**The Perforators LLC**

# DUAL INDUCTION LOG

Company Charles N. Griffin
Well Ash OWWO
Field Medicine Lodge-Boggs
County Barber
State Kansas

| | |
|---|---|
| Company | Charles N. Griffin |
| Well | Ash OWWO |
| Field | Medicine Lodge-Boggs |
| County | Barber |
| State | Kansas |

Location: API # : 15 007 20368 00 01

4485' FSL & 750' FEL

SEC 33 TWP 32S RGE 12W

Other Services
CDNL

| | | | |
|---|---|---|---|
| Permanent Datum | Ground Level | Elevation | 1615' |
| Log Measured From | KB 8' AGL | | |
| Drilling Measured From | KB | | |

Elevation
K.B. 1623'
D.F. 1622'
G.L. 1615'

| | | | |
|---|---|---|---|
| Date | 8-16-11 | | |
| Run Number | One | | |
| Depth Driller | 4960' | | |
| Depth Logger | 4965' | | |
| Bottom Logged Interval | 4963' | | |
| Top Log Interval | 3600' | | |
| Casing Driller | 254' | | |
| Casing Logger | 254' | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | Chemical | | |
| Density / Viscosity | 8.6/68/ | | |
| pH / Fluid Loss | 12.0/10.4 | | |
| Source of Sample | Pit | | |
| Rm @ Meas. Temp | .32@82degf | | |
| Rmf @ Meas. Temp | .24@82degf | | |
| Rmc @ Meas. Temp | .51@82degf | | |
| Source of Rmf / Rmc | Calculated | | |
| Rm @ BHT | .23@116degf | | |
| Time Circulation Stopped | 3:30 p.m. | | |
| Time Logger on Bottom | 5:45 p.m. | | |
| Maximum Recorded Temperature | 116 degf | | |
| Equipment Number | T045 | | |
| Location | Hays, KS. | | |
| Recorded By | L. Smith | | |
| Witnessed By | Mr. Bruce Reed | Mr. JR Griffin | |

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

## Comments

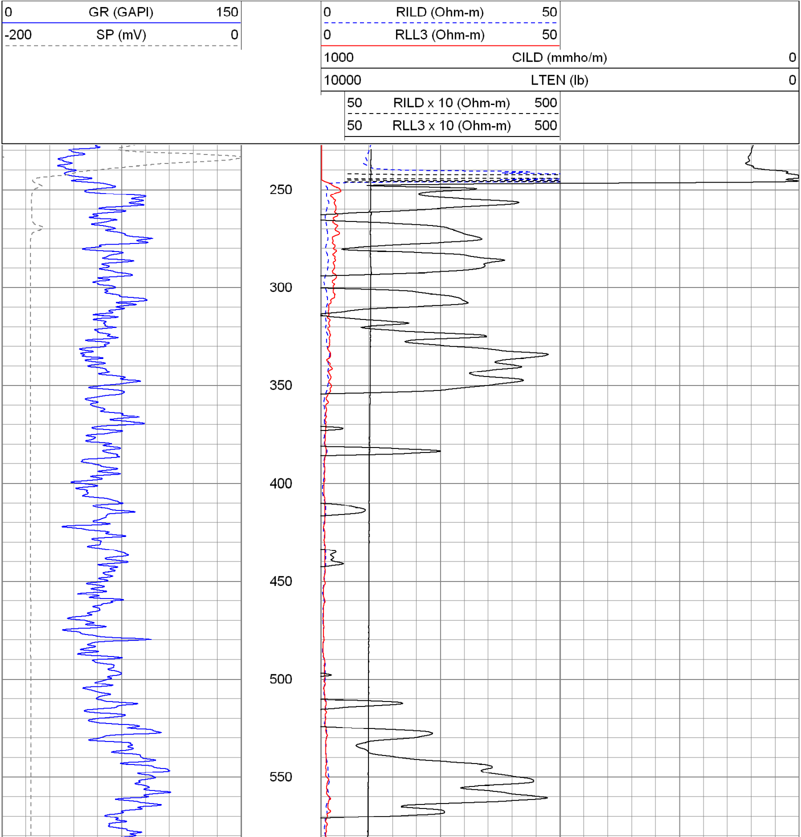
South of Medicine Lodge on 281 2.5 mi. ,
W on Pleasent Valley Rd. Stay on main rd.,
when rd. curves S go across 2 cattle guards and stay on lease rd. to top of hill across from Griffin tank battery.

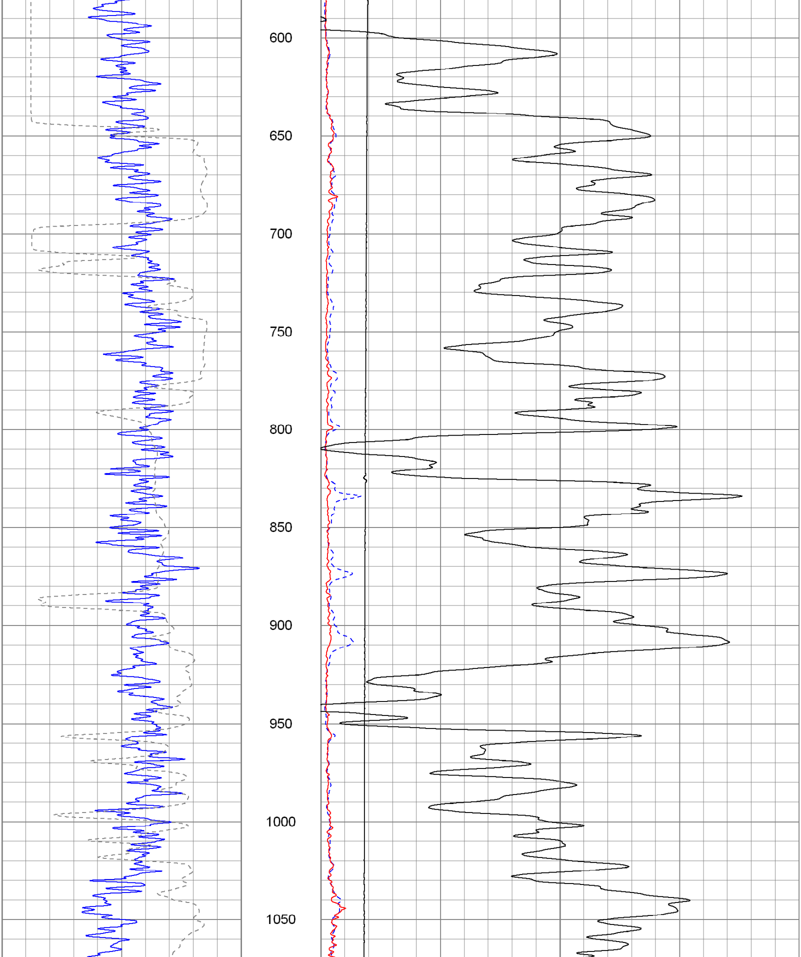
Thanks for using The Perforators LLC Hays, KS. (785-621-4604)

