



MIDWEST WIRELINE

# MICRORESISTIVITY LOG

Company **Ritchie Exploration, Inc.**  
 Well **#3 Myrill 19A**  
 Field **Todd Northeast**  
 County **Rooks** State **Kansas**

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Location: **API #: 15-163-24446-00-00**  
**63 S & 112 W of S2 NW/NE**  
**1053 FNL & 2092 FEL**  
**SEC 19 TWP 6S RGE 20W**

Permanent Datum **Ground Level** Elevation **2281**  
 Log Measured From **Kelly Bushing**  
 Drilling Measured From **Kelly Bushing**

Other Services  
**CNL/CDL**  
**DIL/BHCS**

Elevation  
 K.B. **2288**  
 D.F. **2281**  
 G.L. **2281**

Date	11/28/2021
Run Number	Two
Depth Driller	3840
Depth Logger	3838
Bottom Logged Interval	3837
Top Log Interval	3100
Casing Driller	8.625 @ 215
Casing Logger	212
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	2000
Density / Viscosity	9.3 56
pH / Fluid Loss	10.0 6.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.85 @ 68
Rmt @ Meas. Temp	0.64 @ 68
Rmc @ Meas. Temp	1.15 @ 68
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.51 @ 114
Operating Rig Time	4 Hours
Max Rec. Temp. F	114
Equipment Number	P-24
Location	Hays
Recorded By	T. Martin
Witnessed By	Kent Matson

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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.**

Stockton, KS, 5 N to Rd E,  
 15 W to Rd 3, 1 N, 1 W, S & W into

Log Measured From: **Kelly Bushing**      7 Ft. Above Permanent Datum

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

**Your Midwest Wireline Crew**

Engineer: **T. Martin**  
 Operator:  
 Operator:  
 Operator:

**This Log Record Was Witnessed By**

Primary Witness: **Kent Matson**  
 Secondary Witness:  
 Secondary Witness:  
 Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	28.00 28.00 28.00		ML-Pengo (Pengo3)	5.50	3.50	100.00
			CENT-PENGO (4-PENGO)	5.50	3.00	70.00
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50		CENT-PENGO (3-PENGO)	5.50	3.00	70.00

Dataset: ritchie\_#3 wyrill 19a.db: field/well/SonMel/pass3  
 Total length: 32.50 ft  
 Total weight: 540.00 lb  
 O.D.: 3.50 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\ritchie\_#3 wyrill 19a.db  
 Dataset field/well/Stack/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	114	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	145	50	Off	3838

