

GRAND MESA OPERATING COMPANY

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FAX: (316) 265-3455

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

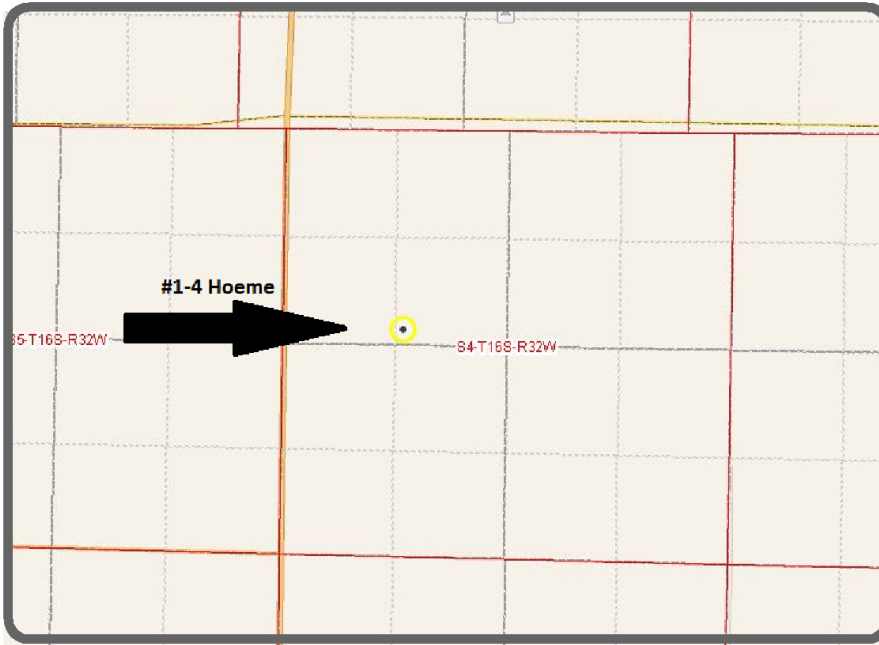
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: #1-4 Hoeme
 Location: 2650' FSL, 1413' FWL, SECTION 04-16S-32W, SW SW SE NW
 License Number: API: 15-171-20863 Region: Scott County
 Spud Date: 03/12/2012 Drilling Completed: 03/23/2012
 Surface Coordinates: LAT 38.6928771
 LONG -100.8663270
 Bottom Hole Vertical hole
 Coordinates:
 Ground Elevation (ft): 2999' K.B. Elevation (ft): 3004'
 Logged Interval (ft): 3650' To: RTD Total Depth (ft): 4780'
 Formation: Mississippi at RTD
 Type of Drilling Fluid: Chemical

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

GEOLOGIST

Name: John Goldsmith
 Company: John Goldsmith Wellsite Service
 Address: 322 Greenwood Ct.
 Cheney, KS 67025
 316-640-0236



