

**OPERATOR**

Company: Younger Energy Company  
 Address: 9415 E. Harry  
 Bldg 400, Suite 403  
 Wichita, KS 67207

Contact Geologist:  
 Contact Phone Nbr: 316-681-2542  
 Well Name: Drach #3  
 Location: Sec. 9 - T22S - R13W  
 API: 15-185-23989-0000  
 Pool:  
 State: Kansas

Field: Silver Bell  
 Country: USA



Scale 1:240 Imperial

Well Name: Drach #3  
 Surface Location: Sec. 9 - T22S - R13W  
 Bottom Location:  
 API: 15-185-23989-0000  
 License Number: 30705  
 Spud Date: 6/9/2017 Time: 7:00 AM  
 Region: Stafford County  
 Drilling Completed: 6/15/2017 Time: 1:40 PM  
 Surface Coordinates: 1223 ft. FNL & 886 ft. FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 1890.00ft  
 K.B. Elevation: 1898.00ft  
 Logged Interval: 3100.00ft To: 3850.00ft  
 Total Depth: 3850.00ft  
 Formation: Arbuckle  
 Drilling Fluid Type: Chemical/Fresh Water Gel

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -98.751167  
 Latitude: 38.155885  
 N/S Co-ord: 1223 ft. FNL  
 E/W Co-ord: 886 ft. 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: Duke Drilling Company  
 Rig #: 8  
 Rig Type: mud rotary  
 Spud Date: 6/9/2017  
 TD Date: 6/15/2017  
 Rig Release:

Time: 7:00 AM  
 Time: 1:40 PM  
 Time:

### ELEVATIONS

K.B. Elevation: 1898.00ft  
K.B. to Ground: 8.00ft

Ground Elevation: 1890.00ft

### NOTES

Due to results of DST 3 the operator elected to set 5 1/2" production casing to further test the Arbuckle.

A Bloodhound gas detection system operated by Bluestem Labs was employed during the drilling of this well. ROP and gas data were imported from the Bloodhound and into this report. Gamma ray and caliper curves from the electrical log suite were also imported into this log.

Respectfully submitted,  
Keith Reavis

## Younger Energy Company daily drilling report

DATE	7:00 AM DEPTH	REMARKS
06/12/2017		Geologist Keith Reavis on location @ 2100 hrs, 3240 ft, replace extractor, Heebner, Toronto, Douglas
06/13/2017	3497	drilling ahead, Douglas, Brown Lime, Lansing, shows and gas kicks in H, I and J zones warrant test, short trip, ctch, TOH for DST #1, conduct and complete DST #1, successful test, TIIH, ctch,
06/14/2017	3665	resume drilling, K zone, BKC, conglomerate, Viola, Simpson, Arbuckle, show in Simpson Sand and Arbuckle warrant DST, TOH for DST #2, conduct and completed DST #2, successful test, TIIH w/bit, resume drilling, cfs and ctch
06/15/2017	3783	TOH for DST #3, Arbuckle, run DST #3, successful test, TIIH w/bit, rathole to TD of 3850, cfs and ctch, TOH for logs, conduct and complete logging operations geologist off location @ 2010 hrs

## Younger Energy Company well comparison sheet

DRILLING WELL					COMPARISON WELL			
Drach #3 1223' FNL & 886' FEL Sec. 9-T22S-R13W					Younger - Drach #1 NE NE NE Sec. 9-T22S-R13W			
1898 KB					1895 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log
Heebner	3243	-1345	3244	-1346	3237	-1342	-3	-4
Toronto	3264	-1366	3264	-1366	3256	-1361	-5	-5
Douglas	3278	-1380	3280	-1382	3272	-1377	-3	-5
Brown Lime	3368	-1470	3370	-1472	3365	-1470	0	-2
Lansing	3388	-1490	3390	-1492	3384	-1489	-1	-3
Lansing G por	3468	-1570	3468	-1570	3464	-1569	-1	-1
Lansing H por	3516	-1618	3518	-1620	3511	-1616	-2	-4
Base KC	3597	-1699	3600	-1702	3592	-1697	-2	-5
Conglomerate	3629	-1731	3633	-1735	3621	-1726	-5	-9
Viola	3667	-1769	3663	-1765	3656	-1761	-8	-4
Simpson Shale	3717	-1819	3720	-1822	3709	-1814	-5	-8
Arbuckle	3777	-1879	3778	-1880	3764	-1869	-10	-11
Total Depth	3850	-1952	3851	-1953	3772	-1877	-75	-76



