

COMPANY: Lamont Doherty

WELL: ODP Leg 189, Site 1170 (WSTR-2A)

FIELD: Tasmanian Seaway, West Tasmania Site

COUNTRY: Offshore STATE: Indian Ocean



Natural Gamma Ray

COUNTY: Offshore  
Field: Tasmanian Seaway, West Tasm  
Location:  
Well: ODP Leg 189, Site 1170 (WSTR-  
Company: Lamont Doherty

LOCATION		Elev.:	K.B.	11.2 M
Permanent Datum:	MSL		G.L.	-2716 M
Log Measured From:	RKB	Elev.: 0 ft	D.F.	10.9 M
Drilling Measured From:	RKB	11.2 M	above Perm. Datum	
API Serial No.	LATITUDE: 47° 9.06' S	LONGITUDE: 146° 2.98' E	RIG: JOIDES Resolution	

Logging Date	Run 1	Run 2	Run
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth			
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss			
PH			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
RMF @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Time			
Logger On Bottom			
Time			
Unit Number			
Location			
Recorded By			
Witnessed By			

Logging Date 9-APR-2000

Run Number One

Depth Driller 3496 M

Schlumberger Depth 3497 M

Bottom Log Interval 3469 M

Top Log Interval 3245 M

Casing Driller Size @ Depth 0.000 in @ 3249 M

Casing Schlumberger 3245 M

Bit Size 9.875 in

Type Fluid In Hole Salt Water Base

Density 8.51234 lbm/gal

Fluid Loss

PH

Source Of Sample Salt water

RM @ Measured Temperature 0.230 ohm.m @ 60 degF

RMF @ Measured Temperature @ @

RMC @ Measured Temperature @ @

Source RMF RMC

RM @ MRT 0.472 @ 26 @ 26

RMF @ MRT

Maximum Recorded Temperatures 25.8 Deg C.

Circulation Stopped 9-APR-2000 16:00

Time 9-APR-2000 22:15

Logger On Bottom

Time

Unit Number 99

Location Houston OS

Recorded By Kerry M. Swain

Witnessed By Patrick Fothergill, Ulysses S. Nimmemann

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**OTHER SERVICES1**  
 OS1: DITE/HNGS  
 OS2: GHMT/NGTC/DSST  
 OS3: MESTB  
 OS4:  
 OS5:

**OTHER SERVICES2**  
 OS1:  
 OS2:  
 OS3:  
 OS4:  
 OS5:

**REMARKS: RUN NUMBER 1**  
 Hole cored with APC/XCB.  
 Sea Floor at 2715.8 MBRF (Driller), Logger depth of sea floor not found.  
 Log presented in meters below rig floor.  
 Lamont Temperature Tool (TAP) run on DITE/HLDS/APS/HNGS only.  
 Toolstring -DITE/HLDS/APS/HNGS.  
 Wireline Heave Compensator (WHC) used on all descents.  
 Sepiolite mud was used to displace the borehole.  
 Dirlers TD-3496 mbrf.  
 Loggers TD-3497.5 mbrf.  
 Drill pipe Logger-3245 mbrf.  
 Drill pipe Driller -3249 mbrf.  
 WHC hit maximum limit between 3475-3448 3405-3374 mbrf on main pass and between 3384-3343 mbrf on the repeat pass.  
 GR spike at 3355 mbrf on repeat section due to detector voltage loop instability.  
 HNGS background countrate is below the specifications but does not affect log.

**REMARKS: RUN NUMBER 2**




RUN 1		
LOGGED INTERVAL	START	STOP

RUN 2		
LOGGED INTERVAL	START	STOP

**EQUIPMENT DESCRIPTION**

**RUN 1 SURFACE EQUIPMENT**  
 SFT-281 24  
 SFT-178 4722  
 GSR-U 135  
 WITM (DTS)-A

**RUN 1 DOWNHOLE EQUIPMENT**

LEH-QT			32.03
LEH-QT			
DTC-H	CTEM		30.86
ECH-KC 8253	TelStatus		31.14
	ToolStatu		30.23
HNGS-BA	Upper_1		29.53
HNGS-BA 27	Lower_2		30.23
			29.32

**RUN 2**

HNSH-BA 27

ILE-D  
ILE-D 25

27.73

APS-BA  
APS-BA 22  
APH-AC 22  
MNTR-F 4185

Status  
Minitron  
Near TD  
Near Arr  
Far Arr  
Far  
Far TD

25.29

22.85  
22.77  
22.64  
22.54

NPLC-B  
NPLC-B 82  
NPH-B 82

Status

20.12

21.35

HLDS  
GSR-Z 1846  
HLDV-D 35  
HLDS-D 35  
HEH-H 35  
HLDP-C 12

Caliper  
SS LS Status

14.85

18.90

DTA-A  
ECH-KE 8261

14.08

DIT-E RED  
DIC-EB 171  
MIH-ZA 174  
DIS-HB 200

12.87

SP  
Deep Ind  
Aux Meas SFL  
Med Ind

6.49  
6.24  
5.32  
5.17

Status

3.34

AH-TAP  
AH-TAP

3.34

DF  
Tension HV

0.00

TOOL ZERO

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

## Output DLIS Files

DEFAULT	DITE .013	FN:13 PRODUCER	09-Apr-2000 22:07	3497.6 M	3223.3 M
DITE_CUST	DITE .013	FN:14 PRODUCER	09-Apr-2000 22:07	3497.6 M	3223.3 M

