

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Heebner Shale	3898'	-687	3898'	-687
Toronto	4020'	-709	4018'	-707
Lansing	4052'	-741	4052'	-741
Muncie Creek Shale	4229'	-918	4228'	-917
Stark Shale	4323'	-1012	4322'	-1011
Hushpuckney Shale	4367'	-1056	4367'	-1056
Base of KC	4410'	-1099	4408'	-1097
Marmaton	4448'	-1137	4447'	-1136
Altamont	4457'	-1146	4456'	-1145
Pawnee	4548'	-1237	4546'	-1235
Myrick Station	4592'	-1281	4592'	-1281
Ft Scott	4607'	-1296	4607'	-1296
Cherokee Shale	4636'	-1325	4635'	-1324
Johnson	4722'	-1411	4722'	-1411
Morrow	4778'	-1467	4779'	-1468
Mississippian	4871'	-1560	4871'	-1560
RTD	4950'	-1639		
LTD			4949'	-1638

DSTs

DST #1 4044'-4072' "Lansing A" 5/24/16 30-45-45-60
 1st Blw: 1/4" blw blt to BOB in 29min (No BB)
 2nd Blw: Surf blw blt to BOB in 35min (No BB)
 IFP: 19-93# ISIP: 1108# FFP: 98-166# FSIP: 1074# HYD: 1970-1935#
 Rec: 155' WCMw/OS (20%WTR), 186' MCW (90%WTR).

DST #2 4076'-4100' "Lansing C" 5/25/16 30-45-45-60
 1st Blw: 1/4" blw blt to 4" in 30min (No BB)
 2nd Blw: Surf blw blt to 5" in 45min (No BB)
 IFP: 15-60# ISIP: 1158# FFP: 62-89# FSIP: 1141# HYD: 1940-1983#
 Rec: 1' FO, 50' WCMw/OS (10%WTR), 118' MCWw/OS (70%WTR).

DST #3 4133'-4178' "Lansing E/F" 5/26/16 30-45-45-60
 1st Blw: 1/4" blw blt to 5" in 30min (No BB)
 2nd Blw: Surf blw blt to 7" in 45min (No BB)
 IFP: 19-57# ISIP: 1190# FFP: 62-87# FSIP: 1186# HYD: 2027-2004#
 Rec: 50' GO(90%O), 60' GOCM(40%O), 60' OCM(20%O), 30'GIP.

DST #4 4415'-4524' "Altamont" 5/28/16 30-45-45-60
 1st Blw: 1/4" blw blt to BOB in 6.5min (Surf BB dead in 10min)
 2nd Blw: 1/4" blw blt to BOB in 7min (No BB)
 IFP: 40-228# ISIP: 1297# FFP: 239-452# FSIP: 1293# HYD: 2339-2231#
 Rec: 282' WM(50%WTR), 693' MCW(95%WTR).

ROCK TYPES




 Anhy	 Dol	 Sltst	 Gry sh
 Cht	 Lmst	 Ss	 Sandylms
 Congl	 Shale	 Carb sh	

ACCESSORIES

EVENTS

-  Circ
-  Conn

FOSSIL

-  Brach
-  Bryozoa
-  Foram

F

G

O

O

P

F

B

F

Fossil

Gastro

Oolite



Ostra

Plant





Fuss

Oomold

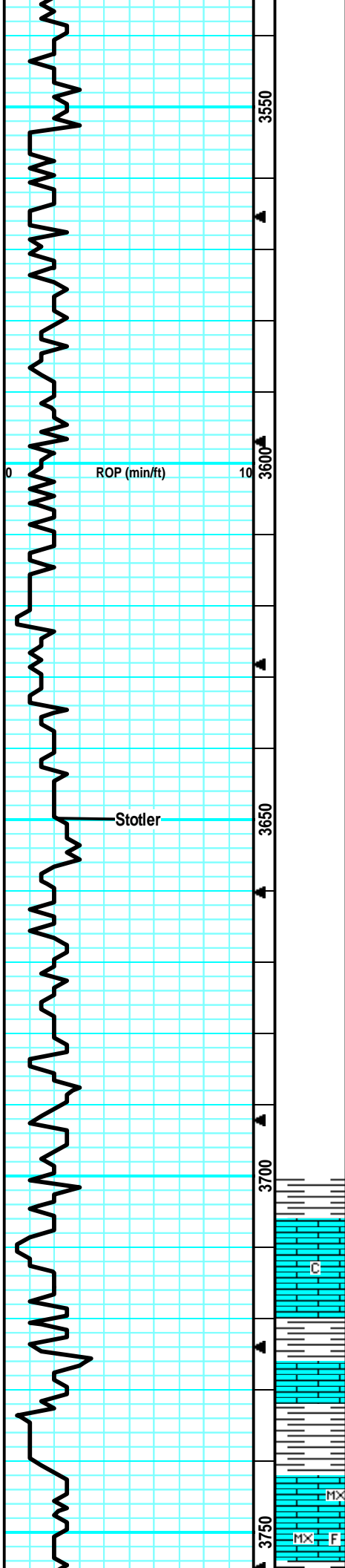
MINERAL

-  Calc
-  Chtdk
-  Chtlt
-  Glau
-  Pyr
-  Sil

TEXTURE

-  Chalky
-  Crsxln
-  Finexln
-  Microxln

ROP ROP (min/ft)	Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
0	10				Morning Report Depth/Activity	Survey @ 211' = 1/4 Degree
2550					5/20/16: Spud 4:00 p.m. 5/21/16: Drlg, 211' 5/22/16: drlg, 2136' 5/23/16: drlg, 3264' 5/24/16: drlg, 3870' (DST #1) 5/25/16: testing, 4072' (DST #2) 5/26/16: testing, 4178' (DST #3) 5/27/16: circ, 4340' 5/28/16: testing, 4524' (DST #4) 5/29/16: drlg, 4680' 5/30/16: drlg, 4930' (TD @ 4950')	Anhydrite @ 2557' (+754)
2600						B/Anhydrite @ 2577' (+734)
						Mud-Co Check #2 @ 2417' 5/22/16 wt vis pH 9.5 32 7.0 Filt chr LCM n/c 62K 1#
						Mud-Co Check #3 @ 3433' 5/23/16 wt vis pH 8.5 63 11.5 Filt chr LCM 8.8 4.0K 2#
	500					



ROP (min/ft)

Stotler

Stotler @ 3646' (-335)

LS: gry/lt tan, mott in prt, fn xln, sm foss, many grny/sandy, tr-nvp, fw SH: gry, silty, no cup odr, ns.