### DRILL STEM TEST REPORT

Younger Energy Company  
 9415 E. Harry Suite 403  
 Wichita, Kansas 67207-5083  
 ATTN: Keith Reavis

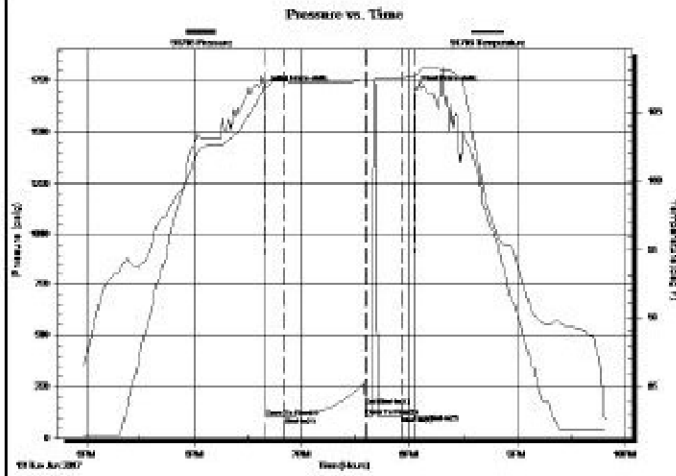
9-22-13w Stafford  
 Drack #3  
 Job Ticket: 01172 DST#: 1  
 Test Start: 2017.06.13 @ 16:58:00

**GENERAL INFORMATION:**

Formation: **Lansing "H&J"**  
 Deviated: **No** Whipstock: **ft (KB)**  
 Time Tool Opened: **18:39:00**  
 Time Test Ended: **21:49:00**  
 Interval: **3508.00 ft (KB) To 3566.00 ft (KB) (TV D)**  
 Total Depth: **3566.00 ft (KB) (TV D)**  
 Hole Diameter: **7.88 inches -to-b** Condition: **Fair**  
 Test Type: **Conventional Bottom Hole (Initial)**  
 Tester: **Gene Budig**  
 Unit No: **1**  
 Reference Elevations: **1898.00 ft (KB)**  
**1890.00 ft (CF)**  
**KB to GR/CF: 8.00 ft**

**Serial #: 91716 Outside**  
 Press@RunDepth: **117.14 psig @ 3555.92 ft (KB)**  
 Start Date: **2017.06.13** End Date: **2017.06.13**  
 Start Time: **16:58:00** End Time: **21:49:29**  
 Capacity: **5000.00 psig**  
 Last Calb.: **2017.06.13**  
 Time On Btm: **2017.06.13 @ 18:39:30**  
 Time Off Btm: **2017.06.13 @ 20:03:30**

**TEST COMMENT:** 1st Opening 10 Minutes weak blow for 7 minutes and died  
 1st Shut-in 45 Minutes no blow back  
 2nd Opening 19 Minutes a-No blow - Flushed tool good surge-Weak blow for 6 minutes and died  
 2nd Shut-in 10 Minutes No blow back



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1710.22	107.09	Initial Hydro-static
1	101.36	107.15	Open To Flow (1)
11	101.74	107.20	Shut-In (1)
56	155.68	107.26	End Shut-In (1)
56	105.33	107.27	Open To Flow (2)
76	108.08	107.48	Shut-In (2)
84	117.14	107.59	End Shut-In (2)
85	1709.66	107.61	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
40.00	Drilling Mud there Was a good's how of	0.56
0.00	oil between the tools	0.00

**Gas Rates**

	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)

**Drill Stem Test #2**



### DRILL STEM TEST REPORT

Younger Energy Company  
 9415 E. Harry Suite 403  
 Wichita, Kansas 67207-5083  
 ATTN: Keith Reavis

