

Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 318 Site U1361A**

Field: **Wilkes Land**

Rig: **JOIDES Resolution** Country: **Antarctica**

Phasor Induction (DITE)
Hostile Litho Density(HLDS)
Neutron Porosity (APS) Gamma Ray (HNGS)

Rig: JOIDES Resolution
 Field: Wilkes Land
 Location: Latitude: S 64.4095 Deg
 Well: Expedition 318 Site U1361A
 Company: Lamont Doherty

LOCATION		Elev.:	
Latitude: S 64.4095 Deg		K.B.	11.00 m
Longitude: E 143.0033 Deg		G.L.	3454.00 m
		D.F.	11.00 m
Permanent Datum:	Mean Sea Level	Elev.:	0.00 m
Log Measured From:	Drill Floor		11.00 m above Perm. Datum
Drilling Measured From:	Drill Floor		
API Serial No.			

Logging Date	Run 1	Run 2	Run
1-Mar-2010			
1			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth			
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
RMF @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

Logging Date	1-Mar-2010
Run Number	1
Depth Driller	3853.5 m
Schlumberger Depth	3861 m
Bottom Log Interval	3858 m
Top Log Interval	3435 m
Casing Driller Size @ Depth	0.000 in @ 3568.7 m
Casing Schlumberger	3571 m
Bit Size	11.438 in
Type Fluid In Hole	Sepiolite Sea Water Gel + Barite
Density	1.22 g/cm3
Fluid Loss	
Source Of Sample	
RM @ Measured Temperature	@
RMF @ Measured Temperature	@
RMC @ Measured Temperature	@
Source RMF	RMC
RM @ MRT	RMF @ MRT
Maximum Recorded Temperatures	9 degC @ 9 @ 9 @
Circulation Stopped	Time
Logger On Bottom	Time
Unit Number	625003 Webster
Recorded By	K. Swain
Witnessed By	T. Williams, A. Fehr

DISCLAIMER
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OTHER SERVICES1
 OS1:
 OS2: FMS/DSI
 OS3:
 OS4:
 OS5:

OTHER SERVICES2
 OS1:
 OS2:
 OS3:
 OS4:
 OS5:

REMARKS: RUN NUMBER 1
 Depths referenced from rig floor in meters below rig floor (MBRF).
 Tools run slick without stand offs as per normal operation to fit inside pipe.
 Logging is performed through drill pipe for open hole logging.
 Go-devil run on bottom of toolstring to actuate flapper in bottom hole assembly of the drill pipe for APC/XCB. Rig can elect to pump go devil before logging but this was not done and the go devil instead was attached to end of tool string to do the same.
 This may result in additional pumping required to drop below or to get inside drill pipe. Difficulty was seen dropping out of pipe and required pump pressure at surface with success.
 Downlog used as repeat section per client request. Log flipped and played back to display with the main uplog in same direction.

REMARKS: RUN NUMBER 2

RUN 1

SERVICE ORDER #: _____
 PROGRAM VERSION: 17C0-154
 FLUID LEVEL: _____

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #: _____
 PROGRAM VERSION: _____
 FLUID LEVEL: _____

LOGGED INTERVAL	START	STOP




EQUIPMENT DESCRIPTION

RUN 1

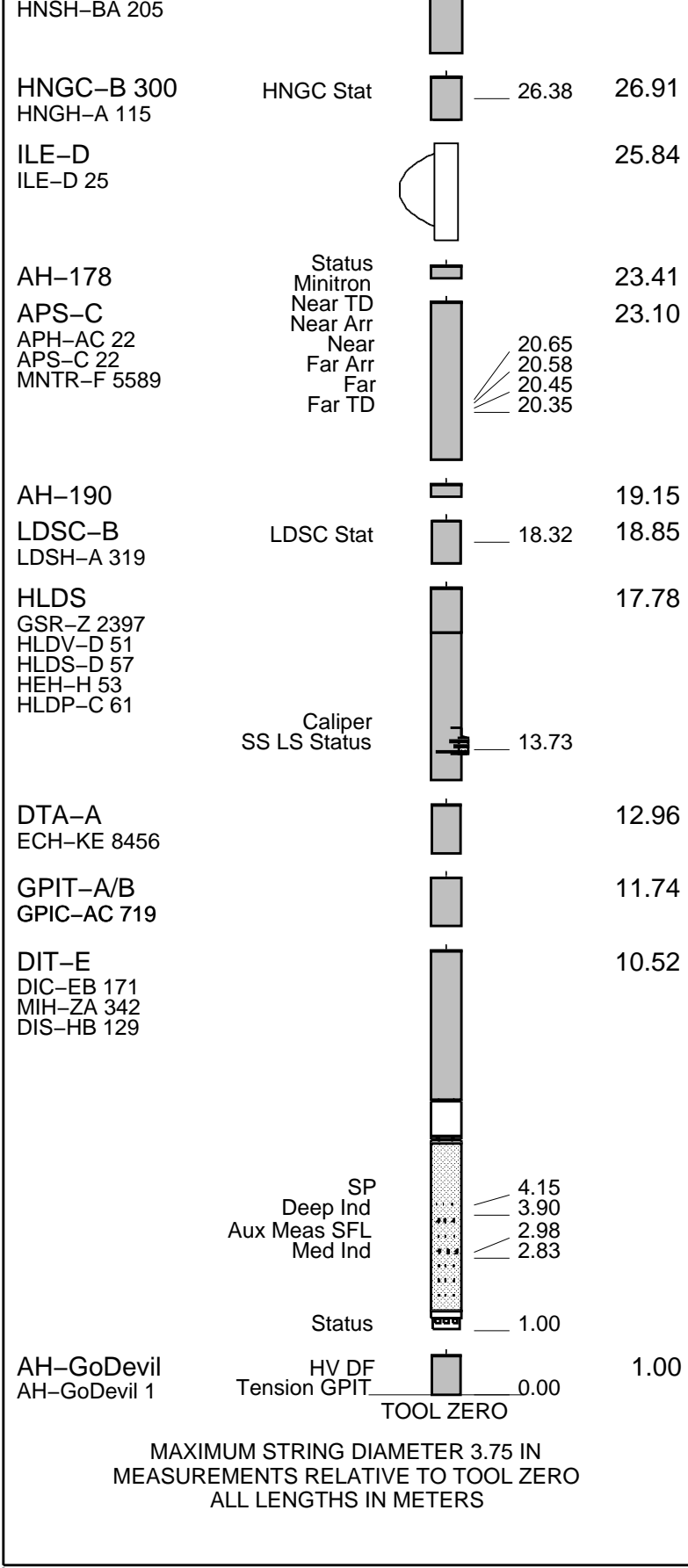
SURFACE EQUIPMENT

SFT-281 2
 SFT-178 2
 GSR-U 616008
 WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT			31.21
LEH-QT 1750			
DTC-H	CTEM		30.04
ECH-KC 9842	TelStatus		30.32
	ToolStatu		29.41
HNGS-BA 194	Upper_1		28.71
HNGS-BA 194	Lower_2		28.50

RUN 2



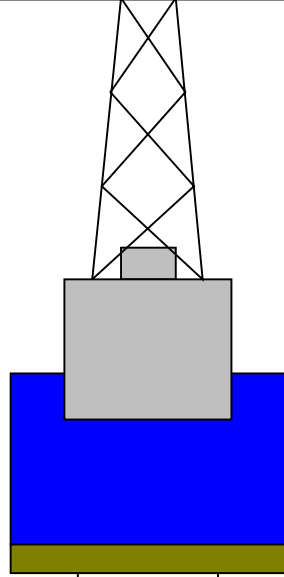
Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

11.0
11.0

0.0



3465.520

Sea Floor



3465.5 3.80

3568.7 11.4375

3853.5

Borehole Segment

Open Hole

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_009LUP	FN:12	PRODUCER	01-Mar-2010 11:30	3863.3 M	3433.9 M
BACKUP	PI_LDL_APS_NGS_009LUP	FN:13	PRODUCER	01-Mar-2010 13:29	3863.3 M	3433.9 M

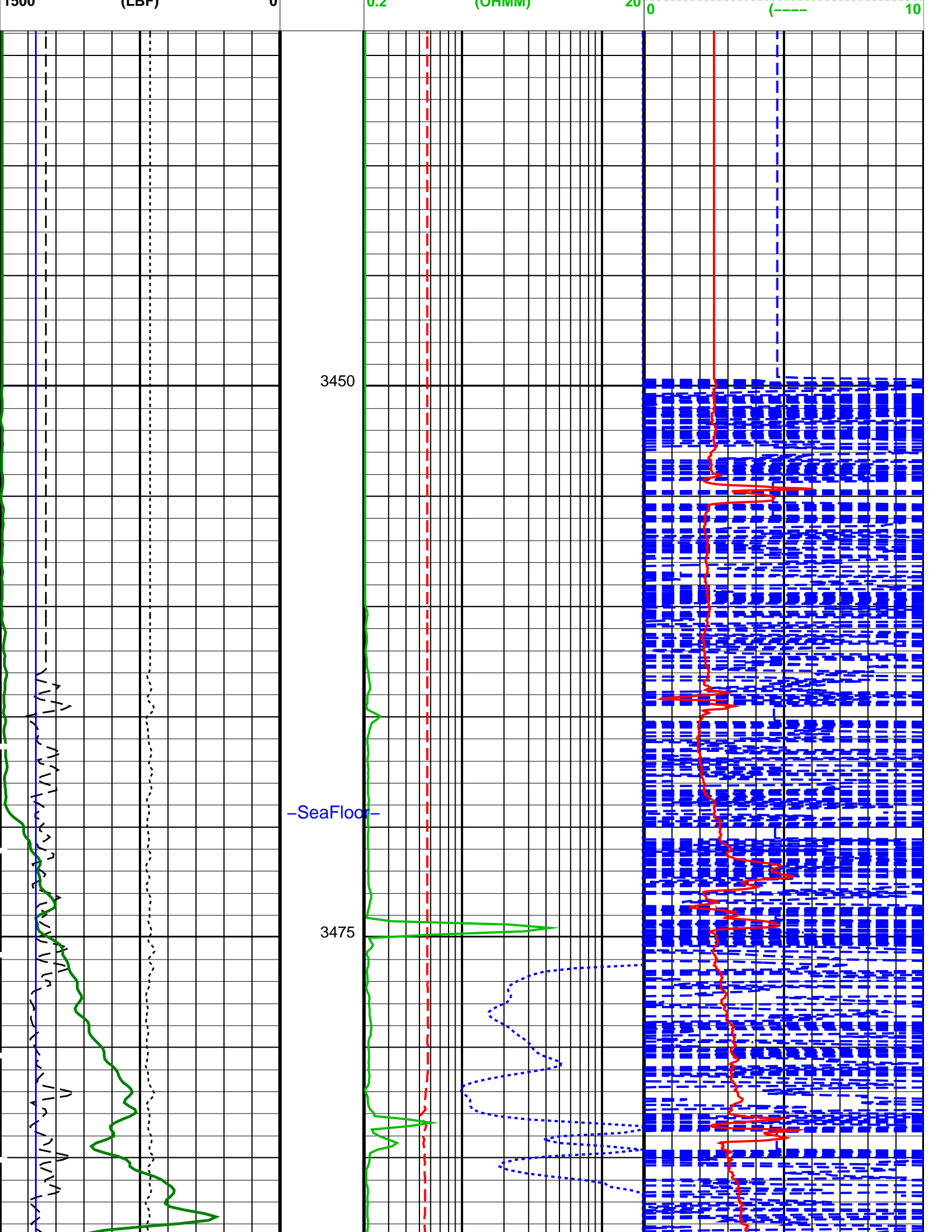
OP System Version: 17C0-154

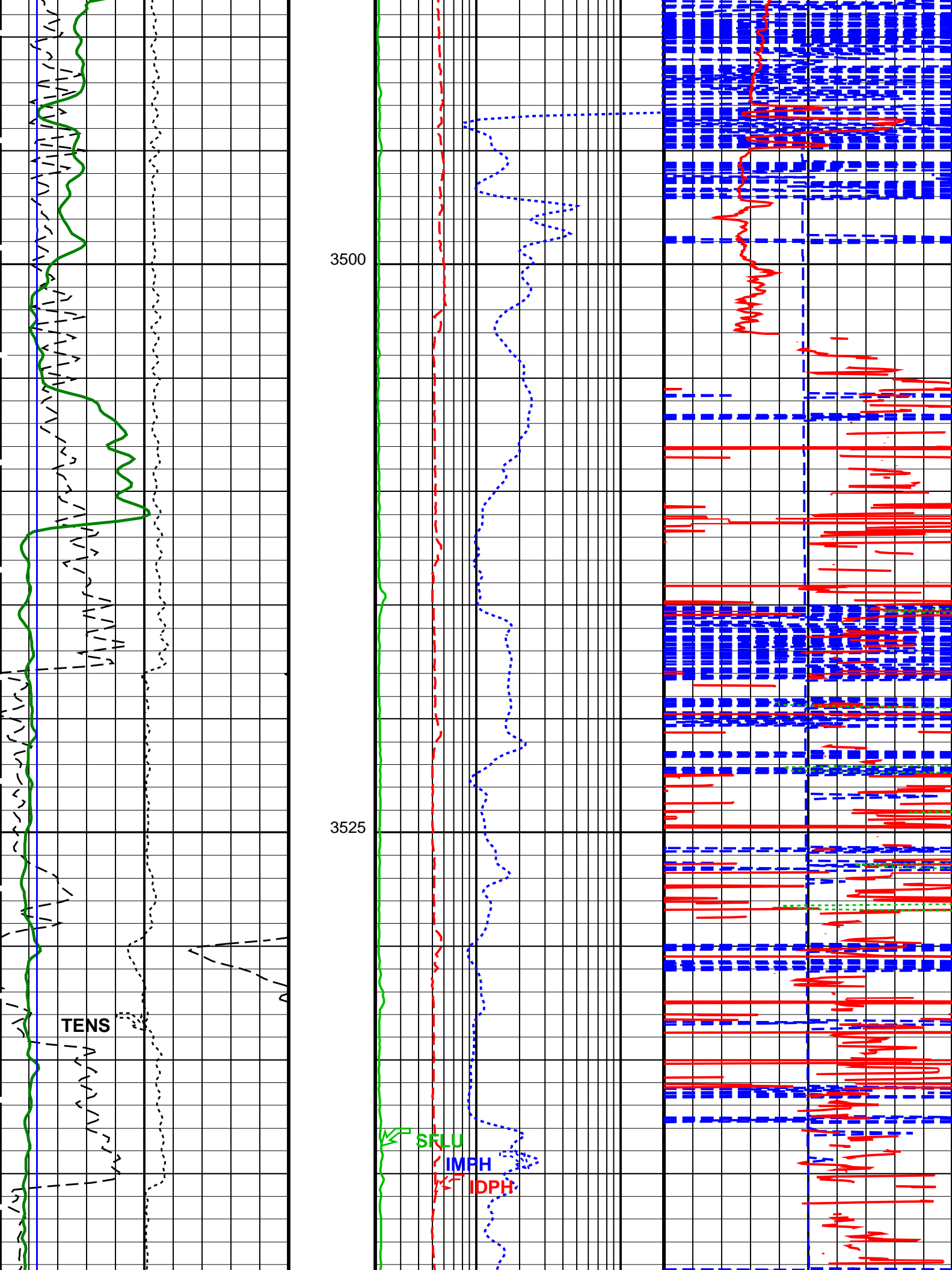
DIT-E	17C0-154	GPIT-A/B	SRPC-3870_Q3_2009_OP17_V3_b
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	APS-C	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100		Uplog #1	
Tension (TENS) 10000 (LBF) 0		Medium Induction Phasor-processed Resistivity (IMPH) 0.2 (OHMM) 20	
HLDS Caliper (LCAL) 0 (IN) 20		HLDS HR Bulk Density (HROM) 0 (G/C3) 4	
Uncalibrated Downhole Force (DF) 1500 (LBF) 0		Deep Induction Phasor-processed Resistivity (IDPH) 0.2 (OHMM) 20	
		APS HR Near/Far Corrected Limestone Porosity (HFLC) 100 (PU) 0	
		SFL Unaveraged (SFLU) 0.2 (OHMM) 20	
		HLDS Long Spaced Photoelectric Effect (PEFL)	





