

**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. #2-35 Kuhlman "E"  
**Location:** 580' FSL, 660' FWL of Section 35-12S-32W  
**License Number:** API: 15-109-20989  
**Spud Date:** 3-21-2011  
**Surface Coordinates:** 580' FSL, 660' FWL of 35-12S-32W

**Region:** Logan County, Kansas  
**Drilling Completed:** 3-29-2011

**Bottom Hole Vertical hole**  
**Coordinates:**  
**Ground Elevation (ft):** 3002' **K.B. Elevation (ft):** 3013'  
**Logged Interval (ft):** 3650' **To:** RTD **Total Depth (ft):** 4740'  
**Formation:** Mississippian at RTD  
**Type of Drilling Fluid:** Chemical - displaced at 3217'

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://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 #21

**Surface Casing:** 8 5/8" set at 226' w/165 sx  
**Production Casing:** 5 1/2" set at 4739' w/175sx

**Mud by:** Morgan Mud - Cade and Dave LInes were the engineers

**DST's by:** Trilobite - James Winder was the tester

**Logs by:** Log-Tech (DIL, CN-CD, MEL, BHCS) - Kenyon Bange was the engineer

Deviation Surveys: 1/2 deg. @ 226'; 1 deg. @ 735'; 1 deg. @ 1236'; 2 deg. @ 1834'; 2 1/2 deg. @ 1960'; 2 3/4 deg. @ 2054'; 2 deg. @ 2210'; 2 deg. @ 2462'; 1 deg. @ 2619'; 3/4 deg. @ 2870'; 3/4 deg. @ 3657'; 3/4 deg. @ 4260'

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	FDS	rerun	226'	226'	1 1/4
2	7 7/8"	Smith	MI616	3657'	3431'	48
3	7 7/8"	Smith	F271Y	4740'	1083'	51 1/4

### FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL MDC Kuhlman "E" 1-35
	Depth	Datum	Depth	Datum	
Anhydrite	2525'	+488	2521'	+492	+5'
B/Anhydrite	2550'	+463	2548'	+465	+2'
Topeka	3765'	-752	3765'	-755	+3'
Heebner Shale	3989'	-976	3988'	-975	+6'
Lansing	4030'	-1017	4029'	-1016	+5'
Muncie Creek Shale	4174'	-1161	4178'	-1165	flat
Stark Shale	4262'	-1249	4263'	-1250	-3'
Hushpuckney Shale	4300'	-1287	4298'	-1285	-4'
BKC	4337'	-1324	4333'	-1320	-5'
Marmaton	4365'	-1352	4359'	-1346	-1'
Pawnee	4470'	-1457	4468'	-1455	-4'
Myrick Station	4502'	-1489	4503'	-1490	-5'
Fort Scott	4519'	-1506	4519'	-1506	-4'
Cherokee Shale	4547'	-1534	4547'	-1534	-4'
Johnson Zone	4593'	-1580	4589'	-1576	-3'
Mississippian	4673'	-1660	4671'	-1658	-9
RTD	4740'	-1727			
LTD			4738'	-1725	

## DRILL STEM TESTS

DST No. 1 Lansing "I" and "J"

Interval: 4210'-4260'

Times: 30-60-60-90

Recovery: 130' WCM, trace oil (37w, 63m);

62' MCW (45m, 55w); 680' MCW (8m, 92w),

chl 37K, system 1200 ppm

FP: 40-228/232-419 SIP: 1180-1120

HP: 1963-1909 BHT: 122 deg. F

IFP: fair blow bldg. to B.O.B. in 8.75 minutes

ISIP: surface blow back for 2 minutes

FFP: fair blow bldg. to B.O.B. in 11.5 minutes

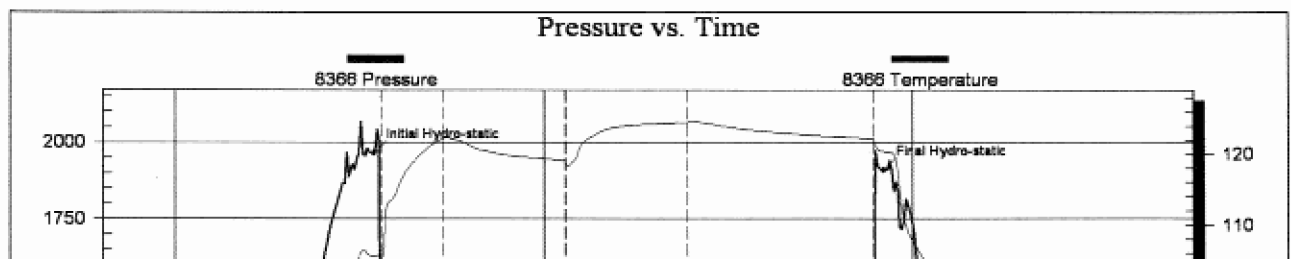
FSIP: no return blow

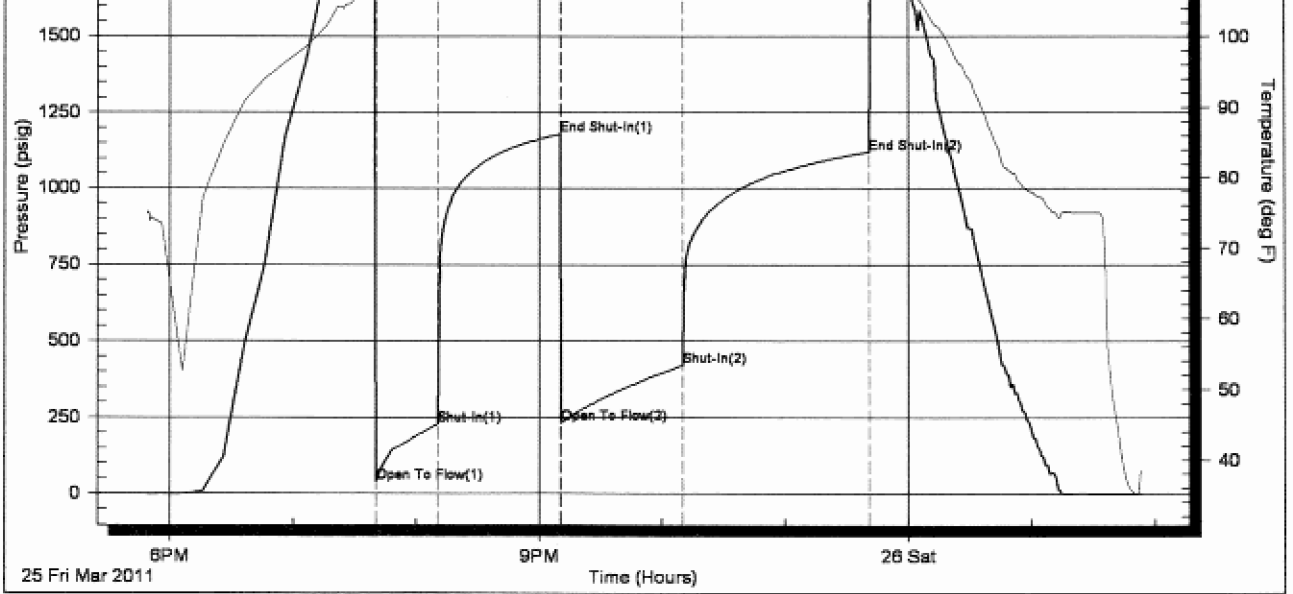
Serial #: 8366

Inside Murfin Drilling Co., Inc

35/12s/32w Logan KS

DST Test Number: 1





## DRILL STEM TESTS

DST No. 2 LKC "K" Zone

Interval: 4262'-4280'

