



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1184313  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

*(Data must be collected from the Reserve Pit)*

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1184313

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Date 11-9-13 District 21 Ticket No. 52021  
 Company Duke 9 Rig #9  
 Lease Cinda Well No. 21-2  
 County Stevenson State MS  
 Location Ver Moscow MS Field \_\_\_\_\_

CEMENT DATA:  
 Spacer Type: H2O  
 Amt. \_\_\_\_\_ Sks Yield \_\_\_\_\_ ft<sup>3</sup>/sk Density \_\_\_\_\_ PPG  
10 bbls

CASING DATA: Conductor  PTA  Squeeze  Misc   
 Surface  Intermediate  Production  Liner   
 Size 8 1/8 Type \_\_\_\_\_ Weight 24# Collar \_\_\_\_\_

LEAD: Pump Time \_\_\_\_\_ hrs. Type 65-35 640 gal  
3 1/2 bbls 1 1/4 # 110 Excess \_\_\_\_\_  
 Amt. 625 Sks Yield 1.97 ft<sup>3</sup>/sk Density 12.4 PPG  
 TAIL: Pump Time \_\_\_\_\_ hrs. Type 65-35 3 1/2 bbls  
1 1/4 # 110 Excess \_\_\_\_\_  
 Amt. 200 Sks Yield 1.10 ft<sup>3</sup>/sk Density 15.6 PPG  
 WATER: Lead \_\_\_\_\_ gals/sk Tail \_\_\_\_\_ gals/sk Total \_\_\_\_\_ Bbls.

Casing Depths: Top 0 Bottom 1756

Pump Trucks Used 547-550  
 Bulk Equip. 456-251 470-467

Drill Pipe: Size \_\_\_\_\_ Weight \_\_\_\_\_ Collars \_\_\_\_\_  
 Open Hole: Size \_\_\_\_\_ T.D. \_\_\_\_\_ ft. P.B. to \_\_\_\_\_ ft.

Float Equip: Manufacturer Weather Ford  
 Shoe: Type Guide Shoe Depth 1756  
 Float: Type Insert Float Depth 1713.3  
 Centralizers: Quantity 3 Plugs Top \_\_\_\_\_ Btm. \_\_\_\_\_

CAPACITY FACTORS:  
 Casing: Bbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Open Holes: Bbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Drill Pipe: Bbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Annulus: Bbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Perforations: From \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Amt. \_\_\_\_\_

Stage Collars \_\_\_\_\_  
 Special Equip. Cement basket  
 Disp. Fluid Type \_\_\_\_\_ Amt. \_\_\_\_\_ Bbls. Weight \_\_\_\_\_ PPG  
 Mud Type \_\_\_\_\_ Weight \_\_\_\_\_ PPG

COMPANY REPRESENTATIVE Angela Pope

CEMENTER Sergio Braga

TIME	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
	AM/PM	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	Pumped Per Time Period	
3:30						On location at 3:30 p.m.
6:45		2000		-		pressure test 2000
6:49		200		10		10 bbl ahead H2O
7:04		300		229		lead cement at 12.4
8:00		250		271		Tail cement at 15.6
8:15						Shut down to release plug
8:18		150		300		plug left displacement 109.3 bbls
8:35		1200		300		landed plug 1200 psi 100 bbls of cement to surface

Customer <i>Palmer Oil/American Warrior</i>		Lease No.		Date <i>11-17-13</i>						
Lease <i>Linda</i>		Well # <i>21-4</i>		Service Receipt						
Casing		Depth		County <i>Stevens</i>						
Job Type		Formation		State <i>KS</i>						
				Legal Description <i>21-31-35</i>						
<b>Pipe Data</b>			<b>Perforating Data</b>			<b>Cement Data</b>				
Casing size <i>5 1/2 17#</i>		Tubing Size		<b>Shots/Ft</b>			<b>Lead</b> <i>200 SKS @ 14.8 PPG</i> <i>Sr. W60, 10% Salt</i> <i>61. C-15 1/4 Detramer</i> <i>5# Gtsonite</i> <i>AAZ Cement</i> <b>Tail-in</b> <i>for Mouse Hole</i> <i>50 SKS @ 13.5 PPG</i> <i>&amp; Rat Hole</i> <i>60/40 Poz</i>			
Depth <i>6395'</i>		Depth		From		To				
Volume <i>147.8 bbl</i>		Volume		From		To				
Max Press		Max Press		From		To				
Well Connection		Annulus Vol.		From		To				
Plug Depth <i>6373'</i>		Packer Depth		From		To				
Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log					
<i>0600</i>					<i>On location - King up</i>					
<i>1045</i>					<i>Safety Meeting</i>					
<i>1110</i>	<i>2500</i>				<i>Pressure Test.</i>					
<i>1113</i>	<i>100</i>		<i>8</i>	<i>4</i>	<i>Pump 30 SKS @ 13.5 PPG, Plug Rat Hole</i>					
<i>1118</i>	<i>100</i>		<i>5</i>	<i>4</i>	<i>Pump 20 SKS @ 13.5 PPG, Plug Mouse Hole</i>					
<i>1134</i>	<i>100</i>		<i>12</i>	<i>5</i>	<i>Pump 500 gallons of Mudflush</i>					
<i>1137</i>	<i>300</i>		<i>53</i>	<i>6</i>	<i>Pump 200 SKS @ 14.8 PPG</i>					
<i>1146</i>					<i>Drop Plug - Wash up</i>					
<i>1151</i>	<i>100</i>			<i>6</i>	<i>Start Displacement</i>					
<i>1211</i>	<i>650</i>		<i>135</i>	<i>2</i>	<i>Slow Rate</i>					
<i>1215</i>	<i>1150</i>		<i>147</i>	<i>2</i>	<i>Bump Plug</i>					
<i>1220</i>	<i>0</i>				<i>Release Pressure - float held</i>					
Service Units		<i>78440</i>	<i>3875019842</i>	<i>30464</i>	<i>37724</i>					
Driver Names		<i>Ruben</i>	<i>Carlos</i>	<i>Daniel</i>						

