

GRAND MESA

OPERATING COMPANY

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

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

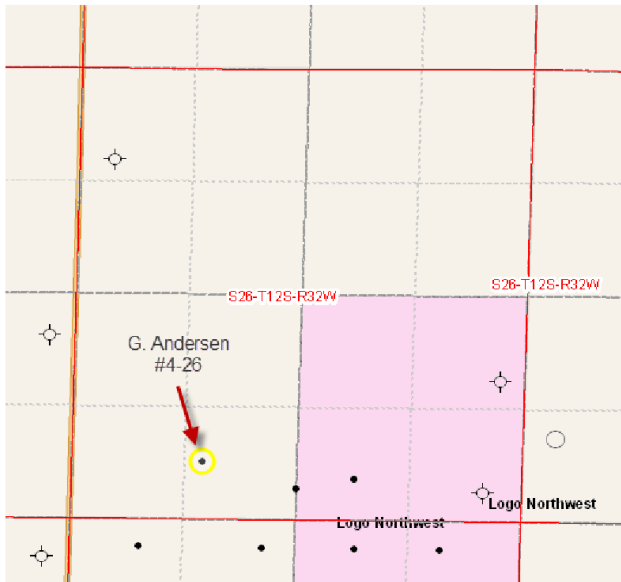
Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: G. Andersen #4-26
Location: 662' FSL, 1481' FWL, 26-12s-32w, Logan County, Kansas
License Number: API: 15-109-21070 Region: Logan County
Spud Date: 01/26/2012 Drilling Completed: 02/02/2012
Surface Coordinates: Lat: 38.9765747
Long: -100.8454563
Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 2991' K.B. Elevation (ft): 2996'
Logged Interval (ft): 3800' To: RTD Total Depth (ft): 4722'
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: Kent R. Matson
Company: Matson Geological Services, LLC
Address: 33300 W. 15th Street S.
Garden Plain, Kansas 67050
316-644-1975



