



# DENSITY NEUTRON LOG

Company BLACK ROCK RESOURCES, LLC.

Well POLIFKA #13-1

Field UNNAMED

County GOVE State KS

Location: API #: 15 063 22364

994' FSL & 1661' FEL

SEC 13 TWP 13S RGE 27W

Permanent Datum Ground Level Elevation 2510  
Log Measured From KB 10' AGL  
Drilling Measured From KB

Other Services  
DIL  
ML  
Elevation  
K.B. 2520  
D.F. 2518  
G.L. 2510

Date 4/8/22

Run Number One

Depth Driller 4430

Depth Logger 4430

Bottom Logged Interval 4410

Top Log Interval 3400

Casing Driller 8 5/8" @ 271'

Casing Logger 271

Bit Size 7 7/8"

Type Fluid in Hole Chemical

Density / Viscosity 9.3/55

pH / Fluid Loss 11.0/7.2

Source of Sample Pit

Rm @ Meas. Temp 2.1@70degf

Rmf @ Meas. Temp 1.58@70degf

Rmc @ Meas. Temp 2.52@70degf

Source of Rmf / Rmc Calculated

Rm @ BHT 1.33@110degf

Time Circulation Stopped 11:00 P.M.

Time Logger on Bottom 1:30 AM

Maximum Recorded Temperature 110degf

Equipment Number T605

Location Hays, KS

Recorded By GUS PFANENSTIEL

Witnessed By CHAD COUNTS

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

## Comments

SOUTH OF QUINTER TO GOVE P RD. WEST 3/4, NORTH INTO.

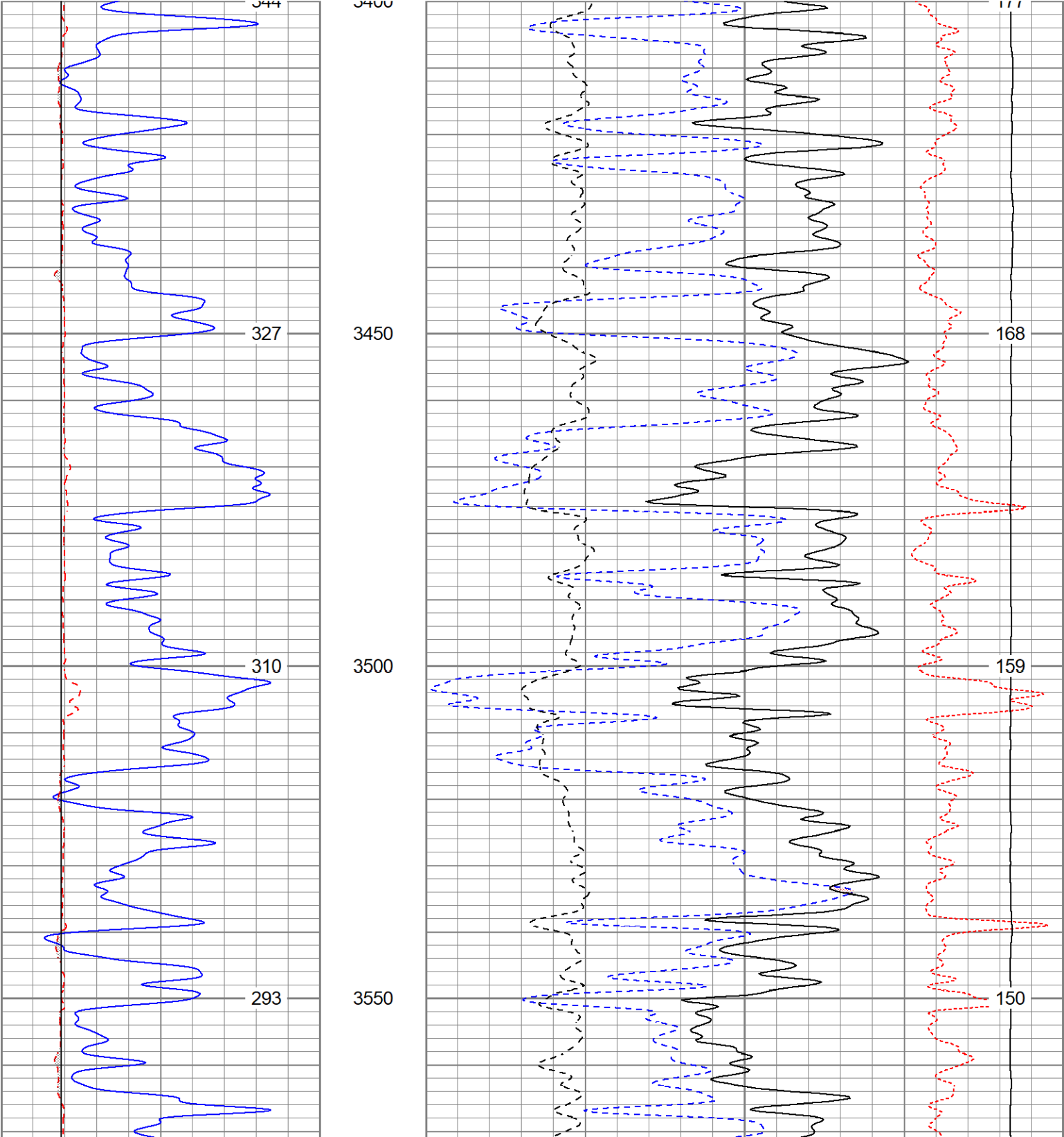
Thank You for using Gemini Wireline LLC  
785-625-1182

