PIONEER

Pioneer Energy Services

HIGH RESOLUTION INDUCTION

Company Ward Petroleum Corp.
Well Sharp 24-3-11HC
Field Wattenberg
County Adams
State Colorado

Company	Ward Petroleum Corp.		
Well	Sharp 24-3-11HC		
Field	Wattenberg		
County	Adams	State	Colorado

Location: API # : 05001098010000

SHL: 250' FSL & 190' FWL
SWSW

SEC 24 TWP 1S RGE 67W

Other Services
Density
Neutron

Permanent Datum	GL	Elevation	5019
Log Measured From	KB		
Drilling Measured From	KB		

Elevation
K.B. 5041
D.F. 5040
G.L. 5019

Date	June 21, 2014		
Run Number	1		
Depth Driller	8258'		
Depth Logger	7560'		
Bottom Logged Interval	7560'		
Top Log Interval	Casing		
Casing Driller	1235'		
Casing Logger	1235'		
Bit Size	8-3/4"		
Type Fluid in Hole	Chem Gel		
Density / Viscosity	10.5 / 63		
pH / Fluid Loss	9.6 / 5.8		
Source of Sample	Flowline		
Rm @ Meas. Temp	3.05 @ 65 F		
Rmf @ Meas. Temp	2.44 @ 65 F		
Rmc @ Meas. Temp	3.66 @ 65 F		
Source of Rmf / Rmc	Measure / Calc		
Rm @ BHT	1.04 @ 185 F		
Time Circulation Stopped	0330 6/20		
Time Logger on Bottom	0425		
Maximum Recorded Temperature	185 F		
Equipment Number	49		
Location	Brighton, CO		
Recorded By	Matt Gill		
Witnessed By	Kevin Brakovec		

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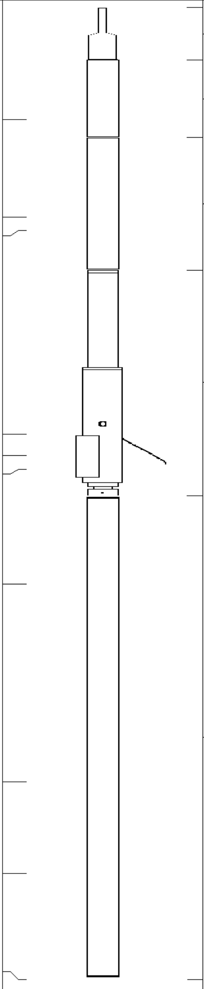
All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

Annular volume calculated for 7" casing
Fronter Drilling Rig 28
Thank you for using Pioneer Energy Services!!

Sensor	Offset (ft)
GR	0.00
CNLSC	-3.67
CNSSC	-4.17
DCAL	-11.84
LSD	-12.67
SSD	-13.17
RLL3	-17.52
CILD	-24.97
CILM	-28.42
SP	-32.42

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
CNT-PSI (826)	5.00	3.50	70.00
CDL-PSI (128)	8.50	5.00	285.00
DIL-PSI (1011)	18.25	3.75	175.00

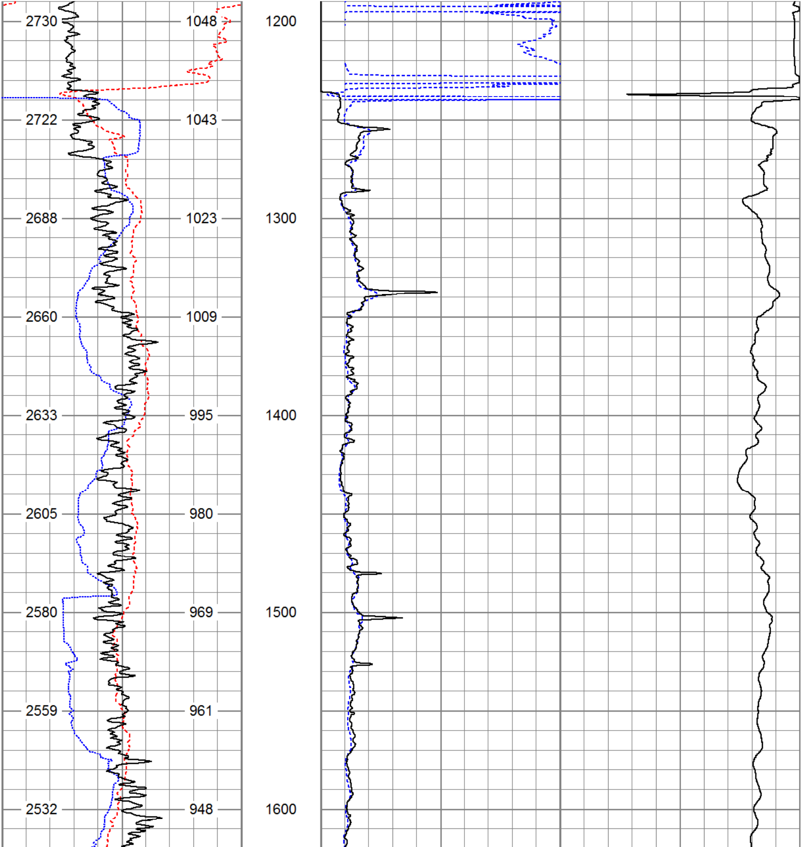
Dataset: 13585.db: field/well/run1/pass2
Total Length: 36.67 ft
Total Weight: 600.00 lb
O.D. 5.00 in

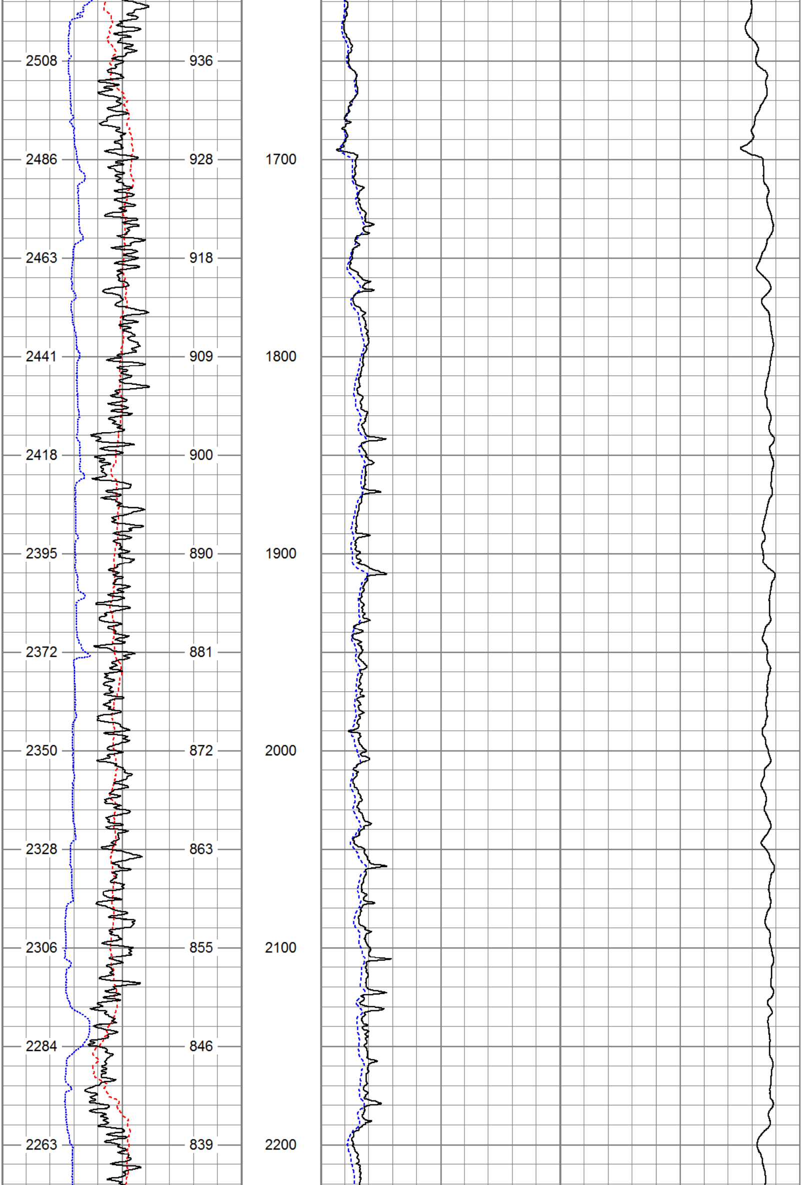
Database File:	13585.db
Dataset Pathname:	final
Presentation Format:	dilin5
Dataset Creation:	Sat Jun 21 05:05:05 2014
Charted by:	Depth in Feet scaled 1:600

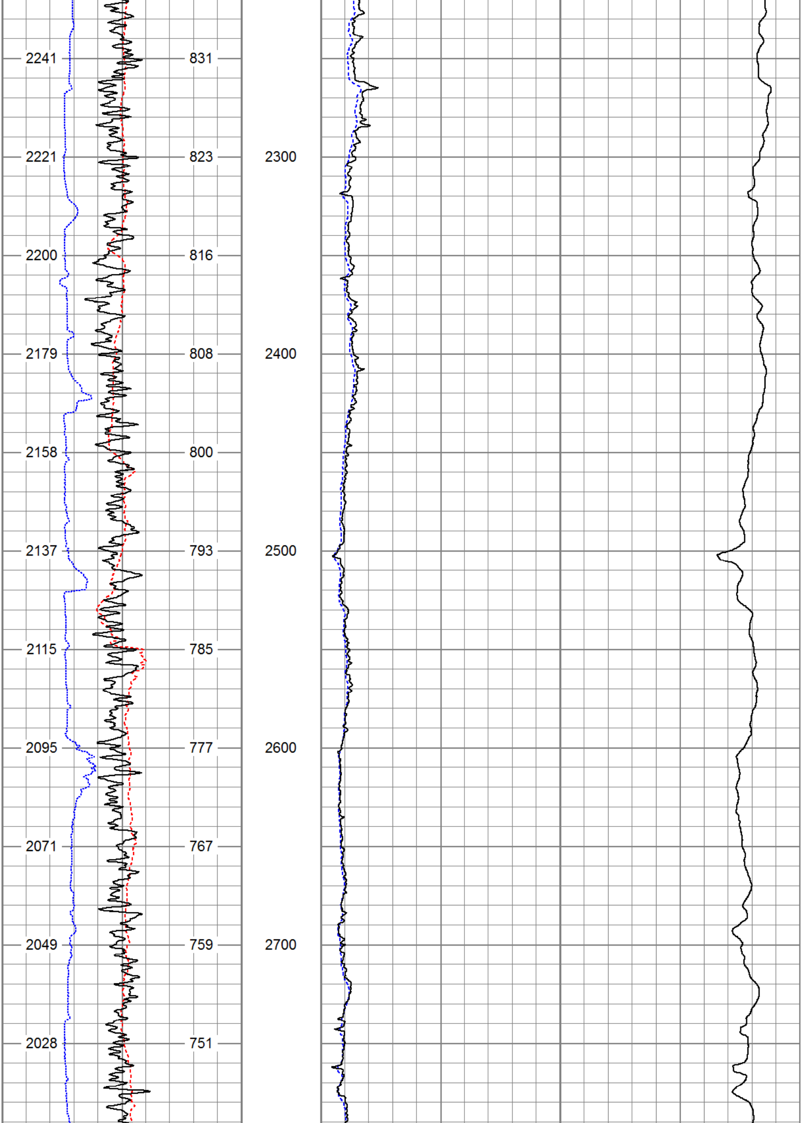
0 SP (mV) 200
6 Caliper (in) 16
0 Gamma Ray (GAPI) 200
TBHV (ft3) ABHV (ft3)