3500

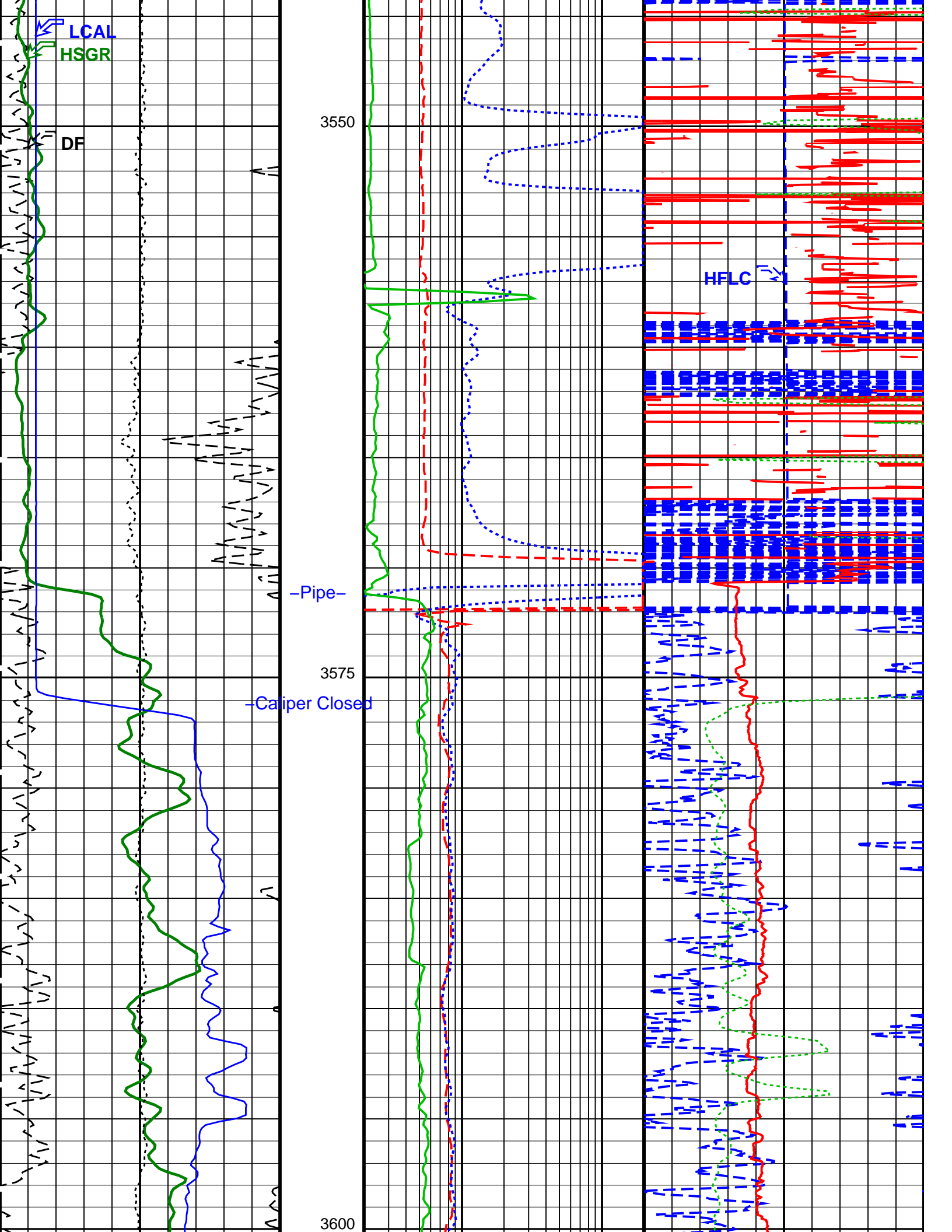
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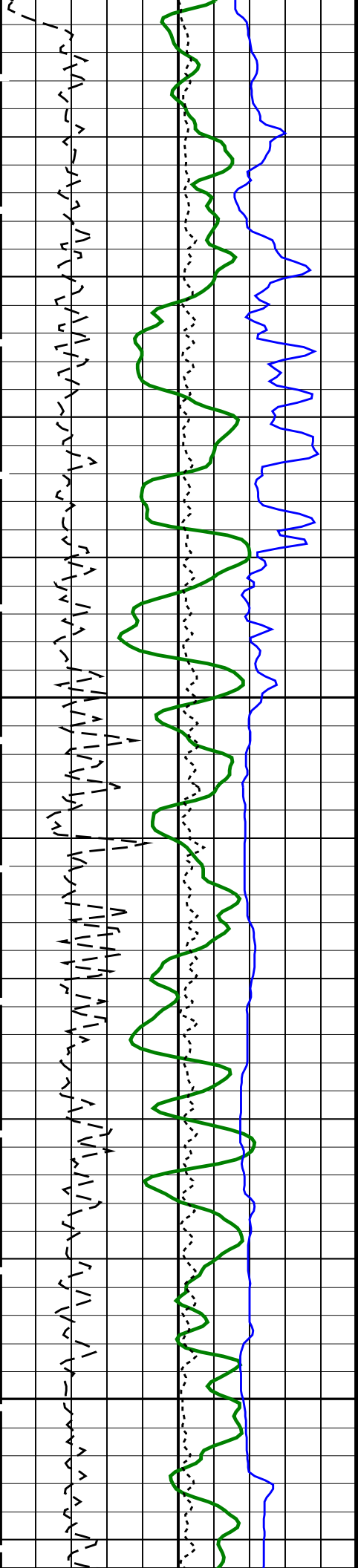
TENS

SFLU

IMPH

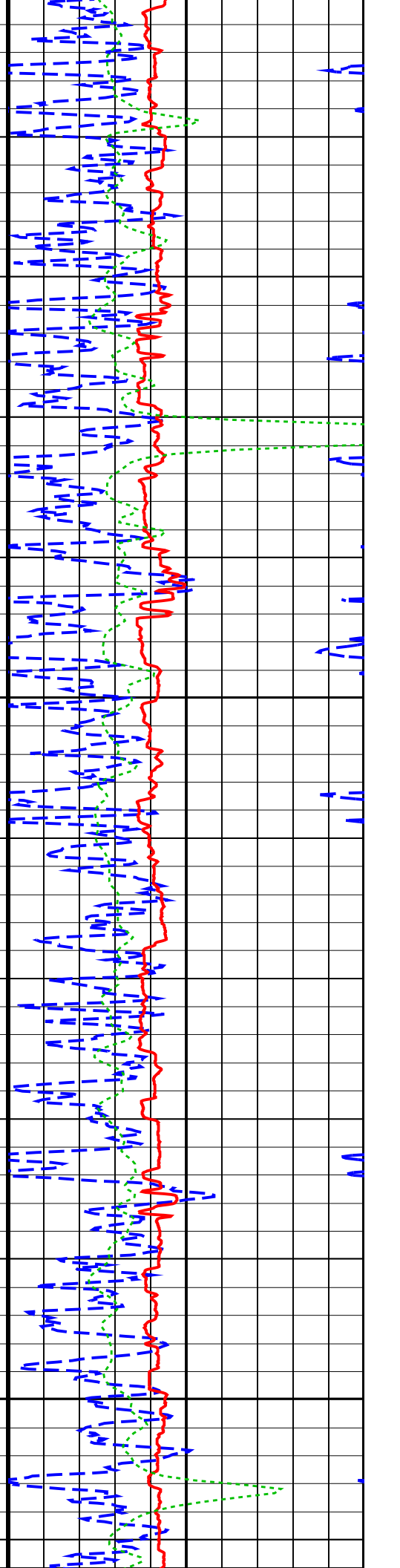
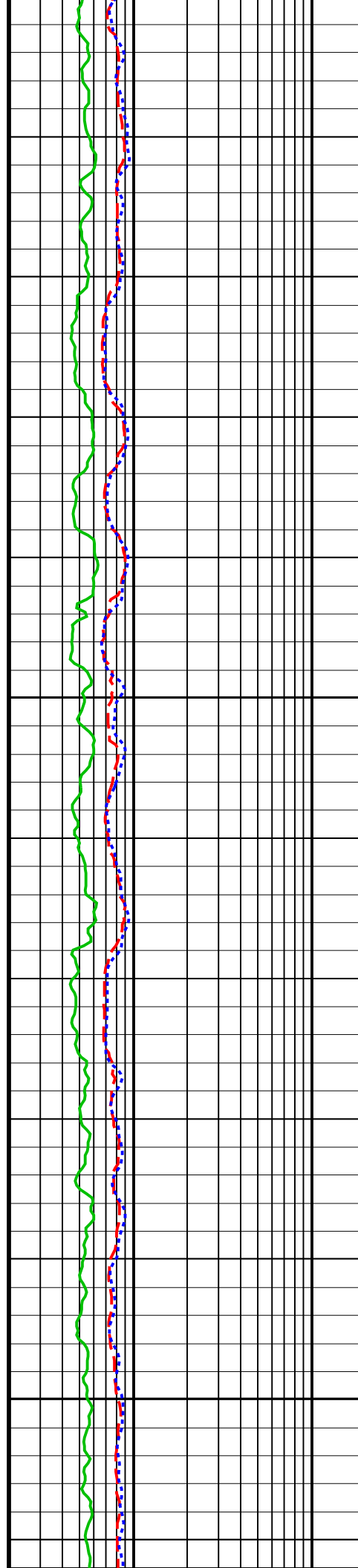
IDPH

