



MICRORESISTIVITY LOG

Company COBALT ENERGY LLC
 Well RADNOR A #1-30
 Field N/A
 County LOGAN
 State KANSAS

Company COBALT ENERGY LLC
 Well RADNOR A #1-30
 Field N/A
 County LOGAN State KANSAS

Location: API #: 15-109-21540-00-00
 NE NW SE SW
 1218' FSL & 1878' FWL
 SEC 30 TWP 15S RGE 33W
 Permanent Datum GROUND LEVEL Elevation 2925'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services
 CNL/CDL
 DIL
 Elevation
 K.B. 2930'
 D.F. 2928'
 G.L. 2925'

Date	4/6/2018
Run Number	ONE
Depth Driller	4680'
Depth Logger	4681'
Bottom Logged Interval	4680'
Top Log Interval	3600'
Casing Driller	8.625" @ 218'
Casing Logger	216'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	8000
Density / Viscosity	9.3 67
pH / Fluid Loss	9.5 11.2
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.3 @ 62
Rmt @ Meas. Temp	.23 @ 62
Rmc @ Meas. Temp	0.41 @ 62
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.15 @ 123
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	123 DEG F
Equipment Number	108
Location	HAYS
Recorded By	T. MARTIN
Witnessed By	COREY BAKER

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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.

PENCE, 2 E TO EAGLE RD, 4.5 N, E AND S INTO

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

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

Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: T. MARTIN	Operator:	Primary Witness: COREY BAKER	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

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		DIL-M&W (PSI 978)	18.50	3.50	220.00
CILD	8.00		CILD	8.00		
CILM	4.70		CILM	4.70		
SP	0.20		SP	0.20		

Dataset: cobalt_radnor a_#1-30.db: field/well/stkml/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt_radnor a_#1-30.db
 Dataset field/well/stkml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	123	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	-310	50	Off	4681

