

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: Gilbert 'A' #1-23
 Location: Sec. 23 - T4S - R31W
 Pool: API: 15-153-21018-0000
 State: Kansas Field: Wildcat
 Country: USA



Scale 1:240 Imperial

Well Name: Gilbert 'A' #1-23
 Surface Location: Sec. 23 - T4S - R31W
 Bottom Location: API: 15-153-21018-0000
 License Number: 30606
 Spud Date: 5/27/2014
 Region: Rawlins County
 Drilling Completed: 6/3/2014
 Surface Coordinates: 400' FSL & 1900' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2890.00ft
 K.B. Elevation: 2895.00ft
 Logged Interval: 3620.00ft
 Total Depth: 4550.00ft
 Formation: Mississippian
 Drilling Fluid Type: Chemical/Fresh Water Gel

Time: 16:30
 Time: 08:00
 To: 4550.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 400' FSL
 E/W Co-ord: 1900' FEL

LOGGED BY

Keith Reavis
Consulting Geologist

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: 5/27/2014
 TD Date: 6/3/2014
 Rig Release:

Time: 16:30
 Time: 08:00
 Time:

ELEVATIONS

K.B. Elevation: 2895.00ft
 K.B. to Ground: 5.00ft
 Ground Elevation: 2890.00ft

NOTES

Due to favorable results of Drill Stem Test #2, it was determined that 5 1/2" production casing be set and cemented and that the Gilbert 'A' #1-23 be tested and evaluated through perforations and stimulation.

Gamma ray and caliper curves were imported from the electrical log suite and laid in along ROP on this report. All log tops were consistently about 2 ft. low to sample/DT tops. No curves were shifted to provide an exact match but rather, left as recorded in the field. 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
05/29/2014	3648	Geologist Keith Reavis on location @ midnight, 3600', bit trip, back on bottom, drilling ahead, Topeka, Oread, Heebner, Toronto, Lansing, shows in Toronto and Lansing A - B warrant DST
05/30/2014	3969	short trip, ctoh, conducting and complete DST #1, successful test, back on bottom with bit, drill D, F, G, shows in F and G warrant test, TOH for DST #2
05/31/2014	4022	TIH w/tools, conduct and complete DST #2, successful test, back on bottom w/bit, resume drlg, H and J zones, shows warrant test, TOH for DST #3
06/01/2014	4105	conduct and complete DST #3, TIH w/bit, drill K & L, show in K warrants test, TOH w/bit, conduct and complete DST #4
06/02/2014	4224	TIH w/bit, resume drilling, Marmaton, Pawnee, Cherokee
06/03/2014	4535	drilling Cherokee, Mississippian, TD @ 4550', 0800 hrs, ofs, short trip, ctoh, TOH for logs, conduct and complete logging operations, off loc 1900 hrs

well comparison sheet

DRILLING WELL					COMPARISON WELL			
Murfin - Gilbert A #1-23					Murfin - Hammerschmidt #1-24			
400' FSL & 1900' FEL					660' FSL & 330' FWL			
Sec 23-T4S-R31W					Sec 24-T4S-R31W			
2895 KB					2916 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log
Topeka	3722	-827	3726	-831	3744	-828	1	-3
Heebner	3888	-993	3890	-995	3910	-994	1	-1
Lansing	3936	-1041	3938	-1043	3957	-1041	0	-2
Stark	4101	-1206	4100	-1205	4122	-1206	0	1
Base KC	4152	-1257	4154	-1259	4176	-1260	3	1
Pawnee	4264	-1369	4264	-1369	4282	-1366	-3	-3
Cherokee	4346	-1451	4347	-1452	4367	-1451	0	-1
Mississippian	4464	-1569	4466	-1571	4482	-1566	-3	-5
Total Depth	4550	-1655	4550	-1655	4583	-1667	12	12


