**Schlumberger**

Company: **International Ocean Discovery Program**

Well: **Expedition 392, Site U1580 A**
Field: **Agulhas Plateau Cretaceous Climate**
Rig: **JOIDES Resolution** Ocean: **Southern**

Rig: JOIDES Resolution
Field: Agulhas Plateau Cretaceous Clim
Location: Latitude: S 40.78589 Deg
Well: Expedition 392, Site U1580 A
Company: International Ocean Discovery Pr

High Resolution Laterolog (HRLA)
Litho Density (HLDS) / Porosity (APS)
Natural Gamma / MSS (HNGS)

LOCATION

Latitude: S 40.78589 Deg
Longitude:E 26.606895 Deg

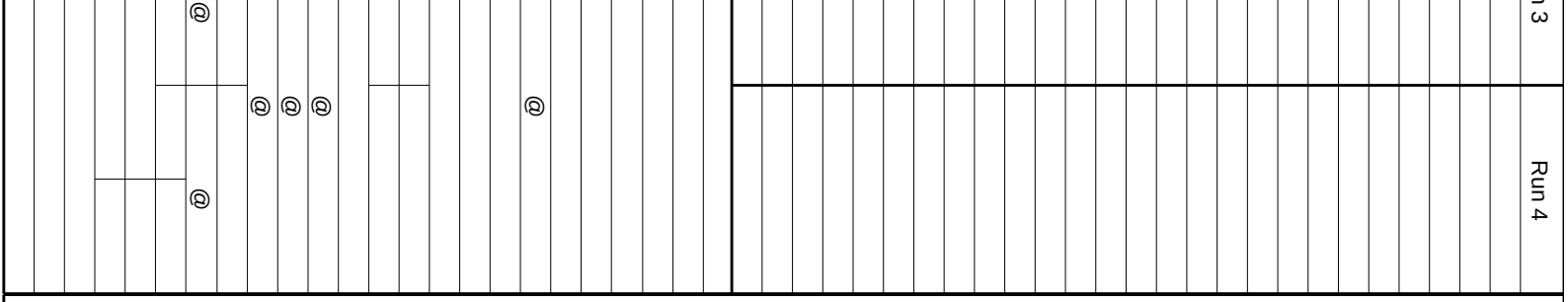
Elev.: K.B. 0.00 m
G.L. −2571.50 m
D.F. 0.00 m

Permanent Datum: Sea Floor — Elev.: −2571.50 m
Log Measured From: Rig Floor — 2571.50 m above Perm. Datum
Drilling Measured From: Rig Floor

| API Serial No. | S*40.78589 | E*26.606895 | |
|---|---|---|---|

| | Run 1 | Run 2 | Run |
|---|---|---|---|
| Logging Date | 5−Mar−2022 | | |
| Run Number | 1 | | |
| Depth Driller | 3105.4 m | | |
| Schlumberger Depth | 3093 m | | |
| Bottom Log Interval | 3093 m | | |
| Top Log Interval | 2571 m | | |
| Casing Driller Size @ Depth | 5.500 in @ 2574.7 m | @ | |
| Casing Schlumberger | 2569 m | | |
| Bit Size | 9.875 in | | |
| Type Fluid In Hole | Seawater | | |
| MUD Density / Viscosity | 1.03 g/cm3 | | |
| MUD Fluid Loss / PH | | 8.07 | |
| MUD Source Of Sample | Mudpit | | |
| RM @ Measured Temperature | 0.220 ohm.m @ 23 degC | @ | |
| RMF @ Measured Temperature | @ | @ | |
| RMC @ Measured Temperature | @ | @ | |
| Source RMF / RMC | N/A | N/A | |
| RM @ MRT / RMF @ MRT | 0.301 @ 11 | @ 11 | @ / @ |
| Maximum Recorded Temperatures | 11 degC | | |
| Circulation Stopped / Time | 5−Mar−2022 | 9:00 | |
| Logger On Bottom / Time | 6−Mar−2022 | 2:39 | |
| Unit Number / Location | 627314 | Larose, LA | |
| Recorded By | K. Swain | | |
| Witnessed By | Z. Mateo | | |

| | Run 1 | Run 2 | Run |
|---|---|---|---|
| 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 | | | |




DISCLAIMER

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

| OTHER SERVICES1 | OTHER SERVICES2 |
|---|---|
| OS1: FMS/DSI | OS1: |
| OS2: UBI | OS2: |
| OS3: | OS3: |
| OS4: | OS4: |
| OS5: | OS5: |

| REMARKS: RUN NUMBER 1 | REMARKS: RUN NUMBER 2 |
|---|---|
| Hole drilled with RCB BHA at 9 7/8" BS | |
| Drill pipe set at 2652.6 mbrf. | |
| Depth recorded from drill floor; logs presented as−logged without depth corrections or shifts, as per client instructions. | |
| All logs presented in wireline measured depth below rig floor (MDBRF). | |
| Caliper opened during upward passes; closed inside pipe and while logging down. | |
| Hole size corrections made using caliper measurements for upward passes bit size | |
| used for downlog corrections. | |
| AHC used from TD then switched off to facilitate pipe entry. | |
| Caliper closed prior to shutting off compensator and entering pipe or casing. | |
| Density calibration unaffected by low count rates due to weaker gamma source | |
| than expected by the software, ie. lower bounds of count rate windows. | |

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 19C0−187
FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

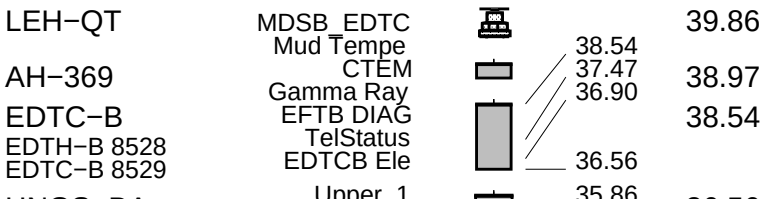
# EQUIPMENT DESCRIPTION

RUN 1

## SURFACE EQUIPMENT

SFT−281 1
SFT−178 1
GSR−U 6098
WITM (EDTS)−A 1

## DOWNHOLE EQUIPMENT




RUN 2

HNGS−BA 36.56
HNGS−BA 99
HNSH−BA 102
Upper_1 35.64
Lower_2

HNGC−B 34.06
HNGC Stat 33.52

ILE−F 32.99
ILE−F 72
Status

Minitron
Near TD 30.55
Near Arr
AH−178

APS−C 30.25
APH−AC 152
APS−C 249
MNTR−F 51002
Near 27.80
Far Arr 27.72
Far 27.60
Far TD 27.50

AH−191 26.30

LDSC−B 26.00
LDSC Stat 25.46

HLDS 24.93
HLDV−D 35
HLDS−D 35
GSR−ZA 2945
HLDP−C 35
HEH−H 35
Caliper
SS LS Status 20.87

AH−184_#1737 20.11

AH−ECHMRA_#4999 19.50
AH−ECHMRA_#4999 4999

AH−184_#1701 16.61

AH−MCD 16.00
AH−MCD 82

HRLT−B 13.72
HRUH−B 975
HRUC−B 964
HRLS−B 768
HRLH−B 1869
HRLC−B 1897
AH−270 1708
High Res. 10.14

AH−MCD1 6.35
AH−MCD1 1

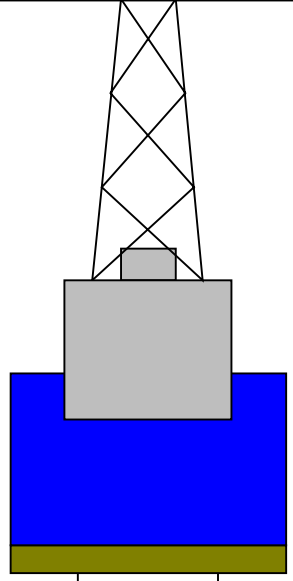
AH−230 4.07

MSS_LDEO−A 3.67
ELIC−A 1
MSS_LDEO−A 1
Hi−Res 3.36
Dual Coil 0.39
DF ACCZ
Tension HV 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

| Production String | (in) OD | (in) ID | (M) MD | Well Schematic | (M) MD | (in) OD | (in) ID | Casing String |
|---|---|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Kelly Bushing Elevation | | 0 |  | | |
| Derrick Floor Elevation | | 0 | | | |
| Mean Sea Level | | 11 | | | |
| | | | | 4.1 | |
| | | | | 2571.5 4.1 | Sea Floor |
| | | | | 2652.6 9.875 | Open Hole |
| | | | | 3105.4 | Total Depth |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | Flip_MSS_LDEO_HRLA_047LUP | | PRODUCER | 08−Mar−2022 14:34 | 3057.1 M | 2514.6 M |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:71 | PRODUCER | 08−Mar−2022 14:46 | 3057.1 M | 2519.3 M |

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

**PIP SUMMARY**

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)

0 (GAPI) 100

Area1
From HCGR to HSGR

Downlog

HNGS Borehole Potassium (HBHK)

−0.05 (−−−−) 0.05

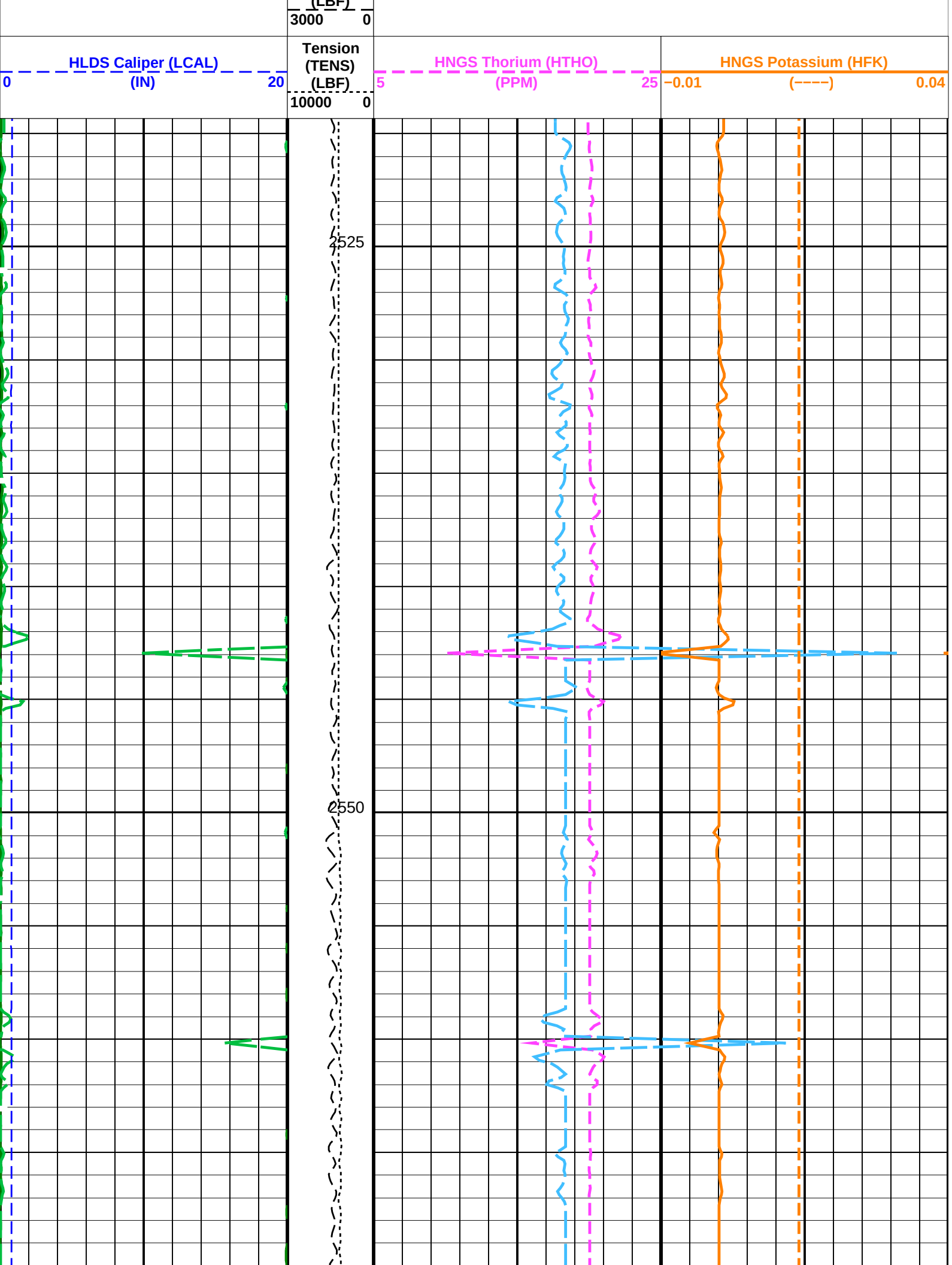
HNGS Computed Gamma Ray (HCGR)

0 (GAPI) 100

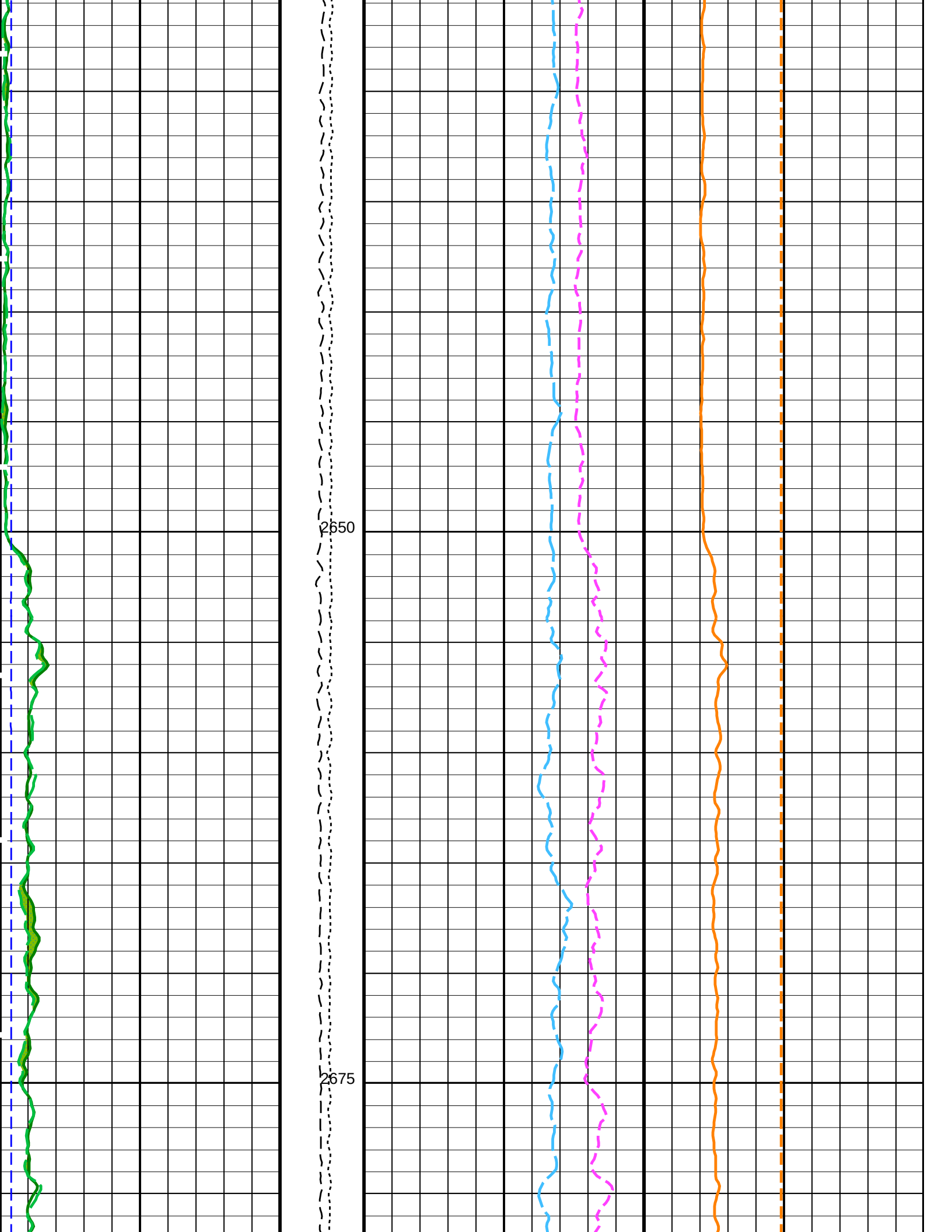
Calibrated Downhole Force (CDF)

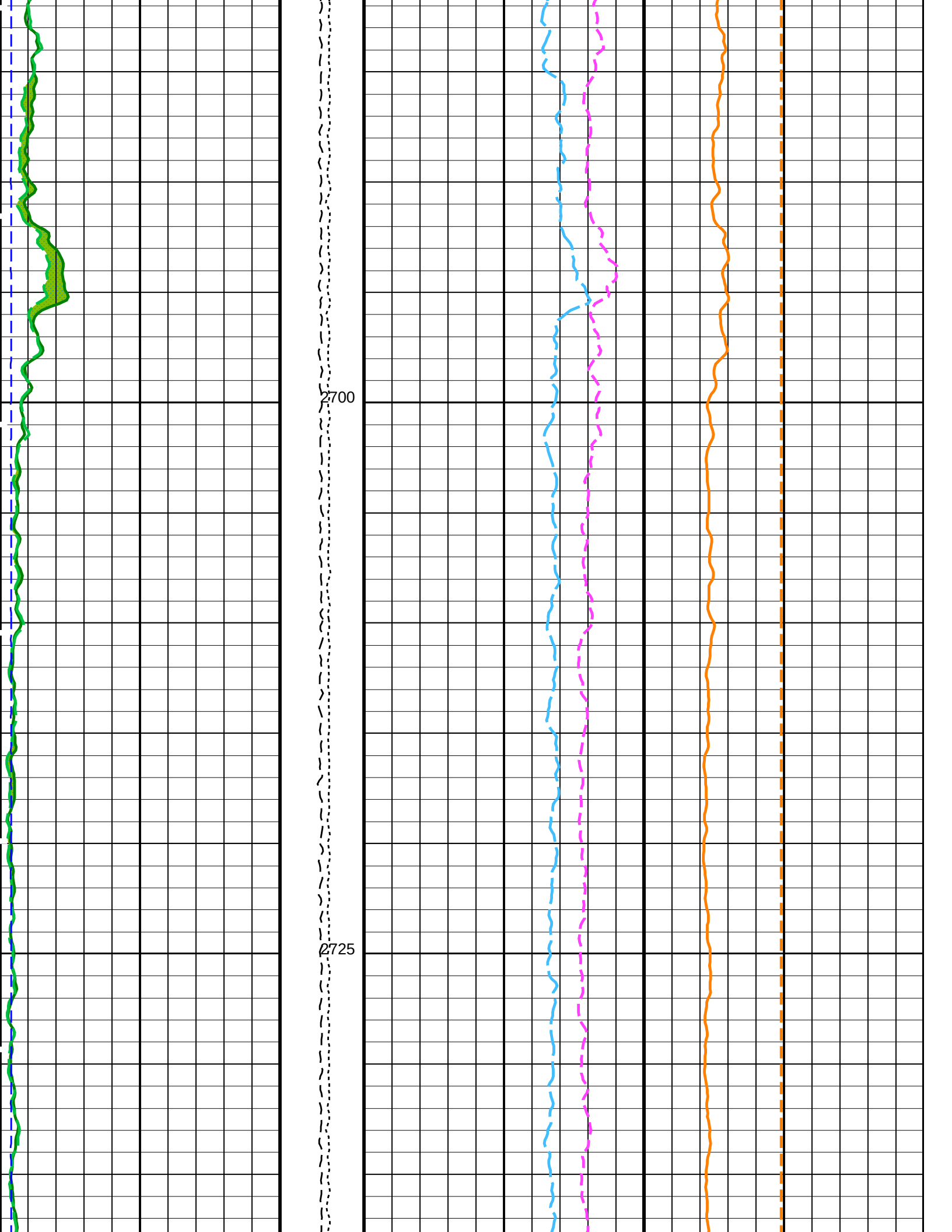
HNGS Uranium (HURA)

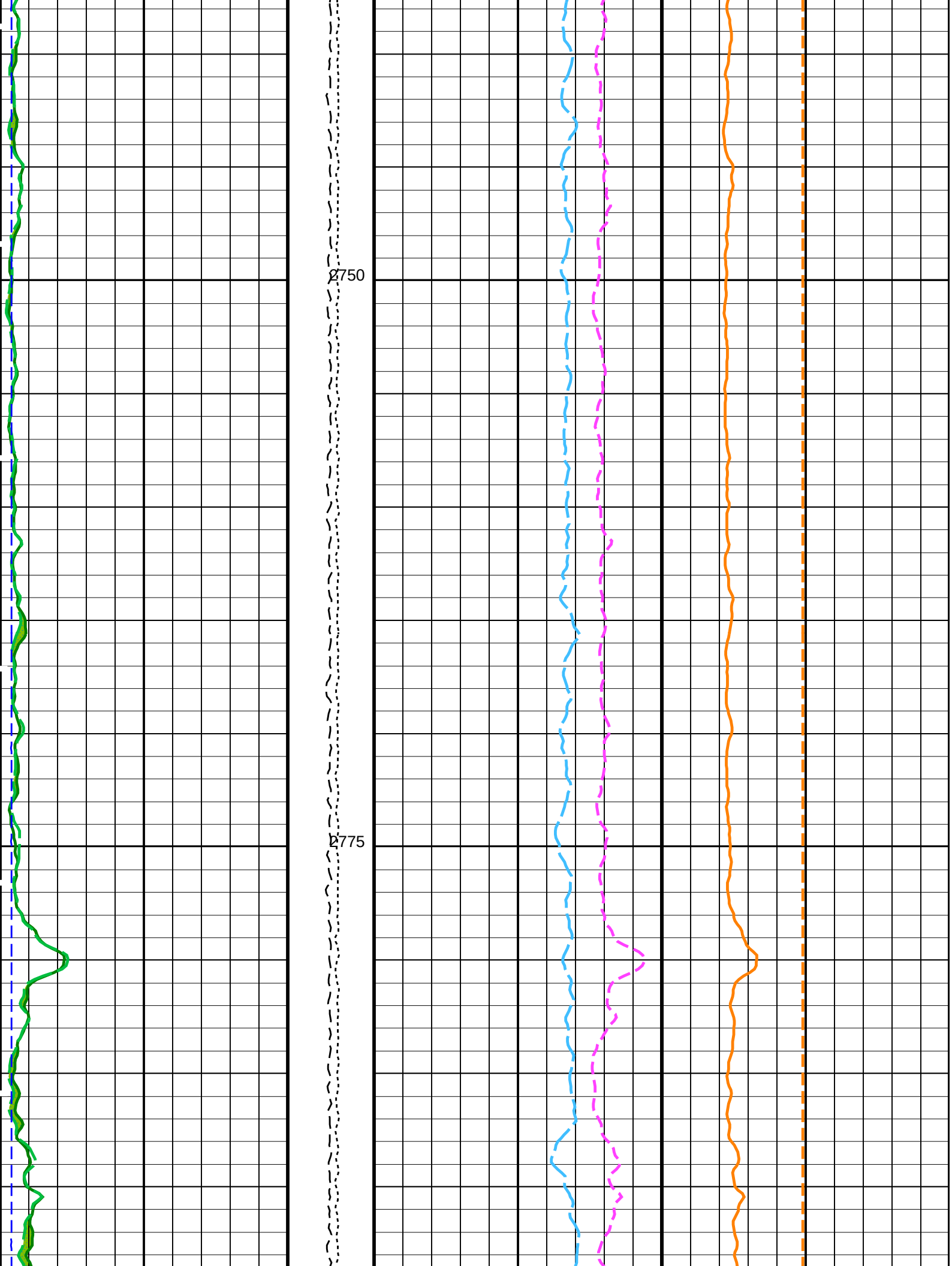
−5 (PPM) 10


(LBF)
3000
0
HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
5
(PPM)
25
HNGS Potassium (HFK)
−0.01
(−−−−)
0.04
2525
2550


2575
2600
2625


2650
2675


2700
2725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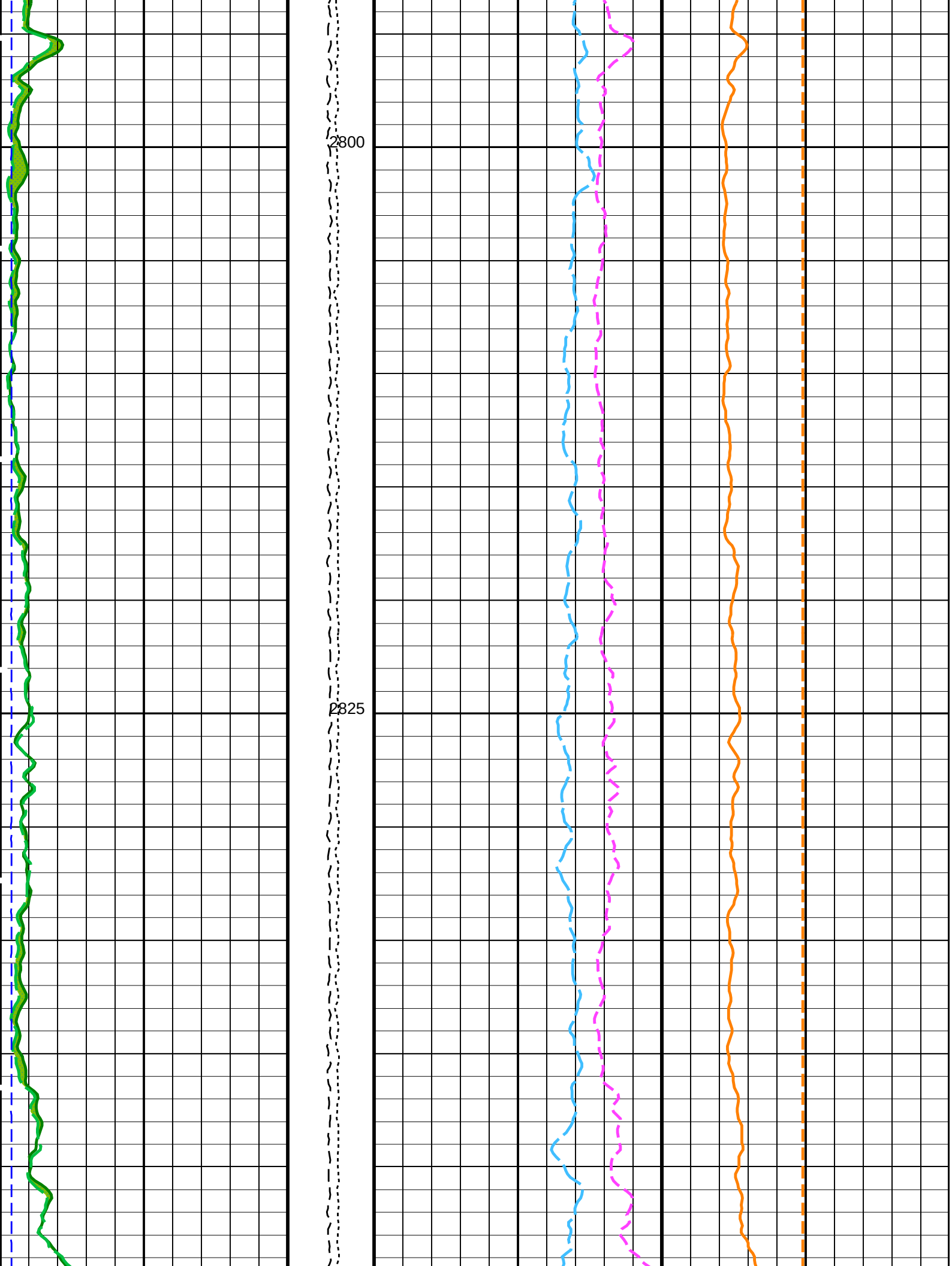
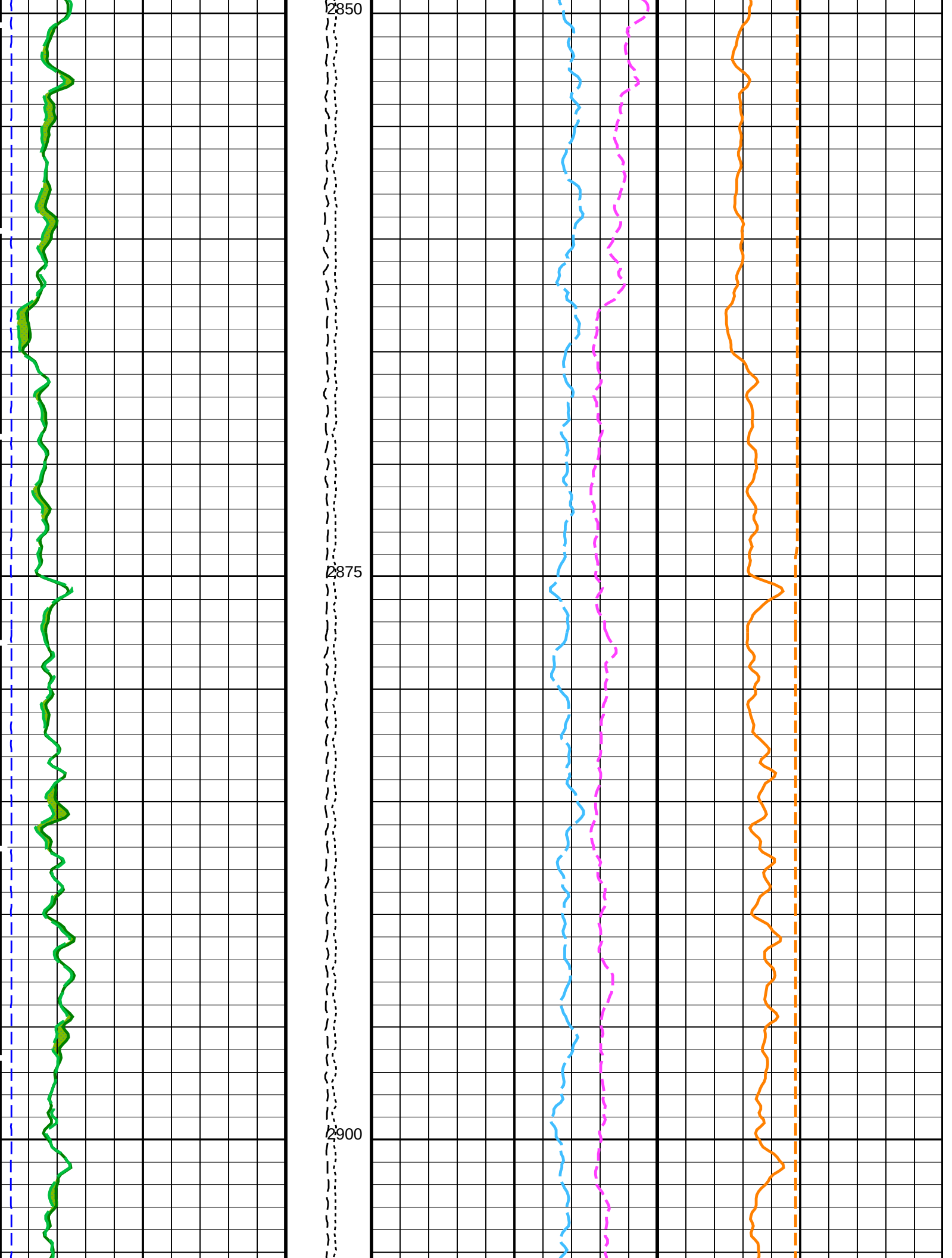
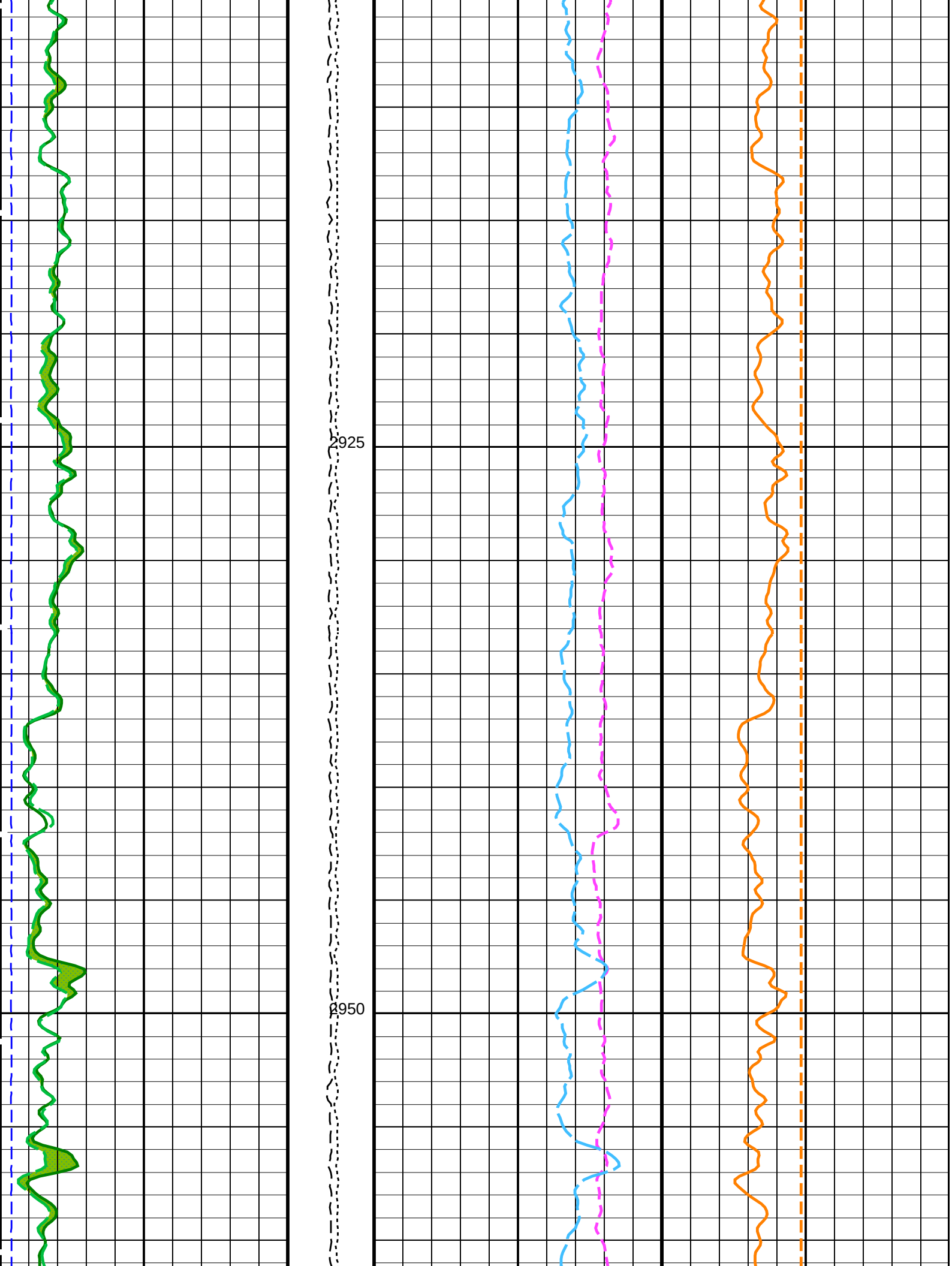

2800
2825


2850
2875
2900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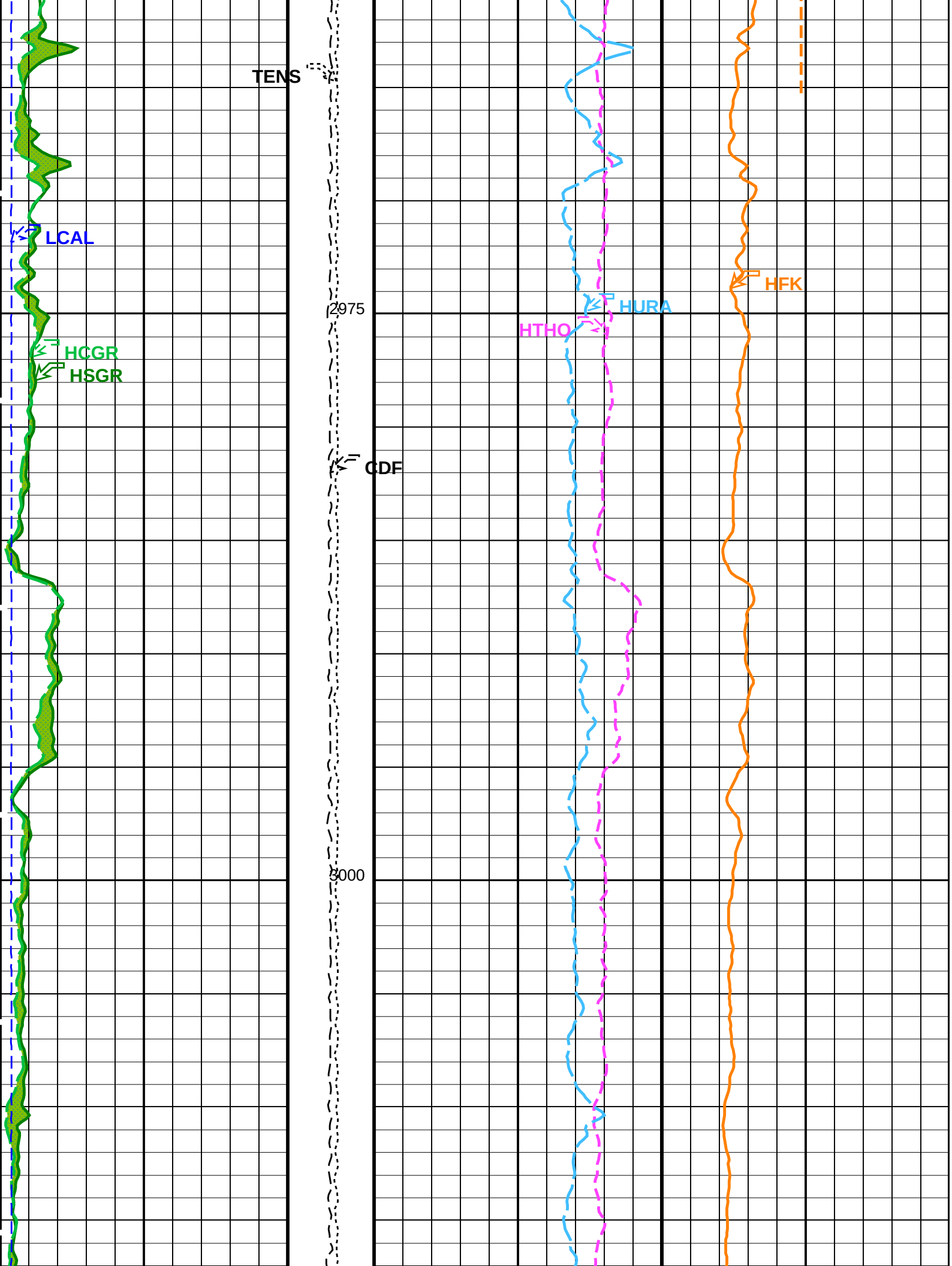
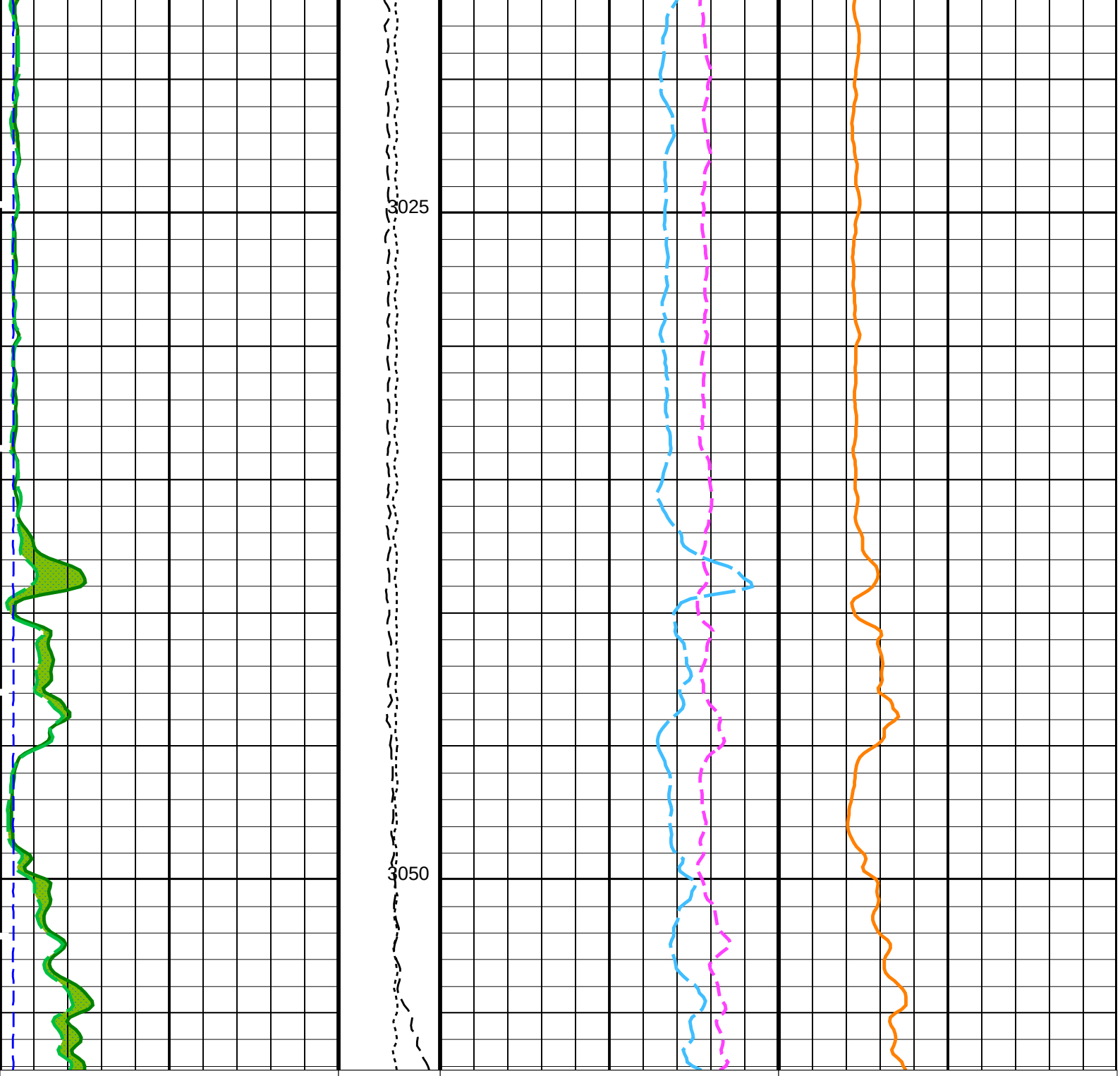
2950


TENS
LCAL
HCGR
HSGR
2975
CDF
HTHO
HURA
HFK
3000




HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10

Area1
From HCGR to HSGR

Downlog

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

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

PIP SUMMARY

Time Mark Every 60 S

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | BS | |
| | **APS−C: Accelerator−Porosity Tool** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | BS | |
| | **HNGS−BA: Hostile Natural Gamma Ray Sonde** | | |
| BAR1 | HNGS Detector 1 Barite Constant | 1 | |
| BAR2 | HNGS Detector 2 Barite Constant | 1 | |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 | |
| BHS | Borehole Status | OPEN | |
| CSD1 | Inner Casing Outer Diameter | 0 | IN |
| CSD2 | Outer Casing Outer Diameter | 0 | IN |
| CSW1 | Inner Casing Weight | 0 | LB/F |
| CSW2 | Outer Casing Weight | 0 | LB/F |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| GCSE | Generalized Caliper Selection | BS | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00153196 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| SGRC | HNGS Standard Gamma−Ray Correction Flag | YES | |
| TPOS | Tool Position | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.02642 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.04318 | |
| | **EDTC−B: Enhanced DTS Cartridge** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | BS | |
| | **System and Miscellaneous** | | |
| BS | Bit Size | 9.875 | IN |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| DO | Depth Offset for Playback | 0.0 | M |
| PP | Playback Processing | RECOMPUTE | |

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 08−Mar−2022 14:46

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Input DLIS Files

| | | | | | |
|---|---|---|---|---|---|
| DEFAULT | Flip_MSS_LDEO_HRLA_047LUP | PRODUCER | 08−Mar−2022 14:34 | 3057.1 M | 2514.6 M |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:71 | PRODUCER | 08−Mar−2022 14:46 | | |

Company: International Ocean Discovery Program Well: Expedition 392, Site U1580 A

## Input DLIS Files

| | | | | | |
|---|---|---|---|---|---|
| DEFAULT | Flip_MSS_LDEO_HRLA_047LUP | PRODUCER | 08−Mar−2022 14:34 | 3057.1 M | 2514.6 M |

## Output DLIS Files

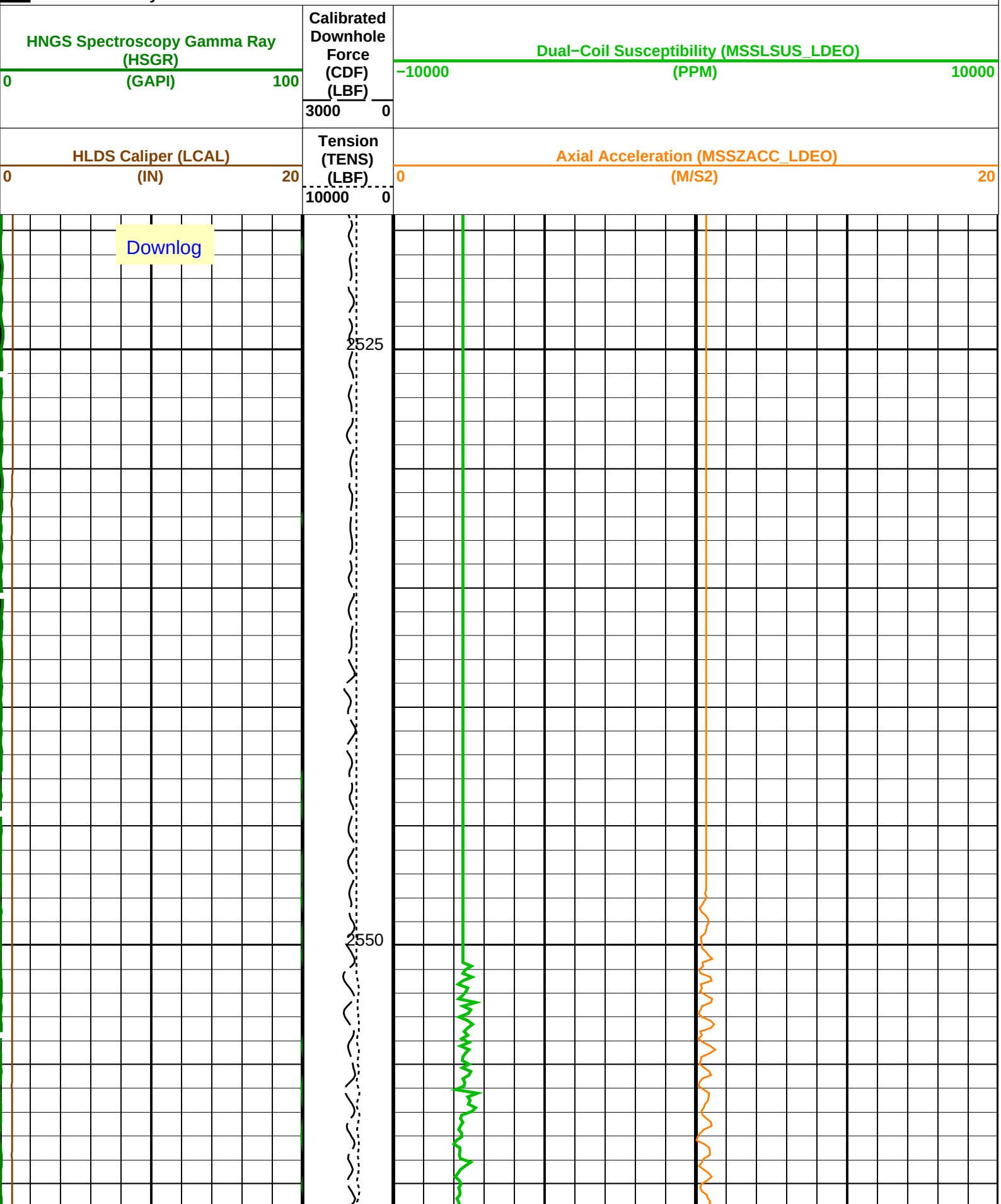
| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:71 | PRODUCER | 08−Mar−2022 14:46 | 3057.1 M | 2519.3 M |

