

Company: **JOGMEC**

Well: **AURORA/JOGMEC/NRCAN MALLIK 2L-38**

Field: **MALLIK**

Province: **NWT**

**HOSTILE ENVIRONMENT NATURAL  
GAMMA RAY SONDE**

Province: NWT  
 Field: MALLIK  
 Location: GRID: 69-30-134-30C  
 Well: AURORA/JOGMEC/NRCAN MALLIK 2L-38  
 Company: JOGMEC

LOCATION		GRID: 69-30-134-30C	Elev.: K.B. 10.55 m
		UWID: 302 L38 69-30-134-301	G.L. 1 m
			D.F. 10.25 m
Permanent Datum:	GROUND LEVEL	Elev.: 1 m	
Log Measured From:	KELLY BUSHING	9.6 m	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		
API Serial No.		1163	

Logging Date	Run Number	Run 1	Run 2	Run
7-Mar-2007	1P-RUN TWO			
Depth Driller	1310 m			
Schlumberger Depth	1296 m			
Bottom Log Interval	1268 m			
Top Log Interval	680 m			
Casing Driller Size @ Depth	339.725 mm @ 677 m			
Casing Schlumberger	680 m			
Bit Size	361.950 mm			
Type Fluid In Hole	KCL POLYMER			
Density	1115 kg/m3			
Fluid Loss	5 cm3			
Source Of Sample	FLOWLINE			
RM @ Measured Temperature	0.107 ohm.m @ 20 degC			
RMF @ Measured Temperature	0.120 ohm.m @ 19 degC			
RMC @ Measured Temperature	0.150 ohm.m @ 20 degC			
Source RMF	PRESS			
RM @ MRT	0.125 @ 14			
RMF @ MRT	0.136 @ 14			
Maximum Recorded Temperatures	14 degC			
Circulation Stopped	5-Mar-2007			
Logger On Bottom	7-Mar-2007			
Unit Number	1803			
Recorded By	LANNY LAROCHE			
Witnessed By	MAKI MATSUZAWA			

## DEPTH SUMMARY LISTING

Date Created: 7-MAR-2007 11:57:50

### Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-JA Serial Number: 6423 Calibration Date: 09-JAN-2007 Calibrator Serial Number: 4 Calibration Cable Type: 7-46P-XS Wheel Correction 1: -6 Wheel Correction 2: -7	Type: CMTD-B/A Serial Number: 2565 Calibration Date: 06-FEB-2007 Calibrator Serial Number: 2565 Calibration Gain: 0.84 Calibration Offset: -14.00	Type: 7-46P-XS Serial Number: 0 Length: 6399.89 M <hr/> Conveyance Method: Wireline Rig Type: LAND

### Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS: COMPENSATED NEUTRON-LITHO DENSITY LOG
Reference Log Run Number:	ONE
Reference Log Date:	03-MAR-2007
Subsequent Trip Down Log Correction:	1.37 M

### Depth Control Remarks

1.	
2.	NO SPEED CORRECTION APPLIED AT WELLSITE
3.	
4.	
5.	
6.	

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OTHER SERVICES1	OTHER SERVICES2
OS1: 1.ZAIT-HRLT-EMS-GPI	OS1:
OS2: 3.FMI-MSIP-EMS	OS2:
OS3: 4.MRSCANNER	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
APS HAS LARGE HOLE KIT INSTALLED	
TLD HAS LARGE HOLE CALIPER INSTALLED	
HGNS HAS LARGE HOLE KIT INSTALLED	
PPC1 AND PPC2 USED FOR ECCENTRALIZATION AND LARGE HOLE KIT INSTALLED ON BOTH	
BS=9.875" FROM TD-1296M	
BS=14.25" FROM 1296-SC	

REPEAT PERFORMED OVER 850-1150M  
 SLB ONLY LOGGED DOWN TO 1296M

BOTTOM ADAPATERS USED AS HOLE FINDER

RIG: AKITA 62  
 CREW: JAMES MACDONALD / MARK KIMBALL / MIKE KLOC
















RUN 1			RUN 2		
SERVICE ORDER #:	11709034		SERVICE ORDER #:		
PROGRAM VERSION:	14C0-302		PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

## EQUIPMENT DESCRIPTION

RUN 1 RUN 2

**SURFACE EQUIPMENT**  
 SFT-281 12673 CNB-AB  
 SFT-178 53 NCS-VB  
 GSR-U/Y 6710 GSR-U 610  
 NCT-B WITM (EDTS)-A

**DOWNHOLE EQUIPMENT**

LEH-QT			35.64
EDTC-B 8265	Mud Tempe		34.75
EDTH-B 8253	CTEM		33.68
EDTC-B	Gamma Ray		33.11
EDTC-B	EDTCB Ele		32.77
AH-184			32.77
AH-224			32.16
AH-224			31.55
AH-184			30.94
PPC1-B 8148	Calipers		29.98
PPC1-B	PPC_Cartr		28.35
PPC_CAL_40EXT	Upper_1		27.65
HNGS-BA 163	Lower_2		27.43
HNGS-BA 163			25.31
HNSH-BA 25			25.85
HNGC-B 405	HNGC Stat		24.25
ECC-B	ECC Statu		23.32
ECS-A 20	Detector		21.34
ECS-A 20			21.69
NSR-F 2671			19.70
PPC2-B 8149	Calipers		19.70
PPC2-B	PPC_Cartr		15.54
PPC_CAL_40EXT			14.95
CMRT-B	CMR-B Raw		14.95
CMRC-BA 202	CMR-B Sen		14.95
CMRS-BA 182	CMR-B Dia		14.72
HGNS HTEM	Gamma-Ray		12.95
HMCA	Neutron F		12.79
HILTH-FTB	Neutron N		12.08
HGNSD-H 4730	HGNS sens		12.08

HRCC cart	10.86	
MCFL	9.21	
HILT cali	9.06	
HRDD-LS		
HRDD-SS		
HRDD-BS	8.94	
Status		
Minitron		
Near TD		8.35
Near Arr		8.05
Near	5.60	
Far Arr	5.52	
Far	5.40	
Far TD	5.30	
DF ACCZ		
HTEN HMAS HV		
Accelerom		
Tension	0.00	
TOOL ZERO		0.14

MAXIMUM STRING DIAMETER 178 MM  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN METERS



## HOSTILE ENVIRONMENT NATURAL GAMMA RAY RATIOS: MAIN PASS

MAXIS Field Log

Company: Well:

### Input DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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### Output DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M

### OP System Version: 14C0-302 MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

### PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)	0
25000 (N)	

HNGS Spectroscopy Gamma Ray	Tool/Tot. Drag
-----------------------------	----------------

0 (HSGR) (GAPI) 150  
 0 (HSGR) (GAPI) 150  
 HNGS Computed Gamma Ray (HCGR)  
 0 (GAPI) 150

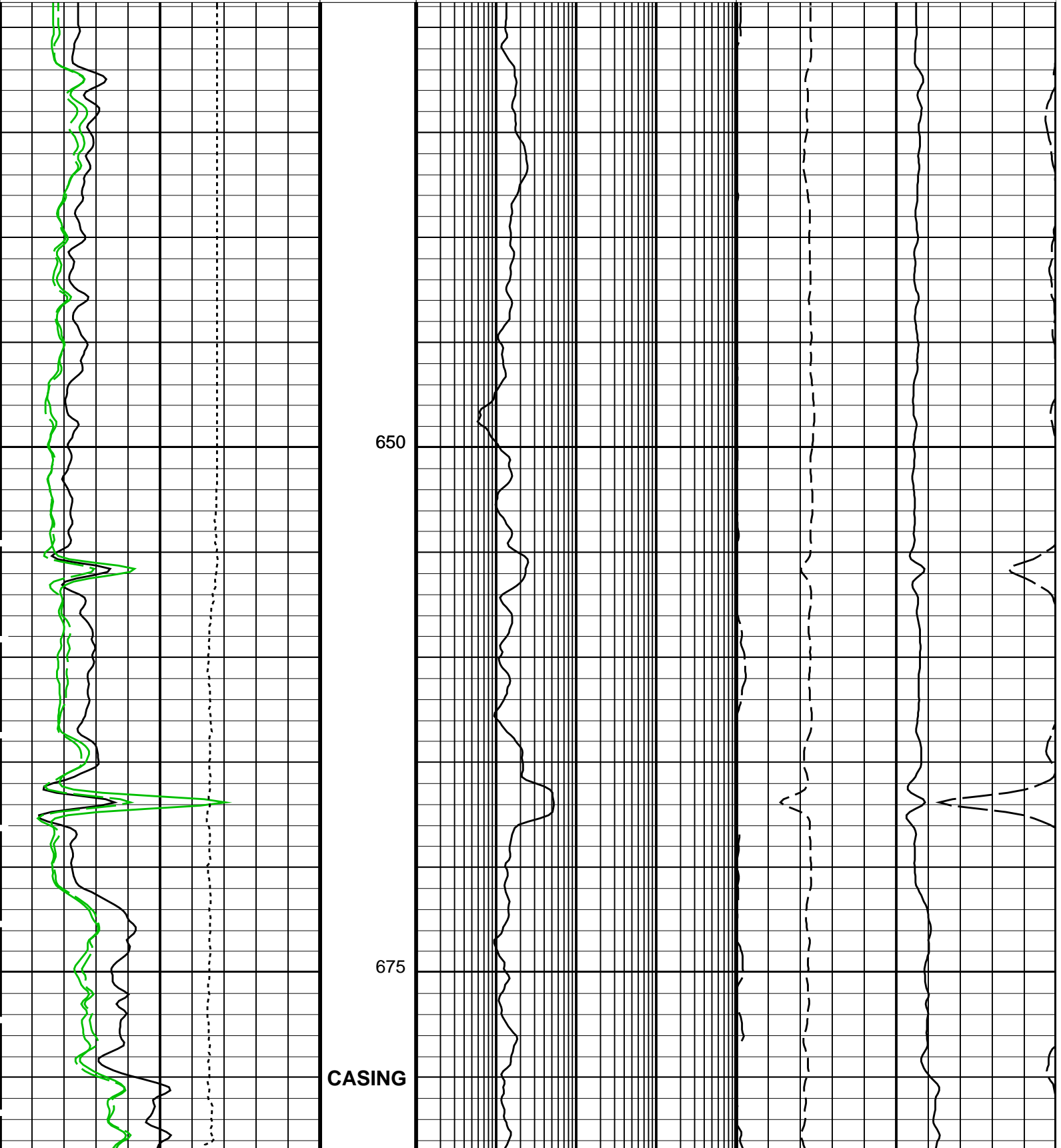
Drag  
 From D3T  
 to STIA  
 Cable  
 Drag  
 From STIA  
 to STIT

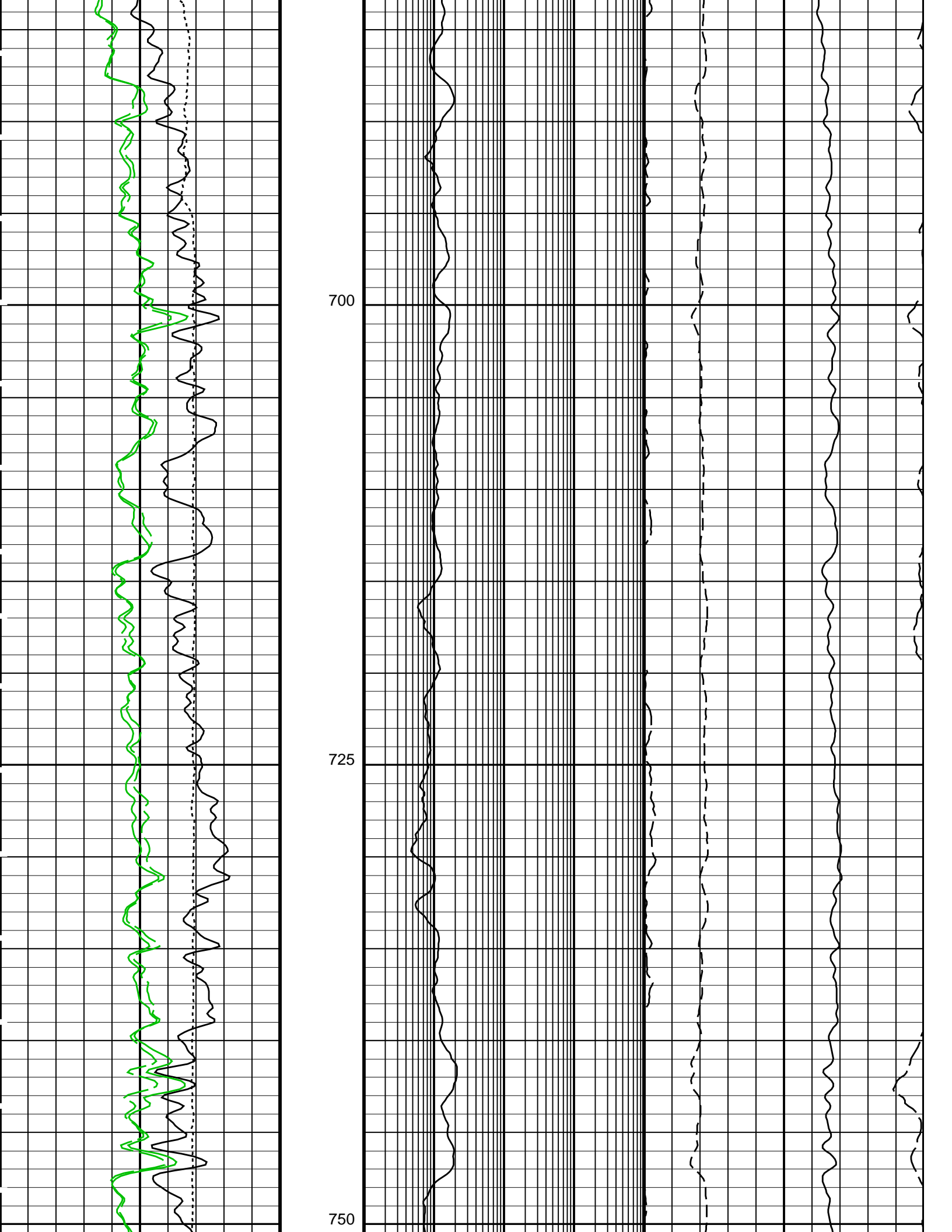
HNGS Thorium (HTHO) (PPM) -20 0  
 HNGS Potassium (HFK) (V/V) -200 0 0.1

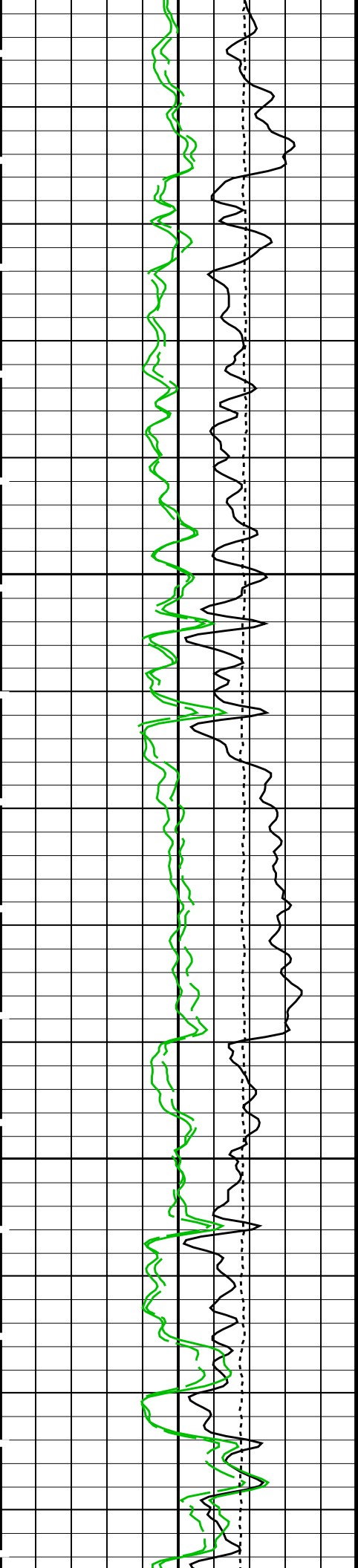
HNGS Potassium (HFK) (V/V) 0 0.05  
 Stuck Stretch (STIT) (M) 0 20