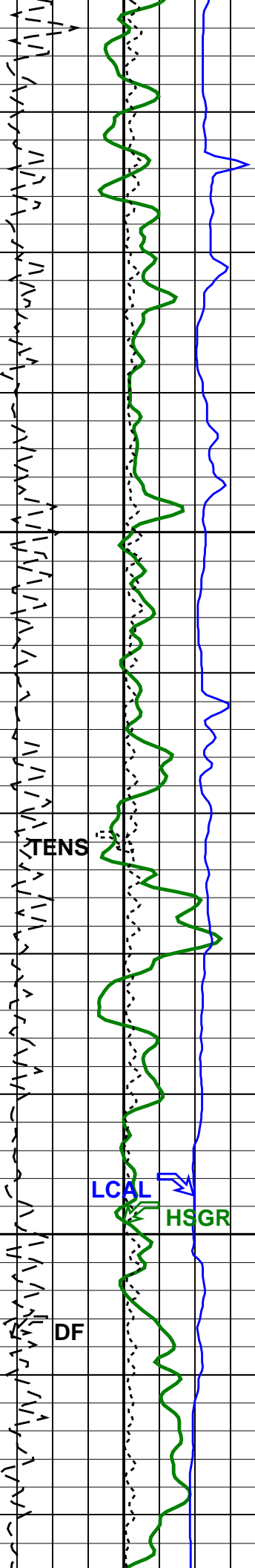




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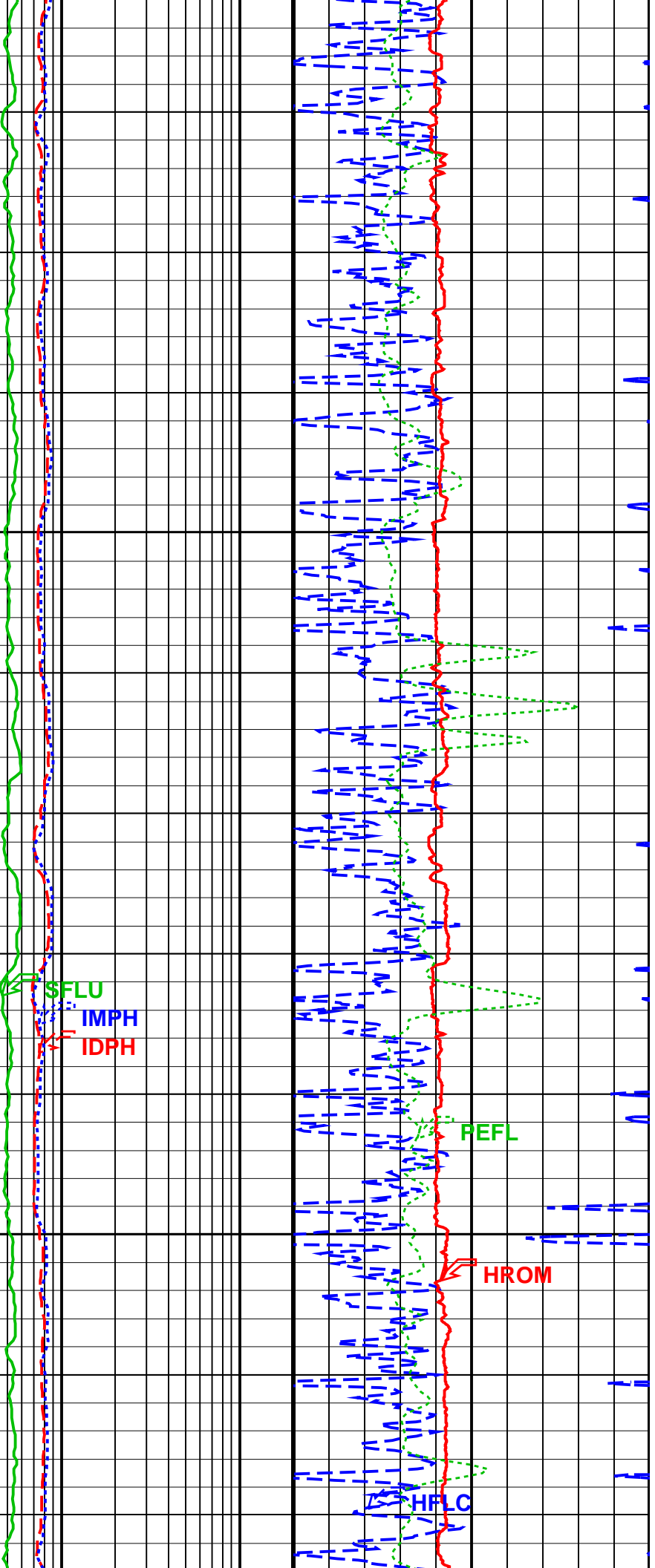
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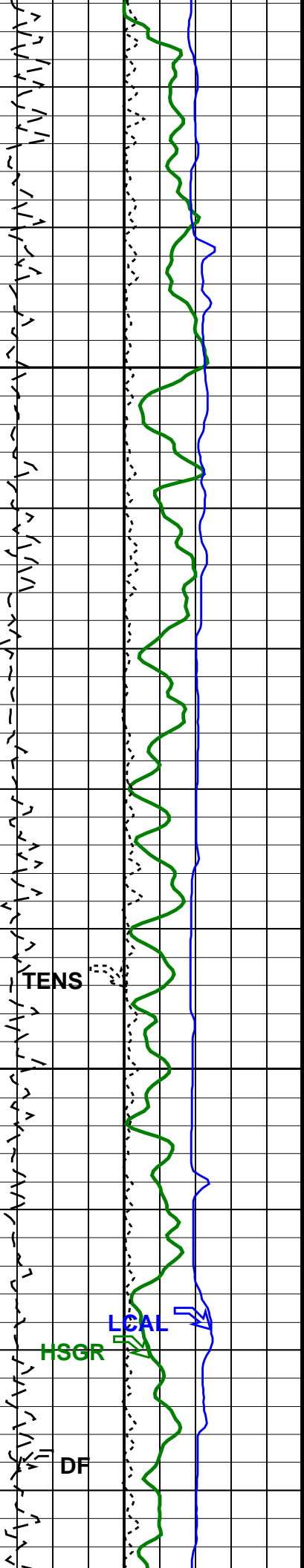




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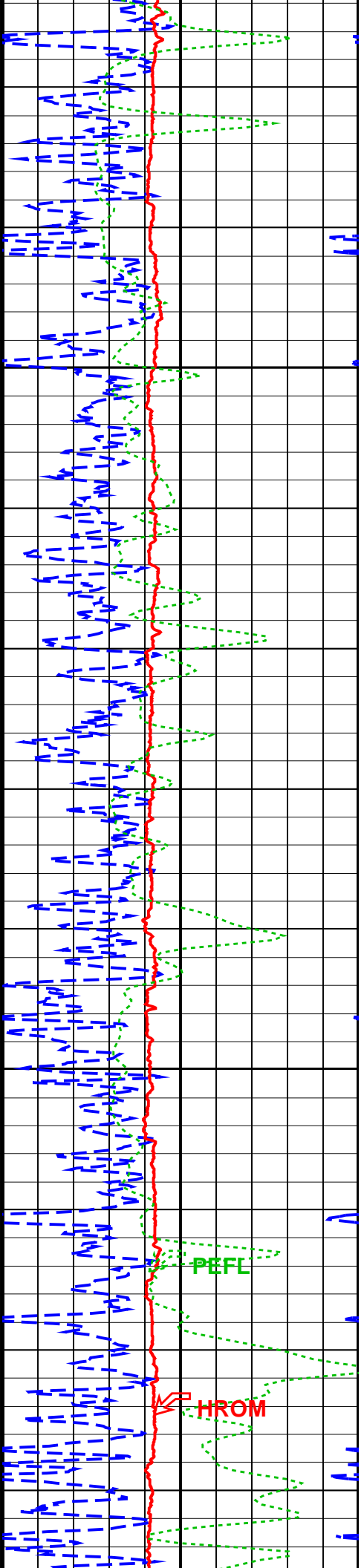
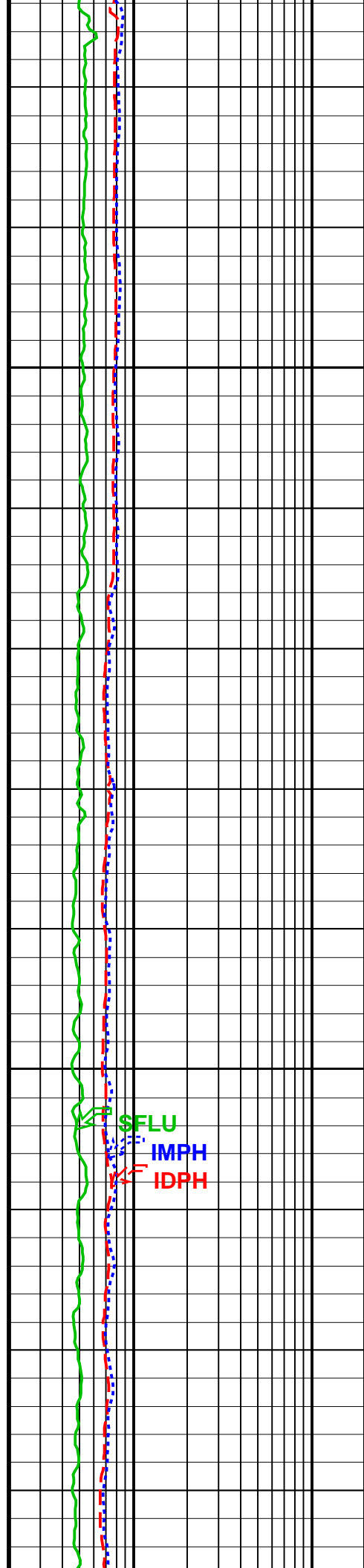
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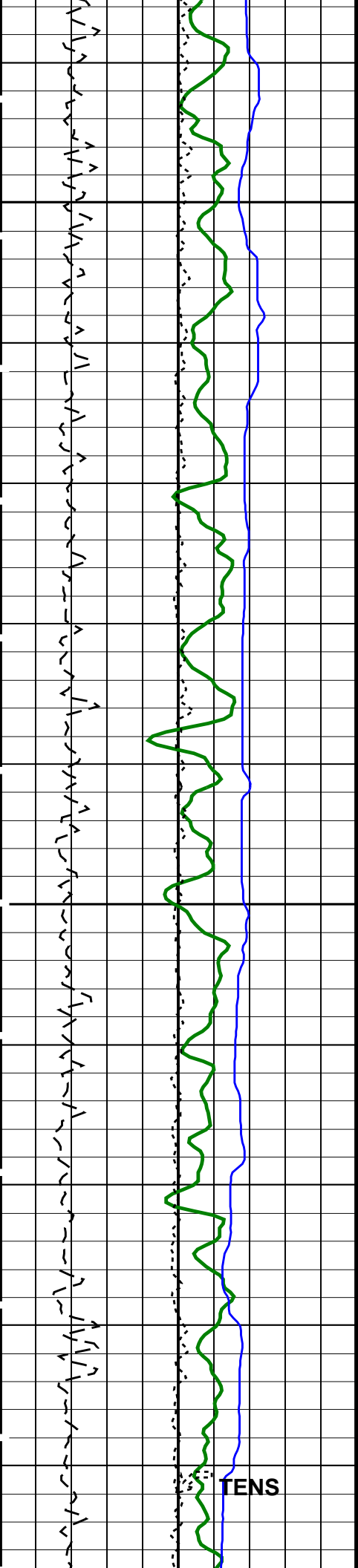




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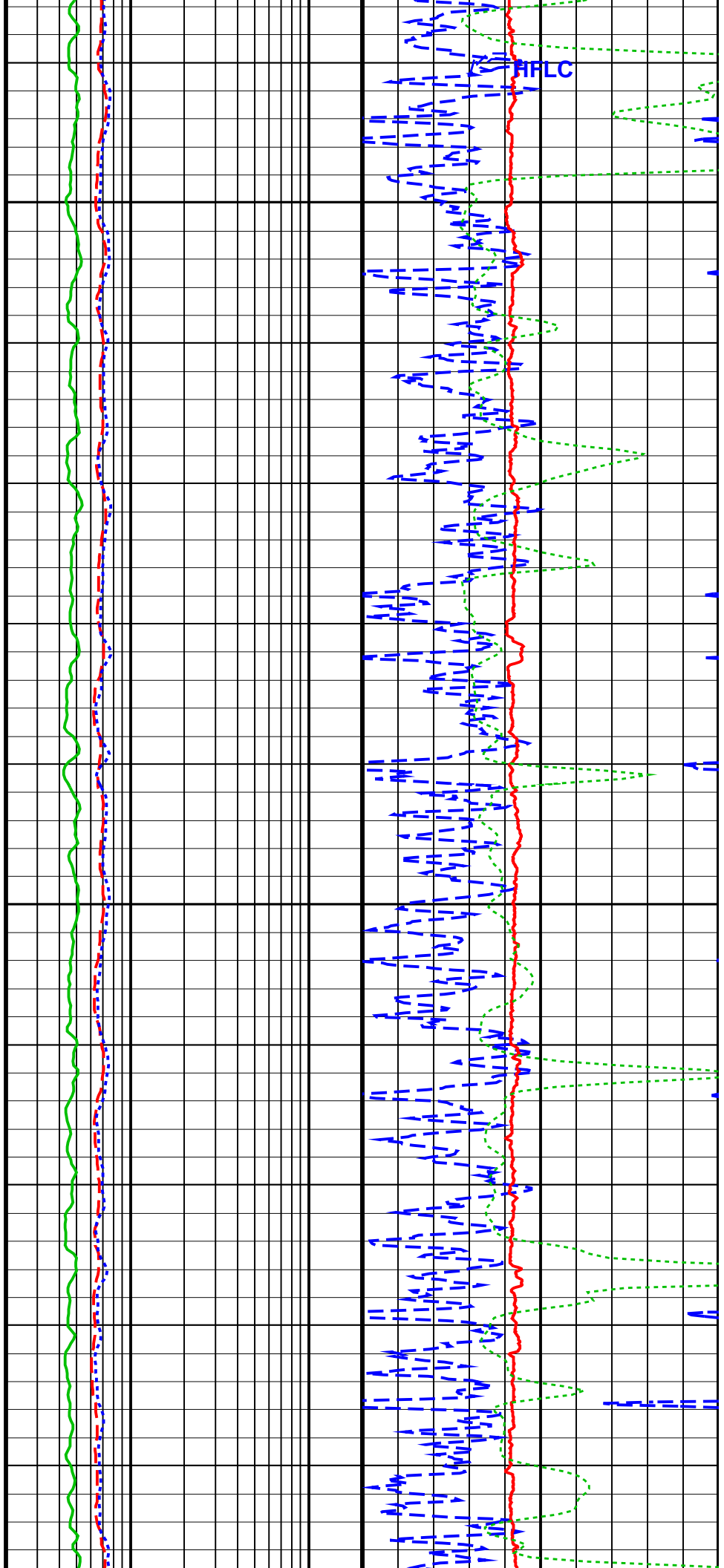
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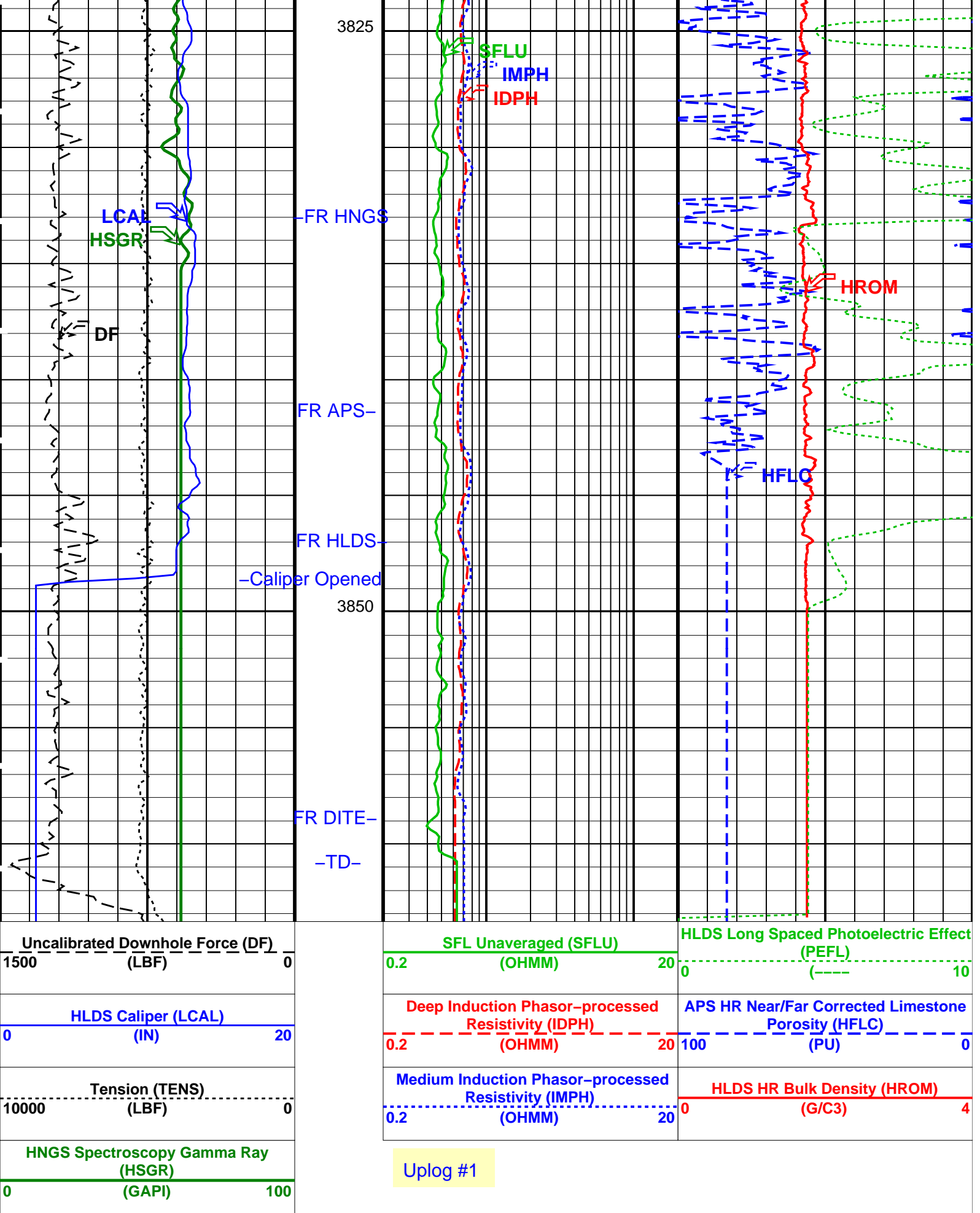




