

Geologic Report
Aaron L. Young

Drilling Time and Sample Log

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

Well Name: Clifford #2
Well Id:
Location: Section 10 - T15S - R27W
License Number: API: 15-063-22145
Spud Date: 5 / 19 / 2014
Surface Coordinates: 1485' FNL and 2310' FWL
Approx. N/2 - NE - SE - NW
Bottom Hole Coordinates:
Ground Elevation (ft): 2417' K.B. Elevation (ft): 2424'
Logged Interval (ft): 3200' To: 4334' Total Depth (ft): 4334'
Formation: Mississippian
Type of Drilling Fluid: Chemical - Mud-Co
Region: Gove Co., KS
Drilling Completed: 5 / 29 / 2014
Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

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Wichita, KS 67202

GEOLOGIST

Name: Aaron L. Young
Company:
Address: 155 N. Market, Suite 710
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General Info

CONTRACTOR: Maverick Drilling, Rig #102

BIT RECORD:

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	JZ	15-15-15	268	261	4.5
2	7-7/8	JZ	13-13-15	4334	4073	85.0

SURVEYS: 4211'-1, 4334'-1.

GENERAL DRILLING AND PUMP INFORMATION:

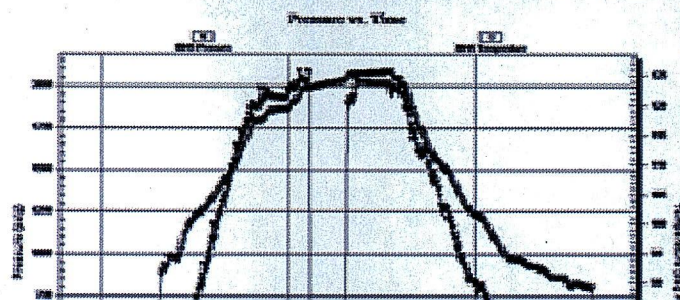
Drilling with 32,000 lbs. on bit and approx 80-85 RPM.
Running 8 stands of collars; 465.68'
Pumping approx 750-850 psi at standpipe.

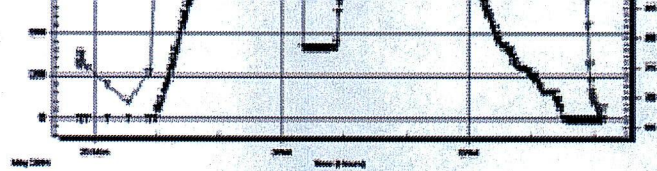
Daily Status

5/19/14 - Spud @ 11:00pm
5/20/14 - @ 253' POH to run surface casing
5/21/14 - Drilling, @ 1058'
5/22/14 - Drilling, @ 2608'
5/23/14 - Drilling, @ 3170'
5/24/14 - Drilling, @ 3685'
5/25/14 - Drilling, @ 4075', DST #1 - Misrun
5/26/14 - @ 4211' POH for hole in the pipe, DST #2
5/27/14 - Drilling @ 4211', DST #3
5/28/14 - 4334' RTD, DST #4 - Straddle
5/29/14 - DST #5 - Straddle
5/30/14 - Plugged

DST #1: 4,122' - 4,211' Ft. Scott - Cherokee

Misrun due to hole in pipe



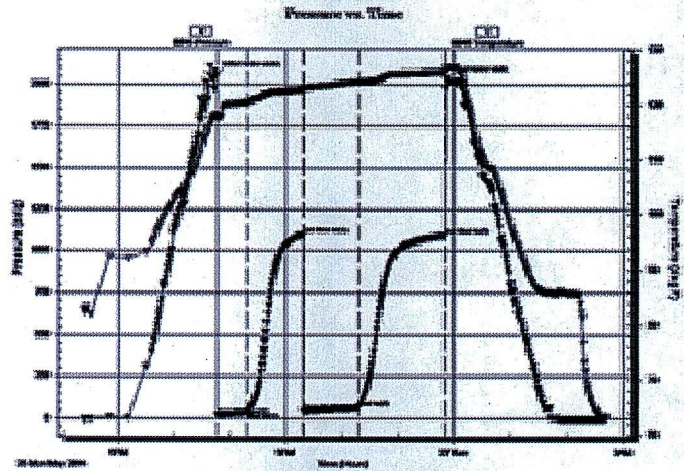


DST #2 4,122' - 4,211' Ft. Scott - Cherokee
30"-60"-60"-90"

