



Musgrove

PETROLEUM CORPORATION
Clafin, Kansas

NOTES

Company: Palmer Oil, Inc.

Lease: Linda 21-2

Field: Cutter South

Location: NW-SE-SE-SW (335' FSL & 2305' FWL)

Sec: 21 Twsp: 31S Rge: 35W

County: Stevens State: Kansas

KB: 3016' GL: 3003'

API #: 15-189-22820-00-00

Contractor: Duke Drilling Inc. (Rig #9)

Spud: 11/05/2013 Comp: 11/16/2013

RTD: 6400' LTD: 6403'

Mud Up: 4400' Type Mud: Chemical

Samples Saved From: 4500' to RTD

Drilling Time Kept From: 4000' to RTD

Samples Examined From: 4500' to RTD

Geological Supervision from: 4500' to RTD

Geologist on Well: Wyatt Urban

Surface Casing: 8 5/8@ 1756'

Electronic Surveys: Logged by Pioneer Energy Services, DIL, CNL/CDL, MEL

Palmer Oil

well comparison sheet

Formation	DRILLING WELL				COMPARISON WELL				COMPARISON WELL			
	Linda 21-2				Palmer Oil- Lola 21-4				EOG Resources-Cullision 28 #1			
	NW-SE-SE-SW				SW-NW-SE-SE				N2-S2-NE-NW			
21-31S-35W				21-31S-35W				28-31S-35W				
3016 KB				3011 KB				3020 KB				
Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Structural Relationship		Log	Sub-Sea	Structural Relationship		
						Sample	Log			Sample	Log	
Heebner	4097	-1081			4101	-1090	9					
B. Heebner	4103	-1087			4108	-1097	10		4123	-1103	16	
Lansing	4215	-1199			4209	-1198	-1		4236	-1216	17	
Marmaton	4909	-1893	4913	-1897	4898	-1887	-6	-10	4914	-1894	1	-3
Cherokee	5084	-2068	5088	-2072	5082	-2071	3	-1	5098	-2078	10	
Atoka	5388	-2372	5396	-2380	5396	-2385	13	5				
Morrow	5494	-2478	5515	-2499	5506	-2495	-4	-4	5513	-2493	17	-6
Chester	5812	-2796	5822	-2806	5803	-2792	-4	-14				
Chester Sand	6005	-2989	6009	-2993	6015	-3004	15	11				
St. Gen	6055	-3039	6062	-3046	6049	-3038	-1	-8	6043	-3023	-16	-23
St. Louis	6148	-3132	6156	-3140	6136	-3125	-7	-15				
RTD	6400	-3384	6400	-3384	6400	-3389	5	5	6300	-3280	-104	-104
LTD	6403	-3387	6403	-3387	6362	-3351	-36	-36				

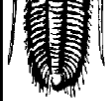


TRILOBITE TESTING

DRILL STEM TEST REPORT

Palmer Oil, Inc.

21-31s-35W Stevens Co.



TESTING, INC.

3118 N Cummings RD PO Box 399 Garden City, KS 67846

ATTN: Wyatt Urban

Linda #21-2

Job Ticket: 54749

DST#: 1

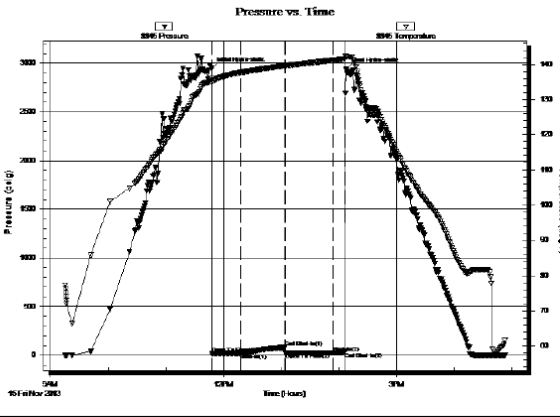
Test Start: 2013.11.15 @ 09:15:00

GENERAL INFORMATION:

Formation: **Chester Sand**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 11:47:45 Tester: Sam Esparza
 Time Test Ended: 16:52:45 Unit No: 64
 Interval: **5973.00 ft (KB) To 6015.00 ft (KB) (TVD)** Reference Elevations: 3016.00 ft (KB)
 Total Depth: 6015.00 ft (KB) (TVD) 3003.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

Serial #: 8845 Outside
 Press@RunDepth: 23.18 psig @ 5974.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.11.15 End Date: 2013.11.15 Last Calib.: 2013.11.01
 Start Time: 09:15:05 End Time: 16:52:44 Time On Btm: 2013.11.15 @ 11:47:30
 Time Off Btm: 2013.11.15 @ 14:07:30

TEST COMMENT: F: 1/2" Blow .
 IS: No Return.
 FF: No Blow .
 FS: No Return.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2945.41	135.97	Initial Hydro-static
1	19.79	134.82	Open To Flow (1)
31	19.83	137.69	Shut-in(1)
77	77.87	139.57	End Shut-in(1)
77	21.44	139.55	Open To Flow (2)
126	23.18	141.12	Shut-in(2)
139	33.85	141.50	End Shut-in(2)
140	2934.21	142.23	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)	

