Company	EnCana Oil & Gas (USA) Inc
Well	Breakneck Properties 21-6
Field	Wattenberg
County	Weld
State	Colorado

HIGH RESOLUTION INDUCTION
COMPENSATED DENSITY
COMPENSATED NEUTRON

PIONEER
Pioneer Energy Services

Company EnCana Oil & Gas (USA) Inc

Well Breakneck Properties 21-6

Field Wattenberg

County Weld **State** Colorado

Location: API # : 05123368230000

SHL: 469' FNL & 2026' FEL NWNE
BHL: 560' FNL & 1980' FWL NENW
SEC 6 TWP 3N RGE 68W

Other Services
BHC Sonic

Permanent Datum GL Elevation 5082
Log Measured From KB
Drilling Measured From KB

Elevation
K.B. 5095
D.F. 5094
G.L. 5082

Date	April 29, 2013
Run Number	1
Depth Driller	8010
Depth Logger	8007
Bottom Logged Interval	8007
Top Log Interval	Casing
Casing Driller	881
Casing Logger	881
Bit Size	7-7/8"
Type Fluid in Hole	Chem Gel
Density / Viscosity	9.8 / 55
pH / Fluid Loss	8.0 / 10.4
Source of Sample	Flowline
Rm @ Meas. Temp	3.36 @ 60 F
Rmf @ Meas. Temp	2.69 @ 60 F
Rmc @ Meas. Temp	4.03 @ 60 F
Source of Rmf / Rmc	Measure / Calc
Rm @ BHT	0.90 @ 224 F
Time Circulation Stopped	2100 4/28/2013
Time Logger on Bottom	0530
Maximum Recorded Temperature	224 F
Equipment Number	50
Location	Brighton, CO
Recorded By	Kelly Keever
Witnessed By	Carl Rayas

<<< Fold Here >>>

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 4-1/2" casing
Ensign Drilling Rig 122
Thank you for using Pioneer Energy Services.

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Pioneer Energy Services

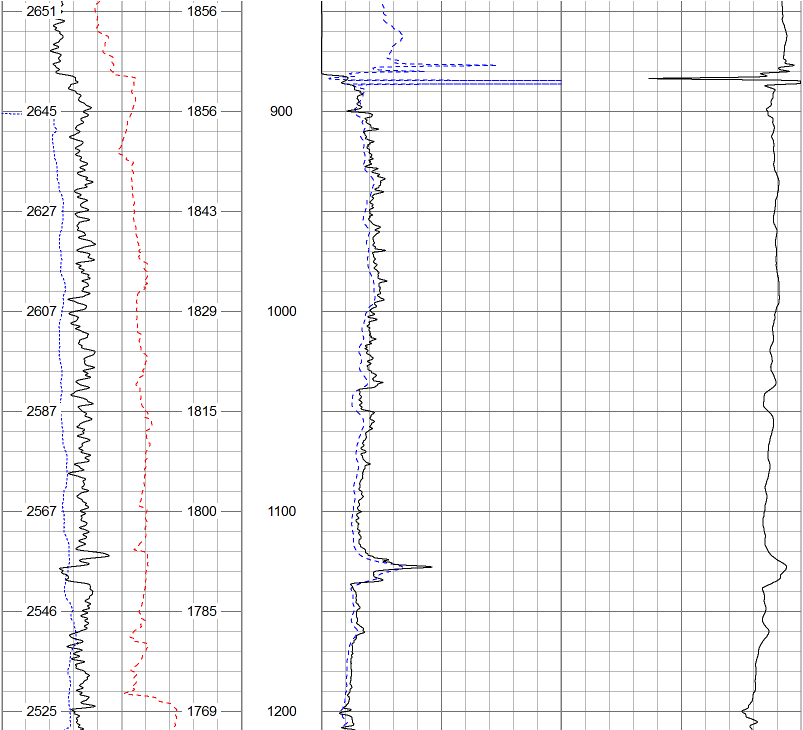
MAIN PASS

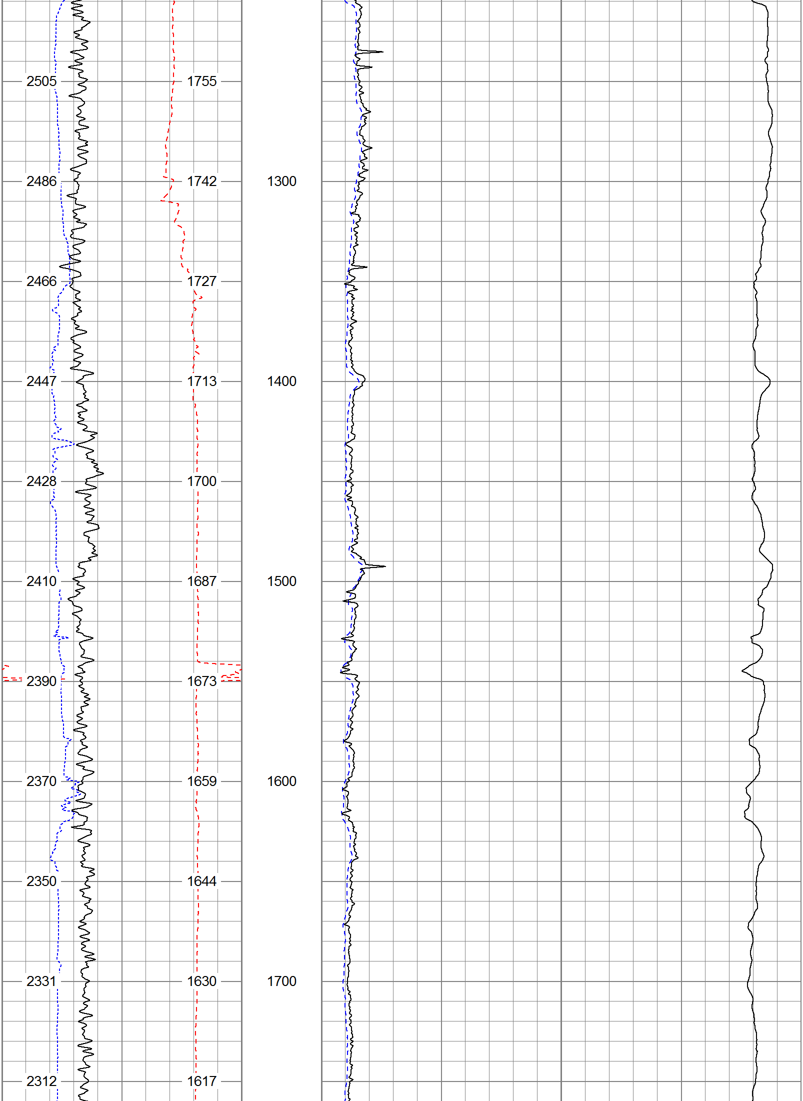
Database File:	12755-56.db
Dataset Pathname:	final
Presentation Format:	dil5enc
Dataset Creation:	Mon Apr 29 08:09:47 2013
Charted by:	Depth in Feet scaled 1:600

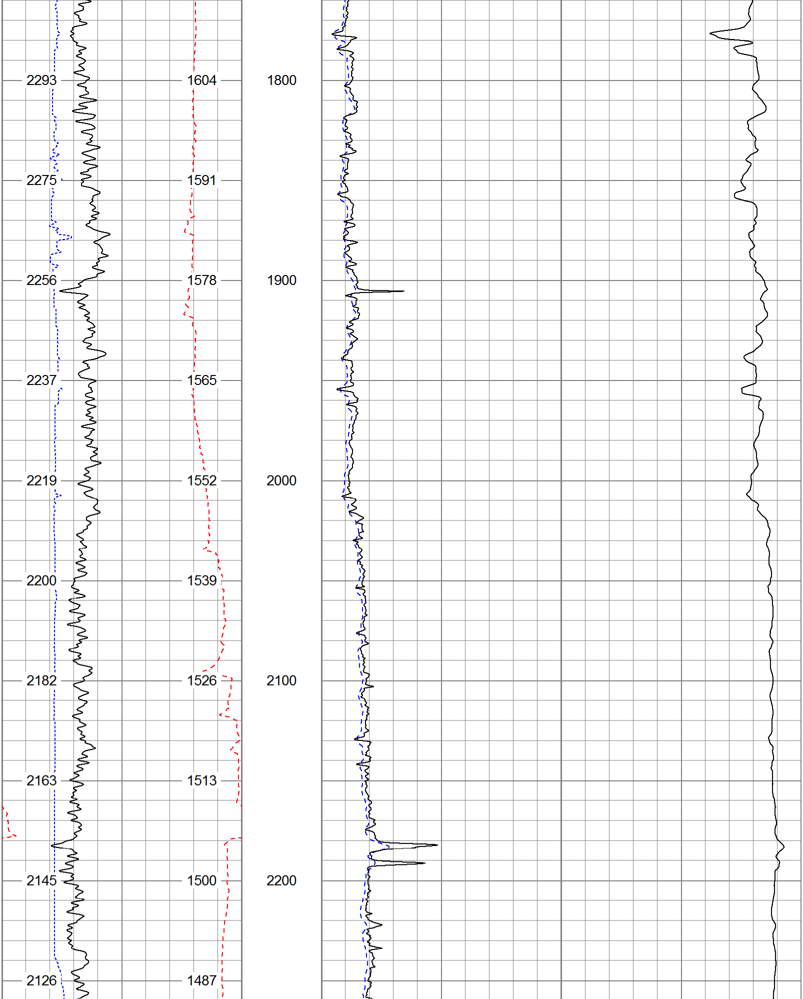
50 SP (mV) 250
6 Caliper (in) 16
0 Gamma Ray (GAPI) 300
TBHV (ft3) ABHV (ft3)

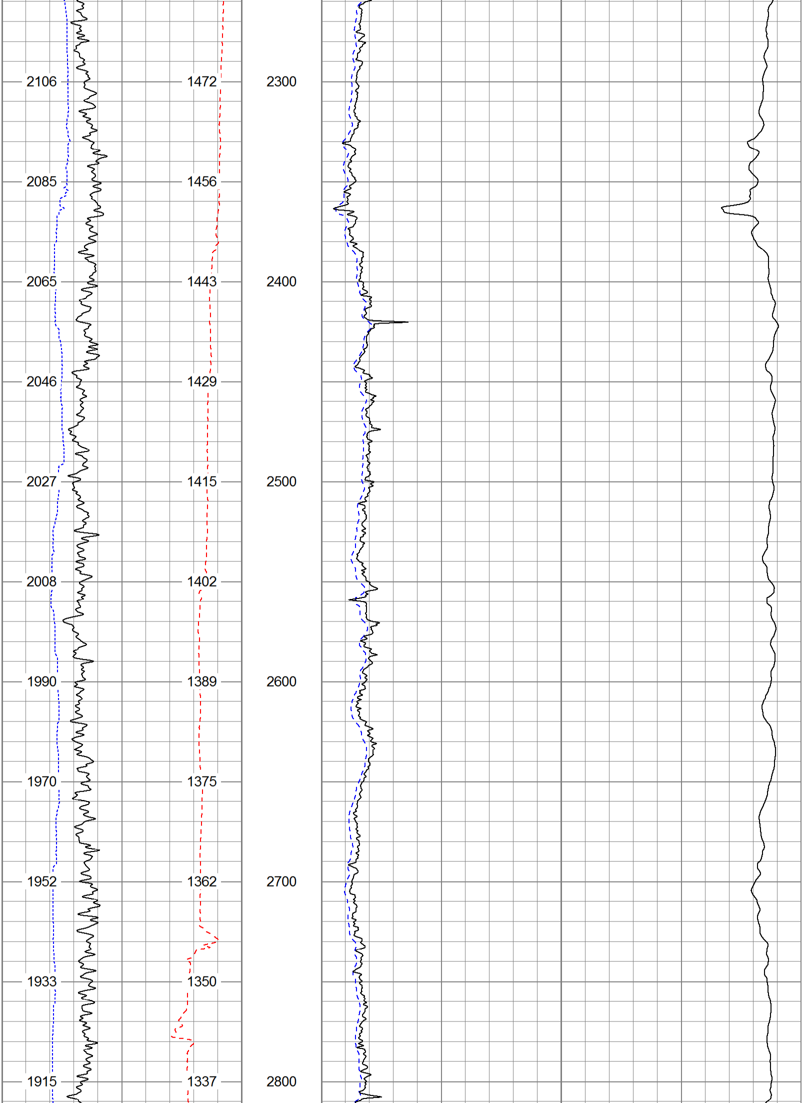
0 Deep Resistivity (Ohm-m) 50
0 Shallow Resistivity (Ohm-m) 50
50 RILD (Ohm-m) 500
50 RLL3 (Ohm-m) 500

