Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1193754

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 # 34904
Name: Palmer Oil, Inc.
Address 1: 3118 N. Cummings Rd.
Address 2: PO BOX 399
City: GARDEN CITY State: KS Zip: 67846 + ____
Contact Person: Joe Smith
Phone: (620) 275-9231
CONTRACTOR: License # 5929
Name: Duke Drilling Co., Inc.
Wellsite Geologist: Wyatt Urban
Purchaser: Valero

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 #:

02/14/2014	02/23/2014	02/23/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-189-22833-00-00
Spot Description:
NE - SW - SW - SE Sec. 23 Twp. 32 S. R. 37 ☐ East ☑ West
335 Feet from ☐ North / ☑ South Line of Section
2300 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Stevens
Lease Name: Willis Well #: 23-8
Field Name:
Producing Formation: None
Elevation: Ground: 3115 Kelly Bushing: 3123
Total Vertical Depth: 6500 Plug Back Total Depth: 0
Amount of Surface Pipe Set and Cemented at: 1743 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: 14000 ppm Fluid volume: 75 bbls
Dewatering method used: Evaporated

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:** Deanna Garrison **Date:** 03/13/2014

[redacted] 1193754

Operator Name: Palmer Oil, Inc. Lease Name: Willis Well #: 23-8

Sec. 23 Twp. 32 S. R. 37 ☐ East ☑ West County: Stevens

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Induction
Porosity
micro

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Marmaton	4912'	-1789
Cherokee	5111'	-1988
Atoka	5529'	-2406
Morrow	5628'	-2505
St.Gen	6169'	-3046
St.Louis	6294'	-3171
St.Louis B	6365'	-3242

CASING RECORD ☑ New ☐ 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
Surface	12.250	8.625	24	1743	65/35 & Class A	825	6%gel, 3%CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ 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 *(Amount and Kind of Material Used)*	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

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

ALLIED OIL & GAS SERVICES, LLC

CEMENTING LOG

Date 2/15/2014 District Liberal # 21 Ticket No. 52516
Company Palmer Oil Rig Duke #9
Lease Willis Well No 23-8
County Stevens State KS
Location
Field

Casing Data ☐ Conductor ☐ PTA ☐ Squeeze ☐ Misc.
☑ Surface ☐ Intermediate ☐ Production ☐ Liner
Size 8 5/8 Type Weight 24# Collar

Casing Depths Top 0 Bottom 1743

CEMENT DATA
Spacer Type H2O
Amt. Sks Yield ft³/sk Density PPG

LEAD: Time hrs. Type 65/35 6% gel 3% CC
.5# flo seal Excess
Amt. 625 Sks Yield 1.97 ft³/sk Density 12.4 PPG
TAIL: Time hrs. Type Class A 3%CC .25# flo Seal
Excess
Amt. 200 Sks Yield 1.18 ft³/sk Density 15.6 PPG
WATER Lead 10.9 Gal/sk Tail 5.3 Gal/sk Total BBLS

Pump Trucks Used: 700-
Bulk Equipment 472-554
705-642

Drill Pipe:	BBLS/LIN. FT		LIN. FT/BBL	
Open Hole:	BBLS/LIN. FT		LIN. FT/BBL	
Capacity Factors:	BBLS/LIN. FT	0.0637	LIN. FT/BBL	15.7
Casing	BBLS/LIN. FT	0.0637	LIN. FT/BBL	15.7
Open Holes	BBLS/LIN. FT	0.1458	LIN. FT/BBL	6.85
Drill Pipe	BBLS/LIN. FT		LIN. FT/BBL	
Annulus	BBLS/LIN. FT	0.0735	LIN. FT/BBL	13.6
	BBLS/LIN. FT		LIN. FT/BBL	

Perforations From ft to ft Amt

Float Equipment: Manufacturer Weather Ford
Shoe: Type Guide Shoe Depth 1742
Float: Type AFU Insert Float Depth 1700
Centralizers: Quantity 3 Plugs Top Bottom
Stage Collars
Special Equipment Cement Basket
Disp: Fluid Type H2O Amt 108.3 bbls Weight 8.33 PPG
Mud Type Weight

COMPANY REPRESENTATIVE
CEMENTER Lenny Baeza

TIME	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
AM/PM	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	PUMPED PER TIME PERIOD	RATE BBLS/MIN	
12:00pm						On location at 11:30am
3:30pm						Rigging up to well head
3:40pm						Safety meeting with rigg crew
3:45pm	2000					Pressure testing pumping lines to 2000 psi
3:53pm	200		10		5	10 bbls of H2O head of cement
3:55pm	220		229		5	Mixing lead cement @ 12.4#
4:31pm	180		271		4	Mixing Tail cement @ 15.6#
4:42pm	0		0		0	End of cememt shutting down to release plug
4:46pm	120		271		5	Plug left the head and started displacement of 108.3 bbls
4:55pm						50 bbls gone
5:10pm	600		371		5	100 bbls gone 5bpm @ 600 psi
5:25pm	1600		379		3	108 bbls gone and landed the plug bumped to 1200 psi and holding
						released the psi and float holding
						70bbls of cement to surface
						rigging down iron
						leaving location @ 6:00pm
						THANK YOU !!!!!!!!!!!!!!!!!!!!!!!!!!!!1

FINAL DISP. PRESS. 600 PSI BUMP PLUG TO 1600 PSI BLEEDBACK 2-Jan BBLS THANK YOU

ALLIED OIL & GAS SERVICES, LLC

CEMENTING LOG

Date 2/24/2014 District Liberal # 21 Ticket No. 52521
Company Palmer Oil Rig Duke #9
Lease Willis Well No 23-8
County Stevens State KS
Location
Field

Casing Data ☐ Conductor ☐ PTA ☐ Squeeze ☐ Misc.
☑ Surface ☐ Intermediate ☐ Production ☐ Liner
Size 8 5/8 Type Weight 24 Collar

Casing Depths Top Bottom 1700

Drill Pipe:	BBLS/LIN. FT		LIN. FT/BBL	
Open Hole:	BBLS/LIN. FT		LIN. FT/BBL	
Capacity Factors:	BBLS/LIN. FT		LIN. FT/BBL	
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	
	BBLS/LIN. FT		LIN. FT/BBL	

Perforations From ft to ft Amt

CEMENT DATA
Spacer Type H2O
Amt. Sks Yield ft³/sk Density PPG

LEAD: Time hrs. Type 60/40/4%gel 1/4 # Flo seal
Excess
Amt. 170 Sks Yield 1,42 ft³/sk Density 13.8 PPG
TAIL: Time hrs. Type
Excess
Amt. Sks Yield ft³/sk Density PPG
WATER Lead 6.9 Gal/sk Tail Gal/sk Total BBLS

