

# AUSTIN B. KLAUS



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**Scale 1:240 (5"=100') Imperial**  
**Measured Depth Log**

**Well Name:** Patterson C #1  
**Location:** Russell County  
**License Number:** API #15-167-23978-00-00  
**Spud Date:** 6/27/14  
**Surface Coordinates:** Section 35 - Township 13 South - Range 15 West  
330' FNL & 1,160' FEL  
**Bottom Hole Coordinates:** Vertical well with minimal deviation, same as above  
**Ground Elevation (ft):** 1,884'      **K.B. Elevation (ft):** 1,892'  
**Logged Interval (ft):** 2,550'      **To:** RTD      **Total Depth (ft):** 3,380'  
**Formation:** LKC, Arbuckle  
**Type of Drilling Fluid:** Chemical (Andy's)

**Region:** Kansas

**Drilling Completed:** 7/3/14

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## OPERATOR

**Company:** John O. Farmer, Inc.  
**Address:** P.O. Box 352  
Russell, KS 67665-0352

## Comments

The Patterson C #1 well was drilled by Discovery Drilling Rig #2 (Tool Pusher: Terry Wickham).

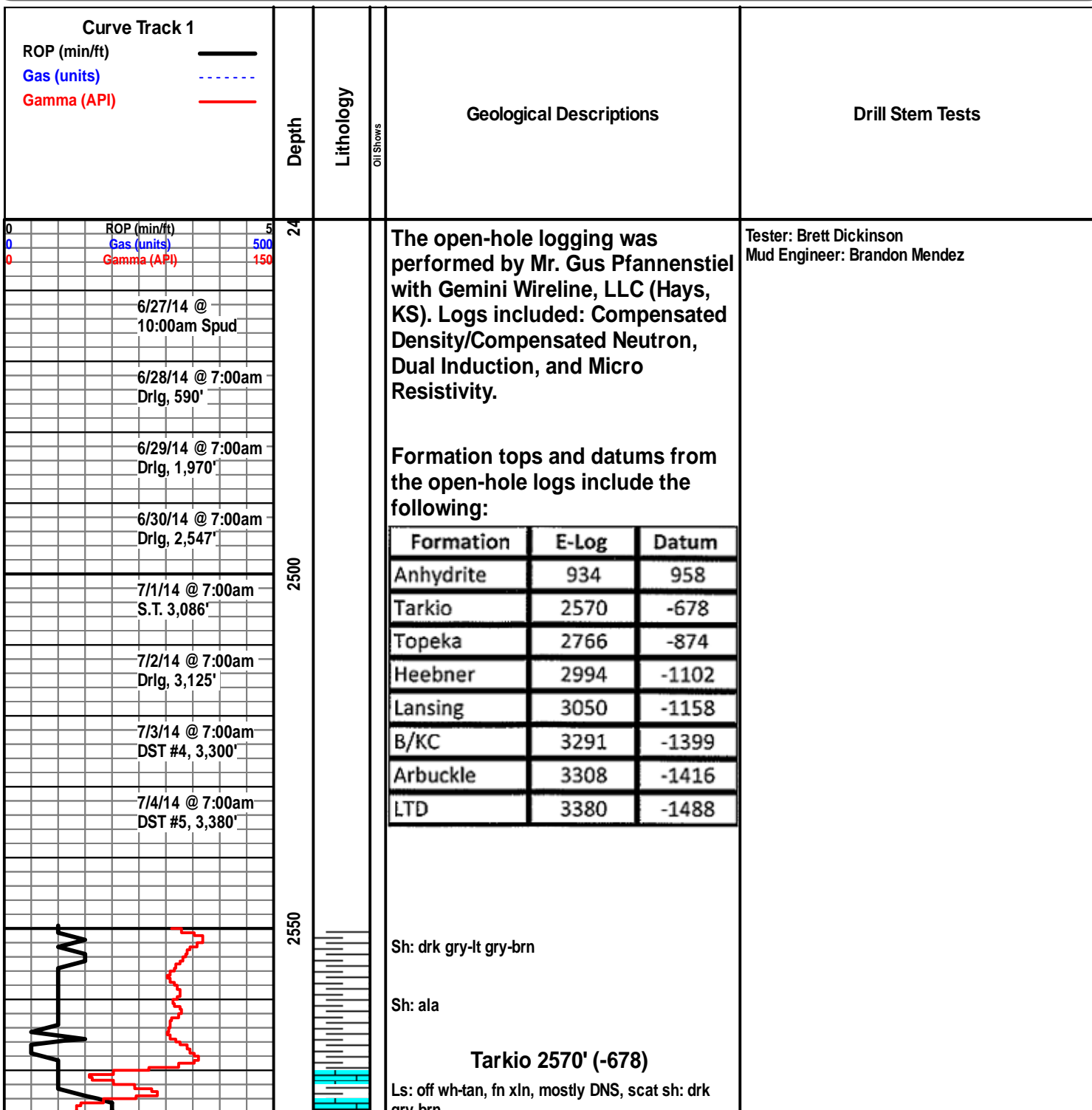
The location for the Patterson C #1 well was found via 3-D seismic survey. Geologic samples were collected and evaluated from 2,550'-3,380'. Structurally, the Patterson C #1 ran 13' high to our correlation well at the Lansing. Four bottom-hole tests were conducted in the Lansing, with the C-D test yielding the only positive results. The Arbuckle horizon was 8' high to the nearest Arbuckle well. Upon completion of the logging operation, a straddle tested was conducted, covering the top 12' of the Arbuckle. After all sample, log, and drill stem test data was gathered and evaluated, the decision was made to run 5 1/2" production casing on 7/4/14 to further evaluate the Patterson C #1 well.

