Schlumberger

Company: Lamont Doherty

Well: ODP Leg 201, Site 1230A PRU-4A
Field: Peru Margin
Rig: JOIDES Resolution Ocean: Pacific

Rig: JOIDES Resolution
Field: Peru Margin
Location: 9 Deg 06.7529' S Latitude
Well: ODP Leg 201, Site 1230A PRU-4
Company: Lamont Doherty

IPLT Triple Combo
with Phasor Induction
Gamma Ray

LOCATION

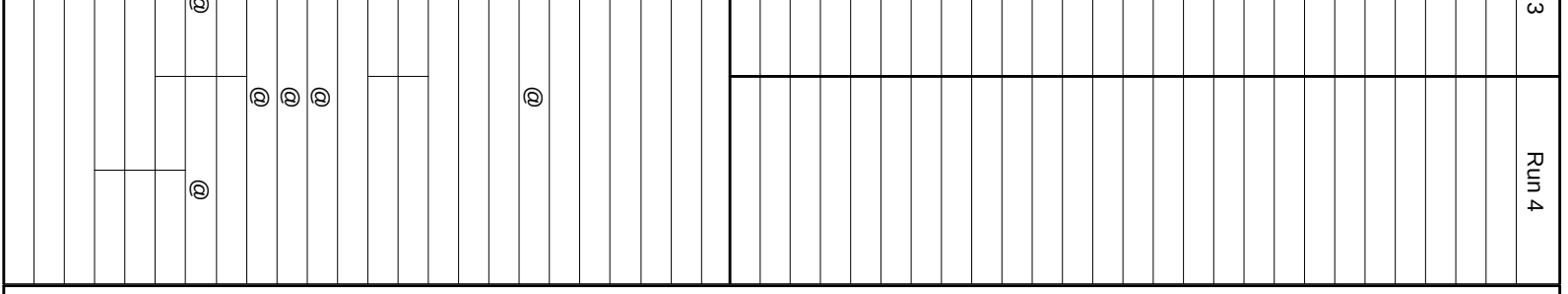
9 Deg 06.7529' S Latitude
80 Deg 35.01' W Longitude

Elev.: K.B. 11.3 m
G.L. -5097 m
D.F. 11 m

Permanent Datum: MSL — Elev.: 0 m
Log Measured From: RKB — 11.3 m above Perm. Datum
Drilling Measured From: RKB

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

	Run 1	Run 2	Run 3
Logging Date	16-Mar-2002		
Run Number	1		
Depth Driller	5375 m		
Schlumberger Depth	5379 m		
Bottom Log Interval	5373 m		
Top Log Interval	5099 m		
Casing Driller Size @ Depth	0.000 in @ 5178 m	@	@
Casing Schlumberger	5179 m		
Bit Size	11.438 in		
Type Fluid In Hole	Sepiolite/Saltwater		
MUD Density / Viscosity	1.07 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	mudpit		
RM @ Measured Temperature	0.235 ohm.m @ 33 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC	none / none		
RM @ MRT / RMF @ MRT	0.421 @ 9 / @ 9	@ / @	@ / @
Maximum Recorded Temperatures	9 degC		
Circulation Stopped / Time	16-Mar-2002 / 3:00		
Logger On Bottom / Time	16-Mar-2002 / 8:45		
Unit Number / Location	99 / Houston ODP		
Recorded By	K. Swain		
Witnessed By	Gilles Guerin		



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OTHER SERVICES1	OTHER SERVICES2
OS1: DITE/APS/HLDT	OS1:
OS2: MEST/DSST	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole cored with APC, XCB	
Log presented in meters below rig floor.	
Lamont Temperature tool (TAP) was run on Triple Combo.	
Wireline Heave Compensator (WHC) was used on all descents.	
Sepliolite mud was used to displace the hole during the wiper trip.	
Drillers TD 5375 mbrf, Driller pipe depth: 5178 mbrf, Sea Floor: 5097 mbrf.	
Drill Pipe Schlumberger 5179 mbrf.	
Sea Floor Schlumberger 5099 mbrf.	
Software bug shows APS calibration not done for part of master calibration.	
Low background countrate on HNGS master calibration signifies a weak internal	
source used for check of detector and not used in calibration.	

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 10C0-306
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