Pump Trucks Used: 549-550
Bulk Equipment 472-554

Float Equipment: Manufacturer
Shoe: Type Depth
Float: Type Depth
Centralizers: Quantity Plugs Top Bottom
Stage Collars
Special Equipment
Disp: Fluid Type Amt bbls Weight PPG
Mud Type Weight

COMPANY REPRESENTATIVE
CEMENTER Lenny Baeza

TIME	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
AM/PM	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	PUMPED PER TIME PERIOD	RATE BBLS/MIN	
9:00pm						On location @ 9:00pm
10:30pm						Rigged up to first plug @ 1770'
10:35pm	130		26		4	10 bbls of spacer ahead of cement then 12.6 bbls of slurry with 2 bbls of
10:42pm	90		47		6	H2O water behind cement and displacement of 21 bbls with MUD
11:46pm	150		62		4	Rigged up to second plug @ 610' Cleaned the hole out with water 15 bbls
11:56pm	140		79		5	and 50sk plug total of 12.6 bbls of slurry and displacement of 5 bbls
12:35pm	130		84		3	Rigged up to third plug @ 60' and plug a 20 sk plug total of 5 bbls slurry
						pumped intel cement to surface
1:14pm	100		89		3	Plugging mouse hole with 20 sk 5 bbls of slurry cement to surface
1:18pm	100		96		3	Plugging rat hole with 30 sk 7 bbls of slurry cement to surface
						Cement to surface on rat hole and mouse hole
						rigging it down and leaving location @ 2:00pm

FINAL DISP. PRESS. PSI BUMP PLUG TO PSI BLEEDBACK BBLS

THANK YOU

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Palmer Oil Inc**

3118 N Cummings Rd
Garden City, KS 67846

ATTN: Wyatt Urban

Willis #23-8

23-32s-37w Stevens,KS

Start Date: 2014.02.22 @ 12:25:05

End Date: 2014.02.22 @ 21:50:35

Job Ticket #: 56284 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.02.25 @ 16:36:48

DRILL STEM TEST REPORT

Palmer Oil Inc

3118 N Cummings Rd
Garden City, KS 67846

ATTN: Wyatt Urban

23-32s-37w Stevens,KS

Willis #23-8

Job Ticket: 56284 **DST#: 1**

Test Start: 2014.02.22 @ 12:25:05

GENERAL INFORMATION:

Formation: **St Louis**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:10:05
Time Test Ended: 21:50:35

Test Type: Conventional Bottom Hole (Initial)
Tester: Shane McBride
Unit No: 55

Interval: 6325.00 ft (KB) To 6385.00 ft (KB) (TVD)
Total Depth: 6385.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

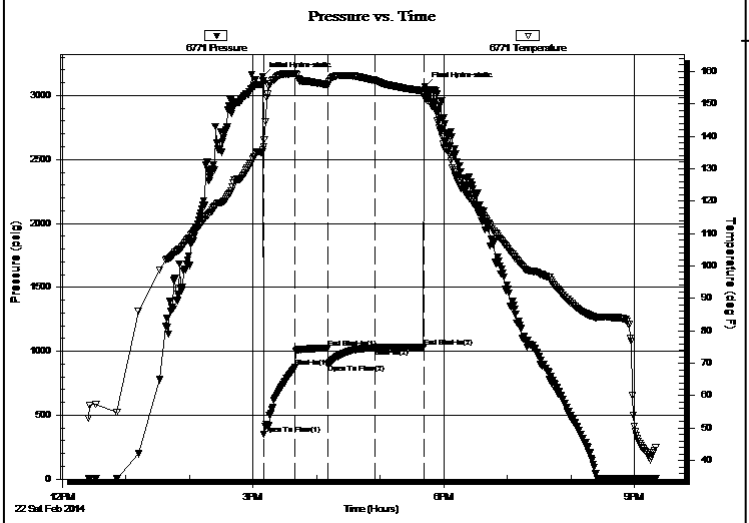
Reference Elevations: 3122.00 ft (KB)
3110.00 ft (CF)
KB to GR/CF: 12.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: 1027.79 psig @ 6326.00 ft (KB)
Start Date: 2014.02.22 End Date: 2014.02.22
Start Time: 12:25:05 End Time: 21:19:35

Capacity: 8000.00 psig
Last Calib.: 2014.02.22
Time On Btm: 2014.02.22 @ 15:09:20
Time Off Btm: 2014.02.22 @ 17:42:05

TEST COMMENT: 12' of fill on bottom . B.O.B. in 2 min.
No return
B.O.B. in 6 1/2 min.
No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3149.75	135.79	Initial Hydro-static
1	350.62	136.81	Open To Flow (1)
31	872.33	159.33	Shut-In(1)
62	1026.59	155.79	End Shut-In(1)
62	898.82	155.76	Open To Flow (2)
106	1027.79	157.21	Shut-In(2)
152	1032.57	153.91	End Shut-In(2)
153	3069.18	152.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1449.00	w ater 100%w	18.61
378.00	s m c w 15%m 85%w	5.30
315.00	m c w 40%m 60%w	4.42

Gas Rates

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

DRILL STEM TEST REPORT

Palmer Oil Inc

3118 N Cummings Rd
Garden City, KS 67846

ATTN: Wyatt Urban

23-32s-37w Stevens,KS

Willis #23-8

Job Ticket: 56284 **DST#: 1**

Test Start: 2014.02.22 @ 12:25:05

GENERAL INFORMATION:

Formation: **St Louis**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:10:05
Time Test Ended: 21:50:35

Test Type: Conventional Bottom Hole (Initial)
Tester: Shane McBride
Unit No: 55

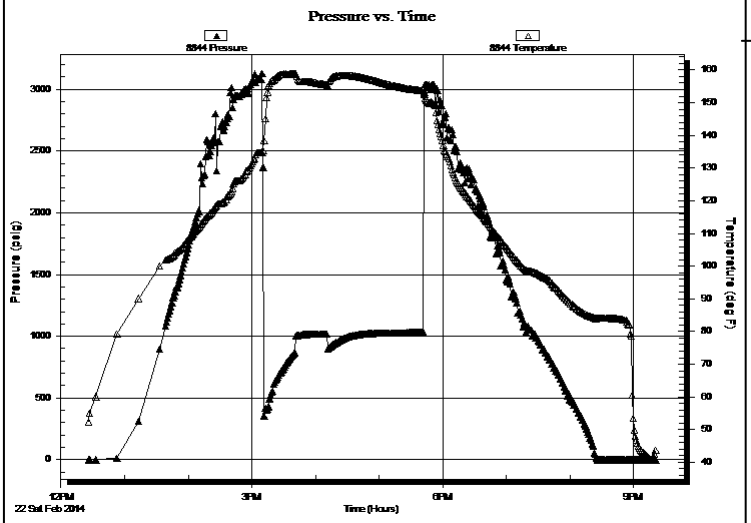
Interval: 6325.00 ft (KB) To 6385.00 ft (KB) (TVD)
Total Depth: 6385.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3122.00 ft (KB)
3110.00 ft (CF)
KB to GR/CF: 12.00 ft

