Casedhole Solutions

DUAL INDUCTION LOG

Company	L.D. DRILLING, INC.
Well	SKOLAUT-MAULER UNIT #1-14
Field	LAUD
County	BARTON
State	KANSAS

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Field	LAUD
County	BARTON
State	KANSAS

Location: API # : 15-009-26141-00-00

SW - SW - NW - SW
1585' FSL & 130' FWL

SEC 14 TWP 18S RGE 14W

Other Services
CNL/CDL
MEL/SON

Elevation
K.B. 1914
D.F. 1912
G.L. 1909

Permanent Datum	GROUND LEVEL Elevation	1909
Log Measured From	KELLY BUSHING 5' A.G.L	
Drilling Measured From	KELLY BUSHING	

Date	3-23-16		
Run Number	ONE		
Depth Driller	3520		
Depth Logger	3520		
Bottom Logged Interval	3518		
Top Log Interval	00		
Casing Driller	8 5/8 @ 855		
Casing Logger	856		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8,800 PPM	
Density / Viscosity	9.2/55		
pH / Fluid Loss	8.5/15		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.40 @ 83F		
Rmf @ Meas. Temp	0.30 @ 83F		
Rmc @ Meas. Temp	0.48 @ 83F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	0.30 @ 112F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	112F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	IAN MABB		
Witnessed By	KIM SHOEMAKER		

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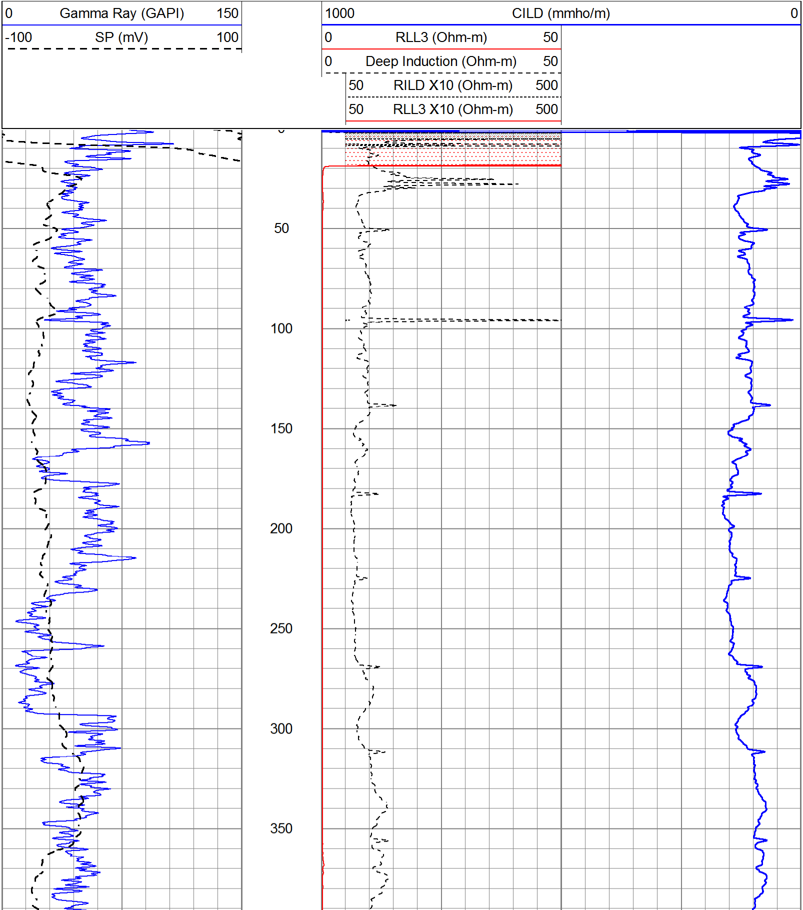
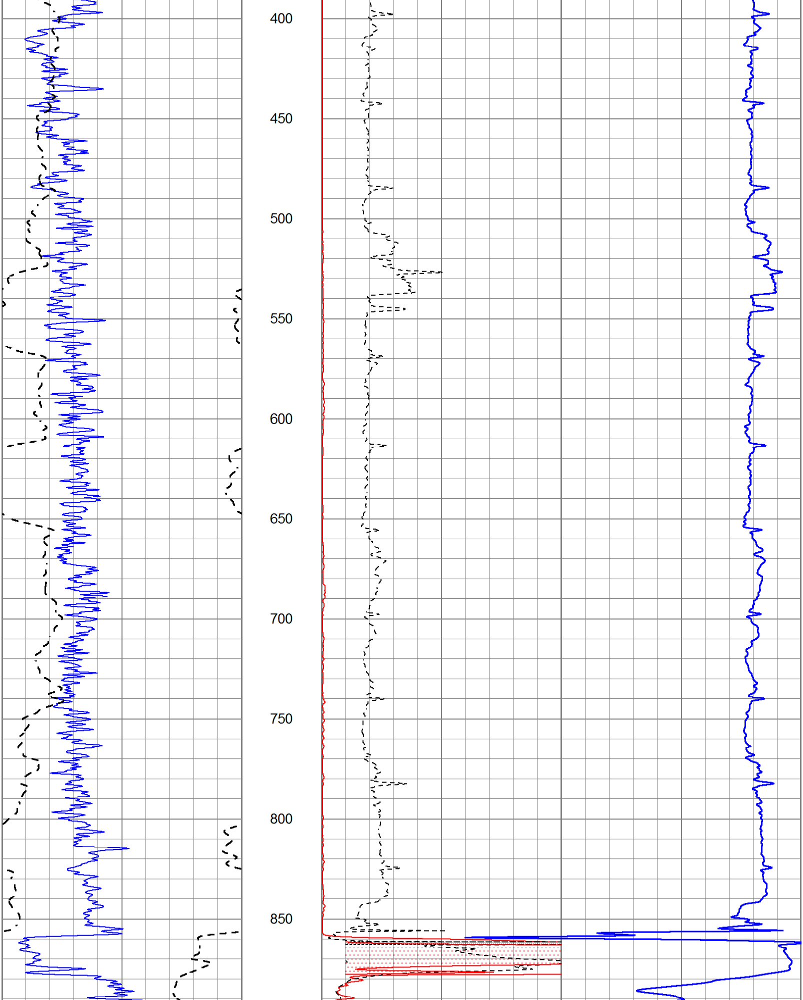
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

