## **GEOLOGIST'S REPORT** DRILLING TIME AND SAMPLE LOG **ELEVATION** KB: 2093 **BACH OIL PRODUCTION** GL: 2088 LOG MEASURED WELL: JK UNIT #2 FROM: KB LOC.: 115' FNL & 700' FWL SEC. 13-1-19W SURFACE CASING PHILLIPS COUNTY, KANSAS 20# 8 5/8 " API: 15-147-20714-00-00 Casing set @ 222' w/175 SX PRODUCTION CASING DRILLING CONTR.: MURFIN RIG #24 SPUD: 08-05-13 COMP: 05-09-13 5 1/2" casing set MUD UP: 2800' TYPE MUD: CHEM. DRILL TIME: 2950' to RTD RTD: 3580' LTD: 3578' WELL LOG SURVEYS SAMPLES SAVED: 2950'-RTD DIL/CDL/MICRO GEOLOGIST: ROBERT J. PETERSEN **ELECTRIC LOG TOPS FORMATION** POS. A POS. B 11 STEENIS <u>DEPTH</u> <u>DATUM</u> Stone Corral 1719 +374 +2 +2 Candy Krafft Base Stone Corral 1742 +351 +2 +1 Topeka 3071 -978 -3 +2 Candy Krafft Heebner 3276 -1183 +2 Toronto -4 +2 3304 -1211 Lansing -1229 -5 3322 +3 Muncie Creek 3432 -1339 -4 +1 -5 -1404 +1 Stark 3497 **BKC** -1446 -6 3539 +2 Subject Well LTD 3563 -1470 N/A N/A REFERENCE WELL: **DAILY REPORT REF B** REF A Bach Bach @7:00 A.M. Candy Krafft #1 JK Unit #1 250' FNL &1840' FWL 1000' FSL &330' FWL 13-1-19W 12-1-19W 08-05-13 MIRU/SPUD REMARKS AND RECOMMENDATIONS 08-06-13 425' 08-07-13 2140' Prodcution casing was set to further test this well. 08-08-13 3095' 08-09-13 3580' RTD Respectfully submitted, Robert J. Petersen **Drill Time in Minutes** 10 1700 Stone Corral Base Stone Corral 1750 **Drill Time in Minutes** SAMPLE DESCRIPTION 2950 SH; Gray, sandy (fine to medium, subrounded) + LS; Gray, dense, chalky (2980) LS; Cream/tan, fine crystalline to dense, foss, chalky (3010) 3000 LS; Tan/gray, fine crystalline to dense, foss, chalky (3040) LS; Gray/cream, fine crystalline to dense, foss, argillaceous in part, cl chalky (3070) 3050 SH; Red/gray (3070) SH; Black with fine pyritic crystals (3100) Topeka LS; Cream/gray-dark gray mottled, fossiliferous (3100) LS; Tan/cream, fine crystalline, fossiliferous, subgranular, chalky, cherty, trace stain (3130) 3100 SH; Red/gray (3130) LS; Cream/tan, fine crystalline, oolitic-granular in part trace light stain, slightly dolomitic, cherty SH: Black (3160) 3150 LS; Cream, fine crystalline to dense, fossiliferous, slightly dolomitic, cherty (3190) SH; Black (3190) SD; Gray, very fine grained, friable (3220) 3200 LS: Cream/gray, fine crystallline to dense, fossiliferous, mottled, cherty (3220) SH; Black (trace 3221/30") LS: Cream. Fine crystalline, fossiliferous-granular to subgranular, trace stain (3221) Bit trip @3221 (strap 0.32 long) SH; Black (trace 3250) LS; Light gray, fine crystalline, fossiliferous, granular, cherty (3250) LS; Cream/gray, fine crystalline, fossiliferous, chalky (3260) 3250 SH; Red/gray (3260) LS; Light gray, fine crystalline, fossiliferous, chalky (3270) LS; Cream/light gray, fine crystalline, fossiliferous, slightly dolomitic, cherty (3280) LS; Light gray, dense, argillaceous (3290) <u>Heebner</u> SH; Black (flood 3300) LS; Gray, dense, foss, cherty (3300) SH; Red/gray, silty LS; Gray, dense, cherty (3310) 3300 SH; Red/gray, silty-sandy + Chert (Black-blocky) (3320) **Toronto** LS; Cream/tan, fine crystalline, foss, sl glauconitic, chalky (3330) \_\_\_\_\_ SH; Red/gray, silty (3330-3340) <u>ansing</u> LS; Cream, fine crystalline, fossiliferous/oolitic, granular