

DEPTH SUMMARY LISTING

Date Created: 4-AUG-2004 2:54:48

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 1933 Calibration Date: dd-mmm-yyyy Calibrator Serial Number: -50000 Calibration Cable Type: 7-42V-XS Wheel Correction 1: -2 Wheel Correction 2: -2	Type: CMTD-B/A Serial Number: 2268 Calibration Date: 16-Jul-04 Calibrator Serial Number: 1050 Calibration Gain: 0.87 Calibration Offset: 326.00	Type: 7-42V-XS Serial Number: 73069 Length: 4500.07 M <hr/> Conveyance Method: Wireline Rig Type: LAND

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	63.28 M
Rig Up Length At Bottom:	63.01 M
Rig Up Length Correction:	0.27 M
Stretch Correction:	0.70 M
Tool Zero Check At Surface:	0.10 M

Depth Control Remarks

1. This is the first run in hole
2. All Schlumberger depth control procedures followed
3.
4.
5.
6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1
OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1
This is the first run in hole
Tool run with 0.5 in standoffs as per tool sketch
HGNS run eccentralised using bowspring

Due to failure of Deep Resistivity Sensor on HALS tool HRLA was run as a second run and the resistivity data merged to this log, information for second run in hole is presented on log MCFL - HRLA -GR log dated 4 Aug 2004
--

Log recorded in Hi-resolution from TD to Casing Shoe
Maximum temperature recorded from thermometers in LEH-QT

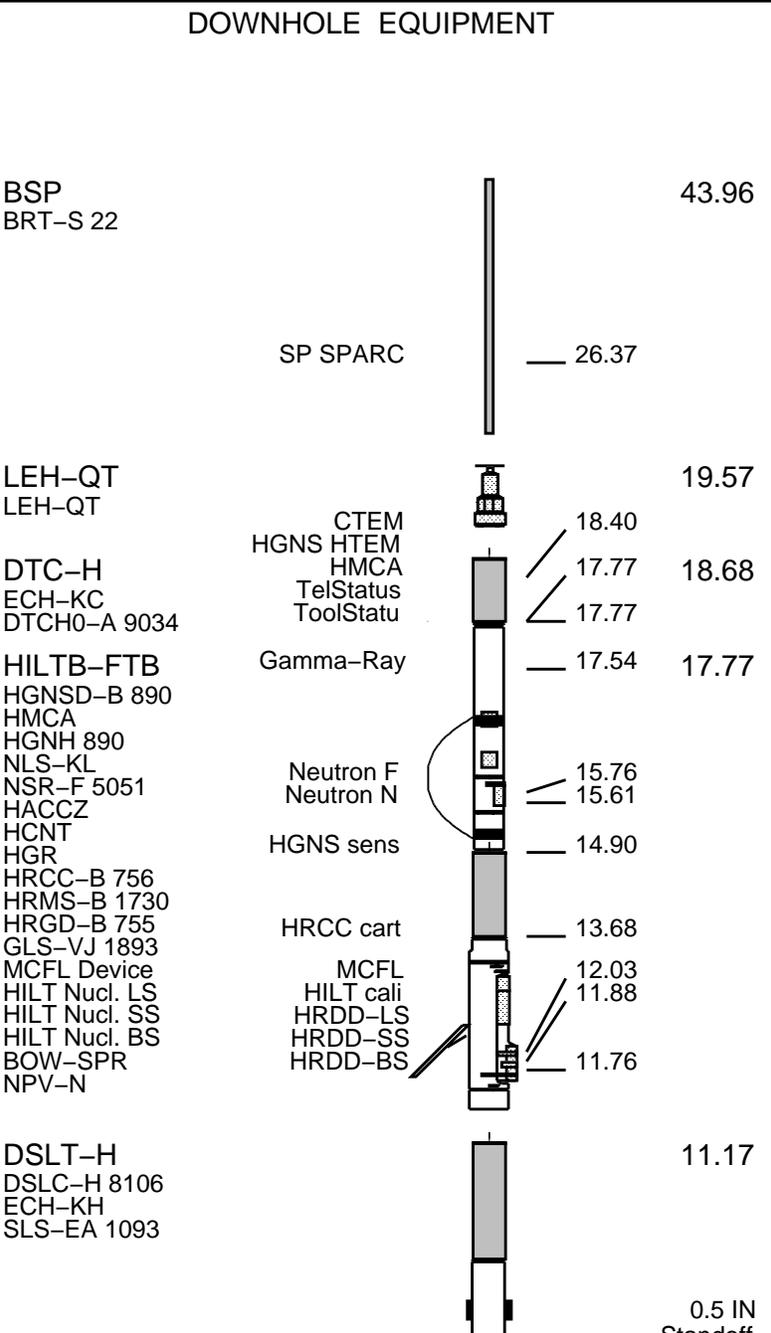
Mud resistivity found from mud sample
 Mud filtrate and mudcake resistivities calculated using Schlumberger chart Gen 7
 No barite was used in the mud
 Neutron porosity data corrected for hole size, borehole salinity, mud weight and pressure/temperature

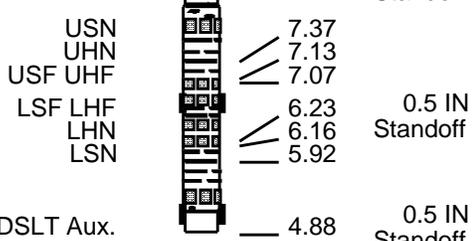
Caliper Check in Casing reads 6.28" (nominal 6.276")
 Sonic check in casing reads 57 us/ft

RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
12C0-301					
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

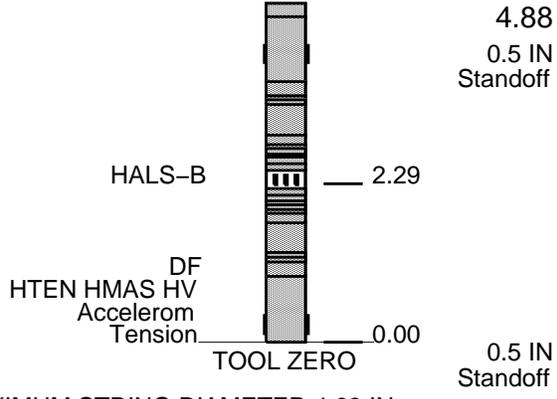
EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT	
LCM-AA GSR-U/Y NCT-B CNB-AB	NCS-VB WITM (DTS)-A



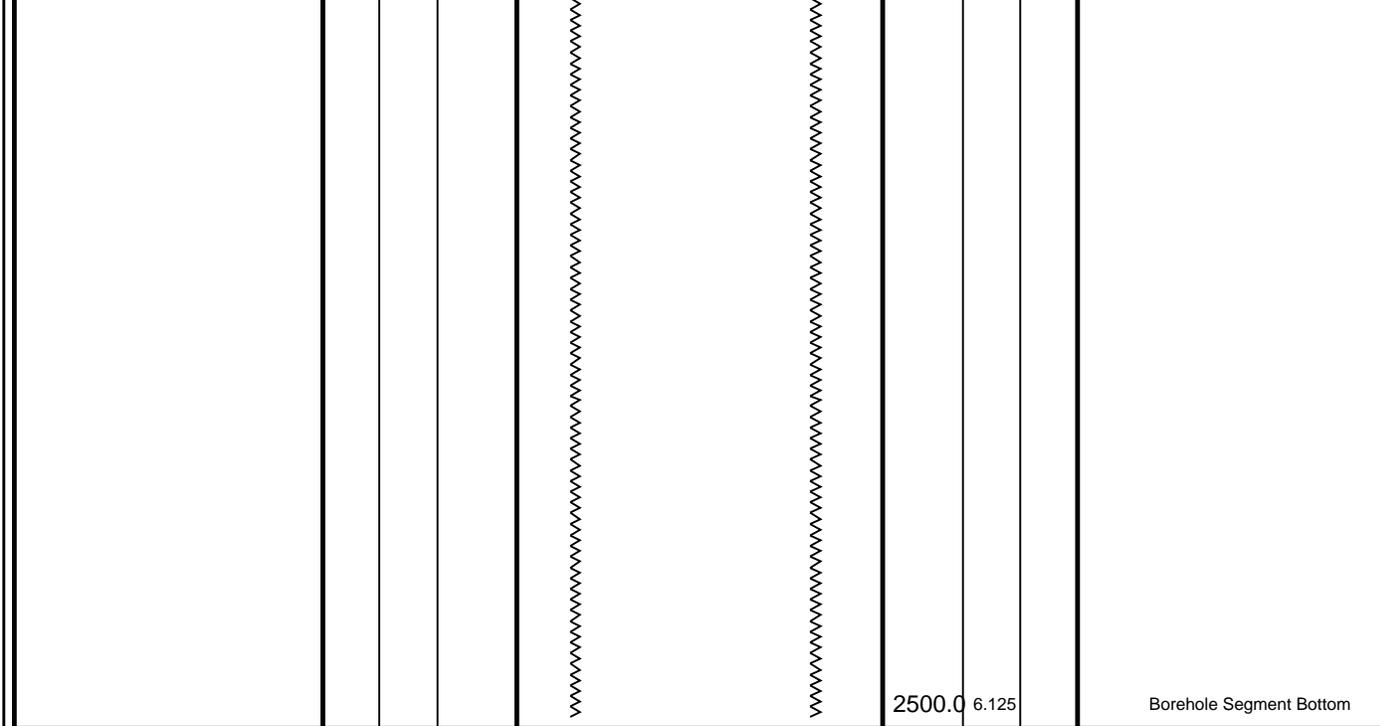


HALS-B
HALS-B 722



MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	7.000		Casing String
					1265.0	7.000		Casing Shoe
					1265.0	6.125		Borehole Segment



**Resistivity Sonic Density Porosity
1:500 Scale High Resolution**

MAXIS Field Log

Company: Lakes Oil N.L.

Well: Trifon 2

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09	2505.9 M	1250.4 M
---------	----------------------------	-------	----------	-------------------	----------	----------

Integrated Hole/Cement Volume Summary

Hole Volume = 39.99 M3
 Cement Volume = 27.27 M3 (assuming 4.50 IN casing O.D.)
 Computed from 2500.0 M to 1260.0 M using data channel(s) HCAL

HALS-B 12C0-301
 HILTB-FTB 12C0-301
 BSP 12C0-301

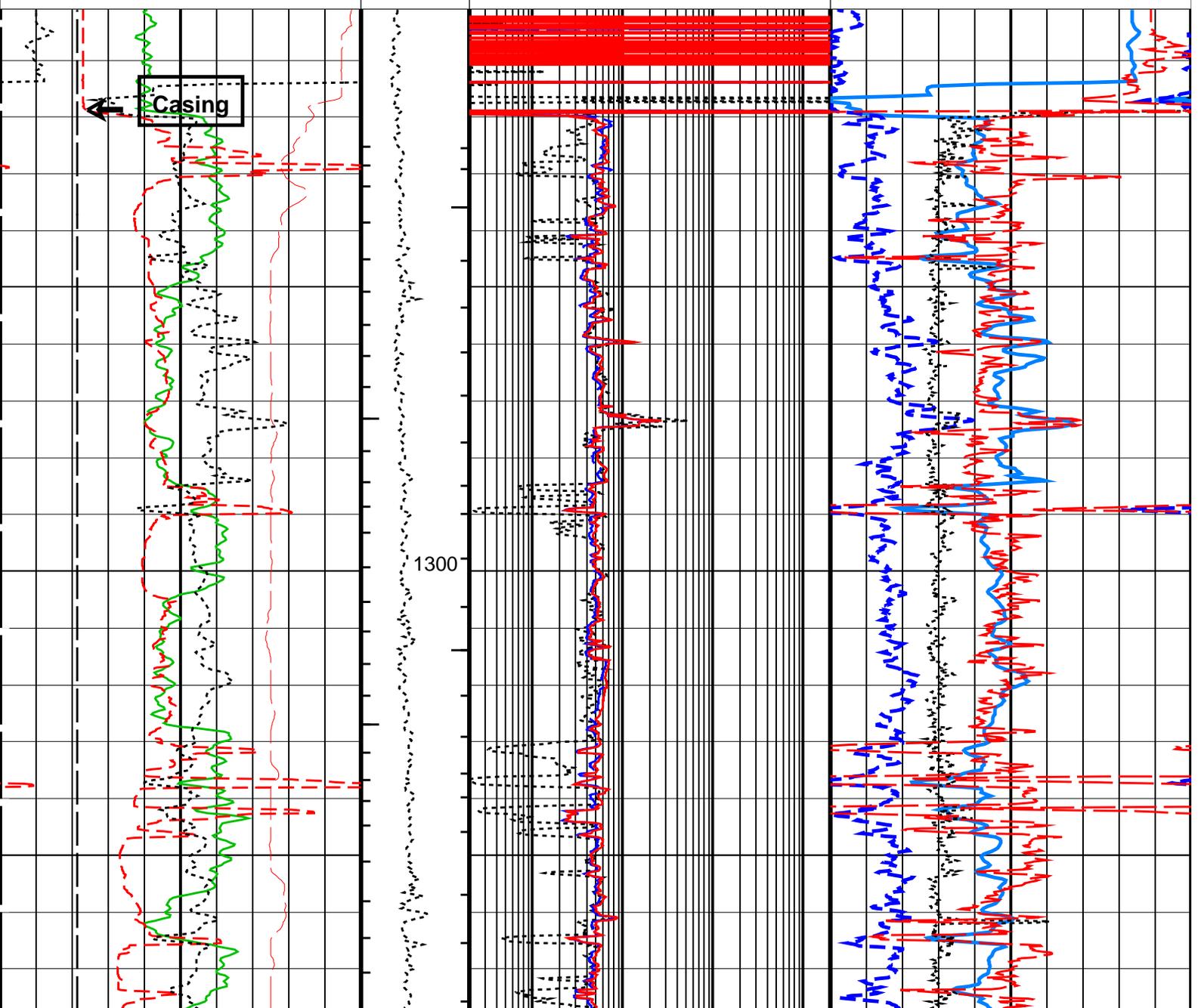
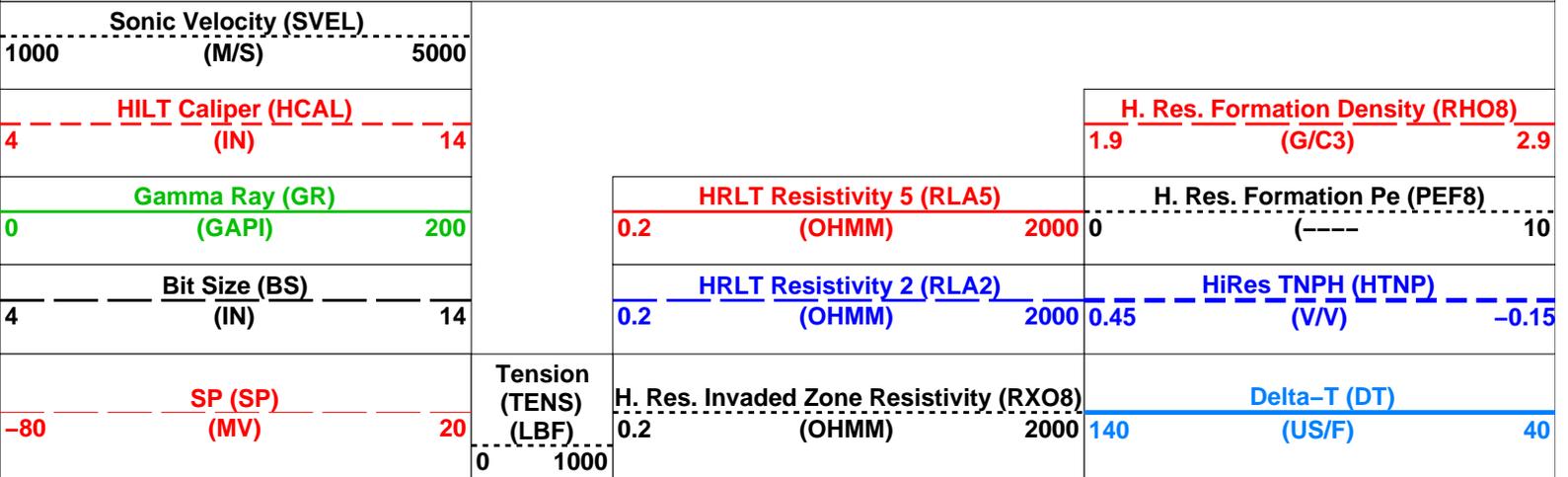
DSLTL-H
 DTC-H

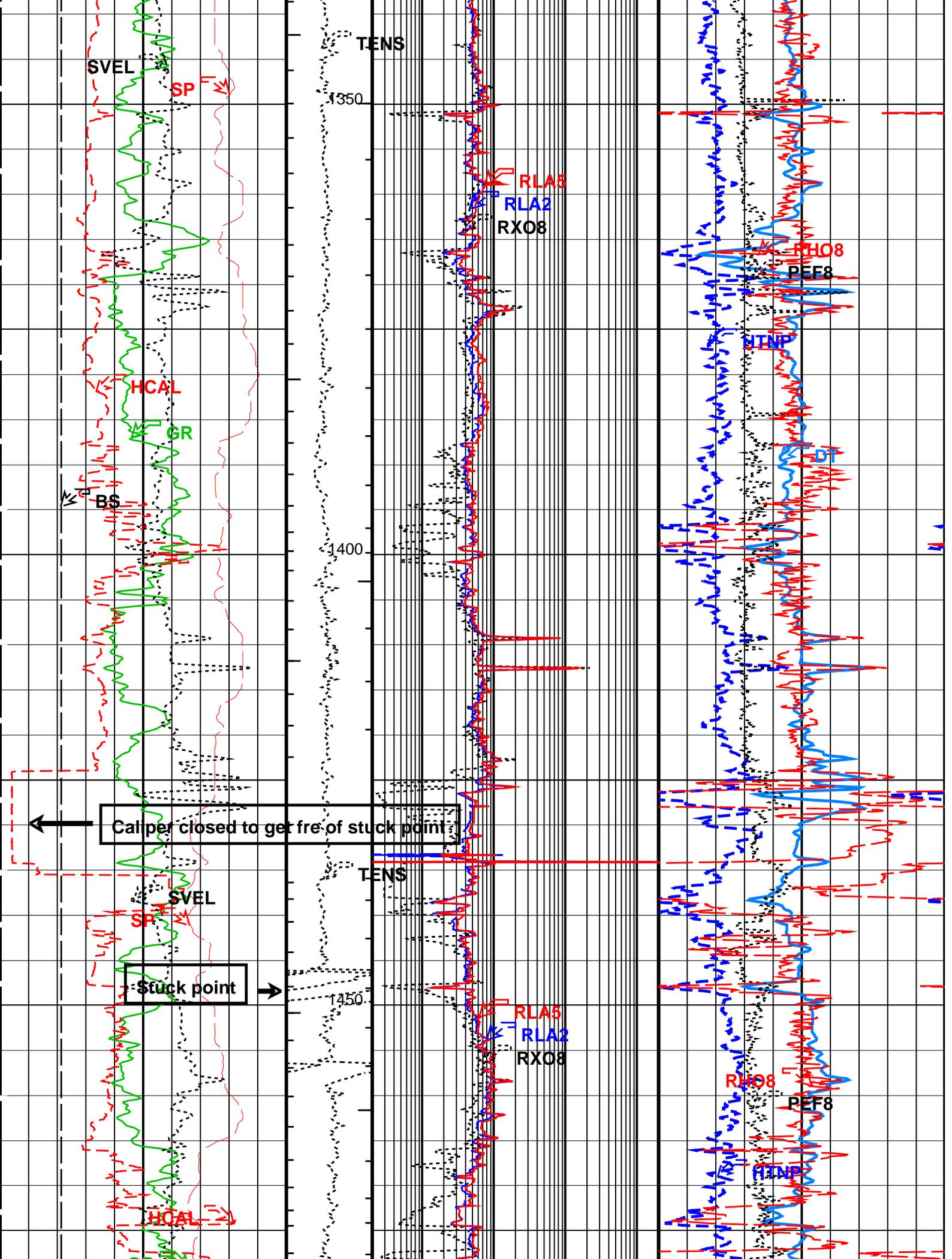
12C0-301
 12C0-301

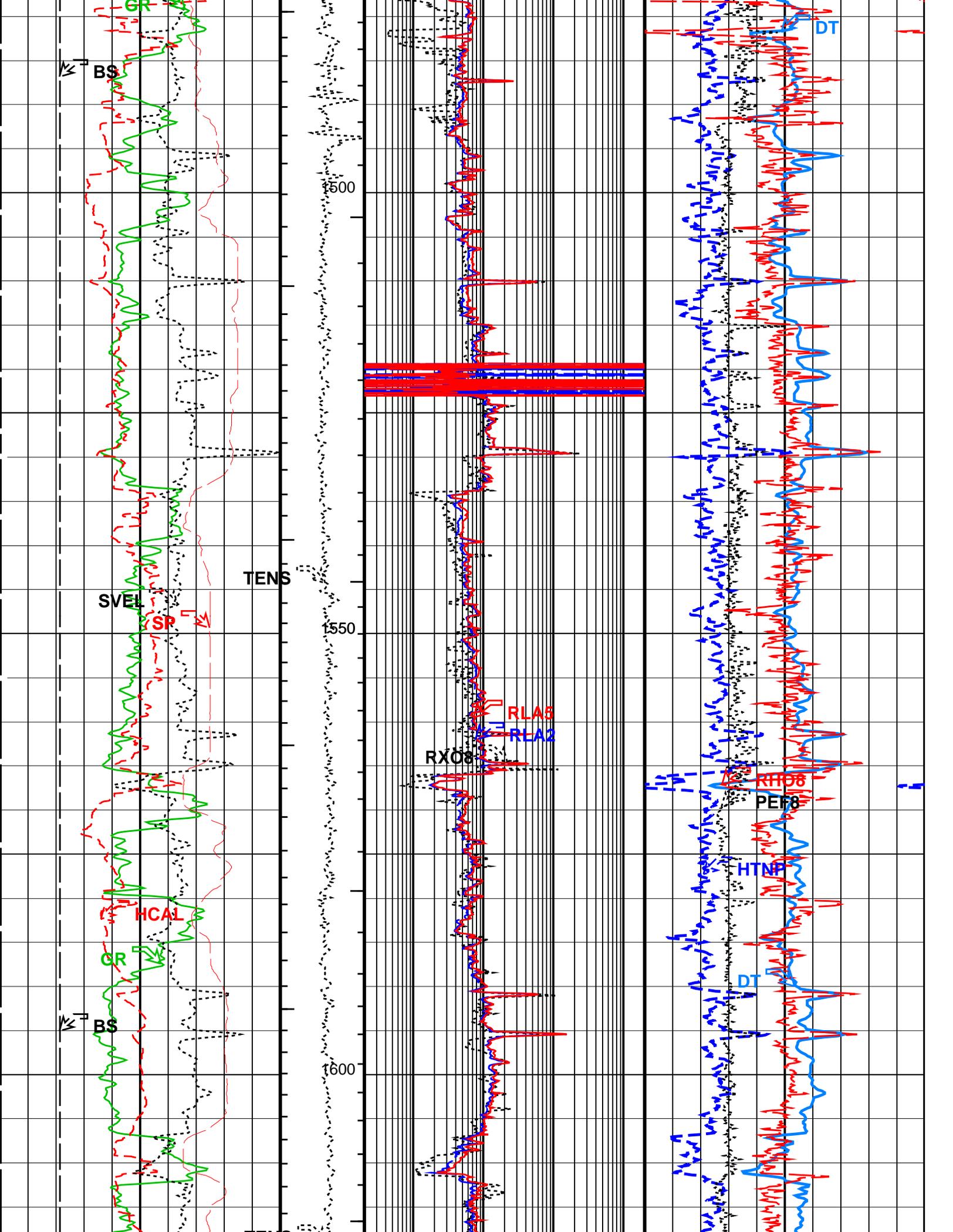
PIP SUMMARY

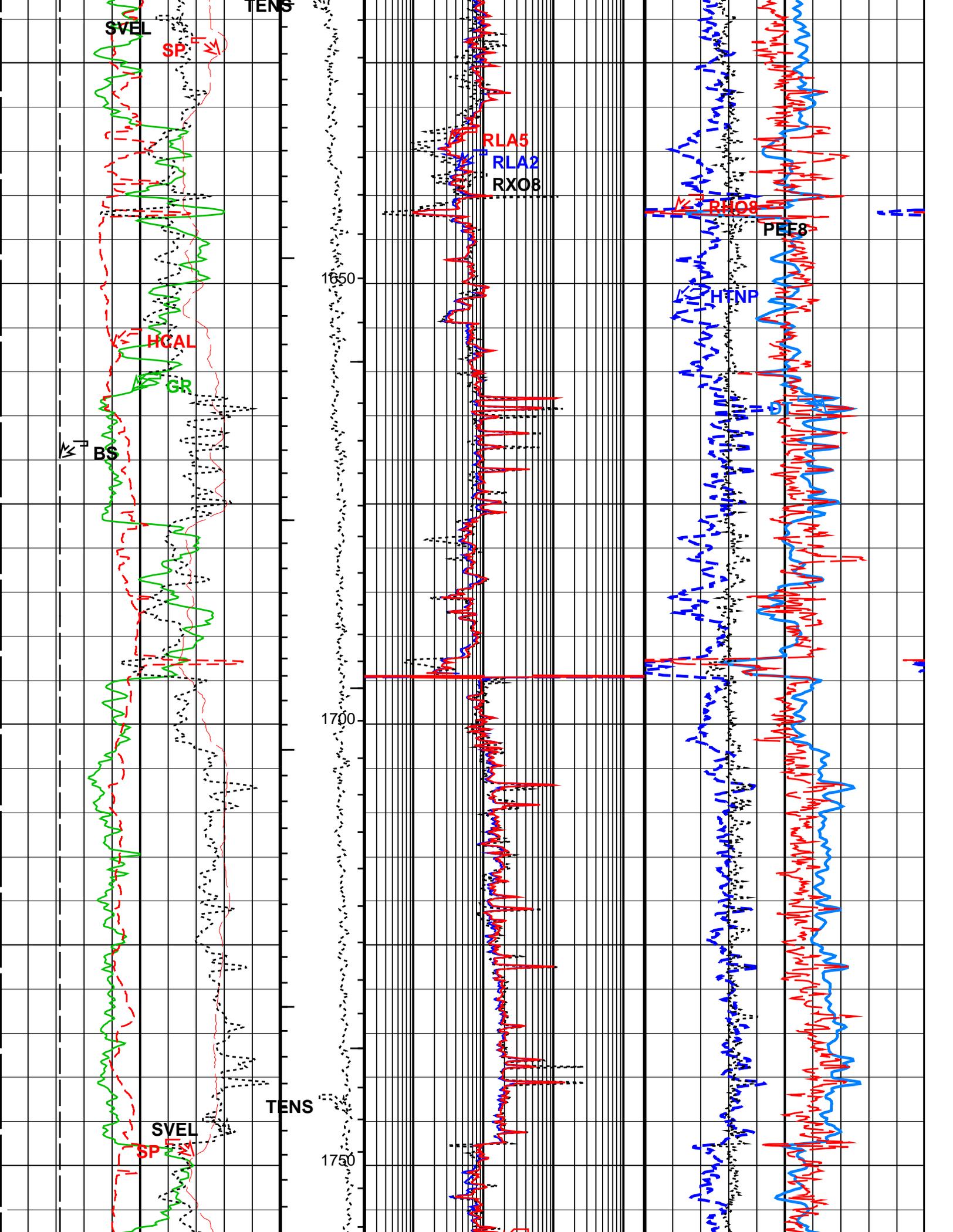
- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
- ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
- ┆ Integrated Cement Volume Major Pip Every 1 M3

