

COMPANY: Lamont Doherty

WELL: ODP Leg 193, Site 1189C (PCM-3A)

FIELD: Manus Basin, Roman Ruins

COUNTRY: Offshore **STATE:** Bismarck Sea

Schlumberger HLDS Density
Natural Gamma Ray

COUNTY: Offshore
Field: Manus Basin, Roman Ruins
Location:
Well: ODP Leg 193, Site 1189C (PCM-3A)
Company: Lamont Doherty

LOCATION		Elev.:	K.B.	11.3 m
Permanent Datum:	MSL		G.L.	-1700 m
Log Measured From:	Drill Floor	Elev.: 0 m	D.F.	11 m
Drilling Measured From:	Drill Floor	11.0 m	above Perm. Datum	
API Serial No.	LATITUDE: 03° 43.2415' S	LONGITUDE: 151° 40.5240' E	RIG: JOIDES Resolution	

Logging Date	Run 1	Run 2	Run
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			
Time			
Logger On Bottom			
Time			
Unit Number			
Location			
Recorded By			
Witnessed By			

29-DEC-2000 1 1866 m 1766 m 1766 m 1700 m 0.000 in 1708 m 7.250 in Seawater 1.1 g/cm3 Seawater 0.180 ohm.m @ 30 degC 0.235 ohm.m @ @ @ @ 0.151 @ 40 @ 40 40 degC 29-DEC-2000 1:00 29-DEC-2000 10:00 99 Houston ODP Kerry M. Swain Gerardo Iturrino, Anne Bartelzko

Logging Date	29-DEC-2000			
Run Number	1			
Depth Driller	1866 m			
Schlumberger Depth	1766 m			
Bottom Log Interval	1766 m			
Top Log Interval	1700 m			
Casing Driller Size @ Depth	0.000 in @ 1710 m			
Casing Schlumberger	1708 m			
Bit Size	7.250 in			
Type Fluid In Hole	Seawater			
Density	1.1 g/cm3			
Fluid Loss				
PH				
Source Of Sample	Seawater			
RM @ Measured Temperature	0.180 ohm.m @ 30 degC			
RMF @ Measured Temperature	0.235 ohm.m @ @			
RMC @ Measured Temperature	@ @			
Source RMF	RMC			
RM @ MRT	0.151 @ 40 @ 40			
RMF @ MRT		@		
Maximum Recorded Temperatures	40 degC			
Circulation Stopped	29-DEC-2000			
Time	1:00			
Logger On Bottom	29-DEC-2000			
Time	10:00			
Unit Number	99			
Location	Houston ODP			
Recorded By	Kerry M. Swain			
Witnessed By	Gerardo Iturrino, Anne Bartelzko			

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

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

REMARKS: RUN NUMBER 1

REMARKS: RUN NUMBER 2

Log presented in meters below rig floor. Sea floor at 1700 mbrf.
 Wireline heave compensator used on all descents.
 Sea water used as mud in hole.
 Log TD at 1766 mbrf.
 Maximum temperature recorded from DITE ITEM.
 Toolstring-DITE/DTA/HLDS/NPLC/HNGS/LEHQ
 Original log files are log60.dlis and log62.dlis, they are replaced with play83.dlis and play 84.dlis. Reprocessing was done for the HNGS to compensate for the correct mud density of 1.1 g/cc.
 No after calibrations were performed to speed rigging down.

RUN 1

SERVICE ORDER #:
 PROGRAM VERSION: 9C1-303
 FLUID LEVEL: 0 m

RUN 2

SERVICE ORDER #:
 PROGRAM VERSION:
 FLUID LEVEL:

LOGGED INTERVAL	START	STOP

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1


SURFACE EQUIPMENT

GSR-U 135
 WITM (DTS)-A


RUN 2

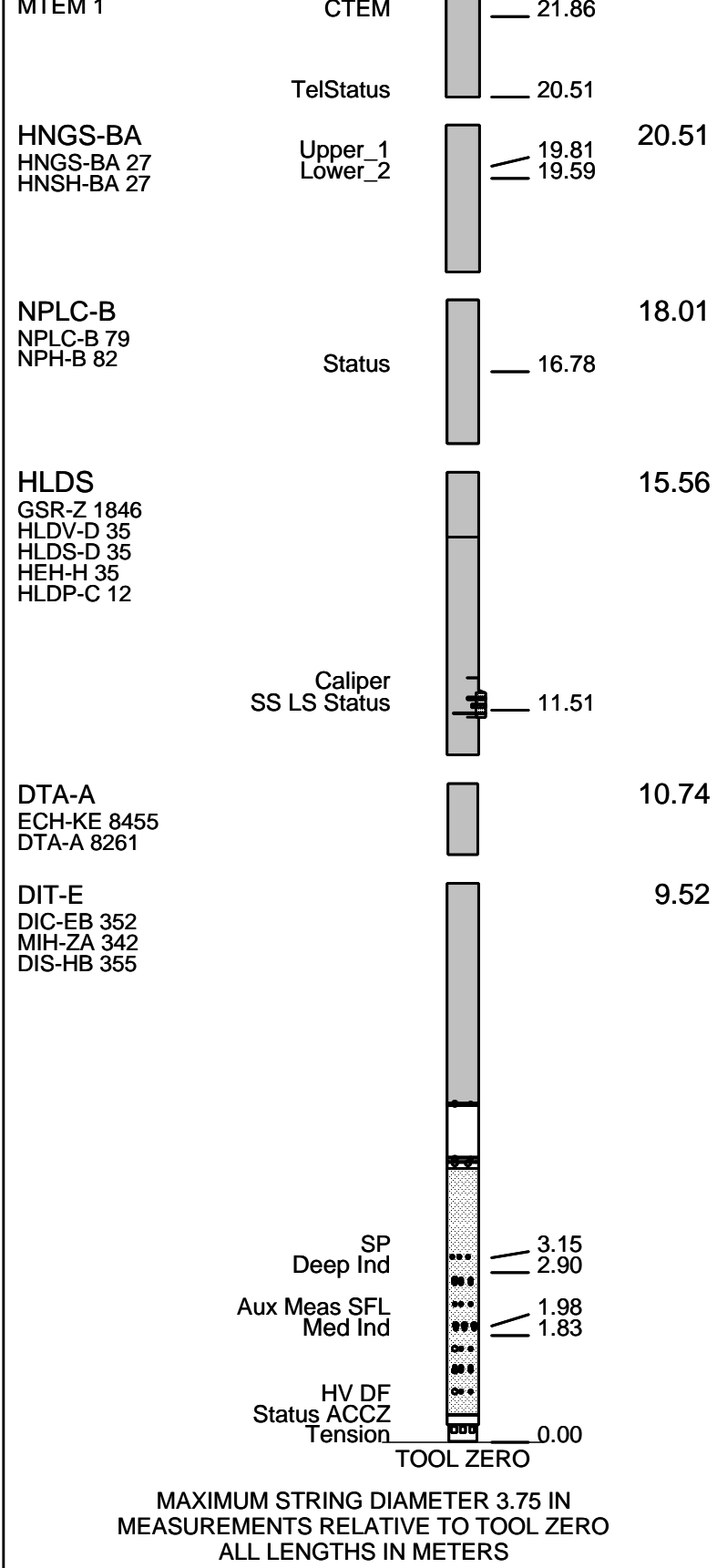
DOWNHOLE EQUIPMENT

LEH-MT 24.72
 LEH-MT 1

Mud Tempe  23.76

HTGC-B 23.76
 UDFH-KL 1062
 STGC0-A 8038
 STGC1-BH 8038

Gamma Ray  22.73



Input DLIS Files

DEFAULT	DITE .060	FN:5 PRODUCER	29-Dec-2000 09:56	1767.1 M	1697.7 M
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Output DLIS Files