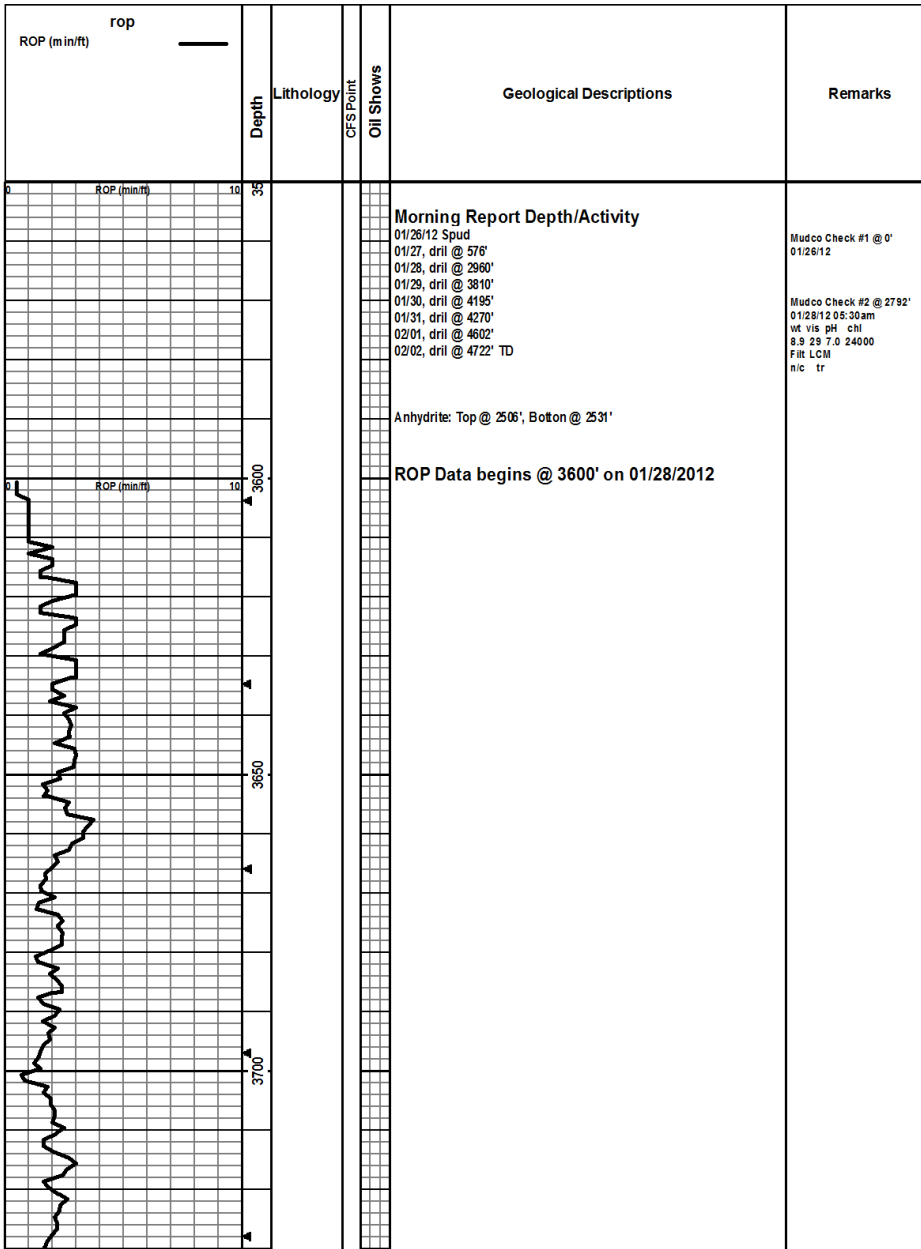
COMMENTS

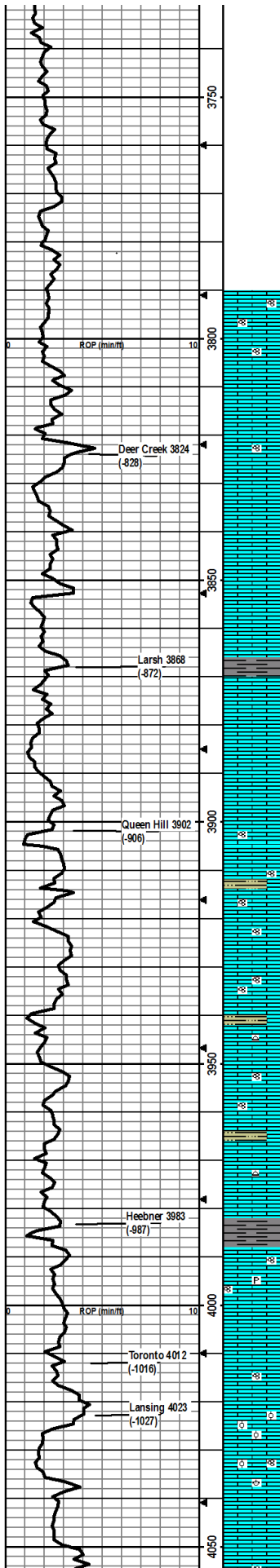
Contractor: Murfin Drilling Company Rig #24
Pusher: Tony Martin
Surface Casing: 8 5/8" set at 224' (KB) w/165sx
Production Casing: Production casing was not installed and the hole was plugged and abandoned based on field observations of drill cuttings and DST results.
Mud by: MudCo
DST's by: Diamond Testing
Logs by: Weatherford (DIL, CN-CD, ML)
RTD= 4722'
LTD= 4722'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Queen Hill	3902'	-906	3901'	-905

Heebner Shale	3983'	-987	3984'	-988
Toronto	4012'	-1016	4012'	-1016
Lansing	4023'	-1027	4023'	-1027
Muncie Creek Shale	4177'	-1181	4177'	-1181
Stark Shale	4262'	-1266	4260'	-1264
Hushpuckney Shale	4299'	-1303	4297'	-1301
Marmaton	4362'	-1366	4361'	-1365
Upper Fort Scott	4473'	-1477	4473'	-1477
Little Osage Shale	4494'	-1498	4494'	-1498
Excello Shale	4569'	-1573	4570'	-1574
Johnson Zone	4592'	-1596	4593'	-1597
Morrow	4617'	-1621	4616'	-1620
Mississippian	4649'	-1653	4649'	-1653
RTD	4722'	-1726		
LTD			4722'	-1726