HNGS Thorium / Potassium Ratio (HTPR) (----) 0.1 1000

HNGS Uranium (HURA) (PPM) 20 0



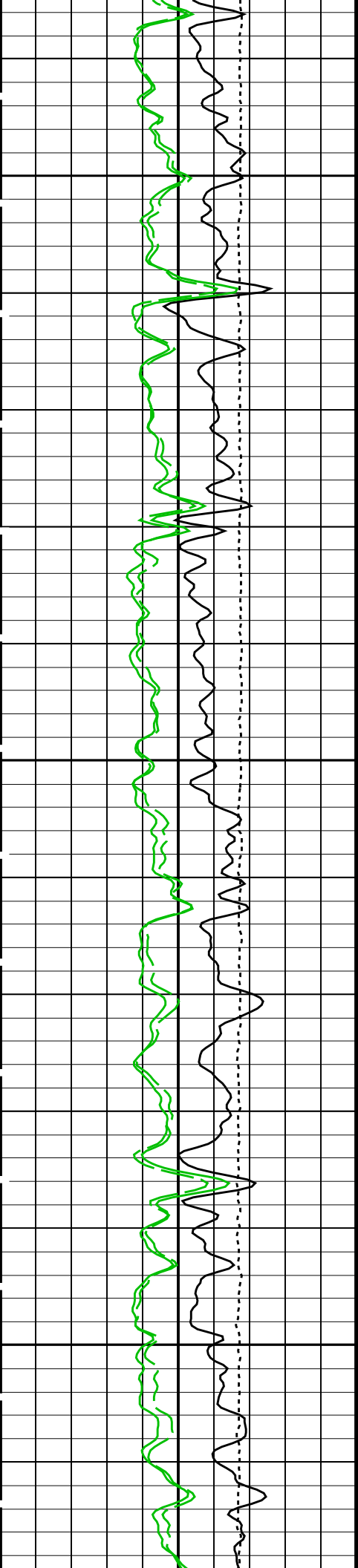




775

800

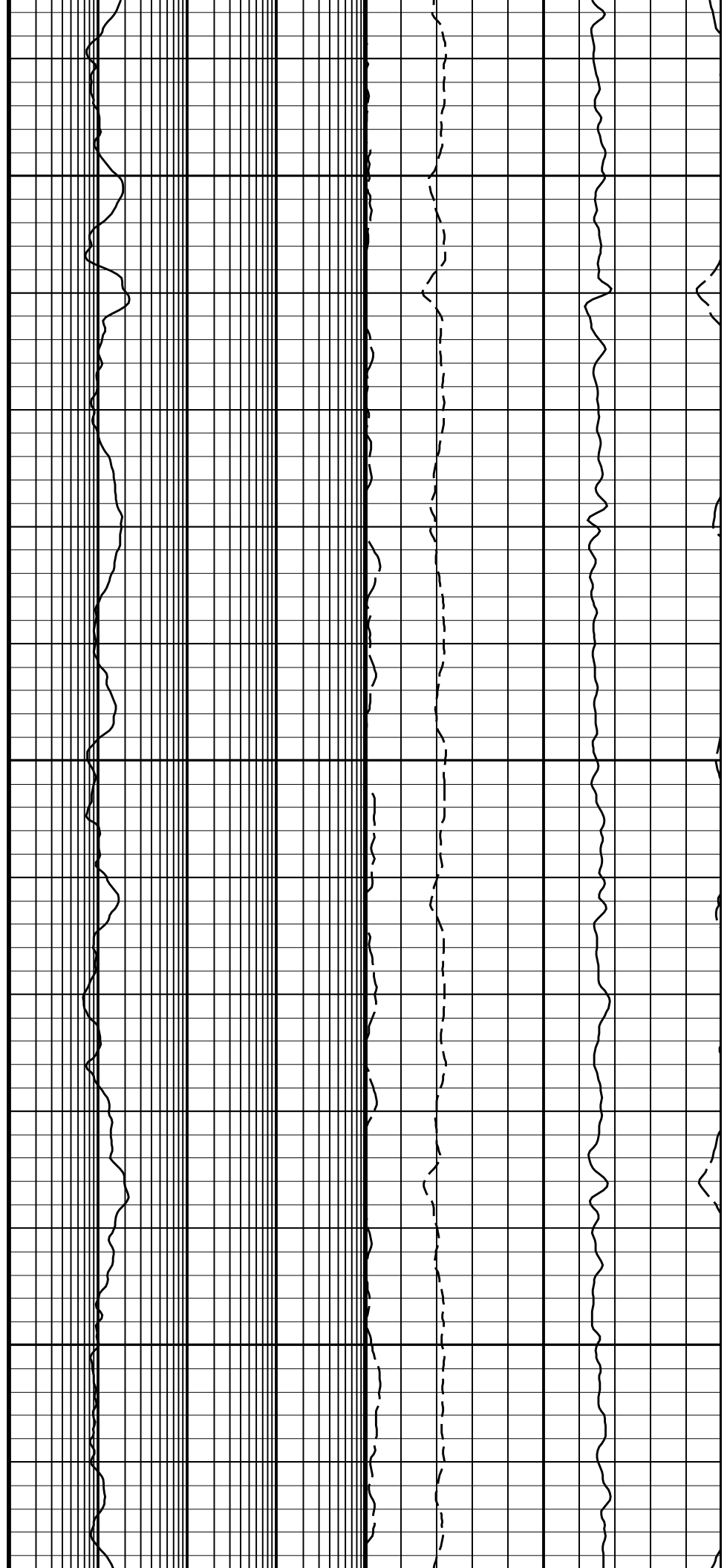




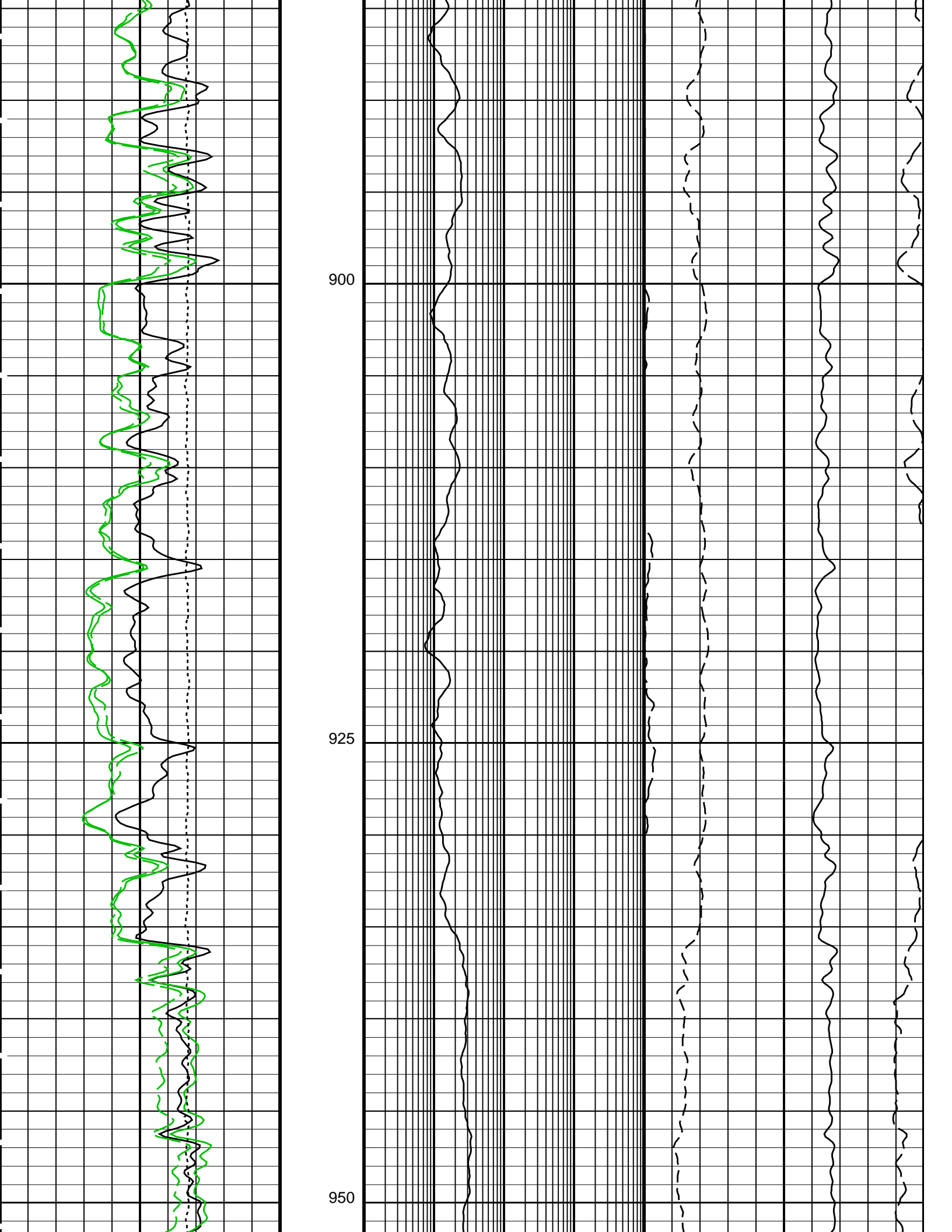
825

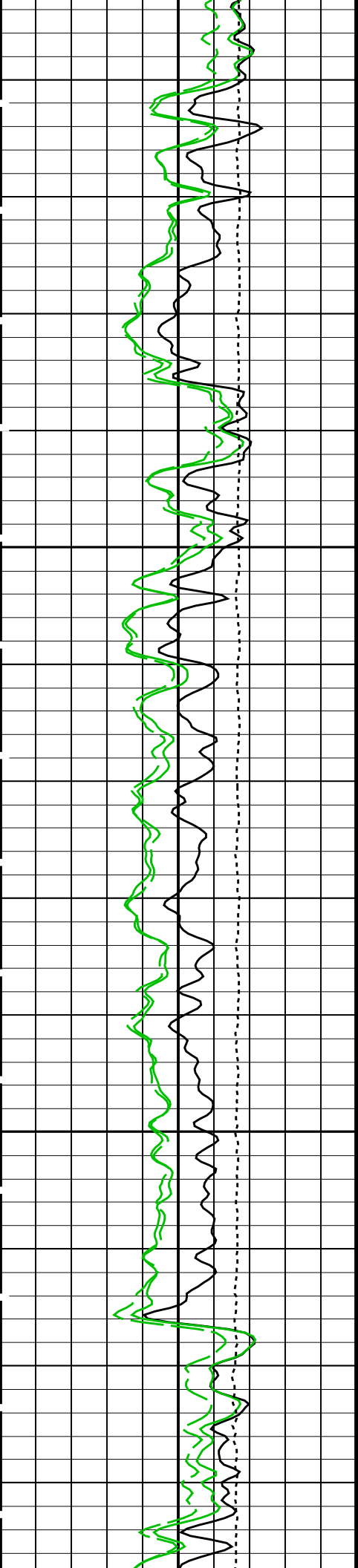
850

875



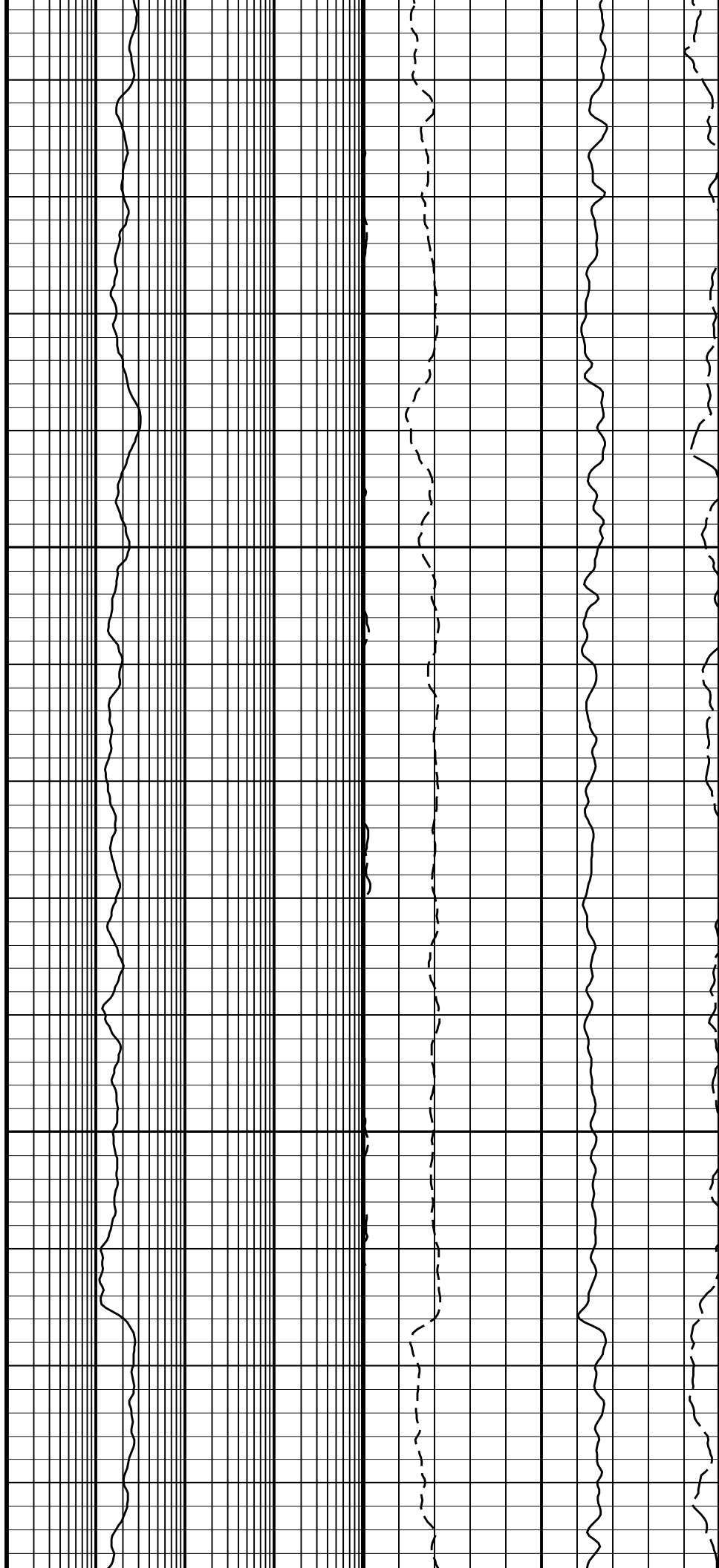


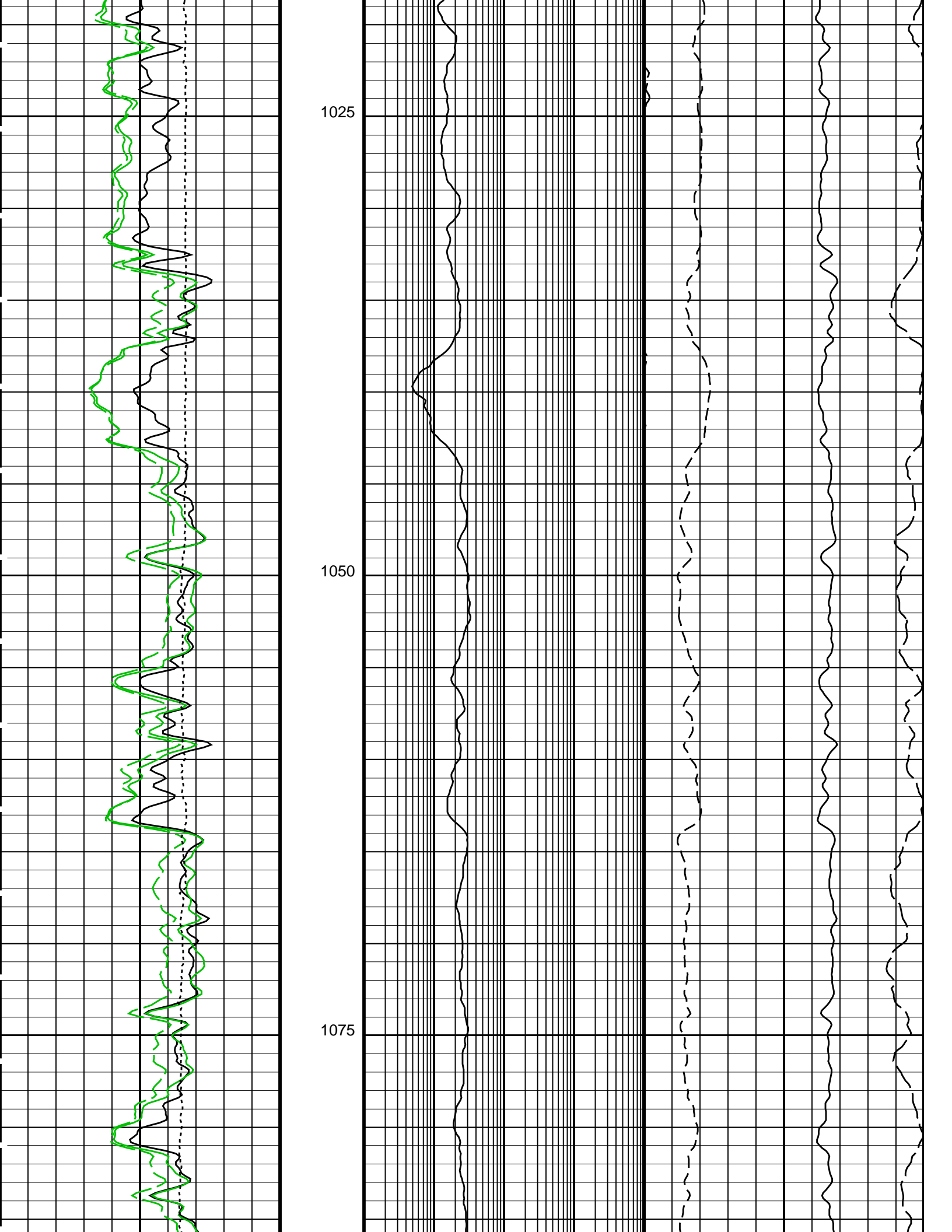


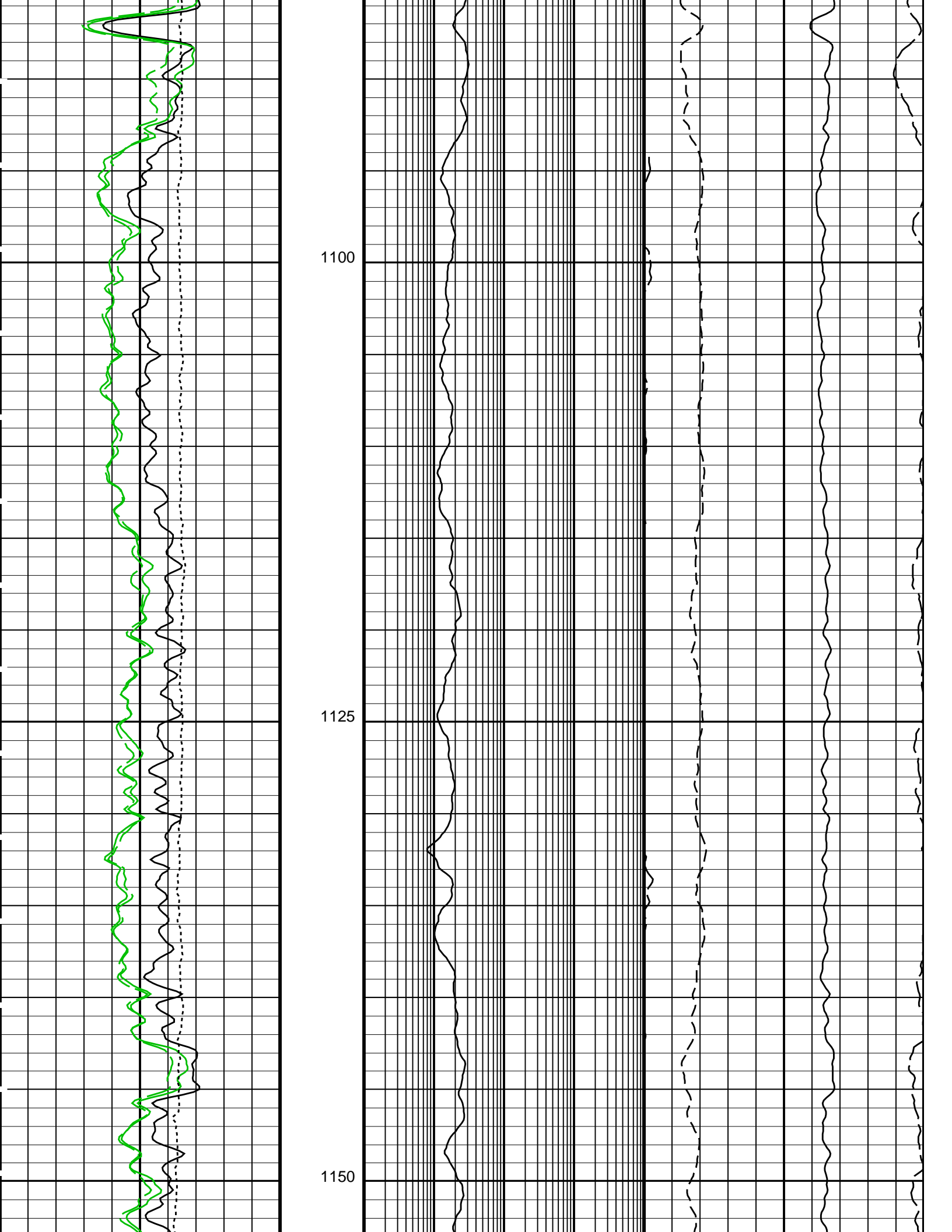


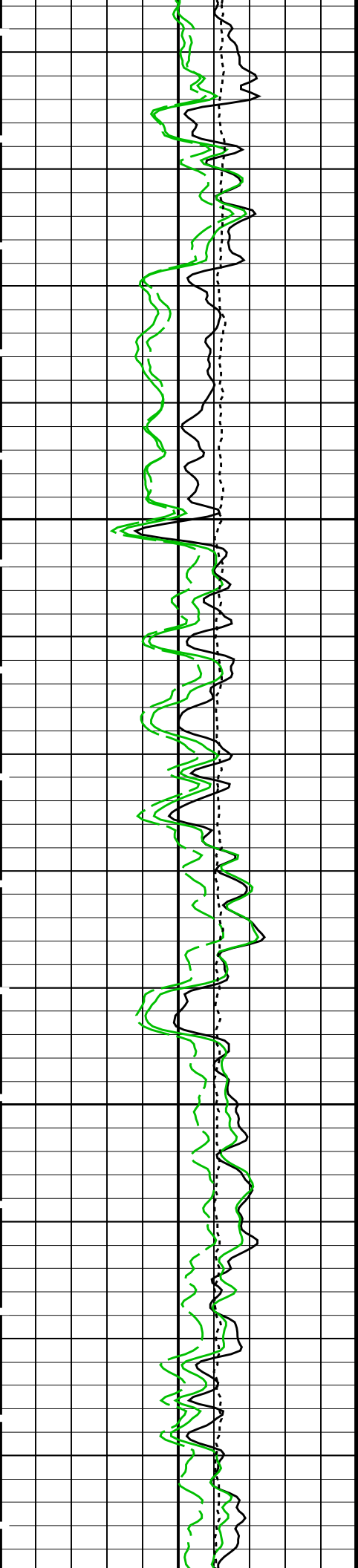
975

1000



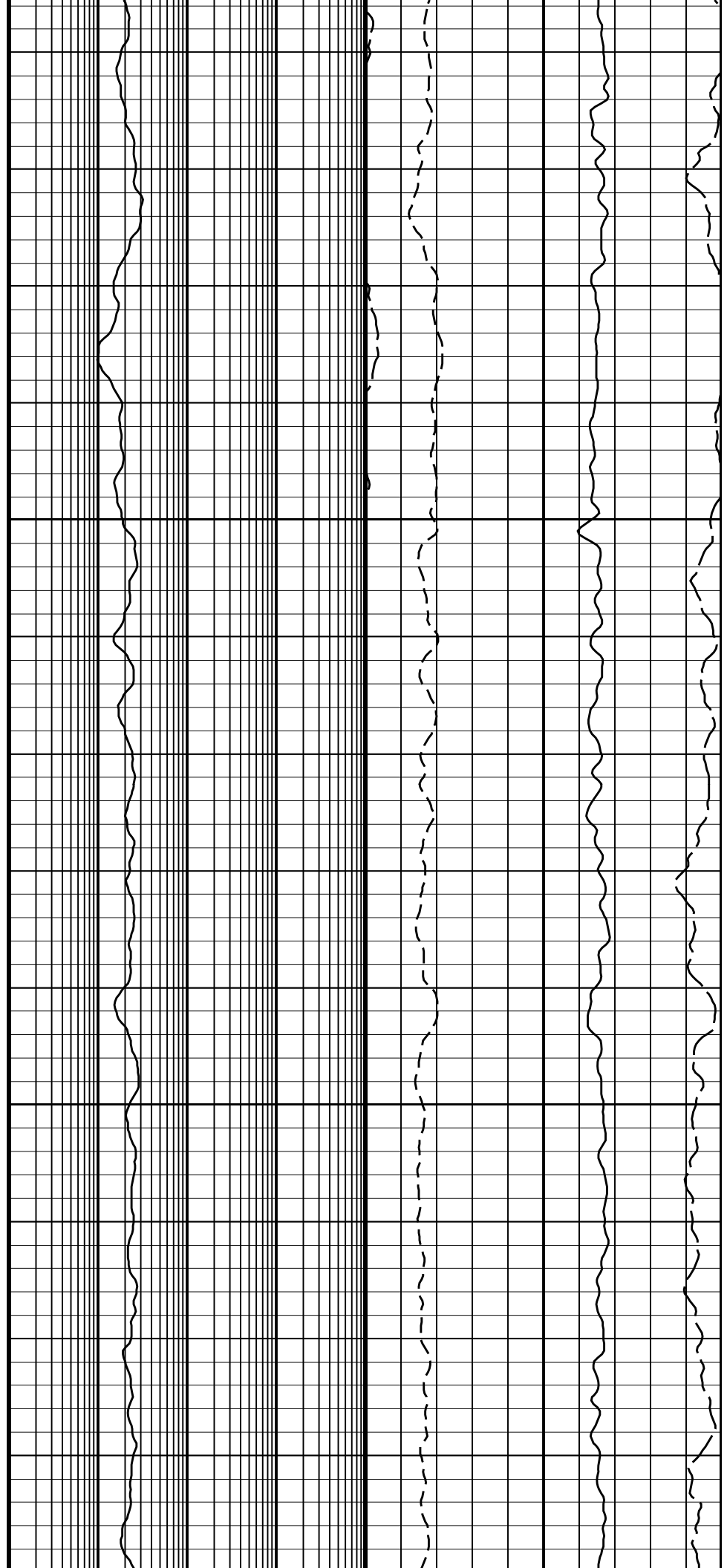


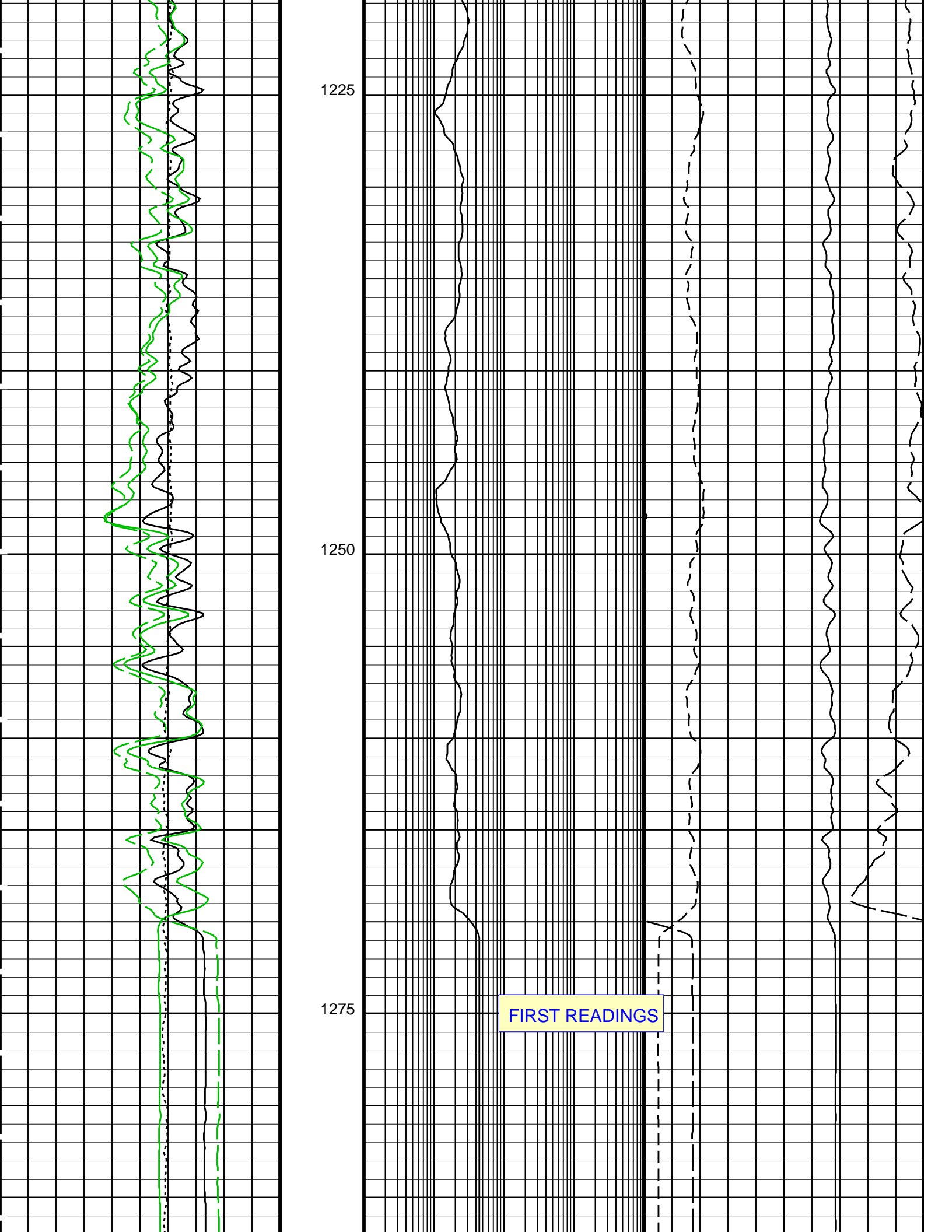




1175

1200



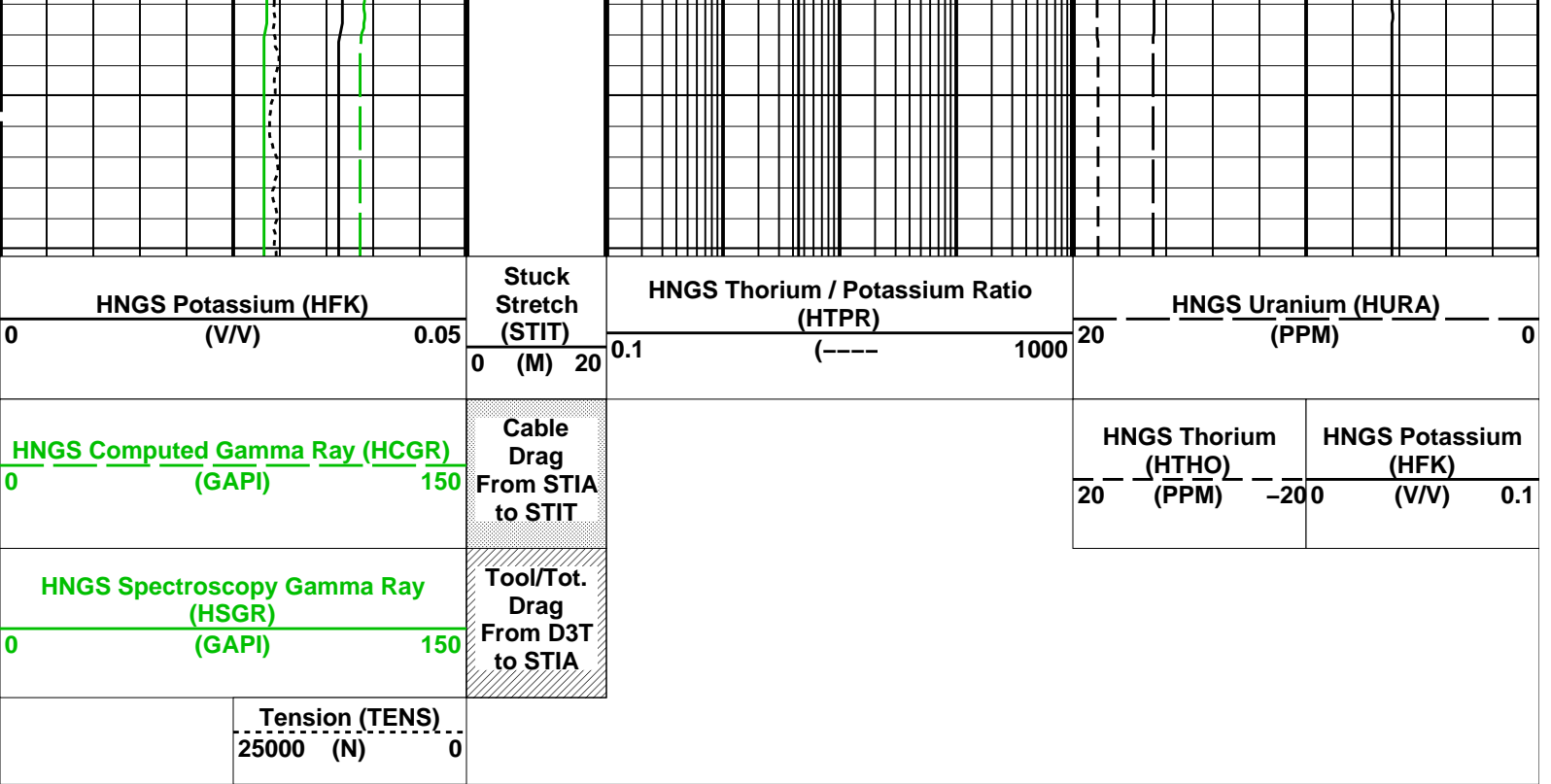


1225

1250

1275

FIRST READINGS



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
APS-C: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
HILTH-FTB: High resolution Integrated Logging Tool-DTS		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
CMRT-B: Combinable Magnetic Resonance Tool - B		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
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 MM
CSD2	Outer Casing Outer Diameter	0 MM
CSW1	Inner Casing Weight	0 KG/M
CSW2	Outer Casing Weight	0 KG/M
DBCC	HNGS Barite Constant Correction Flag	NONE
GCSE	Generalized Caliper Selection	HCAL
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	0.0180305
HALF	HNGS Alpha Filter Length	1524 MM
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	0.995951
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00321
EDTC-B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	1.524 M
