

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: Verna #1-26
 Location: Sec. 26 - T1S - R36W
 API: 15-153-21094-0000
 Pool:
 State: Kansas
 Field: wildcat
 Country: USA



Scale 1:240 Imperial

Well Name: Verna #1-26
 Surface Location: Sec. 26 - T1S - R36W
 Bottom Location:
 API: 15-153-21094-0000
 License Number: 30606
 Spud Date: 1/13/2015
 Region: Rawlins County
 Drilling Completed: 1/20/2015
 Surface Coordinates: 2310' FSL & 2310' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 3299.00ft
 K.B. Elevation: 3304.00ft
 Logged Interval: 3580.00ft
 Total Depth: 4620.00ft
 Formation: Marmaton
 Drilling Fluid Type: Chemical/Fresh Water Gel

Time: 10:30 PM
 Time: 4:55 AM
 To: 4620.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 Latitude:
 N/S Co-ord: 2310' FSL
 E/W Co-ord: 2310' 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: 1/13/2015
 TD Date: 1/20/2015
 Rig Release:

Time: 10:30 PM
 Time: 4:55 AM
 Time:

ELEVATIONS

K.B. Elevation: 3304.00ft
K.B. to Ground: 5.00ft

Ground Elevation: 3299.00ft

NOTES

Due to negative drill stem testing and electrical log analysis, it was determined by the operator that the Verna #1-26 be 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
01/16/2015	3547	Geologist Keith Reavis on location @ 0130 hrs, 3484 ft, drilling ahead, bit trip @ 3547 ft., resume drilling @ 0730 hrs with button bit, Neva, Red Eagle, Foraker, Stotler
01/17/2015	4139	drilling ahead, Topeka, Oread, Lansing, shows in A and D warrant DST, short trip, TOH for DST #1
01/18/2015	4313	conduct and complete DST #1, successful test, TIH w/bit, resume drilling, show in G warrants test, TOH w/bit, conducting DST #2
01/19/2015	4413	complete DST #2, successful test, TIH w/bit, resume drilling, show in J warrants test, TOH for DST #3 (J & K), conduct and complete DST #3, successful test, TIH w/bit
01/20/2015	4620	resume drilling, rathole to TD, TD @ 0455 hrs, ctch, TOH for logs, conducting and complete logging operations, geologist off location @1430 hrs

Murfin Drilling Company well comparison sheet

DRILLING WELL					COMPARISON WELL			
Verna #1-26 2310' FSL & 2310' FEL Sec 26-T1S-R36W					Berexco - Lillie #1-26 330' FNL & 420' FWL Sec 26-T1S-R36W			
3304 KB					3264 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log
Neva	3694	-390	3693	-389	3648	-384	-6	-5
Red Eagle	3760	-456	3756	-452	3709	-445	-11	-7
Foraker	3804	-500	3803	-499	3756	-492	-8	-7
Stotler	3955	-651	3952	-648	3908	-644	-7	-4
Topeka	4025	-721	4016	-712	3974	-710	-11	-2
Oread	4143	-839	4140	-836	4087	-823	-16	-13
Lansing	4241	-937	4237	-933	4190	-926	-11	-7
Lansing G	4359	-1055	4354	-1050	4305	-1041	-14	-9
Stark	4465	-1161	4456	-1152	4408	-1144	-17	-8
Base KC	4511	-1207	4506	-1202	4458	-1194	-13	-8
Total Depth	4620	-1316	4617	-1313	4533	-1269	-47	-44

Drill Stem Test #1

	DRILL STEM TEST REPORT
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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water STE 300
Wichita, KS 67202
ATTN: Keith Reavis

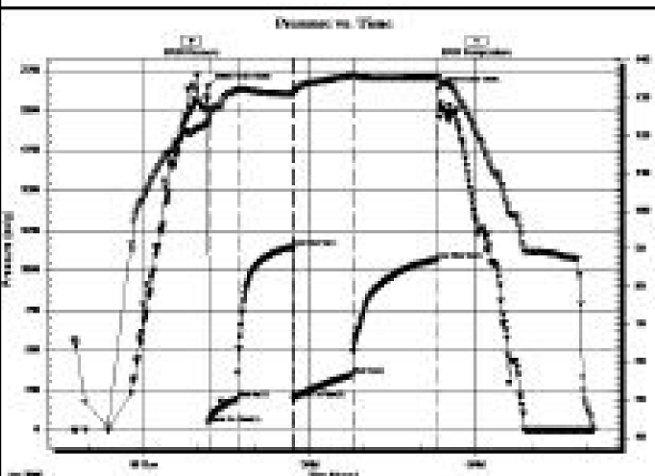
28/1c/38w Rawlins K3
Verna #1-28
Job Ticket: 60848 DST#: 1
Test Start: 2015.01.17 @ 22:45:05