LS: lt gry/lt tan, slght mott, fn xln, fw sandy/grny, fw brittle, tr-nvp, sm SH: gry, silty, fissile, no cup odr, ns.

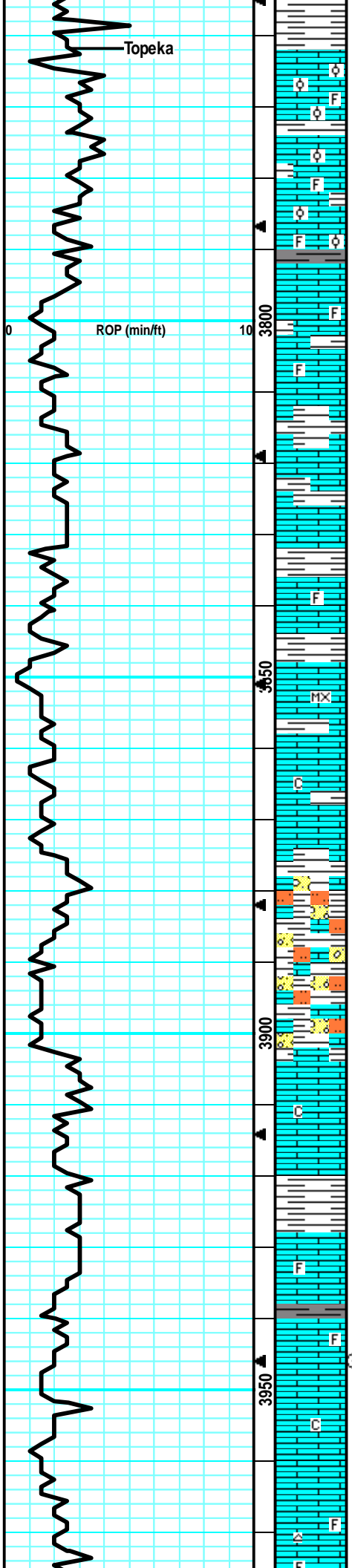
LS: lt tan/lt gry, slght mott in prt, fn xln, sm dense, sm brittle, fw sub-chlky, tr-nvp, fw SH: gry, fissile, no cup odr, ns.

LS: lt tan/lt gry, slght mott in prt, fn xln, many dense, sm brittle, fw sub-chlky, tr-nvp, fw SH: gry, silty, no cup odr, ns.

LS: lt gry/crm, mostly sing, micro-fn xln, mostly dense, sm brittle, fw sub-chlky in prt, tr-nvp, no cup odr, ns.

LS: lt gry/lt tan, sing in prt, micro-fn xln, many dense, sm brittle, sub-chlky in prt, tr-nvp, fw SH: gry, silty, no cup odr, ns.

LS: gry/lt tan, mott in prt, fn xln, sm foss in prt, sm dense, sm firm, tr-nvp, sm SH: drk gry, silty, no cup



dense, sm lim, tr-nvp, sm SH: drk gry, silty, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, sm foss in prt, sm dense, tr-nvp, sm SH: gry/brn, silty, soft, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, sm foss/fw ool, sm brittle, tr-nvp, fw SH: brn, silty, soft, no cup odr, ns.

LS: lt gry/lt tan, slight mott, fn xln, sm foss/ool, sm brittle, fw sub-chlky in prt, tr-nvp, fw SH: brn/gry, silty, no cup odr, ns.

LS: lt gry/crm, slight mott in prt, fn xln, sm foss, fw ool, many brittle, fw sub-chlky in prt, tr-nvp, no cup odr, ns.

LS: gry/lt tan, slight mott in prt, fn xln, fw foss in prt, sm brittle, fw gritty/sandy, tr-nvp, fw SH: gry/brn, silty, no cup odr, ns.

LS: gry/tan, slight mott in prt, fn xln, fw foss in prt, mostly brittle, sm sandy/gritty, tr-nvp, sm SH: drk gry/brn, silty, fissile, no cup odr, ns.

No Samples: Mud pump broke down, limited returns.

LS: tan/lt gry, slight mott, fn xln, v fw foss frags, sm brittle, sm dense, sub-chlky in fw, tr-nvp, svrl SH: gry/grn, silty, sm waxy, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, sm brittle, fw dense, sub-chlky in prt, tr-nvp, svrl SH: gry/blu, silty, sm soft, no cup odr, ns.

LS: tan, mostly sing, micro-fn xln, mostly brittle, sm dense, tr-pr ppt intxln por in fw, fw SH: gry, silty, fissile, no cup odr, ns.

LS: tan, mostly sing, fn xln, mostly brittle, sm dense, sub-chlky in prt, tr-pr ppt intxln por in sm, fw SH: gry, silty, no cup odr, ns.

LS: tan/lt tan, mostly sing, fn xln, many brittle, sm dense, chlky, tr-pr ppt intxln por, abund pur chl, fw SH: drk gry, silty, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, sandy/gritty, brittle, tr-nvp, abund chlky, fw SitStn: gry, friable, brittle, svrl SH: gry/brn, silty, sm soft, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, brittle, sandy/gritty, tr-nvp, fw SitStn: gry, friable, brittle, svrl SH: gry/brn, silty, soft, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, sm brittle, svrl flakey/mealy, tr-nvp, svrl SH: gry/brn, silty, fw pcs pur chl, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, sm brittle, sm flakey, tr-nvp, fw drk mins stns, no fluor/cut, abund SH: gry/brn, silty, soft, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, sm brittle, sm flakey/mealy, tr-nvp, abund SH: gry/brn, silty, no cup odr, ns.

LS: tan/lt gry, mostly sing, fn xln, many dense, sm brittle, sub-chlky in prt, tr-nvp, v fw SH: drk gry/blk, silty, soft, carb, no cup odr, ns.

LS: gry/lt tan, slight mott, fn xln, fw foss frags, mostly brittle, fw dense, tr-nvp, v fw SH: gry, silty, no clup odr, ns.

