28 @ 62					
RMC @ Meas Temp (ohm.m@degF)	0.48 @ 62					
RM @ BHT (ohm.m@degF)	0.09 @ 289.5					
RMF @ BHT (ohm.m@degF)	0.07 @ 289.5					
RMC @ BHT (ohm.m@degF)	0.11 @ 289.5					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

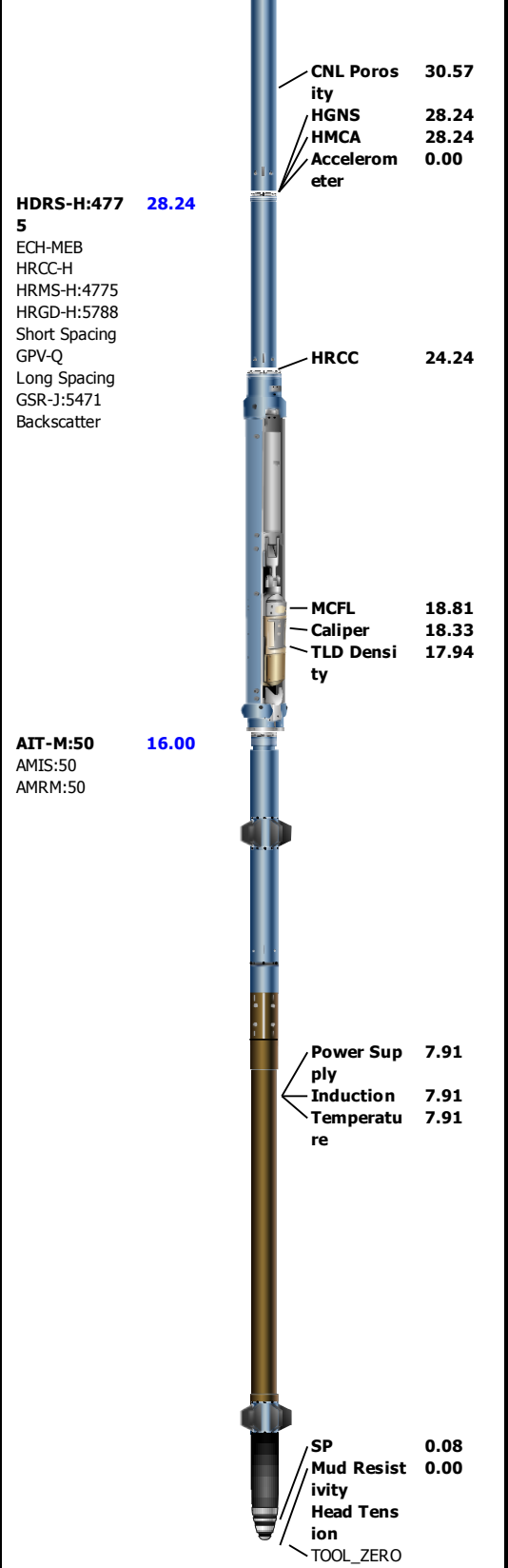
Run 1: Toolstring



Run 1: Remarks

This is first run in hole
Toolstring ran as per tool sketch. HGNS bow spring removed as per client's request
Matrix zoning:
CSG Shoe - 9390': Sandstone (2.65 g/cc)
9390'-10074': Dolomite (2.87 g/cc)
10074'-TD: Sandstone (2.68 g/cc)
Correlation log: Phoenix MWD Gamma (6-Mar-2016)
Data adversely affected by hole condition
Neutron corrections applied: Standoff Correction, Hole Size Correction, Pressure/Temperature Correction
500 ft section logged inside casing as per client's request
Crew: Ian Derry, Dave Marquez

Thank you for choosing Schlumberger Wireline!



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

	Run 1		
Depth Measuring Device			
Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			

Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

Tension Device

Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

Logging Cable

Type	7-46A-XS		
Serial Number			
Length	23500.00 ft		
Conveyance Type	Wireline		
Rig Type	Land Rig		

Run 1:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	All Schlumberger depth policies followed
Rig Up Length At Surface		IDW used as primary depth device
Rig Up Length At Bottom		Z-chart used as secondary depth reference
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		

Run 1

5" Triple Combo

Software Version

Acquisition System	Version
Maxwell 2016	6.0.53731.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Main[3]:Up	Up	8494.82 ft	10664.67 ft	14-Mar-2016 9:07:46 AM	14-Mar-2016 9:44:41 AM	ON	-10.03 ft	No

All depths are referenced to toolstring zero

Log

Company:NGL Water Solutions DJ LLC Well:NGL C3B

Run 1: Main[3]:Up:S015

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-Mar-2016 10:07:19

Channel	Source	Sampling
AT10	AIT-M:AMIS:AMIS	3in
AT20	AIT-M:AMIS:AMIS	3in
AT30	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	3in
CALI	HDRS-H:HRCC-H:HRCC-H	1in
DPHZ	HDRS-H:HRMS-H:HRGD-H	2in
GR	HGNS-H:HGNS-H:HGNS-H	6in
NPOR	HGNS-H:HGNS-H:HGNS-H	6in

PEFZ	HDRS-H:HRMS-H:HRGD-H	2in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)

Array Induction Two Foot Resistivity A10 (AT10) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A90 (AT90) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A20 (AT20) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A60 (AT60) AIT-M
0.2 ohm.m 2000