IF: 4" blow
ISI: No return
FF: 10 1/2" blow
FSI: No return

Rec': 120' GOCM (20% G, 10% O, 70% M)

SIP: 1098-1094; FP: 19-38, 43-65 HP: 2059-2029

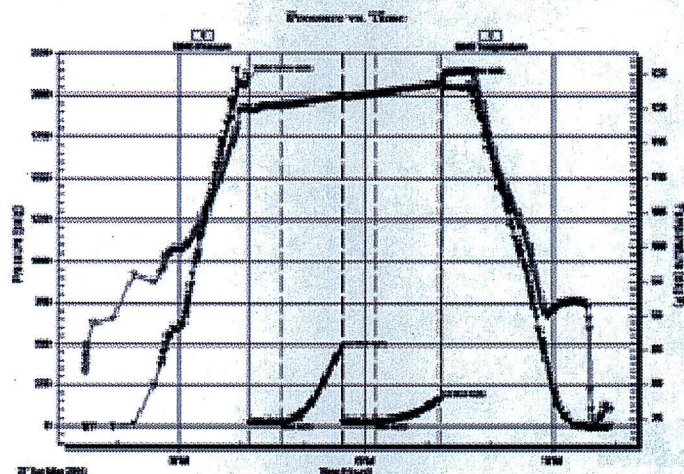


DST #3 4,191'-4,251' Johnson - Miss
30"-60"-30"-60"

IF: Weak Surface Blow died in 20 min
ISI: No return
FF: No blow
FSI: No return

Rec': 15' M

SIP: 477-168; FP: 17-20, 21-23; HP: 2103-2083

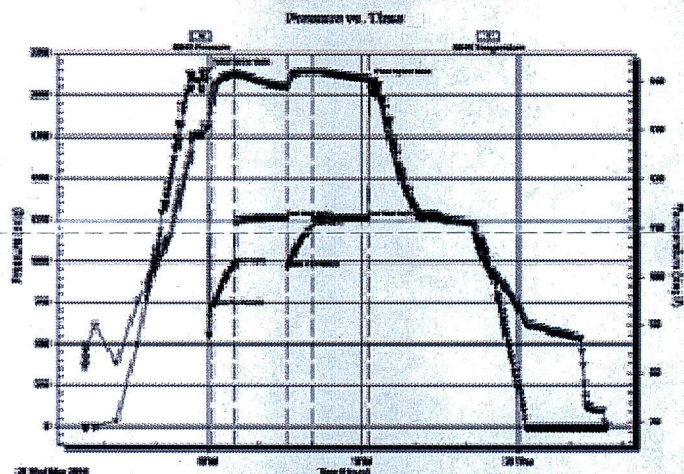


DST #4 4,246'-4,265' Mississippian
30"-60"-30"-60"

IF: BOB in 1 min
ISI: No return
FF: BOB in 2 min
FSI: No return

Rec': 2820' MW (10% M, 90% W)

