Schlumberger

Company: **CDEX**

Well: **C0009A**

Field: **Kumanonada, Offshore Kii peninsula**

Rig: **Chikyu** Country: **JAPAN**

Natural Spectroscopy Gamma Ray (HNGS)

3652.2m − 2785.0m

Suite 1, Run 2 (1:200)

Rig: Chikyu
Field: Kumanonada, Offshore Kii peninsu
Location: NanKai Trough
Well: C0009A
Company: CDEX

LOCATION

NanKai Trough
NT2−11B

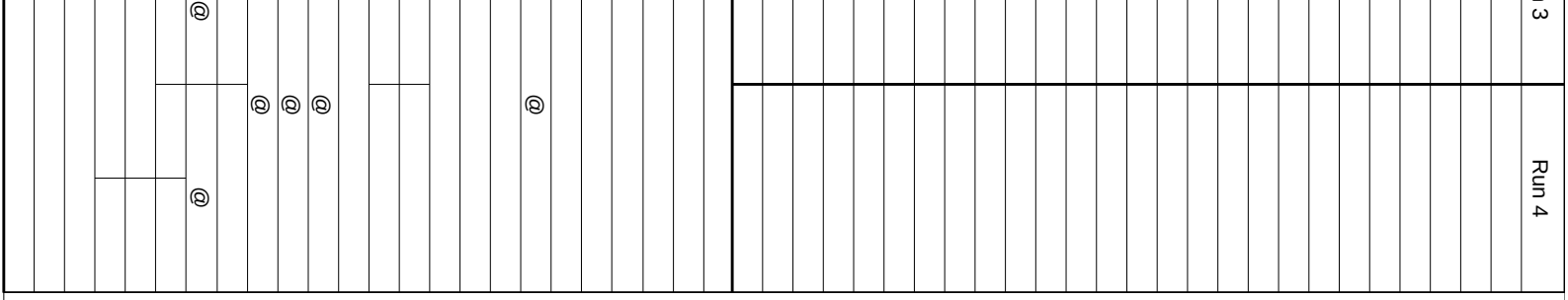
Elev.: K.B.
G.L.
D.F. 28.30 m

Permanent Datum: MEAN SEA LEVEL — Elev.: 28.30 m
Log Measured From: DRILL FLOOR — 0.00 m above Perm. Datum
Drilling Measured From: DRILL FLOOR

Prefecture:	Max. Well Deviation	Longitude	Latitude
Wakayama	0.7 deg	136* 32.1489' E	33* 27.4704' N

	Run 1	Run 2	Run 3
Logging Date	12−Jul−2009		
Run Number	2		
Depth Driller	3686 m		
Schlumberger Depth	3667 m		
Bottom Log Interval	3652.5 m		
Top Log Interval	2785 m		
Casing Driller Size @ Depth	20.000 in @ 2786.2 m	@	@
Casing Schlumberger	2785 m		
Bit Size	12.250 in		
Type Fluid In Hole	KCl−NaCl Polymer		
MUD Density / Viscosity	1.1 g/cm3 / 97 s		
MUD Fluid Loss / PH	4.1 cm3 / 10.6		
MUD Source Of Sample	Flow Line		
RM @ Measured Temperature	0.068 ohm.m @ 26 degC	@	@
RMF @ Measured Temperature	0.059 ohm.m @ 27 degC	@	@
RMC @ Measured Temperature	0.083 ohm.m @ 26 degC	@	@
Source RMF / RMC	Press / Press		
RM @ MRT / RMF @ MRT	0.058 @ 34 / 0.051 @ 34	@ / @	@ / @
Maximum Recorded Temperatures	33 degC / 33 / 34		
Circulation Stopped / Time	11−Jul−2009 / 5:30		
Logger On Bottom / Time	12−Jul−2009 / 19:00		
Unit Number / Location	4308 / JPOP		
Recorded By	Payap Thongpracharn		
Witnessed By	T. Honda / K. Takahashi		

	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			



DEPTH SUMMARY LISTING

Date Created: 15−JUL−2009 16:02:45

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−JA	Type:	CMTD−B/A	Type:	7−46A XXS
Serial Number:	6726	Serial Number:	2986	Serial Number:	6019
Calibration Date:	3−Apr−2009	Calibration Date:	16−Apr−2009	Length:	9200 M
Calibrator Serial Number:	17	Calibrator Serial Number:	1049		
Calibration Cable Type:	7−46A XXS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−6	Calibration RMS:	373	Rig Type:	Offshore Floater with WMC
Wheel Correction 2:	−6	Calibration Peak Error:	499		

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	EMS−HRLA−TLD−CNL−GR−SP
Reference Log Run Number:	1
Reference Log Date:	11−Jul−2009

Depth Control Remarks

1. Schlumberger Depth Control Policy followed.
2. IDW used as primary depth control device.
3. Z−Chart used as secondary depth control device.
4. Tide level = 0 m.
5.
6.

OTHER SERVICES1

OS1: EMS−HRLA−TLD−CNL−GR−SF
OS2: MDT Dual Packer & Single Probe
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1

This is the subsequence run in the well.

The depth correlated with EMS−HRLA−TLD−CNL−GR−SP log on 11−Jul−09.

Tool ran as per tool sketch and 2.5 inch standoffs used.

Maximum recorded temperature from logging head thermometers = 33.89 degC.

Maximum deviation = 0.70 deg @ 2749.79mBRT.

Logging speed was 1,000 ft/hr.

Repeat section was taken from 2900.0m − 2850.0m as per client request.

Some of data affected by borehole condition (rugosity/washout).
Circulation Started: 11−Jul−2009; 1:45am
Circulation Stopped: 11−Jul−2009; 5:30am
AV=55 cps, PV=35 cps, YV=40 lb/100ft2, Gel=7−8 lb/100ft2, WL=4.1 ml, MC=0.5 mm
pH=10.6 ml, Pf=0.2 ml, Pm=0.3 ml, Mf=0.3 ml, Cl−=71,700 mg/l, Ca++Mg++=80/97 mg/l, Sand = 0.2%
O/S/W=0/6/94 %Vol, MBC=0.5 ml/ml mud, K+=26,400 mg/l

RUN 1		RUN 2	
SERVICE ORDER #:	ADVO−0003	SERVICE ORDER #:	
PROGRAM VERSION:	17C0−154	PROGRAM VERSION:	
FLUID LEVEL:	10 m	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

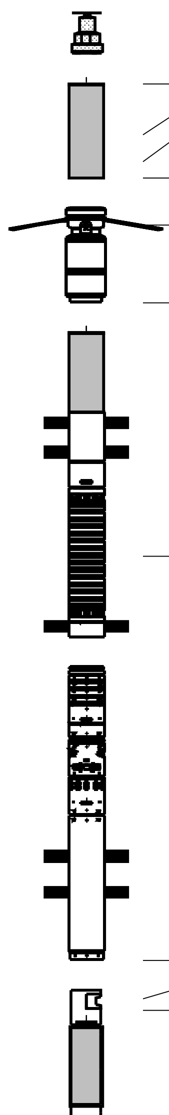
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR−Y 1005
WITM (EDTS)−A

DOWNHOLE EQUIPMENT



LEH−QT — 31.77
LEH−QT 1296
MDSB_EDTC

EDTC−B — 30.88
EDTH−B 8206
EDTC−BB 8218
EDTG−A/B 8215
Mud Tempe — 30.88
CTEM — 29.81
Gamma Ray — 29.24
TelStatus
EDTCB Ele — 28.90

PPC1−B — 28.90
PPC1−B 8169
PPC_CAL_STD
Calipers — 28.55
PPC_Cartr — 26.91

MAPC−B — 26.91
MAPC−BA 8038
ECH−SF 8038
MAMS−BA 8048
2.5 IN Standoff
2.5 IN Standoff
MAMS−PS — 22.20
2.5 IN Standoff

MAXS−B — 20.50
MASS−BA 8038
MAXS−BA 8044
2.5 IN Standoff
2.5 IN Standoff
MAXS−PS — 14.33
Mud Resis — 14.15
Mud Tempe — 13.90

EMS−B — 14.33
EMA−B 8002
RES
EMC−B 8027
ECH−KH 8028

RUN 2

AH192 8016

HNGS−BA
HNGS−BA 164
HNSH−BA 161

Upper_1
Lower_2

10.91
10.70

11.61

HNGC−B
HNGH−A 358

HNGC Stat

8.58

9.11

FBST−B
ECH−MRA 4811
FBCC−A 819
AH−185 938
FBSH−A 815
GPIC−C 1843
FBSC−B 816
FBSS−B 816

8.04

2.5 IN
Standoff
2.5 IN
Standoff

PADS
FBCC FBSC

1.02

DF ACCZ
Cartridge HV
Tension GPIT

BNS−NG

0.00

0.61

TOOL ZERO

MAXIMUM STRING DIAMETER 8.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Client: CDEX

Drawing Date: 7/11/2009

Well: C0009A

Field: Nankai Trough

Rig Name: Chikyu

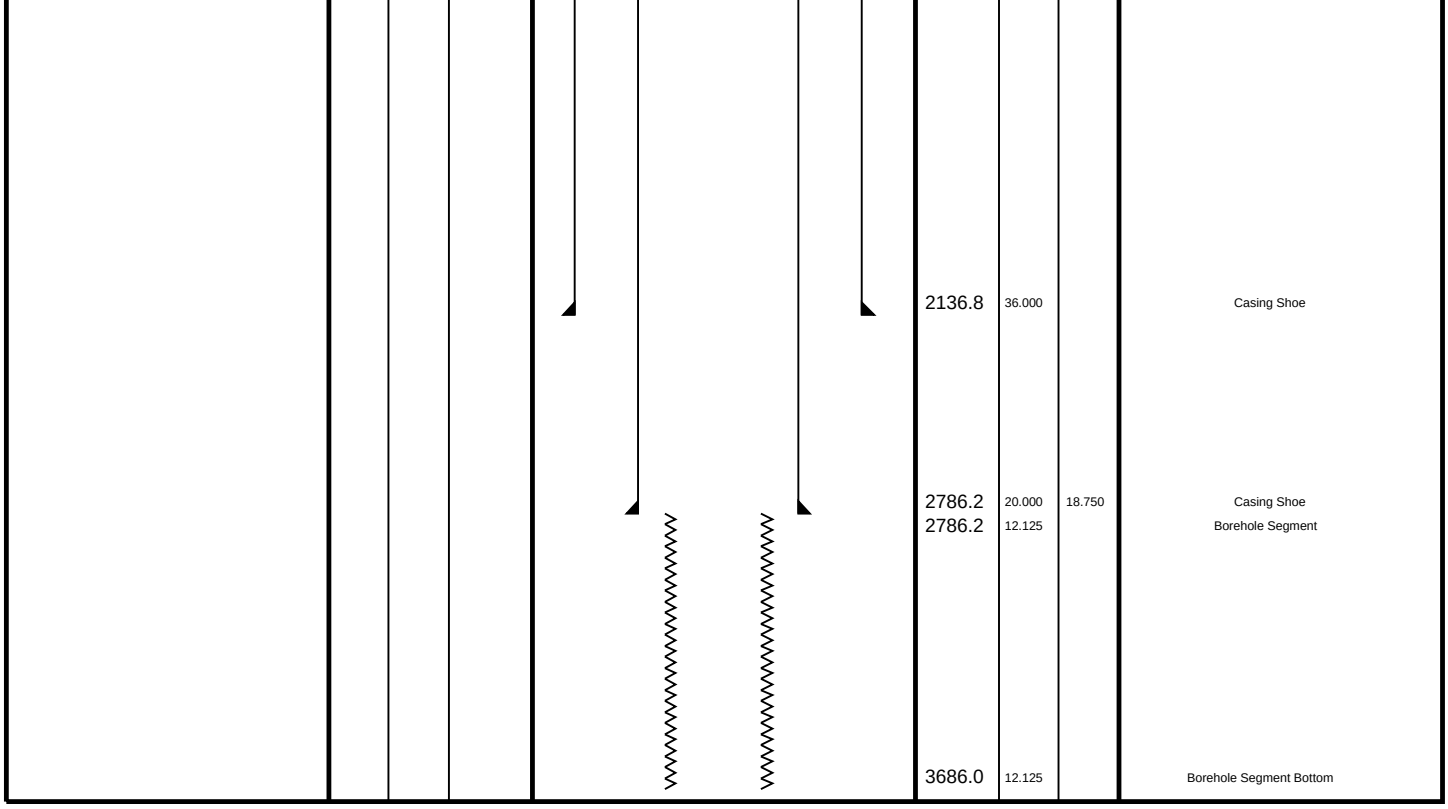
State: Wakayama

Reference Datum: Mean Sea Level

Country: JAPAN

Elevation: 28.3 m

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
Derrick Floor Elevation			28.3					
Mean Sea Level			0.0					
					2082.3	36.000		Casing String



