



Musgrove

Petroleum Geology
212 Main Street, Claflin KS

NOTES

Company: US Oil Resources, LLC.

Lease: Briggs # 14A-35-1329

Field: Hoffsmith

Location: NW-NE-SE-SW (1266' FSL & 2192' FWL)

Sec: 35 Twsp: 13S Rge: 29W

County: Gove State: Kansas

GL: 2791' KB: 2799'

Contractor: Duke Drilling, Inc. (Rig #2)

Spud: 08/09/2017 Comp: 08/18/2017

RTD: 4675' LTD: 4672'

Mud Up: 3500' Type Mud: Chemical

API #: 15-063-22313-00-00

Surface Casing: 8 5/8" @250'

Production Casing: None

Electronic Surveys by: Weatherford: MAI/MFE/CPD/CNM

Formation Testing: Trilobite Testing

Samples Saved From: 3600' to RTD

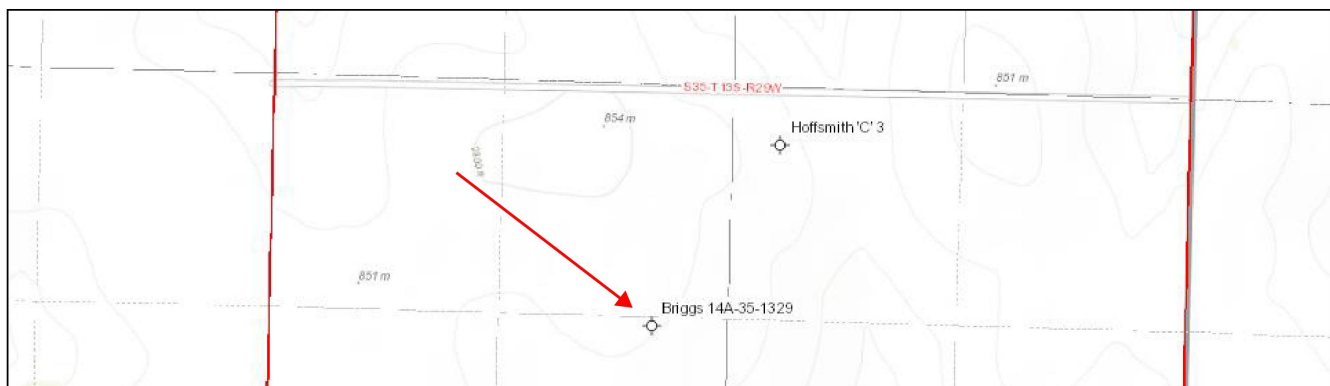
Drilling Time Kept From: 3600' to RTD

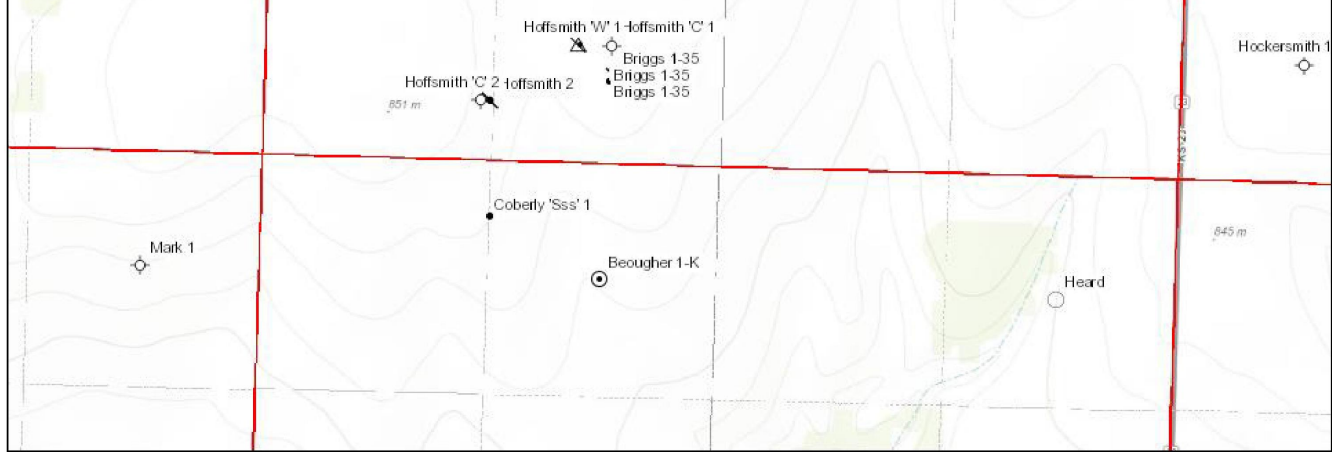
Samples Examined From: 3600' to RTD

Geological Supervision from: 3600' to RTD

Geologist on Well: Jim Musgrove

US OIL RESOURCES- BRIGGS 14-A-35-1329





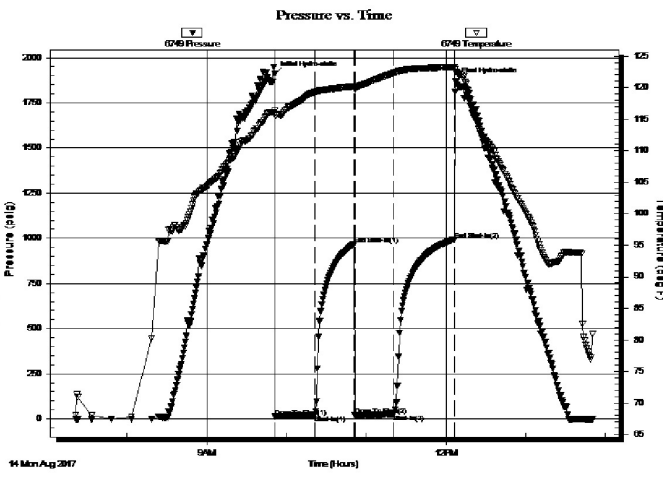
US Oil Resources, LLC well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
US Oil-Briggs 14-A-35-1329					ARRINGTON CJM-#1-35 BRIGGS				DONALD SLAWSON-#3 HOFFSMITH C			
NE-SE-SW 35-13S-29W					N2-S2-SE-SW 35-13S-29W				NW-NW-SE 35-13S-29W			
2799 KB					2795 KB				2793 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Anhydrite			2256	543	2250	545		-2	2257	536		7
B. Anhydrite			2289	510	2284	511		-1	2291	502		8
Heebner	3883	-1084	3880	-1081	3876	-1081	-3	0	3885	-1092	8	11
Toronto	3904	-1105	3901	-1102	3900	-1105	0	3	3904	-1111	6	9
Lansing	3918	-1119	3916	-1117	3913	-1118	-1	1	3923	-1130	11	13