Joe Smith  
Customer Representative

Jerry Bennett  
Station Manager

Ruben Martinez  
Cementer



# 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

DRILLING WELL					COMPARISON WELL				COMPARISON WELL				
Linda 21-2 NW-SE-SE-SW 21-31S-35W					Palmer Oil- Lola 21-4 SW-NW-SE-SE 21-31S-35W				EOG Resources-Cullision 28 #1 N2-S2-NE-NW 28-31S-35W				
3016 KB					3011 KB		Structural Relationship		3020 KB		Structural Relationship		
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	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					

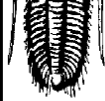


**TRILOBITE TESTING**

### 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

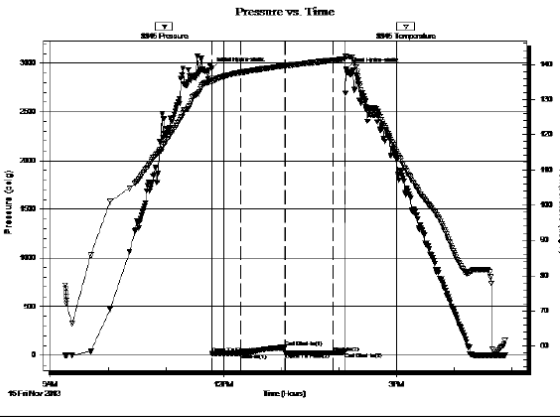
Test Start: 2013.11.15 @ 09:15:00

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

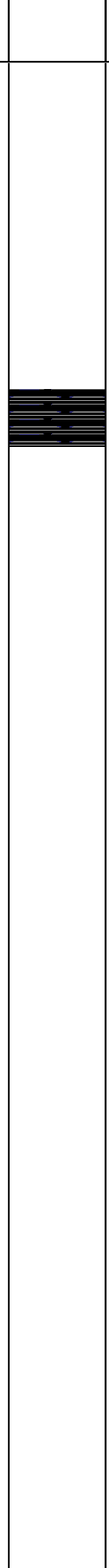
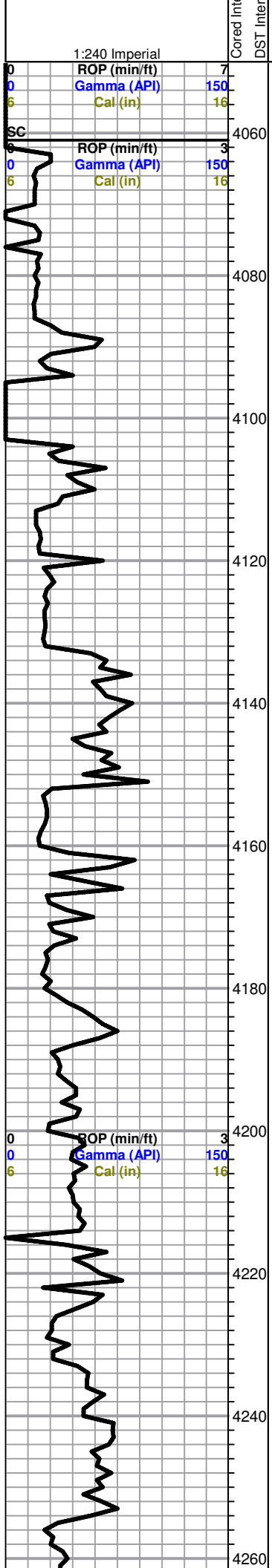
- Lmst fw<7
- shale, gry
- Ss
- Lmst fw7>
- Carbon Sh

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)

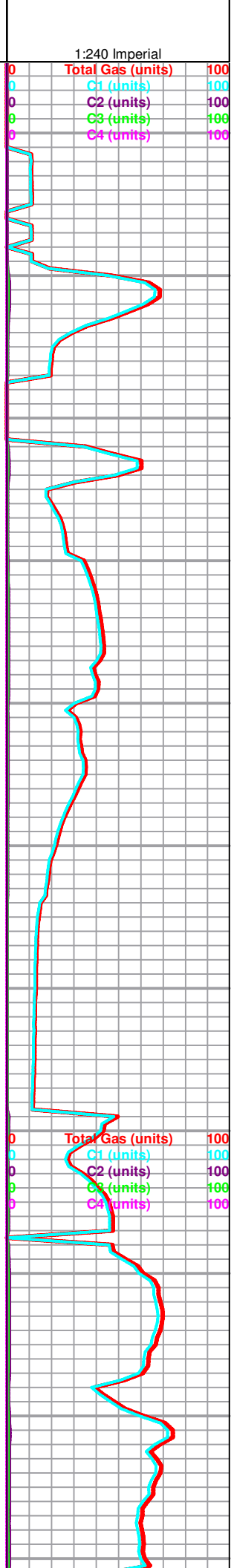
Curve Track #1	Depth   Intervals	DST	Lithology	Oil Show	Geological Descriptions
ROP (min/ft)					TG, C1 - C5
Gamma (API)					Total Gas (units)
Cal (in)					C1 (units)
					C2 (units)
					C3 (units)
					C4 (units)