ROCK TYPES

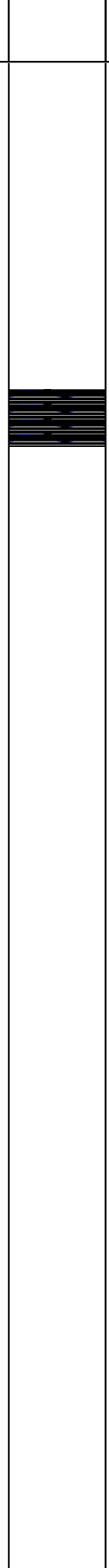
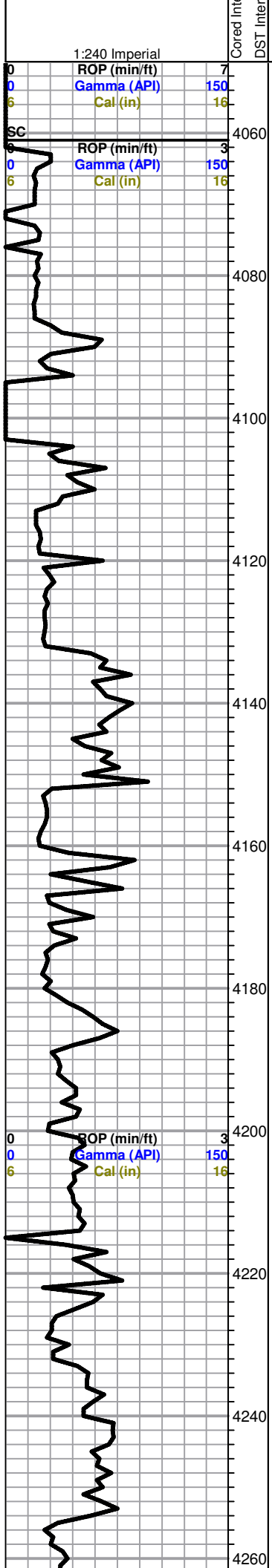
- Lmst fw<7
- shale, gry
- Ss
- Lmst fw7>
- Carbon Sh

OTHER SYMBOLS

- Good Show
- DST Int
- Fair Show
- DST alt
- Poor Show
- Core
- Spotted or Trace
- tail pipe
- Questionable Stn
- Fluorescence
- * Gas

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

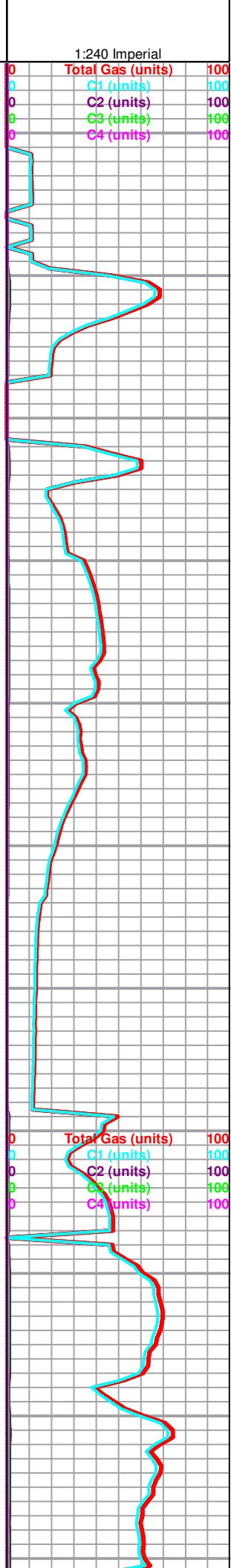
Curve Track #1	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions
ROP (min/ft)	Interval val	DST	Lithology	Oil Show	TG, C1 - C5
Gamma (API)					Total Gas (units)
Cal (in)					C1 (units)
					C2 (units)
					C3 (units)
					C4 (units)

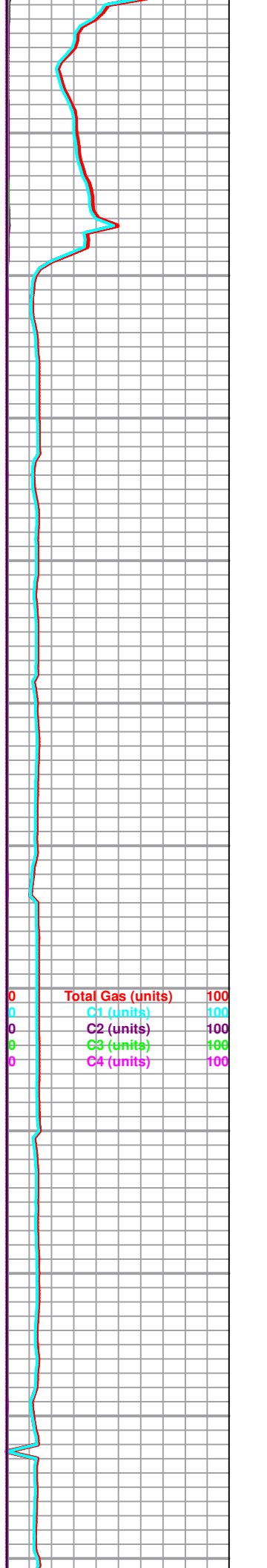
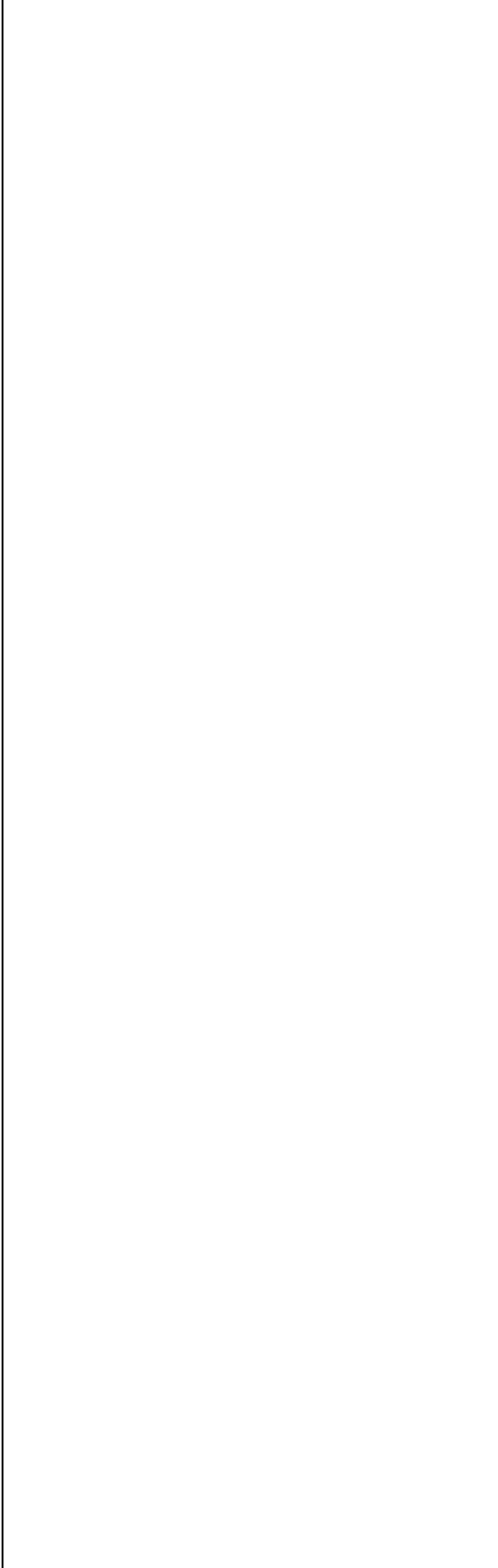
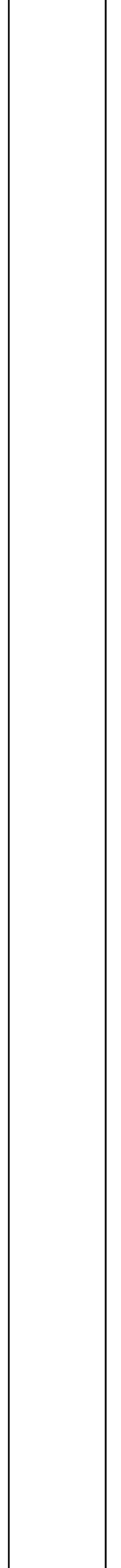
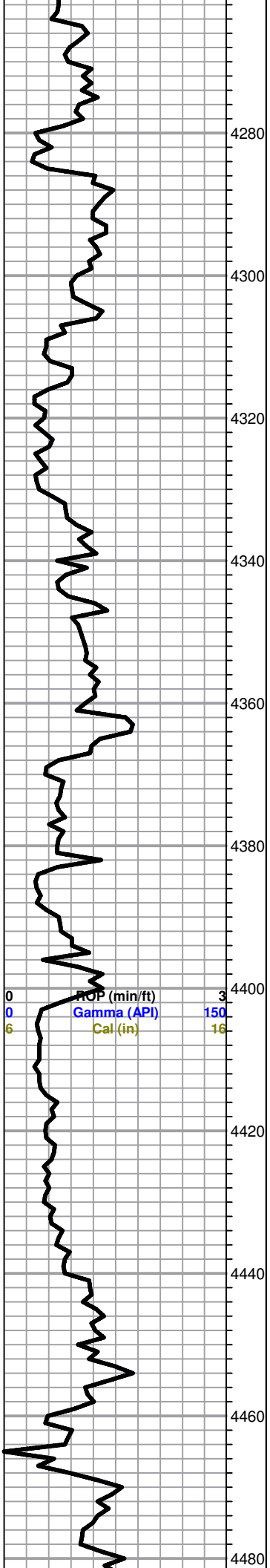


