DUAL INDUCTION
COMPENSATED DENSITY
COMPENSATED NEUTRON

PIONEER
Pioneer Energy Services

Company	PDC ENERGY INC.
Well	BERNHARDT FARMS 13W-403
Field	WATTENBERG
County	WELD
State	COLORADO

Company PDC ENERGY INC.
Well BERNHARDT FARMS 13W-403
Field WATTENBERG
County WELD State COLORADO

Location: API # : 05-123-38830
SHL: 2663' FSL & 640' FEL NESE
SEC 13 TWP 4N RGE 67W

Other Services
NONE

Permanent Datum	GL	Elevation 4737	Elevation K.B. 4750 D.F. 4749 G.L. 4737
Log Measured From	KB		
Drilling Measured From	KB		

Date	APRIL 4, 2015		
Run Number	1		
Depth Driller	7756'		
Depth Logger	7243'		
Bottom Logged Interval	7243'		
Top Log Interval	SURFACE CASING		
Casing Driller	932'		
Casing Logger	932'		
Bit Size	8.75"		
Type Fluid in Hole	WBM		
Density / Viscosity	9.8 / 40		
pH / Fluid Loss	7.0 / 6.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	2.79 @ 70 F		
Rmf @ Meas. Temp	2.09 @ 70 F		
Rmc @ Meas. Temp	3.49 @ 70 F		
Source of Rmf / Rmc	CALC / CALC		
Rm @ BHT	0.93 @ 210 F		
Time Circulation Stopped	0600		
Time Logger on Bottom	1500		
Maximum Recorded Temperature	210 F		
Equipment Number	P36		
Location	FT. MORGAN, CO		
Recorded By	CLINT CHRISTENSEN		
Witnessed By	JOHN FALTON		

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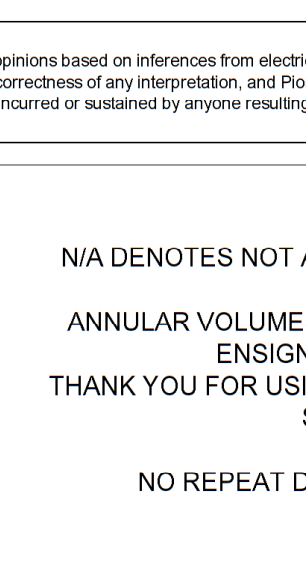
All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, 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 APPLICABLE OR NOT AVAILABLE

ANNULAR VOLUMES CALCULATED FOR 7" CASING
ENSIGN DRILLING RIG #135
THANK YOU FOR USING PIONEER ENERGY SERVICES
SO# 2-013974

NO REPEAT DUE TO HOLE CONDITIONS

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			CHD (~0)	2.00	3.50	30.00
			GR-PSI (939)	2.92	3.50	40.00
GR	0.00					
			CNT-PSI (826)	5.00	3.50	70.00
CNLSC	-3.67					
CNSSC	-4.17					
			CDL-PSI (998)	8.50	5.00	285.00
DCAL	-11.84					
LSD	-12.67					
SSD	-13.17					
RLL3	-17.52					
			DIL-PSI (1011)	18.25	3.75	175.00
CILD	-24.97					
CILM	-28.42					
SP	-32.42					

Dataset: 133974.db: field/well/run1/pass1
Total Length: 36.67 ft
Total Weight: 600.00 lb
O.D. 5.00 in

PIONEER
Pioneer Energy Services

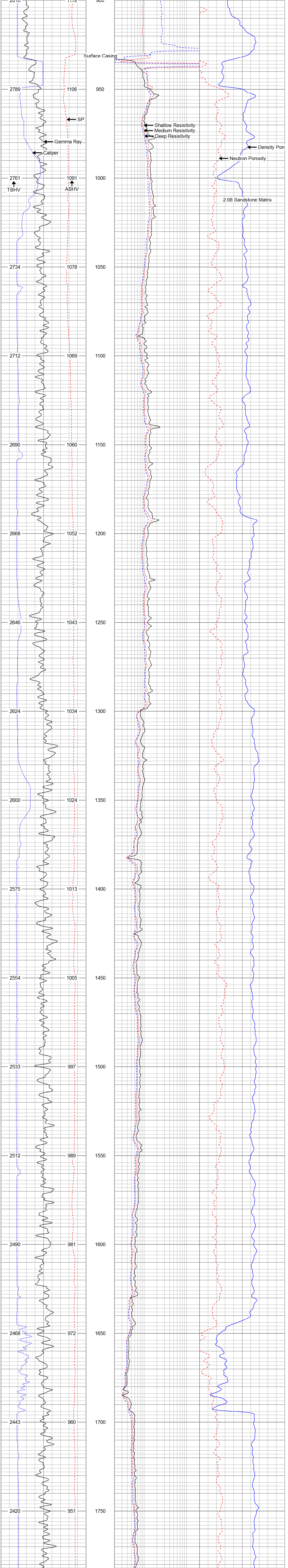
MAIN PASS

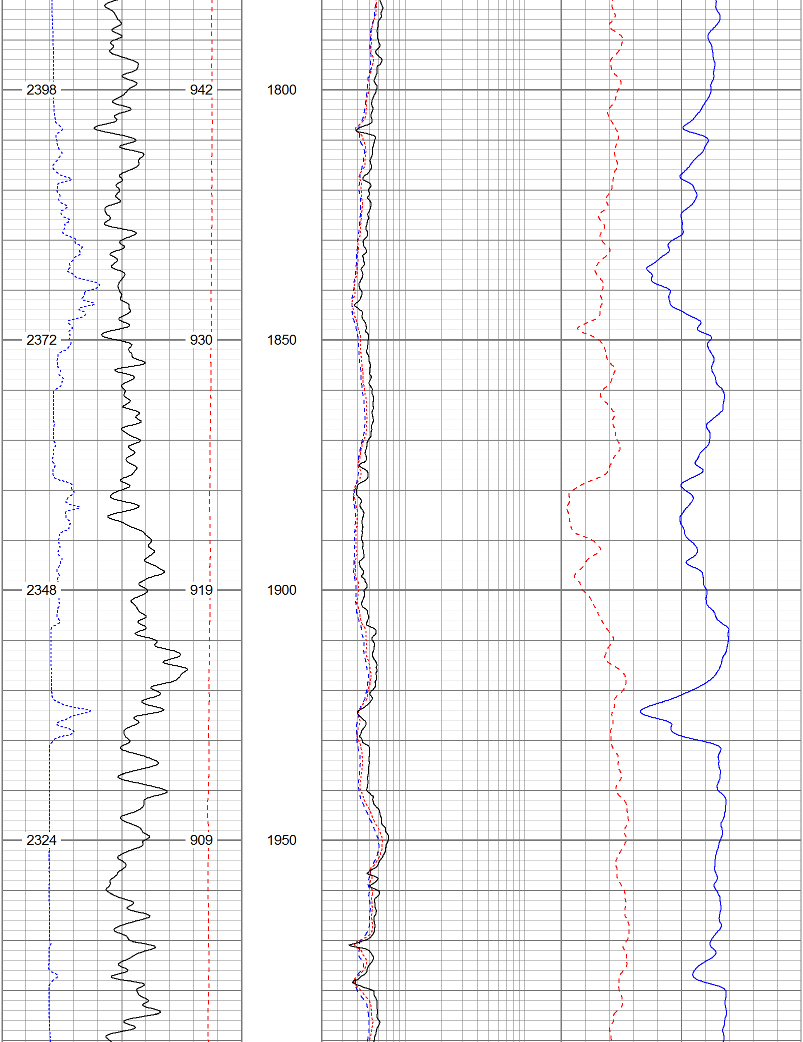
Database File: 133974.db
Dataset Pathname: FINAL
Presentation Format: dilin5
Dataset Creation: Sat Apr 04 16:44:36 2015
Charted by: Depth in Feet scaled 1:600

