



# GAMMA RAY NEUTRON LOG

**PIONEER**  
Pioneer Energy Services

Company **BEREXCO**  
Well **COLLINGWOOD TRUST #2-22**  
Field **VICTORY**  
County **HASKELL** State **KANSAS**

Comp. **BEREXCO**  
Well **COLLINGWOOD TRUST #2-22**  
Field **VICTORY**  
Co. **HASKELL**  
State **KANSAS**

Location: API #: 15-081-20716-00-01 Other Services  
SEC 22 TWP 30S RGE 33W  
Permanent Datum GL Elevation 2934.5  
Log Measured From KB 12 Above GL  
Drilling Measured From N/A G.L. 2934.5

Date of Service 27 OCT 2016

Run Number ONE

Depth Driller or PBTD 1670

Depth Logger 1657

Bottom Log Interval 1656

Top Log Interval SURFACE

Open Hole Size N/A

Type Fluid WATER

Fluid Level 80'

Fluid Density 8.34

Max. Recorded Temperature 92

Max. Wellhead Pressure 0

Wellhead Connection OPEN

Estimated Cement Top SEE LOG

Unit Number T18

Wireline Size 5/16"

Location COLBY KS

Recorded By SCHOENROGGE

Witnessed By MR. KLAUS

Tubing Record

Surface Casing

Production Casing

Liner Record

Size Wt/Ft Top Bottom

8.625 23 SURFACE 1757'

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

## Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.  
FROM SUBLETTE SOUTH TO ROAD 220 AND WEST TO ROAD KK SOUTH 300' WEST IN  
NO FREE PIPE

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

Tool Data - Services

Serial Number

Engineer:  
Operator:  
Operator:  
Operator:

| Sensor | Onset (ft) | Schematic | Description                                                           | Length (ft) | O.D. (in) | Weight (lb) |
|--------|------------|-----------|-----------------------------------------------------------------------|-------------|-----------|-------------|
| WVFS8  | 16.38      |           | RBT-Probe (4.5040904)<br>Probe Radii Bond Tool with Digital Telemetry | 8.75        | 2.75      | 107.00      |
| WVFS7  | 16.38      |           |                                                                       |             |           |             |
| WVFS6  | 16.38      |           |                                                                       |             |           |             |
| WVFS5  | 16.38      |           |                                                                       |             |           |             |
| WVFS4  | 16.38      |           |                                                                       |             |           |             |
| WVFS3  | 16.38      |           |                                                                       |             |           |             |
| WVFS2  | 16.38      |           |                                                                       |             |           |             |
| WVFS1  | 16.38      |           |                                                                       |             |           |             |
| WVFCAL | 16.38      |           |                                                                       |             |           |             |
| WVF3FT | 16.38      |           |                                                                       |             |           |             |
| WVF5FT | 15.38      |           |                                                                       |             |           |             |
|        |            |           | CENT-Probe<br>Probe Centralizer                                       | 2.83        | 2.75      | 20.00       |
| CCL    | 8.39       |           |                                                                       |             |           |             |
| GR     | 7.05       |           | GR_CCL-Tiger (TigerProbe)                                             | 4.54        | 2.75      | 50.00       |
|        |            |           | NEU-Probe (Probe_110326_1-11/16)                                      | 4.75        | 1.69      | 30.00       |
| NEU    | 1.00       |           |                                                                       |             |           |             |

Dataset:
berexco\_collingwoodtrust.db: field/well/SCBL\_N/pass4

Total length:
20.88 ft

Total weight:
207.00 lb

O.D.:
2.75 in

Top - Bottom

|                 |                |              |                   |               |                 |                  |
|-----------------|----------------|--------------|-------------------|---------------|-----------------|------------------|
| NPORSHIFT       | NPORSEL        | PPT<br>usec  | CASEWGHT<br>lb/ft | MAXAMPL<br>mV | MINAMPL<br>mV   | MINATTN<br>db/ft |
| 0               | Limestone      | 0            | 23                | 0             | 1               | 0.8              |
| SRFTEMP<br>degF | CASETHCK<br>in | CASEOD<br>in | PERFS             | TDEPTH<br>ft  | BOTTEMP<br>degF | BOREID<br>in     |
| 60              | 0              | 8.625        | 0                 | 1657          | 92              | 13.5             |



