Schlumberger

Company: **International Ocean Discovery Program**

Well: **Expedition 356, Site U1463B**
Field: **Indonesian Throughflow**
Rig: **JOIDES Resolution** Ocean: **Indian**

Rig: JOIDES Resolution
Field: Indonesian Throughflow
Location: Latitude: S 18.96531 Deg
Well: Expedition 356, Site U1463B
Company: International Ocean Discovery Pr

High Resolution Laterolog Array (HRLA)
Density/Porosity (HLDS) (APS)
Magnetic Susceptibility (MSS), (HNGS)

LOCATION

Latitude: S 18.96531 Deg
Longitude: E 117.6239 Deg

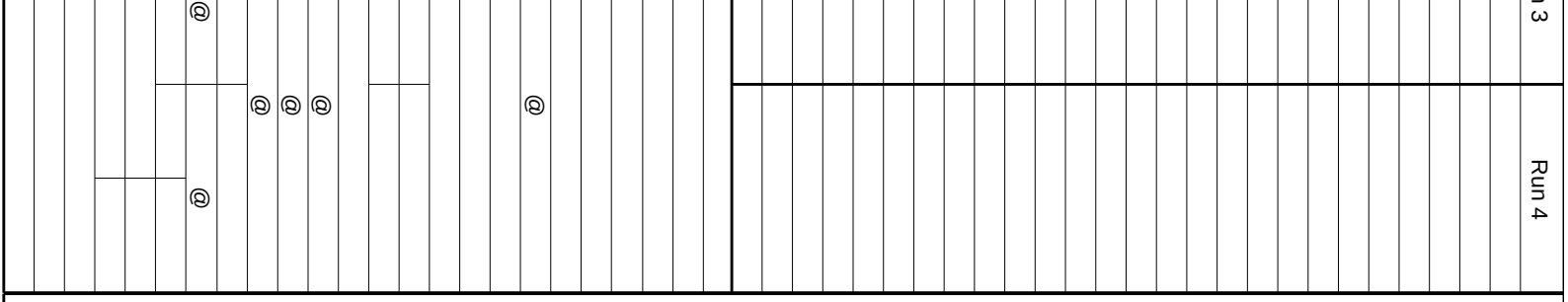
Elev.: K.B. −156.30 m
G.L. 0.00 m
D.F. −156.30 m

Permanent Datum: Sea Floor — Elev.: 0.00 m
Log Measured From: Sea Floor — 0.00 m above Perm. Datum
Drilling Measured From: Sea Floor

API Serial No.	Max. Hole Devi. 0 deg	Longitude E 117.6239	Latitude S 18.96531

			Run 1	Run 2	Run
Logging Date		15−Sep−2015			
Run Number		1			
Depth Driller		530 m			
Schlumberger Depth		453 m			
Bottom Log Interval		453 m			
Top Log Interval		0 m			
Casing Driller Size @ Depth		5.500 in @ 82 m	@	@	
Casing Schlumberger		78 m			
Bit Size		11.438 in			
Type Fluid In Hole		Sepiolite with Barite			
MUD Density	Viscosity	1.318 g/cm3			
MUD Fluid Loss	PH		8.07		
MUD Source Of Sample		Mudpit			
RM @ Measured Temperature		0.220 ohm.m @ 23 degC	@	@	
RMF @ Measured Temperature			@	@	
RMC @ Measured Temperature			@	@	
Source RMF	RMC	N/A	N/A		
RM @ MRT	RMF @ MRT	0.184 @ 32	@ 32	@	@
Maximum Recorded Temperatures		32 degC			
Circulation Stopped	Time	15−Sep−2015	3:30		
Logger On Bottom	Time	15−Sep−2015	7:30		
Unit Number	Location	627314	Houma, LA		
Recorded By		K. Swain			
Witnessed By		M. Gurnis, Z. Mateo, D. Vleeschouwer			

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



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OTHER SERVICES1	OTHER SERVICES2
OS1: FMS/DSI	OS1:
OS2: VSI	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole drilled with XCB coring bit and bottom hole assembly (BHA). 11 7/16" BS	
Drill pipe set at 238.4 mbrf for wireline logging.	
Downlog run with corrections computed using bit size; uplogs corrected for actual hole size using caliper.	
Fluid type was sepiolite+barite at 11 lbs/gal. Corrections for this applied.	
Depth originally recorded from drill floor; played back with sea floor as reference zero.	
All logs presented in measured depth below sea floor (MDBSF).	
Maximum observed temperature on the MSS temperature was 31.7degC.	

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		19C0−187	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

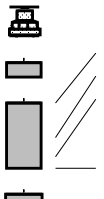
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

SFT−281 1
SFT−178 1
GSR−U 616008
WITM (EDTS)−A

DOWNHOLE EQUIPMENT



LEH−QT	MDSB_EDTC		39.87
	Mud Tempe	38.54	
AH−369	CTEM	37.48	38.98
	Gamma Ray	36.91	
EDTC−B	EFTB DIAG		38.54
EDTH−B 8303	TelStatus		
EDTC−B 8317	EDTCB Ele	36.56	
	Upper_1	35.86	

RUN 2

HNGS−BA 36.56
HNGS−BA 177
HNSH−BA 174
Lower_2 35.65

HNGC−B 34.06
HNGC Stat 33.53

ILE−F 33.00
ILE−F 72
Status

Minitron
Near TD
Near Arr
AH−191 30.56
APS−C 30.25
Near 27.81
Far Arr 27.73
Far 27.60
Far TD 27.50
APH−AC 121
APS−C 212
MNTR−F 6504

AH−190 26.31
LDSC−B 26.00
LDSC Stat 25.47

HLDS 24.94
GSR−Z 8113
HLDV−D 45
HLDS−D 45
HEH−H 47
HLDP−C 45
Caliper
SS LS Status 20.88

AH−184_NonMagKnuckleJoint 20.12

AH−NonMagSpacer 19.51
AH−NonMagSpacer 2

AH−184_NonMagKnuckleJoint 16.61

AH−MCD2 16.00
AH−MCD2 2

HRLT−B 13.72
HRUH−B 978
HRUC−B 764
HRLS−B 768
HRLH−B 968
HRLC−B 974
AH−270 1708
High Res. 10.14

AH−MCD1 6.35
AH−MCD1 1

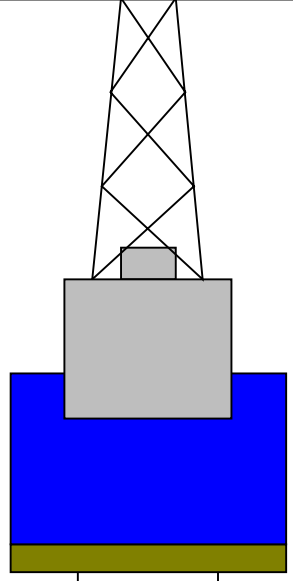
AH−230 4.07

MSS_LDEO−A 3.67
ELIC−A 1
MSS_LDEO−A 3
Hi−Res 3.36
Dual Coil 0.39
DF ACCZ
Tension HV 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

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



Kelly Bushing Elevation	−156.3				
Derrick Floor Elevation	−156.3				
Mean Sea Level	−145.3				
				4.1	
			0	4.1	Sea Floor
			82	11.4375	Open Hole
			530		Total Depth

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:43	PRODUCER	15−Sep−2015 22:53	610.4 M	134.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_034PUP	FN:45	PRODUCER	19−Sep−2015 10:37	452.6 M	−23.8 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)

0 (GAPI) 100

Area1
From HCGR to HSGR

Main Log

HNGS Borehole Potassium (HBHK)

−0.05 (−−−−) 0.05

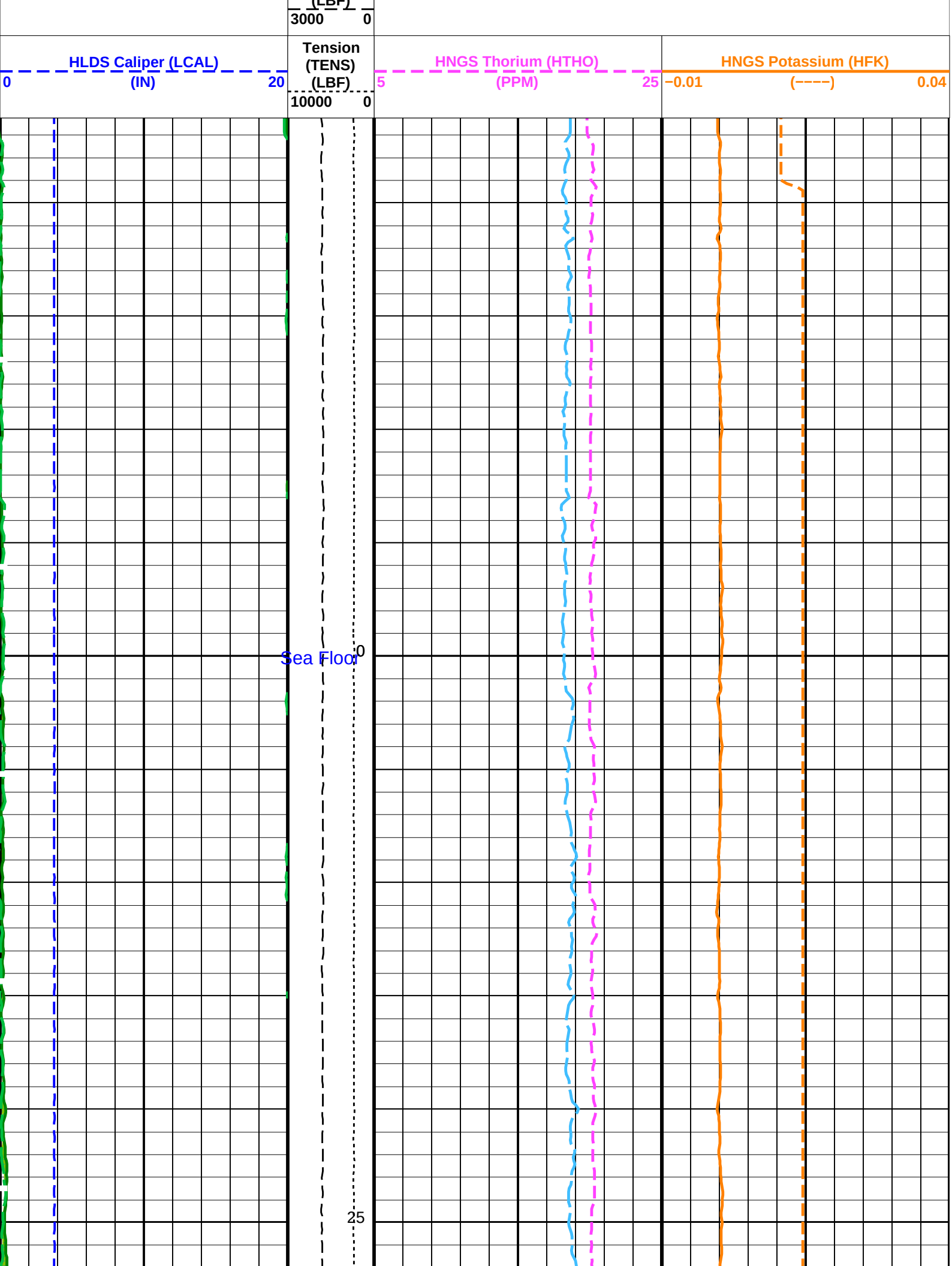
HNGS Computed Gamma Ray (HCGR)

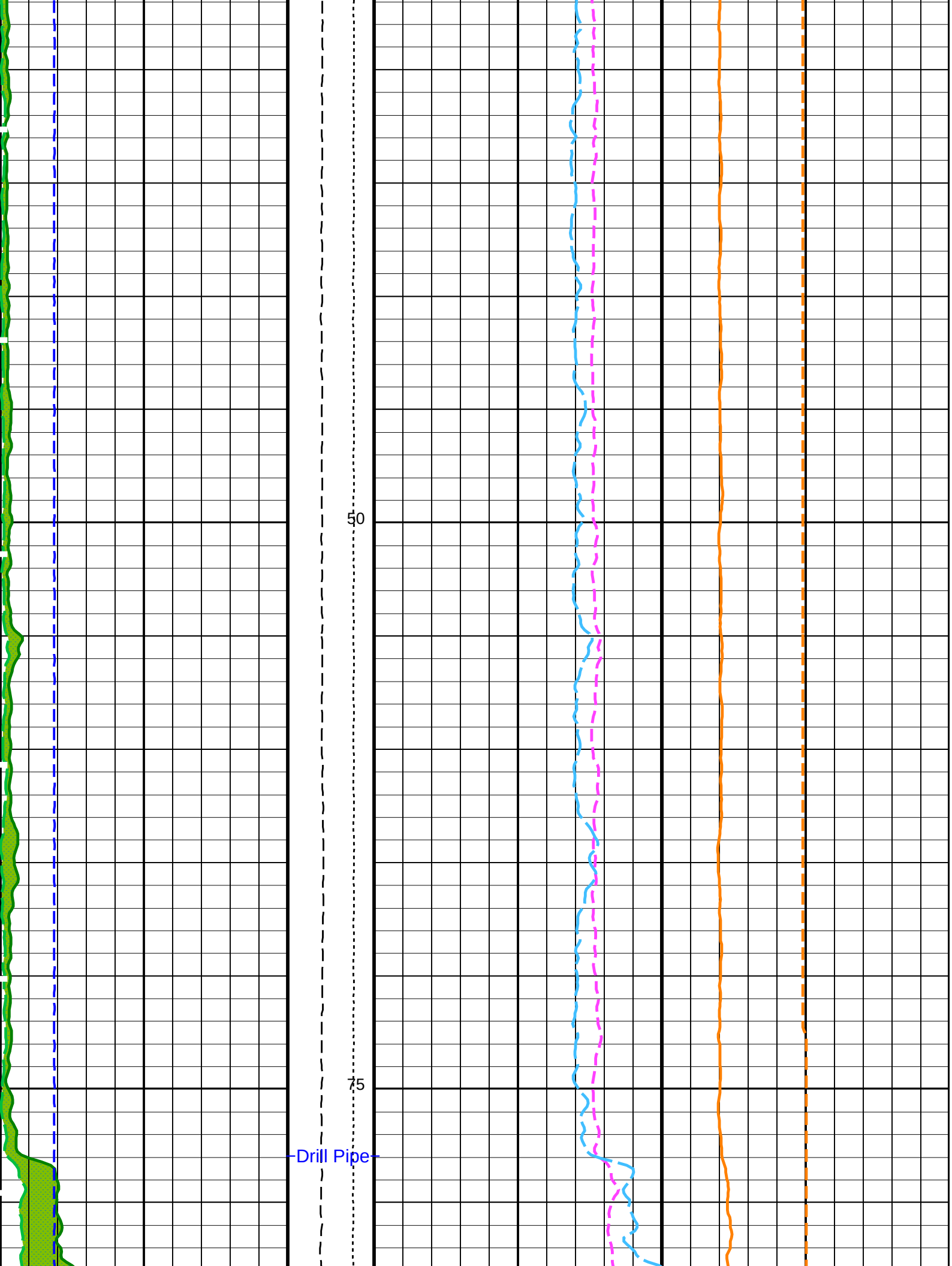
0 (GAPI) 100

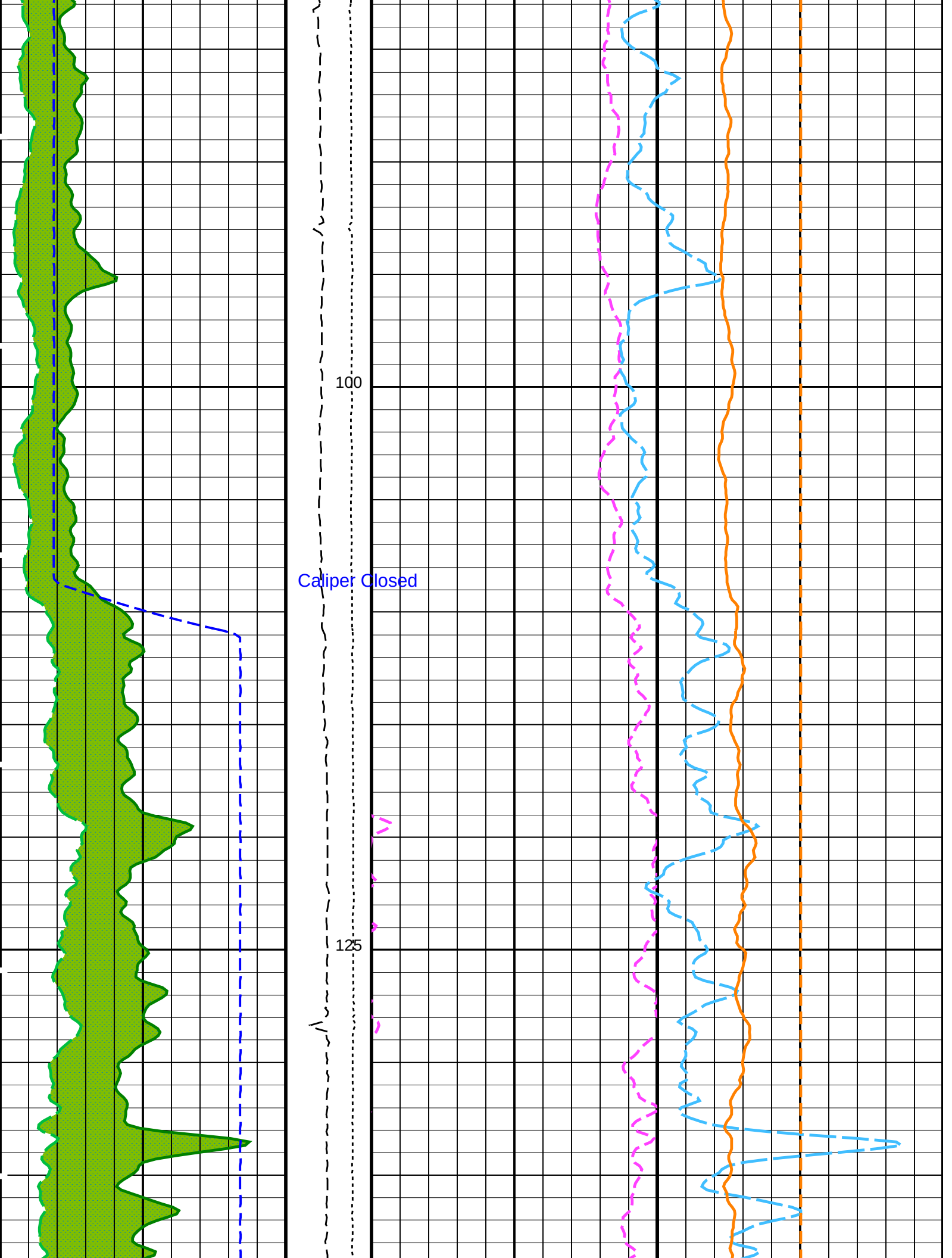
Calibrated Downhole Force (CDF) (LBF)

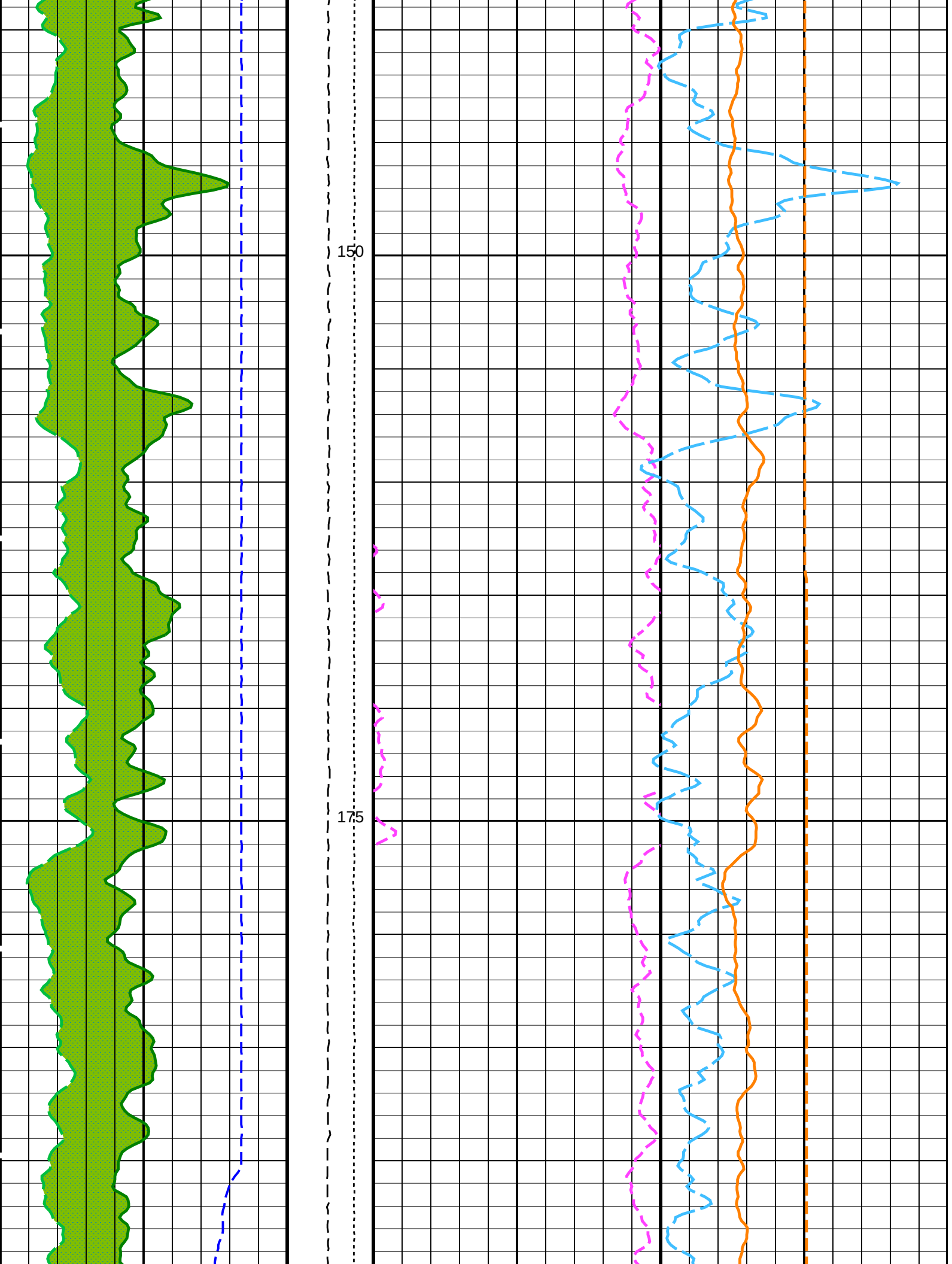
HNGS Uranium (HURA)