9-22-13w Stafford  
 Drack #3  
 Job Ticket: 01173 DST#: 2  
 Test Start: 2017.06.14 @ 14:22:00

**GENERAL INFORMATION:**

Formation: **Simpson & Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 15:42:00  
 Time Test Ended: 00:00:00

Test Type: Conventional BottomHole (Initial)  
 Tester: Gene Budig  
 Unit No: 1

Interval: 3736.00 ft (KB) To 3778.00 ft (KB) (TVD)  
 Total Depth: 3778.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

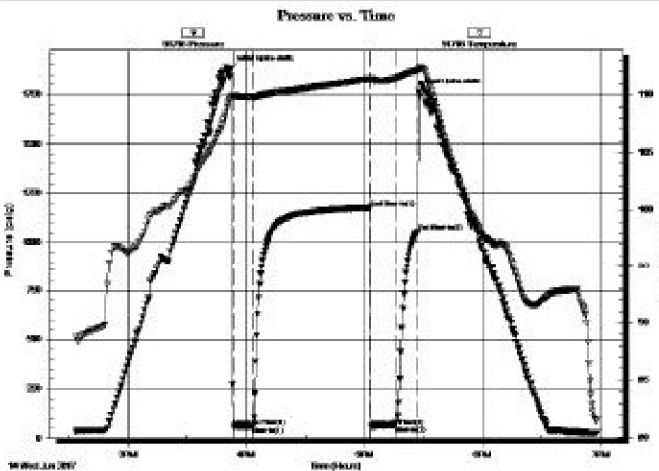
Reference Elevations: 1898.00 ft (KB)  
 1890.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 91716** Outside

Press@RunDepth: 1057.55 psig @ 3773.00 ft (KB)  
 Start Date: 2017.06.14 End Date: 2017.06.14  
 Start Time: 14:33:30 End Time: 18:58:00

Capacity: 5000.00 psig  
 Last Calb.: 2017.06.14  
 Time On Btm: 2017.06.14 @ 15:52:30  
 Time Off Btm: 2017.06.14 @ 17:27:30

TEST COMMENT: 1st Opening 10 Minutes Very weak blow through out  
 1st Shut-in 60 Minutes no blow back  
 2nd Opening 13 Minutes no blow flushed tool no help  
 2nd Shut-in 10 Minutes No blow back



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1879.68	109.85	Initial Hydro-static
1	59.06	109.92	Open To Flow (1)
11	61.25	109.80	Shut-in(1)
71	1178.97	111.38	End Shut-in(1)
71	58.03	111.38	Open To Flow (2)
83	64.88	111.37	Shut-in(2)
95	1057.55	112.13	End Shut-in(2)
95	1763.61	112.16	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
15.00	Drilling Mud	0.21

**Gas Rates**

	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)

**Drill Stem Test #3**



**DRILL STEM TEST REPORT**

Younger Energy Company

9-22-13w Stafford

941 5E Harry Suite 403  
 Wichita, Kansas 67207-5083

Drack #3

Job Ticket: 01174

DST#: 3

ATTN: Keith Peavis

Test Start: 2017.06.15 @ 01:18:00

**GENERAL INFORMATION:**

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 02:55:00  
 Time Test Ended: 00:00:00

Test Type: Conventional BottomHole (Initial)  
 Tester: Gene Budig  
 Unit No: 1

Interval: 3769.00 ft (KB) To 3783.00 ft (KB) (TVD)  
 Total Depth: 3783.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1898.00 ft (KB)  
 1890.00 ft (CF)  
 KB to GR/CF: 8.00 ft

