Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 324 Site U1349A**
Field: **Shatsky Rise**
Rig: **JOIDES Resolution** Ocean: **Pacific**

Rig: JOIDES Resolution
Field: Shatsky Rise
Location: Latitude: N 36* 6.94'
Well: Expedition 324 Site U1349A
Company: Lamont Doherty

Hostile Litho Density (HLDS)

Natural Gamma Spectroscopy (HNGS)

LOCATION

Latitude: N 36* 6.94'
Longitude: E 158* 27.52'

Elev.: K.B. 11.00 m
G.L. −3138.00 m
D.F. 11.00 m

Permanent Datum: Mean Sea Level Elev.: 0.00 m
Log Measured From: Drill Floor 11.00 m above Perm. Datum
Drilling Measured From: Drill Floor

API Serial No.	Max. Hole Devi. 0 deg	Longitude	Latitude

	Run 1	Run 2	Run
Logging Date	11−Oct−2009		
Run Number	1		
Depth Driller	3388 m		
Schlumberger Depth	3385 m		
Bottom Log Interval	3385 m		
Top Log Interval	3130 m		
Casing Driller Size @ Depth	4.500 in @ 3257 m	@	@
Casing Schlumberger	3253 m		
Bit Size	9.875 in		
Type Fluid In Hole	Seawater Gel		
MUD Density / Viscosity	1.258 g/cm3 /	/	/
MUD Fluid Loss / PH	/	/	/
MUD Source Of Sample	N/A		
RM @ Measured Temperature	@	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC	N/A / N/A	/	/
RM @ MRT / RMF @ MRT	@ 4 / @ 4	@ / @	@ / @
Maximum Recorded Temperatures	4 degC / /	/ /	/ /
Circulation Stopped / Time	11−Oct−2009 / 18:00	/	/
Logger On Bottom / Time	11−Oct−2009 / 2345	/	/
Unit Number / Location	625003 / Houston	/	/
Recorded By	K. Swain		
Witnessed By	Gerardo Iturrino, Helen Evans		

	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			

Run 3

Run 4

DISCLAIMER

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

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

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Logging tools deployed inside drillpipe with wireline.	
BHA consisted of RCB Drilling Bit and collars with mechanical bit release.	
HLDS caliper calibration used 12 inch and 15.19" diameter rings as reference to	
improve large hole size accuracy.	
Depths referenced from drill floor which is 11m above sea level.	
Ship heave averaged 1.75m peak to peak on average (estimate)	
HLDS short spacing detector failed due to HLDV failure in HLDS string. This	
fact required the use of Long Spacing Density to be displayed instead of the	
standard density which combines both short spacing and long spacing	
detectors for a compensated measurement. Since IODP holes typically	
have low permeability, mudcake is most likely non existent and most likely	
the Long spacing density is the same as the compensated standard bulk density.	
In any case the standard density curve could not be used due to lack of short	
spacing detector counts.	

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		17C0−154	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

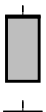
GSR−U 616008
WITM (DTS)−A

DOWNHOLE EQUIPMENT

LEH−QT 22.00
LEH−QT 301

DTC−H 21.11
ECH−KC
DTCH0−A

CTEM
TelStatus
ToolStatu



20.83
20.20

HNGS−BA 194
HNGS−BA 194
HNSH−BA 205

Upper_1 19.49
Lower_2 19.28

20.20

HNGC−B 300
HNGH−A 115
HNGC−B 300

HNGC Stat 17.16

17.70

LDSC−B
LDSH−A 126
LDSC−B 521

LDSC Stat 16.10

16.63

HLDS
GSR−Z 2397
HLDV−D 35
HLDS−D 35
HEH−H 35
HLDP−C 35

Caliper
SS LS Status 11.51

15.56

DTA−A
ECH−KE
DTA−A

10.74

DIT−E
DIC−EB 171
MIH−ZA 342
DIS−HB 129

SP 3.15
Deep Ind 2.90

Aux Meas SFL 1.98
Med Ind 1.83

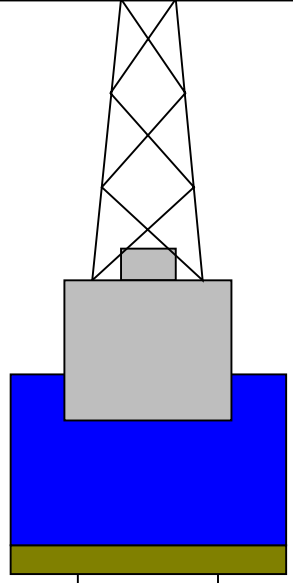
Status HV DF
Tension 0.00

9.52

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		11.0				
Derrick Floor Elevation		11.0				
Mean Sea Level		0.0				
				3138	4.20	Sea Floor
				3138	9.875	Borehole Segment
				3257	3.80	Open Hole
				3388		

Output DLIS Files

DEFAULT	PI_LDL_NGS_009LUP	FN:13	PRODUCER	12−Oct−2009 00:34	3383.3 M	3103.3 M
DLISBACKUP	PI_LDL_NGS_009LUP	FN:14	PRODUCER	11−Oct−2009 15:35	3383.3 M	3103.3 M

OP System Version: 17C0−154

DIT−E	17C0−154	DTA−A	17C0−154
HLDS	17C0−154	LDSC−B	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

