



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company K&N PETROLEUM, INC.
Well NORMAN KLEPPER A NO.1
Field UNKNOWN
County STAFFORD
State KANSAS

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Field UNKNOWN
County STAFFORD State KANSAS

Location: API #: 15-185-24000-00-00

Other Services

NE-SW-SE-SW
475' FSL & 1801' FWL
SEC 17 TWP 22S RGE 11W

CNL/CDL
DIL/BHCS

Permanent Datum GROUND LEVEL Elevation 1830'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1839'
D.F. N/A
G.L. 1830'

Date 10/31/2017

Run Number	TWO
Depth Driller	3700'
Depth Logger	3694'
Bottom Logged Interval	3693'
Top Log Interval	2900'
Casing Driller	8.625" @ 371'
Casing Logger	368'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	12000
Density / Viscosity	9.5 49
pH / Fluid Loss	8.0 14.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.35 @ 58
Rmt @ Meas. Temp	.26 @ 58
Rmc @ Meas. Temp	.47 @ 58
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.18 @ 113
Operating Rig Time	4 HOURS
Max Rec. Temp. F	113 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	WYATT URBAN

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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.

GREAT BEND KANSAS

SOUTH TO HWY 19, EAST TO STAFFORD ROAD, 1 SOUTH
1 3/4 EAST, SOUTH INTO(FOLLOW CURVY ROAD TO WELL)

Log Measured From: KELLY BUSHING 9 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: J. HENRICKSON
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