Muncie Creek	4065	-1266	4062	-1263					4069	-1276	10	13
Stark	4158	-1359	4154	-1355	4152	-1357	-2	2	4156	-1363	4	8
Hushpuckney	4193	-1394	4187	-1388					4190	-1397	3	9
BKC	4219	-1420	4218	-1419	4215	-1420	0	1	4220	-1427	7	8
Marmaton	4248	-1449	4246	-1447	4246	-1451	2	4				
Pawnee	4326	-1527	4327	-1528	4323	-1528	1	0				
Myrick Station	4375	-1576	4374	-1575					4382	-1589	13	14
Fort Scott	4411	-1612	4408	-1609	4410	-1615	3	6	4411	-1618	6	9
Cherokee Shale	4434	-1635	4438	-1639	4442	-1647	12	8	4438	-1645	10	6
Miss. Spergen	4517	-1718	4518	-1719					4514	-1721	3	2
Miss. Warsaw	4571	-1772	4567	-1768								
Miss. Osage	4596	-1797	4592	-1793								
RTD	4675	-1876	4675	-1876	4494	-1699	-177	-177	4620	-1827	-49	-49
LTD	4672	-1873	4672	-1873	4470	-1675	-198	-198	4623	-1830	-43	-43

	DRILL STEM TEST REPORT	
	US Oil Resources LLC 6727 W. Prentice Ave. Lakewood Co. 80123 ATTN: Jim Musgrove	35-13-29 Gove Co KS Briggs #14-A-35-1329 Job Ticket: 63839 DST#: 1 Test Start: 2017.08.14 @ 07:21:15
GENERAL INFORMATION:		
Formation: D Deviated: No Whipstock: ft (KB) Time Tool Opened: 09:51:15 Time Test Ended: 13:51:00	Test Type: Conventional Bottom Hole (Initial) Tester: Mike Roberts Unit No: 81	
Interval: 3988.00 ft (KB) To 4010.00 ft (KB) (TVD) Total Depth: 4010.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair	Reference Elevations: 2971.00 ft (KB) 2963.00 ft (CF) KB to GR/CF: 8.00 ft	
Serial #: 6749 Outside	Capacity: 8000.00 psig Press@RunDepth: 25.53 psig @ 3989.00 ft (KB) Start Date: 2017.08.14 End Date: 2017.08.14 Last Calib.: 2017.08.14	