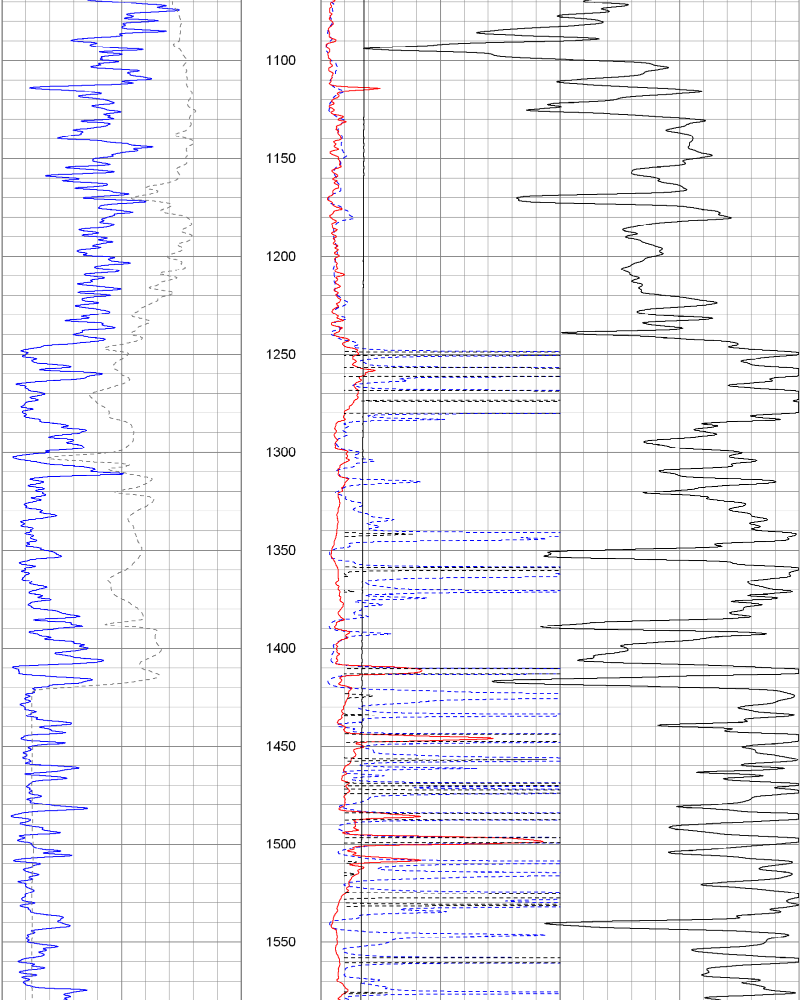
The Perforators LLC

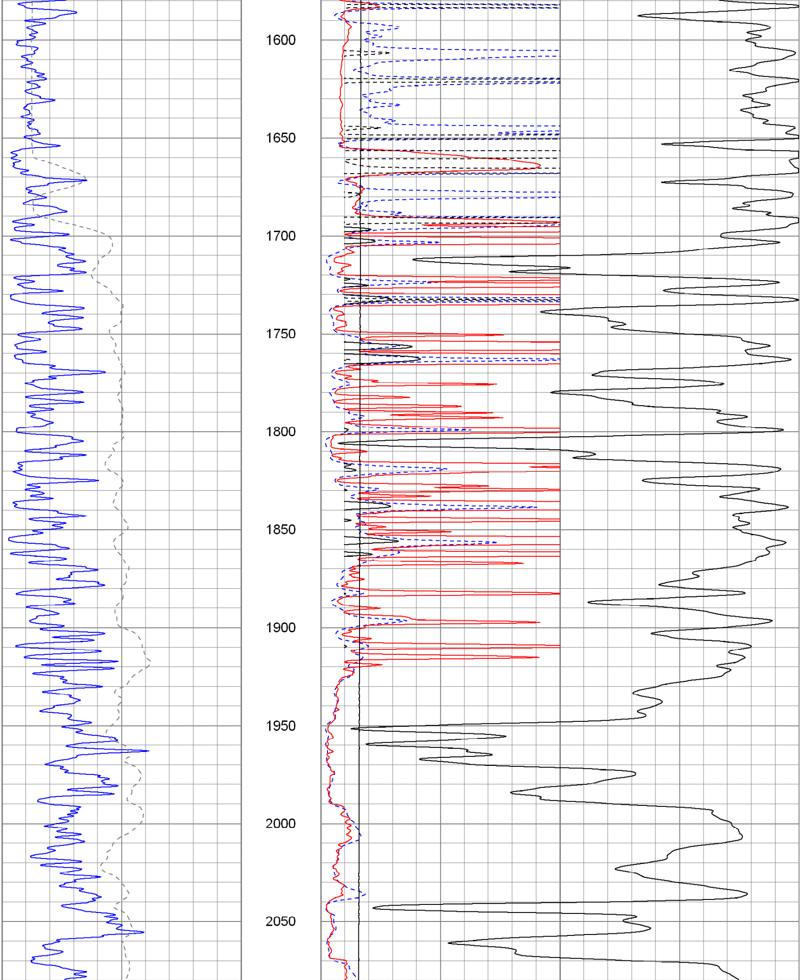
# Main Pass

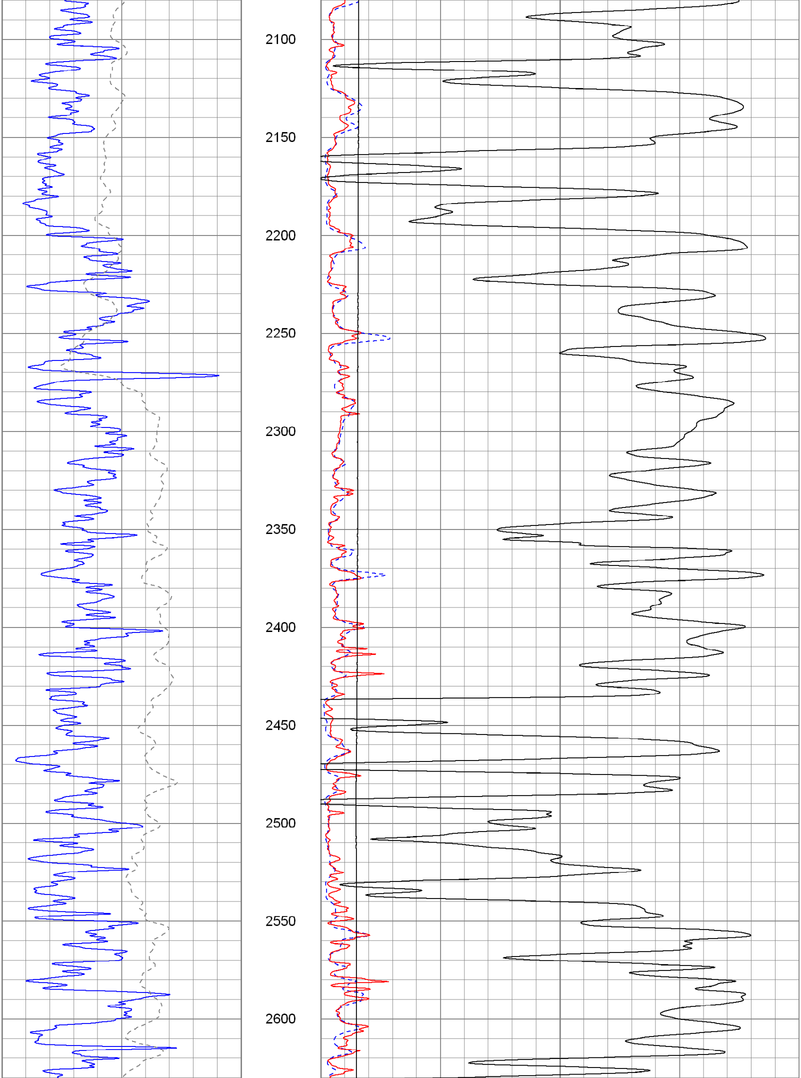
Database File: cgashowwooh.db
Dataset Pathname: pass2
Presentation Format: kdillin2
Dataset Creation: Tue Aug 16 17:58:26 2011 by Log Open-Cased 100827
Charted by: Depth in Feet scaled 1:600

