



WESLEY D. HANSEN Consulting Petroleum Geologist

212 N. Market, Suite 257, Wichita, KS 67202
Office: 316-267-7313 Cellular ; 316-772-6188

**KGS
AAPG
Kansas License #418**



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

Well Name: Murfin Drilling Co., Inc. #1-26 Zodrow
Location: 1010' FNL, 1870' FEL of Section 26-6-29W
License Number: API: 15-179-21344
Spud Date: 9-30-2013
Surface Coordinates: 1010' FNL, 1870' FEL of Section 26-6-29W
Region: Sheridan County, KS
Drilling Completed: 10-6-2013

Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 2742' **K.B. Elevation (ft):** 2753'
Logged Interval (ft): 3550' **To:** RTD **Total Depth (ft):** 4530'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical - Displaced at 3300'

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

OPERATOR

Company: Murfin Drilling Co., Inc.
Address: 250 N. Water
Suite 300
Wichita, KS 67202

GEOLOGIST

Name: Wesley D. Hansen
Company: Wesley D. Hansen - Consulting Petroleum Geologist
Address: 212 N. Market, Suite 257
Wichita, KS 67202
Office: 316-263-7313 **Cellular:** 316-772-6188

COMMENTS

Contractor: Murfin Drilling Co., Inc. Rig #2
 Pusher: Arturo Cabezas

Surface Casing: 8 5/8" set at 221' w/170sx
 Production Casing:

Mud by: Morgan Mud - Cade Lines was the engineer

DST's by: Trilobite - Ryan Nichols was the tester

Logs by: Pioneer Wireline (DIL, CN-CD, MEL, BHCS)

Deviation Surveys: 1/4 deg. @ 221'; 1/2 deg. @ 2017'; 1/2 deg. @ 2523'; 3/4 deg. @ 3530'; 1 deg. @ 3950'; 1 deg. @ 4530'

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	HTC	SDS	221'	221'	1 3/4
2	7 7/8"	HTC	DP506F	3530'	3309'	27 3/4
3	7 7/8"	HTC	GX-20C	4530'	1000'	45 1/2

FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL Hoff Oil & Gas #1 Wessel 27-6-29W 2815' KB
	Depth	Datum	Depth	Datum	
	2753'	KB	2753'	KB	
Anhydrite	2485'	+268	2483'	+270	+2
B/Anhydrite	2522'	+231	2520'	+233	-2
Topeka	3660'	-907	3656'	-903	-6
Heebner	3845'	-1092	3844'	-1091	-9
Toronto	3872'	-1119	3873'	-1120	-7
Lansing	3887'	-1134	3888'	-1135	-10
Muncie Creek Shale	3996'	-1243	3998'	-1245	-24
Stark Shale	4060'	-1307	4057'	-1304	-15
BKC	4108'	-1355	4107'	-1354	-16
Pawnee	4220'	-1467	4216'	-1463	not reached
Fort Scott	4306'	-1553	4303'	-1550	not reached
Cherokee Shale	4317'	-1564	4314'	-1561	not reached
Mississippian	4418'	-1665	4414'	-1661	not reached
Arbuckle?	4488'	-1735	4489'	-1736	not reached
RTD	4530'	-1777			
LTD			4528'	-1775	

DRILL STEM TESTS

DST No. 1 Lansing "D"
 Interval: 3936'-3950'
 Times: 30-60-60-90
 Recovery: 50' MCW with oil spots (5m, 95w); 424' MCW (5m, 95w), chl. 7500
 FP: 18-124/127-220 SIP: 1330-1320
 HP: 2030-1956 BHT: 118 deg. F

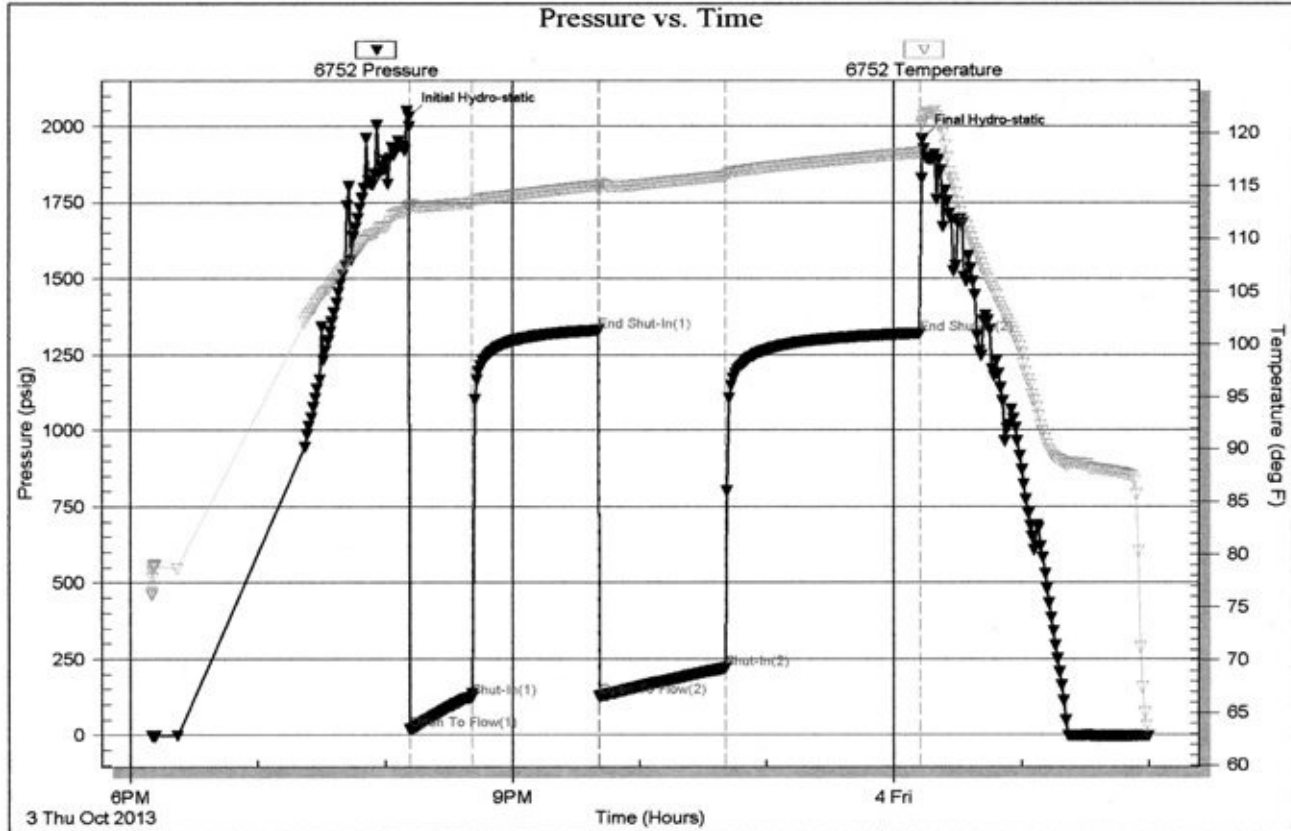
IFP: surface blow, bldg. to B.O.B. in 25 minutes
 ISIP: no return blow
 FFP: surface blow started after 3 minutes, bldg. to B.O.B. in 29 minutes
 FSIP: no return blow