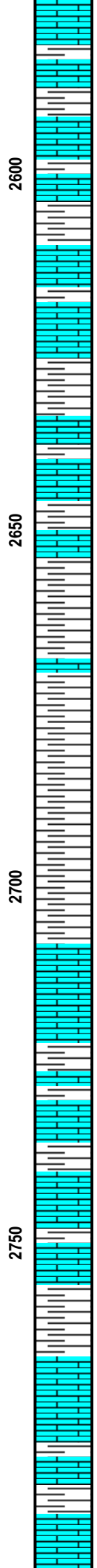
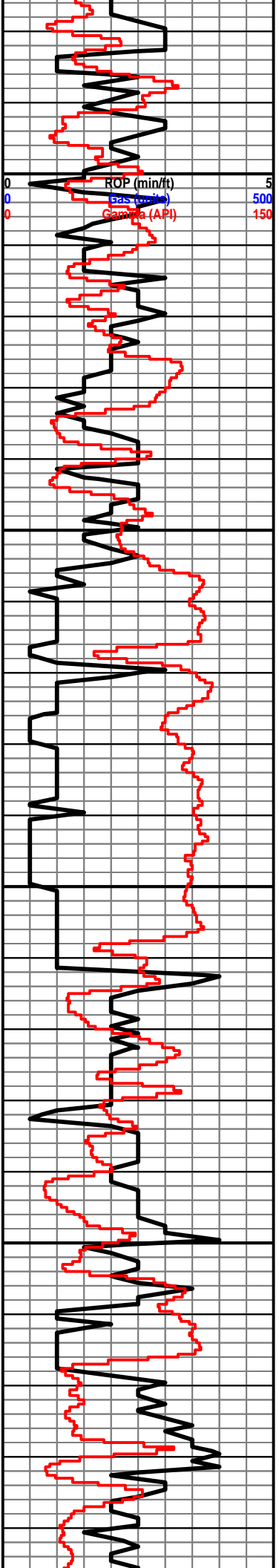
**ROCK TYPES**

 Anhy	 Clyst	 Gyp	 Mrlst	 Shgy
 Bent	 Coal	 Igne	 Salt	 Sltst
 Brec	 Congl	 Lmst	 Shale	 Ss
 Cht	 Dol	 Meta	 Shcol	 Till

**OTHER SYMBOLS**

<b>POROSITY</b>	<input checked="" type="checkbox"/> Vuggy	<b>ROUNDING</b>	<input type="checkbox"/> Spotted	<b>EVENT</b>
<input type="checkbox"/> Earthy	<b>SORTING</b>	<input type="checkbox"/> Rounded	<input type="checkbox"/> Ques	<input type="checkbox"/> Rft
<input type="checkbox"/> Fenest	<input type="checkbox"/> Well	<input type="checkbox"/> Subrnd	<input type="checkbox"/> Dead	<input type="checkbox"/> Sidewall
<input type="checkbox"/> Fracture	<input type="checkbox"/> Moderate	<input type="checkbox"/> Subang	<b>INTERVAL</b>	
<input type="checkbox"/> Inter	<input type="checkbox"/> Poor	<input type="checkbox"/> Angular	<input type="checkbox"/> Core	
<input type="checkbox"/> Moldic		<b>OIL SHOW</b>	<input type="checkbox"/> Dst	
<input type="checkbox"/> Organic		<input type="checkbox"/> Even		
<input type="checkbox"/> Pinpoint				