Schlumberger

Main Log
1:200

MAXIS Field Log

Company: CDEX **Well: C0009A**

Input DLIS Files

DEFAULT	FMI_NGS_EMS_MAXS_038LUP	FN:114	PRODUCER	13−Jul−2009 17:16	3659.9 M	2752.6 M

Output DLIS Files

DEFAULT	FMI_NGS_EMS_CAL_017PUP	FN:50	PRODUCER	12−Aug−2009 23:04	3662.2 M	2755.8 M
CLIENT	FMI_NGS_EMS_CAL_017PUC	FN:51	CUSTOMER	12−Aug−2009 23:04	3662.2 M	2755.8 M

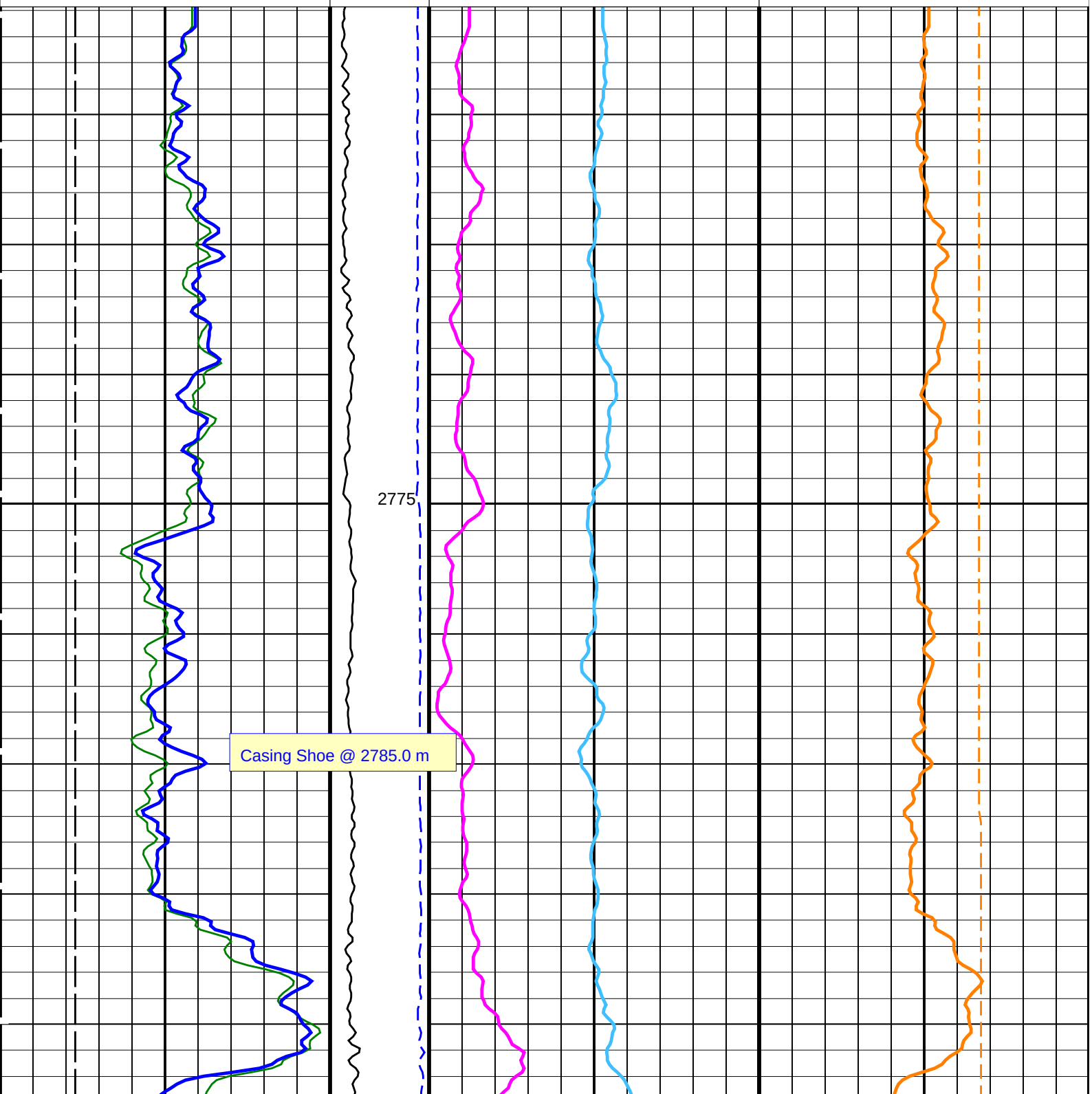
OP System Version: 17C0−154

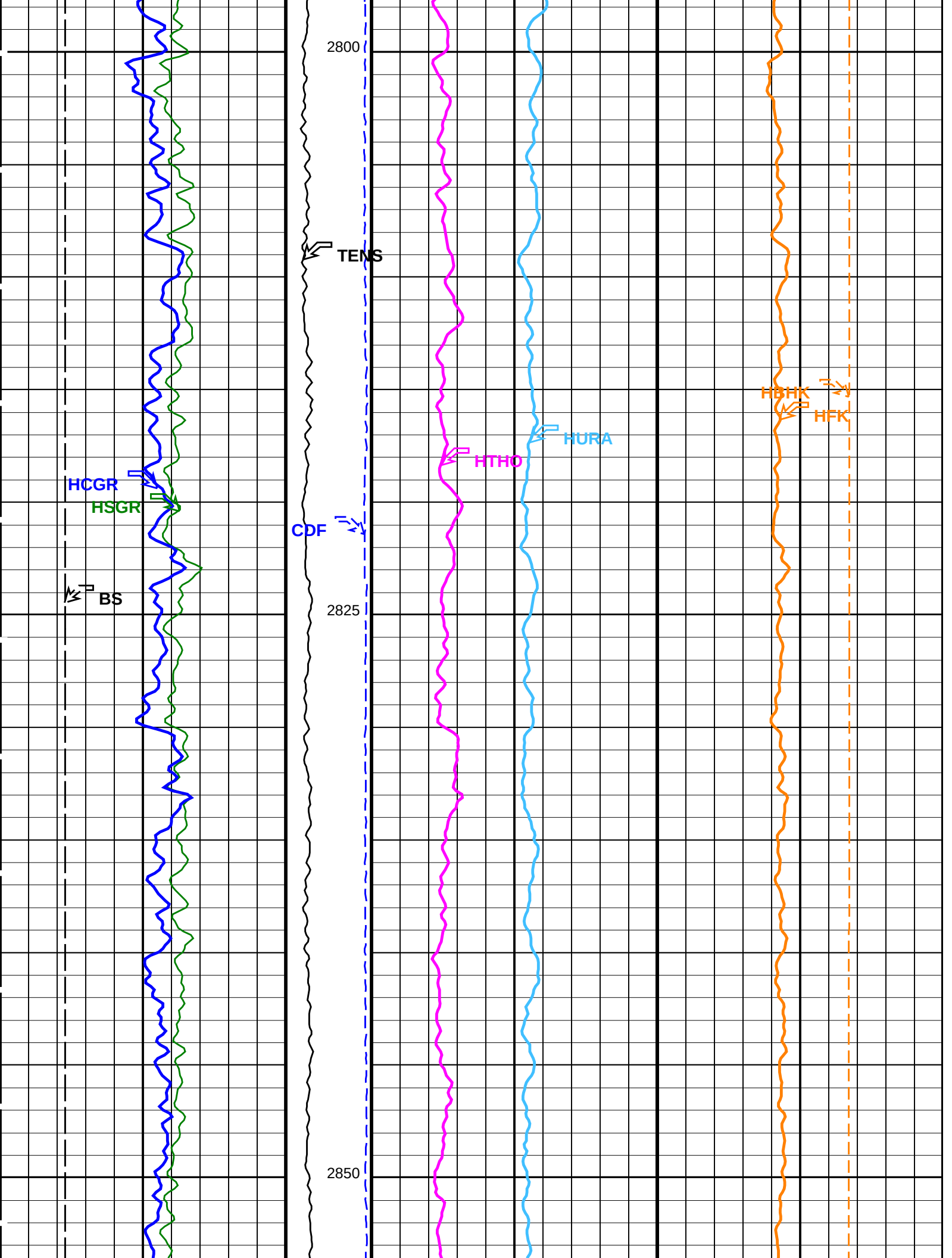
FBST−B	17C0−154	HNGC−B	17C0−154
HNGS−BA	SPC−3839−NUCL	EMS−B	17C0−154
PPC1−B	17C0−154	EDTC−B	17C0−154