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

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

Gamma Ray Back up

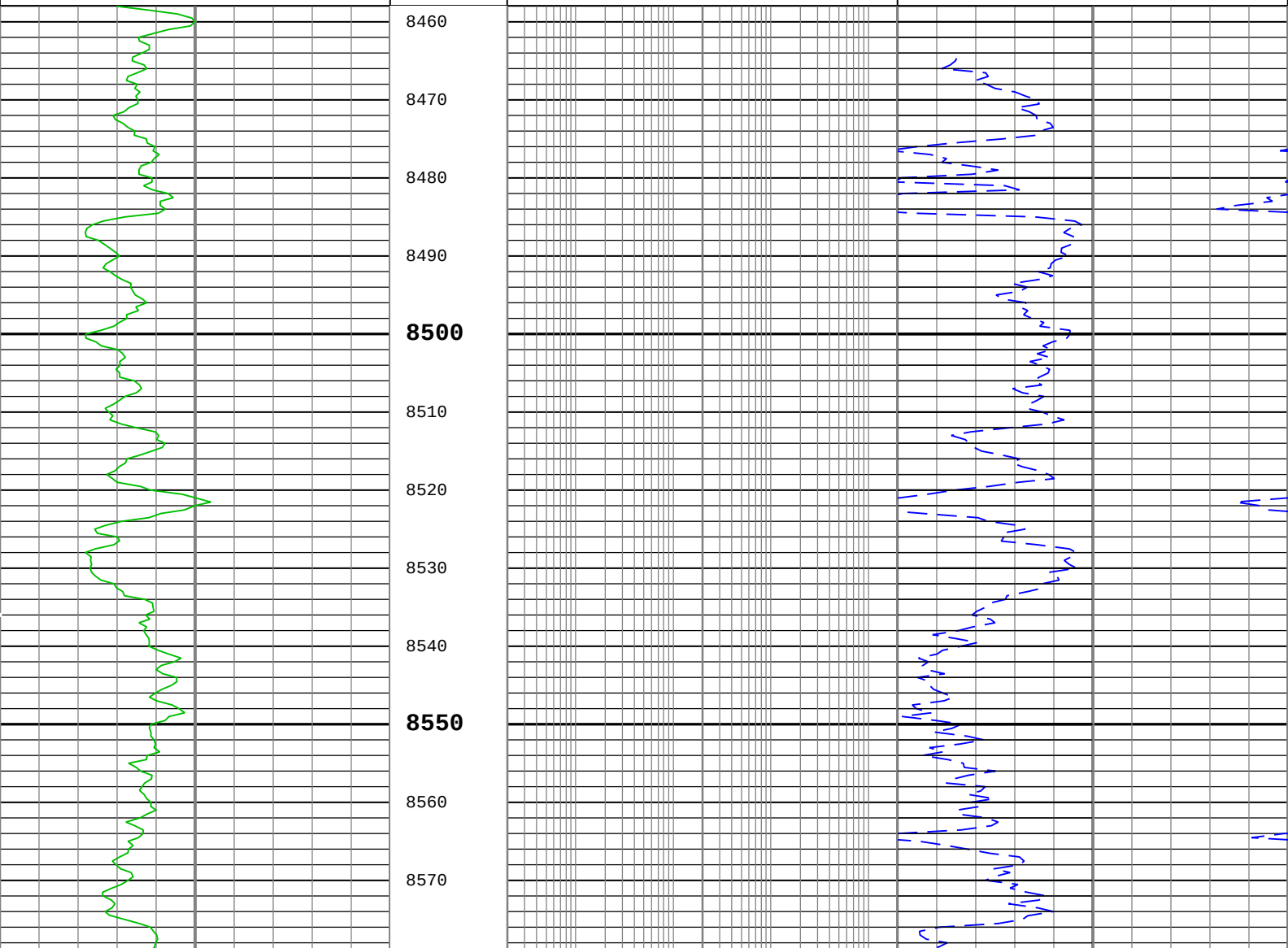
Caliper (HCAL) HDRS-H
1 in 11

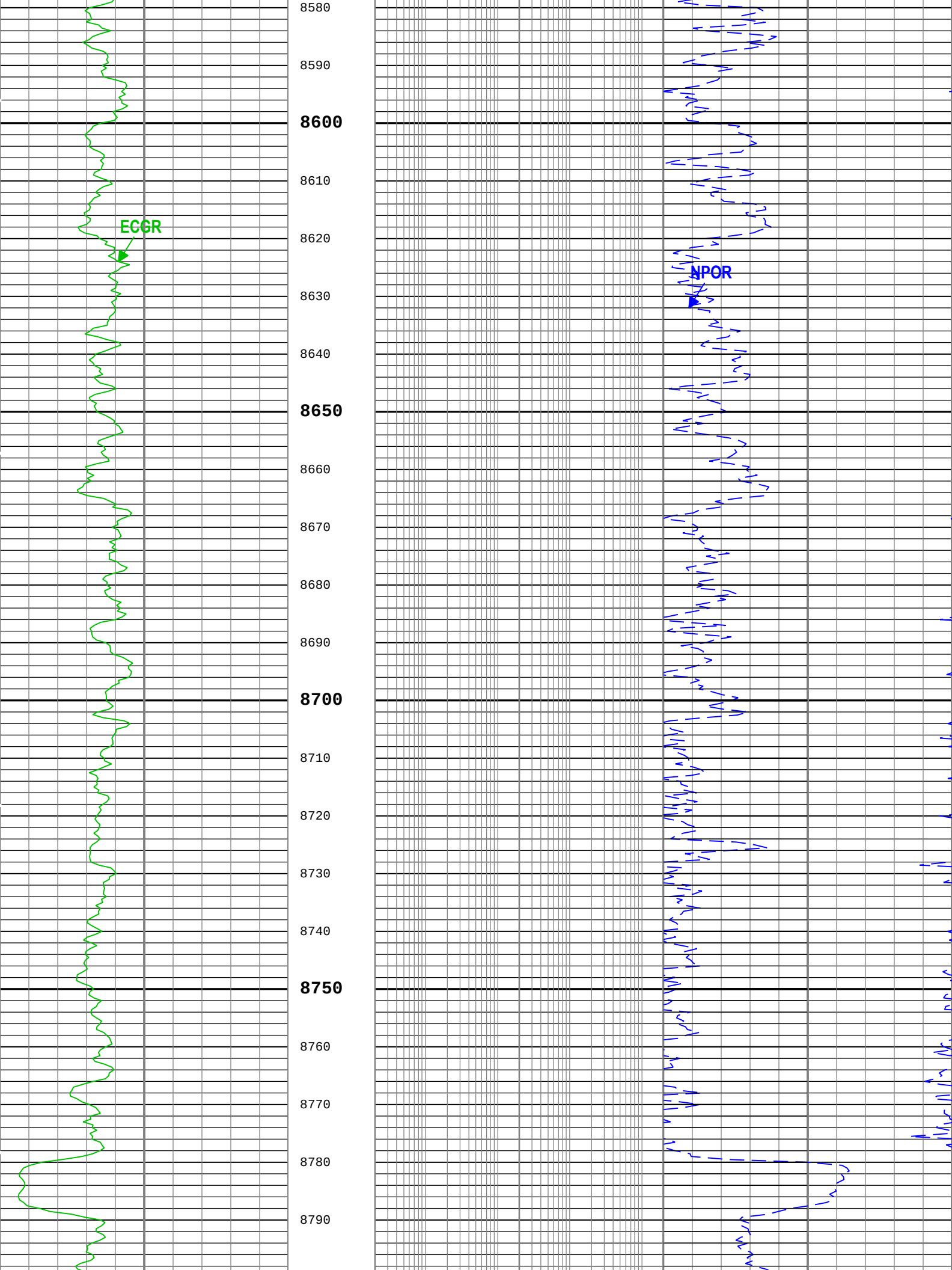
Gamma Ray (ECGR) HGNS-H
200 gAPI 400

Gamma Ray (ECGR) HGNS-H
0 gAPI 200