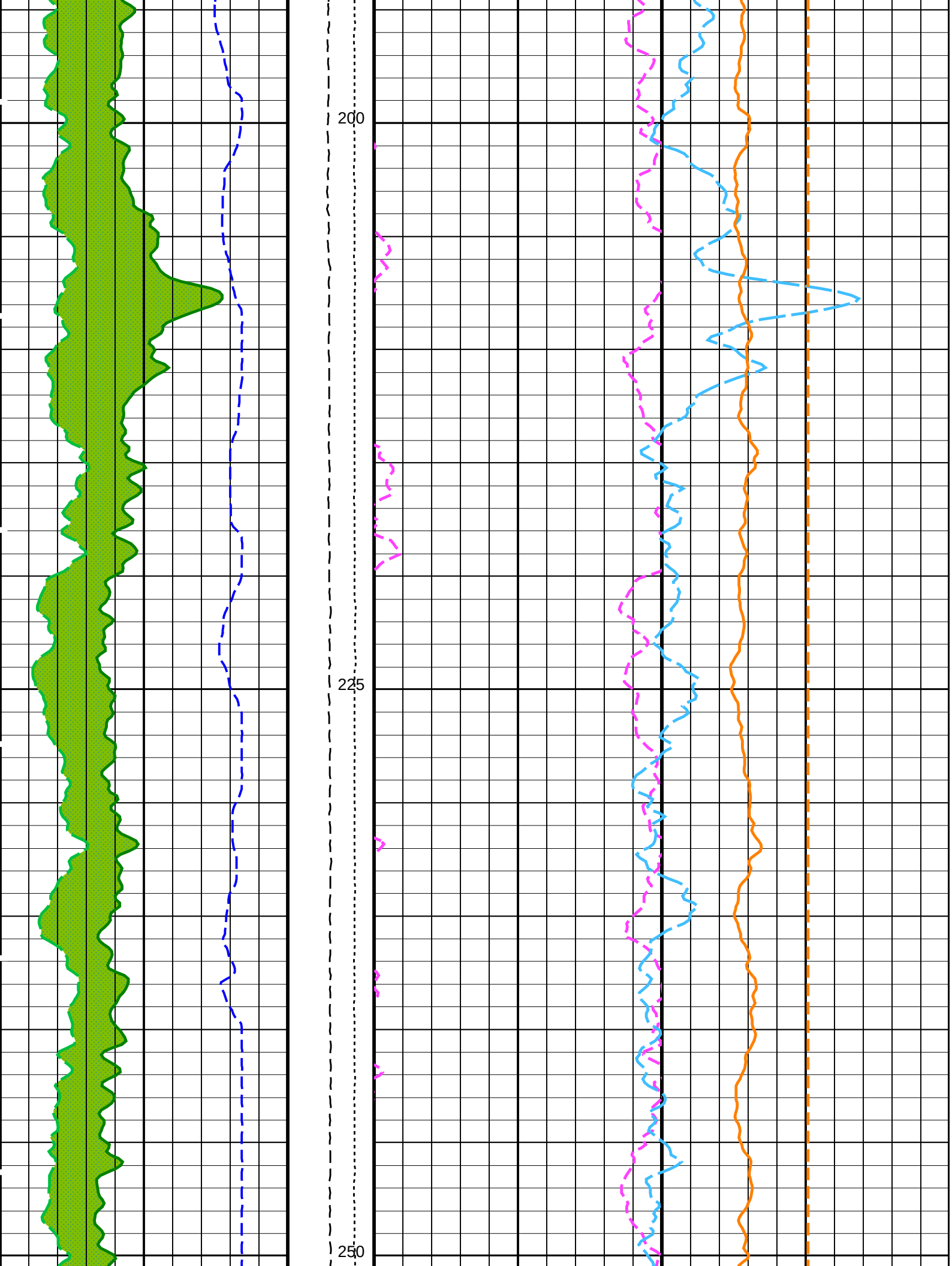
−5 (PPM) 10

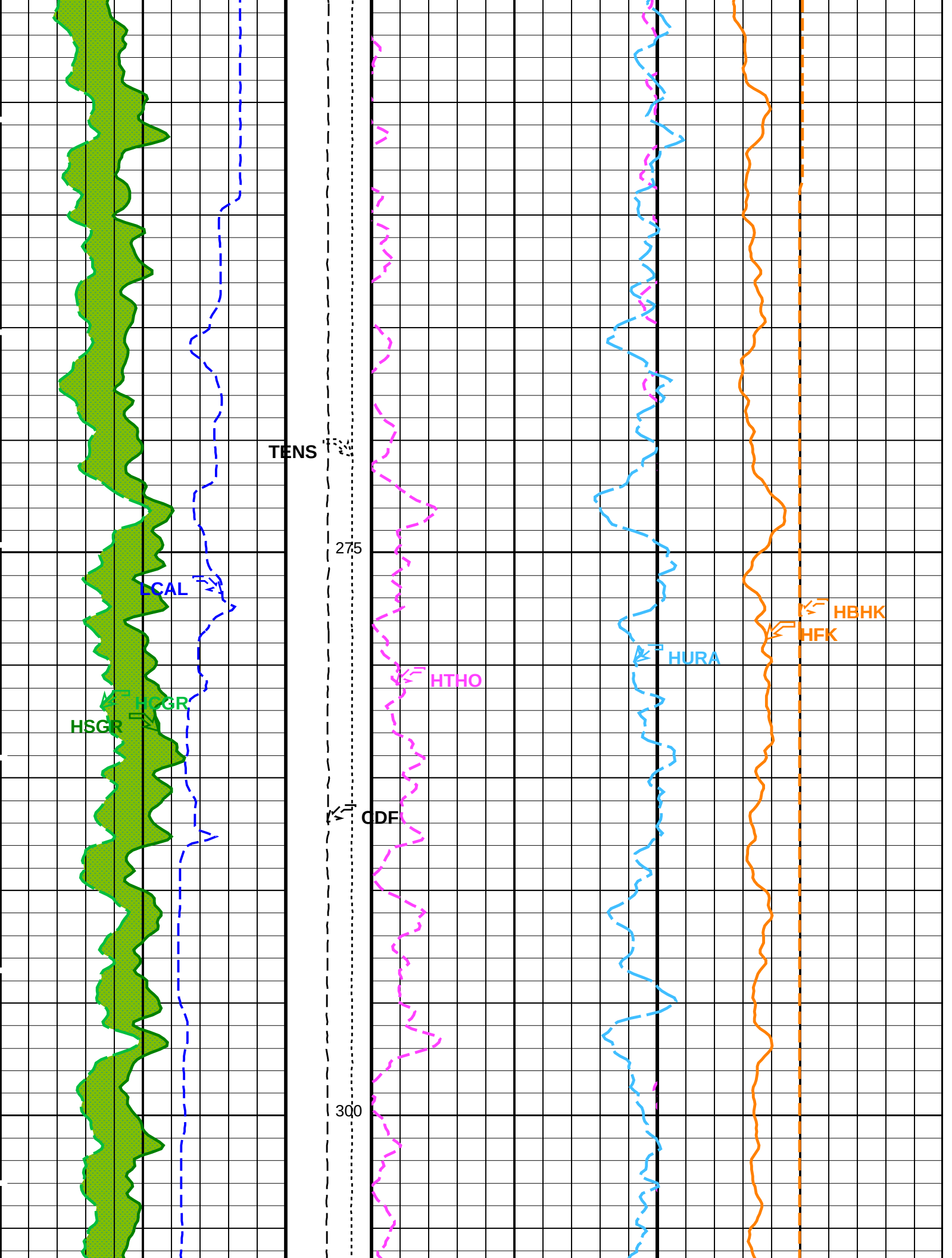

(LBF)
3000
0
HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
5
(PPM)
25
HNGS Potassium (HFK)
−0.01
(−−−−)
0.04
Sea Floor
0
25

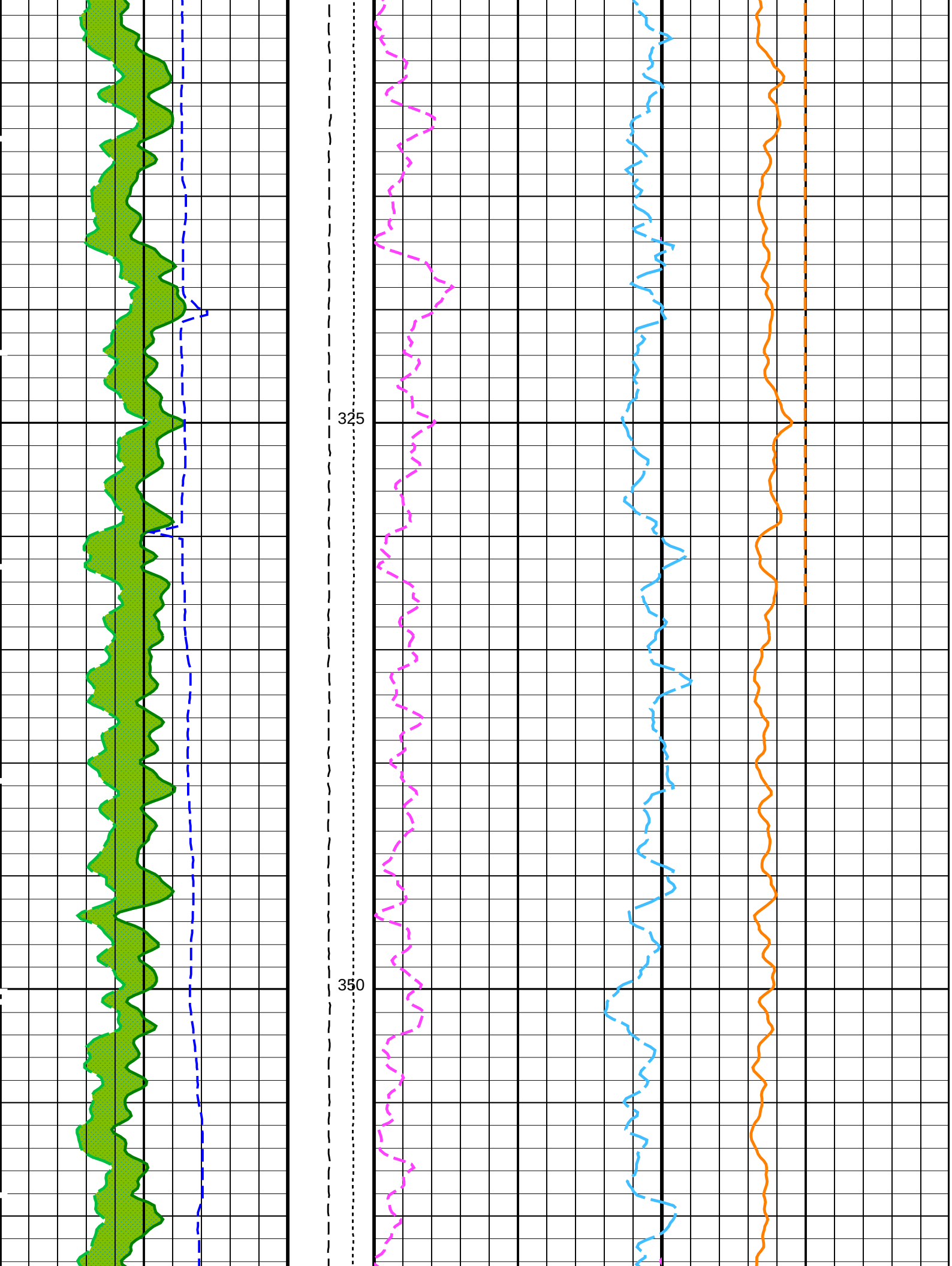

50
75
Drill Pipe

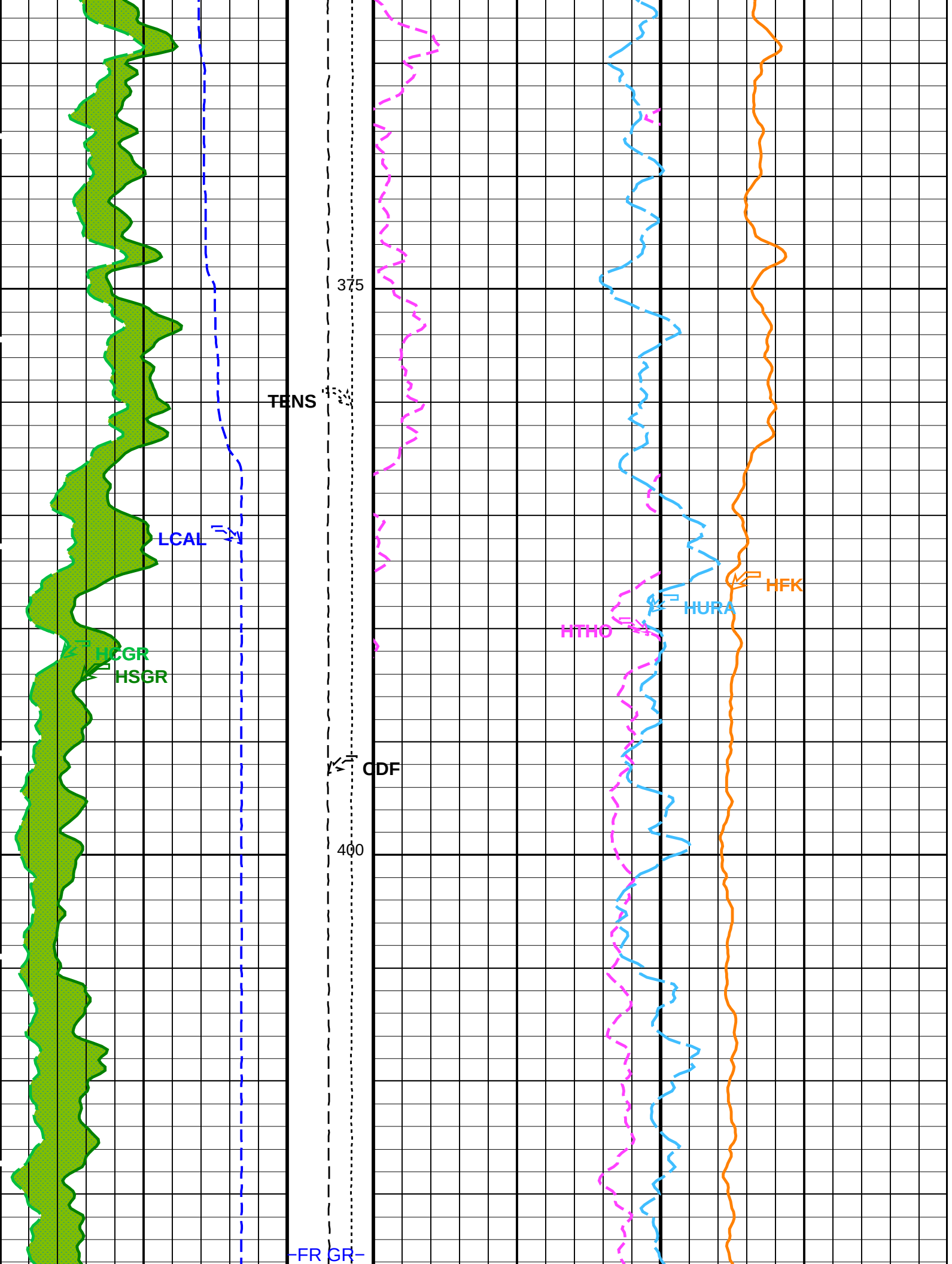

100
Caliper Closed
125

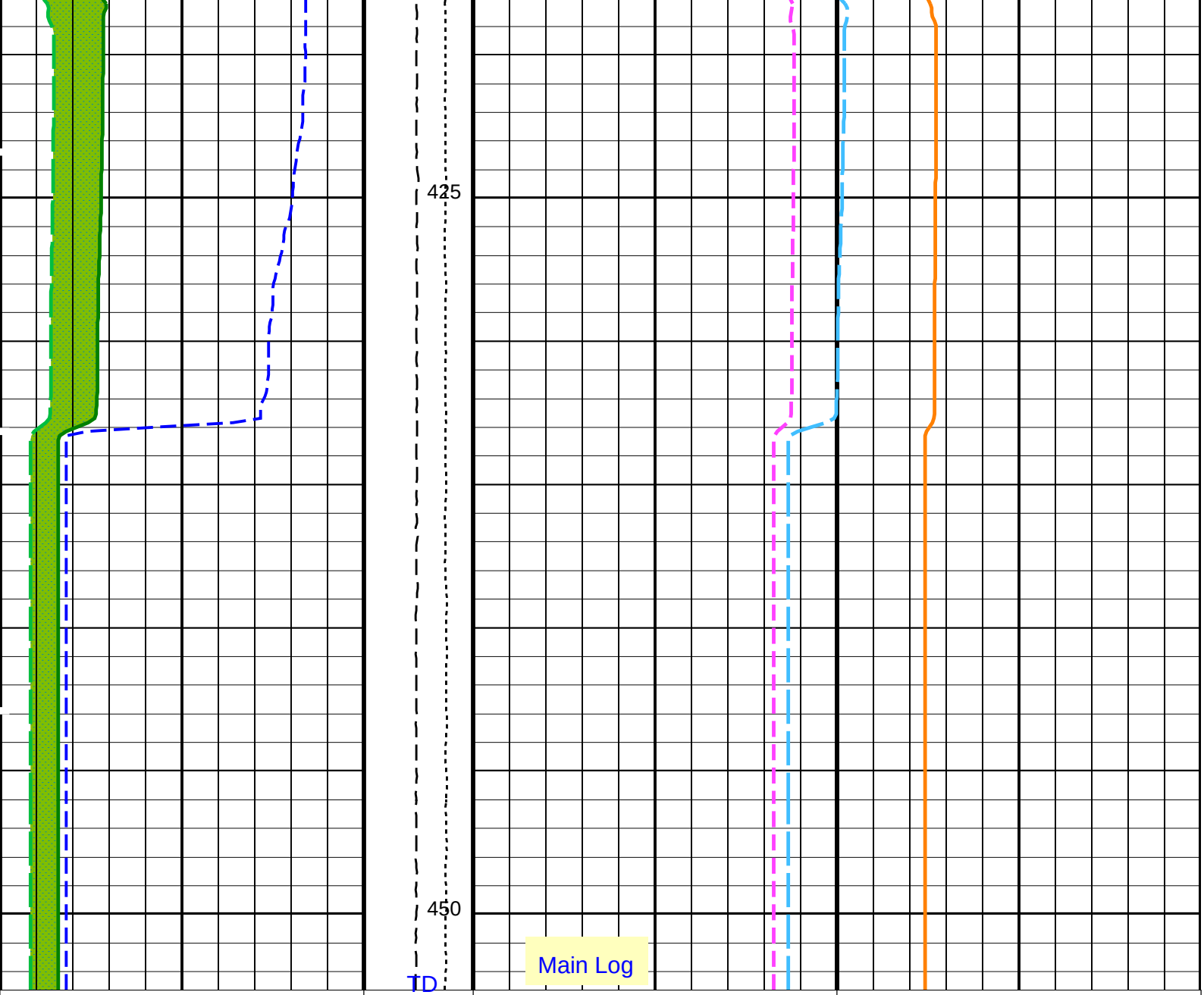

150
175


200
225
250


TENS
275
LCAL
HCGR
HSGR
HTHO
CDF
HURA
HBHK
HFK
300


325
350


375
TENS
LCAL
HCGR
HSGR
CDF
400
HTHO
HURA
HFK
FR GR



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10

Area1
From HCGR to HSGR

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HRLT−B: High Resolution Laterolog Array − B	
BHS	Borehole Status	OPEN

BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	APS−C: Accelerator−Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	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	
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	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0011779	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
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	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.17045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.977099	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DO	Depth Offset for Playback	−158.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 19−Sep−2015 10:37

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:43	PRODUCER	15−Sep−2015 22:53	610.4 M	134.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_034PUP	FN:45	PRODUCER	19−Sep−2015 10:37		

Company: International Ocean Discovery Program Well: Expedition 356, Site U1463B

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:43	PRODUCER	15−Sep−2015 22:53	610.4 M	134.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_034PUP	FN:45	PRODUCER	19−Sep−2015 10:37	452.6 M	−23.8 M