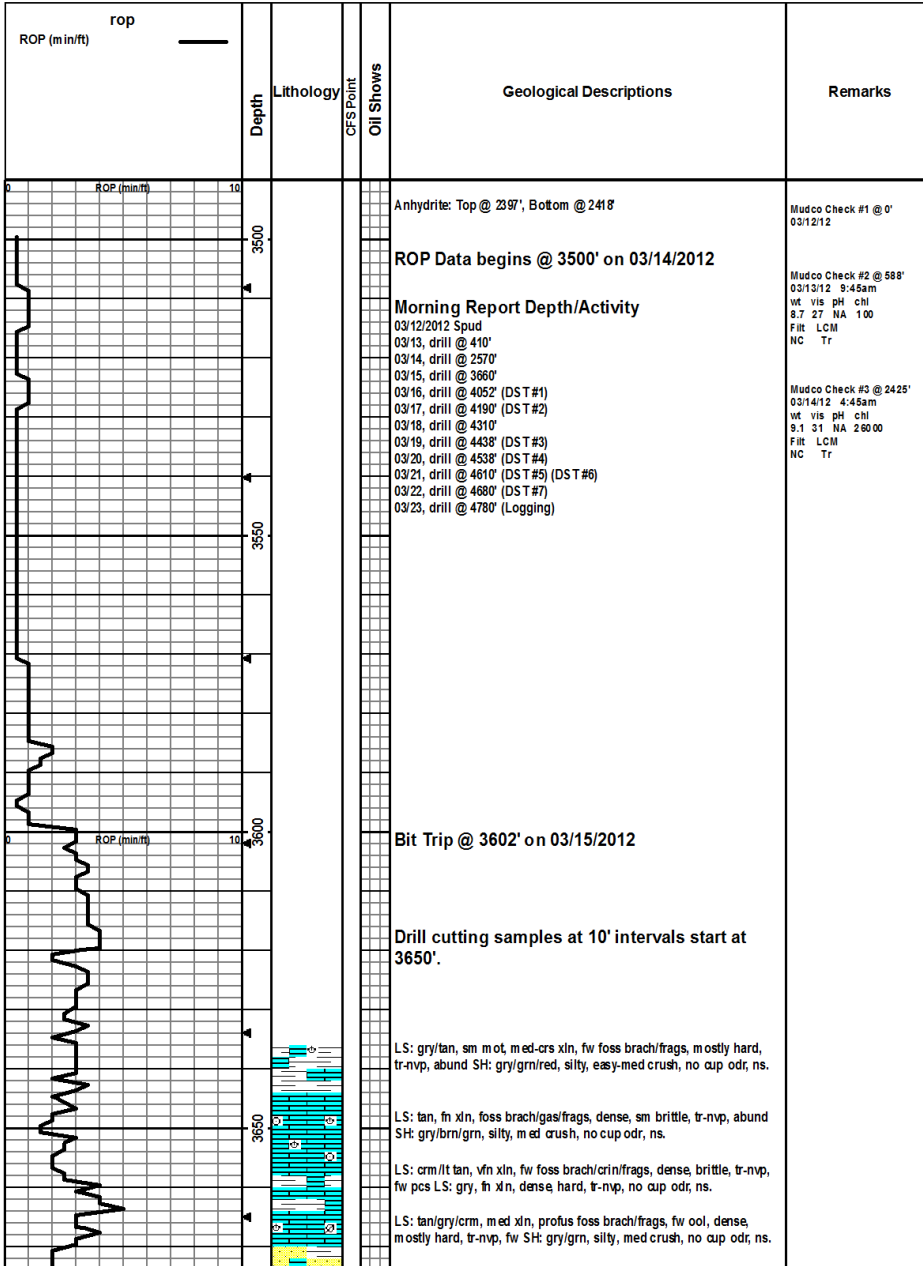
COMMENTS

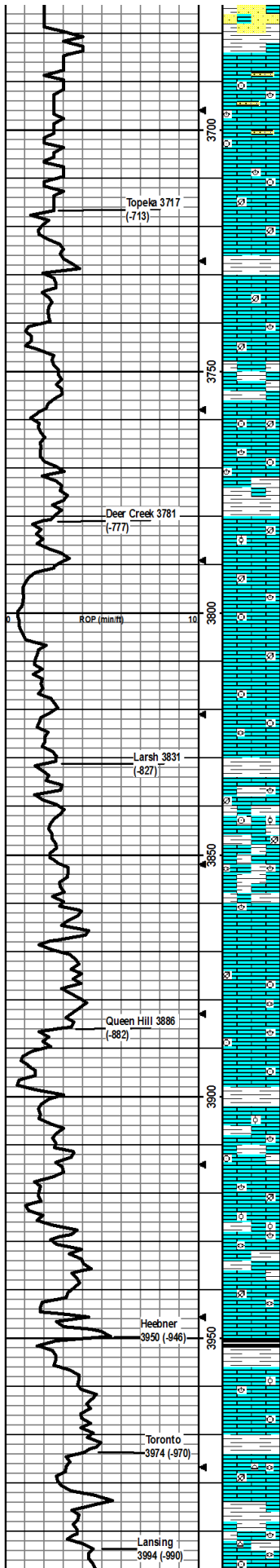
Contractor: Murfin Drilling Company Rig #24
 Pusher: Tony Martin
 Surface Casing: 5 joints of 8 5/8" set at 210'
 Production Casing: No production casing installed, well was plugged.
 Mud by: MudCo
 DST's by: Tribolite Testing
 Logs by: Weatherford (DIL, CN-CD, ML, CS)
 RTD=4780'
 LTD=4783'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Queen Hill	3886'	-882	3889'	-885
Heebner Shale	3950'	-946	3952'	-948

Toronto	3974'	-970	3974'	-970
Lansing	3994'	-990	3996'	-992
Muncie Creek Shale	4162'	-1158	4163'	-1159
Stark Shale	4253'	-1249	4255'	-1251
Hushpuckney Shale	4300'	-1296	4303'	-1299
Marmaton	4374'	-1370	4378'	-1374
Upper Fort Scott	4470'	-1466	4472'	-1468
Little Osage Shale	4490'	-1486	4492'	-1488
Excello Shale	4510'	-1506	4510'	-1506
Johnson Zone	4582'	-1578	4584'	-1580
Morrow	4626'	-1622	4626'	-1622
Mississippian	4668'	-1664	4671'	-1667
RTD	4780'	-1776		
LTD			4783'	-1779





LS: tan, fn xln, fw foss crin/frags, mostly dense, tr-nvp, sm SS: brn, fn grn, sub rnd, arg, silc cem, med crush, tr intgrn por, fw SH: gry/brn, silty, med crush, no cup odr, ns.

LS: gry, fn xln, dense, hard, tr-nvp, sm SS: gry/brn, fn grn, sub rnd, silc cem, arg, tr intgrn por, fw SH: gry/brn, silty, easy-med crush, no cup odr, ns.

LS: gry, fn xln, fw foss brach, dense, hard, mostly uniform, tr-nvp, fw SS: gry/brn, fn grn, sub rnd, arg, silc cem, tr intgrn por, no cup odr, ns.

LS: gry/tan, fn xln, sm foss crin/frags, tr-nvp, fw pcs of chlk, fw SH: gry/drck gry, silty, fissile, med crush, no cup odr, ns.

LS: gry/tan, fn xln, sm foss frags, sm dense, mostly hard, tr-nvp, fw SH: gry/brn, silty, easy-med crush, no cup odr, ns.

LS: gry/lt tan, vfn-fn xln, vfw foss frags, mostly dense, sm chiky, tr-nvp, fw SH: gry/drck gry, silty, soft, fw carb, no cup odr, ns.