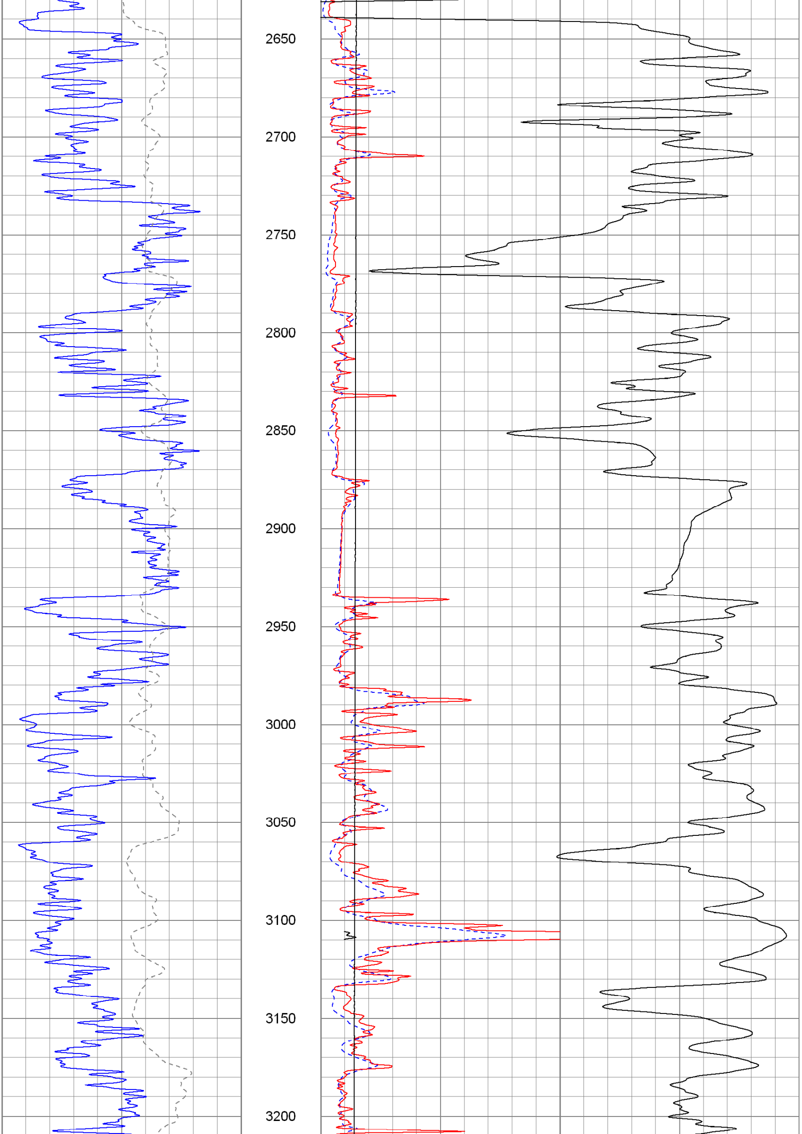


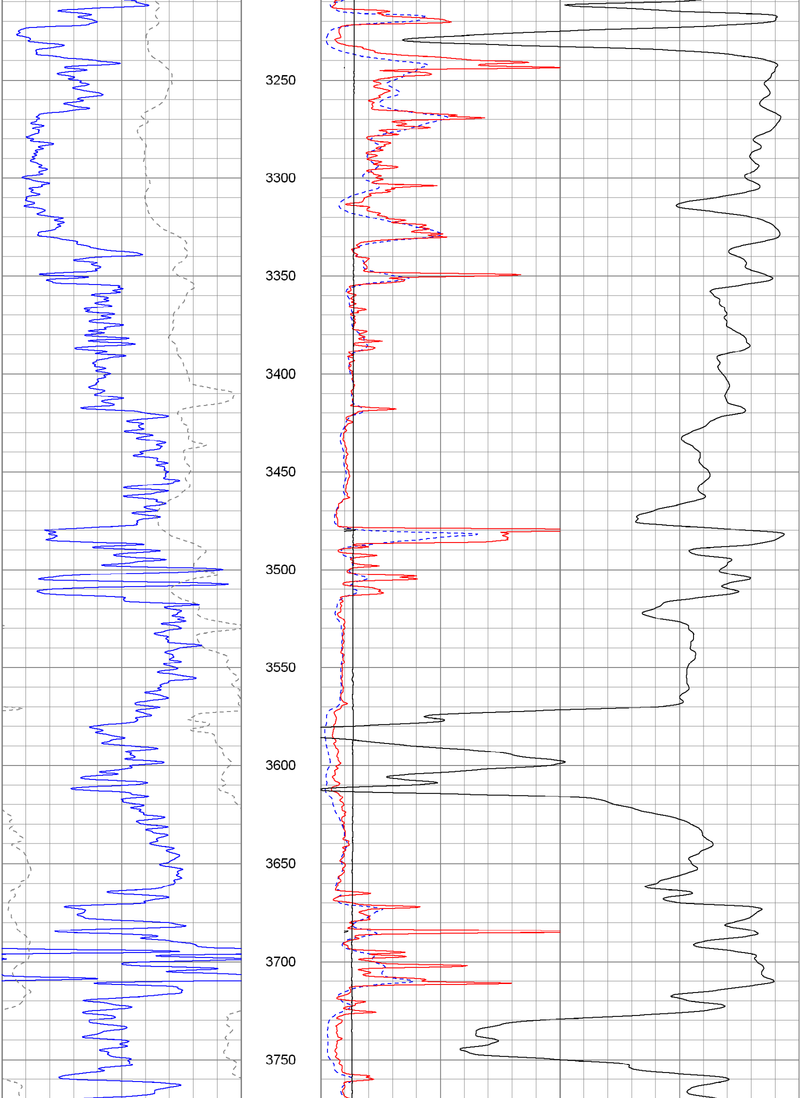


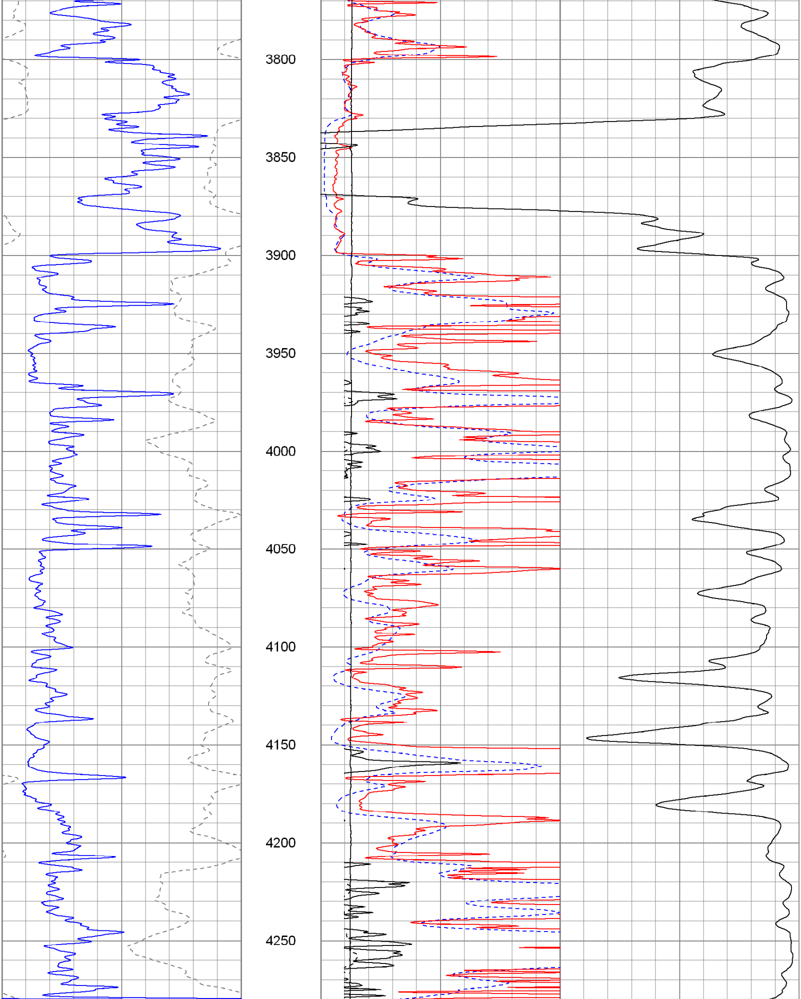


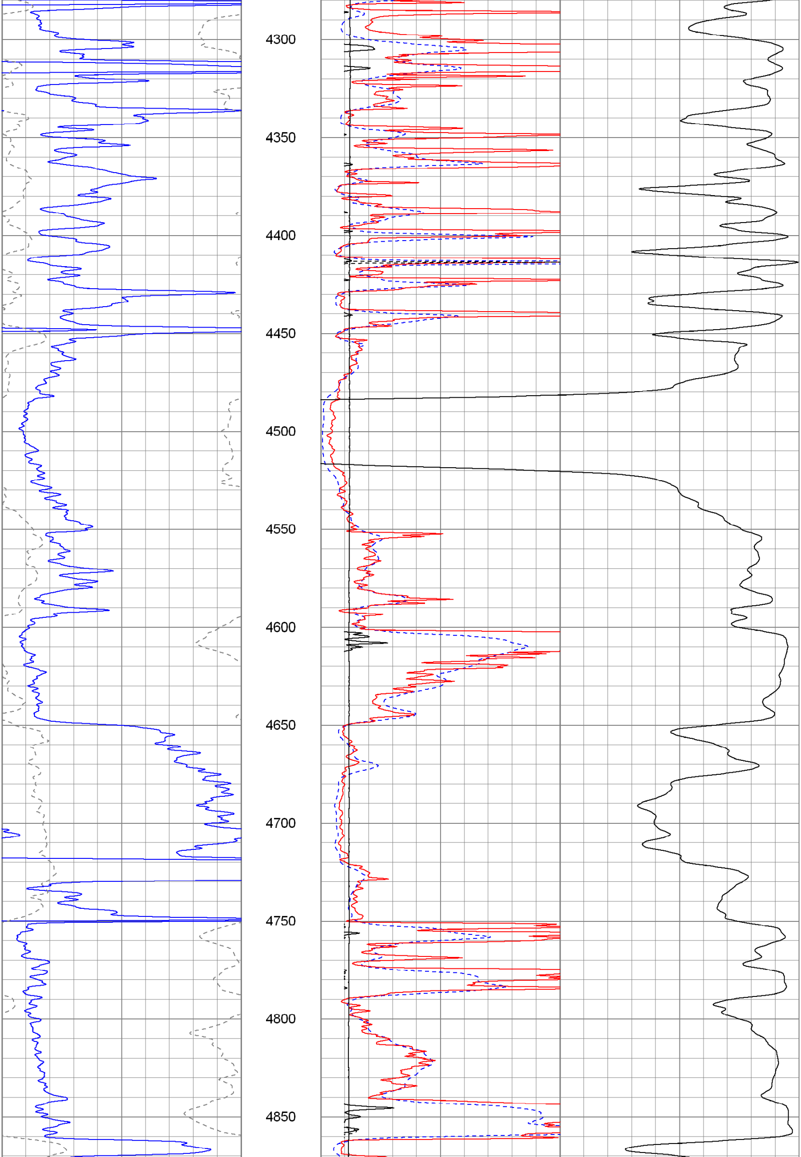


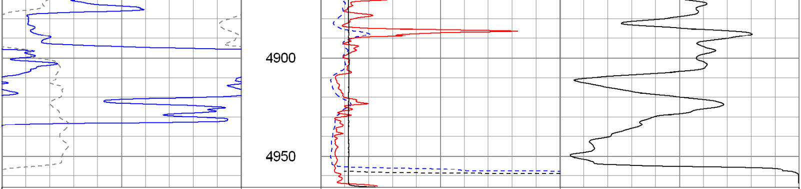












0 GR (GAPI) 150
-200 SP (mV) 0

0 RILD (Ohm-m) 50
0 RLL3 (Ohm-m) 50
1000 CILD (mmho/m) 0
10000 LTEN (lb) 0
50 RILD x 10 (Ohm-m) 500
50 RLL3 x 10 (Ohm-m) 500