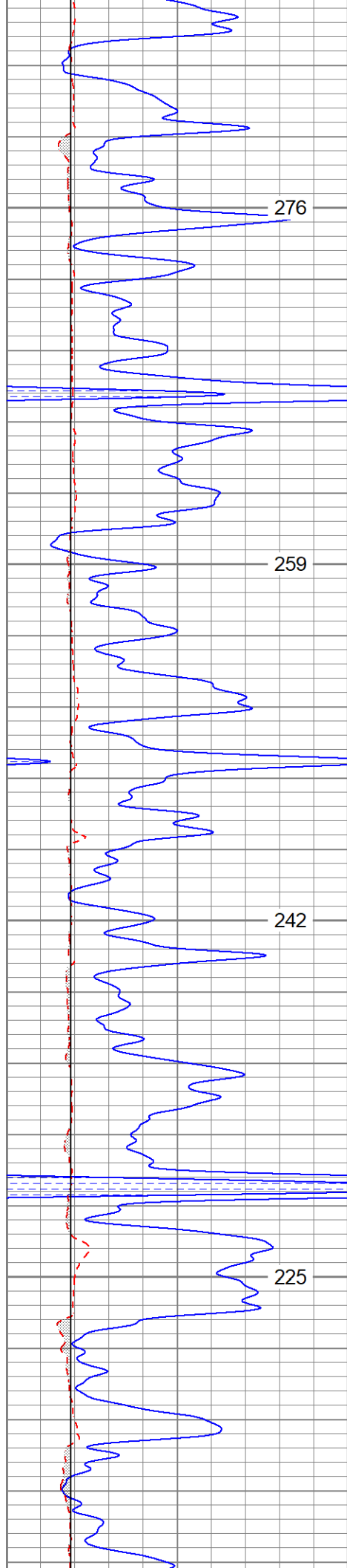


# MAIN PASS

|                     |                            |
|---------------------|----------------------------|
| Database File       | brpolifka#13-1oh.db        |
| Dataset Pathname    | pass3.1                    |
| Presentation Format | kcdnl                      |
| Dataset Creation    | Fri Apr 08 03:15:10 2022   |
| Charted by          | Depth in Feet scaled 1:240 |

|   |             |     |    |           |    |       |             |            |
|---|-------------|-----|----|-----------|----|-------|-------------|------------|
| 0 | GR (GAPI)   | 150 | 30 | NPOR (pu) |    | -10   |             |            |
| 6 | DCAL (in)   | 16  | 30 | DPOR (pu) |    | -10   |             |            |
| 6 | BOREID (in) | 16  | 70 | DPOR (pu) |    | 30    |             |            |
| 6 | BOREID (in) | 16  | 0  | PE (barn) | 10 | -0.25 | RHOC (g/cc) | 0.25       |
|   | TBHV (ft3)  |     |    |           |    | 8000  | LTEN (lb)   | 0          |
|   |             |     |    |           |    |       |             | ABHV (ft3) |



