Schlumberger

Company: Lamont Doherty

Well: ODP Leg 204, Site 1252A
Field: Hydrate Ridge
Ocean: Pacific   State: Oregon

Ocean: Pacific
Field: Hydrate Ridge
Location: W 125* 5.5684'
Well: ODP Leg 204, Site 1252A
Company: Lamont Doherty

HLDT/APS Porosity
Natural Gamma Ray

LOCATION

W 125* 5.5684'
N 44* 35.1658'

Elev.: K.B. 11.3 m
G.L. -1051 m
D.F. 11 m

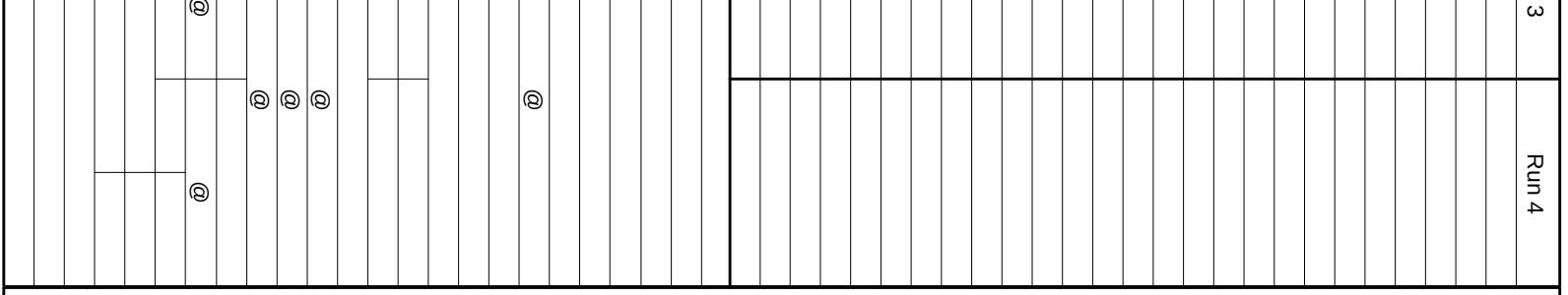
Permanent Datum: MSL   Elev.: 0 m
Log Measured From: RKB   11.3 m above Perm. Datum
Drilling Measured From: RKB

API Serial No.	Max. Hole Devi.	Longitude	Latitude

Logging Date	31-Aug-2002	
Run Number	1	
Depth Driller	1311 m	
Schlumberger Depth	1311 m	
Bottom Log Interval	1298 m	
Top Log Interval	1051 m	
Casing Driller Size @ Depth	0.000 in @ 1126 m	@
Casing Schlumberger	1125 m	
Bit Size	11.438 in	
Type Fluid In Hole	Sepiolite Salt Water Base	
MUD Density / Viscosity	1.1 g/cm3	
MUD Fluid Loss / PH		
MUD Source Of Sample	Mud Pit	
RM @ Measured Temperature	0.322 ohm.m @ 27 degC	@
RMF @ Measured Temperature	@	@
RMC @ Measured Temperature	@	@
Source RMF / RMC		
RM @ MRT / RMF @ MRT	0.428 @ 15 / @ 15	@ / @
Maximum Recorded Temperatures	15 degC	
Circulation Stopped / Time	31-Aug-2002 / 3:00	
Logger On Bottom / Time	31-Aug-2002 / 7:00	
Unit Number / Location	99 / Houston-ODP	
Recorded By	K. Swain	
Witnessed By	G. Guerin, S. Barr, T. Collett	

	Run 1	Run 2	Run

Logging Date		
Run Number		
Depth Driller		
Schlumberger Depth		
Bottom Log Interval		
Top Log Interval		
Casing Driller Size @ Depth	@	
Casing Schlumberger		
Bit Size		
Type Fluid In Hole		
MUD Density / Viscosity		
MUD Fluid Loss / PH		
MUD Source Of Sample		
RM @ Measured Temperature	@	
RMF @ Measured Temperature	@	
RMC @ Measured Temperature	@	
Source RMF / RMC		
RM @ MRT / RMF @ MRT	@ / @	
Maximum Recorded Temperatures		
Circulation Stopped / Time		
Logger On Bottom / Time		
Unit Number / Location		
Recorded By		
Witnessed By		



DISCLAIMER

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

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
All depths measured in meters below rig floor.	
Sea Floor SLB 1051 mbrf.	
Drill pipe SLB 1125 mbrf.	

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

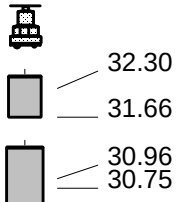
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

SFT-281 24
SFT-178 4722
GSR-U 135
WITM (DTS)-A

DOWNHOLE EQUIPMENT

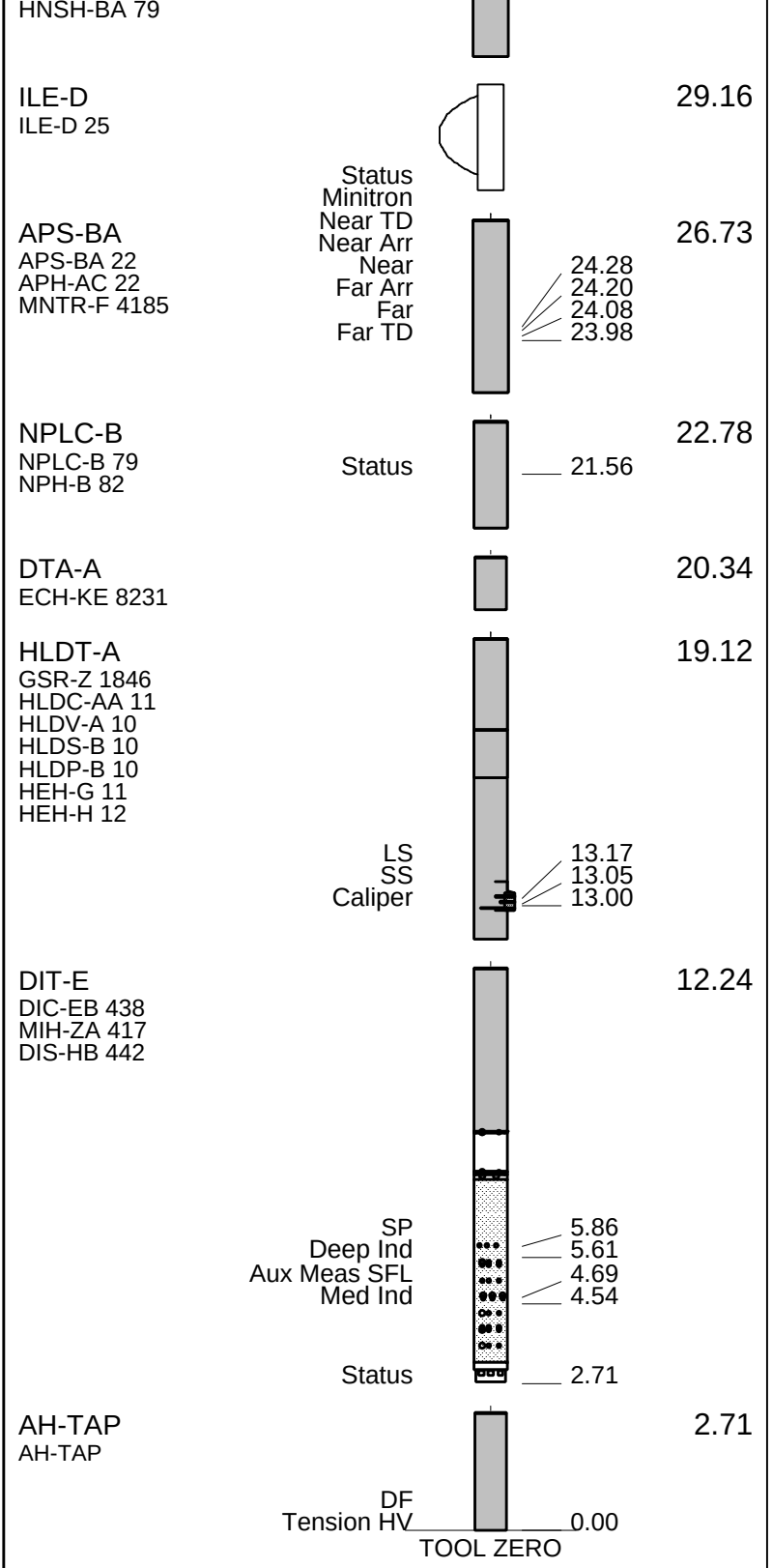


LEH-QT
LEH-QT 1497

DTC-H
ECH-KC 9841

HNGS-BA
HNGS-BA 77

RUN 2



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

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_004LUP	FN:6	PRODUCER	31-Aug-2002 06:56	1312.2 M	1031.9 M
REDUCE	PI_LDL_APS_NGS_004LUP	FN:7	PRODUCER	31-Aug-2002 06:56	1312.2 M	1031.8 M