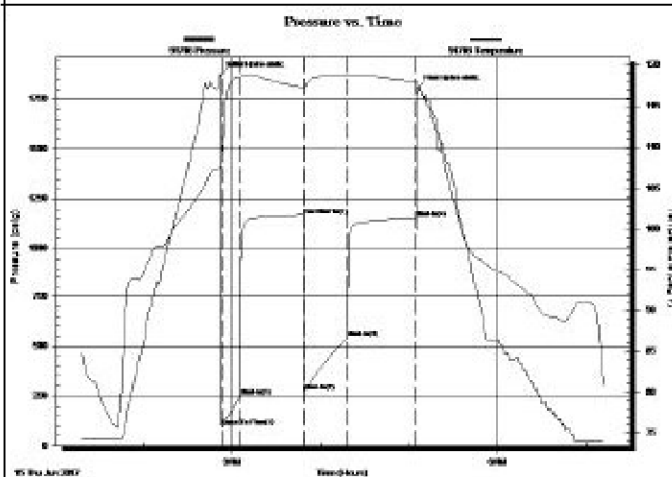
**Serial #: 91716** Outside

Press@RunDepth: 1167.79 psig @ 3778.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2017.06.15 End Date: 2017.06.15 Last Calb.: 2017.06.15  
 Start Time: 01:18:00 End Time: 07:12:29 Time On Btm: 2017.06.15 @ 02:52:30  
 Time Off Btm: 2017.06.15 @ 05:05:30

TEST COMMENT: 1st opening 10 Minutes Strong blow built to the bottom of the bucket in 1 minute  
 1st Shut-h 45Minutes weak blow back  
 2nd Opening 30minutes Good blow built to the bottom of the bucket in 2 minutes  
 2nd Shut-In 45Minutes Weak blow back



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1874.25	107.71	Initial Hydro-static
1	98.70	108.61	Open To Flow (1)
13	250.84	118.59	Shut-In(1)
56	1167.79	117.28	End Shut-In(1)
57	271.12	117.23	Shut-In(2)
86	542.93	118.77	Shut-In(3)
132	1153.98	118.02	Shut-In(4)
133	1805.73	118.03	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
300.00	Gas in the pipe	4.21
350.00	frothy gassy oil	4.91
120.00	Oil and gasd cut w ater	1.68
0.00	27%Gas 15% Oil 8% Mudnb 40% Water	0.00
120.00	Oil and gas cut w ater	1.68
0.00	17%Gas 15% Oil 8%Mud 60% Water	0.00

**Gas Rates**

	Choke (Inches)	Pressure (psig)	Gas Rate (M cfd)

**DST #3 Fluid Recovery**

**Recovery Table**

Length ft	Description	Volume bbl
300.00	Gas in the pipe	4.208
350.00	frothy gassy oil	4.910
120.00	Oil and gasd cut w ater	1.683
0.00	27%Gas 15% Oil 8% Mudnb 40% Water	0.000
120.00	Oil and gas cut w ater	1.683
0.00	17%Gas 15% Oil 8%Mud 60% Water	0.000
120.00	Oil Cut Water	1.683
0.00	10%Oil 8% Mud 82%Water	0.000
120.00	Water w ith A trace of oil	1.683
0.00	1%Oil 3%Mud 96%Water	0.000
120.00	Water w ith a traCE OF oil	1.683
0.00	3%Mud 97%Water	0.000
180.00	w ater w ith a trace of oil	2.525
0.00	1%Mud 99% Water	0.000
0.00	chlorides 19,000	0.000

Total Length: 1430.00 ft

Total Volume: 20.058 bbl

Total Volume: 20.058 bbl

Total Volume: 20.058 bbl

ROCK TYPES

Cht	Chtcongl	Lmst fw7>	Carbon Sh	Ss
Cht vari	Dolprim	shale, grn	shale, red	
Congl	Lmst fw<7	shale, gry	Shcol	

