

T. M. MCCOY & CO., INC.

CONSULTING GEOLOGISTS
P.O. BOX 608 · WILSON, WYOMING 83014 · 307-733-4332

Scale 1:240 (5"=100') Imperial Measured Depth Log

Well Name: Michael 3-22
Location: Rawlins County, Kansas
License Number: 15-153-20946
Spud Date: 9/22/2013
Surface Coordinates: 39.94828 N
101.34632 W
Bottom Hole: 39.94828 N
Coordinates: 101.34632 W
Ground Elevation (ft): 3128'
Logged Interval (ft): 3500 To: 5230
Formation: Lansing Kansas City
Type of Drilling Fluid: Water Based Mud
Region: Wildcat
Drilling Completed: 10/3/2013
K.B. Elevation (ft): 3141'
Total Depth (ft): 5230
Printed by WellSight Log Manager from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Berexo LLC
Address: 2020 N. Bramblewood
Wichita, Kansas 67206

GEOLOGIST

Name: Ryan A. White
Company: T. M. McCoy & Co., Inc.
Address: P.O. Box 608
Wilson, WY 83014
307-733-4332

	Chert-light		Halite		Siltstone gray
	Chert-dark		Coal		Siltstone brown
	Dolomite		Bentonite		Siltstone red-brn
	Limestone		Clystn		Sandstone
	Marl		Limy sh blk-brn		Cement
	Marl red-brn		Limy sh gray		Meta
	Anhydrite		Sh blk-brn		

FOSSIL

MINERAL
 Anhy
 Arg
 Calc
 Carb
 Chalcedony
 Chtdk
 Chtit

ACCESSORIES

Dol
 Glau
 Gyp
 Minxl
 Nodule
 Pyr
 Sandy
 Silt
 Sil

STRINGER
 Sltstrg brn
 Sltstrg rd-brn
 Shstrg gybrn
 Shstrg red-brn
 Shstrg gy red
 Arg
 Bent
 Dol
 Ls

Sltstrg gray
 Ssstrg
 Anhystrg
 Shstrg gy-grn
 Shstrg brn-blk
 Chtstrg
 Salt strg