## 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

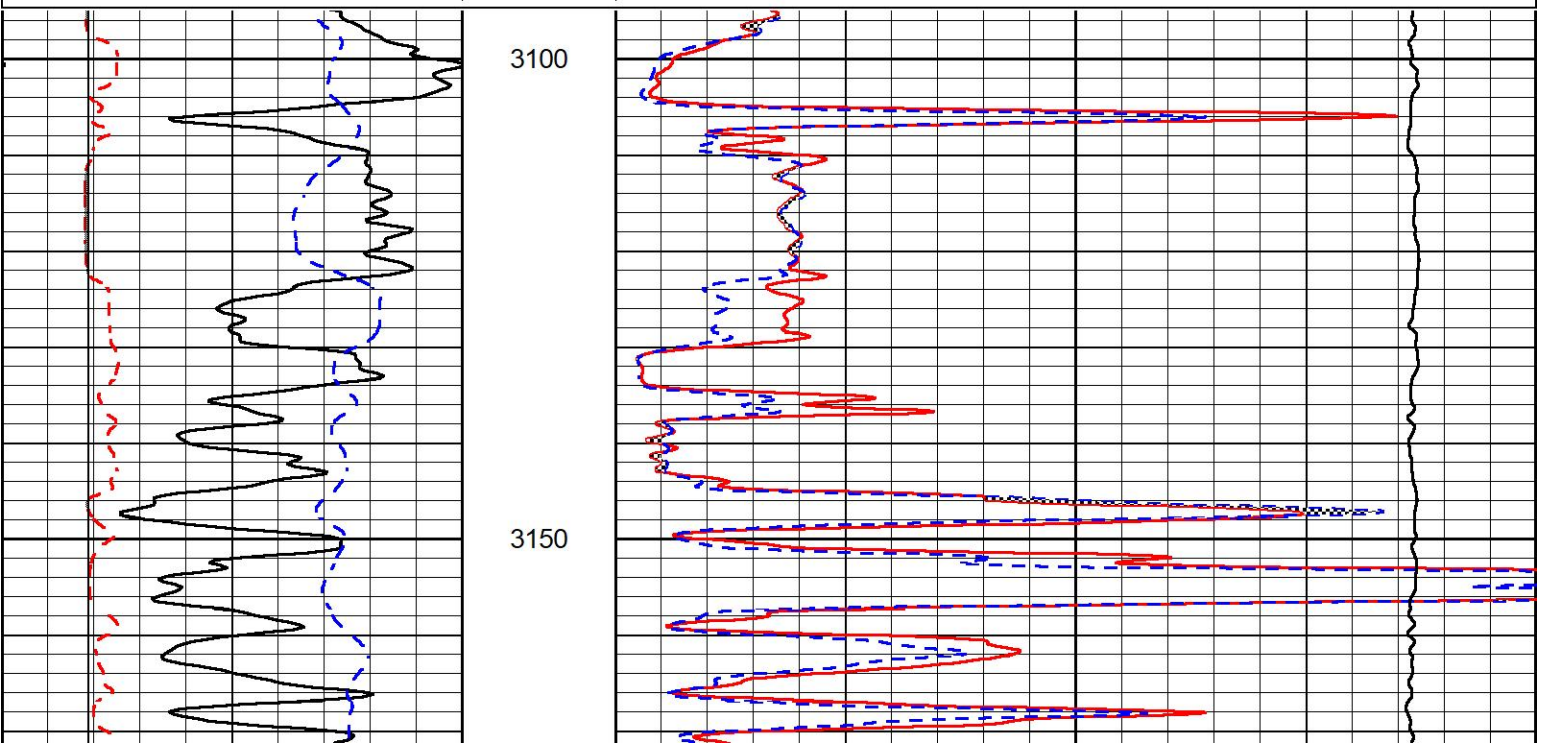


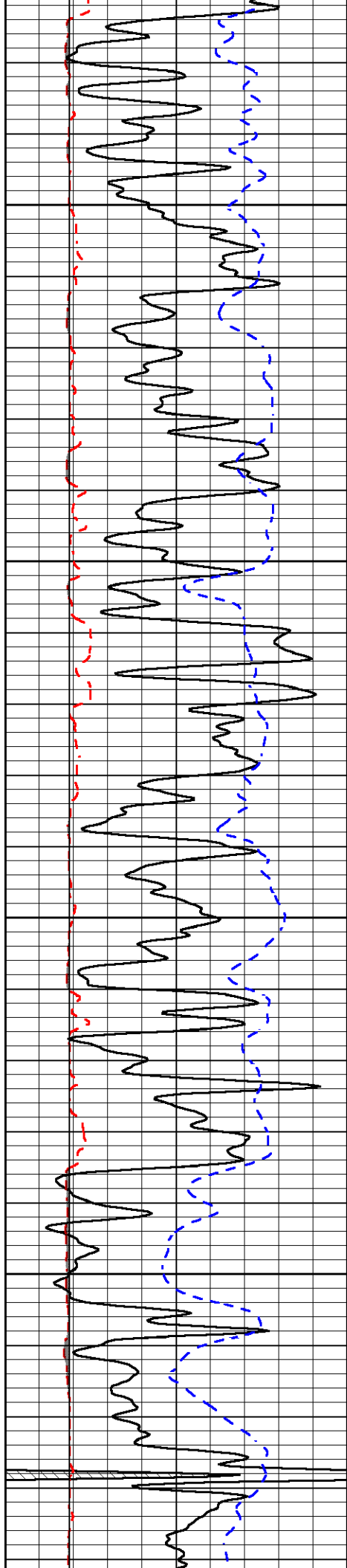
## DETAIL SECTION

### MAIN PASS

Database File        ritchie\_#3 wyrill 19a.db  
 Dataset Pathname    Stack/pass3.1  
 Presentation Format    \_micro  
 Dataset Creation     Sun Nov 28 12:34:00 2021  
 Charted by            Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	0	Micro Inverse 1 X 1 (Ohm-m)	40
6	Caliper (in)	16	0	Micro Normal 2" (Ohm-m)	40
-200	SP (mV)	0	10000	Line Weight (lb)	0



