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OTHER SERVICES1  
 OS1: FMS  
 OS2: DIT  
 OS3: HNGS



**REMARKS: RUN NUMBER 1**

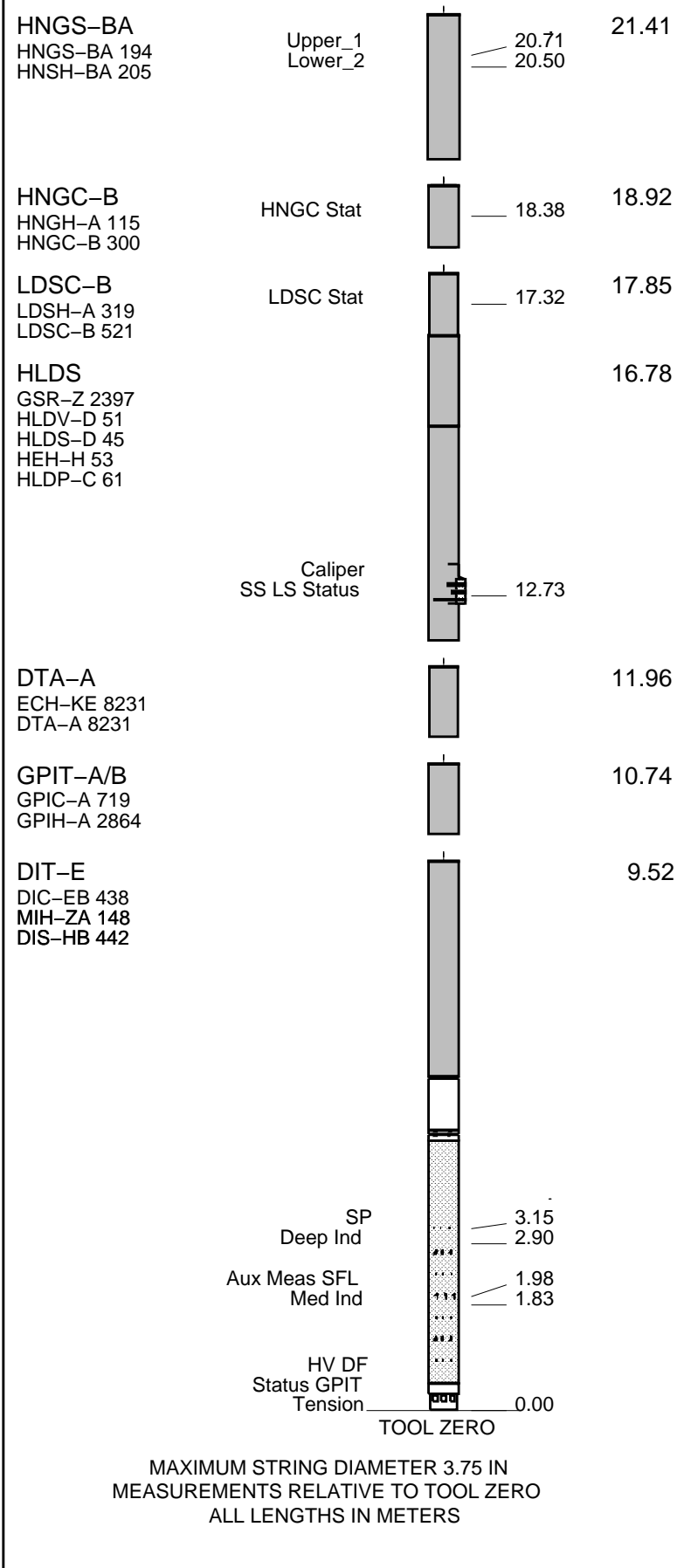
Hole U1368F at site SPG-6A was drilled and cored using the RCB system to a depth of 115mbsf.  
 Logs conducted to measure geophysical properties in-situ for comparison to surface measurements of core samples.  
 Depths originally measured from drill floor, but shifted to reflect wireline measured depth below sea bed at client request.  
 Original Depths below Mean Sea Level were: Sea Floor @ 3752m, Pipe @ 3785m, and TD at 3867m (driller's depth).  
 Depth adjusted to force wireline zero to be at driller's sea floor for compatibility with core data.  
 Logs recorded with Active Heave Compensator switched on continuously throughout logged interval.  
 APS and bowspring NOT run; tool eccented only by HDLS caliper during logging.  
 Density data recorded in standard resolution mode.  
 Caliper closed at 35m below sea floor, prior to entering pipe, to avoid tool damage.  
 Wireline maximum depth found to be 104.3m below sea floor due to hole obstruction, presumed to be in-fill.

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
<b>SURFACE EQUIPMENT</b>	
GSR-U 616008 WITM (DTS)-A	

DOWNHOLE EQUIPMENT	
LEH-QT LEH-QT 301	 23.22
DTC-H ECH-KC 2304 DTCH0-A 8798	CTEM TelStatu ToolStatu  22.05 22.33 _____ 21.41



Production String	(in) (m)	Well Schematic	(m) (in)	Casing String
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Kelly Bushing Elevation

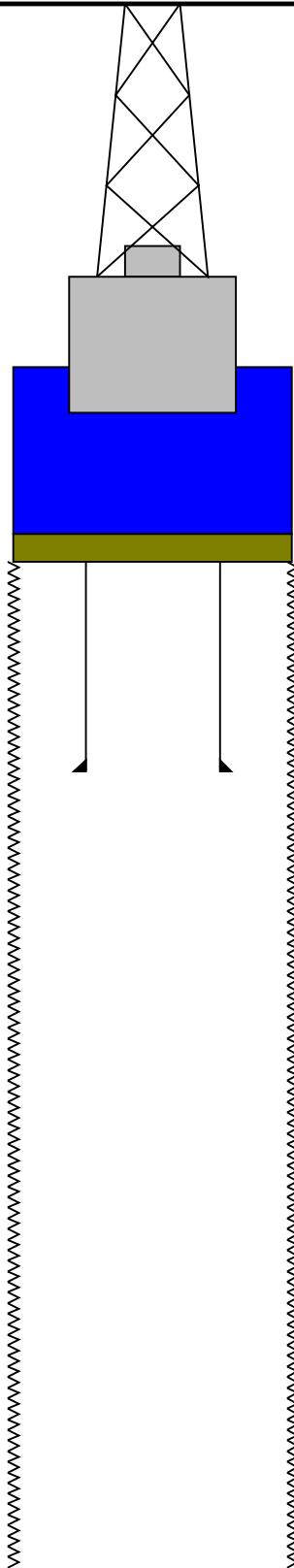
Derrick Floor Elevation

Mean Sea Level

-3752.0

-3752.0

-3741.0



0.0

33.0

115.0

5.500

11.430

Sea Floor

Pipe Tip

Total Depth (Driller)