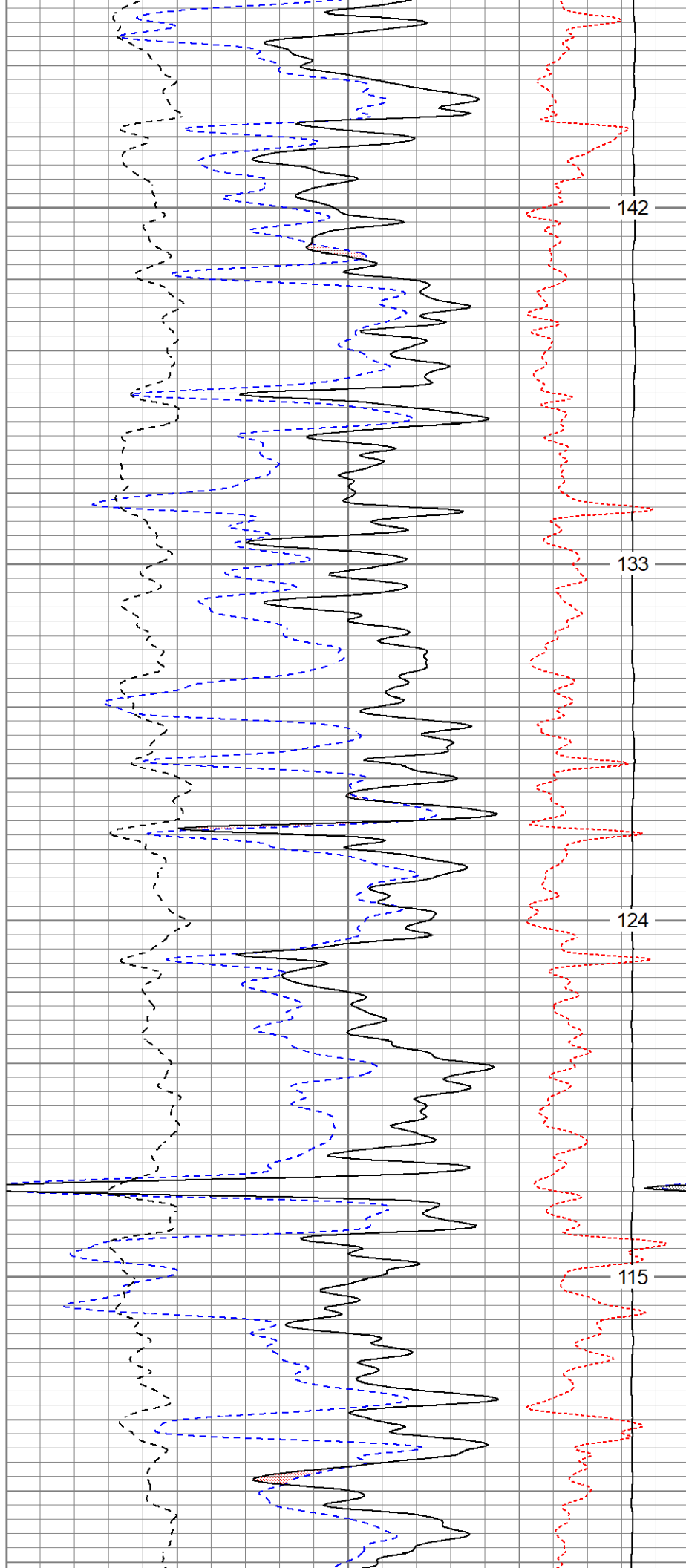


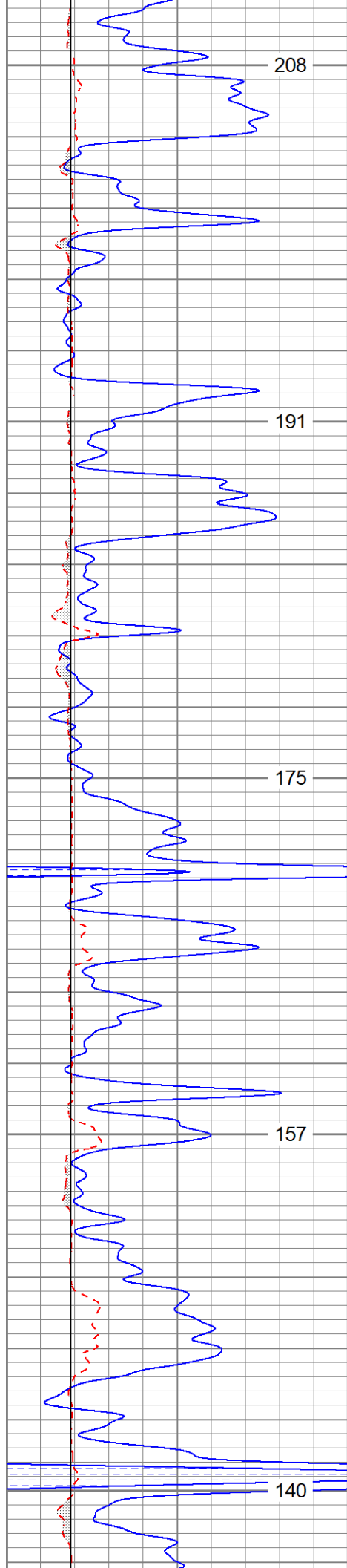
3600

3650

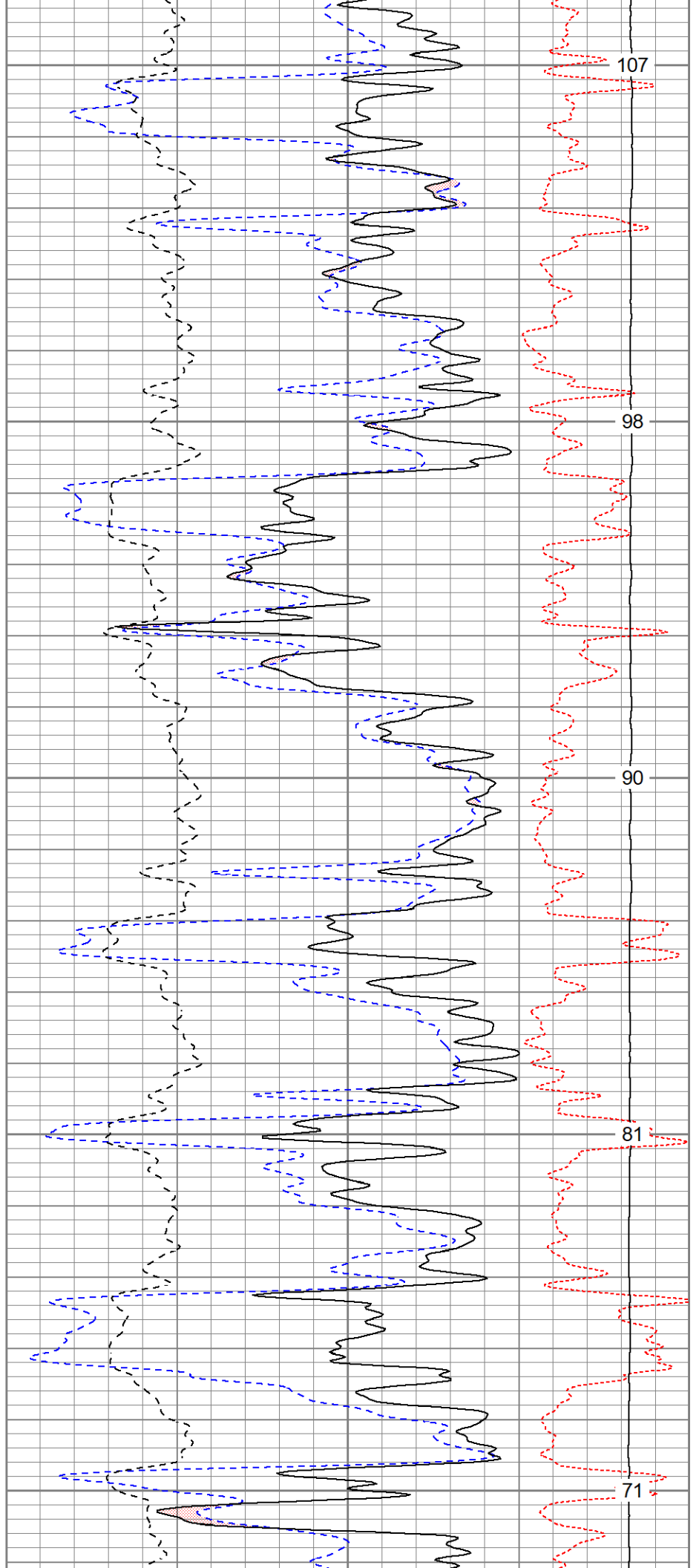
3700

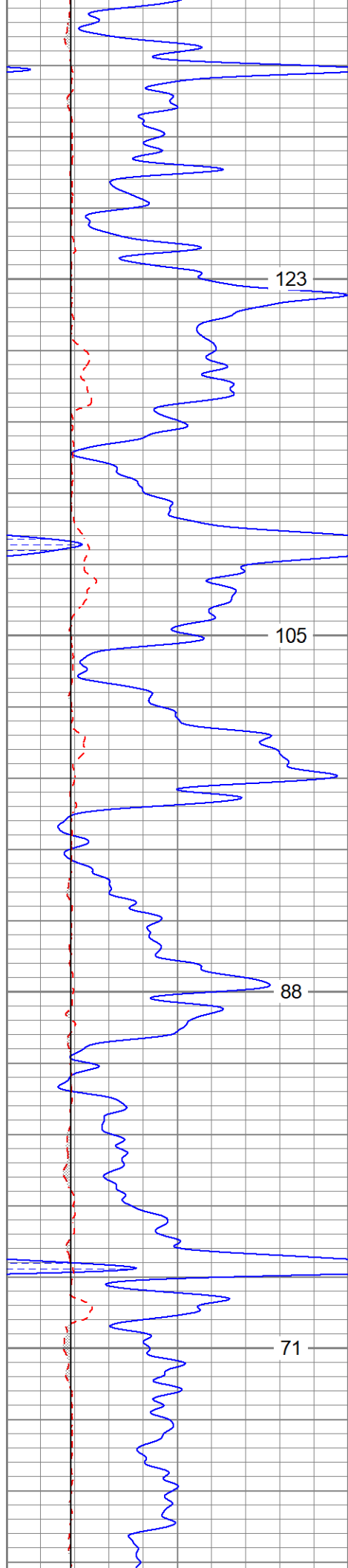
3750





3800  
3850  
3900  