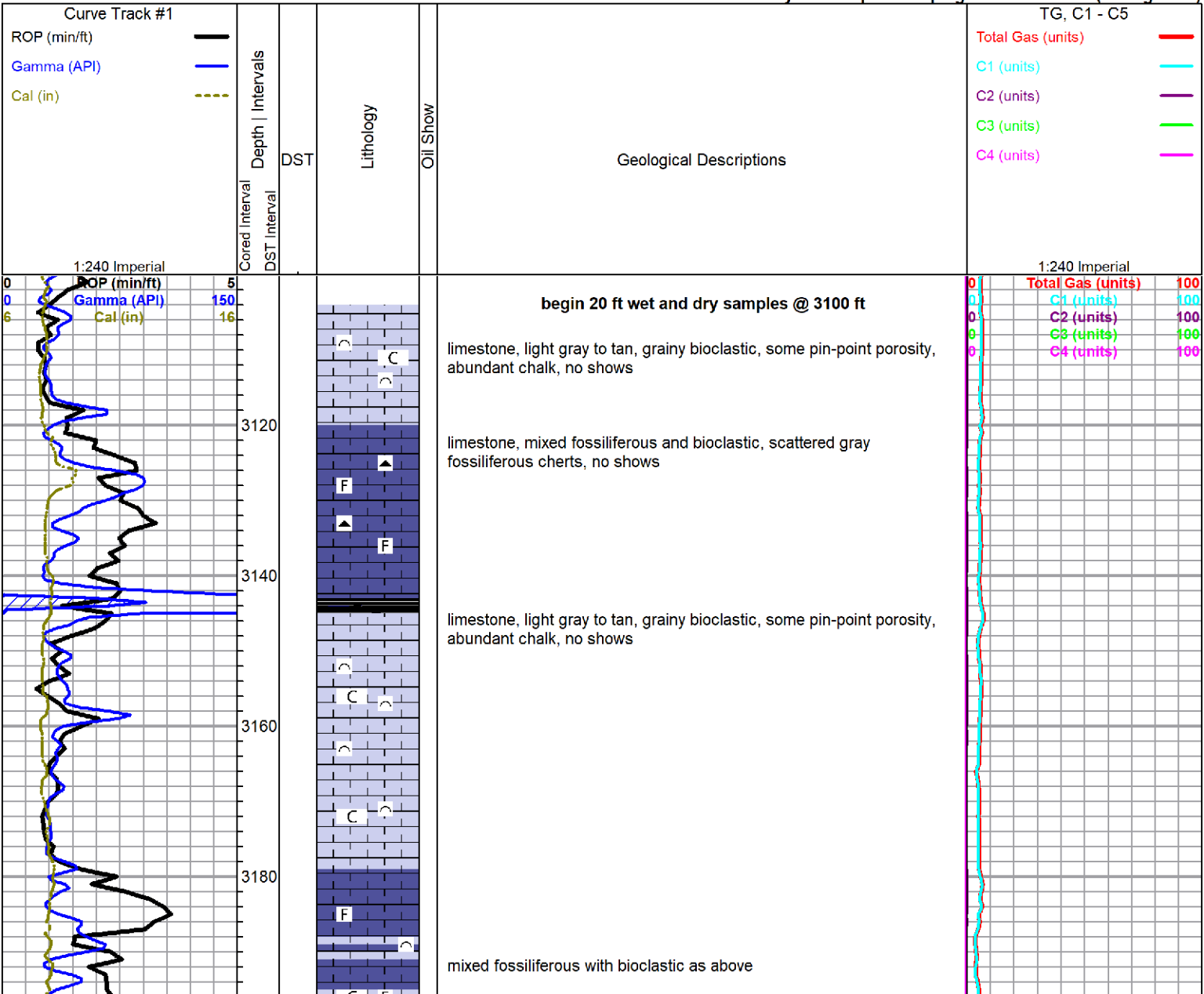
ACCESSORIES

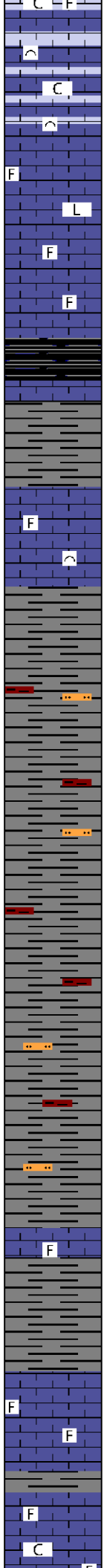
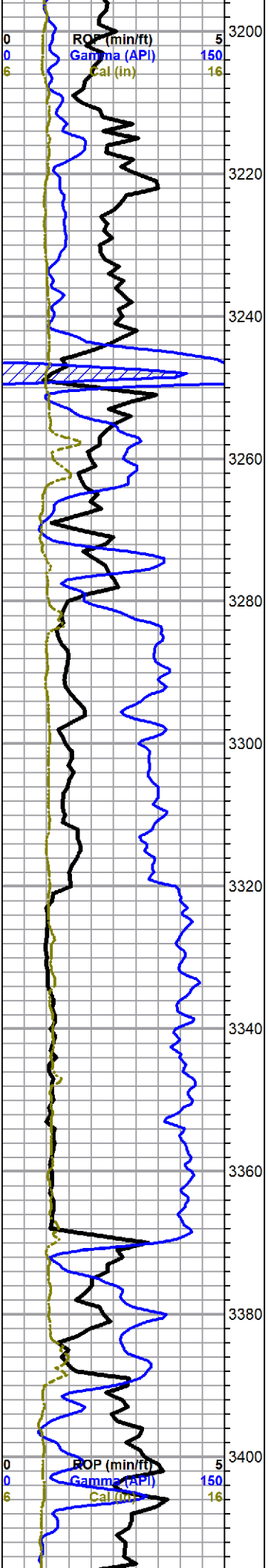
<b>MINERAL</b>	<b>FOSSIL</b>	<b>STRINGER</b>	<b>TEXTURE</b>
▲ Chert, dark	∩ Bioclastic or Fragmental	▨ Dolomite	C Chalky
• Sandy	F Fossils < 20%	•• Sandstone	CX Cryptocrystalline
△ Chert White	∅ Oolite	••• Siltstone	L Lithogr
	∅ Pellets	▨ red shale	
	∅ Oomoldic		

OTHER SYMBOLS

<b>Oil Show</b>	<b>DST</b>
● Good Show	■ DST Int
● Fair Show	■ DST alt
● Poor Show	■ Core
○ Spotted or Trace	■ tail pipe
○ Questionable Stn	
○ Dead Oil Stn	
■ Fluorescence	
* Gas	

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as above with dense cryptocrystalline limestone, cream to gray, sub-lithographic, no shows