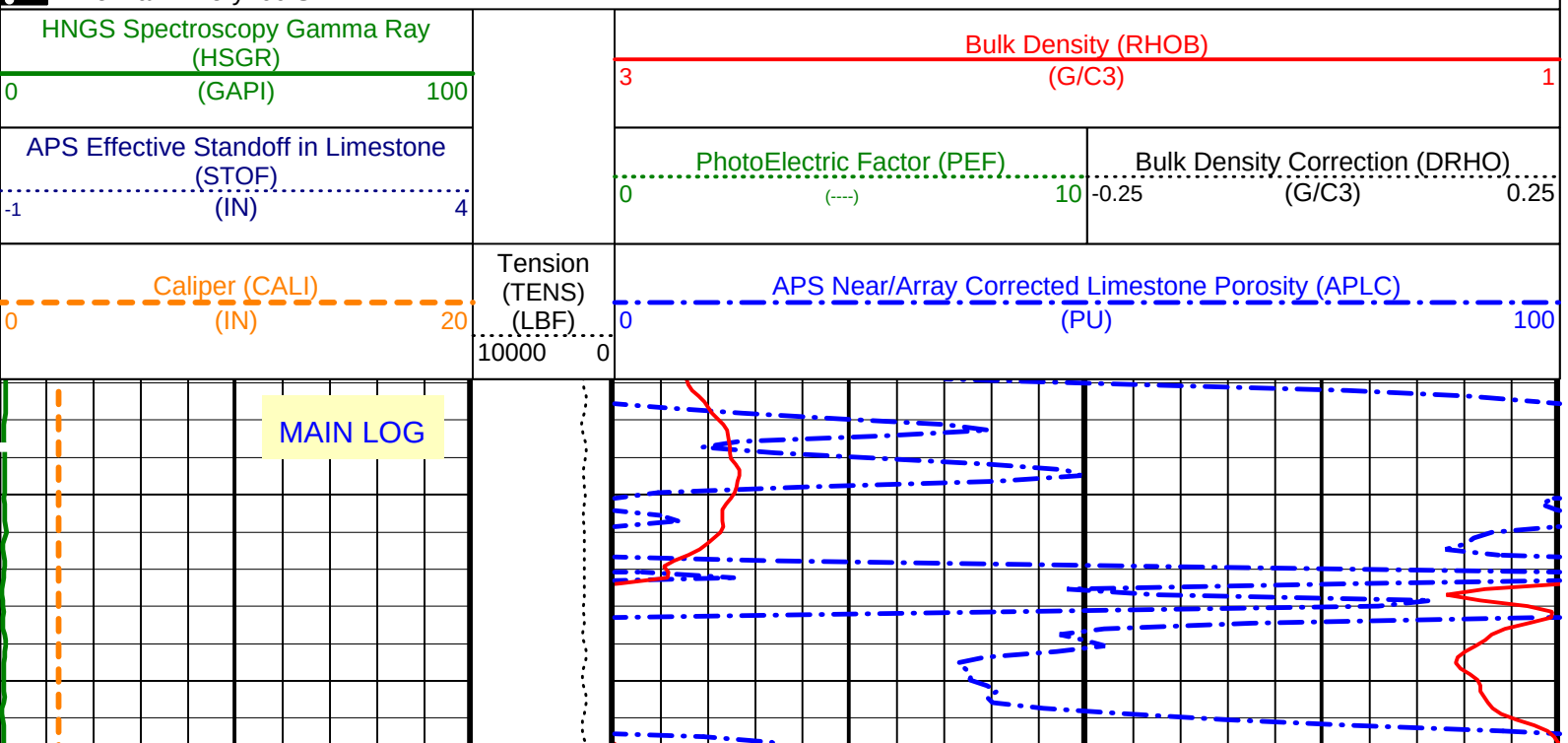
OP System Version: 10C0-306

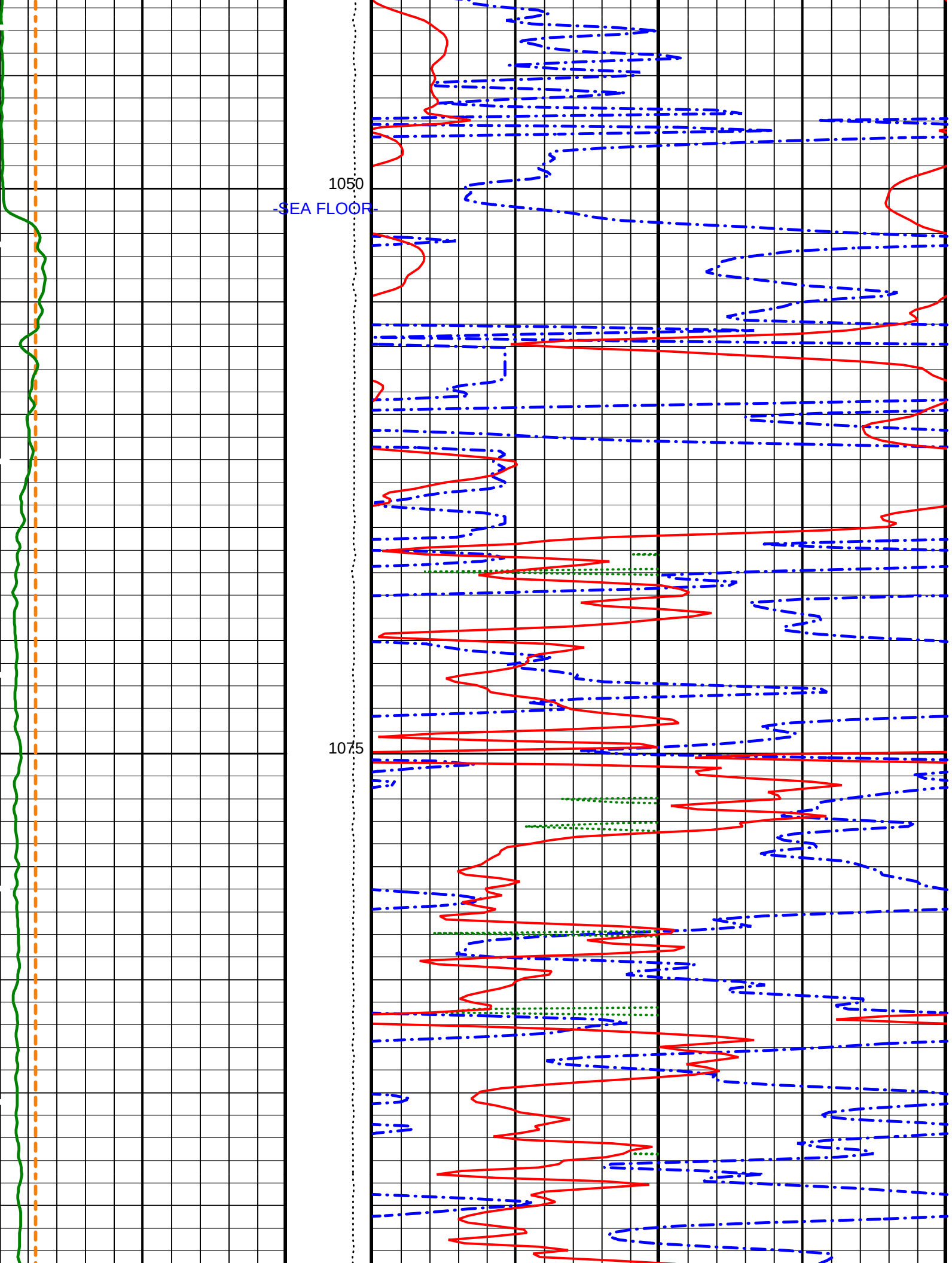
MCM

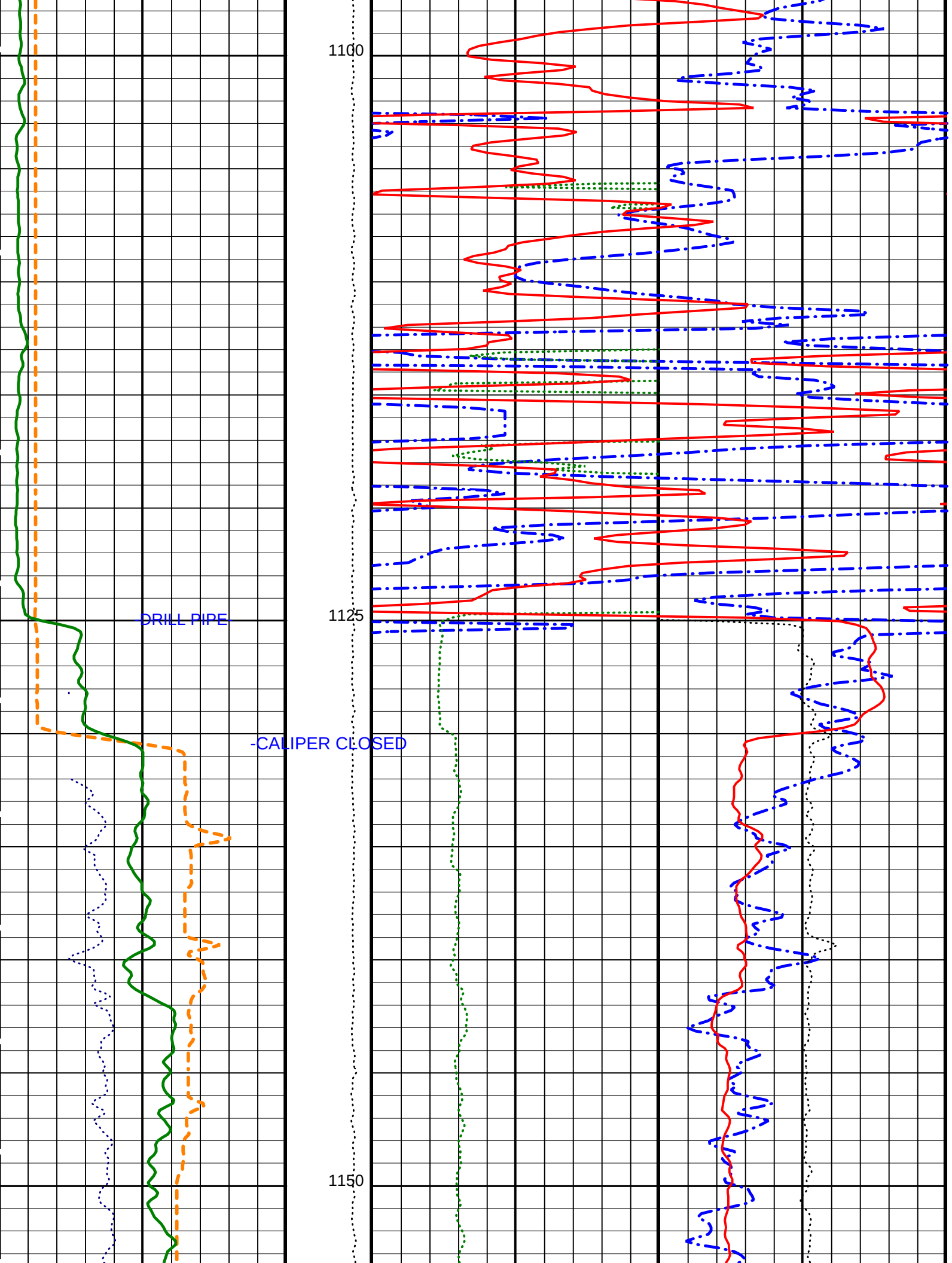
DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