GENERAL INFORMATION:

Formation: LKC "A - D"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:10:30
Time Test Ended: 08:08:00
Test Type: Conventional Bottom Hole (Initial)
Tester: James Winder
Unit No: 83
Interval: 4174.00 ft (KB) To 4313.00 ft (KB) (TVD)
Reference Elevations: 3304.00 ft (KB)
Total Depth: 4313.00 ft (KB) (TVD) 3299.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8781 Inside
Press@RunDepth: 344.32 psig @ 4175.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.01.17 End Date: 2015.01.18 Last Calib.: 2015.01.18
Start Time: 22:45:05 End Time: 08:08:00 Time On Btm: 2015.01.18 @ 01:10:15
Time Off Btm: 2015.01.18 @ 05:18:59

TEST COMMENT: 30 - F: Surging blow built to BOB (11") at 11 min. (Diesel in bucket)
60 - B: No blow back
80 - FF: Blow built to BOB at 13:34 min.
90 - FS: Blow back built to 1G"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2145.43	123.52	Initial Hydro-static
1	39.45	122.51	Open To Flow (1)
32	194.31	132.13	Shut-in (1)
92	1148.45	131.18	End Shut-in (1)
93	197.93	131.13	Open To Flow (2)
157	344.32	135.91	Shut-in (2)
248	1068.18	135.59	End Shut-in (2)
249	2130.09	134.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
188.00	MCN w/trace oil 68%w, 32%w	0.91
382.00	80MCM 64%w, 27%w, 7%g, 2%o	5.38
125.00	80CM 62%w, 7%o, 1%g	1.75
5.00	8MCO 91%o, 4%w, 5%g	0.07

Gas Rates

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

Drill Stem Test #2



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water STE 300
Wichita, KS 67202
ATTN: Keith Reavis

28/1c/38w Rawlins K3
Verna #1-28
Job Ticket: 60847 DST#: 2
Test Start: 2015.01.18 @ 17:37:00

GENERAL INFORMATION:

Formation: LKC "G"
Deviated: No Whipstock: ft (KB)
Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 19:42:30
 Time Test Ended: 01:07:45

Tester: James Winder
 Unit No: 83

Interval: 4314.00 ft (KB) To 4375.00 ft (KB) (TVD)
 Total Depth: 4375.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3304.00 ft (KB)
 3299.00 ft (CF)
 KB to GRVCF: 5.00 ft

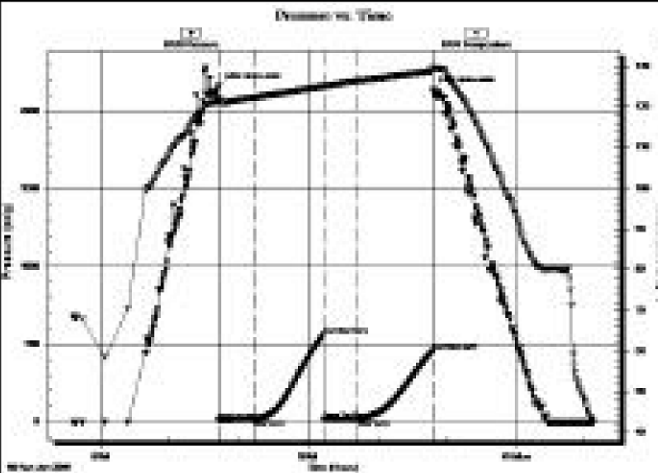
Serial #: 8781

Inside

Press@RunDepth: 19.89 psig @ 4315.00 ft (KB)
 Start Date: 2015.01.18 End Date: 2015.01.19
 Start Time: 17:37:05 End Time: 01:07:44

Capacity: 8000.00 psig
 Last Calib.: 2015.01.19
 Time On Btm: 2015.01.18 @ 19:42:15
 Time Off Btm: 2015.01.18 @ 22:48:15