DEFAULT	DITE .083	FN:26 PRODUCER	31-Dec-2000 19:45	1767.1 M	1697.7 M
LAMONT	DITE .083	FN:27 PRODUCER	31-Dec-2000 19:45	1767.1 M	1697.7 M

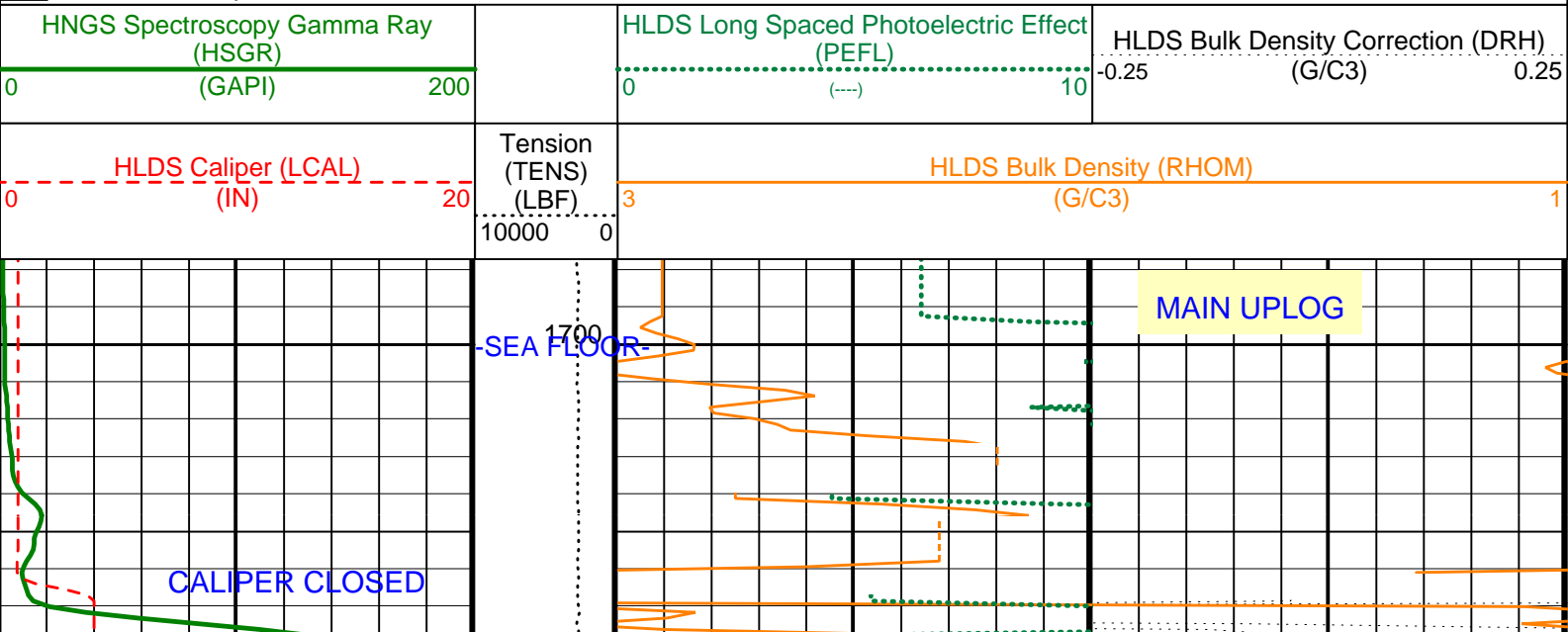
OP System Version: 9C1-303

MCM

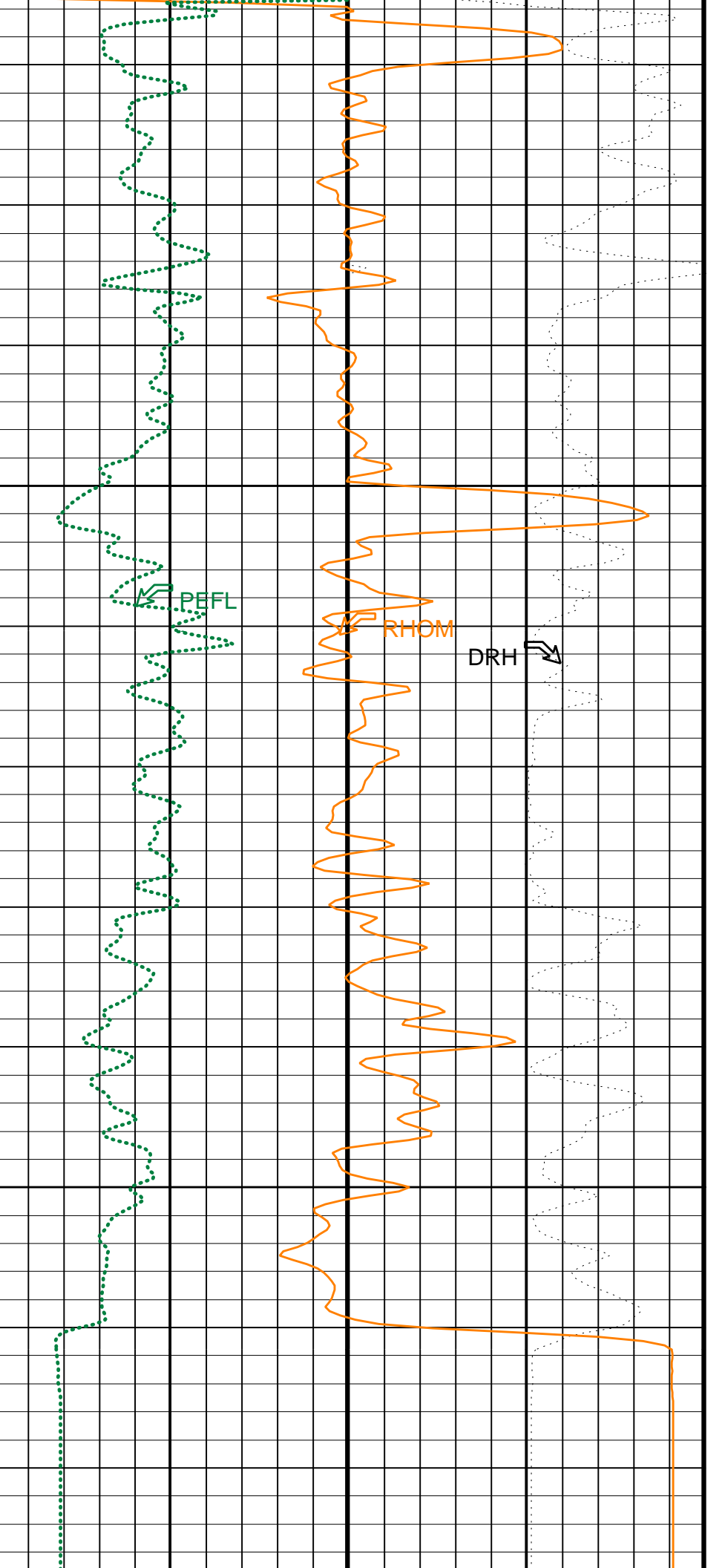
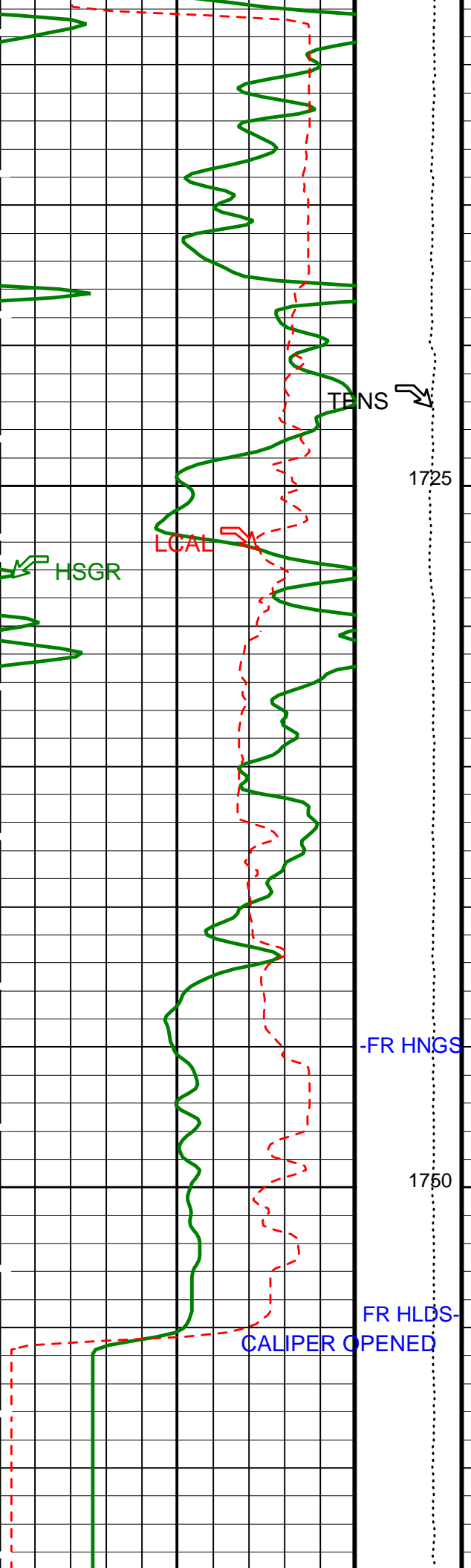
DIT-E	OP91-kp2	DTA-A	OP91-kp2
HLDS	OP91-kp2	NPLC-B	OP91-kp2
HNGS-BA	OP91-kp2	DTC-H	OP91-kp2