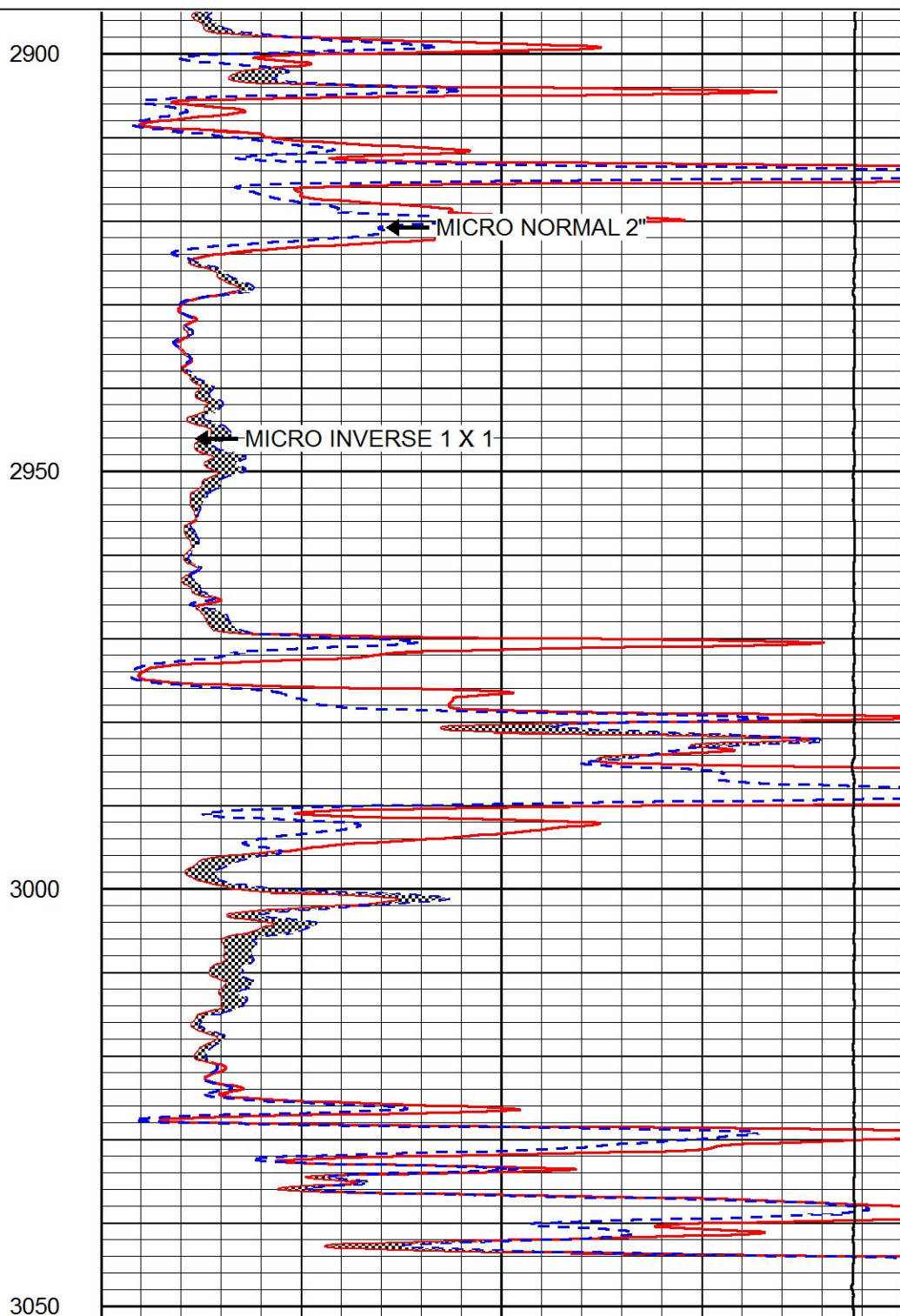
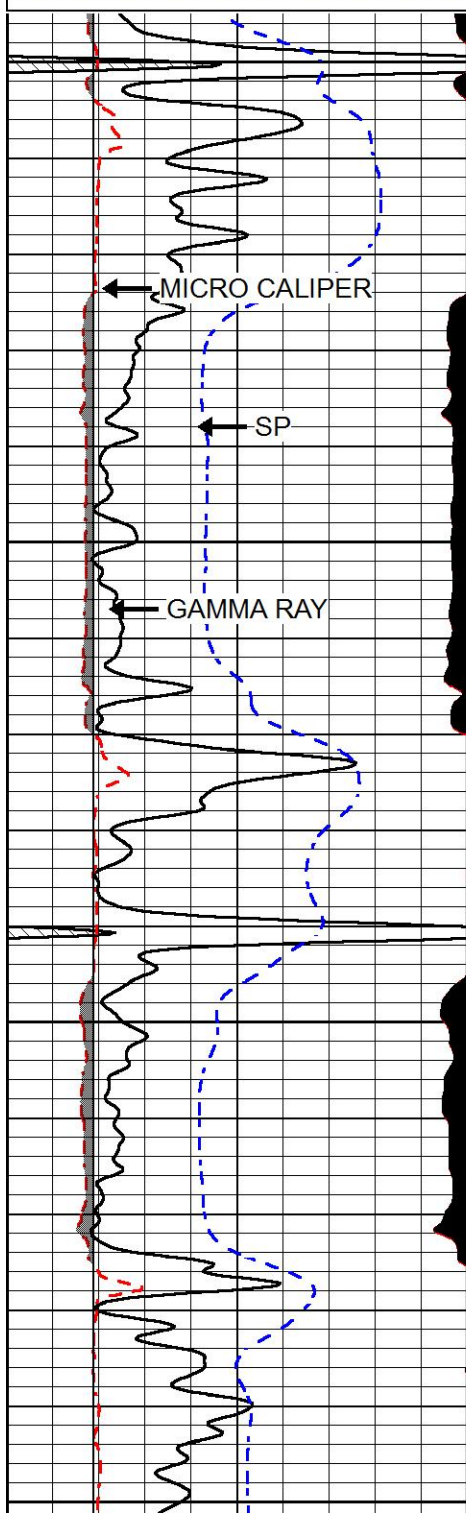
Primary Witness: WYATT URBAN
Secondary Witness:
Secondary Witness:
Secondary Witness:

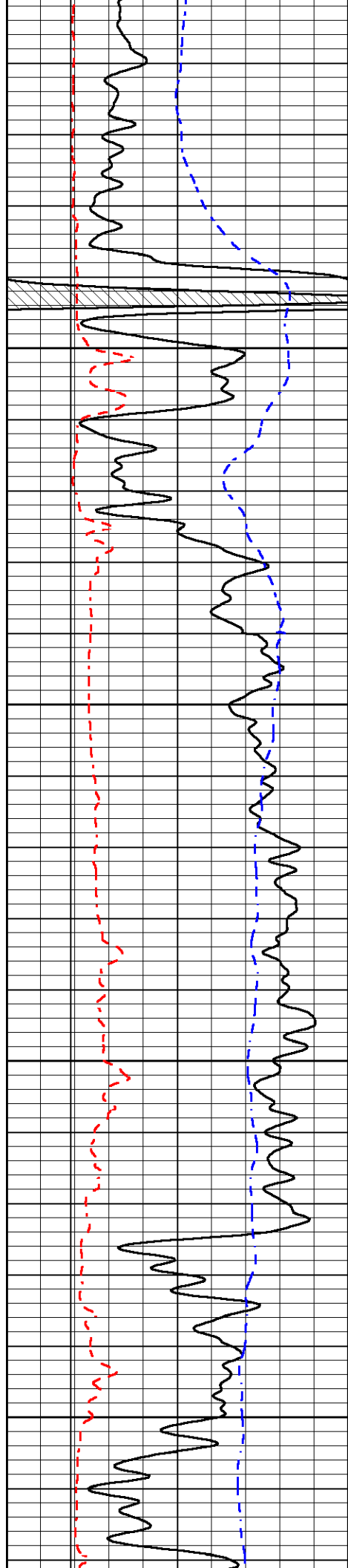
MAIN PASS

Database File k&n_norman_klepper_a_1.db
Dataset Pathname stack/pass3.1
Presentation Format micro
Dataset Creation Tue Oct 31 02:20:02 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