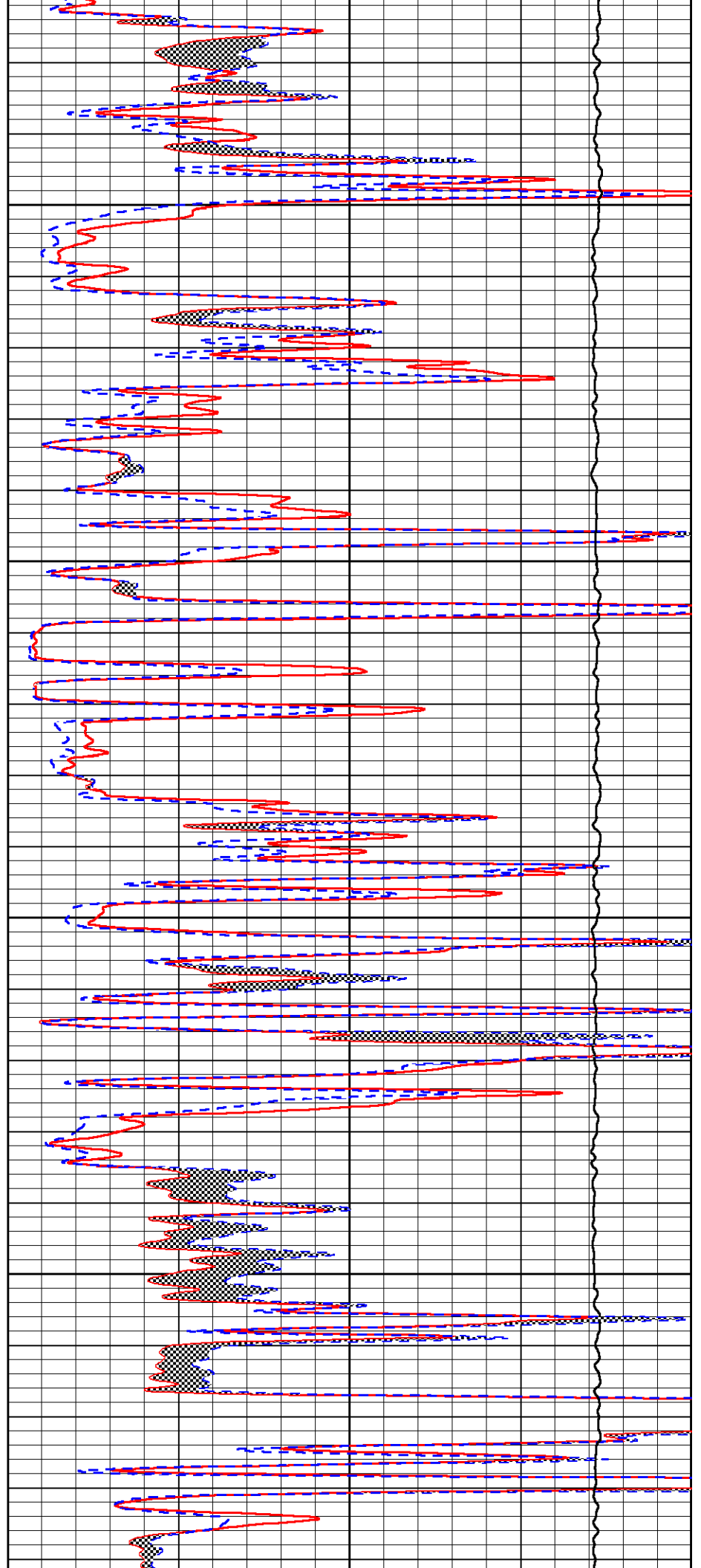


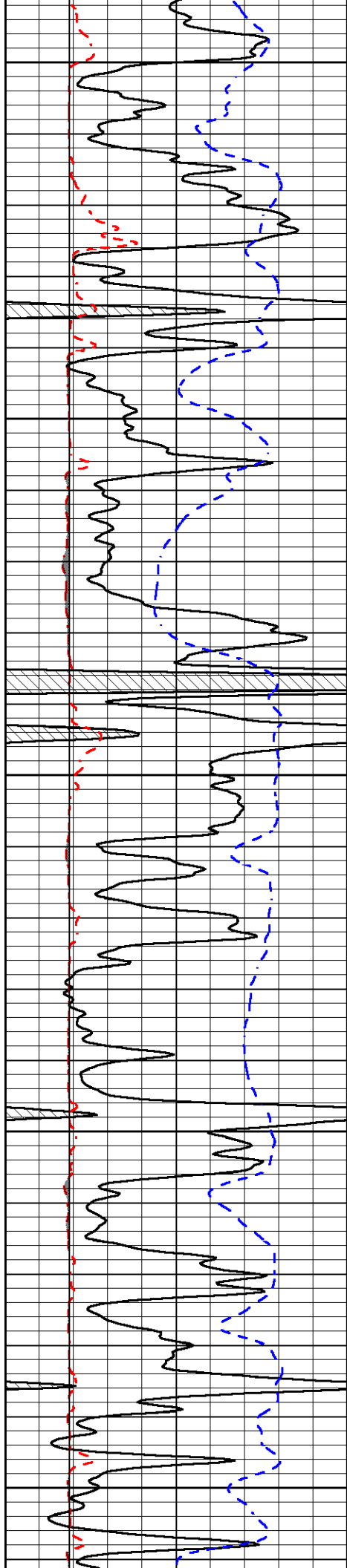
3200

3250

3300

3350





