

Company: Lamont Doherty
Well: Expedition 320, Site U1331A
Field: PEAT
Rig: JOIDES Resolution **Country:** USA

Rig: JOIDES Resolution Field: PEAT Location: Pacific Ocean Well: Expedition 320, Site U1331A Company: Lamont Doherty		Lamont Doherty Litho-Density Downlog	
LOCATION Pacific Ocean SE of Hawaii		Elev.: K.B. 11.10 m G.L. -5116.20 m D.F. 11.10 m	
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	MEAN SEA LEVEL _____ DRILL FLOOR _____ DRILL FLOOR _____	Elev.: 0.00 m _____ 11.10 m above Perm. Datum	
Ocean: _____ Pacific	Max. Well Deviation 0 deg	Longitude 142° 09.695' W	Latitude 12° 04.086' N

Logging Date	17-Mar-2009	
Run Number	1	
Depth Driller	5318 m	
Schlumberger Depth	5318 m	
Bottom Log Interval	5315 m	
Top Log Interval	5206.3 m	
Casing Driller Size @ Depth	5.875 in @ 5206.3 m	
Casing Schlumberger	5206.3 m	
Bit Size	9.875 in	
Type Fluid In Hole	WBM	
Density	1.1 g/cm3	
Fluid Loss		
PH		
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	23:00
Unit Number	Location	
Recorded By	C. Furman	
Witnessed By	H. Evans, T. Williams	

	Run 1	Run 2	
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			
Density			
Fluid Loss			
PH			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
RMF @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

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 SERVICES: Magnetic Susceptibility
OS1:
OS2: Gamma Ray



REMARKS: RUN NUMBER 1

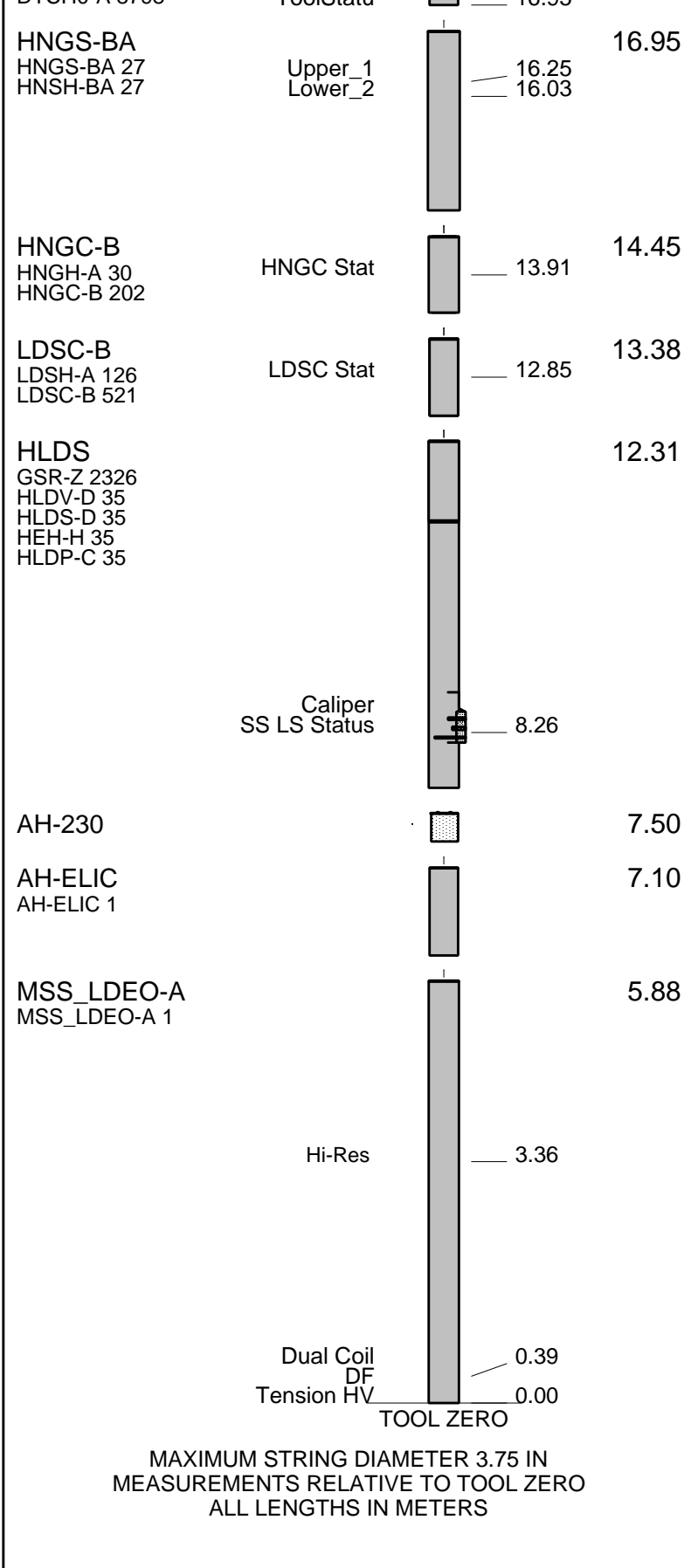
Tools run as per tool sketch with MSS eccentered using inline bowspring devices.
Logging objective was to verify stratigraphic data in comparison to cores collected immediately prior to logging on Well A of Site U1331 and analyze lithology below cherts prior to next drilling.
Logs run through drill pipe; GR recorded from TD to above sea floor for depth tie-in to sea bed.
Depths shown are wireline depths below drill floor, in meters (MWRF) plus 7.0m due to offset created by AHC. (i.e. a depth of 5107m as shown on the is the equivalent of 5100m true depth, referenced to drill floor.)
Logs were run without wave motion compensation and have been put on depth with driller's depths.
Repeat Pass not conducted as per client instructions; depth presented as per client instructions.
Logging recorded in open hole only with caliper closed.

