

GRAND MESA

OPERATING COMPANY

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

1700 N. WATERFRONT PARKWAY
BLDG. 600
WICHITA, KANSAS 67208-5514

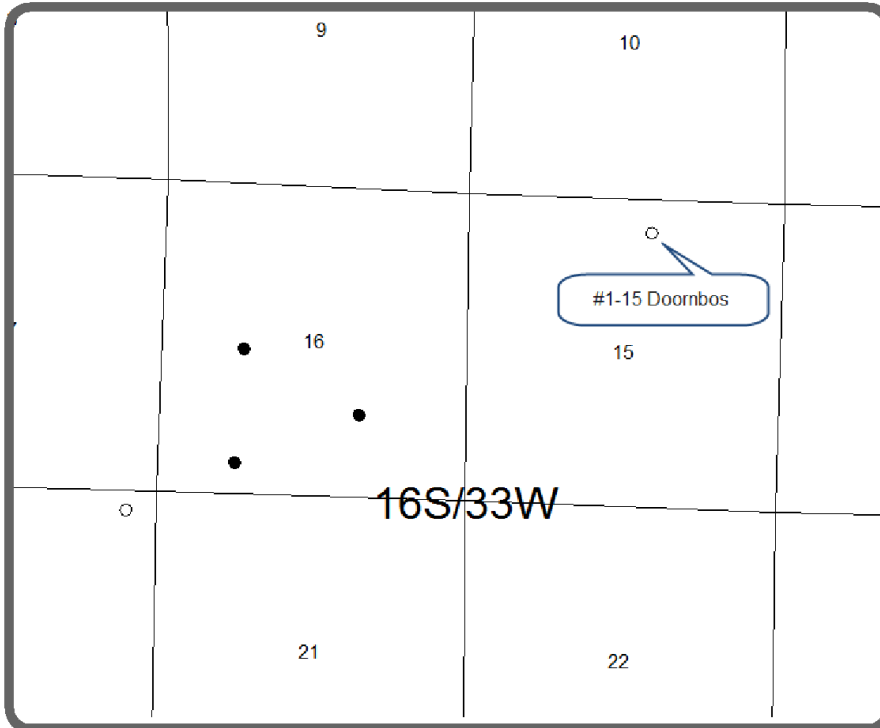
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: #1-15 Doornbos
Location: 575FNL, 2232FEL, 15-16s-33w, Scott County, Kansas
License Number: API: 15-171-20834 Region: Wildcat
Spud Date: 9-30-2011 Drilling Completed: 10-12-11
Surface Coordinates: Lat:
Long:
Bottom Hole Coordinates: Vertical hole
Ground Elevation (ft): 3038' K.B. Elevation (ft): 3043'
Logged Interval (ft): 3600' To: RTD Total Depth (ft): 4853'
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: Bob Schreiber
Company: independent
Address: 268 NE 220 Rd
Hoisington, KS 67544
620-653-7691



COMMENTS

Contractor: Murfin Drilling Company Rig #24
Pusher: Tony Martin
Surface Casing: 8 5/8" set at 222' w/165sx
Production Casing: 5 1/2" set at 4847',
Mud by: MudCo
DST's by: Trilobite Testing
Logs by: Weatherford (DIL, CN-CD, ML,SONIC)
RTD=4850'
LTD=4853'

