



MICRORESISTIVITY LOG

Company CARMEN SCHMITT, INC
Well WP UNIT NO. 4-7
Field N/A
County TREGO **State** KANSAS

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Well WP UNIT NO. 4-7
Field N/A
County TREGO
State KANSAS

Location: API #: 15-195-23033-00-00
 775' FSL & 1690' FWL
 SEC 7 TWP 14S RGE 25W
 Permanent Datum GROUND LEVEL Elevation 2430'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services: CNL/CDL DIL
 Elevation: K.B. 2435', D.F. N/A, G.L. 2430'

| | |
|------------------------|---------------|
| Date | 12/12/2017 |
| Run Number | ONE |
| Depth Driller | 4360' |
| Depth Logger | 4360' |
| Bottom Logged Interval | 4359' |
| Top Log Interval | 3400' |
| Casing Driller | 8.625" @ 218' |
| Casing Logger | 214' |
| Bit Size | 7.875" |
| Type Fluid in Hole | CHEMICAL |
| Salinity, ppm CL | 900 |
| Density / Viscosity | 9.2 53 |
| pH / Fluid Loss | 10.5 6.8 |
| Source of Sample | FLOWLINE |
| Rm @ Meas. Temp | 1.0 @ 54 |
| Rmt @ Meas. Temp | .75 @ 54 |
| Rmc @ Meas. Temp | 1.35 @ 54 |
| Source of Rmf / Rmc | CHARTS |
| Rm @ BHT | .45 @ 120 |
| Operating Rig Time | 2 HOURS |
| Max Rec. Temp. F | 120 DEGF |
| Equipment Number | 108 |
| Location | HAYS |
| Recorded By | J. HENRICKSON |
| Witnessed By | BRAD RINE |

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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.
 COLLYER KANSAS
 12 1/2 SOUTH, 3/4 WEST, NORTH INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

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www.pioneerenergy.com 785-625-3858

| | |
|--|---|
| Your Pioneer Energy Services Crew Engineer: J. HENRICKSON Operator: Operator: Operator: | This Log Record Was Witnessed By Primary Witness: BRAD RINE Secondary Witness: Secondary Witness: Secondary Witness: |
|--|---|

Log Variables

DatabaseC:\ProgramData\Warrior\Data\carmenschmitt_wp_unit_3_7.db
 Dataset field/well/stackml/pass3.1/_vars_

Top - Bottom

| | | | | | | | |
|-----------|--------------|------------------|-------------------|----------------|------------------|-------|------------------|
| A | BOREID in | BOTTEMP degF | CASEOD in | CASETHCK in | FLUIDDEN g/cc | M | MATRXDEN g/cc |
| 1 | 7.875 | 120 | 5.5 | 0 | 1 | 2 | 2.71 |
| NPORSEL | PERFS | SNDERR mmho/m | SNDERRM mmho/m | SPSHIFT mV | SRFTEMP degF | SZCOR | TDEPTH ft |
| Limestone | 0 | 0 | 0 | -365 | 0 | Off | 4360 |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------------------|-------------------------|-----------|--|-------------|-----------|-------------|
| GR | 40.58 | | GR-M&W (89-M&W) | 3.00 | 3.50 | 50.00 |
| CNLSC CNSSC | 37.48 36.73 | | CNT-M&W (tk10-MW) | 5.50 | 3.50 | 100.00 |
| LSD DCAL SSD | 28.43 28.42 27.93 | | CDL-M&W (168-986) | 8.50 | 4.00 | 250.00 |
| MCAL MI MN | 19.83 19.83 19.83 | | ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools | 7.58 | 4.00 | 65.00 |
| RLL3 RLL3F | 15.80 15.79 | | | | | |
| CILD | 8.00 | | DIL-M&W (PSI 978) | 18.50 | 3.50 | 220.00 |

CILM 4.70

SP 0.20

Dataset: carmenschmitt_wp_unit_3_7.db: field/well/stackml/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