TDD	Total Depth - Driller	1310.00 M
TDL	Total Depth - Logger	1296.00 M
System and Miscellaneous		
BS	Bit Size	361.950 MM
DO	Depth Offset for Playback	1.4 M

**OP System Version: 14C0-302**

MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

**Input DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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**Output DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06		
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06		



**HOSTILE ENVIRONMENT NATURAL  
GAMMA RAY YIELDS: MAIN PASS**

MAXIS Field Log

Company: Well:

**Input DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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**Output DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M

**OP System Version: 14C0-302**

MCM

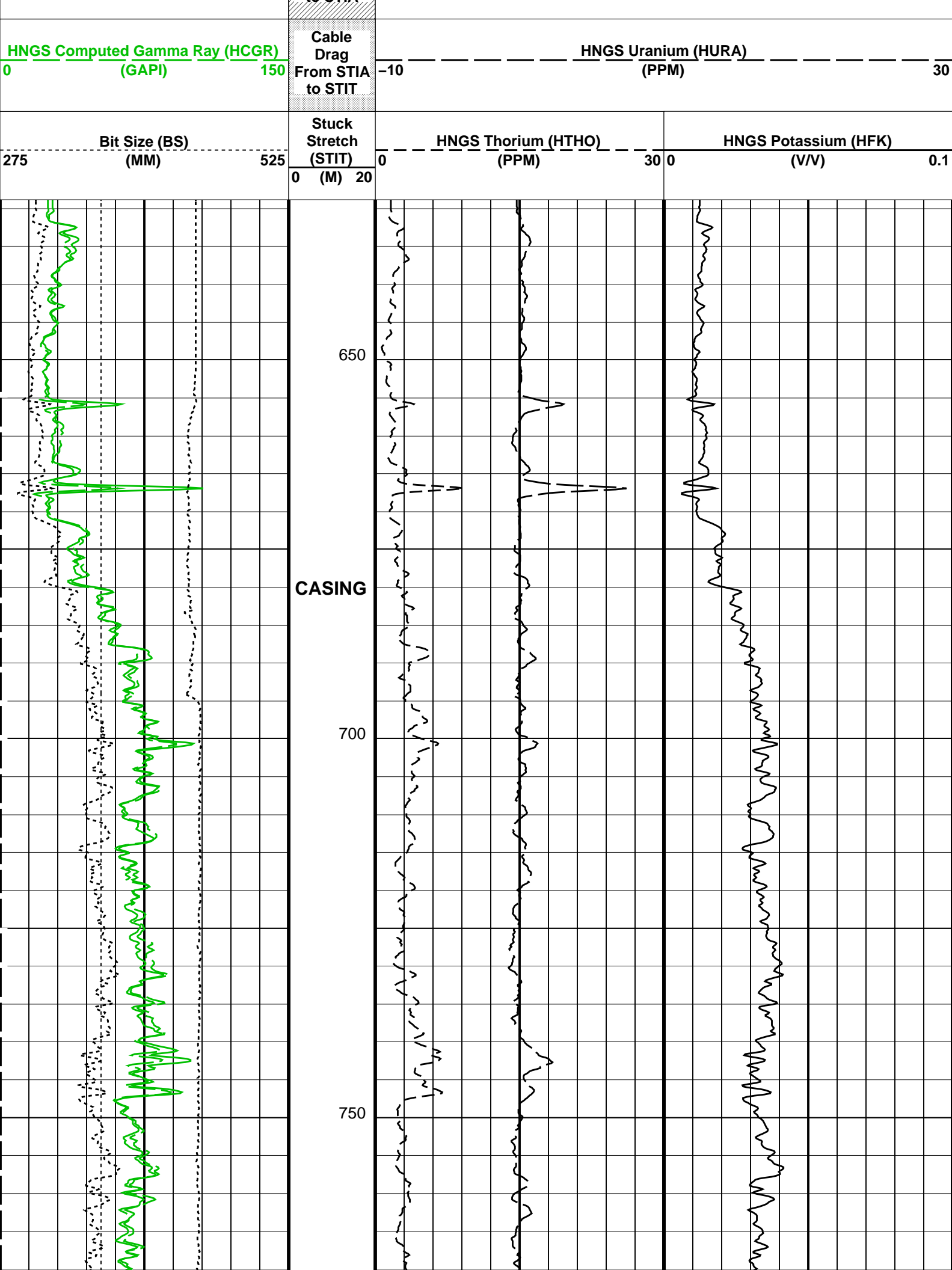
APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

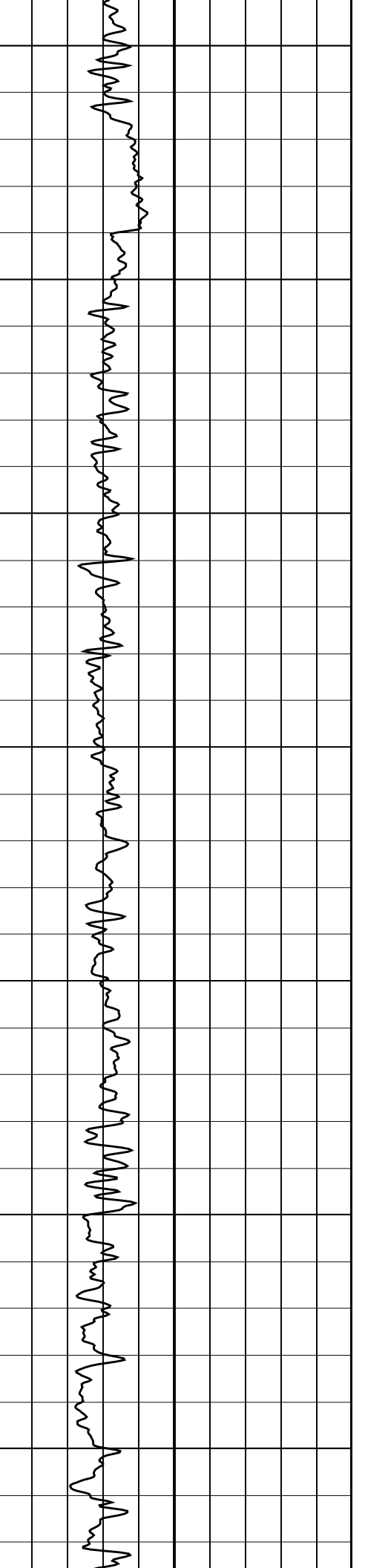
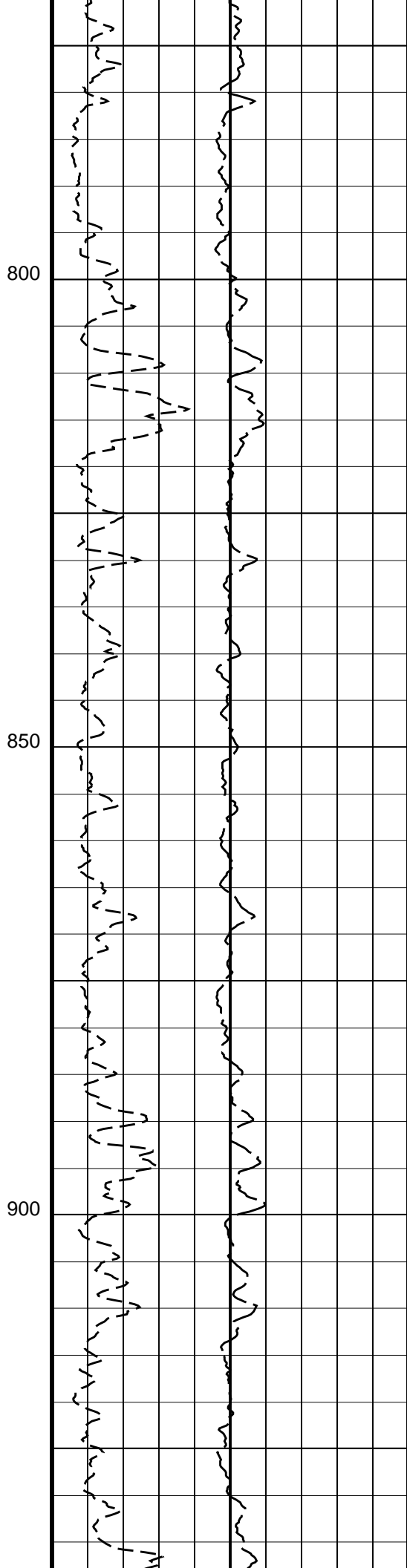
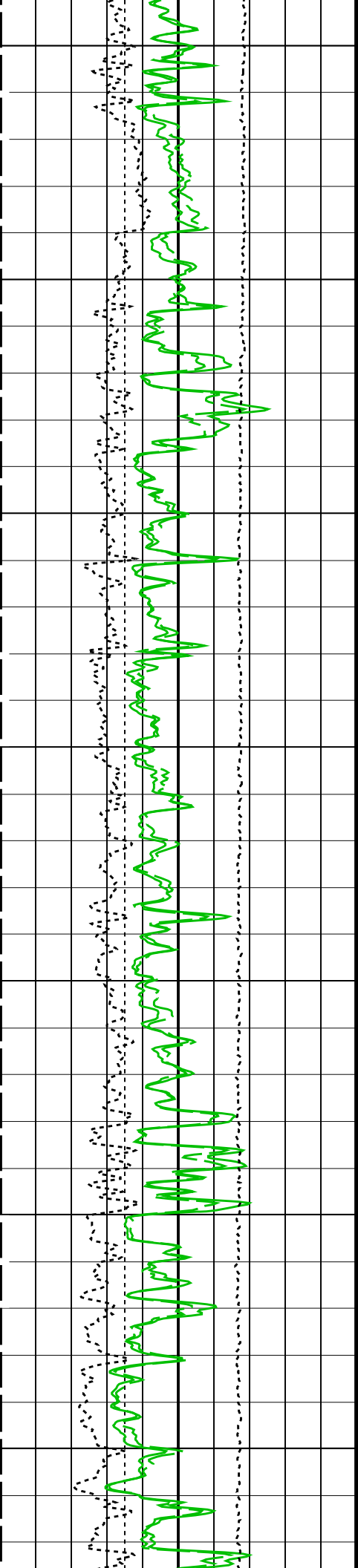
**PIP SUMMARY**

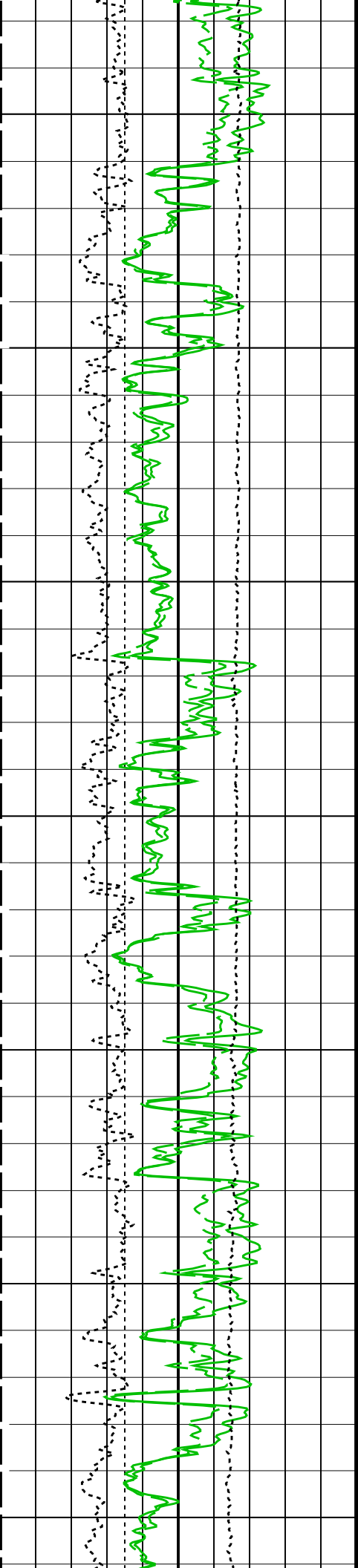
Time Mark Every 60 S

Tension (TENS)		
25000 (N)		0
HNGS Spectroscopy Gamma Ray (HSGR)		
0 (GAPI)		150
HNGS Potassium (HFK)		
0 (V/V)		0.1
		Tool/Tot. Drag From D3T to STIA







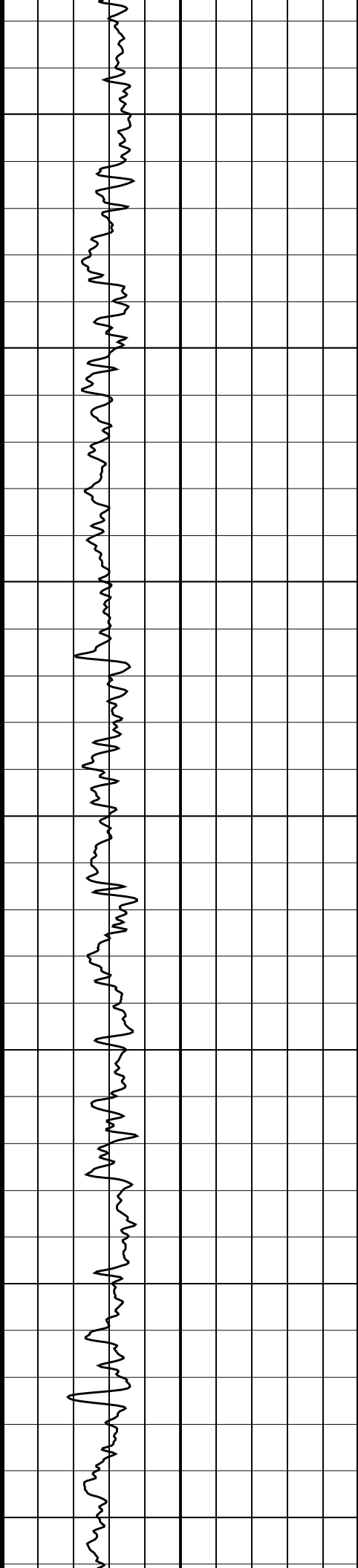
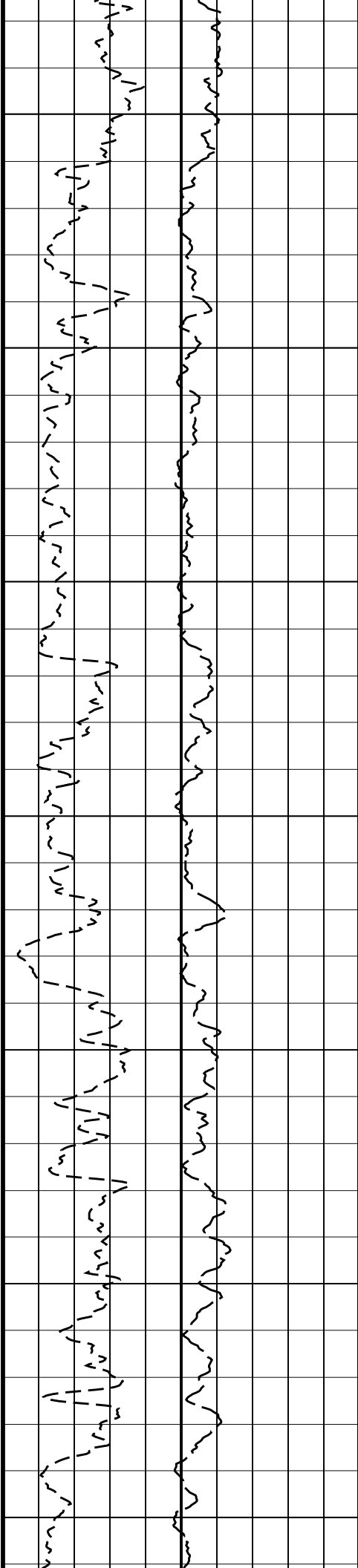


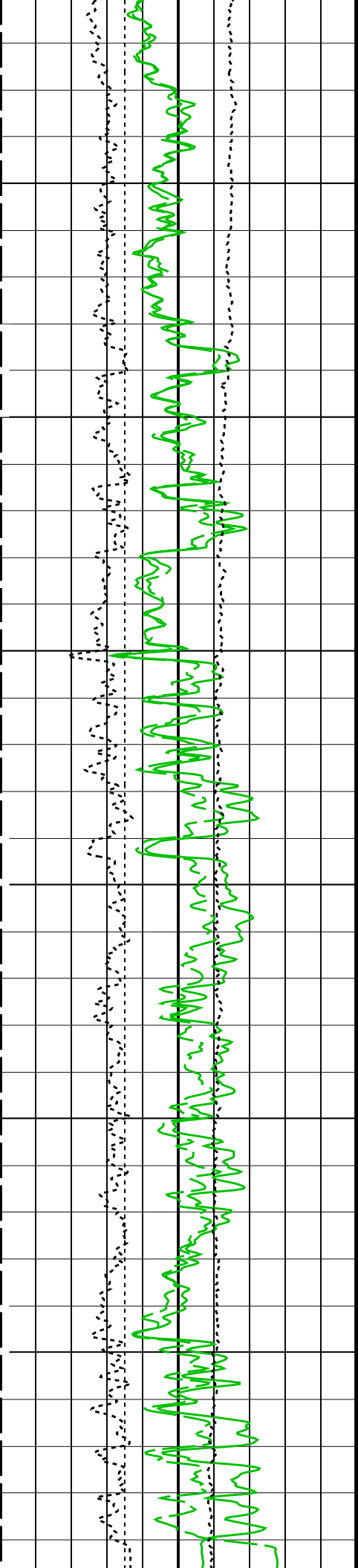
950

1000

1050

1100

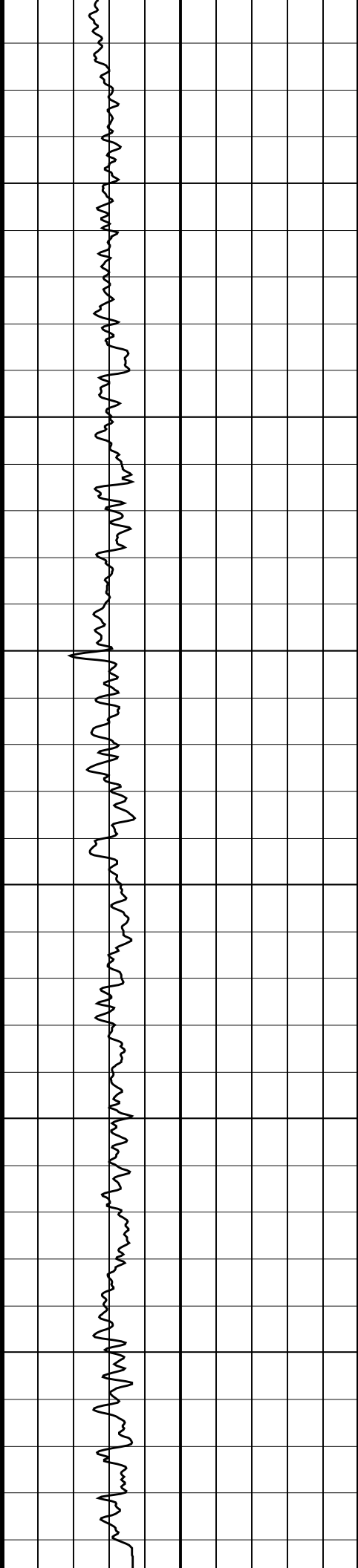
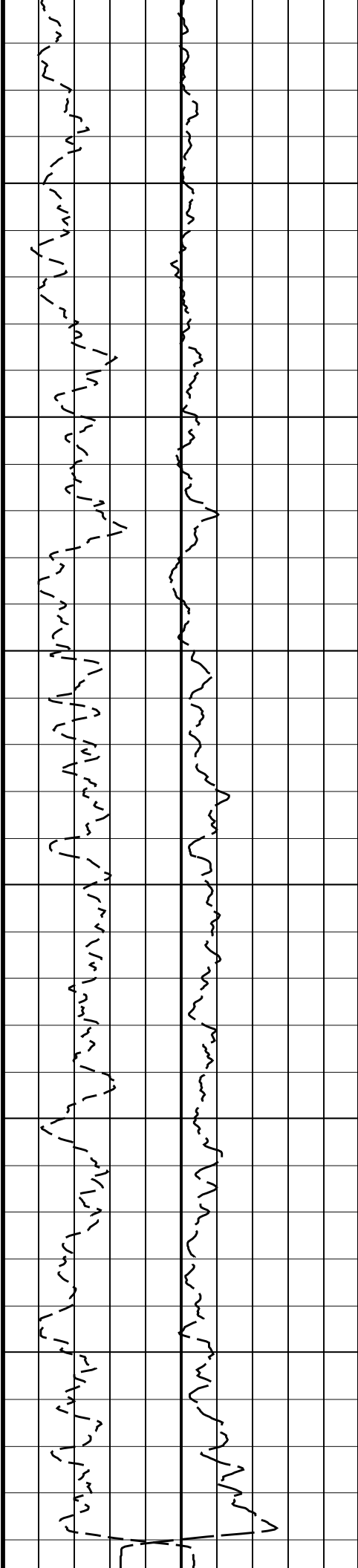