Heebner 4097(-1081)

B. Heebner 4103 (-1087)

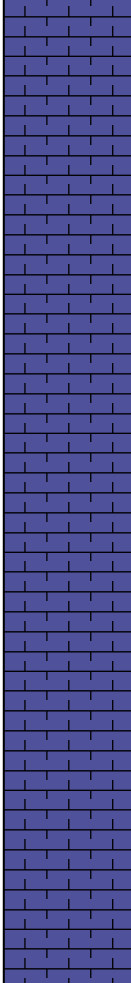
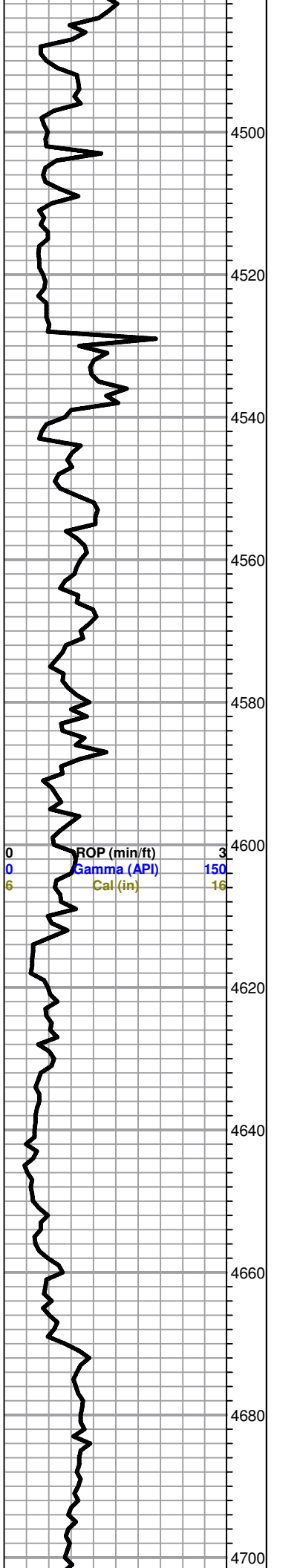
Lansing 4215 (-1199)





4500
4520
4540
4560
4580
4600
4620
4640
4660
4680
4700

ROP (min/ft) 3
Gamma (API) 150
Cal (in) 16



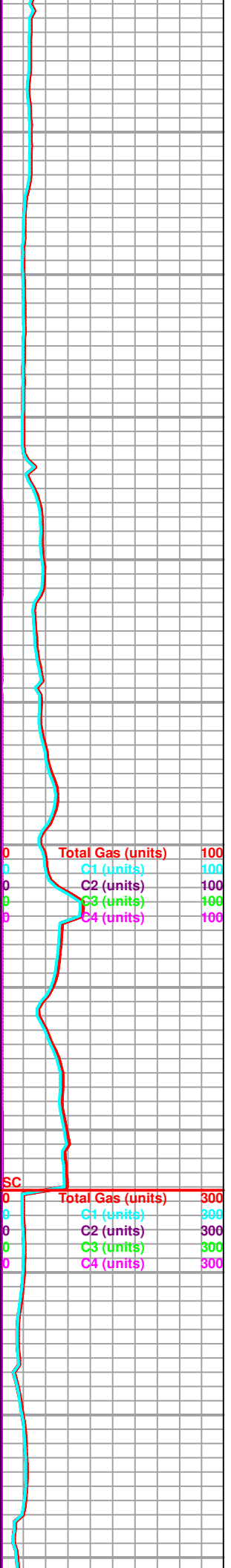
LS, cream to tan, mottled, FXL, foss, poor visible porosity

