



# MICRORESISTIVITY LOG

MIDWEST WIRELINE

|                                     |               |                           |      |
|-------------------------------------|---------------|---------------------------|------|
| Company Russell Oil, Inc.           |               | Company Russell Oil, Inc. |      |
| Well Johnson #14-1                  |               | Well Johnson #14-1        |      |
| Field                               |               | Field                     |      |
| County Logan                        |               | County Logan              |      |
| State Kansas                        |               | State Kansas              |      |
| Location: API #: 15-109-21653-00-00 |               | Other Services            |      |
| SEC 14 TWP 11S RGE 32W              |               | CNL/CDL<br>MEL            |      |
| Permanent Datum                     | Ground Level  | Elevation                 | 3049 |
| Log Measured From                   | Kelly Bushing |                           |      |
| Drilling Measured From              | Kelly Bushing |                           |      |
|                                     |               | K.B.                      | 3059 |
|                                     |               | D.F.                      |      |
|                                     |               | G.L.                      | 3049 |
| Date                                | 8/15/2022     |                           |      |
| Run Number                          | One           |                           |      |
| Depth Driller                       | 4720          |                           |      |
| Depth Logger                        | 4719          |                           |      |
| Bottom Logged Interval              | 4718          |                           |      |
| Top Log Interval                    | 3700          |                           |      |
| Casing Driller                      | 8.625 @ 311   |                           |      |
| Casing Logger                       | 309           |                           |      |
| Bit Size                            | 7.875         |                           |      |
| Type Fluid in Hole                  | Chemical      |                           |      |
| Salinity, ppm CL                    | 3200          |                           |      |
| Density / Viscosity                 | 9.3 61        |                           |      |
| pH / Fluid Loss                     | 10.0 8.0      |                           |      |
| Source of Sample                    | FLOWLINE      |                           |      |
| Rm @ Meas. Temp                     | 0.70 @ 88     |                           |      |
| Rmt @ Meas. Temp                    | 0.53 @ 88     |                           |      |
| Rmc @ Meas. Temp                    | 0.95 @ 88     |                           |      |
| Source of Rmt / Rmc                 | CHARTS        |                           |      |
| Rm @ BHT                            | 0.50 @ 123    |                           |      |
| Operating Rig Time                  | 3 Hours       |                           |      |
| Max Rec. Temp. F                    | 123           |                           |      |
| Equipment Number                    | P-108         |                           |      |
| Location                            | HAYS          |                           |      |
| Recorded By                         | D. Schmidt    |                           |      |
| Witnessed By                        | Kitt Noah     |                           |      |

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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.

Oakley,  
1 South on Hwy 83 to Daydream Rd, 1/4 East,  
South and West into

Log Measured From: Kelly Bushing

10 Ft. Above Permanent Datum

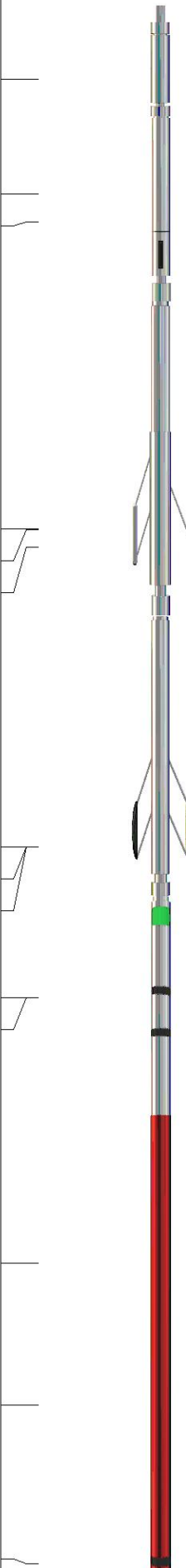
THANK YOU FOR USING MIDWEST WIRELINE LLC  
785-625-3858

## Your Midwest Wireline Crew

Engineer: D. Schmidt  
Operator:  
Operator:  
Operator:

## This Log Record Was Witnessed By

Primary Witness: Kitt Noah  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:

| Sensor                                                                                                                            | Offset (ft)             | Schematic                                                                         | Description           | Length (ft) | O.D. (in) | Weight (lb) |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-----------------------|-------------|-----------|-------------|
| GR                                                                                                                                | 40.33                   |  | GR-M&W (103)          | 3.00        | 3.50      | 50.00       |
| CNLSC<br>CNSSC                                                                                                                    | 37.23<br>36.48          |                                                                                   | CNT-M&W (210)         | 5.00        | 3.50      | 100.00      |
| LSD<br>DCAL<br>SSD                                                                                                                | 28.18<br>28.17<br>27.68 |                                                                                   | CDL-M&W (304-04)      | 8.50        | 4.00      | 250.00      |
| MCAL<br>MI<br>MN                                                                                                                  | 19.58<br>19.58<br>19.58 |                                                                                   | ML-PSI STKBL ML (401) | 7.58        | 4.00      | 65.00       |
| RLL3F<br>RLL3                                                                                                                     | 15.50<br>15.50          |                                                                                   | DIL-M&W (505 HT)      | 18.25       | 3.50      | 220.00      |
| CILD                                                                                                                              | 8.33                    |                                                                                   |                       |             |           |             |
| CILM                                                                                                                              | 4.50                    |                                                                                   |                       |             |           |             |
| SP                                                                                                                                | 0.20                    |                                                                                   |                       |             |           |             |
| Dataset: russell_johnson 14-1.db: field/well/stkml/pass4.10<br>Total length: 42.33 ft<br>Total weight: 685.00 lb<br>O.D.: 4.00 in |                         |                                                                                   |                       |             |           |             |

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\russell\_johnson 14-1.db  
Dataset field/well/stkml/pass4.10/\_vars\_