Serial #: 6752

Inside Murfin Drilling Company

Zodrow #1-26

DST Test Number: 1



Triobte Testing, Inc

Ref. No: 55130

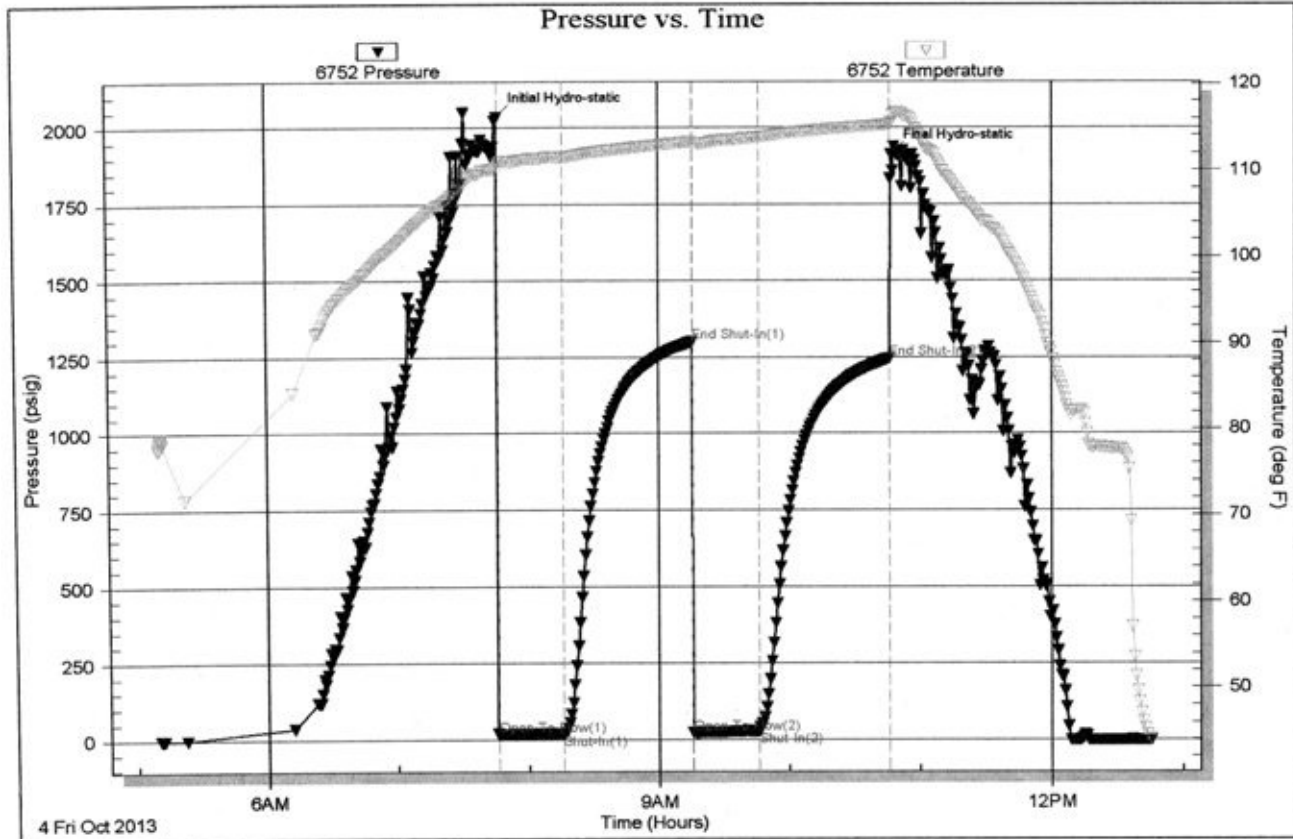
Printed: 2013.10.04 @ 02:07:06

DRILL STEM TESTS

DST No. 2 Lansing "J"
 Interval: 4026'-4060'
 Times: 30-60-30-60
 Recovery: 5' mud with oil spots
 FP: 16-20/22-28 SIP: 1301-1246
 HP: 2035-1912 BHT: 116 deg. F

IFP: surface blow, built to 1/2"
 ISIP: no return blow
 FFP: no blow
 FSIP: no return blow

Serial #: 6752 Inside Murfin Drilling Company Zodrow #1-26 DST Test Number: 2



Tribite Testing, Inc

Ref. No: 55131

Printed: 2013.10.05 @ 00:51:08

ROCK TYPES

- Anhy
- Cht
- Coal
- Congl
- Gyp
- Ls colorless
- Lmst

- Salt
- Shale
- Shcol
- Shgy
- Siltst
- Ss
- Carb sh

- Dol
- Dtd
- Gry sh
- Sandylms
- redshale
- Shale
- Siltstn

- Shlyslts
- Sltyslts
- Sdy dolo
- Silty dolo
- Shy dolo
- Shaly ls

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite

- Plant
- Strom
- Fuss
- Oomold

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr

- Glau
- Gyp
- Hvymn
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Slty

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Ls
- Mrst
- Slstgr
- Ssstgr
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Slstn