Drill Stem Test #1

	DRILL STEM TEST REPORT Murfin Drilling Co., Inc. 250 N Water STE #300 Wichita, KS 67202 ATTN: Keith Reavis		23-4S-31 Rawlins, KS Gilbert 'A' #1-23 Job Ticket: 58228 Test Start: 2014.05.30 @ 05:00:00																																				
	<p>GENERAL INFORMATION:</p> Formation: Toronto-LKC "A-B" Deviated: No Whipstock ft (KB) Time Tool Opened: 08:12:30 Time Test Ended: 13:14:30 Test Type: Conventional Bottom Hole (Initial) Tester: Kevin Mack Unit No: 66 Reference Elevations: 2895.00 ft (KB) Total Depth: 3969.00 ft (KB) (TVD) 2890.00 ft (CF) Hole Diameter: 7.88 inches-Hole Condition: Good KB to GR/CF: 5.00 ft																																						
<p>Serial #: 8874 Inside</p> Press@RunDepth: 35.18 psig @ 3888.00 ft (KB) Start Date: 2014.05.30 Start Time: 05:01:00 Capacity: 8000.00 psig Last Calib.: 2014.05.30 Time On Btm: 2014.05.30 @ 08:10:30 Time Off Btm: 2014.05.30 @ 11:14:30																																							
<p>TEST COMMENT: 30 - IF- 1/4" Blow did not build or die. 60 - IS- No Return 30 - FF- No Blow 60 - FSI- No Return</p>																																							
		<p align="center">PRESSURE SUMMARY</p> <table border="1"> <thead> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr><td>0</td><td>1909.34</td><td>114.61</td><td>Initial Hydro-static</td></tr> <tr><td>2</td><td>17.47</td><td>114.25</td><td>Open To Flow (1)</td></tr> <tr><td>33</td><td>25.77</td><td>114.45</td><td>Shut-In(1)</td></tr> <tr><td>92</td><td>931.08</td><td>115.60</td><td>End Shut-In(1)</td></tr> <tr><td>94</td><td>29.26</td><td>115.24</td><td>Open To Flow (2)</td></tr> <tr><td>124</td><td>35.18</td><td>115.80</td><td>Shut-In(2)</td></tr> <tr><td>182</td><td>717.84</td><td>116.66</td><td>End Shut-In(2)</td></tr> <tr><td>184</td><td>1757.93</td><td>116.95</td><td>Final Hydro-static</td></tr> </tbody> </table>		Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1909.34	114.61	Initial Hydro-static	2	17.47	114.25	Open To Flow (1)	33	25.77	114.45	Shut-In(1)	92	931.08	115.60	End Shut-In(1)	94	29.26	115.24	Open To Flow (2)	124	35.18	115.80	Shut-In(2)	182	717.84	116.66	End Shut-In(2)	184	1757.93	116.95	Final Hydro-static
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation																																				
0	1909.34	114.61	Initial Hydro-static																																				
2	17.47	114.25	Open To Flow (1)																																				
33	25.77	114.45	Shut-In(1)																																				
92	931.08	115.60	End Shut-In(1)																																				
94	29.26	115.24	Open To Flow (2)																																				
124	35.18	115.80	Shut-In(2)																																				
182	717.84	116.66	End Shut-In(2)																																				
184	1757.93	116.95	Final Hydro-static																																				

Recovery		
Length (ft)	Description	Volume (bbl)
10.00	OSM 100M (oil spots)	0.05

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

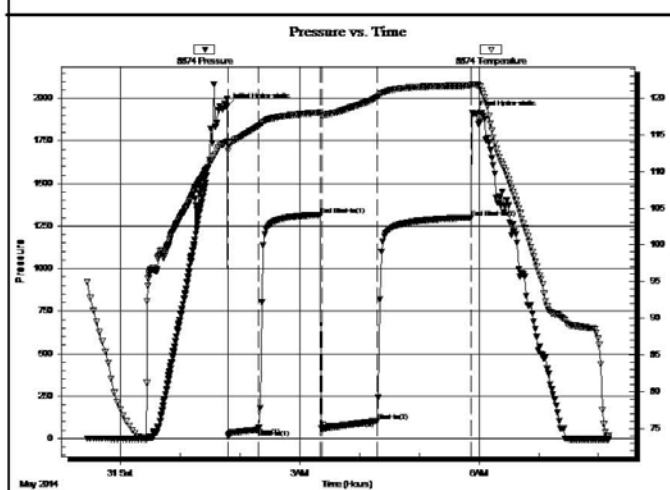
Drill Stem Test #2

	DRILL STEM TEST REPORT	
	Murfin Drilling Co., Inc. 250 N Water STE#300 Wichita, KS 67202 ATTN: Keith Reavis	23-4S-31 Rawlins, KS Gilbert 'A' #1-23 Job Ticket: 56846 DST#: 2 Test Start: 2014.05.30 @ 23:26:00