Start Time: 07:21:15 End Time: 13:51:00 Time On Btm: 2017.08.14 @ 09:51:00
 Time Off Btm: 2017.08.14 @ 12:07:30

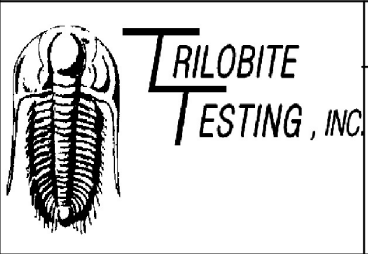
TEST COMMENT: IF:Built to weak surface blow
 IS:No return blow
 FF:No blow
 FS:No return blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1908.56	116.32	Initial Hydro-static
1	12.99	115.71	Open To Flow (1)
30	19.27	119.30	Shut-In(1)
60	967.15	120.16	End Shut-In(1)
61	20.56	119.79	Open To Flow (2)
90	25.53	122.31	Shut-In(2)
136	990.25	123.25	End Shut-In(2)
137	1870.34	122.54	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
10.00	mcw With oil spots 12 %m 88%w	0.14

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



DRILL STEM TEST REPORT

US Oil Resources LLC **35-13-29 Gove Co KS**

6727 W. Prentice Ave. **Briggs #14-A-35-1329**
 Lakewood Co. 80123
 Job Ticket: 63840 **DST#: 2**
 ATTN: Jim Musgrove Test Start: 2017.08.15 @ 04:05:15

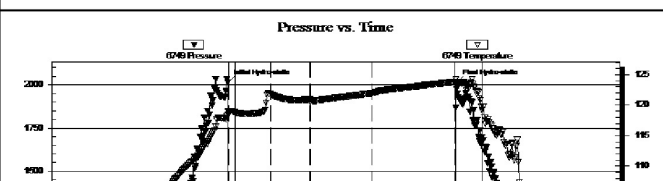
GENERAL INFORMATION:

Formation: **G-H**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:55:00
 Time Test Ended: 10:21:30
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Interval: **4053.00 ft (KB) To 4133.00 ft (KB) (TVD)**
 Total Depth: 4133.00 ft (KB) (TVD)
 Reference Elevations: 2971.00 ft (KB)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 8.00 ft

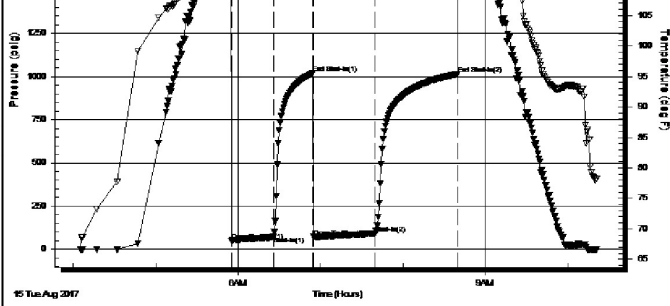
Serial #: 6749 Outside

Press@RunDepth: 90.88 psig @ 4128.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.15 End Date: 2017.08.15 Last Calib.: 2017.08.15
 Start Time: 04:05:15 End Time: 10:21:30 Time On Btm: 2017.08.15 @ 05:54:45
 Time Off Btm: 2017.08.15 @ 08:41:00

TEST COMMENT: IF:Built to 2 1/4" blow
 IS:No return blow
 FF:Built to 1/4" blow
 FS:No return blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2011.75	118.98	Initial Hydro-static
1	50.00	118.42	Open To Flow (1)
31	72.81	121.88	Shut-In(1)



60	1018.59	120.94	End Shut-In(1)
61	70.87	120.71	Open To Flow (2)
105	90.88	121.97	Shut-In(2)
166	1015.03	123.81	End Shut-In(2)
167	2013.70	123.81	Final Hydro-static

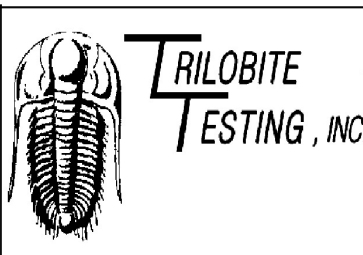
Recovery

Length (ft)	Description	Volume (bbl)
30.00	mcw with oil skim on top 30% m 70% w	0.42
64.00	w cm 16% w 84% m	0.90

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

US Oil Resources LLC
 6727 W Prentice Ave.
 Lakewood CO 80123
 ATTN: Jim Musgrove