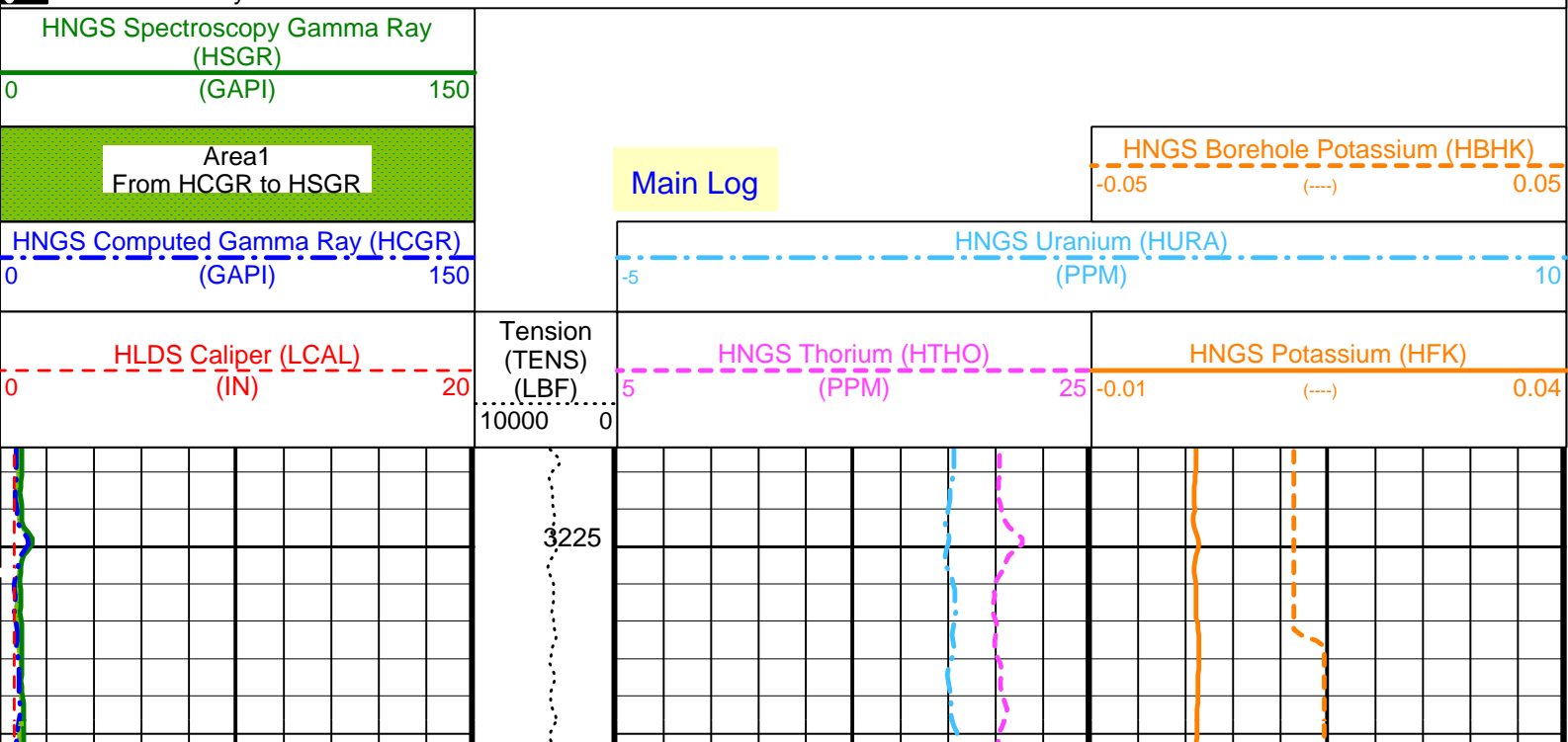
## OP System Version: 9C1-303

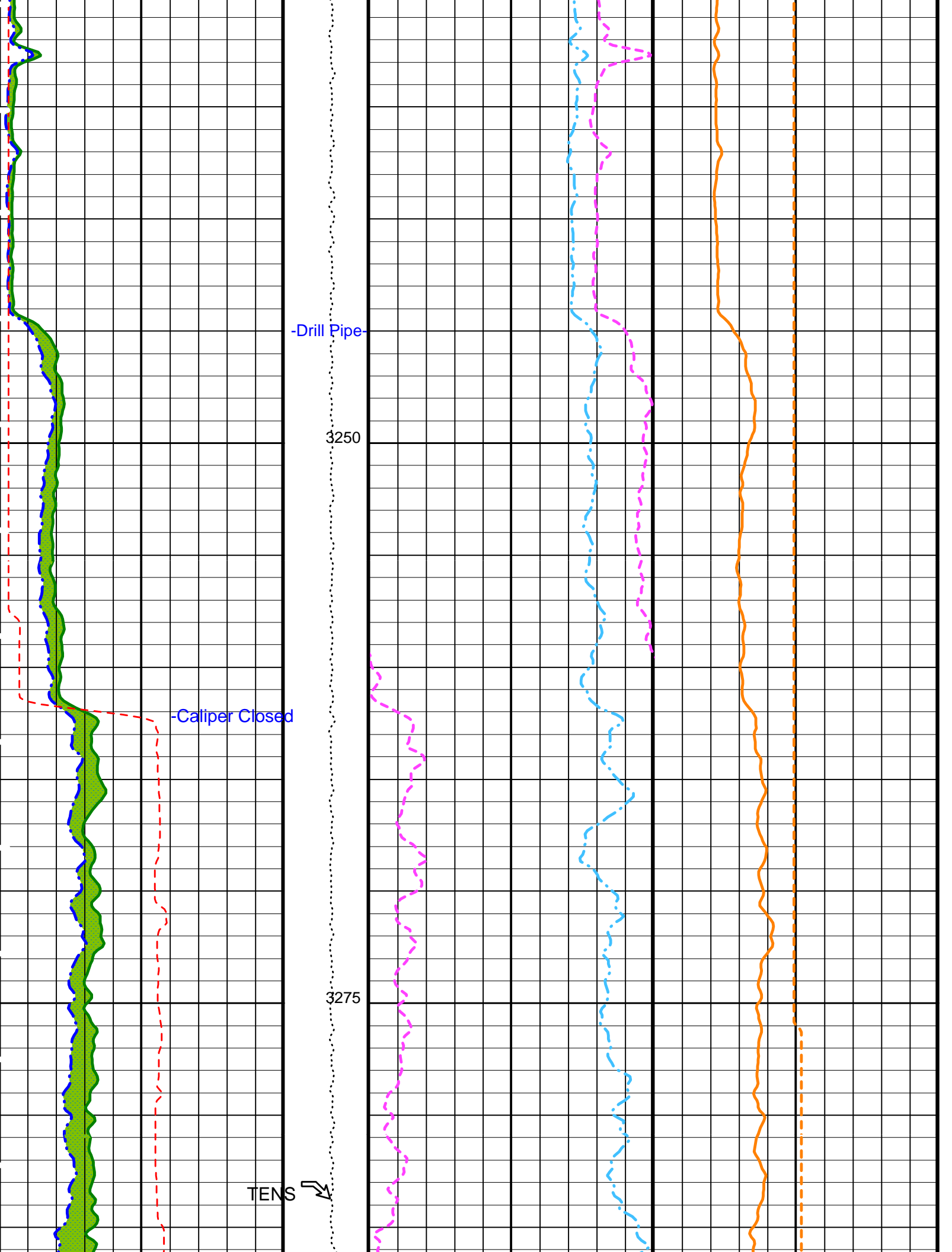
MCM

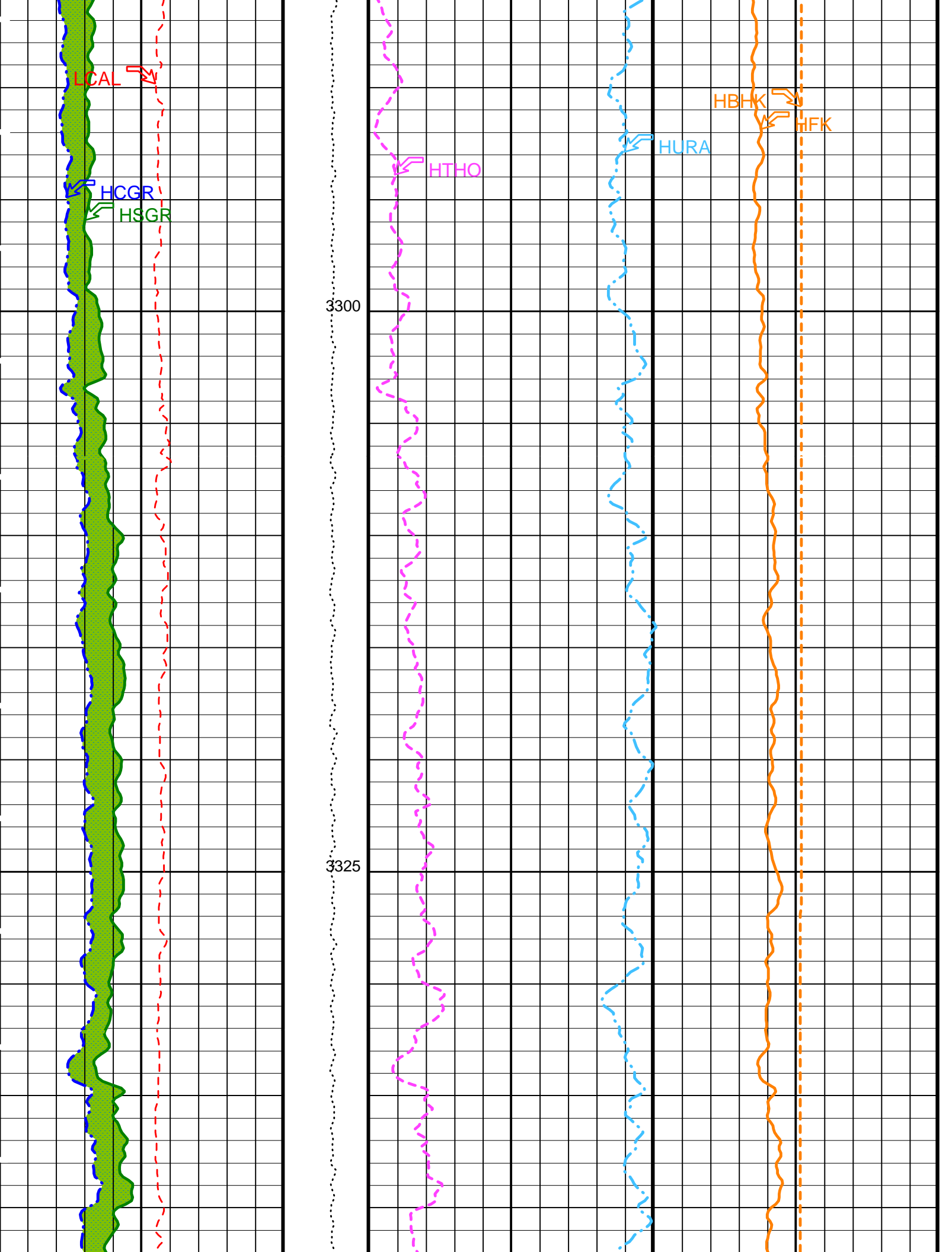
DIT-E	9C1-303	DTA-A	9C1-303
HLDS	9C1-303	NPLC-B	9C1-303
APS-BA	9C1-303	HNGS-BA	9C1-303
DTC-H	9C1-303		