LS: gry/tan, mostly sing, fn xln, many dense, sm brittle, sub-chlky in fw, tr-nvp, abund pur chl, svrl pcs SH: gry/brn, silty, soft, no cup odr, ns.

LS: tan/lt tan, mostly sing, fn xln, sm gritty like, sm brittle, fw sub-chlky, tr-pr ppt intxln por in sm, v fw SH: gry, silty, soft, no cup odr, ns.

LS: lt gry/lt tan, mostly sing, fn xln, v fw foss frags, mostly dense, sm brittle, tr-nvp, fw Chert: wht/opq, foss, sharp, no cup odr, ns.

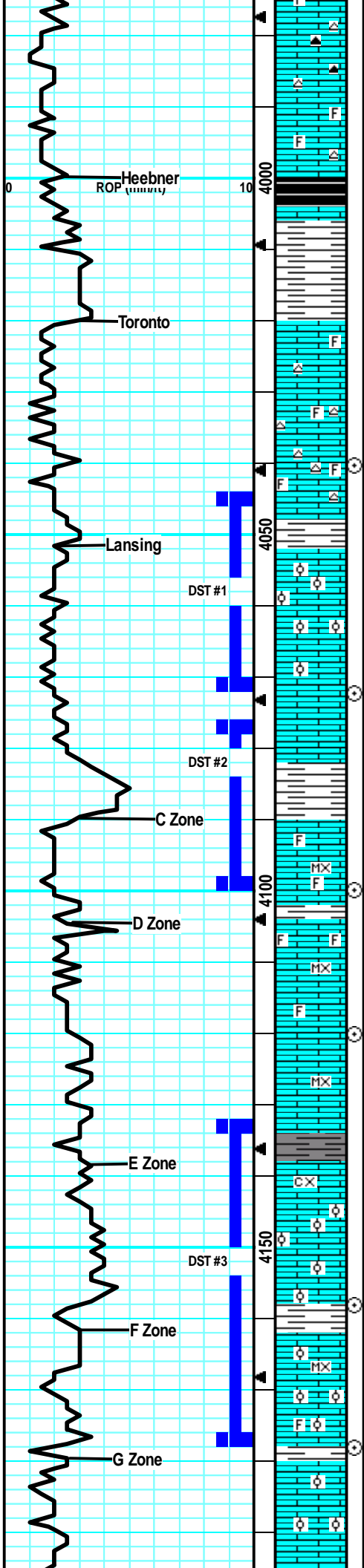
Topeka @ 3762' (-451)

3826' Mud Pump broke down. 3hrs of down time.

Short Trip 25 Stands @ 3946'

CFS @ 3946' (30"/60")

Mud-Co Check #4		
@ 3946' 5/24/16		
wt	vis	pH
8.9	58	11.0
Filt	chr	LCM
7.2	4.4K	2#



LS: tan/lt gry, slight mott in prt, fn xln, mostly brittle, sub-chlky in prt, tr-nvp, fw pcs pur chl, fw Chert: tan, foss, sharp, no cup odr, ns.

LS: tan/lt gry, mott in prt, fn xln, foss in prt, many brittle, chlky, tr-nvp, 1-2 pcs w/ drk hvy stns on edg, no fluor/cut, pos drk dead oil, abund pur chl, no cup odr, ns.

LS: gry/tan, slight mott in prt, fn xln, gritty/sandy, sub-chlky in prt, tr-nvp, svrl SH: drk gry/blk, silty, soft, carb, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, fw foss in prt, sm brittle, tr-nvp, svrl SH: gry, silty, soft, fw Chert: lt tan, sharp, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, v fw foss frags, many brittle, tr-nvp, fw Chert: wht/opaq, sharp, abund SH: brn/grn, silty, soft, no cup odr, ns.

LS: tan/crm/lt gry, mostly sing, fn xln, fw foss frags, mostly brittle, sub-chlky in prt, tr-pr intxln por in sm, abund pur chl, no cup odr, ns.

LS: tan/crm, mostly sing, fn xln, fw foss frags, many brittle, sub-chlky in prt, tr-pr intxln por, svrl pcs Chert: wht/opaq, sharp, abund pur chl, no cup odr, ns.

LS: tan/lt tan, mostly sing, fn xln, v fw foss in prt, gritty like, pr intxln por, sm Chert: wht/opaq, sharp, sm SH: drk gry, silty, no cup odr, ns.

LS: tan/lt tan, slight mott, fn xln, fw v ool, mostly brittle, sm gd intool por in fw, hvy drk stns, gd fluor, strm cut, fw gas bubs on brk, ssofo in 2 pcs, faint cup odr.

LS: lt tan/crm, mostly sing, fn xln, mostly dense, sm brittle, tr-pr ppt intxln por in fw, 3-4 pcs w/ drk hvy tarry stns, wk fluor, slw cut, gils viscus tar, faint-? cup odr, vssfo.

LS: lt tan/crm, mostly sing, fn xln, mostly dense, sm pr intxln por in fw pcs, 2-3 pcs w/ drk brn stns, gd fluor, strm cut, no cup odr, vssfo.

LS: lt tan/lt gry, mostly sing, fn xln, many dense, many brittle, mostly sub-chlky, tr-nvp, svrl pcs pur chl, sm SH: gry/grn, silty, soft, no odr, ns.

LS: lt tan/lt gry, slight mott in prt, fn xln, many dense, sm brittle, sub-chlky in prt, fw flakey, tr-nvp, svrl SH: gry/brn/grn, silty, no odr, ns.

LS: tan/lt tan, mott in prt, micro-fn xln, sm foss, brach/frags, brittle, fw sub-chlky, fr-gd intxln por, many pcs hvy stnd in drk hvy vis oil, gd fluor, strm cut, strg cup odr, v gd sfo in many pcs.

LS: tan/lt tan, mostly sing, fn xln, mostly dense, many brittle, sub-chlky in prt, tr-nvp, 4-5 pcs w/ sho, same as above, abund SH: gry/grn, silty, faint cup odr.

LS: lt tan/crm, mostly sing, micro-fn xln, mostly dense, fw firm, sub-chlky in prt, tr-nvp, fw SH: gry/grn, silty, no cup odr, ns.