TEXTURE
 MX
 Microxln

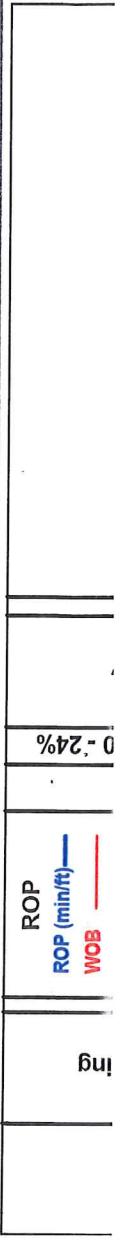
POROSITY

OIL SHOW
 INTERVAL
 Slide
 Rotate

OTHER SYMBOLS

EVENT
 Off btm
 Connection
 Fm-bit line
 New symbol
 Flare

ROUNDING
 Iso-tube
 Csg shoe



Fm Tops	Engineering	Depth	Porosity 0 -	Lithology	Geological Descriptions
MD from drillers depths, LOG from electric wireline depths, Subsea calculated from wireline.	Beredco Rig #2 Bit #2 SMITH Tri-Cone 77/8" Bit used on multiple runs.	0 10 40 ROP (m/hr) WOB	0 10 40 P%		Ryan A. White T. M. McCoy & Co., Inc. Wellsite Geologist Onsite 9/25/2013 Drilling on water based mud. All samples rinsed and sieved in fresh water, color analysis conducted on wet samples. SHALE: medium dark gray (N4), platy, soft, smooth, non-calcareous, no fluorescence. 3720' trace SANDSTONE: upper fine grained, with euhedral pyrite. LIMESTONE: very pale orange (10YR 8/2), sub platy cuttings, very effervescent in HCl, very clean, micrite, tight, possible remnant finestral porosity with calcite fill, pale yellow with splotches of yellow mineral fluorescence. 3730' and 3720': traces of CHERT, clear to translucent pale orange, hard. SILSTONE: moderate brown (5YR 3/4), rounded cuttings, very gritty, non-calcareous, grades into very fine grained sandstone, no fluorescence. 3740' loose clusters of euhedral pyrite, trace SANDSTONE: fine grained, glauconitic. SHALE: medium dark gray (N4), soft to moderately soft, sub platy, smooth, non-calcareous, no fluorescence. SHALE: moderate brown (5YR 3/4), locally moderate reddish brown (10R 4/6), sub platy, moderately soft, smooth, non-calcareous, no fluorescence. loose Selenite crystal, 4mm, tabular, scratches easily trace Chert. SHALE: medium gray (N5) to brownish gray (5YR 4/1), platy, smooth, calcareous, trace pale yellow fluorescence. trace Chert LIMESTONE: moderate yellowish brown (10YR 5/4), firm, sub blocky cuttings, various textures, hacky appearance, unidentifiable fossil debris and possible oolites, locally sparry, no visible porosity, argillaceous to very argillaceous, very dull yellow fluorescence. SHALE: medium gray (N5) to brownish gray (5YR 4/1), platy, smooth, calcareous, trace pale yellow fluorescence. SHALE: moderate brown (5YR 3/4), locally moderate reddish brown (10R 4/6), sub platy, moderately soft, smooth, non-calcareous, no fluorescence. LIMESTONE: light brownish gray (5YR 6/1) to white (N9), firm, locally chalky appearance, micrite, tight, locally includes rounded sand grains, fine grained, no argillaceous material, dull yellow fluorescence.
	DST# 1 3995-3902 Packer Failure	0 10 40 ROP (m/hr) WOB	0 10 40 P%		

appearance, micrite, tight, locally includes rounded sand grains, fine grained, no argillaceous material, dull yellow fluorescence.

LIMESTONE: light brownish gray (5YR 6/1) to white (N9), firm, micrite, local intraclasts, tight, pale yellow fluorescence.

SHALE: moderate brown (5YR 3/4), firm, locally smooth, sandy in 3990 sample, no fluorescence.

SHALE: brownish black (5YR 2/1), firm, smooth, platy, pyrite, no fluorescence.

LIMESTONE: very pale orange (10YR 8/2), firm, sub blocky cuttings, grainstone, fair porosity, rare dark brown oil stain, common light brown oil stain, dull yellow fluorescence.

200 barrels of mud lost to hole after attempting DST #1.

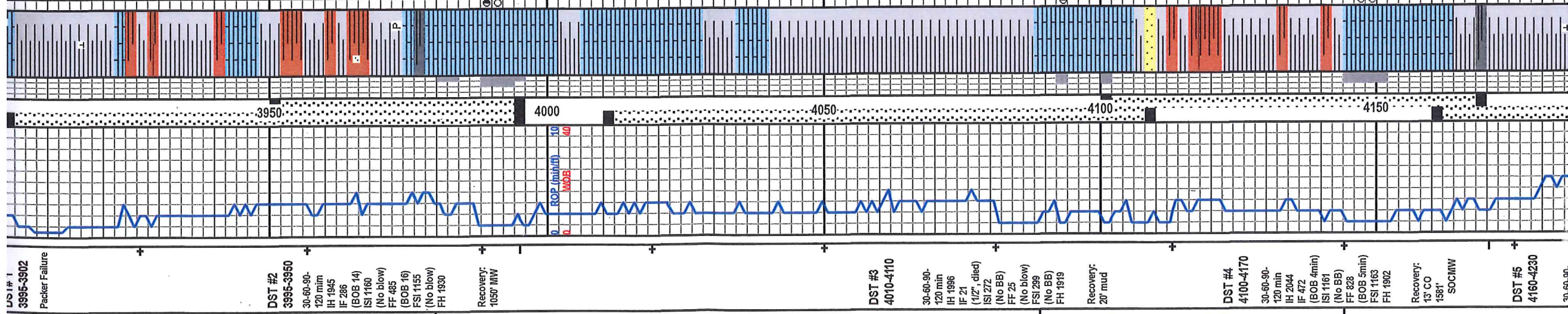
LIMESTONE: light brownish gray (5YR 6/1), very hard, blocky, micrite, tight, dull yellow mineral fluorescence.

