Robert D. Hendrix
Petroleum Geologist

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY	Murfin Drilling Co. Inc.		
LEASE	Ryser #1-24		
FIELD	Wildcat		
LOCATION	760'FSL & 1010'FEL		
	24-5-29s-21e		
COUNTY	Decatur	STATE	Kansas
CONTRACTOR	Murfin Drilling Co. Rig #27		
SPUD	5/23/2013	COMP.	5/28/2013
MUD TYP	Chemical		

ELEVATIONS
KB 2466'
DF 2457'
GL 2452'
Measured From KB
From Kelly Bushing

CASING
CONDUCTOR: Surf - 21'
SURFACE PRODUCTION: None

ELECTRICAL SURVEYS
Pioneer Energy Services
Pioneer Energy Services

FORMATION TOPS	ELECTRIC LOG	SAMPLE
Anhydrite	2071 (+397)	2070 (+396)
Base Anhydrite	2105 (+363)	2104 (+362)
Topeka	3302 (-834)	3302 (-834)
Heebner	3505 (-1037)	3504 (-1036)
Toronto	3528 (-1060)	3526 (-1058)
Lansing	3547 (-1079)	3545 (-1077)
Stark	3691 (-1223)	3690 (-1222)
BKC	3731 (-1263)	3731 (-1263)
RTD		3835 (-1367)

GEOLOGIST ON WELL: Robert D. Hendrix

DRILLING TIME KEPT FROM: 3180' TO 3835'
SAMPLES SAVED FROM: 3180' TO 3835'
SAMPLES EXAMINED FROM: 3180' TO 3835'
GEOLOGICAL SUPERVISION FROM: 3150' TO 3835'

ALTA 15-ESD-15-E

REMARKS:

All shows were tested and due to the negative results it is recommended it be plugged and abandoned.

LEGEND

Anhydrite, Sandstone, Limestone, Shale, Cale Sh, Cherty Ls, Chert, Dolomite

DRILLING TIME IN MINUTES PER FOOT — Rate of Penetration Decreases — 5 10 15

DEPTH — LITHOLOGY — Drill Stem Tests — Oil Shows — SAMPLE DESCRIPTION — REMARKS

Anhydrite 2071 (+397)

Base Anhydrite 2105 (+363)

Geologist on location at 5:35 pm 5/25/2013 @ 3150'

Strap 0.78' long to board which was performed during the switch from pdc to button bit @ 3120'

Limestone: tan, f/vsrs, granular, sl pyritic, no vis por

Shale: gray, brown, green, red silty

Limestone: tan, fsh, dense, no vis por

Shale: gray, red, silty

Limestone: tan to brown, msh, chalky, granular, no vis por

Shale: gray, red, silty

Limestone: tan to lt gray, msh, sl chalky, fossiliferous, no vis por, ns

Shale: gray, red, black

Limestone: tan, f/msh, sl chalky, sl cherty, fossiliferous, no vis por

Shale: red, silty

Limestone: brown, fsh, sl chalky, fossiliferous, no vis por

Limestone: brown to tan, f/msh, sl chalky, granular, fossiliferous, no vis por

Shale: gray, green, red

Limestone: white, tan, fsh, chalky, granular, fossiliferous, no vis por

Limestone: tan to gray, fsh, chalky, granular, fossiliferous, no vis por

Limestone: tan to gray, fsh, dense, no vis por

Shale: gray, green, red

Topeka 3302 (-834)

Limestone: tan to lt gray, fsh, granular in part, sl fossiliferous, no vis por

Limestone: tan, f/msh, sl granular, oolitic in part, fossiliferous, fr intercrh por, ns

Shale: red, gray, green

Limestone: tan to white, f/msh, chalky, granular, fossiliferous, pr intercrh por

Shale: red, silty, soft

Limestone: white, f/sh, chalky, sl fossiliferous, no vis por

Limestone: white to tan, fsh, chalky, granular, fossiliferous, pr intercrh por

Limestone: white to tan, fsh, chalky, granular, fossiliferous

Limestone: white to tan, fsh, chalky, granular, fossiliferous, pr intercrh por

Shale: gray, red

Shale: gray, green

Shale: gray, green

Limestone: tan, fsh, sl chalky, fossiliferous, no vis por

Limestone: white to tan, f/msh, chalky, sandy in part, fossiliferous, no vis por

Shale: gray, green, red, black

Limestone: lt gray to tan, fsh, sl chalky, fossiliferous, no vis por

Shale: red, gray, green

Limestone: tan, f/msh, chalky, fossiliferous, pr intercrh por, ns

Shale: gray, green, red

Limestone: tan, f/msh, chalky, fossiliferous, pr intercrh por, ns

Limestone: tan to lt gray, fsh, v-chalky, fossiliferous, no vis por

Limestone: gray, fsh, sl chalky, dense, sl fossiliferous, no vis por

Heebner 3505 (-1037)