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

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT	
GSR-U 1154 WITM (DTS)-A	

DOWNHOLE EQUIPMENT	
LEH-QT LEH-QT 1726	 18.75
DTC-H ECH-KC 1777 DTCH0-A 8798	CTEM TelStatus ToolStatu  17.58 17.86 16.95



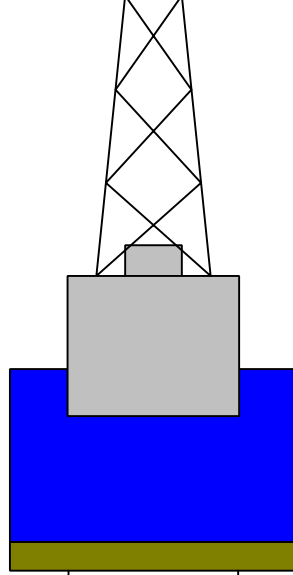
Production String	(in)	(m)	Well Schematic	(m)	(in)	Casing String
	OD	ID		MD	MD	

Derrick Floor Elevation

11.1

Mean Sea Level

0.0



0.0

5.875

Drill Pipe

All depths are in meters below drill floor.



5127.3

9.875

Sea Bed

5206.3

5.875

Bottom of Pipe

5317.9

9.875

Total Depth



Company: Lamont Doherty

Well: Expedition 320, Site U1331A

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_LDL_020LUP	PRODUCER	18-Mar-2009 09:56	5326.2 M	5221.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_036PUP	FN:39	PRODUCER	20-Mar-2009 16:42	5326.2 M	5221.2 M
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OP System Version: 17C0-154