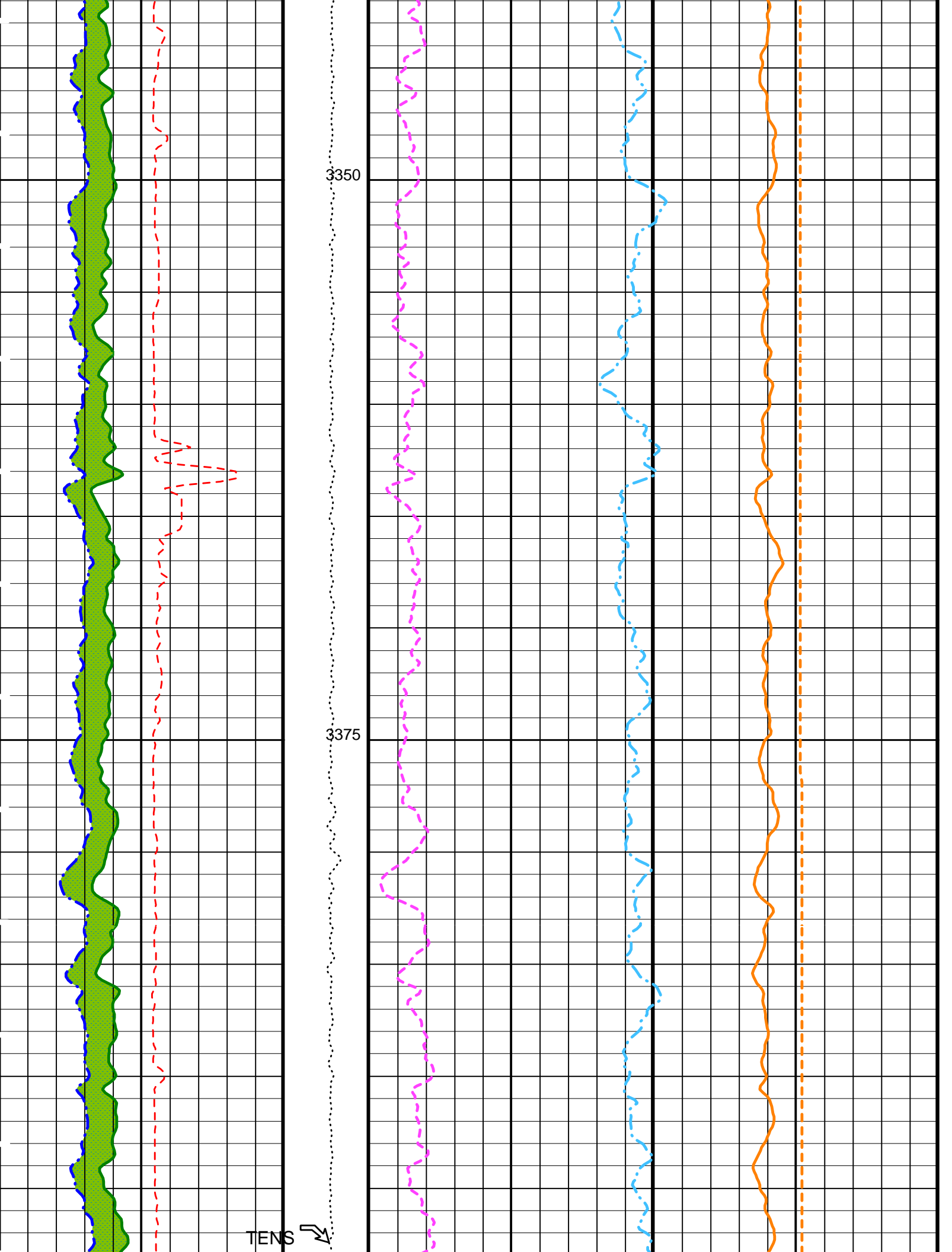
### PIP SUMMARY

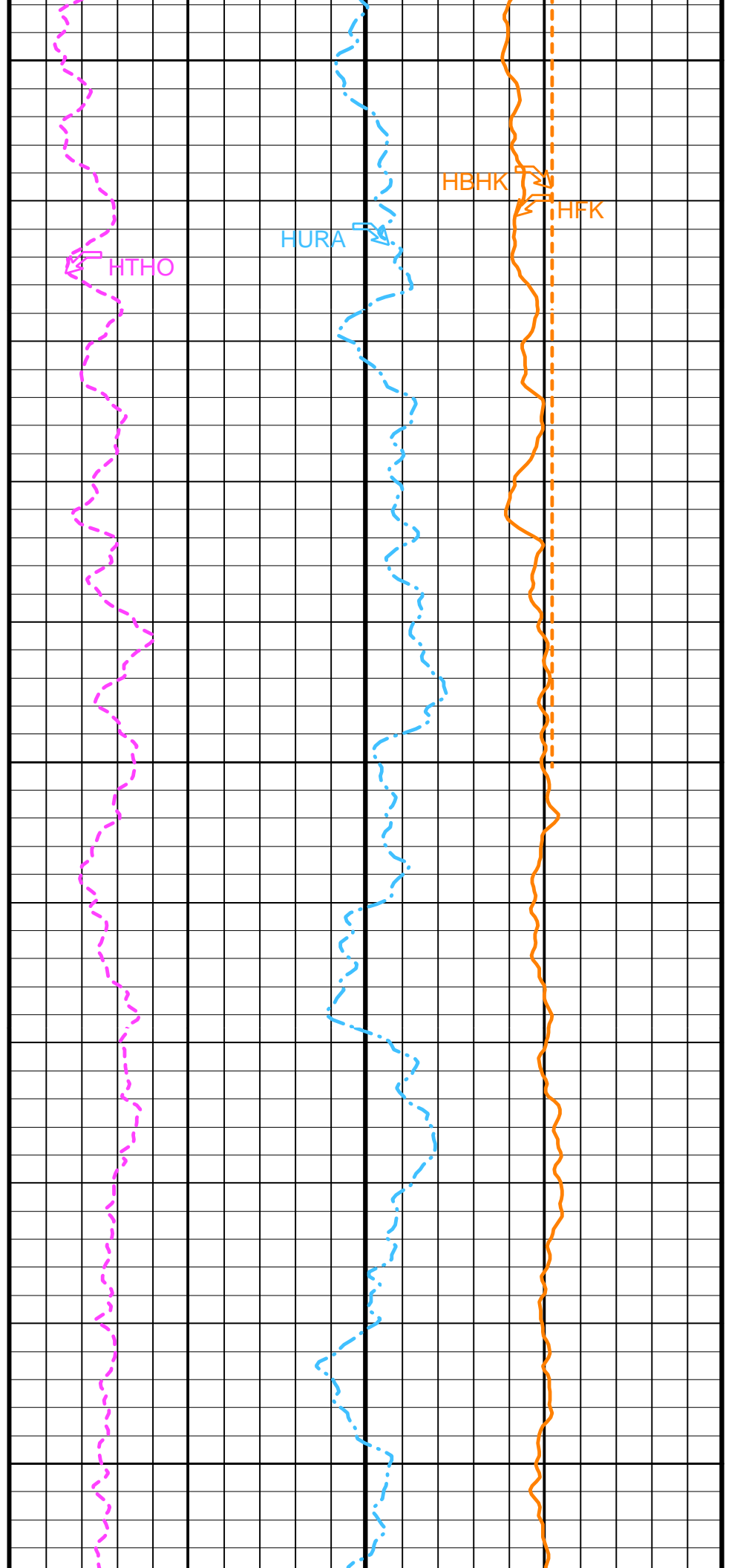
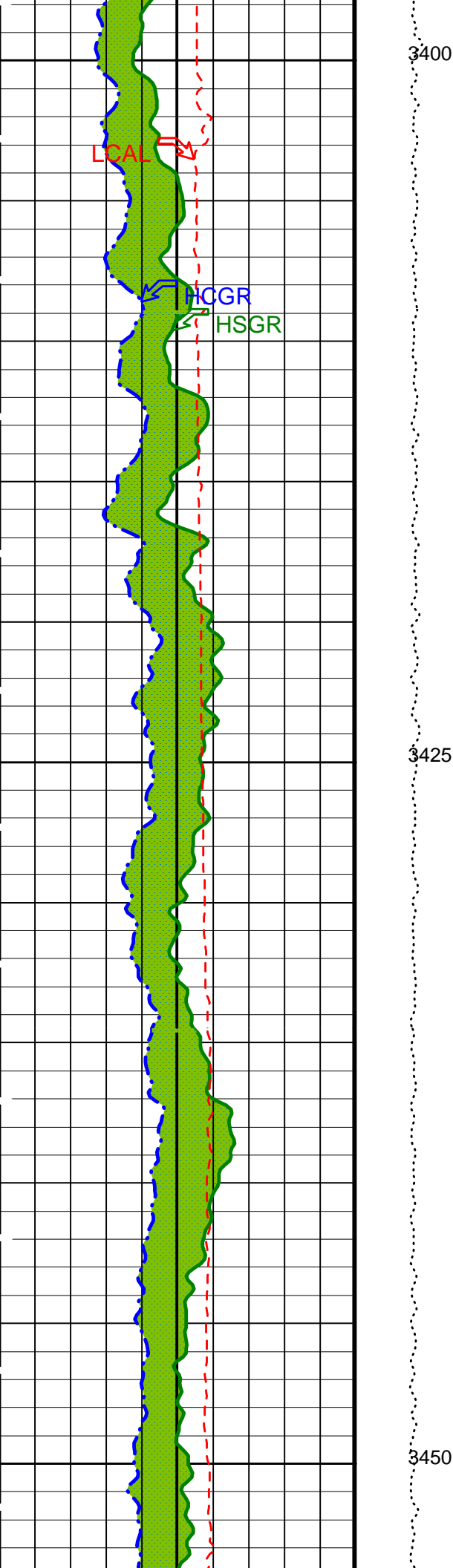
Time Mark Every 60 S