Stuck Tool Indicator, Total (STIT)
0 ft 50

Cable Tension (TENS)
5000 lbf 0

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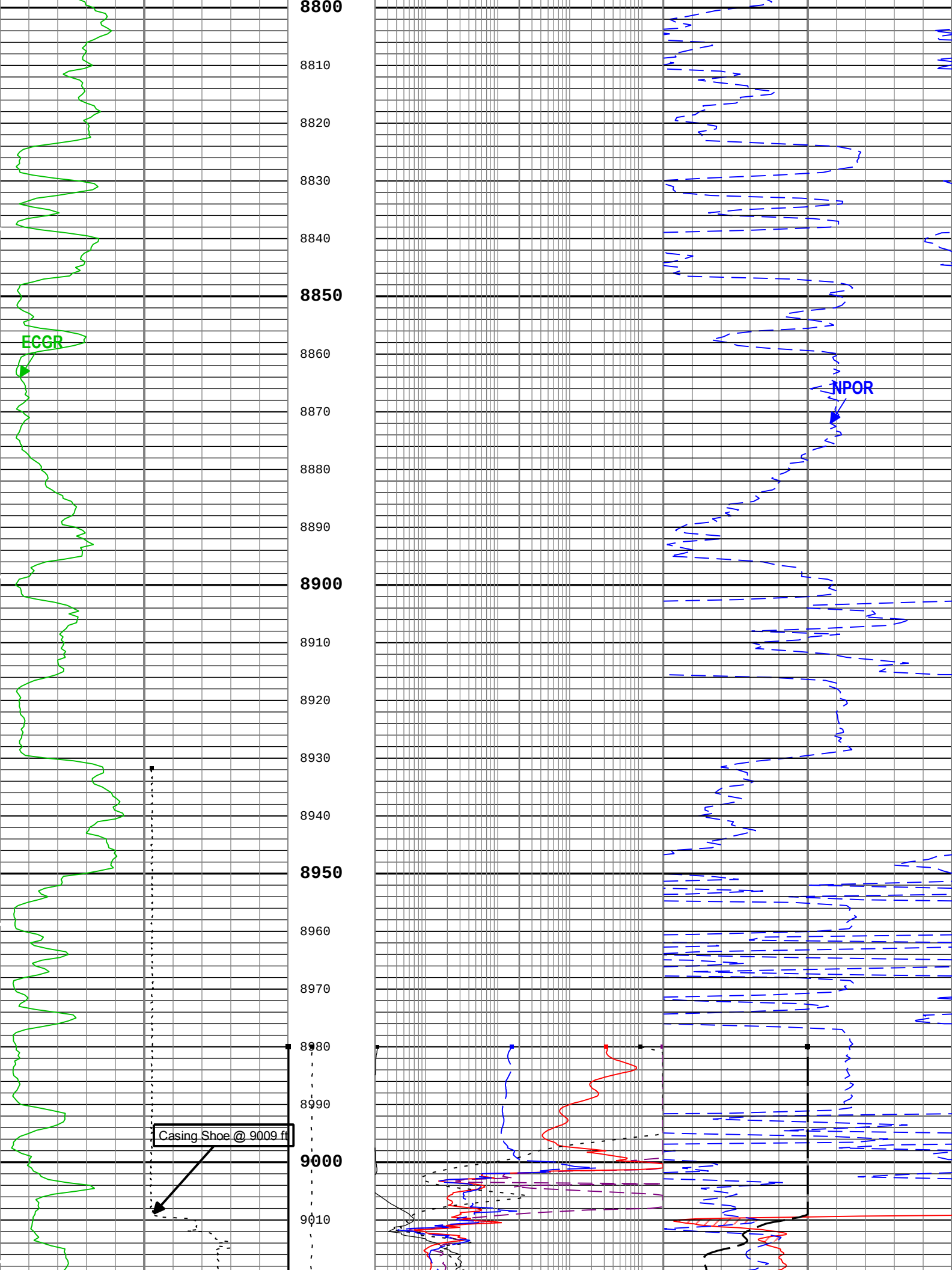
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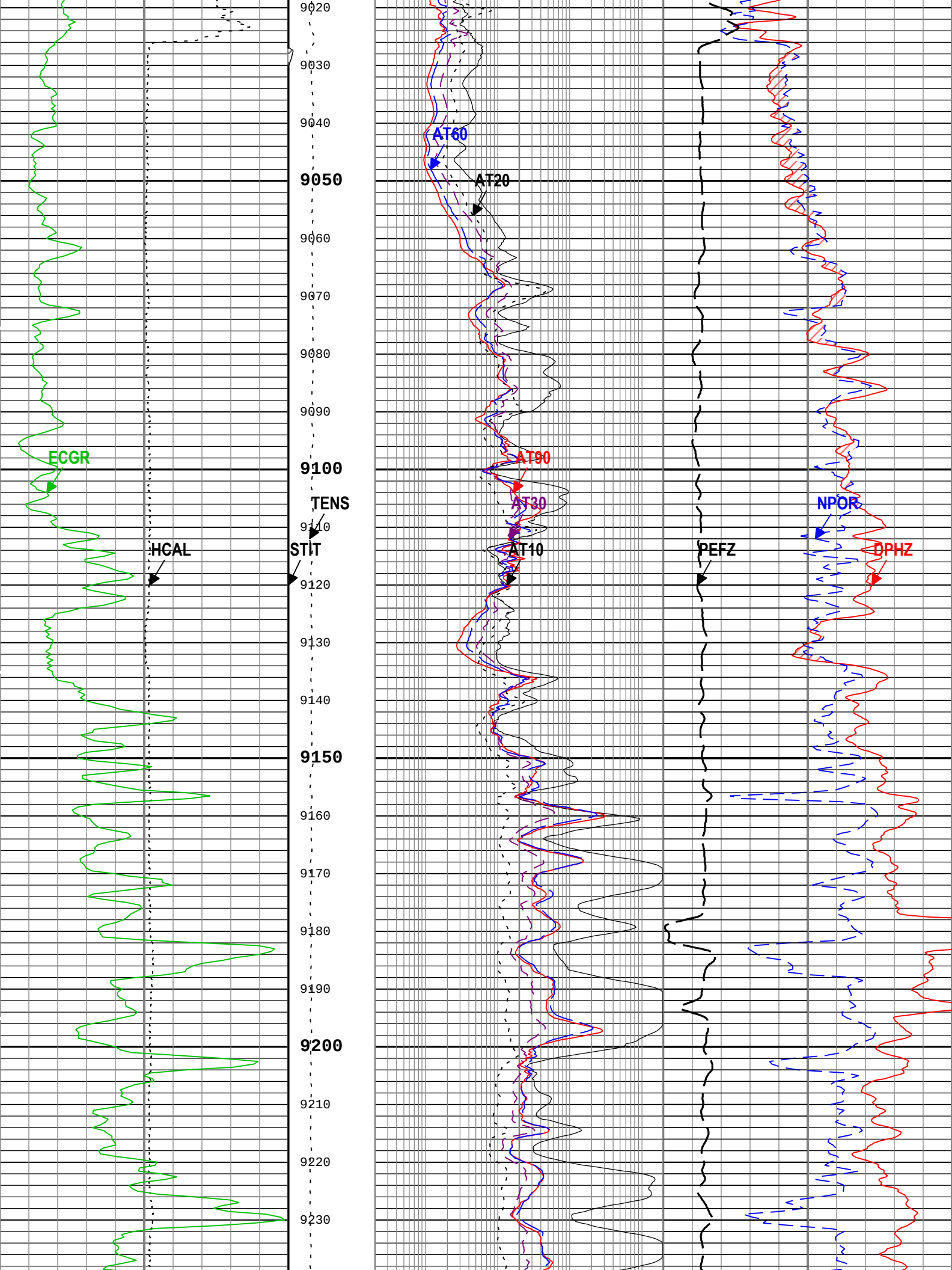
Casing Shoe @ 9009 