1150

1200

1250



Bit Size (BS) (MM)		Stuck Stretch (STIT)	HNGS Thorium (HTHO) (PPM)		HNGS Potassium (HFK) (V/V)	
275	525	0 (M) 20	0	30	0	0.1
HNGS Computed Gamma Ray (HCGR) (GAPI)		Cable Drag From STIA to STIT	HNGS Uranium (HURA) (PPM)			
0	150		-10			30
HNGS Potassium (HFK) (V/V)		Tool/Tot. Drag From D3T to STIA				
0	0.1					
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)						
0	150					
Tension (TENS) (N)						
25000	0					

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
APS-C: Accelerator-Porosity Tool			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
CMRT-B: Combinable Magnetic Resonance Tool - B			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
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	MM
CSD2	Outer Casing Outer Diameter	0	MM
CSW1	Inner Casing Weight	0	KG/M
CSW2	Outer Casing Weight	0	KG/M
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	HCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.0180305	
HALF	HNGS Alpha Filter Length	1524	MM
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	0.995951	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00321	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	

STKT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	1310.00	M
TDL	Total Depth - Logger	1296.00	M
System and Miscellaneous			
BS	Bit Size	361.950	MM
DO	Depth Offset for Playback	1.4	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: HNGSYields\_S2    Vertical Scale: 1:600    Graphics File Created: 07-Mar-2007 14:07

**OP System Version: 14C0-302**  
MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

**Input DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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**Output DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06		
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06		



**HOSTILE ENVIRONMENT NATURAL  
GAMMA RAY YIELDS: MAIN PASS**

MAXIS Field Log

Company: \_\_\_\_\_ Well: \_\_\_\_\_

**Input DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M

**OP System Version: 14C0-302**  
MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

**PIP SUMMARY**

Time Mark Every 60 S

Tension (TENS)	
25000 (N)	0

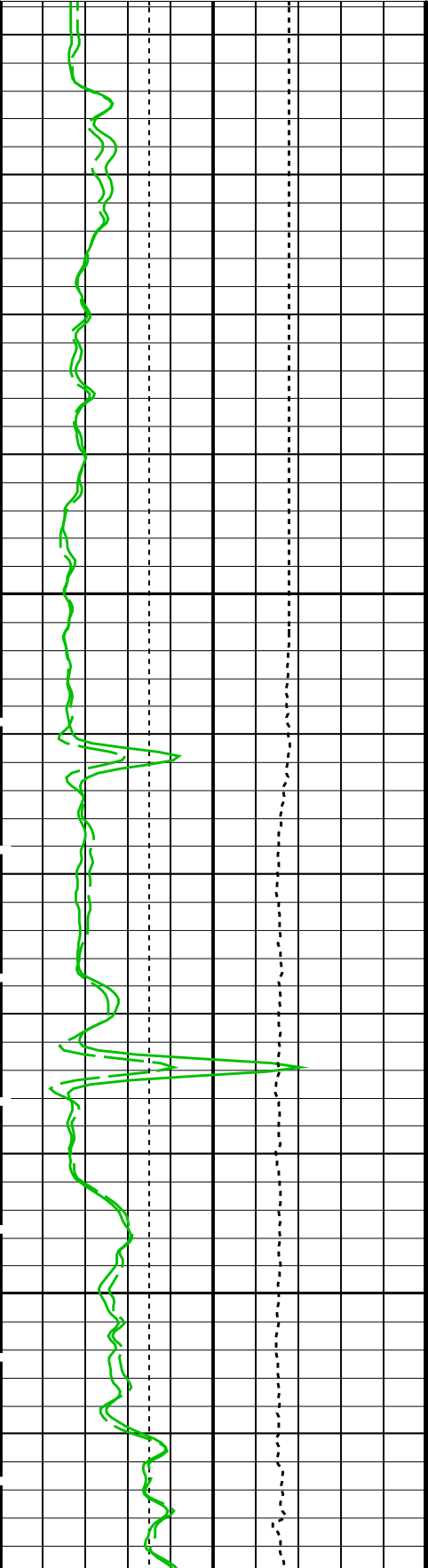
HNGS Spectroscopy Gamma Ray (HSGR)	Tool/Tot. Drag From D3T
0 (GAPI) 150	

HNGS Potassium (HFK)
0 (V/V) 0.1

to STIA  
**HNGS Computed Gamma Ray (HCGR)**  
 (GAPI)  
 0 150  
 Bit Size (BS)  
 (MM)  
 275 525  
 Stuck  
 Stretch  
 (STIT)  
 0 (M) 20

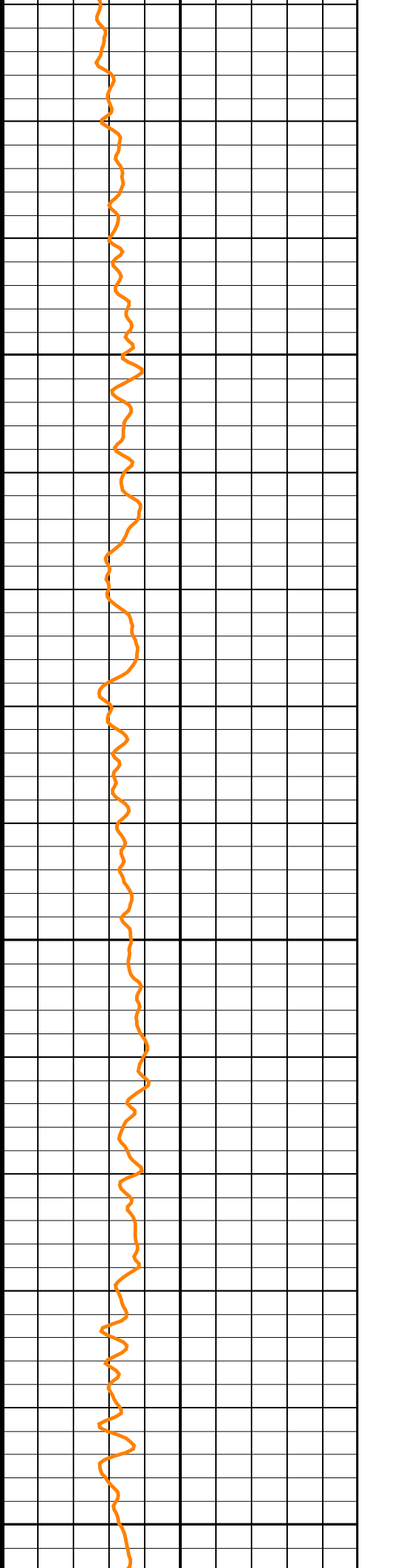
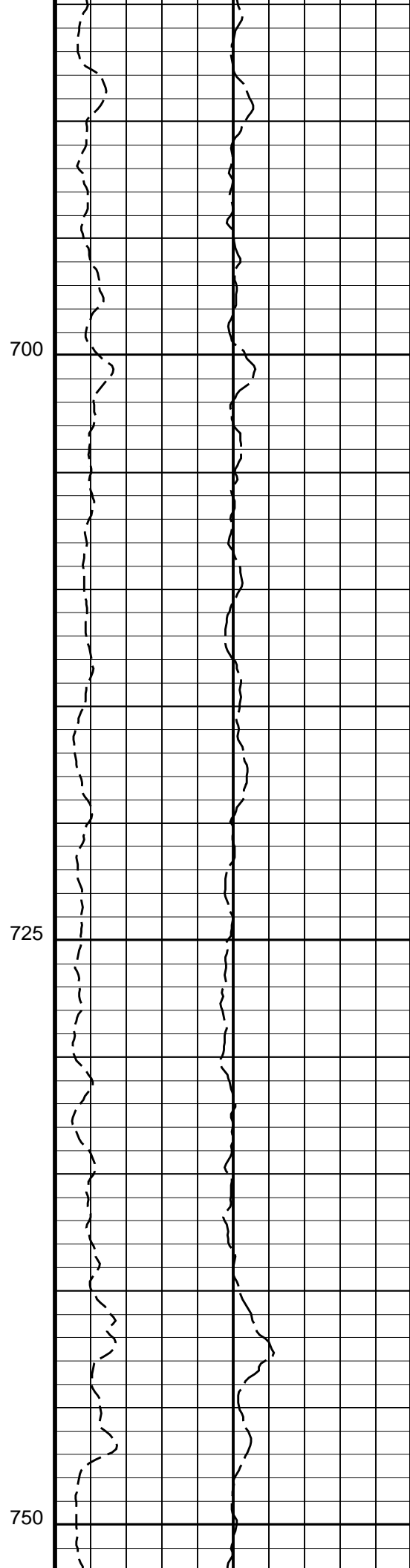
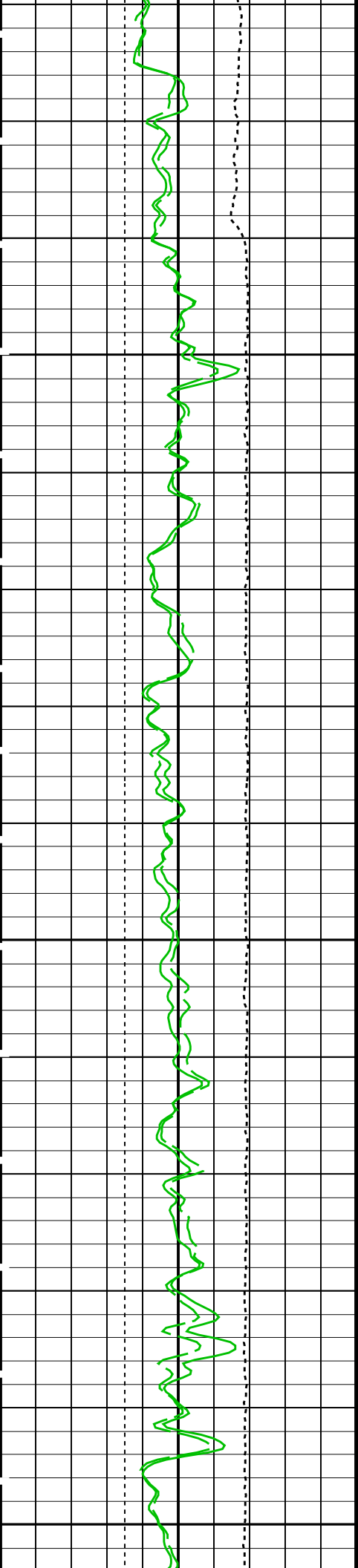
to STIA  
 Cable  
 Drag  
 From STIA  
 to STIT  
 Stuck  
 Stretch  
 (STIT)  
 0 (M) 20

**HNGS Uranium (HURA)**  
 (PPM)  
 -10 30  
**HNGS Thorium (HTHO)**  
 (PPM)  
 0 40  
**HNGS Potassium (HFK)**  
 (V/V)  
 0 0.1

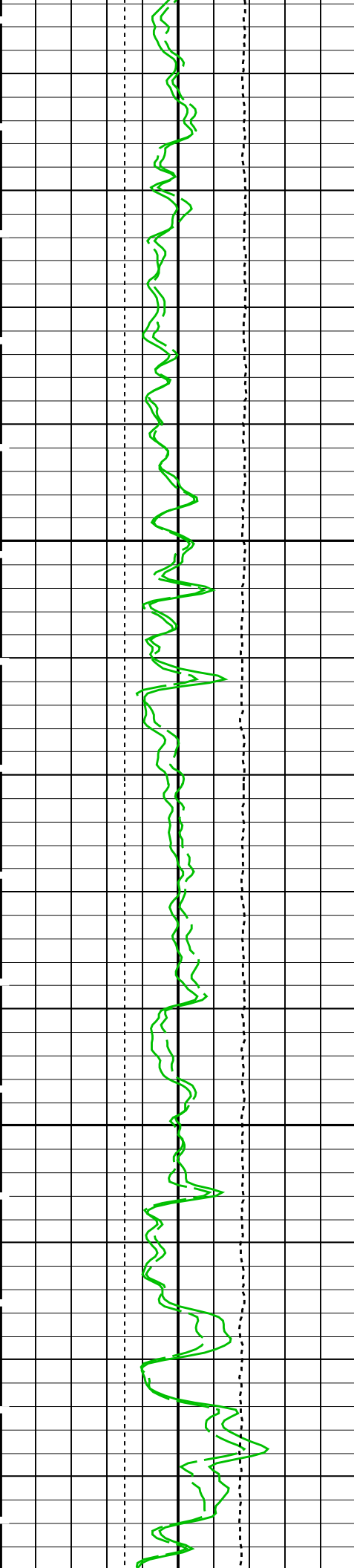


650  
 675  
**CASING**



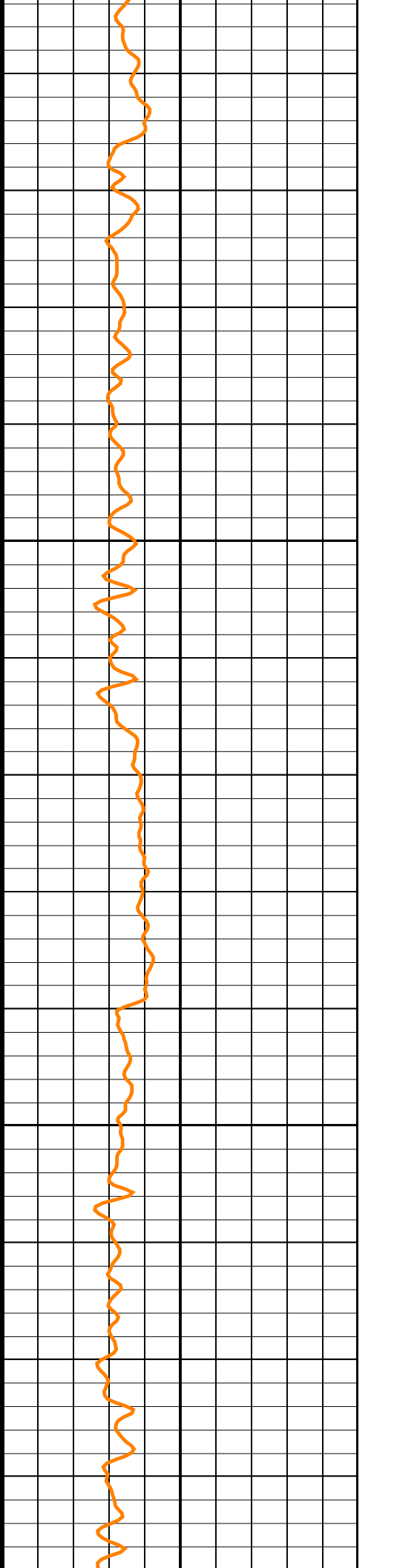
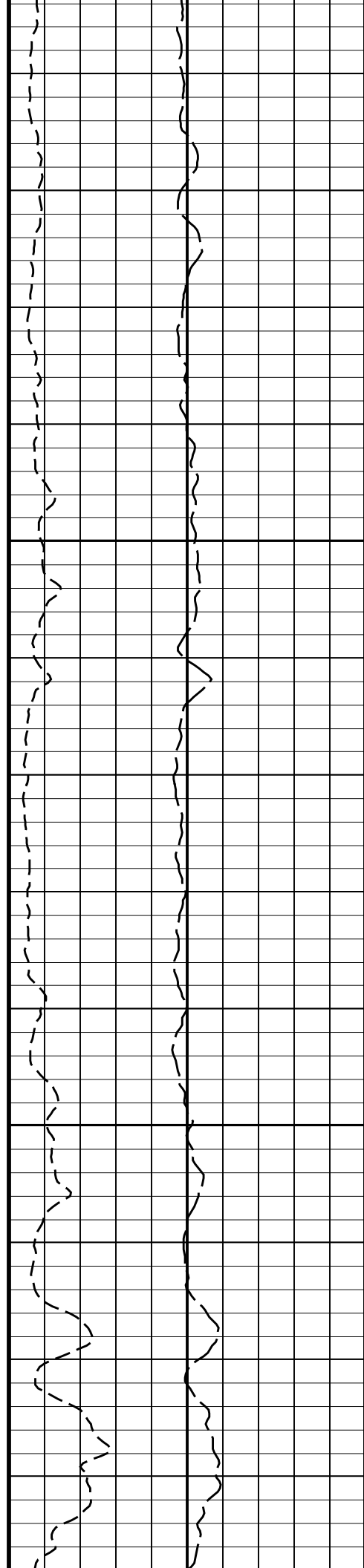


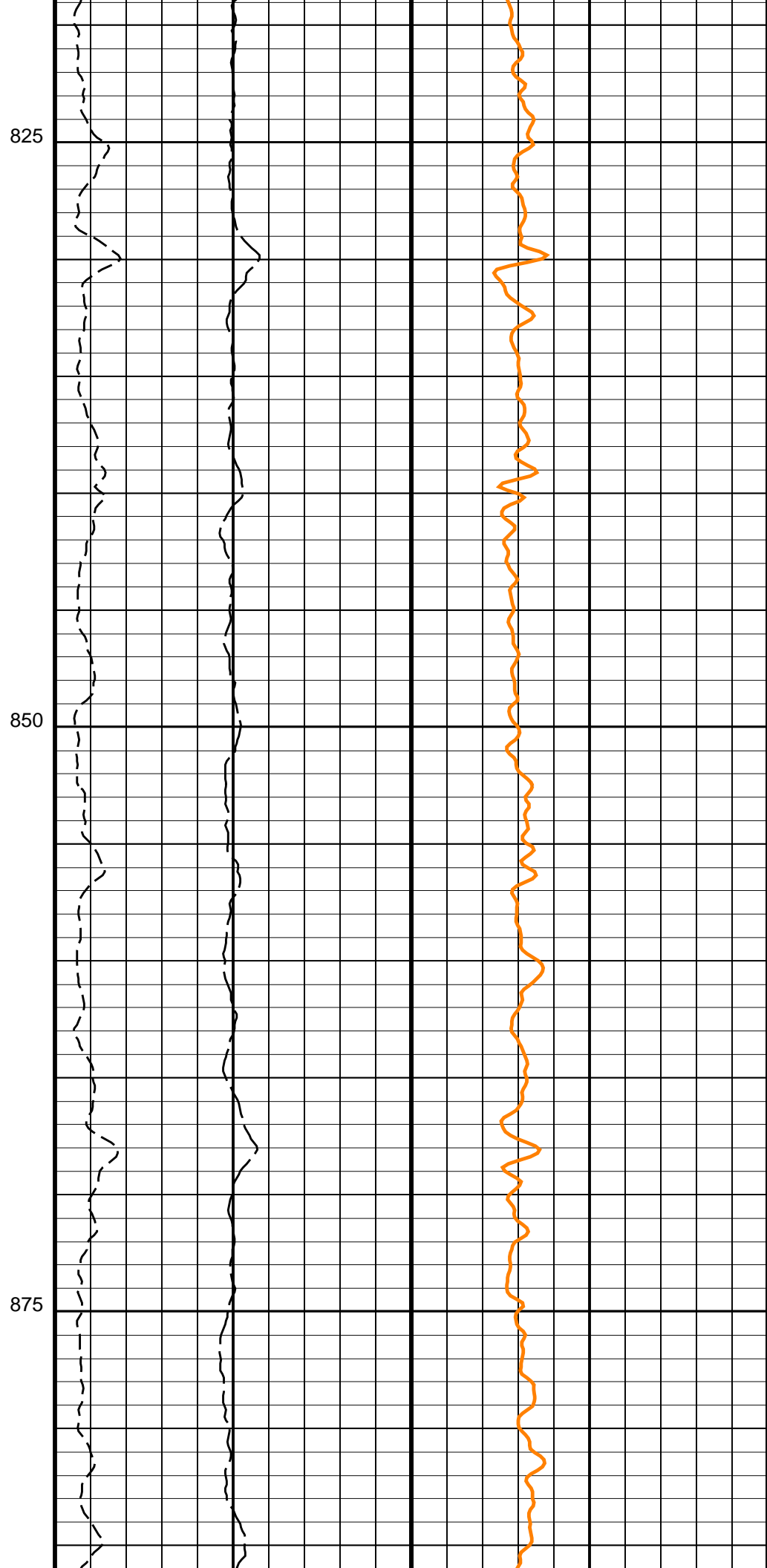
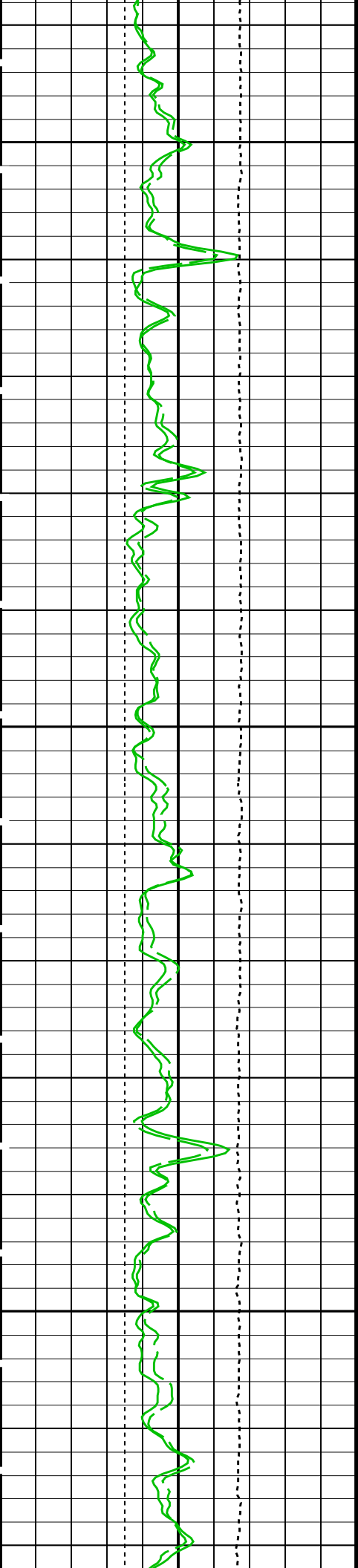