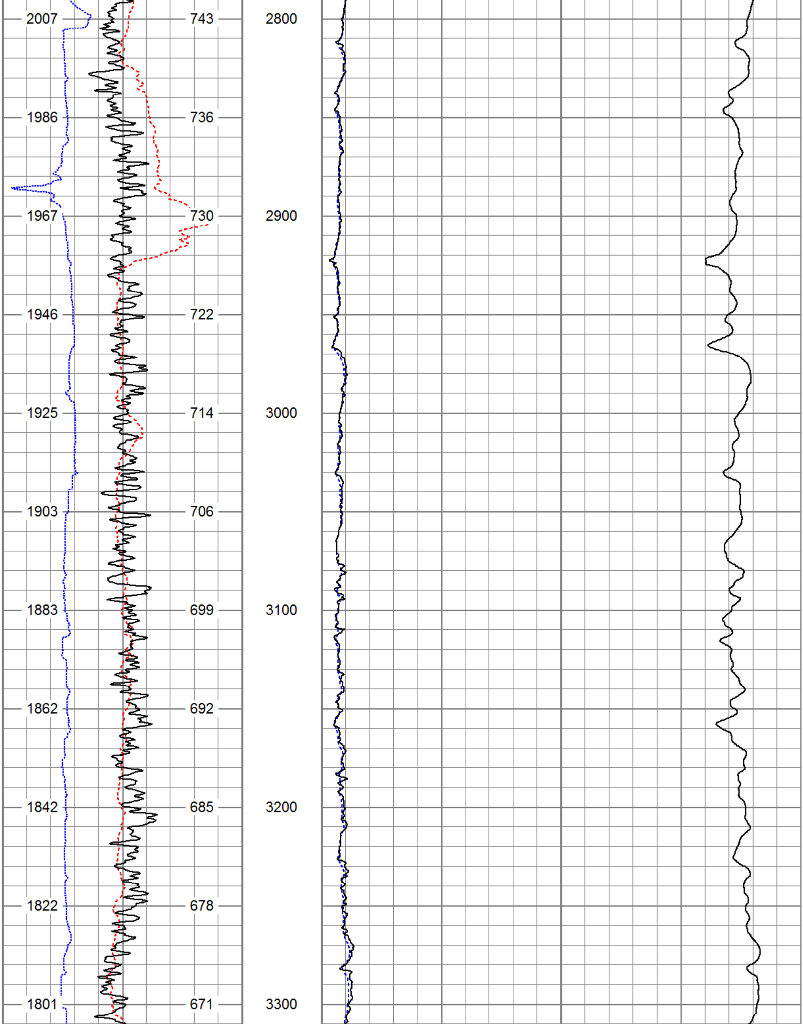
0 Deep Resistivity (Ohm-m) 50
0 Shallow Resistivity (Ohm-m) 50
50 RILD (Ohm-m) 500
50 RLL3 (Ohm-m) 500