TEST COMMENT: 30 - F: 1/4" Blow at open, built to 1/2", died back, dead at 22 min. (Diesel in bucket)
 60 - Bl: No blow
 30 - FF: No blow
 60 - FSI: No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2150.48	122.37	Initial Hydro-static
1	13.13	121.31	Open To Flow (1)
31	16.80	122.25	Shut-in (1)
91	590.23	125.03	End Shut-in (1)
92	17.78	124.80	Open To Flow (2)
121	19.89	126.38	Shut-in (2)
188	453.31	128.80	End Shut-in (2)
188	2138.28	129.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w trace of oil 100%km	0.02

* Recovery from multiple tests

Gas Rates

	Core (inches)	Pressure (psig)	Gas Rate (bbl/d)
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Drill Stem Test #3



DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

28 1/2" x 38w Rawlins KS

250 N. Water STE 300
 Wichita, KS 67202

Verna #1-28

Job Ticket: 60848 DST#: 3

ATTN: Keith Reavis

Test Start: 2015.01.19 @ 15:43:00

GENERAL INFORMATION:

Formation: LKC "J - R"
 Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 17:39:15

Tester: James Winder

Time Test Ended: 22:38:15

Unit No: 83

Interval: 4413.00 ft (KB) To 4499.00 ft (KB) (TVD)
 Total Depth: 4499.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3304.00 ft (KB)
 3299.00 ft (CF)
 KB to GRVCF: 5.00 ft

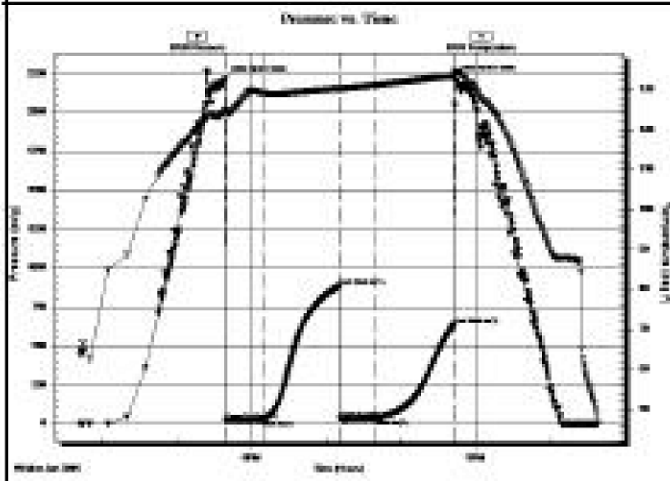
Serial #: 8781

Inside

Press@RunDepth: 32.01 psig @ 4414.00 ft (KB)
 Start Date: 2015.01.19 End Date: 2015.01.19
 Start Time: 15:43:05 End Time: 22:38:14

Capacity: 8000.00 psig
 Last Calib.: 2015.01.19
 Time On Btm: 2015.01.19 @ 17:38:45
 Time Off Btm: 2015.01.19 @ 20:43:15

TEST COMMENT: 30 - IP: 14" Blow at open, built to 1 1/2" (Diesel in bucket)
 80 - IS: No blow back
 30 - FF: No blow
 80 - FS: No blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2213.23	134.61	Initial Hydro-static
1	15.80	134.44	Open To Flow (1)
31	23.28	130.03	Shut-in (1)
92	882.65	130.18	End Shut-in (1)
93	27.85	130.90	Open To Flow (2)
122	32.01	130.99	Shut-in (2)
184	828.11	193.31	End Shut-in (2)
185	2219.71	134.60	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
40.00	OCM 85%lm, 10%a, 5%g	0.20
2.00	Free Oil 100%	0.01

* Recovery from multiple tests

Gas Rates			
	Flow (mcf/d)	Pressure (psig)	Gas Rate (mcf/d)