ft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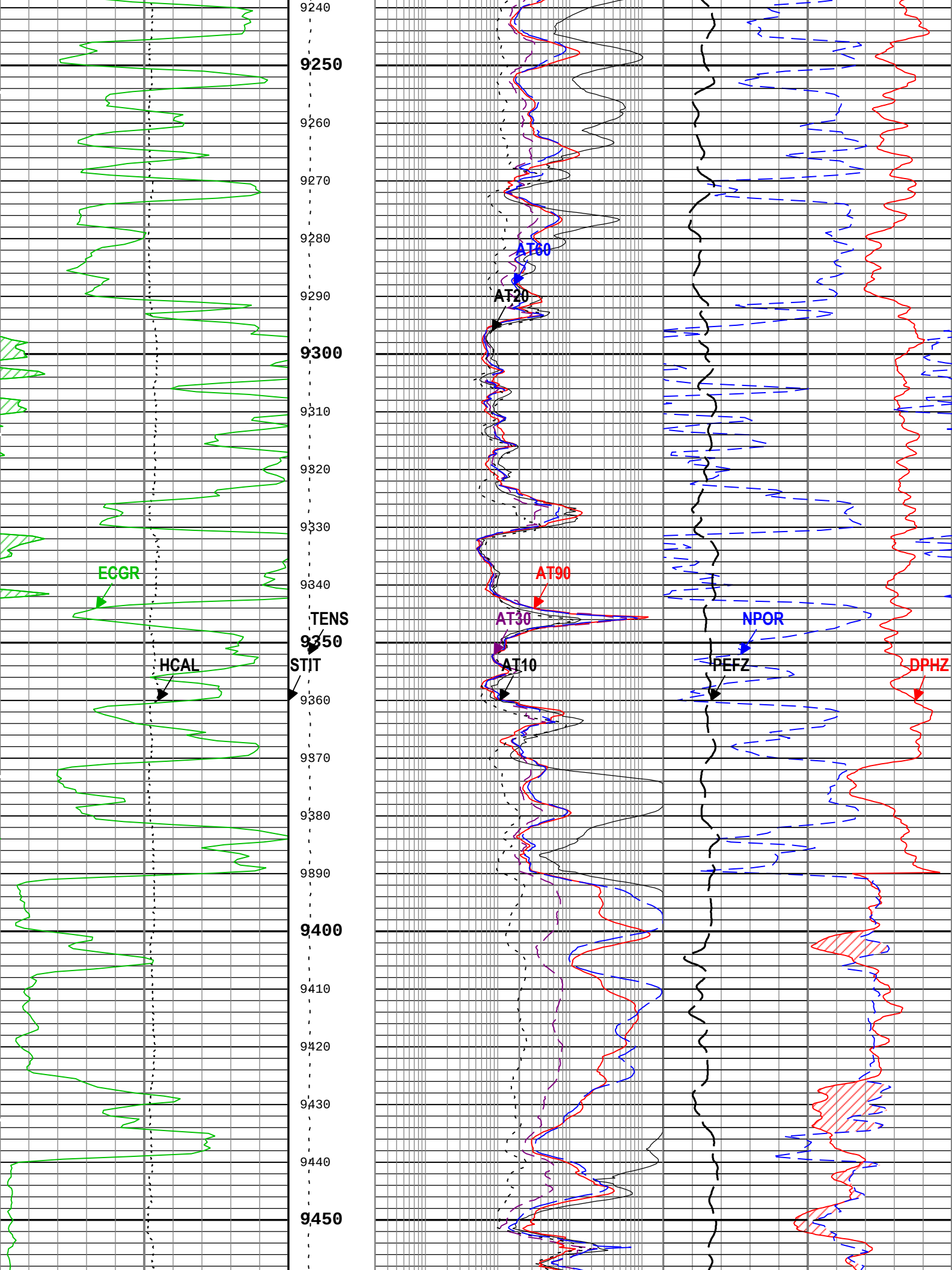
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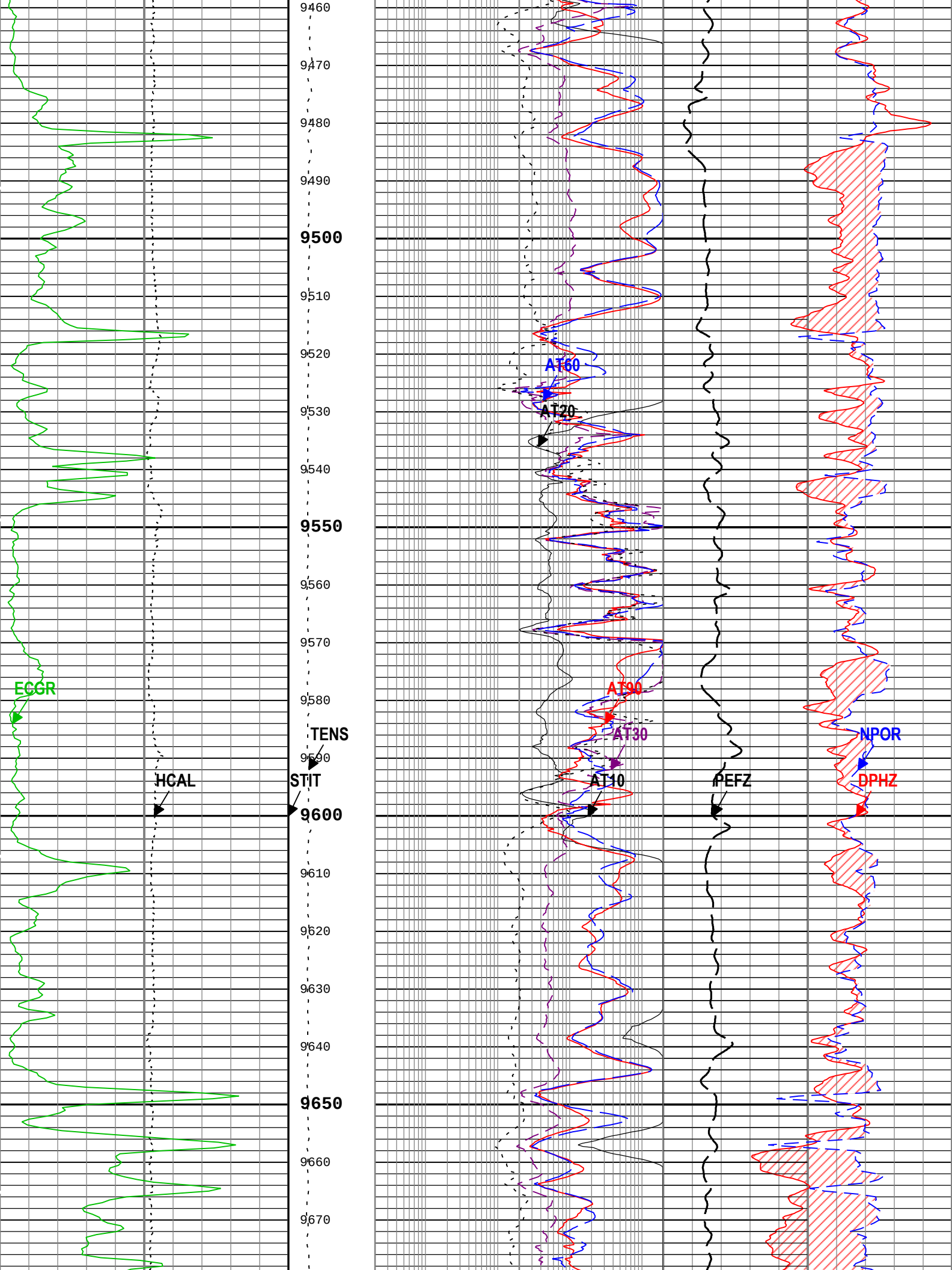
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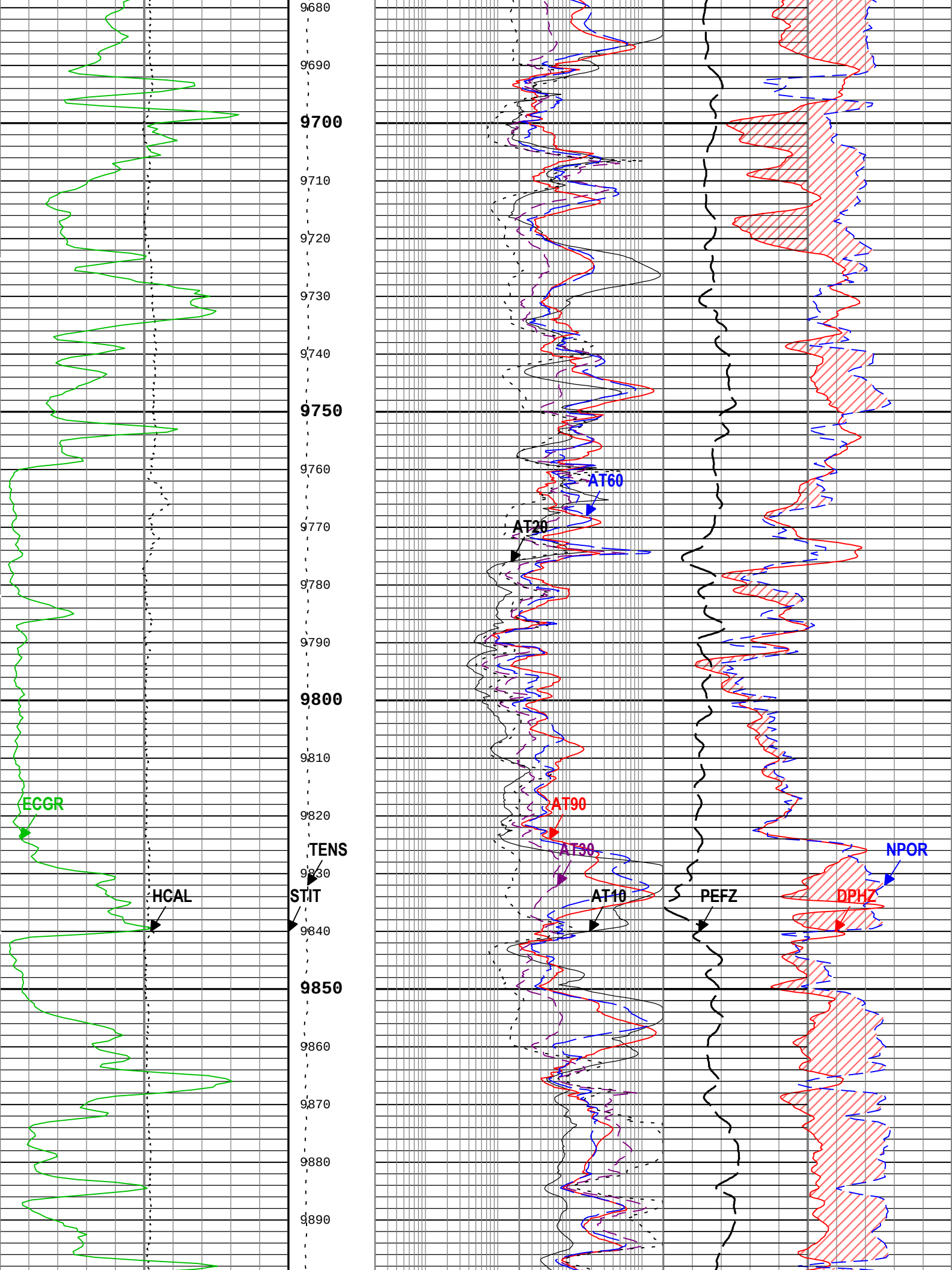
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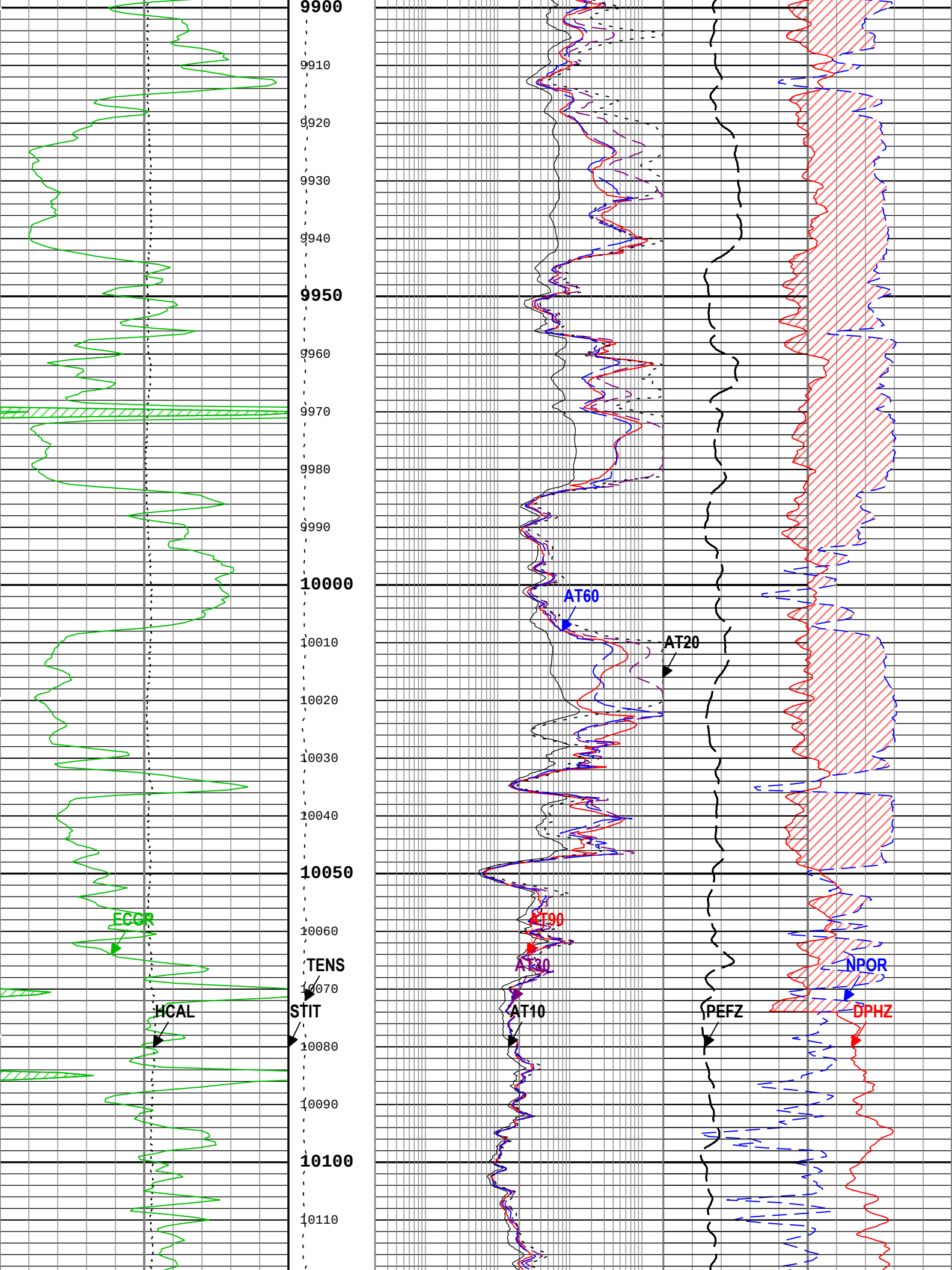
