

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

GRAND MESA OPERATING CO.
 WELL: PHELPS #8-31
 LOC.: 1812' FSL & 461' FEL
 SEC. 31-13-31W
 GOVE COUNTY, KANSAS
 API: 15-063-21874-00-00

ELEVATION
 KB: 2922'
 GL: 2917'
 LOG MEASURED
 FROM: KB

DRILLING CONTR.: MURFIN RIG #24
 SPUD: 10-22-10 COMP: 10-29-10
 MUD UP: 3500' TYPE MUD: CHEM.
 DRILL TIME: 3600-RTD
 RTD: 4720' LTD: 4717'
 SAMPLES SAVED: 3800'-RTD
 GEOLOGIST: ROBERT J. PETERSEN

SURFACE CASING
 23# 8 5/8" Set @ 220' KB.
 Cem. w/165sx Comm.,
 3% CC, 2% Gel.

PRODUCTION CASING
 N/A

WELL LOG SURVEYS
 DIL/CDL w/micro

ELECTRIC LOG TOPS

Stone Corral	2404	518	0
Bs/Stone Corral	2427	495	-1
Heebner	3919	-997	-5
Lansing	3961	-1039	-3
Muncie Creek	4113	-1191	-2
Stark	4208	-1286	-7
Hushpuckney	4246	-1324	-9
Marmaton	4307	-1385	-7
Pawnee	4394	-1472	-15
Upper Ft Scott	4414	-1492	-9
Little Osage	4442	-1520	-9
Excelllo	4466	-1544	-8
Cherokee	4500	-1578	-9
Johnson	4544	-1622	-12
Morrow	4567	-1645	-9
Mississippian	4633	-1711	18



DAILY REPORT

@7:00 A.M.
 10/22/10 MIRU: Spud @ 3:30 p.m.
 10/23/10 Drilled out @ 4:00 a.m.:
 Current depth @ 7:00 a.m. 350', drilling ahead
 10/24/10 2425', drilling ahead
 10/25/10 3444' bit trip.
 10/26/10 3995' drilling ahead.
 10/27/10 4395' drilling ahead
 10/28/10 4643' DST #1
 10/29/10 4720' DST #2

REFERENCE WELL:

GRAND MESA
 PHELPS #3-31 31-13-31W
 1418' FSL & 1289' FELEL. 2932' KB

REMARKS AND RECOMMENDATIONS

Due to the drill stem test results the operator plugged and abandoned this well. Respectfully submitted.

Robert J. Petersen

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DRILL TIME

0 5 10min.

2400

2450

3650

3700

3750

3800

3850

3900

3950

4000

4050

4100

4150

4200

4250

4300

4350

4400

4450

4500

4550

4600

4650

4700

4750

4800

DRILL STEM TEST RESULTS

DST #1
 4560 - 4643'
 30-30-30-30"
 IF: Built to 1/2"
 FF: No blow
 No return blows

Recovered:
 5' mud
 SIP: 106-121#
 FP: 30-36/40-64#
 HP: 2337-2253#
 BHT: 112F

DST #2
 4685-4720'
 30-45-45-60"
 IF: B.O.B. in 4 min.
 FF: B.O.B. in 4 min.
 No return blows

Recovered:
 248' MW w/trace of oil: 50%W/50%M
 310' MW: 90% W/10%M
 930' SW: 100%SW
 SIP: 1204-1214#
 FP: 74-384/402-715#
 HP: 2406-2254#
 BHT: 132F
 Chlorides: 20,000 ppm
 Mud system chlorides: 3,000 ppm

SAMPLES START AT 3800'