## Top - Bottom

|           |        |         |         |          |          |       |          |
|-----------|--------|---------|---------|----------|----------|-------|----------|
| A         | BOREID | BOTTEMP | CASEOD  | CASETHCK | FLUIDDEN | M     | MATRXDEN |
| 1         | in     | degF    | in      | in       | g/cc     | 2     | g/cc     |
|           | 7.875  | 123     | 5.5     | 0        | 1        |       | 2.71     |
| NPORSEL   | PERFS  | SNDERR  | SNDERRM | SPSHIFT  | SRFTEMP  | SZCOR | TDEPTH   |
| Limestone | 0      | mmho/m  | mmho/m  | mV       | degF     | Off   | ft       |
|           |        | 0       | 0       | 345      | 95       |       | 4719     |

## Variable Description

A : Cement Factor (a)  
BOREID : Borehole I.D.  
BOTTEMP : Bottom Hole Temperature  
CASEOD : Casing O.D.  
CASETHCK : Casing Thickness  
FLUIDDEN : Fluid Density  
M : Cement Exp (m)  
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
PERFS : Perforation Flag  
SNDERR : Deep Sonde Error Correction  
SNDERRM : Medium Sonde Error Correction  
SPSHIFT : S.P. Baseline Offset  
SRFTEMP : Surface Temperature  
SZCOR : CN Size Cor. ?  
TDEPTH : Total Depth



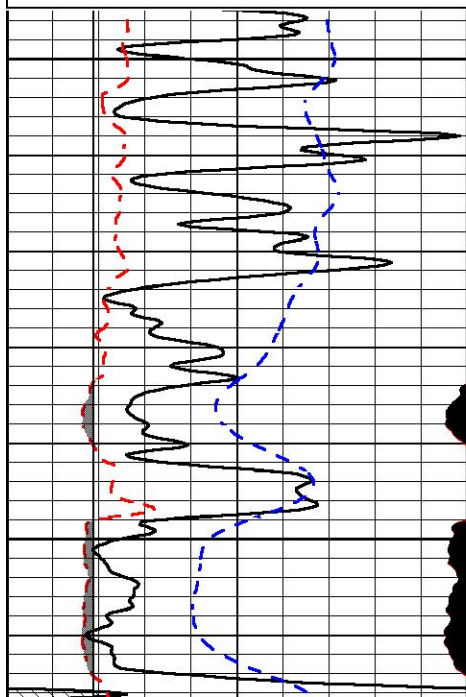
## DETAIL SECTION

### MAIN PASS

Database File russell\_johnson 14-1.db  
Dataset Pathname stkml/pass4.1  
Presentation Format \_micro  
Dataset Creation Mon Aug 15 21:03:20 2022  
Charted by Depth in Feet scaled 1:240

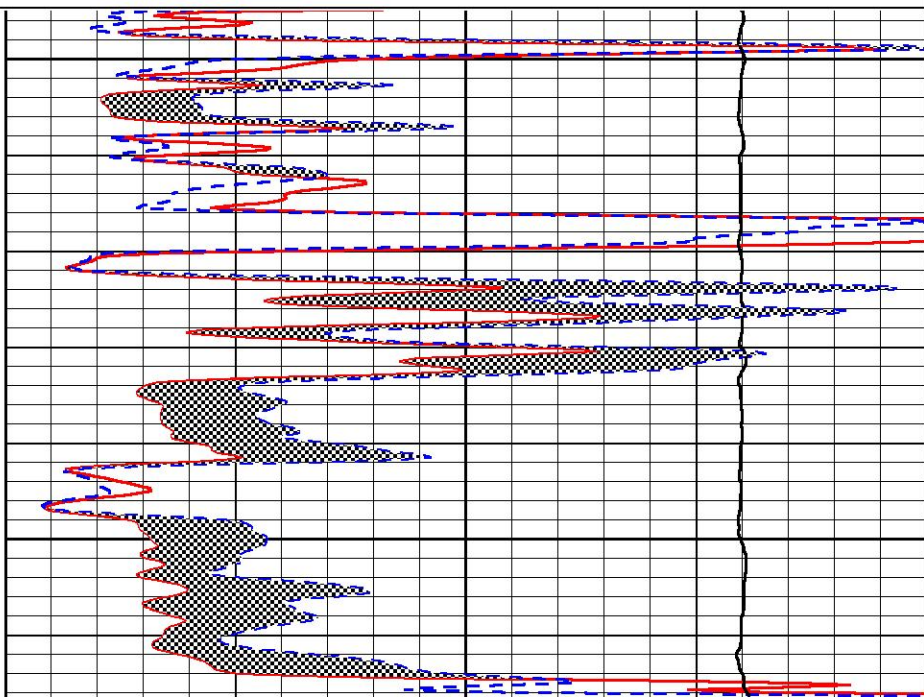
|       |                  |       |
|-------|------------------|-------|
| 0     | Gamma Ray (GAPI) | 150   |
| 6     | Caliper (in)     | 16    |
| 2.875 | mcal (in)        | 7.875 |
| -200  | SP (mV)          | 0     |

|       |                             |    |
|-------|-----------------------------|----|
| 0     | Micro Inverse 1 X 1 (Ohm-m) | 40 |
| 0     | Micro Normal 2" (Ohm-m)     | 40 |
| 10000 | Line Weight (lb)            | 0  |

