



MICRO RESISTIVITY LOG

| | |
|------------------------------|-----------------------|
| Company | Patterson Energy |
| Well | Zwillich #1 |
| Field | Lorraine |
| County | Ellsworth |
| State | Kansas |
| Location: | 660' FNL & 2310' FEL |
| API #: | 15 053 21376 |
| Other Services | DIL LTHO |
| Elevation | 1775' |
| Perment Datum | SEC 23 TWP 17S RGE 9W |
| Log Measured From | Ground level |
| Drilling Measured From | KB 11' AGL |
| Date | 6/13/21 |
| Run Number | 3270 |
| Depth Driller | Two |
| Bottom Logged Interval | 3287' |
| Top Log Interval | 8,540' |
| Casing Under | 8,535 @ 25' |
| Case Log | 7.89' |
| Time Fluid in Hole | 7.89' |
| Time Fluid in Hole | 7.89' |
| Channel | Chickadee 9,000 PPM |
| Density / Viscosity | 9.450 |
| pH / Fluid Loss | 10.5/0.0 |
| Source of Sample | Pit |
| Rm @ Meas. Temp | 0.66 @ 60degf |
| Rmf @ Meas. Temp | 0.56 @ 60degf |
| Rmc @ Meas. Temp | 0.66 @ 60degf |
| Source of Rmf / Rmc | Calculated |
| Rm @ BHT | 0.4 @ 114degf |
| Time Circulation Stopped | 9:00 p.m. |
| Time Logger on Bottom | 12:50 a.m. |
| Maximum Recorder Temperature | 114degf |
| Equipment Number | 114605 |
| Location | HAYS, KS |
| Recorded By | Casey Patterson |
| Witnessed By | Mt. Assin Nicks |

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

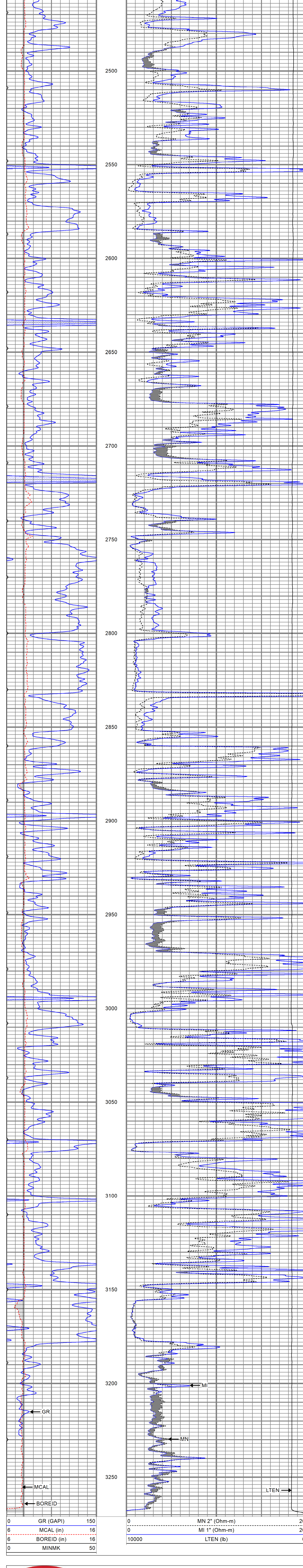
Lorraine, KS Central Prairie Co-op
Ave V 2 mi. East, South into Location