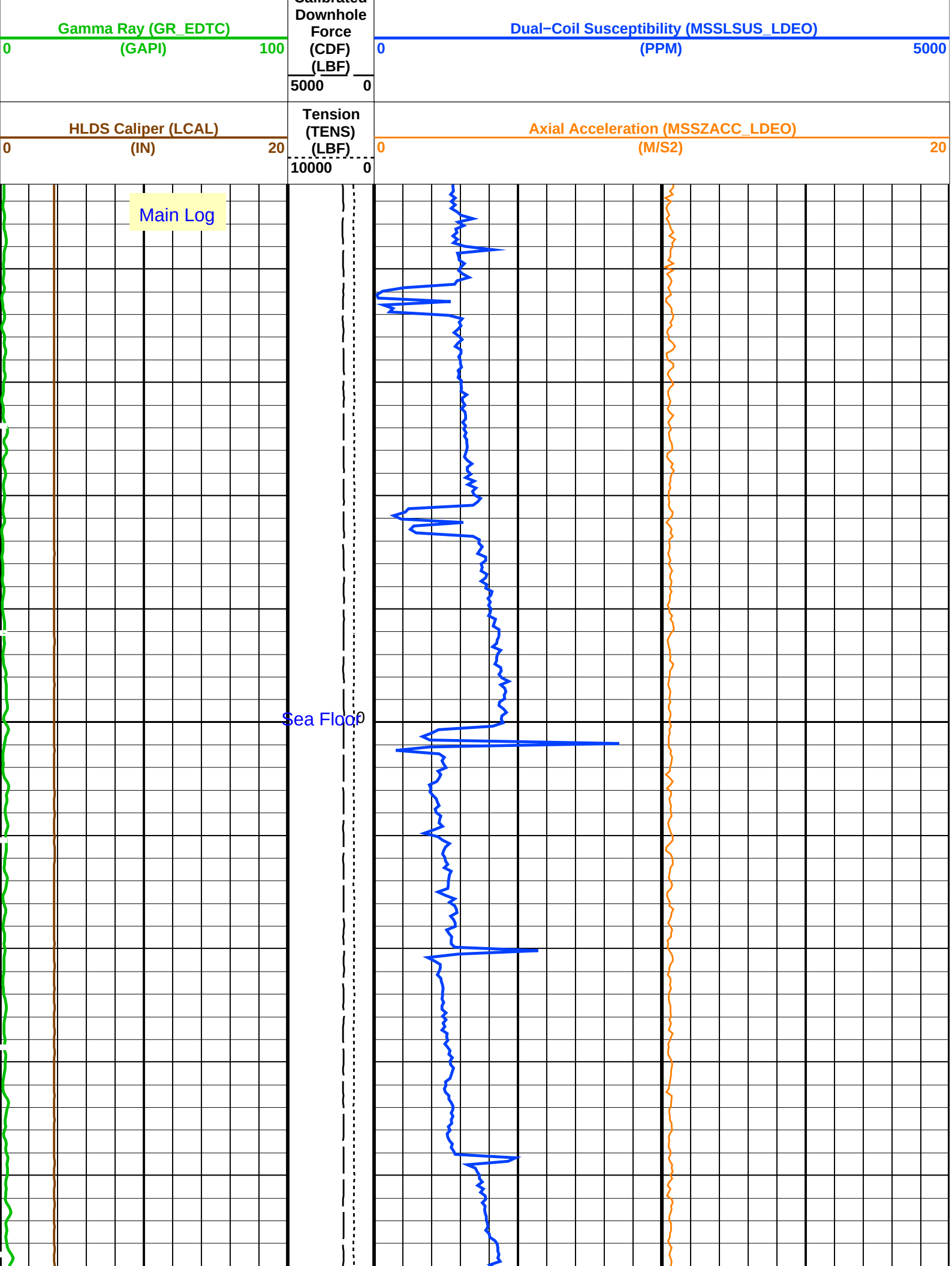
OP System Version: 19C0−187

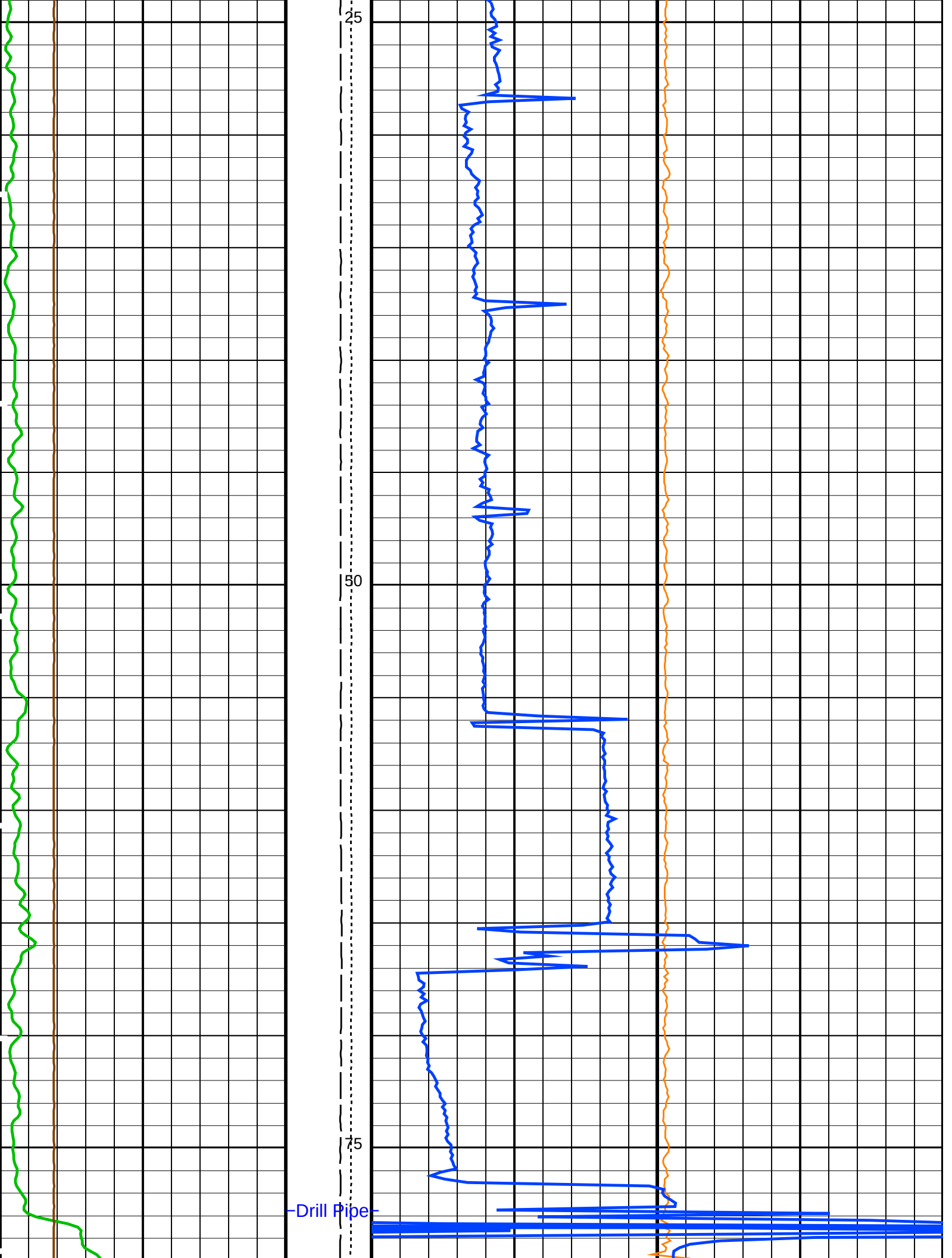
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

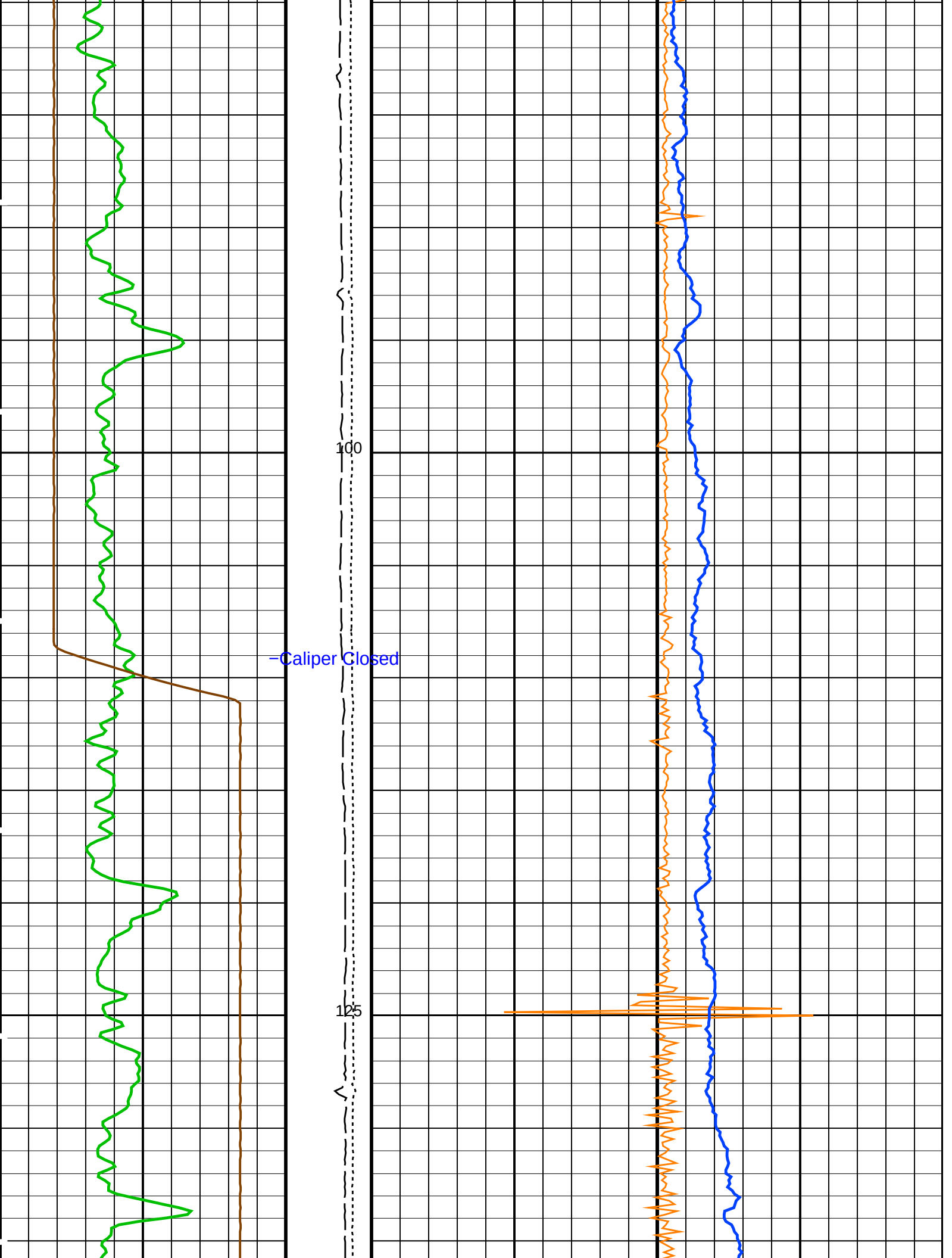
PIP SUMMARY

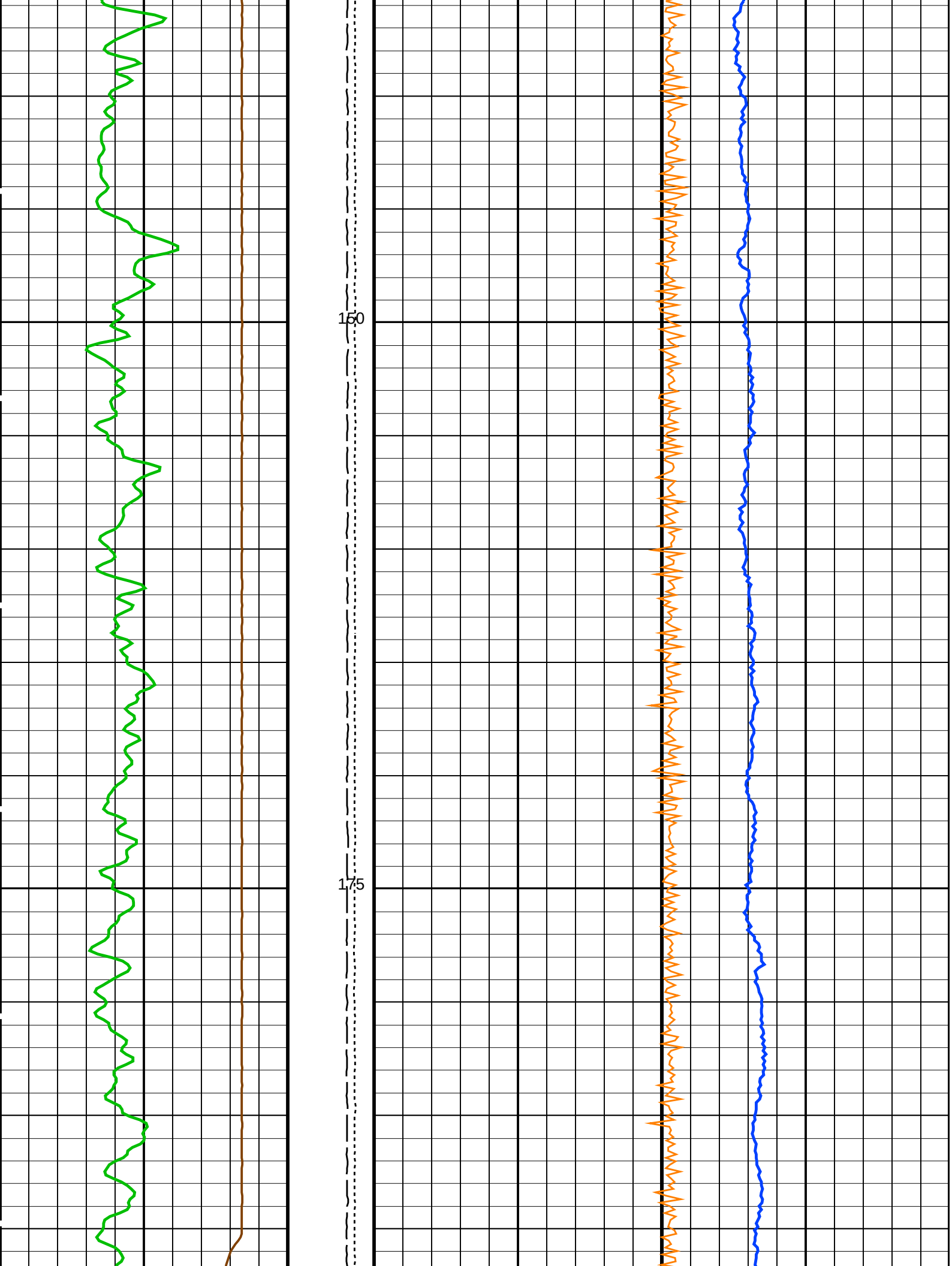
Time Mark Every 60 S

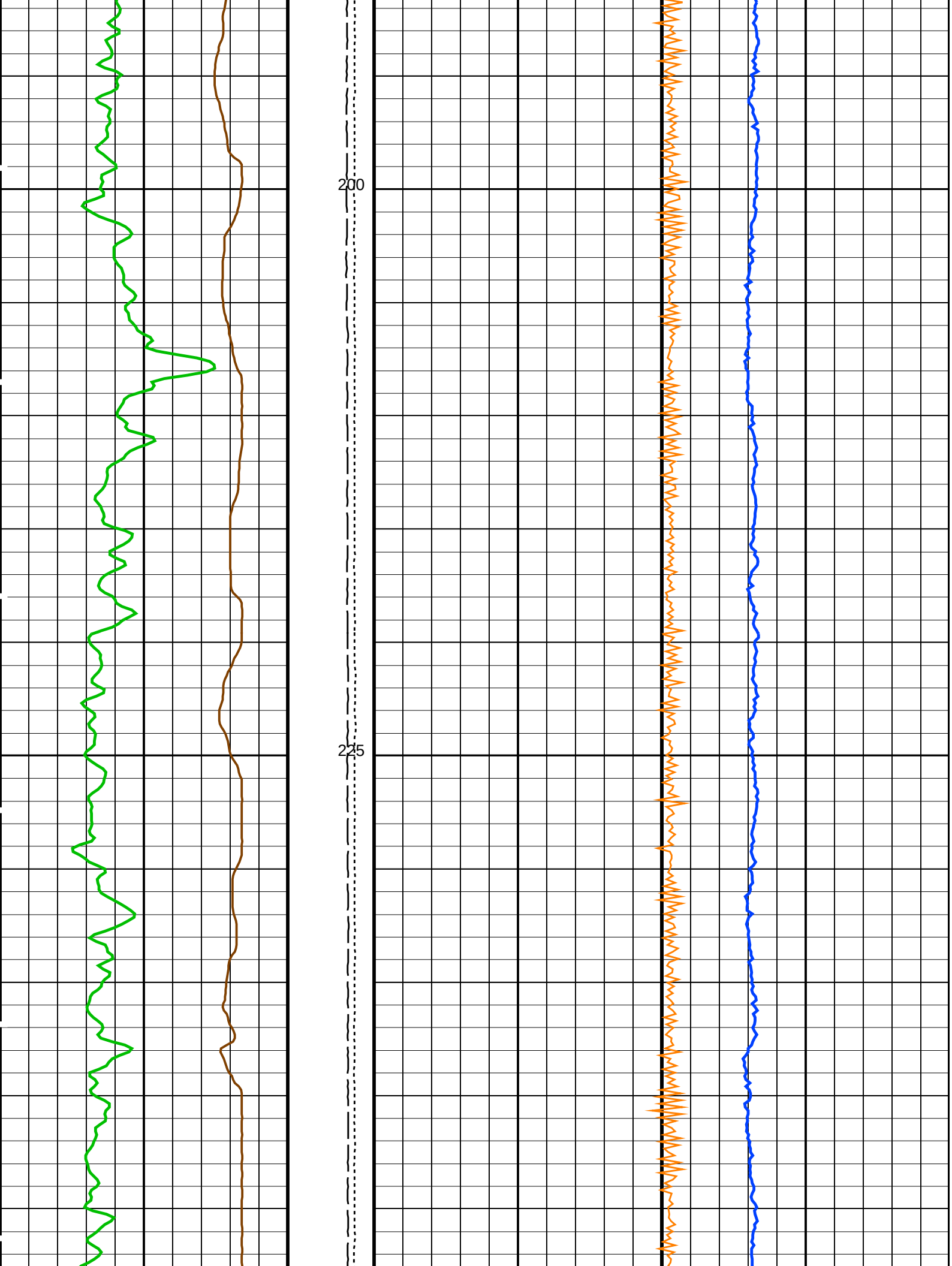
	Calibrated

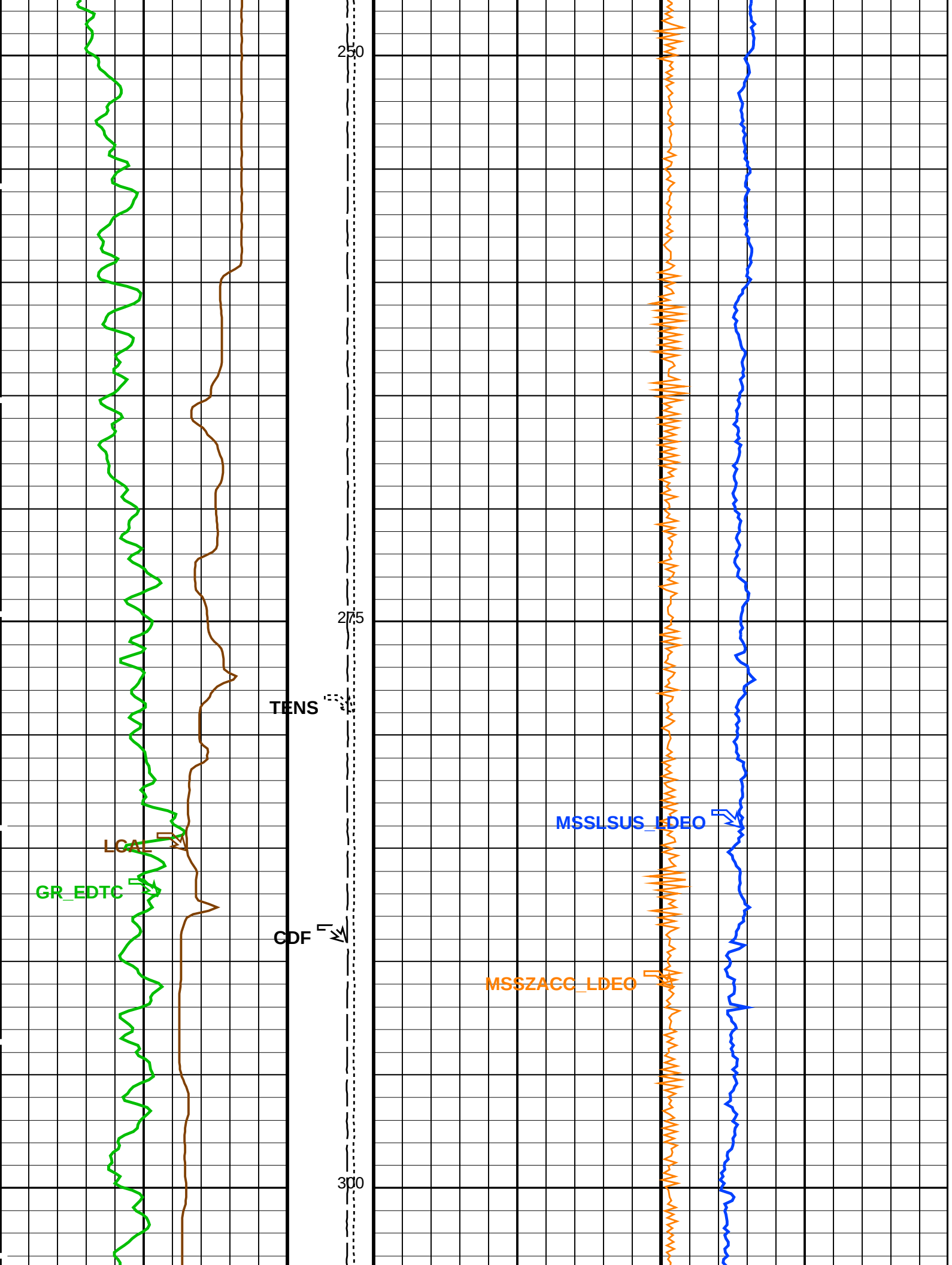

Gamma Ray (GR_EDTC)
0
(GAPI)
100
Calibrated Downhole Force (CDF) (LBF)
5000
0
Dual−Coil Susceptibility (MSSLSUS_LDEO)
0
(PPM)
5000
HLDS Caliper (LCAL)
0
(IN)
20
Tension (TENS) (LBF)
10000
0
Axial Acceleration (MSSZACC_LDEO)
0
(M/S2)
20
Main Log
Sea Floor
0

