

GEOLOGIC REPORT

DAVID J. GOLDAK

WICHITA, KANSAS
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Rufenacht #1
Location: Section 32 - T17S - R24W
License Number: API: 15-135-25927
Spud Date: 10 / 04 / 2016
Surface Coordinates: 335' FSL and 385' FWL
Approx. NE - SW - SW - SW
Region: Ness Co., KS
Drilling Completed: 10 / 10 / 2016
Bottom Hole Coordinates:
Ground Elevation (ft): 2360' K.B. Elevation (ft): 2368'
Logged Interval (ft): 3500' To: 4412' Total Depth (ft): 4412'
Formation: Mississippian
Type of Drilling Fluid: Chemical - Mud Co

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

OPERATOR

Company: Stewart Producers, Inc.
Address: PO Box 546
Mt Vernon, IL 62864

GEOLOGIST

Name: David J. Goldak
Company: D. J. GOLDAK, INC.
Address: 12427 W Ridgepoint Cir
Wichita, Kansas 67235

General Info

CONTRACTOR: WW Drilling, Rig #12

BIT RECORD:

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	Smith-?	4-15s	220	220	2.00
2	7-7/8	Smith-F27	15-14-14	4412	4192	101.25

SURVEYS: 220'-0.50, 4355'-0.75

GENERAL DRILLING & PUMP INFORMATION:

Running 7 stands of collars (6.25"x2.25"): 420.99'
Drilling with 33,000-35,000 lbs on bit and 70-80 RPM.
Pumping 60 S/M; 7.74 B/M; and 800 psi at the Standpipe.

Daily Status

10/04/16 - Spud at 3:45 PM; Set 8-5/8" Csg at 219'
 10/05/16 - 570' Drilling
 10/06/16 - 2,450' Drilling
 10/07/16 - 3,262' Drilling; DiSplace mud @ 3,396'
 10/08/16 - 3,915' Drilling; Wiper trip 43 stands @ 4,224'
 10/09/16 - 4,224' CTCH after wiper trip; DST #1 @ 4,355'
 10/10/16 - 4,355' TIH after DST #1; RTD @ 4,412'; Log well

	Log Tops	Sample Tops
Anhydrite	1646 (+722)	1653 (+715)
Base/Anhy	1679 (+689)	1686 (+682)
Heebner	3702 (-1334)	3709 (-1341)
Lansing	3744 (-1376)	3752 (-1384)
Stark Sh	4019 (-1651)	4027 (-1659)
BKC	4064 (-1696)	4076 (-1708)
Pawnee	4164 (-1796)	4172 (-1804)
Ft Scott	4242 (-1874)	4248 (-1880)
Cherokee	4268 (-1900)	4268 (-1900)
Mississippian	4334 (-1966)	4330 (-1962)
Total Depth	4408 (-2040)	4412 (-2044)

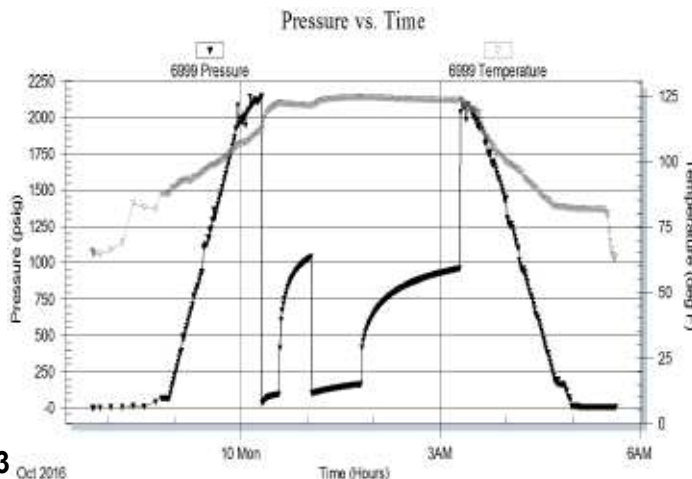
The open-hole log measurements are 6' shallower than drilling-time measurements from TD to 4,060' and 7' shallower from 4,060' to 3,500' (top of drilling time measurements).