PIP SUMMARY

Time Mark Every 60 S



CALIPER CLOSED



-TDL-

MAIN UPLOG

HLDS Caliper (LCAL) (IN)	Tension (TENS) (LBF)	HLDS Bulk Density (RHOM) (G/C3)
0 20	3 10000 0	1
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)	HLDS Long Spaced Photoelectric Effect (PEFL)	HLDS Bulk Density Correction (DRH) (G/C3)
0 200	0 10	-0.25 0.25

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HLDS SS Tri-Ported Memory State	Enable
	HLDS Spec Message Rate	1
	HLDS LS Digital Integrator State	Normal
	HLDS Diag Message Rate	20
	HLDS SS NCB Mode	Density
	HLDS SS Digital Integrator State	Normal
	HLDS LS Tri-Ported Memory State	Enable
	HLDS Data Control	AcquiredData
	HLDS LS NCB Mode	Density
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth
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)	212 DEG F
BKSF	HNGS Borehole Fluid Excluder Sleeve Algorithm Factor	1
BKSH	HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel	245
BKSL	HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel	17
BS	Bit Size	9.875 IN
BSAL	Borehole Salinity	-50000.00 PPM
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
CONTYP	Conveyance Type	Wireline
CSD1	Inner Casing Outer Diameter	0 IN
CSD2	Outer Casing Outer Diameter	0 IN
CSIZ	Current Casing Size	0.000 IN
CSW1	Inner Casing Weight	0 LB/F
CSW2	Outer Casing Weight	0 LB/F
CWEI	Casing Weight	0.00 LB/F
D1PR	HNGS Detector 1 Calibration Thorium Peak Resolution	7.69015 %
D1TC	HNGS Detector 1 Calibration Temperature	83.0462 DEG F
D1TL	HNGS Detector 1 Calibration Thorium Peak Location	209.757
D2PR	HNGS Detector 2 Calibration Thorium Peak Resolution	7.03497 %
D2TC	HNGS Detector 2 Calibration Temperature	81.4405 DEG F
D2TL	HNGS Detector 2 Calibration Thorium Peak Location	209.443
DBCC	HNGS Barite Constant Correction Flag	NONE
DEPREM1	Depth Remark 1	
DEPREM2	Depth Remark 2	
DEPREM3	Depth Remark 3	
DEPREM4	Depth Remark 4	
DEPREM5	Depth Remark 5	
DEPREM6	Depth Remark 6	
DFD	Drilling Fluid Density	9.17 LB/G
DGF2	Deep 20 kHz Gain Factor	1.0235
DHC	Density Hole Correction	BS
DO	Depth Offset for Logical Unit 1	0.0 M
DPH2	Deep 20 kHz Phase Shift	-0.230754 DEG
DPPM	Density Porosity Processing Mode	HIRS
DRE2	Deep Real 20 kHz Sonde Error Correction	18.3624 MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843 MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	-42.2018 MM/M
FD	Fluid Density	1 G/C3
GCF1_START	HNGS Detector 1 GCF Constant	1
GCF2_START	HNGS Detector 2 GCF Constant	1
GCSE	Generalized Caliper Selection	LCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.01 DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9

Parameter	Description	Value	Units
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	-0.00186663	
HALF	HNGS Alpha Filter Length	60	IN
HATIM	HNGS Marquardt Accumulation Time	600	S
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
HSLV	HNGS Borehole Fluid Excluder Sleeve Status	NO	
HSVN	HNGS Spectral Standards Version Number	6.08978e-028	
IDWCD	IDW Calibration Date (dd-MMM-yyyy)	dd-MMM-yyyy	
IDWCSN	IDW Calibrator Serial Number	-999	
IDWLNCN	IDW Calibration Cable Type	7-46P	
IDWSN	IDW Serial Number	-999	
IDWTYP	IDW Type	IDW-B	
IDWWC1	IDW Wheel Correction 1	1	
IDWWC2	IDW Wheel Correction 2	1	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ITEN	DIT-E Temperature Enable	ENABLE	
LATC	HLDS Activation Correction	ON	
LCSN	Logging Cable Serial Number	-999	
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	
LOGSEQ	Log Sequence	First_Log_In_Well	
MARQ_START	HNGS Marquardt Start-up Mode	INTERNAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MDEN	Matrix Density	2.71	G/C3
MGF2	Medium 20 kHz Gain Factor	1.02156	
MPH2	Medium 20 kHz Phase Shift	-1.08578	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	8.9436	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MST	Mud Sample Temperature	30.00	DEGF
MXE2	Medium Quad 20 kHz Sonde Error Correction	-46.3369	MM/M
NOTS	NPLC Old Temperature Sensor	NO	
NRBM	NPLC Reduced Telemetry Bandwidth Mode	OFF	
PBVSDP	Use alternate depth channel for playback	NO	
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PP	Playback Processing	RECOMPUTE	
PSDL	HLDS LS Pulse Shape Compensation DAC	16000	
PSDS	HLDS SS Pulse Shape Compensation DAC	16000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
RDF1_START	HNGS Detector 1 RDF Constant	0	
RDF2_START	HNGS Detector 2 RDF Constant	0	
RIGTYP	Rig Type	Offshore_Floater_with_WMC	
RLDT	Reference Log Date (dd-MMM-yyyy)	dd-MMM-yyyy	
RLNM	Reference Log Name		
RLRN	Reference Log Run Number		
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RULB	Rig Up Length at Bottom	0	FT
RULS	Rig Up Length at Surface	0	FT
RW	Resistivity of Connate Water	1.0000	OHMM
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S1NA	HNGS Detector 1 Calibration Sodium Count Rate	24.2212	CPS
S1NG	HNGS Detector 1 Calibration End-On / Side-On Gain Ratio	0.984113	
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
S2NA	HNGS Detector 2 Calibration Sodium Count Rate	24.6034	CPS
S2NG	HNGS Detector 2 Calibration End-On / Side-On Gain Ratio	0.982439	
SABK	HNGS Statistical Uncertainty in Borehole Potassium Running Average	0.000270422	
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SCORR	Stretch Correction	-50000	FT
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68.0001	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
STDLC	Subsequent Trip Down Log Correction	-50000	FT
TD	Total Depth	32768	FT
TDD	Total Depth - Driller	-50000.00	FT
TDL	Total Depth - Logger	-50000.00	FT
TNDCD	Tension Device Calibration Date (dd-MMM-yyyy)	dd-MMM-yyyy	
TNDCSN	Tension Device Calibrator Serial Number	-999	
TNDGN	Tension Device GAIN	1	
TNDOFF	Tension Device Offset	0	
TNDSN	Tension Device Serial Number	-999	
TNDTYP	Tension Device	CMTD-B/A	
TPOS	Tool Position	ECCE	