**Schlumberger**

**First Pass  
1:200 Scale**

MAXIS Field Log

**Input DLIS Files**

DEFAULT	PI_LDL_NGS_014LUP	FN:14	PRODUCER	18-Nov-2010 04:33	3856.5 M	3806.2 M
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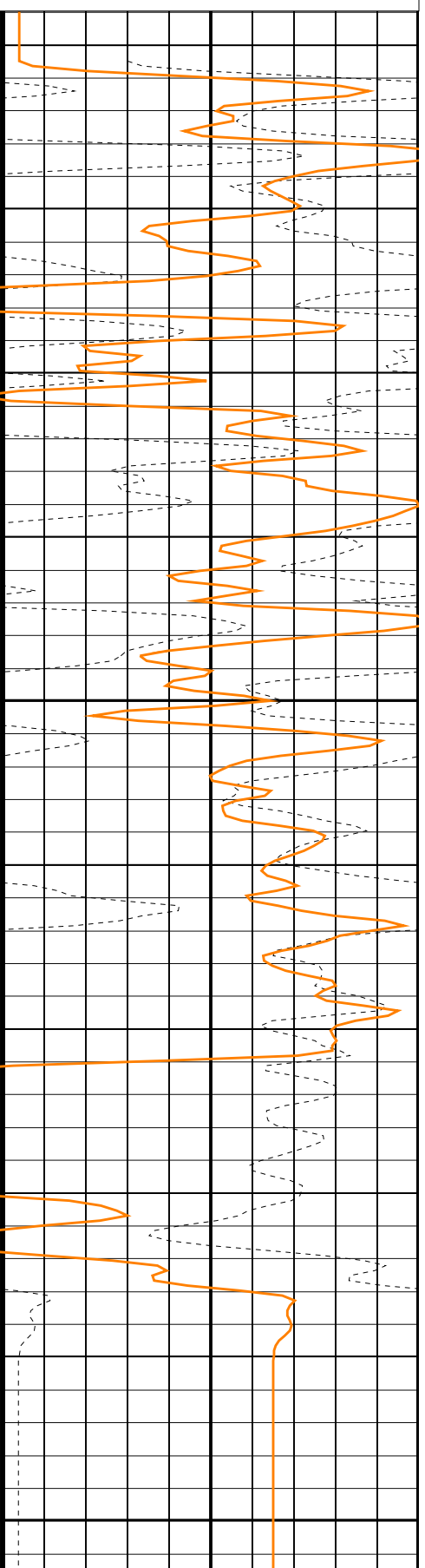
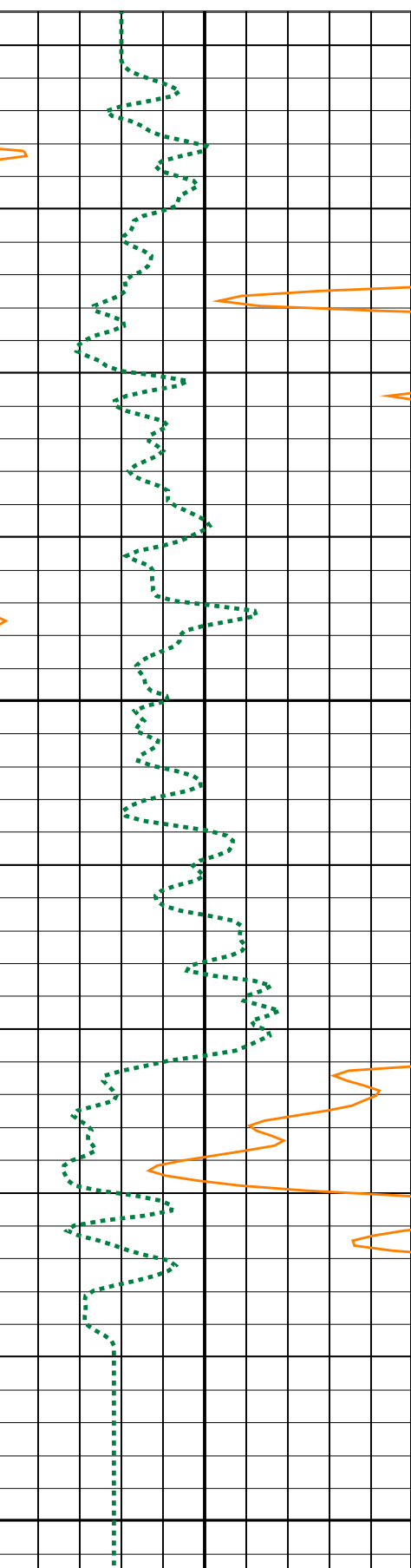
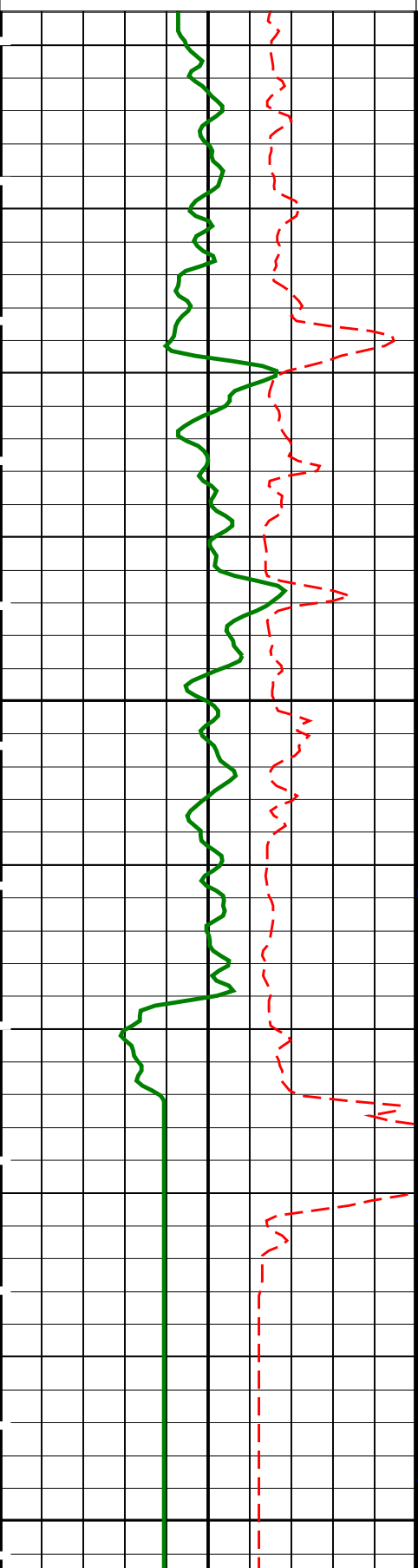
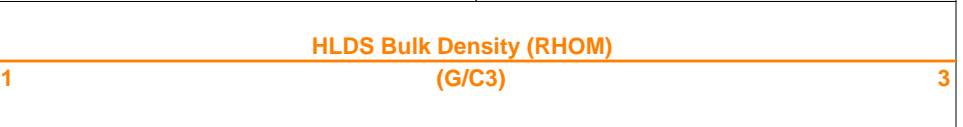
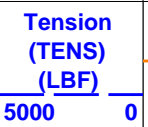
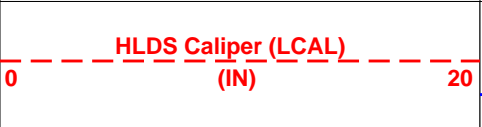
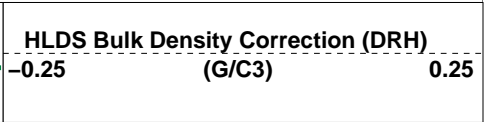
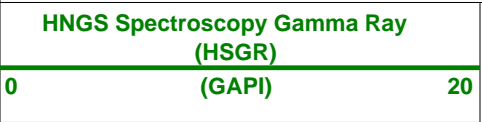
**Output DLIS Files**