PIONEER
Pioneer Energy Services

MAIN PASS

Database File: 133974.db
Dataset Pathname: FINAL
Presentation Format: pdc
Dataset Creation: Sat Apr 04 16:44:36 2015
Charted by: Depth in Feet scaled 1:240

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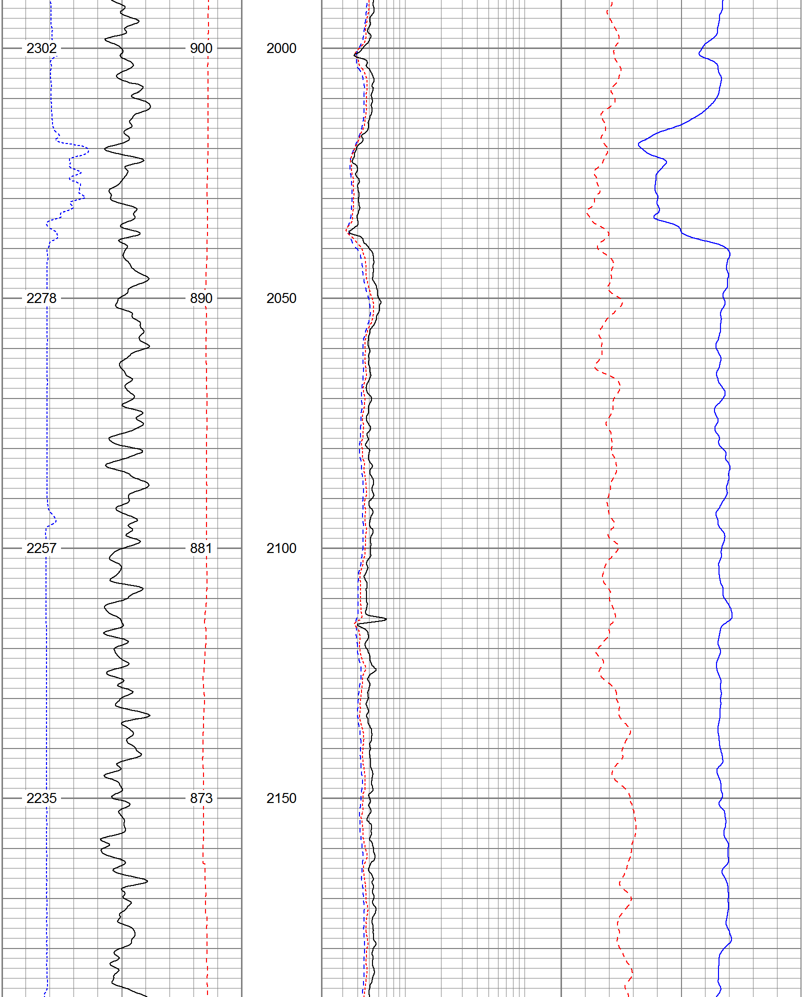
1950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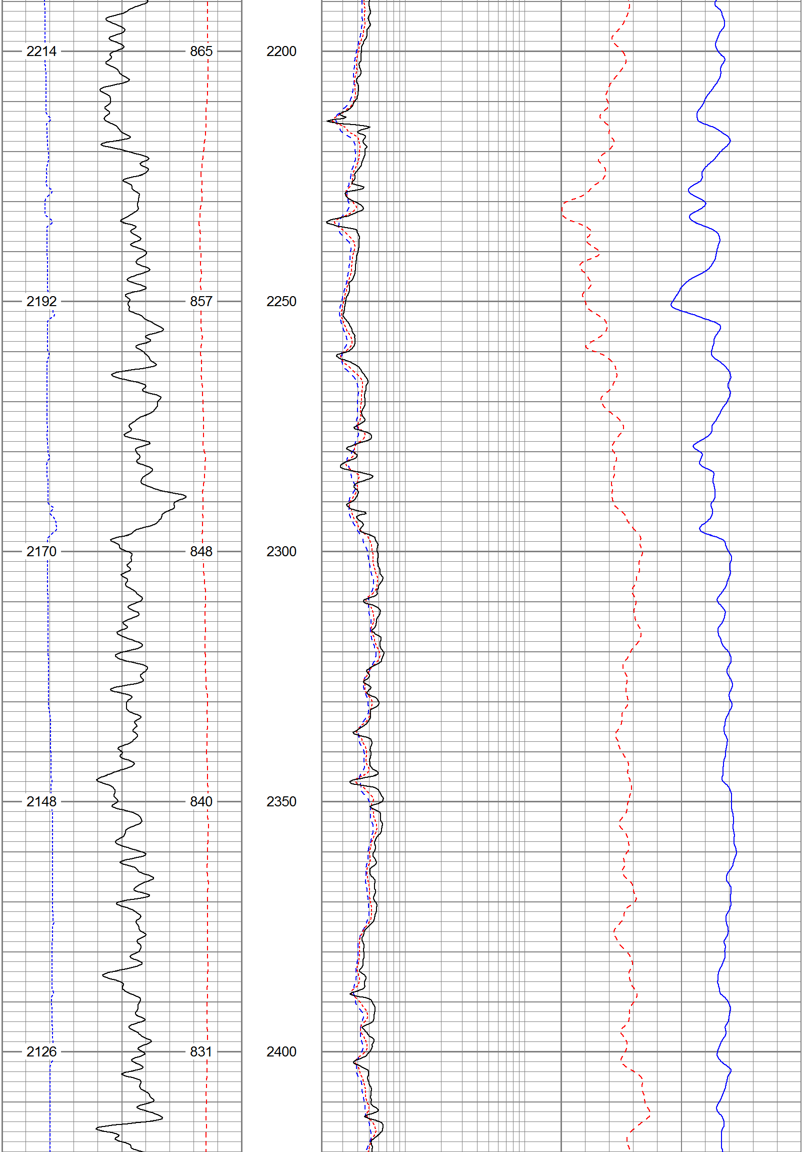
