

GRAND MESA

OPERATING COMPANY

(316) 265-3000
FAX: (316) 265-3455

1700 N. WATERFRONT PARKWAY
BLDG. 600
WICHITA, KANSAS 67206-5514

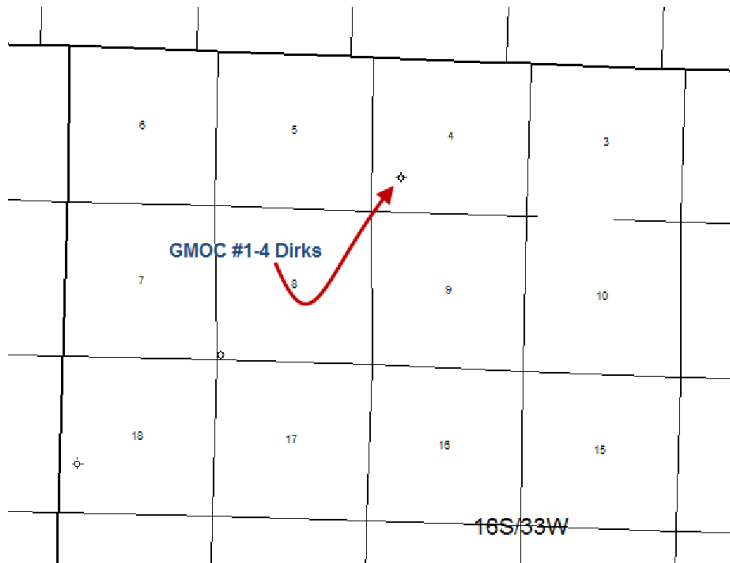
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: #1-4 Dirks
Location: 1168FSL, 969FWL, 4-16s-33w, Scott County, Kansas
License Number: API: 15-171-20812 Region: Wildcat
Spud Date: 6-11-2011 Drilling Completed: 6-23-2011
Surface Coordinates: Lat: 38.6881754
Long: -100.977885
Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 3063' K.B. Elevation (ft): 3068'
Logged Interval (ft): 3600' To: RTD Total Depth (ft): 4870
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

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

GEOLOGIST

Name: Steven P. Carl and Ryan Seib
Company: Grand Mesa Operating Company
Address: 1700 N. Waterfront Parkway, Bldg 600
Wichita, Kansas 67206
316-256-3000



