

OPERATOR

Company: Murfin Drilling Company
 Address: 250 N. Water Suite 300
 Wichita, KS 67202
 Contact Geologist: Shauna Gunzelman
 Contact Phone Nbr: 316-267-3241
 Well Name: Morgan #1-17
 Location: Sec. 17 - T4S - R33W
 API: 15-153-21062-0000
 Pool: _____ Field: Wildcat
 State: Kansas Country: USA



Scale 1:240 Imperial

Well Name: Morgan #1-17
 Surface Location: Sec. 17 - T4S - R33W
 Bottom Location: _____
 API: 15-153-21062-0000
 License Number: 30606
 Spud Date: 10/13/2014 Time: 4:45 PM
 Region: Rawlins
 Drilling Completed: 10/21/2014 Time: 12:30 PM
 Surface Coordinates: 660' FSL & 2310' FEL
 Bottom Hole Coordinates: _____
 Ground Elevation: 3044.00ft
 K.B. Elevation: 3049.00ft
 Logged Interval: 3680.00ft To: 4686.00ft
 Total Depth: 4686.00ft
 Formation: Mississippian
 Drilling Fluid Type: Chemical/Fresh Water Gel

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: _____
 Latitude: _____
 N/S Co-ord: 660' FSL
 E/W Co-ord: 2310' FEL

LOGGED BY



Company: Keith Reavis, Inc.
 Address: 3420 22nd Street
 Great Bend, KS 67530
 Phone Nbr: 620-617-4091
 Logged By: KLG #136 Name: Keith Reavis

CONTRACTOR

Contractor: Murfin Drilling Company
 Rig #: 7
 Rig Type: mud rotary
 Spud Date: 10/13/2014 Time: 4:45 PM
 TD Date: 10/21/2014 Time: 12:30 PM
 Rig Release: _____ Time: _____

ELEVATIONS

K.B. Elevation: 3049.00ft Ground Elevation: 3044.00ft
 K.B. to Ground: 5.00ft

NOTES

Due to negative results of drill stem testing and electrical log analysis, the Morgan #1-17 was plugged and abandoned as a dry test.

The samples were saved and will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted,
 Keith Reavis

**Murfin Drilling Company
 daily drilling report**

| DATE | 7:00 AM DEPTH | REMARKS |
|------------|---------------|---|
| 10/15/2014 | | Geologist Keith Reavis on location @ 2215 hrs, 3674 ft, bit trip |
| 10/16/2014 | 3782 | back on bottom with button bit, drilling ahead, Tarkio, Topeka, Lecompton, Oread, Toronto, Lansing, show in Toronto and Lansing A warrant test, short trip, ctch, TOH and back in with tools |
| 10/17/2014 | 4010 | conduct and complete DST #1, tool plugged second flow, TIH w/bit, resume drilling, show in B zone warrants test, TOH w/bit and in w/tools, conduct and complete DST #2 (B & D zones), successful test, TOH w/tools |
| 10/18/2014 | 4085 | TIH w/bit, resume drilling, show in F warrants test, TOH/bit, conduct DST #3 (F & G), successful test, TOH w/tools, TIH w/bit, resume drilling, geologist Bruce Ard relieve Keith Reavis |
| 10/19/2014 | 4180 | show in H and J warrant test, TOH w/bit, geologist Keith Reavis resume duty, conduct DST #4, successful test, TIH w/bit resume drilling, lower KC, Marmaton |
| 10/20/2014 | 4396 | drilling ahead, Marmaton, Pawnee, Cherokee, run condemnation test on lower Pawnee and upper Cherokee, conduct and complete DST #5, successful test |
| 10/21/2014 | 4556 | TIH w/bit, slip drilling line, resume drilling, Cherokee, Mississippian, rathole to TD of 4686 ft, 1230 hrs, short trip, ctch, TOH for logs, conduct and complete logging operations, geologist off location 2230 hrs |