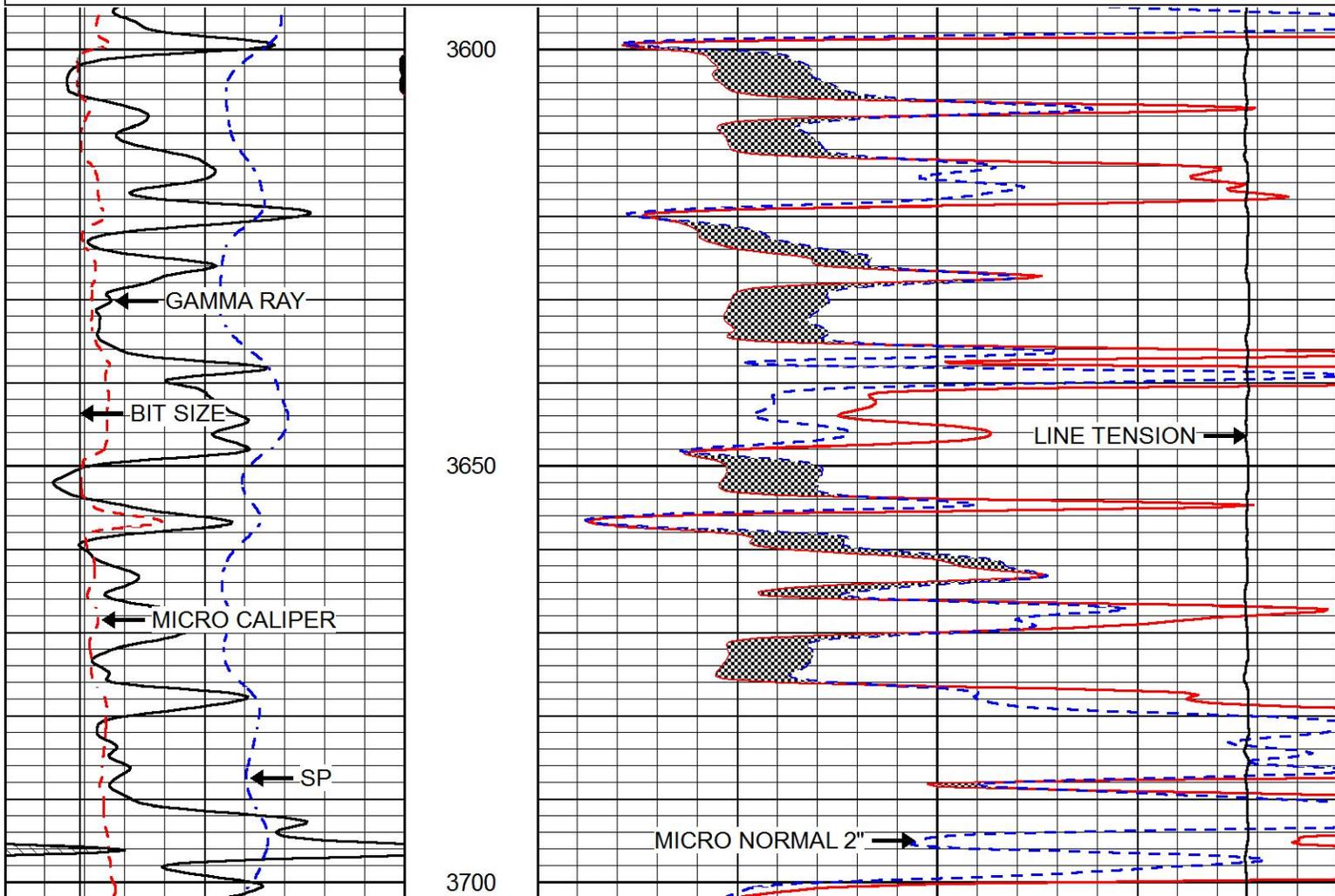


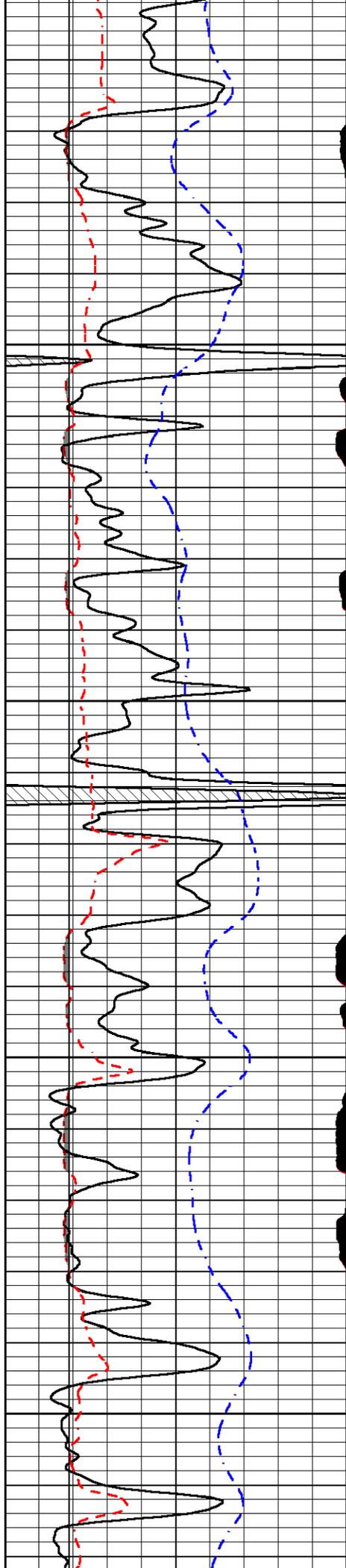
MAIN PASS

Database File cobalt_radnor a_#1-30.db
 Dataset Pathname stkml/pass3.1
 Presentation Format micro
 Dataset Creation Sat Apr 07 00:42:18 2018
 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