ROCK TYPES

Dolsec	Lmst fw>7	shale, gry	Ss
Lmst fw<7	shale, grn	shale, red	Sltst

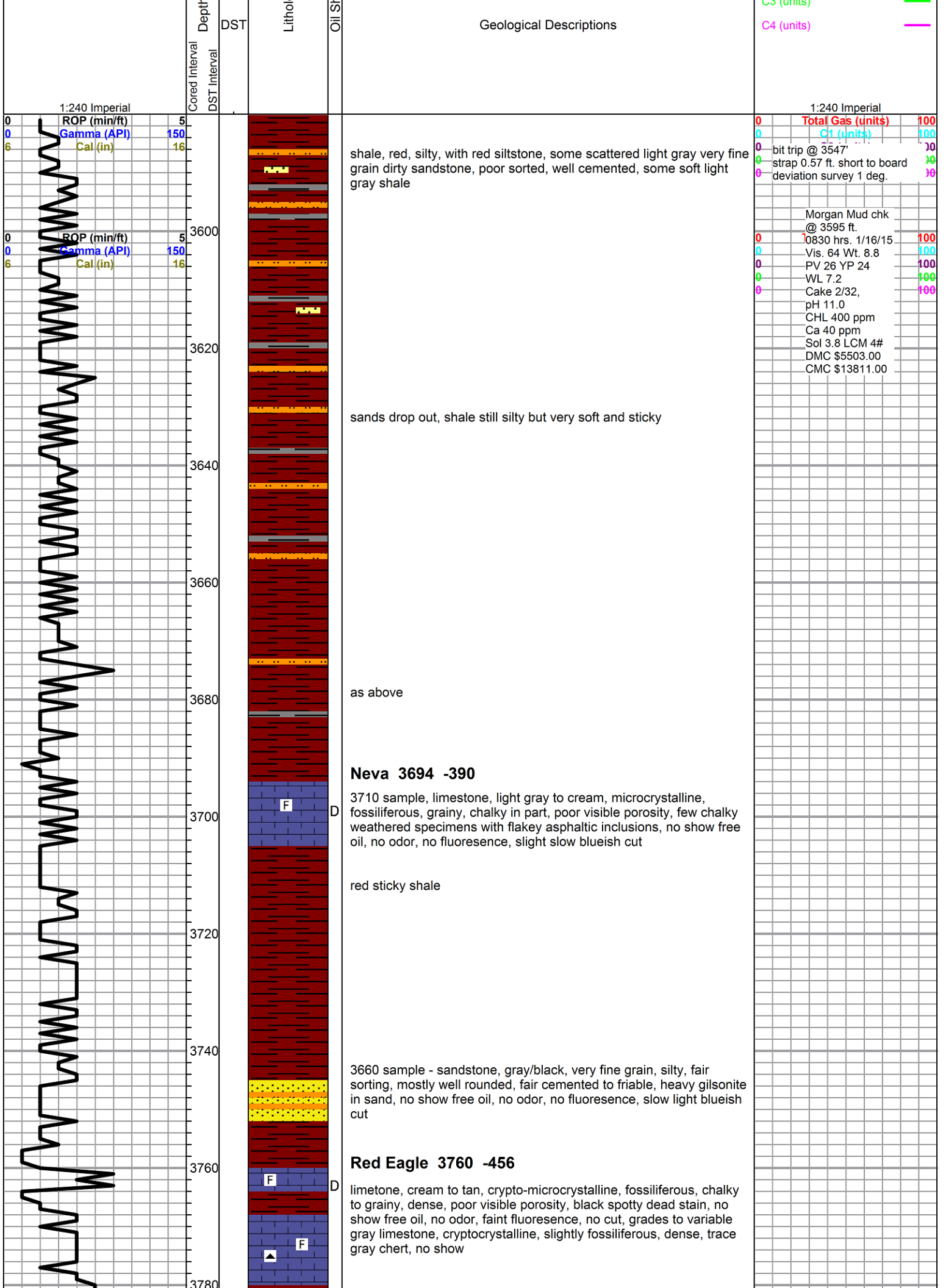
ACCESSORIES

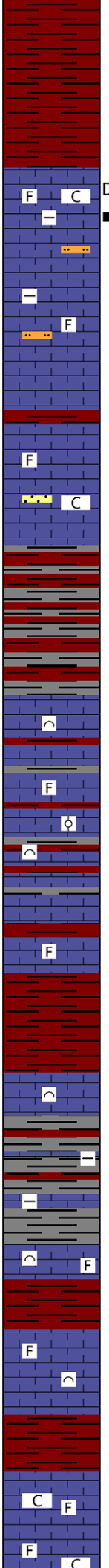
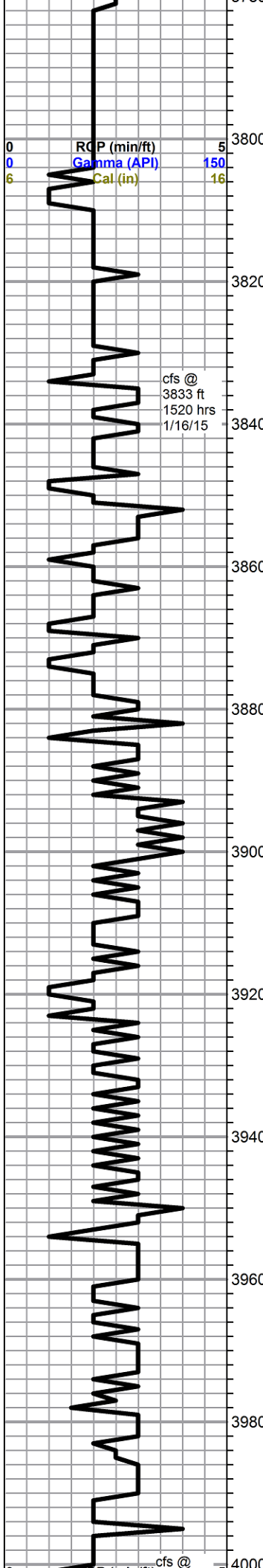
MINERAL - Argillaceous ⊥ Calcareous ▲ Chert, dark • Silty ■ Argillaceous/Shale	FOSSIL ∩ Bioclastic or Fragments F Fossils < 20% φ Oolite ⚡ Pellets	STRINGER ● Sandstone ■ Siltstone	TEXTURE C Chalky L Lithogr
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OTHER SYMBOLS

MISC Daily Report Digital Photo Document Folder Link Vertical Log File Horizontal Log File Core Log File Drill Cuttings Rpt	Oil Show ● Good Show ● Fair Show ● Poor Show ○ Spotted or Trace ○ Questionable Strn D Dead Oil Stn ■ Fluorescence * Gas	DST DST Int DST alt Core tail pipe
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Curve Track #1		Intervals	log	now	TG, C1 - C5			
ROP (min/ft)	—				Total Gas (units)	—	C1 (units)	—
Gamma (API)	—	C3 (units)	—					
Cal (in)	---							





Foraker 3804 -500

limestone, white to cream and gray, microcrystalline, argillaceous to chalky and grainy, spotty to fair black stain, poor visible porosity, no show free oil, no odor, light fluorescence, fair to good milky cut, abundant chalk