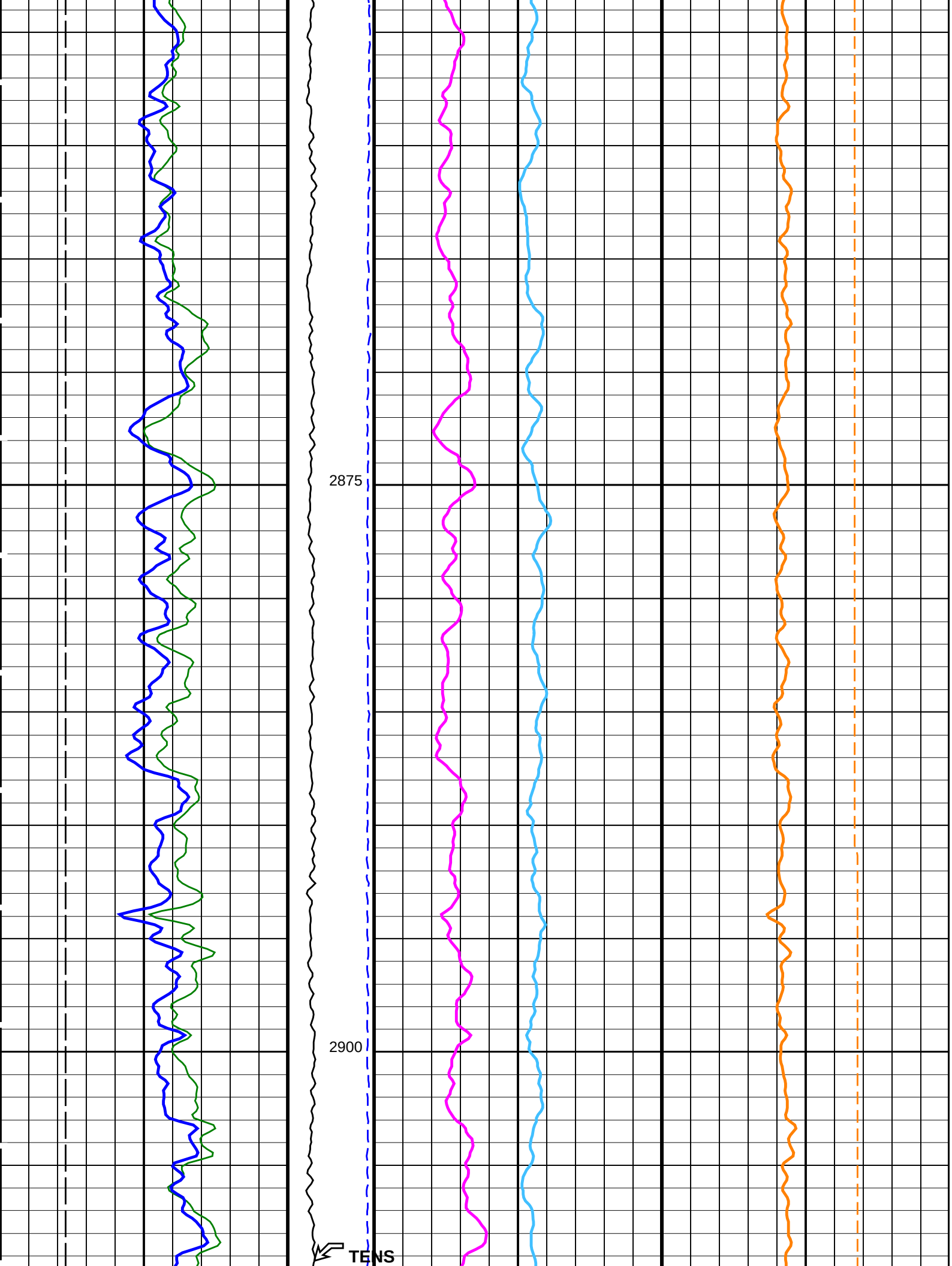
PIP SUMMARY

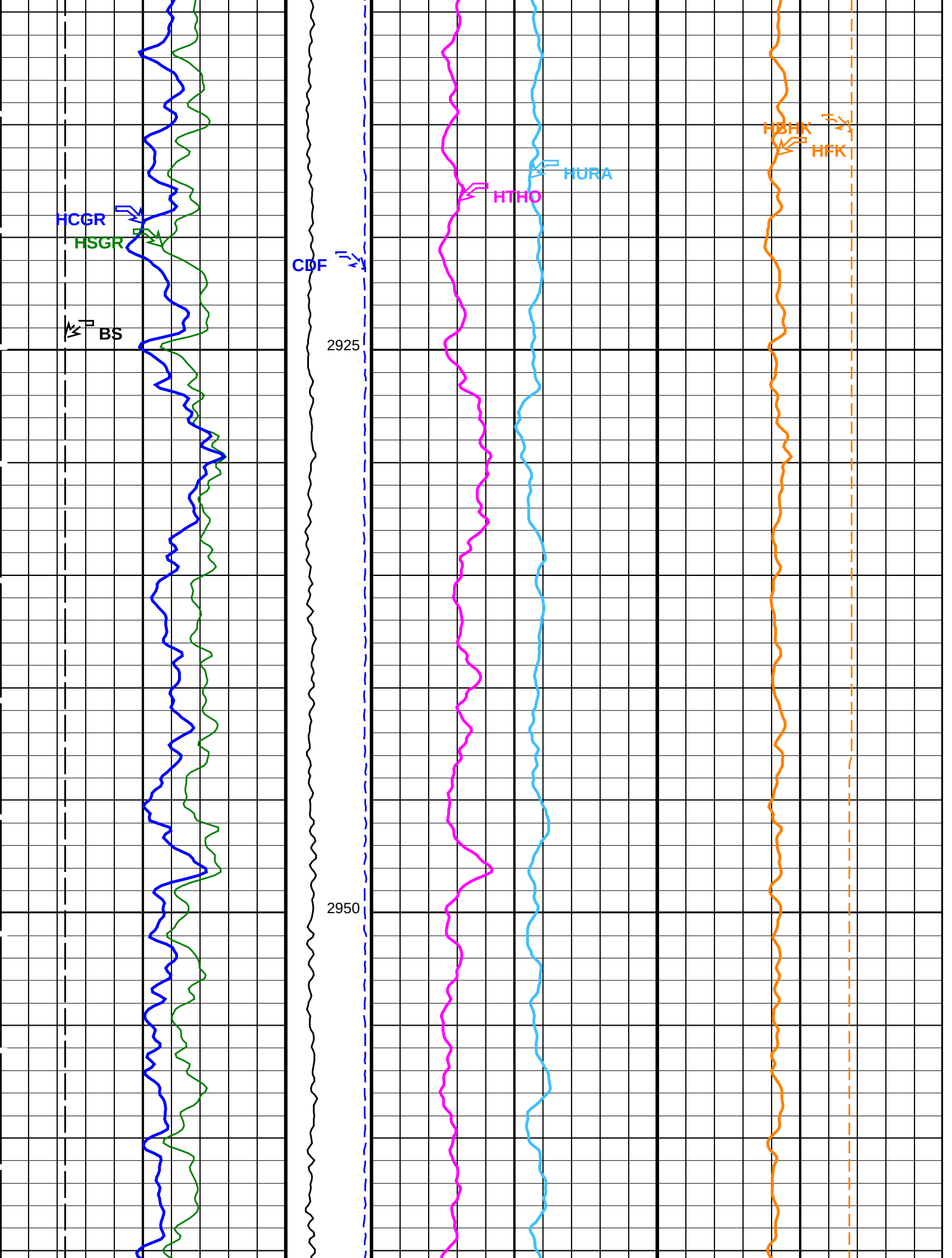
Time Mark Every 60 S

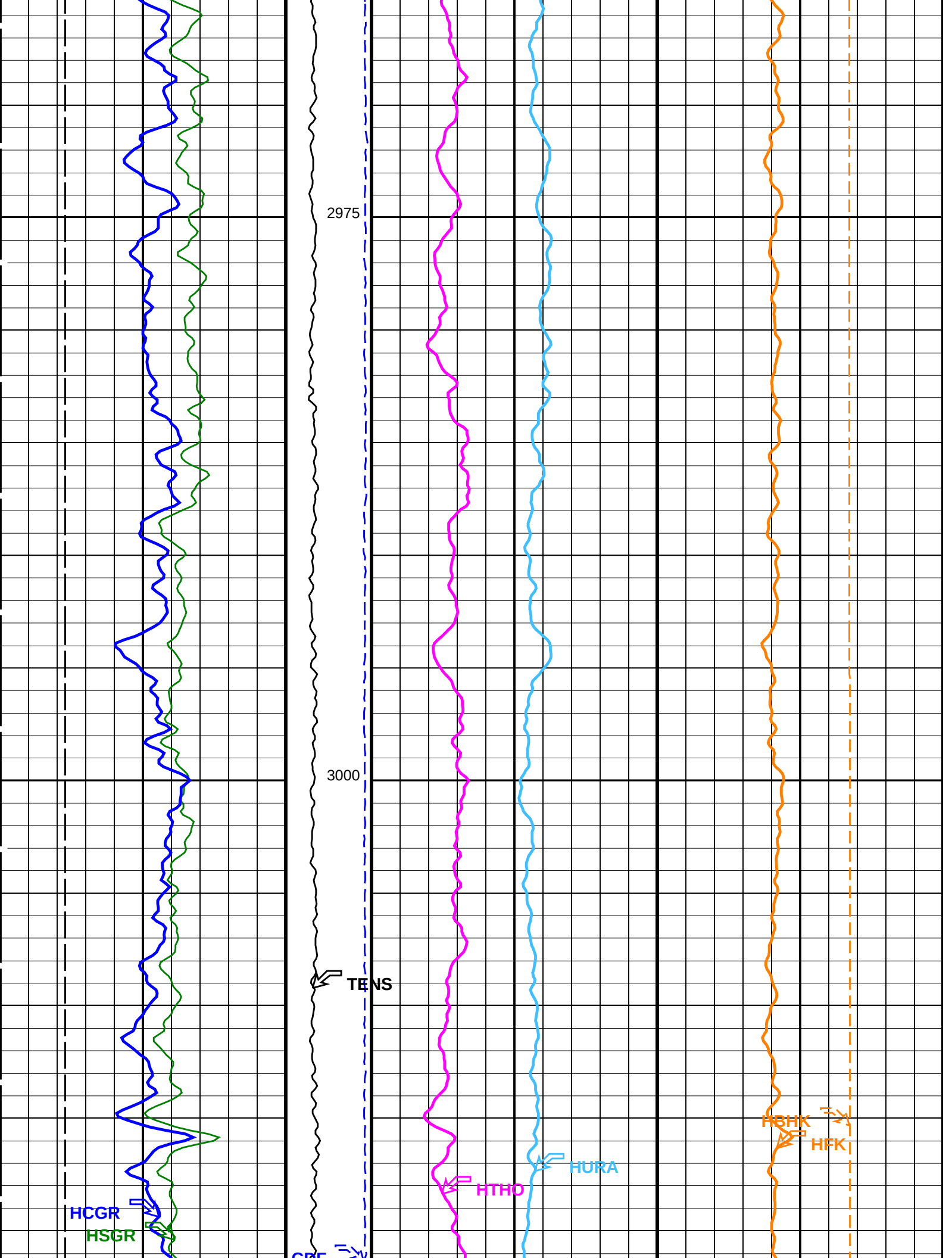
HNGS Spectroscopy Gamma Ray (HSGR) 50 (GAPI) 150		HNGS Borehole Potassium (HBHK) −0.05 (V/V) 0.05
HNGS Computed Gamma Ray (HCGR) 50 (GAPI) 150	Calibrated Downhole Force (CDF) (LBF) −200 1800	HNGS Uranium (HURA) −10 (PPM) 30
Bit Size (BS) 10 (IN) 20	Tension (TENS) (LBF) 0 2000	HNGS Thorium (HTHO) 0 (PPM) 30
		HNGS Potassium (HFK) 0 (V/V) 0.1