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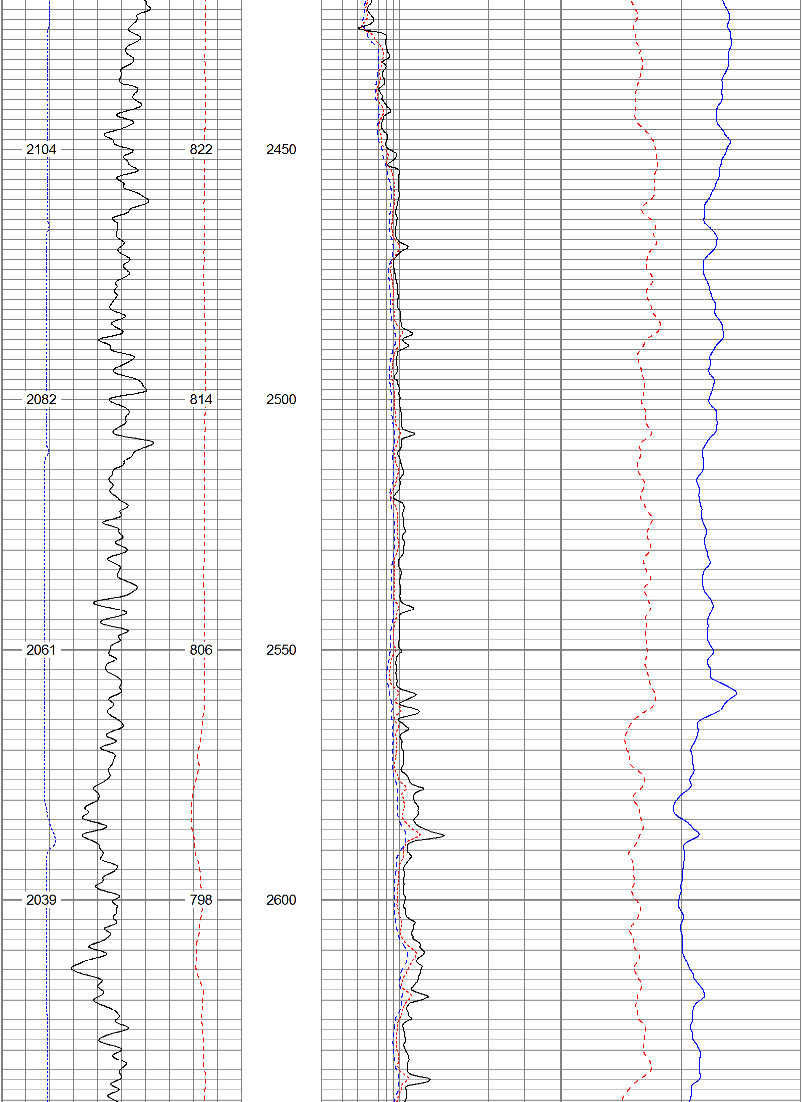
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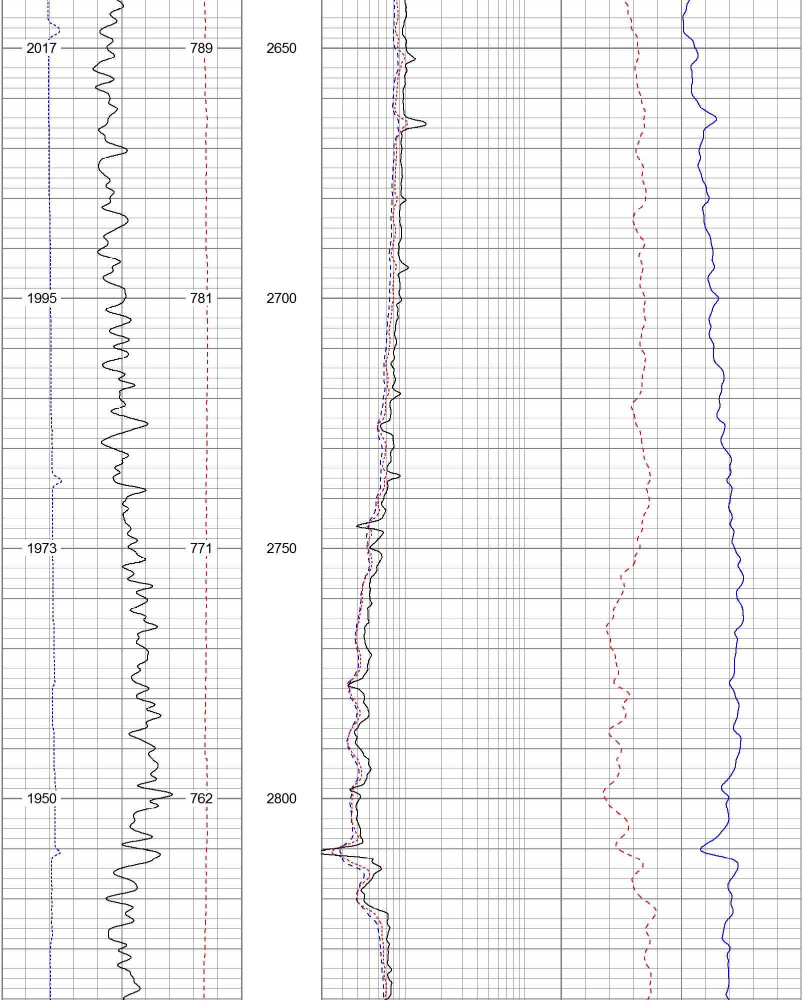
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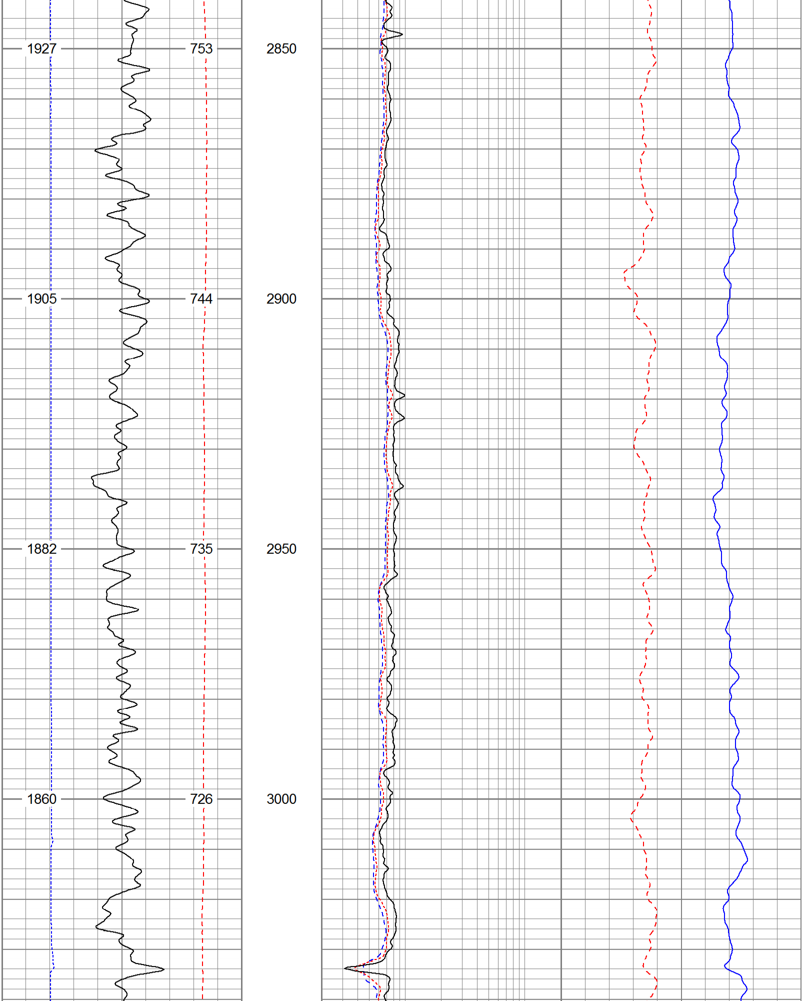
