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

Natural Gamma Ray Spectroscopy

LOCATION

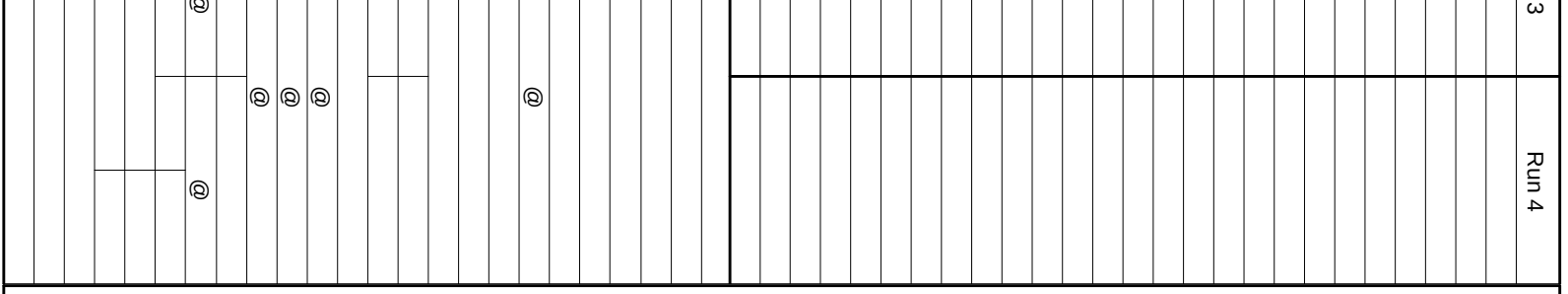
W 125* 5.5684'
N 44* 35.1658'

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

	Run 1	Run 2	Run 3
Logging Date	31-Aug-2002		
Run Number	1		
Depth Driller	1311 m		
Schlumberger Depth	1311 m		
Bottom Log Interval	1280 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		



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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		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	
PROGRAM VERSION:	10C0-306	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

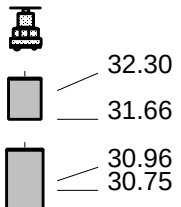
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