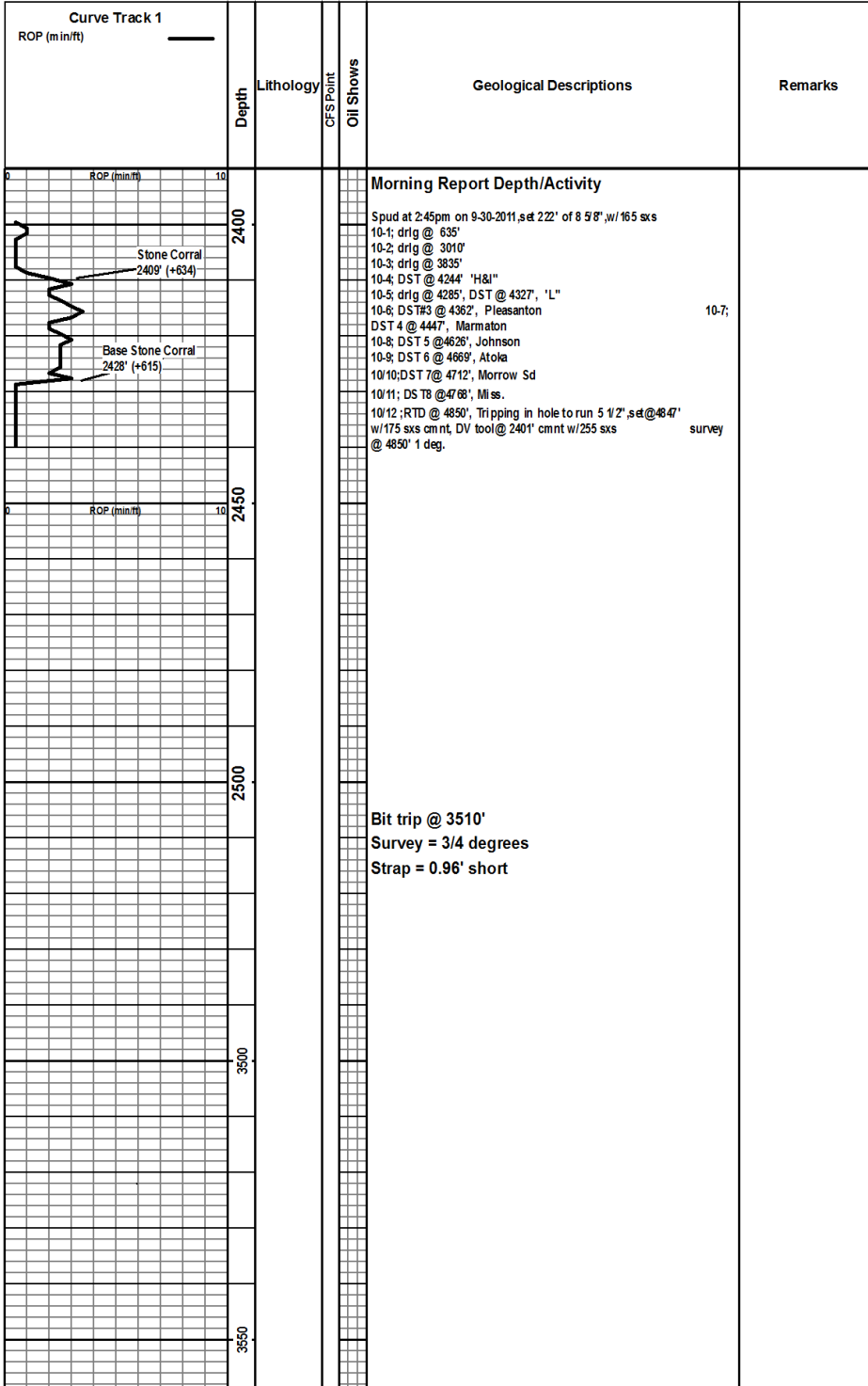
FORMATION TOPS

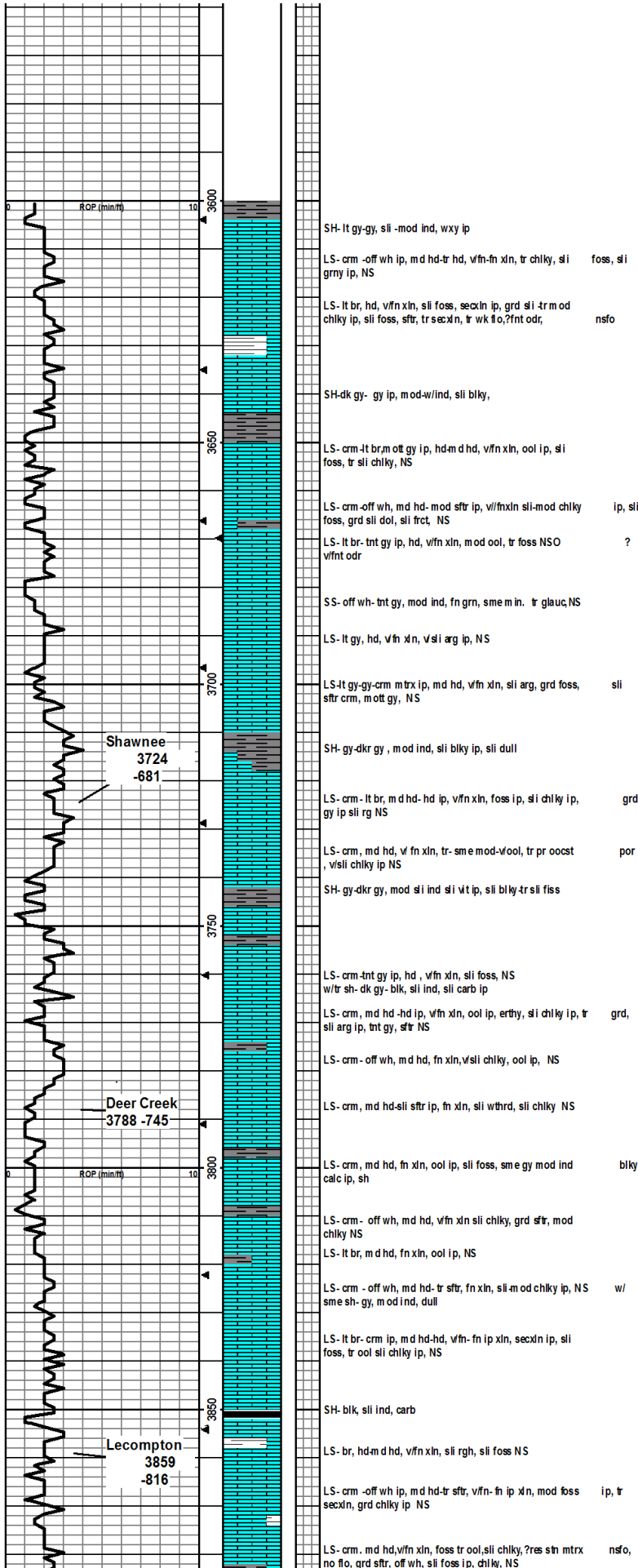
FORMATION

SAMPLE TOPS
Depth Datum

LOG TOPS
Depth Datum

Stone Corral	2409'	+634	2409'	+634
B/Stone Corral	2428'	+615	2428'	+615
Heebner Shale	3956'	-913	3957'	-914
Lansing	3999'	-956	3999'	-956
Muncie Creek Shale	4176'	-1133	4176'	-1133
Stark Shale	4262'	-1219	4262'	-1219
Hushpuckney Shale	4308'	-1265	4309'	-1266
Marmaton	4378'	-1335	4385'	-1342
Upper Fort Scott	4490'	-1447'	4490'	-1447
Little Osage Shale	4512'	-1469	4513'	-1470
Excello Shale	4530'	-1487	4530'	-1487