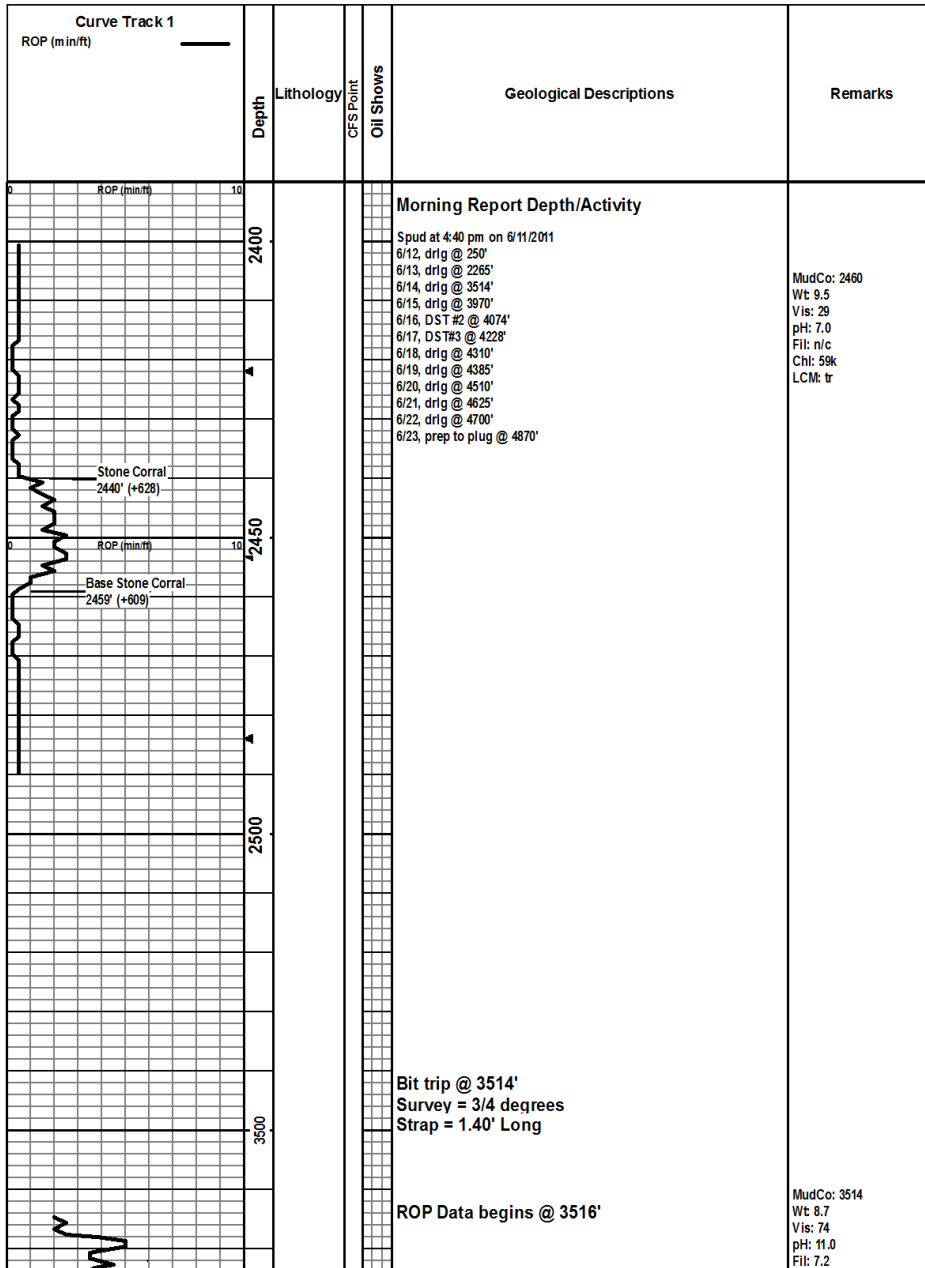
COMMENTS

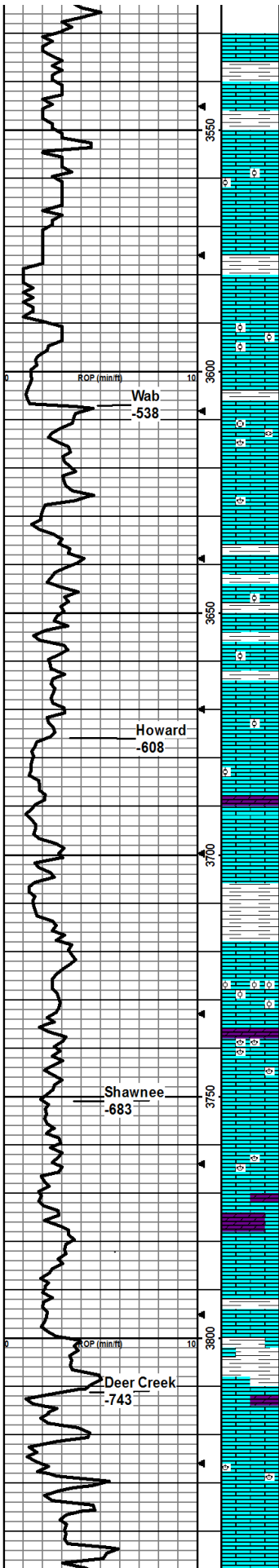
Contractor: Murfin Drilling Company Rig #24.
Pusher: Tony Martin.
Surface Casing: 8 5/8" set at 222' w/165sx.
Production Casing: none set.
Mud by: MudCo.
DST's by: Superior Testing.
Logs by: Weatherford (DIL, CN-CD, ML)
RTD=4870'
LTD=4867'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stone Corral	2441'	+627	2440'	+628
B/Stone Corral	2459'	+609	2456'	+612

Heebner Shale	3981'	-913	3978'	-910
Lansing	4018'	-950	4018'	-950
Muncie Creek Shale	4200'	-1132	4196'	-1128
Stark Shale	4294'	-1226	4290'	-1222
Hushpuckney Shale	4342'	-1274	4338'	-1270
Marmaton	4410'	-1342	4409'	-1341
Little Osage Shale	4542'	-1474	4538'	-1470
Excello Shale	4560'	-1492	4556'	-1488
Johnson Zone	4635'	-1567	4630'	-1562
Morrow	4693'	-1625	4690'	-1622
Mississippian	4773'	-1705	4770'	-1702
RTD	4870'	-1802		
LTD			4867'	-1799





LS-crm-tn, vfn-fn xln, uniform-mott, very chlky, nvp, no odr, no fluor, nsfo, SH-red-gry.

LS-crm-drk gry, vfn-fn xln, uniform, sli chlky, nvp, no odr, no fluor, nsfo, SH-red-gy.

LS-crm-tn, vfn xln, nvp, no odr, no fluor, nsfo SH-red-gy.

LS-crm-gry, vfn-fn xln, ool, m ott, salt/pepper, nvp, no odr, no fluor, nsfo, occ red SH.

LS-crm-gry, vfn-fn xln, uniform, very chlky, nvp, no odr, no fluor, nsfo.

LS-crm-wht, vfn xln, uniform, chlky, nvp, no odr, no fluor, nsfo, SH-red.

LS-crm-gry, vfn-fn xln, ool, salt/pepper, sli chlky, nvp, no odr, no fluor, nsfo, SH-red-gy.

LS-crm, vfn-fn xln, mostly uniform, ool, sm salt/pepper, nvp, no odr, no fluor, nsfo.

LS-crm-gry, vfn-fn xln, ool, salt/pepper, sm SS-wht, fn-m d grn, fri, tr blk min stn, nvp, no odr, no fluor, nsfo.

LS-crm-tn, vfn xln, uniform, sm SS-fri, gn grn, well rnd, no odr, no fluor, nsfo, SH-gy.