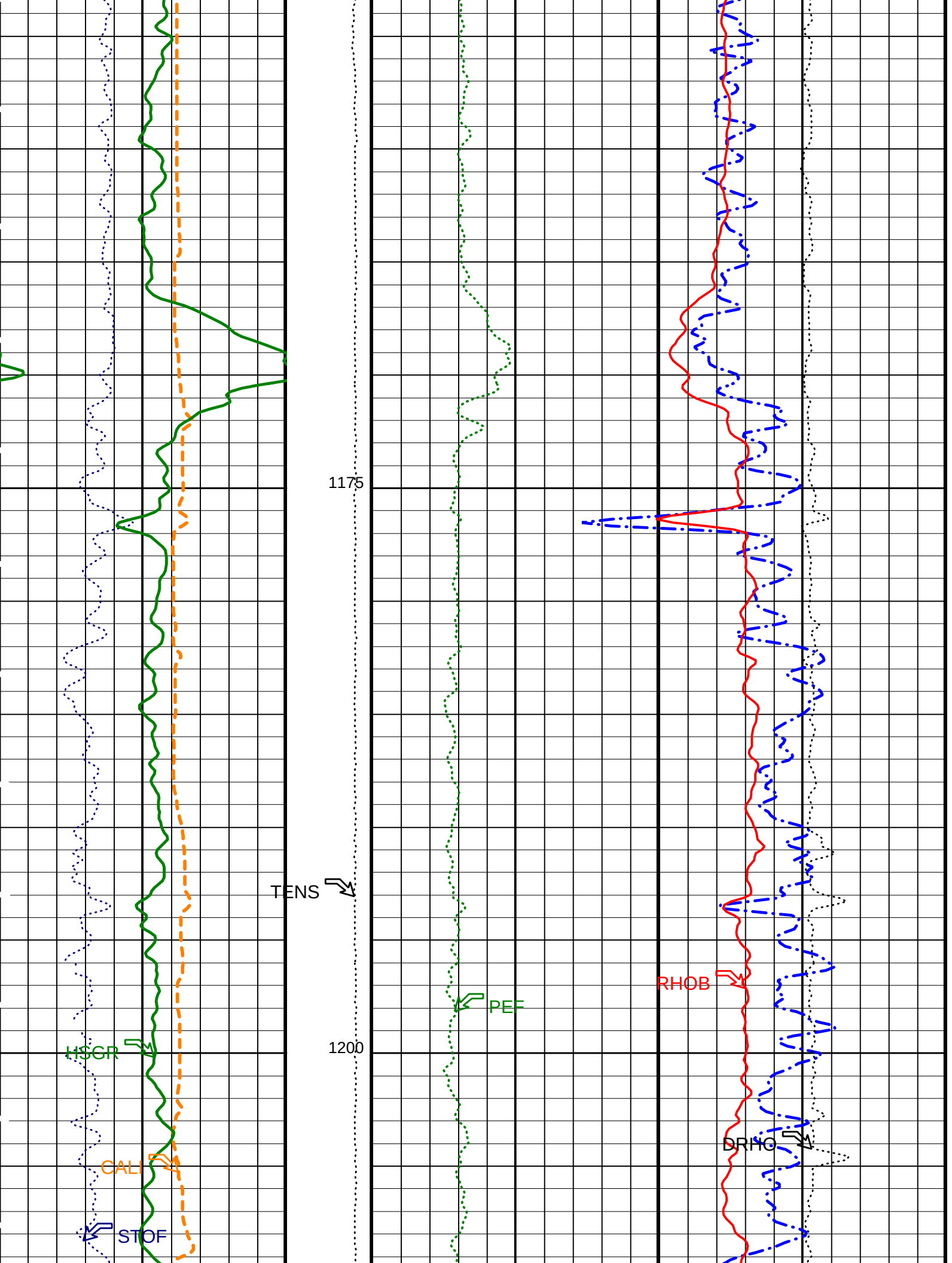
PIP SUMMARY

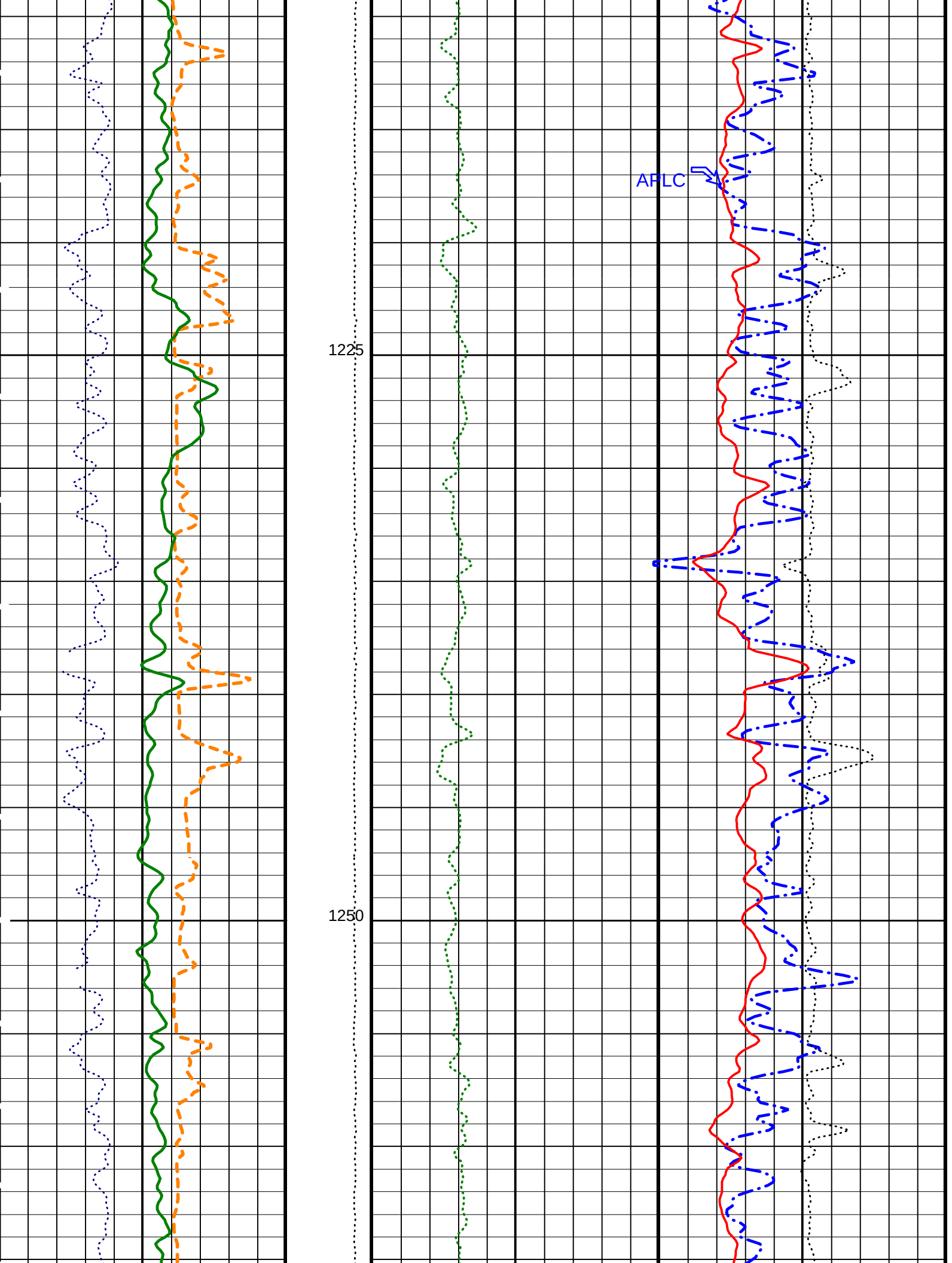
Time Mark Every 60 S

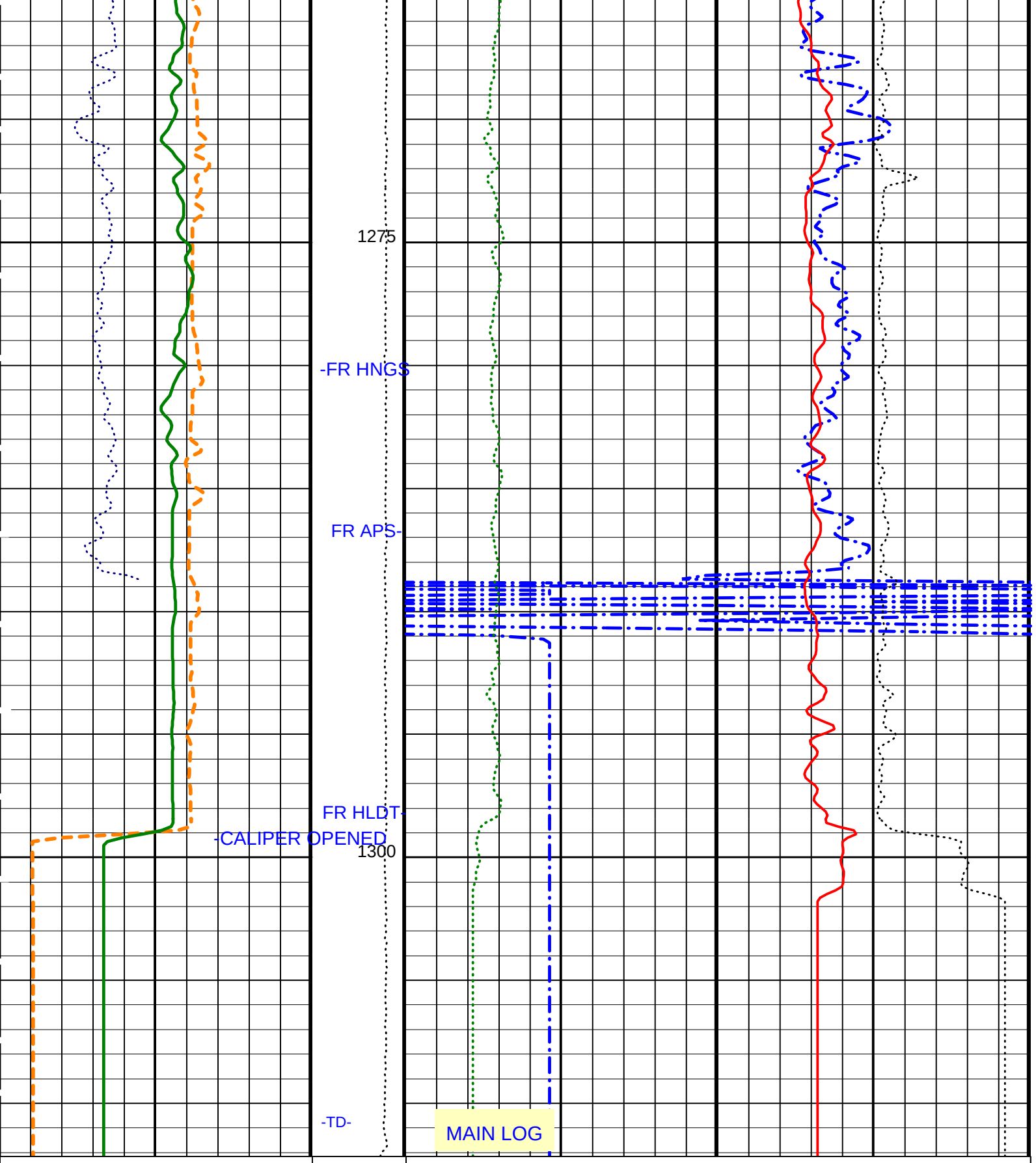



1050
-SEA FLOOR-
1075


1100
1125
1150
DRILL PIPE
-CALIPER CLOSED


1175
TENS
PEF
RHOB
1200
HSGR
DRHO
CALI
STOF


APLC
1225
1250



Caliper (CALI)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

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

APS Effective Standoff in Limestone (STOF)
-1 (IN) 4

PhotoElectric Factor (PEF)
0 (----) 10

Bulk Density Correction (DRHO)
-0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)