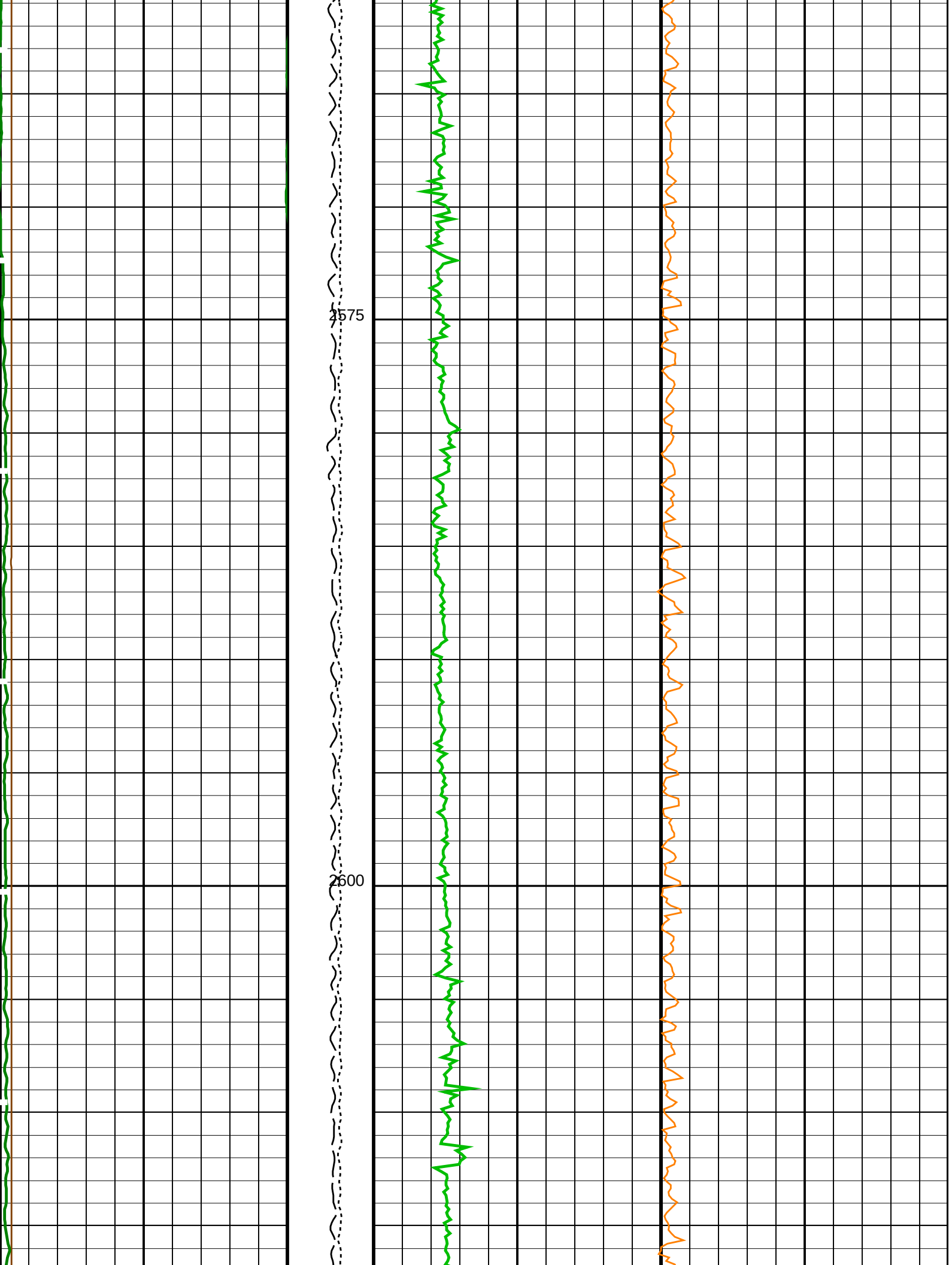
## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## PIP SUMMARY

Time Mark Every 60 S

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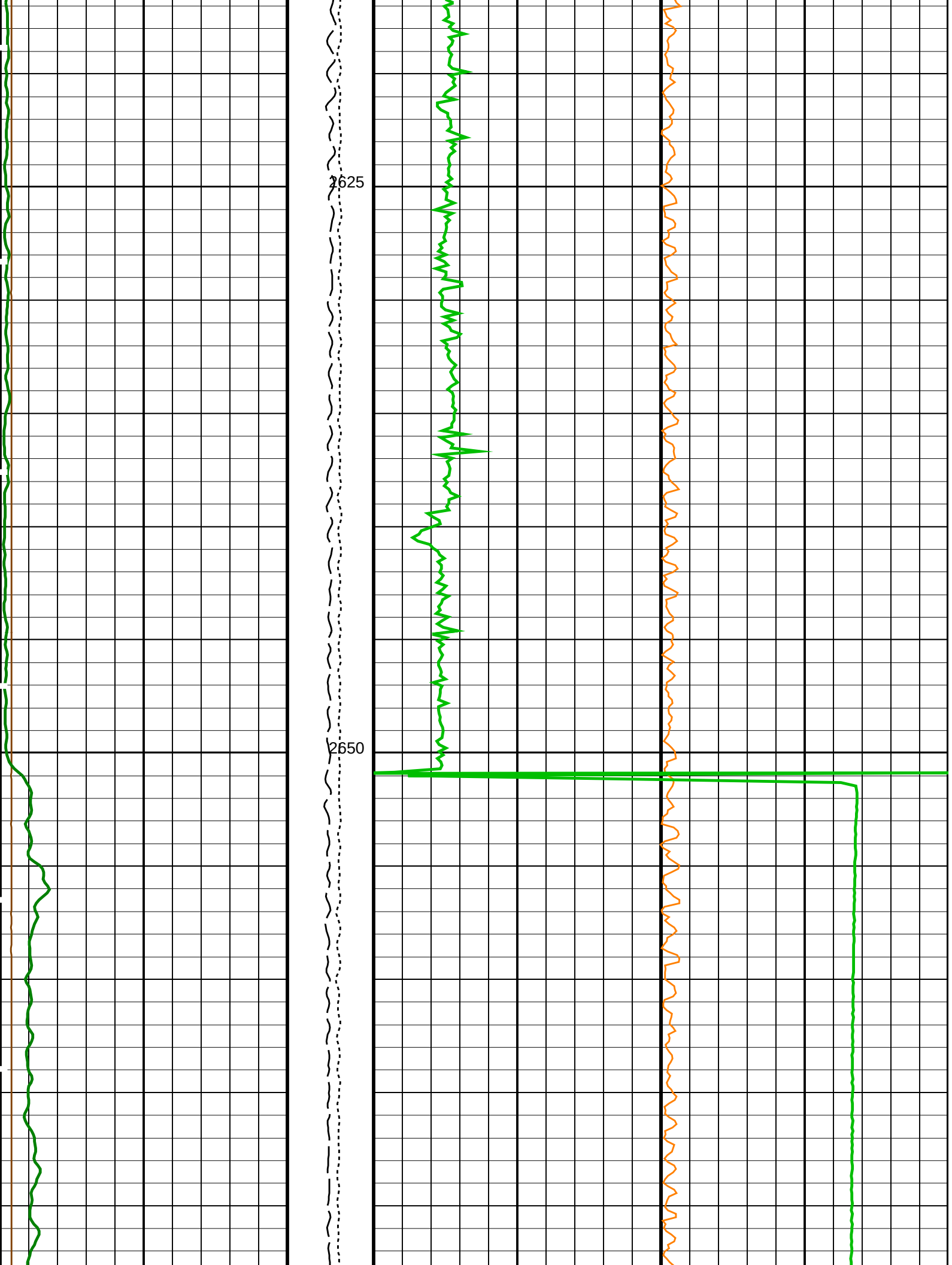
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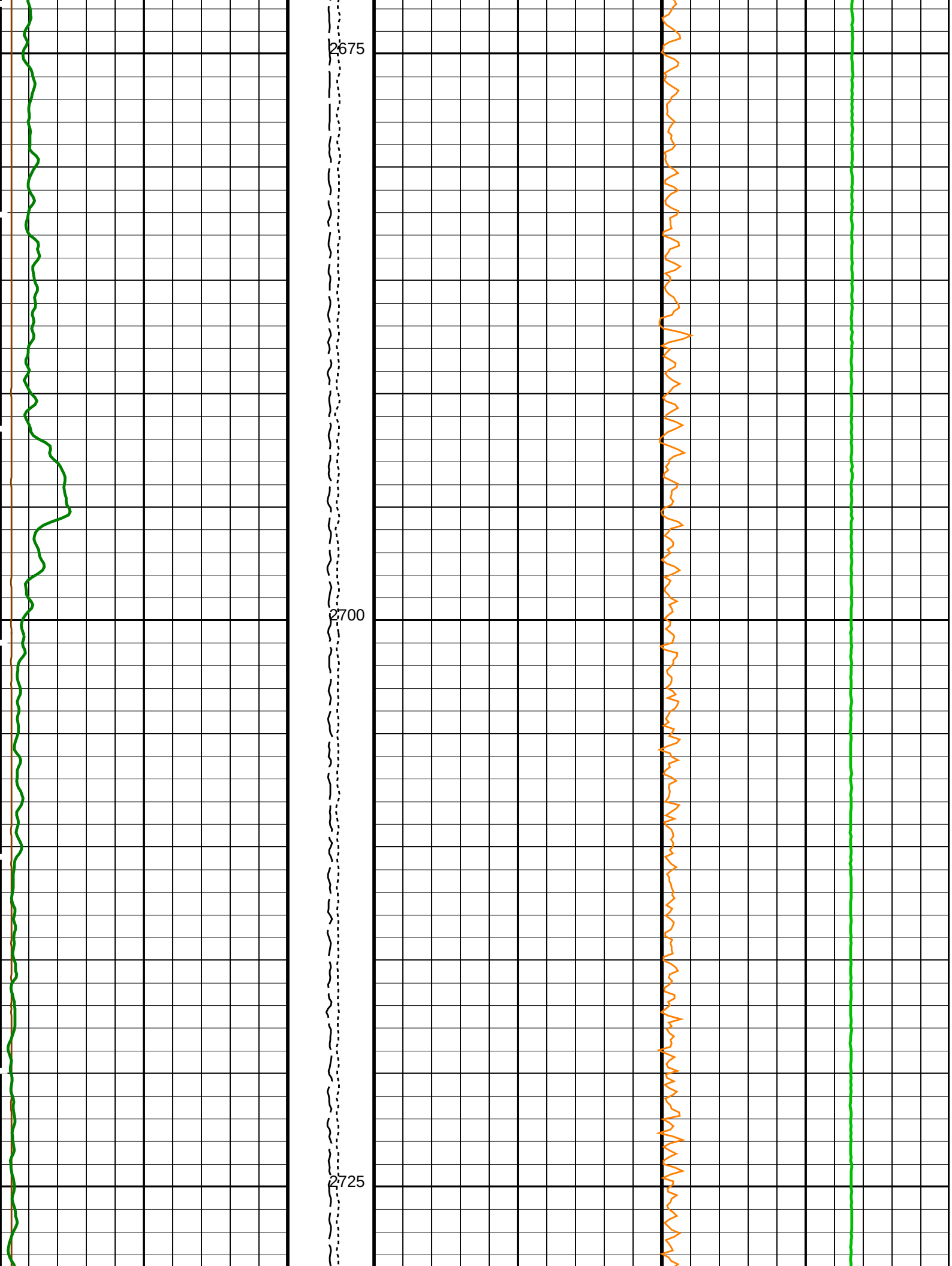
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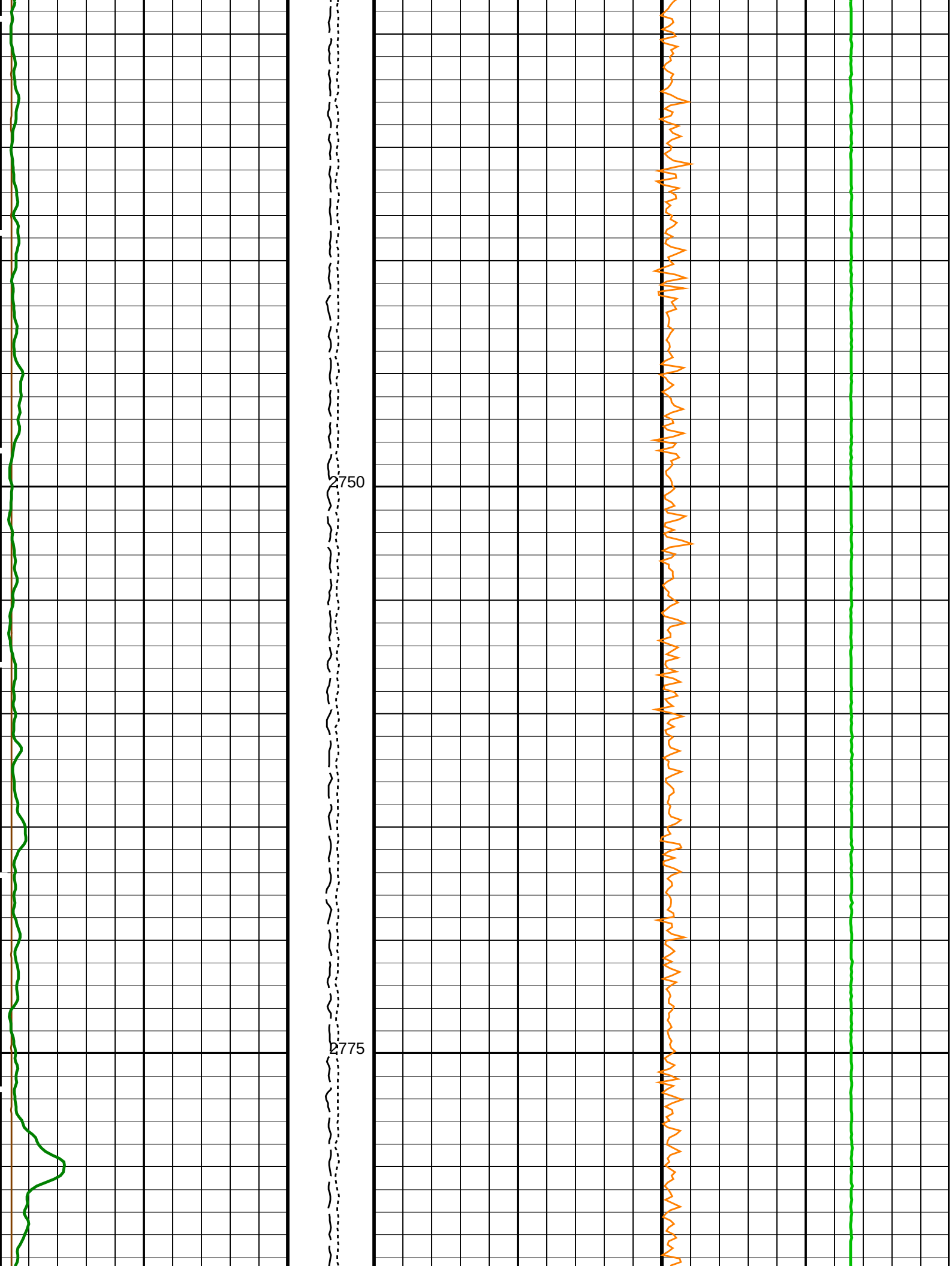
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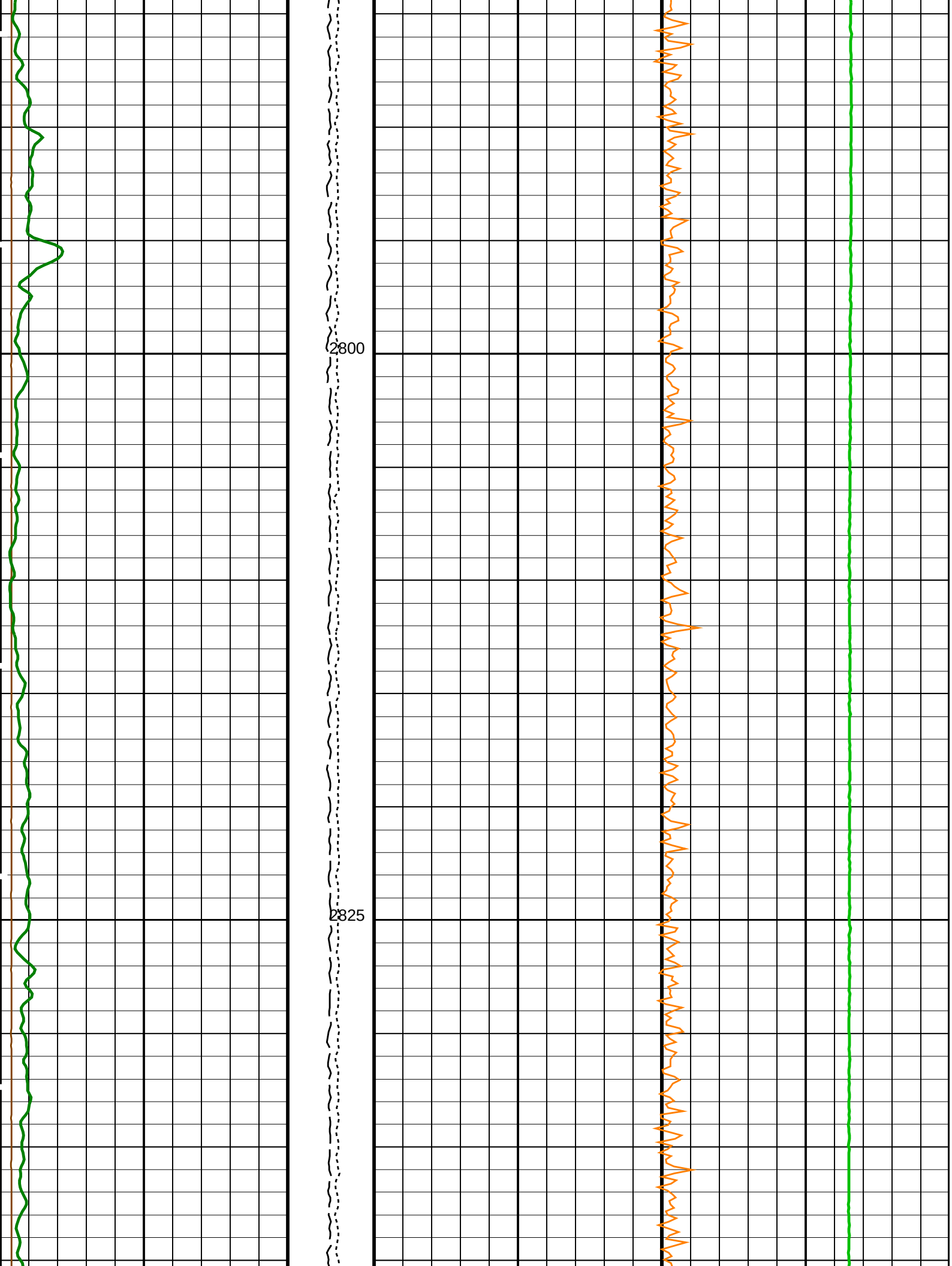
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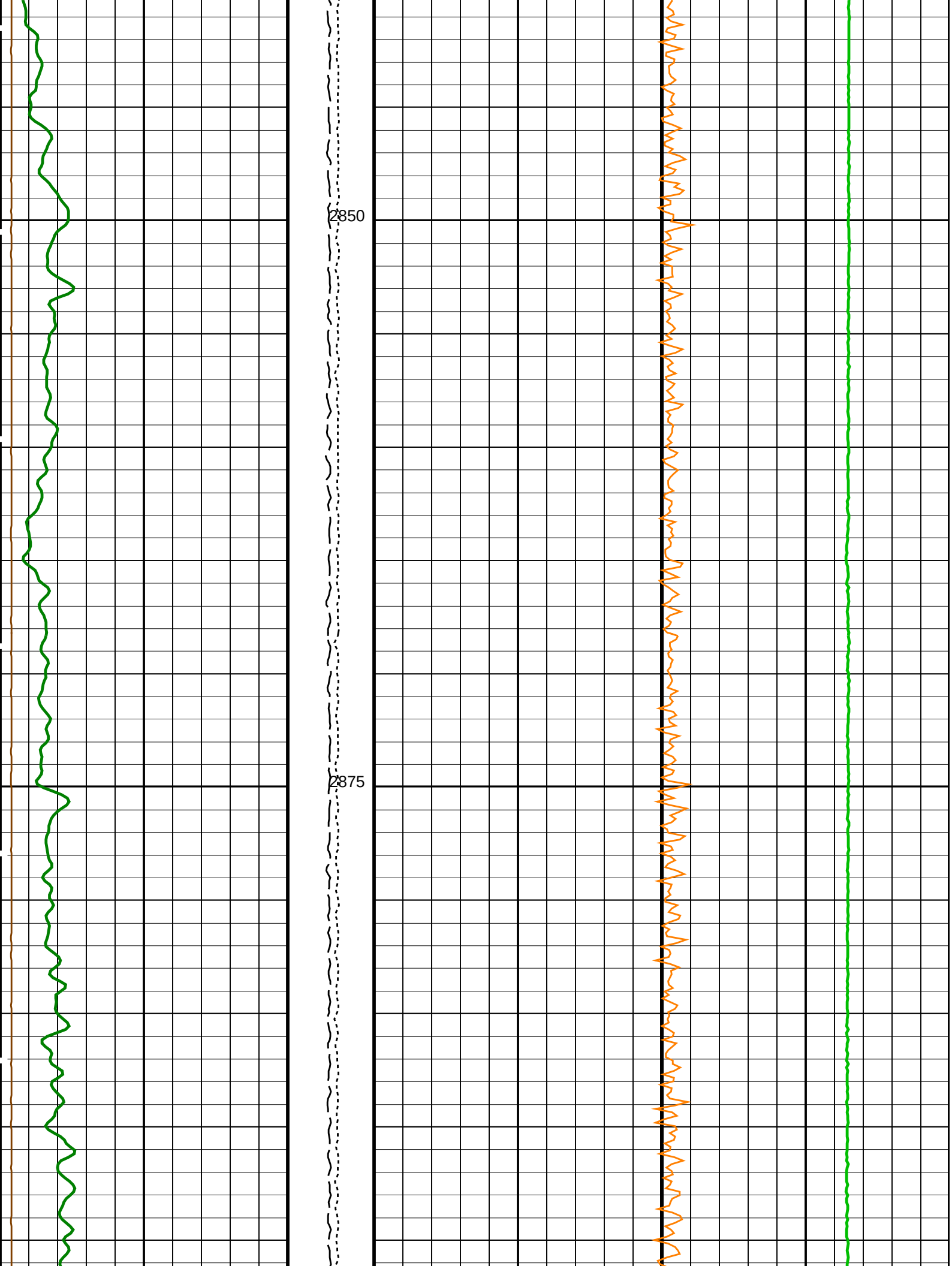
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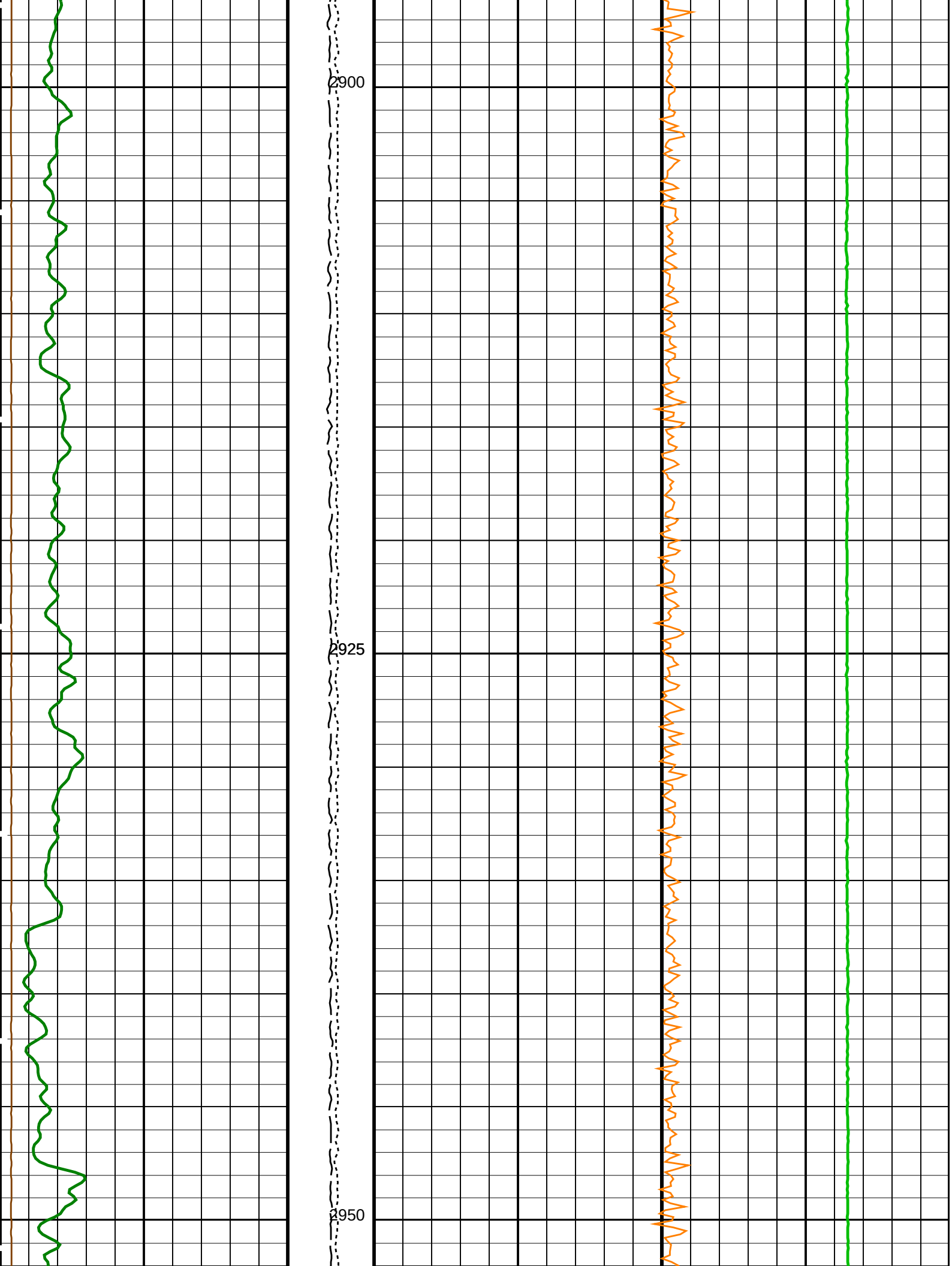
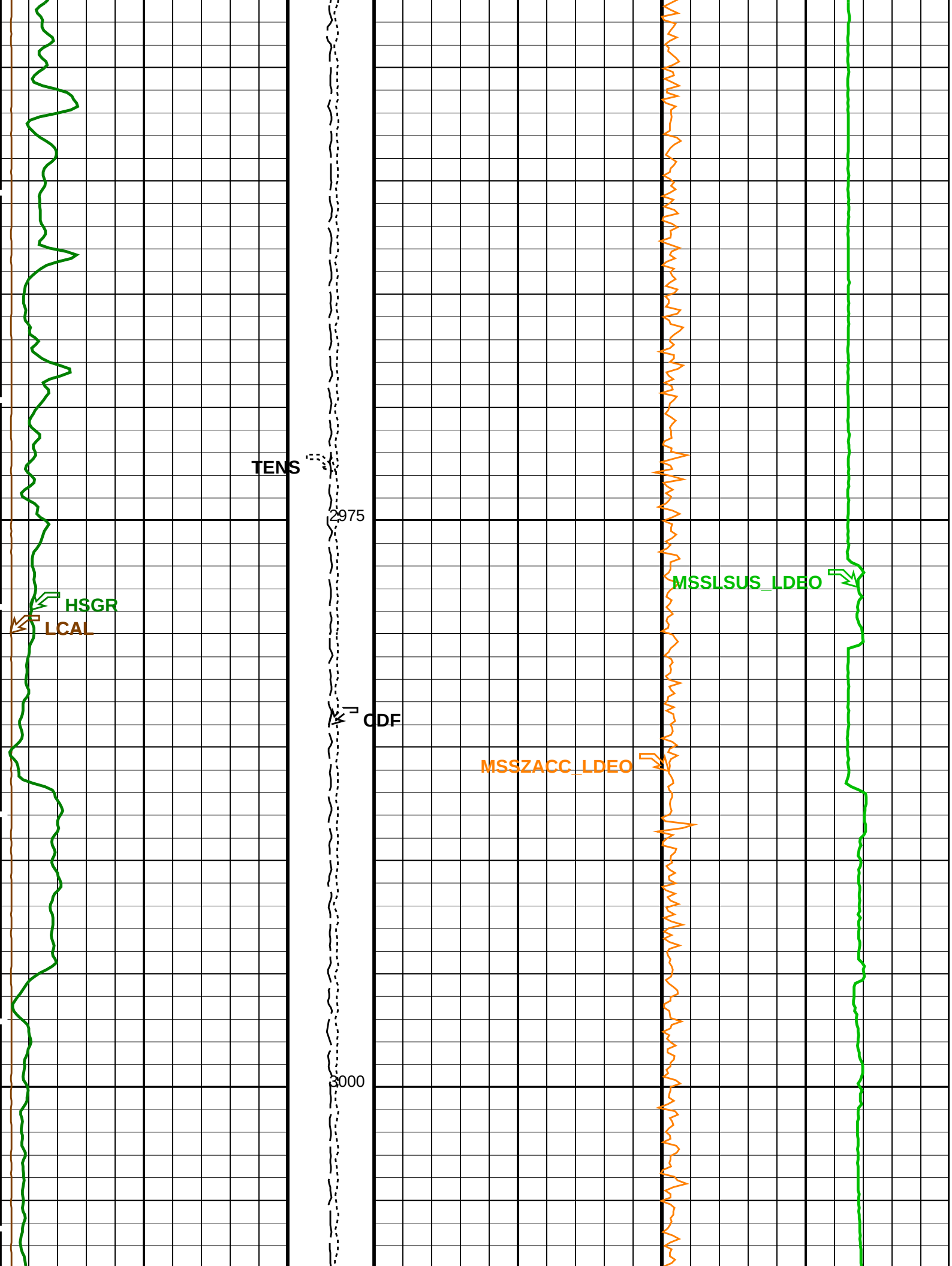
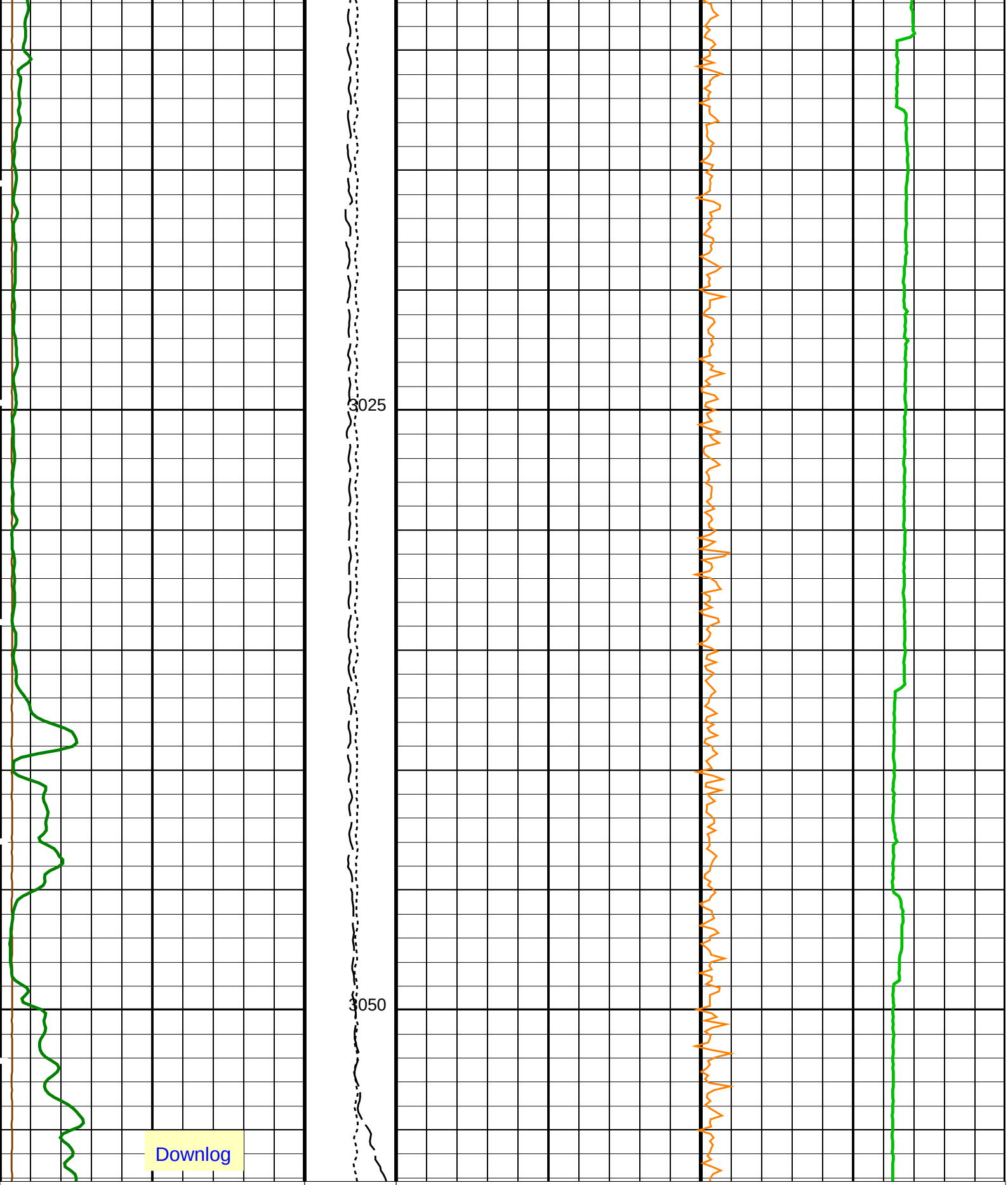

2900
2925
2950


TENS
2975
HSGR
LCAL
CDF
MSSLSUS_LDEO
MSSZACC_LDEO
3000




HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

Axial Acceleration (MSSZACC_LDEO)
0 (M/S2) 20

HNGS Spectroscopy Gamma Ray (HSGR)

Calibrated Downhole Force (CDF)

Dual−Coil Susceptibility (MSSLSUS_LDEO)
−10000 (PPM) 10000

| | | | | | |
|---|---|---|---|---|---|
| 0 | (GAPI) | 100 | (LBF) | | |
| | | | 3000 | 0 | |

**PIP SUMMARY**

**Time Mark Every 60 S**

# Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| | **HLDS: Hostile Litho−Density Sonde** | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | OFF | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| | **APS−C: Accelerator−Porosity Tool** | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |

| | | | |
|---|---|---|---|
| PSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | NO | |
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| 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) | 20 | 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 | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00153196 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.02642 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.04318 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |

| | | | |
|---|---|---|---|
| DO | Depth Offset for Playback | 0.0 | M |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| PP | Playback Processing | RECOMPUTE | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3093.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: MSS_Logging  Vertical Scale: 1:200  Graphics File Created: 08−Mar−2022 14:46

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Input DLIS Files

| | | | | | |
|---|---|---|---|---|---|
| DEFAULT | Flip_MSS_LDEO_HRLA_047LUP | PRODUCER | 08−Mar−2022 14:34 | 3057.1 M | 2514.6 M |

## Output DLIS Files

| | | | | | |
|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:71 | PRODUCER | 08−Mar−2022 14:46 | |


## Input DLIS Files

| | | | | | |
|---|---|---|---|---|---|
| DEFAULT | Flip_MSS_LDEO_HRLA_047LUP | PRODUCER | 08−Mar−2022 14:34 | 3057.1 M | 2514.6 M |


## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:71 | PRODUCER | 08−Mar−2022 14:46 | 3057.1 M | 2519.3 M |


## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |


PIP SUMMARY

Time Mark Every 60 S

HRLT True Resistivity (RT_HRLT)
0.2 (OHMM) 2000

HRLT Resistivity 1 (RLA1)
0.2 (OHMM) 2000

HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 2000

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

Downlog

HRLT Resistivity 3 (RLA3)
0.2 (OHMM) 2000

HLDS Bulk Density (RHOM)
0 (G/C3) 4

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 2000

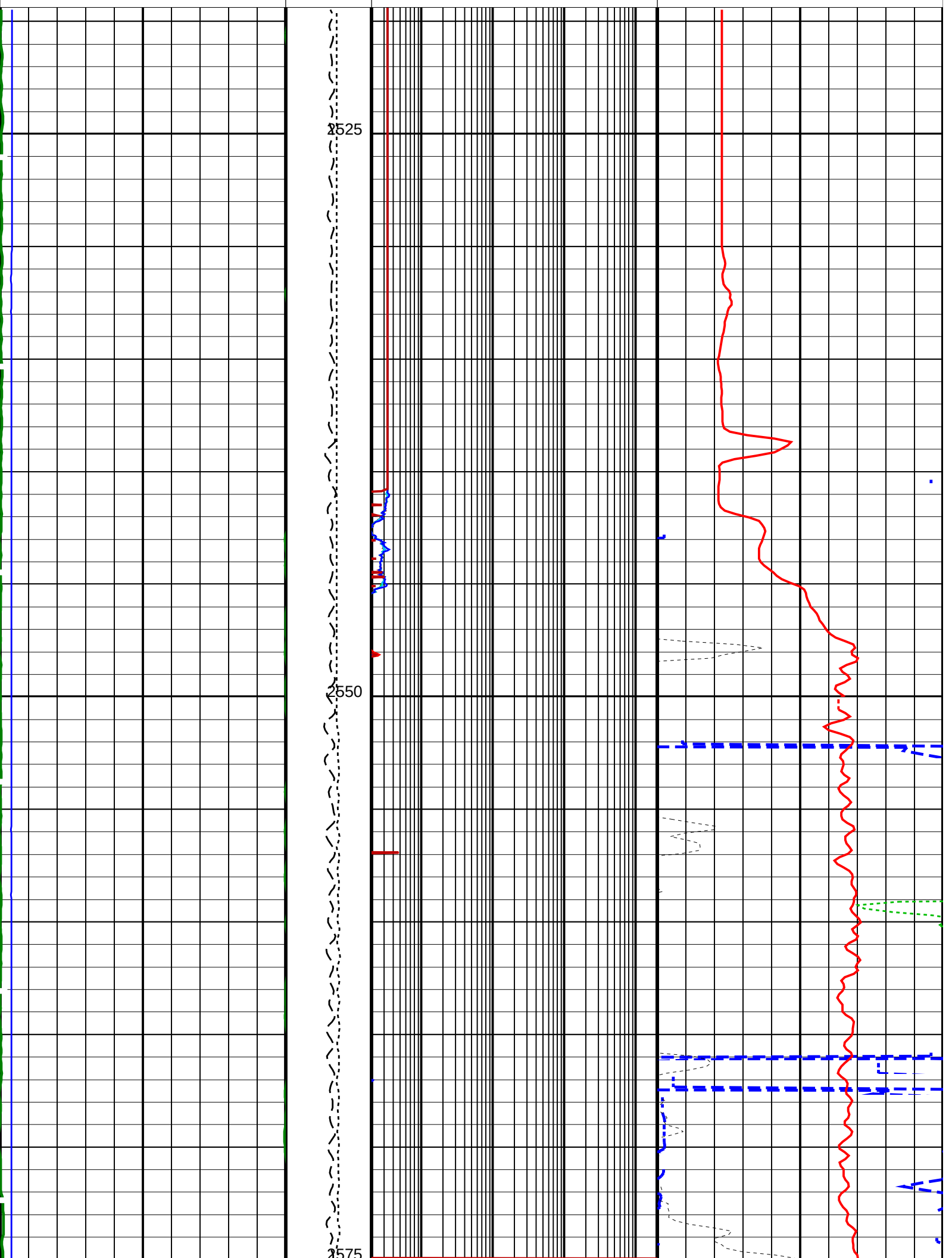
HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

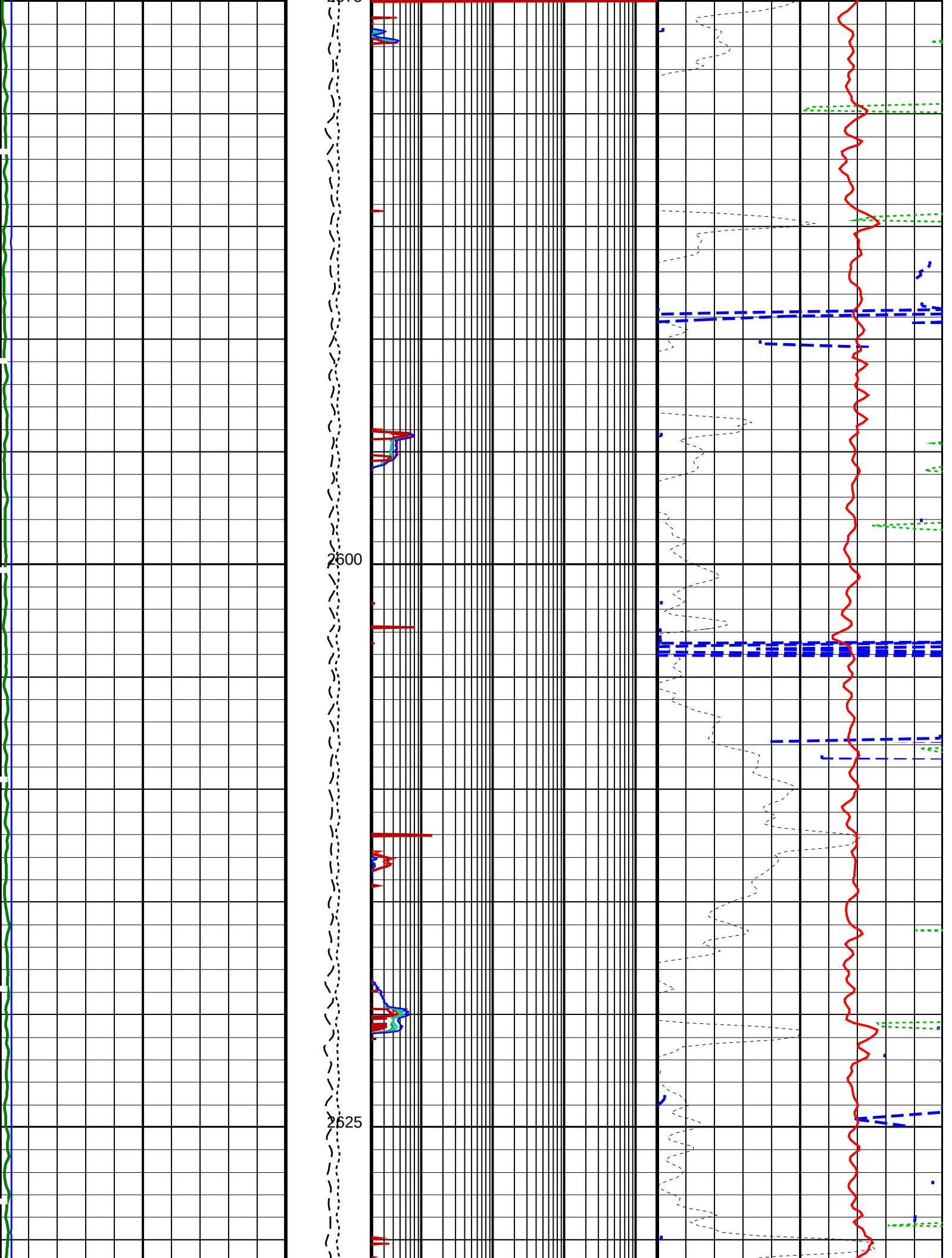
HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HRLT Resistivity 4 (RLA4)
0.2 (OHMM) 2000