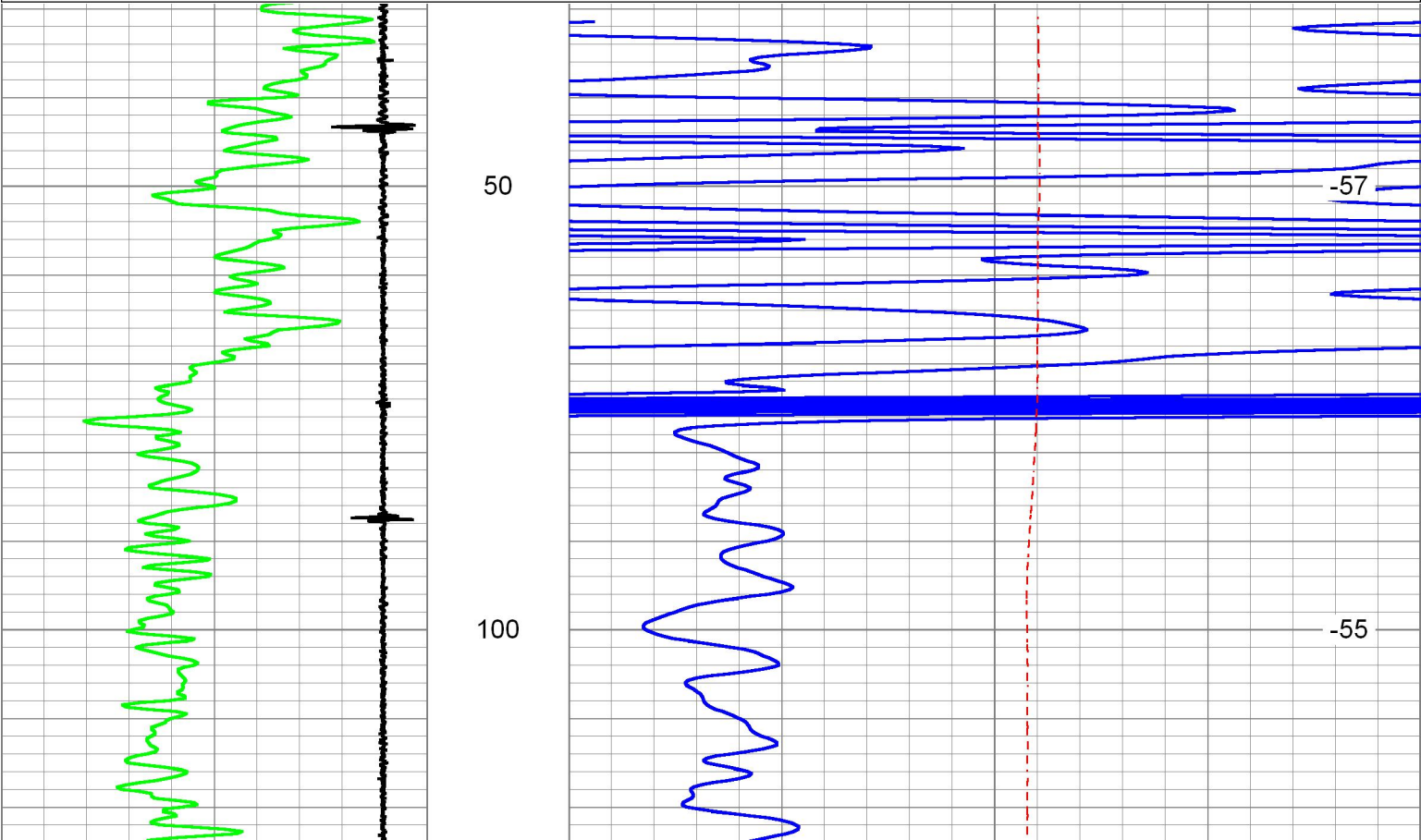
MAIN LOG

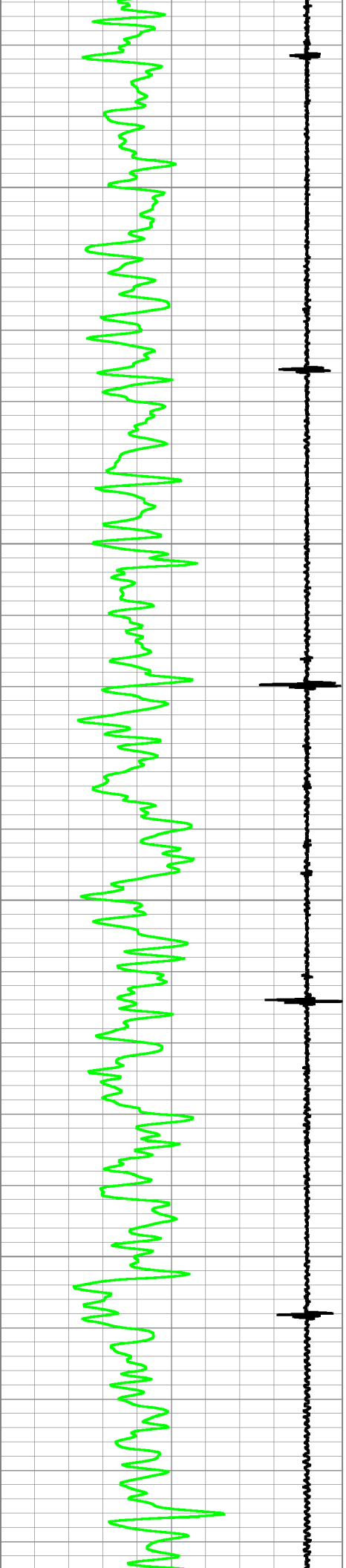
ZERO PSI APPLIED AT SURFACE

Database File  
Dataset Pathname  
Presentation Format  
Dataset Creation  
Charted by

berexco\_collingwoodtrust.db  
SCBL\_N/pass4  
PINR\_N~1  
Thu Oct 27 09:16:13 2016  
Depth in Feet scaled 1:240

|    |     |     |    |            |                   |      |
|----|-----|-----|----|------------|-------------------|------|
| 0  | GR  | 150 | 40 | NEU (NAPI) |                   | 270  |
| -9 | CCL | 1   |    | 0          | Line Tension (lb) | 2000 |
|    |     |     |    |            |                   | LSPD |