Bulk Density (RHOB)
3 (G/C3) 1

0 (GAPI) 100

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	0.995593	
DGF2	Deep 20 kHz Gain Factor	1.00789	
DGF4	Deep 40 kHz Gain Factor	1.02614	
DPH1	Deep 10 kHz Phase Shift	0.114289	DEG
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DPH4	Deep 40 kHz Phase Shift	-1.42629	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	44.9501	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	4.69026	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	108.903	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	46.096	MM/M
GCSE	Generalized Caliper Selection	CALI	
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	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	1.02182	
MGF2	Medium 20 kHz Gain Factor	1.02964	
MGF4	Medium 40 kHz Gain Factor	1.06122	
MPH1	Medium 10 kHz Phase Shift	-0.255819	DEG
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MPH4	Medium 40 kHz Phase Shift	-2.46117	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	20.7292	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-10.4594	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	-105.752	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	11.4521	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
	HLDT-A: Hostile Environment Litho Density - A		
BFM	Borehole Fluid Medium	LIQUID	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LSHC	LS Hardware Loop Control	DISALLOW	
MDEN	Matrix Density	2.71	G/C3
QPPS	Quicklook Processing Pe Select	PEFL	
SSHC	SS Hardware Loop Control	DISALLOW	
WMUD	Mud Weight	0.994556	G/C3
	NPLC-B: Nuclear Porosity Lithology Cartridge - B		
NOTS	NPLC Old Temperature Sensor	NO	
	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
AOTS	APS Old Temperature Sensor Switch	NO	

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)	100	DEGC
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	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NARC	APS Near/Array Calibration Ratio	1.06555	
NFRC	APS Near/Far Calibration Ratio	0.907568	
SHT	Surface Hole Temperature	20	DEGC
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	CALI	
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	-0.00815183	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.945727	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.953644	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
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	1.10	G/C3
MST	Mud Sample Temperature	27.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	M
TDD	Total Depth - Driller	1320.00	M
TDL	Total Depth - Logger	1320.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 31-Aug-2002 06:56

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_004LUP	FN:6	PRODUCER	31-Aug-2002 06:56	
REDUCE	PI_LDL_APS_NGS_004LUP	FN:7	PRODUCER	31-Aug-2002 06:56	

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_005LUP	FN:8	PRODUCER	31-Aug-2002 08:04	1232.2 M	1111.3 M

