DUAL INDUCTION LOG

The Perforators LLC

Company	Charles N. Griffin
Well	Randels B #4
Field	Toni-Mike
County	Barber
State	Kansas

Company Charles N. Griffin
Well Randels B #4
Field Toni-Mike
County Barber State Kansas

Location: API # : 15 007 23957
495' FNL & 2180' FWL
SEC 34 TWP 32S RGE 12W

Other Services: CDNL

Permanent Datum: Ground Level Elevation 1534'
Log Measured From: KB 8' AGL
Drilling Measured From: KB

Elevation: K.B. 1542', D.F. 1541', G.L. 1534'

Date	10-30-12		
Run Number	One		
Depth Driller	4880'		
Depth Logger	4880'		
Bottom Logged Interval	4878'		
Top Log Interval	3400'		
Casing Driller	263'		
Casing Logger	263'		
Bit Size	7 7/8"		
Type Fluid in Hole	Chemical		
Density / Viscosity	9.2/52		
pH / Fluid Loss	10.0/11.0		
Source of Sample	Pit		
Rm @ Meas. Temp	.21@78degf		
Rmf @ Meas. Temp	.16@78degf		
Rmc @ Meas. Temp	.25@78degf		
Source of Rmf / Rmc	Calculated		
Rm @ BHT	.14@116degf		
Time Circulation Stopped	12:00 a.m.		
Time Logger on Bottom	4:00 p.m.		
Maximum Recorded Temperature	116 degf		
Equipment Number	T045		
Location	Hays, KS.		
Recorded By	Gus Pfannenstiel		
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

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

Main Pass

The Perforators LLC

Database File: cgrandelsb#4oh.db
Dataset Pathname: pass2
Presentation Format: kdillin2
Dataset Creation: Tue Oct 30 15:13:32 2012 by Log Open-Cased 100827
Charted by: Depth in Feet scaled 1:600

0	GR (GAPI)	150	0	RILD (Ohm-m)	50
-200	SP (mV)	0	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

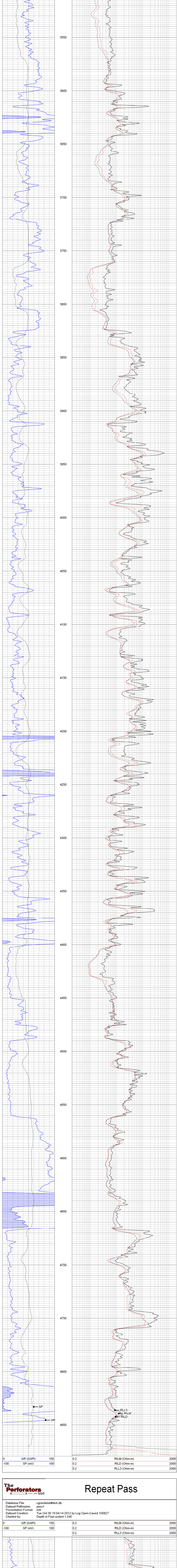
0	GR (GAPI)	150	0	RILD (Ohm-m)	50
-200	SP (mV)	0	0	RLL3 (Ohm-m)	50
			1000	CILD (mmho/m)	0
			10000	LTEN (lb)	0
			50	RILD x 10 (Ohm-m)	500
			50	RLL3 x 10 (Ohm-m)	500

Main Pass

The Perforators LLC

Database File: cgrandelsb#4oh.db
Dataset Pathname: pass2
Presentation Format: kdil
Dataset Creation: Tue Oct 30 15:13:32 2012 by Log Open-Cased 100827
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	150	0.2	RILM (Ohm-m)	2000
-100	SP (mV)	100	0.2	RILD (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000



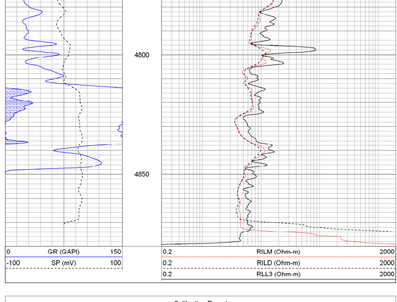
0	GR (GAPI)	150	0.2	RILM (Ohm-m)	2000
-100	SP (mV)	100	0.2	RILD (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000

Repeat Pass

The Perforators LLC

Database File: cgrandelsb#4oh.db
Dataset Pathname: pass1
Presentation Format: kdil
Dataset Creation: Tue Oct 30 15:04:14 2012 by Log Open-Cased 100827
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	150	0.2	RILM (Ohm-m)	2000
-100	SP (mV)	100	0.2	RILD (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000



0	GR (GAPI)	150	0.2	RILM (Ohm-m)	2000
-100	SP (mV)	100	0.2	RILD (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000

Calibration Report

Database File: cgrandelsb#4oh.db
Dataset Pathname: pass1
Dataset Creation: Tue Oct 30 15:04:14 2012 by Log Open-Cased 100827

Dual Induction Calibration Report

Serial-Model: 5375-G
Surface Cal Performed: Thu Sep 13 16:02:51 2012
Downhole Cal Performed: Thu Sep 13 16:03:26 2012

Surface Calibration

Readings	References	Results

Loop:	Air	Loop		Air	Loop		m	b
Deep	0.002	0.640	V	0.000	350.000	mmho/m	548.531	-1.045
Medium	0.005	0.742	V	0.000	400.000	mmho/m	542.602	-2.696

Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.001	0.640	V	0.000	350.000	mmho/m	547.641	-0.739
Medium	0.005	0.742	V	0.000	550.000	mmho/m	745.701	-3.500

Downhole Calibration

	Readings			References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.094	350.007	mmho/m	-0.305	350.264	mmho/m	1.002	-0.399
Medium	0.252	399.957	mmho/m	-0.149	400.053	mmho/m	1.001	-0.401
Shallow	2.471	0.009	V	500.000	2.000	Ohm-m	202.280	0.097

Compensated Density Calibration Report

Serial-Model:	2388DHT-DHT
Source / Verifier:	/
Master Calibration Performed:	Thu Sep 13 16:04:57 2012

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	717.11	305.57	cps
Aluminum	2.620	g/cc	140.63	205.93	cps

Spine Angle = 76.38 Density/Spine Ratio = 0.519

	Size		Reading
Small Ring	8.25	in	5771.32
Large Ring	14.00	in	10165.20

Gamma Ray Calibration Report

Serial Number:	2001	
Tool Model:	OH	
Performed:	Sun Oct 14 13:06:46 2012	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2300	GAPI/cps

Neutron Calibration Report

Serial Number:	5108	
Tool Model:	PROBE	
Performed:	Sun Oct 21 17:05:02 2012	
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	37.85		NEU-PROBE (5108) Probe	4.92	3.63	85.00
GR	32.32		GR-OH (2001) 2001	3.56	3.25	40.00
			CDL-DHT (2388DHT) 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-G (5375) Gearhart	21.47	4.00	345.00
SP	10.60					
CILM	6.89					
RLL3	1.70					

Dataset:	cgrandelsb#4oh.db: field/well/run1/pass1
Total Length:	40.39 ft
Total Weight:	676.00 lb
O.D.	4.00 in