3950  
4000



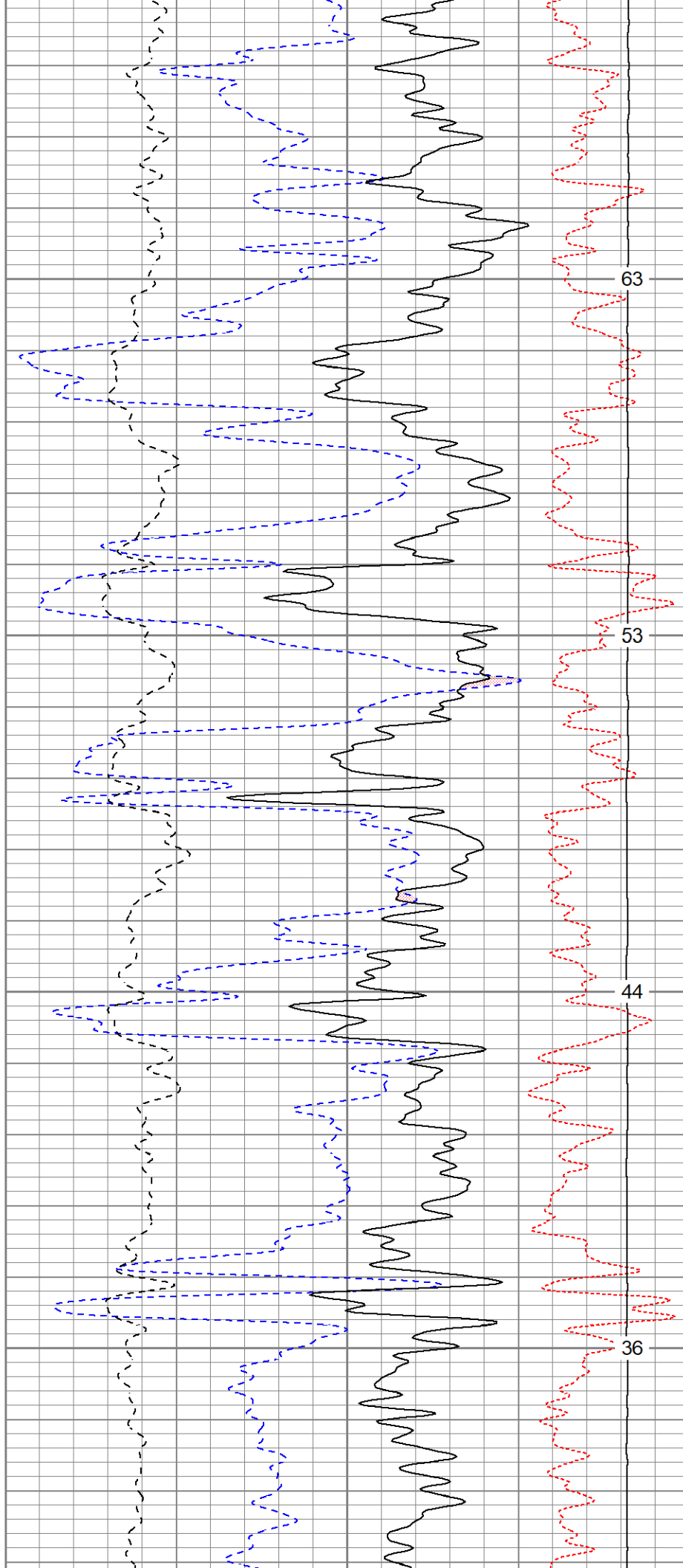


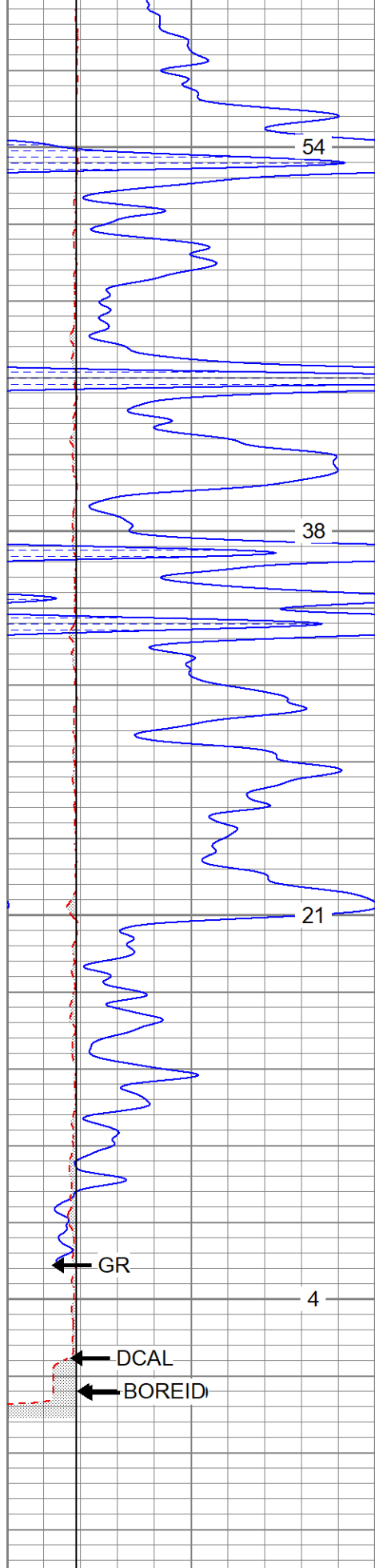
4050

4100

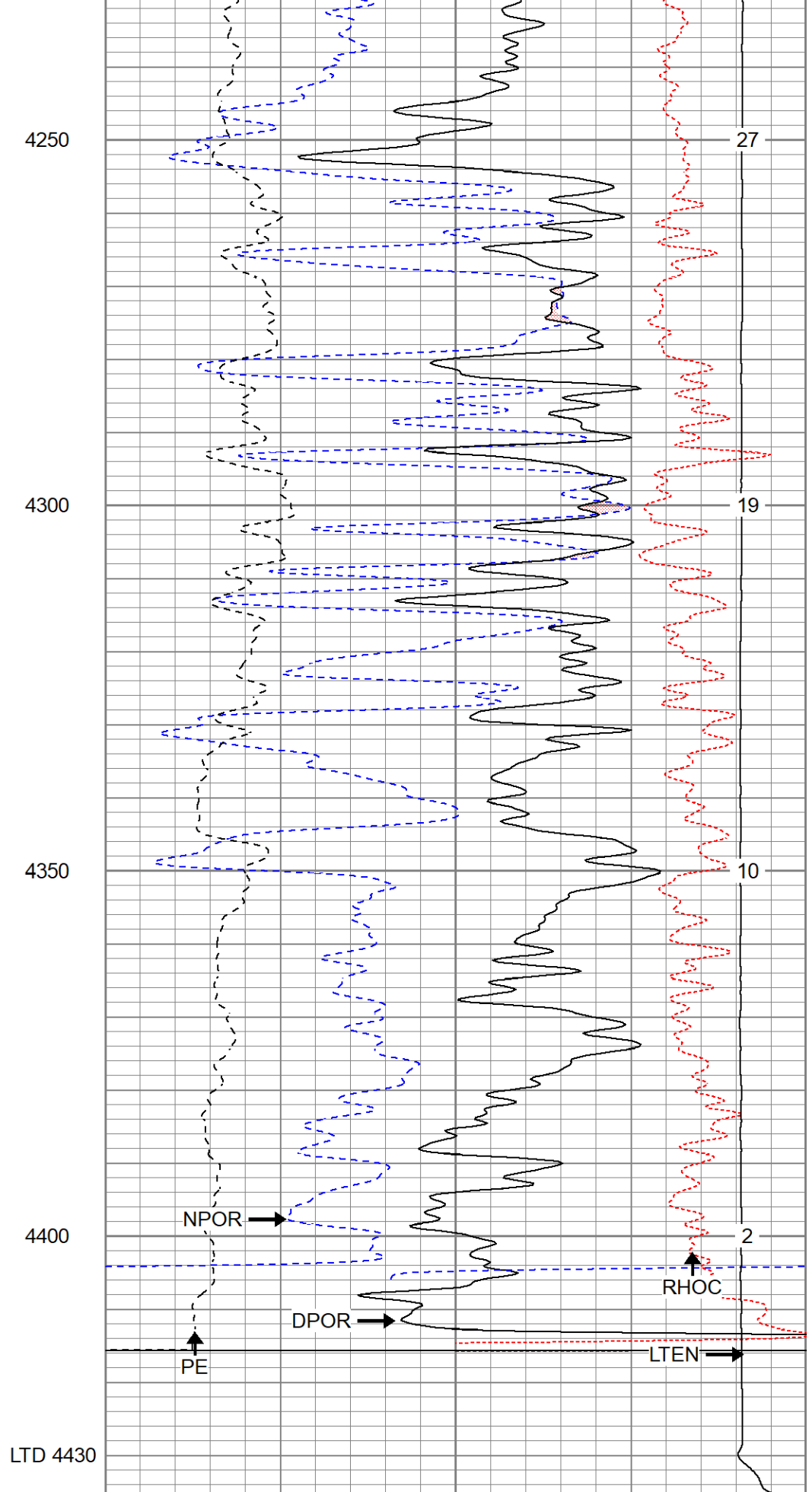
4150

4200





|   |             |     |
|---|-------------|-----|
| 0 | GR (GAPI)   | 150 |
| 6 | DCAL (in)   | 16  |
| 6 | BOREID (in) | 16  |



|    |           |     |
|----|-----------|-----|
| 30 | NPOR (pu) | -10 |
| 30 | DPOR (pu) | -10 |
| 70 | DPOR (pu) | 30  |