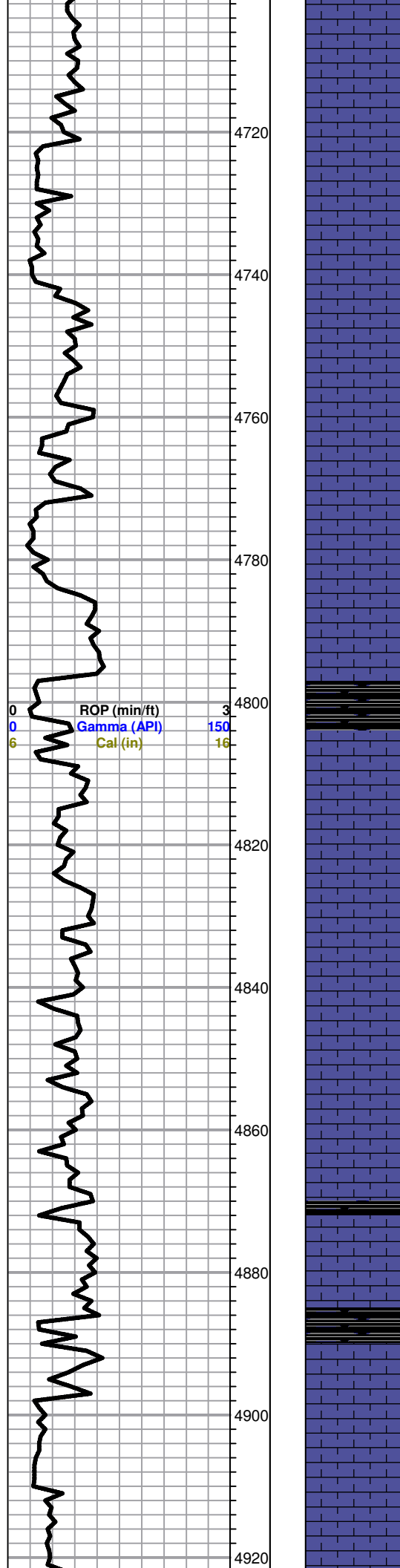
LS, tan, FXL, cherty, foss, dense

LS, tan to cream, FXL, cherty, dense, trace black shale

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

SC
Total Gas (units) 300
C1 (units) 300
C2 (units) 300
C3 (units) 300
C4 (units) 300





LS, tan to brown, FXL, dense, cherty, poor visible porosity

4720

LS, gray to tan, FXL, slightly dol, FXL, dense, trace green and maroon shale

4740

4760

LS, tan to gray FXL, chalky, foss, poor scattered porosity

4780

ROP (min/ft) 3
Gamma (API) 150
Cal (in) 16

4800

4820

LS, tan to gray, FXL, chalky foss, poor scattered porosity, no shows

4840

4860

LS, white to cream, FXL, dense, slightly chalky, poor visible porosity

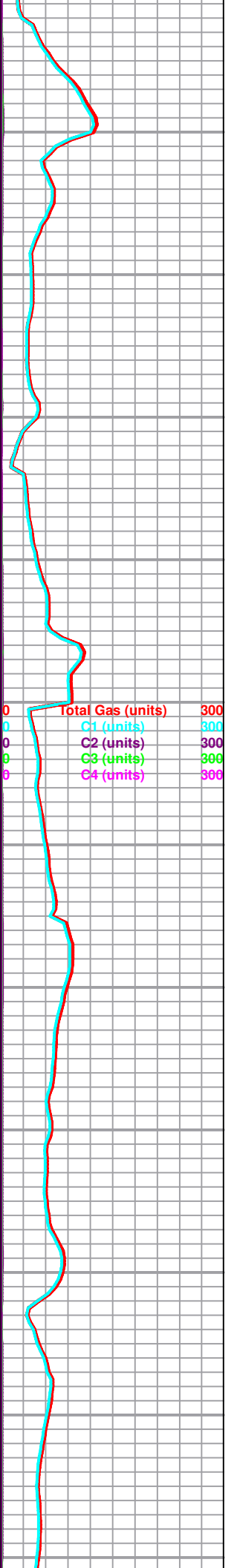
4880

4900

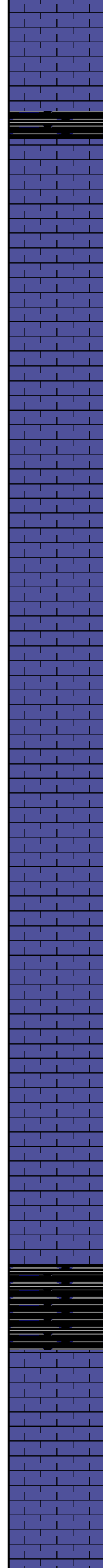
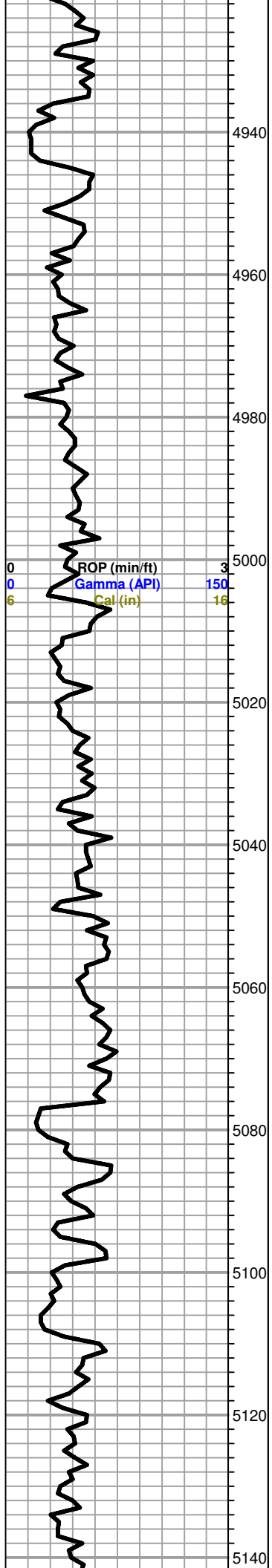
LS white to cream, FXL, dense, slightly cherty no shows