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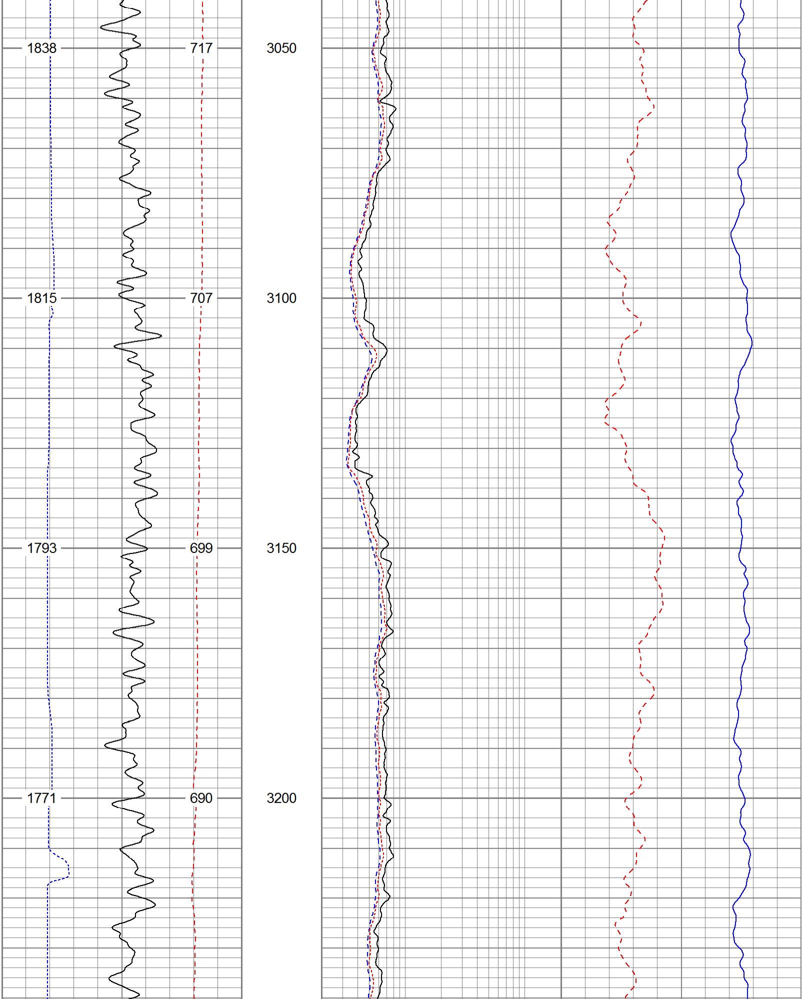
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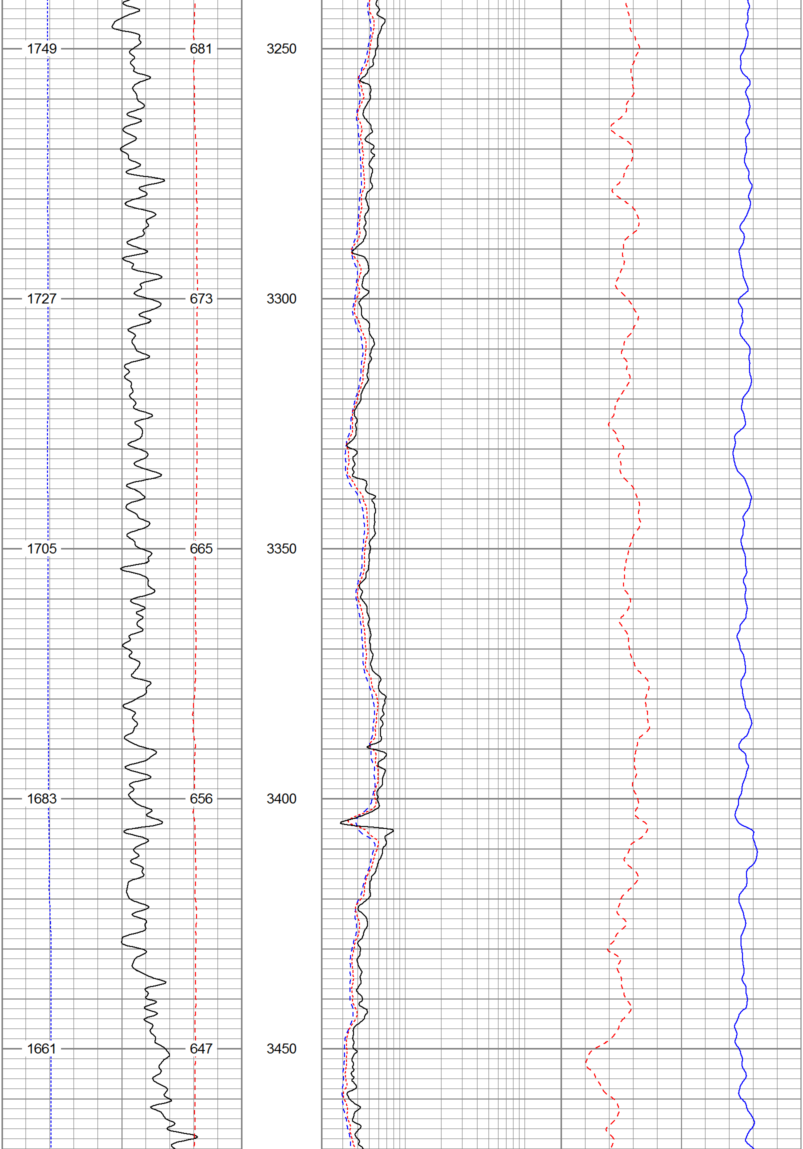
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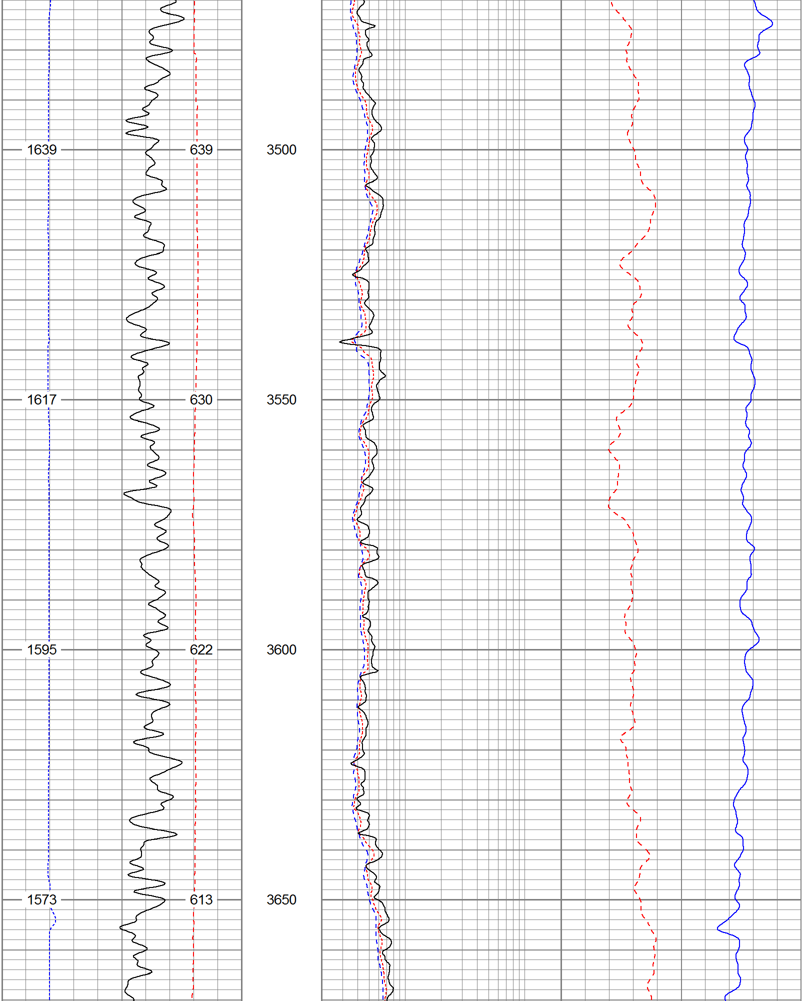
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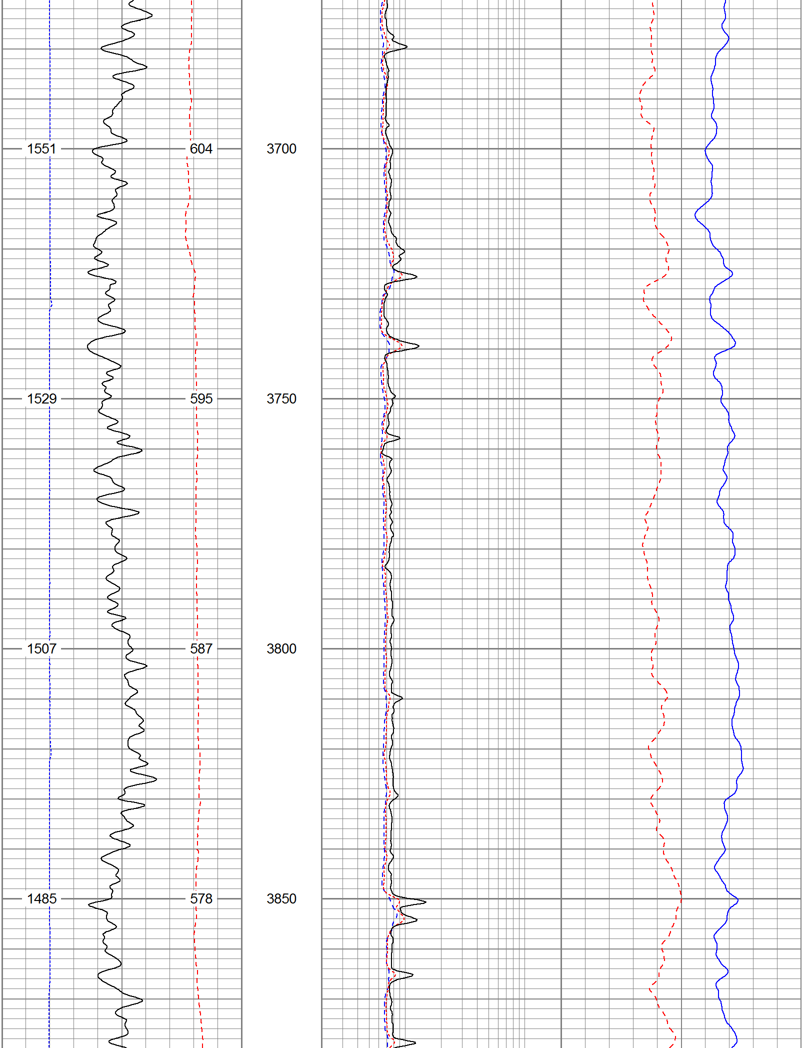