LS-crm-tn, vfn-fn xln, foss-vari, sm uniform, sm LS-vfn-fn xln, mott, SS-wht, fn-m d grn, fri, blk tr min, nvp, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, ool, salt/pepper, SS-wht fri, well rnd, blk tr min, occ dolo, wht, fn xln, nvp, no odr, no fluor, nsfo.

LS-crm-wht, vfn xln, foss-vari, ool, salt/pepper, mott sm SS, wht fn grn, well rnd-ang, sm dolo, wht, fn xln, dense, nvp, no odr, no fluor, nsfo.

LS-crm-gry, vfn-fn xln, sm ool salt/pepper, mott, foss, scat pr int xln por, occ spotty brn stn, cut vwk pale blu, sm SS, gry, fn grn, fri, well rnd, occ dolo, wht, fn xln, dense, nvp, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, ool, salt/pepper, mott pr int xln por, occ spotty brn stn, cut vwk pale blu, no odr, no fluor, nsfo.

LS-crm-tn, vfn xln, foss-vari, occ ool salt/pepper, mostly uniform, nvp, no odr, no fluor, nsfo.

LS-crm-gry, vfn-fn xln, foss-vari, occ ool, salt/pepper, mott, SH-red, nvp, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, sm chalk, occ dol, tan, fn xln, dense, nvp, no odr, no fluor, nsfo.

LS-crm-gry, vfn-fn xln, very chalky, pr int xln por, occ spotty brn stn, does not cut, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, chalky, occ SS, vfn grn, tan, fri, rnd, blk min stn, nvp, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, sli chalky, tr pyr, nvp, no odr, no fluor, nsfo.

LS-crm-wht-tn, sm drk gry, m ostly fn xln, foss-vari, sm profus ool, sli chalky, nvp, no odr, no fluor, nsfo.

LS-crm-tan, md xln, sm crs xln, profus foss-various/ool, scat pr int xln por, rare int foss por, sm LS-drk gry, vfn xln, v dense/hard, foss-brach, nvp, rare DOLO-crm/tan, vfn xln, dense, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, sli ool, very chlky, occ LS-gry-drk gry, dense/hard, foss-vari, nvp, no odr, no fluor, nsfo.

LS-crm-vfn xln, foss-brach, sli ool, nvp, chlky, LS-drk gry, vfn xln, firm/dense, rare dolo, dense/hard, nvp, no odr, no fluor, nsfo.

LS-crm-tn, sm dark gry, vfn-fn xln, foss vari, scat pr int xln/foss por, sli chlky, occ dolomitic LS, wht vfn xln, dense/hard, no odr, no fluor, nsfo.

LS-crm-tn, md xln, foss-vari, dense/hard, uniform, nvp, sli chalky, LS-drk gry, vfn xln, firm/dense, nvp, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, uniform, nvp, sli chalky, LS-drk gry, dense/hard, nvp, SH-red-blk, no odr, no fluor, nsfo.

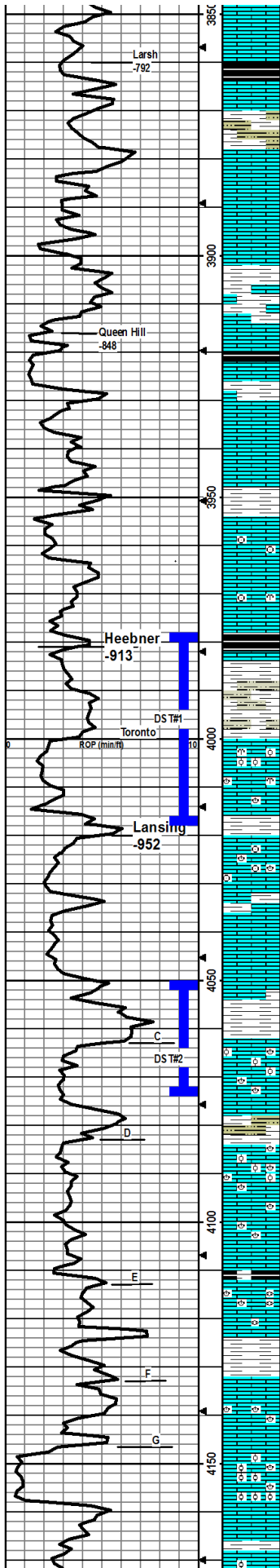
LS-crm-tn, vfn-fn xln, foss-vari, mott, ool/occ, p int xln por, occ dolo, gry, fn xln, firm/dense, nvp, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, mostly uniform, sm sli ool, sli chlky, LS-tn, drk gry, fn xln, dense/hard, SH-red-gy, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-brach, sli ool, very chlky, occ dolo, dense hard, nvp, SH-red-gy, no odr, no fluor, nsfo.

LS-crm-tn, sm gry, vfn-fn xln, foss-vari, scat pr int xln/foss por, chlky, occ dolo, tan, vfn xln, dense/hard, SH-gry-blk, no odr, no fluor, nsfo.

LS-crm, sm arv, vfn-fn xln, foss-vari, ool, sli chkv, occ dolo, vfn xln.



nvp, dense/hard, SH-red-gy, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, sli ool, sli chiky, occ spotty brn stn, uts wk blu, SH-red-gry-blk, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, sli chiky, LS-crm, vfn xln, dense/hard, nvp, SH-red-gry-blk, no odr, no fluor, nsfo.