w/poor to fair intergranular porosity, trace vugular por, sfo, odor, light stain on dry (3340) LS; Cream, fine crystalline, chalky (3340) LS; Cream/light gray, fine crystalline, slightly fossiliferous, chalky-cherty (3350) LS; Cream/light gray, dense, slightly, fossiliferous (3360) SH; Black (3360) 3350 SH; Red, silty (3370) C Zone LS; Cream, fine crystalline, fossiliferous, subgranular in part w/poor intergranular por, light stain, vssfo, very faint odor (3370) LS; Cream/light gray, fine crystalline, slightly dolomitic (3380) SH; Red (3390) D Zone LS; Cream, fine crystalline, fossiliferous, cherty(sharp to angular, orange-gray)slightly dolomitic w/trace poor moldic por, ssfo, faint odor, light stain (3390/3396) SH; Black (trace 3396/15") E Zone LS; Cream, fine crystalline, fossiliferous/oolitic, granular, slightly chalky, cherty, trace stain, vssfo + LS; Gray/brown, fine crystalline to dense, very fossiliferous (breccia) (3396/30") Zone LS; Cream, fine crystalline, fossiliferous, granular w/fair moldic por, sfo, odor medium brown 3400 LS; Cream/tan, dense, sl foss, cherty (3420) SH; Gray (3430) G Zone LS; Cream/tan, fine crystalline, fossiliferous, slightly dolomitic w/trace poor moldic porosity, light stain, ssfo w/ trace oolitic granular w/poor intergranular por (3430-3440) LS; Cream/tan, dense, slightly fossiliferous, cherty (3440) LS; Gray/dark gray mottled, fine crystalline to dense, fossiliferous, cherty (3450) Muncie Creek SH; Black (3450) SH; gray, silty-sandy (fine grained/friable) (3460) H Zone LS; Cream, fine crystalline, fossiliferous, subgranular (3460) 3450 LS; Cream/gray, fine crystalline to dense, argillaceous, fossiliferous, chalky, cherty (3470) SH; Red/gray (3480) LS; Cream, fine crystalline, fossiliferous-granular w/poor moldic por, ssfo (3480) <u>l Zone</u> LS; Cream, fine crystalline to dense, fossiliferous granular w/good moldic por, dark saturation, odor, good sfo (3480/15") LS; Cream, fine crystalline, granular in part, increase moldic/vugular porosity,, increase free oil/dark saturation (3480/30") LS; Cream/light gray, fine crystalline to dense, fossiliferous granular, cherty, increase odor & sfo (3480/45") LS; Cream, fine crystalline, fossiliferous-granular, w/fair to good intergranular por, good sfo, odor (3490) SH; Red/gray (3500) <u>J Zone</u> LS; Cream/tan, fine crystalline to dense, fossiliferous (3500) LS; Cream, fine crystalline, chalky trace moldic porosity, stain + LS; Gray, fine crystalline to dense, fossiliferous (3510) Stark 3500 SH; Red/gray (3520) K Zone LS; Cream/light gray, fine crystalline, fossiliferous-granular in part, chalky (soft) (3530) SH; Black (3540) SH; Gray/red, silty-sandy (3550) LS: Gray/brown, fine crystalline to dense, fossiliferous, cherty (3550) LS; Gray/cream, fine crystalline to dense, cherty, fossiliferous, chalky, trace yellow mineral stain <u>BKC</u> SH; Red/gray, silty + SD; Red/brown, silty (3560) 3550 SD; Red/gray, fine grained, calcareous, hard (3570)

LS; Gray/cream, fine crystalline to dense, foss, cherty (3570) LS; Cream/white, fine crystalline, fossiliferous, chalky (3580)

SH; Red/gray, sandy (3580/15")

3600

RTD 3580 LTD 3578 Drift Survey ½ Degree @222' 1 Degree @3221' 1 Degree @3580'