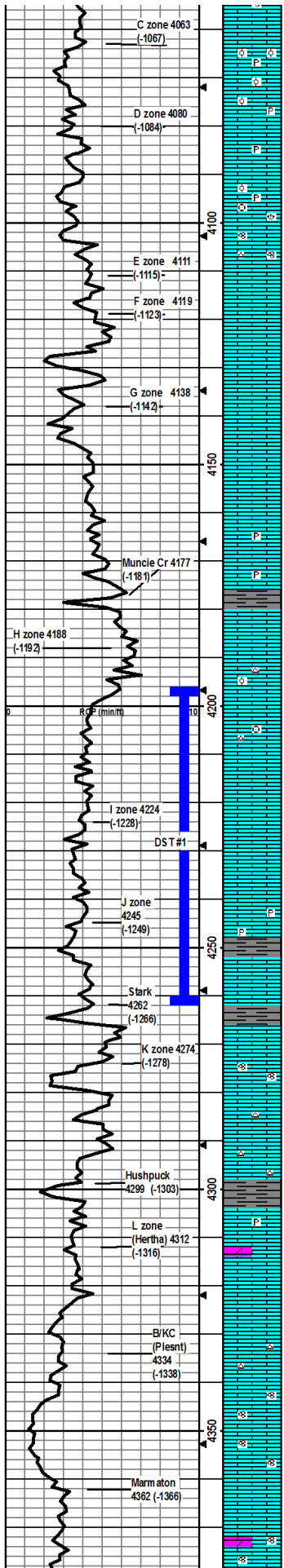




Drill cutting samples at 10' intervals start at 3800'.

- LS: crm/lt gry crm, micro-med xtal, foss frags/fusln, min ppt in-xal por, ns.
- LS: crm/lt gry brn, lt brn, micro-med xtal, foss frags/fusln, stly silty, min ppt in-xal por, ns.
- LS: crm-lt brn, micro-fn xtal, foss frags, vry silty, m in ppt in-xal por, ns.
- LS: crm-lt brn, micro-med xtal, foss frags/in fusln, vry silty, m in ppt in-xal por, ns.
- LS: crm-brn, micro-fn xtal, foss frags, stly silty-vry silty, som e wht chalky pcs, m in frac/in-xal por, ns.
- LS: crm-lt brn, micro-fn xtal, vry grainy/silty, min in-xal por, ns.
- LS: lt gryish brn, micro-med xtal, foss frags, in-xtal/frac por, ns.
- LS: crm-brn, micro-med xtal, foss frags, vry silty, in-xtal/frac por, ns.
- SH: bk, carb, firm, fissile.
- LS: lt-med gry/gry brn w/dk brn mottling, micro-fn xtal, vry silty, som e wht chalky pcs, m in in-xtal/frac por, ns.
- LS: lt gry/crm, micro-med xtal, vry silty, min foss frags, min frac por, ns.
- LS: crm-lt gryish brn, micro-med xtal, vry silty, m in foss frags, frac por, ns.
- LS: crm-lt gryish brn, micro-fn xtal, min foss frag/fusln, silty, min in-xal por, ns.
- LS: lt gryish brn, fn-med xtal, abund fusln, wht chalk, some lt gry/red brn silty SH, min frac por, ns.
- LS: crm/med gry, micro-med xtal, min foss frags/fusln, min frac por, ns.
- LS: crm/lt gryish brn, micro-med xtal, some pcs w/abund fusln, min frac/in-xal por, ns.
- LS: crm, micro-fn xtal, lt gryish wht chert, min frac por, m in lt-med gry silty SH, ns.
- LS: lt gry/crm/med brn, micro-med xtal, foss frags/fusln, m in frac por, ns.
- LS: lt gry/crm/lt brn, micro-med xtal, foss frags/fusln, some silty, min in-xtal/frac por, som e lt-dk gry/red brn silty SH, ns.
- LS: lt gry/crm, micro-med xtal, foss frags, some lt gry chert, no vis por, ns.
- SH: dk gry/blk, carb, firm, fissile.
- LS: lt-dk gry, crm-dk brn, micro-med xtal, foss frags/fusln, some vry silty pcs, some pyritic, frac por, ns.
- LS: lt gry/crm, micro xtal, dense w/min frac por, ns.
- LS: lt gry/crm, micro-fn xtal, m in foss fusln, m in frac por, ns.
- LS: crm, micro-curextal, abund ool, abund wht chalky pcs, vug ool-castic por, ns.
- LS: lt gry/crm, micro-med xtal, foss frags/ool/fusln/brac, som e wht chalky pcs, m in frac por, ns.
- LS: lt gry/crm, micro-fn xtal, m in foss frags, some silty pcs, m in frac por, ns.
- LS: lt gry/crm/lt brn, micro-fn xtal, some foss frags/in fusln, m ostly