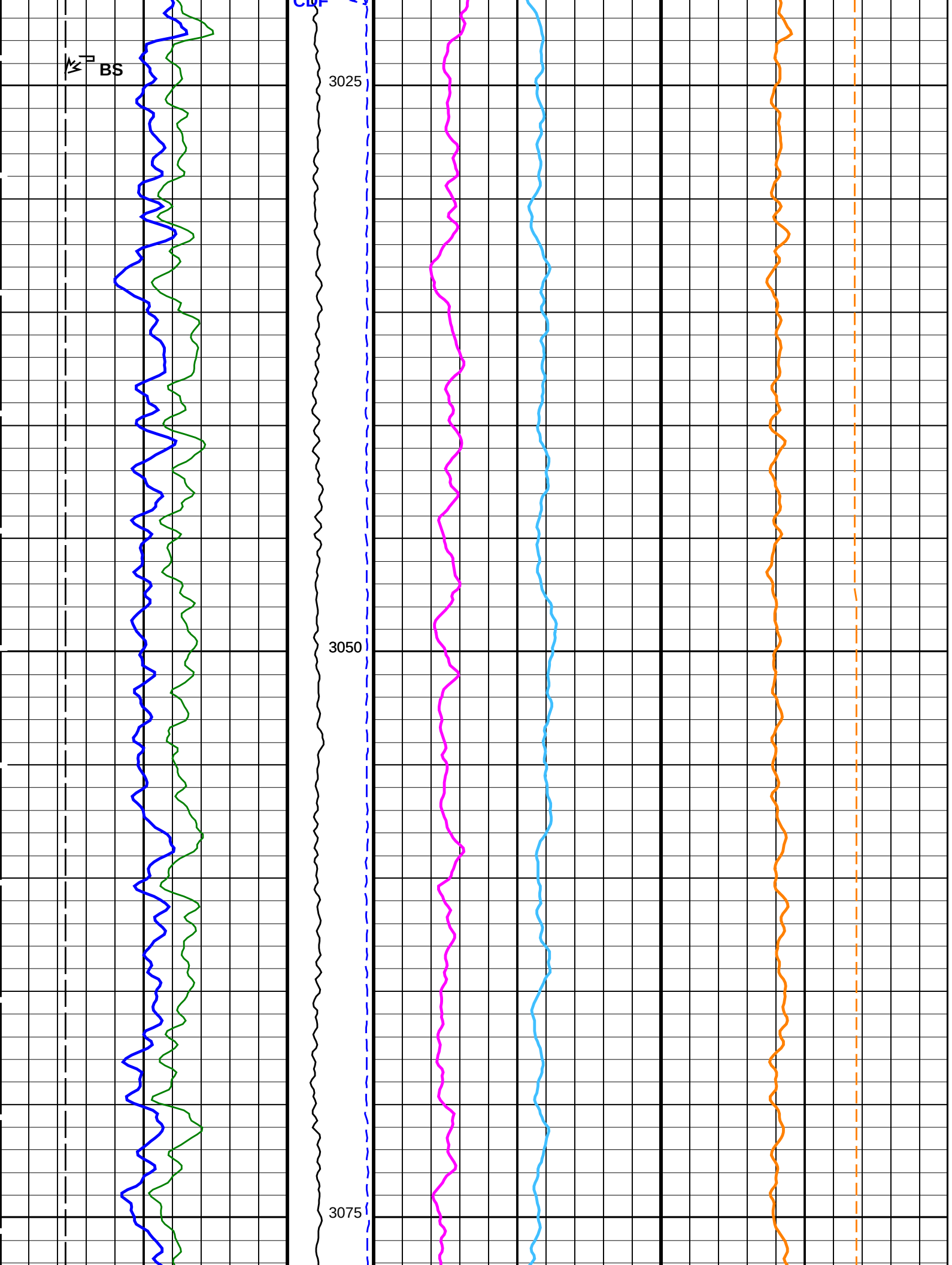


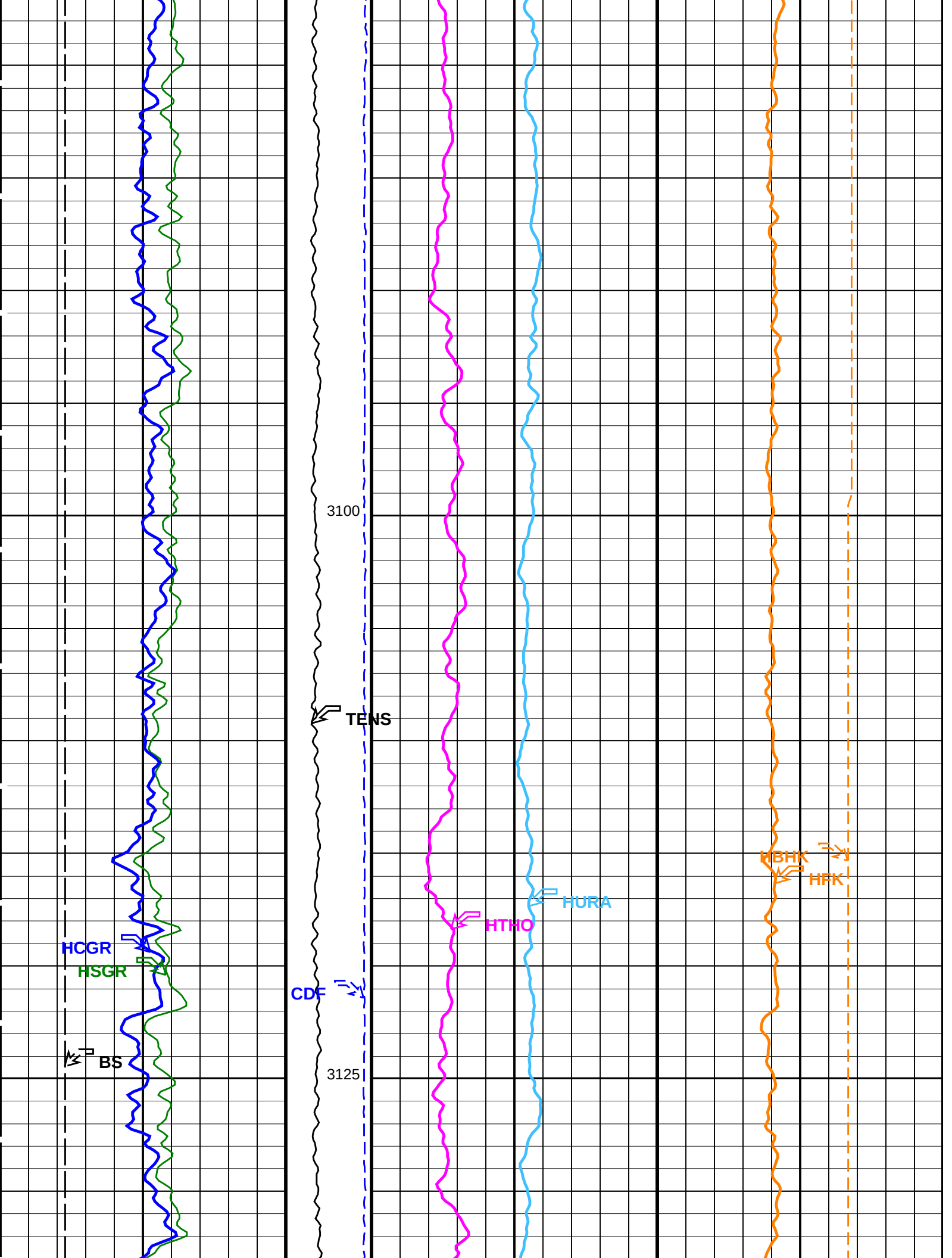

2800
TENS
HBHK
HFK
HURA
HTHO
HCGR
HSGR
CDF
BS
2825
2850

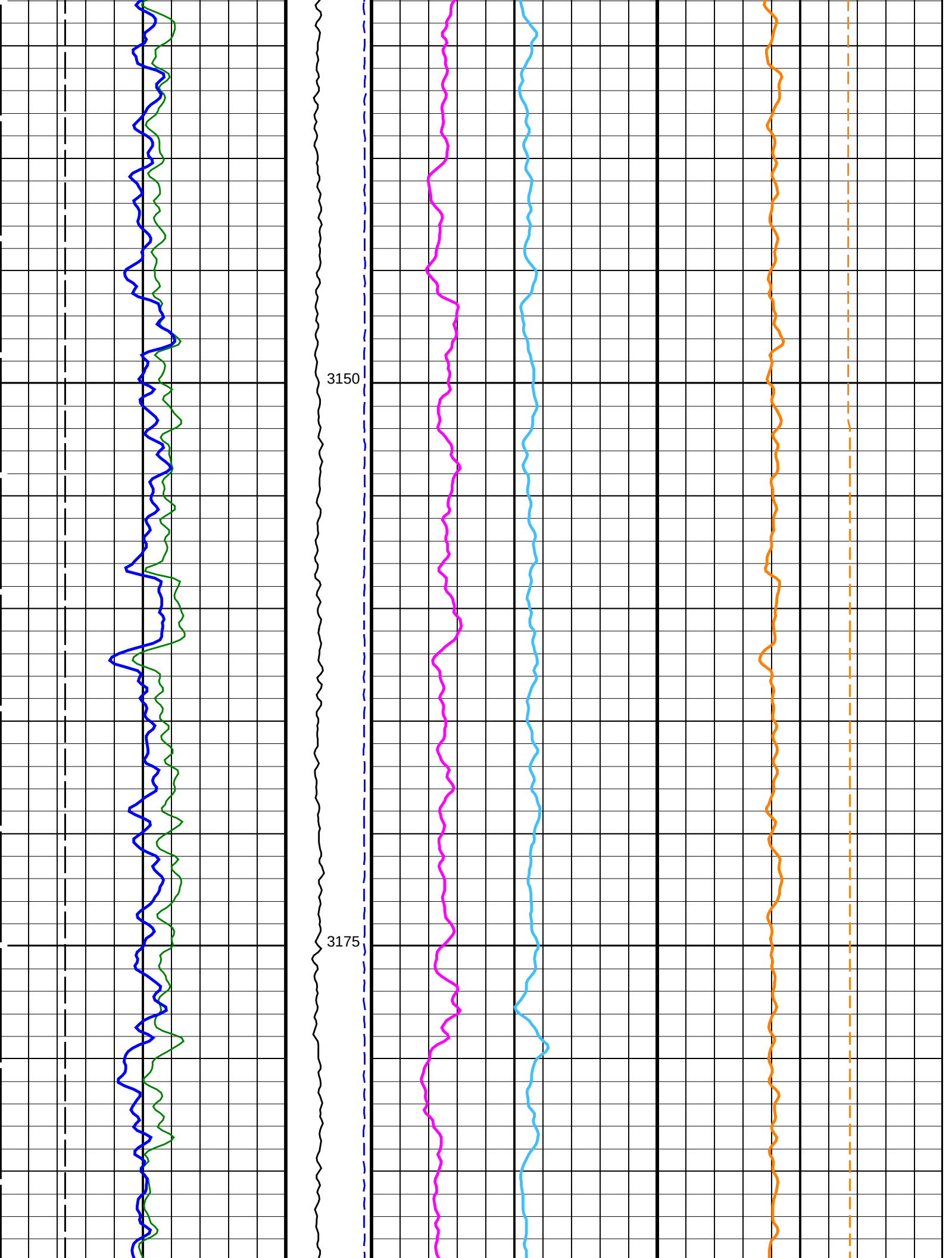

2875
2900
TENS

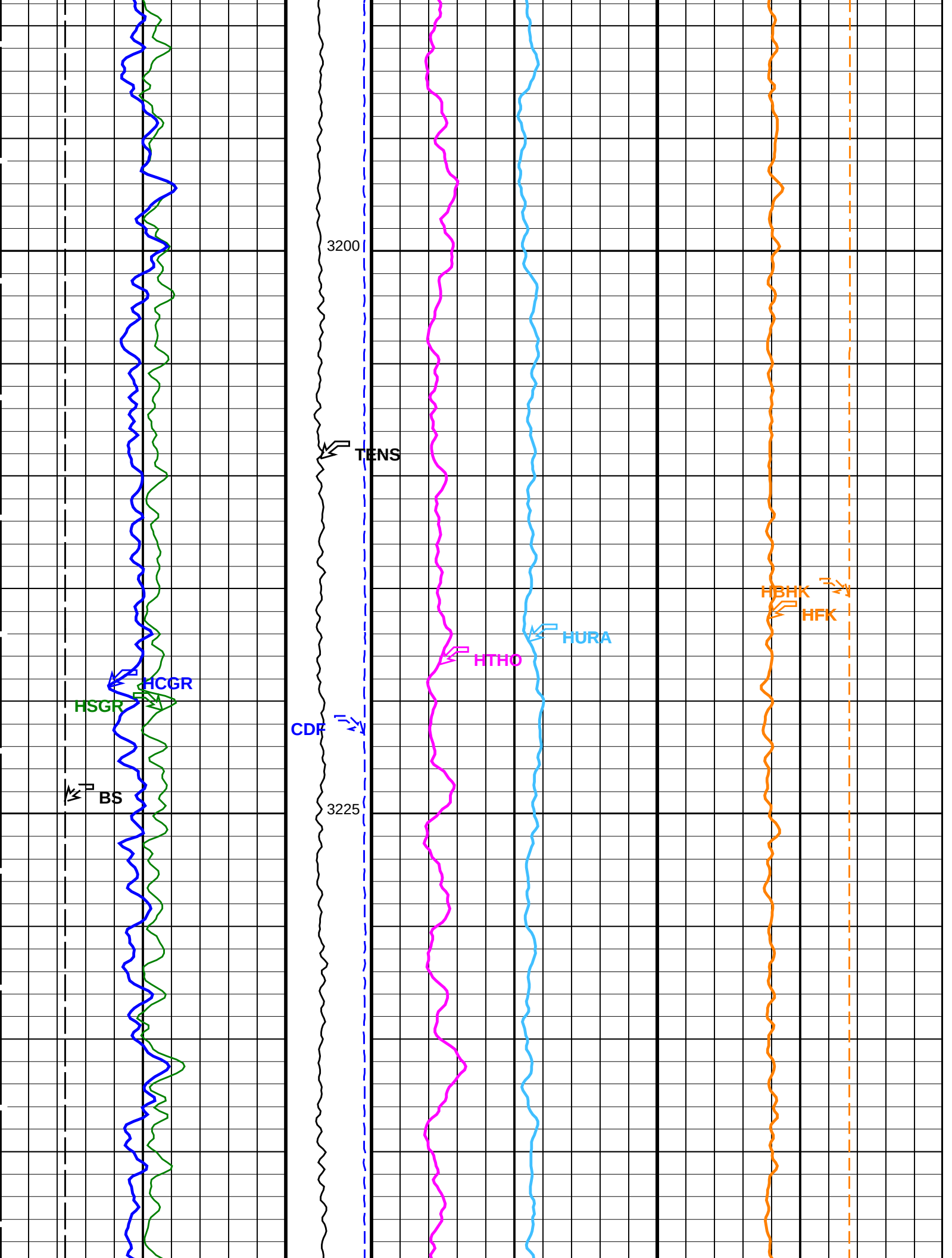

HCGR
HSGR
BS
CDF
HTHO
HURA
HBHK
HFK
2925
2950

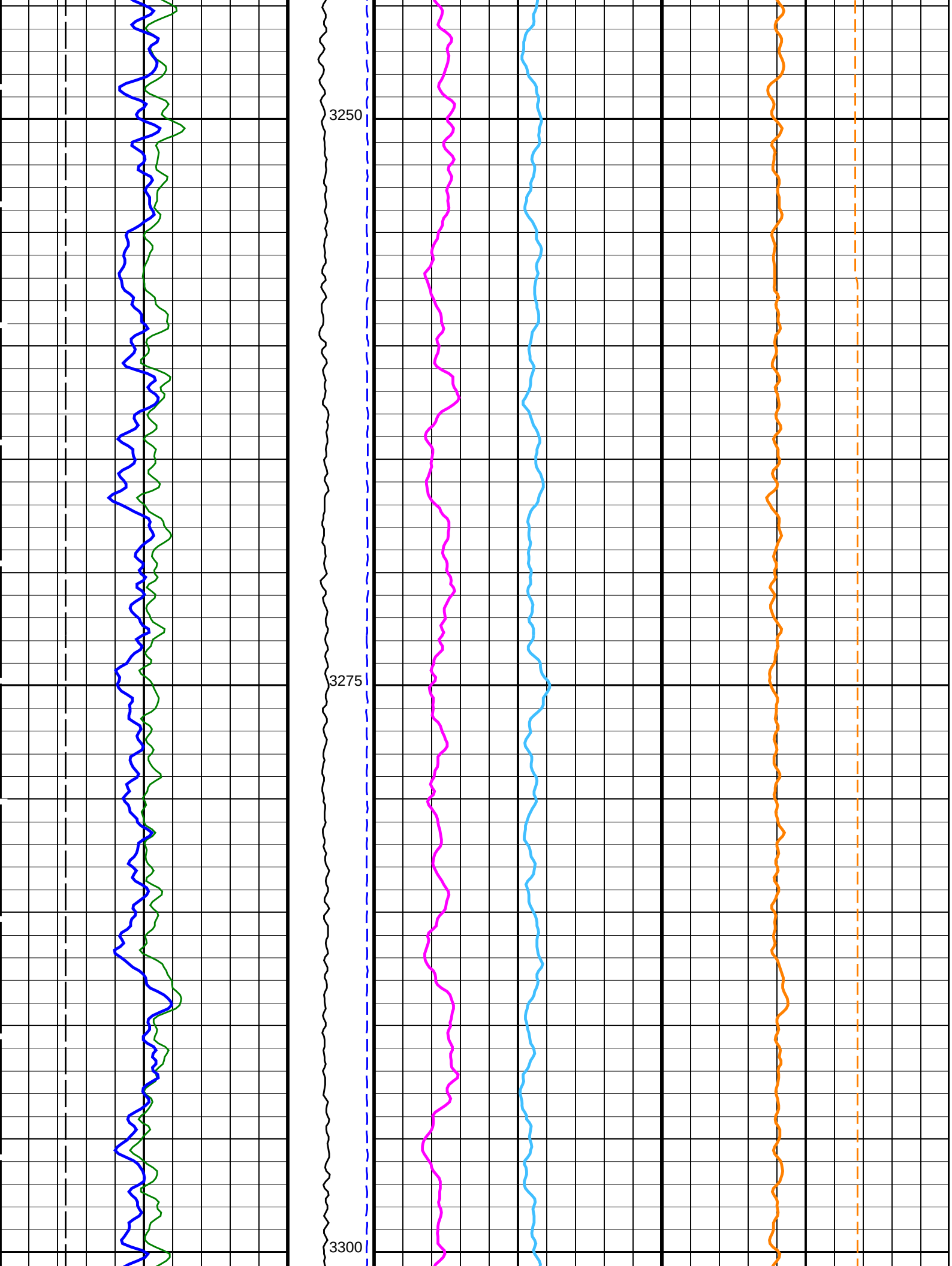

2975
3000
TENS
HCGR
HSGR
HTHO
HURA
HSHK
HFK

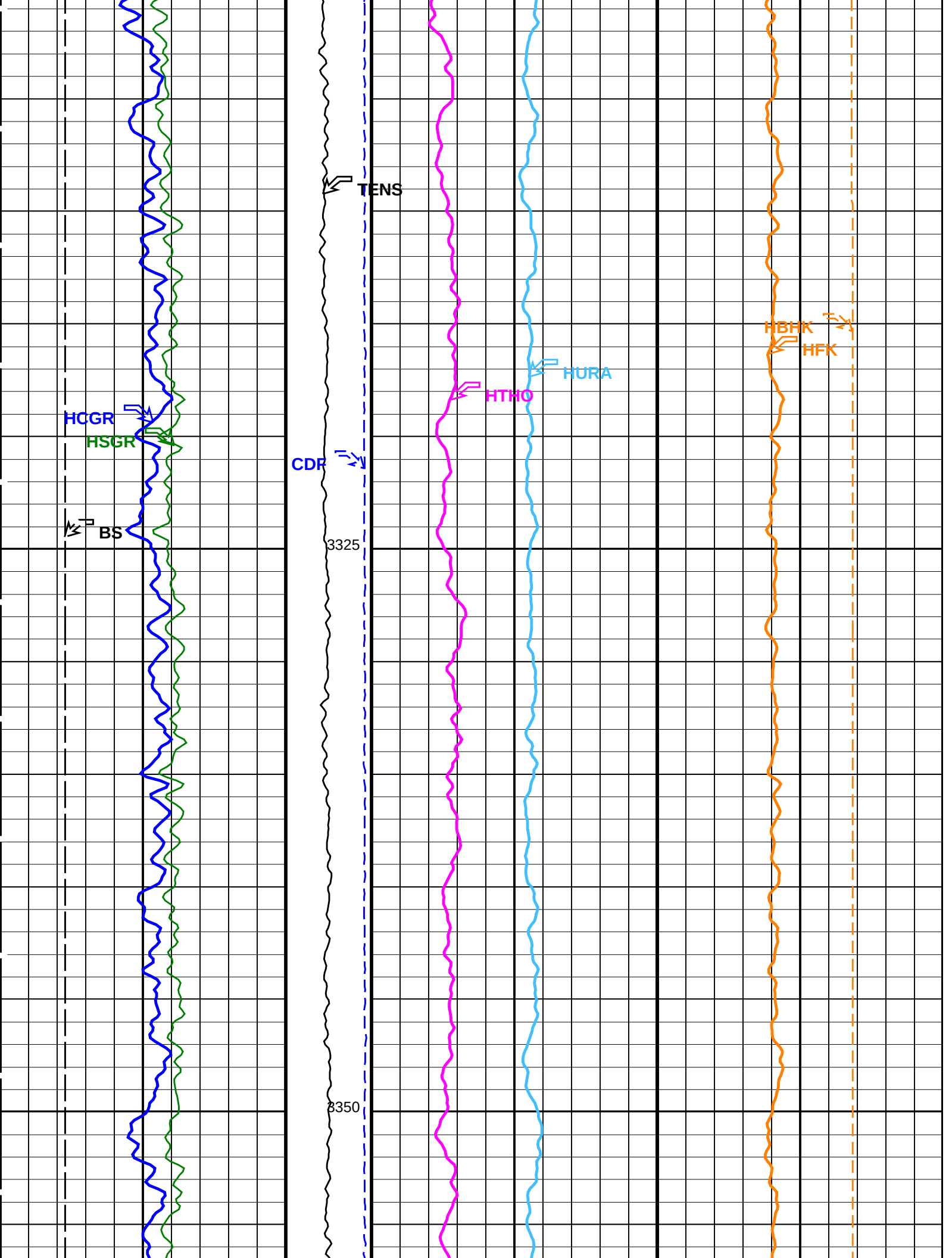

BS
CDF
3025
3050
3075

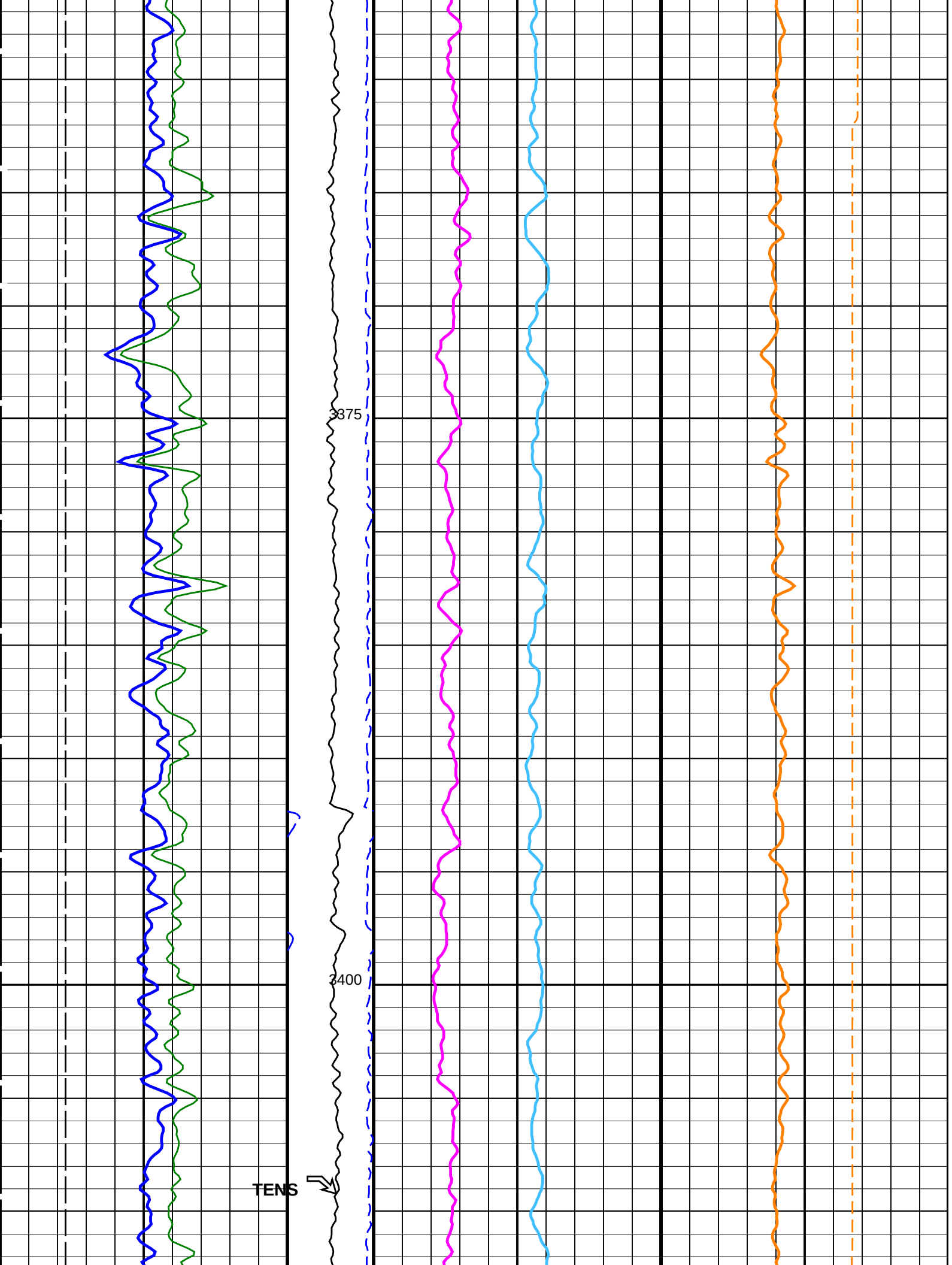

3100
TENS
HTHO
HURA
HBHK
HFK
HCGR
HSGR
CDF
BS
3125

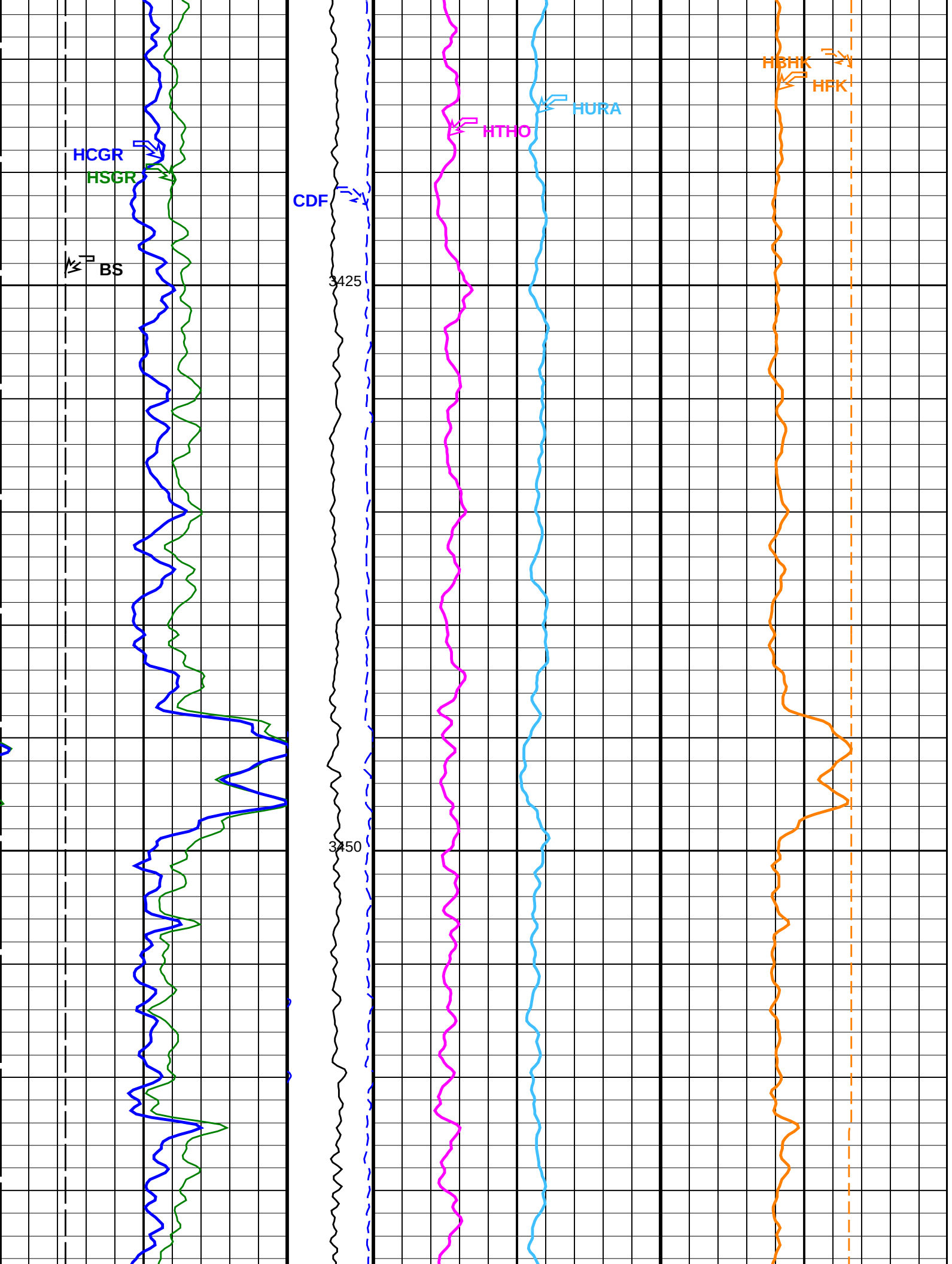

3150
3175

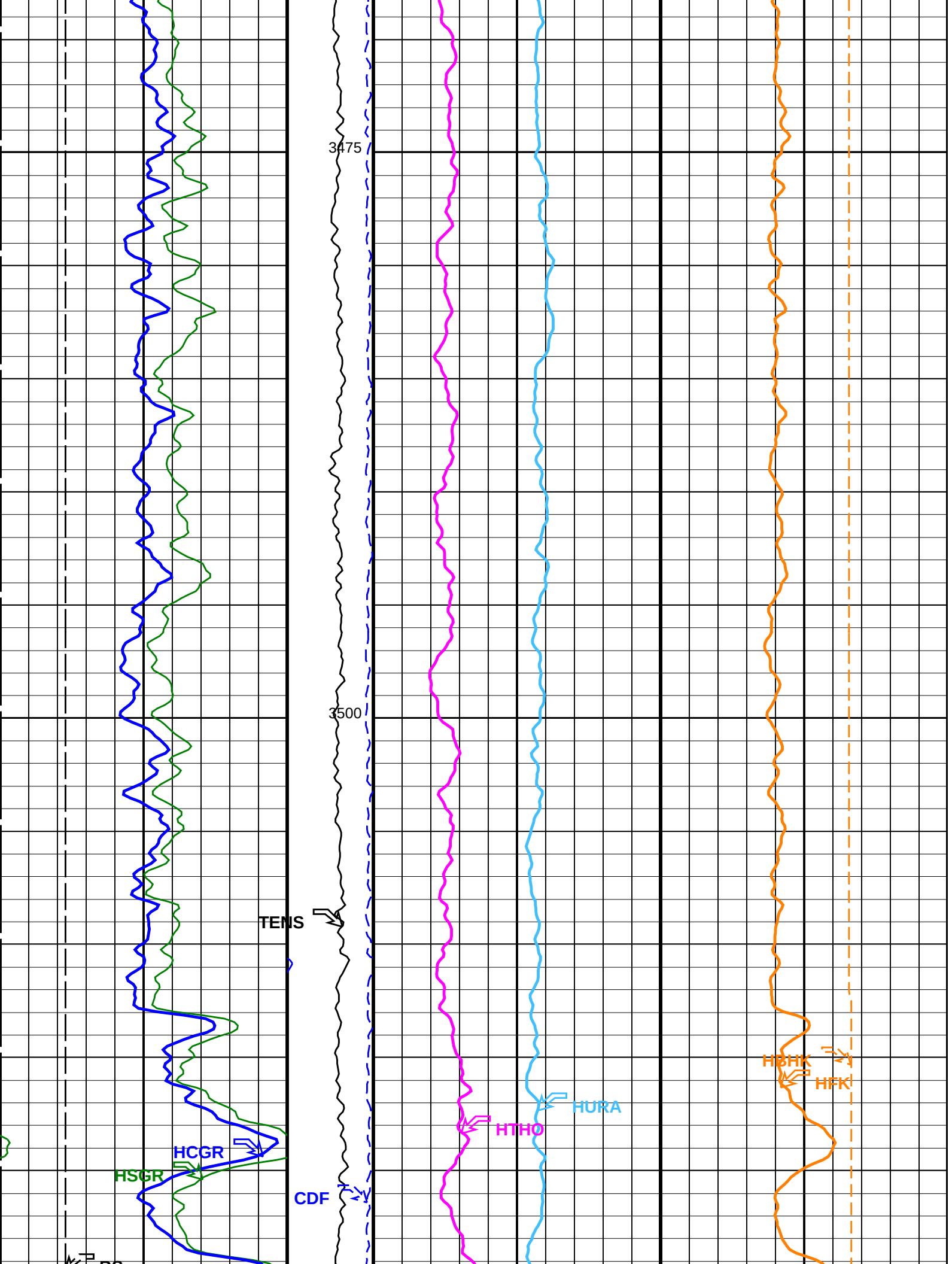

3200
TENS
HCGR
HSGR
CDF
BS
3225
HTHO
HURA
HBHK
HFK

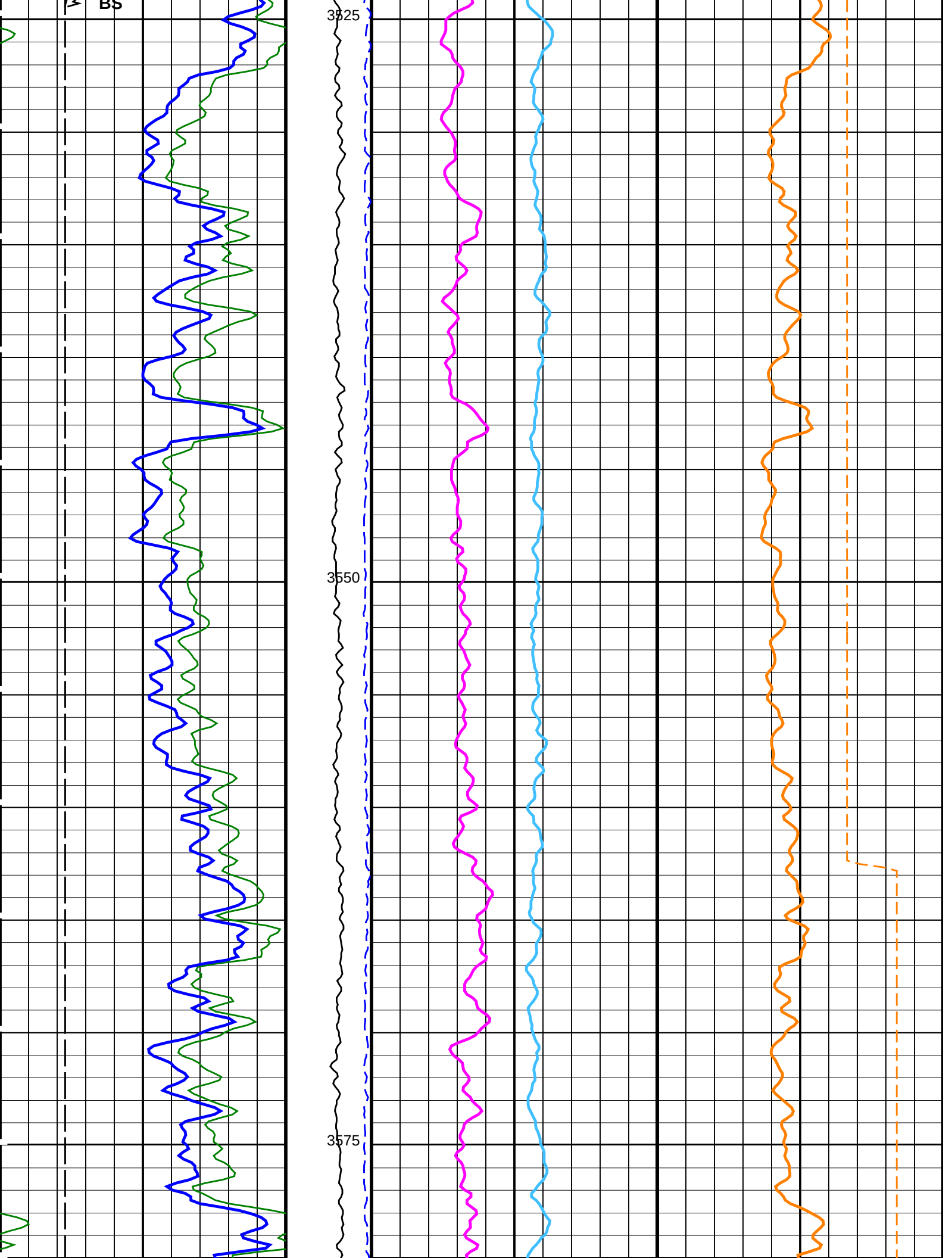

3250
3275
3300

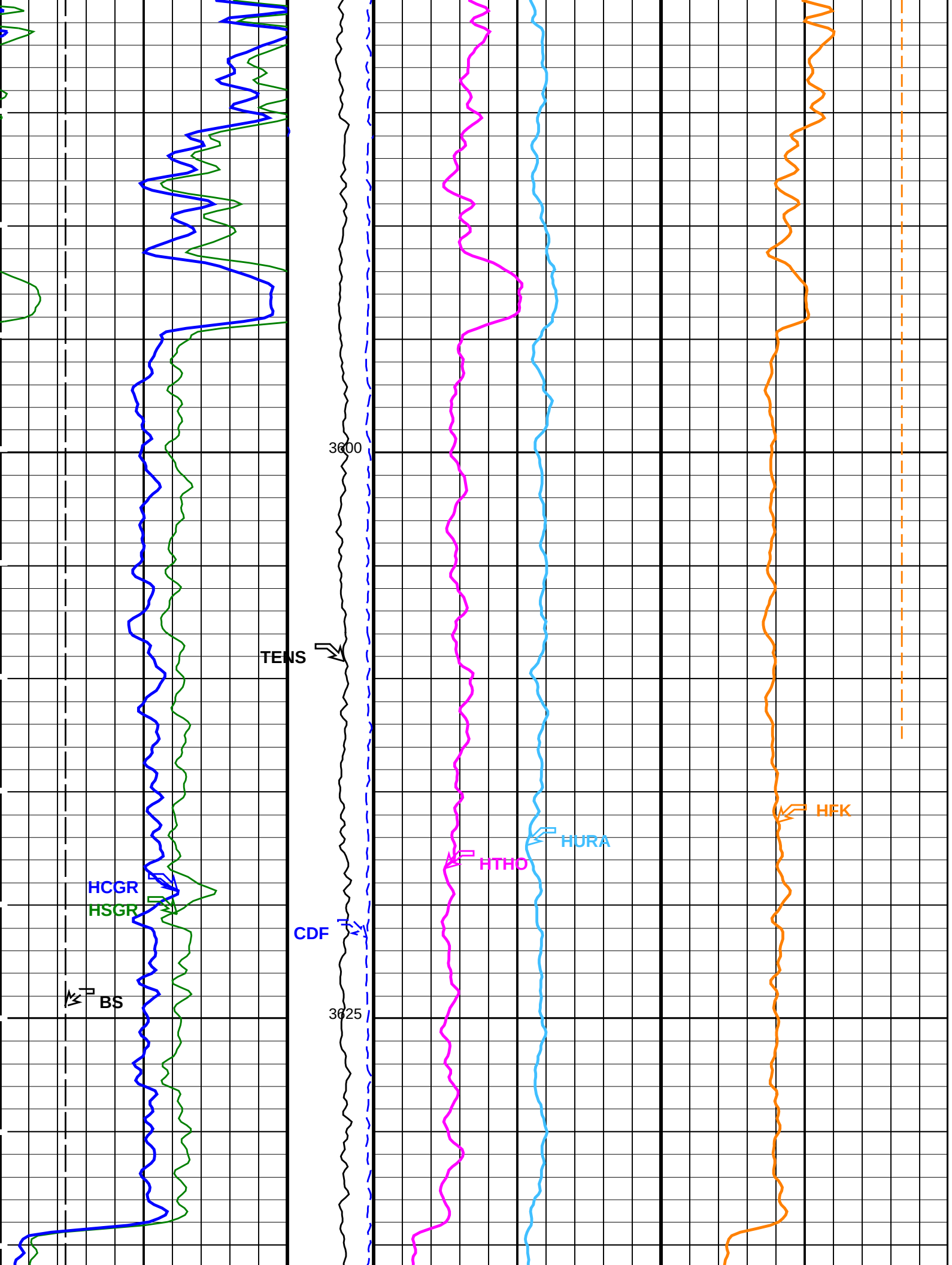

TENS
HCGR
HSGR
CDR
BS
HTHO
HURA
HBHK
HFK
3325
3350

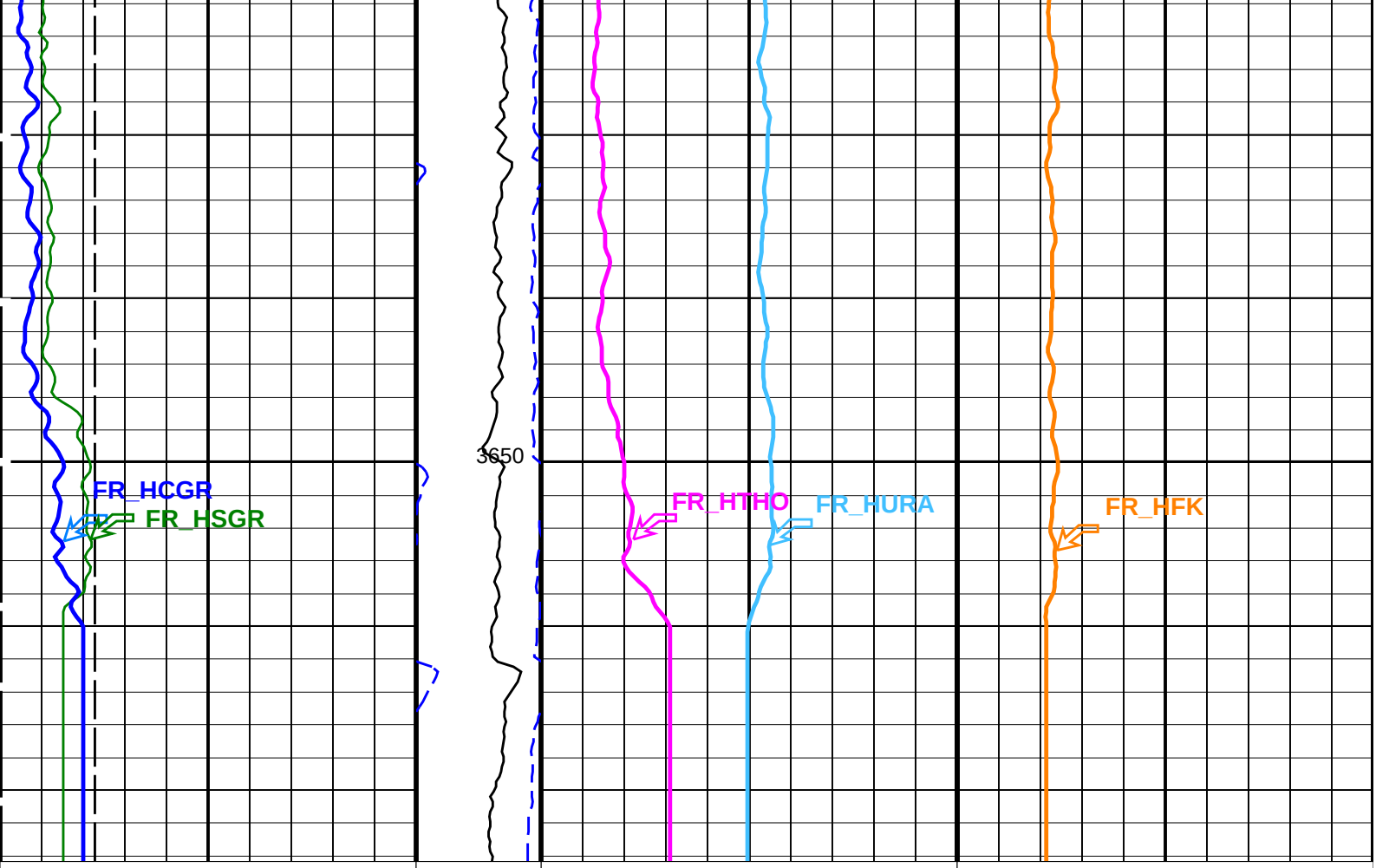

3375
3400
TENS


HCGR
HSGR
BS
CDF
HTHO
HURA
HBHK
HFK
3425
3450


3475
3500
TENS
HCGR
HSGR
CDF
HTHO
HURA
HBHK
HFK


BS
3525
3550
3575


3600
TENS
HFK
HURA
HTHO
HCGR
HSGR
CDF
BS
3625



Bit Size (BS) 10 (IN) 20	Tension (TENS) (LBF) 0 2000	HNGS Thorium (HTHO) 0 (PPM) 30
HNGS Potassium (HFK) 0 (V/V) 0.1		
HNGS Computed Gamma Ray (HCGR) 50 (GAPI) 150	Calibrated Downhole Force (CDF) (LBF) −200 1800	HNGS Uranium (HURA) −10 (PPM) 30
HNGS Spectroscopy Gamma Ray (HSGR) 50 (GAPI) 150		HNGS Borehole Potassium (HBHK) −0.05 (V/V) 0.05