TWS	Temperature of Connate Water Sample	100.00	DEGF
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.2162	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.985236	
ZRCS	Tool Zero Reference Check at Surface	-50000	FT

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 31-Dec-2000 19:45

OP System Version: 9C1-303

MCM

DIT-E	OP91-kp2	DTA-A	OP91-kp2
HLDS	OP91-kp2	NPLC-B	OP91-kp2
HNGS-BA	OP91-kp2	DTC-H	OP91-kp2

Input DLIS Files

DEFAULT	DITE .060	FN:5 PRODUCER	29-Dec-2000 09:56	1767.1 M	1697.7 M
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Output DLIS Files

DEFAULT	DITE .083	FN:26 PRODUCER	31-Dec-2000 19:45
LAMONT	DITE .083	FN:27 PRODUCER	31-Dec-2000 19:45

Input DLIS Files

DEFAULT	DITE .062	FN:9 PRODUCER	29-Dec-2000 10:17	1767.1 M	1696.1 M
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Output DLIS Files

DEFAULT	DITE .084	FN:28 PRODUCER	31-Dec-2000 19:50	1767.1 M	1696.1 M
LAMONT	DITE .084	FN:29 PRODUCER	31-Dec-2000 19:50	1767.1 M	1696.1 M

OP System Version: 9C1-303

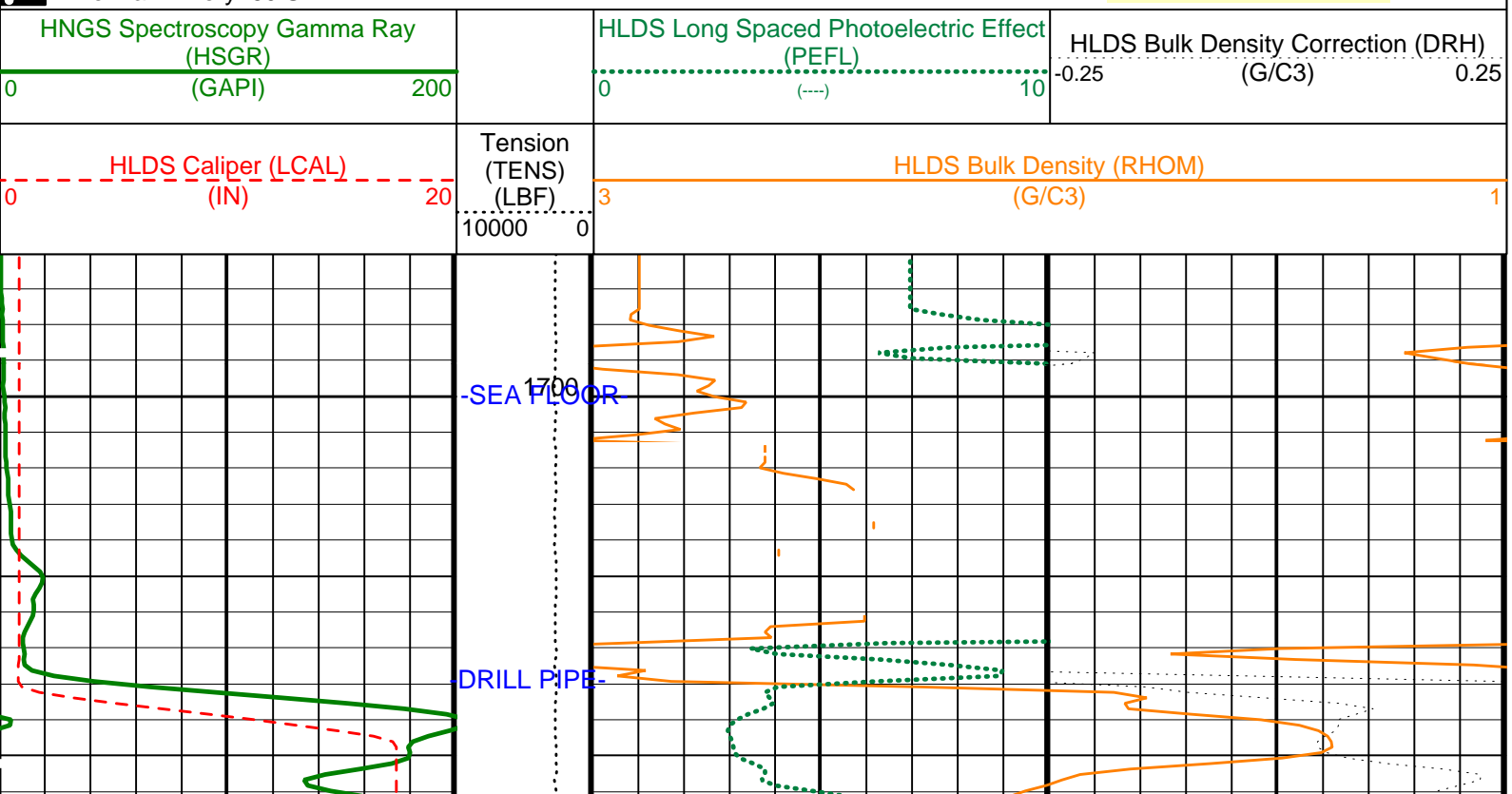
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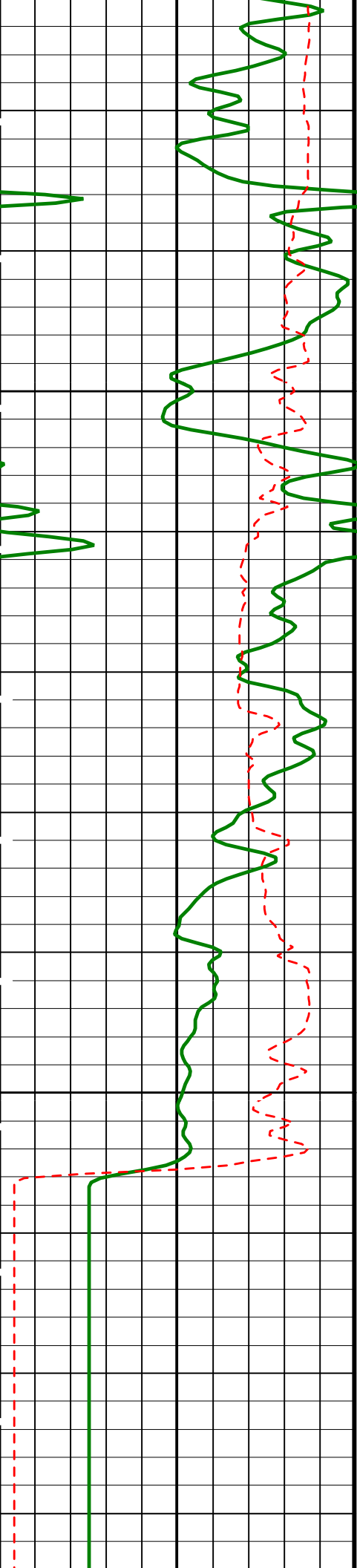
DIT-E	OP91-kp2	DTA-A	OP91-kp2
HLDS	OP91-kp2	NPLC-B	OP91-kp2
HNGS-BA	OP91-kp2	DTC-H	OP91-kp2