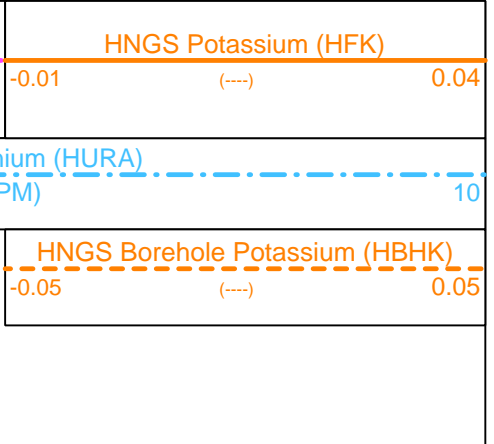
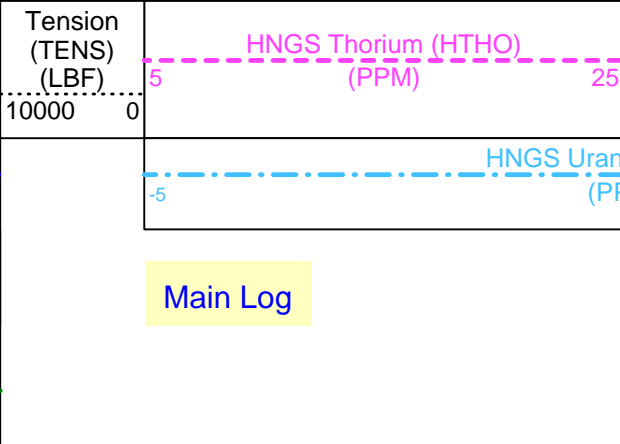
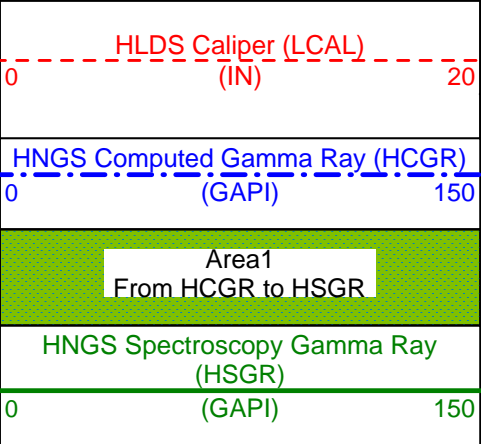
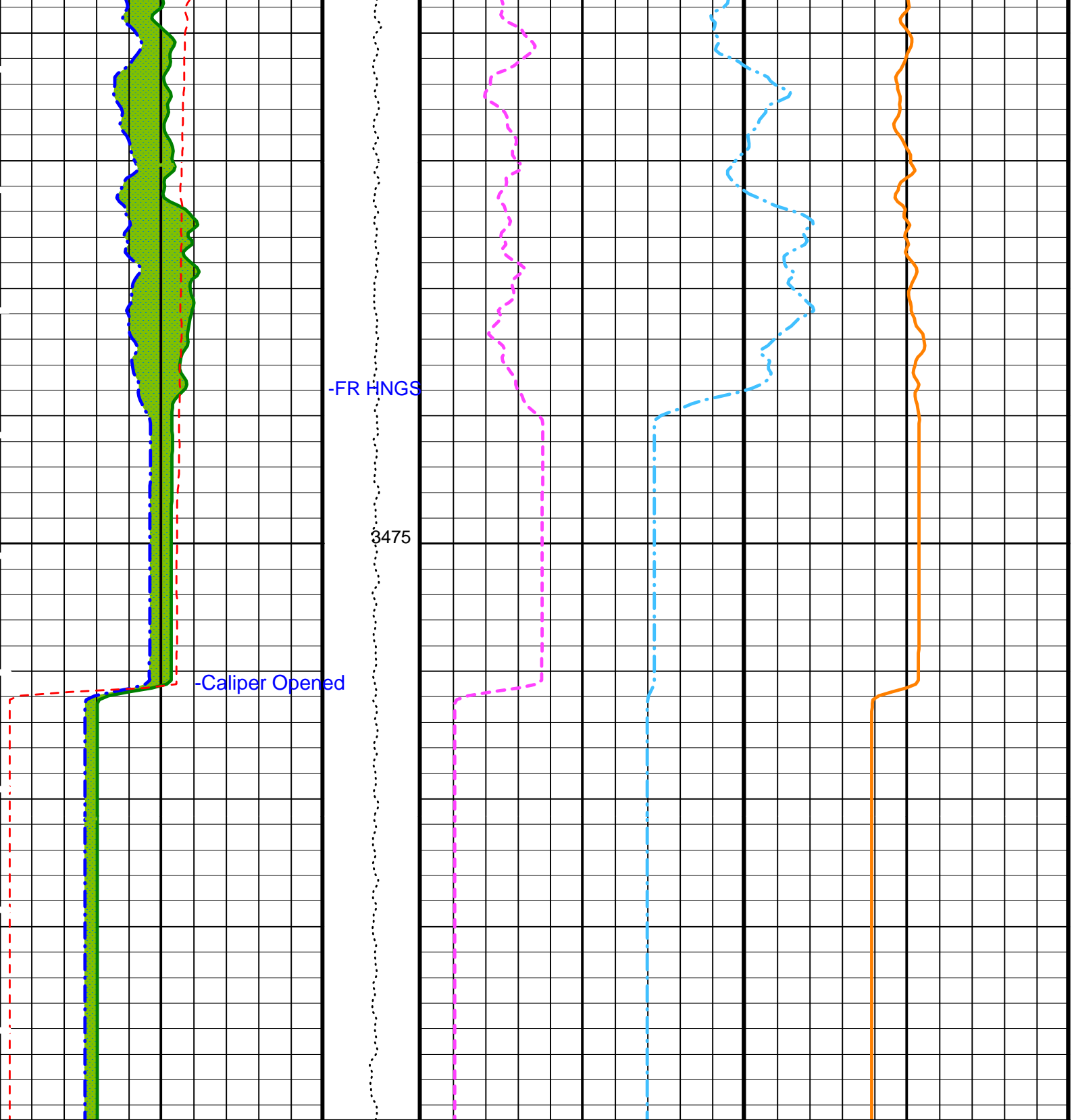












### Parameters

DLIS Name	Description	Value	
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	
BKSF	HNGS Borehole Fluid Excluder Sleeve Algorithm Factor	1	
BKSH	HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel	245	
BKSL	HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel	17	
BS	Bit Size	9.875	IN
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
D1PR	HNGS Detector 1 Calibration Thorium Peak Resolution	7.46561	%
D1TC	HNGS Detector 1 Calibration Temperature	46.8749	DEGF
D1TL	HNGS Detector 1 Calibration Thorium Peak Location	211.312	
D2PR	HNGS Detector 2 Calibration Thorium Peak Resolution	6.19449	%
D2TC	HNGS Detector 2 Calibration Temperature	44.9572	DEGF
D2TL	HNGS Detector 2 Calibration Thorium Peak Location	209.601	
DBCC	HNGS Barite Constant Correction Flag	NONE	
DFD	Drilling Fluid Density	8.51	LB/G
GCF1_START	HNGS Detector 1 GCF Constant	1	
GCF2_START	HNGS Detector 2 GCF Constant	1	
GCSE	Generalized Caliper Selection	LCAL	
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	
HALF	HNGS Alpha Filter Length	60	IN
HATIM	HNGS Marquardt Accumulation Time	600	S
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
HSLV	HNGS Borehole Fluid Excluder Sleeve Status	NO	
HSVN	HNGS Spectral Standards Version Number	5.50788e-032	
MARQ_START	HNGS Marquardt Start-up Mode	INTERNAL	
RDF1_START	HNGS Detector 1 RDF Constant	0	
RDF2_START	HNGS Detector 2 RDF Constant	0	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S1NA	HNGS Detector 1 Calibration Sodium Count Rate	28.899	CPS
S1NG	HNGS Detector 1 Calibration End-On / Side-On Gain Ratio	0.992258	
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
S2NA	HNGS Detector 2 Calibration Sodium Count Rate	29.4941	CPS
S2NG	HNGS Detector 2 Calibration End-On / Side-On Gain Ratio	0.981545	
SABK	HNGS Statistical Uncertainty in Borehole Potassium Running Average	0	
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 09-Apr-2000 22:08

### OP System Version: 9C1-303

MCM

DIT-E	9C1-303	DTA-A	9C1-303
HLDS	9C1-303	NPLC-B	9C1-303
APS-BA	9C1-303	HNGS-BA	9C1-303
DTC-H	9C1-303		

### Output DLIS Files

DEFAULT	DITE .013	FN:13 PRODUCER	09-Apr-2000 22:07
DITE_CUST	DITE .013	FN:14 PRODUCER	09-Apr-2000 22:07

### Output DLIS Files

DEFAULT	DITE .014	FN:15 PRODUCER	09-Apr-2000 23:17	3493.0 M	3216.4 M
DITE_CUST	DITE .014	FN:16 PRODUCER	09-Apr-2000 23:17	3493.0 M	3216.4 M