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

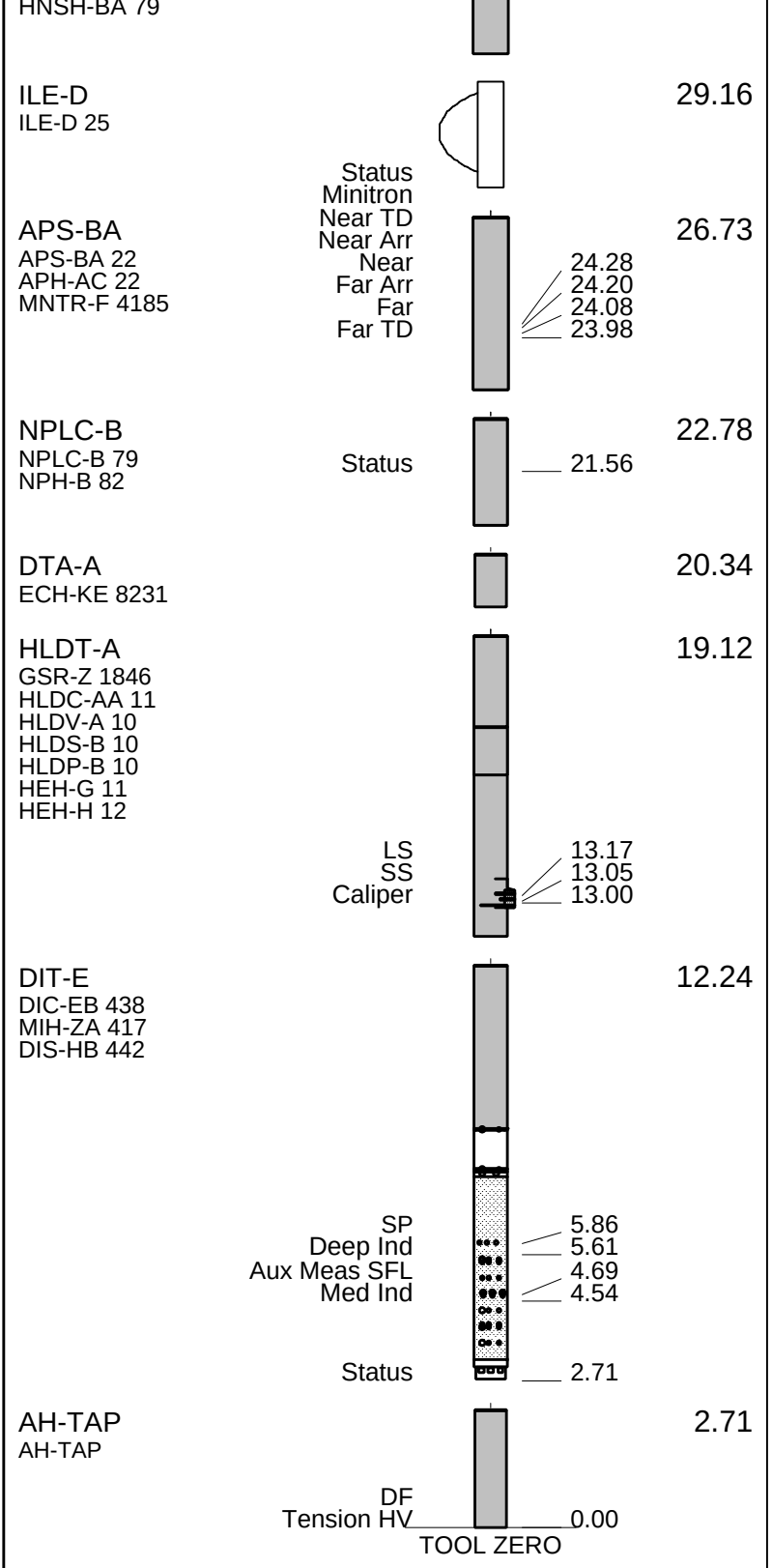
DOWNHOLE EQUIPMENT



LEH-QT 33.47
LEH-QT 1497

DTC-H 32.58
ECH-KC 9841

HNGS-BA 31.66
HNGS-BA 77



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	1033.3 M
REDUCE	PI_LDL_APS_NGS_004LUP	FN:7	PRODUCER	31-Aug-2002 06:56	1312.2 M	1031.8 M