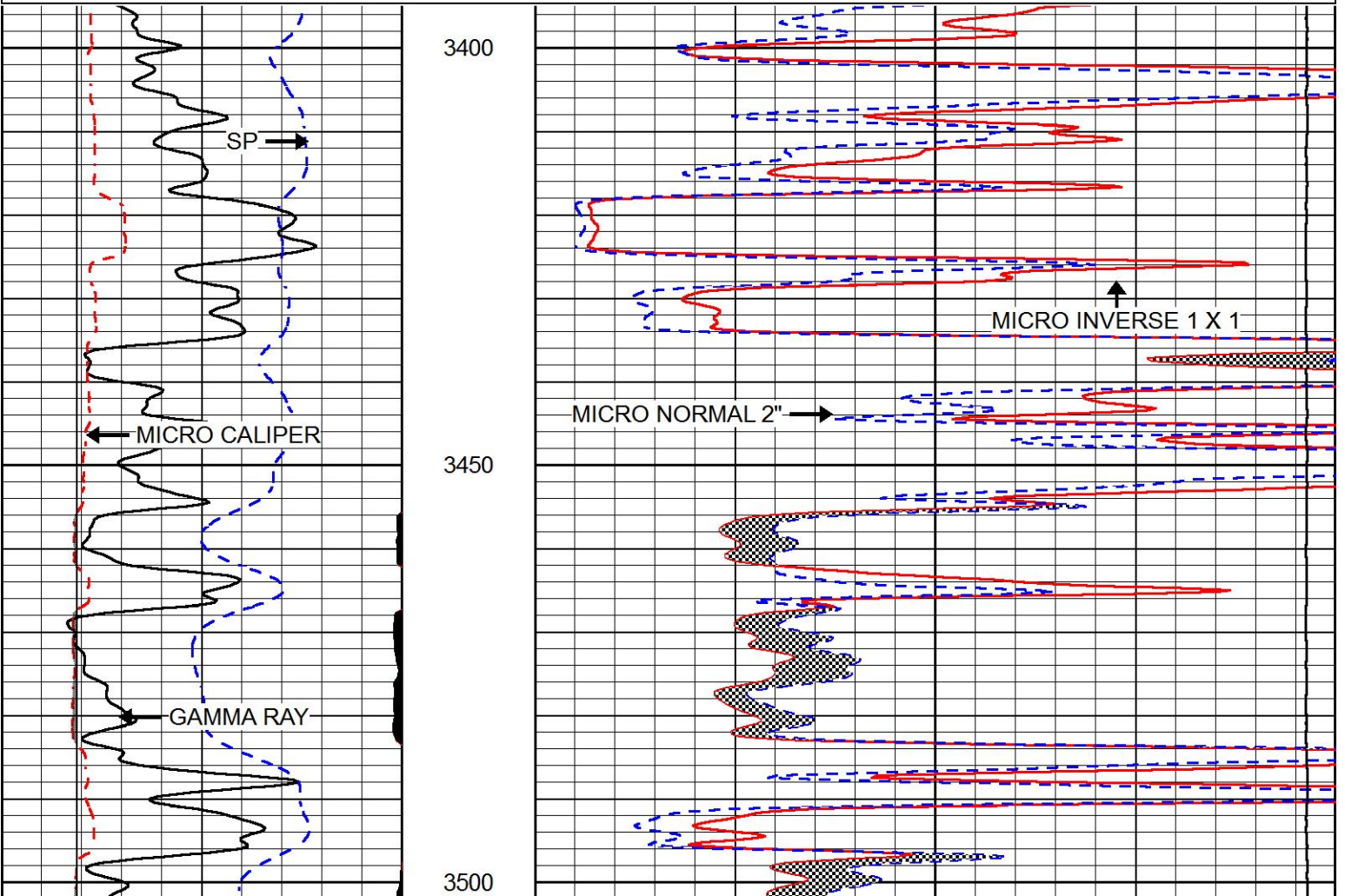


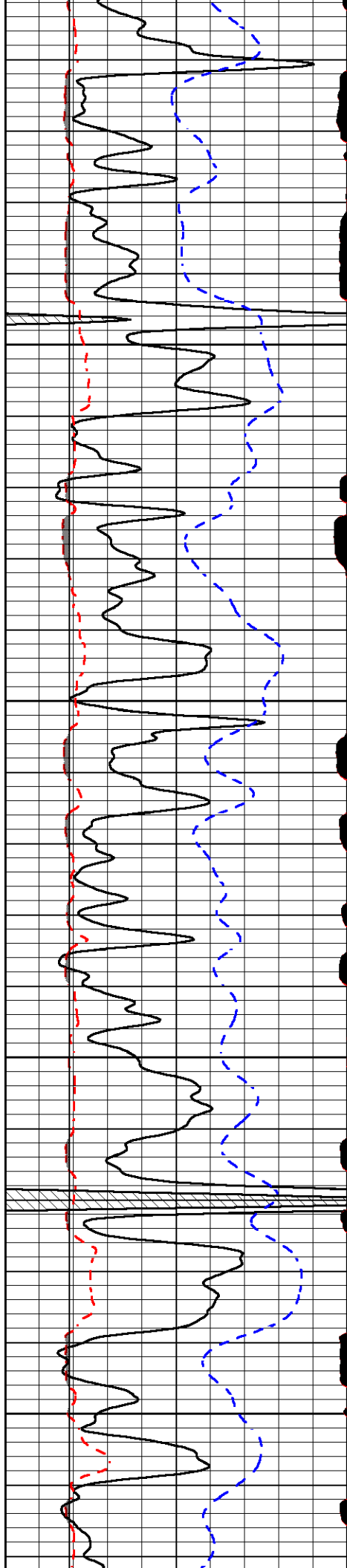
MAIN PASS

Database File carmenschmitt_wp_unit_3_7.db
 Dataset Pathname stackml/pass3.1
 Presentation Format micro
 Dataset Creation Tue Dec 12 05:32:38 2017
 Charted by Depth in Feet scaled 1:240

| | | |
|------|--------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | MICRO CALIPER (in) | 16 |
| 6 | BIT SIZE (in) | 16 |
| -200 | SP (mV) | 0 |

| | | |
|-------|-----------------------------|----|
| 0 | MICRO INVERSE 1 X 1 (Ohm-m) | 40 |
| 0 | MICRO NORMAL 2" (Ohm-m) | 40 |
| 15000 | LINE TENSION (lb) | 0 |