- LS: Tan/gray, fine crystalline, foss-granular + SH; Gray, silty-sandy+ SH; Black (10)
- LS: Cream/gray, fine crystalline, foss, chalky, dolomitic, cherty + SH; Gray/dark gray, trace stain (20)
- LS: Cream/gray, fine crystalline, foss, chalky, trace stain + SH; Gray (30)
- LS: Cream/lt gray, fine crystalline to dense, foss, chalky, cherty, incr dolo, tr stain + SH; Gray/dark gray (40)
- LS: Cream/lt gray, fine crystalline, foss, chalky, cherty + SH; Gray/SS; Gray, fine grained, friable (50)
- LS: Cream/white/lt gray, fine crystalline, foss, chalky, cherty + SH; Gray (60)
- SH: Red; silty + SS; Gray, fine grained, friable (70)
- LS: Cream/lt gray, fine crystalline to dense, si chalky, trace black shaike (80)
- LS: Cream/lt graym fine crystalline to dense, ool-subgranular + SH; Gray (90)
- LS: Cream, fine crystalline to dense, sl chalky, very cherty + trace SH; Black (00)
- LS: Cream/gray, fine crystalline to dense, foss, dolo, chalky, very cherty, trace stain (10)
- LS: Cream/gray, fine crystalline to dense, foss, dolo, chalky(soft) cherty + SH; Dark gray (20)
- SH: Black (trace 30 increase 40)
- LS: Tan, fine crystalline, foss, chalky, trace stain (40)
- LS: Cream, fine crystalline, sl dolo, cherty + SH; Gray (50)
- SH: Red, silty + SS; Gray, fine grained, friable (60)
- LS: Cream/lt gray, fine crystalline to dense, foss, cherty (foss-blocky) (60)
- LS: Cream/lt gray, fine crystalline, foss, sl dolo, chalky (70)
- SH: Gray(70)
Mudco Mud Check: Vis. 66/Wt. 8.8/Filtrate 8.0/LCM 6#
- LS: Cream/tan, fine crystalline, ool., sl dolo w/trace oomoldic por + SH; Red, trace SH; Black (80)
- LS: Lt gray/white/cream, fine crystalline, ool, very chalky(soft) (90)
- LS: Cream/lt gray, fine crystalline, sl foss, chalk (soft), trace SH; Black (00)
- LS: Cream/lt gray, fine crystalline to dense, dolo, chalky + LS; Cream/lt gray, fine crystalline, ool-granular + SH; Black (10)
- LS: Cream, fine crystalline, ool-granular w/trace poor inter-gran por, sfsf, lt odor, patchy stain (20)
- LS: Cream, fine crystalline to dense, foss, cherty, chalky + SH; gray (30)
- LS: Cream/lt graym fine crystalline, oomoldic, chalky (40)
- LS: Cream, fine crystalline to dense, chalky, trac por/tr stain (50)
- SH: Dark gray (tr 60)
- LS: Cream, fine crystalline to dense, ool, chalky, trace inter-ool por, sfsf, lt stain (60)
- LS: Cream, fine crystalline to dense, sl dolo, chalky, cherty, tr frac por, tr stain, lt odor (70)
- SH: Black (80)
- LS: Cream, fine crystalline to dense, ool, very chalky (soft) (80)
- LS: Cream/lt gray, dense, cherty, dolomitic (90)
- LS: Cream/tan, fine to medium crystalline, ool-subgran, dolomitic, chalky(00)
- LS: Lt gray, fine crystalline, ool, chalky, trace stain (10)
- LS: Cream/lt gray/tan, fine crystalline to dense, ool, dolomitic, chalky + SH; Gray (20/30)
- SH: Black (tr 30/incr 40)
- LS: Cream/lt gray, fine crystalline, ool, very chalky, mealy, stain, odor, trace dead oil flakes, nsfo (40)
- SH: Gray/red, silty, sandy (50)
- LS: Cream/tan, fine crystalline, ool, chalky w/trace oom por, patchy stain, sfo, odor (50)