MSS_LDEO-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)	15

HLDS Long Spacing Quality Indicator (LQLS)		
-0.25	(----	0.25

HLDS Short Spacing Quality Indicator (LQSS)		
-0.25	(----	0.25

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

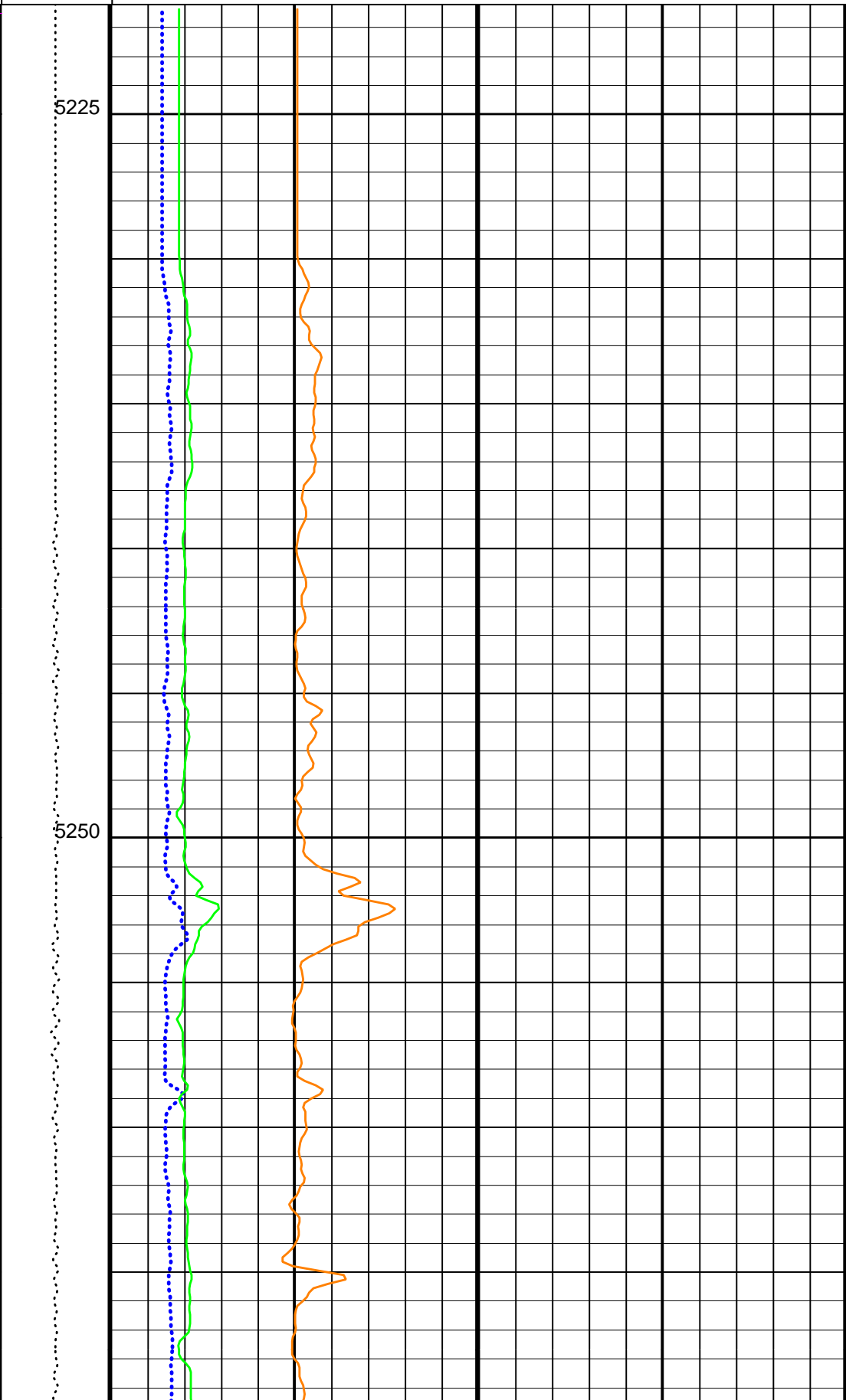
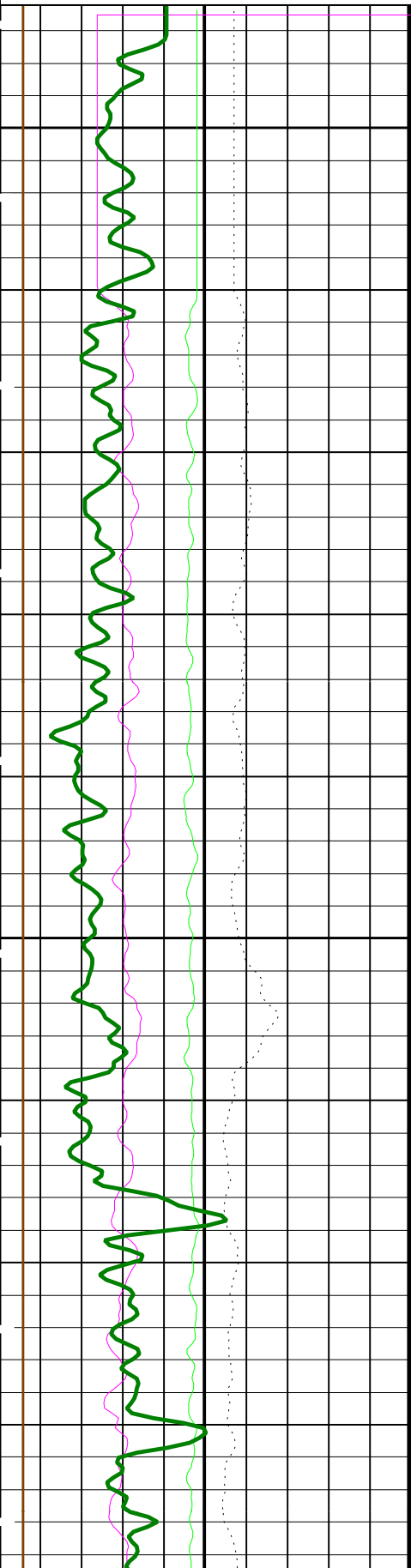
HLDS Caliper (LCAL)
(IN)
0 20