APS Near/Far Corrected Limestone Porosity (FPLC)
100 (PU) 0


2525
2550
2575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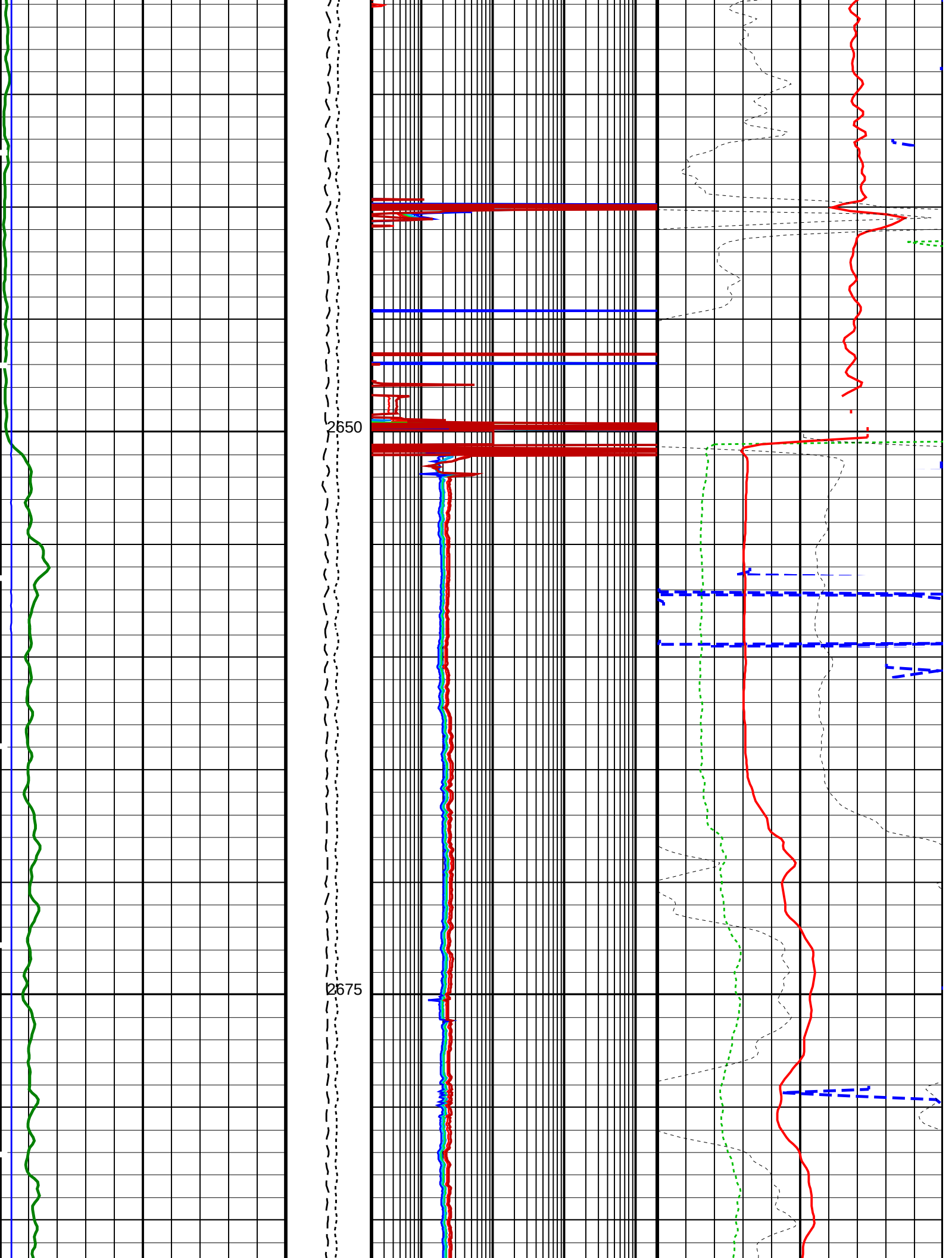
2625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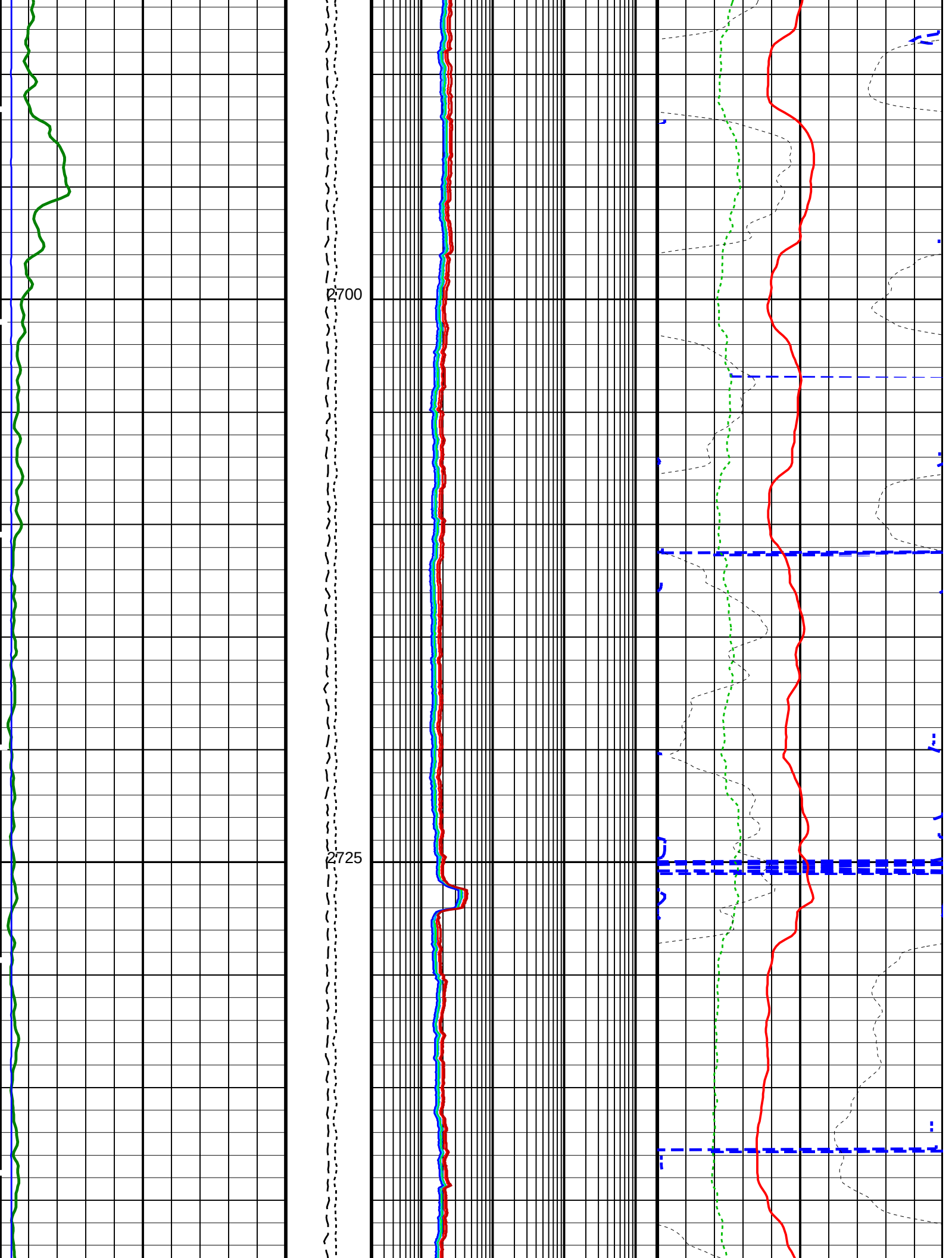
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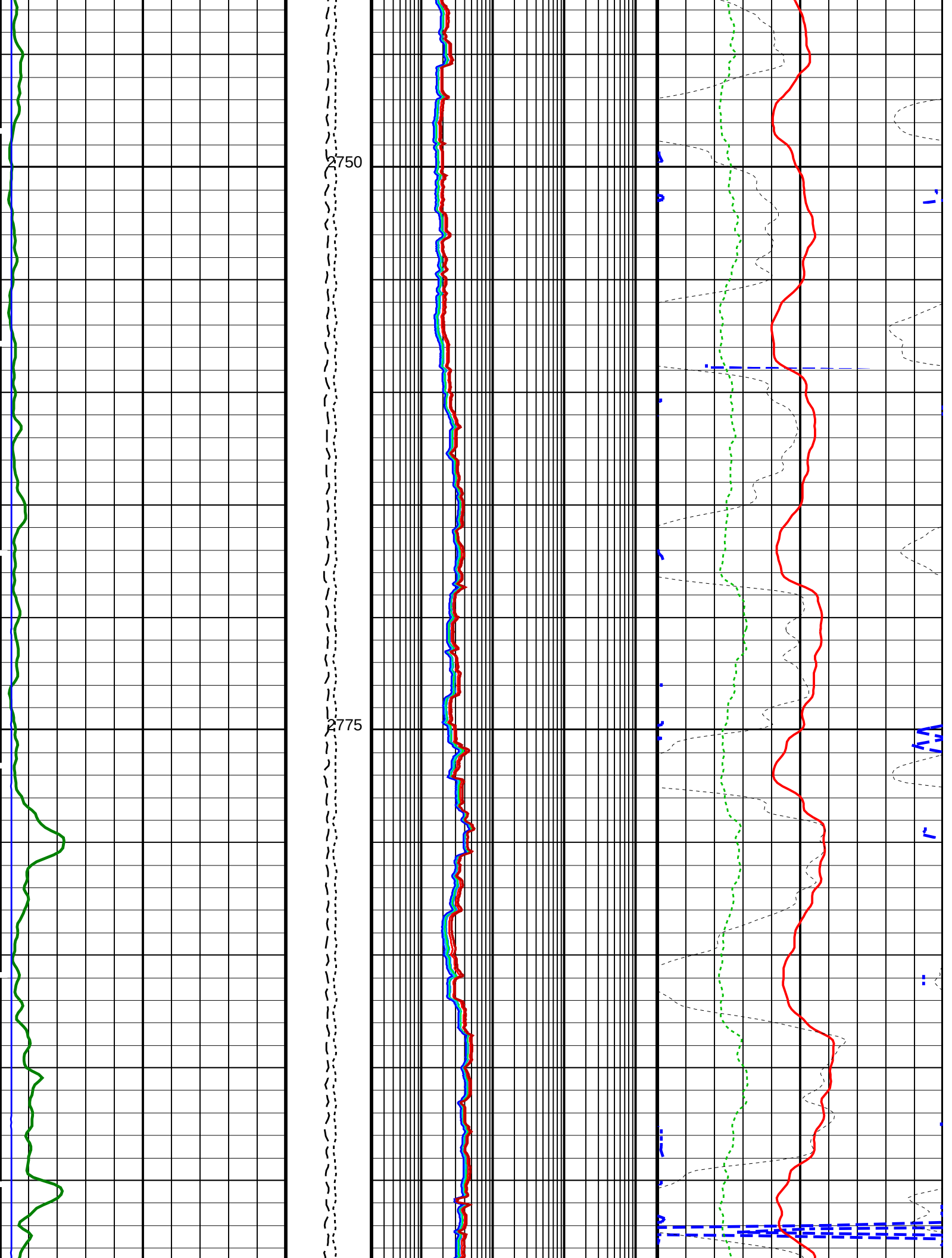
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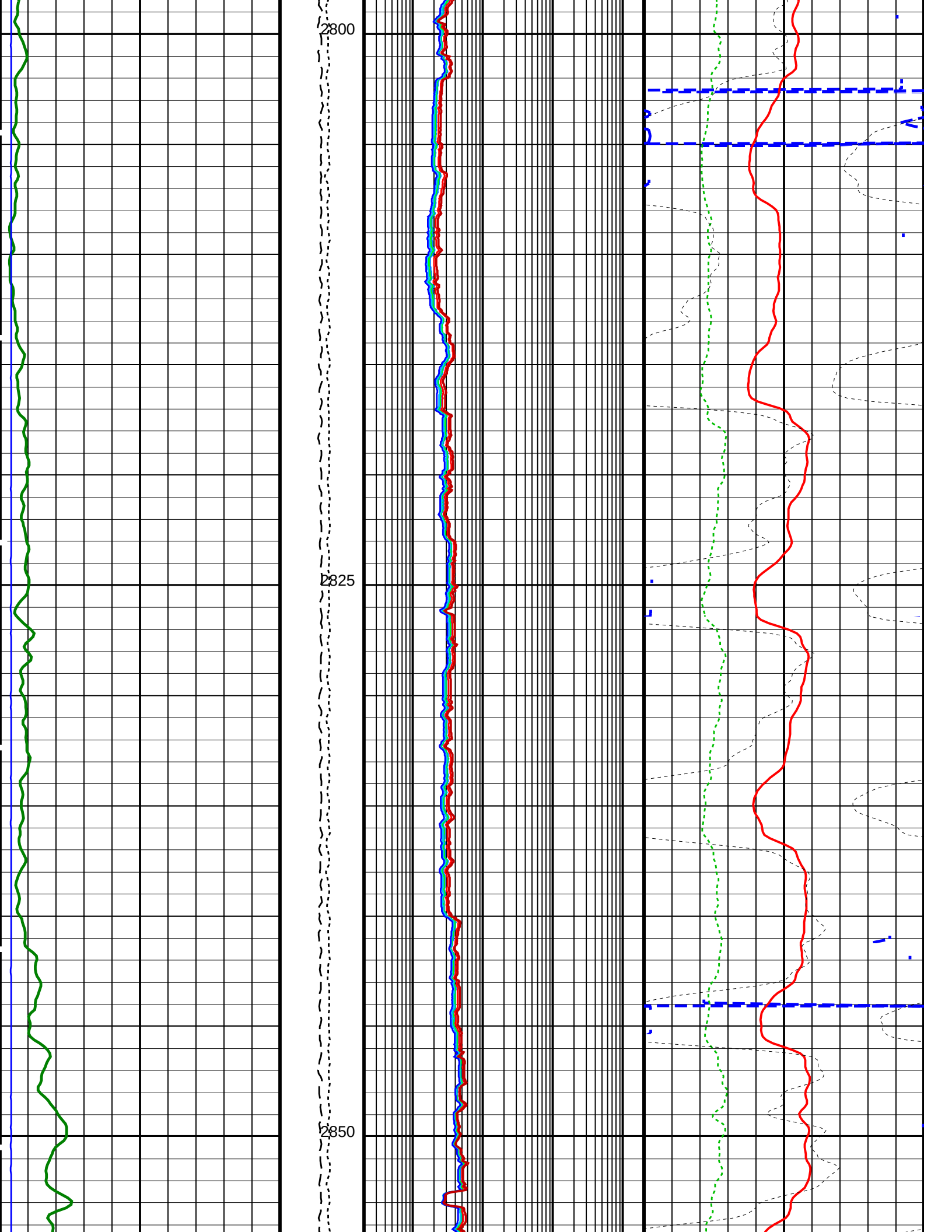
2775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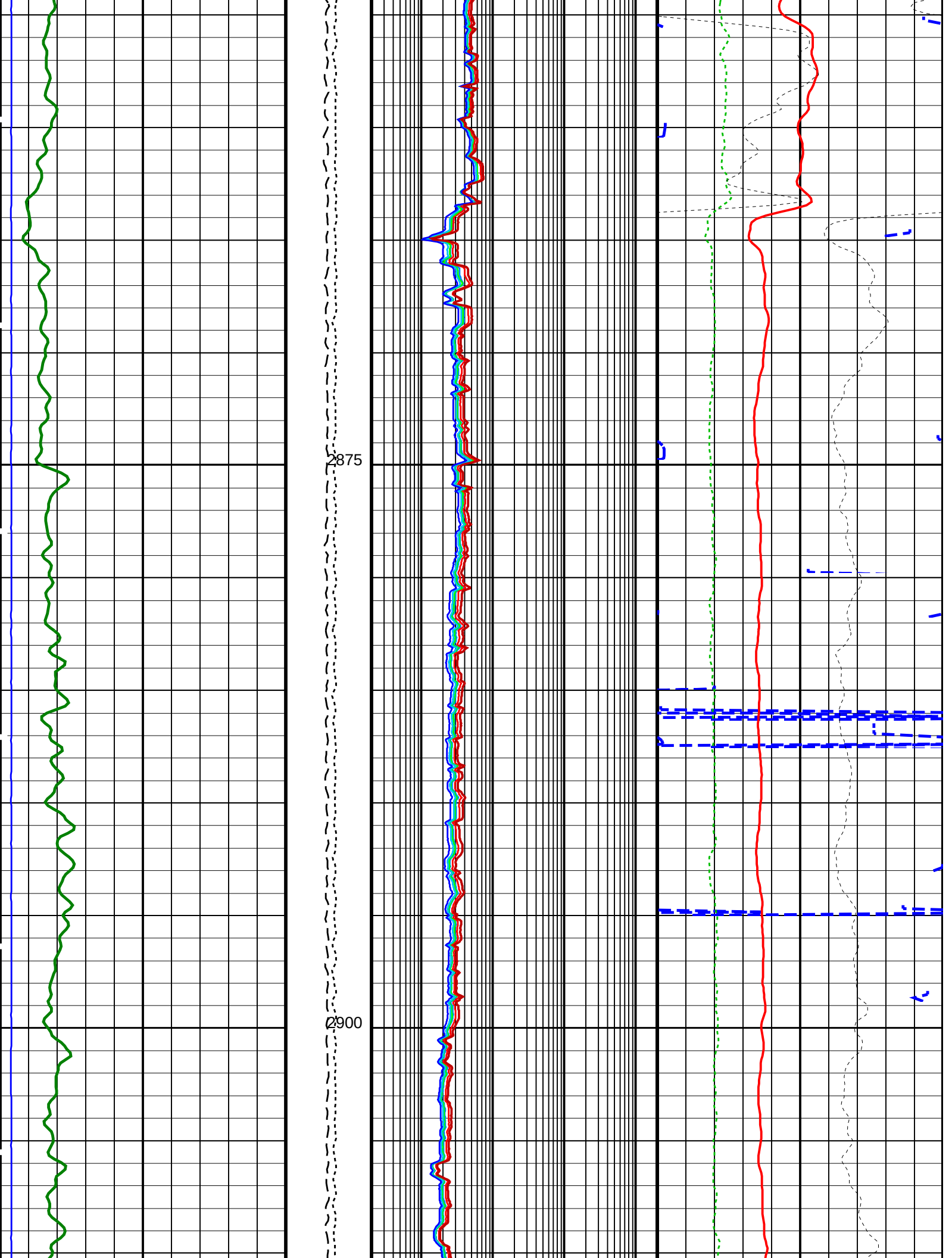
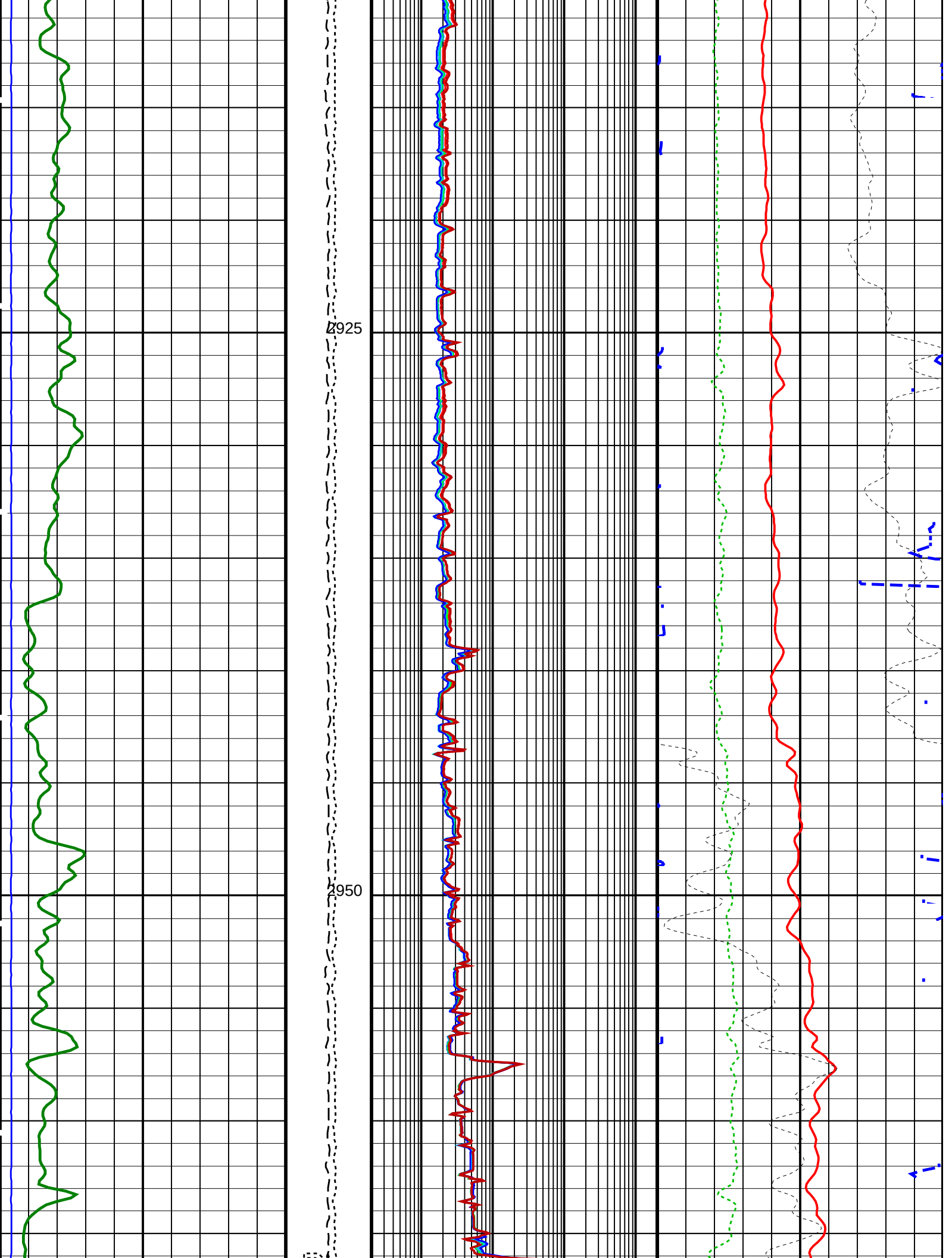
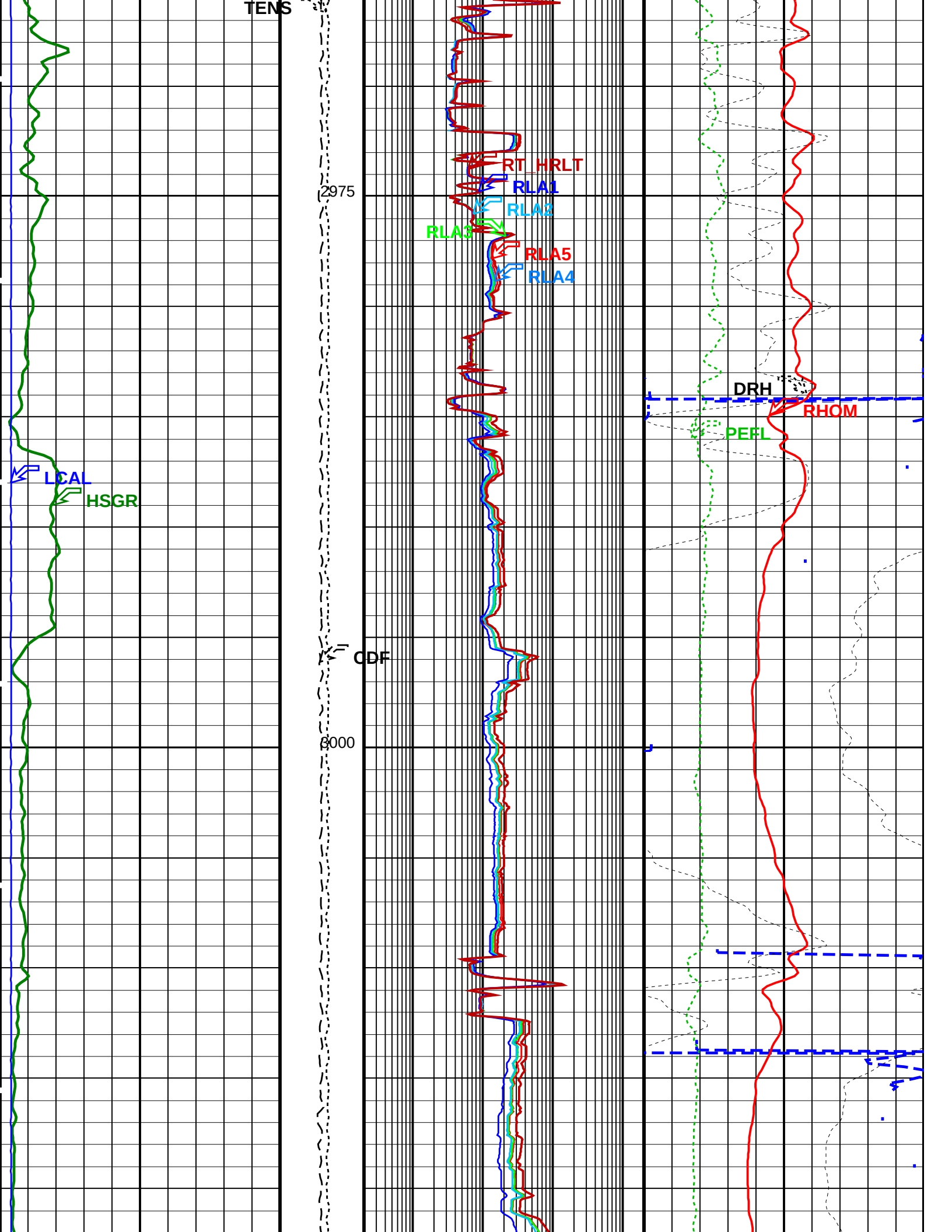
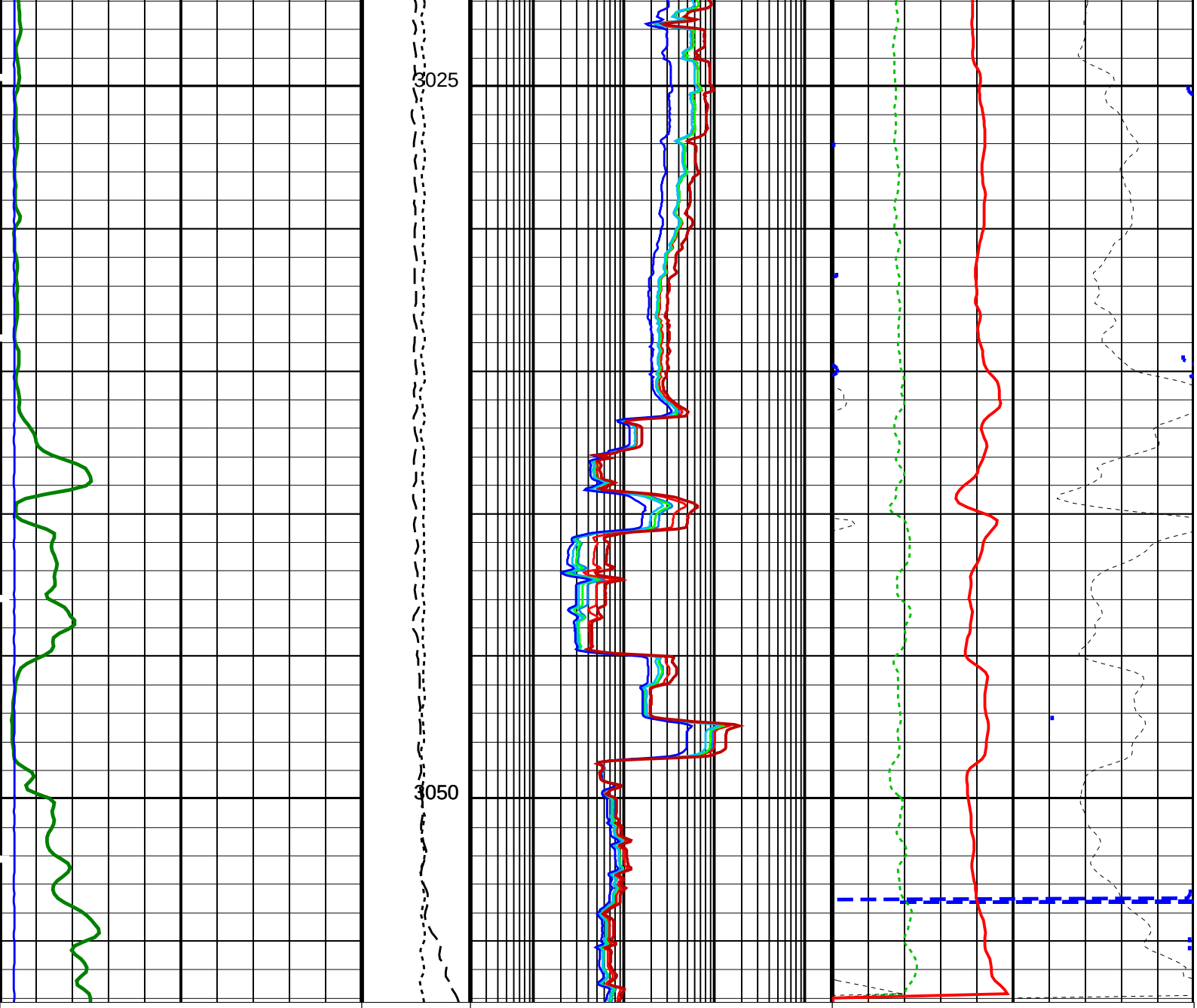
2825
2850


2875
2900


2925
2950


TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
2975
DRH
RHOM
PEFL
LCAL
HSGR
CDF
3000




| | | | |
|---|---|---|---|
| HLDS Caliper (LCAL)<br>0 (IN) 20 | Tension (TENS) (LBF)<br>10000 0 | HRLT Resistivity 4 (RLA4)<br>0.2 (OHMM) 2000 | APS Near/Far Corrected Limestone Porosity (FPLC)<br>100 (PU) 0 |
| HNGS Spectroscopy Gamma Ray (HSGR)<br>0 (GAPI) 100 | Calibrated Downhole Force (CDF) (LBF)<br>3000 0 | HRLT Resistivity 5 (RLA5)<br>0.2 (OHMM) 2000 | HLDS Long Spaced Photoelectric Effect (PEFL)<br>0 (----) 10 |
| Downlog | | HRLT Resistivity 3 (RLA3)<br>0.2 (OHMM) 2000 | HLDS Bulk Density (RHOM)<br>0 (G/C3) 4 |
| | | HRLT Resistivity 2 (RLA2)<br>0.2 (OHMM) 2000 | HLDS Bulk Density Correction (DRH)<br>−0.25 (G/C3) 0.25 |
| | | HRLT Resistivity 1 (RLA1)<br>0.2 (OHMM) 2000 | |
| | | HRLT True Resistivity (RT_HRLT)<br>0.2 (OHMM) 2000 | |

PIP SUMMARY

Time Mark Every 60 S

# Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| | **HLDS: Hostile Litho−Density Sonde** | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | OFF | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| | **APS−C: Accelerator−Porosity Tool** | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | NO | |
| ISSBAR | Barite Mud Switch | BARITE | |

| | | | |
|---|---|---|---|
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| 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) | 20 | 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 | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00153196 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.02642 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.04318 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| DO | Depth Offset for Playback | 0.0 | M |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| PP | Playback Processing | RECOMPUTE | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |

| | | | |
|---|---|---|---|
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3093.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: TripleCombo  Vertical Scale: 1:200  Graphics File Created: 08−Mar−2022 14:46

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Input DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | Flip_MSS_LDEO_HRLA_047LUP | PRODUCER | 08−Mar−2022 14:34 | 3057.1 M | 2514.6 M |

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:71 | PRODUCER | 08−Mar−2022 14:46 |

## Output DLIS Files

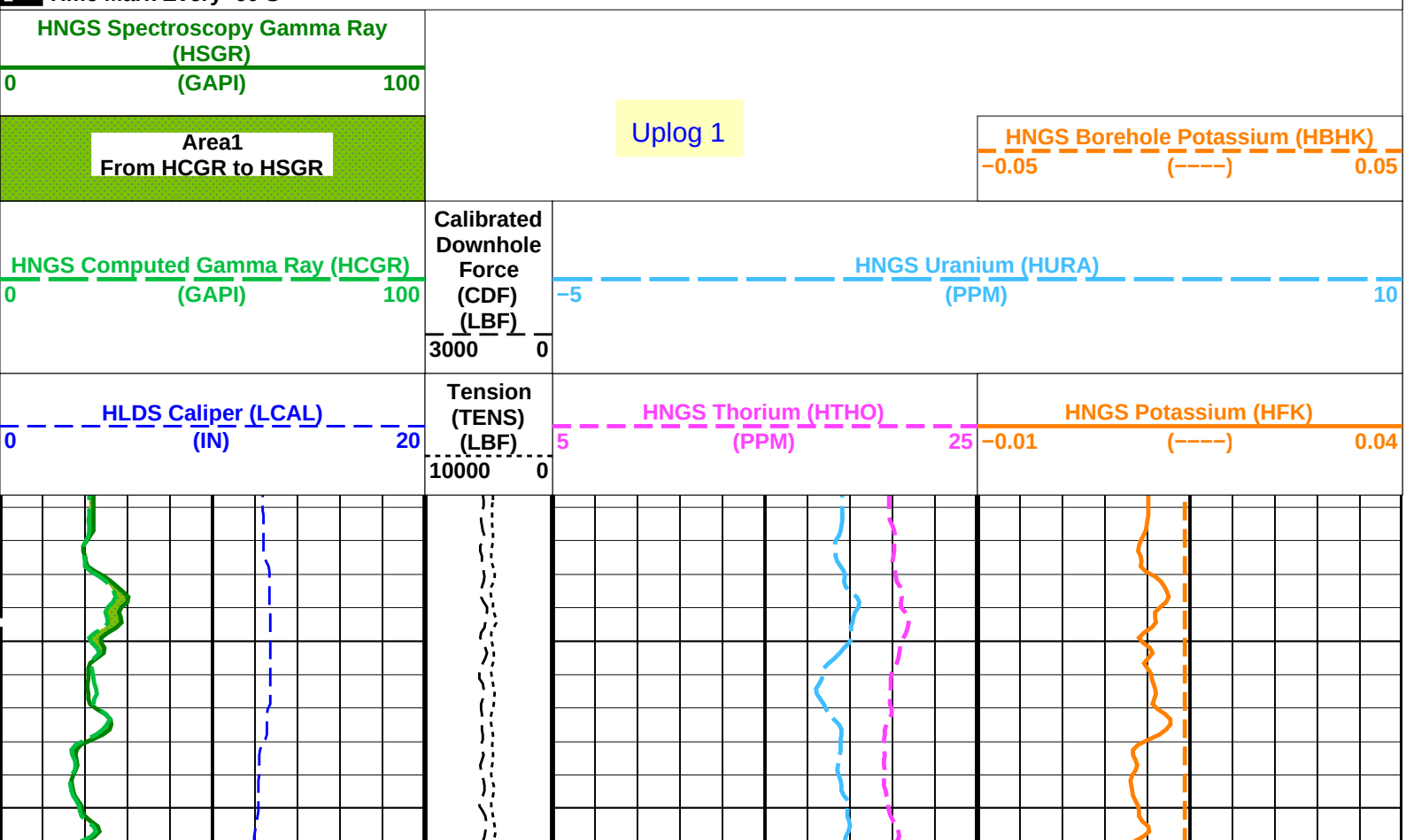
| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_021LUP | FN:23 | PRODUCER | 06−Mar−2022 01:41 | 3095.2 M | 2926.1 M |
| BACKUP | MSS_LDEO_HRLA_LDL_021LUP | FN:24 | PRODUCER | 06−Mar−2022 01:41 | 3095.2 M | 2926.1 M |

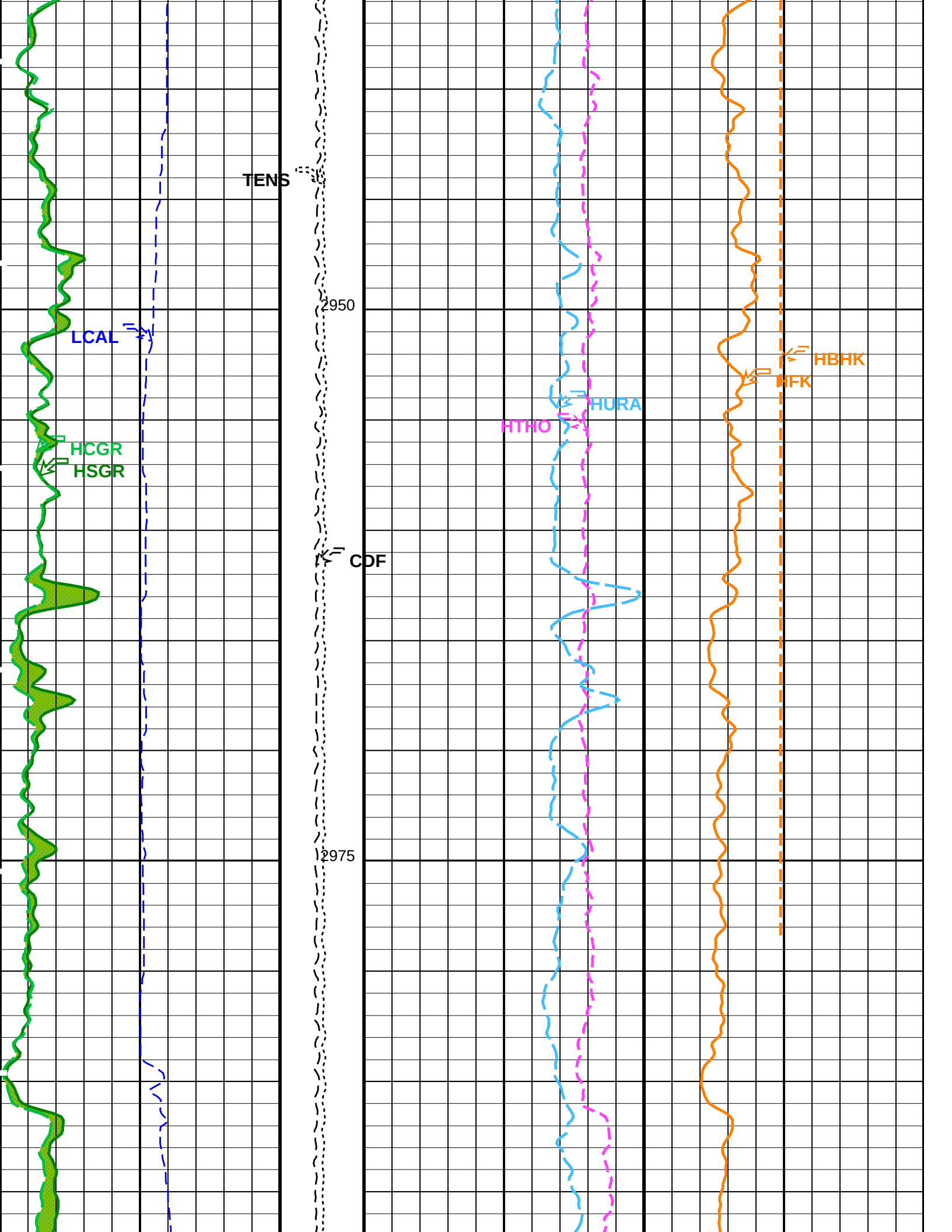
## OP System Version: 19C0−187

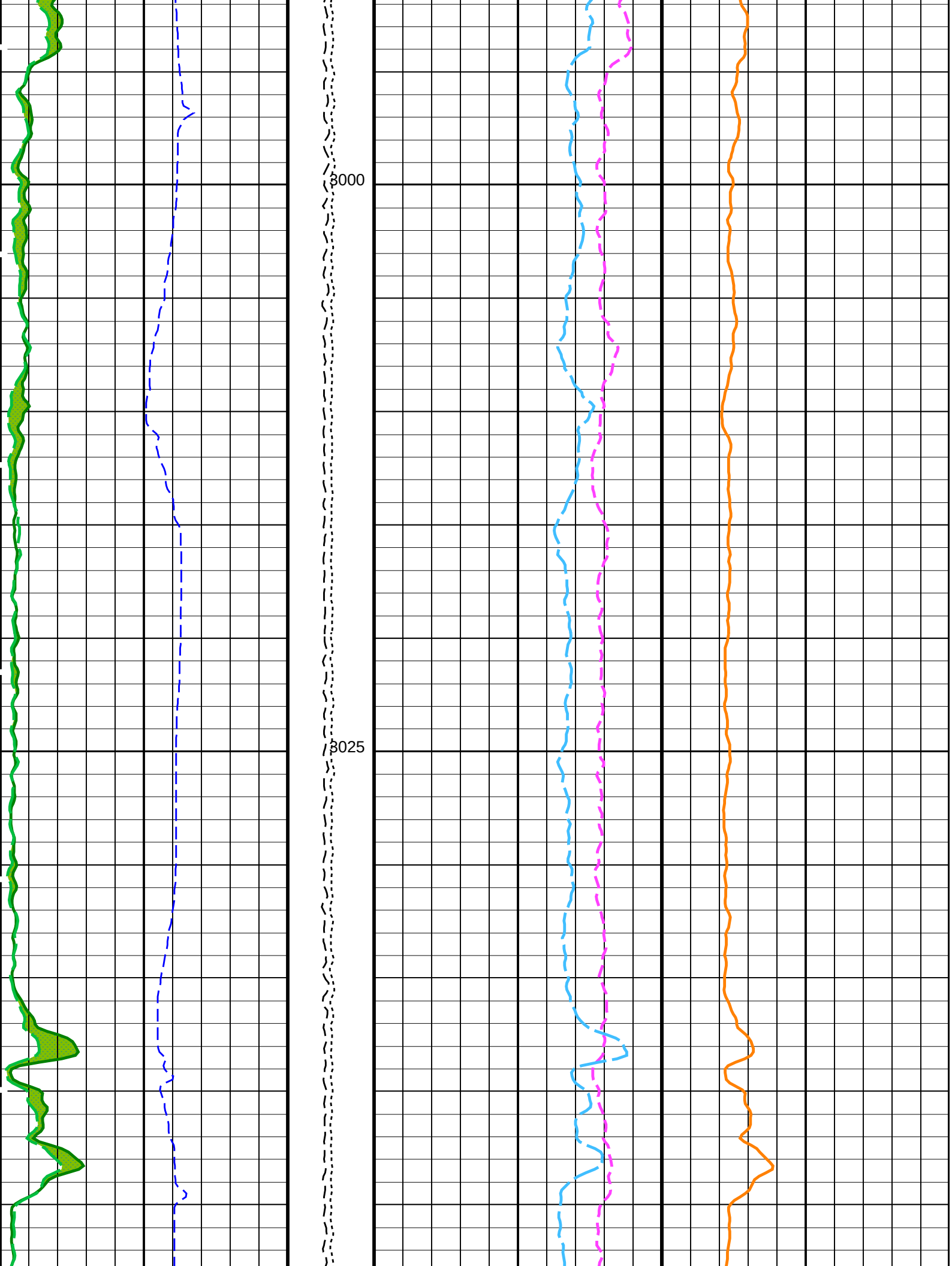
| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

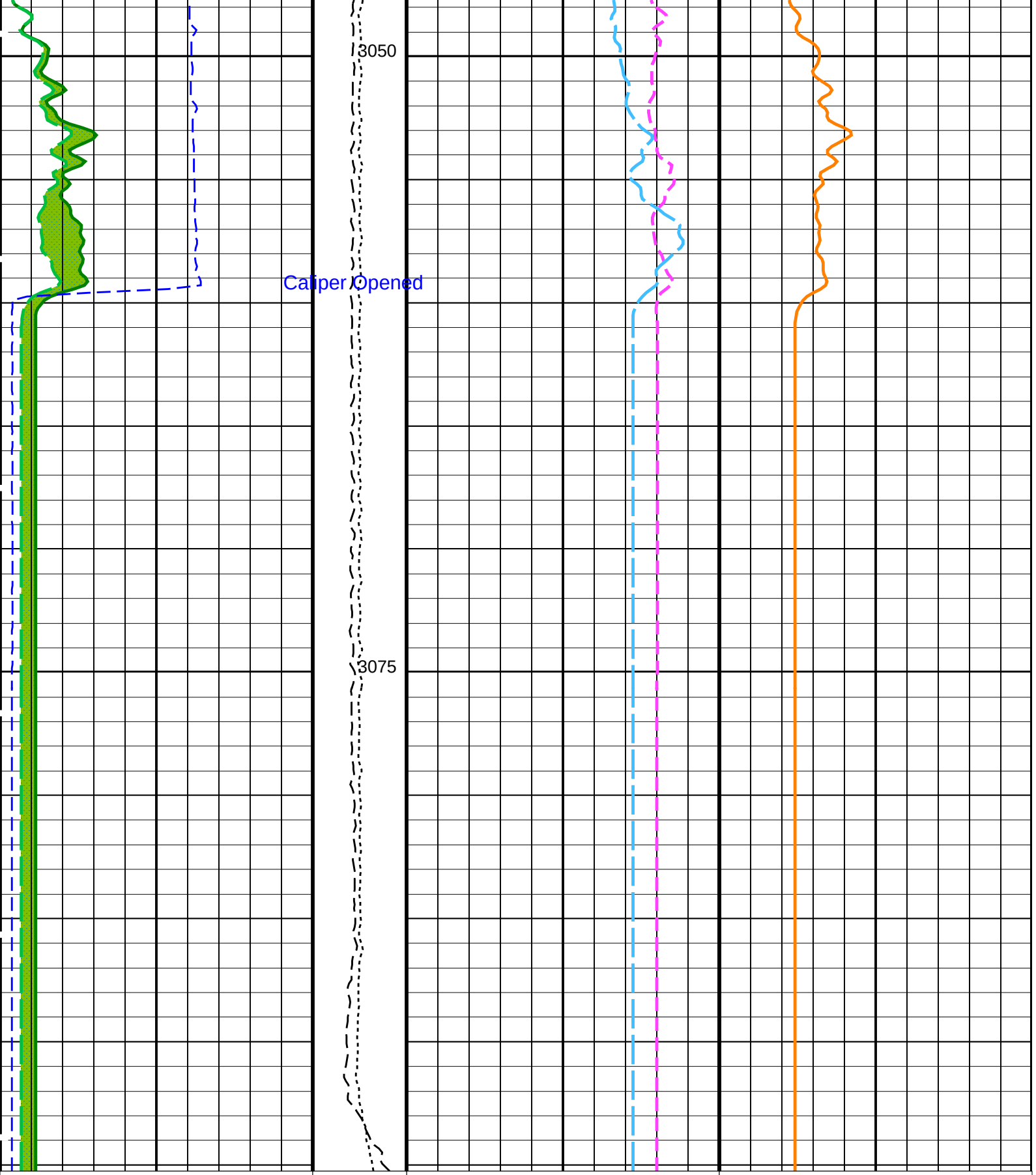
PIP SUMMARY

Time Mark Every 60 S




TENS
2950
LCAL
HBHK
HFK
HURA
HTHO
HCGR
HSGR
CDF
2975


3000
3025




HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

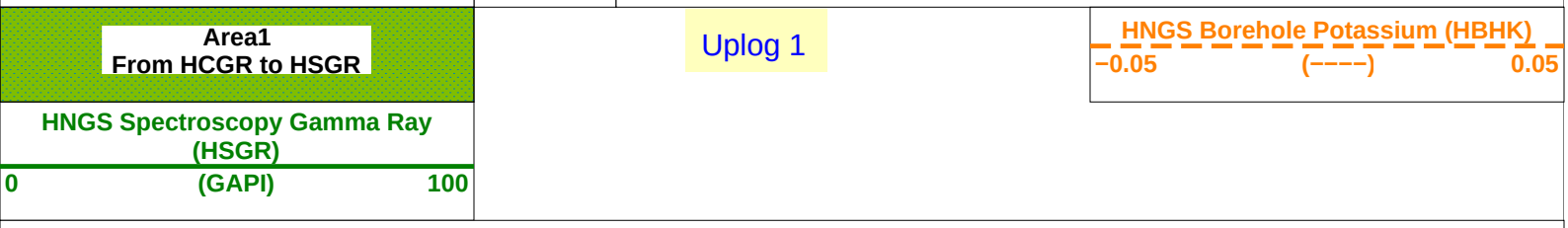
HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10




**PIP SUMMARY**

**Time Mark Every 60 S**

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | LCAL | |
| | **APS−C: Accelerator−Porosity Tool** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | LCAL | |
| | **HNGS−BA: Hostile Natural Gamma Ray Sonde** | | |
| BAR1 | HNGS Detector 1 Barite Constant | 1 | |
| BAR2 | HNGS Detector 2 Barite Constant | 1 | |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 | |
| BHS | Borehole Status | OPEN | |
| CSD1 | Inner Casing Outer Diameter | 0 | IN |
| CSD2 | Outer Casing Outer Diameter | 0 | IN |
| CSW1 | Inner Casing Weight | 0 | LB/F |
| CSW2 | Outer Casing Weight | 0 | LB/F |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| GCSE | Generalized Caliper Selection | 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 | −0.00147779 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| SGRC | HNGS Standard Gamma−Ray Correction Flag | YES | |
| TPOS | Tool Position | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.14306 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.48819 | |
| | **EDTC−B: Enhanced DTS Cartridge** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | LCAL | |
| | **System and Miscellaneous** | | |
| BS | Bit Size | 9.875 | IN |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |

**Format: HNGSYields** **Vertical Scale: 1:200** **Graphics File Created: 06−Mar−2022 01:41**

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_021LUP | FN:23 | PRODUCER | 06−Mar−2022 01:41 | | |
| BACKUP | MSS_LDEO_HRLA_LDL_021LUP | FN:24 | PRODUCER | 06−Mar−2022 01:41 | | |

**Company: International Ocean Discovery Program** **Well: Expedition 392, Site U1579 A**

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_021LUP | FN:23 | PRODUCER | 06−Mar−2022 01:41 | 3095.2 M | 2926.1 M |
| BACKUP | MSS_LDEO_HRLA_LDL_021LUP | FN:24 | PRODUCER | 06−Mar−2022 01:41 | 3095.2 M | 2926.1 M |

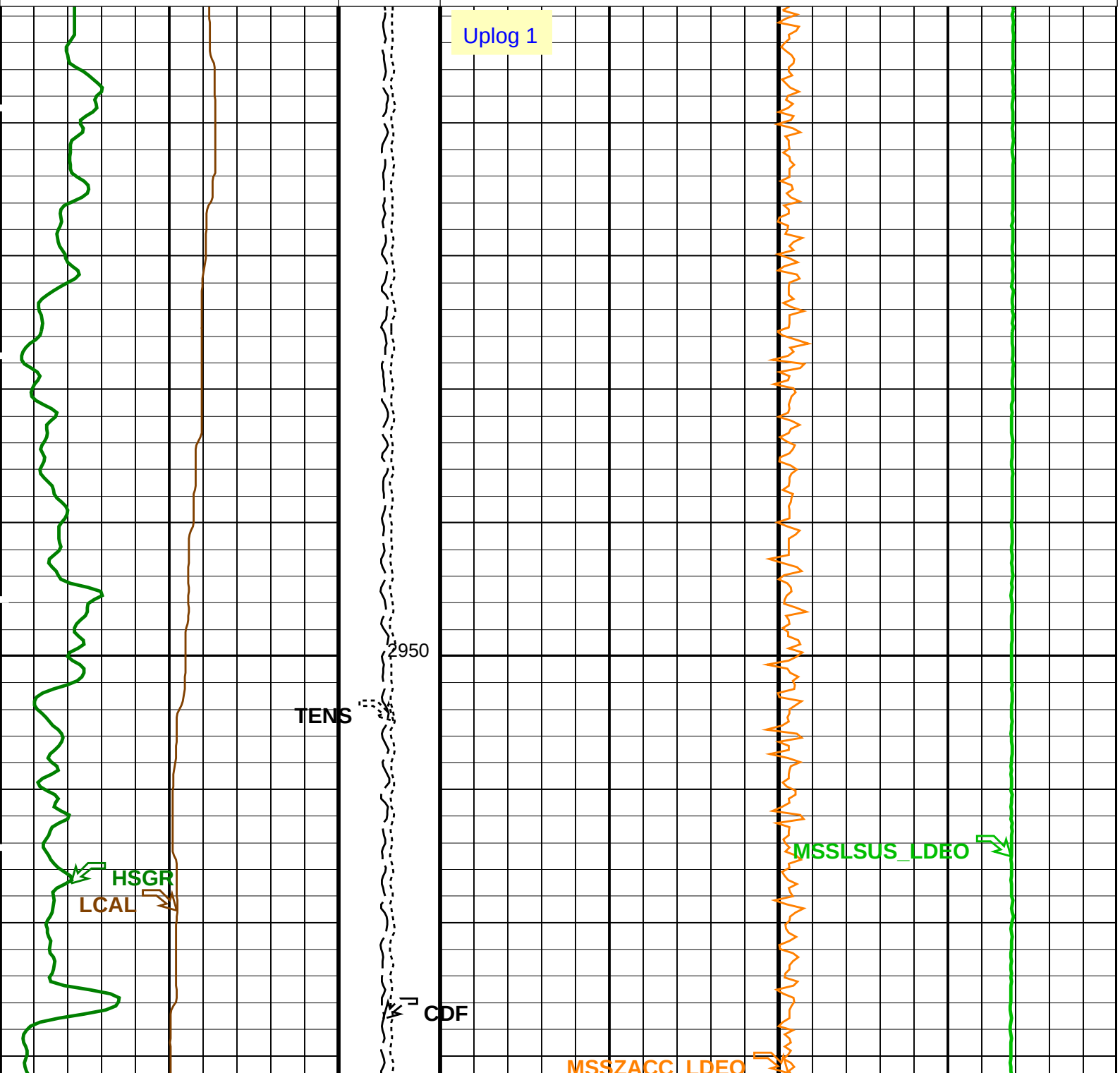
## OP System Version: 19C0−187

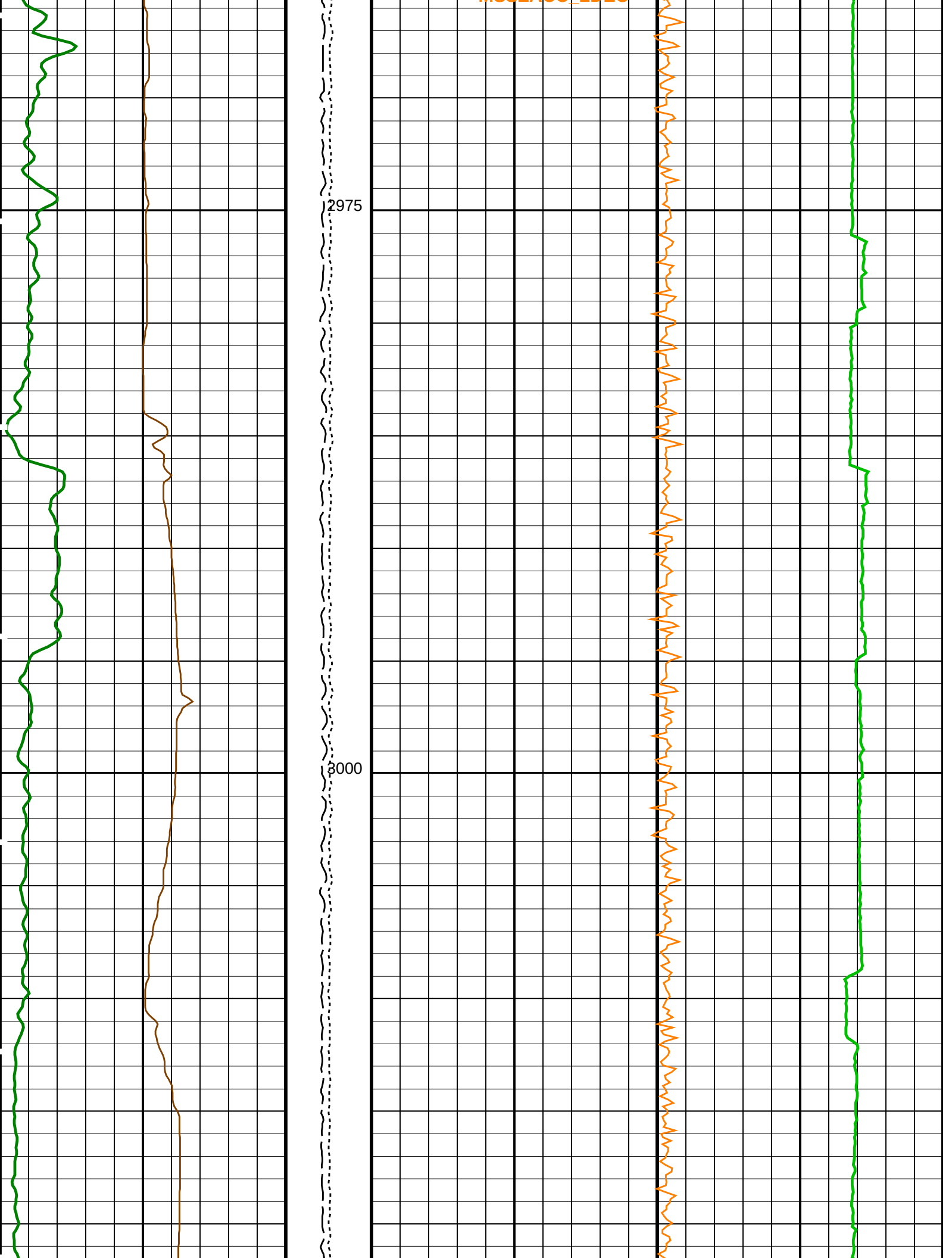
| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