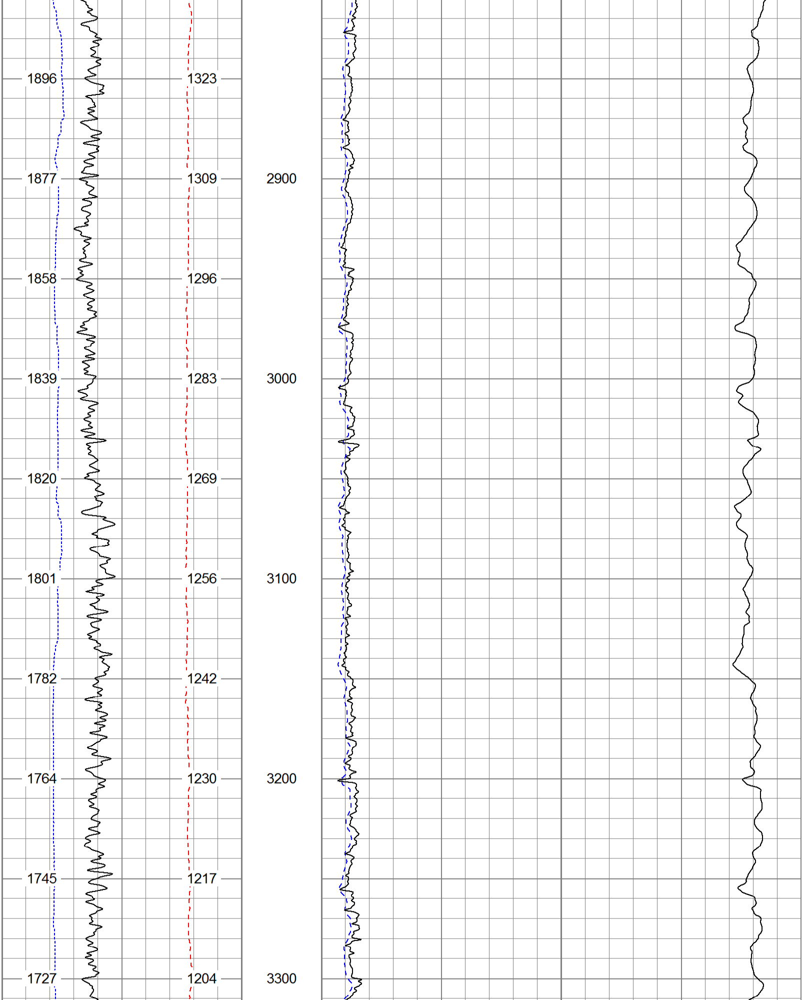
1000 CILD (mmho/m) 0

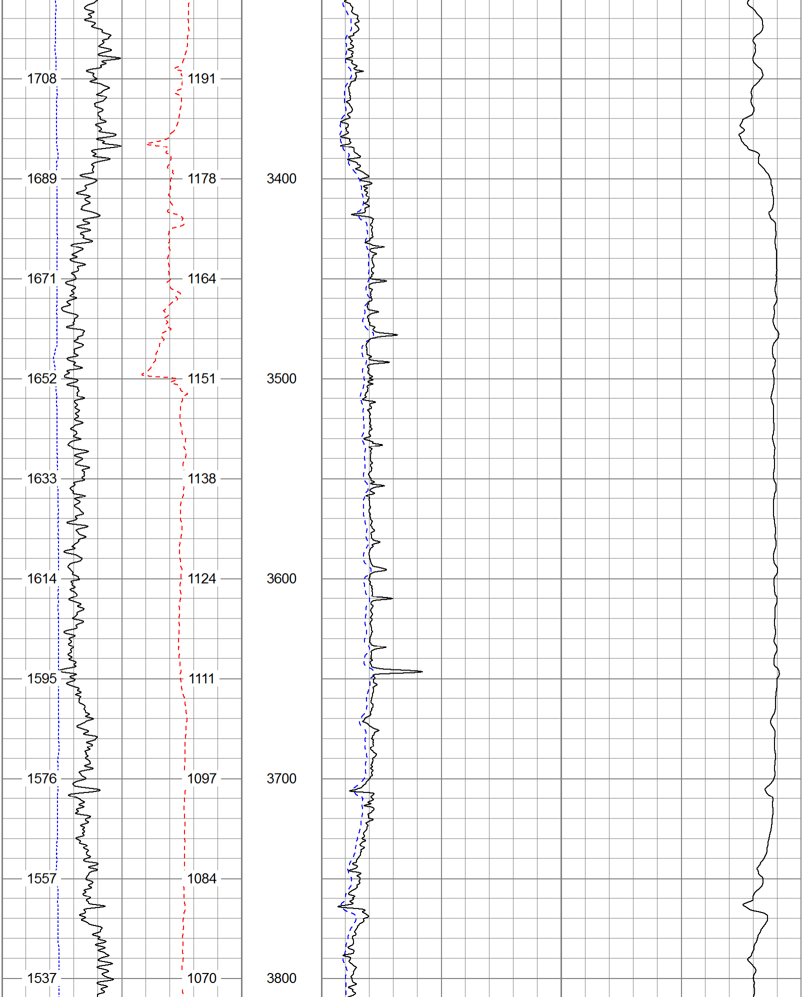


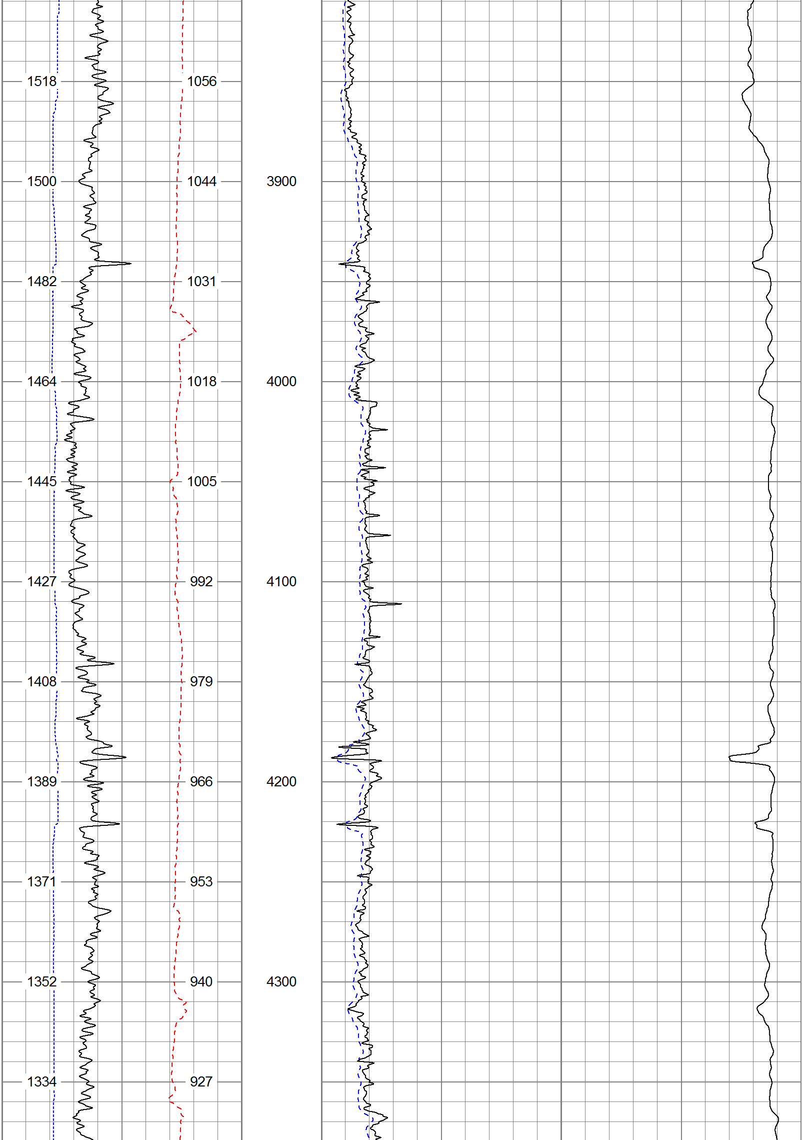


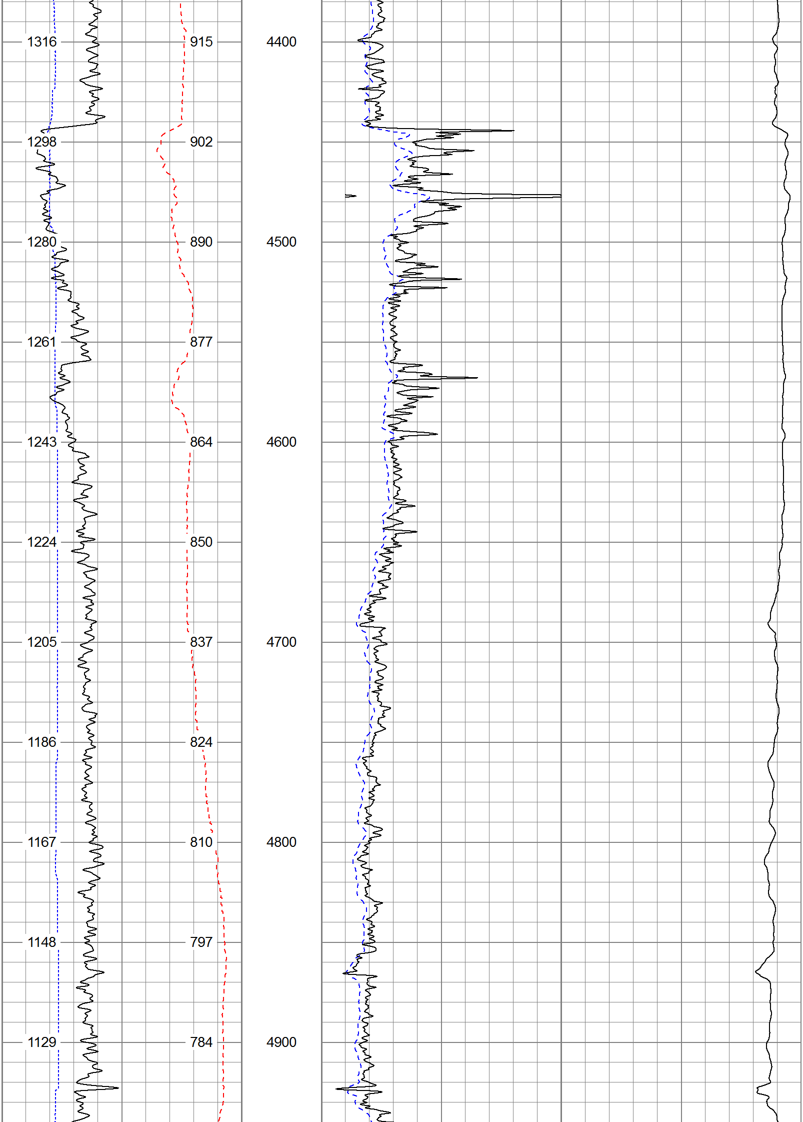


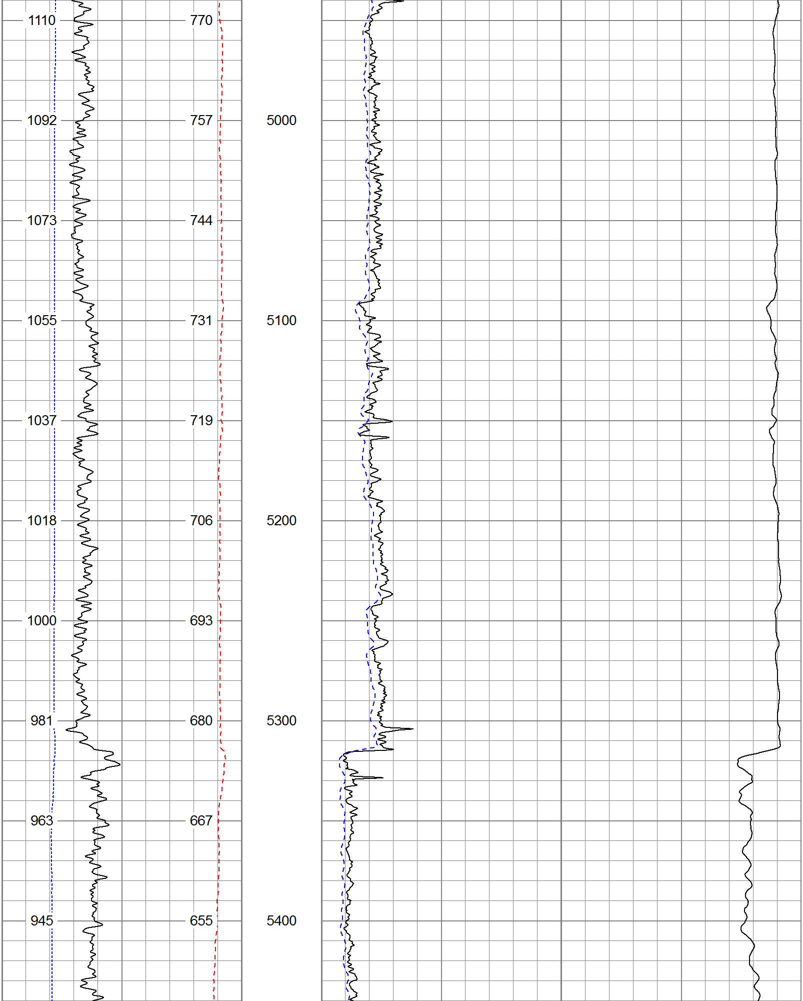


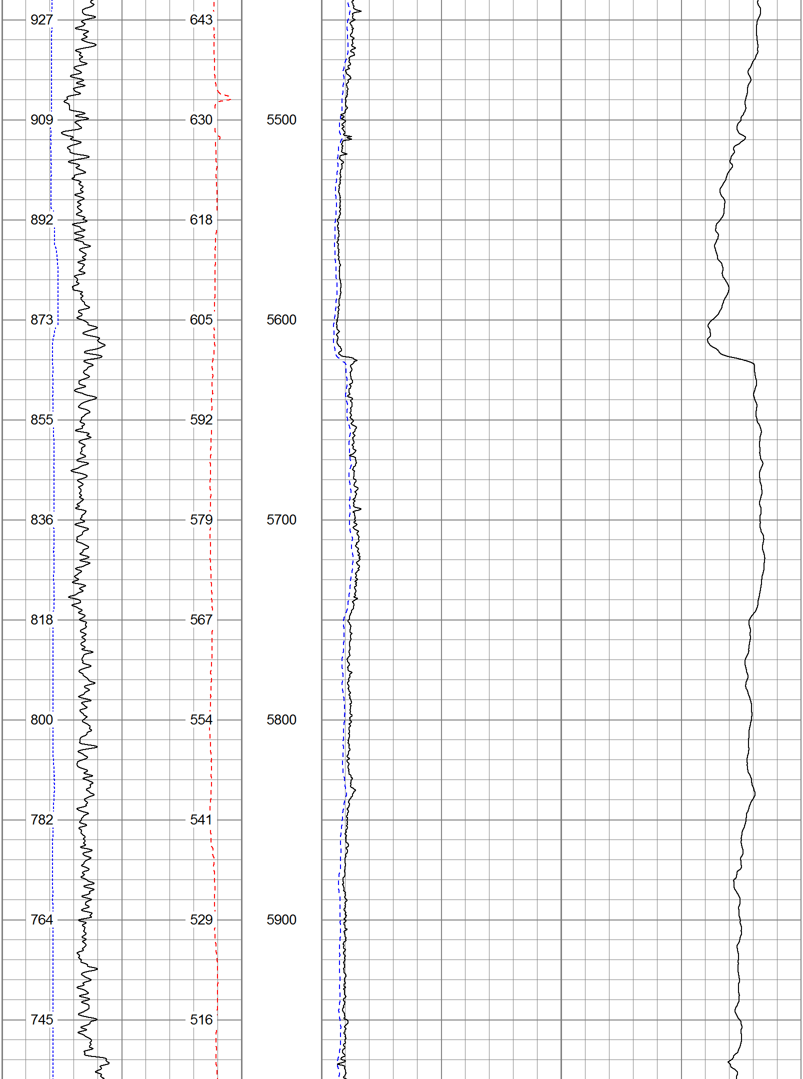


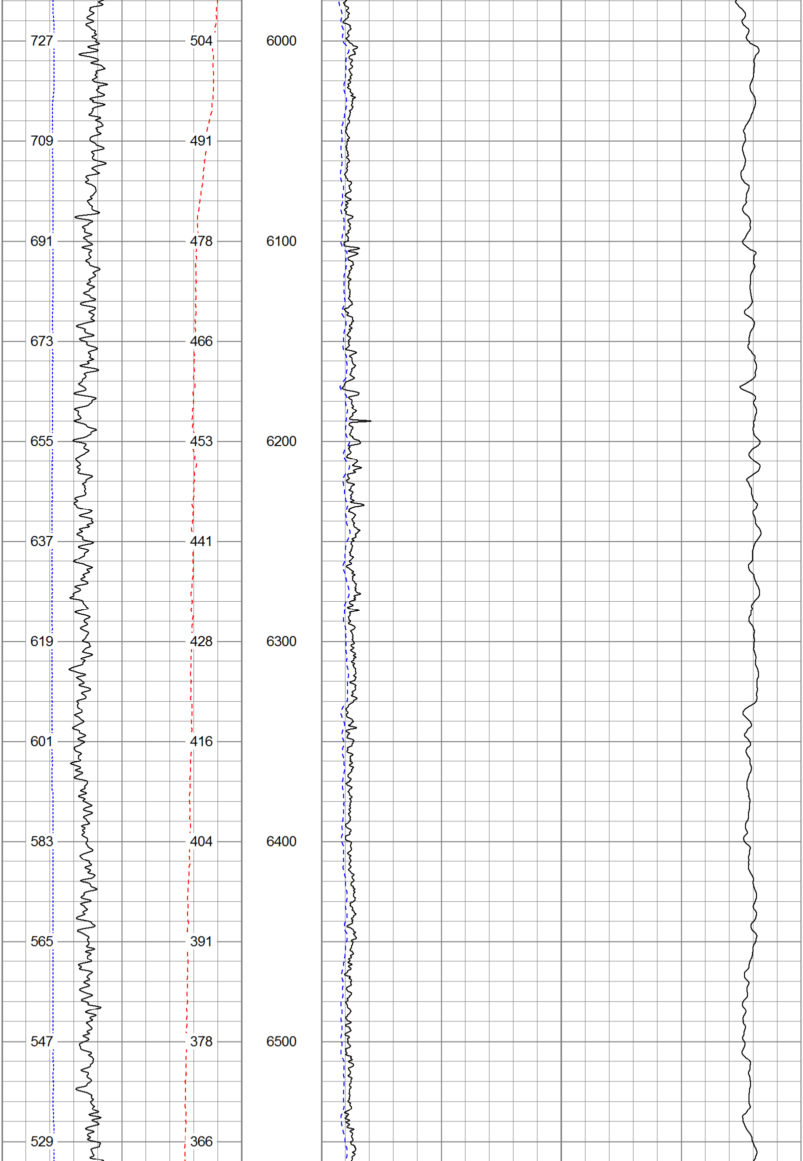


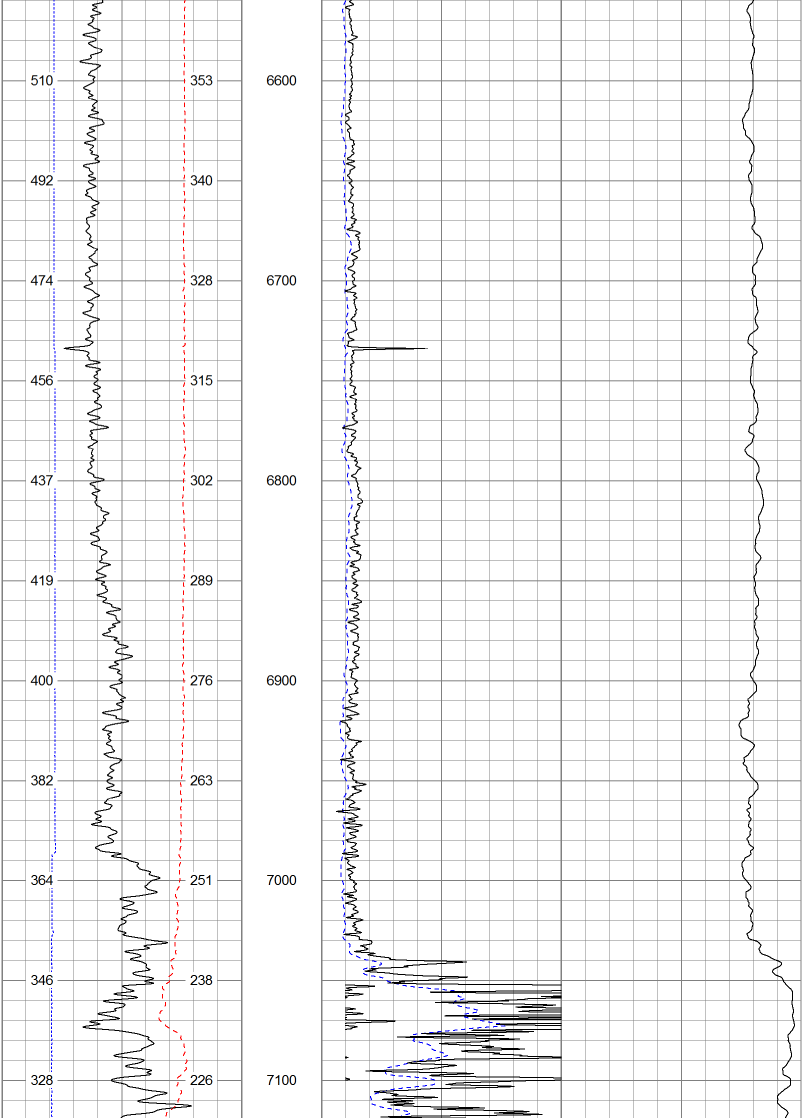


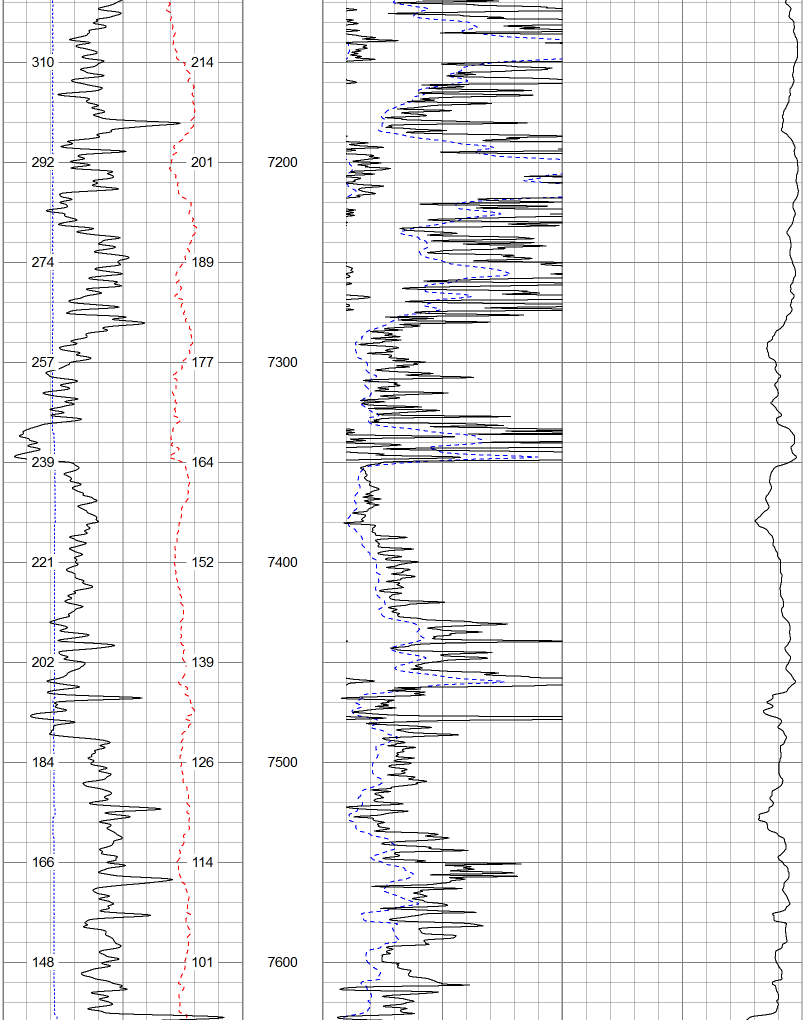


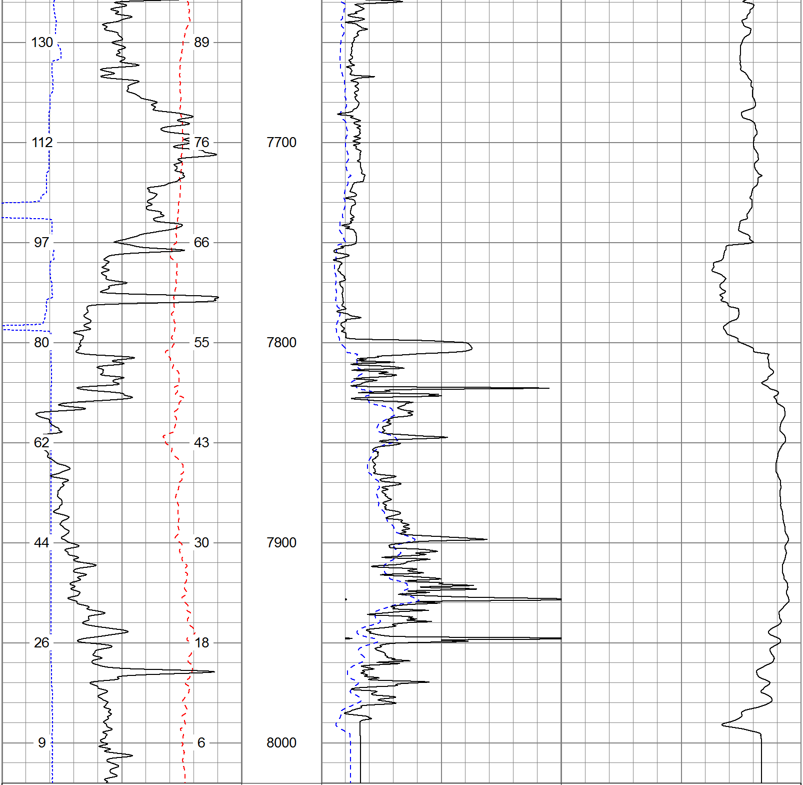












50 SP (mV) 250

6 Caliper (in) 16

0 Gamma Ray (GAPI) 300

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

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MAIN PASS

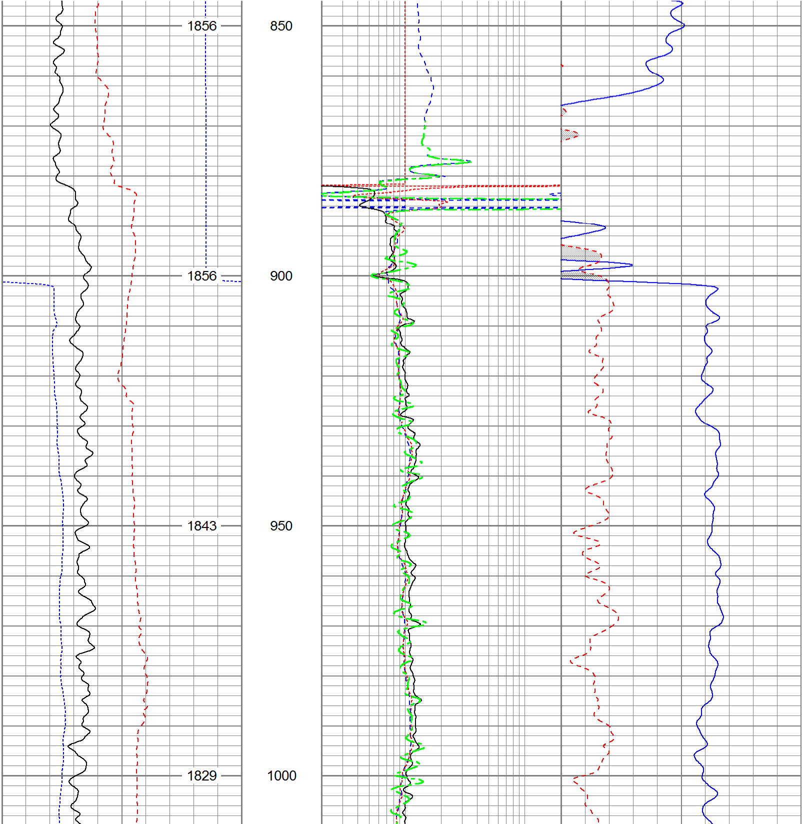
PIONEER

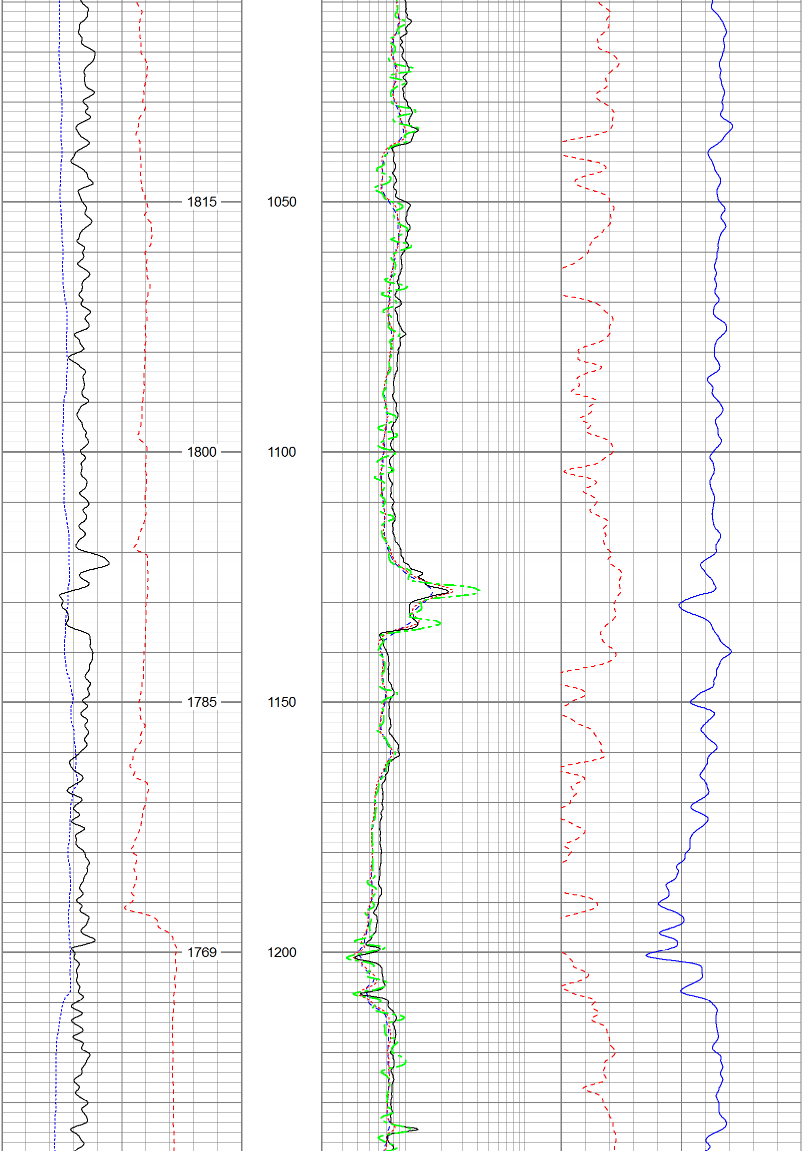
Pioneer Energy Services

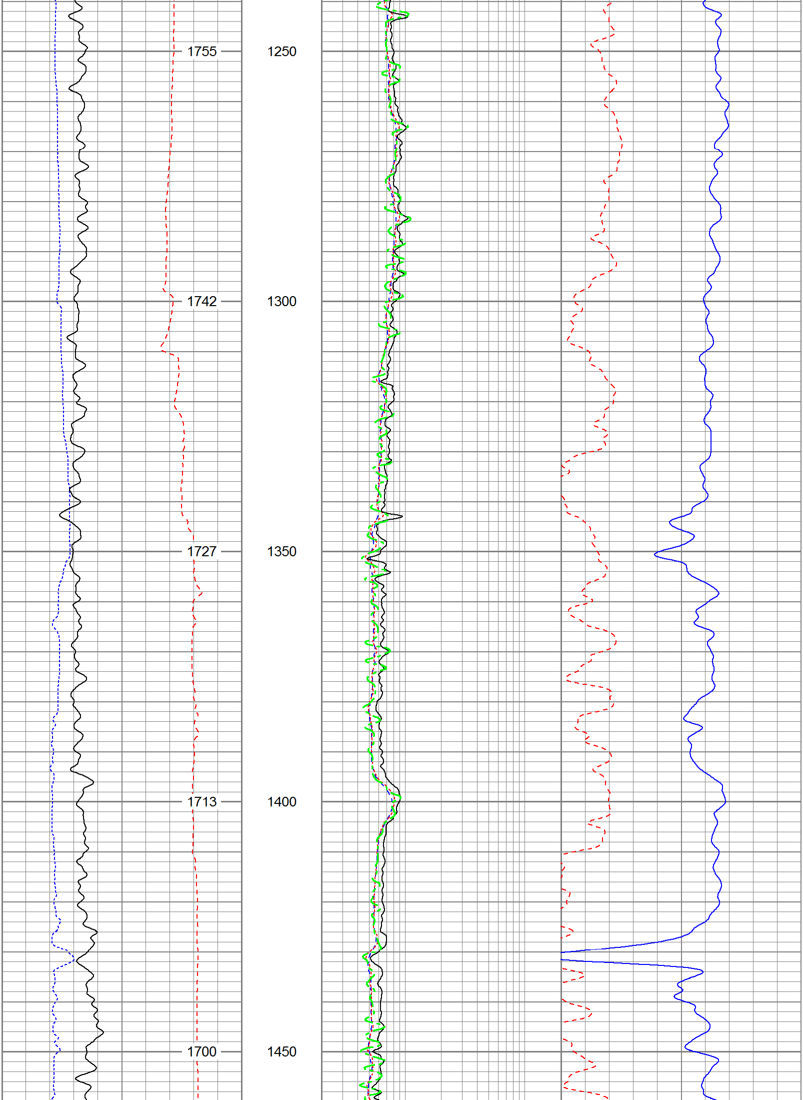
MAIN PASS

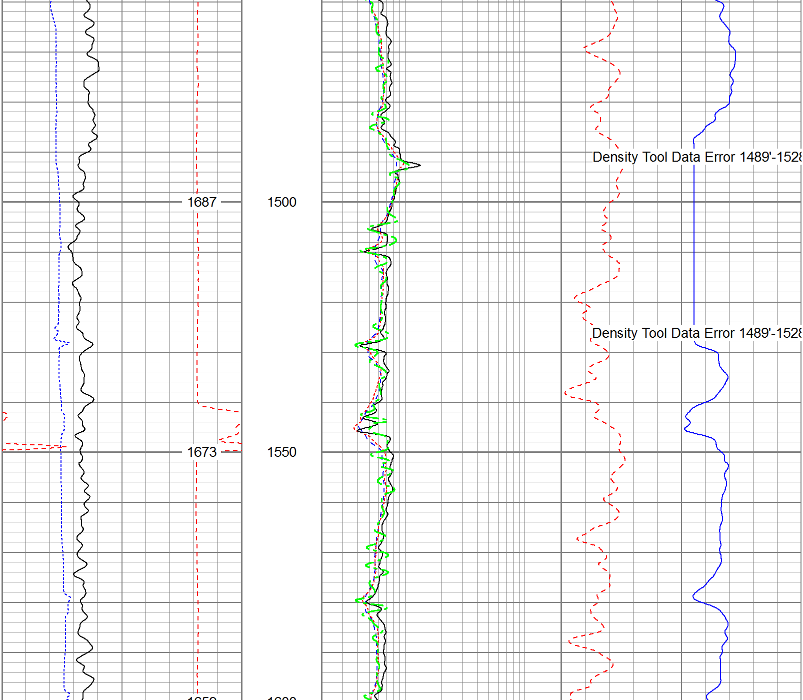
Database File:	12755-56.db
Dataset Pathname:	final
Presentation Format:	encana
Dataset Creation:	Mon Apr 29 08:09:47 2013
Charted by:	Depth in Feet scaled 1:240

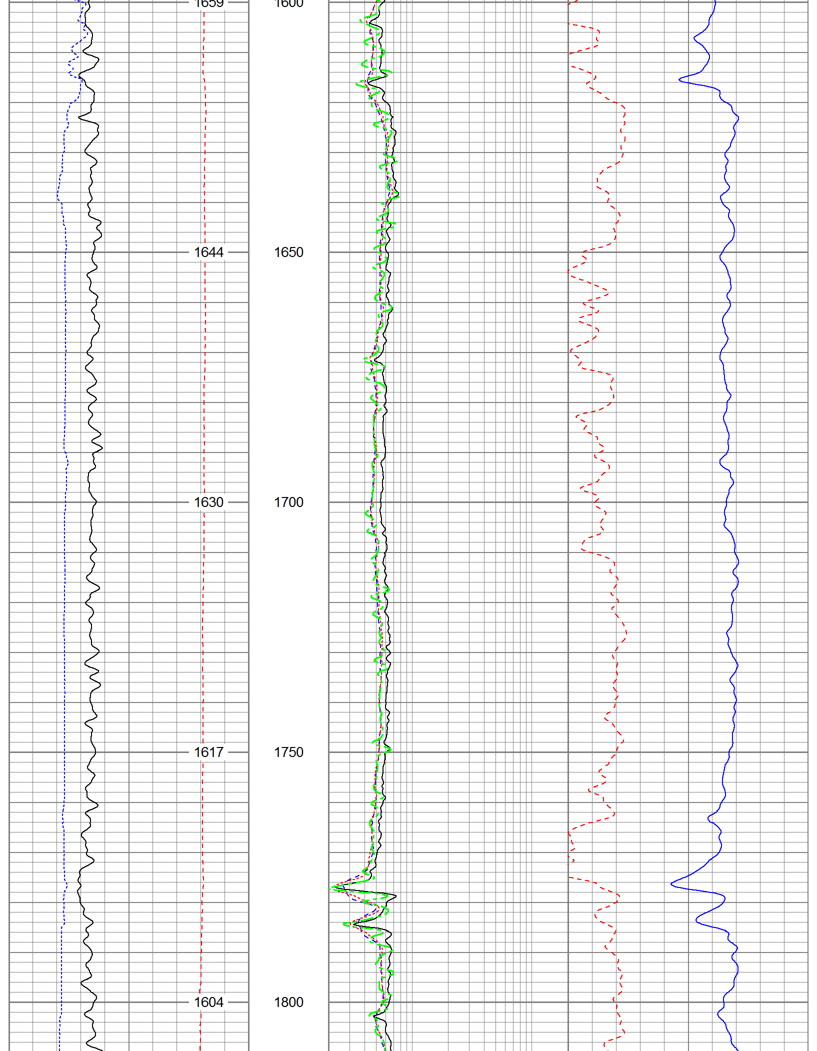
Min	Curve	Max
6	Caliper (in)	16
0	Gamma Ray (GAPI)	300
50	SP (mV)	250
	ABHV (ft3)	
2	Deep Resistivity (Ohm-m)	200
2	Medium Resistivity (Ohm-m)	200
2	Shallow Resistivity (Ohm-m)	200
2	Rt (Ohm-m)	200
40	Density Porosity (pu)	0
40	Neutron Porosity (pu)	0