LS-crm-tn-gry, vfn-fn xln, foss-vari, dense, sli chalky, scat pr int xln foss por, SH-blk, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, sli ool, sli chalky, LS-gry-tn, vfn xln, dense/hard, nvp, SH-red-gy, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, ool, sli chalky, nvp, LS-gry-tn, vfn xln, dense/hard, nvp, occ chert, clear/opaque, dense, nvp, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-vari, sli ool, chiky, nvp, occ dolo, wht, fn xln, dense/hard, nvp, SH-red-gy-blk, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss-vari, sli chiky, nvp, occ chert, wht/opaque, nvp, SH-red-gy, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss, sli chiky, nvp, LS-gry-tn, vfn xln, dense/hard, occ salt/pepper, SH-red-gy, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss, very chiky, nvp, LS-gry, vfn xln, dense/hard, occ dolo/lime, dense/hard, nvp, Abund red-gry SH, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss, sli chiky, nvp, occ spotty brn m in stn, SH-red-gy, no odr, no fluor, nsfo.

LS-crm, vfn-fn xln, foss, chiky, nvp, LS-tn, vfn-fn xln, dense/hard, scat por int xln por, red-gy SH, no odr, no fluor, nsfo.

LS-crm-tn, vfn-fn xln, foss-crin, sli ool, sli chiky, SH-red-gry-blk, no odr, no fluor, nsfo.

LS-lt-med tan, predom med-ors xln, sm fn xln, mottled, sm uniform, foss-brn/crin, sm mealy, mostly dense sm nvp, sc at int xln/bs pos sm chalk, few pcs chert-wht, silty trip, few pcs LS-tan, dolomitic, scat fr-gd vug por, few pcs pe rtay w/ef fluor, fat cup odr, ss fo.

SH-blk, carb, blocky, few fissile.

SH-gry, sm brn, sm orn, silty.

LS-lt gry/crm, fn xln, dense, mostly uniform, few pcs foss-brach, scat pr-fr pp por, rare int foss por, rare spar filled frags w/ss drk fo, sm thk tarry dead? oil, few pcs w/yl fluor, fnt cup odr, ssfo in several pcs per tray.

LS-gry/crm, fn xln, mostly dense/hard, uniform, occ foss-fus/brach, few pcs chert-wht, opaque, sm chalk, no cup odr, rare pp por w/ssfo prob from above.

SH-predom gry, sm red, silty in part, trip sample.

LS-lt tan, fn xln, mostly dense, foss-brach/crin/fus, abund chalk, ool, rare pr-fr int ool/foss por, mostly barren, no cup odr, scat dul yel m in (calc) fluor, few pcs per tray w/vsfo.

LS mostly as above, incr SH-drk gry, sm silty, stuff?, decr show lith, nvp, no cup odr, nsfo.

LS-lt tan, fn xln, dense/hard, decr ool, foss-brach/fus, decr chalk, nvp, wk m in fluor, no cup odr, nsfo.

SH-med to drk gry, waxy, sm silty, still carrying LS from above, no cup odr, ns.

LS-lt tan/crm, fn xln, mostly dense, uniform w/nvp, sm LS-crm, fn xln, profus ool/foss-brach w/fr int ool por, sho drk fo in all por, wk bleed on break, no gas bub, dul yel fluor, streaming out, no cup odr.

LS-crm, fn xln, dense, uniform w/nvp, sm ool/foss-brach/fus w/pr int ool por, occ ool stn from above, Abund red-gry SH, silty, no odr, no fluor, nsfo.

LS-crm, fn-m-d xln, dense, uniform, sm w/pr-fr int ool por, foss-brach/fus, occ tn LS-fn xln, dense w/nvp, SH-red-gry, no cup odr, wk m in fluor, ssfo in several pcs/tray.

LS-crm fn xln, mostly uniform as above, dense, nvp, occ foss, decr ool, no cup odr, carrying few pcs ool w/sho from above.

LS-crm, micro-fn xln, dense, brittle, foss-brach, v rare pp por, 1-2 pcs per tray w/vsfo, no cup odr, no fluor.

SH-mostly gry, few pcs blk carb.

LS-crm, fn xln, dense, brittle, foss-brach/fus, scat pr int xln/foss por, sm fr vug por, barren, sm ool w/pr-fr int ool por, no cup odr, no fluor, vsfo in rare (1-2) pcs per tray.

SH-med gry, sm brn, sm orn, waxy, silty.

LS-crm, fn xln, mostly uniform, dense, foss-brach, few frags filled w/med brn min, does not cut, rare pr vug por, no cup odr, no fluor, nsfo.

LS-crm-lt tan, fn xln, sm sparry crs xln, mostly uniform, dense/hard/brittle, stylo, rare foss-brach, few pcs per tray w/fr vug por, no cup odr, vnt pale fluor on cut, nsfo.

LS-crm-tan, fn xln, foss-brach, dense/hard, ool w/ gd vug/ool por, SH-red-gy, no odr, no fluor, nsfo.