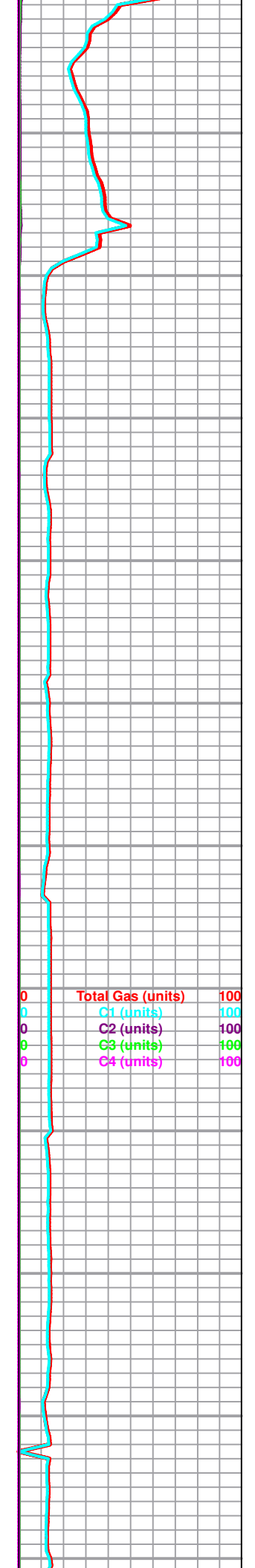
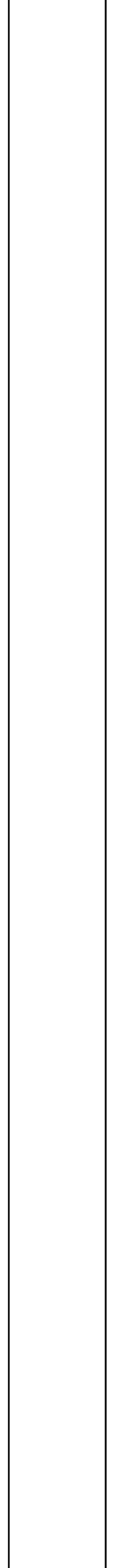
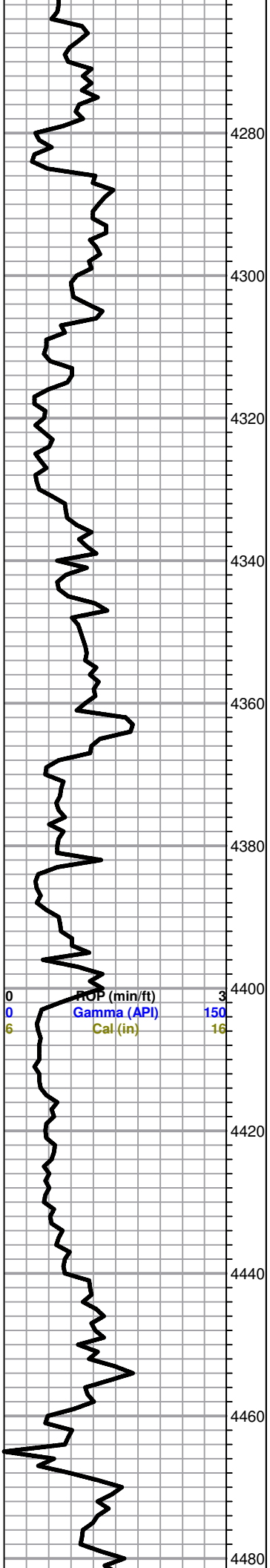
Heebner 4097(-1081)

B. Heebner 4103 (-1087)

Lansing 4215 (-1199)

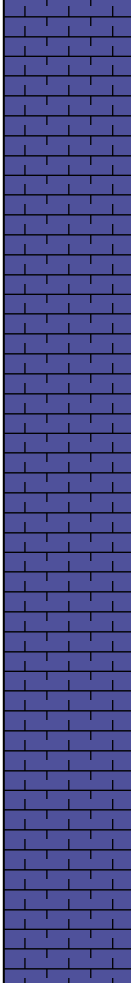
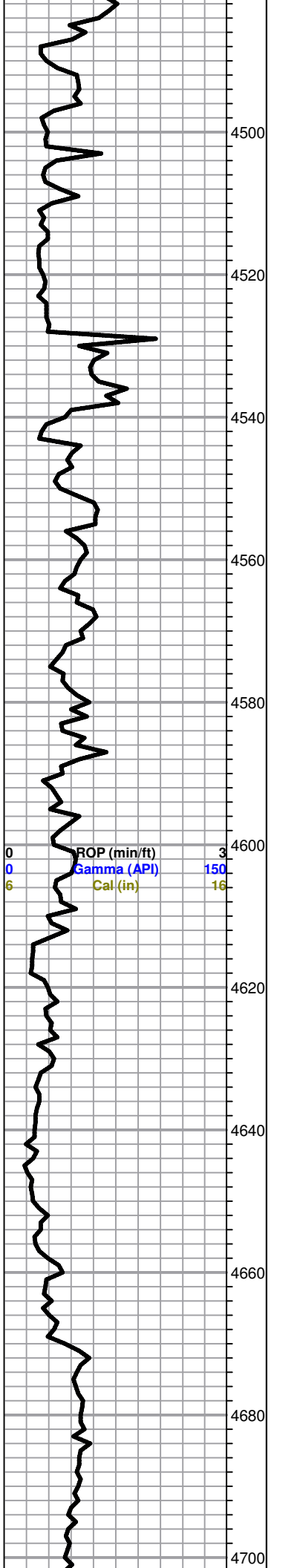