GENERAL INFORMATION: Formation: LKC "F-G" Deviated: No Whipstock ft (KB) Time Tool Opened: 01:48:00 Time Test Ended: 08:10:30		Test Type: Conventional Bottom Hole (Initial) Tester: Kevin Mack Unit No: 66 Reference Elevations: 2895.00 ft (KB) 2890.00 ft (CF) KB to GR/CF: 5.00 ft
Interval: 3984.00 ft (KB) To 4022.00 ft (KB) (TVD) Total Depth: 4022.00 ft (KB) (TVD) Hole Diameter: 7.88 inches-Hole Condition: Good		

Serial #: 8874 Inside Press@RunDepth: 103.68 psig @ 3985.00 ft (KB) Start Date: 2014.05.30 End Date: 2014.05.31 Start Time: 23:27:00 End Time: 08:10:30	Capacity: 8000.00 psig Last Calib.: 2014.05.31 Time On Btm: 2014.05.31 @ 01:47:00 Time Off Btm: 2014.05.31 @ 05:55:00
--	--

TEST COMMENT: 30 - IF- BoB in 8 min
 60 - IS- No Return
 60 - FF- BoB in 9 min.
 90 - FSI- Surface Return started at 3 min. Built to 2 1/2"




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1954.68	114.04	Initial Hydro-static
1	18.08	112.83	Open To Flow (1)
32	53.52	116.17	Shut-In(1)
94	1316.59	118.02	End Shut-In(1)
95	57.07	117.67	Open To Flow (2)
151	103.68	120.07	Shut-In(2)
245	1298.78	121.69	End Shut-In(2)
248	1910.42	121.83	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
61.00	MCO 60o 40M	0.30
189.00	Clean Gassy Oil 20G 80o	2.65
0.00	441 GIP	0.00

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

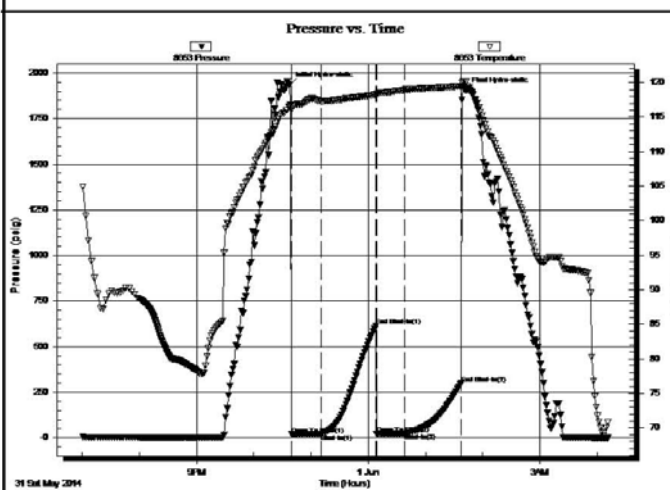
Drill Stem Test #3

	DRILL STEM TEST REPORT	
	Murfin Drilling Co., Inc. 250 N Water STE#300 Wichita, KS 67202 ATTN: Keith Reavis	23-4S-31 Rawlins, KS Gilbert 'A' #1-23 Job Ticket: 56847 DST#: 3 Test Start: 2014.05.31 @ 19:00:00

GENERAL INFORMATION: Formation: LKC "H-J" Deviated: No Whipstock ft (KB) Time Tool Opened: 22:39:30 Time Test Ended: 04:11:00		Test Type: Conventional Bottom Hole (Initial) Tester: Kevin Mack Unit No: 66 Reference Elevations: 2895.00 ft (KB) 2890.00 ft (CF) KB to GR/CF: 5.00 ft
Interval: 4029.00 ft (KB) To 4105.00 ft (KB) (TVD) Total Depth: 4105.00 ft (KB) (TVD) Hole Diameter: 7.88 inches-Hole Condition: Good		

Serial #: 8653 Outside Press@RunDepth: 24.66 psig @ 4030.00 ft (KB) Start Date: 2014.05.31 End Date: 2014.06.01 Start Time: 19:01:00 End Time: 04:11:00	Capacity: 8000.00 psig Last Calib.: 2014.06.01 Time On Btm: 2014.05.31 @ 22:37:30 Time Off Btm: 2014.06.01 @ 01:42:30
--	--