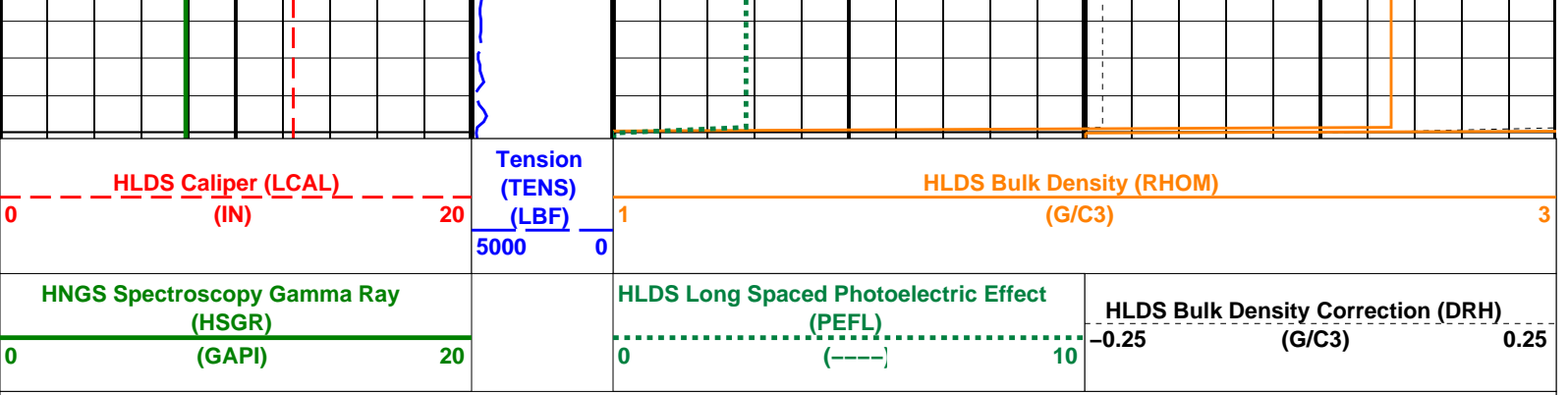
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**OP System Version: 17C0-154**

DIT-E	17C0-154	GPIT-A/B	SRPC-3971-Q1_2010_OP17
DTA-A	17C0-154	HLDS	SPC-3961-OP17_NUCL
LDSC-B	SPC-3961-OP17_NUCL	HNGC-B	SPC-3961-OP17_NUCL
HNGS-BA	SPC-3961-OP17_NUCL	DTC-H	17C0-154

Time Mark Every 60 S





PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction - E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
DGF1	Deep 10 kHz Gain Factor	0.997132	
DGF2	Deep 20 kHz Gain Factor	1.00938	
DGF4	Deep 40 kHz Gain Factor	1.02754	
DPH1	Deep 10 kHz Phase Shift	0.15104	DEG
DPH2	Deep 20 kHz Phase Shift	-0.0838482	DEG
DPH4	Deep 40 kHz Phase Shift	-1.28576	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	48.2003	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.3612	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.55884	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	102.222	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	63.6702	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	45.6558	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	1.03509	
MGF2	Medium 20 kHz Gain Factor	1.04346	
MGF4	Medium 40 kHz Gain Factor	1.07602	
MPH1	Medium 10 kHz Phase Shift	-0.29262	DEG
MPH2	Medium 20 kHz Phase Shift	-0.869665	DEG
MPH4	Medium 40 kHz Phase Shift	-2.31886	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	17.469	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.96289	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-10.7149	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	-94.2986	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-30.0523	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	14.4847	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
GPIT-A/B: General Purpose Inclinerometer			
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	15.8889	DEG

MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	

**HLDS: Hostile Litho-Density Sonde**

CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	STAN	
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	-0.00168311	
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	1.08311	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0282	

**System and Miscellaneous**

ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.03	G/C3
DO	Depth Offset for Playback	-3751.3	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	3867	M
TDD	Total Depth - Driller	3867.00	M
TDL	Total Depth - Logger	3856.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APSLiquidPorosity\_1    Vertical Scale: 1:200    Graphics File Created: 30-Nov-2010 17:53