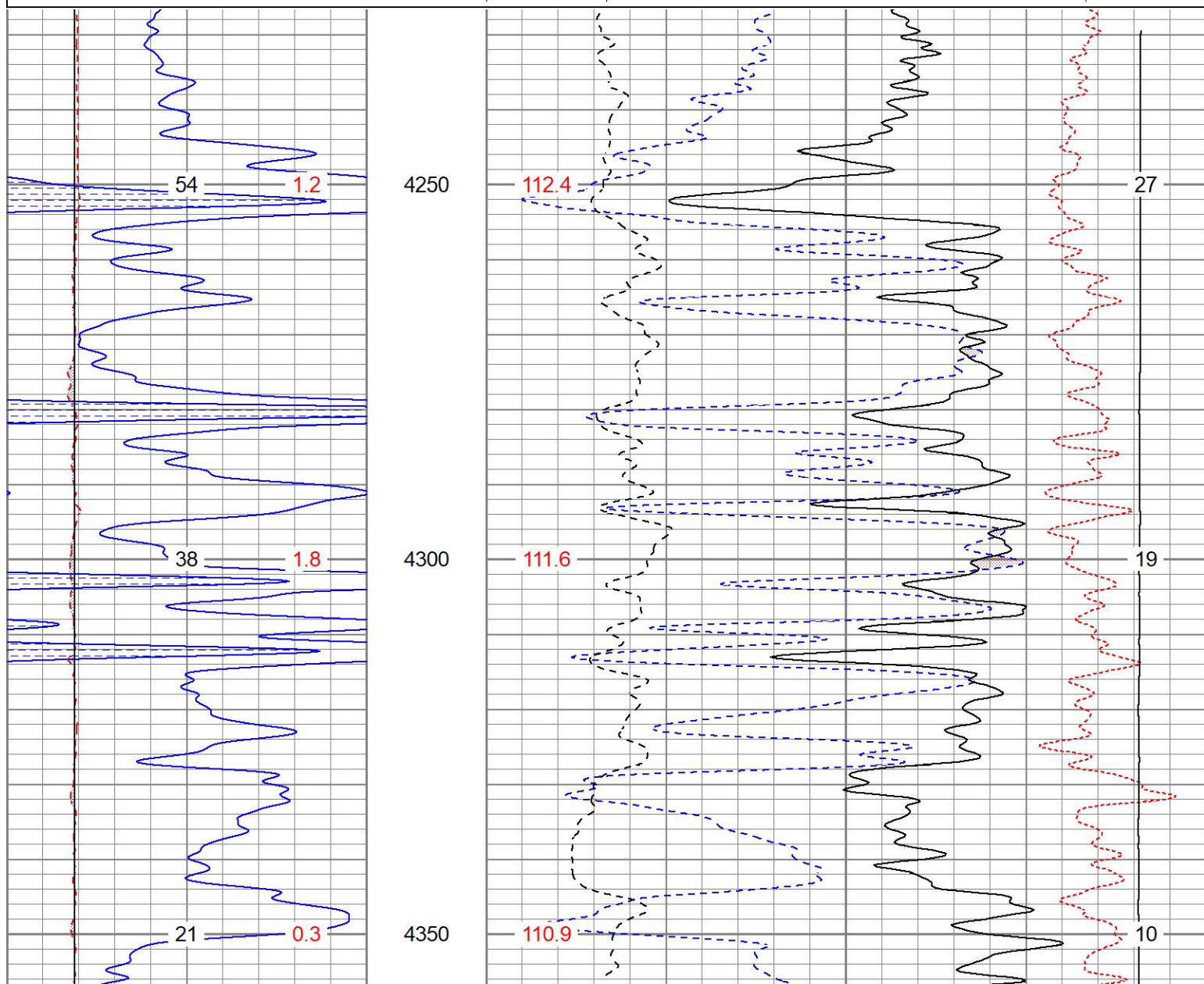
|   |             |    |   |           |    |       |             |            |
|---|-------------|----|---|-----------|----|-------|-------------|------------|
| 0 | BOREID (in) | 16 | 0 | PE (barn) | 10 | -0.25 | RHOC (g/cc) | 0.25       |
|   | TBHV (ft3)  |    |   |           |    | 8000  | LTEN (lb)   | 0          |
|   |             |    |   |           |    |       |             | ABHV (ft3) |

