

# STEP

## energy services

### PHASED INDUCTION SHALLOW FOCUS SP LOG

|                                                                                                                                                                                           |                       |                                                                                                                                                                                                                                       |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Company</b> BEREXCO LLC<br><b>Well</b> PFEIFER "B" #4<br><b>Field</b> YOUNGER<br><b>County</b> ELLIS<br><b>State</b> KANSAS<br><b>Country</b> USA<br><b>API No.</b> 15-051-26980-00-00 |                       | <b>File No</b> : HAYS-70626<br><b>Company</b> : BEREXCO LLC<br><b>Well</b> : PFEIFER "B" #4<br><b>Field</b> : YOUNGER<br><b>County</b> : ELLIS<br><b>State</b> : KANSAS<br><b>Country</b> : USA<br><b>API No</b> : 15-051-26980-00-00 |  |
| <b>Location</b> :<br>2310' FNL & 2310' FWL<br>SE SE NW                                                                                                                                    |                       | <b>LSD</b> : <b>Sect</b> : 5 <b>Twp</b> : 14S <b>Rge</b> : 17W                                                                                                                                                                        |  |
| <b>Permanent Datum:</b><br><b>Drilling Measured From:</b> GL<br><b>Log Measured From:</b> KB<br><b>Above Permanent Datum:</b> 7.00 Ft                                                     |                       | <b>Elevations:</b><br>KB 2029.00 Ft<br>DF 2028.00 Ft<br>GL 2022.00 Ft                                                                                                                                                                 |  |
| <b>Date</b> 02-27-2020                                                                                                                                                                    |                       | <b>Services:</b><br>CNT<br>LDT<br>MST                                                                                                                                                                                                 |  |
| <b>Run Number</b>                                                                                                                                                                         | 1                     |                                                                                                                                                                                                                                       |  |
| <b>Depth--Driller</b>                                                                                                                                                                     | 3730.0                | Ft                                                                                                                                                                                                                                    |  |
| <b>Depth--Logger</b>                                                                                                                                                                      | 3730.0                | Ft                                                                                                                                                                                                                                    |  |
| <b>First Reading</b>                                                                                                                                                                      | 3729.0                | Ft                                                                                                                                                                                                                                    |  |
| <b>Last Reading</b>                                                                                                                                                                       | 1214.0                | Ft                                                                                                                                                                                                                                    |  |
| <b>Casing--Driller</b>                                                                                                                                                                    | 1214.0                | Ft                                                                                                                                                                                                                                    |  |
| <b>Casing--Logger</b>                                                                                                                                                                     | 1212.0                | Ft                                                                                                                                                                                                                                    |  |
| <b>Bit Size</b>                                                                                                                                                                           | 7.625                 | In                                                                                                                                                                                                                                    |  |
| <b>Casing Size</b>                                                                                                                                                                        | 8.625                 | In                                                                                                                                                                                                                                    |  |
| <b>Hole Fluid Type</b>                                                                                                                                                                    | CHEMICAL              |                                                                                                                                                                                                                                       |  |
| <b>Density</b>                                                                                                                                                                            | 9.1                   |                                                                                                                                                                                                                                       |  |
| <b>Fluid Loss</b>                                                                                                                                                                         | 50.0                  |                                                                                                                                                                                                                                       |  |
| <b>PH/Viscosity</b>                                                                                                                                                                       | 10.0                  | 55.0                                                                                                                                                                                                                                  |  |
| <b>Sample Source</b>                                                                                                                                                                      | MEASURED              |                                                                                                                                                                                                                                       |  |
| <b>RMF@Measured Temp.</b>                                                                                                                                                                 | 1.700 @ 69            | F                                                                                                                                                                                                                                     |  |
| <b>RMF@Measured Temp</b>                                                                                                                                                                  | 1.450 @ 69            | F                                                                                                                                                                                                                                     |  |
| <b>RMF@Measured Temp.</b>                                                                                                                                                                 | 1.690 @ 69            | F                                                                                                                                                                                                                                     |  |
| <b>Source RMF/RMC</b>                                                                                                                                                                     | CALCULATED/CALCULATED |                                                                                                                                                                                                                                       |  |
| <b>RM@BHT</b>                                                                                                                                                                             | 1.150 @ 0             | F                                                                                                                                                                                                                                     |  |
| <b>Time Circulation Stopped</b>                                                                                                                                                           | 02-27-2020 09:00      |                                                                                                                                                                                                                                       |  |
| <b>Max Recorded Temp.</b>                                                                                                                                                                 | 0                     | F                                                                                                                                                                                                                                     |  |
| <b>Equipment/Base</b>                                                                                                                                                                     | TRK137                | HAYS                                                                                                                                                                                                                                  |  |
| <b>Recorded By</b>                                                                                                                                                                        | B.BAILEY              |                                                                                                                                                                                                                                       |  |
| <b>Witnessed By</b>                                                                                                                                                                       | JERRY SMITH           |                                                                                                                                                                                                                                       |  |

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by STEP Energy Services personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by STEP Energy Services for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

| Bitsize Intervals |             | Casing Strings |              |             |          |
|-------------------|-------------|----------------|--------------|-------------|----------|
| Size (In)         | Bottom (Ft) | Size (In)      | Weight (Lbs) | Bottom (Ft) | Top (Ft) |
| 7.625             | 3730.00     | 8.625          | 17.00        | 1214.00     | 0.00     |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |

|                     |                  |  |  |
|---------------------|------------------|--|--|
| Run Number          | 1                |  |  |
| Date                | 02-27-2020       |  |  |
| Date/Time On Bottom | 02-27-2020 13:26 |  |  |
| Depth to Fluid      | 0.0 Ft           |  |  |
| Salinity            | 5000.000         |  |  |
| RMF@BHT             | 0.980 @ 0 F      |  |  |
| RMC@BHT             | 1.330 @ 0 F      |  |  |

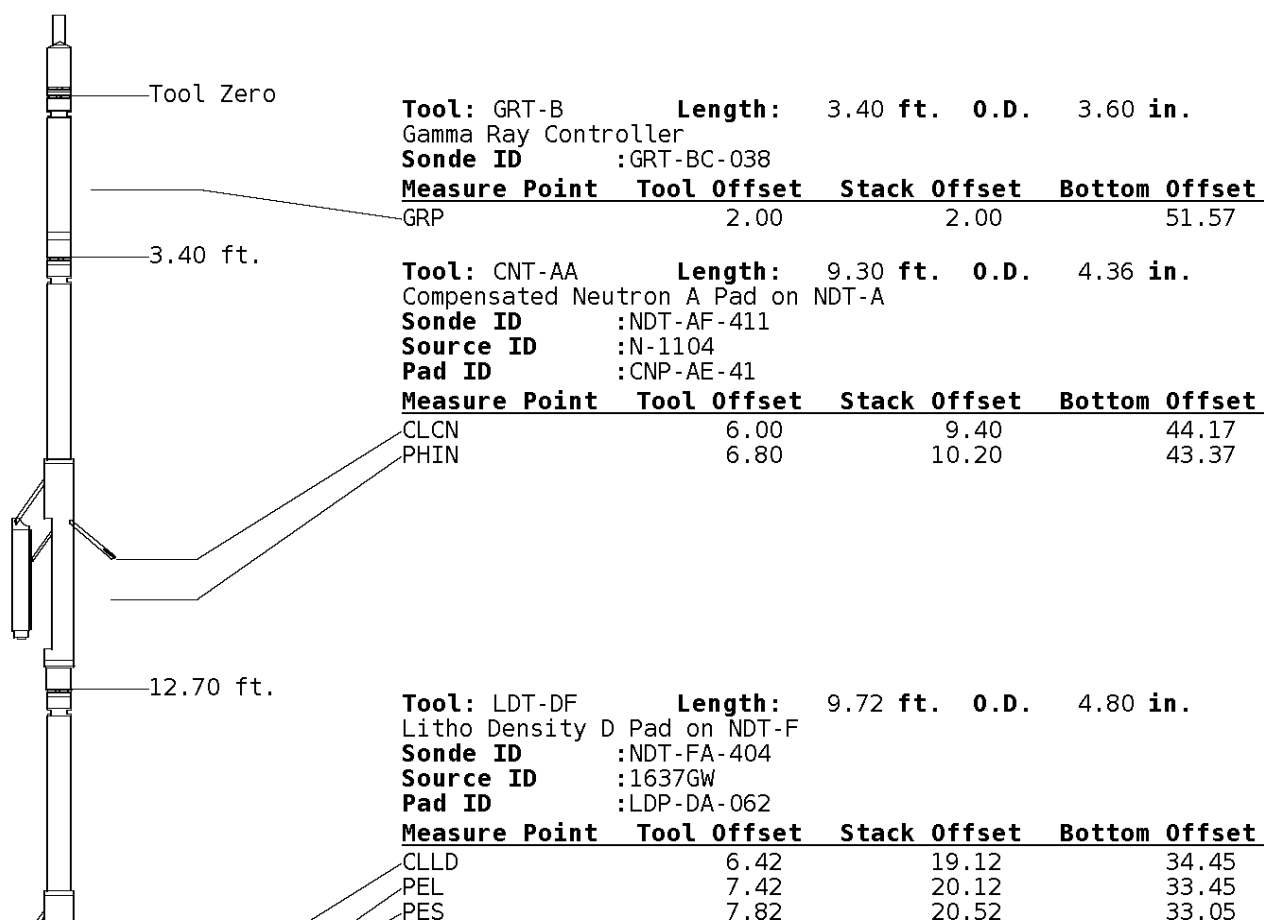
ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, CST, MLT AND PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED

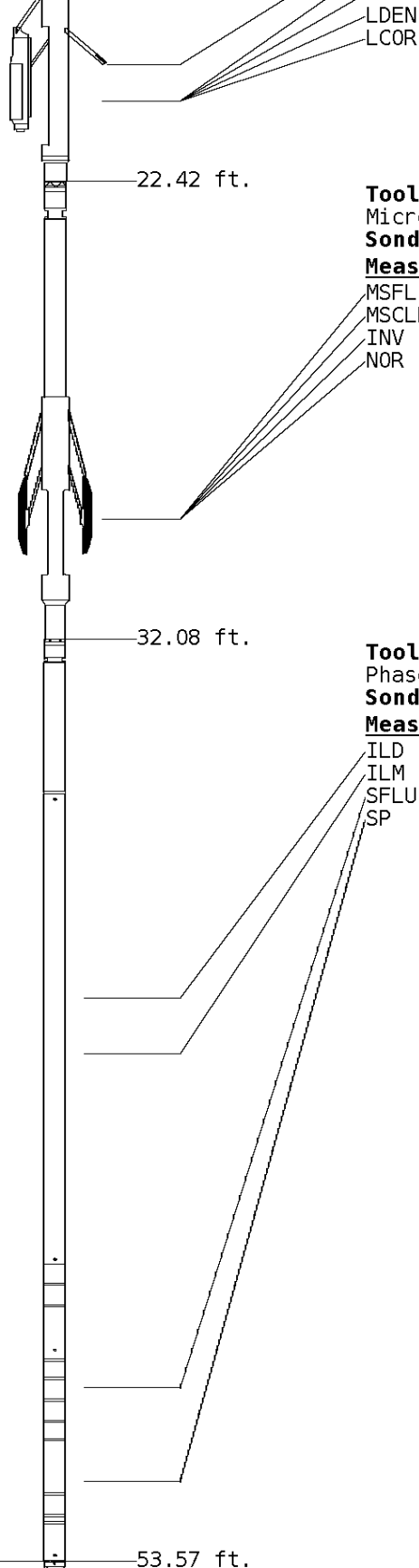
GRT: GRP  
 CNT: PHIN, CLCNIN,  
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN  
 MLT: NOR\_RF, INV\_RF, MSCLPIN  
 PIT: ILD, ILM, SPU, SFLAEC, CIRD, RXO/RT

OPERATORS:  
 D. RAGSDALE  
 J. VAUGHN  
 D.LEGLEITER  
 Z.AL SUDANI

## Tool String Schematic

**Total Tool Length** - 53.57 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 943.00 lbs.





Tool: MST-DA Length: 9.66 ft. O.D. 6.00 in.  
 Micro Spherically Focused (IC)  
 Sonde ID :MST-DA-36

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---------------|-------------|--------------|---------------|
| MSFL          | 7.60        | 30.02        | 23.55         |
| MSCLP         | 7.60        | 30.02        | 23.55         |
| INV           | 7.60        | 30.02        | 23.55         |
| NOR           | 7.60        | 30.02        | 23.55         |

Tool: PIT-CA Length: 21.49 ft. O.D. 3.62 in.  
 Phased Dual Induction w/ RM & D  
 Sonde ID :PIT-AC-043

| Measure Point | Tool Offset | Stack Offset | Bottom Offset |
|---------------|-------------|--------------|---------------|
| ILD           | 8.92        | 41.00        | 12.56         |
| ILM           | 10.10       | 42.18        | 11.39         |
| SFLU          | 17.49       | 49.57        | 4.00          |
| SP            | 20.60       | 52.68        | 0.88          |

Well File: BREXCO\_PFEIFER\_B\_4\_FEB-27\_MST

Scale: 1:600 Format: DIL-600

Segment: V1.D1.S6 Reprocess MAIN

Acquired: 2020-02/27 13:29 3.4.1-13972

Reference: 0

Processed: 2020-02/27 14:51 3.4.1-13972

TENSION  
LBS

10000

0

DEEP INDUCTION  
OHMM

0.0

500.0

0.0

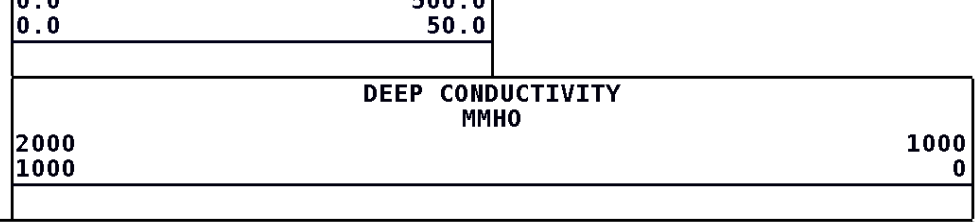
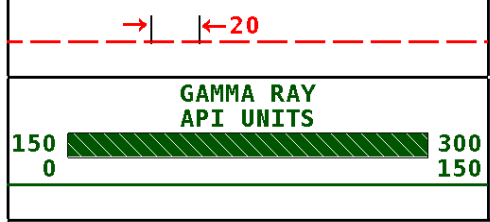
50.0