Ss: lt gry-tan, fn grn, mostly rnd, well sorted, poorly cemented, scat oil st, NSFO

Sh: drk gry

Ls: lt gry, fn-sub xln, mostly DNS, no visible porosity

Sh: drk gry-lt gry

Ls: tan-buff, fn xln, mostly DNS, scat chalky

Ls: ala

Ls: gry, fn xln, scat int xln porosity, scat fossil, NSFO

Sh: drk gry-brn

Ls: tan-buff, fn-sub xln, no visible porosity

Ls: ala

Sh: lt gry-drk gry

Ls: tan-lt gry, fn-sub xln, no visible porosity, scat fossil, chert-off wh

Ls: buff, fn xln, scat int xln porosity, NSFO, scat fossil

Sh: lt gry-brn

Sh: ala

Ls: tan-brn, fn-sub xln, no visible porosity, NSFO, chalky

Sh: drk gry-brn

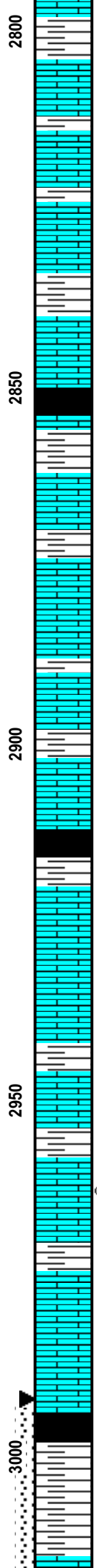
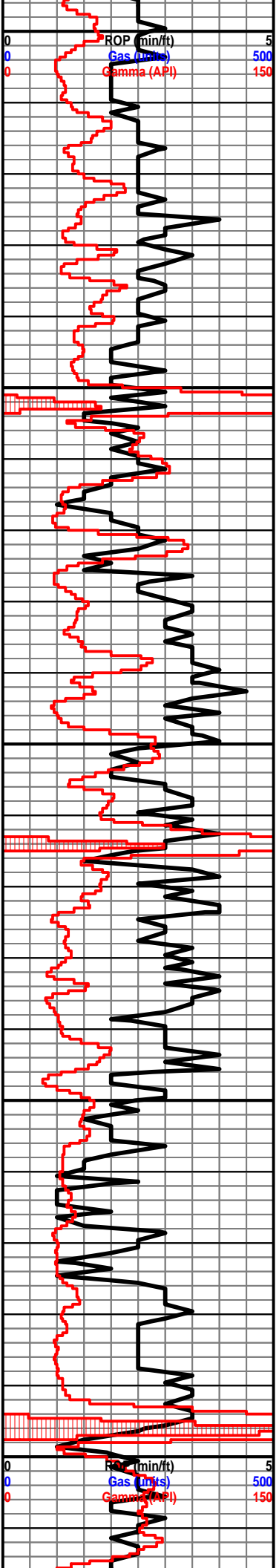
**Topeka 2768' (-876)**

Ls: buff-tan, fn xln, scat fossil, no visible porosity

Sh: drk gry

Sh: ala

Ls: off wh-tan, fn xln, scat int xln porosity, scat oil



st, VSSFO, sl odor, scat fossil

Sh: lt gry-drk gry

Ls: tan-lt gry, fn xln, scat fossil, poor int part porosity, NSFO

Ls: ala

Sh: drk gry-blk

Sh: lt gry-drk gry

Ls: tan-lt gry, fn-sub xln, mostly DNS, NSFO, scat chert-off wh

Sh: drk gry

Ls: tan-lt gry, fn-sub xln, mostly DNS, scat fossil, NSFO

Ls: buff-lt brn, fn xln, scat int xln porosity, scat oil st, NSFO, chert-off wh

Ls: tan-lt gry, fn-sub xln, mostly DNS

Sh: lt gry

Sh: drk gry-blk

Ls: tan-lt gry, fn-sub xln, mostly DNS, scat fossil, NSFO

Ls: tan-lt gry, fn xln, fossil, scat int part porosity, scat oil st, SSFO, sl odor, scat chalky