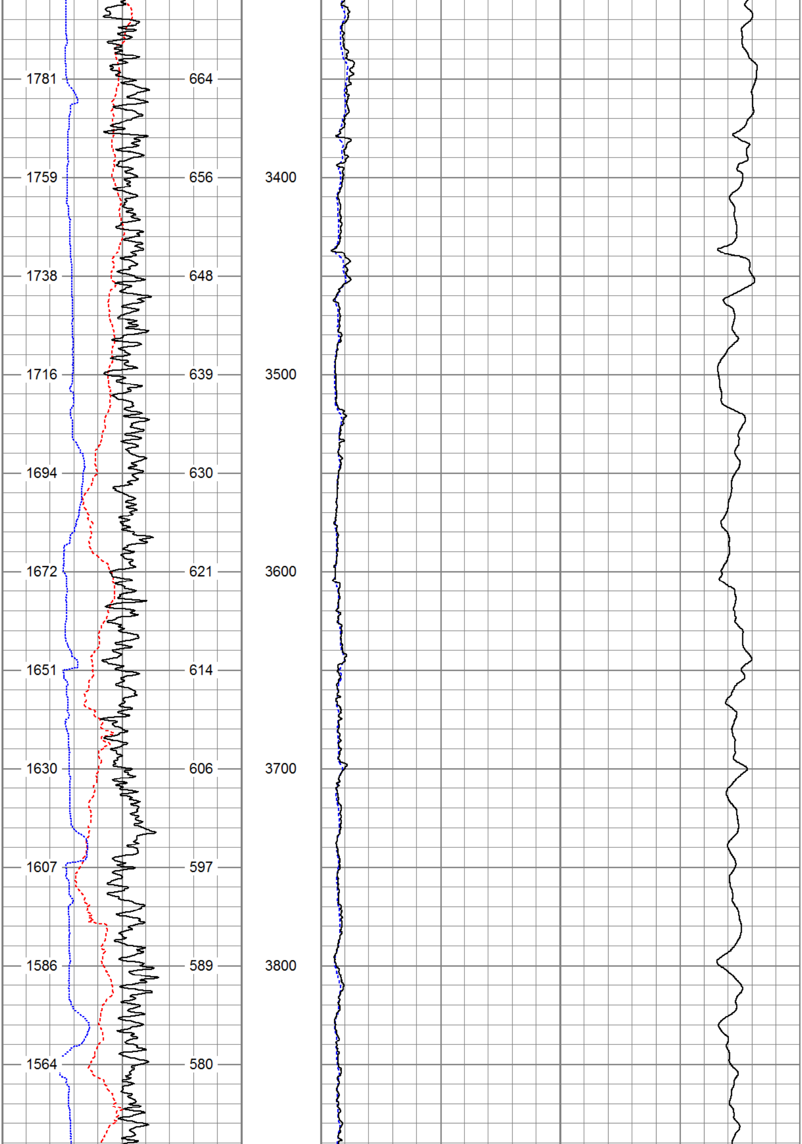
1000 CILD (mmho/m) 0

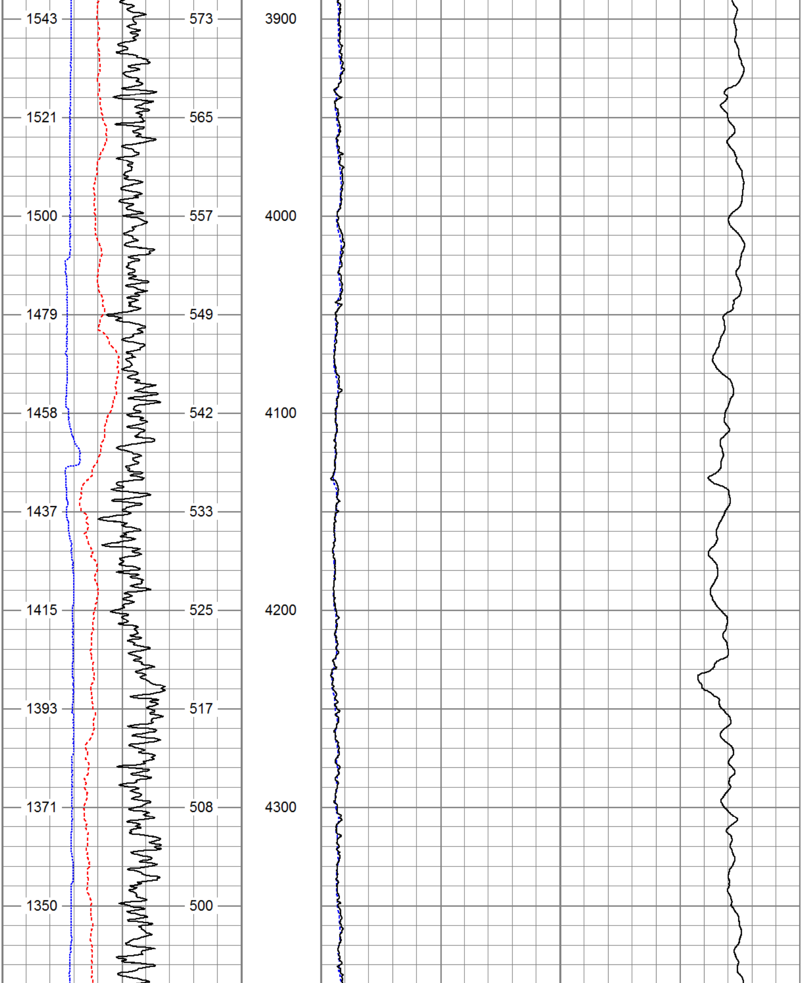


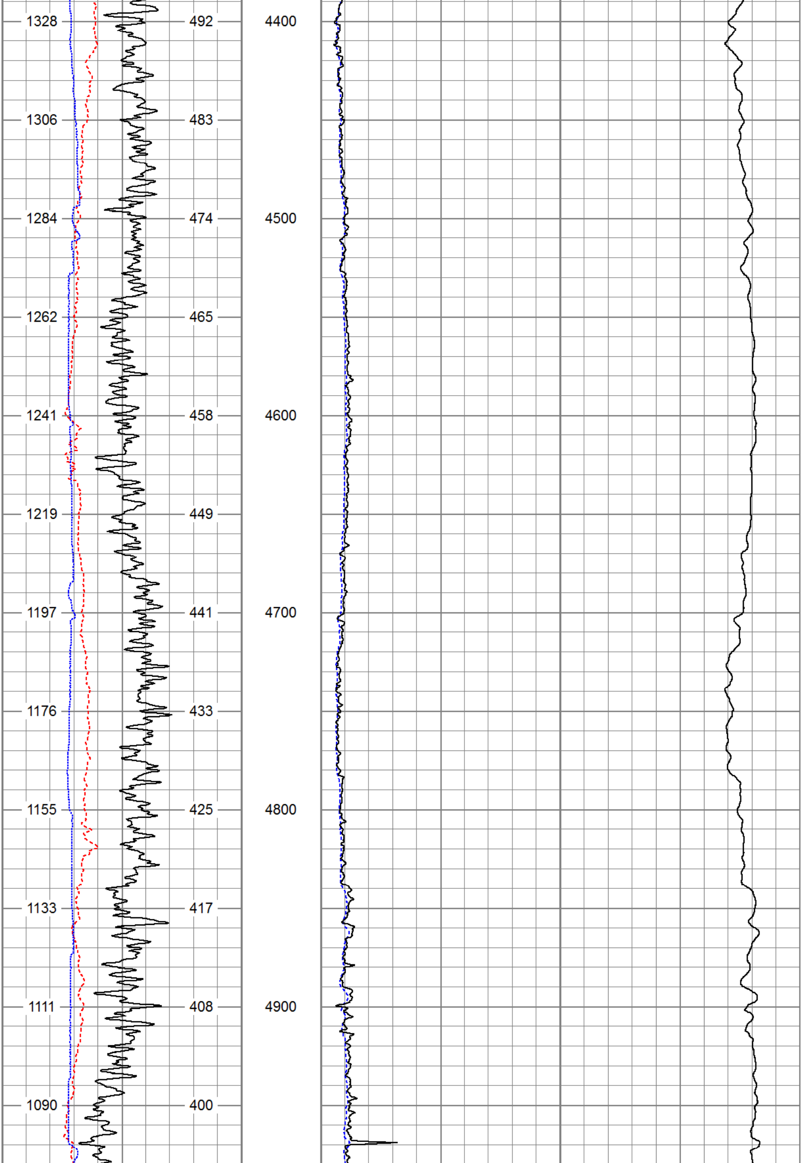


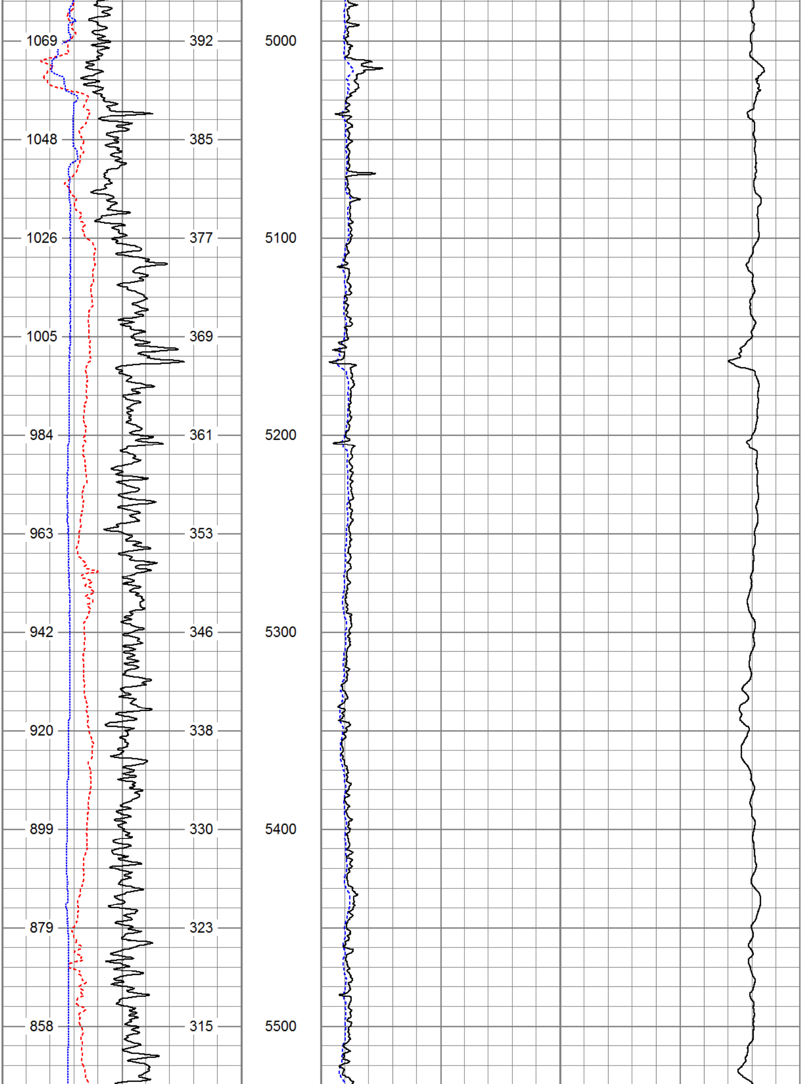


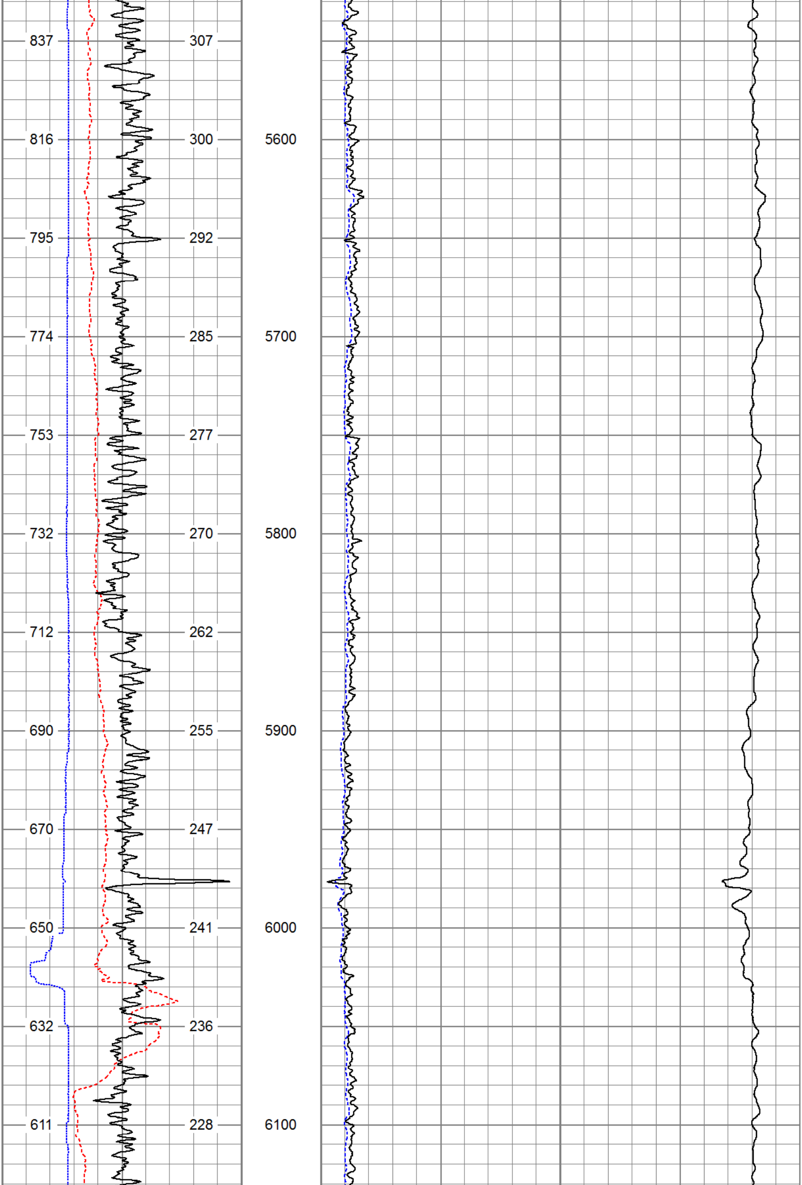


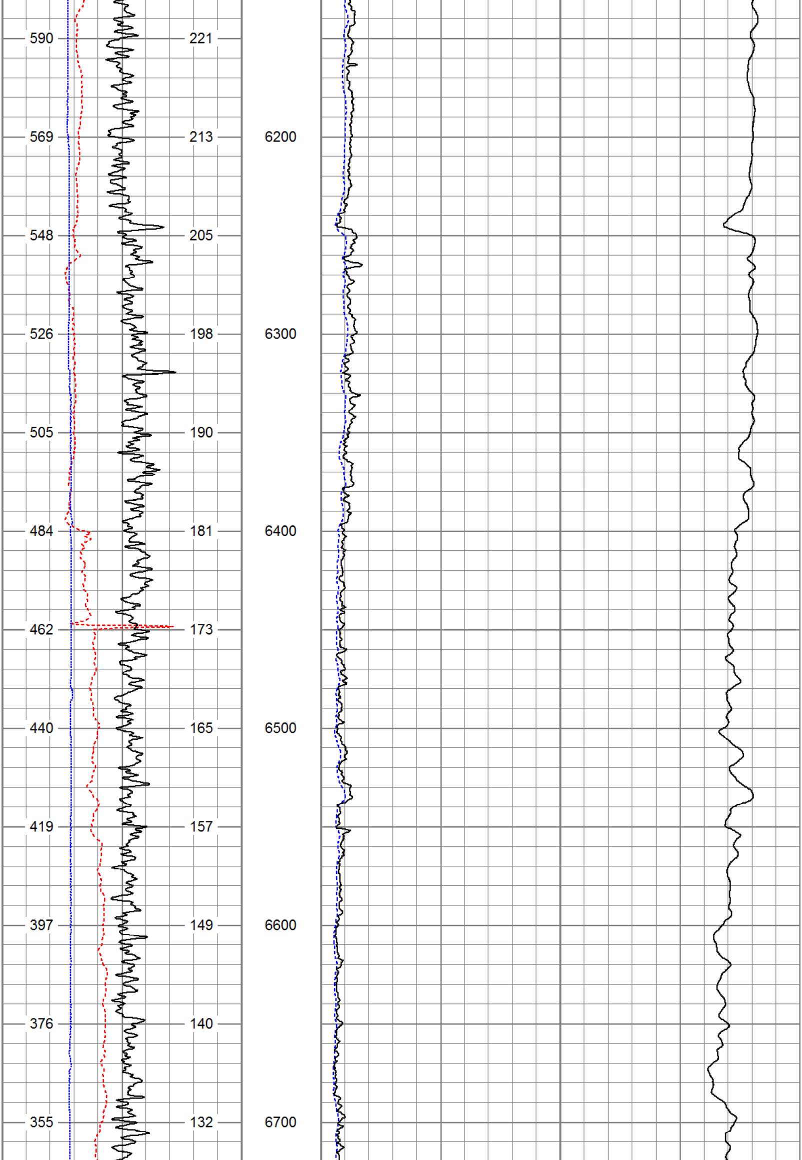


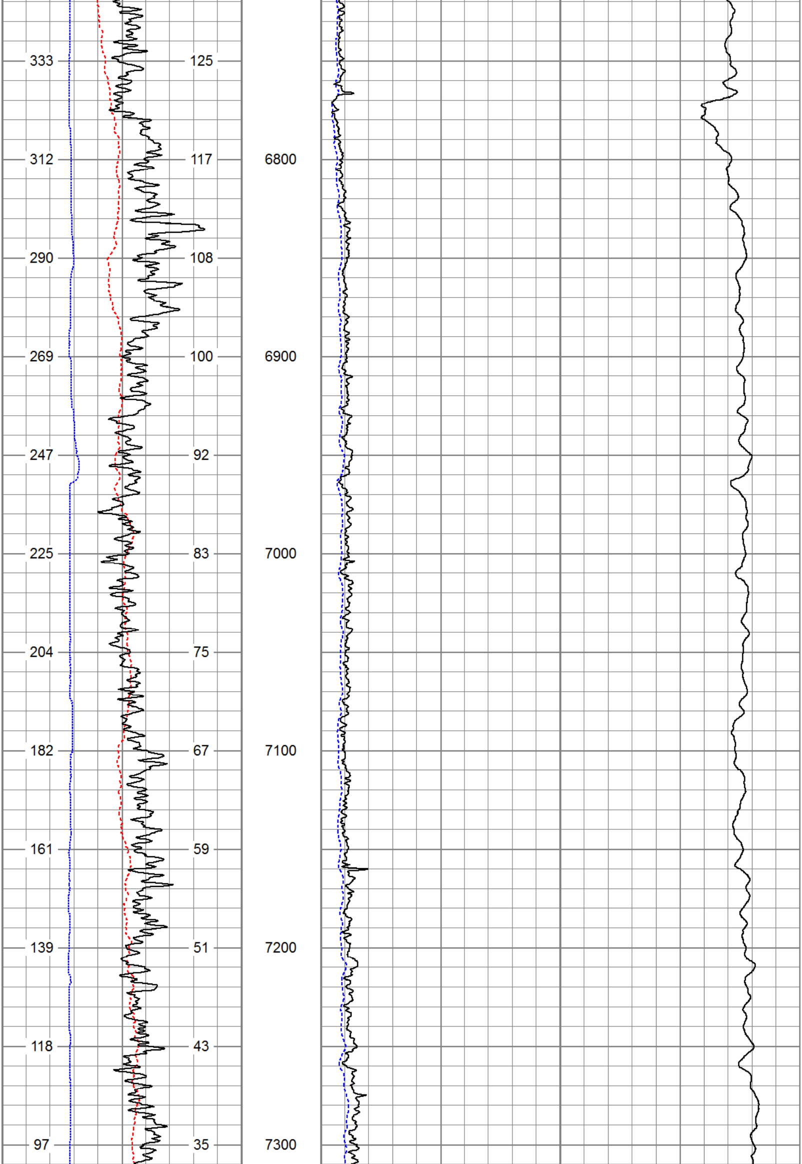


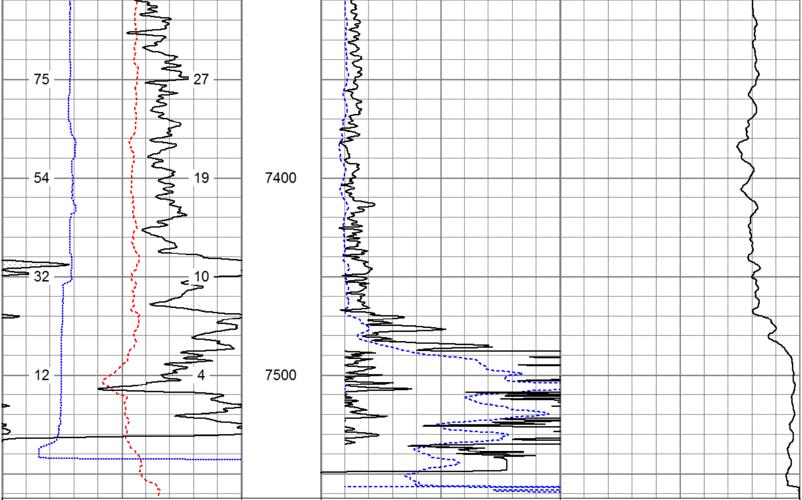












0 SP (mV) 200
6 Caliper (in) 16
0 Gamma Ray (GAPI) 200
TBHV (ft3) ABHV (ft3)

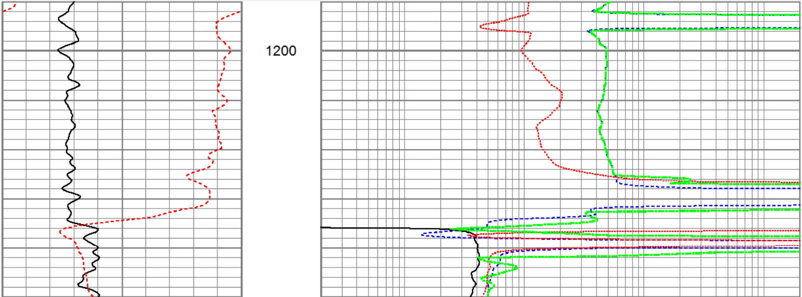
0 Deep Resistivity (Ohm-m) 50
0 Shallow Resistivity (Ohm-m) 50
50 RILD (Ohm-m) 500
50 RLL3 (Ohm-m) 500