Shale: black carbonaceous

Limestone: brown, fsh, dense, fossiliferous, no vis por

Shale: red, gray, black

Toronto 3528 (-1060)

Limestone: tan to lt gray, fsh, sl chalky, fossiliferous, no vis por

Shale: gray, red, black

Lansing 3547 (-1079)

Limestone: tan to white, fsh, chalky, sl pyritic, sl fossiliferous, 10% sample pr intercrh/foss por, dark spotty to sat stain, frshs, fant odor
Limestone: tan, fsh, dense, sl pyritic, no vis por (carry over show from above)

Shale: red, gray, green

Limestone: white, f/msh, oolitic, fossiliferous, sl vuggy/oolic por, 5% sample dark spotty to sat stain, slshs, faint odor

Shale: red, gray, green

Limestone: white, f/msh, chalky, oolitic in part, fossiliferous, 2% sample, sl intercrh por, fl sat stain, slshs on break, faint odor
Limestone: white, tan, fsh, sl chalky, dense, fossiliferous, no vis por, fr spotty stain, nfl, no odor

Shale: red, gray, green

Shale: red, gray, green

Limestone: tan to lt gray, f/msh, mostly dense, oolitic in part, 2% sample, sl intercrh por, dark spotty stain, gab (black, dead), good odor

Limestone: white to lt gray, fsh, mostly dense, oolitic in part, no vis por, ns

Limestone: white to lt gray, fsh, dense, sl chalky, no vis por

Shale: gray, red

Limestone: white to tan, fsh, sl chalky, mostly dense, no vis por, 2 pieces dark spotty stain, nfs, no odor

Limestone: white to tan, fsh, chalky, dense, no vis por

Shale: red, gray, brown, green, silty

Limestone: white, f/sh, chalky, soft, sl fossiliferous, no vis por

Shale: red, gray, silty, muddy

Limestone: white to tan, fsh, sl chalky, dense, no vis por

Shale: red, gray, silty, muddy

Limestone: gray to white, fsh, sl chalky, sl fossiliferous, no vis por

Limestone: gray to white, fsh, sl chalky, sl fossiliferous, sandy in part, no vis por

Shale: red, brown, silty, muddy

Shale: red, brown, silty, muddy

Limestone: tan to gray, fsh, dense, no vis por

Stark 3691 (-1223)

BKC 3731 (-1263)

RTD 3835 (-1367)

DST #1
3503-3577
30-60-30-60
1st open: wk 1/2" blow died 25min
2nd open: no blow
no returns
Rec:
20' m w-trace oil
hydro: 1721-1669 psi
IF: 20-25 psi
FF: 25-25 psi
sip: 1151-1122 psi
bht: 101°F

8:00am, 5/26/2013

DST #2
3550-3616
30-60-30-60
1st open: wk surf died 10 min
2nd open: no blow
no returns
Rec:
2' m w-trace oil
hydro: 1801-1735 psi
IF: 20-21 psi
FF: 23-23 psi
sip: 456-167 psi
bht: 101°F

2nd strap done at DST #1 was short 30 feet of drill pipe

8:00am, 5/27/2013

wt 8.6, vis. 69, lcm 38
Murfin Mud, Dave Lines

wt 9.1, vis. 72, lcm 48
Morgan Mud, Dave Lines

DST #3
3640-3714
30-60-90-90
1st open: blow built to 5"
2nd open: blow built to 6"
no returns
Rec:
140' gocm 7/12/81
60' slow&gcm 26/10/82
30' gip
hydro: 1808-1794 psi
IF: 24-64 psi
FF: 71-126 psi
sip: 1205-1172 psi
bht: 103°F

8:00am, 5/28/2013
wt 9.1, vis. 69, lcm 48
Morgan Mud, Dave Lines

8:00am, 5/29/2013
wt 9.1, vis. 69, lcm 48
Murfin Mud, Dave Lines

8:00am, 5/29/2013

Geologist off location at 11:30am, 5/29/2013

Murfin Drilling Co Inc
Ryser #1-24
760'fsl & 1010'fel
24-5-29s, Decatur County, Kansas
KB=2466 ; GL=2457
API: 15-039-21181