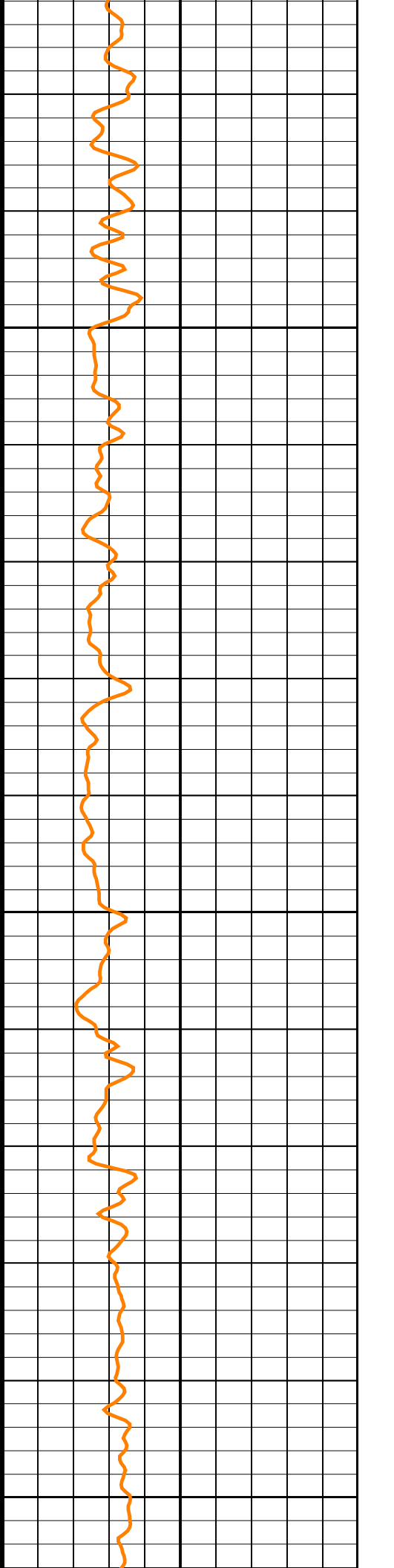
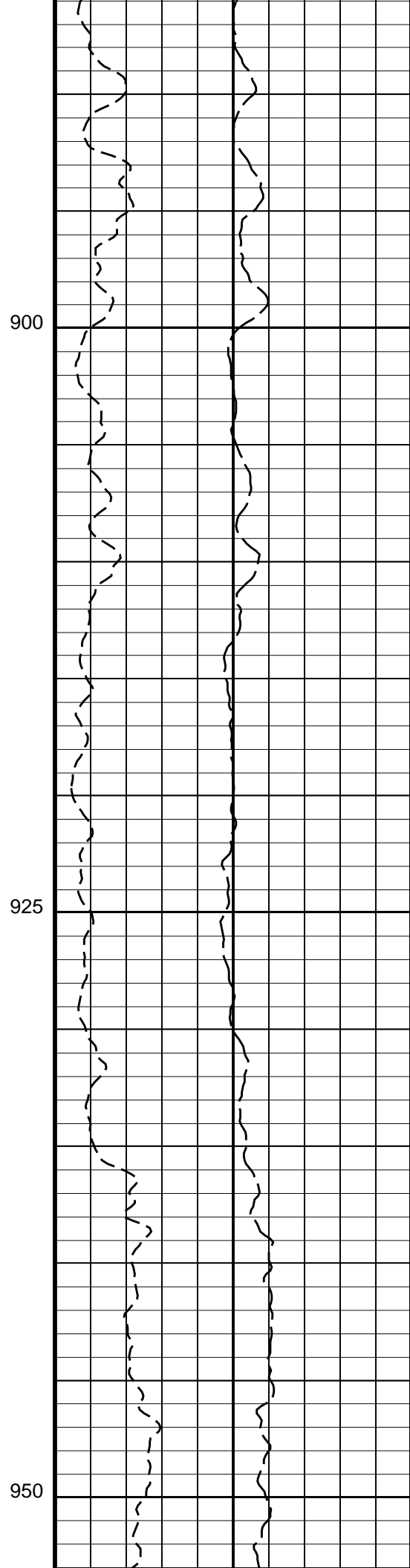
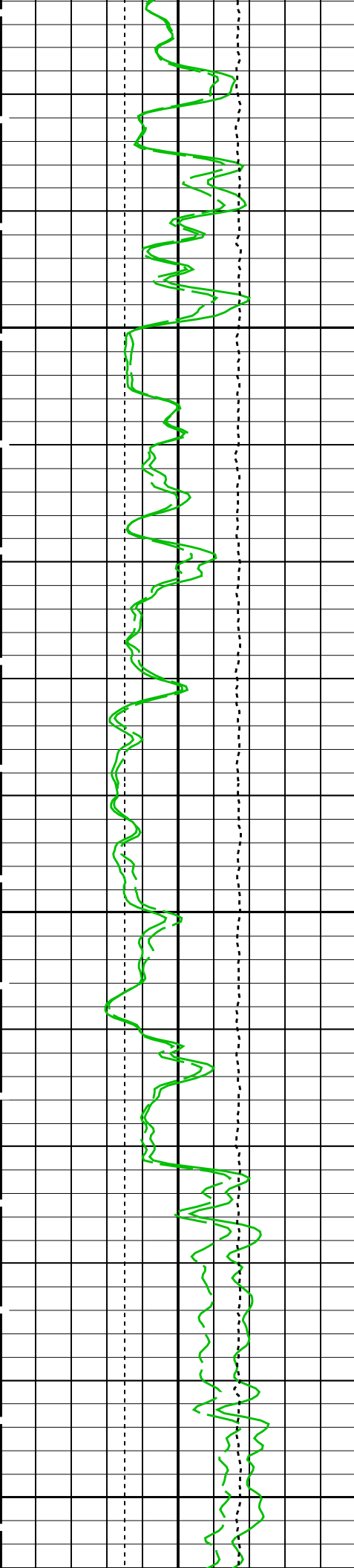


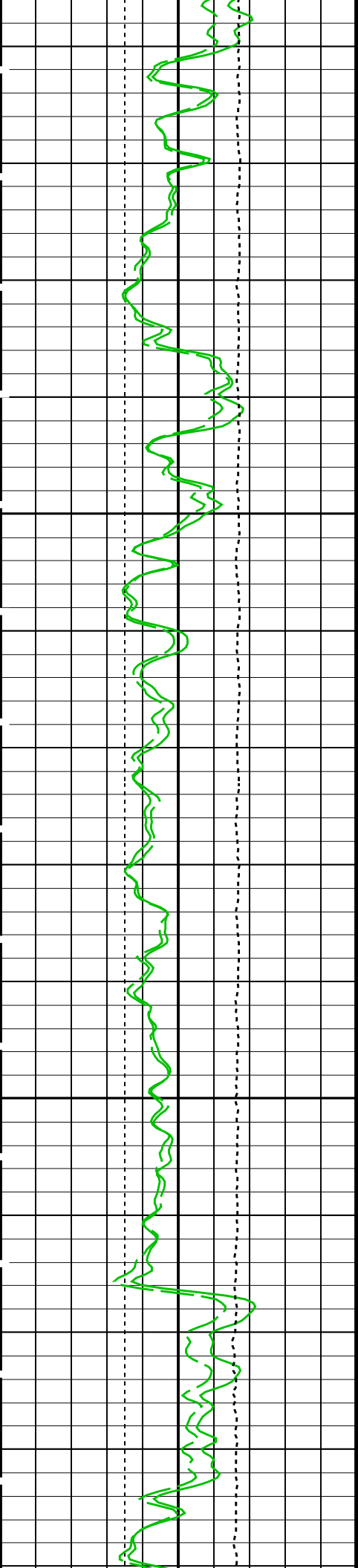
775

800



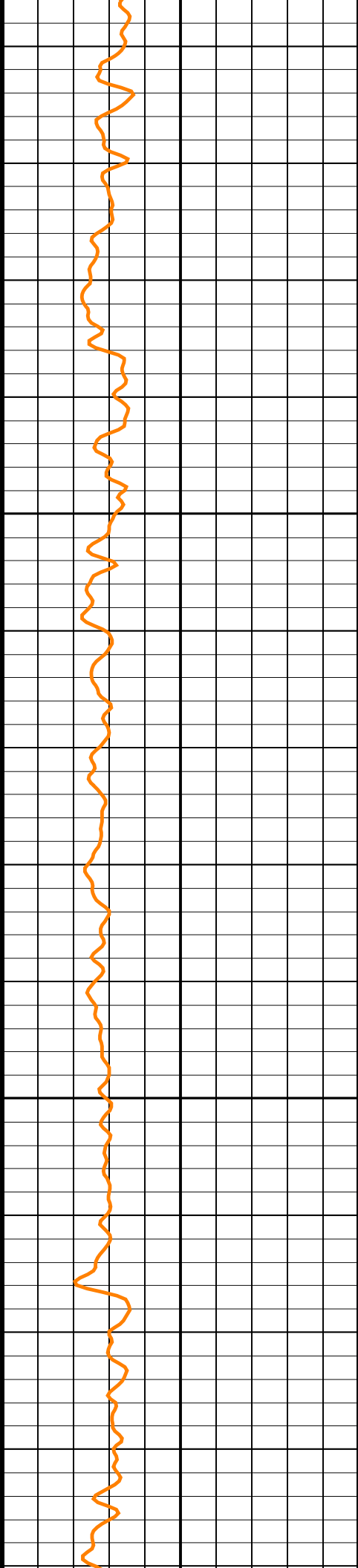
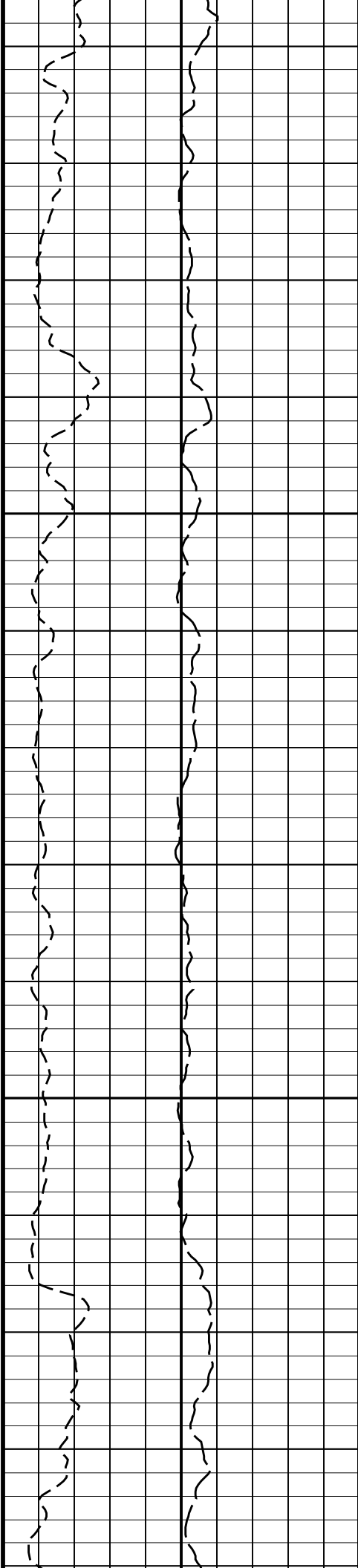


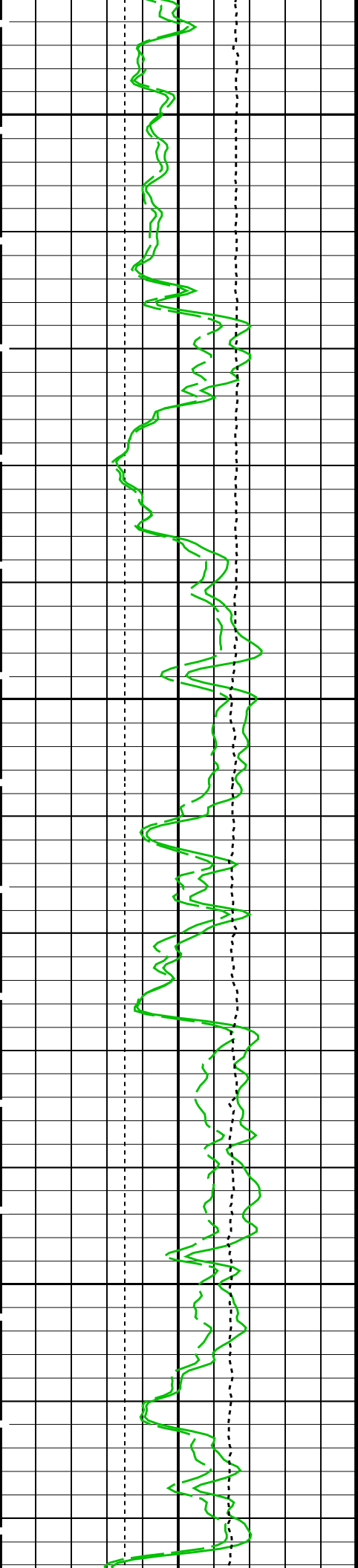




975

1000

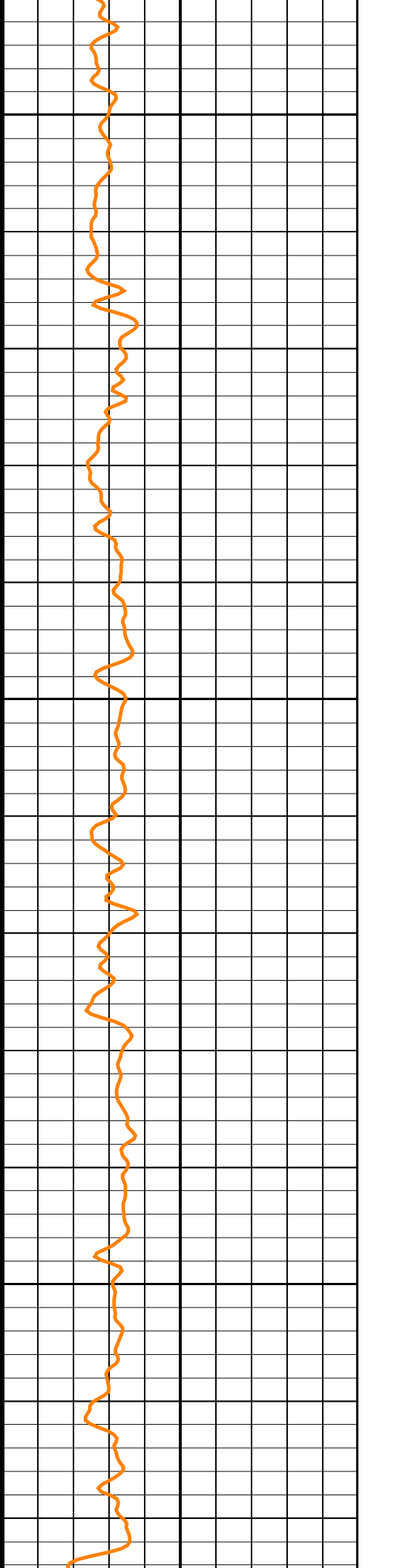
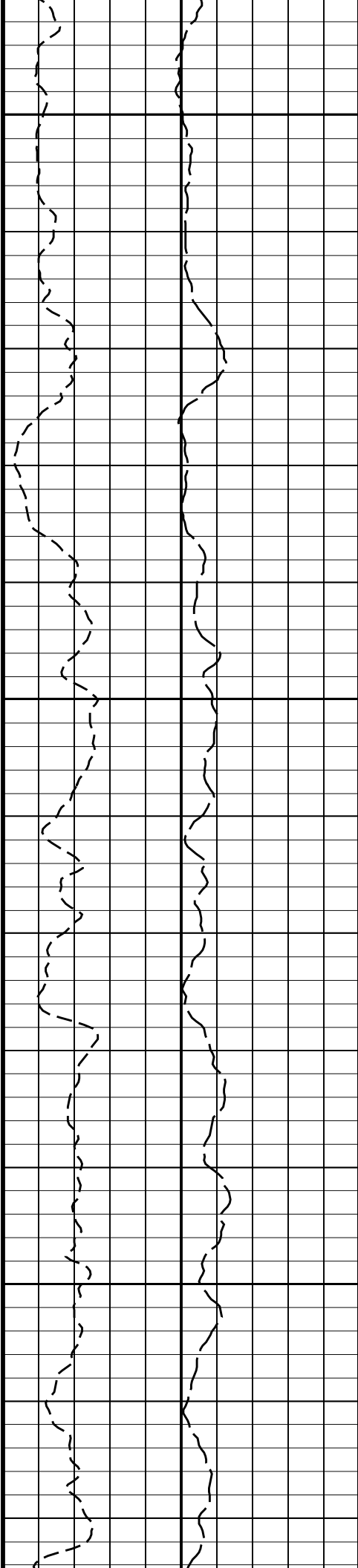


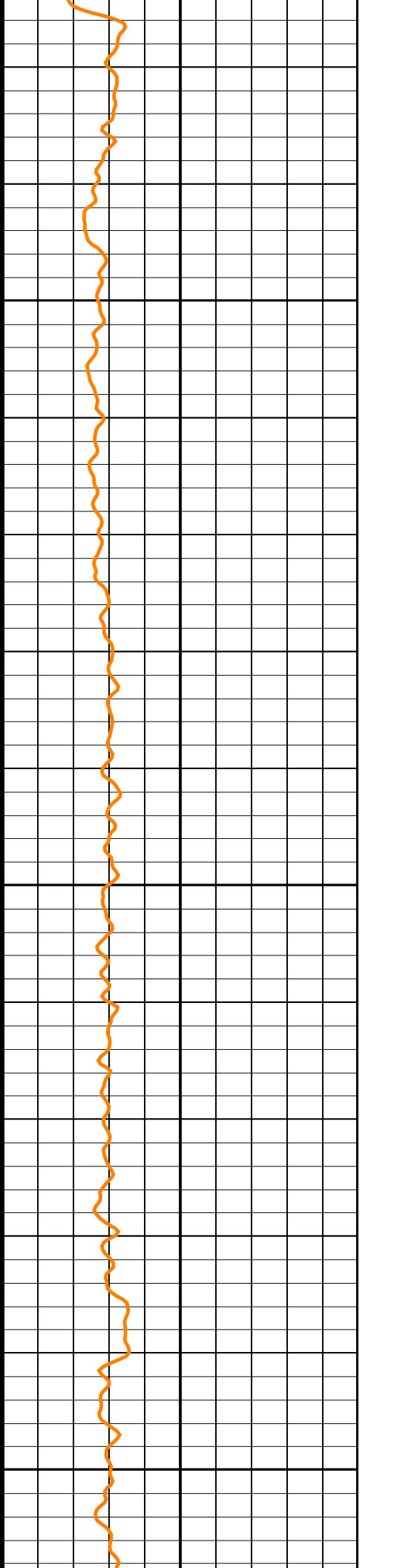
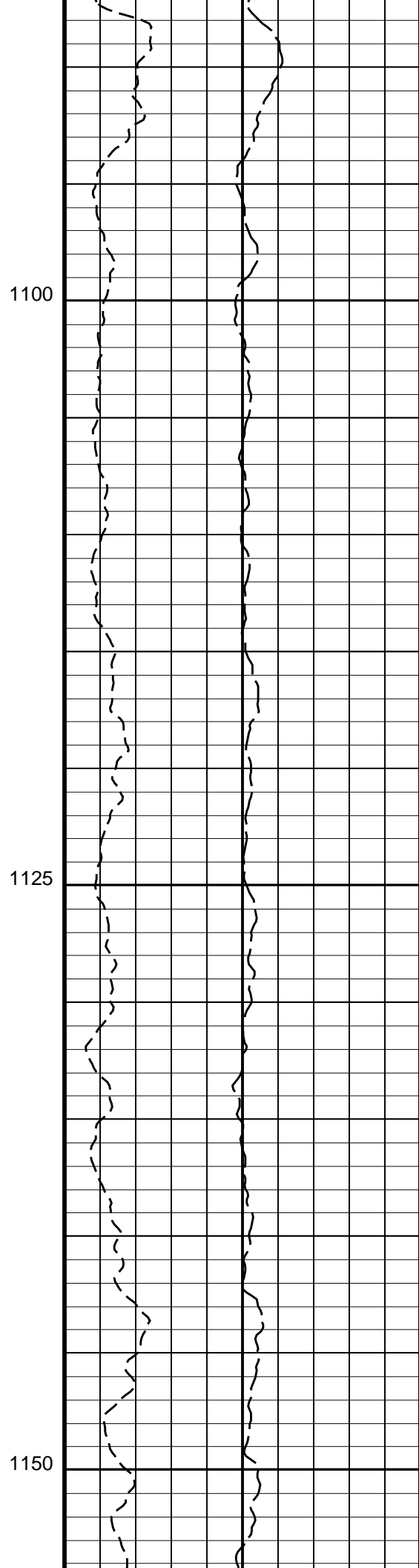
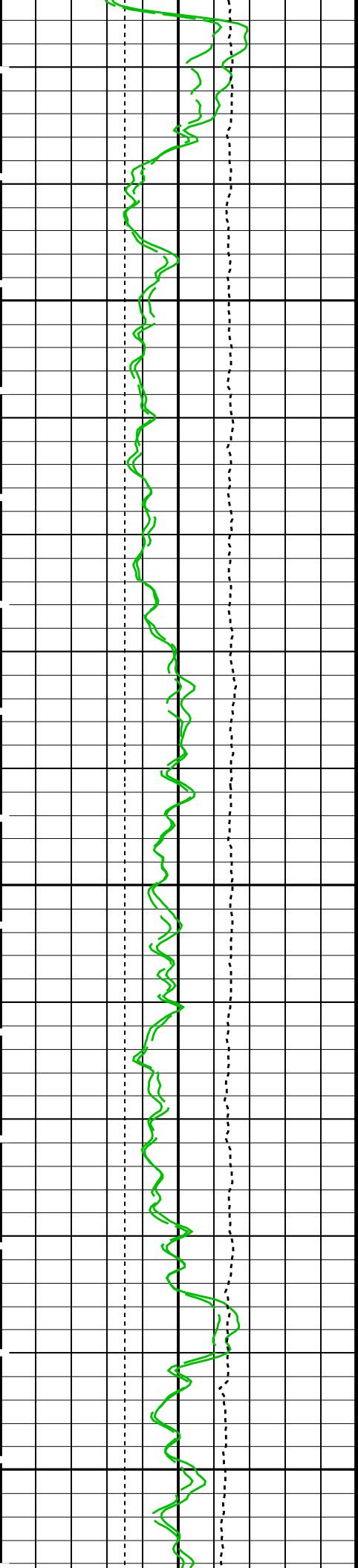