Times: 30-60-60-90

Recovery: 220' GIP; 10 CO (96o, 4m); 10' OCM (3g, 32o, 65m); 60' GO&WCM (20g, 30o, 7w, 43m); oil gravity 39.6

FP: 18-36/35-60 SIP: 1206-1184

HP: 2016-1993 BHT: 116 deg. F

IFFP: slowly bldg. to 5 inches

ISIP: no return

FFP: slowly bldg. to 7 1/2 inches

FSIP: no return

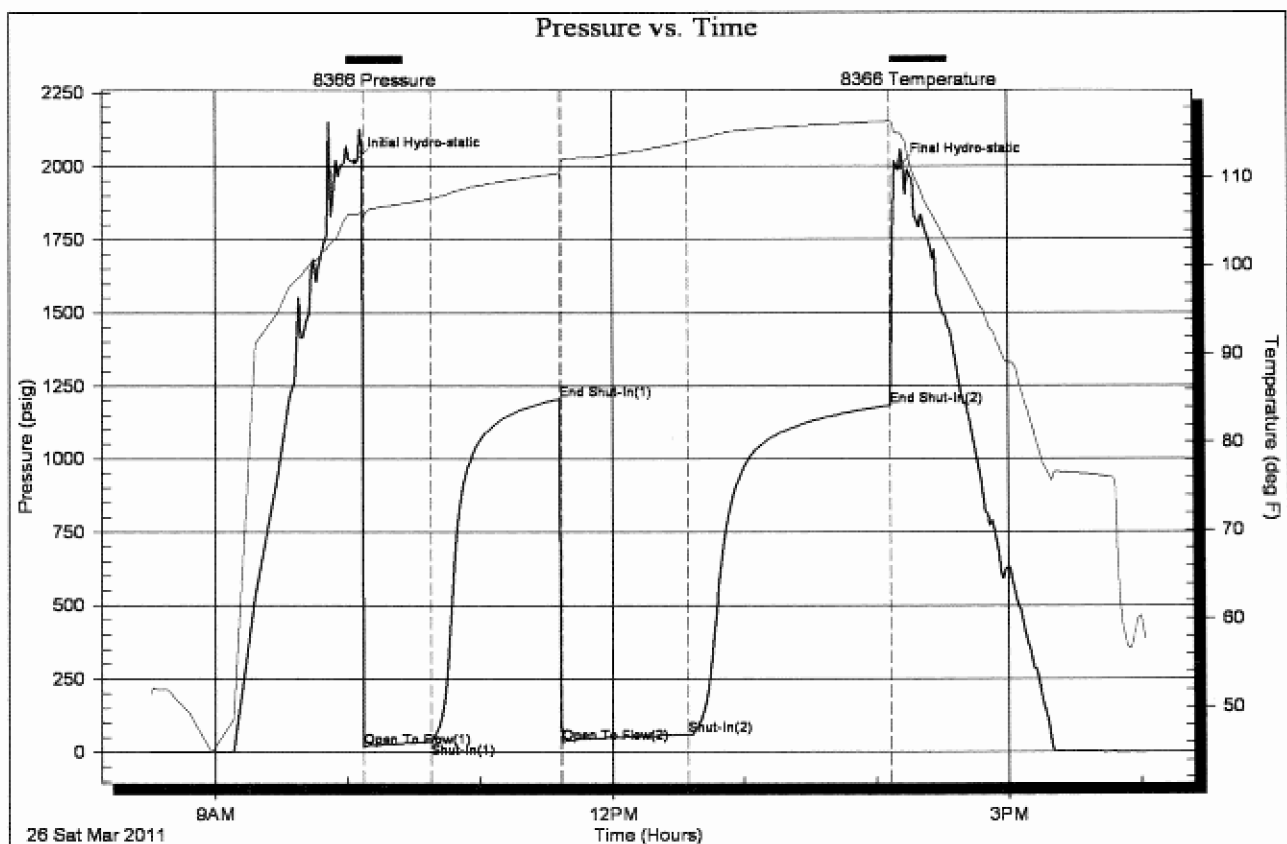
Serial #: 8366

Inside

Murfin Drilling Co., Inc

3512s/32w Logan KS

DST Test Number: 2



# DRILL STEM TESTS

DST No. 3 Marmaton/Upper Pawnee  
 Interval: 4328'-4490'  
 Times: 30-60-30-60  
 Recovery: 126' M w/trace oil; 126' SO&GCM  
 (9g, 1o, 90m); 238' SO&G&WCM (10g, 1o,  
 19w, 70m)  
 FP: 52-217/218-254 SIP: 394-361  
 HP: 2086-2068 BHT: 117 deg. F

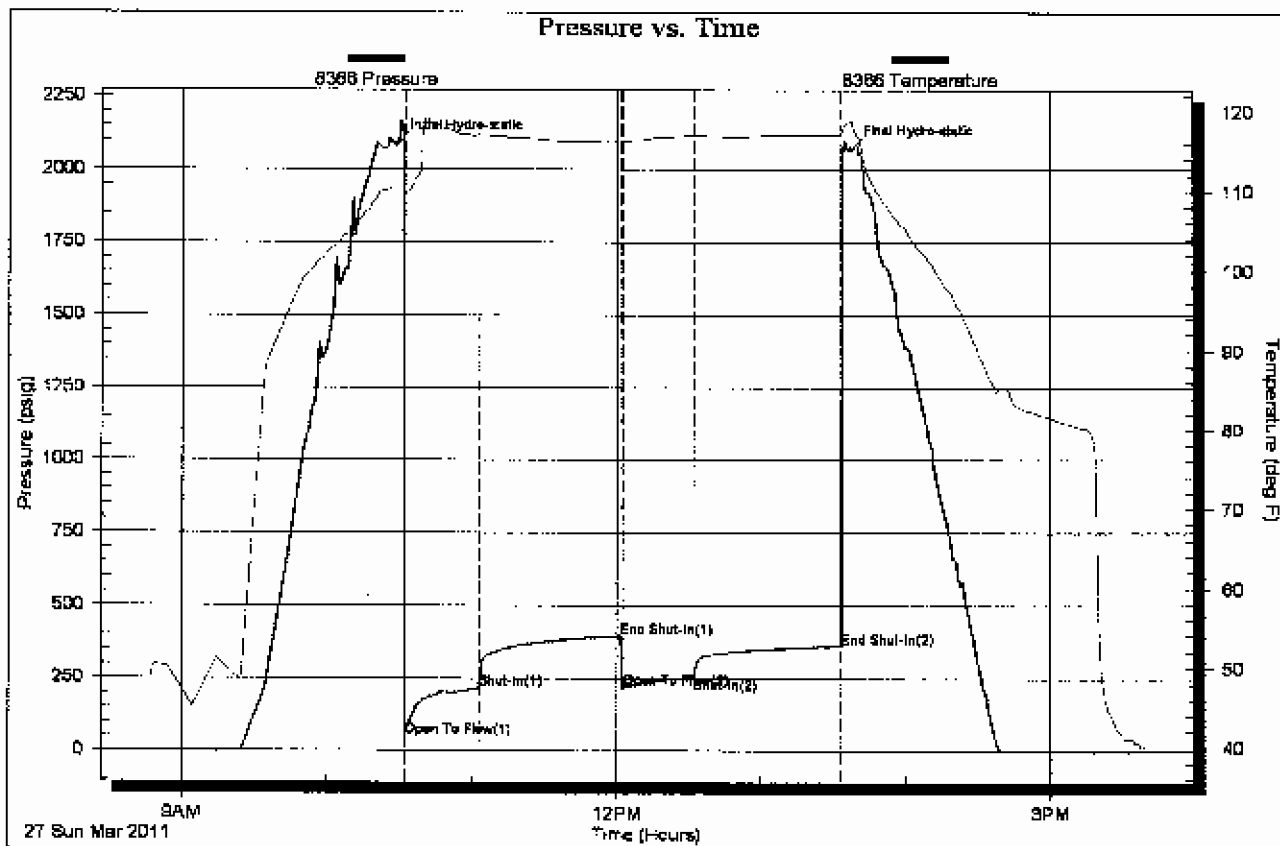
IFP: fair blow bldg. to B.O.B. in 6 1/2 minutes  
 ISIP: no return  
 FFP: fair blow bldg. to 8 inches  
 FSIP: no return