Serial #: 8844 **Outside**
Press@RunDepth: psig @ 6326.00 ft (KB)
Start Date: 2014.02.22 End Date: 2014.02.22
Start Time: 12:26:07 End Time: 21:20:37

Capacity: 8000.00 psig
Last Calib.: 2014.02.22
Time On Btm:
Time Off Btm:

TEST COMMENT: 12' of fill on bottom . B.O.B. in 2 min.
No return
B.O.B. in 6 1/2 min.
No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
1449.00	w ater 100%w	18.61
378.00	s m c w 15%m 85%w	5.30
315.00	m c w 40%m 60%w	4.42

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Palmer Oil Inc

3118 N Cummings Rd
Garden City, KS 67846

ATTN: Wyatt Urban

23-32s-37w Stevens,KS

Willis #23-8

Job Ticket: 56284 **DST#: 1**

Test Start: 2014.02.22 @ 12:25:05

Tool Information

Drill Pipe:	Length:	6129.00 ft	Diameter:	3.80 inches	Volume:	85.97 bbl	Tool Weight:		2500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		25000.00 lb
Drill Collar:	Length:	188.00 ft	Diameter:	2.25 inches	Volume:	0.92 bbl	Weight to Pull Loose:		130000.0 lb
					Total Volume:	86.89 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		20.00 ft					String Weight:	Initial	102000.0 lb
Depth to Top Packer:		6325.00 ft						Final	116000.0 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		60.00 ft							
Tool Length:		88.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			6298.00		
Shut In Tool	5.00			6303.00		
Hydraulic tool	5.00			6308.00		
Jars	5.00			6313.00		
Safety Joint	3.00			6316.00		
Packer	5.00			6321.00	28.00	Bottom Of Top Packer
Packer	4.00			6325.00		
Stubb	1.00			6326.00		
Recorder	0.00	6771	Inside	6326.00		
Recorder	0.00	8844	Outside	6326.00		
Perforations	20.00			6346.00		
Change Over Sub	1.00			6347.00		
Drill Pipe	32.00			6379.00		
Change Over Sub	1.00			6380.00		
Bullnose	5.00			6385.00	60.00	Bottom Packers & Anchor
Total Tool Length:	**88.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Palmer Oil Inc

3118 N Cummings Rd
Garden City, KS 67846

ATTN: Wyatt Urban

23-32s-37w Stevens,KS

Willis #23-8

Job Ticket: 56284 **DST#: 1**

Test Start: 2014.02.22 @ 12:25:05

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	50000 ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.19 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2600.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1449.00	w ater 100%w	18.613
378.00	s m c w 15%m 85%w	5.302
315.00	m c w 40%m 60%w	4.419

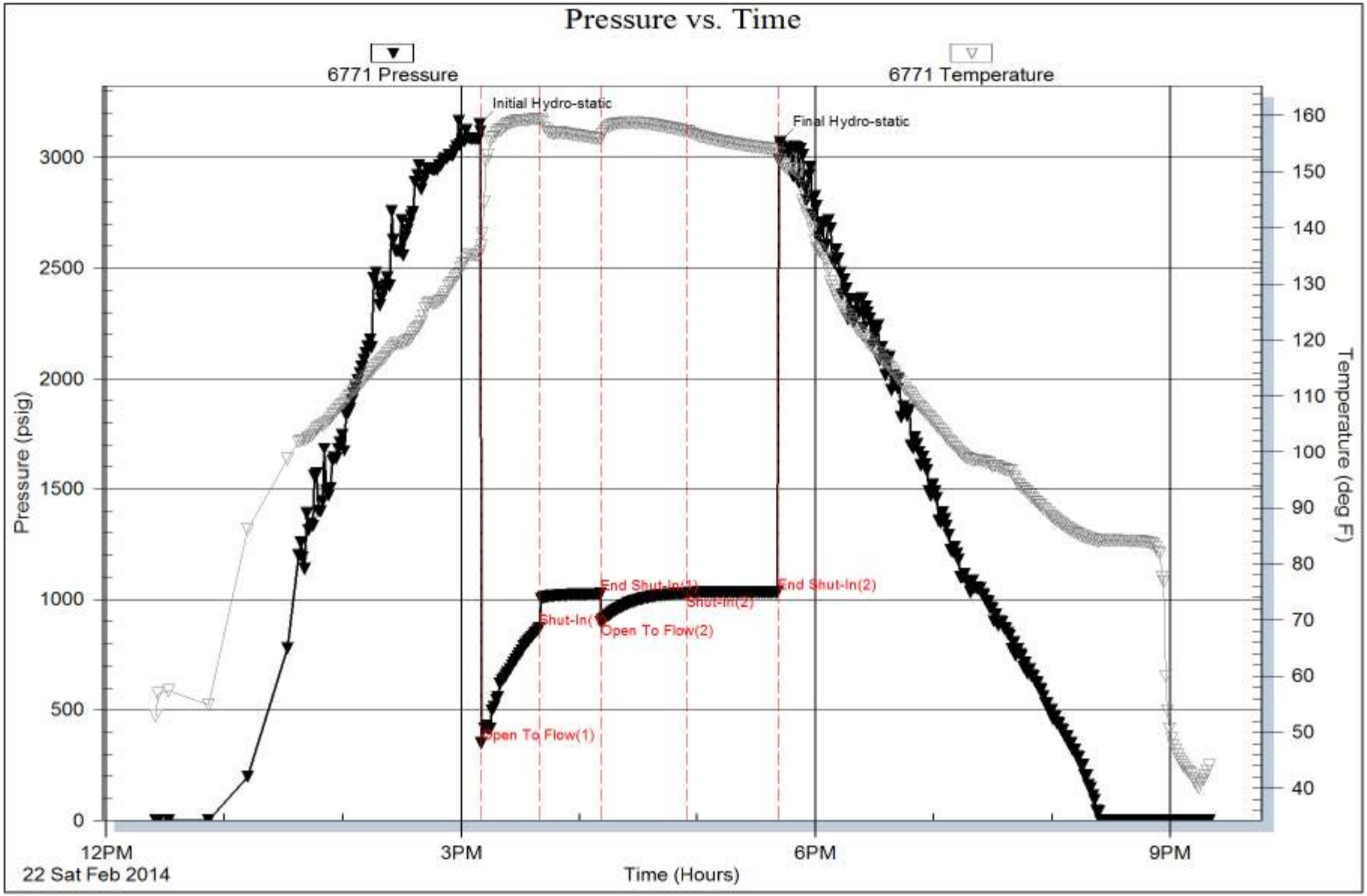
Total Length: 2142.00 ft Total Volume: 28.334 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