35-13s-29w Gove,KS
Briggs #14A-35-1329
 Job Ticket: 63841 DST#: 3
 Test Start: 2017.08.16 @ 22:13:15

GENERAL INFORMATION:

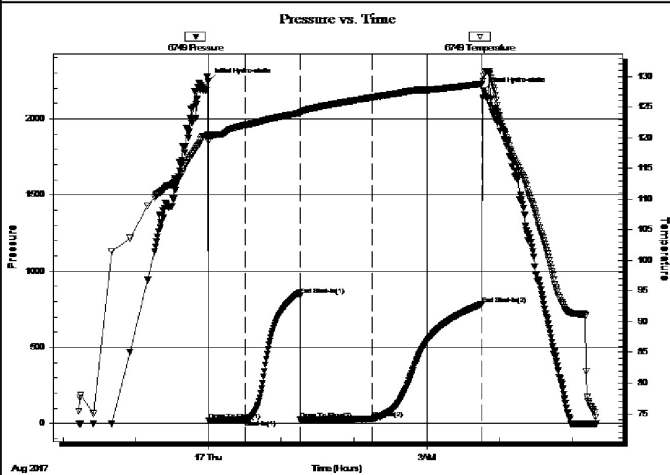
Formation: **Miss**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:00:00
 Time Test Ended: 05:20:30
 Interval: **4495.00 ft (KB) To 4535.00 ft (KB) (TVD)**
 Total Depth: 4535.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 2971.00 ft (KB)
 2963.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6749

Outside

Press@RunDepth: 25.04 psig @ 4530.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.08.16 End Date: 2017.08.17 Last Calib.: 2017.08.17
 Start Time: 22:13:15 End Time: 05:20:30 Time On Btm: 2017.08.16 @ 23:59:45
 Time Off Btm: 2017.08.17 @ 03:47:00

TEST COMMENT: IF: Built to 1" blow
 IS: No return blow
 FF: No blow
 FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2247.40	120.52	Initial Hydro-static
1	17.70	119.36	Open To Flow (1)
31	25.04	122.04	Shut-In(1)
76	839.27	124.04	End Shut-In(1)
76	25.50	123.83	Open To Flow (2)
136	30.78	126.56	Shut-In(2)
226	784.45	128.80	End Shut-In(2)
228	2185.79	130.13	Final Hydro-static