SPONTANEOUS POTENTIAL  
mV

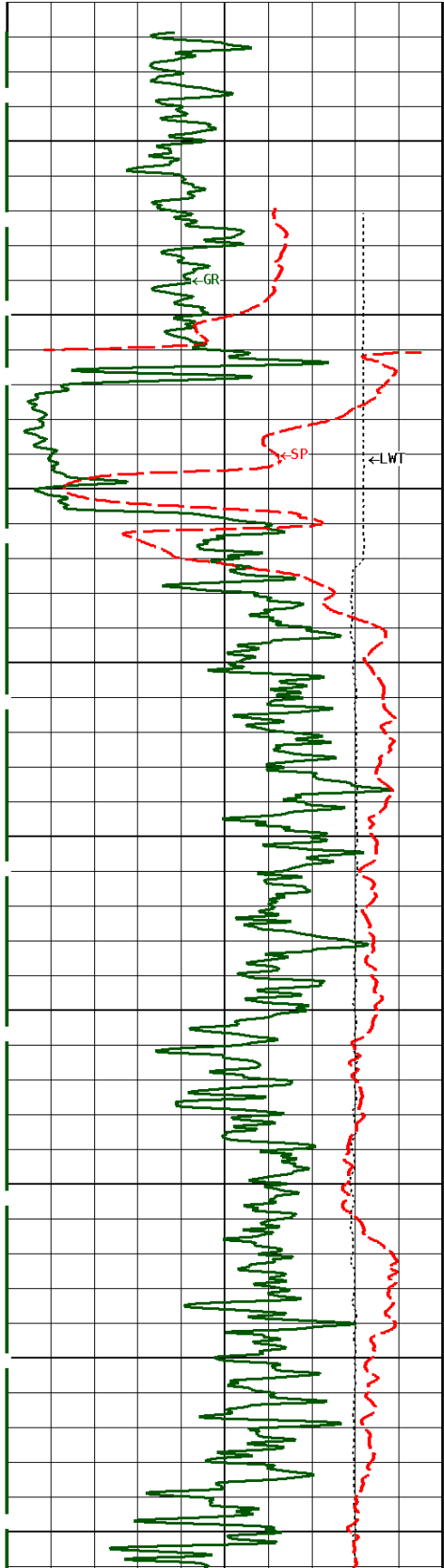
SHALLOW FOCUSED RESISTIVITY  
OHMM

0.0

500.0



# 1:600 MAIN SECTION

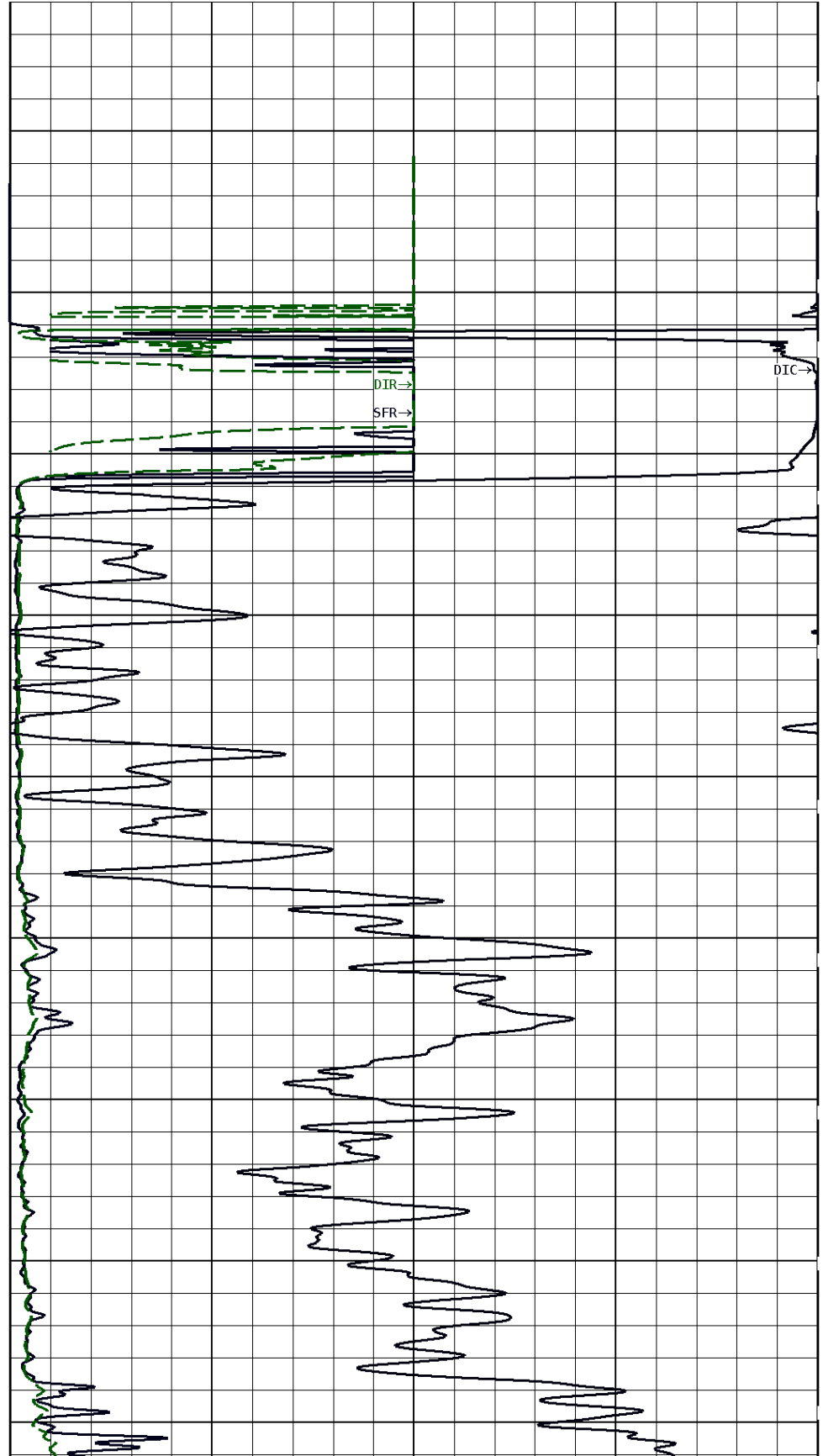


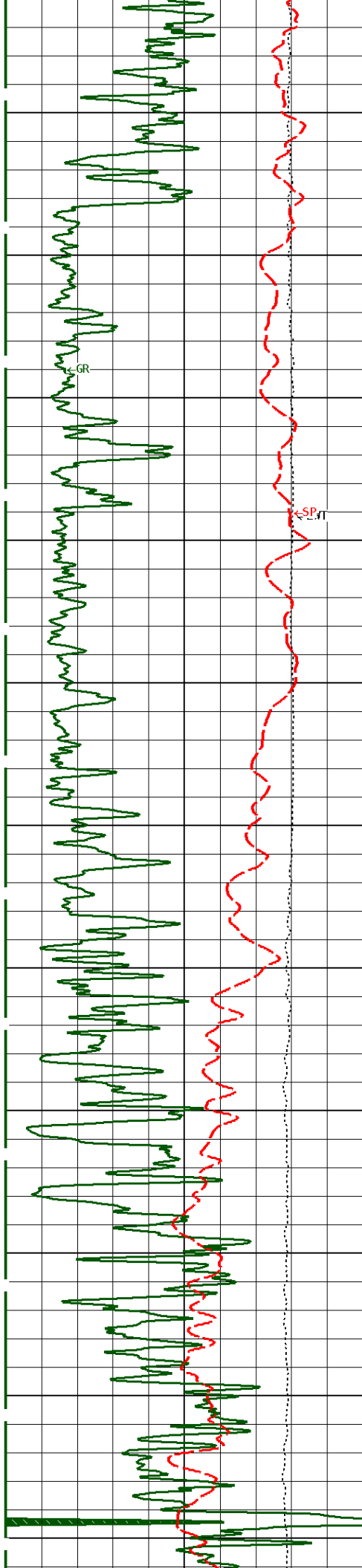
1200

1300

1400

1500





1600

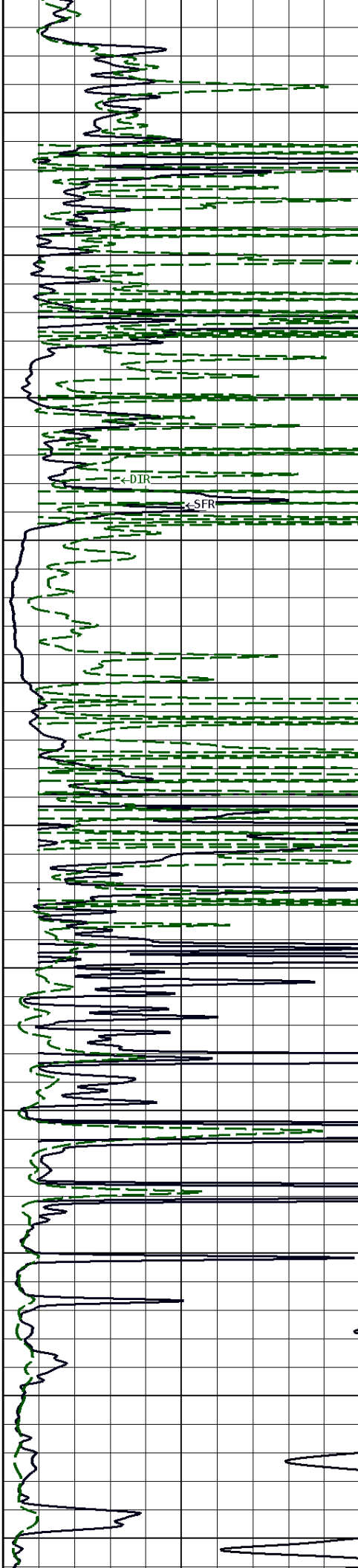
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1800

1900

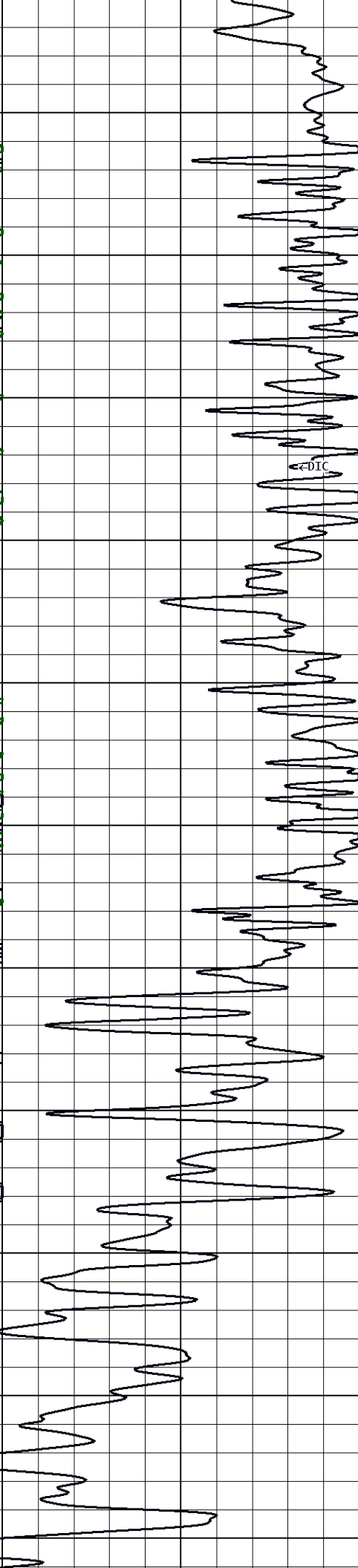
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2100

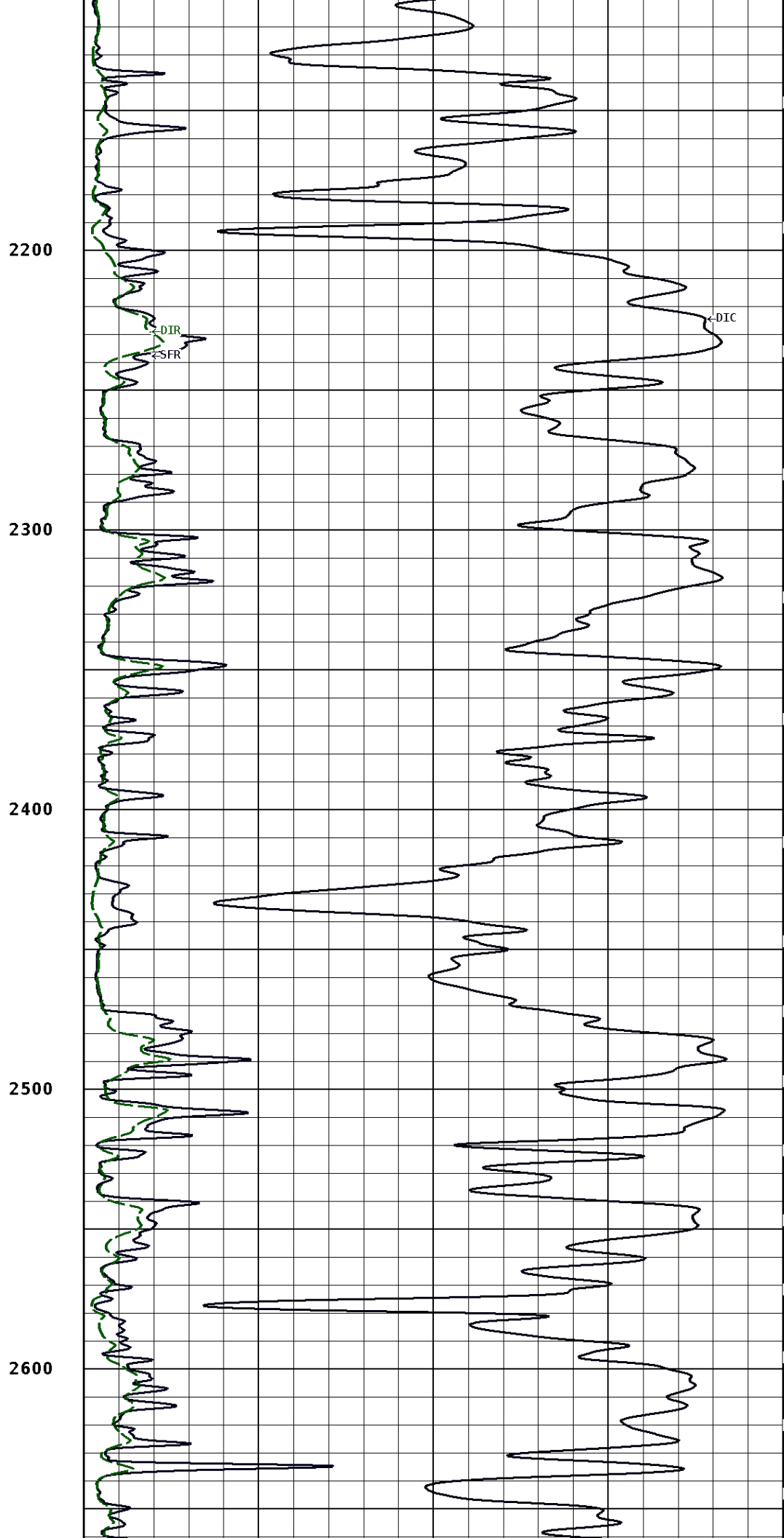
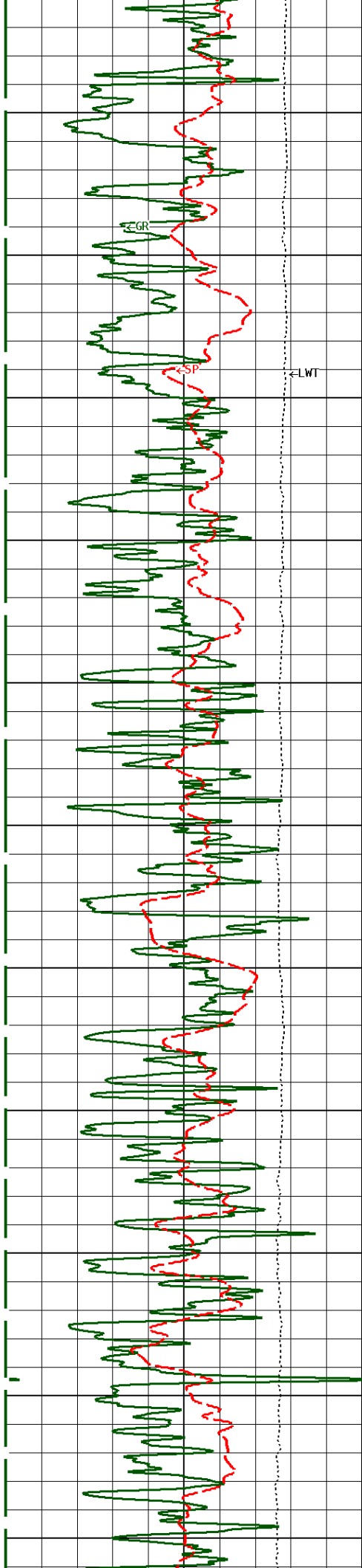