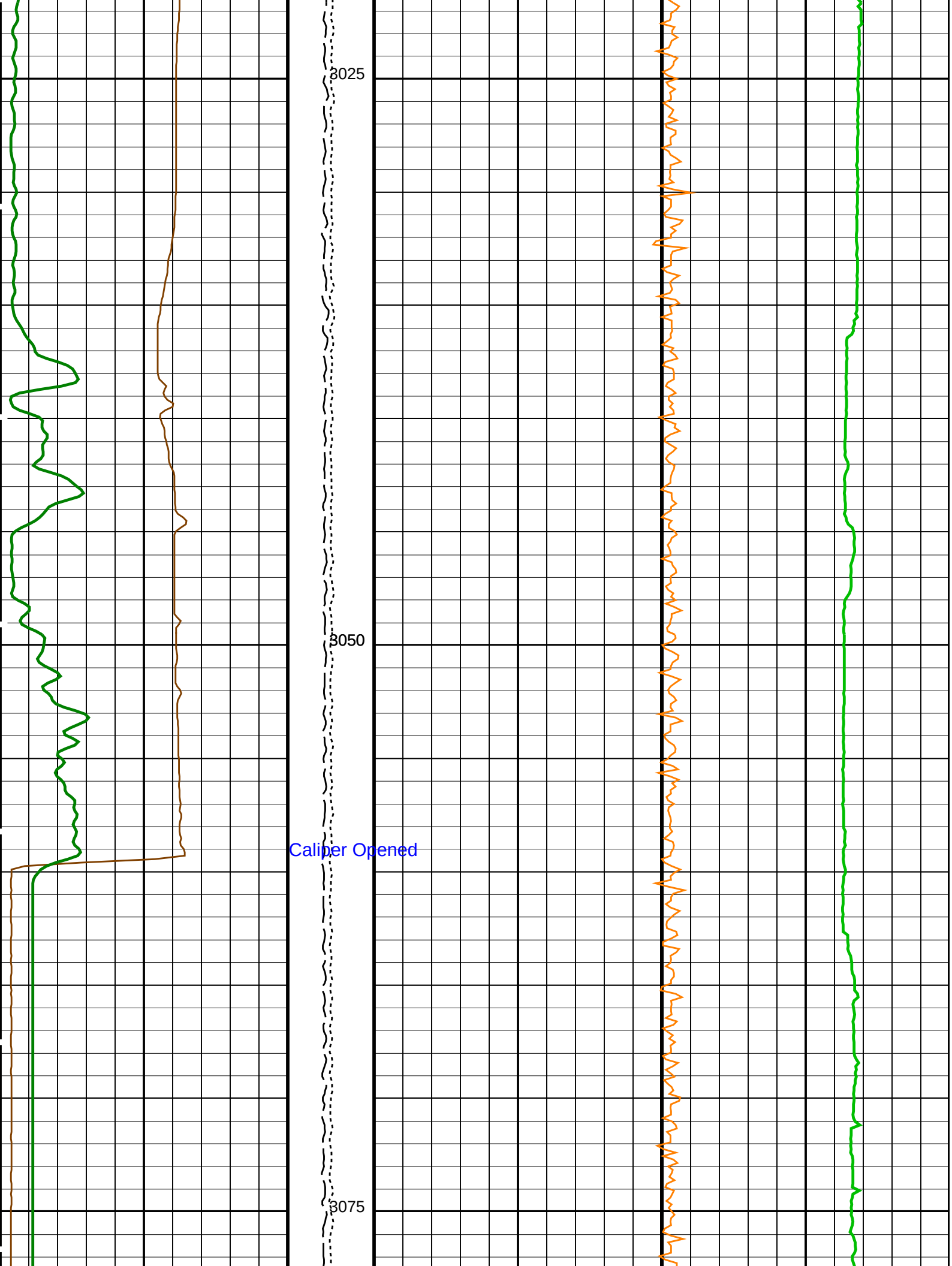
## PIP SUMMARY

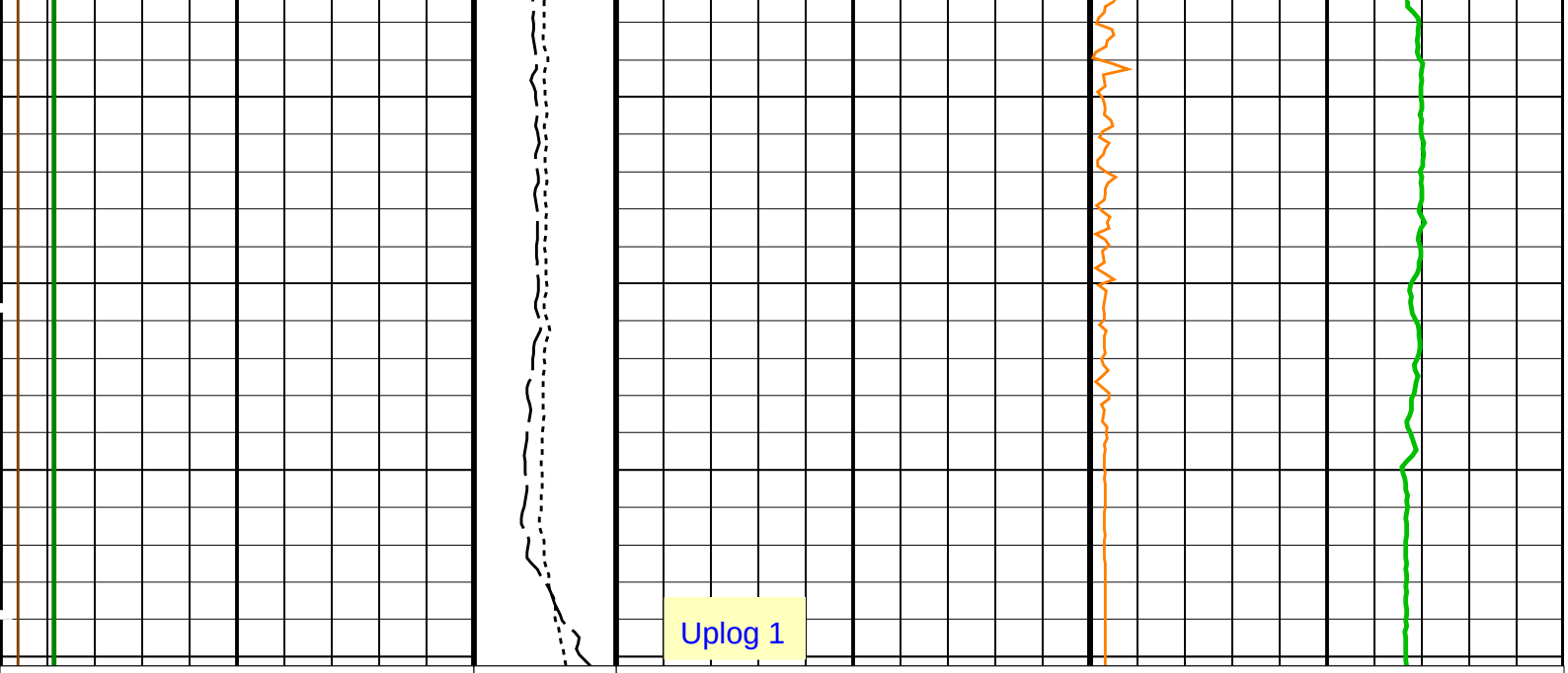
Time Mark Every 60 S

| HNGS Spectroscopy Gamma Ray (HSGR) | Calibrated Downhole Force (CDF) (LBF) | Dual−Coil Susceptibility (MSSLSUS_LDEO) |
|---|---|---|
| 0 (GAPI) 100 | 3000 0 | −10000 (PPM) 10000 |
| **HLDS Caliper (LCAL)** | **Tension (TENS) (LBF)** | **Axial Acceleration (MSSZACC_LDEO)** |
| 0 (IN) 20 | 10000 0 | 0 (M/S2) 20 |




2975
3000


3025
3050
Caliper Opened
3075




| HLDS Caliper (LCAL) | Tension (TENS) | Axial Acceleration (MSSZACC_LDEO) |
|---|---|---|
| 0 (IN) 20 | (LBF) 10000 0 | 0 (M/S2) 20 |
| **HNGS Spectroscopy Gamma Ray (HSGR)** | **Calibrated Downhole Force (CDF)** | **Dual−Coil Susceptibility (MSSLSUS_LDEO)** |
| 0 (GAPI) 100 | (LBF) 3000 0 | −10000 (PPM) 10000 |

PIP SUMMARY

Time Mark Every 60 S

# Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| | **HLDS: Hostile Litho−Density Sonde** | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |

| | | | |
|---|---|---|---|
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | ON | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| APS−C: Accelerator−Porosity Tool | | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| 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) | 20 | 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 | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00147779 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.14306 | |

| | | | |
|---|---|---|---|
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.48819 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3106.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 06−Mar−2022 01:41

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

| | | | | | |
|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_021LUP | FN:23 | PRODUCER | 06−Mar−2022 01:41 | |
| BACKUP | MSS_LDEO_HRLA_LDL_021LUP | FN:24 | PRODUCER | 06−Mar−2022 01:41 | |


## Output DLIS Files


| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_021LUP | FN:23 | PRODUCER | 06−Mar−2022 01:41 | 3095.2 M | 2926.1 M |
| BACKUP | MSS_LDEO_HRLA_LDL_021LUP | FN:24 | PRODUCER | 06−Mar−2022 01:41 | 3095.2 M | 2926.1 M |


## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |


PIP SUMMARY

APS Porosity not enabled to avoid QP activation for Unlog 2

Time Mark Every 60 S

APS Porosity not enabled to avoid GR activation for Uplog 2

UPlog 1

HRLT True Resistivity (RT_HRLT)
0.2 (OHMM) 2000

HRLT Resistivity 1 (RLA1)
0.2 (OHMM) 2000

HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 2000

HRLT Resistivity 3 (RLA3)
0.2 (OHMM) 2000

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

HLDS Bulk Density (RHOM)
0 (G/C3) 4

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 2000

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

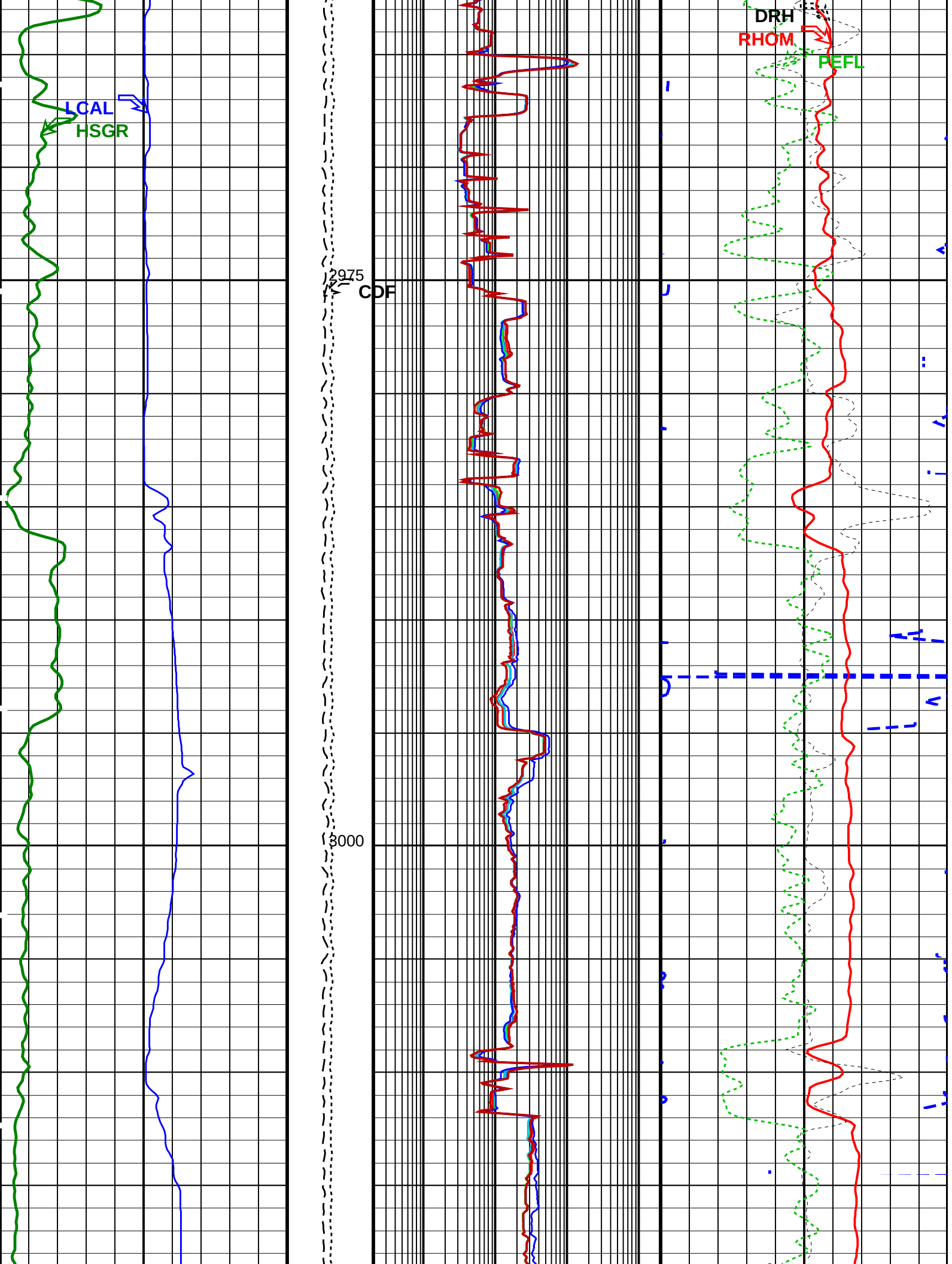
HRLT Resistivity 4 (RLA4)
0.2 (OHMM) 2000

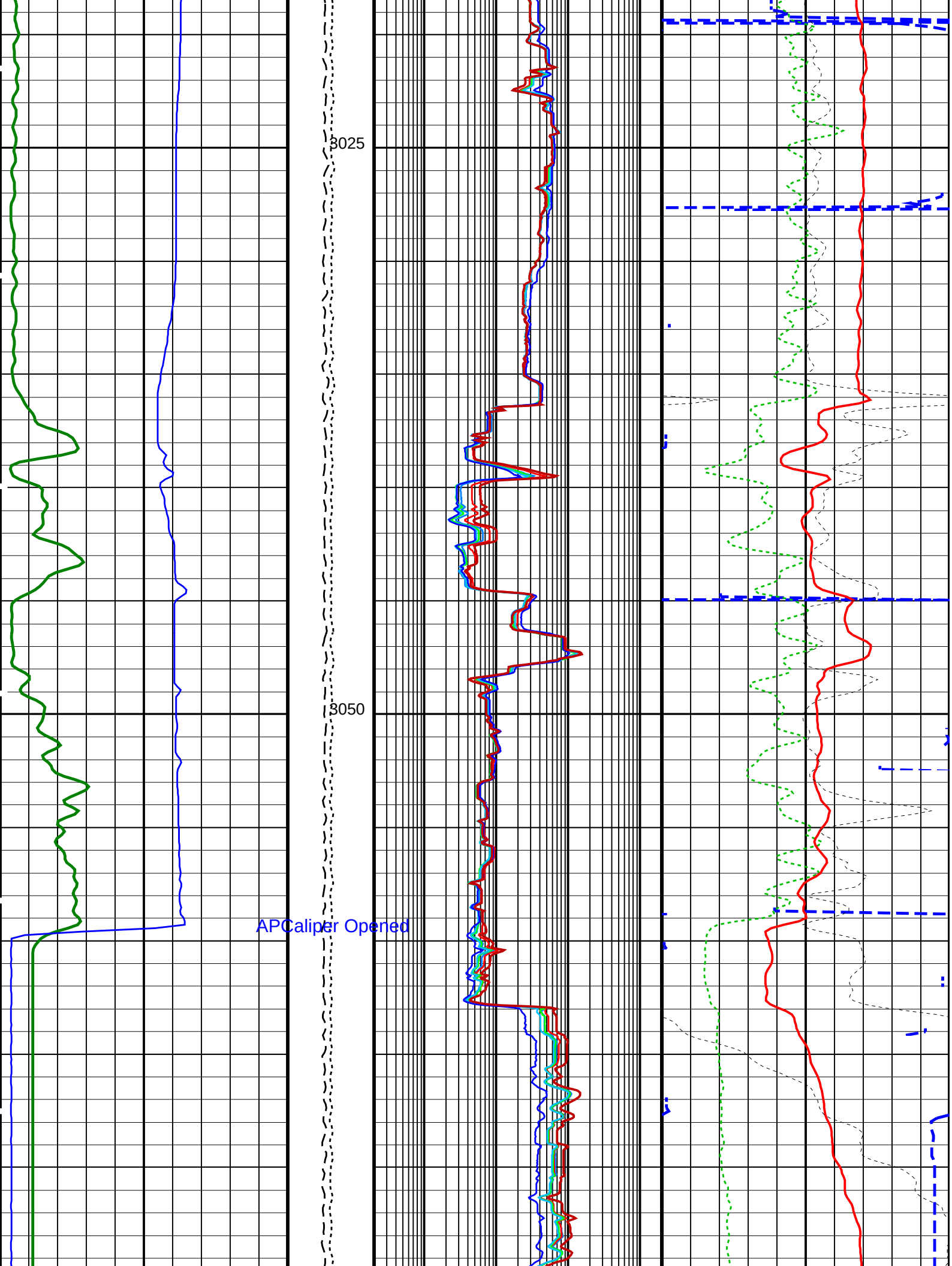
APS Near/Far Corrected Limestone Porosity (FPLC)
100 (PU) 0

TENS

2950

RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4


LCAL
HSGR
2975
CDF
3000
DRH
RHOM
PEFL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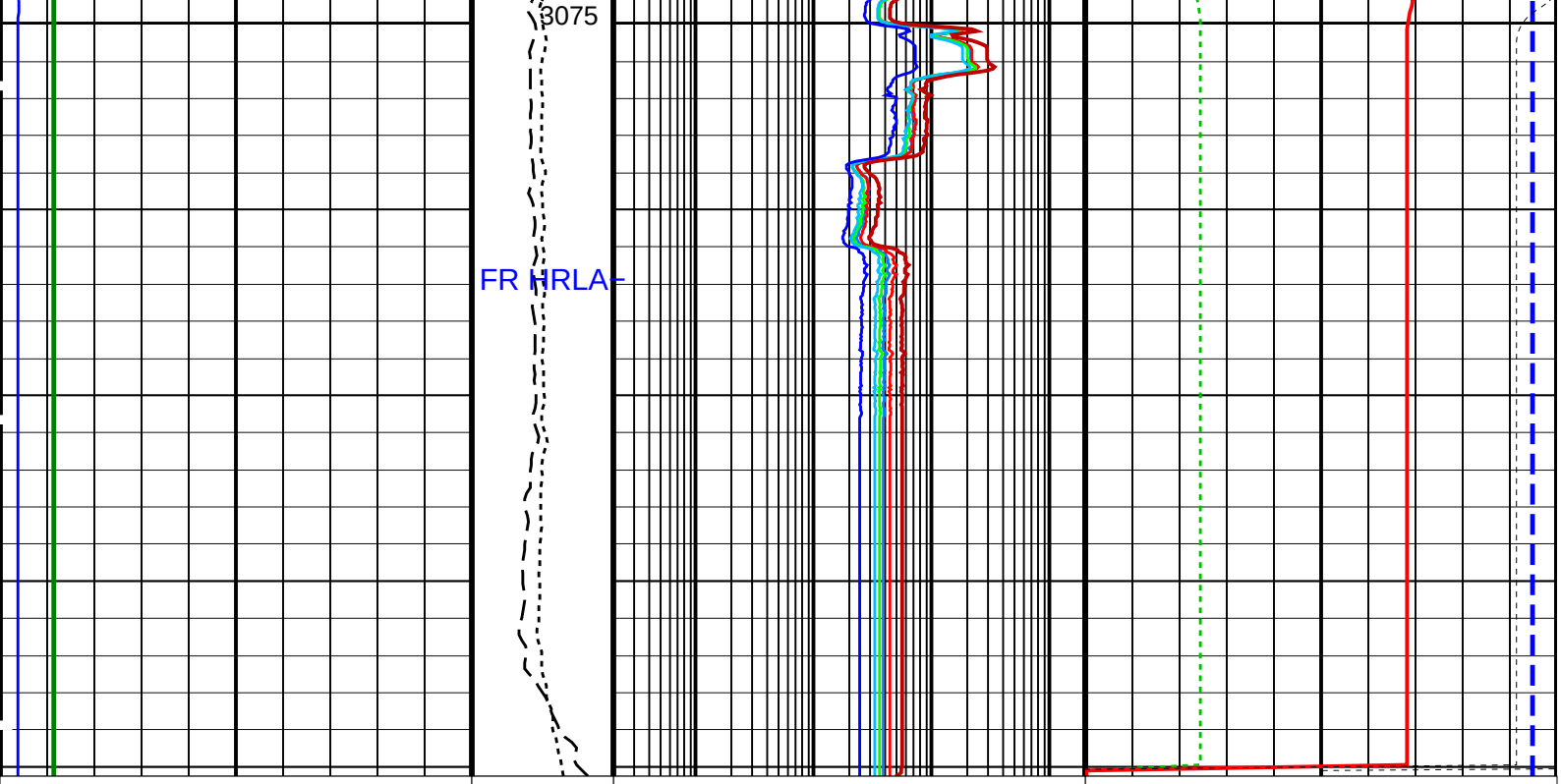
APCaliper Opened




| | | |
|---|---|---|
| HLDS Caliper (LCAL)<br>0 (IN) 20 | Tension (TENS) (LBF)<br>10000 0 | HRLT Resistivity 4 (RLA4)<br>0.2 (OHMM) 2000 |
| HNGS Spectroscopy Gamma Ray (HSGR)<br>0 (GAPI) 100 | Calibrated Downhole Force (CDF) (LBF)<br>3000 0 | HRLT Resistivity 5 (RLA5)<br>0.2 (OHMM) 2000 |
| Uplog 1 | | HRLT Resistivity 3 (RLA3)<br>0.2 (OHMM) 2000 |
| | | HRLT Resistivity 2 (RLA2)<br>0.2 (OHMM) 2000 |
| | | HRLT Resistivity 1 (RLA1)<br>0.2 (OHMM) 2000 |
| | | HRLT True Resistivity (RT_HRLT)<br>0.2 (OHMM) 2000 |

| | |
|---|---|
| APS Near/Far Corrected Limestone Porosity (FPLC)<br>100 (PU) 0 | |
| HLDS Long Spaced Photoelectric Effect (PEFL)<br>0 (----) 10 | |
| HLDS Bulk Density (RHOM)<br>0 (G/C3) 4 | |
| HLDS Bulk Density Correction (DRH)<br>-0.25 (G/C3) 0.25 | |

PIP SUMMARY

Time Mark Every 60 S

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | HRLT-B: High Resolution Laterolog Array - B | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| CTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |

| | | | |
|---|---|---|---|
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| HLDS: Hostile Litho−Density Sonde | | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | ON | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| APS−C: Accelerator−Porosity Tool | | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| 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) | 20 | 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 | LCAL | |

| | | | |
|---|---|---|---|
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00147779 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.14306 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.48819 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3106.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: TripleCombo  Vertical Scale: 1:200  Graphics File Created: 06−Mar−2022 01:41

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_021LUP | FN:23 | PRODUCER | 06−Mar−2022 01:41 |
| BACKUP | MSS_LDEO_HRLA_LDL_021LUP | FN:24 | PRODUCER | 06−Mar−2022 01:41 |

# Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 | 3093.0 M | 2544.6 M |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 | 3093.0 M | 2544.7 M |

# OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

**PIP SUMMARY**

Time Mark Every 60 S

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

Area1
From HCGR to HSGR

UPlog 2

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

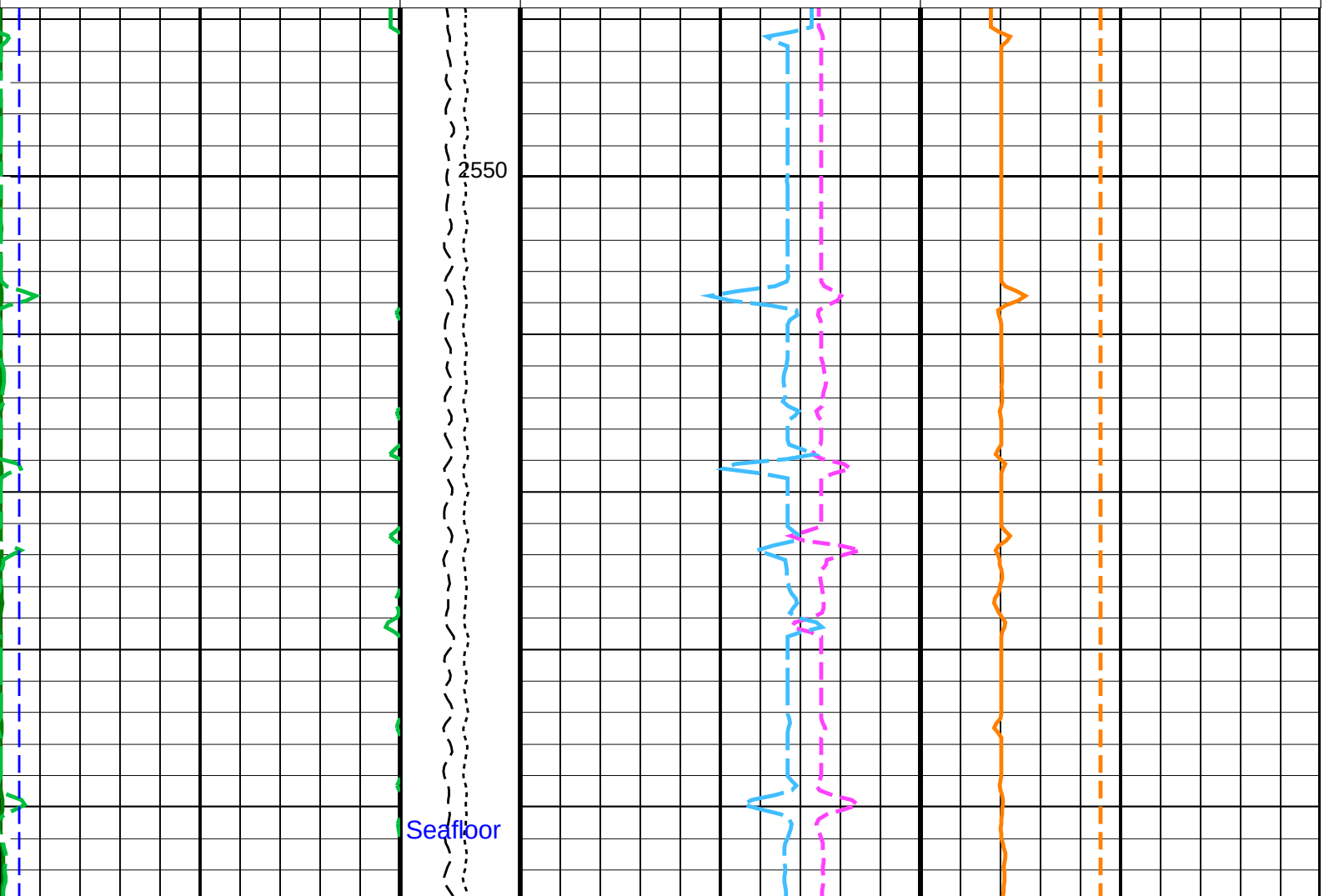
HNGS Uranium (HURA)
−5 (PPM) 10

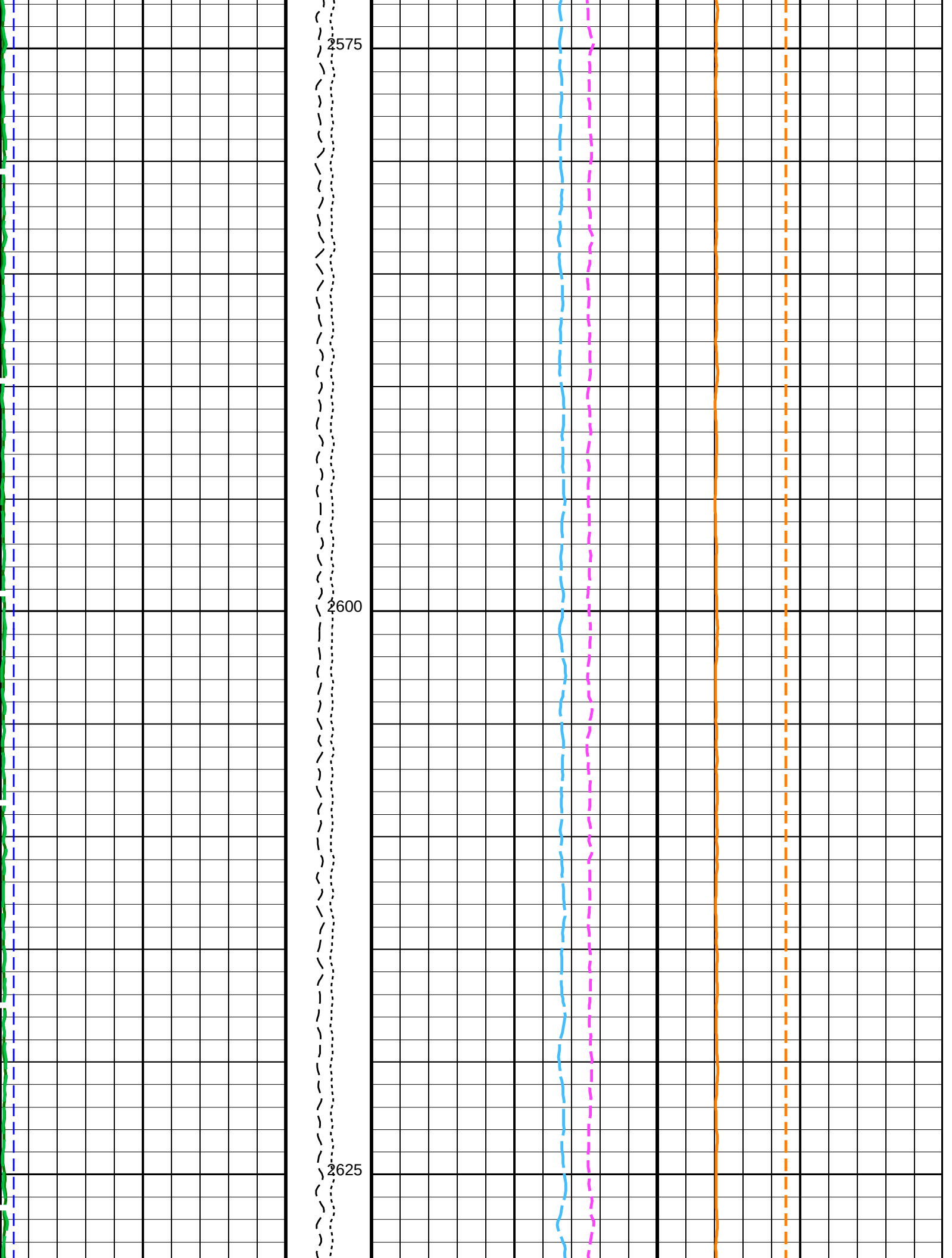
HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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2600
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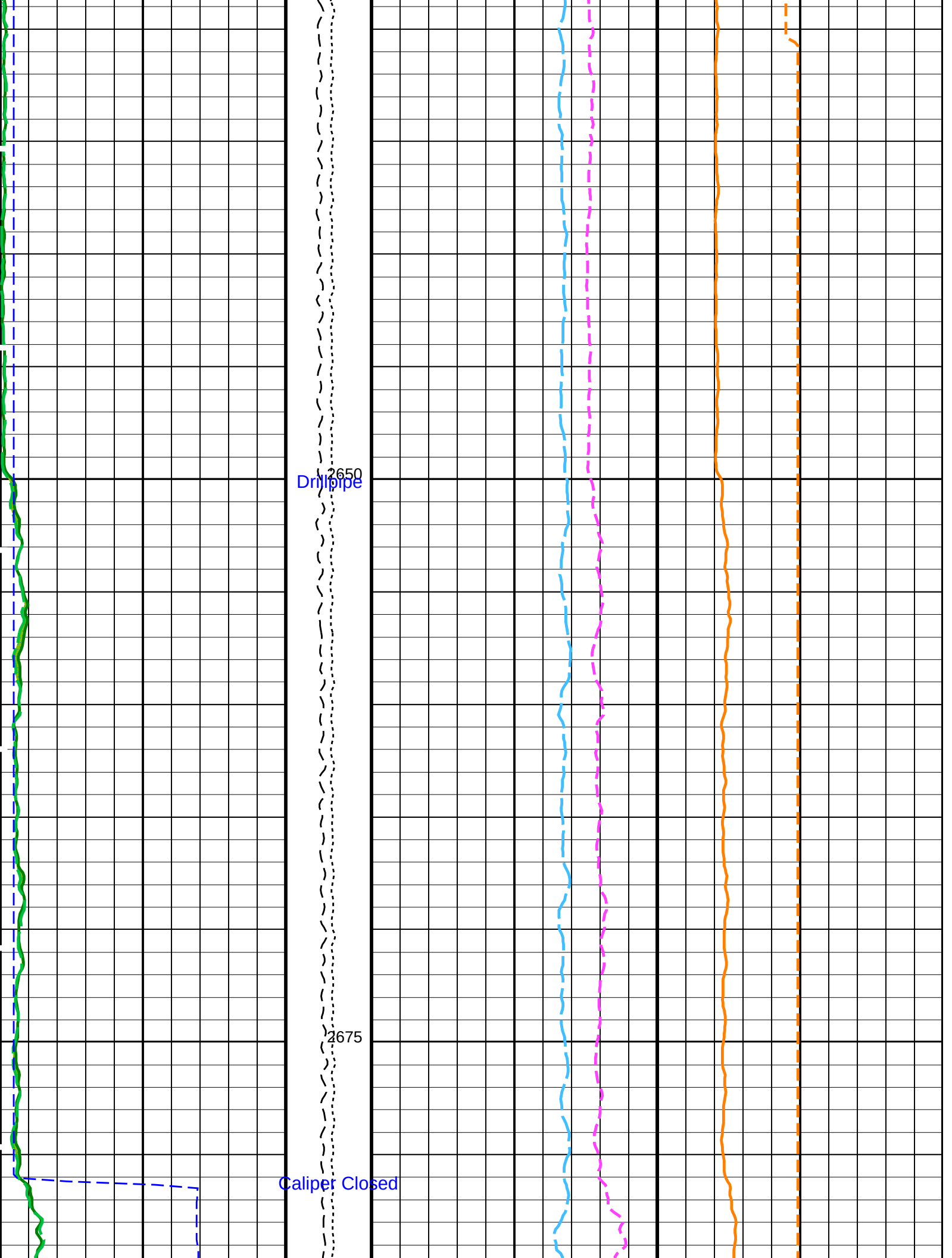
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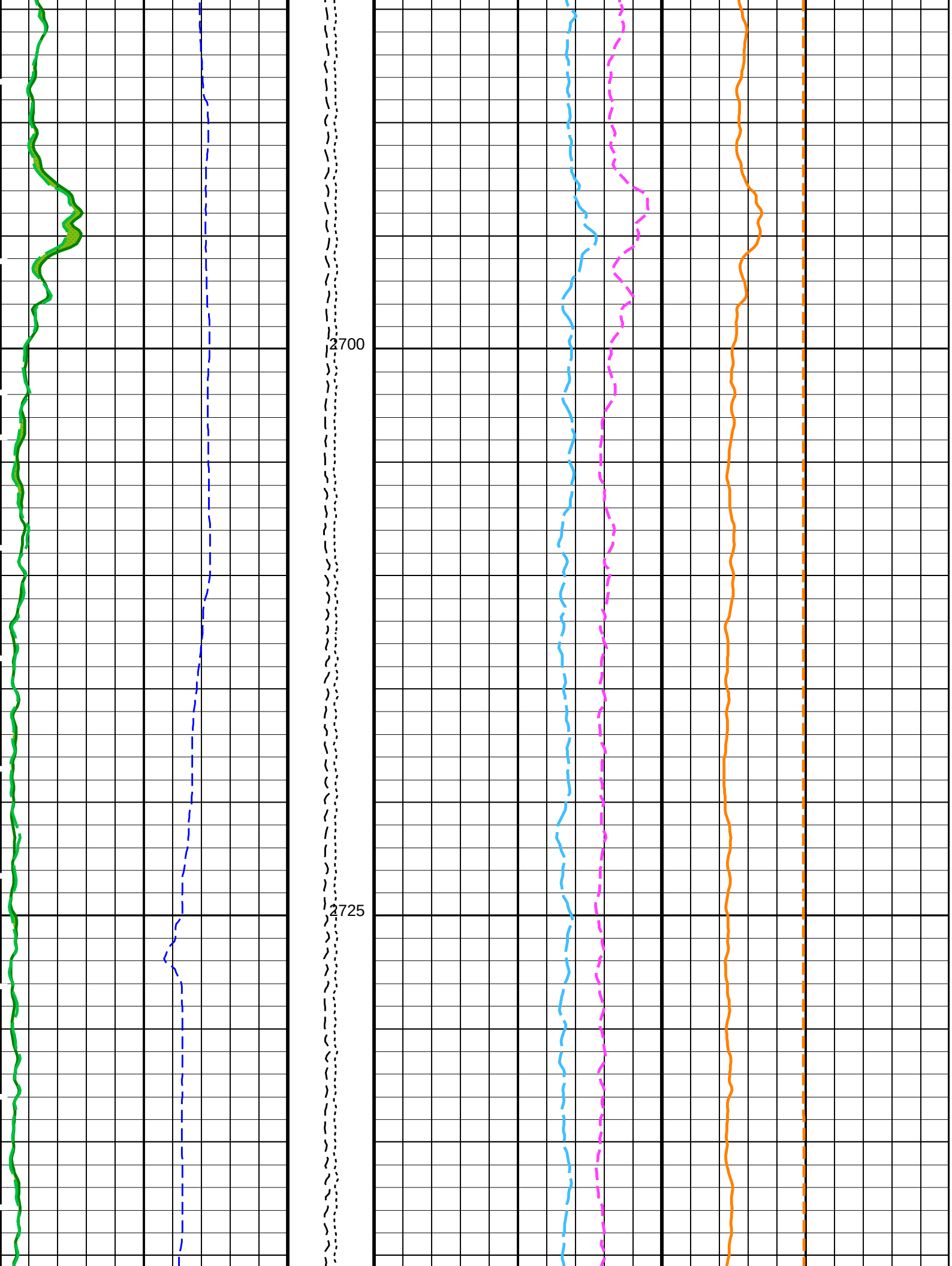
Drillpipe
2675
Caliper Closed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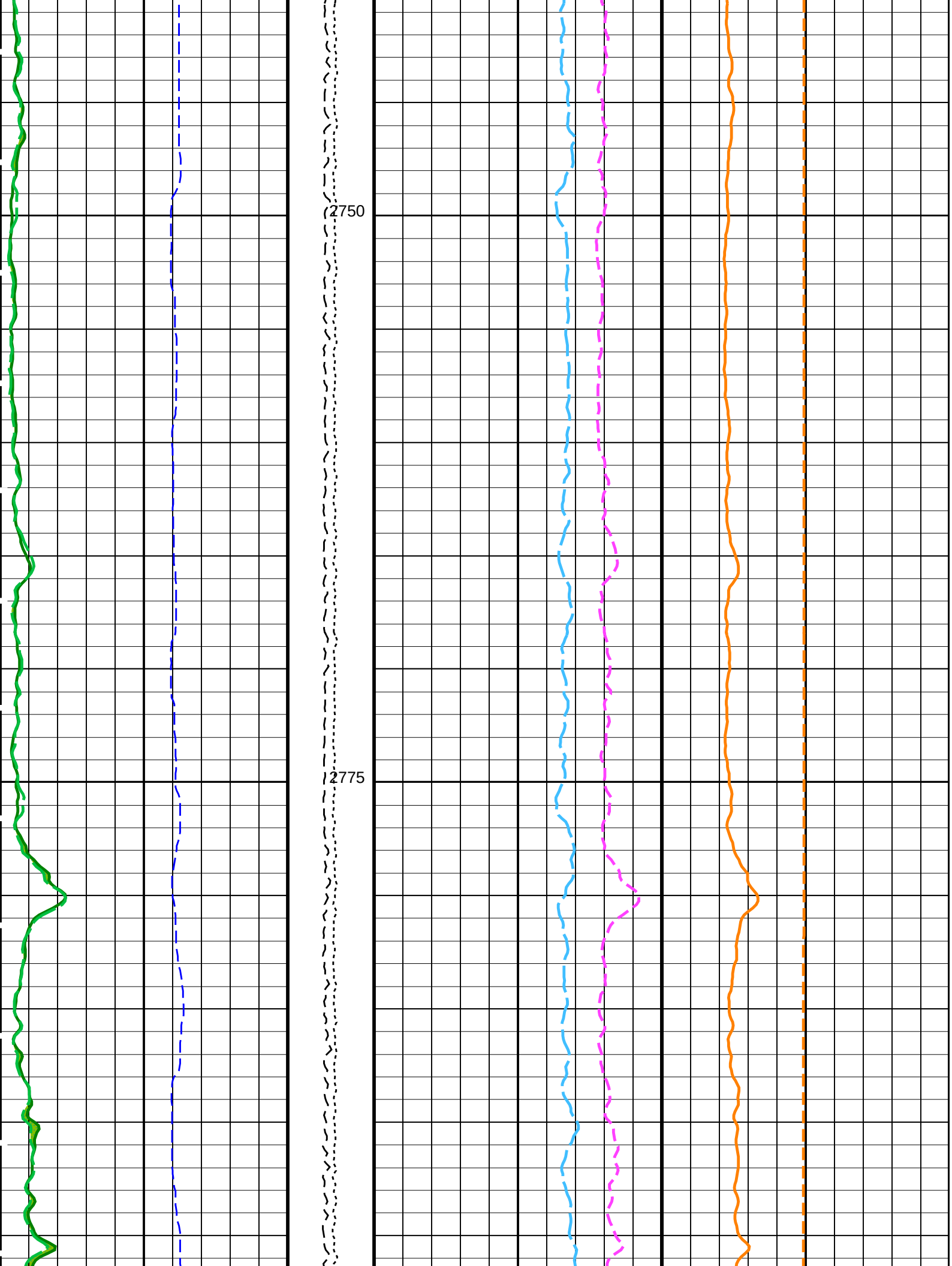
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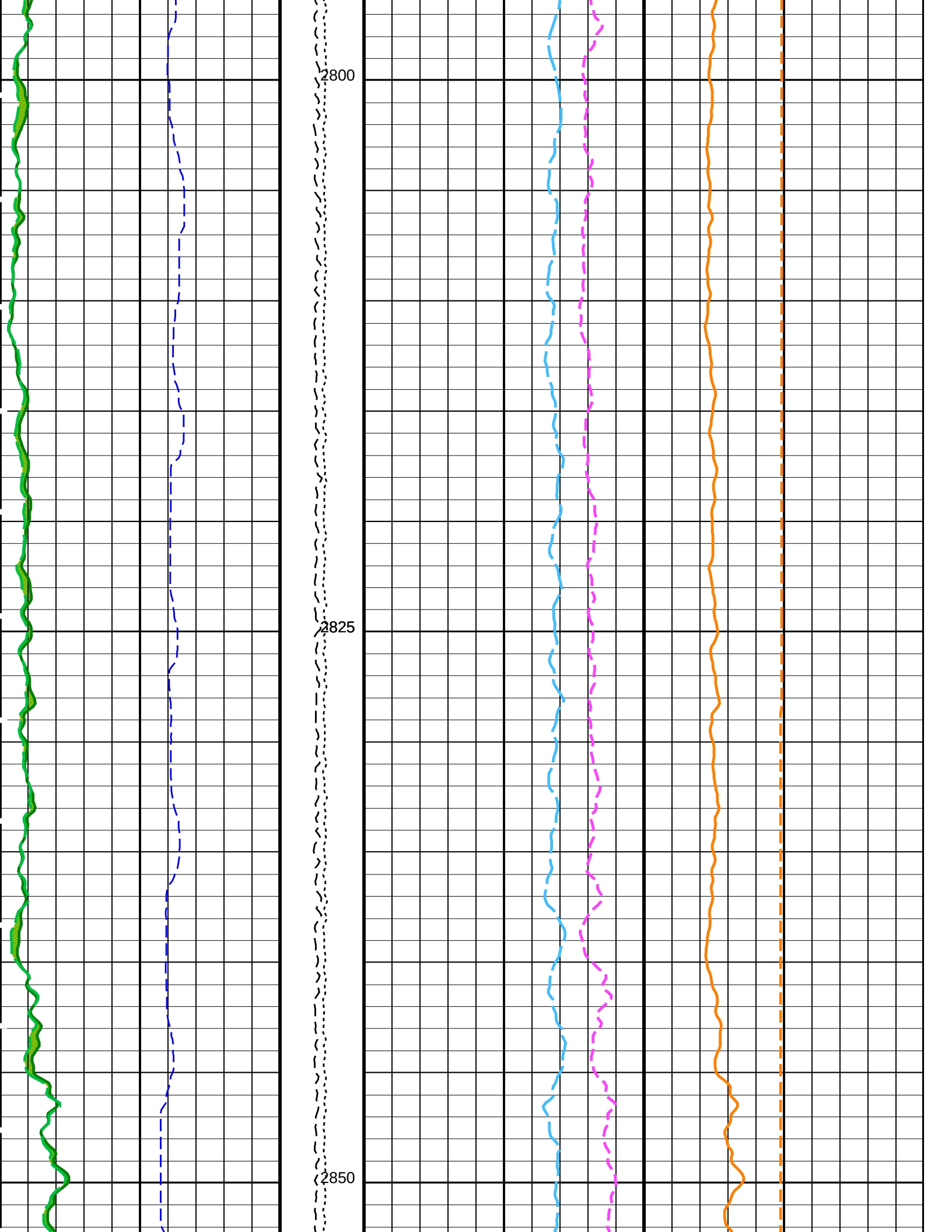
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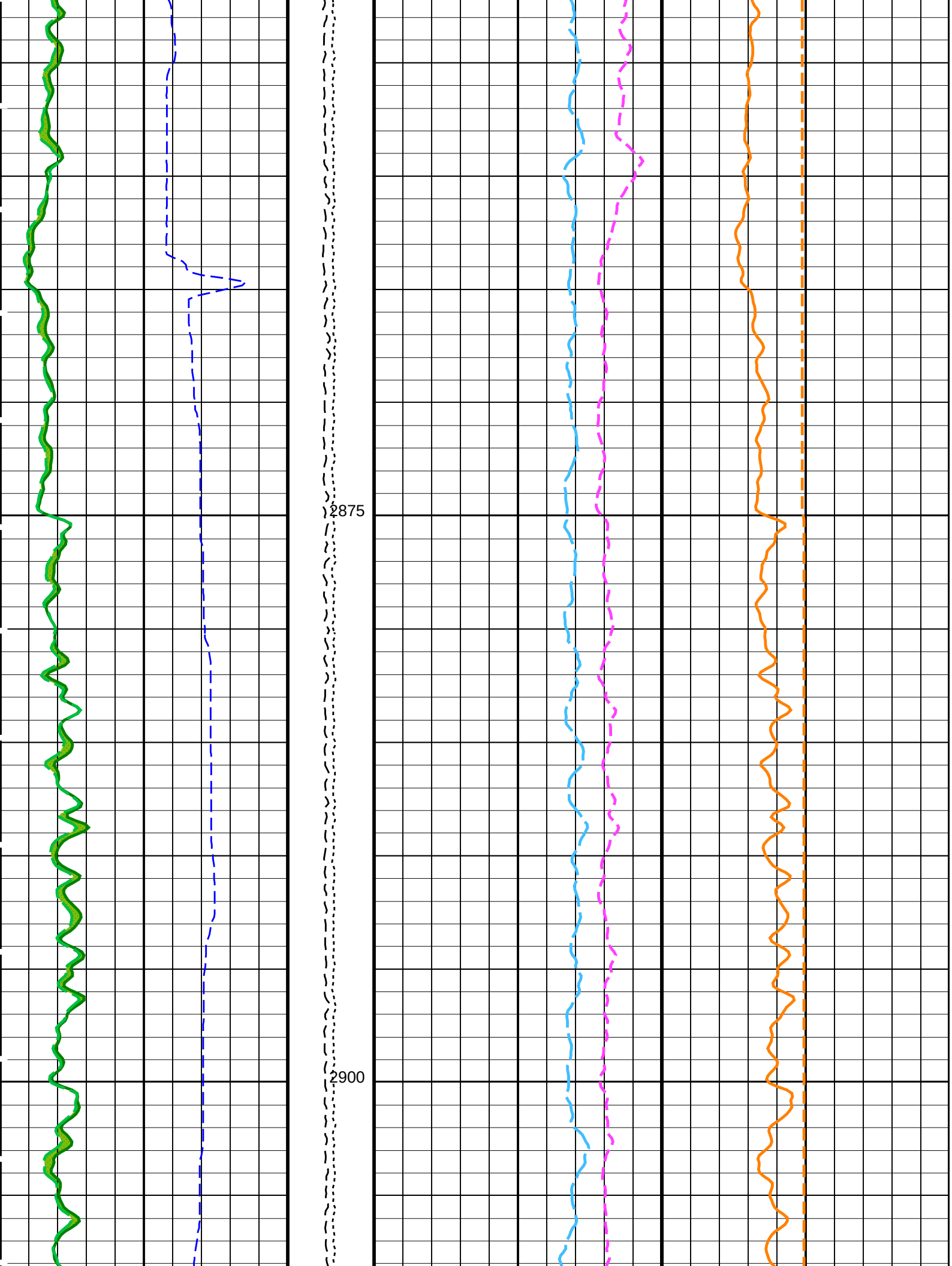
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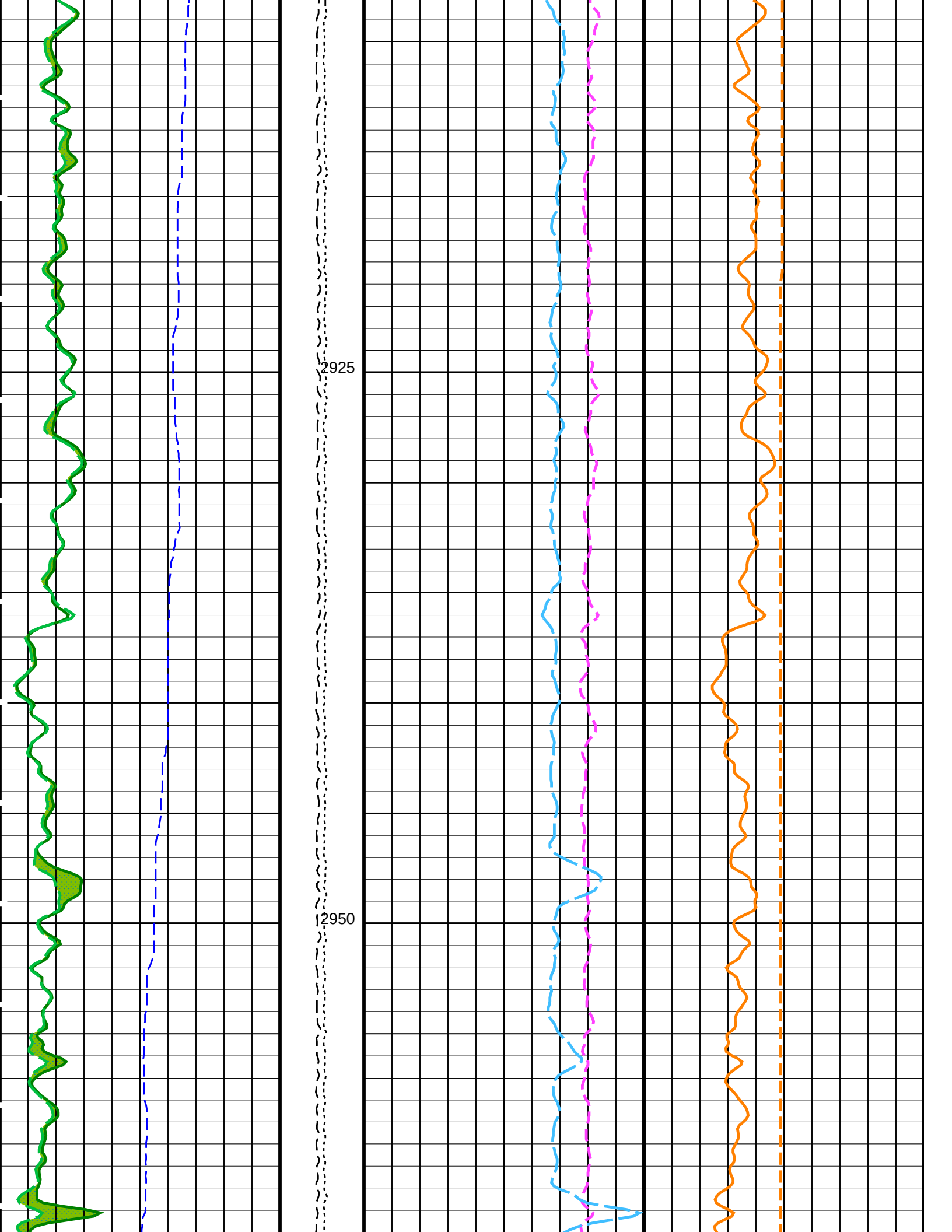
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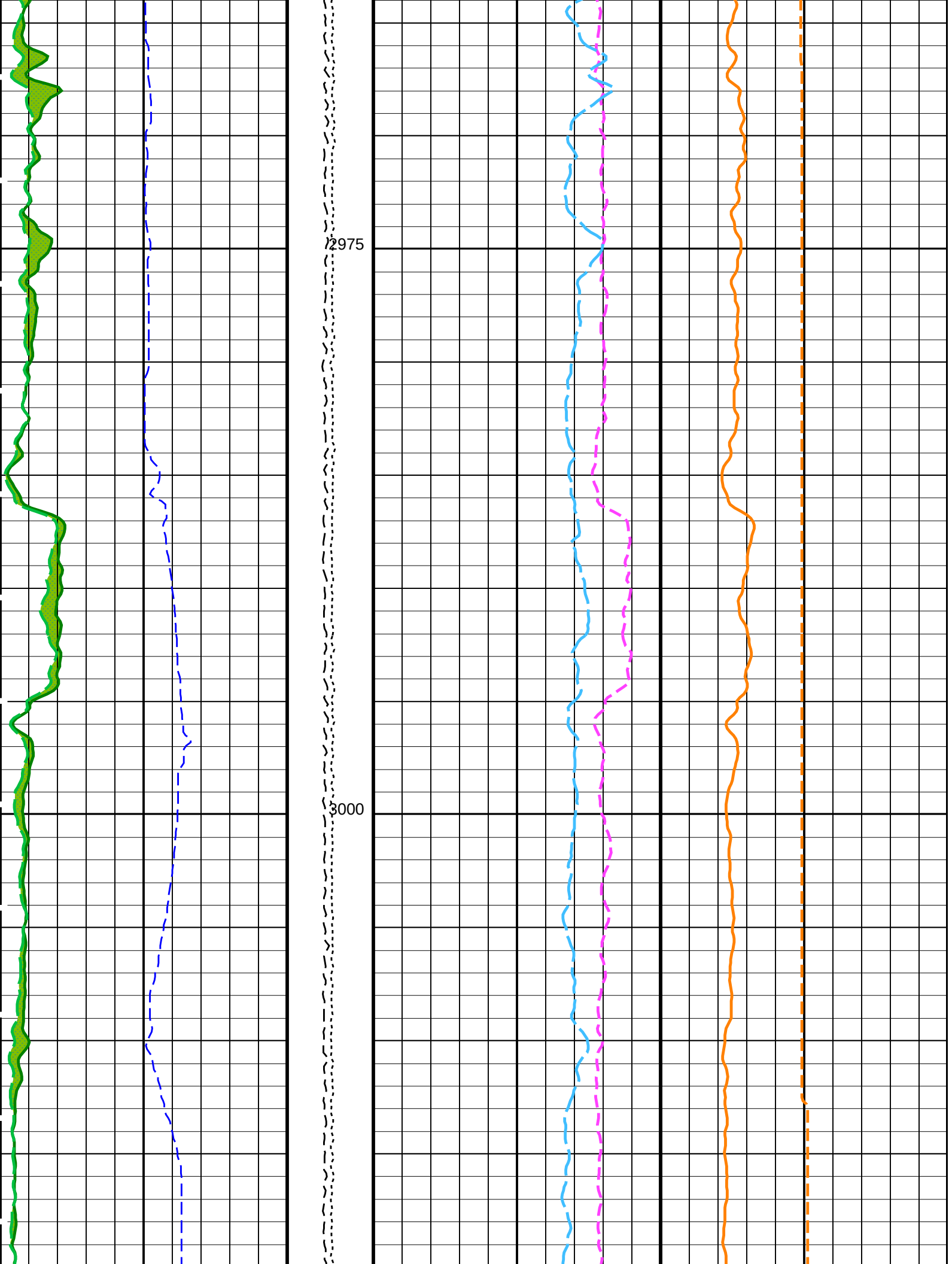
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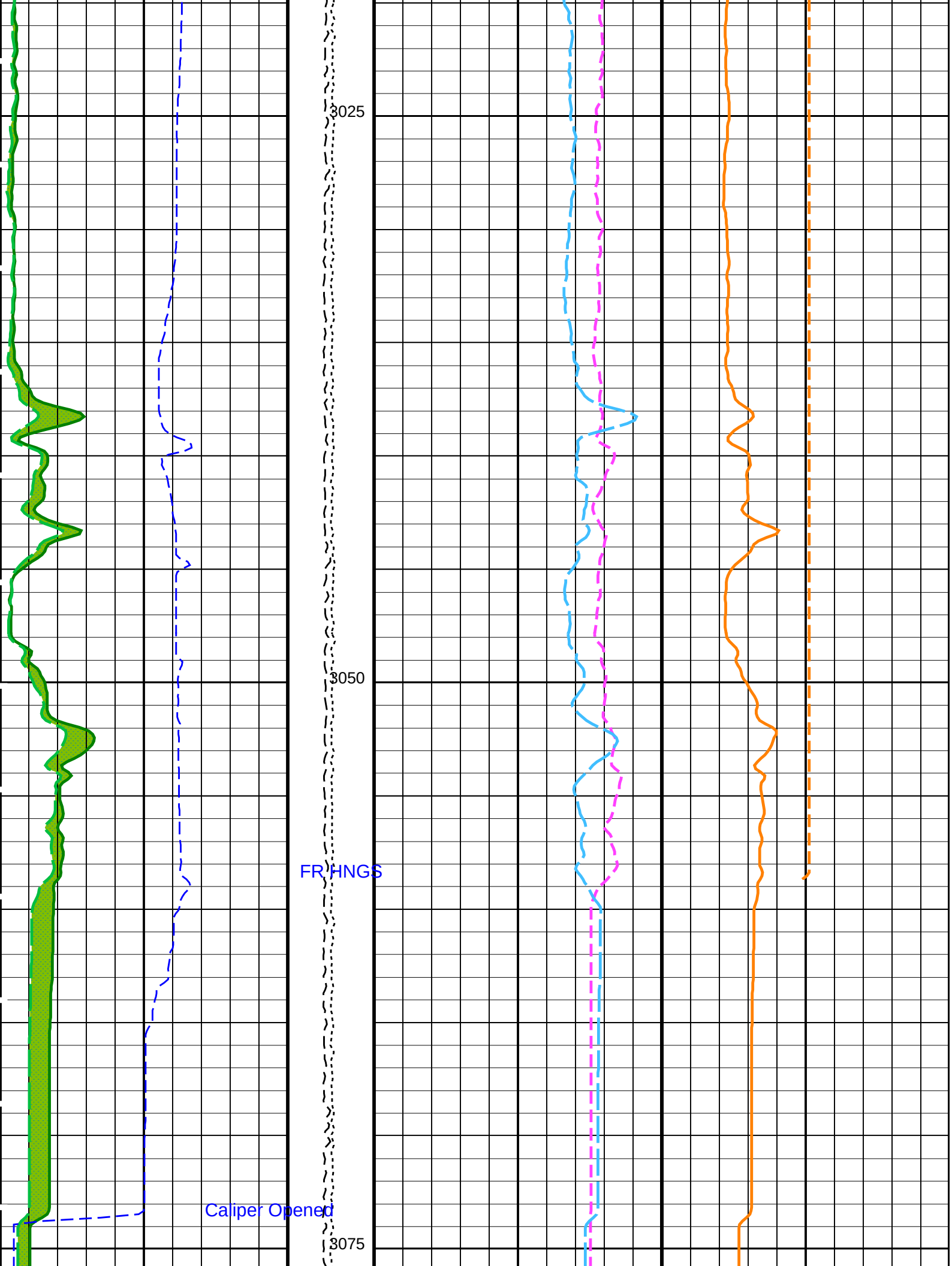
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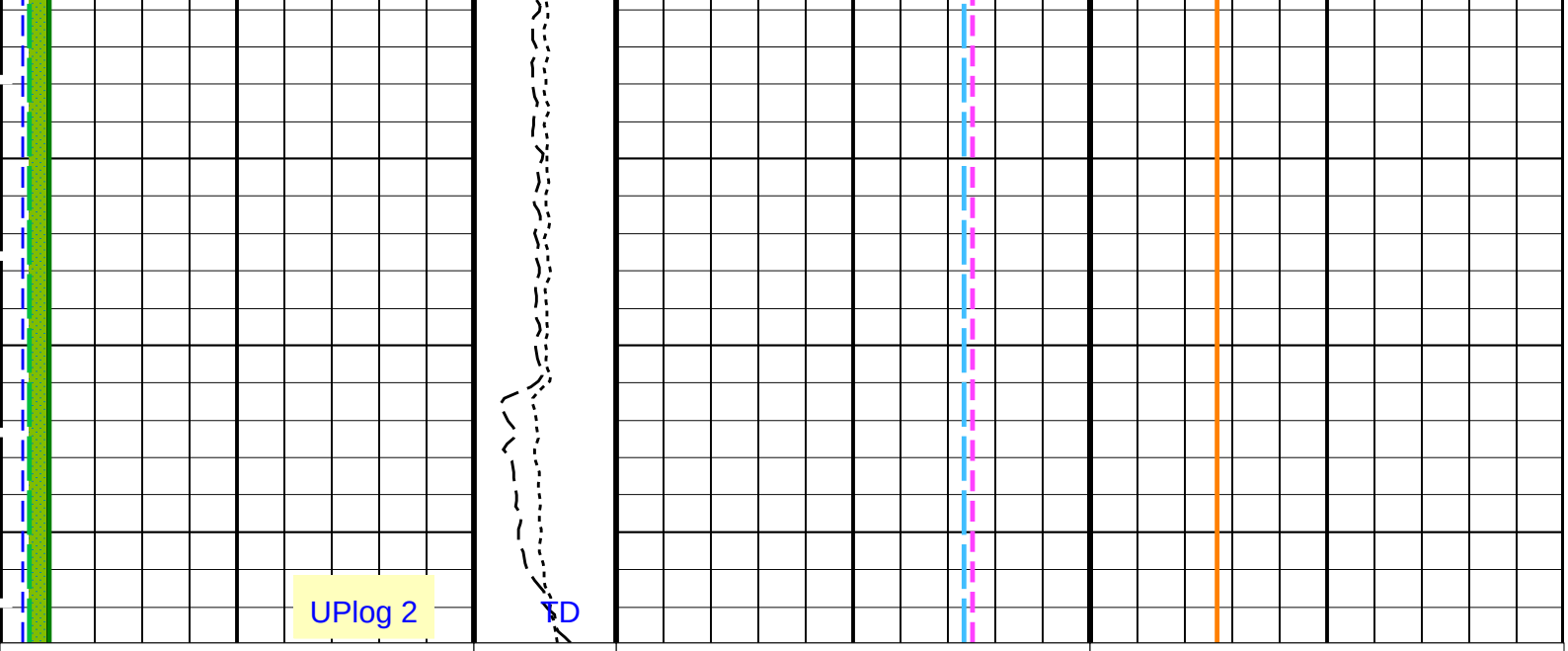
FR HNGS
Caliper Opened
3075




HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10

Area1
From HCGR to HSGR

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

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

**PIP SUMMARY**

Time Mark Every 60 S

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | LCAL | |
| | **APS−C: Accelerator−Porosity Tool** | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | LCAL | |
| | **HNGS−BA: Hostile Natural Gamma Ray Sonde** | | |
| BAR1 | HNGS Detector 1 Barite Constant | 1 | |
| BAR2 | HNGS Detector 2 Barite Constant | 1 | |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 | |
| BHS | Borehole Status | OPEN | |
| CSD1 | Inner Casing Outer Diameter | 0 | IN |
| CSD2 | Outer Casing Outer Diameter | 0 | IN |
| CSW1 | Inner Casing Weight | 0 | LB/F |
| CSW2 | Outer Casing Weight | 0 | LB/F |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| GCSE | Generalized Caliper Selection | 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 | −0.00142908 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| SGRC | HNGS Standard Gamma−Ray Correction Flag | YES | |
| TPOS | Tool Position | ECCE | |

| | | | |
|---|---|---|---|
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.05321 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.07152 | |
| | EDTC−B: Enhanced DTS Cartridge | | |
| BHS | Borehole Status | OPEN | |
| GCSE | Generalized Caliper Selection | LCAL | |
| | System and Miscellaneous | | |
| BS | Bit Size | 9.875 | IN |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |

Format: HNGSYields  Vertical Scale: 1:200  Graphics File Created: 06−Mar−2022 02:14

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 | | |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 | | |

Company: International Ocean Discovery Program  Well: Expedition 392, Site U1579 A


## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 | 3093.0 M | 2544.6 M |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 | 3093.0 M | 2544.6 M |

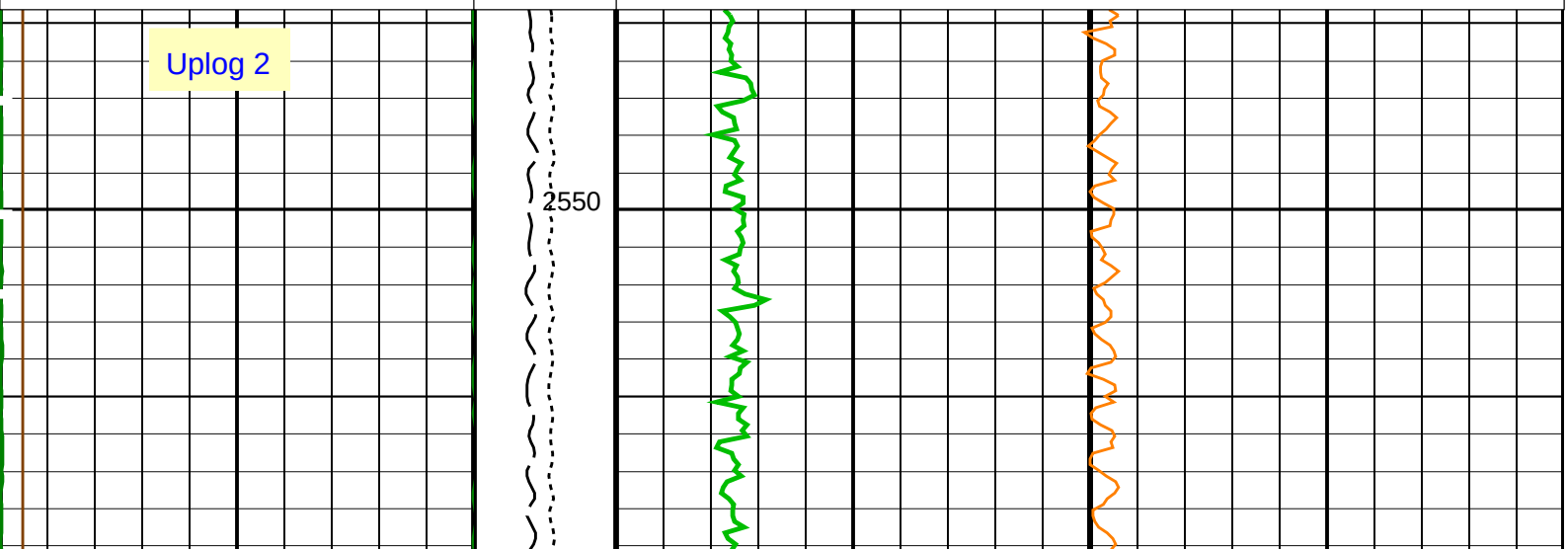
## OP System Version: 19C0−187

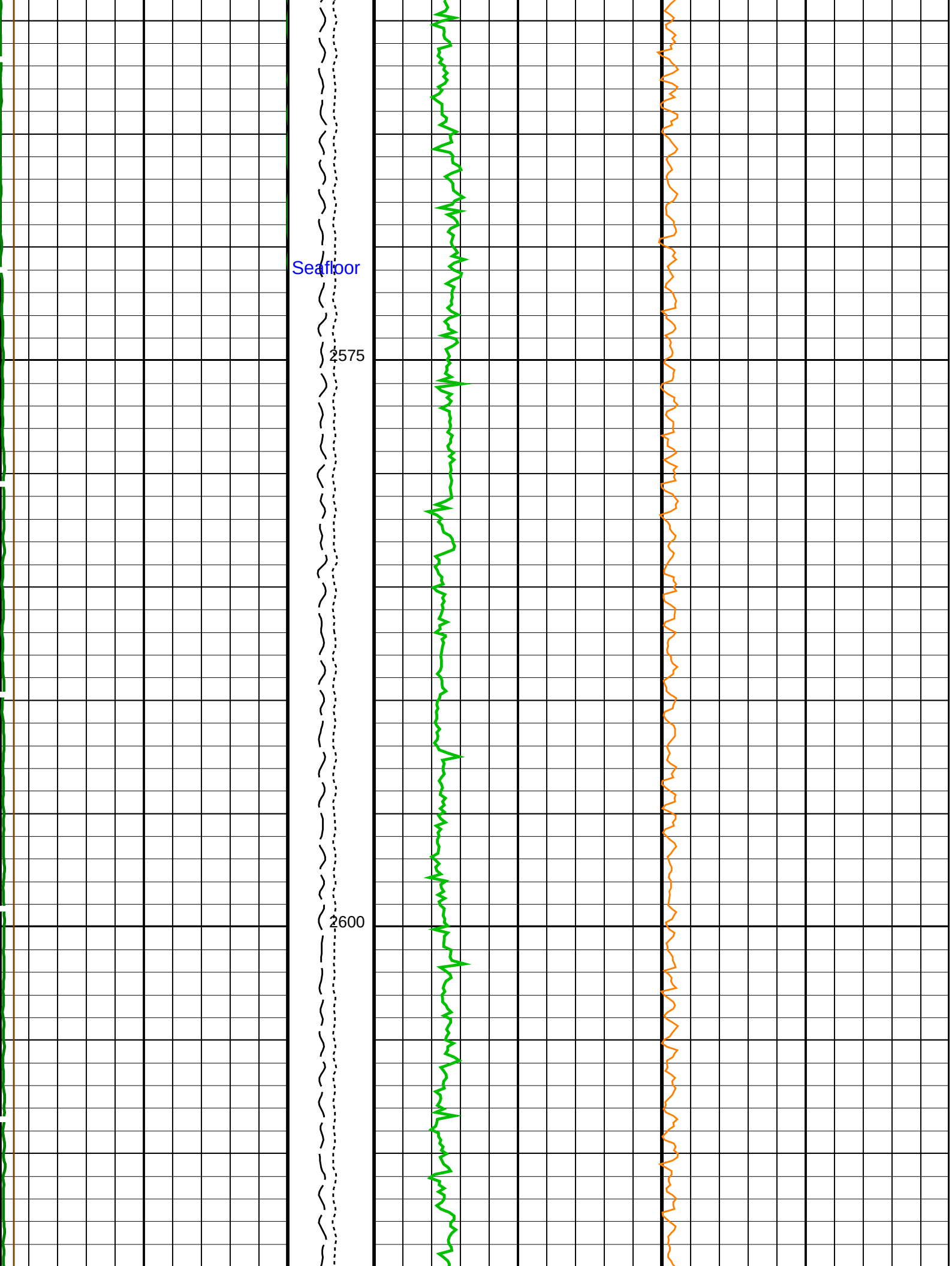
| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |


PIP SUMMARY

Time Mark Every 60 S

| HNGS Spectroscopy Gamma Ray (HSGR) | Calibrated Downhole Force (CDF) (LBF) | Dual−Coil Susceptibility (MSSLSUS_LDEO) |
|---|---|---|
| 0 (GAPI) 100 | 3000 0 | −10000 (PPM) 10000 |
| **HLDS Caliper (LCAL)** | **Tension (TENS) (LBF)** | **Axial Acceleration (MSSZACC_LDEO)** |
| 0 (IN) 20 | 10000 0 | 0 (M/S2) 20 |

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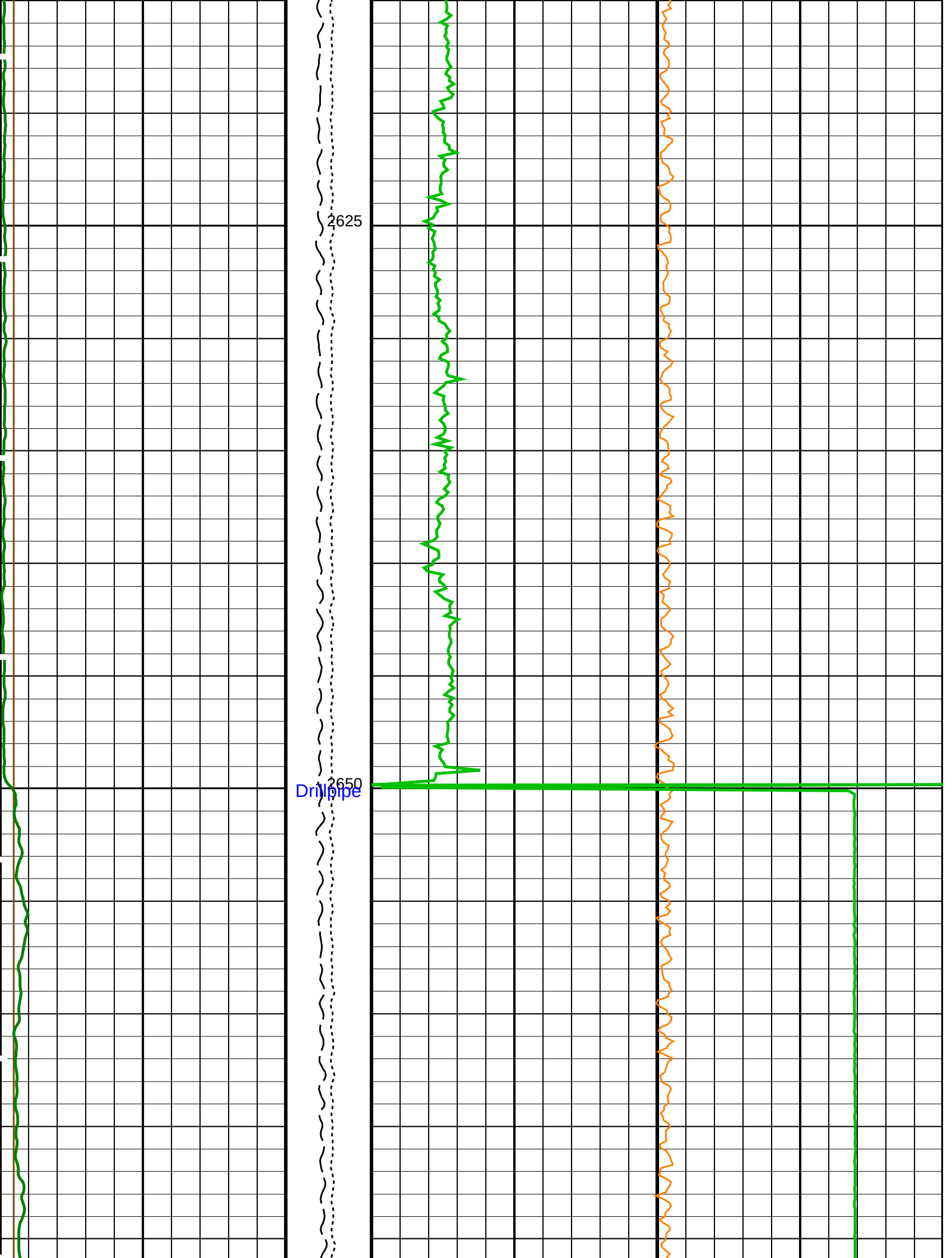
2575
2600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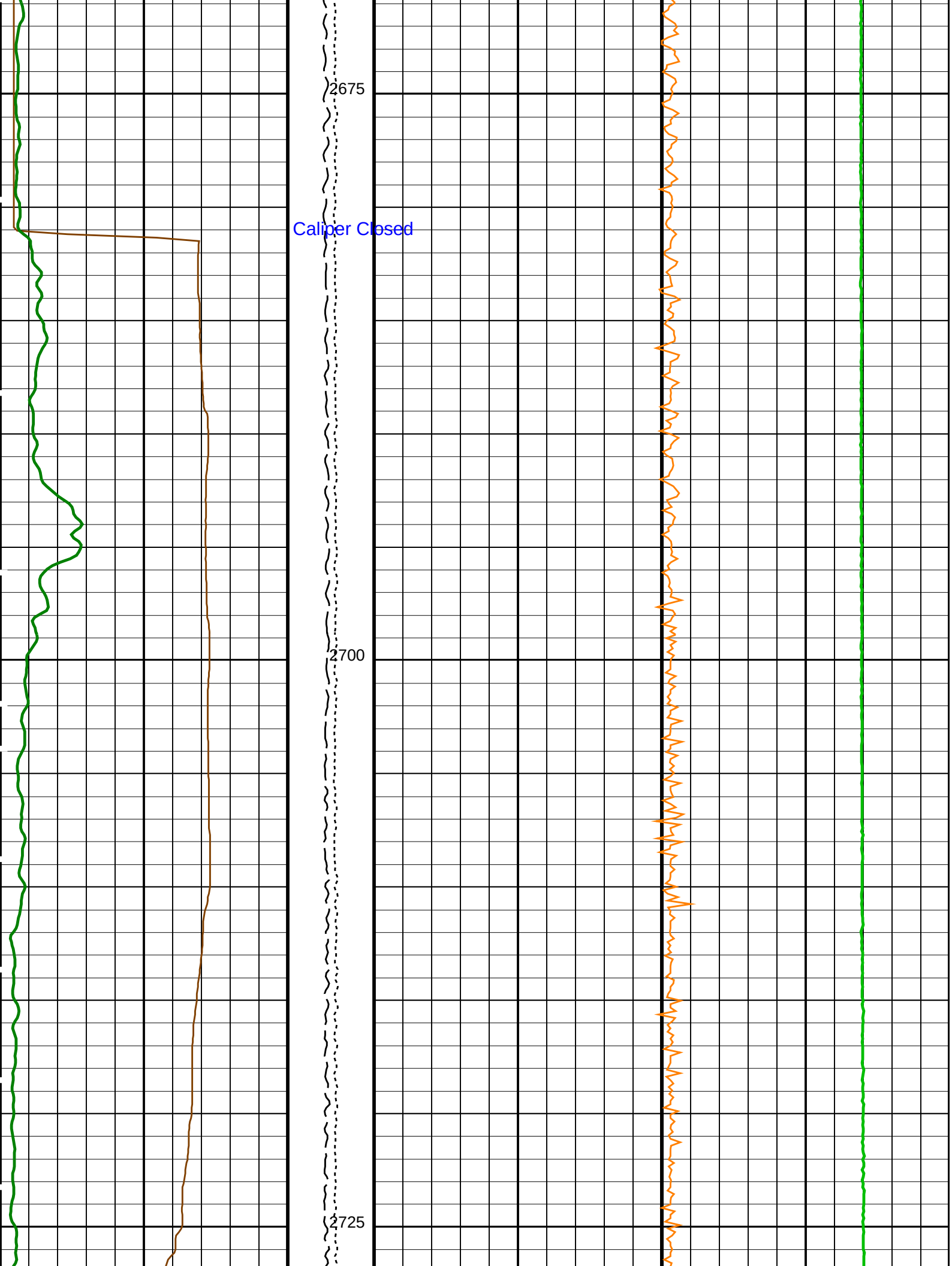
Drillpipe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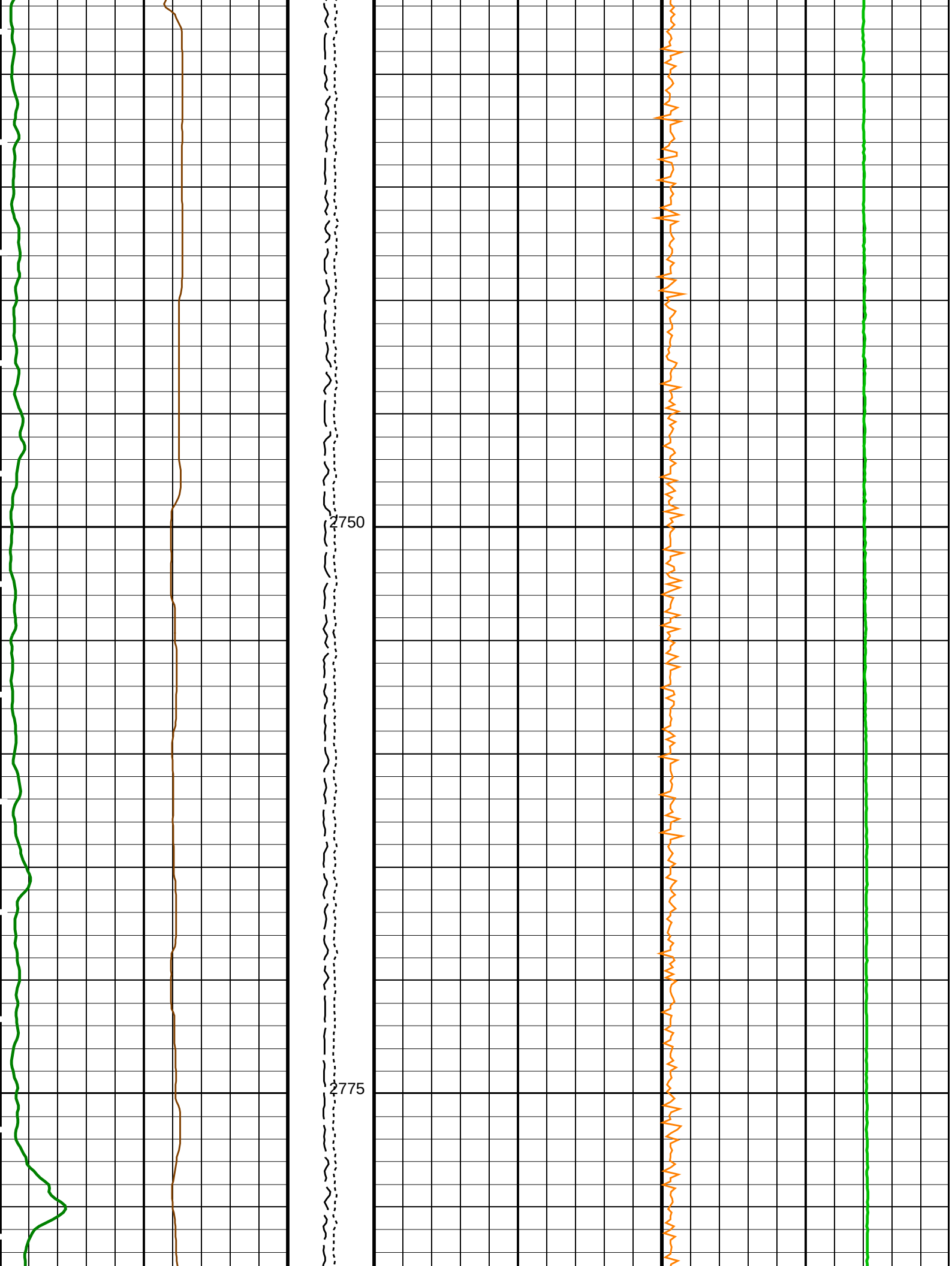
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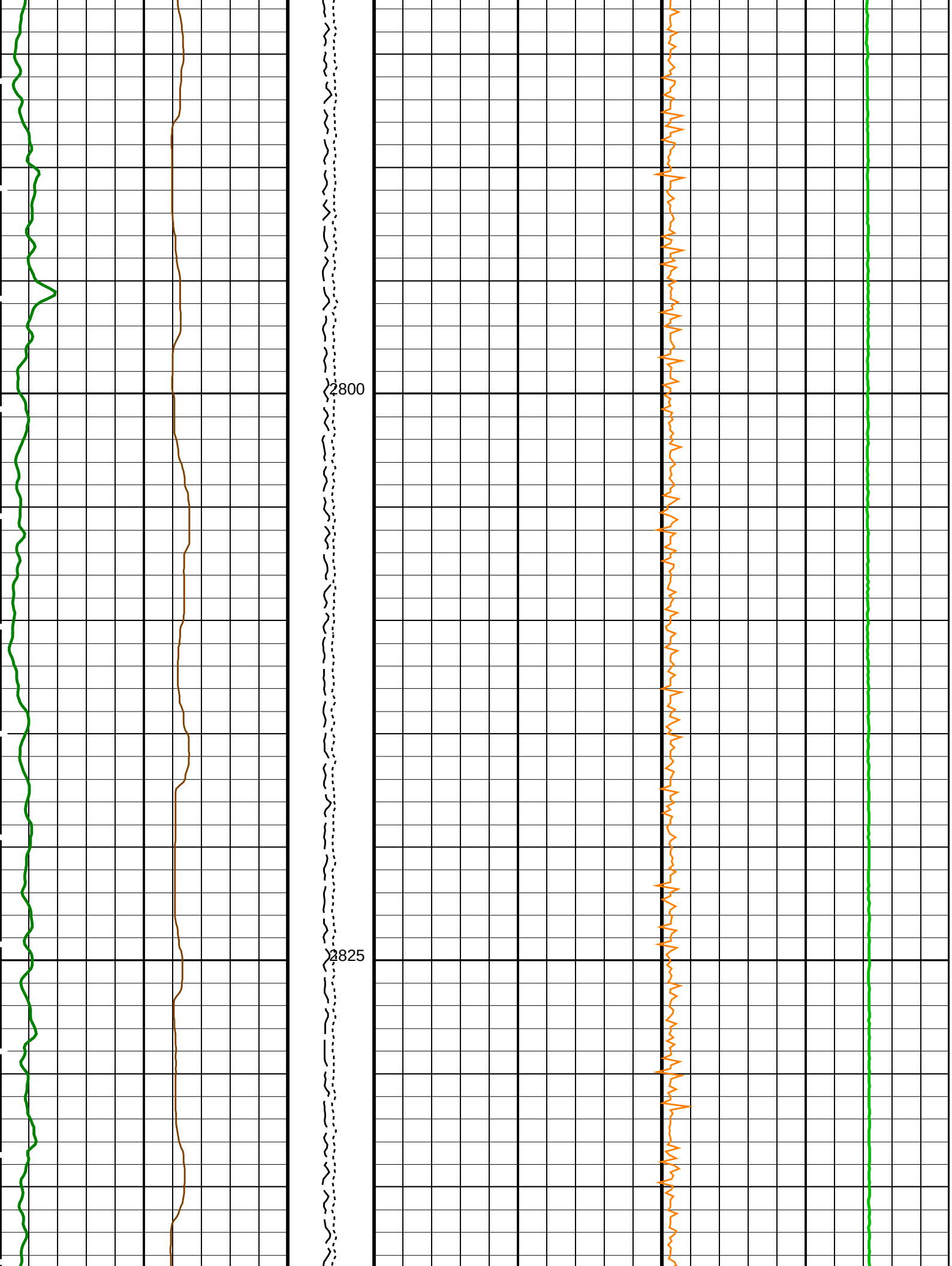
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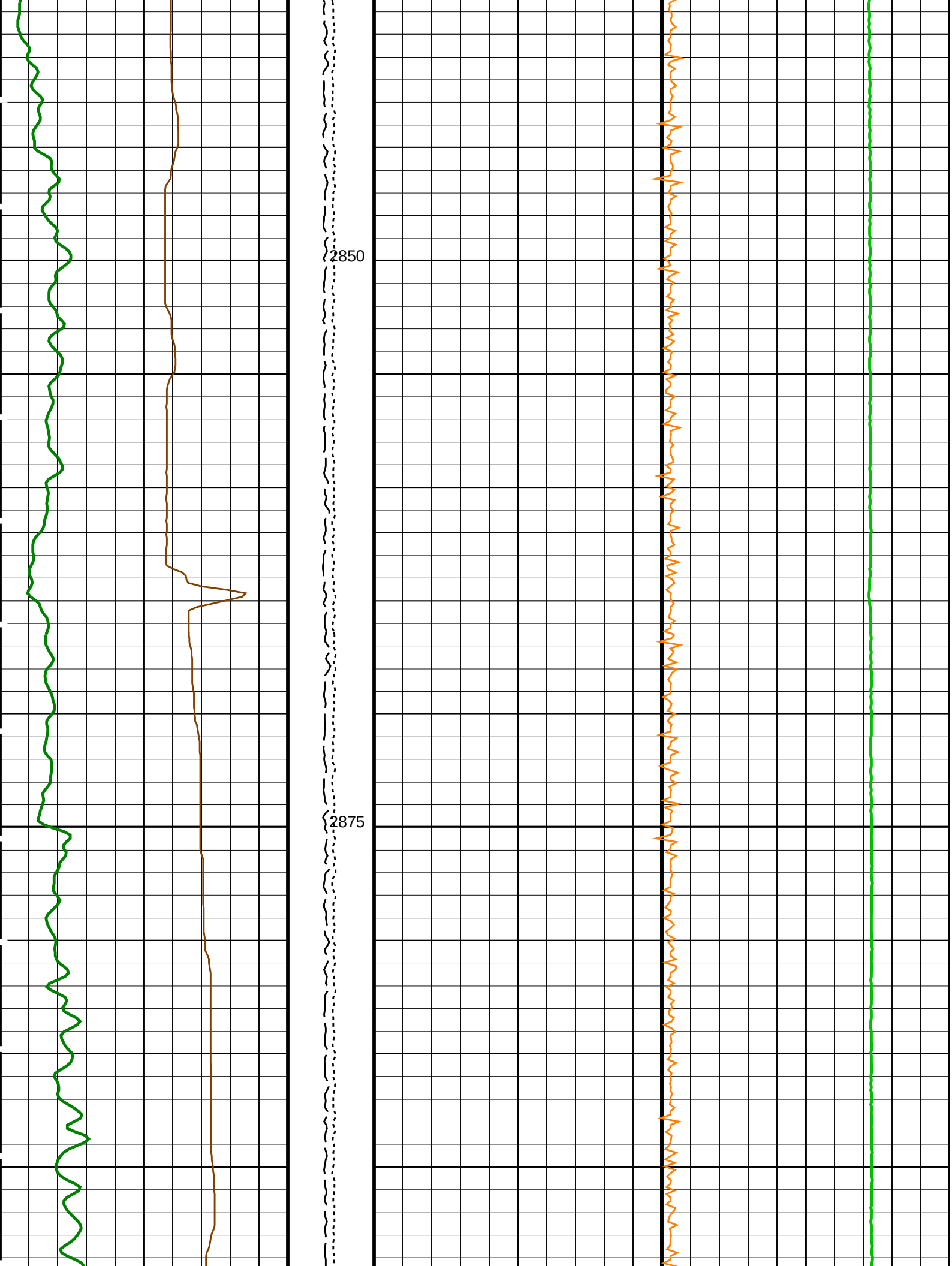
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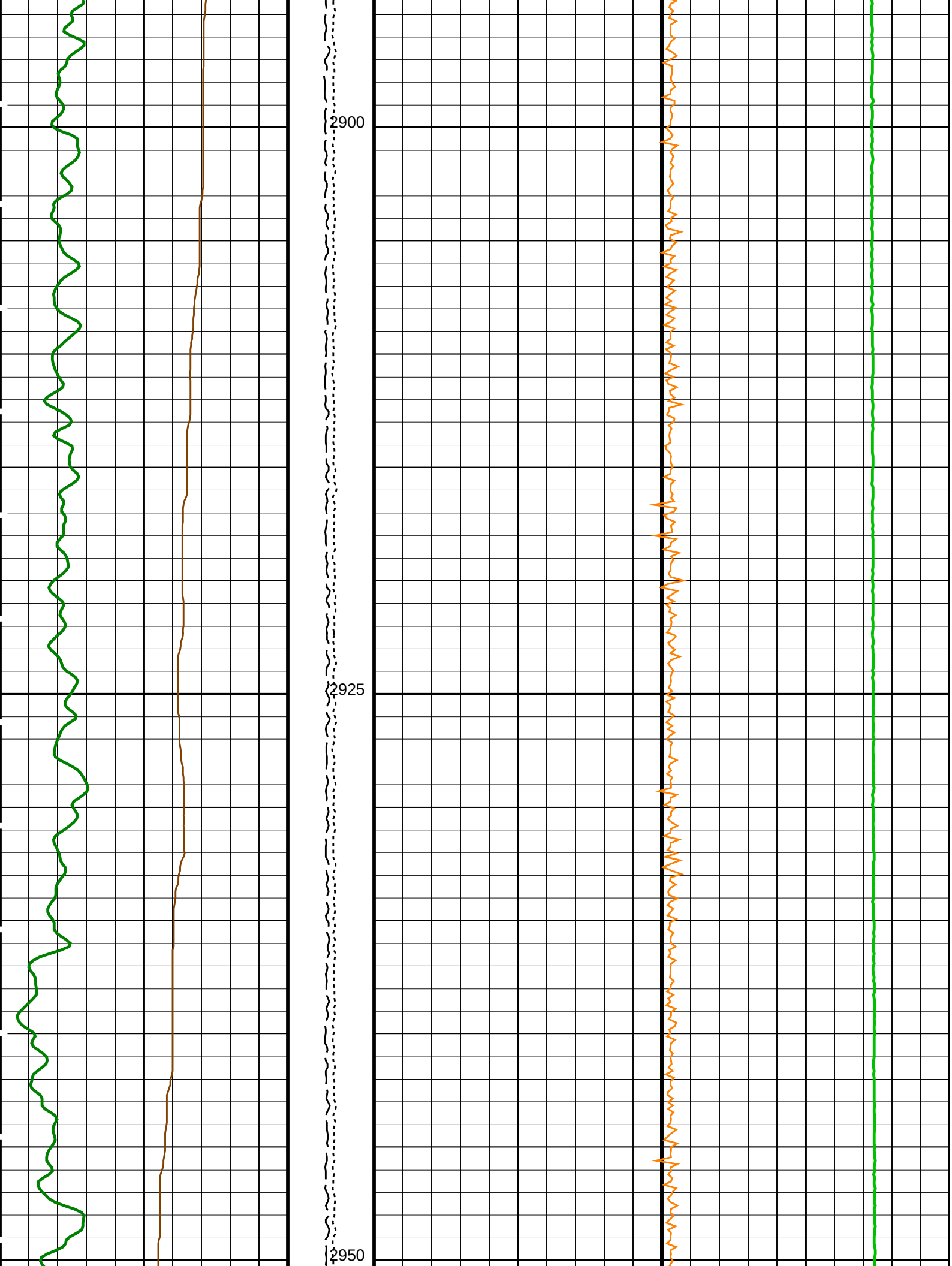
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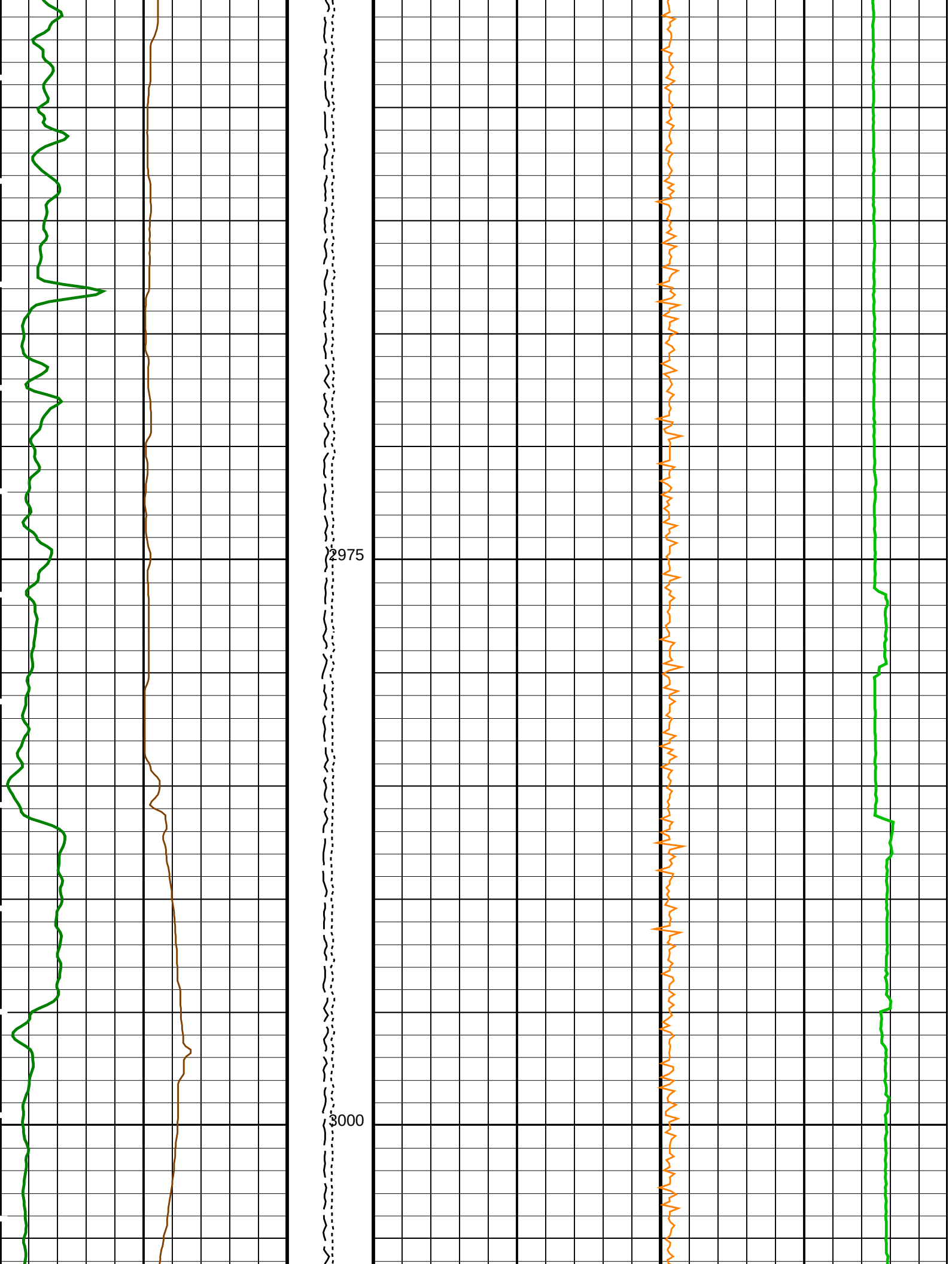
2925
2950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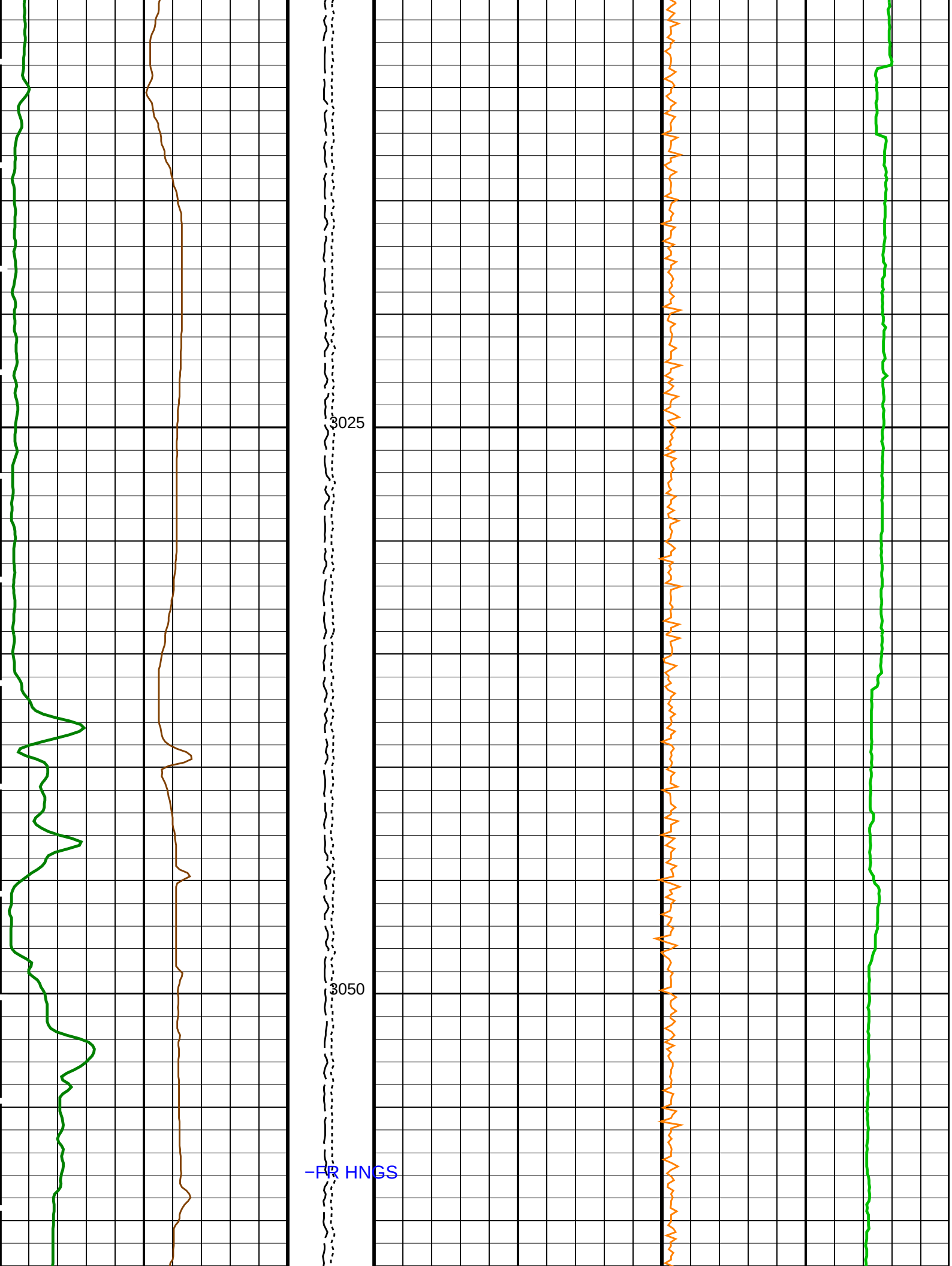
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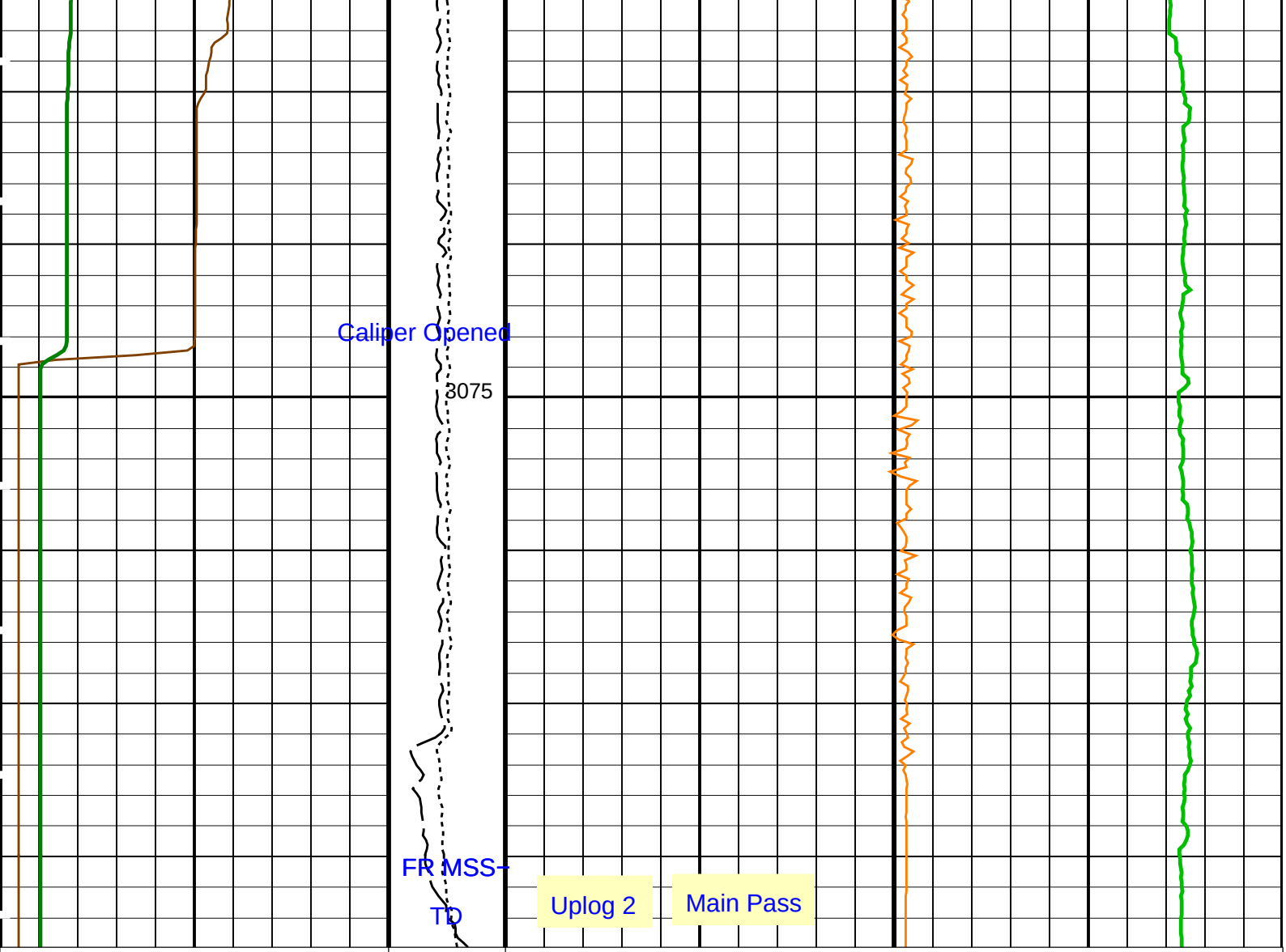
FR HNGS




| HLDS Caliper (LCAL) | Tension (TENS) (LBF) | Axial Acceleration (MSSZACC_LDEO) |
|---|---|---|
| 0 (IN) 20 | 10000 0 | 0 (M/S2) 20 |
| **HNGS Spectroscopy Gamma Ray (HSGR)** | **Calibrated Downhole Force (CDF) (LBF)** | **Dual−Coil Susceptibility (MSSLSUS_LDEO)** |
| 0 (GAPI) 100 | 3000 0 | −10000 (PPM) 10000 |