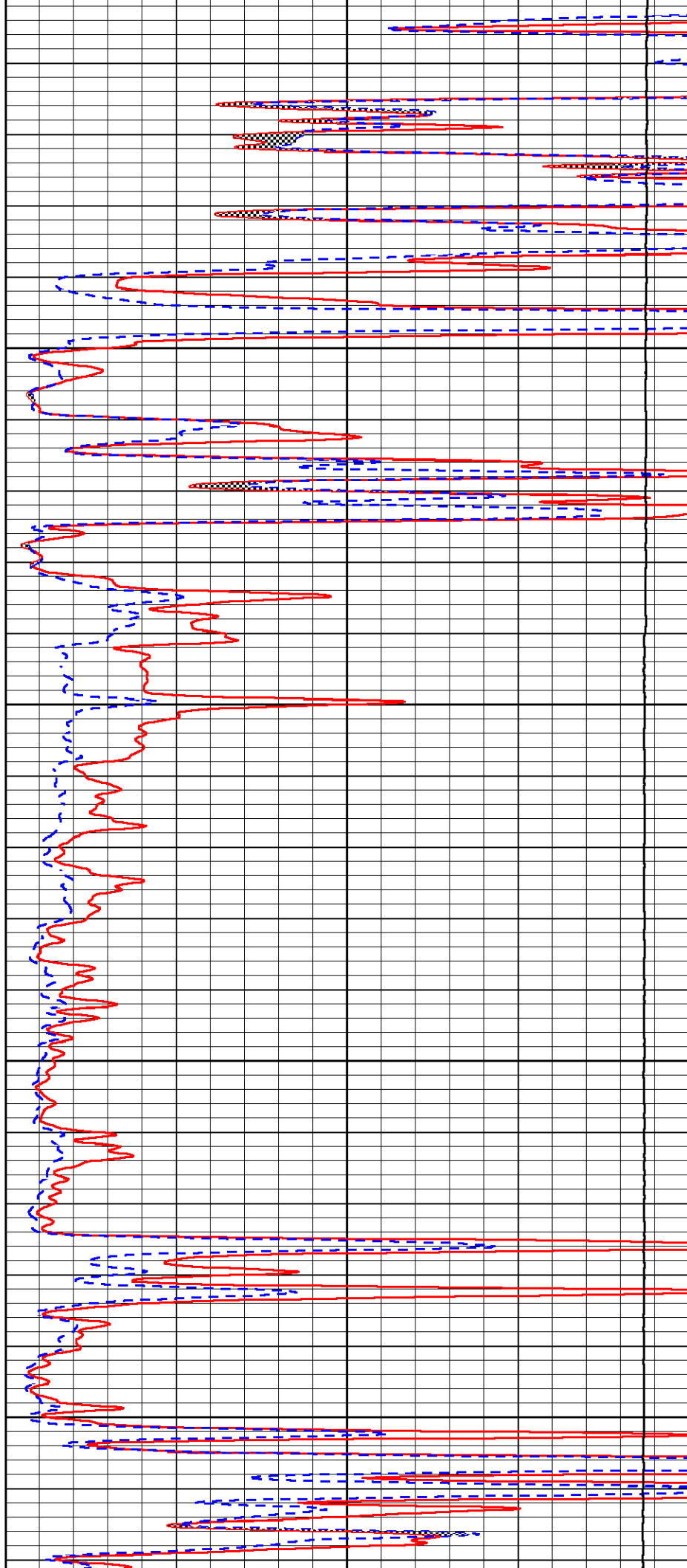


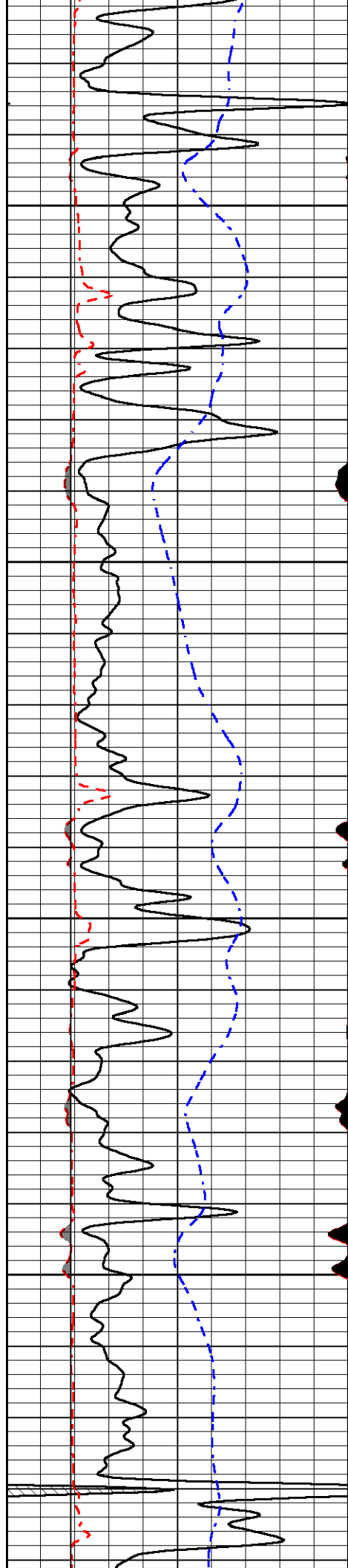
3100

3150

3200

3250