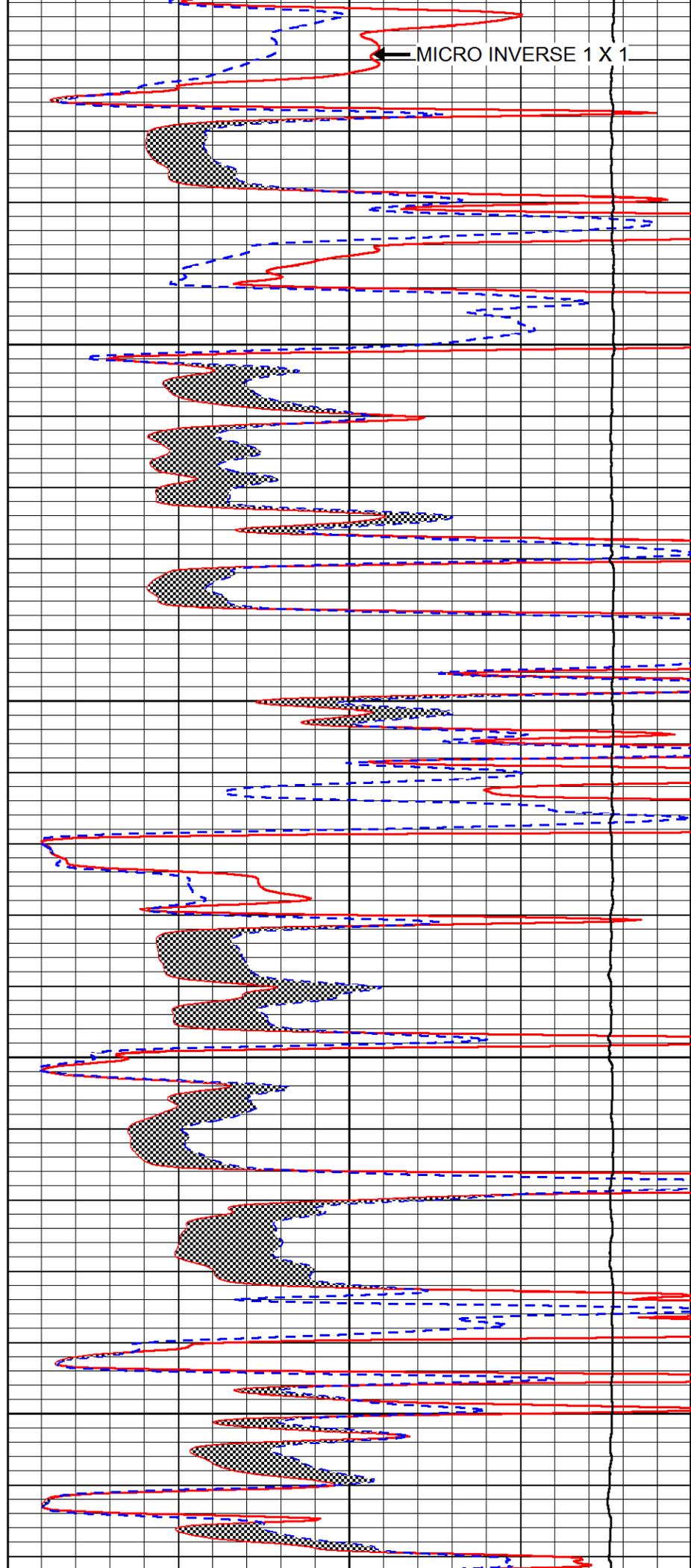


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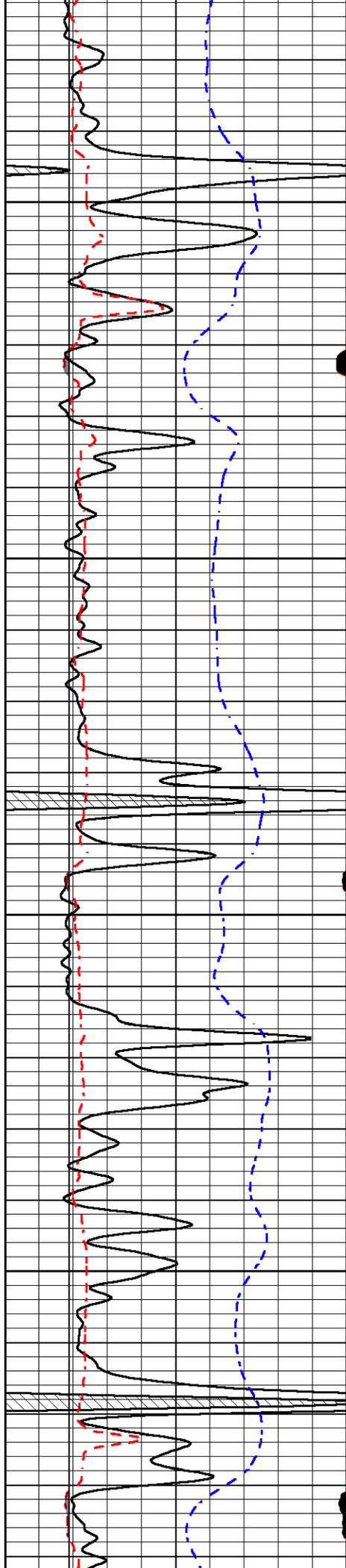
3800