LS: crm/lt tan, sing, fn xln, fw foss frags, mostly dense, fw brittle, sub-chlky in prt, tr-nvp, slight infx SH: brn, soft, no cup odr, ns.

LS: lt tan/lt gry, mostly sing, micro-fn xln, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, fw SH: brn/gry, silty, no cup odr, ns.

LS: lt tan/lt gry, slight mott in prt, fn xln, many dense, fw brittle, sm flakey/mealy, tr-nvp, fw SH: drk gry/brn, silty, soft, ? cup odr, nsfo.

LS: tan/lt tan, mott in prt, fn-crs xln, sm brittle, fw pcs w/ lrg xls & gd intxln por, sat brn stns, fw pcs vug, stns in por, gd fluor, strm cut, gd cup odr, gd strng cup odr, gd sfo in 8-10 pcs.

LS: tan/lt gry, slight mott in prt, fn xln, fw ool, many brittle, sub-chlky in prt, 2-3 pcs w/ pr intxln por, spptd lght brn stns, gd fluor/cut, ssofo, gd cup odr, most of the show out of the 4158' Smpl.

LS: tan/lt gry, mott in prt, fn xln, sm foss in prt, sm brittle, many flakey/mealy, sub-chlky in prt, tr-nvp, fw SH: brn, silty, no cup odr, ns.

LS: lt tan/crm, mostly sing, micro-fn xln, mostly dense, brittle, chlky in prt, tr-nvp, svrl pcs pur chl, no cup odr, ns.

LS: tan/lt tan, mott in prt, fn xln, many foss, many ool, sm dense, many brittle, tr-pr infoss por, 1-2 pcs w/ lght brn stns in por, gd fluor/cut, vssfo, faint cup odr.

LS: lt tan/lt gry, slight mott, fn xln, fw ool, sm brittle, sub-chlky in prt, fw oolcast por, svrl SH: gry/brn, silty, no cup odr, ns.

LS: lt gry/lt tan, slight mott, fn xln, sm dense, fw brittle, sub-chlky in prt, tr-nvp, svrl pcs pur chl, no cup odr,

Heebner @ 4000' (-689)

Toronto @ 4020' (-709)

Mud-Co Check #5		
@ 4072'	5/25/16	
wt	vis	pH
9.0	56	11.0
Filt	chr	LCM
8.0	6.0K	2#

CFS @ 4040' (30"/60")

Lansing @ 4052' (-741)

DST #1 4044'-4072' "Lansing A" 5/24/16 30-45-45-60
 1st Blw: 1/4" blw blt to BOB in 29min (No BB)
 2nd Blw: Surf blw blt to BOB in 35min (No BB)
 IFP: 19-93# ISIP: 1108# FFP: 98-166#
 FSIP: 1074# HYD: 1970-1935#
 Rec: 155' WCMw/OS (20%WTR), 186' MCW (90%WTR).

CFS @ 4072' (30"/60")

Strap .51 short to the board

Survey @ 4072' = 3/4 Degree

CFS @ 4100' (30"/60")

DST #2 4076'-4100' "Lansing C" 5/25/16 30-45-45-60
 1st Blw: 1/4" blw blt to 4" in 30min (No BB)
 2nd Blw: Surf blw blt to 5" in 45min (No BB)
 IFP: 15-60# ISIP: 1158# FFP: 62-89#
 FSIP: 1141# HYD: 1940-1983#
 Rec: 1' FO, 50' WCMw/OS (10%WTR), 118' MCWw/OS (70%WTR).

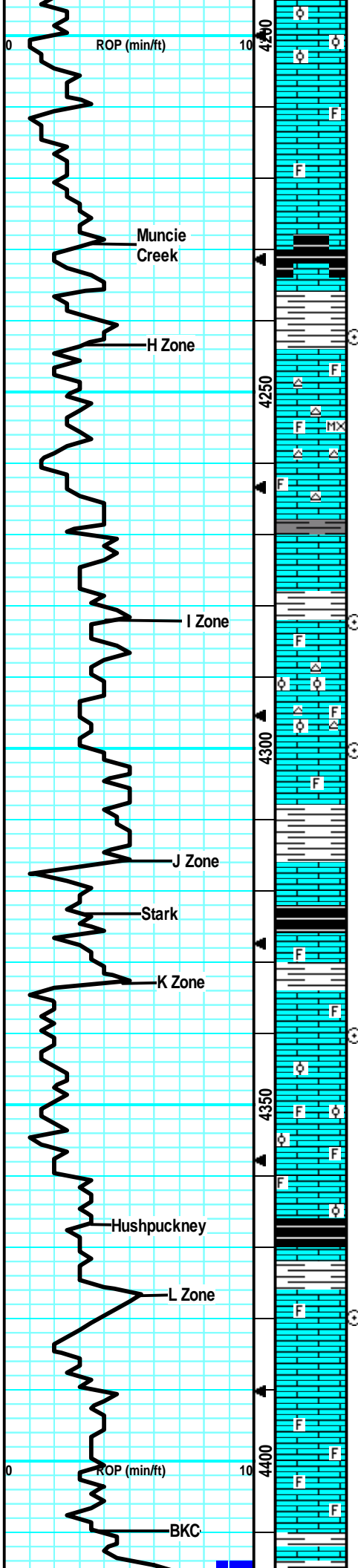
CFS @ 4120' (30"/60")

DST #3 4133'-4178' "Lansing E/F" 5/26/16 30-45-45-60
 1st Blw: 1/4" blw blt to 5" in 30min (No BB)
 2nd Blw: Surf blw blt to 7" in 45min (No BB)
 IFP: 19-57# ISIP: 1190# FFP: 62-87#
 FSIP: 1186# HYD: 2027-2004#
 Rec: 50' GO(90%O), 60' GOCM(40%O), 60' OCM(20%O), 30'GIP.

