

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

GRAND MESA OPERATING CO.

ELEVATION
KB: 2983'

GL: 2978'

LOG MEASURED
FROM: KB

WELL: SMITH #1-34

LOC.: 1896' FNL & 2374' FWL

SEC. 34-12-32W
LOGAN COUNTY, KANSAS

API: 15-109-20959-00-00

DRILLING CONTR.: MURFIN RIG #24

SPUD: 11-09-10 COMP: 11-19-10

MUD UP: 3500' TYPE MUD: CHEM.

DRILL TIME: 3600-RTD

RTD: 4670' LTD: 4667'

SAMPLES SAVED: 3800-RTD

GEOLOGIST: ROBERT J. PETERSEN

SURFACE CASING
2 3/8" 8 5/8" surface csg.
Set @210' KB.
Cem: w/165sx Common,
3% CC, 2% Gel.

PRODUCTION CASING
5 1/2", 15.5#
casing set @4666'
cem w/175sx
DV tool @ 2531'
cem to surf. w/255sx

WELL LOG SURVEYS
DIL/CDL w/micro

FORMATION TOPS

| Formation | Sample Top | Datum | E-Log Top | Datum | Position |
|-----------------|------------|-------|-----------|-------|----------|
| Stone Corral | 2493 | 490 | 2489 | 494 | #4 |
| Bs/Stone Corral | 2516 | 467 | 2511 | 472 | #4 |
| Heebner | 3944 | -961 | 3942 | -959 | #17 |
| Muncie Creek | 4139 | -1156 | 4137 | -1154 | #18 |
| Stark | 4222 | -1239 | 4219 | -1236 | #16 |
| Marmaton | 4325 | -1342 | 4322 | -1339 | #12 |
| Little Osage | 4449 | -1466 | 4443 | -1462 | #19 |
| Johnson | 4555 | -1572 | 4548 | -1565 | #21 |
| Morrow | 4576 | -1593 | 4583 | -1600 | #19 |
| Mississippi | 4604 | -1621 | 4593 | -1610 | #34 |
| RTD/LTD | 4670 | | 4667 | | |

REFERENCE WELL:

1-27 Janova - GMOOC
NE/NE/SE Sec. 27-125-32W
KB: 3012'

REMARKS AND RECOMMENDATIONS

The operator has run production casing in order to further test the Johnson Zone in this well.

Robert J. Petersen

Robert J. Petersen

DAILY REPORT

©7:00 A.M.

11-09-10: M/RU
11-10-10: 461' DRILLING
11-11-10: 2620' DRILLING
11-12-10: 3640' DRILLING
11-13-10: 3995' DST#2
11-14-10: 4094" DST#1
11-15-10: 4225" DST#3
11-16-10: 4268" DST#4
11-17-10: 4555' DRILLING
11-18-10: 4670' RTD CIRC. FOR LOG
11-19-10: CASING RUN RIG RELEASED

Drill Time Min./Ft. 0 5 10

Top Stone Corral

Base Stone Corral

Drill Time Min./Ft. 0 5 10

Heebner

Toronto

Lansing

C zone

E zone

F zone

G zone

Muncie Cr.

H zone

I zone

Stark

Hush

BKC

Marmaton

Altamont

Miss.

Johnson

Morrow

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TORONTO/LANSING "A" FORMATION
DST #1 (3943-3995')
15-45-15-60:
1st open: Good blow, BOB in 30 sec.
Very weak blow back.
2nd open: Good blow, BOB in 30 sec.
No blow back.
REC: Total Fluid 2420':
2420' MW (10%M, 90%W)
IFP: 650-926#, FFP: 996-1174#
SIP: 1252-1255#
Temp. 120 deg.

LANSING "E-F" FORMATIONS
DST #2 (4054-4094') 30-45-60-90:
1st open: Fair blow, BOB in 10 min.
Very weak blow back.
2nd open: Fair blow, BOB in 12 min.
No blow back.
REC: Total Fluid 840':
840' MW (15%M, 85%W)
IFP: 65-241#, FFP: 248-470#
SIP: 1279-1268#
Temp. 125 deg.

LANSING "J" FORMATION
DST #3 (4193-4225')
30-45-60-60:
1st open: Wk blow built to 2 1/2" into water.
No blow back.
2nd open: Wk blow built to 5" into water.
No blow back.
REC: Total Fluid 210':
90' MW, skim of oil (20%M, 80%W)
120' WCM (60%M, 40%W)
IFP: 53-105#, FFP: 109-149#
SIP: 1357-1347#
Temp. 116 deg.