### OP System Version: 9C1-303

MCM

DIT-E 9C1-303  
 HLDS 9C1-303  
 APS-BA 9C1-303  
 DTC-H 9C1-303

DTA-A  
 NPLC-B  
 HNGS-BA

9C1-303  
 9C1-303  
 9C1-303

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)  
 0 (GAPI) 150

Area1  
 From HCGR to HSGR

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

Repeat Section

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

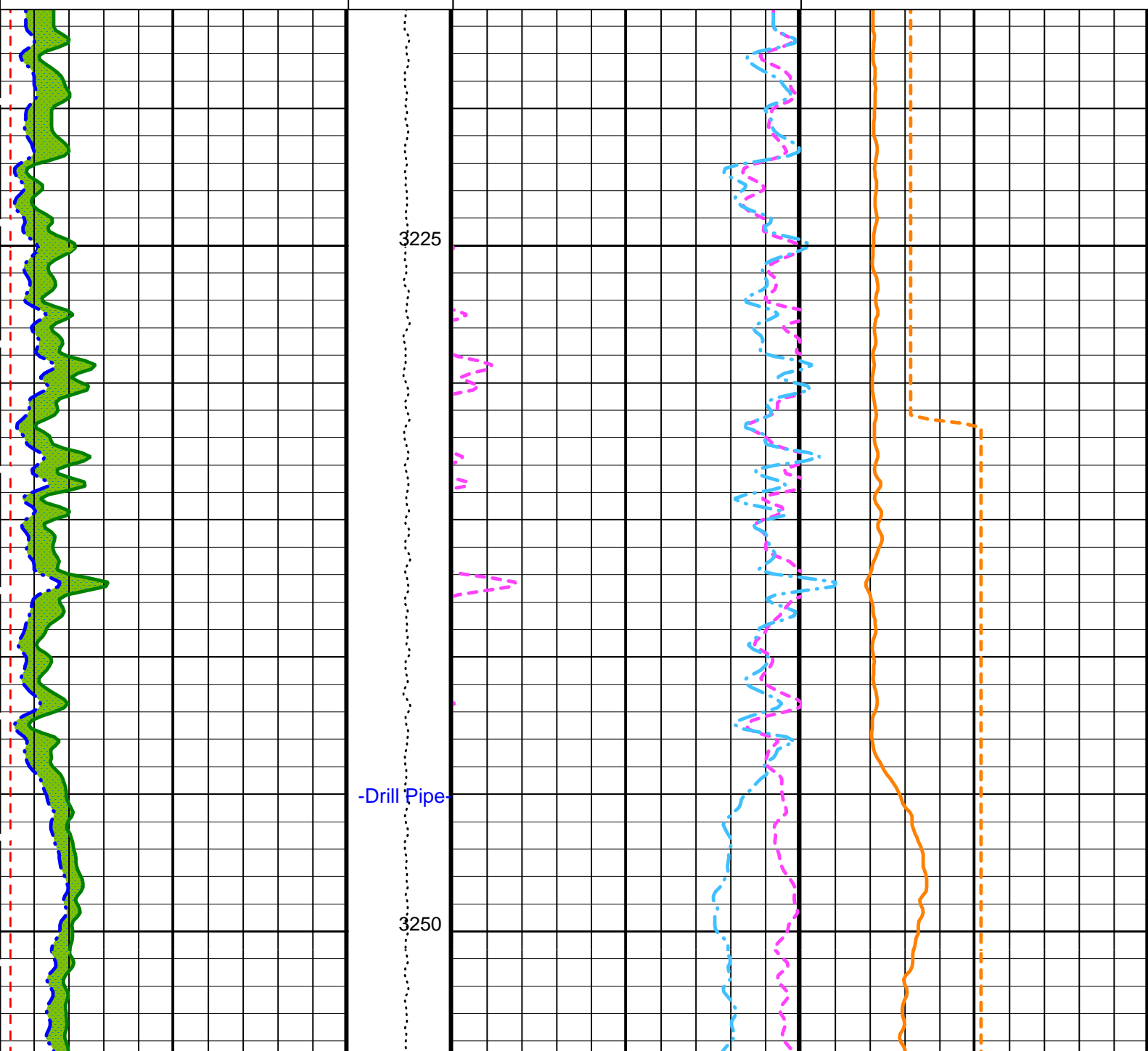
HNGS Uranium (HURA)  
 -5 (PPM) 10

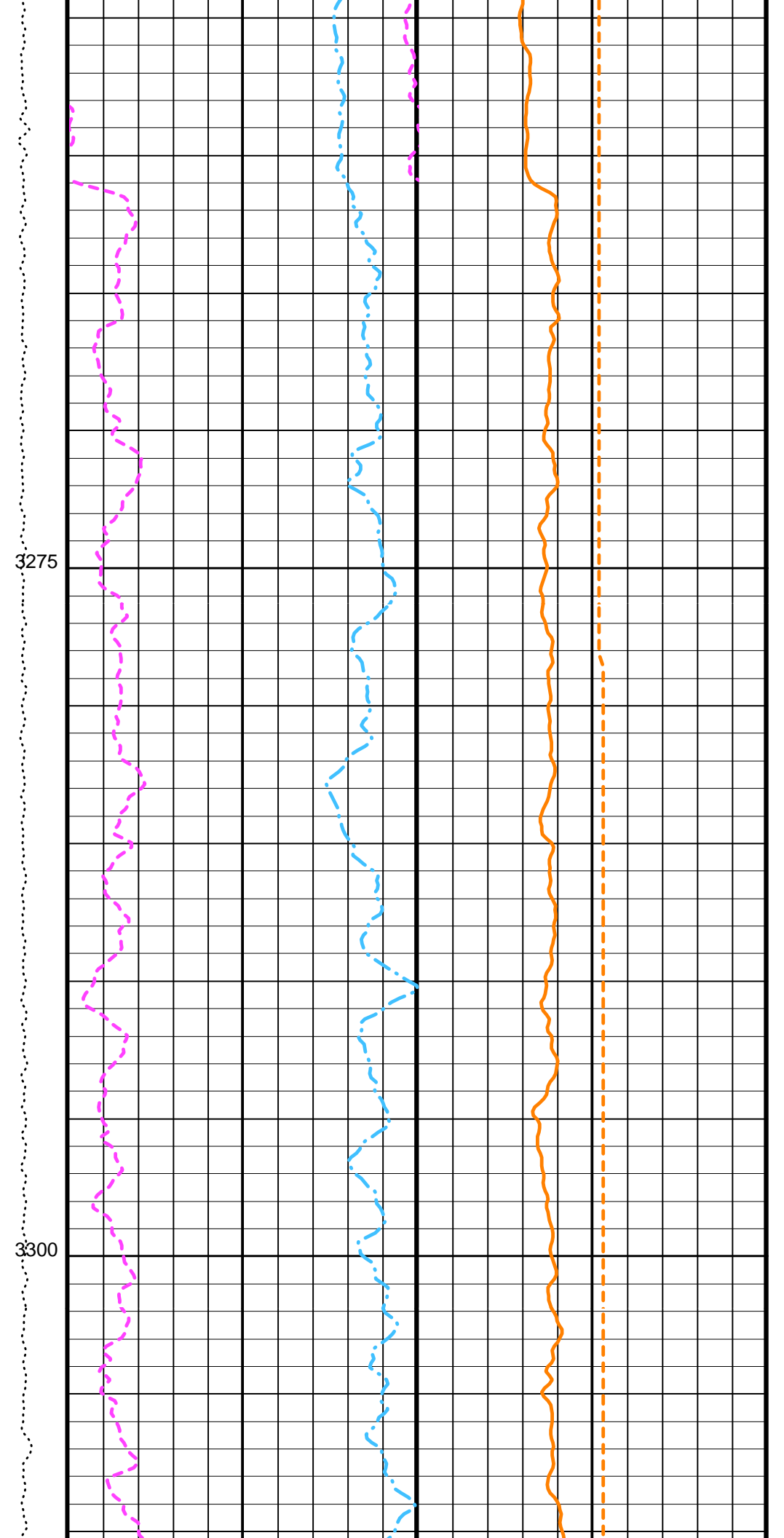
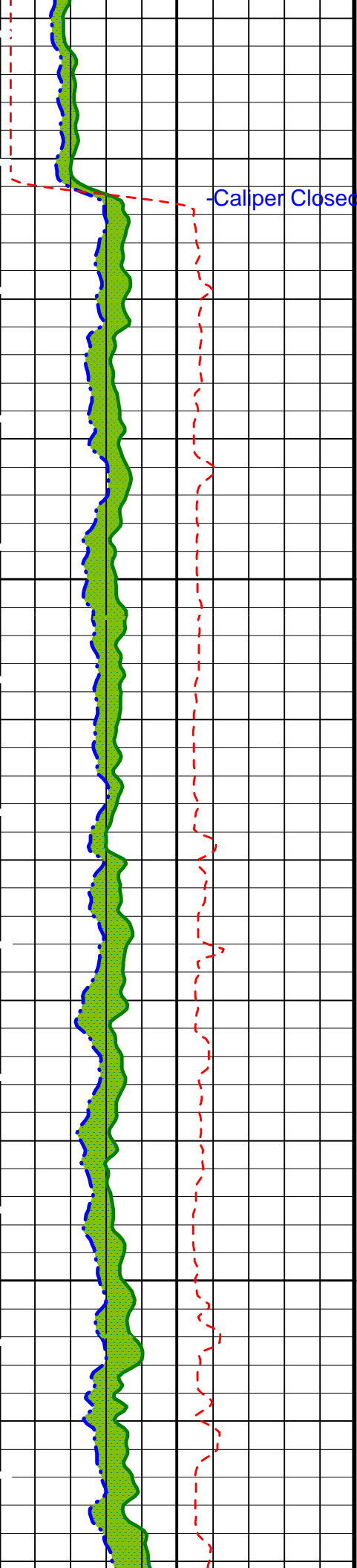
HLDS Caliper (LCAL)  
 0 (IN) 20