CFS @ 4158' (30"/60")

CFS @ 4178' (30"/60")

Mud-Co Check #6		
@ 4178'	5/26/16	
wt	vis	pH
9.1	54	11.0
Filt	chr	LCM
8.8	7.2K	2#



ns.
 LS: lt gry/lt tan, slight mott, fn xln, fw ool, mostly brittle, sub-chlky, fw oolcast por, sm SH: brn, silty, no cup odr, ns.
 LS: lt gry/crm, slight mott, fn xln, frags, sm brittle, sub-chlkiy, fw flakey/mealy, tr-nvp, fw pcs pur chlk, no cup odr, ns.
 LS: gry/lt tan, slight mott, fn xln, sm brittle, sub-chlky, flakey/mealy in prt, tr-nvp, fw SH: drk gry/blk, silty, carb, no cup odr, ns.
 LS: gry/tan, slight mott, fn xln, many dens, svrl brit, sub-chlky in prt, tr-nvp, 2 pcs w/ drk stn on edge, wk fluor, pos cut resid, nsfo, no cup odr.
 LS: gry/lt tan, slight mott, fn xln, fw foss in prt, svrl brittle, fw dense, sub-chlky, tr-nvp, sm SH: gry/brn, silty, no cup odr, ns.
 LS tan/lt tan, mostl sing, fn xln, fw foss, mostly dense, svrl brittle, sub-chlky in prt, tr-nvp, fw Chert: wht/opaq, foss, sharp, no cup odr, ns.
 LS: lt tan/crm, mostly sing, micro-fn xln, dense, brittle, sub-chlky in prt, tr-nvp, svrl Chert: wht/opaq, sharp, no cup odr, ns.
 LS: lt tan/lt gry, slight mott in prt, fn xln, fw foss, many dense, sm brittle, sub-chlky, tr-nvp, svrl Chert: wht/lt gry, foss, sharp, sm SH: drk gry, silty, soft, no cup odr, ns.
 LS: lt tan/lt gry, slight mott, fn xln, fw dense, many brittle, sub-chlky, sm flakey/mealy, tr-nvp, sm Chert: wht/lt gry, sharp, sm SH: gry, silty, soft, no cup odr, ns.
 LS: lt gry/lt tan, slight mott in prt, fn xln, fw foss, svrl brittle, sm dense, sub-chlky in prt, tr-nvp, svrl Chert: lt gry, sharp, no cup odr, ns.
 LS: gry/tan, slight mott, fn xln, fw ool, many brit, fw flakey/mealy, tr-nvp, 1-2 pcs w/ drk blk stns, wk-? fluor, no cut, pos, drk dead oil, no cup odr.
 LS: lt gry/lt tan, mott in prt, fn xln, foss in prt, brittle, many flakey/mealy, tr-nvp, svrl SH: gry/grn silty, soft, waxy, no cup odr, ns.
 LS: tan/lt gry, mott in prt, fn xln, many foss, brit, many flakey/mealy, sub-chlky, tr-nvp, fw SH: brn/blk, silty, carb, no cup odr, ns.
 LS: tan/lt tan, slight mott, fn xln, mostly brittle, 1 pcs w/ gd intxln por, lght brn stns, gd fluor/cut, faint cup odr, gry, silty, vssfo.
 tan/lt gry, mott in prt, fn xln, fw foss, brittle, fw dense, chlky, tr-pr intxln por on fw edges, spttd lght brn stns, faint-? cup odr, vssfo.
 LS: lt gry/tan, slight mott, fn xln, fw foss, britt, sub-chlky, fw flaky, tr-nvp, sm SH: gry/brn, silty, no cup odr, ns.
 LS: tan/lt gry, slight mott, fn xln, mostly brittle, flakey/mealy, sub-chlky, tr-nvp, fw SH: gry/brn/blk, silty, sm carb, no cup odr, ns.
 LS: gry/tan, mott in prt, fn xln, many foss/ool, many brittle, fw flakey/mealy, sm chlky, tr-nvp, svrl pcs pur chlk, no cup odr, ns.
 LS: lt gry/lt tan, mostly sing, fn xln, many dense, sm brittle, fw flakey, sub-chlky in prt, tr-nvp, fw SH: gry/blk, silty, soft, fw carb, no cup odr, ns.
 LS: tan/gry, mott in prt, fn xln, fw foss frags, many brittle, sm flakey/mealy, sub-chlky in prt, tr-nvp, fw pcs pur chlk, no cup odr, ns.
 60" Smp: gry/lt gry, mott, fn xln, foss, brittle, tr-nvp, no cup odr, ns.
 LS: gry/tan, slight mott in prt, fn xln, sm flakey/mealy, sm brittle, sub-chlky, fw fr intxln por, sm SH: brn/gry, silty, no cup odr, ns.
 LS: lt gry/lt tan, slight mott, fn xln, many dense, many flakey/mealy, sub-chlky, tr-nvp, fw SH: drk gry, silty, soft, no cup odr, ns.
 LS: lt tan/lt gry, slight mott, fn xln, many foss, brittle, sub-chlky, fw flakey, tr-nvp, fw pcs pur chlk, fw SH: gry/brn, silty, no cup odr, ns.
 LS: lt gry/tan, slight mott, fn xln, foss in prt, sm dense, fw brittle, sub-chlky, fw flakey/mealy, tr-nvp, svrl SH:

Muncie Creek @ 4229' (-918)

CFS @ 4242'
(30"/60")

CFS @ 4282'
(30"/60")

CFS @ 4300'
(30"/60")

Stark @ 4323' (-1012)

CFS @ 4340'
(30"/60")

Hushpuckney @ 4367' (-1056)