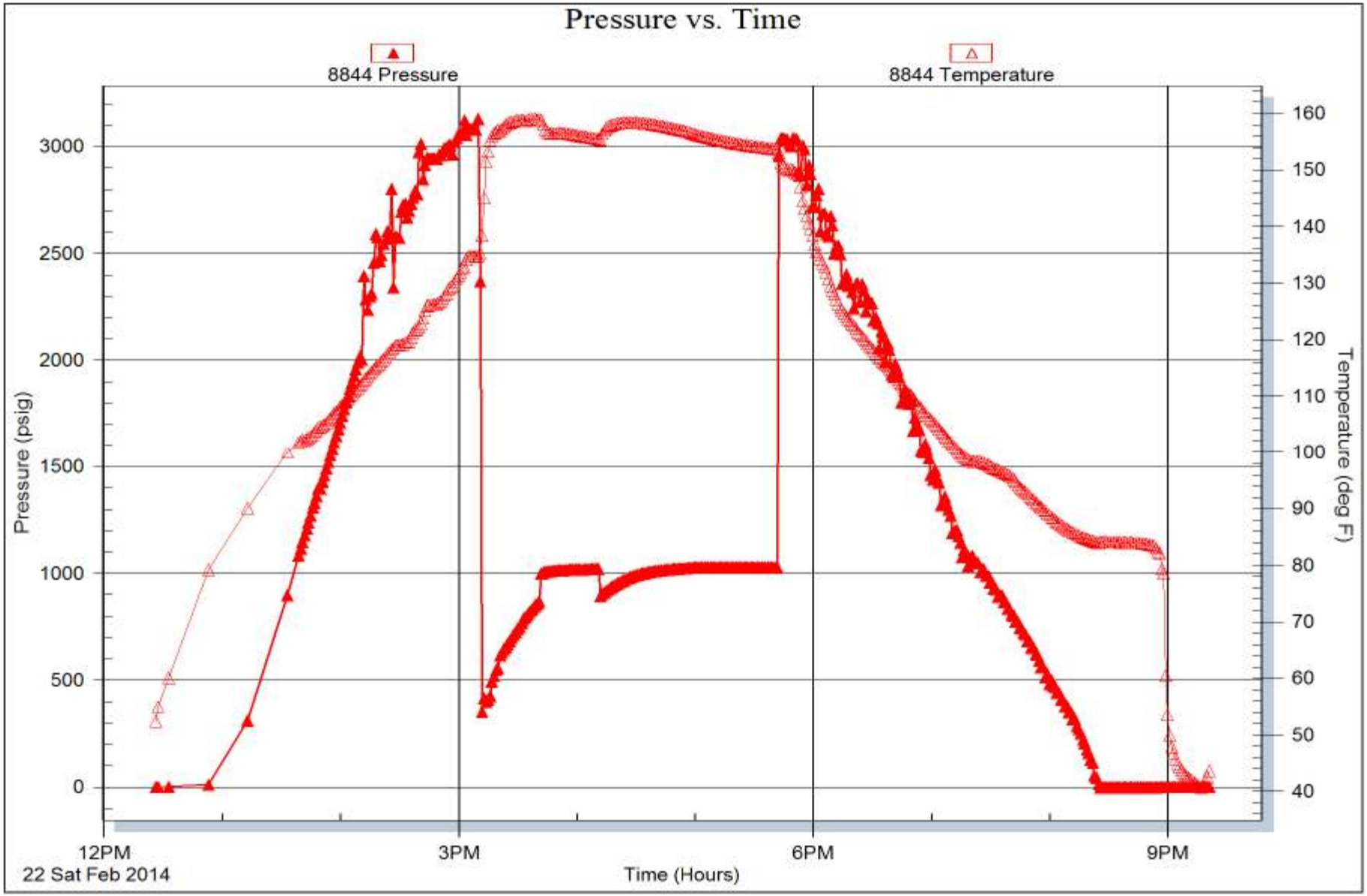
Recovery Comments: rw .199 @ 50*f=50,000 chlor

Serial #: 6771 **Inside** Palmer Oil Inc Willis #23-8 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 56284 Printed: 2014.02.25 @ 16:36:50

Serial #: 8844 **Outside** Palmer Oil Inc Willis #23-8 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 56284 Printed: 2014.02.25 @ 16:36:50

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 56284

Well Name & No. Willis #23-8 Test No. #1 Date 2/22/14

Company Palmer Oil Inc Elevation 3122 KB 3110 GL

Address 3118 N. Cummings Rd, Garden City Ks

Co. Rep / Geo. Wyatt Urban Rig Duke #9

Location: Sec. 23 Twp. 32 Rge. 37 Co. Stevens State Ks

Interval Tested 6325 6385 Zone Tested St. Louis

Anchor Length 60 Drill Pipe Run 6129 Mud Wt. 9.2

Top Packer Depth 6320 Drill Collars Run 188' Vis 54

Bottom Packer Depth 6325 Wt. Pipe Run — WL 7.2

Total Depth 6385 Chlorides 2600 ppm System LCM #2½

Blow Description (12' of Fill on bottom.) B.O.B. in 2 min
No return
B.O.B. in 6' 1/2 min.
No return

Rec 315	Feet of MCW	%gas	%oil	%water	%mud
Rec 378	Feet of SMCW	%gas	%oil	%water	%mud
Rec 1449	Feet of water	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2142' BHT 159° Gravity — API RW .199 @ 50 °F Chlorides 50,000 ppm

(A) Initial Hydrostatic	3149	☒ Test	1450	T-On Location	11:45
(B) First Initial Flow	350	☒ Jars	250	T-Started	12:25
(C) First Final Flow	872	☒ Safety Joint	75	T-Open	15:10
(D) Initial Shut-In	1026	☒ Circ Sub	N/C	T-Pulled	17:40
(E) Second Initial Flow	898	☐ Hourly Standby		T-Out	21:50
(F) Second Final Flow	1027	☒ Mileage 222	344.10	Comments	
(G) Final Shut-In	1032	☐ Sampler			
(H) Final Hydrostatic	3069	☐ Straddle		☐ Ruined Shale Packer	
		☐ Shale Packer		☐ Ruined Packer	
Initial Open	30	☐ Extra Packer		☐ Extra Copies	
Initial Shut-In	30	☐ Extra Recorder		Sub Total	0
Final Flow	45	☐ Day Standby		Total	2119.10
Final Shut-In	45	☐ Accessibility		MP/DST Disc't	
		Sub Total	2119.10		

Approved By _____ Our Representative _____

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

Musgrove PETROLEUM CORPORATION
Claflin, Kansas

NOTES

Company:Palmer Oil, Inc.