4920

Marmaton 4909 (-1893)



Total Gas (units) 300
C1 (units) 300
C2 (units) 300
C3 (units) 300
C4 (units) 300



LS, cream to tan mottled, FXL, chalky, dense,

4940

4960

LS, cream to tan, mottled, FXL, dense, slightly cherty, poor visible porosity, no shows

4980

5000

5020

5040

LS, tan, FXL, cherty, foss, dense

5060

LS, tan to brown to gray, FXL, dense, poor scattered porosity, no shows

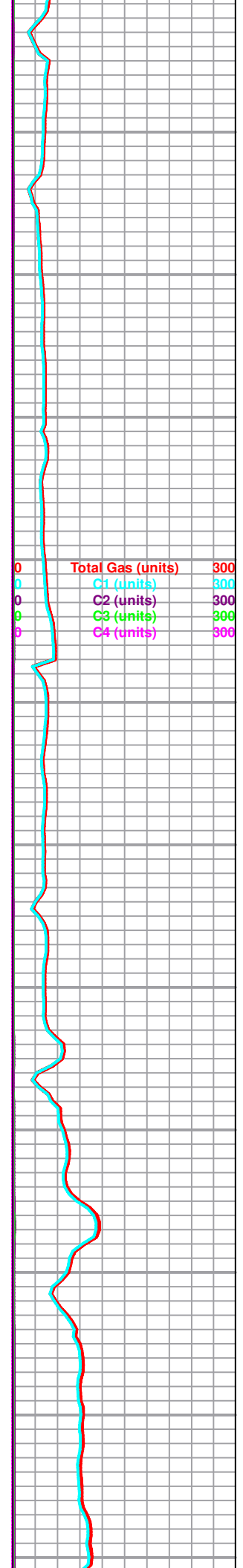
5080

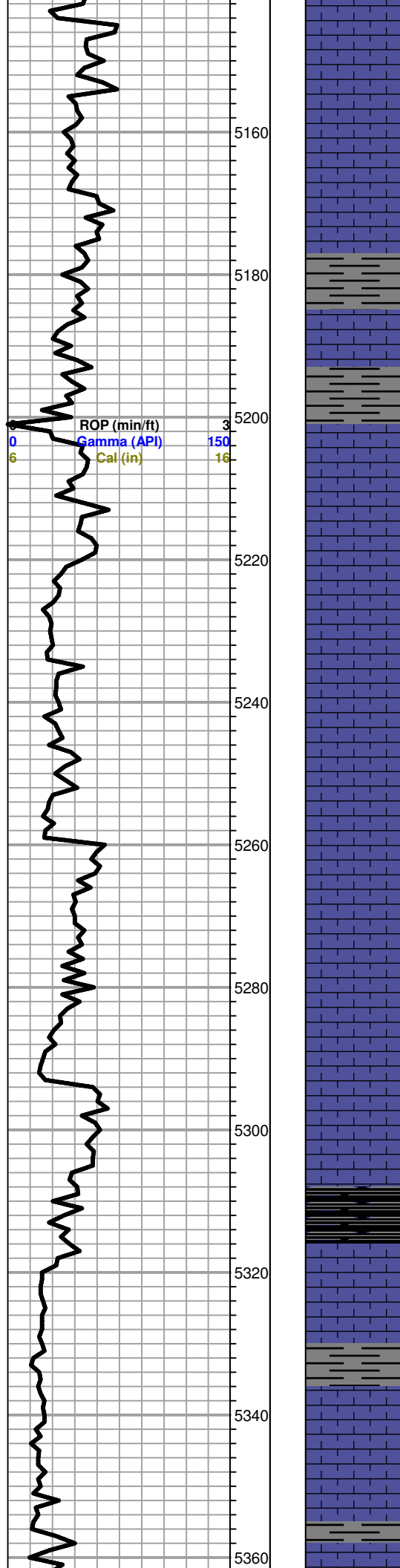
5100

Cherokee Shale 5088 (-2068)
Black carb shale

5120

5140





LS, tan to brown, FXL, dense, cherty, poor visible porosity

Sh, black to gray, silty

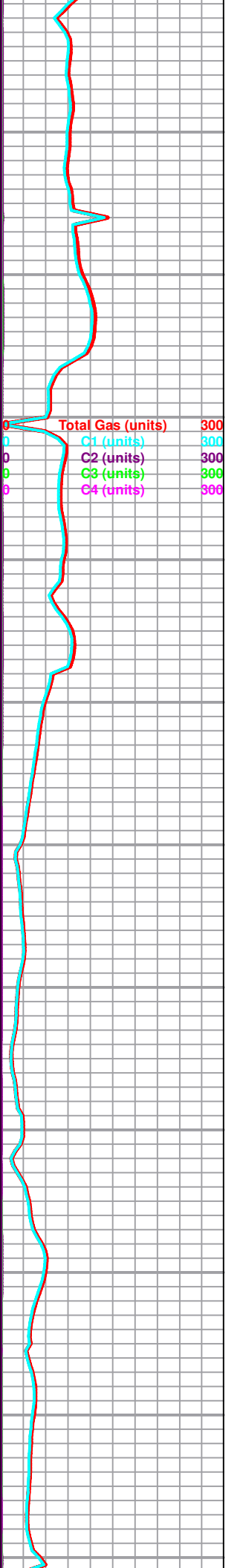
LS, cream to tan, FXL, cherty, poor scattered porosity, no shows