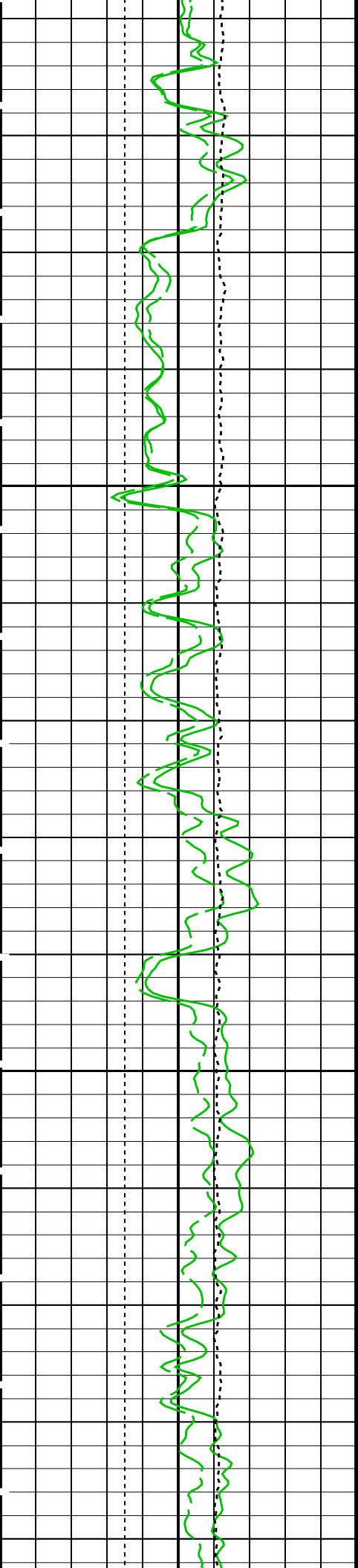
1025

1050

1075

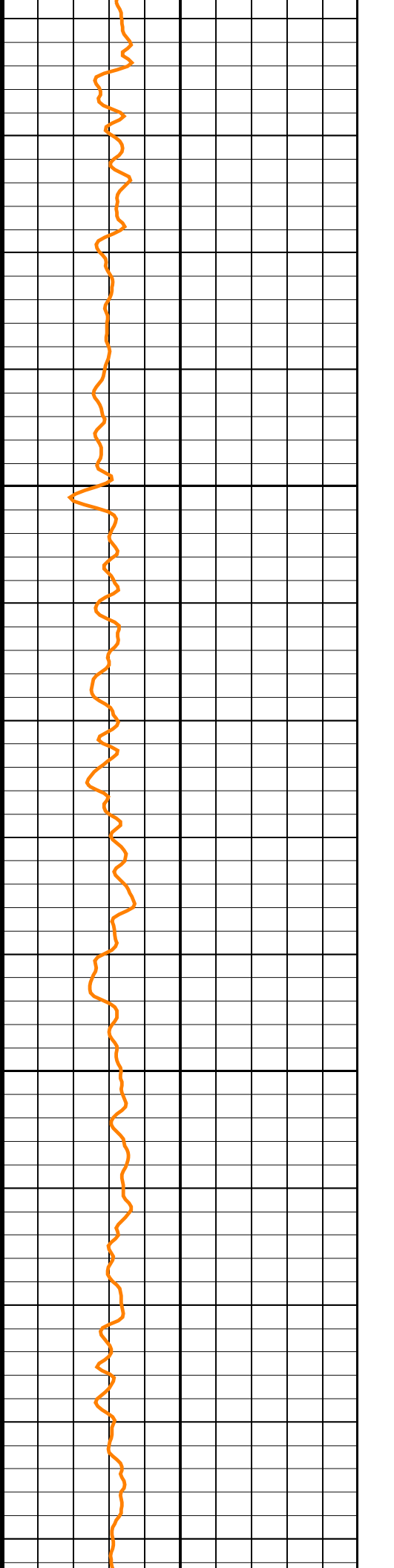
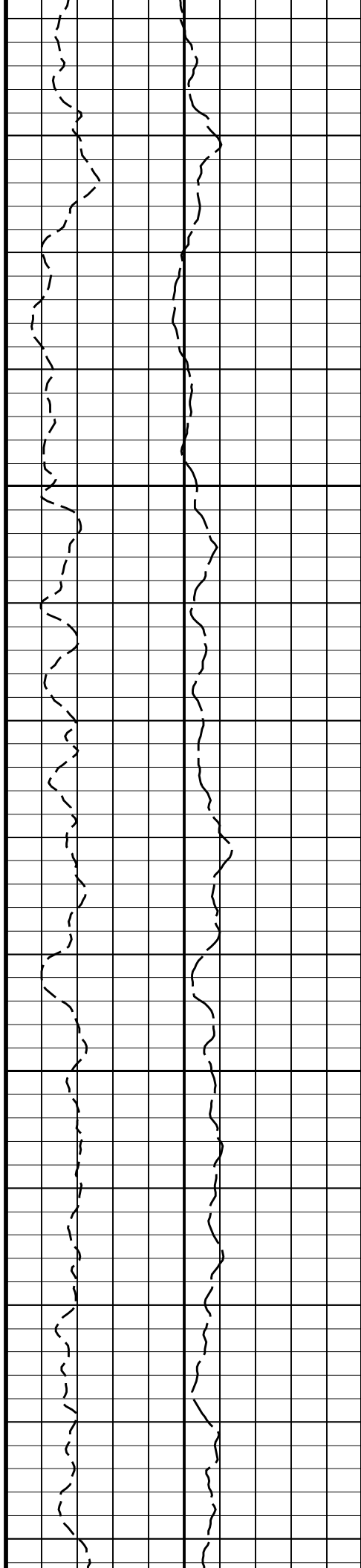


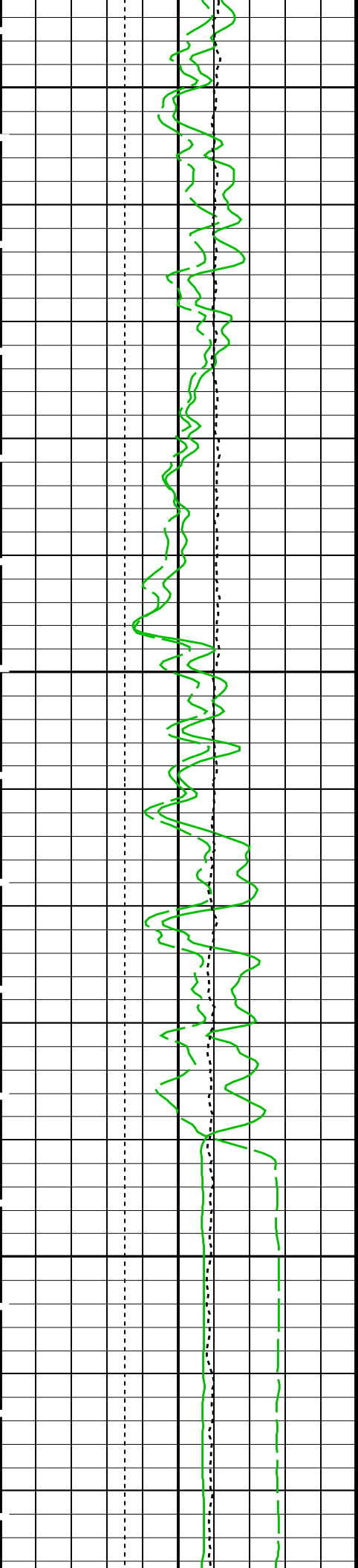




1175

1200

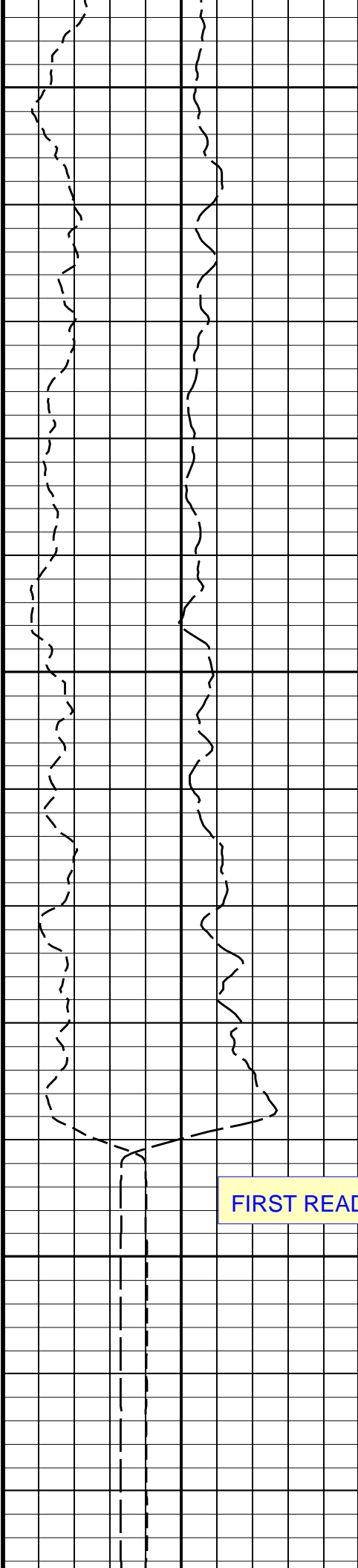




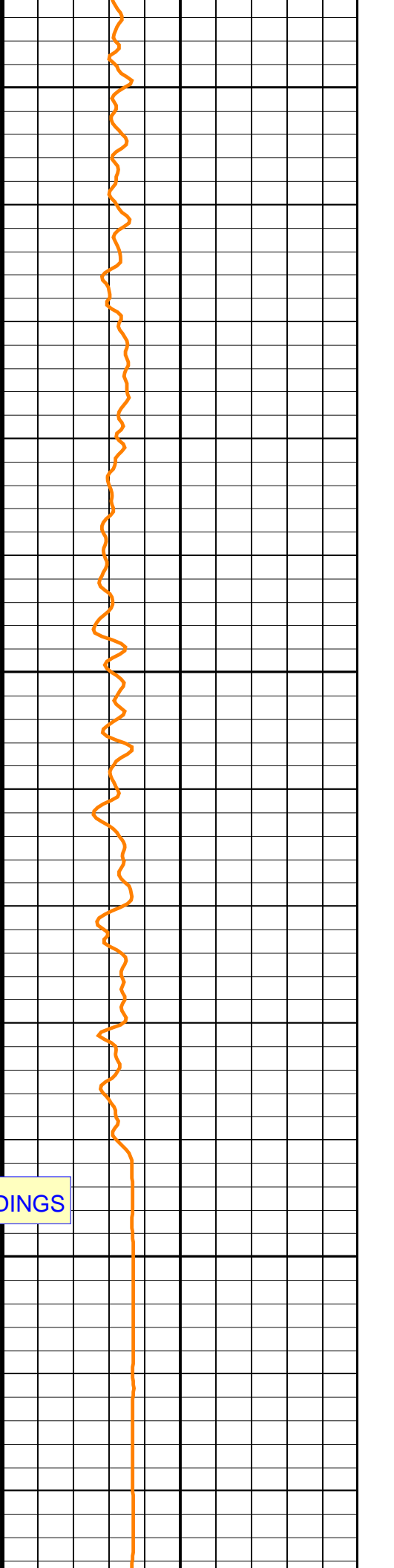
1225

1250

1275



FIRST READINGS





Bit Size (BS) (MM)		275	525	Stuck Stretch (STIT) (M)	0	20	HNGS Thorium (HTHO) (PPM)	0	40	HNGS Potassium (HFK) (V/V)	0	0.1
HNGS Computed Gamma Ray (HCGR) (GAPI)		0	150	Cable Drag From STIA to STIT			HNGS Uranium (HURA) (PPM)					
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)		0	150	Tool/Tot. Drag From D3T to STIA					HNGS Potassium (HFK) (V/V)	0	0.1	
Tension (TENS) (N)		25000	0									

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
APS-C: Accelerator-Porosity Tool			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
CMRT-B: Combinable Magnetic Resonance Tool - B			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
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	MM
CSD2	Outer Casing Outer Diameter	0	MM
CSW1	Inner Casing Weight	0	KG/M
CSW2	Outer Casing Weight	0	KG/M
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	HCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.0180305	
HALF	HNGS Alpha Filter Length	1524	MM
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	0.995951	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00321	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	1310.00	M
TDL	Total Depth - Logger	1296.00	M
System and Miscellaneous			
BS	Bit Size	361.950	MM
DO	Depth Offset for Playback	1.4	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PS	Post-Process	RECOMPUTE	

**OP System Version: 14C0-302**  
 MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

**Input DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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**Output DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06



**HOSTILE ENVIRONMENT NATURAL  
 GAMMA RAY : REPEAT ANALYSIS**

MAXIS Field Log

Company: Well:

**Input DLIS Files**

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
DEFAULT	APS_TLD_MCFL_CNL_154PUP	FN:170	PRODUCER	07-Mar-2007 13:59	1172.7 M	784.3 M

**Output DLIS Files**

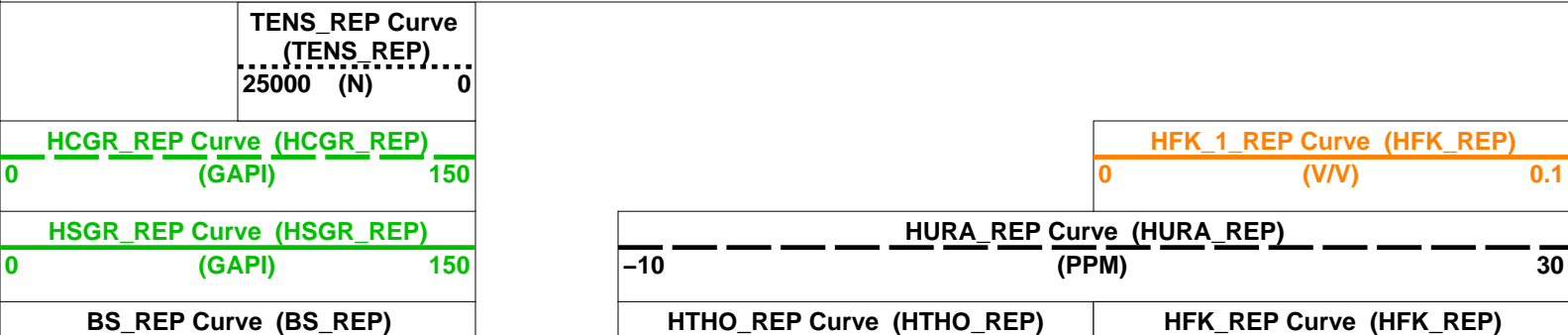
DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06

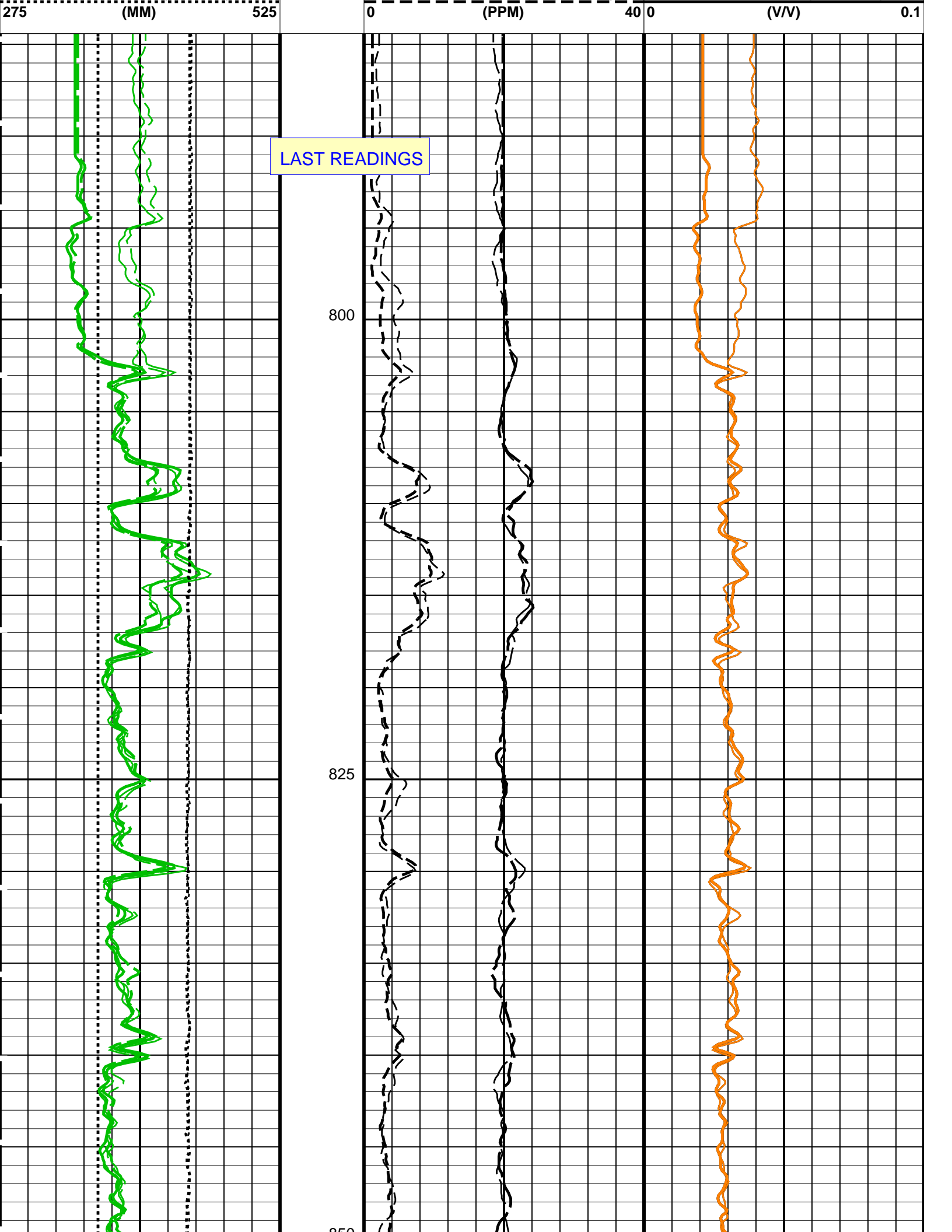
**OP System Version: 14C0-302**  
 MCM

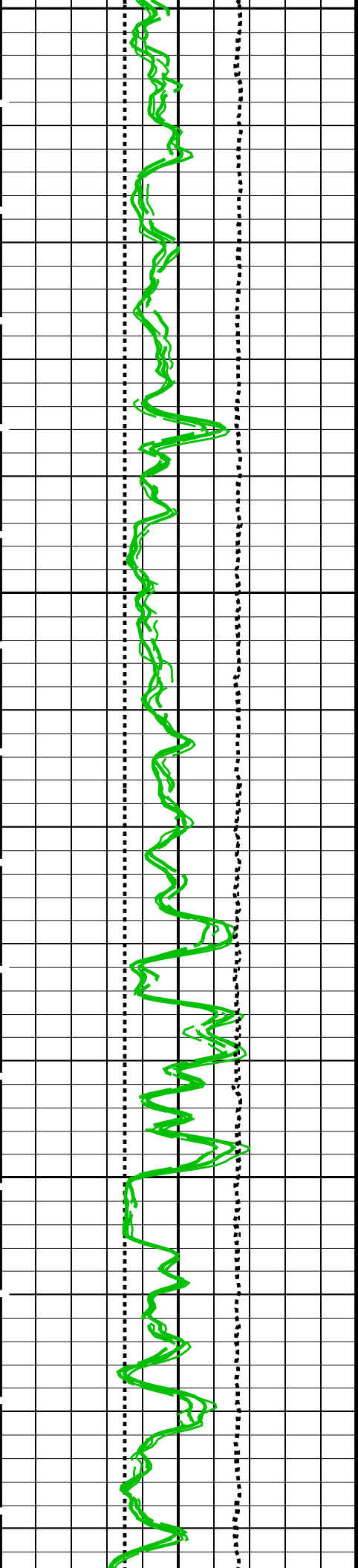
APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

**PIP SUMMARY**

Time Mark Every 60 S



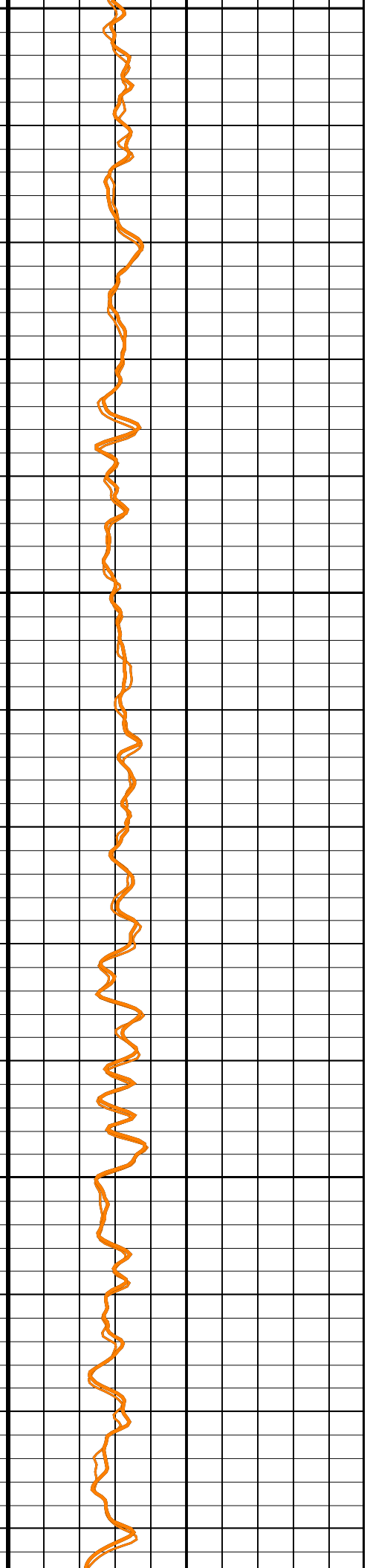
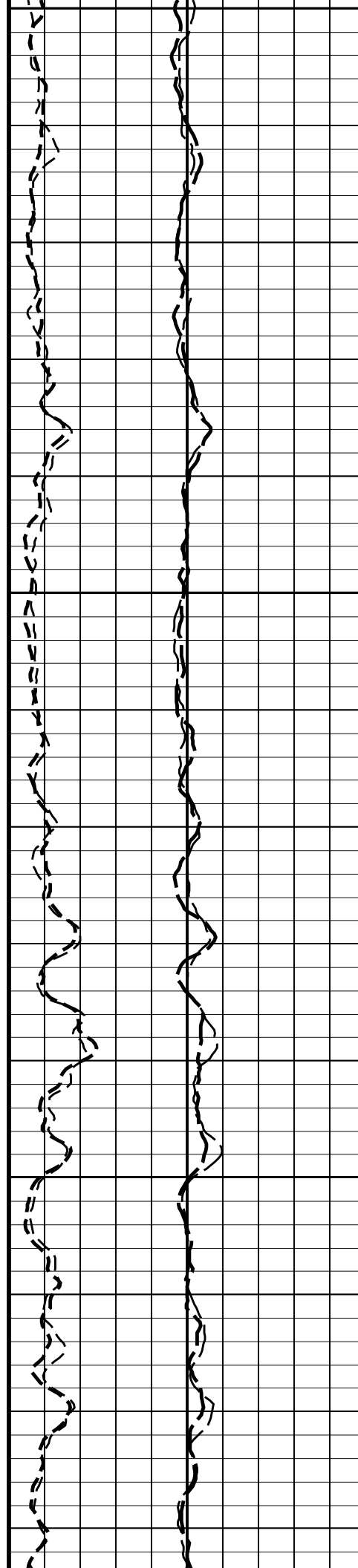