3850

3900



MICRO INVERSE 1 X 1

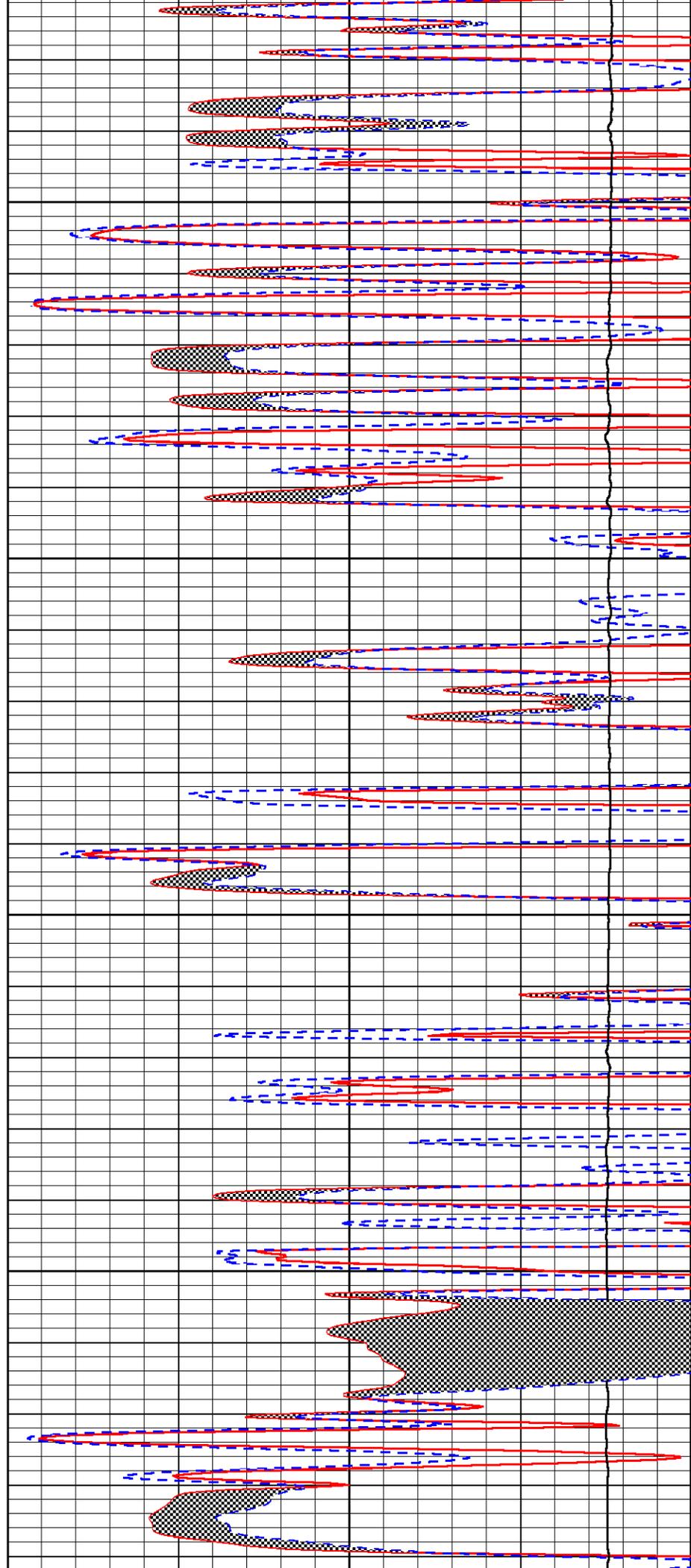


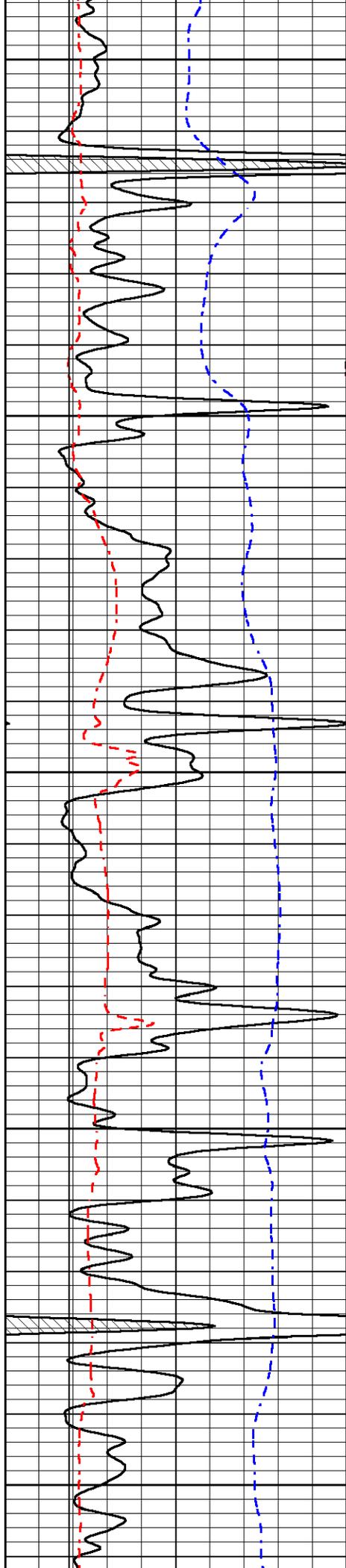
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4000