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PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction - E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	15.5556	DEGC
DGF2	Deep 20 kHz Gain Factor	0.979119	
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MPH2	Medium 20 kHz Phase Shift	-0.199528	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
GPIT-A/B: General Purpose Inclinerometer			
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	71.8638	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
APS-C: Accelerator-Porosity Tool			
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1967.87	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2098.2	V
AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1738.17	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	ON	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	15.5556	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source	COMPUTED	
FSAL	Formation Salinity	-50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	

GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	NATU	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.06031	
NFRC	APS Near/Far Calibration Ratio	0.890147	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	YES	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	NO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	15.5556	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00113835	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	4.30116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.93825	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.22	G/C3
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2750.9	M
TDD	Total Depth - Driller	3860.00	M
TDL	Total Depth - Logger	3860.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 01-Mar-2010 11:30

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3870_Q3_2009_OP17_V3_b
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	APS-C	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_009LUP	FN:12	PRODUCER	01-Mar-2010 11:30
BACKUP	PI_LDL_APS_NGS_009LUP	FN:13	PRODUCER	01-Mar-2010 13:29

Input DLIS Files

DEFAULT FLIP_PI_LDL_APS_NGS_031L PRODUCER 06-Mar-2010 16:32 3844.1 M 3408.4 M

Output DLIS Files

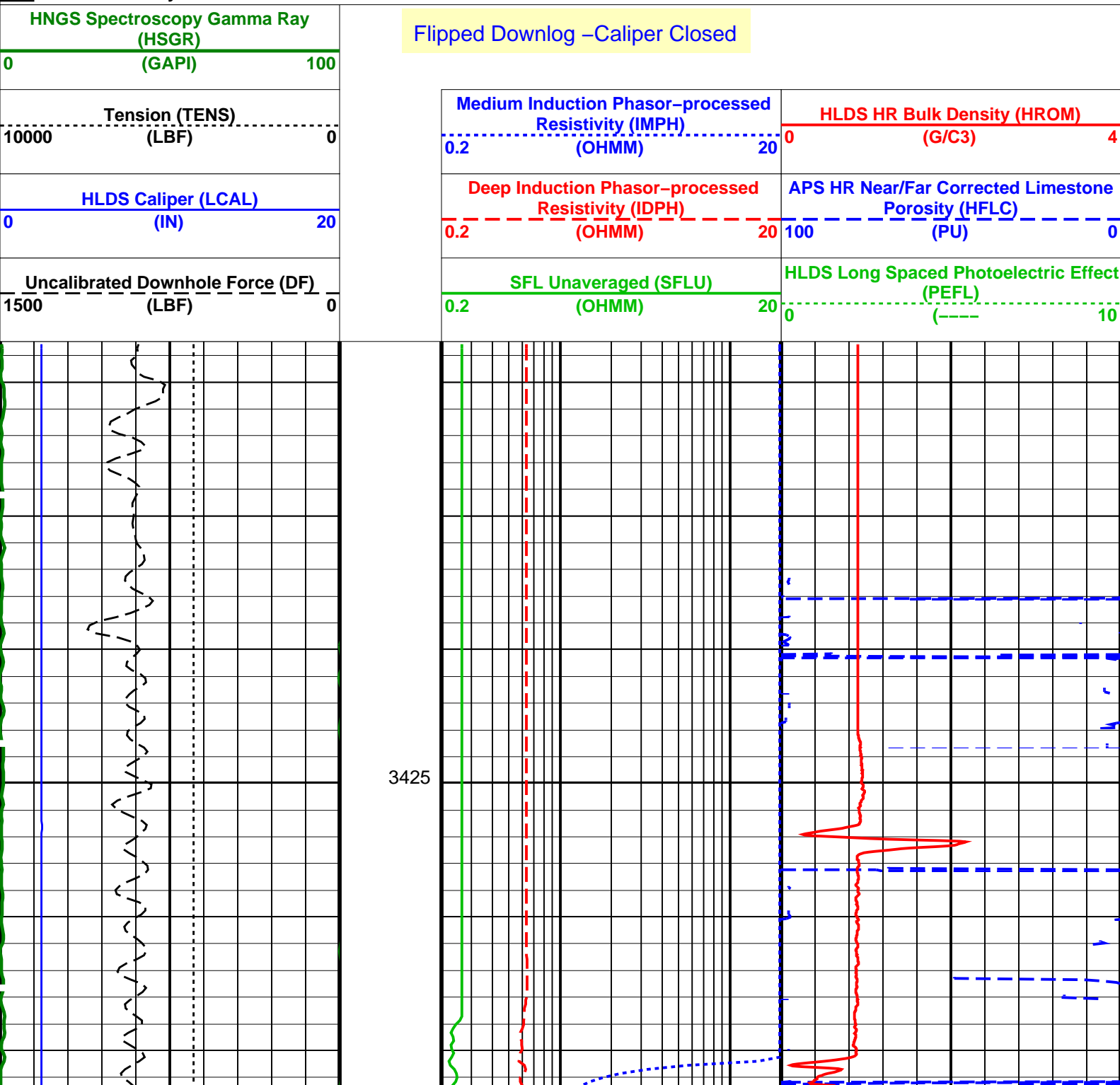
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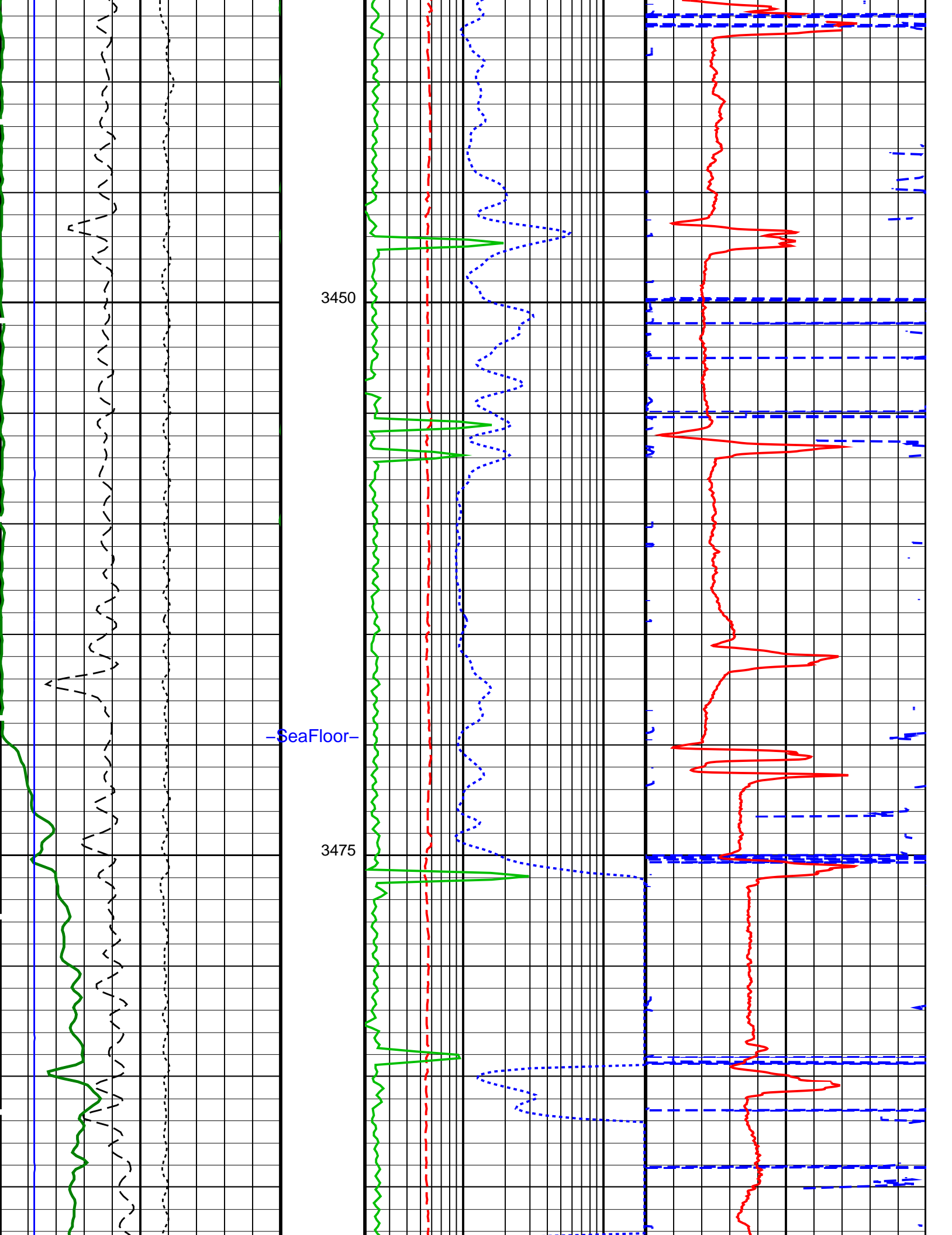
OP System Version: 17C0-154

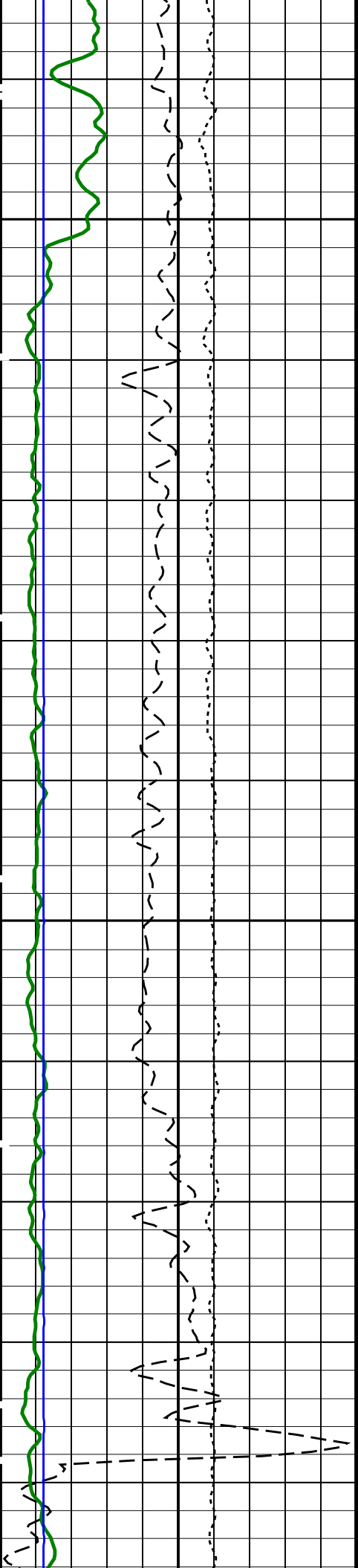
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DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	APS-C	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

