Schlumberger

Company: Lamont Doherty

Well: IODP EXP 308 Site U1324A
Field: URSA Basin
Country: USA Ocean: Gulf Of Mexico

Country: USA
Field: URSA Basin
Location: Rig- Joides Resolution
Well: IODP EXP 308 Site U1324A
Company: Lamont Doherty

Natural Gamma Ray

LOCATION

Rig- Joides Resolution		Elev.: K.B.	10.6 m
		G.L.	1056 m
		D.F.	10.3 m
Permanent Datum:	MSL	Elev.:	0 m
Log Measured From:	DES	10.6 m	above Perm. Datum
Drilling Measured From:	DES		

API Serial No.	Max. Hole Devi.	Longitude	Latitude
		W 89 08.3554	N 28 04.7962

	Run 1	Run 2	Run 3
Logging Date			
Run Number	1		
Depth Driller	1678 m		
Schlumberger Depth	1574 m		
Bottom Log Interval	1573 m		
Top Log Interval	1057 m		
Casing Driller Size @ Depth	0.000 in @ 1115 m	@	@
Casing Schlumberger	1111 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite		
MUD Density / Viscosity	1.2 g/cm3		
MUD Fluid Loss / PH	0 cm3		
MUD Source Of Sample			
RM @ Measured Temperature	0.196 ohm.m @ 23 degC	@	@
RMF @ Measured Temperature	0.172 ohm.m @	@	@
RMC @ Measured Temperature	0.294 ohm.m @	@	@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	0.220 @ 18	@ 18	@ @
Maximum Recorded Temperatures	18 degC	110	
Circulation Stopped / Time	6/19/05	1800	
Logger On Bottom / Time	6/20/05	See Log	
Unit Number / Location	99	Houston	
Recorded By	Steve Kittredge		
Witnessed By	Gerry Iturrino		

	Run 1	Run 2	Run 3
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			

Run 3

Run 4

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1	OTHER SERVICES2
OS1: WSTA	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole drilled with LWD.	
All depths in Meters Below Rig Floor (MBRF).	
Hole flushed with Sepiolite	
Sea Floor Driller- 1066 MBRF.	
Sea Floor Logger- 1064 MBRF.	
Total Depth Driller- 1678 MBRF.	
Total Depth Logger- 1574 MBRF.	
Casing Bottom Driller- 1115 MBRF.	
Casing Bottom Logger- 1111 MBRF.	
Could not reach Total Depth.	
Down Log and Two up passes.	

RUN 1	RUN 2
SERVICE ORDER #:	SERVICE ORDER #:
PROGRAM VERSION: 12C0-301	PROGRAM VERSION:
FLUID LEVEL:	FLUID LEVEL:

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

GSR-U 166
WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT 27.76
LEH-QT

CTEM
DTC-H TelStatus 26.59 26.87
ECH-KC ToolStatu 25.95

HNGS-BA Upper_1 25.25 25.95
HNGS-BA-194 Lower_2 25.04

HNGS-BA 194
HNSH-BA 205

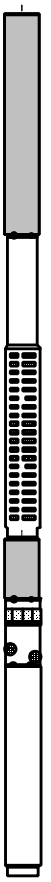
Lower_2 — 25.04

HNGC-B
HNGH-A 115
HNGC-B 300

HNGC Stat — 22.92 — 23.45

AH-MCD
AH-MCD — 22.39

DSST-B
SPAC-B 8128
ECH-SD 8128
SMDR-BD 8076
SSIJ-BA 8127
SMDX-AA 8148 — 20.26



PWF — 4.72

AH-MCD
AH-MCD — 4.72

DTA-A
ECH-KE
DTA-A 8231 — 2.44

GPIT-A/B
GPIC-A 840
GPIH-A — 1.22

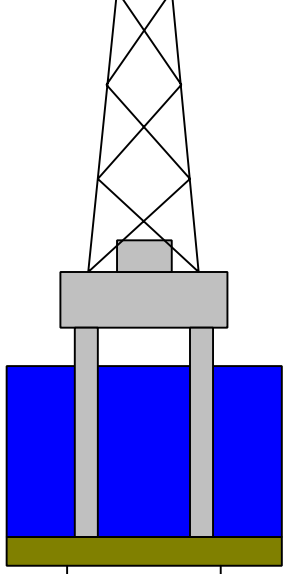
HV DF
Tension GPIT — 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 4.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String

Kelly Bushing Elevation		10.6				
Mean Sea Level		0.0				
				0.0	5.500	Casing String
				1064.0	9.875	Borehole Segment
				1115.6	5.500	Casing Shoe
				1678.0	9.875	Borehole Segment Bottom