LANSING "K" FORMATION
DST #4 (4218-4252')
45-60-45-60:
1st open: Wk blow built to 1 1/2" into water.
No blow back.
2nd open: Wk blow built to 6" into water.
No blow back.
REC: Total Fluid 220':
60' MW (20%M, 80%W)
60' MCW (30%M, 70%W)
100' M, skim of oil (100%#)
IFP: 57-121#, FFP: 123-149#
SIP: 1289-1264#
Temp. 117 deg.

JOHNSON FORMATION
DST #5 (4531-4564') 30-45-60-90:
1st open: Fair blow btm of bucket in 9 min.
Very weak blow back.
2nd open: Weak blw built to btm of bucket in 20 min.
Very weak blow back.
REC: Total Fluid 650':
1000' GIP (100%G)
60' MCO (80%O, 20%M)
590' GO (10%G, 90%O)
IFP: 60-133#, FFP: 161-255#
SIP: 1168-1151#
Temp. 122 deg.

LS: Cream, fine crystalline, foss, chalky + SH; Black/green (3810)

LS: Tan/cream, fine crystalline to dense, ool/oolomoldic, chalky (20)

LS: Cream/gray, fine crystalline, ool, chalky (soft) trace SH; Gray, silty-sandy (30)

LS: Cream/tan, fine crystalline, oolomoldic, chalky, dolomitic, trace SH; gray (40)

LS: Cream/tan, fine crystalline, foss, chalky, trace stain + SS; Gray, very fine grained, silty, trace SH; Black (50)

SS: Gray, very fine grained, silty + LS; Cream/tan, dense, chalky (60)

SS: Red/brown, fine grained, silty (70)

LS: Cream, fine crystalline, ool, chalky (80)

LS: Cream/lt gray, fine crystalline to dense, ool, chalky (90)

LS: Cream/gray, fine crystalline to dense, foss, cherty (3900-10)

SH: Black (20-trace)

LS: Cream/gray, dense, sl dolo, cherty(30)

LS: Cream/tan, fine crystalline to dense, ool, chalky, cherty (40)

LS: Tan, fine crystalline to dense, foss, chalky w/trace stain + SH; Gray (50)

LS: Gray, dense, foss (60)
SH: Black (60)

LS: Tan/gray, dense, Foss, chalky (70)
SH: Dark gray (70)

SS: Gray, fine grained, well-cem to friable (70)

SH: Red/gray, sandy (80)

LS: Cream/white, fine crystalline, oolitic-granular w/fair to good inter-ool/oolomoldic por, sfo, even brown sat on dry, faint odor (80)

LS: Cream, fine crystalline to dense, ool-subgran (90)

SH: Red/gray, silty (95/40')

LS: Cream/white, fine crystalline, ool w/fair inter ool/moldic/por sfo, pungent odor, very chalky (white-soft)(95/40)-added mud

LS: Gray, fine crystalline to dense, foss w/trace moldic por, sfo (95/60')

LS: Lt gray, dense, fine crystalline to dense, foss, blocky (15)

LS: Cream, fine crystalline, ool, chalky (soft-white) w/moldic por (20)

LS: Gray, dense, foss, cherty (30)

SH: Maroon/gray, silty-sandy (30-35)

LS: Cream/lt gray, fine crys, ool-granular in part, chalky, w/por intergran por, trace black larry stain, few dead oil flakes, nsfo, no odor (35/20')

LS: Cream, fine crystalline, ool-granular, loss in-part w/fair inter-gran por, sfo, odor, very light stain on dry + SH; Mar/gray (52/40) increase chalk (52/60')

SH: Red/gray, silty (50)

LS: Cream, fine crystalline to dense, foss, chalky, dolomitic, cherty (50)

LS: Tan, fine crystalline, ool-granular w/por moldic por, dolomitic, chalky, trace stain (55-60)

LS: Cream/lt gray, fine crystalline, oolitic, blocky, chalky (70)

SH: Dark gray/red (80)

LS: Cream, fine crystalline to dense, ool, chalky (80)

LS: Cream/white, fine crystalline, ool, chalky w/trace poor ppt por, spot stain, vssfo, no odor (80/20')

LS: Cream, fine crystalline to dense, ool, chalky, cherty + trace SH; Gray, sandy (90)

LS: Cream/lt gray, fine crystalline, ool-granular, loss in-part w/fair inter-gran por, trace vug por on dry, sfo, faint odor (94/20')

LS: Cream/lt gray, fine crystalline to dense, trace poor ppt por, trace stain, chalky (94/40') LS: Cream, fine crystalline, ool, very chalky, trace stain, sfo (94/40')

LS: Cream, fine crys, ool, dolomitic, chalky-soft (4110-4120)