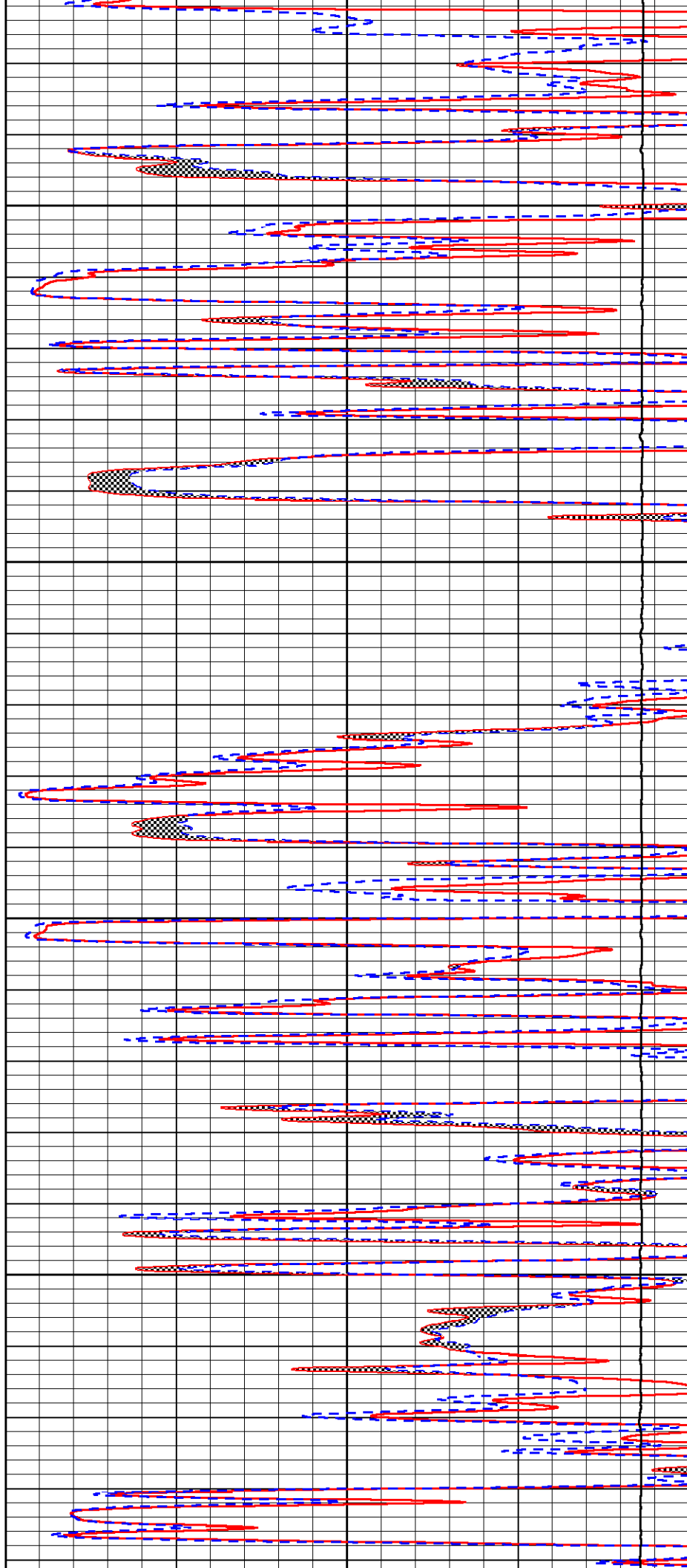


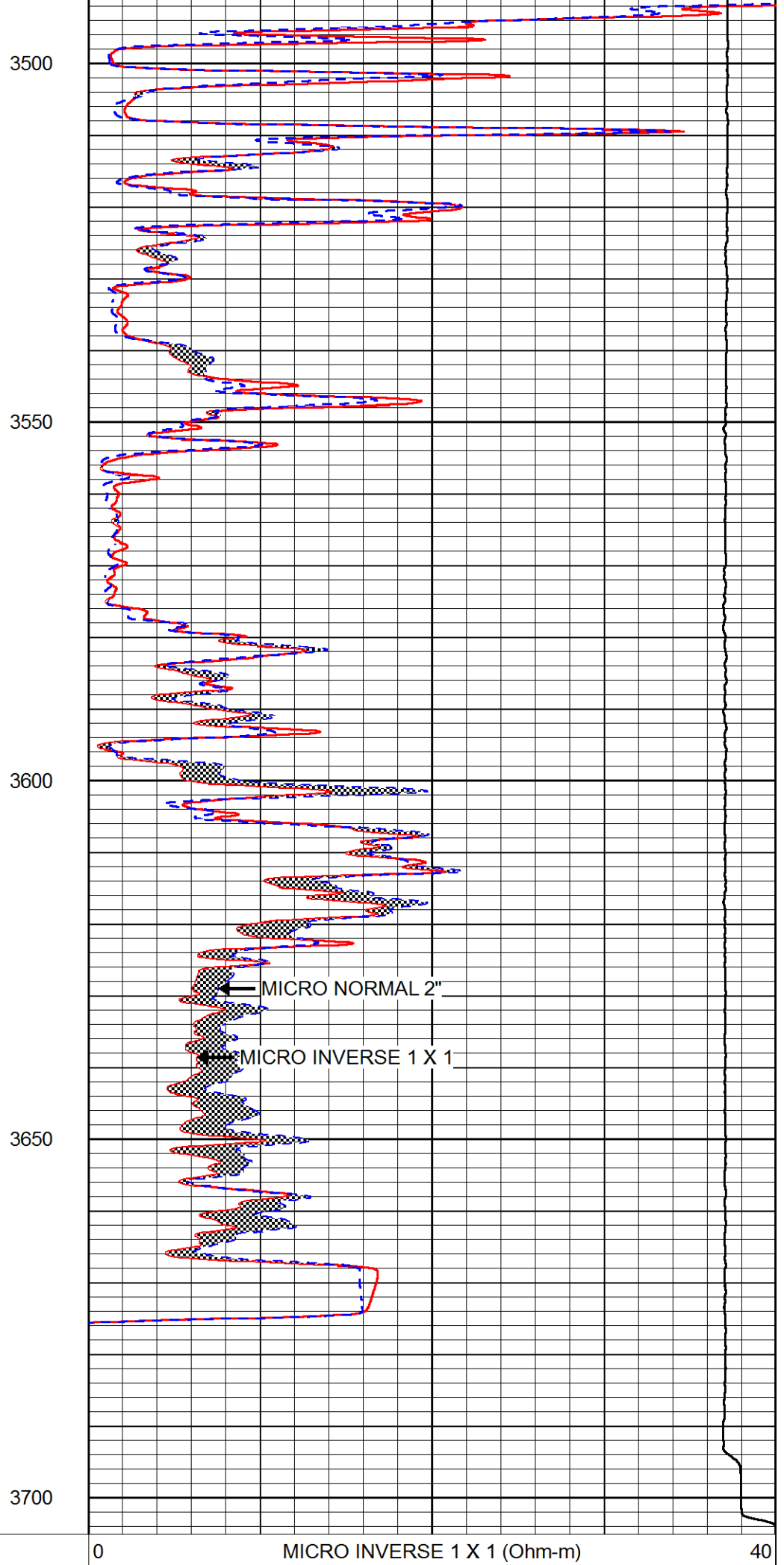
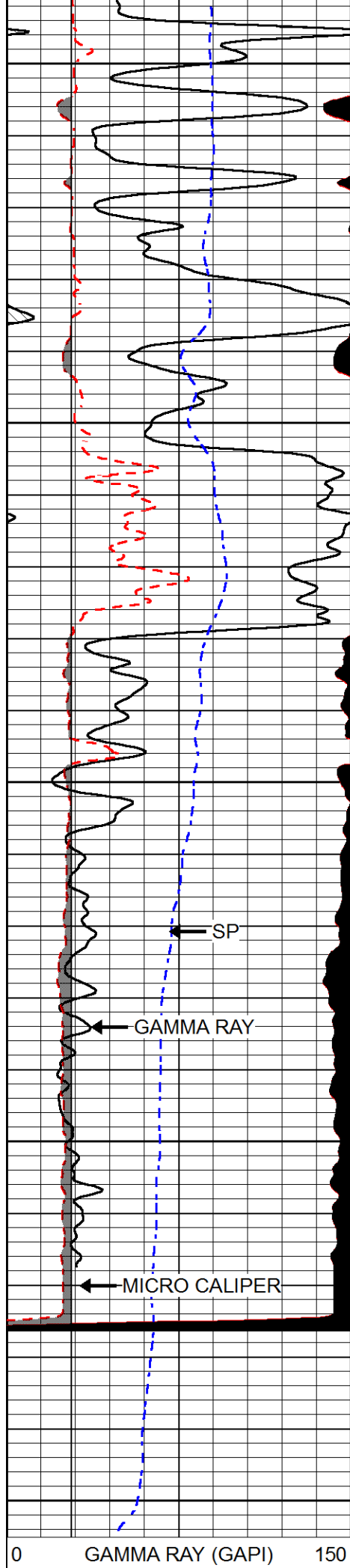
3300