4500  
4520  
4540  
4560  
4580  
4600  
4620  
4640  
4660  
4680  
4700

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



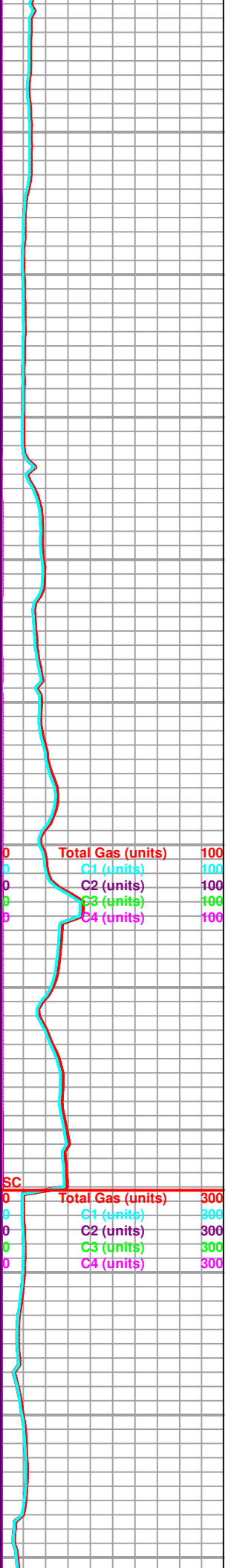
LS, cream to tan, mottled, FXL, foss, poor visible porosity