**OP System Version: 17C0-154**

DIT-E	17C0-154	GPIT-A/B	SRPC-3971-Q1_2010_OP17
DTA-A	17C0-154	HLDS	SPC-3961-OP17_NUCL
LDSC-B	SPC-3961-OP17_NUCL	HNGC-B	SPC-3961-OP17_NUCL
HNGS-BA	SPC-3961-OP17_NUCL	DTC-H	17C0-154



### Input DLIS Files

DEFAULT PI\_LDL\_NGS\_014LUP FN:14 PRODUCER 18-Nov-2010 04:33 3856.5 M 3806.2 M

### Output DLIS Files

DEFAULT PI\_LDL\_NGS\_039PUP FN:45 PRODUCER 30-Nov-2010 17:53



## Second Pass 1:200 Scale

MAXIS Field Log

### Input DLIS Files

DEFAULT PI\_LDL\_NGS\_016LUP FN:16 PRODUCER 18-Nov-2010 05:00 3856.5 M 3746.4 M

### Output DLIS Files

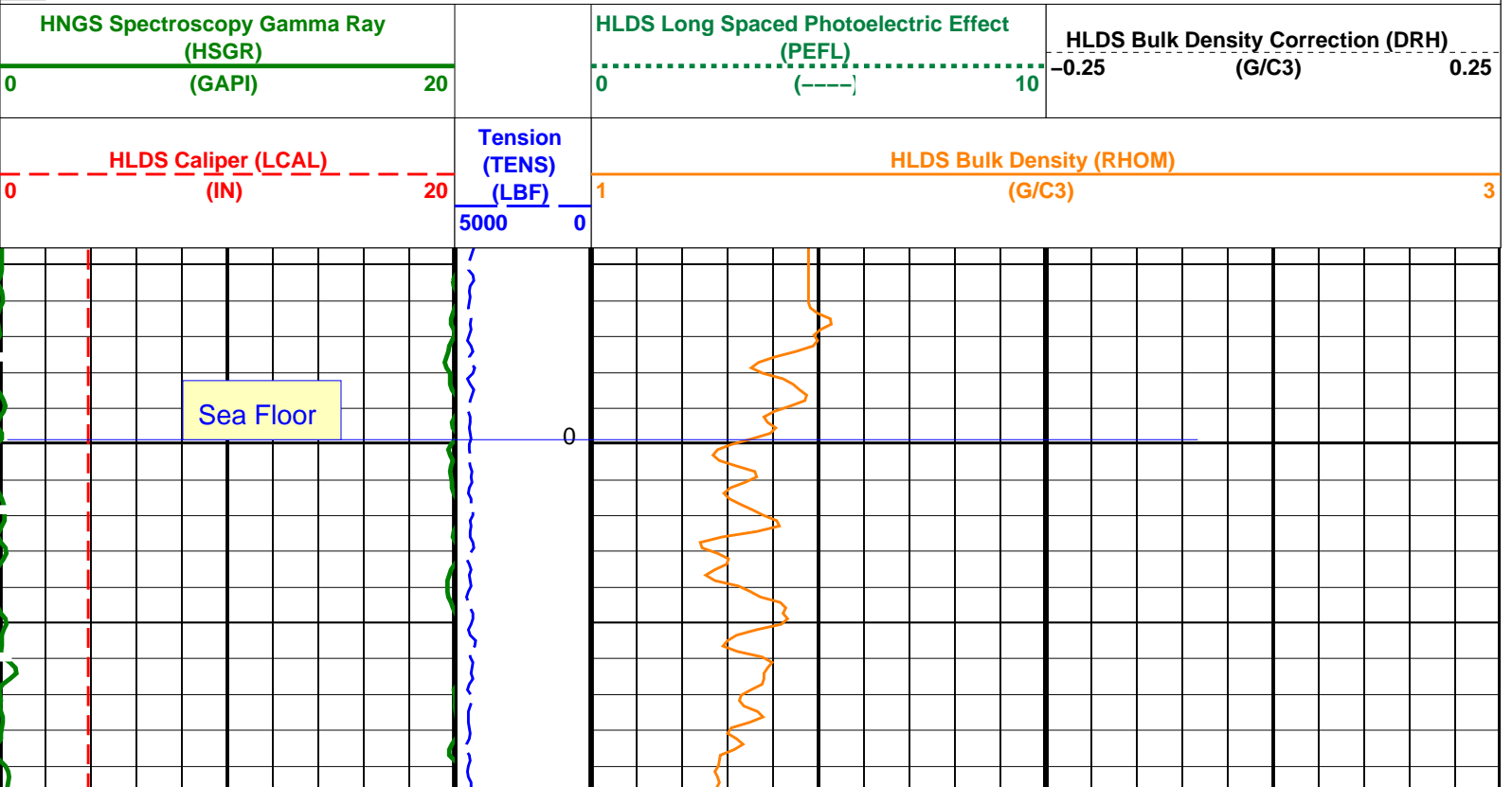
DEFAULT PI\_LDL\_NGS\_036PUP FN:42 PRODUCER 30-Nov-2010 17:41 104.4 M -5.5 M