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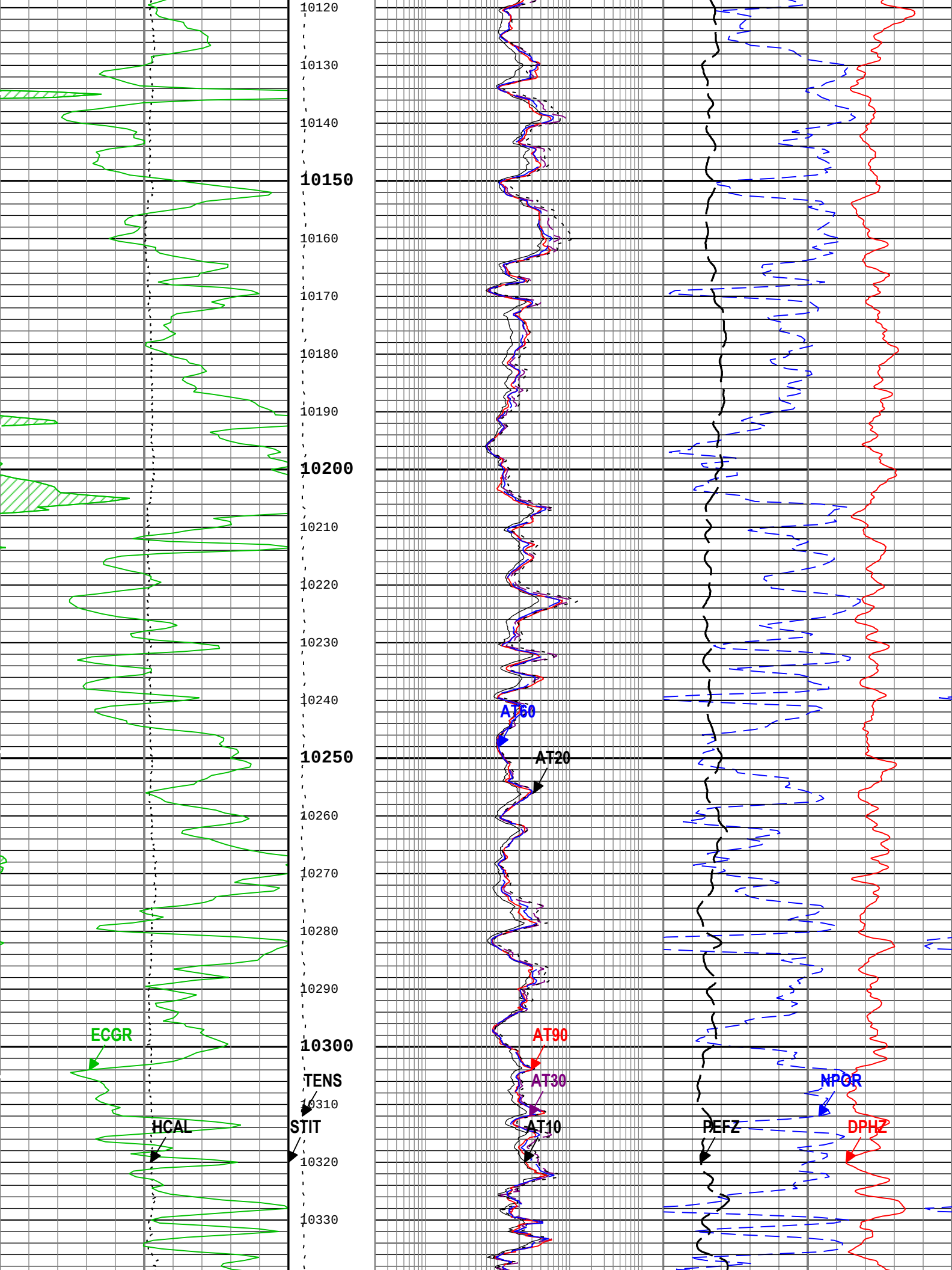
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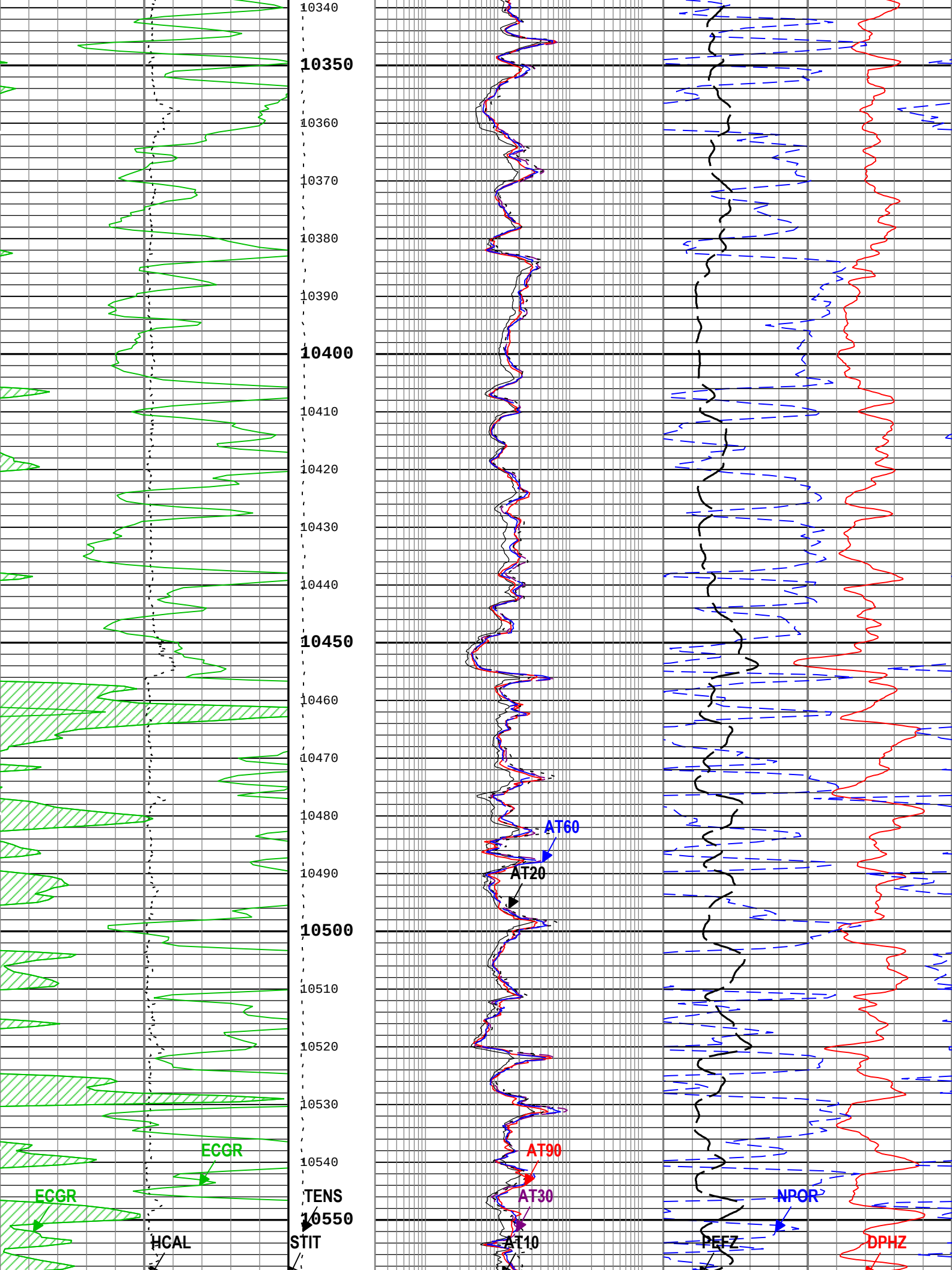
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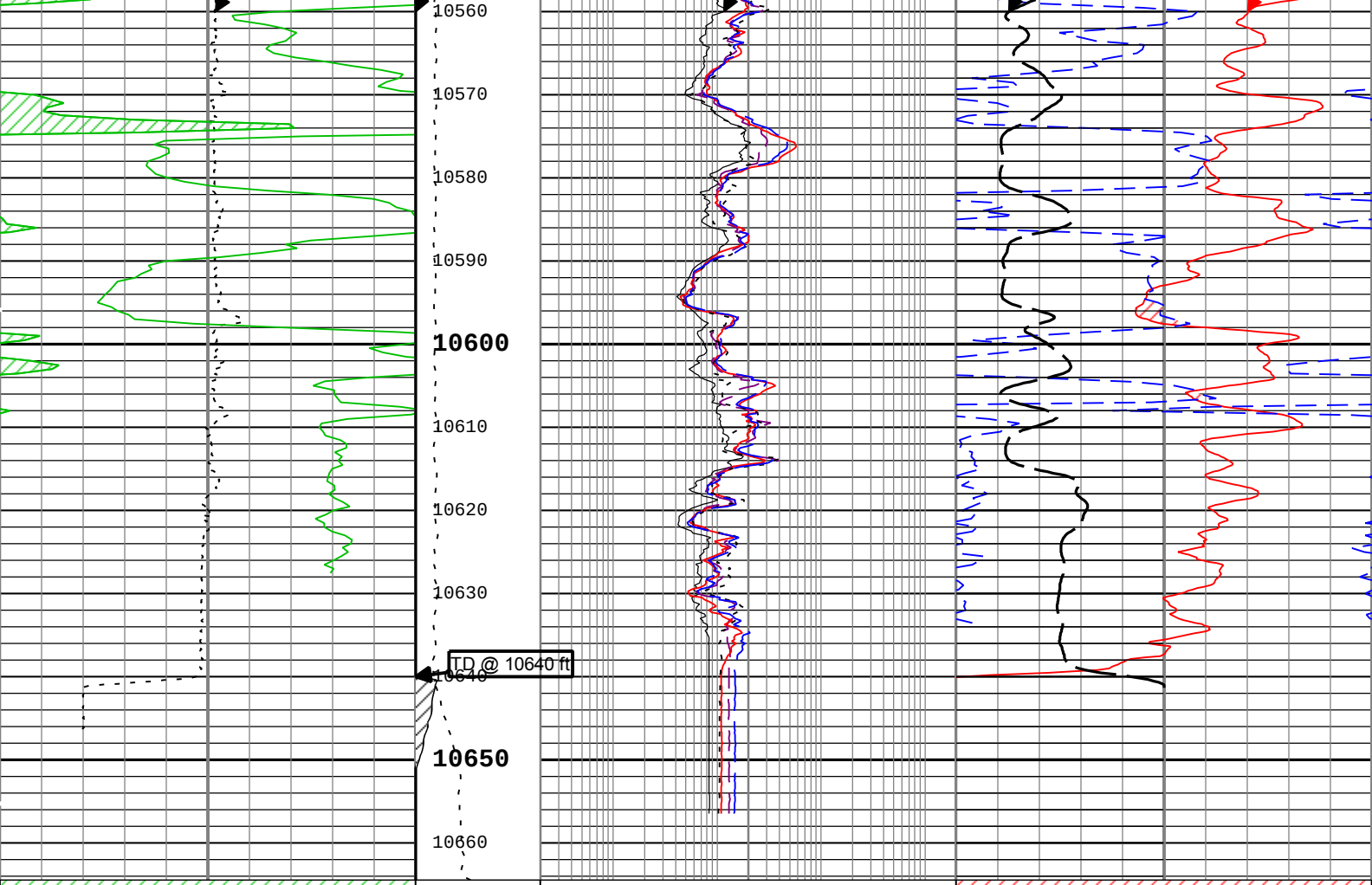