LS: gry/lt tan, vfn-fn xln, vfw foss frags, mostly dense, sm hard, tr-nvp, vfw SH: gry/grn, silty, sm waxy, easy-med crush, no cup odr, ns.

LS: gry/tan, fn-med xln, fw foss frags, mostly brittle, fw chiky, tr-nvp, fw SH: gry/drck gry, silty, easy-med crush, no cup odr, ns.

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

LS: tan/lt tan, fn xln, foss brach/crin/frags, mostly brittle, tr-nvp, fw pcs w/ drk min stns, no cut/fluor, fw SH: gry, silty, vry soft, no cup odr, ns.

LS: gry/tan, fw mott, fn xln, sm foss frags, fw ool, mostly brittle, fw chiky, tr-nvp, fw SH: gry/red/blk, silty, easy-med crush, fw carb, no cup odr, ns.

LS: mostly gry, fn xln, gritty/sandy, dense, brittle, tr-nvp, fw pcs LS: tan, fn xln, foss frags, dense/hard, tr-nvp, fw pcs of pur chlk, no cup odr, ns.

LS: lt tan/crm, vfn xln, foss frags, mostly chiky, dense, brittle, mostly uniform, tr-nvp, fw pcs of pur chlk, fw SH: gry/grn/blk, silty, fw waxy, fw carb, med crush, no cup odr, ns.

LS: gry/tan, fn xln, fw foss frags, mostly dense, tr-nvp, svrl pcs of pur chlk, fw SH: gry, silty, soft, no cup odr, ns.

LS: lt gry/tan, fn xln, mostly foss crin/frags, mostly brittle, tr-nvp, svrl pcs of chlk, fw SH: drk gry/brn, silty, med crush, no cup odr, ns.

LS: lt tan/lt gry, fn xln, foss brach/fuss/frags, mostly dense, mostly brittle, sm chiky, tr-nvp, fw SH: gry, silty, soft, no cup odr, ns.

LS: gry/tan, fn xln, sm foss frags, fw ool, mostly hard, fw chiky, tr-nvp, fw pcs of pur chlk, fw SH: gry/drck gry, silty, med crush, no cup odr, ns.

LS: tan, fn-med xln, foss brach/frags, mostly hard, fw brittle, tr-nvp, sm SS: gry, vfn grn, limey, med crush, tr-nvp, sm SH: gry/brn/red, silty, easy-med crush, no cup odr, ns.

LS: gry/tan, fn-crs xln, mostly dense/hard, tr-nvp, abund SS: gry, vfn grn, limey, med crush, tr-nvp, sm SH: gry/brn/red, silty, med crush, no cup odr, ns.

LS: lt tan/crm, vfn-fn xln, foss crin/brach/fuss, dense, brittle, mostly uniform, tr-nvp, fw SH: gry/grn, silty, sm waxy, soft, no cup odr, ns.

LS: lt tan/lt gry, fn xln, foss crin/fuss/frags, sm hard, tr-nvp, fw pcs pur chlk, sm SH: gry/brn, silty, soft, no cup odr, ns.

LS: lt gry/tan, fn-crs xln, foss crin/brach/frags, mostly dense, sm hard, fw pcs chiky, tr-nvp, fw SH: brn/gry, silty, easy-med crush, no cup odr, ns.

LS: gry/lt tan, fn xln, mostly dense, sm hard, tr-nvp, fw pcs pur chlk, fw SH: gry/brn, silty, easy-med crush, no cup odr, ns.

LS: lt gry/lt tan, fn xln, sm foss brach/frags, fw ool, sm hard, tr-nvp, fw pcs pur chlk, sm SH: gry/drck gry, silty, fissile, med crush, no cup odr, ns.

LS: gry/tan, fn xln, foss brach/frags, fw ool, sm dense, mostly brittle, tr-nvp, fw SH: gry/brn, silty, fissile, easy-med crush, no cup odr, ns.

LS: gry/tan, fn xln, foss brach/fuss/frags, fw ool, sm brittle, tr-nvp, svrl pcs chiky, sm SH: drk gry/brn, silty, soft, no cup odr, ns.

LS: gry/tan, sm mott, med-crs xln, foss fuss/frags, sm brittle, tr-nvp, fw pcs w/ drk min stns, no cut/fluor, no cup odr, ns.

LS: gry/tan, fn xln, foss fuss/frags, fw brittle, tr-nvp, sm SH: drk gry/gry/blk, silty, fissile, med crush, sm carb, no cup odr, ns.

LS: gry/tan, fn xln, foss brach/frags, fw ool, mostly dense, sm hard, tr-nvp, abund SH: gry/grn/blk, silty, sm waxy, mostly carb, med crush, no cup odr, ns.