SFT-281 24
SFT-178 4722
GSR-U 135
GSR-U/Y

WITM (DTS)-A 2

DOWNHOLE EQUIPMENT

LEH-QT 35.14
LEH-QT 1726

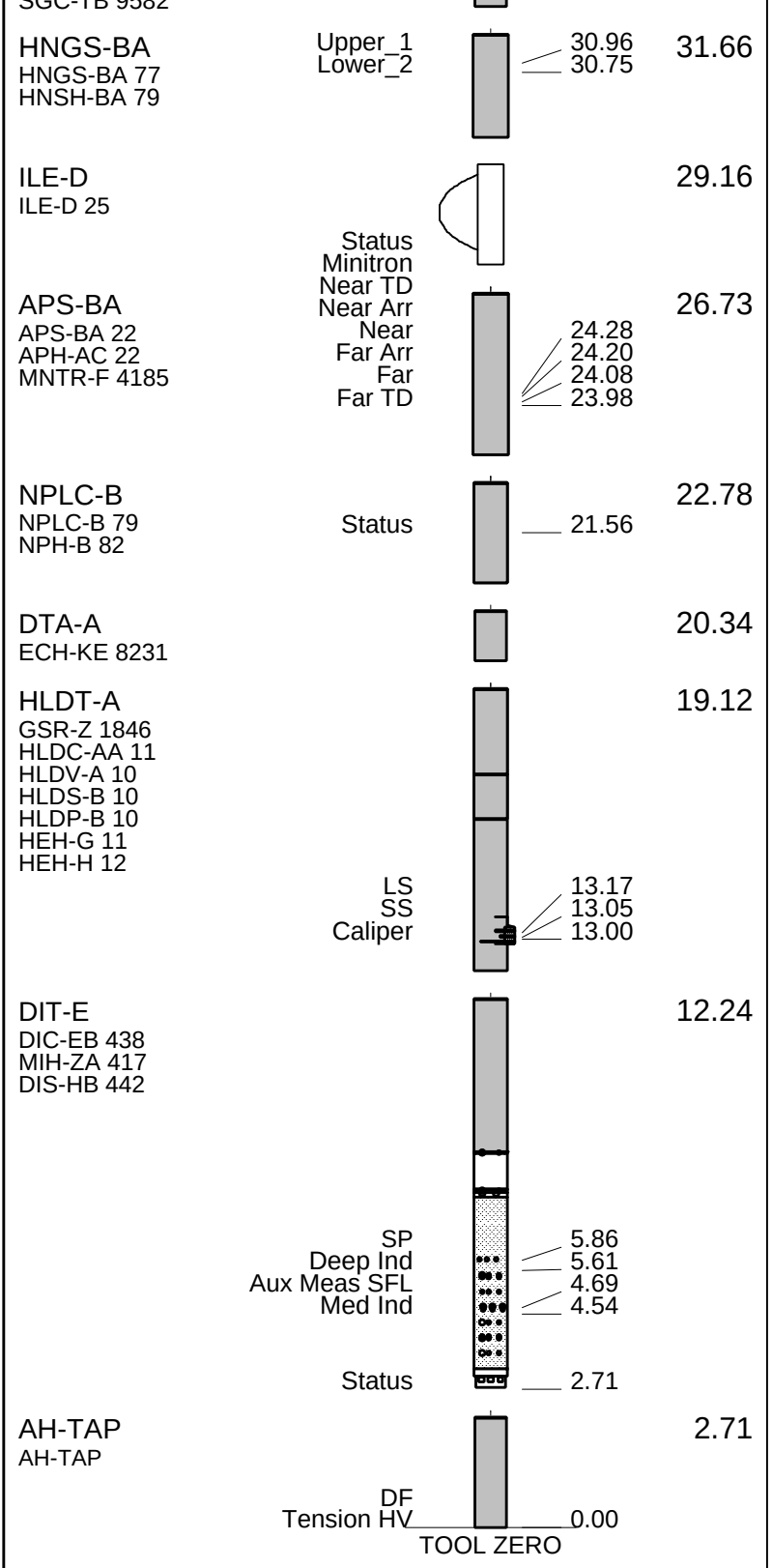
CTEM
TelStatus 33.98
ToolStatu 33.34

DTC-H 34.25
ECH-KC 9343

Gamma Ray 33.06

SGT-N 33.34
SGH-K 2448
SGC-TR 9582

RUN 2



MAXIMUM STRING DIAMETER 3.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_006LUP	FN:8	PRODUCER	16-Mar-2002 08:47	5383.5 M	5079.3 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_021PUP	FN:32	PRODUCER	17-Mar-2002 13:54	5383.5 M	5084.2 M
TCOM	PI_LDL_APS_NGS_021PUP	FN:33	PRODUCER	17-Mar-2002 13:54	5383.5 M	5084.2 M