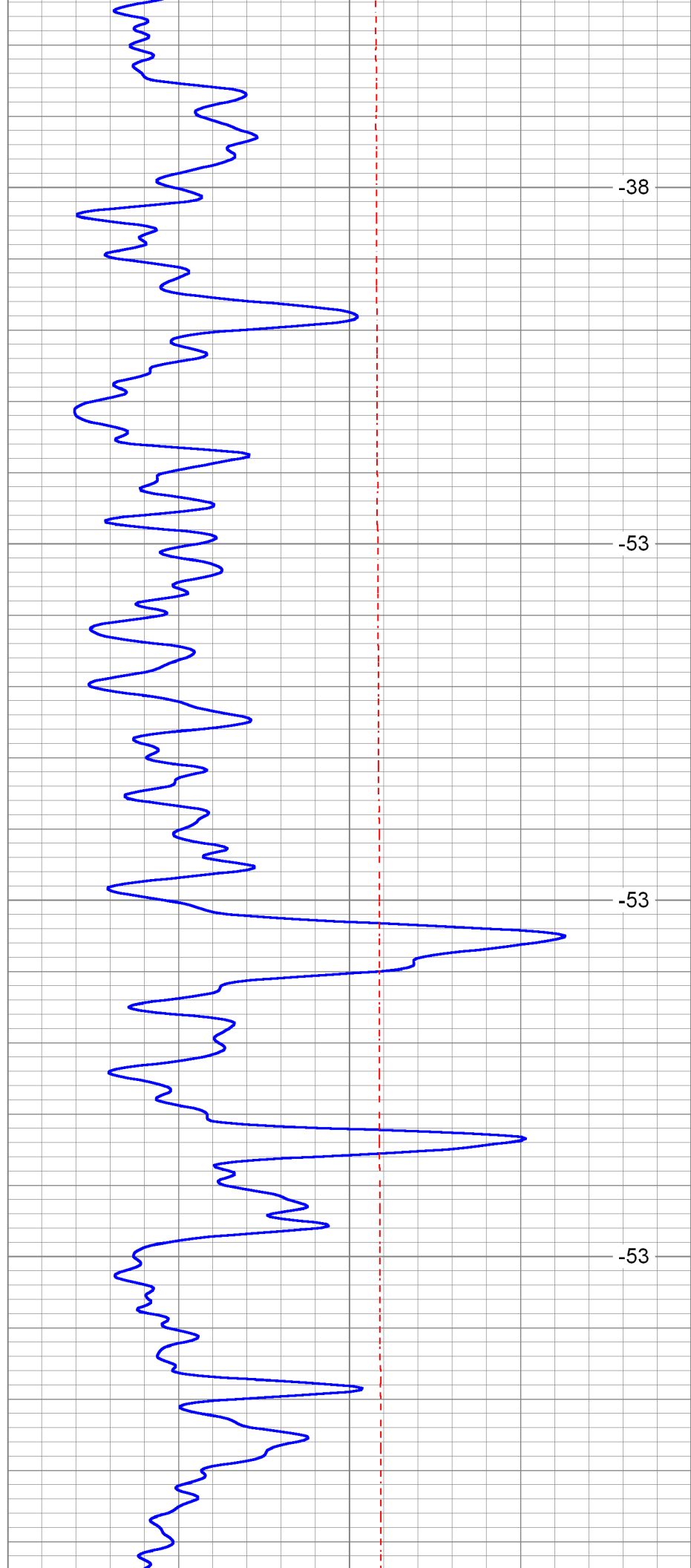


150

200

250

300

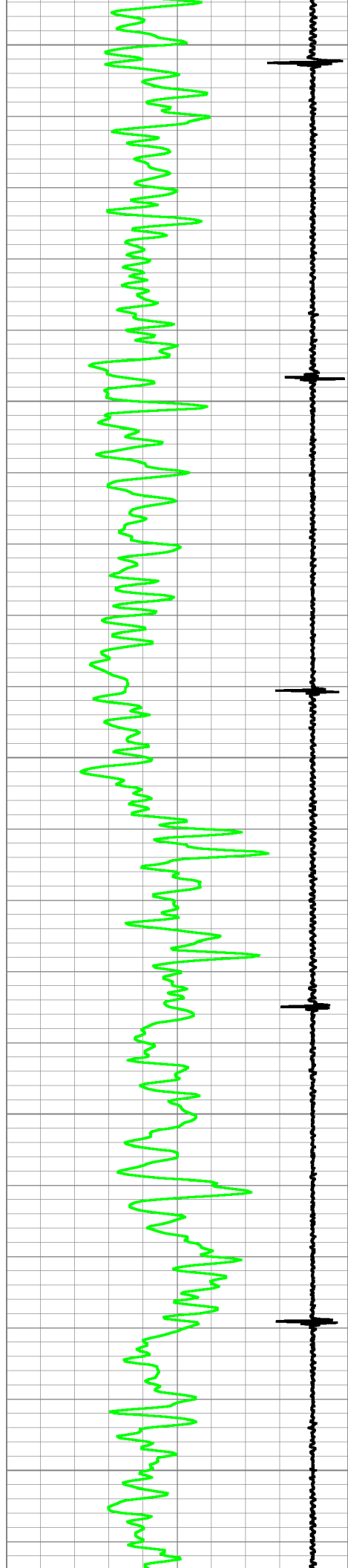


-38

-53

-53

-53



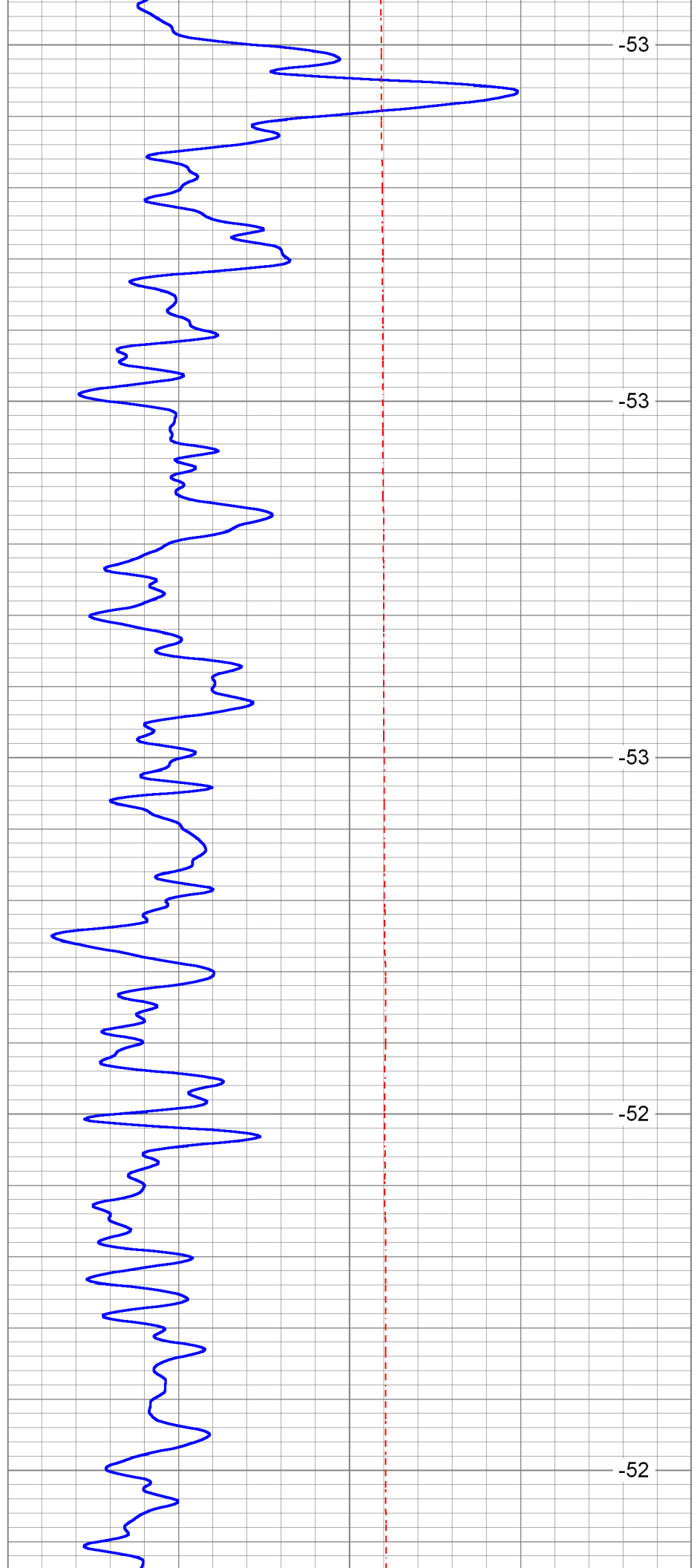
350