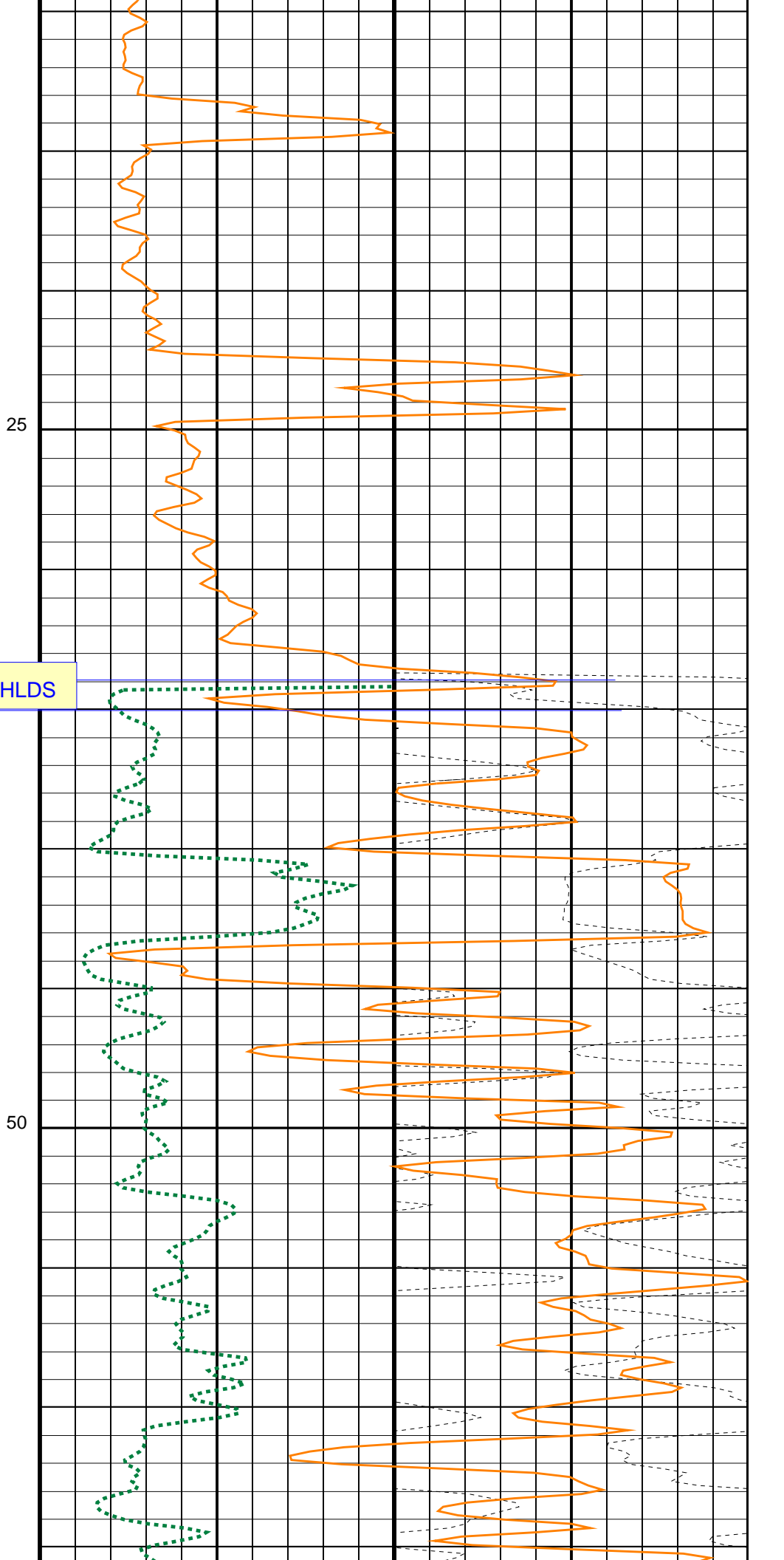
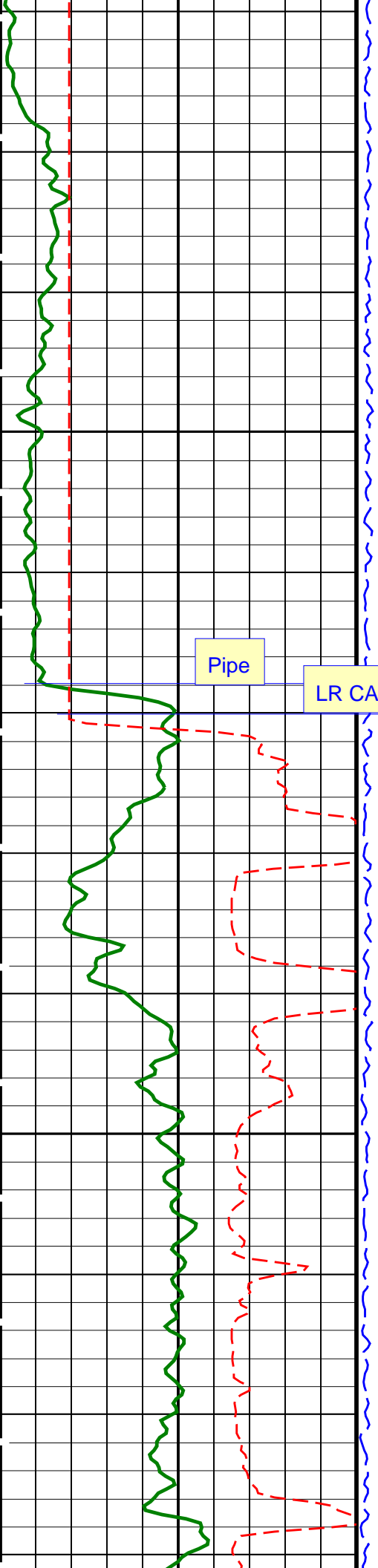
### OP System Version: 17C0-154

