

Geologic Report
Aaron L. Young

Drilling Time and Sample Log

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

Well Name: Maddy #1-5
Well Id: 15-163-24340
Location: Section 5 - T8S - R18W
License Number: 8914
Spud Date: 5 / 06 / 2017
Surface Coordinates: 330' FSL and 330' FEL
Approx. SE - SE - SE
**Bottom Hole
Coordinates:**
Ground Elevation (ft): 1917' **K.B. Elevation (ft):** 1925'
Logged Interval (ft): 2880' **To:** 3470' **Total Depth (ft):** 3470'
Formation: Arbuckle
Type of Drilling Fluid: Chemical - Mud-Co

Region: Rooks Co., KS
Drilling Completed: 5 / 13 / 2017

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: H & C Oil Operating Inc.
Address: PO BOX 86
Plainville, KS 67663 + 0086

GEOLOGIST

Name: Aaron L. Young, M. S.
Company: Young Consulting LLC
Address: 100 S Main, Ste. 505
Wichita, Kansas 67202

General Info

CONTRACTOR: Discovery Drilling Rig #4

BIT RECORD:

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	JZ	14-14-14	219	211	7.0
2	7-7/8	HTC GX-20C	14-14-14	3470	3259	75.5

SURVEYS: 219' - 3/4, 3385' - 3/4

GENERAL DRILLING AND PUMP INFORMATION:

Drilling with 30-35,000 lbs. on bit and approx 80 RPM.
Running 8.5 stands of collars; 517.87'
Pumping 56 strokes/min @ approx 750 psi at standpipe.

Daily Status

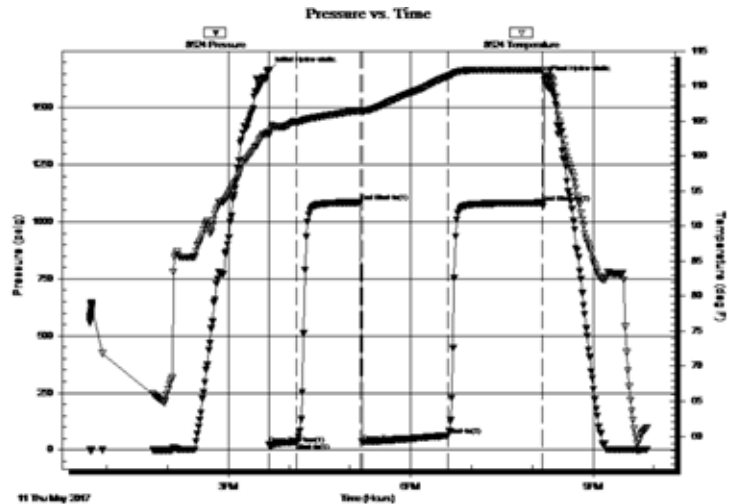
5/07/17 - Spud, @ 219', Ran 5 jts new 23# 8 5/8" casing, set @ 218.84. cem w/ 150 sx 80/20 poz w% gel, 3% cc
 5/08/17 - Drilling @ 1355'
 5/09/17 - Drilling @ 2325'
 5/10/17 - Drilling @ 2945'
 5/11/17 - DST #1 3372'-3385'
 5/12/17 - DST #2 3386'-3400'
 5/13/17 - TD 3470', Logged, Plugged. Plug @ 3360' w/ 50 sx, 2nd plug @ 1345' w/ 50 sx, 3rd plug @ 715' w/ 100sx, 4th plug @ 270 w/ 50 sx, 5th plug @ 40' w/ 10sx. 30 sx in RH, 15 sx in MH. Total 305 sx 60/40 poz, 4% gel, 1/4# FS/sx

DST #1
Arbuckle
 3372'-3385'
 30"-60"-90"-90"

IF: Built slowly to 4"
 ISI: No return
 FF: BOB in 74 min
 FSI: No return

Rec': 15' GIP, 30' CO (100% O), 25' SWSMCO (90% O, 5% W, 5% M), 50' SOCMW (5% O, 65% W, 30% M)