Serial # 8366

Inside Murfin Drilling Co., Inc

35/12s/32w Logan KS

DST Test Number: 3



# DRILL STEM TESTS

DST No. 4 Myrick Station/Fort Scott  
 Interval: 4490'-4550'  
 Times: 30-60-60-90  
 Recovery: 240' GIP; 1' SG&MCO (2g, 5m, 93o);  
 60' G&MCO (25g, 30m, 45o)  
 FP: 20-29/28-44 SIP: 779-639  
 HP: 2172-2158 BHT: 117 deg. F

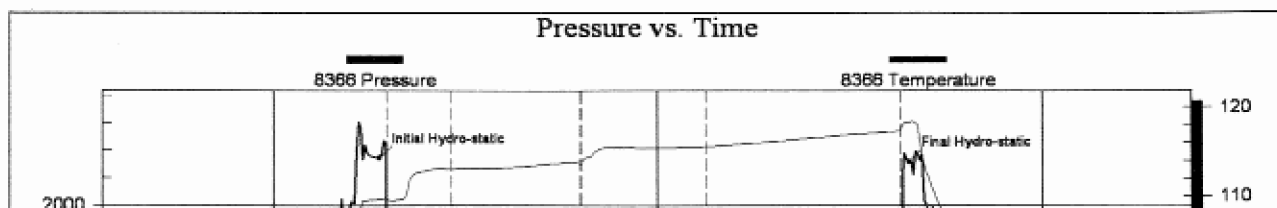
IFP: fair blow bldg. to 5 inches  
 ISIP: surface blow bldg. to 1/4 inch  
 FFP: fair blow bldg. to 9 1/2 inches  
 FSIP: surface return blow

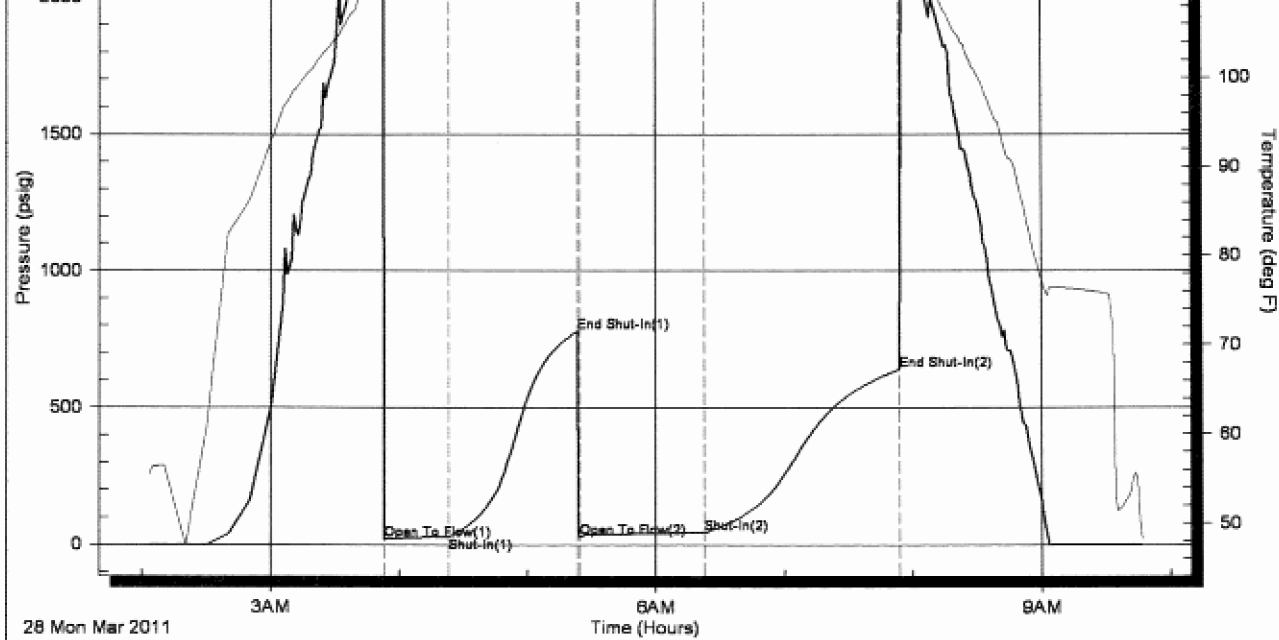
Serial # 8366

Inside Murfin Drilling Co., Inc

35/12s/32w Logan KS

DST Test Number: 4





## DRILL STEM TESTS

**DST No. 5 Johnson Zone**

**Interval: 4576'-4614'**

**Times: 30-60-60-90**

**Recovery: 800' GIP; 160' CGO (30g, 67o, 3m); 85' G&MCO (35g, 54o, 11m); 178' G&MCO (20g, 72o, 8m); 60' G&MCO (35g, 45o, 20m); oil gravity 26.2**