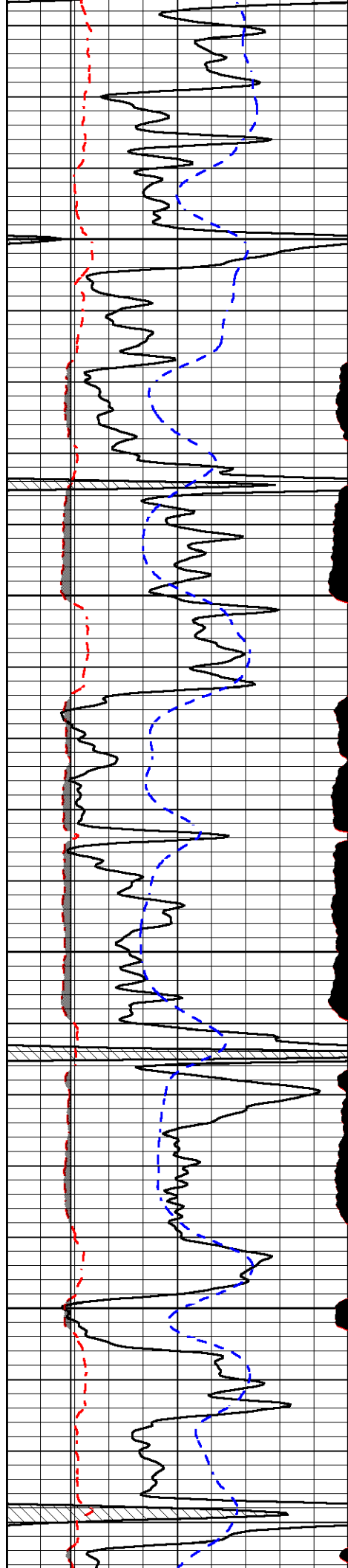


3700

3750





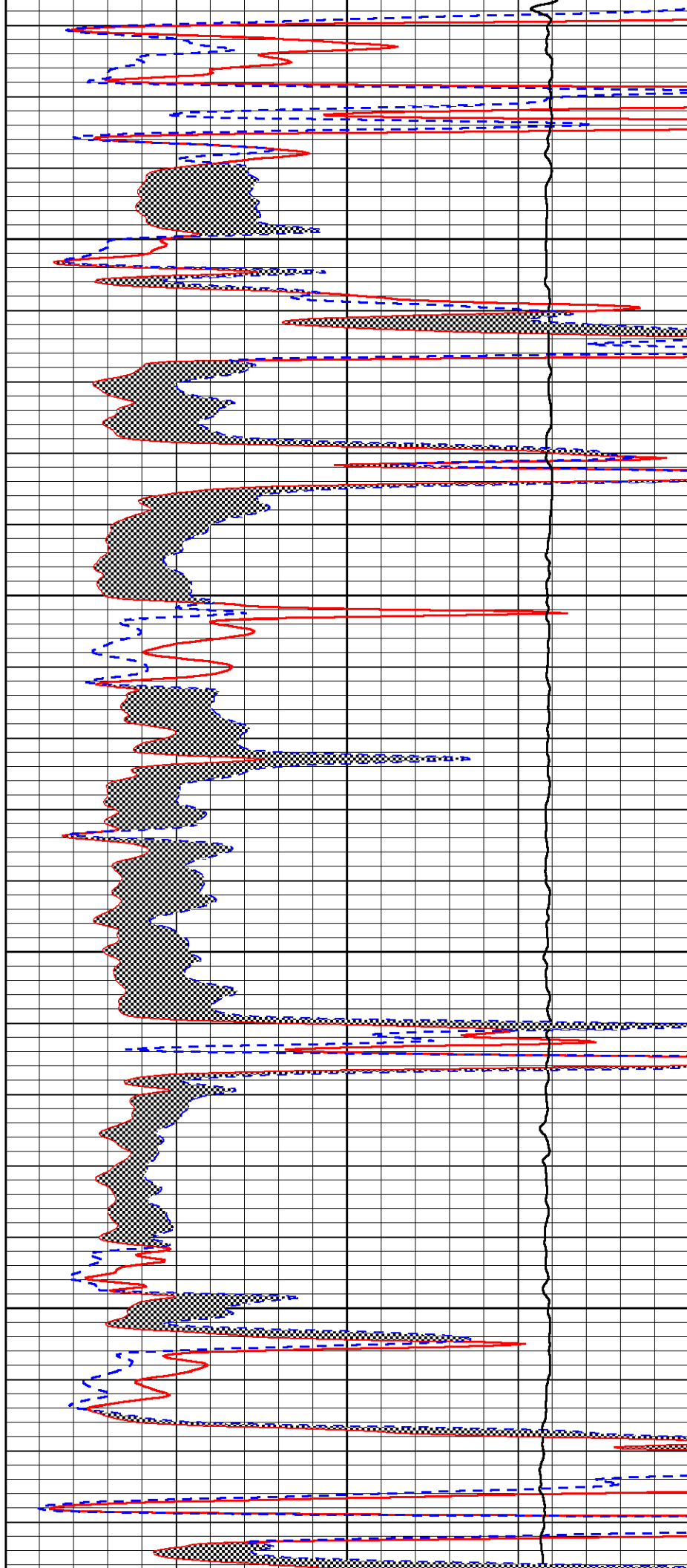


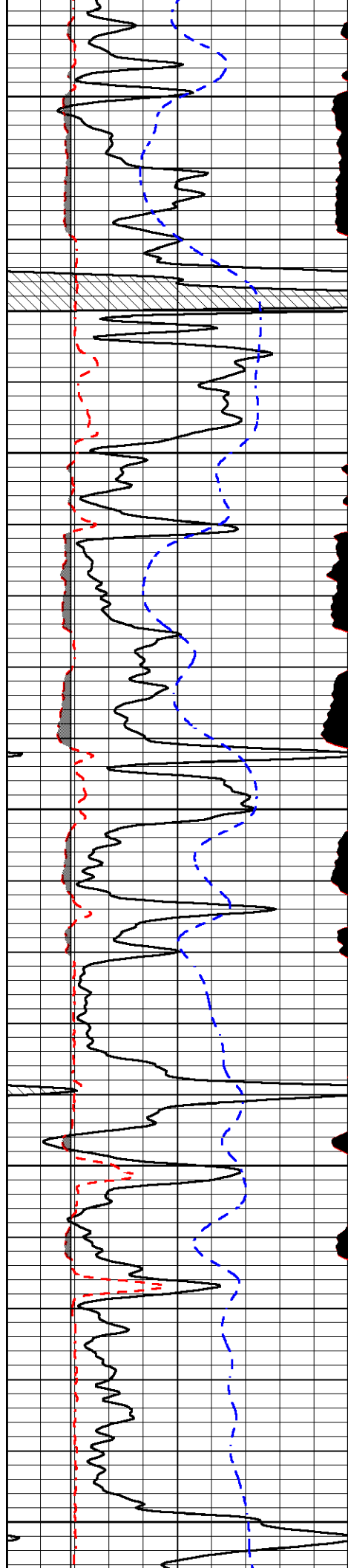
3800

3850

3900

3950





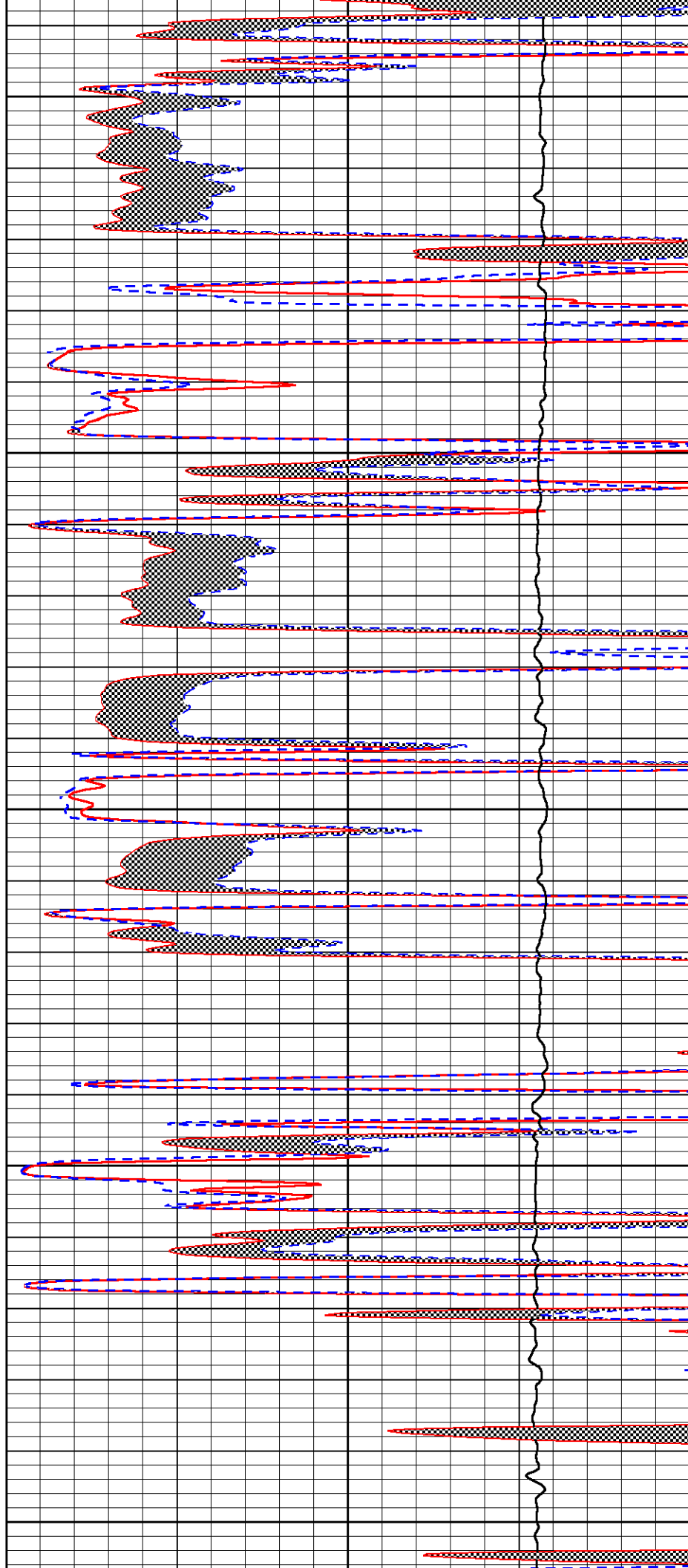