SIP: 1263-1263; FP: 731-978, 961-1208; HP: 2140-2076

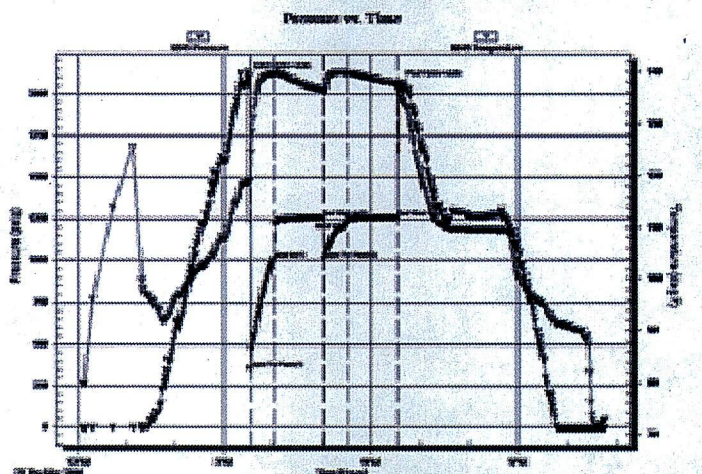


DST #5 4,248'-4,266' Mississippian
30"-60"-30"-60"

IF: BOB in 1 1/4 min
ISI: No return
FF: BOB in 2 min
FSI: No return

Rec': 115' MW (25%M, 75%W), 2505 MW (20%M, 80%W), 175' M

SIP: 1263-1264; FP: 355-1010, 1010-1234; HP: 2102-2062



ROCK TYPES

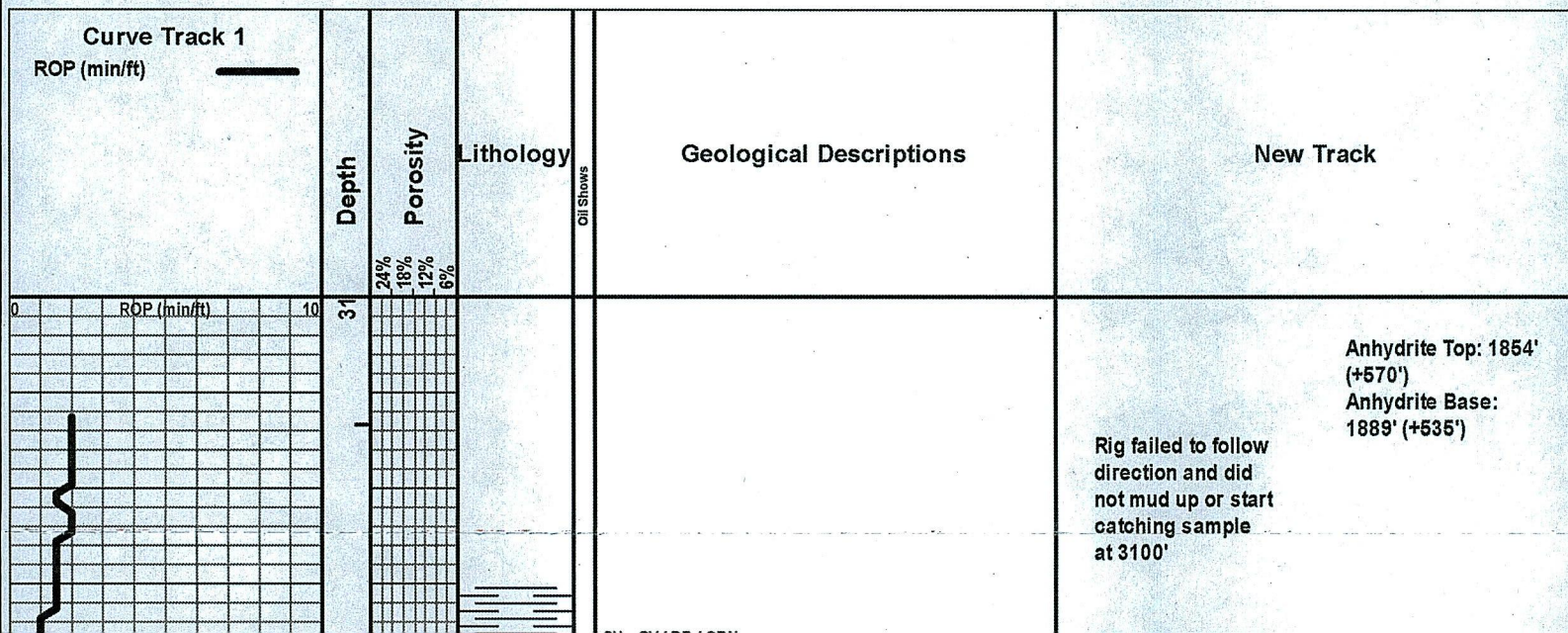
Anhy	Gyp	Shgy	Sandylms
Bent	Igne	Sltst	Shale
Brec	Lmst	Ss	Sltstn
Cht	Meta	Till	Shlyslts
Clyst	Mrlst	Carb sh	Sitysh
Coal	Salt	Dol	Lms
Congl	Shale	Dtd	
Dol	Shcol	Gry sh	