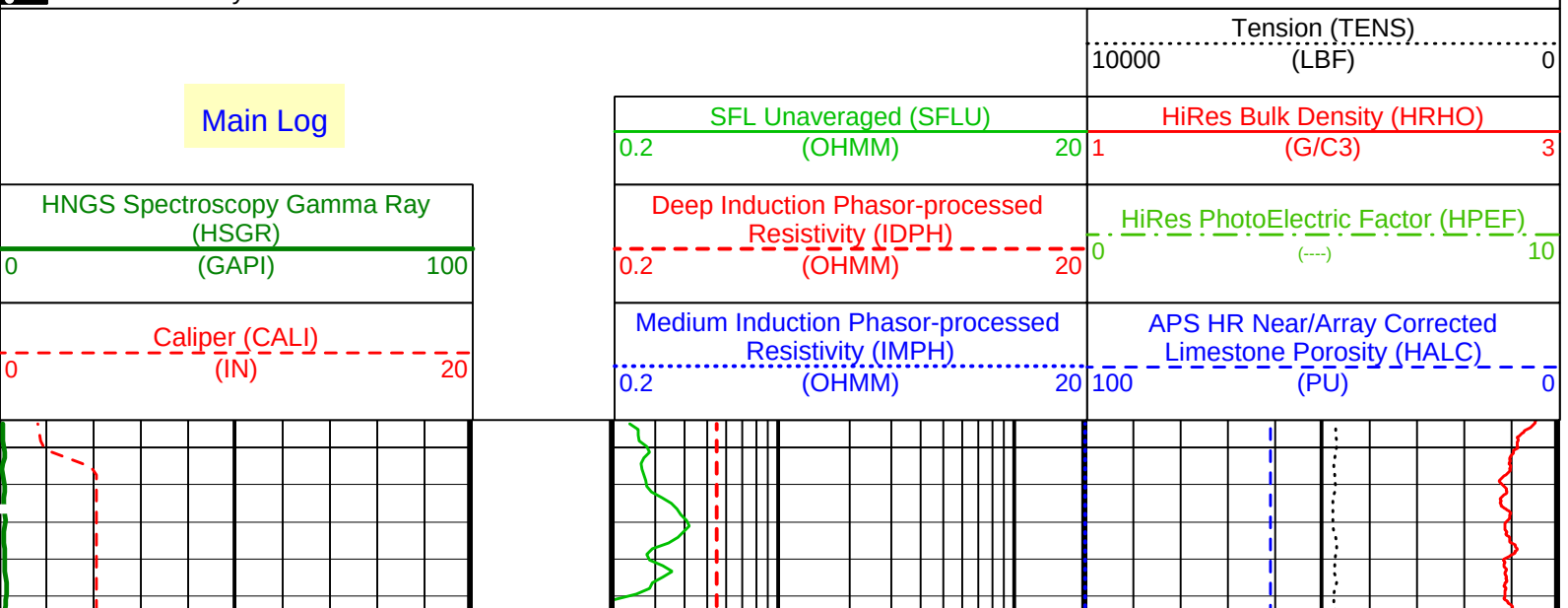
OP System Version: 10C0-306

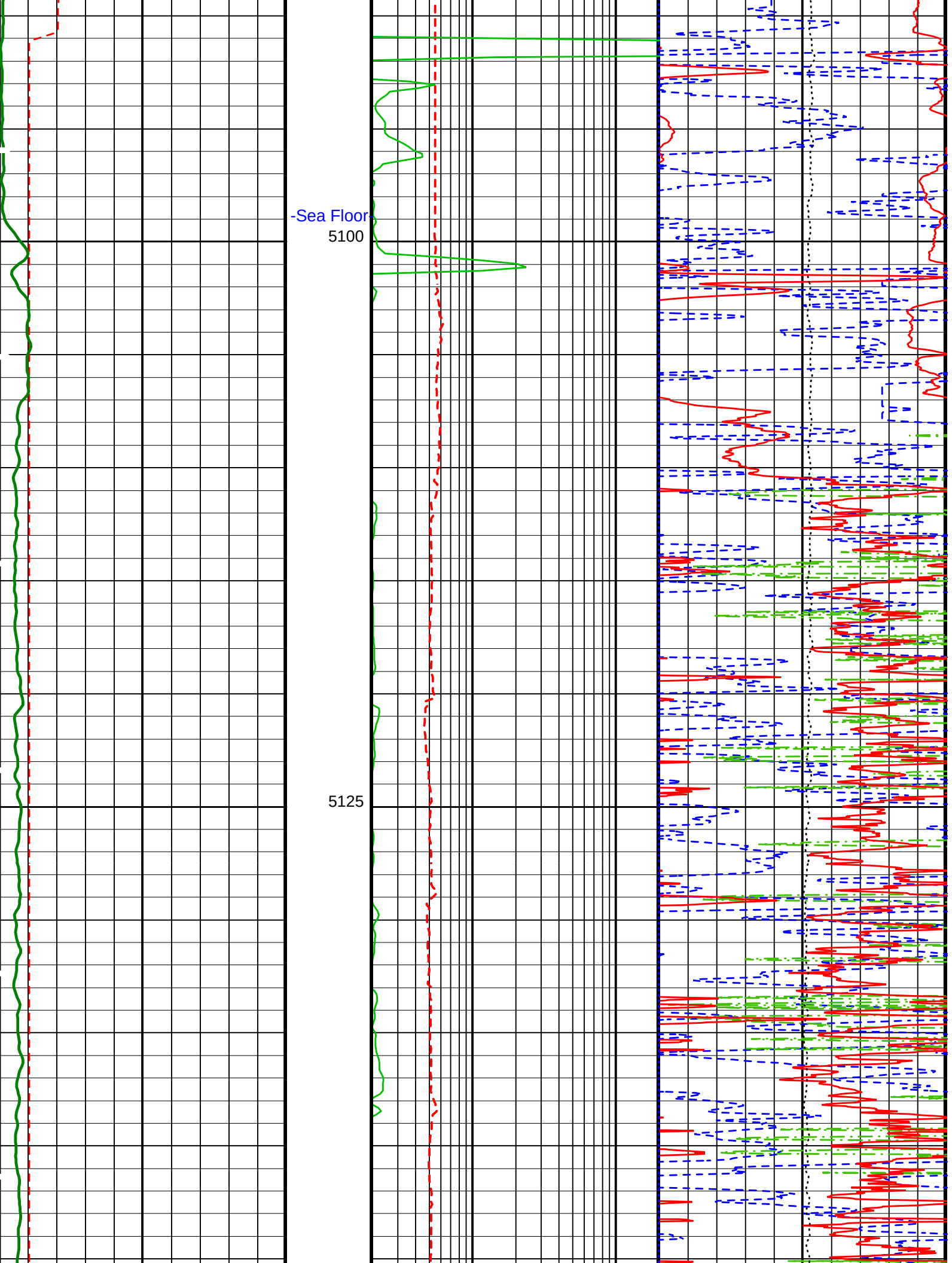
MCM

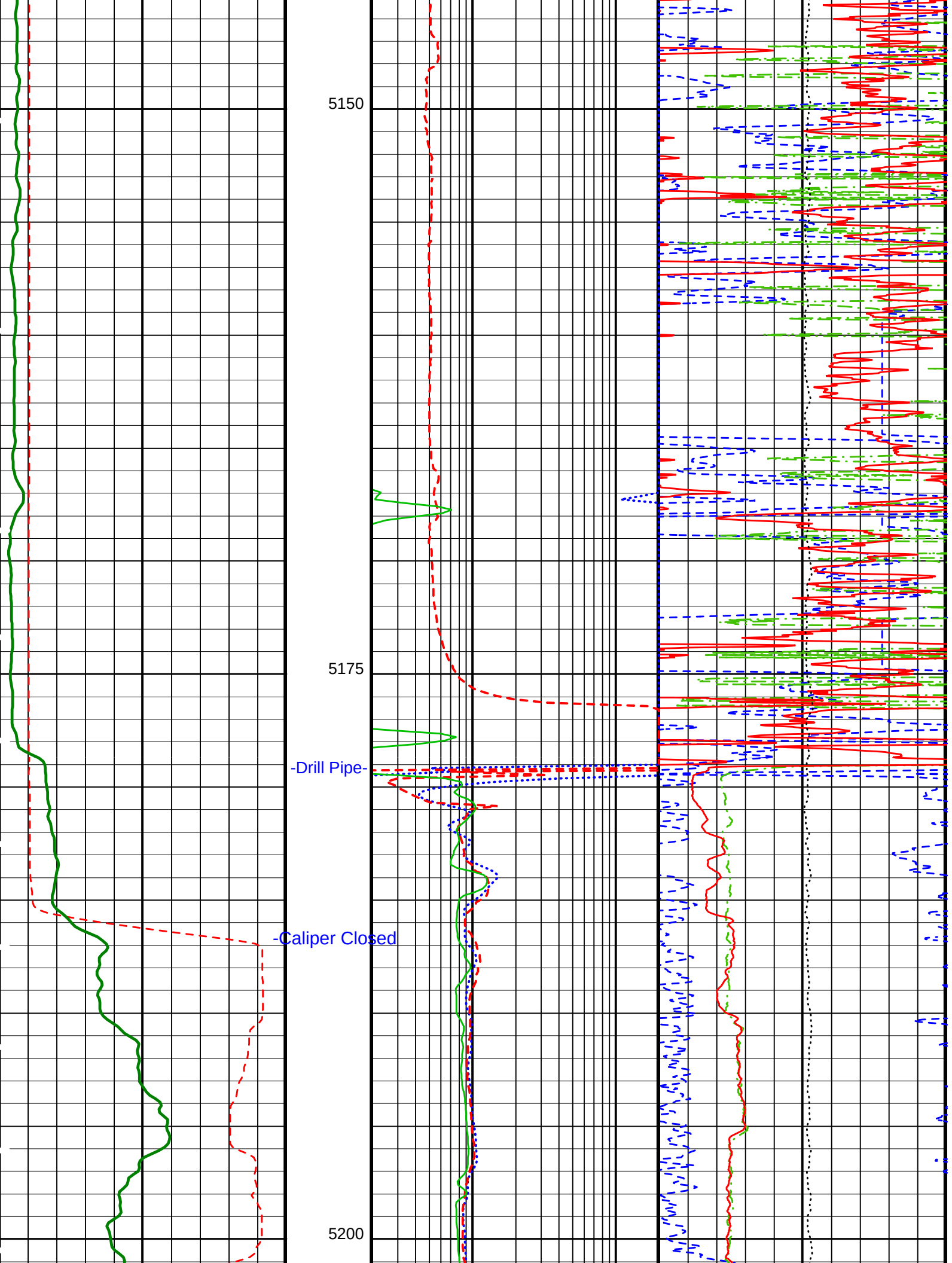
DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