Recovery

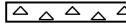







Gas Rates

Length (ft)	Description	Volume (bbl)
35.00	ocm 2% o 98% m	0.49

* Recovery from multiple tests

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

ROCK TYPES





 Cht	 Lmst fw<7	 shale, gry	 shale, red
 Dolprim	 shale, grn	 Carbon Sh	 Ss

OTHER SYMBOLS

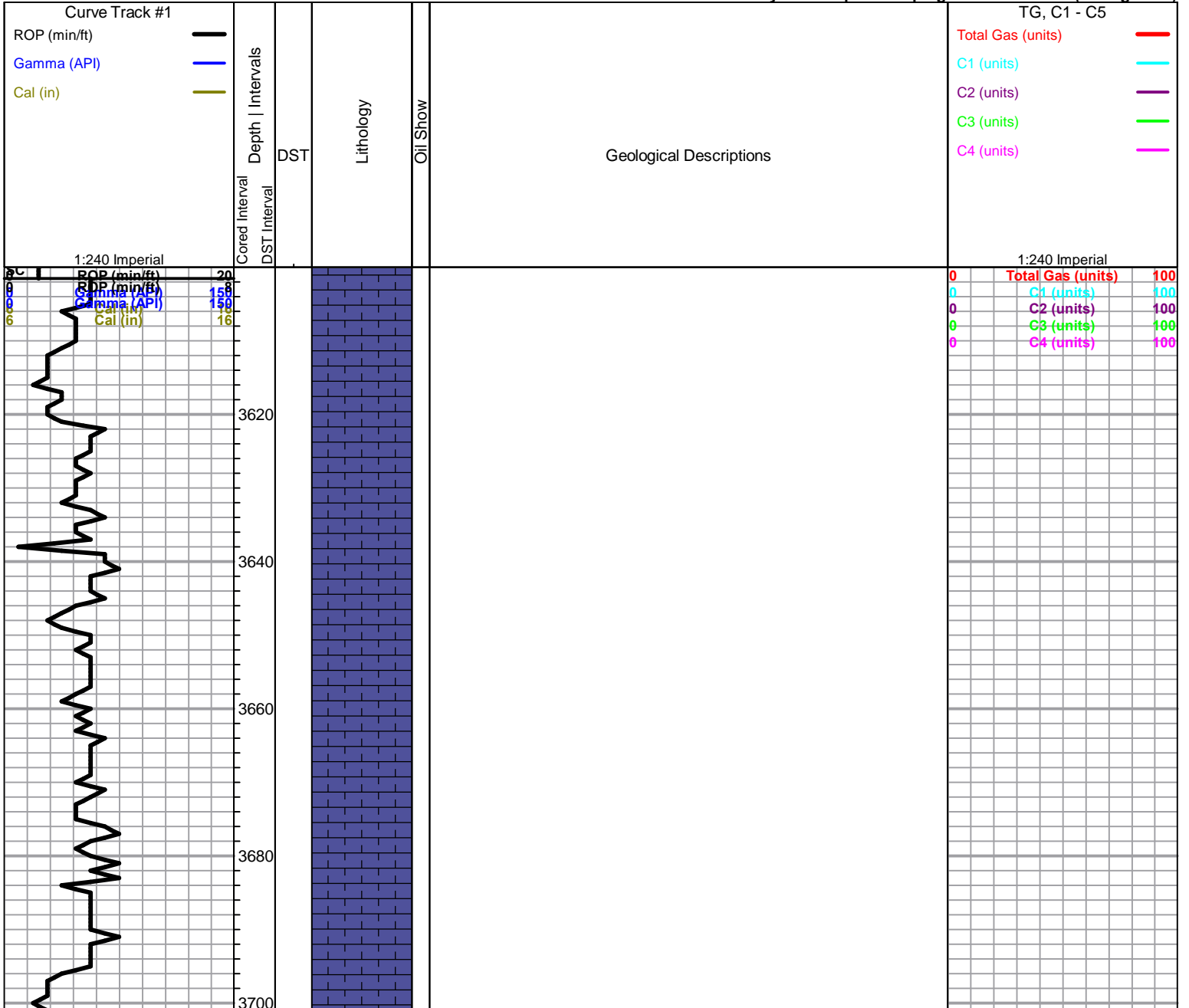
Oil Show

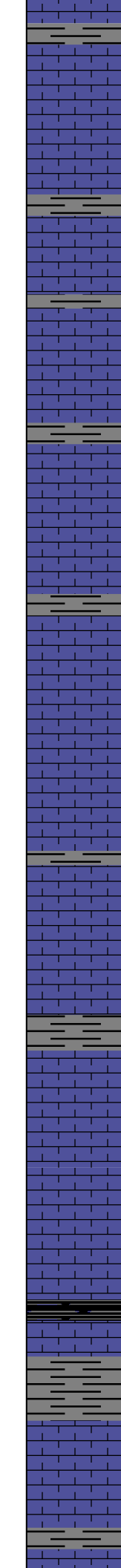
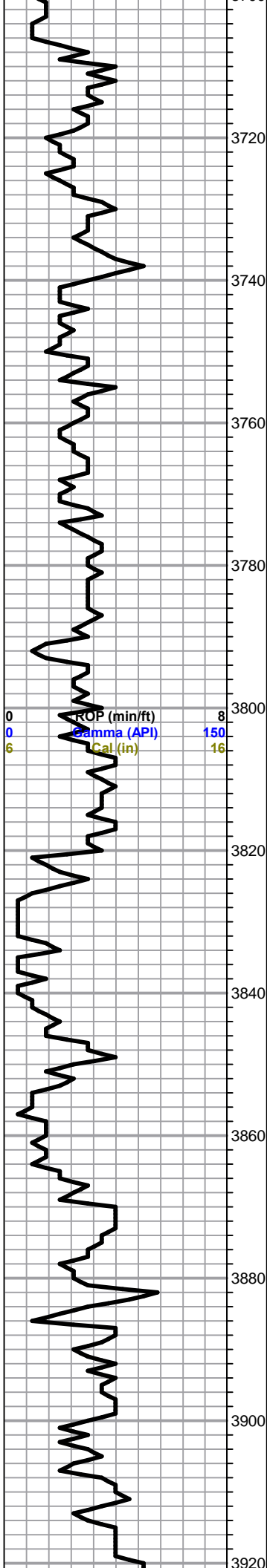
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- * Gas

DST

-  DST Int
-  DST alt
-  Core
-  tail pipe

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LS, tan, gry, slightly cherty, poor visible porosity, no shows

LS, white, fxl, suc. few dolomitic in pt no shows

LS, a/a, white, gry, fxl, chalky, LS, few white, fine vuggy type porosity, no shows

