

Robert D. Hendrix

Petroleum Geologist

GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY **Murfin Drilling Company Inc.**

LEASE **Hanway #1-12**

FIELD **Dechant**

LOCATION **800'FSL & 1750'FEL**

SEC **12 TWP S 15 S RGE 19W**

COUNTY **Ellis Kansas**

CONTRACTOR **Murfin Drilling Rig #2**

SPUD **2/18/2013 COMP 2/22/2013**

RTD **3:60' LTD 3:64'**

MUD UP **2810' TYPE MUD Chemical**

SAMPLES SAVED FROM **2930' TO RTD**

DRILLING TIME KEPT FROM **2930' TO RTD**

SAMPLES EXAMINED FROM **2930' TO RTD**

GEOLOGICAL SUPERVISION FROM **2904' to RTD**

GEOLOGIST ON WELL **Robert D. Hendrix**

FORMATION TOPS

ANHYDRITE **1236 (+814)**

TOPEKA **3021 (-971)**

HEEBNER SH **3294 (-1244)**

LANSING **3339 (-1289)**

STARK SH **3533 (-1483)**

BKC **3577 (-1527)**

ARBUCKLE **3660 (-1610)**

ELEVATIONS **KB 2050'**

DF **GL 2039'**

Measurements Are All From **Kelly Bashing**

CASING **CONDUCTOR 8-5/8" at 223'**

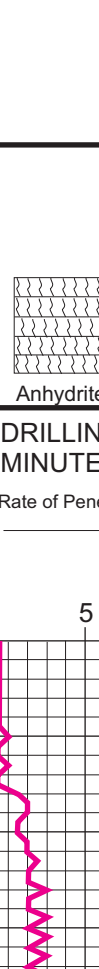
SUPFACE **8-5/8" at 223'**

PRODUCTION **none**

ELECTRICAL SURVEYS

DII / CN-CD / MICROSONIC / Pioneer

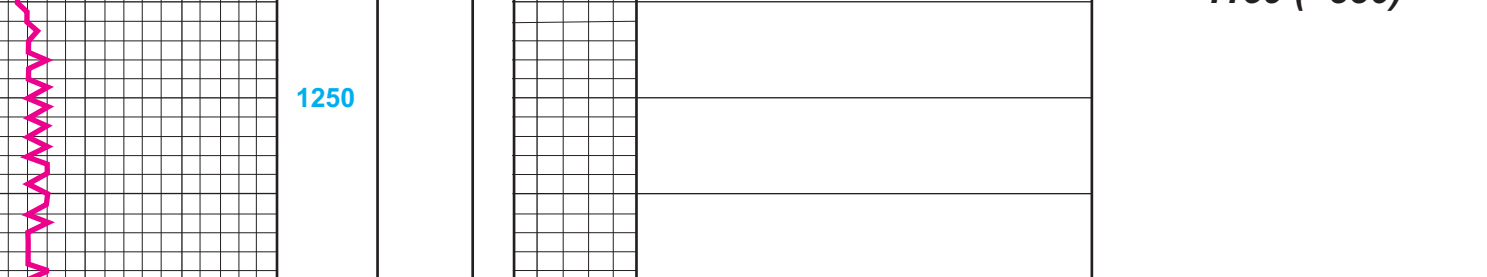
AT# 15-051-26480



REMARKS:

Due to the negative results on the DST's and poor structural position it is recommended that this hole be plugged and abandoned.