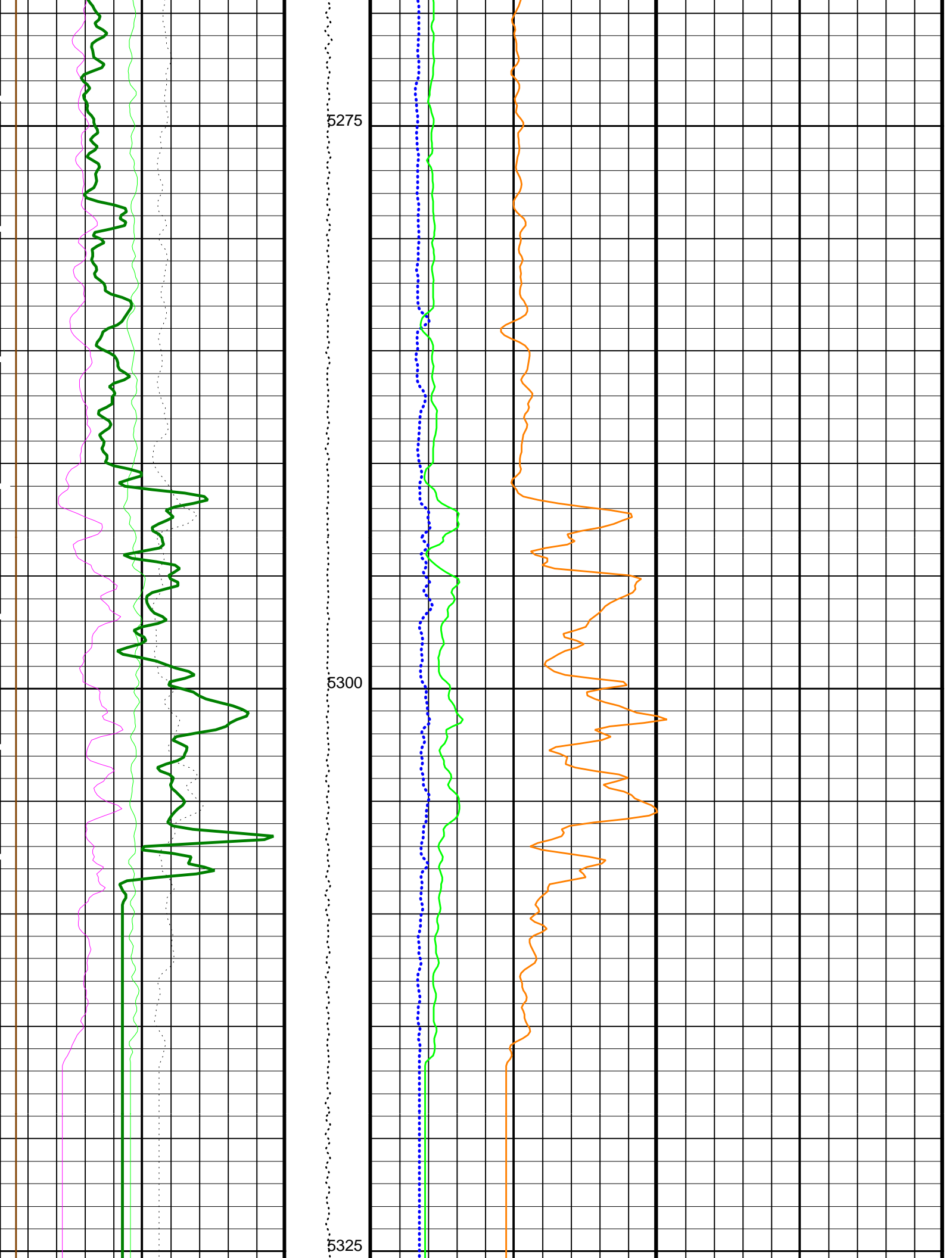
HLDS Volumetric Photoelectric Factor
(ULDS)
(---)
0 10