Mudco Check #3 @ 3822'
 0129/128:00am
 wt vis pH chl
 8.8 57 10.0 1600
 Filt LCM
 5.6 3



dense w/fn in-xtal and frac por, ns.

LS: crm-lt brn, micro-med xtal, abund ool, some pyritic, fn in-ool por, slit odor, 13 tray pcs w/gsf, dull yel flor w/yel cut

LS: crm, micro-med xtal, some ool, some pyritic, some wht chalky pcs, fn in-xtal por, slit odor, 8 tray pcs w/gsf, dull yel flor w/yel cut.

LS: crm, micro-fn xtal, min foss frags, some pyritic, min ppt in-xtal/frac por, ns.

LS: crm, micro-med xtal, foss frags/ool/crin/brac, stly silty, stly pyritic, min in-xtal/frac por, ns.

LS: gry/crm-lt brn, micro-med xtal, foss frags/fusin, some silty, some lt gry/brn chert, min in-xtal/frac por, ns in 30 m in sm pl, one oolitic pcs in 60 min smpl w/sfo - need to crush to see yel cut

LS: crm-lt gryish brn, micro-fn xtal, min foss frags, 8 tray pcs w/fn por w/sfo-dk brn-blk, yel flor cut.

LS: crm-lt brn, micro-fn xtal, min foss frags, vry silty, min frac por, ns.

LS same as above.

LS: lt gryish crm-crm, micro-med xtal, foss frags, silty, m in frac por, ns.

LS: wht-crm, micro-fn xtal, foss frags, some silty, min wht chalky pcs, min in-xtal/frac por, ns.

LS: lt-med gry/crm, micro-med xtal, foss frags, stly pyritic, min frac por, ns.

LS same as above.

SH: dk gry-blk, carb, firm-hard, fissile.

LS: lt-med brn, micro-med xtal, foss frags, frac por, ns.

LS: crm-lt brn, micro-fn xtal, foss frags/ool, some silty, some wht lt brn chert, min in-xtal/frac por, ns in 30 and 60 m in dir smpls.

LS: crm-brn, micro-med xtal, foss frags/min crin, some silty, min lt brn chert, min frac por, ns.

LS: lt gry/crm-med brn, micro-med xtal, foss frags, min frac por, ns.

LS: crm, micro-fn xtal, min foss frags, fn in-xtal por, odor, dull yel flor w/yel cut, 18 pcs w/gsf.

LS: lt-med gry/crm, micro-fn xtal, min foss frags, min frac por, ns.

LS: lt gry/crm-lt brn, micro-fn xtal, some pyritic, min frac por, ns.

SH: dk gry/blk, carb, firm, fissile.

LS: lt gry/crm, micro-fn xtal, gd cup odor, 5 pcs w/fn-vug por, yel flor w/gd yel cut, gsf.

Slight cup odor w/5 pcs w/fn-vug por and sfo in 30 min smpl; slight cup odor w/1 pce sfo in 60 min smpl.

SH: dk gry/blk, carb, firm, fissile.

LS: crm-dk brn, micro-med xtal, foss frags, mostly dense w/some pcs w/fn in-xtal por, slit odor when crushed, 5 pcs w/fn-vug por w/gsf, yel flor.

LS: lt-dk gry/crm-dk brn, micro-med xtal, foss frags/fusin, some vry silty, no stly dense w/min frac por, 1 pce w/fn-vug por w/sfo, yel flor w/yel cut.

LS: lt gry/crm-brn, micro-med xtal, foss frags, min wht chalky pcs, min wht/lt gry chert, min frac por, ns.

LS: lt gry-crm, micro-med xtal, foss frags/fusin, wht chert, min in-xtal/frac por, ns.