SHALE: medium gray (N5) to medium dark gray (N4), firm, play cuttings, slightly calcareous, no fluorescence.

LIMESTONE: very pale orange (10YR 8/2), firm to hard, blocky cuttings, micrite and grainstone textures, rare brown oil staining associated with grainstones, pale yellow to yellow fluorescence.

LIMESTONE: white (N9), hard, common black oil staining, yellow fluorescence.

SHALE: dark gray (N3) to medium gray (N4), moderately firm, smooth, platy cuttings, calcareous.



DST #1
3995-3992
Packer Failure

DST #2
3995-3950
30-60-90-
120 min
IH 1945
IF 286
(BOB 14)
ISI 1160
(No blow)
FF 485
(BOB 16)
FSI 1155
(No blow)
FH 1930
Recovery:
1050' MW

3980 MD
3990 Log
-849 Sub
Oread Ls

DST #3
4010-4110
30-60-90-
120 min
IH 1996
IF 21
(1 1/2" died)
ISI 272
(No BB)
FF 25
(No blow)
FSI 299
(No BB)
FH 1919
Recovery:
20' mud

4089 MD
4085 Log
-844 Sub
LKC "A"

DST #4
4100-4170
30-60-90-
120 min
IH 2044
IF 472
(BOB 4min)
ISI 1161
(No BB)
FF 628
(BOB 5min)
FSI 1163
FH 1902
Recovery:
13' CO
1581'
SOCMW

4144 MD
4143 Log
-1002 Sub
LKC "B"

DST #5
4160-4230
an. en. an.

SHALE: dark gray (N3) to medium gray (N4), moderately firm, smooth, platy cuttings, calcareous.

LIMESTONE: light brownish gray (5YR 6/1), firm, sub platy cuttings, micrite, generally tight, pale yellow fluorescence.

LIMESTONE: light brownish gray (5YR 6/1), firm, sub blocky, micrite, some chalky zones, rare very light brown oil staining, rare porosity, yellow spotty fluorescence.

SHALE: grayish black (N2), moderately firm, fissile, non-calcareous.

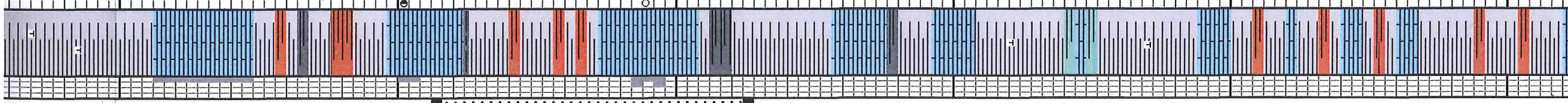
LIMESTONE: white (N9) to light brownish gray (5YR 6/1), sub blocky, micrite, local finestral porosity, trace oil staining, trace porosity.

LIMESTONE: light brownish gray (5YR 6/1), very firm, micrite, possible fossil debris, no porosity, pale yellow fluorescence.

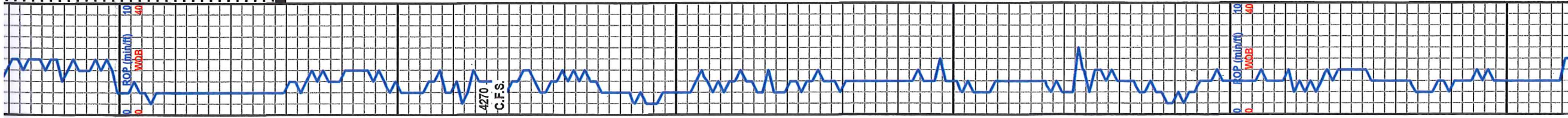
SHALE: medium gray (N5), locally grayish green (5G 5/2), smooth, moderately firm, calcareous.