Schlumberger

SECOND PASS

MAXIS Field Log

Output DLIS Files

DEFAULT	DSI_NGS_017LUP	FN:17	PRODUCER	20-Jun-2005 01:43	1575.1 M	1057.4 M

OP System Version: 12C0-301

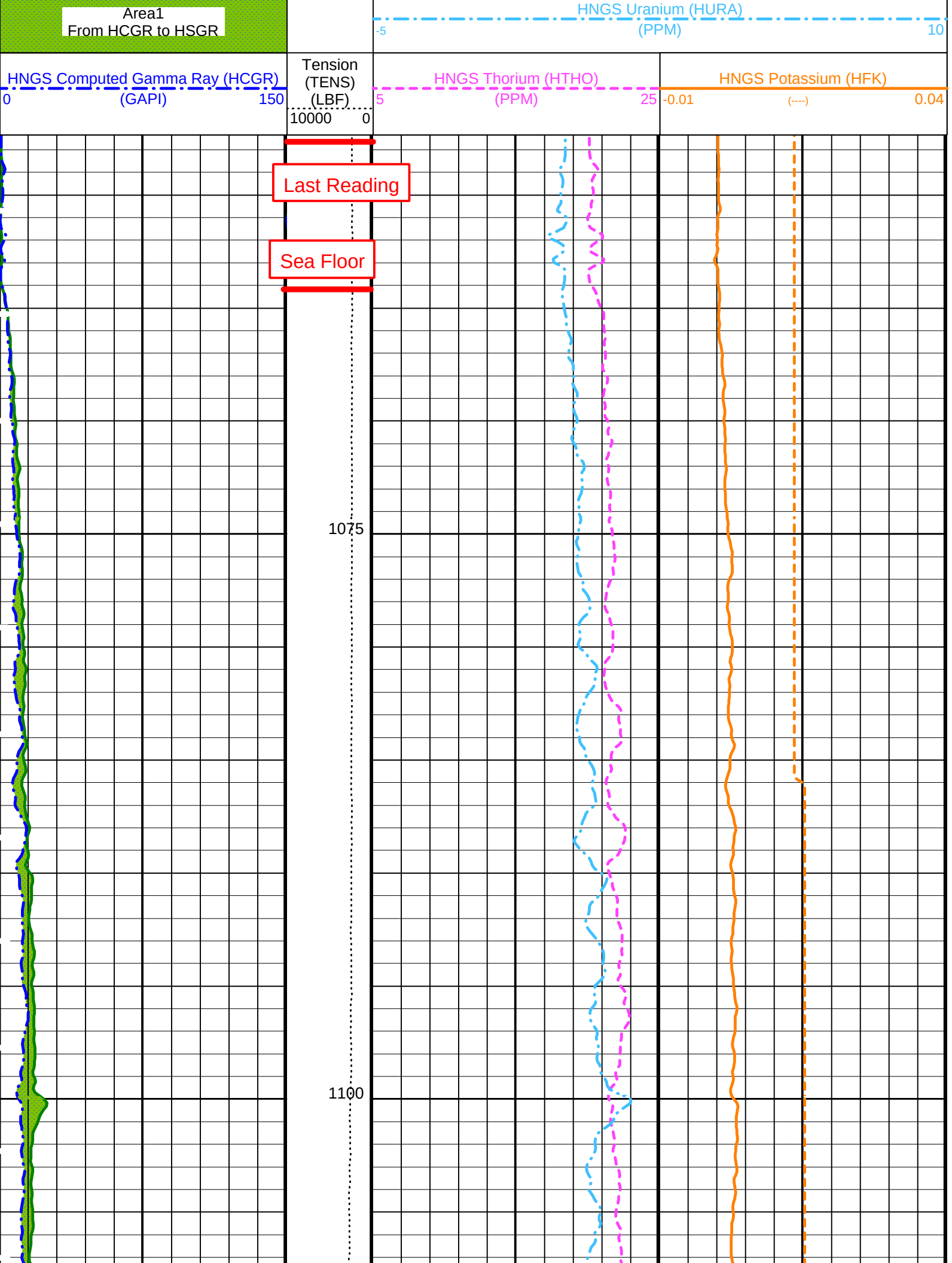
MCM

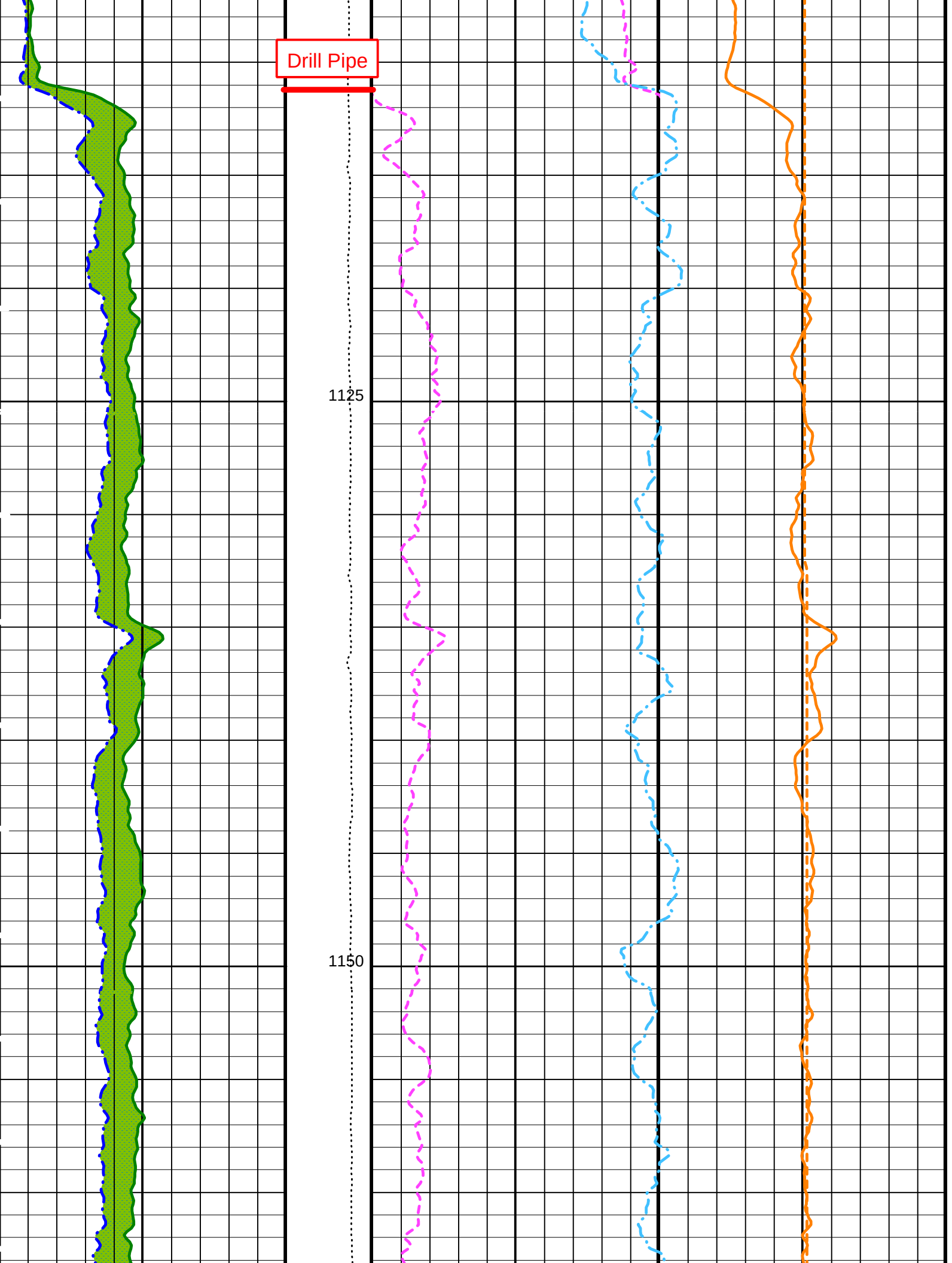
GPIT-A/B	12C0-301	DTA-A	12C0-301
DSST-B	12C0-301	HNGC-B	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