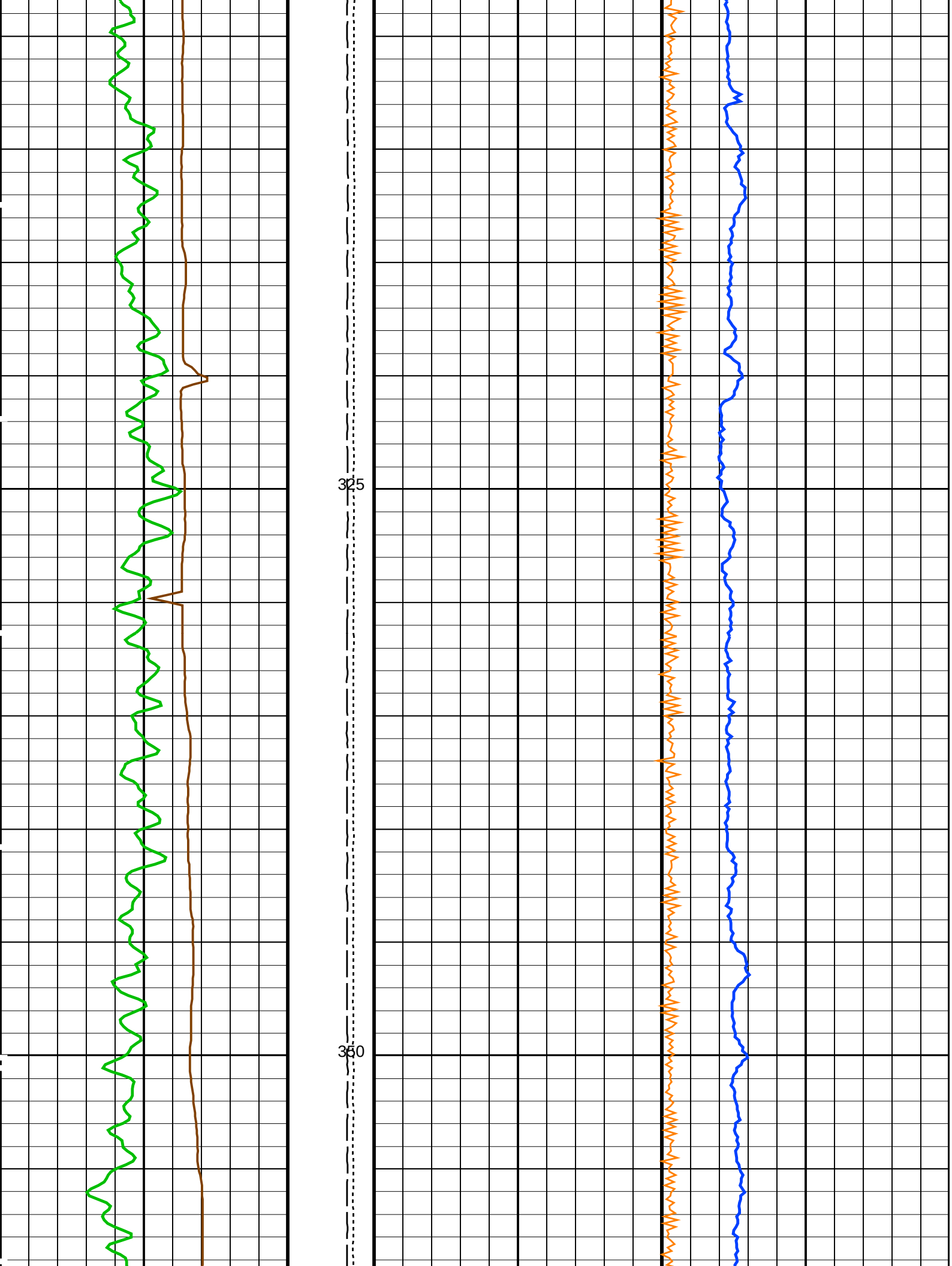

25
50
75
Drill Pipe

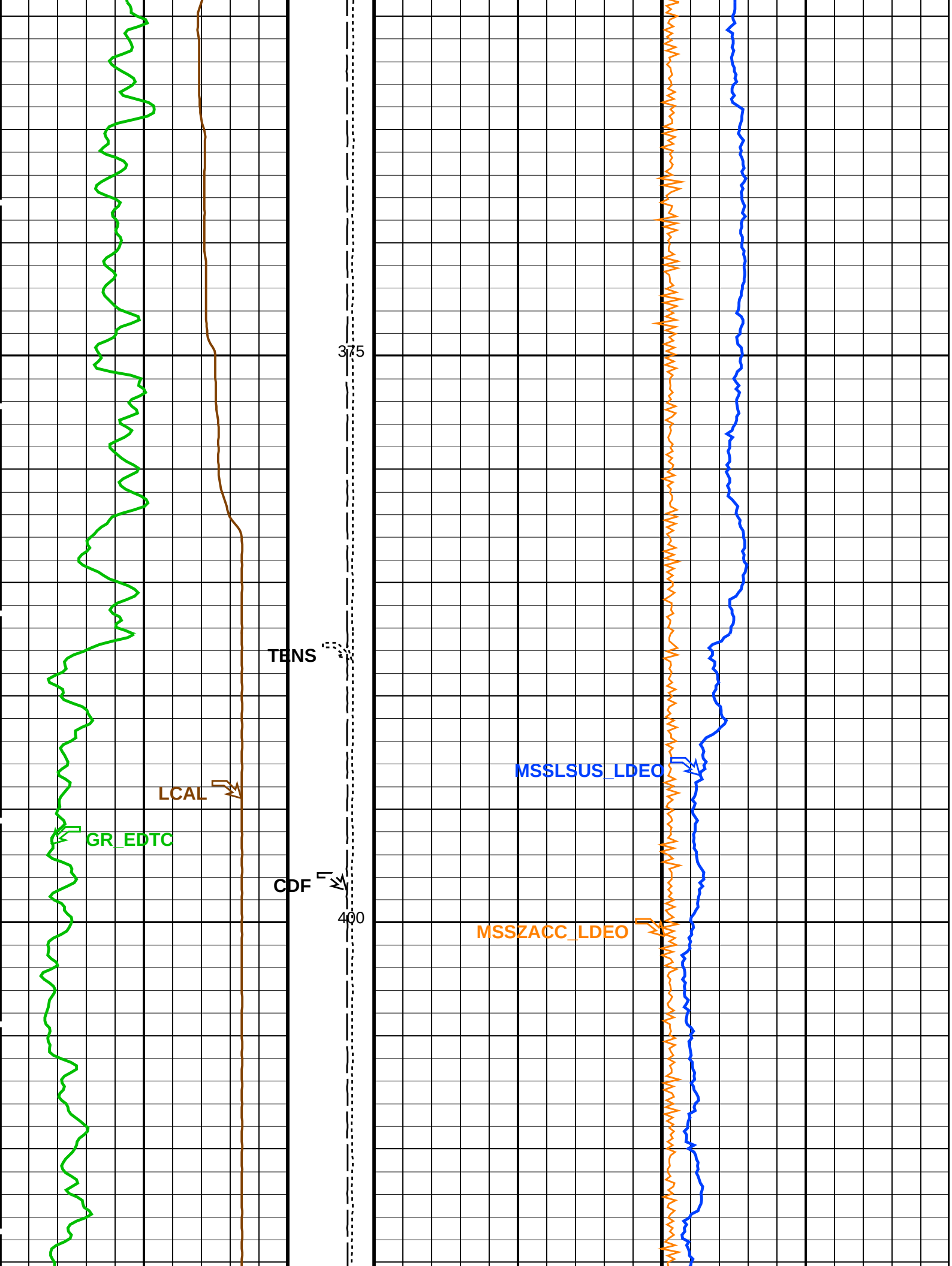

100
−Caliper Closed
125

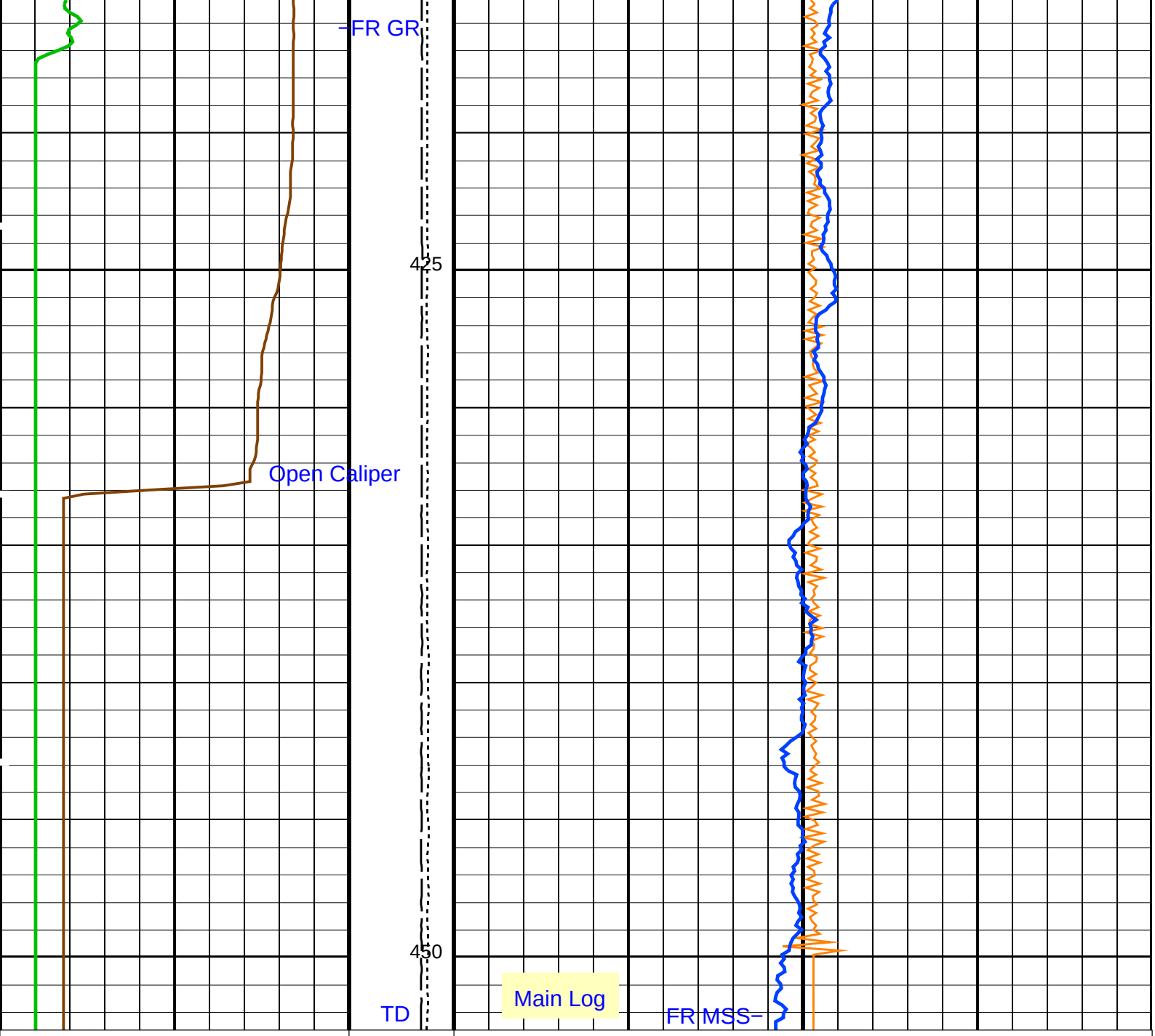

150
175


200
225


250
275
300
TENS
LCAL
GR_EDTC
CDF
MSSLSUS_LDEO
MSSZACC_LDEO


325
350


375
TENS
LCAL
GR_EDTC
CDF
400
MSSLSUS_LDEO
MSSZACC_LDEO



HLDS Caliper (LCAL)	Tension (TENS)	Axial Acceleration (MSSZACC_LDEO)
0 (IN) 20	(LBF) 10000 0	0 (M/S2) 20
Gamma Ray (GR_EDTC)	**Calibrated Downhole Force (CDF) (LBF)**	**Dual−Coil Susceptibility (MSSLSUS_LDEO)**
0 (GAPI) 100	5000 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.8518	DEGC
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	
GCSE	Generalized Caliper Selection	LCAL	
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	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
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	2.6	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	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
HNGS−BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	

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)	30	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	LCAL	
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	−0.0011779	
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	BARITE	
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	1.17045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.977099	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.32	G/C3
DO	Depth Offset for Playback	−158.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	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	960	M
TDD	Total Depth − Driller	686.30	M
TDL	Total Depth − Logger	690.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 19−Sep−2015 10:37

OP System Version: 19C0−187

MSS_LDEO−A 19C0−187 HRLT−B 19C0−187

HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:43	PRODUCER	15−Sep−2015 22:53	610.4 M	134.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_034PUP	FN:45	PRODUCER	19−Sep−2015 10:37		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:43	PRODUCER	15−Sep−2015 22:53	610.4 M	134.3 M

Output DLIS Files

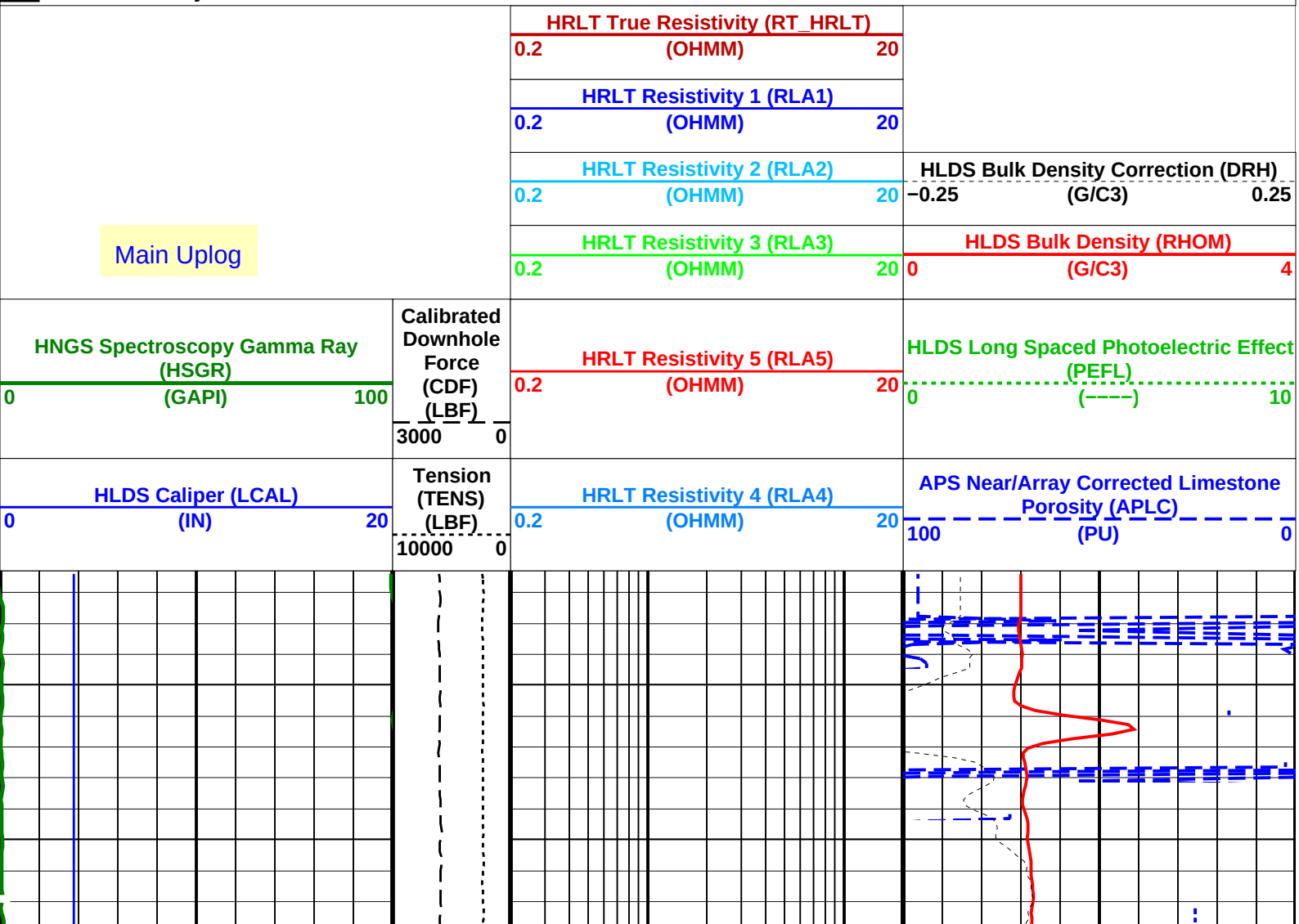
DEFAULT	MSS_LDEO_HRLA_LDL_034PUP	FN:45	PRODUCER	19−Sep−2015 10:37	452.6 M	−23.8 M

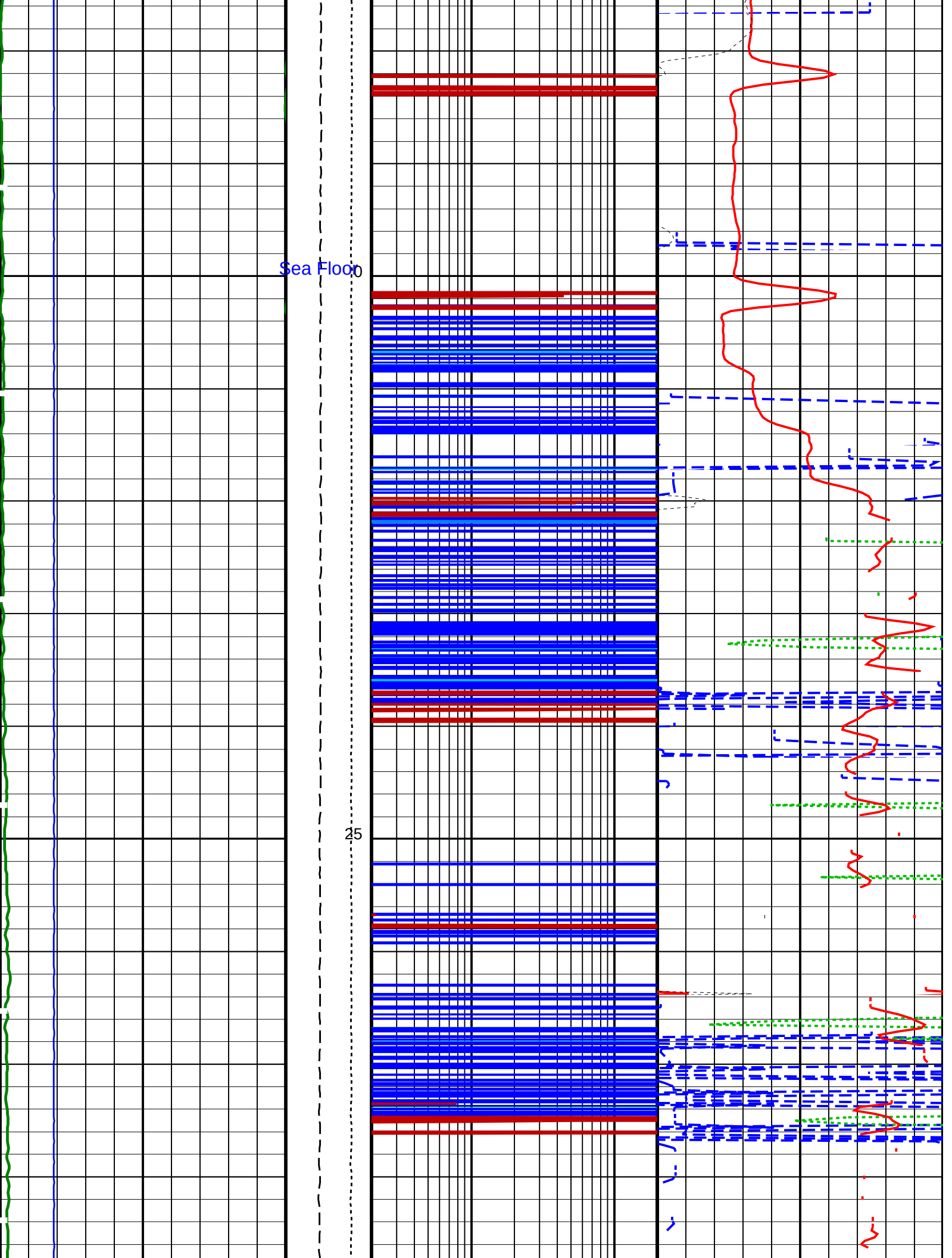
OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