TEST COMMENT: 30 - IF- 1/4" Blow died in 20 min.
 60 - IS- No Return
 30 - FF- No Blow
 60 - FSI- No Return




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1935.59	116.53	Initial Hydro-static
2	18.97	115.96	Open To Flow (1)
33	23.91	117.29	Shut-In(1)
91	614.62	118.23	End Shut-In(1)
91	23.58	118.14	Open To Flow (2)
121	24.66	118.94	Shut-In(2)
180	297.83	119.49	End Shut-In(2)
185	1905.05	120.09	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	Mud 100M	0.02

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

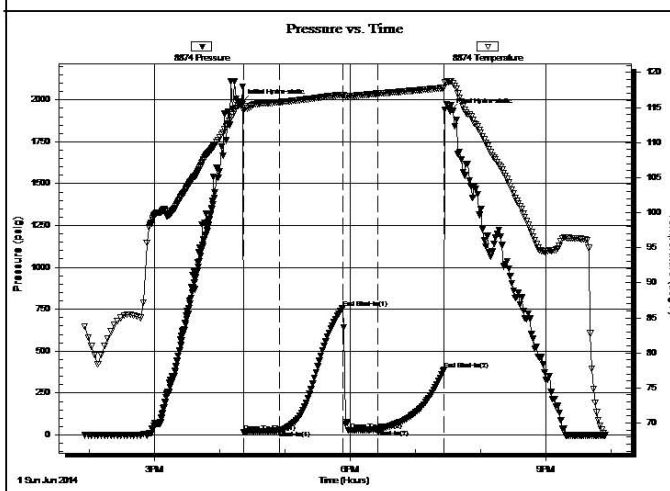
Drill Stem Test #4

	DRILL STEM TEST REPORT	
	Murfin Drilling Co., Inc. 250 N Water STE#300 Wichita, KS 67202 ATTN: Keith Reavis	23-4S-31 Rawlins, KS Gilbert 'A' #1-23 Job Ticket: 56848 DST#: 4 Test Start: 2014.06.01 @ 13:55:00

GENERAL INFORMATION: Formation: Stark - LKC "K-L" Deviated: No Whipstock ft (KB) Time Tool Opened: 16:22:00 Time Test Ended: 21:54:30		Test Type: Conventional Bottom Hole (Initial) Tester: Kevin Mack Unit No: 66 Reference Elevations: 2895.00 ft (KB) 2890.00 ft (CF) KB to GR/CF: 5.00 ft
Interval: 4095.00 ft (KB) To 4160.00 ft (KB) (TVD) Total Depth: 4160.00 ft (KB) (TVD) Hole Diameter: 7.88 inches-Hole Condition: Good		

Serial #: 8874 Inside Press@RunDepth: 32.40 psig @ 4096.00 ft (KB) Start Date: 2014.06.01 End Date: 2014.06.01 Start Time: 13:56:00 End Time: 21:54:30	Capacity: 8000.00 psig Last Calib.: 2014.06.01 Time On Btm: 2014.06.01 @ 16:20:30 Time Off Btm: 2014.06.01 @ 19:32:00
---	--

TEST COMMENT: 30 - IF- 1/4" Blow died back to weak surface blow.
 60 - IS- No Return
 30 - FF- No Blow
 60 - FSI- No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1985.03	115.46	Initial Hydro-static
2	16.58	114.56	Open To Flow (1)
35	24.87	115.75	Shut-In(1)
93	757.53	116.81	End Shut-In(1)
100	27.43	116.64	Open To Flow (2)
125	32.40	116.96	Shut-In(2)
186	388.82	117.79	End Shut-In(2)
192	1932.85	118.75	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
10.00	OCM 70M 30o	0.05

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

	Cht vari		Dolsec		shale, grn		shale, rec
	Chtcong		Lmst fw<7		shale, gry		Shcol
	Dolprim		Lmst fw>7		Carbon Sh		Ss