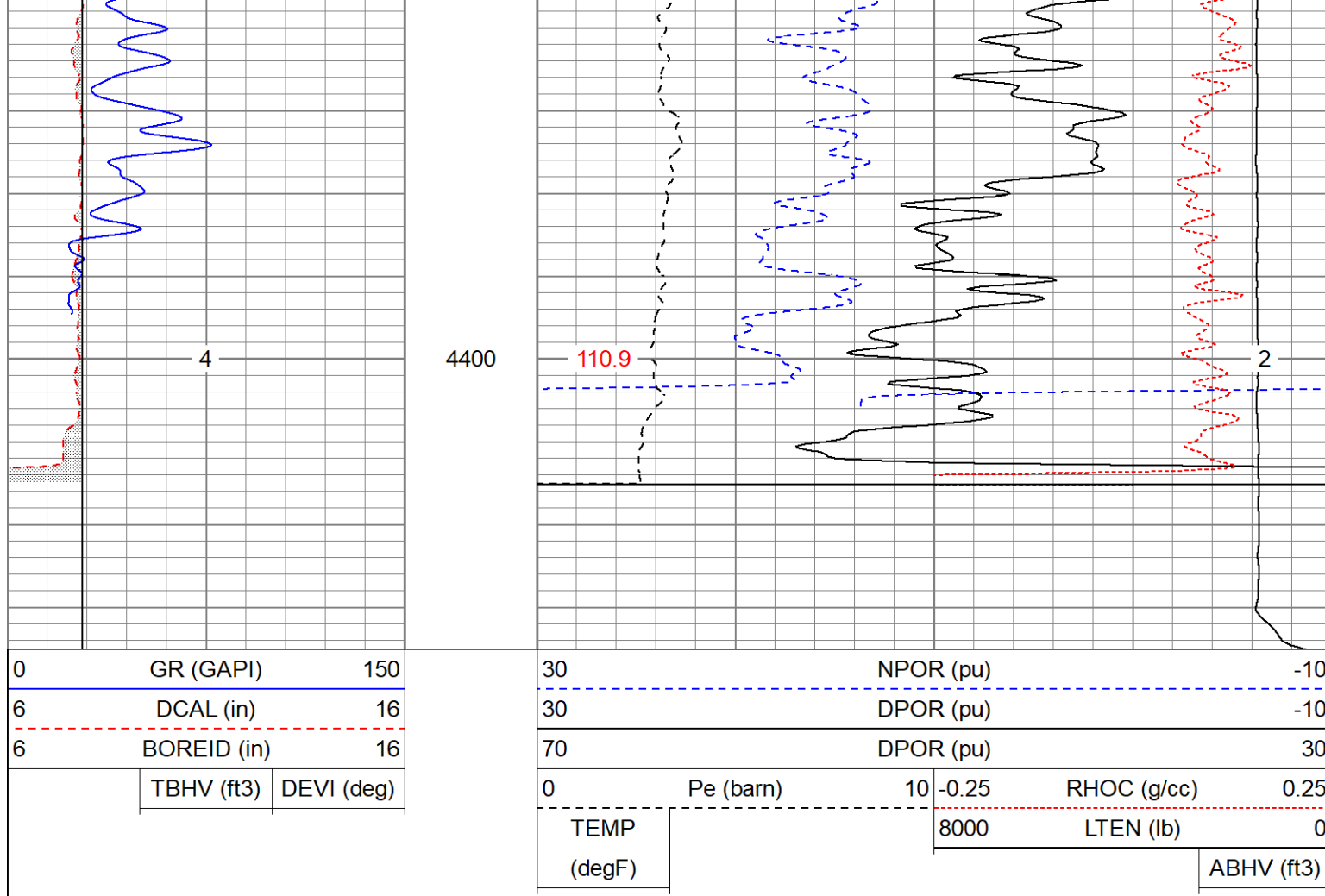


# REPEAT SECTION

Database File brpolifka#13-1oh.db  
 Dataset Pathname pass2.1  
 Presentation Format digital\_kcdnl  
 Dataset Creation Fri Apr 08 03:27:19 2022  
 Charted by Depth in Feet scaled 1:240

|                |  |  |                                  |  |  |
|----------------|--|--|----------------------------------|--|--|
| 0GR (GAPI)150  |  |  | 30NPOR (pu)-10                   |  |  |
| 6DCAL (in)16   |  |  | 30DPOR (pu)-10                   |  |  |
| 6BOREID (in)16 |  |  | 70DPOR (pu)30                    |  |  |
|                |  |  | 0Pe (barn)10-0.25RHOC (g/cc)0.25 |  |  |
|                |  |  | TEMP8000LTEN (lb)0               |  |  |
|                |  |  | (degF)ABHV (ft3)                 |  |  |





| Calibration Report                   |                          |          |   |       |                          |        |         |         |  |
|--------------------------------------|--------------------------|----------|---|-------|--------------------------|--------|---------|---------|--|
| Database File                        | brpolifka#13-1oh.db      |          |   |       |                          |        |         |         |  |
| Dataset Pathname                     | pass2.1                  |          |   |       |                          |        |         |         |  |
| Dataset Creation                     | Fri Apr 08 03:27:19 2022 |          |   |       |                          |        |         |         |  |
| Dual Induction Calibration Report    |                          |          |   |       |                          |        |         |         |  |
| Serial-Model:                        |                          |          |   |       | 1842-ADM                 |        |         |         |  |
| Surface Cal Performed:               |                          |          |   |       | Mon Sep 20 22:00:42 2021 |        |         |         |  |
| Downhole Cal Performed:              |                          |          |   |       | Mon Sep 20 22:00:24 2021 |        |         |         |  |
| After Survey Verification Performed: |                          |          |   |       | Mon Sep 20 22:05:52 2021 |        |         |         |  |
| Surface Calibration                  |                          |          |   |       |                          |        |         |         |  |
|                                      |                          | Readings |   |       | References               |        |         | Results |  |
| Loop:                                | Air                      | Loop     |   | Air   | Loop                     |        | m       | b       |  |
| Deep                                 | 0.018                    | 0.672    | V | 0.000 | 350.000                  | mmho/m | 535.475 | -9.896  |  |
| Medium                               | 0.003                    | 0.769    | V | 0.000 | 400.000                  | mmho/m | 522.607 | -1.745  |  |
| Internal:                            | Zero                     | Cal      |   | Zero  | Cal                      |        | m       | b       |  |
| Deep                                 | 0.018                    | 0.672    | V | 0.000 | 350.000                  | mmho/m | 535.240 | -9.549  |  |
| Medium                               | 0.003                    | 0.768    | V | 0.000 | 550.000                  | mmho/m | 718.637 | -2.088  |  |
| Downhole Calibration                 |                          |          |   |       |                          |        |         |         |  |
|                                      |                          | Readings |   |       | References               |        |         | Results |  |
| Internal:                            | Zero                     | Cal      |   | Zero  | Cal                      |        | m       | b       |  |
| Deep                                 | 0.018                    | 0.672    | V | 0.000 | 350.000                  | mmho/m | 535.240 | -9.549  |  |
| Medium                               | 0.003                    | 0.768    | V | 0.000 | 550.000                  | mmho/m | 718.637 | -2.088  |  |