**Heebner 3343 -1345**  
shale, black carbonaceous

**Toronto 3264 -1366**  
limestone, cream to tan, microcrystalline, fossiliferous to bioclastic, grainy to chalky to dense, poor visible porosity, no shows

**Douglas 3278 -1380**  
shale, gray, some micaceous and silty, some red shale, scattered gray micaceous siltstone

as above

begin 10 ft wet and dry samples @ 3360 ft

**Brown Lime 3368 -1470**  
limestone, tan to gray, some mottled, fossiliferous, some lithographic, dense, no shows

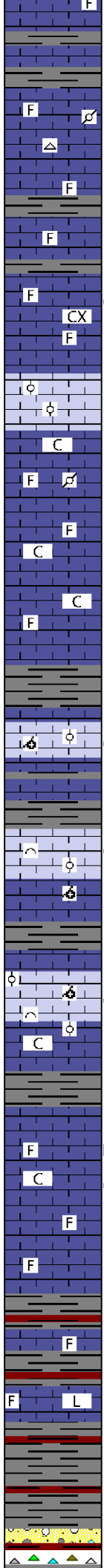
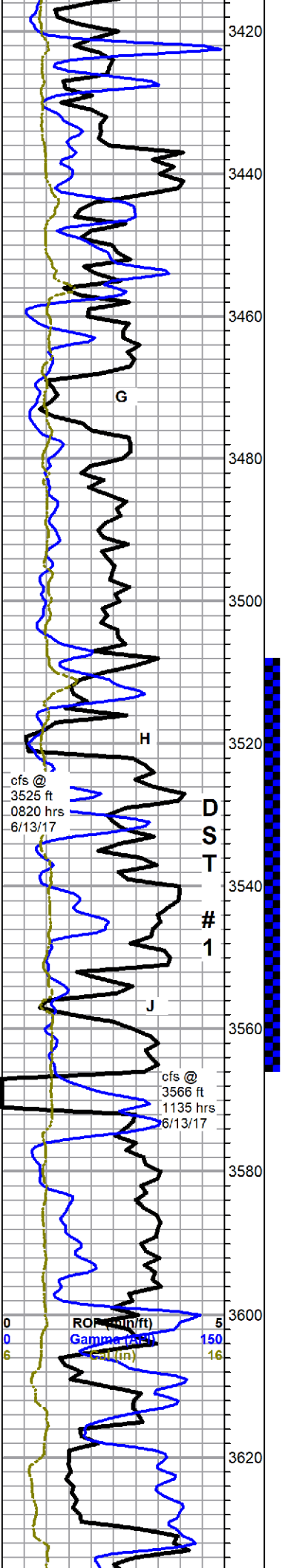
**Lansing 3388 -1490**  
limestone, light gray, microcrystalline, fossiliferous, grainy in part, poor visible porosity, no shows