3350

3400

3450





0	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

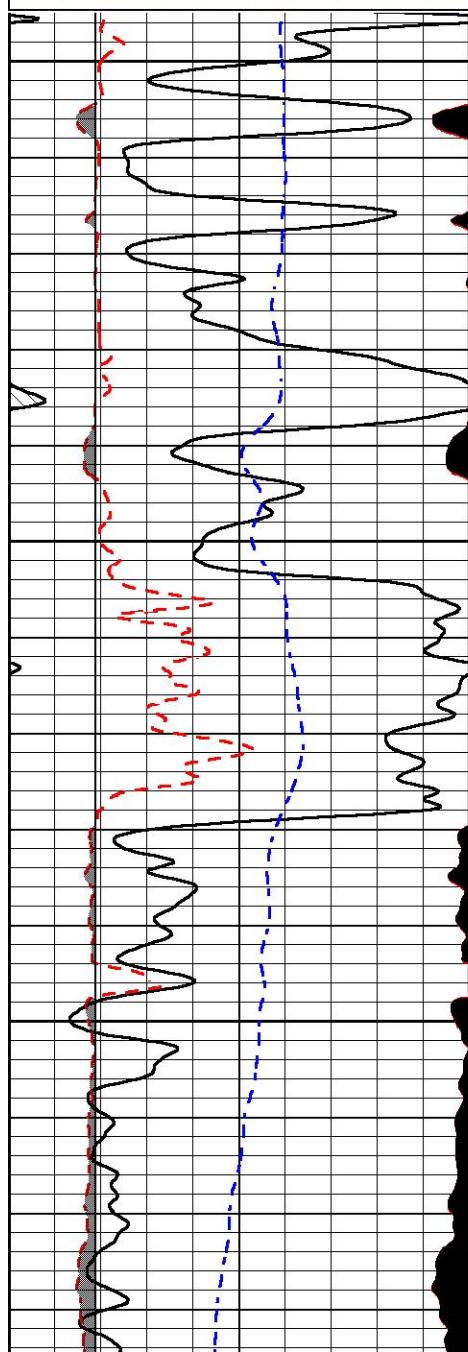


REPEAT SECTION

Database File k&n_norman_klepper_a_1.db
Dataset Pathname stack/pass2.1
Presentation Format micro
Dataset Creation Tue Oct 31 02:19:20 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

