

LS: wh-gry, fxln, fos-ool in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS

LS: A.A.

LS: crm, fxln, fos in prt, chk-prt dns pr por, NS

Sdy LS-Calc Sd: crm-lt gry, fn-vry fn grain sd, pr-fr vis por, NS

Sh: red-brn, sdy in prt, soft & gummy in prt

LS: wh-crm, fxln, fos in prt, vry chky-prtly dns, some fr fos por, NS

LS: wh-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, some fr fos por, NS

LS: A.A. w/ incrs lt gry, sub chky-prtly dns, pr por, NS

Sh: Black Carb

LS: brn, fxln, fos, prt dns, pr por, NS

Sd: lt-med gry, fn-vry fn grain, shly in prt, soft-brittle, pr vis por, NS

LS: crm-lt gry, fxln, sli fos, sub chky-prtly dns w/ some chky, pr por, NS

Sh: red-brn, some sdy, some soft & gummy, some gry

LS: crm-lt gry, fxln, sli fos, sub chky-prtly dns w/ some chky, pr por, NS

Sh: lt-med gry, some soft & gummy

LS: A.A.

LS: wh-crm, fxln, fos in prt, vry chky-sub chky w/ some prtly dns, some pr-fr fos por, NS

LS: crm-lt gry, fxln, sub chky-prtly dns, pr por, NS

Sh: Black Carb

LS: tan-brn, fxln, sli fos, prtly dns, pr por, NS

Sd: gry, fn-vry fn grain, calc, sli shly, mstly brittle, pr vis por, NS

Sh: red-brn, soft & gummy, some grn & gry

Sh: red-brn, some soft & gummy, w/ gry & grn, & some Sdy Sh: grn

LS: wh-crm, fxln, ool-fos in prt, sub chky-prtly dns, pr-fr w/ some gd intrprt-vug por, fr amnt drk brn-blk patchy-sat stn, F-GSFO (brn-blk beads, bleeding, some irreg-sluggish), sli odor

Sh: red-brn & grn, mstly soft & gummy

LS: wh-lt gry, fxln, sli fos-ool, sub chky-prtly dns,

DST #1 3837'-3922' Toronto-LKC 'B'

IF: BOB in 15" ISI: no blow back

FF: BOB in 18" FSI: 3" blow back

Rec: 541' TOTAL FLUID:

107' MCO (70% O, 30% M)

124' OCWM (30% O, 20% W, 50% M)

124' OCMW (15% O, 55% W, 30% M)

186' Oil Sptd MW (1% O, 70% W, 19% M)

Chl ppm: 15,000 DST; 900 Mud

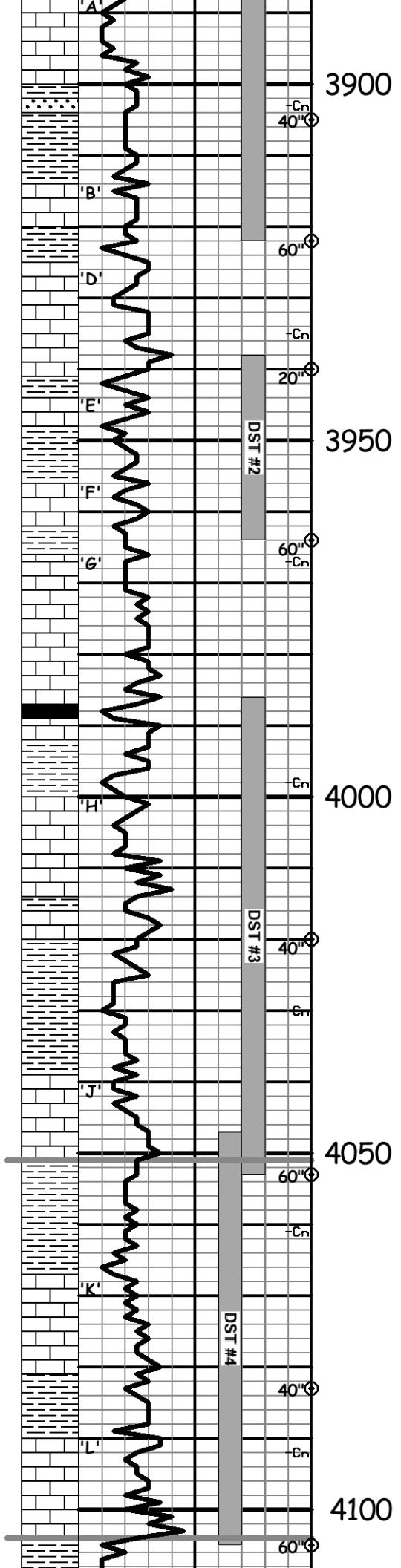
IFP: 28-152#/30" ISIP: 1250#/60"

FFP: 153-265#/60" FSIP: 1233#/90"

Heebner 3837' (-985) EL

Toronto 3869' (-1017) EL

Lansing 3883' (-1031) EL



pr-fr w/ tr intrprt-vug por, scat mstly blk sptd-sat stn, S-FSFO (some thick-hvy oil), no odor.