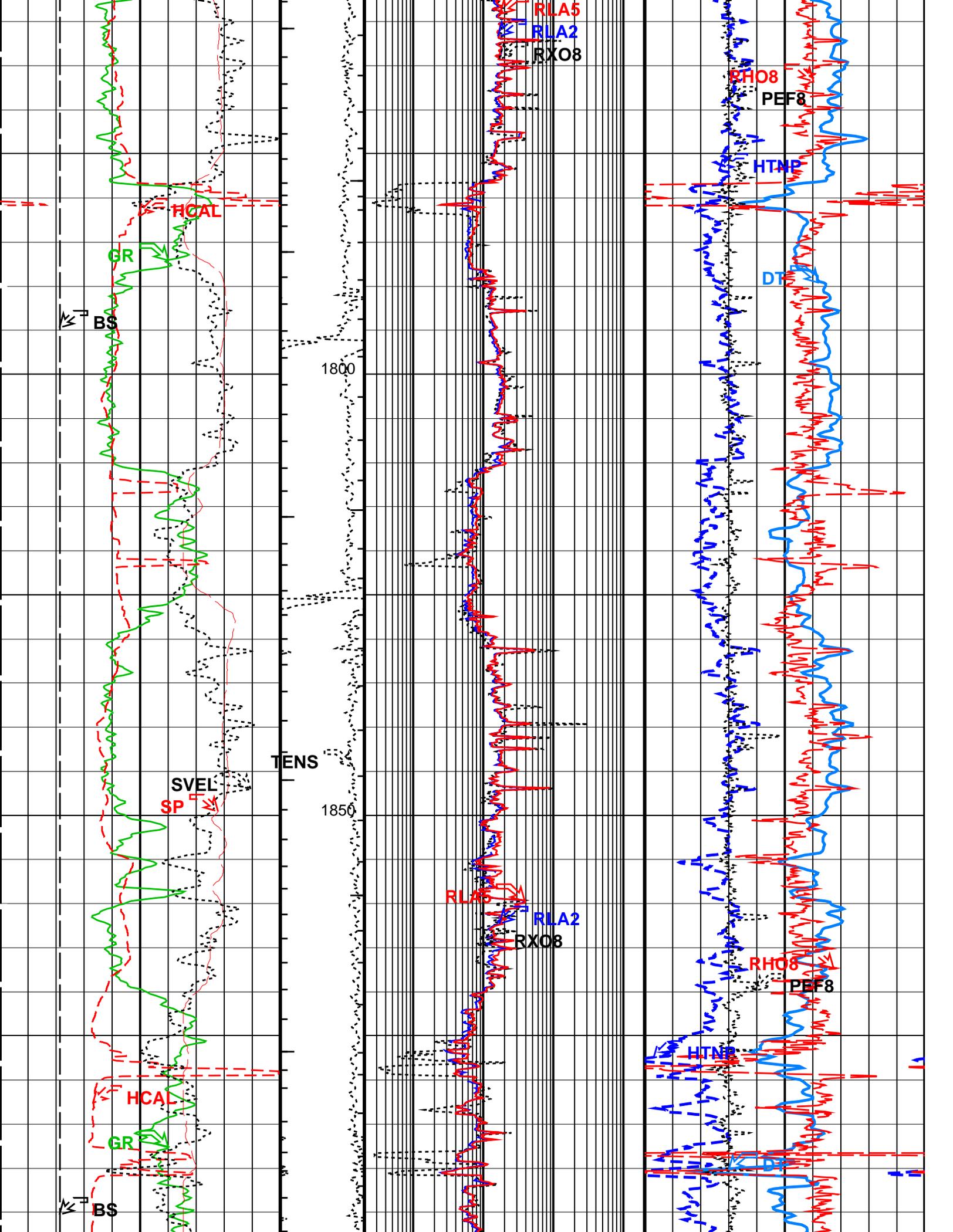
Time Mark Every 60 S

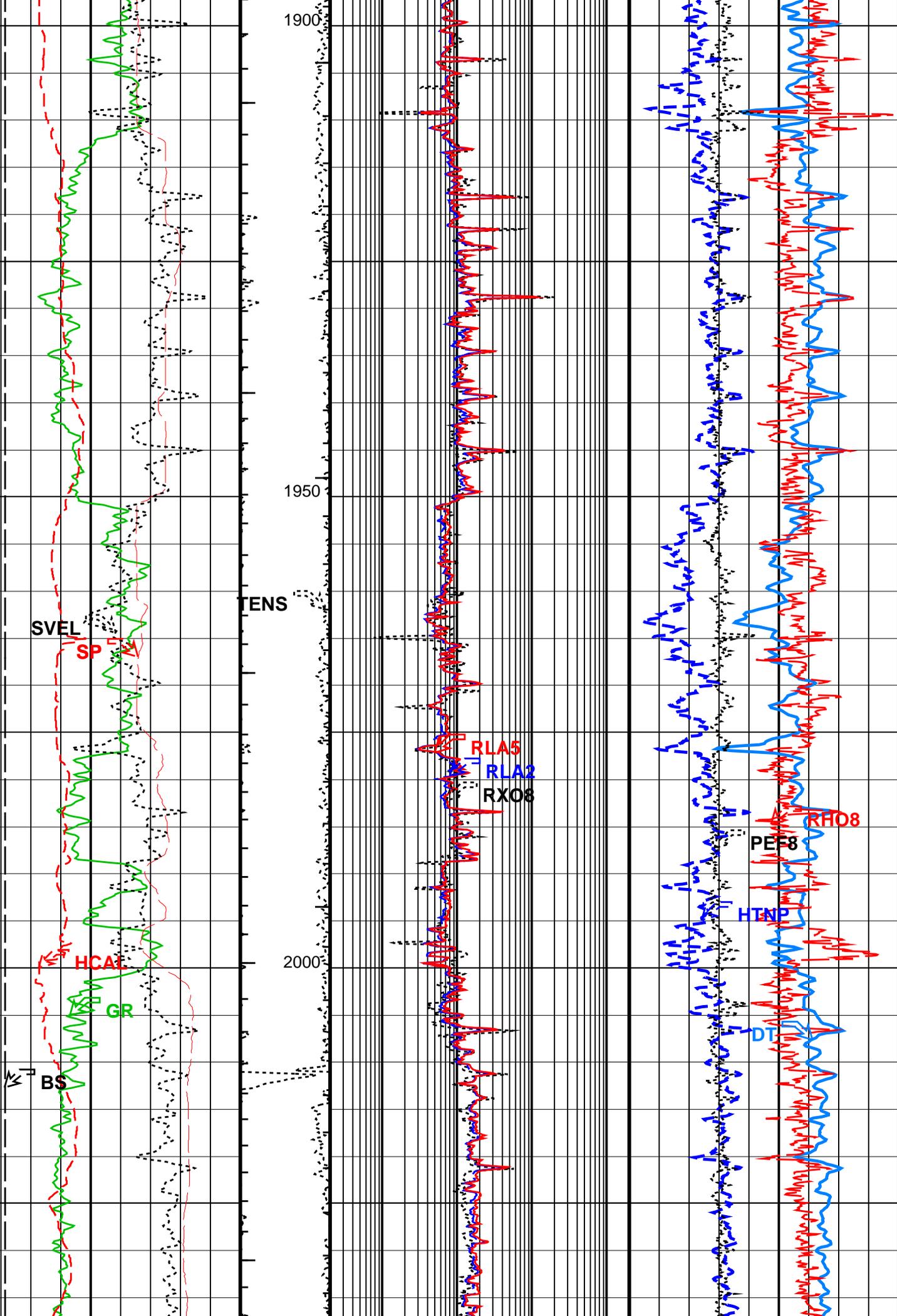


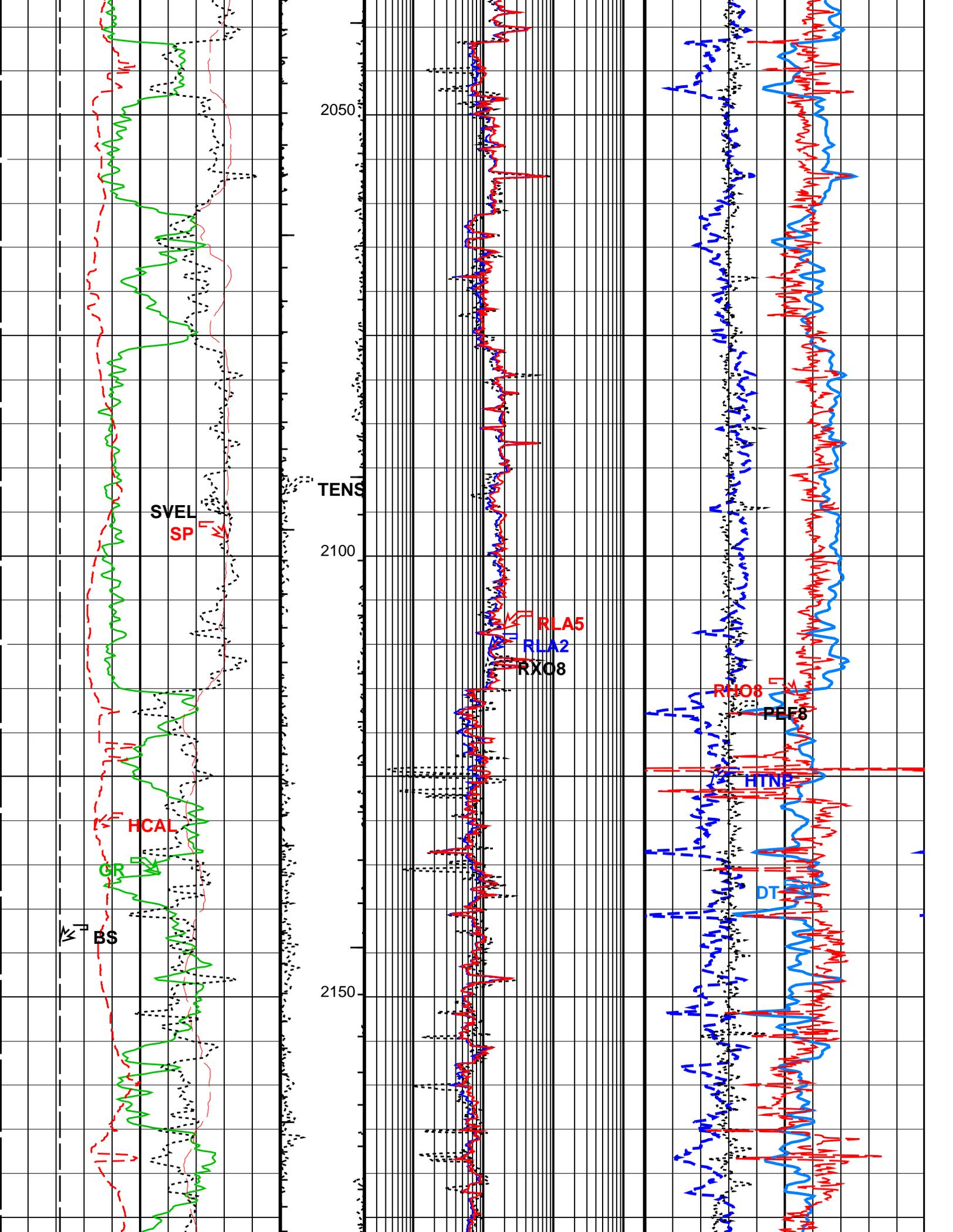


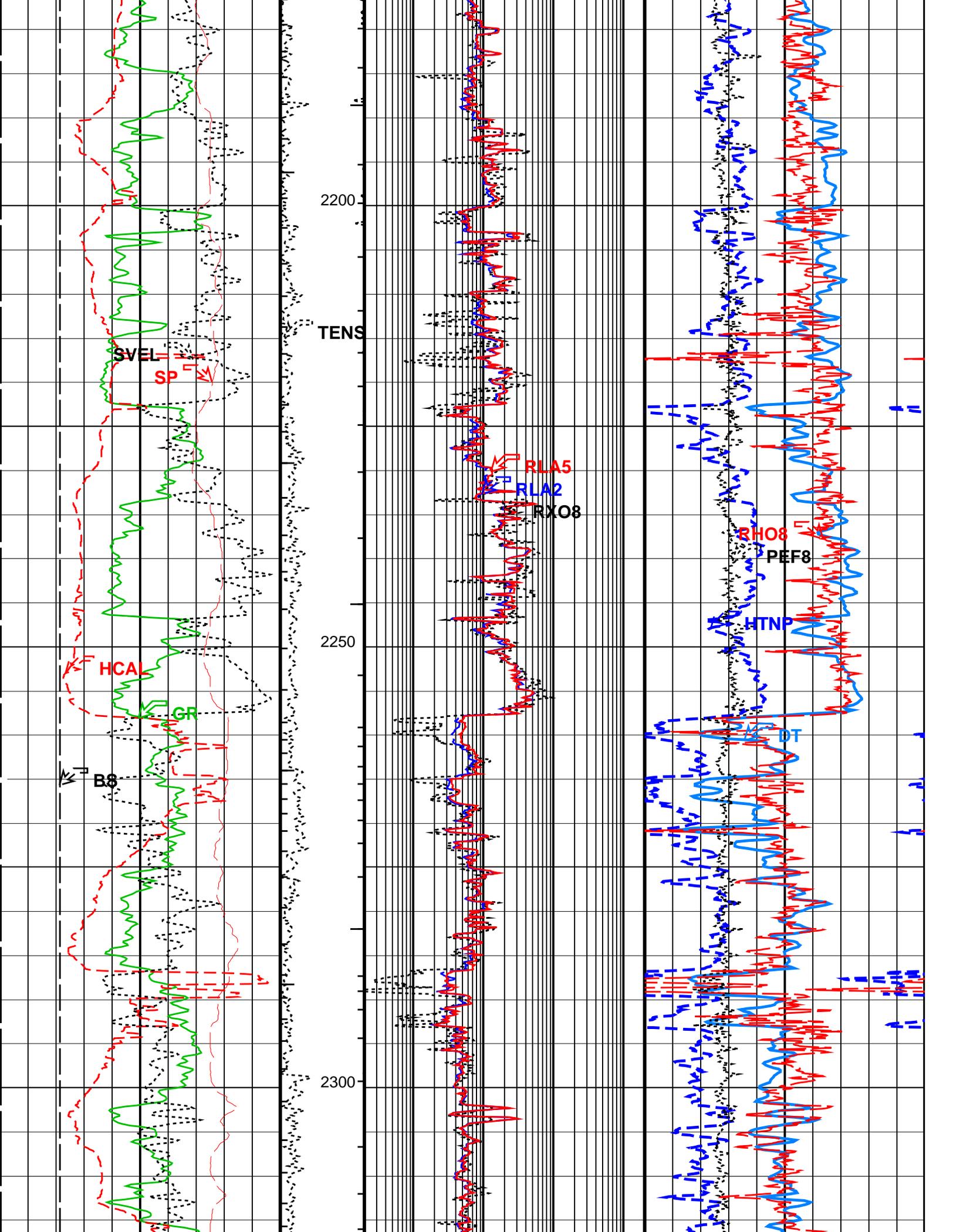


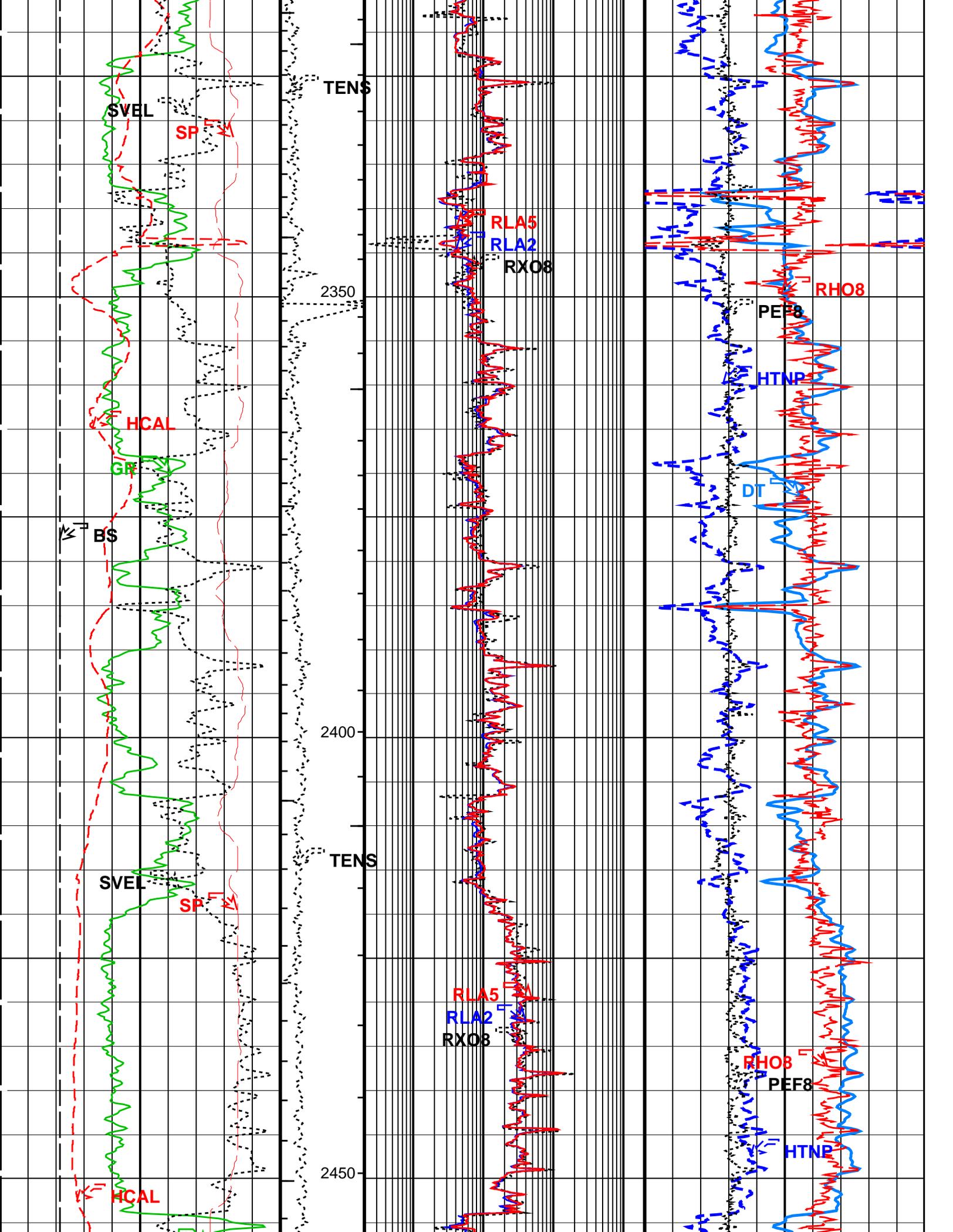


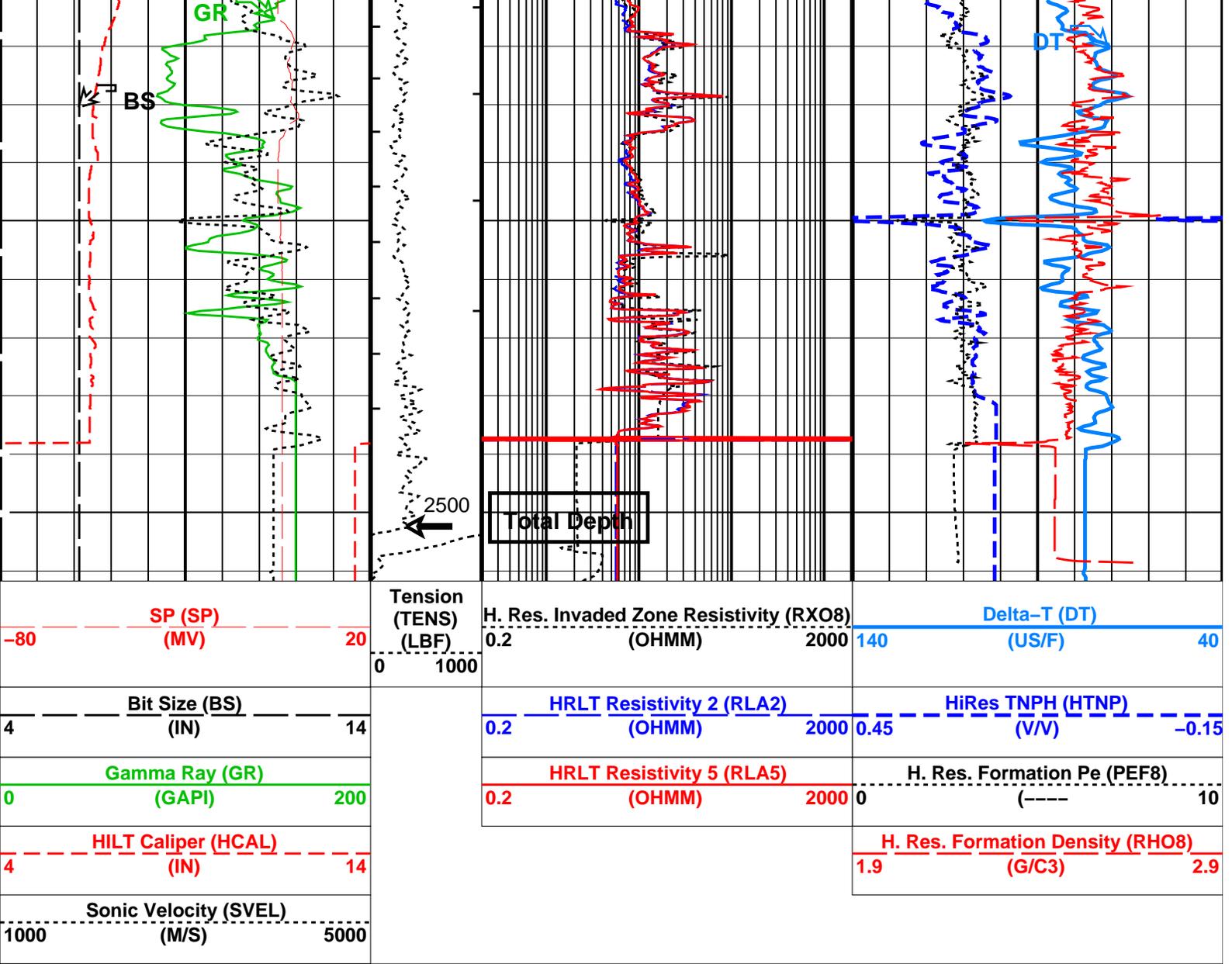












PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
- ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
- ┆ Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HALS-B: HILT Azimuthal Laterolog Sonde B		
A2EX	HALS Type of Image	Conductivities
AGOS	HALS-B A2 Extended (Groningen effect)	OFF
ARIP_LTS	HALS-GPIT OFFSET	-90 IN
ARIP_SHOULDER	HALS Long Tool String Correction	OFF
BHCC	HALS Shoulder Correction	OFF
BHCS	HALS Borehole Correction	ON
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	85 DEGC
DHOP	Diameter & Eccentering used in HALS Borehole Corrections	Caliper_Eccentered
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRCC	HALS Groningen Correction	OFF
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HLAC	HALS-B Loop A Coefficient	LOW
HLMO	HALS Logging Mode	HIRES
HMSO	HALS Mechanical Standoff	0.5 IN
HRUN	HALS-B Record Uncalibrated Channels	NO

IMOS	HALS Image Orientation		
LIMP	HALS Left Image Processing	DeepRaw	
LOP1	HALS-B Mode 1 Loop Mode	OFF	
LOP2	HALS-B Mode 2 Loop Mode	OFF	
LOP3	HALS-B Mode 3 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RIMP	HALS Right Image Processing	ShallowRaw	
RTCOMP	HALS Rt Computation	Hals_Highres	
RTRE	HALS Resistivity Threshold	100000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPCO	HALS-B Special Power Connection	OFF	
TCOR	HALS TLC Correction	OFF	
UNSPK	HALS Despiking Filter Option	OFF	
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20	%
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6	IN
DSLTL-H: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLCL_FTB	
	DSLTL Firing Mode	BHC	
AGC	Automatic Gain Control Status	ON	
AMSG	Auxiliary Minimum Sliding Gate	140	US
BILI	Bond Index Level for Zone Isolation	0.8	
CBAF	CBL Adjustment Factor	1	
CBCF	CBL Correction Factor	4	
CBLG	CBL Gate Width	45	US
CDS	C-Delta-T Shale	100	US/F
CSTR	Compressive Strength of Cement	0	KPAA
DDEL	Digitizing Delay	0	US
DETE	Delta-T Detection	E2	
DFAD	Digital First Arrival Detection Switch	HOST	
DIVL	DSLTL Depth Sampling Interval	20	
DRCS	DSLTL DLIS Recording Size	140	
DSIN	Digitizing Sample Interval	10	
DTCM	Delta-T Computation Mode	FULL	
DTF	Delta-T Fluid	189	US/F
DTFS	DSLCL Telemetry Frame Size	316	
DTM	Delta-T Matrix	56	US/F
DWCO	Digitizing Word Count	140	
FCF	CBL Fluid Compensation Factor	1	
GAI	Manual Gain	40	
GOBO	Good Bond	2	MV
HRSP	High Resolution Spacing	5.118	IN
ITTS	Integrated Transit Time Source	DT	
LTUT	Lower to Upper Transmitter Spacing Ratio	1	
MAHTR	Manual High Threshold Reference	120	
MCI	Minimum Cemented Interval for Isolation	3.048	M
MGAI	Maximum Gain	60	
MIGA	Minimum Gain	1	
MNHTR	Minimum High Threshold Reference	100	
MODE	Sonic Firing Mode	BHC	
MSA	Minimum Sonic Amplitude	18.4103	MV
NMSG	Near Minimum Sliding Gate	140	US
NMXG	Near Maximum Sliding Gate	910	US
NUMP	Number of Detection Passes	2	
RATE	Firing Rate	R15	
RDFA	Reset DFAD	OFF	
SDTH	Switch Down Threshold	20000	
SFAF	Sonic Formation Attenuation Factor	10	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta-T	140	US/F
SGCW	Sliding Gate Closing Width	25	US
SGDT	Sliding Gate Delta-T	40	US/F
SGW	Sliding Gate Width	110	US
SLEV	Signal Level for AGC	5000	
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
SUTH	Switch Up Threshold	1000	
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	OFF	
WGAI	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta-T	240	US/F
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CALSTAT	HRLTB Calibration Status	NOT_DONE	
CALTEMP	HRLTB Calibration Temperature	0	DEGC
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	

FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	OFF	
LOOPMOD1	HRLT Mode 1 Loop Mode	OFF	
LOOPMOD2	HRLT Mode 2 Loop Mode	OFF	
LOOPMOD3	HRLT Mode 3 Loop Mode	OFF	
LOOPMOD4	HRLT Mode 4 Loop Mode	OFF	
LOOPMOD5	HRLT Mode 5 Loop Mode	OFF	
LOOPMOD6	HRLT Mode 6 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e-005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e-005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PROCINV	Inversion Selection	ON	
PROCFL	Inversion Micro-Resistivity Selection	RX08	
PROCMSO	Mechanical Standoff Fin Size	0.5	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0	IN
SOCO	Standoff Correction Option	NO	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
FCD	Future Casing (Outer) Diameter	4.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	2500.00	M
TDL	Total Depth - Logger	2501.20	M
System and Miscellaneous			
ALTRCHAN	Name of alternate depth channel		
SPCORRECT	Speed-Corrected Depth		

ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	6.125	IN
BS	Bit Size		28000.00	PPM
BSAL	Borehole Salinity		7.000	IN
CSIZ	Current Casing Size		26.00	LB/F
CWEI	Casing Weight		1.10	G/C3
DFD	Drilling Fluid Density		0.0	M
DO	Depth Offset for Playback		14.30	DEGC
MST	Mud Sample Temperature		NO	
PBVSADP	Use alternate depth channel for playback		NORMAL	
PP	Playback Processing		0.2180	OHMM
RMFS	Resistivity of Mud Filtrate Sample		1.0000	OHMM
RW	Resistivity of Connate Water		2500	M
TD	Total Depth		37.78	DEGC
TWS	Temperature of Connate Water Sample			

Format: Main_500 Vertical Scale: 1:500 Graphics File Created: 04-Aug-2004 12:09

OP System Version: 12C0-301
MCM

HALS-B	12C0-301	DSLTL-H	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09		
---------	----------------------------	-------	----------	-------------------	--	--



Density Porosity
1:500 Scale High Resolution

MAXIS Field Log

Company: Lakes Oil N.L. Well: Trifon 2

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09	2505.9 M	1250.4 M
---------	----------------------------	-------	----------	-------------------	----------	----------

Integrated Hole/Cement Volume Summary

Hole Volume = 39.99 M3
 Cement Volume = 27.27 M3 (assuming 4.50 IN casing O.D.)
 Computed from 2500.0 M to 1260.0 M using data channel(s) HCAL

OP System Version: 12C0-301
MCM

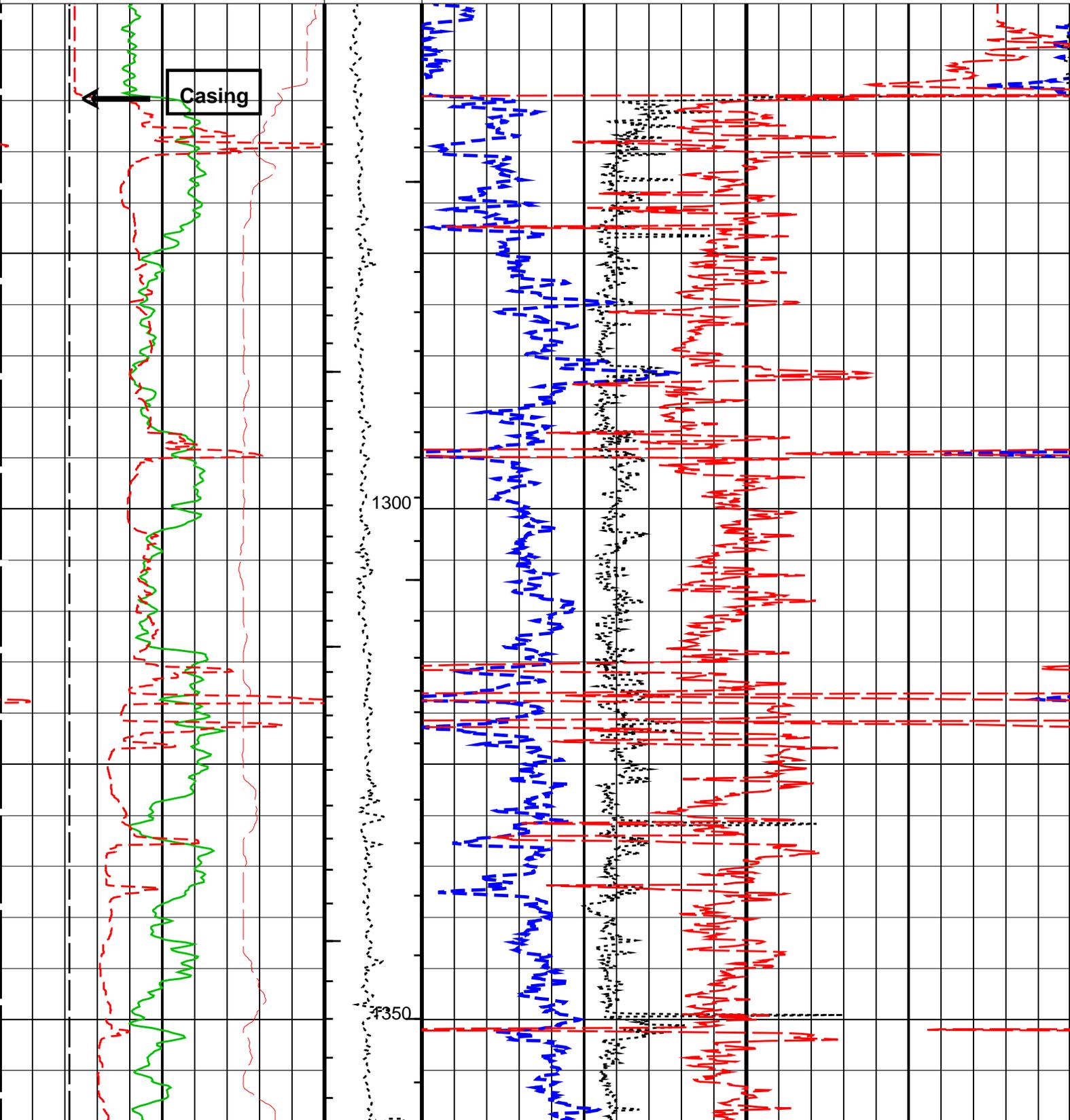
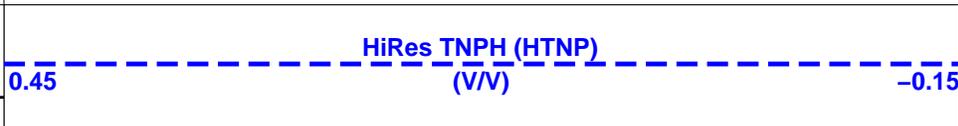
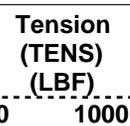
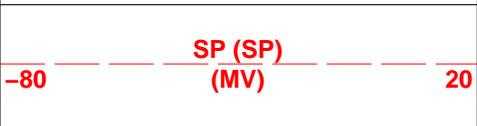
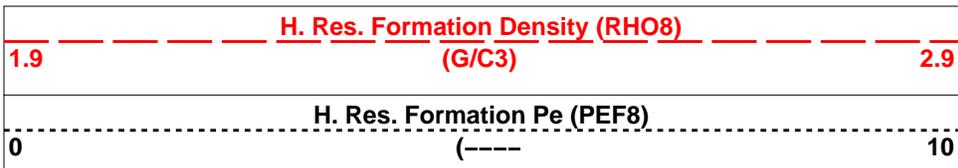
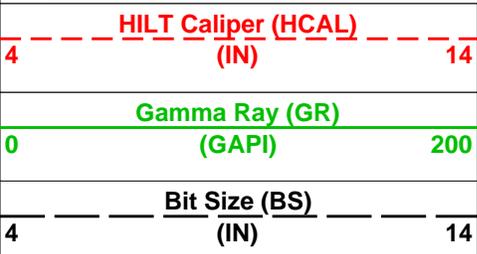
HALS-B	12C0-301	DSLTL-H	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