DST #1: 4,338' - 4,355' (Mississippian)
15" - 30" - 45" - 90"

IF: Good blow building to BOB in 8-1/2 minutes
ISI: No blow back
FF: Fair blow building to BOB in 32 minutes
FSI: No blow back

RECOVERY: 341' Total Fluid, consisting of:
 15' CO (100% O); Gravity: 37 API
 326' MW (90% W & 10% M)
Chlorides Recovery: 21,000 ppm

SIP: 1037-958; FP: 31-93, 98-162; HP: 2143-2113; BHT: 123



ROCK TYPES

	Anhy
	Bent
	Brec
	Cht
	Clyst
	Coal
	Congl
	Dol

	Gyp
	Igne
	Lmst
	Meta
	Mrlst
	Salt
	Shale
	Shcol

	Shgy
	Sltst
	Ss
	Till
	Carb sh
	Dol
	Dtd
	Gry sh

	Sandylms
	Shale
	Sltstn
	Shlyslts
	Slttysh
	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
- Sltly

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
- Grainst
- 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

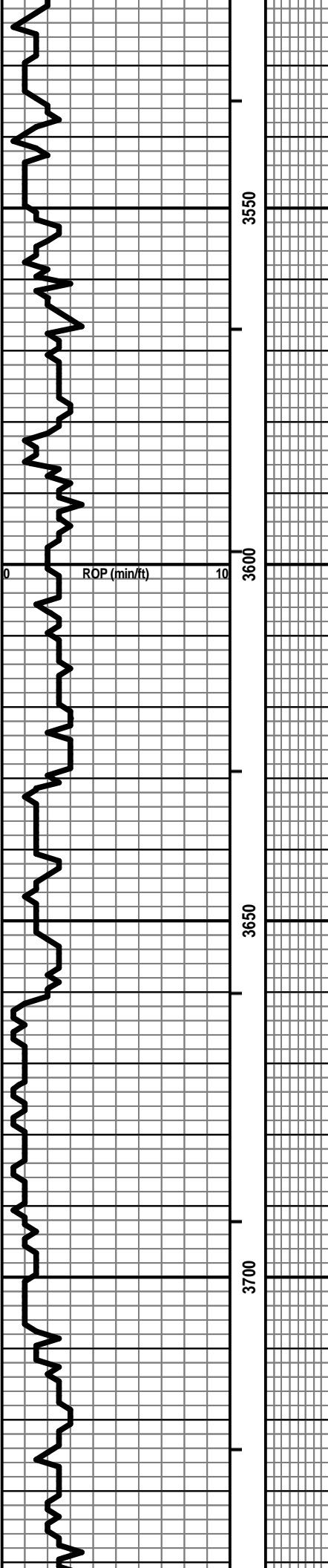
- Dst_1_t
- Dst_1_b
- Dst

EVENTS

- Rft
- Sidewall
- Conn

Curve Track 1 ROP (min/ft)		Depth	Porosity	Lithology	Oil Shows	Geological Descriptions	Remarks
0	ROP (min/ft)	10	24% 18% 12% 6%				<p>DRLG WITH BIT #2: 7-7/8" CONV NEW SMITH-F27; JETS: 15-14-14</p> <p>DISPLACE MUD SYSTEM @ 3,396'</p> <p>MUD-CO @ 3,400': Vis: 59, Wt: 8.7, YP: 13, GelS: 10/45, pH: 10.0, WL: 8.8, Chl: 6,200, Sol: 2.6, LCM: 1#</p>
3500							

Vis: 61, Wt: 8.7, LCM: 1#



Vis: 59, Wt: 8.7, LCM: 1#

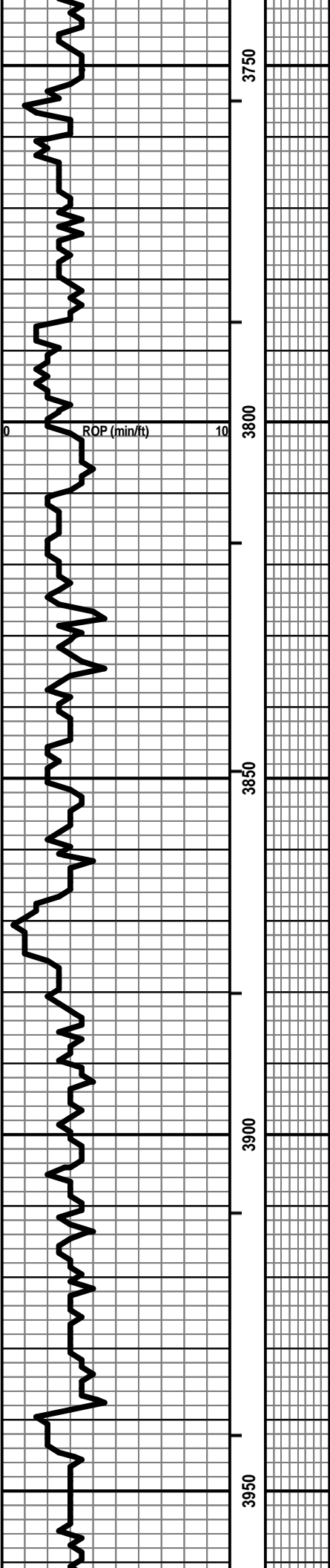
HEEBNER 3709 (-1341)