HLDS Bulk Density Correction (DRH)
(G/C3)
-0.25 0.25

Tension
(TENS)
(LBF)
10000 0

HLDS Bulk Density (RHOM)
(G/C3)
2 3





HLDS Bulk Density Correction (DRH) (G/C3)	Tension (TENS) (LBF)	HLDS Bulk Density (RHOM) (G/C3)	
-0.25 0.25	10000 0	2	3
HLDS Caliper (LCAL) (IN)	HLDS Volumetric Photoelectric Factor (ULDS)		
0 20	0 (---) 10		
HLDS Short Spacing Quality Indicator (LQSS)	HLDS Long Spaced Photoelectric Effect (PEFL)		
-0.25 (---) 0.25	0 (---) 10		
HLDS Long Spacing Quality Indicator (LQLS)			
-0.25 (---) 0.25			
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)			
0 15			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HLDS: Hostile Litho-Density Sonde			
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	STAN	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
MDEN	Matrix Density	2.71	G/C3
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	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00178051	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
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	1.37788	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.974941	
System and Miscellaneous			
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

Format: HLDSDensityPE

Vertical Scale: 1:200

Graphics File Created: 20-Mar-2009 16:42

OP System Version: 17C0-154

MSS_LDEO-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	Flip_MSS_LDEO_LDL_020LUP	PRODUCER	18-Mar-2009 09:56	5326.2 M	5221.2 M
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Output DLIS Files

DEFAULT

MSS_LDEO_LDL_NGS_036PUP

FN:39

PRODUCER

20-Mar-2009 16:42



Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 14-Mar-2009 14:36 Before: 17-Mar-2009 23:00 After: 18-Mar-2009 7:06							
SS Cs Resolution Bkg	9.000	8.424	8.461	8.468	0.006294	1.800	%
LS Cs Resolution Bkg	9.000	8.594	8.555	8.573	0.01742	1.800	%
LSW1 Background	100.0	77.03	75.31	76.00	0.6888	3.000	CPS
LSW2 Background	100.0	70.24	69.77	69.92	0.1473	3.000	CPS
LSW3 Background	200.0	155.8	156.5	156.7	0.2904	6.000	CPS
LSW4 Background	250.0	188.9	190.3	191.7	1.400	7.500	CPS
LSW5 Background	600.0	429.9	429.9	430.3	0.4689	18.00	CPS
SSW1 Background	100.0	74.59	73.68	74.64	0.9512	3.000	CPS
SSW2 Background	200.0	129.3	128.3	130.9	2.612	6.000	CPS
SSW3 Background	500.0	345.3	345.6	344.1	-1.505	15.00	CPS
SSW4 Background	270.0	183.6	185.8	184.8	-1.033	8.100	CPS
SSW5 Background	200.0	132.5	132.4	131.9	-0.5316	6.000	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
Master: 14-Mar-2009 14:36							
LSW1 Aluminum	600.0	527.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	782.6	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	950.7	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	479.2	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	439.7	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2254	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6469	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9378	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3975	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	536.6	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement							
Master: 14-Mar-2009 14:36							
LSW1 Iron	400.0	352.8	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	621.4	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	829.5	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	430.9	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	399.5	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1671	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5373	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8503	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3601	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	469.3	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration							
Before: 17-Mar-2009 23:15							
HLDS Caliper Small Ring	8.000	N/A	10.74	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	12.00	N/A	14.75	N/A	N/A	N/A	IN
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check							
Master: 12-Mar-2009 19:24 Before: 17-Mar-2009 23:02 After: 18-Mar-2009 7:07							
Na 511 Peak Loc	40.00	40.60	40.49	40.68	0.1877	1.000	
Na 511 Peak Res	15.50	16.66	17.64	16.96	-0.6820	2.000	%
High Voltage	1150	1174	1183	1181	-2.068	N/A	V
Na 1785 Peak Loc	142.6	145.7	145.1	145.0	-0.1555	7.000	