**Murfin Drilling Company
 well comparison sheet**

| DRILLING WELL | | | | | COMPARISON WELL | | | | COMPARISON WELL | | | |
|----------------------|--------|---------|------|---------|-------------------------|---------|--------|-----|-------------------------|---------|--------|-----|
| MDC - Morgan #1-17 | | | | | Zenith - Walters #1 | | | | Amerada - Walters #1 | | | |
| 660' FSL & 2310' FEL | | | | | C NW SE | | | | NE NE SW | | | |
| Sec 17-T4S-R33W | | | | | Sec 17-T4S-R33W | | | | Sec 17-T4S-R33W | | | |
| 3049 KB | | | | | 3075 KB | | | | 3084 KB | | | |
| | | | | | Structural Relationship | | | | Structural Relationship | | | |
| Formation | Sample | Sub-Sea | Log | Sub-Sea | Log | Sub-Sea | Sample | Log | Log | Sub-Sea | Sample | Log |
| Topeka | 3784 | -735 | 3782 | -733 | 3812 | -737 | 2 | 4 | 3818 | -734 | -1 | 1 |
| Lecompton | 3891 | -842 | 3884 | -835 | 3916 | -841 | -1 | 6 | 3920 | -836 | -6 | 1 |
| Oread | 3927 | -878 | 3926 | -877 | 3956 | -881 | 3 | 4 | 3957 | -882 | 4 | 5 |
| Heebner | 3952 | -903 | 3950 | -901 | 3981 | -906 | 3 | 5 | 3984 | -909 | 6 | 8 |
| Toronto | 3981 | -932 | 3980 | -931 | 4012 | -937 | 5 | 6 | 4014 | -939 | 7 | 8 |
| Lansing | 3992 | -943 | 3991 | -942 | 4022 | -947 | 4 | 5 | 4024 | -949 | 6 | 7 |
| Lansing G | 4080 | -1031 | 4080 | -1031 | 4112 | -1037 | 6 | 6 | 4115 | -1040 | 9 | 9 |
| Stark | 4179 | -1130 | 4179 | -1130 | 4210 | -1135 | 5 | 5 | 4210 | -1135 | 5 | 5 |
| Base KC | 4230 | -1181 | 4229 | -1180 | 4258 | -1183 | 2 | 3 | 4260 | -1185 | 4 | 5 |
| Pawnee | 4361 | -1312 | 4362 | -1313 | 4394 | -1319 | 7 | 6 | 4390 | -1315 | 3 | 2 |
| Cherokee | 4435 | -1386 | 4432 | -1383 | nr | | | | 4460 | -1385 | -1 | 2 |
| Mississippian | 4617 | -1568 | 4618 | -1569 | | | | | 4610 | -1535 | -33 | -34 |
| Total Depth | 4686 | -1637 | 4690 | -1641 | | | | | 4832 | -1757 | 120 | 116 |

Drill Stem Test #1

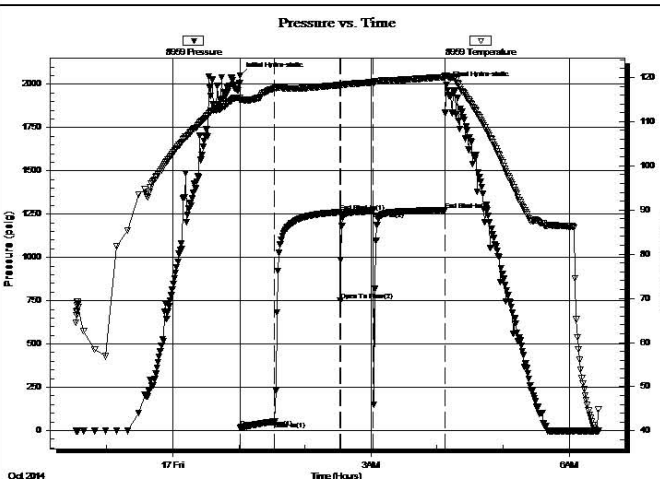
| | | |
|--------------------|---|----------------------|
| | DRILL STEM TEST REPORT | |
| | Murfin Drilling CO., Inc. | 17-4-33 |
| | 250 N. Water STE300 Wichita, KS, 67202 | Morgan # 1-17 |
| ATTN: Keath Reavis | Job Ticket: 60150 | DST#: 1 |
| | Test Start: 2014.10.16 @ 22:32:00 | |

GENERAL INFORMATION:

Formation: Toronto/Lansing
 Deviated: No Whipstock: _____ ft (KB)
 Time Tool Opened: 01:01:30
 Time Test Ended: 06:26:30
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Donovan Baumann
 Unit No: 49
 Interval: 3950.00 ft (KB) To 4010.00 ft (KB) (TVD)
 Total Depth: 4010.00 ft (KB) (TVD)
 Reference Elevations: 3049.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 5.00 ft
 3044.00 ft (CF)