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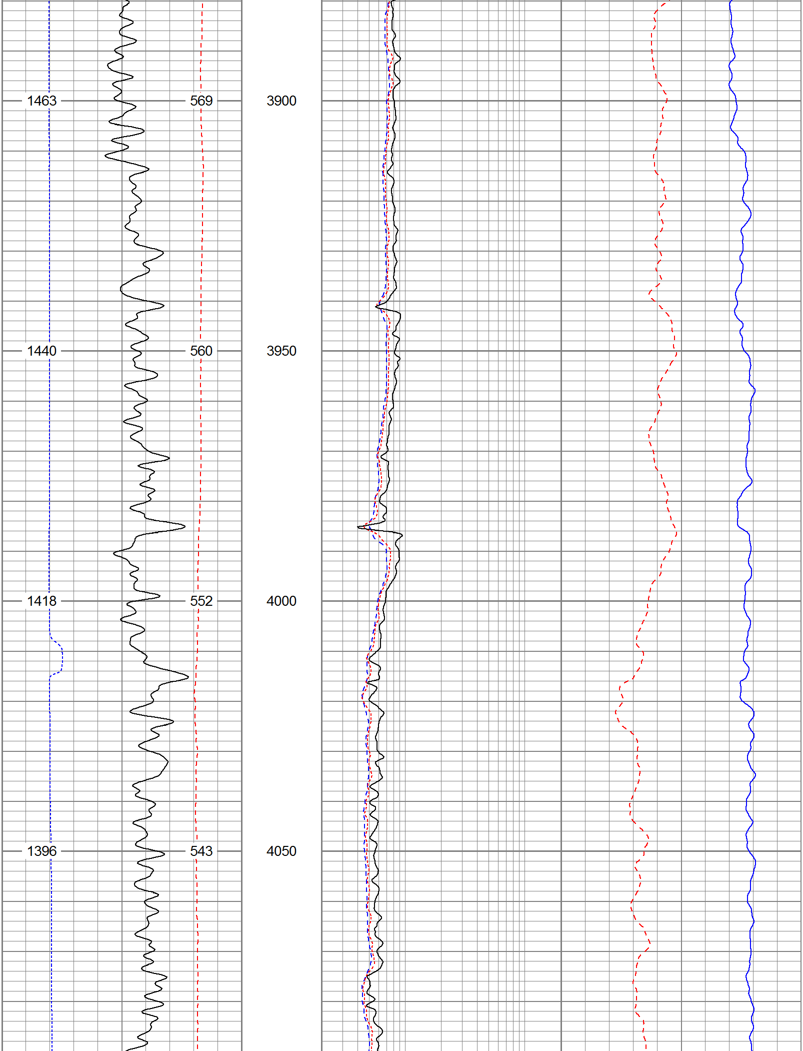
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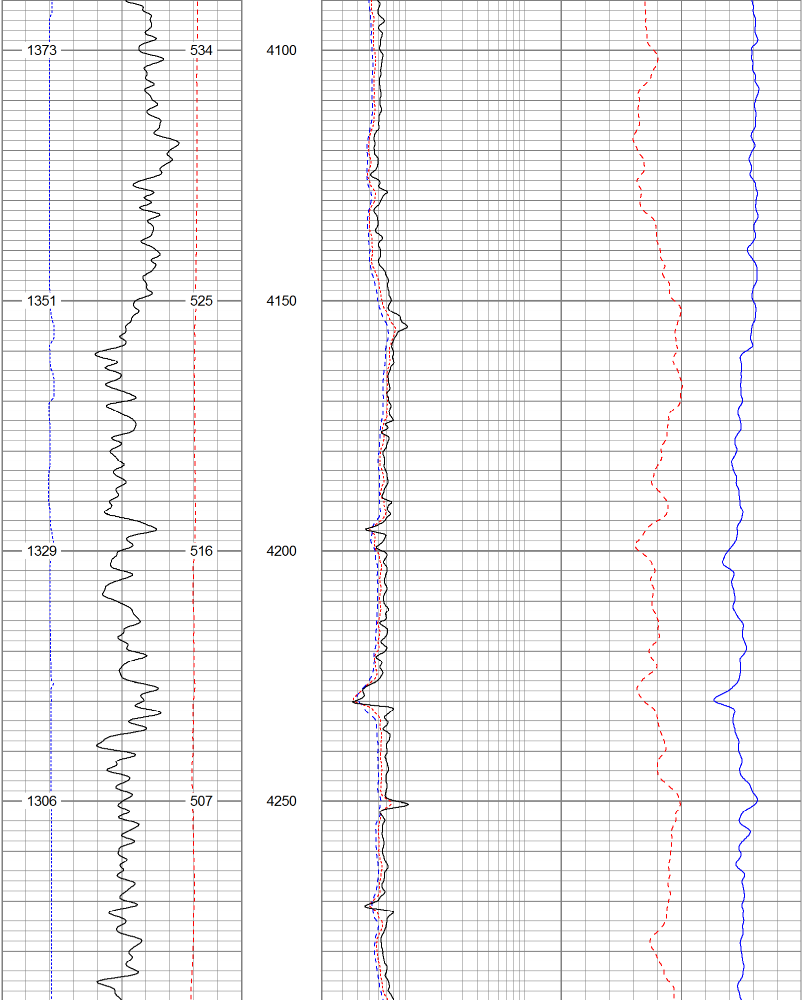
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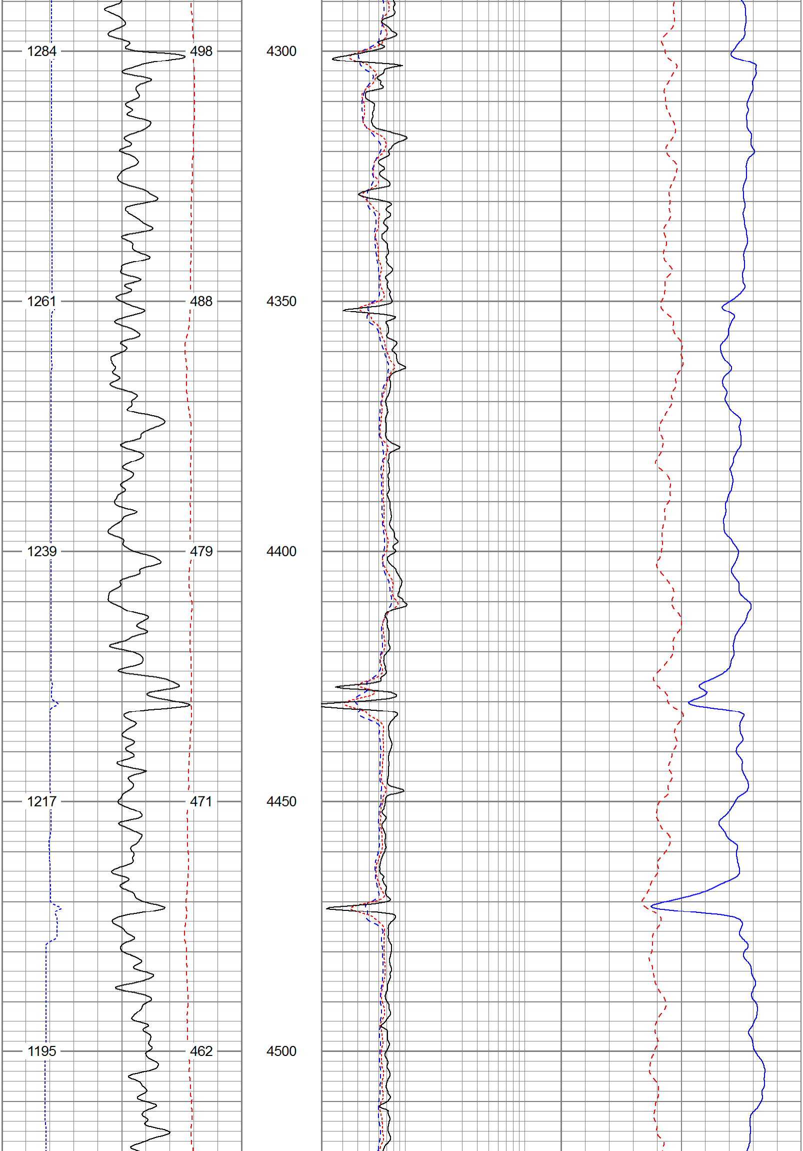
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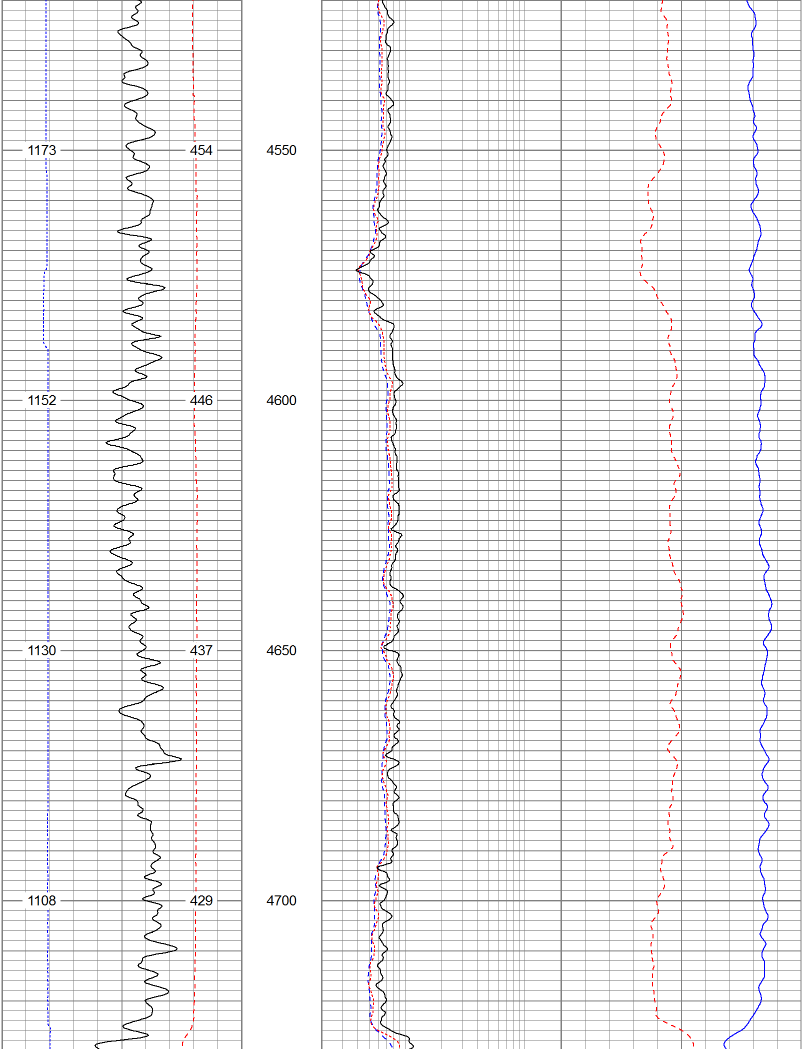