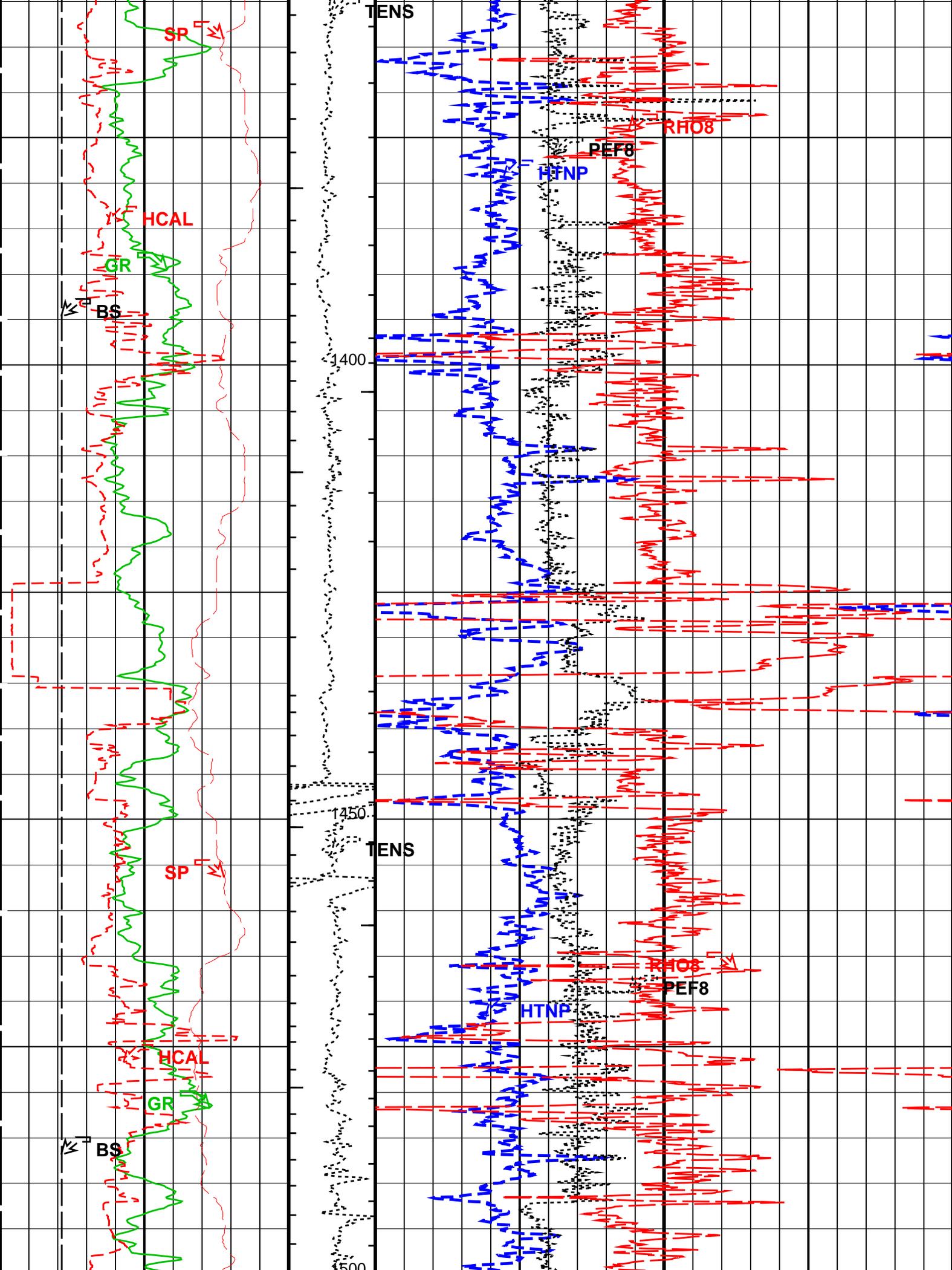
PIP SUMMARY

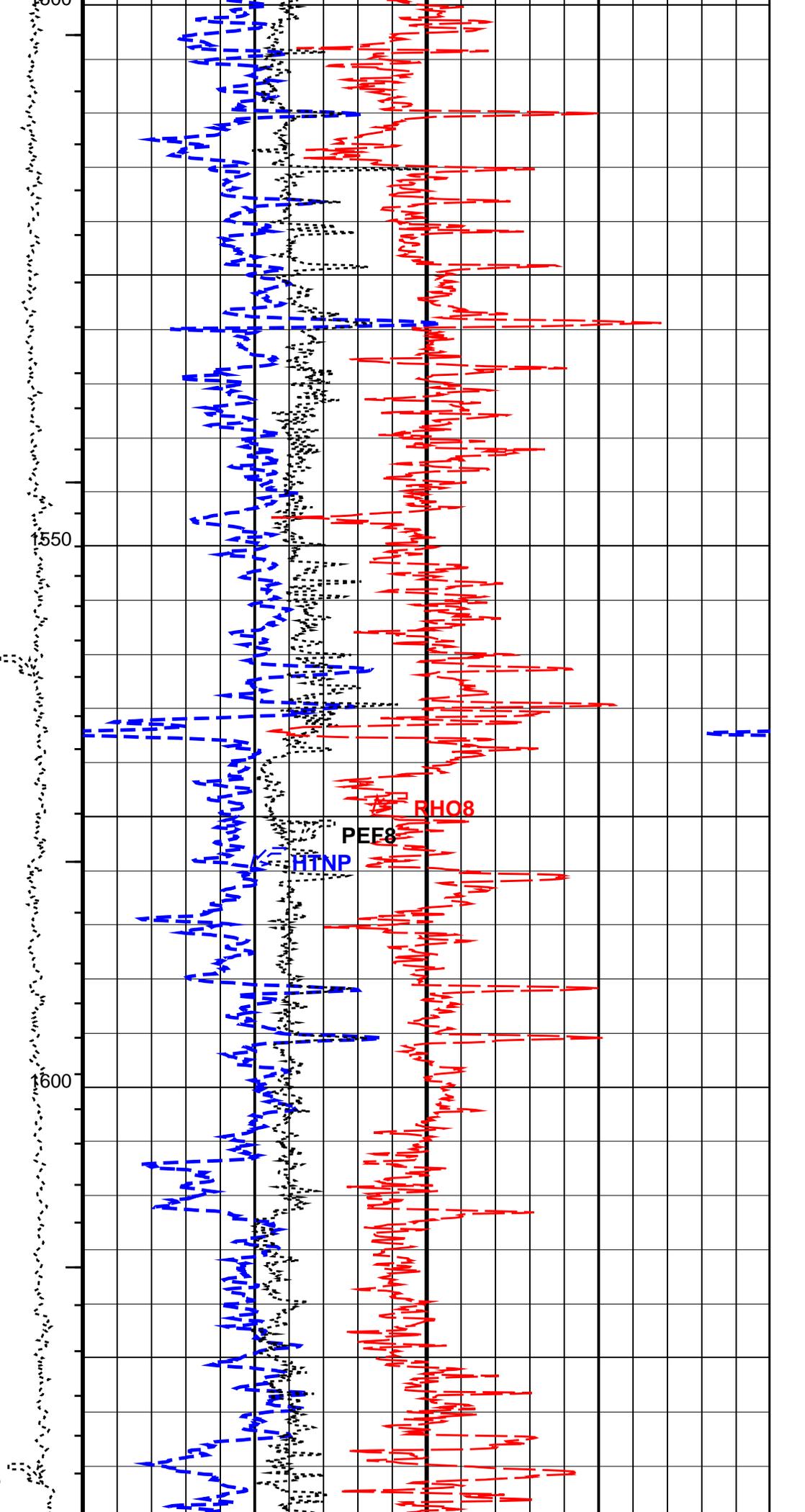
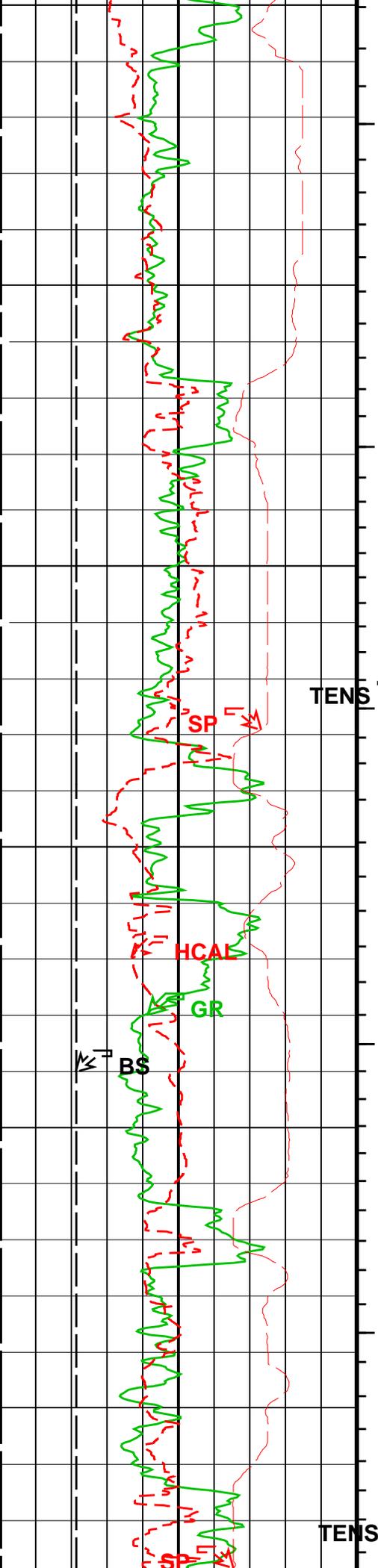
- ┌ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┌ Integrated Hole Volume Major Pip Every 1 M3
- ┌ Integrated Cement Volume Minor Pip Every 0.1 M3

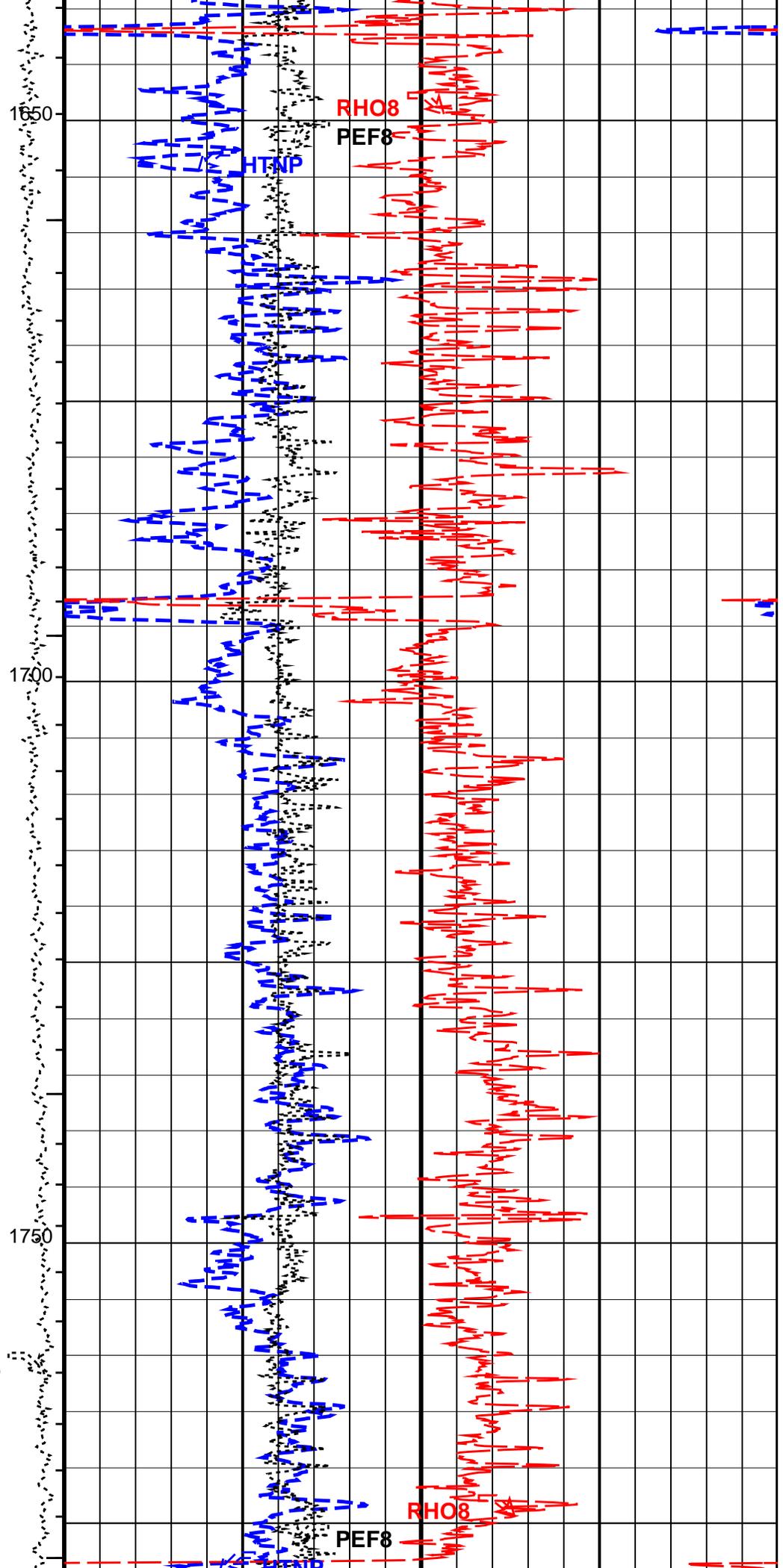
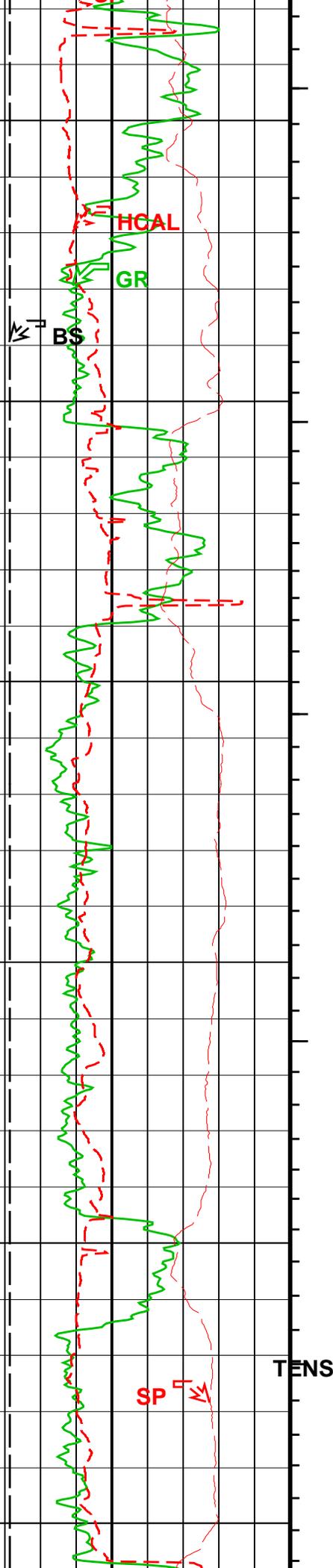
Time Mark Every 60 S

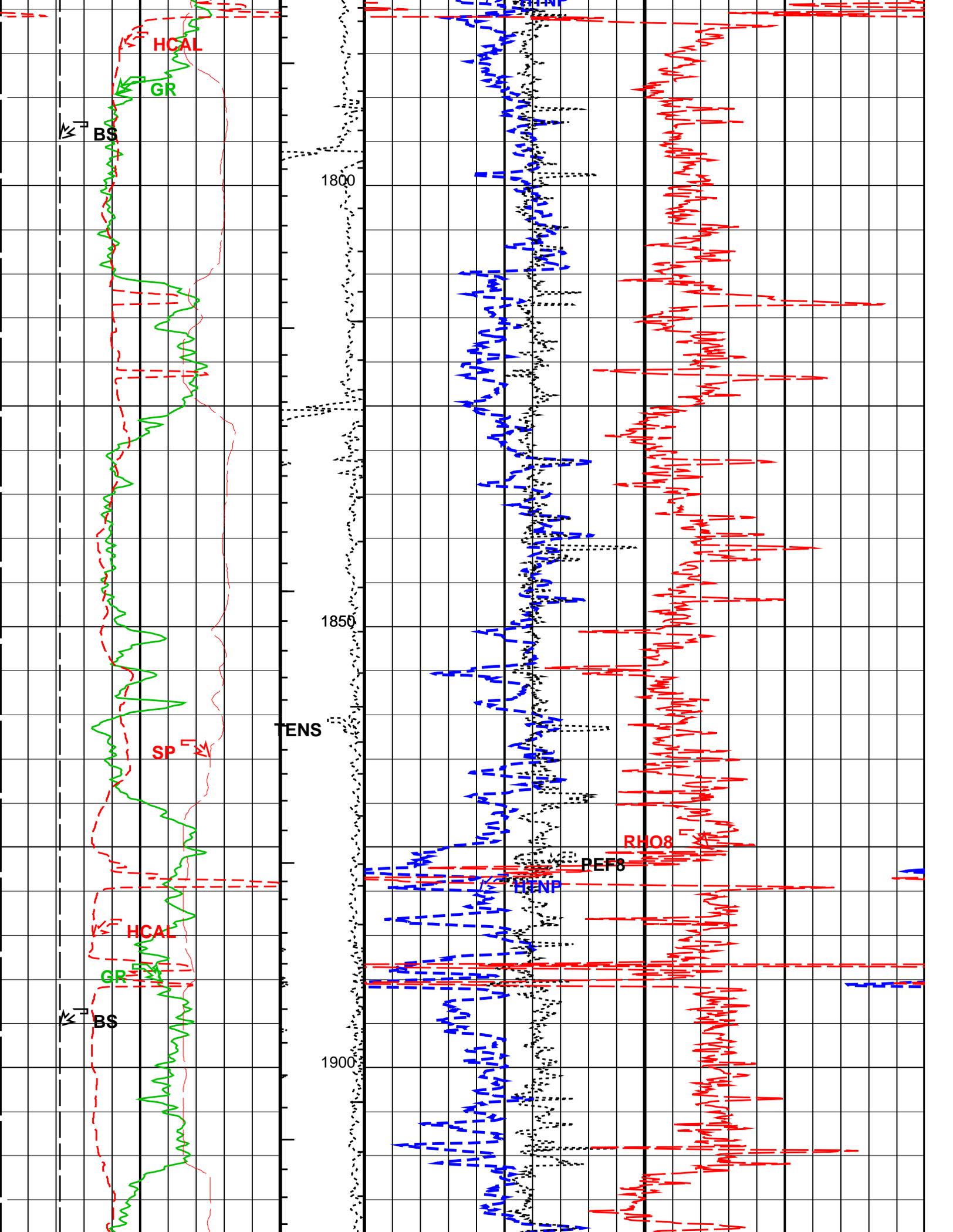
Integrated Cement Volume Major Pip Every 1 M3

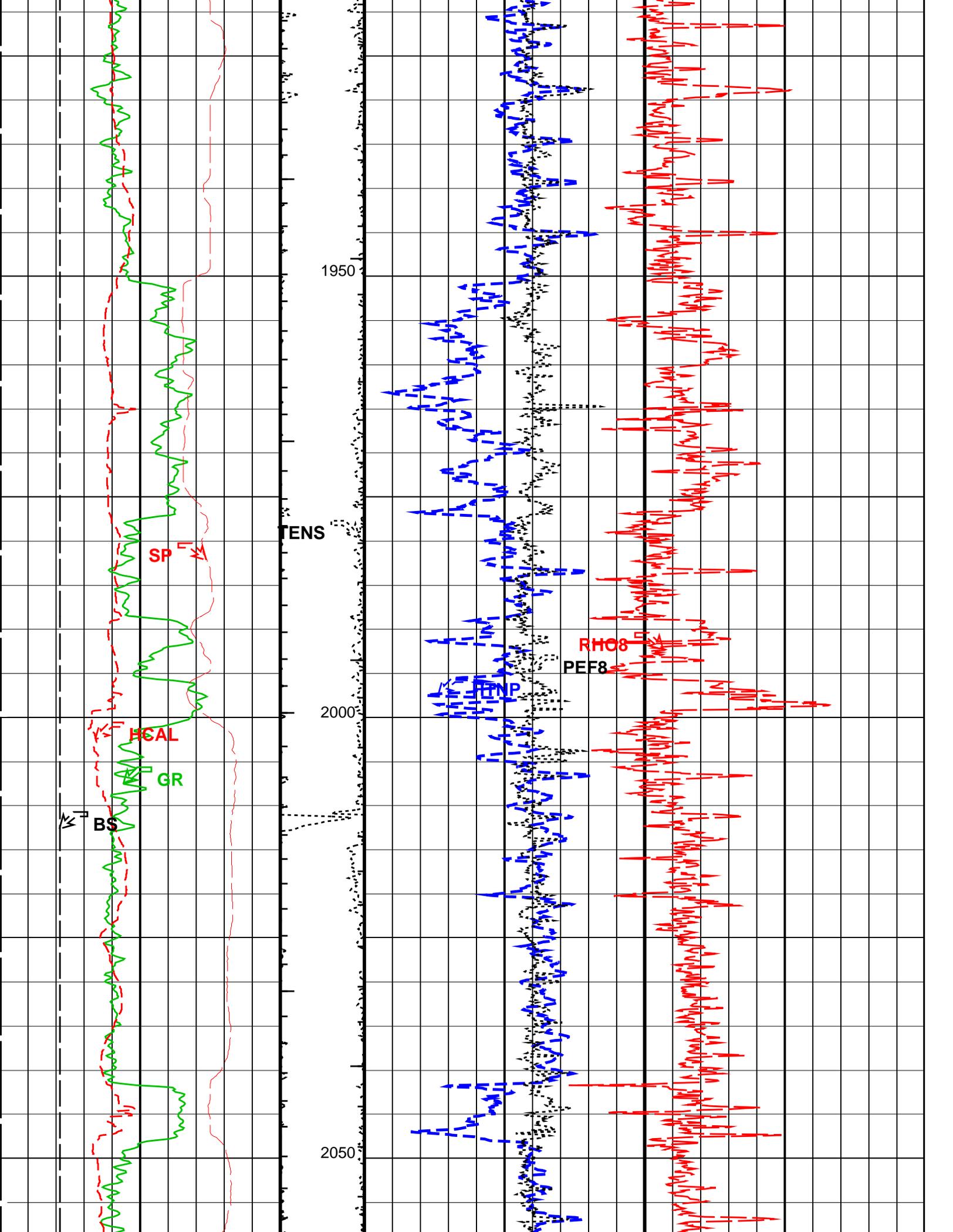


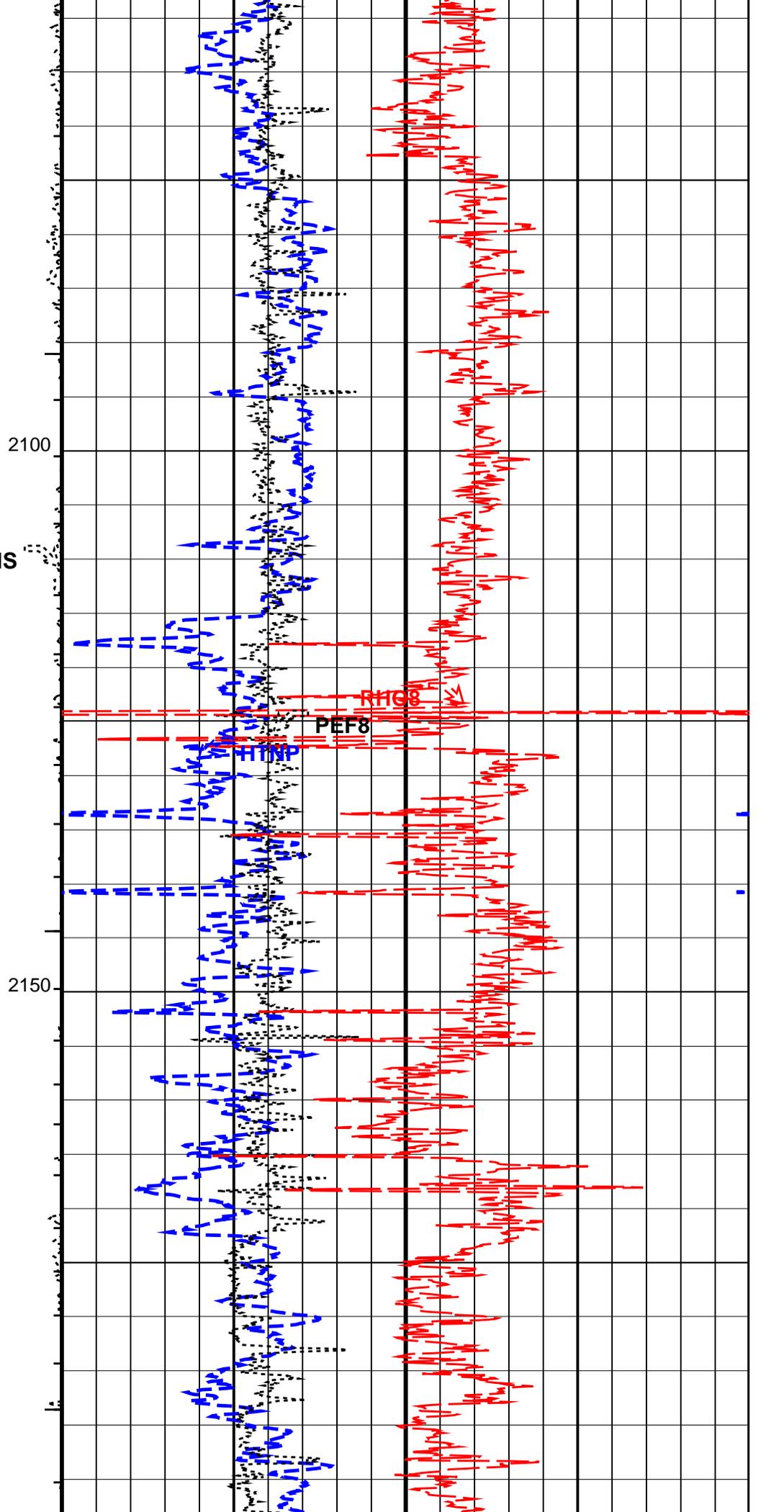
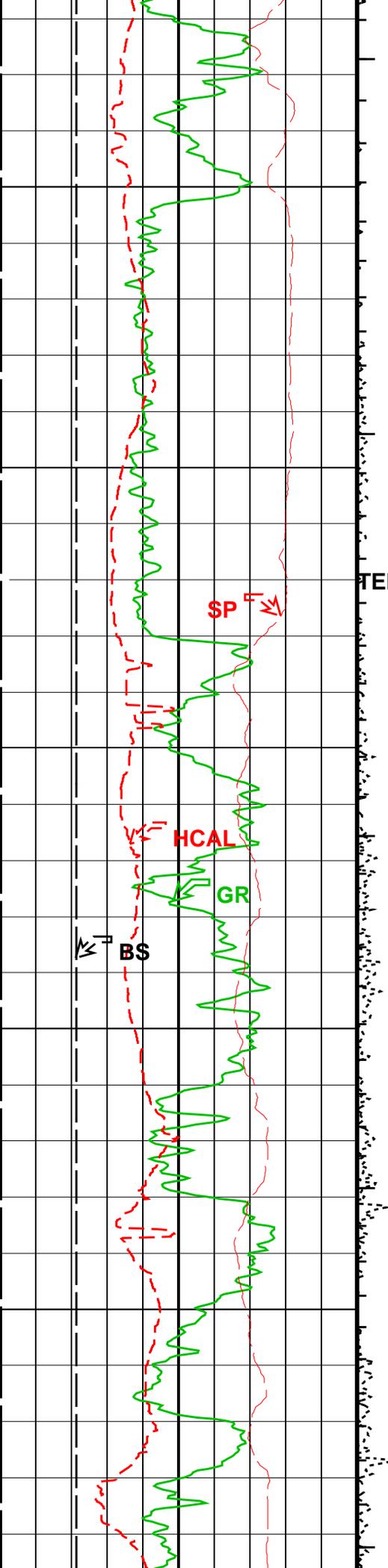


