

# GEOLOGIST'S REPORT

## DRILLING TIME AND SAMPLE LOG

**SUEMAUR EXPLORATION & PRODUCTION, LLC**

**FORTIN/LONG #1-28**  
**SEC. 28 TWP 2S RGE 27W**  
**NW SE NW NE**  
**939' FNL & 1666' FEL**  
**DECATUR COUNTY, KS**  
**API:15-039-21267-00-00**  
**NAD 27 LON. -100.3528617**  
**NAD 27 LAT. 39.85469**

**ELEVATION**

**KB: 2590'**  
**GL: 2585'**  
**LOG MEASURED FROM: KB**

**SURFACE CASING**

**8-5/8" SE @217' W/250 SX**

**PRODUCTION CASING**

**D&A**

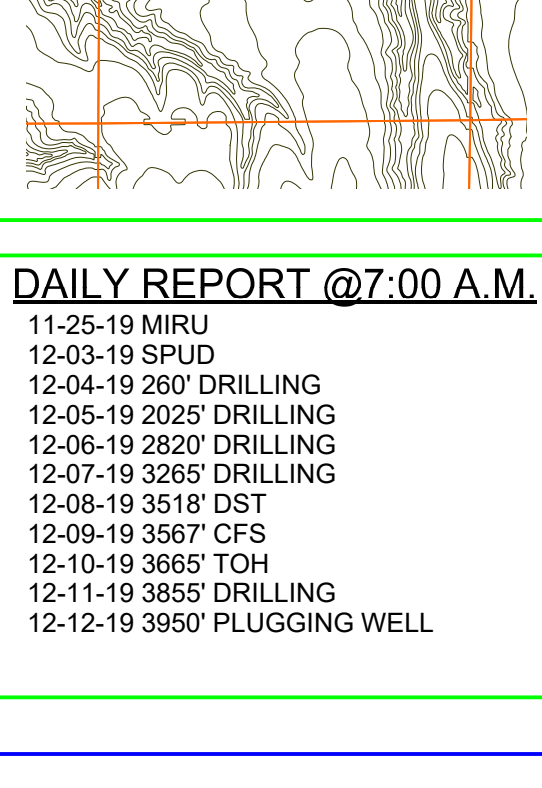
**DRILLING CONTR.: MURFIN RIG #108**  
**SPUD:12-03-2019 COMP: 12-12-2019**  
**MUD UP: 3000' TYPE MTD: CHEM.**  
**DRILL TIME: 3100' to RTD**  
**RTD:3950' LTD: 3947'**  
**SAMPLES SAVED: 3100' to RTD**  
**GEOLOGIST: ROBERT J. PETERSEN**

**WELL LOG SURVEYS**

**DUAL INDUCTION**  
**COMPENSATED NEUTRON**  
**MICRORESISTIVITY**  
**SONIC**

**LOG TOPS**

FORMATION	DEPTH	DATUM	POS A	POS B	POS C
SC	2164	+426	-23	N/A	+20
BASE SC	2197	+393	-14	N/A	+15
TOPEKA	3303	-713	-20	-25	+14
DEER CR	3349	-759	-18	-25	+10
LB	3396	-806	-18	-23	+10
LEC.	3415	-825	-20	-24	+10
OREAD B	3449	-859	-20	-24	+13
HEEBNER	3471	-881	-22	-26	+12
TORONTO	3502	-912	-25	-29	+14
LKC	3509	-919	-20	-26	+13
C ZONE	3535	-945	-21	-26	+7
D ZONE	3548	-958	-22	-27	+12
E/F ZONE	3561	-971	-20	-25	+9
G ZONE	3582	-992	-23	-25	+10
H- ZONE	3611	-1021	-18	-22	+12
J- ZONE	3647	-1057	-20	-22	+15
STARK	3659	-1069	-21	-25	+14
BKC	3706	-1116	-19	-64	+11
ARBUCKLE	3903	-1313	-36	-42	N/A