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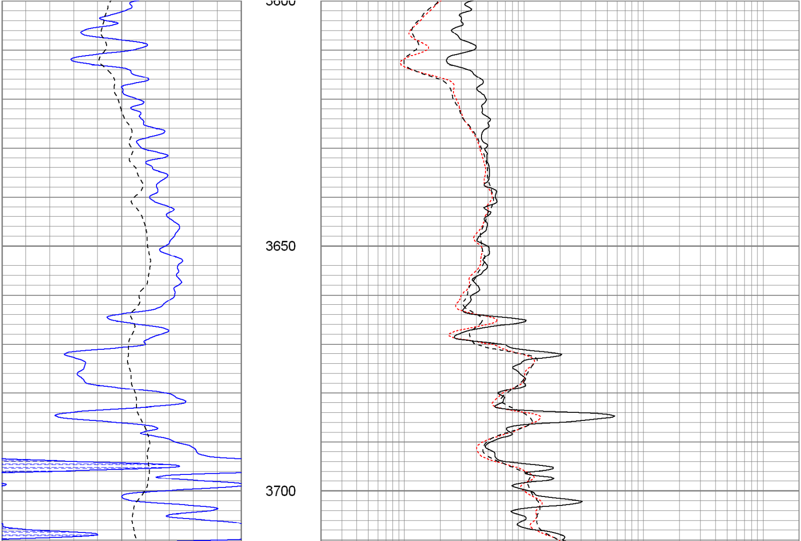
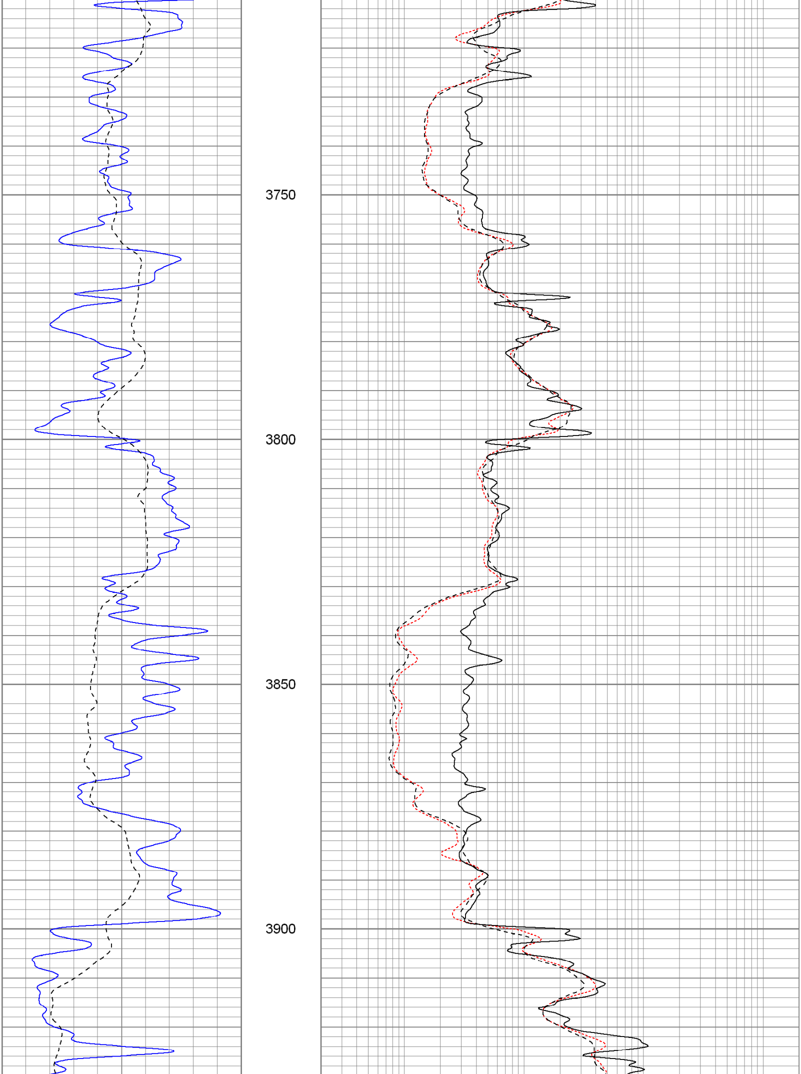
# Main Pass

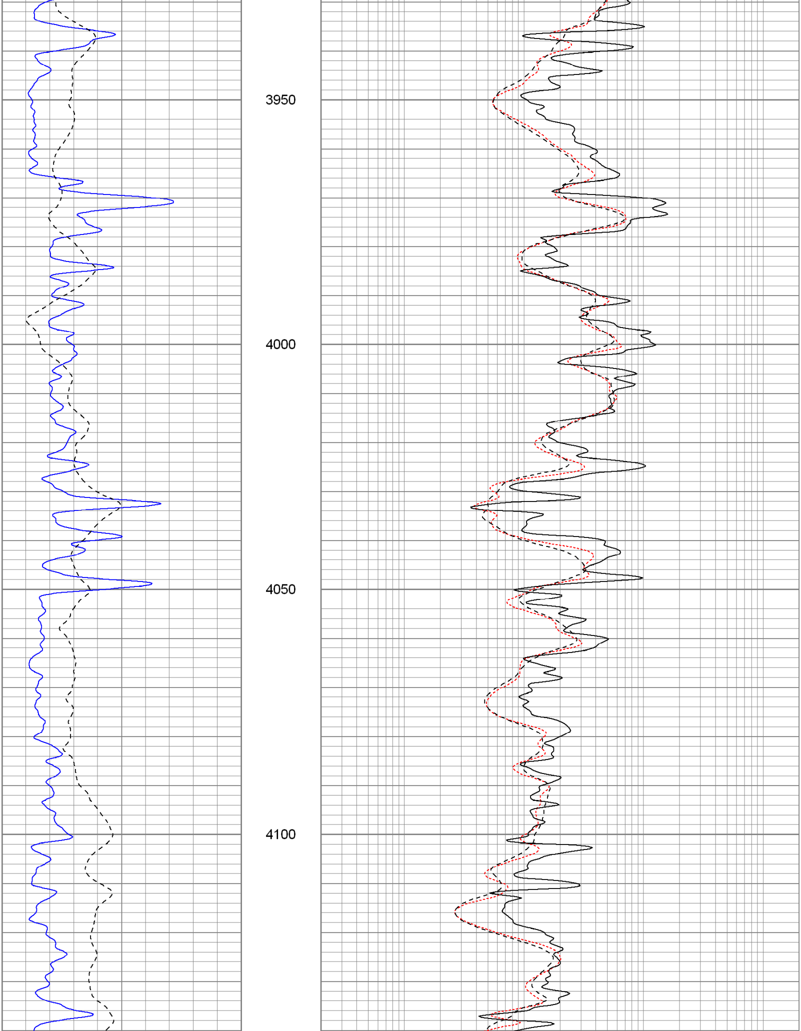
| | |
|---|---|
| Database File: | cgashowwooh.db |
| Dataset Pathname: | pass2 |
| Presentation Format: | kdil |
| Dataset Creation: | Tue Aug 16 17:58:26 2011 by Log Open-Cased 100827 |
| Charted by: | Depth in Feet scaled 1:240 |