PIP SUMMARY

Time Mark Every 60 S

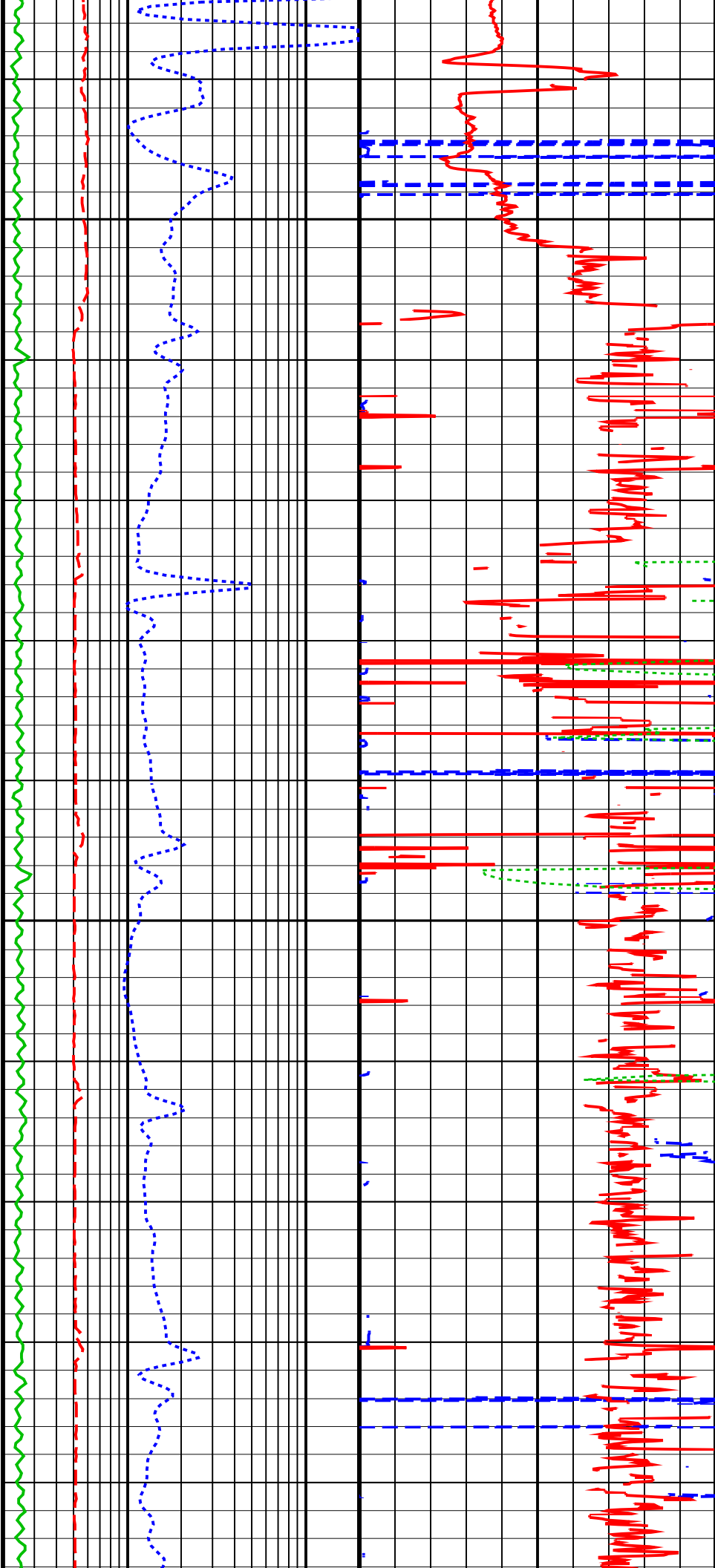


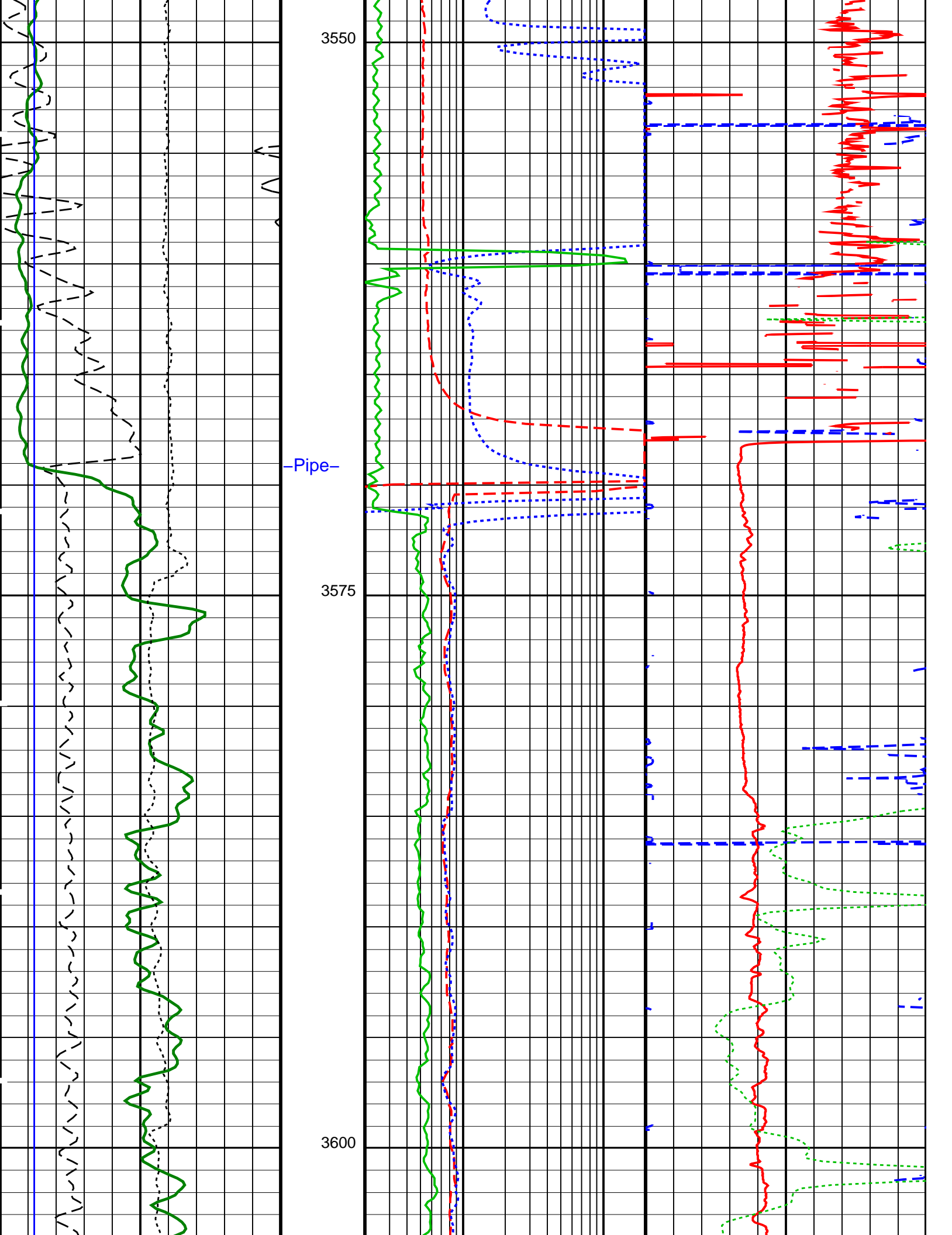


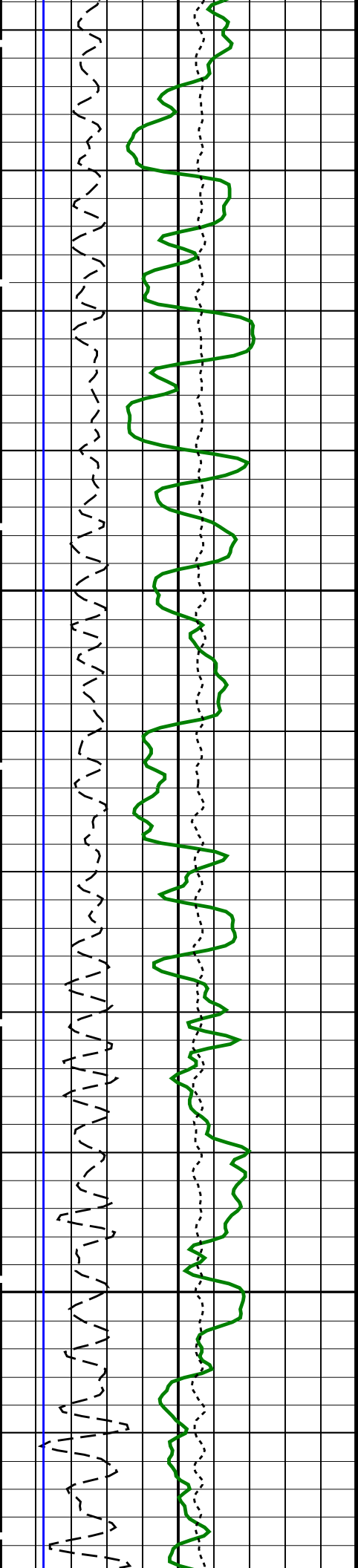


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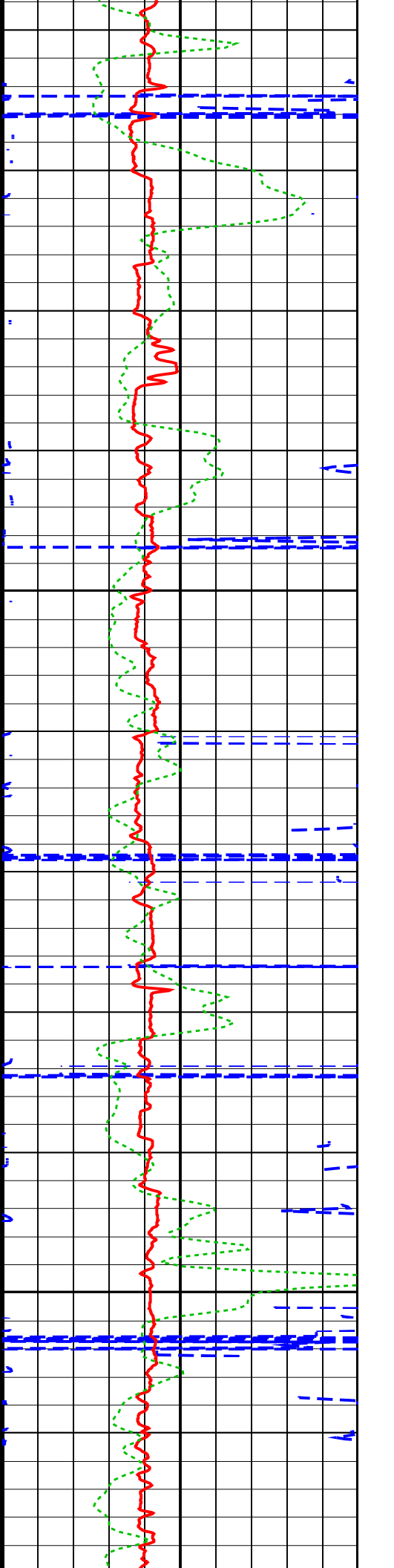
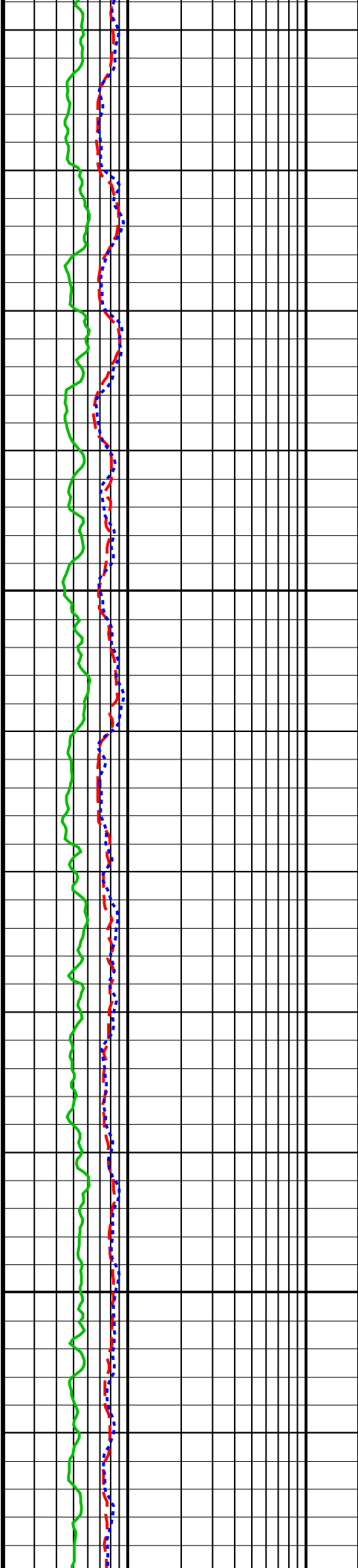