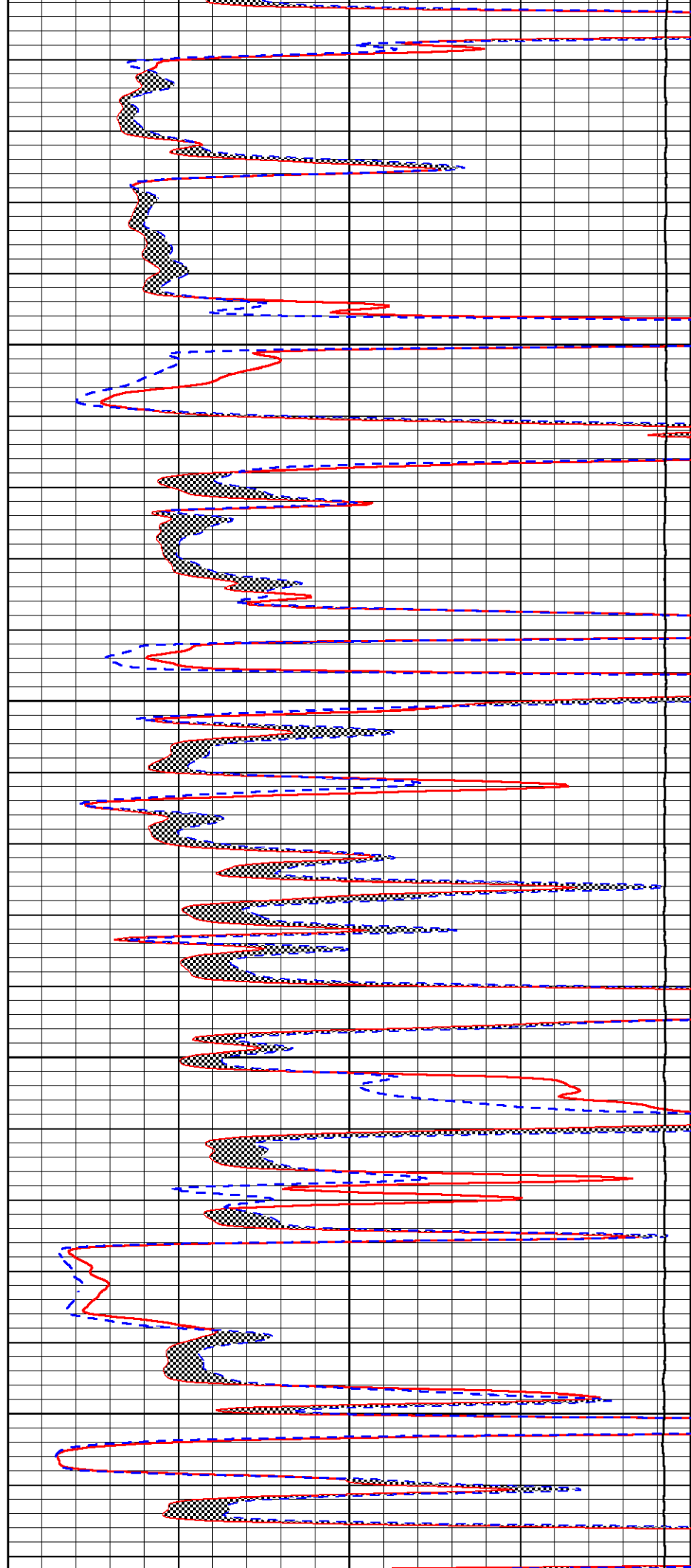


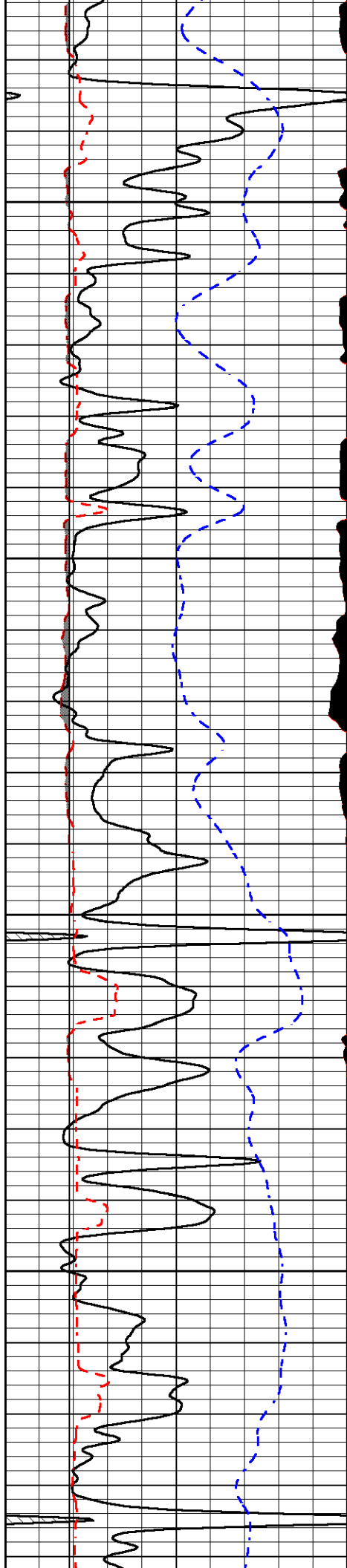
3550

3600

3650

3700