Serial #: 8959 Outside
 Press@RunDepth: 1267.15 psig @ 3951.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.10.16 End Date: 2014.10.17 Last Calib.: 2014.10.17
 Start Time: 22:32:05 End Time: 06:26:29 Time On Btm: 2014.10.17 @ 01:01:00
 Time Off Btm: 2014.10.17 @ 04:08:30

TEST COMMENT: 30 - IF - Weak surface blow built to 3in. in 30 min.
 60 - ISI - No return
 30 - FSI - No blow tool plugged
 60 - FSI - No return



| Time (Mn.) | Pressure (psig) | Temp (deg F) | Annotation |
|------------|-----------------|--------------|----------------------|
| 0 | 2050.79 | 115.39 | Initial Hydro-static |
| 1 | 16.49 | 114.75 | Open To Flow (1) |
| 32 | 53.58 | 117.47 | Shut-In(1) |
| 91 | 1261.05 | 118.25 | End Shut-In(1) |
| 91 | 749.81 | 117.94 | Open To Flow (2) |
| 121 | 1267.15 | 118.88 | Shut-In(2) |
| 186 | 1272.02 | 120.07 | End Shut-In(2) |
| 188 | 1996.42 | 120.43 | Final Hydro-static |

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 73.00 | Mid - 100M | 0.36 |

| Gas Rates | | |
|----------------|-----------------|------------------|
| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
| | | |

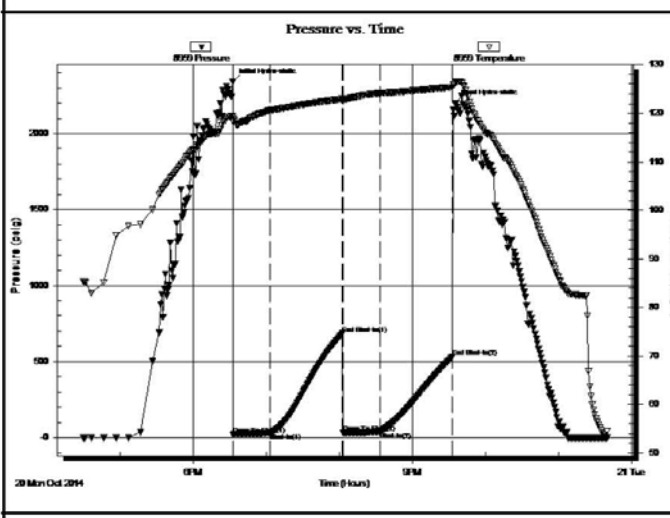


GENERAL INFORMATION:

Formation: **Pawnee & Cherokee**
 Deviated: No Whipstock ft (KB)
 Time Tool Opened: 18:33:00
 Time Test Ended: 23:39:30
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Robert Zdzrow
 Unit No: 49
 Interval: **4380.00 ft (KB) To 4468.00 ft (KB) (TVD)**
 Total Depth: 4468.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches-Hole Condition: Fair
 Reference Elevations: 3049.00 ft (KB)
 3044.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8959 Outside
 Press@RunDepth: 37.13 psig @ 4381.00 ft (KB)
 Start Date: 2014.10.20 End Date: 2014.10.20
 Start Time: 16:30:05 End Time: 23:39:29
 Capacity: 8000.00 psig
 Last Calib.: 2014.10.20
 Time On Btm: 2014.10.20 @ 18:32:30
 Time Off Btm: 2014.10.20 @ 21:35:00

TEST COMMENT: 30-IF- Blow built to 1"
 60-ISI- No return
 30-FF- No blow
 60-FSI- No return



| PRESSURE SUMMARY | | | |
|------------------|-----------------|--------------|----------------------|
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
| 0 | 2341.42 | 119.43 | Initial Hydro-static |
| 1 | 21.24 | 118.28 | Open To Flow (1) |
| 31 | 29.81 | 120.63 | Shut-In(1) |
| 90 | 683.53 | 122.95 | End Shut-In(1) |
| 91 | 32.04 | 122.53 | Open To Flow (2) |
| 121 | 37.13 | 124.11 | Shut-In(2) |
| 180 | 528.27 | 125.39 | End Shut-In(2) |
| 183 | 2199.34 | 126.20 | Final Hydro-static |

| Recovery | | |
|-------------|-------------|--------------|
| Length (ft) | Description | Volume (bbl) |
| 15.00 | mud 100%M | 0.07 |
| | | |
| | | |
| | | |
| | | |

| Gas Rates | | | |
|----------------|-----------------|------------------|--|
| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) | |
| | | | |