OTHER SYMBOLS

INTERVALS

- Core
- Dst
- Dst

EVENTS

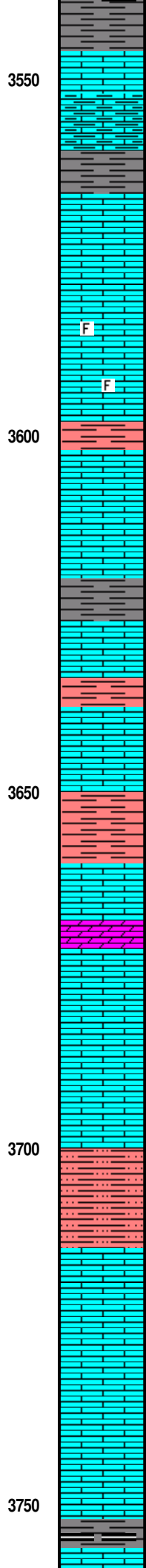
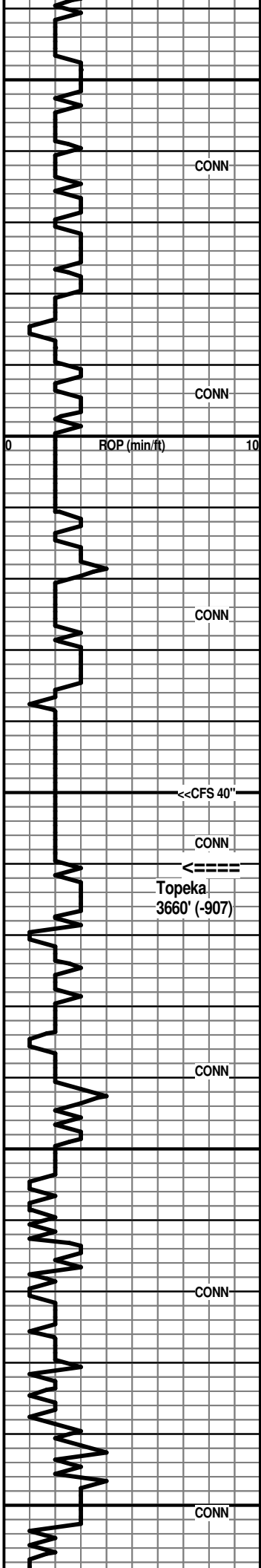
- Rft
- Dst top/base

OIL SHOWS

- Even
- Spotted
- Quest.

- Trace
- Dead
- Gas show

Curve Track 1 ROP (min/ft)	Depth	Lithology	Geological Descriptions	Remarks
<div style="display: flex; justify-content: space-between;"> ROP (min/ft) 10 </div>	3500	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-right: 5px;">Oil Shows</div> </div>	<p>Sh: abund. dark gray to black; some Ls: tan, lt brn fn gran. poor-NVP; some lt gray, offwhite vfxln sl dolomitic</p>	<p>Report Depth & Activity 9-30-2013 MIRT, Spud at 2:00 PM 10-1 Drlg. @ 722' 10-2 Drlg. @ 3309' 10-3 CFS @ 3880' 10-4 CTCH @ 3970' post DST No. 1 10-5 Drlg. @ 4095' post DST No. 2 10-6 Drlg. @ 4465' 10-7 RTD @ 4530', logs complete, P&A</p> <p>Morgan Mud Check at 3502' 9:15 AM on 10-2-2013 wt vis wl pH chl 8.7 75 6.0 12.0 1600 PV YP GelS lcm solids 24 28 12/32 3# 2.9%</p> <p>Tripped PDC bit at 3530' Geologist on location</p>



abund. shales AA; Ls: sl incr. % of tan, lt brn cryptoxln and mottled gray micln to fn gran., dense

3550

common vc gray shales and med gray shaly Ls; other Ls: tan, lt gray, offwhite dense to sl granular, micac. IP, poor-NVP, N.S.

Ls: mix tan, lt gray, offwhite gen. dense; lt to med gray mic-vfxln, shaly; Sh: med to dark gray and black

90' spl - flood Ls: tan, lt brn fnxln, poor-NVP; offwhite mic-vfxln dense, subchalky IP

Ls: various tan, lt gray, lt brn fn-vfxln, occ foss. with poor-NVP; some lt gray-brn vf-cryptoxln; fairly minor shale %

F

Ls: offwhite, lt gray micxln to fn gran. with some inter-particle and pp por.; scatt. lt brn fn gran. and foss. with inter and intra-particle por., N.S.; some white chalky

F

3600

Ls: various tan, lt gray, offwhite mic-vfxln, fn gran. IP; white subchalky to chalky; Sh: influx soft lt red-brn

Ls: mix tan, lt brn fn gran. with some inter-particle por.; offwhite, lt gray mic-vfxln dense, NVP

CONN

Ls: good influx lt brn, lt gray vf-cryptoxln; sl incr. lt to med gray shale

Ls: mix AA with influx med to dark gray and gray-brn cryptoxln, NVP; Sh: sl influx lt red-brn

CFS 3650' 20" spl - Ls: lt to med gray, lt brn vf-cryptoxln, NVP; lesser tan, offwhite mic-vfxln, some pp por., subchalky IP; some white chalky; 40" spl - Ls: incr. tan, offwhite micxln to fn gran. with pp por., N.S.; sl incr. Sh: soft, lt to med red-brn

3650

<<CFS 40"

60' spl - Sh: common red-brn AA; Ls: mix AA with some lt brn, lt gray cryptoxln

70' spl - flood Ls: offwhite, tan fn gran. AA; good influx lt to med brn, lt gray cryptoxln; lesser offwhite subchalky to chalky

Ls: predom. various cryptoxln AA; good influx white chalky

CONN

Ls: predom. tan, lt gray, lt brn vfxln, poor-NVP; scatt. Dolo: tan vfxln poor vis. por., N.S.

Ls: tan, offwhite fn gran. with pp and inter-particle por.; tan, offwhite mic-vfxln dense; scatt. white chalky

3700

Ls: tan, lt gray vf-cryptoxln, NVP; tan, offwhite micxln to fn gran. with pp por.; common subchalky to chalky

Siltst: sl influx lt red-brn with red-brn silty shale

Ls: predom. tan, some lt gray vfxln, NVP; common offwhite subchalky to chalky

CONN

Ls: predom. tan vfxln, some cryptoxln; common white chalky

Ls: mix AA with some tan fnxln with pp and inter-particle por.; decr. chalky

Ls: tan, lt gray, some lt brn cryptoxln with scatt. small vug. por., N.S.; tan, offwhite mic-vfxln dense

3750

70' spl - Sh: influx black carbon. and soft lt gray; Ls: influx mottled lt to med brn gran., some cryptoxln and mottled offwhite/gray micxln dense; common white chalky

CONN

80' spl - decr. shale %: Ls: mixed and mottled AA: some

Topeka 3660' (-907)

tan, lt gray fn granular with inter-particle and vug. por., N.S.