400

450

500

550



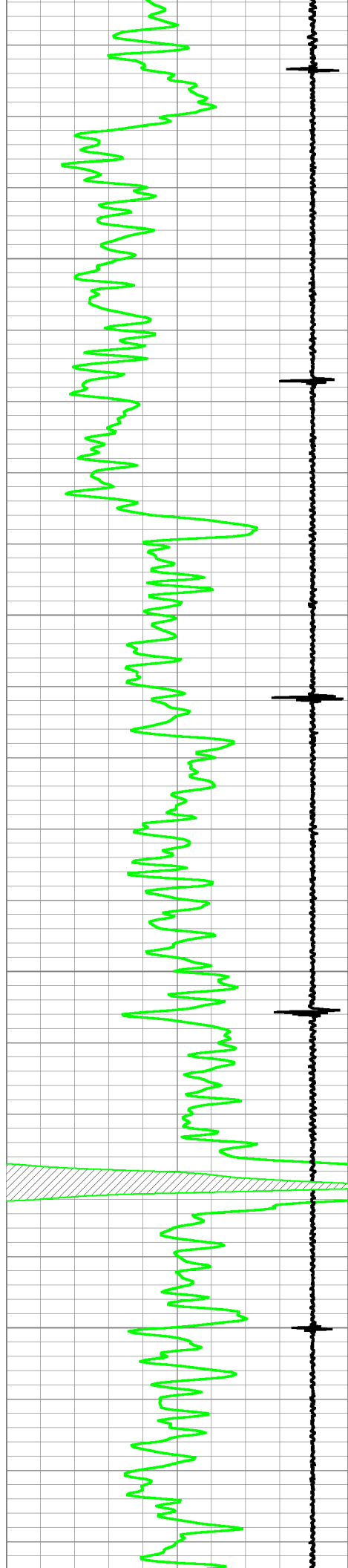
-53

-53

-53

-52

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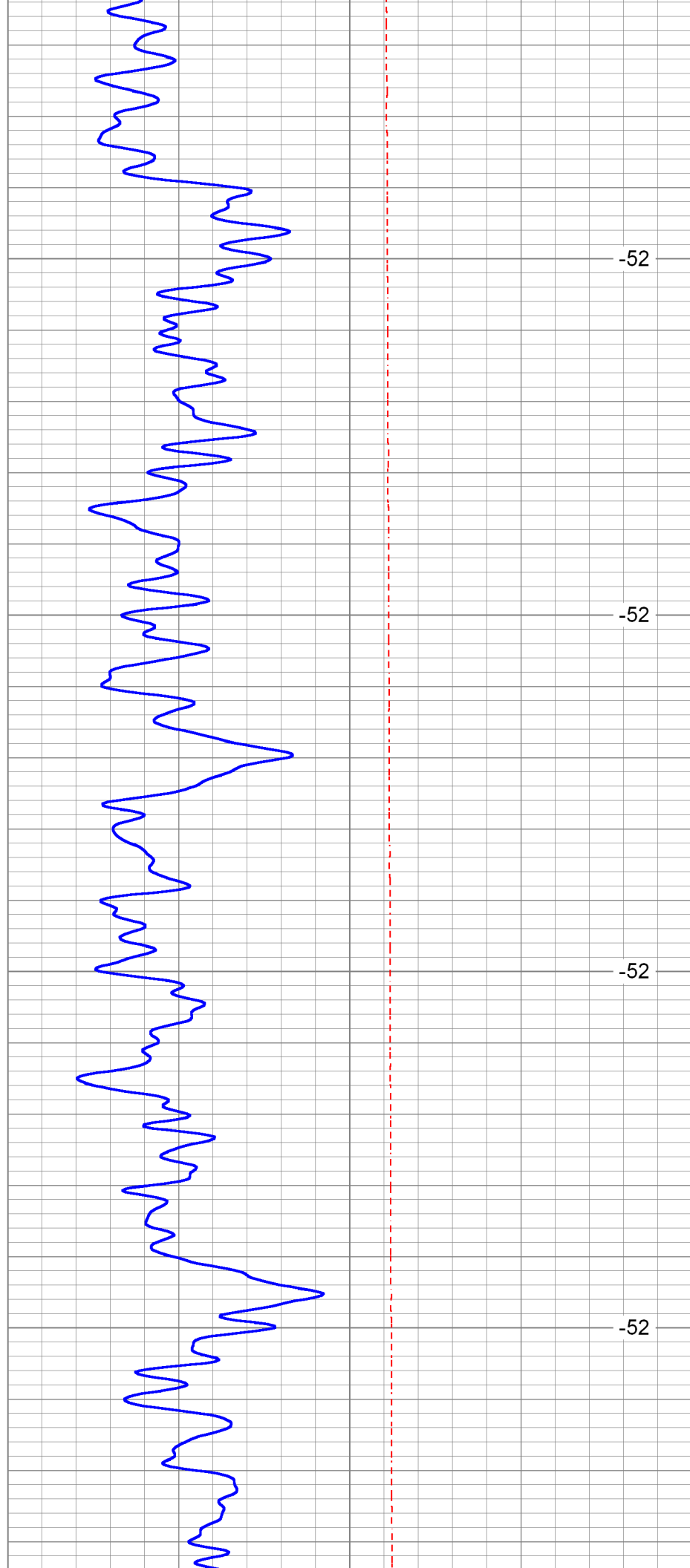