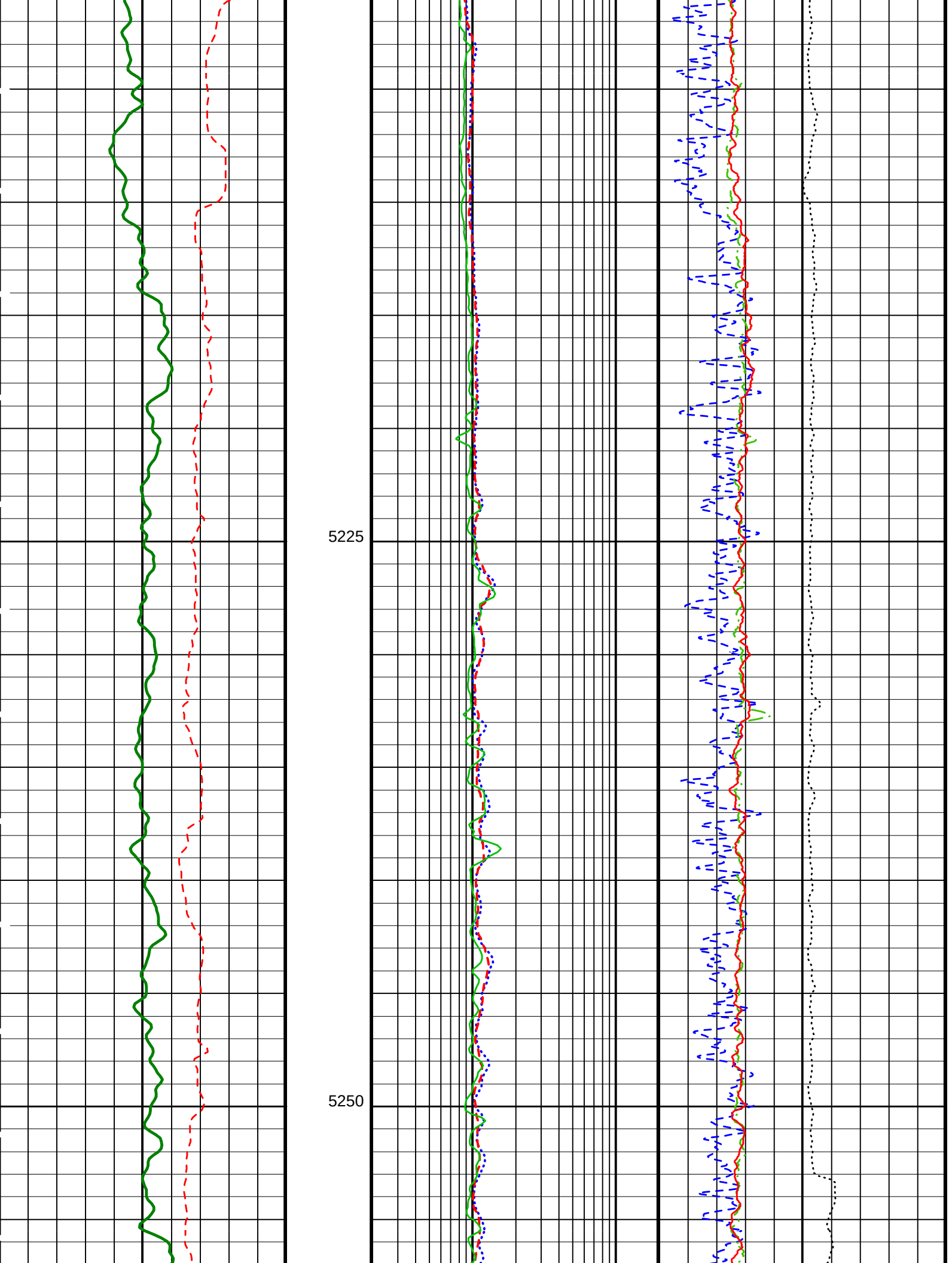
PIP SUMMARY

Time Mark Every 60 S




-Sea Floor-
5100
5125


5150
5175
-Drill Pipe-
-Caliper Closed