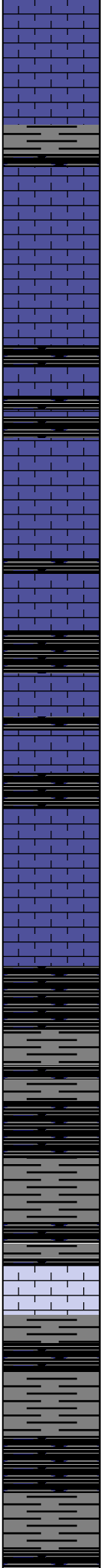
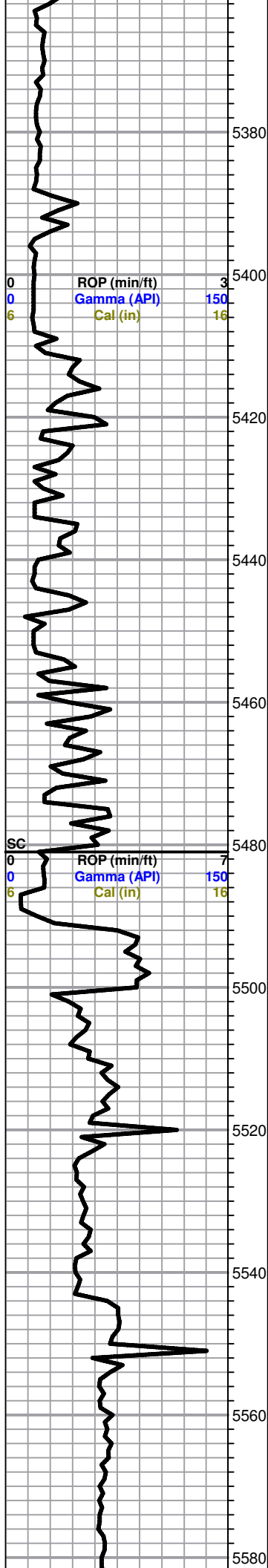
Sh, gray to black, trace LS, tan to brown, chalky, foss, poor visible porosity

Sh gray to black

LS, gray to tan, FXL, dense, poor visible porosity

Sh, gray to black, LS, cream to tan, FXL, chalky, few foss





LS, cream to tan FXL, slightly ool, chalky, poorly developed

Atoka 5388 (-2372)

LS, cream to tan, FXL, mottled, dense, poor scattered porosity, no shows

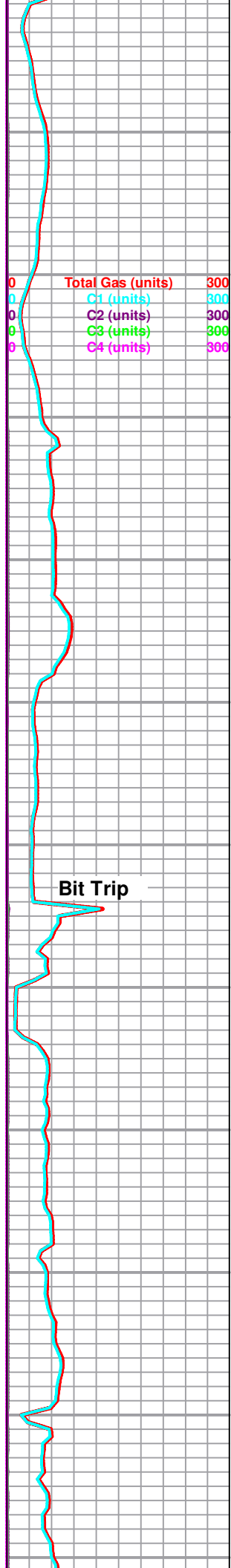
LS, brown to tan, FXL, poor visible porosity, dense, no shows

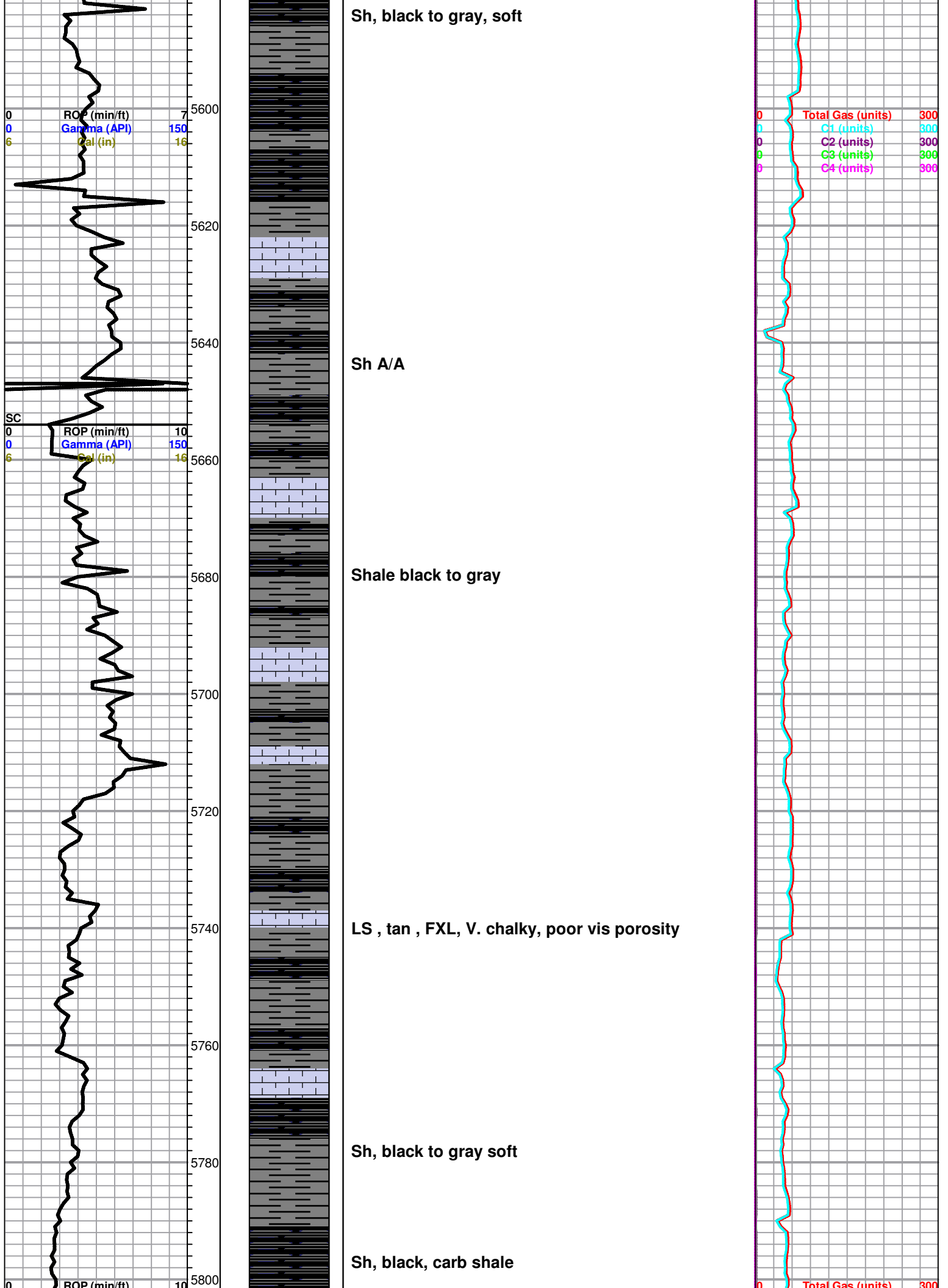
Black carb shale with trace of LS, cream to tan, FXL, Sl. cherty,