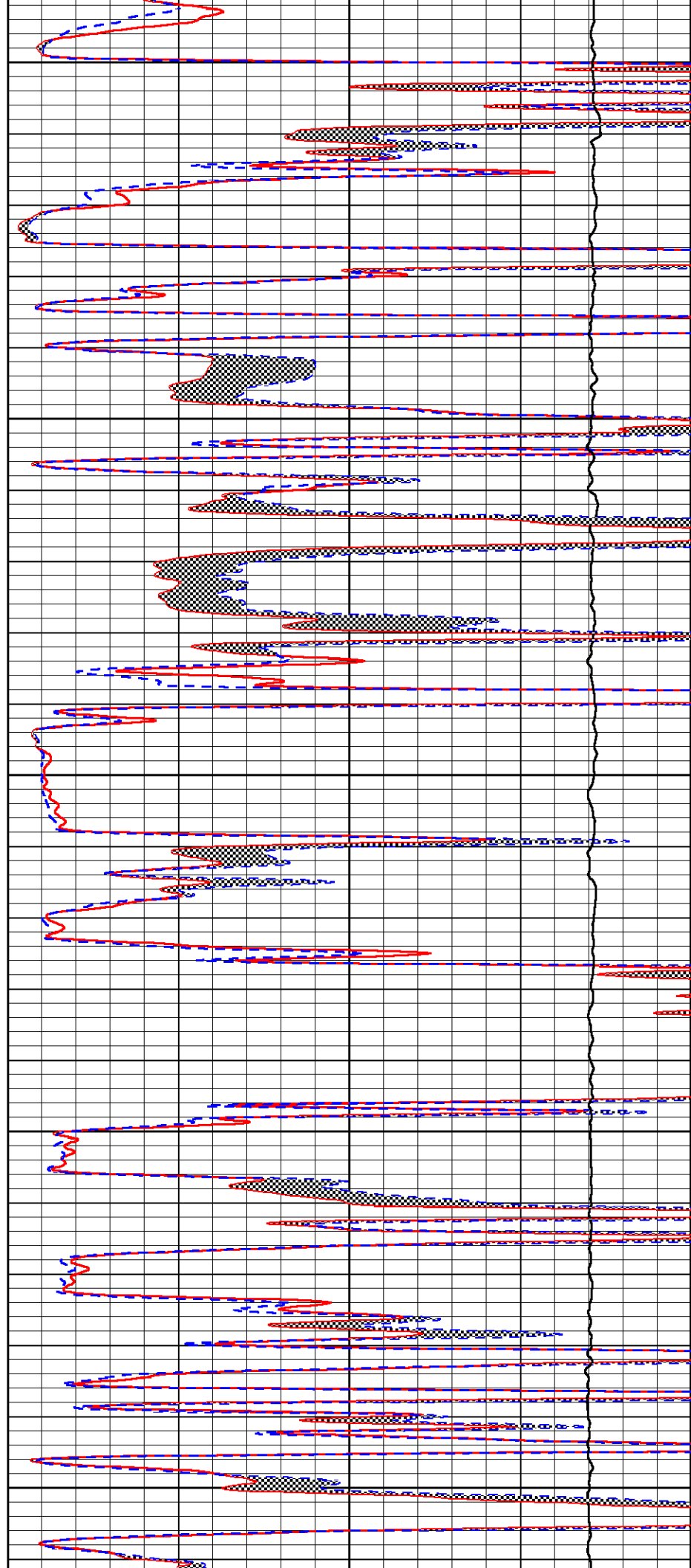
3400

3450

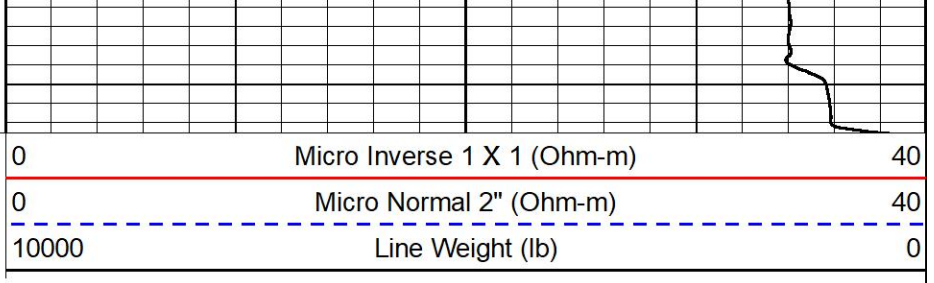
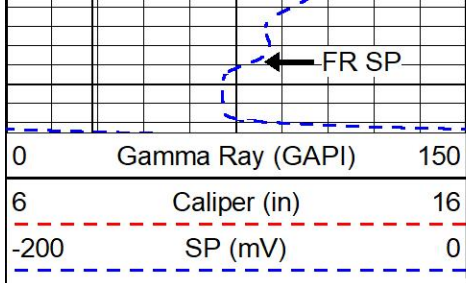
3500

3550

3600







0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-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