Gamma Ray Back up

Caliper (HCAL) HDRS-H
1 in 11

Gamma Ray (ECGR) HGNS-H
200 gAPI 400

Gamma Ray (ECGR) HGNS-H
0 gAPI 200

Stuck Tool Indicator, Total (STIT)
0 ft 50

Cable Tension (TENS)
5000 lbf 0

Array Induction Two Foot Resistivity A10 (AT10) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A90 (AT90) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A20 (AT20) AIT-M
0.2 ohm.m 2000

Array Induction Two Foot Resistivity A60 (AT60) AIT-M
0.2 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-Mar-2016 10:07:19

Channel Processing Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ISSBAR	Barite Mud Presence Flag	Borehole	No	

BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	289.5	degF
BS	Bit Size	WLSESSION	6.125	in
BSAL	Borehole Salinity	Borehole	0	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.12	in
CBLO	Casing Bottom (Logger)	WLSESSION	9009	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	10.2	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	WBM	
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	Depth Zoned	
MDEN	Matrix Density for Density Porosity	Borehole	Depth Zoned	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	62	degF
PTCO	Pressure Temperature Correction Option	HGNS-H	Yes	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.28	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
TD	Total Measured Depth	Borehole	10640	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
MATR	SANDSTONE	8458	9390
MATR	DOLOMITE	9390	10074
MATR	SANDSTONE	10074	10664.5
MDEN	2.65	8458	9390
MDEN	2.87	9390	10074
MDEN	2.68	10074	10664.5

All depth are actual.

Tool Control Parameters

Run 1: Parameters

Parameter	Description	Tool	Value	Unit
HMCA_BOARD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BOARD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Run 1

5" Triple Combo

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Repeat[2]:Up	Up	10235.38 ft	10662.10 ft	14-Mar-2016 8:56:11 AM	14-Mar-2016 9:04:33 AM	ON	-10.26 ft	No

Run 1	Main[3]:Up	Up	8494.82 ft	10664.67 ft	14-Mar-2016 9:07:46 AM	14-Mar-2016 9:44:41 AM	ON	-10.03 ft	No

All depths are referenced to toolstring zero

Log

Company:NGL Water Solutions DJ LLC Well:NGL C3B

Run 1: Main[3]:Up:S015

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo RA) Index Scale: 5 in per 100 ft Index Unit: ft

Index Type: Measured Depth Creation Date: 14-Mar-2016 10:07:22

TIME_1900 - Time Marked every 60.00 (s)

Main To Repeat

Repeat To Main

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H

0 10

Main To Repeat

Repeat To Main

Caliper (HCAL) HDRS-H

1 in 11

Main To Repeat

Repeat To Main

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

0.2 ohm.m 2000

Main To Repeat

Repeat To Main

Standard Resolution Density Porosity (DPHZ) HDRS-H

0.3 ft3/ft3 -0.1

Main To Repeat

Repeat To Main

Gamma Ray (ECGR) HGNS-H

0 gAPI 200

Main To Repeat

Repeat To Main

Stuck Tool Indicator, Total (STIT)