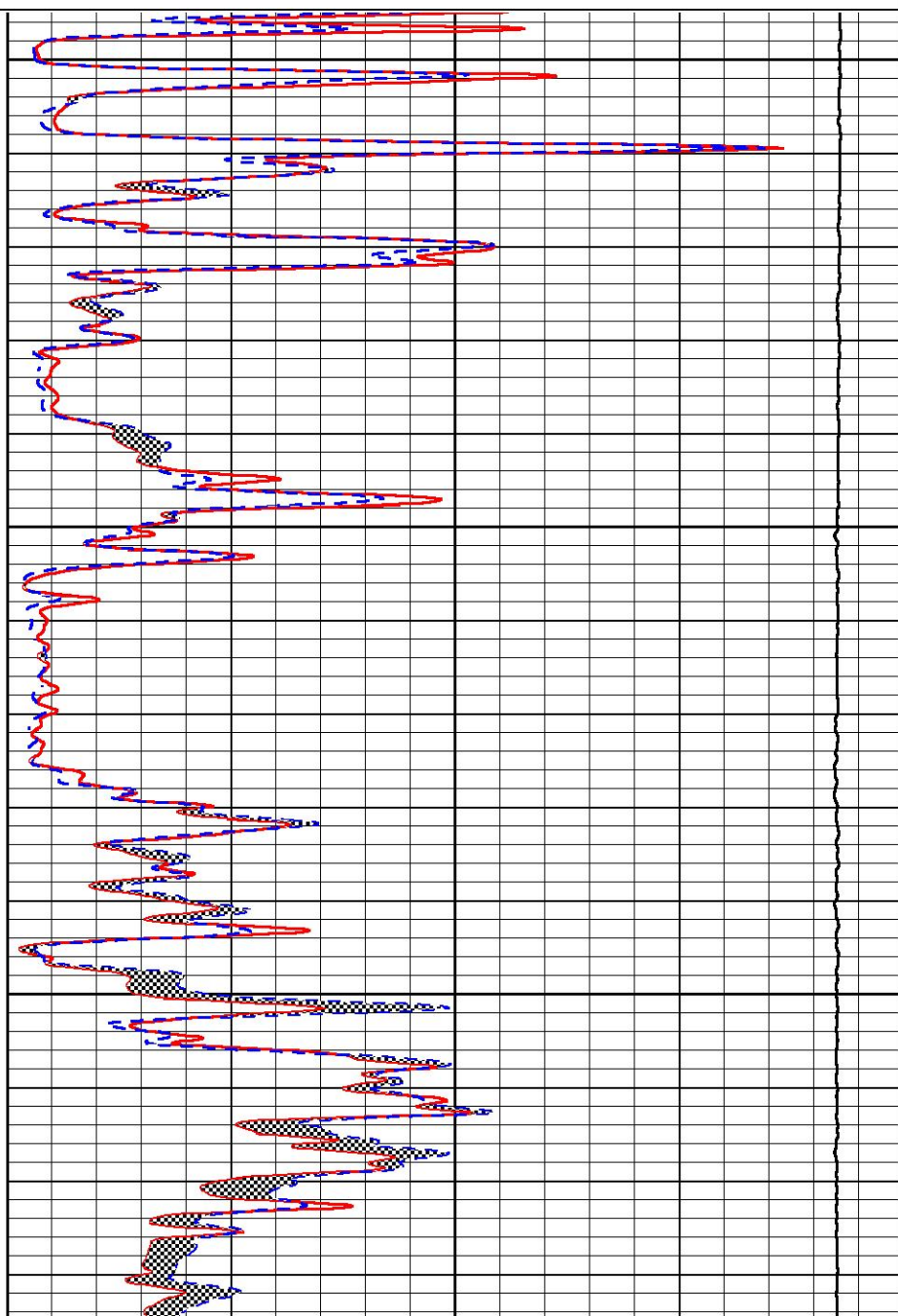
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