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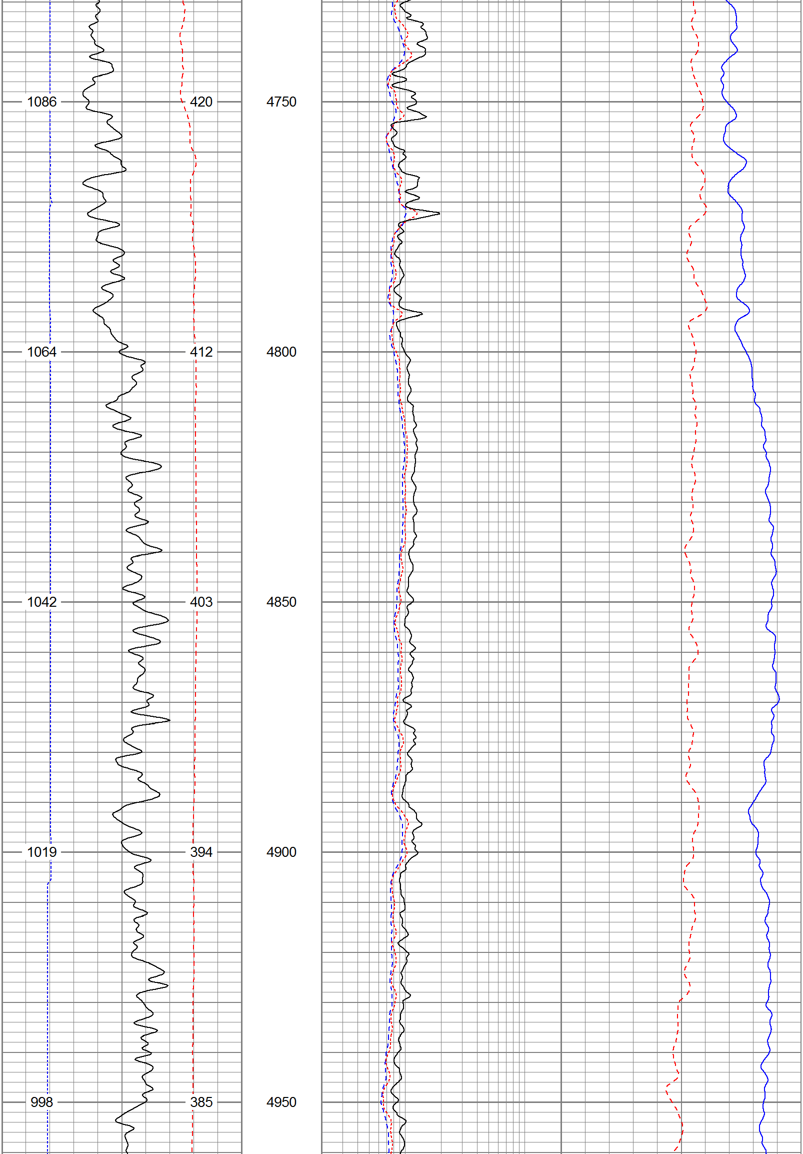
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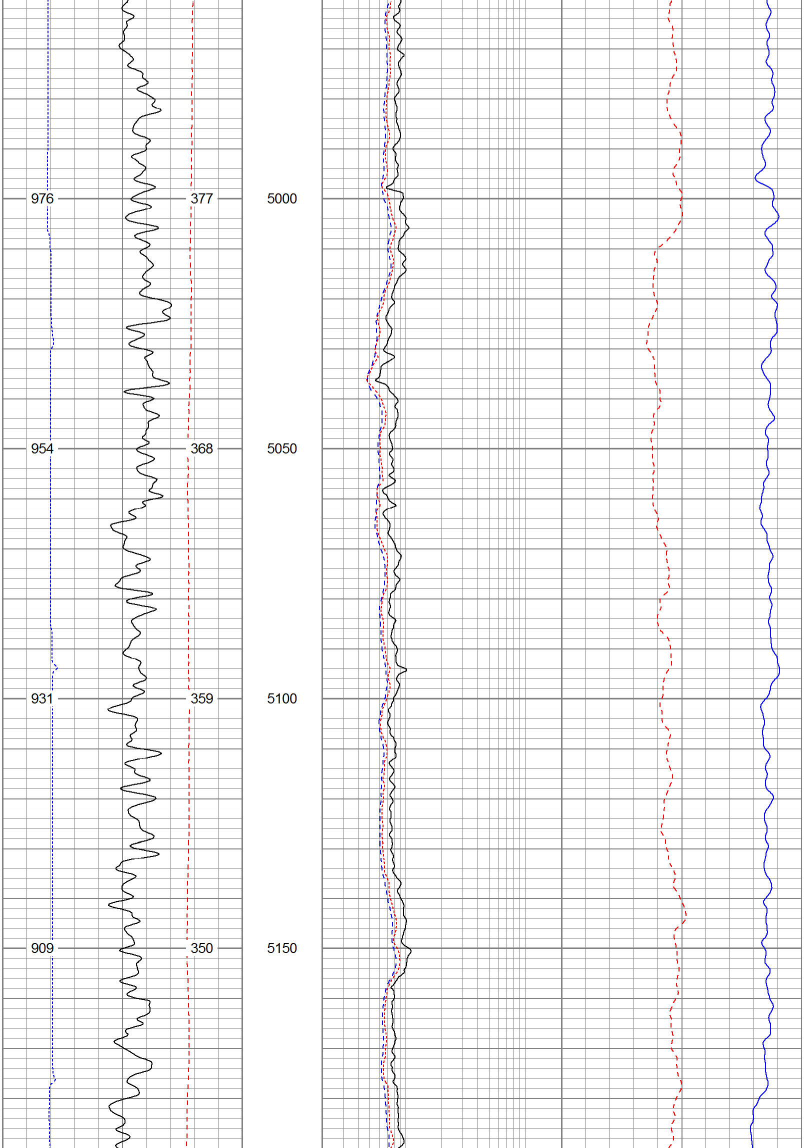
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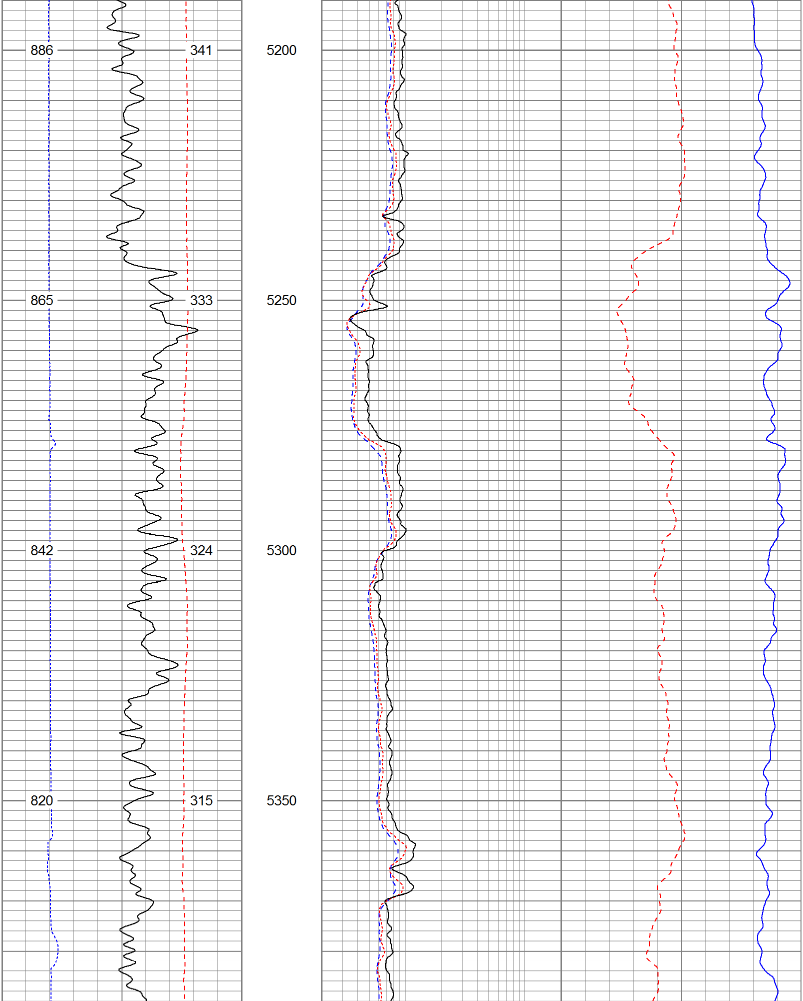
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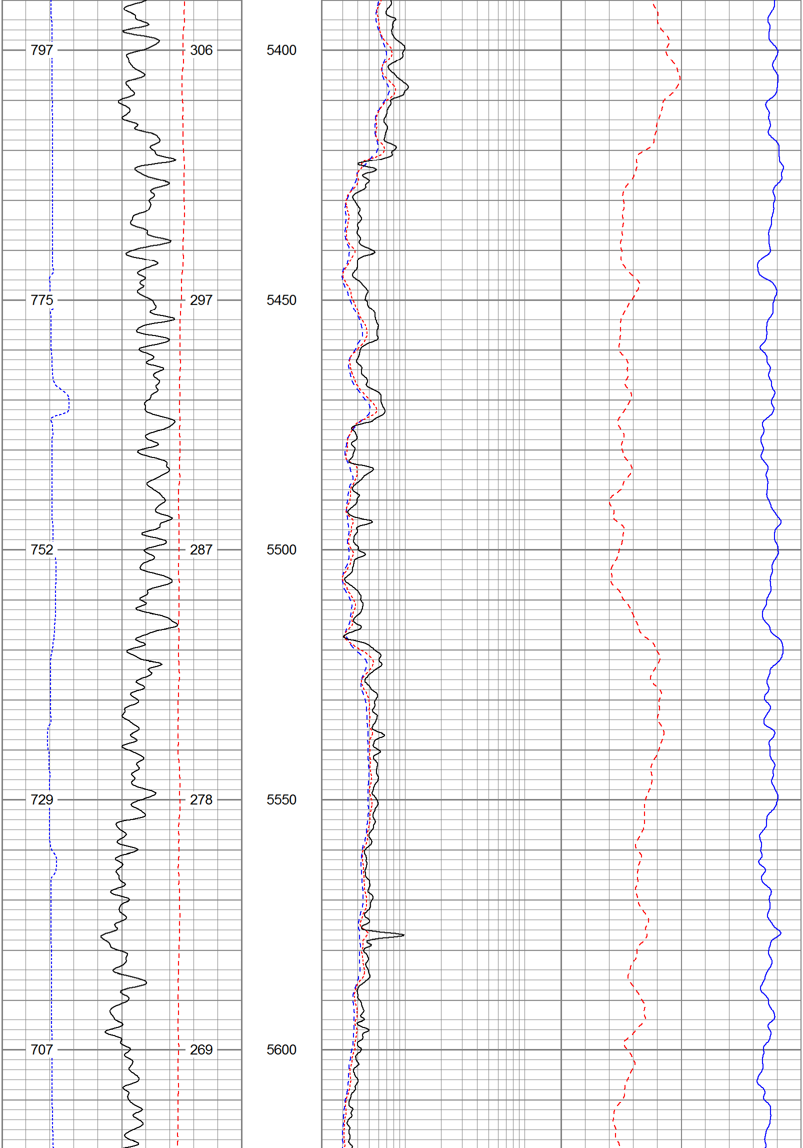