limestone, a. a. with cream limestone, chalky and grainy, no shows

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

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

wireline deviation



limestone, mixed, cream to light gray, fossiliferous, some grainy, chalky, with variable gray to brown mottled limestone, scattered pelletal limestone, gray arenaceous limestone, scattered chert, no shows

a.a

**F zone** limestone, light gray to cream, cryptocrystalline, fossiliferous, some secondary calcite, few pieces with some fair solution vugs, light stain, no show free oil, fleeting sour odor, poor fluorescence, slow milky cut, abundant dark gray dense fossiliferous

**G zone**, limestone, gray to tan, oolitic, poorly developed, poor visible porosity, some very chalky, no shows

limestones, mixed fossiliferous, chalky, with abundant cryptocrystalline, sub-lithographic, dense, abundant chalk in samples, no shows

a.a.

limestone, cream to light gray, oolitic to sub-oolitic, some recrystallized, chalky, much flattened, few pieces with secondary calcite filling mold, some wormy dark stained solution vugs, slight show tarry/clingy oil, no odor, poor fluorescence, good cut

3550 sample - limestone, white to light gray, oolitic to bioclastic, some sub-oolitic, scattered inter-oolite and interclast porosity, scattered fair inter-oolite and clast staining, some sheen and oil droplets on break, trace gassy, feeble odor, spotty fluorescence, good cut - 3560 sample, a.a. with better stain, some gassy, faint odor, some oomoldic with show

limestone, white to light gray and tan, variable oolitic to oomoldic to sub-oolitic, some white bioclastic, some fair oomold porosity and scattered inter-oolite and inter-clast porosity, some small stained solution vugs, spotty stain, fair sheen and some free oil on break, fleeting odor, scattered fluorescence, good milky streaming cut

Note: no drill time 3567-71 ft, geograph switched to 5 min time and geograph wire short

limestone, white to cream and light gray, micro-cryptocrystalline, fossiliferous, some arenaceous, some very chalky, some scattered light staining, mostly in chalky facies, one piece with drop of free oil on break, no odor, poor fluorescence, light milky cut

**Base KC 3597 -1699**

limestone, gray, some with lavender cast, microcrystalline, fossiliferous, grainy, light gray to white, cryptocrystalline, fossiliferous to lithographic, few scattered specimens with slight stain, no show free oil or odor, some maroon and lavender shales with abundant gray shale

**Conglomerate 3629 -1731**

mixed shale, limestone and cherts

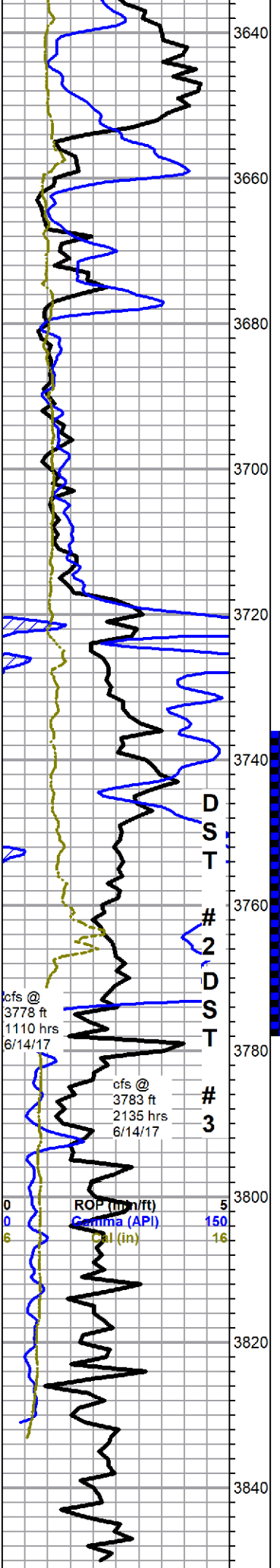
Andy's Mud chk  
@ 3525 ft.  
0915 hrs. 6/13/17  
Vis. 43 Wt. 9.2  
PV 12 YP 22  
WL 8.8  
Cake 1/32,  
pH 9.0  
CHL 5000 ppm  
Ca 10 ppm  
Sol 6.2 LCM 1#  
DMC \$199.50  
CMC \$9452.55