grades to darker gray limestones, dense, fossiliferous, some argillaceous, marked decrease in staining from above, some scattered siltstone, gray, abundant gilsonite, no show free oil or odor, poor fluorescence, slight cut, chalk falling out

30 min sample, influx tan grainy bioclastic limestone, dense, no shows

limestone, mixed gray to cream, microcrystalline, fossiliferous, mostly dense, moderate chalk, no shows, trace dirty quartz sandstone

soft gray shale and red soft clayey shale, some silty

limestone, light gray to cream, microcrystalline, bioclastic, oolitic, fossiliferous, chalky in part, grainy, poor visible porosity, no show

limestone, light gray, some white, cream and dark gray, mostly cryptocrystalline, fossiliferous, arenaceous, dense, no shows, abundant red shales

3930 sample, flood red sticky shale

3940 sample, limestone, cream, microcrystalline, bioclastic, slightly chalky, poor visible porosity, no shows

3950 and 60 sample, shale, gray, silty, with red shale, some gray micaceous siltstone, variable gray argillaceous limestones, no show

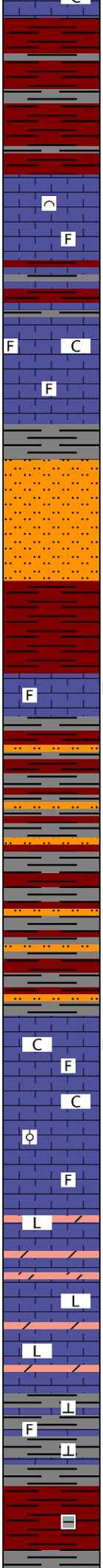
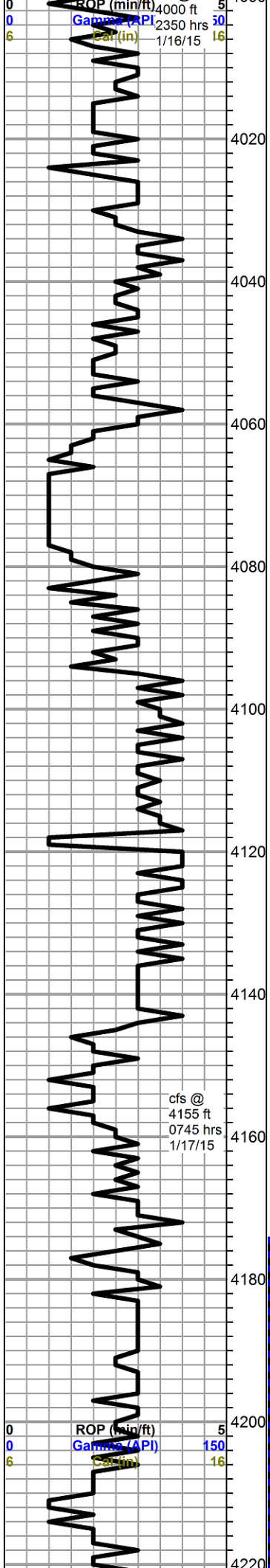
Stotler 3955 -651