Lease:Willis #23-8

Field:Willis

Location:NE-SW-SW-SE (335' FSL & 2300' FEL)

Sec:23 Twsp:32S Rge:37W

County:Stevens State:Kansas

KB:3123' GL:3110'

API #:15-189-22833-00-00

Contractor:Duke Drilling Inc. (Rig #9)

Spud:2/14/2014 Comp:2/23/2014

RTD:6500' LTD:6499'

Mud Up: 4500' Type Mud: Chemical

Samples Saved From: 4600' to RTD
Drilling Time Kept From:4100' to RTD
Samples Examined From: 4600' to RTD
Geological Supervision from:4600' to RTD
Geologist on Well: Wyatt Urban

Surface Casing: 8 5/8@1743'

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

Palmer Oil, Inc.

well comparison sheet

	DRILLING WELL Palmer OIl-Willis 23-8 NE SW SW SE 23-32-37W 3123 KB				COMPARISON WELL Palmer Oil, Inc- Willis 23-7 SE NW NW SE 23-32S-37W 3117 KB		Structural Relationship		COMPARISON WELL EOG Resources- Willis 23-3 SE SE SE 23-32S-37W 3109 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
B. Heebner	4150	-1027			4133	-1016	11		4133	-1016	-11	
Lansing	4255	-1132			4251	-1134	-2		4251	-1142	10	
Marmaton	4932	-1809	4912	-1789	4916	-1799	-10	10	4916	-1799	-10	10
Cherokee	5129	-2006	5111	-1988	5117	-2000	-6	12	5117	-2000	-6	12
Atoka	5525	-2402	5529	-2406	5523	-2406	4	0	5523	-2406	4	0
Morrow	5629	-2506	5628	-2505	5622	-2505	-1	0	5622	-2505	-1	0
St. Gen.	6174	-3051	6169	-3046	6172	-3055	4	9				
St. Louis	6292	-3169	6294	-3171	6297	-3180	11	9				
St. Louis B	6368	-3245	6365	-3242	6347	-3230	-15	-12				
RTD	6500	-3377	6500	-3377	6500	-3383	6	6				
LTD	6499	-3376	6499	-3376	6506	-3389	13	13				

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Palmer Oil Inc

3118 N Cummings Rd
Garden City, Ks

23-32-37 Stevens,Ks

Willis #23-8

Garden City, Ks
67846
ATTN: Wyatt Urban

Job Ticket: 56284 **DST#: 1**

Test Start: 2014.02.22 @ 12:25:05

GENERAL INFORMATION:

Formation: **St Louis**
Deviated: No Whipstock: 0.00 ft (KB)
Time Tool Opened: 15:10:05
Time Test Ended: 21:50:35

Test Type: Conventional Bottom Hole (Initial)
Tester: Shane McBride
Unit No: 55

Interval: 6325.00 ft (KB) To 6385.00 ft (KB) (TVD)
Total Depth: 6385.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

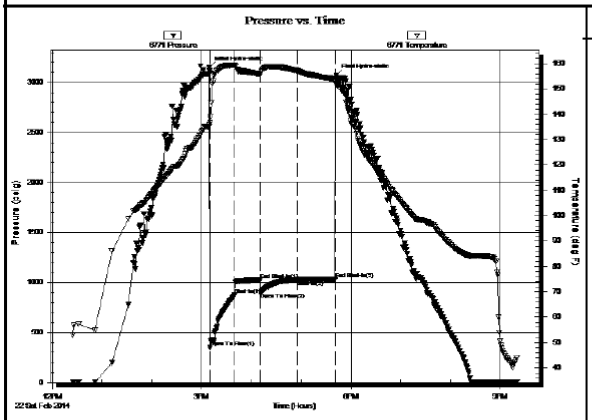
Reference Elevations: 3122.00 ft (KB)
3110.00 ft (CF)
KB to GR/CF: 12.00 ft

Serial #: 6771 **Inside**

Press@RunDepth: 1027.79 psig @ 6326.00 ft (KB)
Start Date: 2014.02.22 End Date: 2014.02.22
Start Time: 12:25:05 End Time: 21:19:35

Capacity: 8000.00 psig
Last Calib.: 2014.02.22
Time On Btm: 2014.02.22 @ 15:09:20
Time Off Btm: 2014.02.22 @ 17:42:05

TEST COMMENT: 12' of fill on bottom . B.O.B. in 2 min.
No return
B.O.B. in 6 1/2 min.
No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	3149.75	135.79	Initial Hydro-static
1	350.62	136.81	Open To Flow (1)
31	872.33	159.33	Shut-In(1)
62	1026.59	155.79	End Shut-In(1)
62	898.82	155.76	Open To Flow (2)
106	1027.79	157.21	Shut-In(2)
152	1032.57	153.91	End Shut-In(2)
153	3069.18	152.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1449.00	w ater 100%w	18.61
378.00	s m c w 15%m 85%w	5.30
315.00	m c w 40%m 60%w	4.42