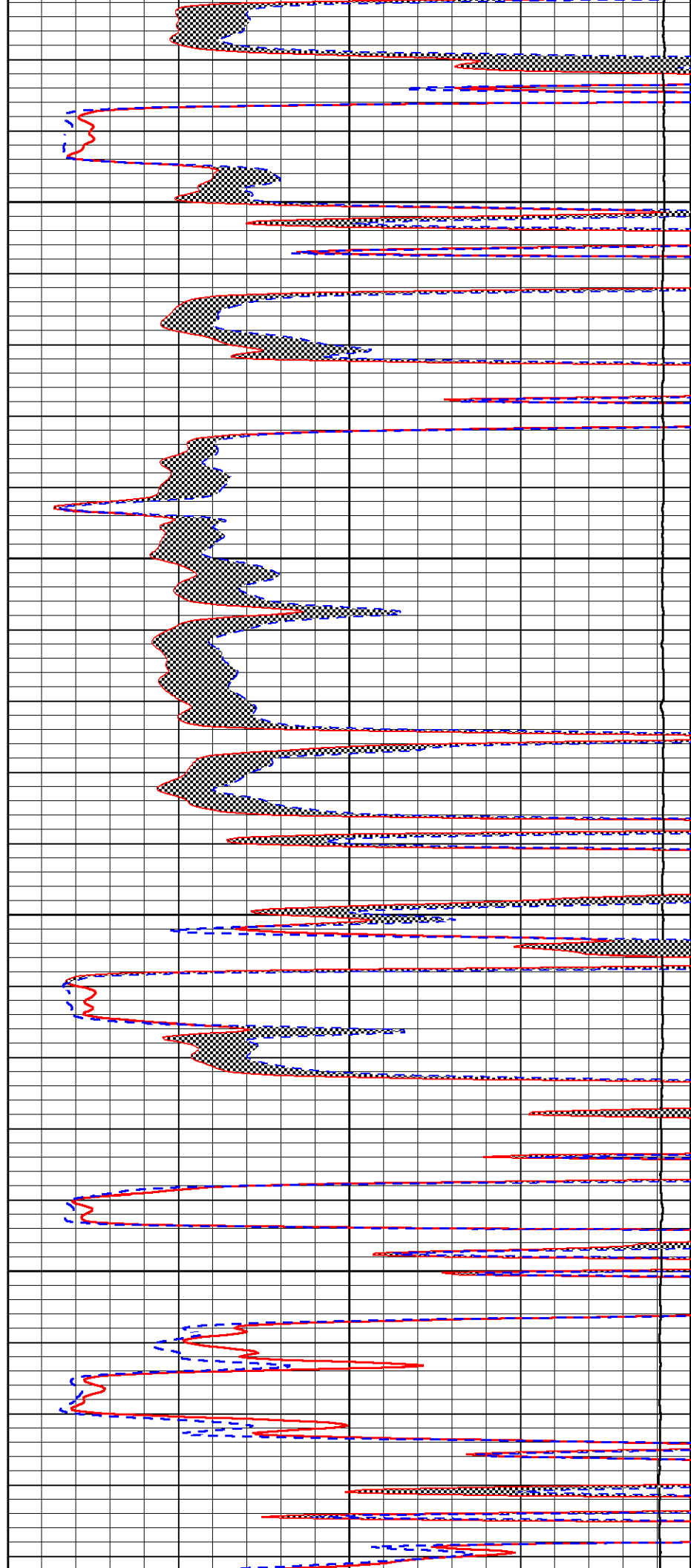


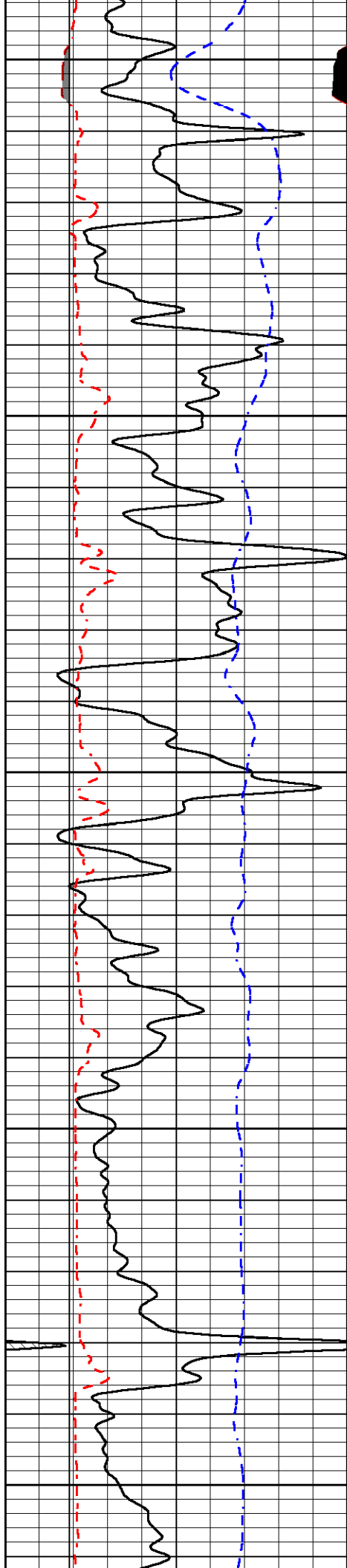
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3800