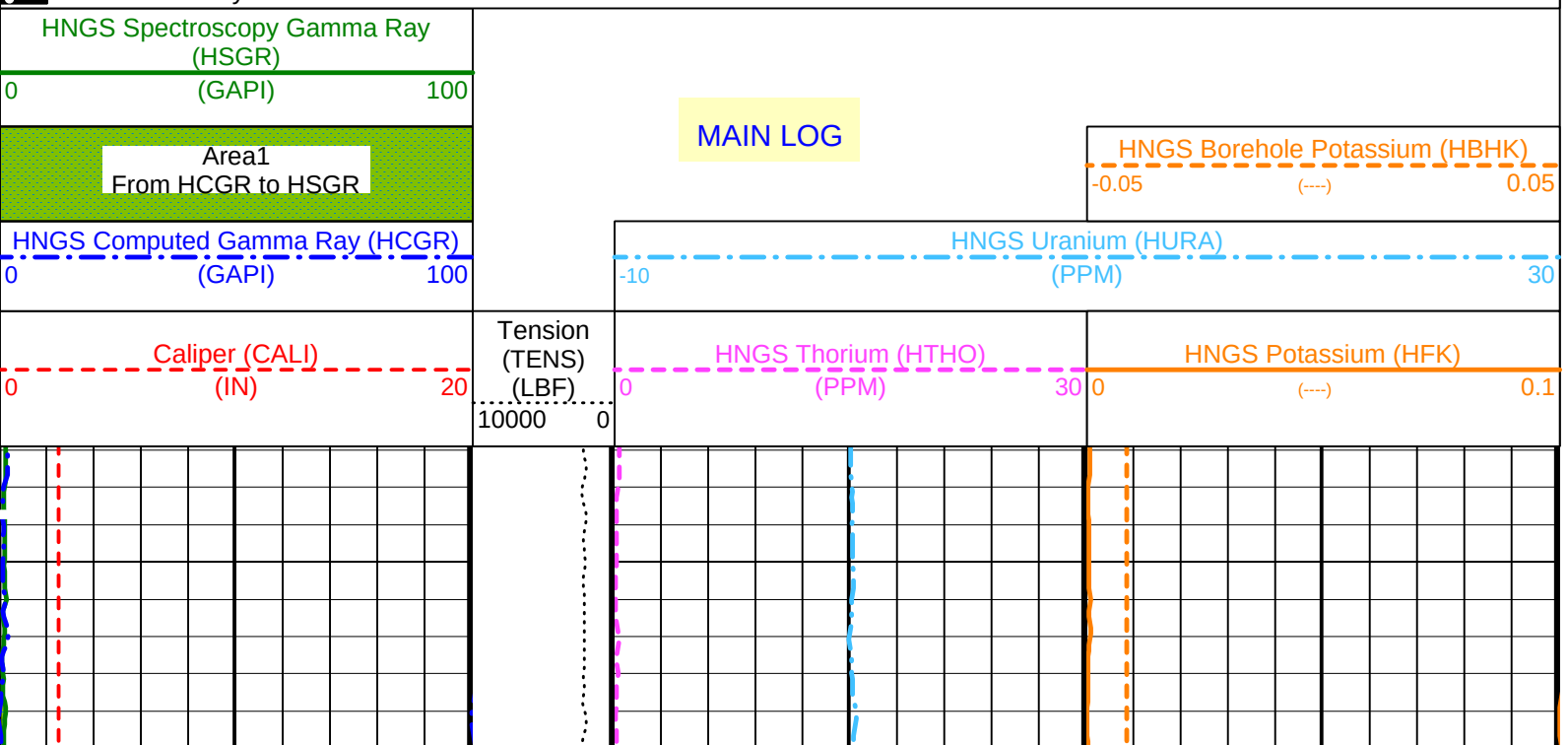
OP System Version: 10C0-306

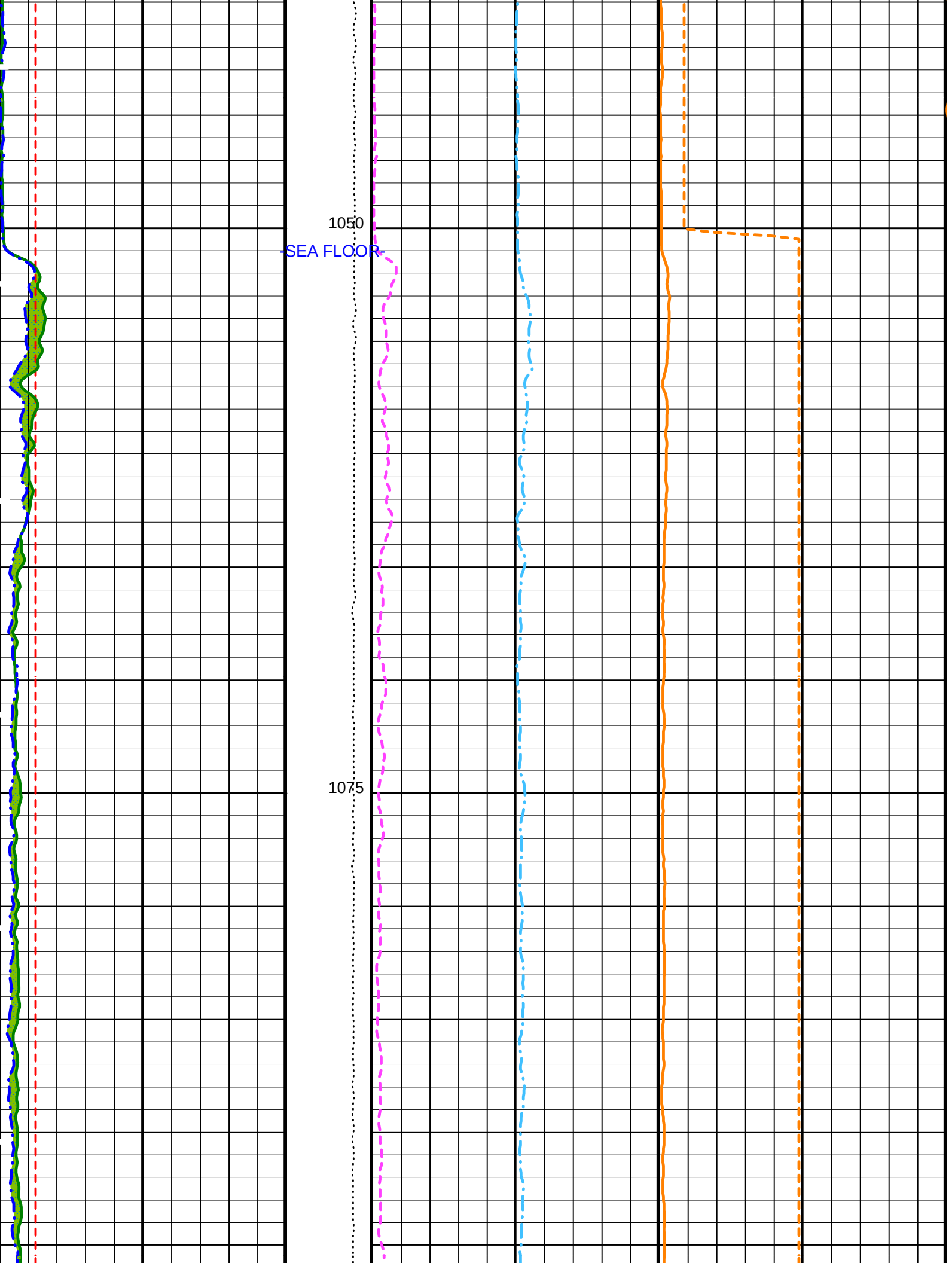