Johnson Zone	4604'	-1561	4607'	-1564
Morrow	4664'	-1621	4664'	-1621
Mississippian	4709'	-1666	4709'	-1666
RTD	4850'	-1696		
LTD			4853'	-1810

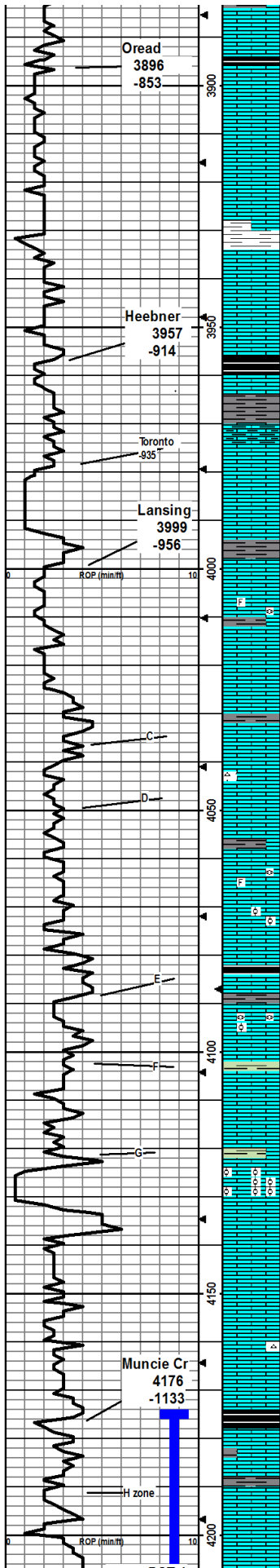




Shawnee
3724
-681

Deer Creek
3788 -745

Lecompton
3859
-816



SH-blk, sli ind, carb
 LS- vlt br- crm, m d hd, vfn- fn xln, sli chiky, fn ool, grd off wh str, mod chiky NS

LS- vlt br, m d hd - hd ip, fn xln, mod foss (fm n) ip, sli tr secxn NS

LS- vlt br- crm, hd- m d hd ip, micro- fn ip xln, frct ip, tr foss sli str, tr sli chiky, tr gs bbl, ? vifnt odr NSO w/tr off wh chrt NS