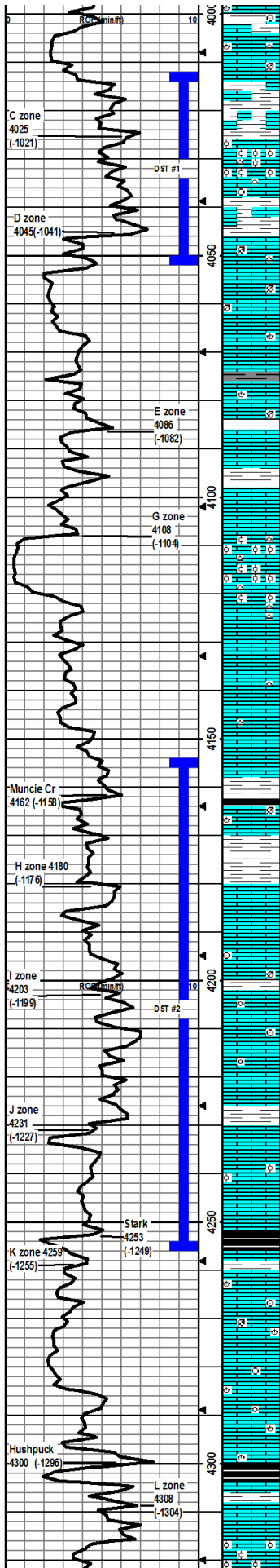
LS: tan/lt tan, fn xln, sm foss frags, mostly dense, sm chiky, tr-nvp, svrl SH: gry/grn, silty, sm waxy, easy-med crush, no cup odr, ns.

LS: crm/lt tan, vfn-fn xln, fw foss fuss/frags, mostly dense/brittle, sm chiky, mostly uniform, tr-nvp, fw pcs pur chlk, fw Chert wht, opaque, sharp, foss, no cup odr, ns.

LS: lt tan, fn xln, sm foss frags, mostly dense, sm chalky, tr-nvp, fw pcs pur chlk, fw Chert wht, opaque, sharp, fw SH: gry/grn/brn, silty, soft, no cup odr, ns.

LS: lt tan, fn xln, foss brach/crin/frags, mostly dense, tr-nvp, fw pcs pur chlk, abund SH: gry/grn/brn, silty, easy-med crush, no cup odr, ns.

Mudco Check #4 @ 3710'
 03/15/12 9:45am
 WE VIS GH CH
 8.7 68 10.5 1600
 FIT LCM
 6.0 3#



ns.

LS: crm/lt tan, vfn-fn xln, fw foss frags, dense, mostly uniform, fw chiky, tr-nvp, fw Chert wht, opaque, sharp, foss, no cup odr, ns.

LS: tan/gry, fn-crs xln, fw foss frags, mostly dense sm hard, tr-nvp, fw pcs pur chlk, sm SH: brn/gry/grn, silty, m ed crush, no cup odr, ns.

LS: lt tan, fn xln, fw foss frags, profuss ool, mostly dense, uniform, fr intool por, w/fr sfo, dul yel fluor, cut pal blu, slight-fr cup odr, fw Chert: wht, opaque, sharp, foss.

LS: lt tan, vfn-fn xln, fw foss frags, fw ool pcs, mostly dense, uniform, tr-nvp, fw Chert: wht, opaque, sharp foss, fw pcs SH: gry/grn, silty, sm waxy, no cup odr, ns.

LS: lt tan, vfn-fn xln, fw foss frags, mostly dense, brittle, mostly uniform, tr-nvp, fw pcs pur chlk, fw Chert wht, opaque, sharp, sm LS: lt gry/tan, crs xln, scat ppt intxln por, no cup odr, ns.

LS: gry/tan, fn xln, foss frags, mostly brittle, sm chiky, scat rare vug por, svrl pcs pur chlk, abund SH: gry/grn/brn, silty, med crush, no cup odr, ns.

LS: gry/tan, fn xln, sm foss brach/frags, sm chiky, rare ppt intxln por, svrl pcs pur chlk, fw SH: gry/drk gry grn/brn, silty, med crush, no cup odr, ns.

LS: gry/tan, fn-crs xln, fw foss frags, sm flakey, fw brittle, mostly hard, scat rare vug por, sm pcs pur chlk, fw pcs SH: gry/drk gry/brn, silty, sm waxy, easy-med crush, no cup odr, ns.

LS: tan, fn-med xln, mostly brittle, pr intxln por, dul yel fluor, slw cut pal blu, w/ patchy stns on smpl, dry patchy stns in dries, fw pcs pur chlk, v wk cup odr, vsfo.

LS: lt tan/crm, vfn-fn xln, fw foss frags, dense, brittle, mostly uniform, sm chiky, tr-nvp, sm pcs pur chlk, fw SH: gry/grn, silty, waxy, no cup odr, ns.

LS: tan/brn, fn xln, profus ool, vgd gd oolcast por, fw pcs LS: crm/lt tan, fn xln, dense, brittle, tr-nvp, fw pcs pur chlk, fw Chert: wht, opaque, foss, sharp, no cup odr, ns.

LS: lt gry/gry, vfn-fn xln, dense, hard, tr-nvp, sm LS: tan/brn, fn xln, profus ool, fr-gd oolcast por, fw Chert wht, opaqa, sharp, foss, no cup odr, ns.

LS: lt gry/tan, vfn-fn xln, dense, mostly hard, mostly uniform, fw chiky, tr-nvp, fw pcs pur chlk, no cup odr, ns.

LS: tan, fn xln, mostly dense, fw brittle, mostly uniform, tr-nvp, svrl pcs pur chlk, fw pcs Chert: wht, opaque, foss, sharp, no cup odr, ns.

LS: lt gry/tan, fn xln, dense, mostly hard, mostly uniform, fw flakey, tr-nvp, sm pcs pur chlk, no cup odr, ns.

LS: gry/tan, fw mott, fn xln, dense, hard, tr-nvp, abund SH: gry/drk gry/brn, silty, sm fissile, fw carb, med crush, no cup odr, ns.