SHALE: medium gray (N5), moderate red (5R 5/4), firm, platy cuttings, generally smooth, slightly calcareous.

LIMESTONE: light brownish gray (5YR 6/1), firm, sub blocky cuttings, micrite, fossiliferous, grainstone texture notably absent, rare porosity, pale yellow fluorescence.



4200 4250 4300 4350 4400 4450



30-60-90-
120 min
IH 2061
IF 1435
(BOB 1min)
ISI 1885
(No BB)
FF 1493
(No Blow)
FSI 1519
(No BB)
FH 1832

Recovery:
2418'
SOHWCM
558' HWCM

4206 MD
4206 Log
-1066 Sub
LKC "C"

DST #6
4256-4315

30-60-90-
120 min
IH 2126
IF 1115
(8" Blow)
ISI 1229
(No BB)
FF 1322
(No Blow)
FSI 1238
(No BB)
FH 2136

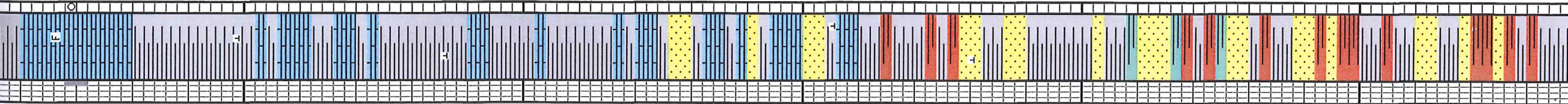
Recovery:
5' CO
63'
SOHWCM
73' SOHWCM
83' WCM

4292 MD
4292 Log
-1151 Sub
LKC "E"

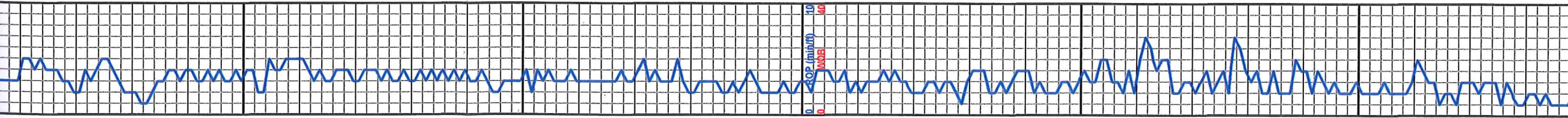
4329 MD
4335 Log
-1194 Sub
LKC "F"

4460 MD

no visible, grainstone texture not clearly apparent, rare porosity, pale yellow fluorescence.



450 455 460 465 470



4460 MD
4480 Log
-1339 Sub
Pawnee
Fm

SHALE: medium dark gray (N4) to medium gray (N5), moderately firm, calcareous.

LIMESTONE: yellowish gray (5Y 8/1), firm, platy cuttings, micrite, trace intraclasts, clean, pale yellow fluorescence.

SHALE: medium dark gray (N4) to medium gray (N5), moderately firm, calcareous.

LIMESTONE: light gray (N7), firm, micrite, sub blocky cuttings, pale yellow fluorescence.

SANDSTONE: pinkish gray (5YR 8/1), very firm, quartzose, trace (<10%) lithic fragments, fine to very fine grained, well sorted, no fluorescence.

SHALE: medium dark gray (N4), moderately firm, calcareous.

SHALE: medium dark gray (N4), moderate brown (5YR 3/4), moderately firm, platy cuttings, ripple marks visible on large cuttings, no fluorescence.