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	FBST−B: Full−Bore Scanner − B		
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
EGCO	FMI EMEX and GAIN Correction	NO	
FBCD	Correct Dip Buttons Values by EMEX and Gain	OFF	
FBEF	FMI EMEX filtering activation	OFF	
FBMV	FMI EMEX maximum voltage calculation	OFF	
FDBD	FMI Dead Buttons detection	AUTO	
FDBP	FMI Dead Buttons Patching	ON	
FDFL	FMI DSP Filter Length	1	
FIEQ	FMI Image Equalisation	ON	
FIGA	FMI Image Gain	1	
FIOF	FMI Image Offset	0	
FLM	FMI Logging Mode	8PAD	
FPSA	FMI Peak Signal Amplitude for Required Servo Level	ON	
GLM	GPIT Logging Mode	DIPM	
GMOD	Gain Mode	AUTOLOW	

ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	−6.587	DEG
MRTE	Magneto Reference Temperature	22	DEGC
RBS	Resistivity Button Selection	AUTO	
RBSI	Auto RBS Change Interval	10	
SOFF	Standoff	−1	IN
TEMS	GPIT Temperature Sensor Used	BOTH	
U−GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC−3098−FEB_2006_C) ?	NO	
XGAI_FBST	Gain Value in Manual Mode	0_dB	
XGMO	EMEX & Gain Modes	EmexManu_GainAutoLowRange	
XMOD	EMEX Voltage Regulation Mode	MANU	
XVOL	EMEX Voltage	175	V
HNGS−BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	33.89	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	HD1_PPC1	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	EMS_RESIST	