LS- crm- tnt br ip, hd- m d hd, vfn xln, tr foss, w/tr chrt, crm br, sli foss, w/tr off wh str chiky LS NS

SH- gy- tnt gr, m od ind, plty- blk,

LS- crm - off wh ip, m d hd- hd, vfn xln sli frct ip, sli foss ip, sli grny ip, NS

LS- crm- tnt br, hd- md hd, microxln, NS

SH- blk, sli- mod, ind, carb ip, sli fiss
 LS- crm, hd, vfn xln, tr fn foss NS

SH- rsty/br gy- tnt gr ip, sli mod ind, sli blk

LS- crm - off wh, m d hd- str ip, vfn- fn xln, chiky ip, fn ool ip, sli foss ip, tr fr vug- intrprtd por, tr mst sat, dk br ip, vs sfo, sli dd- dd oil ip, ? folwr grv

SH- gy- dkr gy ip, sli- mod ind sli plty/fiss

LS- crm- tnt br ip, m d hd- hd, vfn xln, sli foss ip, tr sli chiky NS

LS- crm - off wh ip, m d hd, vfn- fn ip xln, sli chiky ip, tr sli foss, tr ool, tr part sat, vs sfo md br o, no odr

SH- gy, sli- mod ind, sli splnry ip
 gy- tnt gr, sli- mod ind, sli blk & sm er sty/br sh

SMPLS PR

LS- crm - off wh ip, m d hd hd ip, vfn xln, tr fn ool, tr foss frct ip, ? pc so ? abv, w/tr chrt- opq- crm, frsh, shrp, sli foss NS

LS- crm - tnt gy ip- mott lt- m d gy ip, m d hd, fn xln, fn ool ip sli foss, NS

LS- vlt br- tr mott lt gy, m d hd- hd ip, vfn- fn xln, sli frmy ip, ool ip, sli foss ip tr secxn NS, w tr chrt- off wh, tr foss

LS- crm - vlt br, m d hd- tr hd, vfn- fn ip xln, ool ip, tr frct, v chiky ip, tr introol por NS

LS- lt br, hd- md hd, vfn xln, sli frct, tr prt sat, tr spity stn, fw pcs flo & fr cut, vs- sfo, md br o, fnt- sli fr odr

LS- lt br- br, hd- md hd ip, vfn xln, sli frct, sli foss ip, fr spity flo, sfo, lt- m d br oil, sli odr, w/sme ls- crm, m d hd- hd vfn- fn xln, w pcs prt- mst sat, tr fr flo, sfo, sli dd ip

LS- crm - lt br, m d hd- hd, vfn xln, tr sli frct, m od ool ip, tnt odr, tr sat, tr fr cut, vs sfo, md br- sli dd oil

SH- gy- tnt gr, m od ind sli blk

LS- crm - off wh, m d hd- tr str, vfn xln, sli chiky ip, tr ool, tr sat/stn, w/tr lt br hdr, tr secxn, tr stn, fnt odr, vs sfo

LS- crm - off wh, m d hd- tr str ip, fn xln, chiky ip tr ool NS w/ sme ls- br- lt br, m d hd- str, vfn xln, mod ool, sme gd oocst por, NS

LS- crm - lt br, m d hd- hd, microxln, tr ool, grd sli str, off sli chiky NS

LS- crm- opq, hd- md hd, microxln, frct ip, tr foss, NS

LS- crm- off wh, hd- md hd, micro- vfn xln, vsli chiky ip, w/tr crm chrt NS

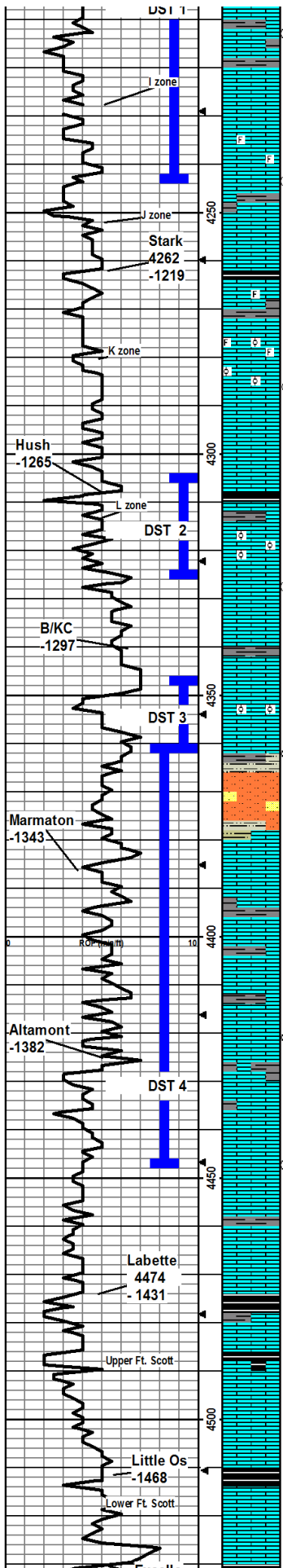
SH- blk, sli ind, carb
 SH- gy- dkr tnt gr, mod ind blk,