ROCK TYPES

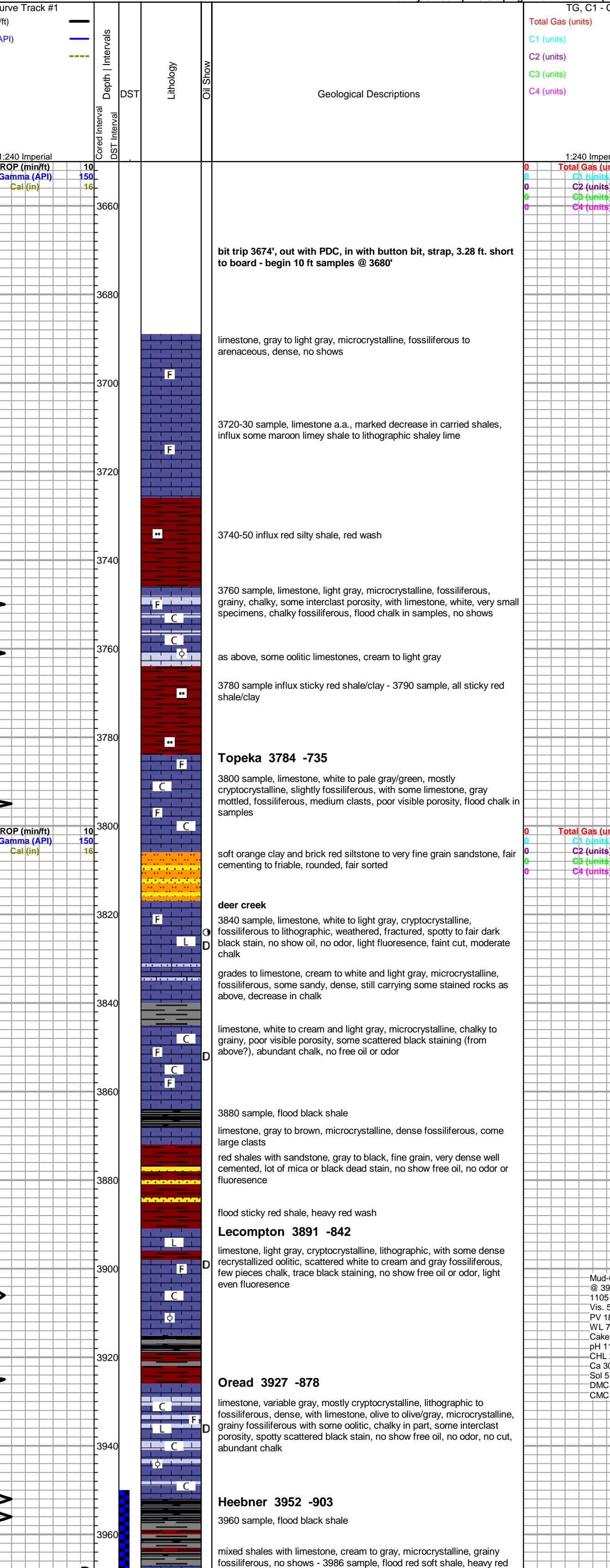
| | | | |
|----------|-----------|------------|--------|
| Cht | Lmst fw<7 | shale, gry | Shcol |
| Cht vari | Lmst fw>7 | Carbon Sh | Ss |
| sdy lmst | shale, gm | shale, red | Siltst |

ACCESSORIES

| | | | |
|--------------------|----------------------------|-----------------|----------------|
| MINERAL | FOSSIL | STRINGER | TEXTURE |
| ▲ Chert, dark | ∩ Bioclastic or Fragmental | ■ Sandstone | C Chalky |
| ✕ Mineral Crystals | F Fossils < 20% | ■ Siltstone | L Lithogr |
| P Pyrite | ◇ Oolite | | |
| • Silty | | | |
| △ Chert White | | | |