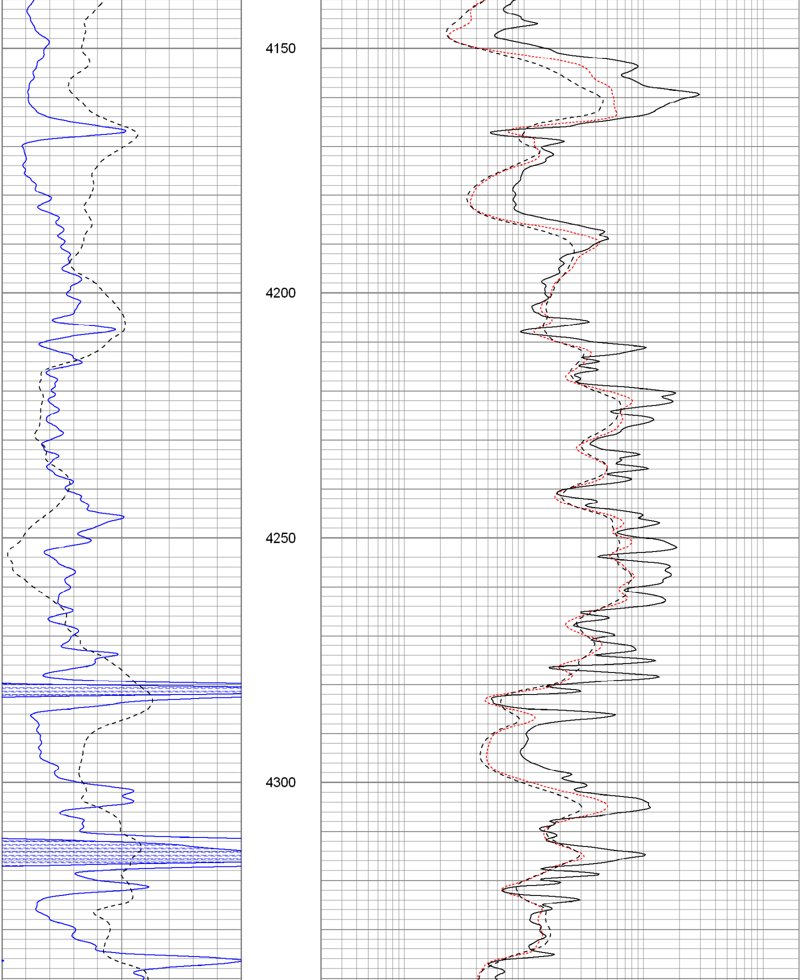
0 GR (GAPI) 150
-100 SP (mV) 100

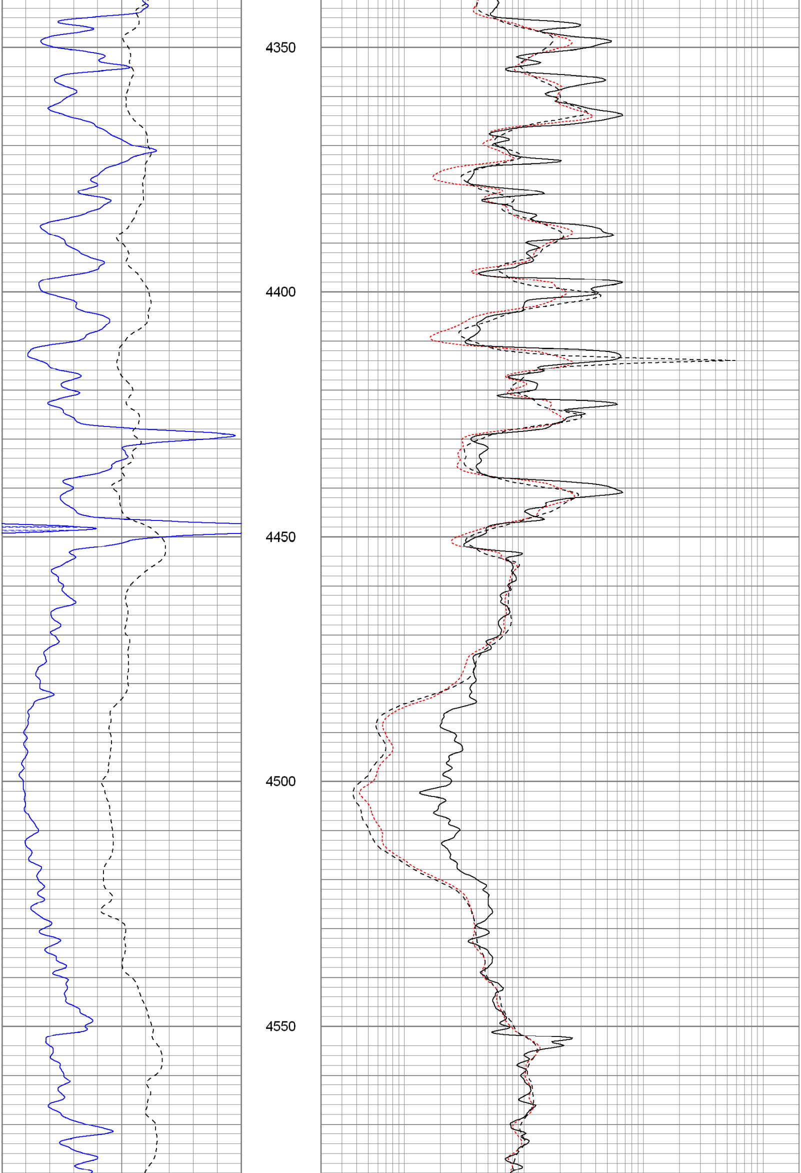
0.2 RILM (Ohm-m) 2000
0.2 RILD (Ohm-m) 2000
0.2 RLL3 (Ohm-m) 2000