**PIP SUMMARY**

**Time Mark Every 60 S**

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |

| | | | |
|---|---|---|---|
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| HLDS: Hostile Litho−Density Sonde | | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | ON | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| APS−C: Accelerator−Porosity Tool | | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| 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) | 20 | 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 | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00142908 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.05321 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.07152 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3106.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: MSS_Logging  Vertical Scale: 1:200  Graphics File Created: 06−Mar−2022 02:14

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 |

# Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 | 3093.0 M | 2544.6 M |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 | 3093.0 M | 2544.6 M |

# OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

**PIP SUMMARY**

**Time Mark Every 60 S**

Uplog 2

**HRLT True Resistivity (RT_HRLT)**
0.2 (OHMM) 2000

**HRLT Resistivity 1 (RLA1)**
0.2 (OHMM) 2000

**HRLT Resistivity 2 (RLA2)**
0.2 (OHMM) 2000

**HRLT Resistivity 3 (RLA3)**
0.2 (OHMM) 2000

**HLDS Bulk Density Correction (DRH)**
−0.25 (G/C3) 0.25

**HLDS Bulk Density (RHOM)**
0 (G/C3) 4

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

**Calibrated Downhole Force (CDF) (LBF)**
3000 0

**HRLT Resistivity 5 (RLA5)**
0.2 (OHMM) 2000

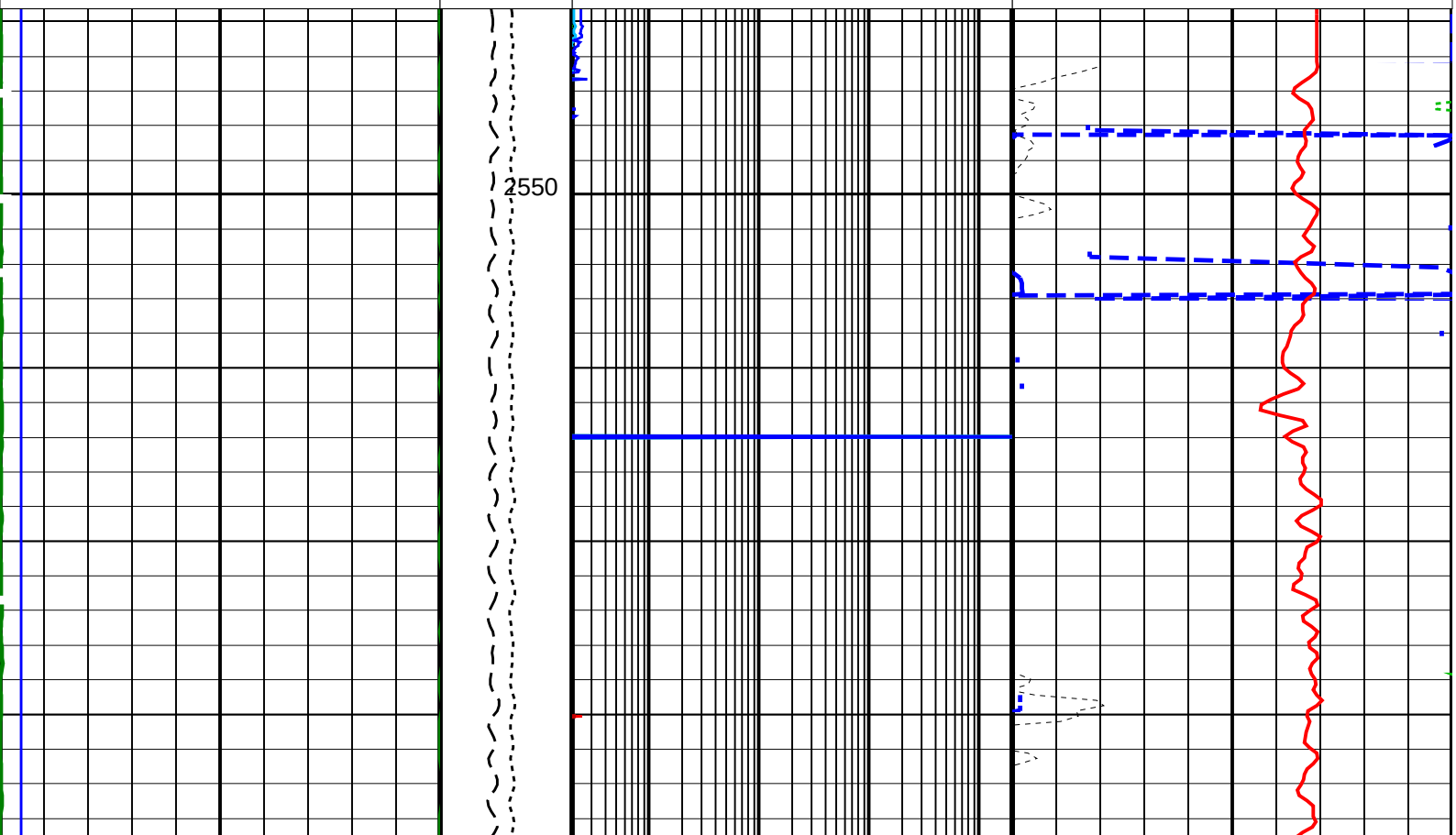
**HLDS Long Spaced Photoelectric Effect (PEFL)**
0 (−−−−) 10

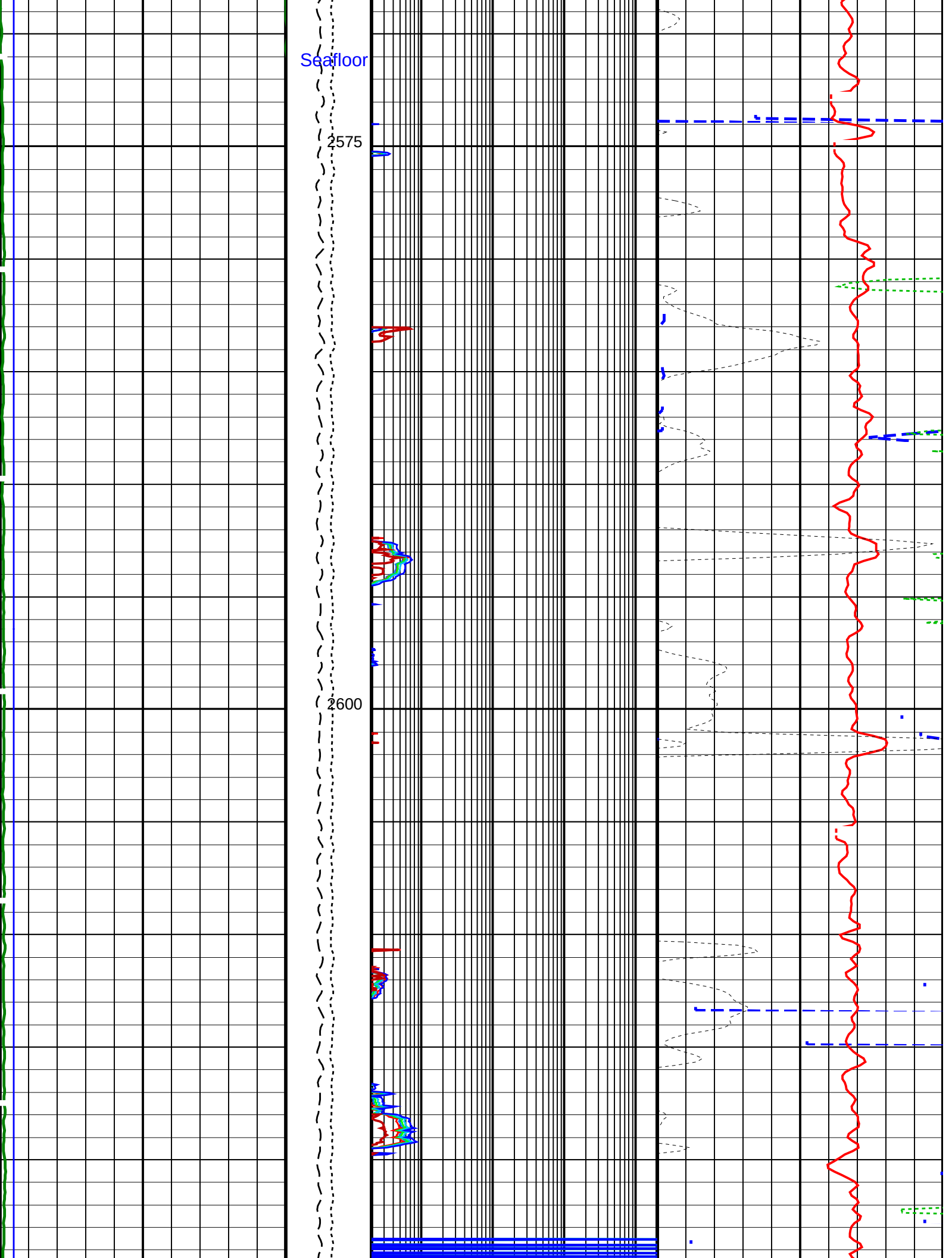
**HLDS Caliper (LCAL)**
0 (IN) 20

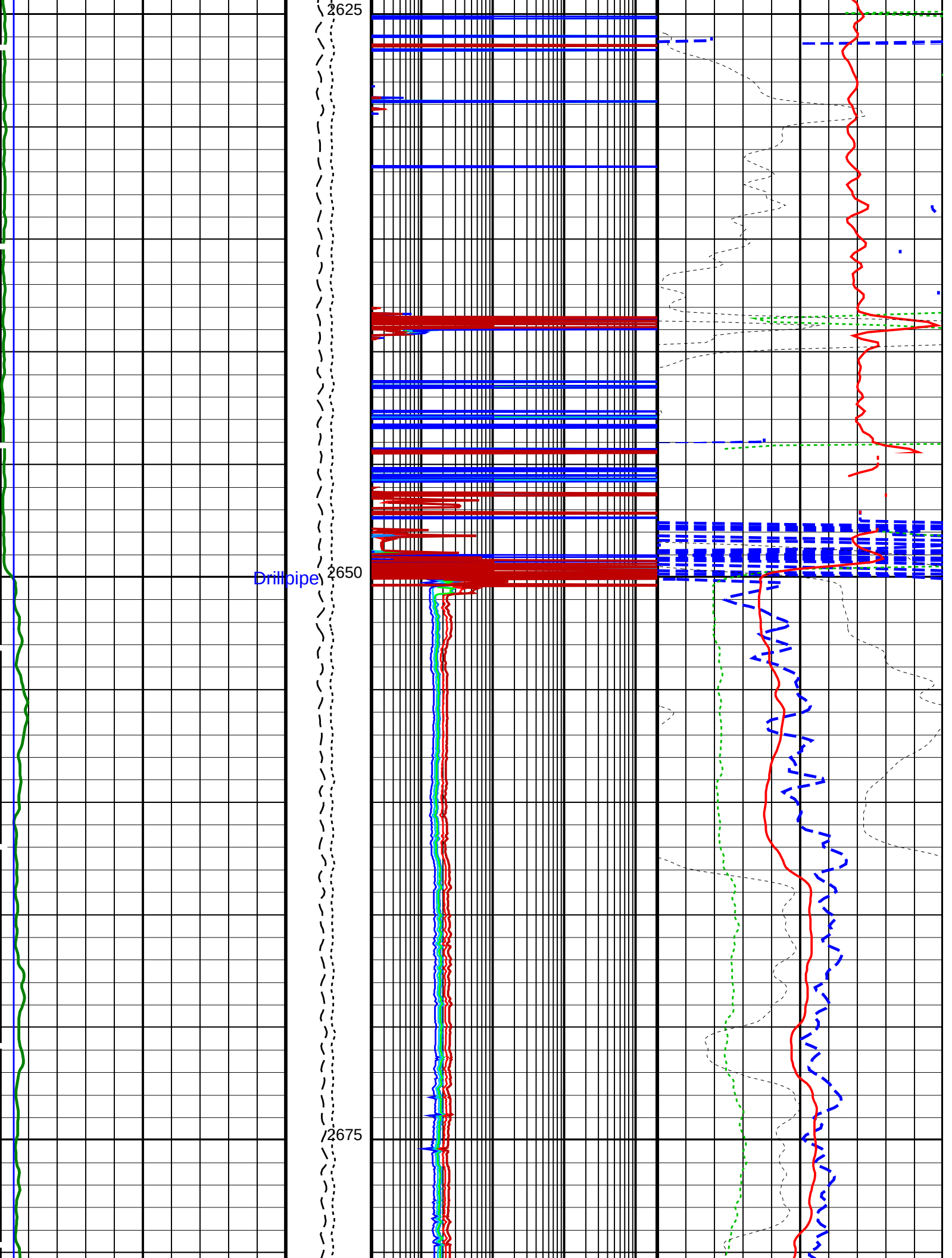
**Tension (TENS) (LBF)**
10000 0

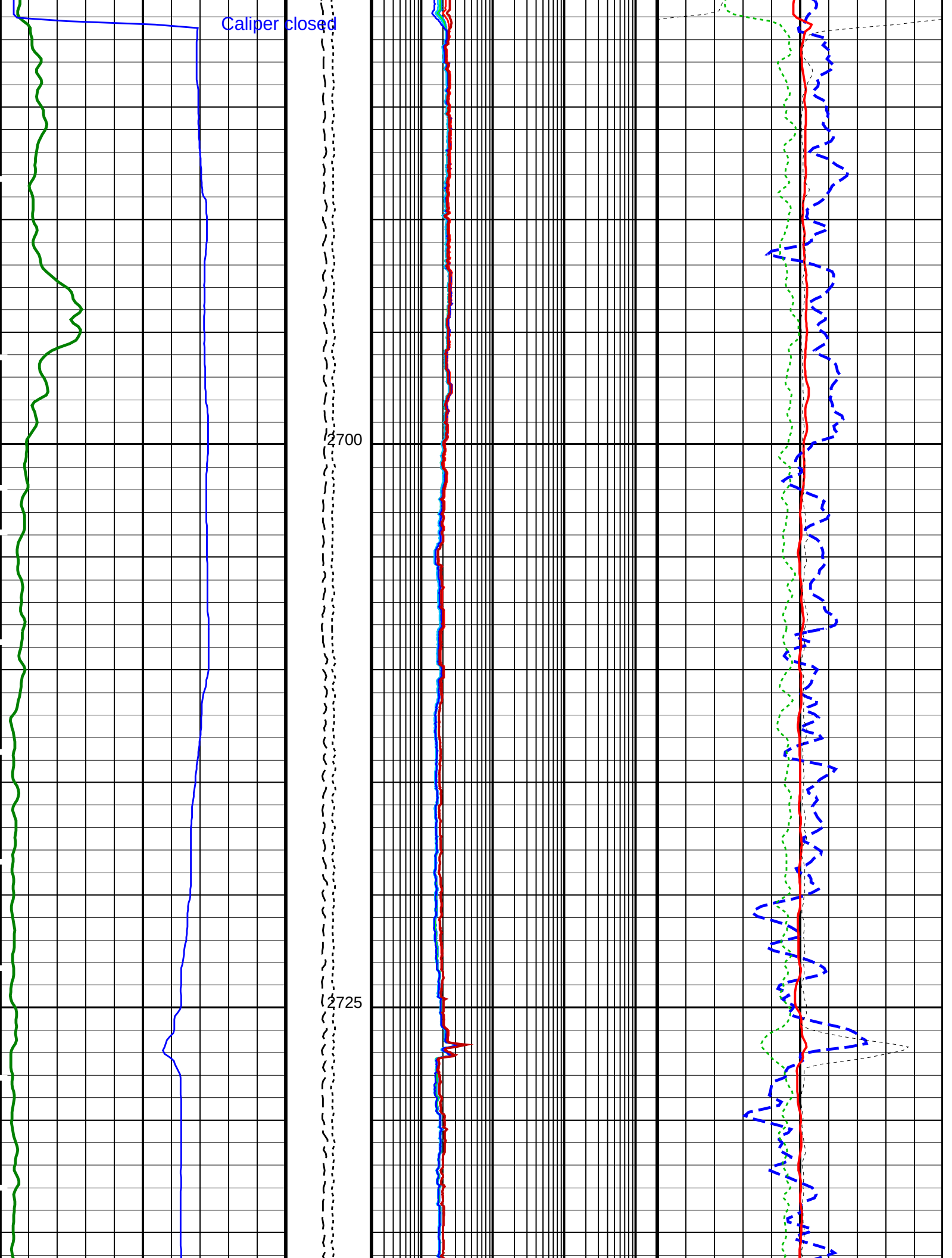
**HRLT Resistivity 4 (RLA4)**
0.2 (OHMM) 2000

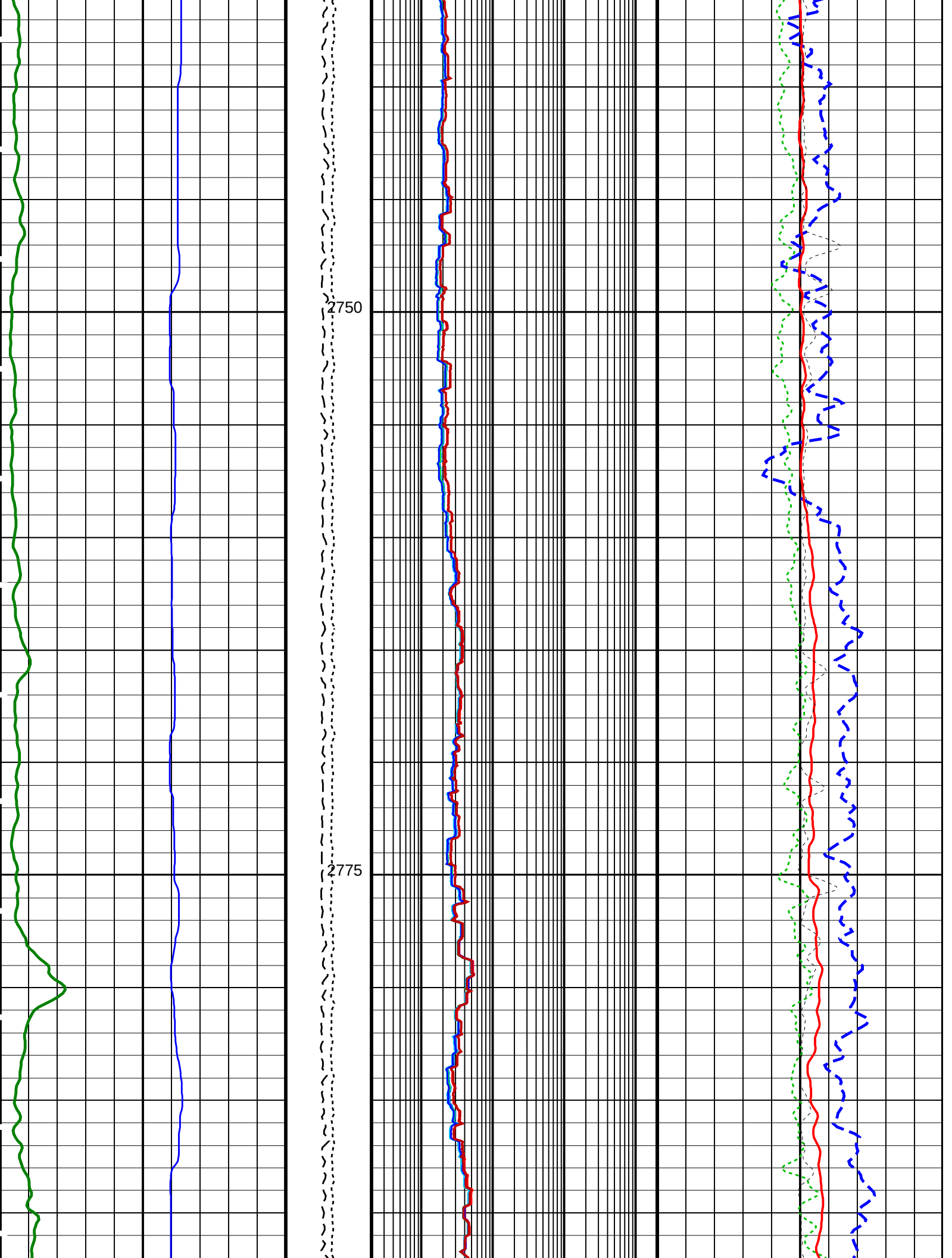
**APS Near/Far Corrected Limestone Porosity (FPLC)**
100 (PU) 0




Seafloor
2575
2600


2625
Drillpipe
2650
2675


Caliper closed
2700
2725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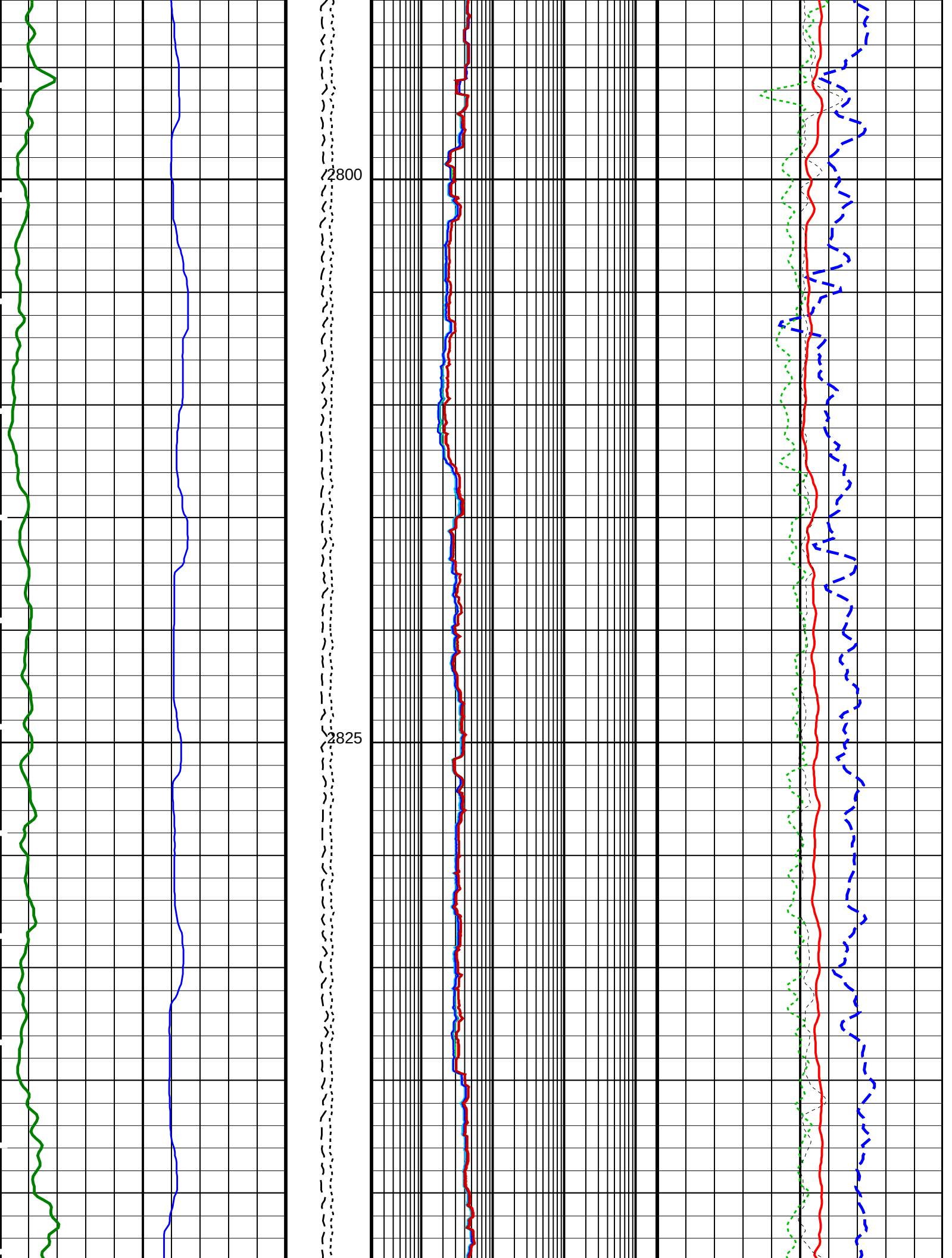
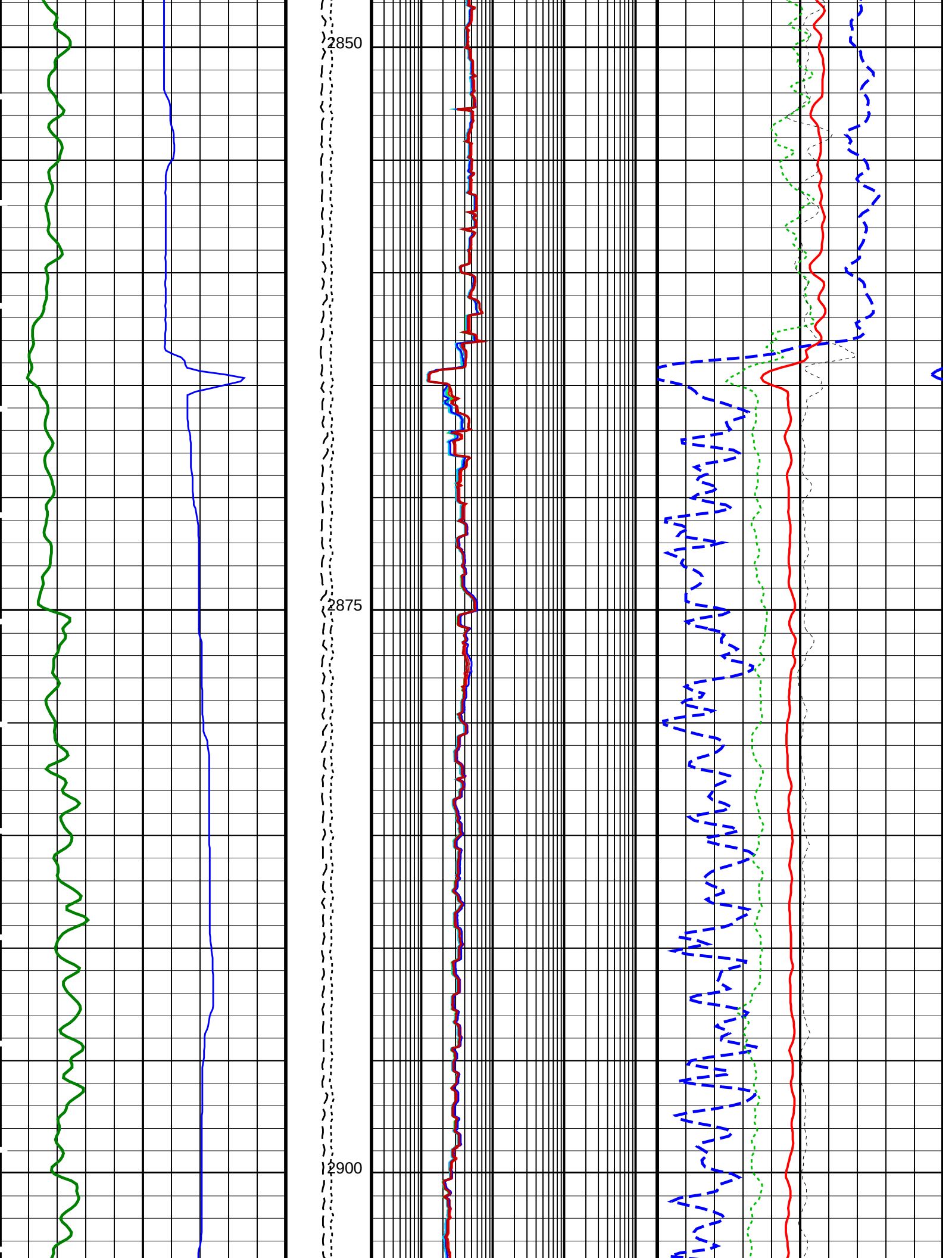
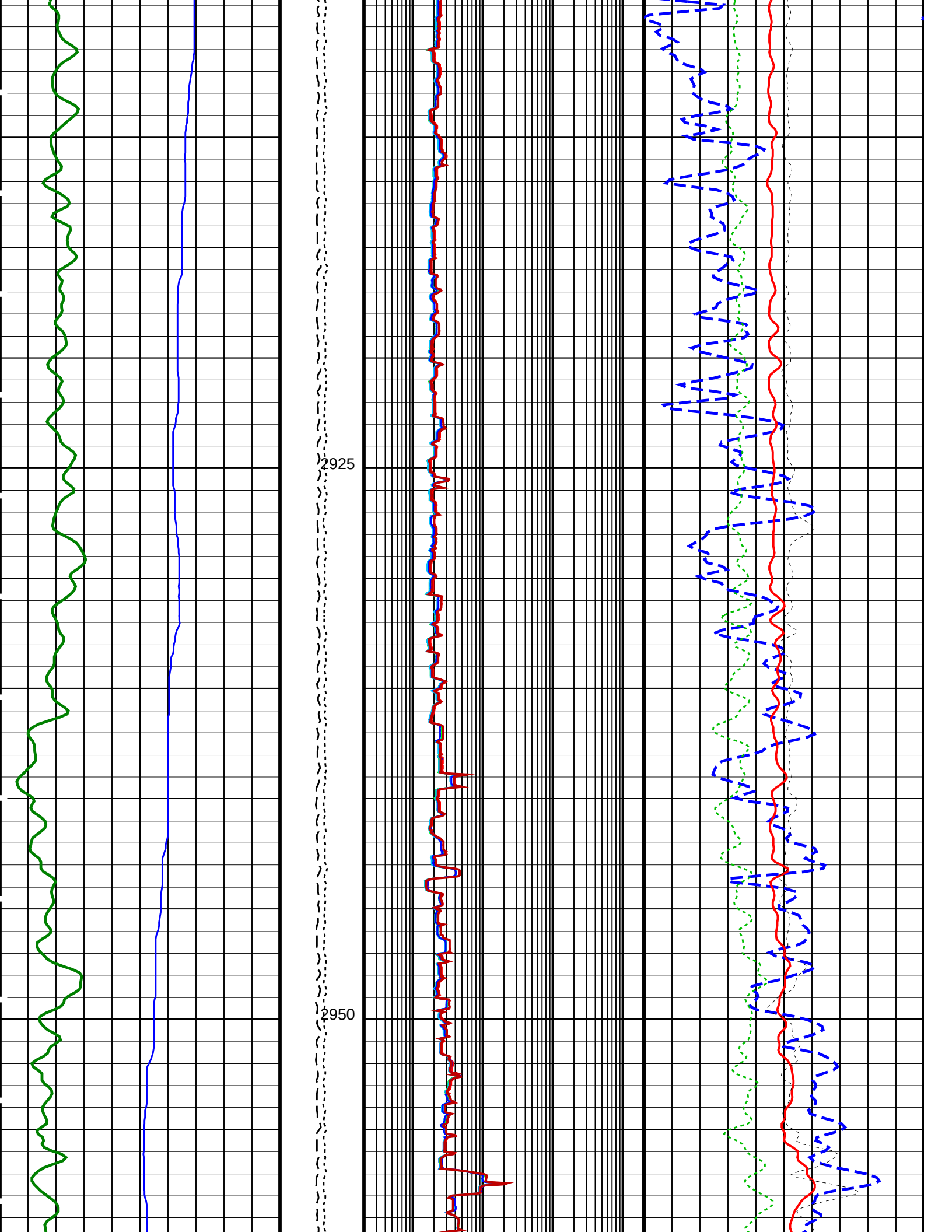

2800
2825


2850
2875
2900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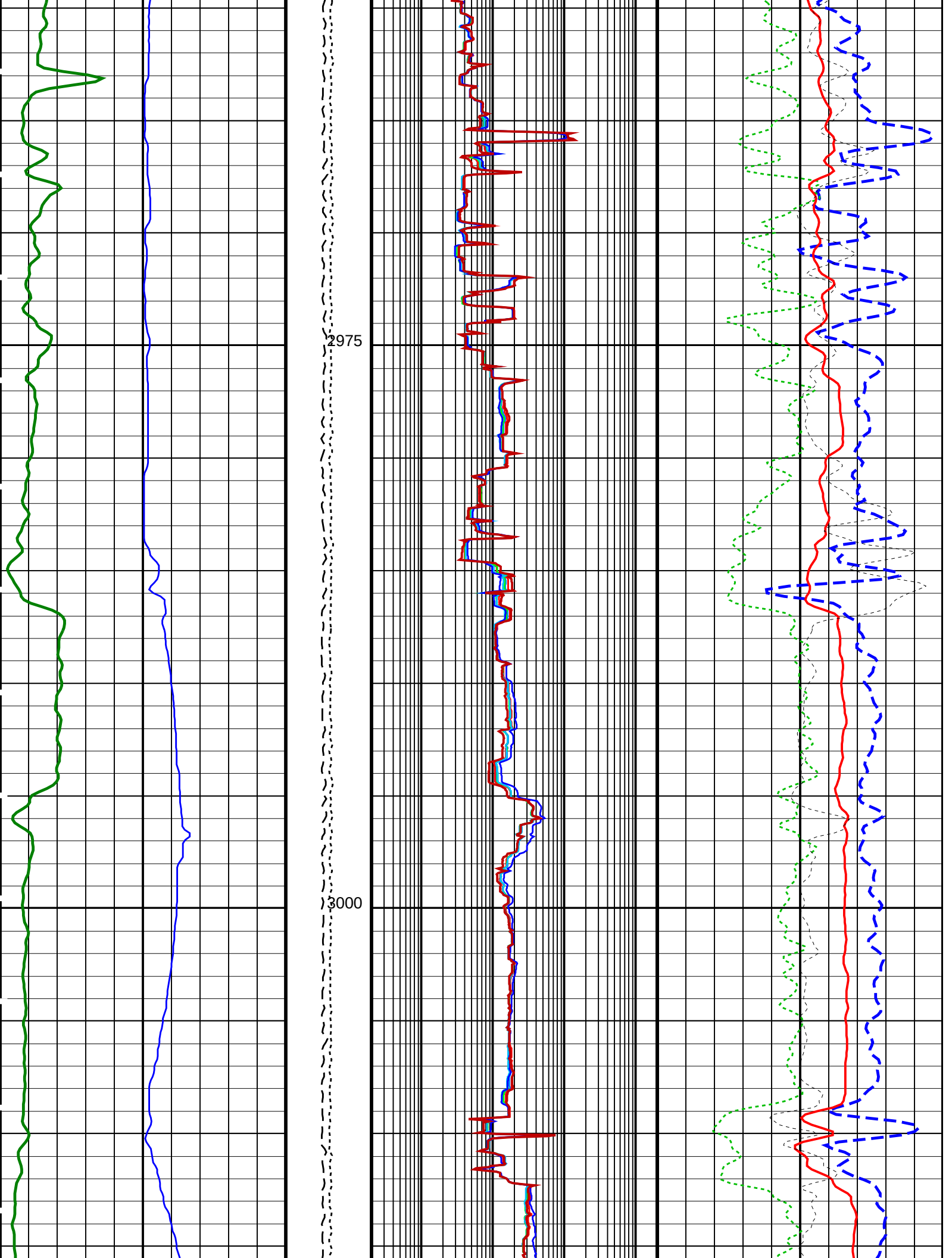
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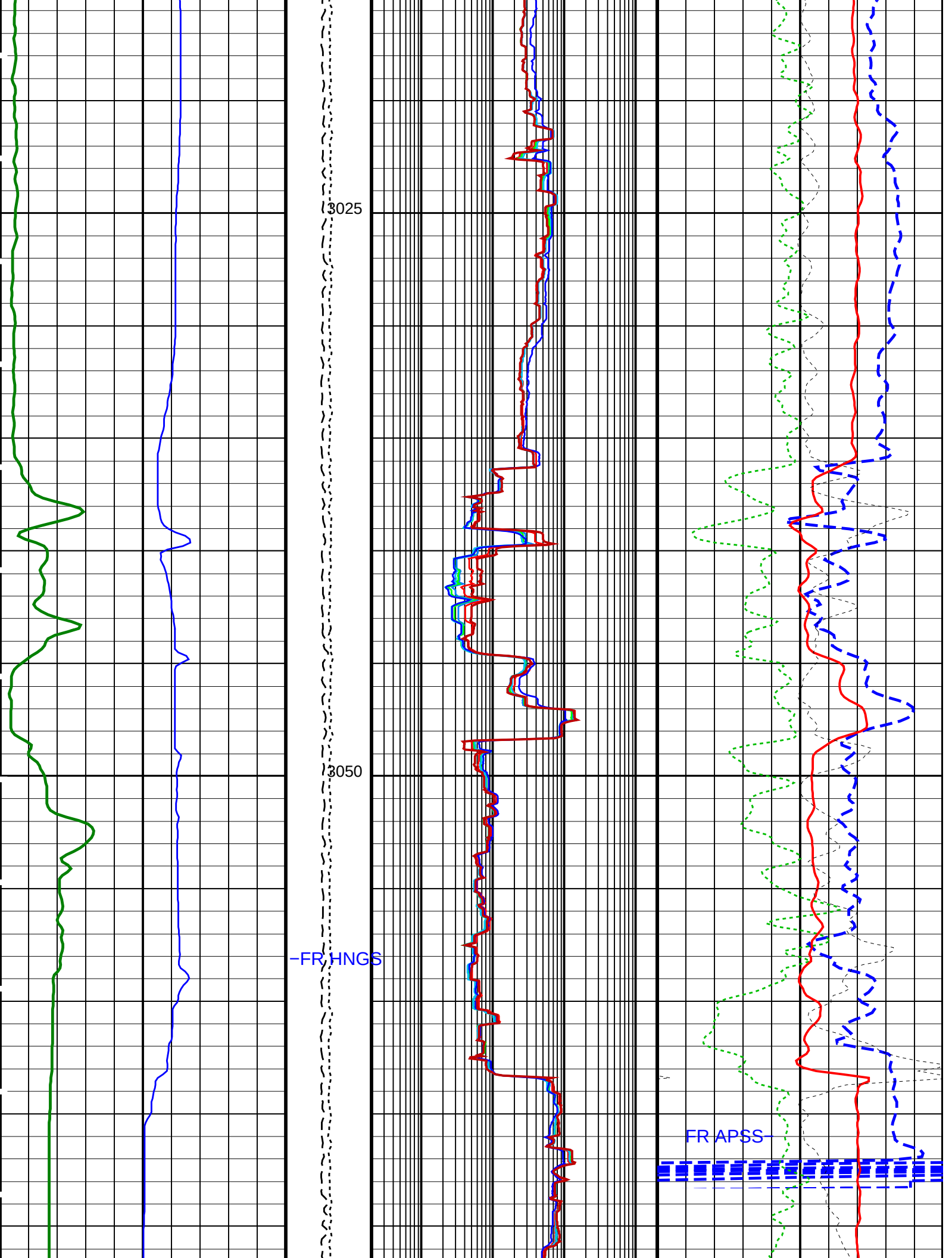
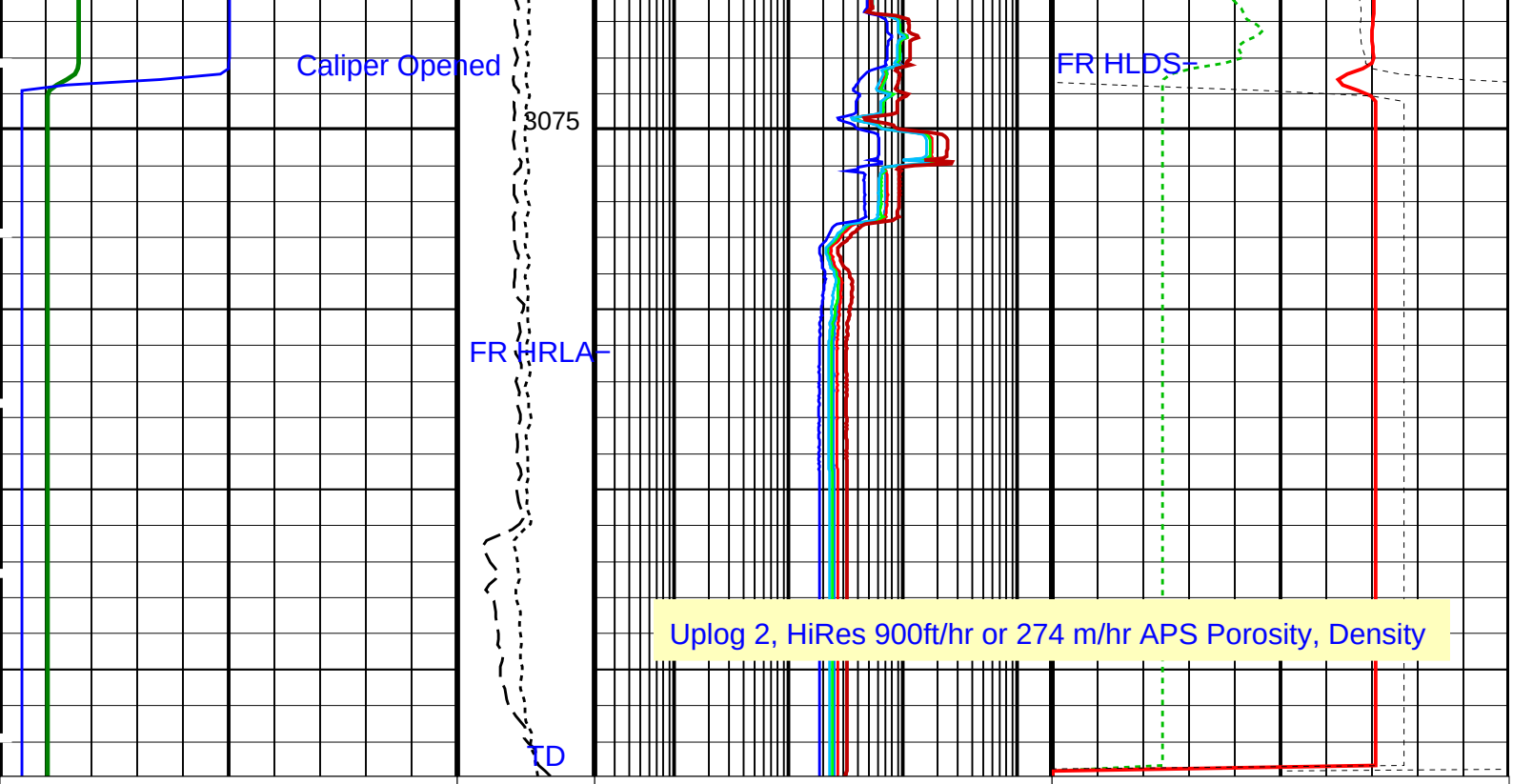

3025
3050
FR HNGS
FR APSS




| | | | |
|---|---|---|---|
| HLDS Caliper (LCAL)<br>0 (IN) 20 | Tension (TENS) (LBF)<br>10000 0 | HRLT Resistivity 4 (RLA4)<br>0.2 (OHMM) 2000 | APS Near/Far Corrected Limestone Porosity (FPLC)<br>100 (PU) 0 |
| HNGS Spectroscopy Gamma Ray (HSGR)<br>0 (GAPI) 100 | Calibrated Downhole Force (CDF) (LBF)<br>3000 0 | HRLT Resistivity 5 (RLA5)<br>0.2 (OHMM) 2000 | HLDS Long Spaced Photoelectric Effect (PEFL)<br>0 (----) 10 |
| | | HRLT Resistivity 3 (RLA3)<br>0.2 (OHMM) 2000 | HLDS Bulk Density (RHOM)<br>0 (G/C3) 4 |
| | | HRLT Resistivity 2 (RLA2)<br>0.2 (OHMM) 2000 | HLDS Bulk Density Correction (DRH)<br>−0.25 (G/C3) 0.25 |
| | | HRLT Resistivity 1 (RLA1)<br>0.2 (OHMM) 2000 | |
| | | HRLT True Resistivity (RT_HRLT)<br>0.2 (OHMM) 2000 | |