90' spl - Ls: influx tan, offwhite, lt brn fn gran. and foss. with inter-particle por.; tan, offwhite micxln with pp por., N.S.; Sh: influx lt to med red-brn, soft

3800' spl - Sh: incr. % of soft red-brn AA; Ls: various offwhite, tan mic-vfxln with pp por. IP

Ls: tan, lt gray vf-cryptoxln; some offwhite, lt gray silty

Sh: influx dark gray to black, lesser dark red-brn; Ls: tan, lt brn fn gran. with gen. poor to fair inter-particle por., N.S.; influx white chalky

Ls: tan gran. with por. AA; good influx offwhite, tan micxln subchalky; abund. white chalky

Ls: mix AA, still very chalky

Ls: AA; good influx lt gray, lt to med brn cryptoxln, some gran., NVP

60' spl - Sh: strong influx black carbon.; Ls: fair influx med brn cryptoxln

Ls: lt to med brn, gray cryptoxln

Sh: flood very soft and gummy lt gray and soft red-brn

Sh: AA; Ls: tan gran. with poor inter-particle por. with black gilsonite flecks, milky cut, no odor, nfo; some offwhite micxln with gilsonite flecks

CFS 3880' spls - Ls: tan fn-vfxln with some inter-particle por. with shows AA; flood white chalky

Sh: dark gray to black, some red-brn

Ls: offwhite, tan oolitic, some with spar matrix, some with micxln matrix, N.S.

CFS 3900' spls - Ls: tan, lt brn, lt gray vf-cryptoxln, oolitic IP; abund. tan, offwhite mic-vfxln subchalky to white chalky, N.S.

20' spl - Ls: very chalky AA; tan, lt gray cryptoxln, some gran., N.S.; Sh: influx soft red-brn, spls wash red

Sh: soft red-brn, influx green; Ls: lt gray, tan cryptoxln and offwhite subchalky to chalky

CFS 3930' 20" spl - incr. Ls: offwhite micxln subchalky to chalky; still shaly, washes red AA; 45" spl - still shaly AA; Ls: mix subchalky to chalky and lt gray, tan vfxln, N.S.

40'/50' spls - Ls: tan, offwhite mic-fnxln with pp por., occ foss. with intra-particle por., scatt. black gilsonite flecks, no odor, nfo; flood white chalky and tan mic-vfxln in 50' spl, rare gilsonite AA

CFS 3950' 30" spl - Ls: good influx lt brn, lt gray sl mottled gran. to cryptoxln with vug. and inter-particle por. with patchy brn stain, fair sfo, no odor; 60" spl - >>>

60' spl - trashy, very shaly AA; 70' spl - decr. shale %; Ls: flood lt to med brn and red-brn cryptoxln, mottled IP, NVP, N.S.

CFS 3970' 30" spl - Ls: flood white subchalky to chalky and tan fn gran. with fair inter-particle por, N.S.; 60" spl - Ls: mix AA, very chalky, N.S.

80' spl - Ls: very chalky mix AA with influx lt to med brn, gray-brn cryptoxln

Ls: tan, lt gray cryptoxln to sl gran., NVP; decr. chalky; Sh: incr. % med to dark gray, maroon, purplish-gray, mottled

Heebner Shale 3845' (-1092)

Toronto 3872' (-1119)

7:00 AM at 3880' on 10-3-2013

Lansing 3887' (-1134)

DST No. 1 Lansing "D"
Interval: 3936'-3950'
Times: 30-60-60-90
IFP: surface blow, bldg. to B.O.B. in 25 minutes
ISIP: no return blow
FFP: surface blow started after 3 minutes, bldg. to B.O.B. in 29 minutes
FSIP: no return blow
Recovery: 50' MCW with oil spots (5m, 95w); 424' MCW (5m, 95w), chl. 7500
FP: 18-124/127-220 SIP: 1330-1320
HP: 2030-1956 BHT: 118 deg. F

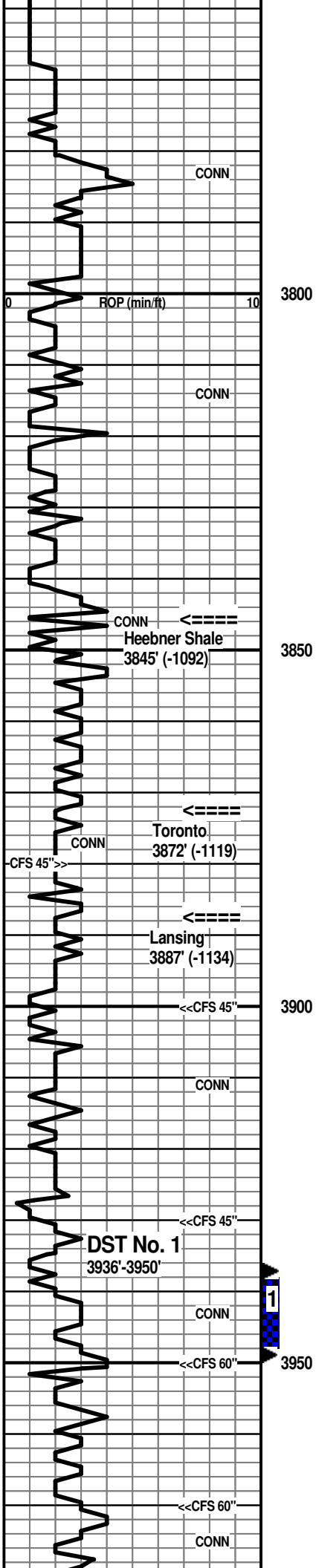
Morgan Mud Check at 3950'

4:10 PM on 10-3-2013
wt vis wl pH chl
9.1 74 5.6 10.0 1300
PV YP GelS lcm solids
26 26 11/32 6# 5.7%

CFS 3950' 60" spl - Ls: various AA, decr. shows; Sh: good influx med to dark gray, black, med to dark red-brn