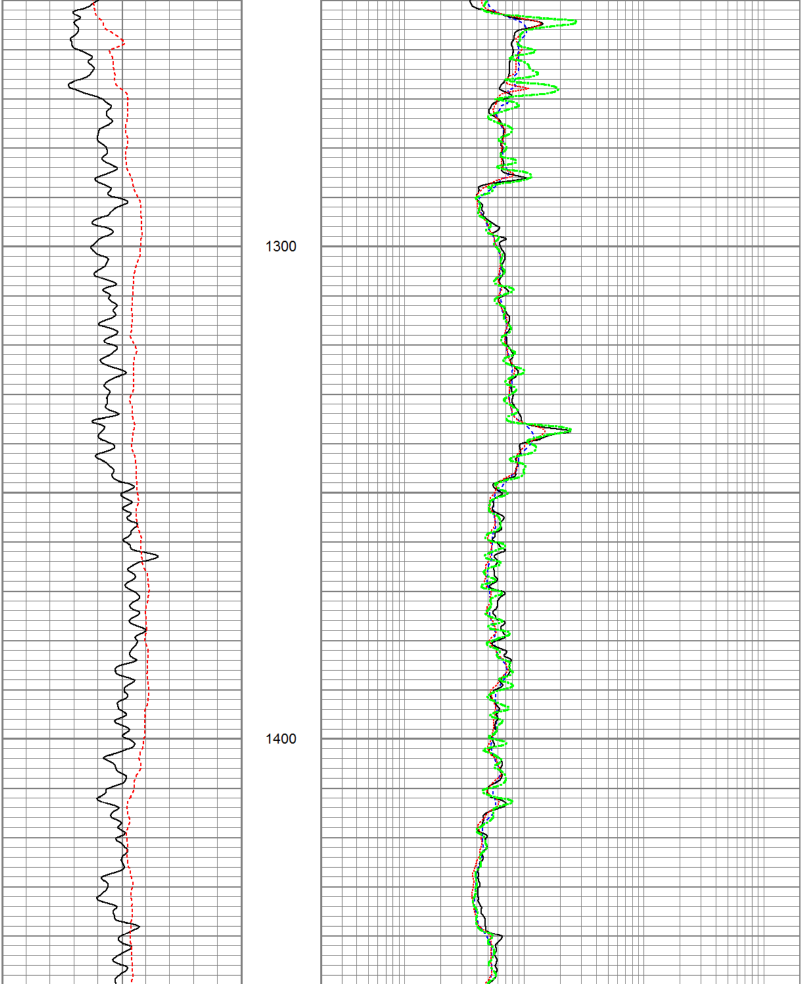
1000 CILD (mmho/m) 0

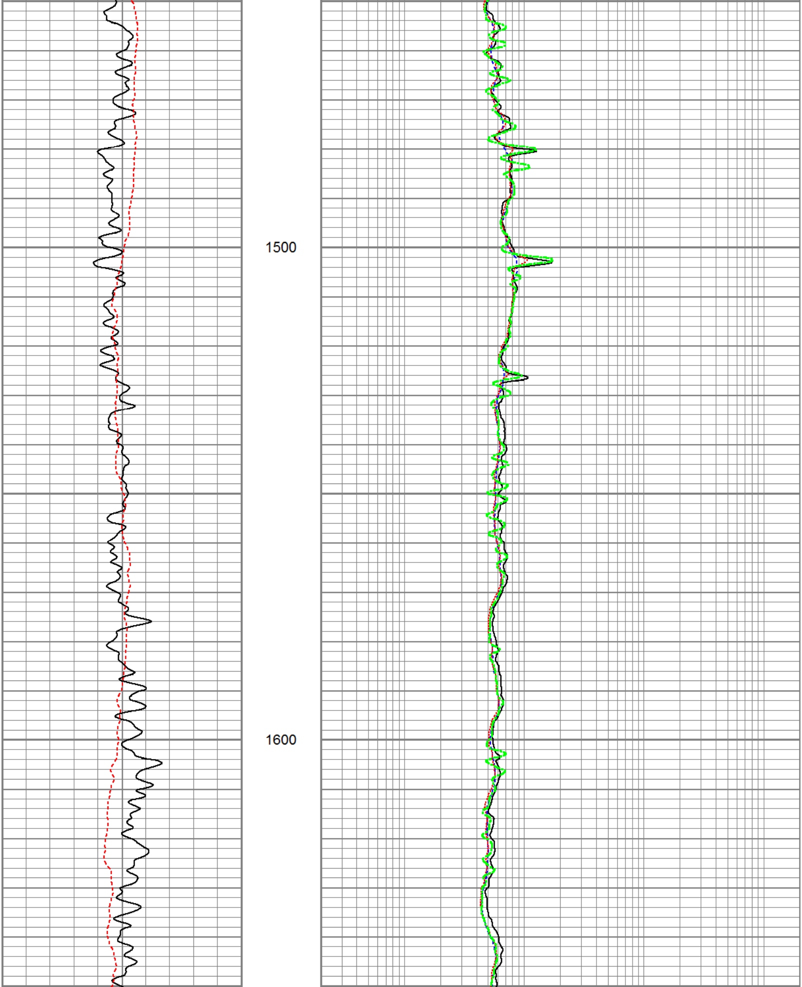
Database File:	13585.db
Dataset Pathname:	final
Presentation Format:	dil
Dataset Creation:	Sat Jun 21 05:05:05 2014
Charted by:	Depth in Feet scaled 1:240

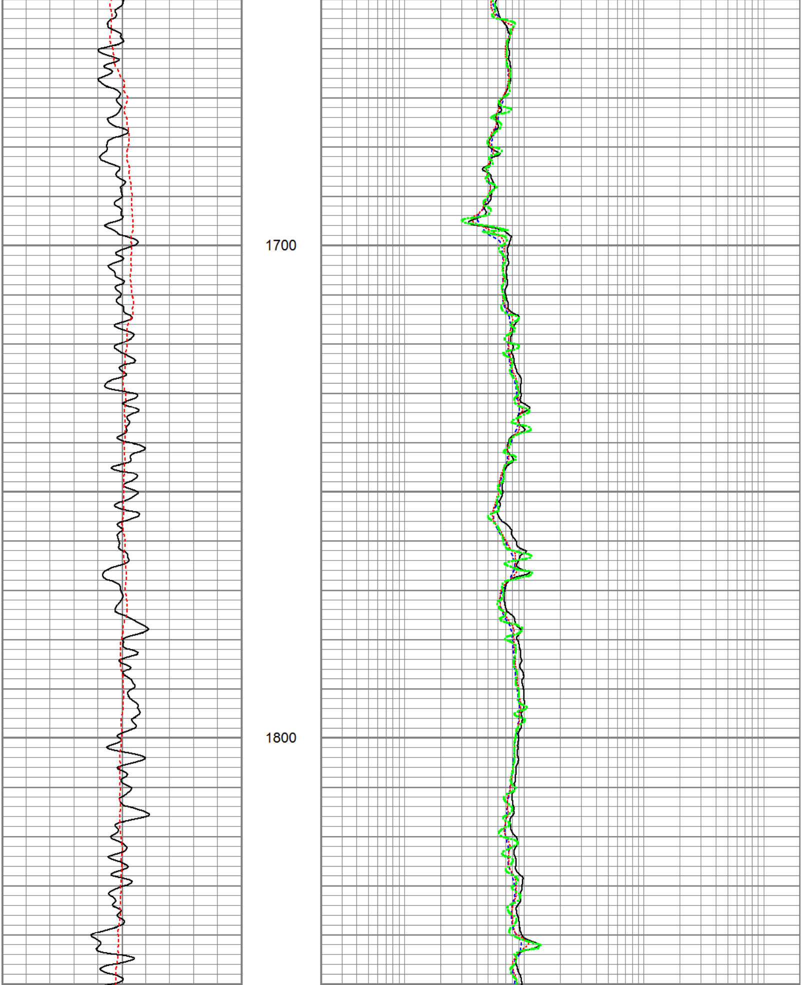
0 Gamma Ray (GAPI) 200
0 SP (mV) 200

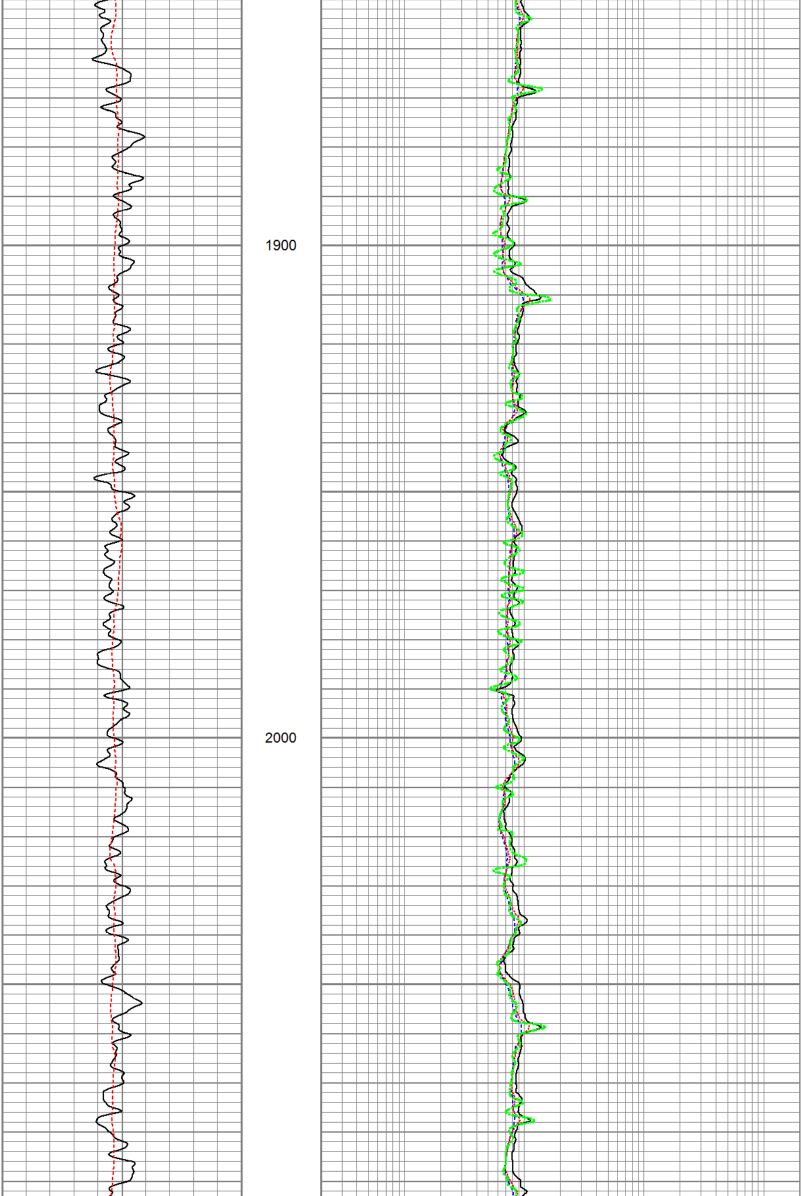
0.2 Deep Resistivity (Ohm-m) 2000
0.2 Shallow Resistivity (Ohm-m) 2000
0.2 Medium Resistivity (Ohm-m) 2000
0.2 Rt (Ohm-m) 2000