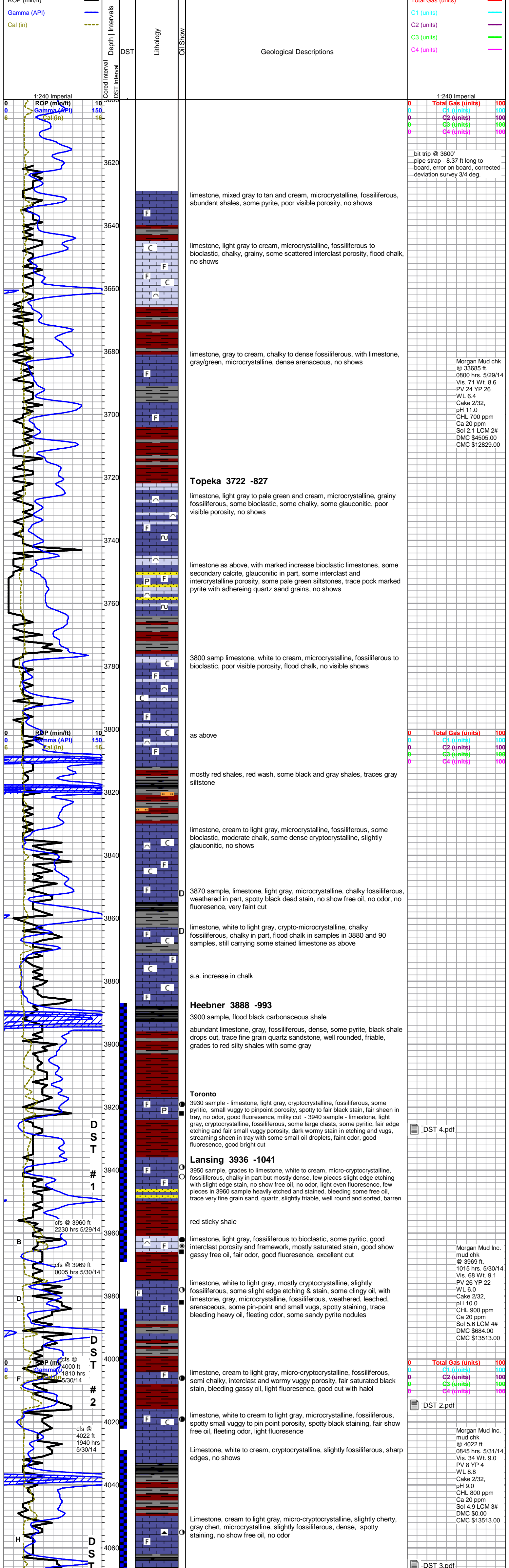
ACCESSORIES

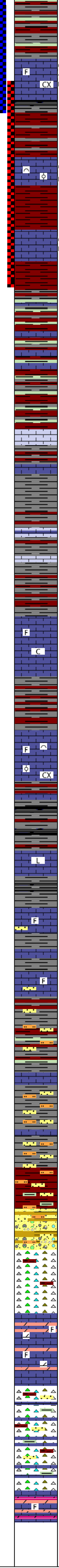
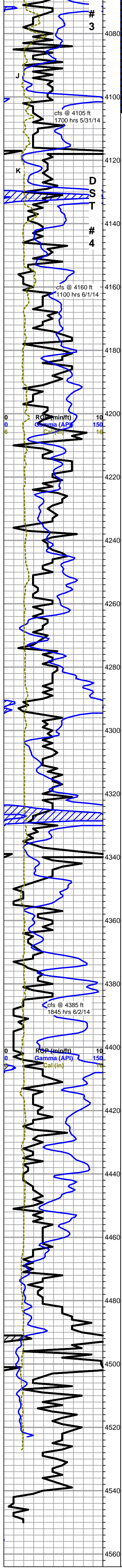
MINERAL	FOSSIL	STRINGER	TEXTURE
▲ Chert, dark	∩ Bioclastic or Fragmental	Conglomerate	C Chalky
∟ Dolomitic	F Fossils < 20%	Sandstone	CX Cryptocrystalline
∩ Glauconite	φ Oolite	Siltstone	L Lithogr
P Pyrite		green shale	
		red shale	

OTHER SYMBOLS

MISC	Oil Show	DST
Daily Report	● Good Show	DST Int
Digital Photo	● Fair Show	DST alt
Document	● Poor Show	Core
Folder	○ Spotted or Trace	tail pipe
Link	○ Questionable Stn	
Vertical Log File	○ Dead Oil Stn	
Horizontal Log File	■ Fluorescence	
Core Log File	* Gas	
Drill Cuttings Rpt		