600

650

700

750

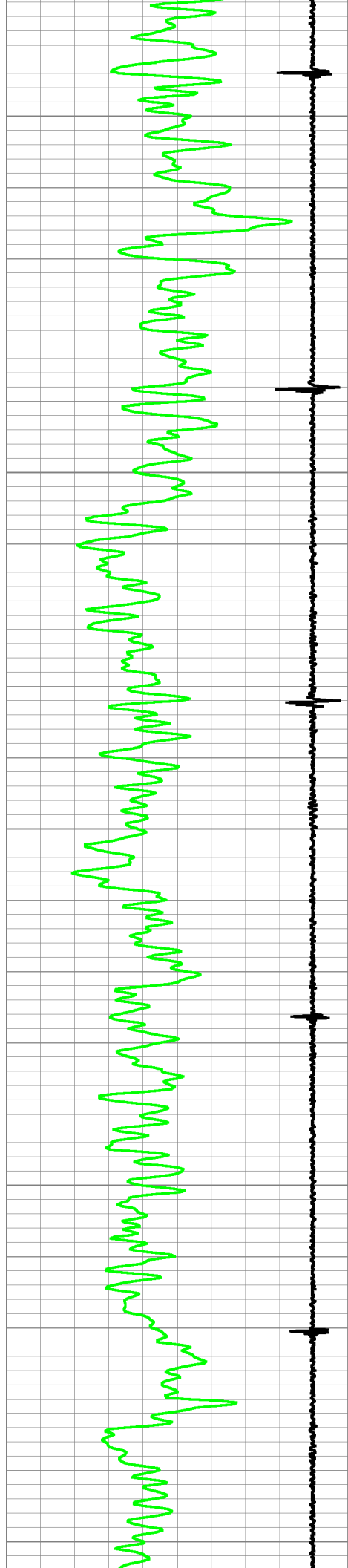


-52

-52

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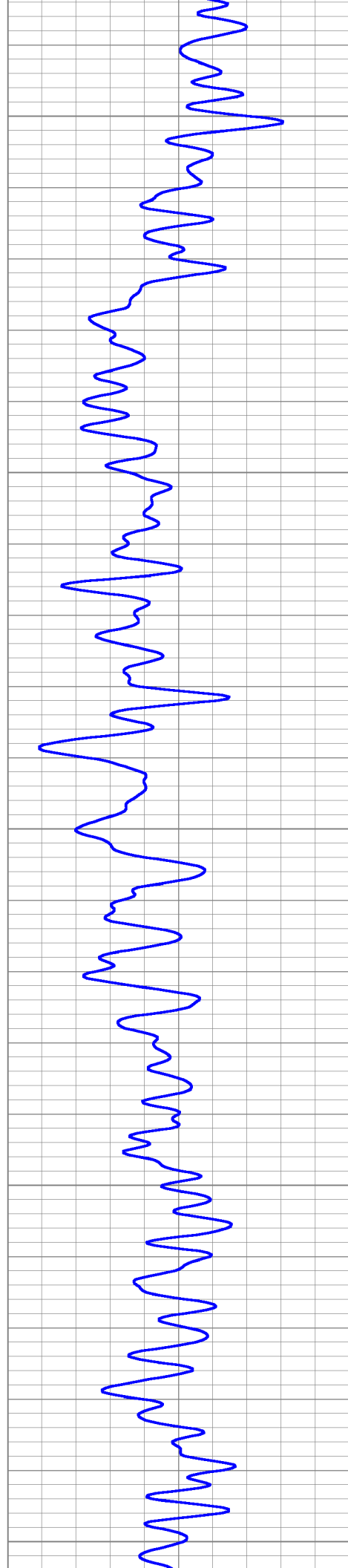
800