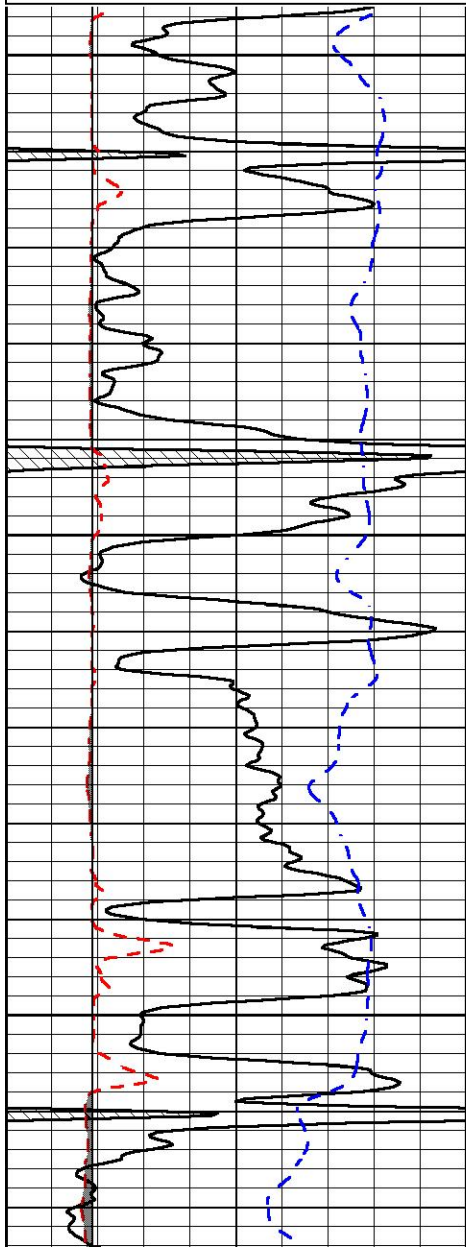
# REPEAT SECTION

## REPEAT PASS

Database File      ritchie\_#3 wyrill 19a.db  
 Dataset Pathname   Stack/pass2.1  
 Presentation Format  \_micro  
 Dataset Creation   Sun Nov 28 11:53:28 2021  
 Charted by         Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-200	SP (mV)	0

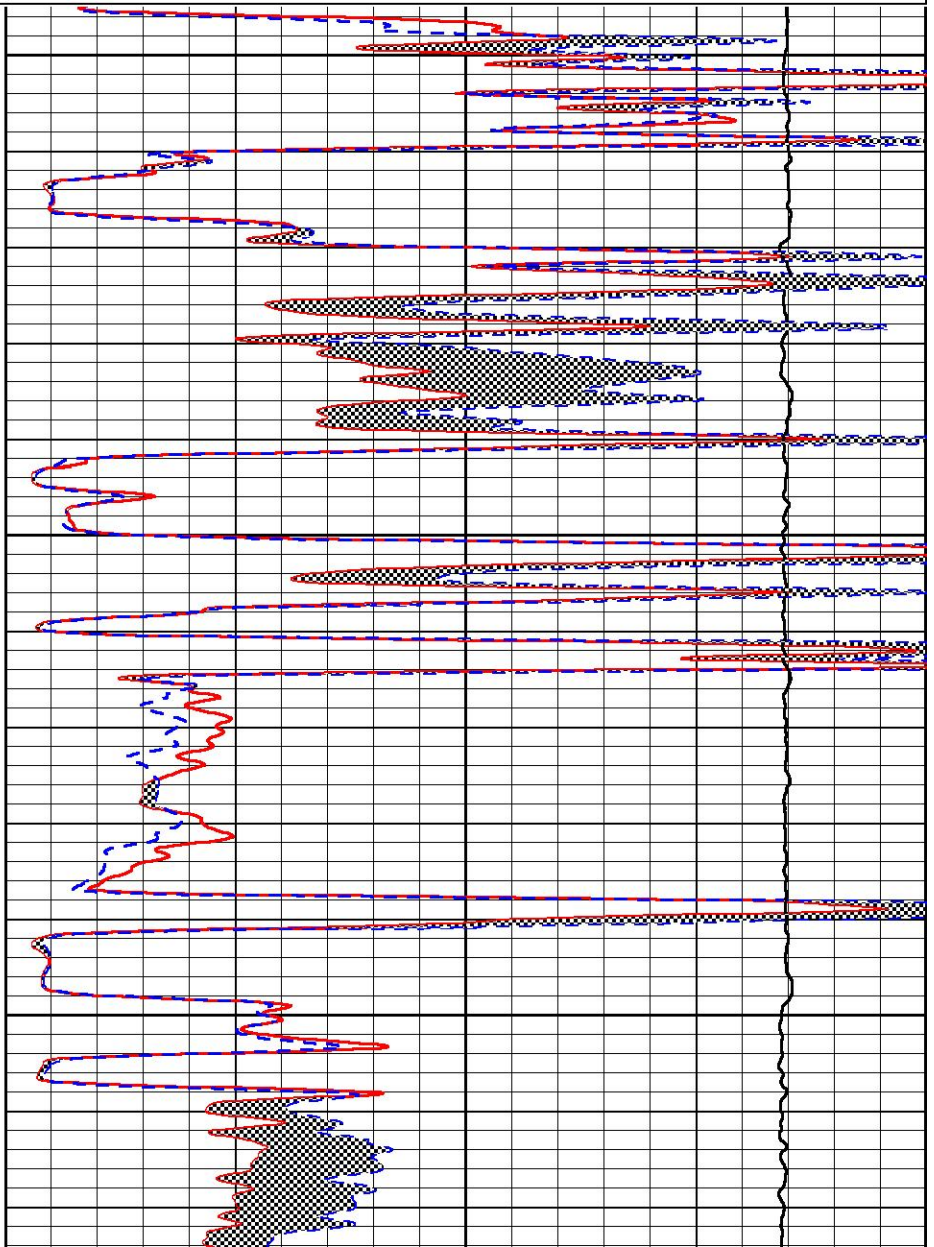
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

