

# GEOLOGIST'S REPORT

## DRILLING TIME AND SAMPLE LOG

### BACH OIL PRODUCTION

WELL: Forssberg #1

LOC.: 2483' FNL & 1737' FEL  
 SEC. 6-4-19W  
 PHILLIPS COUNTY, KANSAS  
 API: 15-147-20695-00-00

DRILLING CONTR.: MURFIN RIG #8  
 SPUD: 10-27-12 COMP: 11-2-12  
 MUD UP: 2850' TYPE MUD: CHEM.  
 DRILL TIME: 2950 to' RTD  
 RTD: 3510' LTD: 3508'  
 SAMPLES SAVED: 2950'-RTD  
 GEOLOGIST: ROBERT J. PETERSEN

### ELEVATION

KB: 2099  
 GL: 2094  
 LOG MEASURED  
 FROM: KB

### SURFACE CASING

20# 8 5/8" Casing set @ 210' w/170 SX

### PRODUCTION CASING

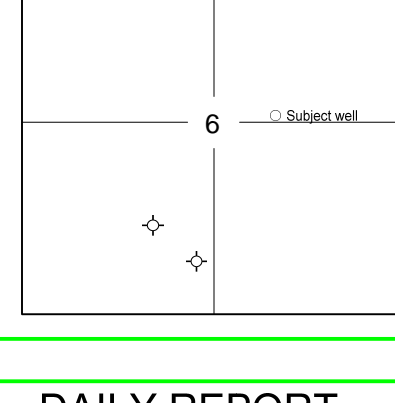
5 1/2" Set

### WELL LOG SURVEYS

RAG

### ELECTRIC LOG TOPS

FORMATION	DEPTH	DATUM	POSITION
Stone Corral	N/A		N/A
Base Stone Corral	1703	+396	+3
Topeka	3067	-968	+6
Heebner	3264	-1165	+4
Toronto	3290	-1191	+6
Lansing	3308	-1209	+3
Stark	3481	-1382	+2
LTD	3508	-1409	X



### REFERENCE WELL:

American Petroleum  
 ZILLINGER #2  
 990' FSL & 1650' FWL  
 6-4-19W

### REMARKS AND RECOMMENDATIONS

Production casing was run to further test this well for commercial production.

Respectfully submitted,

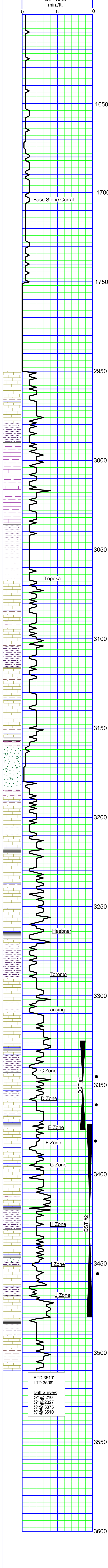
*Robert J. Petersen*

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### DAILY REPORT

@7:00 A.M.

10-27-12 MIRU  
 10-28-12 Spud  
 10-29-12 210' WOC  
 10-30-12 1900'  
 10-31-12 2920'  
 11-01-12 3375'  
 11-02-12 3510' RTD