SIP: 1085-1084# FP: 22-34#, 35-64# HP: 1663-1622#

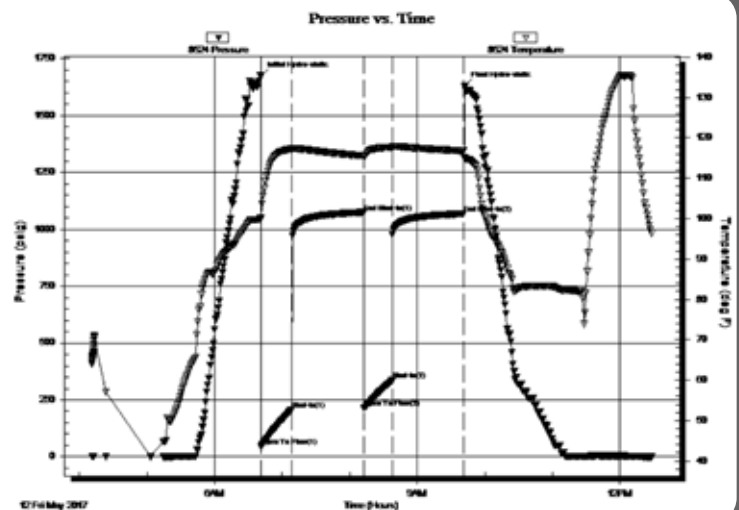


DST #2
Arbuckle
 3386'-3400'
 30"-60"-30"-60"

IF: BOB in 4 min
 ISI: Surface blowback throughout
 FF: BOB in 7 min
 FSI: Surface blowback throughout

Rec': 32' GIP, 30' CO (100% O), 377' SOCMW (10% O, 75% W, 15% M), 314' MW (90% W, 10% M)

SIP: 1075-1069# FP: 46-207#, 214-335# HP: 1672-1631#



ROCK TYPES

Anhy
 Bent
 Brec
 Cht
 Clyst
 Coal
 Congl
 Dol

Gyp
 Igne
 Lmst
 Meta
 Mr1st
 Salt
 Shale
 Shcol

Shgy
 Slstst
 Ss
 Till
 Carb sh
 Dol
 Dtd
 Gry sh

Sandylms
 Shale
 Slststn
 Shlyslts
 Sltysh
 Lms

ACCESSORIES

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr



- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Slty

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram



- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh



- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Graint
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY TYPE