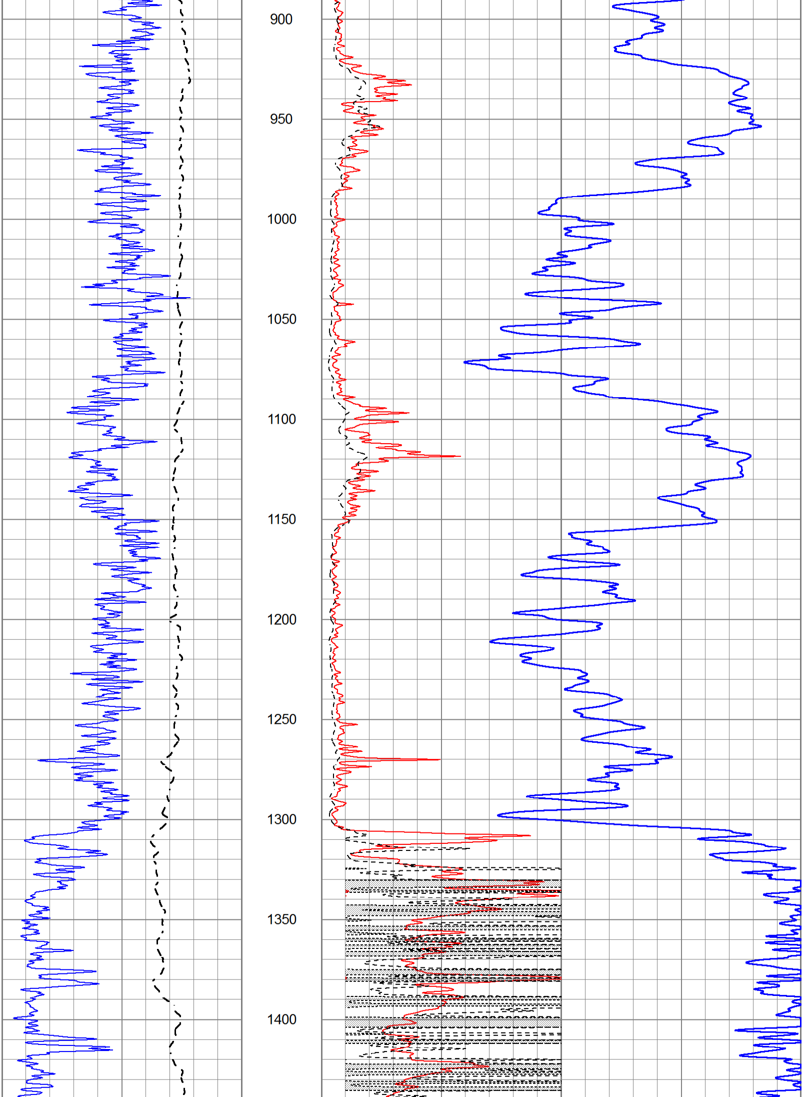
Comments

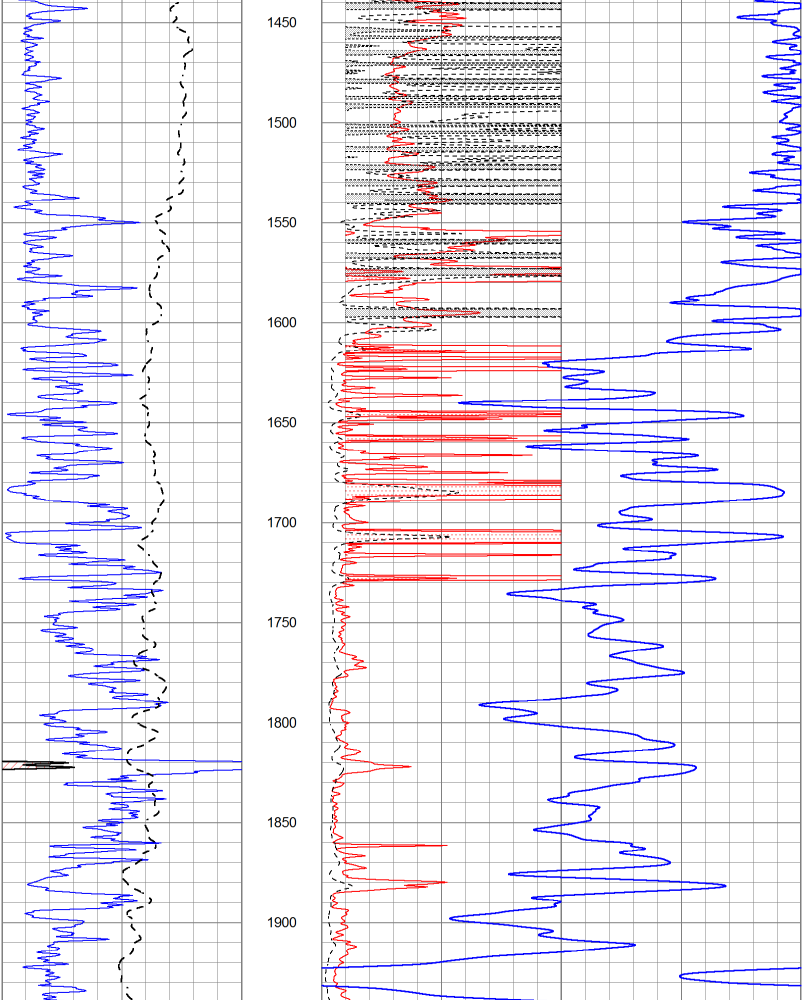
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS : HWY 281 & HWY 4 - SOUTH ON BOYD RD. 3 1/2 MILES - EAST INTO