LEGEND



| DEPTH | LITHOLOGY | SAMPLE DESCRIPTION | REMARKS |
|-------|-----------|---|---|
| 1220 | Anhydrite | | Anhydrite 1159 (+830) |
| 1250 | Anhydrite | | Base Anhydrite 1193 (+796) |
| 2950 | Limestone | Shale: gray, dark gray, silty Limestone: tan, fxl, dense, fossiliferous, no vis por | Geologist on location @ 2904' 2:45 am, 2/24/2013 |
| 3000 | Limestone | Limestone: tan, fxl, dense, chalky, sl fossiliferous, no vis por Shale: gray, dark gray, silty | |
| 3021 | Limestone | Limestone: tan to brown, fxl, dense, chalky, sl fossiliferous, no vis por Shale: gray, brown | Topeka 3030 (-980) |
| 3050 | Limestone | Limestone: tan, fxl, sl chalky, sl fossiliferous, no vis por Shale: gray, brown, silty | 8:00 am, 2/24/2013 |
| 3100 | Limestone | Limestone: tan to white, f-mxl, sl chalky, v-fossiliferous, pr pp por, ns Shale: gray, dark gray | |
| 3150 | Limestone | Limestone: dark brown to tan, fxl, chalky, fossiliferous, no vis por Shale: gray, brown, fossiliferous | |
| 3200 | Limestone | Limestone: tan to brown, f-mxl, chalky, fossiliferous, no vis por Limestone: tan, fxl, granular, chalky, fossiliferous, pr pp por, ns Limestone: tan, fxl, granular, chalky, sl cherty, fossiliferous, pr pp por, ns Limestone: tan, fxl, granular, chalky, sl fossiliferous, no vis por Shale: gray, silty | wt. 8.6, vis. 58, lcm 1 Morgan Mud, Dave Lines |
| 3250 | Limestone | Limestone: tan, fxl, granular, chalky, sl cherty, sl fossiliferous, v sl interxn por, ns | |
| 3300 | Limestone | Limestone: tan to brown, fxl, sl chalky, sl fossiliferous, no vis por | |
| 3312 | Limestone | Shale: black, gray, red Limestone: tan, fxl, chalky, sl cherty, fossiliferous, no vis por Shale: black, gray, brown, silty | Heebner 3292 (-1242) |
| 3331 | Limestone | Limestone: tan to white, f-mxl, chalky, granular, fossiliferous, no vis por | Toronto 3312 (-1262) |
| 3336 | Limestone | Limestone: tan to white, fxl, sl chalky, dense, fossiliferous, no vis por Shale: gray, red, soft | Lansing 3336 (-1286) |
| 3353 | Limestone | Limestone: tan, fxl, dense, sl cherty, sl fossiliferous, no vis por Limestone: tan, fxl, sl chalky, soft in part, fossiliferous, no vis por Shale: gray, green, red | Stark Shale 3533 (-1483) |
| 3400 | Limestone | Limestone: tan, fxl, sl chalky, dense, sl fossiliferous, no vis por Limestone: tan to gray, fxl, chalky, dense, sl fossiliferous, no vis por | DST #1 3373-3398 30-60-30-60 1st open: wk blow built to 3/4" then died back to surface 2nd open: wk surface for 2 min then died no returns Rec: 30' mud hydro: 1666-1639 psi lf: 30-32 psi ff: 32-33 psi sip: 375-255 psi bht: 99°F |
| 3450 | Limestone | Shale: gray, red Limestone: tan to white, f-mxl, fossiliferous, pr interxn por, 1% sample lt sat stain, slsfo on break, no odor Limestone: tan to white, fxl, chalky, sl fossiliferous, no vis por, several pieces lt sat stain, nfo, no odor Shale: dark gray, gray, red soft | 8:00 am, 2/25/2013 wt. 8.9, vis. 59, lcm 2.0 Morgan Mud, Dave Lines |
| 3500 | Limestone | Limestone: tan to gray fxl, soft, sl cherty, sl fossiliferous, sl pyritic, no vis por, ns Shale: gray, black, red Limestone: white, fxl, chalky, dense, no vis por, ns Limestone: white, fxl, chalky, sl cherty, fossiliferous, no vis por Limestone: white to tan, f-mxl, chalky, oolitic in part, fr oolitic por, ns | DST #2 3464-3530 30-60-60-90 1st open: wk building blow bob 24 1/2 min 2nd open: wk building blow bob 21 1/2 min 2nd close: return built to 3" Rec: 30' go 20/80 60' gmo 20/20/60 60' glocm 20/30/50 156' gip hydro: 1727-1687 psi lf: 19-51 psi ff: 57-80 psi sip: 931-866 psi bht: 103°F gravity: 32° |
| 3533 | Limestone | Limestone: tan to white, fxl, chalky, dense, soft, no vis por Limestone: tan, f-mxl, chalky, fossiliferous, no vis por | 8:00 am, 2/26/2013 wt. 9.0, vis. 57, lcm 2.0 Morgan Mud, Dave Lines |
| 3577 | Limestone | Shale: gray, red, black Limestone: tan, f-mxl, oolitic, 3% sample pr oolitic por, lt spotty to sat stain, slsfo on break, faint odor | BKC 3518 (-1528) |
| 3600 | Limestone | Shale: gray, black, red Limestone: tan, fxl, dense, hard, fossiliferous, no vis por, 5 pieces dark sat stain, sl sfo on break, faint odor Shale: gray, green, red | |
| 3660 | Limestone | Limestone: white to tan, f-mxl, chalky, cherty, fossiliferous, sl interxn por, pieces dark sat stain, nfo, no odor Shale: gray, green, red, black Limestone: white to tan, f-mxl, chalky, Very-cherty, fossiliferous, sl interxn por, pieces dark sat stain, nfo, no odor | Arbuckle 3660 (-1610) |
| 3700 | Dolomite | Dolomite: tan to white, mxln, granular, hard, cherty, fr ppt to vug por, several pieces lt to dark sat stain, slsfo on break, faint odor Dolomite: tan, m-ixln, granular, sandy, fr interxn por, few pieces lt sat stain, slsfo on break, faint odor Dolomite: tan, m-ixln, granular, sandy, sl cherty, fr to gd interxn por, few pieces lt sat stain, slsfo on break, faint odor | 8:00 am, 1/21/2013 wt. 8.9, vis. 59, lcm 6.0 Morgan Mud, Dave Lines |
| 3750 | Dolomite | Dolomite: tan, m-ixln, granular, sl sandy, cherty, fr to gd interxn por, several pieces lt to dark sat stain, slsfo on break, faint odor Dolomite: tan, m-ixln, granular, sl cherty, sl pyritic, fr to gd interxn por, ns | DST #3 3660-3670 15-60-15-60 1st open: bob 30 sec 2nd open: bob 30 sec no return's Rec: 141' wm 40/60 378' mw 10/50 2131' mw 5/95 hydro: 1890-1784 psi lf: 505-1000 psi ff: 1065-1201 psi sip: 1208-1208 psi bht: 115°F chl: 9000 api rw: 1.18@42°F |
| 3800 | Dolomite | Dolomite: tan, mxln, granular, hard, gd interxn por, ns | Geologist off site at 3:45 am, 2/28/2013 |