4000

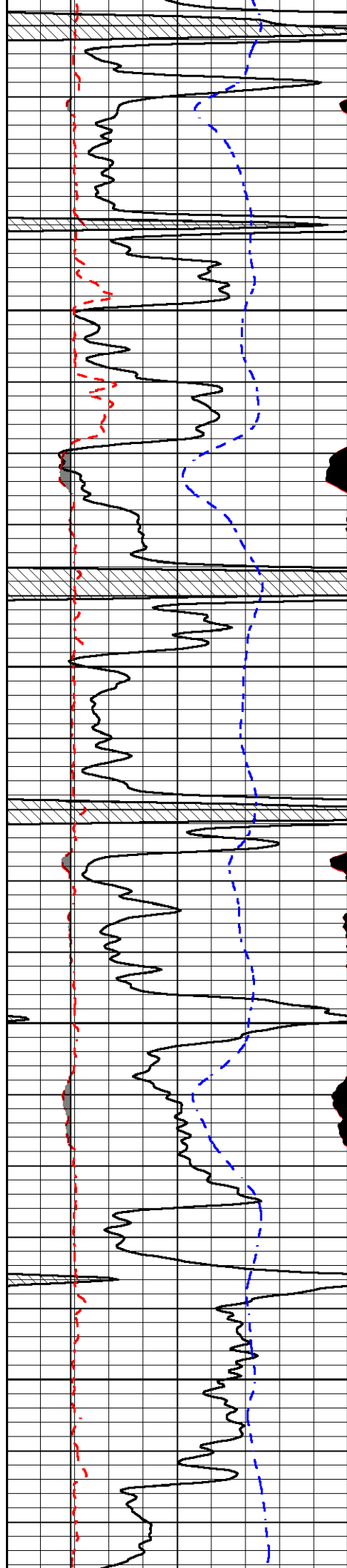
4050

4100

4150

4200



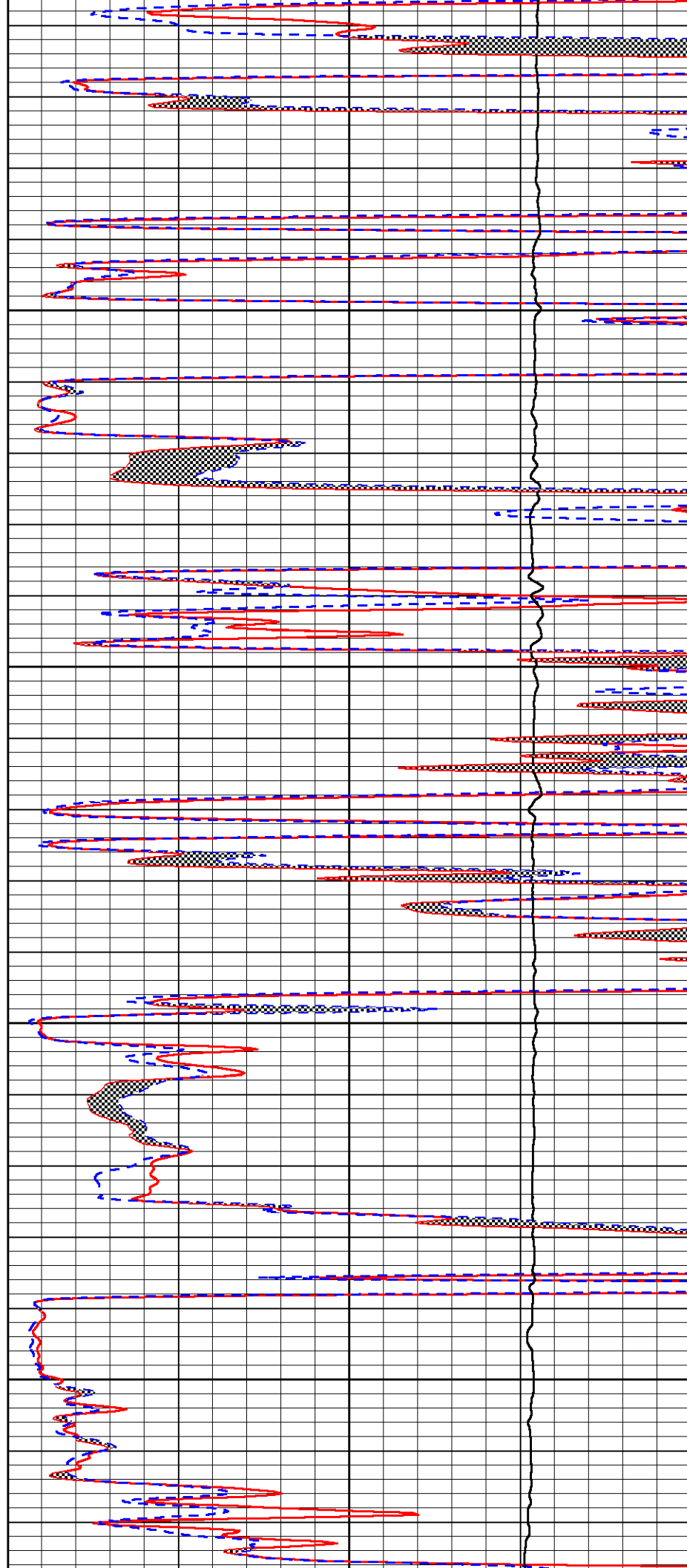


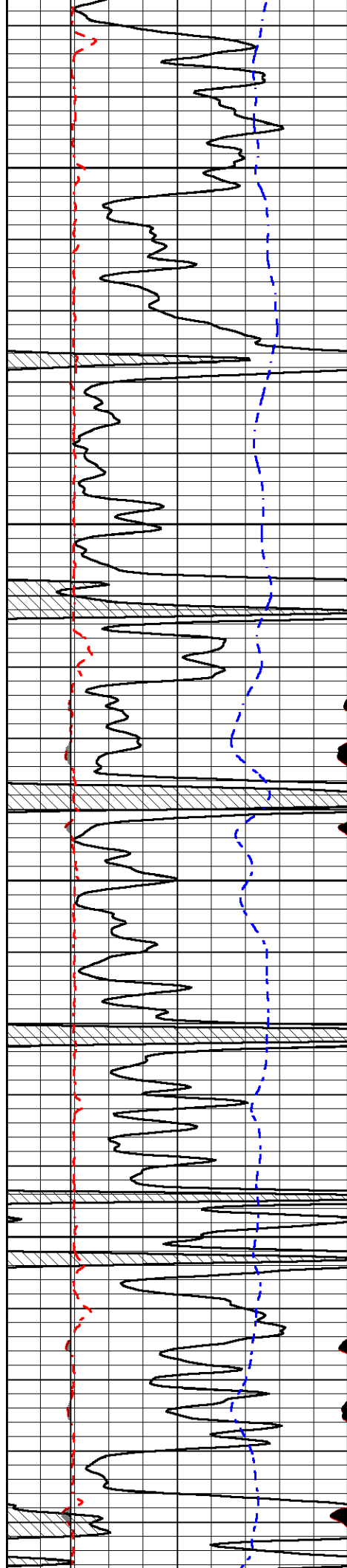
4250

4300

4350