REDUCE	PI_LDL_APS_NGS_005LUP	FN:9	PRODUCER	31-Aug-2002 08:04	1232.2 M	1111.3 M

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

PIP SUMMARY

Time Mark Every 60 S

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

APS Effective Standoff in Limestone (STOF)
-1 (IN) 4

Bulk Density (RHOB)
3 (G/C3) 1

PhotoElectric Factor (PEF)
0 (----) 10

Bulk Density Correction (DRHO)
-0.25 (G/C3) 0.25

Caliper (CALI)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

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

REPEAT SECTION

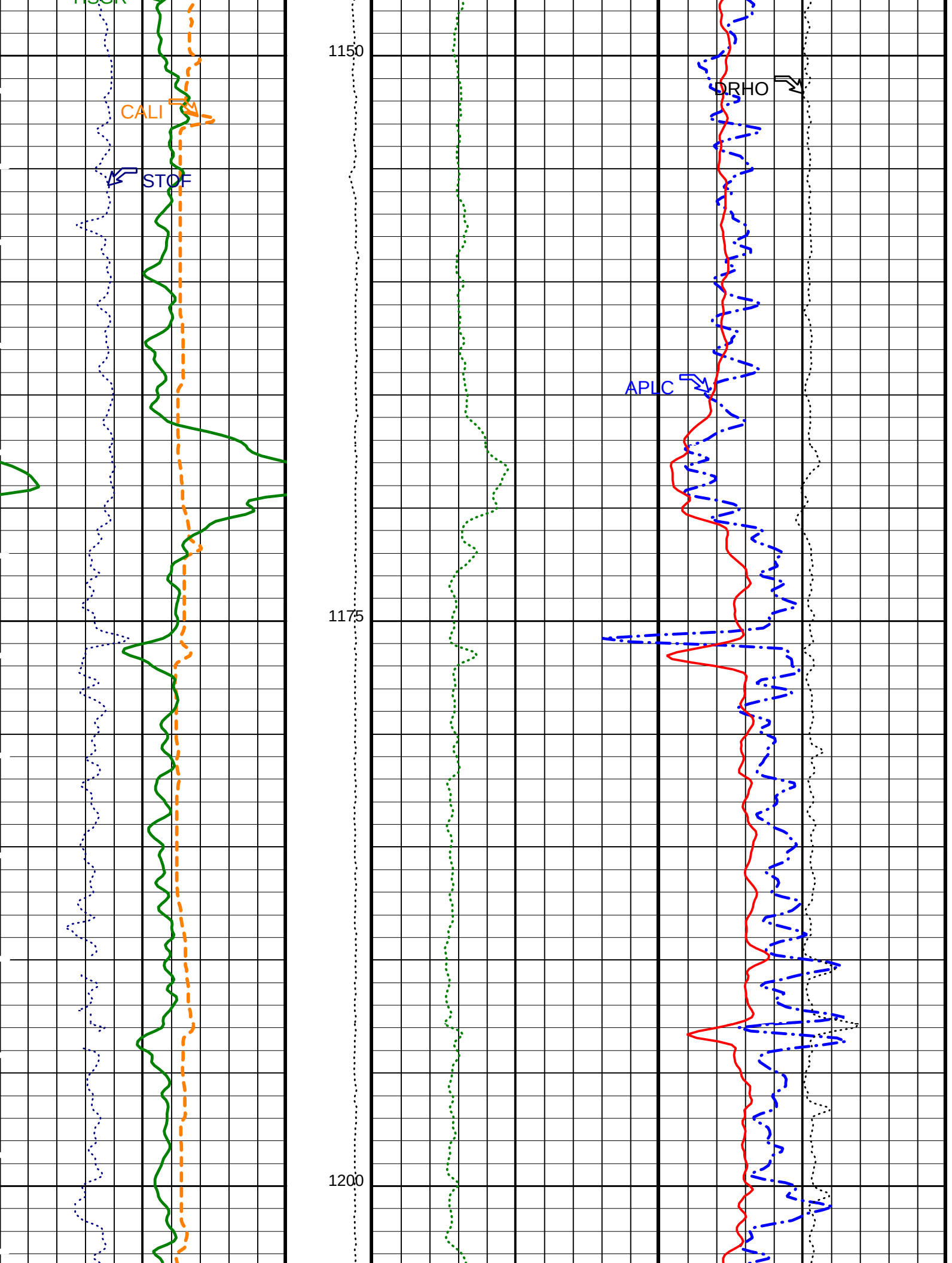
1125

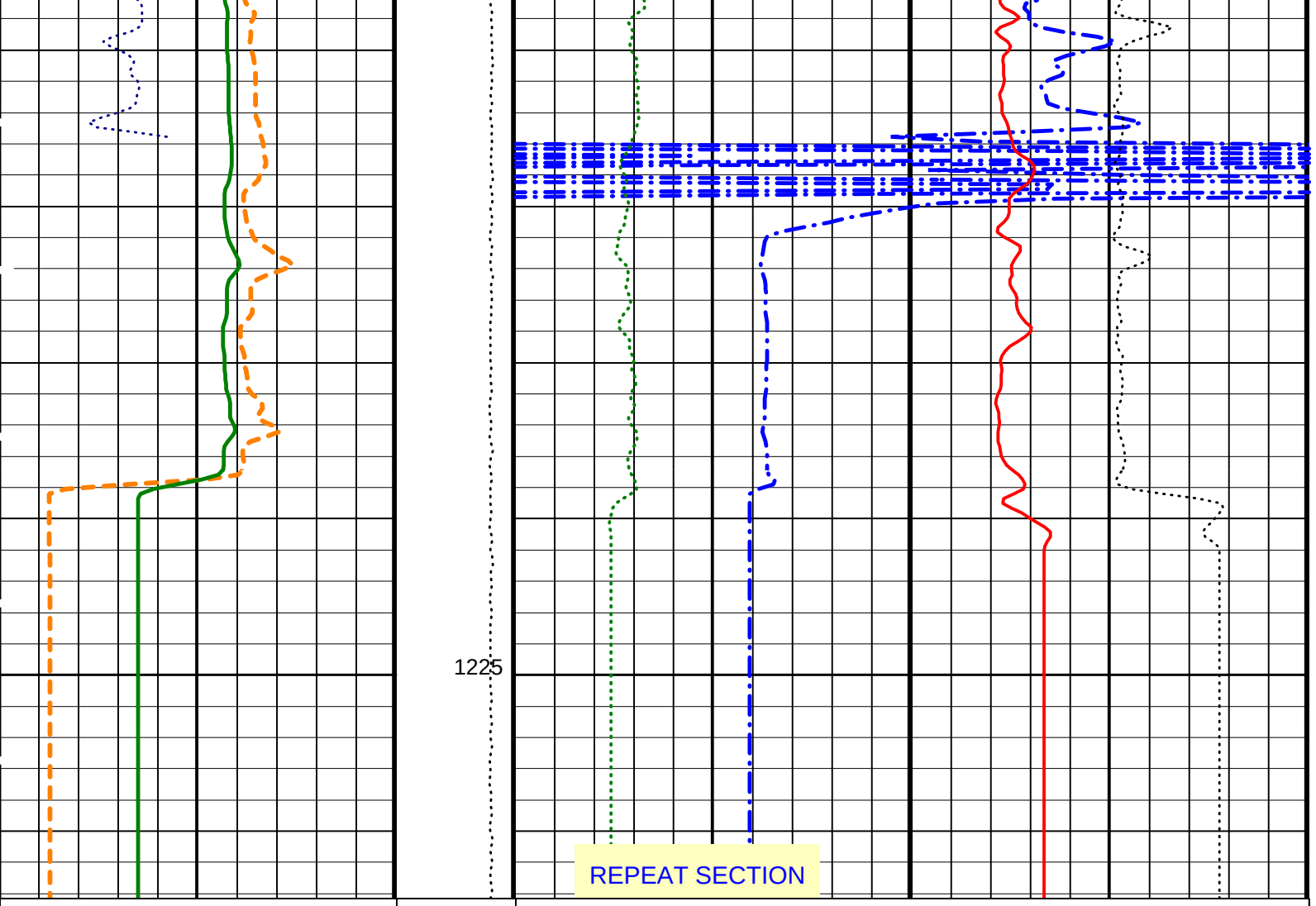
TENS

HSGR

PEF

RHOB


HSGR
CALI
STOF
1150
DRHO
APLC
1175
1200



Caliper (CALI)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

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

APS Effective Standoff in Limestone (STOF)
-1 (IN) 4

PhotoElectric Factor (PEF)
0 (----) 10

Bulk Density Correction (DRHO)
-0.25 (G/C3) 0.25

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

Bulk Density (RHOB)
3 (G/C3) 1

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	0.995593	
DGF2	Deep 20 kHz Gain Factor	1.00789	
DGF4	Deep 40 kHz Gain Factor	1.02614	
DPH1	Deep 10 kHz Phase Shift	0.114289	DEG
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DPH4	Deep 40 kHz Phase Shift	-1.42629	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	44.9501	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	4.69026	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	108.903	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	46.096	MM/M
GCSE	Generalized Caliper Selection	CALI	
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	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	1.02182	
MGF2	Medium 20 kHz Gain Factor	1.02964	
MGF4	Medium 40 kHz Gain Factor	1.06122	
MPH1	Medium 10 kHz Phase Shift	-0.255819	DEG
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MPH4	Medium 40 kHz Phase Shift	-2.46117	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	20.7292	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-10.4594	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	-105.752	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	11.4521	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
HLDT-A: Hostile Environment Litho Density - A			
BFM	Borehole Fluid Medium	LIQUID	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LSHC	LS Hardware Loop Control	DISALLOW	
MDEN	Matrix Density	2.71	G/C3
QPPS	Quicklook Processing Pe Select	PEFL	
SSHC	SS Hardware Loop Control	DISALLOW	
WMUD	Mud Weight	0.994556	G/C3
NPLC-B: Nuclear Porosity Lithology Cartridge - B			
NOTS	NPLC Old Temperature Sensor	NO	
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
AOTS	APS Old Temperature Sensor Switch	NO	
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)	100	DEGC
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	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NARC	APS Near/Array Calibration Ratio	1.06555	
NFRC	APS Near/Far Calibration Ratio	0.907568	
SHT	Surface Hole Temperature	20	DEGC
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	CALI	