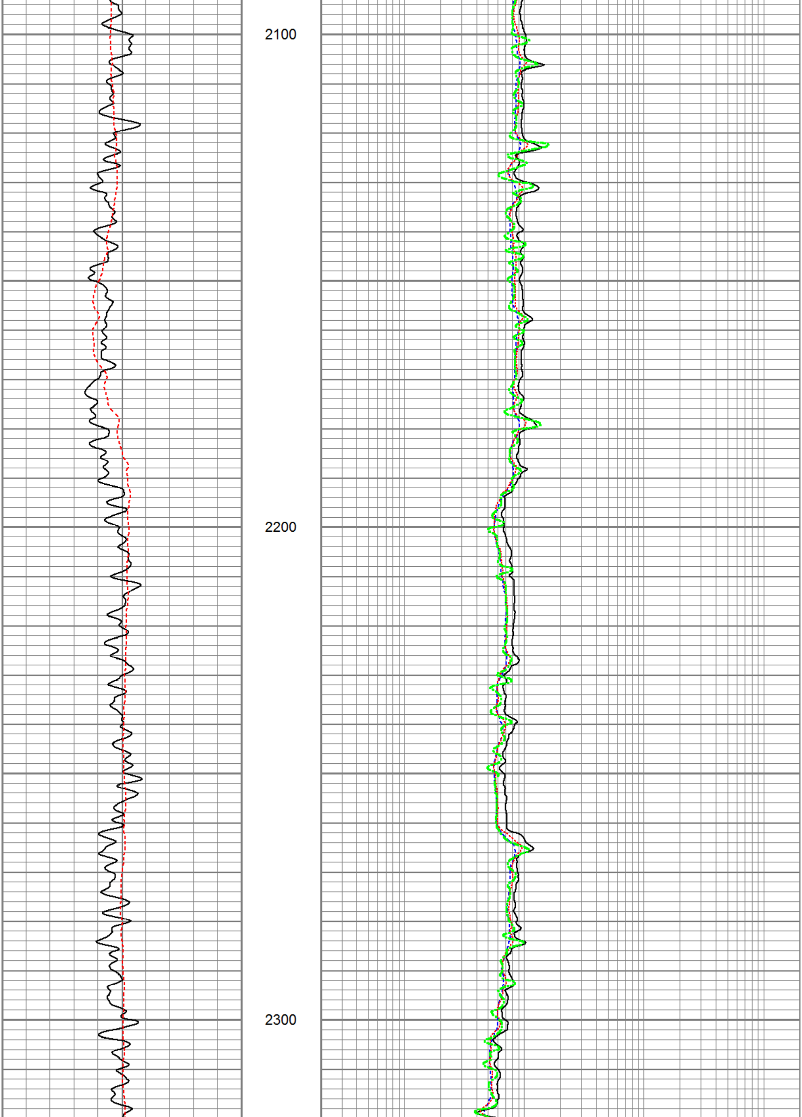








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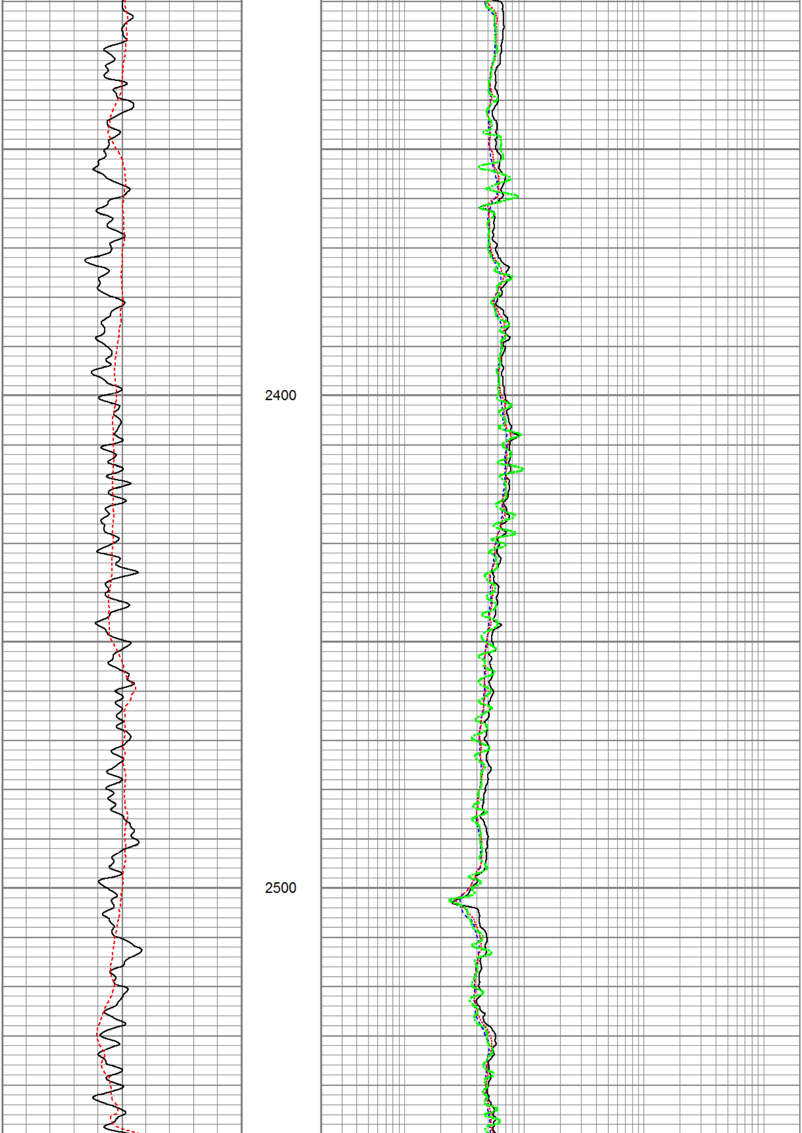
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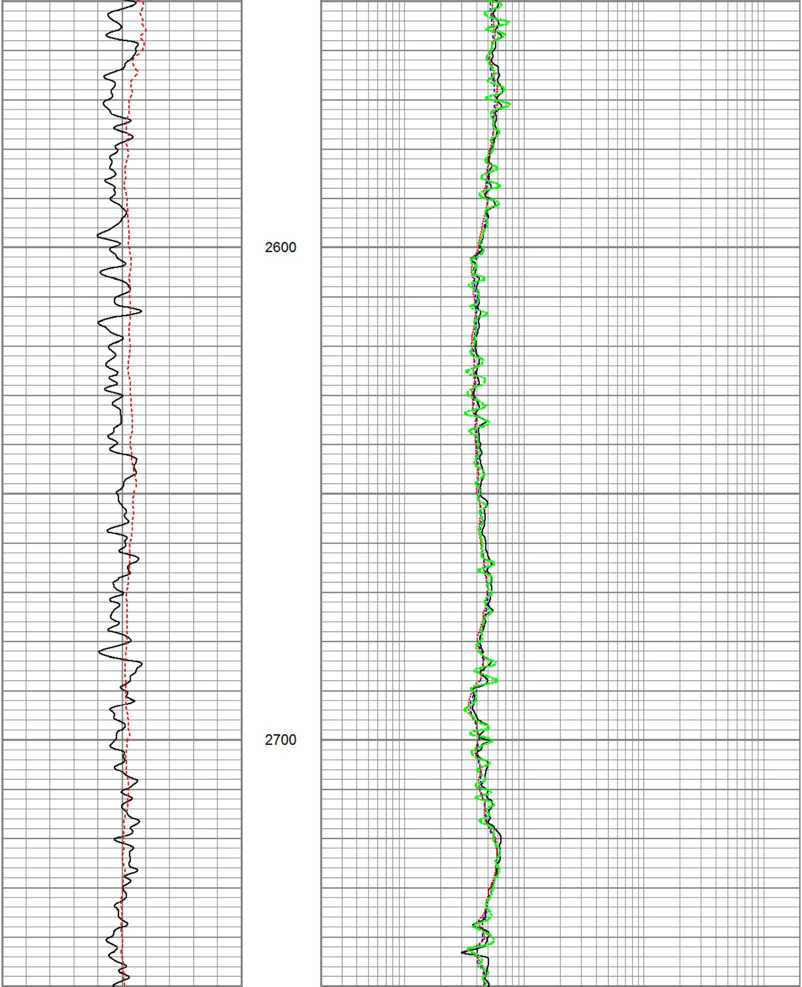
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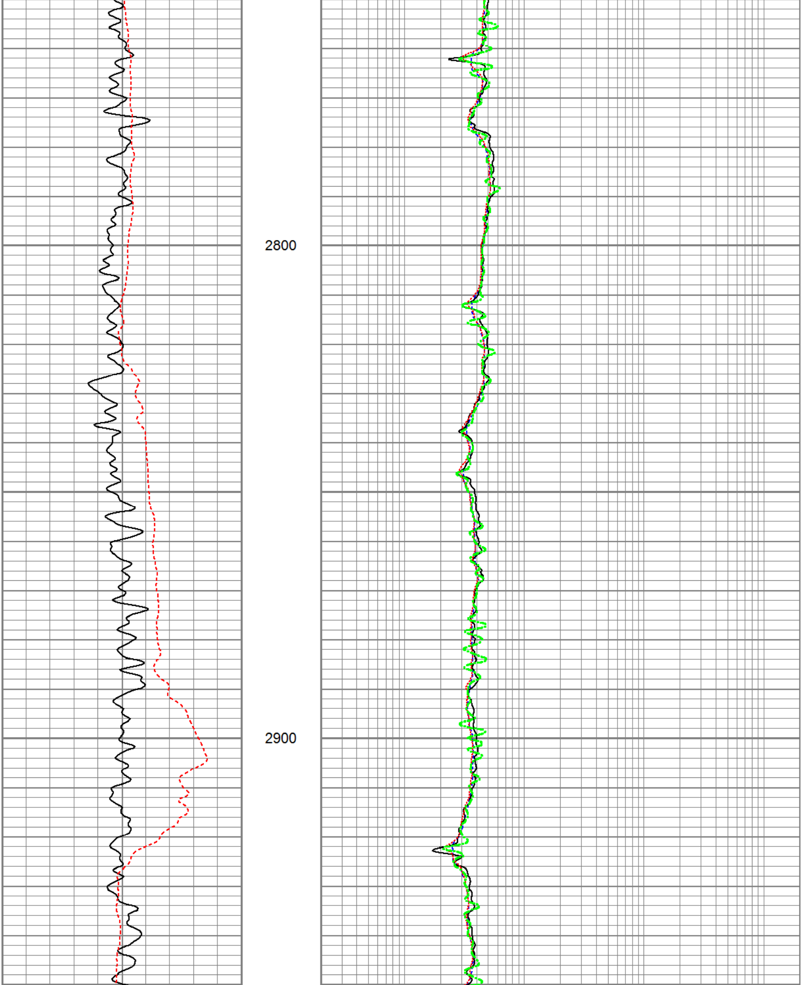
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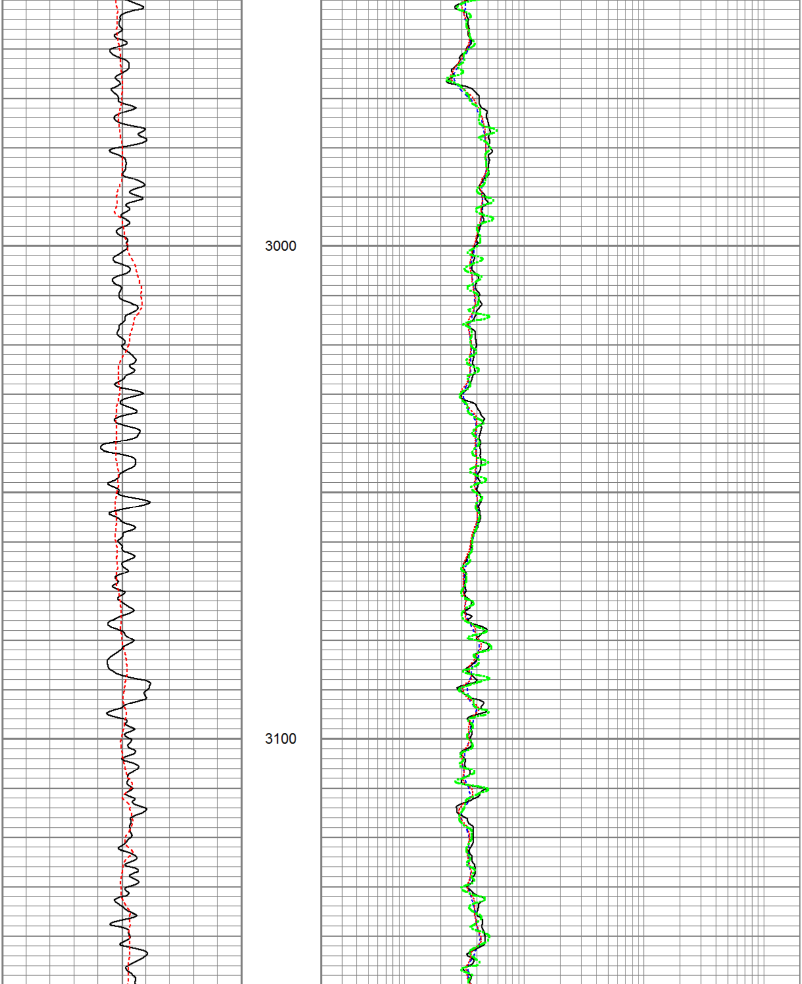
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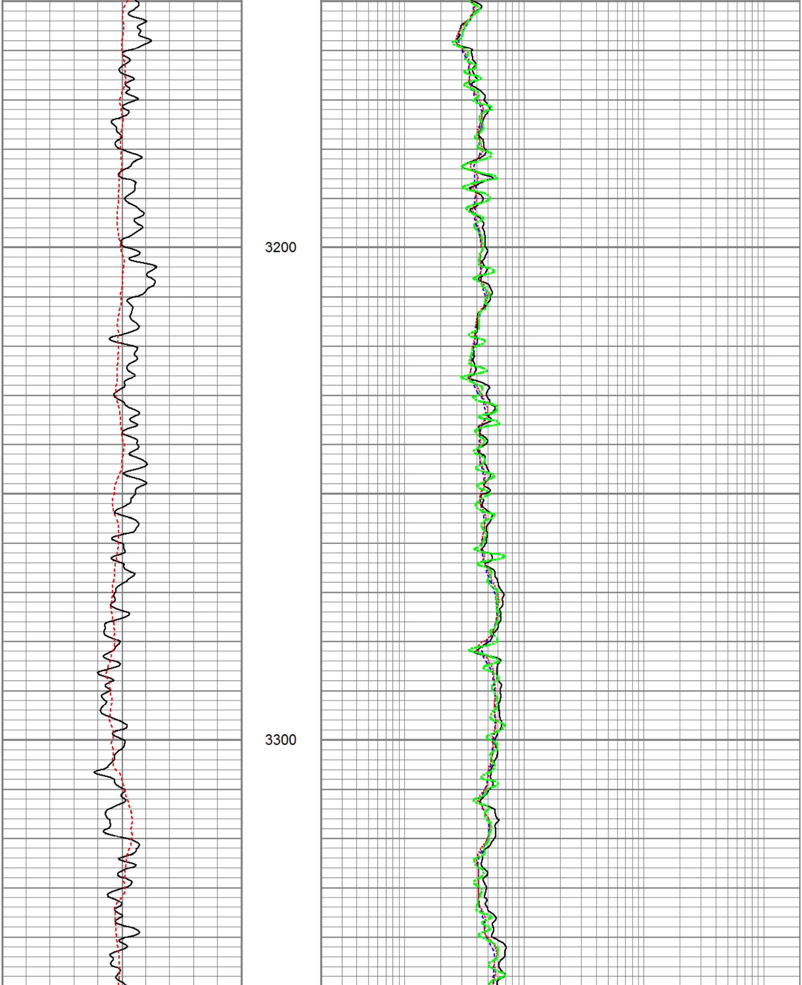
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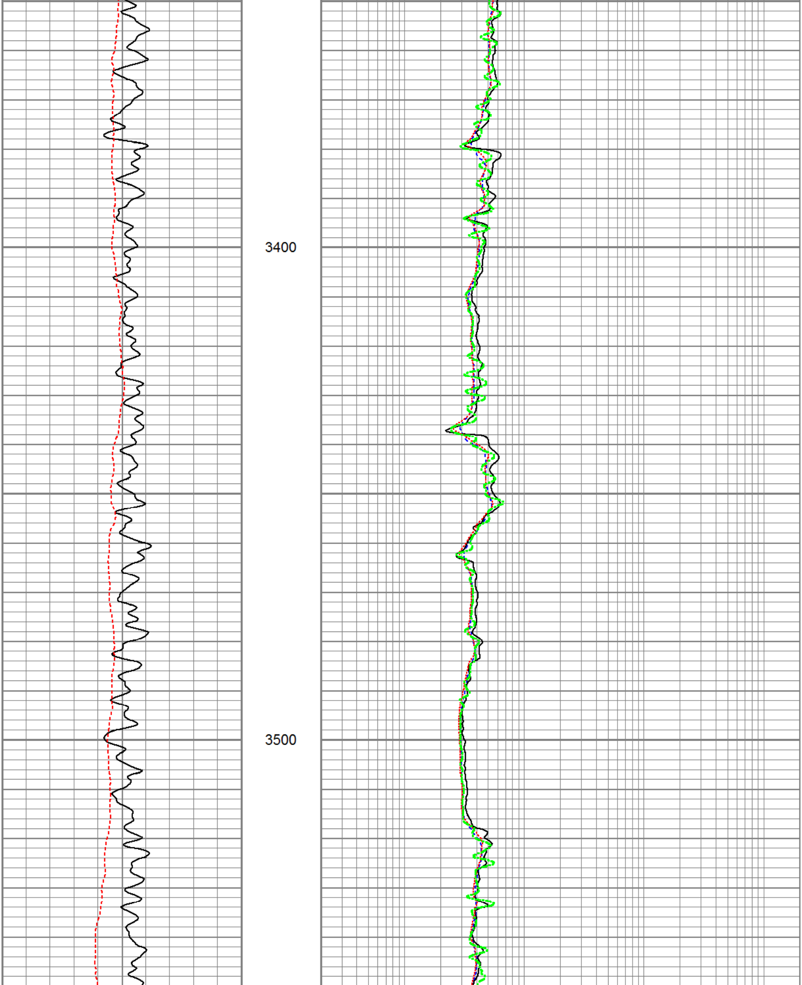