PIP SUMMARY

Time Mark Every 60 S

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

Area From HCGR to HSGR

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

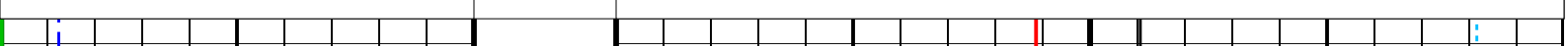
HLDS Caliper (LCAL)
0 (IN) 20

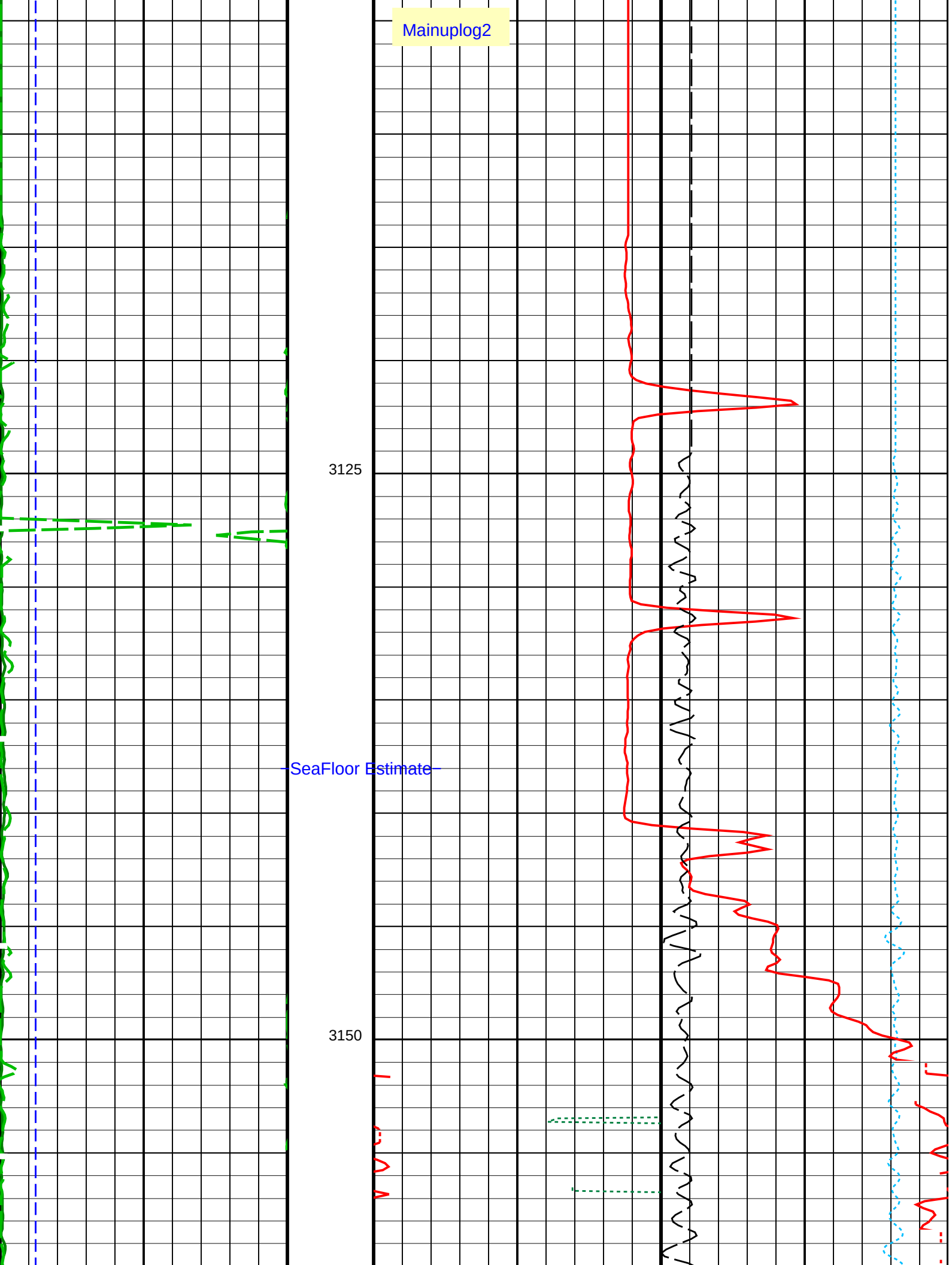
Tension (TENS)
10000 (LBF) 0

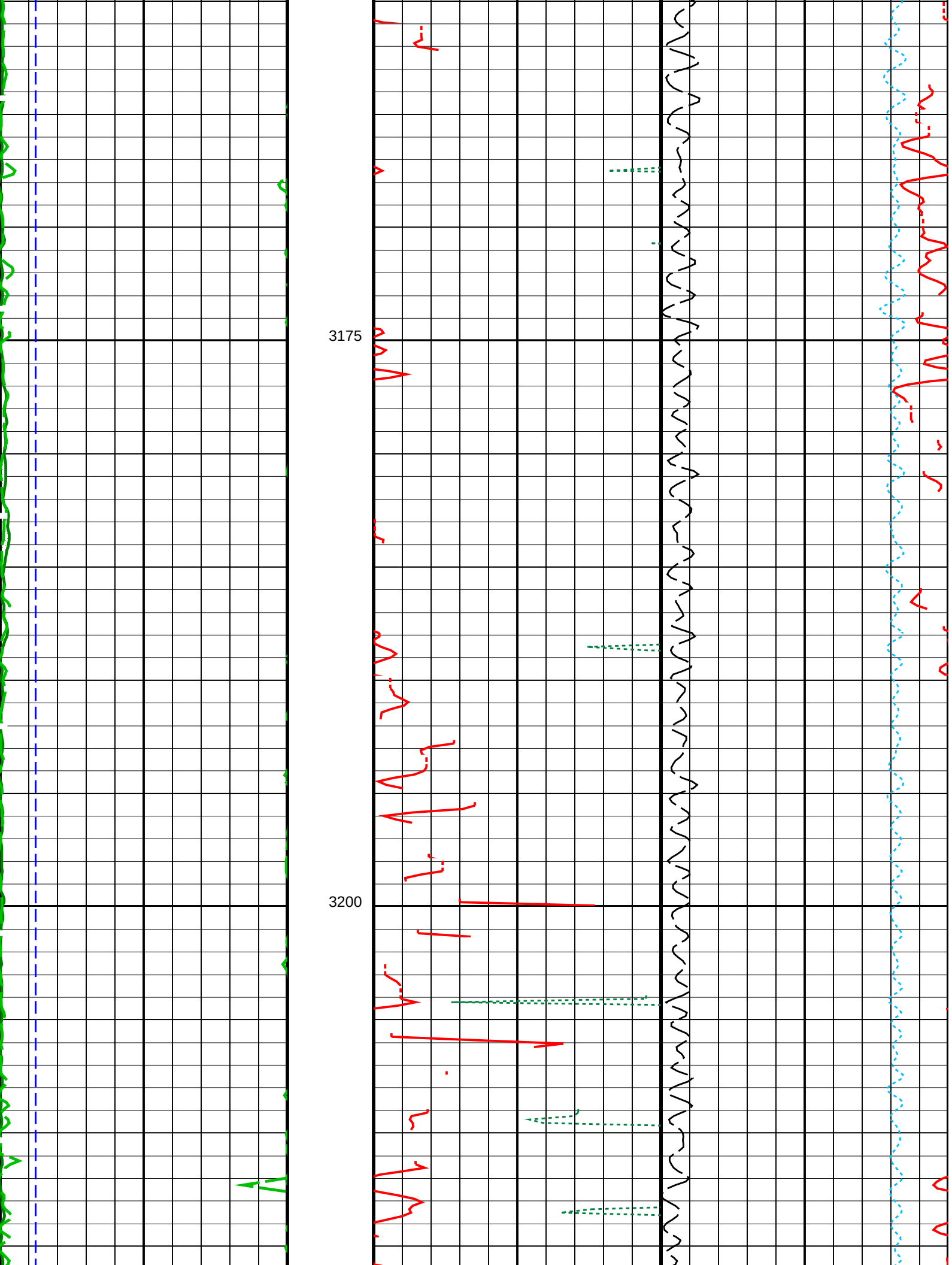
HLDS Long Spaced Bulk Density (RHL)
0 (G/C3) 4