3850

3900





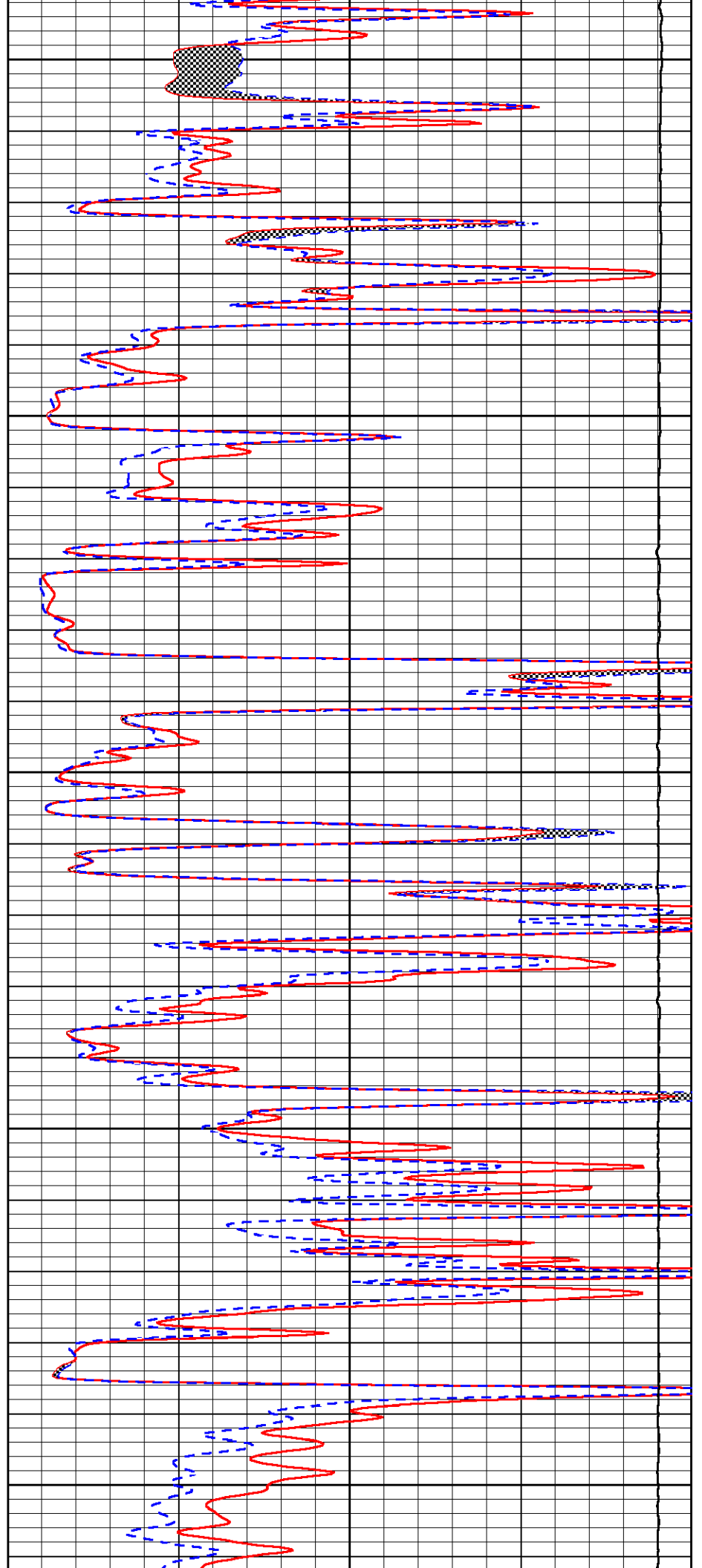
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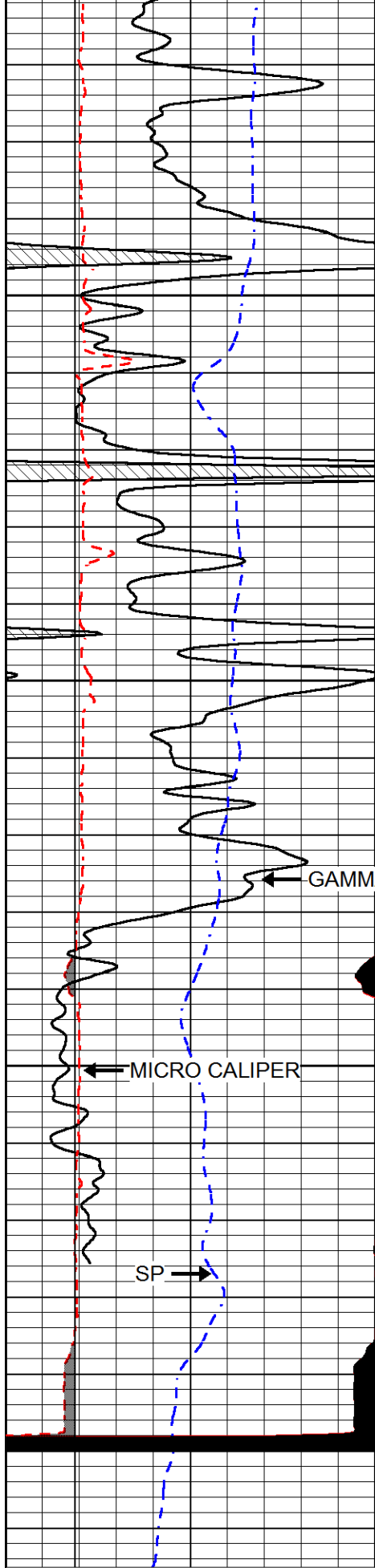
4000