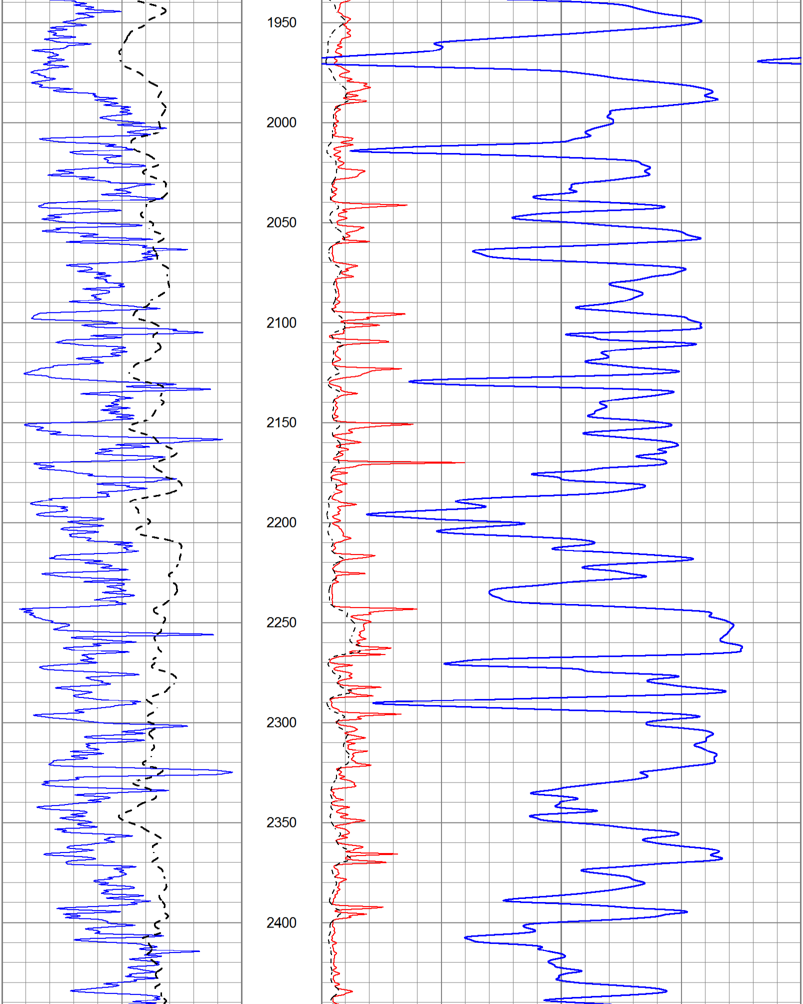
Database File	30958ddn8.db
Dataset Pathname	pass3.2
Presentation Format	_dil2
Dataset Creation	Wed Mar 23 06:40:55 2016
Charted by	Depth in Feet scaled 1:600