Pipe strap at 3950' was 2.54' short to the board

7:00 AM at 3970' on 10-4-2013



tan, lt gray fn granular with inter-particle and vug. por., N.S.
90' spl - Ls: influx tan, offwhite, lt brn fn gran. and foss. with inter-particle por.; tan, offwhite micxln with pp por., N.S.; Sh: influx lt to med red-brn, soft
3800' spl - Sh: incr. % of soft red-brn AA; Ls: various offwhite, tan mic-vfxln with pp por. IP
Ls: tan, lt gray vf-cryptoxln; some offwhite, lt gray silty
Sh: influx dark gray to black, lesser dark red-brn; Ls: tan, lt brn fn gran. with gen. poor to fair inter-particle por., N.S.; influx white chalky
Ls: tan gran. with por. AA; good influx offwhite, tan micxln subchalky; abund. white chalky
Ls: mix AA, still very chalky
Ls: AA; good influx lt gray, lt to med brn cryptoxln, some gran., NVP
60' spl - Sh: strong influx black carbon.; Ls: fair influx med brn cryptoxln
Ls: lt to med brn, gray cryptoxln
Sh: flood very soft and gummy lt gray and soft red-brn
Sh: AA; Ls: tan gran. with poor inter-particle por. with black gilsonite flecks, milky cut, no odor, nfo; some offwhite micxln with gilsonite flecks
CFS 3880' spls - Ls: tan fn-vfxln with some inter-particle por. with shows AA; flood white chalky
Sh: dark gray to black, some red-brn
Ls: offwhite, tan oolitic, some with spar matrix, some with micxln matrix, N.S.
CFS 3900' spls - Ls: tan, lt brn, lt gray vf-cryptoxln, oolitic IP; abund. tan, offwhite mic-vfxln subchalky to white chalky, N.S.
20' spl - Ls: very chalky AA; tan, lt gray cryptoxln, some gran., N.S.; Sh: influx soft red-brn, spls wash red
Sh: soft red-brn, influx green; Ls: lt gray, tan cryptoxln and offwhite subchalky to chalky
CFS 3930' 20" spl - incr. Ls: offwhite micxln subchalky to chalky; still shaly, washes red AA; 45" spl - still shaly AA; Ls: mix subchalky to chalky and lt gray, tan vfxln, N.S.
40'/50' spls - Ls: tan, offwhite mic-fnxln with pp por., occ foss. with intra-particle por., scatt. black gilsonite flecks, no odor, nfo; flood white chalky and tan mic-vfxln in 50' spl, rare gilsonite AA
CFS 3950' 30" spl - Ls: good influx lt brn, lt gray sl mottled gran. to cryptoxln with vug. and inter-particle por. with patchy brn stain, fair sfo, no odor; 60" spl - >>>
60' spl - trashy, very shaly AA; 70' spl - decr. shale %; Ls: flood lt to med brn and red-brn cryptoxln, mottled IP, NVP, N.S.
CFS 3970' 30" spl - Ls: flood white subchalky to chalky and tan fn gran. with fair inter-particle por, N.S.; 60" spl - Ls: mix AA, very chalky, N.S.
80' spl - Ls: very chalky mix AA with influx lt to med brn, gray-brn cryptoxln
Ls: tan, lt gray cryptoxln to sl gran., NVP; decr. chalky; Sh: incr. % med to dark gray, maroon, purplish-gray, mottled

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Toronto 3872' (-1119)

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HP: 2030-1956 BHT: 118 deg. F

Morgan Mud Check at 3950'

4:10 PM on 10-3-2013
wt vis wl pH chl
9.1 74 5.6 10.0 1300
PV YP GelS lcm solids
26 26 11/32 6# 5.7%

CFS 3950' 60" spl - Ls: various AA, decr. shows; Sh: good influx med to dark gray, black, med to dark red-brn

Pipe strap at 3950' was 2.54' short to the board

7:00 AM at 3970' on 10-4-2013

yellow/gray/maroon

4000' spl - Ls: tan, lt brn, lt gray cryptoxln; influx white chalky; influx Chert: tan, lt gray, offwhite, orange opq, sharp

Ls: flood mottled med brn cryptoxln, NVP, N.S.; lesser offwhite, tan mic-vfxln dense; very minor shale %

Sh: fair influx dark red-brn, some dark gray to black

Ls: flood tan, lt brn oolitic with poor to fair inter-oolitic por. IP; fairly common white chalky, N.S.

CFS 4020' 30" spl - Ls: flood lt to med brn, lt gray cryptoxln, some sl mottled, sl gran., and foss., NVP; common white chalky; 60" spl - mix AA

Ls: tan mic-vfxln dense, subchalky and offwhite chalky

Ls: predom. subchalky to chalky AA with lesser tan, lt gray cryptoxln; trace crinoid and bryozoan foss. frag.; minor med to dark gray shale

CFS 4040' 30" spl - flood Sh: med to dark red-brn, lesser gray-green and med to dark gray; Ls: some tan, gray gran. to cryptoxln, NVP; 60" spl - >>>

60' spl - Ls: lt gray, tan, lt brn predom. cryptoxln with very poor visible por. with pp brn to black stain, some patchy stain, vsl odor, sl to fair show bleeding gas and oil; common cryptoxln with NVP, N.S.

CFS 4060' 30" spl - Ls: various cryptoxln to mottled gran., occ foss., with pp to patchy stain, vsl odor, sl sfo on break, tight; 60" spl - AA

70' spl - trashy; Sh: pred. dark red-brn, lesser med to dark gray, black carbon. fissile

Sh: very predom. red-brn

Ls: influx lt gray, tan predom. cryptoxln and offwhite, tan mic-vfxln dense, subchalky IP; some offwhite mottled with red shale filled microfractures

CFS 4090' 30" spl - Ls: various cryptoxln to sl mottled granular AA; Sh: some dark gray to black; 60" spl - Ls's AA; incr. red-brn shale

Sh: med to dark red-brn, with dark gray to black

Ls: flood offwhite, lt gray mic-vfxln dense, subchalky to occ chalky; lesser tan, lt gray gran., NVP, N.S.; one chip lt gray cryptoxln with patchy stain (cave?)

Ls: flood lt gray, lt brn vf-cryptoxln; lesser offwhite, lt gray mic-vfxln dense; 1-2 chips tan cryptoxln with spotty stain, no odor, nfo. ?cave?