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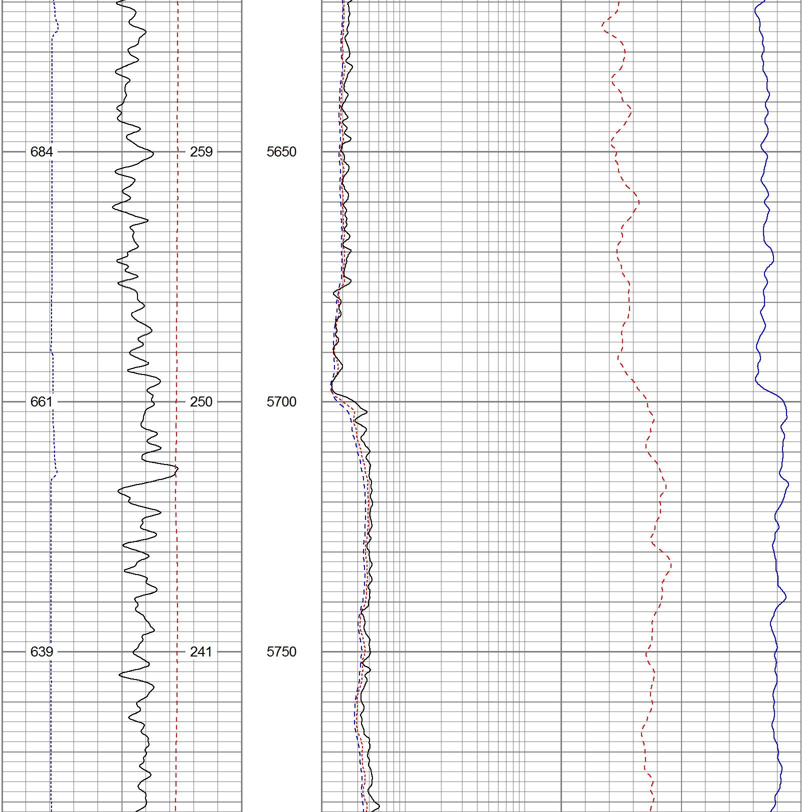
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7	Caliper (in)	17	2	Deep Resistivity (Ohm-m)	200	40	Density Porosity (pu)	0
0	Gamma Ray (GAPI)	200	2	Medium Resistivity (Ohm-m)	200	40	Neutron Porosity (pu)	0
0	SP (mV)	200	2	Shallow Resistivity (Ohm-m)	200			