5200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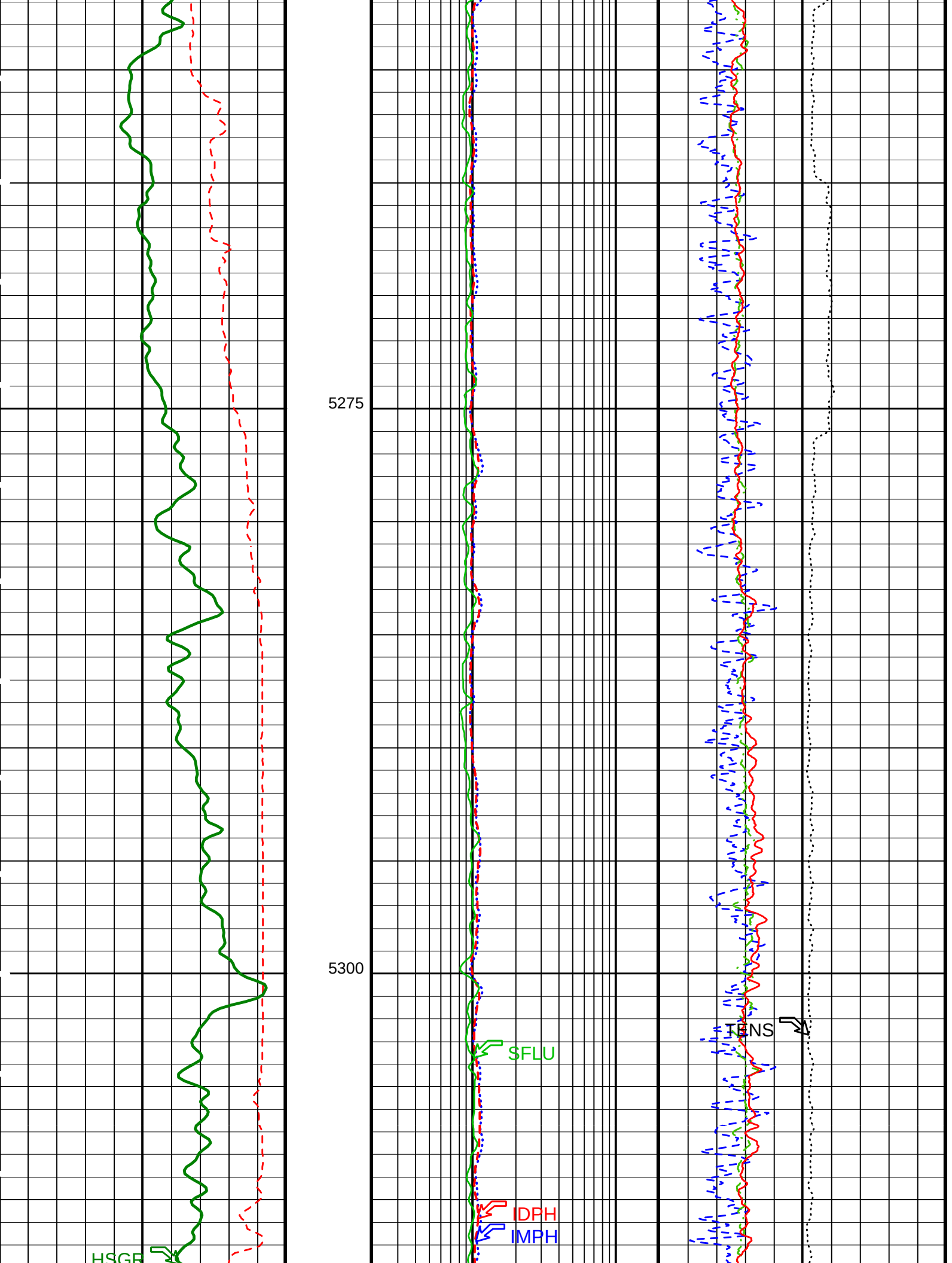
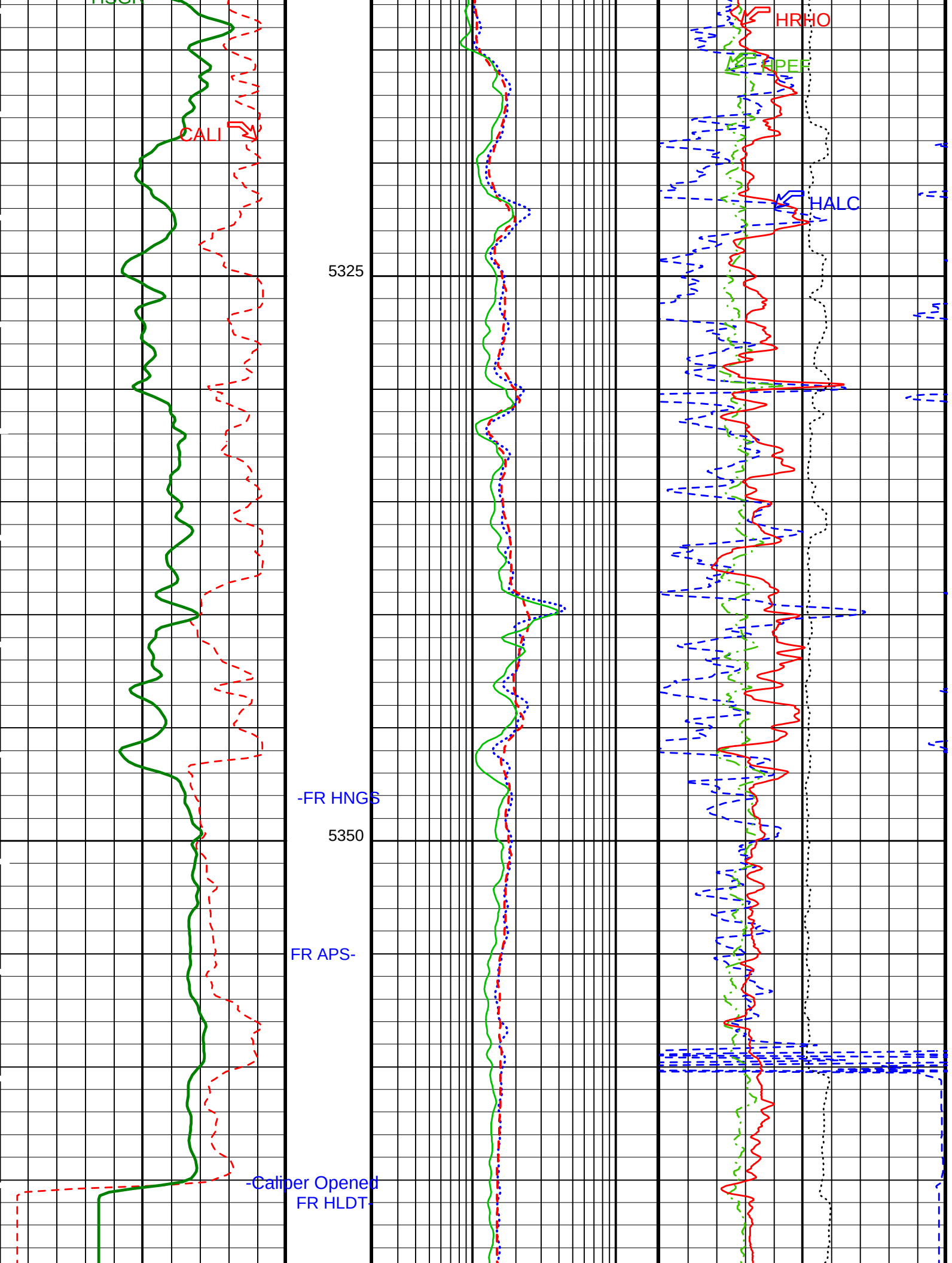
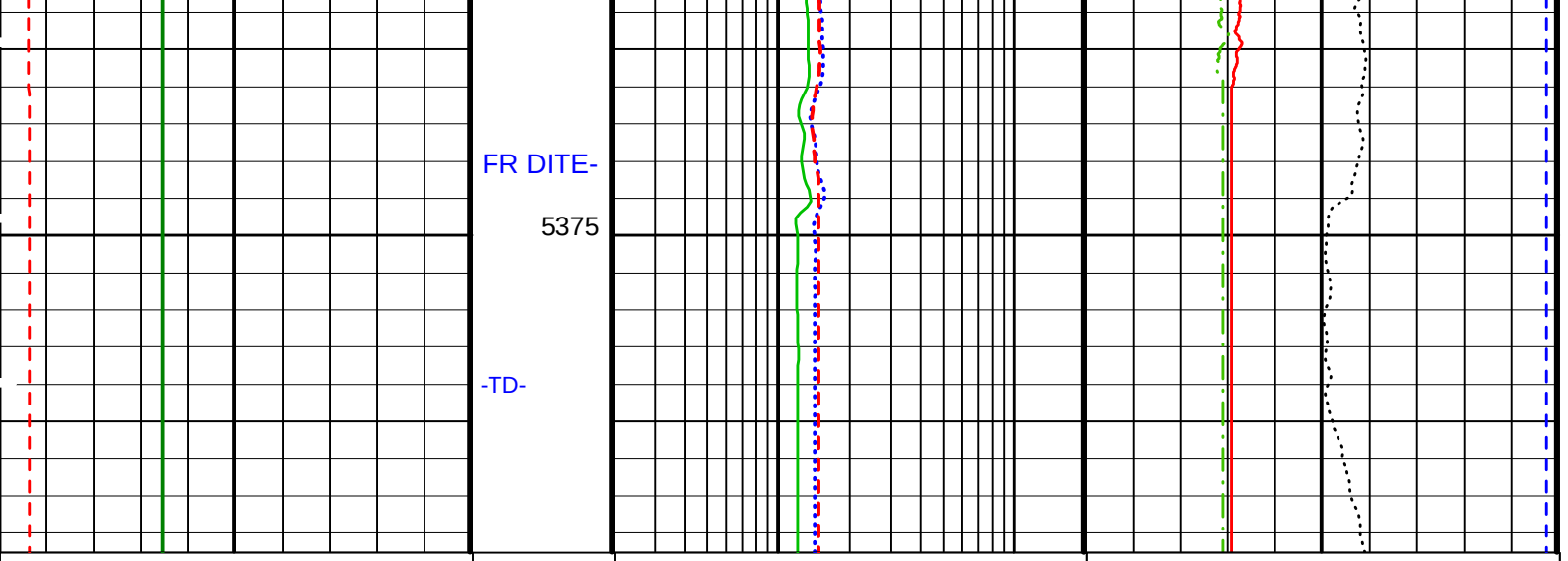
5250