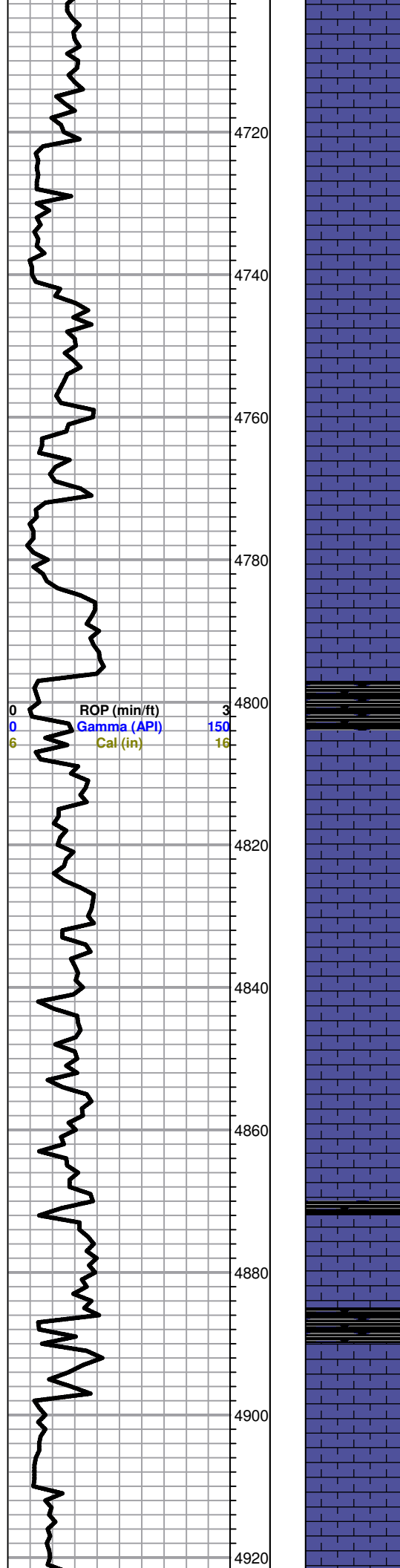
LS, tan, FXL, cherty, foss, dense

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

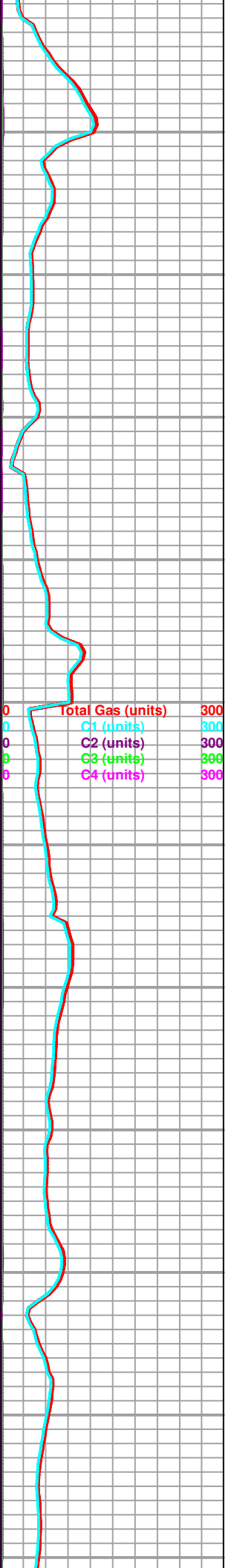
4880

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

4940  
4960  
4980  
5000  
5020  
5040  
5060  
5080  
5100  
5120  
5140

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

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

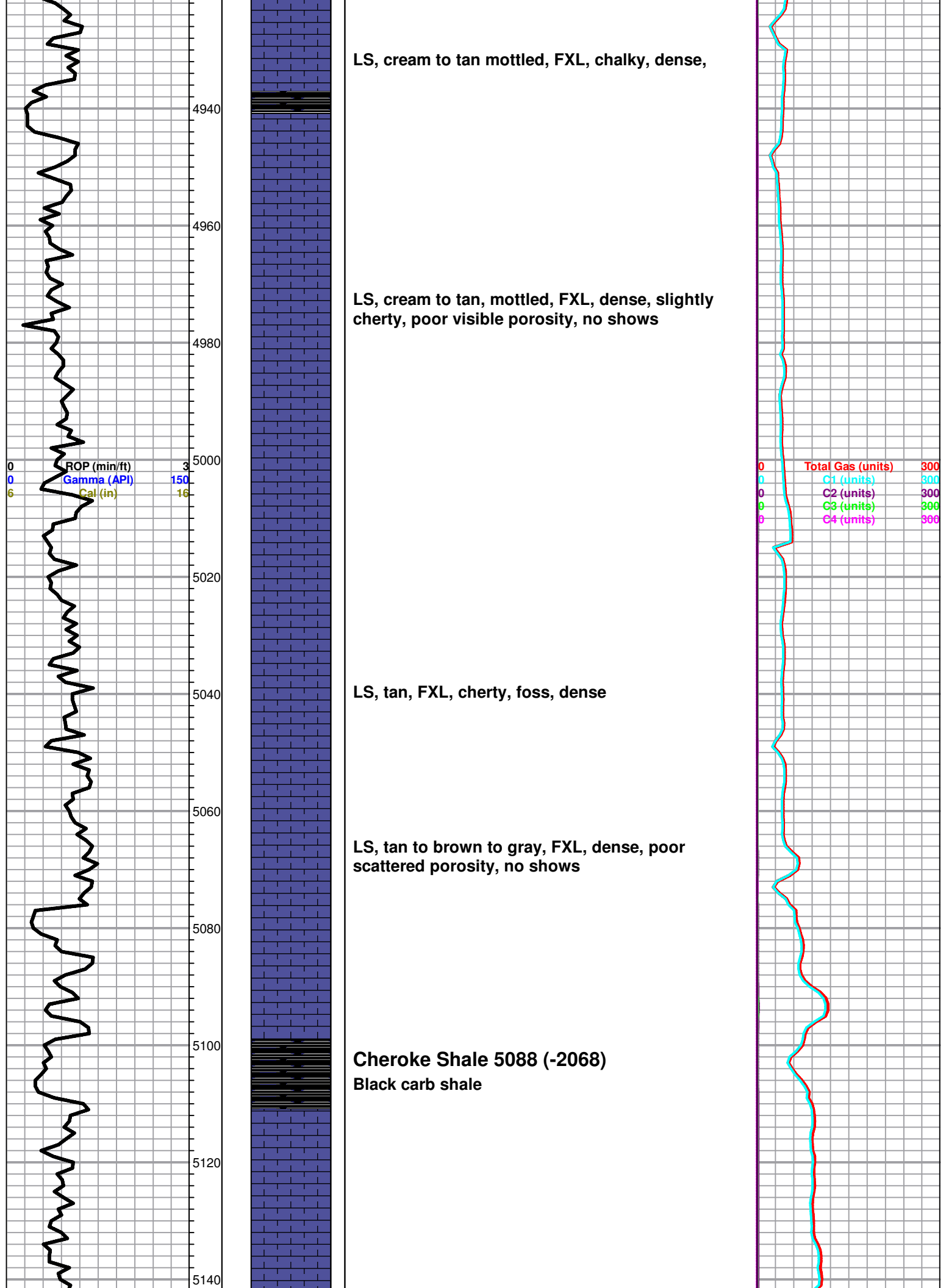
LS, tan, FXL, cherty, foss, dense

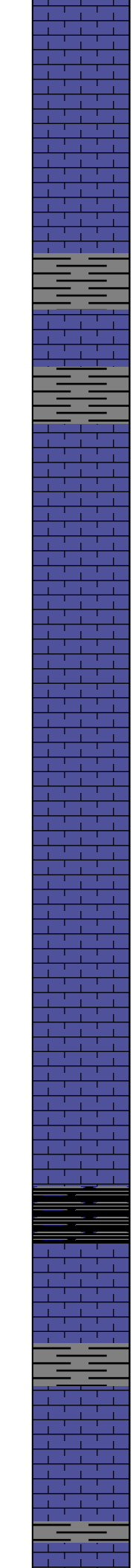
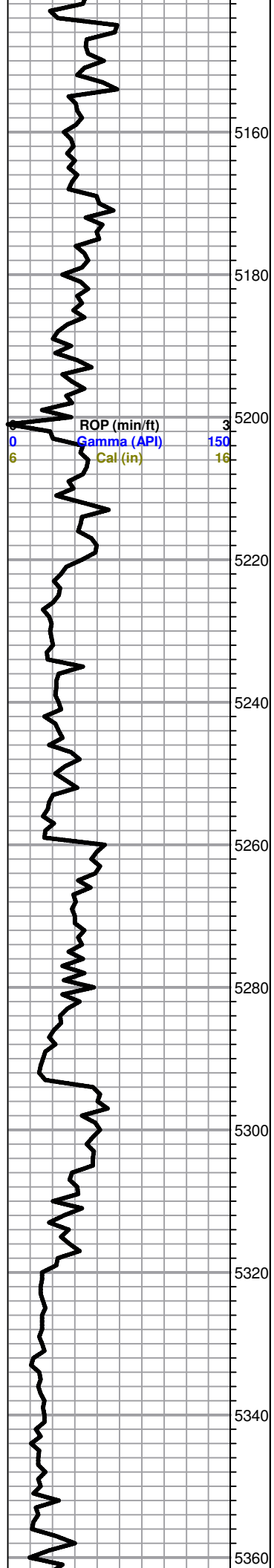
LS, tan to brown to gray, FXL, dense, poor scattered porosity, no shows