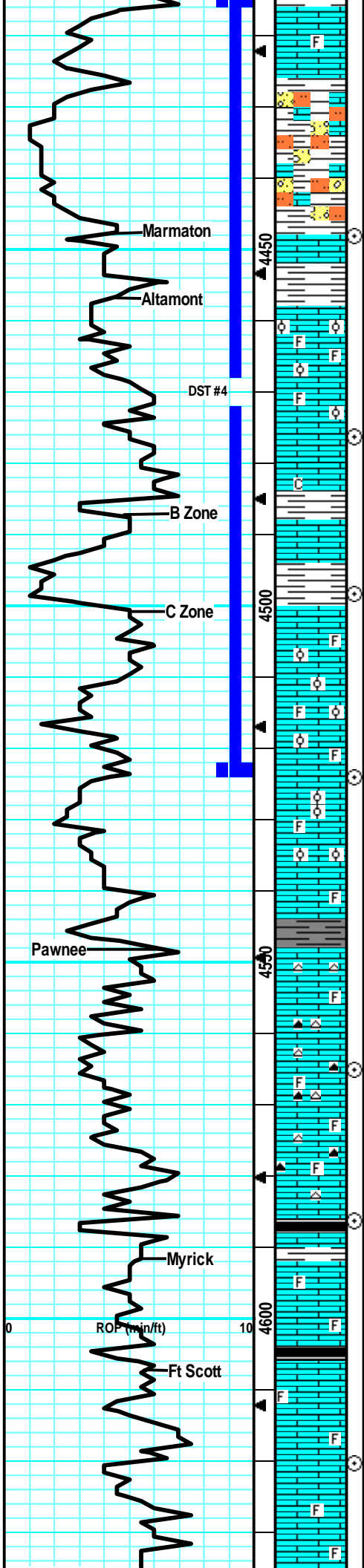
CFS @ 4380'
(30"/60")

Mud-Co Check #7
 @ 4380' 5/27/16

wt	vis	pH
9.2	58	10.0
Filt	chr	LCM
7.2	6.5K	1#

BKC @ 4410' (-1099)

DST #4 4415'-4524' "Altamont"
 5/28/16 30-45-45-60



gry/brn, silty, no cup odr, ns.

SH: gry/brn/grn, silty, soft, fw SitStn: lt gry/lt brn, gritty, friable, v soft, fw LS: gry/tan, mott in prt, fn xln, dense, sub-chlky, tr-nvp, no odr, ns.

LS: tan/gry, slight mott, fn xln, dense, sub-chlky, tr-nvp, abund SH: drk gry/grn/brn, silty, fw SitStn: lt gry, gritty, v soft, no cup odr, ns.

LS: gry/lt tan, slight mott, fn xln, mostly dense, sm firm, flakey/mealy, sm sub-chlky, tr-nvp, abund SH: drk gry/brn, silty, no cup odr, ns.

SH: gry/drk gry/brn/grn, silty, sm soft, fw gritty, sm LS: tan/lt gry, slight mott, fn xln, dense, sm brittle, sub-chlky, tr-nvp, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, sm foss/ool, many britt, fw sub-chlky in prt, tr-pr intxln por in fw, no cup odr, ns.

LS: tan/lt tan, slight mott, fn xln, sm foss/ool, mostly brittle, flakey/mealy in prt, fr intxln por in sm, sm SH: drkgry/brn, silty, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, mostly brittle, sub-chlky in most, fr intxln por in sm, sm SH: brn/drkgry, silty, soft, no cup odr, ns.

SH: gry/brn/drkgry, silty, soft, fw LS: gry/tan, slight mott, fn xln, mostly dense, sm flakey, tr-nvp, no cup odr, ns.

LS: tan/gry, mott in prt, fn xln, fw foss/ool, mostly dense, sm brittle, sub-chlky, many flakey/mealy, sm firm, tr-nvp, cpl pcs w/ pos lght brn stns, ? fluor, no cut, abund SH: gry/brn/drkgry, silty, soft, no cup odr, nsfo.

LS: tan/lt gry, mostly sing, fn xln, sm foss, mostly brittle, sm fr intxln por, sub-chlky, fw pcs pur chlk, no cup odr, ns.

LS: lt gry/lt tan, slight mott, fn xln, fw foss, sub-chlky, fw britt, svrl flakey/mealy, tr-nvp, fw pcs pur chlk, fw SH: gry/blu, silt, soft, no odr, ns.

LS: gry/lt tan, mott in prt, fn xln, many foss/ool, britt, fw flakey/mealy, tr-pr intfoss por in fw, sm SH: drk gry/grn, silty, soft, no cup odr, ns.

LS: lt tan/tan, mostly mott, fn xln, sm v foss/ool, mostly brittle, sub-chlky, almt gry like, tr-nvp, svrl SH: drkgry/grn, silty, soft, no cup odr, ns.

SH: drkgry/brn, silty, soft, sm LS: lt tan/crm, mott, foss/ool, brittle, chlky, tr-nvp, no cup odr, ns.

LS: tan/lt tan, mott, fn xln, mostly foss/ool, fw flakey/mealy, chlky, brittle, sandy/gry like, tr-nvp, fw SH: gry/brn, silty, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, fw foss, sub-chlky in prt, fw flakey/mealy, sm dense/firm, tr-nvp, fw Chert: gry, foss, sharp, svrl SH: drkgry/gry, silty, no cup odr, ns.

LS: gry/lt tan, mostly sing, fn xln, sub-chlky, sm flakey/mealy, fw firm, tr-nvp, fw Chert: gry, foss, sharp, sm SH: gry/brn, silty, no cup odr, ns.

LS: gry/tan, mostly sing, fn xln, dense, fw sub-chlky, sm firm, tr-nvp, sm SH: gry, silty, soft, no cup odr, ns.

LS: lt gry/lt tan, sing, fn xln, v fw foss, mostly dense, sm firm, sub-chlky, tr-nvp, sm Chert: gry/drkgry, foss, sharp, v fw SH: gry, silty, no cup odr, ns.

LS: drkgry/lt gry, mott, fn xln, many foss, flakey/mealy, brittle, sub-chlky, tr-nvp, svrl Chert: gry, foss, sharp, fw SH: gry/blk, silty, fw carb, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, many foss, sub-chlky, brittle, tr-nvp, svrl pcs pur chlk, abund SH: gry/brn, silty, no cup odr, ns.

LS: gry/lt gry, mott in prt, fn xln, fw foss frags, sm firm, svrl flakey/mealy, sub-chlky in prt, tr-nvp, svrl SH: drk gry/blk, silty, soft, sm carb, no cup odr, ns.

LS: gry/tan, mott in prt, fn xln, foss, sm firm, sub-chlky, tr-nvp, 1 pcs w/ sml drk brn stns, no fluor/cut, pos drk dead oil, nsfo, fw Chert: gry, foss, sharp, no cup odr.

LS: lt gry/lt tan, mott in prt, fn xln, fw foss, sub-chlky in prt, tr-? ppt por in fw pcs, 2 pcs w/ spptd brn stns, ? fluor, pos v sml spr of oil on brk undr hgh mag in scp, ? vssfo on brk, no cup odr.