LS-crm, fn xln, foss-vari, ool/ool, hard/brittle, fr-gd vug/ool por, sm LS-crm-tn, vfn xln, occ red SH, no odr, no fluor, nsfo.

LS-crm, fn xln, foss-vari, ool, dense/hard, decr fr-gd vug/ool por, LS-tn, vfn-fn xln, dense/hard, nvp, no odr, no fluor, nsfo.

MudCo: 3981
Wt: 9.0
Vis: 55
pH: 10
FI: 8.8
Chl: 4.8k
LCM: 3

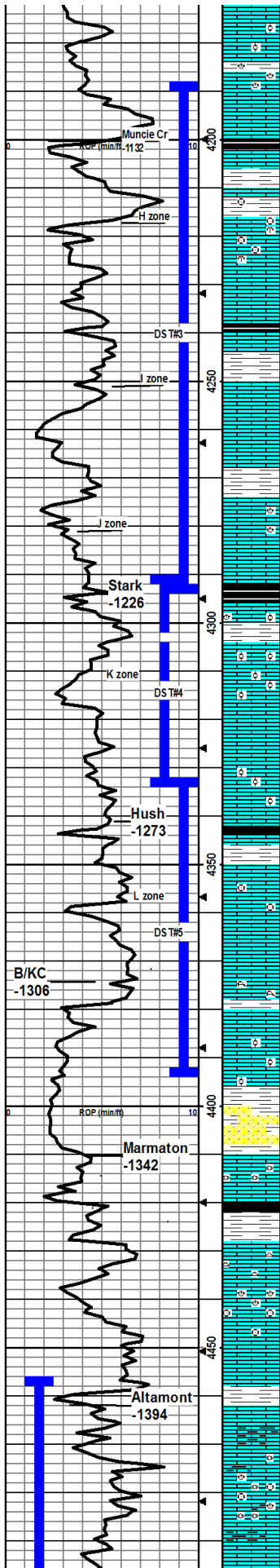
DST #1
Toronto
3979-4018'
30-30-20-40
Rec: 65' Mud
IFP: 49-77#
FFP: 68-78#
ISIP: 1105#
FSIP: 1111#

Vis: 49
Wt: 9.1

DST #2
Lan C
4050-4074'
30-30-30-30
Rec: 65' OSM
IFP: 40-54#
FFP: 55-67#
ISIP: 1076#
FSIP: 1042#

MudCo: 4074
Wt: 9.0
Vis: 53
pH: 10.5
FI: 8.0
Chl: 5k
LCM: 2

MudCo: 4200
Wt: 9.2
Vis: 59
pH: 10.5



LS-crm, fn xln, foss-vari, ool, sm mott, dense/hard, pr-fr vug por, LS-gry, vfn xln, dense/hard, nvp, no odr, no fluor, nsfo.

LS-crm, vfn xln, foss/brach, ool, dense/hard, nvp, occ brn min stn, LS-crm, fn xln, ool, dense/hard, pr-fr vug/ool por, SH- red-gry no odr, no fluor, nsfo

SH-blk, carb.

LS-drk-med tan, micro-fn xln, v dense/hard, foss-brach/crin/spic, rare stylo frags caked w asphaltoid oil, wicking cut, pale blu, no cup odr, nsfo. SH-gry, waxy.

LS-med tan, fn xln, vdense/hard, diff crush, mostly uniform, sm foss-crin, nvp, no fluor no odr, ns.

LS-erm/lt gry, crs xln, profus foss-byzbrach/crin/fts, dense/hard, rare frac faces w/d oil cake, cuts dull yel, LS-med gry/tan, fn xln, mottled, foss-vari, v hard/dense, nvp, no cup odr, nsfo.

LS-as above, decr foss, few pcs per tray w/pr int xln por, int ux of chalk & chert-whit, opaque, v fnt cup odr, ves drk fo in few pcs per tray.

LS-erm/lt gry, fn xln, foss-vari, dense/hard, abund chert-gry, opaque, scat pr pp por, no odr, no fluor, ns.

LS-erm, micro-fn xln, mostly uniform, dense/hard, rare foss, scat pr pp por, no cup odr, no fluor, ns. SH-gry.

LS-gry, fn xln, mostly dense/hard, uniform, rare foss, chert-gry, opaque, few pcs per tray LS-erm, med xln, pr-fr int xln por, fr vug por, fnt cup odr, dul yel fluor, ssfo.

LS-erm, fn xln, dense/hard, uniform, rare foss, nvp, LS-tan, vfn-fn xln, dense/hard, mottled, nvp, SH-red-gry-blk, faint odr, few pcs per tray w/ weak blu fluor on cut, nsfo.

LS-erm/gry, micro-fn xln, mostly dense/hard, uniform, sm v foss-vari, several pcs per tray w/fr-gd vug por, calcite rhombs in vugs, gd cup odr, dul gold fluor, pale blu strng cut, fair sho drk fo.

LS-erm/gry, fn xln, mostly uniform, dense/hard, occ foss, nvp, no cup odr, no fluor, ns, abund SH-gry/brn.

SH-blk, carb.

LS-med tan, micro-fn xln, v dense/hard, ool/foss in part, few pcs w/gd vug por, fs drk fo in al por, fnt cup odr, gold fluor, strng cut.