PIP SUMMARY

REPEAT SECTION

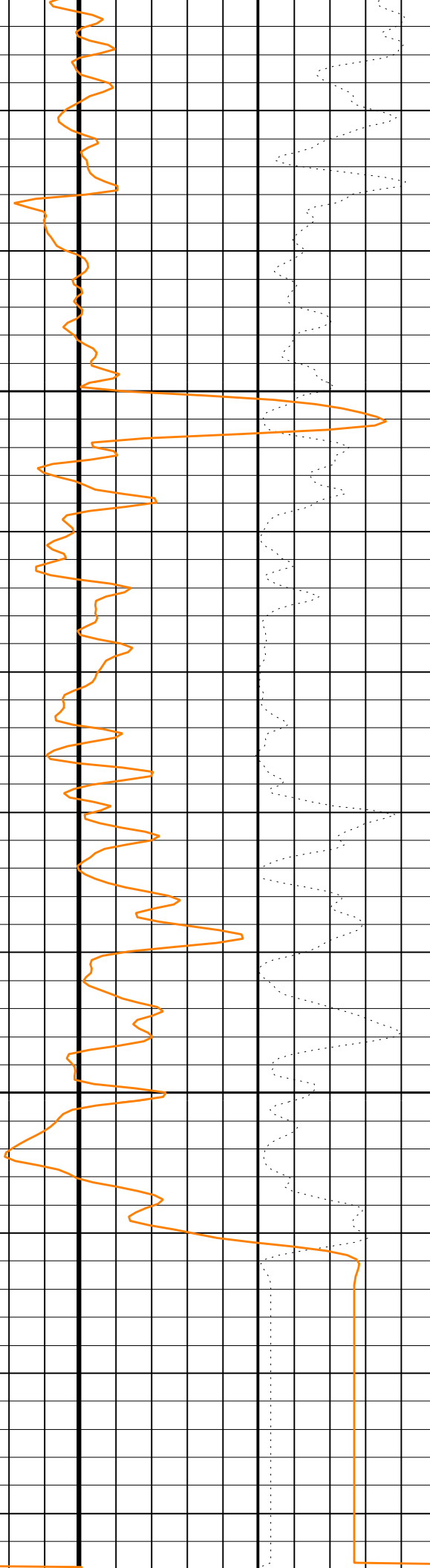
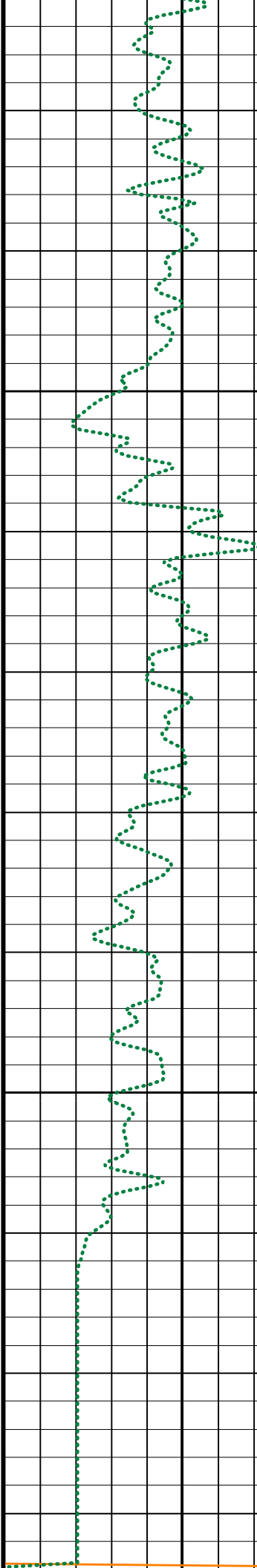
Time Mark Every 60 S





1725

1750



0	HLDS Caliper (LCAL) (IN)	20	Tension (TENS) (LBF)	3	HLDS Bulk Density (RHOM) (G/C3)	1
0	HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)	200	10000	0	HLDS Long Spaced Photoelectric Effect (PEFL) (---)	10
0					HLDS Bulk Density Correction (DRH) (G/C3)	0.25

PIP SUMMARY

Time Mark Every 60 S

REPEAT SECTION

Parameters

DLIS Name	Description	Value
	HLDS SS Tri-Ported Memory State	Enable
	HLDS Spec Message Rate	1
	HLDS LS Digital Integrator State	Normal
	HLDS Diag Message Rate	20
	HLDS SS NCB Mode	Density
	HLDS SS Digital Integrator State	Normal
	HLDS LS Tri-Ported Memory State	Enable
	HLDS Data Control	AcquiredData
	HLDS LS NCB Mode	Density
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth
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)	212
BKSF	HNGS Borehole Fluid Excluder Sleeve Algorithm Factor	1
BKSH	HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel	245
BKSL	HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel	17
BS	Bit Size	9.875
BSAL	Borehole Salinity	-50000.00
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
CONTYP	Conveyance Type	Wireline
CSD1	Inner Casing Outer Diameter	0
CSD2	Outer Casing Outer Diameter	0
CSIZ	Current Casing Size	0.000
CSW1	Inner Casing Weight	0
CSW2	Outer Casing Weight	0
CWEI	Casing Weight	0.00
D1PR	HNGS Detector 1 Calibration Thorium Peak Resolution	7.69015
D1TC	HNGS Detector 1 Calibration Temperature	83.0462
D1TL	HNGS Detector 1 Calibration Thorium Peak Location	209.757
D2PR	HNGS Detector 2 Calibration Thorium Peak Resolution	7.03497
D2TC	HNGS Detector 2 Calibration Temperature	81.4405
D2TL	HNGS Detector 2 Calibration Thorium Peak Location	209.443
DBCC	HNGS Barite Constant Correction Flag	NONE
DEPREM1	Depth Remark 1	
DEPREM2	Depth Remark 2	
DEPREM3	Depth Remark 3	
DEPREM4	Depth Remark 4	
DEPREM5	Depth Remark 5	
DEPREM6	Depth Remark 6	
DFD	Drilling Fluid Density	9.17
DGF2	Deep 20 kHz Gain Factor	1.0235
DHC	Density Hole Correction	BS
DO	Depth Offset for Logical Unit 1	0.0
DPH2	Deep 20 kHz Phase Shift	-0.230754
DPPM	Density Porosity Processing Mode	HIRS
DRE2	Deep Real 20 kHz Sonde Error Correction	18.3624
DSR2	Deep Sigma Reference (20 kHz)	1843
DXE2	Deep Quad 20 kHz Sonde Error Correction	-42.2018
FD	Fluid Density	1
GCF1_START	HNGS Detector 1 GCF Constant	1
GCF2_START	HNGS Detector 2 GCF Constant	1
GCSE	Generalized Caliper Selection	LCAL
GDEV	Average Angular Deviation of Borehole from Normal	0
GGRD	Geothermal Gradient	0.01
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	-0.00706549
HALF	HNGS Alpha Filter Length	60
HATIM	HNGS Mercuric Accumulation Time	600