Sh: influx various lt to med red, red-brn, green, lt to med gray, and lt gray soft clayey; common Ls's in spls

Sh: influx red-brn, brick red, and vc gray; Siltst: strong influx lt to med red and offwhite, vf sandy and calcar.

Ls: flood lt gray, tan cryptoxln and lesser offwhite, lt gray micxln dense, subchalky IP; decr. shale and siltst %

Ls: flood lt gray, tan some yellow micxln to fn gran., poor-NVP, N.S., occ foss.; one chip offwhite cryptoxln, NVP, with pp black stain, prob. slough

70' spl - Ls: mixed and mottled AA; new mottled tan/red gran. NVP, some mottled red/gray cryptoxln; Sh: good influx red-brn, lt to med gray, silty

Ls: lt to med brn cryptoxln to mottled gran. and offwhite, lt gray mic-vfxln dense; interbedded with Sh: med to dark red-brn, lt to med gray, trace maroon and yellow

90' spl - flood lt to med gray silty Ls and calcar. siltst

4200' spl - decr. silty Ls and calcar. siltst; influx med to dark red-brn shale and mottled tan, gray granular Ls, NVP, N.S.

10' spl - Sh: lt to med gray, med to dark red-brn, mostly silty

Muncie Creek Sh. 3996' (-1243)

DST No. 2 Lansing "J"
Interval: 4026'-4060'
Times: 30-60-30-60
IFP: surface blow, built to 1/2"
ISIP: no return blow
FFP: no blow
FSIP: no return blow
Recovery: 5' mud with oil spots
FP: 16-20/22-28 SIP: 1301-1246
HP: 2035-1912 BHT: 116 deg. F

CFS 4040' 60" spl - decr. shale %; Ls: mix tan, lt gray cryptoxln and mottled tan, lt brn, lt gray gran. NVP, N.S.; common offwhite, tan mic-vfxln dense

Stark Shale 4060' (-1307)

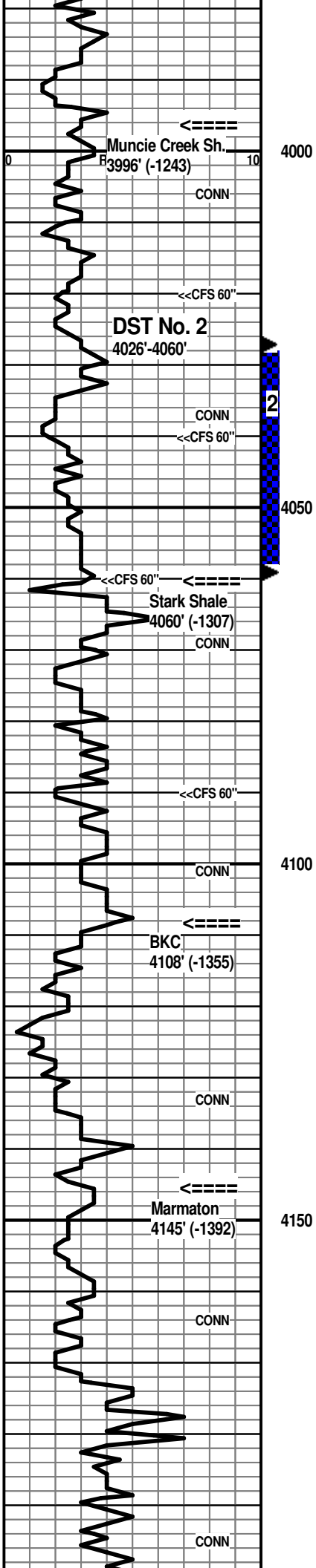
Morgan Mud Check at 4060'
3:50 PM on 10-4-2013
wt vis wl pH chl
9.0 66 6.0 10.5 1300
PV YP GeIS lcm solids
23 23 10/28 6# 5.7%

7:00 AM at 4095' on 10-5-2013

BKC 4108' (-1355)

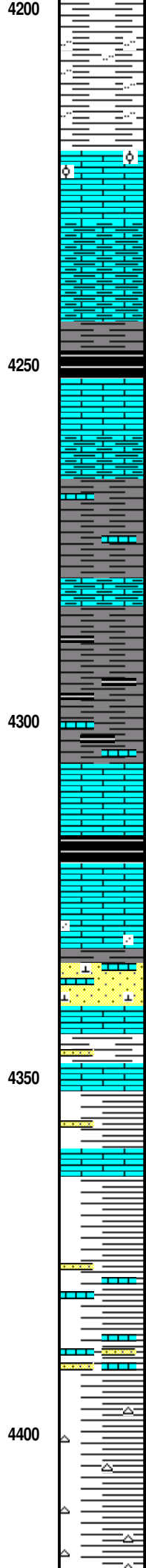
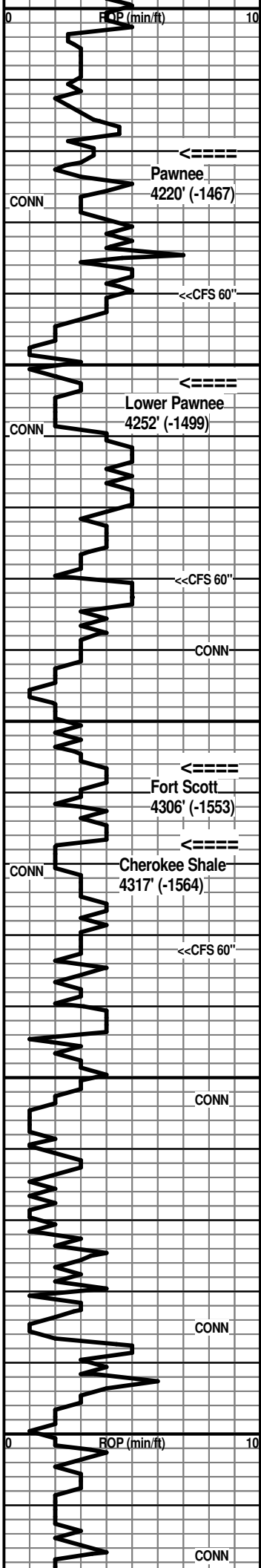
Morgan Mud Check at 4101'
7:30 AM on 10-5-2013
wt vis wl pH chl
9.0 55 5.6 10.0 1000
PV YP GeIS lcm solids
20 20 10/25 6# 5.0%