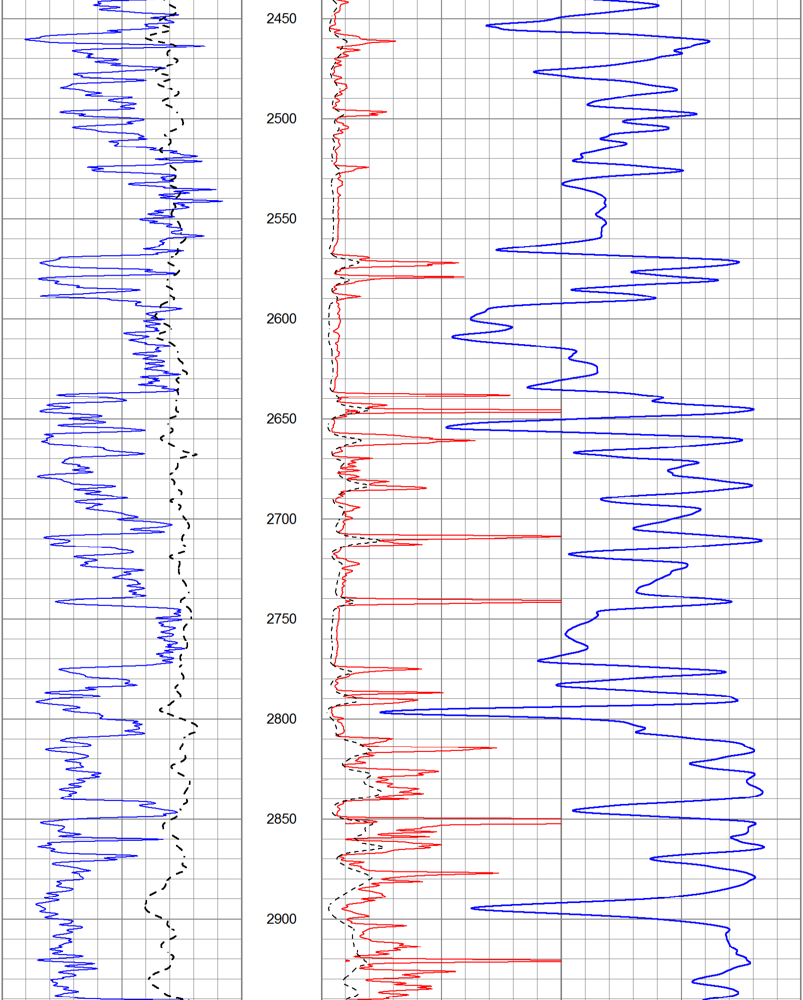


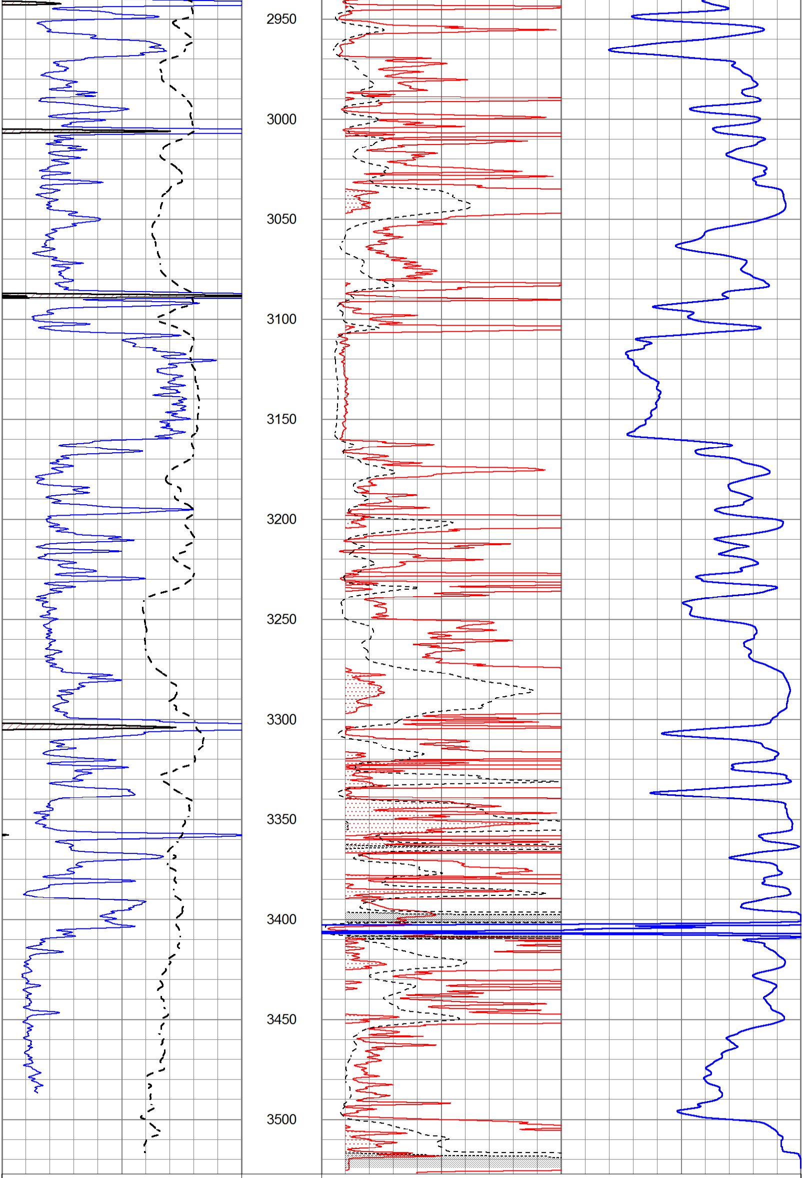












0 Gamma Ray (GAPI) 150

-100 SP (mV) 100

1000 CILD (mmho/m) 0

0 RLL3 (Ohm-m) 50

0 Deep Induction (Ohm-m) 50

50 RILD X10 (Ohm-m) 500

50 RLL3 X10 (Ohm-m) 500

Database File	30958ddn8.db
Dataset Pathname	pass3.2
Presentation Format	_dil
Dataset Creation	Wed Mar 23 06:40:55 2016
Charted by	Depth in Feet scaled 1:240