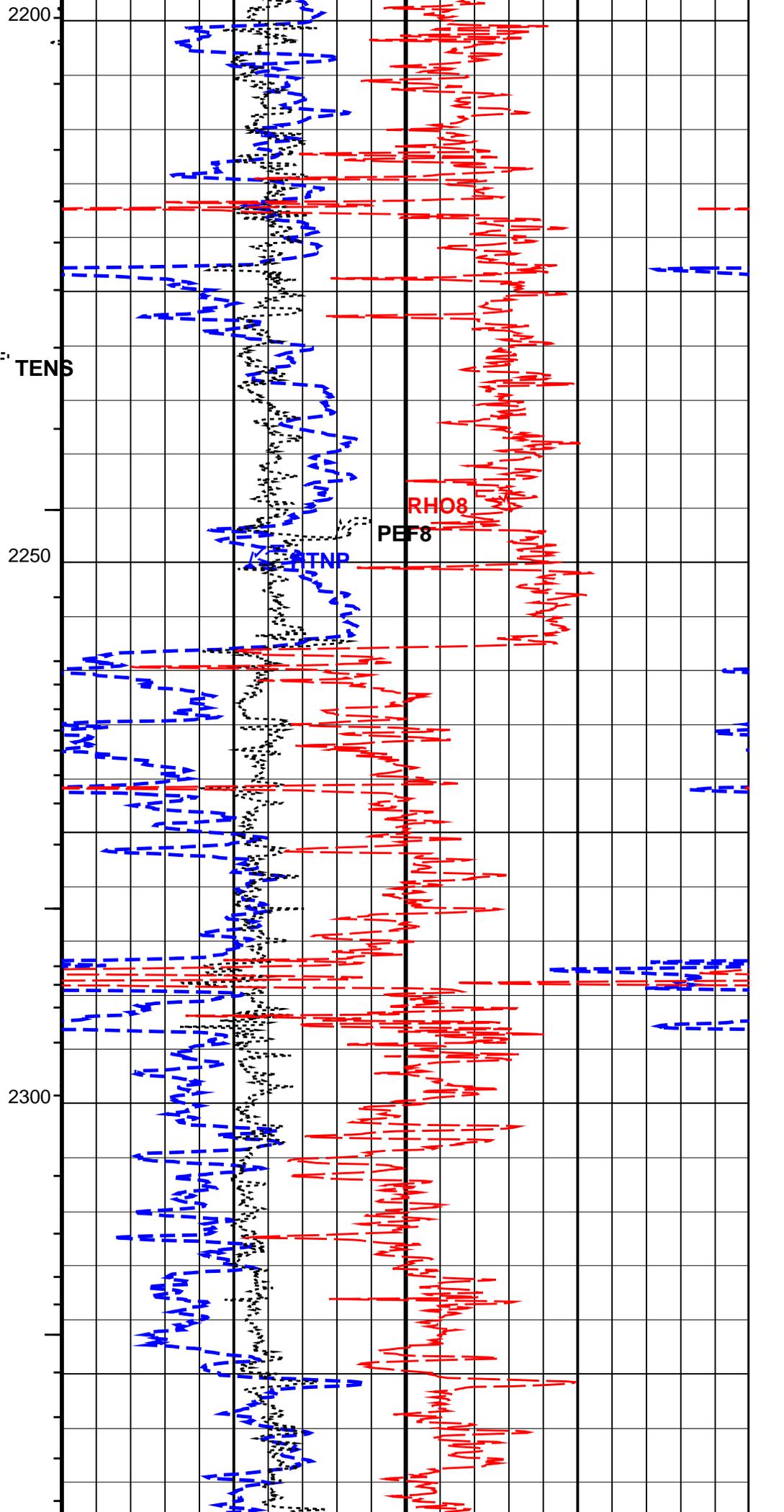
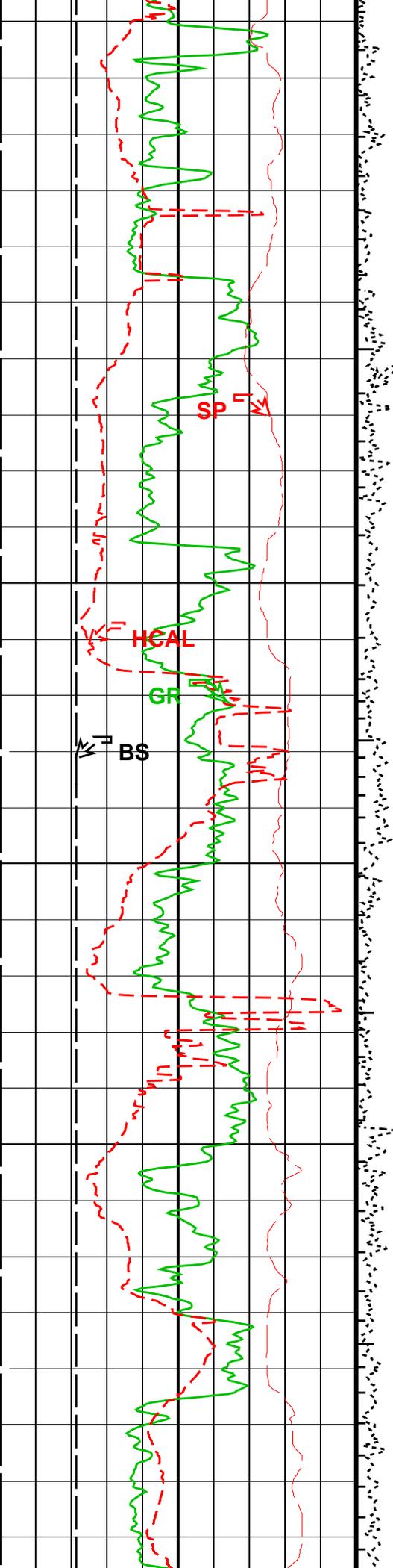


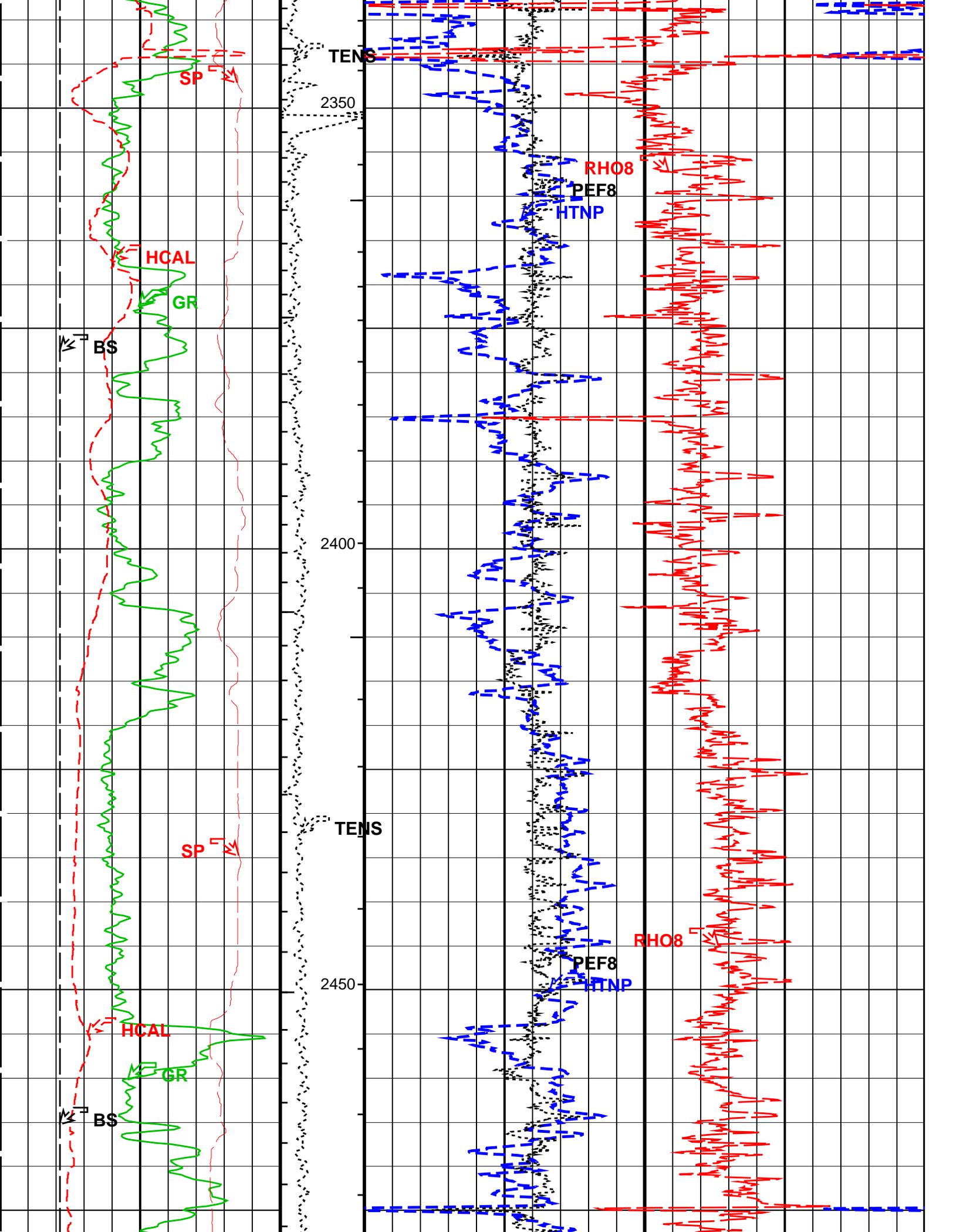


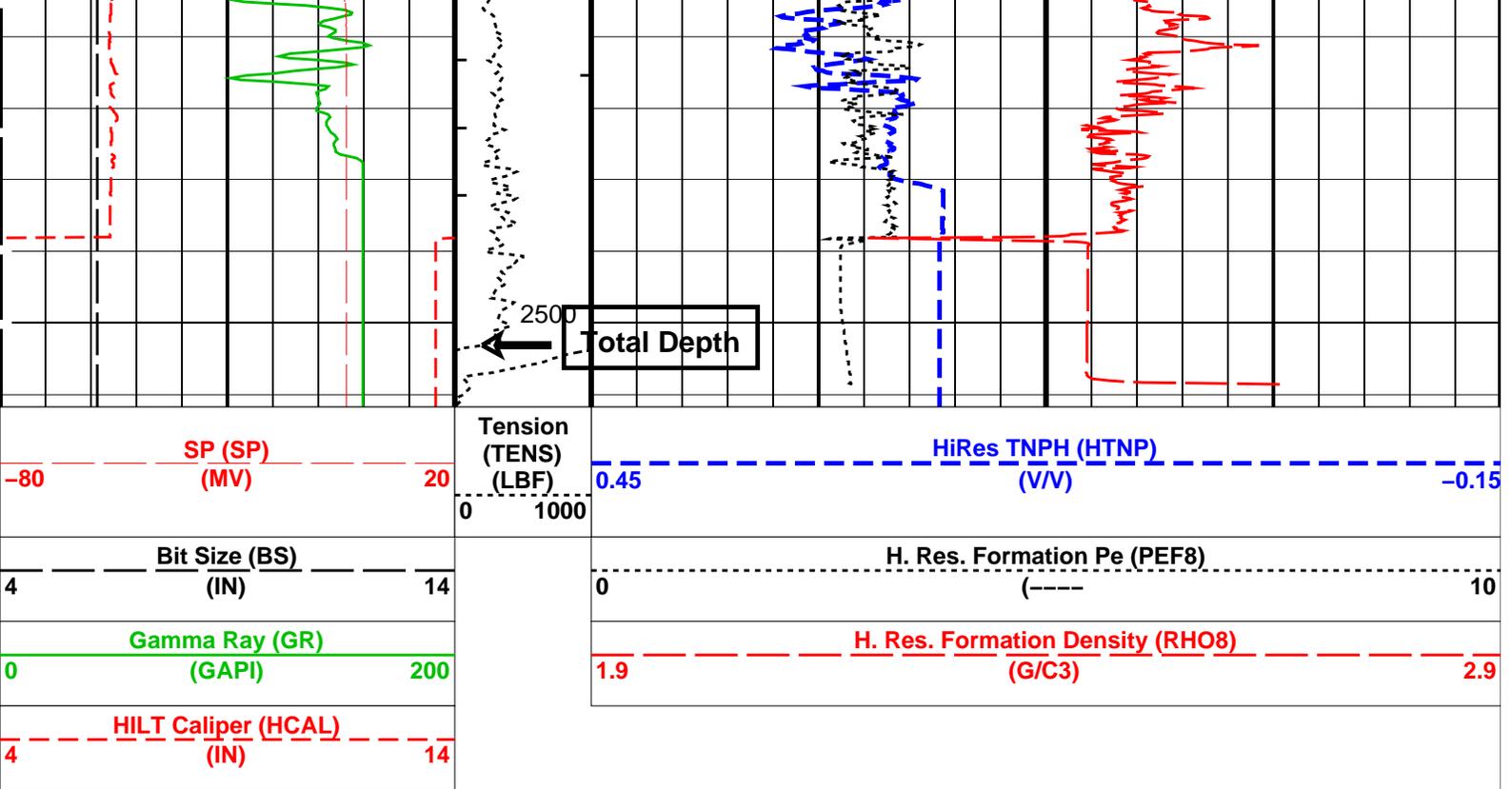












PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
 - ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
 - ┆ Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HALS-B: HILT Azimuthal Laterolog Sonde B		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
SHT	Surface Hole Temperature	20 DEGC
HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHFL	Borehole Fluid Type	WATER
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	YES
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FSAL	Formation Salinity	-50000 PPM
FSCO	Formation Salinity Correction Option	NO
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
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	YES
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	HiRes
NSAR	HRDD Depth Sampling Rate	1 IN
PTCO	Pressure/Temperature Correction Option	YES
SDAT	Standoff Data Source	SOCN
SHT	Surface Hole Temperature	20 DEGC
SOCN	Standoff Distance	0 IN
SOCO	Standoff Correction Option	NO
BSP: Bridle SP		
SPNV	SP Next Value	0 MV
HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN
FCD	Future Casing (Outer) Diameter	4.5 IN
GCSE	Generalized Caliper Selection	HCAL

GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	2501.20	M
System and Miscellaneous			
BS	Bit Size	6.125	IN
BSAL	Borehole Salinity	28000.00	PPM
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	
TD	Total Depth	2500	M

Format: Nuclear_500 Vertical Scale: 1:500 Graphics File Created: 04-Aug-2004 12:09

OP System Version: 12C0-301
MCM

HALS-B	12C0-301	DSLT-H	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09		
---------	----------------------------	-------	----------	-------------------	--	--



Resistivity
1:500 Scale High Resolution

MAXIS Field Log

Company: Lakes Oil N.L.

Well: Trifon 2

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09	2505.9 M	1250.4 M
---------	----------------------------	-------	----------	-------------------	----------	----------

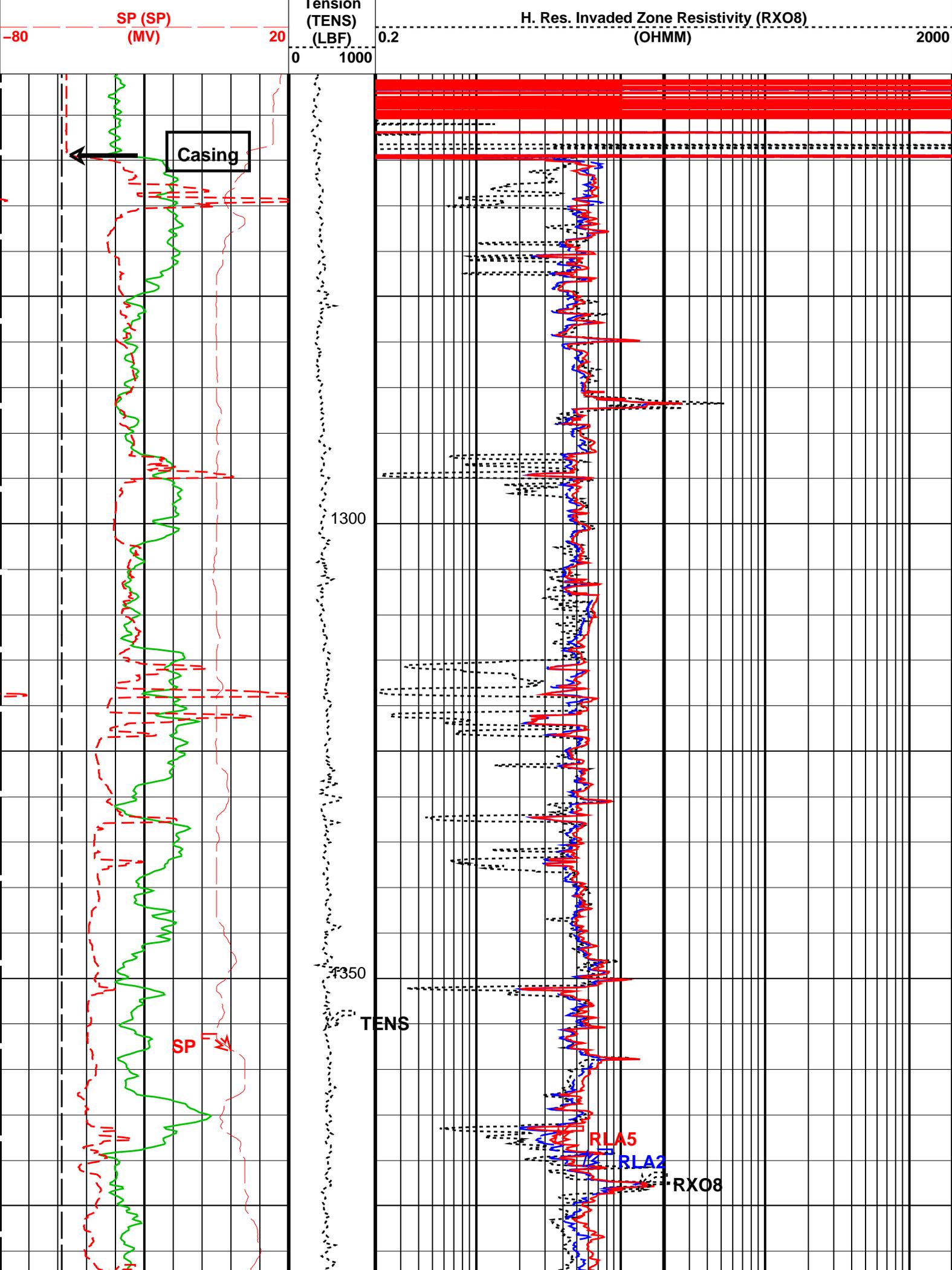
OP System Version: 12C0-301
MCM

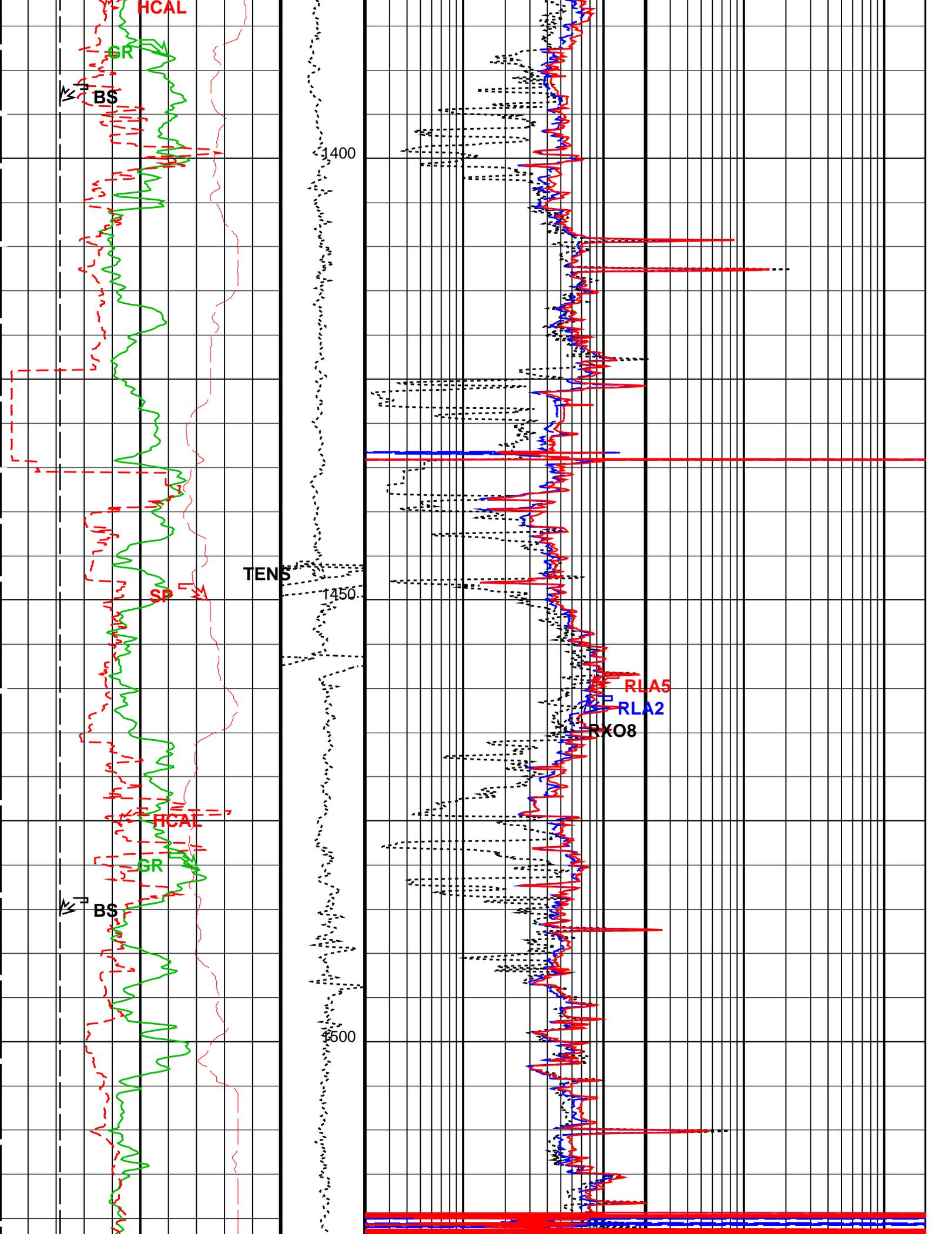
HALS-B	12C0-301	DSLT-H	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

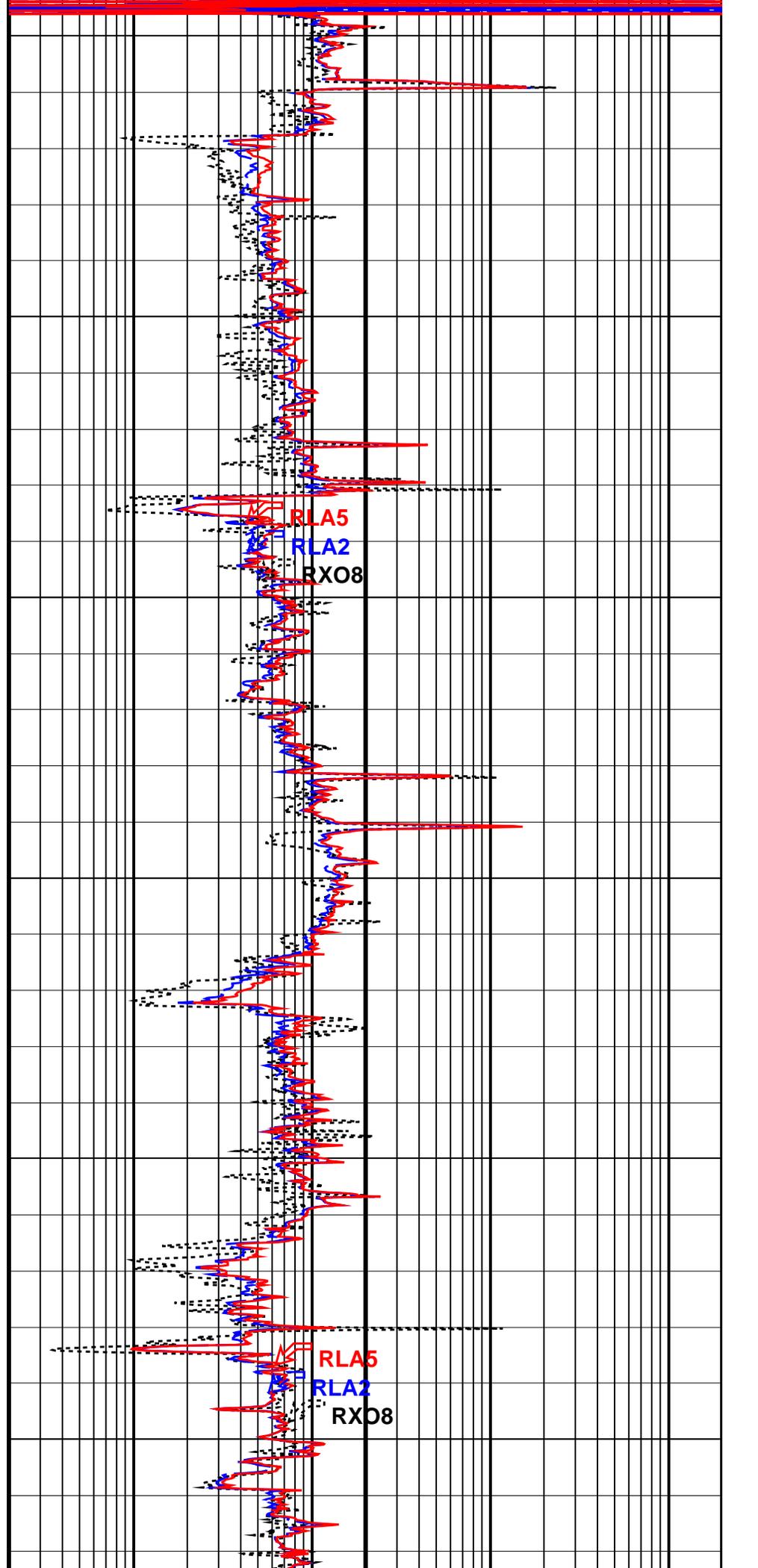
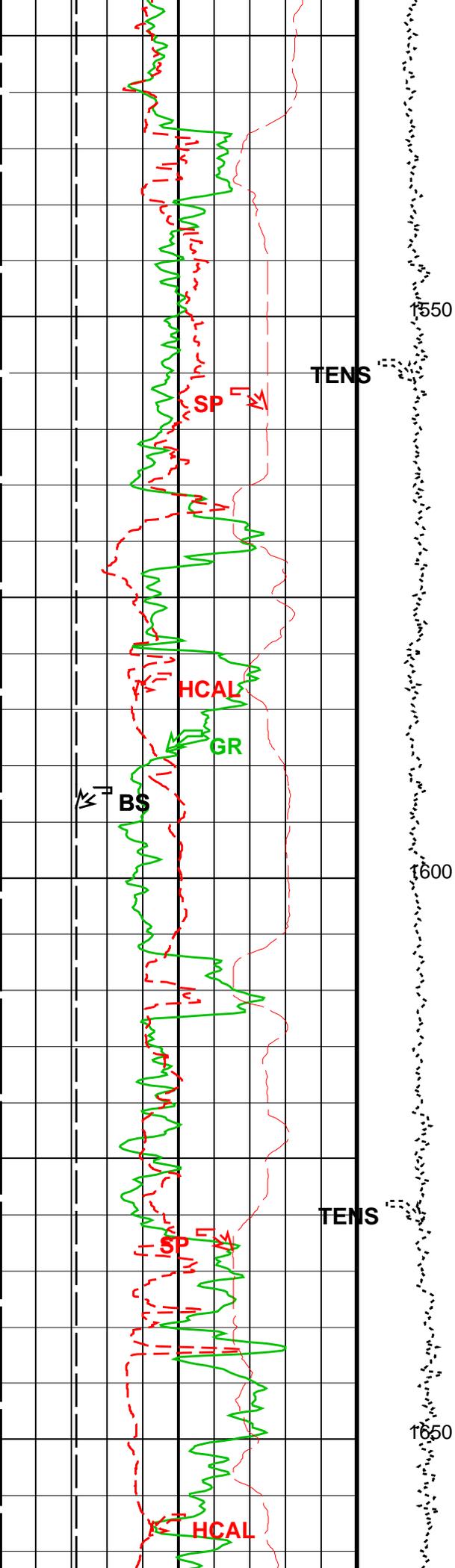
PIP SUMMARY