**Cherokee Shale 5088 (-2068)**  
Black carb shale

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

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

Sh, black to gray, silty

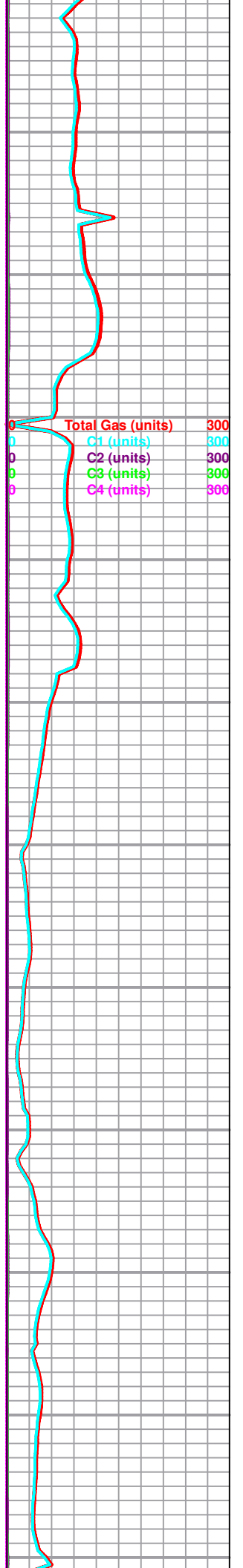
LS, cream to tan, FXL, cherty, poor scattered porosity, no shows

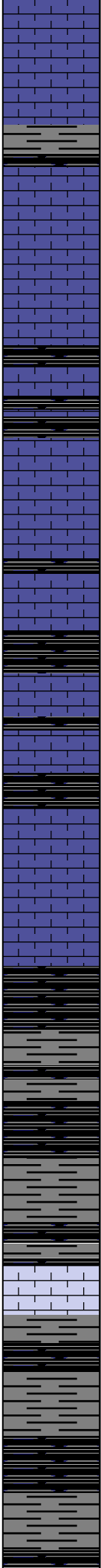
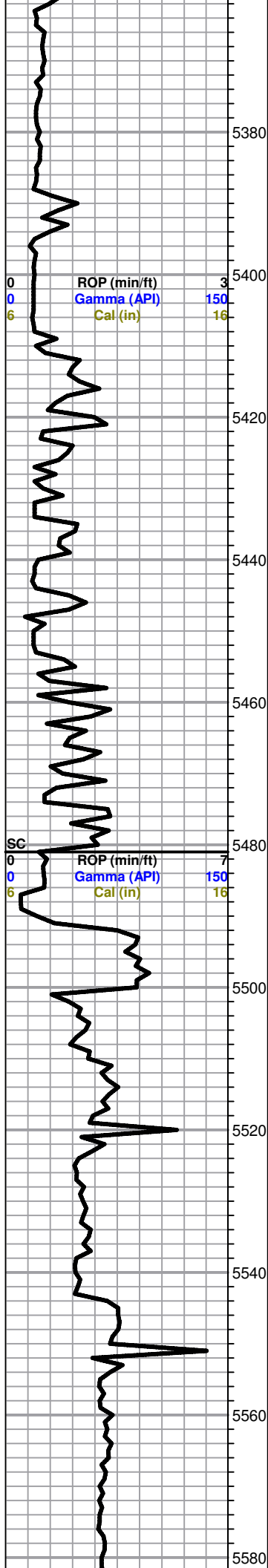
Sh, gray to black, trace LS, tan to brown, chalky, foss, poor visible porosity

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

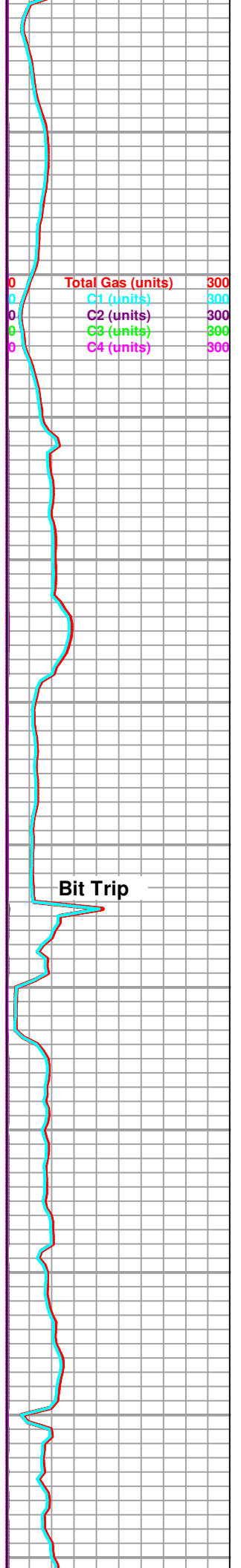
LS, brown to tan, FXL, poor visible porosity, dense, no shows