LS-erm/tan, mostly fn xln, dense, sm chalk, rare spotty int xln por w/rare ss drk fo, fnt cup odr, wk fluor in few pcs.

LS-erm, fn-med xln, mostly uniform, rare foss, brittle/flaky, slty chalky, sm chert-mlly-gry-opaque rare vpr int xln por, vsso in 1-2 pcs per tray, faint cup odr.

LS-erm/tan, mostly fn xln, few crs xln, chalky, scat vpr int xln por, few pcs chert-gry/whit, opaque, no cup odr, spotty m in fluor, nsfo.

LS-erm, fn xln, ool/foss, dense/hard, sli chiky, nvp, LS-tan, fn vfn xln, dense/bttle, nvp, chert-whit, dense/hard, nvp, Abund red-gry-blk SH, no odr, no fluor, nsfo.

SH-blk, carb.

LS-erm, fn xln, foss-vari, ool, dense/hard, mostly uniform, sli chiky, m/p, rare bmblik min stn, LS-tn-gry, vfn xln, dense/hard, m/p, no odr, no fluor, nsfo.

LS-erm, fn xln, foss/crin, brittle, mott, sli chiky, some brn-blik min stn, LS-tn-gry, fn xln, dense/hard, pr int xln por, v fnt int odr, no fluor, vsso.

LS-erm, fn xln, foss-vari, dense/bttle, mott, pr int xln por, occ bmblik stn, trpyr, LS-tn, vfn xln, dense/hard, rare pr int xln por SH-red-gry, faint cup odr, no fluor, vsso.

LS-erm, fn-vfn xln, foss-vari, dense/hard, uniform, pr int xln por, trpyr, some LS-tn-gry, vfn xln, m/p SH-red-gry, fnt cup odr, no fluor, vsso in few pcs per tray.

LS-erm, fn xln, foss/coral, bttle, mostly uniform, scat pr fr int xln por, LS-tn, fn xln, pr fr int xln por, rare pieces Chert-whit, dense/hard, m/p, fr cup odr, faint yel fluor, vsso in few pcs per tray.

LS-erm, med xln, mostly dense/uniform, chalky, rare pr fr int xln por w/vvsso, difficult to break out of por, LS-tan, fn xln, ool, mostly dense w/calcite filled in to d por, rare pr int ool por w/vvsso, patchy gold fluor, fnt cup odr, patchy lt brn stn in dry.

LS-erm, vfn-fn xln, dense/hard, uniform, nvp, LS-tn, vfn-fn xln, dense/bttle, nvp, occ. SS-gry, vfn grn, subrnd, well sorted, nvp, Abund red-gry-blk SH, no odr, no fluor, nsfo.

LS-gry-tan, mostly uniform, dense, sm crs xln, foss-fus, calcite filled frags, few pcs/tray w/pr int xln por, sm dead oil stn, 2 pcs/tray w/vsso, no cup odr, scat m in fluor, patchy lt-med brn stn, pr sat in dry.

SH-predom gry, few pcs blk, carb.

LS-gry, fn xln, uniform, chert-whit, opaque, sm chalk no cup odr, scat m in fluor, nsfo, 1 pc/tray w/pr pp por, lt brn patchy stn, cuts wht/blu.

LS-gry, predom as above sm LS-blk, fn-med xln, foss-crin, hard/dense, nvp, no cup odr, nsfo, sm LS-gry, fn xln, chalky, scat pr in xln por, fcs dead oil stn, scat patchy bmblik stn in dry.

SH-drk tan, brn, gry, few blk carb.

LS-gry, fn xln, uniform, dense, nvp, LS-tt gry-erm, fn xln, chalky, soft/flaky, rare patchy pr int xln por, 1-2 pc/tray w/vsso, locked into por, abund red SH, cup water muddy red, no cup odr.

LS-med tan, vfn xln, dense/bttle, v foss-fus/crin/brach, few frac faces, no fluor along frags, one pc per tray w/vpr int xln por w/vsso locked in por, patchy med brn stn, cuts blu/wht in dry, no cup odr.

LS-tt tan, vfn-fn xln, dense/bttle, decr foss, mostly uniform w/sm mottling, sm chalky, m/p, nsfo, in flu x LS-erm, micro xln, ool, dense y pac ke dw calcite filled in to ool por, no cup odr, scat dul min fluor, ns.

Fit: 9.6
Chl: 7.4k
LCM: 2

DST#3
Lan H-I-J
4188-4293'
30-45-45-60
Rec: 295' TF
55' OSM
60' OCM
180' OCWM
IFP: 95-174#
FFP: 175-232#
ISIP: 1210#
FSIP: 1214#

MudCo: 4300
Wt: 9.2
Vis: 57
pH: 10.5
Fit: 8.8
Chl: 7k
LCM: 2

MudCo: 4333
Wt: 9.0
Vis: 58
pH: 10.5
Fit: 9.6
Chl: 10k
LCM: 2

DST#4
Lan K
4290-4333'
30-30-30-30
Rec: 65' Mud
Show oil
on top
IFP: 48-66#
FFP: 67-84#
ISIP: 1252#
FSIP: 1244#