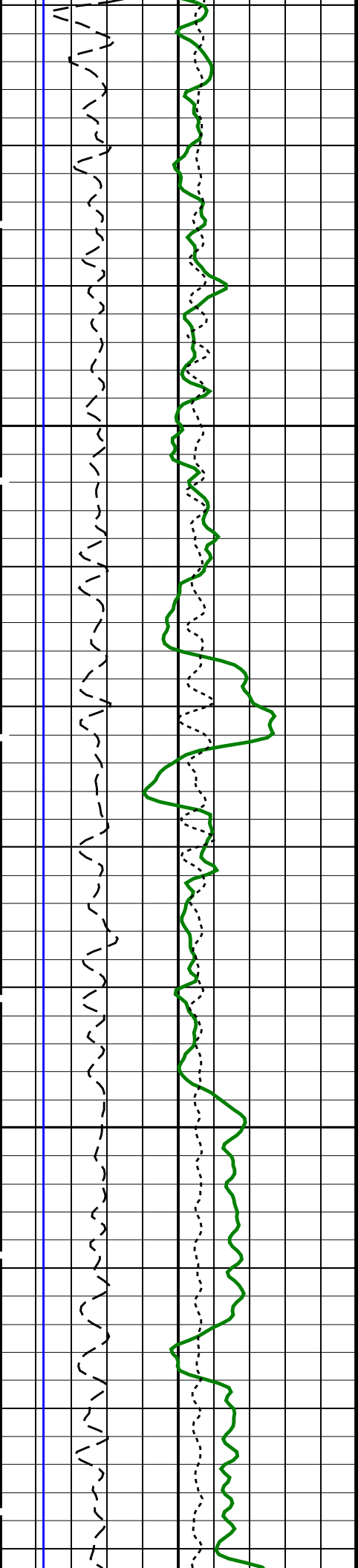




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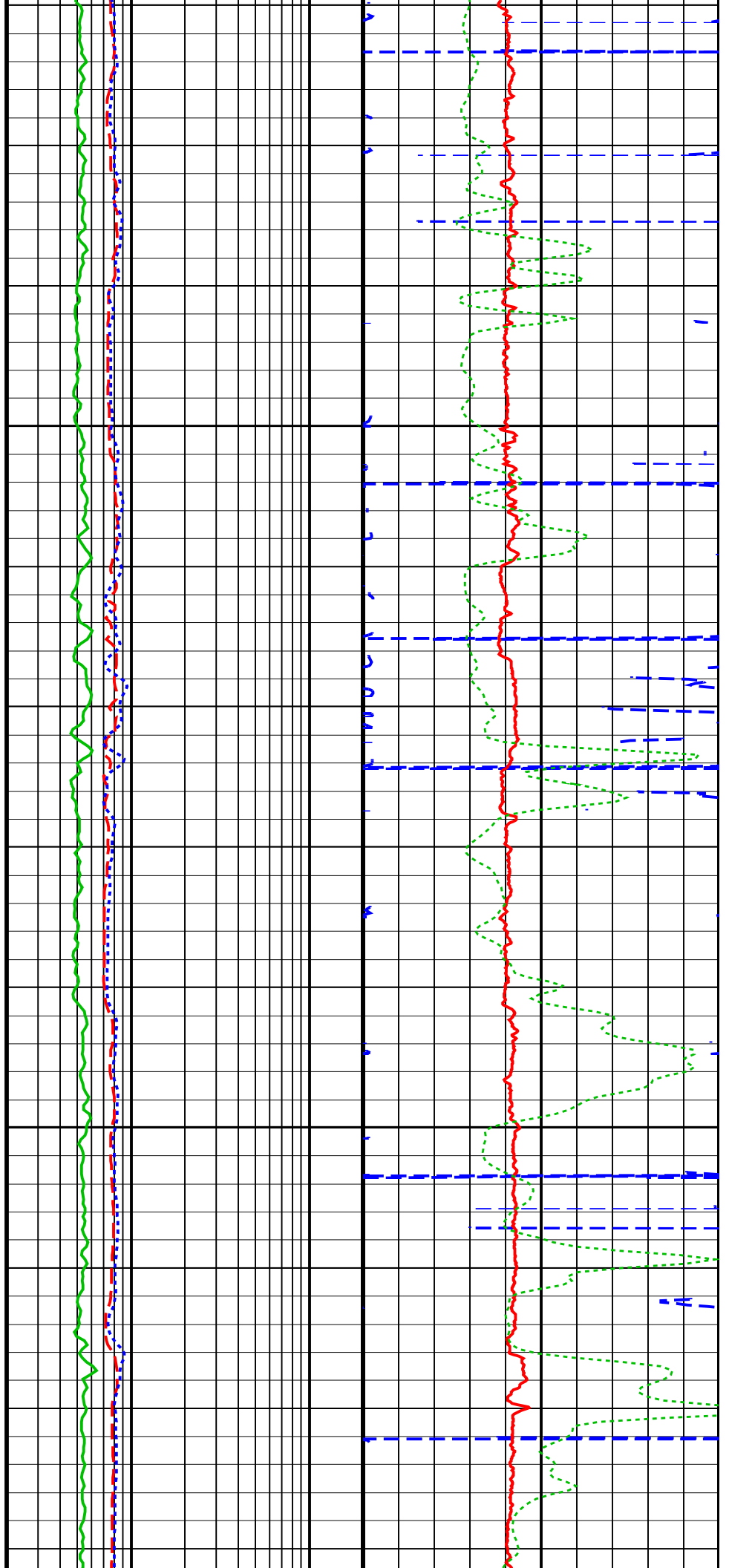
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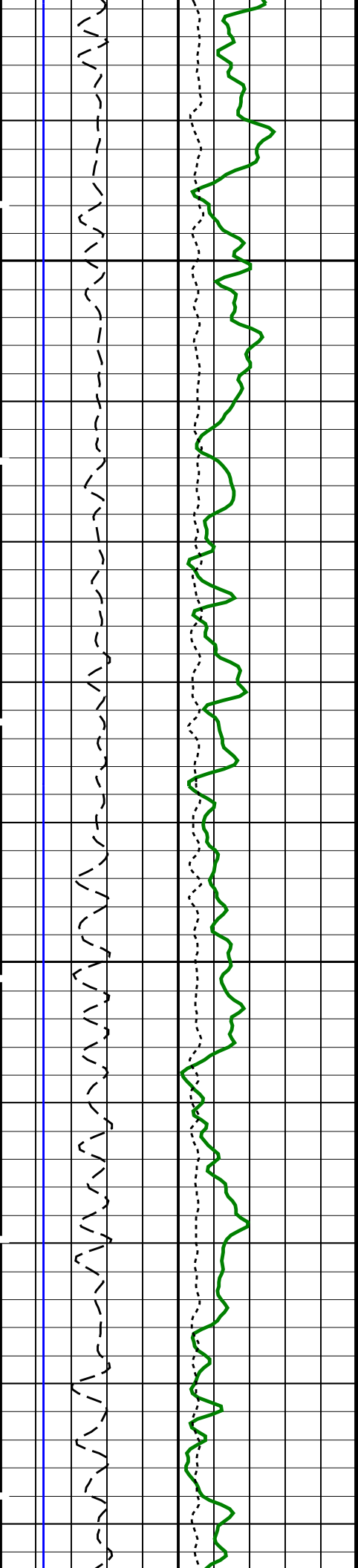




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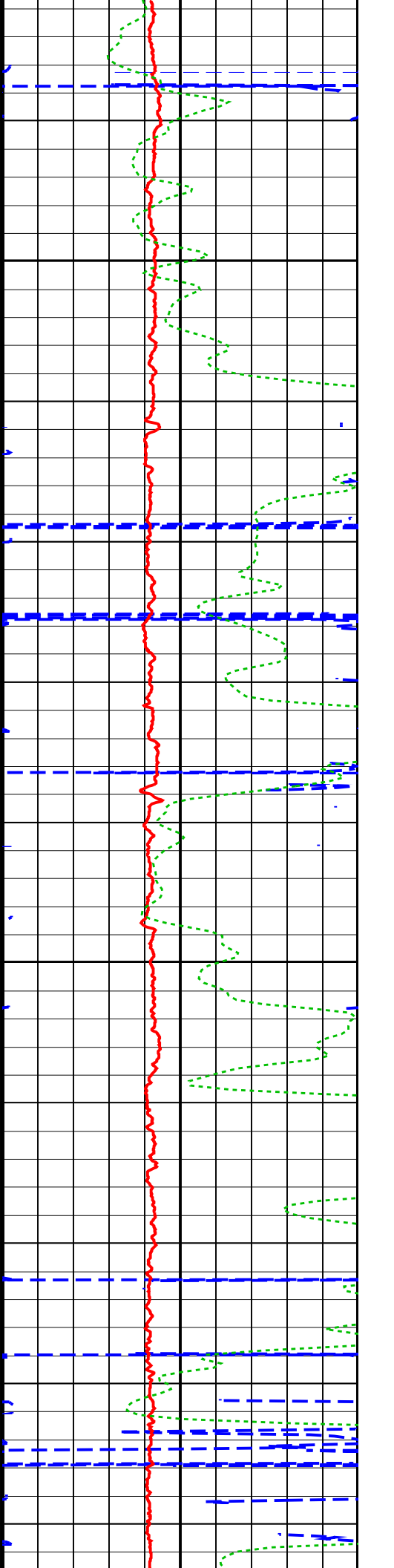
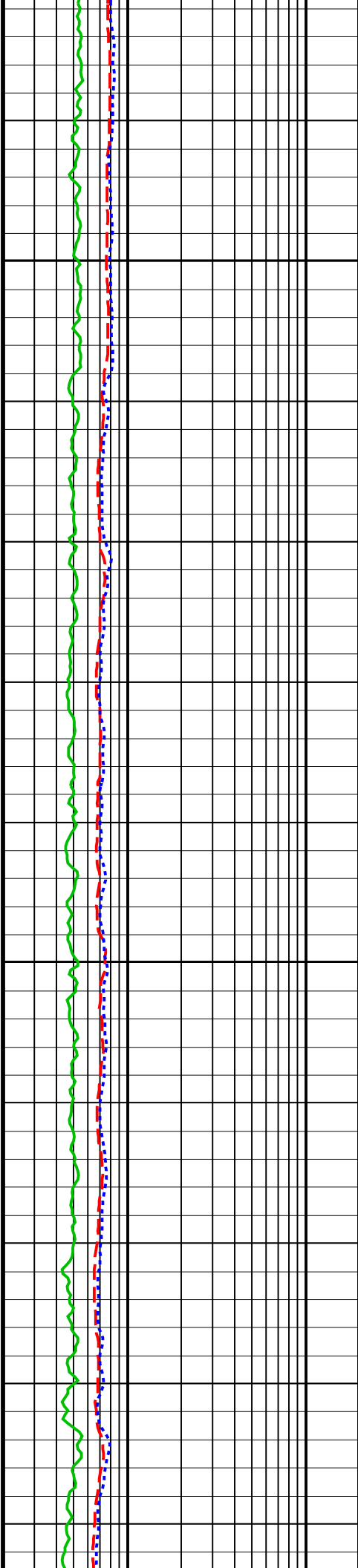
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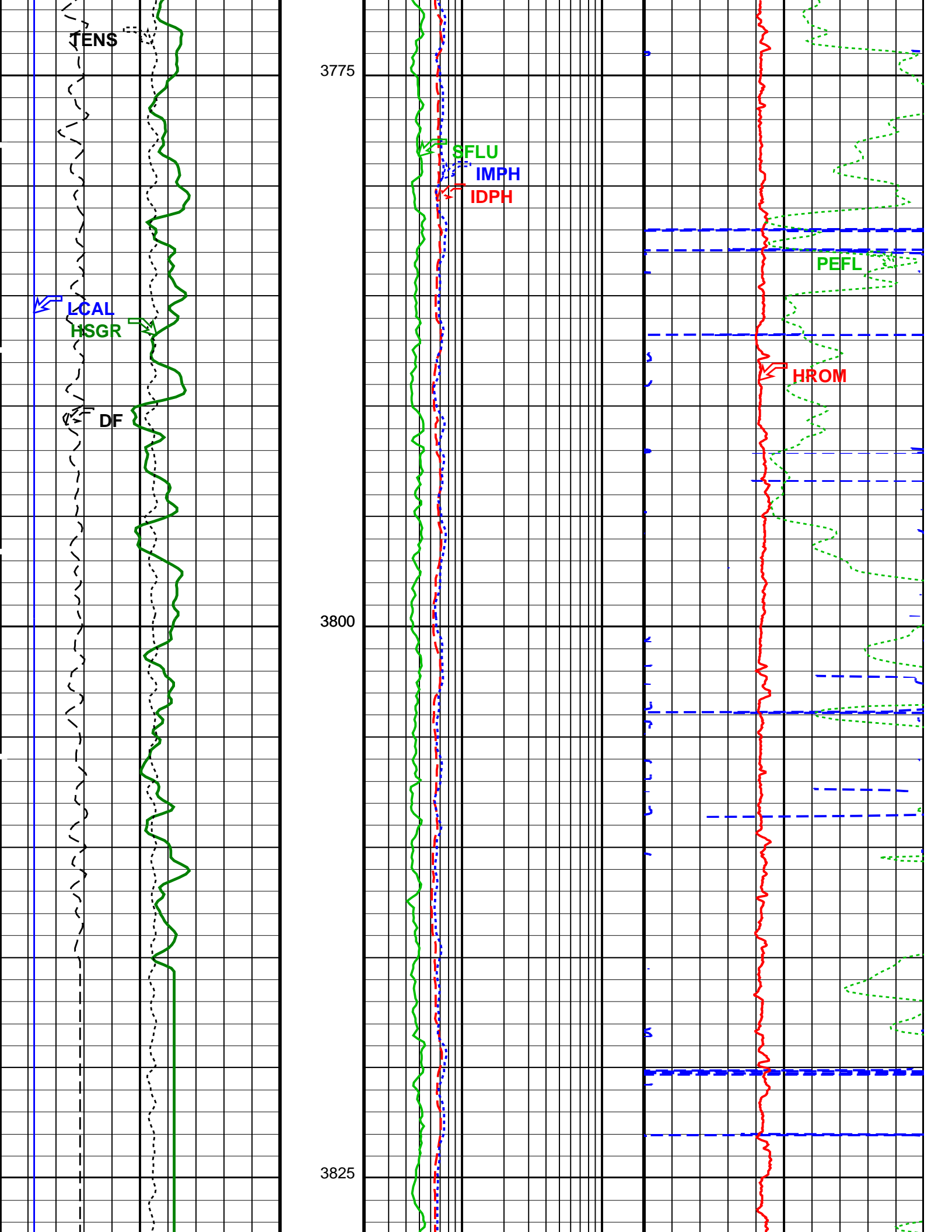


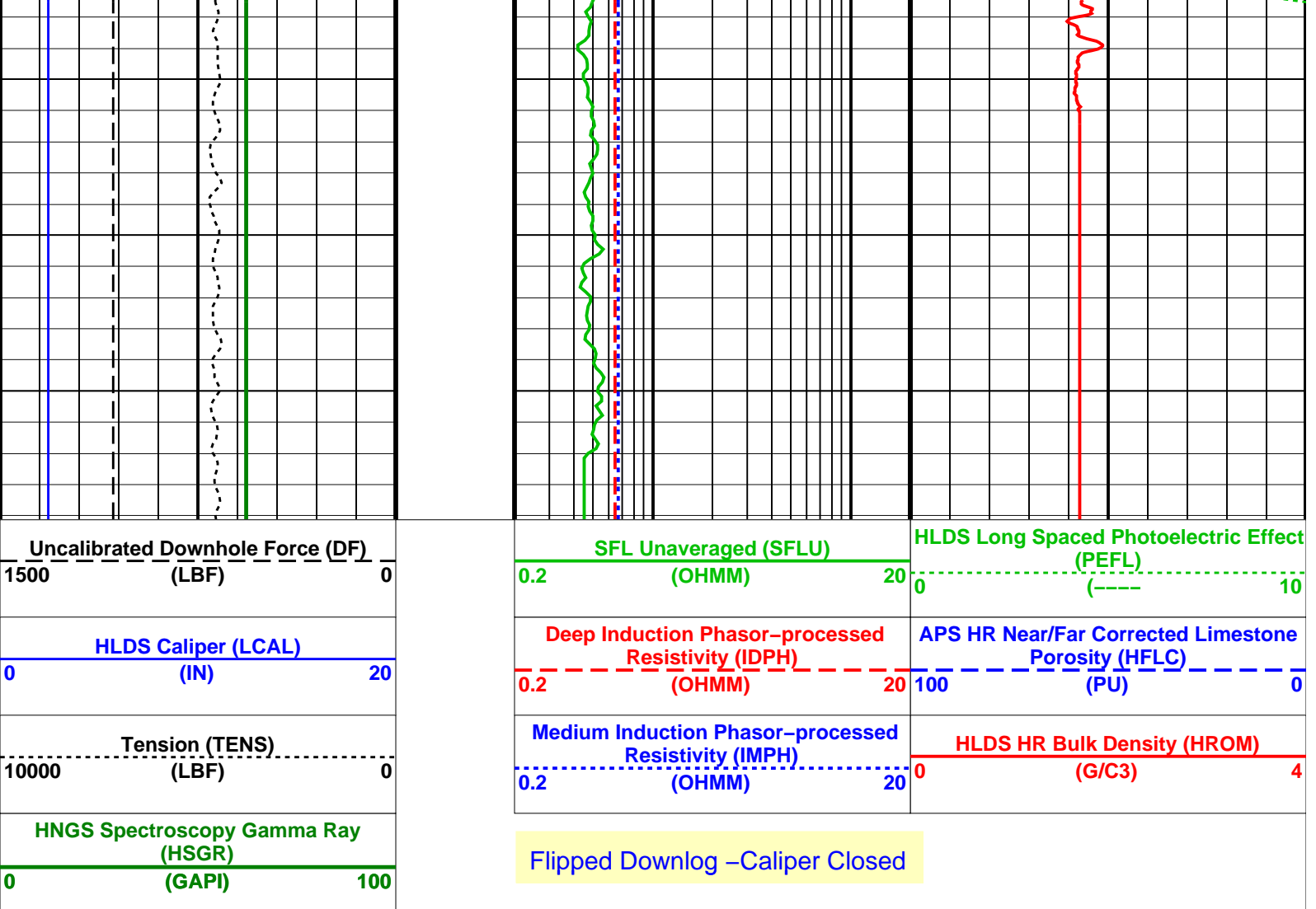


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PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction - E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	9.16	DEGC
DGF1	Deep 10 kHz Gain Factor	0.968645	
DGF2	Deep 20 kHz Gain Factor	0.979119	
DGF4	Deep 40 kHz Gain Factor	0.990252	
DPH1	Deep 10 kHz Phase Shift	0.26358	DEG
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DPH4	Deep 40 kHz Phase Shift	-1.11256	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	39.5751	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.15121	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	245.841	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	78.4516	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GRGD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGE1	Medium 10 kHz Gain Factor	0.960585	