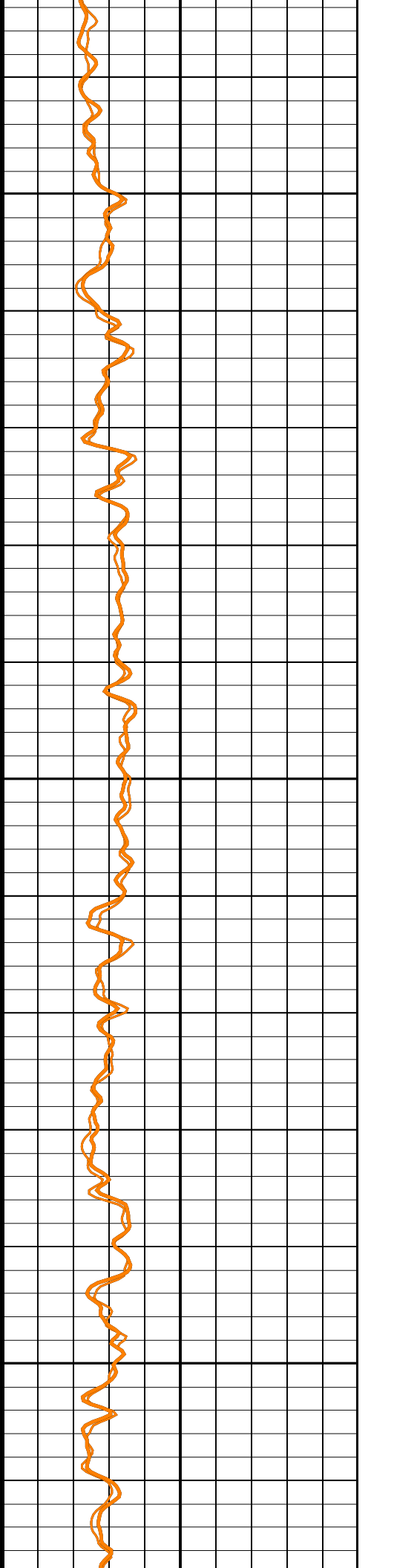
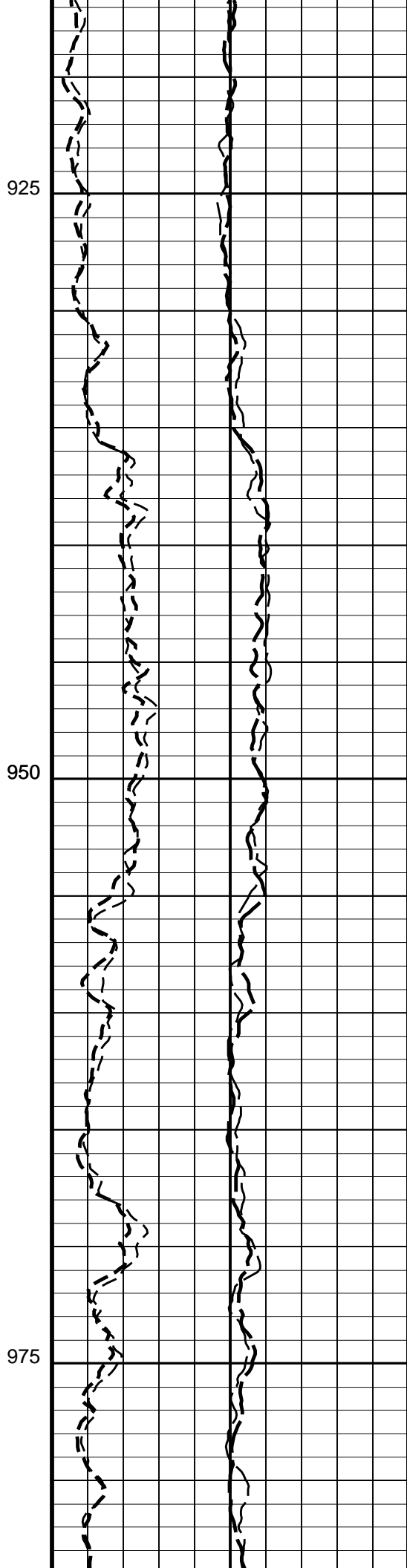
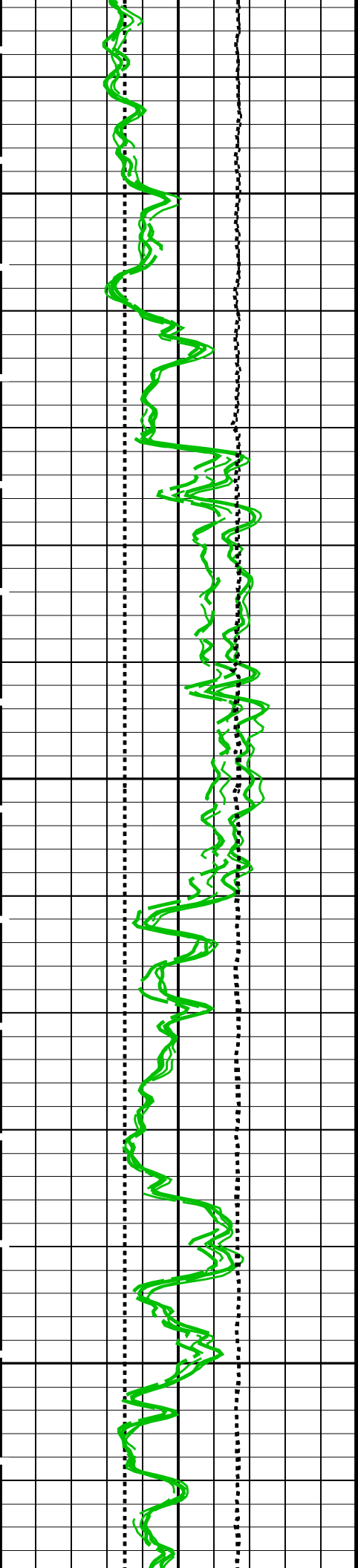


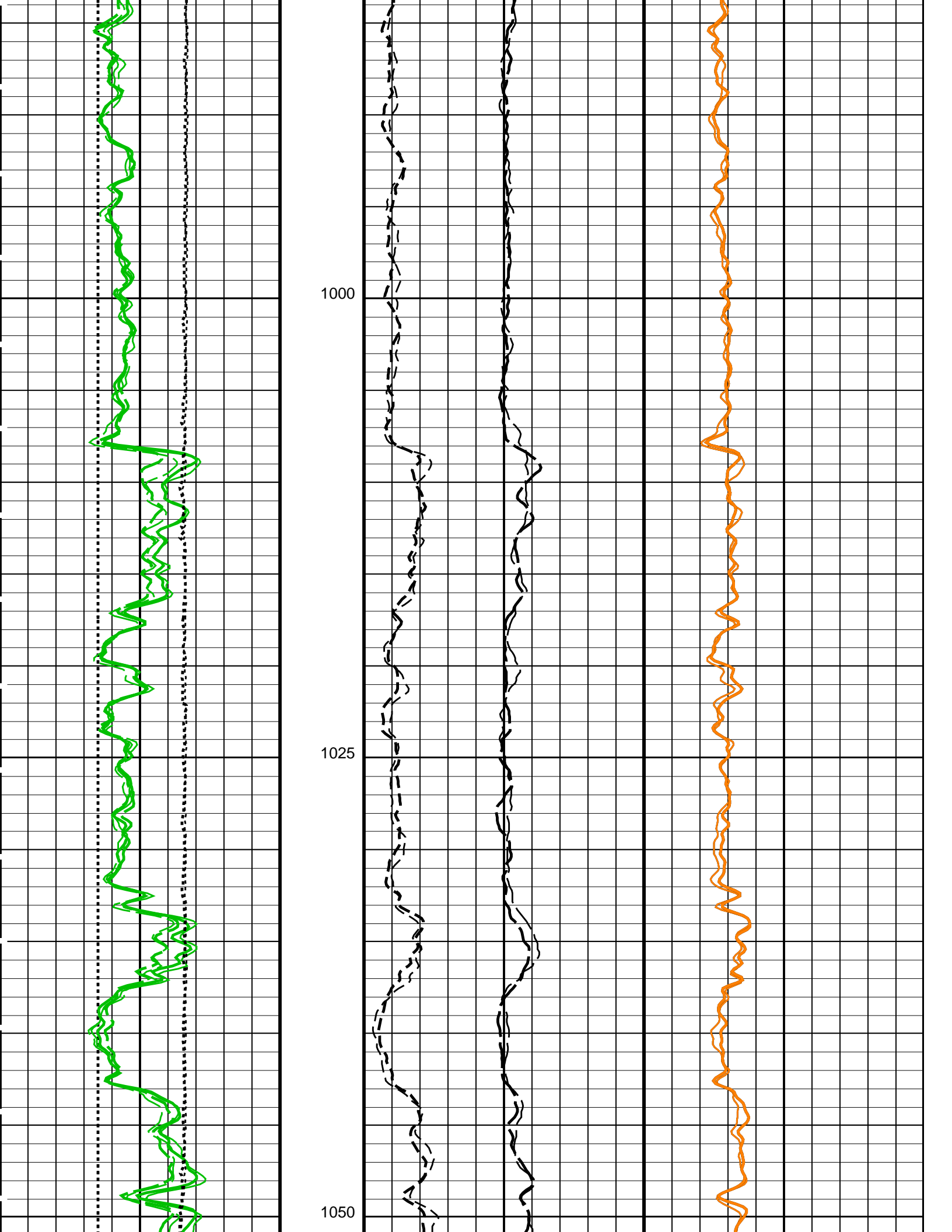
850

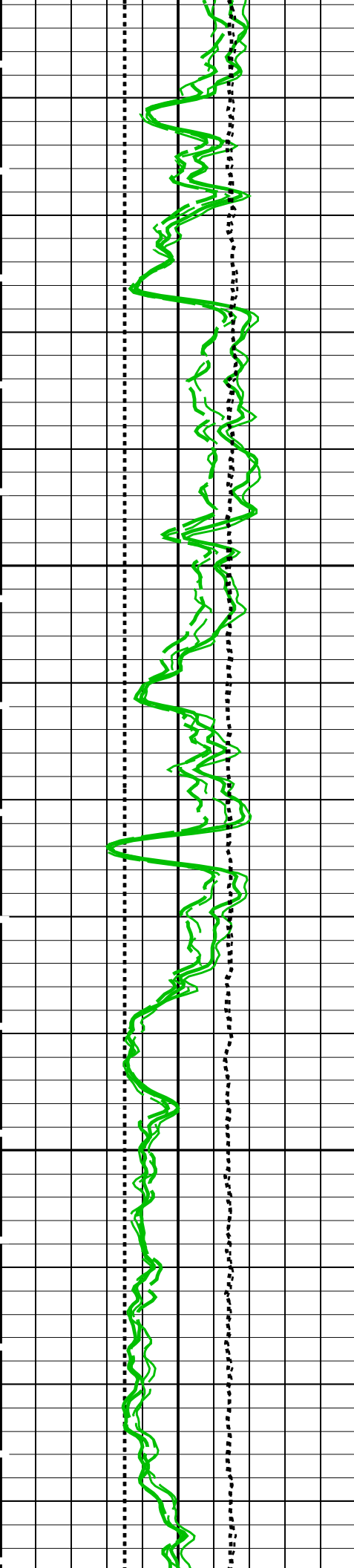
875

900



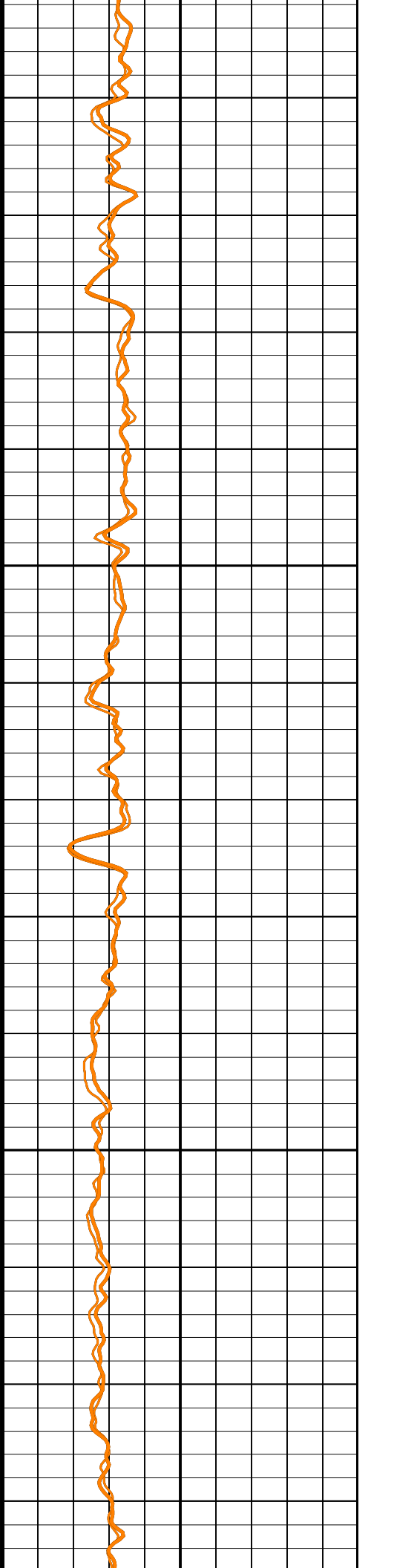
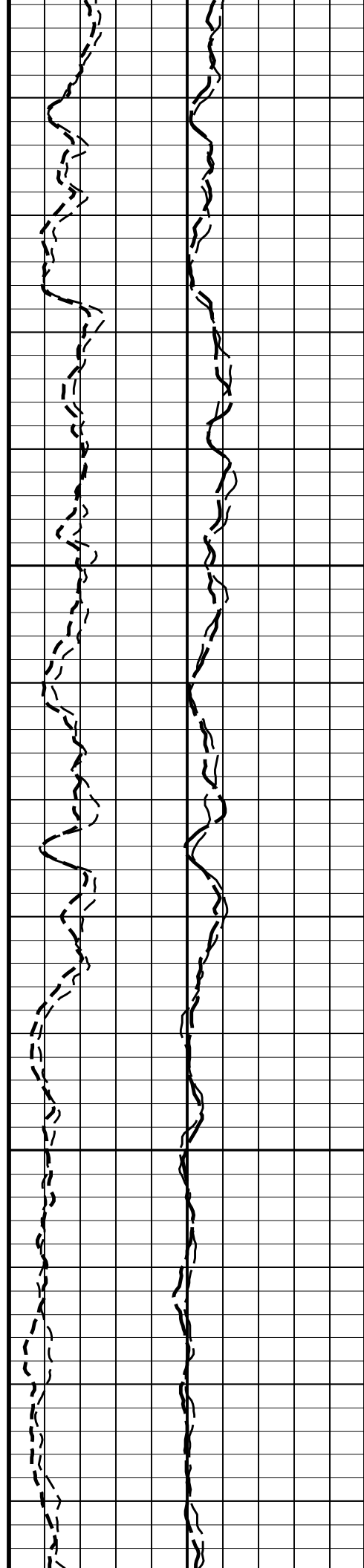


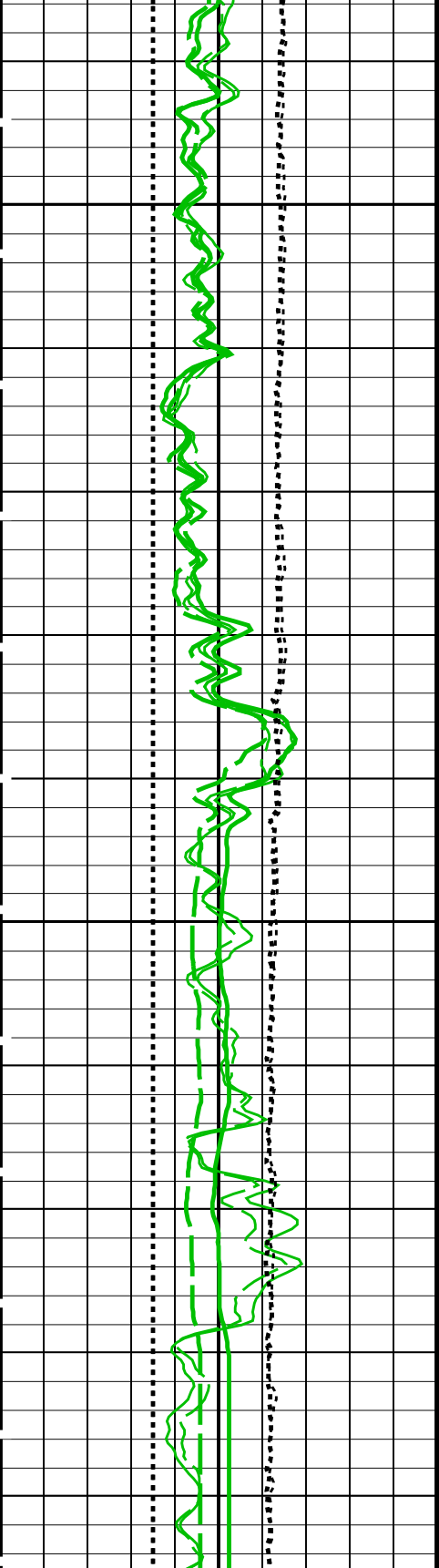




1075

1100



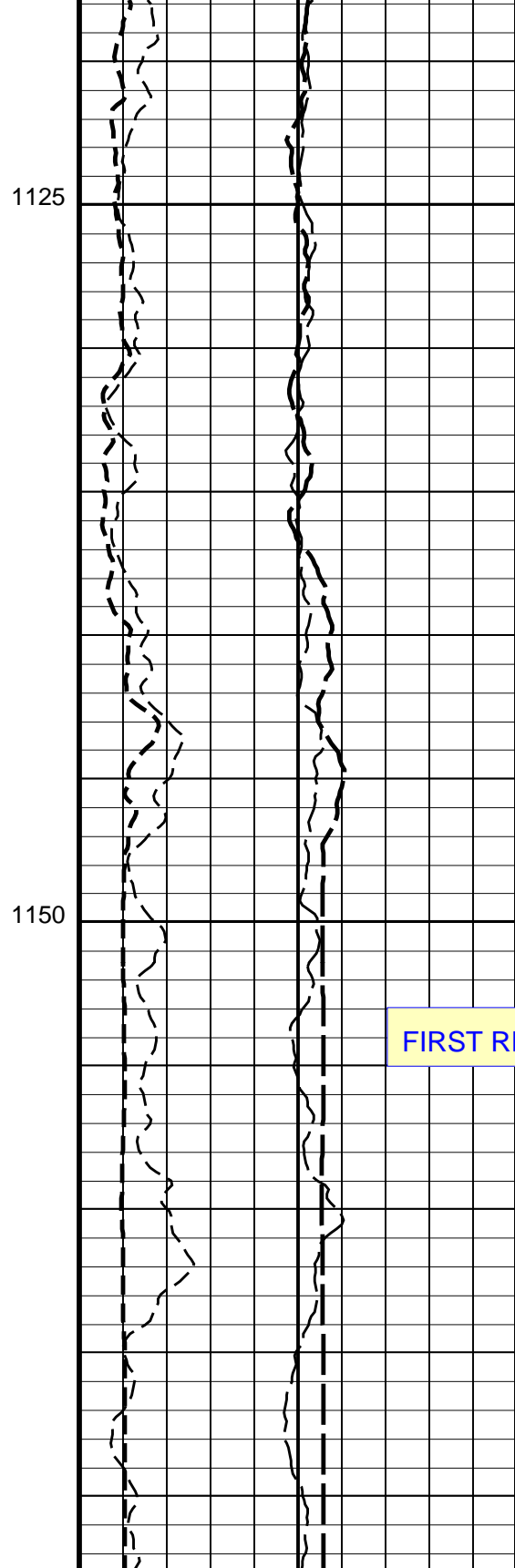


BS\_REP Curve (BS\_REP)  
275 (MM) 525

HSGR\_REP Curve (HSGR\_REP)  
0 (GAPI) 150

HCGR\_REP Curve (HCGR\_REP)  
0 (GAPI) 150

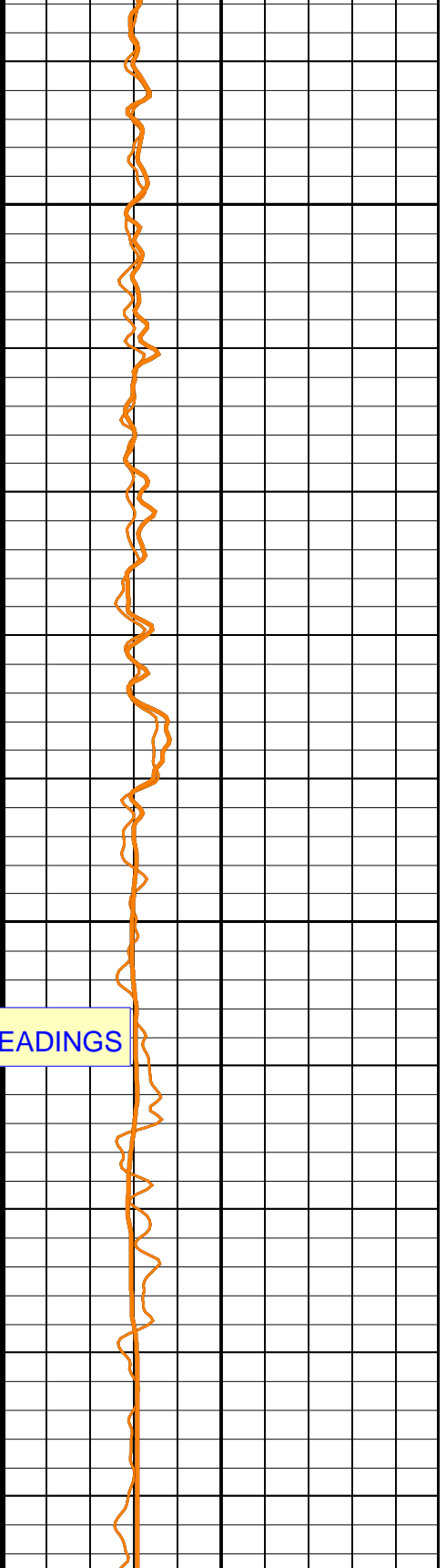
TENS\_REP Curve (TENS\_REP)  
25000 (N) 0



HTHO\_REP Curve (HTHO\_REP)  
0 (PPM) 40

HURA\_REP Curve (HURA\_REP)  
-10 (PPM) 30

FIRST READINGS



HFK\_REP Curve (HFK\_REP)  
0 (V/V) 0.1

HFK\_1\_REP Curve (HFK\_REP)  
0 (V/V) 0.1



### Parameters

DLIS Name	Description	Value	
<b>APS-C: Accelerator-Porosity Tool</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
<b>HILTH-FTB: High resolution Integrated Logging Tool-DTS</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
<b>CMRT-B: Combinable Magnetic Resonance Tool - B</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
<b>HNGS-BA: Hostile Natural Gamma Ray Sonde</b>			
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	MM
CSD2	Outer Casing Outer Diameter	0	MM
CSW1	Inner Casing Weight	0	KG/M
CSW2	Outer Casing Weight	0	KG/M
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	HCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.0180305	
HALF	HNGS Alpha Filter Length	1524	MM
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	0.995951	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00321	
<b>EDTC-B: Enhanced DTS Cartridge</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
<b>System and Miscellaneous</b>			
BS	Bit Size	361.950	MM
DO	Depth Offset for Playback	1.4	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: HNGSYields\_S5\_REP      Vertical Scale: 1:240      Graphics File Created: 07-Mar-2007 14:07

### OP System Version: 14C0-302

MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

### Input DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
DEFAULT	APS_TLD_MCFL_CNL_154PUP	FN:170	PRODUCER	07-Mar-2007 13:59	1172.7 M	784.3 M

### Output DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06

Accelerator-Porosity Tool Wellsite Calibration – Detector Background

Master: 12-Jan-2007 20:56 Before: 6-Mar-2007 16:13

Near Det Bkg Cntrate	30.00	25.72	25.63	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	26.28	26.00	N/A	N/A	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	26.42	26.99	N/A	N/A	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	27.96	27.50	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	24.23	25.50	N/A	N/A	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration – Calibration Ratios

Master: 12-Jan-2007 20:56

Near/Far Calibration Ratio	0.9250	0.9516	N/A	N/A	N/A	N/A
Near/Array Calibration Ratio	1.030	0.9853	N/A	N/A	N/A	N/A
Near/Array Cal Ratio Up/Down	1.000	1.016	N/A	N/A	N/A	N/A

Accelerator-Porosity Tool Wellsite Calibration – Tank Check

Master: 12-Jan-2007 20:56

Array-1 Standoff Porosity	0.1175	0.1131	N/A	N/A	N/A	N/A	V/V
Array-2 Standoff Porosity	0.1175	0.1119	N/A	N/A	N/A	N/A	V/V
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	0.9832	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9667	N/A	N/A	N/A	N/A	
Sigma Formation	2.750	2.710	N/A	N/A	N/A	N/A	M-1

Accelerator-Porosity Tool Wellsite Calibration – CCR7 signal boxes

Master: 12-Jan-2007 20:56

Near Detector Plateau Setting	1650	1743	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2079	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1972	N/A	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Stab Measurement Summary

Before: 2-Mar-2007 21:28

BS Window Ratio	0.7427	N/A	0.7435	N/A	N/A	N/A	
BS Window Sum	29280	N/A	29240	N/A	N/A	N/A	CPS
SS Window Ratio	0.4849	N/A	0.4833	N/A	N/A	N/A	
SS Window Sum	13080	N/A	13060	N/A	N/A	N/A	CPS
LS Window Ratio	0.3035	N/A	0.2974	N/A	N/A	N/A	
LS Window Sum	1545	N/A	1536	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Photo-multiplier High Voltages Calibrations

Before: 2-Mar-2007 21:28

BS PM High Voltage (Command)	1376	N/A	1352	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1421	N/A	1410	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1301	N/A	1310	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 2-Mar-2007 21:28

BS Crystal Resolution	10.78	N/A	10.84	N/A	N/A	N/A	%
SS Crystal Resolution	8.916	N/A	8.780	N/A	N/A	N/A	%
LS Crystal Resolution	8.952	N/A	9.048	N/A	N/A	N/A	%

High resolution Integrated Logging Tool-DTS Wellsite Calibration – MCFL Calibration