**REFERENCE WELL**

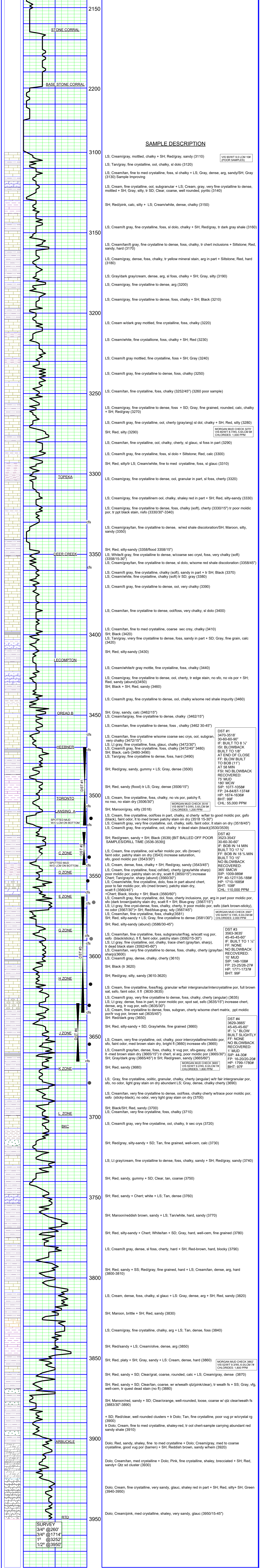
REF WELL A:	REF WELL B:	REF WELL C:
MURIN DRILLING CO	DFW OIL & GAS INC	DARK HORSE
LONG SIMPSON 1-22	SIMPSON INV. NO. 1	HARMON -RUSH 1-20
15-039-20908	15-039-20486	15-039-20985
700' FWL & 1200' FSL	C SW SW	1690' FSL & 860' FEL
SW/4 22-2-28W	22-2-27W	20-2-27W

**REMARKS**

**THIS WELL WAS PLUGGED AND ABANDONED BY THE OPERATOR**

**DAILY REPORT @7:00 A.M.**

- 11-25-19 MIRU
- 12-03-19 SPUD
- 12-04-19 260' DRILLING
- 12-05-19 2025' DRILLING
- 12-06-19 2820' DRILLING
- 12-07-19 3265' DRILLING
- 12-08-19 3518' DST
- 12-09-19 3567' CFS
- 12-10-19 3665' TOH
- 12-11-19 3855' DRILLING
- 12-12-19 3950' PLUGGING WELL



**SAMPLE DESCRIPTION**

LS: Cream/gray, mottled, chalky + SH; Red/gray, sandy (3110)

LS: Tan/gray, fine crystalline, ool, chalky, sl dolo (3120)

LS: Cream/tan, fine to med crystalline, foss, sl chalky + LS; Gray, dense, arg, sandy/SH; Gray (3130) Sample Improving

LS: Cream, fine crystalline, ool, subgranular + LS; Cream, gray, very fine crystalline to dense, mottled + SH; Gray, silty, tr SD; Clear, coarse, well rounded, pyritic (3140)

SH: Red/pink, calc, silty + LS; Cream/white, dense, chalky (3150)

LS: Cream/lt gray, fine crystalline, foss, sl dolo, chalky + SH; Red/gray, tr dark gray shale (3160)

LS: Cream/tan/lt gray, fine crystalline to dense, foss, chalky, tr chert inclusions + Siltstone; Red, sandy, hard (3170)

LS: Cream/gray, dense, foss, chalky, tr yellow mineral stain, arg in part + Siltstone; Red, hard (3180)

LS: Gray/dark gray/cream, dense, arg, sl foss, chalky + SH; Gray, silty (3190)

LS: Cream/gray, fine crystalline to dense, arg (3200)

LS: Cream/gray, fine crystalline to dense, foss, chalky + SH; Black (3210)

LS: Cream w/dark gray mottled, fine crystalline, foss, chalky (3220)

LS: Cream/white, fine crystalline, foss, chalky + SH; Red (3230)

LS: Cream/lt gray mottled, fine crystalline, foss + SH; Gray (3240)

LS: Cream/lt gray, fine crystalline to dense, foss, chalky (3250)

LS: Cream/tan, fine crystalline, foss, chalky (3252/45") (3260 poor sample)

LS: Cream/gray, fine crystalline to dense, foss + SD; Gray, fine grained, rounded, calc, chalky + SH; Red/gray (3270)

LS: Cream/lt gray, fine crystalline, ool, cherty (gray/arg) sl dol, chalky + SH; Red, silty (3280)

SH: Red, silty (3290)

LS: Cream/tan, fine crystalline, ool, chalky, cherty, sl glauc, sl foss in part (3290)

LS: Cream/lt gray, fine crystalline, foss, sl dolo + Siltstone; Red, calc (3300)

SH: Red, silty/tr LS; Cream/white, fine to med crystalline, foss, sl glauc (3310)