0 GAMMA RAY (GAPI) 150

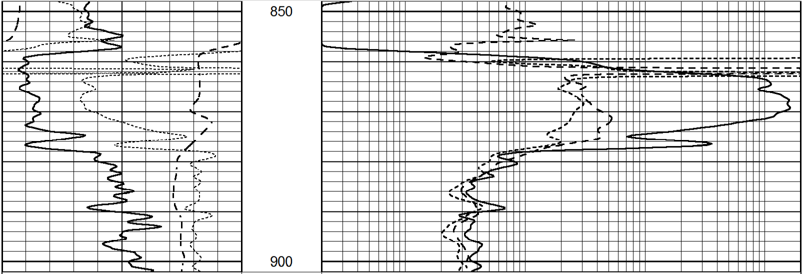
-100 SP (mV) 100

-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



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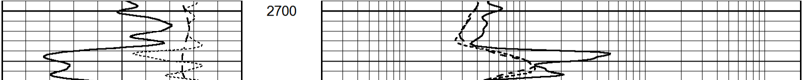
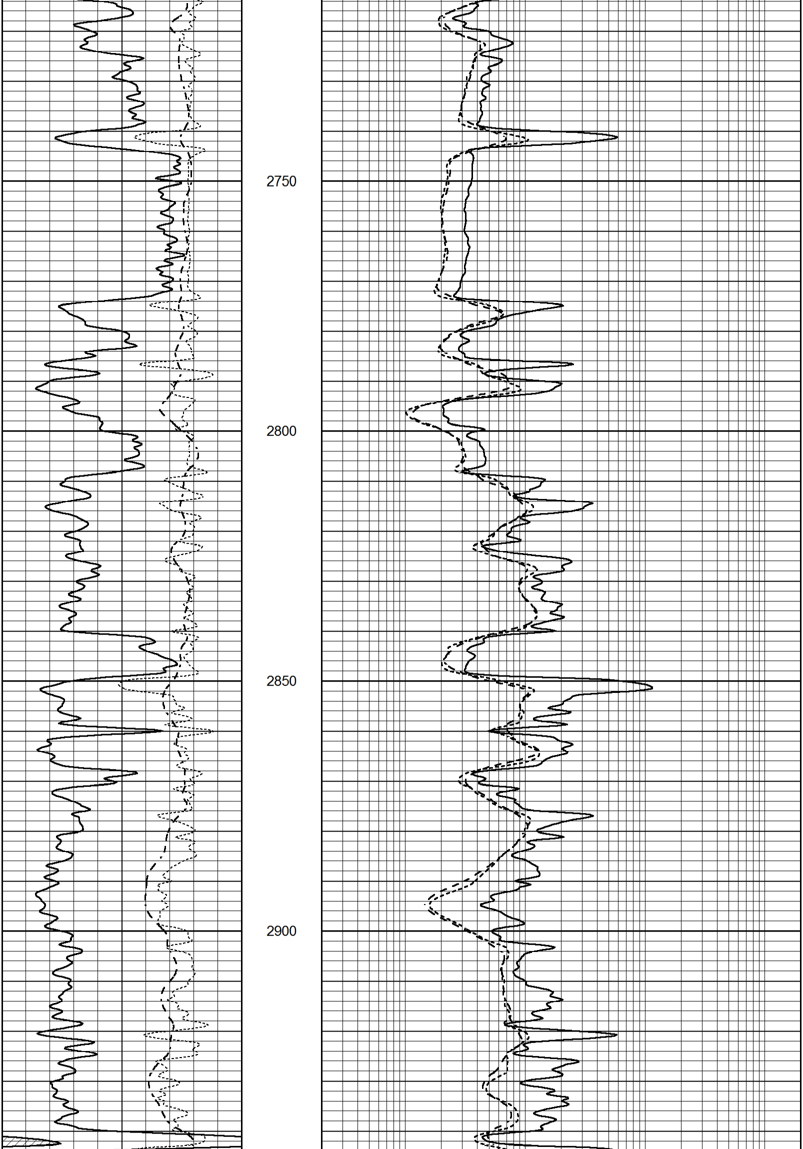