HATIM	HNGS Marquardt Accumulation Time	600	S
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
HSLV	HNGS Borehole Fluid Excluder Sleeve Status	NO	
HSVN	HNGS Spectral Standards Version Number	6.56295e-027	
IDWCD	IDW Calibration Date (dd-MMM-yyyy)	dd-MMM-yyyy	
IDWCSN	IDW Calibrator Serial Number	-999	
IDWLGN	IDW Calibration Cable Type	7-46P	
IDWSN	IDW Serial Number	-999	
IDWTYP	IDW Type	IDW-B	
IDWWC1	IDW Wheel Correction 1	1	
IDWWC2	IDW Wheel Correction 2	1	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ITEN	DIT-E Temperature Enable	ENABLE	
LATC	HLDS Activation Correction	ON	
LCSN	Logging Cable Serial Number	-999	
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	
LOGSEQ	Log Sequence	First_Log_In_Well	
MARQ_START	HNGS Marquardt Start-up Mode	INTERNAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MDEN	Matrix Density	2.71	G/C3
MGF2	Medium 20 kHz Gain Factor	1.02156	
MPH2	Medium 20 kHz Phase Shift	-1.08578	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	8.9436	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MST	Mud Sample Temperature	30.00	DEGF
MXE2	Medium Quad 20 kHz Sonde Error Correction	-46.3369	MM/M
NOTS	NPLC Old Temperature Sensor	NO	
NRBM	NPLC Reduced Telemetry Bandwidth Mode	OFF	
PBVSADP	Use alternate depth channel for playback	NO	
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PP	Playback Processing	RECOMPUTE	
PSDL	HLDS LS Pulse Shape Compensation DAC	16000	
PSDS	HLDS SS Pulse Shape Compensation DAC	16000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
RDF1_START	HNGS Detector 1 RDF Constant	0	
RDF2_START	HNGS Detector 2 RDF Constant	0	
RIGTYP	Rig Type	Offshore_Floater_with_WMC	
RLDT	Reference Log Date (dd-MMM-yyyy)	dd-MMM-yyyy	
RLNM	Reference Log Name		
RLRN	Reference Log Run Number		
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RULB	Rig Up Length at Bottom	0	FT
RULS	Rig Up Length at Surface	0	FT
RW	Resistivity of Connate Water	1.0000	OHMM
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S1NA	HNGS Detector 1 Calibration Sodium Count Rate	24.2212	CPS
S1NG	HNGS Detector 1 Calibration End-On / Side-On Gain Ratio	0.984113	
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
S2NA	HNGS Detector 2 Calibration Sodium Count Rate	24.6034	CPS
S2NG	HNGS Detector 2 Calibration End-On / Side-On Gain Ratio	0.982439	
SABK	HNGS Statistical Uncertainty in Borehole Potassium Running Average	0.000818593	
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SCORR	Stretch Correction	-50000	FT
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68.0001	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
STDLC	Subsequent Trip Down Log Correction	-50000	FT
TD	Total Depth	32768	FT
TDD	Total Depth - Driller	-50000.00	FT
TDL	Total Depth - Logger	-50000.00	FT
TNDCD	Tension Device Calibration Date (dd-MMM-yyyy)	dd-MMM-yyyy	
TNDCSN	Tension Device Calibrator Serial Number	-999	
TNDGN	Tension Device GAIN	1	
TNDOFF	Tension Device Offset	0	
TNDSN	Tension Device Serial Number	-999	
TNDTYP	Tension Device	CMTD-B/A	
TPOS	Tool Position	ECCE	
TWS	Temperature of Connate Water Sample	100.00	DEGF
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.992159	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.980345	
ZRCS	Tool Zero Reference Check at Surface	-50000	FT

OP System Version: 9C1-303

MCM

DIT-E	OP91-kp2	DTA-A	OP91-kp2
HLDS	OP91-kp2	NPLC-B	OP91-kp2
HNGS-BA	OP91-kp2	DTC-H	OP91-kp2

Input DLIS Files

DEFAULT	DITE .062	FN:9 PRODUCER	29-Dec-2000 10:17	1767.1 M	1696.1 M
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Output DLIS Files

DEFAULT	DITE .084	FN:28 PRODUCER	31-Dec-2000 19:50
LAMONT	DITE .084	FN:29 PRODUCER	31-Dec-2000 19:50

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: Calibration out of date 21-SEP-2000 5:35 Before: 26-NOV-2000 9:01							
SS Total Countrate Bkg	1645	1433	1424	N/A	N/A	80.00	CPS
SS HV Measured Bkg	1100	1062	1062	N/A	N/A	80.00	V
SS Cs Centroid Bkg	661.0	661.3	661.3	N/A	N/A	1.500	KEV
SS Cs Resolution Bkg	9.000	8.578	8.573	N/A	N/A	1.800	%
LS Total Countrate Bkg	1645	1457	1447	N/A	N/A	80.00	CPS
LS HV Measured Bkg	1100	1181	1181	N/A	N/A	80.00	V
LS Cs Centroid Bkg	661.0	661.2	661.1	N/A	N/A	1.500	KEV
LS Cs Resolution Bkg	9.000	8.815	8.878	N/A	N/A	1.800	%
Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration							
Before: 26-NOV-2000 9:01							
HLDS Caliper Small Ring	8.000	N/A	10.23	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	12.00	N/A	14.22	N/A	N/A	N/A	IN
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check							
Master: 6-OCT-2000 5:44 Before: 21-DEC-2000 9:52							
Na 511 Peak Loc	40.00	40.59	40.60	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.53	17.00	N/A	N/A	2.000	%
High Voltage	1150	1100	1104	N/A	N/A	30.00	V
Na 1785 Peak Loc	142.6	145.1	145.1	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.600	11.14	N/A	N/A	2.000	%
Temperature	15.50	33.94	32.57	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	24.22	22.49	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check							
Master: 6-OCT-2000 5:44 Before: 21-DEC-2000 9:52							
Na 511 Peak Loc	40.00	40.70	40.59	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.05	16.03	N/A	N/A	2.000	%
High Voltage	1150	1189	1194	N/A	N/A	30.00	V
Na 1785 Peak Loc	142.6	145.1	145.7	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	7.959	8.040	N/A	N/A	2.000	%
Temperature	15.50	33.01	31.76	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	24.60	22.72	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2							
Master: 6-OCT-2000 5:44 Before: 21-DEC-2000 9:52							
Coincidence Count Rate Ratio	1.000	0.9848	0.9904	N/A	N/A	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration							
Master: 6-OCT-2000 5:36							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.4	--	--	--	--	
Th Peak Res	7.000	8.367	--	--	--	--	%
Background Count Rate	142.5	14.06	--	--	--	--	CPS
Gain Ratio	1.000	0.9908	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration							
Master: 6-OCT-2000 5:36							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.2	--	--	--	--	

Th Peak Loc	209.6	210.2	--	--	--	--	--	%
Th Peak Res	7.000	7.339	--	--	--	--	--	CPS
Background Count Rate	142.5	15.63	--	--	--	--	--	
Gain Ratio	1.000	0.9828	--	--	--	--	--	

Dual Induction - E / Equipment Identification

Primary Equipment:		
Dual Induction Sonde	DIS - HB	355
Dual Induction Cartridge	DIC - EB	352
Auxiliary Equipment:		
Mass Isolated Housing	MIH - ZA	342

Dual Induction - E Wellsite Calibration

Induction Electronics (10 kHz)

Phase	ID Elect Real Offset 10 kHz	MM/M	Value	Phase	ID Elect Real Gain 10 kHz	Value	Phase	ID Elect Phase 10 kHz	DEG	Value	
Before			35.83	Before		0.9728	Before			8.859	
	-266.2 (Minimum)	33.79 (Nominal)	333.8 (Maximum)		0.8284 (Minimum)	0.9784 (Nominal)	1.170 (Maximum)		-0.7745 (Minimum)	9.225 (Nominal)	19.23 (Maximum)
Phase	ID Elect Quad Offset 10 kHz	MM/M	Value	Phase	ID Elect Quad Gain 10 kHz	Value	Phase	IM Elect Phase 10 kHz	DEG	Value	
Before			56.03	Before		0.9791	Before			8.369	
	-279.1 (Minimum)	20.94 (Nominal)	320.9 (Maximum)		0.8369 (Minimum)	0.9869 (Nominal)	1.181 (Maximum)		-1.166 (Minimum)	8.834 (Nominal)	18.83 (Maximum)
Phase	IM Elect Real Offset 10 kHz	MM/M	Value	Phase	IM Elect Real Gain 10 kHz	Value					
Before			83.29	Before		0.9442					
	-467.5 (Minimum)	82.54 (Nominal)	632.5 (Maximum)		0.8031 (Minimum)	0.9531 (Nominal)	1.134 (Maximum)				
Phase	IM Elect Quad Offset 10 kHz	MM/M	Value	Phase	IM Elect Quad Gain 10 kHz	Value					
Before			44.02	Before		0.9278					
	-506.2 (Minimum)	43.79 (Nominal)	593.8 (Maximum)		0.7903 (Minimum)	0.9403 (Nominal)	1.116 (Maximum)				