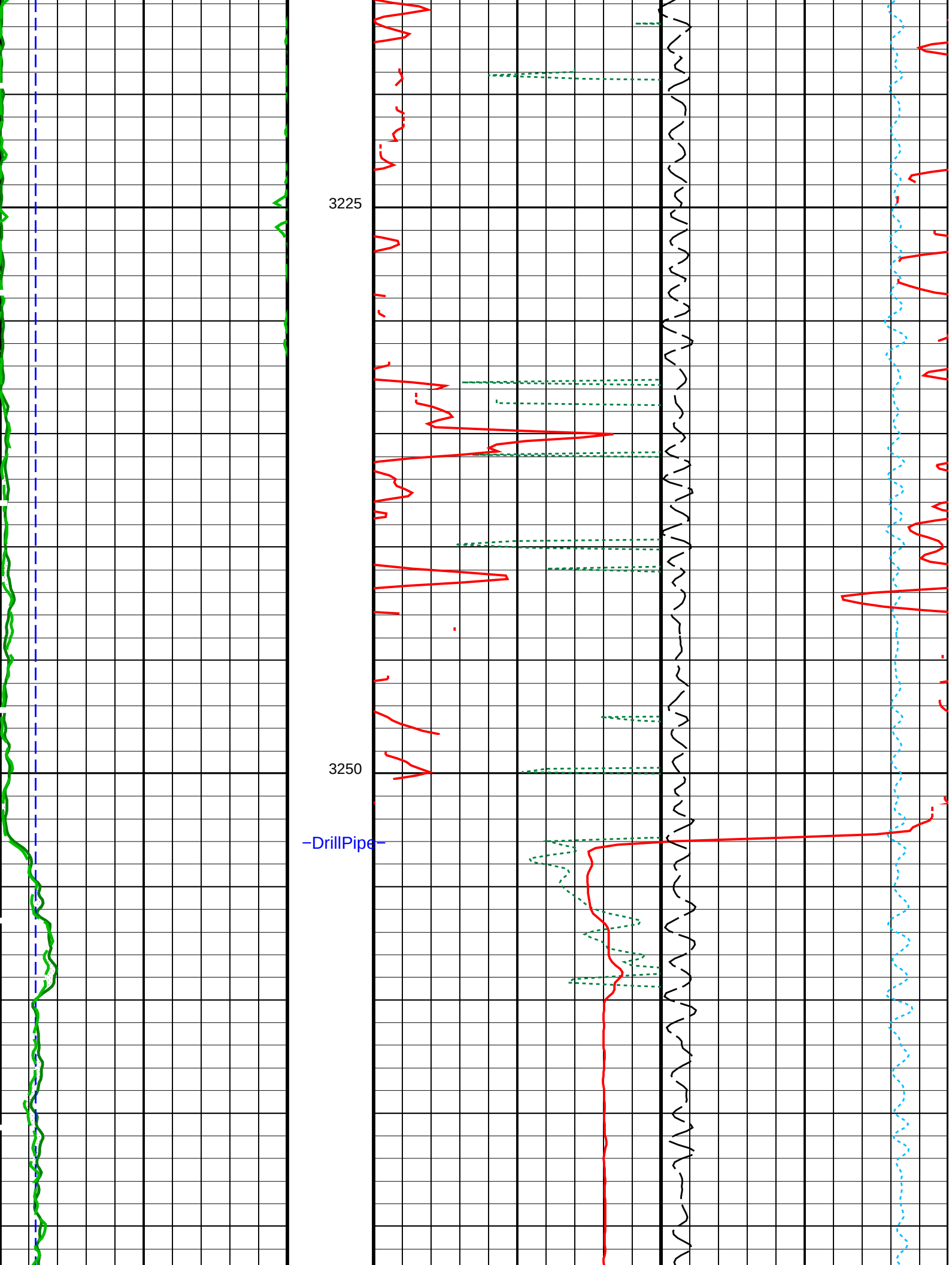
HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

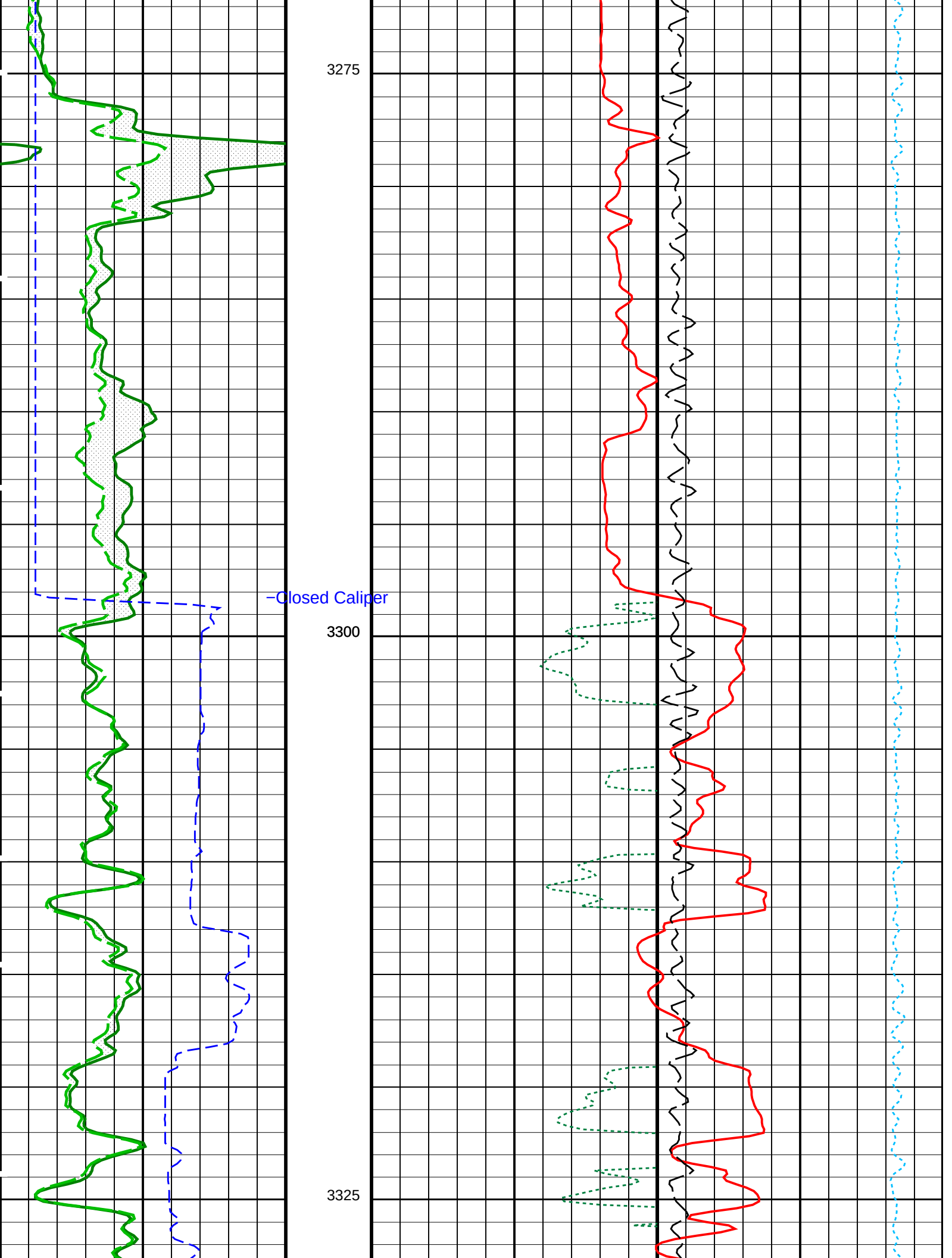
Calibrated Downhole Force (CDF)
10000 (LBF) 0