- LS: Cream/lt gray, fine crystalline, oolitic-granular, trace poor to fair inter-gran por, sfo, odor (60)
- SH: Black (60)
- LS: Cream/lt gray/tan, fine crystalline to dense, ool, cherty (70)
- SH: Black (80)
- LS: Cream/lt gray, fine crystalline to dense, ool, cherty, sl dolo (80)
- SH: Gray, silty-sandy + SH; Gray/green (90)
- LS: Cream/lt gray/tan, fine crystalline, chalky-mealy, cherty spot stain, odor, nsfo (90)
- SH: Black (00)
- SH: Red/gray (00)
- LS: Cream/lt gray, fine crystalline to dense, subchalky, cherty (00)
- LS: Cream/lt gray, fine crystalline, oomoldic, dolomitic, w/fair to good oomoldic por, sfo, odor, lt stain on dry (10)
- LS: Cream/tan, fine crystalline to dense, ool, chalky, odor, nsfo, no stain (20)
- SH: Black (trace 20/increase 30)
- SH: Gray (30)
- LS: Cream/lt gray, fine crystalline to dense, ool, chalky, dolomitic (30)
- LS: Cream/lt gray, dense, ool, chalky, cherty, trace fracture por w/stain, nsfo, no odor (40)
- LS: Cream/lt gray, fine crystalline to dense, dolo, ool, chalky + SH; Black (50)
- SH: Black (60)
- SH: Gray, silty(70)
- LS: Lt gray/cream, fine crystalline, ool, chalky, trace poor inter-ool por, trace stain (70)
- LS: Gray/cream, dense, arg, chalky + SH; Gray (80)
- LS: Gray, dense, oool, hard, cherty + SH; Red/gray (90)
- SH: Gray, silty, sandy (00)
- SH: Red/gray, silty, sandy + LS; Gray, dense (10)
- LS: Gray, fine crystalline to dense, cherty + SH; Red/gray, sandy, trace SH; Black (20)
- LS: Cream/lt gray, fine crystalline, blocky, subchalky + SH; Red/green, sandy + SH; Black (30)
- LS: Cream/tan, fine crystalline, foss, chalky, cherty + SH; Gray (40)
- LS: Tan/gray, fine crystalline to dense, foss, blocky + SH; Black, carb (50)
- LS: Lt gray, fine crystalline to dense, foss, sl chalky, trace poor inter-gran por w/stain, + SH; Gray, trace SS; Lt gray, angular, friable (60)
- SH: Gray/maroon + SS; Gray, silty, soft (70)
- SH: Gray/dark gray, silty (80)
- LS: Tan/cream, fine crystalline to dense, foss, sandy in part (80)
- Mudco mud check: Vis 58/Wt 8.8/Filtrate 9.6/LCM 3#
- LS: Cream/lt gray, fine crystalline to dense, foss/ool (90)
- SH: Black (90)
- SH: Gray, sandy + SS; Dark gray, very fine grained, hard (00)
- SS: Gray, silty, fine to coarse, friable + LS: Cream/lt brown, dense, chalky, w/trace fracture por w/stain, nsfo, no odor (10)
- LS: Cream/white/lt gray, fine crystalline to dense, chalky, foss + SH; Gray (20)
- SH: Black (30 trace)
- LS: Cream, fine crystalline, foss w/fossil-cast por, chalky + SH; Red/gray (30)
- LS: Cream, fine crystalline, foss, chalky, cherty (40-50)
- LS: Cream, fine crystalline chalky + LS; Gray, dense, foss, cherty (60)
- SH: Black, carb (60)
- SH: Maroon (70)
- LS: Cream/lt gray, fine crystalline, foss, chalky, cherty (70)
- LS: Cream, fine crystalline, chalky, cherty(blue-gray/ang/foss)(80)
- SH: Black (80/flood 90)
- LS: Cream, fine crystalline, foss, chalky, cherty (90)
- SH: Gray (4500)
- LS: Gray, dense, foss, blocky, cherty (4500)
- LS: Lt gray/cream, fine crystalline, foss, chalky (soft) (10)