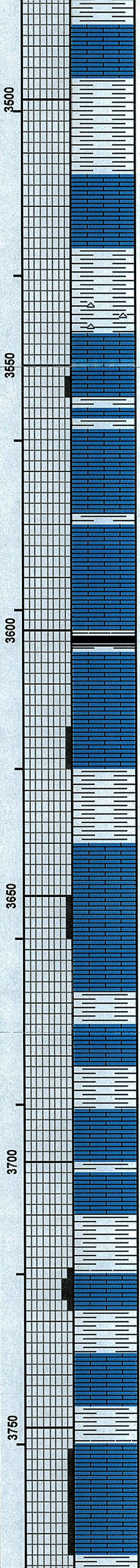
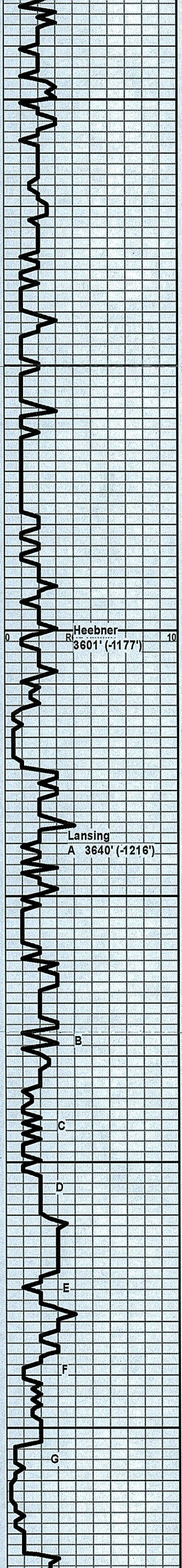
ACCESSORIES

MINERAL	Salt	Fossil	Clystn
Anhy	Sandy	Gastro	Dol
Arggrn	Silt	Oolite	Grysh
Arg	Sil	Ostra	Gryslt
Bent	Sulphur	Pelec	Lms
Bit	Tuff	Pellet	Sandylms
Brecfrag	Chlorite	Pisolite	Sh
Calc	Dol	Plant	Sltstn
Carb	Sand	Strom	
Chtdk	Sity	Fuss	TEXTURE
Chtlt	FOSSIL	Oomold	Boundst
Dol	Algae	STRINGER	Chalky
Feldspar	Amph	Anhy	Cryxln
Ferrpel	Belm	Arg	Earthy
Ferr	Bioclst	Bent	Finexln
Glau	Brach	Coal	Grainst
Gyp	Bryozoa	Dol	Lithogr
Hvymin	Cephal	Gyp	Microxln
Kaol	Coral	Ls	MS
Marl	Crin	Mrst	PS
Minxl	Echin	Sltstrg	Wackest
Nodule	Fish	Ssstrg	
Phos	Foram	Carbsh	
Pyr			

OTHER SYMBOLS

POROSITY TYPE	SORTING	OIL SHOWS	Dst
Earthy	Well	Even	EVENTS
Fenest	Moderate	Spotted	Rft
Fracture	Poor	Ques	Sidewall
Inter	ROUNDING	Dead	Conn
Moldic	Rounded	Gas show	
Organic	Subrnd	INTERVALS	
Pinpoint	Subang	Core	
Vuggy	Angular	Dst	