3900
 Sd: lt grn, fn-vry fn grain, sli shly, calc, mstly brittle, pr vis por, NS
 Sh: red-brn, soft & gummy, some gry & grn

• LS: crm, fxln, ool-fos in prt, sub chky-prtly dns, pr-fr intrprt por, scat med brn-blk sub sat-sat stn, FSFO, no odor

• LS: wh-lt gry, fxln, fos-ool in prt, chty (clr-gry, fresh, mstly semi transl), chky-prtly dns, fr-gd intrprt-vug por, scat med-drk brn sub sat-sat stn, S-FSFO (some thick-hvy oil), sli odor (sour?)
 LS: crm-lt gry, fxln, sub chk-prt dns, pr por, NS

3950
 • LS: mstly crm-lt gry, fxln, sub chk-prt dns, pr por, NS & pcs look like cavings w/ stn & SFO A.A.
 Sh: red-brn, gry, grn

• LS: crm-tan, fxln, fos-ool in prt, sub chky-prtly dns, fr-gd intrprt-small vug por, scat lt-drk brn sub sat-sat stn, FSFO, fnt odor

• LS: wh-lt gry, fxln, sli fos, sli chty (wh-lt gry), chky-prtly dns, pr-fr fos-vug por, vry scat lt-drk brn sptd-sat stn & tr blk tarry sptd stn, SSFO w/ few pcs FS, no odor

• LS: crm-lt gry, fxln, sli fos, sli chty, sub chky-prtly dns, pr w/ tr fr fos-vug por, vry scat lt brn sub sat-sat stn, SSFO w/ cpl pcs FS, no odor
 Sh: Blk Carb (trace) & drk gry
 LS: gry-tan, fxln, prtly dns, pr por, NS
 Sh: red-brn, gry, grn

4000
 • LS: wh-tan, fxln, sli fos, sli chty (crm), sub chky-prtly dns, pr-fr w/ some gd fos-vug por, scat lt-med brn sptd-sub sat stn, SSFO w/ cpl pcs FS, no odor

LS: crm-tan, fxln, sli fos (fusl), sub chk-prt dns, pr por, NS
 Sh: red-brn, soft & gummy in prt, some gry & grn

Sh: A.A.

• LS: wh-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky, pr-fr w/ some gd fos-vug por, scat lt brn sptd-sat stn, S-FSFO, fnt odor

4050
 Sh: med gry, red-brn
 Sh: red-brn w/ gry & grn

• LS: crm-lt gry, fxln, sli fos-ool, sub chky-prtly dns w/ some chky, pr w/ tr fr fos por, scat lt-med brn sptd-sat stn, SSFO w/ some pcs FS, no odor

Sh: red-brn & gry, some grn

LS: crm-tan, fxln, sli fos, shly in prt (red-brn, mottled), sub chky-prtly dns, pr por, NS
 LS: gry, fxln, shly, gritty-prtly dns, pr por, NS

4100
 Sh: gry-grn & red-brn
 Sh: red-brn soft & gummy in prt some lt arv soft

Ran 28 stand short trip prior to DST #1

Pipe Strap @ 3922': Strap long 1.38'
 Straight Hole Survey @ 3922': 0.5° Dev.

Morgan Mud check @ 3922': 67 Vis,
 9.0 Wt, 5.2 WL, 900 ppm Chl, 5# LCM

DST #2 3938'-3964' LKC 'F' zn
 IF: BOB in 1" ISI: BOB in 30"
 FF: BOB in 1" FSI: BOB in 10"
 Rec: 1,364' GIP & 1,302' TOTAL FLUID:
 496' GO (40% G, 60% O)
 620' GO (30% G, 70% O)
 186' MCO (60% O, 40% M)
 Oil Gravity 33° API
 IFP: 114-382#/30" ISIP: 942#/60"
 FFP: 398-550#/30" FSIP: 880#/60"
 (dumped 248' GO, reversed out 868' GO into frac tank, dumped 186' MO below circ sub)