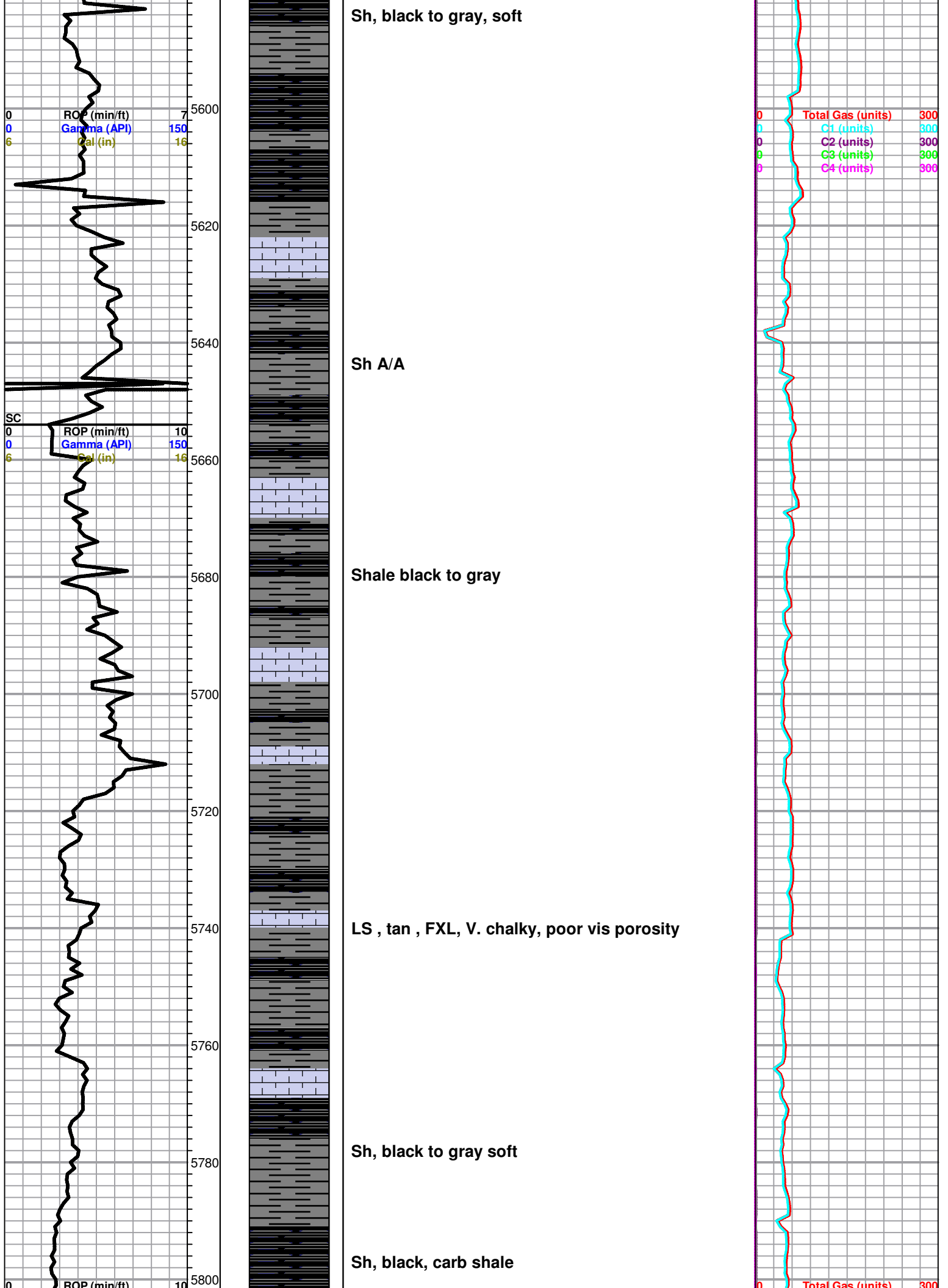
Black carb shale with trace of LS, cream to tan, FXL, Sl. cherty,

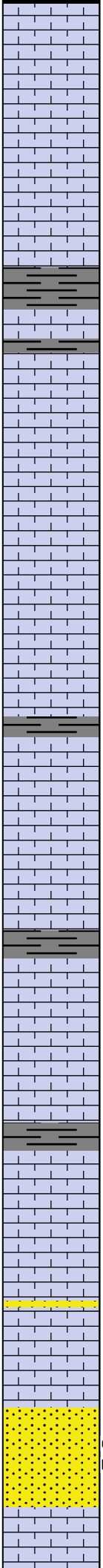
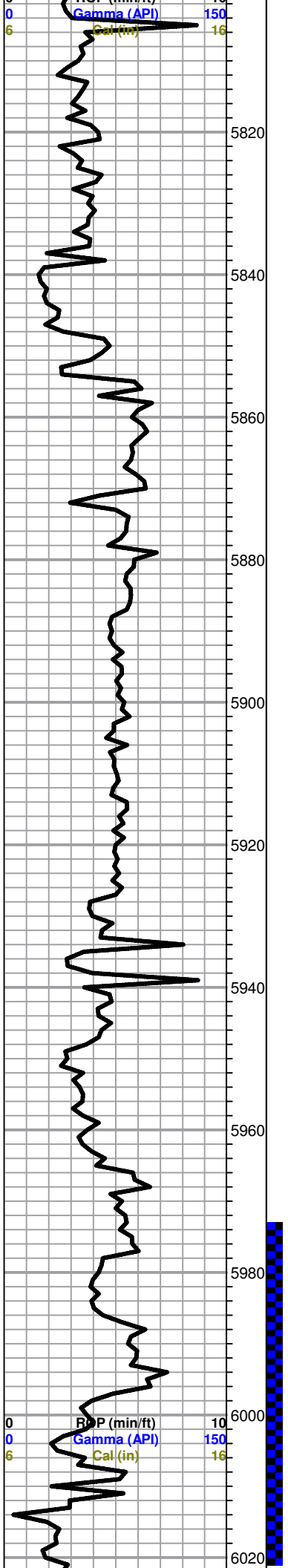
**Morrow 5494 (-2478)**