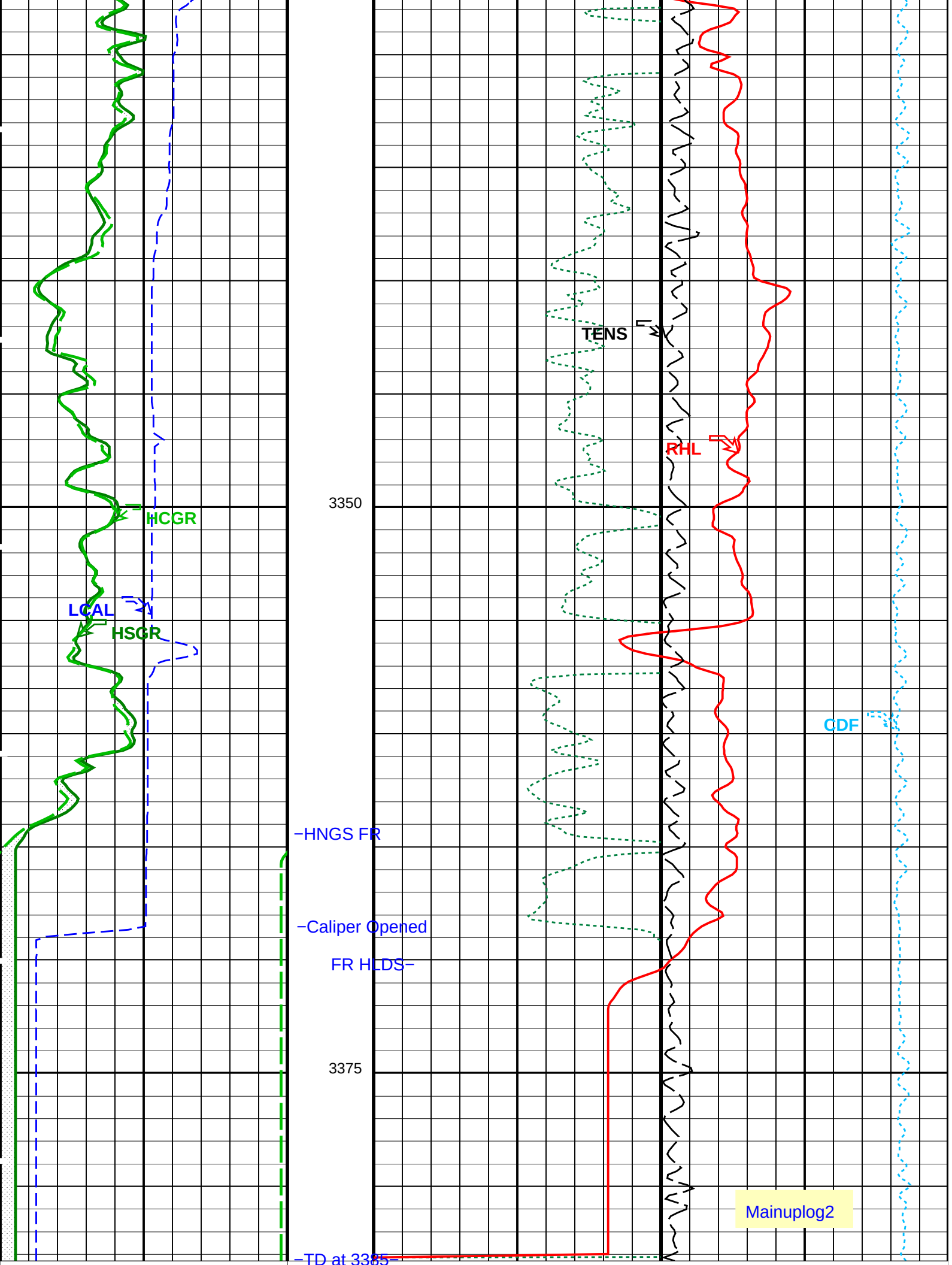


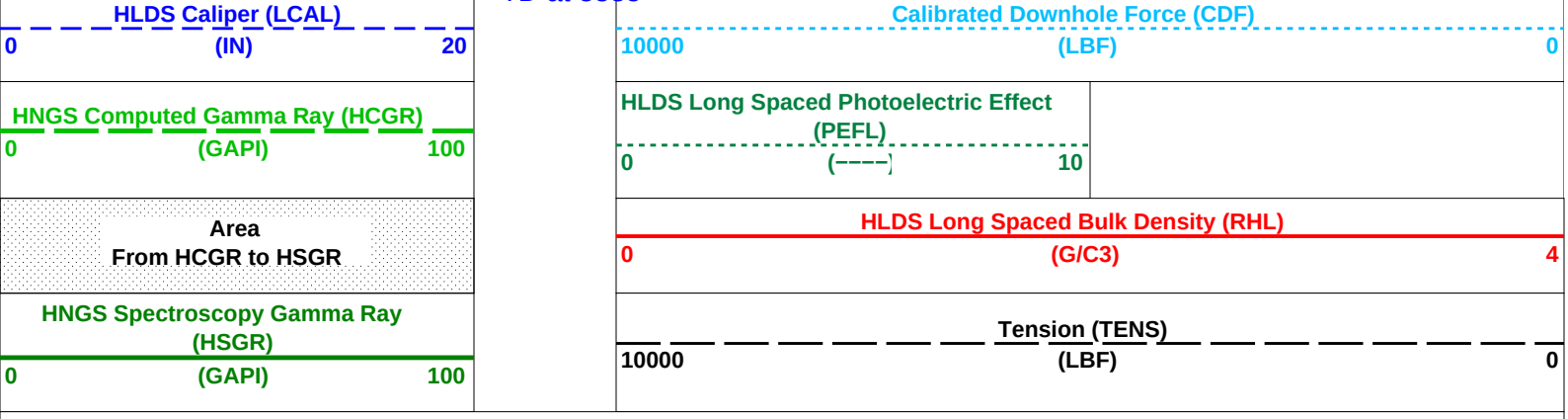

Mainuplog2
3125
SeaFloor Estimate
3150


3175
3200


3225
3250
−DrillPipe−


3275
Closed Caliper
3300
3325


TENS
RHL
HCGR
LCAL
HSGR
CDF
3350
−HNGS FR
−Caliper Opened
FR HLDS−
3375
−TD at 3385−
Mainuplog2



Parameters

DLIS Name	Description	Value	
	DIT−E: Dual Induction − E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
DGF1	Deep 10 kHz Gain Factor	0.968645	
DGF2	Deep 20 kHz Gain Factor	0.979119	
DGF4	Deep 40 kHz Gain Factor	0.990252	
DPH1	Deep 10 kHz Phase Shift	0.26358	DEG
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DPH4	Deep 40 kHz Phase Shift	−1.11256	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	39.5751	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.15121	MM/M
DRIM	DIT−E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT−E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	245.841	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	78.4516	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT−E Induction Frequency Selector	20	
IPHA	DIT−E Phasor Processing Mode	ALL	
IPRO	DIT−E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT−E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	0.969585	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MGF4	Medium 40 kHz Gain Factor	0.999842	
MPH1	Medium 10 kHz Phase Shift	0.0787021	DEG
MPH2	Medium 20 kHz Phase Shift	−0.199528	DEG
MPH4	Medium 40 kHz Phase Shift	−0.885081	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	31.1041	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	3.5782	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	328.09	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	112.808	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT−E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	HLDS: Hostile Litho−Density Sonde		
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	

FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
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)	100	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0017655	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973357	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.976784	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	−50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3390	M
TDD	Total Depth − Driller	3388.00	M
TDL	Total Depth − Logger	3388.00	M
TWS	Temperature of Connate Water Sample	7.00	DEGC

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 12−Oct−2009 00:34

OP System Version: 17C0−154

DIT−E	17C0−154	DTA−A	17C0−154
HLDS	17C0−154	LDSC−B	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

Output DLIS Files

DEFAULT	PI_LDL_NGS_009LUP	FN:13	PRODUCER	12−Oct−2009 00:34
DLISBACKUP	PI_LDL_NGS_009LUP	FN:14	PRODUCER	11−Oct−2009 15:35

Input DLIS Files

DEFAULT	PI_LDL_NGS_006LUP	FN:7	PRODUCER	11−Oct−2009 23:45	3383.3 M	3215.8 M

Output DLIS Files

DEFAULT	PI_LDL_NGS_008PUP	FN:11	PRODUCER	12−Oct−2009 00:26	3383.3 M	3195.1 M
DLISBACKUP	PI_LDL_NGS_008PUP	FN:12	PRODUCER	11−Oct−2009 15:27	3383.3 M	3195.1 M