Before: 2-Mar-2007 21:29

Raw B0 Resistivity	3875	N/A	3870	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3819	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3828	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool-DTS Wellsite Calibration – HILT Caliper Calibration

Before: 2-Mar-2007 21:51

HILT Caliper Zero Measurement	254.0	N/A	199.8	N/A	N/A	N/A	MM
HILT Caliper Plus Measurement	508.0	N/A	382.4	N/A	N/A	N/A	MM

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration

Before: 2-Mar-2007 21:25

Gamma Ray Background	30.00	N/A	23.72	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	185.1	N/A	185.1	N/A	N/A	16.83	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement

Master: 10-Jan-2007 15:23 Before: 2-Mar-2007 21:23

CNTC Background	26.53	26.53	26.48	N/A	N/A	3.980	CPS
CFTC Background	29.66	29.66	29.06	N/A	N/A	4.449	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Ratio Measurement

Master: 10-Jan-2007 15:23

Thermal Near Corr. (Tank)	6031	6292	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2793	2647	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.377	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration

Before: 3-Mar-2007 6:35

Z-Axis Acceleration	9.812	N/A	9.812	N/A	N/A	N/A	M/S2
<b>High resolution Integrated Logging Tool-DTS Master Calibration – Inversion results</b>							
Master: 14-Feb-2007 15:55							
Rho Aluminum	2596	2599	--	--	--	--	K/M3
Rho Magnesium	1686	1686	--	--	--	--	K/M3
Pe Aluminum	2.570	2.556	--	--	--	--	
Pe Magnesium	2.650	2.631	--	--	--	--	
<b>High resolution Integrated Logging Tool-DTS Master Calibration – Deviation Summary</b>							
Master: 14-Feb-2007 15:55							
BS Average Deviation	0	0.2316	--	--	--	--	%
BS Max Deviation	0	0.7406	--	--	--	--	%
SS Average Deviation	0	0.2254	--	--	--	--	%
SS Max Deviation	0	1.106	--	--	--	--	%
LS Average Deviation	0	0.6026	--	--	--	--	%
LS Max Deviation	0	1.170	--	--	--	--	%
<b>Combinable Magnetic Resonance Tool – B Master Calibration – Date of Master Calibration: 14-Feb-2007</b>							
Master: 7-Mar-2007 4:45							
Tool Temperature MCAL	27.00	25.19	--	--	--	--	DEGC
LOOP Measurement MCAL	2300	1870	--	--	--	--	
Hall Probe B0 MCAL	52.00	52.68	--	--	--	--	MTES
Cal. Fixture Amplitude MCAL	37.50	28.32	--	--	--	--	%
<b>Powered Positioning Deveice/Caliper 2 Wellsite Calibration – PPC2 Caliper Calibration</b>							
Before: 5-Mar-2007 19:34							
PPC2 Radius 1 Raw Small Radius	88.90	N/A	139.6	N/A	N/A	12.70	MM
PPC2 Radius 1 Raw Large Radius	203.2	N/A	245.1	N/A	N/A	12.70	MM
PPC2 Radius 2 Raw Small Radius	88.90	N/A	59.05	N/A	N/A	12.70	MM
PPC2 Radius 2 Raw Large Radius	203.2	N/A	169.2	N/A	N/A	12.70	MM
PPC2 Radius 3 Raw Small Radius	88.90	N/A	135.0	N/A	N/A	12.70	MM
PPC2 Radius 3 Raw Large Radius	203.2	N/A	242.2	N/A	N/A	12.70	MM
PPC2 Radius 4 Raw Small Radius	88.90	N/A	75.27	N/A	N/A	12.70	MM
PPC2 Radius 4 Raw Large Radius	203.2	N/A	186.6	N/A	N/A	12.70	MM
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check</b>							
Master: 9-Jan-2007 19:28 Before: 5-Mar-2007 16:58							
Na 511 Peak Loc	40.00	39.72	39.61	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.36	15.93	N/A	N/A	2.000	%
High Voltage	1150	1250	1238	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.5	143.5	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	7.630	8.646	N/A	N/A	2.000	%
Temperature	15.50	19.48	13.14	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	46.07	43.11	N/A	N/A	8.000	CPS
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check</b>							
Master: 9-Jan-2007 19:28 Before: 5-Mar-2007 16:58							
Na 511 Peak Loc	40.00	39.67	39.53	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.21	15.54	N/A	N/A	2.000	%
High Voltage	1150	1270	1257	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.2	142.7	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.889	8.350	N/A	N/A	2.000	%
Temperature	15.50	18.64	12.45	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	46.16	43.06	N/A	N/A	8.000	CPS
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2</b>							
Master: 9-Jan-2007 19:28 Before: 5-Mar-2007 16:58							
Coincidence Count Rate Ratio	1.000	0.9985	1.002	N/A	N/A	0.05000	
<b>Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration</b>							
Master: 9-Jan-2007 19:28							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.5	--	--	--	--	
Th Peak Res	7.000	6.885	--	--	--	--	%
Background Count Rate	142.5	97.39	--	--	--	--	CPS
Gain Ratio	1.000	1.013	--	--	--	--	
<b>Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration</b>							
Master: 9-Jan-2007 19:28							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.7	--	--	--	--	
Th Peak Res	7.000	6.455	--	--	--	--	%
Background Count Rate	142.5	99.08	--	--	--	--	CPS
Gain Ratio	1.000	1.015	--	--	--	--	
<b>Powered Positioning Deveice/Caliper 1 Wellsite Calibration – PPC1 Caliper Calibration</b>							
Before: 6-Mar-2007 4:43							
PPC1 Radius 1 Raw Small Radius	88.90	N/A	137.5	N/A	N/A	12.70	MM
PPC1 Radius 1 Raw Large Radius	203.2	N/A	244.4	N/A	N/A	12.70	MM
PPC1 Radius 2 Raw Small Radius	88.90	N/A	55.65	N/A	N/A	12.70	MM
PPC1 Radius 2 Raw Large Radius	203.2	N/A	168.8	N/A	N/A	12.70	MM

PPC1 Radius 2 Raw Large Radius	203.2	N/A	168.8	N/A	N/A	12.70	MM
PPC1 Radius 3 Raw Small Radius	88.90	N/A	136.3	N/A	N/A	12.70	MM
PPC1 Radius 4 Raw Small Radius	88.90	N/A	63.71	N/A	N/A	12.70	MM
PPC1 Radius 4 Raw Large Radius	203.2	N/A	178.0	N/A	N/A	12.70	MM

Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 6-Mar-2007 10:05

Gamma Ray (Jig – Bkg)	159.1	N/A	159.1	N/A	N/A	14.47	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 6-Mar-2007 9:11

EDTC Z-Axis Acceleration	9.810	N/A	9.805	N/A	N/A	N/A	M/S2
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Accelerator-Porosity Tool – Detector Plateau Settings :

Near Detector Plateau Setting	1743 V
Far Detector Plateau Setting	2079 V
Array Detector Plateau Setting	1972 V

The GLS-VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature	18.0	DEGC.
Thermal Housing Size	85.725	MM.
NSR-F serial number	5196	

Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:			
Accelerator-Porosity Sonde	APS – C	202	202
APS Minitron	MNTR – F	5329	5890
Auxiliary Equipment:			
Accelerator-Porosity Housing	APH – AC	104	104
APS Calibration Water Tank	SFT – 178	53	53
APS Aluminum Calibrator Sleeve	SFT – 281	12673	12673

Accelerator-Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value	Phase	Far Det Bkg Cntrate CPS	Value	Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		25.72	Master		26.28	Master		26.42
Before		25.63	Before		26.00	Before		26.99
1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)		
Phase	Array-2 Det Bkg Cntrate CPS	Value	Phase	Array Therm Det Bkg Cntrate CPS	Value			
Master		27.96	Master		24.23			
Before		27.50	Before		25.50			
1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)					
Master: 12-Jan-2007 20:56			Before: 6-Mar-2007 16:13					

Accelerator-Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.9516	Master		0.9853	Master		1.016
0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)			0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)			0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)		
Master: 12-Jan-2007 20:56								

Accelerator-Porosity Tool Wellsite Calibration

Tank Check

Phase	Array-1 Standoff Porosity V/V	Value	Phase	Array-2 Standoff Porosity V/V	Value	Phase	Average Slowing Down Time US	Value

Master			Master			Master			5.884
0.09900 (Minimum)	0.1175 (Nominal)	0.1360 (Maximum)	0.09900 (Minimum)	0.1175 (Nominal)	0.1360 (Maximum)	5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-2 SDT Ratio Up/Down	Value	Phase	Sigma Formation M-1	Value	
Master		0.9832	Master		0.9667	Master		2.710	
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	2.000 (Minimum)	2.750 (Nominal)	3.500 (Maximum)	

Master: 12-Jan-2007 20:56

Accelerator-Porosity Tool Master Calibration								
Detector Calibration								
Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.9516	Master		0.9853	Master		1.016
0.8000 (Minimum)	0.9250 (Nominal)	1.050 (Maximum)	0.9000 (Minimum)	1.030 (Nominal)	1.170 (Maximum)	0.9700 (Minimum)	1.000 (Nominal)	1.030 (Maximum)

Master: 12-Jan-2007 20:56

Accelerator-Porosity Tool Master Calibration								
Tank Check								
Phase	Array-1 Standoff Porosity V/V	Value	Phase	Array-2 Standoff Porosity V/V	Value	Phase	Average Slowing Down Time US	Value
Master		0.1131	Master		0.1119	Master		5.884
0.09900 (Minimum)	0.1175 (Nominal)	0.1360 (Maximum)	0.09900 (Minimum)	0.1175 (Nominal)	0.1360 (Maximum)	5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-2 SDT Ratio Up/Down	Value	Phase	Sigma Formation M-1	Value
Master		0.9832	Master		0.9667	Master		2.710
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	2.000 (Minimum)	2.750 (Nominal)	3.500 (Maximum)

Master: 12-Jan-2007 20:56

High resolution Integrated Logging Tool-DTS / Equipment Identification			
Primary Equipment:			
HILT high-Resolution Mechanical Sonde	HRMS - H	4707	
HILT Rxo Gamma-ray Device	HRGD - H	4761	
HILT Micro Cylindrically Focused Log Dev	MCFL - H		
GR Logging Source	GLS - VJ	1904	
HILT High Res. Control Cartridge	HRCC - H	4721	
HILT Gamma-Ray Neutron Sonde-DTS	HGNS - H	4730	
HILT Gamma-Ray Device	HGR -		
HILT Neutron Detector with Alpha Source	HCNT - H		
Auxiliary Equipment:			
Neutron Calibration Tank	NCT - B		
Gamma Source Radioactive	GSR - U/Y	6710	

High resolution Integrated Logging Tool-DTS Wellsite Calibration								
Stab Measurement Summary								
Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.7435	Before		0.4833	Before		0.2974
0.7056 (Minimum)	0.7427 (Nominal)	0.7799 (Maximum)	0.4606 (Minimum)	0.4849 (Nominal)	0.5091 (Maximum)	0.2883 (Minimum)	0.3035 (Nominal)	0.3186 (Maximum)
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		29240	Before		13060	Before		1536
27820 (Minimum)	29280 (Nominal)	30740 (Maximum)	12430 (Minimum)	13080 (Nominal)	13740 (Maximum)	1468 (Minimum)	1545 (Nominal)	1622 (Maximum)

Before: 2-Mar-2007 21:28

High resolution Integrated Logging Tool-DTS Wellsite Calibration								
Photo-multiplier High Voltages Calibrations								
Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		1352	Before		1410	Before		1310
1276 (Minimum)	1376 (Nominal)	1476 (Maximum)	1321 (Minimum)	1421 (Nominal)	1521 (Maximum)	1201 (Minimum)	1301 (Nominal)	1401 (Maximum)

Before: 2-Mar-2007 21:28

High resolution Integrated Logging Tool-DTS Wellsite Calibration								
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**Crystal Quality Resolutions Calibration**

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before		10.84	Before		8.780	Before		9.048
	9.775 (Minimum) 10.78 (Nominal) 11.78 (Maximum)			7.916 (Minimum) 8.916 (Nominal) 9.916 (Maximum)			7.952 (Minimum) 8.952 (Nominal) 9.952 (Maximum)	

Before: 2-Mar-2007 21:28

**High resolution Integrated Logging Tool-DTS Wellsite Calibration**

**MCFL Calibration**

Phase	Raw B0 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity OHMM	Value
Before		3870	Before		3819	Before		3828
	3565 (Minimum) 3875 (Nominal) 4185 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)	

Before: 2-Mar-2007 21:29

**High resolution Integrated Logging Tool-DTS Wellsite Calibration**

**HILT Caliper Calibration**

Phase	HILT Caliper Zero Measurement MM	Value	Phase	HILT Caliper Plus Measurement MM	Value
Before		199.8	Before		382.4
	190.5 (Minimum) 254.0 (Nominal) 317.5 (Maximum)			381.0 (Minimum) 508.0 (Nominal) 635.0 (Maximum)	

Before: 2-Mar-2007 21:51

**High resolution Integrated Logging Tool-DTS Wellsite Calibration**

**Detector Calibration**

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		23.72	Before		185.1	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			168.3 (Minimum) 185.1 (Nominal) 201.9 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 2-Mar-2007 21:25

**High resolution Integrated Logging Tool-DTS Wellsite Calibration**

**Zero Measurement**

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		26.53	Master		29.66
Before		26.48	Before		29.06
	5.000 (Minimum) 26.53 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 29.66 (Nominal) 40.00 (Maximum)	

Master: 10-Jan-2007 15:23

Before: 2-Mar-2007 21:23

**High resolution Integrated Logging Tool-DTS Wellsite Calibration**

**Ratio Measurement**

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		6292	Master		2647	Master		2.377
	5000 (Minimum) 6031 (Nominal) 7200 (Maximum)			2075 (Minimum) 2793 (Nominal) 3125 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 10-Jan-2007 15:23

**High resolution Integrated Logging Tool-DTS Wellsite Calibration**

**Accelerometer Calibration**

Phase	Z-Axis Acceleration M/S2	Value
Before		9.812
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 3-Mar-2007 6:35

**High resolution Integrated Logging Tool-DTS Master Calibration**

**Inversion results**

Phase	Rho Aluminum K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master		2599	Master		1686
	2586 (Minimum) 2596 (Nominal) 2606 (Maximum)			1676 (Minimum) 1686 (Nominal) 1696 (Maximum)	
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.556	Master		2.631

2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)
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Master: 14-Feb-2007 15:55

High resolution Integrated Logging Tool-DTS Master Calibration											
Deviation Summary											
Phase	BS Average Deviation %		Value	Phase	SS Average Deviation %		Value	Phase	LS Average Deviation %		Value
Master			0.2316	Master			0.2254	Master			0.6026
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)		-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)
Phase	BS Max Deviation %		Value	Phase	SS Max Deviation %		Value	Phase	LS Max Deviation %		Value
Master			0.7406	Master			1.106	Master			1.170
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)		-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)

Master: 14-Feb-2007 15:55

High resolution Integrated Logging Tool-DTS Master Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Master			26.53	Master			29.66
	5.000 (Minimum)	26.53 (Nominal)	40.00 (Maximum)		5.000 (Minimum)	29.66 (Nominal)	40.00 (Maximum)

Master: 10-Jan-2007 15:23

High resolution Integrated Logging Tool-DTS Master Calibration											
Tank Measurement											
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)		Value
Master			6292	Master			2647	Master			2.377
	5000 (Minimum)	6031 (Nominal)	7200 (Maximum)		2075 (Minimum)	2793 (Nominal)	3125 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 10-Jan-2007 15:23

Combinable Magnetic Resonance Tool - B / Equipment Identification			
Primary Equipment:			
CMR-B Sonde	CMRS - BA	182	
CMR Cartridge	CMRC - BA	202	
Auxiliary Equipment:			

Combinable Magnetic Resonance Tool - B Master Calibration											
Date of Master Calibration: 14-Feb-2007											
Phase	Tool Temperature MCAL DEGC		Value	Phase	LOOP Measurement MCAL		Value	Phase	Hall Probe B0 MCAL MTES		Value
Master			25.19	Master			1870	Master			52.68
	10.00 (Minimum)	27.00 (Nominal)	44.00 (Maximum)		1500 (Minimum)	2300 (Nominal)	2900 (Maximum)		50.00 (Minimum)	52.00 (Nominal)	55.00 (Maximum)
Phase	Cal. Fixture Amplitude MCAL %		Value								
Master			28.32								
	25.00 (Minimum)	37.50 (Nominal)	50.00 (Maximum)								

Master: 7-Mar-2007 4:45

Powered Positioning Device/Caliper 2 / Equipment Identification			
Primary Equipment:			
PPC Powered Positioning Device/Caliper	PPC2 - B		
PPC2 Caliper 40 Extension	PPC_ -		
Auxiliary Equipment:			

Powered Positioning Device/Caliper 2 Wellsite Calibration							
PPC2 Caliper Calibration							
Phase	PC2 Radius 1 Raw Small Radius MM		Value	Phase	PC2 Radius 1 Raw Large Radius MM		Value

Before			139.6	Before			245.1	
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)		154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Phase	PC2 Radius 2 Raw Small Radius MM			Value	Phase	PC2 Radius 2 Raw Large Radius MM		
Before				59.05	Before			
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)		154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Phase	PC2 Radius 3 Raw Small Radius MM			Value	Phase	PC2 Radius 3 Raw Large Radius MM		
Before				135.0	Before			
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)		154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Phase	PC2 Radius 4 Raw Small Radius MM			Value	Phase	PC2 Radius 4 Raw Large Radius MM		
Before				75.27	Before			
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)		154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	

Before: 5-Mar-2007 19:34

Elemental Capture Spectroscopy Tool / Equipment Identification

Primary Equipment:

ECS Sonde	ECS - A	20	20
ECS Detector Package	ECSD - A	20	20
ECS AmBe Source	NSR - F	2671	2671

Auxiliary Equipment:

ECS Sonde Housing	ECSH - A	20	20
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Elemental Capture Spectroscopy Tool Wellsite Calibration

ECS Calibration Check

Phase	Detector Resolution(20 Degc) %	Value	Phase	Spectral Shift Factor	Value	
Master		13.34	Master		0.8834	
	11.20 (Minimum)	13.00 (Nominal)	14.00 (Maximum)	-1.000 (Minimum)	1.000 (Nominal)	2.000 (Maximum)

Master: Calibration out of date 11-Jan-2007 13:41

Elemental Capture Spectroscopy Tool Master Calibration

NO SUB\_TITLE1

Phase	Detector Resolution(20 Degc) %	Value	Phase	Spectral Shift Factor	Value	
Master		13.34	Master		0.8834	
	11.20 (Minimum)	13.00 (Nominal)	14.00 (Maximum)	-1.000 (Minimum)	1.000 (Nominal)	2.000 (Maximum)

Master: Calibration out of date 11-Jan-2007 13:41

Elemental Capture Cartridge - B / Equipment Identification

Primary Equipment:

ECC Cartridge	ECC - B
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Auxiliary Equipment:

ECC Housing	ECH - A
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Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

Primary Equipment:

HNGC Cartridge	HNGC - B	405	405
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Auxiliary Equipment:

HNGC Housing	HNGH - A	346	346
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Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:

HNGS Sonde	HNGS - BA	163	163
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Hostile Natural Gamma Ray Sonde Wellsite Calibration											
Detector 1 Check											
Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value
Master			39.72	Master			15.36	Master			1250
Before			39.61	Before			15.93	Before			1238
	37.50 (Minimum)	40.00 (Nominal)	42.50 (Maximum)		12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)		900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc		Value	Phase	Na 1785 Peak Res %		Value	Phase	Temperature DEGC		Value
Master			143.5	Master			7.630	Master			19.48
Before			143.5	Before			8.646	Before			13.14
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)		7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)		-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS		Value								
Master			46.07								
Before			43.11								
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)								
Master: 9-Jan-2007 19:28				Before: 5-Mar-2007 16:58							

Hostile Natural Gamma Ray Sonde Wellsite Calibration											
Detector 2 Check											
Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value
Master			39.67	Master			15.21	Master			1270
Before			39.53	Before			15.54	Before			1257
	37.50 (Minimum)	40.00 (Nominal)	42.50 (Maximum)		12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)		900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc		Value	Phase	Na 1785 Peak Res %		Value	Phase	Temperature DEGC		Value
Master			142.2	Master			8.889	Master			18.64
Before			142.7	Before			8.350	Before			12.45
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)		7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)		-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS		Value								
Master			46.16								
Before			43.06								
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)								
Master: 9-Jan-2007 19:28				Before: 5-Mar-2007 16:58							

Hostile Natural Gamma Ray Sonde Wellsite Calibration			
Ratio Of Detector 1 To Detector 2			
Phase	Coincidence Count Rate Ratio	Value	
Master		0.9985	
Before		1.002	
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)
Master: 9-Jan-2007 19:28			
Before: 5-Mar-2007 16:58			

Hostile Natural Gamma Ray Sonde Master Calibration											
Detector 1 Calibration											
Phase	Na 511 Peak Set Point		Value	Phase	Th Peak Loc		Value	Phase	Th Peak Res %		Value
Master			41.00	Master			211.5	Master			6.885
	38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)		201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)		5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS		Value	Phase	Gain Ratio		Value				
Master			97.39	Master			1.013				

20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)
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Master: 9-Jan-2007 19:28

Hostile Natural Gamma Ray Sonde Master Calibration									
Detector 2 Calibration									
Phase	Na 511 Peak Set Point			Value	Phase	Th Peak Loc			Value
Master				41.00	Master				211.7
	38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)			201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	
Phase	Background Count Rate CPS			Value		Th Peak Res %			Value
Master				99.08	Master				6.455
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)			5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)	
Phase <th colspan="3">Gain Ratio</th> <th>Value</th> <td colspan="5"></td>	Gain Ratio			Value					
Master				1.015					
	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)						

Master: 9-Jan-2007 19:28

**Powered Positioning Device/Caliper 1 / Equipment Identification**

Primary Equipment:  
 PPC Powered Positioning Device/Caliper  
 PPC1 Caliper 40 Extension  
 PPC1 - B  
 PPC\_ -

Auxiliary Equipment:

Powered Positioning Device/Caliper 1 Wellsite Calibration											
PPC1 Caliper Calibration											
Phase	PPC1 Radius 1 Raw Small Radius MM			Value	Phase	PPC1 Radius 1 Raw Large Radius MM			Value		
Before				137.5	Before				244.4		
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			
Phase	PPC1 Radius 2 Raw Small Radius MM			Value	Phase	PPC1 Radius 2 Raw Large Radius MM			Value		
Before				55.65	Before				168.8		
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			
Phase	PPC1 Radius 3 Raw Small Radius MM			Value	Phase	PPC1 Radius 3 Raw Large Radius MM			Value		
Before				136.3	Before				244.0		
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			
Phase	PPC1 Radius 4 Raw Small Radius MM			Value	Phase	PPC1 Radius 4 Raw Large Radius MM			Value		
Before				63.71	Before				178.0		
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			

Before: 6-Mar-2007 4:43

**Enhanced DTS Cartridge / Equipment Identification**

Primary Equipment:  
 Enhanced DTS Cartridge  
 EDTC - B

Auxiliary Equipment:  
 EDTC Housing  
 EDTH - B      8253      8253

Enhanced DTS Cartridge Wellsite Calibration														
Detector Calibration														
Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig - Bkg) GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Before				5.155	Before				159.1	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)			144.7 (Minimum)	159.1 (Nominal)	173.6 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)	

Before: 6-Mar-2007 10:05

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		0.000

Before		9.805
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)
Before: 6-Mar-2007 9:11		

Company: **JOGMEC**

**Schlumberger**

Well: **AURORA/JOGMEC/NRCAN MALLIK 2L-38**

Field: **MALLIK**

Province: **NWT**

HOSTILE ENVIRONMENT NATURAL  
GAMMA RAY SONDE