LS, a/a, chalky, cherty

ditto a/a, tr. tan, opaque cherts

LS, gry, foss/ool, chalky, oom, fair visible porosity, no shows, (vuggy/ few oom)

LS, a/a, chalky

Tr. gry cherts

Heebner 3883.0 (-1084.0)

Sh. black carb shale

Toronto 3904.0 (-1105.0)

LS, gry, white, fxl, chalky, in pt, cherty, white, tan, foss, opaque cherts

Lansing 3918.0 (-1119.0)

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

Lansing 3976.0 (-1175.0)

LS, gry, white, fxl, ool, tr. gry cherts

LS, gry, buff, fxl, finely ool, chalky, poor visible porosity, tr. gry, white, cherts

Sh, gry, greenish

LS, gry, tan, ool, dense, poorly developed porosity

○ LS, white, gry, fxl, foss, chalky, tr. brn stain, tr. fo, ft. odor

○ LS, white, gry, a/a, fair p.p. porosity, brn stain, tr. fo, ft/fair odor, tr. clear calcite inclusions

LS, tan, gry, ool, chalky, tr. gry, white, opaque cherts

LS, gry, white, ool, oom, scattered oom porosity, plus white, ool, opaque cherts.
tr. LS, white, & white, opaque, ool cherts

○ LS, gry, tan, ool, foss, poor/fair visible porosity, spty stain, tr. fo, odor in broken samples

LS, tan, cherty in pts (dense) no shows,

Muncie Creek 4065.0 (-1266.0)

Sh, black carb

○ LS, tan, fxl, scattered inxln porosity, chalky, poor stain, wk sfo, no odor

○ LS, tan, sub oom, chalky, poor golden brown stain, sfo, no odor

Tr. black carb sh

○ LS, white, fxl, fr-vuggy porsity, fair golden brown stain, scattered oom vuggy porosity, tr. fo, ??? odor

○ LS, tan, fxl, few med xln, foss, fair vuggy porosity, brn, dark brn stain, tr. fo, no odor

DST#1 3988-4010

30-60-90-130

1st Open:
Weak surface blow

2nd Open:
Dead

Recovery:
10' mud

Pressures:
ISIP 967 psi
FSIP 990 psi
IFP 12-19 psi
FFP 20-25 psi
HSH 1908-1870 psi

DST#2 4053-4133

30-30-45-60

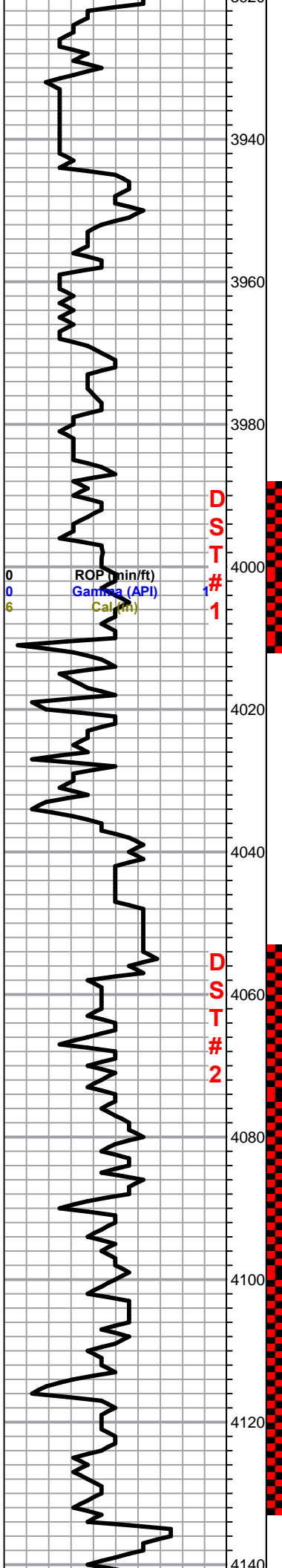
1st Open:
Weak build 2.5"

2nd Open:
Weak build 1/4"

Recovery:
30' MCW w/ oil skim
(30%M, 70%W)

64' WCM
(16%W, 84%M)

Pressures:
ISIP 1018 psi
FSIP 1015 psi
IFP 50-72 psi
FFP 70-90 psi
HSH 2011-2013 psi



D
S
T

1

D
S
T

2

ROP (min/ft)
Gamma (API)
Cal (ft)

LS, white, gry, foss, chalky, poor visible porosity, tr. gry/ brn, spotty stain, tr. fo, no odor

Stark 4158.0 (-1394.0)

Sh, black carb

LS, tan, finely foss, scattered porosity, fine vuggy p.p. porosity, brown stain, sfo, odor

Hushpuckney 4193.0 (-1394.0)

Sh, black carb

LS, gry, white, fxl, chalky, foss in pt, + white chalk

Base Kansas City 4219.0 (-1420.0)

Sh, black carb

LS, white, gry, sandy, + gry, soft sh, + gry, vfg, cal, sand & gry sandy sh.