4050

4100

4150





4200

4250

4300

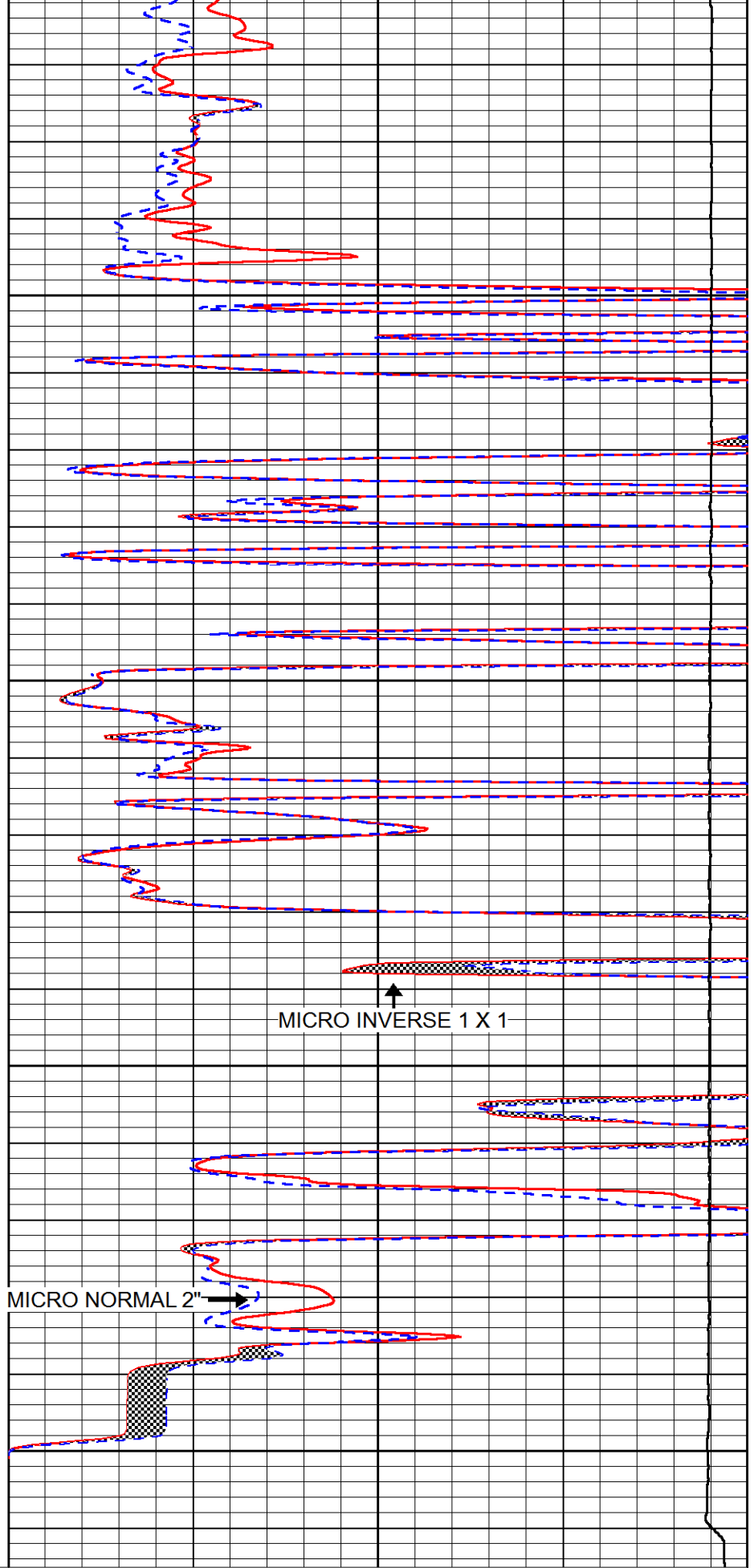
4350

GAMMA RAY

MICRO CALIPER

SP

| | | |
|-----|--------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | MICRO CALIPER (in) | 16 |
| 6 | BIT SIZE (in) | 16 |
| 200 | SP (mV) | 0 |



MICRO INVERSE 1 X 1

MICRO NORMAL 2"

| | | |
|-------|-----------------------------|----|
| 0 | MICRO INVERSE 1 X 1 (Ohm-m) | 40 |
| 0 | MICRO NORMAL 2" (Ohm-m) | 40 |
| 15000 | LINE TENSION (lb) | 0 |