0 ft 50

Main To Repeat

Repeat To Main

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

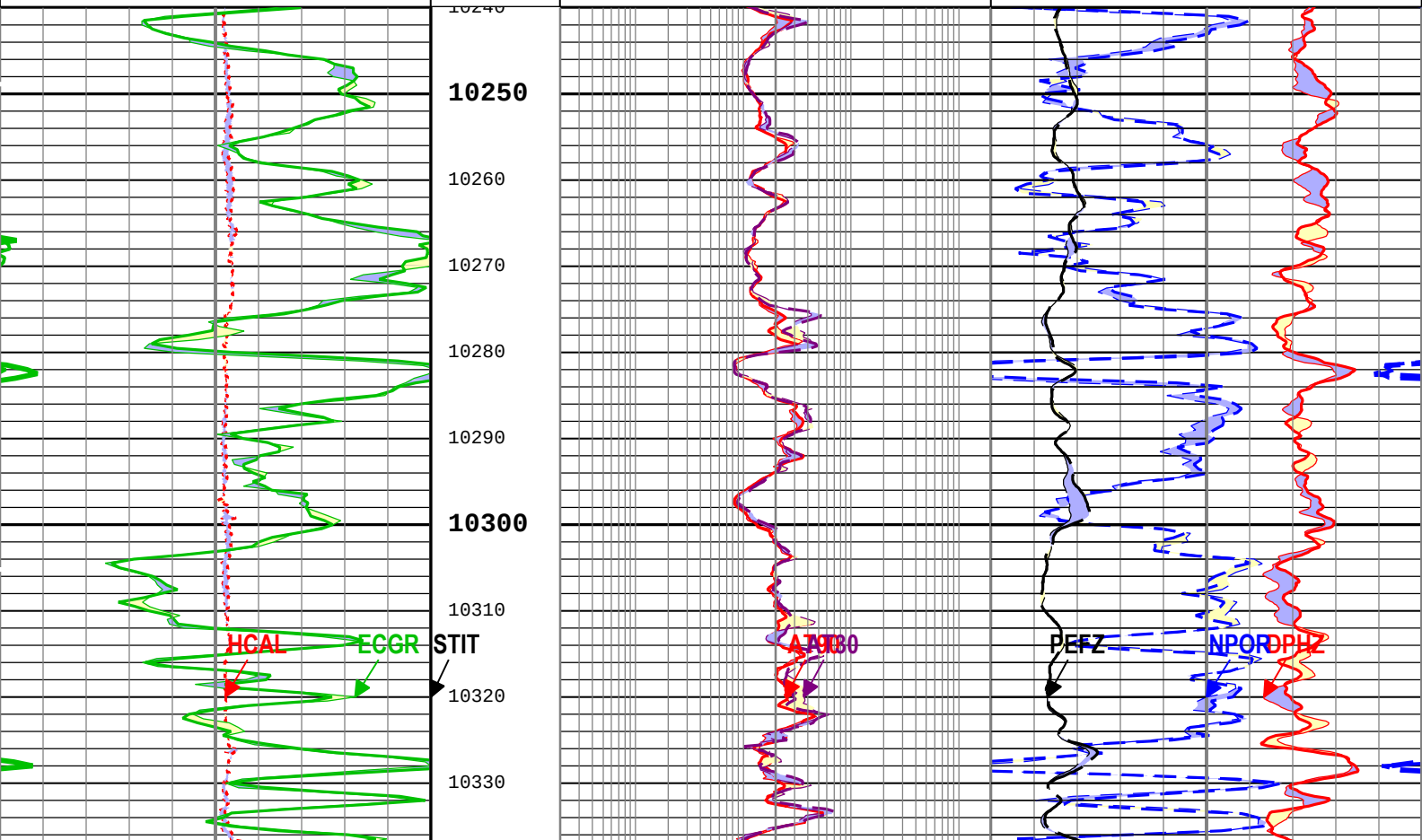
0.2 ohm.m 2000

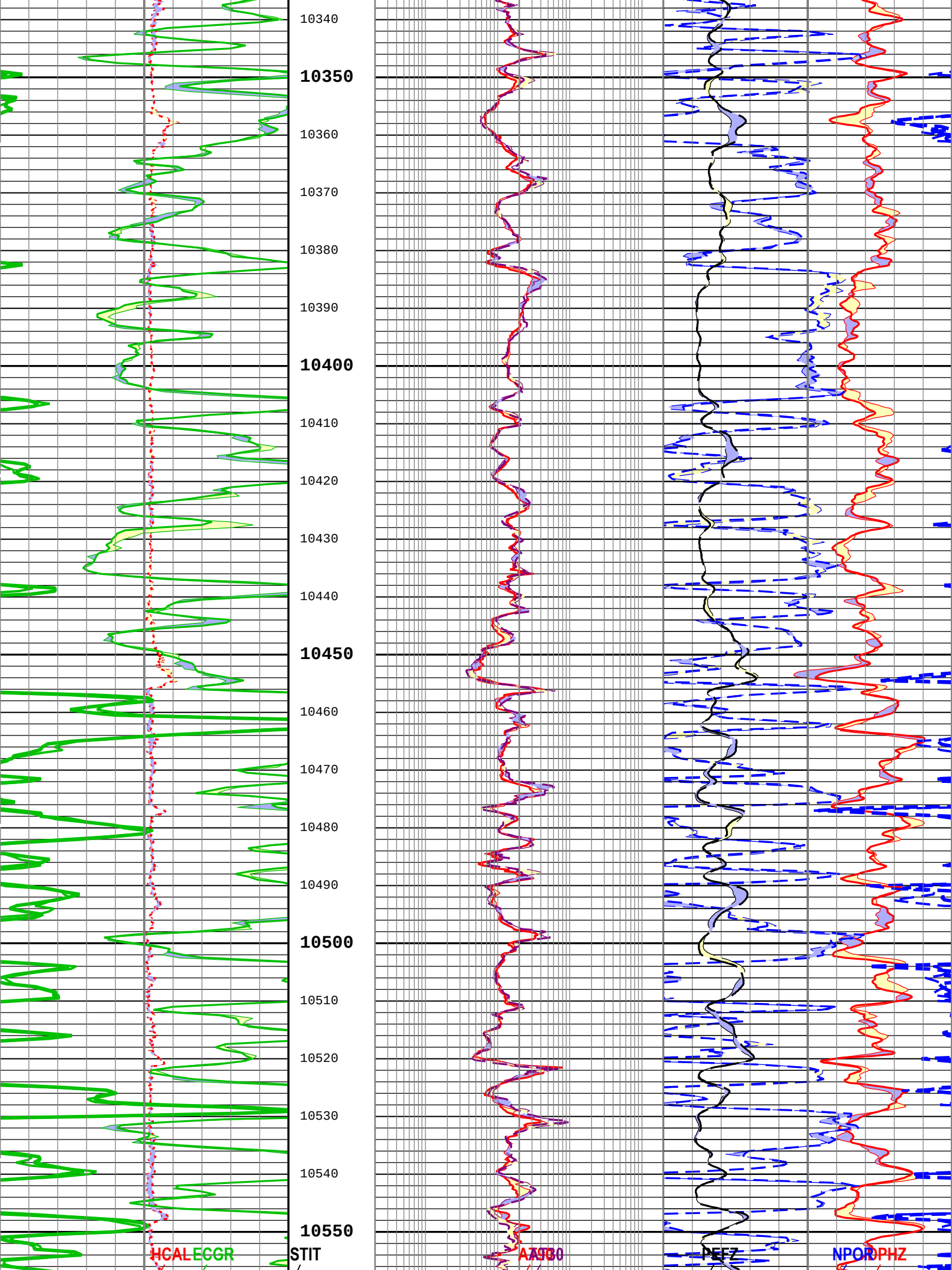
Main To Repeat

Repeat To Main

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

0.3 m3/m3 -0.1

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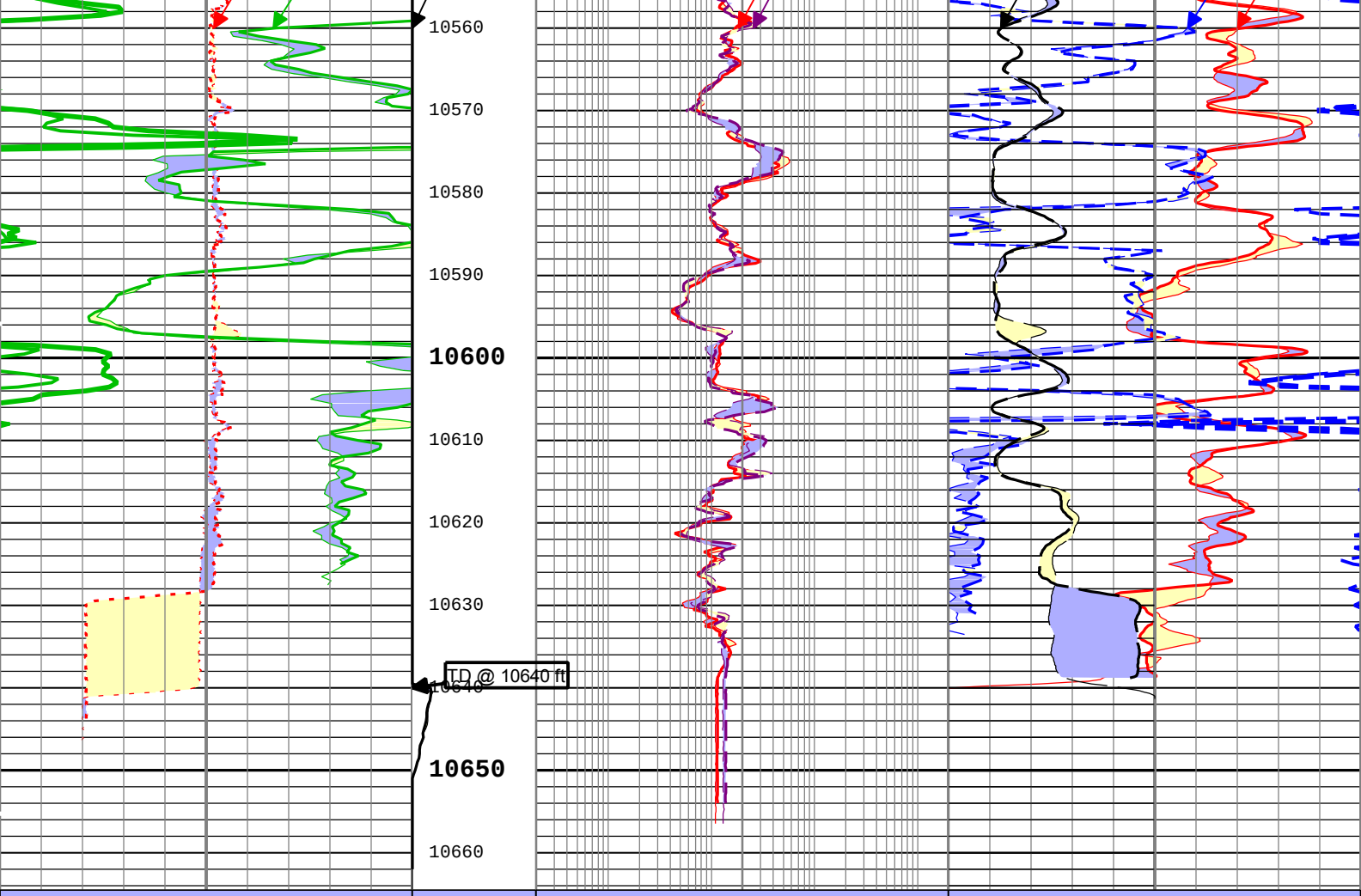
STIT
AT30
PEFZ
NPORPHZ



Main To Repeat	Main To Repeat	Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main	Repeat To Main	Repeat To Main
Caliper (HCAL) HDRS-H	Stuck Tool Indicator, Total (STIT)	Array Induction Two Foot Resistivity A90 (AT90) AIT-M	Standard Resolution Density Porosity (DPHZ) HDRS-H
1 in 11	0 ft 50	0.2 ohm.m 2000	0.3 ft3/ft3 -0.1
Main To Repeat		Main To Repeat	Main To Repeat
Repeat To Main		Repeat To Main	Repeat To Main
Gamma Ray (ECGR) HGNS-H		Array Induction Two Foot Resistivity A30 (AT30) AIT-M	Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H
0 gAPI 200		0.2 ohm.m 2000	0.3 m3/m3 -0.1
			Main To Repeat
			Repeat To Main
			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 RA) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 14-Mar-2016 10:07:22

Calibration Report

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

Primary Equipment :