OTHER SYMBOLS

| | |
|--------------------|-------------|
| Oil Show | DST |
| ● Good Show | ■ DST Int |
| ● Fair Show | ■ DST alt |
| ● Poor Show | ■ Core |
| ○ Spotted or Trace | ■ tail pipe |
| ○ Questionable Stn | |
| ■ Dead Oil Stn | |
| ■ Fluorescence | |
| * Gas | |



Mud-Co Mud chk @ 3901 ft.
 1105 hrs. 10/16/14
 Vis. 58 Wt. 9.0
 PV 18 YP 19
 WL 7.6
 Cake 2/32,
 pH 11.0
 CHL 2100 ppm
 Ca 30 ppm
 Sol 5.0 LCM 3#
 DMC \$2704.00
 CMC \$12830.00

sand, glauconitic and micaceous

Toronto 3981 -932

limestone, white to light gray, oolitic to fossiliferous, chalky in part, slight pin-point porosity, most specimens with spotty but saturated black to dark brown stain, free oil on break, no odor, good green fluorescence, slight cut

Lansing 3993 -943

limestone, white to light gray, oolitic to sub oomoldic, chalky in part, mostly dense, grading to cryptocrystalline fossiliferous to lithographic, some calcite seams, trace stain in seams, some clingy tarry oil and stain, no free oil or odor, very slow streaming cut, abundant rose to orange fossiliferous/oolitic cherts in lower section

4020 sample, red, maroon & gray shales, 4034 sample same, heavy with limestone described below:

4034 sample - limestone, white to light gray, microcrystalline, grainy bioclastic to fossiliferous, chalky in part, some visible pinpoint porosity, spotty black to brown saturated stain, no show free oil, sheen on break, no odor, fair green fluorescence, very slight cut - **30 min sample** - limestone, light gray, cryptocrystalline, recrystallized fossiliferous, some good solution vugs with dark stain, sheen in cup and tray, slight show free oil, no odor, light even fluorescence, excellent cut

4034 60 min a.a. - 4040 sample LS as in cfs above, increasing red shale

4050 sample - limestone, light gray, cryptocrystalline, fossiliferous, dense, with flood white chalk, no shows

5054 30 min sample a.a.

limestone, light gray, cryptocrystalline, slightly fossiliferous, some slight surface etching, scattered spotty black staining, no show free oil, no odor, fair fluorescence, very slight cut

limestone, cream to light gray, micro-cryptocrystalline, fossiliferous to oolitic, some fair small vugs, staining in vugs, fair show free oil, no odor, good green fluorescence, good but slow cut

limestone, cream, microcrystalline, arenaceous, some oolitic, abundant secondary calcite crystals, trace pyrite, poor visible porosity, some scattered black stain, no free oil, no odor

limestone, lt gry-crm to gry-wht, dse, sli chlky, xtaln ,sli rextalized, sli fos, pvls por, ns, ? trc dos

limestone, same aa, sli cherty, lt gry-crm/org, ns noted

blk carb sh

limestone, dk brn-gry, vdse, sli rextalized to fxtaln, sli fos, pvls por, ns noted

limestone, lt gry-crm, dse, sli chlky, sli rextalized, trc fos, pscatt vis por, ? trc stn, nsfo noted

limestone, lt crm-wht, dse, chlky, xtaln to sli rextalized, sli fos, pvls por, few spls w/dk brn-blk stn & hvly tarry oil, trc fo w/brkn

limestone, gry-lt gry, dse, xtaln, sli sdy, pvls por, ns noted

limestone, lt gry-crm, dse, sli chlky, rextalized, fos, sli ooc, scatt pp & fos/occ por, blk-dk brn stn & hvly fo vis, some blk asphaltic stn, sli incr blk-dk brn hvly fo w/brkn

limestone, lt crm-wht, dse, sli chlky, sli rextalized, sli fos/sm ooc, pscatt por, sli chert, org/beige, some wht chl, ns noted

Stark 4179 -1130

mostly red shale, silty, with black and gray shale

limestone, light gray to cream, mostly cryptocrystalline, fossiliferous, chalky in part, poor visible porosity, no shows

limestone, as above, some cream chalky bioclastic, one piece in samples fair black stain (uphole sluff?), no other shows noted