Gas Rates

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

ROCK TYPES

sdy lmst
Lmst fw<7
Lmst fw7>
shale, gry
Carbon Sh

ACCESSORIES

FOSSIL
○ Oolite

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

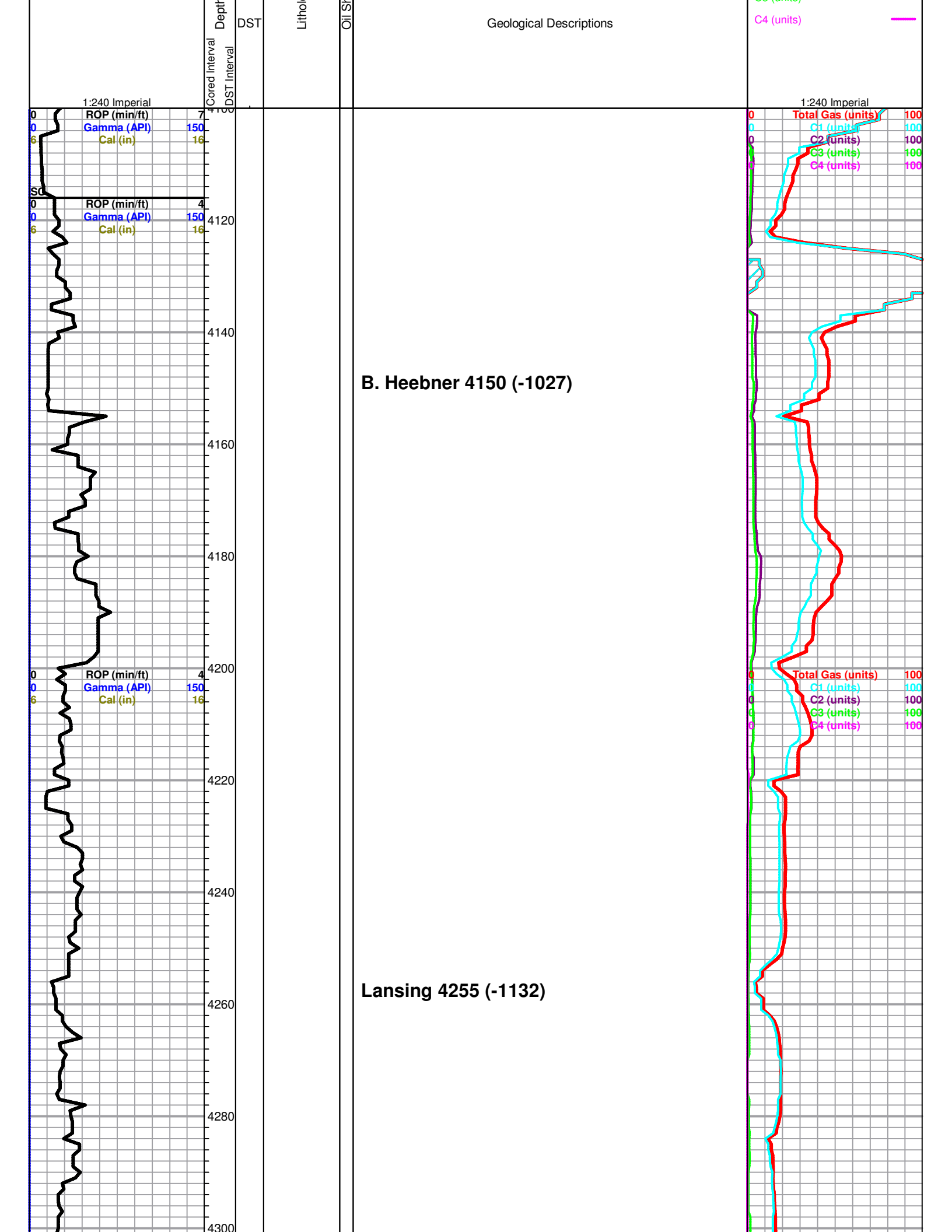
Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

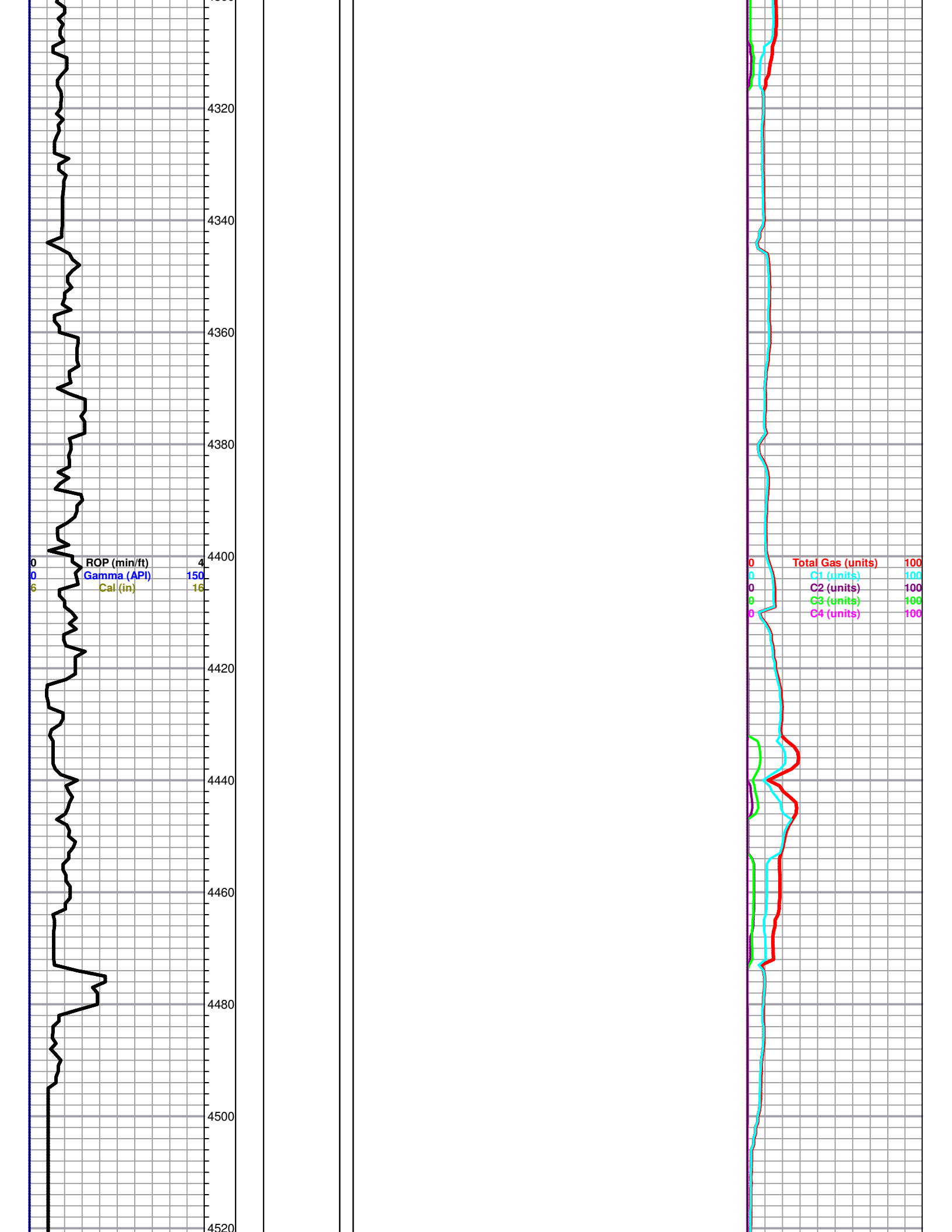
Curve Track #1
ROP (min/ft)
Gamma (API)
Cal (in)