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang
- Angular

OIL SHOWS

- Even
- Spotted
- Ques
- Dead
- Gas show

INTERVALS

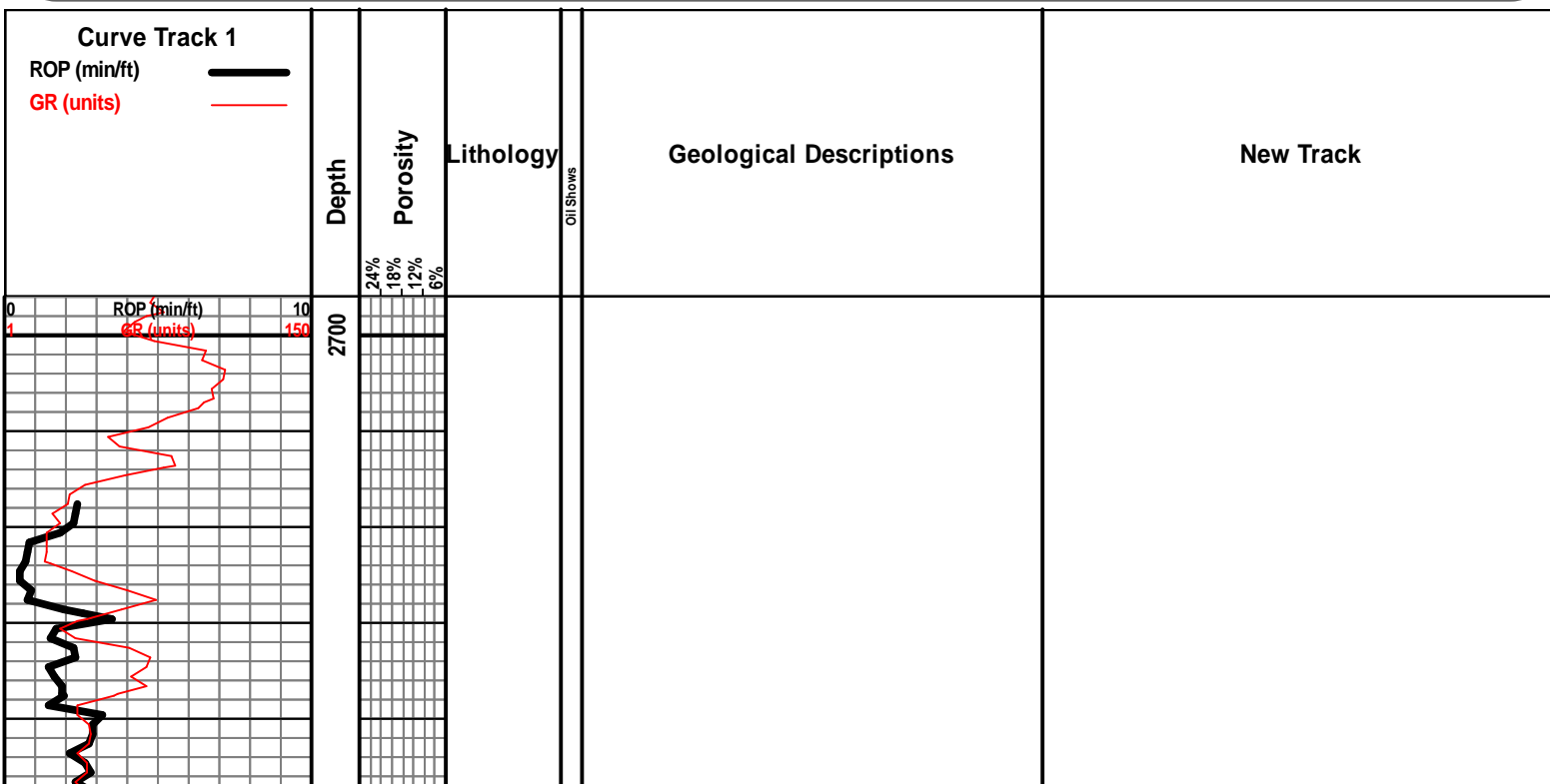
- Core
- Dst

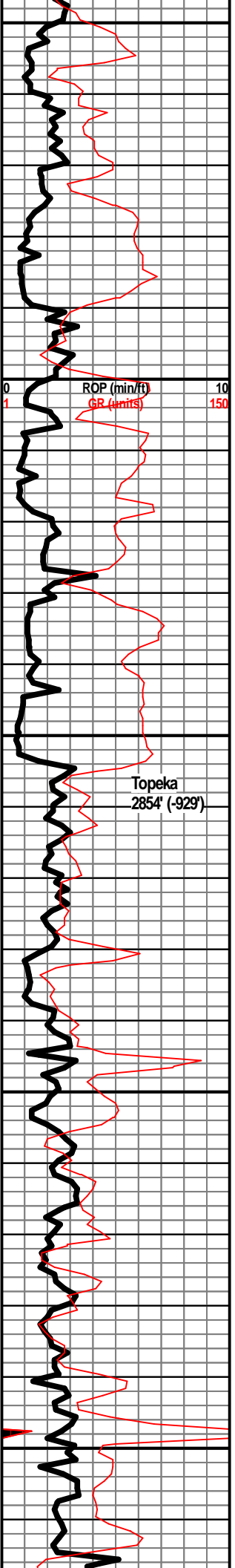


Dst

EVENTS

- Rft
- Sidewall
- Conn

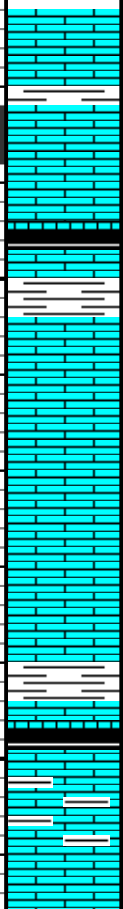




2750
2800
2850
2900
2950

ROP (min/ft)
GR (hr/ft)

Topeka
2854' (-929')



LS - PRED CRM, TAN / BRN IN PT, VF / F XLN, G
INTXLN POR, VGSFO, LT BRN OIL, G ODOR, V