Na 1785 Peak Loc	142.6	143.7	143.1	143.0	-0.1904	7.000	
Na 1785 Peak Res	8.500	9.231	9.840	10.03	0.1904	2.000	%
Temperature	15.50	27.43	30.64	28.97	-1.675	N/A	DEGC
Na Count Rate	45.00	37.76	38.10	37.68	-0.4226	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 12-Mar-2009 19:24 Before: 17-Mar-2009 23:02 After: 18-Mar-2009 7:07

Na 511 Peak Loc	40.00	40.61	40.64	40.59	-0.05334	1.000	
Na 511 Peak Res	15.50	14.67	16.20	15.98	-0.2151	2.000	%
High Voltage	1150	1250	1271	1257	-14.30	N/A	V
Na 1785 Peak Loc	142.6	143.6	144.4	144.8	0.4219	7.000	
Na 1785 Peak Res	8.500	8.251	8.655	7.947	-0.7082	2.000	%
Temperature	15.50	26.37	29.83	29.30	-0.5365	N/A	DEGC
Na Count Rate	45.00	38.49	38.60	37.85	-0.7454	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2

Master: 12-Mar-2009 19:24 Before: 17-Mar-2009 23:02 After: 18-Mar-2009 7:07

Coincidence Count Rate Ratio	1.000	0.9811	0.9865	0.9954	0.008901	0.05000	
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Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: 12-Mar-2009 19:24

Na 511 Peak Set Point	40.00	42.00	--	--	--	--	
Th Peak Loc	209.6	210.1	--	--	--	--	
Th Peak Res	7.000	8.224	--	--	--	--	%
Background Count Rate	142.5	20.31	--	--	--	--	CPS
Gain Ratio	1.000	0.9844	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: 12-Mar-2009 19:24

Na 511 Peak Set Point	40.00	42.00	--	--	--	--	
Th Peak Loc	209.6	207.9	--	--	--	--	
Th Peak Res	7.000	7.336	--	--	--	--	%
Background Count Rate	142.5	22.05	--	--	--	--	CPS
Gain Ratio	1.000	0.9744	--	--	--	--	

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	2326

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	Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value	
Master		8.424	Master		8.594	Master		77.03	
Before		8.461	Before		8.555	Before		75.31	
After		8.468	After		8.573	After		76.00	
7.000 (Minimum)		9.000 (Nominal)	7.000 (Minimum)		9.000 (Nominal)	55.00 (Minimum)		100.0 (Nominal)	150.0 (Maximum)
Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value	Phase	LSW4 Background CPS	Value	
Master		70.24	Master		155.8	Master		188.9	
Before		69.77	Before		156.5	Before		190.3	
After		69.92	After		156.7	After		191.7	
50.00 (Minimum)		100.0 (Nominal)	110.0 (Minimum)		200.0 (Nominal)	140.0 (Minimum)		250.0 (Nominal)	360.0 (Maximum)
Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	
Master		429.9	Master		74.59	Master		129.3	
Before		429.9	Before		73.68	Before		128.3	
After		430.3	After		74.64	After		130.9	
330.0 (Minimum)		600.0 (Nominal)	55.00 (Minimum)		100.0 (Nominal)	100.0 (Minimum)		200.0 (Nominal)	260.0 (Maximum)
Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	
Master		345.3	Master		183.6	Master		132.5	