5275
5300
SFLU
IDPH
IMPH
TENS
HSGR


HSGR
CALI
HRHO
PEF
HALC
5325
-FR HNGS
5350
FR APS-
-Caliper Opened
FR HLDT-



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)	40	DEGF
DGF2	Deep 20 kHz Gain Factor	1.00789	
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	
ITEN	DIT-E Temperature Enable	ENABLE	
MGF2	Medium 20 kHz Gain Factor	1.02964	
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
SFCR	SFL Channel Ratio	1000	
SHT	Surface Hole Temperature	68	DEGF
	HLDT-A: Hostile Environment Litho Density - A		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
QPPS	Quicklook Processing Pe Select	PEFL	
WMUD	Mud Weight	1.07	G/C3
	APS-BA: Accelerator-Porosity Tool		
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1968.98	V
ABOS	APS Neutron Burst-Off Background Subtraction Switch	ON	
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2052.03	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	

ANSD	APS Near Detector High Voltage Setting	1748.3	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
NARC	APS Near/Array Calibration Ratio	1.0631	
NFRC	APS Near/Far Calibration Ratio	0.902243	
SHT	Surface Hole Temperature	68	DEGF
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)	40	DEGF
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	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	0.000145375	
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	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973008	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.974631	
SGT-N: Scintillation Gamma-Ray - N			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.07	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	17647.6	FT

Format: HLDT_HR_TCOM Vertical Scale: 1:200 Graphics File Created: 17-Mar-2002 13:54

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_006LUP	FN:8	PRODUCER	16-Mar-2002 08:47	5383.5 M	5079.3 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_021PUP	FN:32	PRODUCER	17-Mar-2002 13:54		
TCOM	PI_LDL_APS_NGS_021PUP	FN:33	PRODUCER	17-Mar-2002 13:54		

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_008LUP	FN:11	PRODUCER	16-Mar-2002 09:52	5383.5 M	5202.5 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_023PUP	FN:35	PRODUCER	17-Mar-2002 14:07	5383.5 M	5207.7 M
TCOM	PI_LDL_APS_NGS_023PUP	FN:36	PRODUCER	17-Mar-2002 14:07	5383.5 M	5207.7 M