LS: gry/tan, sm mott, fn xln, foss brach/crin/frags, tr-nvp, abund SH: gry/drk gry/brn, silty, sm fissile, sm carb, easy-med crush, no cup odr, ns.

LS: lt gry/tan, fn xln, foss brach/crin/fuss, mostly dense, fw chiky, mostly uniform, tr-nvp, fw SH: gry/grn/brn, silty, fissile, med crush, no cup odr, ns.

LS: lt gry/tan, fn xln, mostly dense, brittle, sm chiky, mostly uniform, tr-nvp, fw pcs pur chlk, fw pcs Chert: gry, sharp, no cup odr, ns.

LS: lt gry/tan, fn xln, sm foss crin/frags, mostly dense, sm brittle, fw hard, tr-nvp, fw pcs pur chlk, fw Chert: wht, sharp, foss, no cup odr, ns.

LS: gry/tan, fn-med xln, sm foss, mostly brittle, tr-nvp, svrl pcs pur chlk, abund SH: gry/grn/brn, silty, sm waxy, easy-med crush, no cup odr, ns.

LS: lt tan, fn xln, fw foss frags, mostly dense, brittle, sm chiky, fw pcs fr intxln por, scat dul yel fluor, cut pal blu, sfo in scat intxln por and on sm frac facies, salt/pepper look, v wk cup odr, sfo.

LS: fw pcs w/ sho same as above, abund SH: drk gry/gry/grn/brn, silty, sm fissile, fw waxy, easy-med crush, slight cup odr, sfo.

LS: 3-4 pcs like sho much like above...most likely from above, most LS: tan, vfn-fn xln, fw foss, sm vry ool, w/ sm fr oolcast por, mostly dense, hard, w/ tr-nvp, no cup odr.

LS: lt tan, fn xln, mostly dense, sm brittle, sm chiky, tr-nvp, sm SH: gry/grn, silty, easy-med crush, no cup odr, ns.

LS: lt gry/tan, fn-med xln, mostly dense, sm hard, tr-nvp, fw pcs of SH: gry/grn/blk, silty, sm fissile, med crush, no cup odr, ns.

LS: gry/tan, fn-crs xln, sm sandy, sm foss brach/crin/frags, fw ool, fw chiky, tr-nvp, fw pcs pur chlk, sm SH: gry/grn, silty, sm waxy, easy-med crush, no cup odr, ns.

LS: gry/tan, fn-crs xln, sm sandy, sm foss brach/frags, mostly brittle, mostly chiky, pr intxln por, svrl pcs pur chlk, no cup odr, ns.

LS: gry/tan, fn-crs xln, sm sandy, foss brach/crin/gas, sm chalky, tr-nvp, abund of pur chlk, fw SH: gry/grn, silty, fissile, med crush, no cup odr, ns.

LS: tan/lt gry, fn-crs xln, foss brach/frags, mostly dense, sm brittle, tr-nvp, abund of pur chlk, fw SH: gry/grn/brn, silty, sm waxy, easy-med crush, no cup odr, ns.

LS: lt tan, vfn-fn xln, vfw foss, dense, mostly uniform, tr-nvp, fw pcs pur chlk, abund SH: gry/drk gry/blk/grn, silty, fissile, carb, fw waxy, med crush, no cup odr, ns.

LS: lt gry/tan, fn xln, mostly dense, fw flakey, rare scat ppt-intxln por, fw pcs w/ v lght possible brn stn, no fluor, nsfo, sm SH: gry/brn, silty, fissile, med crush, no cup odr.

LS: gry/tan, vfn-fn xln, foss crin/fuss, ool, dense, mostly brittle, sm chiky, tr-nvp, fw LS: tan, fn xln, foss brach/crin/frags, sm flakey, tr-nvp, no cup odr, ns.

DST1) 4012-4052

3045/4560
1st) Built to 3"
2nd) Built to 4.5"
IFP 41-80#
ISIP 1084#
FFP 83-111#
1083#
HP 1936-1861#
Recvd: 17' OCM, 6" oil scum

CFS 4052'
30"60"

Mudco Check #5 @ 4053'
03/16/12 12:00pm
wt vis pH chl
9.2 48 10.5 1500
FIT LCM
6.4 4#

CFS @ 4118'
30"60"

DST2) 4154-4256

3030/3030
1st) Surf blow/died in 15"
2nd) No blow
IFP 36-41#
ISIP 899#
FFP 39-47#
815#
HP 2012-1978#
Recvd: 10' Mud

CFS @ 4194'
30"60"

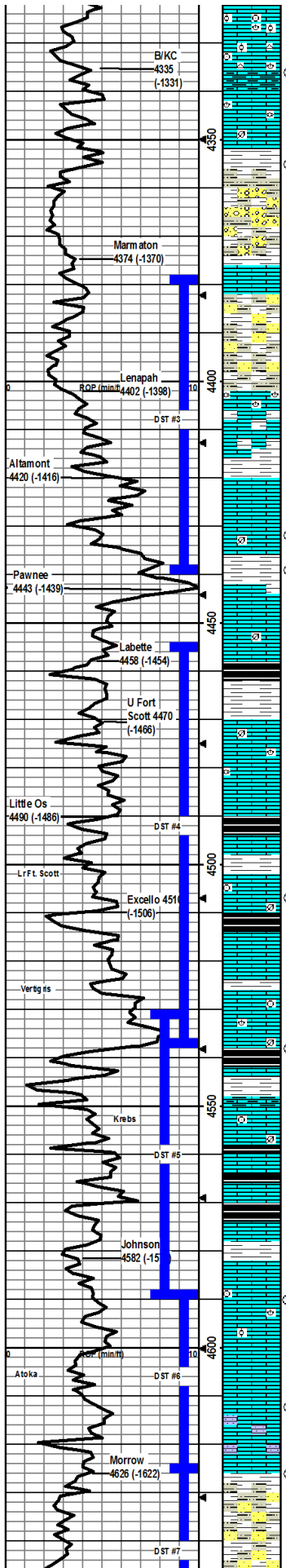
CFS @ 4232'
30"40"