### SAMPLE DESCRIPTION

LS: Cream/tan mottled, fine crystalline to dense + SH; Gray, sandy (2960)  
 LS: Gray/brown, fine crystalline + SH; Gray/green, sandy (2970)  
 SH: Red/gray, silty-sandy (2970)  
 LS: Cream/tan, fine crystalline to dense, very foss + LS; Gray, fine crystalline (2980-2990)  
 LS: Cream/gray, fine crystalline, foss (3000)  
 SH: Red (3010)  
 LS: Cream, fine crystalline to dense, foss, blocky (3010)  
 LS: Cream/gray, fine crystalline to dense, foss, sl dolo (3020)  
 SH: Red/gray + LS: Gray, blocky, fine crystalline, foss (3030)  
 LS: Gray/tan, fine crystalline to dense, foss (3040)  
 LS: Cream/gray, dense (3050-3060)  
 SD: Gray, very fine grained, friable, silty (3070)  
 SD: Gray, fine grained, friable + SH; Red, silty (3080)  
 LS: Cream/gray, dense, chalky (3090)  
 LS: Cream/gray, fine crystalline, foss, mottled + SH; Dark gray (3100)  
 SD: Gray, fine to medium, friable (3110)  
 LS: Cream, fine crystalline to dense, foss, chalky, cherty (3120)  
 LS: Cream/gray, fine crystalline, foss, chalky + SH; Red/gray (3130)  
 LS: Gray, fine crystalline to dense, cherty (3140)  
 LS: Cream, fine crystalline to dense, foss, chalky-cherty (3150)  
 LS: Cream, fine crystalline, foss, chalky, cherty + SH; Gray (3160)  
 + Chert; Blocky (3170-3180)  
 SD: Gray, fine grained, friable (3180)  
 SH: Red/gray, silty (3190)  
 LS: Cream/lt gray fine crystalline, foss, chalky-mealy, trace stain, cherty (3200)  
 SH: Red, silty (3210)  
 LS: Cream/lt gray, fine crystalline to dense, very foss, chalky-cherty (3220)  
 SH: Black (3220-3230)  
 LS: Cream/gray/tan, fine crystalline to dense, foss, cherty, chalky (3230)  
 LS: Cream/fine crystalline, foss, sub granular, sl chalky (3240-3250)  
 LS: Cream, fine crystalline, foss, sub granular, sl dolo (3260)  
 LS: Lt gray, fine crystalline to dense, foss, cherty, dolo (3270-3280)  
 SH: Black (trace 3280/increase 3290)  
 LS: Gray, fine crystalline, foss, dolo (3290)  
 SH: Red, silty + SD; Dark gray, silty (3290-3300)  
 LS: Cream/gray, fine crystalline, foss, chalky, dolo, cherty, traces stain (3300/20")  
 LS: Cream/lt gray, fine crystalline, foss, chalky, chalky, trace stain (3310)  
 SH: Red/gray (3320)  
 LS: Cream/white, fine crystalline, foss, sub granular w/poor moldic por, trace stain, vssfo (3330)  
 LS: Cream/lt gray, fine crystalline to dense, foss, chalky (3340)  
 LS: Gray, fine crystalline to dense, foss, trace black chert (3350)  
 SH: Red/gray (3350)  
 LS: Cream, fine crystalline, foss, sub granular w/poor inter-gran por, dolo, ssofo, faint odor, lt stain on dry (3350)  
 LS: Cream/tan, fine crystalline to dense, chalky, cherty (3355)  
 LS: Cream, fine crystalline, foss, granular w/fair inter-granular por, cherty (brown/angular to blocky)w/moldic por, sfo (gassy), light gold to med sat on dry (3360) gray dolomitic (3370)  
 SH: Red (3375)  
 LS: Cream, fine crystalline, foss, granular, w/fair inter granular and moldic por, sfo, odor, chalky, med brown sat on dry (3375)  
 LS: Cream/lt gray, fine crystalline, foss, chalky, cherty (3375/20")  
 LS: Lt gray, fine crystalline, dolo, chalky (3375/40")  
 SH: Gray (3375/40")  
 LS: Cream, fine crystalline, foss, sub granular, trace inter-crystalline por, ssofo (3390)  
 LS: Cream/gray, dense, foss, chalky, cherty (3400)  
 SH: Black (3410)  
 LS: Cream, fine crystalline to dense, chalky, cherty (3410-3420)  
 SH: Gray (3420)  
 LS: Cream, fine crystalline to dense, cherty (tan) foss, (3430)  
 SH: Black (3430)  
 SH: Red/gray, silty (3440)  
 LS: Cream, fine crystalline, foss, sl dolo, sub-granular w/poor, moldic por, cherty, ssofo, (3450)  
 LS: Tan/gray, sl dolo, dense, chalky, trace chert (blocky-foss), chalky (3460)  
 SH: Maroon/gray (3470)  
 LS: Cream, dense, foss w/fair moldic por-trace inter gran por, sfo, trace inter-granular por, sfo, odor, medium to dark stain on dry (3470-3470-15-30")  
 SH: Gray (3470/30")  
 SH: Red, silty (3480)  
 LS: Cream/lt gray, fine crystalline, foss, granular w/moldic por, sfo, med stain on dry + LS; Tan, dense, chalky, cherty (3480)  
 LS: Cream/gray, fine crystalline, foss, chalky (3480 30-60")  
 SH: Black (3490)  
 SH: Red/gray, silty (3500)  
 LS: Cream, fine crystalline, sl foss, chalky + LS; Tan, dense, dolo. Chalky, cherty (3510)  
 SH: Black + SH; Red/gray, silty (3510/30")  
 LS: Cream/lt gray, fine crystalline, chalky (3510/60")

DST #1  
 3325-3375'  
 45-45-60-45 min.  
 IF: Weak surface blow, built to 1.5"  
 FF: Weak surface blow, built to 1"  
 Recovered:  
 1' free oil  
 39' GOCM 10% gas/10% oil/80% mud  
 SIP: 874-749#  
 FP: 20-30/35-44#  
 BHT: 89F

DST #2  
 3372-3480'  
 30-45-30-60 min.  
 IF: Bottom of bucket in 11 min.  
 FF: built to 10"  
 Recovered:  
 40' OCMW  
 248' MW  
 120' W  
 SIP: 1002-961#  
 FP: 37-54/159-214#  
 BHT: 93F

RTD 3510'  
 LTD 3508'

Drift Survey:  
 1/2" @ 210'  
 3/4" @ 2327'  
 1/2" @ 3375'  
 1/2" @ 3510'