Base KC 4230 -1181

limestone, mixed, gray to gray green, cream and white, micro-cryptocrystalline, fossiliferous, some sandy, chalky in part, poor visible porosity, some chalk in samples, no shows

as above, some maroon mottled limestone and limey shale, poor samples, mostly shales in samples

limestone, light gray to cream, microcrystalline, fossiliferous to bioclastic, grainy, chalky, some arenaceous, some scattered interclast pinpoint porosity, some friable, no shows

Pawnee 4361 -1312

limestone, light gray to cream, micro-cryptocrystalline, lithographic to recrystallized fossiliferous, some flattened oolitic, scattered secondary calcite, poor visible porosity, barren

shale, black carbonaceous

limestone, brown mottled fossiliferous, dense, no shows

limestone, gray mottled, microcrystalline, fossiliferous, chalky to very chalky, poor visible porosity, chalky wash in samples, no shows, poor fluorescence

shale, black carbonaceous

limestone, light gray, mottled, very chalky, fossiliferous, dense to soft, poor visible porosity, no shows

Cherokee 4435 -1386

limestone, light gray to cream, microcrystalline, fossiliferous, some bioclastic, trace sandy, slight chalky, trace sandy soft limestone, no shows, abundant chalk in samples, abundant black and brick red shales, trace gray chert

cfs - limestone, shale and chalk a.a. with flood maroon and olive shales, maroon sandy limestone, no shows

mixed shale and siltstones

4500 sample, some limestone, gray to cream, fossiliferous, no visible porosity or shows, still mostly shale in samples

4520-30 samples, mixed shale and siltstone, abundant sandstone, maroon, very fine grain, rounded to sub-angular, fair to poor sorting, well cemented, no shows

4550 sample, a.a. with influx limestone, light gray-cream, cryptocrystalline, dense fossiliferous, no shows

4560-70 sample, shaley conglomerate, mixed shales, sands and some weathered white to opaque gray chert, large quartz grains, heavy red wash

4580 sample, a.a. influx more chert

| | |
|-------------------|-----|
| Total Gas (units) | 100 |
| C1 (units) | 100 |
| C2 (units) | 100 |
| C3 (units) | 100 |
| C4 (units) | 100 |

| | | |
|----------------------------|------------|----------|
| Morgan Mud check @ 4037 ft | 1205 hrs | 10/17/14 |
| Vis. | 62 | Wt. 9.0 |
| PV | 19 | YP 19 |
| WL | 7.6 | |
| Cake | 2/32 | |
| pH | 10.5 | |
| CHL | 2600 | ppm |
| Ca | 30 | ppm |
| Sol | 5.0 | LCM 4# |
| DMC | \$0.00 | |
| CMC | \$12830.00 | |

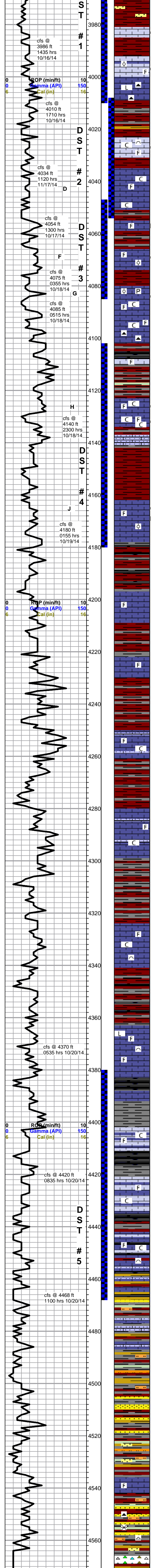
Well supervised by geologist Bruce Ard from 4085 ft - 4180 ft