850

900

950

1000



-52

-52

-52

-52

-52



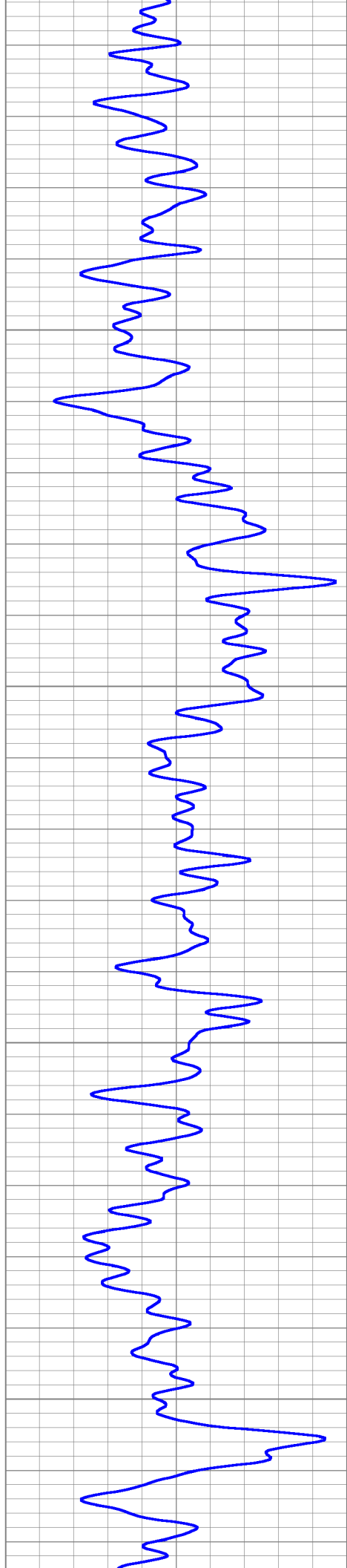


1050

1100

1150

1200

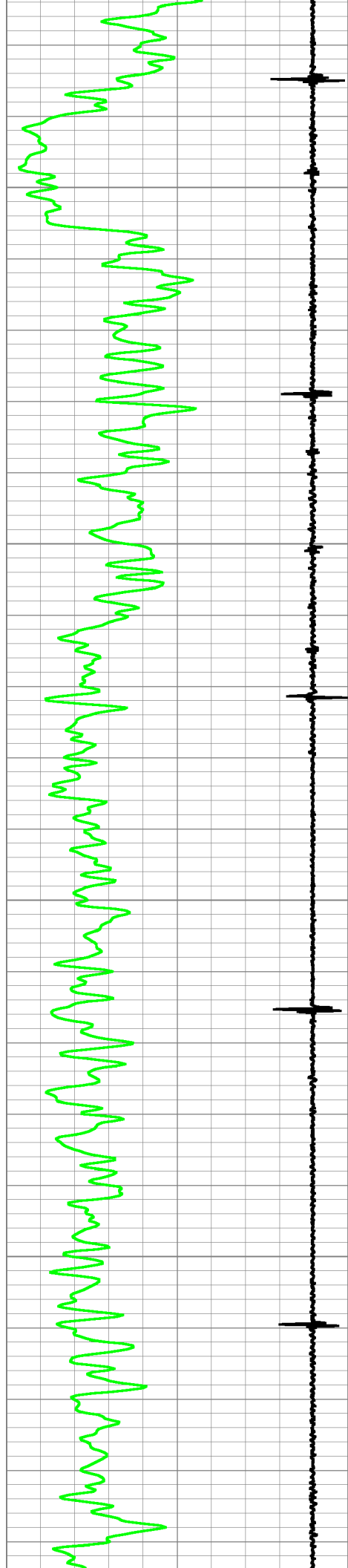


-52

-52

-52

-52

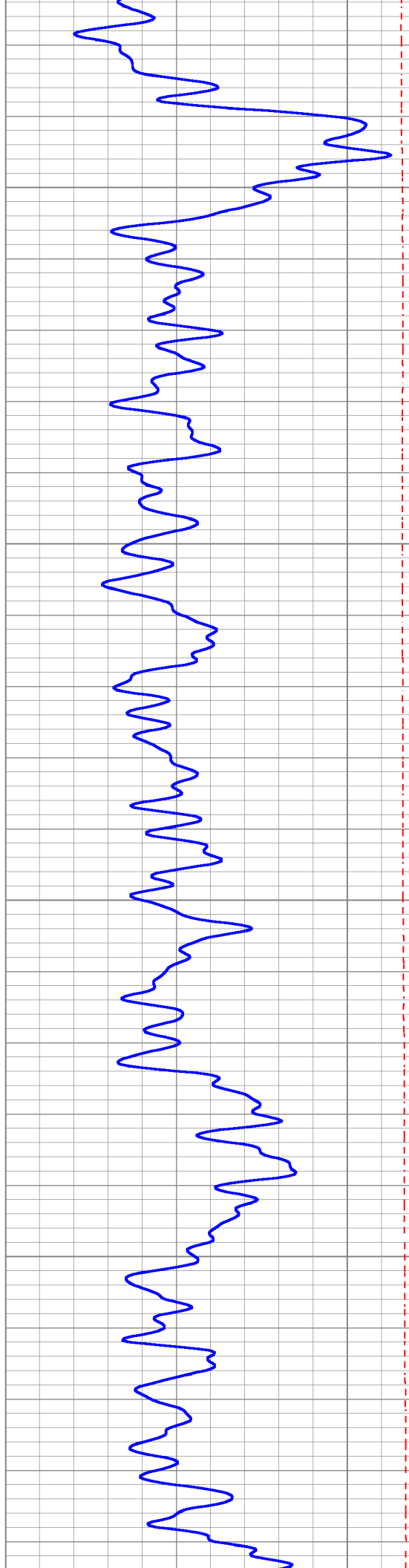


1250

1300

1350

1400