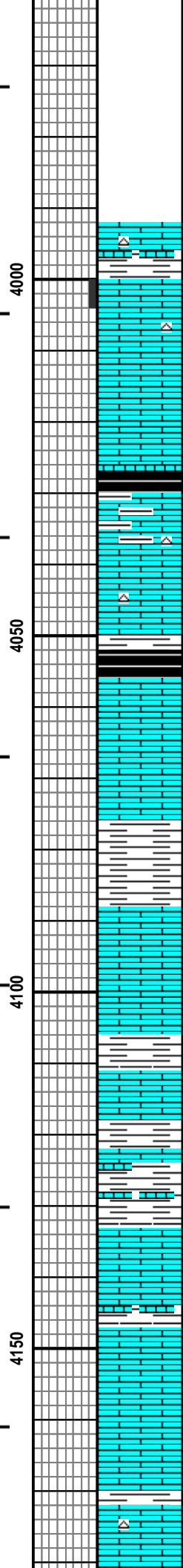
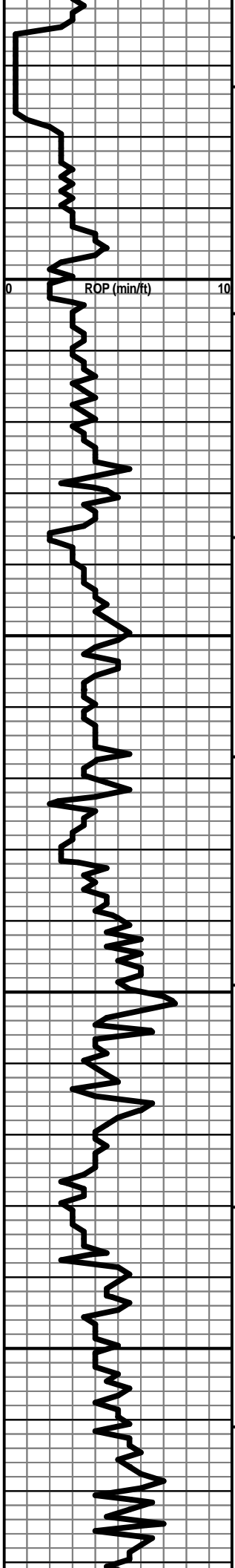
LANSING 3752 (-1384)

Vis: 59, Wt: 8.8, LCM: 1.5#

Vis: 63, Wt: 8.9, LCM: 2#

Vis: 61, Wt: 9.0, LCM: 2#





LS - CRM / TAN / SCAT BRN, MOT IN PT, VF / F XLN, SCAT
REXLN CALC, SL FOSS + OOL, TR INTXLN POR, PRED DNS,
NS W/ CHT - LT GY / WHT

BEGIN SAMPLES @ 4,010'

Vis: 50, Wt: 9.3, YP: 14,
GelS: 11/46, pH: 8.5, WL: 8.0,
Chl: 6,400, Sol: 6.8, LCM: Tr

LS - GY / TAN, PRED VF / SCAT F XLN, TR FOSS PRED DNS,
NS W/ SH - BLK, CARB

STARK SHALE 4027 (-1659)

LS - CRM / TAN / SCAT GY, VF / F XLN, OOL IN PT, TR FOSS,
CHKY IN PT, PRED DNS, NS W/ SCAT CHT - GY / WHT

LS - TAN / BRN / SCAT GY, MOT IN PT, VF / F XLN, SCAT
REXLN CALC, TR CHKY, PRED DNS, NS

BASE OF KC 4076 (-1708)