**API; total fluid 483'**

**FP: 66-143/155-200 SIP: 617-832 (still bldg.)**

**HP: 2196-2162 BHT: 127 deg. F**

**IFP: strong bldg. to B.O.B. in 4 1/4 minutes**

**ISIP: Bldg. to B.O.B. in 28 minutes**

**FFP: good bldg. to B.O.B. in 14 minutes**

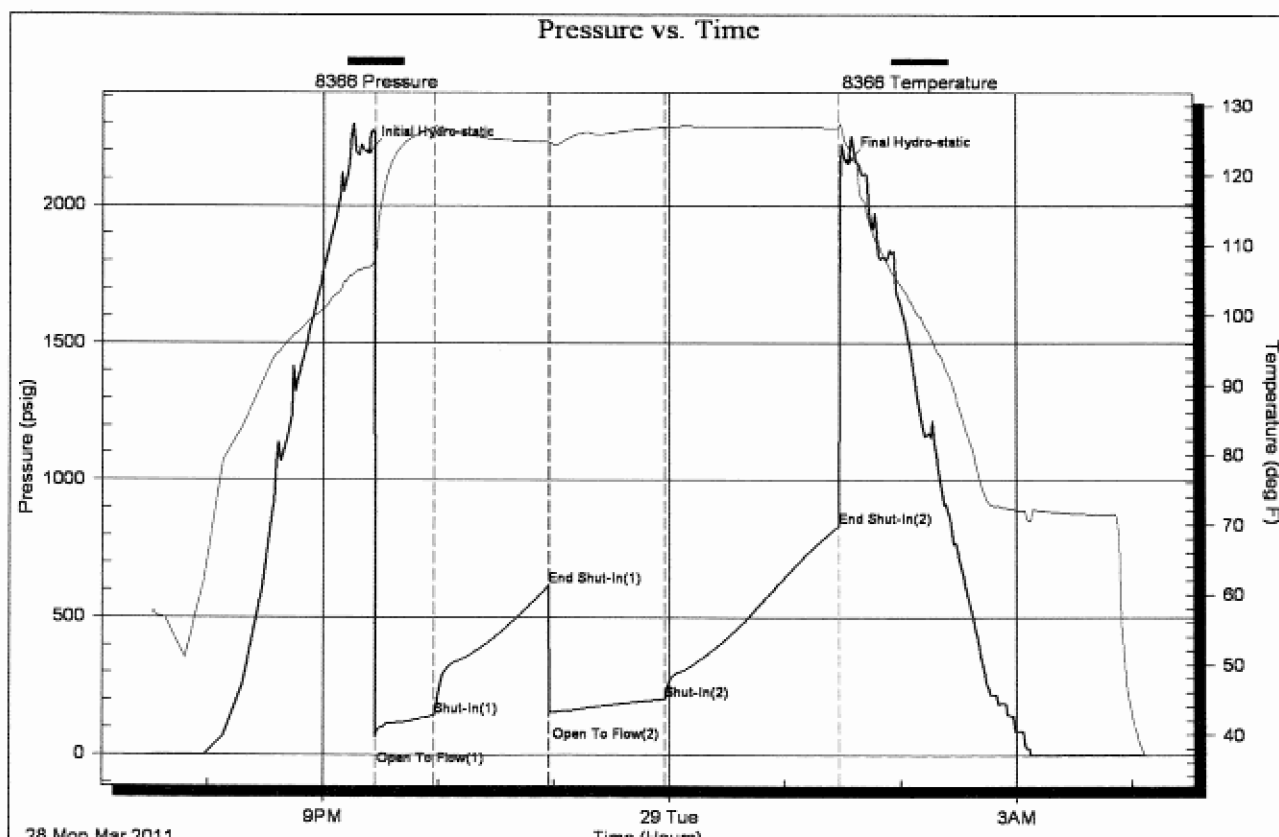
**FSIP: Bldg. to 7 3/4 inches**

Serial #: 8366

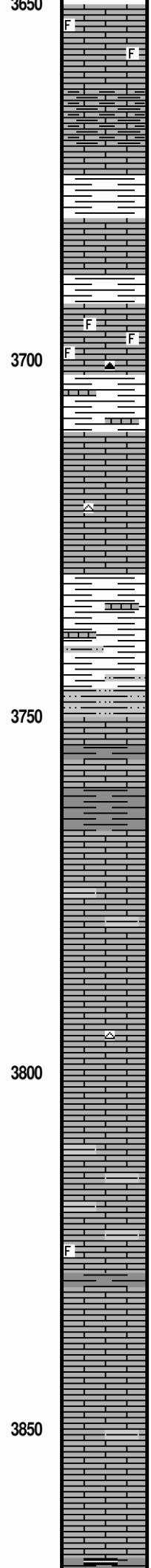
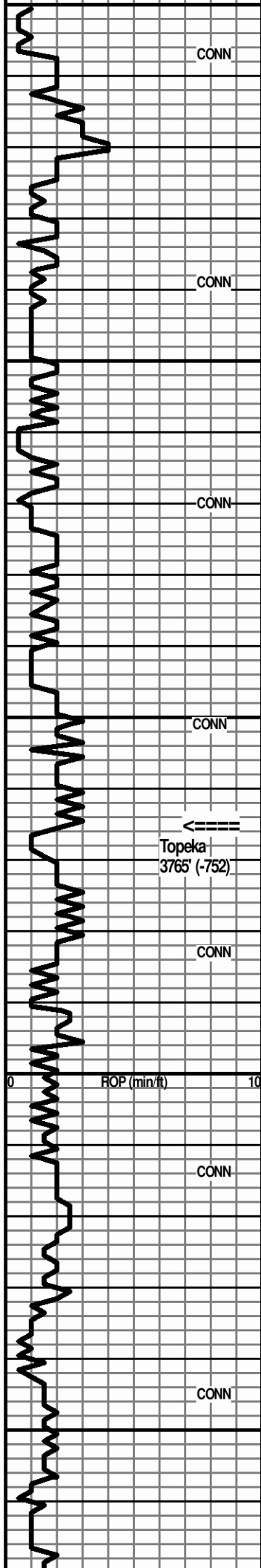
Inside Murfin Drilling Co., Inc

35/12s/32w Logan KS

DST Test Number: 5







Ls: influx lt gray, lt brn vfxn dense, fossilif. IP; lesser offwhite, tan micxn, subchalky IP

Ls: influx mottled dark gray dense, shaly; common offwhite, tan micxn subchalky IP

Ls: lt-med gray mic-vfxn dense; some offwhite, lt gray micxn subchalky; one chip (3700' spl) of lt brn mic-vfxn dense with patchy brn stain, milky cut (dry spl); Sh: med to dark gray

Ls: lt-med brn predom. vfxn dense; some offwhite chalky and dark gray dense, shaly; Sh: med to dark gray, calcar. IP

20' spl - Ls: good influx lt brn vfxn, fossilif. with fair to good pnpt and small vug. por., N.S.; common offwhite, tan mic-vfxn subchalky to chalky; trace black chert; fairly minor med to dark gray shale

Ls: abund. tan, lt brn with por. AA; common offwhite, tan subchalky to chalky; lesser lt brn, lt gray vfxn dense; fairly minor med to dark gray shale

Ls: mix tan, lt brn, lt gray mic-vfxn dense; influx med brn and mottled med gray vfxn dense; persistant offwhite chalky; trace brn chert; minor shale

50' spl - Ls: various lt-med brn, gray predom. vfxn, mottled IP; some med brn, gray vf-cryptoxn; common subchalky to chalky AA; fairly minor shale %

60' spl - influx Sh: med to dark gray, occ black; occ dark gray micac. siltst; Ls's are still common, more brn, gray vf-cryptoxn

70' spl - Sh: lt-med gray with sl influx lt gray micac. siltst; Ls's AA still prevalent in spls

80' spl - Sh: vc gray AA; Ls: influx tan, lt brn, offwhite mic-fnxn with pnpt por., subchalky to chalky, N.S.

90' spl - Ls: tan, lt brn, offwhite mic-fnxn with pnpt por. AA, subchalky matrix; common offwhite chalky; Sh: lt gray calcar. and silty

3800' spl - Ls: mix tan, lt brn fn granular, poor to no vis. por.; common offwhite, tan subchalky to white chalky; lesser lt gray, tan vf-cryptoxn

10' spl - Ls: abund. offwhite, lt gray mic-vfxn dense, subchalky; some tan, offwhite, lt gray vfxn dense; trace tan, lt orange chert

20' spl - Ls: very predom. offwhite, tan, lt gray mic-vfxn dense, subchalky to occ white chalky

30' spl - Ls: mix AA with influx tan, lt brn mic-vfxn dense, some poor pnpt por.; Sh: fairly minor med to dark gray, trace green, occ red-brn

40' spl - Ls: flood mottled tan, lt brn, gray mic-fnxn dense; minor shaly gray Ls

50' spl - Ls: predom. tan, lt brn mic-fnxn dense; some mottled gray fn granular; some mottled med to dark brn occ fossilif. with trace good intra-particle por., N.S.; thin gray shales

60' spl - Ls: tan mic-fnxn with fair pnpt and interxn por.; some offwhite, tan mic-vfxn dense, subchalky, N.S.