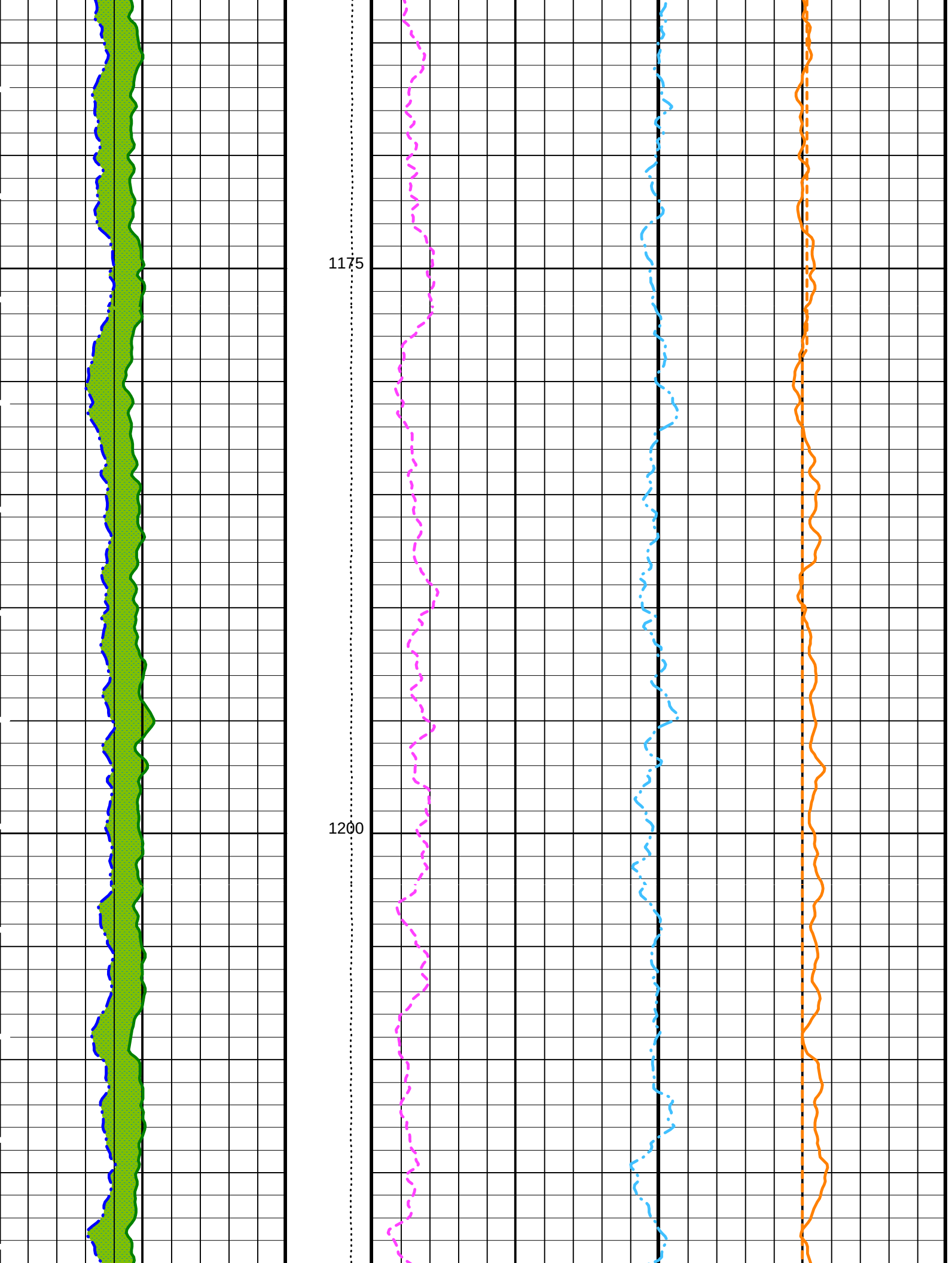
PIP SUMMARY

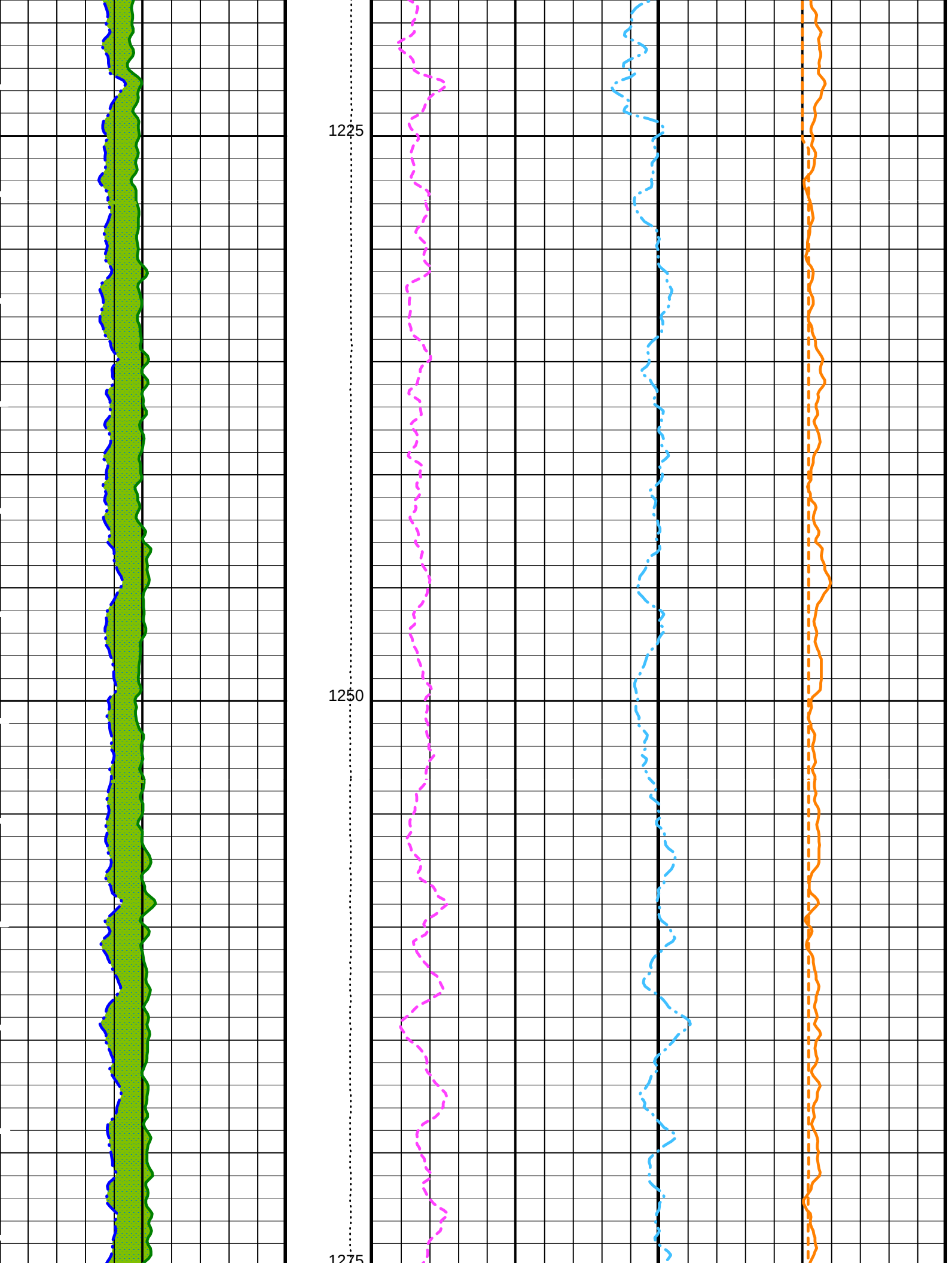
Time Mark Every 60 S

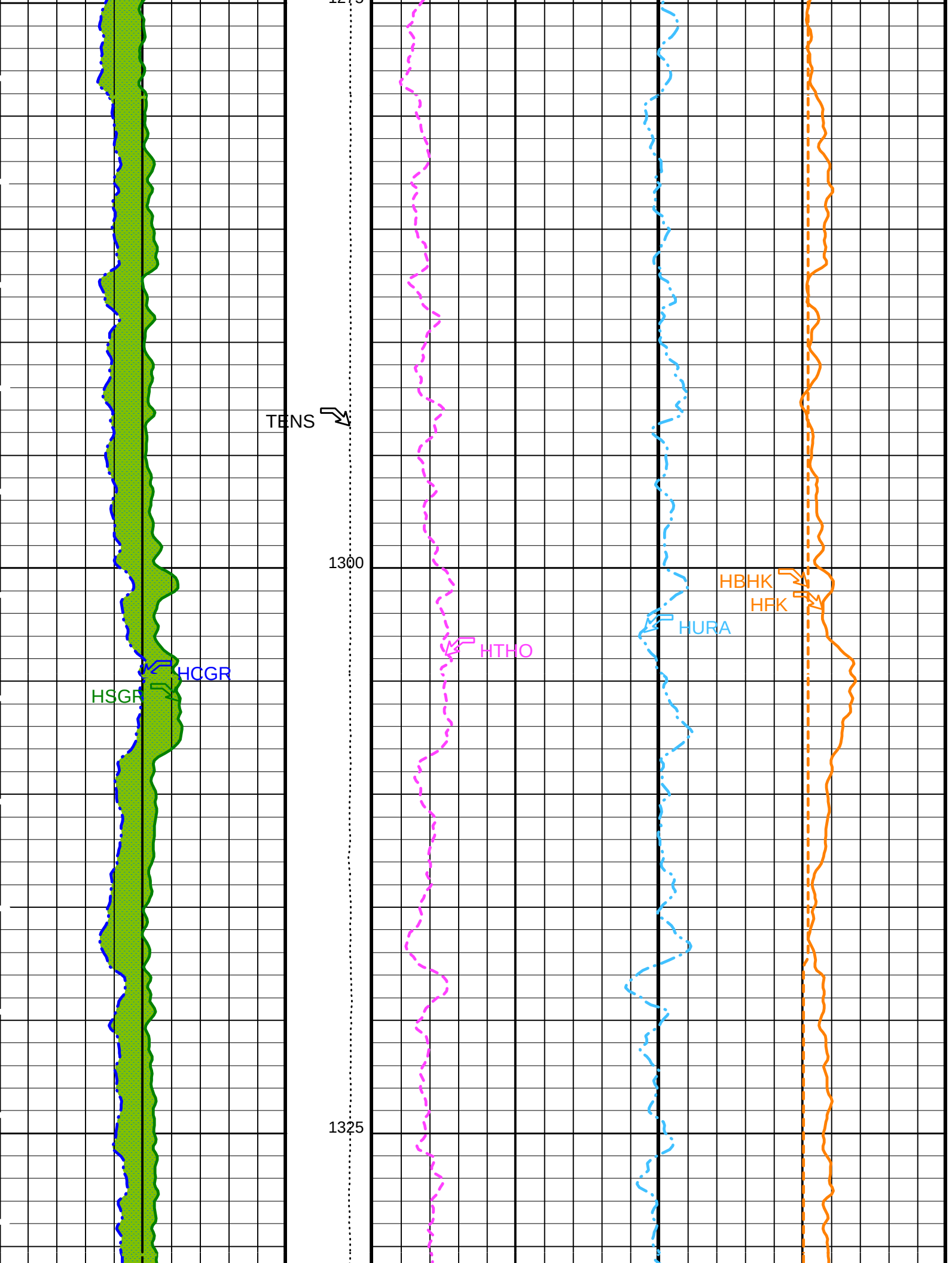
HNGS Spectroscopy Gamma Ray (HSGR)			HNGS Borehole Potassium (HBHK)		
0	(GAPI)	150	-0.05	(----)	0.05

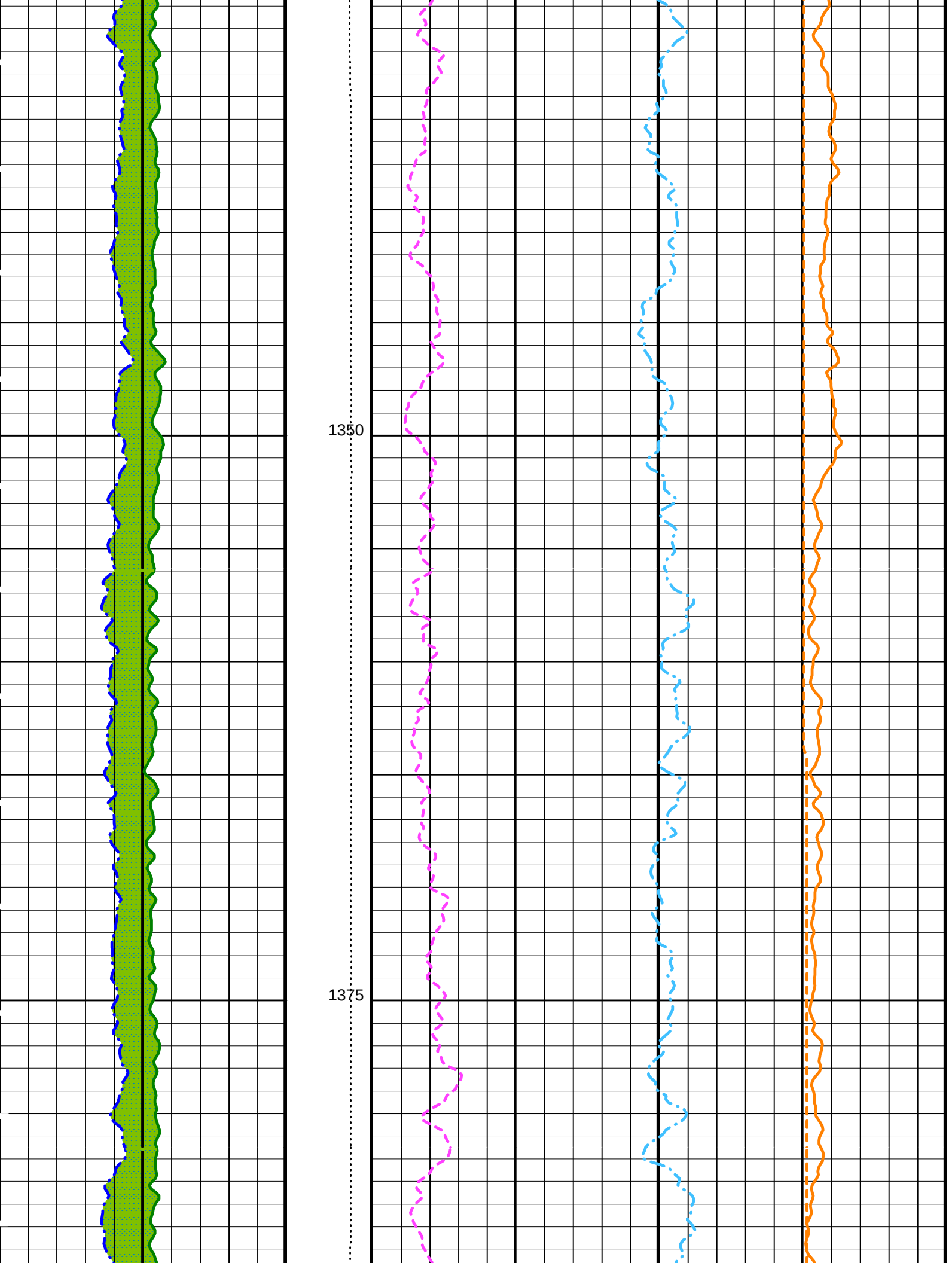

Area1
From HCGR to HSGR
HNGS Uranium (HURA)
-5
(PPM)
10
HNGS Computed Gamma Ray (HCGR)
0
(GAPI)
150
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
5
(PPM)
25
HNGS Potassium (HFK)
-0.01
(----)
0.04
Last Reading
Sea Floor
1075
1100