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	-0.00966604	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.95148	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.963097	

System and Miscellaneous

ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
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	1.10	G/C3
MST	Mud Sample Temperature	27.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	M
TDD	Total Depth - Driller	1320.00	M
TDL	Total Depth - Logger	1320.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 31-Aug-2002 08:04

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_005LUP	FN:8	PRODUCER	31-Aug-2002 08:04
REDUCE	PI_LDL_APS_NGS_005LUP	FN:9	PRODUCER	31-Aug-2002 08:04

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Environment Litho Density - A Wellsite Calibration - Background Measurement							
Master: 12-Jun-2002 1:31 Before: 24-Jul-2002 18:39 After: 31-Aug-2002 9:46							
LSW1 Background	100.0	88.67	86.74	87.43	0.6993	3.000	CPS
LSW2 Background	105.0	93.18	91.70	91.97	0.2706	3.150	CPS
LSW3 Background	210.0	177.4	176.2	179.8	3.662	6.300	CPS
LSW4 Background	290.0	236.8	236.6	234.3	-2.263	8.700	CPS
LSW5 Background	610.0	518.0	517.3	511.9	-5.447	18.30	CPS
SSW1 Background	100.0	83.02	84.95	84.09	-0.8559	3.000	CPS
SSW2 Background	200.0	165.1	166.3	166.9	0.5784	6.000	CPS
SSW3 Background	530.0	440.7	439.6	436.9	-2.680	15.90	CPS
SSW4 Background	280.0	232.4	232.4	231.0	-1.397	8.400	CPS
SSW5 Background	205.0	174.0	173.3	174.4	1.064	6.150	CPS
Hostile Environment Litho Density - A Wellsite Calibration - Tool Quality Control Information High Voltage							
Master: 12-Jun-2002 1:31 Before: 24-Jul-2002 18:39 After: 31-Aug-2002 9:46							
LS Bkg. High Voltage	1133	1133	1130	1128	-1.827	N/A	V
SS Bkg. High Voltage	1177	1177	1171	1171	0.2494	N/A	V
Hostile Environment Litho Density - A Wellsite Calibration - Detectors Resolution From BKG Measurments							
Master: 12-Jun-2002 1:31 Before: 24-Jul-2002 18:39 After: 31-Aug-2002 9:46							
LS Background Resolution	1.000	1.032	1.032	0.8895	-0.1429	N/A	
SS Background Resolution	1.000	0.9430	0.9416	0.9420	0.0004600	N/A	

Hostile Environment Litho Density - A Wellsite Calibration - Caliper Calibration
Before: 24-Jul-2002 18:38

Caliper Small Ring	12.00	N/A	17.14	N/A	N/A	N/A	IN
Caliper Large Ring	15.25	N/A	21.07	N/A	N/A	N/A	IN

Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement
Master: 12-Jun-2002 4:36

LSW1 Aluminum	648.4	576.7	--	--	--	--	CPS
LSW2 Aluminum	1018	928.8	--	--	--	--	CPS
LSW3 Aluminum	1105	996.5	--	--	--	--	CPS
LSW4 Aluminum	609.5	555.2	--	--	--	--	CPS
LSW5 Aluminum	533.8	495.5	--	--	--	--	CPS
SSW1 Aluminum	2664	2503	--	--	--	--	CPS
SSW2 Aluminum	7731	7298	--	--	--	--	CPS
SSW3 Aluminum	10380	9792	--	--	--	--	CPS
SSW4 Aluminum	4574	4340	--	--	--	--	CPS
SSW5 Aluminum	745.2	732.3	--	--	--	--	CPS

Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage
Master: 12-Jun-2002 4:36

LS Alum. High Voltage	1133	1137	--	--	--	--	V
SS Alum. High Voltage	1177	1170	--	--	--	--	V

Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Aluminum Measurment
Master: 12-Jun-2002 4:36

LS Aluminum Resolution	1.000	1.047	--	--	--	--	
SS Aluminum Resolution	1.000	1.055	--	--	--	--	

Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement (Window Ratios)
Master: 12-Jun-2002 4:36