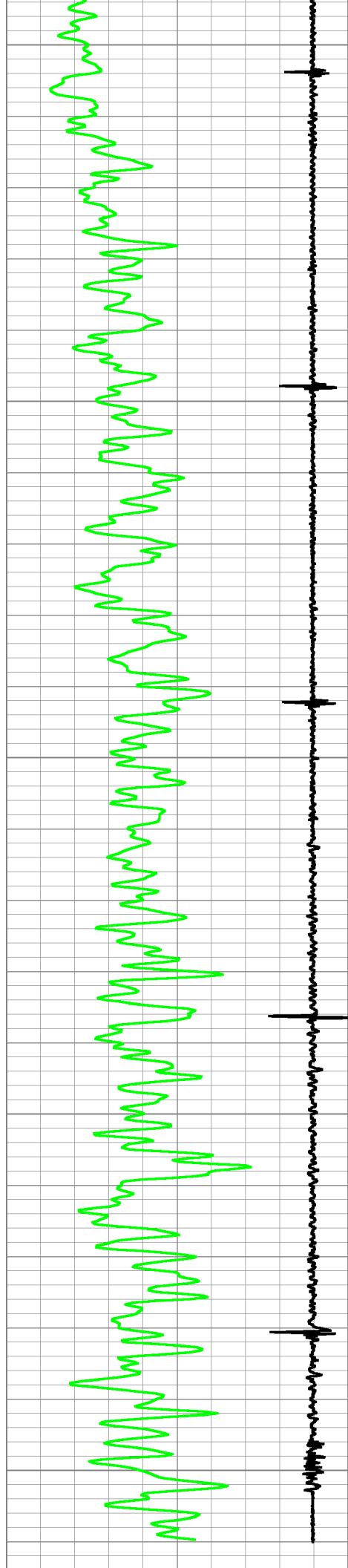


-52

-51

-51

-51



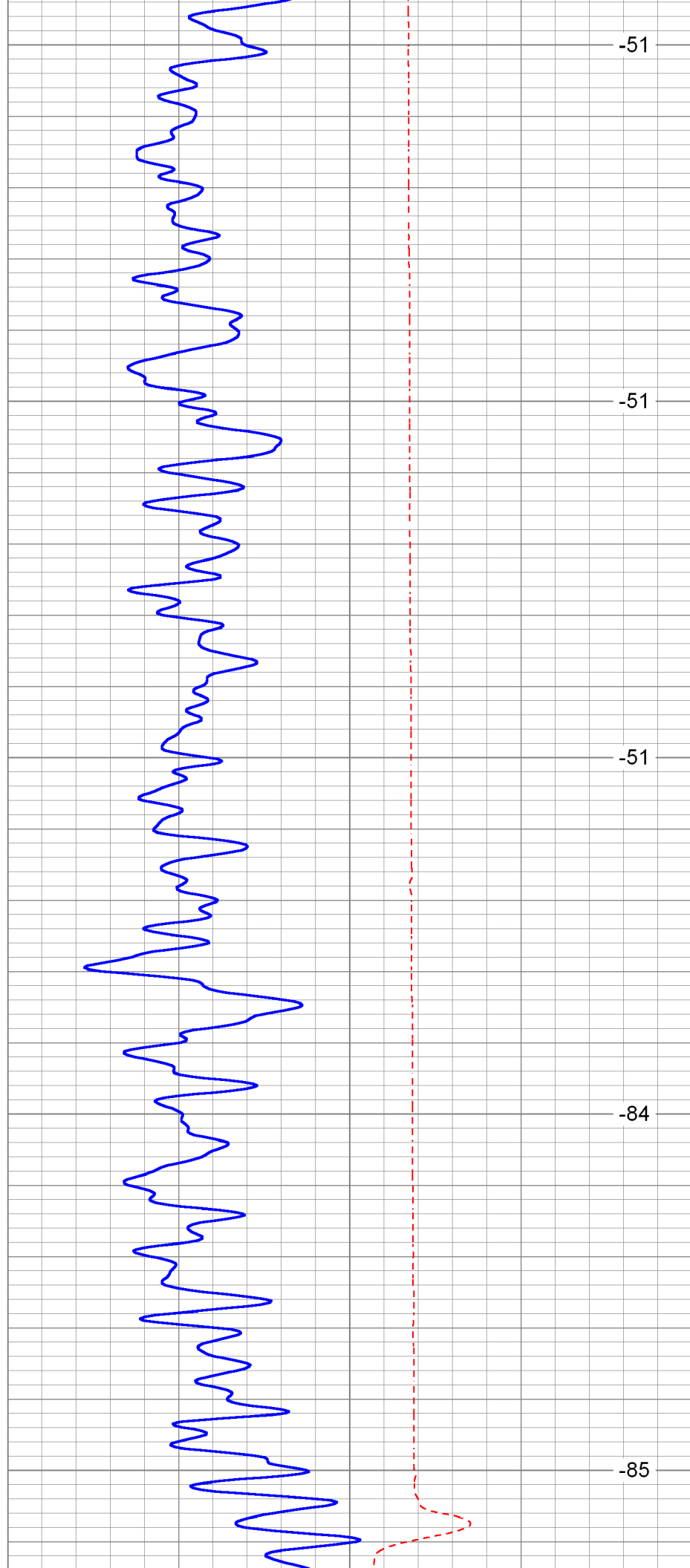
1450

1500

1550

1600

1650



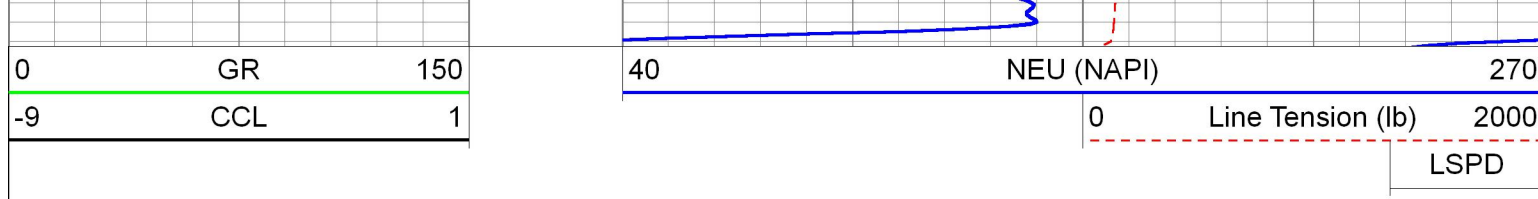
-51

-51

-51

-84

-85

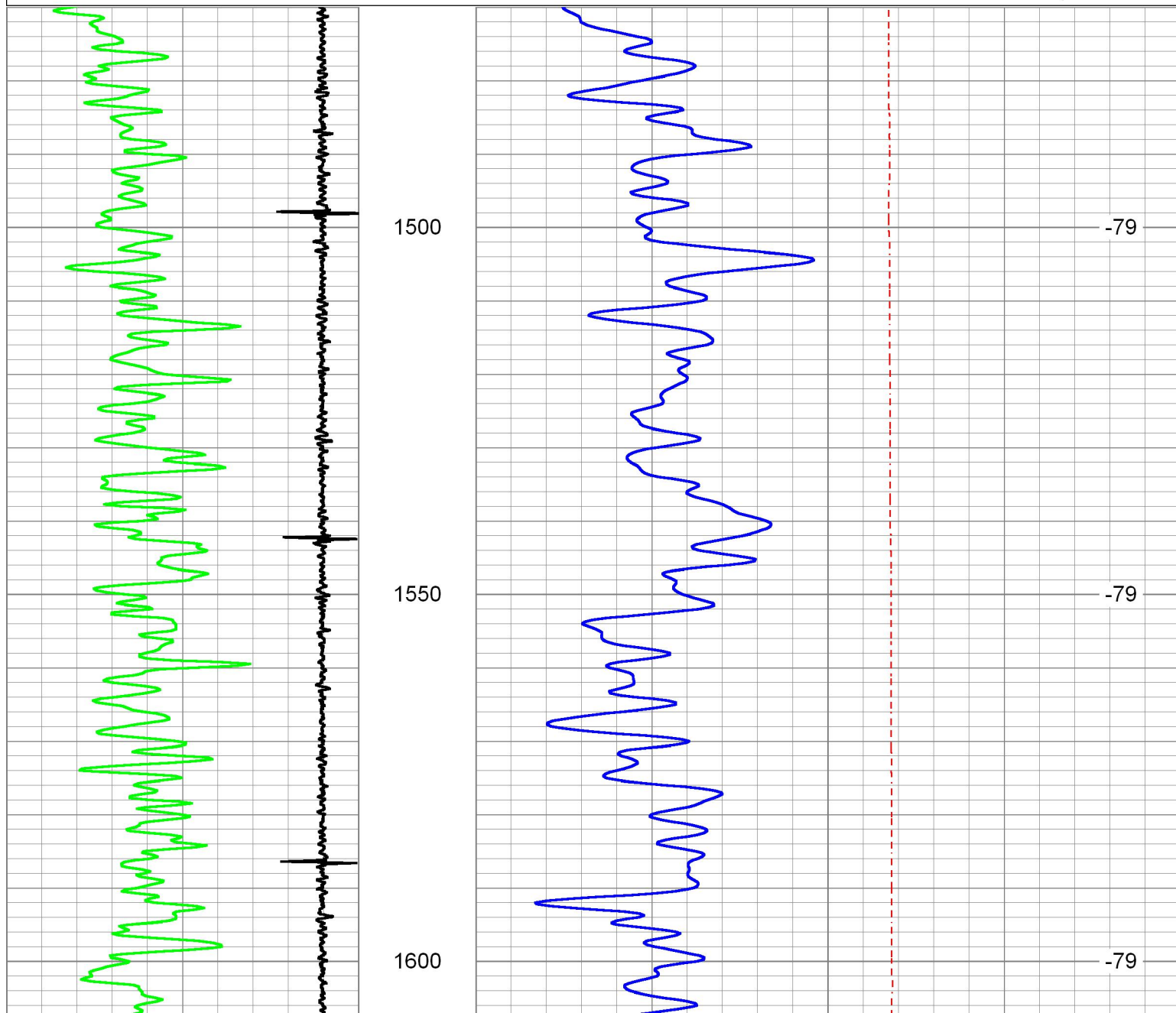
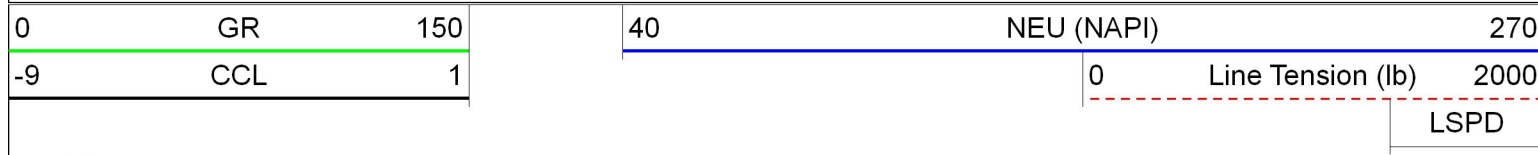