Before: Calibration out of date 19-AUG-1998 18:34

Dual Induction - E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz	MM/M	Value	Phase	ID Elect Real Gain 20 kHz	Value	Phase	ID Elect Phase 20 kHz	DEG	Value	
Before			12.55	Before		0.9893	Before			6.814	
	-111.7 (Minimum)	13.30 (Nominal)	138.3 (Maximum)		0.8456 (Minimum)	0.9956 (Nominal)	1.194 (Maximum)		-7.217 (Minimum)	7.783 (Nominal)	22.78 (Maximum)
Phase	ID Elect Quad Offset 20 kHz	MM/M	Value	Phase	ID Elect Quad Gain 20 kHz	Value	Phase	IM Elect Phase 20 kHz	DEG	Value	
Before			10.79	Before		0.9991	Before			6.388	
	-116.7 (Minimum)	8.308 (Nominal)	133.3 (Maximum)		0.8568 (Minimum)	1.007 (Nominal)	1.210 (Maximum)		-7.866 (Minimum)	7.134 (Nominal)	22.13 (Maximum)
Phase	IM Elect Real Offset 20 kHz	MM/M	Value	Phase	IM Elect Real Gain 20 kHz	Value					
Before			32.12	Before		0.9529					
	-192.0 (Minimum)	32.95 (Nominal)	258.0 (Maximum)		0.8169 (Minimum)	0.9669 (Nominal)	1.153 (Maximum)				
Phase	IM Elect Quad Offset 20 kHz	MM/M	Value	Phase	IM Elect Quad Gain 20 kHz	Value					
Before			17.02	Before		0.9381					
	-207.5 (Minimum)	17.51 (Nominal)	242.5 (Maximum)		0.8037 (Minimum)	0.9537 (Nominal)	1.135 (Maximum)				

Before: 26-DEC-2000 6:51

Dual Induction - E Wellsite Calibration

Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz	MM/M	Value	Phase	ID Elect Real Gain 40 kHz	Value	Phase	ID Elect Phase 40 kHz	DEG	Value	
Before			9.377	Before		0.9951	Before			25.34	
	-76.21 (Minimum)	8.795 (Nominal)	93.79 (Maximum)		0.8403 (Minimum)	0.9903 (Nominal)	1.186 (Maximum)		3.750 (Minimum)	23.75 (Nominal)	43.75 (Maximum)
Phase	ID Elect Quad Offset 40 kHz	MM/M	Value	Phase	ID Elect Quad Gain 40 kHz	Value	Phase	IM Elect Phase 40 kHz	DEG	Value	
Before			15.23	Before		1.000	Before			24.79	
	-79.47 (Minimum)	5.533 (Nominal)	90.53 (Maximum)		0.8595 (Minimum)	1.009 (Nominal)	1.213 (Maximum)		3.199 (Minimum)	23.20 (Nominal)	43.20 (Maximum)

Phase	IM Elect Real Offset 40 kHz MM/M	Value	Phase	IM Elect Real Gain 40 kHz	Value
Before		21.35	Before		0.9612
	-109.0 (Minimum) 21.03 (Nominal) 151.0 (Maximum)			0.8111 (Minimum) 0.9611 (Nominal) 1.145 (Maximum)	
Phase	IM Elect Quad Offset 40 kHz MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value
Before		11.43	Before		0.9440
	-118.8 (Minimum) 11.24 (Nominal) 141.2 (Maximum)			0.7976 (Minimum) 0.9476 (Nominal) 1.126 (Maximum)	

Before: Calibration out of date 19-AUG-1998 18:36

Dual Induction - E Wellsite Calibration					
SFL Electronics					
Phase	SFL Voltage Offset MV	Value	Phase	SFL Voltage Gain	Value
Before		0.09040	Before		0.9947
	-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	
Phase	SFL Current Offset MA	Value	Phase	SFL Current Gain	Value
Before		0.03114	Before		1.005
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Before: 26-DEC-2000 6:52

Dual Induction - E Master Calibration								
Test Loop Calibration: Calibration of Internal Reference to Test Loop Standard								
Phase	Deep 10 kHz Gain Factor	Value	Phase	Deep 20 kHz Gain Factor	Value	Phase	Deep 40 kHz Gain Factor	Value
Master		1.010	Master		1.023	Master		1.044
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	
Phase	Medium 10 kHz Gain Factor	Value	Phase	Medium 20 kHz Gain Factor	Value	Phase	Medium 40 kHz Gain Factor	Value
Master		1.017	Master		1.022	Master		1.042
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	
Phase	Deep 10 kHz Phase Shift	Value	Phase	Deep 20 kHz Phase Shift	Value	Phase	Deep 40 kHz Phase Shift	Value
Master		0.05099	Master		-0.2308	Master		-1.484
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-2.000 (Minimum) 0 (Nominal) 2.000 (Maximum)			-4.000 (Minimum) -1.000 (Nominal) 2.000 (Maximum)	
Phase	Medium 10 kHz Phase Shift	Value	Phase	Medium 20 kHz Phase Shift	Value	Phase	Medium 40 kHz Phase Shift	Value
Master		-0.3767	Master		-1.086	Master		-2.610
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-3.000 (Minimum) -1.000 (Nominal) 1.000 (Maximum)			-5.000 (Minimum) -2.000 (Nominal) 1.000 (Maximum)	

Master: Calibration out of date 23-OCT-1998 20:57

Dual Induction - E Master Calibration								
Sonde Error Corrections: Correction for sonde response in zero conductivity environment. (Normalized to 25C).								
Phase	Real Deep 10 kHz S.E. Corr.	Value	Phase	Real Deep 20 kHz S.E. Corr.	Value	Phase	Real Deep 40 kHz S.E. Corr.	Value
Master		38.86	Master		18.36	Master		7.201
	-50.00 (Minimum) 0 (Nominal) 125.0 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	Quad Deep 10 kHz S.E. Corr.	Value	Phase	Quad Deep 20 kHz S.E. Corr.	Value	Phase	Quad Deep 40 kHz S.E. Corr.	Value
Master		-112.2	Master		-42.20	Master		-2.651
	-250.0 (Minimum) 0 (Nominal) 350.0 (Maximum)			-125.0 (Minimum) 0 (Nominal) 200.0 (Maximum)			-75.00 (Minimum) 0 (Nominal) 125.0 (Maximum)	
Phase	Real Medium 10 kHz S.E. Corr.	Value	Phase	Real Medium 20 kHz S.E. Corr.	Value	Phase	Real Medium 40 kHz S.E. Corr.	Value
Master		43.35	Master		8.944	Master		-1.864
	-50.00 (Minimum) 0 (Nominal) 140.0 (Maximum)			-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	
Phase	Quad Medium 10 kHz S.E. Corr.	Value	Phase	Quad Medium 20 kHz S.E. Corr.	Value	Phase	Quad Medium 40 kHz S.E. Corr.	Value
Master		-125.2	Master		-46.34	Master		3.123
	-1300 (Minimum) 0 (Nominal) 1300 (Maximum)			-650.0 (Minimum) 0 (Nominal) 650.0 (Maximum)			-350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Master: Calibration out of date 23-OCT-1998 21:07

Primary Equipment:
 Hostile Litho Density Sonde
 Hostile Litho Density High Voltage
 Gamma Source Radioactive

HLDS - D 35
 HLDV - D 35
 GSR - Z 1846

Auxiliary Equipment:
 Hostile Litho Density Pad
 Hostile Litho Density High Voltage Housi