SLI YEL-GRN FLUOR

SH - BLK, CARB, W/ SH - GY, W/ LS - GY / TAN, F
XLN, DNS, FOSS

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS

LS - TAN, F XLN, DNS, ABUND FOSS

SH - RD / GRN, W/ LS - CRM / TAN, VF / F XLN,
SUBCHKY

SH - BLK, SLI CARB

LS - TAN / GY, VF / F XLN, MOD DNS, ARG,
ABUND FOSS (CRINOID, FUSIL)

LS - TAN / LT BRN, F XLN, V DNS, FOSS

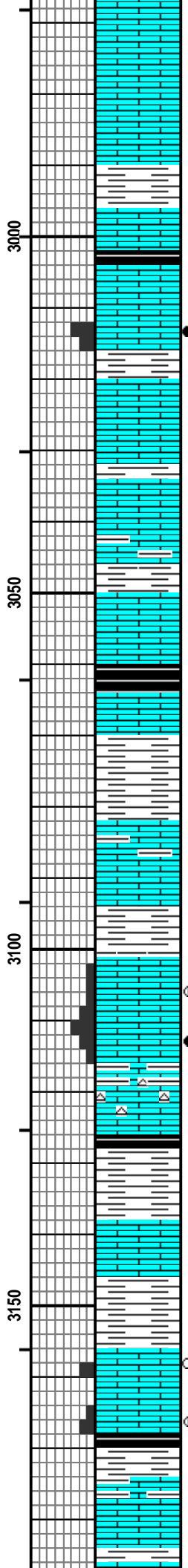
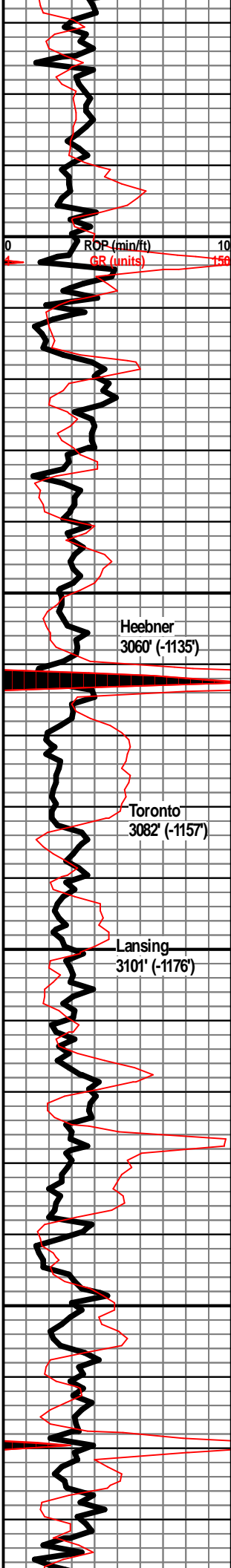
WT 8.5
VIS 54