|                                       |        |         |                             |                          |               |         |         |        |
|---------------------------------------|--------|---------|-----------------------------|--------------------------|---------------|---------|---------|--------|
| Deep                                  | -0.219 | 349.905 | mmho/m                      | -0.343                   | 349.810       | mmho/m  | 1.000   | -3.124 |
| Medium                                | -0.118 | 399.722 | mmho/m                      | -0.226                   | 399.745       | mmho/m  | 1.000   | -3.108 |
| Shallow                               | 2.536  | 0.025   | V                           | 500.000                  | 2.000         | Ohm-m   | 180.330 | -1.504 |
| After Survey Verification             |        |         |                             |                          |               |         |         |        |
| Readings                              |        |         | Targets                     |                          |               | Results |         |        |
| Internal:                             | Zero   | Cal     |                             | Zero                     | Cal           |         | m'      | b'     |
| Deep                                  | 0.000  | 0.000   | mmho/m                      | -0.219                   | 349.905       | mmho/m  | 1.000   | -3.124 |
| Medium                                | 0.000  | 0.000   | mmho/m                      | -0.118                   | 399.722       | mmho/m  | 1.000   | -3.108 |
| Shallow                               | 0.000  | 0.000   | Ohm-m                       | 500.000                  | 2.000         | Ohm-m   | 1.000   | 0.000  |
| Admyr Lithodensity Calibration Report |        |         |                             |                          |               |         |         |        |
| Serial-Model:                         |        |         |                             | 1C-C                     |               |         |         |        |
| Source:                               |        |         |                             | Blue2                    |               |         |         |        |
| Master Calibration Performed:         |        |         |                             | Tue Oct 20 08:37:42 2020 |               |         |         |        |
| Master Calibration                    |        |         |                             |                          |               |         |         |        |
| Density                               |        |         | Far Detector                |                          | Near Detector |         |         |        |
| Magnesium                             | 1.670  | g/cc    | 6640.15                     |                          | 4353.97       |         | cps     |        |
| Aluminium                             | 2.640  | g/cc    | 1651.98                     |                          | 2729.31       |         | cps     |        |
| Aluminium+Sleeve                      | 2.640  | g/cc    | 1651.98                     |                          | 2729.31       |         | cps     |        |
| Spine Angle = 71.44                   |        |         | Density/Spine Ratio = 0.661 |                          |               |         |         |        |
| PE                                    |        |         | NLITH                       |                          | NHARD         |         |         |        |
| Magnesium                             | 1.900  | barn    | 1410.00                     |                          | 1000.00       |         | cps     |        |
| Aluminium                             | 2.400  | barn    | 1101.00                     |                          | 918.50        |         | cps     |        |
| Aluminium+Sleeve                      | 5.000  | barn    | 656.00                      |                          | 951.00        |         | cps     |        |
| M = 0.448                             |        |         | B = -0.112                  |                          | R = 0.999     |         |         |        |
| Size                                  |        |         | Reading                     |                          |               |         |         |        |
| Small Ring                            | 8.30   | in      | 8.61                        |                          | V             |         |         |        |
| Large Ring                            | 14.30  | in      | 12.40                       |                          | V             |         |         |        |
| Neutron Calibration Report            |        |         |                             |                          |               |         |         |        |
| Serial Number:                        |        |         | AD5139                      |                          |               |         |         |        |
| Tool Model:                           |        |         | ADMY5139                    |                          |               |         |         |        |
| Performed:                            |        |         | (Not Performed)             |                          |               |         |         |        |
| Calibrator Value:                     |        |         | 1                           | NAPI                     |               |         |         |        |
| Calibrator Reading:                   |        |         | 1                           | cps                      |               |         |         |        |
| Sensitivity:                          |        |         | 1                           | NAPI/cps                 |               |         |         |        |
| Temperature Calibration Report        |        |         |                             |                          |               |         |         |        |
| Serial Number:                        |        |         | WithMC                      |                          |               |         |         |        |
| Tool Model:                           |        |         | WMC                         |                          |               |         |         |        |
| Performed:                            |        |         | Fri Apr 19 12:15:04 2019    |                          |               |         |         |        |
| Reference                             |        |         | Reading                     |                          |               |         |         |        |
| Low Reference:                        | 0.00   | degF    | 0.00                        |                          | degF          |         |         |        |
| High Reference:                       | 1.00   | degF    | 1.00                        |                          | degF          |         |         |        |
| Gain:                                 | 1.00   |         |                             |                          |               |         |         |        |
| Offset:                               | 0.00   |         |                             |                          |               |         |         |        |

## Inclinometer Calibration Report

Performed: Wed May 5 19:20:48 2021

|  | Low Read. | High Read. | Low Ref. | High Ref. |  |
|--|-----------|------------|----------|-----------|--|
|--|-----------|------------|----------|-----------|--|

|                 |        |         |       |      |     |
|-----------------|--------|---------|-------|------|-----|
| X Accelerometer | 205.00 | 1843.00 | -1.00 | 1.00 | gee |
|-----------------|--------|---------|-------|------|-----|

|                 |        |         |       |      |     |
|-----------------|--------|---------|-------|------|-----|
| Y Accelerometer | 205.00 | 1843.00 | -1.00 | 1.00 | gee |
|-----------------|--------|---------|-------|------|-----|

|                 |  |  |  |  |     |
|-----------------|--|--|--|--|-----|
| Z Accelerometer |  |  |  |  | gee |
|-----------------|--|--|--|--|-----|

## Gamma Ray Calibration Report

|                |                         |
|----------------|-------------------------|
| Serial Number: | WithMC                  |
| Tool Model:    | WMC                     |
| Performed:     | Wed May 5 19:21:08 2021 |

|                   |     |      |
|-------------------|-----|------|
| Calibrator Value: | 1.0 | GAPI |
|-------------------|-----|------|

|                     |     |     |
|---------------------|-----|-----|
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |

|              |        |          |
|--------------|--------|----------|
| Sensitivity: | 1.0000 | GAPI/cps |
|--------------|--------|----------|