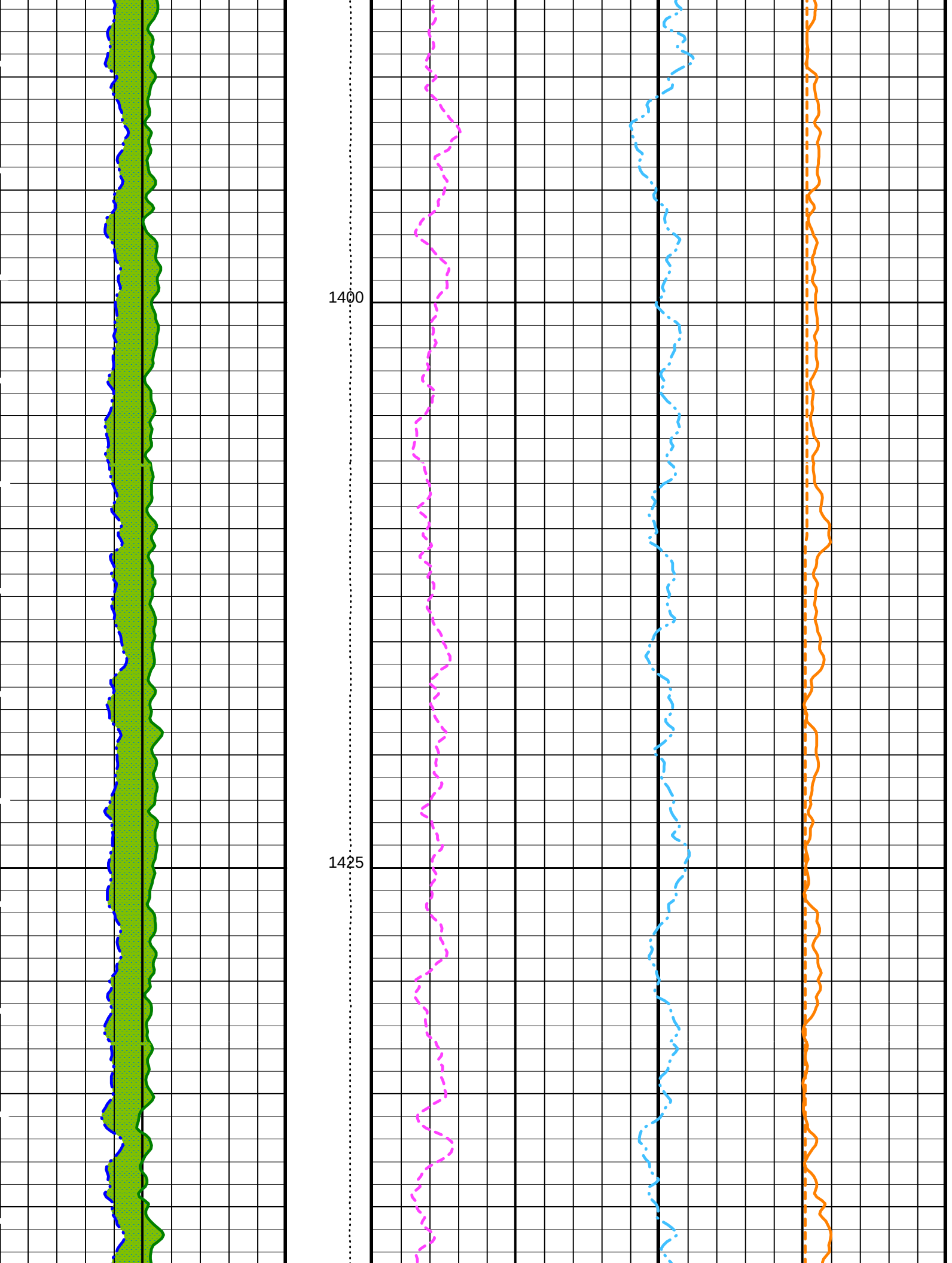

Drill Pipe
1125
1150

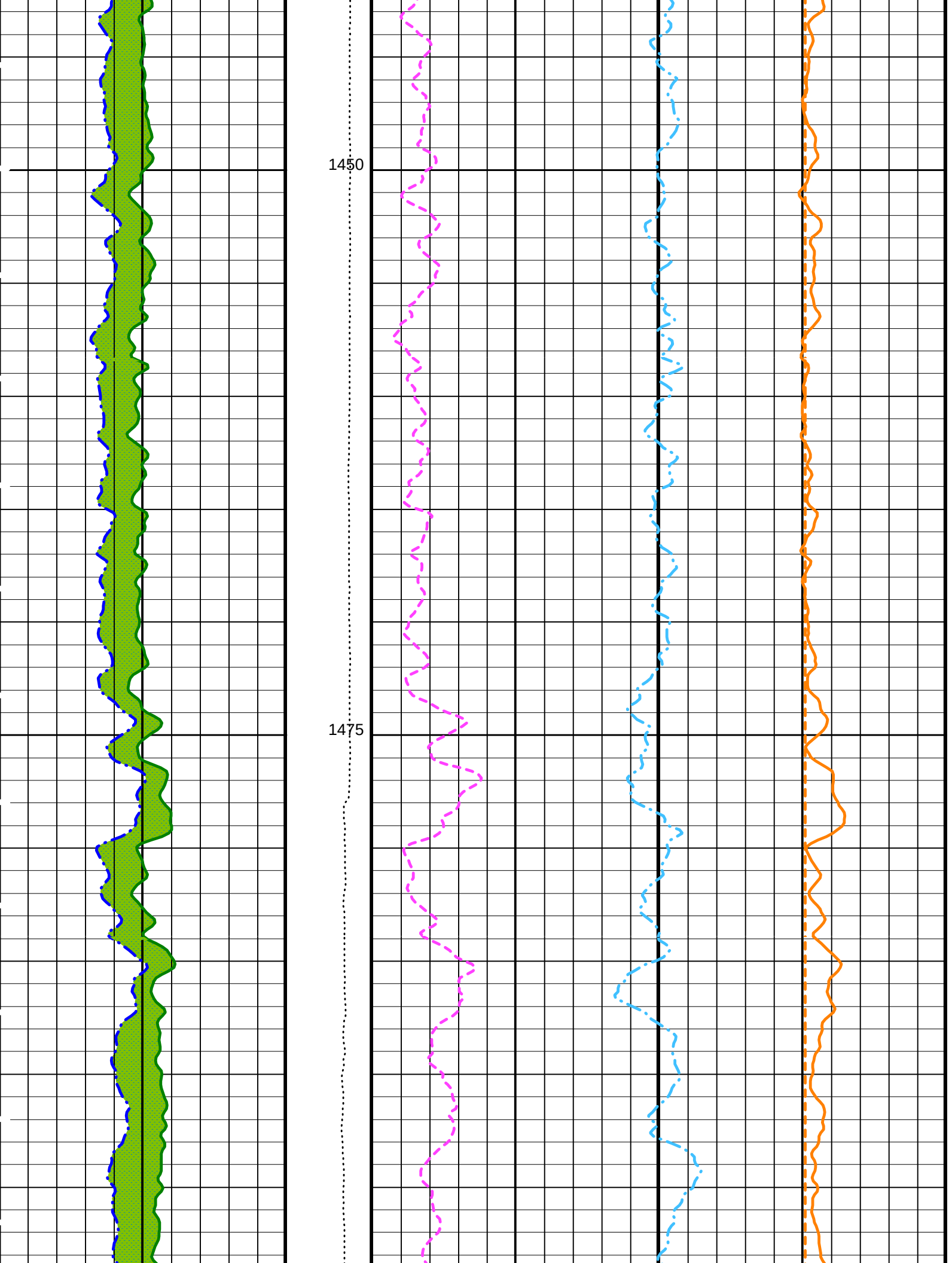

1175
1200

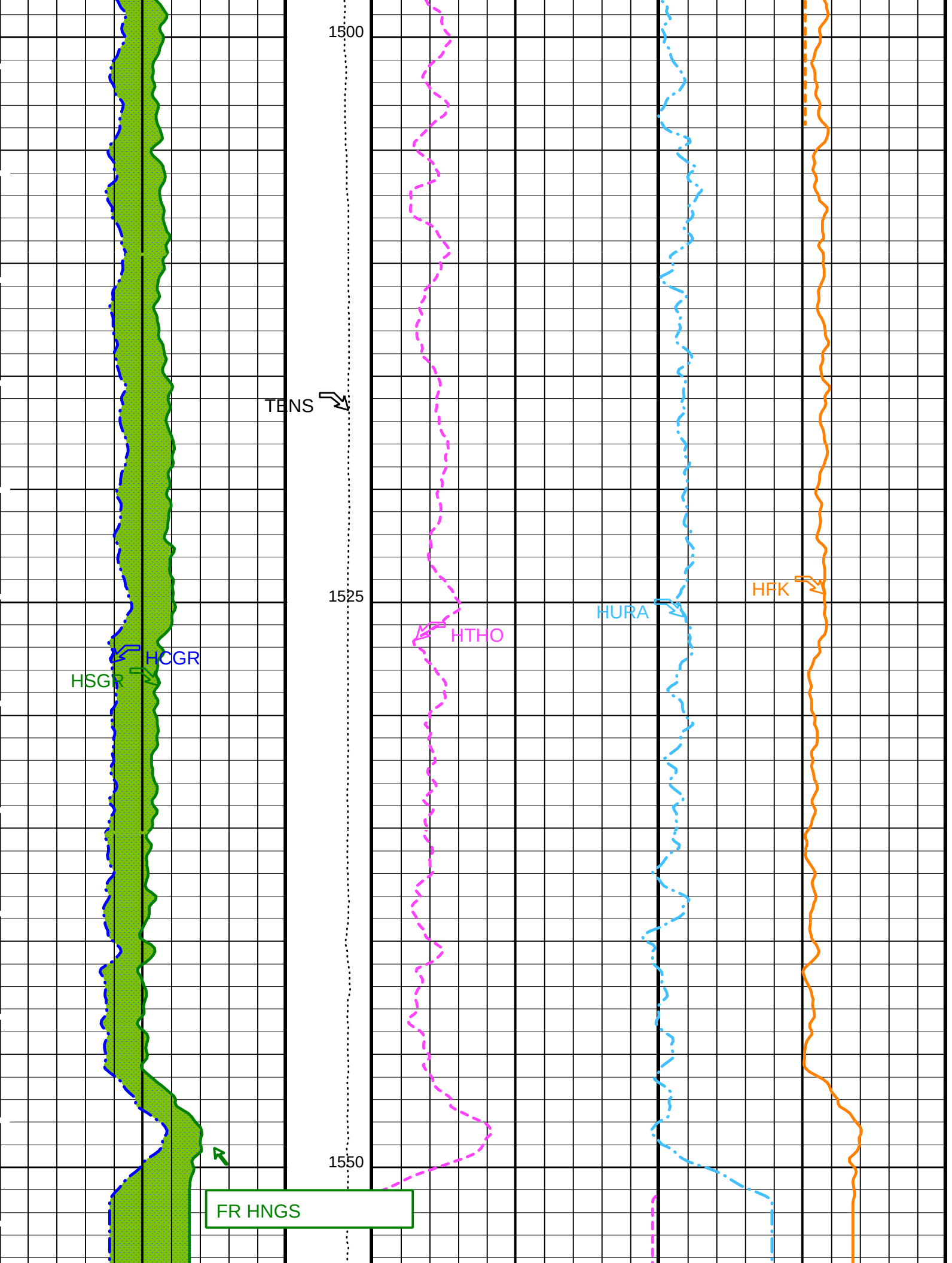

1225
1250
1275

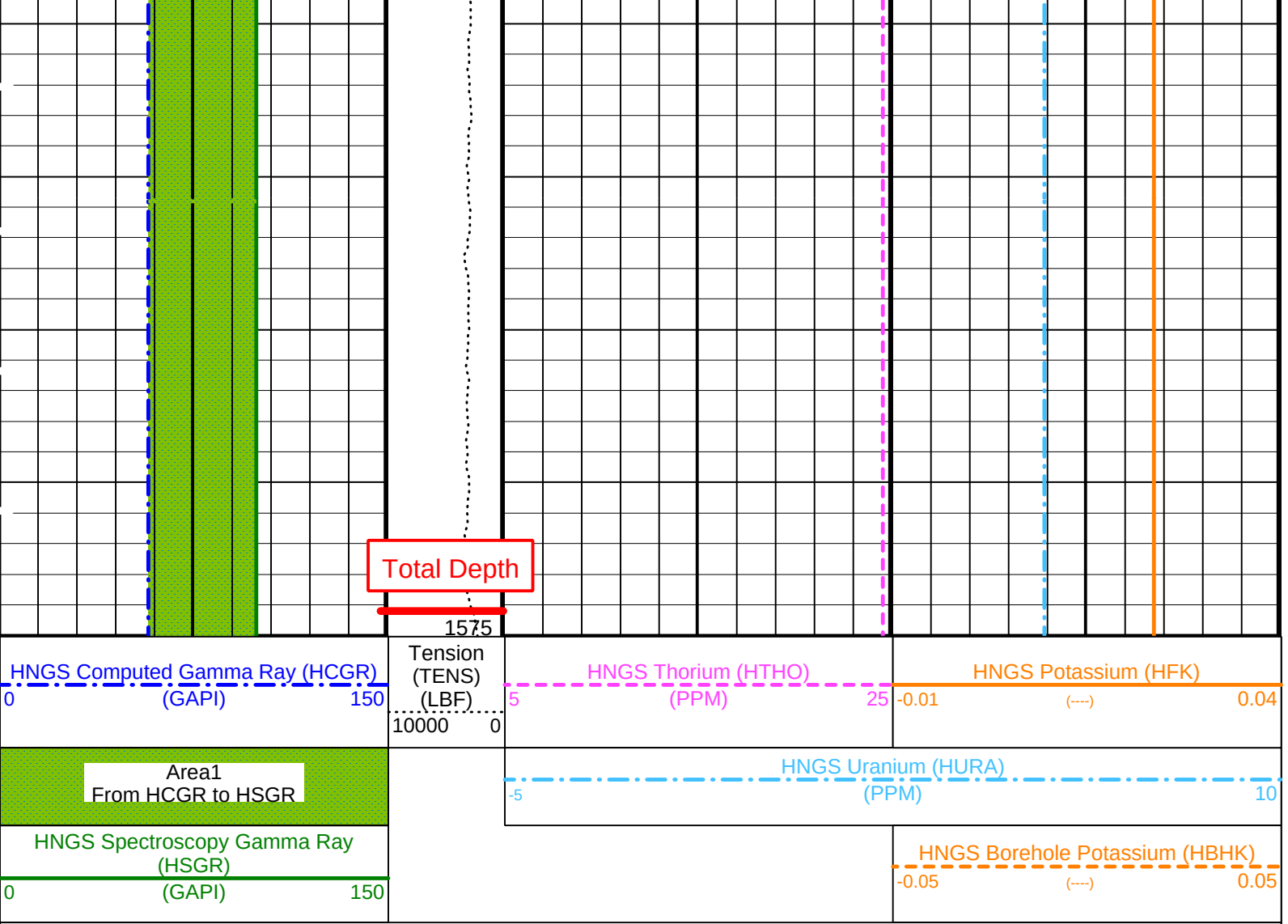

TENS
1300
HBHK
HFK
HURA
HTHO
HCGR
HSGR
1325


1350
1375


1400
1425


1450
1475


1500
TENS
1525
HTHO
HURA
HFK
HCGR
HSGR
1550
FR HNGS



Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	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	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.0010148	
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	0.985262	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.989153	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.20	G/C3

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 20-Jun-2005 01:43

OP System Version: 12C0-301

MCM

GPIT-A/B	12C0-301	DTA-A	12C0-301
DSST-B	12C0-301	HNGC-B	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