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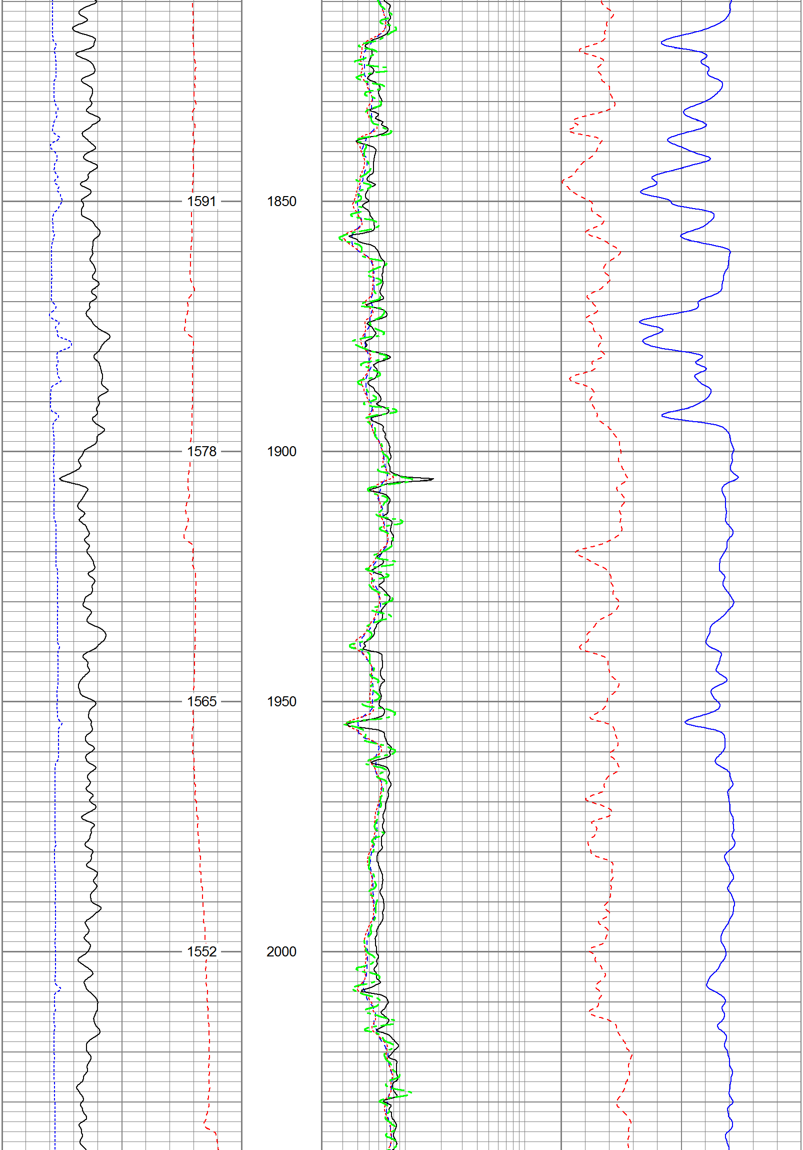
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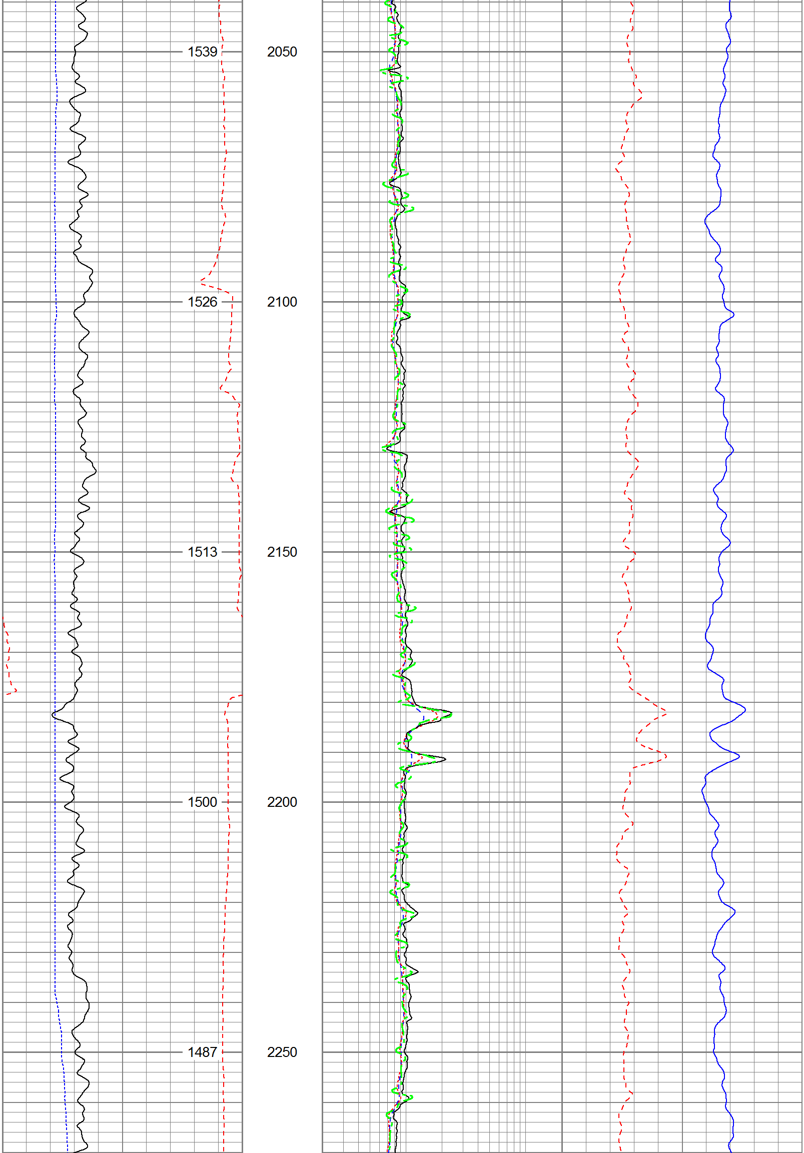
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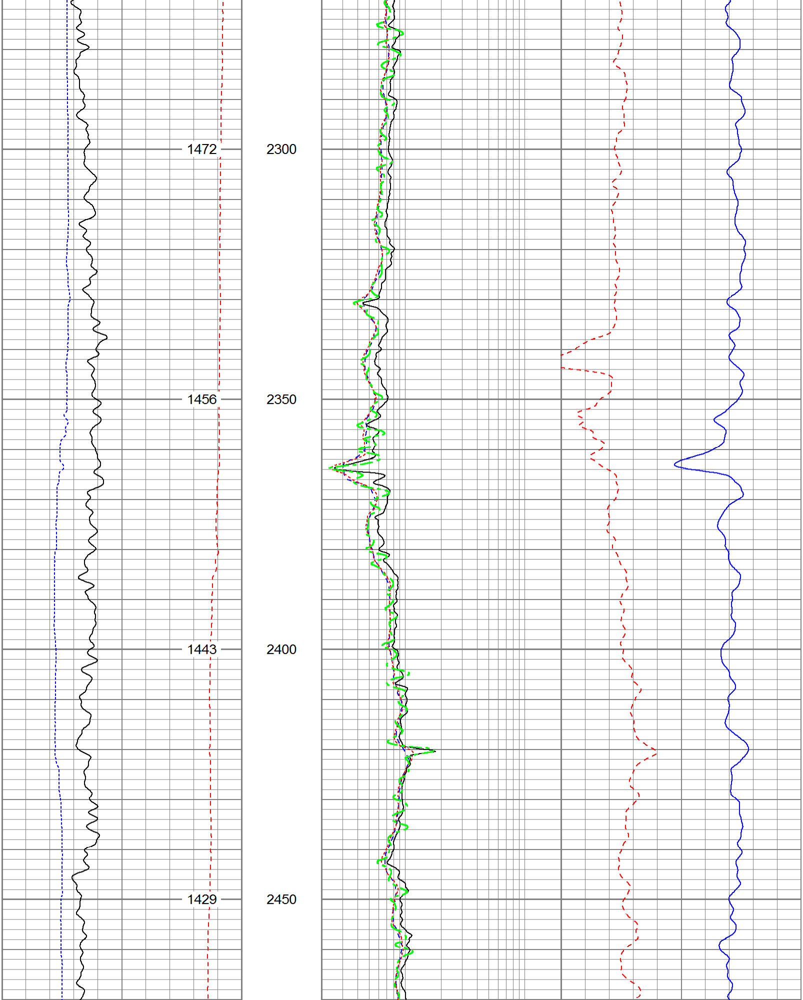
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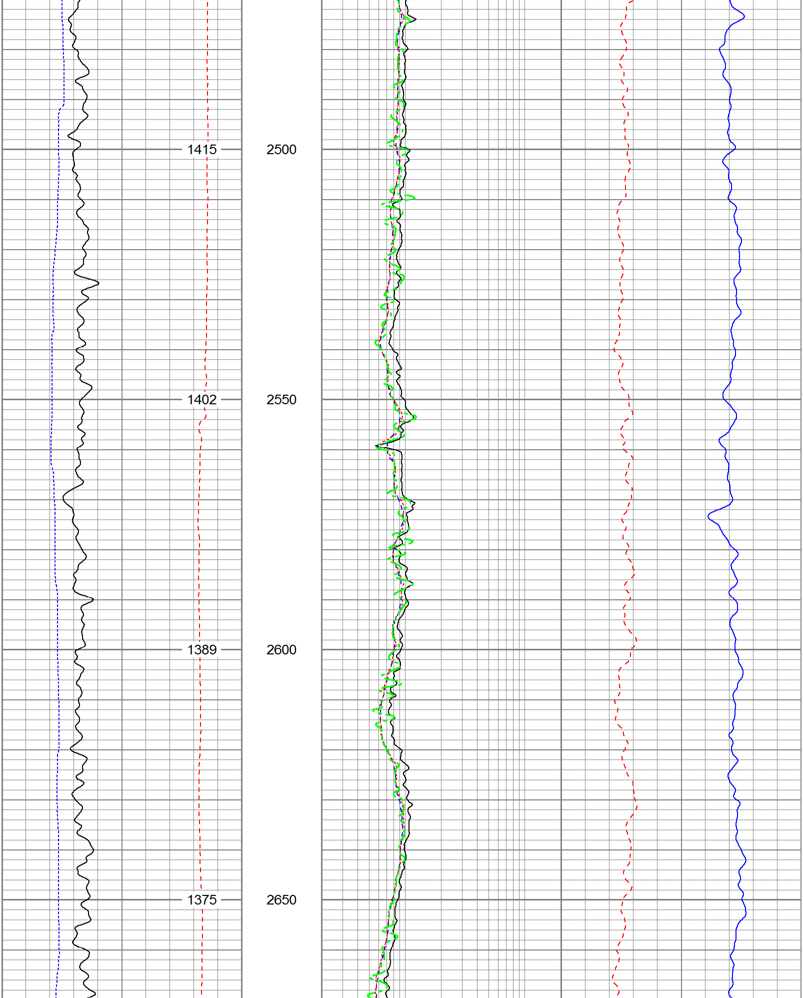
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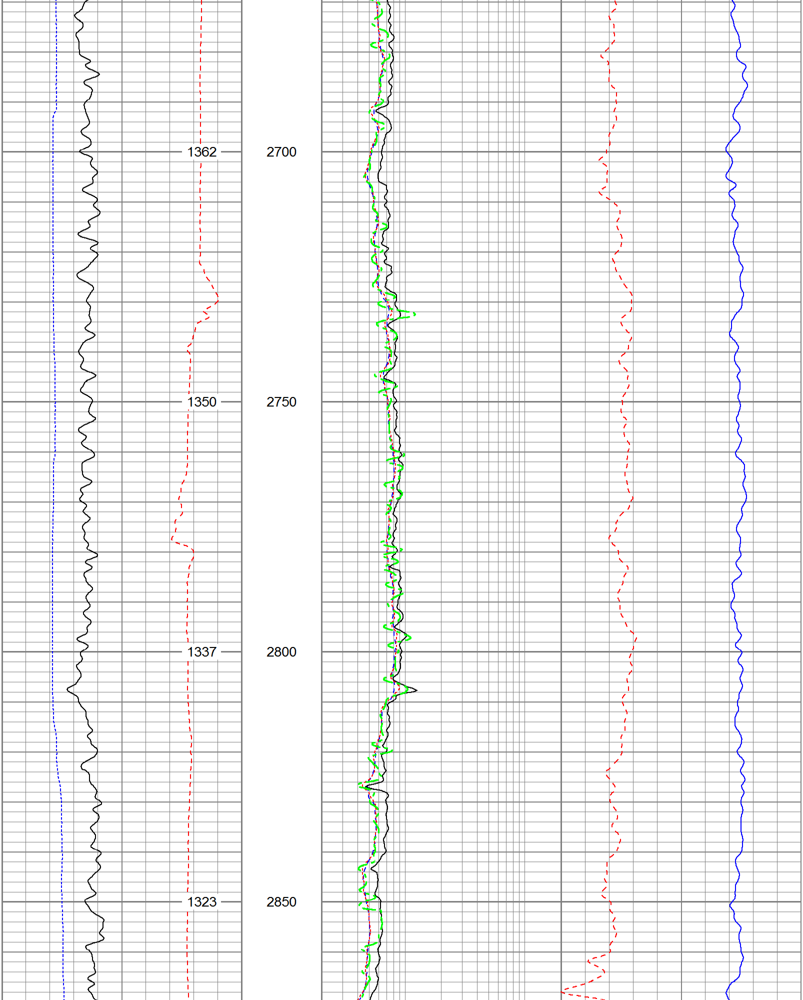
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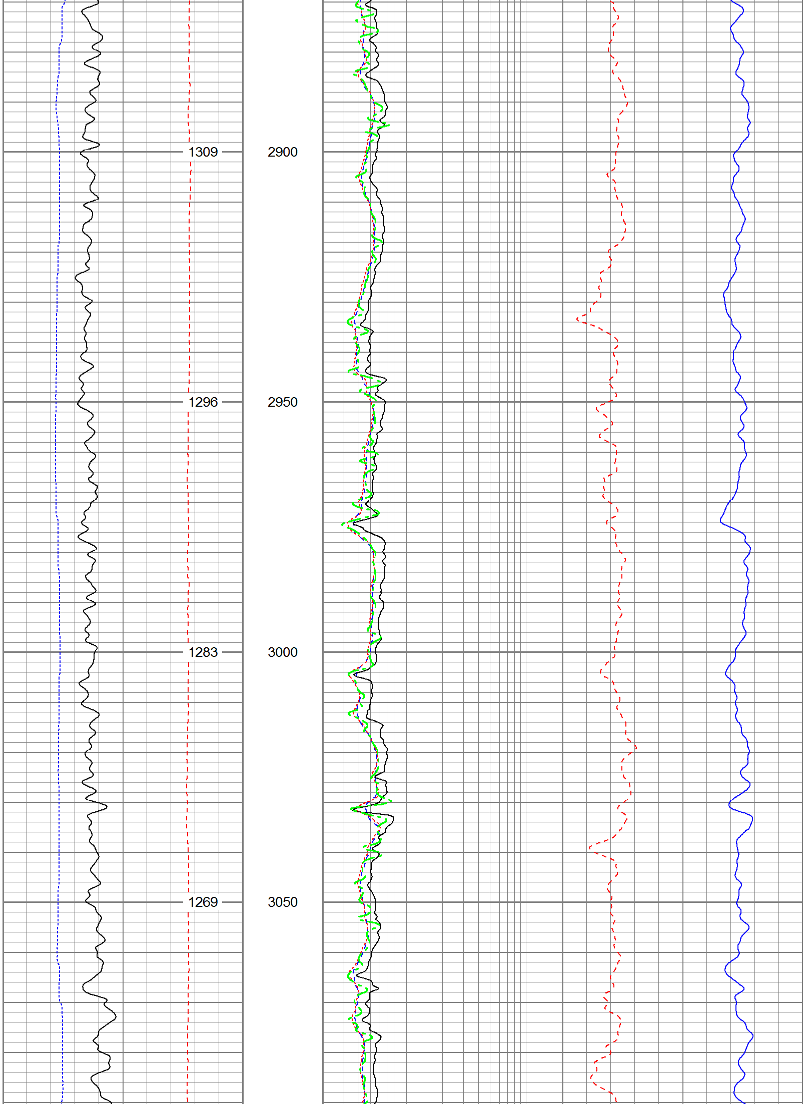
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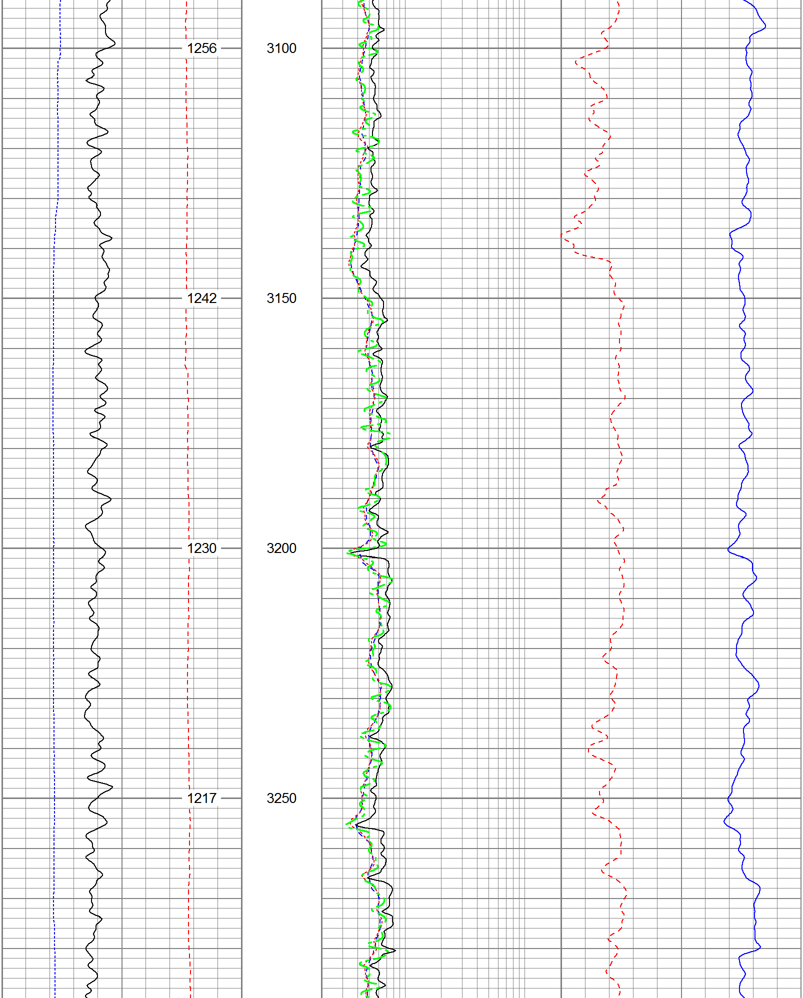
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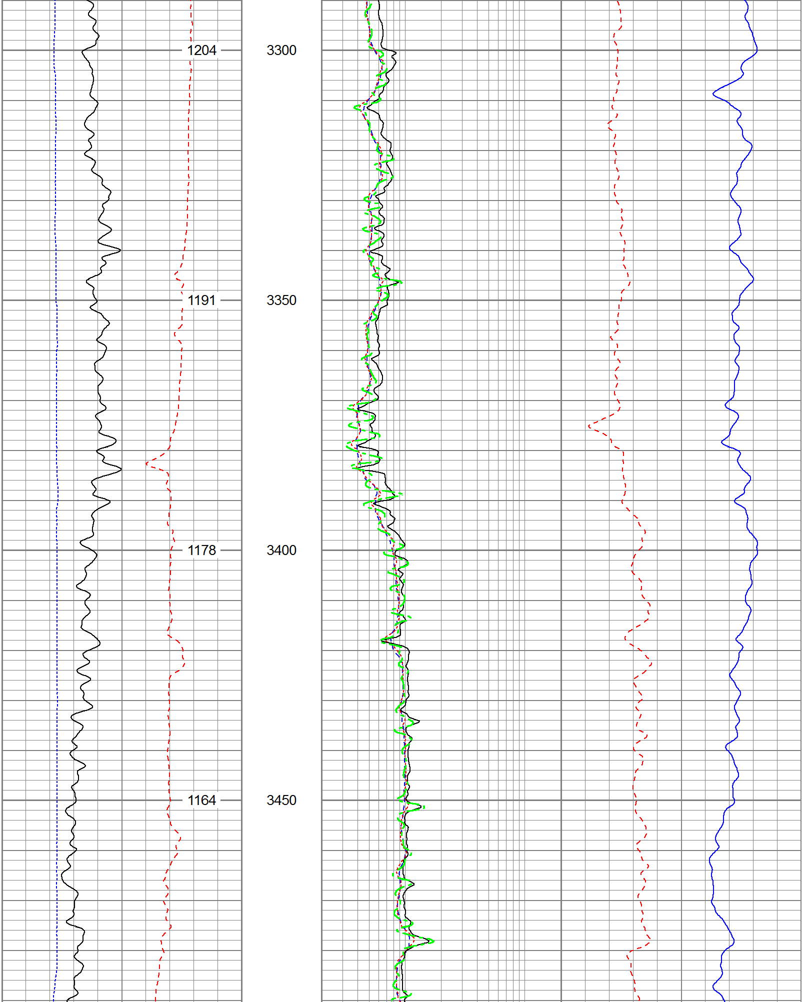
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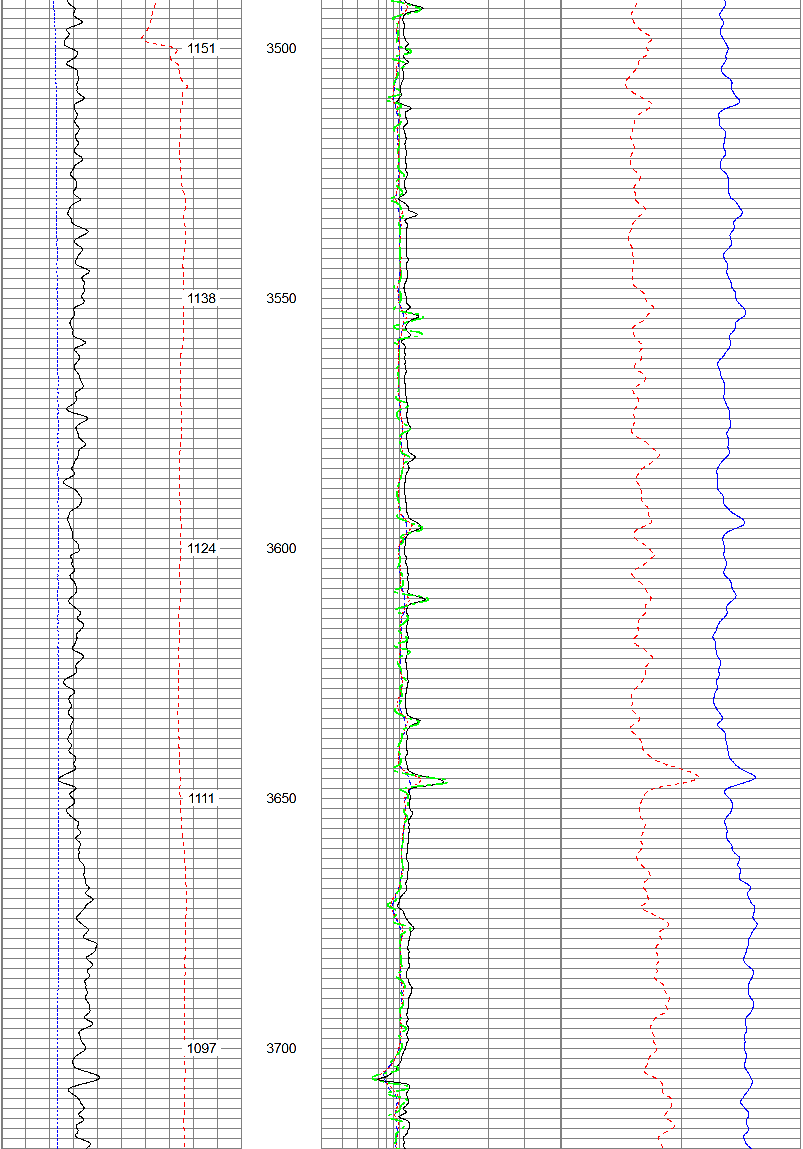
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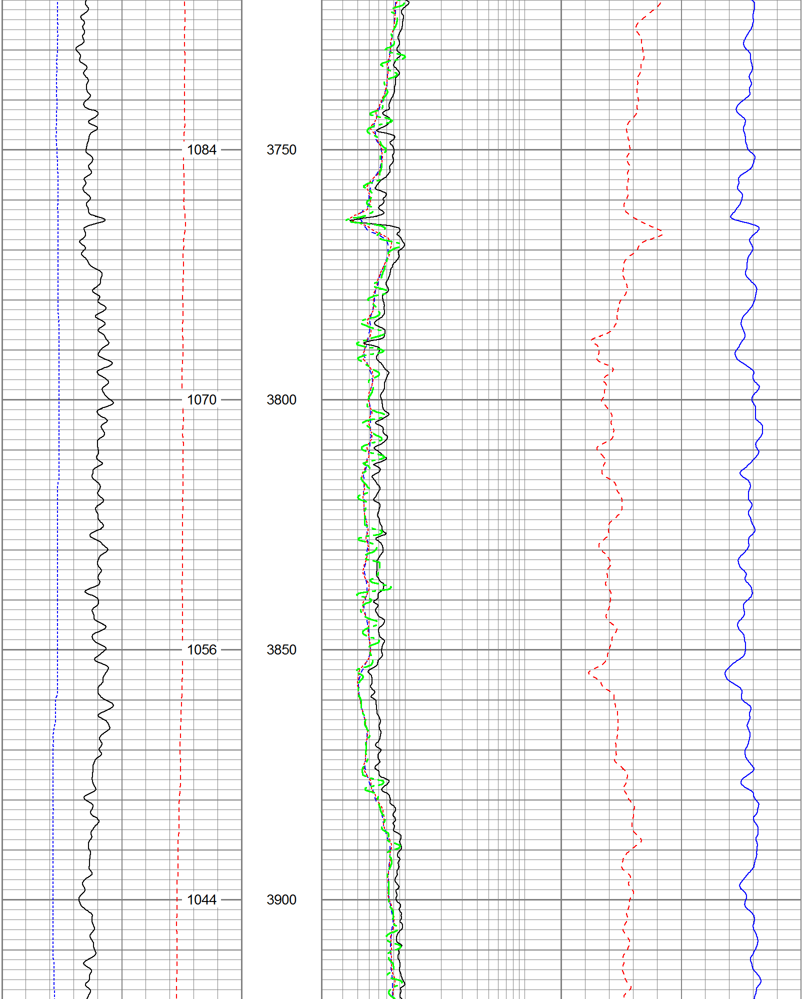
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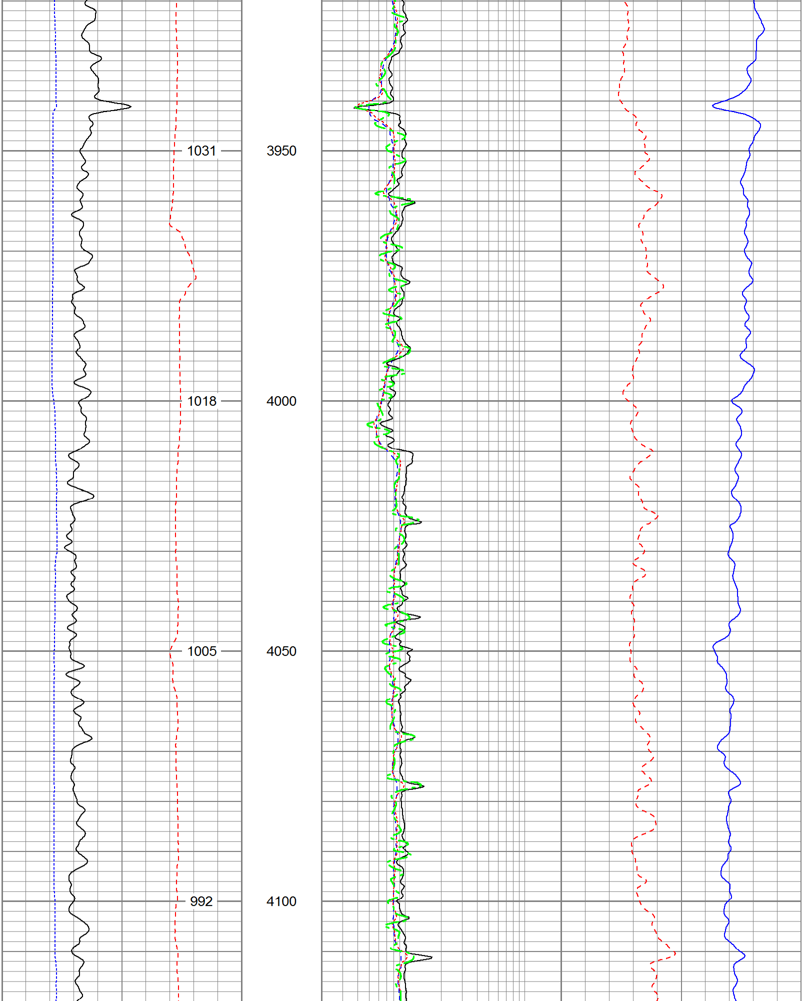