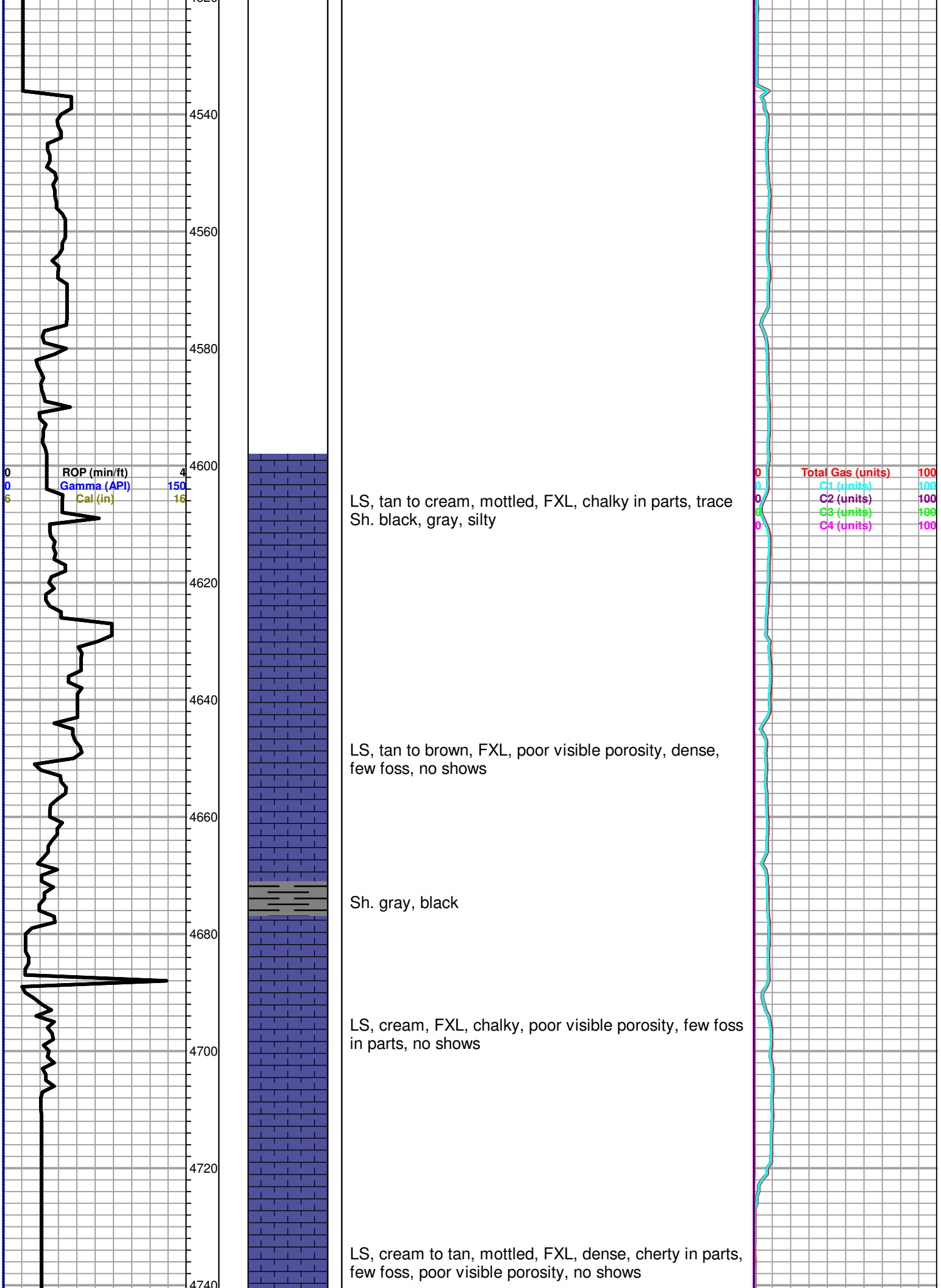
Intervals

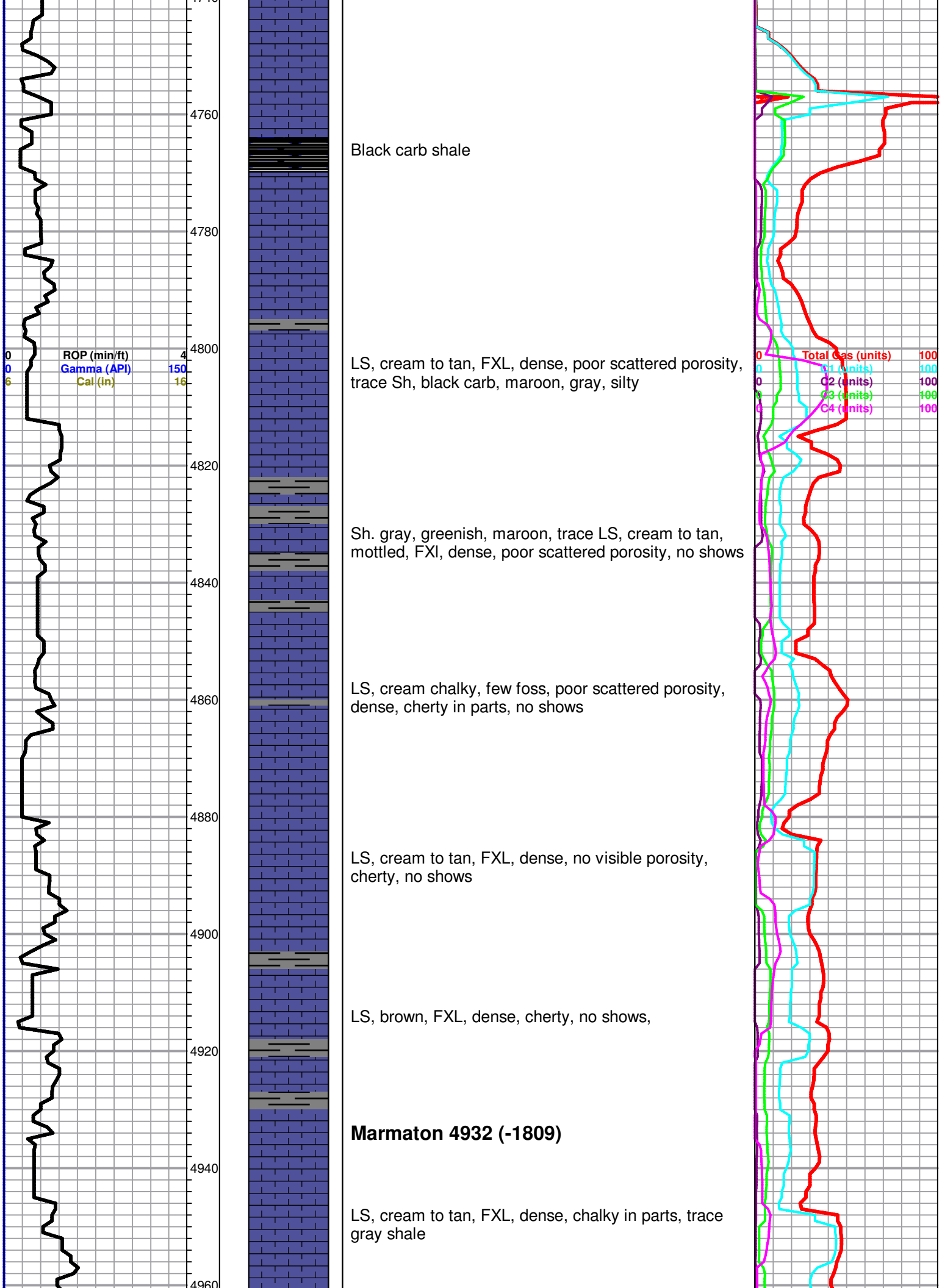
ogy

TG, C1 - C5
Total Gas (units)
C1 (units)
C2 (units)
C3 (units)