DST#5
Lan L-Pleas
4333-4395'
30-45-45-60
Rec: 1420' MW
IFP: 94-408#
FFP: 421-703#
ISIP: 1225#
FSIP: 1202#

MudCo: 4386
Wt: 9.0
Vis: 57
pH: 10.5
Fit: 9.2
Chl: 8.2k
LCM: 2

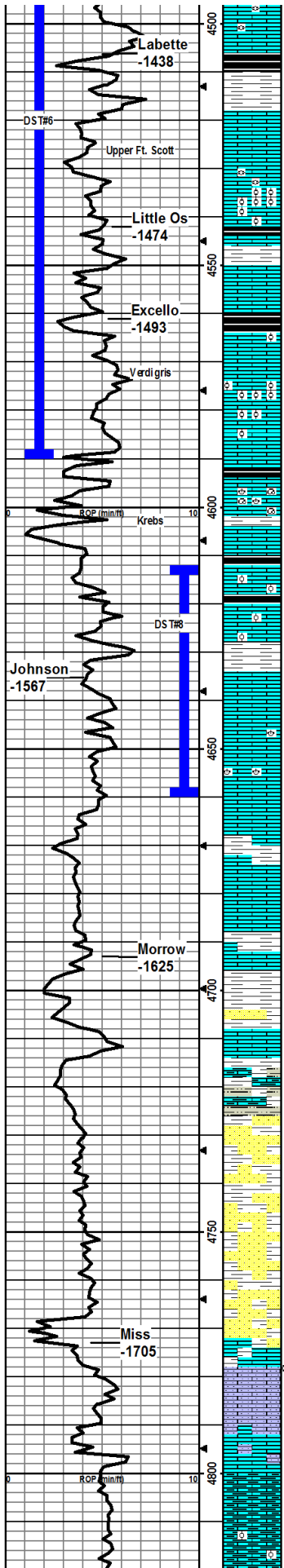
Influx of red/brn SH, rounded, firm, sm silty, v abund in samples.

Still carrying red SH.

MudCo: 4514
Wt: 9.1
Vis: 61
pH: 10.0
Fit: 10.4
Chl: 8.5k
LCM: 2

Still carrying red SH.

DST #6
Alt-Vert



LS-tt tan-lt gry, med xln, foss-crinifus, mostly dense, hard, sm brittle w/easy crush, sm ool, few pcs chert-milky, foss, no cup odr, nvp, no fluor, ns.

SH-blk, carb, flood in 4520smpl.

SH-predom drk gry, sm grn/maroon/redbrn, rare silty, no cup odr, no fluor, LS-tt gry, fn xln, dense/hard, nvp, no fluor, ns.

LS-med gry-lt gry, fn xln, dense, mostly uniform, nvp, no cup odr, ns, carrying abund SH-as above.

LS-med tan-lt gry, fn-m d xln, sparry, foss-fus, dense, brittle, rare dolo-lt tan, fn xln, nvp, no cup odr, ns.

LS-med tan, micro xln, profusely ool/foss, dense, nvp, LS-tt tan, fn xln, dense, uniform, nvp, no cup odr, ns.

SH-blk, carb.

LS-drk-lt brn, fn xln, sparry, hard, brittle, mostly dense, few pcs/frag w/pr int xln/pp por w/vss drk fo, dul yel fluor, pale blu streaming cut, no cup odr.

SH-blk, carb.

LS-crm, fn xln, dense/brittle, occ foss, nvp, LS-tt gry, vfn- fn xln, hard/dense, sm frac, nvp, Abund SH-red-gry-grn, blk carb, faint cup odr, no fluor, nsfo.

LS-tt gry/crm/tan, fn-med xln, dense/uniform, sm foss-brach, sm profus ool, rare pr int xln por, vssfb, will not break out of por, no cup odr although roughneck reported odr while collecting smpl, NOTE: smpl nearly all drk gry SH, few pcs of LS as described.

LS-gry, crs xln, easy crush, nvp, no fluor, no cup odr, ns. Sample is predom drk gry SH.

LS-gry/drk tan, med xln, foss-brach/fusigas, oolpis, hard/brittle, nvp, no cup odr, fn min fluor, ns, abund SH-blk carb and as above.

LS-predom gry-fn xln, dense/hard, uniform, sm foss/oolpis w/nvp, few pcs LS-gry mottled, med xln, brittle, easy crush, fr int xln por's sfo, wk bleed on break, dul yel/gold fluor, blu/wht streaming/wicking cut, fr cup odr.

LS-gry, fn xln, dense, uniform, nvp, ns, abund SH-as above, few pcs LS-gry, med xln, spotty pr int xln por, vs sfo, difficult to break out of por, no cup odr, dul yel fluor, whtblu cut, sh pcs may be from above.

Several LS's as follow:
 LS-drk-med brn, crs xln, hard/brittle, foss-crinifus/ool, rare spotty in foss por, vssfo in rare spots.
 LS-tt gry, fn xln, uniform, dense, nvp, ns.
 LS-med gry, micro v fn xln matrix, profus foss-crinifus/brach, dense, brittle, rare pp por, vs sfo, no cup odr.