Ls: buff-lt gry, fn xln, mostly DNS, no visible porosity, NSFO, scat chert-off wh

Sh: drk gry

Ls: off wh-tan, fn xln, poor-fair int xln porosity, fair-good oil sat, SSFO, fair odor, scat chalky

Sh: drk gry-brn

Ls: tan-lt gry, fn xln, scat fossil, no visible porosity, NSFO

Ls: tan-lt gry, fn-sub xln, mostly DNS

**Heebner 2996' (-1104)**

Sh: blk, carb, fissile

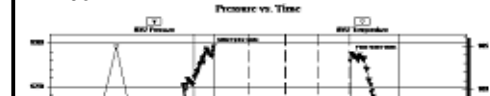
Ls: tan-gry, fn-sub xln, mostly DNS

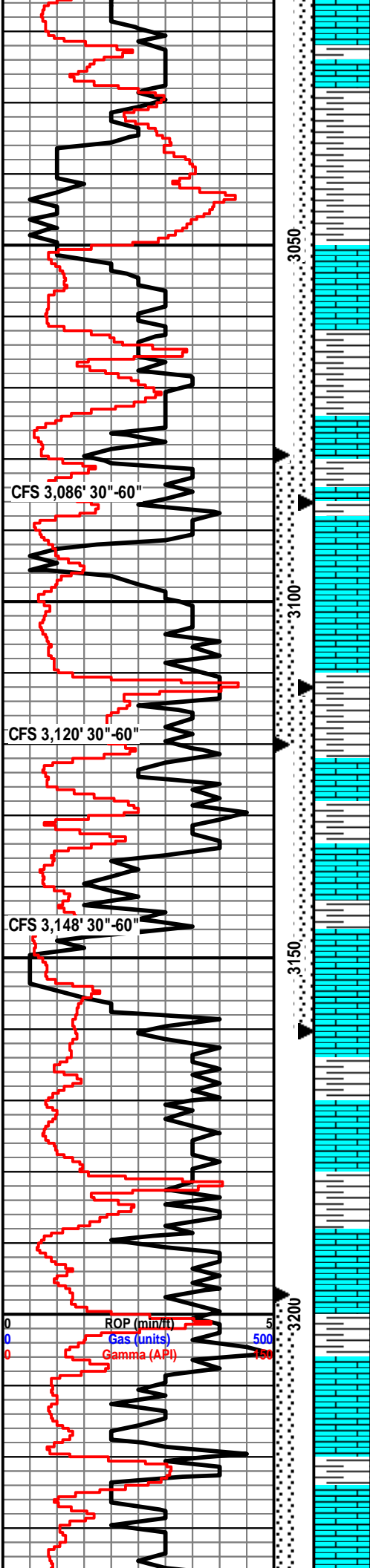
Sh: lt gry-drk gry

**Toronto 3016' (-1124)**

DST #1 2,993-3,086' (Toronto-LKC B)  
30"-30"-30"-30"

IF: weak blow built to 1"  
FF: weak surface blow  
Rec: 35' Mud  
FP: 17-30, 31-33 #  
SIP: 233-95#  
HP: 1,475-1,433#  
BHT: 98





Ls: off wh-tan, fn xln, scat int xln porosity, mostly tite, vry lt oil st, NSFO, no odor

Sh: drk gry-brn

Sh: drk gry, few pcs soft

Sh: gry

**Lansing 3053' (-1161)**

Ls: off wh-tan, fn xln, poor-scat int xln porosity, scat oil st, NSFO, scat chalk

Sh: lt gry-drk gry

Ls: off wh-tan, fn xln, poor-fair int xln and vuggy porosity, fair oil sat, SSFO, fair odor, scat chalky

CFS 3,086' 30"-60"

Sh: drk gry

Ls: off wh-tan, fn xln, ool, fair ool porosity, fair-good oil sat, FSFO, good odor, dull yel fluor

3100

Ls: off wh-tan, fn xln, scat fossil, no visible porosity, mostly tite, NSFO, no odor

Sh: lt gry-drk gry

CFS 3,120' 30"-60"

Ls: off wh-lt gry, fn xln, fossil, scat int fossil porosity, no oil st, NSFO

Sh: drk gry

Ls: off wh-tan, fn xln, fossil, poor int part porosity, lt oil st, NSFO, no odor, sl chalky