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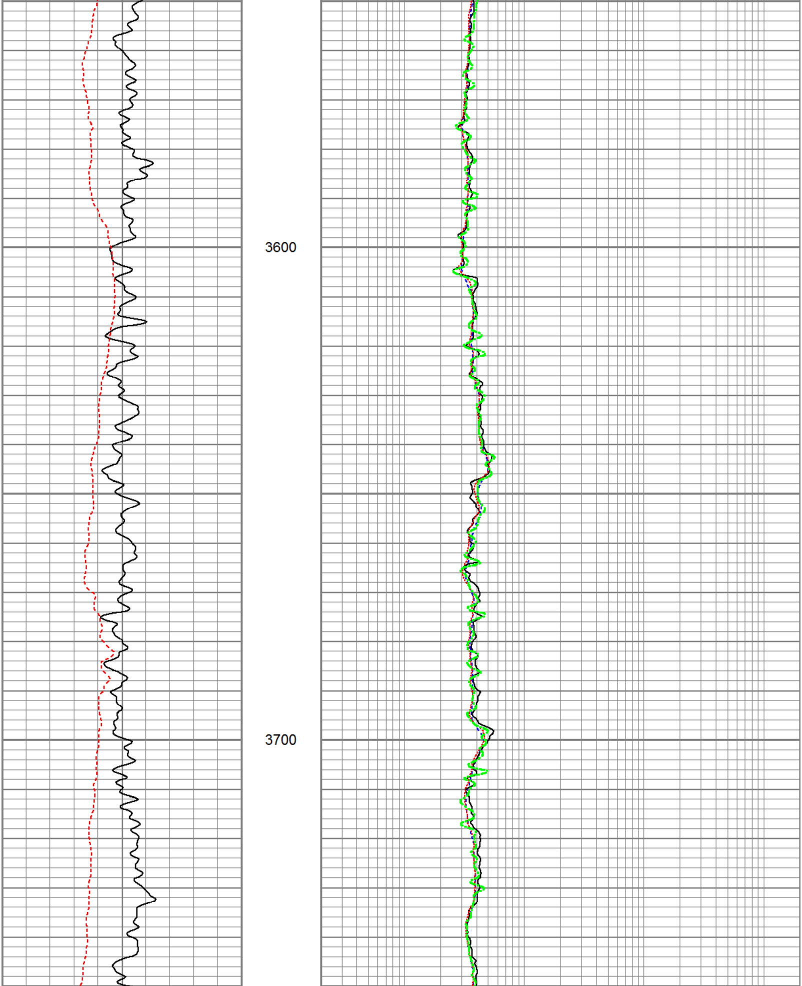
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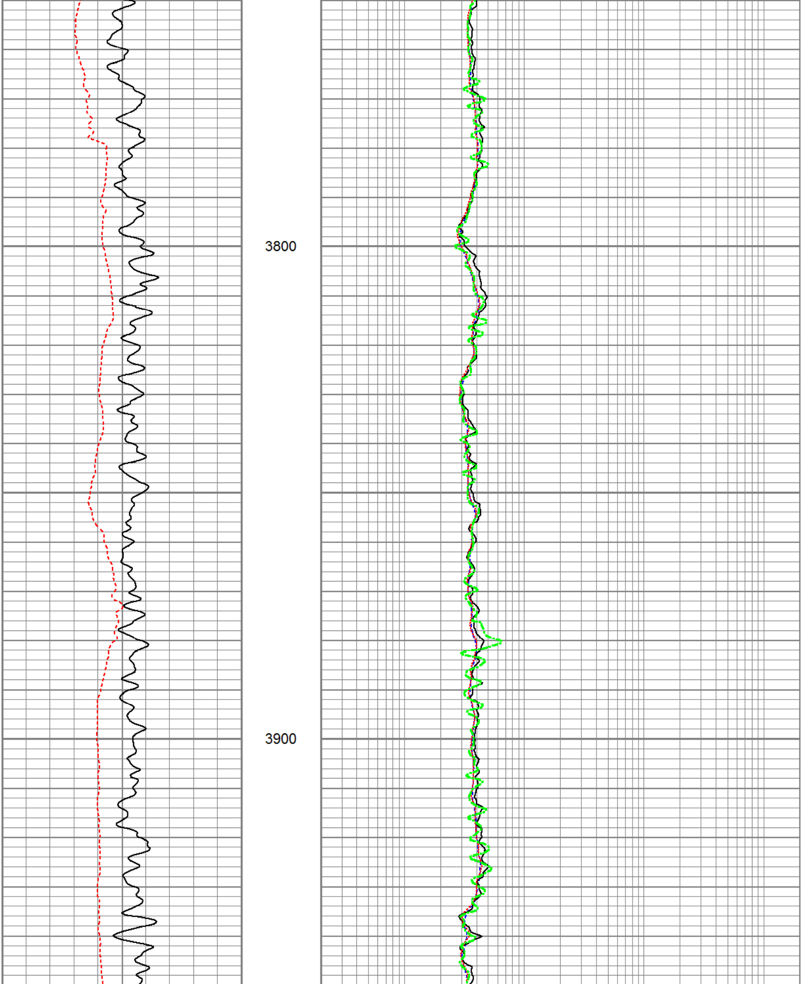
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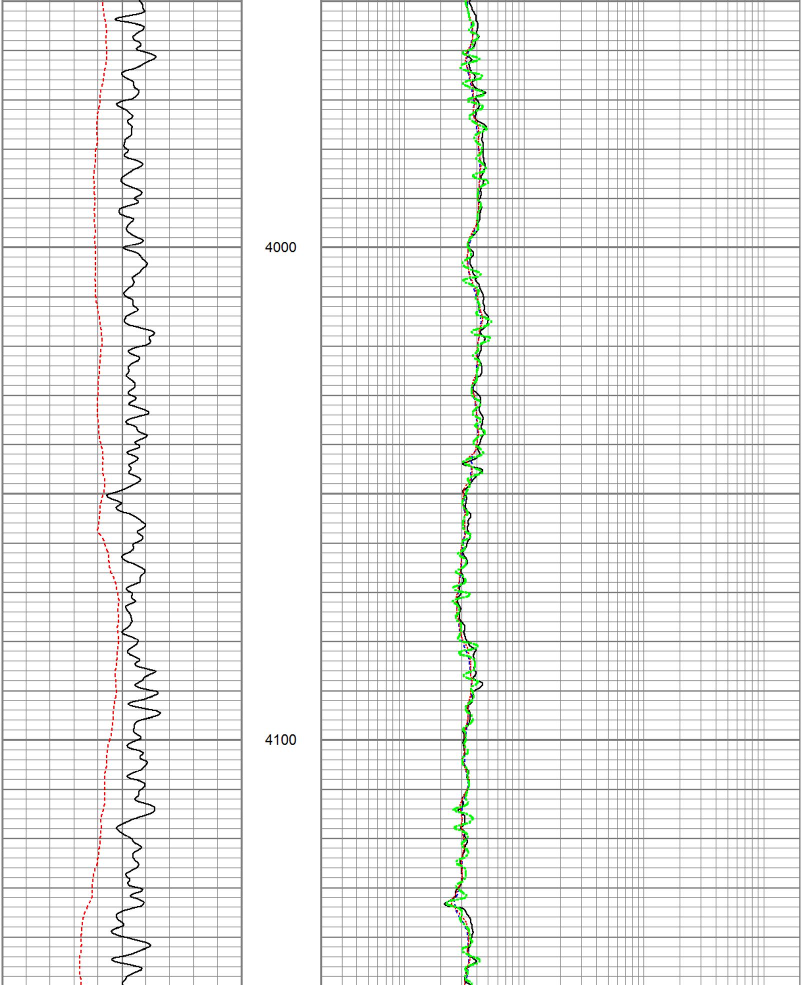
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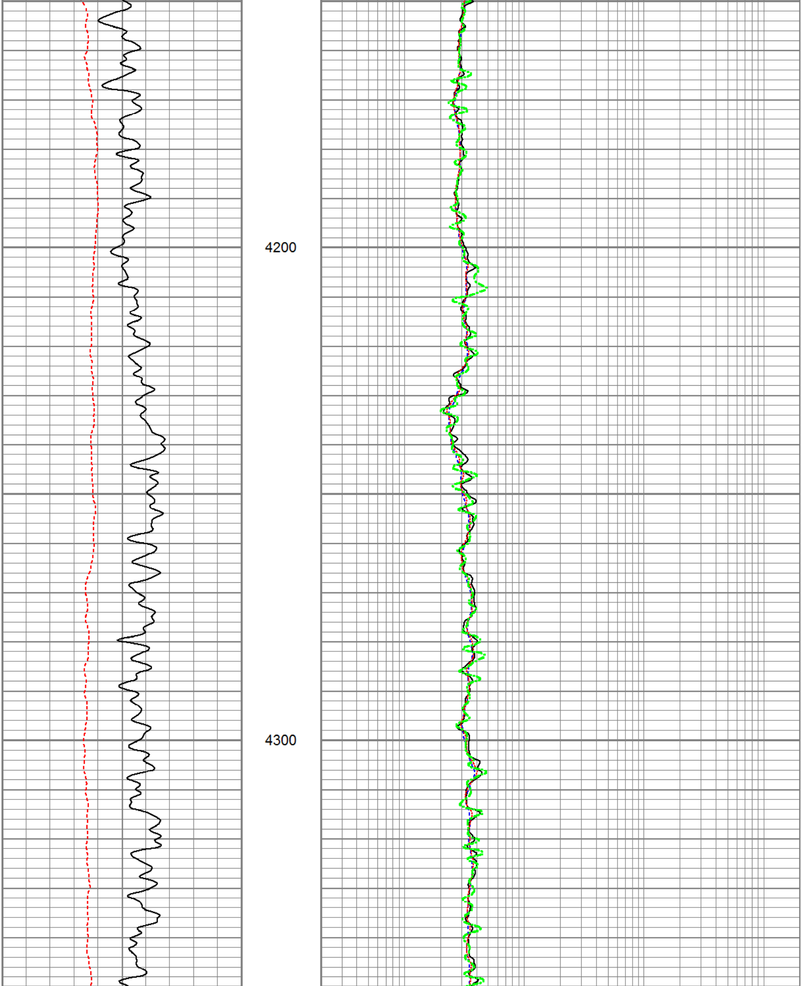
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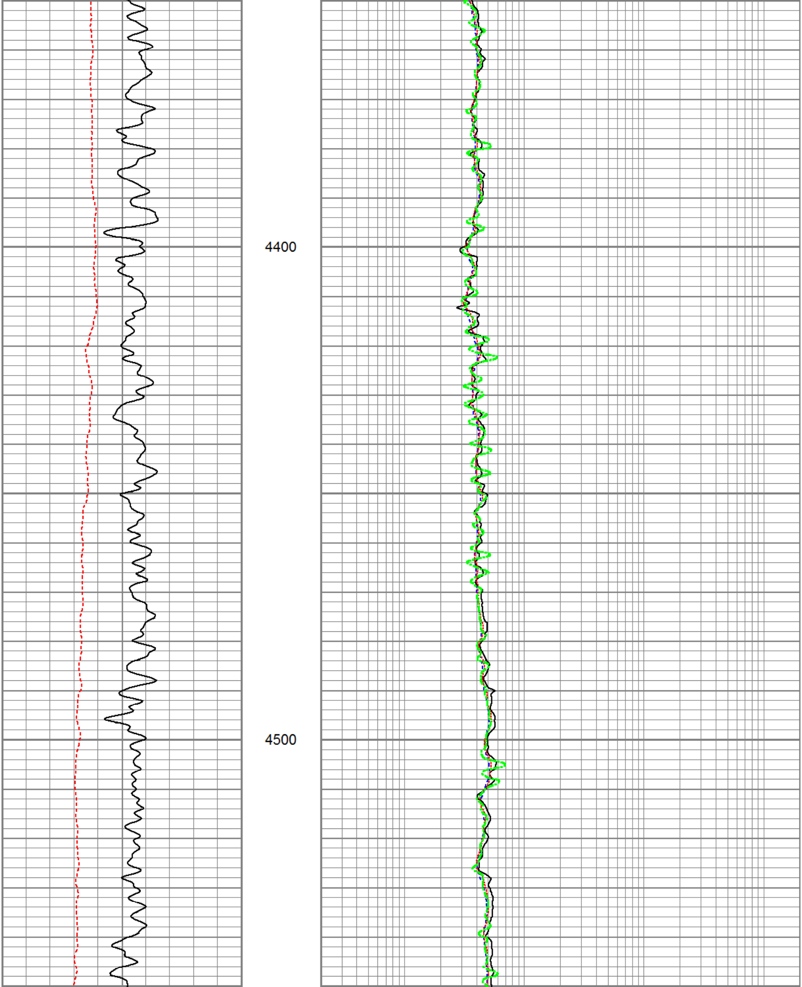
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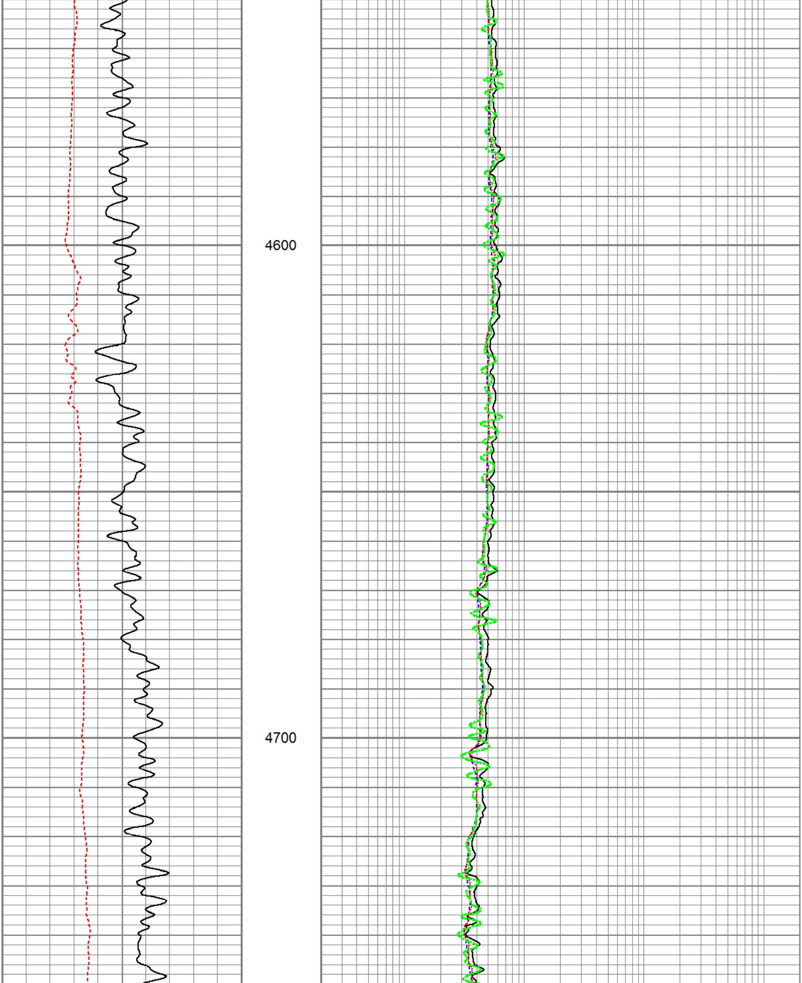
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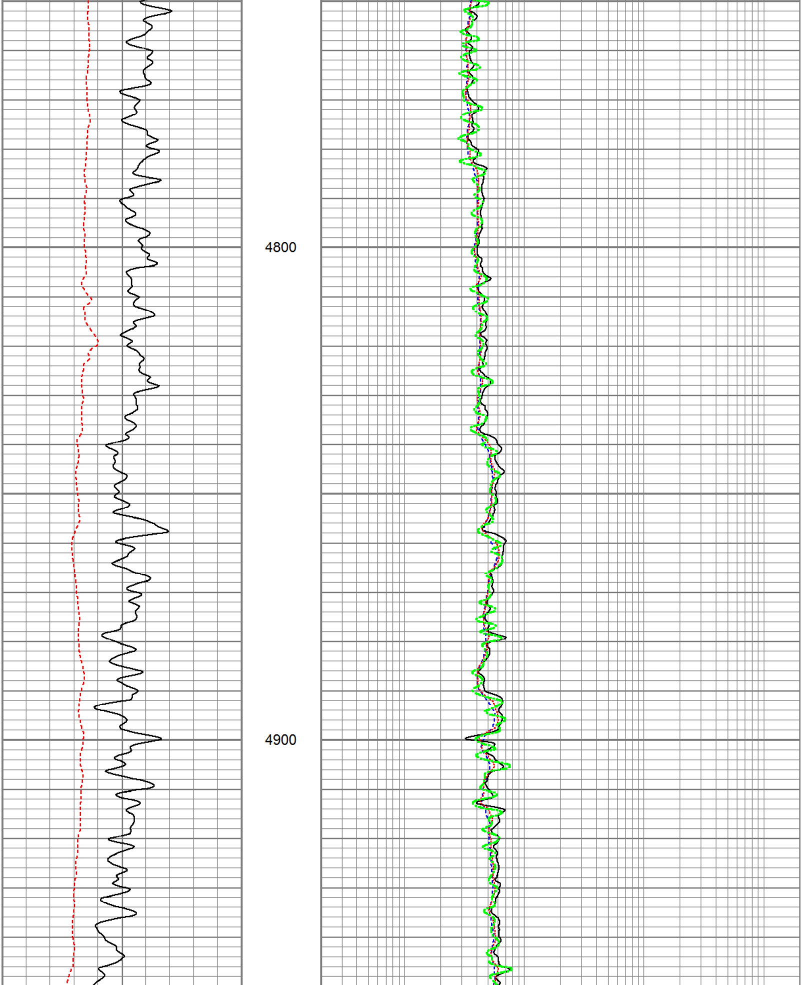