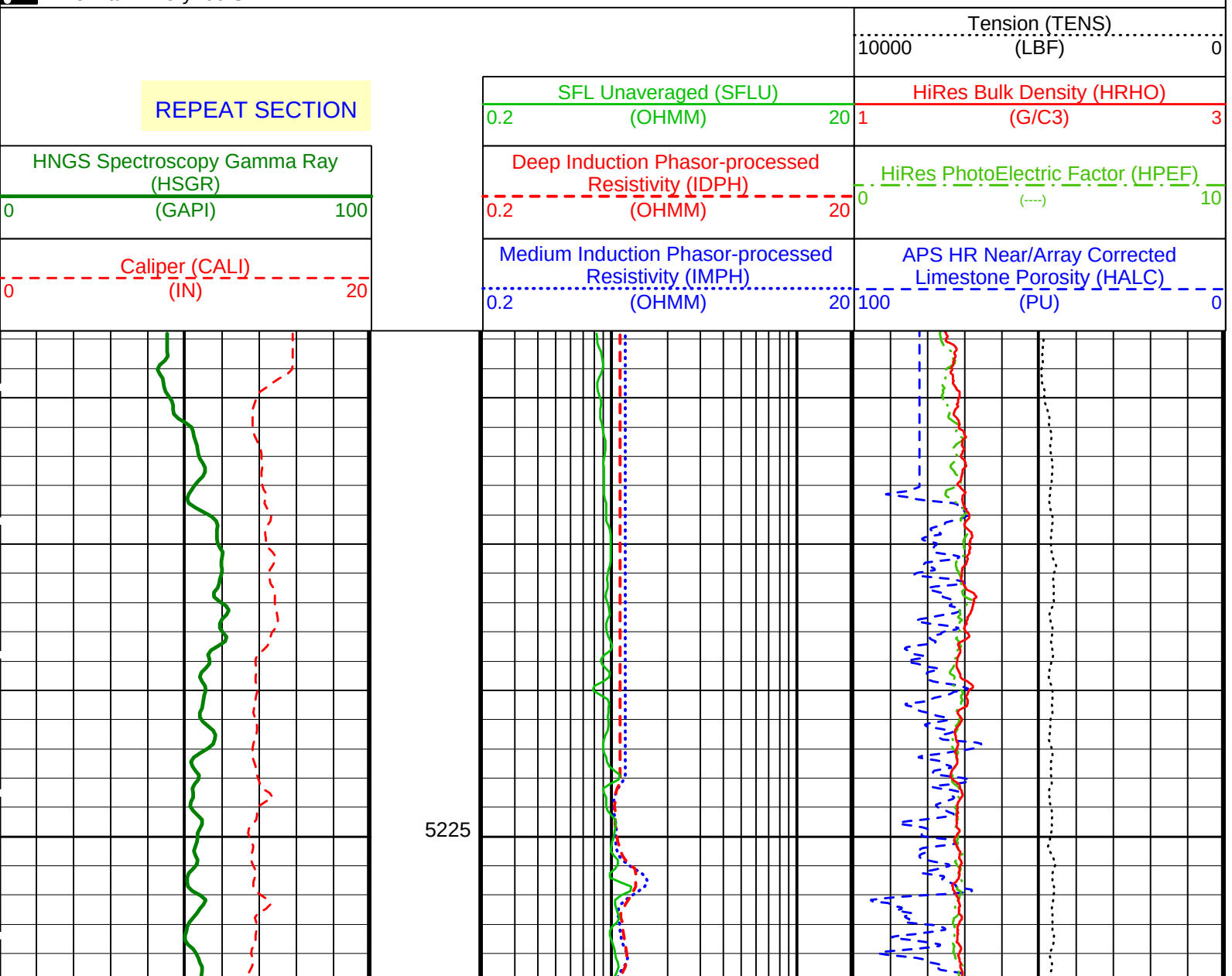
OP System Version: 10C0-306

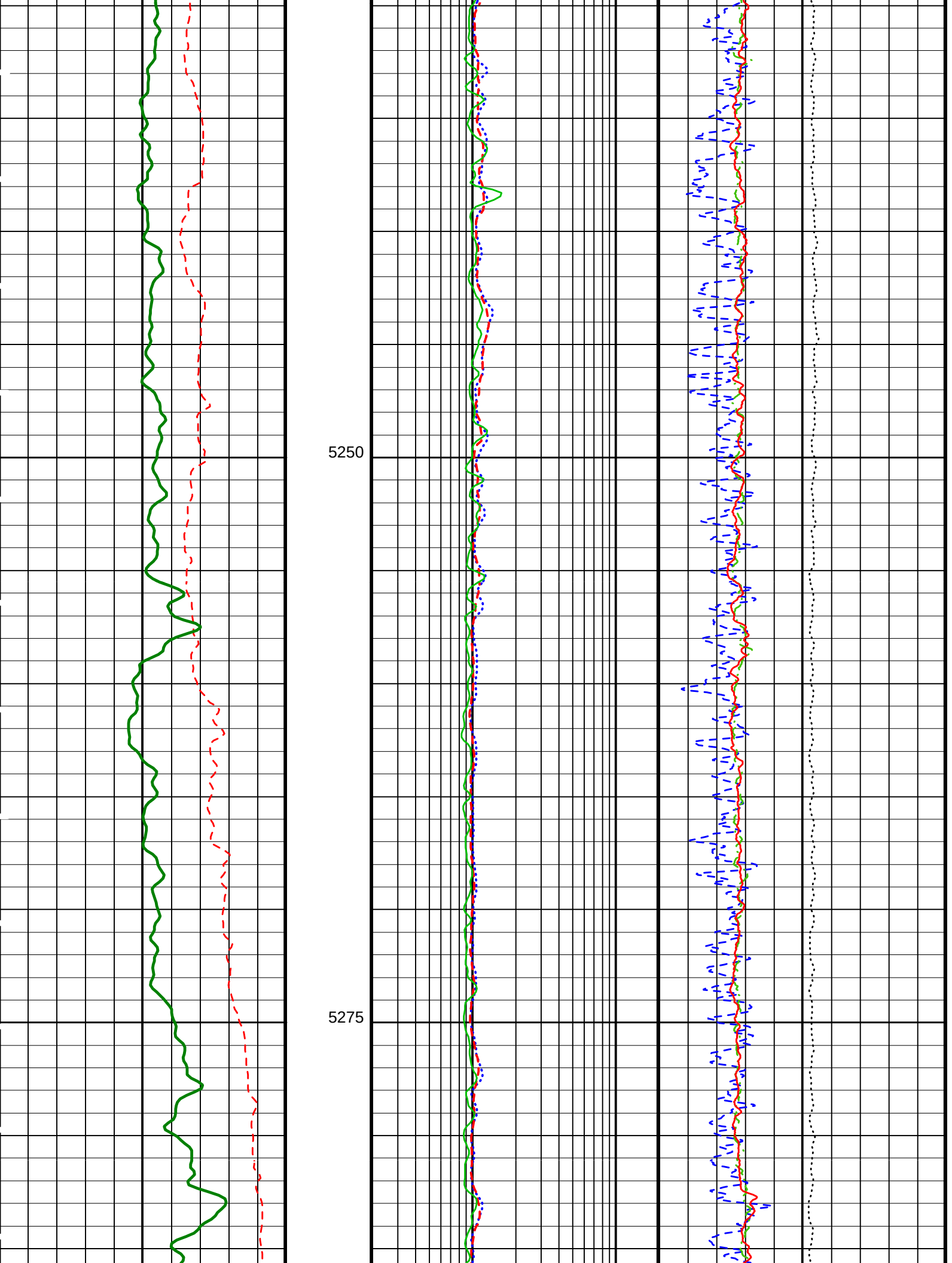
MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