WT 8.6
VIS 54

WT 8.6
VIS 50

WT 8.7
VIS 44

WT 8.7



LS - CRM, VF / F XLN, PRED DNS, MOD DNS / SUBCHKY IN PT

LS - TAN, F XLN, MOD DNS / DNS, FOSS IN PT

SH - LT GRN

LS - TAN / LT BRN, F XLN, DNS, FOSS

SH - BLK, CARB

LS - CRM / TAN, F XLN, DNS, FOSS (ABUND FUSIL)

LS - CRM, VF / F XLN, P / F INTXLT POR, FSFO, LT BRN OIL, V SLI ODOR, F YEL-GRN FLUOR

LS - CRM, VF / F XLN, SUBCHKY / MOD DNS, FOSS, W/ SH - GRN

LS - CRM, VF / F XLN, MOD DNS, ARG, W/ SH - GRN / GY

LS - CRM, VF / F XLN, SUBCHKY / MOD DNS

SH - BLK, CARB, W/ LS - CRM / WHT, VF XLN, CHKY / SUBCHKY

LS - TAN, F XLN, DNS, FOSS

SH - GRN / GY

LS - CRM, VF / F XLN, MOD DNS, ARG IN PT, FOSS

LS - CRM / WHT, VF XLN, SUBCHKY

SH - RD / LT GRN

LS - CRM / TAN, VF / F XLN, P INTXLN POR, VSSFO, LT BRN OIL, SOME OIL STN, SLI ODOR, SLI YEL-GRN FLOUR

LS - CRM, F XLN, P / F INTXLN POR, FSFO, LT BRN OIL, F ODOR, F YEL-GRN FLUOR

LS - CRM / TAN, VF / F XLN, MOD DNS / DNS, ARG IN PT, FOSS, W/ CHT - GY, FRSH, SLI TRANSLUCNT

SH - BLK, SLI CARB

SH - GY, GRN

LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY IN PT

SH - RD / GRN

LS - CRM, VF / F XLN, P INTXLN POR, FOSS, NSFO, ABUND OIL STN, ABUND OIL SHEEN UPON BREAK, POR MOSTLY BARREN, V SLI ODOR, SLI YEL-GRN FLUOR

LS - AA, MORE FOSS, VSSFO, V SLI ODOR

SH - DK GY / BLK, W/ LS - TAN / GY, F XLN, MOD DNS / DNS, ARG

LS - CRM, VF XLN, SUBCHKY / CHKY IN PT, W/ SH LT GRN

WT 8.7
VIS 68

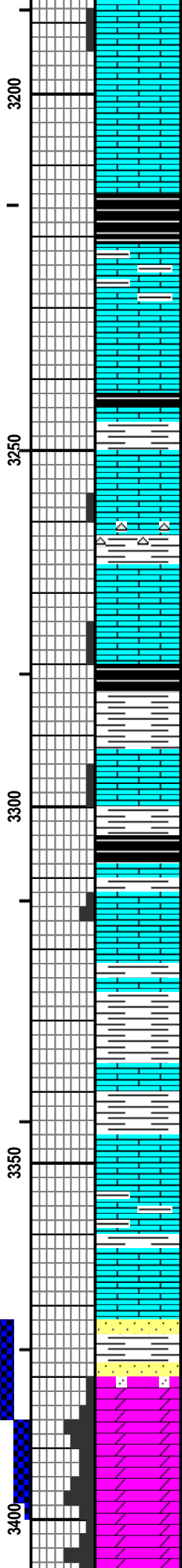
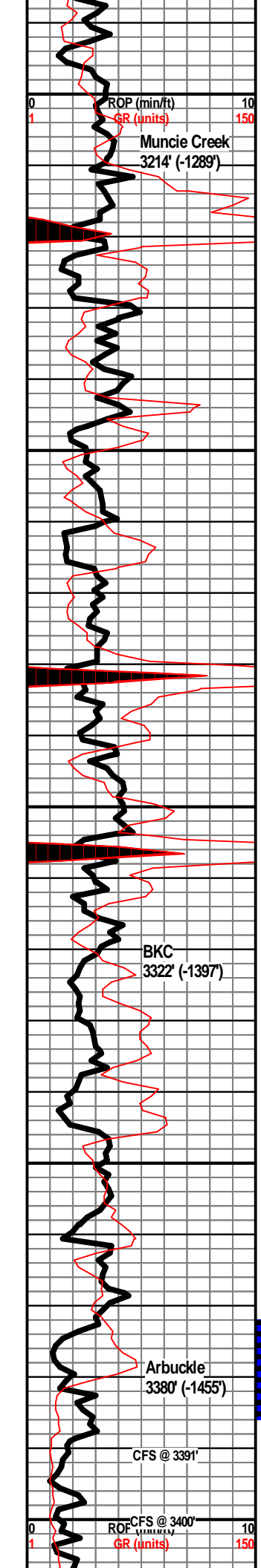
WT 8.7
VIS 46