**PIP SUMMARY**

**Time Mark Every 60 S**

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_0 | |

| | | | |
|---|---|---|---|
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| **HLDS: Hostile Litho−Density Sonde** | | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | ON | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| **APS−C: Accelerator−Porosity Tool** | | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| **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) | 20 | 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 | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00142908 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.05321 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.07152 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3106.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: TripleCombo  Vertical Scale: 1:200  Graphics File Created: 06−Mar−2022 02:14

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 |

# Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | MSS_LDEO_HRLA_LDL_022LUP | FN:25 | PRODUCER | 06−Mar−2022 02:13 | 3093.0 M | 2544.6 M |
| BACKUP | MSS_LDEO_HRLA_LDL_022LUP | FN:26 | PRODUCER | 06−Mar−2022 02:14 | 3093.0 M | 2544.6 M |

# OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

**PIP SUMMARY**

Time Mark Every 60 S

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

Uplog 2 HiRes 900ft/hr or 274 m/hr Density and Porosity, EDTC_GR

APS Effective Standoff in Limestone (STOF)
−2.5 (IN) 2.5

HLDS HR Long Spaced Photoelectric Effect (HLEF)
0 (−−−−) 10

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

Area From HCGR to HSGR

HLDS HR Bulk Density (HROM)
0 (G/C3) 4

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

HLDS Bulk Density (RHOM)
0 (G/C3) 4

HLDS Caliper (LCAL)
0 (IN) 20

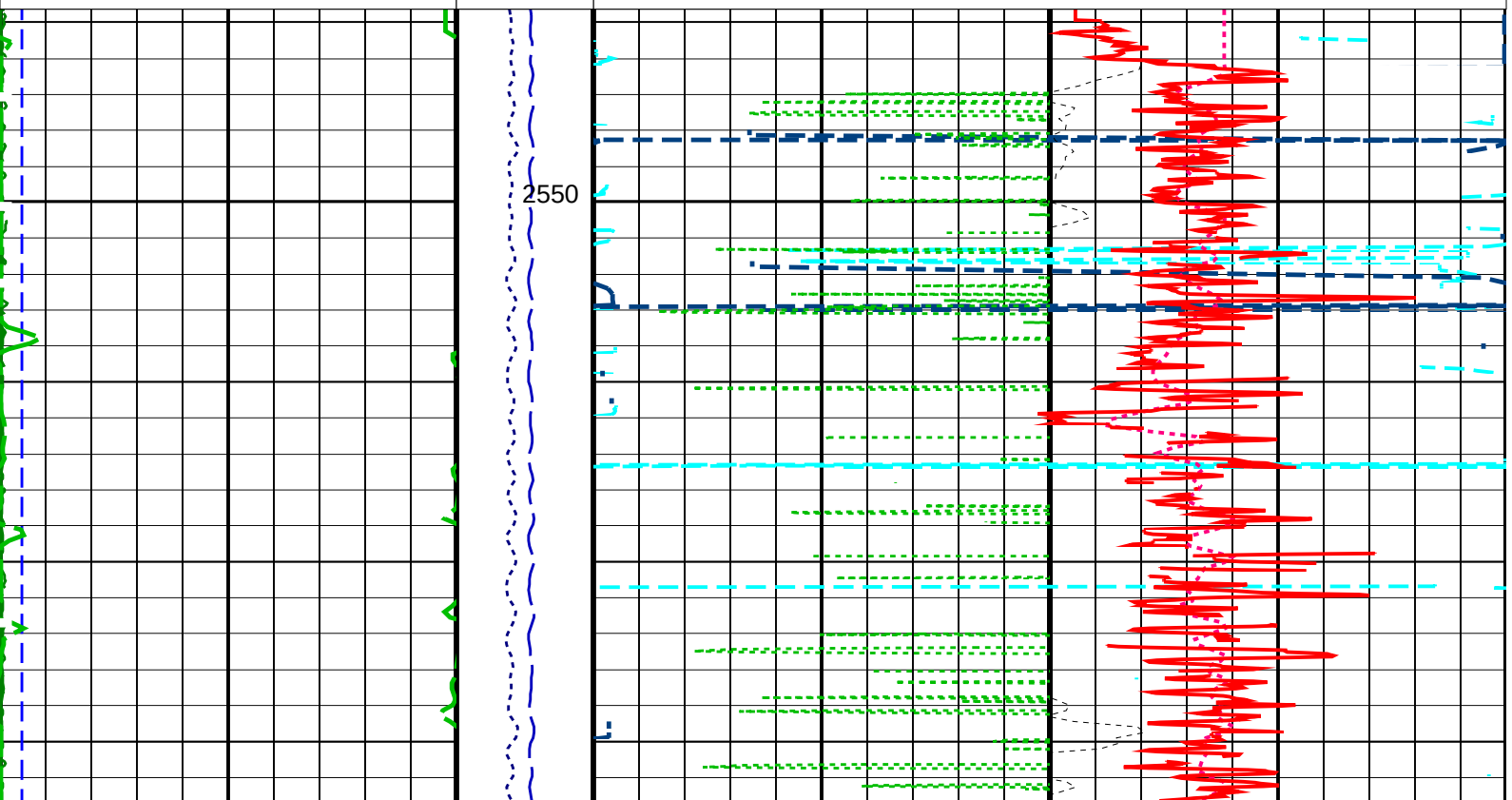
Calibrated Downhole Force (CDF) (LBF)
3000 0

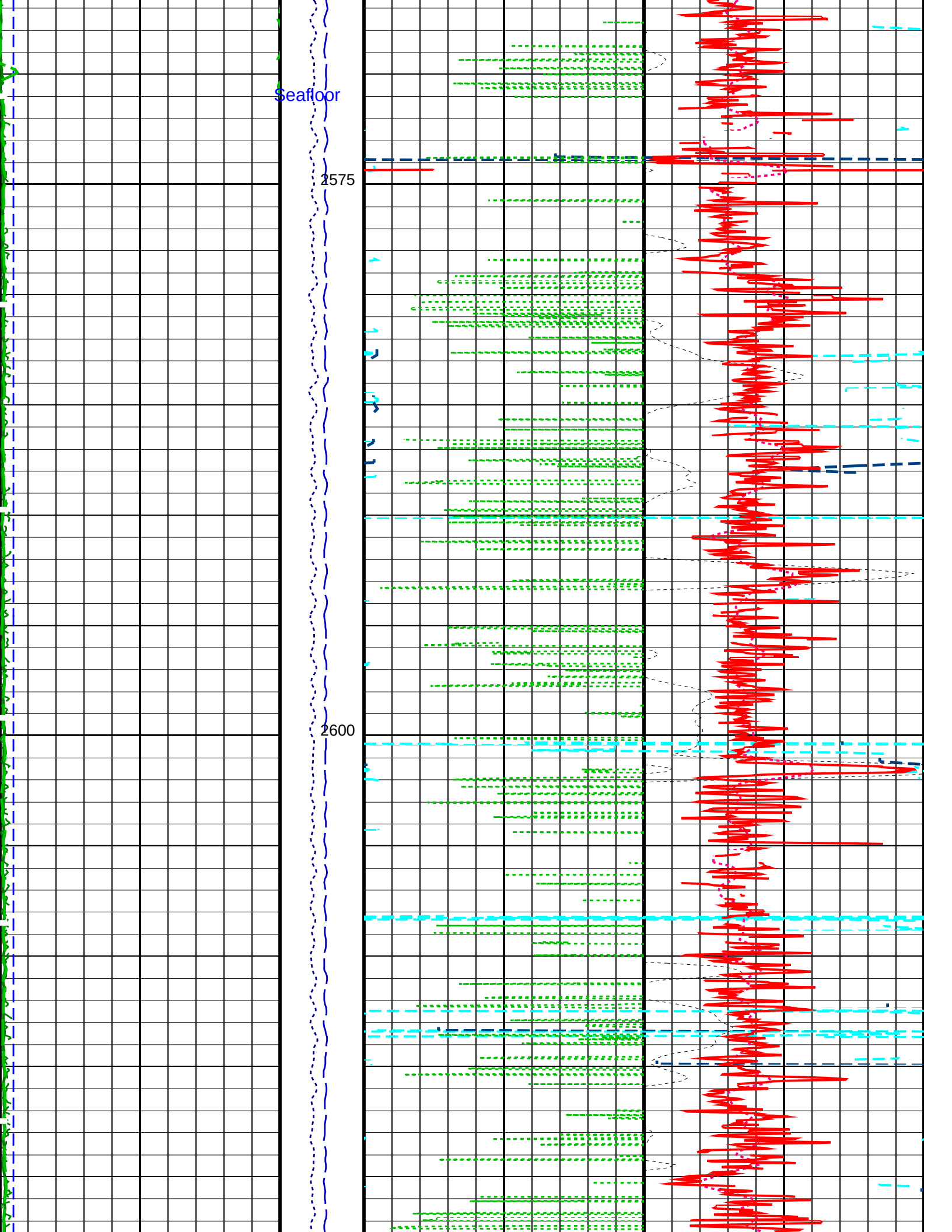
APS Near/Far Corrected Limestone Porosity (FPLC)
100 (PU) 0

Corrected HiRes GR (EHGR_EDTC)
0 (GAPI) 100

Tension (TENS) (LBF)
10000 0

APS HR Near/Far Corrected Limestone Porosity (HFLC)
100 (PU) 0

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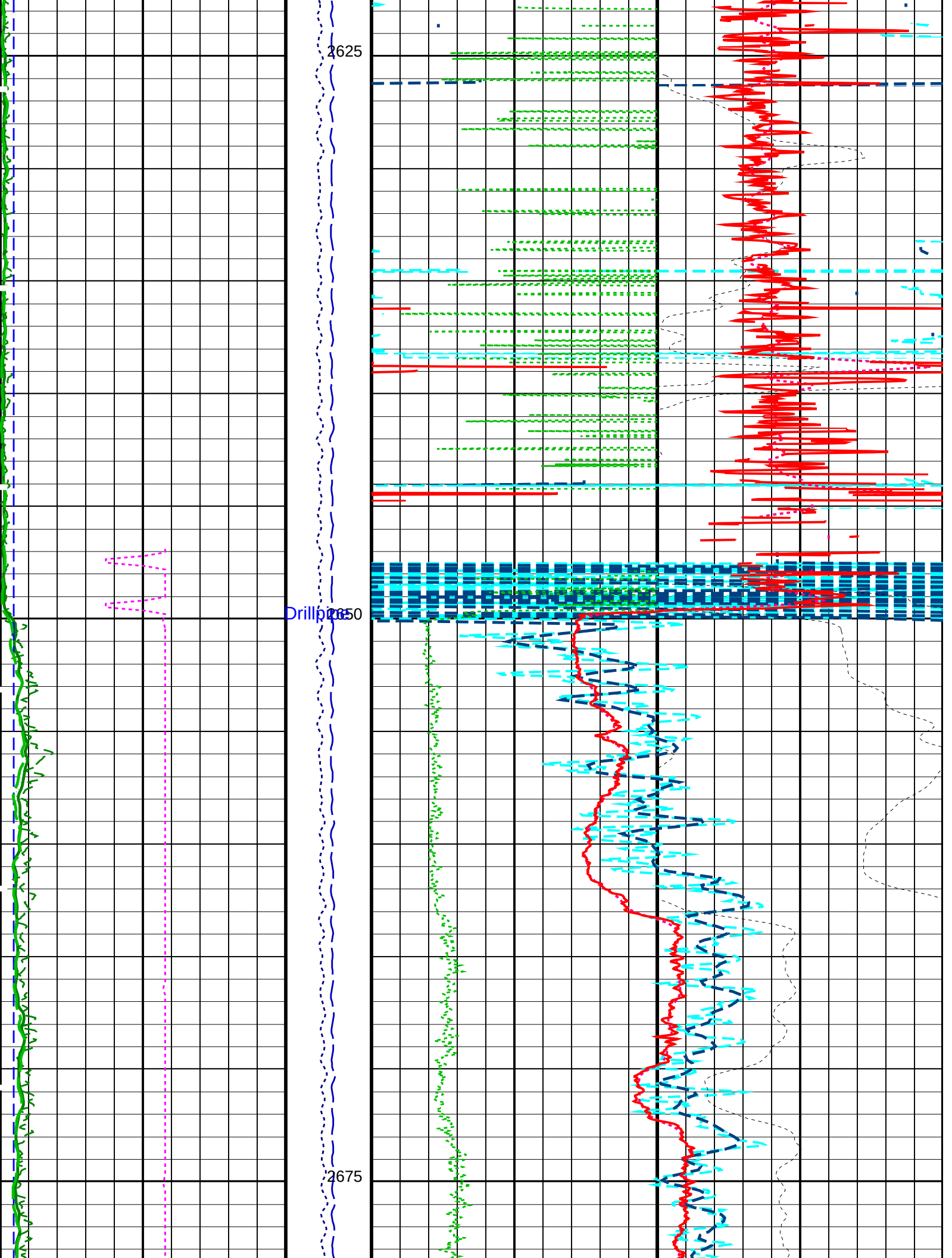
2575
2600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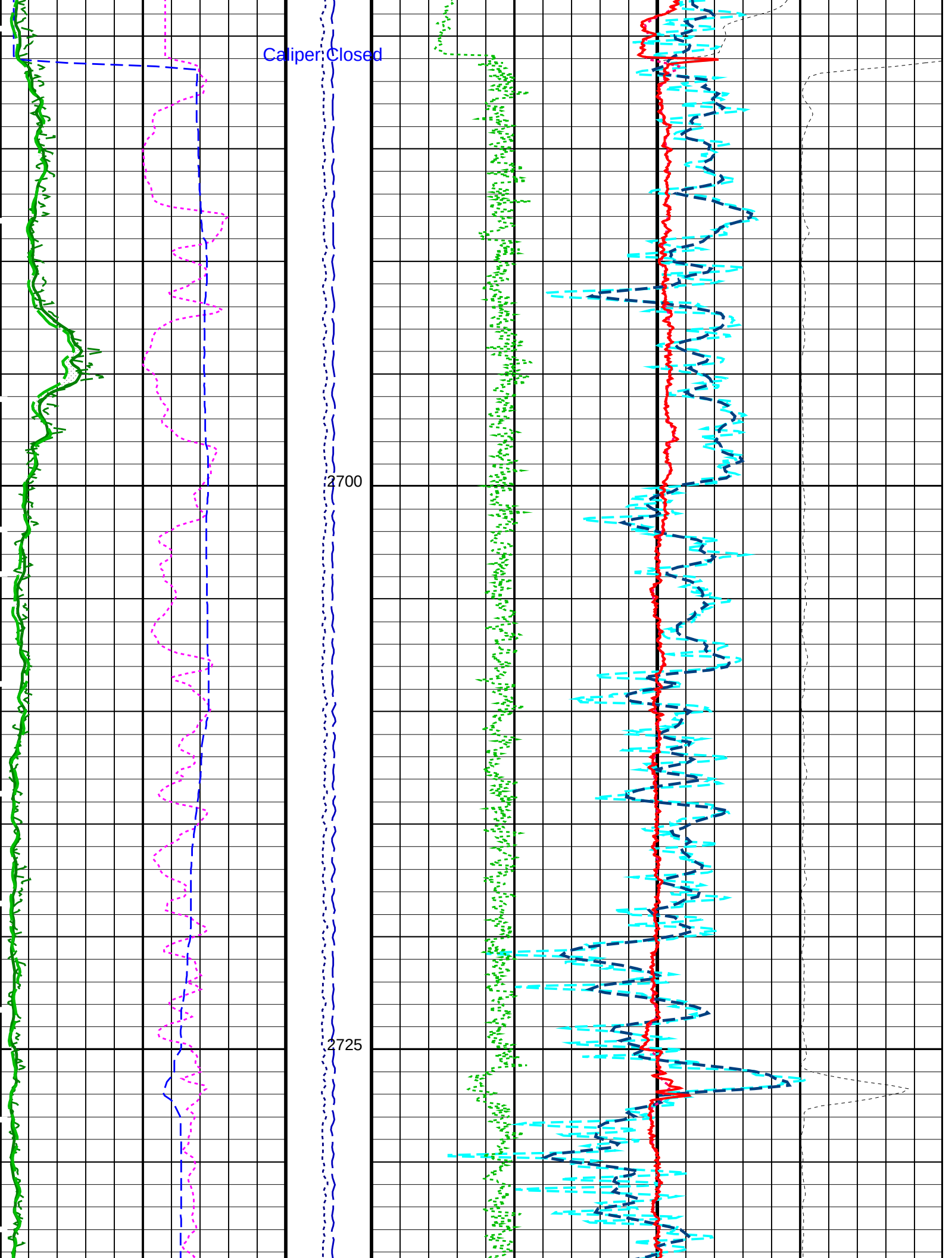
Drillpipe
2650
2675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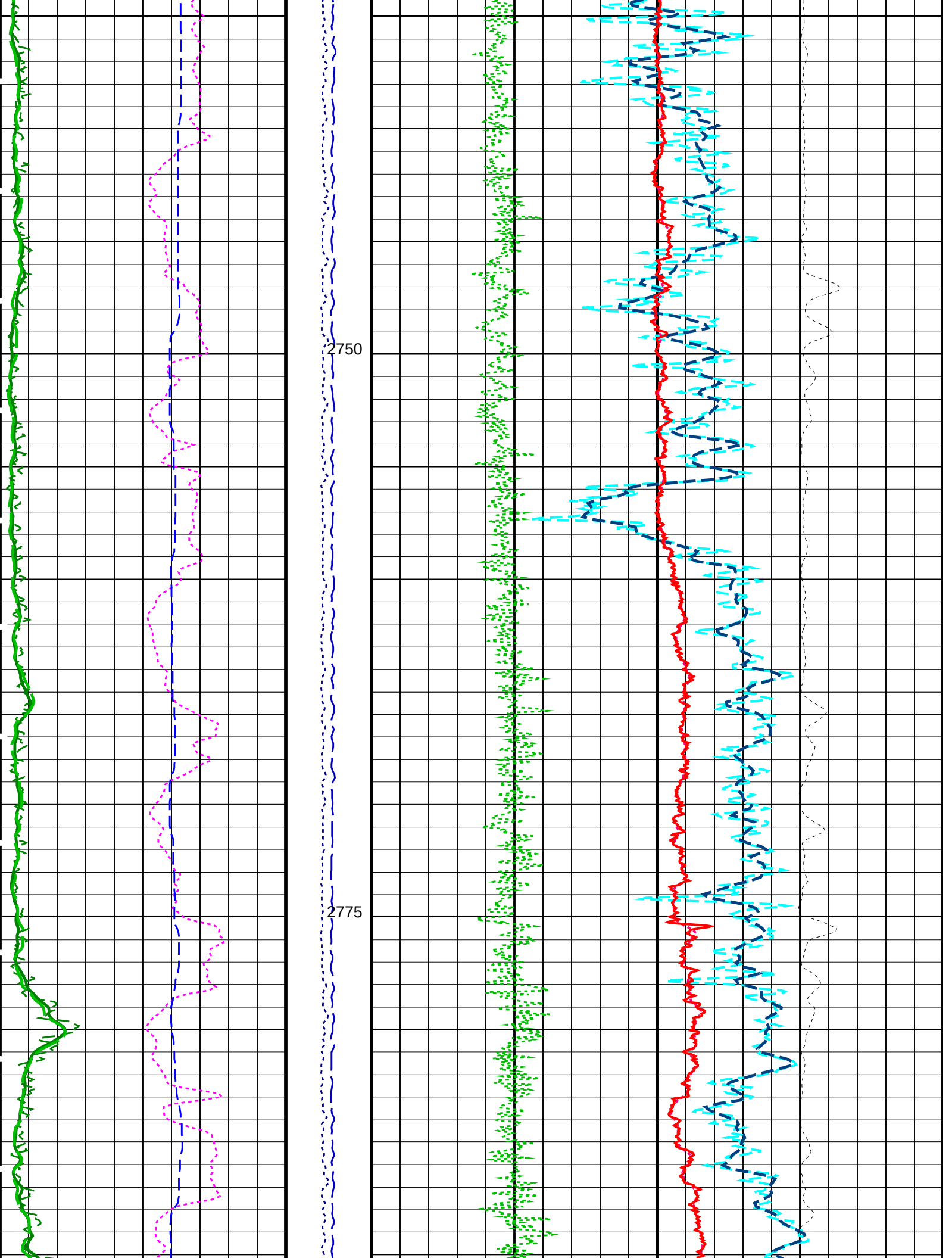
2725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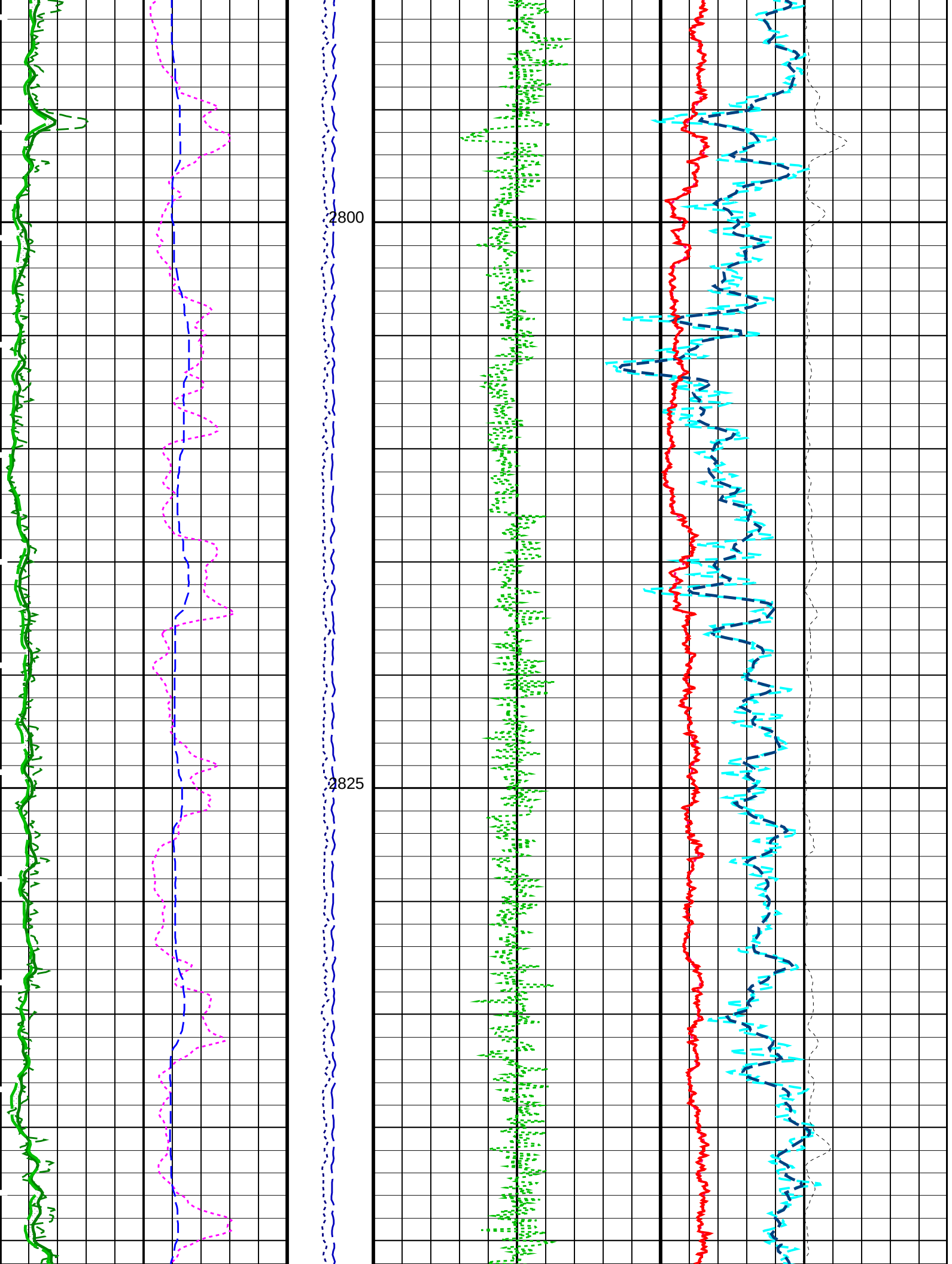
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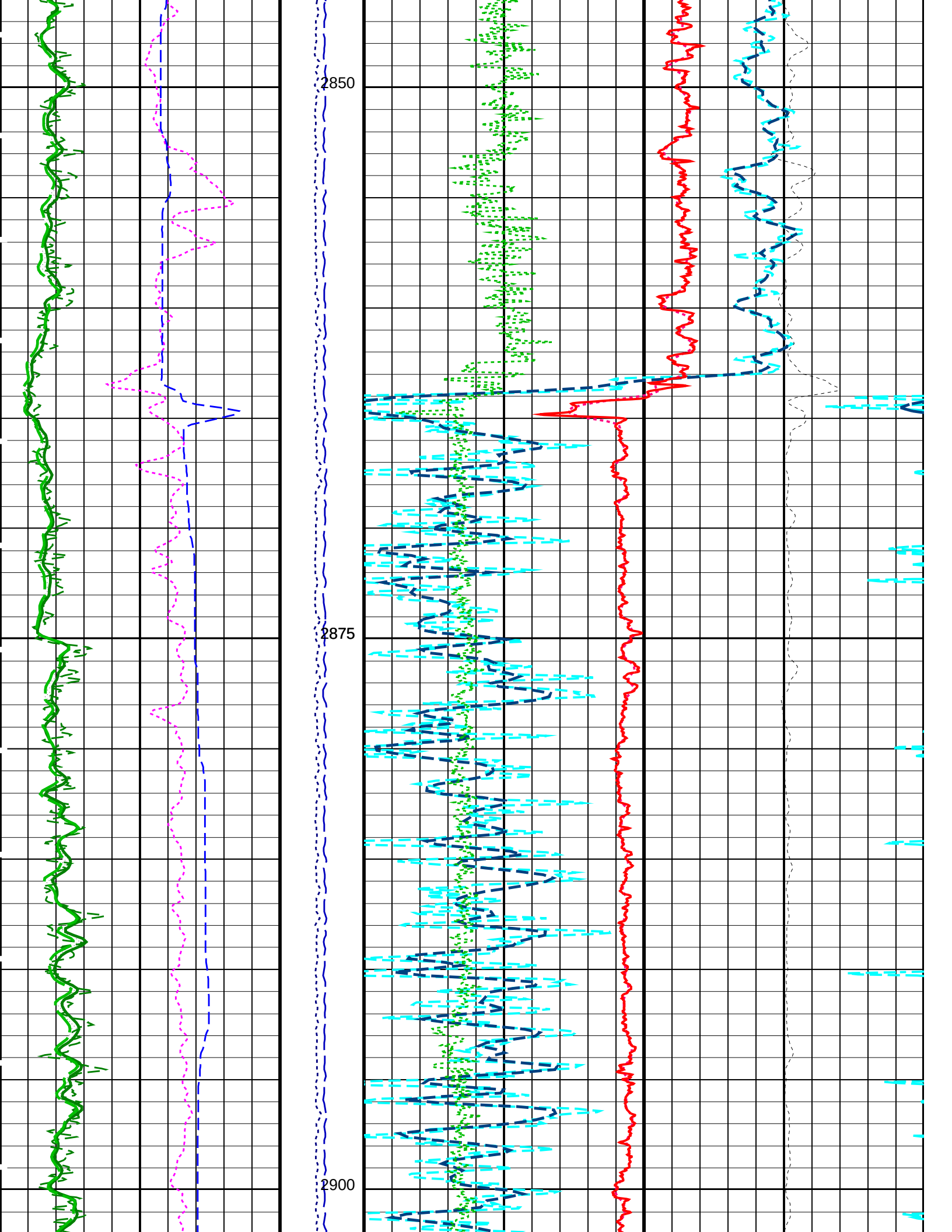
2825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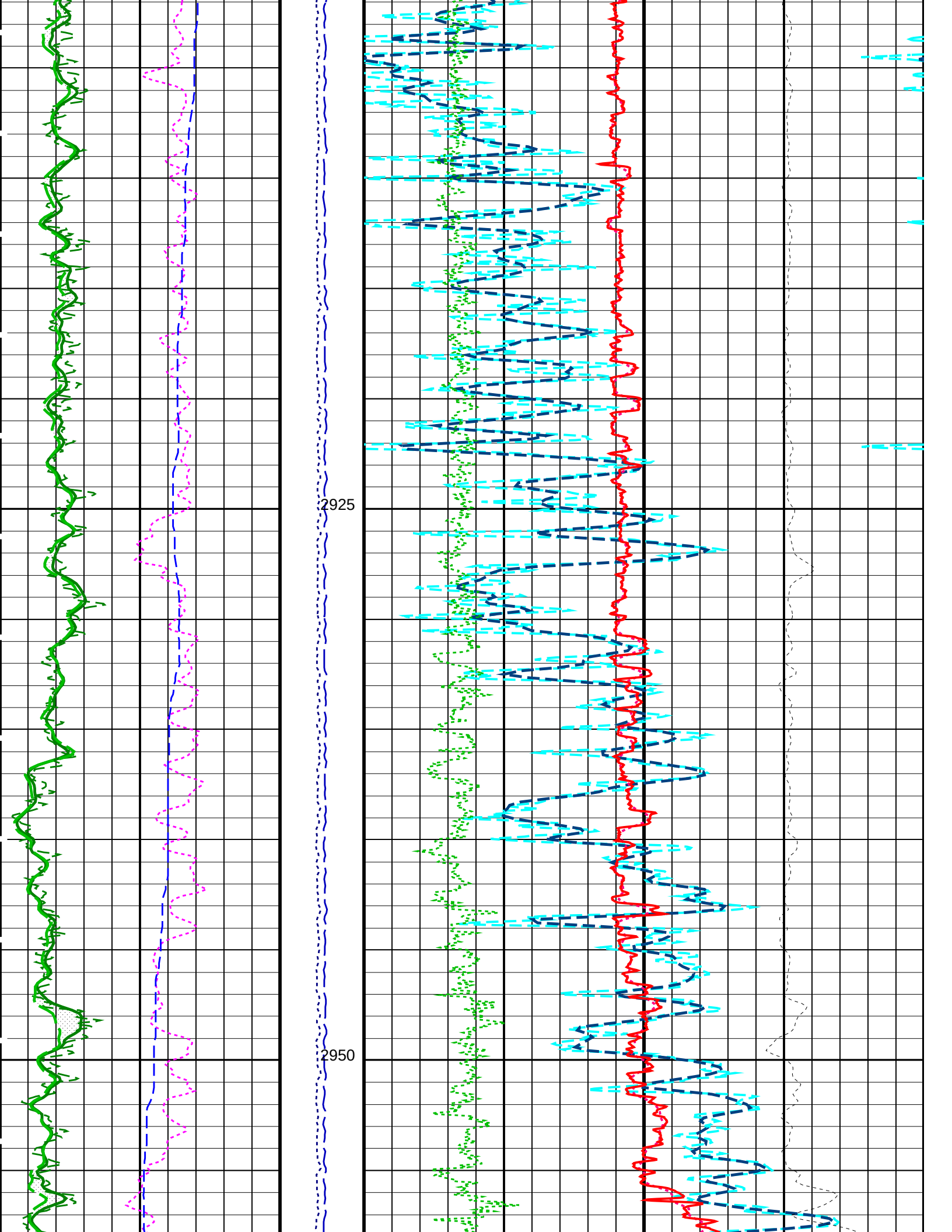
2875
2900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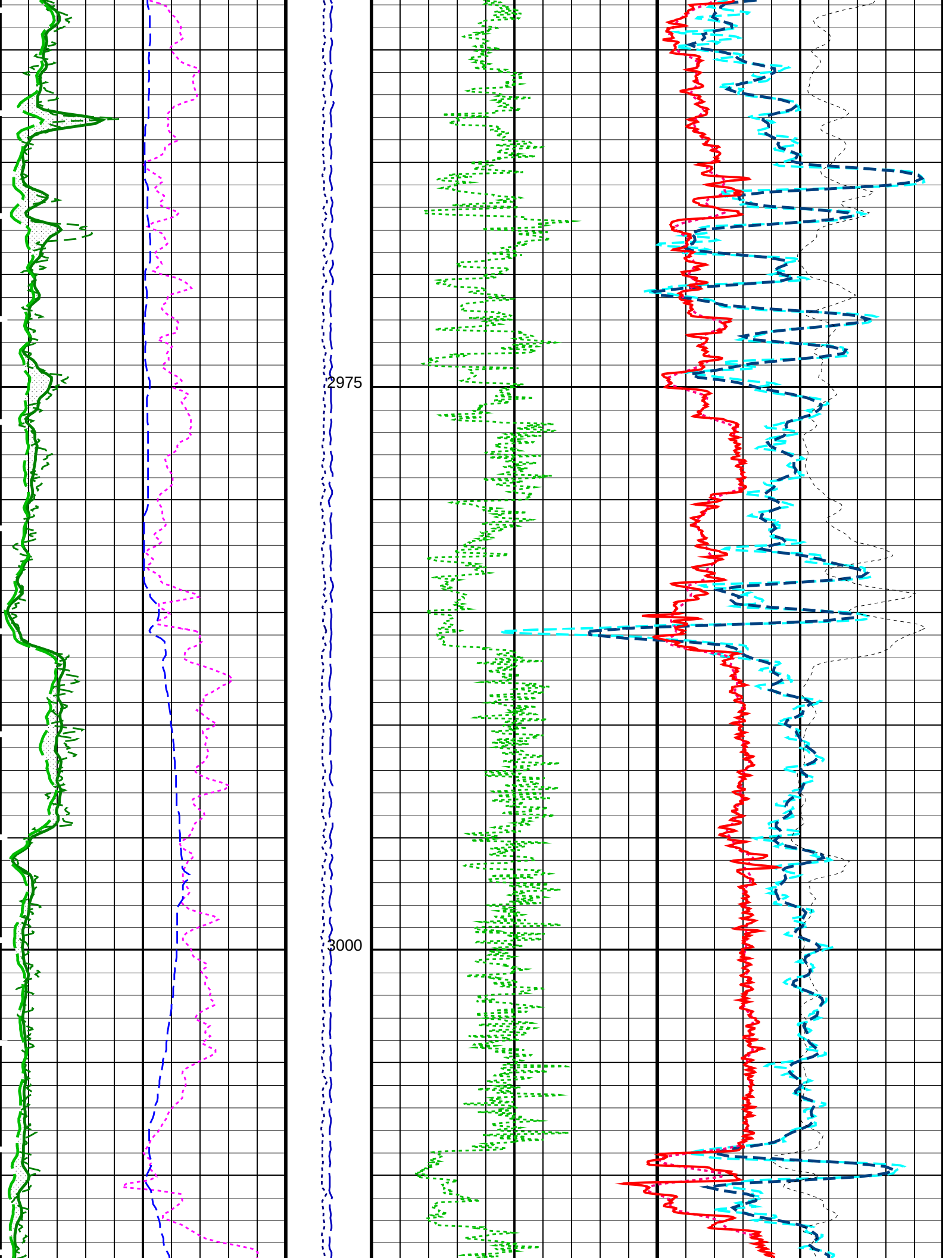
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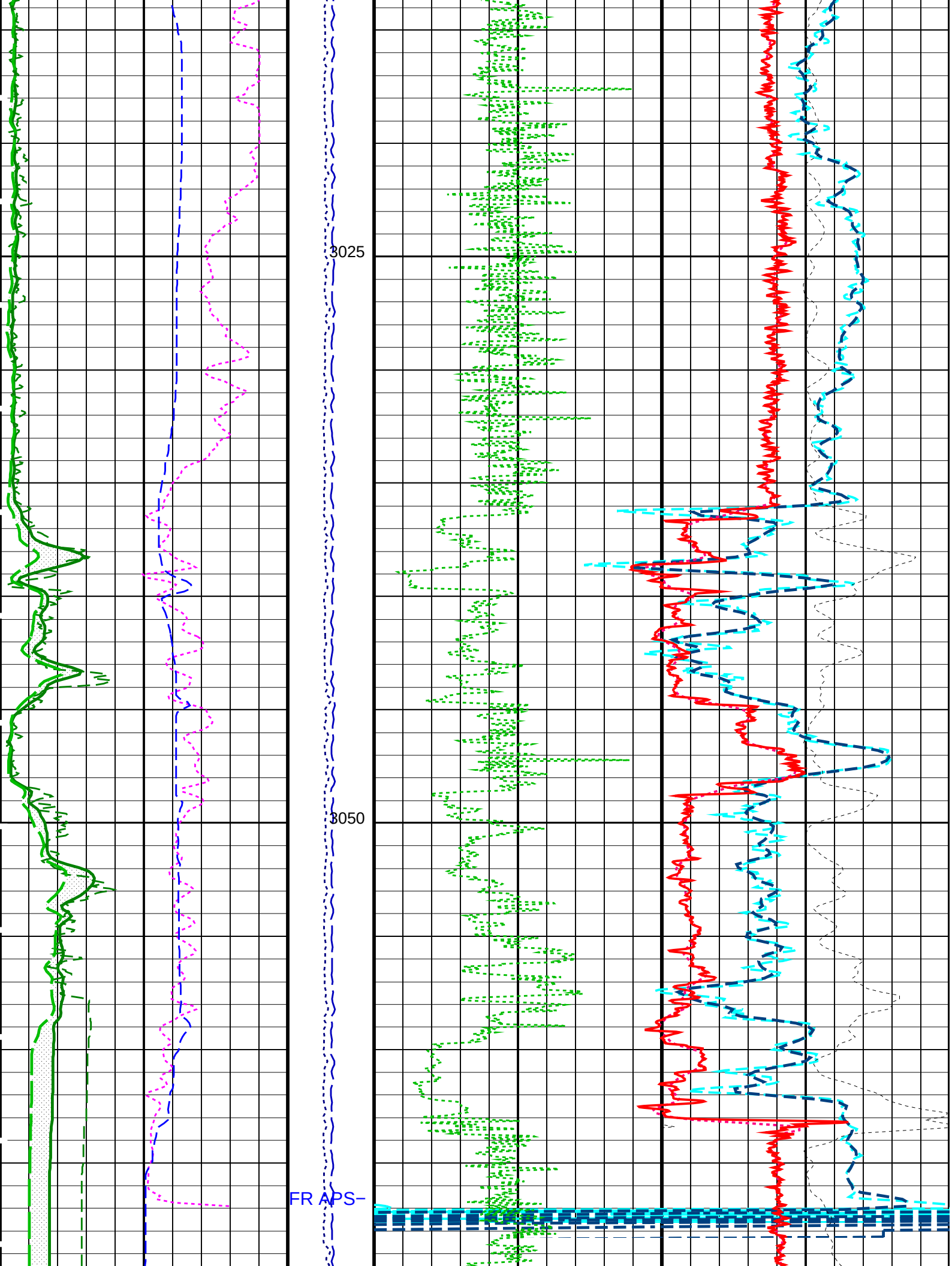
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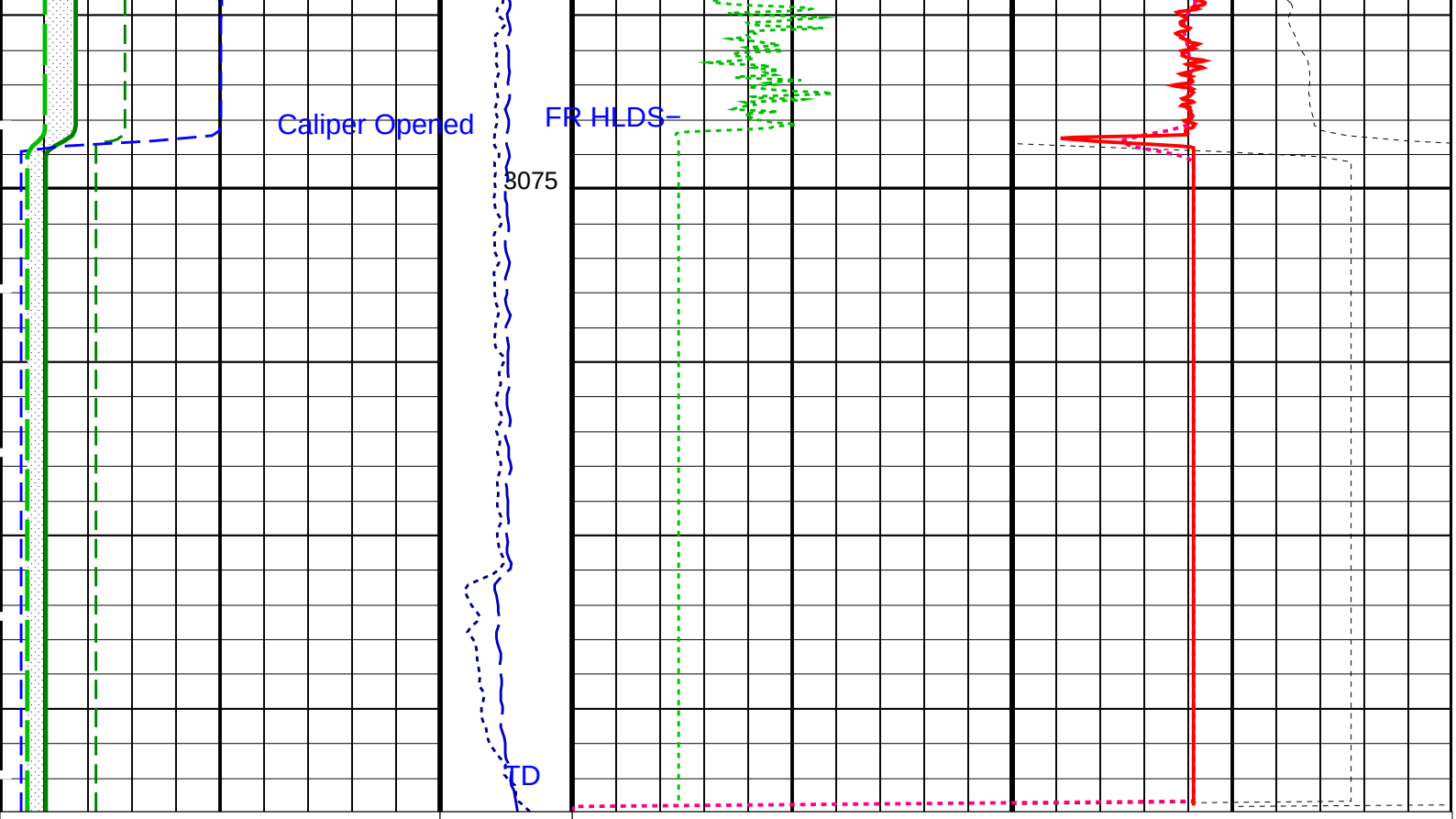
3050
FR APS-




| | | |
|---|---|---|
| Corrected HiRes GR (EHGR_EDTC) 0 (GAPI) 100 | Tension (TENS) (LBF) 10000 0 | APS HR Near/Far Corrected Limestone Porosity (HFLC) 100 (PU) 0 |
| HLDS Caliper (LCAL) 0 (IN) 20 | Calibrated Downhole Force (CDF) (LBF) 3000 0 | APS Near/Far Corrected Limestone Porosity (FPLC) 100 (PU) 0 |
| HNGS Computed Gamma Ray (HCGR) 0 (GAPI) 100 | | HLDS Bulk Density (RHOM) 0 (G/C3) 4 |
| Area From HCGR to HSGR | | HLDS HR Bulk Density (HROM) 0 (G/C3) 4 |
| APS Effective Standoff in Limestone (STOF) −2.5 (IN) 2.5 | | HLDS HR Long Spaced Photoelectric Effect (HLEF) 0 (−−−−) 10 / HLDS Bulk Density Correction (DRH) −0.25 (G/C3) 0.25 |
| HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100 | | |

Uplog 2 HiRes 900ft/hr or 274 m/hr Density and Porosity, EDTC_GR

**PIP SUMMARY**

Time Mark Every 60 S

## Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| | **HRLT−B: High Resolution Laterolog Array − B** | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| CALSTAT | HRLTB Calibration Status | SHALLOW_DONE | |
| CALTEMP | HRLTB Calibration Temperature | 18.0158 | DEGC |
| FREQ0 | HRLT Frequency Index for Mode 0 | 32 | |
| FREQ1 | HRLT Frequency Index for Mode 1 | 128 | |
| FREQ2 | HRLT Frequency Index for Mode 2 | 104 | |
| FREQ3 | HRLT Frequency Index for Mode 3 | 86 | |
| FREQ4 | HRLT Frequency Index for Mode 4 | 56 | |

| | | | |
|---|---|---|---|
| FREQ5 | HRLT Frequency Index for Mode 5 | 44 | |
| FREQ6 | HRLT Frequency Index for Mode 6 | 116 | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| ISSBAR | Barite Mud Switch | BARITE | |
| KFAC_HRLT | HRLT K Factor Option | SONDE | |
| LOOPCOEF_S | HRLT Loop Coefficient for Shallow Modes | LOW | |
| LOOPMOD0 | HRLT Mode 0 Loop Mode | AUTO | |
| LOOPMOD1 | HRLT Mode 1 Loop Mode | AUTO | |
| LOOPMOD2 | HRLT Mode 2 Loop Mode | AUTO | |
| LOOPMOD3 | HRLT Mode 3 Loop Mode | AUTO | |
| LOOPMOD4 | HRLT Mode 4 Loop Mode | AUTO | |
| LOOPMOD5 | HRLT Mode 5 Loop Mode | AUTO | |
| LOOPMOD6 | HRLT Mode 6 Loop Mode | AUTO | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| PROCINV | Inversion Selection | ON | |
| PROCMFL | Inversion Micro−Resistivity Selection | NO_EXTERNAL_RXO | |
| PROCMSO | Mechanical Standoff Fin Size | 0 | IN |
| PROCRM | Processing Mud Resistivity Select | HRLT_Compute | |
| PROCSPO | Sonde Position | Centered | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| HLDS: Hostile Litho−Density Sonde | | | |
| CLCL | HLDS LS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLCS | HLDS SS Control Loop Controller Mode | AUTO_DEFAULT | |
| CLLS | HLDS Mode Loop Long Spacing | AUTO | |
| CLSS | HLDS Mode Loop Short Spacing | AUTO | |
| DHC | Density Hole Correction | BS | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FD | Fluid Density | 1 | G/C3 |
| LATC | HLDS Activation Correction | ON | |
| LLDL | HLDS LS Low Level Discriminator DAC | 14000 | |
| LLDS | HLDS SS Low Level Discriminator DAC | 14000 | |
| LLML | HLDS LS Low Level Discriminator Mode | AUTO | |
| LLMS | HLDS SS Low Level Discriminator Mode | AUTO | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| PHVL | HLDS Long Spacing High Voltage Setting | 1000 | V |
| PHVS | HLDS Short Spacing High Voltage Setting | 1000 | V |
| PSDL | HLDS LS Pulse Shape Compensation DAC | 30000 | |
| PSDS | HLDS SS Pulse Shape Compensation DAC | 30000 | |
| PSML | HLDS LS Pulse Shape Compensation Mode | AUTO | |
| PSMS | HLDS SS Pulse Shape Compensation Mode | AUTO | |
| APS−C: Accelerator−Porosity Tool | | | |
| | APS Software Version | 5 | |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1975.52 | V |
| ADSO | APS Array Detectors Data Source Switch | Both | |
| AFSD | APS Far Detector High Voltage Setting | 2072.05 | V |
| AHCS | APS Holesize Correction Source | GCSE | |
| AHSS | APS Holesize Correction Switch | ON | |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite | |
| ANSD | APS Near Detector High Voltage Setting | 1737.24 | V |
| ASOS | APS Standoff Correction Switch | ON | |
| ATSS | APS Temperature−Pressure−Salinity Correction Switch | ON | |
| BHFL_APS | APS TNPH Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO_APS | APS TNPH Borehole Salinity Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DSCO_APS | APS TNPH Density Source Correction Option | MEASURED | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO_APS | APS TNPH Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO_APS | APS TNPH Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO_APS | APS TNPH Mud Cake Correction Option | YES | |
| MCOR_APS | APS TNPH Mud Correction | NATU | |
| MWCO_APS | APS TNPH Mud Weight Correction Option | YES | |
| NARC | APS Near/Array Calibration Ratio | 1.08163 | |
| NFRC | APS Near/Far Calibration Ratio | 0.93759 | |
| PTCO_APS | APS TNPH Pressure/Temperature Correction Option | NO | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| TNCO_APS | APS TNPH Computation Option | YES | |
| 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) | 20 | DEGC |

| | | | |
|---|---|---|---|
| BHT | Bottom Hole Temperature (used in calculations) | 20 | 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 | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | −0.00142908 | |
| 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 | BARITE | |
| 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 | ECCE | |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.05321 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.07152 | |
| EDTC−B: Enhanced DTS Cartridge | | | |
| BHFL | Borehole Fluid Type | WATER | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 20 | DEGC |
| BSCO | Borehole Salinity Correction Option | NO | |
| CCCO | Casing & Cement Thickness Correction Option | NO | |
| DPPM | Density Porosity Processing Mode | HIRS | |
| FSAL | Formation Salinity | −50000 | PPM |
| FSCO | Formation Salinity Correction Option | NO | |
| GCSE | Generalized Caliper Selection | LCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| HSCO | Hole Size Correction Option | YES | |
| ISSBAR | Barite Mud Switch | BARITE | |
| ISSBAR_EDTC | Nuclear Mud Type | NOBARITE | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | BARI | |
| MWCO | Mud Weight Correction Option | YES | |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SOCN | Standoff Distance | 0.5 | IN |
| SOCO | Standoff Correction Option | NO | |
| TPOS_EDTC | EDTC Tool Centered/Eccentered | Eccentered | |
| U−ETELM_EDTS | Telemetry Mode for eWAFE | Standard_EDTS | |
| U−TELM_EDTS | Telemetry Mode for WAFE | Standard_EDTS | |
| System and Miscellaneous | | | |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth | |
| BS | Bit Size | 9.875 | IN |
| BSAL | Borehole Salinity | 38000.00 | PPM |
| CSIZ | Current Casing Size | 5.500 | IN |
| CWEI | Casing Weight | 168.00 | LB/F |
| DFD | Drilling Fluid Density | 1.03 | G/C3 |
| FLEV | Fluid Level | −50000.00 | M |
| MST | Mud Sample Temperature | 23.00 | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO | |
| RMFS | Resistivity of Mud Filtrate Sample | −50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| TD | Total Depth | 10190.3 | FT |
| TDD | Total Depth − Driller | 3105.40 | M |
| TDL | Total Depth − Logger | 3106.00 | M |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 06−Mar−2022 02:14