MCM

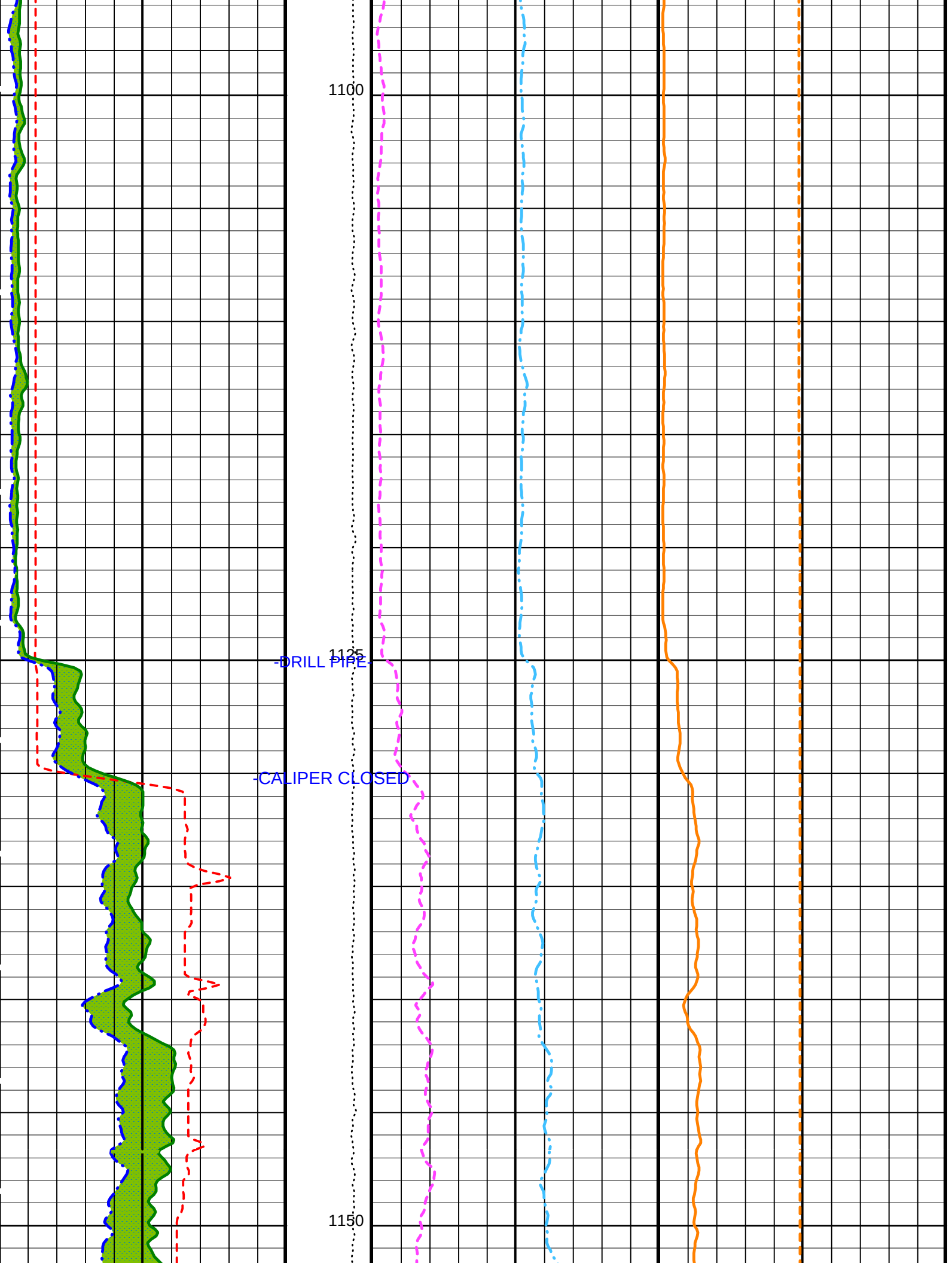
DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