Output DLIS Files

DEFAULT	DSI_NGS_017LUP	FN:17	PRODUCER	20-Jun-2005 01:43	

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FIRST PASS

MAXIS Field Log

Output DLIS Files

DEFAULT	DSI_NGS_016LUP	FN:16	PRODUCER	19-Jun-2005 23:37	1572.8 M	1150.0 M

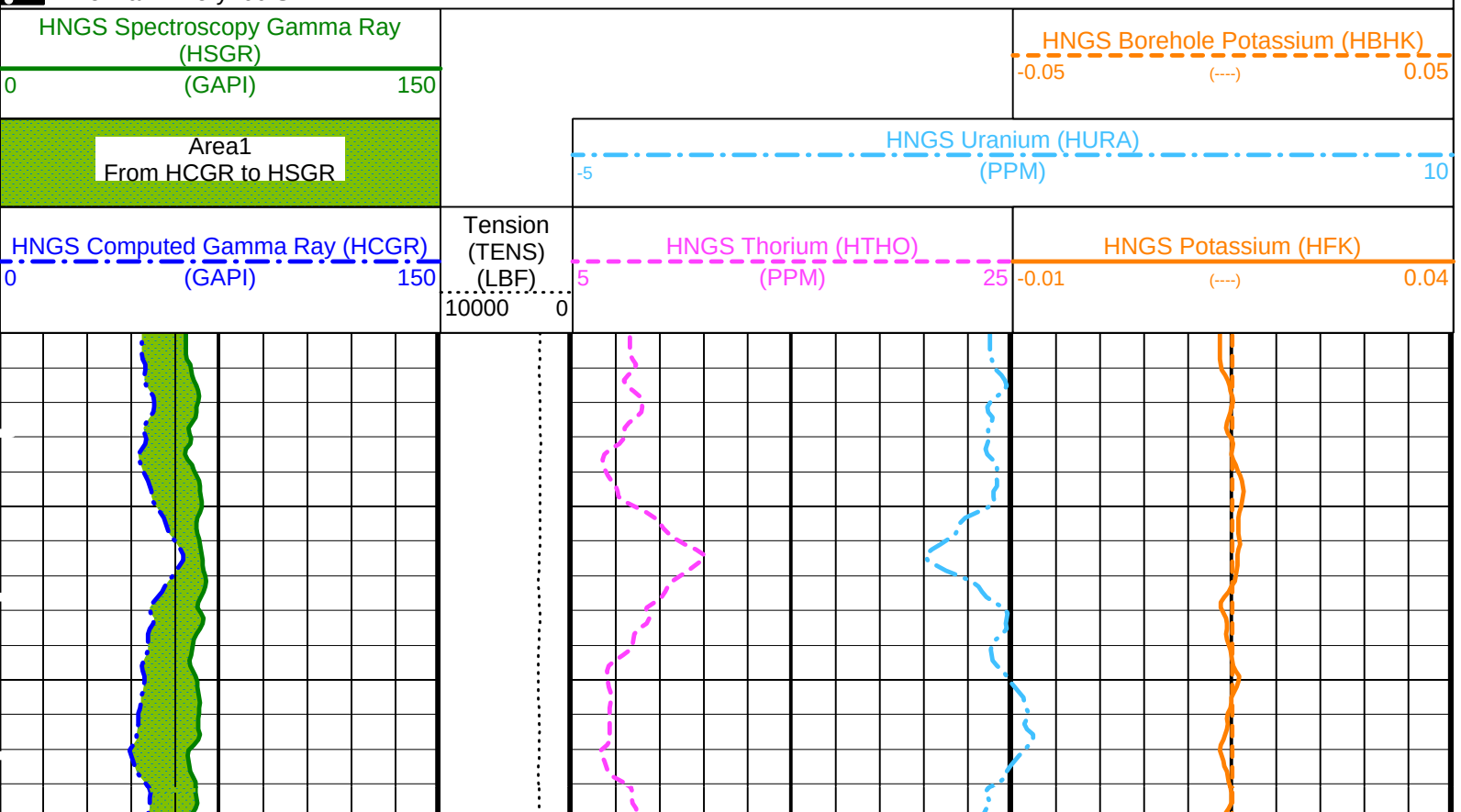
OP System Version: 12C0-301

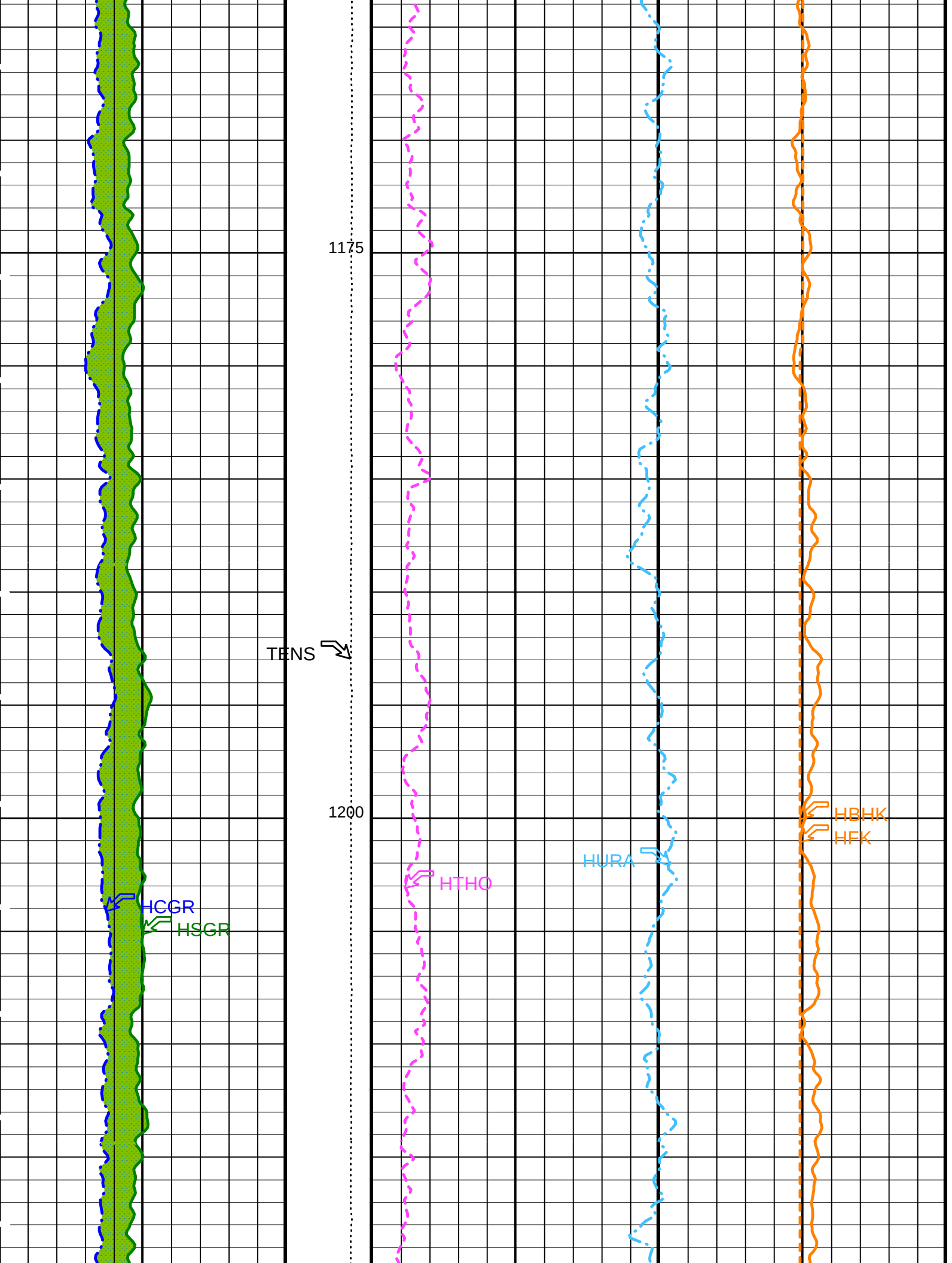
MCM

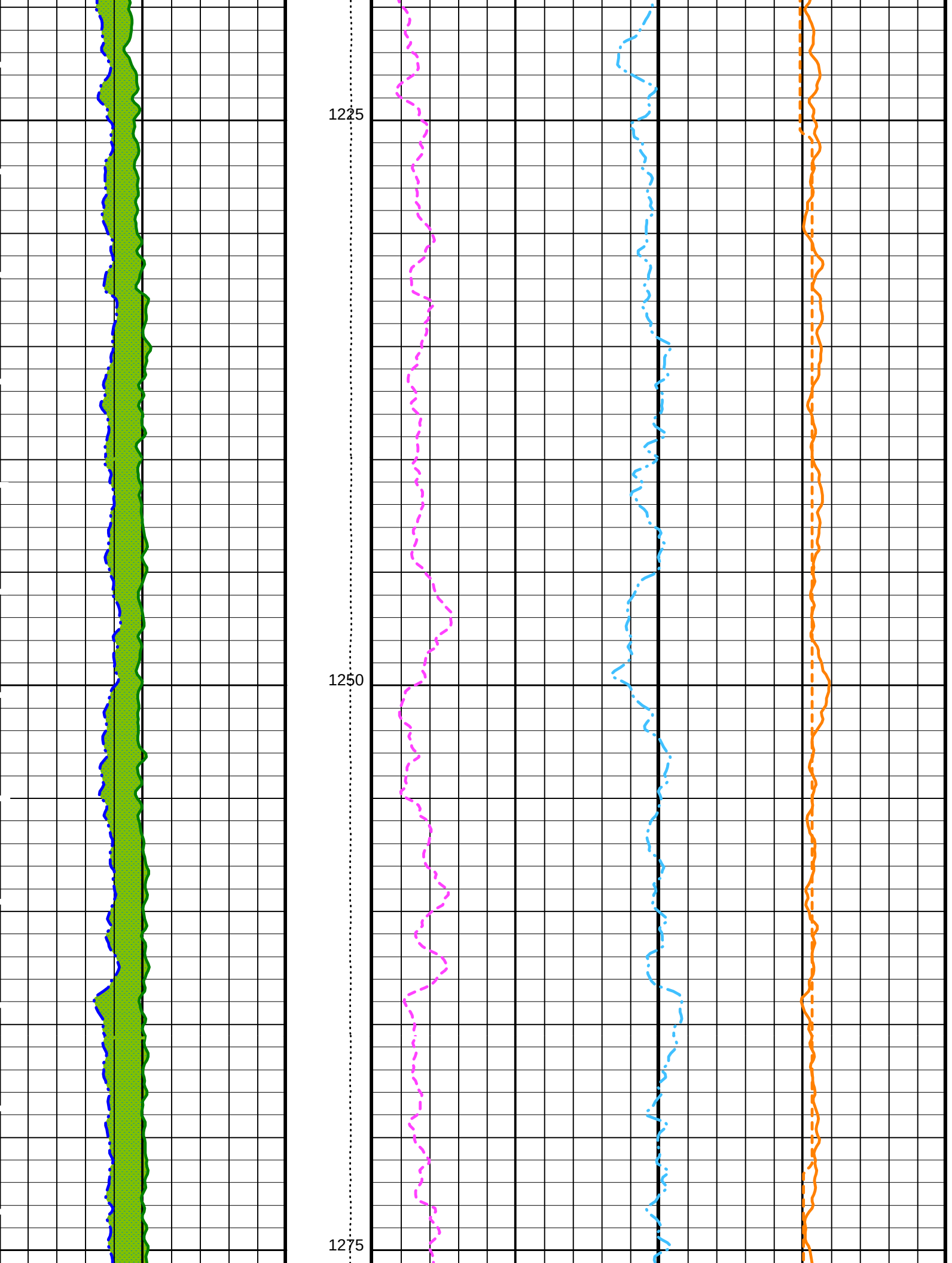
GPIT-A/B	12C0-301	DTA-A	12C0-301
DSST-B	12C0-301	HNGC-B	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