LSW1/(LSW4 + LSW5) Calc.	0.5400	0.5489	--	--	--	--	
LSW3/(LSW4 + LSW5) Calc.	0.9600	0.9485	--	--	--	--	
SSW1/(SSW4 + SSW5) Calc.	0.4600	0.4935	--	--	--	--	
SSW3/(SSW4 + SSW5) Calc.	1.900	1.931	--	--	--	--	

Hostile Environment Litho Density - A Master Calibration - Litholog Measurement
Master: 12-Jun-2002 4:44

LSW1 Iron	410.0	405.2	--	--	--	--	CPS
LSW2 Iron	870.0	771.0	--	--	--	--	CPS
LSW3 Iron	1030	901.5	--	--	--	--	CPS
LSW4 Iron	590.0	512.2	--	--	--	--	CPS
LSW5 Iron	530.0	459.1	--	--	--	--	CPS
SSW1 Iron	1850	1831	--	--	--	--	CPS
SSW2 Iron	6500	6181	--	--	--	--	CPS
SSW3 Iron	10000	9037	--	--	--	--	CPS
SSW4 Iron	4500	3979	--	--	--	--	CPS
SSW5 Iron	750.0	640.2	--	--	--	--	CPS

Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage
Master: 12-Jun-2002 4:44

LS Lith High Voltage	1133	1136	--	--	--	--	V
SS Lith High Voltage	1177	1170	--	--	--	--	V

Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Litholog Measurment
Master: 12-Jun-2002 4:44

LS Lith Resolution	1.000	1.048	--	--	--	--	
SS Lith Resolution	1.000	1.019	--	--	--	--	

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 24-Jul-2002 10:08 Before: 31-Aug-2002 6:26 After: 31-Aug-2002 8:37

Near Det Bkg Cntrate	30.00	32.30	33.03	31.64	-1.397	N/A	CPS
Far Det Bkg Cntrate	30.00	33.62	32.99	34.06	1.072	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	28.88	29.51	29.40	-0.1105	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	29.64	29.74	31.48	1.742	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.75	33.69	30.84	-2.851	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 24-Jul-2002 10:08

Near/Far Calibration Ratio	0.9250	0.9076	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.066	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.006	N/A	N/A	N/A	N/A	

Accelerator-Porosity Tool Wellsite Calibration - Tank Check
Master: 24-Jul-2002 10:09

Array-1 Standoff Porosity	11.75	11.51	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.19	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.884	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9901	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9732	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.88	N/A	N/A	N/A	N/A	CU

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check:

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 13-Jul-2002 4:08 Before: 24-Jul-2002 13:59 After: 31-Aug-2002 9:47

Na 511 Peak Loc	40.00	40.59	40.60	40.66	0.05748	1.000	
Na 511 Peak Res	15.50	16.79	16.89	16.39	-0.4952	2.000	%
High Voltage	1150	1224	1220	1219	-1.036	30.00	V
Na 1785 Peak Loc	142.6	145.1	146.3	146.6	0.2785	7.000	
Na 1785 Peak Res	8.500	10.40	8.694	9.052	0.3585	2.000	%
Temperature	15.50	24.98	22.43	22.27	-0.1584	N/A	DEGC
Na Count Rate	45.00	50.31	49.89	48.79	-1.100	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 13-Jul-2002 4:08 Before: 24-Jul-2002 13:59 After: 31-Aug-2002 9:47

Na 511 Peak Loc	40.00	40.58	40.59	40.62	0.02441	1.000	
Na 511 Peak Res	15.50	16.72	16.53	16.62	0.08802	2.000	%
High Voltage	1150	1253	1250	1245	-4.988	30.00	V
Na 1785 Peak Loc	142.6	144.7	144.3	144.4	0.04208	7.000	
Na 1785 Peak Res	8.500	9.766	9.897	8.884	-1.013	2.000	%
Temperature	15.50	24.15	21.87	22.54	0.6711	N/A	DEGC
Na Count Rate	45.00	50.19	49.39	48.63	-0.7643	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 13-Jul-2002 4:08 Before: 24-Jul-2002 13:59 After: 31-Aug-2002 9:47

Coincidence Count Rate Ratio	1.000	1.004	1.010	1.004	-0.005504	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration
Master: 13-Jul-2002 4:01

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.9	--	--	--	--	
Th Peak Res	7.000	8.227	--	--	--	--	%
Background Count Rate	142.5	24.67	--	--	--	--	CPS
Gain Ratio	1.000	0.9793	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration
Master: 13-Jul-2002 4:01

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.8	--	--	--	--	
Th Peak Res	7.000	8.191	--	--	--	--	%
Background Count Rate	142.5	22.68	--	--	--	--	CPS
Gain Ratio	1.000	0.9792	--	--	--	--	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1748 V
Far Detector Plateau Setting 2052 V
Array Detector Plateau Setting 1969 V

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	417

Hostile Environment Litho Density - A / Equipment Identification

Primary Equipment:		
HOSTILE ENVIRONMENT LITHO DENSITY HIGH V	HLDV - A	10
HOSTILE ENVIRONMENT LITHO DENSITY CARTRI	HLDC - AA	11
Gamma Source Radioactive	GSR - Z	1846
Auxiliary Equipment:		
HOSTILE ENVIRONMENT LITHO DENSITY SONDE	HLDS - B	10
HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG	HEH - H	12
HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG	HEH - G	11
HOSTILE ENVIRONMENT LITHO DENSITY PAD	HLDP - B	10

Hostile Environment Litho Density - A Wellsite Calibration
Background Measurement

Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value

Phase	Value
Master	88.67
Before	86.74
After	87.43

65.00 (Minimum) 100.0 (Nominal) 125.0 (Maximum)

Phase	Value
Master	93.18
Before	91.70
After	91.97

70.00 (Minimum) 105.0 (Nominal) 130.0 (Maximum)

Phase	Value
Master	177.4
Before	176.2
After	179.8

150.0 (Minimum) 210.0 (Nominal) 250.0 (Maximum)

LSW4 Background CPS

Phase	Value
Master	236.8
Before	236.6
After	234.3

220.0 (Minimum) 290.0 (Nominal) 330.0 (Maximum)

LSW5 Background CPS

Phase	Value
Master	518.0
Before	517.3
After	511.9

430.0 (Minimum) 610.0 (Nominal) 730.0 (Maximum)

SSW1 Background CPS

Phase	Value
Master	83.02
Before	84.95
After	84.09

70.00 (Minimum) 100.0 (Nominal) 120.0 (Maximum)

SSW2 Background CPS

Phase	Value
Master	165.1
Before	166.3
After	166.9

140.0 (Minimum) 200.0 (Nominal) 240.0 (Maximum)

SSW3 Background CPS

Phase	Value
Master	440.7
Before	439.6
After	436.9

380.0 (Minimum) 530.0 (Nominal) 630.0 (Maximum)

SSW4 Background CPS

Phase	Value
Master	232.4
Before	232.4
After	231.0

190.0 (Minimum) 280.0 (Nominal) 340.0 (Maximum)

SSW5 Background CPS

Phase	Value
Master	174.0
Before	173.3
After	174.4

140.0 (Minimum) 205.0 (Nominal) 250.0 (Maximum)

Master: 12-Jun-2002 1:31 Before: 24-Jul-2002 18:39 After: 31-Aug-2002 9:46

Hostile Environment Litho Density - A Wellsite Calibration

Detectors Resolution From BKG Measurments

LS Background Resolution

Phase	Value
Master	1.032
Before	1.032
After	0.8895

0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)

SS Background Resolution

Phase	Value
Master	0.9430
Before	0.9416
After	0.9420

0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)

Master: 12-Jun-2002 1:31 Before: 24-Jul-2002 18:39 After: 31-Aug-2002 9:46

Hostile Environment Litho Density - A Master Calibration

Aluminum Measurement

LSW1 Aluminum CPS

Phase	Value
Master	576.7

440.0 (Minimum) 648.4 (Nominal) 840.0 (Maximum)

LSW2 Aluminum CPS

Phase	Value
Master	928.8

840.0 (Minimum) 1018 (Nominal) 1200 (Maximum)

LSW3 Aluminum CPS

Phase	Value
Master	996.5

920.0 (Minimum) 1105 (Nominal) 1280 (Maximum)