LS - TAN / LT BRN, F XLN, DNS, FOSS IN PT, W/ SH - GY

SH - GY / GRN / RD

SH - GRN / RD / MAR

LS - CRM, F XLN, MOD DNS, ABUND FOSS

LS - CRM, VF / F XLN, SUBCHKY / CHKY

SH - GRN / GY, PYRITIZED IN PT

SH - GRN / RD, W/ CHT - WHT TRANLCNT / WHT OPQUE

LS - WHT / CRM, VF XLN, CHKY

LS - CRM / TAN, VF / F XLN, P INTXLN POR IN PT, NS, NO ODOR

LS - TAN / LT BRN, F XLN, DNS, FOSS IN PT, W/ SH - GY

SH - GY / BLK

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

SH - BLK, SLI CARB

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

SH - GY, W/LS - WHT / CRM, VF / F XLN, P INTXLN POR IN PT, NS, NO ODOR

SH - GY / MAR

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

LS - CRM / TAN, VF / F XLN, PRED SUBCHKY / CHKY, P INTXLN POR IN PT, NS NO ODOR

SH - GY

SH - GY / GRN / MAR

LS - CRM, F XLN, V DNS, FOSS

SH - MAR / GY / GRN

LS - CRM, F XLN, DNS, SLI SUBCHKY IN PT

SH - GY

LS - TAN / LT BRN, F XLN, P / F INTXLN POR, FSFO, LT BRN OIL, OOL, NO ODOR, V SLI YEL FLUOR

SH - GRN / GY, SLTY IN PT

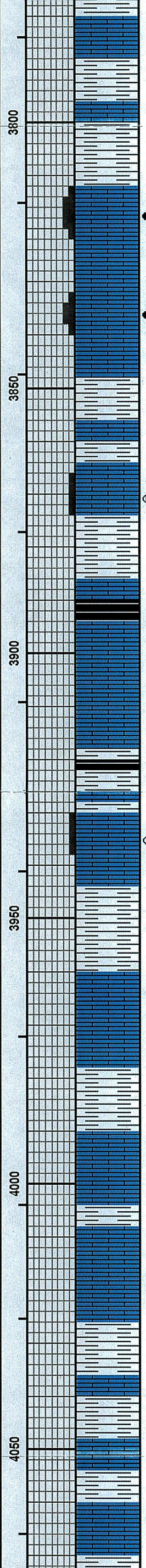
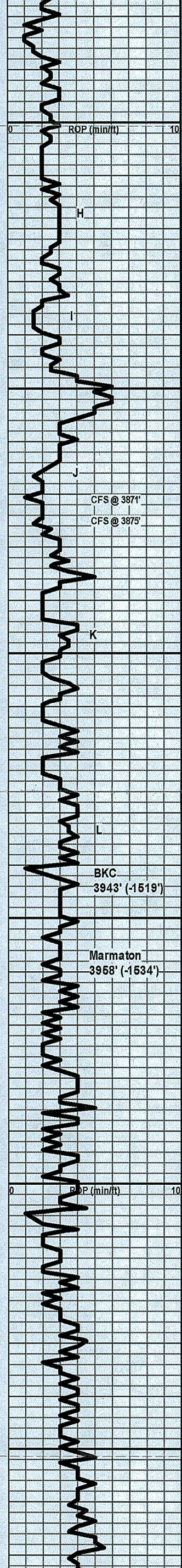
SH - BLK / GY