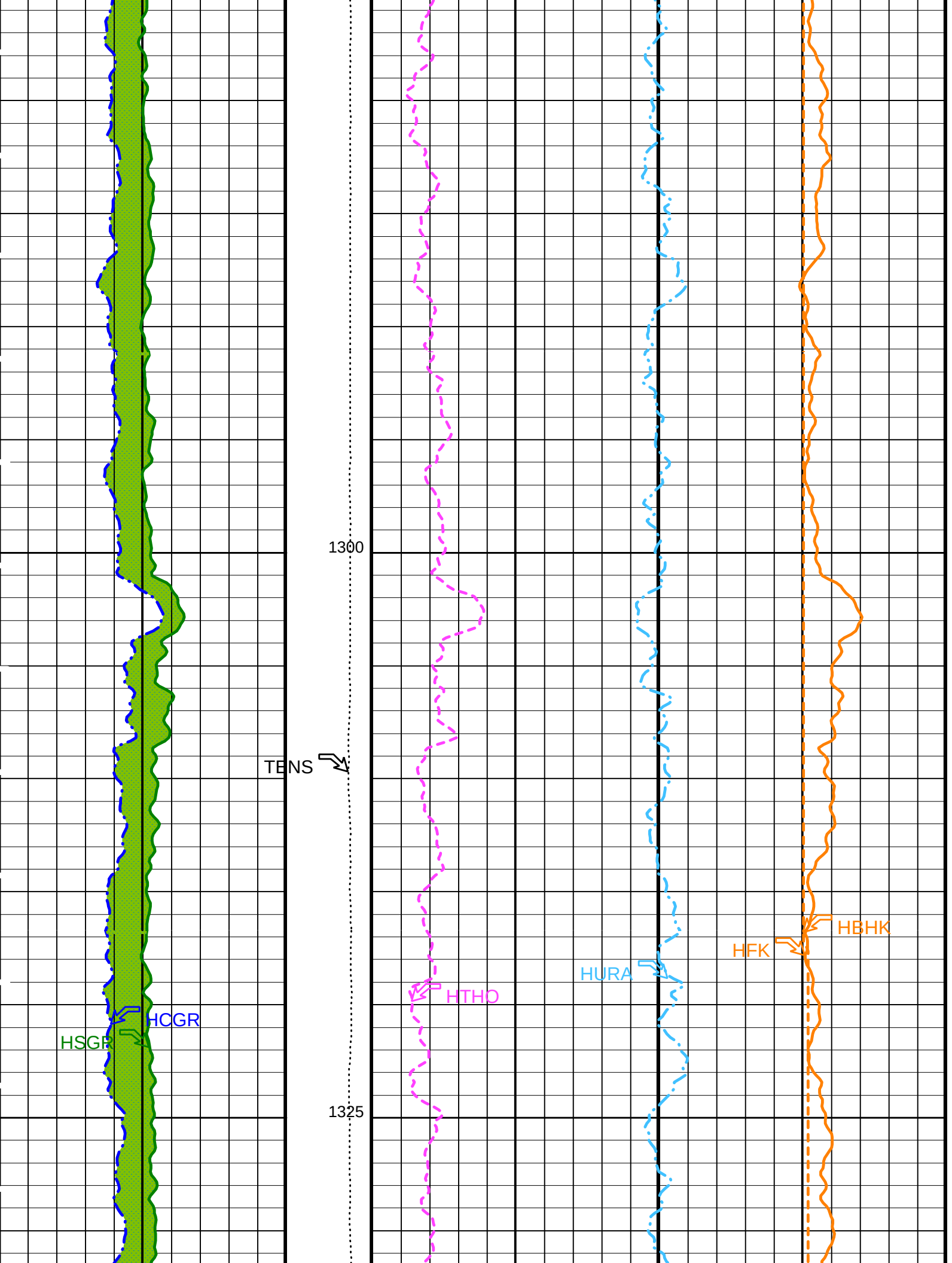
PIP SUMMARY

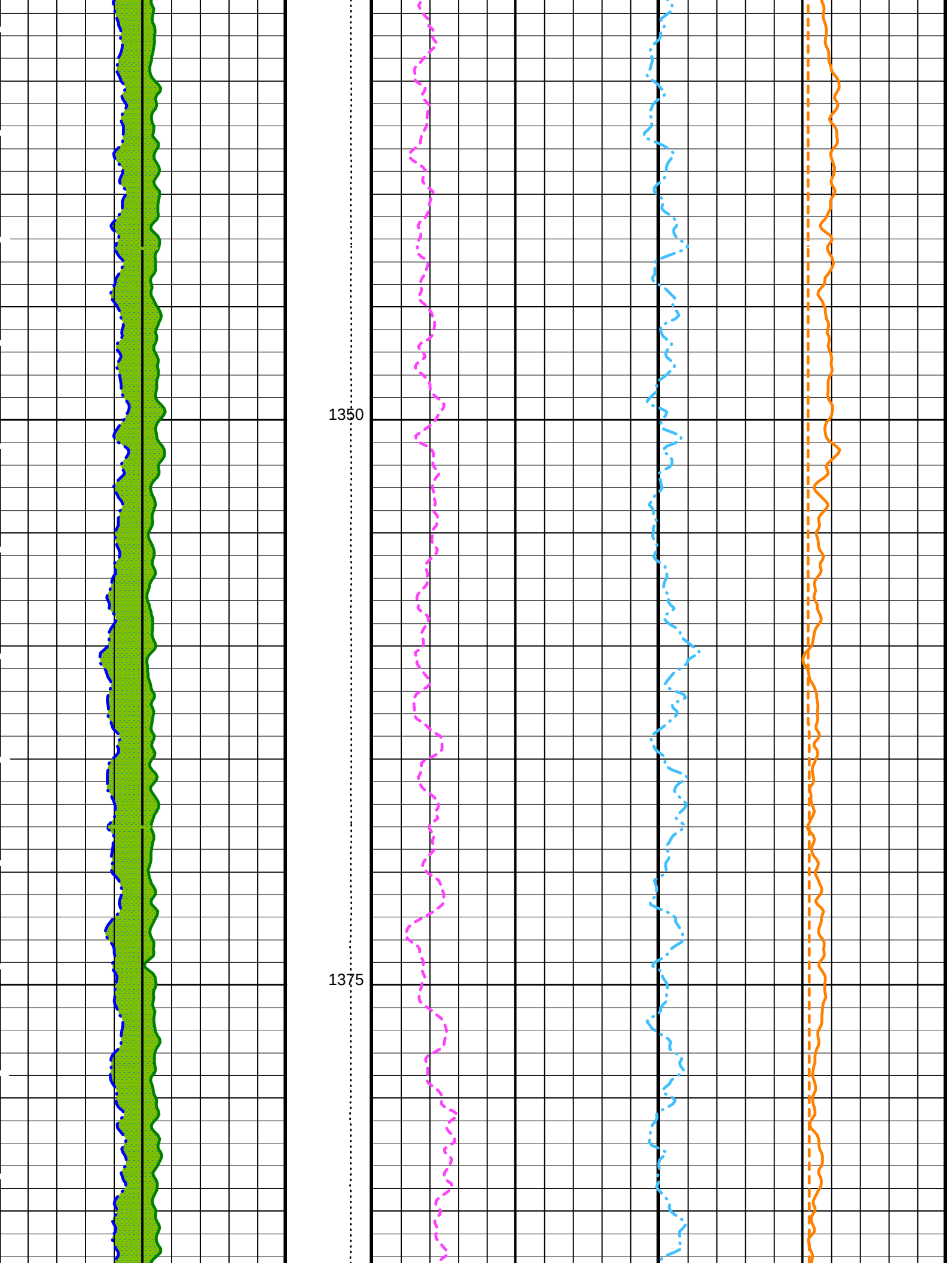
Time Mark Every 60 S




1175
TENS
1200
HTHO
HURA
HBHK
HFK
HCGR
HSGR


1225
1250
1275


1300
TENS
HTHO
HURA
HFK
HBHK
HCGR
HSGR