Morgan Mud check @ 3964': 61 Vis,
 9.1 Wt, 6.0 WL, 2,000 ppm Chl, 5# LCM

After DST #2, samples carried an increase of vcol shales

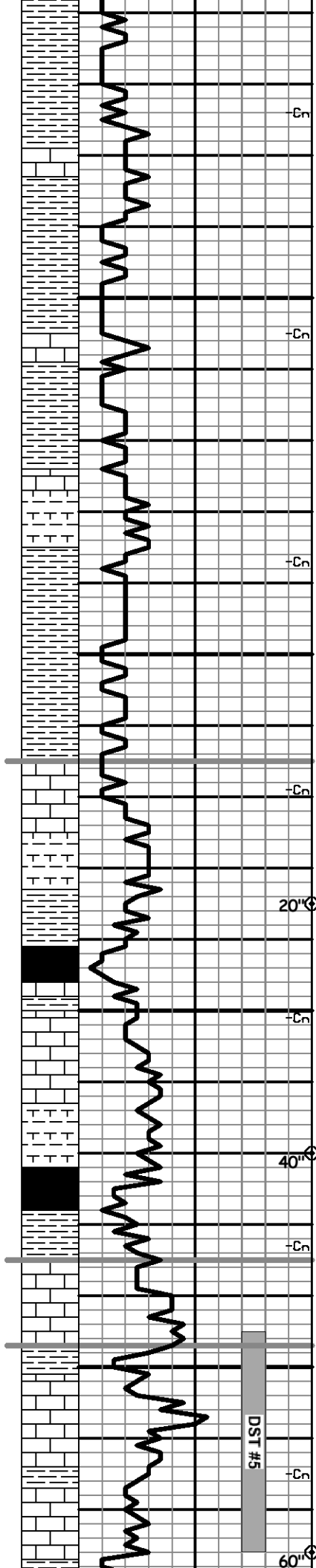
DST #3 3986'-4053' LKC 'H'-'J' zns
 IF: BOB in 12" ISI: 3" blow back
 FF: BOB in 4" FSI: 7" blow back
 Rec: 465' GIP & 341' TOTAL FLUID:
 93' GO (20% G, 80% O)
 248' GWCOM (20%G, 20%O, 10%W, 50%M)
 Oil Gravity 42° API
 IFP: 22-99#/30" ISIP: 1088#/60"
 FFP: 104-145#/60" FSIP: 1080#/90"

Stark 4050' (-1198) EL

Morgan Mud check @ 4053': 47 Vis,
 8.9 Wt, 5.2 WL, 2,000 ppm Chl, 5# LCM

DST #4 4047'-4105' LKC 'K'-'L' zns
 IF: blow built to 1"
 FF: blow built to 0.5" & remained thruout
 Rec: 5' OCM (35% O, 65% M)
 IFP: 17-21#/30" ISIP: 471#/60"
 FFP: 20-25#/60" FSIP: 180#/90"

B/KC 4103' (-1251) EL



Sh: red-brn, some soft & gummy, w/ gry & grn

Sh: red-brn, some soft & gummy, w/ gry & grn

LS: crm-tan, fxln, fos-ool in prt, sub chky-prtly dns, pr por, NS

Sh: red-brn, gry, grn, brn

Sh: lt gry, soft & gummy, red-brn, gry

4150

LS: crm-tan, fxln, shly in prt (red-brn, mottled), sub chky-prtly dns, pr por, NS

Sh: red-brn, gry, some grn

Sh: red-brn, w/ gry, grn, brn

LS: crm-lt gry, fxln, sub chk-prt dns, pr por, NS

Calc Sh: purple-brn, w/ Sh: A.A.

Sh: red-brn, some soft & gummy, some gry, gry, brn

Sh: med gry, some soft & gummy, some drk gry

4200

Sh: red-brn, mstly soft & gummy, some gry

LS: wh-crm, fxln, ool (small)-fos in prt, vry chky-prtly dns, pr por, 1 pc w/ brn sptd stn & cpl pin point beads FO (caving?), no odor

Calc Sh: lt gry, soft & gummy in prt

20"

Sh: Black Carb & drk gry

4250

LS: lt brn, fxln, sli fos, prtly dns, pr por, NS

LS: wh-tan, fxln, ool (small) in prt, sli chty (org), vry chky-prtly dns, some pr-fr fos-pin point por, NS

Shly LS: med gry, fxln, hrd, gritty, pr por, NS, w/ Calc Sh: med gry

40"

Sh: Black Carb-drk gry, w/ some med gry

Sh: med gry, some grn, some Calc Sh: lt gry

4300

LS: crm-tan, fxln, fos in prt, sub chky-prtly dns w/ some chky, pr por, NS

LS: wh-tan, fxln, fos in prt, sub chky-prtly dns, pr por, rare brn sptd-edge stn, NSFO, no odor

Sh: Black Carb-drk gry

LS: wh-tan, fxln, fos in prt, some sdy, sub chk-prt dns w/ some chk, some pr-fr intrprt-vug por, scat brn-blk sptd-sub sat stn, SSFO, no odor

Sd: wh-crm, fn grain, calc, sli glauc & pyr, mstly brittle, pr vis por, scat brn-blk sub sat-sat stn, VSSFO, no odor, & LS: A.A. w/ stn & SFO