MGF1	Medium 10 kHz Gain Factor	0.969383	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MGF4	Medium 40 kHz Gain Factor	0.999842	
MPH1	Medium 10 kHz Phase Shift	0.0787021	DEG
MPH2	Medium 20 kHz Phase Shift	-0.199528	DEG
MPH4	Medium 40 kHz Phase Shift	-0.885081	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	31.1041	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	3.5782	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	328.09	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	112.808	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV

GPIT-A/B: General Purpose Inclinometer

ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	71.8638	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	

HLDS: Hostile Litho-Density Sonde

CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	

APS-C: Accelerator-Porosity Tool

AASD	APS Software Version	0	
ADSO	APS Thermal and Array Detectors High Voltage Setting	1967.87	V
AFSD	APS Array Detectors Data Source Switch	Both	
AHCS	APS Far Detector High Voltage Setting	2098.2	V
AHSS	APS Holesize Correction Source	BS	
AMTY	APS Holesize Correction Switch	ON	
ANSD	APS Environmental Corrections Mud Type	WaterBaseBarite	
ASOS	APS Near Detector High Voltage Setting	1738.17	V
ATSS	APS Standoff Correction Switch	ON	
BHFL_APS	APS Temperature-Pressure-Salinity Correction Switch	ON	
BHS	APS TNPH Borehole Fluid Type	WATER	
BHT	Borehole Status	OPEN	
BSCO_APS	Bottom Hole Temperature (used in calculations)	9.16	DEGC
DPPM	APS TNPH Borehole Salinity Correction Option	NO	
DSCO_APS	Density Porosity Processing Mode	HIRS	
FSAL	APS TNPH Density Source	COMPUTED	
FSCO_APS	Formation Salinity	-50000	PPM
GCSE	APS TNPH Formation Salinity Correction Option	NO	
GDEV	Generalized Caliper Selection	BS	
GGRD	Average Angular Deviation of Borehole from Normal	0	DEG
GRSE	Geothermal Gradient	0.018227	DC/M
GTSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
HSCO_APS	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	APS TNPH Hole Size Correction Option	YES	
MATR	Barite Mud Switch	NOBARITE	
MCCO_APS	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCOR_APS	APS TNPH Mud Cake Correction Option	NO	
MWCO_APS	APS TNPH Mud Correction	NATU	
NARC	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.06031	
NARC	APS Near/Far Calibration Ratio	0.890147	

PTCO_APS	APS TNPH Pressure/Temperature Correction Option	YES	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	NO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	9.16	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00113835	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	4.30116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.93825	

System and Miscellaneous

ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.22	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3861	M
TDD	Total Depth - Driller	3853.50	M
TDL	Total Depth - Logger	3861.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 06-Mar-2010 16:34

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3870_Q3_2009_OP17_V3_b
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	APS-C	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

Input DLIS Files

DEFAULT	FLIP_PI_LDL_APS_NGS_031L	PRODUCER	06-Mar-2010 16:32	3844.1 M	3408.4 M
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Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_032PUP	FN:39	PRODUCER	06-Mar-2010 16:34
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Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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General Purpose Inclinometer Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY

Before: 1–Mar–2010 6:50

TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	

General Purpose Inclinometer Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY

Before: 1–Mar–2010 6:50

TEMPERATURE REFERENCE :	N/A	N/A	19	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	

Hostile Litho–Density Sonde Wellsite Calibration – Background Measurement

Master: 1–Jan–2010 22:54 Before: 17–Jan–2010 0:16

SS Cs Resolution Bkg	9.000	7.783	7.716	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.079	8.019	N/A	N/A	1.800	%
LSW1 Background	100.0	91.64	91.89	N/A	N/A	3.000	CPS
LSW2 Background	100.0	82.70	82.51	N/A	N/A	3.000	CPS
LSW3 Background	200.0	187.7	186.7	N/A	N/A	6.000	CPS
LSW4 Background	250.0	231.1	233.3	N/A	N/A	7.500	CPS
LSW5 Background	600.0	541.2	543.9	N/A	N/A	18.00	CPS
SSW1 Background	100.0	90.66	89.76	N/A	N/A	3.000	CPS
SSW2 Background	200.0	151.1	152.5	N/A	N/A	6.000	CPS
SSW3 Background	500.0	428.0	428.1	N/A	N/A	15.00	CPS
SSW4 Background	270.0	227.6	230.6	N/A	N/A	8.100	CPS
SSW5 Background	200.0	164.5	164.7	N/A	N/A	6.000	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Aluminum Measurement

Master: 1–Jan–2010 22:54

LSW1 Aluminum	600.0	567.9	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	809.6	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	970.5	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	493.5	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	444.3	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2502	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6870	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9624	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3962	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	476.3	N/A	N/A	N/A	N/A	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Lithology Measurement

Master: 1–Jan–2010 22:54

LSW1 Iron	400.0	389.4	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	659.2	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	867.1	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	449.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	410.2	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1833	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5740	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8814	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3635	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	422.7	N/A	N/A	N/A	N/A	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Caliper Calibration

Before: 16–Jan–2010 19:05

HLDS Caliper Small Ring	12.00	N/A	14.54	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	18.04	N/A	N/A	N/A	IN

Accelerator–Porosity Tool Wellsite Calibration – Detector Background

Master: 1–Jan–2010 22:21 Before: 1–Mar–2010 8:49

Near Det Bkg Cntrate	30.00	33.05	30.48	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	32.94	33.09	N/A	N/A	N/A	CPS
Array–1 Det Bkg Cntrate	30.00	29.80	29.00	N/A	N/A	N/A	CPS
Array–2 Det Bkg Cntrate	30.00	29.33	31.07	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.63	31.74	N/A	N/A	N/A	CPS

Accelerator–Porosity Tool Wellsite Calibration – Calibration Ratios

Master: 1–Jan–2010 22:21

Near/Far Calibration Ratio	0.9250	0.8901	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.060	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.006	N/A	N/A	N/A	N/A	

Accelerator–Porosity Tool Wellsite Calibration – Tank Check

Master: 1–Jan–2010 22:21

Array–1 Standoff Porosity	11.75	11.67	N/A	N/A	N/A	N/A	PU
Array–2 Standoff Porosity	11.75	11.50	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.851	N/A	N/A	N/A	N/A	US
Array–1 SDT Ratio Up/Down	1.000	0.9891	N/A	N/A	N/A	N/A	
Array–2 SDT Ratio Up/Down	1.000	0.9855	N/A	N/A	N/A	N/A	

Sigma Formation	27.50	27.54	N/A	N/A	N/A	N/A	CU
Accelerator-Porosity Tool Wellsite Calibration – CCR7 signal boxes							
Master: 1–Jan–2010 22:21							
Near Detector Plateau Setting	1650	1738	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2098	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1968	N/A	N/A	N/A	N/A	V
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 1–Jan–2010 19:23 Before: 16–Jan–2010 20:44							
Na 511 Peak Loc	40.00	39.63	39.63	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.18	14.78	N/A	N/A	2.000	%
High Voltage	1150	1161	1177	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.1	142.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.816	10.01	N/A	N/A	2.000	%
Temperature	15.50	22.69	14.92	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	33.90	33.64	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check							
Master: 1–Jan–2010 19:23 Before: 16–Jan–2010 20:44							
Na 511 Peak Loc	40.00	39.69	39.65	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.48	14.73	N/A	N/A	2.000	%
High Voltage	1150	1095	1081	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.2	141.8	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.546	8.949	N/A	N/A	2.000	%
Temperature	15.50	23.40	15.62	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	33.69	33.51	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2							
Master: 1–Jan–2010 19:23 Before: 16–Jan–2010 20:44							
Coincidence Count Rate Ratio	1.000	1.006	1.005	N/A	N/A	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration							
Master: 1–Jan–2010 19:02							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.4	--	--	--	--	
Th Peak Res	7.000	6.564	--	--	--	--	%
Background Count Rate	142.5	18.85	--	--	--	--	CPS
Gain Ratio	1.000	1.010	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration							
Master: 1–Jan–2010 19:02							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.1	--	--	--	--	
Th Peak Res	7.000	6.559	--	--	--	--	%
Background Count Rate	142.5	18.64	--	--	--	--	CPS
Gain Ratio	1.000	1.002	--	--	--	--	

Accelerator-Porosity Tool – Detector Plateau Settings :	
Near Detector Plateau Setting	1738 V
Far Detector Plateau Setting	2098 V
Array Detector Plateau Setting	1968 V

Dual Induction – E / Equipment Identification		
Primary Equipment:		
Dual Induction Sonde	DIS – HB	129
Dual Induction Cartridge	DIC – EB	171
Auxiliary Equipment:		
Mass Isolated Housing	MIH – ZA	342

Dual Induction – E Wellsite Calibration									
Induction Electronics (10 kHz)									
Phase	ID Elect Real Offset 10 kHz MM/M	Value	Phase	ID Elect Real Gain 10 kHz	Value	Phase	ID Elect Phase 10 kHz DEG	Value	
Before		29.74	Before		0.9415	Before		9.141	
	-267.4 (Minimum) 32.65 (Nominal) 332.6 (Maximum)			0.7960 (Minimum) 0.9460 (Nominal) 1.124 (Maximum)			-0.5967 (Minimum) 9.403 (Nominal) 19.40 (Maximum)		
Phase	ID Elect Quad Offset 10 kHz MM/M	Value	Phase	ID Elect Quad Gain 10 kHz	Value	Phase	IM Elect Phase 10 kHz DEG	Value	
Before		25.20	Before		0.9567	Before		8.957	
	-278.5 (Minimum) 21.47 (Nominal) 321.5 (Maximum)			0.8109 (Minimum) 0.9609 (Nominal) 1.145 (Maximum)			-0.7277 (Minimum) 9.272 (Nominal) 19.27 (Maximum)		

(Minimum)			(Nominal)			(Maximum)		
Phase	IM Elect Real Offset 10 kHz	MM/M	Value	Phase	IM Elect Real Gain 10 kHz	Value		
Before			83.05	Before			0.9495	
	-465.7 (Minimum)	84.34 (Nominal)	634.3 (Maximum)		0.8034 (Minimum)	0.9534 (Nominal)	1.134 (Maximum)	
Phase	IM Elect Quad Offset 10 kHz	MM/M	Value	Phase	IM Elect Quad Gain 10 kHz	Value		
Before			43.40	Before			0.9306	
	-505.4 (Minimum)	44.57 (Nominal)	594.6 (Maximum)		0.7864 (Minimum)	0.9364 (Nominal)	1.110 (Maximum)	

Before: 16-Jan-2010 19:20

Dual Induction – E Wellsite Calibration											
Induction Electronics (20 kHz)											
Phase	ID Elect Real Offset 20 kHz	MM/M	Value	Phase	ID Elect Real Gain 20 kHz	Value	Phase	ID Elect Phase 20 kHz	DEG	Value	
Before			11.79	Before			0.9693	Before			3.979
	-112.1 (Minimum)	12.92 (Nominal)	137.9 (Maximum)		0.8195 (Minimum)	0.9695 (Nominal)	1.157 (Maximum)		-10.06 (Minimum)	4.941 (Nominal)	19.94 (Maximum)
Phase	ID Elect Quad Offset 20 kHz	MM/M	Value	Phase	ID Elect Quad Gain 20 kHz	Value	Phase	IM Elect Phase 20 kHz	DEG	Value	
Before			10.24	Before			0.9876	Before			4.369
	-116.3 (Minimum)	8.664 (Nominal)	133.7 (Maximum)		0.8375 (Minimum)	0.9875 (Nominal)	1.182 (Maximum)		-9.662 (Minimum)	5.338 (Nominal)	20.34 (Maximum)
Phase	IM Elect Real Offset 20 kHz	MM/M	Value	Phase	IM Elect Real Gain 20 kHz	Value					
Before			34.09	Before			0.9935				
	-190.4 (Minimum)	34.62 (Nominal)	259.6 (Maximum)		0.8410 (Minimum)	0.9910 (Nominal)	1.187 (Maximum)				
Phase	IM Elect Quad Offset 20 kHz	MM/M	Value	Phase	IM Elect Quad Gain 20 kHz	Value					
Before			17.95	Before			0.9736				
	-206.6 (Minimum)	18.45 (Nominal)	243.4 (Maximum)		0.8231 (Minimum)	0.9731 (Nominal)	1.162 (Maximum)				

Before: 16-Jan-2010 19:21

Dual Induction – E Wellsite Calibration											
Induction Electronics (40 kHz)											
Phase	ID Elect Real Offset 40 kHz	MM/M	Value	Phase	ID Elect Real Gain 40 kHz	Value	Phase	ID Elect Phase 40 kHz	DEG	Value	
Before			7.702	Before			0.9527	Before			14.16
	-76.50 (Minimum)	8.503 (Nominal)	93.50 (Maximum)		0.8112 (Minimum)	0.9612 (Nominal)	1.145 (Maximum)		-3.044 (Minimum)	16.96 (Nominal)	36.96 (Maximum)
Phase	ID Elect Quad Offset 40 kHz	MM/M	Value	Phase	ID Elect Quad Gain 40 kHz	Value	Phase	IM Elect Phase 40 kHz	DEG	Value	
Before			6.850	Before			0.9798	Before			13.95
	-79.21 (Minimum)	5.786 (Nominal)	90.79 (Maximum)		0.8370 (Minimum)	0.9870 (Nominal)	1.182 (Maximum)		-3.281 (Minimum)	16.72 (Nominal)	36.72 (Maximum)
Phase	IM Elect Real Offset 40 kHz	MM/M	Value	Phase	IM Elect Real Gain 40 kHz	Value					
Before			21.94	Before			0.9934				
	-107.6 (Minimum)	22.42 (Nominal)	152.4 (Maximum)		0.8470 (Minimum)	0.9970 (Nominal)	1.196 (Maximum)				
Phase	IM Elect Quad Offset 40 kHz	MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value					
Before			11.58	Before			0.9733				
	-118.0 (Minimum)	12.02 (Nominal)	142.0 (Maximum)		0.8285 (Minimum)	0.9785 (Nominal)	1.170 (Maximum)				