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





limestone, white light to white, mostly cryptocrystalline, fossiliferous, some fractures, etching & scattered very small vugs, light golden brown spotty to saturated stain, sheen in tray, gassy free oil on break, bleeding some gas, faint odor, good fluorescence and cut

Stark Shale 4101 -1206

Limestone, white to cream to light gray, microcrystalline, bioclastic and micro-oolitic, slight staining, very small vugs, faint odor, slow bleeding, fair fluorescence, poor cut

DST 4.pdf

Limestone, light gray, microcrystalline, bioclastic and micro-oolitic, fair spotty to saturated staining, fair interclast porosity, fleeting odor, sheen in tray, fair fluorescence, fair cut

Base KC 4152 -1257

Limestone, cream to light gray, microcrystalline, fossiliferous, dense no shows, mixed shales

Shale mix, red to gray to green, silty

Limestone, shale mix, poor sample, cream to gray, microcrystalline, soft, chalky, gas bubbles on water, no shows

Limestone, shale mix, poor sample, gray, microcrystalline, fossiliferous, dense

Shale, gray to dark gray, red drops out

Limestone, shale mix, light gray, microcrystalline, fossiliferous,

Limestone, shale mix, cream to light gray, microcrystalline, fossiliferous, small fractures, no shows

Shale, red to gray, silty

Pawnee 4264 -1369

poor samples, mostly shales a.a., some limestone, white to light gray, fossiliferous, some chalky, sparse in samples

Shale, gray to red, silty

Limestone, white to cream to light gray, bioclastic, slightly cryptocrystalline, fossiliferous, some white oolitic, green arenaceous, slightly chalky, dense, fractures, no shows

Shale, black carbonaceous to gray

limestone, gray, mostly cryptocrystalline, slightly fossiliferous to lithographic, some white chalky limestone, no shows

Cherokee 4346 -1451

Limestone, cream to light gray, microcrystalline, fossiliferous, slightly chalky, dense, sandstone, clusters, fine grain, quartz, well rounded, fair to poor sorted, slightly friable, no shows

a.a.

Shale, red to gray to green, silty, some siltstone, scattered sandstone, fine to very fine, grain, rounded to sub-angular, poorly sorted, some glauconitic, well cemented to friable, no shows

Shale, gray wash, siltstone, mixed sandstones as above, some limestones, mixed gray to cream and white, fossiliferous, chalky to dense, no shows

Shale, gray wash, siltstone, mixed sandstone, fine grain

4450 sample flood red shale, siltstones and sandstones as above

a.a., influx yellow shale, orange and pink cherts in 4460 sample grades to cherty conglomerate, yellow shale, mixed orange and pink cherts, some lighter gray to cream cherts, weathered in part

Mississippian 4464 -1569

Chert, white to cream and yellow, mostly sharp and fresh, some slightly weathered, fossiliferous, no shows, some weathered maroon chert and hard brick red ferrous, cherty shale

limestone to dolomitic Limestone, white to slightly pink, microcrystalline, fossiliferous, dense, no shows, still carrying abundant chert a.a.

chert, white to translucent and pale yellow, fossiliferous, some maroon to red and green shale, some mottled, some scattered quartz sandstone, fine grain, poor sorted, no shows - with dolomitic limestones, mostly white, micro-cryptocrystalline, fossiliferous, dense, no shows

dolomitic limestone as above, cherts dropping out, with scattered dolomite, light gray, microcrystalline, sub-sucrosic, some fair small vuggy intercrystalline porosity, no shows

Rotary TD 4550 ft. @ 0800 hrs 6/3/14
Pioneer Log TD 4550 ft.
Complete logging operations 1845 hrs 6/3/14

Morgan Mud Inc.
 mud chk
 @ 4152 ft.
 1030 hrs. 6/1/14
 Vis. 56 Wt. 9.1
 PV 21 YP 19
 WL 6.4
 Cake 2/32,
 pH 10.5
 CHL 900 ppm
 Ca 10 ppm
 Sol 5.6 LCM 3#
 DMC \$4265.00
 CMC \$17778.00

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

Morgan Mud Inc.
 mud chk
 @ 4273 ft.
 1030 hrs. 6/2/14
 Vis. 69 Wt. 9.2
 PV 22 YP 23
 WL 6.4
 Cake 2/32,
 pH 10.0
 CHL 1000 ppm
 Ca 10 ppm
 Sol 6.3 LCM 3#
 DMC \$0.00
 CMC \$17778.00

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