SH - GY / SCAT GRN + BLK W/ LS - CRM / TAN, VF / F XLN,
FOSS IN PT, CHKY IN PT, PRED DNS, NS

LS - GY / TAN / SCAT BRN, MOT IN PT, VF / F XLN, SL FOSS,
PRED DNS, NS

LS - TAN, VF / CRYPTO XLN, PRED DNS, NS W/ SH - GY /
GRN / RED W/ SCAT LS - TAN / GY, MOT, ARGIL / DNS

Vis: 55, Wt: 9.3, LCM: 1#

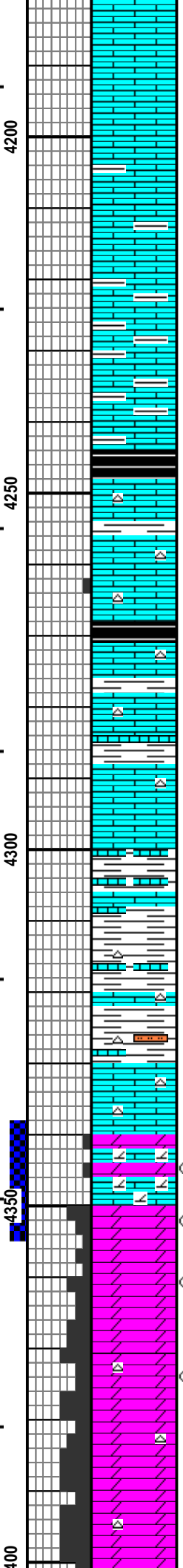
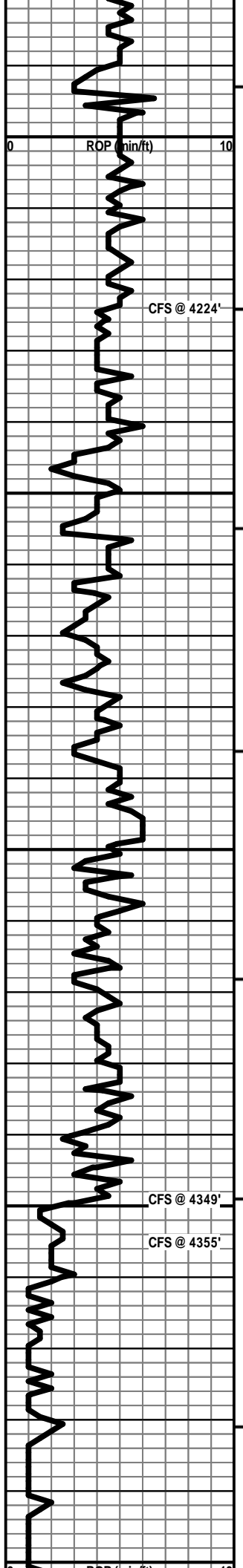
ABNT SH - GY / RED / SCAT GRN W/ LS - TAN / WHT, VF XLN,
CHKY / DNS

LS - TAN / SCAT GY, VF / SCAT F XLN, OOL IN PT, SL FOSS,
PRED DNS, NS

LS - CRM / TAN / SCAT WHT, MOT IN PT, VF / F XLN, SCAT
OOL + FOSS, CHKY IN PT, PRED DNS, NS

PAWNEE 4172 (-1804)

LS - TAN / BRN / GY, VF / F XLN, SCAT REXLN CALC, CHKY
IN PT, PRED DNS, NS W/ TR CHT - TAN



LS - TAN / BRN / GY, VF / F XLN, SCAT REXLN CALC, SUBCHKY / CHKY IN PT, PRED DNS, NS

LS - TAN / BRN / SCAT GY, VF / F XLN, SUBCHKY IN PT, PRED DNS, NS W/SH - LT / DK GY

LS - TAN / CRM / SCAT BRN, VF / F XLN, SUBCHKY IN PT, PRED DNS, NS W/ABNT SH - LT / DK GY

SH - BLK, CARB W/LS - TAN / CRM, F / VF XLN, OOL IN PT, SL FOSS, PRED DNS, NS W/SCAT CHT - LT / MED GY

LS - TAN / CRM, F / VF XLN, FOSS IN PT, SLOOL, TR P INTXLN POR, TR GB, NSFO, FT ODOR, TR BRN / BLK SPTY STN, SCAT FLUOR, NO / GD CUT W/CHT - LT GY

LS - TAN, VF / F XLN, FOSS IN PT, SUBCHKY IN PT, PRED DNS, NS W/CHT - GY / TAN

LS - TAN / CRM / WHT, MOT IN PT, VF / F XLN, SCAT REXLN CALC, FOSS IN PT, SCAT OOL, CHKY IN PT, PRED DNS, NS W/SCAT CHT - GY / TAN