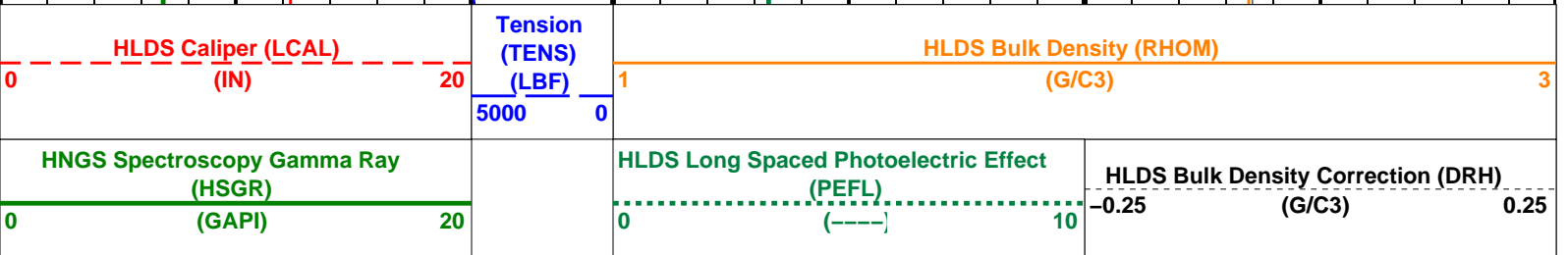
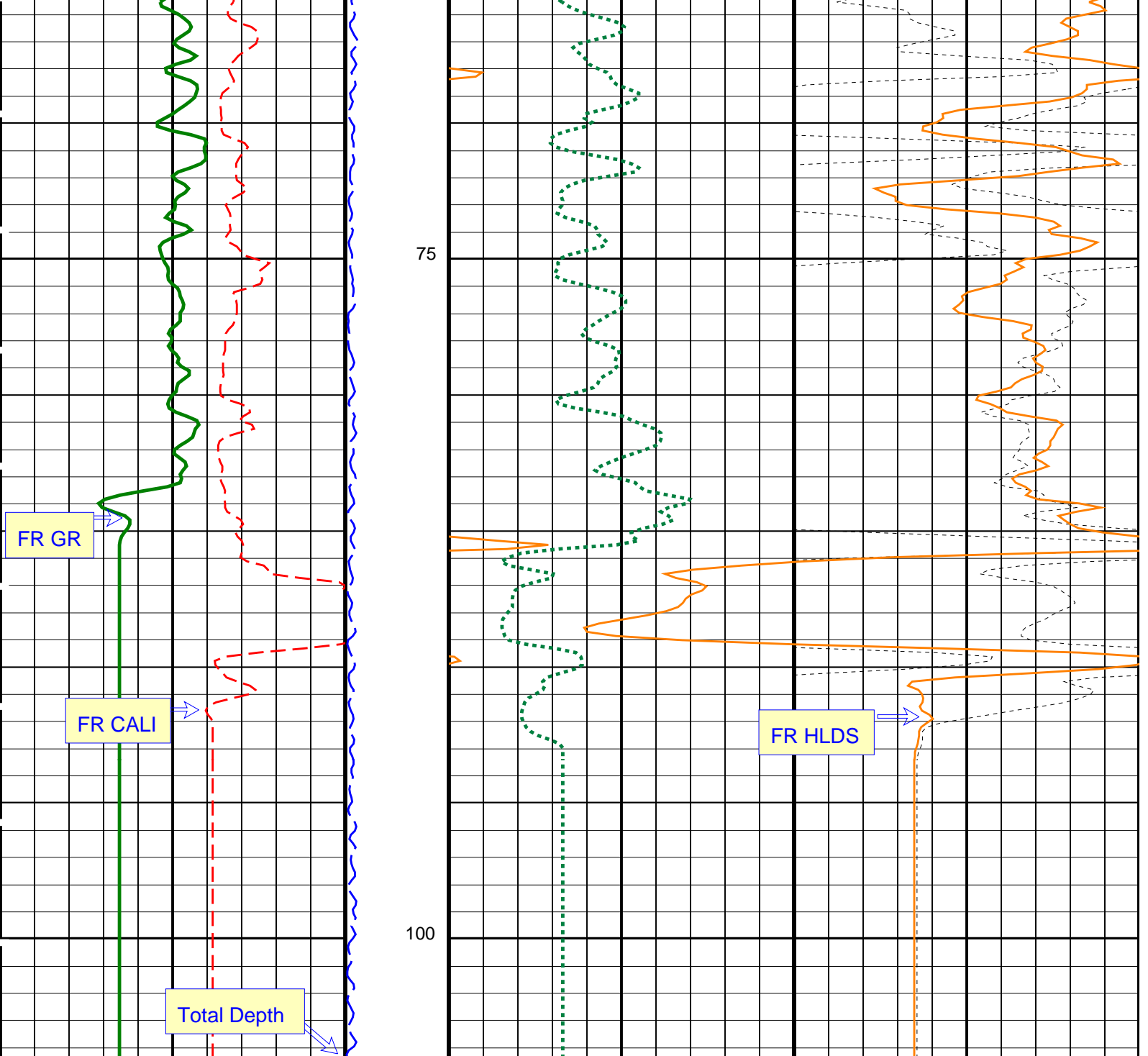
DIT-E	17C0-154	GPIT-A/B	SRPC-3971-Q1_2010_OP17
DTA-A	17C0-154	HLDS	SPC-3961-OP17_NUCL
LDSC-B	SPC-3961-OP17_NUCL	HNGC-B	SPC-3961-OP17_NUCL
HNGS-BA	SPC-3961-OP17_NUCL	DTC-H	17C0-154

#### PIP SUMMARY

Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	100 DEGC
DGF1	Deep 10 kHz Gain Factor	0.997132
DGF2	Deep 20 kHz Gain Factor	1.00938
DGF4	Deep 40 kHz Gain Factor	1.02754
DRH1	Deep 10 kHz Phase Shift	0.15104 DEG

DPH1	Deep 10 kHz Phase Shift	0.15104	DEG
DPH2	Deep 20 kHz Phase Shift	-0.0838482	DEG
DPH4	Deep 40 kHz Phase Shift	-1.28576	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	48.2003	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.3612	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.55884	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	102.222	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	63.6702	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	45.6558	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	1.03509	
MGF2	Medium 20 kHz Gain Factor	1.04346	
MGF4	Medium 40 kHz Gain Factor	1.07602	
MPH1	Medium 10 kHz Phase Shift	-0.29262	DEG
MPH2	Medium 20 kHz Phase Shift	-0.869665	DEG
MPH4	Medium 40 kHz Phase Shift	-2.31886	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	17.469	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.96289	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-10.7149	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	-94.2986	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-30.0523	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	14.4847	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
GPIT-A/B: General Purpose Incliner			
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	15.8889	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	STAN	
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	
HNGBA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGBA Detector 1 Barite Constant	1	
BAR2	HNGBA Detector 2 Barite Constant	1	
BHK	HNGBA 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	-0.00168311	
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	1.08311	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0282	
DIR: Directional Survey Computation			
SPED	East Departure of Starting Point	0	M
SPND	North Departure of Starting Point	0	M
SPVD	TVD of Starting Point	0	M
TAZI	Vertical Section Azimuth	0	DEG
TIED	East Departure of Tie-in Point	0	M
TIMD	Along-hole depth of Tie-in Point	0	M
TIND	North Departure of Tie-in Point	0	M
TIVD	TVD of Tie-in Point	0	M
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.03	G/C3
DO	Depth Offset for Playback	-3752.0	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	3867	M
TDD	Total Depth - Driller	3867.00	M
TDL	Total Depth - Logger	3856.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APSLiquidPorosity\_1 Vertical Scale: 1:200 Graphics File Created: 30-Nov-2010 17:41

### OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3971-Q1_2010_OP17
DTA-A	17C0-154	HLDS	SPC-3961-OP17_NUCL
LDSC-B	SPC-3961-OP17_NUCL	HNGC-B	SPC-3961-OP17_NUCL
HNGS-BA	SPC-3961-OP17_NUCL	DTC-H	17C0-154

### Input DLIS Files

DEFAULT	PI_LDL_NGS_016LUP	FN:16	PRODUCER	18-Nov-2010 05:00	3856.5 M	3746.4 M
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### Output DLIS Files

DEFAULT	PI_LDL_NGS_036PUP	FN:42	PRODUCER	30-Nov-2010 17:41
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## Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinometer Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 18–Nov–2010 4:06							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 18–Nov–2010 4:06							
TEMPERATURE REFERENCE :	N/A	N/A	19	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	
Hostile Litho–Density Sonde Wellsite Calibration – Background Measurement							
Master: 8–Oct–2010 6:23 Before: 17–Nov–2010 14:21 After: 18–Nov–2010 8:19							
SS Cs Resolution Bkg	9.000	8.424	7.783	7.706	–0.07681	1.800	%
LS Cs Resolution Bkg	9.000	8.570	8.047	8.132	0.08555	1.800	%
LSW1 Background	100.0	75.06	89.05	88.87	–0.1733	3.000	CPS
LSW2 Background	100.0	67.72	81.01	79.78	–1.227	3.000	CPS
LSW3 Background	200.0	152.2	186.6	185.2	–1.364	6.000	CPS
LSW4 Background	250.0	184.6	231.4	229.1	–2.287	7.500	CPS
LSW5 Background	600.0	415.9	534.1	534.0	–0.1058	18.00	CPS
SSW1 Background	100.0	72.64	87.33	87.73	0.3976	3.000	CPS
SSW2 Background	200.0	124.8	150.0	150.4	0.4818	6.000	CPS
SSW3 Background	500.0	335.1	421.8	420.3	–1.536	15.00	CPS
SSW4 Background	270.0	178.9	226.1	225.2	–0.9063	8.100	CPS
SSW5 Background	200.0	128.2	158.8	162.3	3.487	6.000	CPS
Hostile Litho–Density Sonde Wellsite Calibration – Aluminum Measurement							
Master: 8–Oct–2010 6:50							
LSW1 Aluminum	600.0	530.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	786.1	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	961.8	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	486.9	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	449.7	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2261	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6478	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9457	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3987	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	534.7	N/A	N/A	N/A	N/A	CPS
Hostile Litho–Density Sonde Wellsite Calibration – Lithology Measurement							
Master: 8–Oct–2010 6:46							
LSW1 Iron	400.0	365.8	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	644.5	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	860.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	446.3	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	415.4	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1704	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5482	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8750	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3718	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	489.6	N/A	N/A	N/A	N/A	CPS
Hostile Litho–Density Sonde Wellsite Calibration – Caliper Calibration							
Before: Calibration out of date 16–Jul–2009 11:33							
HLDS Caliper Small Ring	8.000	N/A	13.30	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	12.00	N/A	16.70	N/A	N/A	N/A	IN
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 6–Oct–2010 15:29 Before: 17–Nov–2010 14:22 After: 18–Nov–2010 8:20							
Na 511 Peak Loc	40.00	39.57	39.68	39.58	–0.1041	1.000	
Na 511 Peak Res	15.50	16.64	15.16	15.77	0.6103	2.000	%
High Voltage	1150	1192	1175	1202	26.77	N/A	V
Na 1785 Peak Loc	142.6	142.1	142.3	141.6	–0.6642	7.000	
Na 1785 Peak Res	8.500	8.982	8.689	8.776	0.08654	2.000	%
Temperature	15.50	32.61	30.62	28.63	–1.996	N/A	DEGC

Na Count Rate 45.00 27.66 25.88 25.76 -0.1222 8.000 CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 6-Oct-2010 15:29 Before: 17-Nov-2010 14:22 After: 18-Nov-2010 8:20

Na 511 Peak Loc	40.00	39.71	39.69	39.52	-0.1660	1.000	
Na 511 Peak Res	15.50	16.61	15.22	16.15	0.9270	2.000	%
High Voltage	1150	1114	1108	1107	-1.874	N/A	V
Na 1785 Peak Loc	142.6	142.6	141.9	141.4	-0.5118	7.000	
Na 1785 Peak Res	8.500	8.170	8.084	9.327	1.243	2.000	%
Temperature	15.50	33.14	30.64	30.33	-0.3121	N/A	DEGC
Na Count Rate	45.00	27.85	25.93	25.86	-0.06644	8.000	CPS

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

Master: 6-Oct-2010 15:29 Before: 17-Nov-2010 14:22 After: 18-Nov-2010 8:20

Coincidence Count Rate Ratio	1.000	0.9948	0.9982	0.9952	-0.003027	0.05000	
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Dual Induction - E / Equipment Identification

Primary Equipment:

Dual Induction Sonde	DIS - HB	442
Dual Induction Cartridge	DIC - EB	438

Auxiliary Equipment:

Mass Isolated Housing	MIH - ZA	148
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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		28.77	Before		0.9439	Before		8.813
	-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-10.00 (Minimum) 0 (Nominal) 10.00 (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		27.32	Before		0.9581	Before		8.584
	-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-10.00 (Minimum) 0 (Nominal) 10.00 (Maximum)	
Phase	IM Elect Real Offset 10 kHz MM/M	Value	Phase	IM Elect Real Gain 10 kHz	Value			
Before		82.62	Before		0.9516			
	-550.0 (Minimum) 0 (Nominal) 550.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 10 kHz MM/M	Value	Phase	IM Elect Quad Gain 10 kHz	Value			
Before		43.36	Before		0.9331			
	-550.0 (Minimum) 0 (Nominal) 550.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 18-Nov-2010 4:30