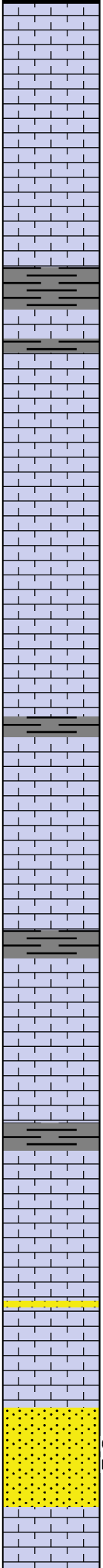
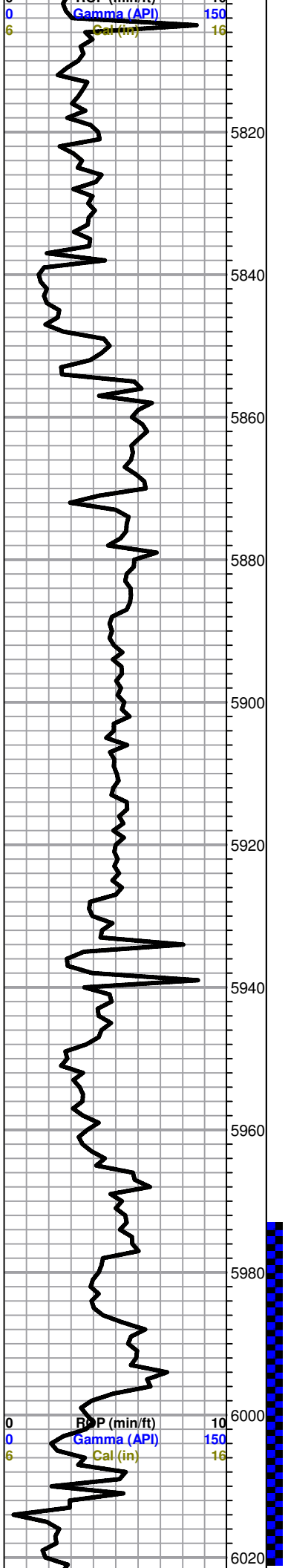
Morrow 5494 (-2478)

Sh, black carb, trc LS, cream to tan FXL, dense, sl. chalky

Sh, A/A trace LS, cream to tan, FXL, foss, chalky, poor scattered porosity, no show







Chester 5815 (-2796)

LS, gray, mott, FXL, few foss, cherty, poor visible porosity

Shale, gray to black, soft

LS, cream to gray, mottled, FXL, cherty dense, poor scattered porosity, no shows

LS, tan to gray, FXL, dense, cherty, poor visible porosity, no shows

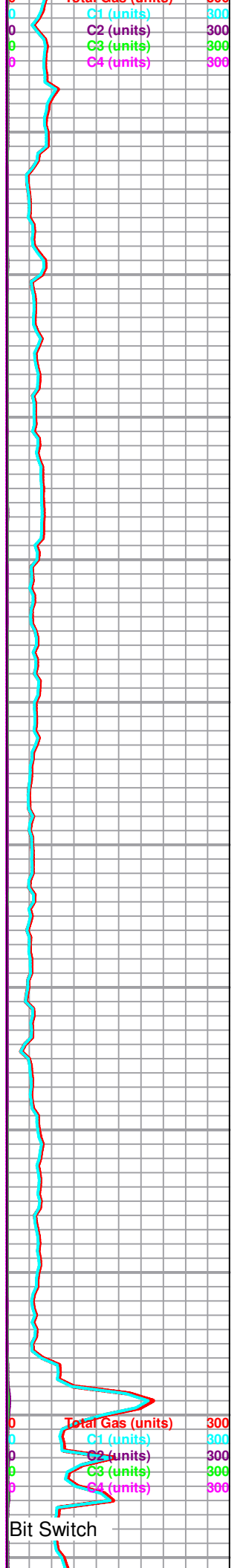
LS, gray to tan, FXL, dense, cherty, poor visible porosity