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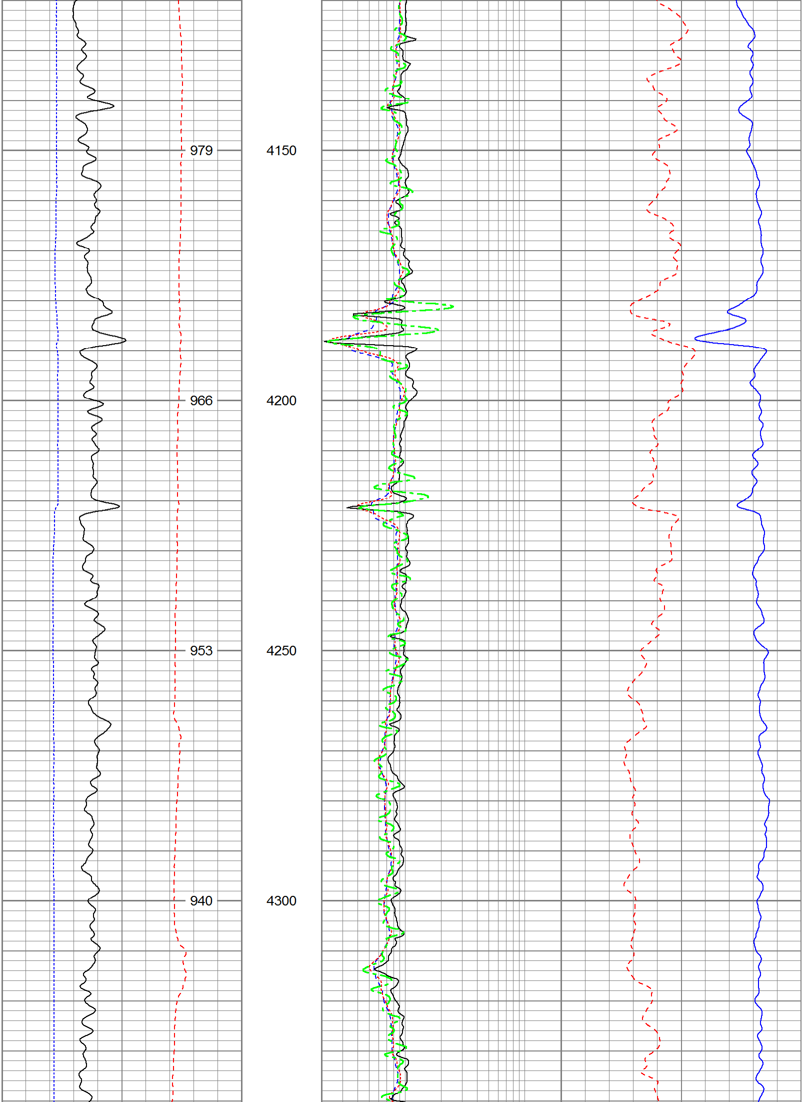
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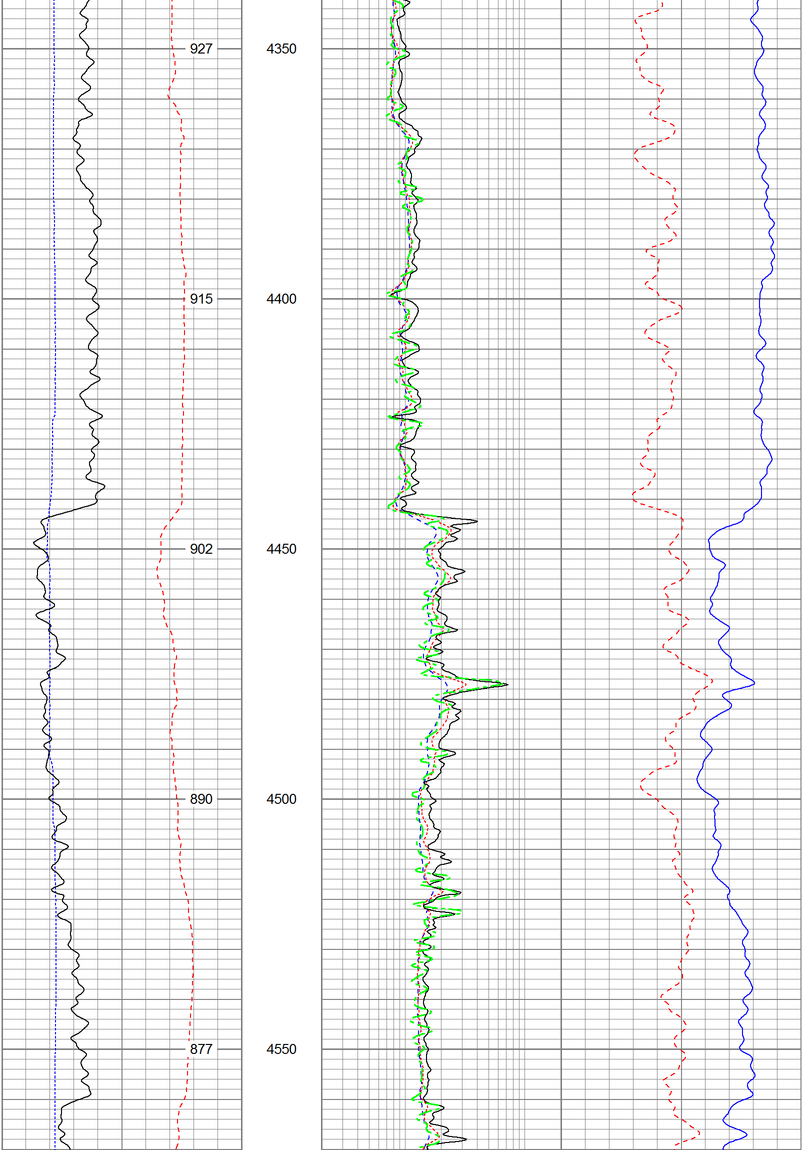
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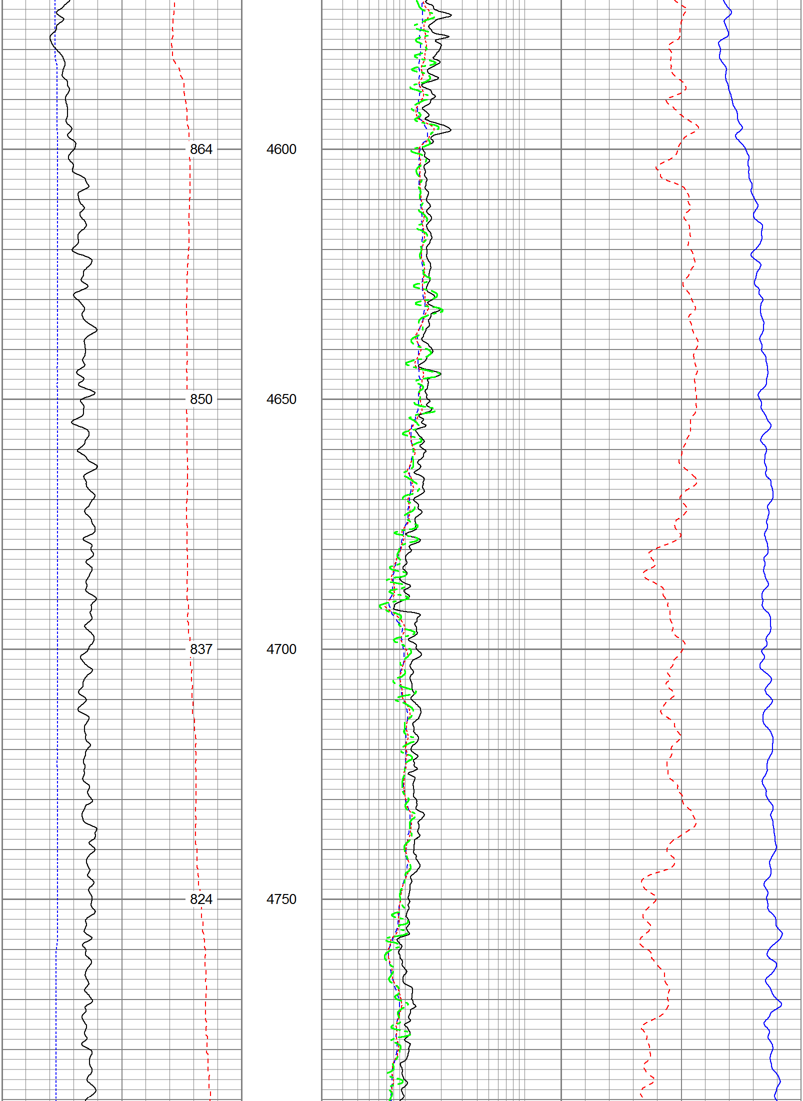
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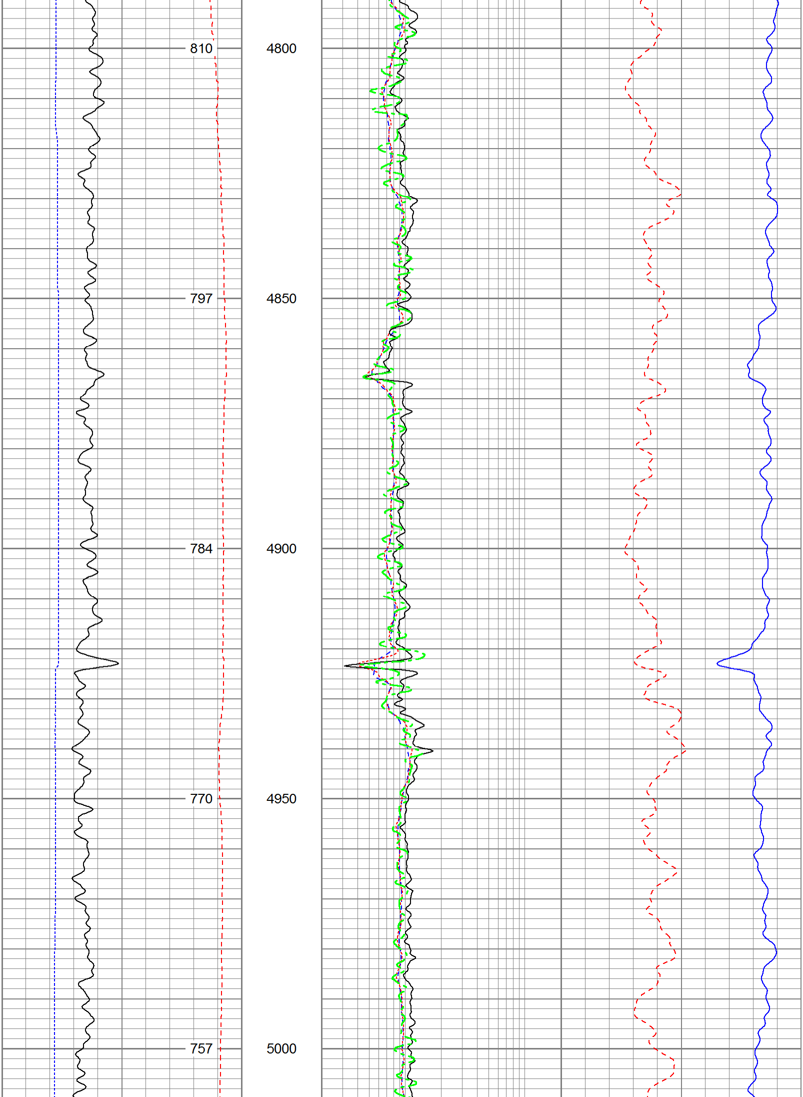
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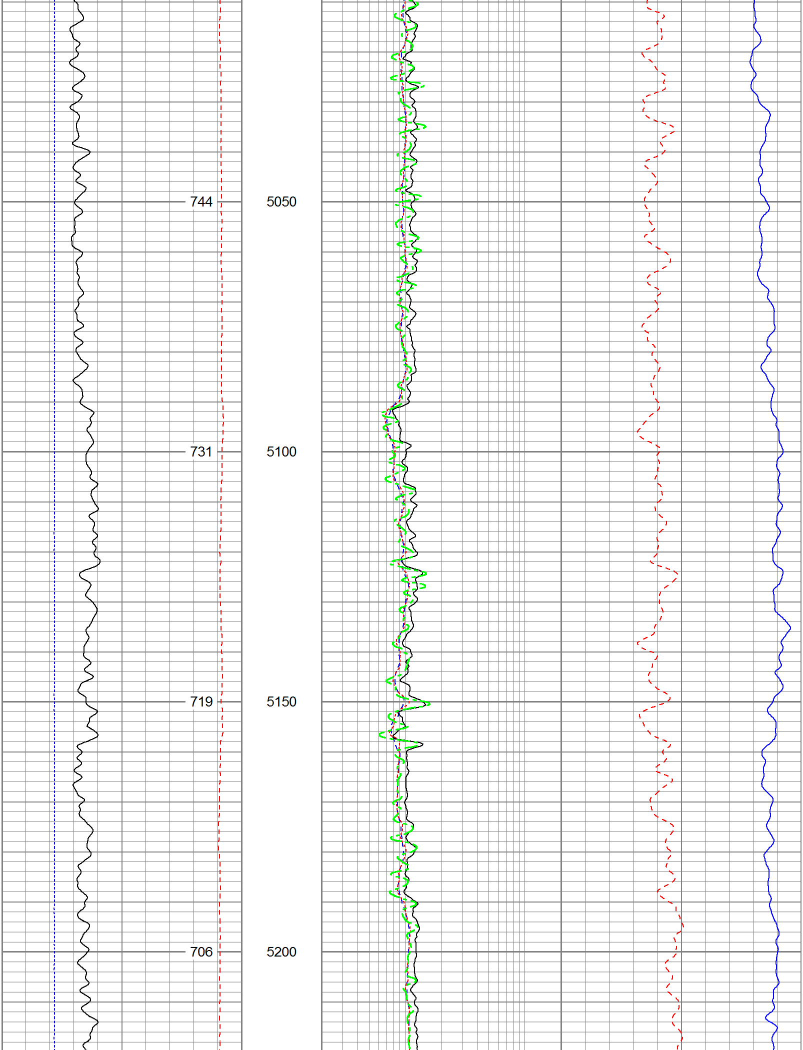
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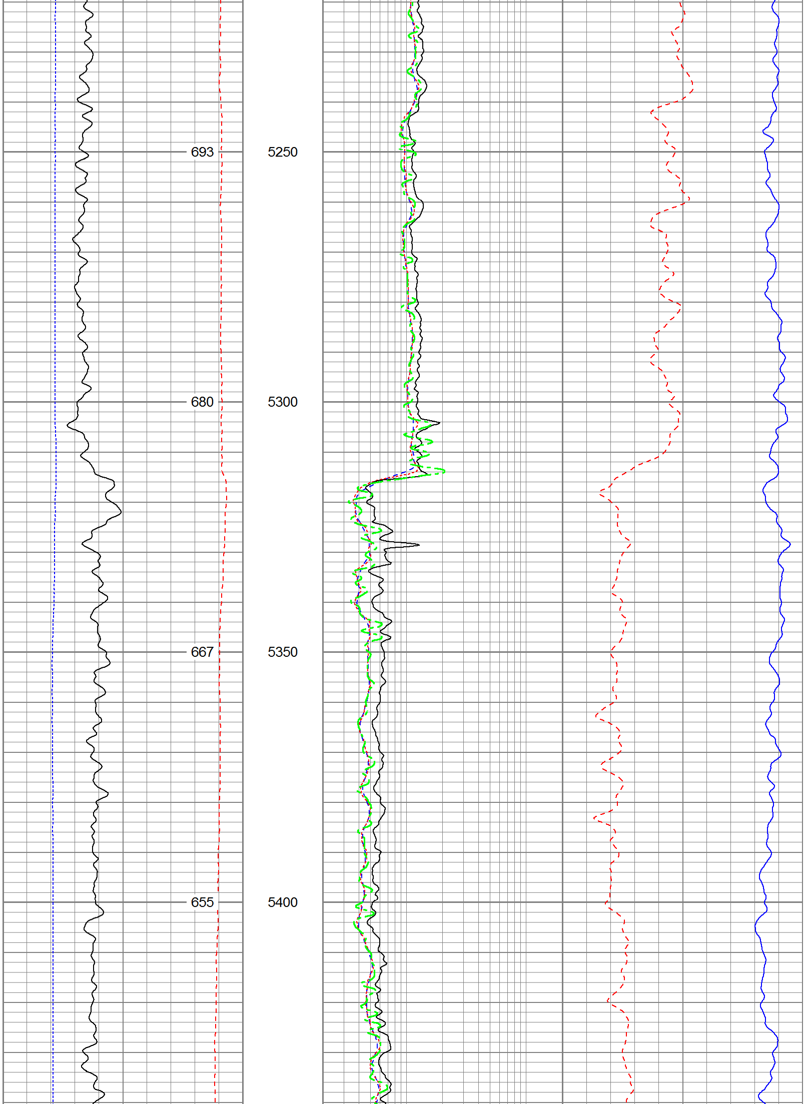
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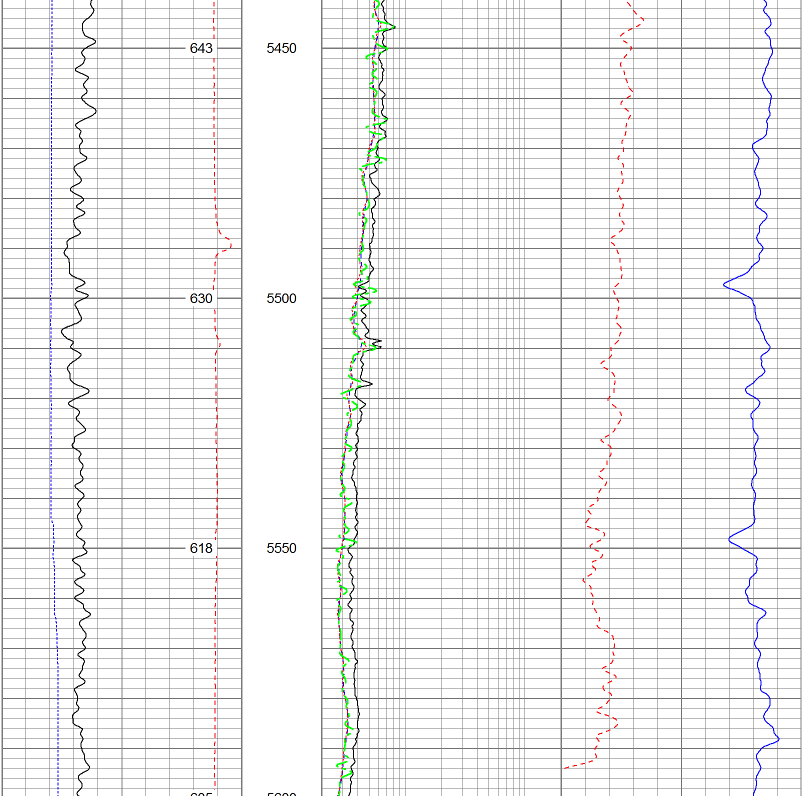
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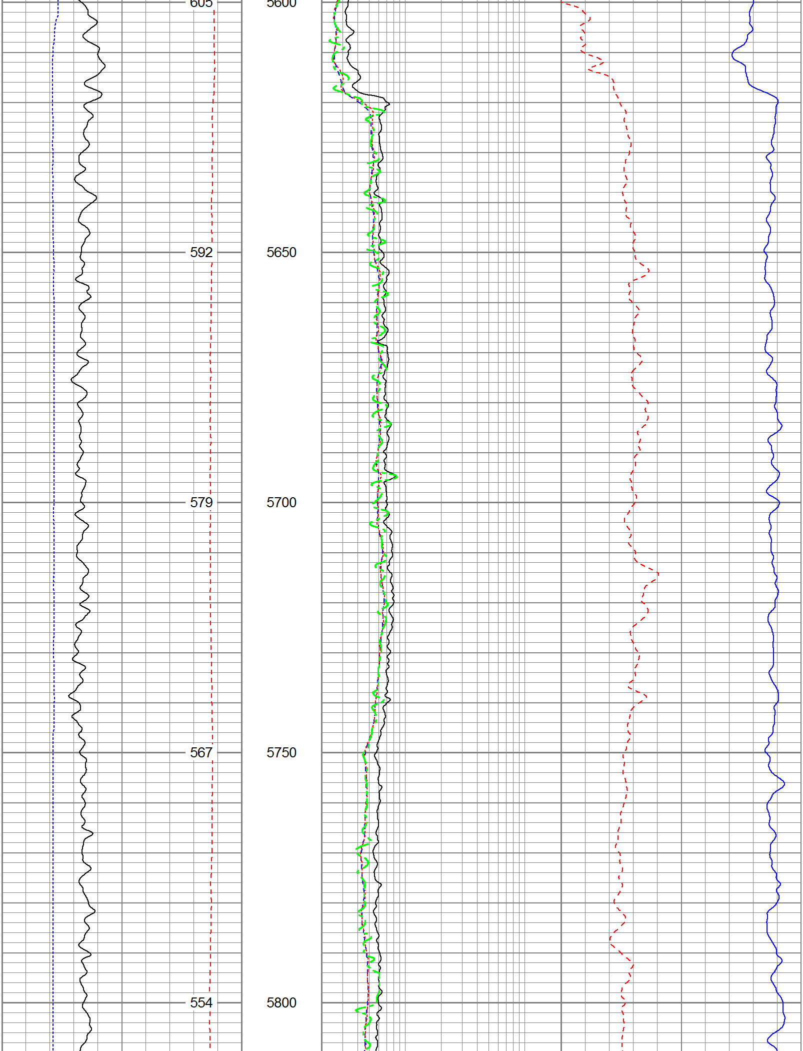
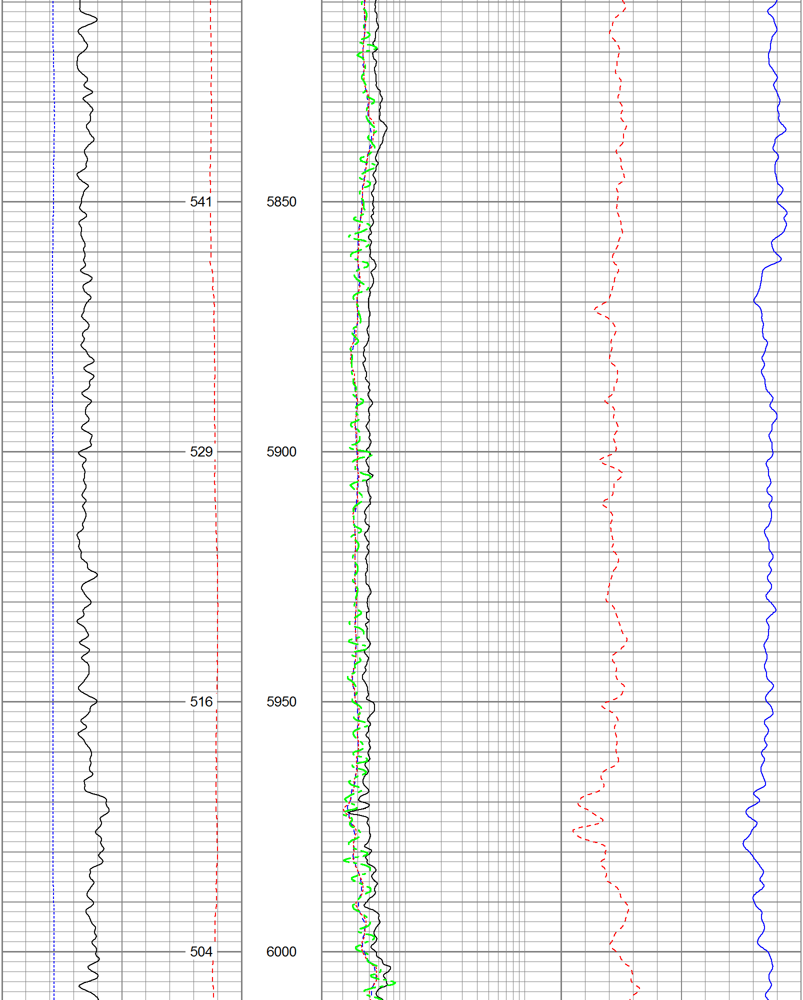
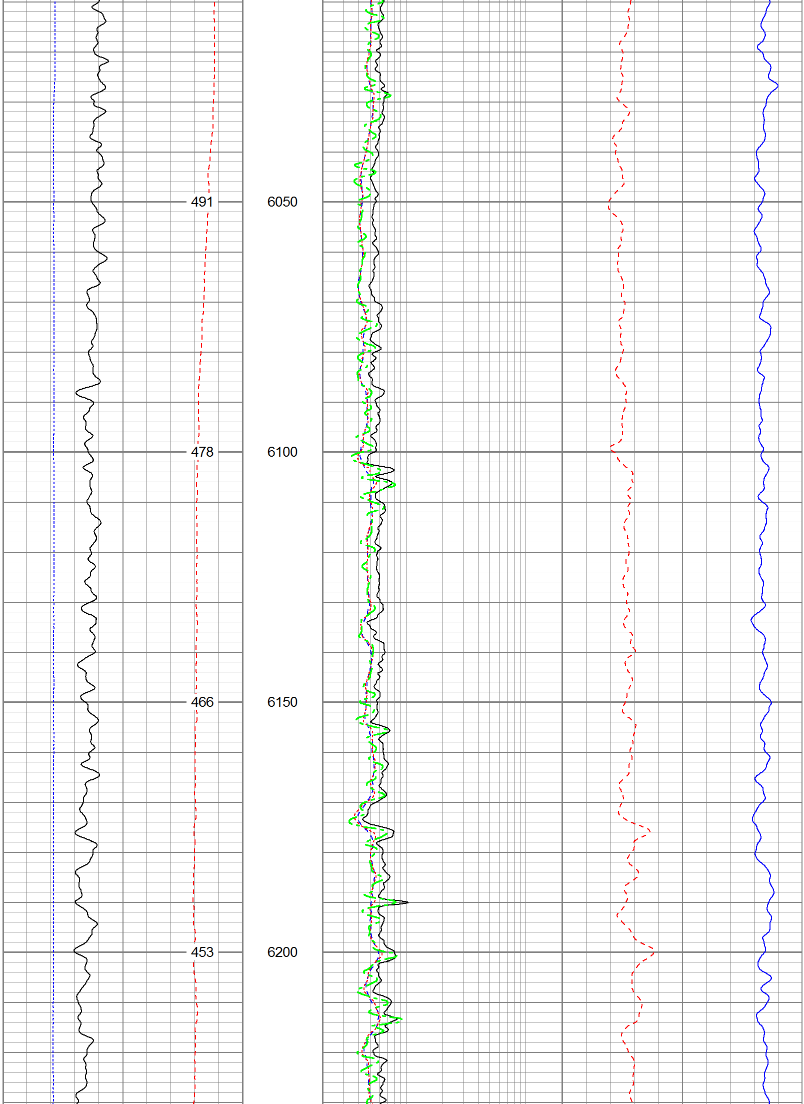
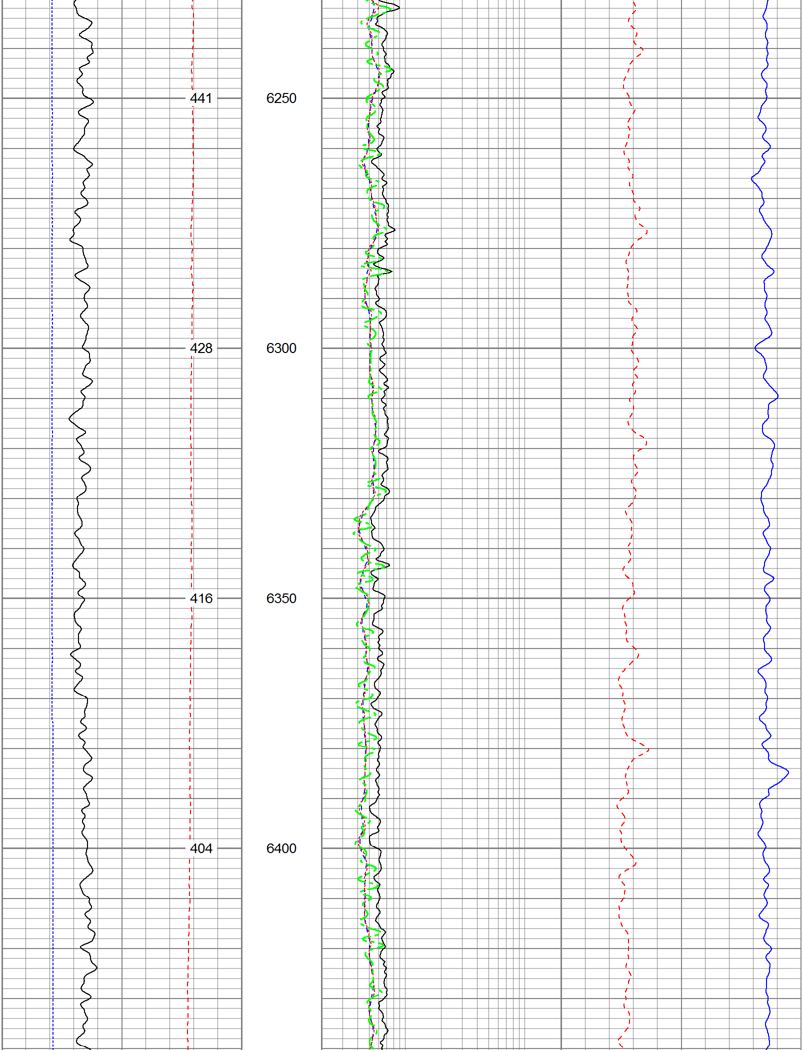
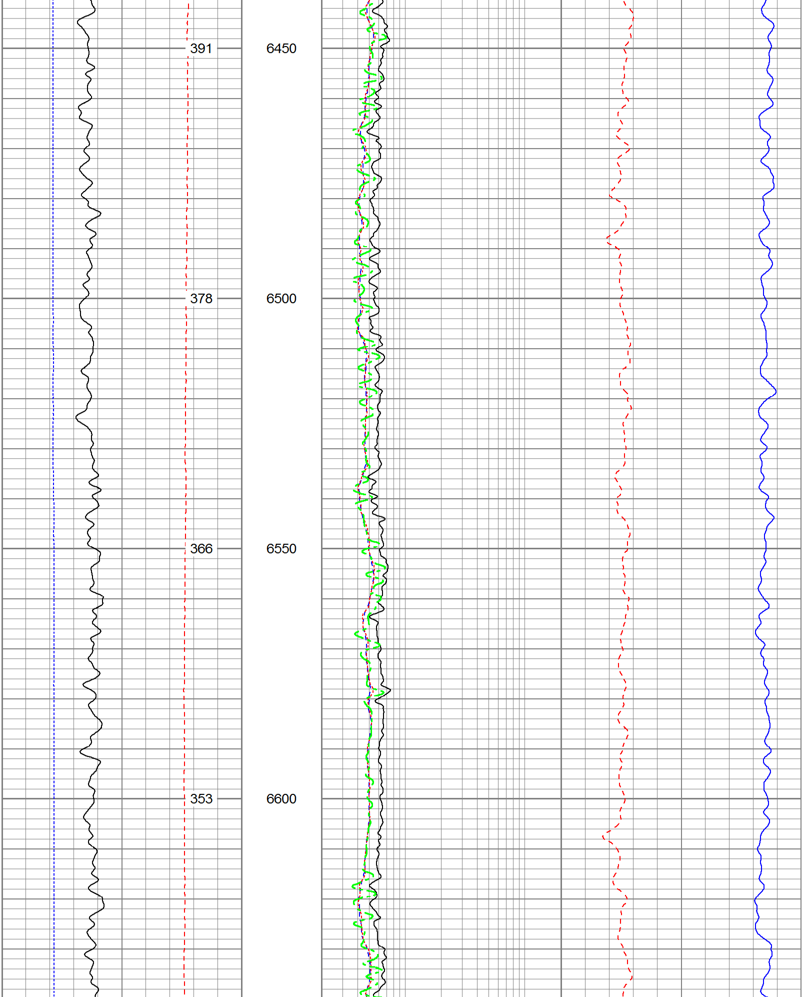
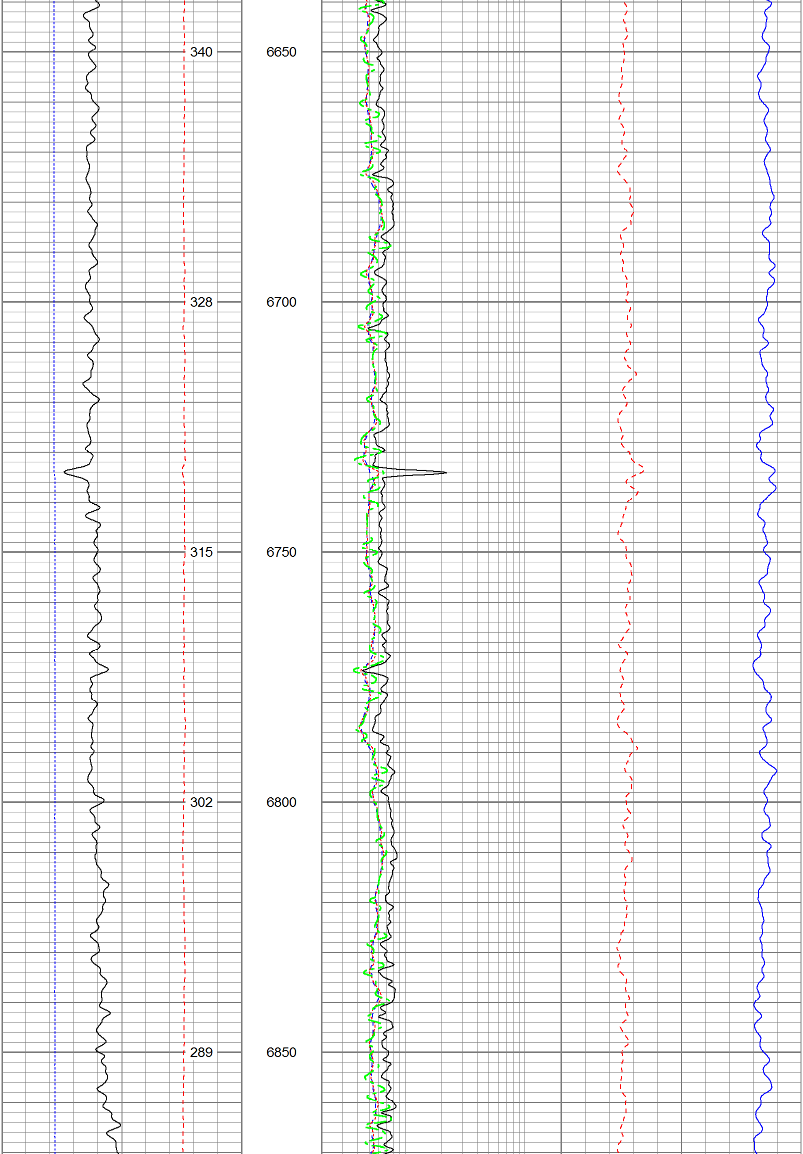