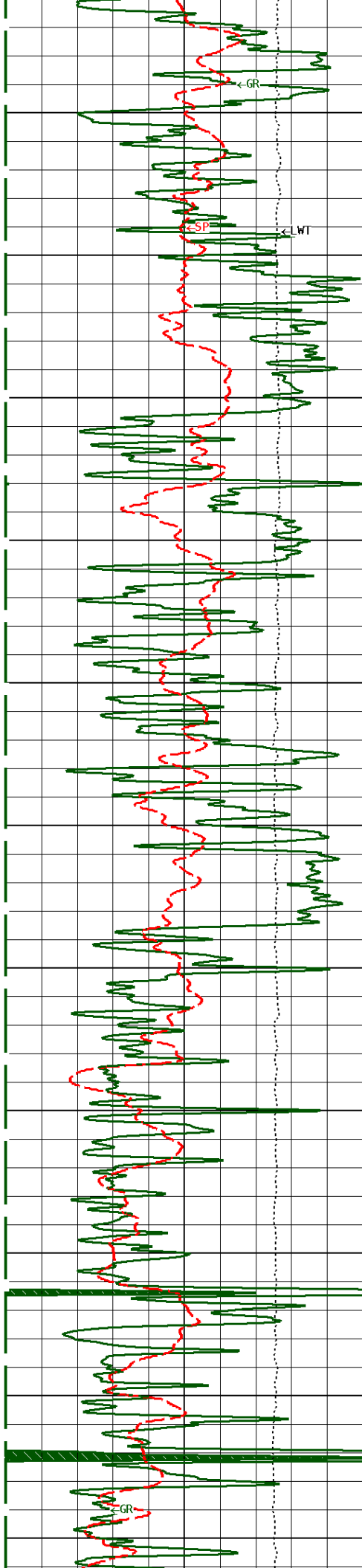
DIR

SFR



DTC





2700

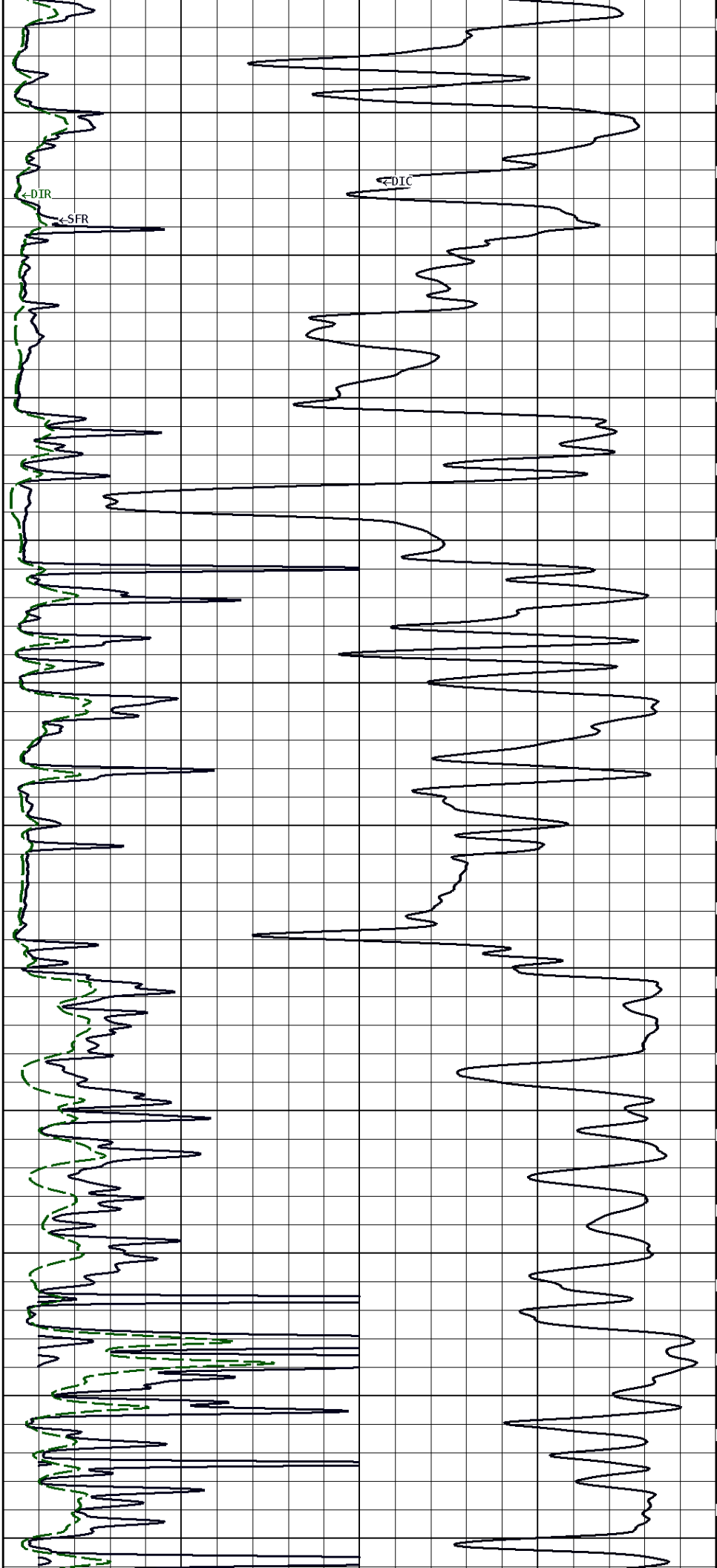
2800

2900

3000

3100

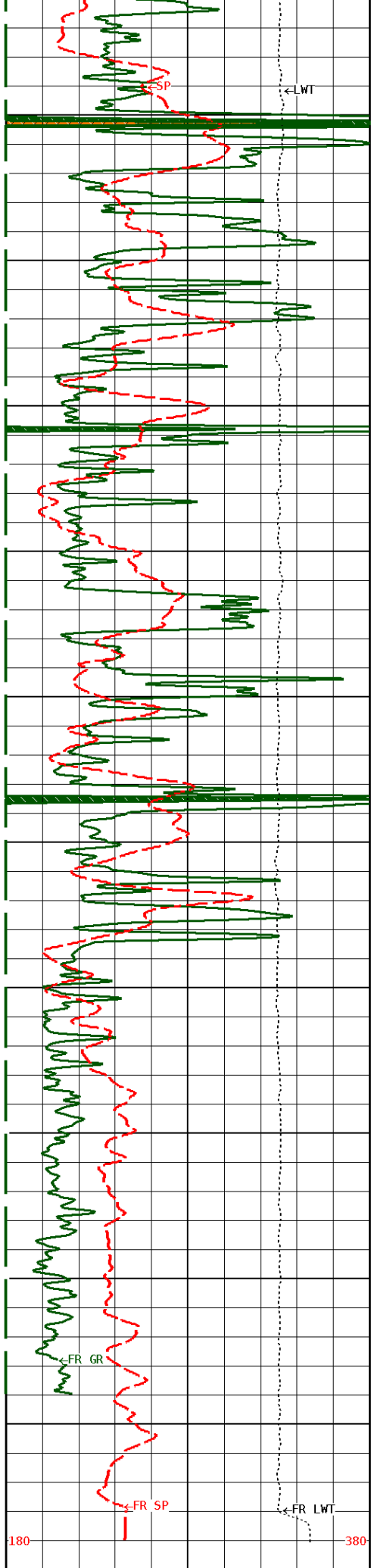
3200



←DIR

←SFR

←DIC



File #1.1.6

3300

3400

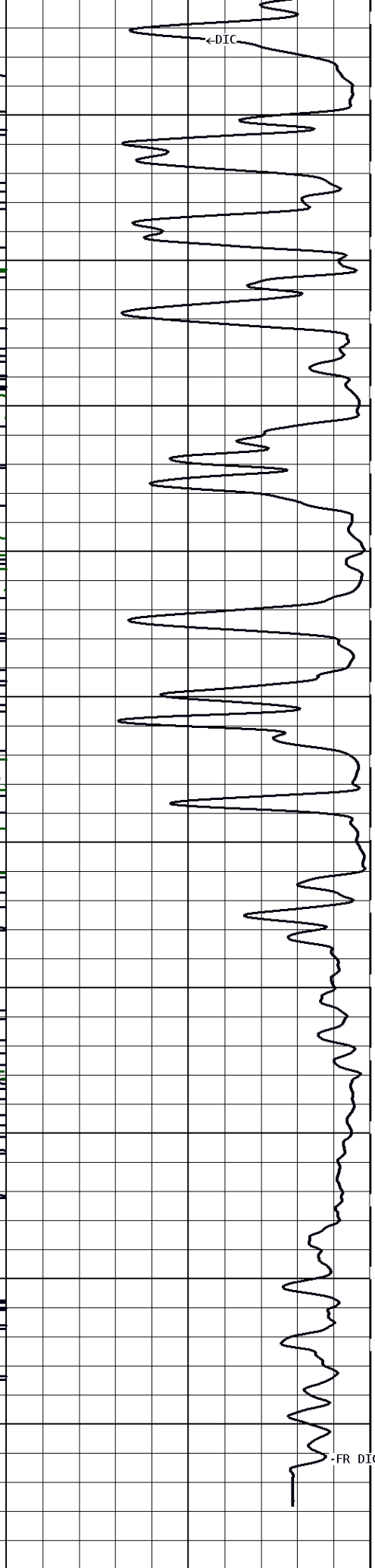
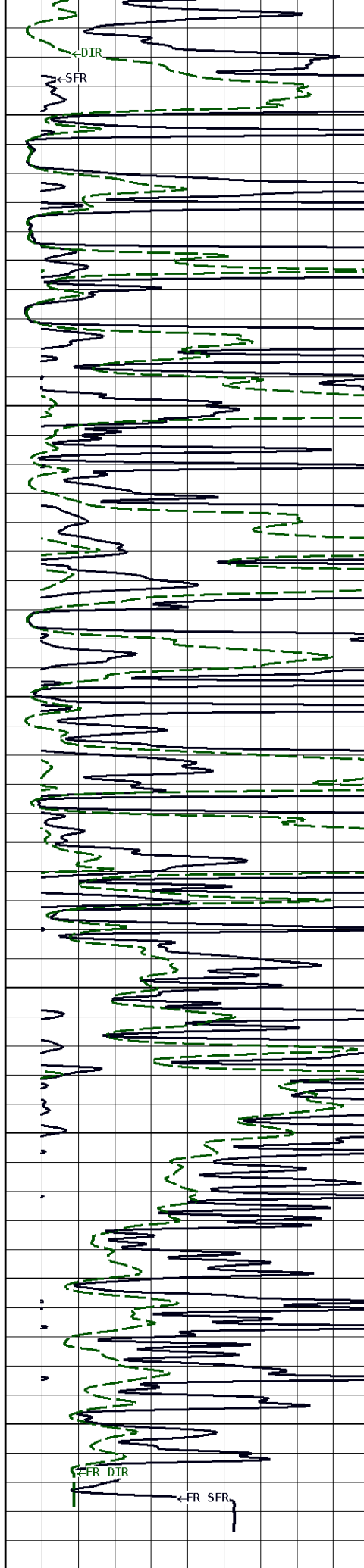
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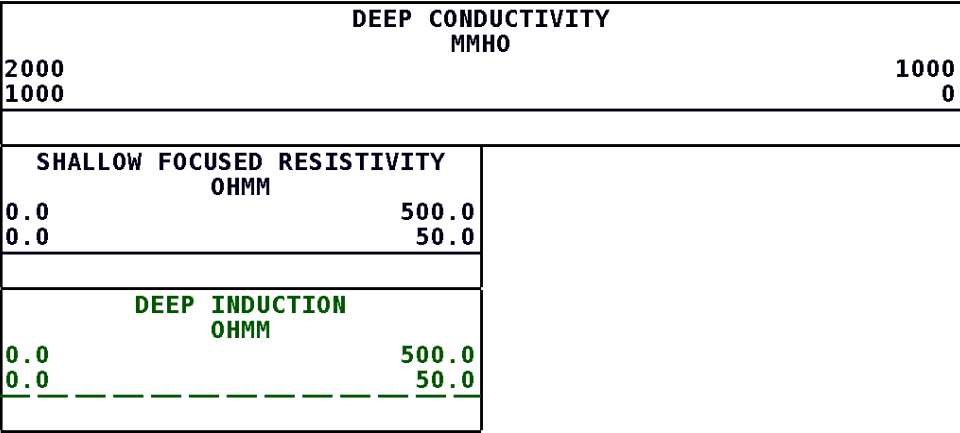
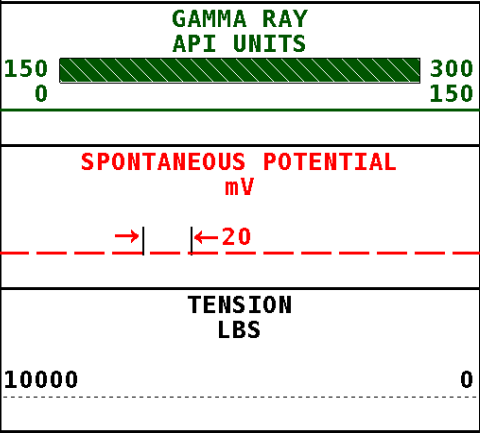
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3700

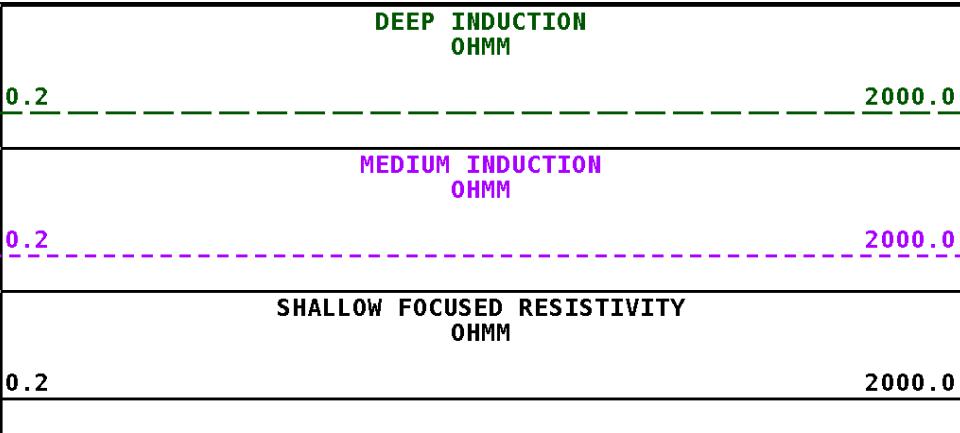
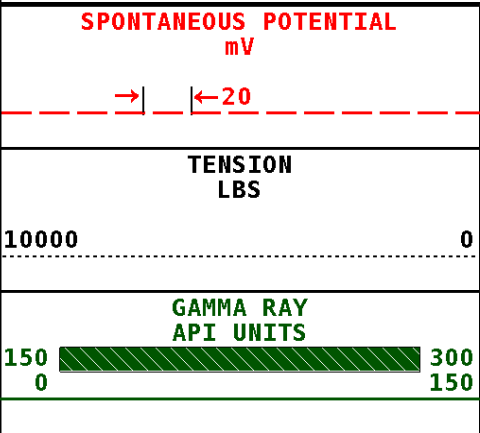
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# 1:600 MAIN SECTION

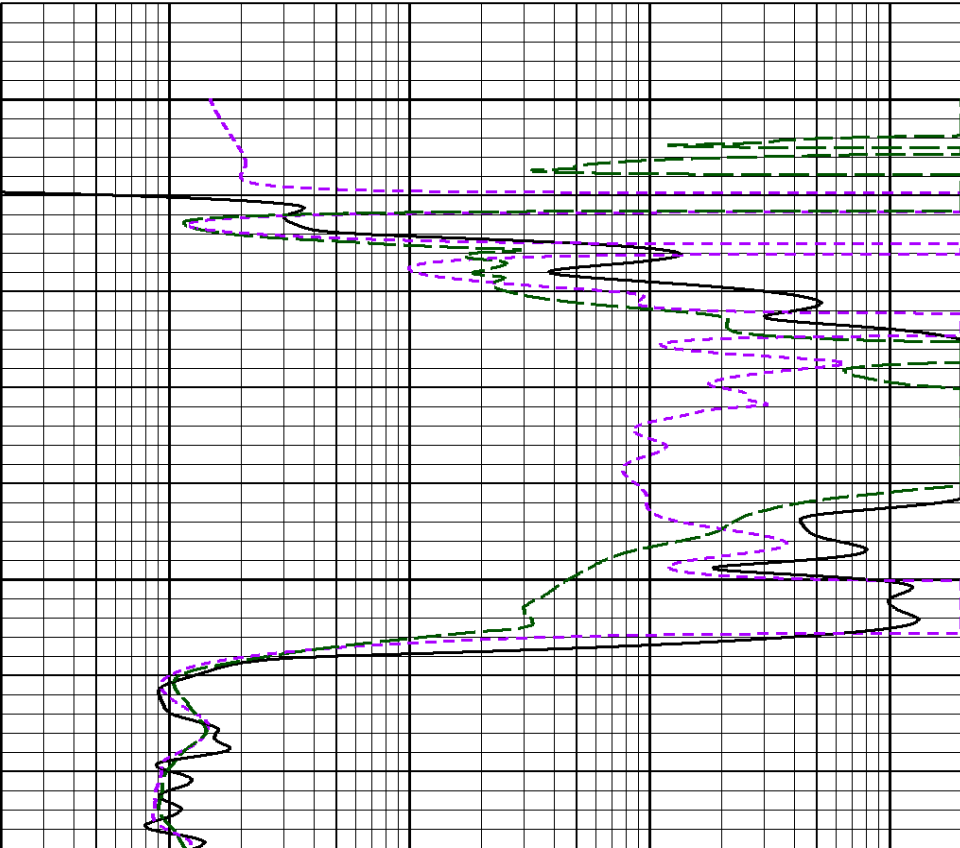
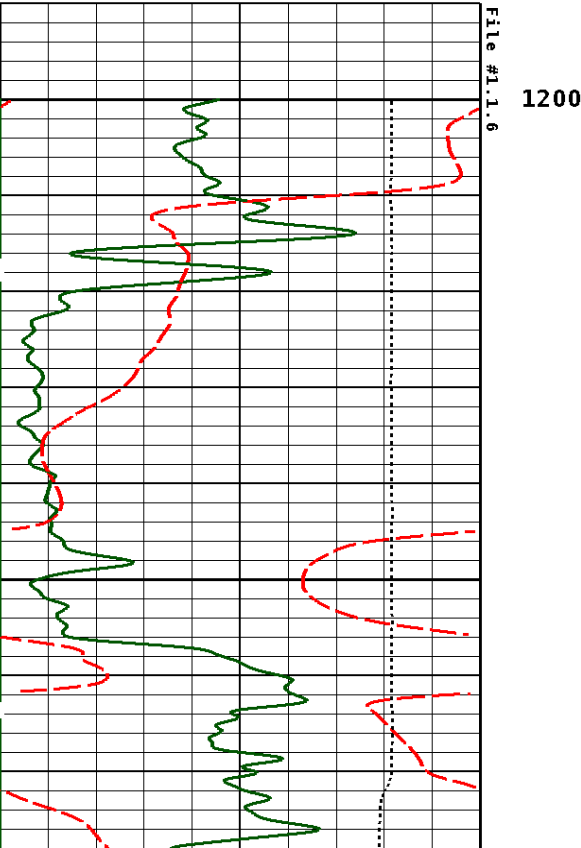