SH: Red/gray, sandy (20)

LS: Cream, fine crystalline, ool, dolomitic-medium crystalline, very chalky, trace questionable stain on dolo-dry(20)

LS: Cream, fine crystalline, ool-chalky, dolomitic, cherty, trace light stain, vssfo in chalk, no vis por (30)

LS: Cream/lt gray, fine crystalline to dense, chalky-cherty (36)

LS: Cream/lt gray, fine crystalline, dolomitic, chalky (36/20')

LS: Cream/gray, mottled, fine crystalline to dense, foss, very chalky + SH; Black (36/40')

LS: Gray, dense, argillaceous (50)

SH: Black (50)

LS: Cream/lt brown/gray, mottled, dense, foss, brittle, chalky, trace stain, poor ppt por, nsfo (60)

SH: Gray, sandy (very fine grained) silty (60)

LS: Cream, fine crystalline, to dense, foss, cherty (white-ang-blocky-foss), trace edge stain, nsfo, no evid por (70)

LS: Gray, dense, foss, (80)

SH: Black (trace 80)

LS: Gray/tan/cream, dense, sl foss, chalky (90)

SH: Gray, silty-sandy (90)

LS: Cream/tan/lt gray, dense, foss, blocky, trace frac por w/stain, nsfo-gray stain on dry (4200)

LS: Cream/gray, fine crystalline to dense, sl foss + trace SH; Black (4200-20')

SH: Red, silty (10)

LS: Cream, fine crystalline, oolitic-granular w/fair to good modic/inter ool por, gsfo, bleeding show, lt grayish brown stain on dry, good odor (20)

LS: Cream/lt gray, fine crystalline to dense, foss, chalky + SH; Gray (20-25)

LS: White/lt gray, fine crystalline, sl ool, chalky (25/20')

SH: Black (25/20') + SH; Red/green-gray, silty (25/40') (4230)

SH: Maroon/green-gray, blocky + LS; Cream/brown, dense, foss, blocky (37)

SH: Gray, sandy + LS; Cream/brown, fine crystalline to dense, trace ppt por, stain (37/40')

LS: Cream, fine crystalline, ool-granular, poorly sorted in part w/ fair intergran por, trace vug por (37/40' 42/40) increase chalk (52/60')

LS: Gray, dense, blocky, dolomitic + SH; Maroon/gray (50)

LS: Cream, fine crystalline, oolitic, very chalky(soft)Cherty (white, sharp, foss) (52/20') + LS: Cream fine crystalline, ool-granular, loss in-part w/fair inter-gran por, sfo, odor, very light stain on dry + SH; Mar/gray (52/40) increase chalk (52/60')

LS: Lt gray/cream, dense, foss, blocky very cherty(block/lt gray/foss)(60)

SH: Black + SH: Red (60 circ 30 min @4252 before drilling ahead)

SH: Gray/silty + LS; Gray, dense (70)

LS: Cream/gray, fine crystalline to dense, chalky-mealy w/trace even to spot stain, very slight show dead oil flakes, no odor (80)

LS: Tan/gray/cream, mottled, fine crystalline, foss, chalky (84/20')

LS: Cream, fine crystalline to dense, chalky (90)

LS: Cream/lt gray, fine crystalline, sl foss, chalky + SH; Black (4300)

LS: Cream/lt gray, fine crystalline, ool, trace moldic por, chalky + SH; Red/gray, silty-sandy (10-20)

SH: Red/gray, silty, sandy (20)

SH: Gray, silty + SS; Red, fine grained, silty (30)

LS: Cream, fine crystalline, ool, sl chalky (40)

SH: Black/gray (50)

LS: Cream, fine crystalline, ool, chalky, sl dolo (50)

LS: Tan, dense, foss (60)

SH: Gray, sandy + SS; Gray, silty, friable + SH; Red, silty-sandy (60-70)

LS: Cream, dense, sl foss (70)

LS: Gray, fine crystalline to dense, chalky, arg + SH; Gray, silty-sandy (80)

SH: Black (90)

LS: Cream/gray, fine crystalline to dense, dolo, clay (90)

LS: Cream, fine crystalline to dense, chalky + SH; Gray + SS; Gray, very fine grained, well-cem (4400)

SH: Black (10)

SH: Gray, silty + SS; Gray, very fine grained + LS; Cream, dense, cherty (10)

LS: Gray, dense, sandy + LS; Cream, fine crystalline chalky + SH; Gray (20)

SH: Black, carb (30)

LS: Dark gray, dense, arg, blocky + SH; Gray/gren (30)

LS: White/lt gray, fine crystalline