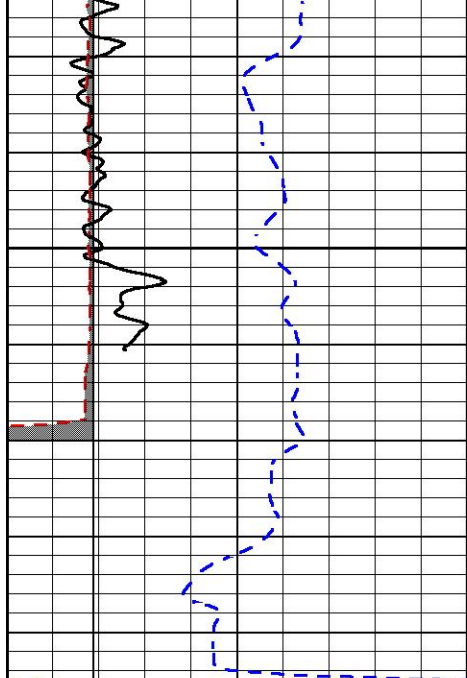


3650

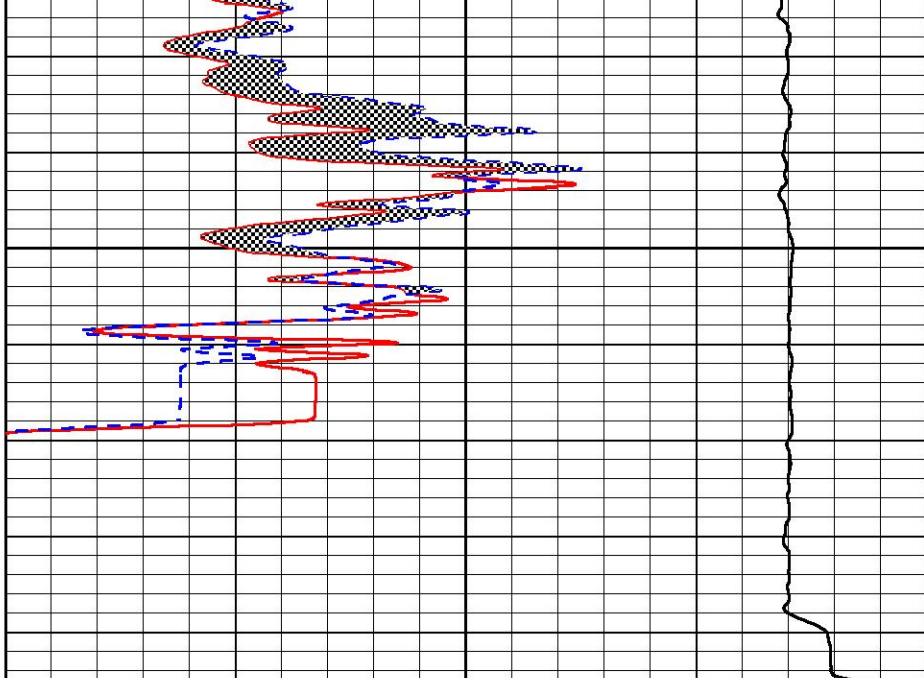
3700

3750





3800



0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
-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



Company     Ritchie Exploration, Inc.  
 Well         #3 Wyrill 19A  
 Field        Todd Northeast  
 County      Rooks  
 State        Kansas