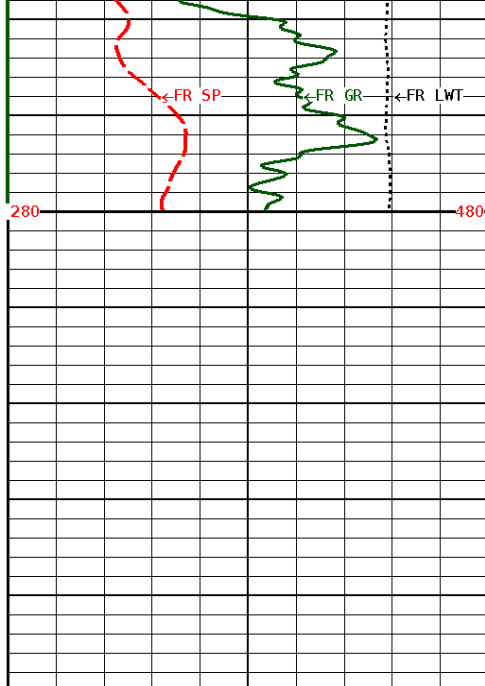


Well File: BREXCO\_PFEIFER\_B\_4 FEB-27\_MST Scale: 1:240 Format: DIL-240  
Segment: V1.D1.S6 Reprocess MAIN Acquired: 2020-02/27 13:29 3.4.1-13972  
Reference: 0 Processed: 2020-02/27 14:51 3.4.1-13972

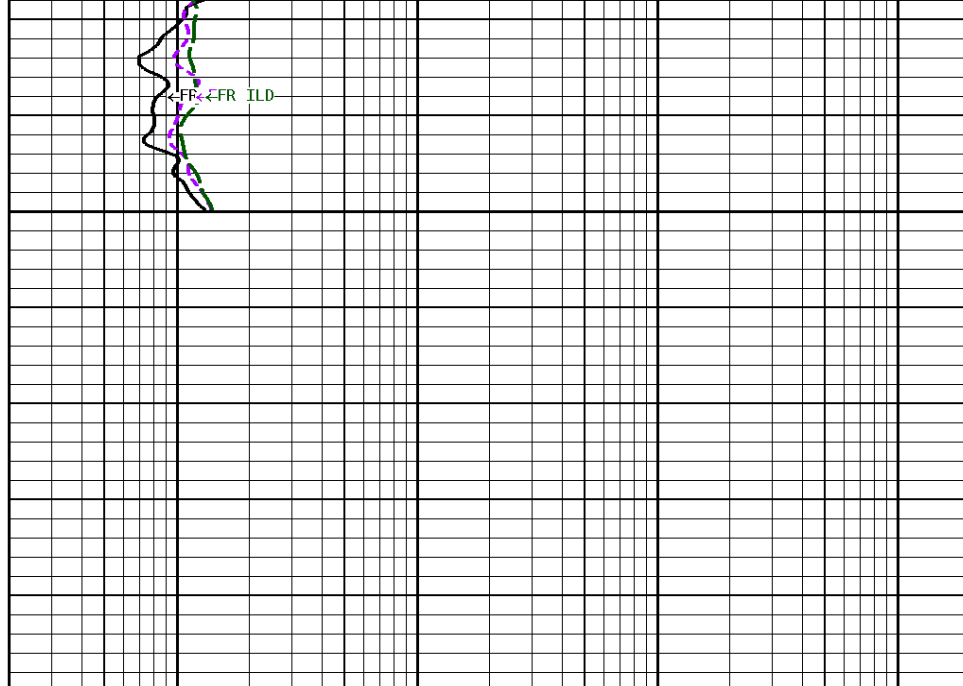


1:240 MAIN SECTION

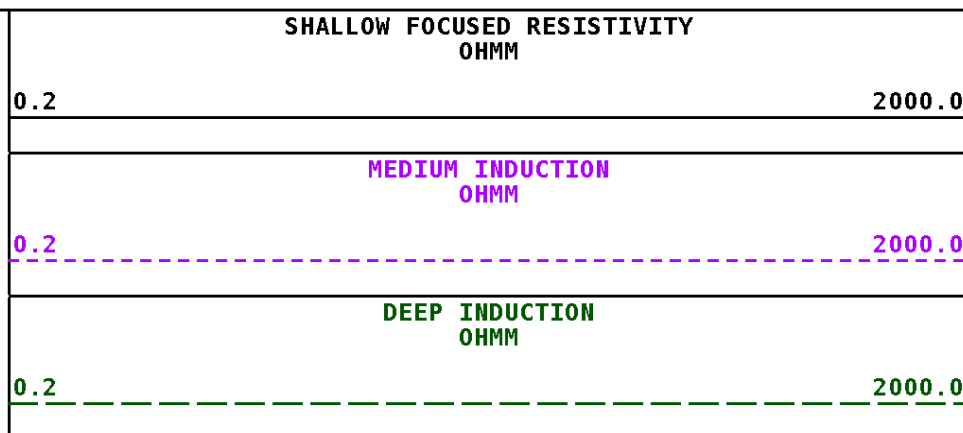
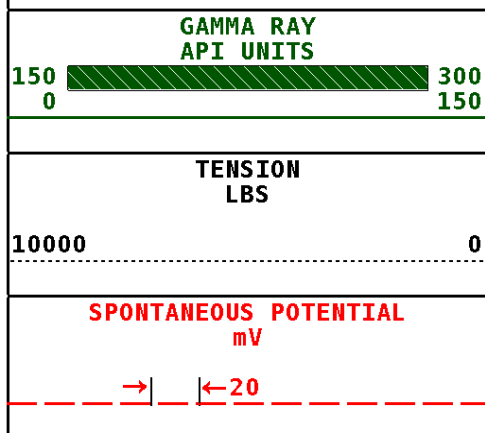




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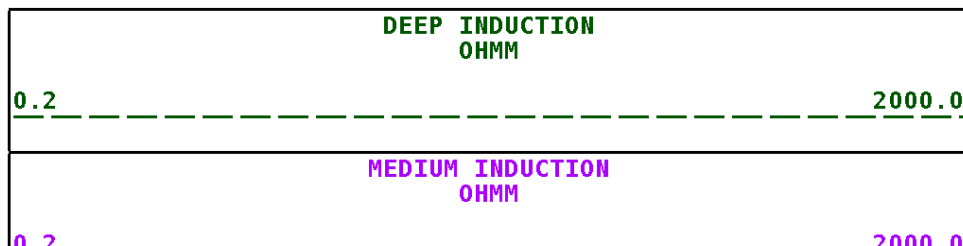
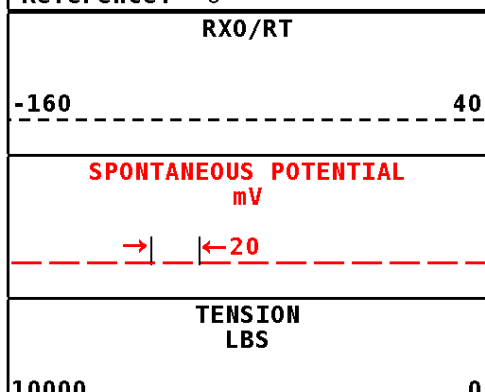
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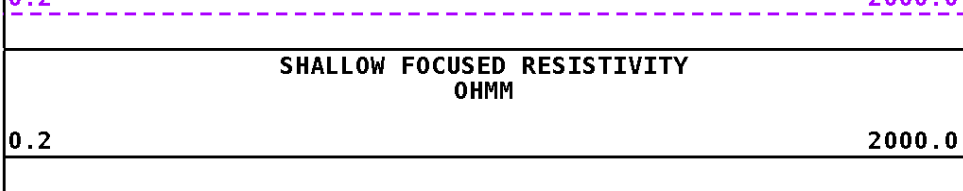
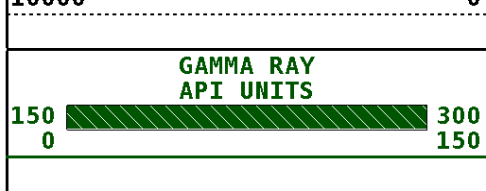


### \* Borehole Zone Factors \*

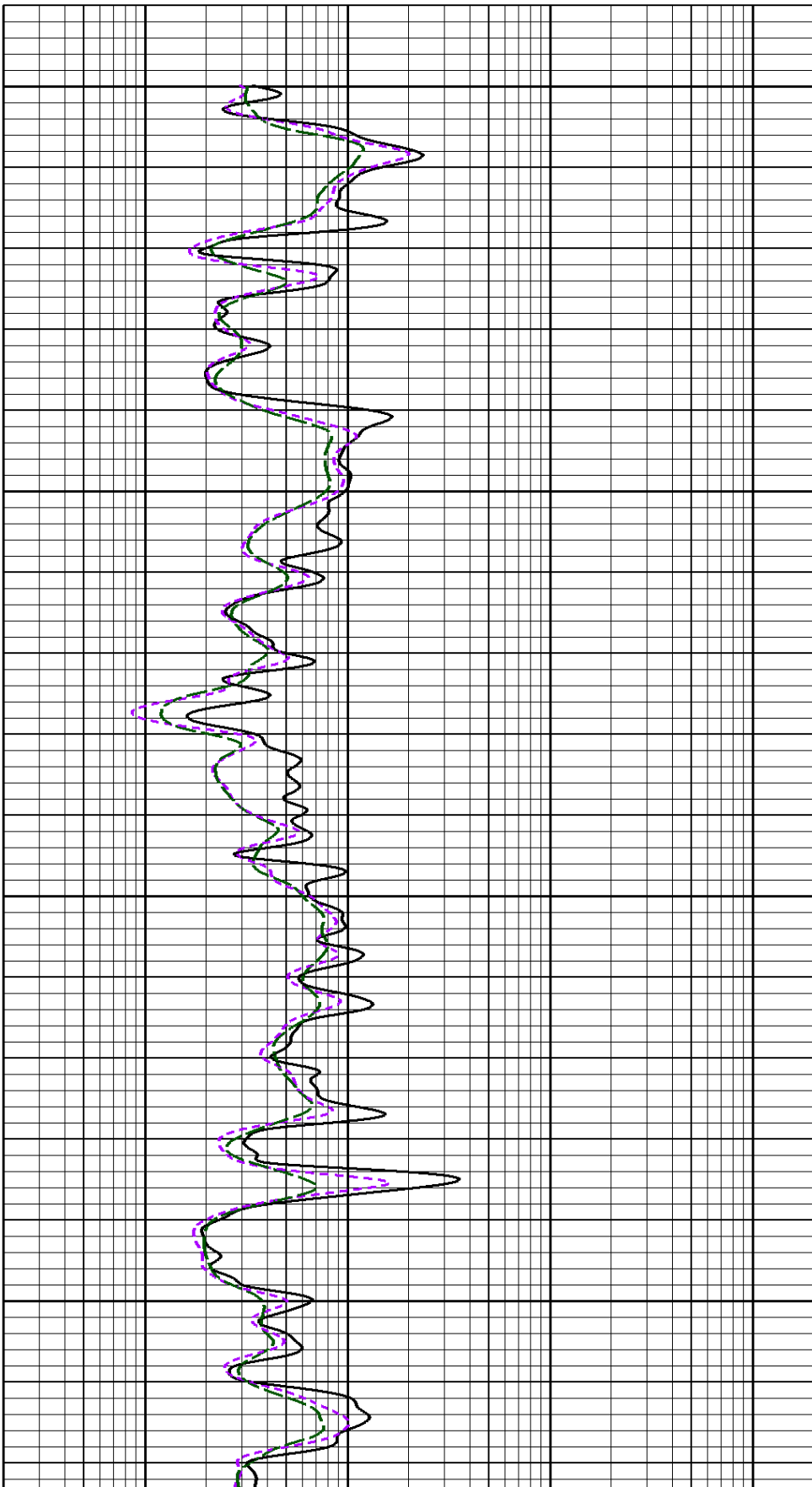
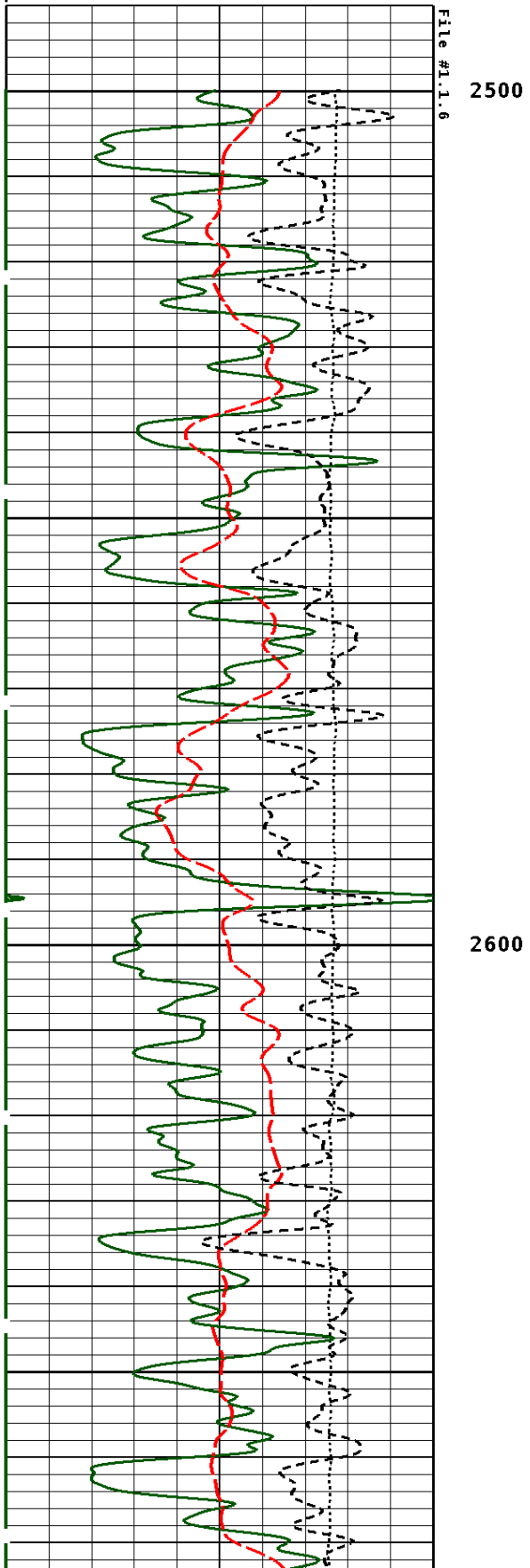
| Zone 1 99999.0 to 0.0 Feet     |          |      |
|--------------------------------|----------|------|
| Drill Bit Size                 | 7.875    | in   |
| Casing Diameter                | 5.500    | in   |
| BHT Depth                      | 3730.000 | ft   |
| Borehole Temperature           | 73.0     | degF |
| Temperature Gradient           | 1.00     | DFHF |
| Resistivity Of Mud             | 1.700    | ohmm |
| Resistivity Of Mud Temperature | 69.00    | degF |