LSW4 Aluminum CPS

Phase	Value
Master	555.2

520.0 (Minimum) 609.5 (Nominal) 720.0 (Maximum)

LSW5 Aluminum CPS

Phase	Value
Master	495.5

450.0 (Minimum) 533.8 (Nominal) 670.0 (Maximum)

SSW1 Aluminum CPS

Phase	Value
Master	2503

1850 (Minimum) 2664 (Nominal) 2900 (Maximum)

SSW2 Aluminum CPS

Phase	Value
Master	7298

6200 (Minimum) 7731 (Nominal) 8500 (Maximum)

SSW3 Aluminum CPS

Phase	Value
Master	9792

8750 (Minimum) 10380 (Nominal) 11750 (Maximum)

SSW4 Aluminum CPS

Phase	Value
Master	4340

4000 (Minimum) 4574 (Nominal) 5400 (Maximum)

SSW5 Aluminum CPS

Phase	Value
Master	732.3

570.0 (Minimum) 745.2 (Nominal) 1110 (Maximum)

Master: 12-Jun-2002 4:36

Hostile Environment Litho Density - A Master Calibration

Detectors Resolution From Aluminum Measurment

LS Aluminum Resolution

Phase	Value
Master	1.047

SS Aluminum Resolution

Phase	Value
Master	1.055

Phase		Value
Master		
0.7000 (Minimum)	1.000 (Nominal)	1.111 (Maximum)

Phase		Value
Master		
0.7000 (Minimum)	1.000 (Nominal)	1.111 (Maximum)

Master: 12-Jun-2002 4:36

Hostile Environment Litho Density - A Master Calibration

Aluminum Measurement (Window Ratios)

Phase	LSW1/(LSW4 + LSW5) Calc.	Value
Master		0.5489
0.3400 (Minimum)	0.5400 (Nominal)	0.7400 (Maximum)

Phase	LSW3/(LSW4 + LSW5) Calc.	Value
Master		0.9485
0.7600 (Minimum)	0.9600 (Nominal)	1.160 (Maximum)

Phase	SSW1/(SSW4 + SSW5) Calc.	Value
Master		0.4935
0.3600 (Minimum)	0.4600 (Nominal)	0.5600 (Maximum)

Phase	SSW3/(SSW4 + SSW5) Calc.	Value
Master		1.931
1.700 (Minimum)	1.900 (Nominal)	2.100 (Maximum)

Master: 12-Jun-2002 4:36

Hostile Environment Litho Density - A Master Calibration

Litholog Measurement

Phase	LSW1 Iron CPS	Value
Master		405.2
310.0 (Minimum)	410.0 (Nominal)	510.0 (Maximum)

Phase	LSW2 Iron CPS	Value
Master		771.0
660.0 (Minimum)	870.0 (Nominal)	980.0 (Maximum)

Phase	LSW3 Iron CPS	Value
Master		901.5
810.0 (Minimum)	1030 (Nominal)	1170 (Maximum)

Phase	LSW4 Iron CPS	Value
Master		512.2
470.0 (Minimum)	590.0 (Nominal)	670.0 (Maximum)

Phase	LSW5 Iron CPS	Value
Master		459.1
400.0 (Minimum)	530.0 (Nominal)	620.0 (Maximum)

Phase	SSW1 Iron CPS	Value
Master		1831
1400 (Minimum)	1850 (Nominal)	2120 (Maximum)

Phase	SSW2 Iron CPS	Value
Master		6181
5170 (Minimum)	6500 (Nominal)	7270 (Maximum)

Phase	SSW3 Iron CPS	Value
Master		9037
8100 (Minimum)	10000 (Nominal)	11000 (Maximum)

Phase	SSW4 Iron CPS	Value
Master		3979
3620 (Minimum)	4500 (Nominal)	5020 (Maximum)

Phase	SSW5 Iron CPS	Value
Master		640.2
470.0 (Minimum)	750.0 (Nominal)	10100 (Maximum)

Master: 12-Jun-2002 4:44

Hostile Environment Litho Density - A Master Calibration

Detectors Resolution From Litholog Measurment

Phase	LS Lith Resolution	Value
Master		1.048
0.7000 (Minimum)	1.000 (Nominal)	1.111 (Maximum)

Phase	SS Lith Resolution	Value
Master		1.019
0.7000 (Minimum)	1.000 (Nominal)	1.111 (Maximum)

Master: 12-Jun-2002 4:44

Nuclear Porosity Lithology Cartridge - B / Equipment Identification

Primary Equipment:		
NPLC Cartridge	NPLC - B	79
Auxiliary Equipment:		
NPLC Housing	NPH - B	82

Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator-Porosity Sonde	APS - BA	22
APS Minitron	MNTR - F	4185
Auxiliary Equipment:		
Accelerator-Porosity Housing	APH - AC	22
APS Calibration Water Tank	SFT - 178	4722
APS Aluminium Calibrator Sleeve	SFT - 281	24

Accelerator-Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value
Master		32.30
Before		33.03
After		31.64

0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Far Det Bkg Cntrate CPS	Value
Master		33.62
Before		32.99
After		34.06

0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		28.88
Before		29.51
After		29.40

0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array-2 Det Bkg Cntrate CPS	Value
Master		29.64
Before		29.74
After		31.48

0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		32.75
Before		33.69
After		30.84

0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Master: 24-Jul-2002 10:08 Before: 31-Aug-2002 6:26 After: 31-Aug-2002 8:37

Accelerator-Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value
Master		0.9076

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		1.066

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.006

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 24-Jul-2002 10:08

Accelerator-Porosity Tool Wellsite Calibration

Tank Check

Phase	Array-1 Standoff Porosity PU	Value
Master		11.51

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array-2 Standoff Porosity PU	Value
Master		11.19

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		5.884

5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)

Phase	Array-1 SDT Ratio Up/Down	Value
Master		0.9901

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Array-2 SDT Ratio Up/Down	Value
Master		0.9732

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Sigma Formation CU	Value
Master		27.88

20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)

Master: 24-Jul-2002 10:09

Accelerator-Porosity Tool Master Calibration

Detector Calibration

Phase	Near/Far Calibration Ratio	Value
Master		0.9076

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		1.066

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.006

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 24-Jul-2002 10:08

Accelerator-Porosity Tool Master Calibration

Tank Check

Phase	Array-1 Standoff Porosity PU	Value
Master		11.51

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array-2 Standoff Porosity PU	Value
Master		11.19

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		5.884

5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)

Phase	Array-1 SDT Ratio Up/Down	Value
Master		0.9901

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Array-2 SDT Ratio Up/Down	Value
Master		0.9732

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Sigma Formation CU	Value
Master		27.88

20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)

Master: 24-Jul-2002 10:09

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS - BA	77
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH - BA	79
Gamma Source Radioactive	GSR - U	135

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		40.59
Before		40.60
After		40.66
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.79
Before		16.89
After		16.39
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1224
Before		1220
After		1219
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		145.1
Before		146.3
After		146.6
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		10.40
Before		8.694
After		9.052
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		24.98
Before		22.43
After		22.27
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		50.31
Before		49.89
After		48.79
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 13-Jul-2002 4:08 Before: 24-Jul-2002 13:59 After: 31-Aug-2002 9:47

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		40.58
Before		40.59
After		40.62
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.72
Before		16.53
After		16.62
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1253
Before		1250
After		1245
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		144.7
Before		144.3
After		144.4
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.766
Before		9.897
After		8.884
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		24.15
Before		21.87
After		22.54
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		50.19
Before		49.39
After		48.63
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 13-Jul-2002 4:08 Before: 24-Jul-2002 13:59 After: 31-Aug-2002 9:47

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.004
Before		1.010
After		1.004
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Master: 13-Jul-2002 4:08
Before: 24-Jul-2002 13:59
After: 31-Aug-2002 9:47

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		208.9
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		8.227
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		24.67
	20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		0.9793
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 13-Jul-2002 4:01

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		208.8
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		8.191
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		22.68
	20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		0.9792
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 13-Jul-2002 4:01

Company: Lamont Doherty

Schlumberger

Well: ODP Leg 204, Site 1252A
Field: Hydrate Ridge
Ocean: Pacific
State: Oregon

HLDT/APS Porosity
Natural Gamma Ray