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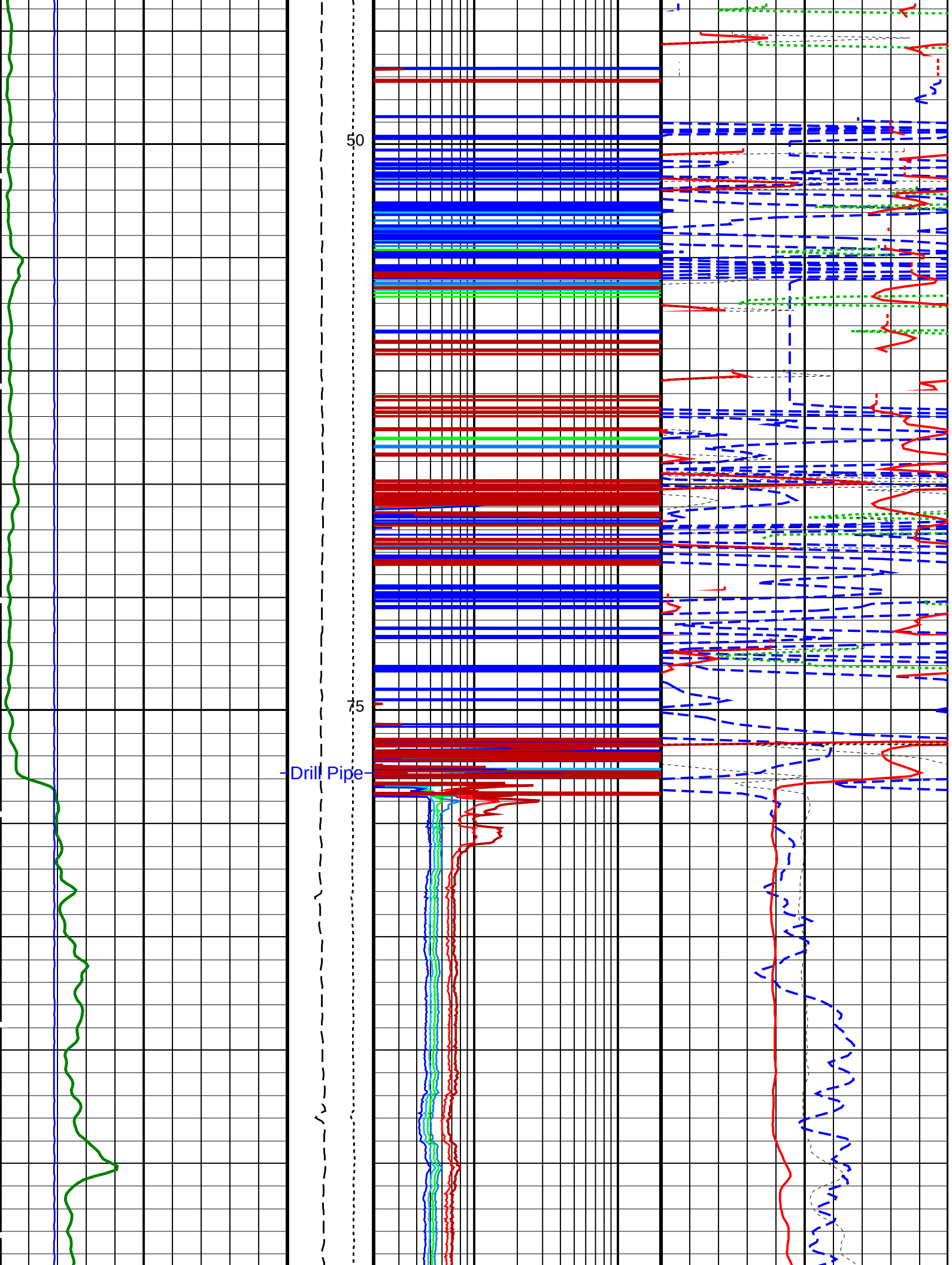
25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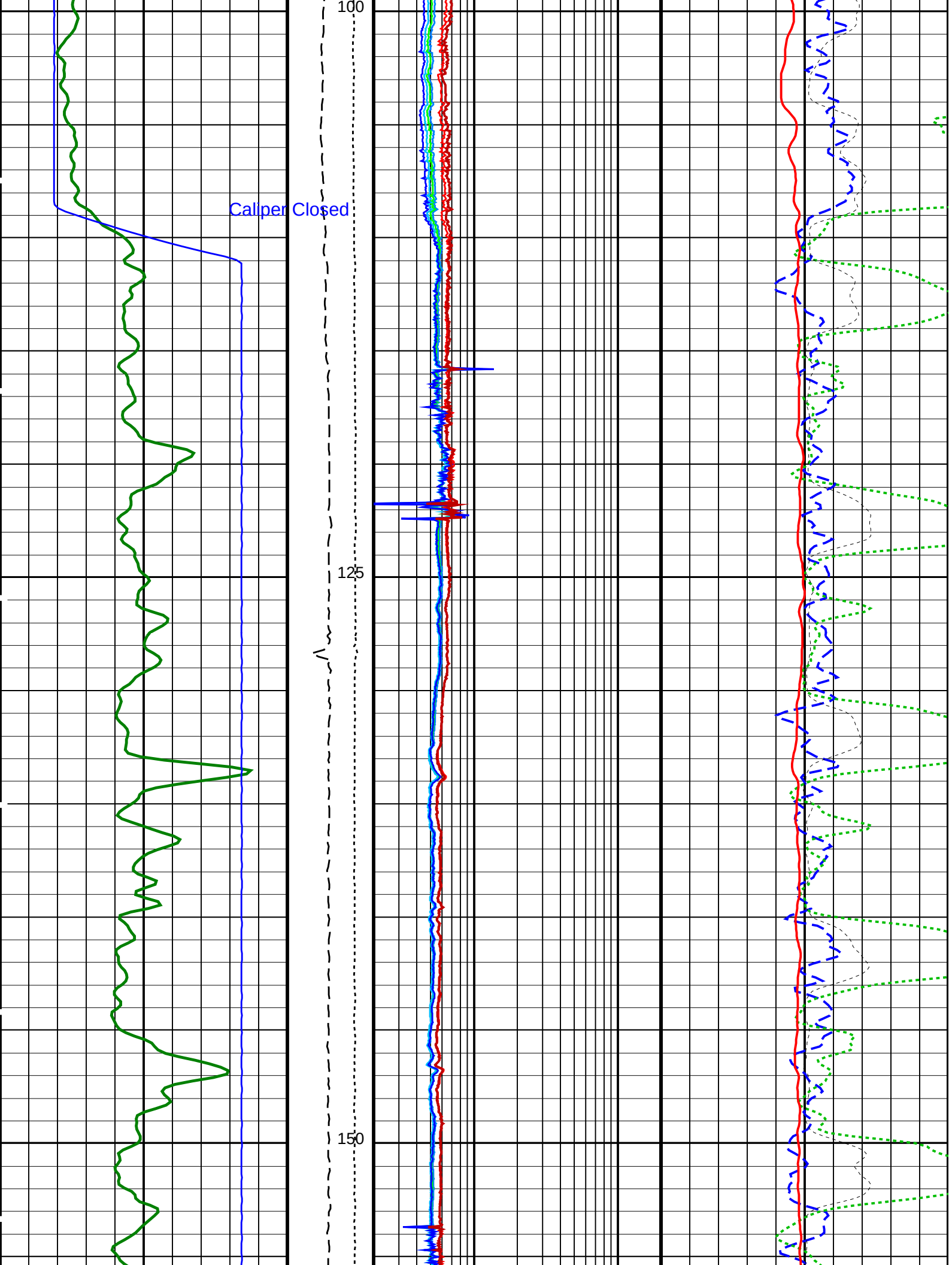
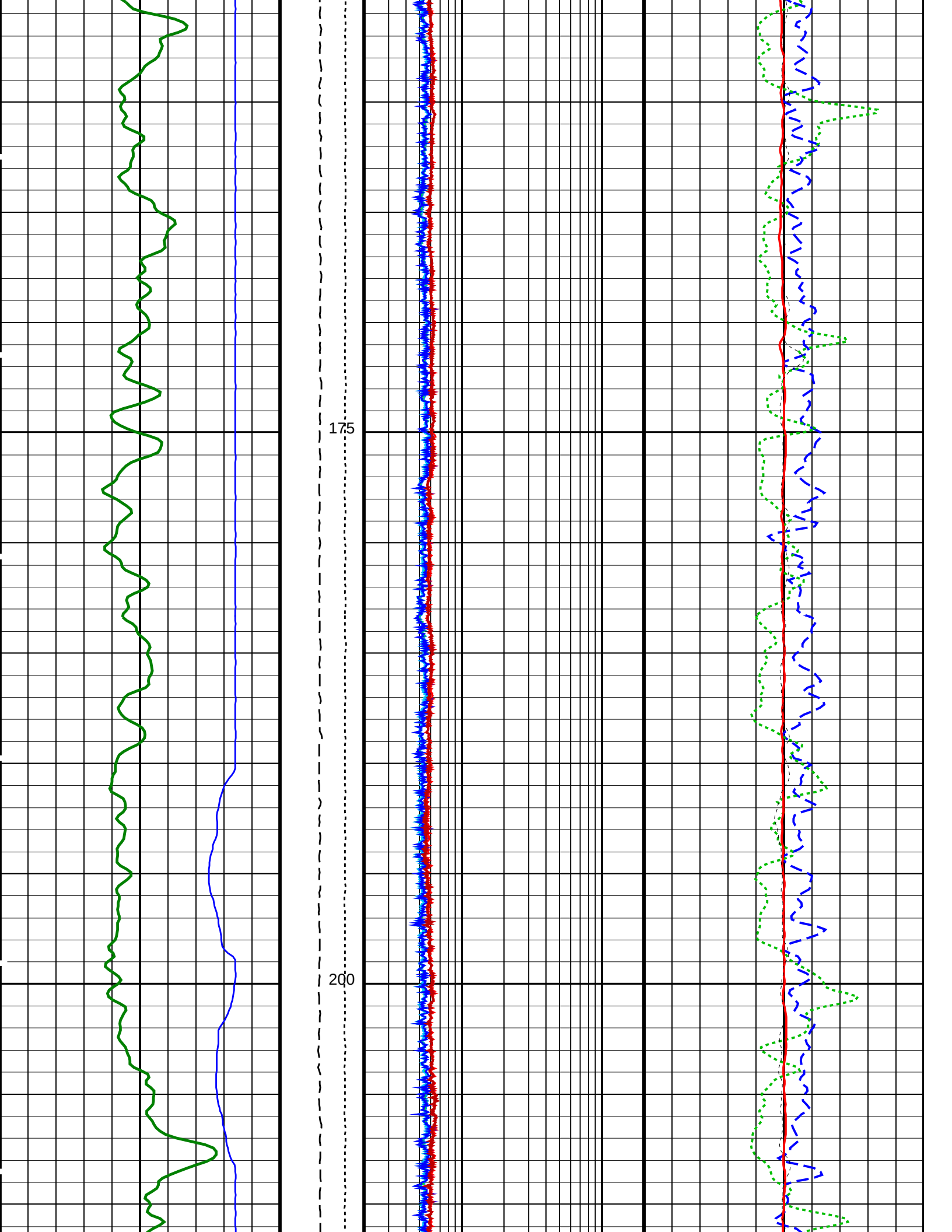
75
Drill Pipe


100
Caliper Closed
125
150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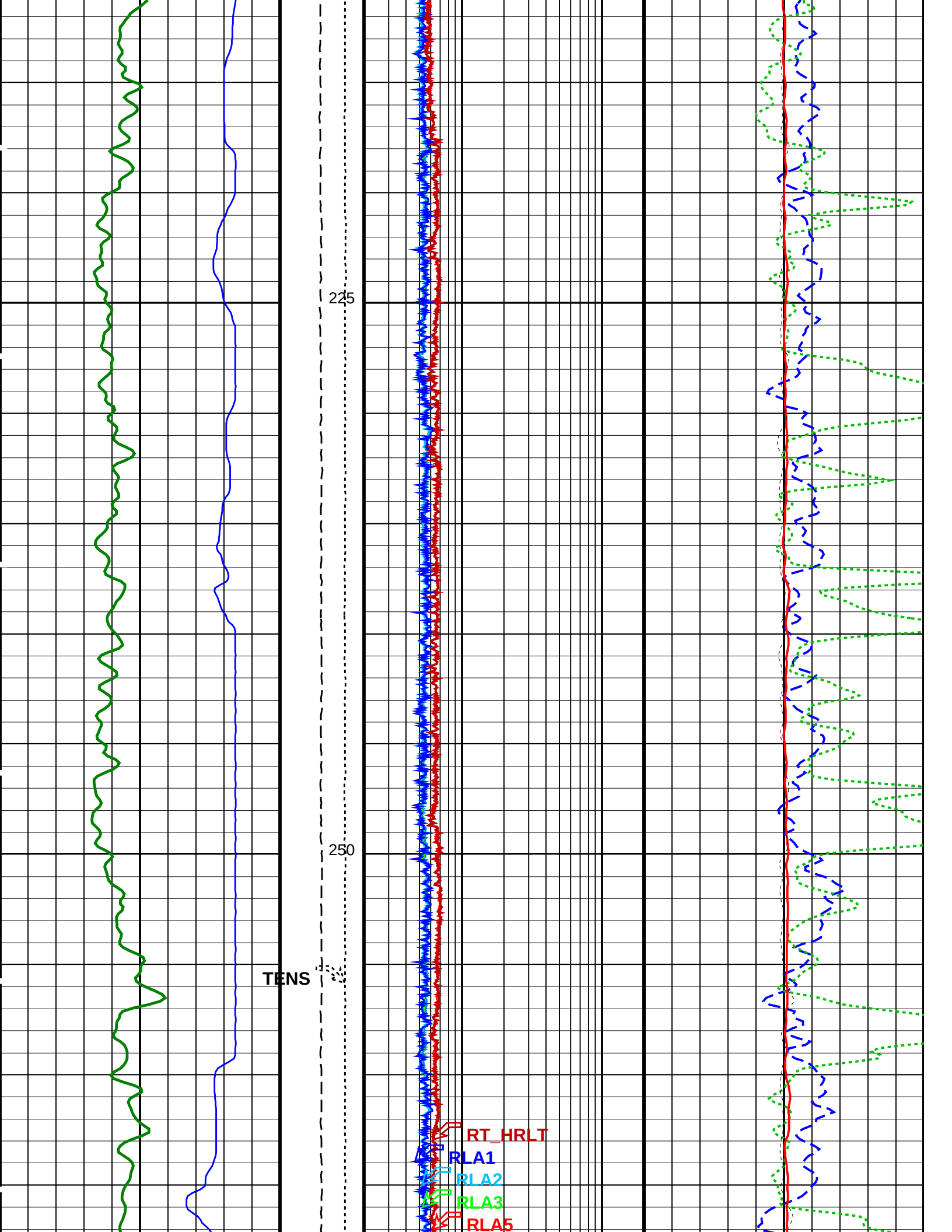
200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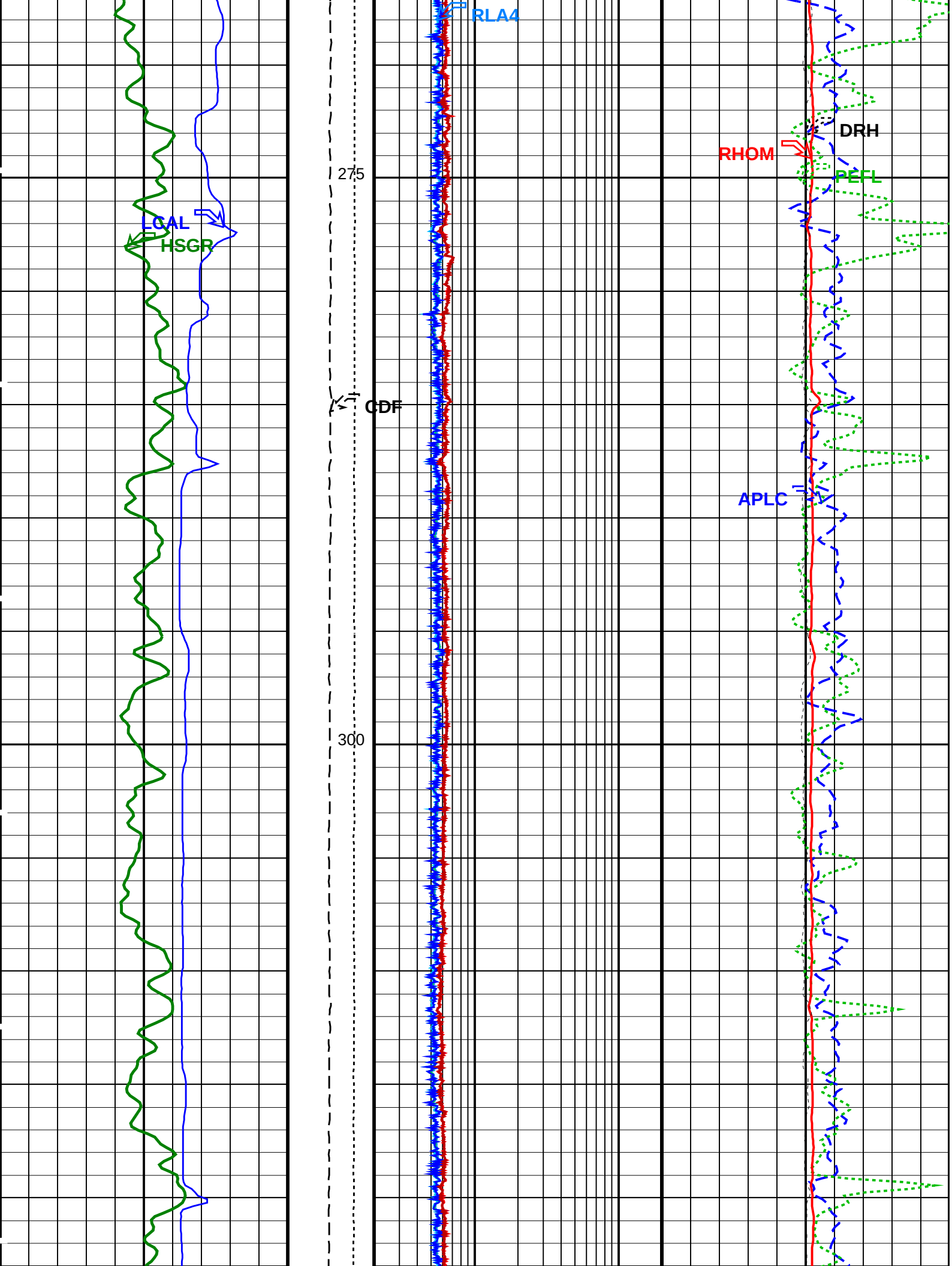
250
TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5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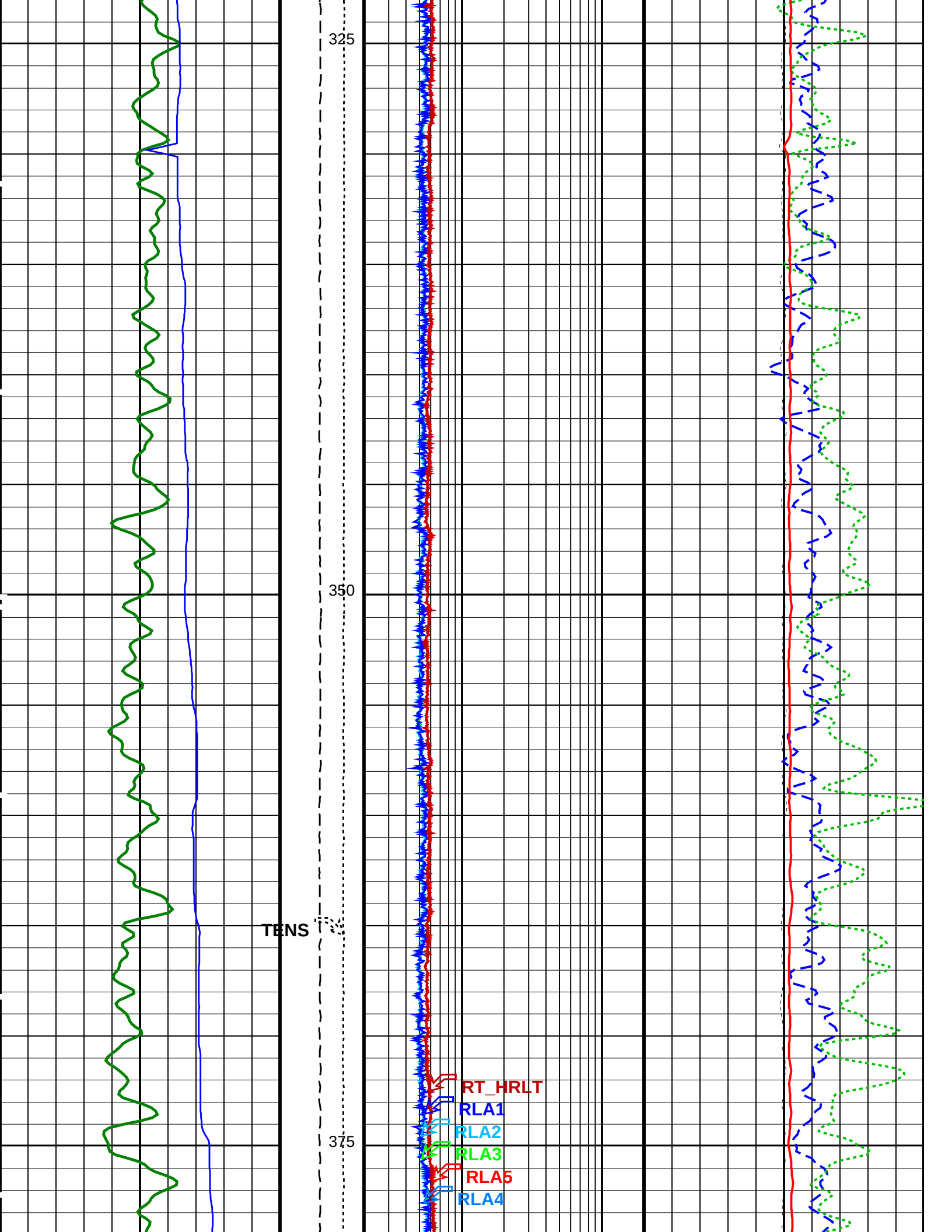
DRH
RHOM
PEFL
LCAL
HSGR
275
CDF
APLC
300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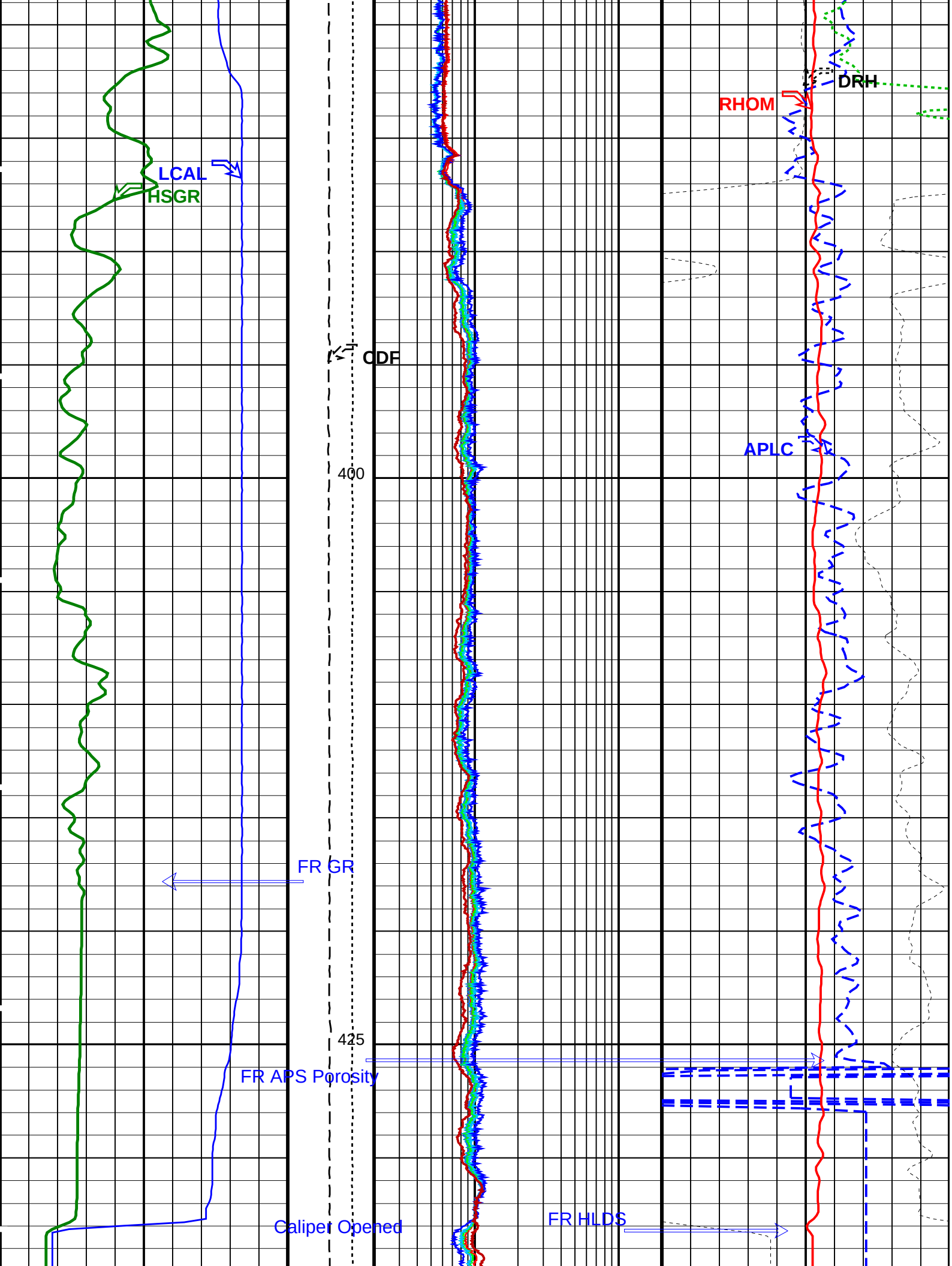
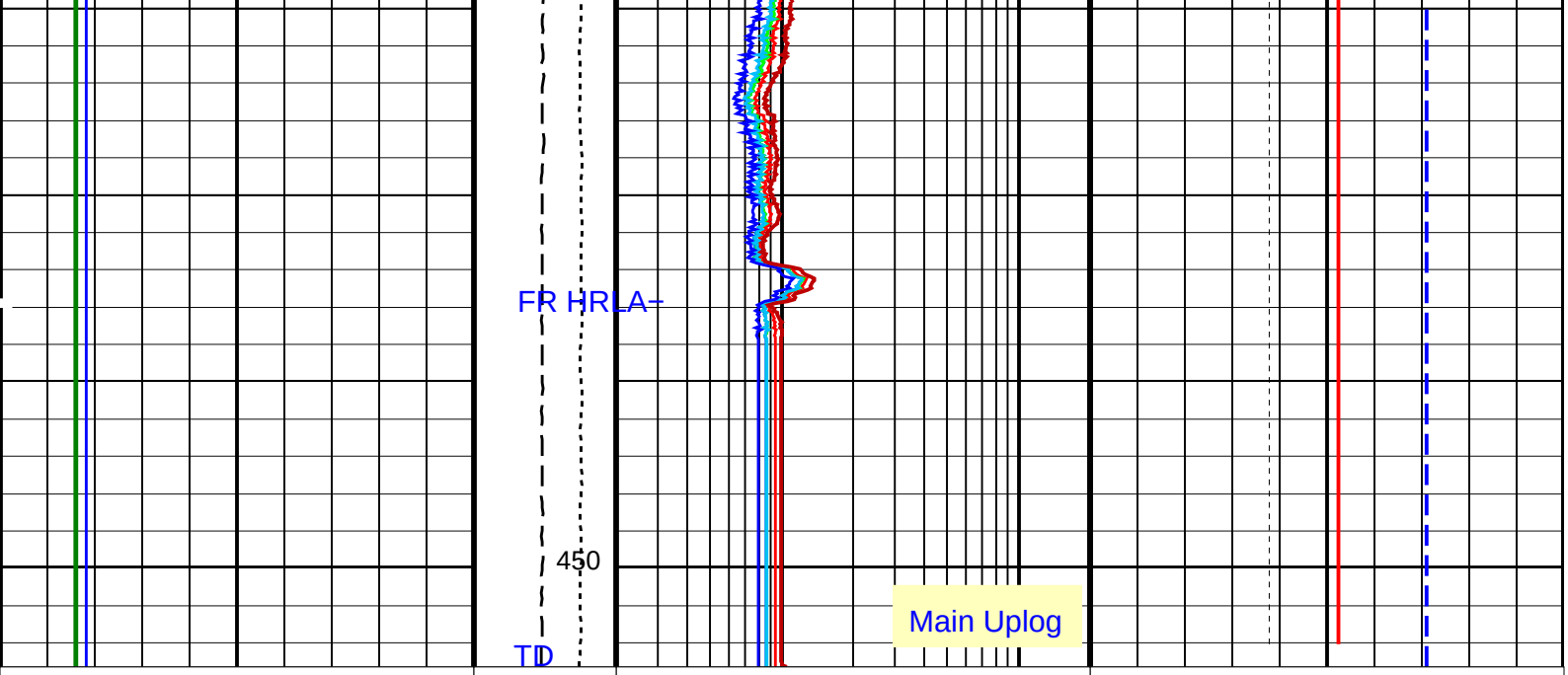
375
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4