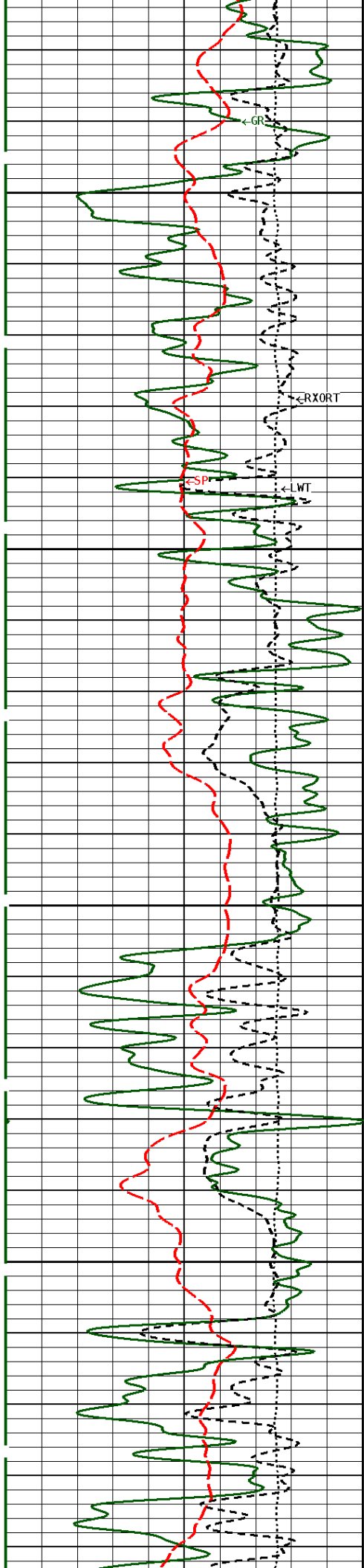
Well File: BREXCO\_PFEIFER\_B\_4 FEB-27\_MST Scale: 1:240 Format: DIL-240  
 Segment: V1.D1.S6 Reprocess MAIN Acquired: 2020-02/27 13:29 3.4.1-13972  
 Reference: 0 Processed: 2020-02/27 14:51 3.4.1-13972





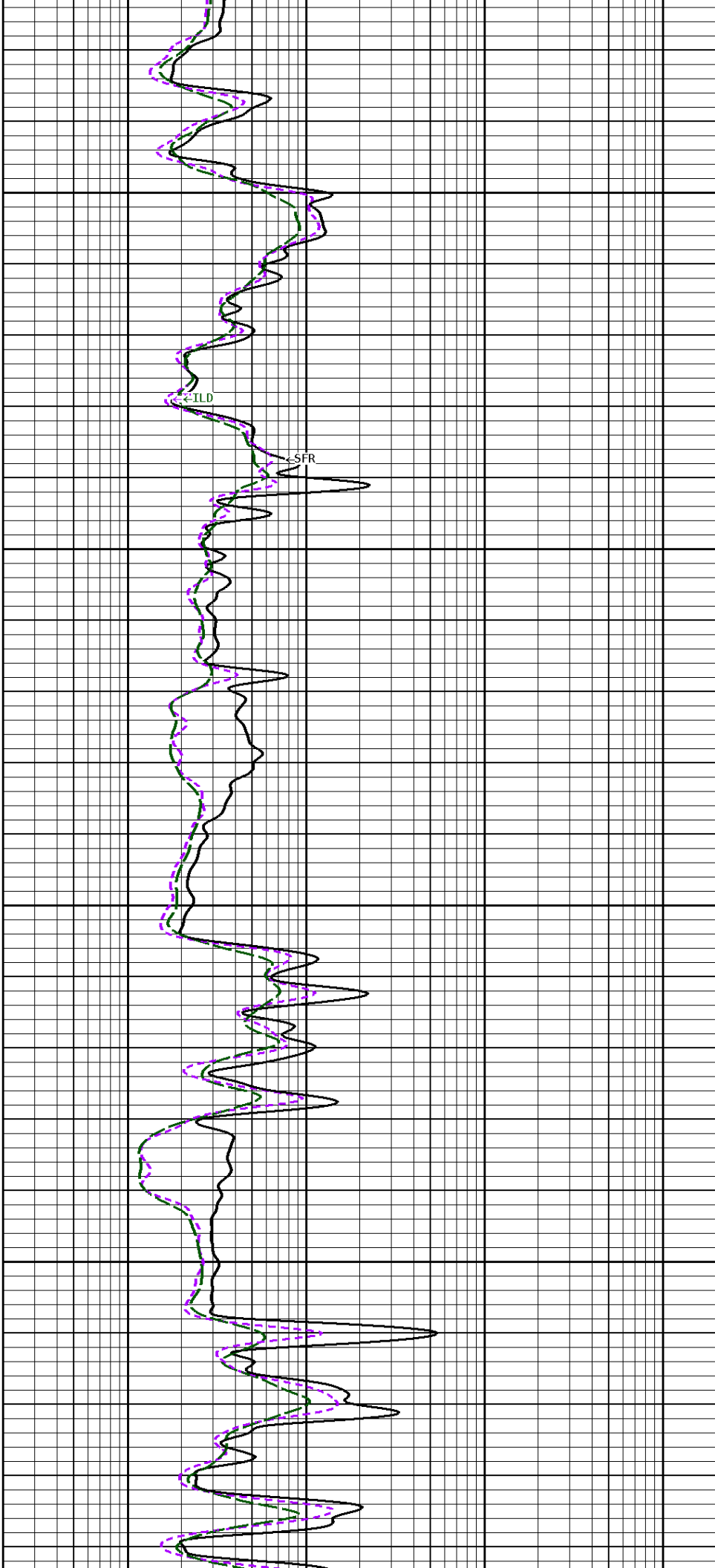
1:240 MAIN SECTION

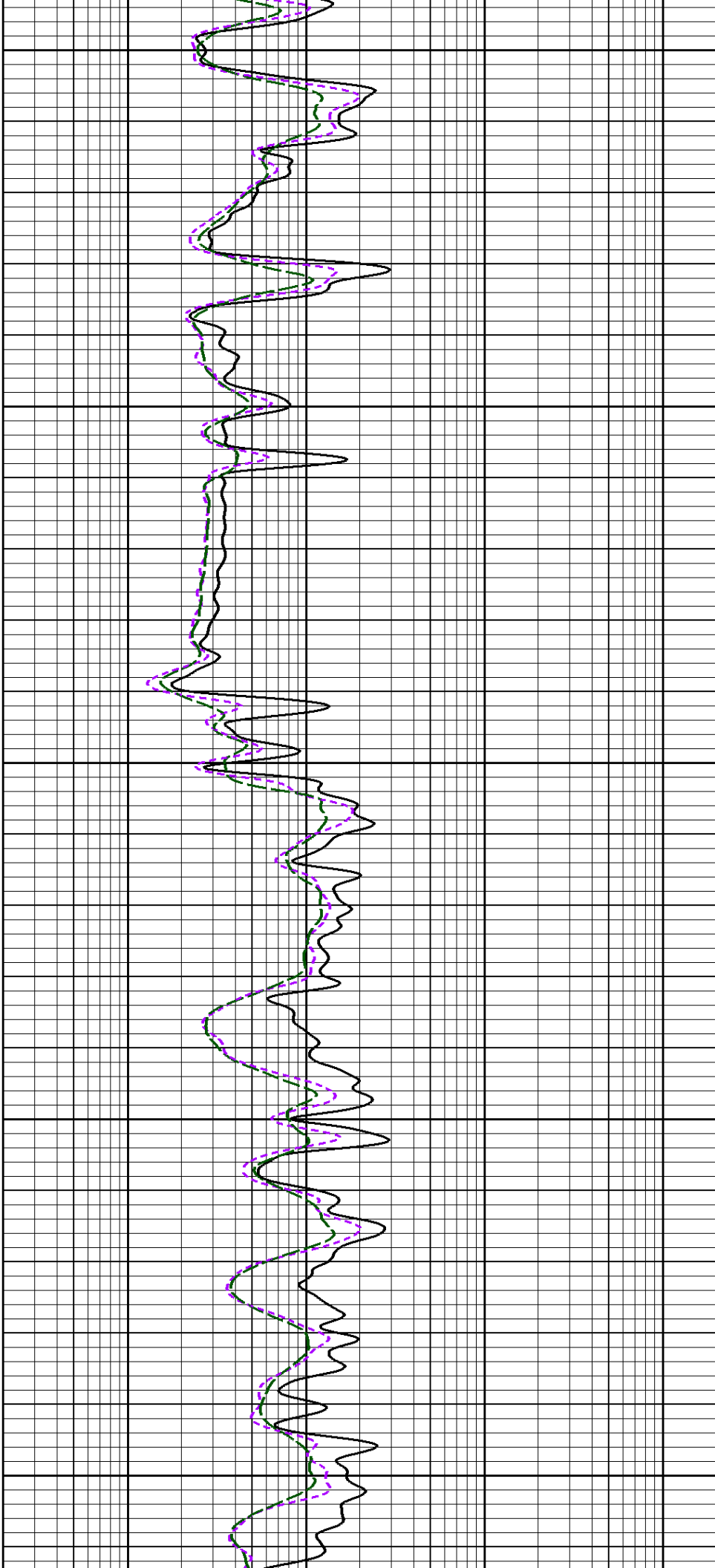
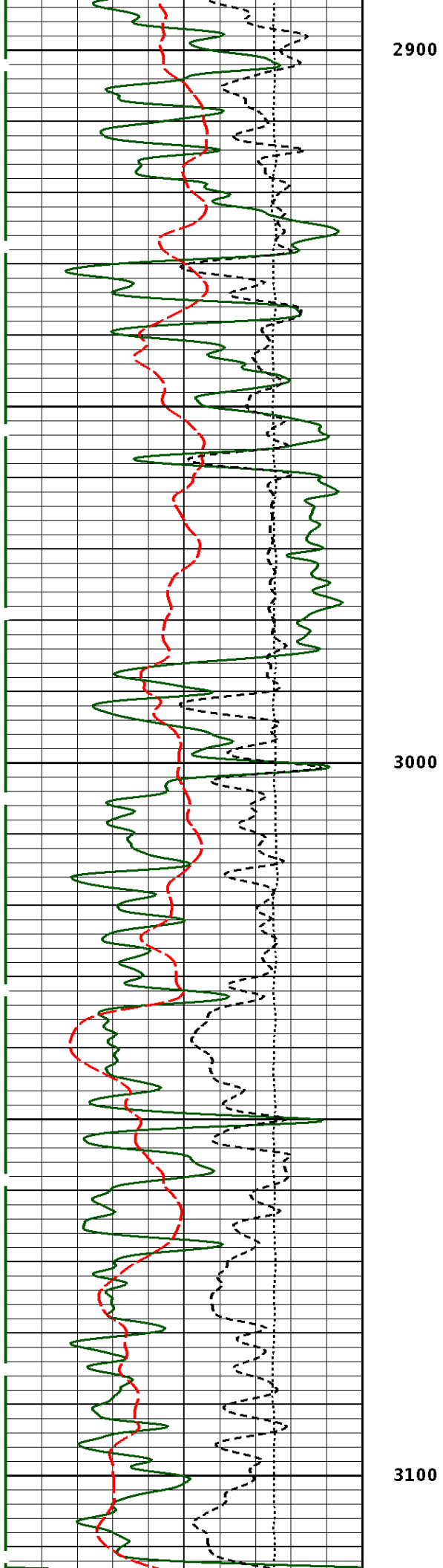