LS - TAN / CRM, VF / F XLN, SCAT OOL + FOSS, SUBCHKY IN PT, PRED DNS, NS W/SH - GY / SCAT GRN

LS - TAN / CRM / SCAT BRN, MOT IN PT, F / M XLN, SCAT GLAUC, SCAT OOL, NO POR, TR FO + SPTY STN, NO ODOR W/SCAT CHT - TAN / RED / ORG W/SH - GRN / GY

LS - TAN / SCAT BRN, MOT IN PT, F / M XLN, SCAT REXLN CALC, SL FOSS, DNS, NS W/CHT - ORG / YEL / GY W/SCAT SH - GY / GRN, SLTY IN PT

LS - ASABOVE W/DOLO, LMY IN PT AND DOLO LS - TAN, F / M XLN, OOL IN PT, SCAT P INTXLN + PPT + VUG POR, TR FO, V FT ODOR, TR RESIDUAL SPTY STN

DOLO - LT GY / CRM, F / SCAT M XLN, F / TR GD INTXLN + VUG POR, PRED SL / GD SFO, SL SGB, G ODOR, SPTY / SAT STN, P / G FLUOR + CUT

DOLO - LT GY / CRM, F / SCAT M XLN, FR / GD VUG + INTXLN POR, SL / FR SFO, SL / FR SHOW RESIDUAL OIL, F ODOR, SPTY BRN / BLK STN

DOLO - LT GY / CRM, F / SCAT M XLN, FR / GD VUG + INTXLN POR, SL / FR SFO, BARR IN PT, FT ODOR, SCAT SPTY STN W/SCAT CHT - LT GY / WHT W/MOD CAVINGS

DOLO - LT GY / CRM, F / SCAT M XLN, FR / GD VUG + INTXLN POR, VSSFO, PRED BARR, V FT ODOR, TR SPTY STN W/SCAT CHT - LT GY / WHT W/MOD CAVINGS

Vis: 50, Wt: 9.4, LCM: 1#

WIPER TRIP 43 STANDS @ 4,224'

FT SCOTT 4248 (-1880)

Vis: 52, Wt: 9.35, YP: 11,
GelS: 12/46, pH: 9.0, WL: 9.6,
Chl: 6,200, Sol: 7.5, LCM: 1#

CHEROKEE SH 4268 (-1900)

Vis: 56, Wt: 9.1+, LCM: 2#

MISSISSIPPIAN 4330 (-1962)

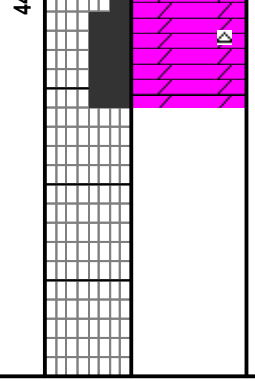
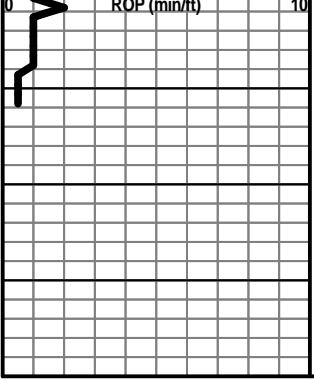
PIPE STRAP @ 4,355': LONG 0.6'

DST #1: 4,338' - 4,355' (Mississippian)
15" - 30" - 45" - 90"

IF: Good blow, BOB in 8-1/2 min.
ISI: No blow back
FF: Fair blow, BOB in 32 min.
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RECOVERY: 341' Total Fluid:
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326' MW (90% W & 10% M)
Chlorides recovery: 21,000 ppm

SIP: 1037-958 HP: 2143-2113
FP: 31-93, 98-162 BHT: 123



DOLO - LT GY / CRM, F / SCAT M XLN, FR / GD VUG + INTXLN
 POR, VSSFO, PRED BARR, V FT ODOR, TR SPTY STN W/
 SCAT CHT - LT GY / WHT W/ MOD CAVINGS

Vis: 50, Wt: 9.2, YP: 13,
 GelS: 10/38, pH: 9.0, WL: 8.8,
 Chl: 7,000, Sol: 6.0, LCM: 1#

TOTAL DEPTH 4412 (-2044)