4400



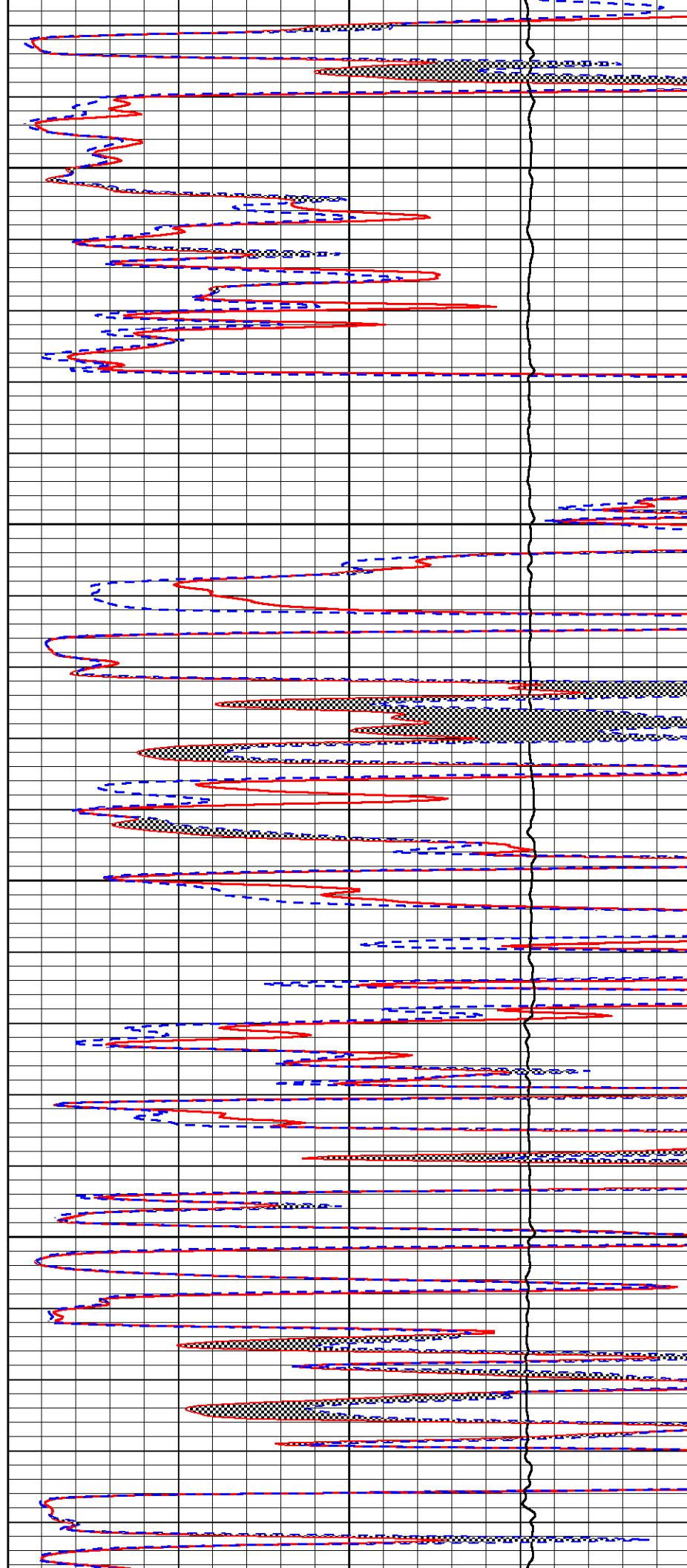


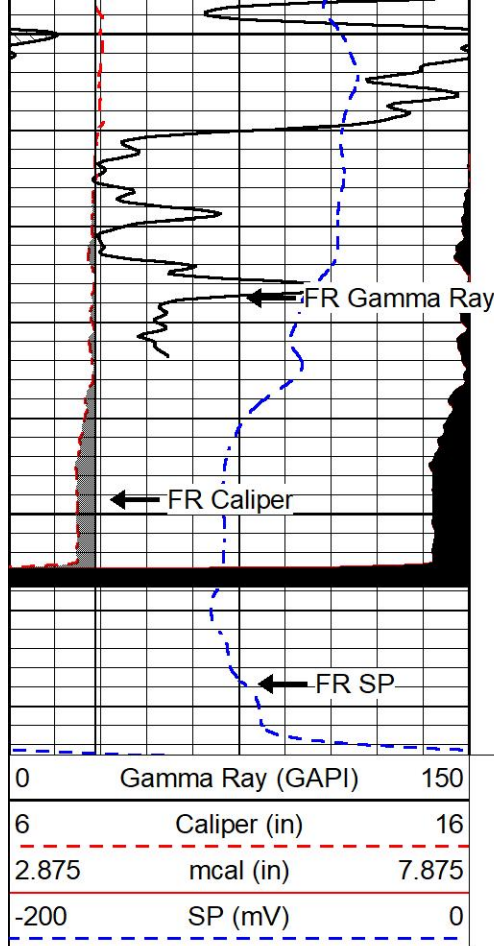
4450

4500

4550

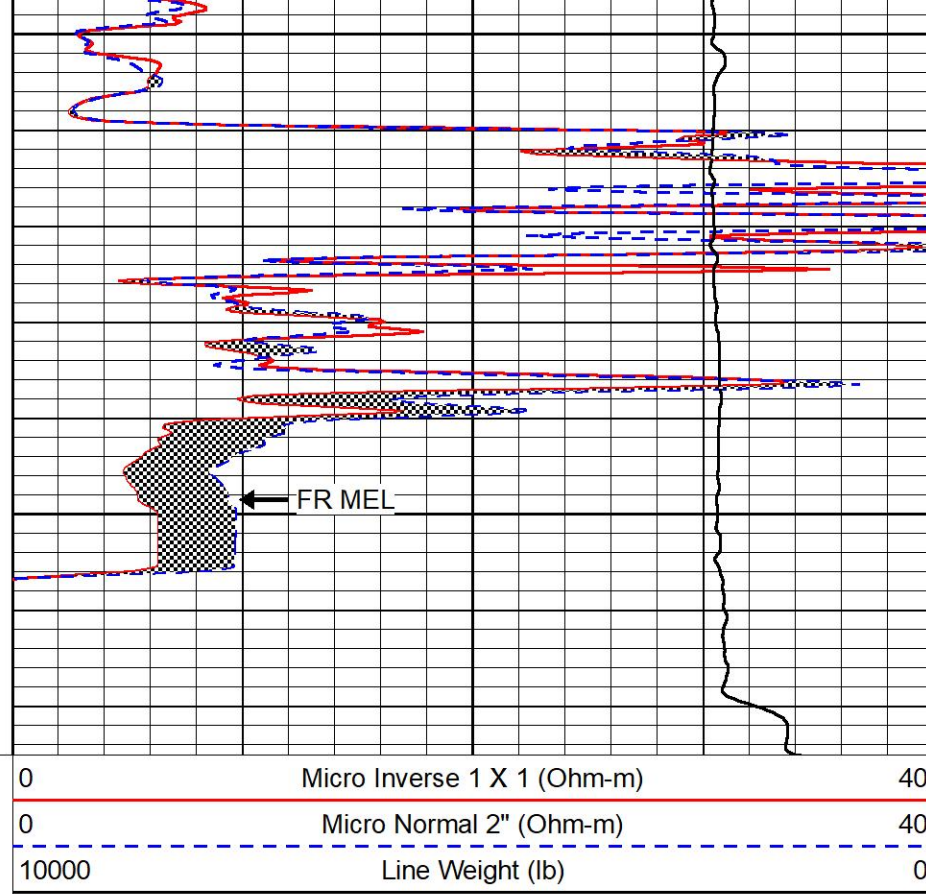
4600





4650

4700

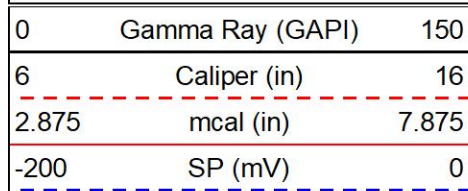


