

Robert D. Hendrix

Petroleum Geologist

GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY **Murfin Drilling Co. Inc.**

LEASE **Schmidt-Vap #1-26**

FIELD **Wildcat**

LOCATION **1545' 1st & 880' fwi**

SEC **26** TWP **4S** RGE **31W**

COUNTY **Rawlins** STATE **Kansas**

CONTRACTOR **Murfin Drilling Co. Rig #2**

SPUD **2/12/2014** COMP **2/20/2014**

RTD **4:54:31** LTD **4:54:27**

MUD UP **3381'** TYPE MUD **Chemical**

SAMPLES SAVED FROM **3620** TO **TD**

DRILLING TIME KEPT FROM **3604** TO **TD**

SAMPLES EXAMINED FROM **3620** TO **TD**

GEOLOGICAL SUPERVISION FROM **3603**

GEOLOGIST ON WELL **Robert D Hendrix**

FORMATION TOPS

ELECTRIC LOG

SAMPLE

Anhydrite 2657 (+254)

Topoka 3722 (+811)

Heebner 3884 (-978)

Lansing 3937 (-1026)

Stark 4109 (-1198)

Pawnee 4267 (-1356)

Cherokee 4354 (-1443)

Electrical Surveys
Dual Induction/Neutron Density
Mudlogging/ Sonic
Promer Wireline Systems

ELEVATIONS
KB 2911

Measurements Are All From Kelly Bushing

CASING
CONDUCTOR SURFACE 8.518' at 265'
PRODUCTION 5.122' @ 4537'