CFS 3,148' 30"-60"

Ls: off wh, fn xln, ool, poor-fair ool porosity, scat oil st, VSSFO, fair odor, chalky, scat chert-off wh

3150

Sh: drk gry

Ls: off wh-tan, fn-sub xln, poor int xln porosity, mostly tite, NSFO, no odor

Sh: drk gry-drk brn

Ls: off wh-lt gry, fn xln, scat int xln porosity, mostly tite, NSFO, no odor, scat chert-off wh

3200

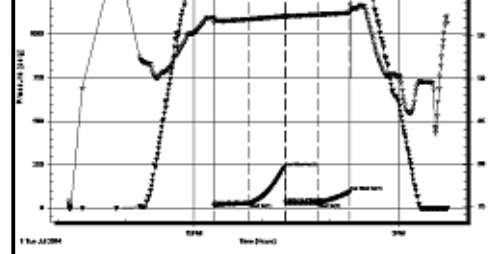
Sh: drk gry

Ls: off wh, fn xln, fossil, poor-fair int fossil porosity, scat-fair oil sat, SSFO, sl-fair odor, chalky

ROP (min/ft) 5  
Gas (units) 500  
Gamma (API) 150

Sh: drk gry

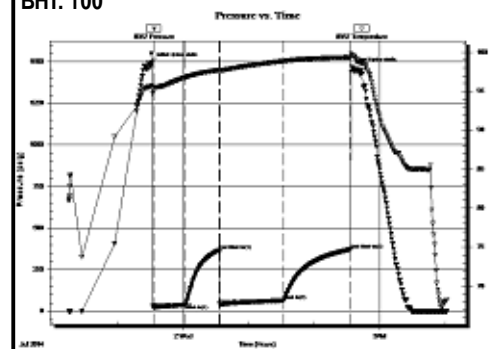
Ls: off wh-tan, fn-md xln, scat fossil, poor int xln porosity, fair oil st, SSFO, sl odor, scat chalk



Vis: 57  
Wt: 8.9

DST #2 3,079-3,120' (LKC C-D)  
30"-30"-60"-60"

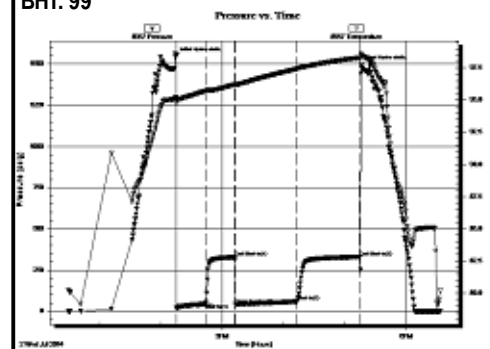
IF: BOB in 7.5 minutes, no blow back  
FF: BOB in 11 minutes, surface blow back  
Rec: 300' Gas in pipe  
20' GO (5% G, 95% O), 30' HOCM (30% O, 70% M),  
65' MW (20% M, 80% W)  
FP: 21-39, 42-65#  
SIP: 366-372#  
HP: 1,495-1,469#  
BHT: 100



Vis: 51  
Wt: 9.1

DST #3 3,112-3,160' (LKC E-G)  
30"-30"-30"-30"

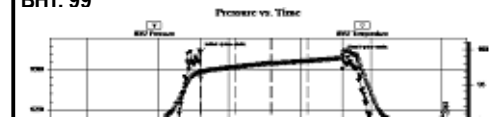
IF: weak blow, built to 1.5"  
FF: weak blow built to 1.25"  
Rec: 85' SWCM (5% W, 95% M)  
FP: 19-44, 41-60#  
SIP: 328-329#  
HP: 1,540-1,494#  
BHT: 99