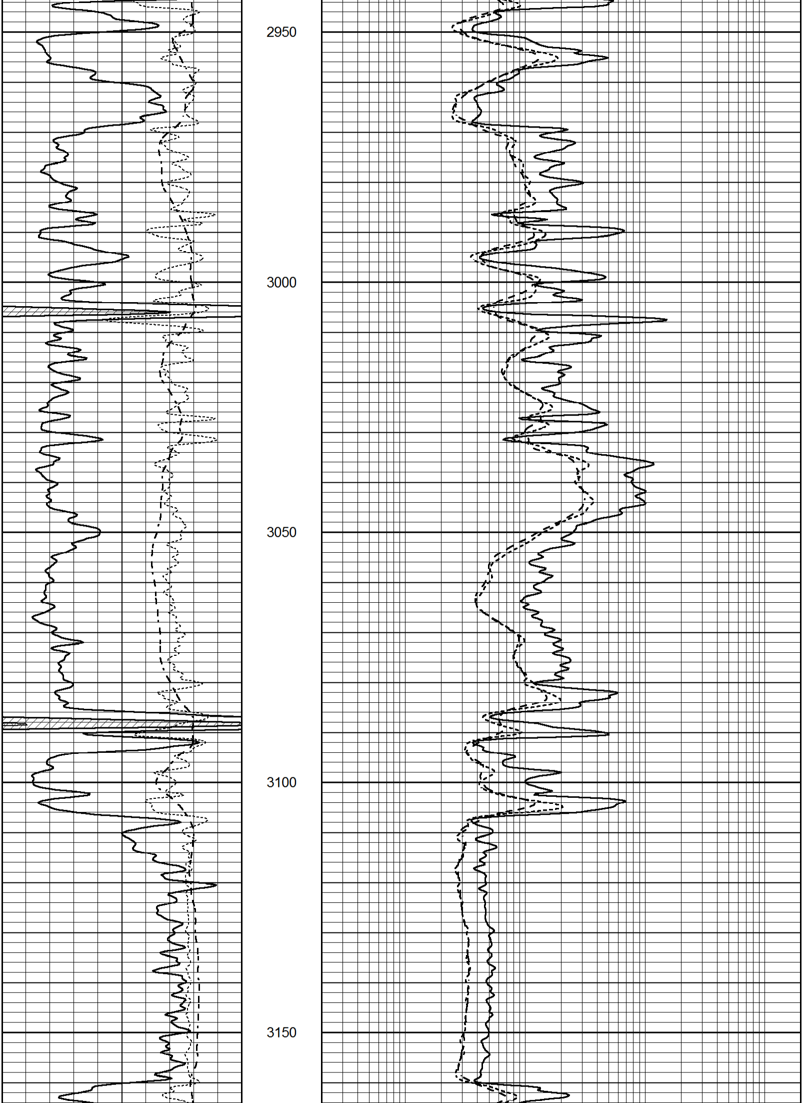
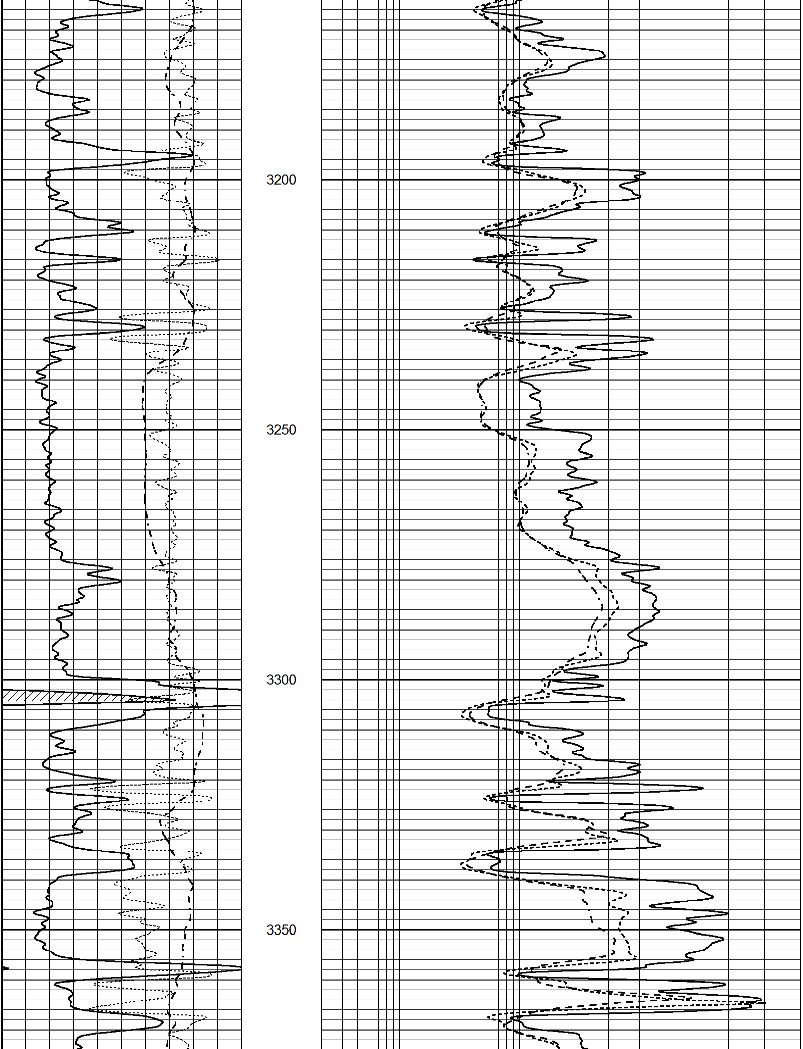
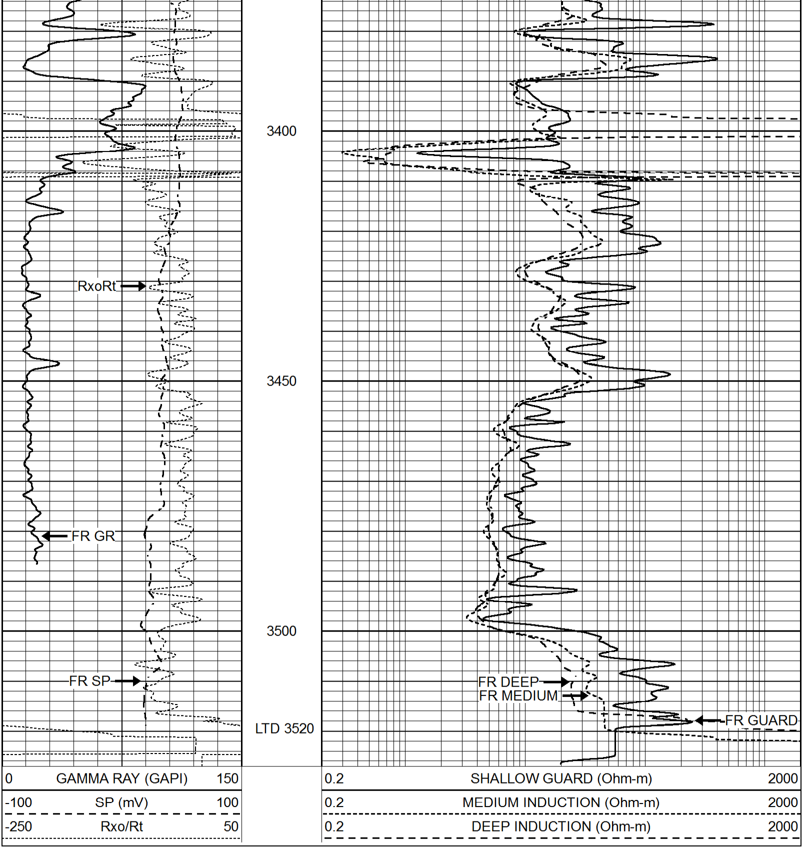