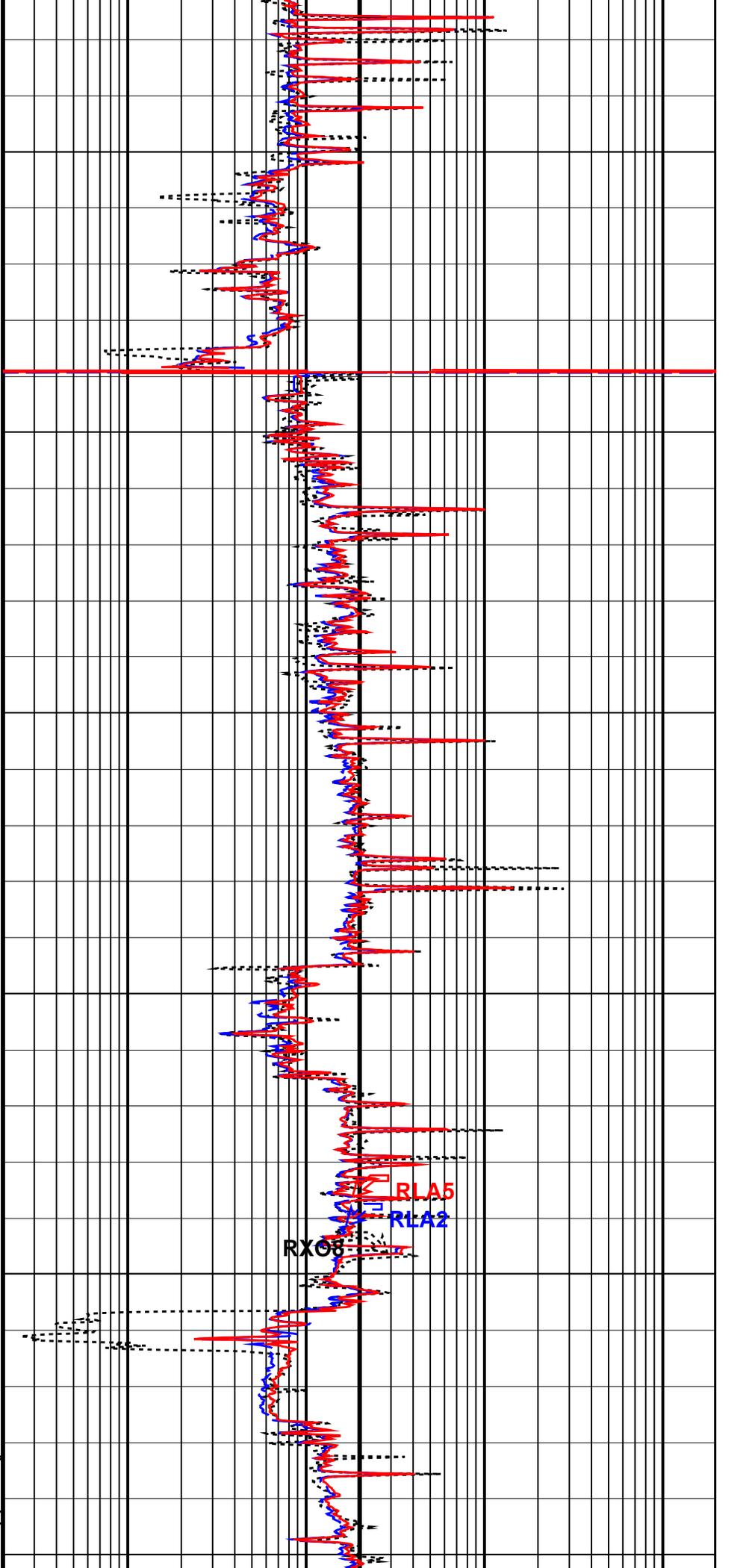
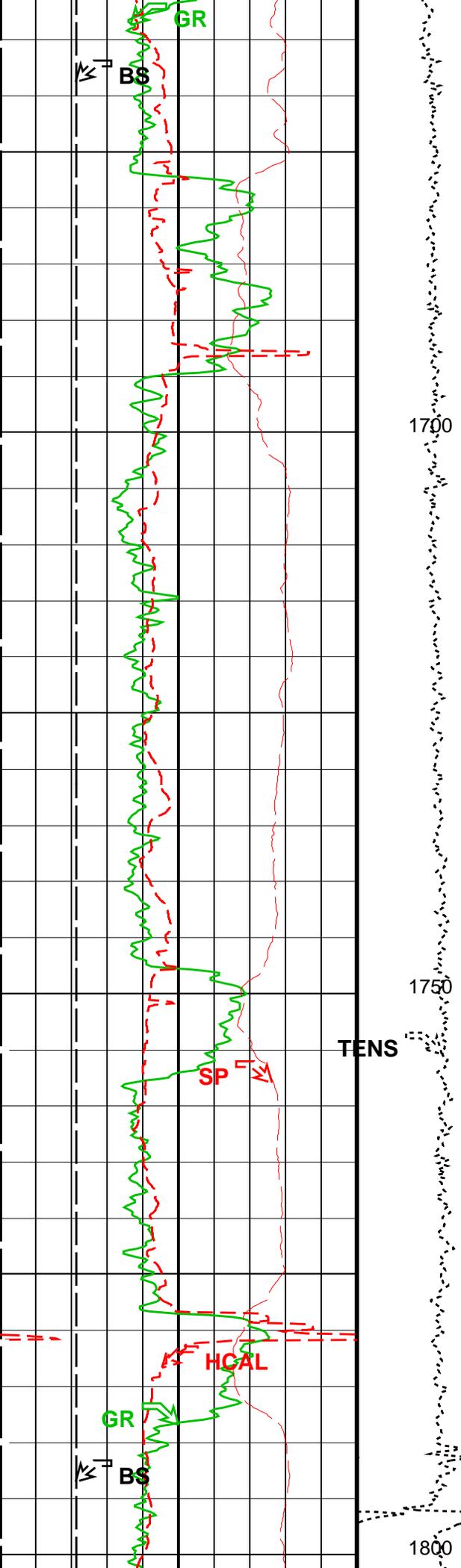
Time Mark Every 60 S

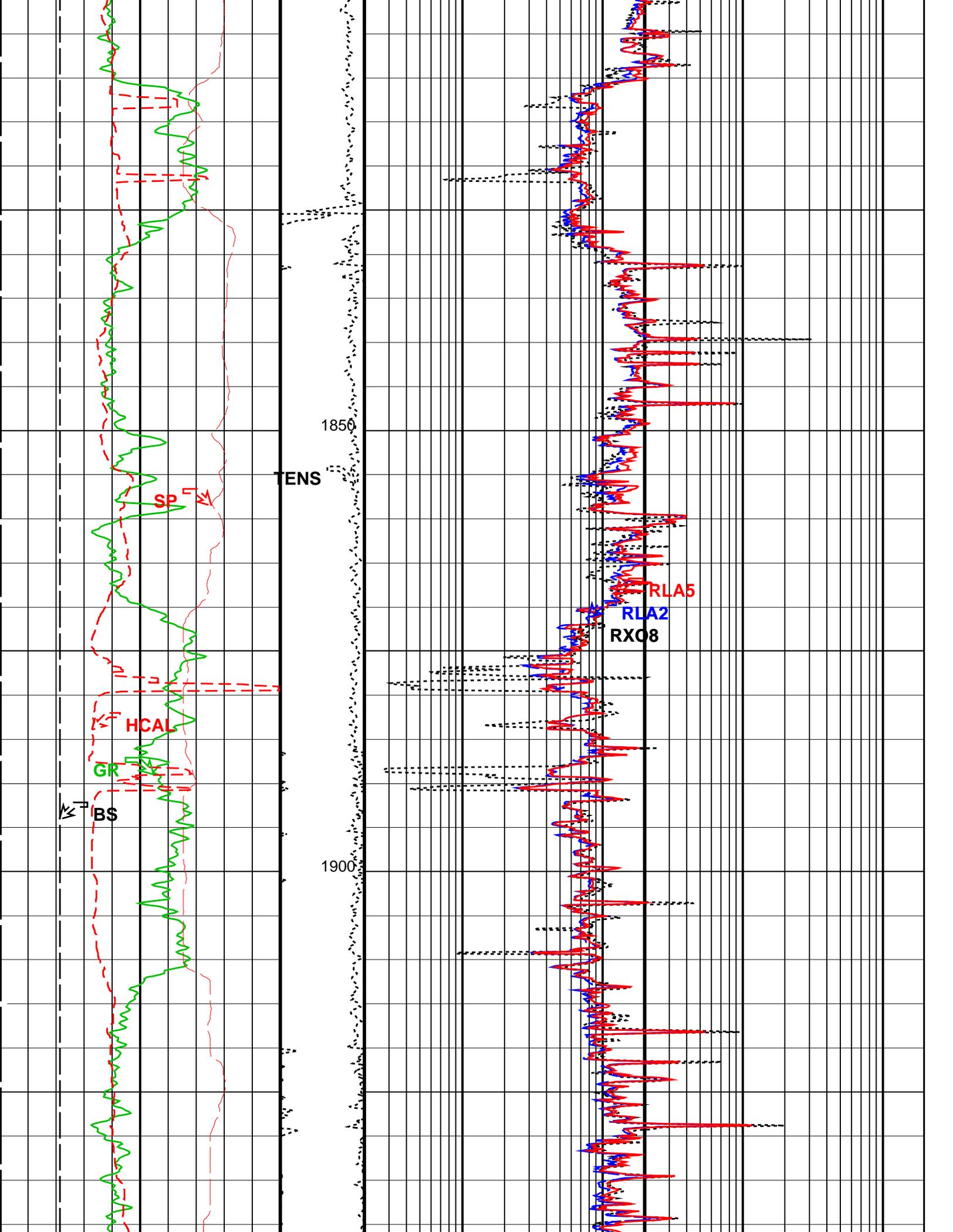
4	HILT Caliper (HCAL) (IN)	14		
0	Gamma Ray (GR) (GAPI)	200		
4	Bit Size (BS) (IN)	14		
0.2	HRLT Resistivity 5 (RLA5) (OHMM)	2000		
0.2	HRLT Resistivity 2 (RLA2) (OHMM)	2000		

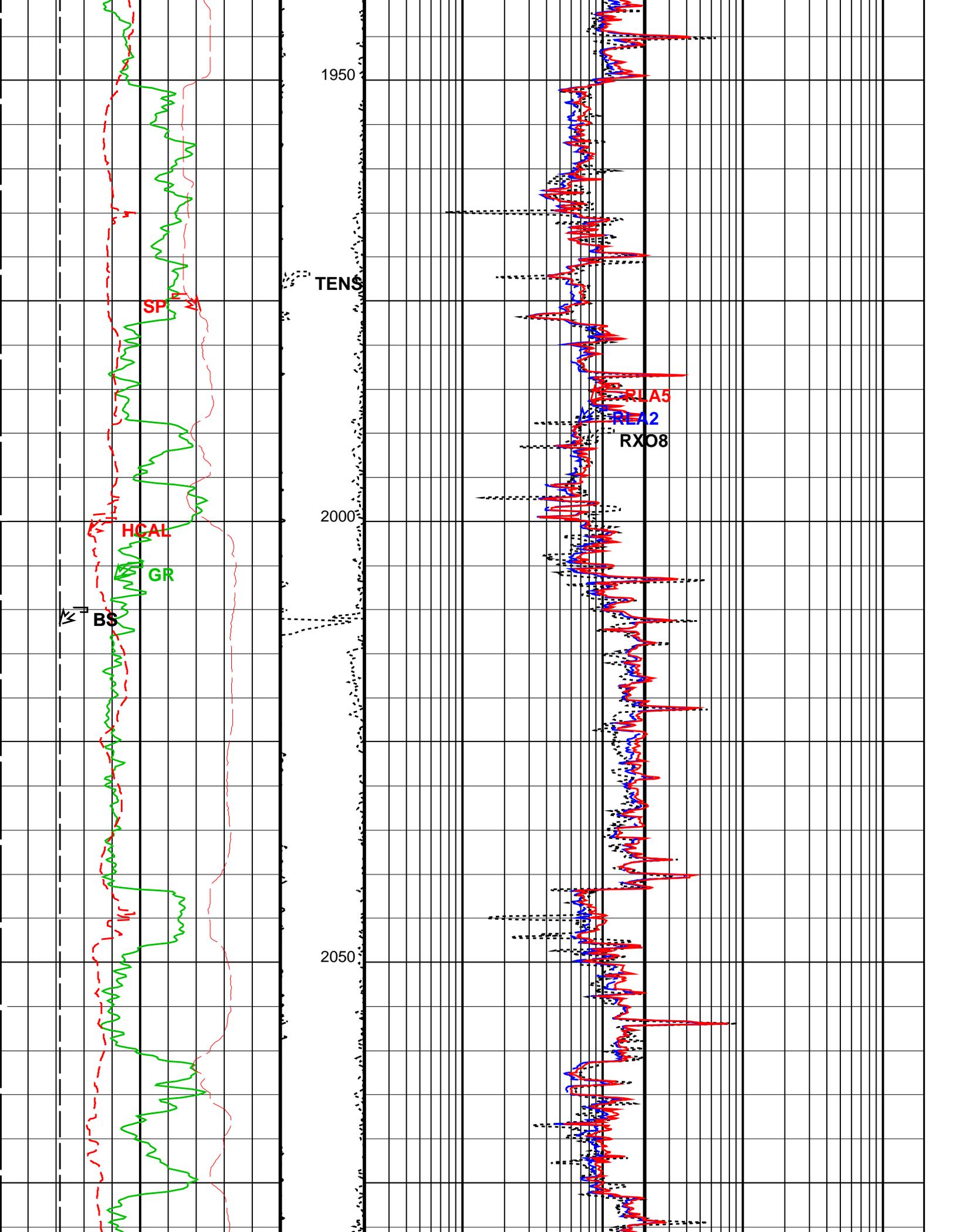


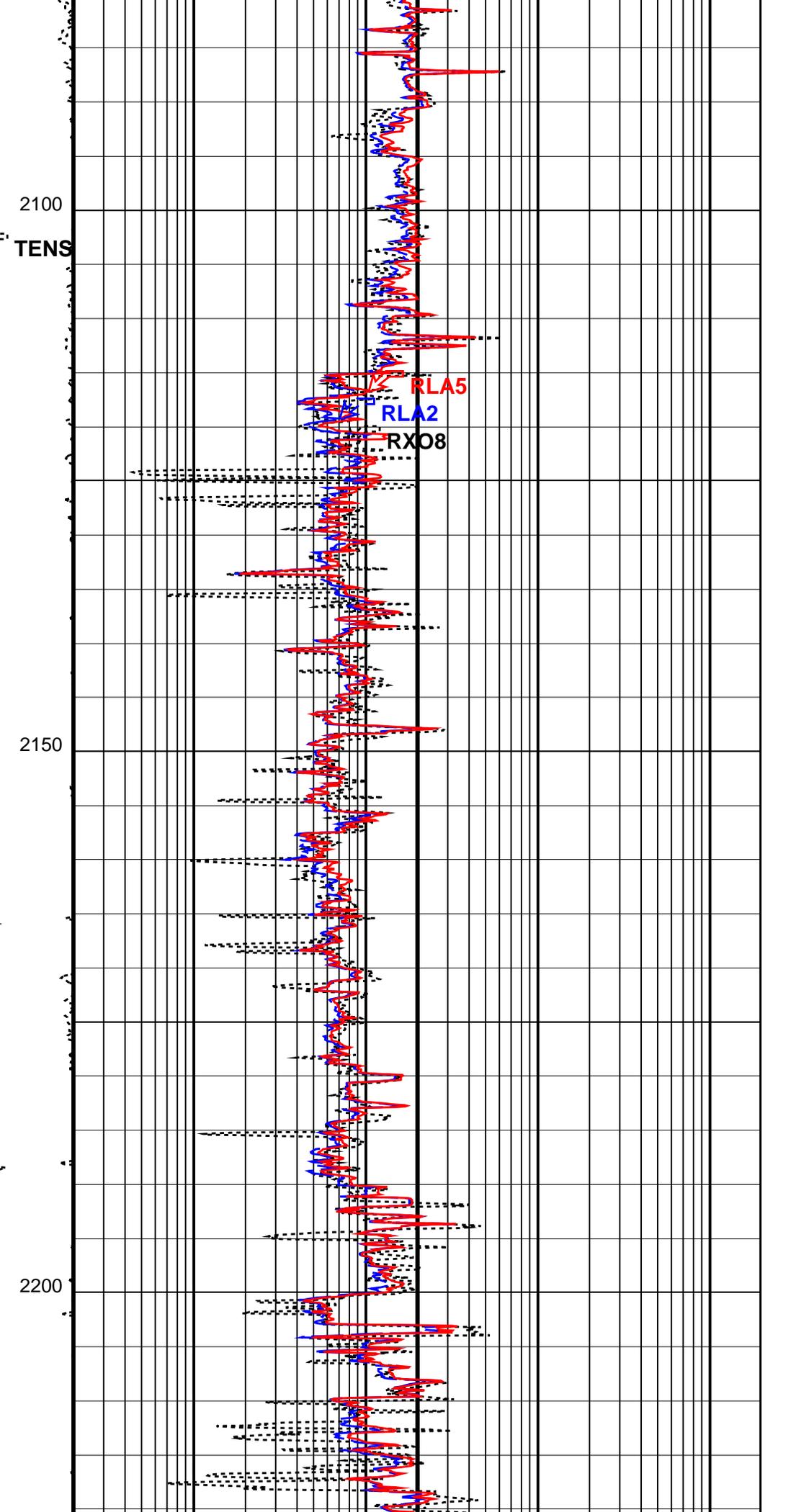
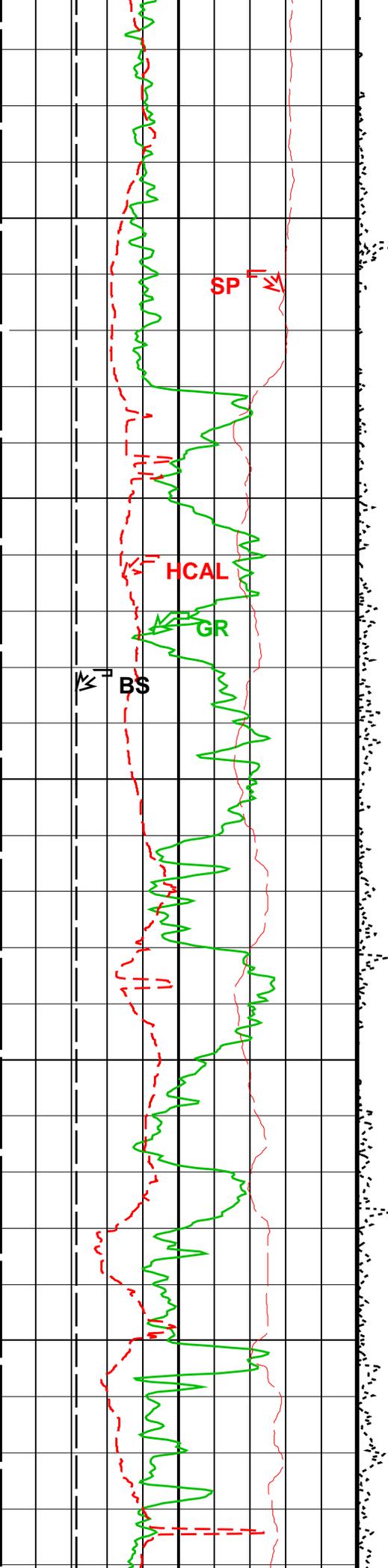


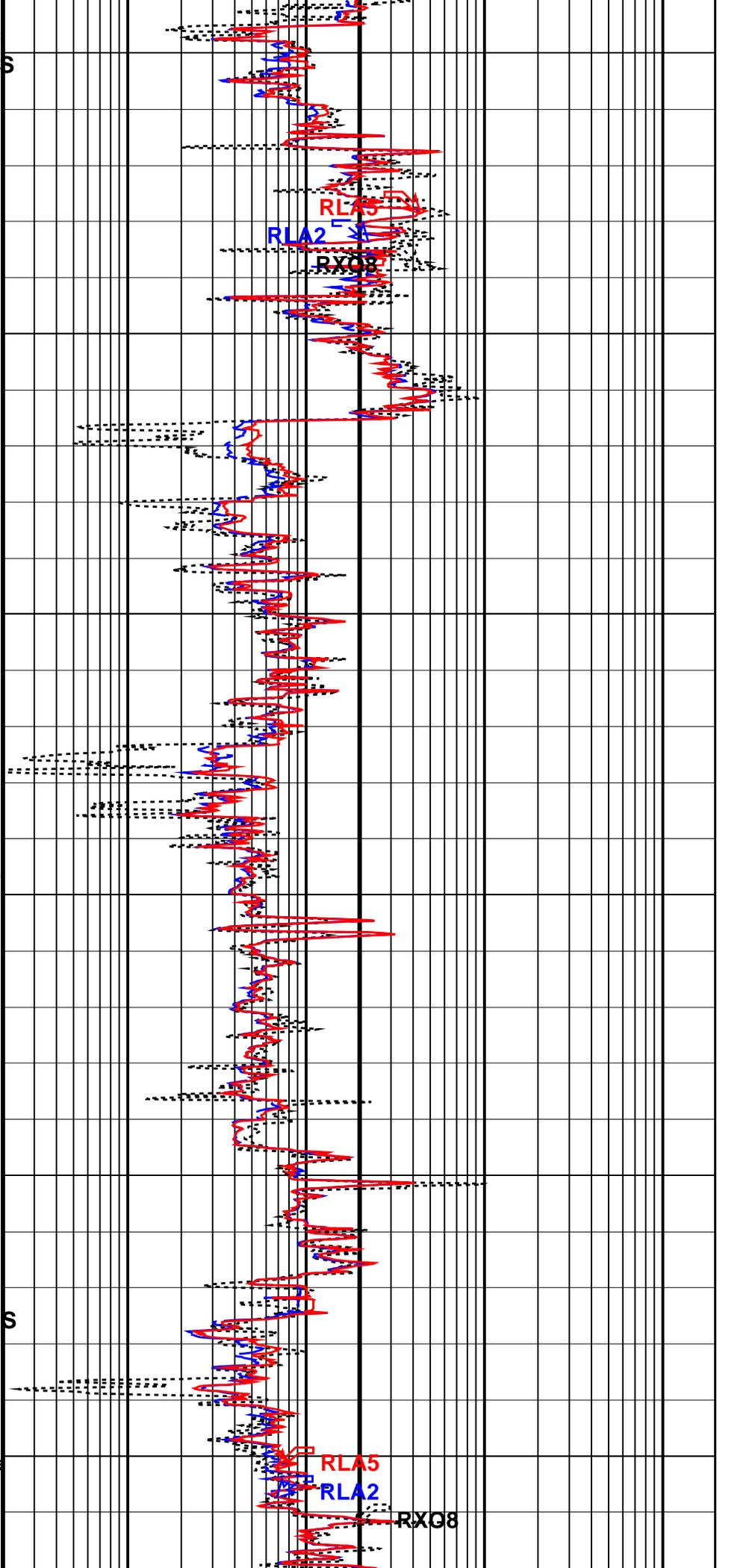
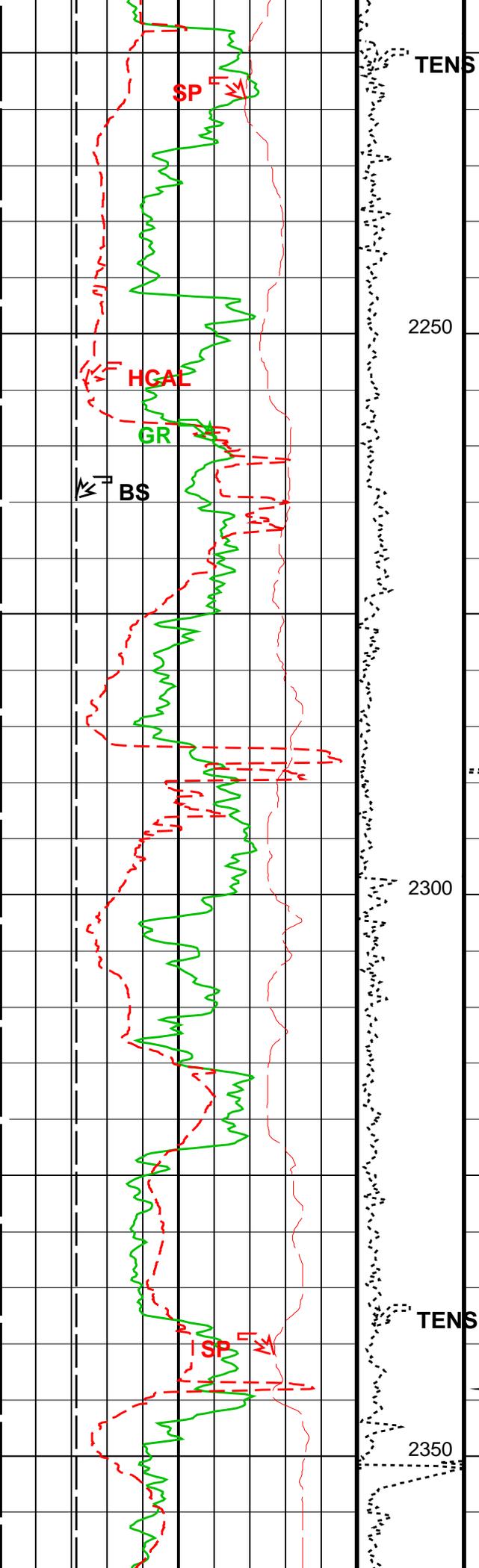


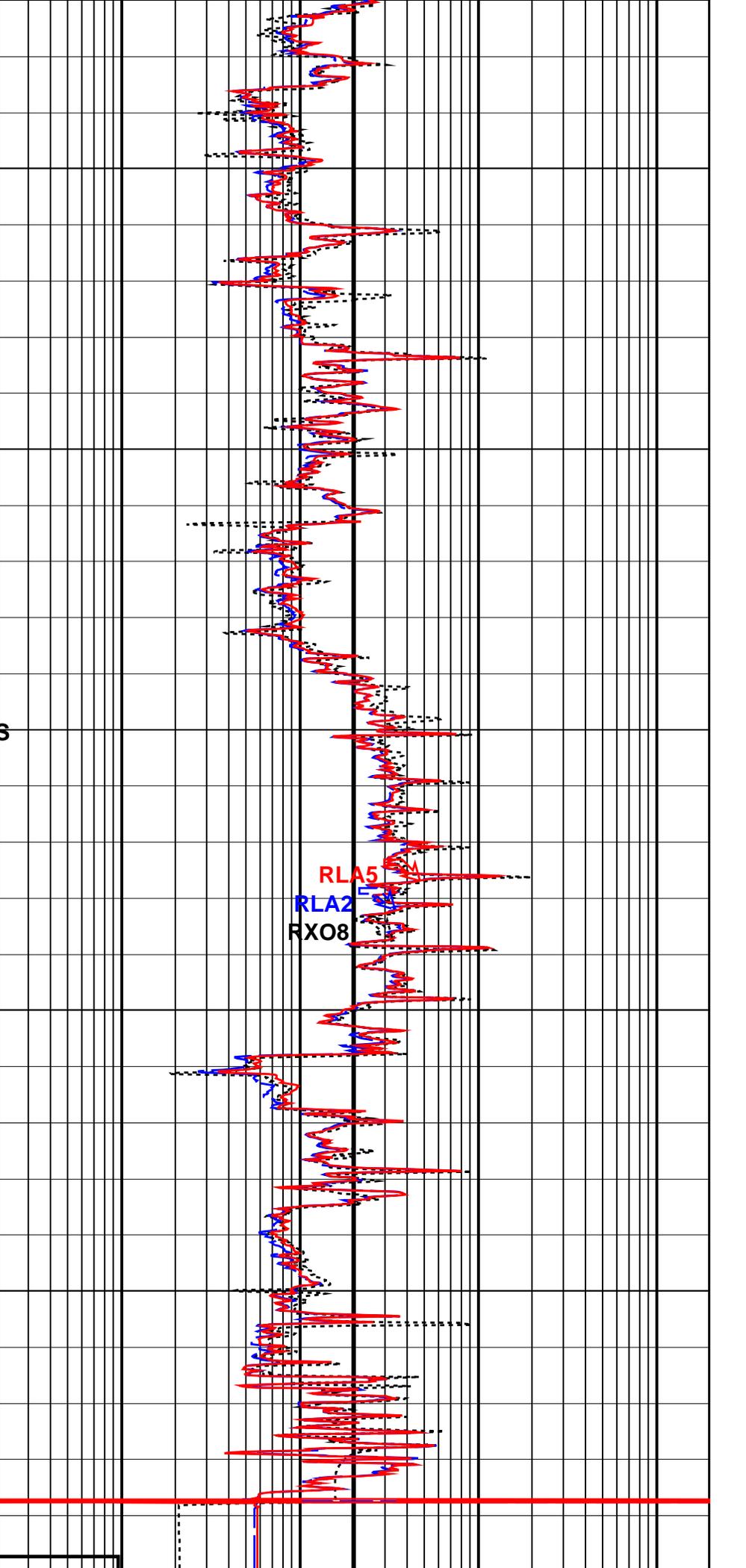
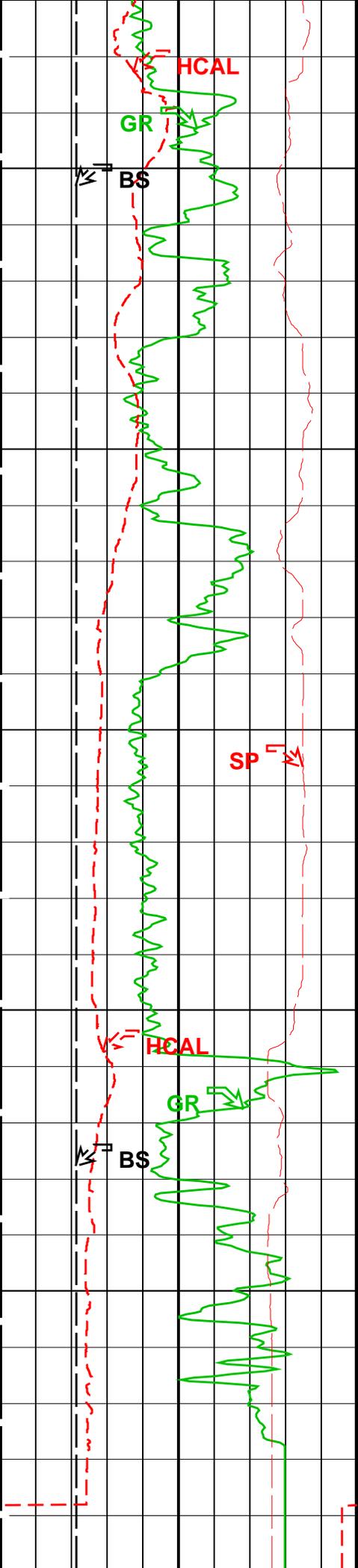


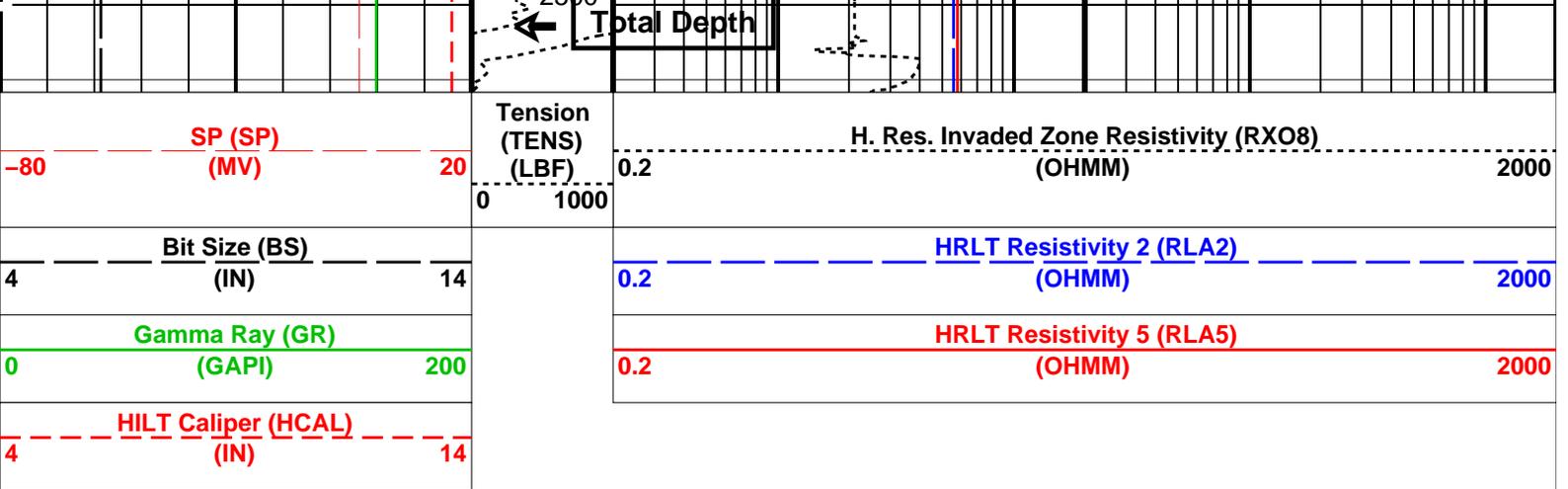












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
KFAC_HRLT	HRLT K Factor Option	SONDE
MPOF	MCFL Processing Operation Mode	ON
	BSP: Bridle SP	
SPNV	SP Next Value	0 MV
	System and Miscellaneous	
BS	Bit Size	6.125 IN
DO	Depth Offset for Playback	0.0 M
PP	Playback Processing	NORMAL

Format: Resistivity_500 Vertical Scale: 1:500 Graphics File Created: 04-Aug-2004 12:09

OP System Version: 12C0-301
MCM

HALS-B	12C0-301	DSLTL-H	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09
---------	----------------------------	-------	----------	-------------------

Sonic
1:500 Scale High Resolution

MAXIS Field Log

Company: Lakes Oil N.L.