LCAL
HSGR
CDF
DRH
RHOM
APLC
400
FR GR
425
FR APS Porosity
Caliper Opened
FR HLDS



HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20
APS Near/Array Corrected Limestone Porosity (APLC) 100 (PU) 0		
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20
HLDS Long Spaced Photoelectric Effect (PEFL) 0 (----) 10		
		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20
HLDS Bulk Density (RHOM) 0 (G/C3) 4		
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20
HLDS Bulk Density Correction (DRH) -0.25 (G/C3) 0.25		
		HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 20
		HRLT True Resistivity (RT_HRLT) 0.2 (OHMM) 20

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT-B: High Resolution Laterolog Array - B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.8518	DEGC
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	
GCSE	Generalized Caliper Selection	LCAL	
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	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	

LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
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	2.6	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	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	30	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	LCAL	
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	−0.0011779	
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	BARITE	
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	1.17045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.977099	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.32	G/C3
DO	Depth Offset for Playback	−158.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	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	960	M
TDD	Total Depth − Driller	686.30	M
TDL	Total Depth − Logger	690.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 19−Sep−2015 10:37

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:43	PRODUCER	15−Sep−2015 22:53	610.4 M	134.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_034PUP	FN:45	PRODUCER	19−Sep−2015 10:37

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:42	PRODUCER	15−Sep−2015 22:51	610.4 M	496.8 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_033PUP	FN:44	PRODUCER	19−Sep−2015 10:28	452.6 M	338.8 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Area1
From HCGR to HSGR

REPEAT SECTION

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

Calibrated Downhole Force (CDF) (LBF)
3000 0

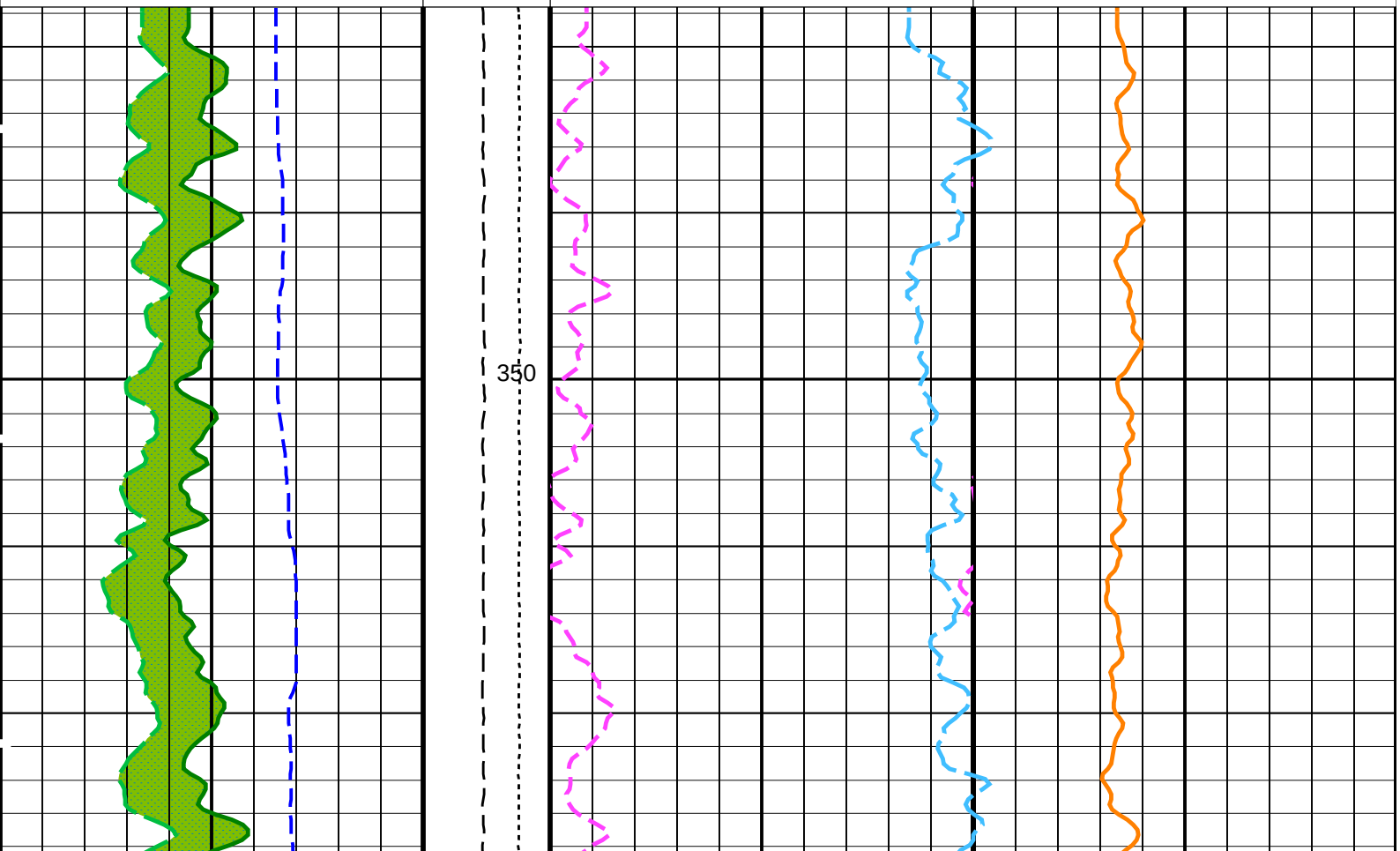
HNGS Uranium (HURA)
−5 (PPM) 10

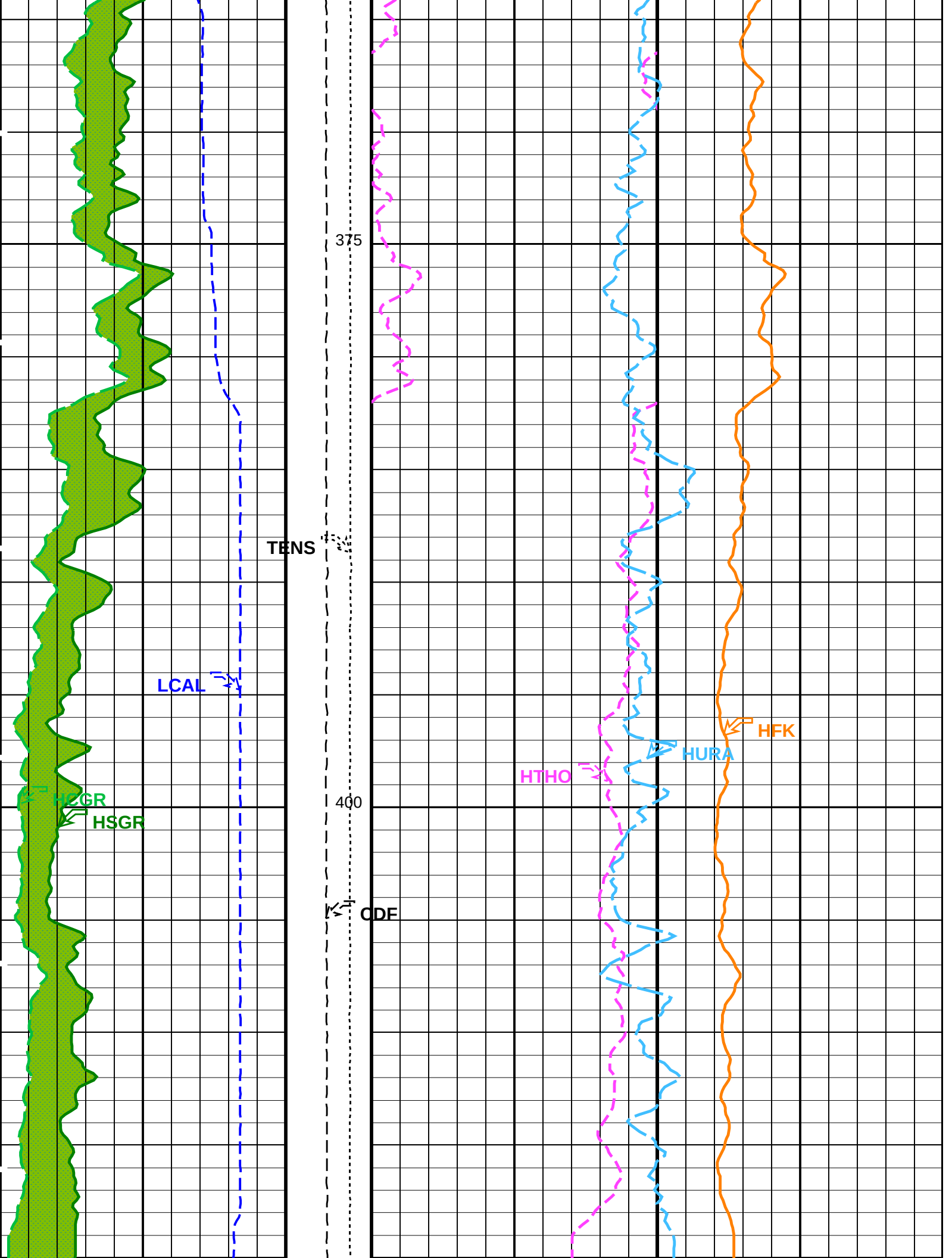
HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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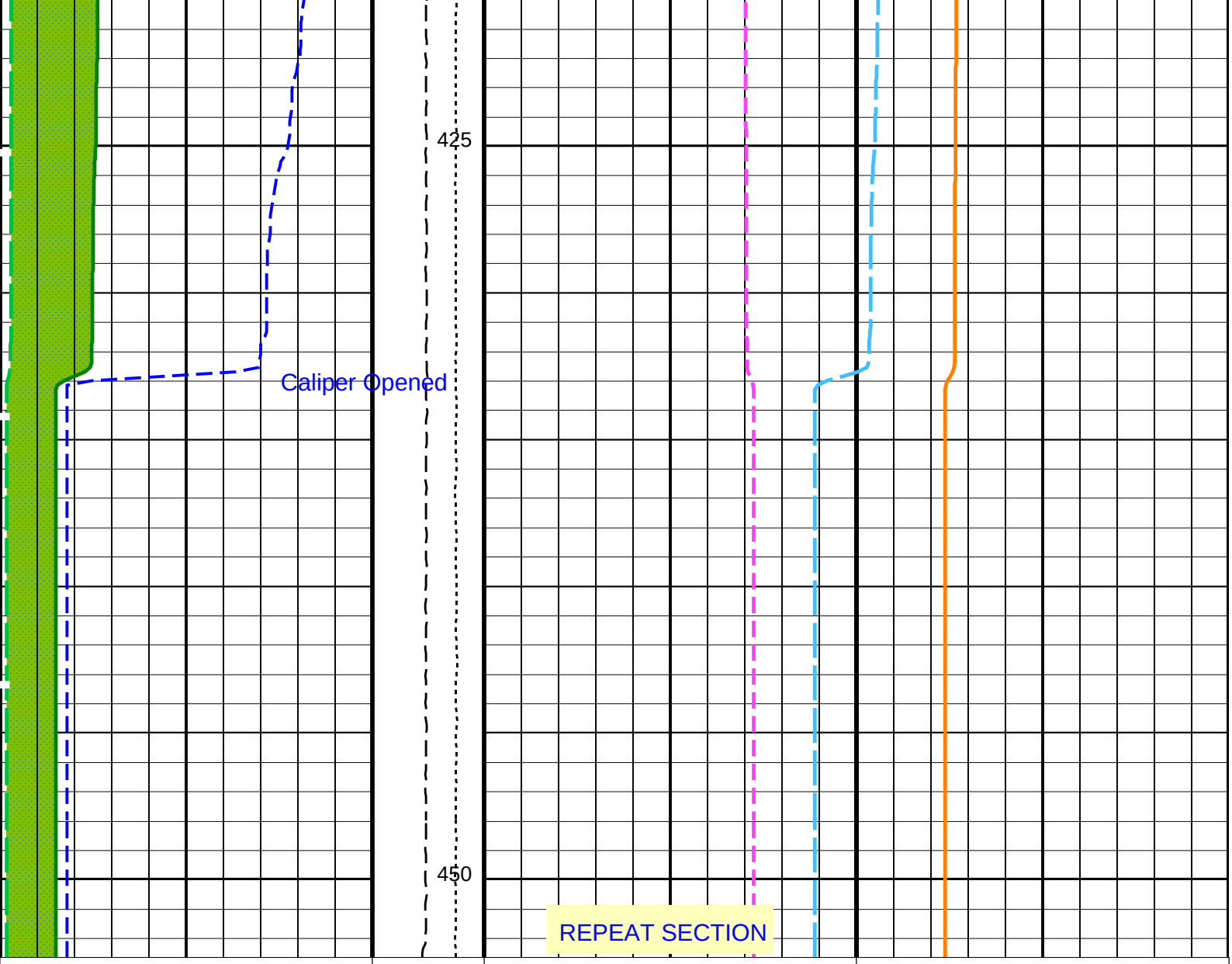
TENS
LCAL
HCGR
HSGR
400
CDF
HTHO
HURA
HFK



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10

Area1
From HCGR to HSGR

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HRLT−B: High Resolution Laterolog Array − B	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	LCAL
	APS−C: Accelerator−Porosity Tool	
BHS	Borehole Status	OPEN

BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	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	
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	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0011779	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
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	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.17045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.977099	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DO	Depth Offset for Playback	−158.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 19−Sep−2015 10:28

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:42	PRODUCER	15−Sep−2015 22:51	610.4 M	496.8 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_033PUP	FN:44	PRODUCER	19−Sep−2015 10:28		

Company: International Ocean Discovery Program Well: Expedition 356, Site U1463B

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:42	PRODUCER	15−Sep−2015 22:51	610.4 M	496.8 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_033PUP	FN:44	PRODUCER	19−Sep−2015 10:28	452.6 M	338.8 M

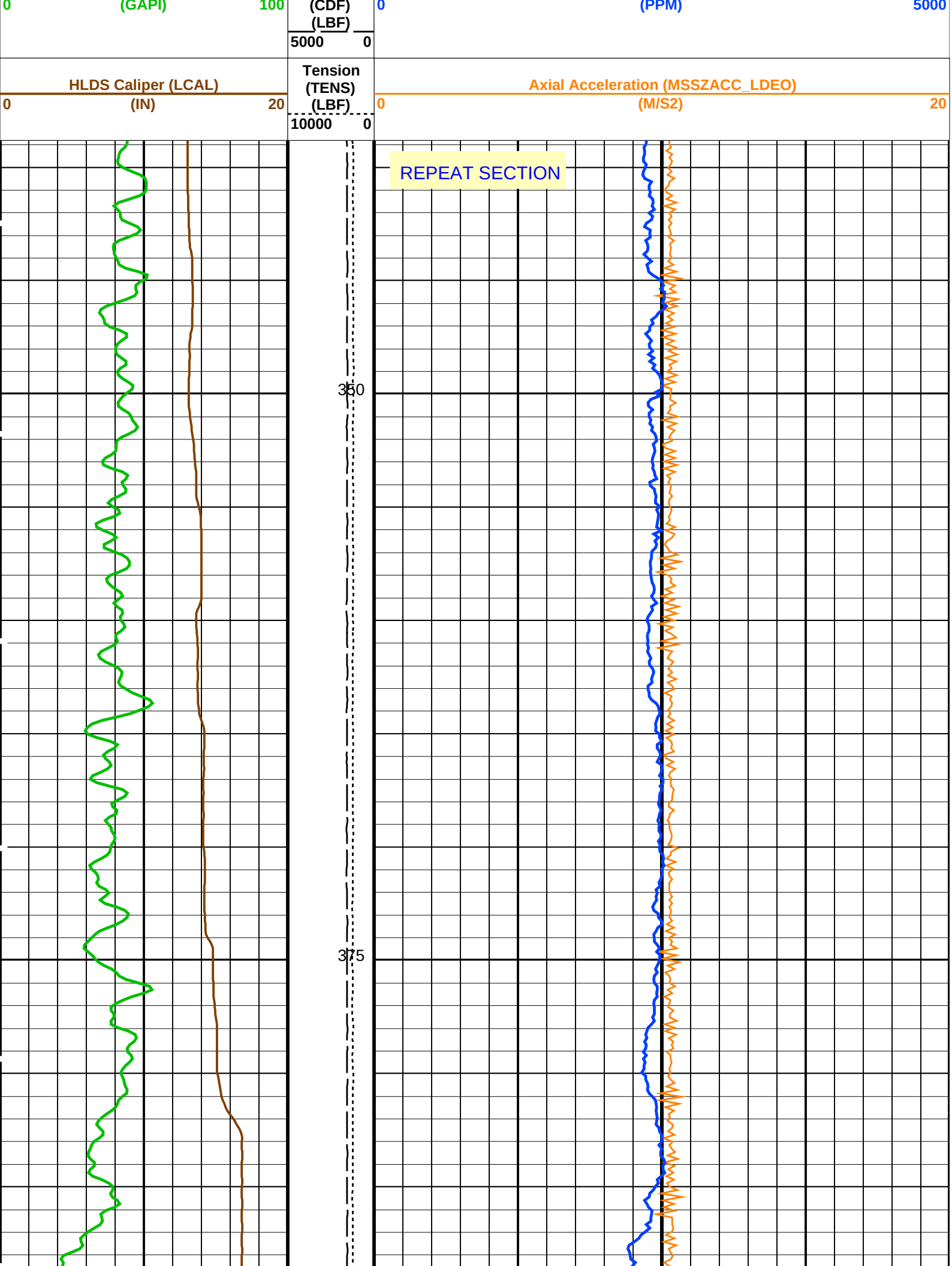
OP System Version: 19C0−187

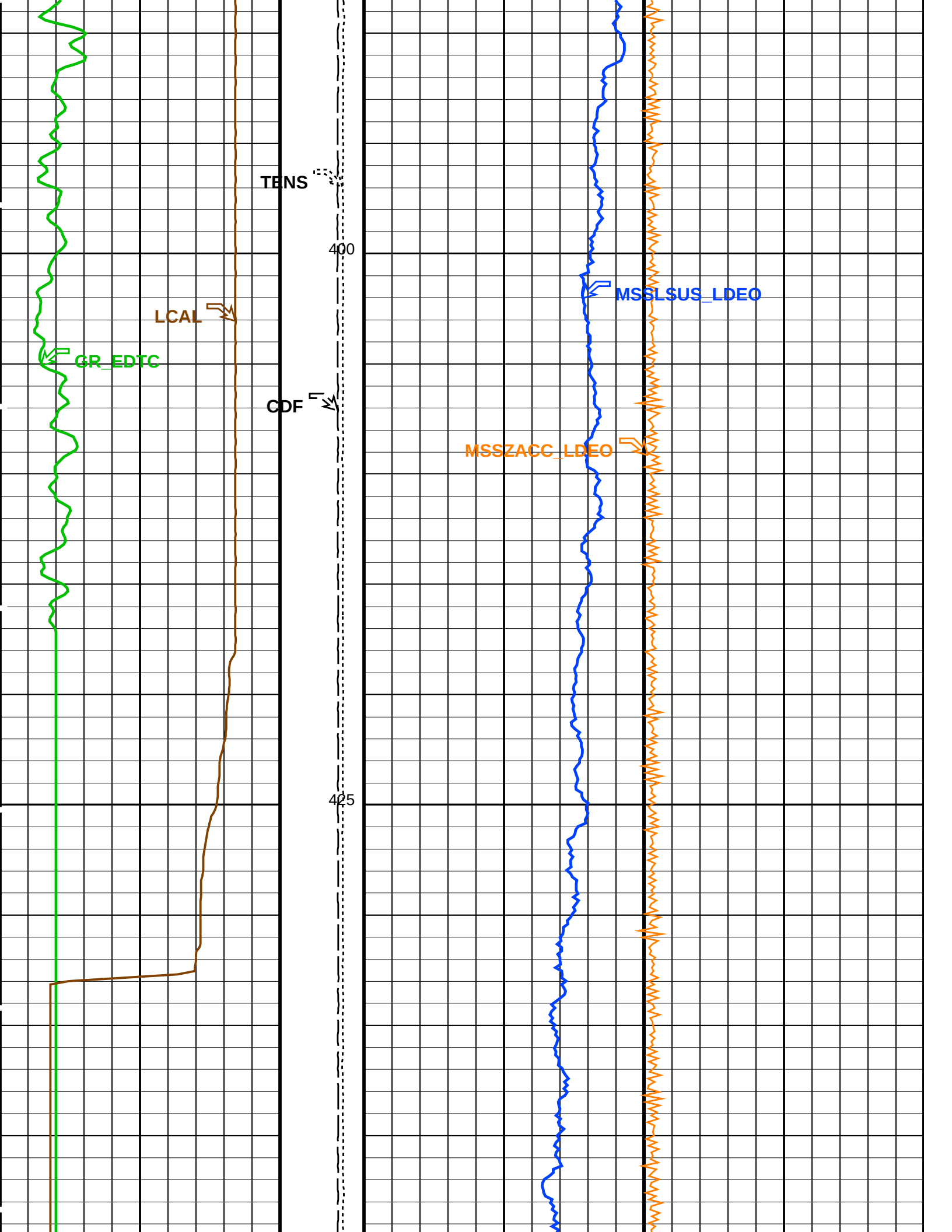
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