Marmaton 4248.0 (-1449.0)

LS, gry, tan, chalky, few cherty, tr. brn stain, nsfo, no odor

Slug maroon, soft shale, tr. gry black shale

a/a

LS, white, gry, chalky, dense

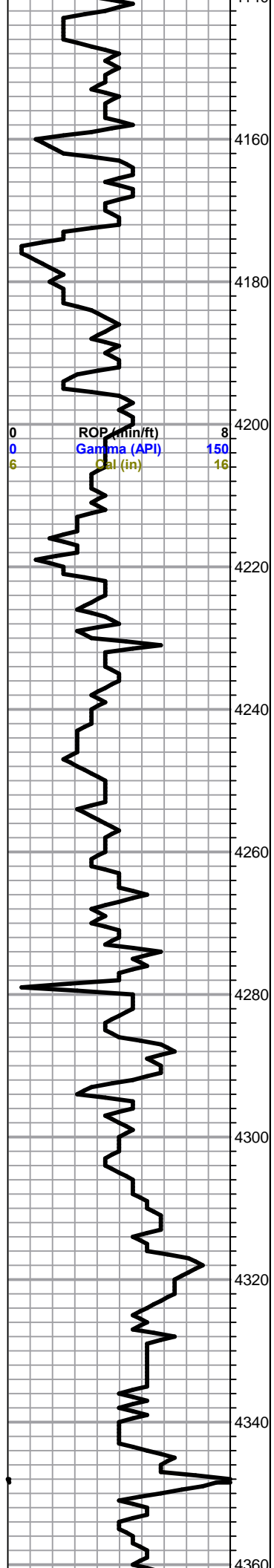
LS, tan, fxl, few med xln, foss, dense

Pawnee 4326.0 (-1529.0)

LS, gry, white, chalky, + gry chert, tr. orange chert

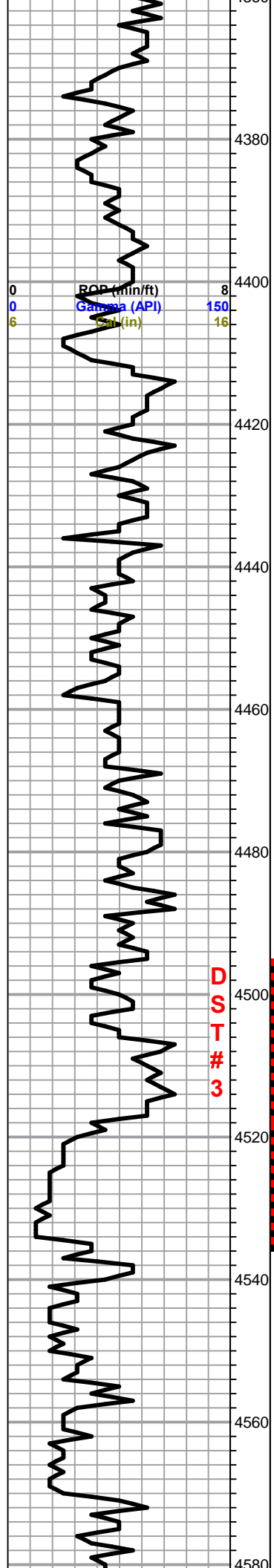
LS, brn, gry, fxl, gran. chalky, no shows

LS, gry, dk gry, argill., "shaley"



ROP (min/ft) 8
 Gamma (API) 150
 Cal (in) 16

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



Myrick Station (US Oil) 4370.0 (-1571.0)

Sh, black carb

Myrick Station 4375.0 (-1576.0)

LS, dk gry, brown, oom, brn stain, nsfo, no odor

LS, white, fxl, chalky in pts, no shows

Ft. Scott (US Oil) 4401.0 (-1602.0)

Slug black carb shale

Ft. Scott 4411.0 (-1612.0)

LS, white, cream, ool, chalky, poor visible porosity, tr. spty stain, nsfo, no odor

LS, tan, brown, dense, + gry, dk ool cherts

Cherokee Shale 4434.0 (-1635.0)