Marmaton 4145' (-1392)



4000' spl - Ls: tan, lt brn, lt gray cryptoxln; influx white chalky; influx Chert: tan, lt gray, offwhite, orange opq, sharp
Ls: flood mottled med brn cryptoxln, NVP, N.S.; lesser offwhite, tan mic-vfxln dense; very minor shale %
Sh: fair influx dark red-brn, some dark gray to black
Ls: flood tan, lt brn oolitic with poor to fair inter-oolitic por. IP; fairly common white chalky, N.S.
CFS 4020' 30" spl - Ls: flood lt to med brn, lt gray cryptoxln, some sl mottled, sl gran., and foss., NVP; common white chalky; 60" spl - mix AA
Ls: tan mic-vfxln dense, subchalky and offwhite chalky
Ls: predom. subchalky to chalky AA with lesser tan, lt gray cryptoxln; trace crinoid and bryozoan foss. frag.; minor med to dark gray shale
CFS 4040' 30" spl - flood Sh: med to dark red-brn, lesser gray-green and med to dark gray; Ls: some tan, gray gran. to cryptoxln, NVP; 60" spl - >>>
60' spl - Ls: lt gray, tan, lt brn predom. cryptoxln with very poor visible por. with pp brn to black stain, some patchy stain, vsl odor, sl to fair show bleeding gas and oil; common cryptoxln with NVP, N.S.
CFS 4060' 30" spl - Ls: various cryptoxln to mottled gran., occ foss., with pp to patchy stain, vsl odor, sl sfo on break, tight; 60" spl - AA
70' spl - trashy; Sh: pred. dark red-brn, lesser med to dark gray, black carbon. fissile
Sh: very predom. red-brn
Ls: influx lt gray, tan predom. cryptoxln and offwhite, tan mic-vfxln dense, subchalky IP; some offwhite mottled with red shale filled microfractures
CFS 4090' 30" spl - Ls: various cryptoxln to sl mottled granular AA; Sh: some dark gray to black; 60" spl - Ls's AA; incr. red-brn shale
Sh: med to dark red-brn, with dark gray to black
Ls: flood offwhite, lt gray mic-vfxln dense, subchalky to occ chalky; lesser tan, lt gray gran., NVP, N.S.; one chip lt gray cryptoxln with patchy stain (cave?)
Ls: flood lt gray, lt brn vf-cryptoxln; lesser offwhite, lt gray mic-vfxln dense; 1-2 chips tan cryptoxln with spotty stain, no odor, nfo. ?cave?
Sh: influx various lt to med red, red-brn, green, lt to med gray, and lt gray soft clayey; common Ls's in spls
Sh: influx red-brn, brick red, and vc gray; Siltst: strong influx lt to med red and offwhite, vf sandy and calcar.
Ls: flood lt gray, tan cryptoxln and lesser offwhite, lt gray micxln dense, subchalky IP; decr. shale and siltst %
Ls: flood lt gray, tan some yellow micxln to fn gran., poor-NVP, N.S., occ foss.; one chip offwhite cryptoxln, NVP, with pp black stain, prob. slough
70' spl - Ls: mixed and mottled AA; new mottled tan/red gran. NVP, some mottled red/gray cryptoxln; Sh: good influx red-brn, lt to med gray, silty
Ls: lt to med brn cryptoxln to mottled gran. and offwhite, lt gray mic-vfxln dense; interbedded with Sh: med to dark red-brn, lt to med gray, trace maroon and yellow
90' spl - flood lt to med gray silty Ls and calcar. siltst
4200' spl - decr. silty Ls and calcar. siltst; influx med to dark red-brn shale and mottled tan, gray granular Ls, NVP, N.S.
10' spl - Sh: lt to med gray, med to dark red-brn, mostly silty

DST No. 2 Lansing "J"
Interval: 4026'-4060'
Times: 30-60-30-60
IFP: surface blow, built to 1/2"
ISIP: no return blow
FFP: no blow
FSIP: no return blow
Recovery: 5' mud with oil spots
FP: 16-20/22-28 SIP: 1301-1246
HP: 2035-1912 BHT: 116 deg. F
CFS 4040' 60" spl - decr. shale %; Ls: mix tan, lt gray cryptoxln and mottled tan, lt brn, lt gray gran. NVP, N.S.; common offwhite, tan mic-vfxln dense
Morgan Mud Check at 4060'
3:50 PM on 10-4-2013
wt vis wl pH chl
9.0 66 6.0 10.5 1300
PV YP GeIS lcm solids
23 23 10/28 6# 5.7%
7:00 AM at 4095' on 10-5-2013
BKC 4108' (-1355)
Morgan Mud Check at 4101'
7:30 AM on 10-5-2013
wt vis wl pH chl
9.0 55 5.6 10.0 1000
PV YP GeIS lcm solids
20 20 10/25 6# 5.0%
Marmaton 4145' (-1392)



20' spl - Sh: various red-brn, lt to med gray, occ lt purple, silty IP

30' spl - influx Ls: mix tan, offwhite fn gran. with micxn matrix; some lt gray cryptoxln; occ tan oolitic/gran., NVP, N.S.

40' spl - Ls: some lt to med gray cryptoxln; flood lt to med gray shaly Ls to very calcar. or dolomitic gray shale

CFS 4240' 30" spl - very predom. shaly dense Ls and calcar. to dolomitic shale AA; occ lt to med gray cryptoxln Ls; 60" spl - AA

AA

Sh: dark gray to black subfissile IP

70' spl - Ls: tan, lt brn fnxn, NVP and offwhite micxn to fn gran. with subchalky matrix

80' spl - Ls: tan, lt brn AA with lt to med gray shales

CFS 4280' 30" spl - predom. Sh: med to dark gray and black subfissile to fissile; fairly minor tan, offwhite mic-vfxln Ls; 60" spl - Sh: predom. dark gray; some Ls: med to dark gray vf-cryptoxln

90' spl - Sh: dark gray to black with dark gray very shaly Ls

4300' spl - Sh: dark gray to black carbon., subfissile IP

10' spl - shales AA

20' spl - Sh: predom. dark gray to black carbon.; minor tan vfxln Ls

30' spl - flood Ls: lt to med brn, some gray cryptoxln, mottled IP; some offwhite mic-vfxln dense

CFS 4332' 30" spl - Sh: dark gray to black with influx dark red-brn, dark maroon; Ls: mix lt to med brn, lt gray cryptoxln and lt brn, lt gray gran. with micxn matrix; 60" spl - Ls: predom. mottled lt brn fn to med gran., sl sandy IP, poor-NVP, N.S.; var. cryptoxln AA

Ls: mix various cryptoxln and mottled lt brn gran, sandy IP

50' spl - Ls: mix AA with some mottled red-brn and yellow cryptoxln; sl influx Sst: lt red, offwhite, tan fn-med grnd. with Ls clasts; some very coarse loose qtz grains, N.S.