SH: dk gry/blk, carb, firm, fissile.

LS: crm/lt brn-dk gryish brn, micro-coarse xtal, foss frags, some silty, stly pyritic, ns.

LS: crm-dk brn/lt-med gry, micro-med xtal, min foss frags, min dk brn Dolo, frac por, ns.

LS: lt-dk gry/crm, micro-med xtal, min foss frags, frac por, ns.

LS: gry/crm-lt brn, micro-fn xtal, foss frags, some vry sandy pcs, min lt brn chert, some wht chalky pcs, min frac por, ns.

LS: lt gry/crm, micro-fn xtal, min foss frags/fusin, some dk gry/red brn SH, frac por, ns.

LS: lt gry/crm-med brn, micro-fn xtal, foss frags/fusin, some vry silty, frac por, ns.

LS: crm-lt brn, micro-med xtal, some vry silty, min in-xtal/frac por, ns.

LS: lt gry/crm, micro-med xtal, some foss frags/fusin, min dk brn Dolo, some wht chalky pcs, some in-xtal/frac por, ns.

CFS @ 4111'
30°/60"

Mudco Check #4 @ 4196'
01/30/12 3:00am
wt vis pH chl
9.0 54 11.0 1500
Filt LCM
6.4 5

CFS @ 4196'
30°/60"

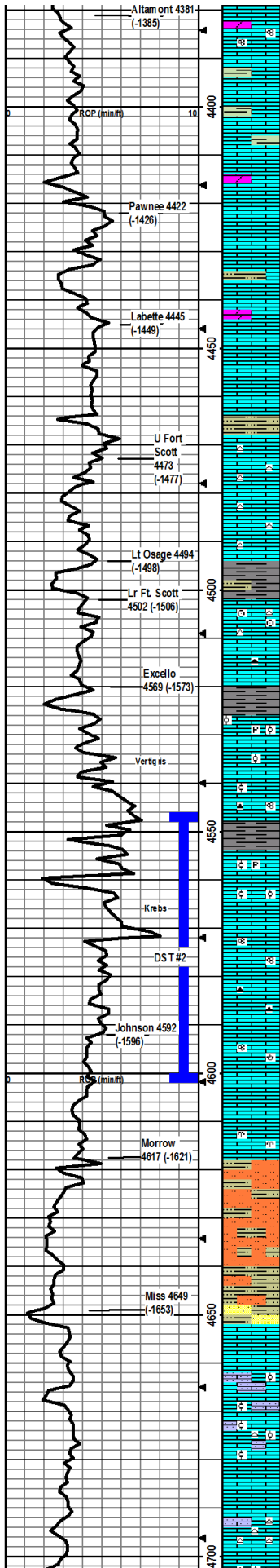
DST1) 4195-4262
30/30/30/30
1st) 5" blow built to 5.25" in 30 min, no BB.
2nd) Weak sur blow died in 2.5 min, no BB
IFP 71-73# FFP
ISIP 749# FFP
73-74# FFP
HP 2029-2029# FFP
Recvd: 135' mud.

Note: DST tool slid down 10' when seating: 5.25" initial blow is due to influx of mud into tool; true blow is probably weak surface blow building to .25" of recovered mud may also be more true instead of 135'.

CFS @ 4247'
30°/60"

CFS @ 4262'
30°/60"

Mudco Check #5 @ 4332'
01/31/12 11:00am
wt vis pH chl
9.1 57 11.0 2000
Filt LCM
4.8 6



LS: crm-brn, micro-med xtal, some foss frags/fusin, min brn Dolo, wht chalky pcs, some vry sandy pcs, in-xtal/frac por, ns.

LS: lt gry/crm-lt brn, micro-med xtal, some foss frags, some dk red brn firm SH, min frac por, ns.

LS same as above w/increase in lt-med gry/dk red brn SH, soft-firm, fissile.

LS: lt gry/crm-dk brn, micro-med xtal, foss frags, some lt gryish brn Dolo, min in-xtal/frac por, ns.

LS: lt gryish crm/crm, micro-fn xtal, min foss frags, some stly silty pcs, min in-xtal/frac por, ns.