Sh, black carb

LS, tan, ool, slightly cherty, (dense)

Sh, black carb, gry

LS, tan, gry, chalky, no shows

Sh, black carb, tr. pyrite

LS, gry, tan, chalky-cherty in pts

LS, a/a, few ool, no shows

Sh, gry, green,
Tr. LS, gry, tan, tr. orange cherts

Sh, v.c. / v.c. chalky LS

Tr. sd. white, vfg, sub rounded, few glauc., cal. in pts, no shows

Mississippian 4517.0 (-1718.0)

Dol, tan, fxl, suc. cherty in pts, poor visible porosity, vuggy in pt, poor brn stain, tr. fo, no odor

Dol. a/a, increasing porsity, fair brn stain, sfo, no odor

Dol. tan, suc. slightly cherty, poorly developed, few vuggy porosity, brown stain, tr. fo, no odor

Dol white. oom, fxl, suc. poor visible porosity, no shows

Dol, white, fxl, suc. poor visible porosity, no shows

Warsaw 4571.0 (-1712.0)

LS, white, dolomitic, + white, gry, suc. dolomite, tr. white cherts

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

DST#3 4495-4535

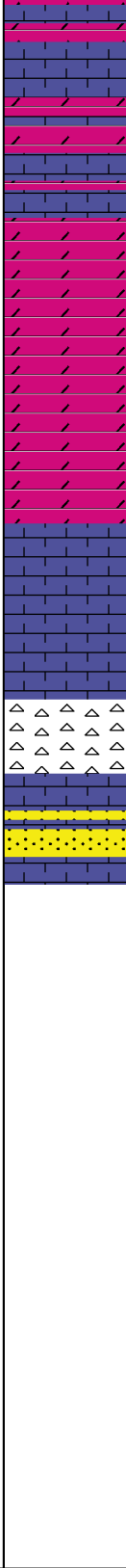
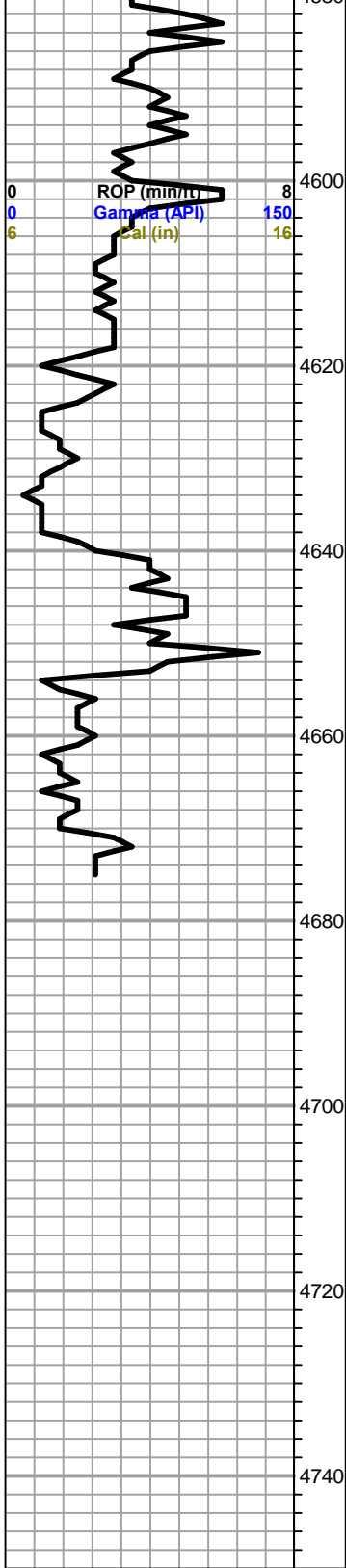
30-45-60-90

1st Open:
Weak 1" build

2nd Open:
No blow

Recovery:
35' OCM
(2%O, 98%M)

Pressures:
ISIP 839 psi
FSIP 784 psi
IFP 17-25 psi
FFP 25-30 psi
HSH 2247-2185 psi



white cherts

LS, gry, foss, chalky in pts, tr. white chert

LS, gry, foss, dolomitic in pts, no shows
Tr. gry, boney foss, opaque cherts

Slug white, boney cherts, + white, gry, foss, cherts

Dol. cream, white, suc. few chalky clusters

LS, gry, highly ool,
LS, tan, fxl, chalky, cherty (dense) no shows

Chert, white, gry, trans, opaque

Tr. sd. white, clean vfg, friable in pt, no shows

RTD 4675.0 (-1876.0)

LTD 4672.0 (-1873.0)

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