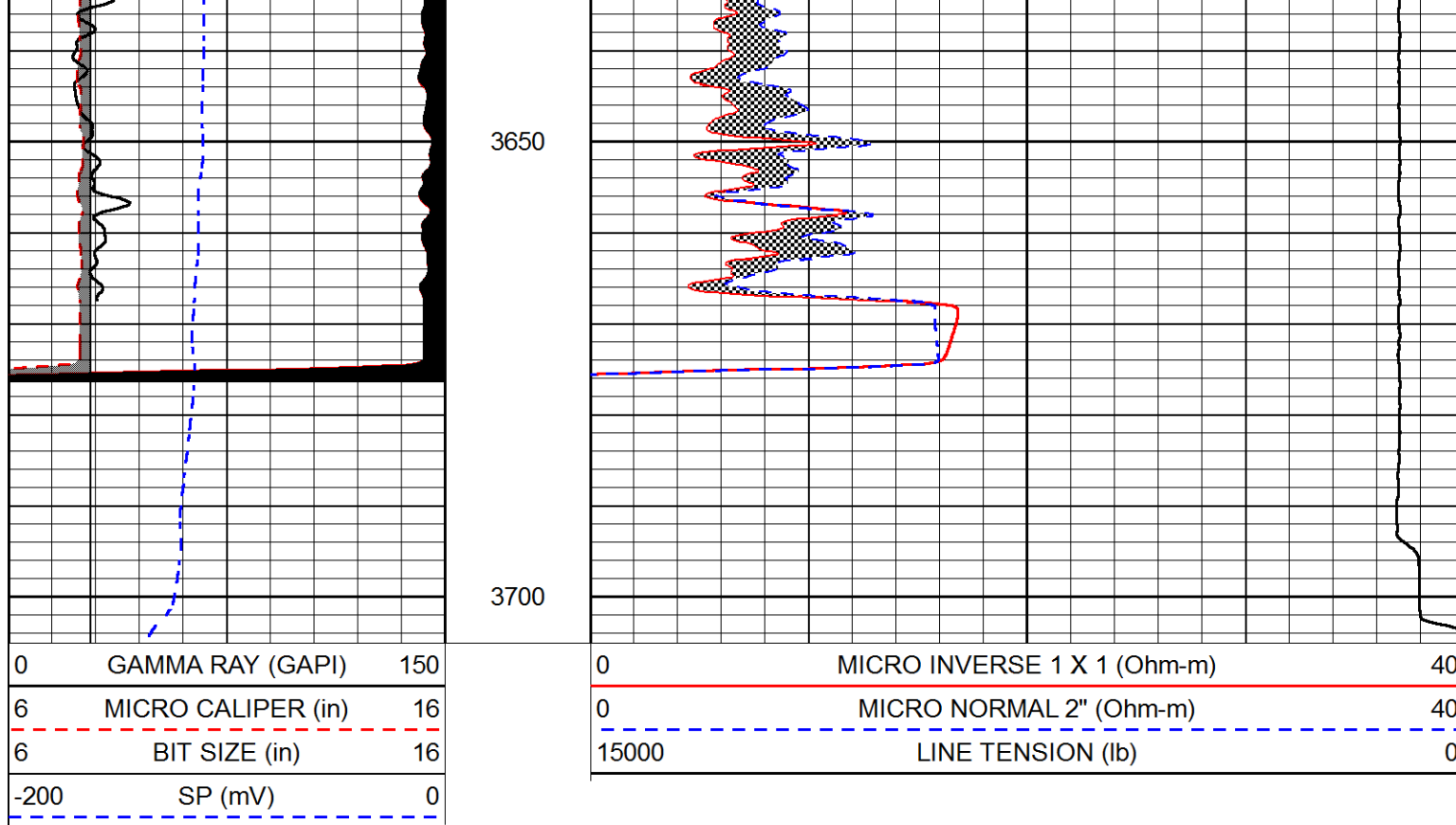


3500

3550

3600





Calibration Report

Database File k&n_norman_klepper_a_1.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Tue Oct 31 02:20:02 2017

Dual Induction Calibration Report

Serial-Model: PSI 216 HT-PSI HIGH TEMP
 Calibration Performed: Thu Aug 24 03:44:32 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	75.411	495.929	4.000	250.000	mmho/m	0.750	-40.115
Medium	75.269	470.661	10.000	100.000	mmho/m	0.628	-22.133

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps

Spine Angle = 74.61

Density/Spine Ratio = 0.523

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 16:08:01 2017
Calibrator Value:	1000.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	6.2 cps
Sensitivity:	0.5200 GAPI/cps



Company	K&N PETROLEUM, INC.
Well	NORMAN KLEPPER A NO.1
Field	UNKNOWN
County	STAFFORD
State	KANSAS