MIDWEST WIRELINE

## REPEAT SECTION

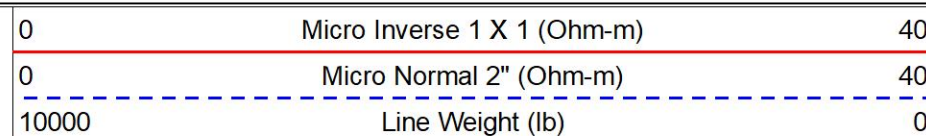
### REPEAT PASS

Database File russell\_johnson 14-1.db  
 Dataset Pathname stkml/pass3.1  
 Presentation Format \_micro  
 Dataset Creation Mon Aug 15 20:15:19 2022  
 Charted by Depth in Feet scaled 1:240

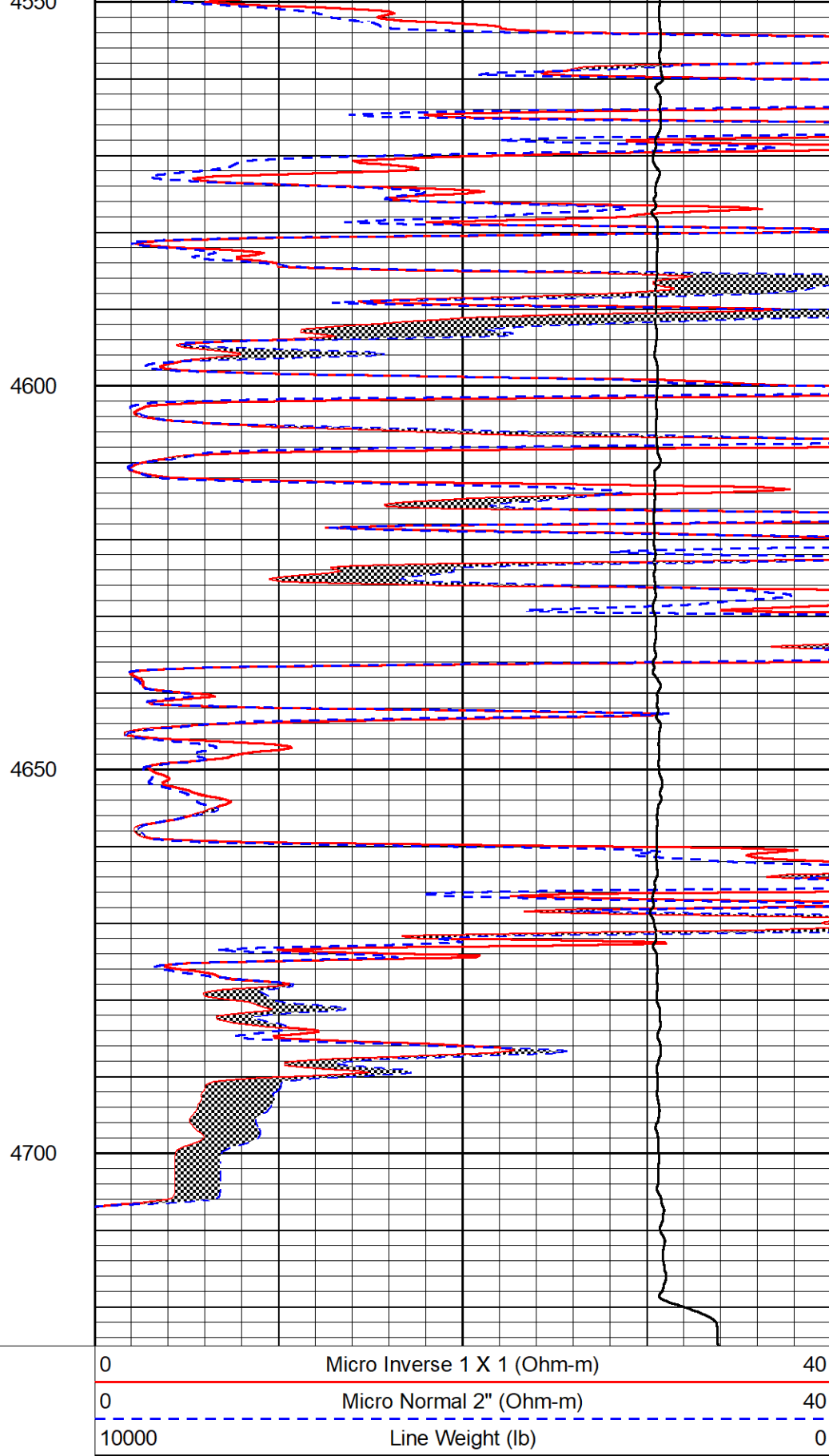
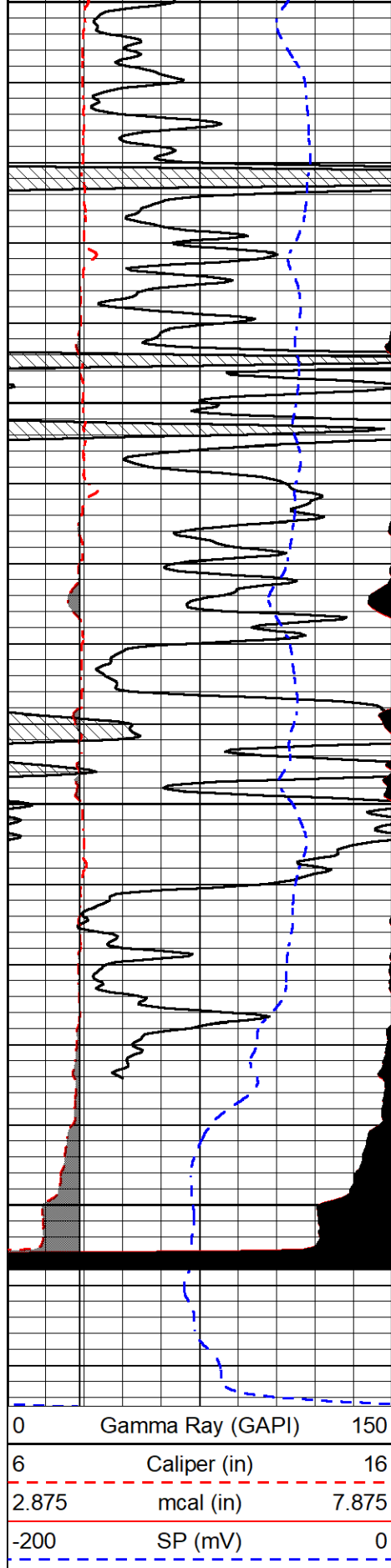