PIP SUMMARY

Time Mark Every 60 S

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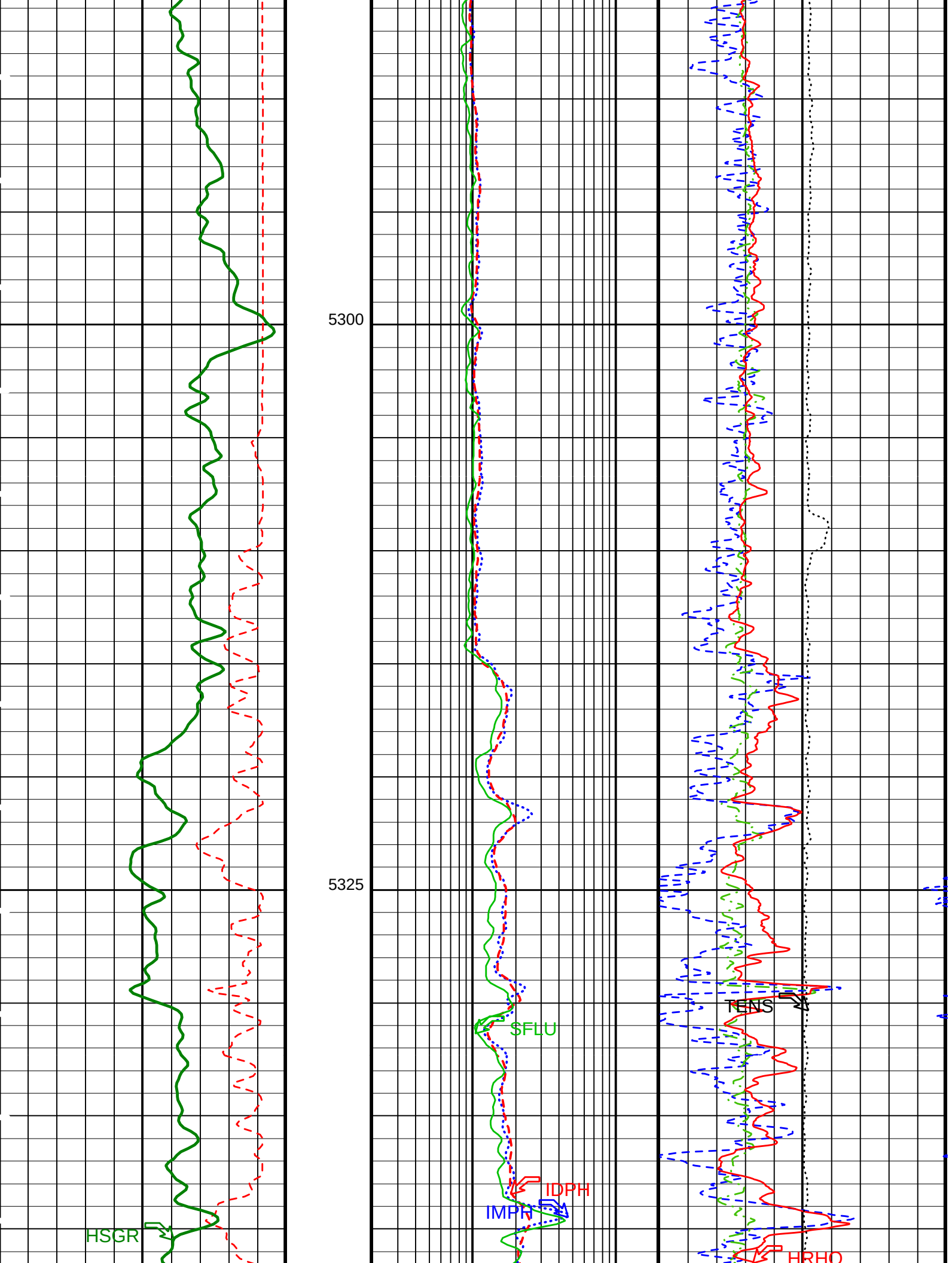
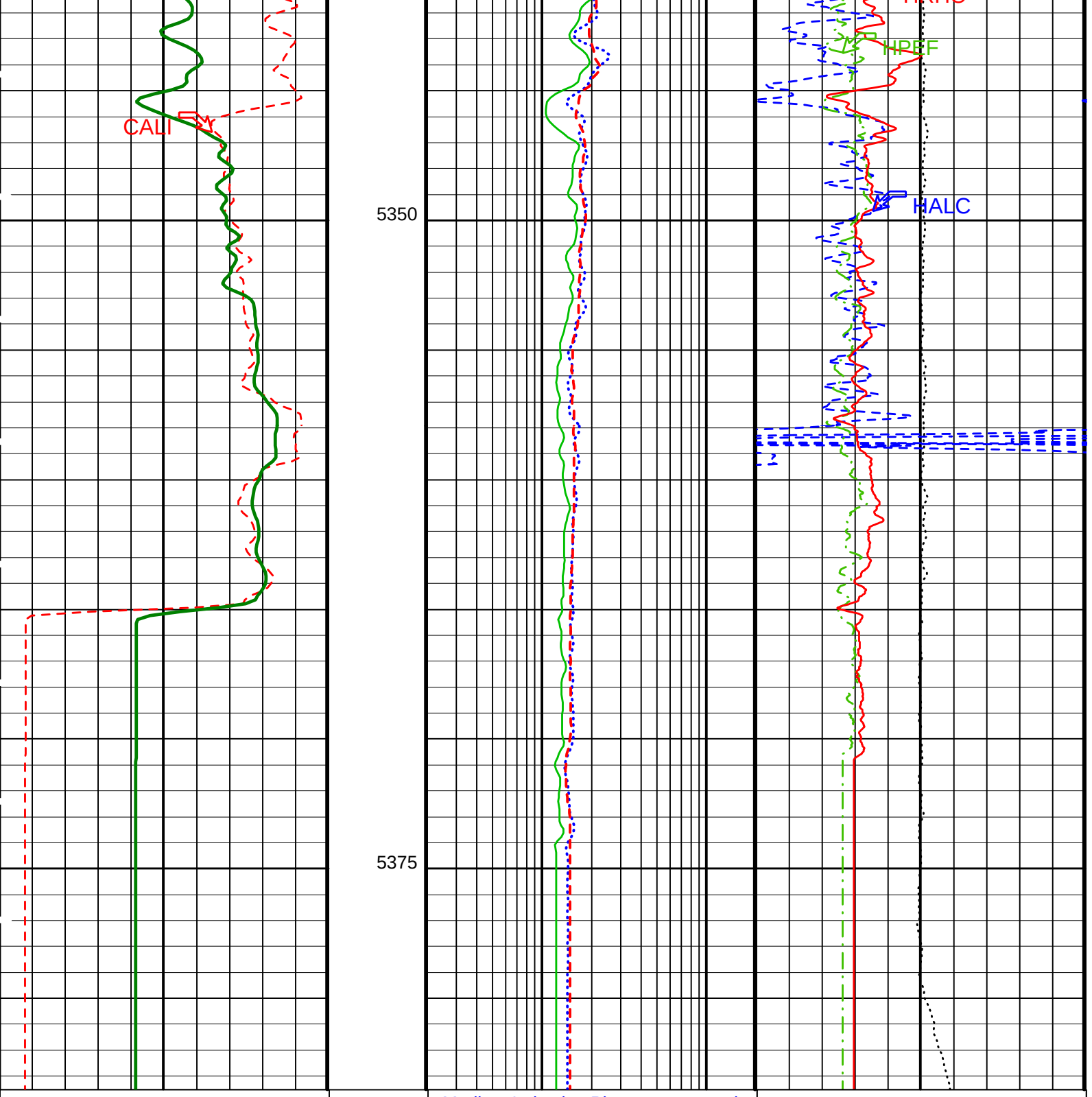

5300
5325
HSGR
SFLU
IDPH
IMPH
TENS
HRHO



Caliper (CALI)
0 (IN) 20

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

Medium Induction Phasor-processed Resistivity (IMPH)
0.2 (OHMM) 20

Deep Induction Phasor-processed Resistivity (IDPH)
0.2 (OHMM) 20

SFL Unaveraged (SFLU)
0.2 (OHMM) 20

APS HR Near/Array Corrected Limestone Porosity (HALC)
100 (PU) 0

HiRes PhotoElectric Factor (HPEF)
0 (----) 10

HiRes Bulk Density (HRHO)
1 (G/C3) 3

Tension (TENS)
10000 (LBF) 0

REPEAT SECTION

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)	40	DEGF
DGF2	Deep 20 kHz Gain Factor	1.00789	
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	
ITEN	DIT-E Temperature Enable	ENABLE	
MGF2	Medium 20 kHz Gain Factor	1.02964	
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
SFCR	SFL Channel Ratio	1000	
SHT	Surface Hole Temperature	68	DEGF
	HLDT-A: Hostile Environment Litho Density - A		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
QPPS	Quicklook Processing Pe Select	PEFL	
WMUD	Mud Weight	1.07	G/C3
	APS-BA: Accelerator-Porosity Tool		
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1968.98	V
ABOS	APS Neutron Burst-Off Background Subtraction Switch	ON	
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2052.03	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1748.3	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
NARC	APS Near/Array Calibration Ratio	1.0631	
NFRC	APS Near/Far Calibration Ratio	0.902243	
SHT	Surface Hole Temperature	68	DEGF
	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)	40	DEGF
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	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	0.000145375	
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	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973008	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.974631	

SGT-N: Scintillation Gamma-Ray - N			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.07	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	17647.6	FT

Format: HLDT_HR_TCOM Vertical Scale: 1:200 Graphics File Created: 17-Mar-2002 14:07

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_008LUP	FN:11	PRODUCER	16-Mar-2002 09:52	5383.5 M	5202.5 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_023PUP	FN:35	PRODUCER	17-Mar-2002 14:07
TCOM	PI_LDL_APS_NGS_023PUP	FN:36	PRODUCER	17-Mar-2002 14:07

Company: Lamont Doherty

Schlumberger

Well: ODP Leg 201, Site 1230A PRU-4A
Field: Peru Margin
Rig: JOIDES Resolution
Ocean: Pacific

IPLT Triple Combo
with Phasor Induction
Gamma Ray