Well: Trifon 2

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

OP System Version: 12C0-301

MCM

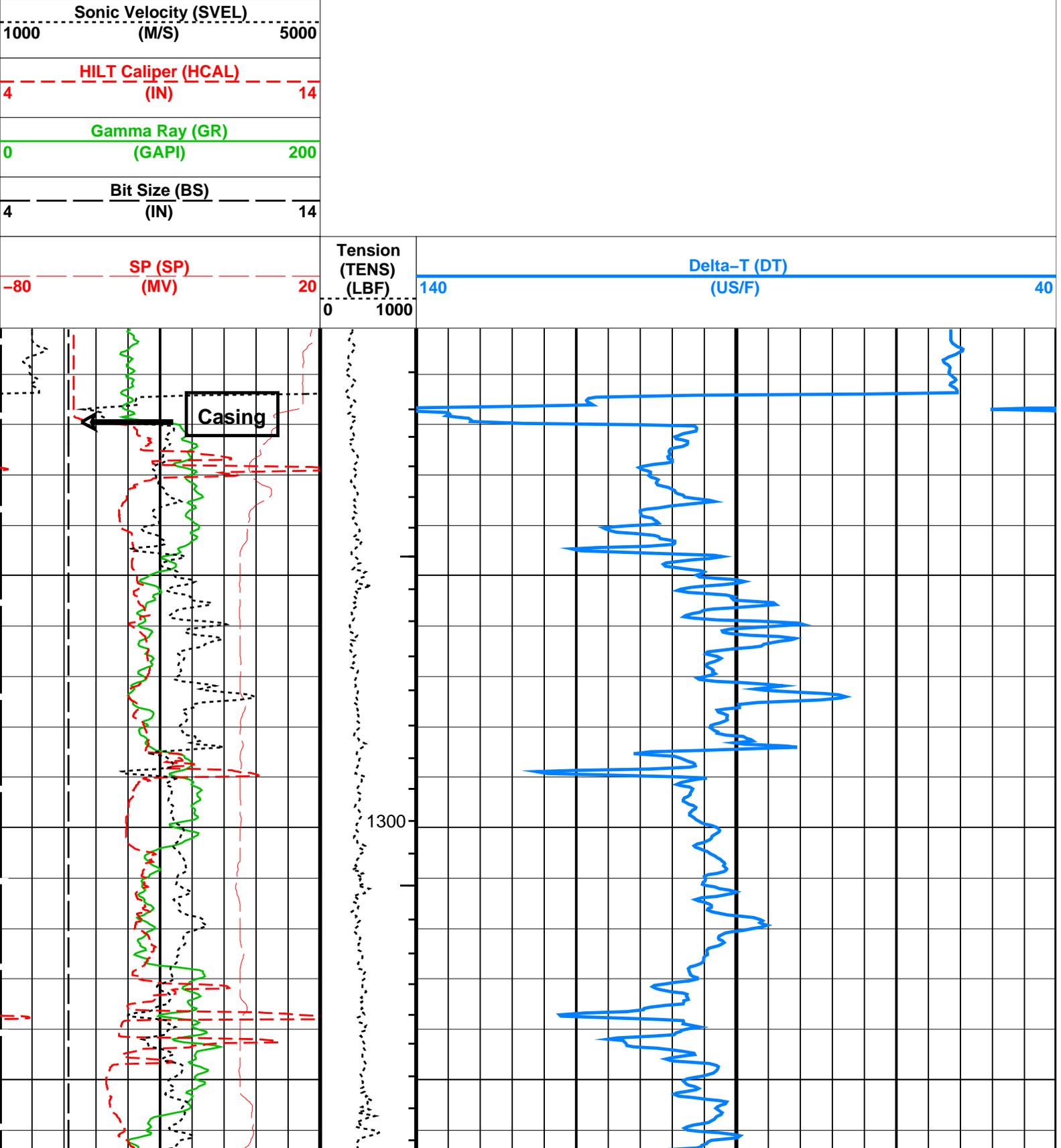
HALS-B 12C0-301
HILTB-FTB 12C0-301
BSP 12C0-301

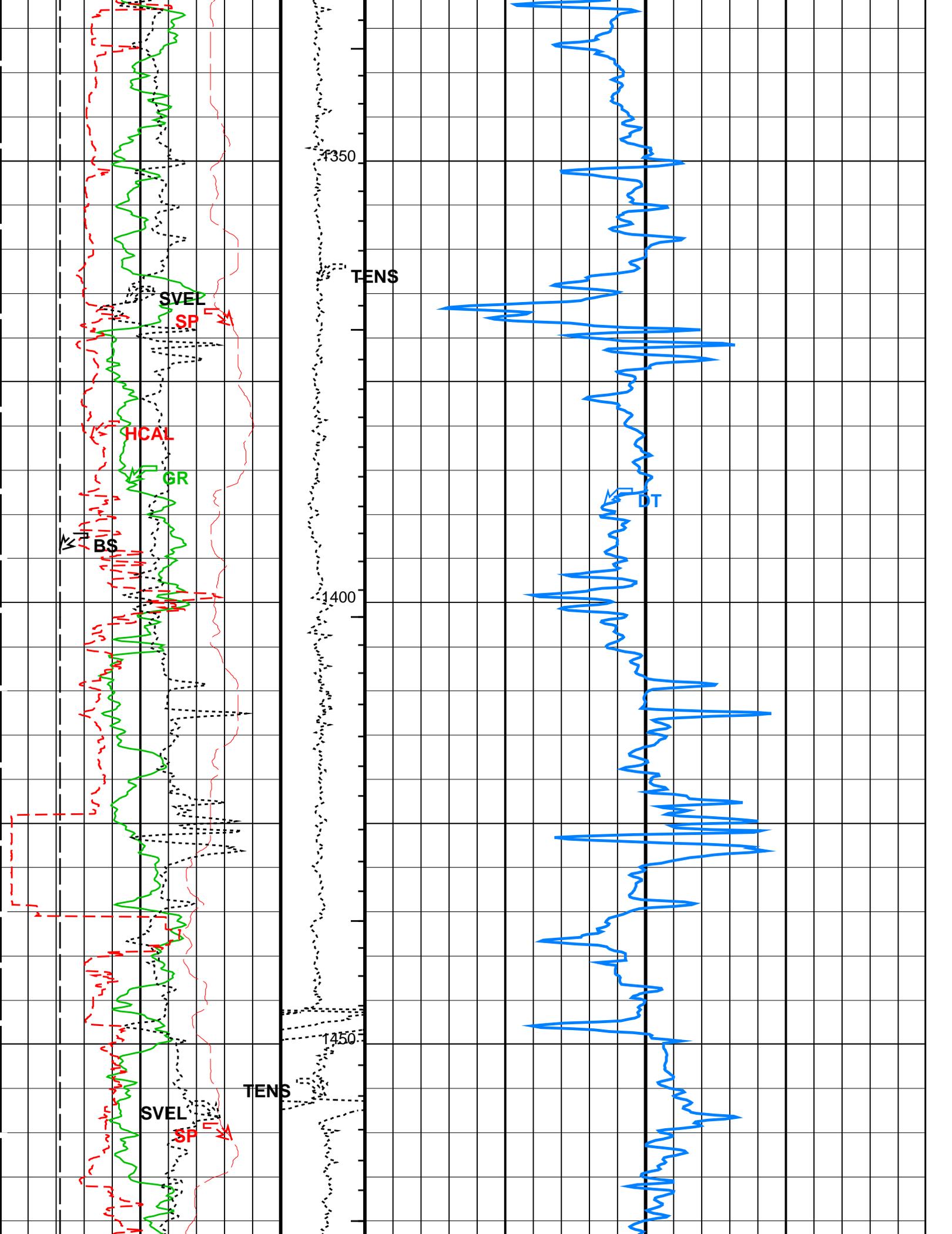
DSLTH 12C0-301
DTC-H 12C0-301

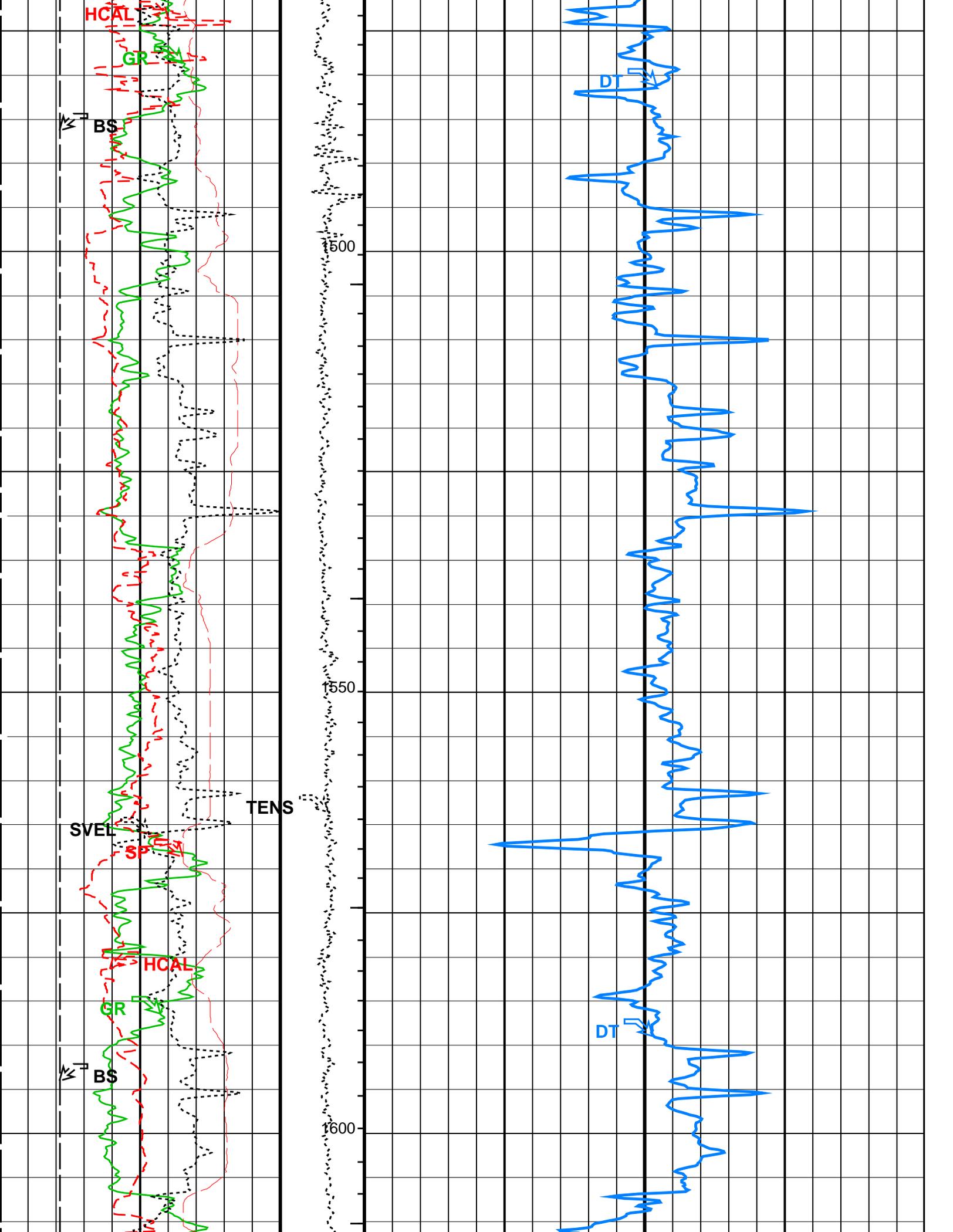
PIP SUMMARY

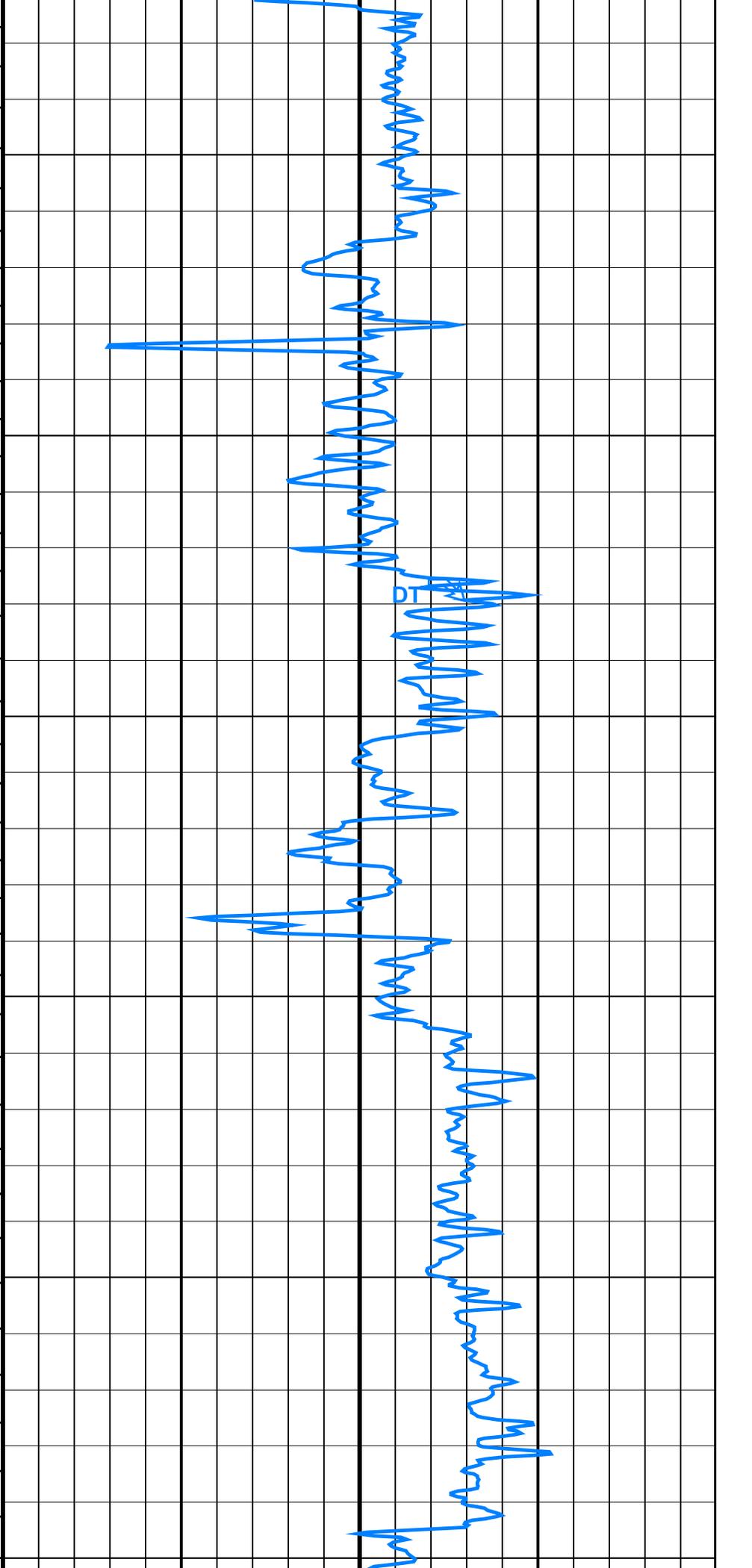
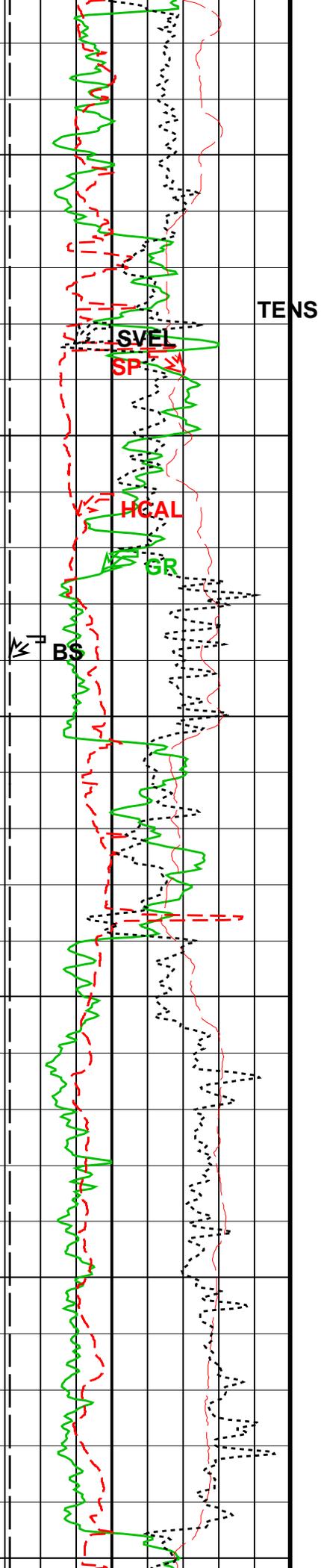
- ┆ Integrated Transit Time Minor Pip Every 1 MS
- ┆ Integrated Transit Time Major Pip Every 10 MS

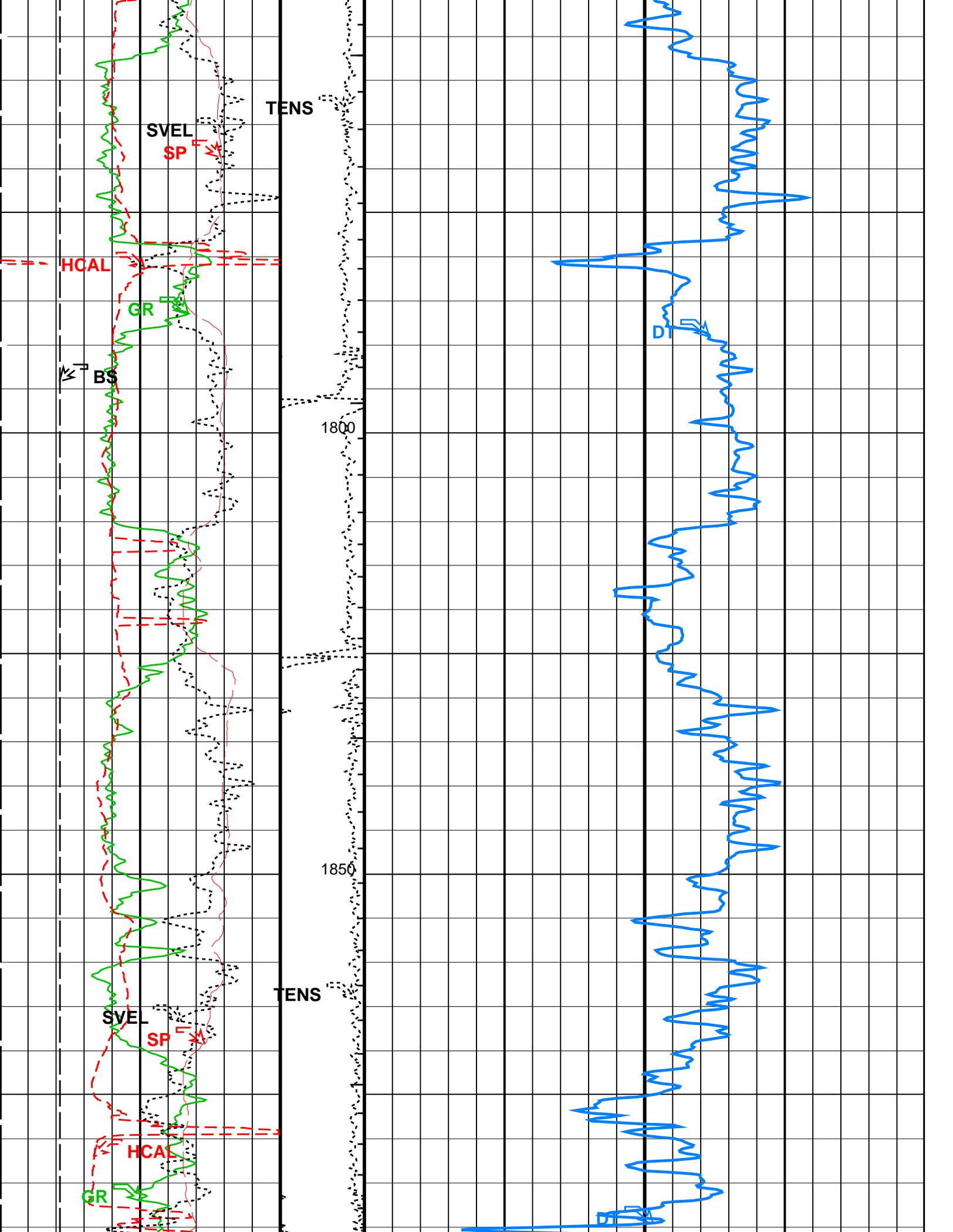
Time Mark Every 60 S

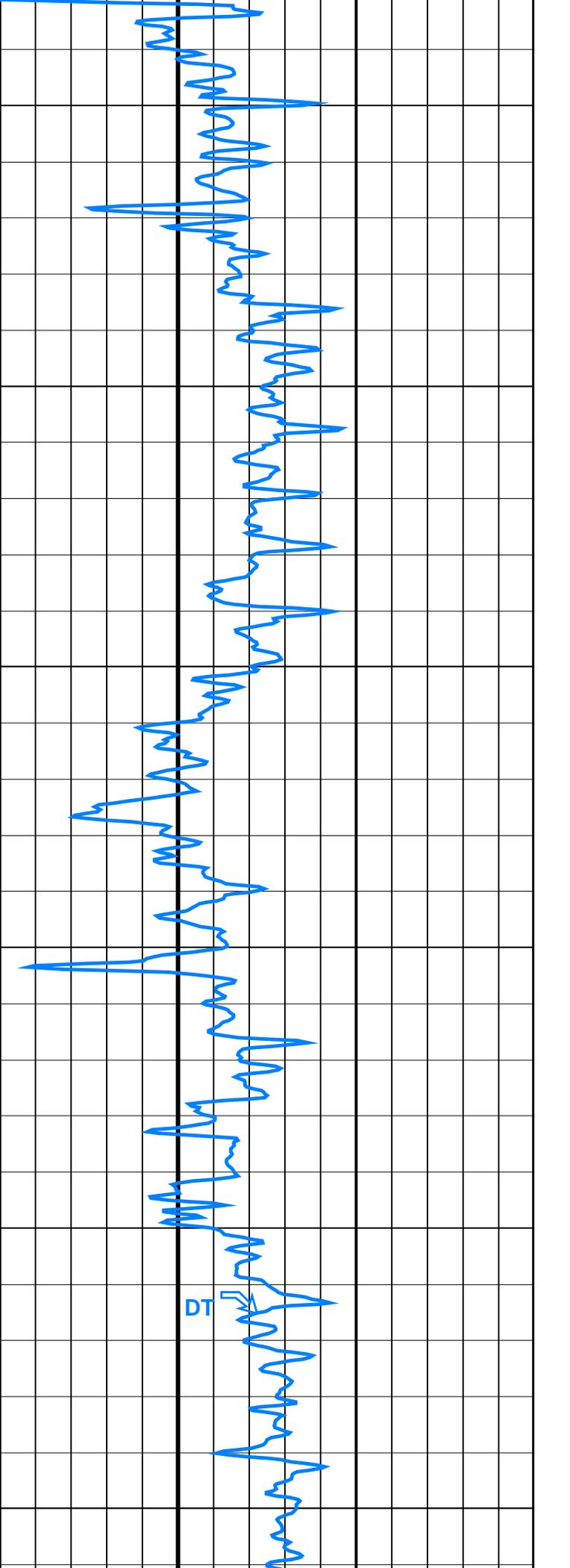
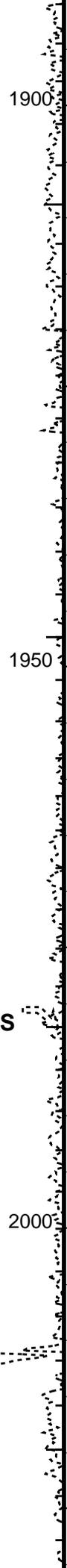
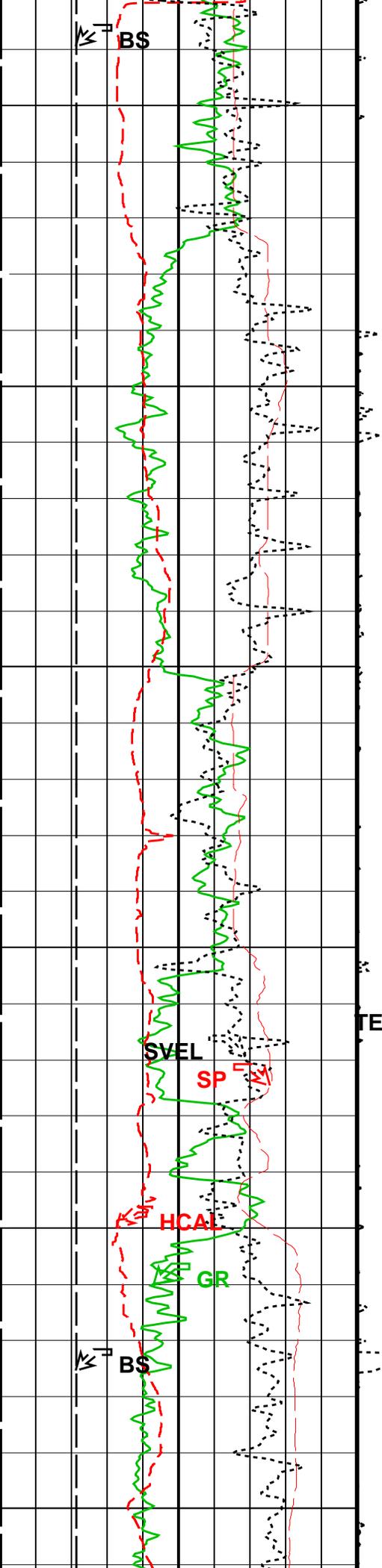