70' spl - Ls: tan vfxn dense; tan, lt brn mic-vfxn dense, subchalky; still carry white chalky; sl incr. med to dark gray shale

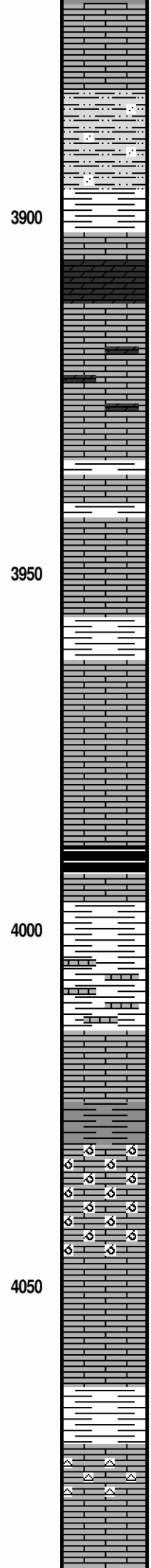
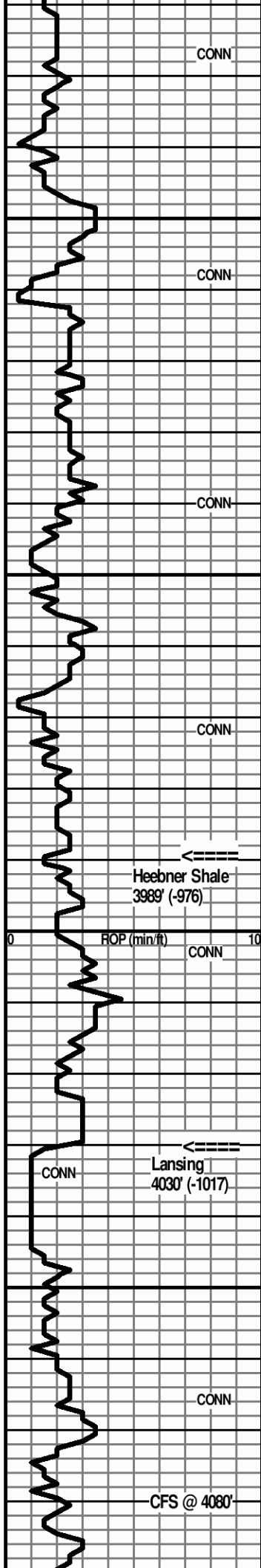
80' spl - Ls: tan, lt brn mic-fn-vfxn some pnpt por., subchalky IP; common white chalky

90' spl - Ls: influx tan, lt brn fn-vfxn, dense; some med to

7:00 AM at 3657' on 3-24-2011  
 Bit trip  
 Pipe strap @ 3657' was 1.76' long to the pipe bpard  
 one chip with stain - source?  
 Geologist on location at 3677'

Morgan Mud Check at 3713'  
 12:20 PM on 3-24-2011  
 wt vis wl pH chl  
 9.1 63 7.2 10.5 1300  
 PV YP GelS lcm solids  
 21 18 7/19 2# 5.7%

Topeka 3765' (-752)



dark gray and black carbon. shale

3900' spl - Ls: mottled lt brn mic-fxn dense, sl shaly; Siltst: good influx lt-med gray, sl micac. and very calcar., finely sandy IP

10' spl - Siltst: lt-med gray, calcar. AA; some red sitst and med to dark gray shale

Ls: med gray, sl granular to cryptoxln

Dolo: influx in 30' spl of tan fn-vfxln, sucrosic IP with interxln and some vug. por., N.S.

Ls: tan, lt brn fn granular, gen. dense; tan, offwhite mic-vfxln dense, subchalky

40' spl - Ls/Dolo mix AA with some med to dark gray and med brn cryptoxln Ls

50' spl - Ls: tan, lt brn fn-vfxln dense; some tan, lt gray cryptoxln; Sh: minor red-brn, gray

60' spl - flood Ls: tan, lt brn, lt gray vf-cryptoxln

Ls: tan, lt brn fnxln with some pnpt por.; tan, offwhite mic-vfxln dense, subchalky

Sh: med to dark gray, common red-brn

90' spl - very shaly mix AA; Ls: some lt brn with good pnpt and small vug. por.; sl influx gray vf-cryptoxln, N.S.

Ls: various tan, lt brn, lt gray vf-cryptoxln; offwhite, tan mic-vfxln dense, subchalky

Sh: influx black carbon. in 4000' spl

Ls: med brn, lt gray cryptoxln

Sh: lt to med gray

20' spl - Sh: some vc gray to black; flood Ls: lt to med brn, lt gray cryptoxln

30' spl - Ls: tan, lt gray predom. cryptoxln; offwhite, tan mic-vfxln dense, subchalky, white chalky; minor red-brn shale

40' spl - Ls: various dense AA with sl increase of med to dark gray shale, some black

Ls: influx in 50' spl of tan oolitic with fair to good fn to med oomoldic por., N.S.

60' spl - Ls: tan oolitic AA with flood of white chalk

70' spl - Ls: oolitic and chalky AA with sl influx tan, lt brn cryptoxln to sl mottled granular, no vis. por., N.S.

80' spl - Ls: mix AA with sl influx red-brn and med gray shales

CFS 4080' 30' spl - Ls: good influx white chalky and offwhite, tan micxn subchalky; influx tan, lt orange opq chert

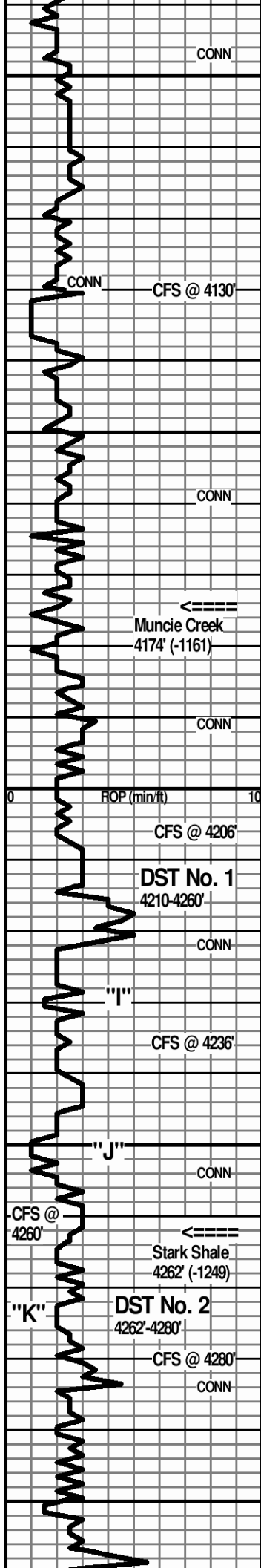
4100' spl - Ls: predom. offwhite, tan mic-vfxln dense, subchalky, occ white chalky; lesser tan, lt gray vfxln dense

**Heebner Shale 3989' (-976)**

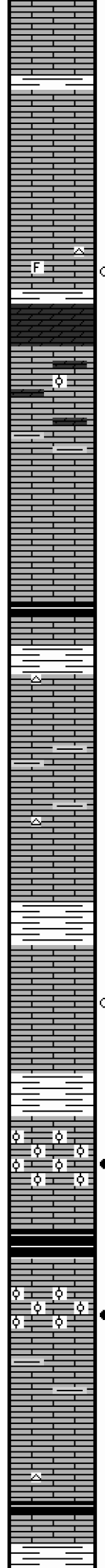
**Lansing 4030' (-1017)**

CFS 4080' 60' spl - Ls: abund. subchalky to chalky with chert AA; lesser tan, lt gray vf-cryptoxln, N.S.