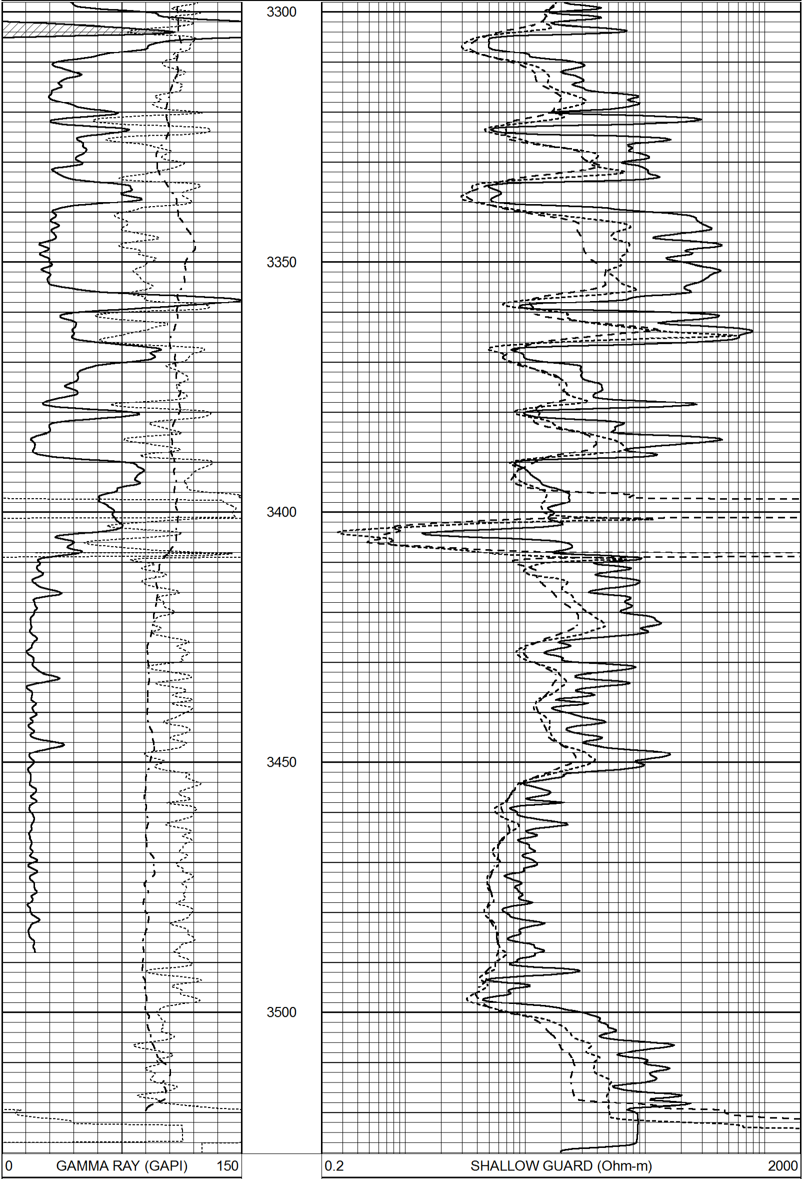


Casedhole Solutions

REPEAT SECTION

Database File	30958ddn8.db
Dataset Pathname	pass2.1
Presentation Format	_dil
Dataset Creation	Wed Mar 23 06:18:20 2016
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000



-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

Calibration Report

Database File 30958ddn8.db
Dataset Pathname pass3.2
Dataset Creation Wed Mar 23 06:40:55 2016

Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe
Surface Cal Performed: Thu Mar 12 09:27:11 2015
Downhole Cal Performed: Thu Mar 12 09:29:20 2015
After Survey Verification Performed: Thu Mar 12 09:29:20 2015

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report

Serial: 140703
Model: V4_10P
Source Number: 74GBq-19

Master Calibration

Performed: Wed Feb 11 16:57:09 2015

	Background	Aluminum	Magnesium	
Window 1	594.39	6349.98	29204.00	cps
Window 2	47.14	1460.46	7334.94	cps
Window 4	261.52	1478.45	6338.23	cps
Window 5	633.19	10381.10	19565.80	cps
Window 6	49.78	1758.01	3436.39	cps
Window 8	302.39	3297.16	6093.06	cps
Bulk Density	-	2.6020	1.6830	g/cc
Pe	-	3.0000	2.5070	b/e

LS Alpha:	: -1.8570	SS Alpha:	: -0.7600	LS CPE:	: 1.1652
LS Beta:	: 157430.0395	SS Beta:	: 22665.8398	SS CPE:	: 1.4739

Before Survey Backround Counts Verification

Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

After Survey Background Counts Verification

Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

Lithodensity Caliper Calibration

Performed: Wed Feb 11 16:57:09 2015

Results Readings		References (in)			
Low	High	Low	High	Gain	Offset
5280.9	9455.1	8.6	14.0	0.0	1.3

Before Survey Caliper Verification

Performed:

	Reference	Reading
Caliper (in)		

After Survey Caliper Verification

Performed:

	Reference	Reading
Caliper (in)		

Compensated Neutron Calibration Report

Serial Number: 080621PMC
Tool Model: NABORS

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	070558	
Tool Model:	Probe1	
Performed:	Tue Jun 10 17:54:10 2014	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.3000	GAPI/cps