Dual Induction - E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value	Phase	ID Elect Real Gain 20 kHz	Value	Phase	ID Elect Phase 20 kHz DEG	Value
Before		11.36	Before		0.9703	Before		3.594
	-125.0 (Minimum) 0 (Nominal) 125.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (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		11.04	Before		0.9872	Before		3.968
	-125.0 (Minimum) 0 (Nominal) 125.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	IM Elect Real Offset 20 kHz MM/M	Value	Phase	IM Elect Real Gain 20 kHz	Value			
Before		33.84	Before		0.9938			
	-225.0 (Minimum) 0 (Nominal) 225.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 20 kHz MM/M	Value	Phase	IM Elect Quad Gain 20 kHz	Value			
Before		17.90	Before		0.9743			
	-225.0 (Minimum) 0 (Nominal) 225.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 18-Nov-2010 4:31

Dual Induction - E Wellsite Calibration

**Dual Induction - E Wellsite Calibration**

Induction Electronics (40 kHz)								
Phase	ID Elect Real Offset 40 kHz MM/M	Value	Phase	ID Elect Real Gain 40 kHz	Value	Phase	ID Elect Phase 40 kHz DEG	Value
Before		7.154	Before		0.9479	Before		13.31
	-85.00 (Minimum) 0 (Nominal) 85.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-20.00 (Minimum) 0 (Nominal) 20.00 (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		7.340	Before		0.9728	Before		13.12
	-85.00 (Minimum) 0 (Nominal) 85.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-20.00 (Minimum) 0 (Nominal) 20.00 (Maximum)	
Phase	IM Elect Real Offset 40 kHz MM/M	Value	Phase	IM Elect Real Gain 40 kHz	Value			
Before		21.66	Before		0.9879			
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 40 kHz MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value			
Before		11.54	Before		0.9683			
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 18-Nov-2010 4:32

**Dual Induction - E Wellsite Calibration**

**SFL Electronics**

Phase	SFL Voltage Offset MV	Value	Phase	SFL Voltage Gain	Value
Before		-0.4439	Before		0.9776
	-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		-0.01862	Before		0.9793
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Before: 18-Nov-2010 4:32

**Dual Induction - E Wellsite Calibration**

**Electronics Calibration Changes Files/Depth Intervals: 12: 3682.7 - 3859.2 14: 3856.5 - 3805.3 15: 3856.5 - 3844.3 16: 3856.5 - 3746.4**

Phase	ID (R > 27 OHM-M) MM/M	Value	Phase	ID (R < 27 OHM-M) %	Value	Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0.04393	After		0.0009296	After		0
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)			0 (Minimum) 0 (Nominal) 0.02000 (Maximum)	
Phase	IM (R > 27 OHM-M) MM/M	Value	Phase	IM (R < 27 OHM-M) %	Value			
After		0.04031	After		0.0006642			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				
Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value			
After		0.004648	After		0.0002071			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				

After: 18-Nov-2010 5:28

**General Purpose Inclinometer / Equipment Identification**

Primary Equipment:		
GPIT Cartridge - A	GPIC - A	719
Auxiliary Equipment:		
GPIT Housing	GPIH - A	2864

**Hostile Litho-Density Sonde / Equipment Identification**

Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	45
Hostile Litho Density High Voltage	HLDV - D	51
Gamma Source Radioactive	GSR - Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	61
Hostile Litho Density High Voltage Housing	HLDVH - D	51



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		8.570	Master		75.06
Before		7.783	Before		8.047	Before		89.05
After		7.706	After		8.132	After		88.87
7.000 (Minimum)		9.000 (Nominal)	11.00 (Maximum)		7.000 (Minimum)		9.000 (Nominal)	11.00 (Maximum)
55.00 (Minimum)		100.0 (Nominal)	150.0 (Maximum)		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		67.72	Master		152.2	Master		184.6
Before		81.01	Before		186.6	Before		231.4
After		79.78	After		185.2	After		229.1
50.00 (Minimum)		100.0 (Nominal)	140.0 (Maximum)		110.0 (Minimum)		200.0 (Nominal)	290.0 (Maximum)
140.0 (Minimum)		250.0 (Nominal)	360.0 (Maximum)		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		415.9	Master		72.64	Master		124.8
Before		534.1	Before		87.33	Before		150.0
After		534.0	After		87.73	After		150.4
330.0 (Minimum)		600.0 (Nominal)	830.0 (Maximum)		55.00 (Minimum)		100.0 (Nominal)	150.0 (Maximum)
100.0 (Minimum)		200.0 (Nominal)	260.0 (Maximum)		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		335.1	Master		178.9	Master		128.2
Before		421.8	Before		226.1	Before		158.8
After		420.3	After		225.2	After		162.3
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)		110.0 (Minimum)		200.0 (Nominal)	270.0 (Maximum)
Master: 8-Oct-2010 6:23			Before: 17-Nov-2010 14:21			After: 18-Nov-2010 8:19		

Litho-Density Spectroscopy Cartridge - B / Equipment Identification

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

Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

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

Hostile Natural Gamma Ray Sonde / Equipment Identification

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

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value

Master		39.57	Master		16.64	Master		1192
Before		39.68	Before		15.16	Before		1175
After		39.58	After		15.77	After		1202
37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.1	Master		8.982	Master		32.61
Before		142.3	Before		8.689	Before		30.62
After		141.6	After		8.776	After		28.63
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		27.66						
Before		25.88						
After		25.76						
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 6-Oct-2010 15:29			Before: 17-Nov-2010 14:22			After: 18-Nov-2010 8:20		

Hostile Natural Gamma Ray Sonde Wellsite Calibration								
Detector 2 Check								
Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.71	Master		16.61	Master		1114
Before		39.69	Before		15.22	Before		1108
After		39.52	After		16.15	After		1107
37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.6	Master		8.170	Master		33.14
Before		141.9	Before		8.084	Before		30.64
After		141.4	After		9.327	After		30.33
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		27.85						
Before		25.93						
After		25.86						
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 6-Oct-2010 15:29			Before: 17-Nov-2010 14:22			After: 18-Nov-2010 8:20		

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9948
Before		0.9982
After		0.9952
0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		
Master: 6-Oct-2010 15:29		
Before: 17-Nov-2010 14:22		
After: 18-Nov-2010 8:20		

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge  
DTC-H Telemetry Cartridge

DTCH - A  
DTCH - A

8798

Company: **Lamont Doherty**

**Schlumberger**

Well: **Expedition 329 Site U1368F**

Field: **South Pacific Gyre**

Rig: **JOIDES Resolution**

Country: **USA**

Litho-Density