GL 2900

DF

Rate of Penetration →

AP# 15-153-20982

LEGEND

	Anhydrite		Sandstone		Limestone		Shale		Carb Sh		Cherty LS		Chert		Dolomite
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DEPTH	LITHOLOGY	SAMPLE DESCRIPTION	REMARKS
2630	Anhydrite		Anhydrite 2660 (+251)
2650	Anhydrite		Base Anhydrite 2691 (+220)
2700	Anhydrite		
3600	Shale	Shale: red, brown, gray	Geologist on location at 3603' on 9:15 pm 2/14/2014
50	Limestone	Limestone: lt gray to white, fxn, sl chalky, sil fossiliferous, no vis por	
50	Shale	Shale: gray, red, black	
50	Limestone	Limestone: tan, fxn, granular, no vis por	
50	Shale	Shale: gray, red, black	
50	Limestone	Limestone: tan to white, fxn, sl chalky, fossiliferous, no vis por	wt 8.6, vis. 57, lcm 2# Morgan Mud, Cade Lines
50	Limestone	Limestone: tan, fxn, chalky, sil pyritic, fossiliferous, no vis por	
50	Limestone	Limestone: tan, fxn, chalky, fossiliferous, no vis por	
50	Shale	Shale: red, gray	
50	Siltstone	Siltstone: gray to brown, fxn, silty, sl chalky, no vis por	
50	Shale	Shale: red, brown, gray, silty	
50	Limestone	Limestone: tan to white, fxn, chalky, granular, no vis por	Topeka 3722 (-811)
50	Limestone	Limestone: lt gray to tan, fxn, chalky, granular, sil fossiliferous, no vis por	
50	Shale	Shale: red, argillaceous, soft, sandy	
50	Limestone	Limestone: white to tan, f-mxn, chalky, fossiliferous, pr interxn por, ns	
50	Limestone	Limestone: white to tan, f-mxn, chalky, oolitic, fossiliferous, pr pp por	
50	Shale	Shale: gray, red, black, pyritic	
50	Limestone	Limestone: white, f-mxn, chalky, fossiliferous, calcite fracture fill, no vis por	
50	Limestone	Limestone: tan to white, f-mxn, chalky, fossiliferous, no vis por	8:00am, 2/15/2014
50	Shale	Shale: gray, red, black	
50	Limestone	Limestone: tan to white, f-mxn, chalky, fossiliferous, no vis por	
50	Shale	Shale: red, gray, green, red	
50	Limestone	Limestone: tan to white, f-mxn, chalky, fossiliferous, no vis por	
50	Shale	Shale: red, gray, green	
50	Limestone	Limestone: tan, f-ixn, oolitic in part, fossiliferous, no vis por	
50	Shale	Shale: black carbonaceous, red, gray, pyritic	
50	Shale	Shale: red, gray, green, black	
50	Limestone	Limestone: tan, f-mxn, chalky, oolitic in part, v-fossiliferous, pr interxn por, 10% sample black sat stain, prsfo on break, faint odor	
50	Shale	Shale: red, gray, black	
50	Shale	Shale: red, gray, black, pyritic	
50	Limestone	Limestone: tan to white, f-ixn, sl chalky, fossiliferous, 10% sample fr vug por, black spotty to sat stain, prsfo, fair odor	
50	Sandstone	Sandstone: brown, fr-vfn gr, rnd, well sorted, semi-friable, calcareous, pr interxn por, dark sat stain, frsfo, fair odor	wt 9.0, vis. 92, lcm 10# Morgan Mud, Cade Lines
50	Shale	Shale: red, gray, black	
50	Limestone	Limestone: white, m-ixn, oolitic, fossiliferous, fr oolitic por, spotty dark stain, prsfo, faint odor	
50	Shale	Shale: red, gray, pyritic	
50	Limestone	Limestone: white, fxn, chalky, sil cherty, pyritic, fossiliferous, pr vug por, 2% sample lt sat stain, silsfo, no odor	8:00am, 2/16/2014 wt 9.0, vis. 85, lcm 8# Morgan Mud, Cade Lines
50	Shale	Shale: red, gray	
50	Limestone	Limestone: white to lt gray, fxn, sl chalky, dense, no vis por	
50	Limestone	Limestone: tan to white, f-mxn, chalky, fossiliferous, 5% sample fr vug por, lt spotty stain, silsfo, no odor	
50	Shale	Shale: gray, red	
50	Limestone	Limestone: tan, m-ixn, sl chalky, oolitic, fossiliferous, 20% sample gd oolitic to vug por, lt sat stain, gdsfo, gd odor	8:00am, 2/17/2014
50	Shale	Shale: red, gray, pyritic	
50	Limestone	Limestone: white, fxn, dense, sl oolitic, sil fossiliferous, no vis por, ns	
50	Limestone	Limestone: white, fxn, sl oolitic, chalky, fossiliferous, fr interxn to pp por, 5% sample lt spotty stain, no odor	
50	Shale	Shale: white, f-ixn, dense, chalky, sil cherty, sil fossiliferous, no vis por, ns	
50	Shale	Shale: gray, black, red	
50	Limestone	Limestone: brown, fxn, dense, fossiliferous, no vis por	
50	Shale	Shale: gray, red	
50	Limestone	Limestone: tan to lt gray, fxn, sl chalky, sil vug por, 1% sample black spotty stain, silsfo, no odor	
50	Limestone	Limestone: tan to white, f-ixn, sl chalky, sil pyritic, no vis por, ns	
50	Shale	Shale: gray, red	
50	Limestone	Limestone: white to lt gray, fxn, sil fossiliferous, pr interxn to vug por, 2% sample lt spotty to sat stain, frsfo, gd odor	
50	Shale	Shale: dark to lt gray, red, brown	
50	Limestone	Limestone: lt gray to tan, fxn, sl chalky, oolitic, dense, no vis por	
50	Limestone	Limestone: lt gray to white, fxn, chalky, sil cherty, dense, no vis por	8:00am, 2/18/2014
50	Shale	Shale: gray, red, black	
50	Limestone	Limestone: no vis por	wt 9.3, vis. 51, lcm 7# Morgan Mud, Cade Lines
50	Shale	Shale: gray, red, black	
50	Limestone	Limestone: white, f-mxn, oolitic in part, fossiliferous, no vis por	
50	Shale	Shale: red, brown, gray, silty	
50	Limestone	Limestone: white, f-mxn, oolitic in part, fossiliferous, no vis por	
50	Shale	Shale: red, gray, silty	
50	Limestone	Limestone: gray to white, fxn, granular, silty, fossiliferous, no vis por	
50	Shale	Shale: gray, green, red, brown, silty	
50	Limestone	Limestone: white, f-mxn, oolitic, fossiliferous, no vis por, ns	
50	Shale	Shale: black, gray	
50	Shale	Shale: gray, black, red, brown, silty	
50	Limestone	Limestone: tan to white, f-mxn, chalky, oolitic, fossiliferous, no vis por	
50	Limestone	Limestone: gray to tan, fxn, sl chalky, sil fossiliferous, no vis por	
50	Shale	Shale: gray, brown, silty	
50	Shale	Shale: black and carbonaceous	
50	Shale	Shale: gray, brown	
50	Limestone	Limestone: tan, fxn, mostly dense, sl chalky, no vis por, 10% sample lt to dark sat stain, silsfo, no odor	
50	Shale	Shale: black, gray, red	
50	Limestone	Limestone: tan to white, fxn, dense, sl chalky, no vis por, ns	
50	Limestone	Limestone: tan, fxn, sl chalky, mostly dense, fossiliferous, no vis por, ns	
50	Sandstone	Sandstone: white, lt, md gr, sub rnd, mod sorted, hard, no vis por	8:00am, 2/19/2014 wt 9.2, vis. 55, lcm 8# Morgan Mud, Cade Lines
50	Shale	Shale: red, gray, green	
50	Limestone	Limestone: white, fxn, chalky, granular, sil fossiliferous, no vis por	
50	Sandstone	Sandstone: brown to gray, md gr, sub rnd, mod sorted, friable, no vis por	
50	Shale	Shale: red, gray, brown, silty	
50	Sandstone	Sandstone: white, glauconitic, fr-md gr, sub rnd, mod sorted, hard, no vis por	
50	Shale	Shale: red, brown, gray, silty, sandy	
50	Sandstone	sandstone (chert): yellow, lt, very-coarse to pebble, sub-ang, poorly sorted, no vis por	
50	Shale	Shale: red, gray, yellow, sandy	
50	Shale	Shale: red, gray, yellow, sandy	
50	Chert	Chert: white, opaque, mostly weathered, no vis por	
50	Chert	Chert: white, opaque, mostly weathered, no vis por	
50	Chert	Chert: white to yellow, majority lt, mostly fresh, no vis por, ns	
50	Limestone	Limestone: white, fxn, cherty, dense, no vis por	
50	Dolomite	Dolomite: white, f-mxn, cherty, fr interxn por	
50	Chert	Chert: white, lt to opaque, mostly fresh, no vis por, ns	
50	Dolomite	Dolomite: white, f-mxn, cherty, fr interxn por, ns	
50	RTD		RTD 4543 (-1632) 8:00am, 2/20/2014
50			Due to inclement weather the loggers were delayed in getting to the rig. The loggers generator broke and another had to be delivered before logging could begin. Then the sp went out and another run with the dual induction had to be performed in order to get an sp curve.
50			Geologist off location at 5:30pm, 2/20/2014