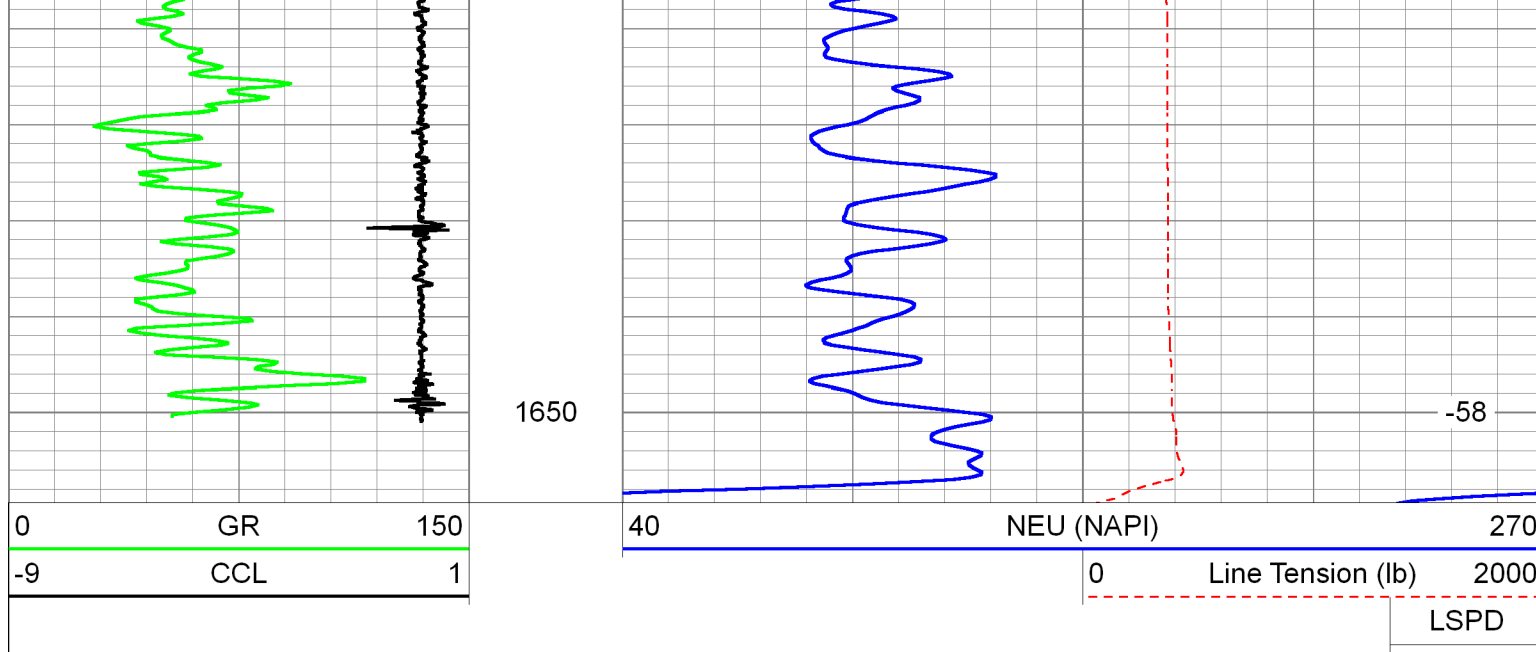


# REPEAT SECTION

## ZERO PSI APPLIED AT SURFACE

|                     |                             |
|---------------------|-----------------------------|
| Database File       | berexco_collingwoodtrust.db |
| Dataset Pathname    | SCBL_N/pass3                |
| Presentation Format | pinr_neu-gr-ccl             |
| Dataset Creation    | Thu Oct 27 09:10:17 2016    |
| Charted by          | Depth in Feet scaled 1:240  |





### Calibration Report

Database File berexco\_collingwoodtrust.db  
 Dataset Pathname SCBL\_N/pass4  
 Dataset Creation Thu Oct 27 09:16:13 2016

### Neutron Calibration Report

Serial Number: Probe\_110326\_1-11/16  
 Tool Model: Probe  
 Performed: Tue Aug 25 11:25:36 2015

Calibrator Value: 1 NAPI

Calibrator Reading: 1 cps

Sensitivity: 4 NAPI/cps

### Gamma Ray Calibration Report

Serial Number: TigerProbe  
 Tool Model: Tiger  
 Performed: Thu Oct 27 08:43:42 2016

Calibrator Value: 1.0

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 1.2100 /cps

### Segmented Cement Bond Log Calibration Report

Serial Number: 4.5040904  
 Tool Model: Probe

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 0.058 ft

Master Calibration, performed Thu Oct 27 08:42:54 2016:

Raw (v)

Calibrated (mv)

Results

|     | Zero   | Cal   | Zero  | Cal     | Gain   | Offset |
|-----|--------|-------|-------|---------|--------|--------|
| 3'  | -0.005 | 2.028 | 0.700 | 71.921  | 35.027 | 0.880  |
| CAL | -0.005 | 2.178 |       |         |        |        |
| 5'  | -0.005 | 2.236 | 0.700 | 71.921  | 31.785 | 0.852  |
| SUM |        |       |       |         |        |        |
| S1  | -0.005 | 2.127 | 0.000 | 100.000 | 46.899 | 0.245  |
| S2  | -0.005 | 2.087 | 0.000 | 100.000 | 47.791 | 0.245  |
| S3  | -0.005 | 1.959 | 0.000 | 100.000 | 50.924 | 0.257  |
| S4  | -0.006 | 1.817 | 0.000 | 100.000 | 54.870 | 0.315  |
| S5  | -0.005 | 1.788 | 0.000 | 100.000 | 55.775 | 0.275  |
| S6  | -0.006 | 1.904 | 0.000 | 100.000 | 52.356 | 0.300  |
| S7  | -0.005 | 2.087 | 0.000 | 100.000 | 47.794 | 0.233  |
| S8  | -0.005 | 2.158 | 0.000 | 100.000 | 46.215 | 0.249  |

Air Zero Calibration, performed Thu Oct 27 08:43:22 2016:

|     | Raw (v) | Calibrated (v) | Results |
|-----|---------|----------------|---------|
|     | Zero    | Zero           | Offset  |
| 3'  | 0.004   | 0.000          | -0.009  |
| 5'  | -0.000  | 0.000          | -0.005  |
| SUM |         |                |         |
| S1  | -0.000  | 0.000          | -0.005  |
| S2  | 0.003   | 0.000          | -0.008  |
| S3  | 0.004   | 0.000          | -0.009  |
| S4  | 0.004   | 0.000          | -0.009  |
| S5  | 0.004   | 0.000          | -0.009  |
| S6  | 0.005   | 0.000          | -0.011  |
| S7  | 0.006   | 0.000          | -0.011  |
| S8  | 0.005   | 0.000          | -0.011  |



|         |                         |
|---------|-------------------------|
| Company | BEREXCO                 |
| Well    | COLLINGWOOD TRUST #2-22 |
| Field   | VICTORY                 |
| County  | HASKELL                 |
| State   | KANSAS                  |