

# GEOLOGIST'S REPORT

## DRILLING TIME AND SAMPLE LOG

**BACH OIL PRODUCTION**

**WELL: KNAPE #1**

**LOC.: 2570' FSL & 1420' FEL**  
**SEC. 18-1-18W**  
**PHILLIPS COUNTY, KANSAS**  
**API: 15-147-20653-00-00**

**DRILLING CONTR.: MURFIN RIG #16**  
**SPUD: 09-17-11 COMP: 9-23-11**  
**MUD UP: 2600' TYPE MUD: CHEM.**  
**DRILL TIME: 2900' RTD**  
**RTD: 3737' LTD: 3738'**  
**SAMPLES SAVED: 3000'-RTD**  
**GEOLOGIST: ROBERT J. PETERSEN**

**ELEVATION**

KB: 2070  
 GL: 2065  
 LOG MEASURED  
 FROM: KB

**SURFACE CASING**

8 5/8 "  
 Casing set @ 225'  
 w/160 SX

**PRODUCTION CASING**

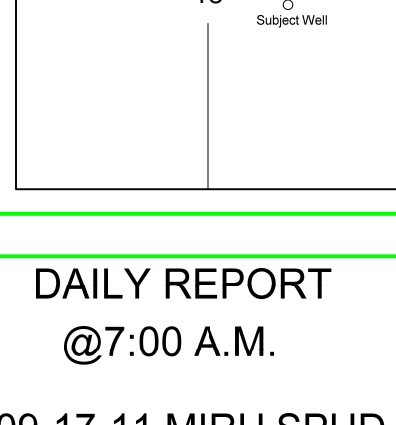
5 1/2" "  
 Casing set @ 3736'  
 w/400 SX

**WELL LOG SURVEYS**

CDL/DIL  
 SONIC/MICRO

**ELECTRIC LOG TOPS**

FORMATION	Depth	Datum	POS.
Stone Corral	1672	+398	+10
Base Stone Corral	1692	+378	+12
Topeka	3027	-957	+18
Heebner	3233	-1163	+16
Toronto	3262	-1192	+14
Lansing	3281	-1211	+13
Base Kansas City	3499	-1429	+18
Pre_Penn	3645	-1575	+71
Viola	3677	-1575	N/A
Simpson SH	3727	-1607	N/A
Arbuckle		-1657	-11



**REFERENCE WELL:**

Black Cat Oil Co.  
 Byerstrom #1  
 SE SE SE  
 7-1-18W

**REMARKS AND RECOMMENDATIONS**

Production pipe was set to further test this well.

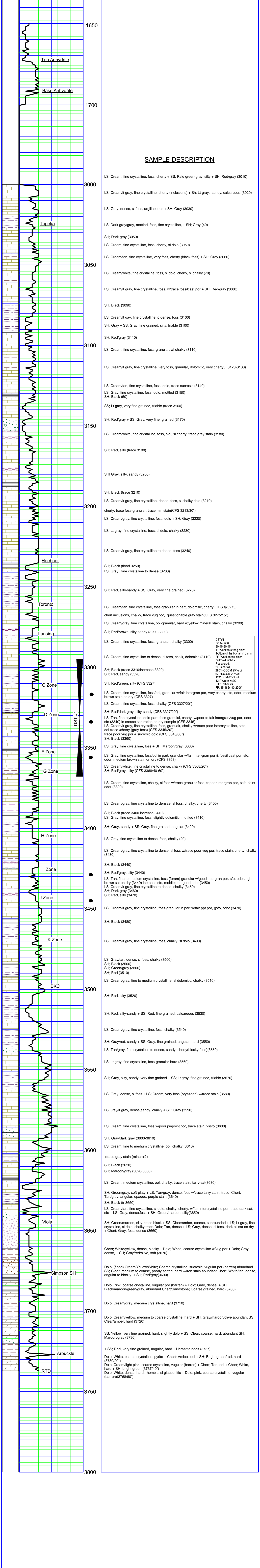
Respectfully submitted,

*Robert J. Petersen*  
 Robert J. Petersen

**DAILY REPORT**

@ 7:00 A.M.

