

# GEOLOGIST'S REPORT

## DRILLING TIME AND SAMPLE LOG

### BACH OIL PRODUCTION

WELL: BILLY #1

LOC.: 400' FSL & 2190' FWL  
 SEC. 34-1-19W  
 PHILLIPS COUNTY, KANSAS  
 API: 15-147-20675-00-00

### ELEVATION

KB: 2226  
 GL: 2221  
 LOG MEASURED  
 FROM: KB

### SURFACE CASING

20# 8 5/8" Casing set @ 224 w/170 SX

### PRODUCTION CASING

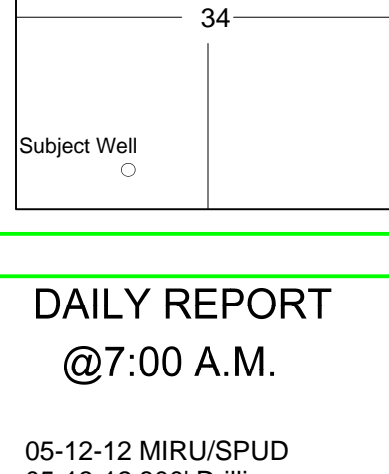
5 1/2" Casing set

### WELL LOG SURVEYS

Compensated Density  
 Dual Induction  
 Micro/Sonic

### ELECTRIC LOG TOPS

FORMATION	DEPTH	DATUM	POSITION
Stone Corral	1825	+401	+26
Base Stone Corral	1853	+373	+27
Topeka	3168	-942	+33
Heebner	3377	-1151	+33
Toronto	3405	-1179	+34
Lansing	3425	-1199	+31
Base Kansas City	3639	-1413	+38



### REFERENCE WELL:

WJ Coppinger  
 Hartzog#1  
 NE NE NW  
 34-1-19W

### REMARKS AND RECOMMENDATIONS

Production casing has been run to further test this well.

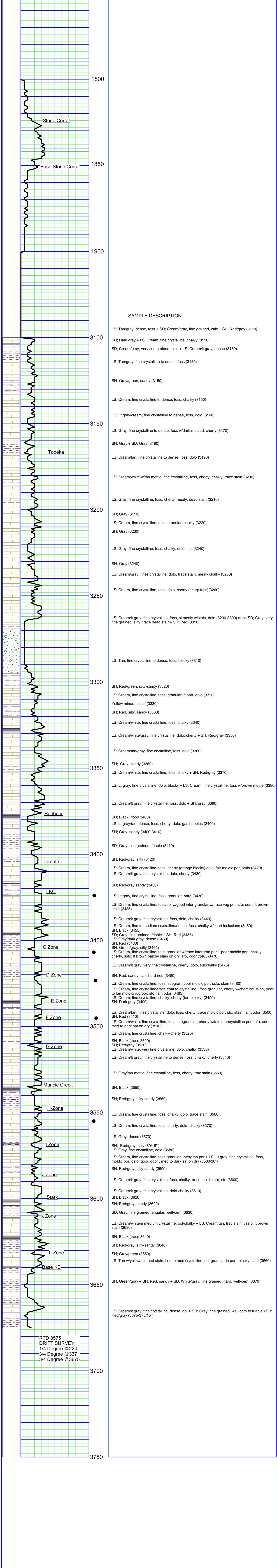
Respectfully submitted,

*Robert J. Petersen*  
 Robert J. Petersen

### DAILY REPORT

@7:00 A.M.

05-12-12 MIRU/SPUD  
 05-13-12 800' Drilling  
 05-14-12 2710' Drilling  
 05-15-12 3375' Drilling  
 05-16-12 3675' RTD