LS: Cream/gray, fine crystalline to dense, ool, granular in part, sl foss, cherty (3320)

LS: Cream/gray, fine crystalline ool, chalky, shaley red in part + SH; Red, silty-sandy (3330)

LS: Cream/gray, fine crystalline to dense, foss, chalky (soft), cherty (3330/15") tr poor moldic por, tr ppt black stain, nsfo (3330/30"-3340)

LS: Cream/gray/tan, fine crystalline to dense, w/red shale discoloration/SH; Maroon, silty, sandy (3350)

SH: Red, silty-sandy (3358/flood 3358/15")

LS: White/lt gray, fine crystalline to dense, w/coarse sec cryst, foss, very chalky (soft) (3358/15-30")

LS: Cream/gray/tan, fine crystalline to dense, sl dolo, w/poor red shale discoloration (3358/45")

LS: Cream/lt gray, fine crystalline, cherty (soft), ls, in part + tr SH; Black (3370)

LS: Cream/white, fine crystalline, chalky (soft) tr SD; gray (3380)

LS: Cream/lt gray, fine crystalline to dense, ool, very chalky (3390)

LS: Cream/tan, fine crystalline to dense, ool/foss, very chalky, sl dolo (3400)

LS: Cream/tan, fine to med crystalline, coarse sec crsy, chalky (3410)

SH: Black (3420)

LS: Tan/gray, very fine crystalline to dense, foss, sandy in part + SD; Gray, fine grain, calc (3420)

SH: Red, silty-sandy (3430)

LS: Cream/white/tr gray mottled, fine crystalline, foss, chalky (3440)

LS: Cream/gray, fine crystalline to dense, ool, cherty, tr edge stain, no sfo, no vis por + SH; Red, sandy (abund)(3450)

SH: Black + SH; Red, sandy (3460)

LS: Cream/lt gray, fine crystalline to dense, ool, chalky w/some red shale impurity (3460)

SH: Gray, sandy, calc (3462/15")

LS: Cream/ta/gray, fine crystalline to dense, chalky (3462/15")

LS: Cream/tan, fine crystalline to dense, foss, chalky (3462/30-45")

LS: Cream/tan, fine crystalline w/some chalky sec crs, ool, subgran

LS: Lt gray, fine crystalline, foss, glauc, cherty (3472/30")

LS: Cream/lt gray, fine crystalline, foss, chalky (3472/45" 3480)

SH: Black, carb (3480-3490)

LS: Tan/gray, fine crystalline to dense, foss, hard (3490)

SH: Red/gray, sandy, gummy + LS; Gray, dense (3500)

SH: Red, sandy (flood) tr LS; Gray, dense (3506/15")

LS: Cream, fine crystalline, foss, chalky, no vis por, patchy fl, no nso, no stain dry (3506/30")

SH: Maroon/gray, silty (3518)

LS: Cream, fine crystalline, ool/foss in part, chalky, sl cherty w/fair to good moldic por, gsfo (black), faint odor, lt to med brown patchy stain on dry (3518 15-30")

LS: Cream/lt gray, very fine crystalline, ool, chalky, sso, faint odor, lt stain on dry (3518/45")

LS: Cream/lt gray, fine crystalline, ool, chalky tr dead stain (black)(3530/3539)

SH: Red/green, sandy + SH; Black (3539) [BIT BALLED OFF POOR SAMPLES/DRILL TIME (3536-3539)]

LS: Cream, fine crystalline, ool w/fair moldic por, sfo (brown) faint odor, patchy stain on dry (3543) increase saturation, sfo, good moldic por (3543/30")

LS: Cream, dense, foss, chalky + SH; Red/gray, sandy (3543/45")

LS: Cream, fine crystalline, foss (csf/det), cherty (gray/white sharp) poor moldic por, patchy stain on dry, scatt fl + SH; Blue-gray (3567/15")

LS: Cream/tan, fine crystalline, foss, chalky(3581)

LS: Cream/white, fine crystalline, dolo, foss in part abund chert, poor to fair moldic por, sfo (med brown), patchy stain dry, scatt fl (3560/45")

+Chert, Black, blocky + SH; Black (3560/60")

LS: Cream/lt gray, fine crystalline, dol, foss, cherty inclusions, pyr, arg in part poor moldic por, sfo (dark brown) patchy stain dry, scatt fl + SH; Blue-gray (3567/15")