4100  
CONN  
CFS @ 4130'  
4150  
CONN  
4200  
CFS @ 4206'  
4250  
CONN  
4280  
CONN  
4300



10' spl - Ls: tan vfxln sl granular with poor inter-particle por.; abund. offwhite, tan mic-vfxln dense, subchalky AA

20' spl - Ls: influx tan, lt brn vf-cryptoxln; still common subchalky AA

30' spl - Ls: predom. lt to med brn cryptoxln and sl mottled granular, no vis. por.; minor med to dark gray and red-brn shale

CFS 4130' 30' spl - Ls: lt-med brn, gray cryptoxln, some sl mottled granular, no vis. por.; very scatt. lt gray opq chert; Sh: sl influx med to dark gray

50' spl - Dolo: strong influx tan vfxln with poor to fair interxn por. and some vug. por., N.S.

60' spl - Ls: sl influx tan, lt brn, lt gray med granular, mottled IP, no vis. por.; occ lt brn oolitic with poor to no vis. por., N.S.; Dolomite AA

70' spl - Sh: good influx med to dark gray, red-brn; Ls: tan, lt gray cryptoxln and offwhite, lt gray mic-vfxln dense, subchalky; occ white chalky

80' spl - flood Ls: offwhite mic-vfxln dense, subchalky; tan, lt gray cryptoxln, no vis. por., N.S.; much decr. shale %

90' spl - Sh: influx black carbon.; Ls: mix AA with sl influx med brn cryptoxln

4200' spl - Ls: influx med brn, gray-brn mottled granular and some cryptoxln; common dense subchalky AA; scatt. mottled gray-brn opq chert

4206' spl - influx Sh: med to dark gray, red-brn, gray-green, some black; Ls: mottled brn, gray-brn AA; some med brn cryptoxln

CFS 4206' 30' spl - flood Ls: tan, lt gray vf-cryptoxln and tan, offwhite mic-vfxln dense, subchalky IP; some lt gray and tan subopq chert

60" spl - Ls: AA, some med brn cryptoxln; influx Sh: dark gray to black, red-brn

20' spl - Ls: lt gray, tan cryptoxln and offwhite, tan mic-vfxln dense, subchalky IP; Sh: good influx med to dark gray, abund. red-brn

30'/36' spl - very predom. shales AA

CFS 4236' 30' spl - very shaly AA with good influx Ls: offwhite, tan predom. vfxln dense; lesser offwhite subchalky; 60" spl - Ls: very predom. dense AA; some sl mottled lt brn; one chip lt brn fn-vfxln, mealy with spotty pnpt stain, no odor, no fluor., vsf show listless oil on break

50' spl - very predom. shales AA, more dark gray, occ maroon-brn; Ls: various AA, some med brn cryptoxln; one chip offwhite oolitic with pnpt dead oil flecks, trace slow bleeding gas, nfo, no odor, no fluor.; 60" spl - very predom. shales AA

CFS 4260' 20' spl - Ls: influx offwhite, tan oolitic to granular with patchy to subsat stain, fair to good sl pungent odor, vsf sfo on break; influx tan, lt gray cryptoxln and offwhite mic-vfxln dense, subchalky to occ chalky

70'/80' spl - influx black carbon. shale; Ls: sl influx in 80' spl of dark brn and med gray cryptoxln and mottled offwhite/gray dense

CFS 4280' 30' spl - Ls: sl influx tan, lt brn oolitic with pnpt fluor., good pungent odor, patchy to sat. stain, good sfo on break, sg, with poor to fair inter-oolitic and some vug. por.; flood offwhite chalky and offwhite mic-vfxln with mnrl fluor.

90' spl - ? new rocks; Ls: oolitic AA; sl mottled tan, lt brn gran.; lesser mottled gray, gray-brn cryptoxln; Sh: lt-med gray, gray-green, black

4300' spl - Ls: flood offwhite, lt gray mic-vfxln dense, subchalky IP, occ white chalky; lesser tan vf-cryptoxln

10' spl - Ls: abund. offwhite dense AA; incr. tan, lt-med brn cryptoxln; scatt. lt gray, offwhite opq chert; Sh: sl influx black carbon.

20' spl - Ls: flood dark gray, gray-brn, dark brn mottled

CFS 4130' 60" spl - Ls: tan, lt brn cryptoxln, occ granular, sl fossilif.; incr. offwhite, tan mic-vfxln dense, subchalky, N.S.

one chip in 4140' spl of tan vfxln with black gilsonite flecks, vsf show brn oil on break, no odor, no fluor.

**Muncie Creek 4174' (-1161)**  
7:00 AM at 4175' on 3-25-2011

DST No. 1 Lansing "I" and "J"  
Interval: 4210'-4260'  
Times: 30-60-60-90  
IFP: fair blow bldg. to B.O.B. in 8.75 minutes  
ISIP: surface blow back for 2 minutes  
FFP: fair blow bldg. to B.O.B. in 11.5 minutes  
FSIP: no return blow  
Recovery: 130' WCM, trace oil (37w, 63m); 62' MCW (45m, 55w); 680' MCW (8m, 92w), chl 37K, system 1200 ppm  
FP: 40-228/232-419 SIP: 1180-1120  
HP: 1963-1909 BHT: 122 deg. F

**Morgan Mud Check at 4249'**  
12:45 PM on 3-25-2011  
wt vis wl pH chl  
9.0 48 6.8 10.5 1200  
PV YP GelS lcm solids  
16 13 5/14 3# 5.0%

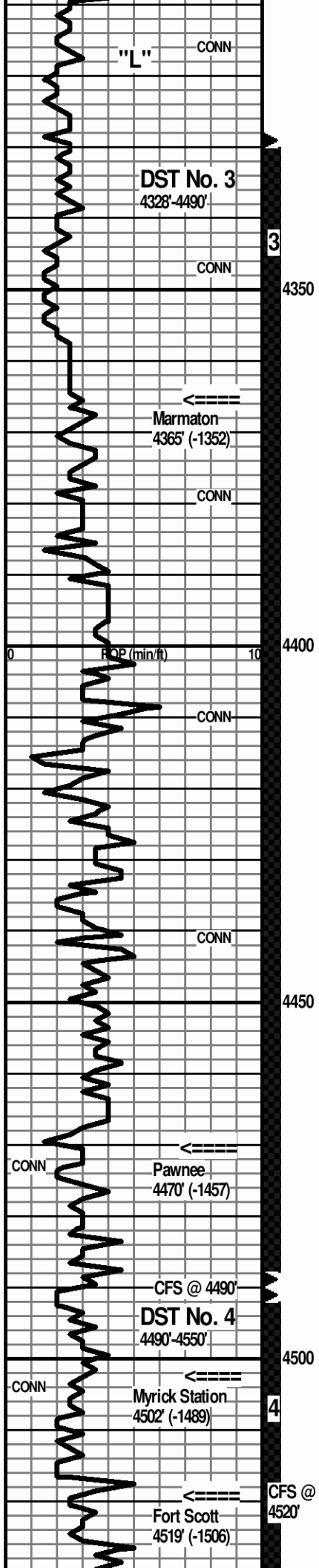
CFS 4260' 45" spl - Ls: mix AA, predom. various dense; some oolitic with shows AA; spls still shaly AA with occ dark gray to black

**Stark Shale 4262' (-1249)**

CFS 4280' 60" spl - Ls: mix AA with more lt-med brn, gray cryptoxln, mottled and sl granular IP, no vis. por., N.S.