PIONEER
Pioneer Energy Services

MAIN PASS

Database File: 133974.db
Dataset Pathname: FINAL
Presentation Format: cdl
Dataset Creation: Sat Apr 04 16:44:36 2015
Charted by: Depth in Feet scaled 1:240

7	Caliper (in)	17	2	Bulk Density (g/cc)	3
0	Gamma Ray (GAPI)	200	30	Density Porosity (pu)	-10
			-0.5	Correction (g/cc)	0.5

Calibration Report

Database File: 133974.db
Dataset Pathname: pass1
Dataset Creation: Sat Apr 04 14:29:27 2015 by Log Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: 1011-PSI
Surface Cal Performed:

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	0.000	1.000	0.000	1.000	mmho/m	0.550	-32.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.480	-32.000

Compensated Density Calibration Report

Serial-Model: 998-PSI
Master Calibration Performed: Sat Apr 04 14:23:07 2015

Master Calibration

	Density	Far Detector	Near Detector

Magnesium	1.750	g/cc	5781.01	7666.81	cps
Aluminum	2.690	g/cc	1082.67	4886.43	cps

	Size		Reading
Small Ring		in	
Medium Ring		in	
Large Ring		in	

Compensated Neutron Calibration Report

Serial Number: 826
Tool Model: PSI

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.9000
Long Space	1.00	cps	1.00	cps	2.1300

Gamma Ray Calibration Report

Serial Number: 939
Tool Model: PSI
Performed: Sat Apr 04 14:27:58 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6300 GAPI/cps