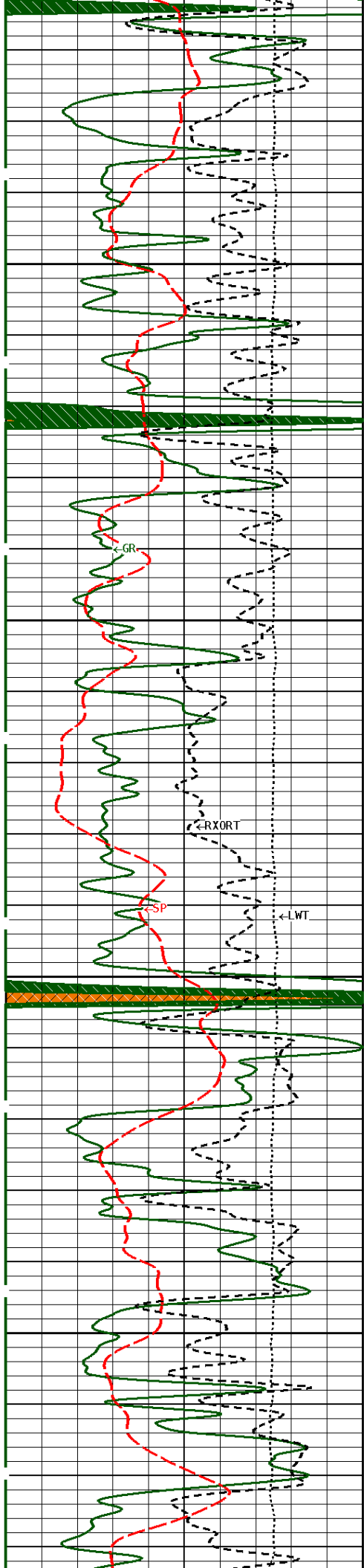


2700

2800

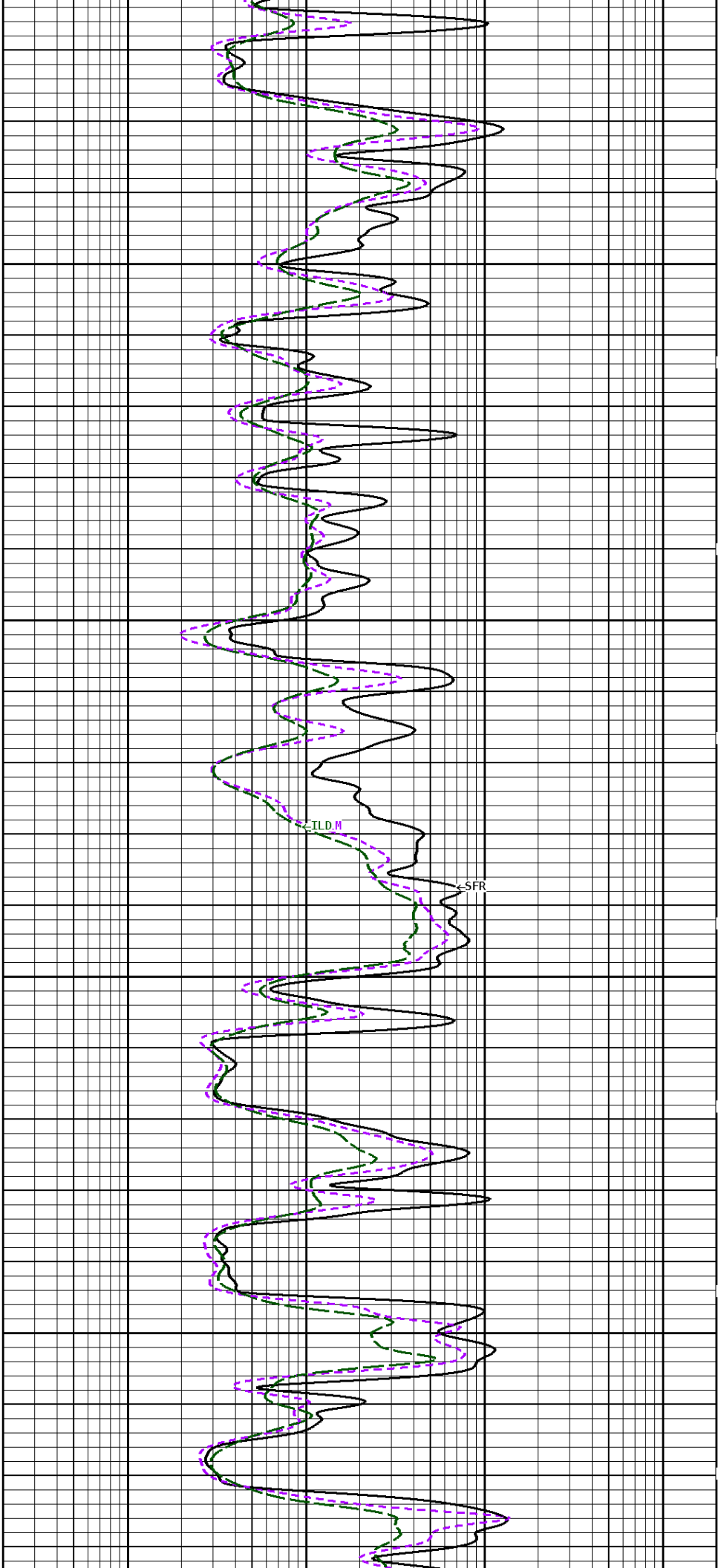


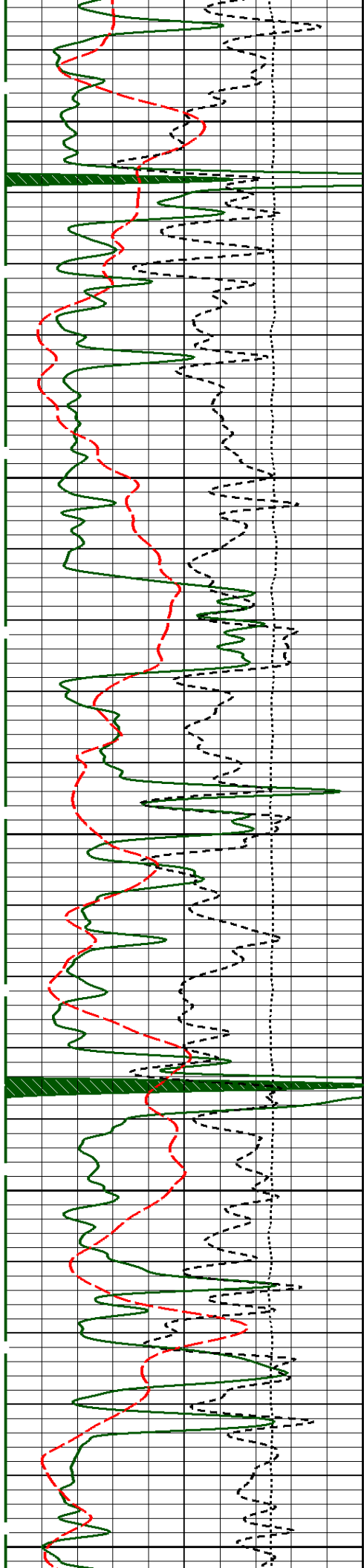




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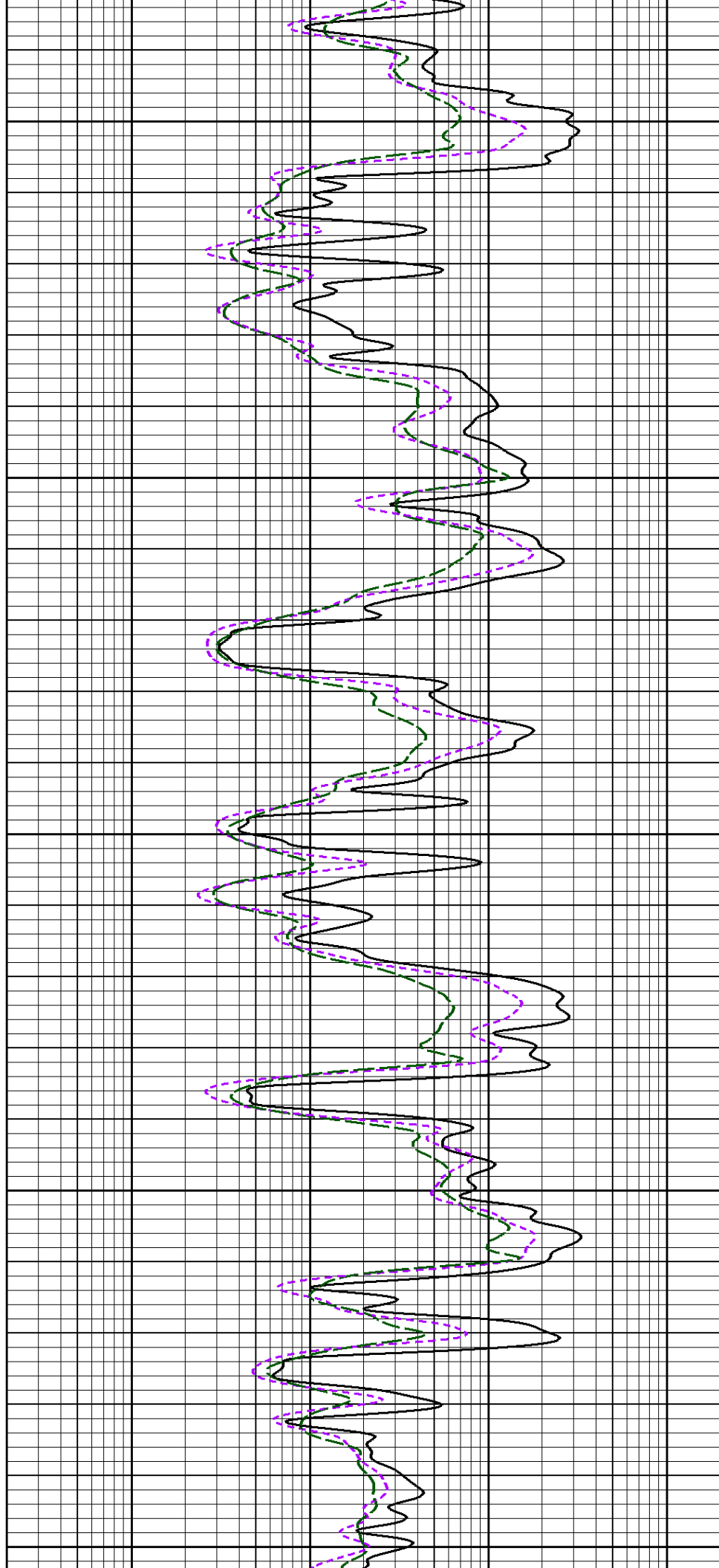
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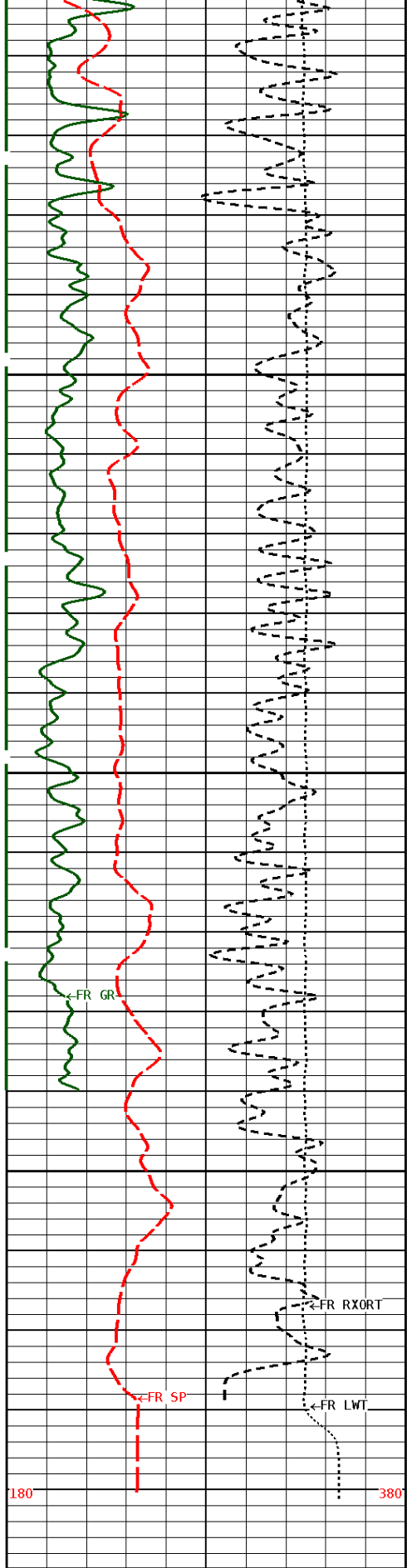




3400

3500





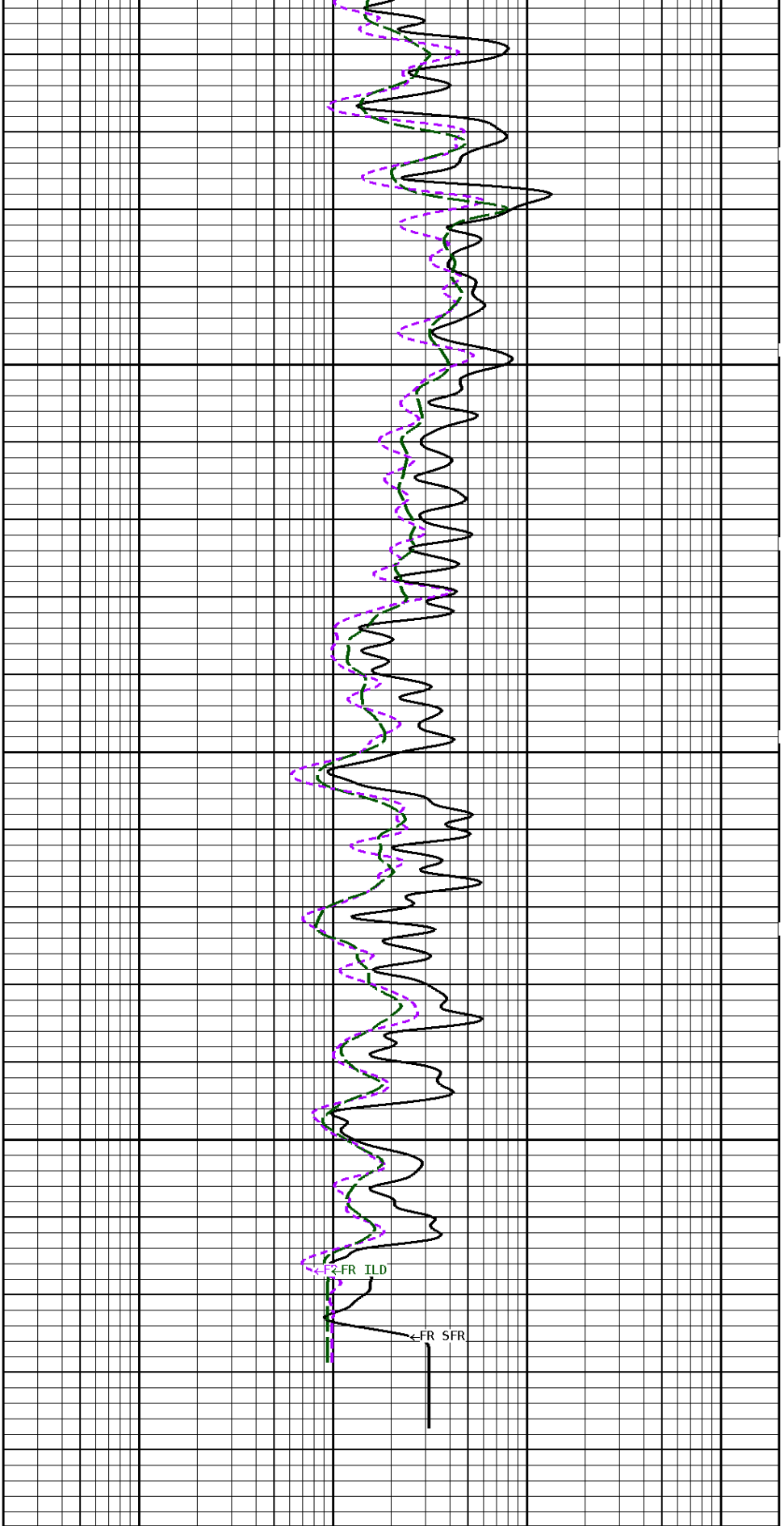
File #1.1.6

3600

3700

3730

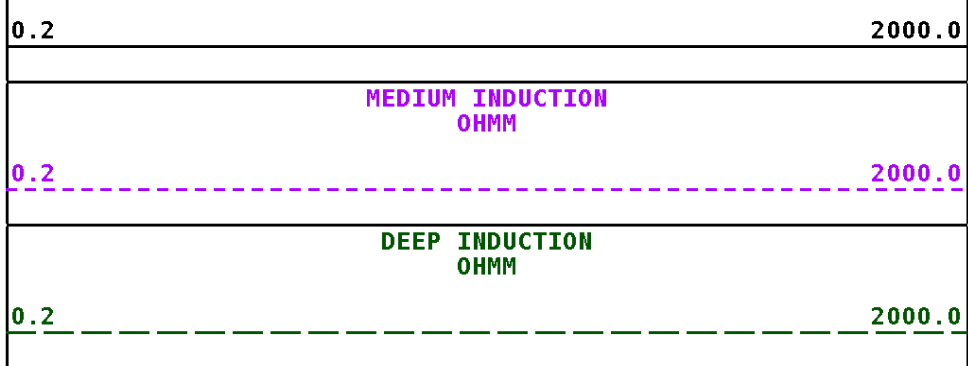
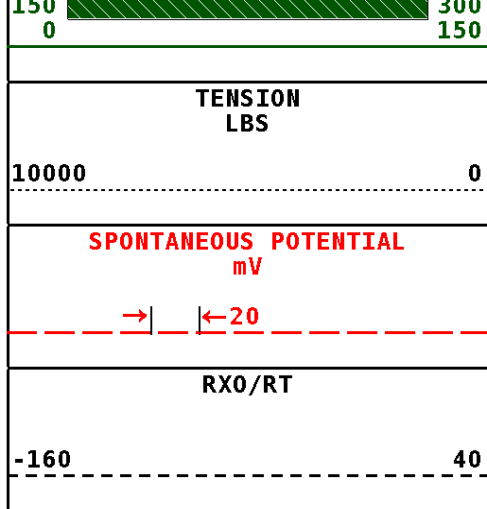
180 380