SANDSTONE: white (N9) to clear, very firm, carbonate cemented, well rounded, fine grained, moderately well sorted, quartzose, no visible porosity, no fluorescence.

SANDSTONE: white (N9) to clear, very firm, well rounded, very fine grained, well sorted, quartzose, no visible porosity, no fluorescence.

SHALE: medium dark gray (N4) and moderate brown (5YR 3/4), moderately firm, platy cuttings, no fluorescence.

DOLomite: light gray (N7), firm, sparite, sandy.

SHALE: medium dark gray (N4) and moderate brown (5YR 3/4), moderately firm, platy cuttings, no fluorescence.

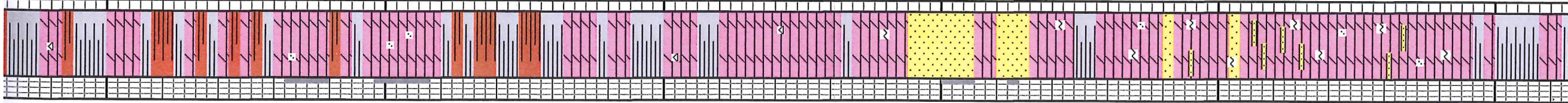
DOLomite: very light gray (N9), sub blocky cuttings, firm, tight, various textures, commonly sparite, locally clast supported intrasparite, tight, pale yellowish green fluorescence.

loose CHERT: semi-translucent, orange, hard.

SANDSTONE: clear, fine grained, well sorted, dolomitic cement, common glauconite, fair porosity.

DOLomite: very light gray (N9), firm, blocky cuttings, sparite, commonly sucrosic, very abundant evenly disseminated glauconite, zones of quartz sand (grades to DOLomitic SANDSTONE), fine grained, locally yellowish green fluorescence.

Decrease in sample quality.



4750

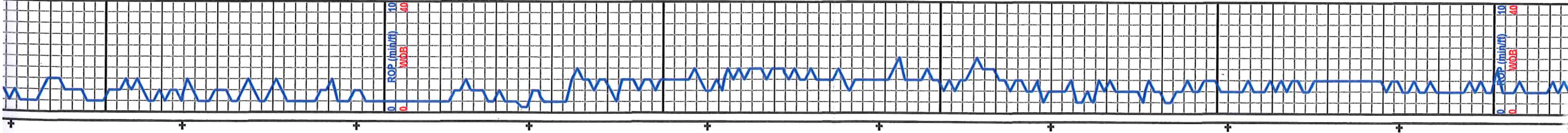
4800

4850

4900

4950

5000



4778 MD
4780 Log
-1639 Sub
Mississippian

4850 MD
4850 Log
-1709 Sub
Atbuckle

5047 MD
5056 Log
-1915 Sub
Reagan Ss

5207 MD
Base-
ment

5230
Rig TD

Deepened
from 5108' to
5230' on
10/3/2013

SHALE: dark medium gray (N4), firm, platy cuttings, non-calcareous, no fluorescence.

SANDSTONE: clear, rarely pinkish gray (5YR 8/1), commonly occurs as loose grains, fine grained, well rounded, quartzose, likely good porosity, no fluorescence.

CONGLOMERATE: clear to pinkish gray (5YR 8/1), moderately firm clusters and loose grains, medium sand to fragments of large clasts, mostly quartz, some black mica, K-feldspar crystal up 3mm, no fluorescence.

Remark: The following interval was logged by Brian Bynog

SAND: trnsj,fr, f-m gr,rd, w srt, ch, gd por, ns

SAND: trnsj,fr,frm, f gr,rd, w srt, thn Sh ptgs, p-fr por, ns

SANDSTONE: fros, frm, m-crs gr, fr-gd porcin ip, no show

SANDSTONE: fros, frm, m-crs gr, fr-gd porcin ip, no show

METAMORPHIC: Gneiss, Qtz, Mica, tr pink xls(Plag)