WT 8.7
VIS 61

WT 8.8
VIS 61

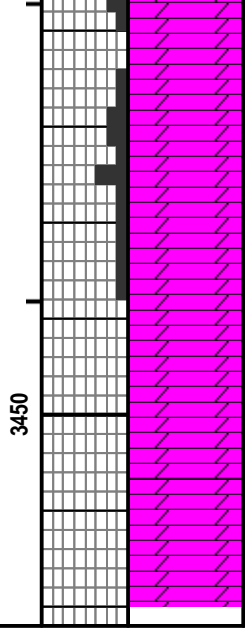
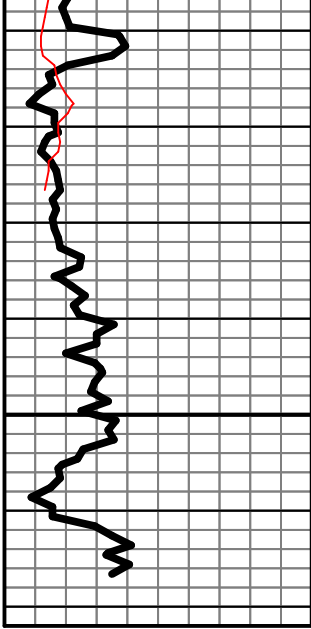
WT 8.8
VIS 58

WT 8.9
VIS 56



- LT GRN
 LS - CRM, VF / F XLN, ABUND FOSS, P INTXLN POR, FSFO, LT BRN OIL, SLI ODOR, SLI YEL-GRN FLUOR
 LS - CRM / TAN, F XLN, DNS, FOSS
 LS - CRM / WHT, VF XLN, SUBCHKY / CHKY
 SH - BLK, CARB
 LS - GY, VF / F XLN, DNS, ARG
 LM - CRM, VF / F XLN, SUBCHKY / MOD DNS, DNS IN PT
 SH - BLK, SLI CARB, W/ LS - CRM / TAN, F XLN, DNS / V DNS
 LS - CRM, VF / F XLN, DNS, P INTXLN POR IN PT, SSFO, SLI ODOR, G YEL-GRN FLUOR
 SH - GRN, W/ LS - TAN / GY, F XLN, DNS, W/ CHT - TAN / GY, FRSCH, SLI TRANSLUCNT
 LS - CRM, VF / F XLN, SUBCHKY / CHKY
 LS - TAN / GY, VF / F XLN, MOD DNS, P INTXLN POR IN PT, SSFO, LT BRN OIL, NO ODOR, F YEL-GRN FLUOR
 SH - BLK, CARB
 SH - LT GRN
 LS - CRM, VF / F XLN, FOSS, P INTXLN POR, SSFO, LT BRN OIL, MOST POR BARREN, SLI ODOR, F YEL-GRN FLUOR, W/ SH - GRN / RD
 SH - BLK, CARB
 LS - CRM, TAN, VF / F XLN, FOSS, P INTXLN POR, SSFO, LT BRN OIL, SLI ODOR, SLI YEL-GRN FLUOR
 SH - LT GRN / RD
 SH - GY
 SH - GRN / GY / MAR / PURP, W/ LS - CRM, F XLN, DNS
 LS - TAN / GY, F XLN, MOD DNS / DNS, ABUND FOSS, ARG IN PT
 SH - PURP / GRN, LMY, DNS, W/ LS - WHT / CRM, VF XLN, CHKY
 SS - CLR / TAN, F / M GR, SUB-RND, P SRTD, W CEM, PRED DNS, NO VIS POR, NS, NO ODOR, NO FLUOR, W SH - GRN / YEL
 DOLO - TAN, F XLN, FOSS, V DNS, P INTXLN POR IN PT, FEW SANDY PIECES W/ F INTXLN + INTGR POR, GSFO IN PT, OIL SLWLY BLEEDING, F ODOR, F YEL-GRN FLUOR
 DOLO - TAN / GY, F XLN, DNS IN PT, FOSS, F / G INTXLN POR, GSFO, LT BRN OIL, SHO GAS BUBBLES, G ODOR, G YEL-GRN FLUOR
 DOLO - TAN, F XLN, F / G INTXLN + VUG POR, VGSFO, LT BRN OIL, G SHO GAS, SUC IN PT, FOSS IN PT, G ODOR, F YEL-GRN FLUOR
 DOLO - TAN, VF / F XLN, P / F INTXLN POR, SUC, ABUND OIL SUC, SSFO, LT BRN OIL, SLI ODOR, F YEL-GRN FLUOR