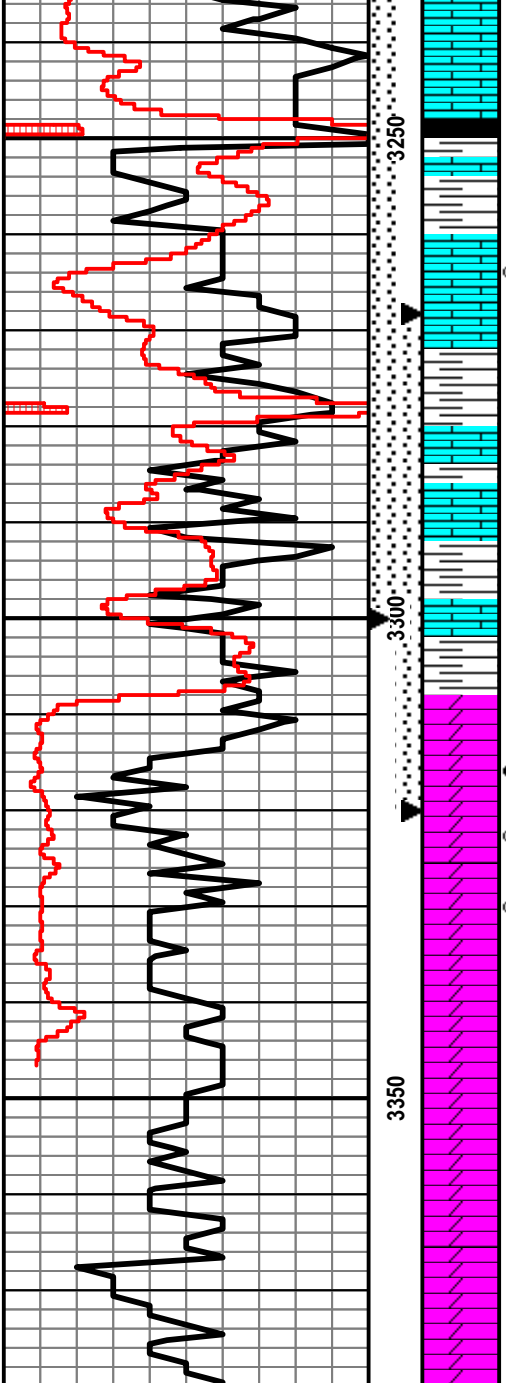


Vis: 51  
Wt: 9.1

DST #4 3,197-3,300' (LKC I-L)  
30"-30"-30"-30"

IF: weak blow, built to 1"  
FF: weak surface blow  
Rec: 35' Mud  
FP: 17-26, 29-32#  
SIP: 519-144#  
HP: 1,609-1,594#  
BHT: 99





Ls: off wh-lt gry, fn xln, scat int xln porosity, scat oil st, NSFO

Sh: drk gry-blk, carb

Ls: off wh-tan, fn xln, ool, scat ool porosity, poor-fair oil st in porosity, SSFO, sl odor, chalky

Sh: drk gry

Ls: tan-lt gry, fn-sub xln, mostly DNS, tite, NSFO, scat fossil

**B/KC 3294' (-1402)**

Sh: drk gry-drk brn-grn

Ls: tan-lt gry, fn xln, no visible porosity, NSFO

Sh: drk gry-grn

**Arbuckle 3311' (-1419)**

Dolo: off wh-tan-lt gry, fn xln, poor int xln porosity, poor oil sat, VSSFO, sl-fair odor, scat sh: drk gry

Dolo: off wh-tan, fn-md xln, fair int xln porosity, fair-good oil sat, SFO, good odor, scat chert-off wh

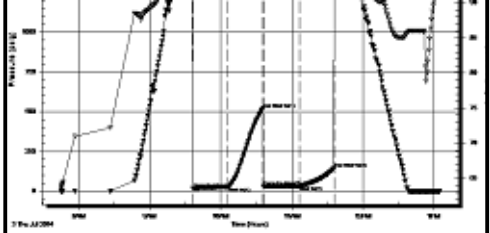
Dolo: off wh, fn-md xln, fair int xln porosity, SFO, good odor, scat chert-off wh

Dolo: off wh-tan, fn-md xln, poor int xln porosity, sl oil sat, SSFO, sl odor, scat chalk

Dolo: ala

Sh: drk gry-grn

Dolo: off wh-tan, fn xln, poor-fair int xln porosity, mostly barren, NSFO, no odor, chalky



**DST #5 3,268-3,320' (Top 12' of Arbuckle)  
30"-30"-30"-30"**

IF: BOB in 45 seconds, no blow back  
 FF: BOB in 45 seconds, no blow back  
 Rec: 1,520' HOCGW (10% G, 40% O, 50% W), 490' G&OCW (10% G, 10% O, 80% W), 430' SOCW (5% O, 95% W)  
 FP: 282-882, 880-1,050#  
 SIP: 1,082-1,087#  
 HP: 1,617-1,576#  
 BHT: 105