LS- crm - lt br ip, m d hs- tr hd, vfn xln, sli oolip fn secxn, tr pr oocst sli chiky ip, no odr, 1 pc odr, 2 pcs sli flo, 1 pc stn no por, ?so

LS- crm - tnt br ip, m d hd- hd, vfn xln, sli ool ip, tr secxn sli

MUD@3948'
 WT:8.9
 VIS:56
 WL:7.2
 PH:10.0
 CHL:2800

DST #1
 Lans H&I
 4174-4244
 30-45-45-60
 1st; BOB 18"
 2nd; BOB 25"
 Rec: 186' WCM
 248' MCW
 IFP: 20-118
 FFP: 122-207
 SIP: 1132-1126
 HP: 2052-1997
 CHL: 32,000
 BHT 117



TOSS, NS, 1 pc tr r rock, sat r adv

SH-gy-ltr gr, sli wxy ip, & sh-dk gy-blk sli ind, sli carb ip
 LS-crm- lt gy md hd, fn xln, sly ip, sli arg-tr mod arg
 prob sme blk res flk, NSFO, no odr

LS-crm, md hd -hd, vfn xln, frct ip, tr intrprtl por w/prt sat, tr
 stn, vssfo, ss sli dd-ddo, md br o

LS-crm-off wh ip, md hd-hdip, sme sli -tr mod chiky ip foss
 ip, tr ool, tr-sme pr intrprtl por, w/ tr stn, vssfo, ss sli dd-dd o,
 blk o fnt odr

LS- crm - off wh, mm d hd, vfn xln, mod ool ip tr sli chiky
 tr-sme fr oocst por NS, sme off wh sstr chiky ls, ns

Sh- blk, sli-mod ind, mod carb
 LS- crm ,hd, vfn xln, sli foss rexlin ip, NS

LS-br, hd, microxln, NS: grd ls- off wh, sstr sli chiky, sli foss NS

LS- v/lt br- crm, hd dns- md hd, v/ fn xln, sme fn secxln, sme
 sli-tr mod chiky, foss ip, ool ip, 1 pc chiky res stn NSFO

LS-v/lt br- crm, hd dns- tr sstr ip, micro-vfn xln ip, frct ip, sli foss, tr
 secxln no odr, NS

LS- crm md hd -hd ip-tr sstr, vfn xln, tr-sme secxln, tr mod -sme
 sli ool, tr fr introol-sli vug por, fr-sli gd odr, tr fr- sli gd flo,
 vs-ssfo lt br

LS- crm-off wh-tnt gy ip-tr mott gy, md hd-hd-tr sstr, vfn xln, ool
 ip, tr foss, tr sli chiky, tr vug-intrprtl por, fr odr, tr fr-gd flo,
 vs-ssfo lt-m d br oil, tr sat/prt sat

LS- crm-off wh ip, hd-mhdhd ip, microxln, sli foss ip, frct ip,
 visli-sli chiky, NS

LS- crm-tnt gy ip, md hd, vfn xln, ool ip, tr secxln, tr sli frct tr
 fr-gd vug-fr oocst-tr introol por, tr fr/gd flo, tr prt sat/sat

vs/ssfo lt br-sli flmy oil, fr-gd odr

LS- off wh, sstr, vfn xln, chiky ip NS

LS- lt br- crm, hd, vfn xln, tr ool, tr frct oil/frct, vssfo v/lt br
 w/fr-gd flo, fr odr

SLST- crm, md hd-hd ip, sli - tr mod calc, tr fn xln pyr, tr sli
 arg, grd fn gm ss NS

w/sme sh- gy, mod ind, sly ip, tr pyr

LS- crm- lt br ip, md hd -hd, vfn xln, tr foss, tr ool, tr prt stn tr pr
 oocst- vug por