LS: Lt gray, dense, foss in part, tr poor moldic por, spot sat, sso (3635/15") increase chert, dense, arg, tr vug por, sso (3635/30")

LS: Cream, fine crystalline to dense, foss, subgran, cherty w/some chert matrix, ppt moldic por/tr vug por, brown sat (3635/45")

SH: Red/dark gray (3650)

SH: Red, silty-sandy + SD; Gray/white, fine grained (3660)

LS: Cream, very fine crystalline, ool, chalky, poor intercrystalline/moldic por, sfo, faint odor, med brown stain dry, bright fl (3660) increase sfo (3665)

LS: Cream/lt gray, dense, foss, chalky, tr vug por, sfo-gassy, dull fl, lt-med brown stain dry (3665/15") tr chert, sl arg, poor moldic por (3665/30")

SH: Gray/dark gray (3665/45") tr SH; Red/green, sandy (3665/60")

SH: Red, sandy (3680)

LS: Gray, fine crystalline, oolitic, granular, chalky, cherty (angular) w/tr fair intergranular por, sfo, no odor, light gray stain on dry abundant LS; Gray, dense, chalky cherty (3690)

SH: Black/SH; Red, sandy (3700)

LS: Cream/tan, very fine crystalline, foss, chalky (3710)

LS: Cream/lt gray, very fine crystalline, ool, chalky, tr sec crys (3720)

SH: Red/gray, silty-sandy + SD; Tan, fine grained, well-cem, calc (3730)

LS: Lt gray/cream, fine crystalline to dense, foss, chalky + SH; Red/gray, sandy (3740)

SH: Red, sandy, gummy + SD; Clear, tan, coarse (3750)

SH: Red, sandy + Chert; white + LS; Tan, dense (3760)

SH: Maroon/reddish brown, sandy + LS; Tan/white, hard, sandy (3770)

SH: Red, silty-sandy + Chert; White/tan + SD; Gray, hard, well-cem, fine grained (3780)

LS: Cream/lt gray, dense, sl foss, cherty, hard + SH; Red-brown, hard, blocky (3790)

SH: Red, sandy + SS; Red/gray, fine grained, hard + LS; Cream/tan, dense, arg, hard (3800-3810)

LS: Cream, dense, foss, chalky, sl glauc + LS; Gray, dense, arg + SH; Red, sandy (3820)

SH: Maroon, brittle + SH; Red, sandy (3830)

LS: Cream/gray, fine crystalline, chalky, arg + LS; Tan, dense, foss (3840)

SH: Red/sandy + LS; Cream/olive, dense, arg (3850)

SH: Red, platy + SH; Gray, sandy + LS: Cream, dense, hard (3860)

SH: Red, sandy + SD; Clear/grat, coarse, rounded, calc + LS; Cream/gray, dense (3870)

SH: Red, sandy + SD; Clear/tan, coarse, wr w/wealth qtz(pink/red), tr weath fs + SS; Gray, vfg, well-cem, tr quest dead stain (no fl) (3880)

SH: Maroon/red, sandy + SD; Clear/orange, well-rounded, loose, coarse w/ qtz clear/weath fs (3883/30"-3890)

+ SD; Red/clear, well rounded clusters + tr Dolo; Tan, fine crystalline, poor vug pr w/crystal rg tr Dolo; Cream, fine to med crystalline, shaley-red, tr ool chert-sample carrying abundant red sandy shale (3910)

Dolo; Red, sandy, shaley, fine to med crystalline + Dolo; Cream/gray, med to coarse crystalline, good vug por (barren) + SH; Reddish brown, sandy whem (3920)

Dolo; Cream/tan, med crystalline + Dolo; Pink, fine crystalline, shaley, brecciated + SH; Red, sandy+ Qtz sd cluster (3930)

Dolo; Cream, fine crystalline, very sandy, glauc, shaley red in part + SH; Red, silty+ SH; Green (3940-3950)

Dolo; Cream/pink, med crystalline, shaley, very sandy, glauc (3950/15-45")

**SURVEY**  
**3/4" @260'**  
**3/4" @1714'**  
**1" @3252'**  
**1/2" @3950'**

SUEMAUR EXPLORATION & PRODUCTION, LLC  
 FORTIN/LONG #1-28  
 SEC. 28 TWP 2S RGE 27W  
 2585' GL/2590' KB  
 NW SE NW NE  
 939' FNL & 1666' FEL  
 DECATUR COUNTY, KS  
 API:15-039-21267-00-00