4050

4100





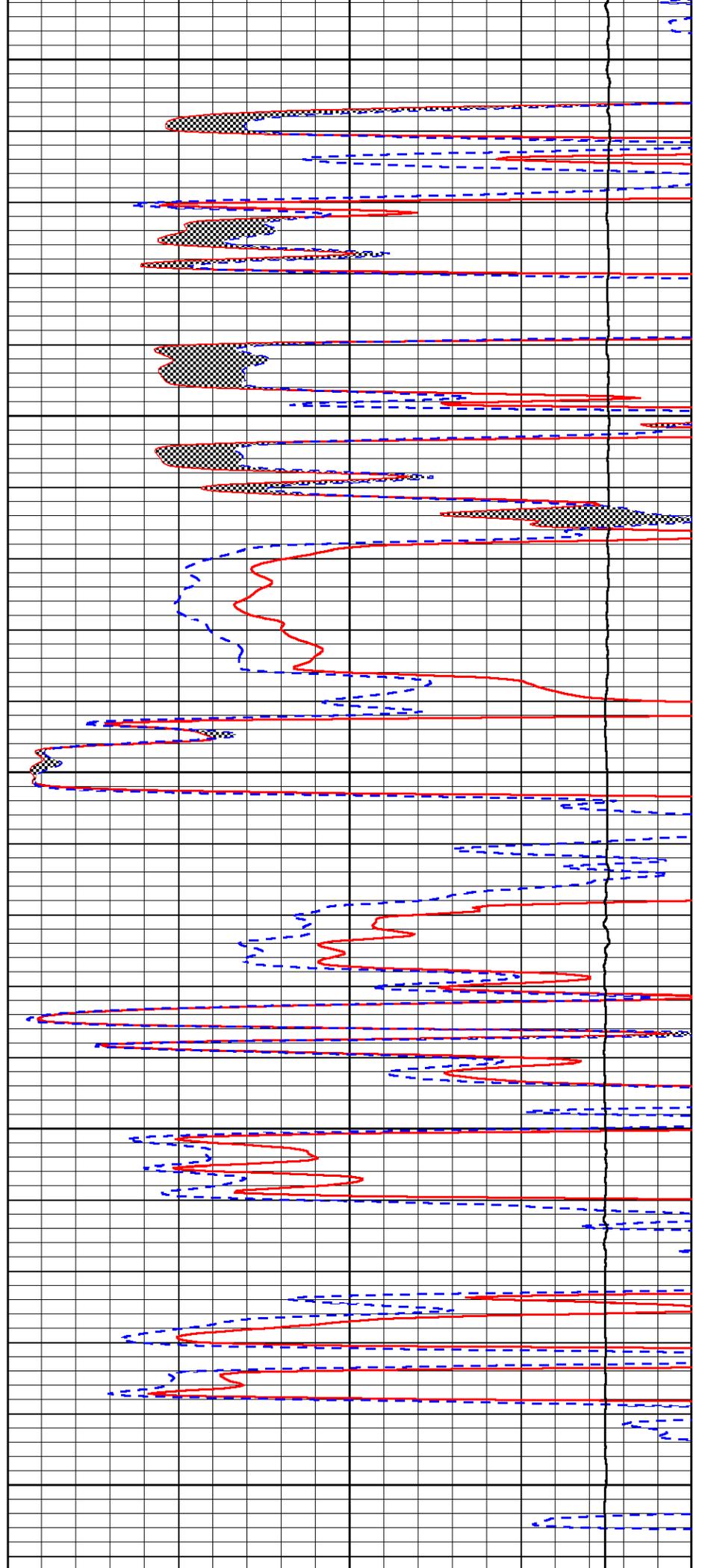
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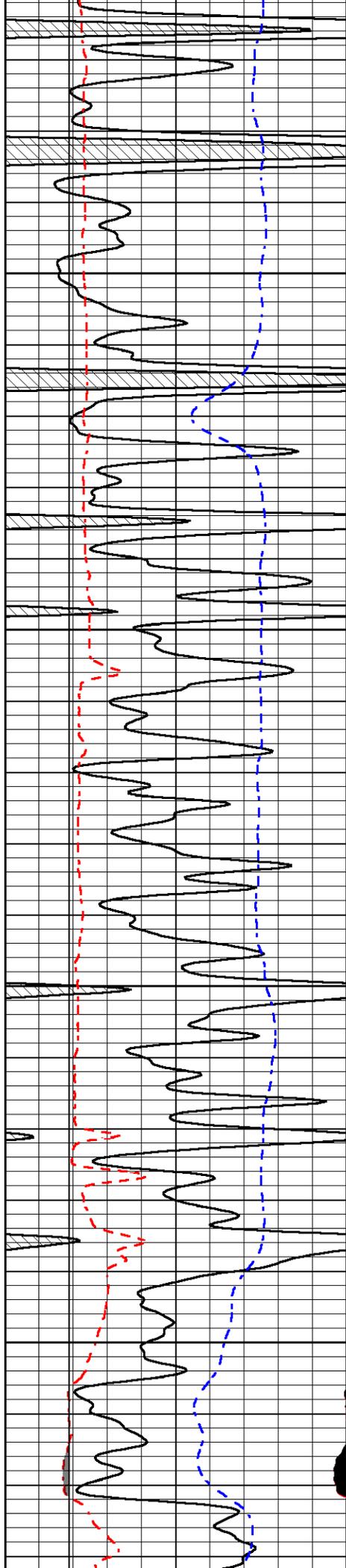
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4300