LS- crm- lt br ip, hd-md hd ip, vfn xln, tr secxln, tr-sme stn, tr prt
 sat, 3-4 pcs dol/lis, dkr br sat, fr-sli gd vug-fossct por, fnt odr, 1
 pc, introol por, sfo, md br, mod-gd flo mst shw tt w/sli dd-dd
 o lwr grv oil

LS- lt br, hd- tr md hd, vfn xln, mod foss ip, fn-md secxln ip, tr pr
 por, tr sply flo, tr stn, tr pr sat, tr frct, vssfo sli dd v/fnt odr, grd
 crm md hd, fn xln, sli foss, sli chiky, tr stn

LS- crm-mott lt gr-mrn ip, hd-md hd, vfn xln, sli frct, foss ip, tr
 ool, w/ tr sh veins, grd sli sstr chiky off wh, ls NS

SH-gy-dk gy, mod sli ind, sli biky LS- lt
 br-br, md hd-hd, vfn xln, tr ool, tr foss, tr sli frct, tr stn- prt sat tr pr
 oocst por, vssfo lt br o, tr sli dd o, fnt odr, grd crm ,sstr, sli
 chiky ,ss sli ddo

Sh-gy-tnt gr dkr gy, mod ind
 LS- crm-off wh-tnt gy, md hd-hd ip, vfn-tr fn xln, sli-mod
 chiky ip, w/sme grd dol ls, md hd -dh, fn sn, tr pr
 intrxln-vug por, tr prt stn/sat, tr md br sat w/por, fnt
 odr, vs-ssfo slidd-tr dd o, dk br, tr wk flo

LS- crm- lt br, hd-mhdhd, vfn xln, m od ool ip, tr foss, sli dol
 ipk tr stn, 1 pc so sli dd, grd off wh, sstr/ vsli fri, chiky NS

LS- crm-off wh, md hd-hd, vfn xln, sli chldy, tr sli ool, tr sli frct,
 NS

SH-blk, sli ind, fess, carb
 w/ fw pcs ls- lt br md hd, fn xln, sli fn ool, tr intrprtl- vug por,
 tr stn, vssfo md br-sli ddo o, no odr, wkho flo

LS- crm- tnt br, hd-md hd ip, vfn xln, tr mod-sli foss ip, tr
 secxln, NS W/sme sh- lt gy- palebl/gr sli wxy, sli-m od ind

LS- crm, md hd-hd, vfn xln, sme mod ool NS
 w/tr dol/lis- fn xln, w/so, lwr grv-sli ddo o, fr odr bst?abv

LS-br, hd ,microxln, ?tr res stn, nso, w/sme LS- crm, md hd,
 vfn xln, mod foss ip/fm n, tr sli chiky, 1pc res stn, no odr, NSFO

SH-blk, sli ind, carb, fess ip

LS- lt br- crm, hd -md hd, vfn xln, sli foss, mod ool, sli chiky ip,
 NS

LS- crm md hd-hd, vfn xln, ool no odr, 1pc fo tr rck

MUD@4223'
 WT:9.0
 VIS:57
 WL:7.2
 PH:10.5
 CHL:2800

MUD@4316'
 WT:9.2
 VIS:56
 WL:8.0
 PH:9.0
 CHL:4800

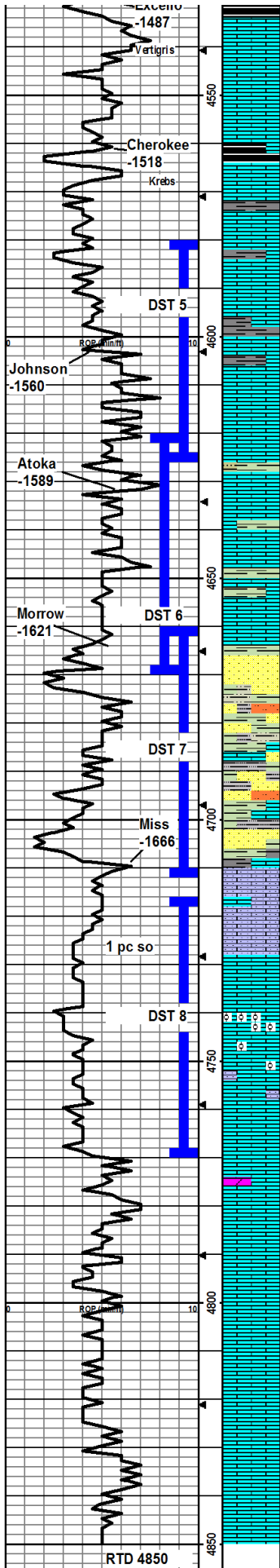
DST 2 (Lans L)
 4305-4327
 30-30-15-15
 1st) SrfB dd 8"
 2nd) No blw
 Rec: 5'M/oil spts
 IFP: 13-14
 FFP: 17-16
 SIP: 129-34
 HP: 2184-2098
 BHT: 110