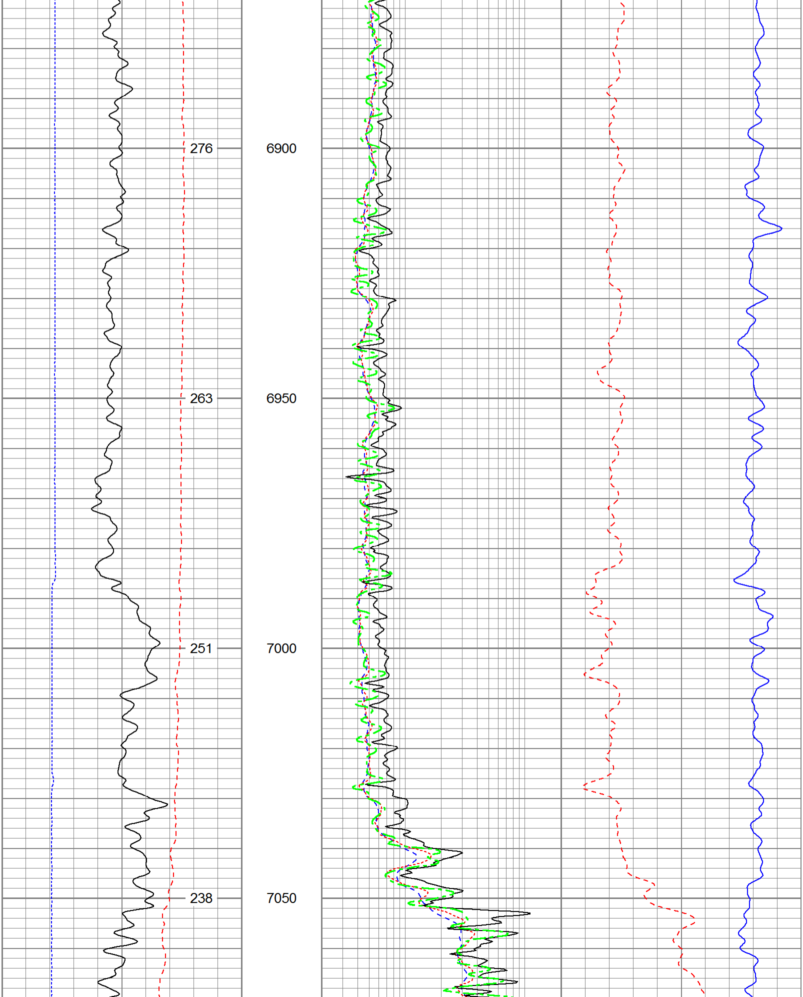


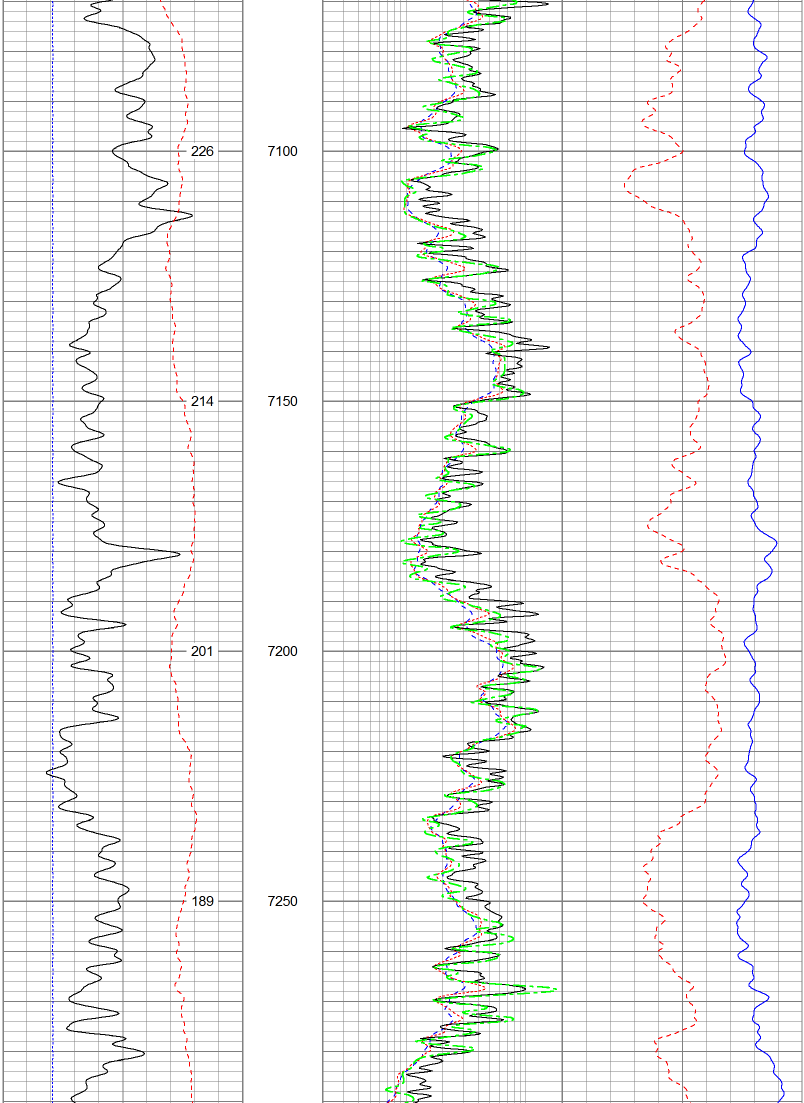


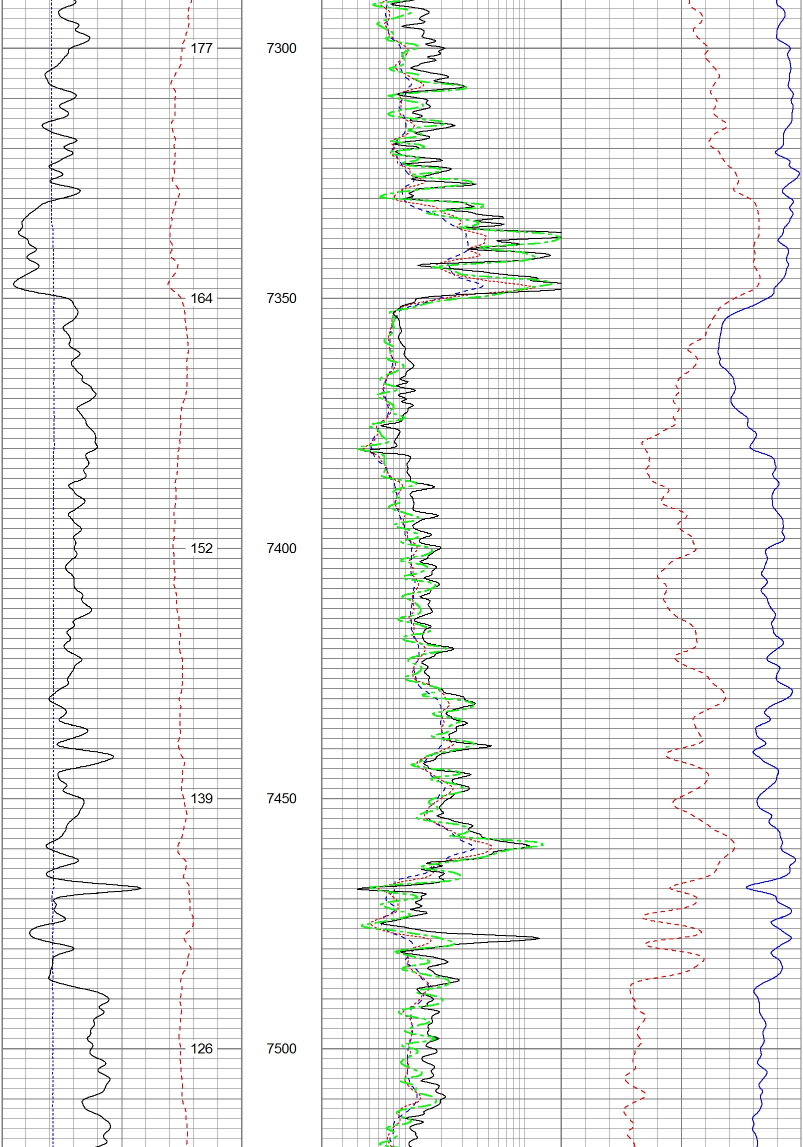


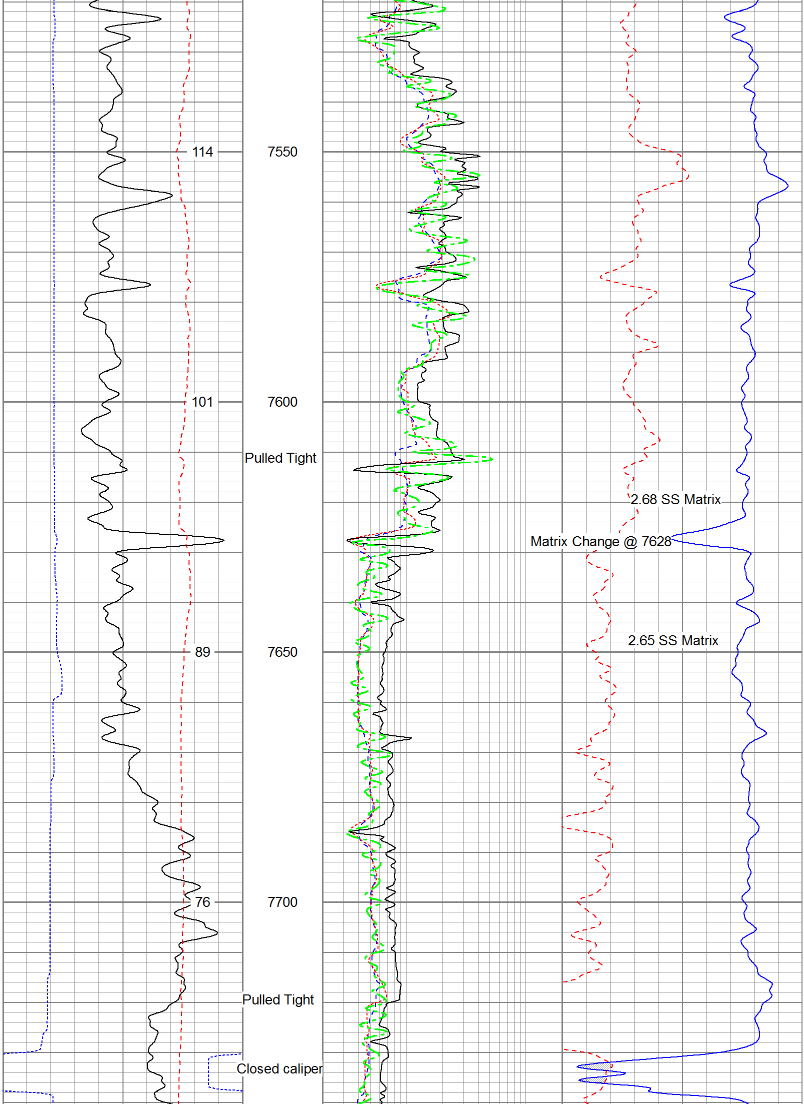


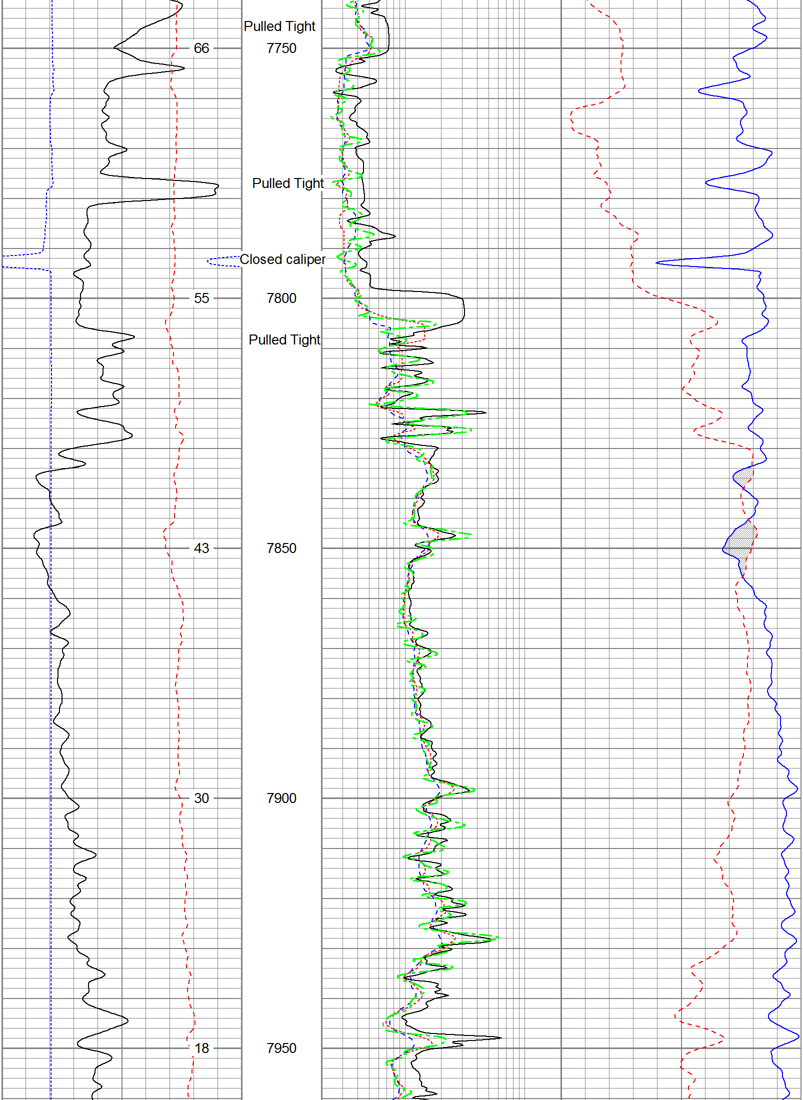


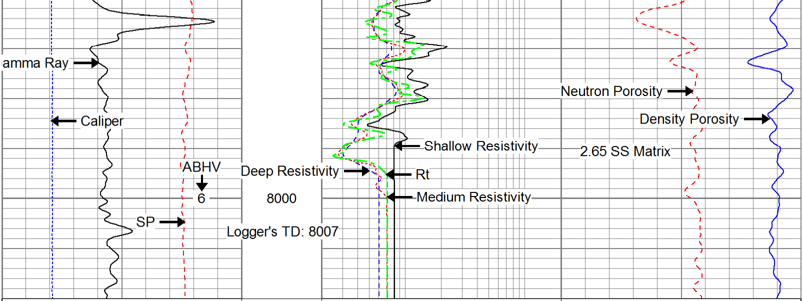












6 Caliper (in) 16		2 Deep Resistivity (Ohm-m) 200	40 Density Porosity (pu) 0
0 Gamma Ray (GAPI) 300		2 Medium Resistivity (Ohm-m) 200	40 Neutron Porosity (pu) 0
50 SP (mV) 250		2 Shallow Resistivity (Ohm-m) 200	
ABHV (ft3)		2 Rt (Ohm-m) 200	

PIONEER
Pioneer Energy Services

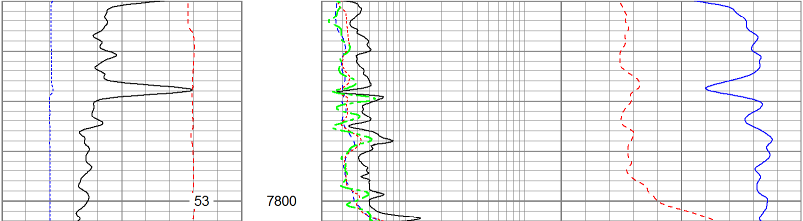
MAIN PASS

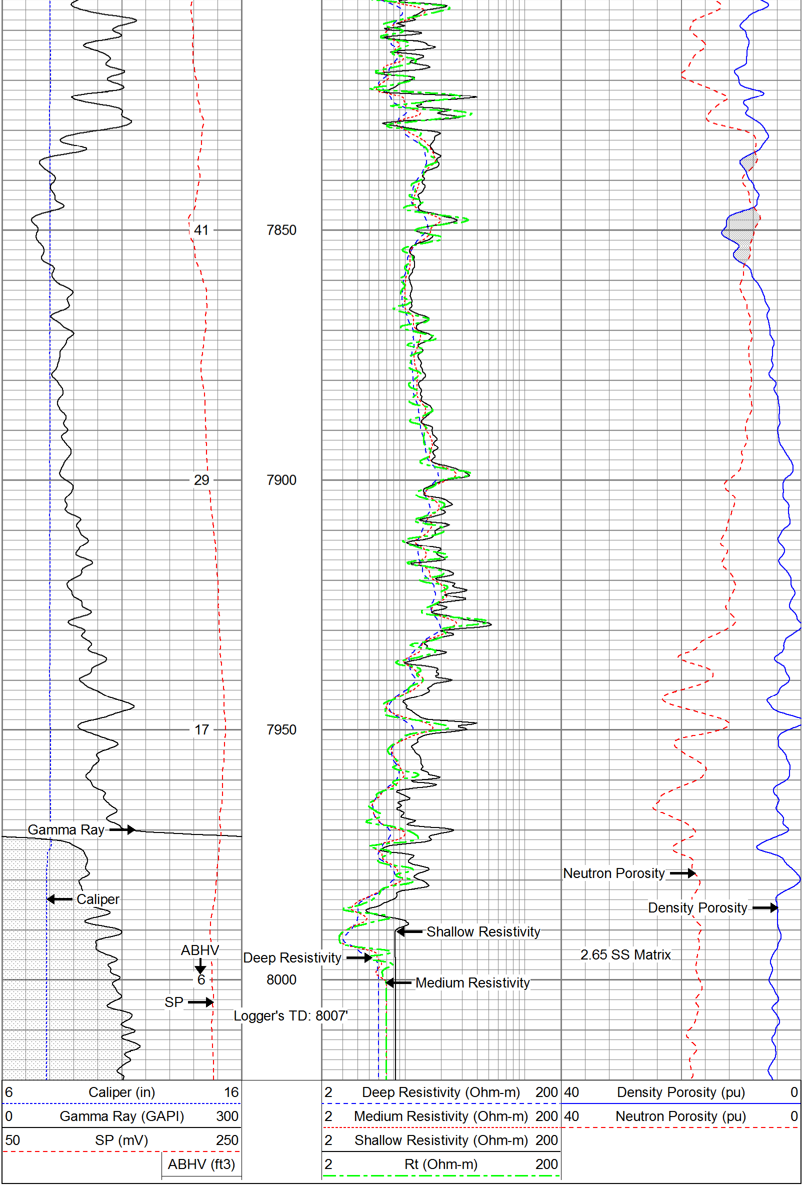
PIONEER
Pioneer Energy Services

REPEAT PASS

Database File:	12755-56.db
Dataset Pathname:	pass3.3
Presentation Format:	encana
Dataset Creation:	Mon Apr 29 05:17:29 2013 by Calc 0
Charted by:	Depth in Feet scaled 1:240

6 Caliper (in) 16		2 Deep Resistivity (Ohm-m) 200	40 Density Porosity (pu) 0
0 Gamma Ray (GAPI) 300		2 Medium Resistivity (Ohm-m) 200	40 Neutron Porosity (pu) 0
50 SP (mV) 250		2 Shallow Resistivity (Ohm-m) 200	
ABHV (ft3)		2 Rt (Ohm-m) 200	





PIONEER

Pioneer Energy Services

REPEAT PASS

PIONEER

Pioneer Energy Services

MAIN PASS

Database File:	12755-56.db
Dataset Pathname:	final
Presentation Format:	cdlenc
Dataset Creation:	Mon Apr 29 08:09:47 2013
Charted by:	Depth in Feet scaled 1:240

6 Caliper (in) 16

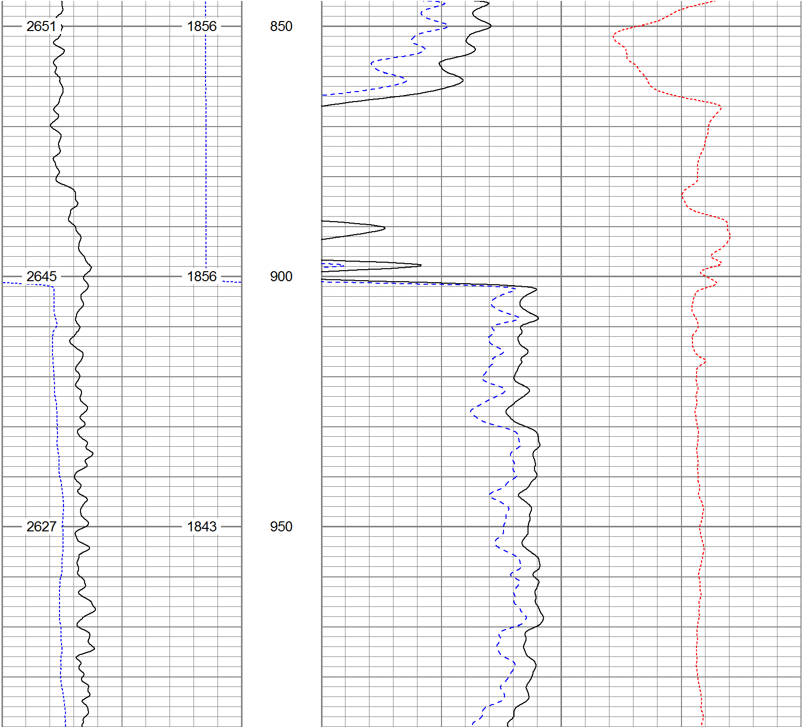
0 Gamma Ray (GAPI) 300

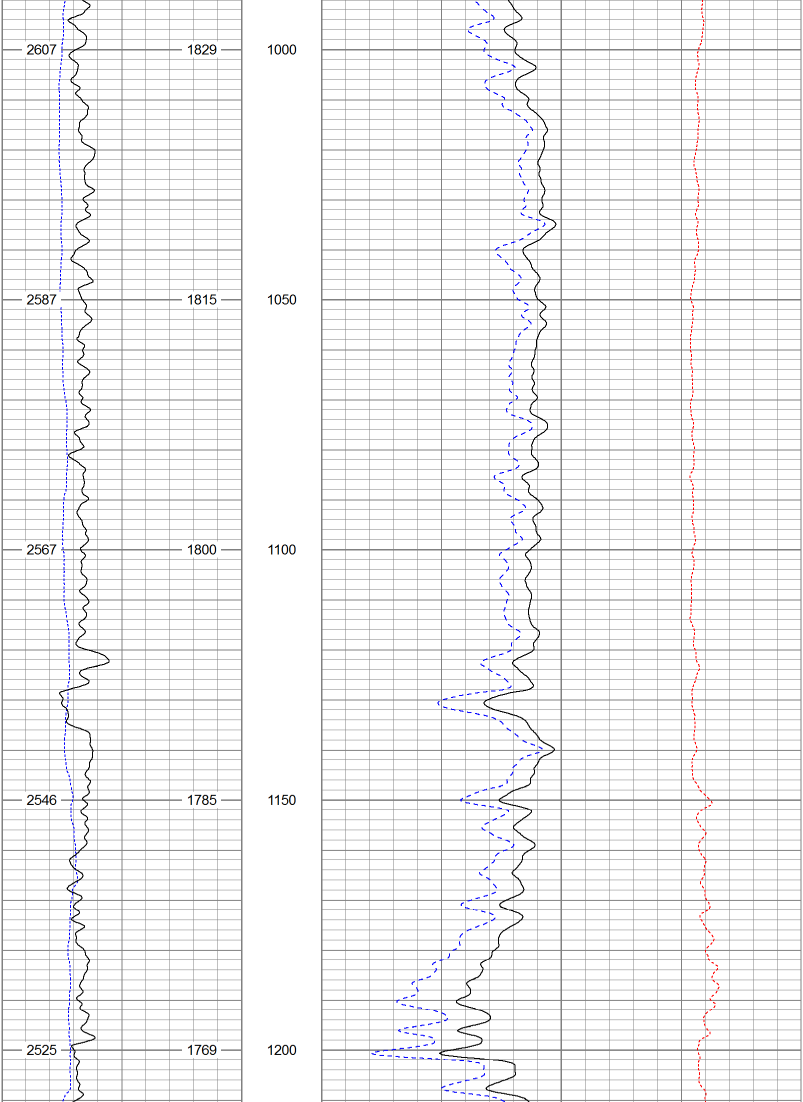
TBHV (ft3) ABHV (ft3)