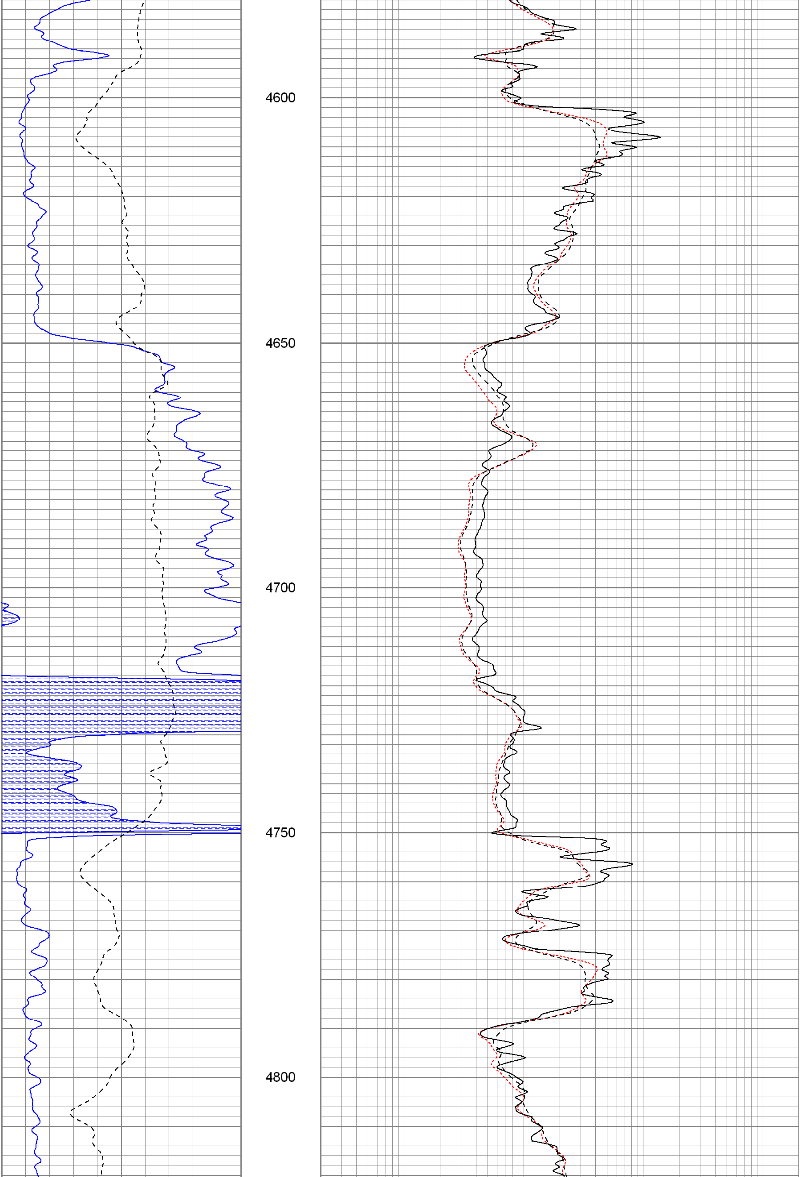


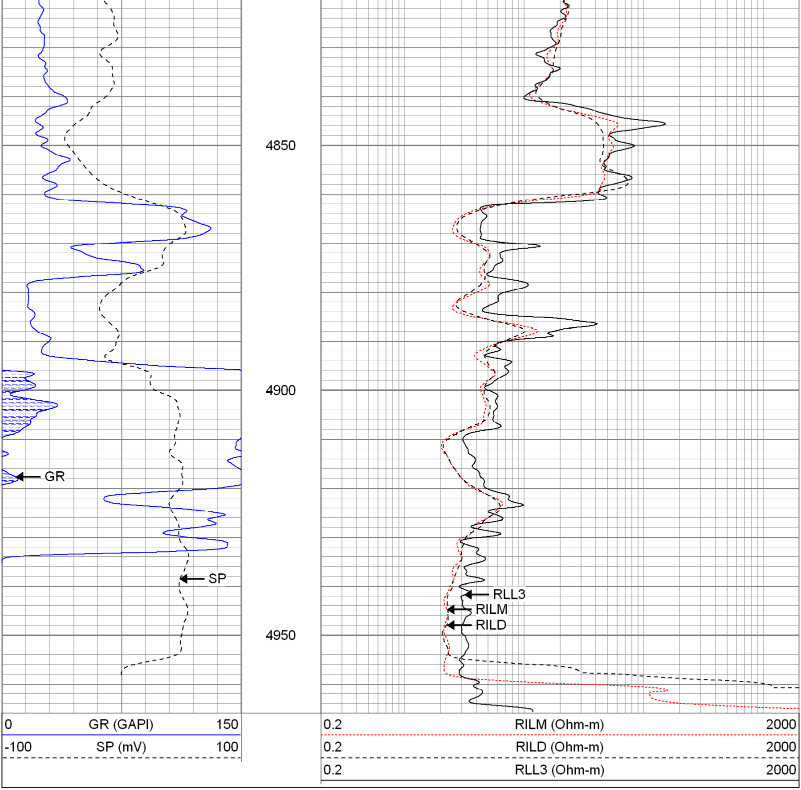












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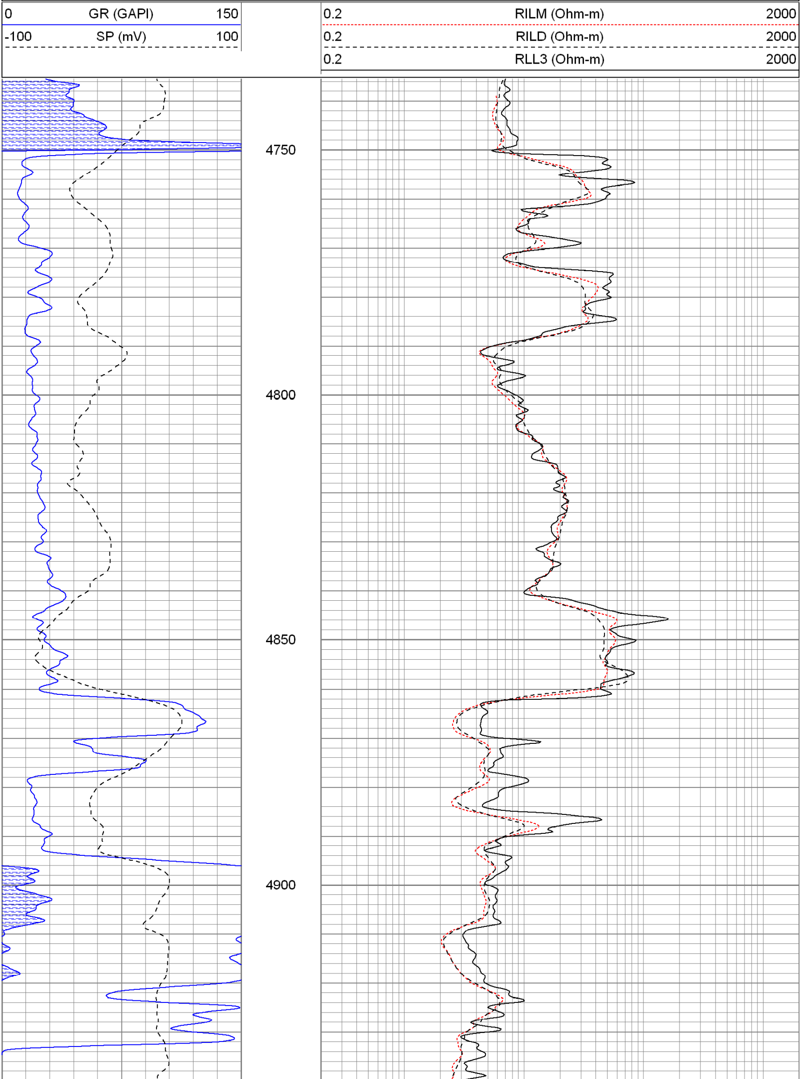
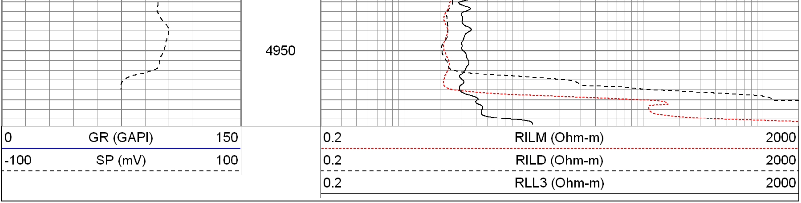
# Repeat Pass