4500

4550







### Calibration Report

Database File russell\_johnson 14-1.db  
 Dataset Pathname stkml/pass4.10  
 Dataset Creation Mon Aug 15 20:11:54 2022

## Dual Induction Calibration Report

Serial-Model:  
Surface Cal Performed:

505 HT-M&W  
Wed Feb 2 12:55:14 2022

| Loop:  | Readings |          | References |         |        | Results |         |
|--------|----------|----------|------------|---------|--------|---------|---------|
|        | Air      | Loop     | Air        | Loop    |        | m       | b       |
| Deep   | 167.000  | 835.000  | 0.000      | 255.800 | mmho/m | 0.480   | -59.000 |
| Medium | 1348.000 | 1348.000 | 0.000      | 255.800 | mmho/m | 0.390   | -56.000 |

## Microlog Calibration Report

Serial-Model:  
Performed:

401-PSI STKBL ML  
Mon Aug 1 06:22:24 2022

|         | Readings |        | References |         |       | Results    |           |
|---------|----------|--------|------------|---------|-------|------------|-----------|
|         | Zero     | Cal    | Zero       | Cal     |       | m          | b         |
| Normal  | 0.0037   | 0.0043 | 0.0000     | 10.0000 | Ohm-m | 15000.0000 | -1.5000   |
| Inverse | 0.1208   | 0.0013 | 0.0000     | 10.0000 | Ohm-m | 14700.0000 | -0.8000   |
| Caliper | 1.0049   | 1.0846 | 5.5000     | 20.0000 | in    | 135.0000   | -131.2500 |

## Compensated Density Calibration Report

Serial-Model:  
Source #:  
Master Calibration Performed:

304-04-M&W  
21170B  
Sun May 29 09:31:45 2022

## Master Calibration

|                     | Density |      | Far Detector                | Near Detector |     |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium           | 1.755   | g/cc | 6392.84                     | 8538.69       | cps |
| Aluminum            | 2.685   | g/cc | 1184.69                     | 5433.63       | cps |
| Spine Angle = 74.99 |         |      | Density/Spine Ratio = 0.533 |               |     |
|                     | Size    |      | Reading                     |               |     |
| Small Ring          | 4.00    | in   | 1.15                        |               |     |
| Large Ring          | 14.00   | in   | 1.02                        |               |     |

## Compensated Neutron Calibration Report

Serial-Model:  
Source #:  
Master Calibration Performed:

210-M&W  
N-1238  
Fri Dec 3 09:16:24 2021

## Master Calibration

| Detector    | Readings |     | Target      | Normalization |
|-------------|----------|-----|-------------|---------------|
| Short Space | 6240.00  | cps | 1000.00 cps | 1.6025        |
| Long Space  | 460.00   | cps | 1000.00 cps | 1.9500        |

## Gamma Ray Calibration Report

Serial Number: 103  
Tool Model: M&W  
Performed: Fri Dec 3 12:13:24 2021

Performed:

11 Dec 5 12:13:24 2021

|                     |        |          |
|---------------------|--------|----------|
| Calibrator Value:   | 500.0  | GAPI     |
| Background Reading: | 28.0   | cps      |
| Calibrator Reading: | 986.0  | cps      |
| Sensitivity:        | 0.5700 | GAPI/cps |



|         |                   |
|---------|-------------------|
| Company | Russell Oil, Inc. |
| Well    | Johnson #14-1     |
| Field   |                   |
| County  | Logan             |
| State   | Kansas            |