4350



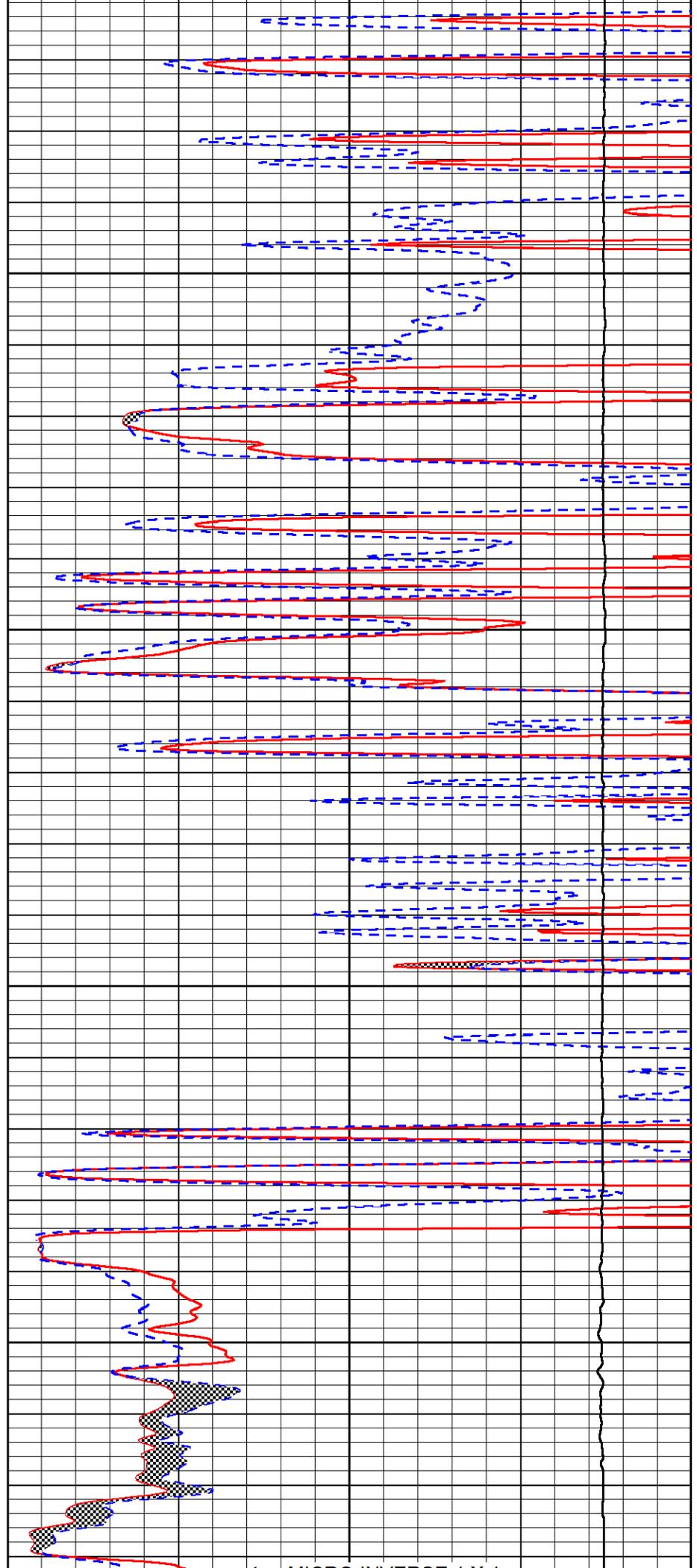


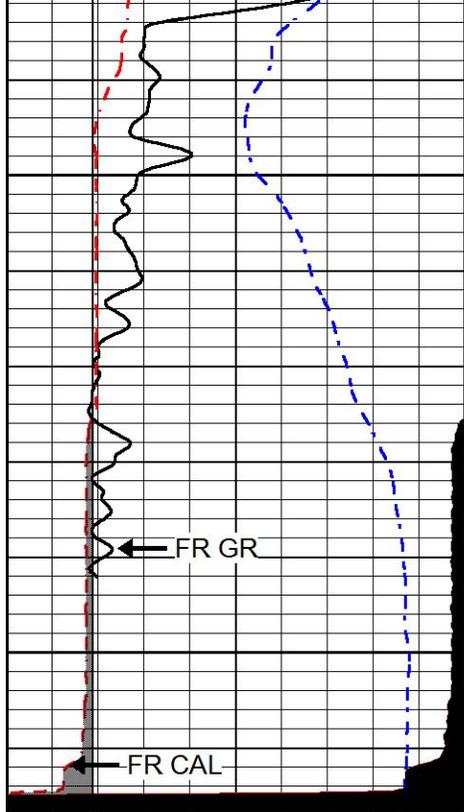
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4450