WT 8.9
 VIS 54
 WT 9.0
 VIS 57
 ORANGE EXTRACT
 ADDED TO MUD...
 MUD SMELLS LIKE
 ORANGES
 DST #1
 Arbuckle
 3372'-3385'
 30"-60"-90"-90"
 WT 9.0
 VIS 57
 IF: Built slowly to 4"
 ISI: No return
 FF: BOB in 74 min
 FSI: No return
 Rec: 15' GIP, 30' CO (100% O), 25' SWSMCO (90% O, 5% W, 5% M), 50' SOCMW (5% O, 65% W, 30% M)
 IH: 1663#
 IF: 22#-34#
 ISI: 1085#
 FF: 35#-64#
 FSI: 1084#
 FH: 1622#
 WT 9.0
 VIS 56
 WT 9.0
 VIS 51
 WT 8.9
 VIS 52
 DST #2
 Arbuckle
 3386'-3400'
 20" CO" 20" CO"



SHEEN, SSFO, LT BRN OIL, SLI ODOR, F YEL-GRN FLUOR

DOLO - TAN, F XLN, V DNS, NO VIS POR, NS

DOLO - TAN, VF / F XLN, F / G INTXLN POR, ABUND OIL
 SHEEN, FSFO, G ODOR, G SHO OF GAS, F YEL-GRN FLUOR

DOLO - TAN / GY, F XLN, PRED DNS, SLI EDGE STN, OIL
 SHEEN, SLI ODOR, SLI MIN FLUOR

DOLO - GY, VF / F XLN, SUC IN PT, PRED DNS, NS

DOLO - GY, VF / F XLN, DNS, VP INTXLN POR IN PT, SLT EDGE
 STN, PYRITIC

DOLO - TAN / GY / WHT IN PT, VF / F XLN, MOD DNS / DNS,
 CHKY IN PT, NO VIS POR, NS

RTD 3470'

30' -60' -30' -60'

IF: BOB in 4 min
 ISI: Surface blowback throughout
 FF: BOB in 7 min
 FSI: Surface blowback throughout

Rec': 32' GIP, 30' CO (100% O), 377' SOCMW (10% O,
 75% W, 15% M), 314' MW (90% W, 10% M)

IH: 1672#
 IF: 46#-207#
 ISI: 1075#
 FF: 214#-335#
 FSI: 1069#
 FH: 1631#

Drill time slid up 3'
 to match log