09-17-11 MIRU SPUD  
 09-18-11 580'  
 09-19-11 2520'  
 09-20-11 3213'  
 09-21-11 3348"  
 09-22-11 3737' RTD



**SAMPLE DESCRIPTION**

LS: Cream, fine crystalline, foss, cherty + SS; Pale green-gray, silty + SH; Red/gray (3010)

LS: Cream/lt gray, fine crystalline, cherty (inclusions) + Sh; Lt gray, sandy, calcareous (3020)

LS: Gray, dense, sl foss, argillaceous + SH; Gray (3030)

LS: Dark gray/gray, mottled, foss, fine crystalline, + SH; Gray (40)

SH: Dark gray (3050)

LS: Cream, fine crystalline, foss, cherty, sl dolo (3050)

LS: Cream/tan, fine crystalline, very foss, cherty (black-foss) + SH; Gray (3060)

LS: Cream/white, fine crystalline, foss, sl dolo, cherty, sl chalky (70)

LS: Cream/lt gray, fine crystalline, foss, w/trace fossilcast por + SH; Red/gray (3080)

SH: Black (3090)

LS: Cream/lt gray, fine crystalline to dense, foss (3100)

SH: Gray + SS; Gray, fine grained, silty, friable (3100)

SH: Red/gray (3110)

LS: Cream, fine crystalline, foss-granular, w/ chalky (3110)

LS: Cream/lt gray, fine crystalline, very foss, granular, dolomitic, very cherty (3120-3130)

LS: Cream/tan, fine crystalline, foss, dolo, trace sucrosic (3140)

LS: Gray, fine crystalline, foss, dolo, mottled (3150)

SH: Black (50)

SS: Lt gray, very fine grained, friable (trace 3160)

SH: Red/gray + SS; Gray, very fine grained (3170)

LS: Cream/white, fine crystalline, foss, slol, sl cherty, trace gray stain (3180)

SH: Red, silty (trace 3190)

SH: Gray, silty, sandy (3200)

SH: Black (trace 3210)

LS: Cream/lt gray, fine crystalline, dense, foss, sl chalky, dolo (3210)

cherty, trace foss-granular, trace min stain(CFS 3213/30')

LS: Cream/gray, fine crystalline, foss, dolo + SH; Gray (3220)

LS: Lt gray, fine crystalline, foss, sl dolo, chalky (3230)

LS: Cream/lt gray, fine crystalline to dense, foss (3240)

SH: Black (flood 3250)

LS: Gray,, fine crystalline to dense (3260)

SH: Red, silty-sandy + SS; Gray, very fine grained (3270)

LS: Cream/tan, fine crystalline, foss-granular in part, dolomitic, cherty (CFS @3275)

chert inclusions, chalky, trace vug por, questionable gray stain(CFS 3275/15')

LS: Cream/gray, fine crystalline, ool-granular, hard w/yellow mineral stain, chalky (3290)

SH: Red/brown, silty-sandy (3290-3300)

LS: Cream, fine crystalline, foss, granular, chalky (3300)

LS: Cream, fine crystalline to dense, sl foss, chalk, dolomitic (3110)

SH: Black (trace 3310/increase 3320)

SH: Red, sandy (3320)

SH: Red/green, silty (CFS 3327)

LS: Cream, fine crystalline, foss/ool, granular w/fair intergran por, very cherty, sfo, odor, medium brown stain on dry (CFS 3327)

LS: Cream, fine crystalline, foss, chalky (CFS 3327/20')

SH: Red/dark gray, silty-sandy (CFS 3327/20')

LS: Tan, fine crystalline, dolo-part, foss-granular, cherty, w/poor to fair intergran/vug por, odor, sfo (3340) in crease saturation on dry sample (CFS 3345)

LS: Cream/lt gray, fine crystalline, foss, granular, chalky w/trace poor intercrystalline, ssfo, dol-trace /cherty (gray-foss) (CFS 3345/20')

trace poor vug por + sucrosic dolo (CFS 3345/60')

SH: Black (3360)

LS: Gray, fine crystalline, foss + SH; Maroon/gray (3360)

LS: Gray, fine crystalline, foss/ool in part, granular w/fair inter-gran por & fossil cast por, sfo, odor, medium brown stain on dry (CFS 3368)

LS: Cream/white, fine crystalline to dense, chalky (CFS 3368/20')

SH: Red/gray, silty (CFS 3368/40-60')

LS: Cream, fine crystalline, chalky, sl foss w/trace granular foss, tr poor intergran por, ssfo, faint odor (3390)

LS: Cream/gray, fine crystalline to densae, sl foss, chalky, cherty (3400)

SH: Black (trace 3400 increase 3410)

LS: Gray, fine crystalline, foss, slightly dolomitic, mottled (3410)

SH: Gray, sandy + SS; Gray, fine grained, angular (3420)

LS: Gray, fine crystalline to dense, foss, chalky (20)

LS: Cream/gray, fine crystalline to dense, sl foss w/trace poor vug por, trace stain, cherty, chalky (3430)

SH: Black (3440)

SH: Red/gray, silty (3440)