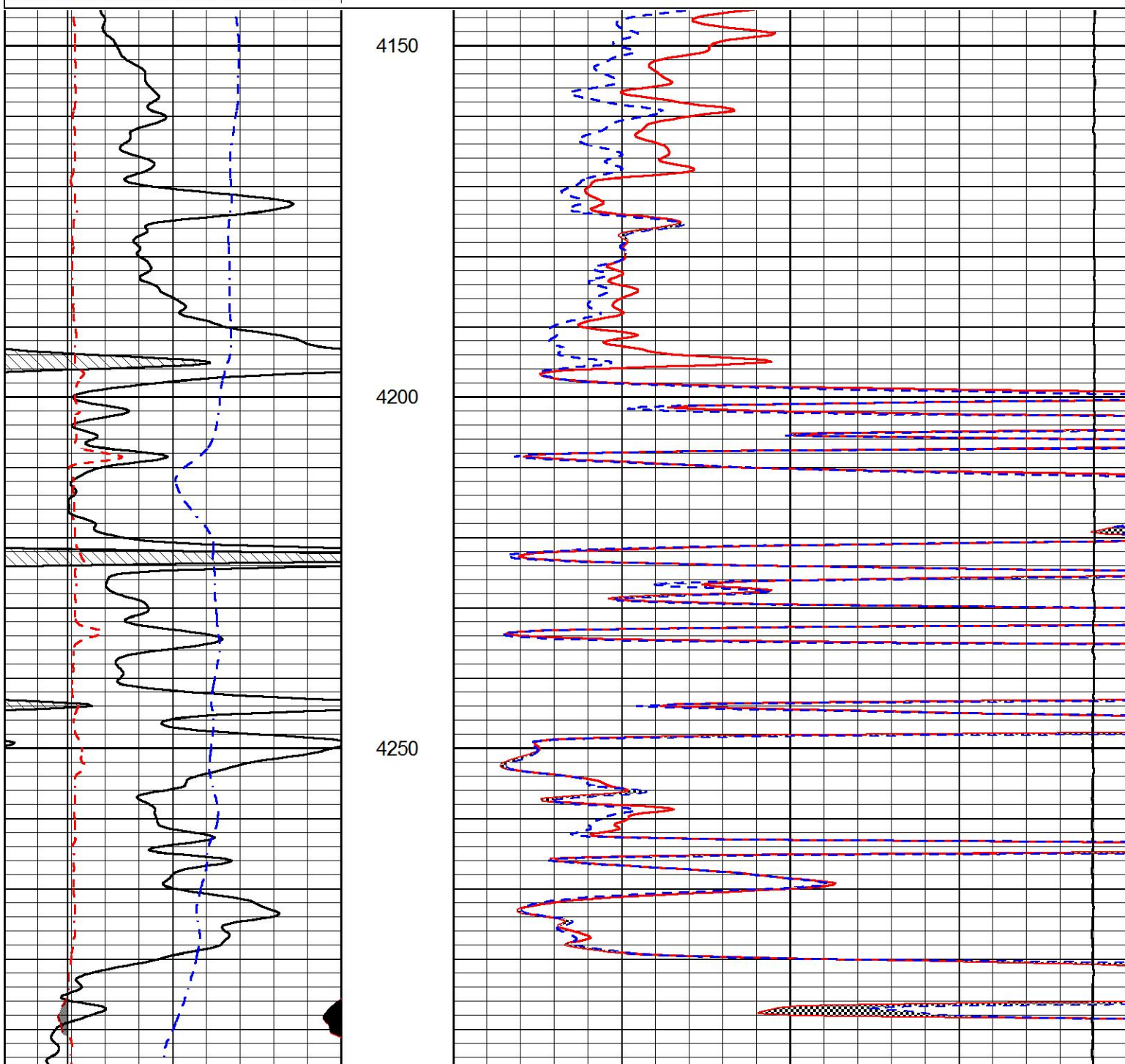


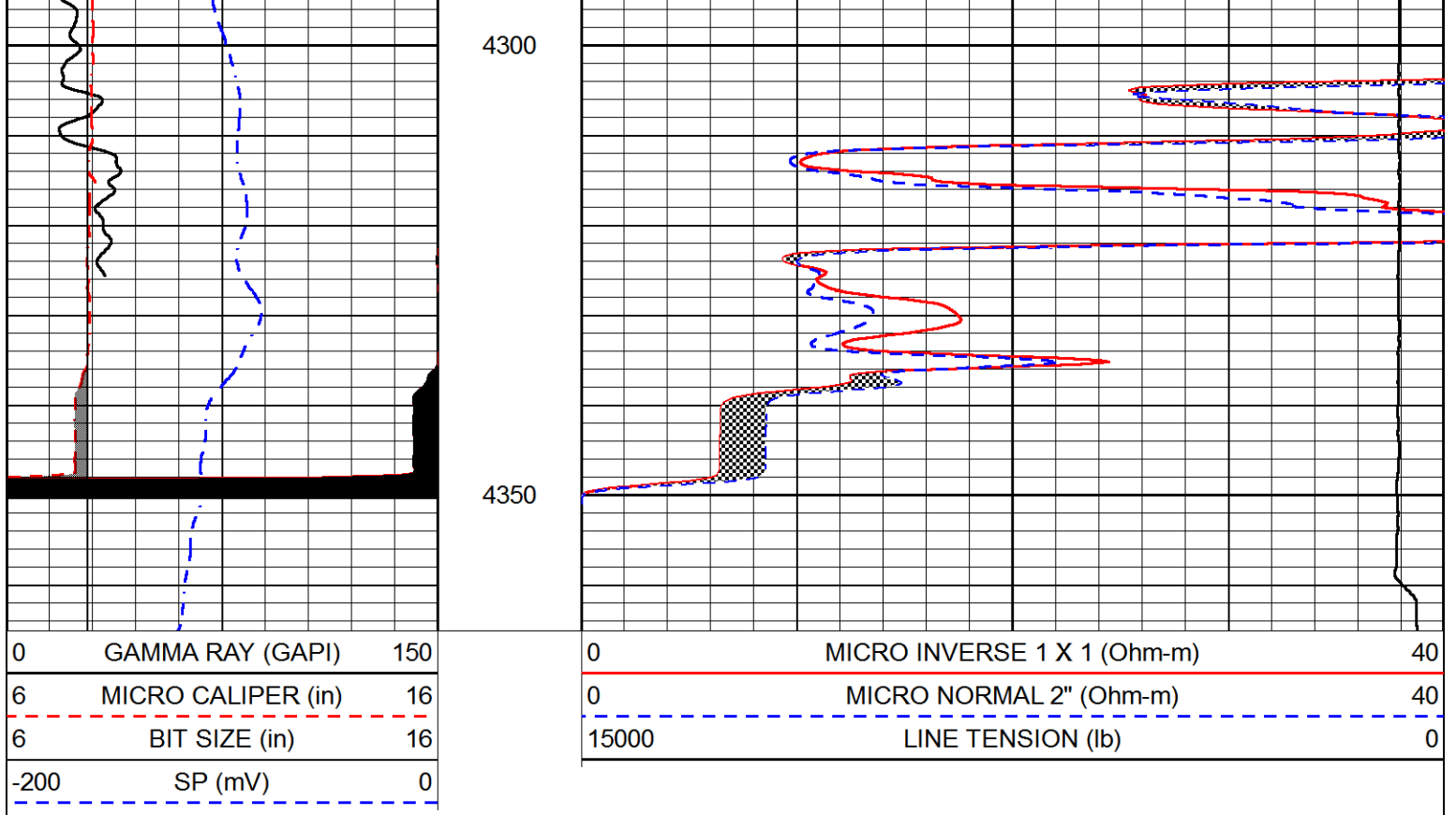
REPEAT SECTION

Database File carmenschmitt_wp_unit_3_7.db
 Dataset Pathname stackml/pass2.1
 Presentation Format micro
 Dataset Creation Tue Dec 12 05:32:50 2017
 Charted by Depth in Feet scaled 1:240

| | | |
|------|--------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | MICRO CALIPER (in) | 16 |
| 6 | BIT SIZE (in) | 16 |
| -200 | SP (mV) | 0 |

| | | |
|-------|-----------------------------|----|
| 0 | MICRO INVERSE 1 X 1 (Ohm-m) | 40 |
| 0 | MICRO NORMAL 2" (Ohm-m) | 40 |
| 15000 | LINE TENSION (lb) | 0 |





Calibration Report

Database File: carmenschmitt_wp_unit_3_7.db
 Dataset Pathname: stackml/pass3.1
 Dataset Creation: Tue Dec 12 05:32:38 2017

Dual Induction Calibration Report

Serial-Model: PSI 978-M&W
 Calibration Performed: Tue Dec 12 04:08:11 2017

| Loop: | Readings | | References | | | Results | |
|--------|----------|----------|------------|---------|--------|---------|---------|
| | Air | Loop | Air | Loop | | Gain | Offset |
| Deep | 178.615 | 710.235 | 0.000 | 255.800 | mmho/m | 0.570 | -36.500 |
| Medium | 161.982 | 1441.110 | 0.000 | 255.800 | mmho/m | 0.420 | -35.000 |

Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML