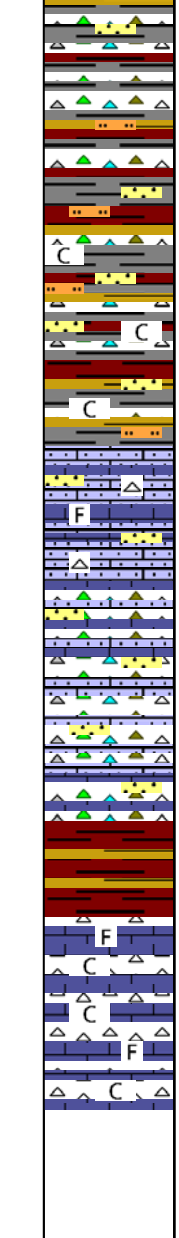
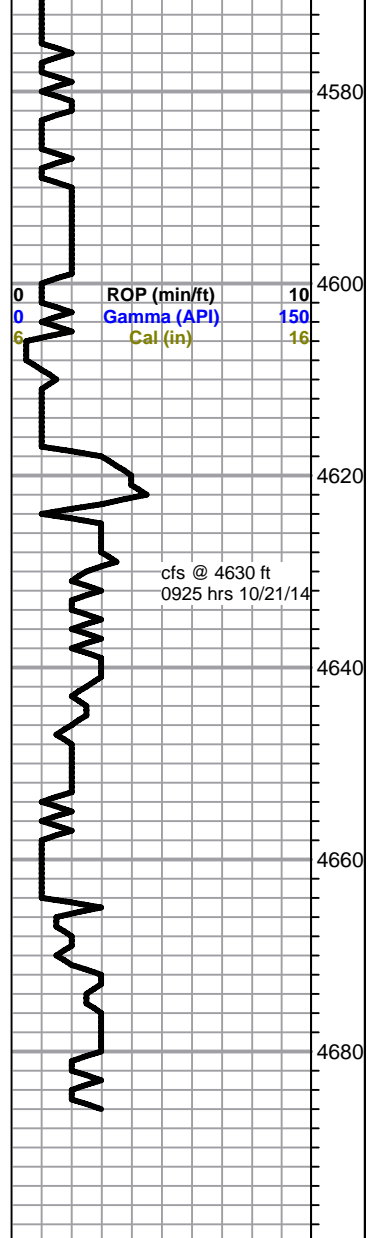
| | | |
|----------------------------|------------|----------|
| Morgan Mud check @ 4180 ft | 1145 hrs | 10/19/14 |
| Vis. | 54 | Wt. 9.3 |
| PV | 17 | YP 18 |
| WL | 6.8 | |
| Cake | 2/32 | |
| pH | 11.5 | |
| CHL | 2800 | ppm |
| Ca | 20 | ppm |
| Sol | 7.1 | LCM 3# |
| DMC | \$2485.00 | |
| CMC | \$15315.00 | |

| | |
|-------------------|-----|
| Total Gas (units) | 100 |
| C1 (units) | 100 |
| C2 (units) | 100 |
| C3 (units) | 100 |
| C4 (units) | 100 |

| | | |
|----------------------------|------------|----------|
| Morgan Mud check @ 4406 ft | 0750 hrs | 10/20/14 |
| Vis. | 69 | Wt. 9.3 |
| PV | 20 | YP 22 |
| WL | 7.2 | |
| Cake | 2/32 | |
| pH | 11.0 | |
| CHL | 2600 | ppm |
| Ca | 40 | ppm |
| Sol | 7.1 | LCM 3# |
| DMC | \$0.00 | |
| CMC | \$15315.00 | |

Morgan Mud check @ 4578 ft





4590-4600 sample, increasing cherts, decreasing shales, fresh boney white, some semi-tripolitic, with gray opaque and some yellow, mostly fresh, sharp

4610-20 sample, decrease chert, increase shales, flood chalk in samples

Mississippian 4617 -1568
limestone, white to light gray, some pale yellow and maroon, microcrystalline, fossiliferous, sandy to cherty, with some very dense quartz sandstone, fine grain, well cemented, mixed cherts, sharp, fresh, fossiliferous, no shows,

as above, decreasing limestone, increasing chert, still abundant sandstone

as above, flood red, maroon and olive shales in 4670 sample

limestone, light gray, some yellow tint, micro-cryptocrystalline, fossiliferous, sandy, dense, with chert, white to frosted, fresh, sharp, fossiliferous, no shows, flood chalk in samples

Rotary TD 4686 ft @ 1230 hrs 10/21/14
Pioneer Wireline TD 4690 ft.
complete logging operations @ 2300 hrs 10/21/14

| | | |
|---|-------------------|-----|
| 0 | Total Gas (units) | 100 |
| 0 | C1 (units) | 100 |
| 0 | C2 (units) | 100 |
| 0 | C3 (units) | 100 |
| 0 | C4 (units) | 100 |