# 1:240 MAIN SECTION

GAMMA RAY  
API UNITS

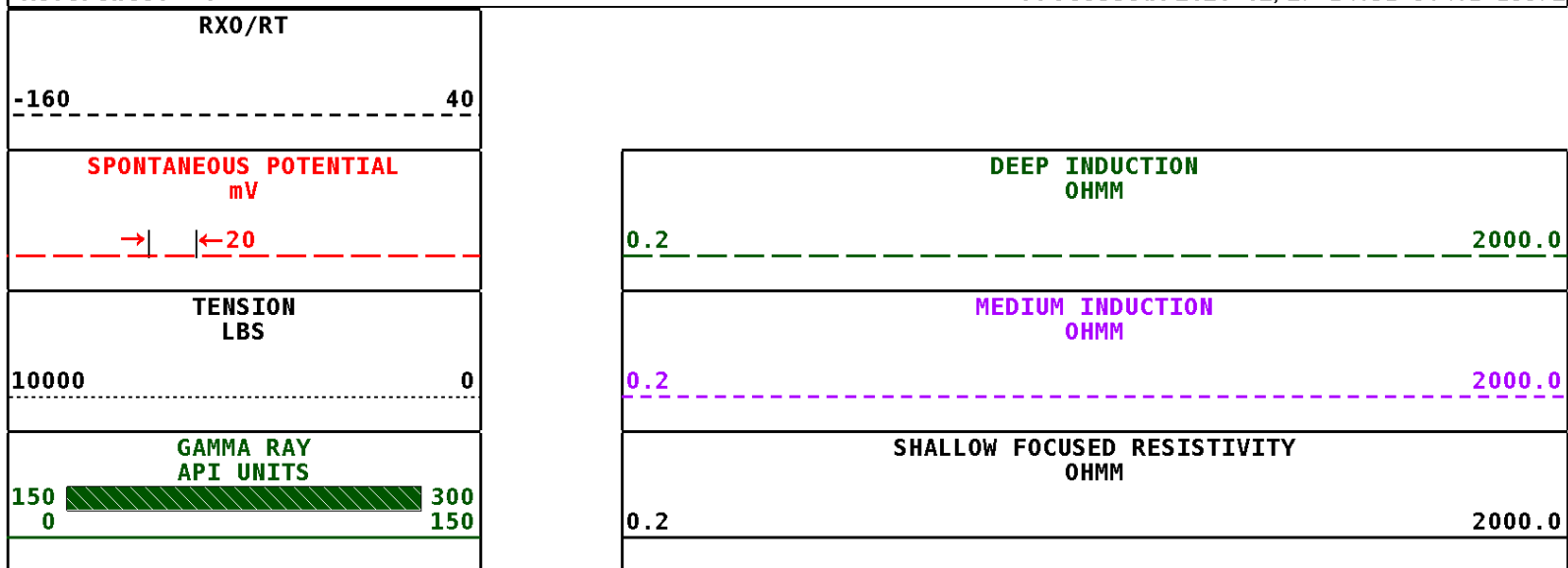
SHALLOW FOCUSED RESISTIVITY  
OHMM



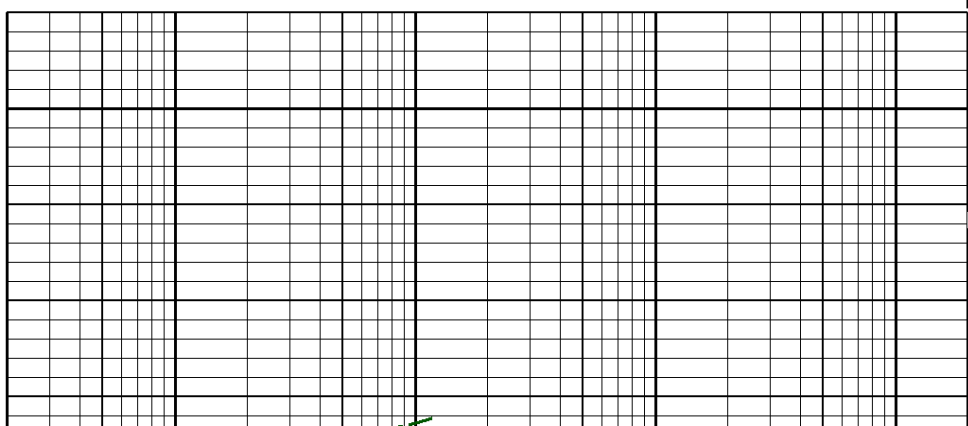
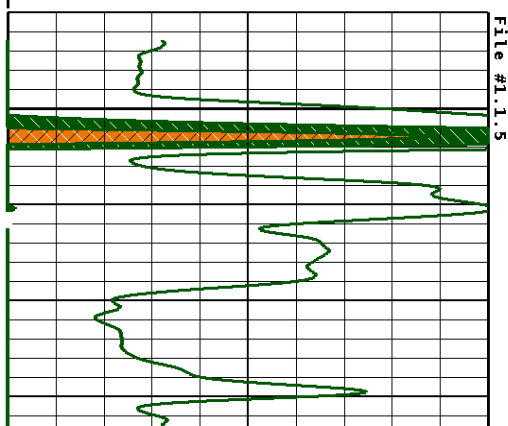
\* Borehole Zone Factors \*

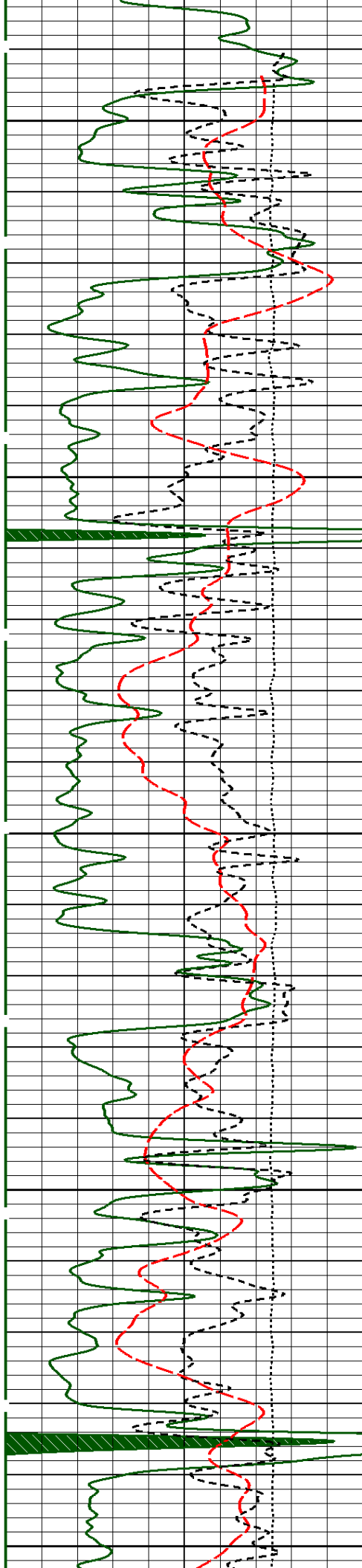
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Well File: BREXCO\_PFEIFER\_B\_4\_FEB-27\_MST Scale: 1:240 Format: DIL-240  
Segment: V1.D1.S5 Reprocess REPEAT Acquired: 2020-02/27 13:03 3.4.1-13972  
Reference: 0 Processed: 2020-02/27 14:51 3.4.1-13972



1:240 REPEAT SECTION

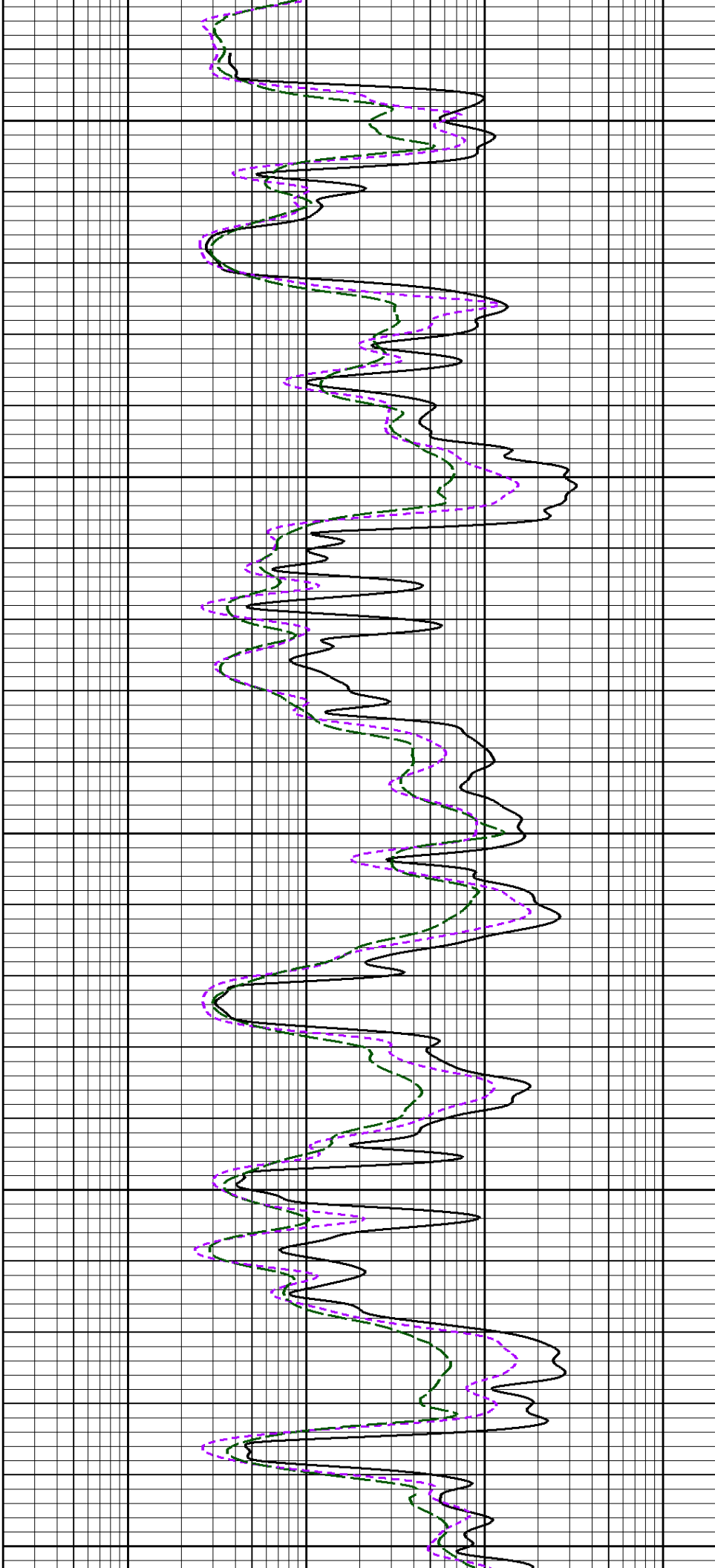


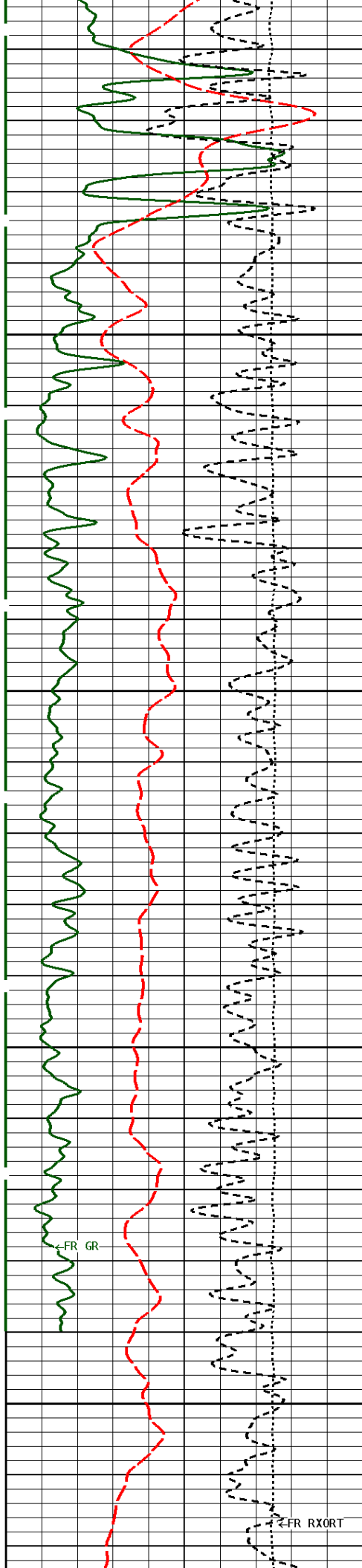


3300

3400

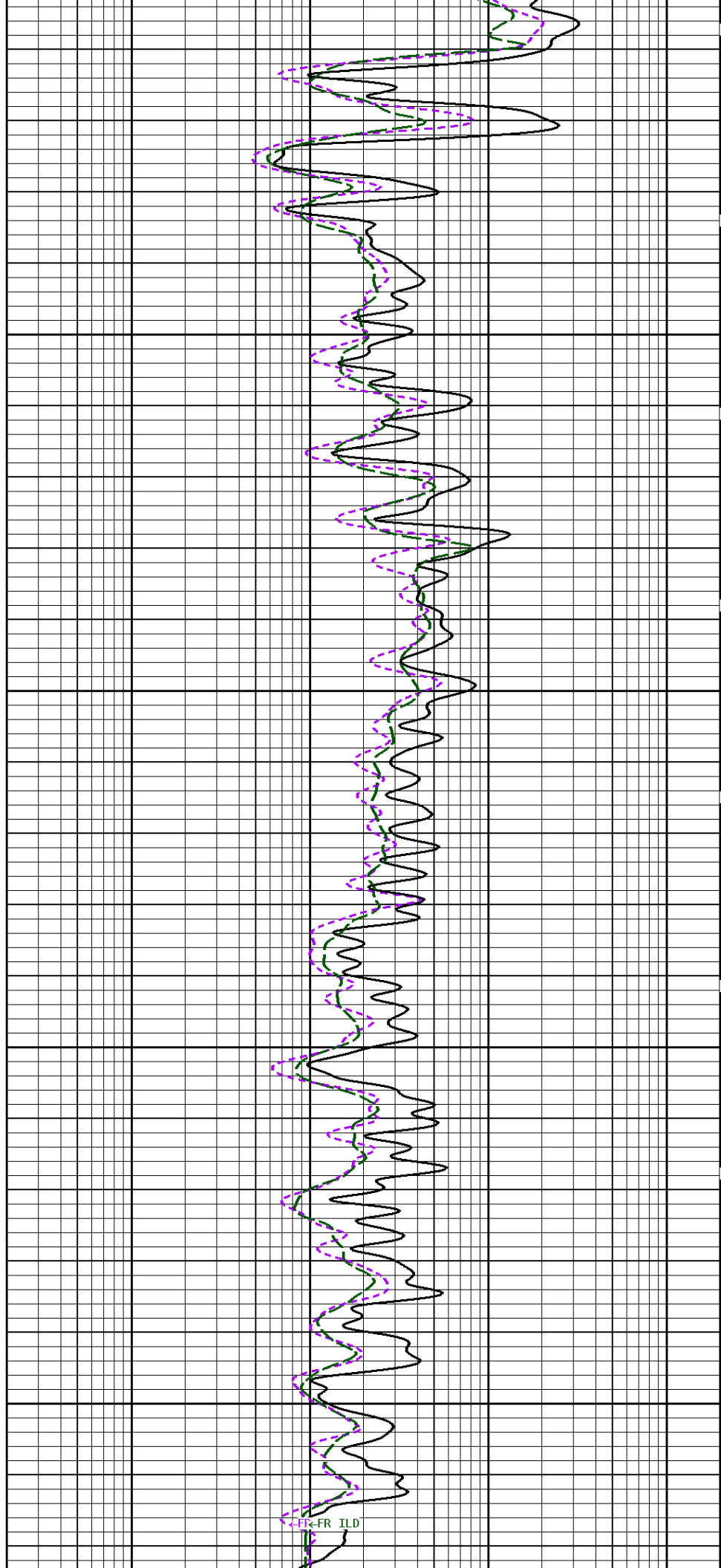
3500

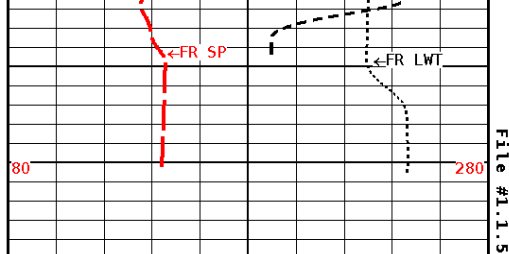




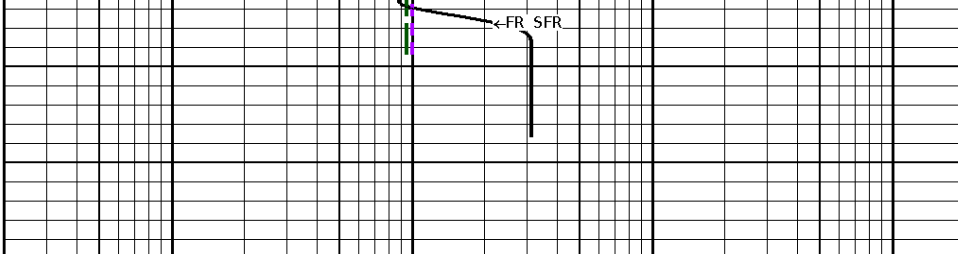
3600

3700

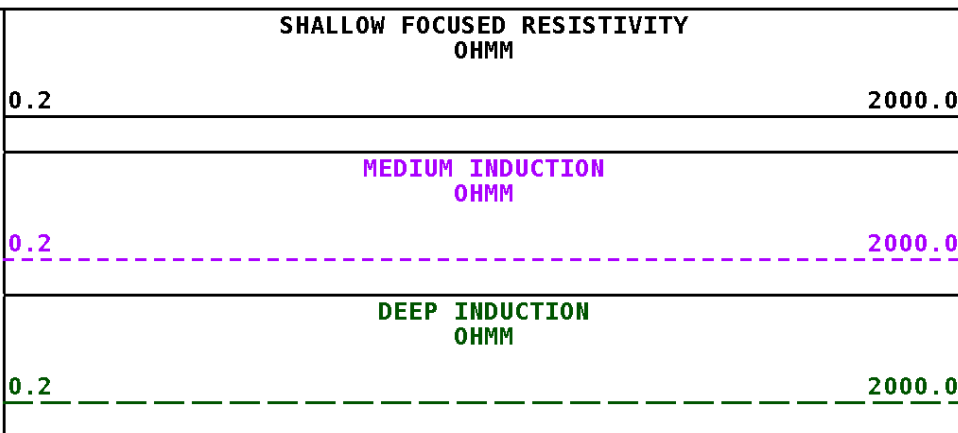
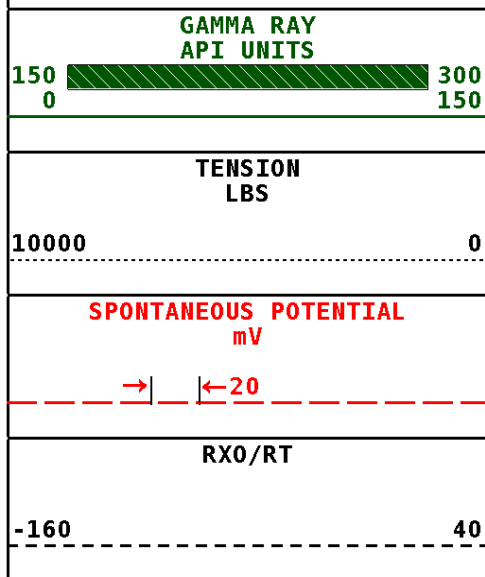