LS: lt gry/lt tan, mott in prt, fn xln, sm foss, many flakey/mealy, sub-chlky, tr-nvp, abund SH: drk gry/gry/blk, silty, fw carb, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, sm foss in prt, many dense, sm firm, tr-nvp, svrl SH: brn/gry/blk, silty, fw soft, fw carb, no cup odr, ns.

SH: brn/gry, silty, soft, fw fissile, fw LS: tan/lt gry, slight mott, fn xln, fw foss, mostly dense, many firm, tr-nvp,

1st Blw: 1/4" blw blt to BOB in 6.5min
 (Surf BB dead in 10min)
 2nd Blw: 1/4" blw blt to BOB in 7min
 (No BB)
 IFP: 40-228# ISIP: 1297# FFP:
 239-452# FSIP: 1293# HYD:
 2339-2231#
 Rec: 282' WM(50%WTR), 693'
 MCW(95%WTR).

Marmaton @ 4448' (-1137)

CFS @ 4448'
 (30"/60")

Altamont @ 4457' (-1146)

CFS @ 4476'
 (30"/60")

CFS @ 4498'
 (30"/60")

CFS @ 4524'
 (30"/60")

Mud-Co Check #8		
@ 4524' 5/28/16		
wt	vis	pH
9.4	59	11.0
Filt	chlrl	LCM
8.8	8.0K	2#

Pawnee @ 4548' (-1237)

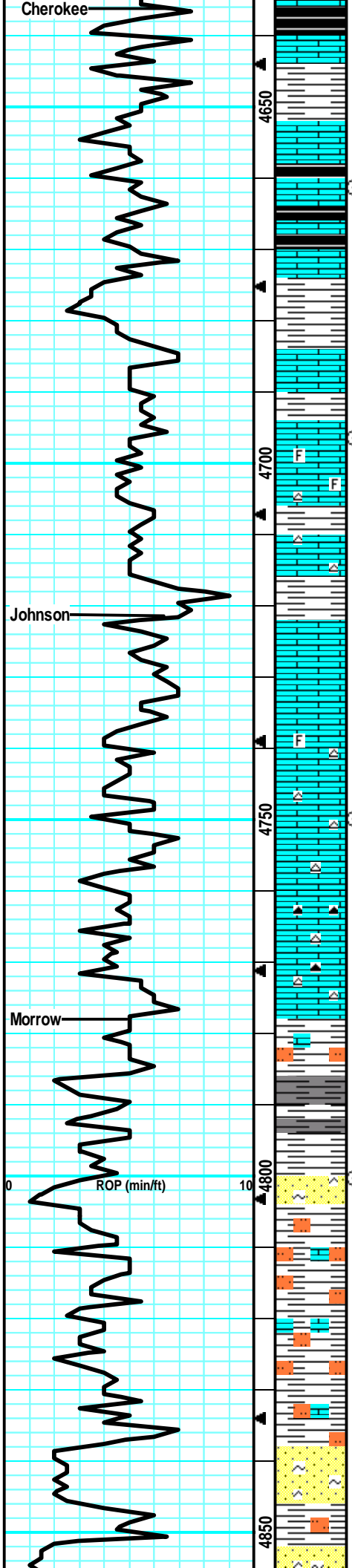
CFS @ 4565'
 (30"/60")

CFS @ 4586'
 (30"/60")

Myrick Station @ 4592' (-1281)

Ft Scott @ 4607' (-1296)

CFS @ 4620'
 (30"/60")



no cup odr, ns.

SH: brn/gry/blu, silty, sm v soft, fw waxy, sm redbeds from up hole, v fw LS: lt tan, sing, micro-fn xln, dense, brittle, tr-nvp, no cup odr, ns.

SH: gry/brn/blk, silty, soft, fw carb, fw fissile, v fw LS: lt tan/lt gry, sing, fn xln, mostly dense, sm brittle, sub-chlky, tr-nvp, no cup odr, ns.

SH: brn/gry/blk, silty, soft, v fw carb, v fw LS: lt tan, sing, fn xln, mostly dense, sub-chlky, fw firm, tr-nvp, no cup odr, ns.

SH: brn/gry, silty, soft, fw gritty, v fw LS: lt tan/lt gry, sing, fn xln, mostly dense, sub-chlky, tr-nvp, no cup odr, ns.

LS: gry/lt tan, mott in prt, fn xln, mostly dense, sub-chlky, flakey/mealy, tr-nvp, fw SH: gry/brn, silty, soft, no cup odr, ns.

LS: tan/gry, slight mott, fn xln, mostly dense, many firm, sub-chlky, flakey/mealy, tr-nvp, v fw SH: gry, silty, soft, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, many dense, sub-chlky in prt, sm firm, flakey/mealy, tr-nvp, v fw SH: gry/grn, silty, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, fw foss in prt, mostly dense, many firm, fw sub-chlky, fw flakey, tr-nvp, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, mostly dense, many firm, flakey/mealy, tr-nvp, fw Chert: wht/gry, foss, sharp, no cup odr, ns.

LS: gry/lt brn, slight mott, fn xln, mostly dense, many firm, flakey, tr-nvp, fw pcs w/ drk min spts, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, many dense, mostly flakey/mealy, sub-chlky in sm, tr-nvp, fw SH: gry, silty, no cup odr, ns.

gry/lt brn, slight mott, fn xln, fw foss, mostly dense, flakey, sm firm, tr-nvp, fw Chert: gry, smokey, sharp, no cup odr, ns.

LS: lt gry/tan, slight mott, fn xln, mostly dense, sub-chlky in prt, fw flakey, many firm, tr-nvp, sm Chert: wht/gry, foss, sharp, no cup odr, ns.

LS: lt gry/tan, slight mott, fn xln, mostly dense, many firm, sub-chlky in prt, sm flakey/mealy, tr-nvp, fw Chert: gry/lt brn, foss, sharp, no cup odr, ns.

LS: gry/lt gry, mott, fn xln, flakey, fw dense, mostly firm, tr-nvp, svrl SH: gry/grn, silty, soft, fw fissile, no cup odr, ns.