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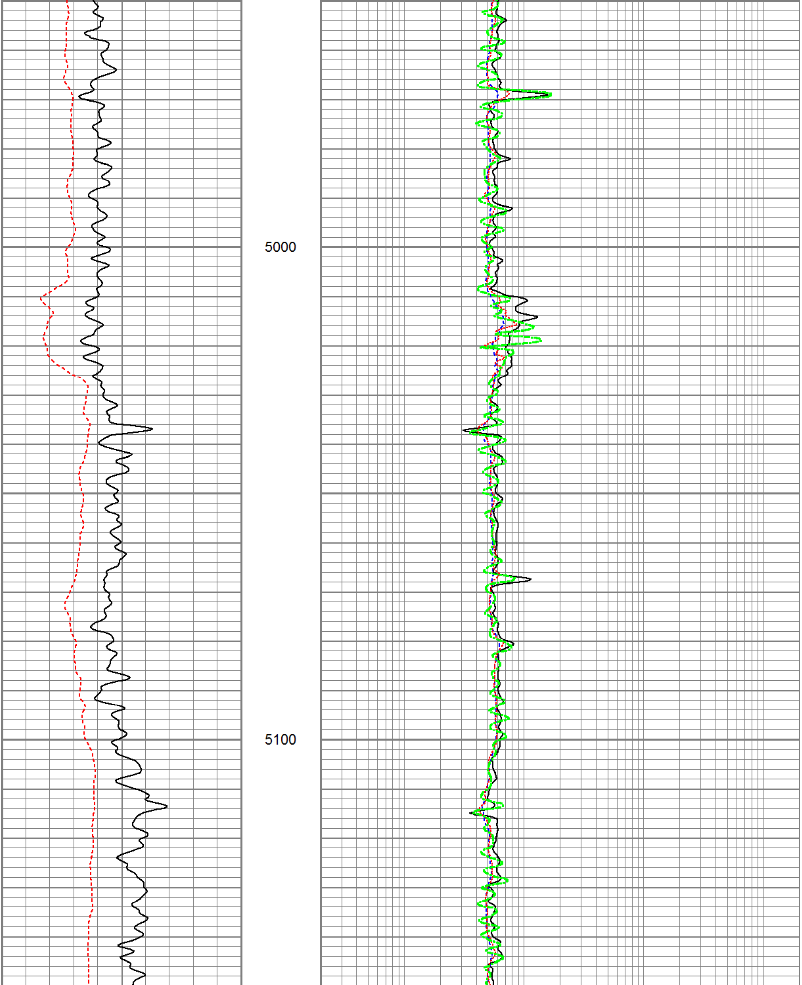
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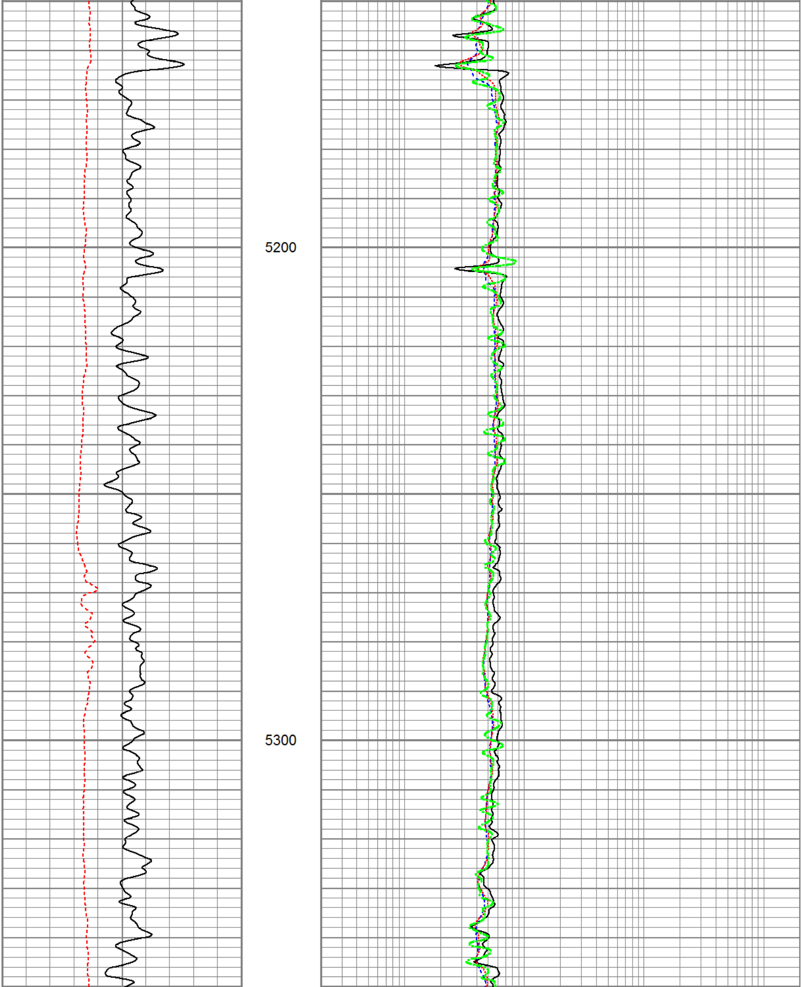
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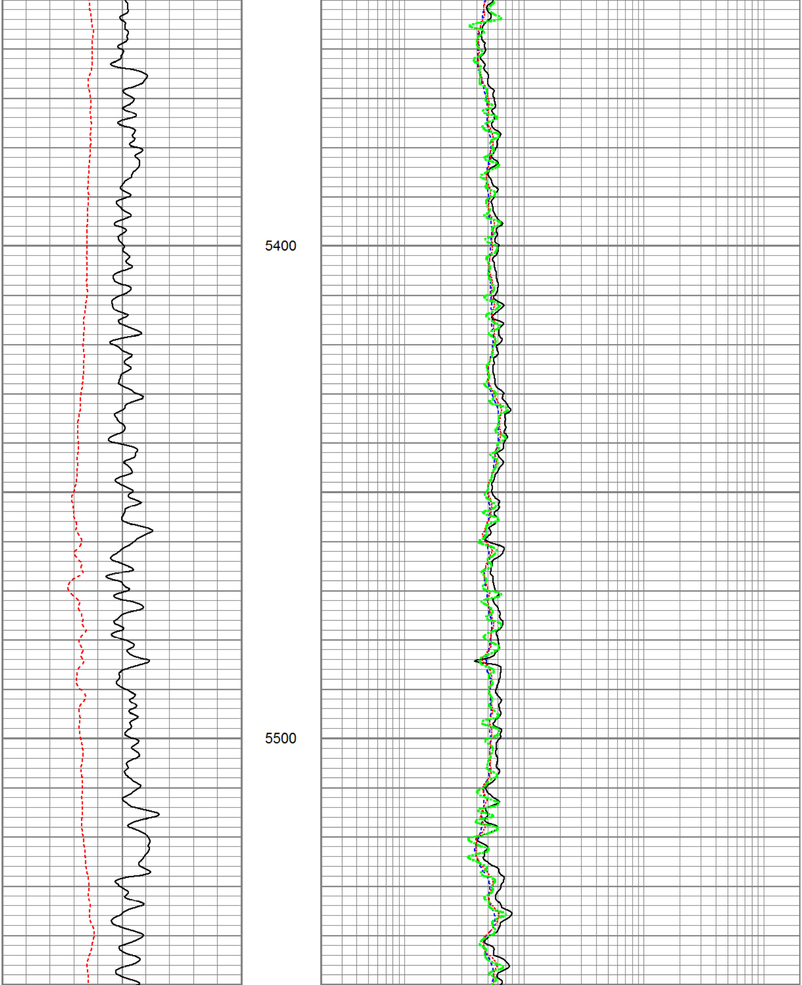
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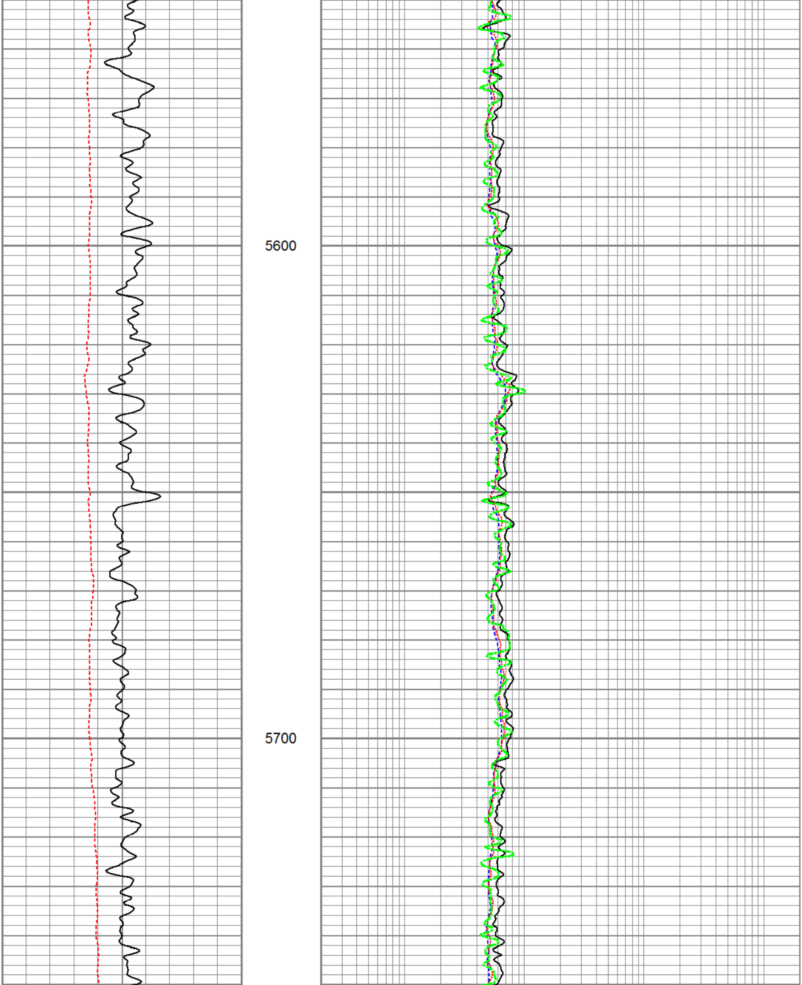
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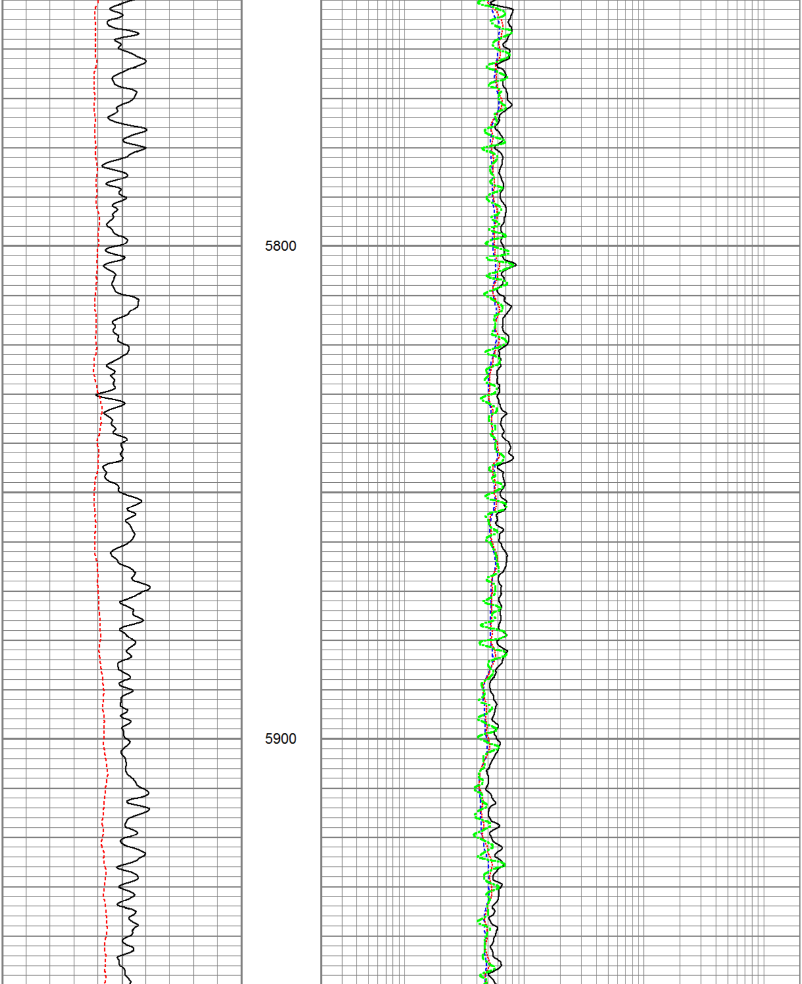
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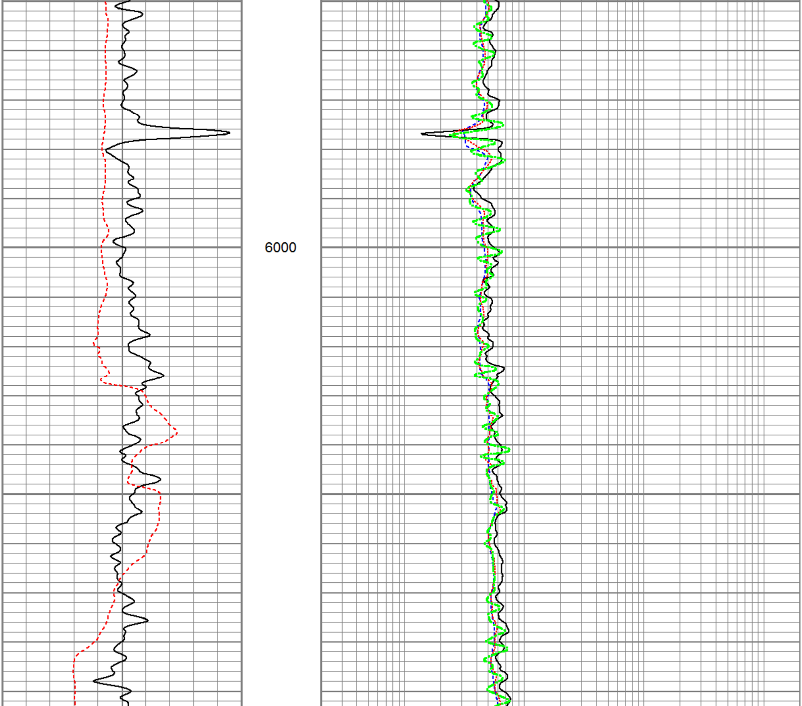
6000

Calibration Report

Database File: 13585.db
Dataset Pathname: pass1
Dataset Creation: Sat Jun 21 03:23:31 2014 by Log 0

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	0.510	-28.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.440	-28.000

Compensated Density Calibration Report

Serial-Model: 128-PSI
Master Calibration Performed: Sat May 24 17:51:40 2014

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	5900.80	3069.93	cps
Aluminum	2.690	g/cc	1074.43	1919.88	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	2.0900

Gamma Ray Calibration Report

Serial Number:	939	
Tool Model:	PSI	
Performed:	Sat May 17 22:07:40 2014	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6200	GAPI/cps