7:00 AM at 4280' on 3-26-2011  
**Morgan Mud Check at 4280'**  
10:40 AM on 3-26-2011  
wt vis wl pH chl  
9.1 61 6.4 10.5 1400  
PV YP GelS lcm solids  
19 20 11/29 2# 5.7%

DST No. 2 LKC "K" Zone  
Interval: 4262'-4280'  
Times: 30-60-60-90  
IFP: slowly bldg. to 5 inches



cryptoxln; Sh: vc gray

30' spl - Ls: mottled gray, mottled brn granular; some med to dark brn cryptoxln, no vis. por., N.S.

40' spl - Ls: flood offwhite mic-vfxn dense, subchaly to occ white chalky

50' spl - Ls: decr. subchalyAA; strong influx tan, lt brn vf-cryptoxln, no vis. por., N.S.

60' spl - Ls: lt gray, med brn vf-cryptoxln; offwhite, tan mic-vfxn dense; Sh: influx med to dark gray, red-brn; sl influx Siltst: offwhite, lt gray dolomitic

70' spl - shales and siltst AA with incr. shale% of red-brn, vc gray; some red-brn siltst; Ls: mix AA with sl influx med to dark brn cryptoxln to mottled granular, N.S.

80' spl - flood Ls: tan, lt brn, lt gray vf-cryptoxln and offwhite micxn subchaly to occ chalky; trace offwhite, tan mic-vfxn with spotty pnpt stain and fluor., faint odor, nfo

90' spl - Ls: mix AA; one chip offwhite oolitic with very spotty pnpt stain, vsl sfo on break, poss. faint odor; 2 chips lt brn cryptoxln with patchy stain, nfo; Sh: influx med to dark gray, silty IP, some black, gray-green

4400' spl - Sh: vc gray, silty IP, red-brn, some black; Ls: various brn, gray vf-cryptoxln and mottled gray/offwhite dense

10' spl - influx Ls: mottled lt to med brn granular with offwhite micxn matrix, some cryptoxln; Sh: decr. %, predom. red-brn, med to dark gray, occ gray-maroon

20' spl - Ls: predom. lt to med brn vf-cryptoxln and offwhite mic-vfxn dense, subchaly IP; scatt. chips lt brn vf-cryptoxln, rare vug. por., with pnpt fluor., vsl odor on break, lt pnpt stain, nfo

30' spl - Sh: med to dark gray with Ls: predom. lt to med brn, med gray, sl mottled granular to cryptoxln, no vis. por., N.S.

40' spl - incr. % Ls: lt to med brn, gray, gray-brn cryptoxln; trace mottled dark brn granular, no vis. por., N.S.; much decr. shale %

50' spl - Ls: influx mottled dark brn granular, N.S.; various cryptoxln AA; Sh: med to dark gray

60' spl - Ls: lt-med gray, lt-med brn cryptoxln to sl mottled granular, no vis. por.; lesser offwhite, lt gray mic-vfxn dense, subchaly; Sh: streaks of lt-med gray

70' spl - Ls: predom. med brn, med gray cryptoxln and med gray vfxn dense, sl shaly; Sh: streaks vc gray to black

80' spl - Ls: flood offwhite, tan mic-vfxn dense, no vis. por., N.S.; lesser tan, lt brn cryptoxln; occ dark brn granular to cryptoxln; sl influx offwhite, lt gray opq chert

90' spl - Ls: decr. offwhite, tanAA; influx tan, lt-med brn cryptoxln, no vis. por., N.S.; scatt. chips lt gray cherty Ls with pnpt brn stain, trace fo, slow forming gas bubbles, faint odor

CFS 4490' 30' spl - Ls: flood med to dark brn mottled granular, no vis. por.; lesser med to dark brn cryptoxln, N.S.; influx dark brn opq chert; trace tan fnxn with spotty lt stain, fair sfo on break, sl sg

10' spl - Sh: good influx black carbon.; Ls: mottled dark brn, mottled dark gray granular to cryptoxln, no vis.por.

20' spl - Sh: med to dark gray; Ls: tan, lt gray vf-cryptoxln; mottled tan/lt gray with micxn matrix; several chips tan, lt gray vfxn, with poor pnpt & interxn por.; with faint odor, spotty pnpt stain, shows of lt brn listless oil and lt-med brn sl gassy oil, patchy brn stain; scatt. lt gray opq chert

30' spl - Sh: black carbon.; Ls: scatt. chips with shows AA; predom. various tan, lt brn, lt gray mottled dense; sl influx med to dark brn opq chert

40' spl - Ls: flood tan, lt brn finely oolitic, mottled with tan

ISIP: no return  
 FFP: slowly bldg. to 7 1/2 inches  
 FSIP: no return  
 Recovery: 220' GIP; 10 CO (96, 4m); 10' OCM (3g, 32, 65m); 60' GO&WCM (20g, 30, 7w, 43m); oil gravity 39.6  
 FP: 18-36/35-60 SIP: 1206-1184  
 HP: 2016-1993 BHT: 116 deg. F

**Marmaton 4365' (-1352)**

DST No. 3 Marmaton/Upper Pawnee  
 Interval: 4328'-4490'  
 Times: 30-60-30-60  
 IFP: fair blow bldg. to B.O.B. in 6 1/2 minutes  
 ISIP: no return  
 FFP: fair blow bldg. to 8 inches  
 FSIP: no return  
 Recovery: 126' M w/trace oil; 126' SO&GCM (9g, 1, 90m); 238' SO&G&WCM (10g, 1, 19w, 70m)  
 FP: 52-217/218-254 SIP: 394-361  
 HP: 2086-2068 BHT: 117 deg. F

DST No. 4 Myrick Station/Fort Scott  
 Interval: 4490'-4550'  
 Times: 30-60-60-90  
 IFP: fair blow bldg. to 5 inches  
 ISIP: surface blow bldg. to 1/4 inch  
 FFP: fair blow bldg. to 9 1/2 inches  
 FSIP: surface return blow  
 Recovery: 240' GIP; 1' SG&MCO (2g, 5m, 93c); 60' G&MCO (25g, 30m, 45c)  
 FP: 20-29/28-44 SIP: 779-639  
 HP: 2172-2158 BHT: 117 deg. F

80' spl - cont. - several chips offwhite, tan vfxn dense with spotty pnpt stain (wet) and patchy stain dry, and along micro sutures, nfo, slowly forming gas bubbles on fresh brkn surfaces

**Pawnee 4470' (-1457)**

90' spl - cont. - some tan vf-cryptoxln, no vis. por. with pnpt stain, sg, trace dark brn oil on break

CFS 4490' 60' spl - Ls: influx lt-med brn, med gray cryptoxln to sl mottled granular; sl influx offwhite mic-vfxn dense, subchaly IP; scatt. cherts; minor black & med to dark gray shales