| | |
|---|---|
| Database File: | cgashowwooh.db |
| Dataset Pathname: | pass1 |
| Presentation Format: | kdil |
| Dataset Creation: | Tue Aug 16 17:46:51 2011 by Log Open-Cased 100827 |
| Charted by: | Depth in Feet scaled 1:240 |





## Calibration Report

Database File: cgashowwooh.db
Dataset Pathname: pass1
Dataset Creation: Tue Aug 16 17:46:51 2011 by Log Open-Cased 100827

## Dual Induction Calibration Report

| | |
|---|---|
| Serial-Model: | 080522-Probe |
| Surface Cal Performed: | Fri Jul 29 15:35:44 2011 |
| Downhole Cal Performed: | Fri Jul 29 15:35:48 2011 |
| After Survey Verification Performed: | Fri Jul 29 15:35:57 2011 |

### Surface Calibration

| Readings | References | Results |
|---|---|---|

| Loop: | Air | Loop | | Air | Loop | | m | b |
|---|---|---|---|---|---|---|---|---|
| Deep | -0.000 | 0.638 | V | 0.000 | 400.000 | mmho/m | 626.857 | 0.275 |
| Medium | 0.001 | 0.741 | V | 0.000 | 464.000 | mmho/m | 626.953 | -0.823 |

| Internal: | Zero | Cal | | Zero | Cal | | m | b |
|---|---|---|---|---|---|---|---|---|
| Deep | 0.000 | 0.638 | V | 0.000 | 400.000 | mmho/m | 627.013 | -0.291 |
| Medium | 0.001 | 0.741 | V | 0.000 | 464.000 | mmho/m | 627.190 | -0.915 |

Downhole Calibration

| | Readings | | | References | | | Results | |
|---|---|---|---|---|---|---|---|---|
| | Zero | Cal | | Zero | Cal | | m' | b' |
| Deep | 0.096 | 400.608 | mmho/m | 0.566 | 400.467 | mmho/m | 0.998 | 0.471 |
| Medium | -0.069 | 464.142 | mmho/m | 0.092 | 463.916 | mmho/m | 0.999 | 0.161 |
| LL3 | | 7.358 | V | | 750.000 | Ohm-m | | |
| | | 0.001 | V | | 12.000 | Ohm-m | | |
| | | -7.218 | V | | 3745.000 | mmho-m | | |

## Compensated Density Calibration Report

Serial-Model: 2501DHT-DHT
Source / Verifier: /
Master Calibration Performed: Fri Jul 29 13:49:52 2011

Master Calibration

| | Density | | Far Detector | Near Detector | |
|---|---|---|---|---|---|
| Magnesium | 1.730 | g/cc | 744.27 | 293.58 | cps |
| Aluminum | 2.700 | g/cc | 138.48 | 189.15 | cps |

Spine Angle = 75.35

Density/Spine Ratio = 0.558

| | Size | | Reading |
|---|---|---|---|
| Small Ring | 7.90 | in | 6064.22 |
| Large Ring | 14.00 | in | 10296.80 |

## Gamma Ray Calibration Report

Serial Number: 2000
Tool Model: P2000
Performed: Thu Jul 28 10:33:00 2011

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.2200 GAPI/cps

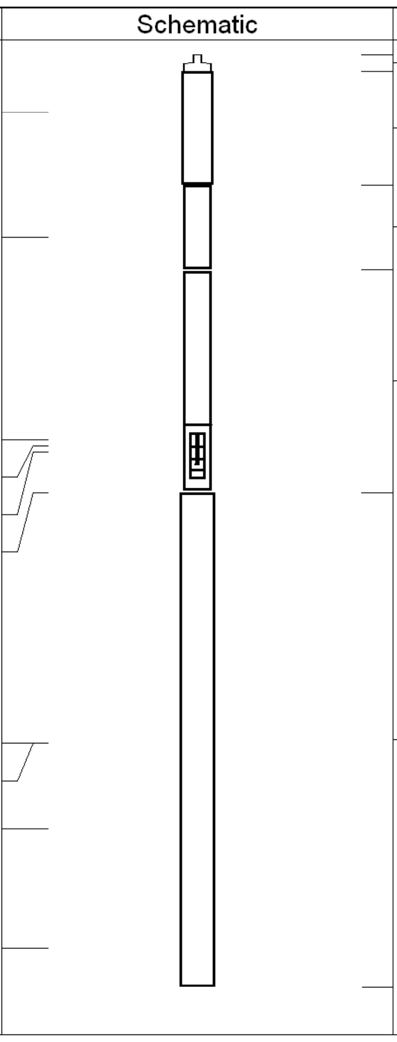
## Neutron Calibration Report

Serial Number: 5108
Tool Model: PROBE
Performed: Sat Jul 30 10:54:34 2011

Calibrator Value: 1 NAPI

Calibrator Reading: 1 cps

Sensitivity: 1 NAPI/cps

| Sensor | Offset (ft) | Schematic | Description | Len (ft) | OD (in) | Wt (lb) |
|---|---|---|---|---|---|---|
| | |  | None | 0.75 | 1.50 | 5.00 |
| NEU | 37.96 | | NEU-PROBE (5108)<br>Probe | 4.92 | 3.63 | 85.00 |
| GR | 32.57 | | GR-P2000 (2000) | 3.67 | 3.25 | 40.00 |
| | | | CDL-DHT (2501DHT)<br>Digital High Temp CDL Tool | 9.69 | 4.00 | 201.00 |
| LSD | 23.78 | | | | | |
| DCAL | 23.49 | | | | | |
| SSD | 23.24 | | | | | |
| HEADVOLT | 21.47 | | | | | |
| CILD | 10.60 | | DIL-Probe (080522)<br>Probe Dual Induction | 21.47 | 4.00 | 345.00 |
| SP | 10.60 | | | | | |
| CILM | 6.89 | | | | | |
| RLL3 | 1.70 | | | | | |

Dataset: cgashowwooh.db: field/well/run1/pass2
Total Length: 40.49 ft
Total Weight: 676.00 lb
O.D. 4.00 in