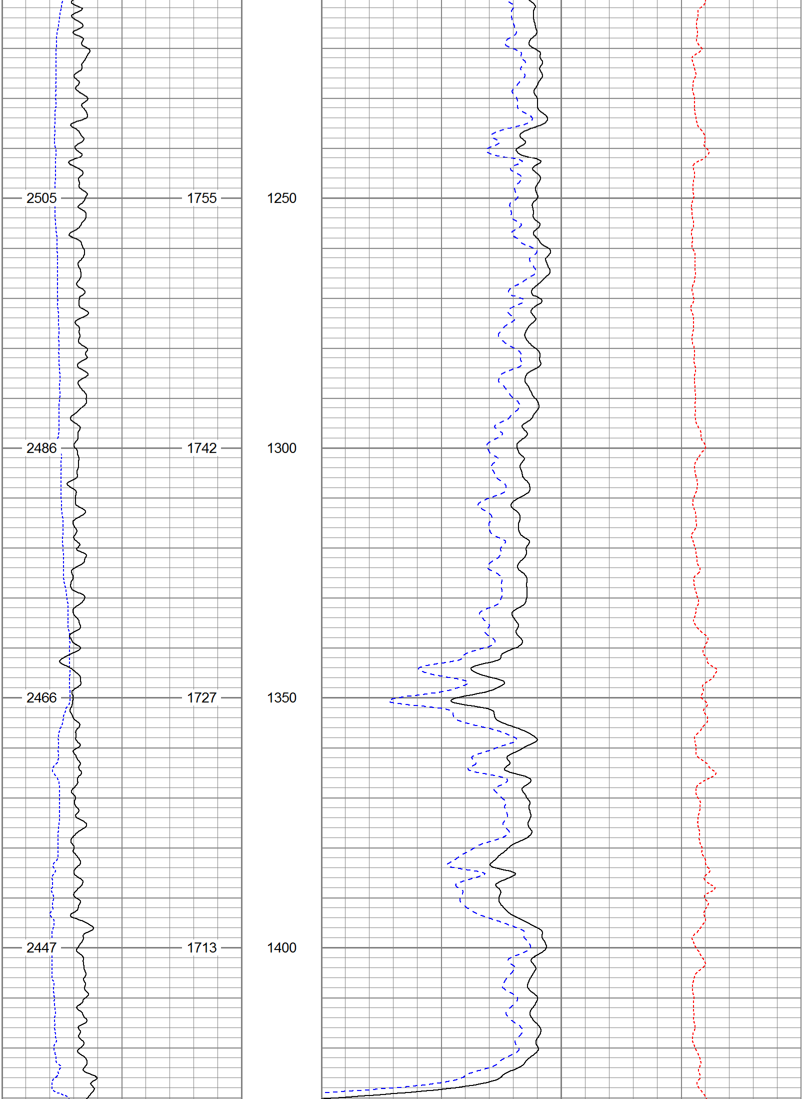
2 Bulk Density (g/cc) 3

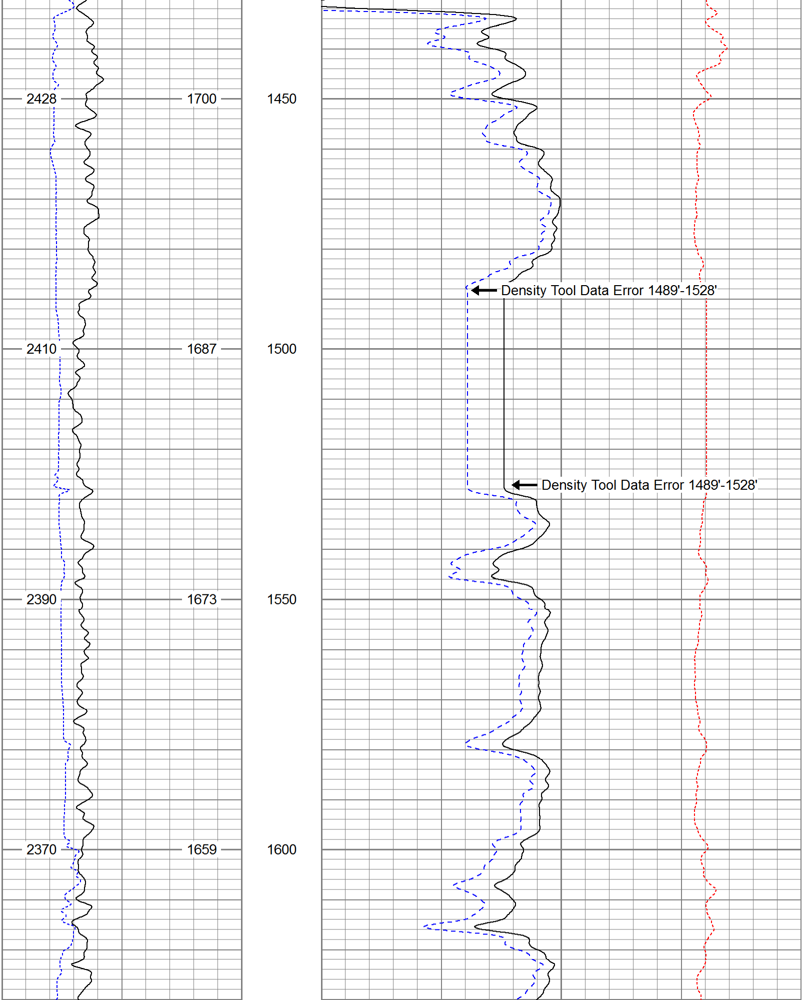
30 Density Porosity (pu) -10

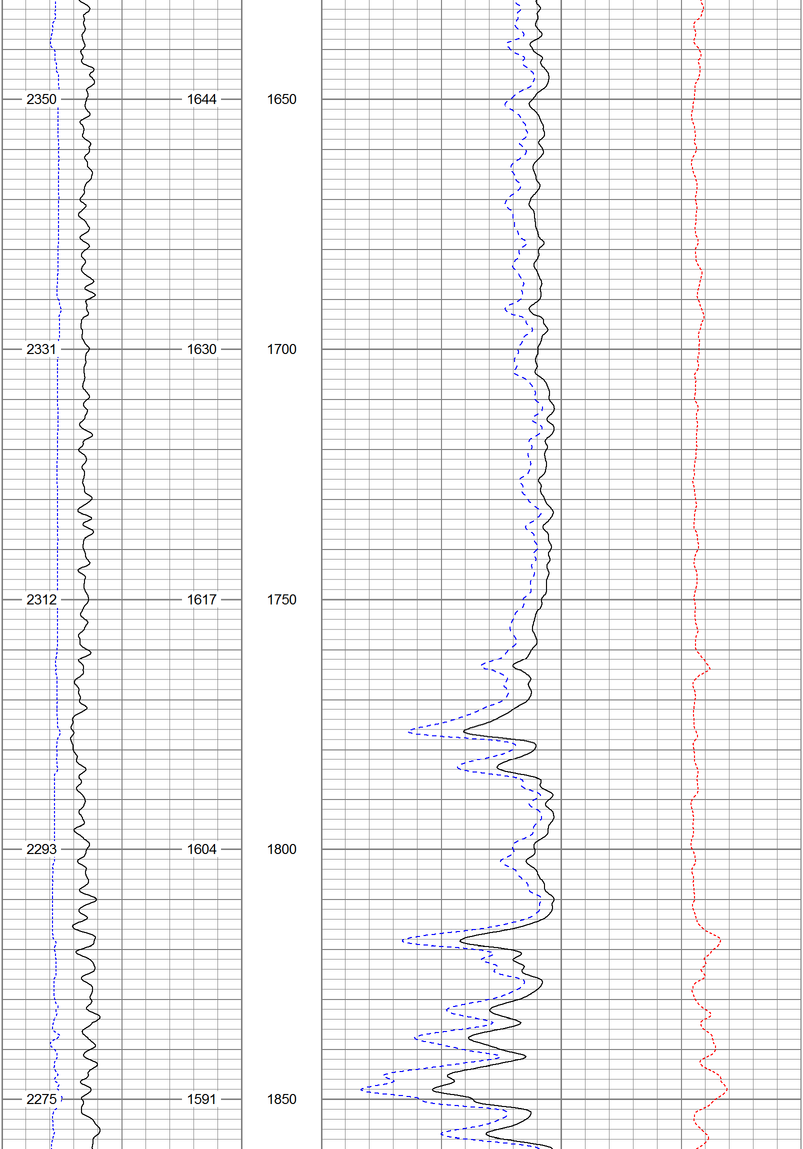
-0.5 Correction (g/cc) 0.5

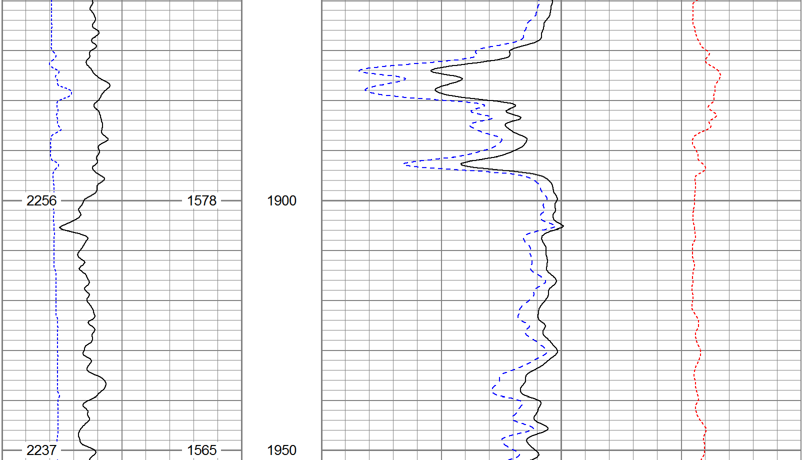


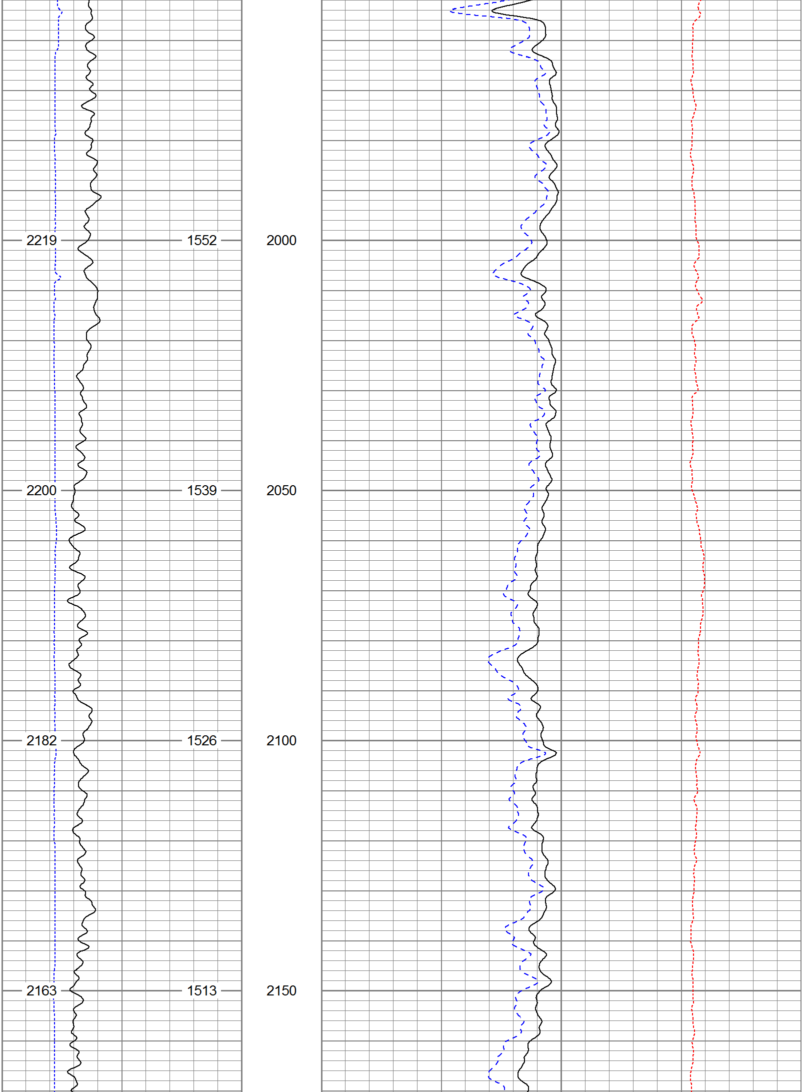








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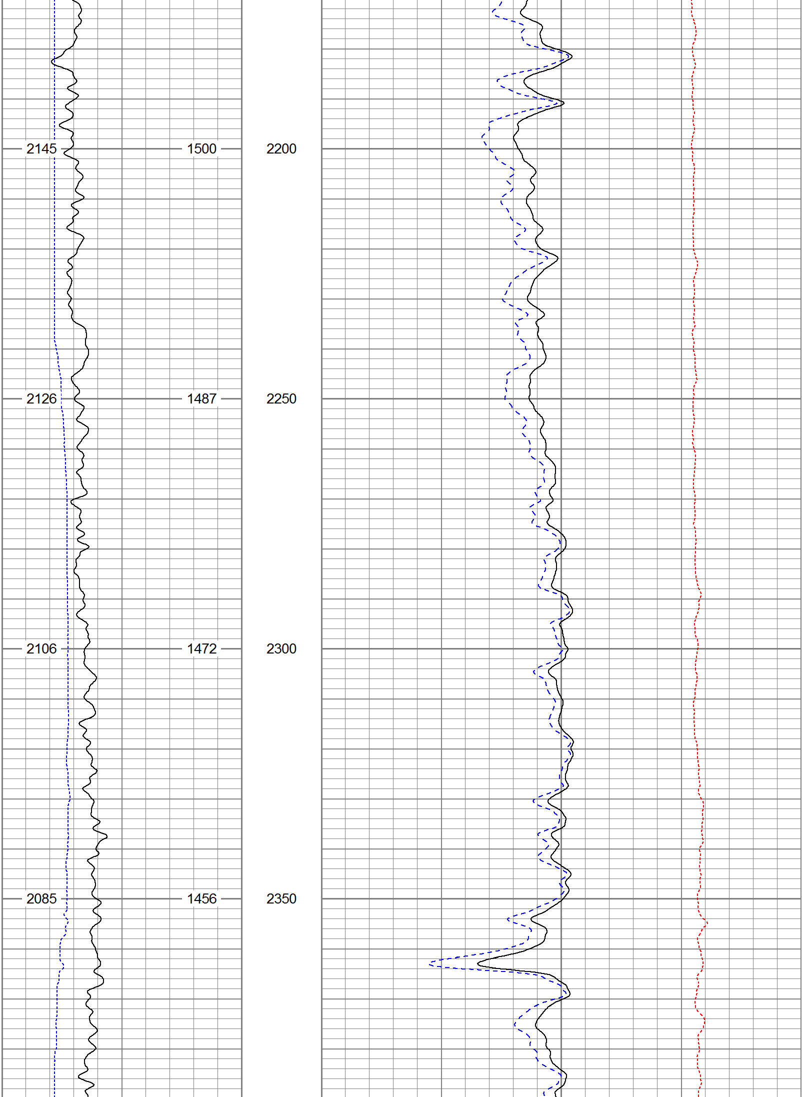
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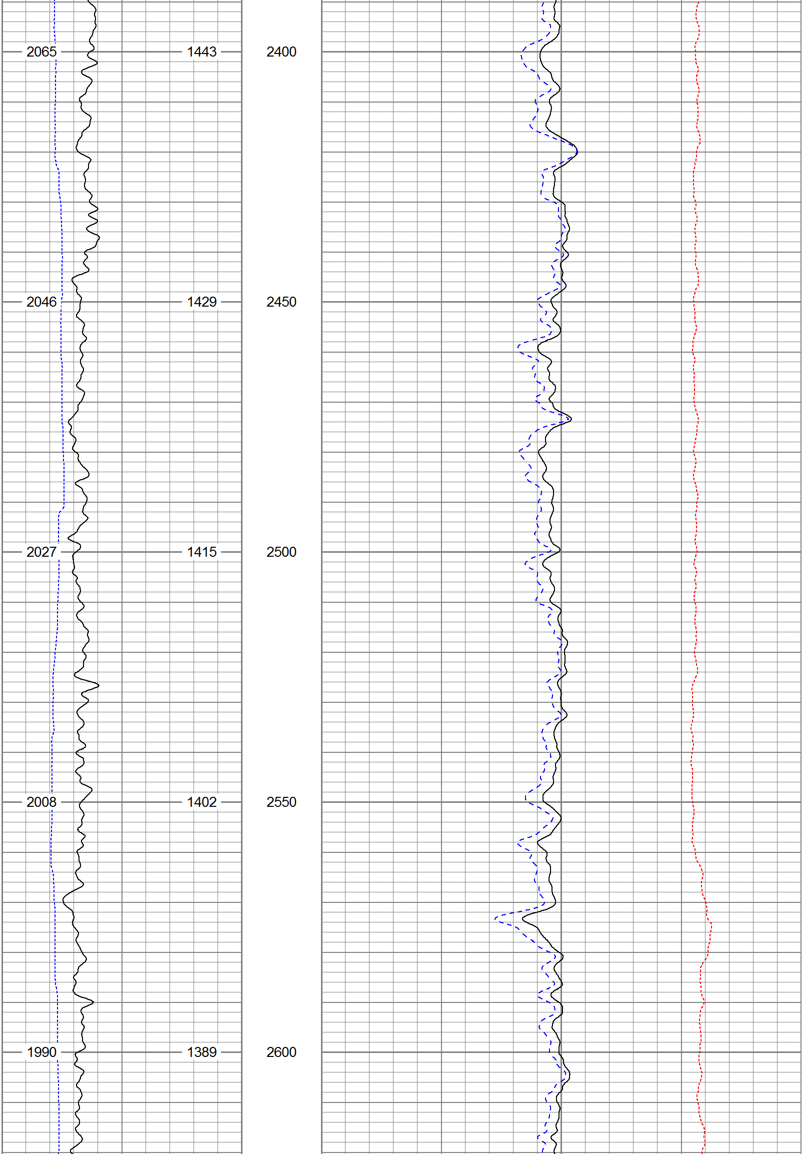
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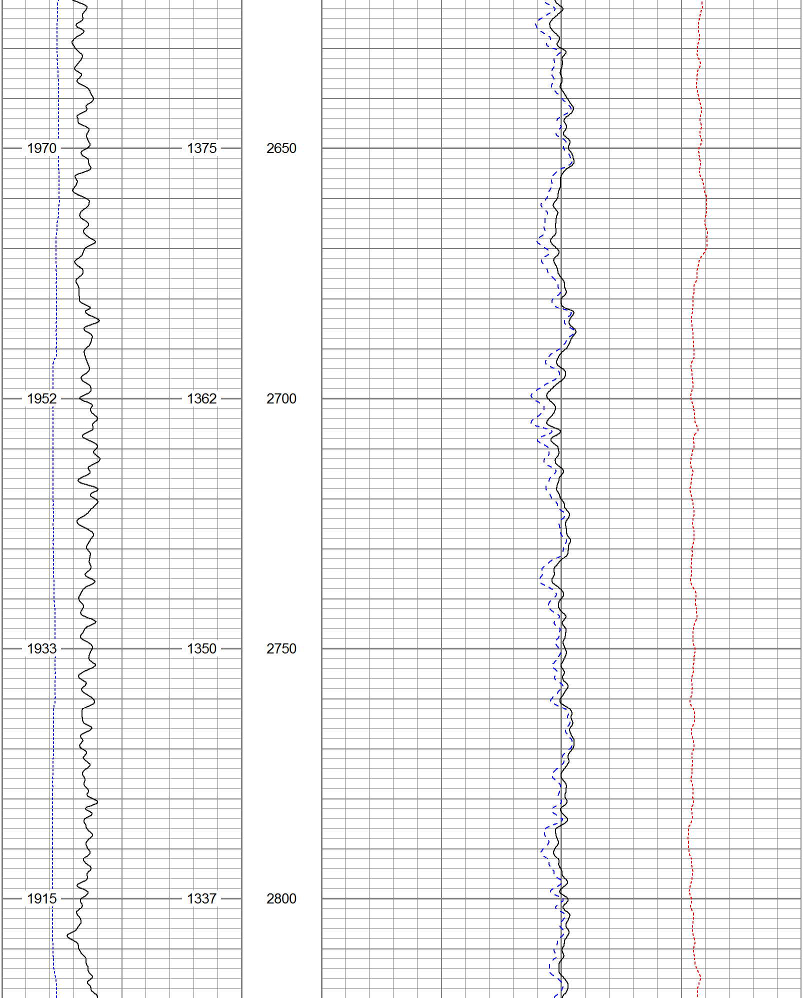
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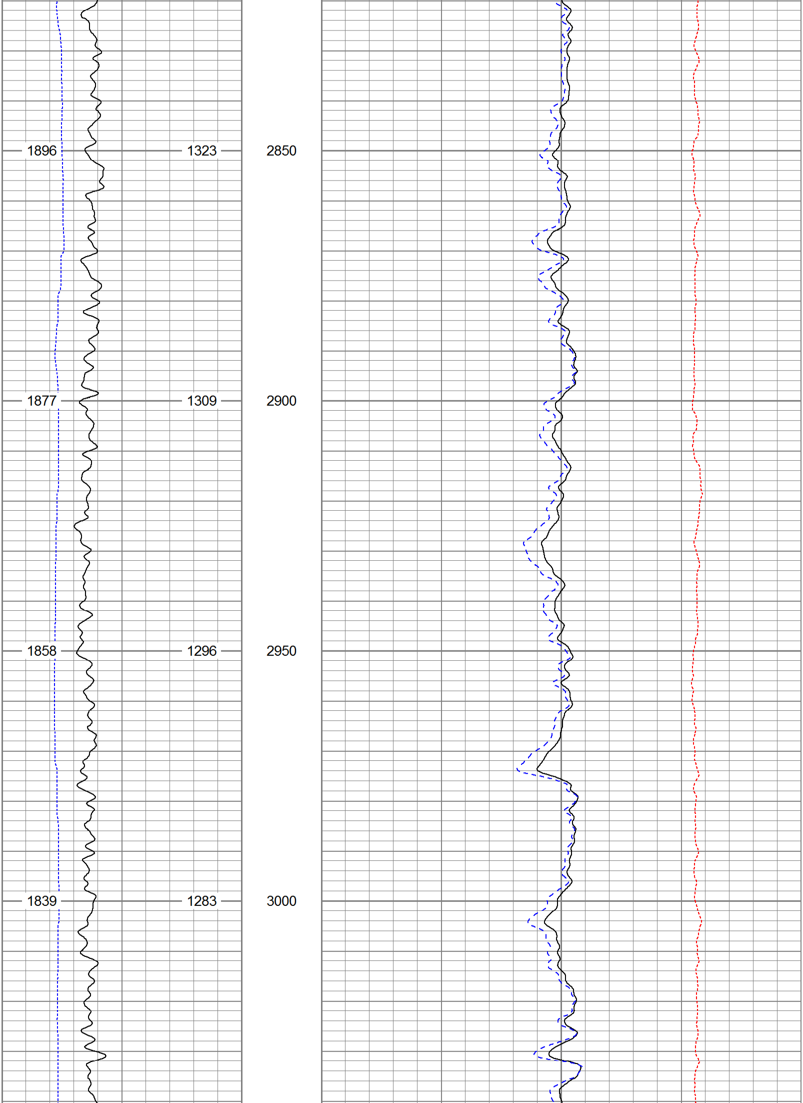
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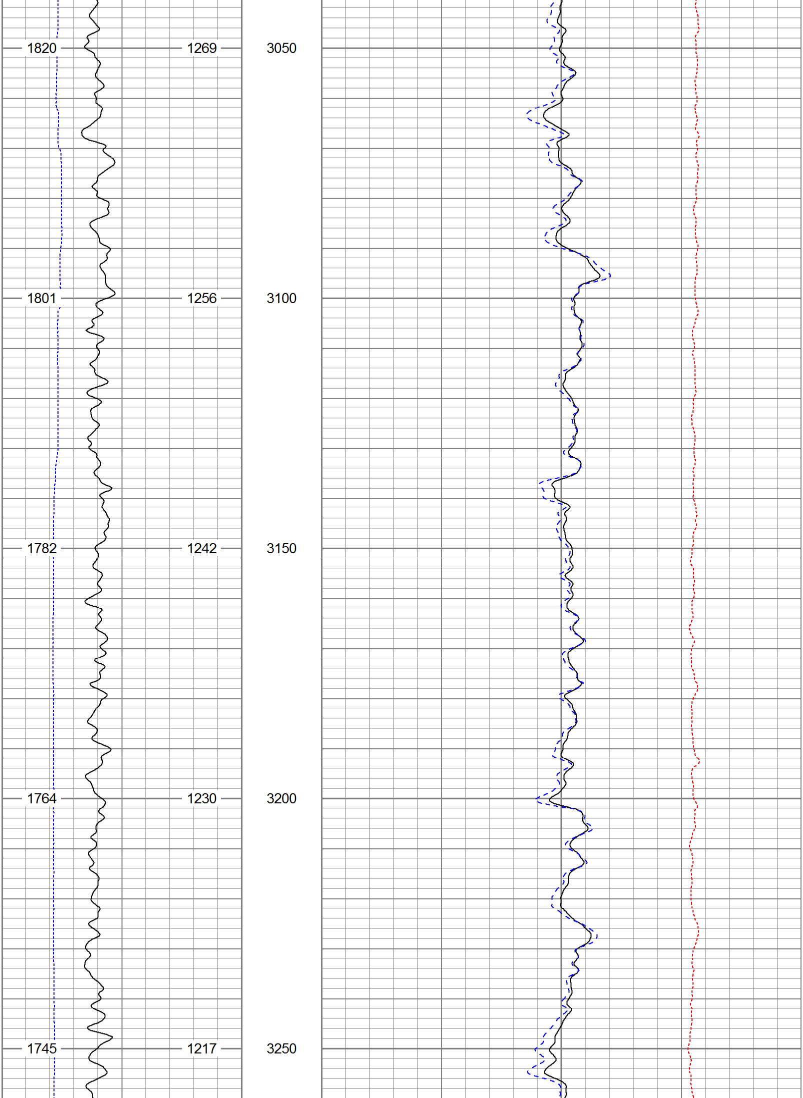
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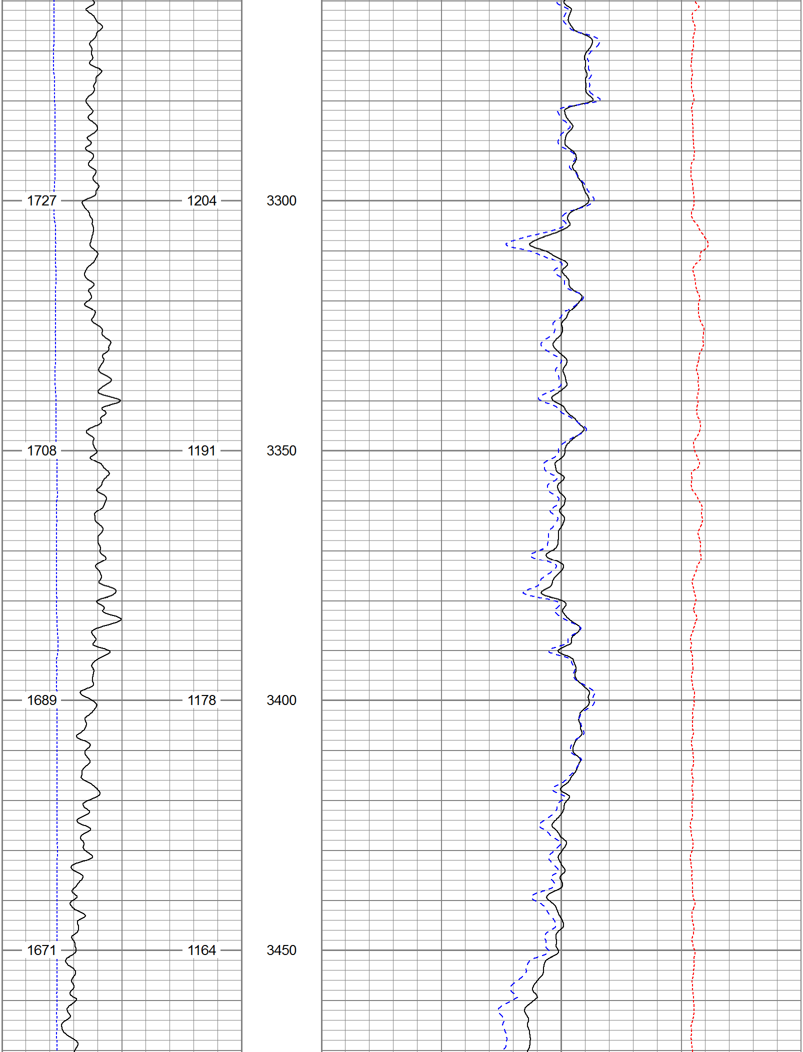
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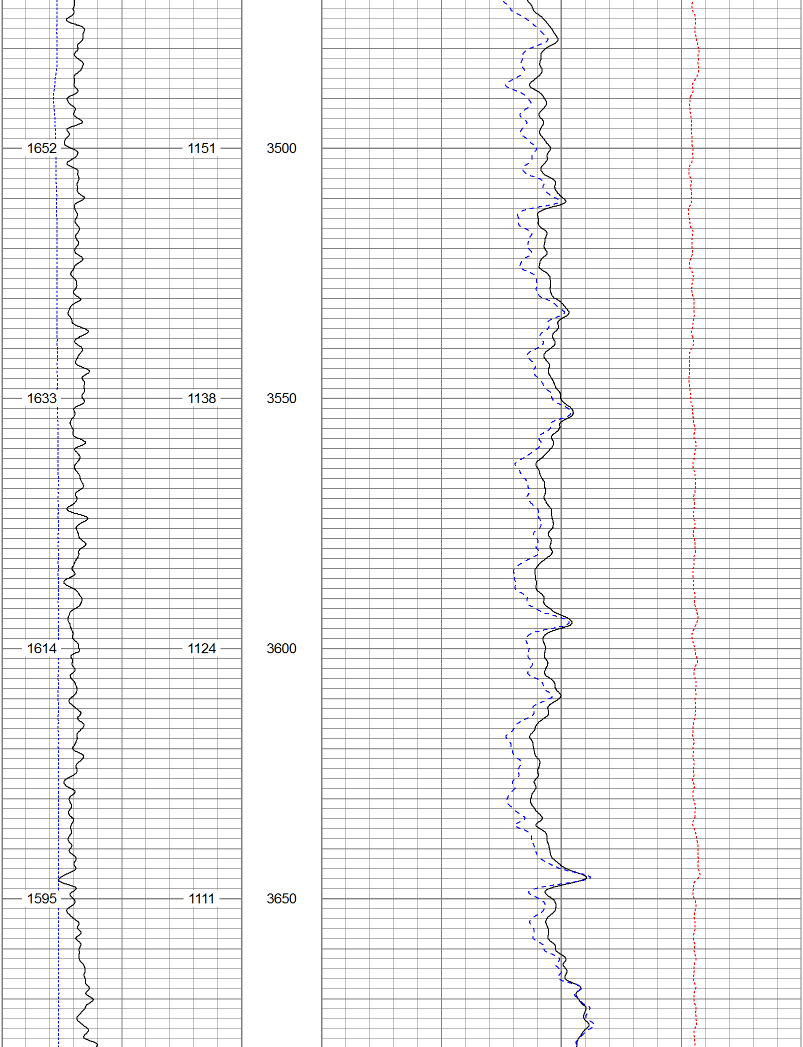
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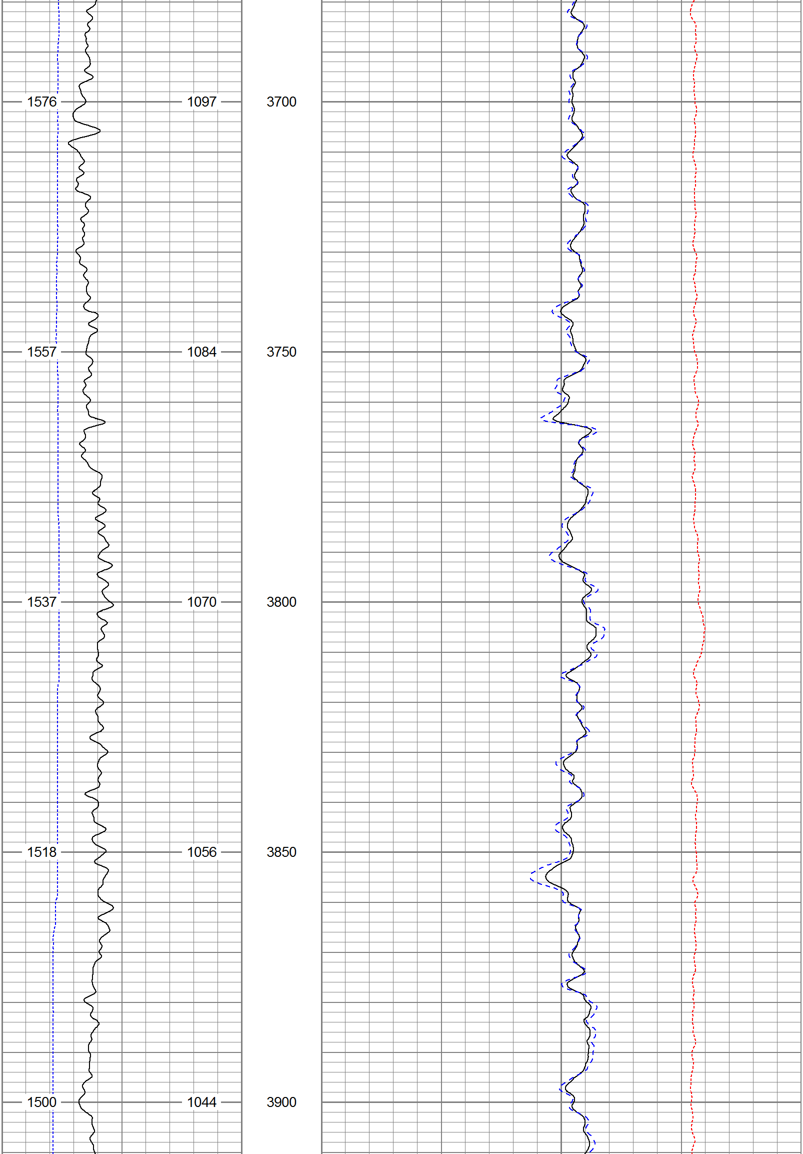