LS: Tan, fine to medium crystalline, foss (foram) granular w/good intergran por, sfo, odor, light brown sat on dry (3440) increase sfo, moldic por, good odor (3450)

LS: Cream/lt gray, fine crystalline to dense, chalky (3450)

SH: Dark gray (3460)

SH: Red, silty (3470)

LS: Cream/lt gray, fine crystalline, foss-granular in part w/fair ppt por, gsfo, odor (3470)

SH: Black (3480)

LS: Cream/lt gray, fine crystalline, foss, chalky, sl dolo (3490)

LS: Gray/tan, dense, sl foss, chalky (3500)

SH: Black (3500)

SH: Green/gray (3500)

SH: Red (3510)

LS: Cream/gray, fine to medium crystalline, sl dolomitic, chalky (3510)

SH: Red, silty (3520)

SH: Red, silty-sandy + SS; Red, fine grained, calcareous (3530)

LS: Cream/gray, fine crystalline, foss, chalky (3540)

SH: Gray/red, sandy + SS; Gray, fine grained, angular, hard (3550)

LS: Tan/gray, fine crystalline to dense, sandy, cherty(blocky-foss)(3550)

LS: Lt gray, fine crystalline, foss-granular-hard (3560)

SH: Gray, silty, sandy, very fine grained + SS; Lt gray, fine grained, friable (3570)

LS: Gray, dense, sl foss + LS; Cream, very foss (bryozoan) w/trace stain (3580)

LS: Gray/lt gray, dense, sandy, chalky + SH; Gray (3590)

LS: Cream, fine crystalline, foss, w/poor pinpoint por, trace stain, vssfo (3600)

SH: Gray/dark gray (3600-3610)

LS: Cream, fine to medium crystalline, ool, chalky (3610)

+trace gray stain (mineral?)

SH: Black (3620)

SH: Maroon/gray (3620-3630)

LS: Cream, medium crystalline, ool, chalky, trace stain, tarry-sat(3630)

SH: Green/gray, soft-platey + LS; Tan/gray, dense, foss w/trace tarry stain, trace Chert; Tan/gray, angular, opaque, purple stain (3640)

SH: Black (tr 3650)

LS: Cream/tan, fine crystalline, sl dolo, chalky, w/fair intercrystalline por, trace dark sat, sfo + LS; Gray, dense, foss + SH; Green/maroon, cherty (3650)

SH: Green/maroon, silty, trace black + SS; Clear/amber, coarse, subrounded + LS; Lt gray, fine crystalline, sl dolo, chalky trace Dolo; Tan, dense + LS; Gray, dense, sl foss, dark oil sat on dry + Chert; Gray, foss, dense (3660)

Chert; White/yellow, dense, blocky + Dolo; White, coarse crystalline w/vug por + Dolo; Gray, dense, + SH; Gray/red/olive, soft (3670)

Dolo; (flood) Cream/Yellow/White; Coarse crystalline, sucrosic, vugular por (barren) abundant SS; Clear, medium to coarse, poorly sorted, hard w/iron stain abundant Chert; White/tan, dense, angular to blocky + SH; Red/gray(3690)

Dolo; Pink, coarse crystalline, vugular por (barren) + Dolo; Gray, dense, + SH; Black/maroon/green/gray, abundant Chert/Sandstone; Coarse grained, hard (3700)

Dolo; Cream/gray, medium crystalline, hard (3710)

Dolo; Cream/yellow, medium to coarse crystalline, hard + SH; Gray/maroon/olive abundant SS; Clear/amber, hard (3720)

SS; Yellow, very fine grained, hard, slightly dolo + SS; Clear, coarse, hard, abundant SH; Maroon/gray (3730)

+ SS; Red, very fine grained, angular, hard + Hematite nodds (3737)

Dolo; White, coarse crystalline, pyrite + Chert; Amber, ool + SH; Bright green/red, hard (3730/20')

Dolo; Cream/light pink, coarse crystalline, vugular (barren) + Chert; Tan, ool + Chert; White, hard + SH; bright green (3737/40')

Dolo; White, dense, hard, rhombic, sl glauconitic + Dolo; pink, coarse crystalline, vugular (barren)(3768/60')

DST#1  
 3295-3368  
 30-45-30-45  
 IF: Weak to strong blow  
 bottom of the bucket in 8 min.  
 FF: Weak to fair blow  
 built to 4 inches  
 Recovered:  
 20' Clear oil  
 250' HOGCM 25 % oil  
 62' HOGCM 20% oil  
 124' OCMW 5% oil  
 124' Water w/CO  
 SIP: 691-682#  
 FP: 45-182/190-290#