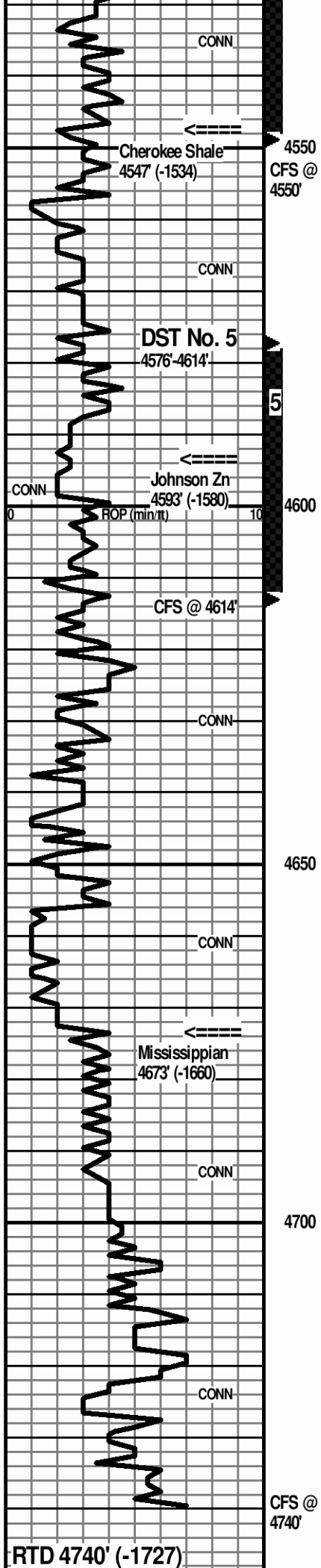
7:00 AM at 4490' on 3-27-2011

**Myrick Station 4502' (-1489)**

CFS 4520' 30' spl - scatt. chips with shows AA; 2-3 chips with vug. por. with shows gassy oil; Ls: tan, lt gray vf-cryptoxln and lesser offwhite mic-vfxn dense, N.S.; Sh: dark gray to black carbon.; 60' spl - incr. black carbon. shale with med brn, med gray mottled granular to cryptoxln Ls

**Fort Scott 4519' (-1506)**

Morgan Mud Check at 4490'



40' spl - Ls: med tan, lt-brn mic vfxn, mottled, with tan, offwhite micxn to subchalky matrix, N.S.

50' spl - Ls: oolitic AA; influx lt-med brn, lt-med gray vf-cryptoxn, no vis. por., N.S.; CFS 30" - Ls: new dark gray, dark brn gran., mottled and shaly IP; scatt. mottled gray/brn opq chert; Sh: dark gray to black; 60" spl - Ls: various brn, gray vf-cryptoxn, cherty AA; shales AA

70' spl - Ls: various brn, gray cryptoxn, sl mottled and granular IP; 3-4 chips med brn oolitic with poor inter-oolitic por. with dark stain, fair to good show dark brn oil on break, faint to no odor, no fluor.; Sh: med to dark gray, black

80' spl - Ls: flood offwhite mic-vfxn dense; abund. tan, lt-med brn cryptoxn, no vis. por., N.S.; 3-4 chips med brn with vug. por. with patchy to sat. stain, sfo on break, faint odor, no fluor.; 2-3 chips offwhite vfxn with black prnt stain, no fluor.

90' spl - Ls: predom. med-dark brn, gray-brn cryptoxn, no vis. por., N.S.; lesser offwhite dense; 3-4 chips brn cryptoxn with fair-good vug. por. with shows AA (new??); scatt. gray/brn opq chert; Sh: med-dark gray, black

10' spl - Ls: several chips tan/brn granular & fossilif. with vug. por., fair odor, good sfo and stain, sg; predom. lt-med brn, tan, gray-brn vf-cryptoxn, mottled IP; lesser offwhite, tan mic-vfxn dense, N.S.

14' spl - Ls: flood offwhite mic-vfxn dense, subchalky IP; lesser tan, lt-med brn vf-cryptoxn, no vis. por., N.S.

Sst: white vfg, tight, N.S.

Sh: med to dark gray with dark yellow, red-brn, maroon-gray

40' spl - influx lt gray, tan vfg silty Sst, finely micac. IP; multi-col shales AA

50' spl - Sh: vc gray, red-brn, dark yellow; Siltst: lt-dark gray, shaly and vfg sandy

60' spl - Sh: influx dark gray, silty, sl micac.; sl influx Sst: lt gray fg, with dess. pyrite, very scatt. glauc.

70' spl - predom. med to dark gray sandy shale and very shaly Sst

80' spl - Sst: good influx white fg, good inter-gran. por., sl glauc., silica cmt, N.S.; sl iflux med brn vfxn dolomite, N.S.

90' spl - Ls: flood tan, lt brn granular, no vis. por. and fn granular with offwhite micxn to subchalky matrix, rarely sl pyritic; some white chalky, N.S.

Ls: tan, lt brn fn granular with micxn to subchalky matrix; occ white chalky, N.S.

Ls: AA; becoming more lt brn granular, occ cryptoxn, less subchalky

20' spl - Ls: sl influx med brn cryptoxn; flood offwhite subchalky to chalky

30' spl - Ls: predom. lt-med brn fn granular to cryptoxn, subchalky matrix IP; sl influx tan, lt gray opq chert

40' spl - Ls: flood med brn granular, oolitic IP with micxn to vfxn matrix, occ moldic por., N.S.; Chert: offwhite, lt gray, sl orange tinted

CFS 4740' spl - Ls: lt-med brn mottled granular, sl oolitic with micxn matrix; occ dark brn cryptoxn; sl cherty AA

After review of sample shows, DST results and open hole log evaluation, the decision was made to run 5 1/2" casing for production testing

1:00 PM on 3-27-2011  
wt vis wl pH chl  
9.2 56 6.0 11.0 1400  
PV YP GelS lcn solids  
18 18 14/34 4# 6.4%

**Cherokee Shale 4547' (-1534)**  
7:00 AM at 4550' on 3-28-2011  
Lost 100 bbls circ at 4550' after DST No. 4  
Morgan Mud Check at 4550'  
12:20 PM on 3-28-2011  
wt vis wl pH chl  
9.2 69 6.4 10.5 3200  
PV YP GelS lcn solids  
20 25 17/39 3# 6.4%

4600' spl - Ls: various brn, gray vf-cryptoxn mottled IP; lesser offwhite, lt gray, tan mic-vfxn dense; shales AA; N.S.

**Johnson Zn 4593' (-1580)**  
CFS 4614' 30" spl - Ls: lt-med brn cryptoxn and offwhite mic-vfxn dense, N.S.; 60" spl - dense Ls's AA with new lt green, lt gray-green, trace orange, brick red shales; occ lt gray vfg Sst, N.S.

7:00 AM at 4620' on 3-29-2011  
DST No. 5 Johnson Zone  
Interval: 4576'-4614'  
Times: 30-60-60-90  
IFP: strong bldg. to B.O.B. in 4 1/4 minutes  
ISIP: Bldg. to B.O.B. in 28 minutes  
FFP: good bldg. to B.O.B. in 14 minutes  
FSIP: Bldg. to 7 3/4 inches  
Recovery: 800' GIP; 160' CGO (30g, 67o, 3m); 85' G&MCO (35g, 54o, 11m); 178' G&MCO (20g, 72o, 8m); 60' G&MCO (35g, 45o, 20m);  
oil gravity 26.2 API; total fluid 483'  
FP: 66-143/155-200 SIP: 617-832 (still bldg.)  
HP: 2196-2162 BHT: 127 deg. F

**Mississippian 4673' (-1660)**

Morgan Mud Check at 4715'  
12:20 PM on 3-29-2011  
wt vis wl pH chl  
9.3 51 6.8 11.0 3000  
PV YP GelS lcn solids  
16 18 15/33 6# 7.1%

RTD reached at 2:30 PM on 3-29-2011  
CFS/CTCH 1 1/4 hours - SHS - TOFL  
Log prints completed at 12:15 AM 3-30-2011