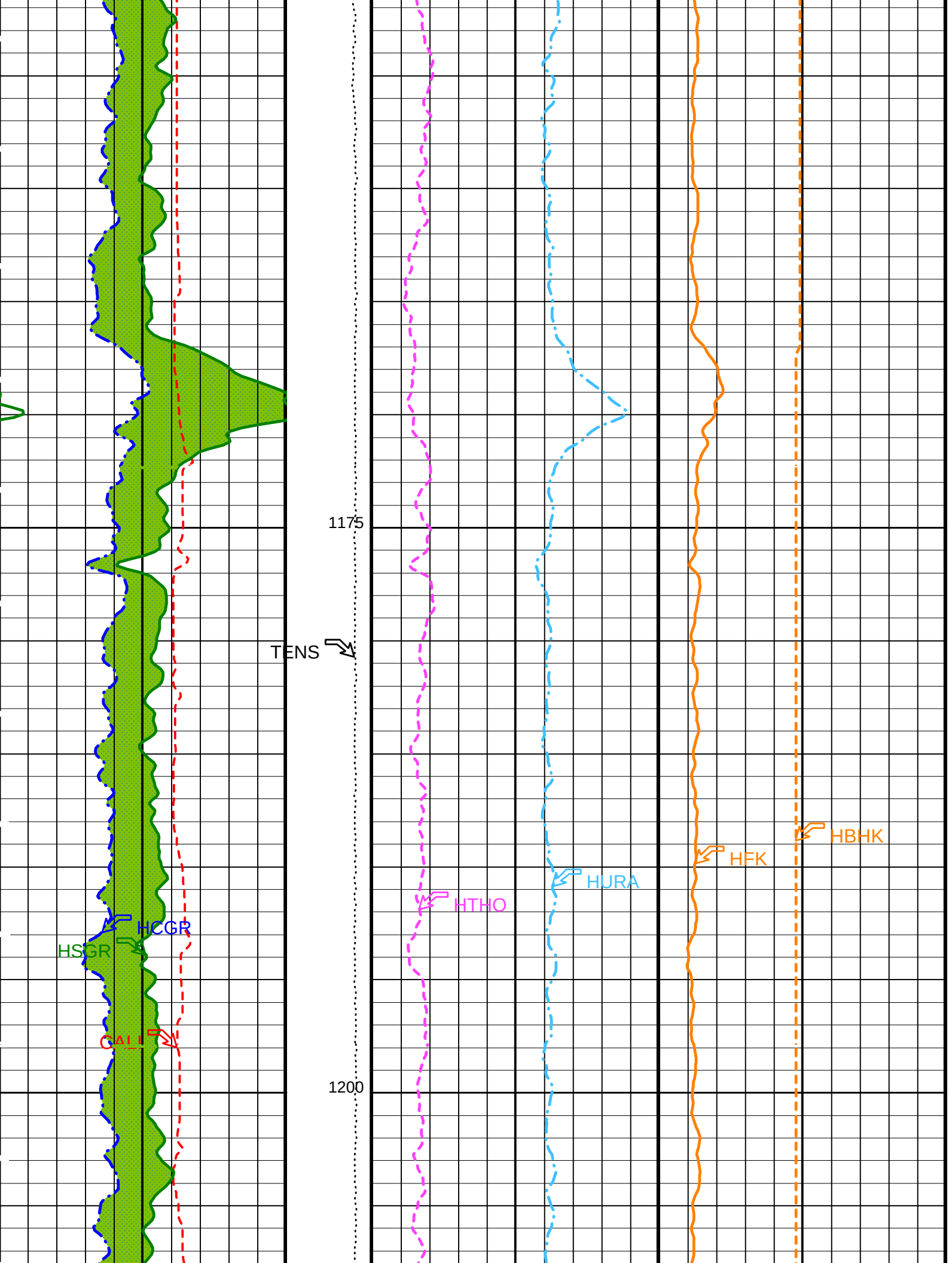
PIP SUMMARY

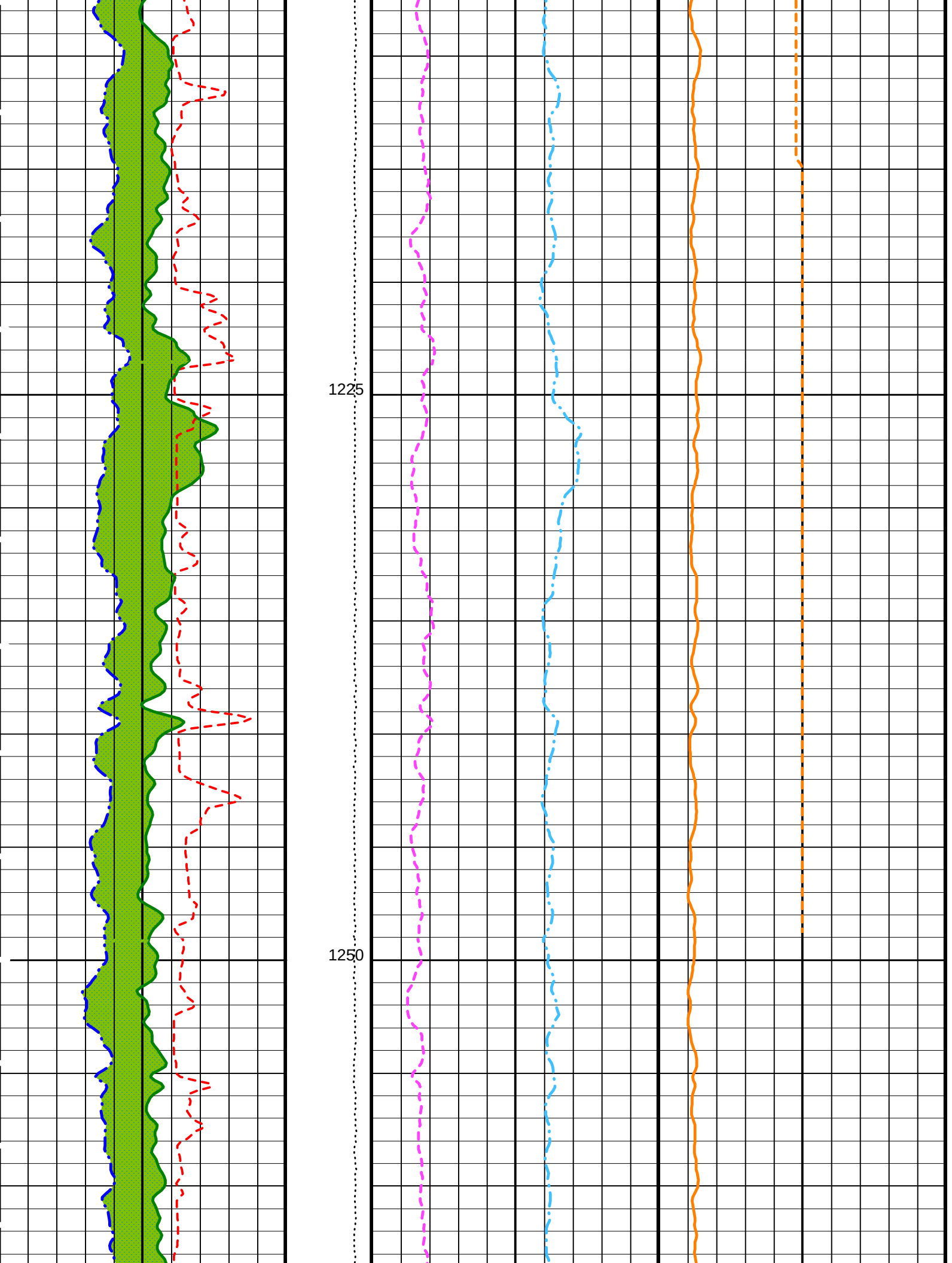
Time Mark Every 60 S

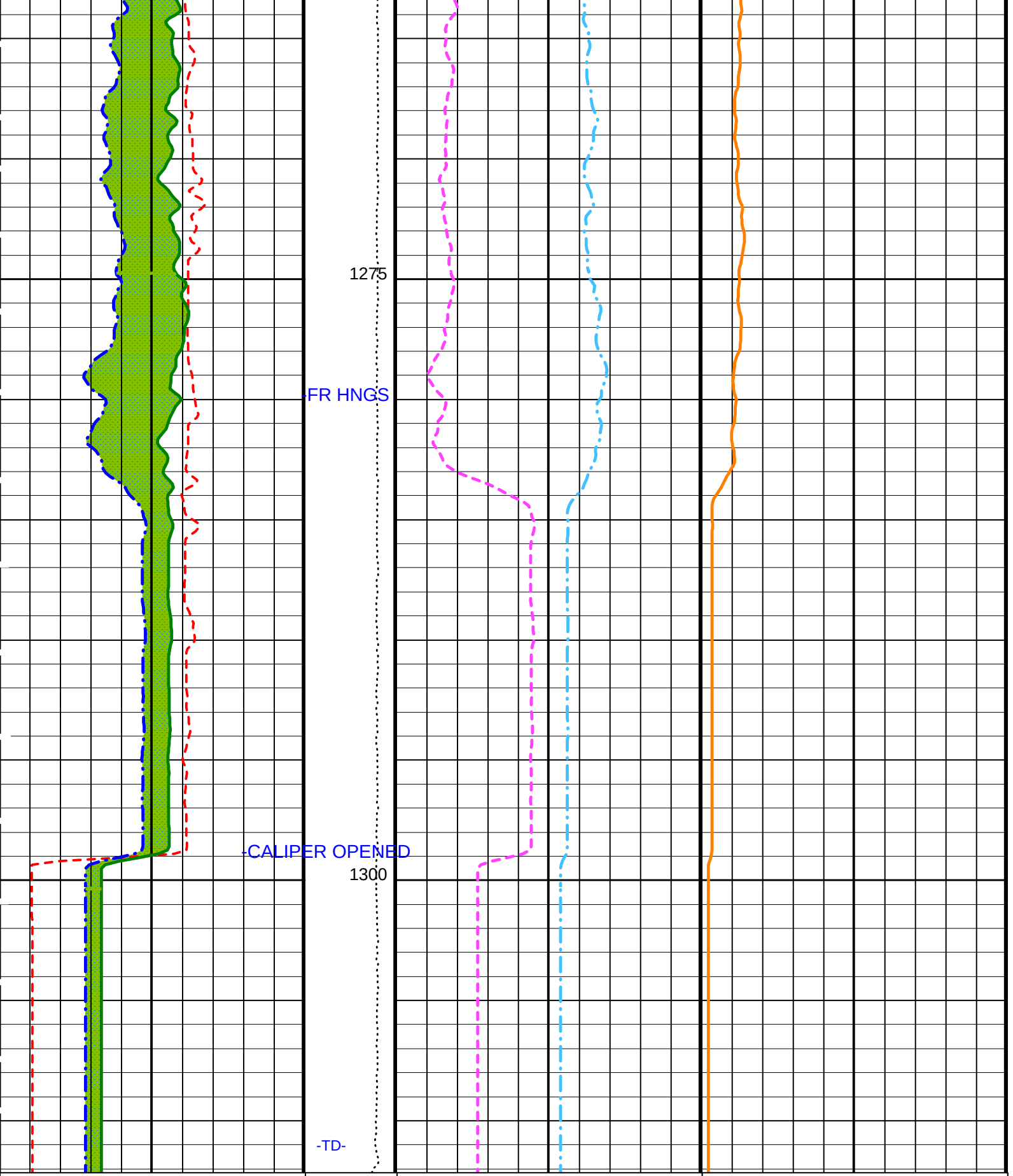



1050
SEA FLOOR
1075


1100
1125
-DRILL PIPE-
-CALIPER CLOSED
1150


1175
TENS
HTHO
HJRA
HFK
HBHK
HCGR
HSGR
CALI
1200


1225
1250


1275
-FR HNGS
-CALIPER OPENED
1300
-TD-
Caliper (CALI)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
0
(PPM)
30
HNGS Potassium (HFK)
0
(----)
0.1
HNGS Computed Gamma Ray (HCGR)
0
(GAPI)
100
HNGS Uranium (HURA)
-10
(PPM)
30
Area1
HNGS Borehole Potassium (HBHK)

From HCGR to HSGR

HNGS Spectroscopy Gamma Ray (HSGR)

0 (GAPI) 100

MAIN LOG

-0.05 (----) 0.05

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	CALI	
	APS-BA: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	CALI	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	CALI	
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	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.945727	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.953644	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.10	G/C3

Format: HNGSYields 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		
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