LS - TAN / LT BRN, F XLN, G OOMOLDIC + P INTXLN POR, P VIS PERM, ABUND OOL, NS, NO ODOR, NO FLUOR

SH - GY / GRN / RD

LS - TAN / LT BRN, F XLN, PRED DNS, P OOMOLDIC + INTXLN POR IN PT, NS, NO ODOR, NO FLUOR

WT 8.7
VIS 45



LS - CRM / TAN, F XLN, DNS, ABUND FOSS, W/SH - GY

LS - WHT / CRM, VF / F XLN, SUBCHKY / CHKY, W/SH - GY

SH - MAR / GY / GRN

LS - WHT / CRM, VF / F XLN, F INTXLN POR, GSFO, LT BRN OIL, NO ODOR, NO FLUOR

LS - WHT, VF / F XLN, SUBCHKY / MOD DNS, NS

LS - CRM / TAN, F XLN, P / F INTXLN POR, GSFO, LT BRN OIL, SLI ODOR, NO FLUOR

SH - RD / GRN / GY

LS - WHT / CRM, VF XLN, DNS / SUBCHKY / CHKY

LS - CRM / TAN, VF / F XLN, P INTXLN POR, SSFO, NO ODOR, NO FLUOR

SH - GRN / GY / MAR / RD

LS - TAN / GY, F XLN, DNS

SH - BLK, CARB

LS - LT BRN / TAN / GY, F XLN, DNS, FOSS IN PT

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

LS - TAN, F XLN, V DNS, ABUND OOL, ABUND FOSS

LS - TAN, F XLN, DNS, P INTXLN POR IN PT, SLI OIL STN, SSFO, SLI ODOR, NO FLUOR

SH - GRN / GY / RD

SH - MAR / GY / BLK

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

SH - GY

LS - WHT / CRM, VF / F XLN, CHKY / SUBCHKY

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

SH - GRN / GY, W/LS - TAN, F XLN, DNS

LS - TAN / LT GY, VF / F XLN, SUBCHKY

SH - MAR / LT GRN

SH - GY, W/LS - CRM, VF / F XLN, SUBCHKY

LS - CRM / TAN, VF / F XLN, PRED DNS, SUBCHKY IN PT, W/SH - GY

LS - TAN / GY, F XLN, DNS

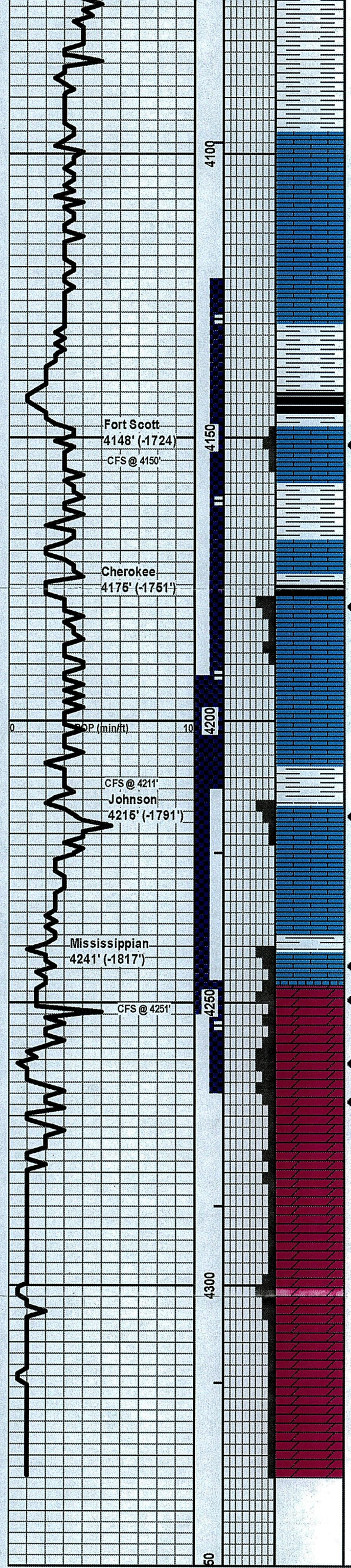
WT 9.0
VIS 48
LCM 1#

WT 9.2
VIS 53
LCM 1#

WT 9.2
VIS 53
LCM 1#

Drilling w/ 32,000#
WOB @ 80-85 RPM
w/ 8 stands of
collars and 800
psi at the
standpipe