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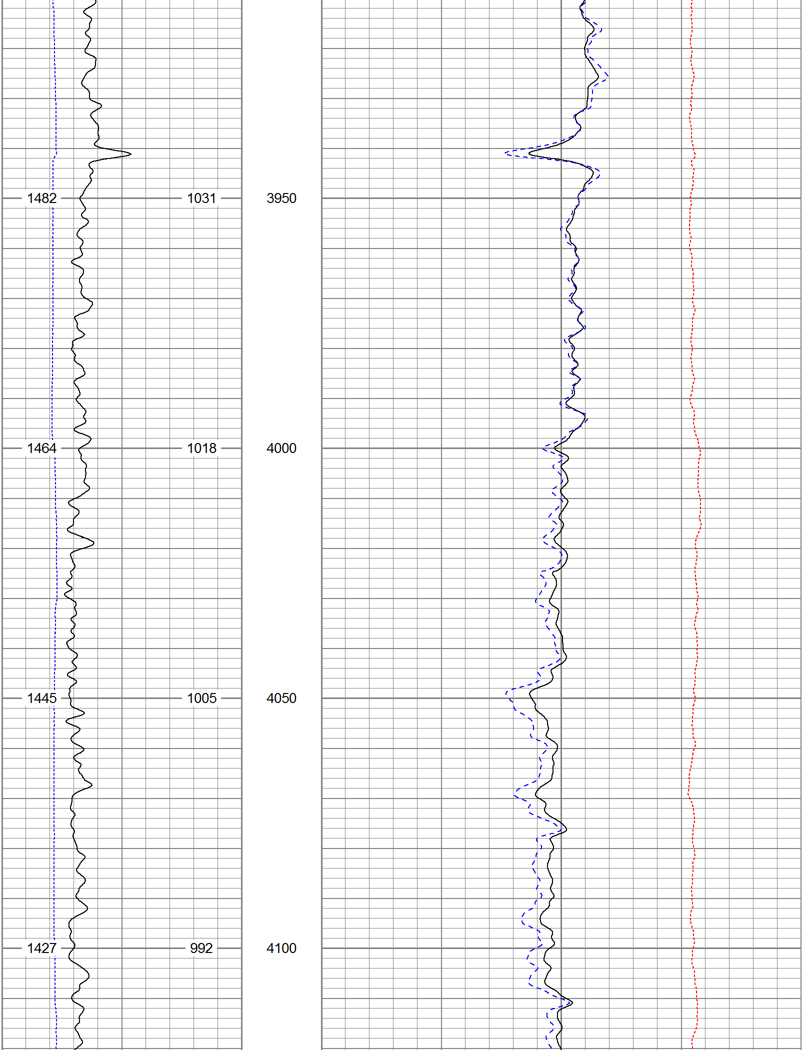
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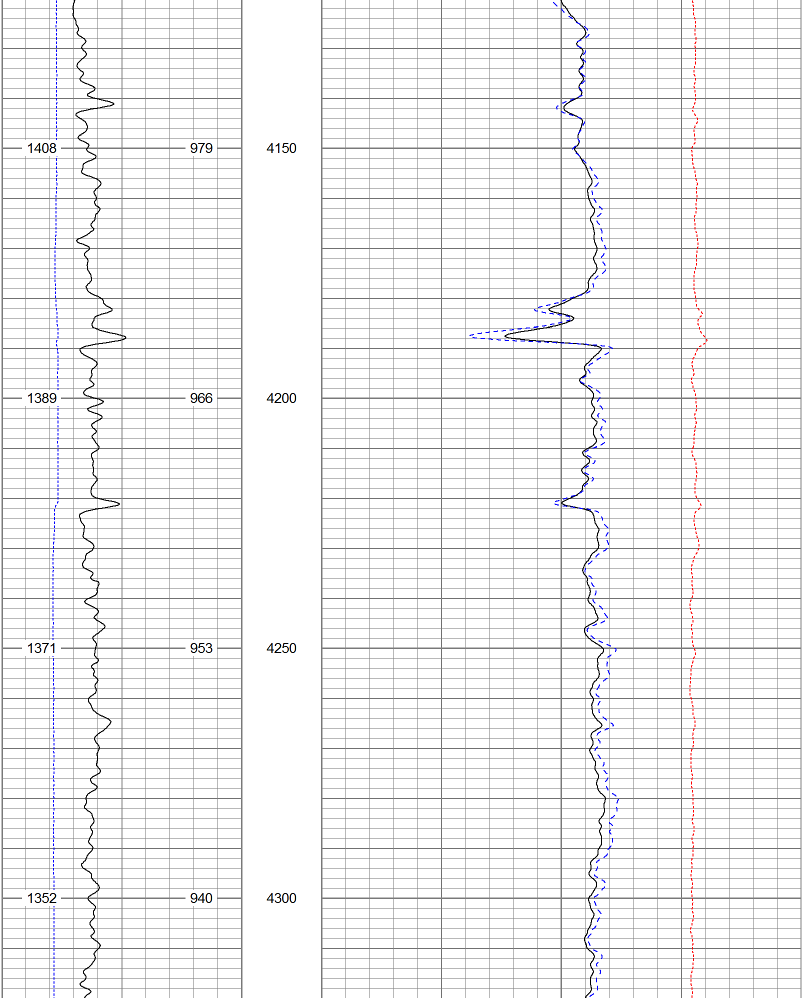
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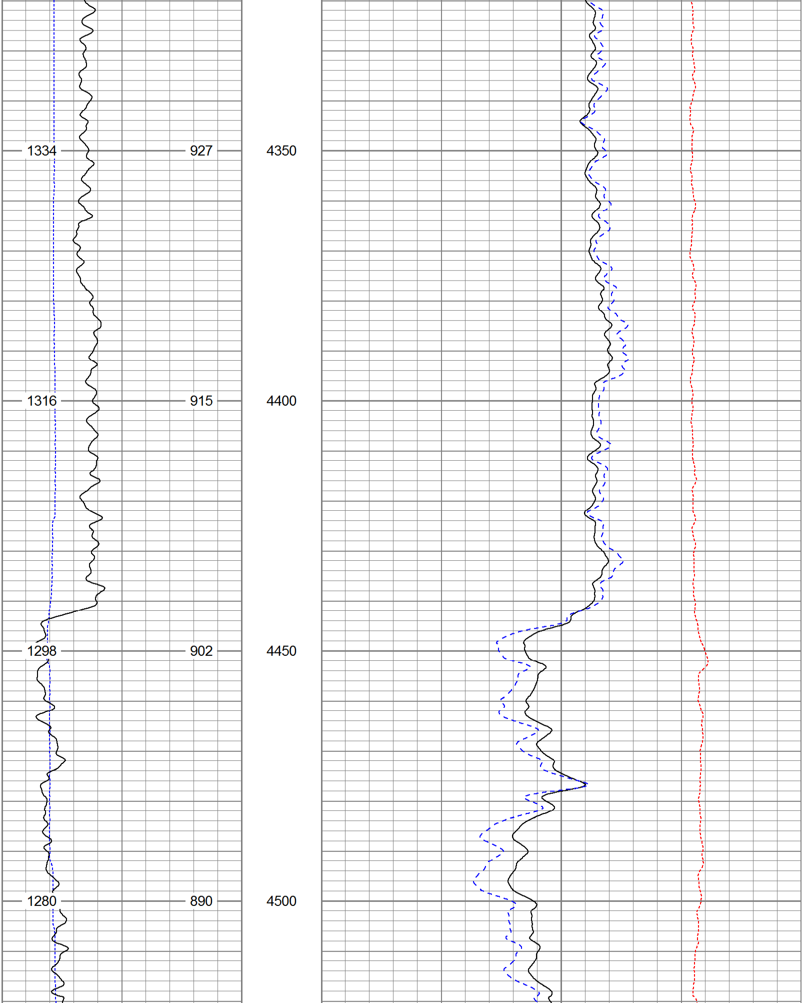
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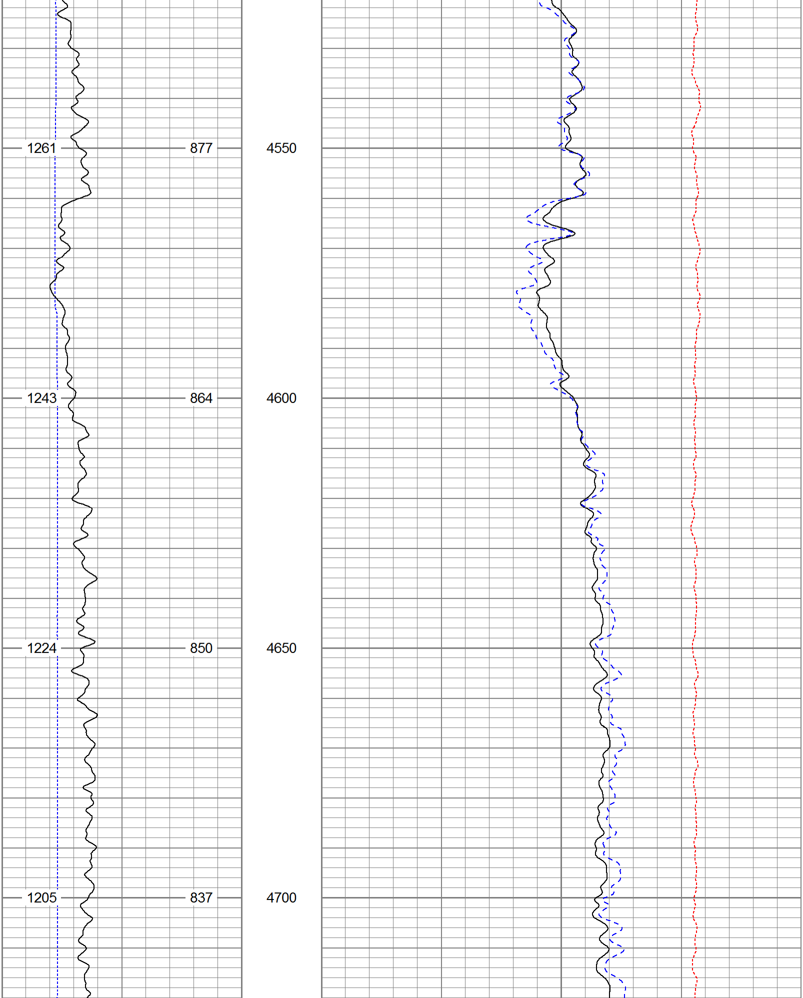
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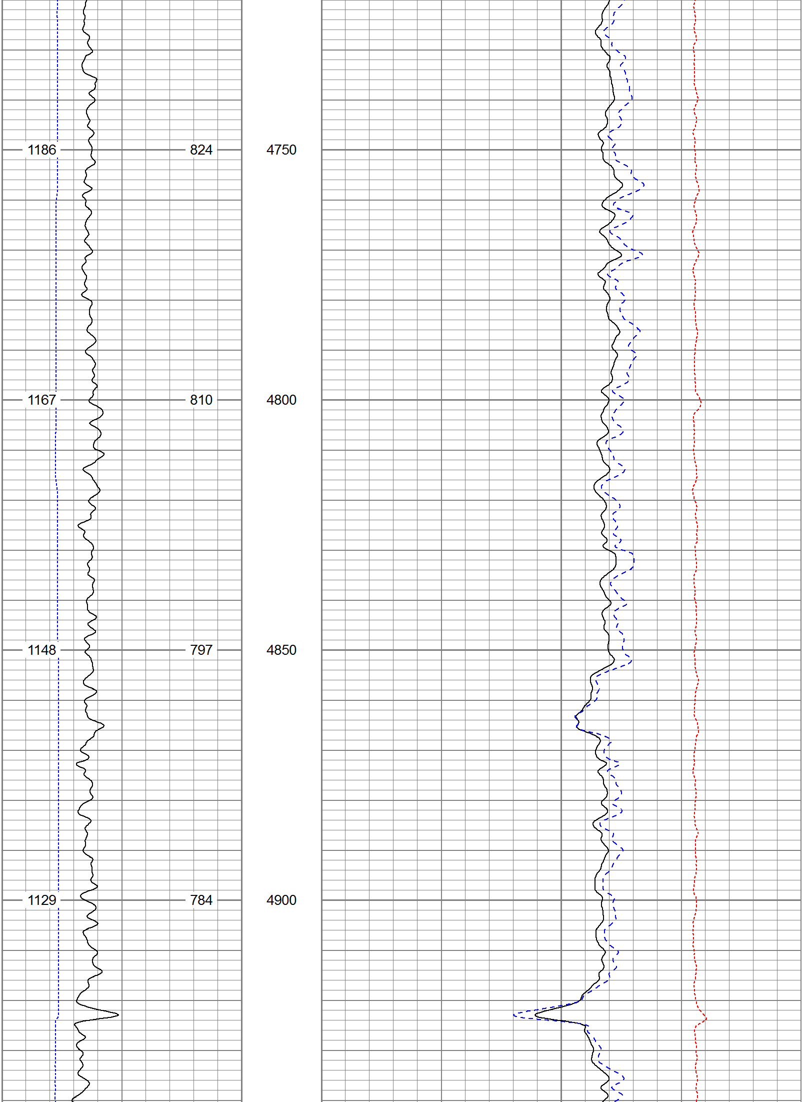
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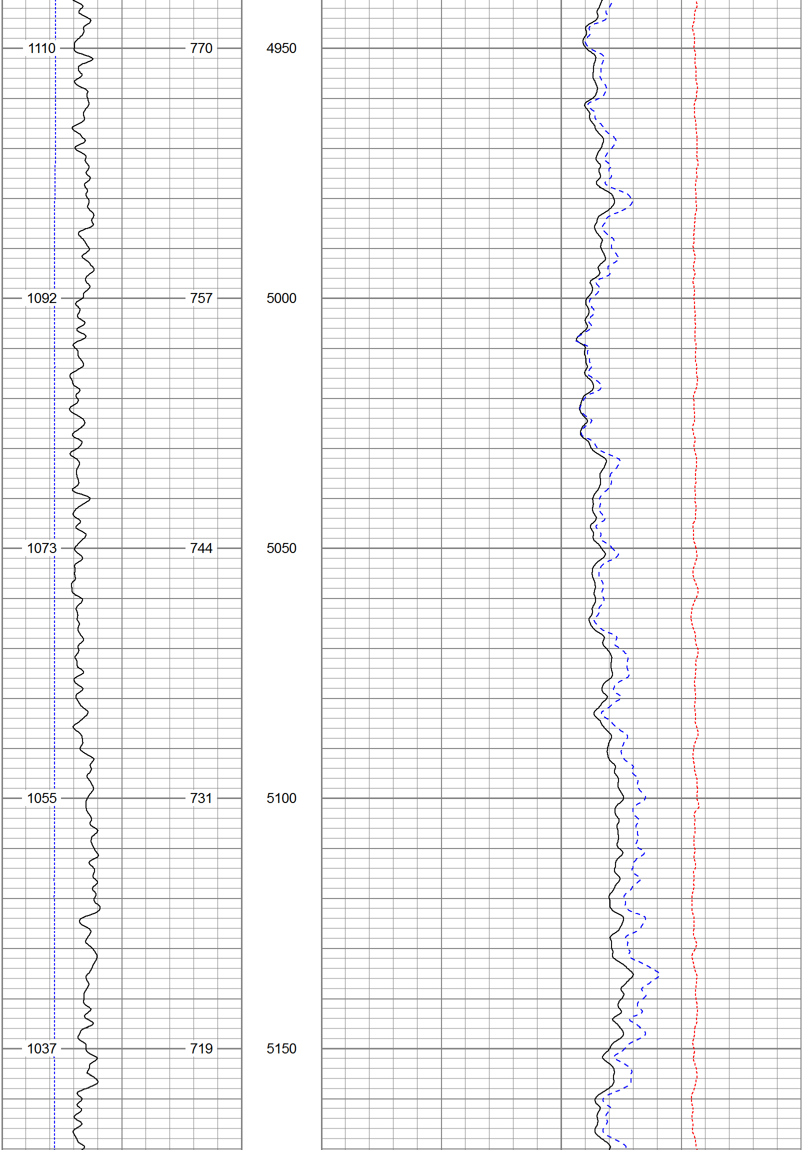
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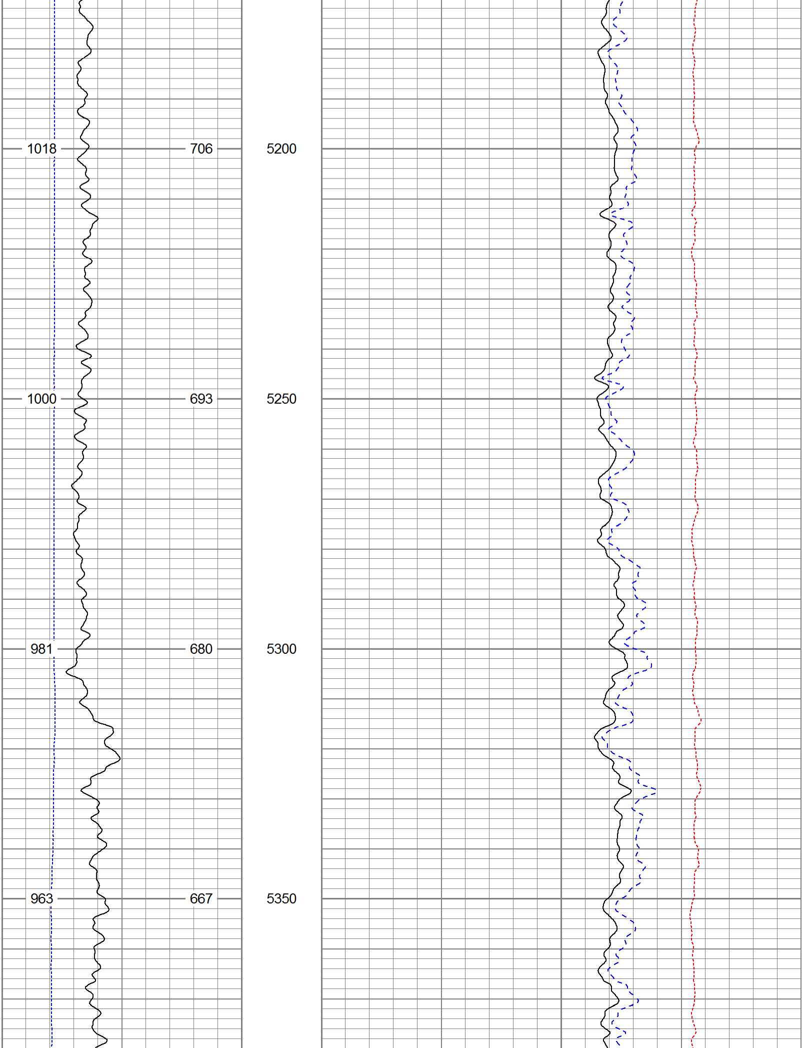
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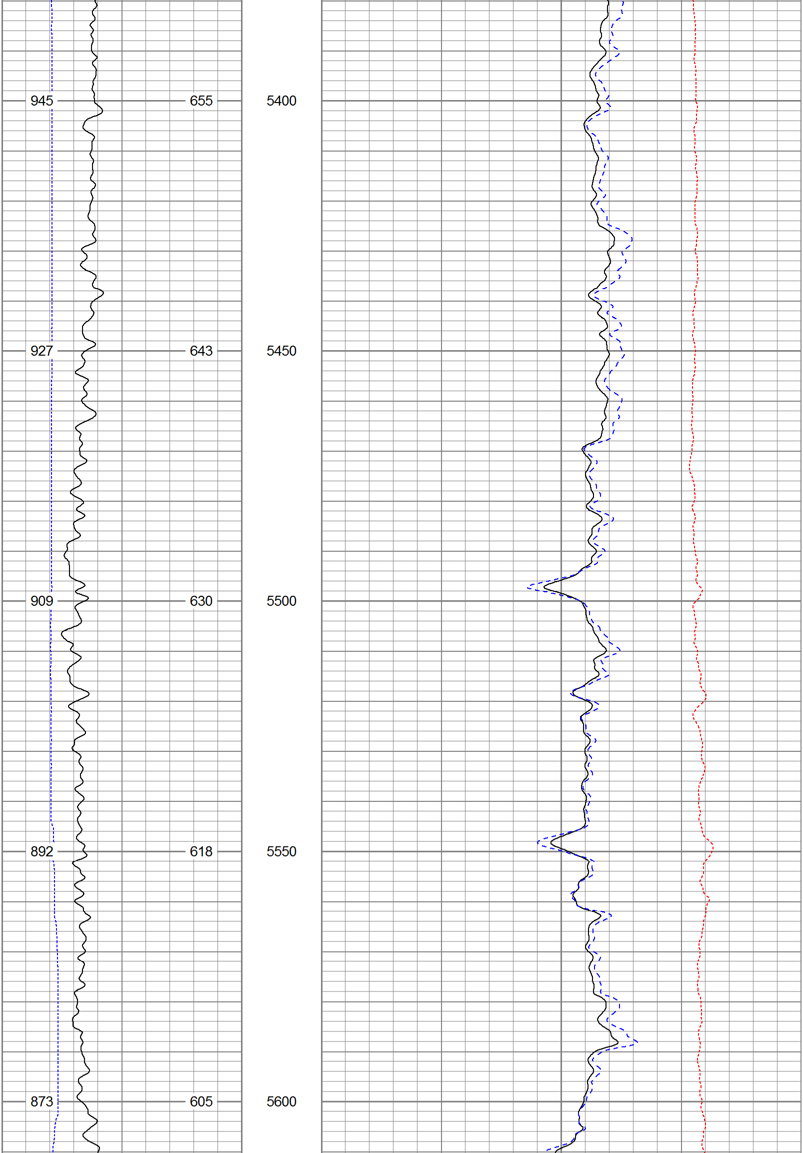
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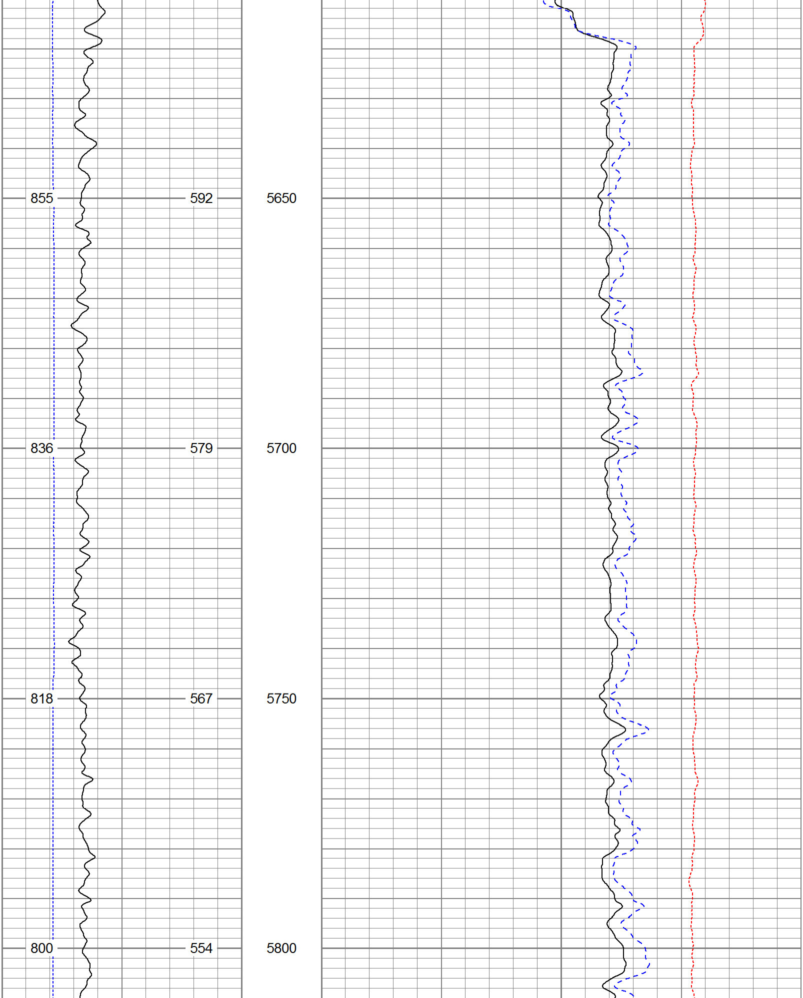
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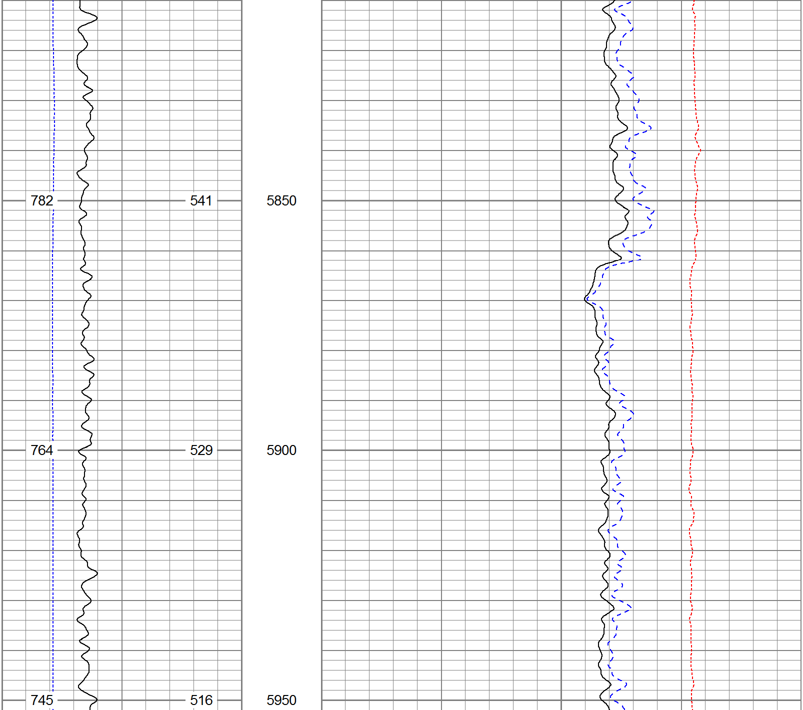
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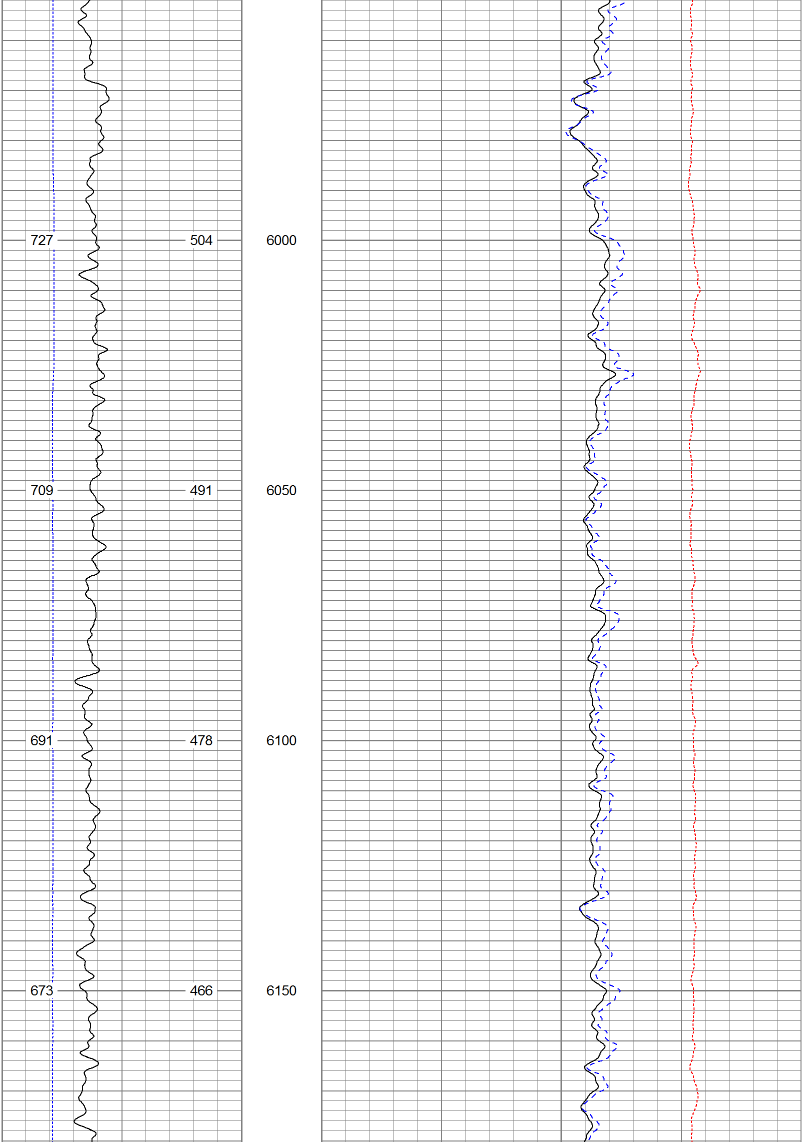