CFS @ 4241'
30"60"

Mudco Check #6 @ 4241'
03/17/12 12:05pm
wt vis pH chl
9.1 49 10.5 1400
FIT LCM
6.8 4#

CFS @ 4256'
30"60"

CFS @ 4280'
30"60"



LS: lt gry/tan, fn xln, foss brach/frags, ool, mostly dense, brittle, sm chiky, tr-nvp, fw pos pur chlk fw SH gry/brn, silty, med crush, no cup odr, ns.

LS: lt gry/tan, fn xln, foss brach/crin/frags, ool, tr-nvp, fw Chert why, sharp, foss, no cup odr, ns.

LS: gry/tan, fn xln, foss frags, ool, mostly dense, sm brittle, tr-nvp, sm Chert: wht, sharp, foss, sm SH: gry/grn/brn, silty, med crush, no cup odr, ns.

LS: lt gry/tan, fn xln, foss brach/fuss/frags, brittle, sm chiky, tr-nvp, fw pes w/ drk min stns, does not cut, sm SH: gry/brn/grn, silty, easy-med crush, no cup odr, ns.

SH: gry/grn/brn, silty, easy-med crush, sm waxy, sm fissile, sm SitStn: gry, gritty, silty, v soft, fw LS: tan, fn xln, fw foss, brittle, pr ppt-intnln por, no cup odr, ns.

SH: gry/brn/grn, silty, easy-med crush, sm waxy, sm SitStn: gry/brn, silty, v soft, fw LS: lt tan, fn xln, foss frags, brittle, tr-nvp, no cup odr, ns.

SH: gry/grn/brn, silty, easy-med crush, sm waxy, fw fissile, sm SitStn: gry, gritty, silty, v soft, fw LS: lt tan, fn xln, sm foss, scat pr intnln por, no cup odr, ns.

SH: gry/grn/brn, silty, easy-med crush, fw SitStn: gry, gritty, v soft, sm LS: lt tan, fn xln, foss brach/fuss/frags, rare scat intoss por, no cup odr, ns.

LS: tan/lt tan, fn xln, profus foss brach/fuss/crin, ool, sm brittle, sm chiky, tr-nvp, sm SH: gry/grn/brn, silty, sm waxy, med crush, no cup odr, ns.

LS: lt tan, fn-crs xln, foss brach/fuss, ool, brittle, mostly uniform, pr scat intnln por, fw drk stns, does not cut, sm SH: gry/brn, silty, sm waxy, med crush, no cup odr, ns.

LS: lt tan, fn-crs xln, foss brach/frags, sm brittle mostly hard, pr scat intnln por, sm SH: gry/brn, silty, sm waxy, med crush, no cup odr, ns.

LS: lt tan, vfn-fn xln, mostly dense/hard, fr patchy intnln por, dul gold/yel fluor, stream cut pal blu, fr-gd sfo on break 6-8 pcs/try, wk cup odr, sm SH: gry/brn, silty, med crush.

30" smpl had only 1-2 pcs w/ sho, 60" had 5-6 pcs w/ sho much as desc above, abund SH: gry/brn/grn, sm waxy, 60" had v wk cup odr.

LS: lt tan, fn xln, fw foss frags, sm brittle, mostly dense, tr-nvp, 1-2 pcs in 30" smpl w/ sho fo, most likely from above, no cup odr.

SH: gry/brn/grn, silty, sm fissile, easy-med crush, fw LS: gry/lt tan, fn xln, mostly dense, tr-nvp, fw pos pur chlk, no cup odr, ns.

LS: tan/lt tan, fn-crs xln, v fw foss frags, mostly uniform, sm chiky, tr-nvp, fw pos pur chlk, sm SH: gry/brn, silty, med crush, no cup odr, ns.

LS: gry/lt tan, fn xln, mostly dense, sm brittle, fw chiky, tr-nvp, fw pos pur chlk, sm SH: gry/brn/bik, silty, sm fissile, sm carb, med crush, no cup odr, ns.

LS: lt tan, fn xln, fw foss frags, mostly dense, sm chiky, tr-nvp, sm SH: gry/blk/brn, silty, easy-med crush, sm carb, fw Chert wht, opaque, sharp, no cup odr, ns.

LS: lt tan/crm, fn xln, fw foss fuss/brach, mostly dense, mostly uniform, scat intoss por, 2-3 pcs w/ lght stns, scat dul yel fluor, cut pal blu, no cup odr, v sfo.

LS: gry/ltan, fn xln, mostly dense, fw pos chiky, mostly hard, tr-nvp, abund SH: gry/blk/brn, fissile, med crush, no cup odr, ns.