Before		345.6	Before		185.8	Before		132.4
After		344.1	After		184.8	After		131.9
280.0 (Minimum) 500.0 (Nominal)		700.0 (Maximum)	150.0 (Minimum) 270.0 (Nominal)		380.0 (Maximum)	110.0 (Minimum) 200.0 (Nominal)		270.0 (Maximum)

Master: 14-Mar-2009 14:36 Before: 17-Mar-2009 23:00 After: 18-Mar-2009 7:06

Hostile Litho-Density Sonde Master Calibration								
Detector Background Measurement								
Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value
Master		77.03	Master		70.24	Master		155.8
55.00 (Minimum) 100.0 (Nominal)		150.0 (Maximum)	50.00 (Minimum) 100.0 (Nominal)		140.0 (Maximum)	110.0 (Minimum) 200.0 (Nominal)		290.0 (Maximum)
Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	LS Cs Resolution Bkg %	Value
Master		188.9	Master		429.9	Master		8.594
140.0 (Minimum) 250.0 (Nominal)		360.0 (Maximum)	330.0 (Minimum) 600.0 (Nominal)		830.0 (Maximum)	7.000 (Minimum) 9.000 (Nominal)		11.00 (Maximum)
Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value
Master		74.59	Master		129.3	Master		345.3
55.00 (Minimum) 100.0 (Nominal)		150.0 (Maximum)	100.0 (Minimum) 200.0 (Nominal)		260.0 (Maximum)	280.0 (Minimum) 500.0 (Nominal)		700.0 (Maximum)
Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	Phase	SS Cs Resolution Bkg %	Value
Master		183.6	Master		132.5	Master		8.424
150.0 (Minimum) 270.0 (Nominal)		380.0 (Maximum)	110.0 (Minimum) 200.0 (Nominal)		270.0 (Maximum)	7.000 (Minimum) 9.000 (Nominal)		11.00 (Maximum)

Master: 14-Mar-2009 14:36

Hostile Litho-Density Sonde Master Calibration								
Detector Aluminum Measurement (bkgd-subtracted)								
Phase	LSW1 Aluminum CPS	Value	Phase	LSW2 Aluminum CPS	Value	Phase	LSW3 Aluminum CPS	Value
Master		527.6	Master		782.6	Master		950.7
420.0 (Minimum) 600.0 (Nominal)		770.0 (Maximum)	650.0 (Minimum) 900.0 (Nominal)		1150 (Maximum)	800.0 (Minimum) 1100 (Nominal)		1450 (Maximum)
Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	SSW1 Aluminum CPS	Value
Master		479.2	Master		439.7	Master		2254
410.0 (Minimum) 580.0 (Nominal)		740.0 (Maximum)	410.0 (Minimum) 570.0 (Nominal)		740.0 (Maximum)	2000 (Minimum) 2800 (Nominal)		3200 (Maximum)
Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value	Phase	SSW4 Aluminum CPS	Value
Master		6469	Master		9378	Master		3975
5800 (Minimum) 8000 (Nominal)		9300 (Maximum)	8300 (Minimum) 11600 (Nominal)		13500 (Maximum)	3500 (Minimum) 5000 (Nominal)		5800 (Maximum)
Phase	SSW5 Aluminum CPS	Value						
Master		536.6						
470.0 (Minimum) 660.0 (Nominal)		770.0 (Maximum)						