OP System Version: 17C0−154

DIT−E	17C0−154	DTA−A	17C0−154
HLDS	17C0−154	LDSC−B	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

PIP SUMMARY

Time Mark Every 60 S

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

Area From HCGR to HSGR

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

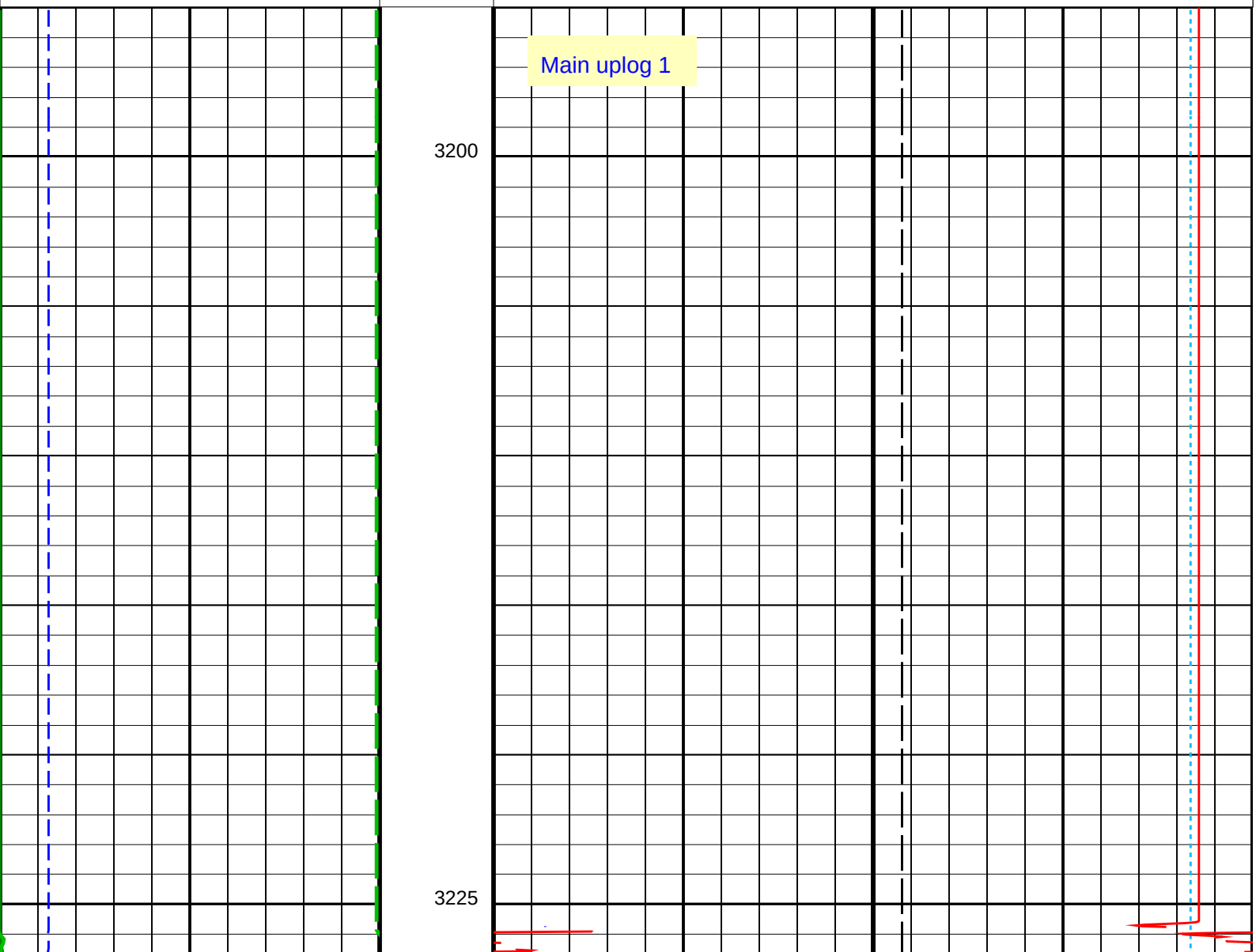
HLDS Caliper (LCAL)
0 (IN) 20

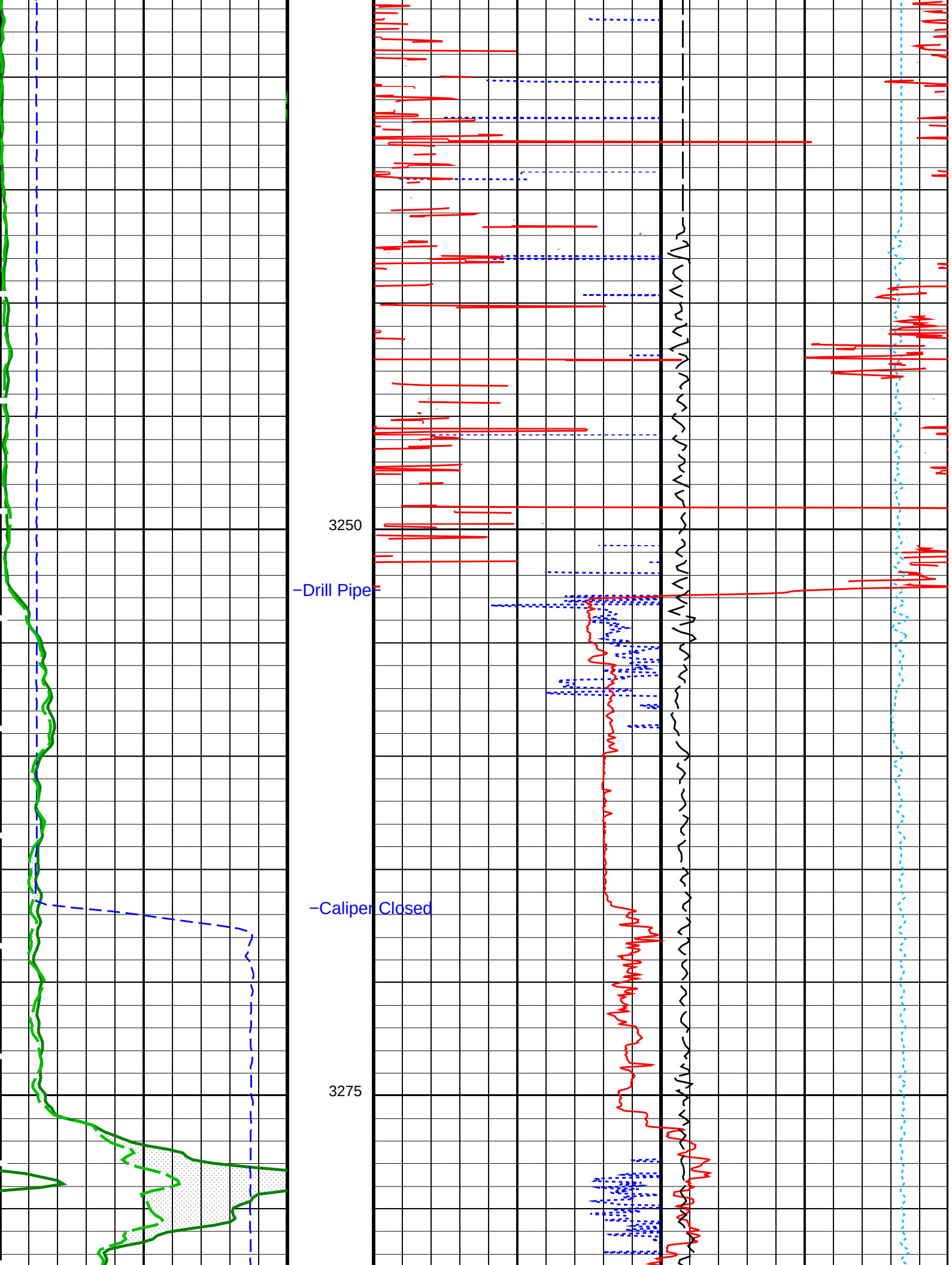
Tension (TENS)
10000 (LBF) 0

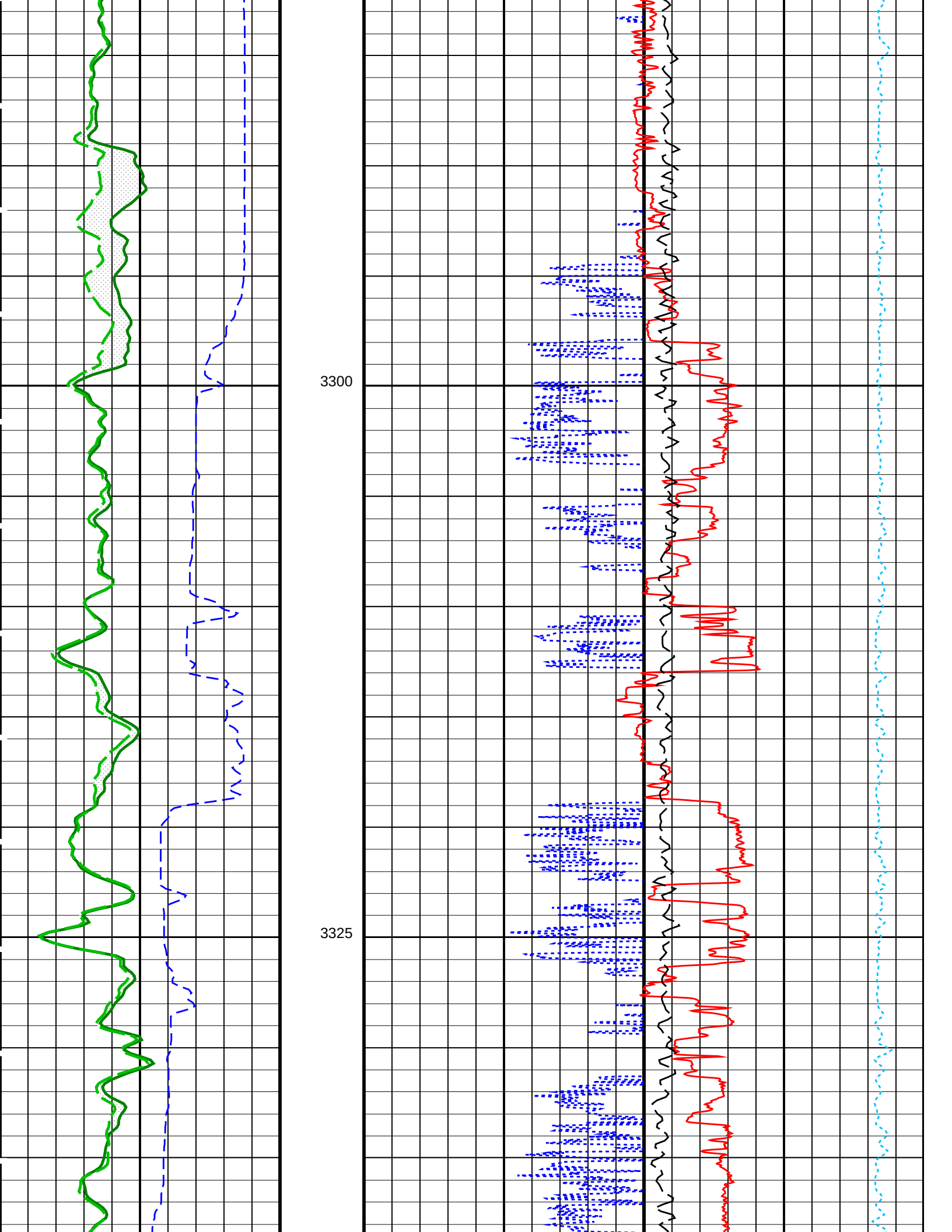
HLDS HR Long Spaced Bulk Density (HRHL)
0 (G/C3) 4

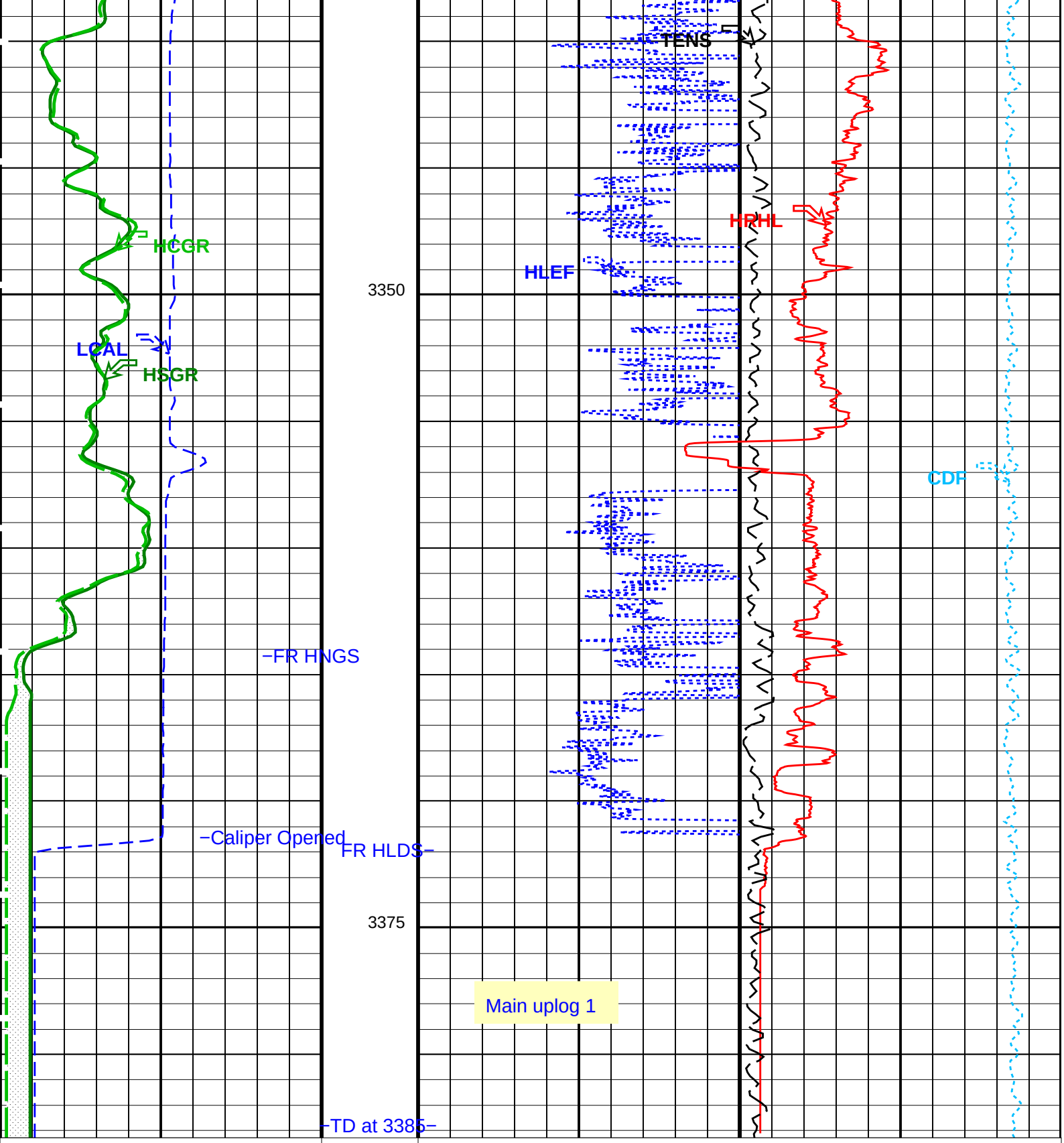
HLDS HR Long Spaced Photoelectric Effect (HLEF)
0 (−−−−) 10