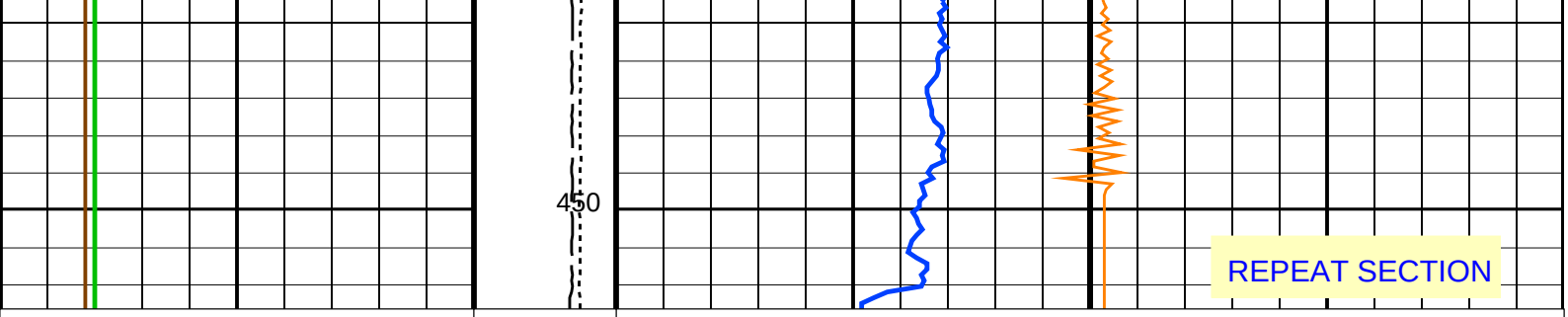
PIP SUMMARY

Time Mark Every 60 S

Gamma Ray (GR_EDTC)	Calibrated Downhole Force	Dual−Coil Susceptibility (MSSLSUS_LDEO)


0
(GAPI)
100
(CDF)
(LBF)
5000
0
0
(PPM)
5000
HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
Axial Acceleration (MSSZACC_LDEO)
0
(M/S2)
20
REPEAT SECTION
350
375


TENS
400
LCAL
GR_EDTC
CDF
MSSLSUS_LDEO
MSSZACC_LDEO
425



HLDS Caliper (LCAL)	Tension (TENS)	Axial Acceleration (MSSZACC_LDEO)
0 (IN) 20	(LBF) 10000 0	0 (M/S2) 20
Gamma Ray (GR_EDTC)	**Calibrated Downhole Force (CDF) (LBF)**	**Dual−Coil Susceptibility (MSSLSUS_LDEO)**
0 (GAPI) 100	5000 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.8518	DEGC
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	
GCSE	Generalized Caliper Selection	LCAL	
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	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
	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	2.6	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	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	30	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	LCAL	
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	−0.0011779	
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	BARITE	
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	1.17045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.977099	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.32	G/C3
DO	Depth Offset for Playback	−158.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	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	960	M
TDD	Total Depth − Driller	686.30	M
TDL	Total Depth − Logger	690.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 19−Sep−2015 10:28

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:42	PRODUCER	15−Sep−2015 22:51	610.4 M	496.8 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_033PUP	FN:44	PRODUCER	19−Sep−2015 10:28		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:42	PRODUCER	15−Sep−2015 22:51	610.4 M	496.8 M

Output DLIS Files

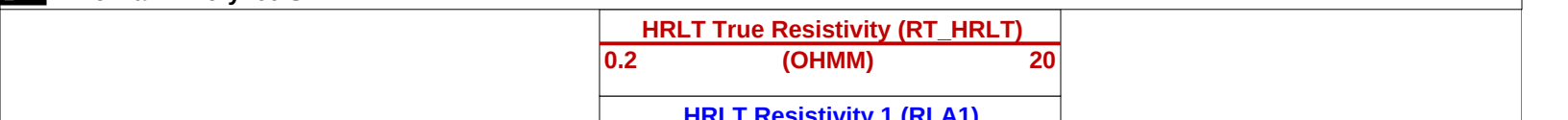
DEFAULT	MSS_LDEO_HRLA_LDL_033PUP	FN:44	PRODUCER	19−Sep−2015 10:28	452.6 M	338.8 M

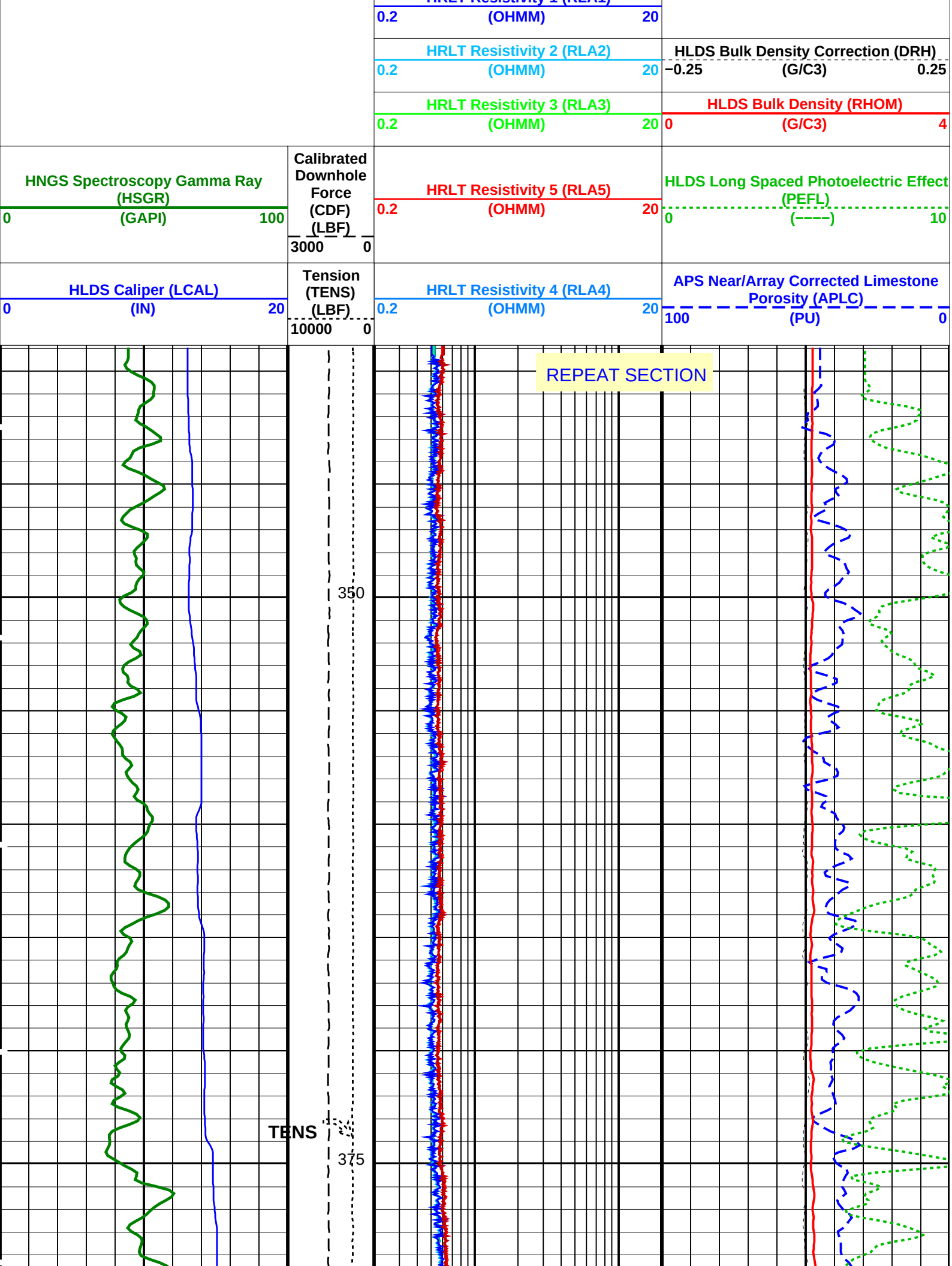
OP System Version: 19C0−187

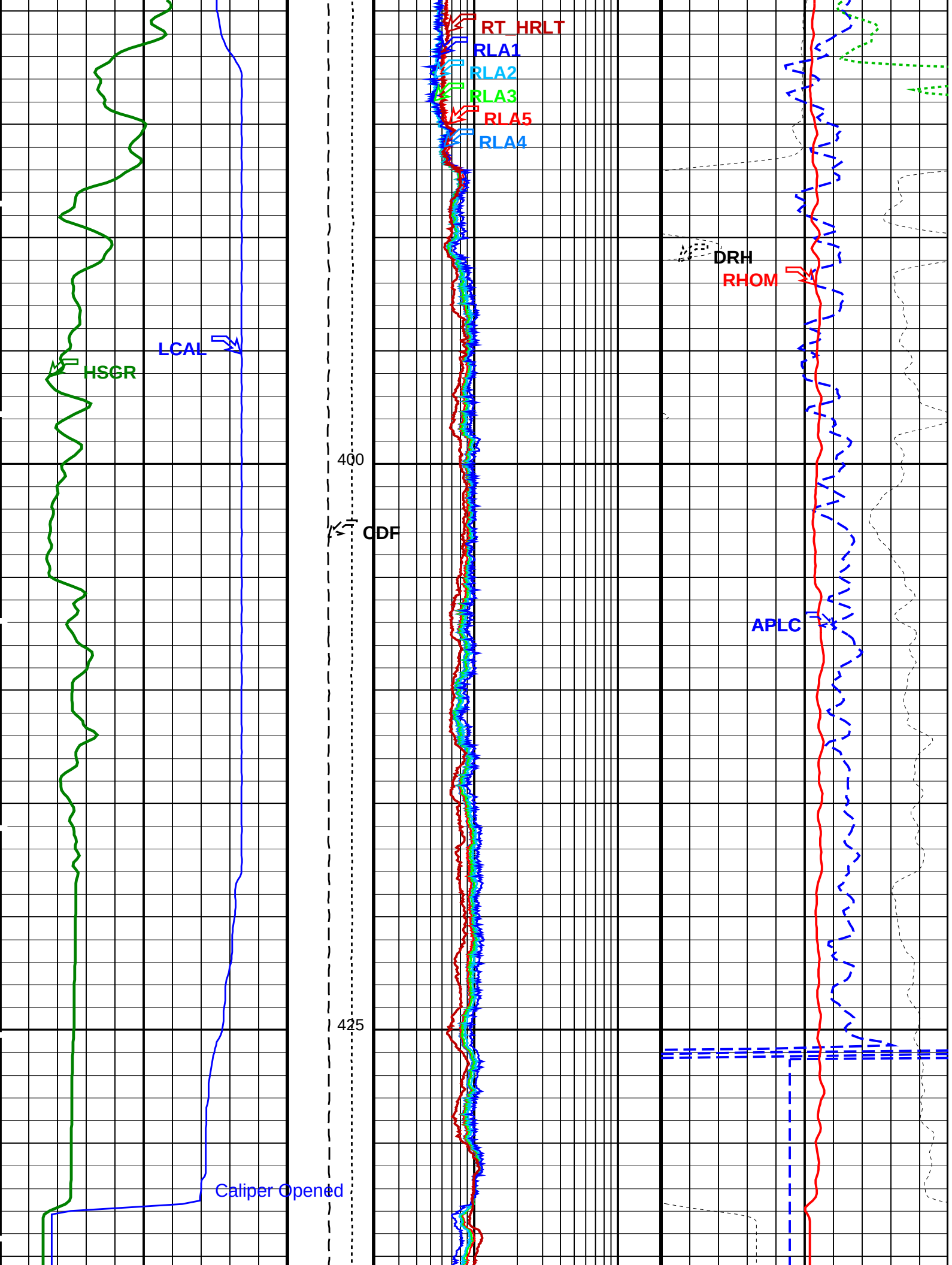
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

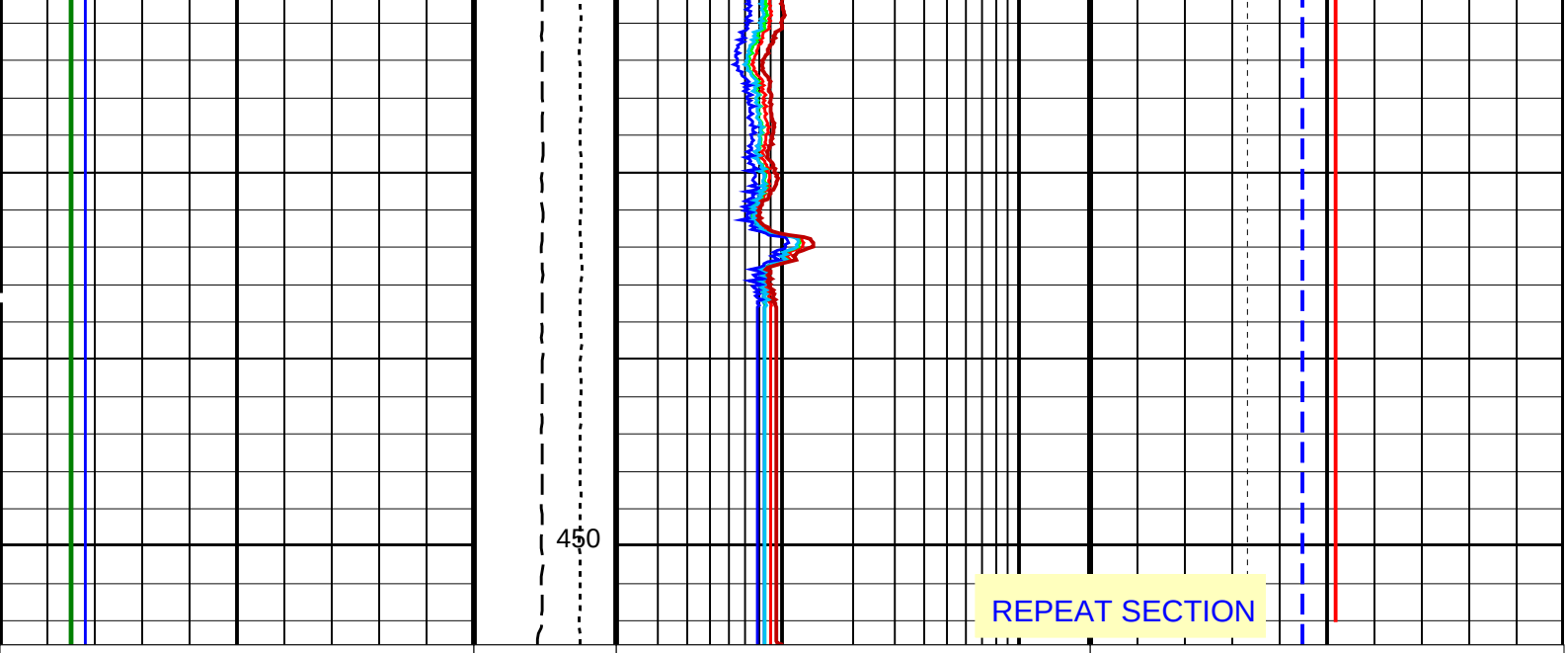
PIP SUMMARY

Time Mark Every 60 S




HRLT Resistivity 1 (RLA1)
0.2 (OHMM) 20
HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 20
HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25
HRLT Resistivity 3 (RLA3)
0.2 (OHMM) 20
HLDS Bulk Density (RHOM)
0 (G/C3) 4
HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100
Calibrated Downhole Force (CDF) (LBF)
3000 0
HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 20
HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10
HLDS Caliper (LCAL)
0 (IN) 20
Tension (TENS) (LBF)
10000 0
HRLT Resistivity 4 (RLA4)
0.2 (OHMM) 20
APS Near/Array Corrected Limestone Porosity (APLC)
100 (PU) 0
REPEAT SECTION
350
TENS
375


RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
DRH
RHOM
LCAL
HSGR
400
CDF
APLC
425
Caliper Opened



HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20	APS Near/Array Corrected Limestone Porosity (APLC) 100 (PU) 0
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20	HLDS Long Spaced Photoelectric Effect (PEFL) 0 (----) 10
		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20	HLDS Bulk Density (RHOM) 0 (G/C3) 4
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20	HLDS Bulk Density Correction (DRH) −0.25 (G/C3) 0.25
		HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 20	
		HRLT True Resistivity (RT_HRLT) 0.2 (OHMM) 20	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.8518	DEGC
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	
GCSE	Generalized Caliper Selection	LCAL	
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	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	

LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
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	2.6	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	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	30	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	LCAL	
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	−0.0011779	
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	BARITE	
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	1.17045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.977099	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	30	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
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	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.32	G/C3
DO	Depth Offset for Playback	−158.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	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	960	M
TDD	Total Depth − Driller	686.30	M
TDL	Total Depth − Logger	690.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 19−Sep−2015 10:28

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:42	PRODUCER	15−Sep−2015 22:51	610.4 M	496.8 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_033PUP	FN:44	PRODUCER	19−Sep−2015 10:28

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−318.8	−318.5	0.2786	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−331.8	−332.8	−0.9787	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−339.4	−340.2	−0.8167	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−329.7	−330.3	−0.5993	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−320.1	−320.2	−0.1125	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−321.9	−322.1	−0.2084	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	322.0	322.9	0.9130	9.681	UV
HRLT M0−M1 Voltage Plus − 7	0	N/A	−322.7	−322.7	0	9.681	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M12							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT M1−M2 Voltage Plus − 0	0	N/A	1742	1742	−0.7883	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1820	1826	5.786	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1855	1860	5.246	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1801	1805	3.913	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1747	1748	1.316	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1758	1759	1.499	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1775	−1780	−5.659	53.42	UV
HRLT M1−M2 Voltage Plus − 7	0	N/A	1781	1781	0	53.42	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M23							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT M2−M3 Voltage Plus − 0	0	N/A	1734	1732	−1.724	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1822	1828	6.020	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1859	1864	4.832	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1809	1811	2.530	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1748	1748	0.04126	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1760	1761	0.9951	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1766	−1770	−4.652	53.42	UV
HRLT M2−M3 Voltage Plus − 7	0	N/A	1781	1781	0	53.42	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT V34							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT A3−A4 Voltage Plus − 0	0	N/A	68710	68660	−50.81	2100	UV
HRLT A3−A4 Voltage Plus − 1	0	N/A	72010	72260	250.5	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	73770	73960	195.5	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	72010	72150	136.6	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	69590	69630	42.12	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	70070	70130	64.73	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−68790	−69000	−206.3	2100	UV
HRLT A3−A4 Voltage Plus − 7	0	N/A	70000	70000	0	2100	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT V45							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT A4−A5 Voltage Plus − 0	0	N/A	68790	68750	−42.03	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	72220	72470	252.4	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	73950	74140	188.1	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	72160	72300	136.6	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	69690	69730	43.45	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	70160	70230	62.14	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−69000	−69200	−202.0	2100	UV
HRLT A4−A5 Voltage Plus − 7	0	N/A	70000	70000	0	2100	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT V56							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT A5−A6 Voltage Plus − 0	0	N/A	68640	68600	−40.14	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	72070	72300	226.8	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	73780	74000	221.8	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	72010	72180	166.2	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	69560	69600	35.43	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	70030	70090	62.78	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−68840	−69040	−200.2	2100	UV
HRLT A5−A6 Voltage Plus − 7	0	N/A	70000	70000	0	2100	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT VTP							
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09							
HRLT Torpedo−M0 Voltage − 0	0	N/A	−68150	−68110	43.13	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−71870	−72110	−237.3	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−73630	−73840	−216.6	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−71910	−72060	−146.1	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−69500	−69540	−35.75	2100	UV

HRLT Torpedo−M0 Voltage − 5	0	N/A	−69970	−70030	−51.93	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	68590	68810	216.9	2100	UV
HRLT Torpedo−M0 Voltage − 7	0	N/A	−70000	−70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VBD
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−68190	−68150	40.14	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−71970	−72200	−234.7	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−73710	−73920	−201.0	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−71990	−72150	−162.0	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−69550	−69590	−40.85	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−70020	−70060	−44.51	2100	UV
HRLT Bridle#9−M0 Voltage − 6	0	N/A	68690	68890	198.7	2100	UV
HRLT Bridle#9−M0 Voltage − 7	0	N/A	−70000	−70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT ISO
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09

HRLT Source Current Plus − 0	0	N/A	284.4	284.3	−0.1234	8.520	UA
HRLT Source Current Plus − 1	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 2	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 3	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 4	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 5	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 6	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 7	0	N/A	281.1	281.1	0	8.520	UA