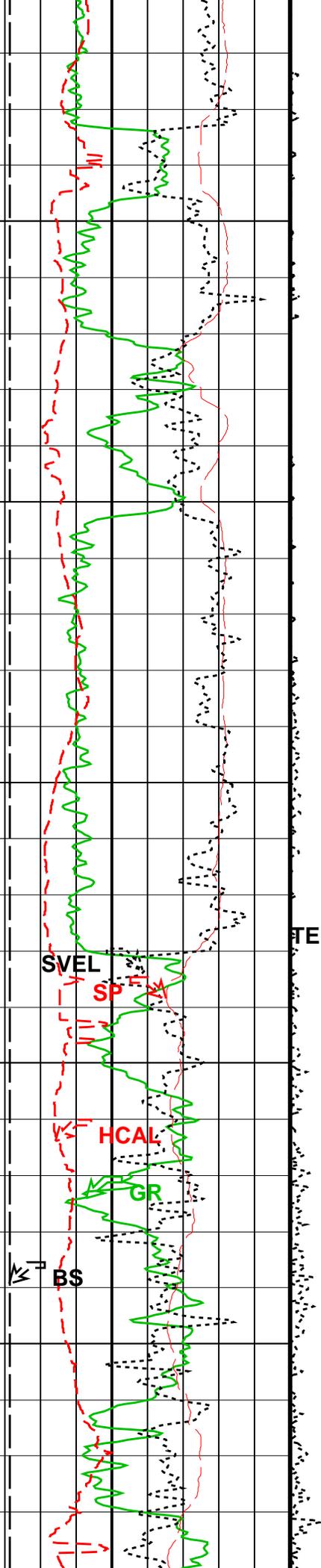




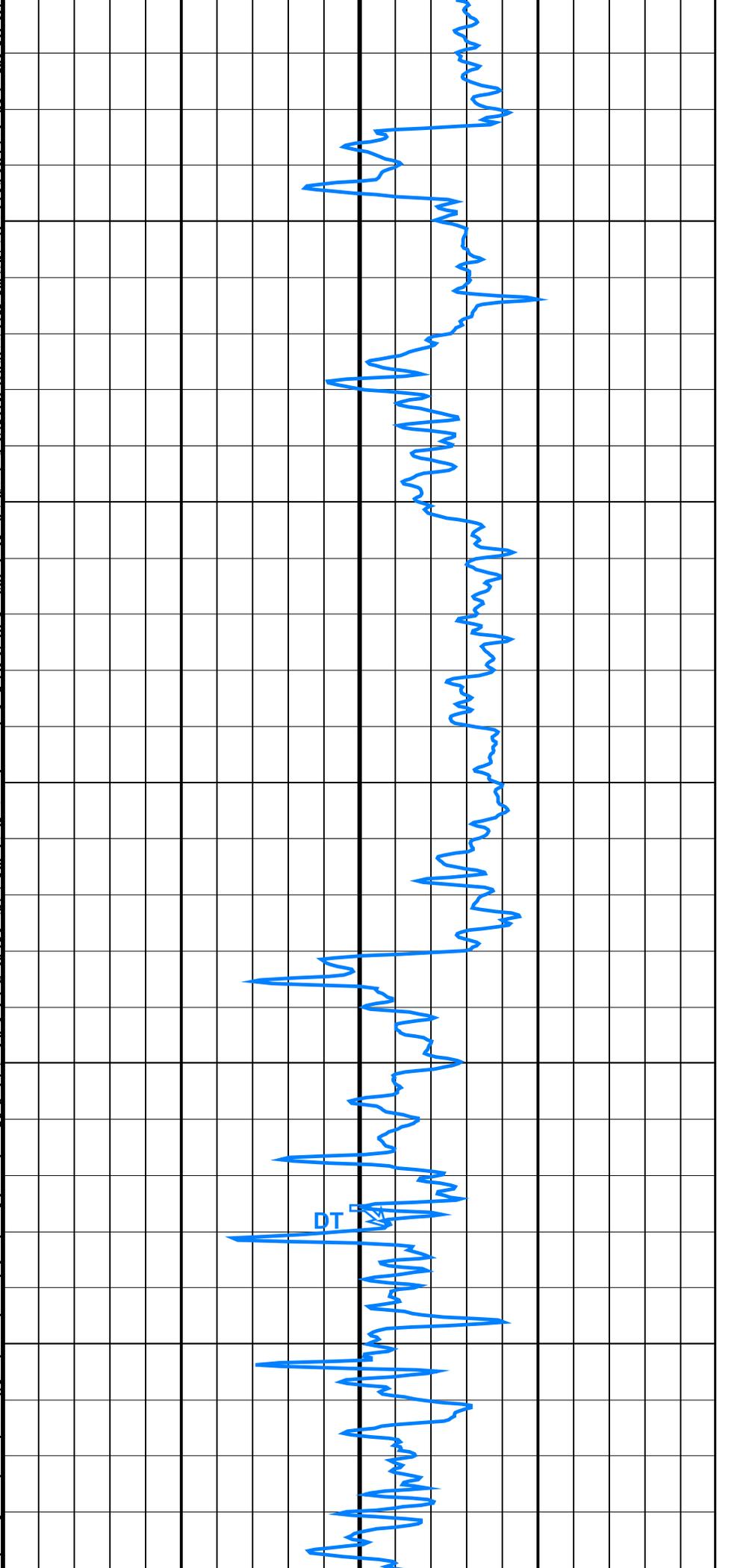






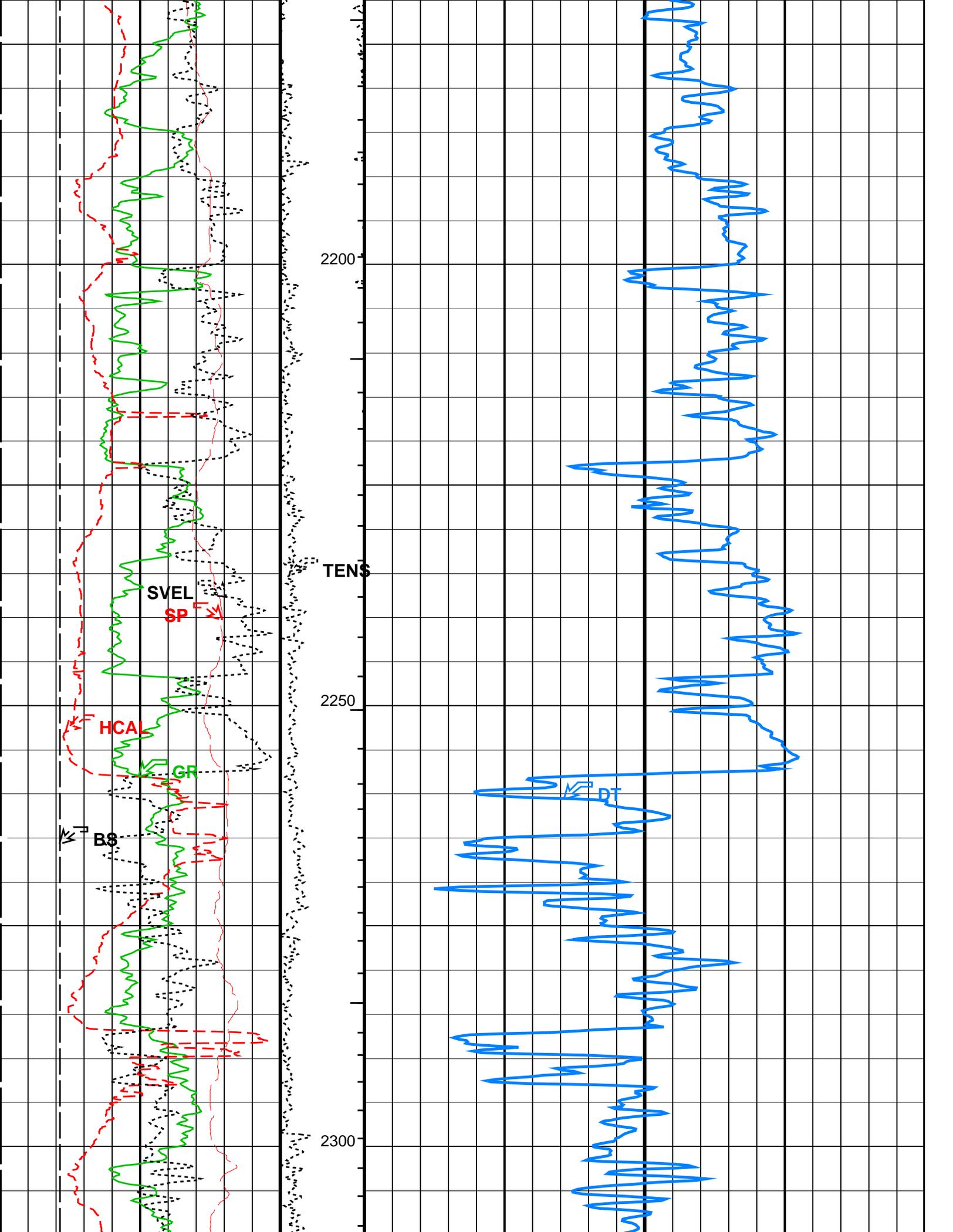


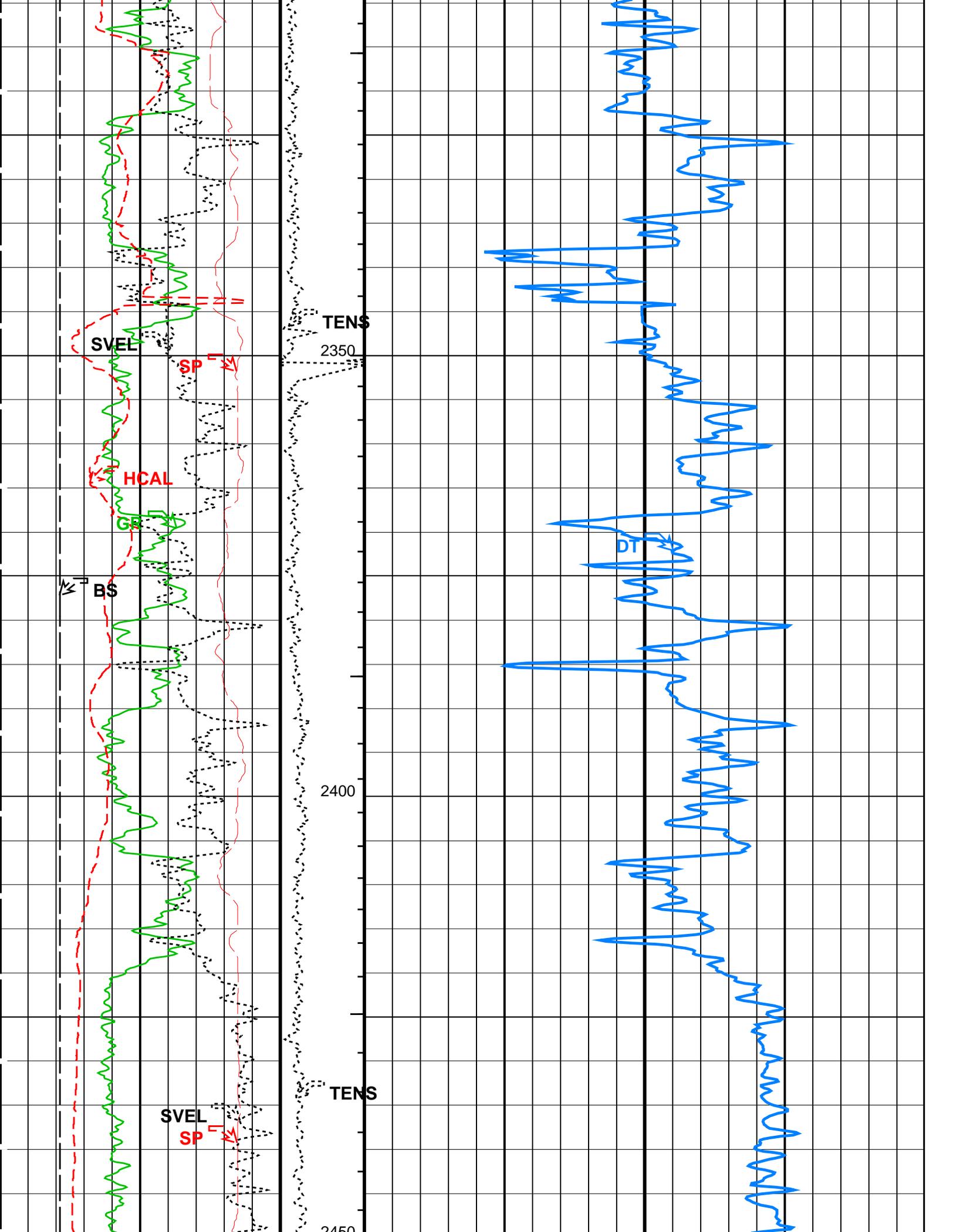
2150
2100
2050

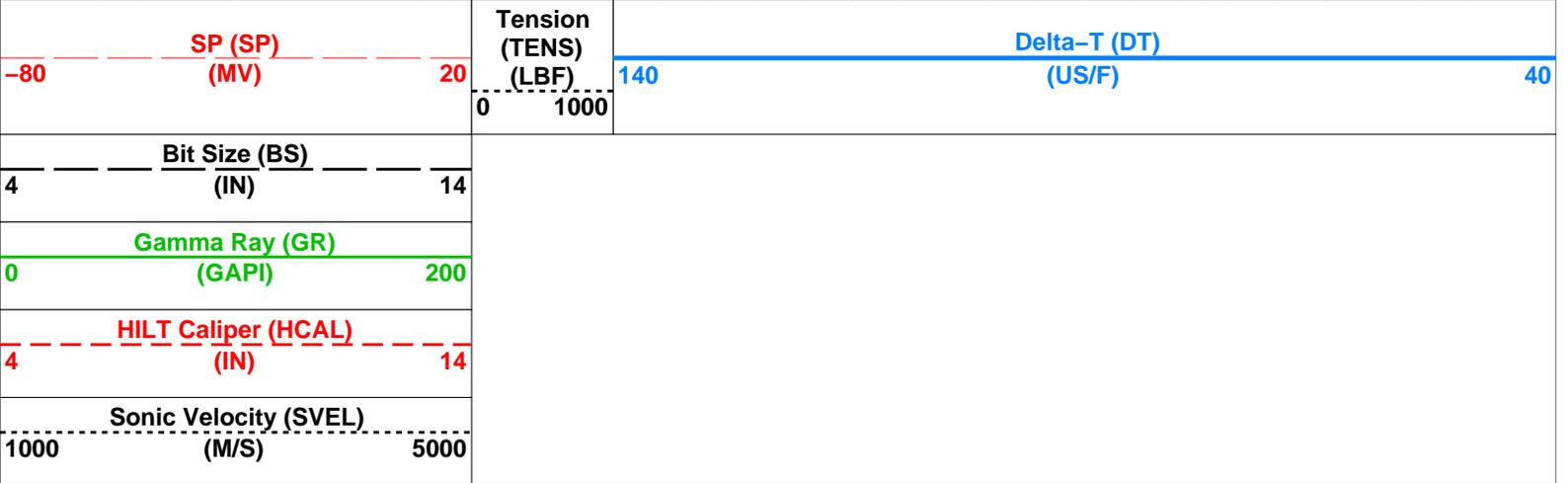
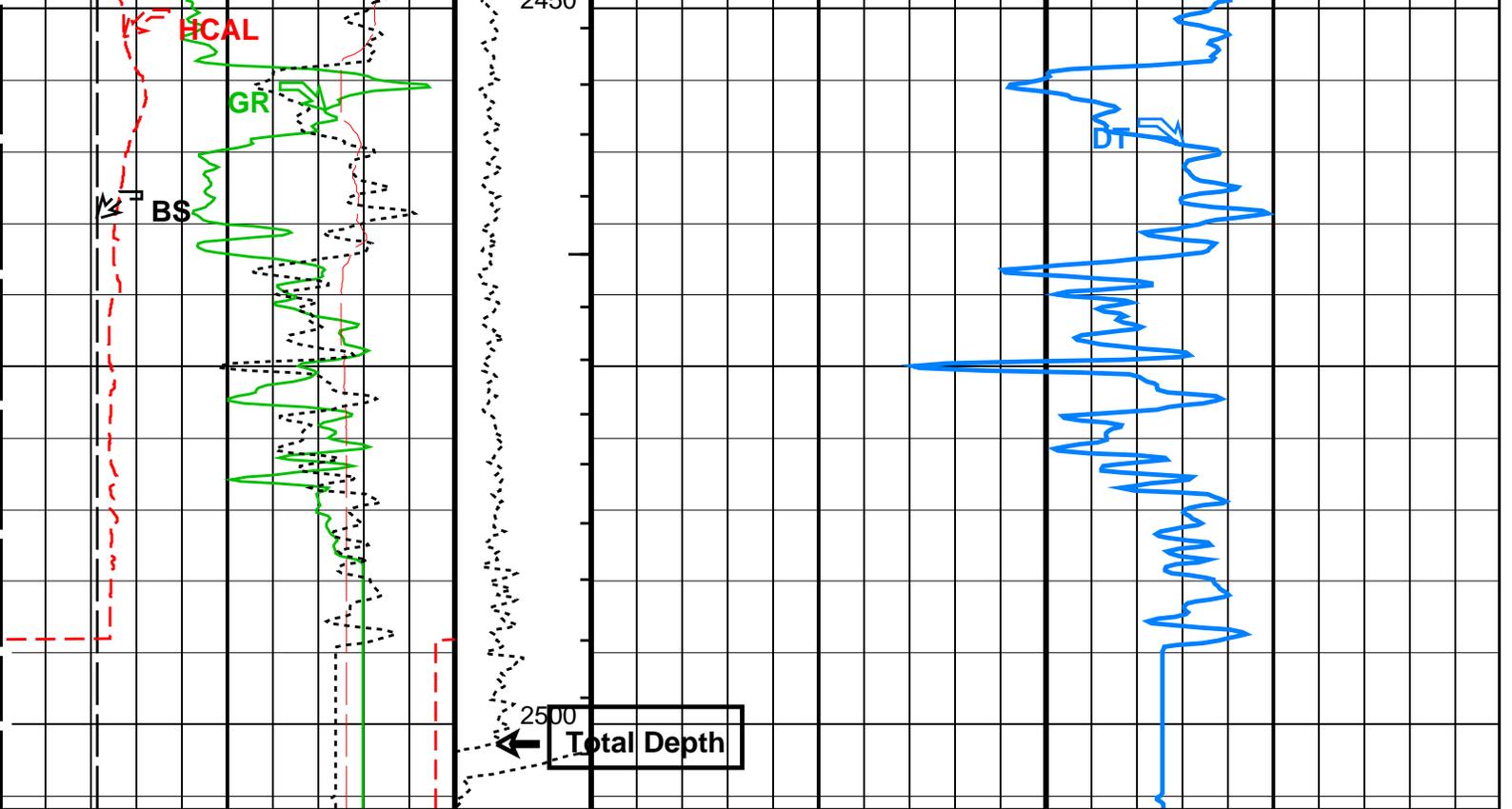


DT

TENS







PIP SUMMARY

- ┆ Integrated Transit Time Minor Pip Every 1 MS
- ┆ Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HALS-B: HILT Azimuthal Laterolog Sonde B	HALS Type of Image	Conductivities
DSLH-H: Digitizing Sonic Logging Tool	Telemetry Mode	DSLH_FT
	DSLH Firing Mode	BHC
DDEL	Digitizing Delay	0 US
DIVL	DSLH Depth Sampling Interval	20
DRCS	DSLH DLIS Recording Size	140
DSIN	Digitizing Sample Interval	10
DTFS	DSLH Telemetry Frame Size	316
DWCO	Digitizing Word Count	140
GAI	Manual Gain	40
ITTS	Integrated Transit Time Source	DT
MAHTR	Manual High Threshold Reference	120
MGAI	Maximum Gain	60
MNHTR	Minimum High Threshold Reference	100
NMSG	Near Minimum Sliding Gate	140 US
NMXG	Near Maximum Sliding Gate	910 US
RATE	Firing Rate	R15
SEAF	Sonic Formation Attenuation Factor	10 DB/M

SPAF	Sonic Formation Attenuation Factor	10	DB/M
SGCL	Sliding Gate Closing Delta-T	140	US/F
SGDT	Sliding Gate Delta-T	40	US/F
SGW	Sliding Gate Width	110	US
SLEV	Signal Level for AGC	5000	
WMOD	Waveform Firing Mode	FULL	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
System and Miscellaneous			
BS	Bit Size	6.125	IN
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

Format: Sonic_500 Vertical Scale: 1:500 Graphics File Created: 04-Aug-2004 12:09

OP System Version: 12C0-301

MCM

HALS-B	12C0-301	DSLTH	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04-Aug-2004 11:55	2505.9 M	1213.0 M
---------	----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04-Aug-2004 12:09		
---------	----------------------------	-------	----------	-------------------	--	--



Repeat Analysis 1:200 Scale

MAXIS Field Log

Company: Lakes Oil N.L. Well: Trifon 2

Input DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_014LUP	FN:19	PRODUCER	03-Aug-2004 22:51	2506.2 M	2406.1 M
---------	----------------------------	-------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_015LUP	FN:21	PRODUCER	03-Aug-2004 23:13		
---------	----------------------------	-------	----------	-------------------	--	--

OP System Version: 12C0-301

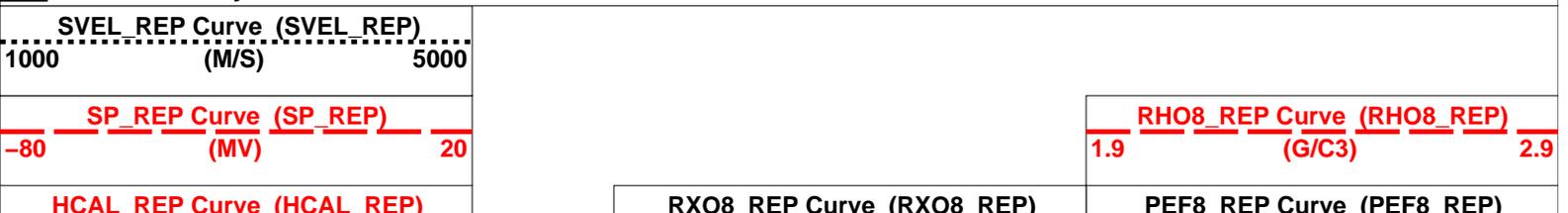
MCM

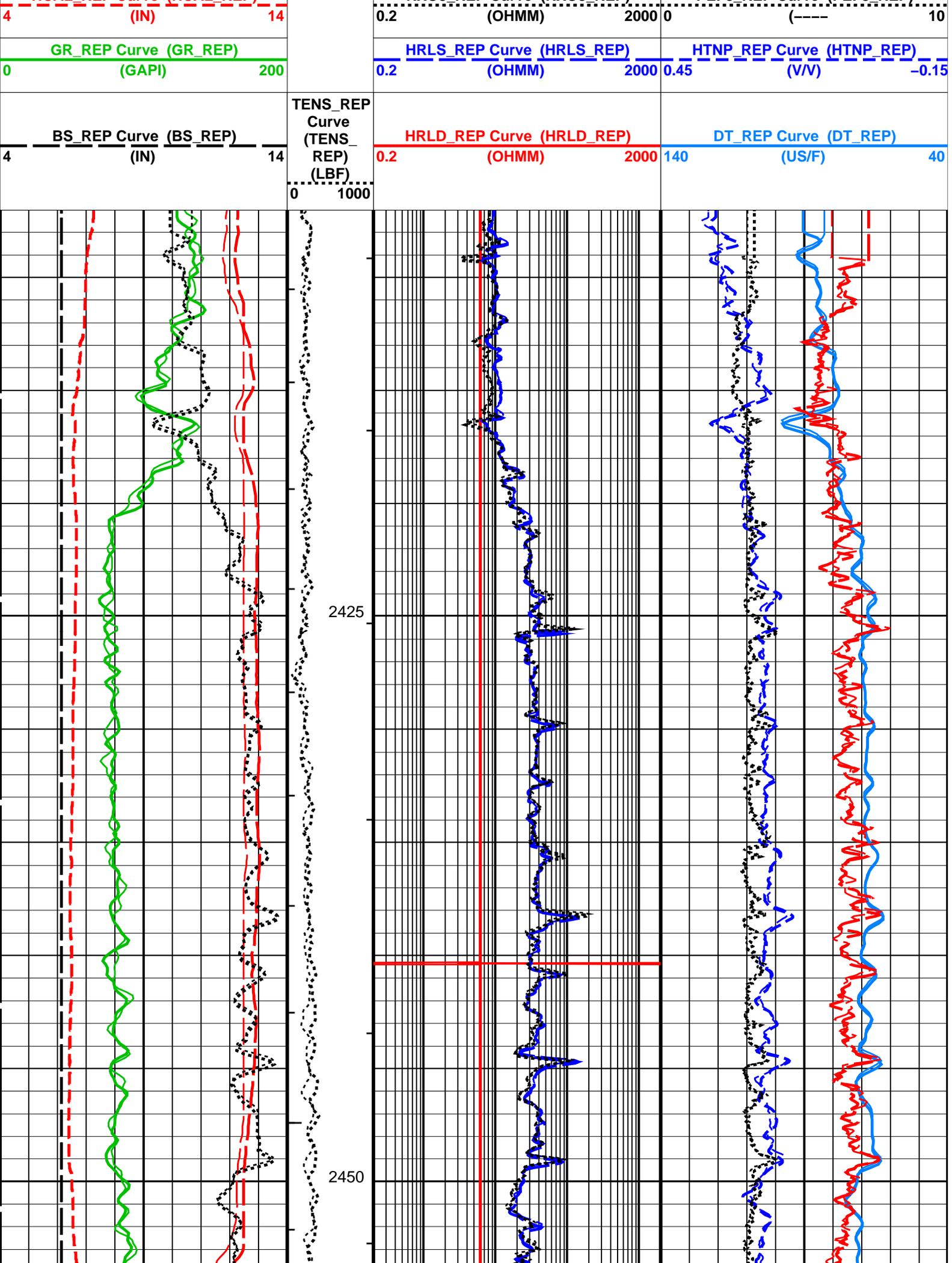
HALS-B	12C0-301	DSLTH	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
 - ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
 - ┆ Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S





		(LBT)	0	1000		
<u>GR_REP Curve (GR_REP)</u>		<u>HRLS_REP Curve (HRLS_REP)</u>	<u>HTNP_REP Curve (HTNP_REP)</u>			
0	(GAPI)	200	0.2	(OHMM)	2000	0.45 (V/V) -0.15
<u>HCAL_REP Curve (HCAL_REP)</u>		<u>RXO8_REP Curve (RXO8_REP)</u>		<u>PEF8_REP Curve (PEF8_REP)</u>		
4	(IN)	14	0.2	(OHMM)	2000	0 (----) 10
<u>SP_REP Curve (SP_REP)</u>		<u>RHO8_REP Curve (RHO8_REP)</u>				
-80	(MV)	20			1.9 (G/C3) 2.9	
<u>SVEL_REP Curve (SVEL_REP)</u>						
1000	(M/S)	5000				

PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
 - ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
 - ┆ Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HALS-B: HILT Azimuthal Laterolog Sonde B		
A2EX	HALS Type of Image	Conductivities
AGOS	HALS-B A2 Extended (Groningen effect)	OFF
ARIP_LTS	HALS-GPIT OFFSET	-90 IN
ARIP_SHOULDER	HALS Long Tool String Correction	OFF
BHCC	HALS Shoulder Correction	OFF
BHS	HALS Borehole Correction	ON
BHT	Borehole Status	OPEN
DHOP	Bottom Hole Temperature (used in calculations)	80 DEGC
	Diameter & Eccentering used in HALS Borehole Corrections	Caliper_Eccentered
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRCC	HALS Groningen Correction	OFF
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HLAC	HALS-B Loop A Coefficient	LOW
HLMO	HALS Logging Mode	HIRES
HMSO	HALS Mechanical Standoff	0.5 IN
HRUN	HALS-B Record Uncalibrated Channels	NO
IMOS	HALS Image Orientation	OFF
LIMP	HALS Left Image Processing	DeepRaw
LOP1	HALS-B Mode 1 Loop Mode	OFF
LOP2	HALS-B Mode 2 Loop Mode	OFF
LOP3	HALS-B Mode 3 Loop Mode	OFF
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
RIMP	HALS Right Image Processing	ShallowRaw
RTCOMP	HALS Rt Computation	Hals_Highres
RTRE	HALS Resistivity Threshold	100000 OHMM
SHT	Surface Hole Temperature	20 DEGC
SPCO	HALS-B Special Power Connection	ON
TCOR	HALS TLC Correction	OFF
UNSPK	HALS Despiking Filter Option	OFF
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20 %
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6 IN
DSLTL-H: Digitizing Sonic Logging Tool		
	Telemetry Mode	DSLCL_FTB
	DSLTL Firing Mode	BHC
AGC	Automatic Gain Control Status	ON
AMSG	Auxiliary Minimum Sliding Gate	140 US
BILI	Bond Index Level for Zone Isolation	0.8
CBAF	CBL Adjustment Factor	1
CBCF	CBL Correction Factor	4
CBLG	CBL Gate Width	45 US
CDTS	C-Delta-T Shale	100 US/F
CSTR	Compressive Strength of Cement	0 KPAA
DDEL	Digitizing Delay	0 US
DETE	Delta-T Detection	E2
DFAD	Digital First Arrival Detection Switch	DSP
DIVL	DSLTL Depth Sampling Interval	20
DRCS	DSLTL DLIS Recording Size	140
DSIN	Digitizing Sample Interval	10
DTCM	Delta-T Computation Mode	FULL

DTF	Delta-T Fluid	189	US/F
DTFS	DSLCL Telemetry Frame Size	316	
DTM	Delta-T Matrix	56	US/F
DWCO	Digitizing Word Count	140	
FCF	CBL Fluid Compensation Factor	1	
GAI	Manual Gain	40	
GOBO	Good Bond	2	MV
HRSP	High Resolution Spacing	5.118	IN
ITTS	Integrated Transit Time Source	DT	
LTUT	Lower to Upper Transmitter Spacing Ratio	1	
MAHTR	Manual High Threshold Reference	120	
MCI	Minimum Cemented Interval for Isolation	3.048	M
MGAI	Maximum Gain	60	
MIGA	Minimum Gain	1	
MNHTR	Minimum High Threshold Reference	100	
MODE	Sonic Firing Mode	BHC	
MSA	Minimum Sonic Amplitude	18.4103	MV
NMSG	Near Minimum Sliding Gate	140	US
NMXG	Near Maximum Sliding Gate	910	US
NUMP	Number of Detection Passes	2	
RATE	Firing Rate	R15	
RDFA	Reset DFAD	OFF	
SDTH	Switch Down Threshold	20000	
SFAF	Sonic Formation Attenuation Factor	10	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta-T	140	US/F
SGCW	Sliding Gate Closing Width	25	US
SGDT	Sliding Gate Delta-T	40	US/F
SGW	Sliding Gate Width	110	US
SLEV	Signal Level for AGC	5000	
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
SUTH	Switch Up Threshold	1000	
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	OFF	
WGAI	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta-T	240	US/F
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e-005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e-005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	

NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
FCD	Future Casing (Outer) Diameter	4.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GRRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	2500.00	M
TDL	Total Depth - Logger	-50000.00	M
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	6.125	IN
BSAL	Borehole Salinity	28000.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	1.10	G/C3
DORL	Depth Offset for Repeat Analysis	0.7	M
MST	Mud Sample Temperature	14.30	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	0.2180	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2500	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: Main_200_REP Vertical Scale: 1:200 Graphics File Created: 03-Aug-2004 23:13

OP System Version: 12C0-301
MCM

HALS-B	12C0-301	DSLT-H	12C0-301
HILTB-FTB	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Input DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_014LUP FN:19	PRODUCER	03-Aug-2004 22:51	2506.2 M	2406.1 M
---------	----------------------------------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_015LUP FN:21	PRODUCER	03-Aug-2004 23:13
---------	----------------------------------	----------	-------------------



MAXIS Field Log

Measurement	Nominal	Master	Before	After	Change	Limit	Units
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Total current mode 1							
Before: 3–Aug–2004 20:40							
Itot 1 Gain	1.000	N/A	0.997	N/A	N/A	0.026	MA
Itot 1 Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux current mode 1							
Before: 3–Aug–2004 20:40							
Iaux 1 Gain	1.000	N/A	0.995	N/A	N/A	0.035	MA
Iaux 1 Phase	0.000	N/A	0.109	N/A	N/A	1.900	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux current mode 2							
Before: 3–Aug–2004 20:40							
Iaux 2 Gain	1.000	N/A	0.980	N/A	N/A	0.048	MA
Iaux 2 Phase	0.000	N/A	–0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0 current mode 3A							
Before: 3–Aug–2004 20:40							
I0 3A Gain	1.000	N/A	0.985	N/A	N/A	0.036	UA
I0 3A Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0 current mode 3B							
Before: 3–Aug–2004 20:40							
I0 3B Gain	1.000	N/A	0.993	N/A	N/A	0.036	UA
I0 3B Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Torpedo Voltage gains							
Before: 3–Aug–2004 20:40							
Zvt 1 Gain	1.000	N/A	0.994	N/A	N/A	0.025	MV
Zvt 2 Gain	1.000	N/A	0.986	N/A	N/A	0.045	MV
Zvt 3 Gain	1.000	N/A	0.987	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Torpedo Voltage Phases							
Before: 3–Aug–2004 20:40							
Zvt 1 Phase	0.000	N/A	0.183	N/A	N/A	2.300	DEG
Zvt 2 Phase	0.000	N/A	0.742	N/A	N/A	0.800	DEG
Zvt 3 Phase	0.000	N/A	0.465	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Upper Bridle Voltage mode 1							
Before: 3–Aug–2004 20:40							
Zvb 1 Gain	1.000	N/A	0.994	N/A	N/A	0.025	MV
Zvb 1 Phase	0.000	N/A	0.103	N/A	N/A	2.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–M2 Voltage gains							
Before: 3–Aug–2004 20:40							
ZVM 1 Gain	1.000	N/A	0.997	N/A	N/A	0.039	UV
ZVM 2 Gain	1.000	N/A	0.994	N/A	N/A	0.019	UV
ZVM 3 Gain	1.000	N/A	0.992	N/A	N/A	0.019	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–M2 Voltage Phases							
Before: 3–Aug–2004 20:40							
ZVM 1 Phase	0.000	N/A	0.238	N/A	N/A	3.800	DEG
ZVM 2 Phase	0.000	N/A	1.573	N/A	N/A	1.300	DEG
ZVM 3 Phase	0.000	N/A	0.841	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage gains							
Before: 3–Aug–2004 20:40							
ZVH 1 Gain	1.000	N/A	0.998	N/A	N/A	0.013	UV
ZVH 2 Gain	1.000	N/A	0.992	N/A	N/A	0.046	UV
ZVH 3 Gain	1.000	N/A	0.992	N/A	N/A	0.046	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage Phases							
Before: 3–Aug–2004 20:40							
ZVH 1 Phase	0.000	N/A	0.114	N/A	N/A	3.800	DEG
ZVH 2 Phase	0.000	N/A	1.805	N/A	N/A	1.300	DEG
ZVH 3 Phase	0.000	N/A	0.917	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage gains							
Before: 3–Aug–2004 20:40							
ZVA 1 Gain	1.000	N/A	1.098	N/A	N/A	0.032	MV
ZVA 2 Gain	1.000	N/A	1.073	N/A	N/A	0.045	MV
ZVA 3 Gain	1.000	N/A	1.012	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage Phases							
Before: 3–Aug–2004 20:40							
ZVA 1 Phase	0.000	N/A	0.975	N/A	N/A	2.300	DEG
ZVA 2 Phase	0.000	N/A	–0.162	N/A	N/A	0.800	DEG
ZVA 3 Phase	0.000	N/A	0.325	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 1							
Before: 3–Aug–2004 20:40							

Before: 3-Aug-2004 20:40	ZVD 1 Gain	1.000	N/A	1.003	N/A	N/A	0.047	UV
	ZVD 1 Phase	0.000	N/A	-0.319	N/A	N/A	3.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*-A0** Diff. Voltage mode 2								
Before: 3-Aug-2004 20:40								
	ZVD 2 Gain	1.000	N/A	0.988	N/A	N/A	0.056	UV
	ZVD 2 Phase	0.000	N/A	1.062	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*-A0** Diff. Voltage mode 3A								
Before: 3-Aug-2004 20:40								
	ZVD 3A Gain	1.000	N/A	0.992	N/A	N/A	0.056	UV
	ZVD 3A Phase	0.000	N/A	0.404	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*-A0** Diff. Voltage mode 3B								
Before: 3-Aug-2004 20:40								
	ZVD 3B Gain	1.000	N/A	1.016	N/A	N/A	0.054	UV
	ZVD 3B Phase	0.000	N/A	-0.131	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 1								
Before: 3-Aug-2004 20:40								
	ZVV 1 Gain	1.000	N/A	0.996	N/A	N/A	0.022	UV
	ZVV 1 Phase	0.000	N/A	0.429	N/A	N/A	2.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 2								
Before: 3-Aug-2004 20:40								
	ZVV 2 Gain	1.000	N/A	0.986	N/A	N/A	0.036	UV
	ZVV 2 Phase	0.000	N/A	2.427	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 1								
Before: 3-Aug-2004 20:40								
	Az 1 Gain – 0	1.000	N/A	0.997	N/A	N/A	0.047	UV
	Az 1 Gain – 1	1.000	N/A	0.999	N/A	N/A	0.047	UV
	Az 1 Gain – 2	1.000	N/A	0.998	N/A	N/A	0.047	UV
	Az 1 Gain – 3	1.000	N/A	0.999	N/A	N/A	0.047	UV
	Az 1 Gain – 4	1.000	N/A	0.996	N/A	N/A	0.047	UV
	Az 1 Gain – 5	1.000	N/A	0.993	N/A	N/A	0.047	UV
	Az 1 Gain – 6	1.000	N/A	0.997	N/A	N/A	0.047	UV
	Az 1 Gain – 7	1.000	N/A	0.999	N/A	N/A	0.047	UV
	Az 1 Gain – 8	1.000	N/A	0.998	N/A	N/A	0.047	UV
	Az 1 Gain – 9	1.000	N/A	1.001	N/A	N/A	0.047	UV
	Az 1 Gain – 10	1.000	N/A	0.998	N/A	N/A	0.047	UV
	Az 1 Gain – 11	1.000	N/A	0.997	N/A	N/A	0.047	UV
	AZ 1 Phase – 0	0.000	N/A	0.098	N/A	N/A	3.800	DEG
	AZ 1 Phase – 1	0.000	N/A	0.024	N/A	N/A	3.800	DEG
	AZ 1 Phase – 2	0.000	N/A	-0.146	N/A	N/A	3.800	DEG
	AZ 1 Phase – 3	0.000	N/A	0.071	N/A	N/A	3.800	DEG
	AZ 1 Phase – 4	0.000	N/A	-0.054	N/A	N/A	3.800	DEG
	AZ 1 Phase – 5	0.000	N/A	0.066	N/A	N/A	3.800	DEG
	AZ 1 Phase – 6	0.000	N/A	-0.008	N/A	N/A	3.800	DEG
	AZ 1 Phase – 7	0.000	N/A	0.056	N/A	N/A	3.800	DEG
	AZ 1 Phase – 8	0.000	N/A	-0.143	N/A	N/A	3.800	DEG
	AZ 1 Phase – 9	0.000	N/A	0.197	N/A	N/A	3.800	DEG
	AZ 1 Phase – 10	0.000	N/A	0.063	N/A	N/A	3.800	DEG
	AZ 1 Phase – 11	0.000	N/A	0.047	N/A	N/A	3.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 2								
Before: 3-Aug-2004 20:40								
	Az 2 Gain – 0	1.000	N/A	0.984	N/A	N/A	0.056	UV
	Az 2 Gain – 1	1.000	N/A	0.985	N/A	N/A	0.056	UV
	Az 2 Gain – 2	1.000	N/A	0.984	N/A	N/A	0.056	UV
	Az 2 Gain – 3	1.000	N/A	0.985	N/A	N/A	0.056	UV
	Az 2 Gain – 4	1.000	N/A	0.983	N/A	N/A	0.056	UV
	Az 2 Gain – 5	1.000	N/A	0.980	N/A	N/A	0.056	UV
	Az 2 Gain – 6	1.000	N/A	0.983	N/A	N/A	0.056	UV
	Az 2 Gain – 7	1.000	N/A	0.985	N/A	N/A	0.056	UV
	Az 2 Gain – 8	1.000	N/A	0.984	N/A	N/A	0.056	UV
	Az 2 Gain – 9	1.000	N/A	0.987	N/A	N/A	0.056	UV
	Az 2 Gain – 10	1.000	N/A	0.984	N/A	N/A	0.056	UV
	Az 2 Gain – 11	1.000	N/A	0.983	N/A	N/A	0.056	UV
	Az 2 Phase – 0	0.000	N/A	1.206	N/A	N/A	1.300	DEG
	Az 2 Phase – 1	0.000	N/A	1.192	N/A	N/A	1.300	DEG
	Az 2 Phase – 2	0.000	N/A	1.194	N/A	N/A	1.300	DEG
	Az 2 Phase – 3	0.000	N/A	1.150	N/A	N/A	1.300	DEG
	Az 2 Phase – 4	0.000	N/A	1.169	N/A	N/A	1.300	DEG
	Az 2 Phase – 5	0.000	N/A	1.210	N/A	N/A	1.300	DEG
	Az 2 Phase – 6	0.000	N/A	1.082	N/A	N/A	1.300	DEG
	Az 2 Phase – 7	0.000	N/A	1.204	N/A	N/A	1.300	DEG
	Az 2 Phase – 8	0.000	N/A	1.143	N/A	N/A	1.300	DEG
	Az 2 Phase – 9	0.000	N/A	1.207	N/A	N/A	1.300	DEG
	Az 2 Phase – 10	0.000	N/A	1.166	N/A	N/A	1.300	DEG
	Az 2 Phase – 11	0.000	N/A	1.177	N/A	N/A	1.300	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3A

Before: 3–Aug–2004 20:40

Az 3A Gain – 0	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 1	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 2	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 3	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 4	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 5	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 3A Gain – 6	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 7	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 8	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 9	1.000	N/A	0.992	N/A	N/A	0.056	UV
Az 3A Gain – 10	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 11	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Phase – 0	0.000	N/A	0.559	N/A	N/A	1.000	DEG
Az 3A Phase – 1	0.000	N/A	0.534	N/A	N/A	1.000	DEG
Az 3A Phase – 2	0.000	N/A	0.516	N/A	N/A	1.000	DEG
Az 3A Phase – 3	0.000	N/A	0.515	N/A	N/A	1.000	DEG
Az 3A Phase – 4	0.000	N/A	0.502	N/A	N/A	1.000	DEG
Az 3A Phase – 5	0.000	N/A	0.538	N/A	N/A	1.000	DEG
Az 3A Phase – 6	0.000	N/A	0.464	N/A	N/A	1.000	DEG
Az 3A Phase – 7	0.000	N/A	0.552	N/A	N/A	1.000	DEG
Az 3A Phase – 8	0.000	N/A	0.495	N/A	N/A	1.000	DEG
Az 3A Phase – 9	0.000	N/A	0.579	N/A	N/A	1.000	DEG
Az 3A Phase – 10	0.000	N/A	0.530	N/A	N/A	1.000	DEG
Az 3A Phase – 11	0.000	N/A	0.522	N/A	N/A	1.000	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3B

Before: 3–Aug–2004 20:40

Az 3B Gain – 0	1.000	N/A	1.019	N/A	N/A	0.054	UV
Az 3B Gain – 1	1.000	N/A	1.019	N/A	N/A	0.054	UV
Az 3B Gain – 2	1.000	N/A	1.020	N/A	N/A	0.054	UV
Az 3B Gain – 3	1.000	N/A	1.016	N/A	N/A	0.054	UV
Az 3B Gain – 4	1.000	N/A	1.016	N/A	N/A	0.054	UV
Az 3B Gain – 5	1.000	N/A	1.014	N/A	N/A	0.054	UV
Az 3B Gain – 6	1.000	N/A	1.011	N/A	N/A	0.054	UV
Az 3B Gain – 7	1.000	N/A	1.019	N/A	N/A	0.054	UV
Az 3B Gain – 8	1.000	N/A	1.016	N/A	N/A	0.054	UV
Az 3B Gain – 9	1.000	N/A	1.021	N/A	N/A	0.054	UV
Az 3B Gain – 10	1.000	N/A	1.017	N/A	N/A	0.054	UV
Az 3B Gain – 11	1.000	N/A	1.016	N/A	N/A	0.054	UV
Az 3B Phase – 0	0.000	N/A	0.179	N/A	N/A	1.000	DEG
Az 3B Phase – 1	0.000	N/A	0.275	N/A	N/A	1.000	DEG
Az 3B Phase – 2	0.000	N/A	0.237	N/A	N/A	1.000	DEG
Az 3B Phase – 3	0.000	N/A	0.102	N/A	N/A	1.000	DEG
Az 3B Phase – 4	0.000	N/A	0.114	N/A	N/A	1.000	DEG
Az 3B Phase – 5	0.000	N/A	0.275	N/A	N/A	1.000	DEG
Az 3B Phase – 6	0.000	N/A	-0.169	N/A	N/A	1.000	DEG
Az 3B Phase – 7	0.000	N/A	0.253	N/A	N/A	1.000	DEG
Az 3B Phase – 8	0.000	N/A	0.071	N/A	N/A	1.000	DEG
Az 3B Phase – 9	0.000	N/A	0.202	N/A	N/A	1.000	DEG
Az 3B Phase – 10	0.000	N/A	0.040	N/A	N/A	1.000	DEG
Az 3B Phase – 11	0.000	N/A	0.167	N/A	N/A	1.000	DEG

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 2–Aug–2004 13:53

BS Window Ratio	0.7730	N/A	0.7734	N/A	N/A	N/A	
BS Window Sum	11810	N/A	11790	N/A	N/A	N/A	CPS
SS Window Ratio	0.4826	N/A	0.4845	N/A	N/A	N/A	
SS Window Sum	9867	N/A	9836	N/A	N/A	N/A	CPS
LS Window Ratio	0.2946	N/A	0.2975	N/A	N/A	N/A	
LS Window Sum	1302	N/A	1295	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations

Before: 2–Aug–2004 13:53

BS PM High Voltage (Command)	1560	N/A	1566	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1646	N/A	1655	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1809	N/A	1807	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 2–Aug–2004 13:53

BS Crystal Resolution	10.37	N/A	10.35	N/A	N/A	N/A	%
SS Crystal Resolution	9.902	N/A	9.889	N/A	N/A	N/A	%
LS Crystal Resolution	9.679	N/A	9.490	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 2–Aug–2004 13:42

Raw B0 Resistivity	3875	N/A	3873	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3842	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3836	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool-DTS Wellsite Calibration – HILT Caliper Calibration

Before: 2-Aug-2004 13:45

HILT Caliper Zero Measurement	8.000	N/A	8.208	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.25	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration

Before: 2-Aug-2004 13:41

Gamma Ray Background	30.00	N/A	45.40	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	168.3	N/A	168.3	N/A	N/A	15.30	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement

Master: 2-Jun-2004 11:58 Before: 2-Aug-2004 13:43

CNTC Background	29.20	29.20	29.19	N/A	N/A	4.380	CPS
CFTC Background	26.52	26.52	30.42	N/A	N/A	3.978	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration

Before: 3-Aug-2004 20:01

Z-Axis Acceleration	9.810	N/A	9.785	N/A	N/A	N/A	M/S2
---------------------	-------	-----	-------	-----	-----	-----	------

High resolution Integrated Logging Tool-DTS Master Calibration – Inversion results

Master: 8-Jul-2004 13:28

Rho Aluminum	2.596	2.595	--	--	--	--	G/C3
Rho Magnesium	1.686	1.692	--	--	--	--	G/C3
Pe Aluminum	2.570	2.559	--	--	--	--	
Pe Magnesium	2.650	2.607	--	--	--	--	

High resolution Integrated Logging Tool-DTS Master Calibration – Deviation Summary

Master: 8-Jul-2004 13:28

BS Average Deviation	0	0.4492	--	--	--	--	%
BS Max Deviation	0	1.001	--	--	--	--	%
SS Average Deviation	0	0.7701	--	--	--	--	%
SS Max Deviation	0	1.846	--	--	--	--	%
LS Average Deviation	0	0.6198	--	--	--	--	%
LS Max Deviation	0	1.862	--	--	--	--	%

High resolution Integrated Logging Tool-DTS Master Calibration – Tank Measurement

Master: 2-Jun-2004 11:58

Thermal Near Corr. (Tank)	6031	5441	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2260	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.408	--	--	--	--	

High resolution Integrated Logging Tool-DTS Master Calibration – Tank Measurement

Master: 2-Jun-2004 11:58

Thermal Near Corr. (Tank)	6031	5441	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2260	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.408	--	--	--	--	

The GLS-VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 20.2 DEGC.
Thermal Housing Size 3.385 IN.

HILT Azimuthal Laterolog Sonde B / Equipment Identification

Primary Equipment:

Auxiliary Equipment:

Laterolog Control Module

LCM – AA

HILT Azimuthal Laterolog Sonde B Wellsite Calibration							
HALSB Total current mode 1							
Itot 1 Gain MA		Value	Itot 1 Phase DEG		Value		
		0.997			0.000		
0.926	1.000	1.081	-0.100	0.000	0.100		
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)		
Before: 3-Aug-2004 20:40							

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB Aux current mode 1			
iaux 1 Gain MA	Value	iaux 1 Phase DEG	Value

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB Aux current mode 2			
iaux 2 Gain MA	Value	iaux 2 Phase DEG	Value

0.854	1.000	1.180	-4.600	0.000	4.600
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

0.816	1.000	1.232	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3A					
0.893	1.000	1.114	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3B					
0.893	1.000	1.114	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage gains					
0.925	1.000	1.078	0.865	1.000	1.153
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage Phases					
-4.400	0.000	4.400	-2.800	0.000	2.800
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Upper Bridle Voltage mode 1					
0.925	1.000	1.078	-4.400	0.000	4.400
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage gains					
0.895	1.000	1.117	0.943	1.000	1.056
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage Phases					
-6.500	0.000	6.500	-3.300	0.000	3.300
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage gains					
0.962	1.000	1.039	0.864	1.000	1.154
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage Phases					
-6.500	0.000	6.500	-3.300	0.000	3.300
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 3-Aug-2004 20:40					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
---	--	--	--	--	--

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage gains					
ZVA 1 Gain MV	Value	ZVA 2 Gain MV	Value	ZVA 3 Gain MV	Value
	1.098		1.073		1.012
0.905 (Minimum) 1.000 (Nominal) 1.103 (Maximum)		0.866 (Minimum) 1.000 (Nominal) 1.151 (Maximum)		0.866 (Minimum) 1.000 (Nominal) 1.151 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage Phases					
ZVA 1 Phase DEG	Value	ZVA 2 Phase DEG	Value	ZVA 3 Phase DEG	Value
	0.975		-0.162		0.325
-4.100 (Minimum) 0.000 (Nominal) 4.100 (Maximum)		-2.300 (Minimum) 0.000 (Nominal) 2.300 (Maximum)		-1.000 (Minimum) 0.000 (Nominal) 1.000 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB A0*-A0** Diff. Voltage mode 1			
ZVD 1 Gain UV	Value	ZVD 1 Phase DEG	Value
	1.003		-0.319
0.874 (Minimum) 1.000 (Nominal) 1.147 (Maximum)		-6.300 (Minimum) 0.000 (Nominal) 6.300 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB A0*-A0** Diff. Voltage mode 2			
ZVD 2 Gain UV	Value	ZVD 2 Phase DEG	Value
	0.988		1.062
0.842 (Minimum) 1.000 (Nominal) 1.187 (Maximum)		-3.300 (Minimum) 0.000 (Nominal) 3.300 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB A0*-A0** Diff. Voltage mode 3A			
ZVD 3A Gain UV	Value	ZVD 3A Phase DEG	Value
	0.992		0.404
0.842 (Minimum) 1.000 (Nominal) 1.187 (Maximum)		-2.000 (Minimum) 0.000 (Nominal) 2.000 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB A0*-A0** Diff. Voltage mode 3B			
ZVD 3B Gain UV	Value	ZVD 3B Phase DEG	Value
	1.016		-0.131
0.845 (Minimum) 1.000 (Nominal) 1.183 (Maximum)		-2.000 (Minimum) 0.000 (Nominal) 2.000 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB vertical Voltage mode 1			
ZVV 1 Gain UV	Value	ZVV 1 Phase DEG	Value
	0.996		0.429
0.936 (Minimum) 1.000 (Nominal) 1.065 (Maximum)		-4.600 (Minimum) 0.000 (Nominal) 4.600 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB vertical Voltage mode 2			
ZVV 2 Gain UV	Value	ZVV 2 Phase DEG	Value
	0.986		2.427
0.895 (Minimum) 1.000 (Nominal) 1.112 (Maximum)		-2.800 (Minimum) 0.000 (Nominal) 2.800 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 1					
Idx	Az 1 Gain UV	Value	Idx	Az 1 Phase DEG	Value
0		0.997	0		0.098
1		0.999	1		0.024
2		0.998	2		-0.146
3		0.999	3		0.071
4		0.996	4		-0.054
5		0.993	5		0.066
6		0.997	6		-0.008
7		0.999	7		0.056
8		0.998	8		-0.143
9		1.001	9		0.197
10		0.998	10		0.063
11		0.997	11		0.047
	0.874 (Minimum) 1.000 (Nominal) 1.147 (Maximum)			-6.300 (Minimum) 0.000 (Nominal) 6.300 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 2					
Idx	Az 2 Gain UV	Value	Idx	Az 2 Phase DEG	Value
0		0.984	0		1.206
1		0.985	1		1.192
2		0.984	2		1.194
3		0.985	3		1.150
4		0.983	4		1.169
5		0.980	5		1.210
6		0.983	6		1.082
7		0.985	7		1.204
8		0.984	8		1.143
9		0.987	9		1.207
10		0.984	10		1.166
11		0.983	11		1.177
	0.842 (Minimum) 1.000 (Nominal) 1.187 (Maximum)			-3.300 (Minimum) 0.000 (Nominal) 3.300 (Maximum)	

Before: 3-Aug-2004 20:40

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3A					
Idx	Az 3A Gain UV	Value	Idx	Az 3A Phase DEG	Value
0		0.999	0		0.559

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3B					
Idx	Az 3B Gain UV	Value	Idx	Az 3B Phase DEG	Value
0		0.999	0		0.559

			0.988	0		0.559	
1			0.989	1		0.534	
2			0.987	2		0.516	
3			0.989	3		0.515	
4			0.987	4		0.502	
5			0.984	5		0.538	
6			0.987	6		0.464	
7			0.989	7		0.552	
8			0.989	8		0.495	
9			0.992	9		0.579	
10			0.989	10		0.530	
11			0.988	11		0.522	
	0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)		-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 3-Aug-2004 20:40							

			1.019	0		0.179	
1			1.019	1		0.275	
2			1.020	2		0.237	
3			1.016	3		0.102	
4			1.016	4		0.114	
5			1.014	5		0.275	
6			1.011	6		-0.169	
7			1.019	7		0.253	
8			1.016	8		0.071	
9			1.021	9		0.202	
10			1.017	10		0.040	
11			1.016	11		0.167	
	0.845 (Minimum)	1.000 (Nominal)	1.183 (Maximum)		-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 3-Aug-2004 20:40							

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:

HILT high-Resolution Mechanical Sonde
 HILT Rxo Gamma-ray Device
 HILT Nuclear Back-Scatter Detector
 HILT Nuclear Short-Spacing Detector
 HILT Nuclear Long-Spacing Detector
 Micro Cylindrically Focused Log Device
 GR Logging Source
 HILT High Res. Control Cartridge

HRMS - B 1730
 HRGD - B 755
 HILT -
 HILT -
 HILT -
 MCFL -
 GLS - VJ 1893
 HRCC - B 756

Auxiliary Equipment:

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Stab Measurement Summary

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value	
Before		0.7734	Before		0.4845	Before		0.2975	
	0.7344 (Minimum)	0.7730 (Nominal)	0.8117 (Maximum)	0.4585 (Minimum)	0.4826 (Nominal)	0.5067 (Maximum)	0.2798 (Minimum)	0.2946 (Nominal)	0.3093 (Maximum)
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value	
Before		11790	Before		9836	Before		1295	
	11220 (Minimum)	11810 (Nominal)	12400 (Maximum)	9373 (Minimum)	9867 (Nominal)	10360 (Maximum)	1237 (Minimum)	1302 (Nominal)	1367 (Maximum)

Before: 2-Aug-2004 13:53

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Photo-multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value	
Before		1566	Before		1655	Before		1807	
	1460 (Minimum)	1560 (Nominal)	1660 (Maximum)	1546 (Minimum)	1646 (Nominal)	1746 (Maximum)	1709 (Minimum)	1809 (Nominal)	1909 (Maximum)

Before: 2-Aug-2004 13:53

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value	
Before		10.35	Before		9.889	Before		9.490	
	9.369 (Minimum)	10.37 (Nominal)	11.37 (Maximum)	8.902 (Minimum)	9.902 (Nominal)	10.90 (Maximum)	8.679 (Minimum)	9.679 (Nominal)	10.68 (Maximum)

Before: 2-Aug-2004 13:53

High resolution Integrated Logging Tool-DTS Wellsite Calibration

MCFL Calibration

Phase	Raw R0 Resistivity OHMM	Value	Phase	Raw R1 Resistivity OHMM	Value	Phase	Raw R2 Resistivity OHMM	Value
-------	-------------------------	-------	-------	-------------------------	-------	-------	-------------------------	-------

Phase	Raw DC Resistivity Ohm/m	Value	Phase	Raw DC Resistivity Ohm/m	Value	Phase	Raw DC Resistivity Ohm/m	Value
Before		3873	Before		3842	Before		3836
	3565 (Minimum) 3875 (Nominal) 4185 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)	

Before: 2-Aug-2004 13:42

High resolution Integrated Logging Tool-DTS Wellsite Calibration					
HILT Caliper Calibration					
Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value
Before		8.208	Before		12.25
	6.000 (Minimum) 8.000 (Nominal) 10.00 (Maximum)			9.000 (Minimum) 12.00 (Nominal) 15.00 (Maximum)	

Before: 2-Aug-2004 13:45

High resolution Integrated Logging Tool-DTS Wellsite Calibration									
Detector Calibration									
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value	Value
Before		45.40	Before		168.3	Before		165.0	
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			153.0 (Minimum) 168.3 (Nominal) 183.6 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)		

Before: 2-Aug-2004 13:41

High resolution Integrated Logging Tool-DTS Wellsite Calibration					
Zero Measurement					
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		29.20	Master		26.52
Before		29.19	Before		30.42
	5.000 (Minimum) 29.20 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 26.52 (Nominal) 40.00 (Maximum)	

Master: 2-Jun-2004 11:58

Before: 2-Aug-2004 13:43

High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration M/S2	Value
Before		9.785
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 3-Aug-2004 20:01

High resolution Integrated Logging Tool-DTS Master Calibration					
Inversion results					
Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
Master		2.595	Master		1.692
	2.586 (Minimum) 2.596 (Nominal) 2.606 (Maximum)			1.676 (Minimum) 1.686 (Nominal) 1.696 (Maximum)	
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.559	Master		2.607
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)			2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 8-Jul-2004 13:28

High resolution Integrated Logging Tool-DTS Master Calibration									
Deviation Summary									
Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value	Value
Master		0.4492	Master		0.7701	Master		0.6198	
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)		
Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value	Value
Master		1.001	Master		1.846	Master		1.862	
	-1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)		

Master: 8-Jul-2004 13:28

High resolution Integrated Logging Tool-DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5441	Master		2260	Master		2.408
5000 (Minimum)	6031 (Nominal)	7200 (Maximum)	2075 (Minimum)	2793 (Nominal)	3125 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 2-Jun-2004 11:58

High resolution Integrated Logging Tool-DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5441	Master		2260	Master		2.408
5000 (Minimum)	6031 (Nominal)	7200 (Maximum)	2075 (Minimum)	2793 (Nominal)	3125 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 2-Jun-2004 11:58

Company: **Lakes Oil N.L.**

Schlumberger

Well: **Trifon 2**
 Field: **Wildcat**
 Rig: **Hunt #2**
 Country: **Australia**

HALS(/HRLA) – BHC – PE)
 2498.9 – 1260 m
 1:500 Scale