GTSE	Generalized Temperature Selection	EMS_TEMP	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.0134006	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.03291	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.05889	
EMS−B: Environment Measurement Sonde			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	33.89	DEGC
EAAB	EMS Accelerometer Coefficient:Ab	0	
EAAS	EMS Accelerometer Coefficient:As	0	
EABB	EMS Accelerometer Coefficient:Bb	0	
EABS	EMS Accelerometer Coefficient:Bs	0	
EACB	EMS Accelerometer Coefficient:Cb	0	
EACS	EMS Accelerometer Coefficient:Cs	0	
EMUD	EMS Mudcake Correction	OFF	
FCD	Future Casing (Outer) Diameter	0	IN
GCSE	Generalized Caliper Selection	HD1_PPC1	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	EMS_RESIST	
GTSE	Generalized Temperature Selection	EMS_TEMP	
HVCS	Integrated Hole Volume Caliper Selection	PPC1_Calipers	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
PPC1−B: Powered Positioning Device/Caliper 1			
	PPC1 Caliper Type	CAL_STD	
CLBD_PPC	PPC Calibration data selection	ROM	
PWEL_PPC	PPC Primary Tool for WellCAD	NONE	
SWEL_PPC	PPC Secondary Tool for WellCAD (45 Degrees Rotation PPC Tool)	NONE	
WRDR_PPC	PPC Rotation Direction for Secondary Tool	NONE	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	33.89	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	STAN	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HD1_PPC1	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	EMS_RESIST	

GRSE	Generalized Mud Resistivity Selection	EMS_RESIST	