4500

4550

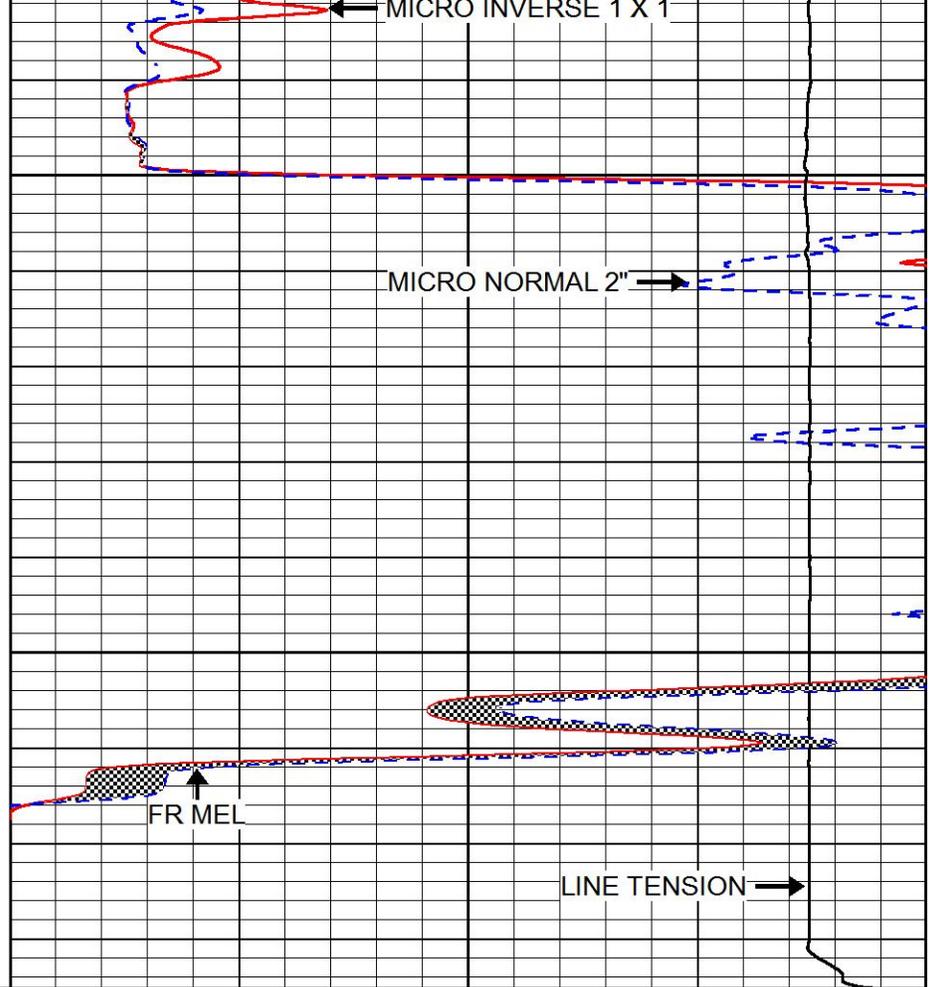




0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

4600

4650



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

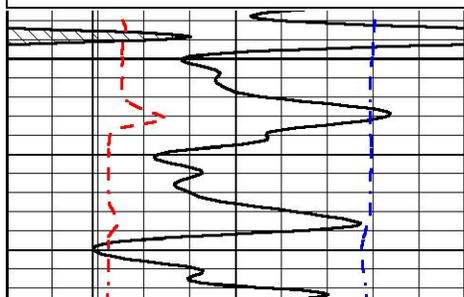


REPEAT SECTION

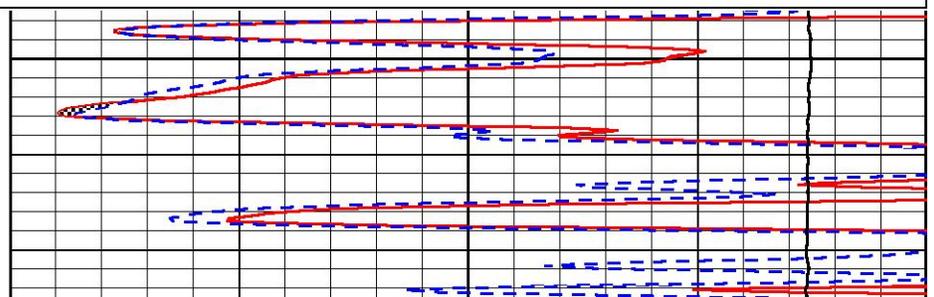
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 Dataset Creation Sat Apr 07 00:18:24 2018
 Charted by Depth in Feet scaled 1:240

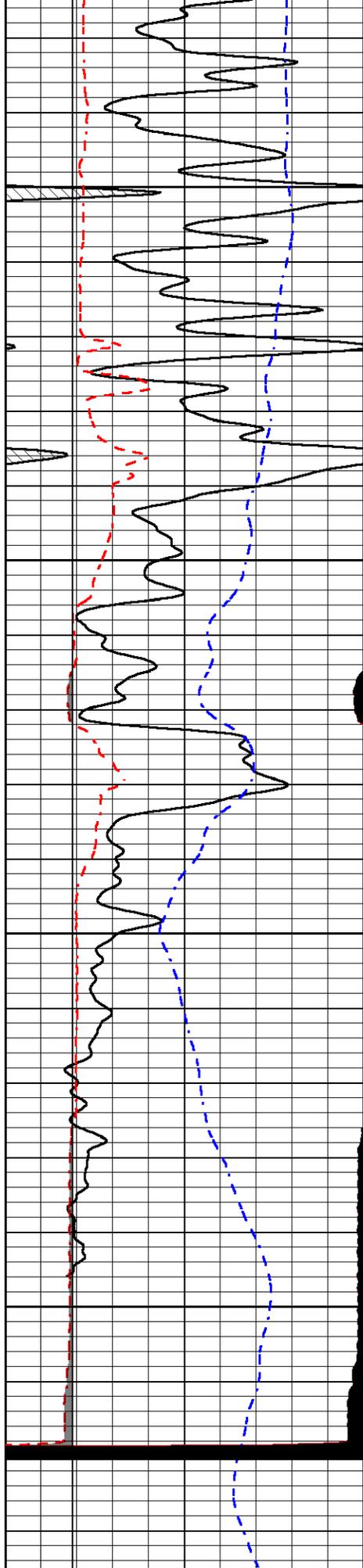
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