1325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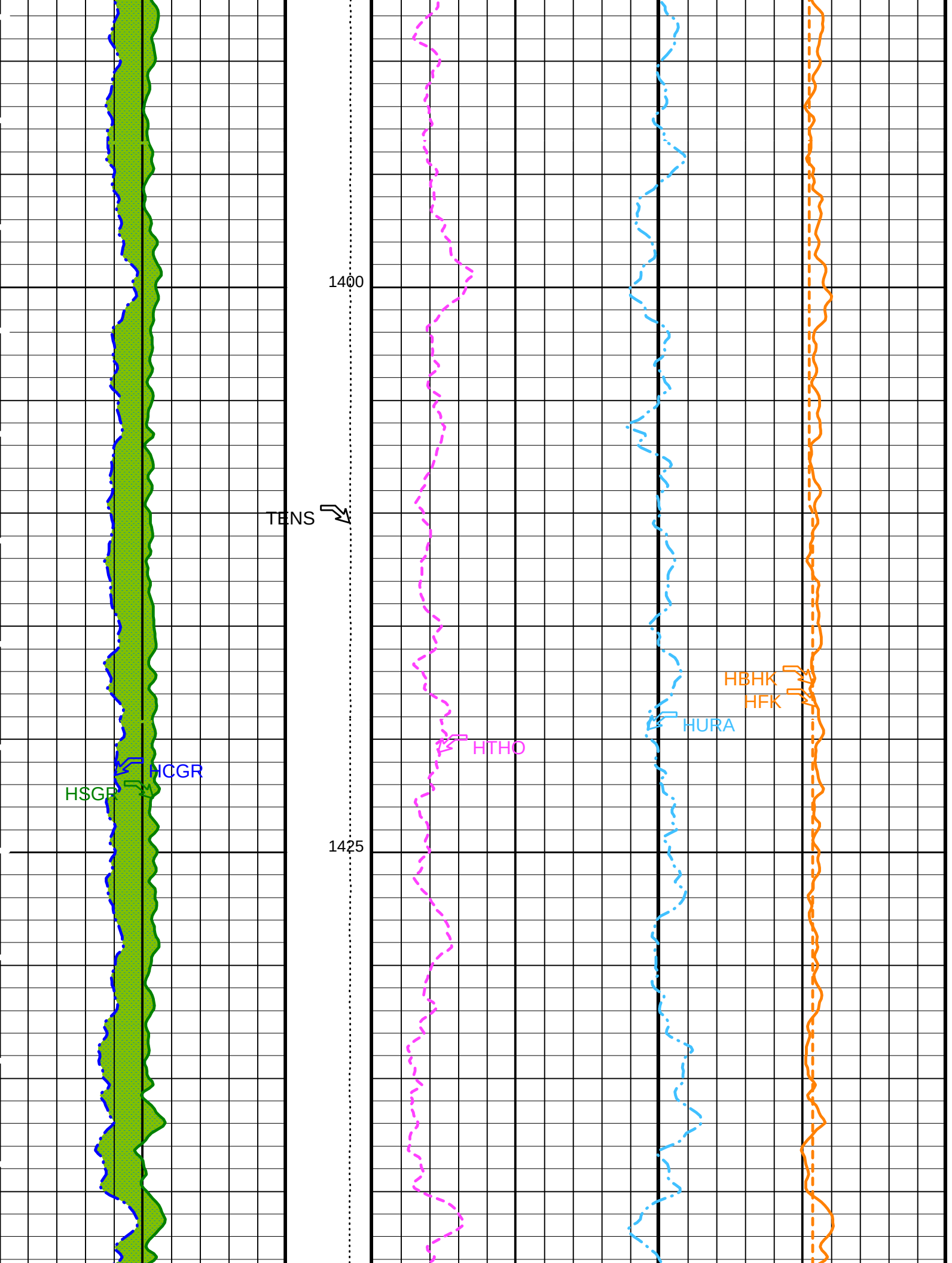
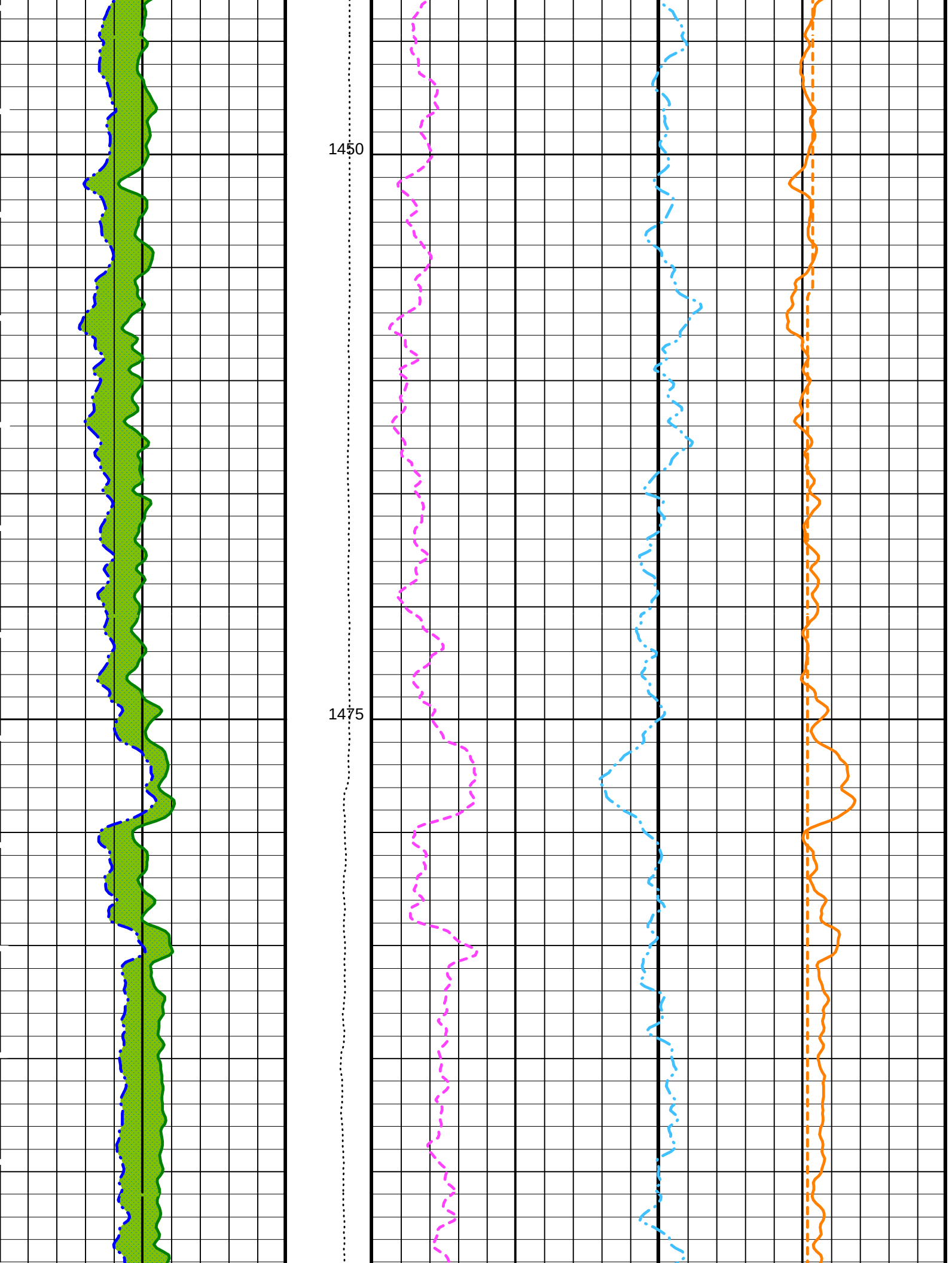
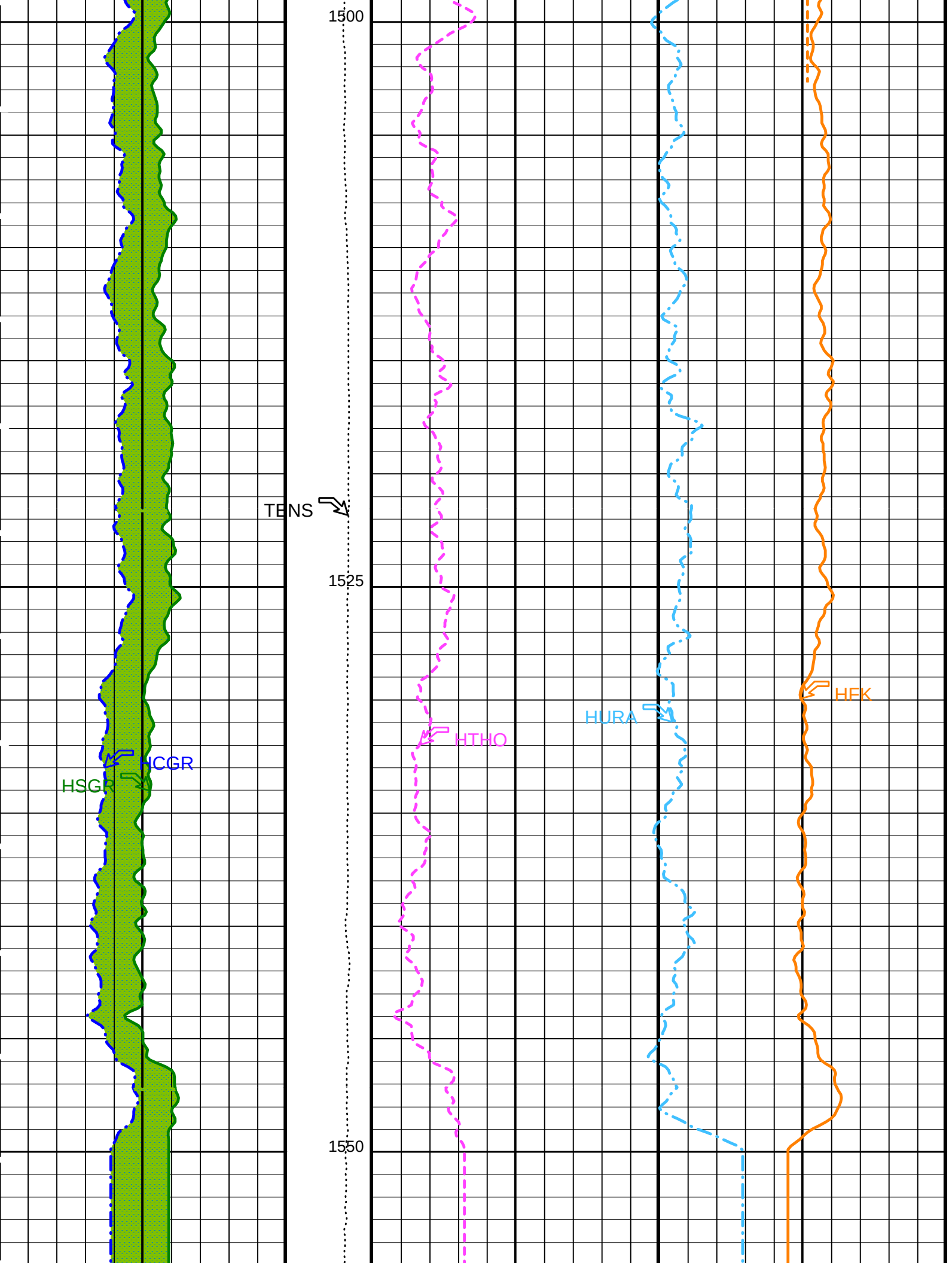
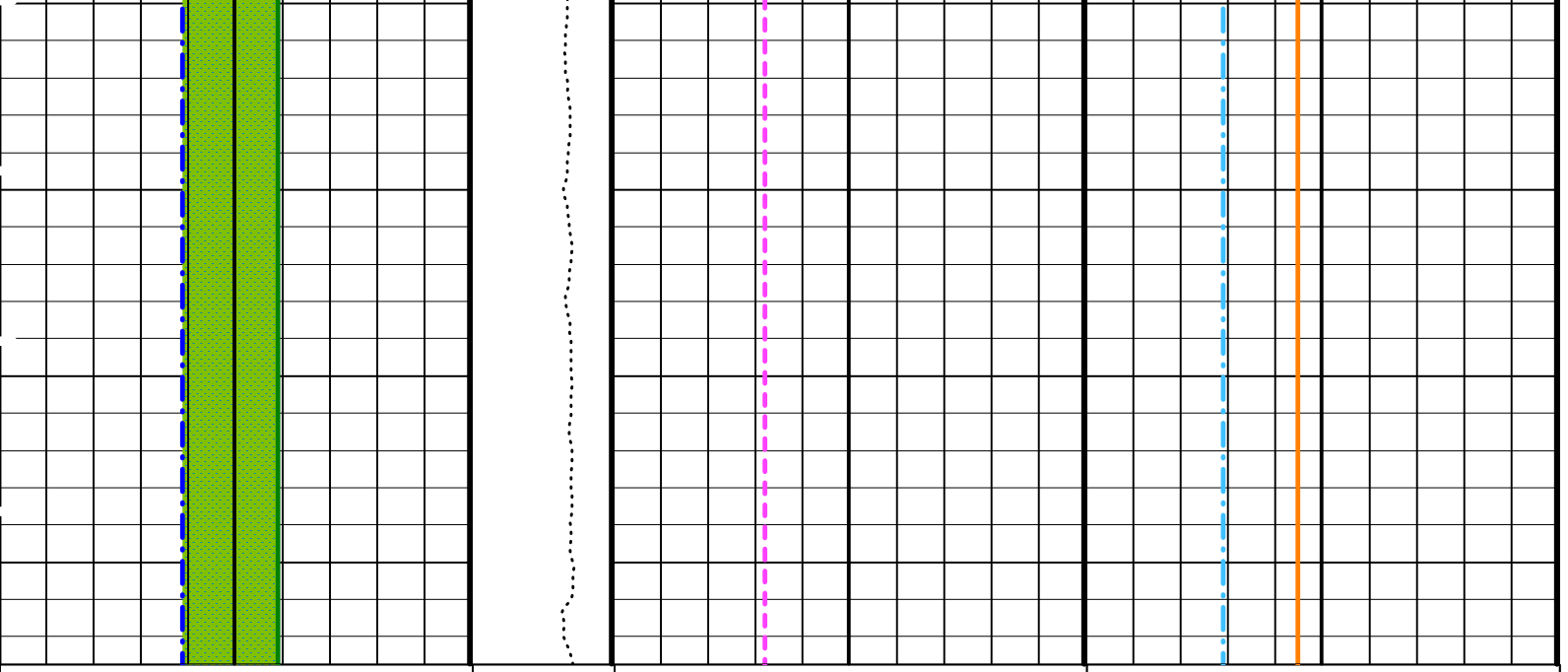
1375