SH: gry/blk/brn/grn, silty, fissile med crush, sm carb, sm LS: gry/ltan, fn xln, foss brach/crin/frags, sm chiky, tr-nvp, no cup odr, ns.

SH: gry/brn/grn, silty, fw waxy, easy-med crush, sm LS: gry/tan, fn xln, foss crin/frags, pr scat intnln por, 1-2 pcs w/ stn in 60" sm pl, scat dul yel fluor, cut pale blu, no cup odr.

SH: gry/grn/brn/bik, silty, sm fissile, sm waxy, sm carb, easy-med crush, fw LS: lt tan/crm, fn xln, fw foss, mostly brittle, fw chiky, tr-nvp, no cup odr, ns.

LS: lt tan/gry, fn xln, mostly dense, fw chalky, tr-nvp, abund SH: gry/grn/brn, silty, sm waxy, fw fissile, med crush, no cup odr, ns.

LS: gry/lt tan, fn xln, foss crin/frags, fw chiky, tr-nvp, abund SH: gry/grn/brn, silty, sm waxy, med crush, fw Chert: gry, semi-trans, sharp, no cup odr, ns.

SH: gry/brn/bik, silty, sm fissile, sm carb, med crush, sm LS: tan/lt tan, fn xln, mostly dense, sm hard, tr-nvp, no cup odr, ns.

LS: gry/lt tan, fn xln, foss crin/plant frags, mostly dense, sm brittle, fw chiky, tr-nvp, fw pos pur chlk, svrl SH: gry/blk, silty, sm fissile, easy-med crush, no cup odr, ns.

LS: lt gry/tan, fn xln, foss crin/frags, mostly dense, sm brittle, tr-nvp, sm SH: gry/grn/bik, silty, sm fissile, sm carb, med crush, no cup odr, ns.

LS: lt tan/crm, fn xln, fw foss frags, mostly dense, brittle, sm chiky, tr-nvp, abund SH: gry/brn, silty, soft, no cup odr, ns.

LS: gry/lt tan, fn-med xln, mostly dense, fw flakey, mostly hard, tr-nvp, sm SH: gry/drk gry/blk, silty, sm fissile, fw carb, easy-med crush, no cup odr, ns.

LS: lt tan, fn xln, fw foss frags, sm chiky, tr-nvp, 30" smpl had 5-6 pcs w/ scat ppt-intnln por, dul yel fluor cut pal blu, sfo w/ fr cup odr, 60" had 7-8 pcs w/ gd scat vug por, stream cut pal blu/wht, gd-strong cup odr, fr-gd sfo.

LS: gry/tan, fn xln, fw foss crin/frags, fw ool, sm chiky, tr-nvp, 1-2 pcs w/ rare scat vug por, possibly from above, v sfo, slight cup odr, abund SH: gry/brn, silty, fissile.

LS: lt gry/tan, fn xln, sm chiky, scat ppt-intnln/rare vug por, fr-gd stns on svrl pcs, fr sfo, 6-8 pcs/try, dul yel fluor cut pal blu, fr cup odr.

LS: tan, fn xln, sm flakey, scat ppt-intnln por, fr amount of stns on svrl pcs, fr sfo, 4-5 pcs/try in 30" smpl, 4-5 pcs/try in 60" smpl, wk cup odr.

LS: gry/lt tan, fn-med xln, sm gritty/sandy, mostly brittle, fr-gd ppt-intnln por, fr-gd surf stns, dul yel fluor, cut pal blu/wht, fr sfo, fr-gd cup odr. 30" 60" smpl S: gry, fn grn, limy, fr-gd intgrn por, dul yel/gold fluor, stream cut pal blu/wht, gd sfo, gd cup odr.

SH: gry/olive/brn, silty, soft, sm SitStn: gry/olive, very soft fw S: gry/bluish, v fn grn, arg/muddy, sil cem, soft, no cup odr, ns.

SS: gry/bluish, fn grn, sub rnd, sil cem, easy-med crush, pr intgrn por, sm SH: gry/olive, silty, easy-med crush, no cup odr, ns.

CFS @ 4336'
30"60"

CFS @ 4354'
30"60"

Mudco Check #7 @ 4354'
03/18/12 12:00pm
wt vis pH chl
9.0 48 10.5 1800
FIR LCM
6.4 4#

DST3) 4377-4438
30303030
1st) Blowed in 18"
2nd) No blow
IFP 24-27#
ISIP 457#
FFP 28-32# F SIP
307#
HP 2157-2096#
Recvd: 5' Mud w/ oil spots

CFS @ 4432'
30"60"

CFS @ 4438'
30"60"

Mudco Check #8 @ 4478'
03/19/12 1:30pm
wt vis pH chl
9.2 51 10.0 2000
FIR LCM
7.2 4#

DST4) 4455-4538
30303030
1st) Blowed in 20"
2nd) No blow
IFP 42-38#
ISIP 782#
FFP 43-42# F SIP #11#
HP 2251-2155#
Recvd: 5' Mud

CFS @ 4507'
30"60"

Sample Returns are not good.
Abund of Shale.