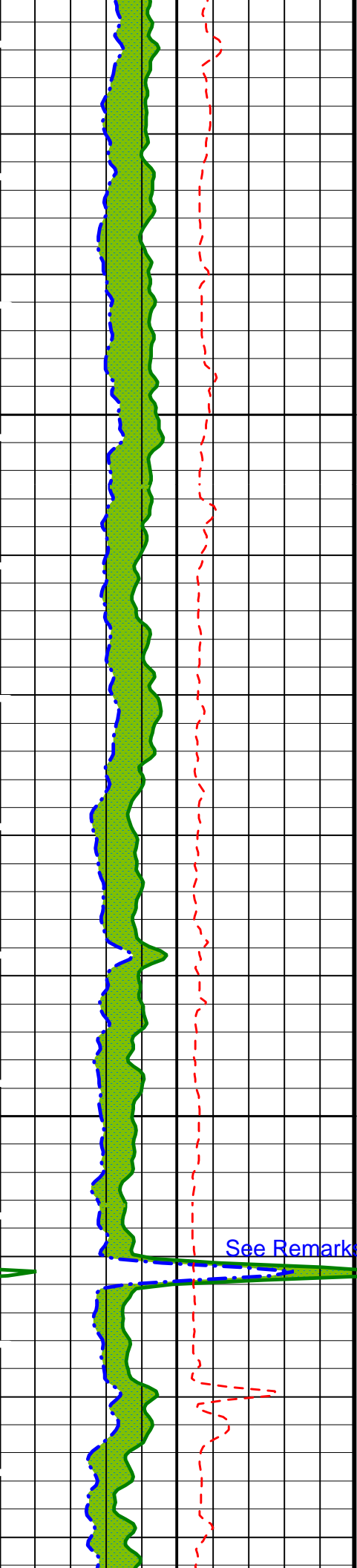
Tension (TENS) (LBF)  
 10000 0

HNGS Thorium (HTHO)  
 5 (PPM) 25

HNGS Potassium (HFK)  
 -0.01 (----) 0.04



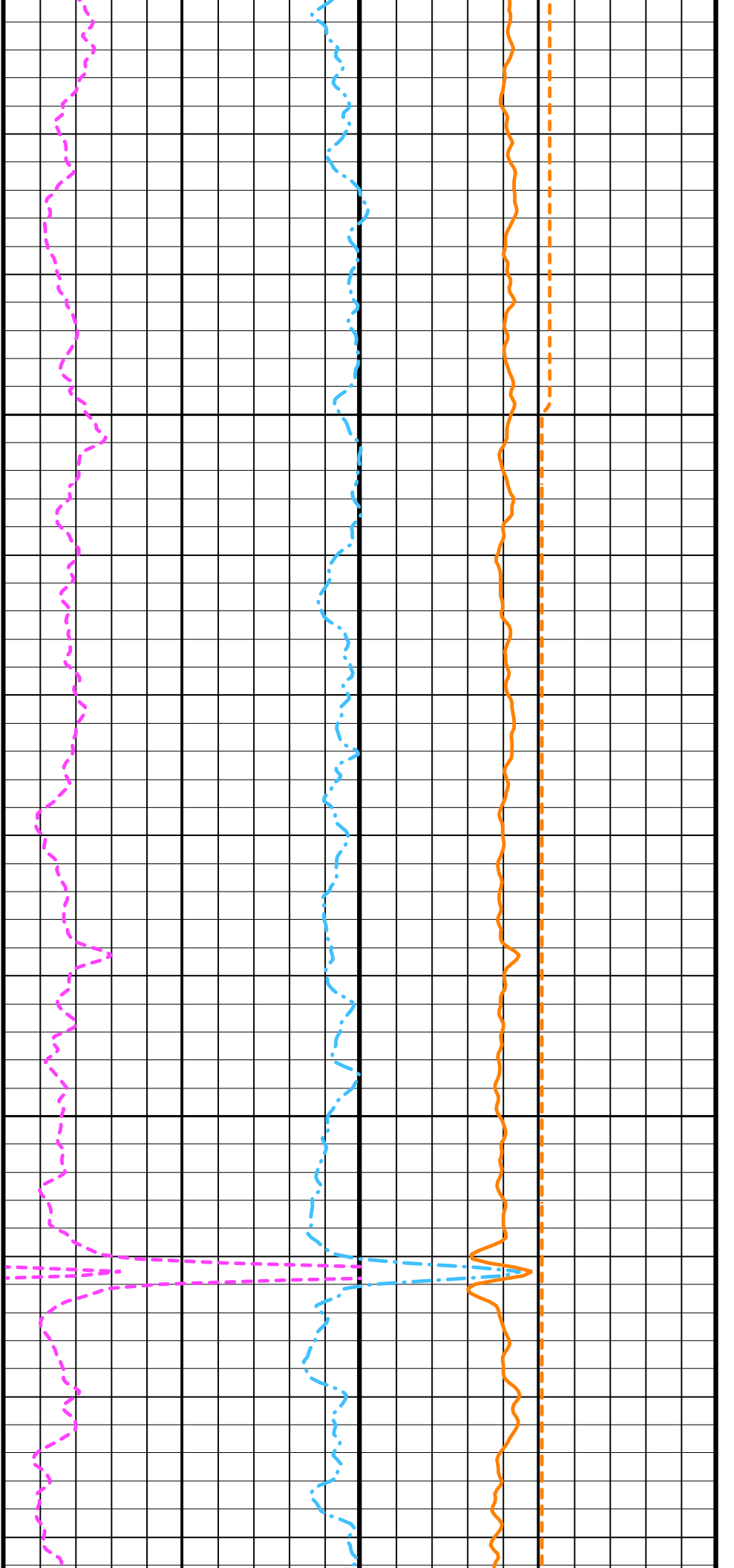


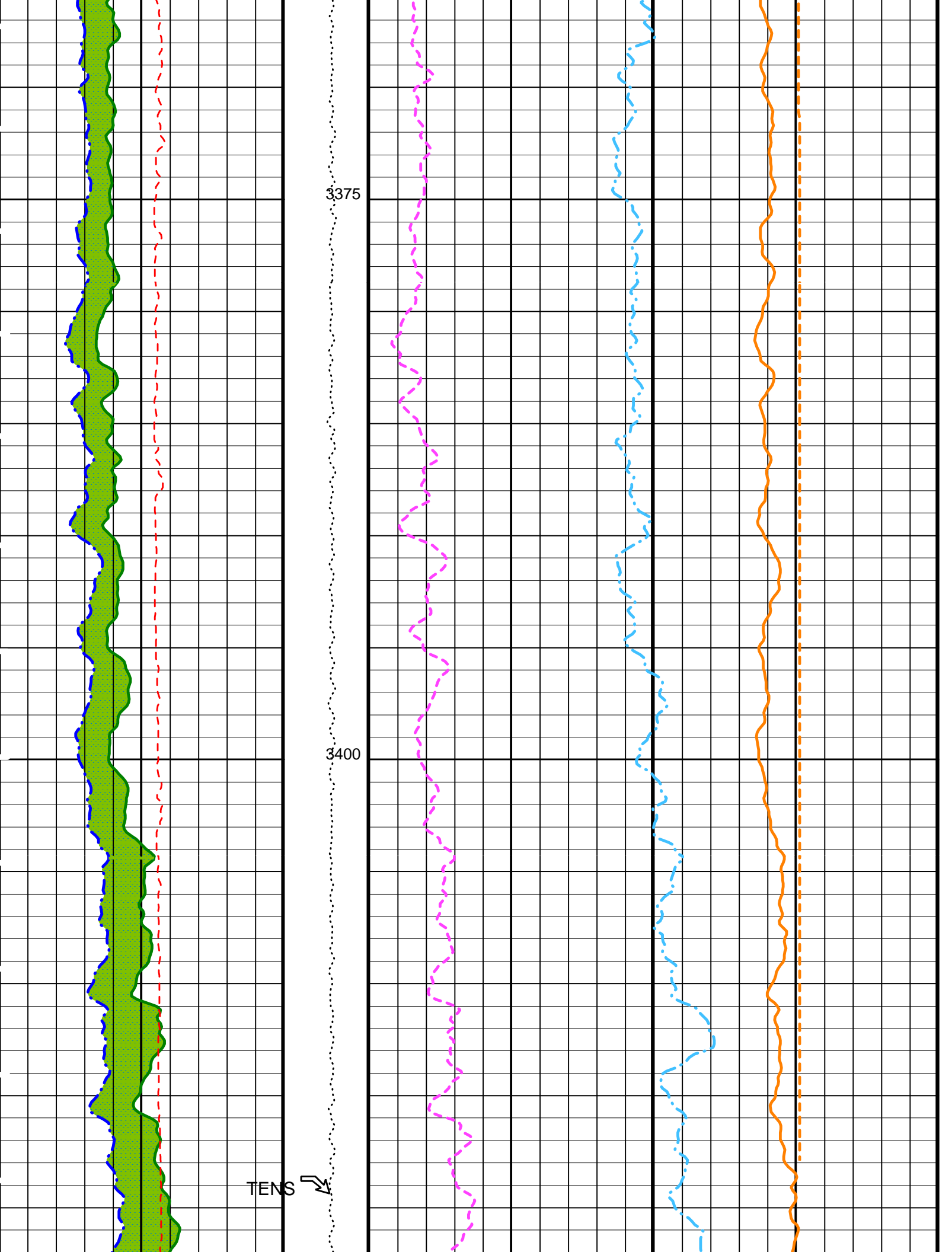


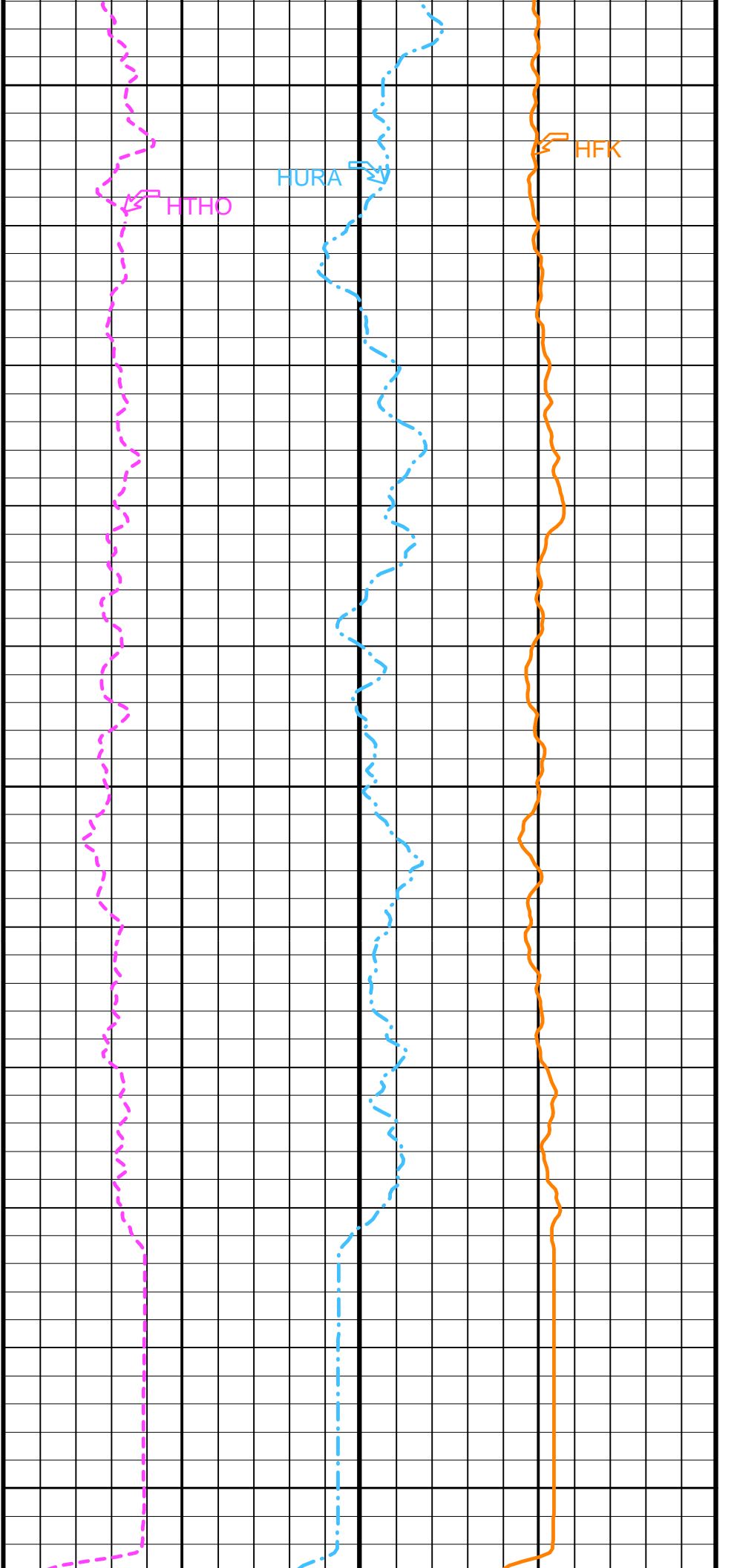
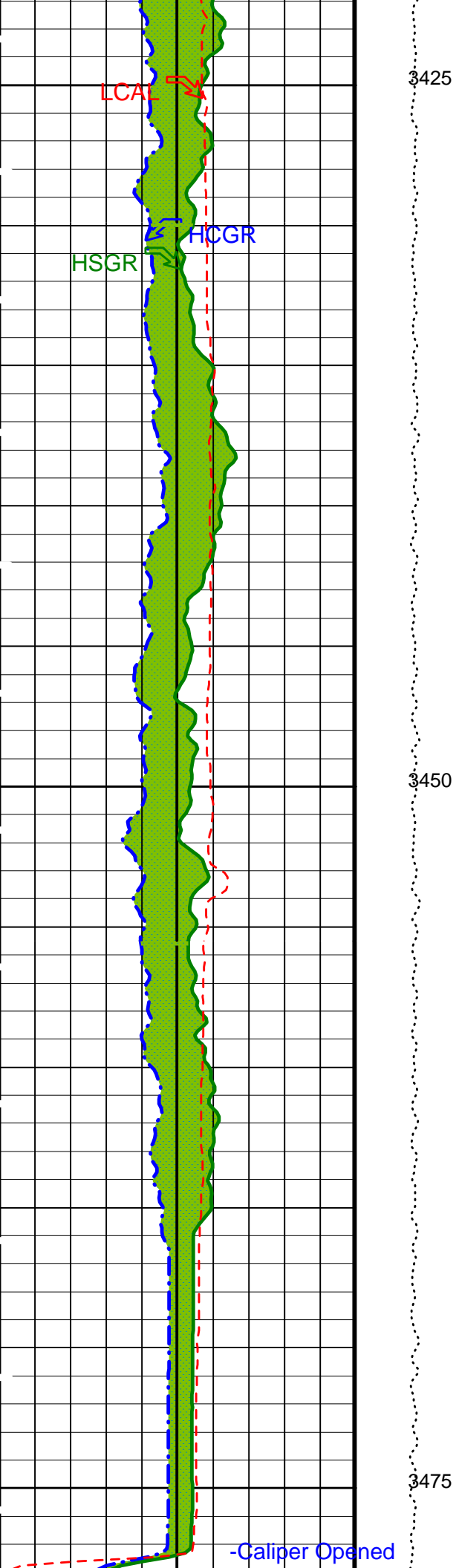
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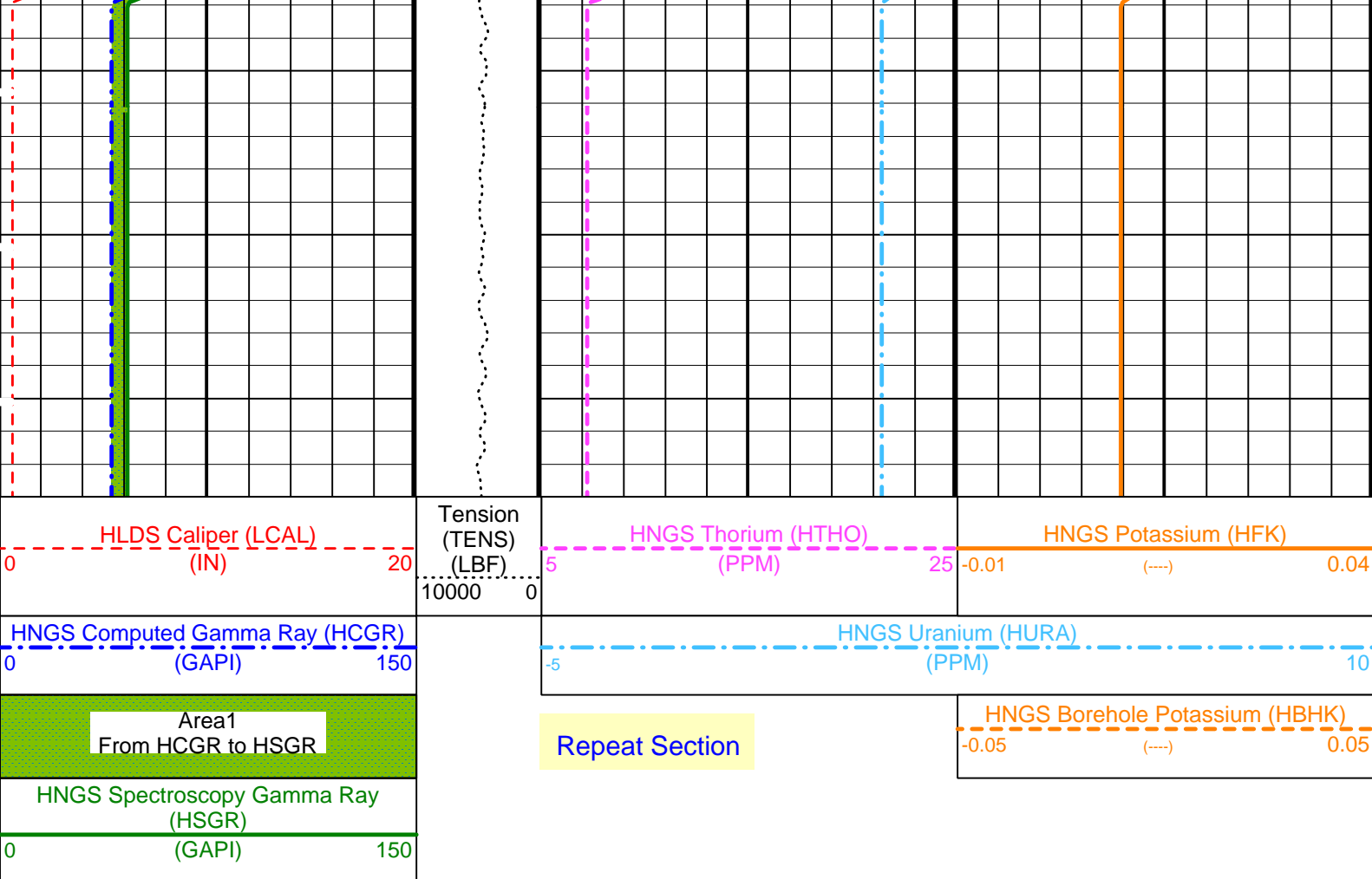
3350

See Remarks









PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
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
BKSF	HNGS Borehole Fluid Excluder Sleeve Algorithm Factor	1
BKSH	HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel	245
BKSL	HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel	17
BS	Bit Size	9.875 IN
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
D1PR	HNGS Detector 1 Calibration Thorium Peak Resolution	7.46561 %
D1TC	HNGS Detector 1 Calibration Temperature	46.8749 DEGF
D1TL	HNGS Detector 1 Calibration Thorium Peak Location	211.312
D2PR	HNGS Detector 2 Calibration Thorium Peak Resolution	6.19449 %
D2TC	HNGS Detector 2 Calibration Temperature	44.9572 DEGF
D2TL	HNGS Detector 2 Calibration Thorium Peak Location	209.601
DBCC	HNGS Barite Constant Correction Flag	NONE
DFD	Drilling Fluid Density	8.51 LB/G
GCF1_START	HNGS Detector 1 GCF Constant	1
GCF2_START	HNGS Detector 2 GCF Constant	1
GCSE	Generalized Caliper Selection	LCAL
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	-0.000965788
HALF	HNGS Alpha Filter Length	60 IN
HATIM	HNGS Marquardt Accumulation Time	600 S
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
HNPE	HNGS Processing Enable	YES
HSLV	HNGS Borehole Fluid Excluder Sleeve Status	NO
HSVN	HNGS Spectral Standards Version Number	4.02002e-036
MARQ_START	HNGS Marquardt Start-up Mode	INTERNAL
RDF1_START	HNGS Detector 1 RDF Constant	0