HLDP - C 12
 HEH - H 35

Hostile Litho-Density Sonde Wellsite Calibration									
Background Measurement									
Phase	SS Total Countrate Bkg CPS	Value	Phase	SS HV Measured Bkg V	Value	Phase	SS PSC DAC Value Bkg	Value	
Master		1433	Master		1062	Master		16760	
Before		1424	Before		1062	Before		16790	
	1000 (Minimum) 1645 (Nominal) 2290 (Maximum)			800.0 (Minimum) 1100 (Nominal) 1400 (Maximum)			14100 (Minimum) 16000 (Nominal) 20000 (Maximum)		
Phase	SS Cs Centroid Bkg KEV	Value	Phase	SS Cs Resolution Bkg %	Value	Phase	LS Total Countrate Bkg CPS	Value	
Master		661.3	Master		8.578	Master		1457	
Before		661.3	Before		8.573	Before		1447	
	656.0 (Minimum) 661.0 (Nominal) 666.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.000 (Maximum)			1000 (Minimum) 1645 (Nominal) 2290 (Maximum)		
Phase	LS HV Measured Bkg V	Value	Phase	LS PSC DAC Value Bkg	Value	Phase	LS Cs Centroid Bkg KEV	Value	
Master		1181	Master		18320	Master		661.2	
Before		1181	Before		18370	Before		661.1	
	800.0 (Minimum) 1100 (Nominal) 1400 (Maximum)			14100 (Minimum) 16000 (Nominal) 20000 (Maximum)			656.0 (Minimum) 661.0 (Nominal) 666.0 (Maximum)		
Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	
Master		8.815	Master		88.11	Master		80.49	
Before		8.878	Before		86.99	Before		79.85	
	7.000 (Minimum) 9.000 (Nominal) 11.000 (Maximum)			55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)		
Phase	LSW3 Background CPS	Value	Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	
Master		179.9	Master		217.8	Master		500.3	
Before		178.1	Before		215.7	Before		497.4	
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)			140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)			330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)		
Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value	
Master		87.70	Master		155.5	Master		417.1	
Before		86.54	Before		155.0	Before		413.2	
	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				
Master		222.8	Master		161.8				
Before		220.8	Before		161.1				
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)					

Master: Calibration out of date 21-SEP-2000 5:35 Before: 26-NOV-2000 9:01

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		88.11	Master		80.49	Master		179.9	
	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		217.8	Master		500.3	Master		8.815	
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)			330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.000 (Maximum)		
Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value	
Master		87.70	Master		155.5	Master		417.1	
	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		222.8	Master		161.8	Master		8.578
	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: Calibration out of date 21-SEP-2000 5:35

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		601.2	Master		873.6	Master		1045
	420.0 (Minimum) 600.0 (Nominal) 700.0 (Maximum)			650.0 (Minimum) 900.0 (Nominal) 1050 (Maximum)			800.0 (Minimum) 1100 (Nominal) 1300 (Maximum)	
Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	LS Cs Resolution Al %	Value
Master		521.1	Master		496.0	Master		8.861
	410.0 (Minimum) 580.0 (Nominal) 670.0 (Maximum)			410.0 (Minimum) 570.0 (Nominal) 660.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	
Phase	SSW1 Aluminum CPS	Value	Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value
Master		2319	Master		6767	Master		9888
	2000 (Minimum) 2800 (Nominal) 3200 (Maximum)			5800 (Minimum) 8000 (Nominal) 9300 (Maximum)			8300 (Minimum) 11600 (Nominal) 13500 (Maximum)	
Phase	SSW4 Aluminum CPS	Value	Phase	SSW5 Aluminum CPS	Value	Phase	SS Cs Resolution Al %	Value
Master		4299	Master		625.3	Master		8.572
	3500 (Minimum) 5000 (Nominal) 5800 (Maximum)			470.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Master: Calibration out of date 21-SEP-2000 7:27

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		397.9	Master		694.7	Master		924.5
	290.0 (Minimum) 400.0 (Nominal) 470.0 (Maximum)			520.0 (Minimum) 730.0 (Nominal) 850.0 (Maximum)			720.0 (Minimum) 1000 (Nominal) 1160 (Maximum)	
Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	LS Cs Resolution Al + Fe %	Value
Master		477.2	Master		463.2	Master		8.823
	370.0 (Minimum) 520.0 (Nominal) 600.0 (Maximum)			340.0 (Minimum) 470.0 (Nominal) 550.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	
Phase	SSW1 Iron CPS	Value	Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value
Master		1735	Master		5690	Master		9124
	1500 (Minimum) 2100 (Nominal) 2400 (Maximum)			4900 (Minimum) 6800 (Nominal) 7900 (Maximum)			7800 (Minimum) 10800 (Nominal) 12600 (Maximum)	
Phase	SSW4 Iron CPS	Value	Phase	SSW5 Iron CPS	Value	Phase	SS Cs Resolution Al + Fe %	Value
Master		3979	Master		565.0	Master		8.472
	3300 (Minimum) 4600 (Nominal) 5400 (Maximum)			420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Master: Calibration out of date 21-SEP-2000 7:21

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		1.027	Master		2.008	Master		0.5910
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			1.800 (Minimum) 2.000 (Nominal) 2.200 (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		0.4709	Master		0.9816	Master	EXCEEDS LIMIT	0.9591
	0.4000 (Minimum) 0.5000 (Nominal) 0.6000 (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	EXCEEDS LIMIT	0.8860	Master	EXCEEDS LIMIT	0.8263			
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)			0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)				

Master: Calibration out of date 21-SEP-2000 7:17

PAD WEAR NOT USED IN HLDS MEASUREMENT CALIBRATION.

Primary Equipment:
NPLC Cartridge

NPLC - B 79

Auxiliary Equipment:
NPLC Housing

NPH - B 82

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:
HNGS Sonde

HNGS - BA 27

Auxiliary Equipment:
HNGS Sonde Housing
Gamma Source Radioactive

HNSH - BA 27
GSR - U 135

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		40.59	Master		16.53	Master		1100
Before		40.60	Before		17.00	Before		1104
37.50 (Minimum) 40.00 (Nominal) 42.50 (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		145.1	Master		9.600	Master		33.94
Before		145.1	Before		11.14	Before		32.57
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		24.22						
Before		22.49						
15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 6-OCT-2000 5:44				Before: 21-DEC-2000 9:52				

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		40.70	Master		15.05	Master		1189
Before		40.59	Before		16.03	Before		1194
37.50 (Minimum) 40.00 (Nominal) 42.50 (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		145.1	Master		7.959	Master		33.01
Before		145.7	Before		8.040	Before		31.76
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		24.60						
Before		22.72						
15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 6-OCT-2000 5:44				Before: 21-DEC-2000 9:52				

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9848
Before		0.9904
0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		

Master: 6-OCT-2000 5:44

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			211.4	Master			8.367
	38.00 (Minimum)	40.00 (Nominal)	42.00 (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	EXCEEDS LIMIT		14.06	Master			0.9908				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				

Master: 6-OCT-2000 5:36

WEAK BACKGROUND COUNT RATE DUE TO WEAK INTERNAL SOURCE FOR BACKGROUND ONLY.

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			210.2	Master			7.339
	38.00 (Minimum)	40.00 (Nominal)	42.00 (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	EXCEEDS LIMIT		15.63	Master			0.9828				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				

Master: 6-OCT-2000 5:36

COMPANY:	Lamont Doherty	BOTTOM LOG INTERVAL	1766 m
WELL:	ODP Leg 193, Site 1189C (PCM-3A)	SCHLUMBERGER DEPTH	1766 m
FIELD:	Manus Basin, Roman Ruins	DEPTH DRILLER	1866 m
COUNTY:	Offshore	KELLY BUSHING	11.3 m
STATE:	Bismarck Sea	DRILL FLOOR	11 m
		GROUND LEVEL	-1700 m



**HLDS Density
 Natural Gamma Ray**