High Resolution Laterolog Array − B Wellsite Calibration − HRLT MV
Before: 15−Sep−2015 6:46 After: 11−Sep−2015 3:09

HRLT Vertical Voltage Pl − 0	0	N/A	−320.7	−320.2	0.5693	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−326.6	−327.3	−0.6817	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−333.0	−333.5	−0.4796	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−321.7	−322.0	−0.2878	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−309.3	−309.1	0.1409	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−326.0	−325.9	0.09485	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	329.8	330.4	0.6425	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	−322.7	0	9.681	UV

Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement
Master: 3−Aug−2015 21:03 Before: 10−Sep−2015 22:59 After: 5−Aug−2015 9:22

SS Cs Resolution Bkg	9.000	8.017	7.993	7.919	−0.07482	1.800	%
LS Cs Resolution Bkg	9.000	8.170	8.219	8.157	−0.06247	1.800	%
LSW1 Background	100.0	68.33	68.08	67.33	−0.7546	3.000	CPS
LSW2 Background	100.0	63.65	62.52	61.96	−0.5642	3.000	CPS
LSW3 Background	200.0	137.7	138.1	137.2	−0.8874	6.000	CPS
LSW4 Background	250.0	169.1	166.6	168.5	1.915	7.500	CPS
LSW5 Background	600.0	386.6	380.0	383.4	3.381	18.00	CPS
SSW1 Background	100.0	76.45	75.19	75.94	0.7417	3.000	CPS
SSW2 Background	200.0	136.4	134.9	137.6	2.702	6.000	CPS
SSW3 Background	500.0	362.4	363.9	365.1	1.139	15.00	CPS
SSW4 Background	270.0	190.8	190.0	189.5	−0.5672	8.100	CPS
SSW5 Background	200.0	138.4	136.5	138.7	2.256	6.000	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement
Master: 3−Aug−2015 21:34

LSW1 Aluminum	600.0	504.7	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	726.8	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	878.5	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	443.6	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	408.1	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2360	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6396	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	8862	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3644	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	446.4	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement
Master: 3−Aug−2015 21:29

LSW1 Iron	400.0	344.5	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	588.5	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	781.6	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	405.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	370.3	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1732	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5346	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8101	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3320	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	398.5	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: 3−Aug−2015 21:46

HLDS Caliper Small Ring	12.00	N/A	16.20	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	20.40	N/A	N/A	N/A	IN

Accelerator−Porosity Tool Wellsite Calibration − Detector Background
Master: 4−Aug−2015 18:37 Before: 15−Sep−2015 6:49 After: 11−Sep−2015 3:12

Near Det Bkg Cntrate	30.00	25.87	27.03	26.50	−0.5339	N/A	CPS
Far Det Bkg Cntrate	30.00	28.00	27.60	28.02	0.4172	N/A	CPS
Array−1 Det Bkg Cntrate	30.00	26.10	26.54	26.14	−0.4003	N/A	CPS
Array−2 Det Bkg Cntrate	30.00	25.95	25.49	28.05	2.552	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	27.77	25.71	25.71	0	N/A	CPS

Accelerator−Porosity Tool Wellsite Calibration − Calibration Ratios
Master: 4−Aug−2015 18:37

Near/Far Calibration Ratio	0.9250	0.9777	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.086	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.021	N/A	N/A	N/A	N/A	

Accelerator−Porosity Tool Wellsite Calibration − Tank Check
Master: 4−Aug−2015 18:37

Array−1 Standoff Porosity	11.75	10.45	N/A	N/A	N/A	N/A	PU
Array−2 Standoff Porosity	11.75	10.61	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	6.032	N/A	N/A	N/A	N/A	US
Array−1 SDT Ratio Up/Down	1.000	0.9769	N/A	N/A	N/A	N/A	
Array−2 SDT Ratio Up/Down	1.000	0.9680	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	34.31	N/A	N/A	N/A	N/A	CU

Accelerator−Porosity Tool Wellsite Calibration − CCR7 signal boxes
Master: 4−Aug−2015 18:00

Near Detector Plateau Setting	1650	1700	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2035	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1938	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Na 511 Peak Loc	40.00	37.71	37.63	37.62	−0.01348	1.000	
Na 511 Peak Res	15.50	16.11	15.42	15.72	0.3043	2.000	%
High Voltage	1150	1211	1201	1204	2.856	N/A	V
Na 1785 Peak Loc	142.6	136.7	136.8	136.3	−0.4773	7.000	
Na 1785 Peak Res	8.500	10.13	8.646	8.654	0.007848	2.000	%
Temperature	15.50	22.16	22.65	22.78	0.1236	N/A	DEGC
Na Count Rate	45.00	43.96	43.37	42.72	−0.6500	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Na 511 Peak Loc	40.00	39.69	39.55	39.58	0.02773	1.000	
Na 511 Peak Res	15.50	15.27	16.42	15.01	−1.409	2.000	%
High Voltage	1150	1084	1083	1085	2.161	N/A	V
Na 1785 Peak Loc	142.6	143.4	143.2	142.7	−0.5449	7.000	
Na 1785 Peak Res	8.500	8.457	8.664	8.451	−0.2128	2.000	%
Temperature	15.50	21.65	22.00	22.57	0.5625	N/A	DEGC
Na Count Rate	45.00	44.18	43.52	42.99	−0.5368	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Coincidence Count Rate Ratio	1.000	0.9887	0.9903	0.9926	0.002269	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 31−Jul−2015 9:56

Na 511 Peak Set Point	40.00	39.00	−−	−−	−−	−−	
Th Peak Loc	209.6	206.7	−−	−−	−−	−−	
Th Peak Res	7.000	8.351	−−	−−	−−	−−	%
Background Count Rate	142.5	37.67	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.042	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 31−Jul−2015 9:56

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	211.5	−−	−−	−−	−−	
Th Peak Res	7.000	6.877	−−	−−	−−	−−	%
Background Count Rate	142.5	39.84	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.014	−−	−−	−−	−−	

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 15−Sep−2015 6:46

EDTC Z−Axis Acceleration	9.810	N/A	9.816	N/A	N/A	N/A	M/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: Calibration out of date 5−Aug−2015 7:56 After: Calibration out of date 5−Aug−2015 9:33

Gamma Ray (Jig − Bkg)	152.3	N/A	152.3	152.9	0.5175	13.85	GAPI
Gamma Ray (Calibrated)	165.0	N/A	164.0	164.6	0.5571	15.00	GAPI

Accelerator−Porosity Tool − Detector Plateau Settings :

Accelerator Porosity Tool − Detector Plateau Settings :

Near Detector Plateau Setting 1700 V
Far Detector Plateau Setting 2035 V
Array Detector Plateau Setting 1938 V

High Resolution Laterolog Array − B / Equipment Identification

Primary Equipment:		
HRLT Sonde	HRLS − B	768
Auxiliary Equipment:		
HRLT lower Housing	HRLH − B	968
HRLT Lower Cartridge	HRLC − B	974
HRLT upper Housing	HRUH − B	978
HRLT Upper Cartridge	HRUC − B	764

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M01

Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−318.8	−322.7	−280.7	−379.7
	After		−318.5			
1	Before		−331.8	−322.7	−280.7	−379.7
	After		−332.8			
2	Before		−339.4	−322.7	−280.7	−379.7
	After		−340.2			
3	Before		−329.7	−322.7	−280.7	−379.7
	After		−330.3			
4	Before		−320.1	−322.7	−280.7	−379.7
	After		−320.2			
5	Before		−321.9	−322.7	−280.7	−379.7
	After		−322.1			
6	Before		322.0	322.7	379.7	280.7
	After		322.9			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 15−Sep−2015 6:46
After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1742	1781	2095	1549
	After		1742			
1	Before		1820	1781	2095	1549
	After		1826			
2	Before		1855	1781	2095	1549
	After		1860			
3	Before		1801	1781	2095	1549
	After		1805			
4	Before		1747	1781	2095	1549
	After					

	After	1748			
5	Before	1758	1781	2095	1549
	After	1759			
6	Before	−1775	−1781	−1549	−2095
	After	−1780			
7	Before	1781	1781	2095	1549
	After	1781			
	(Minimum) (Nominal) (Maximum)				

Before: 15−Sep−2015 6:46
After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M23

Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1734	1781	2095	1549
	After		1732			
1	Before		1822	1781	2095	1549
	After		1828			
2	Before		1859	1781	2095	1549
	After		1864			
3	Before		1809	1781	2095	1549
	After		1811			
4	Before		1748	1781	2095	1549
	After		1748			
5	Before		1760	1781	2095	1549
	After		1761			
6	Before		−1766	−1781	−1549	−2095
	After		−1770			
7	Before		1781	1781	2095	1549
	After		1781			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46
After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V34

Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68710	70000	82360	60900
	After		68660			
1	Before		72010	70000	82360	60900
	After		72260			
2	Before		73770	70000	82360	60900
	After		73960			
3	Before		72010	70000	82360	60900
	After		72150			
4	Before		69590	70000	82360	60900
	After		69630			
5	Before		70070	70000	82360	60900

	After	70130			
6	Before	−68790	−70000	−60900	−82360
	After	−69000			
7	Before	70000	70000	82360	60900
	After	70000			
	(Minimum) (Nominal) (Maximum)				

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68790	70000	82360	60900
	After		68750			
1	Before		72220	70000	82360	60900
	After		72470			
2	Before		73950	70000	82360	60900
	After		74140			
3	Before		72160	70000	82360	60900
	After		72300			
4	Before		69690	70000	82360	60900
	After		69730			
5	Before		70160	70000	82360	60900
	After		70230			
6	Before		−69000	−70000	−60900	−82360
	After		−69200			
7	Before		70000	70000	82360	60900
	After		70000			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68640	70000	82360	60900
	After		68600			
1	Before		72070	70000	82360	60900
	After		72300			
2	Before		73780	70000	82360	60900
	After		74000			
3	Before		72010	70000	82360	60900
	After		72180			
4	Before		69560	70000	82360	60900
	After		69600			
5	Before		70030	70000	82360	60900
	After		70090			
6	Before		−68840	−70000	−60900	−82360
	After					

	After	−69040			
7	Before	70000	70000	82360	60900
	After	70000			
	(Minimum) (Nominal) (Maximum)				

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VTP

Idx	Phase	HRLT Torpedo−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68150	−70000	−60900	−82360
	After		−68110			
1	Before		−71870	−70000	−60900	−82360
	After		−72110			
2	Before		−73630	−70000	−60900	−82360
	After		−73840			
3	Before		−71910	−70000	−60900	−82360
	After		−72060			
4	Before		−69500	−70000	−60900	−82360
	After		−69540			
5	Before		−69970	−70000	−60900	−82360
	After		−70030			
6	Before		68590	70000	82360	60900
	After		68810			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

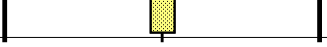
High Resolution Laterolog Array − B Wellsite Calibration

HRLT VBD

Idx	Phase	HRLT Bridle#9−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68190	−70000	−60900	−82360
	After		−68150			
1	Before		−71970	−70000	−60900	−82360
	After		−72200			
2	Before		−73710	−70000	−60900	−82360
	After		−73920			
3	Before		−71990	−70000	−60900	−82360
	After		−72150			
4	Before		−69550	−70000	−60900	−82360
	After		−69590			
5	Before		−70020	−70000	−60900	−82360
	After		−70060			
6	Before		68690	70000	82360	60900
	After		68890			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

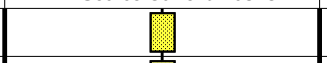
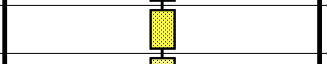
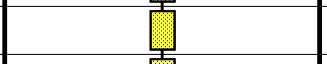
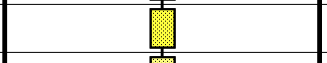
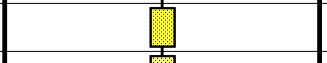
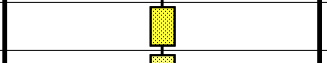
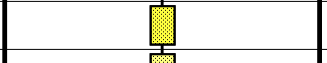
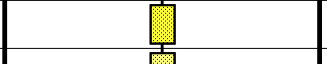
	After		−70000			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT ISO

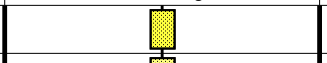
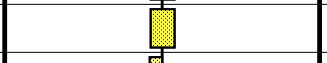
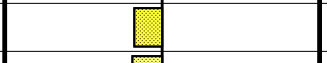
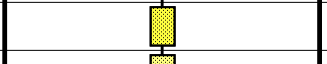
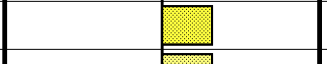
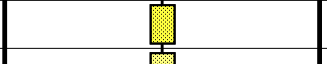
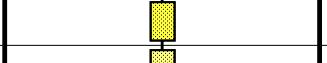
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.4	284.0	334.1	247.0
	After		284.3			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
2	Before		281.1	281.1	330.7	244.4
	After		281.1			
3	Before		281.1	281.1	330.7	244.4
	After		281.1			
4	Before		281.1	281.1	330.7	244.4
	After		281.1			
5	Before		281.1	281.1	330.7	244.4
	After		281.1			
6	Before		281.1	281.1	330.7	244.4
	After		281.1			
7	Before		281.1	281.1	330.7	244.4
	After		281.1			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

High Resolution Laterolog Array − B Wellsite Calibration

HRLT MV

Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−320.7	−322.7	−280.7	−379.7
	After		−320.2			
1	Before		−326.6	−322.7	−280.7	−379.7
	After		−327.3			
2	Before		−333.0	−322.7	−280.7	−379.7
	After		−333.5			
3	Before		−321.7	−322.7	−280.7	−379.7
	After		−322.0			
4	Before		−309.3	−322.7	−280.7	−379.7
	After		−309.1			
5	Before		−326.0	−322.7	−280.7	−379.7
	After		−325.9			
6	Before		329.8	322.7	379.7	280.7
	After		330.4			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
	(Minimum) (Nominal) (Maximum)					

Before: 15−Sep−2015 6:46

After: 11−Sep−2015 3:09

Hostile Litho−Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS − D	45
Hostile Litho Density High Voltage	HLDV − D	45
Gamma Source Radioactive	GSR − Z	8113
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP − C	45
Hostile Litho Density High Voltage Housi	HEH − H	47

Hostile Litho−Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.017
Before		7.993
After		7.919
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.170
Before		8.219
After		8.157
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW1 Background CPS	Value
Master		68.33
Before		68.08
After		67.33
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		63.65
Before		62.52
After		61.96
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		137.7
Before		138.1
After		137.2
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		169.1
Before		166.6
After		168.5
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		386.6
Before		380.0
After		383.4
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		76.45
Before		75.19
After		75.94
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		136.4
Before		134.9
After		137.6
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		362.4
Before		363.9
After		365.1
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		190.8
Before		190.0
After		189.5
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		138.4
Before		136.5
After		138.7
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Master: 3−Aug−2015 21:03 Before: 10−Sep−2015 22:59 After: 5−Aug−2015 9:22

Hostile Litho−Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		68.33
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		63.65
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		137.7
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		169.1
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		386.6
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.170
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		76.45
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		136.4
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		362.4
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		190.8
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		138.4
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Phase	SS Cs Resolution Bkg %	Value
Master		8.017
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Master: 3−Aug−2015 21:03

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

Phase	LSW1 Aluminum CPS	Value
Master		504.7
	420.0 (Minimum) 600.0 (Nominal) 770.0 (Maximum)	

Phase	LSW2 Aluminum CPS	Value
Master		726.8
	650.0 (Minimum) 900.0 (Nominal) 1150 (Maximum)	

Phase	LSW3 Aluminum CPS	Value
Master		878.5
	800.0 (Minimum) 1100 (Nominal) 1450 (Maximum)	

Phase	LSW4 Aluminum CPS	Value
Master		443.6
	410.0 (Minimum) 580.0 (Nominal) 740.0 (Maximum)	

Phase	LSW5 Aluminum CPS	Value
Master	EXCEEDS LIMIT	408.1
	410.0 (Minimum) 570.0 (Nominal) 740.0 (Maximum)	

Phase	SSW1 Aluminum CPS	Value
Master		2360
	2000 (Minimum) 2800 (Nominal) 3200 (Maximum)	

Phase	SSW2 Aluminum CPS	Value
Master		6396
	5800 (Minimum) 8000 (Nominal) 9300 (Maximum)	

Phase	SSW3 Aluminum CPS	Value
Master		8862
	8300 (Minimum) 11600 (Nominal) 13500 (Maximum)	

Phase	SSW4 Aluminum CPS	Value
Master		3644
	3500 (Minimum) 5000 (Nominal) 5800 (Maximum)	

Phase	SSW5 Aluminum CPS	Value
Master		446.4
	430.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum)	

Master: 3−Aug−2015 21:34

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

Phase	LSW1 Iron CPS	Value
Master		344.5
	290.0 (Minimum) 400.0 (Nominal) 560.0 (Maximum)	

Phase	LSW2 Iron CPS	Value
Master		588.5
	520.0 (Minimum) 730.0 (Nominal) 950.0 (Maximum)	

Phase	LSW3 Iron CPS	Value
Master		781.6
	720.0 (Minimum) 1000 (Nominal) 1350 (Maximum)	

Phase	LSW4 Iron CPS	Value
Master		405.5
	370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum)	

Phase	LSW5 Iron CPS	Value
Master		370.3
	340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum)	

Phase	SSW1 Iron CPS	Value
Master		1732
	1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	

Phase	SSW2 Iron CPS	Value
Master		**5346**
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)	

Phase	SSW3 Iron CPS	Value
Master		**8101**
	7800 (Minimum) 10800 (Nominal) 12600 (Maximum)	

Phase	SSW4 Iron CPS	Value
Master		**3320**
	3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	

Phase	SSW5 Iron CPS	Value
Master	EXCEEDS LIMIT	398.5
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)	

Master: 3−Aug−2015 21:29

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.031
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	

Phase	AL CALIBRATION RATIO 2	Value
Master		2.166
	1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)	

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5926
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5770
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	Pad−Wear SS Ratio	Value
Master		0.9867
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Wear LS Ratio	Value
Master		0.9843
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Position SS Ratio	Value
Master		1.006
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)	

Phase	Pad−Position LS Ratio	Value
Master		0.9952
	0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)	

Master: 3−Aug−2015 21:34

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC − B	521
Auxiliary Equipment:		
LDSC Housing	LDSH − A	319

Accelerator−Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator−Porosity Sonde	APS − C	212
APS Minitron	MNTR − F	6504
Auxiliary Equipment:		
Accelerator−Porosity Housing	APH − AC	121
APS Calibration Water Tank	SFT − 178	1
APS Aluminum Calibrator Sleeve	SFT − 281	1

Accelerator−Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value
Master		25.87
Before		27.03
After		26.50

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Far Det Bkg Cntrate CPS	Value
Master		28.00
Before		27.60
After		28.02

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array−1 Det Bkg Cntrate CPS	Value
Master		26.10
Before		26.54
After		26.14

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array−2 Det Bkg Cntrate CPS	Value
Master		25.95
Before		25.49
After		28.05

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		27.77
Before		25.71
After		25.71

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Master: 4−Aug−2015 18:37 Before: 15−Sep−2015 6:49 After: 11−Sep−2015 3:12

Accelerator−Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value
Master		0.9777

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		1.086

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.021

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 4−Aug−2015 18:37

Accelerator−Porosity Tool Wellsite Calibration

Tank Check

Phase	Array−1 Standoff Porosity PU	Value
Master		10.45

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array−2 Standoff Porosity PU	Value
Master		10.61

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		6.032

5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)

Phase	Array−1 SDT Ratio Up/Down	Value
Master		0.9769

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Array−2 SDT Ratio Up/Down	Value
Master		0.9680

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Sigma Formation CU	Value
Master		34.31

20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)

Master: 4−Aug−2015 18:37

Accelerator−Porosity Tool Master Calibration

Detector Calibration

Phase	Near/Far Calibration Ratio	Value
Master		0.9777

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		1.086

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.021

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 4−Aug−2015 18:37

Accelerator−Porosity Tool Master Calibration

Tank Check

Phase	Array−1 Standoff Porosity PU	Value
Master		10.45

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array−2 Standoff Porosity PU	Value
Master		10.61

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		6.032

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		0.9769	Master		0.9680	Master		34.31
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: 4−Aug−2015 18:37

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

Primary Equipment:		
HNGC Cartridge	HNGC − B	439
Auxiliary Equipment:		
HNGC Housing	HNGH − A	380

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS − BA	177
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH − BA	174
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		37.71	Master		16.11	Master		1211
Before		37.63	Before		15.42	Before		1201
After		37.62	After		15.72	After		1204
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		136.7	Master		10.13	Master		22.16
Before		136.8	Before		8.646	Before		22.65
After		136.3	After		8.654	After		22.78
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		43.96
Before		43.37
After		42.72
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.69	Master		15.27	Master		1084
Before		39.55	Before		16.42	Before		1083
After		39.58	After		15.01	After		1085
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		143.4	Master		8.457	Master		21.65
Before		143.2	Before		8.664	Before		22.00
After		142.7	After		8.451	After		22.57
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		44.18
Before		43.52
After		42.99
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9887
Before		0.9903
After		0.9926
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 31−Jul−2015 10:01
Before: 5−Aug−2015 7:59
After: 5−Aug−2015 9:23

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		39.00	Master		206.7	Master		8.351
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		37.67	Master		1.042
10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)

Master: 31−Jul−2015 9:56

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		211.5	Master		6.877
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		39.84	Master		1.014
10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)

Master: 31−Jul−2015 9:56

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:		
EDTC Gamma Ray Detector	EDTG − A/B	8305
Enhanced DTS Cartridge	EDTC − B	8317
Auxiliary Equipment:		
EDTC Housing	EDTH − B	8303

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration M/S2	Value
Before		9.816
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 15−Sep−2015 6:46

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		9.594
After		10.26

0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)

Phase	Gamma Ray (Jig − Bkg) GAPI	Value
Before		152.3
After		152.9

138.5 (Minimum) 152.3 (Nominal) 166.2 (Maximum)

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		164.0
After		164.6

150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)

Before: Calibration out of date 5−Aug−2015 7:56 After: Calibration out of date 5−Aug−2015 9:33

Company: **International Ocean Discovery Program**

Schlumberger

Well: **Expedition 356, Site U1463B**
Field: **Indonesian Throughflow**
Rig: **JOIDES Resolution**
Ocean: **Indian**

High Resolution Laterolog Array (HRLA)
Density/Porosity (HLDS) (APS)
Magnetic Susceptibility (MSS), (HNGS)