RDF2_START	HNGS Detector 2 RDF Constant	0	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S1NA	HNGS Detector 1 Calibration Sodium Count Rate	28.899	CPS
S1NG	HNGS Detector 1 Calibration End-On / Side-On Gain Ratio	0.992258	
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
S2NA	HNGS Detector 2 Calibration Sodium Count Rate	29.4941	CPS
S2NG	HNGS Detector 2 Calibration End-On / Side-On Gain Ratio	0.981545	
SABK	HNGS Statistical Uncertainty in Borehole Potassium Running Average	0.000681538	
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.0028	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.979432	

Format: HNGSYields      Vertical Scale: 1:200      Graphics File Created: 09-Apr-2000 23:17

## OP System Version: 9C1-303 MCM

DIT-E	9C1-303	DTA-A	9C1-303
HLDS	9C1-303	NPLC-B	9C1-303
APS-BA	9C1-303	HNGS-BA	9C1-303
DTC-H	9C1-303		

## Output DLIS Files

DEFAULT	DITE .014	FN:15 PRODUCER	09-Apr-2000 23:17
DITE_CUST	DITE .014	FN:16 PRODUCER	09-Apr-2000 23:17

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement</b>							
Master: 10-MAR-2000 10:06    Before: 17-MAR-2000 18:41    After: 10-APR-2000 3:27							
SS Total Countrate Bkg	1645	1446	1441	1445	3.925	80.00	CPS
SS HV Measured Bkg	1100	1077	1070	1071	1.198	80.00	V
SS Cs Centroid Bkg	661.0	661.3	661.0	661.1	0.1165	1.500	KEV
SS Cs Resolution Bkg	9.000	8.490	8.564	8.541	-0.02354	1.800	%
LS Total Countrate Bkg	1645	1468	1467	1470	3.281	80.00	CPS
LS HV Measured Bkg	1100	1195	1190	1189	-1.689	80.00	V
LS Cs Centroid Bkg	661.0	661.3	661.2	661.3	0.09393	1.500	KEV
LS Cs Resolution Bkg	9.000	8.744	8.772	8.775	0.003606	1.800	%
<b>Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration</b>							
Before: 17-MAR-2000 19:48							
HLDS Caliper Small Ring	8.000	N/A	9.714	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	12.00	N/A	13.89	N/A	N/A	N/A	IN
<b>Accelerator-Porosity Tool Wellsite Calibration - Detector Background</b>							
Master: 2-FEB-2000 21:50    Before: 9-APR-2000 22:25    After: 10-APR-2000 1:44							
Near Det Bkg Cntrate	30.00	32.07	32.52	32.72	0.1994	N/A	CPS
Far Det Bkg Cntrate	30.00	32.19	34.17	33.20	-0.9641	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	28.58	29.26	28.48	-0.7808	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	30.06	29.16	30.29	1.130	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	33.94	30.88	34.29	3.405	N/A	CPS
<b>Accelerator-Porosity Tool Wellsite Calibration - Detector Plateau Settings</b>							
Master: 2-FEB-2000 20:07							
Near Detector Plateau Setting	1650	1762	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2069	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1987	N/A	N/A	N/A	N/A	V
<b>Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios</b>							
Master: 2-FEB-2000 21:50							
Near/Far Calibration Ratio	0.9250	0.9031	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.068	N/A	N/A	N/A	N/A	
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check</b>							
Master: 2-FEB-2000 11:55    Before: 17-MAR-2000 18:42    After: 10-APR-2000 3:28							
Na 511 Peak Loc	40.00	40.51	40.70	40.60	-0.1080	1.000	
Na 511 Peak Res	15.50	15.86	15.41	16.04	0.6325	2.000	%
High Voltage	1150	1114	1112	1112	0.5459	30.00	V
Na 1785 Peak Loc	142.6	145.5	145.3	146.8	1.473	7.000	
Na 1785 Peak Res	8.500	9.054	8.948	7.937	-1.011	2.000	%
Temperature	15.50	8.880	81.55	17.81	2.301	N/A	DEG C

Temperature	15.50	8.268	21.55	17.81	-3.734	N/A	DEGC
Na Count Rate	45.00	28.90	27.69	27.71	0.01389	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check							
Master: 2-FEB-2000 11:55 Before: 17-MAR-2000 18:42 After: 10-APR-2000 3:28							
Na 511 Peak Loc	40.00	40.64	40.50	40.53	0.03549	1.000	
Na 511 Peak Res	15.50	14.00	15.27	15.72	0.4516	2.000	%
High Voltage	1150	1201	1200	1198	-2.570	30.00	V
Na 1785 Peak Loc	142.6	144.2	145.0	144.6	-0.3656	7.000	
Na 1785 Peak Res	8.500	8.101	8.587	8.197	-0.3896	2.000	%
Temperature	15.50	7.197	20.53	17.81	-2.712	N/A	DEGC
Na Count Rate	45.00	29.49	28.21	28.18	-0.02695	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2							
Master: 2-FEB-2000 11:55 Before: 17-MAR-2000 18:42 After: 10-APR-2000 3:28							
Coincidence Count Rate Ratio	1.000	0.9809	0.9840	0.9829	-0.001040	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration							
Master: 2-FEB-2000 11:43							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.3	--	--	--	--	
Th Peak Res	7.000	7.466	--	--	--	--	%
Background Count Rate	142.5	18.16	--	--	--	--	CPS
Gain Ratio	1.000	0.9923	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration							
Master: 2-FEB-2000 11:43							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.6	--	--	--	--	
Th Peak Res	7.000	6.194	--	--	--	--	%
Background Count Rate	142.5	20.51	--	--	--	--	CPS
Gain Ratio	1.000	0.9815	--	--	--	--	

#### Dual Induction - E / Equipment Identification

Primary Equipment:		
Dual Induction Sonde	DIS - HB	200
Dual Induction Cartridge	DIC - EB	171
Auxiliary Equipment:		
Mass Isolated Housing	MIH - ZA	174

#### Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	35
Hostile Litho Density High Voltage	HLDV - D	35
Gamma Source Radioactive	GSR - Z	1846
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	12
Hostile Litho Density High Voltage Housi	HEH - H	35

#### Nuclear Porosity Lithology Cartridge - B / Equipment Identification

Primary Equipment:		
NPLC Cartridge	NPLC - B	82
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	SET - 172	4722

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS - BA	27
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH - BA GSR - U	27 135

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		40.51	Master		15.86	Master		1114
Before		40.70	Before		15.41	Before		1112
After		40.60	After		16.04	After		1112
	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		145.5	Master		9.054	Master		8.268
Before		145.3	Before		8.948	Before		21.55
After		146.8	After		7.937	After		17.81
	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		28.90						
Before		27.69						
After		27.71						
	15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 2-FEB-2000 11:55			Before: 17-MAR-2000 18:42			After: 10-APR-2000 3:28		

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		40.64	Master		14.00	Master		1201
Before		40.50	Before		15.27	Before		1200
After		40.53	After		15.72	After		1198
	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		144.2	Master		8.101	Master		7.197
Before		145.0	Before		8.587	Before		20.53
After		144.6	After		8.197	After		17.81
	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		29.49						
Before		28.21						
After		28.18						
	15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 2-FEB-2000 11:55			Before: 17-MAR-2000 18:42			After: 10-APR-2000 3:28		

Hostile Natural Gamma Ray Sonde Wellsite Calibration
Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio		Value
Master			0.9809
Before			0.9840
After			0.9829
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)
Master: 2-FEB-2000 11:55			
Before: 17-MAR-2000 18:42			
After: 10-APR-2000 3:28			

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			211.3	Master			7.466
	38.00 (Minimum)	40.00 (Nominal)	42.00 (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	<b>See Remarks</b>			
Master	<b>EXCEEDS LIMIT</b>		18.16	Master			0.9923				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				
Master: 2-FEB-2000 11:43											

Hostile Natural Gamma Ray Sonde Master Calibration											
Detector 2 Calibration											
Phase	Na 511 Peak Set Point		Value	Phase	Th Peak Loc		Value	Phase	Th Peak Res %		Value
Master			41.00	Master			209.6	Master			6.194
	38.00 (Minimum)	40.00 (Nominal)	42.00 (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	<b>See Remarks</b>			
Master			20.51	Master			0.9815				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				
Master: 2-FEB-2000 11:43											

<b>COMPANY:</b> Lamont Doherty  <b>WELL:</b> ODP Leg 189, Site 1170 (WSTR-2A) <b>FIELD:</b> Tasmanian Seaway, West Tasmania Site <b>COUNTY:</b> Offshore <b>STATE:</b> Indian Ocean	<b>BOTTOM LOG INTERVAL</b>	3469 M
	<b>SCHLUMBERGER DEPTH</b>	3497.5 M
	<b>DEPTH DRILLER</b>	3496 M
	<b>KELLY BUSHING</b>	11.2 M
	<b>DRILL FLOOR</b>	10.9 M
	<b>GROUND LEVEL</b>	-2716 M

Natural Gamma Ray

**Schlumberger**