MUD@4362'
 WT:9.3
 VIS:54
 WL:8.8
 PH:10.5
 CHL:4800

DST 3 (Pleas)
 4347-4362
 30-45-60-90
 1st) 1/4" bld 4"
 2nd) SB bld 5"
 Rec: 10' CO
 70' MCW
 60' MCW
 IFP: 17-49#
 FFP: 55-78#
 SIP: 984-944#
 HP: 2185-2085#
 BHT 120
 CHL 29,000

DST 4 (Marm)
 4361-4447
 30-30-15-15
 1st) 1/4" dd
 2nd) no blw
 Rec: 65'Mw/tr O
 IFP 18-38#
 FFP44-51#
 SIP 963-871#
 HP 2131-2085#

MUD@ 4438'
 WT:9.1
 VIS:58
 WL:7.8
 PH:10.0
 CHL:5500



SH- blk, sli-mod ind, fss ip, carb
 LS- lt br-mott gy(nucl ool) hd, mod ool, tr pr introol
 por, w/tr stn, tr sat m d-dkr br, vsfo w/sme
 chrt- lt br-ly gy, m ot ip, fsh, ool, NS
 LS- lt br-sli mott, hd, vfn xln, ool & foss ip, tr pr intrprcl por,
 tr br - dkr br sat, vsfo, md br oil, grd crm, md hd -hd, vfn-fn
 xln, mod ool, tr foss, sme sli-tr m od chiky, NSO, ?tr stn

SH- blk, sli ind, carb ip & gy-dk gy blk, mod ind
 LS- lt br-crm, md hd-hd, vfn sin, sli ool, NS
 LS- crm-off wh, md hd- sfr ip, vfn x.n, sli-mod chiky ip, sli foss,
 fn ool ip, tr frct, tr stn, 1 pc sfo, dkr br lw grv
 LS- off wh-crm, md hd-hd, vfn-fn xln, sli wthrd ip, sli chiky ip,
 tr ool, NS (verd: 3 pcs sat, fr -sli gd cut, tt'r)

SH- pale gr-rsty/br, m od ind, blk; w/sme LS- lt br hd, vfn xln tr ool
 NS
 LS- lt br-crm, hd-md hd ip, vfn xln, fn secln ip, sli foss ip, fw pcs
 spity stn, ? odr, vs sli ddo
 LS- lt br-crm ip, hd-md hd ip, vfn-fn xln, sli foss, grd sli chiky
 ip, tr secln, fw pcs prt/spity stn, tr prt sat, tr blk -dk br dd-sli dd
 oil, 2 pcs md br fo
 LS- br, hd, microxln, foss ip, tr pr pvug intrprtd por, 2 pcs
 fo, grd crm, sli sfr, vfn xln, vsli chiky ip, vsli wthrd, sli foss
 ip, tr pr por, vs sli ddd oil, ?fo, fnt'fr odr
 LS- crm- lt gy ip md hs-hd ip, mod foss ip, sli-mod ool ip v/sli
 -tr mod chiky ip, fnt-sli incr odr, 2 pcs res stn, ipc fosscat por
 w/sat dk br olwr grv/sli dd w/sme sh- gy- pale
 gr, tr m ot m m, sli mod ind
 LS- lt br-br, hd dns microxln, tr secln, sli foss, pyr clstr NS,
 w/sme olv/gr-gy mod-w/ind, blk, sli dull LS- crm- tnt br
 ip, hd-md hd, vfn xln, tr coral, sli ool, tr stn tr fr fosscat por, fr
 odr bust, vsso dd-sli dd o, ?? lv oil, vfnf odr