LS: crm-tan, fxln, sub chky-prtly dns w/ some chky, pr por, NS

Sh: red-brn soft & gummy in prt, gry, some grn

Morgan Mud check @ 4110': 51 Vis, 9.1 Wt, 5.6 WL, 2,300 ppm Chl, 6# LCM

Pawnee 4214' (-1362) EL

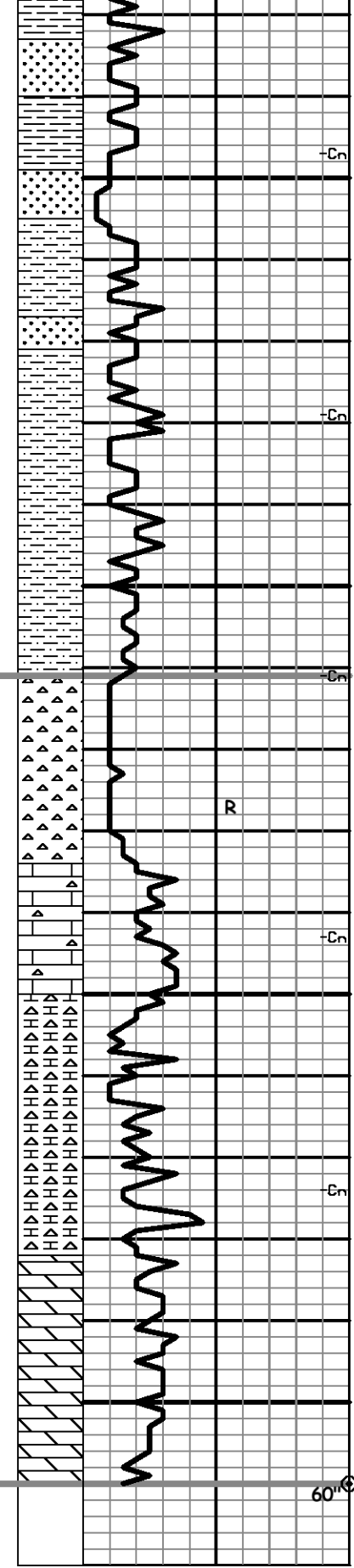
Ft. Scott 4284 (-1432) EL

Cherokee 4296' (-1444) EL

DST #5 4295'-4326' Verdigris
 IF: blow built to 0.5", then died @ 20 min.
 FF: no blow
 Rec: 5' Mud w/ oil spots
 IFP: 15-17#/30" ISIP: 27#/60"
 FFP: 15-17#/30" FSIP: 22#/60"

Ran 9 stand short trip prior to DST #5

Morgan Mud check @ 4326': 76 Vis,



Sh: red-brn, gry, some grn, w/ small amnt Sd: clr, fn-med w/& some crs grains, some calc, sli glauc, fri-semi brittle, pr vis por, NS & tr loose crs grains, sub rnd-sub ang, NS

4350
 Sd: clr-crm, med-crs grain, calc in prt, sli glauc, semi fri, pr-fr por, NS
 Sh: red-brn w/ gry, grn & some vry scat pcs of
 • LS: pr-fr fos-vug por, brn-blk sptd-sub sat stn, some live stn, NSFO, no odor (appear to be cavings)
 Sd: A.A., NS

Sh: red-brn, some soft & gummy, gry, grn, brn, w/ Sd: clr-reddish, fn-med w/ some crs grain, some sli calc, some shly (red-brn), semi fri-brittle, pr-fr por, NS, & some loose crs grains, sub rnd-sub ang, NS

4400
 Sh A.A. w/ some yell, & dcrs amnt of Sd: A.A., incrs shly (red-brn), NS
 Sh & Sd: A.A.

Cht: wh-crm w/ some yell, fresh & weathered, some semi transl, fr pin point por in weathered cht, NS

R
 Cht: A.A., some fos, 50% fresh/50% weathered, NS
 LS: crm-tan, fxln, sub chky-prtly dns w/ some chky, pr por, NS w/ Cht: A.A.

4450
 Chty LS: wh-crm, fxln vry chky-prtly dns, some vug por, NS w/ Cht: wh-crm, fresh & weathered, some transl, fr-gd pin point por in weathered cht, NS
 A.A.

Dol: crm-tan, fxln, some suc, chty (crm, fresh), sub chky-prtly dns, some pr-fr intrxln-pin point por, NS
 Dol: A.A. w/ incrs suc, some vug por, NS

4500
 Dol: A.A., w/ some wh, chky-vry chky, NS

9.2 Wt, 5.2 WL, 2,300 ppm Chl, 6# LCM

Miss. 4410' (-1558) EL

Ran 8 stand short trip @ TD, prior to running electric logs

L.T.D. 4509' (-1657)
 R.T.D. 4510' (-1658)

Straight Hole Survey @ 4510': 0.5° Dev.