Calibrated Downhole Force (CDF)
10000 (LBF) 0




3250
Drill Pipe
Caliper Closed
3275


3300
3325



HLDS Caliper (LCAL)
0 (IN) 20

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

Area
From HCGR to HSGR

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

Calibrated Downhole Force (CDF)
10000 (LBF) 0

HLDS HR Long Spaced Photoelectric Effect (HLEF)
0 (----) 10

HLDS HR Long Spaced Bulk Density (HRHL)
0 (G/C3) 4

Tension (TENS)
10000 (LBF) 0

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DIT−E: Dual Induction − E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
DGF1	Deep 10 kHz Gain Factor	0.968645	
DGF2	Deep 20 kHz Gain Factor	0.979119	
DGF4	Deep 40 kHz Gain Factor	0.990252	
DPH1	Deep 10 kHz Phase Shift	0.26358	DEG
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DPH4	Deep 40 kHz Phase Shift	−1.11256	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	39.5751	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.15121	MM/M
DRIM	DIT−E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT−E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	245.841	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	78.4516	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT−E Induction Frequency Selector	20	
IPHA	DIT−E Phasor Processing Mode	ALL	
IPRO	DIT−E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT−E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	0.969585	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MGF4	Medium 40 kHz Gain Factor	0.999842	
MPH1	Medium 10 kHz Phase Shift	0.0787021	DEG
MPH2	Medium 20 kHz Phase Shift	−0.199528	DEG
MPH4	Medium 40 kHz Phase Shift	−0.885081	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	31.1041	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	3.5782	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	328.09	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	112.808	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT−E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	HLDS: Hostile Litho−Density Sonde		
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
	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	

BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0017655	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973357	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.976784	

System and Miscellaneous

ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	−50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3390	M
TDD	Total Depth − Driller	3388.00	M
TDL	Total Depth − Logger	3388.00	M
TWS	Temperature of Connate Water Sample	7.00	DEGC

Format: APSLiquidPorosity_1 **Vertical Scale: 1:200** **Graphics File Created: 12−Oct−2009 00:26**

OP System Version: 17C0−154

DIT−E	17C0−154	DTA−A	17C0−154
HLDS	17C0−154	LDSC−B	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

Input DLIS Files

DEFAULT	PI_LDL_NGS_006LUP	FN:7	PRODUCER	11−Oct−2009 23:45	3383.3 M	3215.8 M

Output DLIS Files

DEFAULT	PI_LDL_NGS_008PUP	FN:11	PRODUCER	12−Oct−2009 00:26
DLISBACKUP	PI_LDL_NGS_008PUP	FN:12	PRODUCER	11−Oct−2009 15:27

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement							
Master: 18−Sep−2009 2:55 Before: 18−Sep−2009 5:19							
SS Cs Resolution Bkg	9.000	8.452	8.363	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.580	8.651	N/A	N/A	1.800	%
LSW1 Background	100.0	76.04	75.16	N/A	N/A	3.000	CPS

LSW2 Background	100.0	69.08	67.85	N/A	N/A	3.000	CPS
LSW3 Background	200.0	155.5	152.7	N/A	N/A	6.000	CPS
LSW4 Background	250.0	187.6	187.4	N/A	N/A	7.500	CPS
LSW5 Background	600.0	426.9	426.3	N/A	N/A	18.00	CPS
SSW1 Background	100.0	74.38	73.61	N/A	N/A	3.000	CPS
SSW2 Background	200.0	130.0	127.5	N/A	N/A	6.000	CPS
SSW3 Background	500.0	340.0	341.3	N/A	N/A	15.00	CPS
SSW4 Background	270.0	181.2	184.1	N/A	N/A	8.100	CPS
SSW5 Background	200.0	132.4	130.8	N/A	N/A	6.000	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement
Master: 18−Sep−2009 4:05

LSW1 Aluminum	600.0	539.9	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	806.6	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	986.0	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	501.1	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	458.2	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2369	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6795	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9808	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4129	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	554.7	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement
Master: 18−Sep−2009 3:57

LSW1 Iron	400.0	366.5	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	642.8	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	862.0	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	447.6	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	414.9	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1749	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5618	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8869	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3733	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	484.8	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: 18−Sep−2009 5:08

HLDS Caliper Small Ring	12.00	N/A	14.59	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	18.14	N/A	N/A	N/A	IN

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 9−Oct−2009 4:43 Before: 8−Oct−2009 23:44 After: 12−Oct−2009 2:55

Na 511 Peak Loc	40.00	39.53	39.52	39.54	0.02031	1.000	
Na 511 Peak Res	15.50	16.11	15.73	16.00	0.2734	2.000	%
High Voltage	1150	1193	1186	1167	−19.27	N/A	V
Na 1785 Peak Loc	142.6	142.3	142.4	142.7	0.2921	7.000	
Na 1785 Peak Res	8.500	8.575	7.584	7.915	0.3304	2.000	%
Temperature	15.50	26.63	26.50	24.57	−1.930	N/A	DEGC
Na Count Rate	45.00	35.40	35.94	34.92	−1.018	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 9−Oct−2009 4:43 Before: 8−Oct−2009 23:44 After: 12−Oct−2009 2:55

Na 511 Peak Loc	40.00	39.67	39.54	39.70	0.1535	1.000	
Na 511 Peak Res	15.50	15.41	16.53	15.27	−1.261	2.000	%
High Voltage	1150	1107	1102	1101	−0.5918	N/A	V
Na 1785 Peak Loc	142.6	141.8	141.6	142.2	0.5570	7.000	
Na 1785 Peak Res	8.500	8.703	8.533	7.984	−0.5492	2.000	%
Temperature	15.50	27.96	26.63	26.04	−0.5934	N/A	DEGC
Na Count Rate	45.00	35.24	35.85	34.42	−1.429	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 9−Oct−2009 4:43 Before: 8−Oct−2009 23:44 After: 12−Oct−2009 2:55

Coincidence Count Rate Ratio	1.000	1.005	1.001	1.014	0.01270	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 9−Oct−2009 3:42

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	209.5	−−	−−	−−	−−	
Th Peak Res	7.000	6.995	−−	−−	−−	−−	%
Background Count Rate	142.5	19.73	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.008	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 9−Oct−2009 3:42

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	208.0	−−	−−	−−	−−	
Th Peak Res	7.000	6.910	−−	−−	−−	−−	%
Background Count Rate	142.5	19.88	−−	−−	−−	−−	CPS
Gain Ratio	1.000	0.9976	−−	−−	−−	−−	