3730



## 1:240 REPEAT SECTION



### \* Borehole Zone Factors \*

| Zone 1                         | 99999.0 | to | 0.0      | Feet |
|--------------------------------|---------|----|----------|------|
| Drill Bit Size                 |         |    | 7.875    | in   |
| Casing Diameter                |         |    | 5.500    | in   |
| BHT Depth                      |         |    | 3730.000 | ft   |
| Borehole Temperature           |         |    | 73.0     | degF |
| Temperature Gradient           |         |    | 1.00     | DFHF |
| Resistivity Of Mud             |         |    | 1.700    | ohmm |
| Resistivity Of Mud Temperature |         |    | 69.00    | degF |

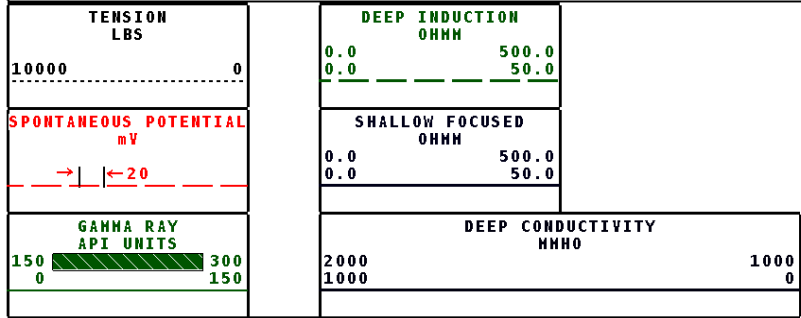
### \* Calibration Summary \*

| Shop Calibration        |                |       |                 |       |  |
|-------------------------|----------------|-------|-----------------|-------|--|
| GRT-B                   |                |       |                 |       |  |
| Performed : 24-JUN-2019 |                |       | Time : 12:20    |       |  |
| Sensor Suite : GR-GR5   |                |       | ID : GRT-BC-038 |       |  |
|                         | Measured       | Units | Calibrated      | Units |  |
|                         | Background Jig |       | Jig             |       |  |
| GR                      | 36 266         | CPS   | 160             | GRAPI |  |

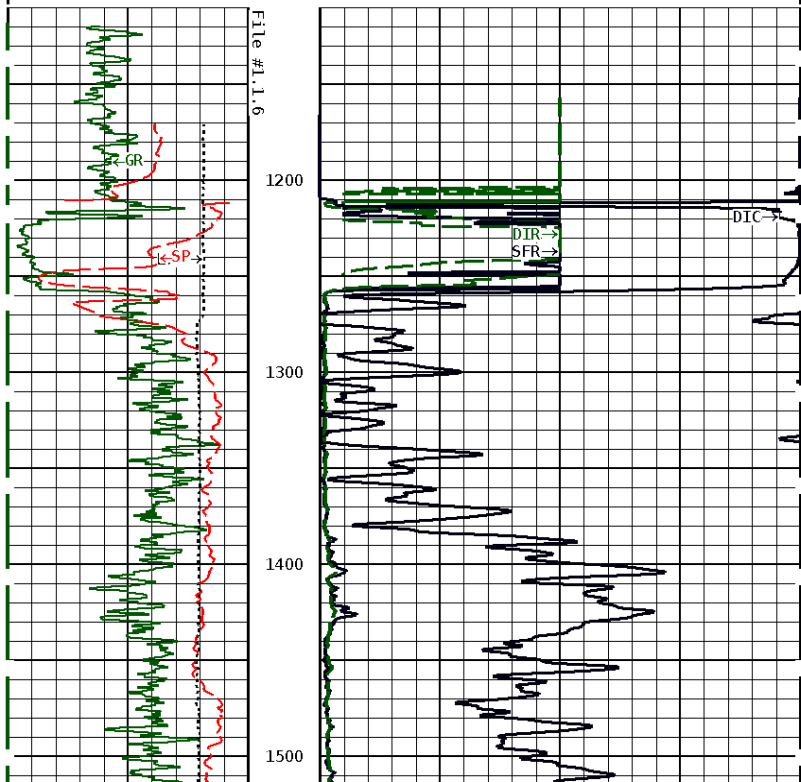
| Shop Calibration        |               |  |                 |  |       |
|-------------------------|---------------|--|-----------------|--|-------|
| PIT-CA                  |               |  |                 |  |       |
| Performed : 21-DEC-2019 |               |  | Time : 21:46    |  |       |
| Sensor Suite : P-IND-T  |               |  | ID : PIT-AC-043 |  |       |
| Medium                  |               |  |                 |  |       |
|                         | Measured      |  | Calibrated      |  | Units |
|                         | R X           |  | R X             |  |       |
| Air                     | 131492 129685 |  | 0.0 0.0         |  | MMHOS |
| Zero                    | 131066 131062 |  | -18.1 59.6      |  | MMHOS |
| Reference               | 244915 244454 |  | 4981.9 5059.6   |  | MMHOS |
| Loop                    | 130404 210498 |  | 3515.7 3611.2   |  | MMHOS |
| Sonde Error             |               |  | -0.5 -1.7       |  | MMHOS |
| Cond                    |               |  | 4981.9 5059.6   |  | MMHOS |
| Deep                    |               |  |                 |  |       |
|                         | Measured      |  | Calibrated      |  | Units |
|                         | R X           |  | R X             |  |       |
| Air                     | 131030 129230 |  | 0.0 0.0         |  | MMHOS |

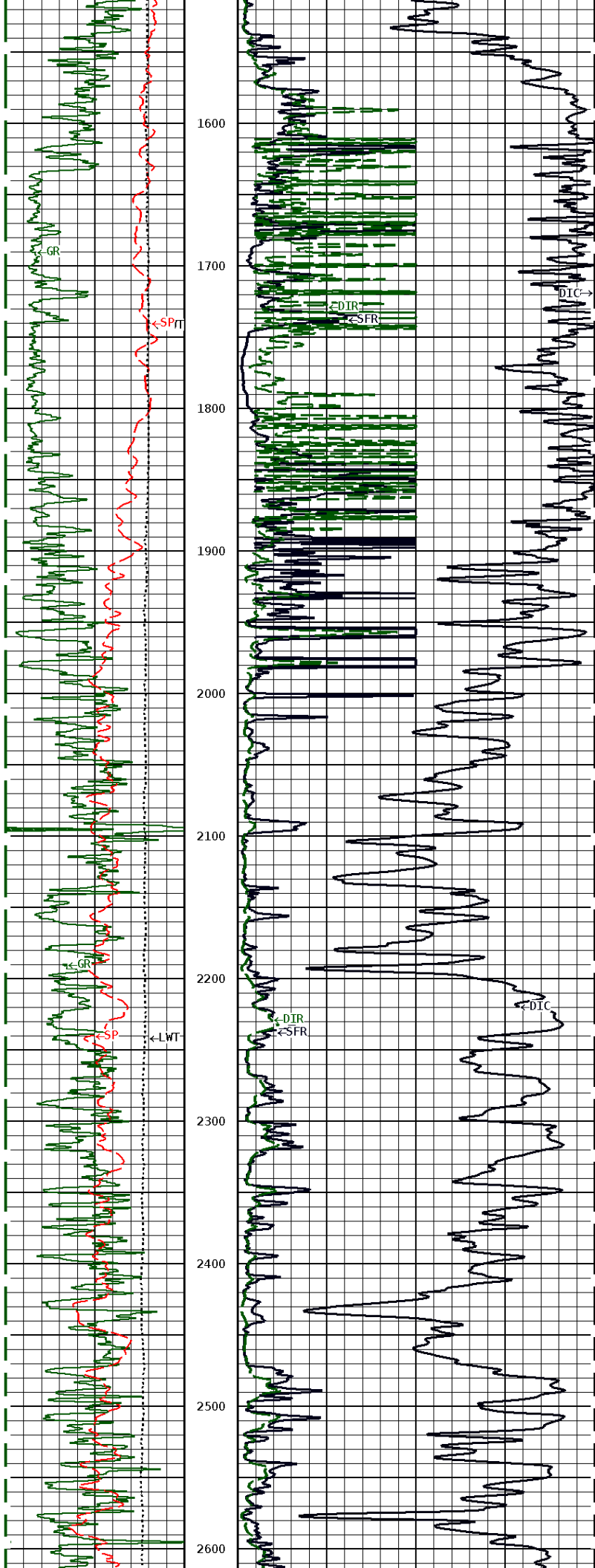
|                         |          |           |                 |           |       |
|-------------------------|----------|-----------|-----------------|-----------|-------|
| Air                     | 131939   | 129250    | 0.0             | -0.0      | MMHOS |
| Zero                    | 131079   | 131067    | -15.6           | 35.3      | MMHOS |
| Reference               | 220620   | 224092    | 1984.4          | 2035.3    | MMHOS |
| Loop                    | 129308   | 206166    | 1595.4          | 1712.8    | MMHOS |
| Sonde Error             |          |           | -0.6            | -7.8      | MMHOS |
| Cond                    |          |           | 1984.4          | 2035.3    | MMHOS |
| Temperature             |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | Low      | High      | Low             | High      | Units |
|                         | 16980.0  | 56920.0   | 70.0            | 350.0     | DEGF  |
| Performed : 21-DEC-2019 |          |           | Time : 21:46    |           |       |
| Sensor Suite : SFL      |          |           | ID : PIT-AC-043 |           |       |
| Internal                |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | Zero     | Reference | Zero            | Reference | Units |
| Im                      | 32732.6  | 48929.1   | 0.0             | 7028.0    | uA    |
| Ib                      | 32768.6  | 49680.1   | 0.0             | 1750.0    | mA    |
| MOM1                    | 32722.0  | 56290.6   | 0.0             | 175.0     | mV    |
| Equivalent SFL          |          |           |                 | 43.97     | OHMM  |
| Performed : 21-DEC-2019 |          |           | Time : 21:47    |           |       |
| Sensor Suite : P-SP     |          |           | ID : PIT-AC-043 |           |       |
| Internal                |          |           |                 |           |       |
|                         | Measured |           | Calibrated      |           |       |
|                         | Zero     | Reference | Zero            | Reference | Units |
|                         | 32774.5  | 58935.9   | 0.0             | 1000.0    | mV    |

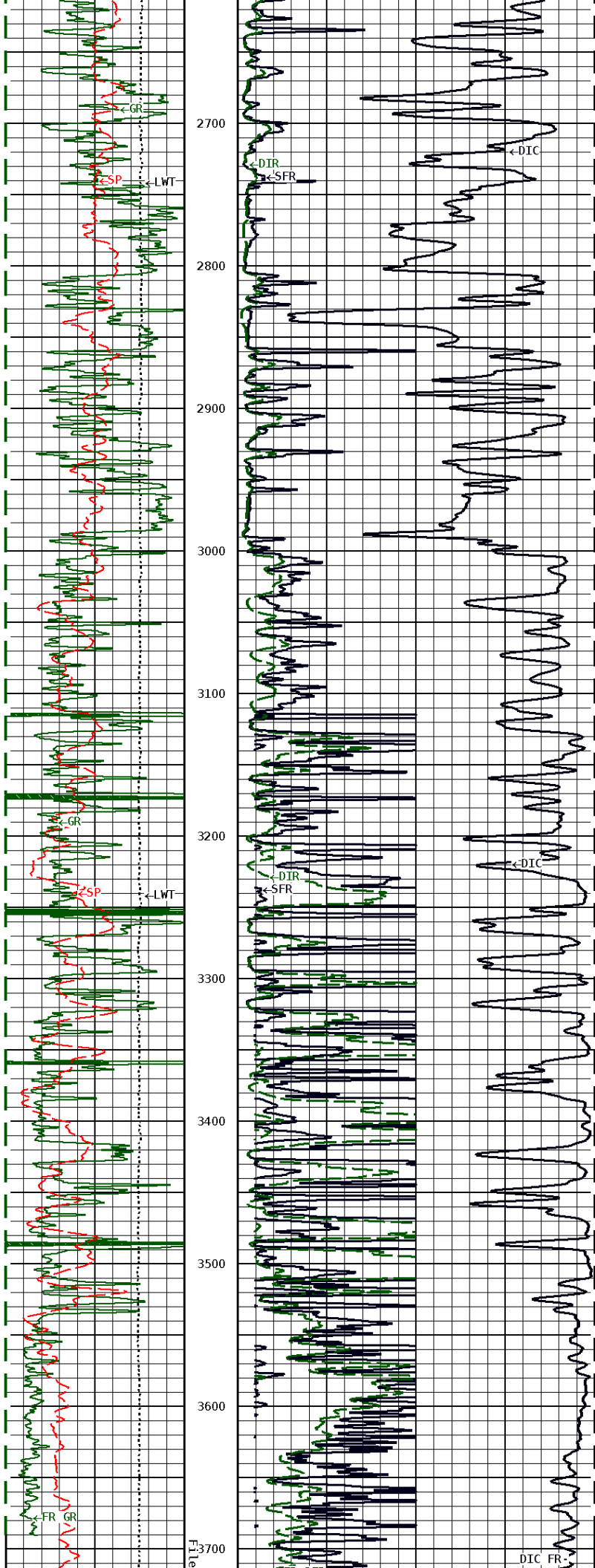
|                                                 |                                                |                        |
|-------------------------------------------------|------------------------------------------------|------------------------|
| <b>Well File:</b> BREXCO PFEIFER B 4 FEB-27_MST | <b>Scale:</b> 1:1200                           | <b>Format:</b> DIL1200 |
| <b>Segment:</b> V1.D1.S6 Reprocess MAIN         | <b>Acquired:</b> 2020-02/27 13:29 3.4.1-13972  |                        |
| <b>Reference:</b> 0                             | <b>Processed:</b> 2020-02/27 14:51 3.4.1-13972 |                        |

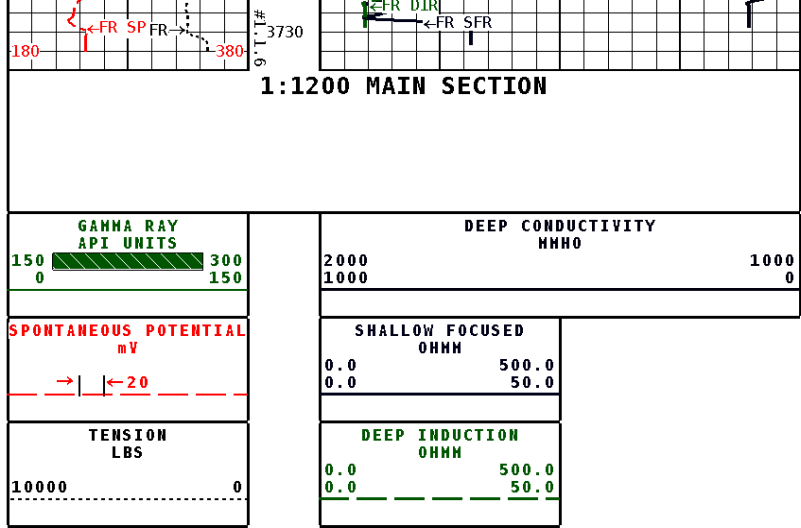


**1:1200 MAIN SECTION**











Company: BEREXCO LLC

Well: PFEIFER "B" #4

Location: 2310' FNL & 2310' FWL

Logged: 02-27-2020

K.B. Elev: 2029.0 Ft