Ls: mix med brn, red, gray cryptoxln and tan, lt brn gran. sandy; some offwhite fg Sst with Ls clasts; interbedded vc gray and red-brn shales

Sh: med to dark red-brn, lt gray, lt gray-green, some dark yellow; with various med brn and gray cryptoxln Ls's; occ offwhite, tan fg sl glauc. Sst

Sh: multi-colored AA with thin cryptoxln Ls's AA

90' spl - Sh: very predom. med to dark red-brn, sandy IP; some lt to med gray, black, mottled yellow/red; scatt. Ls and Sst

4400' spl - predom. shales AA, some purple and mottled green/maroon

Sh: various red-brn and vc gray; occ dark yellow, mixed and mottled; incr. Ls: lt gray, red, offwhite cryptoxln; some Sst: mottled tan/yellow fg, shaly; occ yellow and tan opq chert

Sh: multi-colored AA with influx Chert: yellow, tan, offwhite sharp, opq, mottled IP, N.S.

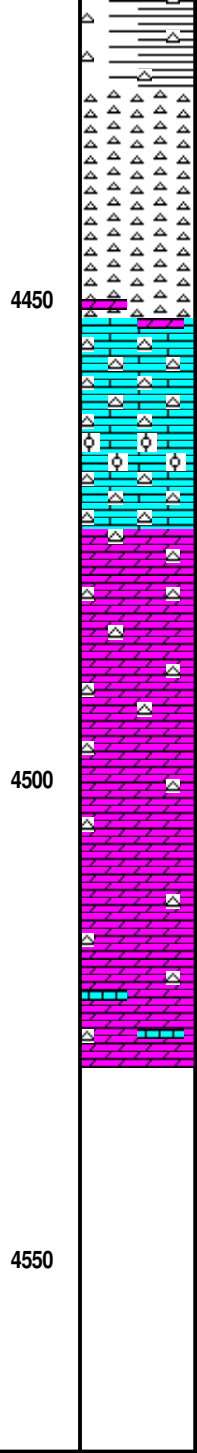
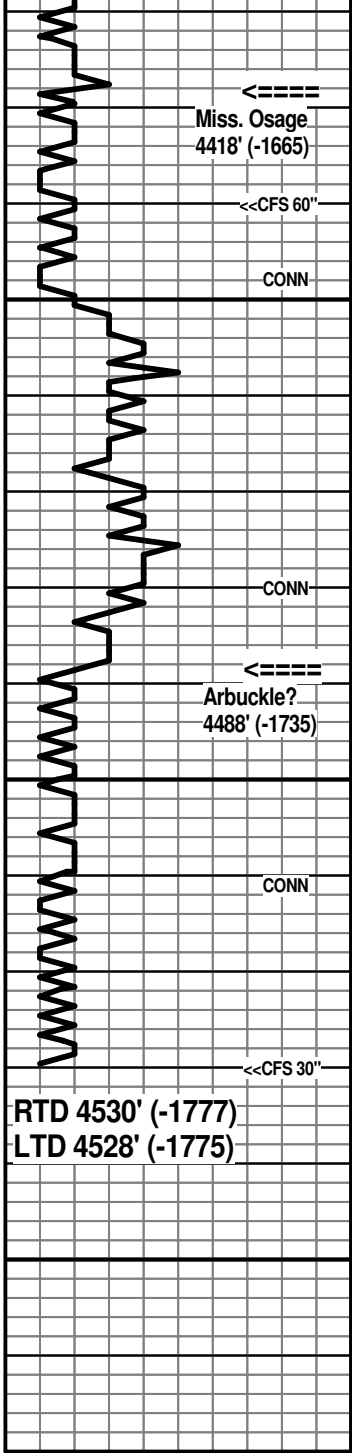
40' spl - Shales AA with med influx Chert: tan, offwhite

Pawnee 4220' (-1467)

Lower Pawnee 4252' (-1499)

Fort Scott 4306' (-1553)

Cherokee Shale 4317' (-1564)



40' spl - Shales AA with good influx Chert: tan, offwhite, yellow, mottled IP; some offwhite partially weath. with pp por., N.S.

CFS 4440' 30" spl - Chert: predom. offwhite, tan, some med to dark yellow, opq, sharp; offwhite partially weath. to weath. with pp and some vug. por., N.S.; 60" spl - Chert: various AA

Chert AA

60' spl - Chert: AA with some Dolo: offwhite, tan frxn with good interxn por., N.S.

70' spl - very cherty AA with influx Ls: med to dark brn cryptoxln

80' spl - flood Ls: tan oolitic to gran. with spar matrix and tan, lt brn sl gran., NVP; lesser offwhite mic-vfxln dense; one chip tan oolitic with dead black stain in microfractures, no odor, nfo

90' spl - flood Dolo: lt brn, lt gray vf-cryptoxln, NVP, N.S.; with offwhite, lt gray opq chert

4500' spl - Dolo: tight AA

Dolo: tan frxn, sucrosic IP with good interxn por., N.S.; cherty

Dolo: tan, lt brn frxn with interxn and some vug. por., N.S.; cherty AA

Dolo: AA

Dolo: AA with sl influx white chalky Ls

Because of the lack of any commercial shows of oil or gas in this well, as evidenced from sample examination, DST results and open hole log evaluation, the Zodrow #1-26 was plugged as a dry hole.

Respectfully submitted,

Wesley D. Hansen
Petroleum Geologist
Kansas License No. 418

Miss. Osage 4418' (-1665)

7:00 AM at 4465' on 10-6-2013

Arbuckle? 4488' (-1735)

RTD reached at 9:30 AM on 10-6-2013
CFS 30' - short trip 10-12 stands -
CTCH 1 1/2 hours - Survey - TOFL

RTD 4530' (-1777)
LTD 4528' (-1775)