limestone, cream to light gray, some reddish cast, mostly cryptocrystalline, some secondary calcite seams, bioclastic to fossiliferous, trace gray pelletal, poor visible porosity, no shows, poor fluorescence

3990 sample, flood red sticky shale

limestone, cream, cryptocrystalline, fossiliferous, chalky in part, poor visible porosity, no shows, abundant chalk

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



Topeka 4025 -721

limestone, cream to light gray to gray/green, micocrystalline, bioclastic to fossiliferous, sandy in part, chalky in part, poor visible porosity, no shows

limestone, white to pale green and cream, mostly cryptocrystalline, fossiliferous, fairly dense, poor visible porosity, no shows, some chalk

soft pink to orange clay, silt loaded, with abundant silt grains in bottom of tray, no shows or odor

4100 sample - limestone, white to light gray, micro-cryptocrystalline, fossiliferous, poor visible porosity, some weathered and friable with heavy to spotty gilsonitic staining, no show free oil, no odor, fair fluorescence, no cut

grades to shale, red and gray, with light brown to maroon very silty dense shale to siltstone

Oread 4143 -839

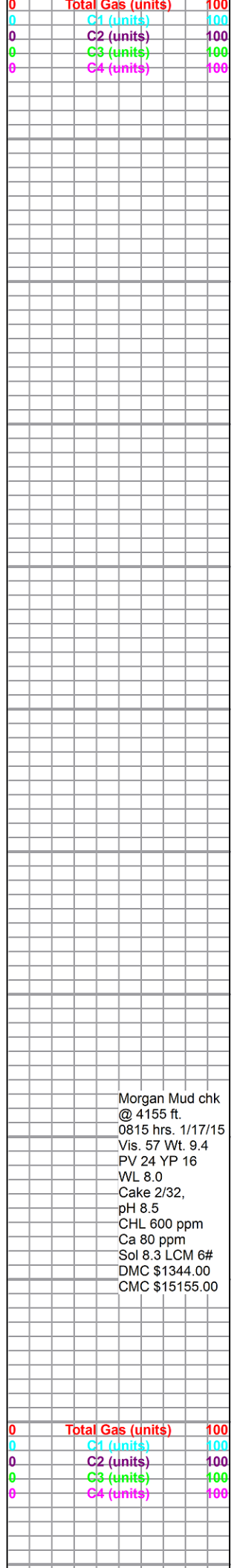
limestone, white to light gray, micro and cryptocrystalline, fossiliferous, dense to chalky, poor visible porosity, flood chalk in samples, found only 2 specimens with dead black spotty staining, no show free oil, no odor, fair mineral fluorescence, no cut

limestone, cream to light gray, mostly cryptocrystalline, fossiliferous, some oolitic, dense, poor visible porosity, no shows

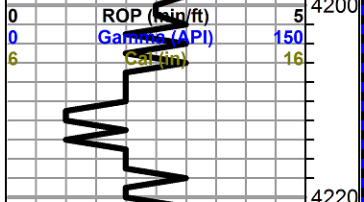
limestone, gray, cryptocrystalline, dolomitic in part, lithographic, dense, no shows

gray limey shales with light to dark gray cryptocrystalline limestone, some cream fossiliferous limestone stringers

shales, brick red, gray, brown, some argillaceous



Morgan Mud chk
 @ 4155 ft.
 0815 hrs. 1/17/15
 Vis. 57 Wt. 9.4
 PV 24 YP 16
 WL 8.0
 Cake 2/32,
 pH 8.5
 CHL 600 ppm
 Ca 80 ppm
 Sol 8.3 LCM 6#
 DMC \$1344.00
 CMC \$15155.00



flood gray soft muddy shale, silty

grades to red shale, silty, some mixed limestone stringers, some with large clasts, no shows