Before: 16-Jan-2010 19:22

Dual Induction – E Wellsite Calibration							
SFL Electronics							
Phase	SFL Voltage Offset	MV	Value	Phase	SFL Voltage Gain	Value	
Before			0.1180	Before			0.9952
	-15.00 (Minimum)	0 (Nominal)	15.00 (Maximum)		0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Phase	SFL Current Offset	MA	Value	Phase	SFL Current Gain	Value	
Before			0.03239	Before			1.006
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Before: 16-Jan-2010 19:23

Phase	Deep 10 kHz Gain Factor	Value	Phase	Deep 20 kHz Gain Factor	Value	Phase	Deep 40 kHz Gain Factor	Value
Master		0.9686	Master		0.9791	Master		0.9903
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	
Phase	Medium 10 kHz Gain Factor	Value	Phase	Medium 20 kHz Gain Factor	Value	Phase	Medium 40 kHz Gain Factor	Value
Master		0.9696	Master		0.9748	Master		0.9998
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	
Phase	Deep 10 kHz Phase Shift	Value	Phase	Deep 20 kHz Phase Shift	Value	Phase	Deep 40 kHz Phase Shift	Value
Master		0.2636	Master		0.01600	Master		-1.113
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-2.000 (Minimum) 0 (Nominal) 2.000 (Maximum)			-4.000 (Minimum) -1.000 (Nominal) 2.000 (Maximum)	
Phase	Medium 10 kHz Phase Shift	Value	Phase	Medium 20 kHz Phase Shift	Value	Phase	Medium 40 kHz Phase Shift	Value
Master		0.07870	Master		-0.1995	Master		-0.8851
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-3.000 (Minimum) -1.000 (Nominal) 1.000 (Maximum)			-5.000 (Minimum) -2.000 (Nominal) 1.000 (Maximum)	

Master: Calibration out of date 30-Apr-2008 6:59

Dual Induction – E Master Calibration								
Sonde Error Corrections: Correction for sonde response in zero conductivity environment. (Normalized to 25C).								
Phase	Real Deep 10 kHz S.E. Corr.	Value	Phase	Real Deep 20 kHz S.E. Corr.	Value	Phase	Real Deep 40 kHz S.E. Corr.	Value
Master		39.58	Master		17.05	Master		5.151
	-50.00 (Minimum) 0 (Nominal) 125.0 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	Quad Deep 10 kHz S.E. Corr.	Value	Phase	Quad Deep 20 kHz S.E. Corr.	Value	Phase	Quad Deep 40 kHz S.E. Corr.	Value
Master		245.8	Master		136.2	Master		78.45
	-250.0 (Minimum) 0 (Nominal) 350.0 (Maximum)			-125.0 (Minimum) 0 (Nominal) 200.0 (Maximum)			-75.00 (Minimum) 0 (Nominal) 125.0 (Maximum)	
Phase	Real Medium 10 kHz S.E. Corr.	Value	Phase	Real Medium 20 kHz S.E. Corr.	Value	Phase	Real Medium 40 kHz S.E. Corr.	Value
Master		31.10	Master		11.33	Master		3.578
	-50.00 (Minimum) 0 (Nominal) 140.0 (Maximum)			-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	
Phase	Quad Medium 10 kHz S.E. Corr.	Value	Phase	Quad Medium 20 kHz S.E. Corr.	Value	Phase	Quad Medium 40 kHz S.E. Corr.	Value
Master		328.1	Master		172.6	Master		112.8
	-1300 (Minimum) 0 (Nominal) 1300 (Maximum)			-650.0 (Minimum) 0 (Nominal) 650.0 (Maximum)			-350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Master: Calibration out of date 30-Apr-2008 7:24

General Purpose Inclinomter / Equipment Identification		
Primary Equipment:		
GPIT Cartridge – AC	GPIC – AC	719
Auxiliary Equipment:		
GPIT Housing	GPIH – A	2864

Hostile Litho–Density Sonde / Equipment Identification		
Primary Equipment:		
Hostile Litho Density Sonde	HLDS – D	57
Hostile Litho Density High Voltage	HLDV – D	51
Gamma Source Radioactive	GSR – Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP – C	61
Hostile Litho Density High Voltage Housi	HEH – H	53

Hostile Litho–Density Sonde Wellsite Calibration								
Background Measurement								
Phase	SS Cs Resolution Bkg %	Value	Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value
Master		7.783	Master		8.079	Master		91.64
Before		7.716	Before		8.019	Before		91.89
	7.000 9.000 11.00			7.000 9.000 11.00			55.00 100.0 150.0	

(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)		
Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value	Phase	LSW4 Background CPS	Value
Master		82.70	Master		187.7	Master		231.1
Before		82.51	Before		186.7	Before		233.3
50.00	100.0	140.0	110.0	200.0	290.0	140.0	250.0	360.0
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value
Master		541.2	Master		90.66	Master		151.1
Before		543.9	Before		89.76	Before		152.5
330.0	600.0	830.0	55.00	100.0	150.0	100.0	200.0	260.0
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value
Master		428.0	Master		227.6	Master		164.5
Before		428.1	Before		230.6	Before		164.7
280.0	500.0	700.0	150.0	270.0	380.0	110.0	200.0	270.0
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Master: 1-Jan-2010 22:54 Before: 17-Jan-2010 0:16

Hostile Litho-Density Sonde Master Calibration								
Detector Background Measurement								
Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value
Master		91.64	Master		82.70	Master		187.7
55.00	100.0	150.0	50.00	100.0	140.0	110.0	200.0	290.0
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	LS Cs Resolution Bkg %	Value
Master		231.1	Master		541.2	Master		8.079
140.0	250.0	360.0	330.0	600.0	830.0	7.000	9.000	11.00
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value
Master		90.66	Master		151.1	Master		428.0
55.00	100.0	150.0	100.0	200.0	260.0	280.0	500.0	700.0
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	Phase	SS Cs Resolution Bkg %	Value
Master		227.6	Master		164.5	Master		7.783
150.0	270.0	380.0	110.0	200.0	270.0	7.000	9.000	11.00
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Master: 1-Jan-2010 22:54

Hostile Litho-Density Sonde Master Calibration								
Detector Aluminum Measurement (bkgd-subtracted)								
Phase	LSW1 Aluminum CPS	Value	Phase	LSW2 Aluminum CPS	Value	Phase	LSW3 Aluminum CPS	Value
Master		567.9	Master		809.6	Master		970.5
420.0	600.0	770.0	650.0	900.0	1150	800.0	1100	1450
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	SSW1 Aluminum CPS	Value
Master		493.5	Master		444.3	Master		2502
410.0	580.0	740.0	410.0	570.0	740.0	2000	2800	3200
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value	Phase	SSW4 Aluminum CPS	Value
Master		6870	Master		9624	Master		3962
5800	8000	9300	8300	11600	13500	3500	5000	5800
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Phase	SSW5 Aluminum CPS	Value						
Master		476.3						
470.0	660.0	770.0						
(Minimum)	(Nominal)	(Maximum)						

Master: 1-Jan-2010 22:54

Hostile Litho-Density Sonde Master Calibration								
Detector Litholog Measurement (bkgd-subtracted)								
Phase	LSW1 Iron CPS	Value	Phase	LSW2 Iron CPS	Value	Phase	LSW3 Iron CPS	Value
Master		389.4	Master		659.2	Master		867.1
290.0	400.0	560.0	520.0	730.0	950.0	720.0	1000	1350

Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	SSW1 Iron CPS	Value
Master		449.5	Master		410.2	Master		1833
	370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum)			340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum)			1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	
Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value	Phase	SSW4 Iron CPS	Value
Master		5740	Master		8814	Master		3635
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)			7800 (Minimum) 10800 (Nominal) 12600 (Maximum)			3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	
Phase	SSW5 Iron CPS	Value						
Master		422.7						
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)							

Master: 1-Jan-2010 22:54

Hostile Litho-Density Sonde Master Calibration								
Quality Ratios								
Phase	AL CALIBRATION RATIO 1	Value	Phase	AL CALIBRATION RATIO 2	Value	Phase	AL CALIBRATION RATIO 3	Value
Master		1.035	Master		2.169	Master		0.6056
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)			0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	
Phase	AL CALIBRATION RATIO 4	Value	Phase	Pad-Wear SS Ratio	Value	Phase	Pad-Wear LS Ratio	Value
Master		0.5637	Master		0.9909	Master		0.9828
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)			0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)			0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	
Phase	Pad-Position SS Ratio	Value	Phase	Pad-Position LS Ratio	Value			
Master		1.001	Master		0.9868			
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)			0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)				

Master: 1-Jan-2010 22:54

Litho-Density Spectroscopy Cartridge - B / Equipment Identification

Primary Equipment:			
LDSC Cartridge	LDSC - B	326	
Auxiliary Equipment:			
LDSC Housing	LDSH - A	319	

Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:			
Accelerator-Porosity Sonde	APS - C	22	
APS Minitron	MNTR - F	5589	
Auxiliary Equipment:			
Accelerator-Porosity Housing	APH - AC	22	
APS Calibration Water Tank	SFT - 178	2	
APS Aluminum Calibrator Sleeve	SFT - 281	2	

Accelerator-Porosity Tool Wellsite Calibration								
Detector Background								
Phase	Near Det Bkg Cntrate CPS	Value	Phase	Far Det Bkg Cntrate CPS	Value	Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		33.05	Master		32.94	Master		29.80
Before		30.48	Before		33.09	Before		29.00
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	
Phase	Array-2 Det Bkg Cntrate CPS	Value	Phase	Array Therm Det Bkg Cntrate CPS	Value			
Master		29.33	Master		32.63			
Before		31.07	Before		31.74			
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)				

Master: 1-Jan-2010 22:21

Before: 1-Mar-2010 8:49

Accelerator-Porosity Tool Wellsite Calibration											
Calibration Ratios											
Phase	Near/Far Calibration Ratio		Value	Phase	Near/Array Calibration Ratio		Value	Phase	Near/Array Cal Ratio Up/Down		Value
Master			0.8901	Master			1.060	Master			1.006
	0.8000 (Minimum)	0.9250 (Nominal)	1.050 (Maximum)		0.9000 (Minimum)	1.030 (Nominal)	1.170 (Maximum)		0.9700 (Minimum)	1.000 (Nominal)	1.030 (Maximum)

Master: 1-Jan-2010 22:21

Accelerator-Porosity Tool Wellsite Calibration											
Tank Check											
Phase	Array-1 Standoff Porosity PU		Value	Phase	Array-2 Standoff Porosity PU		Value	Phase	Average Slowing Down Time US		Value
Master			11.67	Master			11.50	Master			5.851
	9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array-1 SDT Ratio Up/Down		Value	Phase	Array-2 SDT Ratio Up/Down		Value	Phase	Sigma Formation CU		Value
Master			0.9891	Master			0.9855	Master			27.54
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		20.00 (Minimum)	27.50 (Nominal)	35.00 (Maximum)

Master: 1-Jan-2010 22:21

Accelerator-Porosity Tool Master Calibration											
Detector Calibration											
Phase	Near/Far Calibration Ratio		Value	Phase	Near/Array Calibration Ratio		Value	Phase	Near/Array Cal Ratio Up/Down		Value
Master			0.8901	Master			1.060	Master			1.006
	0.8000 (Minimum)	0.9250 (Nominal)	1.050 (Maximum)		0.9000 (Minimum)	1.030 (Nominal)	1.170 (Maximum)		0.9700 (Minimum)	1.000 (Nominal)	1.030 (Maximum)

Master: 1-Jan-2010 22:21

Accelerator-Porosity Tool Master Calibration											
Tank Check											
Phase	Array-1 Standoff Porosity PU		Value	Phase	Array-2 Standoff Porosity PU		Value	Phase	Average Slowing Down Time US		Value
Master			11.67	Master			11.50	Master			5.851
	9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array-1 SDT Ratio Up/Down		Value	Phase	Array-2 SDT Ratio Up/Down		Value	Phase	Sigma Formation CU		Value
Master			0.9891	Master			0.9855	Master			27.54
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		20.00 (Minimum)	27.50 (Nominal)	35.00 (Maximum)

Master: 1-Jan-2010 22:21

Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

Primary Equipment: HNGC Cartridge	HNGC - B	300
Auxiliary Equipment: HNGC Housing	HNGH - A	115

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS - BA	194
Auxiliary Equipment: HNGS Sonde Housing	HNSH - BA	205
Gamma Source Radioactive	GSR - U	616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration											
Detector 1 Check											
Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value
Master			39.63	Master			15.18	Master			1161
Before			39.63	Before			14.78	Before			1177

37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.1	Master		8.816	Master		22.69
Before		142.4	Before		10.01	Before		14.92
135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)		
Phase	Na Count Rate CPS	Value						
Master		33.90						
Before		33.64						
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 1-Jan-2010 19:23				Before: 16-Jan-2010 20:44				

Hostile Natural Gamma Ray Sonde Wellsite Calibration								
Detector 2 Check								
37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.69	Master		15.48	Master		1095
Before		39.65	Before		14.73	Before		1081
37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.2	Master		8.546	Master		23.40
Before		141.8	Before		8.949	Before		15.62
135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)		
Phase	Na Count Rate CPS	Value						
Master		33.69						
Before		33.51						
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 1-Jan-2010 19:23				Before: 16-Jan-2010 20:44				

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.006
Before		1.005
0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		
Master: 1-Jan-2010 19:23		
Before: 16-Jan-2010 20:44		

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 1 Calibration								
38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)		
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		210.4	Master		6.564
38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)		
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		18.85	Master		1.010			
10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)					
Master: 1-Jan-2010 19:02								

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 2 Calibration								
38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)		
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		209.1	Master		6.559
38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)		
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		18.85	Master		1.010			
10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)					

Master		18.64	Master		1.002
	10.00 (Minimum)	142.5 (Nominal)		0.9400 (Minimum)	1.000 (Nominal)
		265.0 (Maximum)			1.060 (Maximum)

Master: 1-Jan-2010 19:02

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge	DTCH - A	8799
DTC-H Telemetry Cartridge	DTCH - A	8799

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing	ECH - KC	9842
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Company: **Lamont Doherty**

Schlumberger

Well: **Expedition 318 Site U1361A**

Field: **Wilkes Land**

Rig: **JOIDES Resolution**

Country: **Antarctica**

Phasor Induction (DITE)
 Hostile Litho Density(HLDS)
 Neutron Porosity (APS) Gamma Ray (HNGS)