LS-mostly gry, fn xln, dense, brittle, nvp, ns, LS-tt tan brn, v fn xln, dense/lt hard, sm calcite filled frags, spots of blk (dead?) oil within frags and along faces, wk yel fluor, pale cut, no cup odr.

LS-med tan, micro xln, vhard, dense, scat pr-fr vug por, brn stn and gold fluor along vug walls, streaming blu cut, few droplets blk oil in dimple dish, no cup odr.

LS-tan/brn, micro-fn xln, dense, brittle, foss-brach, nvp, no cup odr, ns.

LS-tt tan/gry, med xln, foss-epic/vari, dense, hard, nvp, no fluor, no cup odr, ns. SH-drk gry, flecked w/blk min, striated.

LS-tt gry, med xln, foss-vari, dense, sparry, nvp, no cup odr, ns.
 SH-gry, brittle to waxy, sm blk organic remains.

LS-tt gry, fn xln, mostly uniform, sm foss-vari, nvp, ns, LS-drk-med tan, micro-vfn xln, uniform, rare foss, rare frac, dense, brittle, nvp, no cup odr, ns.

SH-predom gry, sm olive sm varicolored, finely laminated in part, few cong, waxy, firm, sm S-S gry, fn grn, well srted, sub round, arg, glauc, no cup odr, ns.

LS-gry-lt tan, fn xln, vhard, dense, nvp, brt yel m in (calc) fluor, nvp, no cup odr, ns.

Mix of LS-as above, few clusters SS-gry/grn, fn grn, well srted, glauc, SH-s as above, no cup odr, ns.

SS-tt blu, fn grn, well srted, sub rnd, glauc, pr int grn por, semi fri, few pcs w/drk stn, cuts weak pale blu, no cup odr, no fluor, nsfo. SH-gry, sm striated.

SS-grn/blu, vfn-fn grn, well srted, sub rnd, glauc matrix, few pcs v friable, no vis por, no cup odr, nsfo.

SS as above w/mix of md-gry matrix.

SS-wht/grn/blu grns, vfn-fn grn, well srted, sub-well rnd, glauc matrix, hard w/ few pcs of soft ss, no vis por, no cup odr, ns.

SS-white, vfn-fn grn, well srted, sub-well rnd, glauc matrix, less dense than above, no vis por, no cup odr, ns.

LS-whtbuf, fn xln, vry sndy, vfn-fn grn, sub-rnd, hard w/slt chalky-sft pcs, no vis por, no cup odr, ns.

LS-wht-lt brn, fn xln, sly sndy vfn-fn grn, sub-rnd, hard, pr int xln por, no cup odr, ns.

LS-wht-buf, fn xln, hard, some foss and some pyrite, gry and dk green soft Sh, some int xln por, no cup odr, ns.

LS-wht-buf, fn xln, hard, foss, some ool, (green, dk gry to blk Sh, soft), sm pp por in ool pcs, no cup odr, ns.

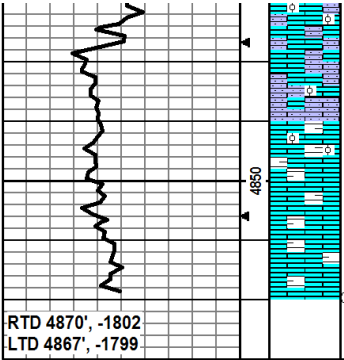
4456-4590'
 30-30-out
 Packer failed attempting 2nd open.
 1st period: Weak blow building to 1/2", no return.
 Rec: 1800' Mud
 No shows of Oil IFF: 102-105#
 FFP: N/A
 ISIP: 446#
 FSIP: N/A

DST#7
 Johnson
 4612-4660'
 Misrun:
 Pkr failed on 2nd open as in DST#6. DST Tool replaced.

DST #8
 Johnson
 4613-4660'
 30-30-30-30
 Rec: 15' Mud
 IFF: 64-65#
 FFP: 62-64#
 ISIP: 80#
 FSIP: 76#

MudCo: 4630
 Wt: 9.2
 Vis: 57
 pH: 10.0
 Fil: 9.6
 Chl: 7.5k
 LCM: 2

MudCo: 4733
 Wt: 9.2
 Vis: 56
 pH: 10.5
 Fil: 8.8
 Chl: 6.5k
 LCM: 4



LS-white-tt brn, m xin, hard, toss, some ool, sit sandy w/ vm-m grn, well srted, sub rnd, (green to dk gry to blk soft SH), sm int xin por, no cup odr, ns.

LS-wht-tt brn, fn xin, softer than above, foss, increase in sand, vfn-fn grn, (dk green to dk gray soft sh), no cup odr, ns.

LS-wht-buf, fn-med xin, hard, foss frags, some ool pcs, hard, med green to dk gry soft SH, no cup odr, ns.

same as above LS, some SS, vfn-fn grn, well srted, rnd, sm pp por, some sily chalky pcs, SH- same as above, no cup odr, ns.

LS-white-tt brn, fn xin, hard, sm pyrite xts, some soft sily chalky pcs, some sily chalky, lt to dk gry and green shale sm pp por, no cup odr, ns.

RTD 4870', -1802
LTD 4867', -1799