SS- off wh- opq, m od-w/ind, fn-vfn grn, m st tt'r, tr glauc w/tr
 pyr clstr, NS w/sme
 sh- pale gr-gr, sli ind wxy, sli blk ip
 SH- gr-pale gr-tr-gy, sli-mod ind ip, sli wxy, sly ip-tr sndy w/tr
 ss pred a/abv, NS
 SH- pale gr-gy-dkr gy, m od-sli ind ip, blk ip, tr pyr, blk
 w/sme sh- dk gy - blk, sli-mod ind, sli carb, sli fss- w/sme SS-
 crm-off wh-pale gr, mod w/ind tr sfr, fn grn glauc, sli arg ip, tr fn
 xln pyr, NS
 SS- off wh- opq, mod ind -sli sfr, fn grn, sbrnd, mod-m od w
 srt, sli drty ip, tr sat & prt stn, fr cut, no flo, tr fr sli gd cut,
 sso sli dd-dd oil, 2 pcs lw grv o
 LS- off wh, md hd-hd ip, vfn xln, sli chiky, fn grn sndy NS

LS-br, hd-md hd, vfn xln, fn secln, foss, NS
 LS- lt br-crm-tr br, hd-md hd ip, fn-vfn xln, sndy ip, tr fn ool, ?
 in place 2-3 pcs stn & 1 pc tr vug por w/o

LS- crm-tn-off wh ip, md hd-hd ip, tr sfr, vfn-fn-tr md xln sli
 chiky mtr ip, mod ool, w/sli foss, tr sli sndy, tr ls incl, tr
 fr-sme pr intrprcl-sli chnl/vug por, tr seme prt stn/sat, fw pcs
 sat/tt ip w/ 2 pcs fr flsh cut, sso&fso dkr br/blk lw grv-sli dd-dd
 o, fnt odr, bst sn pl'fr odr

LS- tn-crm ip- lt br ip, md hd-hd, fn-md-crs ip xln, sli-mod ool
 ip, sli foss, tr ool, NS
 LS- lt br-crm, hd-md hd ip, vfn-fn grd tom d-crs litho xln, ool
 ip, sli foss, sli frct ip, grd off wh ip, sli sfr NS

LS- lt br hd, vfn-fn xln, ool ip, tr foss grd crm-off wh, md hd, hd,
 vfn xln, tr sli ool NS w/ tr
 dol- lt br, fn xln, md hd, stn, so dd ip sli dd, prob prt of shw fo
 lwr grv(pcs are small)

LS- lt br-crm ip, hd-tr md hd, vfn xln, grd sfr ip, mod ool ip,
 tr sli foss, sli frct NS W/tr chrt- pale org, sli foss chrt NS

LS- off wh-crm, hd, vfn-micro xln, frct ip, NS

LS- vlt br-crm, hd, micro-vfn xln, frct ip, sme mod ool NS

LS- crm- tn, hd-tr md hd, microxln, frct ip, NS grd sli sfr
 br-crm, tr ool, sli chiky ip NS

LS- crm- off wh, hd, frct, tr pyr, secln, tr m od ool NS LS- lt
 br-br, hd, vfn-microxln, frct ip, sli foss, tr ool, NS

LS- lt br-crm, md hd-hd, vfn fn xln, sme md xln, mod ool ip, sli
 chiky mtr, tr fn grn sndy, NS

DST 5 (John.)
 4580-4626
 30-30-15-15
 1st) SB dd 8"
 2nd) No Blw
 Rec: 3' M
 IFP: 17-20#
 FFP: 19-20#
 SIP: 28-24#
 HP: 2287-2220#

DST 6 Atoka
 4621-4669
 30-30-15-15
 1st) SB dd 6"
 2nd) No Blw
 Rec: 5' M w/oil
 spots
 IFP: 26-20#
 FFP: 23-22#
 SIP: 48-34#
 HP: 2321-2248#

MUD @ 4669'
 WT: 9.2
 VIS: 58
 WL: 6.4
 PH: 10.5
 CHL: 4900

MUD @ 4726'
 WT: 9.4
 VIS: 51
 WL: 10.0
 PH: 9.0
 CHL: 5500

DST 7 Morrow
 4662-4712
 30-30-15-15
 1st) 1/4" bld/dd
 2nd) no blw
 Rec: 5' M
 IFP: 24-32#
 FFP: 29-39#
 SIP: 55-48#
 HP: 2423-2269#
 BHT: 113 deg

DST 8) Miss
 4717-4768'
 30-45-60-90
 1st) 1/4" bld 6"
 S1) No blw
 2nd) BOB/38"
 S1) SB/bld/2"
 Rec: 60' O, 28 grv
 90' gocm
 IFP: 24-46#
 FFP: 58-68#
 SIP: 1120-1146#
 HP: 2424-2297#
 BHT: 118 deg

MUD @ 4800'
 WT: 9.2
 VIS: 55
 WL: 10.4
 PH: 9.0
 CHL: 8000