Area1
From HCGR to HSGR

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

REPEAT SECTION

HNGS Borehole Potassium (HBHK)
-0.05 (----) 0.05

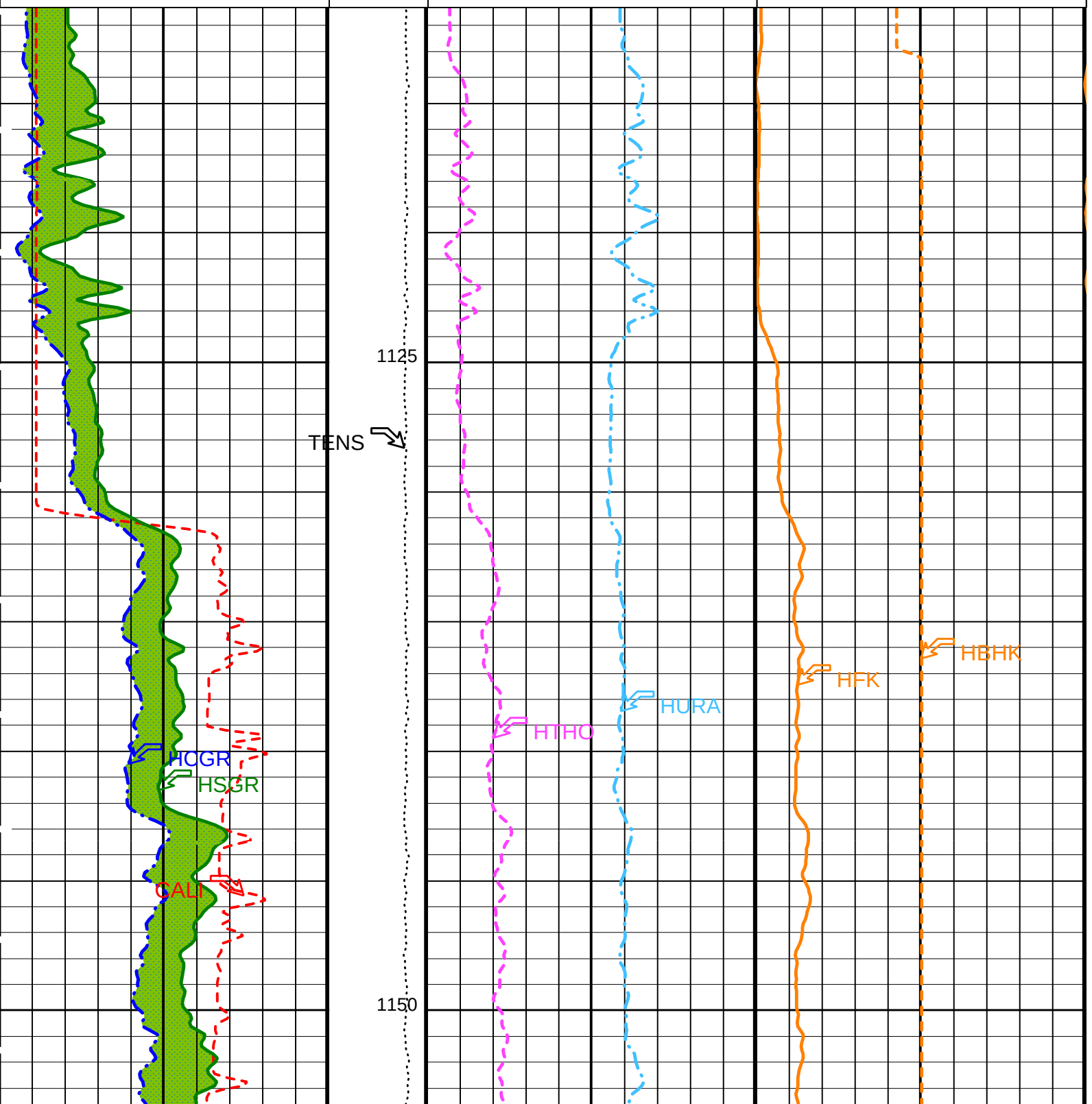
HNGS Uranium (HURA)
-10 (PPM) 30

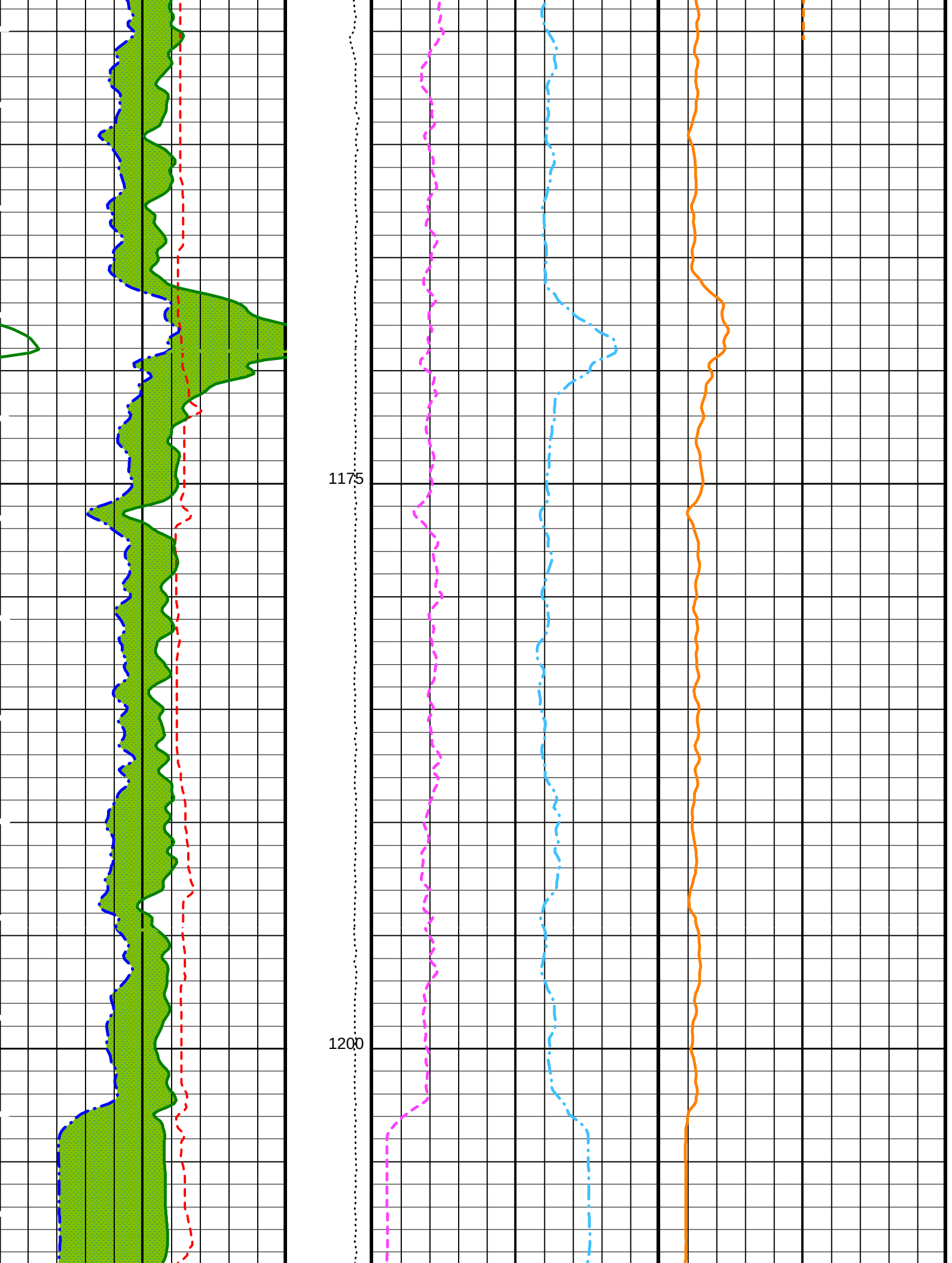
Caliper (CALI)
0 (IN) 20

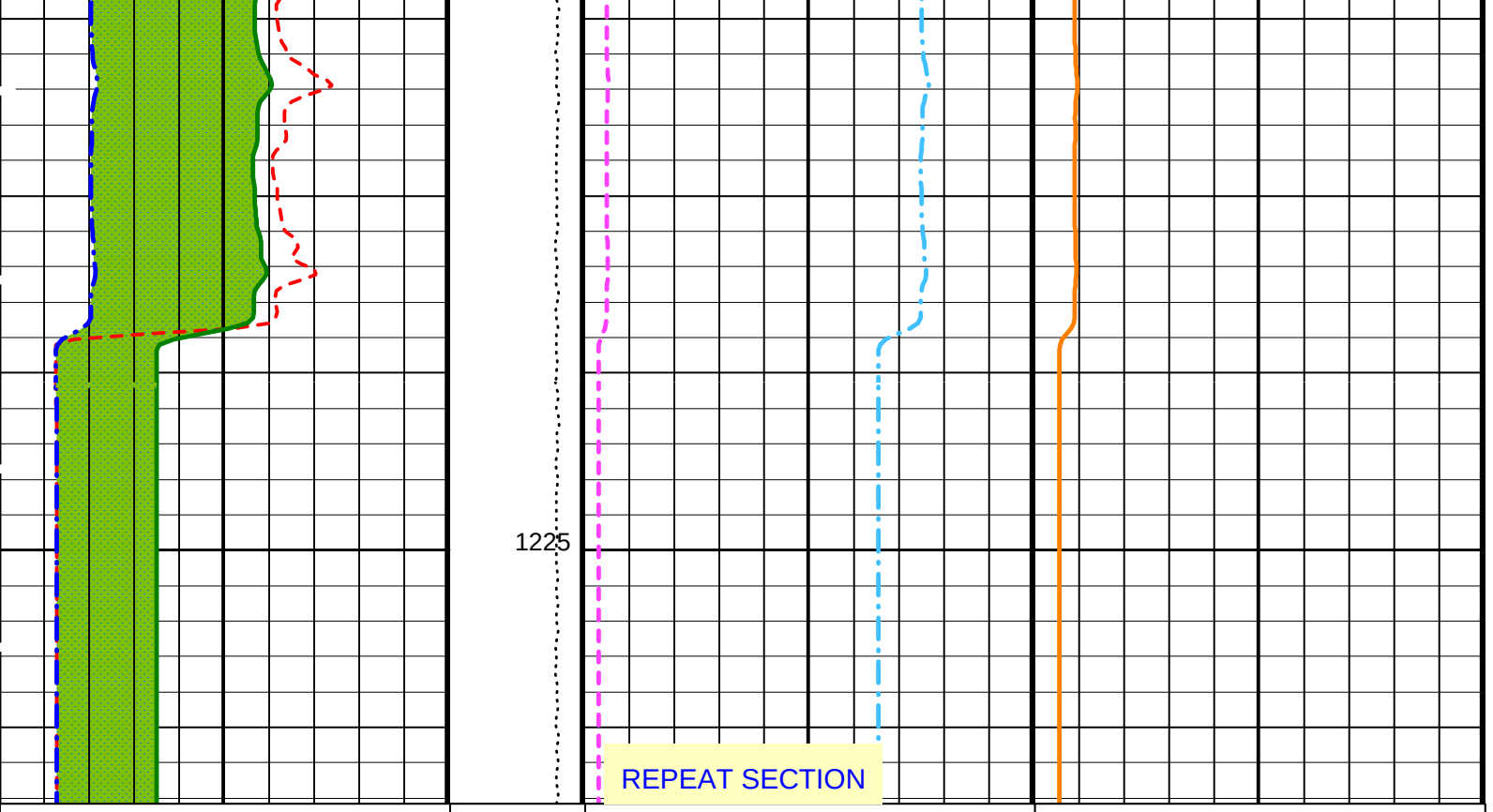
Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (----) 0.1




1175
1200



Caliper (CALI)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (----) 0.1

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

HNGS Uranium (HURA)
-10 (PPM) 30

Area1
From HCGR to HSGR

HNGS Borehole Potassium (HBHK)
-0.05 (----) 0.05

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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	CALI	
	APS-BA: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	CALI	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	CALI	
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	
HNPF	HNGS Processing Enable	YES	

S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.95148	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.963097	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.10	G/C3

Format: HNGSYields 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	0.03000	CPS
LSW2 Background	105.0	93.18	91.70	91.97	0.2706	0.03000	CPS
LSW3 Background	210.0	177.4	176.2	179.8	3.662	0.03000	CPS
LSW4 Background	290.0	236.8	236.6	234.3	-2.263	0.03000	CPS
LSW5 Background	610.0	518.0	517.3	511.9	-5.447	0.03000	CPS
SSW1 Background	100.0	83.02	84.95	84.09	-0.8559	0.03000	CPS
SSW2 Background	200.0	165.1	166.3	166.9	0.5784	0.03000	CPS
SSW3 Background	530.0	440.7	439.6	436.9	-2.680	0.03000	CPS
SSW4 Background	280.0	232.4	232.4	231.0	-1.397	0.03000	CPS
SSW5 Background	205.0	174.0	173.3	174.4	1.064	0.03000	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
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
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

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

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

Field: Hydrate Ridge
Ocean: Pacific
State: Oregon

Natural Gamma Ray
Spectroscopy