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



4450





4500

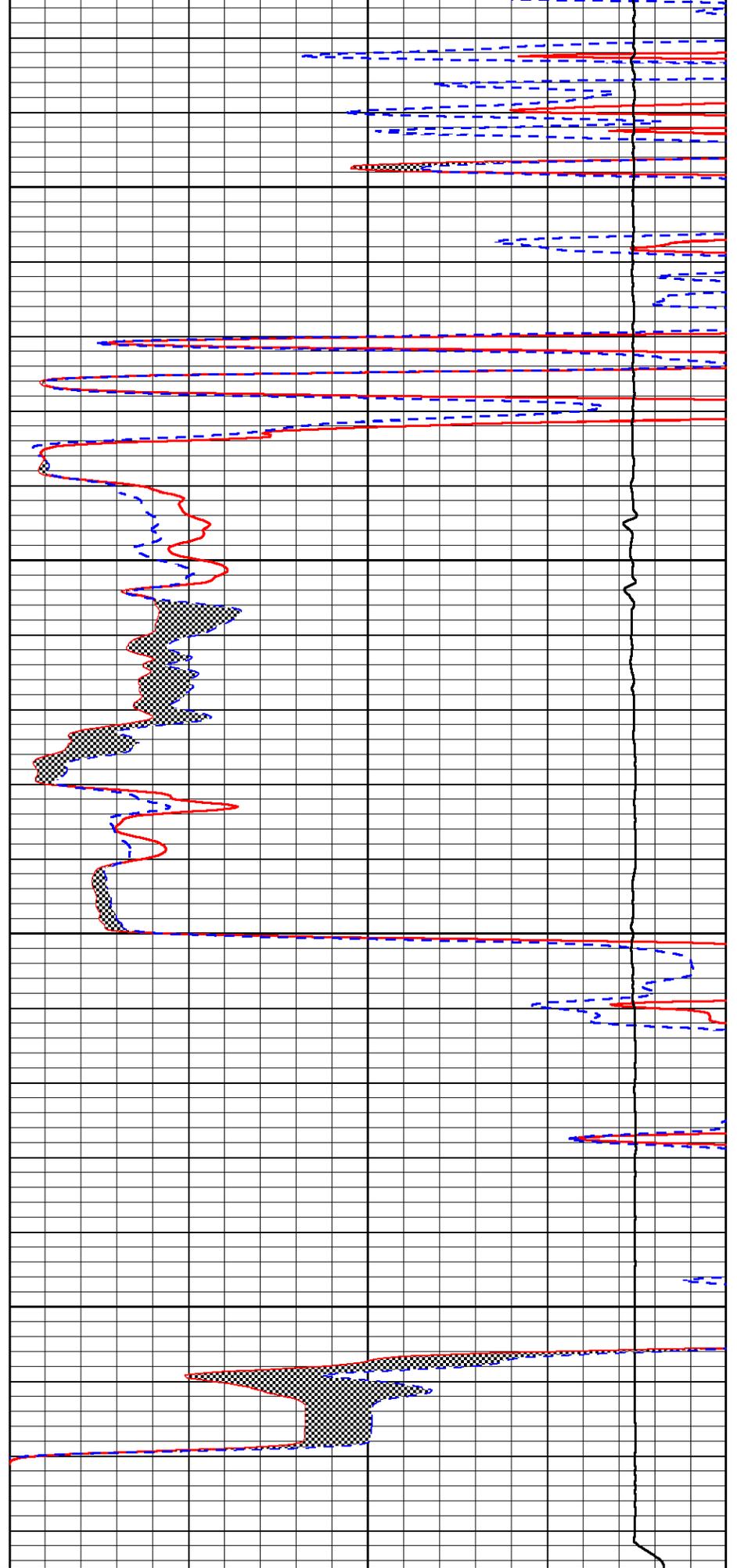
4550

4600

4650

0 GAMMA RAY (GAPI) 150

6 MICRO CALIPER (in) 16



0 MICRO INVERSE 1 X 1 (Ohm-m) 40

0 MICRO NORMAL 2" (Ohm-m) 40

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	COBALT ENERGY LLC
Well	RADNOR A #1-30
Field	N/A
County	LOGAN
State	KANSAS