### SAMPLE DESCRIPTION

LS: Tan/gray, dense, foss + SD; Cream/gray, fine grained, calc + SH; Red/gray (3110)  
 SH: Dark gray + LS: Cream, fine crystalline, chalky (3120)  
 SD: Cream/gray, very fine grained, calc + LS: Cream/lt gray, dense (3130)  
 LS: Tan/gray, fine crystalline to dense, foss (3140)  
 SH: Gray/green, sandy (3150)  
 LS: Cream, fine crystalline to dense, foss, chalky (3150)  
 LS: Lt gray/cream, fine crystalline to dense, foss, dolo (3160)  
 LS: Gray, fine crystalline to dense, foss w/dark mottled, cherty (3170)  
 SH: Gray + SD; Gray (3180)  
 LS: Cream/tan, fine crystalline to dense, foss, dolo (3190)  
 LS: Cream/white w/tan mottle, fine crystalline, foss, cherty, chalky, trace stain (3200)  
 LS: Gray, fine crystalline, foss, cherty, mealy, dead stain (3210)  
 SH: Gray (3110)  
 LS: Cream, fine crystalline, foss, granular, chalky (3220)  
 SH: Gray (3230)  
 LS: Gray, fine crystalline, foss, chalky, dolomitic (3240)  
 SH: Gray (3240)  
 LS: Cream/gray, fines crystalline, dolo, trace stain, mealy chalky (3250)  
 LS: Cream, fine crystalline, foss, dolo, cherty (sharp foss)(3260)  
 LS: Cream/lt gray, fine crystalline, foss, sl mealy w/stain, dolo (3290-3300) trace SD; Gray, very fine grained, silty, trace dead stain+ SH; Red (3310)  
 LS: Tan, fine crystalline to dense, foss, blocky (3310)  
 SH: Red/green, silty-sandy (3320)  
 LS: Cream, fine crystalline, foss, granular in part, dolo (3320)  
 Yellow mineral stain (3330)  
 SH: Red, silty, sandy (3330)  
 LS: Cream/white, fine crystalline, foss, chalky (3340)  
 LS: Cream/white/gray, fine crystalline, dolo, cherty + SH; Red/gray (3350)  
 LS: Cream/tan/gray, fine crystalline, foss, dolo (3360)  
 SH: Gray, sandy (3360)  
 LS: Cream/white, fine crystalline, foss, chalky + SH; Red/gray (3370)  
 LS: Lt gray, fine crystalline, dolo, blocky + LS: Cream, fine crystalline, foss w/brown mottle (3380)  
 LS: Cream/lt gray, fine crystalline, foss, dolo + SH; gray (3390)  
 SH: Black (flood 3400)  
 LS: Lt gray/tan, dense, foss, cherty, dolo, gas bubbles (3400)  
 SH: Gray, sandy (3400-3410)  
 SD: Gray, fine grained, friable (3410)  
 SH: Red/gray, silty (3420)  
 LS: Cream, fine crystalline, foss, cherty (orange blocky) dolo, fair moldic por, stain (3420)  
 LS: Cream/lt gray, fine crystalline, dolo, cherty (3430)  
 SH: Red/gray sandy (3430)  
 LS: Lt gray, fine crystalline, foss, granular, hard (3430)  
 LS: Cream, fine crystalline, foss/ool w/good inter granular w/trace vug por, sfo, odor, lt brown stain (3435)  
 LS: Cream/lt gray, fine crystalline, foss, dolo, chalky (3440)  
 LS: Cream, fine to medium crystalline/dense, foss, chalky w/chert inclusions (3450)  
 SH: Black (3455)  
 SD: Gray, fine grained, friable + SH; Red (3455)  
 LS: Gray/dark gray, dense (3460)  
 SH: Red (3460)  
 SH: Green/gray, silty (3465)  
 LS: Cream, fine crystalline, foss-granular w/trace intergran por + poor moldic por, chalky, cherty, sso, lt brown patchy stain on dry, sfo, odor (3465-3470)  
 LS: Cream/lt gray, very fine crystalline, cherty, dolo, subchalky (3475)  
 SH: Red, sandy, calc hard nod (3480)  
 LS: Cream, fine crystalline, foss, subgran, poor moldic por, sso, stain (3480)  
 LS: Cream, fine crystalline/trace coarse crystalline, foss-granular, cherty w/chert inclusion, poor to fair moldic/vug por, sfo, faint odor (3485)  
 LS: Cream, fine crystalline, chalky, cherty (tan-blocky) (3490)  
 SH: Dark gray (3490)  
 LS: Cream/tan, fine crystalline, dolo, foss, cherty, trace moldic por, sfo, stain, faint odor (3500)  
 SH: Red (3510)  
 LS: Cream/white, fine crystalline, foss-subgranular, cherty w/fair intercrystalline por, sfo, odor, med to dark sat on dry (3510)  
 LS: Cream, fine crystalline, chalky-cherty (3520)  
 SH: Black (trace 3520)  
 SH: Red/gray (3520)  
 LS: Cream/white, very fine crystalline, dolo, chalky (3530)  
 LS: Cream/lt gray, fine crystalline to dense, foss, chalky, cherty (3540)  
 LS: Gray/tan mottle, fine crystalline, foss, cherty, trac stain (3550)  
 SH: Black (3550)  
 SH: Red/gray, silty-sandy (3560)  
 LS: Cream, fine crystalline, foss, chalky, dolo, trace stain (3560)  
 LS: Cream, fine crystalline, foss, cherty, dolo, chalky (3570)  
 LS: Gray, dense (3570)  
 SH: Red/gray, silty (80/15")  
 LS: Gray, fine crystalline, dolo (3580)  
 LS: Cream, fine crystalline, foss-granular, intergran por + LS: Lt gray, fine crystalline, foss, moldic por, gsf, good odor, med to dark sat on dry (3580/30")  
 SH: Red/gray, silty-sandy (3590)  
 LS: Cream/lt gray, fine crystalline, foss, chalky, trace moldic por, sfo (3600)  
 LS: Cream/lt gray, fine crystalline, dolo-chalky (3610)  
 SH: Black (3620)  
 SH: Red/gray, sandy (3620)  
 SD: Gray, fine grained, angular, well-cem (3630)  
 LS: Cream/whitem medium crystalline, ool/chalky + LS: Cream/tan, trac stain, vssfo, lt brown stain (3630)  
 SH: Black (trace 3640)  
 SH: Red/gray, silty-sandy (3640)  
 SH: Gray/green (3650)  
 LS: Tan w/yellow mineral stain, fine to med crystalline, ool-granular in part, blocky, sso (3660)  
 SH: Green/gray + SH; Red, sandy + SD; White/gray, fine grained, hard, well-cem (3670)  
 LS: Cream/lt gray, fine crystalline, dense, dol + SD; Gray, fine grained, well-cem to friable +SH; Red/gray (3675-375/15")

RTD 3575  
 DRIFT SURVEY  
 1/4 Degree @224  
 3/4 Degree @337  
 3/4 Degree @3675