GTSE	Generalized Temperature Selection	EMS_TEMP	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	2.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Centered	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	12.250	IN
BSAL	Borehole Salinity	110000.00	PPM
CSIZ	Current Casing Size	20.000	IN
CWEI	Casing Weight	133.00	LB/F
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	3.2	M
FLEV	Fluid Level	10.00	M
MST	Mud Sample Temperature	25.70	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.0587	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3667	M
TDD	Total Depth − Driller	3686.00	M
TDL	Total Depth − Logger	3667.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HNGSNGT 200 Vertical Scale: 1:200 Graphics File Created: 12−Aug−2009 23:04

OP System Version: 17C0−154

FBST−B	17C0−154	HNGC−B	17C0−154
HNGS−BA	SPC−3839−NUCL	EMS−B	17C0−154
PPC1−B	17C0−154	EDTC−B	17C0−154

Input DLIS Files

DEFAULT	FMI_NGS_EMS_MAXS_038LUP	FN:114	PRODUCER	13−Jul−2009 17:16	3659.9 M	2752.6 M

Output DLIS Files

DEFAULT	FMI_NGS_EMS_CAL_017PUP	FN:50	PRODUCER	12−Aug−2009 23:04		
CLIENT	FMI_NGS_EMS_CAL_017PUC	FN:51	CUSTOMER	12−Aug−2009 23:04		

Schlumberger

Repeat Analysis
1:200

MAXIS Field Log

Company: CDEX Well: C0009A

Input DLIS Files

DEFAULT	FMI_NGS_EMS_MAXS_038LUP	FN:114	PRODUCER	13−Jul−2009 17:16	3659.9 M	2752.6 M
DEFAULT	FMI_NGS_EMS_CAL_005PUP	FN:28	PRODUCER	08−Aug−2009 16:39	2900.0 M	2844.9 M