WT 9.3
VIS 50
LCM 1#



SH - GY / BLK
 SH - GY
 LS - CRM / TAN, VF / F XLN, SUBCHKY / DNS
 LS - GY, VF XLN, CHKY, ARG IN PT
 SH - MAR / GY / BLK
 SH - BLK, CARB
 LS - LT BRN, F XLN, P / F INTXLN POR, FSFO, LT BRN OIL, OOL, FOSS, NO FLUOR
 SH - GY
 LS - WHT / CRM, VF XLN, CHKY / SUBCHKY
 LS - LT BRN, F XLN, F INTXLN POR, GSFO, LT BRN OIL, GAS BUBBLES, VG ODOR, NO FLUOR
 LS - TAN / GY, VF / F XLN, SUBCHKY, FOSS, NS
 LS - CRM / TAN, VF / F XLN, SUBCHKY, FOSS
 SH - MAR / GY
 LS - TAN, F XLN, PRED DNS, P / F INTXLN + FRAC POR, FSFO, DK BRN OIL, F ODOR, NO FLUOR
 LS - WHT / CRM, VF / F XLN, SUBCHKY / CHKY
 LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, W / CHT - YEL / RD / CLR, TRANSLCNT
 LS - CRM, VF / F XLN, P / F INTXLN POR IN PT, FSFO, LT BRN OIL, NO FLUOR, W / SH - GRN
 DOLO - WHT / CRM, F XLN, P / F INTXLN POR, GSFO, LT BRN OIL, G ODOR, NO FLUOR
 DOLO - TAN, F XLN, DNS IN PT, P INTXLN + VUG POR IN PT, FSFO, G ODOR, NO FLUOR
 DOLO - TAN, F XLN, P / F INTXLN POR, GSFO, G ODOR, NO FLUOR
 DOLO - TAN, F XLN, DNS, NS, NO ODOR
 DOLO - CRM / TAN, VF / F XLN, PRED DNS, SUBCHKY / CHKY IN PT, NS
 DOLO - WHT / CRM, VF XLN, SUBCHKY / CHKY
 DOLO - CRM, VF / F XLN, SUBCHKY, F INTXLN POR IN PT, NS, NO ODOR, NO FLUOR

DST #1
 Misrun - Hole in pipe

DST #2
 Ft. Scott - Cherokee
 4122'-4211'
 30"-60"-60"-90"
 IF: 4" blow
 ISI: No return
 FF: 10 1/2" blow
 FSI: No return
 Rec': 120 GOCM (20% G, 10% O, 70% M), 180' GIP
 IH: 2059#
 IF: 19#-38#
 ISI: 1098#
 FF: 43#-65#
 FSI: 1094#
 FH: 2029#

DST #3
 Johnson - Mississippian
 4191'-4251'
 30"-60"-30"-60"
 IF: Weak surface blow, died in 20 min
 ISI: No return
 FF: No blow
 FSI: No return
 Rec': 15' mud
 IH: 2103#
 IF: 17#-20#
 ISI: 478#
 FF: 21#-23#
 FSI: 168#
 FH: 2083#
 WT 9.5
 VIS 66
 LCM 1#
 WT 9.3
 VIS 60
 LCM 1#
 WT 9.0
 VIS 50

DST #4
 Mississippian
 4246'-4265'
 30"-60"-30"-60"
 IF: BOB in 1 min
 ISI: No return
 FF: BOB in 2 min
 FSI: No return
 Rec': 2820' MW (10% M, 90% W)
 IH: 2140#
 IF: 731#-978#
 ISI: 1263#
 FF: 962#-1208#
 FSI: 1263#
 FH: 2076#

DST #5
 Johnson - Mississippian
 4248'-4266'
 30"-60"-30"-60"
 IF: BOB in 1 1/4 min
 ISI: No return
 FF: BOB in 2 min
 FSI: No return
 Rec': 115' MW (25% M, 75% W), 2505 MW (20% M, 80% W), 175 M
 IH: 2102#
 IF: 355#-1010#
 ISI: 1263#
 FF: 1010#-1234#
 FSI: 1264#
 FH: 2062#
 WT 9.2
 VIS 70
 LCM 1#

RTD 4334'