Dual Induction − E / Equipment Identification

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

Hostile Litho−Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS − D	35
Hostile Litho Density High Voltage	HLDV − D	35
Gamma Source Radioactive	GSR − Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP − C	35
Hostile Litho Density High Voltage Housi	HEH − H	35

Hostile Litho−Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.452
Before		8.363
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.580
Before		8.651
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW1 Background CPS	Value
Master		76.04
Before		75.16
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		69.08
Before		67.85
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		155.5
Before		152.7
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		187.6
Before		187.4
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		426.9
Before		426.3
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		74.38
Before		73.61
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		130.0
Before		127.5
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		340.0
Before		341.3
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		181.2
Before		184.1
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		132.4
Before		130.8
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Master: 18−Sep−2009 2:55 Before: 18−Sep−2009 5:19

Hostile Litho−Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		76.04
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		69.08
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		155.5
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		187.6
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		426.9
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.580
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		74.38
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		130.0
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		340.0
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		181.2
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		132.4
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Phase	SS Cs Resolution Bkg %	Value
Master		8.452
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase		Value
Master		
(Minimum)	(Nominal)	(Maximum)

Phase		Value
Master		
(Minimum)	(Nominal)	(Maximum)

Phase		Value
Master		
(Minimum)	(Nominal)	(Maximum)

Master: 18−Sep−2009 2:55

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

Phase	LSW1 Aluminum CPS	Value
Master		539.9
420.0 (Minimum)	600.0 (Nominal)	770.0 (Maximum)

Phase	LSW2 Aluminum CPS	Value
Master		806.6
650.0 (Minimum)	900.0 (Nominal)	1150 (Maximum)

Phase	LSW3 Aluminum CPS	Value
Master		986.0
800.0 (Minimum)	1100 (Nominal)	1450 (Maximum)

Phase	LSW4 Aluminum CPS	Value
Master		501.1
410.0 (Minimum)	580.0 (Nominal)	740.0 (Maximum)

Phase	LSW5 Aluminum CPS	Value
Master		458.2
410.0 (Minimum)	570.0 (Nominal)	740.0 (Maximum)

Phase	SSW1 Aluminum CPS	Value
Master		2369
2000 (Minimum)	2800 (Nominal)	3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value
Master		6795
5800 (Minimum)	8000 (Nominal)	9300 (Maximum)

Phase	SSW3 Aluminum CPS	Value
Master		9808
8300 (Minimum)	11600 (Nominal)	13500 (Maximum)

Phase	SSW4 Aluminum CPS	Value
Master		4129
3500 (Minimum)	5000 (Nominal)	5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value
Master		554.7
470.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)

Master: 18−Sep−2009 4:05

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

Phase	LSW1 Iron CPS	Value
Master		366.5
290.0 (Minimum)	400.0 (Nominal)	560.0 (Maximum)

Phase	LSW2 Iron CPS	Value
Master		642.8
520.0 (Minimum)	730.0 (Nominal)	950.0 (Maximum)

Phase	LSW3 Iron CPS	Value
Master		862.0
720.0 (Minimum)	1000 (Nominal)	1350 (Maximum)

Phase	LSW4 Iron CPS	Value
Master		447.6
370.0 (Minimum)	520.0 (Nominal)	700.0 (Maximum)

Phase	LSW5 Iron CPS	Value
Master		414.9
340.0 (Minimum)	470.0 (Nominal)	750.0 (Maximum)

Phase	SSW1 Iron CPS	Value
Master		1749
1500 (Minimum)	2100 (Nominal)	2400 (Maximum)

Phase	SSW2 Iron CPS	Value
Master		5618
4900 (Minimum)	6800 (Nominal)	7900 (Maximum)

Phase	SSW3 Iron CPS	Value
Master		8869
7800 (Minimum)	10800 (Nominal)	12600 (Maximum)

Phase	SSW4 Iron CPS	Value
Master		3733
3300 (Minimum)	4600 (Nominal)	5400 (Maximum)

Phase	SSW5 Iron CPS	Value
Master		484.8
420.0 (Minimum)	580.0 (Nominal)	680.0 (Maximum)

Master: 18−Sep−2009 3:57

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.028
0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)

Phase	AL CALIBRATION RATIO 2	Value
Master		2.094
1.900 (Minimum)	2.100 (Nominal)	2.300 (Maximum)

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5628
0.4500 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5058
0.4000 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)

Phase	Pad−Wear SS Ratio	Value
Master		0.9917
0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)

Phase	Pad−Wear LS Ratio	Value
Master		0.9948
0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)

Phase	Pad−Position SS Ratio	Value
Master		1.002
0.9900 (Minimum)	0.9940 (Nominal)	1.015 (Maximum)

Phase	Pad−Position LS Ratio	Value
Master		0.9855
0.9850 (Minimum)	0.9940 (Nominal)	1.010 (Maximum)

Master: 18−Sep−2009 4:05

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

Primary Equipment:
LDSC Cartridge LDSC − B 521

Auxiliary Equipment:

LDSC Housing	LDSH − A	126

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

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

Hostile Natural Gamma Ray Sonde / Equipment Identification

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

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		39.53
Before		39.52
After		39.54
37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.11
Before		15.73
After		16.00
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

Phase	High Voltage V	Value
Master		1193
Before		1186
After		1167
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		142.3
Before		142.4
After		142.7
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		8.575
Before		7.584
After		7.915
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		26.63
Before		26.50
After		24.57
−28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		35.40
Before		35.94
After		34.92
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 9−Oct−2009 4:43 Before: 8−Oct−2009 23:44 After: 12−Oct−2009 2:55

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.67
Before		39.54
After		39.70
37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		15.41
Before		16.53
After		15.27
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

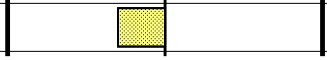
Phase	High Voltage V	Value
Master		1107
Before		1102
After		1101
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		141.8
Before		141.6
After		142.2
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		8.703
Before		8.533
After		7.984
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		27.96
Before		26.63
After		26.04
−28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

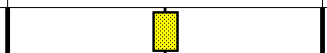
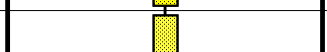
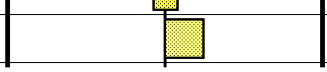
Phase	Na Count Rate CPS	Value
Master		35.24

Phase		Value
Before		35.85
After		34.42
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 9−Oct−2009 4:43 Before: 8−Oct−2009 23:44 After: 12−Oct−2009 2:55

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.005
Before		1.001
After		1.014
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

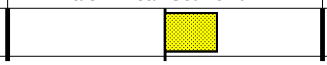
Master: 9−Oct−2009 4:43

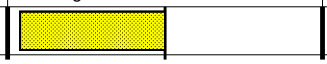
Before: 8−Oct−2009 23:44

After: 12−Oct−2009 2:55

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

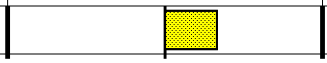
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		209.5	Master		6.995
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

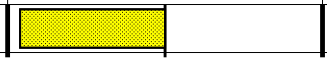
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value
Master		19.73	Master		1.008
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 9−Oct−2009 3:42

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		208.0	Master		6.910
	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		19.88	Master		0.9976
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 9−Oct−2009 3:42

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC−H Auxiliary Cartridge	DTCH − A
DTC−H Telemetry Cartridge	DTCH − A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing	ECH − KC

Field:	**Shatsky Rise**
Rig:	**JOIDES Resolution**
Ocean:	**Pacific**

	Hostile Litho Density (HLDS)
	Natural Gamma Spectroscopy (HNGS)