Lansing 4241 -937 (log 4237 -933)

4250 limestone, cream, re-crystallized oolitic to fossiliferous, slighty grainy to smooth, fairly dense, poor visible porosity, no staining, no odor, good streaming sheen and some light oil droplets, some gassy on break, fair fluorensence, fair milky cut with instant halo

grades to gray dense limestone, cryptocrytalline, mostly lithographic, some fossiliferous, moderate chalk, no shows

limestone, mixed gray fossiliferous to lithographic, no shows

flood red shale, with some limestone as above

limestone, white to light gray, microcrystalline, bioclastic to fossiliferous, chalky, pyritic and weathered in part, some scattered fair vugs and interclast porosity, spotty to fair interclast staining, slightly gassy, fair show free oil, heavy, no odor, faint fluorensence, excellent cut, moderate chalk in samples - 30 min sample, decrease in show, slight increase in chalk

limestone, light gray, microcrystalline, fossiliferous, some secondary calcite, poor visible porosity, no shows

shale, brick red, red, mixed grays, silty

limestone, light gray, cryptocrytalline, fossiliferous to sub-oomoldic, small specimens vuggy, staining in vugs with show of heavy oil, just a few pieces, grades to limestone, white to light gray, chalky fossiliferous, some surface etching with light brown/black stain, pin-point porosity, some fractures, some bleeding oil, most specimens with oil on break, no odor, fair even fluorensence, good to excellent cut

red, gray and green shales

limestone, gray to light gray, microcrystalline, fossiliferous, secondary calcite, some weathered to very chalky, poor visible porosity, flood chalk in samples, no shows

limestone a.a.

shales, mostly red, silty, siltstone, brown to gray, some pyrite

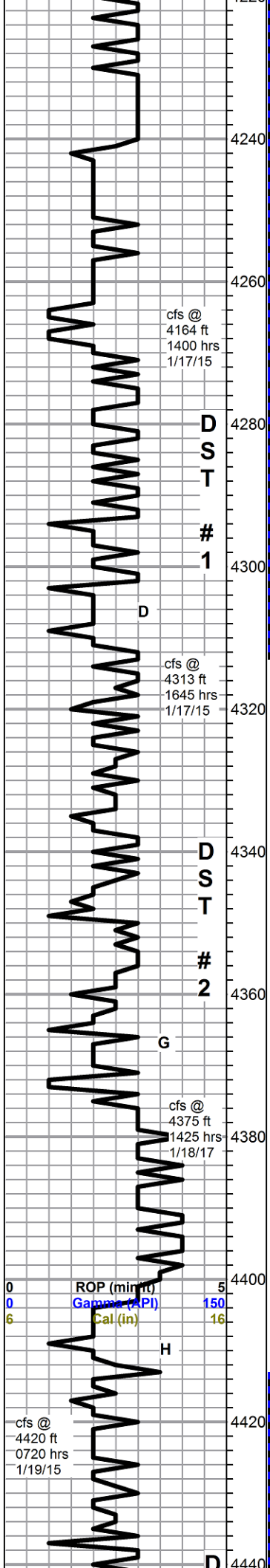
Murfin Verna 1-26 dst 1....

Morgan Mud chk @ 4313 ft. 0800 hrs. 1/18/15 Vis. 53 Wt. 9.4 PV 18 YP 14 WL 8.0 Cake 2/32, pH 9.5 CHL 900 ppm Ca 80 ppm Sol 7.9 LCM 6# DMC \$1380.00 CMC \$16535.00

Murfin Verna 1-26 dst 2....