LATITUDE/LONGITUDE
38.5635072, -98.2832565

Thanks for using Gemini Wireline LLC
785-625-1182

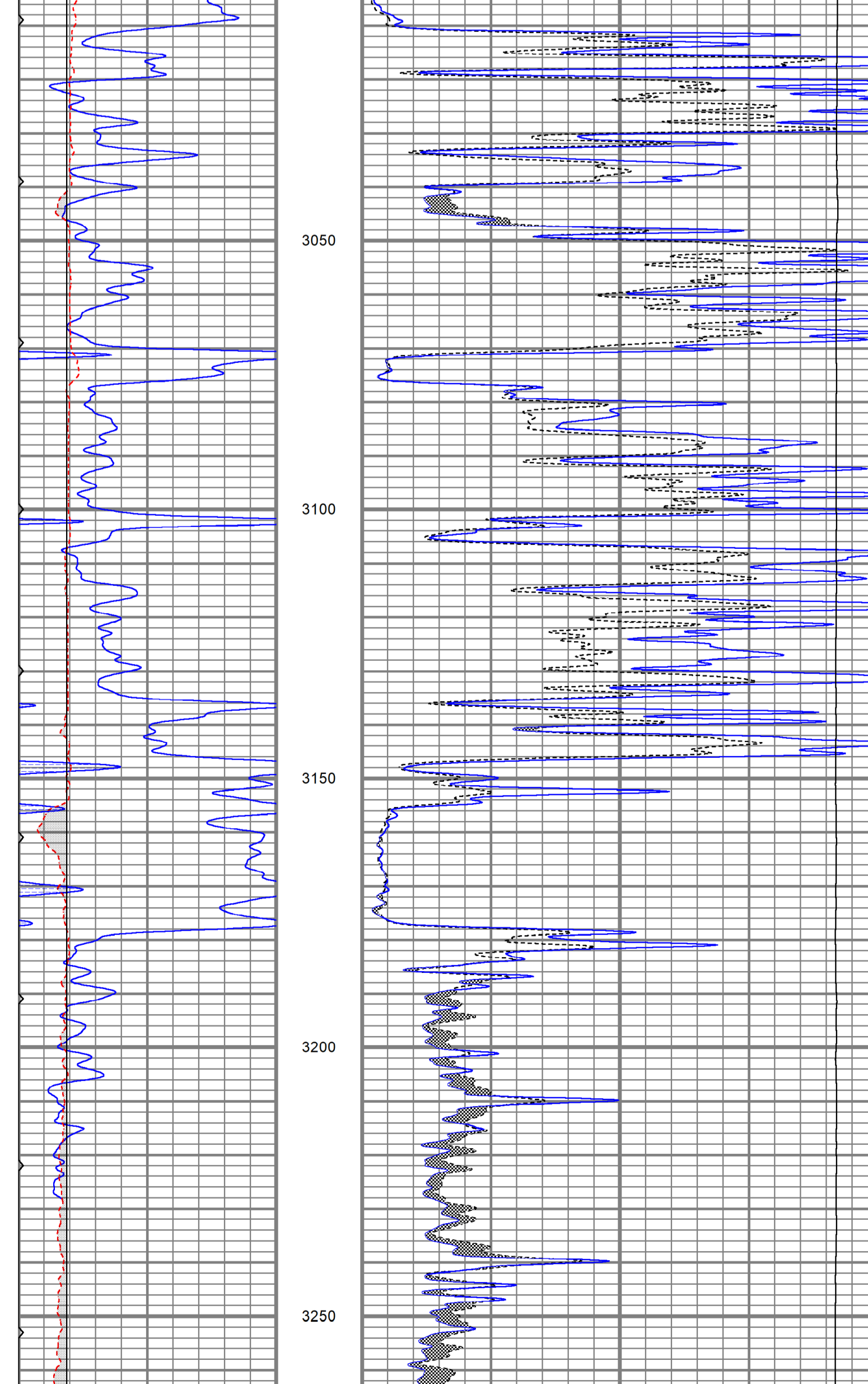
MAIN PASS

Database File: pezwillich#1oh.db
 Dataset Pathname: pass4
 Presentation Format: kml
 Dataset Creation: Sun Jun 13 01:16:00 2021
 Charted by: Depth in Feet scaled 1:240



REPEAT SECTION

Database File: pezwillich#1oh.db
 Dataset Pathname: pass3
 Presentation Format: kml
 Dataset Creation: Sun Jun 13 01:00:17 2021
 Charted by: Depth in Feet scaled 1:240



Calibration Report

Database File: pezwillich#1oh.db
 Dataset Pathname: pass4
 Dataset Creation: Sun Jun 13 01:16:00 2021

Microlog Calibration Report

Serial-Model: 1600-Pengo
 Performed: Sun Jun 13 00:58:55 2021

| | Readings | | | References | | | Results | |
|---------|----------|--------|---|------------|---------|-------|---------|---------|
| | Zero | Cal | | Zero | Cal | | m | b |
| Normal | 0.0065 | 0.4836 | V | 0.0000 | 10.0000 | Ohm-m | 20.9593 | -0.1356 |
| Inverse | 0.0062 | 0.6325 | V | 0.0000 | 10.0000 | Ohm-m | 15.9688 | -0.0996 |
| Caliper | 2.9973 | 6.1045 | V | 7.6500 | 15.0000 | in | 2.3655 | 0.5600 |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------|-------------|-----------|-----------------|-------------|-----------|-------------|
| MCAL | 1.30 | | CHD-None | 0.75 | 1.50 | 5.00 |
| MI | 1.30 | | ML-Pengo (1600) | 6.97 | 3.50 | 100.00 |
| MN | 1.30 | | | | | |

Dataset: pezwillich#1oh.db; field/well/run1/pass4
 Total length: 7.72 ft
 Total weight: 105.00 lb
 O.D.: 3.50 in