Master: 14-Mar-2009 14:36

Hostile Litho-Density Sonde Master Calibration								
Detector Litholog Measurement (bkgd-subtracted)								
Phase	LSW1 Iron CPS	Value	Phase	LSW2 Iron CPS	Value	Phase	LSW3 Iron CPS	Value
Master		352.8	Master		621.4	Master		829.5
290.0 (Minimum) 400.0 (Nominal)		560.0 (Maximum)	520.0 (Minimum) 730.0 (Nominal)		950.0 (Maximum)	720.0 (Minimum) 1000 (Nominal)		1350 (Maximum)
Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	SSW1 Iron CPS	Value
Master		430.9	Master		399.5	Master		1671
370.0 (Minimum) 520.0 (Nominal)		700.0 (Maximum)	340.0 (Minimum) 470.0 (Nominal)		750.0 (Maximum)	1500 (Minimum) 2100 (Nominal)		2400 (Maximum)
Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value	Phase	SSW4 Iron CPS	Value
Master		5373	Master		8503	Master		3601
4900 (Minimum) 6800 (Nominal)		7900 (Maximum)	7800 (Minimum) 10800 (Nominal)		12600 (Maximum)	3300 (Minimum) 4600 (Nominal)		5400 (Maximum)
Phase	SSW5 Iron CPS	Value						
Master		469.3						
420.0 (Minimum) 580.0 (Nominal)		680.0 (Maximum)						

Hostile Litho-Density Sonde Master Calibration											
Quality Ratios											
Phase	AL CALIBRATION RATIO 1		Value	Phase	AL CALIBRATION RATIO 2		Value	Phase	AL CALIBRATION RATIO 3		Value
Master			1.035	Master			2.079	Master			0.5742
	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)		1.900 (Minimum)	2.100 (Nominal)	2.300 (Maximum)		0.4500 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)
Phase	AL CALIBRATION RATIO 4		Value	Phase	Pad-Wear SS Ratio		Value	Phase	Pad-Wear LS Ratio		Value
Master			0.4997	Master			0.9930	Master			0.9925
	0.4000 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)		0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)		0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)
Phase	Pad-Position SS Ratio		Value	Phase	Pad-Position LS Ratio		Value				
Master			1.006	Master			0.9851				
	0.9900 (Minimum)	0.9940 (Nominal)	1.015 (Maximum)		0.9850 (Minimum)	0.9940 (Nominal)	1.010 (Maximum)				

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	202
Auxiliary Equipment: HNGC Housing	HNGH - A	30

Hostile Natural Gamma Ray Sonde / Equipment Identification		
Primary Equipment: HNGS Sonde	HNGS - BA	27
Auxiliary Equipment: HNGS Sonde Housing	HNSH - BA	27
Gamma Source Radioactive	GSR - U	1154

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			40.60	Master			16.66	Master			1174
Before			40.49	Before			17.64	Before			1183
After			40.68	After			16.96	After			1181
	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			145.7	Master			9.231	Master			27.43
Before			145.1	Before			9.840	Before			30.64
After			145.0	After			10.03	After			28.97
	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			37.76
Before			38.10

Before			38.10
After			37.68
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 12-Mar-2009 19:24 Before: 17-Mar-2009 23:02 After: 18-Mar-2009 7:07

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			40.61	Master			14.67	Master			1250
Before			40.64	Before			16.20	Before			1271
After			40.59	After			15.98	After			1257
	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			143.6	Master			8.251	Master			26.37
Before			144.4	Before			8.655	Before			29.83
After			144.8	After			7.947	After			29.30
	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			38.49
Before			38.60
After			37.85
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 12-Mar-2009 19:24 Before: 17-Mar-2009 23:02 After: 18-Mar-2009 7:07

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio		Value
Master			0.9811
Before			0.9865
After			0.9954
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 12-Mar-2009 19:24
Before: 17-Mar-2009 23:02
After: 18-Mar-2009 7:07

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			42.00	Master			210.1	Master			8.224
	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			20.31	Master			0.9844				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				

Master: 12-Mar-2009 19:24

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			42.00	Master			207.9	Master			7.336
	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			22.05	Master			0.9744				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge	DTCH - A	8789
DTC-H Telemetry Cartridge	DTCH - A	8798

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing	ECH - KC	1777
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Company: Lamont Doherty

Schlumberger

Well: Expedition 320, Site U1331A

Field: PEAT

Rig: JOIDES Resolution

Country: USA

Lamont Doherty

Litho-Density

Downlog