- SH: Black (20)
- LS: Cream/lt gray, dense, foss, chalky (soft) (20)
- LS: Cream/tan/lt gray, fine crystalline, foss, very chalky, trace ppt por, lt stain, vsfso (30/40)
- SH: Black (4540)
- LS: Cream/tan/lt gray, dense, foss, chalky (soft) (40/15')
- LS: Cream/tan, fine crystalline, foss, chalky + SH; Black/gray (40/45') (SHORT TRIP 4540')
- LS: Cream/pink, dense, dolomitic-hard (4500/20')
- SH: Gray, sandy (60)
- LS: Tan/cream, dense, trace frac por (60)
- LS: Tan/lt brown/cream, fine crystalline to dense, foss, chalky, trace ppt por, tr stain + SH; Gray (70)
- LS: Cream/tan, fine crystalline, foss, subchalky, dolomitic in part (80/90)
- SH: Dark gray/green + SS; Gray, fine grained, friable + SS; White, medium, subrounded, friable (90)
- LS: Cream/lt gray, dense, chalky, foss, trace vug por, stain, vsfso+ Chert; White, blocky + SH; gray, silty + trace SS; White, fine grained (4600)
- LS: Cream/lt gray, dense, blocky, foss trace LS; Cream, dense, sandy + Chert; Yellow, crystalline, foss + tr Dolo; White, fine crystalline (4600/20')
- SH: Gray, silty + SH; Mustard yellow, blocky + LS; Cream, fine crystalline, foss, chalky (4600/40')
- SH: Dark graym sandy + SH; Gray, silty + LS; Lt gray, dense, foss, blocky + LS; Cream, fine crystalline, chalky (10)
- SH: Green-gray/gray, + abund LS; Cream, fine crystalline to dense + SS; Lt gray/white, fine grained, friable, trace very small oil flakes + trace SS; Clear, fine to medium, subrounded, poorly sorted, questionable lt stain on dry (20)
- SH: Black/gray/olive, silty to hard, some sandy-mushy, pyrite, trace SH; Black/green, w/coarse sand incl, trace Sand clusters; White, fine grained, subrounded, friable (4630/20')
- SH: Black/gray/maroon/olive, silty-sandy (30/40')
- LS: Cream, fine crystalline, fair to good, vug por, sfo, odor, lt stain on dry (40)
- LS: Cream, dense, no vis por + Chert; Orange/cream, angular, foss, trace Dolo; Cream, dense still carrying abundant SH; Black
- LS: Lt gray, dense, foss, subchalky, sl pyritic+ Chert; Yellow, angular to sharp (43/40')
- LS: Cream/lt gray, dense, blocky, foss trace LS; Cream, dense, sandy + Chert; Yellow, sharp, + SD; Clear, med-coarse, clusters, trace dead oil flake (43/60')
- Mudco Mud Check: Vis. 54/Wt 9.3/Filtrate 9.2/LCM 3#
- LS: Cream, f-med crystalline, sl gluc, ool/sandy (coarse grains, poor intercrystalline por, sfo, odor, lt stain on dry + LS; Lt gray, dense, foss (60-70)
- LS: Cream, medium crystalline, ool, chalky, cherty(white-sharp to angular) + LS; Tan/gray, dense, foss (90/00)
- Dolo; Tan, fine to medium crystalline, no vis por + Chert; Gray (10)
- Dolo; Tan/brown, medium to coarse crystalline, vugular w/fair to good vug and inter crystalline por, sfo (brown), odor, lt brown stain on dry (20-20/30')
- Dolo; Gray/brown, fine crystalline to dense, chalky, cherty w/pyrite + SH; Black (20/60')
- Mudco Mud Check: Vis. 57/Wt 9.3/Filtrate 9.6/LCM 3#

Drift Survey
 Survey 3/4 deg. @ 220'.
 Survey 1/2 deg. @ 2517'.
 Survey 1 deg. @ 3441'.
 Survey 1 1/2 deg. @ 4643'