File code for AIT-MA Sonde Tool Element	AMIS	50

Auxiliary Equipment :

File code for AIT Bottom Nose Tool Element	AMRM	50

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 14:54:44 09-Feb-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.015	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.608	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.016	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.706	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.015	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	0.166	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.012	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	0.177	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.994	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	0.155	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.986	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.092	3.000
Test Loop Gain - 6		Master	1.000	0.950	0.997	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	0.231	3.000
Test Loop Gain - 7		Master	1.000	0.950	1.007	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.042	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 14:54:44 09-Feb-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-107.608	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-672.617	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	162.756	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	-205.444	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	114.610	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	114.441	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	69.166	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	-162.632	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	24.790	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	8.514	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	15.051	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-33.135	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	10.228	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	-6.547	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.683	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	-4.672	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 14:54:44 09-Feb-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	0.835	1.200
Fine Gain		Master	1.000	0.800	0.835	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 14:54:44 09-Feb-2016 Before (Measured): 13:40:17 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.366	0.603	0.854
		Before	-----	0.366	0.603	0.854
		Before-Master	-----	-----	0.000	-----
Thru Cal Phase - 0	deg	Master	-----	137.000	-165.059	-103.000
		Before	-----	137.000	-163.336	-103.000
		Before-Master	-----	-----	1.723	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.237	1.778
		Before	-----	0.762	1.236	1.778

		Before-Master	-----	-----	-0.001	-----
Thru Cal Phase - 1	deg	Master	-----	136.000	-166.014	-104.000
		Before	-----	136.000	-164.292	-104.000
		Before-Master	-----	-----	1.722	-----
Thru Cal Mag - 2	V	Master	-----	0.372	0.613	0.868
		Before	-----	0.372	0.612	0.868
		Before-Master	-----	-----	-0.001	-----
Thru Cal Phase - 2	deg	Master	-----	132.000	-169.496	-108.000
		Before	-----	132.000	-167.840	-108.000
		Before-Master	-----	-----	1.656	-----
Thru Cal Mag - 3	V	Master	-----	0.420	0.691	0.980
		Before	-----	0.420	0.690	0.980
		Before-Master	-----	-----	-0.001	-----
Thru Cal Phase - 3	deg	Master	-----	131.000	-170.230	-109.000
		Before	-----	131.000	-168.575	-109.000
		Before-Master	-----	-----	1.655	-----
Thru Cal Mag - 4	V	Master	-----	0.804	1.297	1.876
		Before	-----	0.804	1.295	1.876
		Before-Master	-----	-----	-0.002	-----
Thru Cal Phase - 4	deg	Master	-----	125.000	-176.192	-115.000
		Before	-----	125.000	-174.543	-115.000
		Before-Master	-----	-----	1.649	-----
Thru Cal Mag - 5	V	Master	-----	1.176	1.887	2.744
		Before	-----	1.176	1.885	2.744
		Before-Master	-----	-----	-0.002	-----
Thru Cal Phase - 5	deg	Master	-----	122.000	-177.722	-118.000
		Before	-----	122.000	-176.074	-118.000
		Before-Master	-----	-----	1.648	-----
Thru Cal Mag - 6	V	Master	-----	1.176	1.886	2.744
		Before	-----	1.176	1.884	2.744
		Before-Master	-----	-----	-0.002	-----
Thru Cal Phase - 6	deg	Master	-----	121.000	-177.699	-119.000
		Before	-----	121.000	-176.051	-119.000
		Before-Master	-----	-----	1.648	-----
Thru Cal Mag - 7	V	Master	-----	0.846	1.358	1.974
		Before	-----	0.846	1.353	1.974
		Before-Master	-----	-----	-0.005	-----
Thru Cal Phase - 7	deg	Master	-----	115.000	-178.454	-125.000
		Before	-----	115.000	-177.066	-125.000
		Before-Master	-----	-----	1.388	-----
SPA Zero	mV	Master		-50.000	0.148	50.000
		Before		-50.000	0.148	50.000
		Before-Master	-----	-----	0.000	-----
SPA Plus	mV	Master		941.000	988.010	1040.000
		Before		941.000	988.016	1040.000
		Before-Master	-----	-----	0.006	-----
Temperature Zero	V	Master		-0.050	0.000	0.050
		Before		-0.050	0.000	0.050
		Before-Master	-----	-----	0.000	-----
Temperature Plus	V	Master		0.870	0.915	0.960
		Before		0.870	0.915	0.960
		Before-Master	-----	-----	0.000	-----

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

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	5788

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter
HRDD Long Spacing Detector	Long Spacing
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	4775

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): 12:20:19 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Small Ring	in	Before	8.00	6.00	8.26	10.00
Large Ring	in	Before	12.00	9.00	12.62	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 15:25:40 08-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Rho Aluminum	g/cm3	Master	2.596	2.586	2.597	2.606
Rho Magnesium	g/cm3	Master	1.686	1.676	1.688	1.696
Pe Aluminum		Master	2.570	2.470	2.538	2.670
Pe Magnesium		Master	2.650	2.550	2.614	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 15:25:40 08-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.4314	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.8564	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.3598	1.0000
SS Max Deviation	%	Master	0	-2.5000	0.8883	2.5000
LS Average Deviation	%	Master	0	-1.5000	1.2535	1.5000
LS Max Deviation	%	Master	0	-3.5000	3.4653	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 15:25:40 08-Mar-2016 Before (Measured): 12:16:34 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7379	
		Before	0.7379	0.7010	0.7374	0.7748
		Before-Master	-----	-----	-0.0005	-----
BS Window Sum	1/s	Master	1		24128	
		Before	24128	22921	24130	25334
		Before-Master	-----	-----	2	-----
SS Window Ratio		Master	1.0000		0.4894	
		Before	0.4894	0.4649	0.4914	0.5139
		Before-Master	-----	-----	0.0020	-----
SS Window Sum	1/s	Master	1		11594	
		Before	11594	11014	11577	12174
		Before-Master	-----	-----	-17	-----
LS Window Ratio		Master	1.0000		0.3008	
		Before	0.3008	0.2857	0.3021	0.3158
		Before-Master	-----	-----	0.0013	-----
LS Window Sum	1/s	Master	1		1310	
		Before	1310	1245	1310	1376
		Before-Master	-----	-----	0	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 15:25:40 08-Mar-2016 Before (Measured): 12:16:34 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1559	2400
		Before		1000	1557	2400
		Before-Master	-----	-100	-2	100
SS PM High Voltage	V	Master		1000	1865	2400
		Before		1000	1860	2400
		Before-Master	-----	-100	-5	100

LS PM High Voltage	V	Master		1000	1266	2400
		Before		1000	1268	2400
		Before-Master	-----	-100	2	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 15:25:40 08-Mar-2016 Before (Measured): 12:16:34 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	10.80	25.00
		Before		5.00	10.84	25.00
		Before-Master	-----	-1.00	0.04	1.00
SS Crystal Resolution	%	Master		5.00	9.55	20.00
		Before		5.00	9.63	20.00
		Before-Master	-----	-1.00	0.08	1.00
LS Crystal Resolution	%	Master		5.00	8.28	20.00
		Before		5.00	8.45	20.00
		Before-Master	-----	-1.00	0.17	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 12:18:24 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3889	4185
Deep Resistivity	ohm.m	Before	3830	3524	3821	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3843	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	4736

Auxiliary Equipment :

HGNS Accelerometer, 150 degC	HACCZ-H	5118
AmBe Neutron Logging Source	NSR-F	5069

Calibration Parameter :

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

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 08:06:07 14-Mar-2016

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

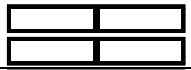
Master (EEPROM): 00:00:00 15-May-2006

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Accelerometer Manufacturer		Master			QAT_160	
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0
Accelerometer Coefficients - 0		Master	-----	-----	2900.000	-----
Accelerometer Coefficients - 1		Master	-----	-----	19.000	-----
Accelerometer Coefficients - 2		Master	-----	-----	0.002	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.747	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	299.100	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.993	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 12:32:24 12-Jan-2016 Before (Measured): 12:14:48 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	27.6	40.0

		Before	0	5.0	26.9	40.0	
		Before-Master	-----	-4.1	-0.7	4.1	
Far Zero Measurement	1/s	Master	0	5.0	27.6	40.0	
		Before	0	5.0	28.3	40.0	
		Before-Master	-----	-4.1	0.7	4.1	
Near Plus Measurement	1/s	Master	6031.0	4700.0	4869.0	6900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Far Plus Measurement	1/s	Master	2793.0	1900.0	1994.0	2900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Near Corrected Plus Measurement	1/s	Master		4700.0	4973.0	6900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Far Corrected Plus Measurement	1/s	Master		1900.0	2049.0	2900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 12:19:19 13-Mar-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	71.6	120.0	
RGR Plus Measurement	gAPI	Before	185.4	157.1	175.7	206.3	
GR Calibration Gain		Before	0.89	0.80	0.94	1.05	

Company: NGL Water Solutions DJ LLC

Schlumberger

Well: NGL C3B

Field: Hambert

County: Weld

State:	Colorado

Platform Express

Triple Combo