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

Morgan Mud chk @ 4420 ft. 0815 hrs. 1/19/15 Vis. 56 Wt. 9.1 PV 24 YP 18 WL 7.2 Cake 2/32, pH 10.0 CHL 1000 ppm Ca 50 ppm



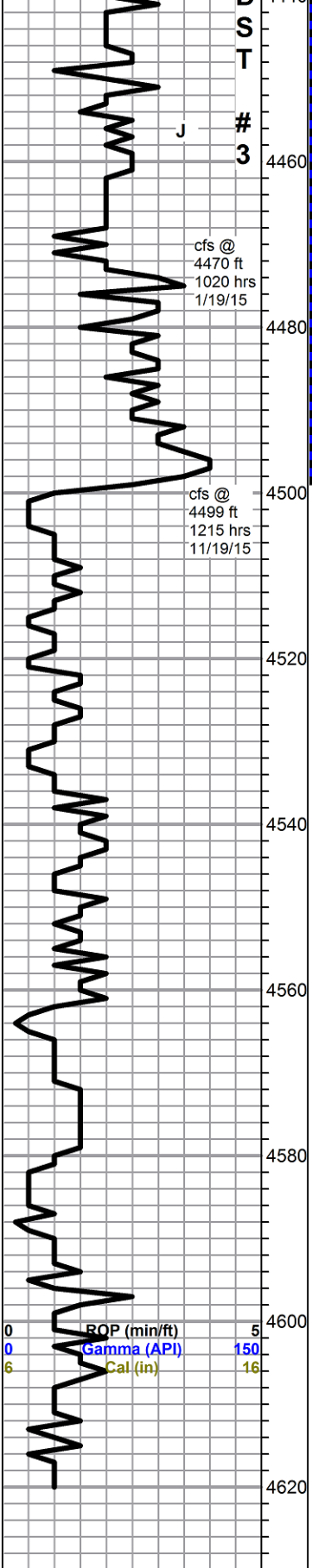
cfs @ 4164 ft 1400 hrs 1/17/15

cfs @ 4313 ft 1645 hrs 1/17/15

cfs @ 4375 ft 1425 hrs 1/18/17

ROP (min ft) 5
Gamma (API) 150
Cal (in) 16

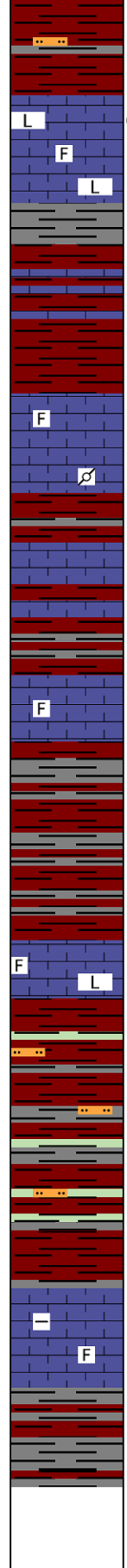
cfs @ 4420 ft 0720 hrs 1/19/15



cfs @
 4470 ft
 1020 hrs
 1/19/15

cfs @
 4499 ft
 1215 hrs
 11/19/15

0 ROP (min/ft) 5
 0 Gamma (API) 150
 6 Cal (in) 16



limestone, white to cream and pale green, cryptocrystalline, mostly smooth lithographic, some slighty fossiliferous, some scattered small solution vugs and etching, spotty black stain, fair sheen, one specimen good show gassy free oil on break, no odor, poor fluorescence, poor to excellent cut

Stark Shale 4465 -1161 (log 4456 -1152)

brown gritty silty shale
 mostly red shales, with some limestone, white to gray and pale green, fossiliferous to lithographic

limestone, white to light gray to gray/green, microcrystalline, fossiliferous, chalky in part, poor visible porosity, no shows, some scattered gray pelletal, dark gray peloids, dense, no shows, some chalk in samples

Base KC 4511 -1207 (log 4506 -1202)

red gray and maroon shales
 limestone, white to light gray, fossiliferous, chalky, brittle, poor visible porosity, no shows
 shales as above, some sticky

limetone, light gray, cryptocrystalline, lithographic to fossiliferous, poor visible porosity, no shows
 mixed shales, abundant brick red and green, heavy red wash, some variable siltstones

limestone, gray, cryptocrystalline, slightly fossiliferous, arenaceous to argillaceous, with some argillaceous limey shale, no shows

influx shales, abundant sticky gray

Rotary TD @ 4620 ft. 0455 hrs 1/20/15
Pioneer Wireline TD 4617 ft.
Complete Logging Operations 1400 hrs 1/20/15

Murfin Verna 1-26 dst 3....

back in hole after DST
 with PDC bit

Morgan Mud chk
 @ 4420 ft.
 0815 hrs. 1/20/15
 no sample taken
 on bank for logs
 DMC \$744.00
 CMC \$19853.00

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