Mudco Check #9 @ 4538'
03/20/12 8:30pm
wt vis pH chl
9.2 52 10.0 3000
FIR LCM
8.8 4#

CFS @ 4538'
30"60"

DST5) 4531-4590
30456090
1st) Built to 4"
2nd) Built to 3.5"
IFP 28-70#
ISIP 934# F SIP
900#
HP 2249-2160#
Recvd: 5' Mud

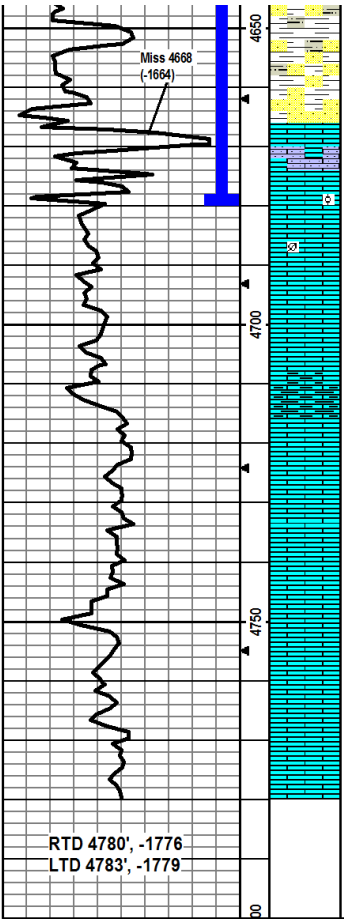
CFS @ 4590'
30"60"

DST6) 4590-4626
30303030
1st) Surface Blow
2nd) Surface Blow
IFP 27-35#
ISIP 820# F SIP #1#
FFP 34-35#
HP 2273-2271#
Recvd: 5' Mud

CFS @ 4612'
30"60"

CFS @ 4626'
30"60"

Mudco Check #10 @ 4612'
03/21/12 8:20pm
wt vis pH chl
9.2 58 10.5 3500
FIR LCM
7.2 4#



SS: gry/wh, fn grn, sub rmd, sil cem, easy-med crush, pr intgrn por, sm SH: gry/grn, silty, sm waxy, easy-med crush, no cup odr, ns.

SS: gry/lt gry, fn grn, sub rmd, sil cem, easy-med crush, intgrn por, wk fluor, pal blu cut, wk cup odr, fr sfo on break, sm LS: lt tan, fn xln, mostly dense, scat intxln por, scat dul yel fluor, cut pal blu, vssfo.

SS: gry/lt tan, fn grn, sub rmd, sil cem, med crush, intgrn por, wk ppt fluor, cut pal blu, slight cup odr, gd sfo on break, fw LS: gry, fn xln, mostly dense, tr-nvp, fw Chert: gry/sharp.

LS: lt tan/gry, sm gritty/sandy, sm chiky, fw ool, tr-nvp, fw pcs SS: much like disc above, sm SH: gry/olive, silty, fw Chert gry, sharp, little-no cup odr, vssfo from above.

LS: crm/lt tan, fn xln, fw gritty/sandy, fw sm all foss frags, mostly brittle, tr-nvp, abund SH: gry/grn, silty, fissile sm waxy, med crush, no cup odr, ns.

LS: lt tan, fn xln, fw gritty/sandy, sm chiky, mostly brittle, tr-nvp, sm SH: gry/grn, silty, sm fissile, sm waxy, med crush, fw Chert brn, semi-trans, sharp, no cup odr, ns.

LS: lt tan, fn xln, mostly dense, sm chiky, mostly brittle, tr-nvp, sm SH: gry/grn, silty, fissile fw waxy, med crush, no cup odr, ns.

LS: crm/lt tan, fn xln, fw sm all foss frags, sm chiky, mostly brittle, tr-nvp, sm SH: gry/grn, silty, fissile easy-med crush, no cup odr, ns.

LS: crm lt tan, fn xln, fw gritty/sandy, mostly brittle fw chiky, tr-nvp, sm SH: gry/brn/grn, silty, fissile med crush, no cup odr, ns.

LS: lt tan, fn-med xln, fw dense, mostly brittle, fw chiky, pr scat ppt-intxln por, fw SH: gry/brn/grn, silty, fw waxy, no cup odr, ns.

LS: lt tan, vfn-fn xln, mostly dense, sm brittle, fw pcs cherty, tr-nvp, fw SH: gry/grn, silty, soft no cup odr, ns.

LS: lt tan, vfn-fn xln, dense, brittle, mostly uniform, fw pcs slightly chiky, tr-nvp, no cup odr, ns.

LS: lt gry/tan, fn xln, fw ool, mostly dense, fw flakey, tr-nvp, fw pcs pur chiky, fw SH: gry/brn/grn, silty, sm fissile, fw waxy, easy/med crush, no cup odr, ns.

LS: tan, fn-med xln, mostly brittle, mostly uniform, rare ppt-intxln por, fw pcs Chert: gry, semi-trans, sharp, no cup odr, ns.

DST7) 4624-4680
 3045/6090
 1st) Built to 5.5"
 2nd) Built to 7"
 I/P 30-97#
 ISIP 1063#
 FFP 100-154# FSP
 1005#
 HP 2220-2194#
 Recvd: 280' Mud w oil spots
 CFS @ 4680'
 30"/60"
 Mud visc dropped to 31 new mud was pumped in before test.
 MudcoCheck #11 @ 4680'
 03/22/12 8:00pm
 wt vis pH chl
 8.9 51 10.5 1500
 Fm LCM
 5.5 4#
 Sample return quality is bad. abund of shale in every sample.
 CFS @ 4780'
 30"/60"

RTD 4780', -1776
 LTD 4783', -1779