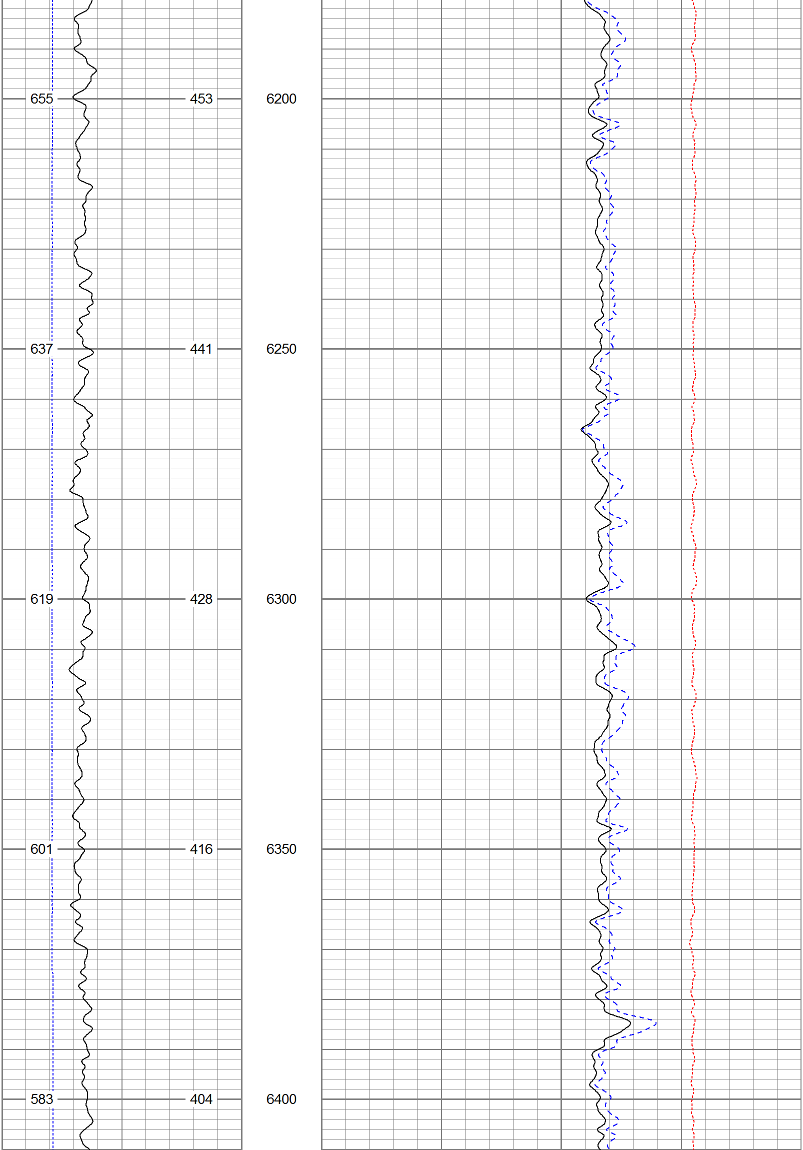

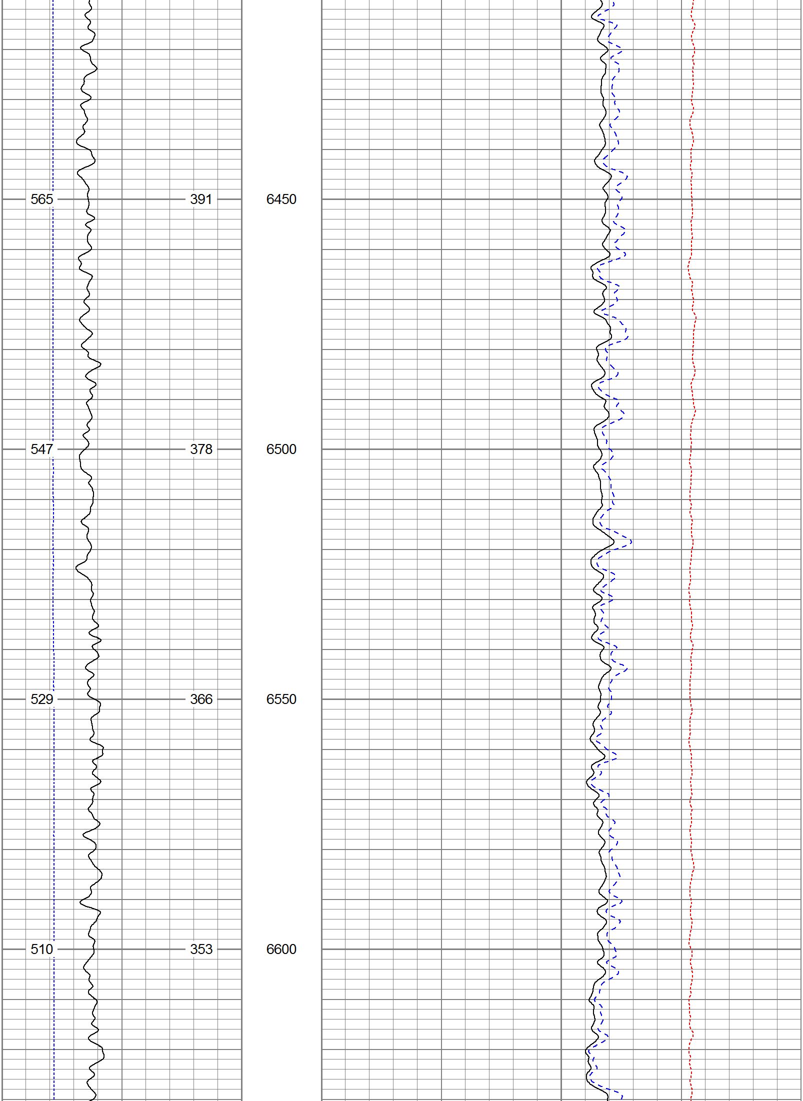

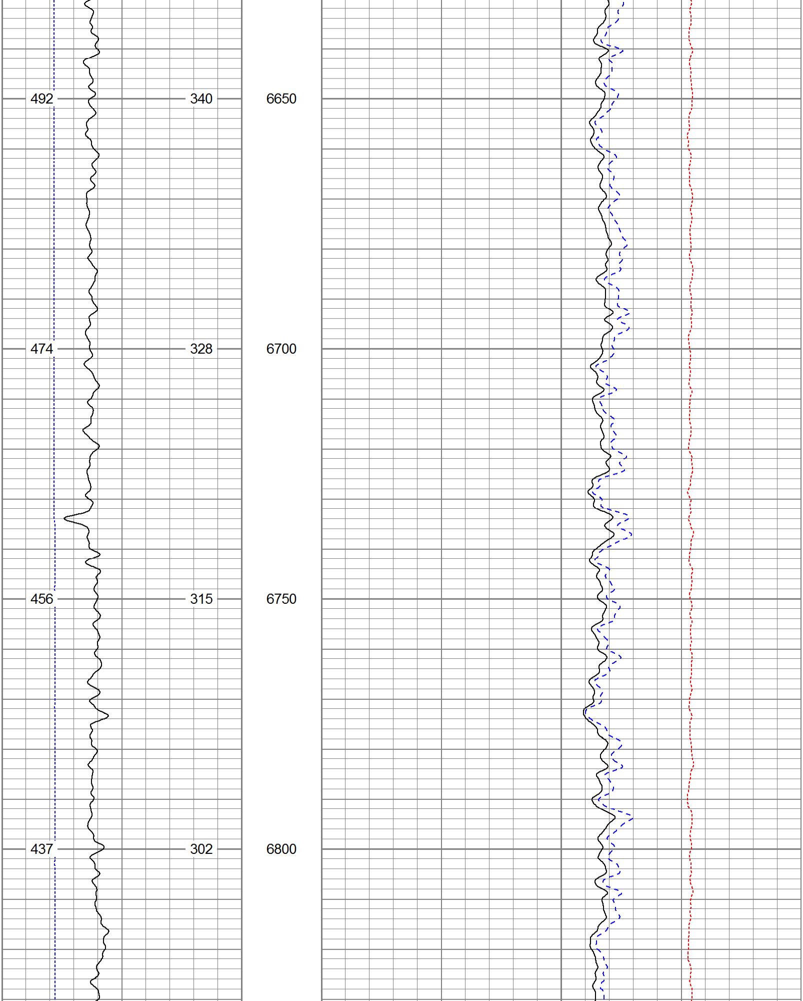

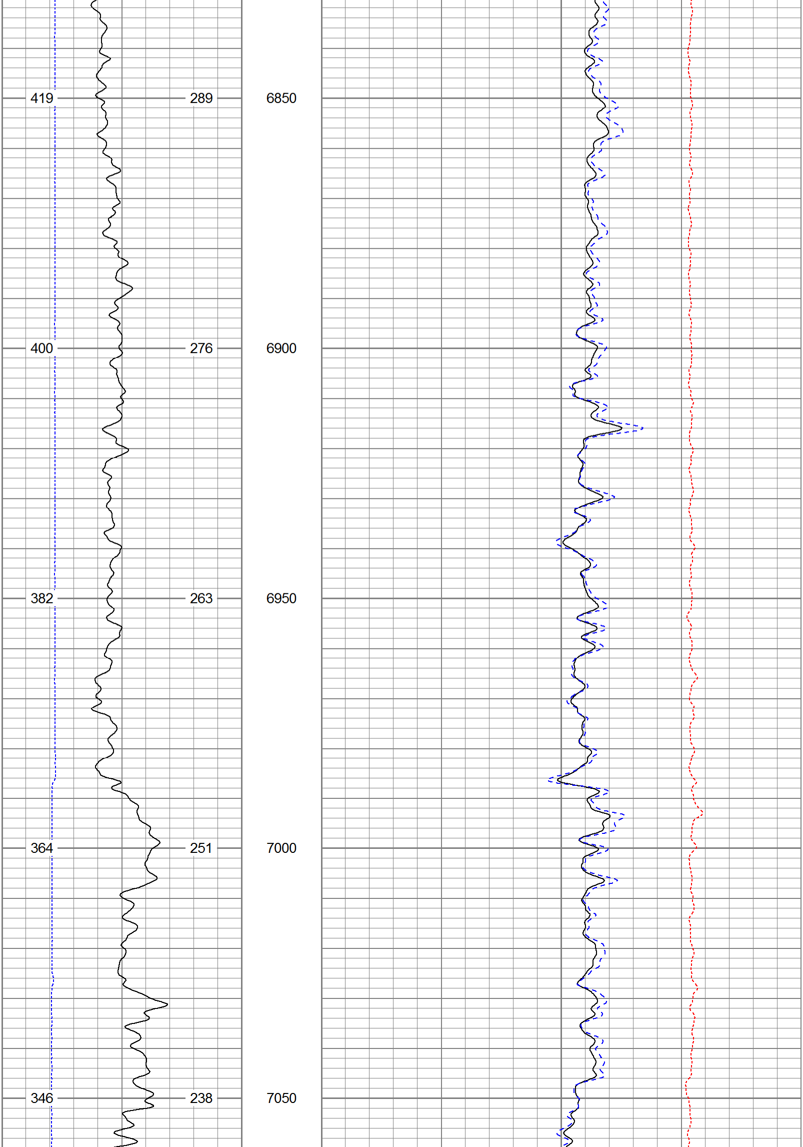

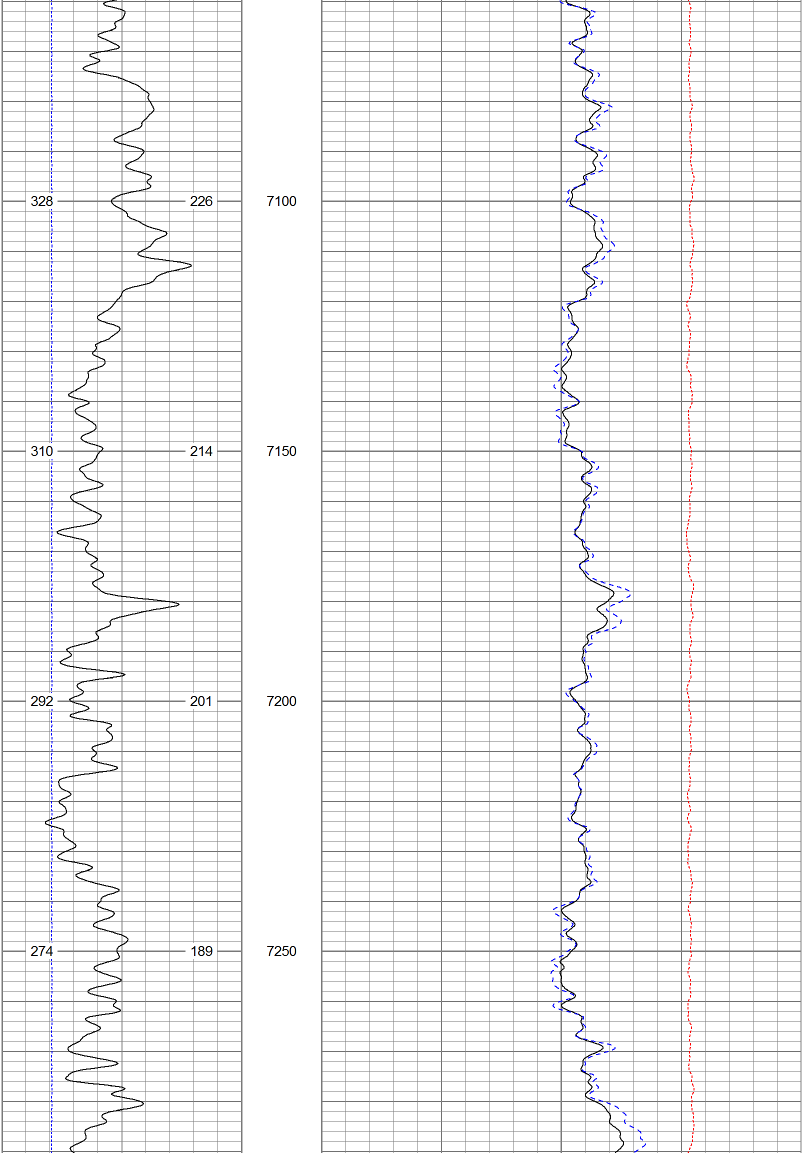

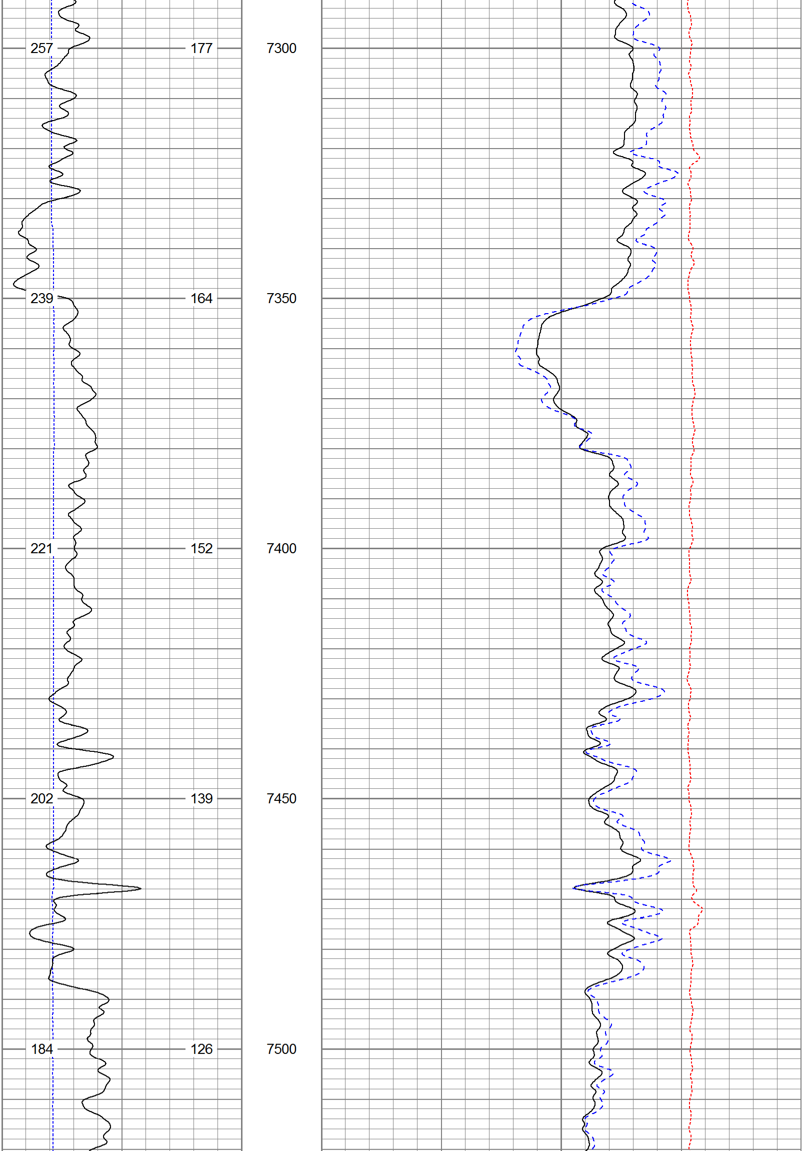

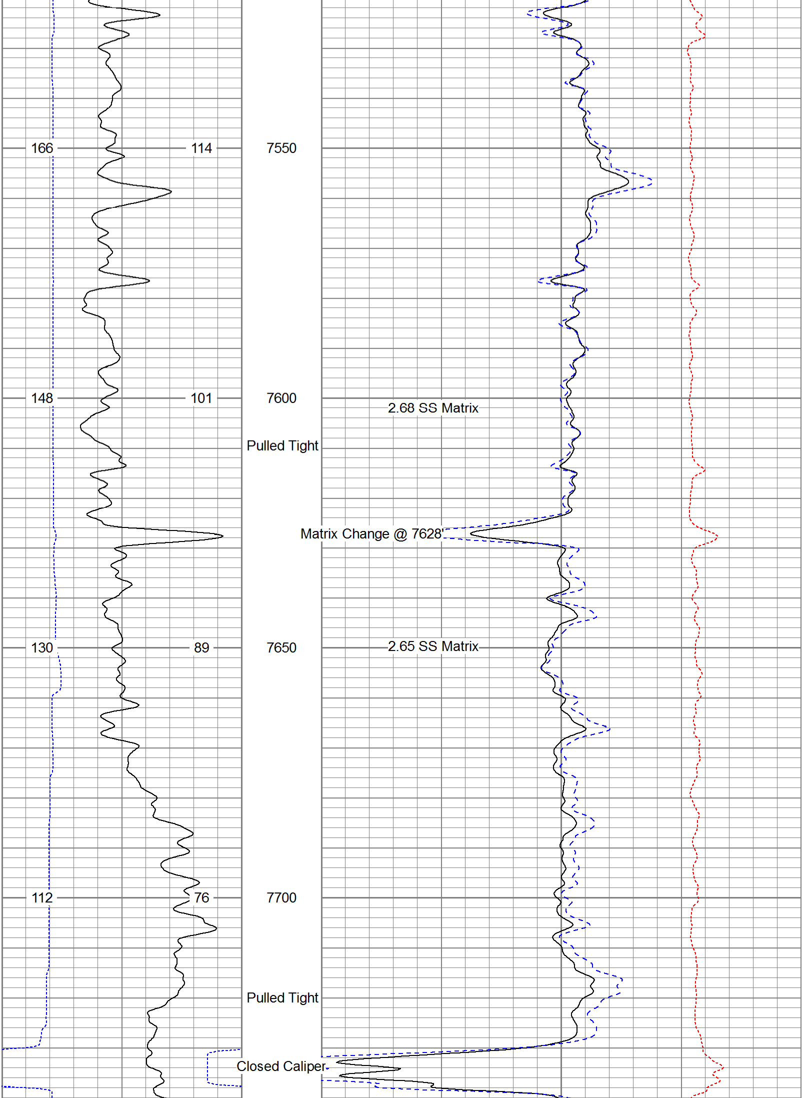

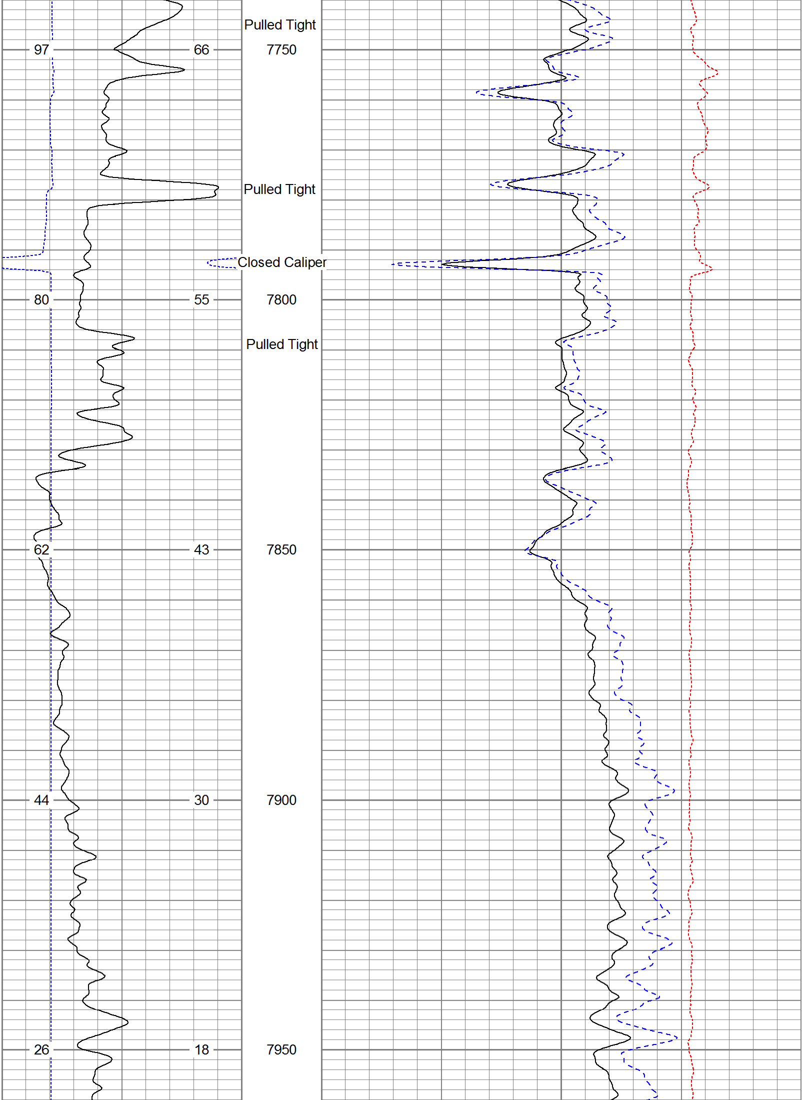

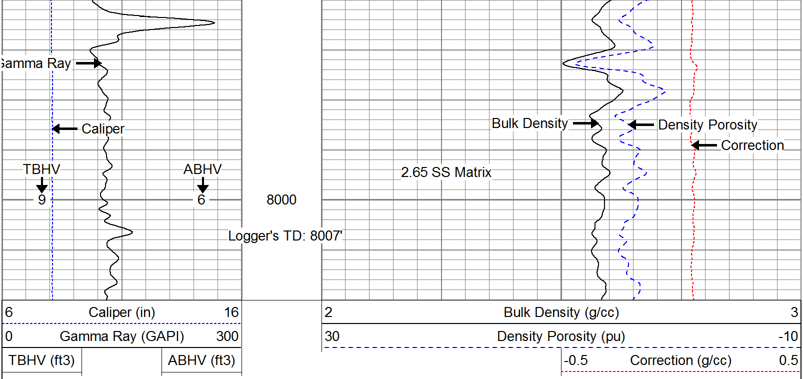

PIONEER
Pioneer Energy Services

MAIN PASS

Calibration Report

Database File: 12755-56.db
Dataset Pathname: pass2
Dataset Creation: Mon Apr 29 04:30:32 2013 by Log 0

Dual Induction Calibration Report

Serial-Model: 1017-PSI
Surface Cal Performed:

Loop:	Readings Air	Readings Loop	References Air	References Loop		Results m	Results b
Deep	4908.160	12644.400	9.000	365.000	mmho/m	0.620	-45.000
Medium	2818.360	8491.080	9.000	288.000	mmho/m	0.532	-39.000

Compensated Density Calibration Report

Serial-Model: 128-PSI
Master Calibration Performed: Sat Apr 06 08:57:36 2013

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	5228.74	2679.22	cps
Aluminum	2.690	g/cc	986.64	1690.57	cps

	Size		Reading
Small Ring		in	
Medium Ring		in	
Large Ring		in	

Compensated Neutron Calibration Report

Serial Number: 4
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	2.4200

Gamma Ray Calibration Report

Serial Number:	939	
Tool Model:	PSI	
Performed:	Thu Oct 25 06:44:09 2012	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6200	GAPI/cps