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

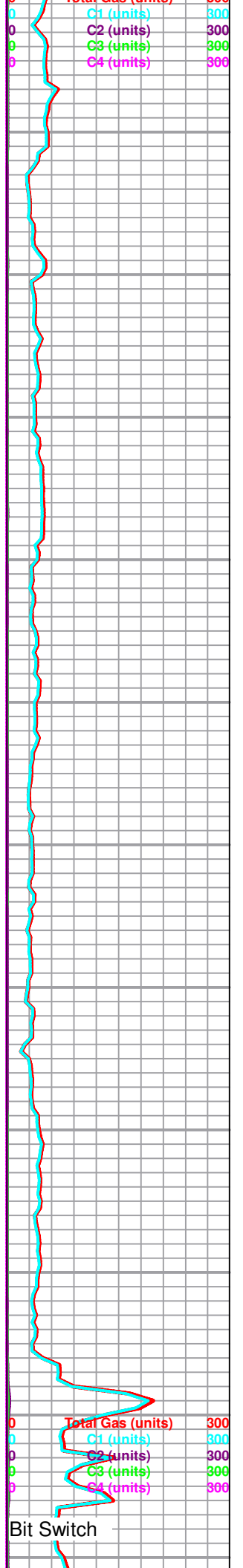
LS, gray to tan, FXL, dense, cherty, poor visible porosity

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

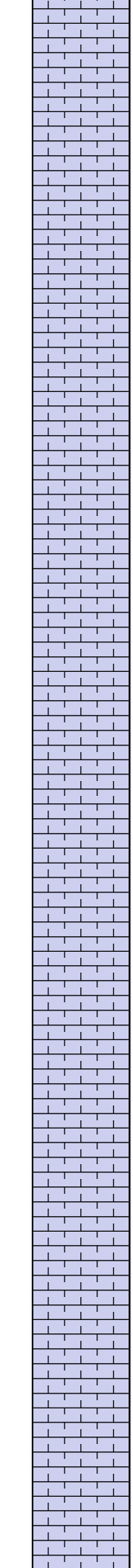
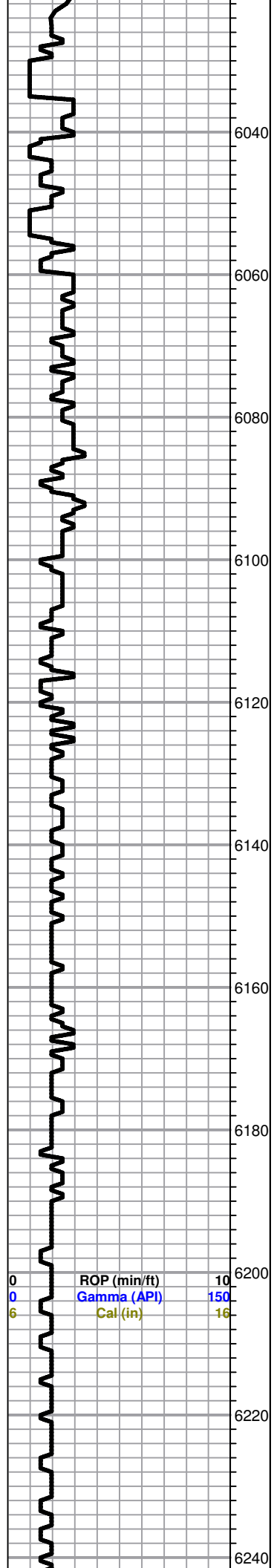
LS, cream to tan, mott, FXL, dense, cherty poor visible porosity

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







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

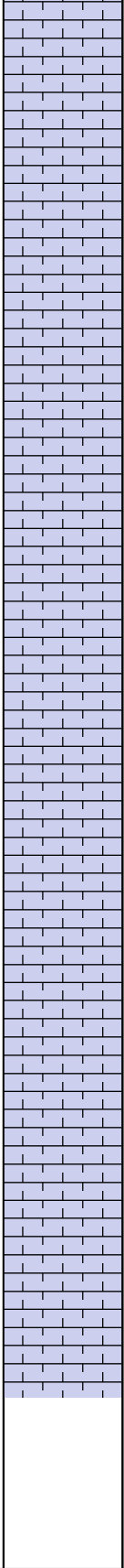
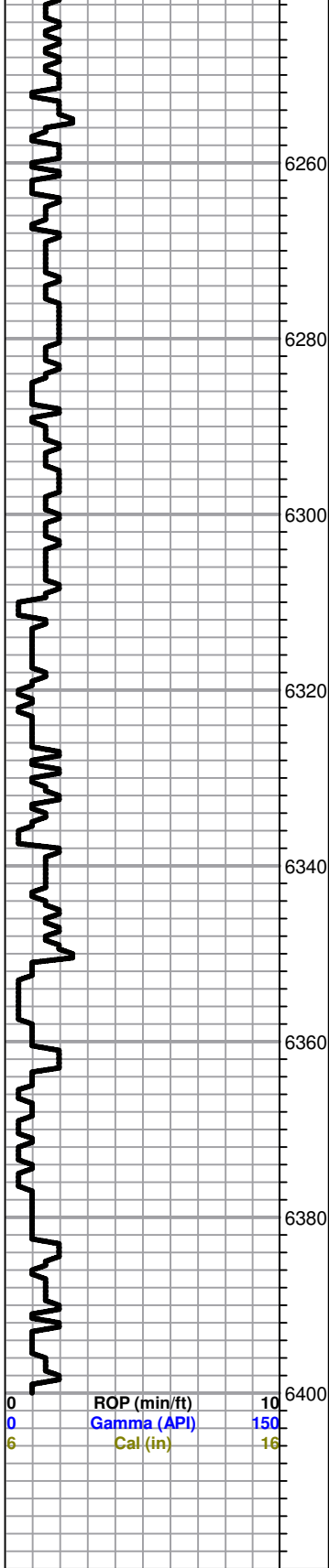
LS, cream to white, few ool, chalky, poorly developed, no shows

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.

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

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