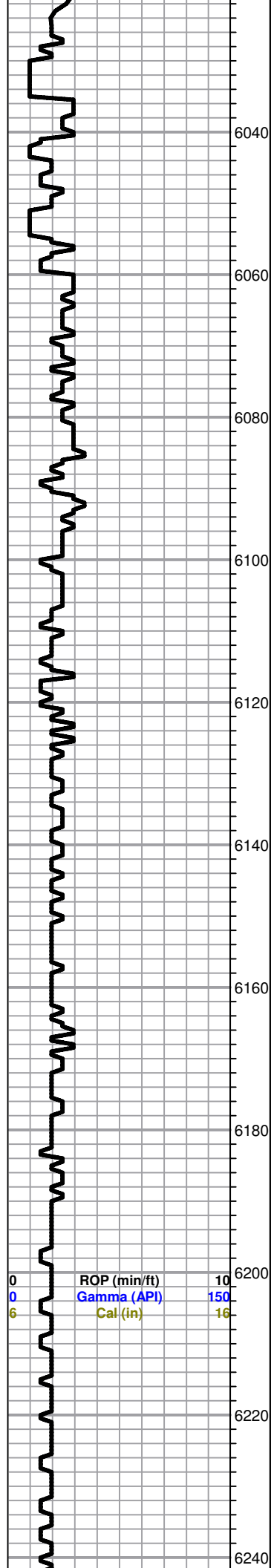
LS, cream to tan, FXL, cherty, poor visible porosity, slightly chalky, trace gray and aqua green shale

LS, cream to tan, mott, FXL, dense, cherty poor visible porosity

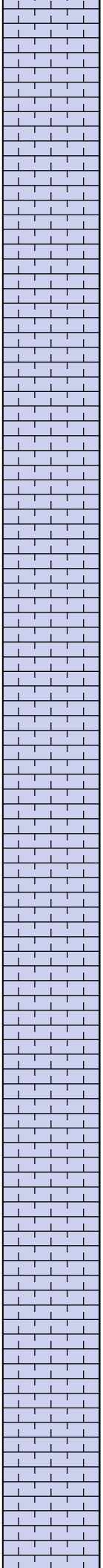
LS, A/A trace of clear f. grain sand, sub angular, fair flor. cut, odor ????

● Snd, clear to tan, m. grain, sub rounded, fairly friable, bright flor. cut, good odor in freshly broken samples, SFO





0 ROP (min/ft) 10
 0 Gamma (API) 150
 6 Cal (in) 16



Sh, gray, black, maroon, trc. LS, brn-tan, FXL poor visible porosity, dense

LS, tan to brown, micro ool, poor INXLN porosity, no shows

LS, A/A

St. Gen 6055 (-3039)

LS, tan to maroon, micro ool, no shows

LS, cream to tan, FXL, cherty, dense, poor visible porosity, no shows

LS, cream tan gray, cherty, poor visible porosity, no shows

LS, A/A

St. Louis 6148 (-3132)

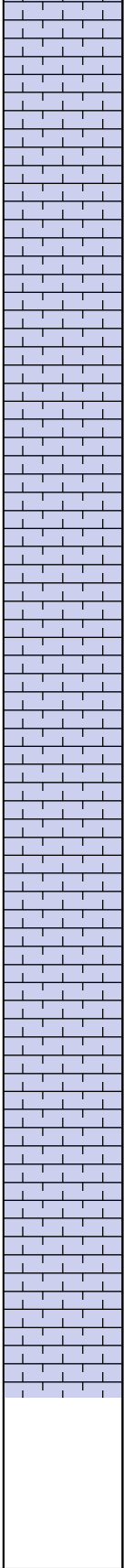
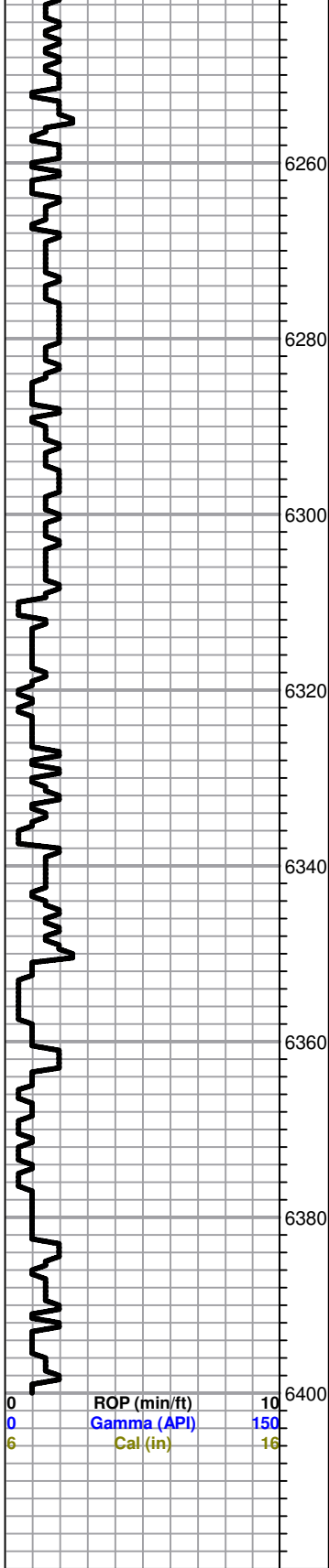
LS, cream to tan FXL, dense, cherty, poor visible porosity no shows

LS, cream to white, few ool, chalky, poorly developed, no shows

LS, white to cream, FXL, dense, cherty, few ool, poorly developed, no shows

Bloodhound System malfunction @6026' Drill time kept by rig and gas dector was monitored by geologist.

0	Total Gas (units)	300
0	C1 (units)	300
0	C2 (units)	300
0	C3 (units)	300
0	C4 (units)	300



LS, white, cream, gray, FXL, dense, poor visible porosity, no shows

LS, tan, FXL, chalky, poorly cemented, no shows

LS, A/A trace light brown stain, NSFO, no odor

LS, gray to tan, mottled, FXL, poor visible porosity, no shows

LS, tan to brown, chalky, ool in parts poorly developed, no shows

LS, cream to tan, slightly dol, poor scattered porosity

LS, cream to tan FXL dense, poor visible porosity, no shows

RTD 6400'

0	Total Gas (units)	300
0	C1 (units)	300
0	C2 (units)	300
0	C3 (units)	300
0	C4 (units)	300