 Performed: Fri Jun 23 01:25:19 2017

| | Readings | | References | | | Results | |
|---------|----------|--------|------------|---------|-------|------------|-----------|
| | Zero | Cal | Zero | Cal | | m | b |
| Normal | 0.0031 | 0.0043 | 0.0000 | 10.0000 | Ohm-m | 14000.0000 | 0.0000 |
| Inverse | 0.0000 | 0.0013 | 0.0000 | 10.0000 | Ohm-m | 16000.0000 | 0.0000 |
| Caliper | 1.0020 | 1.0834 | 5.5000 | 16.5000 | in | 135.1560 | -131.3000 |

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

| | Density | | Far Detector | Near Detector | |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium | 1.755 | g/cc | 4691.86 | 4818.19 | cps |
| Aluminum | 2.690 | g/cc | 859.57 | 3020.22 | cps |
| Spine Angle = 74.61 | | | Density/Spine Ratio = 0.531 | | |
| | Size | | Reading | | |
| Small Ring | 4.00 | in | 1.03 | | |
| Large Ring | 14.00 | in | 1.23 | | |

Compensated Neutron Calibration Report

Serial Number: tk10-MW
 Tool Model: M&W
 Calibration Performed: Wed Nov 16 11:21:36 2016

| 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: 89-M&W
 Tool Model: M&W
 Calibration Performed: Tue Apr 11 17:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



PIONEER
 Pioneer Energy Services

Company CARMEN SCHMITT, INC
 Well WP UNIT NO. 4-7
 Field N/A
 County TREGO
 State KANSAS