1400
TENS
HBHK
HFK
HURA
HTHO
NCGR
HSGR
1425


1450
1475


1500
TENS
1525
1550
HCGR
HSGR
HTHO
HURA
HFK



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	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	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00135614	
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	0.947381	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.957877	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.20	G/C3

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 19-Jun-2005 23:37

OP System Version: 12C0-301

MCM

GPIT-A/B	12C0-301	DTA-A	12C0-301
DSST-B	12C0-301	HNGC-B	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

Output DLIS Files

DEFAULT DSI_NGS_016LUP FN:16 PRODUCER 19-Jun-2005 23:37

Schlumberger

CALIBRATIONS

MAXIS Field Log

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: 10-Jun-2005 4:16							
TEMPERATURE REFERENCE :	N/A	N/A	20	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	3	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	743	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 10-Jun-2005 4:16							
TEMPERATURE REFERENCE :	N/A	N/A	25	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	91	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	5	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	98	N/A	N/A	N/A	
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check							
Master: 14-Jun-2005 13:56 Before: 14-Jun-2005 14:04							
Na 511 Peak Loc	40.00	39.60	39.58	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.49	16.77	N/A	N/A	2.000	%
High Voltage	1150	1136	1136	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.6	142.3	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.087	8.483	N/A	N/A	2.000	%
Temperature	15.50	39.08	39.07	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	49.00	49.53	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check							
Master: 14-Jun-2005 13:56 Before: 14-Jun-2005 14:04							
Na 511 Peak Loc	40.00	39.57	39.52	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.58	16.69	N/A	N/A	2.000	%
High Voltage	1150	1213	1213	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.2	142.1	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.188	8.924	N/A	N/A	2.000	%
Temperature	15.50	37.80	37.86	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	48.39	49.20	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2							
Master: 14-Jun-2005 13:56 Before: 14-Jun-2005 14:04							
Coincidence Count Rate Ratio	1.000	1.014	1.009	N/A	N/A	0.05000	

General Purpose Inclinometer / Equipment Identification

Primary Equipment:

GPIT Cartridge - A	GPIC - A	840

Auxiliary Equipment:		
GPIT Housing	GPIH - A	

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	166

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		39.60
Before		39.58
37.50 (Minimum)	40.00 (Nominal)	42.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.49
Before		16.77
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

Phase	High Voltage V	Value
Master		1136
Before		1136
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		142.6
Before		142.3
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		9.087
Before		8.483
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		39.08
Before		39.07
-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		49.00
Before		49.53
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 14-Jun-2005 13:56 Before: 14-Jun-2005 14:04

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.57
Before		39.52
37.50 (Minimum)	40.00 (Nominal)	42.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.58
Before		16.69
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

Phase	High Voltage V	Value
Master		1213
Before		1213
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		142.2
Before		142.1
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		9.188
Before		8.924
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

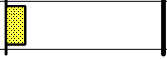
Phase	Temperature DEGC	Value
Master		37.80
Before		37.86
-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		48.39
Before		49.20
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 14-Jun-2005 13:56 Before: 14-Jun-2005 14:04

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.014
Before		1.009

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

Master: 14-Jun-2005 13:56

Before: 14-Jun-2005 14:04

Company: Lamont Doherty

Schlumberger

Well: IODP EXP 308 Site U1324A

Field: URSA Basin

Country: USA

Ocean: Gulf Of Mexico

DSI-GR