SUPERIOR WELL SERVICES

SUPERIOR
Hays, Kansas

DUAL INDUCTION LOG

Company CAPTIVA II
Well EAKIN #6-7
Field LARNED WEST
County PAWNEE State KANSAS

Location: API # : 15-145-21657-0000
2335' FNL & 745' FEL

SEC 7 TWP 22S RGE 16W

Other Services
CDL/CNL
MEL/SON

Permanent Datum	GROUND LEVEL	Elevation	2006
Log Measured From	KELLY BUSHING 11' A.G.L.		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B. 2017
D.F. 2015
G.L. 2006

Company CAPTIVA II
Well EAKIN #6-7
Field LARNED WEST
County PAWNEE
State KANSAS

Date	11/25/11		
Run Number	ONE		
Depth Driller	4001		
Depth Logger	4005		
Bottom Logged Interval	4003		
Top Log Interval	00		
Casing Driller	8 5/8" @ 1038'		
Casing Logger	1038		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9500 PPM	
Density / Viscosity	9.2/62		
pH / Fluid Loss	11.5/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.48 @ 75F		
Rmf @ Meas. Temp	.36 @ 75F		
Rmc @ Meas. Temp	.57 @ 75F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.31 @ 116F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	116F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	BRUCE ARD		

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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

THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395
DIRECTIONS
LARNED, KS. - SW ON HWY 56 ACROSS PAWNEE RIVER BRIDGE - 1/2 MILE PAST BRIDGE
1/2 MILE SOUTH - W. INTO

MAIN SECTION

SUPERIOR
Hays, Kansas

SUPERIOR WELL SERVICES

Database File: 008091ddn.db
Dataset Pathname: pass3.2
Presentation Format: _dil2
Dataset Creation: Fri Nov 25 21:22:01 2011 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:600

450
500
550
600
650
700
750
800
850
900
950

1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600

2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150

3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700

SUPERIOR WELL SERVICES

SUPERIOR
Hays, Kansas

ANHYDRITE

Database File:	008091ddn.db
Dataset Pathname:	pass3.3
Presentation Format:	_dil
Dataset Creation:	Fri Nov 25 20:51:15 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

MAIN SECTION

Database File:	008091ddn.db
Dataset Pathname:	pass3.1
Presentation Format:	_dil
Dataset Creation:	Fri Nov 25 20:28:42 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

3000
3050
3100
3150
3200

3250
3300
3350
3400

3450
3500
3550
3600
3650

3700
3750
3800
3850

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

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REPEAT SECTION

Database File:	008091ddn.db
Dataset Pathname:	pass2.5
Presentation Format:	_dil
Dataset Creation:	Fri Nov 25 20:37:34 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

3800
3850
3900
3950
4000
0
GAMMA RAY (GAPI)
150
0.2
SHALLOW GUARD (Ohm-m)
2000

-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 008091ddn.db
Dataset Pathname: pass3.1
Dataset Creation: Fri Nov 25 20:28:42 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
Surface Cal Performed: Wed Jul 30 06:14:24 2008
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	621.923	8.759
Medium	0.039	0.728	V	0.000	464.000	mmho/m	673.322	-26.058
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Compensated Density Calibration Report

Serial-Model: GEAR4-GEARHART
Source / Verifier: 143 / 143
Master Calibration Performed: Sat Jul 16 17:35:04 2011

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1015.91	497.51	cps
Aluminum	2.570	g/cc	227.67	350.20	cps

Spine Angle = 76.79 Density/Spine Ratio = 0.560

	Size		Reading	
Small Ring	8.00	in	2.24	V
Large Ring	14.00	in	4.38	V

Compensated Neutron Calibration Report

Serial Number: 6I
Tool Model: G

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.0000
Long Space	1.00	cps	1.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number: #8
Tool Model: OPEN
Performed: Mon Jun 13 16:56:43 2011

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 175.0 cps

Sensitivity: 0.8371 GAPI/cps