Output DLIS Files

DEFAULT	FMI_NGS_EMS_CAL_006PUP	FN:30	PRODUCER	08−Aug−2009 16:43		

CLIENT	FMI_NGS_EMS_CAL_006PUC	FN:31	CUSTOMER	08−Aug−2009 16:43

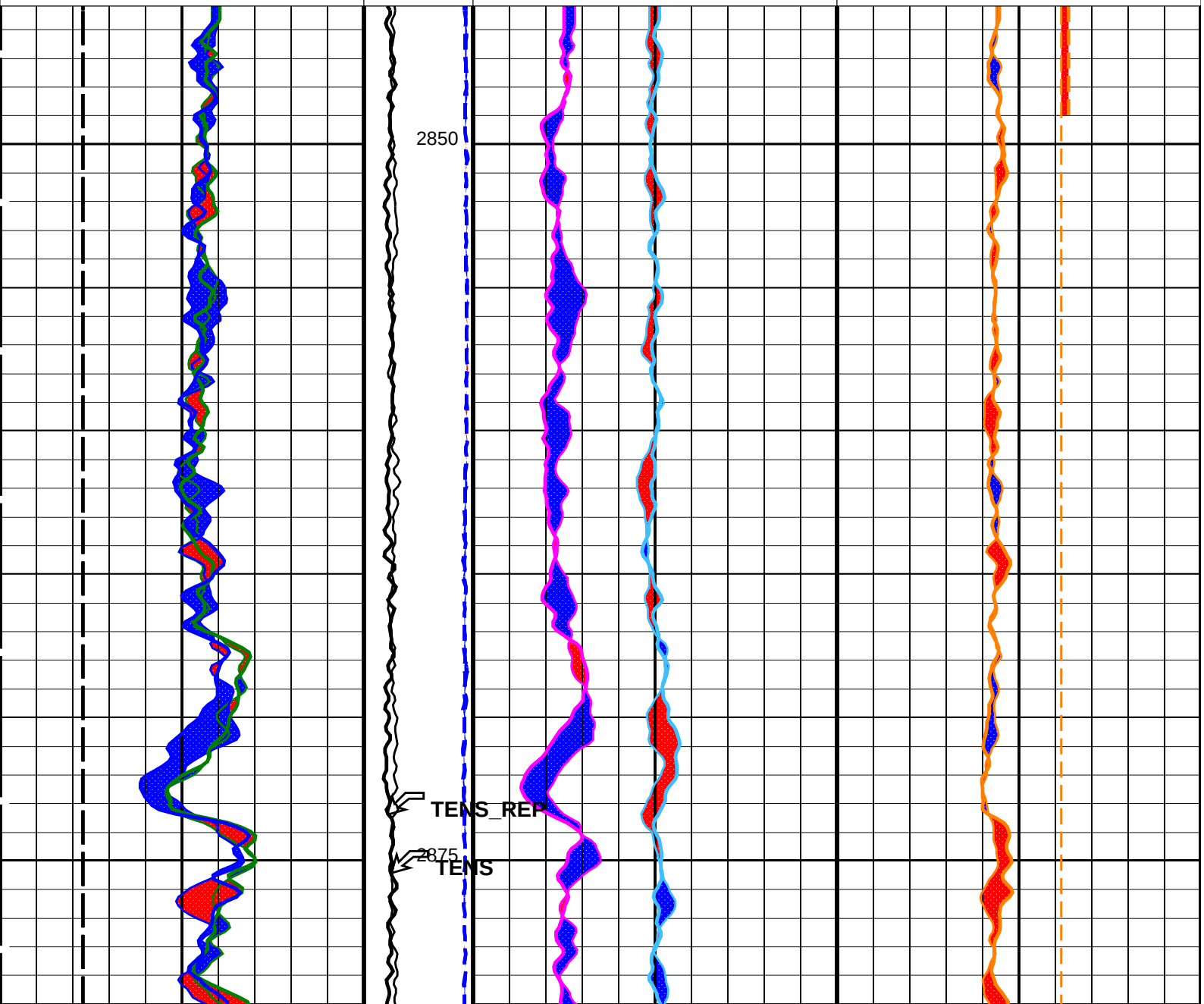
OP System Version: 17C0−154

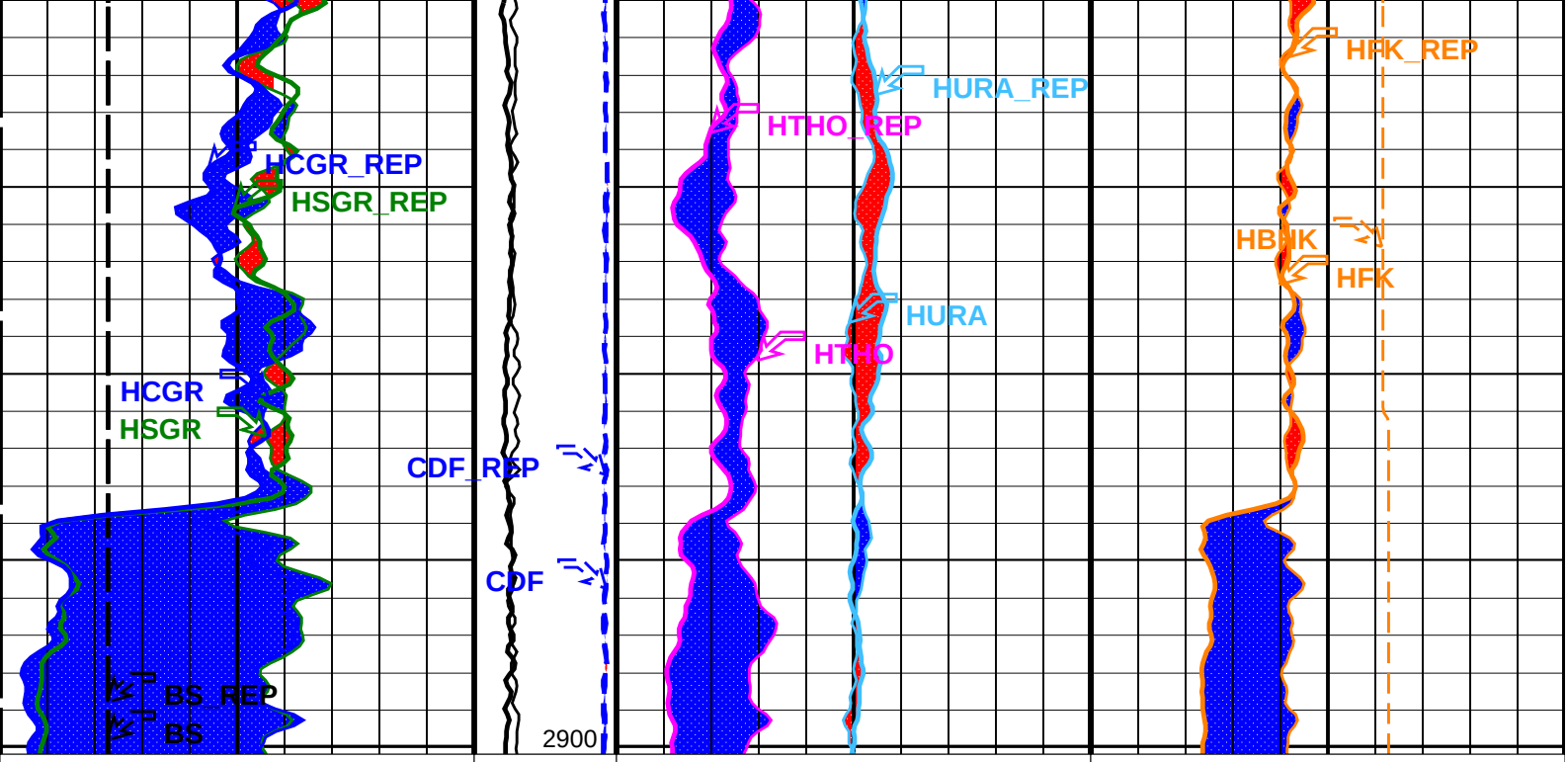
FBST−B	17C0−154	HNGC−B	17C0−154
HNGS−BA	SPC−3839−NUCL	EMS−B	17C0−154
PPC1−B	17C0−154	EDTC−B	17C0−154

PIP SUMMARY

Time Mark Every 60 S

HCGR_REP Curve (HCGR_REP) 50 (GAPI) 150		HBHK_REP Curve (HBHK_REP) −0.05 (V/V) 0.05
HSGR_REP Curve (HSGR_REP) 50 (GAPI) 150	TENS_REP Curve (TENS_REP) (LBF) 0 2000	HURA_REP Curve (HURA_REP) −10 (PPM) 30
BS_REP Curve (BS_REP) 10 (IN) 20	CDF_REP Curve (CDF_REP) (LBF) −200 1800	HTHO_REP Curve (HTHO_REP) 0 (PPM) 30
		HFK_REP Curve (HFK_REP) 0 (V/V) 0.1





BS_REP Curve (BS_REP) 10 (IN) 20	CDF_REP Curve (CDF_REP) (LBF) −200 1800	HTHO_REP Curve (HTHO_REP) 0 (PPM) 30
HFK_REP Curve (HFK_REP) 0 (V/V) 0.1		
HSGR_REP Curve (HSGR_REP) 50 (GAPI) 150	TENS_REP Curve (TENS_REP) (LBF) 0 2000	HURA_REP Curve (HURA_REP) −10 (PPM) 30
HCGR_REP Curve (HCGR_REP) 50 (GAPI) 150		HBHK_REP Curve (HBHK_REP) −0.05 (V/V) 0.05

PIP SUMMARY

Time Mark Every 60 S

Format: HNGSNGT 200_REP Vertical Scale: 1:200 Graphics File Created: 08−Aug−2009 16:43

OP System Version: 17C0−154

FBST−B	17C0−154	HNGC−B	17C0−154
HNGS−BA	SPC−3839−NUCL	EMS−B	17C0−154
PPC1−B	17C0−154	EDTC−B	17C0−154

Input DLIS Files

DEFAULT	FMI_NGS_EMS_MAXS_038LUP	FN:114	PRODUCER	13−Jul−2009 17:16	3659.9 M	2752.6 M
DEFAULT	FMI_NGS_EMS_CAL_005PUP	FN:28	PRODUCER	08−Aug−2009 16:39	2900.0 M	2844.9 M

Output DLIS Files

DEFAULT	FMI_NGS_EMS_CAL_006PUP	FN:30	PRODUCER	08−Aug−2009 16:43
CLIENT	FMI_NGS_EMS_CAL_006PUC	FN:31	CUSTOMER	08−Aug−2009 16:43

Schlumberger

Calibrations

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Full−Bore Scanner − B Wellsite Calibration − Caliper Calibration							
Before: 12−Jul−2009 11:56							
Caliper 1 Small Jig	8.000	N/A	7.973	N/A	N/A	N/A	IN
Caliper 2 Small Jig	16.00	N/A	16.03	N/A	N/A	N/A	IN
Caliper 1 Large Jig	16.00	N/A	15.80	N/A	N/A	N/A	IN
Caliper 2 Large Jig	8.000	N/A	7.906	N/A	N/A	N/A	IN
Full−Bore Scanner − B Wellsite Calibration − CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 12−Jul−2009 12:49							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	4	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	852	N/A	N/A	N/A	
Full−Bore Scanner − B Wellsite Calibration − CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 12−Jul−2009 12:49							
TEMPERATURE REFERENCE :	N/A	N/A	22	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	97	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	2	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	287	N/A	N/A	N/A	
Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check							
Master: 5−Jul−2009 18:42 Before: 5−Jul−2009 18:56							
Na 511 Peak Loc	40.00	39.49	39.74	N/A	N/A	1.000	
Na 511 Peak Res	15.50	17.60	16.16	N/A	N/A	2.000	%
High Voltage	1150	1214	1215	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.1	143.6	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.645	9.431	N/A	N/A	2.000	%
Temperature	15.50	26.77	26.77	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	23.60	23.58	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check							
Master: 5−Jul−2009 18:42 Before: 5−Jul−2009 18:56							
Na 511 Peak Loc	40.00	39.91	39.56	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.82	17.24	N/A	N/A	2.000	%
High Voltage	1150	1105	1106	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	144.3	143.7	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.151	8.788	N/A	N/A	2.000	%
Temperature	15.50	26.35	26.46	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	23.75	23.52	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2							
Master: 5−Jul−2009 18:42 Before: 5−Jul−2009 18:56							
Coincidence Count Rate Ratio	1.000	0.9925	1.004	N/A	N/A	0.05000	
Powered Positioning Device/Caliper 1 Wellsite Calibration − PPC1 Caliper Calibration							
Before: 12−Jul−2009 12:03							
PPC1 Radius 1 Raw Small Radius	3.500	N/A	4.426	N/A	N/A	0.5000	IN
PPC1 Radius 1 Raw Large Radius	8.000	N/A	8.666	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Small Radius	3.500	N/A	3.337	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Large Radius	8.000	N/A	7.746	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Small Radius	3.500	N/A	4.219	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Large Radius	8.000	N/A	8.465	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Small Radius	3.500	N/A	2.510	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Large Radius	8.000	N/A	7.022	N/A	N/A	0.5000	IN
Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration							
Before: 12−Jul−2009 13:01							
EDTC Z−Axis Acceleration	9.810	N/A	9.794	N/A	N/A	N/A	M/S2
Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration							
Before: 12−Jul−2009 12:51							
Gamma Ray (Jig − Bkg)	167.1	N/A	167.1	N/A	N/A	15.19	GAPI
Gamma Ray (Calibrated)	160.0	N/A	160.0	N/A	N/A	15.00	GAPI

Full−Bore Scanner − B / Equipment Identification

Primary Equipment:		
FullBore Scanner Sonde	FBSS − B	816
FullBore Scanner Sonde Upper part	FBSH − A	815
FullBore Scanner Sonde Cartridge	FBSC − B	816
GPIT Cartridge − C	GPIC − C	1843
Insulating Sub	AH − 185	938
FullBore Scanner Control Cartridge	FBCC − A	819
Auxiliary Equipment:		
Electronics Cartridge Housing	ECH − MRA	4811

Full−Bore Scanner − B Wellsite Calibration

Caliper Calibration

Phase	Caliper 1 Small Jig IN	Value
Before		7.973
	6.800 (Minimum) 8.000 (Nominal) 9.200 (Maximum)	

Phase	Caliper 2 Small Jig IN	Value
Before		16.03
	13.60 (Minimum) 16.00 (Nominal) 18.40 (Maximum)	

Phase	Caliper 1 Large Jig IN	Value
Before		15.80
	13.60 (Minimum) 16.00 (Nominal) 18.40 (Maximum)	

Phase	Caliper 2 Large Jig IN	Value
Before		7.906
	6.800 (Minimum) 8.000 (Nominal) 9.200 (Maximum)	

Before: 12−Jul−2009 11:56

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

Primary Equipment:		
HNGC Cartridge	HNGC − B	424
Auxiliary Equipment:		
HNGC Housing	HNGH − A	358

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS − BA	164
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH − BA	161
Gamma Source Radioactive	GSR − Y	1005

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		39.49
Before		39.74
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		17.60
Before		16.16
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1214
Before		1215
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		143.1
Before		143.6
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.645
Before		9.431
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		26.77
Before		26.77
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		23.60
Before		23.58
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 5−Jul−2009 18:42 Before: 5−Jul−2009 18:56

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.91
Before		39.56
37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.82
Before		17.24
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

Phase	High Voltage V	Value
Master		1105
Before		1106
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		144.3
Before		143.7
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		9.151
Before		8.788
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		26.35
Before		26.46
−28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		23.75
Before		23.52
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 5−Jul−2009 18:42 Before: 5−Jul−2009 18:56

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9925
Before		1.004
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 5−Jul−2009 18:42

Before: 5−Jul−2009 18:56

Multimode Array Sonic Power Cartridge / Equipment Identification

Primary Equipment:

Multimode Array Sonic Minimum Service So	MAMS − BA	8048
Multimode Array Sonic Control Cartridge	MAPC − BA	8038

Auxiliary Equipment:

Electronics Cartridge Housing	ECH − SF	8038

Powered Positioning Device/Caliper 1 / Equipment Identification

Primary Equipment:

PPC Powered Positioning Device/Caliper	PPC1 − B	8169
PPC1 Caliper Standard	PPC_ −	

Auxiliary Equipment:

Powered Positioning Device/Caliper 1 Wellsite Calibration

PPC1 Caliper Calibration

Phase	PPC1 Radius 1 Raw Small Radius IN	Value
Before		4.426
1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)

Phase	PPC1 Radius 1 Raw Large Radius IN	Value
Before		8.666
6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)

Phase	PPC1 Radius 2 Raw Small Radius IN	Value
Before		3.337
1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)

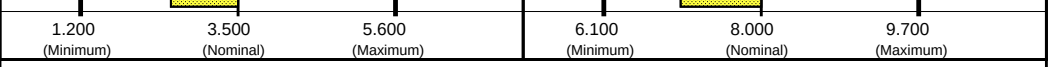
Phase	PPC1 Radius 2 Raw Large Radius IN	Value
Before		7.746
6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)

Phase	PPC1 Radius 3 Raw Small Radius IN	Value
Before		4.219
1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)

Phase	PPC1 Radius 3 Raw Large Radius IN	Value
Before		8.465
6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)

Phase	PPC1 Radius 4 Raw Small Radius IN	Value
Before		2.510

Phase	PPC1 Radius 4 Raw Large Radius IN	Value
Before		7.022



1.200 (Minimum)	3.500 (Nominal)	5.600 (Maximum)	6.100 (Minimum)	8.000 (Nominal)	9.700 (Maximum)

Before: 12−Jul−2009 12:03

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:		
EDTC Gamma Ray Detector	EDTG − A/B	8215
Enhanced DTS Cartridge	EDTC − BB	8218
Auxiliary Equipment:		
EDTC Housing	EDTH − B	8206

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration M/S2	Value
Before		9.794

9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 12−Jul−2009 13:01

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		3.157	Before		167.1	Before		160.0

0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	151.9 (Minimum)	167.1 (Nominal)	182.3 (Maximum)	145.0 (Minimum)	160.0 (Nominal)	175.0 (Maximum)

Before: 12−Jul−2009 12:51

Company: **CDEX**

Schlumberger

Well: **C0009A**
Field: **Kumanonada, Offshore Kii peninsula**
Rig: **Chikyu**
Country: **JAPAN**

Natural Spectroscopy Gamma Ray (HNGS)
3652.2m − 2785.0m
Suite 1, Run 2 (1:200)