LS: lt-dk gry/crm-dk brn, micro-fn xtal, min foss frags, some vry silty pcs, lt gry/dk red brn soft-firm silty SH, frac por, ns.

LS: lt gry/crm, micro-fn xtal, foss frags, some wht chalky pcs, some brn Dolo, frac por, ns.

LS: lt gry/crm, micro-fn xtal, min foss frags, some vry silty, frac por, ns.

SH: lt-dk gry, soft-firm, some vry silty, fissile.

LS: lt gry/crm, micro-fn xtal, min foss frags, silty, wht/lt gry chert, min pyritic, ppt in-xtal/frac por, ns.

LS: crm-med brn, micro-fn xtal, min foss frags/fusin, wht/brn chert, frac por, ns.

SH: dk gry/blk, carb, firm-hard, some silty pcs, fissile.

LS: lt gry/crm-brn, micro-coarse xtal, some foss frags/crin, wht/brn chert, min frac por, ns.

LS: lt gry/crm-lt brn, micro-med xtal, some foss frags, min brn chert, min frac por, ns.

SH: gry-dk gry/blk, firm, carb, fissile.

LS: crm-brn, micro-coarse xtal, some foss frags w/abund ool, some coarse ool w/solid matrix, stly pyritic, min frac por, ns.

LS: lt gry/crm-brn, micro-coarse xtal, min foss frags/decrease in ool content from above, min frac por, ns.

LS: brn-dk brn, micro-coarse xtal, foss frags/fusin/ool, dk brn chert, frac por, ns.

SH: dk gry/blk, firm, carb, fissile.

LS: lt gry/crm, micro-med xtal, min foss frags/some ool pcs w/solid matrix, stly pyritic, frac por, ns.

LS: lt gry/crm-brn, micro-med xtal, foss frags/fusin/some ool clusters, frac por, ns.

LS: crm-brn, micro-fn xtal, some foss frags/fusin, lt gryish brn chert, frac por, ns.

LS: crm-lt brn, micro-fn xtal, min foss frags, some wht chalky pcs, some brn chert, some fn in-xtal/frac por, no cup or crushed odor, 1 pce w/fn in-xtal por and sfo, dull yel floor and yel cut, slsfo.

LS: crm-lt brn, micro-fn xtal, min foss frags/brac/fusin, some brn chert, some clastic sand clusters, min in-xtal/frac por, ns in 30 m in sm pl, 6 pcs in 60 m in sm pl w/fn por w/sfo.

LS: crm-brn, micro-fn xtal, some foss frags, some frac por, ns.

LS: crm-med brn, micro-fn xtal, foss frags/bryoz, some frac por, ns.

SH/SS mix: SH: mustard yel/greenish gry/gry, st-vry silty, firm; SS: wht/green/brn, vf grnd, well sorted, sr-wr, predom qtz, friable, ns.

SH/SS mix as above; SH is stly pyritic, includes some red brn, ns.

SH/SS mix as above but w/increase in SH content, ns.

Some pcs of coarse grained sand in 30" and 60" smpls, ns.

LS: lt gry/crm-lt brn, micro-fn xtal, min foss frags, stly pyritic, frac por, ns.

LS: crm, micro-fn xtal, oolitic w/solid matix, some vry silty/sandy pcs, min frac por, ns.

LS: lt gry/crm, micro-med xtal, abund oolites w/solid matrix, stly silty/sandy, min wht chert, min ppt in-xtal and frac por, ns.

LS: lt gry/crm, micro xtal, dense, no vis por, ns.

LS: lt gry/crm, micro-fn xtal, some vry sandy, abund wht chert, no vis por, ns.

DST2) 4545-4602

020203030
 1st) 0.25" blow built to 0.5" in 30 min, no BB.
 2nd) no blow no build, no BB
 IF P 8-10# FFP 9-11#
 ISIP 27# F SIP 20#
 HP 2230-2228#
 Recvd: 3' mud.

CF 5 @ 4602'
 30"60"

Mudco Check #6 @ 4602'
 020111211:30 am
 VE vis pH chl
 9.4 53 10.5 2800
 FIT LCM
 6.4 4

CF 5 @ 4637'
 30"60"

CF 5 @ 4652'
 30"60"

Mudco Check #7 @ 4722'
 02021205:30 am