## OP System Version: 19C0−187

| | | | |
|---|---|---|---|
| MSS_LDEO−A | 19C0−187 | HRLT−B | 19C0−187 |
| HLDS | 19C0−187 | LDSC−B | 19C0−187 |
| APS−C | 19C0−187 | HNGC−B | 19C0−187 |
| HNGS−BA | 19C0−187 | EDTC−B | SKK−5169−EDTCB |

## Output DLIS Files

## Output DLIS Files

| | | | | |
|---|---|---|---|---|
| **DEFAULT** | **MSS_LDEO_HRLA_LDL_022LUP** | **FN:25** | **PRODUCER** | **06−Mar−2022 02:13** |
| **BACKUP** | **MSS_LDEO_HRLA_LDL_022LUP** | **FN:26** | **PRODUCER** | **06−Mar−2022 02:14** |

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|---|---|---|---|---|---|---|---|
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01 | | | | | | | |
| Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49 | | | | | | | |
| HRLT M0−M1 Voltage Plus − 0 | 0 | N/A | −318.8 | −318.1 | 0.6703 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 1 | 0 | N/A | −331.6 | −329.3 | 2.340 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 2 | 0 | N/A | −339.0 | −336.6 | 2.443 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 3 | 0 | N/A | −329.4 | −327.7 | 1.744 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 4 | 0 | N/A | −320.1 | −319.4 | 0.7526 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 5 | 0 | N/A | −321.9 | −321.3 | 0.6619 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 6 | 0 | N/A | 320.7 | 318.3 | −2.450 | 9.681 | UV |
| HRLT M0−M1 Voltage Plus − 7 | 0 | N/A | −322.7 | −322.7 | 0 | 9.681 | UV |
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT M12 | | | | | | | |
| Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49 | | | | | | | |
| HRLT M1−M2 Voltage Plus − 0 | 0 | N/A | 1741 | 1735 | −5.629 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 1 | 0 | N/A | 1818 | 1803 | −14.87 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 2 | 0 | N/A | 1851 | 1835 | −15.66 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 3 | 0 | N/A | 1797 | 1785 | −11.64 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 4 | 0 | N/A | 1745 | 1739 | −6.011 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 5 | 0 | N/A | 1755 | 1750 | −5.693 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 6 | 0 | N/A | −1766 | −1750 | 15.71 | 53.42 | UV |
| HRLT M1−M2 Voltage Plus − 7 | 0 | N/A | 1781 | 1781 | 0 | 53.42 | UV |
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT M23 | | | | | | | |
| Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49 | | | | | | | |
| HRLT M2−M3 Voltage Plus − 0 | 0 | N/A | 1733 | 1728 | −5.456 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 1 | 0 | N/A | 1820 | 1805 | −15.45 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 2 | 0 | N/A | 1855 | 1840 | −15.84 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 3 | 0 | N/A | 1805 | 1793 | −12.14 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 4 | 0 | N/A | 1747 | 1741 | −5.945 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 5 | 0 | N/A | 1759 | 1753 | −5.785 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 6 | 0 | N/A | −1758 | −1741 | 16.25 | 53.42 | UV |
| HRLT M2−M3 Voltage Plus − 7 | 0 | N/A | 1781 | 1781 | 0 | 53.42 | UV |
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT V34 | | | | | | | |
| Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49 | | | | | | | |
| HRLT A3−A4 Voltage Plus − 0 | 0 | N/A | 68670 | 68510 | −163.1 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 1 | 0 | N/A | 71960 | 71400 | −560.5 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 2 | 0 | N/A | 73660 | 73080 | −580.0 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 3 | 0 | N/A | 71900 | 71490 | −411.4 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 4 | 0 | N/A | 69550 | 69360 | −187.9 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 5 | 0 | N/A | 70030 | 69850 | −186.4 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 6 | 0 | N/A | −68490 | −67910 | 573.8 | 2100 | UV |
| HRLT A3−A4 Voltage Plus − 7 | 0 | N/A | 70000 | 70000 | 0 | 2100 | UV |
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT V45 | | | | | | | |
| Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49 | | | | | | | |
| HRLT A4−A5 Voltage Plus − 0 | 0 | N/A | 68760 | 68600 | −166.9 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 1 | 0 | N/A | 72160 | 71600 | −562.3 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 2 | 0 | N/A | 73840 | 73260 | −579.2 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 3 | 0 | N/A | 72050 | 71620 | −425.8 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 4 | 0 | N/A | 69670 | 69470 | −196.5 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 5 | 0 | N/A | 70130 | 69950 | −184.5 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 6 | 0 | N/A | −68700 | −68120 | 579.9 | 2100 | UV |
| HRLT A4−A5 Voltage Plus − 7 | 0 | N/A | 70000 | 70000 | 0 | 2100 | UV |
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT V56 | | | | | | | |
| Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49 | | | | | | | |
| HRLT A5−A6 Voltage Plus − 0 | 0 | N/A | 68620 | 68440 | −188.2 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 1 | 0 | N/A | 72010 | 71460 | −547.7 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 2 | 0 | N/A | 73690 | 73110 | −581.7 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 3 | 0 | N/A | 71900 | 71490 | −409.1 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 4 | 0 | N/A | 69540 | 69340 | −197.2 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 5 | 0 | N/A | 69990 | 69810 | −187.7 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 6 | 0 | N/A | −68540 | −67970 | 568.6 | 2100 | UV |
| HRLT A5−A6 Voltage Plus − 7 | 0 | N/A | 70000 | 70000 | 0 | 2100 | UV |
| High Resolution Laterolog Array − B Wellsite Calibration − HRLT VTP | | | | | | | |

Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| HRLT Torpedo−M0 Voltage − 0 | 0 | N/A | −68140 | −67980 | 155.1 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 1 | 0 | N/A | −71810 | −71270 | 533.8 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 2 | 0 | N/A | −73520 | −72970 | 555.3 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 3 | 0 | N/A | −71800 | −71400 | 400.0 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 4 | 0 | N/A | −69470 | −69300 | 168.5 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 5 | 0 | N/A | −69950 | −69780 | 168.1 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 6 | 0 | N/A | 68290 | 67740 | −556.6 | 2100 | UV |
| HRLT Torpedo−M0 Voltage − 7 | 0 | N/A | −70000 | −70000 | 0 | 2100 | UV |

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VBD

Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HRLT Bridle#9−M0 Voltage − 0 | 0 | N/A | −68170 | −68020 | 152.8 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 1 | 0 | N/A | −71890 | −71360 | 530.3 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 2 | 0 | N/A | −73600 | −73040 | 564.7 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 3 | 0 | N/A | −71880 | −71470 | 412.3 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 4 | 0 | N/A | −69520 | −69350 | 165.9 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 5 | 0 | N/A | −69980 | −69820 | 156.4 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 6 | 0 | N/A | 68380 | 67810 | −568.1 | 2100 | UV |
| HRLT Bridle#9−M0 Voltage − 7 | 0 | N/A | −70000 | −70000 | 0 | 2100 | UV |

High Resolution Laterolog Array − B Wellsite Calibration − HRLT ISO

Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HRLT Source Current Plus − 0 | 0 | N/A | 284.4 | 283.8 | −0.5486 | 8.520 | UA |
| HRLT Source Current Plus − 1 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |
| HRLT Source Current Plus − 2 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |
| HRLT Source Current Plus − 3 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |
| HRLT Source Current Plus − 4 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |
| HRLT Source Current Plus − 5 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |
| HRLT Source Current Plus − 6 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |
| HRLT Source Current Plus − 7 | 0 | N/A | 281.1 | 281.1 | 0 | 8.520 | UA |

High Resolution Laterolog Array − B Wellsite Calibration − HRLT MV

Before: 5−Mar−2022 23:01 After: 6−Mar−2022 4:49

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HRLT Vertical Voltage Pl − 0 | 0 | N/A | −320.8 | −320.2 | 0.5996 | 9.681 | UV |
| HRLT Vertical Voltage Pl − 1 | 0 | N/A | −326.5 | −324.1 | 2.351 | 9.681 | UV |
| HRLT Vertical Voltage Pl − 2 | 0 | N/A | −332.5 | −330.2 | 2.357 | 9.681 | UV |
| HRLT Vertical Voltage Pl − 3 | 0 | N/A | −321.3 | −319.6 | 1.662 | 9.681 | UV |
| HRLT Vertical Voltage Pl − 4 | 0 | N/A | −309.3 | −308.6 | 0.6256 | 9.681 | UV |
| HRLT Vertical Voltage Pl − 5 | 0 | N/A | −326.0 | −325.3 | 0.6112 | 9.681 | UV |
| HRLT Vertical Voltage Pl − 6 | 0 | N/A | 328.4 | 326.0 | −2.409 | 9.681 | UV |
| **HRLT Vertical Voltage Pl − 7** | **0** | **N/A** | **−322.7** | **−322.7** | **0** | **9.681** | **UV** |

Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement

Master: Calibration out of date 6−Dec−2021 2:28 Before: 14−Feb−2022 22:41 After: Calibration out of date 6−Dec−2021 3:13

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SS Cs Resolution Bkg | 9.000 | 8.116 | 8.074 | 7.941 | −0.1335 | 1.800 | % |
| LS Cs Resolution Bkg | 9.000 | 7.716 | 7.653 | 7.737 | 0.08418 | 1.800 | % |
| LSW1 Background | 100.0 | 58.31 | 58.69 | 59.19 | 0.5055 | 3.000 | CPS |
| LSW2 Background | 100.0 | 54.71 | 53.85 | 54.74 | 0.8840 | 3.000 | CPS |
| LSW3 Background | 200.0 | 119.6 | 119.2 | 119.1 | −0.04193 | 6.000 | CPS |
| LSW4 Background | 250.0 | 143.7 | 142.6 | 142.9 | 0.3869 | 7.500 | CPS |
| LSW5 Background | 600.0 | 329.5 | 329.6 | 331.5 | 1.884 | 18.00 | CPS |
| SSW1 Background | 100.0 | 65.79 | 66.33 | 66.54 | 0.2121 | 3.000 | CPS |
| SSW2 Background | 200.0 | 116.2 | 116.5 | 116.9 | 0.3182 | 6.000 | CPS |
| SSW3 Background | 500.0 | 313.2 | 314.0 | 315.4 | 1.380 | 15.00 | CPS |
| SSW4 Background | 270.0 | 164.8 | 163.7 | 163.4 | −0.3555 | 8.100 | CPS |
| SSW5 Background | 200.0 | 118.8 | 116.7 | 117.7 | 0.9835 | 6.000 | CPS |

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement

Master: Calibration out of date 6−Dec−2021 2:58

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LSW1 Aluminum | 600.0 | 424.6 | N/A | N/A | N/A | N/A | CPS |
| LSW2 Aluminum | 900.0 | 618.7 | N/A | N/A | N/A | N/A | CPS |
| LSW3 Aluminum | 1100 | 747.6 | N/A | N/A | N/A | N/A | CPS |
| LSW4 Aluminum | 580.0 | 378.6 | N/A | N/A | N/A | N/A | CPS |
| LSW5 Aluminum | 570.0 | 347.2 | N/A | N/A | N/A | N/A | CPS |
| SSW1 Aluminum | 2800 | 2005 | N/A | N/A | N/A | N/A | CPS |
| SSW2 Aluminum | 8000 | 5497 | N/A | N/A | N/A | N/A | CPS |
| SSW3 Aluminum | 11600 | 7681 | N/A | N/A | N/A | N/A | CPS |
| SSW4 Aluminum | 5000 | 3153 | N/A | N/A | N/A | N/A | CPS |
| SSW5 Aluminum | 660.0 | 382.7 | N/A | N/A | N/A | N/A | CPS |

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement

Master: Calibration out of date 6−Dec−2021 2:53

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LSW1 Iron | 400.0 | 292.1 | N/A | N/A | N/A | N/A | CPS |
| LSW2 Iron | 730.0 | 502.1 | N/A | N/A | N/A | N/A | CPS |
| LSW3 Iron | 1000 | 663.9 | N/A | N/A | N/A | N/A | CPS |
| LSW4 Iron | 520.0 | 345.2 | N/A | N/A | N/A | N/A | CPS |
| LSW5 Iron | 470.0 | 319.3 | N/A | N/A | N/A | N/A | CPS |
| SSW1 Iron | 2100 | 1480 | N/A | N/A | N/A | N/A | CPS |
| SSW2 Iron | 6800 | 4600 | N/A | N/A | N/A | N/A | CPS |
| SSW3 Iron | 10800 | 7038 | N/A | N/A | N/A | N/A | CPS |
| SSW4 Iron | 4600 | 2891 | N/A | N/A | N/A | N/A | CPS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SSW4 Iron | 4000 | 2891 | N/A | N/A | N/A | N/A | CPS |
| SSW5 Iron | 580.0 | 340.8 | N/A | N/A | N/A | N/A | CPS |

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: 6−Dec−2021 15:35

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HLDS Caliper Small Ring | 12.00 | N/A | 14.98 | N/A | N/A | N/A | IN |
| HLDS Caliper Large Ring | 15.19 | N/A | 18.15 | N/A | N/A | N/A | IN |

Accelerator−Porosity Tool Wellsite Calibration − Detector Background
Master: Calibration out of date 6−Dec−2021 1:59 Before: 5−Mar−2022 22:55 After: 6−Mar−2022 5:01

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Near Det Bkg Cntrate | 30.00 | 26.02 | 25.01 | 25.28 | 0.2669 | N/A | CPS |
| Far Det Bkg Cntrate | 30.00 | 25.01 | 24.73 | 24.23 | −0.5006 | N/A | CPS |
| Array−1 Det Bkg Cntrate | 30.00 | 24.13 | 22.96 | 22.87 | −0.08340 | N/A | CPS |
| Array−2 Det Bkg Cntrate | 30.00 | 24.27 | 23.31 | 25.29 | 1.985 | N/A | CPS |
| Array Therm Det Bkg Cntrate | 30.00 | 26.11 | 25.50 | 24.43 | −1.068 | N/A | CPS |

Accelerator−Porosity Tool Wellsite Calibration − Calibration Ratios
Master: Calibration out of date 6−Dec−2021 1:59

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Near/Far Calibration Ratio | 0.9250 | 0.9376 | N/A | N/A | N/A | N/A | |
| Near/Array Calibration Ratio | 1.030 | 1.082 | N/A | N/A | N/A | N/A | |
| Near/Array Cal Ratio Up/Down | 1.000 | 1.013 | N/A | N/A | N/A | N/A | |

Accelerator−Porosity Tool Wellsite Calibration − Tank Check
Master: Calibration out of date 6−Dec−2021 1:59

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Array−1 Standoff Porosity | 11.75 | 10.75 | N/A | N/A | N/A | N/A | PU |
| Array−2 Standoff Porosity | 11.75 | 10.38 | N/A | N/A | N/A | N/A | PU |
| Average Slowing Down Time | 6.000 | 6.004 | N/A | N/A | N/A | N/A | US |
| Array−1 SDT Ratio Up/Down | 1.000 | 0.9667 | N/A | N/A | N/A | N/A | |
| Array−2 SDT Ratio Up/Down | 1.000 | 0.9647 | N/A | N/A | N/A | N/A | |
| Sigma Formation | 27.50 | 27.51 | N/A | N/A | N/A | N/A | CU |

Accelerator−Porosity Tool Wellsite Calibration − CCR7 signal boxes
Master: Calibration out of date 6−Dec−2021 1:20

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Near Detector Plateau Setting | 1650 | 1737 | N/A | N/A | N/A | N/A | V |
| Far Detector Plateau Setting | 2000 | 2072 | N/A | N/A | N/A | N/A | V |
| Array Detector Plateau Setting | 2000 | 1976 | N/A | N/A | N/A | N/A | V |

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 13−Feb−2022 23:25 Before: 13−Feb−2022 23:31 After: 13−Feb−2022 23:36

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Loc | 40.00 | 39.60 | 39.35 | 39.61 | 0.2548 | 1.000 | |
| Na 511 Peak Res | 15.50 | 17.00 | 17.03 | 15.57 | −1.463 | 2.000 | % |
| High Voltage | 1150 | 1202 | 1203 | 1204 | 0.4124 | N/A | V |
| Na 1785 Peak Loc | 142.6 | 142.6 | 141.9 | 142.9 | 1.014 | 7.000 | |
| Na 1785 Peak Res | 8.500 | 9.539 | 8.461 | 9.996 | 1.534 | 2.000 | % |
| Temperature | 15.50 | 27.53 | 27.56 | 27.63 | 0.06811 | N/A | DEGC |
| Na Count Rate | 45.00 | 10.98 | 10.73 | 11.29 | 0.5581 | 8.000 | CPS |

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 13−Feb−2022 23:25 Before: 13−Feb−2022 23:31 After: 13−Feb−2022 23:36

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Loc | 40.00 | 40.51 | 40.45 | 40.84 | 0.3914 | 1.000 | |
| Na 511 Peak Res | 15.50 | 16.47 | 16.18 | 15.76 | −0.4217 | 2.000 | % |
| High Voltage | 1150 | 1129 | 1129 | 1129 | −0.2573 | N/A | V |
| Na 1785 Peak Loc | 142.6 | 145.0 | 144.7 | 147.0 | 2.293 | 7.000 | |
| Na 1785 Peak Res | 8.500 | 9.043 | 10.12 | 9.460 | −0.6603 | 2.000 | % |
| Temperature | 15.50 | 28.33 | 28.25 | 28.19 | −0.05676 | N/A | DEGC |
| Na Count Rate | 45.00 | 11.22 | 11.24 | 11.38 | 0.1345 | 8.000 | CPS |

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 13−Feb−2022 23:25 Before: 13−Feb−2022 23:31 After: 13−Feb−2022 23:36

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Coincidence Count Rate Ratio | 1.000 | 0.9687 | 0.9517 | 0.9802 | 0.02851 | 0.05000 | |

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 13−Feb−2022 23:19

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Set Point | 40.00 | 41.00 | −− | −− | −− | −− | |
| Th Peak Loc | 209.6 | 210.2 | −− | −− | −− | −− | |
| Th Peak Res | 7.000 | 7.307 | −− | −− | −− | −− | % |
| Background Count Rate | 142.5 | 22.81 | −− | −− | −− | −− | CPS |
| Gain Ratio | 1.000 | 1.009 | −− | −− | −− | −− | |

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 13−Feb−2022 23:19

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Na 511 Peak Set Point | 40.00 | 42.00 | −− | −− | −− | −− | |
| Th Peak Loc | 209.6 | 211.1 | −− | −− | −− | −− | |
| Th Peak Res | 7.000 | 7.436 | −− | −− | −− | −− | % |
| Background Count Rate | 142.5 | 22.96 | −− | −− | −− | −− | CPS |
| Gain Ratio | 1.000 | 0.9914 | −− | −− | −− | −− | |

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 24−Feb−2022 10:02

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EDTC Z−Axis Acceleration | 9.810 | N/A | 9.812 | N/A | N/A | N/A | M/S2 |

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration

| Before: 13−Feb−2022 22:35 After: 13−Feb−2022 22:44 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Gamma Ray (Jig − Bkg) | 163.4 | N/A | 163.4 | 165.6 | 2.160 | 14.86 | GAPI |
| Gamma Ray (Calibrated) | 164.0 | N/A | 164.0 | 166.2 | 2.168 | 15.00 | GAPI |

Accelerator−Porosity Tool − Detector Plateau Settings :

Near Detector Plateau Setting 1737 V
Far Detector Plateau Setting 2072 V
Array Detector Plateau Setting 1976 V

High Resolution Laterolog Array − B / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| HRLT Sonde | HRLS − B | 768 |
| Auxiliary Equipment: | | |
| HRLT lower Housing | HRLH − B | 1869 |
| HRLT Lower Cartridge | HRLC − B | 1897 |
| HRLT upper Housing | HRUH − B | 975 |
| HRLT Upper Cartridge | HRUC − B | 964 |

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M01

| Idx | Phase | HRLT M0−M1 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before | | −318.8 | −322.7 | −280.7 | −379.7 |
| | After | | −318.1 | | | |
| 1 | Before | | −331.6 | −322.7 | −280.7 | −379.7 |
| | After | | −329.3 | | | |
| 2 | Before | | −339.0 | −322.7 | −280.7 | −379.7 |
| | After | | −336.6 | | | |
| 3 | Before | | −329.4 | −322.7 | −280.7 | −379.7 |
| | After | | −327.7 | | | |
| 4 | Before | | −320.1 | −322.7 | −280.7 | −379.7 |
| | After | | −319.4 | | | |
| 5 | Before | | −321.9 | −322.7 | −280.7 | −379.7 |
| | After | | −321.3 | | | |
| 6 | Before | | 320.7 | 322.7 | 379.7 | 280.7 |
| | After | | 318.3 | | | |
| 7 | Before | | −322.7 | −322.7 | −280.7 | −379.7 |
| | After | | −322.7 | | | |
| | | (Minimum) (Nominal) (Maximum) | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M12

| Idx | Phase | HRLT M1−M2 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before | | 1741 | 1781 | 2095 | 1549 |
| | After | | 1735 | | | |
| 1 | Before | | 1818 | 1781 | 2095 | 1549 |
| | After | | 1803 | | | |
| 2 | Before | | 1851 | 1781 | 2095 | 1549 |
| | After | | 1835 | | | |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Before | 1797 | 1781 | 2095 | 1549 |
| | After | 1785 | | | |
| 4 | Before | 1745 | 1781 | 2095 | 1549 |
| | After | 1739 | | | |
| 5 | Before | 1755 | 1781 | 2095 | 1549 |
| | After | 1750 | | | |
| 6 | Before | −1766 | −1781 | −1549 | −2095 |
| | After | −1750 | | | |
| 7 | Before | 1781 | 1781 | 2095 | 1549 |
| | After | 1781 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M23

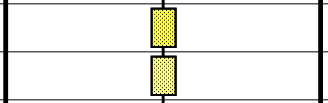
| Idx | Phase | HRLT M2−M3 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before | | 1733 | 1781 | 2095 | 1549 |
| | After | | 1728 | | | |
| 1 | Before | | 1820 | 1781 | 2095 | 1549 |
| | After | | 1805 | | | |
| 2 | Before | | 1855 | 1781 | 2095 | 1549 |
| | After | | 1840 | | | |
| 3 | Before | | 1805 | 1781 | 2095 | 1549 |
| | After | | 1793 | | | |
| 4 | Before | | 1747 | 1781 | 2095 | 1549 |
| | After | | 1741 | | | |
| 5 | Before | | 1759 | 1781 | 2095 | 1549 |
| | After | | 1753 | | | |
| 6 | Before | | −1758 | −1781 | −1549 | −2095 |
| | After | | −1741 | | | |
| 7 | Before | | 1781 | 1781 | 2095 | 1549 |
| | After | | 1781 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration

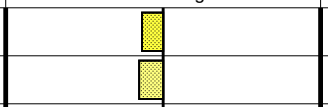
HRLT V34

| Idx | Phase | HRLT A3−A4 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before | | 68670 | 70000 | 82360 | 60900 |
| | After | | 68510 | | | |
| 1 | Before | | 71960 | 70000 | 82360 | 60900 |
| | After | | 71400 | | | |
| 2 | Before | | 73660 | 70000 | 82360 | 60900 |
| | After | | 73080 | | | |
| 3 | Before | | 71900 | 70000 | 82360 | 60900 |
| | After | | 71490 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | Before |  | 69550 | 70000 | 82360 | 60900 |
| | After | | 69360 | | | |
| 5 | Before | | 70030 | 70000 | 82360 | 60900 |
| | After | | 69850 | | | |
| 6 | Before | | −68490 | −70000 | −60900 | −82360 |
| | After | | −67910 | | | |
| 7 | Before | | 70000 | 70000 | 82360 | 60900 |
| | After | | 70000 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | | |

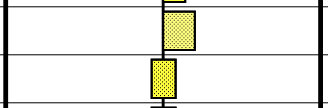
Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration
HRLT V45

| Idx | Phase | HRLT A4−A5 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before |  | 68760 | 70000 | 82360 | 60900 |
| | After | | 68600 | | | |
| 1 | Before | | 72160 | 70000 | 82360 | 60900 |
| | After | | 71600 | | | |
| 2 | Before | | 73840 | 70000 | 82360 | 60900 |
| | After | | 73260 | | | |
| 3 | Before | | 72050 | 70000 | 82360 | 60900 |
| | After | | 71620 | | | |
| 4 | Before | | 69670 | 70000 | 82360 | 60900 |
| | After | | 69470 | | | |
| 5 | Before | | 70130 | 70000 | 82360 | 60900 |
| | After | | 69950 | | | |
| 6 | Before | | −68700 | −70000 | −60900 | −82360 |
| | After | | −68120 | | | |
| 7 | Before | | 70000 | 70000 | 82360 | 60900 |
| | After | | 70000 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration
HRLT V56

| Idx | Phase | HRLT A5−A6 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before |  | 68620 | 70000 | 82360 | 60900 |
| | After | | 68440 | | | |
| 1 | Before | | 72010 | 70000 | 82360 | 60900 |
| | After | | 71460 | | | |
| 2 | Before | | 73690 | 70000 | 82360 | 60900 |
| | After | | 73110 | | | |
| 3 | Before | | 71900 | 70000 | 82360 | 60900 |
| | After | | 71490 | | | |
| 4 | Before | | 69540 | 70000 | 82360 | 60900 |
| | After | | 69340 | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5 | Before | 69990 | 70000 | 82360 | 60900 |
| | After | 69810 | | | |
| 6 | Before | −68540 | −70000 | −60900 | −82360 |
| | After | −67970 | | | |
| 7 | Before | 70000 | 70000 | 82360 | 60900 |
| | After | 70000 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VTP

| Idx | Phase | HRLT Torpedo−M0 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before | | −68140 | −70000 | −60900 | −82360 |
| | After | | −67980 | | | |
| 1 | Before | | −71810 | −70000 | −60900 | −82360 |
| | After | | −71270 | | | |
| 2 | Before | | −73520 | −70000 | −60900 | −82360 |
| | After | | −72970 | | | |
| 3 | Before | | −71800 | −70000 | −60900 | −82360 |
| | After | | −71400 | | | |
| 4 | Before | | −69470 | −70000 | −60900 | −82360 |
| | After | | −69300 | | | |
| 5 | Before | | −69950 | −70000 | −60900 | −82360 |
| | After | | −69780 | | | |
| 6 | Before | | 68290 | 70000 | 82360 | 60900 |
| | After | | 67740 | | | |
| 7 | Before | | −70000 | −70000 | −60900 | −82360 |
| | After | | −70000 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VBD

| Idx | Phase | HRLT Bridle#9−M0 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before | | −68170 | −70000 | −60900 | −82360 |
| | After | | −68020 | | | |
| 1 | Before | | −71890 | −70000 | −60900 | −82360 |
| | After | | −71360 | | | |
| 2 | Before | | −73600 | −70000 | −60900 | −82360 |
| | After | | −73040 | | | |
| 3 | Before | | −71880 | −70000 | −60900 | −82360 |
| | After | | −71470 | | | |
| 4 | Before | | −69520 | −70000 | −60900 | −82360 |
| | After | | −69350 | | | |
| 5 | Before | | −69980 | −70000 | −60900 | −82360 |
| | After | | −69820 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | Before |  | 68380 | 70000 | 82360 | 60900 |
| | After |  | 67810 | | | |
| 7 | Before |  | −70000 | −70000 | −60900 | −82360 |
| | After |  | −70000 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration
HRLT ISO

| Idx | Phase | HRLT Source Current Plus UA | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before |  | 284.4 | 284.0 | 334.1 | 247.0 |
| | After |  | 283.8 | | | |
| 1 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| 2 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| 3 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| 4 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| 5 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| 6 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| 7 | Before |  | 281.1 | 281.1 | 330.7 | 244.4 |
| | After |  | 281.1 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | | |

Before: 5−Mar−2022 23:01
After: 6−Mar−2022 4:49

High Resolution Laterolog Array − B Wellsite Calibration
HRLT MV

| Idx | Phase | HRLT Vertical Voltage Plus UV | Value | Nominal | Maximum | Minimum |
|---|---|---|---|---|---|---|
| 0 | Before |  | −320.8 | −322.7 | −280.7 | −379.7 |
| | After |  | −320.2 | | | |
| 1 | Before |  | −326.5 | −322.7 | −280.7 | −379.7 |
| | After |  | −324.1 | | | |
| 2 | Before |  | −332.5 | −322.7 | −280.7 | −379.7 |
| | After |  | −330.2 | | | |
| 3 | Before |  | −321.3 | −322.7 | −280.7 | −379.7 |
| | After |  | −319.6 | | | |
| 4 | Before |  | −309.3 | −322.7 | −280.7 | −379.7 |
| | After |  | −308.6 | | | |
| 5 | Before |  | −326.0 | −322.7 | −280.7 | −379.7 |
| | After |  | −325.3 | | | |
| 6 | Before |  | 328.4 | 322.7 | 379.7 | 280.7 |
| | After |  | 326.0 | | | |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Before | −322.7 | −322.7 | −280.7 | −379.7 |
| | After | −322.7 | | | |
| | (Minimum) (Nominal) (Maximum) | | | | |

Before: 5−Mar−2022 23:01

After: 6−Mar−2022 4:49

## Hostile Litho−Density Sonde / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| Gamma Source Radioactive | GSR − ZA | 2945 |
| Hostile Litho Density Sonde | HLDS − D | 35 |
| Hostile Litho Density High Voltage | HLDV − D | 35 |
| Auxiliary Equipment: | | |
| Hostile Litho Density High Voltage Housi | HEH − H | 35 |
| Hostile Litho Density Pad | HLDP − C | 35 |

## Hostile Litho−Density Sonde Wellsite Calibration

### Background Measurement

| Phase | SS Cs Resolution Bkg % | Value |
|---|---|---|
| Master | | 8.116 |
| Before | | 8.074 |
| After | | 7.941 |
| | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) | |

| Phase | LS Cs Resolution Bkg % | Value |
|---|---|---|
| Master | | 7.716 |
| Before | | 7.653 |
| After | | 7.737 |
| | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) | |

| Phase | LSW1 Background CPS | Value |
|---|---|---|
| Master | | 58.31 |
| Before | | 58.69 |
| After | | 59.19 |
| | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) | |

| Phase | LSW2 Background CPS | Value |
|---|---|---|
| Master | | 54.71 |
| Before | | 53.85 |
| **After** | | **54.74** |
| | 50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum) | |

| Phase | LSW3 Background CPS | Value |
|---|---|---|
| Master | | 119.6 |
| Before | | 119.2 |
| **After** | | **119.1** |
| | 110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum) | |

| Phase | LSW4 Background CPS | Value |
|---|---|---|
| Master | | 143.7 |
| Before | | 142.6 |
| **After** | | **142.9** |
| | 140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum) | |

| Phase | LSW5 Background CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 329.5 |
| Before | EXCEEDS LIMIT | 329.6 |
| After | | 331.5 |
| | 330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum) | |

| Phase | SSW1 Background CPS | Value |
|---|---|---|
| Master | | 65.79 |
| Before | | 66.33 |
| After | | 66.54 |
| | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) | |

| Phase | SSW2 Background CPS | Value |
|---|---|---|
| Master | | 116.2 |
| Before | | 116.5 |
| After | | 116.9 |
| | 100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum) | |

| Phase | SSW3 Background CPS | Value |
|---|---|---|
| Master | | 313.2 |
| Before | | 314.0 |
| After | | 315.4 |
| | 280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum) | |

| Phase | SSW4 Background CPS | Value |
|---|---|---|
| Master | | 164.8 |
| Before | | 163.7 |
| After | | 163.4 |
| | 150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum) | |

| Phase | SSW5 Background CPS | Value |
|---|---|---|
| Master | | 118.8 |
| Before | | 116.7 |
| After | | 117.7 |
| | 110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum) | |

Master: Calibration out of date 6−Dec−2021 2:28

Before: 14−Feb−2022 22:41

After: Calibration out of date 6−Dec−2021 3:13

## Hostile Litho−Density Sonde Master Calibration

### Detector Background Measurement

| Phase | LSW1 Background CPS | Value |
|---|---|---|
| Master | | 58.31 |
| | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) | |

| Phase | LSW2 Background CPS | Value |
|---|---|---|
| Master | | 54.71 |
| | 50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum) | |

| Phase | LSW3 Background CPS | Value |
|---|---|---|
| Master | | 119.6 |
| | 110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum) | |

| Phase | LSW4 Background CPS | Value |
|---|---|---|
| Master | | 143.7 |
| | 140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum) | |

| Phase | LSW5 Background CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 329.5 |
| | 330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum) | |

| Phase | LS Cs Resolution Bkg % | Value |
|---|---|---|
| Master | | 7.716 |
| | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) | |

| Phase | SSW1 Background CPS | Value |
|---|---|---|
| Master | | 65.79 |
| | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) | |

| Phase | SSW2 Background CPS | Value |
|---|---|---|
| Master | | 116.2 |
| | 100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum) | |

| Phase | SSW3 Background CPS | Value |
|---|---|---|
| Master | | 313.2 |
| | 280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum) | |

| Phase | SSW4 Background CPS | Value |
|---|---|---|
| Master | | 164.8 |
| | 150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum) | |

| Phase | SSW5 Background CPS | Value |
|---|---|---|
| Master | | 118.8 |
| | 110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum) | |

| Phase | SS Cs Resolution Bkg % | Value |
|---|---|---|
| Master | | 8.116 |
| | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) | |

Master: Calibration out of date 6−Dec−2021 2:28

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

| Phase | LSW1 Aluminum CPS | Value |
|---|---|---|
| Master | | 424.6 |
| | 420.0 (Minimum) 600.0 (Nominal) 770.0 (Maximum) | |

| Phase | LSW2 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 618.7 |
| | 650.0 (Minimum) 900.0 (Nominal) 1150 (Maximum) | |

| Phase | LSW3 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 747.6 |
| | 800.0 (Minimum) 1100 (Nominal) 1450 (Maximum) | |

| Phase | LSW4 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 378.6 |
| | 410.0 (Minimum) 580.0 (Nominal) 740.0 (Maximum) | |

| Phase | LSW5 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 347.2 |
| | 410.0 (Minimum) 570.0 (Nominal) 740.0 (Maximum) | |

| Phase | SSW1 Aluminum CPS | Value |
|---|---|---|
| Master | | 2005 |
| | 2000 (Minimum) 2800 (Nominal) 3200 (Maximum) | |

| Phase | SSW2 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 5497 |
| | 5800 (Minimum) 8000 (Nominal) 9300 (Maximum) | |

| Phase | SSW3 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 7681 |
| | 8300 (Minimum) 11600 (Nominal) 13500 (Maximum) | |

| Phase | SSW4 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 3153 |
| | 3500 (Minimum) 5000 (Nominal) 5800 (Maximum) | |

| Phase | SSW5 Aluminum CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 382.7 |
| | 430.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum) | |

Master: Calibration out of date 6−Dec−2021 2:58

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

| Phase | LSW1 Iron CPS | Value |
|---|---|---|
| Master | | 292.1 |
| | 290.0 (Minimum) 400.0 (Nominal) 560.0 (Maximum) | |

| Phase | LSW2 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 502.1 |
| | 520.0 (Minimum) 730.0 (Nominal) 950.0 (Maximum) | |

| Phase | LSW3 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 663.9 |
| | 720.0 (Minimum) 1000 (Nominal) 1350 (Maximum) | |

| Phase | LSW4 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 345.2 |
| | 370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum) | |

| Phase | LSW5 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 319.3 |
| | 340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum) | |

| Phase | SSW1 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 1480 |
| | 1500 (Minimum) 2100 (Nominal) 2400 (Maximum) | |

| Phase | SSW2 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 4600 |
| | 4900 (Minimum) 6800 (Nominal) 7900 (Maximum) | |

| Phase | SSW3 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 7038 |
| | 7800 (Minimum) 10800 (Nominal) 12600 (Maximum) | |

| Phase | SSW4 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 2891 |
| | 3300 (Minimum) 4600 (Nominal) 5400 (Maximum) | |

| Phase | SSW5 Iron CPS | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 340.8 |
| | 420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum) | |

Master: Calibration out of date 6−Dec−2021 2:53

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

| Phase | AL CALIBRATION RATIO 1 | Value |
|---|---|---|
| Master | | 1.030 |
| | 0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum) | |

| Phase | AL CALIBRATION RATIO 2 | Value |
|---|---|---|
| Master | | 2.173 |
| | 1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum) | |

| Phase | AL CALIBRATION RATIO 3 | Value |
|---|---|---|
| Master | | 0.5850 |
| | 0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum) | |

| Phase | AL CALIBRATION RATIO 4 | Value |
|---|---|---|
| Master | | 0.5670 |
| | 0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum) | |

| Phase | Pad−Wear SS Ratio | Value |
|---|---|---|
| Master | | 0.9909 |
| | 0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum) | |

| Phase | Pad−Wear LS Ratio | Value |
|---|---|---|
| Master | | 0.9909 |
| | 0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum) | |

| Phase | Pad−Position SS Ratio | Value |
|---|---|---|
| Master | | 1.002 |
| | 0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum) | |

| Phase | Pad−Position LS Ratio | Value |
|---|---|---|
| Master | EXCEEDS LIMIT | 0.9849 |
| | 0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum) | |

Master: Calibration out of date 6−Dec−2021 2:47

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| LDSC Cartridge | LDSC − B | 326 |
| Auxiliary Equipment: | | |
| LDSC Housing | LDSH − A | 303 |

Accelerator−Porosity Tool / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| Accelerator−Porosity Sonde | APS − C | 249 |
| APS Minitron | MNTR − F | 51002 |
| Auxiliary Equipment: | | |
| Accelerator−Porosity Housing | APH − AC | 152 |
| APS Calibration Water Tank | SFT − 178 | 1 |
| APS Aluminum Calibrator Sleeve | SFT − 281 | 1 |

Accelerator−Porosity Tool Wellsite Calibration

Detector Background

| Phase | Near Det Bkg Cntrate CPS | Value |
|---|---|---|
| Master | | 26.02 |
| Before | | 25.01 |
| After | | 25.28 |
| 1.000 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) |

| Phase | Far Det Bkg Cntrate CPS | Value |
|---|---|---|
| Master | | 25.01 |
| Before | | 24.73 |
| After | | 24.23 |
| 1.000 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) |

| Phase | Array−1 Det Bkg Cntrate CPS | Value |
|---|---|---|
| Master | | 24.13 |
| Before | | 22.96 |
| After | | 22.87 |
| 1.000 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) |

| Phase | Array−2 Det Bkg Cntrate CPS | Value |
|---|---|---|
| Master | | 24.27 |
| Before | | 23.31 |
| After | | 25.29 |
| 1.000 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) |

| Phase | Array Therm Det Bkg Cntrate CPS | Value |
|---|---|---|
| Master | | 26.11 |
| Before | | 25.50 |
| After | | 24.43 |
| 1.000 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) |

Master: Calibration out of date 6−Dec−2021 1:59 Before: 5−Mar−2022 22:55 After: 6−Mar−2022 5:01

Accelerator−Porosity Tool Wellsite Calibration

Calibration Ratios

| Phase | Near/Far Calibration Ratio | Value |
|---|---|---|
| Master | | 0.9376 |
| 0.8000 (Minimum) | 0.9250 (Nominal) | 1.050 (Maximum) |

| Phase | Near/Array Calibration Ratio | Value |
|---|---|---|
| Master | | 1.082 |
| 0.9000 (Minimum) | 1.030 (Nominal) | 1.170 (Maximum) |

| Phase | Near/Array Cal Ratio Up/Down | Value |
|---|---|---|
| Master | | 1.013 |
| 0.9700 (Minimum) | 1.000 (Nominal) | 1.030 (Maximum) |

Master: Calibration out of date 6−Dec−2021 1:59

Accelerator−Porosity Tool Wellsite Calibration

Tank Check

| Phase | Array−1 Standoff Porosity PU | Value |
|---|---|---|
| Master | | 10.75 |
| 9.900 (Minimum) | 11.75 (Nominal) | 13.60 (Maximum) |

| Phase | Array−2 Standoff Porosity PU | Value |
|---|---|---|
| Master | | 10.38 |
| 9.900 (Minimum) | 11.75 (Nominal) | 13.60 (Maximum) |

| Phase | Average Slowing Down Time US | Value |
|---|---|---|
| Master | | 6.004 |
| 5.500 (Minimum) | 6.000 (Nominal) | 6.250 (Maximum) |

| Phase | Array−1 SDT Ratio Up/Down | Value |
|---|---|---|
| Master | | 0.9667 |
| 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) |

| Phase | Array−2 SDT Ratio Up/Down | Value |
|---|---|---|
| Master | | 0.9647 |
| 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) |

| Phase | Sigma Formation CU | Value |
|---|---|---|
| Master | | 27.51 |
| 20.00 (Minimum) | 27.50 (Nominal) | 35.00 (Maximum) |

Master: Calibration out of date 6−Dec−2021 1:59

Accelerator−Porosity Tool Master Calibration

Detector Calibration

| Phase | Near/Far Calibration Ratio | Value |
|---|---|---|
| Master | | 0.9376 |
| 0.8000 (Minimum) | 0.9250 (Nominal) | 1.050 (Maximum) |

| Phase | Near/Array Calibration Ratio | Value |
|---|---|---|
| Master | | 1.082 |
| 0.9000 (Minimum) | 1.030 (Nominal) | 1.170 (Maximum) |

| Phase | Near/Array Cal Ratio Up/Down | Value |
|---|---|---|
| Master | | 1.013 |
| 0.9700 (Minimum) | 1.000 (Nominal) | 1.030 (Maximum) |

Master: Calibration out of date 6−Dec−2021 1:59

Accelerator−Porosity Tool Master Calibration

Tank Check

| Phase | Array−1 Standoff Porosity PU | Value |
|---|---|---|
| Master | | 10.75 |
| | 9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum) | |

| Phase | Array−2 Standoff Porosity PU | Value |
|---|---|---|
| Master | | 10.38 |
| | 9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum) | |

| Phase | Average Slowing Down Time US | Value |
|---|---|---|
| Master | | 6.004 |
| | 5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum) | |

| Phase | Array−1 SDT Ratio Up/Down | Value |
|---|---|---|
| Master | | 0.9667 |
| | 0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum) | |

| Phase | Array−2 SDT Ratio Up/Down | Value |
|---|---|---|
| Master | | 0.9647 |
| | 0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum) | |

| Phase | Sigma Formation CU | Value |
|---|---|---|
| Master | | 27.51 |
| | 20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum) | |

Master: Calibration out of date 6−Dec−2021 1:59

## Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| HNGC Cartridge | HNGC − B | 304 |
| Auxiliary Equipment: | | |
| HNGC Housing | HNGH − A | 3 |

## Hostile Natural Gamma Ray Sonde / Equipment Identification

| | | |
|---|---|---|
| Primary Equipment: | | |
| HNGS Sonde | HNGS − BA | 99 |
| Auxiliary Equipment: | | |
| HNGS Sonde Housing | HNSH − BA | 102 |
| Gamma Source Radioactive | GSR − U | 6098 |

## Hostile Natural Gamma Ray Sonde Wellsite Calibration

### Detector 1 Check

| Phase | Na 511 Peak Loc | Value |
|---|---|---|
| Master | | 39.60 |
| Before | | 39.35 |
| After | | 39.61 |
| | 37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum) | |

| Phase | Na 511 Peak Res % | Value |
|---|---|---|
| Master | | 17.00 |
| Before | | 17.03 |
| After | | 15.57 |
| | 12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum) | |

| Phase | High Voltage V | Value |
|---|---|---|
| Master | | 1202 |
| Before | | 1203 |
| After | | 1204 |
| | 900.0 (Minimum) 1150 (Nominal) 1600 (Maximum) | |

| Phase | Na 1785 Peak Loc | Value |
|---|---|---|
| Master | | 142.6 |
| Before | | 141.9 |
| After | | 142.9 |
| | 135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum) | |

| Phase | Na 1785 Peak Res % | Value |
|---|---|---|
| Master | | 9.539 |
| Before | | 8.461 |
| After | | 9.996 |
| | 7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum) | |

| Phase | Temperature DEGC | Value |
|---|---|---|
| Master | | 27.53 |
| Before | | 27.56 |
| After | | 27.63 |
| | −28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum) | |

| Phase | Na Count Rate CPS | Value |
|---|---|---|
| Master | | 10.98 |
| Before | | 10.73 |
| After | | 11.29 |
| | 10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum) | |

Master: 13−Feb−2022 23:25 Before: 13−Feb−2022 23:31 After: 13−Feb−2022 23:36

## Hostile Natural Gamma Ray Sonde Wellsite Calibration

### Detector 2 Check

| Phase | Na 511 Peak Loc | Value |
|---|---|---|
| Master | | 40.51 |
| Before | | 40.45 |
| After | | 40.84 |
| | 37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum) | |

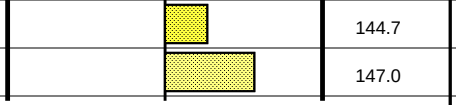
| Phase | Na 511 Peak Res % | Value |
|---|---|---|
| Master | | 16.47 |
| Before | | 16.18 |
| After | | 15.76 |
| | 12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum) | |

| Phase | High Voltage V | Value |
|---|---|---|
| Master | | 1129 |
| Before | | 1129 |
| After | | 1129 |
| | 900.0 (Minimum) 1150 (Nominal) 1600 (Maximum) | |

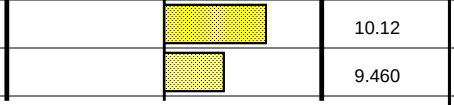
| Phase | Na 1785 Peak Loc | Value |
|---|---|---|
| Master | | 145.0 |

| Phase | Na 1785 Peak Res % | Value |
|---|---|---|
| Master | | 9.043 |

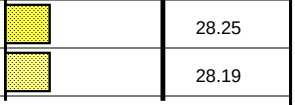
| Phase | Temperature DEGC | Value |
|---|---|---|
| Master | | 28.33 |

| | | |
|---|---|---|
| Before |  | 144.7 |
| After | | 147.0 |

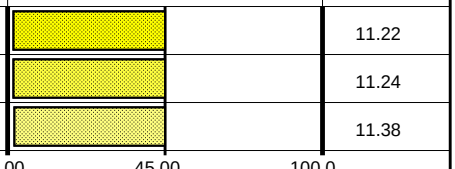
135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)

| | | |
|---|---|---|
| Before |  | 10.12 |
| After | | 9.460 |

7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)

| | | |
|---|---|---|
| Before |  | 28.25 |
| After | | 28.19 |

−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)

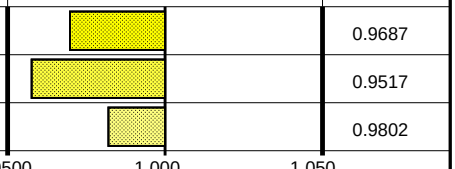
| Phase | Na Count Rate CPS | Value |
|---|---|---|
| Master |  | 11.22 |
| Before | | 11.24 |
| After | | 11.38 |

10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)

Master: 13−Feb−2022 23:25 Before: 13−Feb−2022 23:31 After: 13−Feb−2022 23:36

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

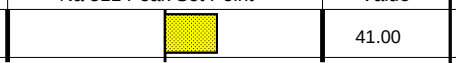
| Phase | Coincidence Count Rate Ratio | Value |
|---|---|---|
| Master |  | 0.9687 |
| Before | | 0.9517 |
| After | | 0.9802 |

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

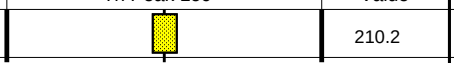
Master: 13−Feb−2022 23:25
Before: 13−Feb−2022 23:31
After: 13−Feb−2022 23:36

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

| Phase | Na 511 Peak Set Point | Value |
|---|---|---|
| Master |  | 41.00 |

38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)

| Phase | Th Peak Loc | Value |
|---|---|---|
| Master |  | 210.2 |

201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)

| Phase | Th Peak Res % | Value |
|---|---|---|
| Master |  | 7.307 |

5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)

| Phase | Background Count Rate CPS | Value |
|---|---|---|
| Master |  | 22.81 |

10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)

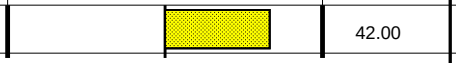
| Phase | Gain Ratio | Value |
|---|---|---|
| Master |  | 1.009 |

0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)

Master: 13−Feb−2022 23:19

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

| Phase | Na 511 Peak Set Point | Value |
|---|---|---|
| Master |  | 42.00 |

38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)

| Phase | Th Peak Loc | Value |
|---|---|---|
| Master |  | 211.1 |

201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)

| Phase | Th Peak Res % | Value |
|---|---|---|
| Master |  | 7.436 |

5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)

| Phase | Background Count Rate CPS | Value |
|---|---|---|
| Master |  | 22.96 |

10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)

| Phase | Gain Ratio | Value |
|---|---|---|
| Master |  | 0.9914 |

0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)

Master: 13−Feb−2022 23:19

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

| | | |
|---|---|---|
| EDTC Gamma Ray Detector | EDTG − A/B | 77693 |
| Enhanced DTS Cartridge | EDTC − B | 8529 |

Auxiliary Equipment:

| | | |
|---|---|---|
| EDTC Housing | EDTH − B | 8528 |

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

| Phase | EDTC Z−Axis Acceleration M/S2 | Value |
|---|---|---|
| Before |  | 9.812 |

9.610 9.810 10.01

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | (Minimum) | (Nominal) | (Maximum) | | | | |

Before: 24−Feb−2022 10:02

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 | | | | 8.029 | Before | | | | 163.4 | Before | | | | 164.0 |
| After | | | | 7.842 | After | | | | 165.6 | After | | | | 166.2 |
| | 0 (Minimum) | 30.00 (Nominal) | 120.0 (Maximum) | | | 148.6 (Minimum) | 163.4 (Nominal) | 178.3 (Maximum) | | | 149.0 (Minimum) | 164.0 (Nominal) | 179.0 (Maximum) | |

Before: 13−Feb−2022 22:35 After: 13−Feb−2022 22:44

Company: **International Ocean Discovery Program**

Schlumberger

Well: **Expedition 392, Site U1580 A**
Field: **Agulhas Plateau Cretaceous Climate**
Rig: **JOIDES Resolution**
Ocean: **Southern**

High Resolution Laterolog (HRLA)
Litho Density (HLDS) / Porosity (APS)
Natural Gamma / MSS (HNGS)