LS: gry/tan, mott, fn xln, fw foss frags, many flakey/mealy, grainy like, tr-nvp, fw Chert: gry, smokey, sharp, abund SH: gry/brn/grn, silty, soft, fw waxy, no cup odr, ns.

LS: drk gry/lt gry, mott, fn xln, flakey/mealy, firm, grainy, tr-nvp, abund SH: drkgry/brn/grn, silty, soft, fw waxy, no cup odr, ns.

LS: gry, mott, fn xln, sm dense, firm, flakey, tr-nvp, abund SH: gry/grn/brn, silty, soft, fissile, fw SS: gry, glauc, silc cem, fn grn, arg, firm, tr-? intgrn, no cup odr, ns..

LS: drk gry, mott, fn xln, fw foss frags, sm sandy/grainy, fw almost flakey, tr-nvp, abund SH: gry/drkgry, silty, soft, no cup odr, ns.

SH: gry/drkgry/brn/oliv, silty soft, sm withrd, fw LS: tan/gry, slight mott, dense, tr-nvp, fw SS: gry/wht, fn-med grn, arg, chlky, friable, brittl, tr-nvp intgrn por, no odr, ns.

SH: gry/brn/drkgry, silty, soft, fw withrd, fw LS: drkgry/brn, mott, fn xln, dense, firm, tr-nvp, fw SS: crm/wht, fn grn, silc, arg, chlky, brittl, friable, tr-nvp, no cup odr, ns.

SH: gry/brn/grn, silty, soft, fw fissile, fw LS: gry/brn, mott in prt, fn xln, dense, firm, tr-nvp, fw SS: wht/crm/grn, silc, fn-crs grn, arg, brittl, friable, glauc, tr-? tr-nvp, no cup odr, ns.

SH: gry/grn/brn/blu, silty, soft, fissile, fw waxy, no cup odr, ns.

SS: blu-grn/gry, clean, fn grn, silc cem, sub-rnd, sm firm, brittle, friable, glauc, tr ppt, intgrn por, fw SH: gry/drkgry, silty, fissile, no odr, ns.

SS: blu-grn/gry/wht, fn grn, silc cem, sub-rnd friable, brittle, sm firm, glauc in prt, tr intgrn por, svrl arv pcs

Cherokee @ 4636' (-1325)

Mud-Co Check #9
@ 4695' 5/29/16

wt	vis	pH
9.2	63	11.0
Filt	chr	LCM
7.2	9.7K	3#

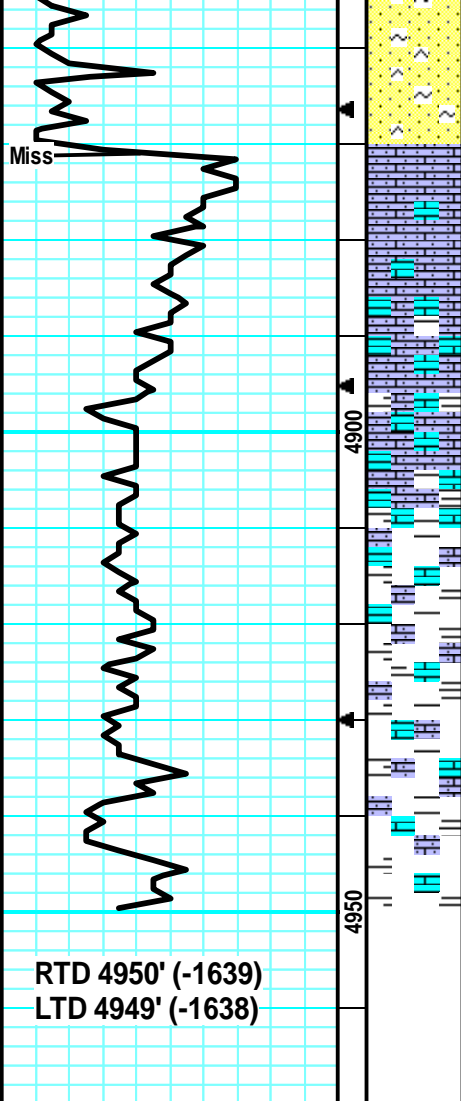
CFS @ 4696'
(30"/60")

Johnson @ 4722' (-1411)

CFS @ 4750'
(30"/60")

Morrow @ 4778' (-1467)

CFS @ 4800'
(30"/60")



w/ drk min stns, no fluor/cut, sm SH: gry, silty, soft, fissile, no cup odr, ns.

SS: blu-grn/gry/wht, fn grn, silc cem, sub-rnd, fw glauc, brittle, fw firm, fw arg, sm gry pcs w/ drk mins stns, no fluor/cut, fw SH: gry, silty, fissile, no cup odr, ns.

LS: crm/wht/lt tan, slght mott, fn xln, sandy, gritty, chlky, brittle, sm firm, tr-nvp, fw SH: gry/brn, silty, sm soft, fissile, no cup odr, ns.

LS: crm/wht/lt tan, sing, fn xln, sandy/gritty, brittle, friable, sub-chlky, tr-nvp, fw SS: blu-grn/gry, firm, fri, silc, sub-rnd, tr intgrn por, fw SH: gry, silty, no cup odr, ns.

LS: crm/wht/lt tan, sing, fn xln, svrl sandy, friable, sub-chlky, sm brittle, tr-nvp, abund SH: gry/drkgry, silty, fissile, no cup odr, ns.

LS: crm/lt tan, sing, fn xln, sm sandy/gritty, sm friable, sub-chlky, fw dense, fw flakey, tr-nvp, abund almst all SH: silty, soft, fw fissile, no cup odr, ns.

SH: gry/brn/grn, silty, soft, sm fissile, v fw LS: lt tan, sing, fn xln, dense, tr-nvp, no cup odr, ns.

Mississippi @ 4871' (-1560)

CFS @ 4889'
(30"/60")

Samples quality was good until 11:00 tour change. Driller increased wait on bit and increased RPM to improve ROP. Samples became straight shale.

Mud-Co Check #10
@ 4950' 5/30/16

wt	vis	pH
9.3	57	9.5
Filt	chlr	LCM
8.8	10K	2#

CFS @ 4950'
(30"/60")

Survey @ 4950' = 1/2 Degree

RTD 4950' (-1639)
LTD 4949' (-1638)