22 unit total kick

pipe strap  
0.79 ft short to  
board

0	<b>Total Gas (units)</b>	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100





**Viola 3667 -1769**

chert, boney white with some opaque tan, trace yellow, mostly fresh, some scattered sub-tripolitic with black to brown stain, some gray dolomite adhesions, dolomite, gray, microcrystalline, sub-rhombic, dense, no visible porosity, no show free oil, fleeting sour odor, poor fluorescence, no cut

a.a with increased dolomite content, dolomite is grading from gray to brown, slow bleeding gas, no show free oil, no odor

**Simpson Shale 3717 -1819**

shale, gray, green, waxy green, some maroon, with scattered sandstone, green, quartz, white and reddish brown, fine to med grain, dirty, fair to poor cement, shale bound in part, poor sorting, no visible porosity or shows - still carrying abundant Viola cherts and dolomites in samples

3778 sample a.a. with some sandstone, mostly small clusters, quartz, very fine grain, fair sorting, fairly friable some inter-grain porosity, golden brown stain, show free oil on break, weak fleeting odor in wet cup, no fluorescence, weak cut

30 min sample, flood mshy green shale, olive shale and chalk, with olive brown sandy limestone, poor porosity, some large black clasts, few pieces olive brown sandstone, fine to medium grain, well cemented, slight stain, show oil on break, some free oil droplets in sample, good odor (sulfury smell) in wet cup - appears to be erosional/transition surface

**Arbuckle 3777 -1879**

3778 60 min sample, dolomite, dark gray to brown (stain?), microcrystalline, sub-rhombic, poor visible porosity, streaming sheen in tray, fair show oil on break, good odor a.a., dull green fluorescence, fair slow streaming cut

3783 cfs, dolomite, gray to light gray, some white, microcrystalline, sub-rhombic to sub-sucrosic to recrystallized, trace rhombic, spotty to saturated black to brown stain, some pinpoint porosity slightly bleeding oil, good odor in cup, good green/white fluor., poor cut, 50% plus of samples barren, mostly dense cryptocrystalline dolomite

3890 & 3800 samples, mostly trip trash, poor samples

3810 - 3830 samples, dolomites, variable gray, micro to fine crystalline, rhombic to sub-rhombic and re-crystallized, some sub-sucrosic, some fair intercrystalline porosity and solution vugs, spotty to saturated stain, most samples stained, fair show of oil with heavy streaming sheen in tray (sheen could be due to oil contaminated mud), good odor, but sour, bright yellowish fluorescence

3840 - 3850 30 min cfs - dolomite, gray to light gray, trace white, micro to medium crystalline, rhombic, sub-rhombic and recrystallized, with some sucrosic and dense lithographic, some good intercrystalline porosity, 30-50% staining, mostly spotty and black, no show free oil, sheen falls out of samples, weak odor, light yellow fluorescence, abundant influx boney white chert

60 min cfs, dolomite a.a., medium crystalline drops out, more dense lithographic, only scattered light staining, no show free oil, faint odor, chert a.a.

Rotary TD 3850 ft. @ 1340 hrs 6/15/17

ELI Wiring TD 3851 ft.

Logging Operations Complete @ 2000 hrs 6/15/17

Andy's Mud chk @ 3720 ft. 0815 hrs. 6/14/17 Vis. 48 Wt. 9.2 PV 14 YP 24 WL 8.0 Cake 1/32, pH 9.5 CHL 4000 ppm Ca 10 ppm Sol 6.2 LCM 2# DMC \$498.20 CMC \$9950.75

contamination from DST

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