Depth
Cored Interval
DST Interval
DST
Lithology
Oil Show
Geological Descriptions
C4 (units)
1:240 Imperial
0 ROP (min/ft) 7
0 Gamma (API) 150
6 Cal (in) 16
SC
0 ROP (min/ft) 4
0 Gamma (API) 150
6 Cal (in) 16
0 ROP (min/ft) 4
0 Gamma (API) 150
6 Cal (in) 16
4100
4120
4140
4160
4180
4200
4220
4240
4260
4280
4300
B. Heebner 4150 (-1027)
Lansing 4255 (-1132)
1:240 Imperial
0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100
0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100


4320
4340
4360
4380
4400
4420
4440
4460
4480
4500
4520
0 ROP (min/ft) 4
0 Gamma (API) 150
6 Cal (in) 16
0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100


0 ROP (min/ft) 4
0 Gamma (API) 150
6 Cal (in) 16
4540
4560
4580
4600
4620
4640
4660
4680
4700
4720
4740
0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100
LS, tan to cream, mottled, FXL, chalky in parts, trace Sh. black, gray, silty
LS, tan to brown, FXL, poor visible porosity, dense, few foss, no shows
Sh. gray, black
LS, cream, FXL, chalky, poor visible porosity, few foss in parts, no shows
LS, cream to tan, mottled, FXL, dense, cherty in parts, few foss, poor visible porosity, no shows



Black carb shale

LS, cream to tan, FXL, dense, poor scattered porosity, trace Sh, black carb, maroon, gray, silty

Sh. gray, greenish, maroon, trace LS, cream to tan, mottled, FXl, dense, poor scattered porosity, no shows

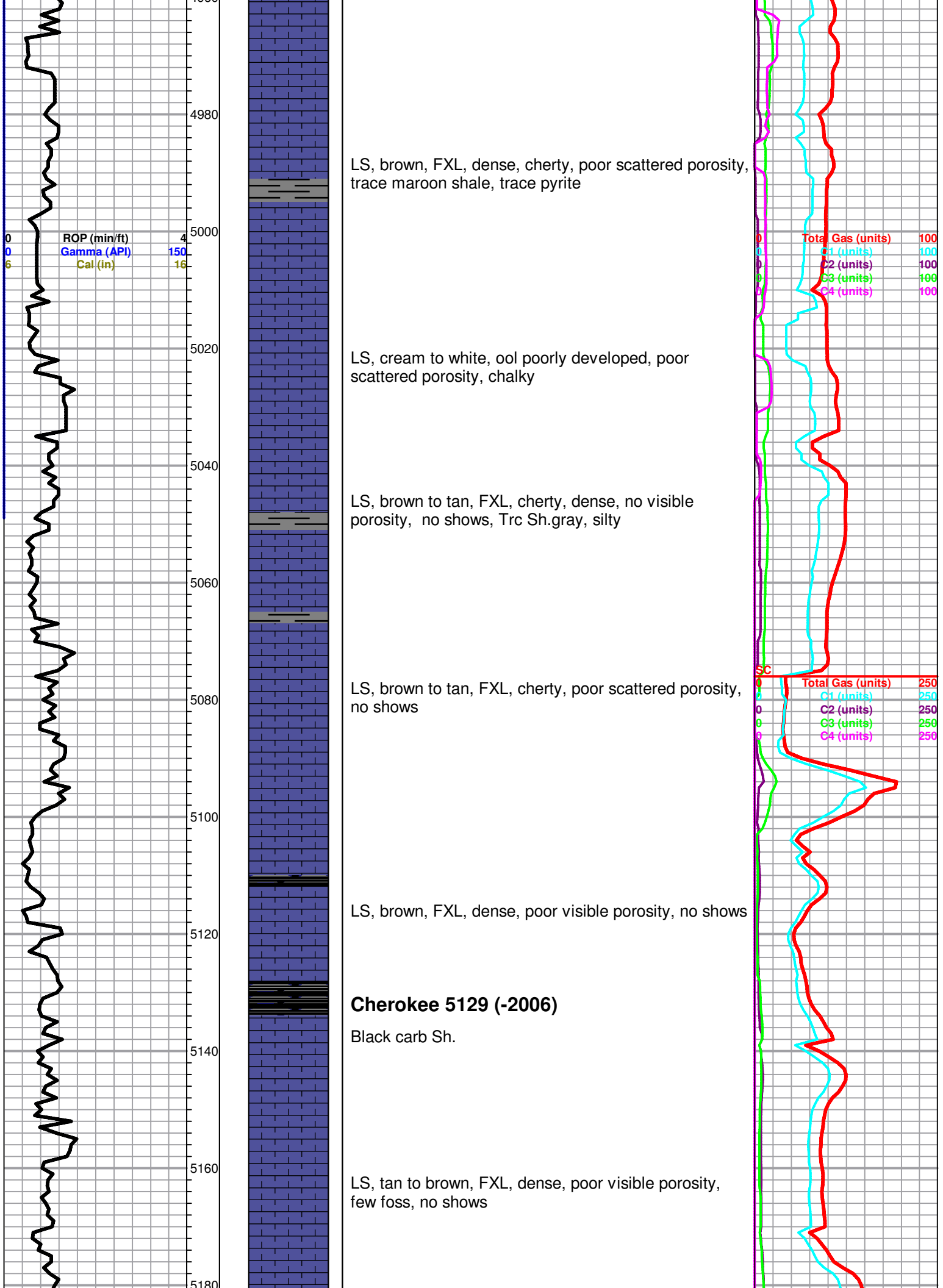
LS, cream chalky, few foss, poor scattered porosity, dense, cherty in parts, no shows

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

LS, brown, FXL, dense, cherty, no shows,

Marmaton 4932 (-1809)

LS, cream to tan, FXL, dense, chalky in parts, trace gray shale



LS, brown, FXL, dense, cherty, poor scattered porosity, trace maroon shale, trace pyrite

LS, cream to white, ool poorly developed, poor scattered porosity, chalky

LS, brown to tan, FXL, cherty, dense, no visible porosity, no shows, Trc Sh.gray, silty

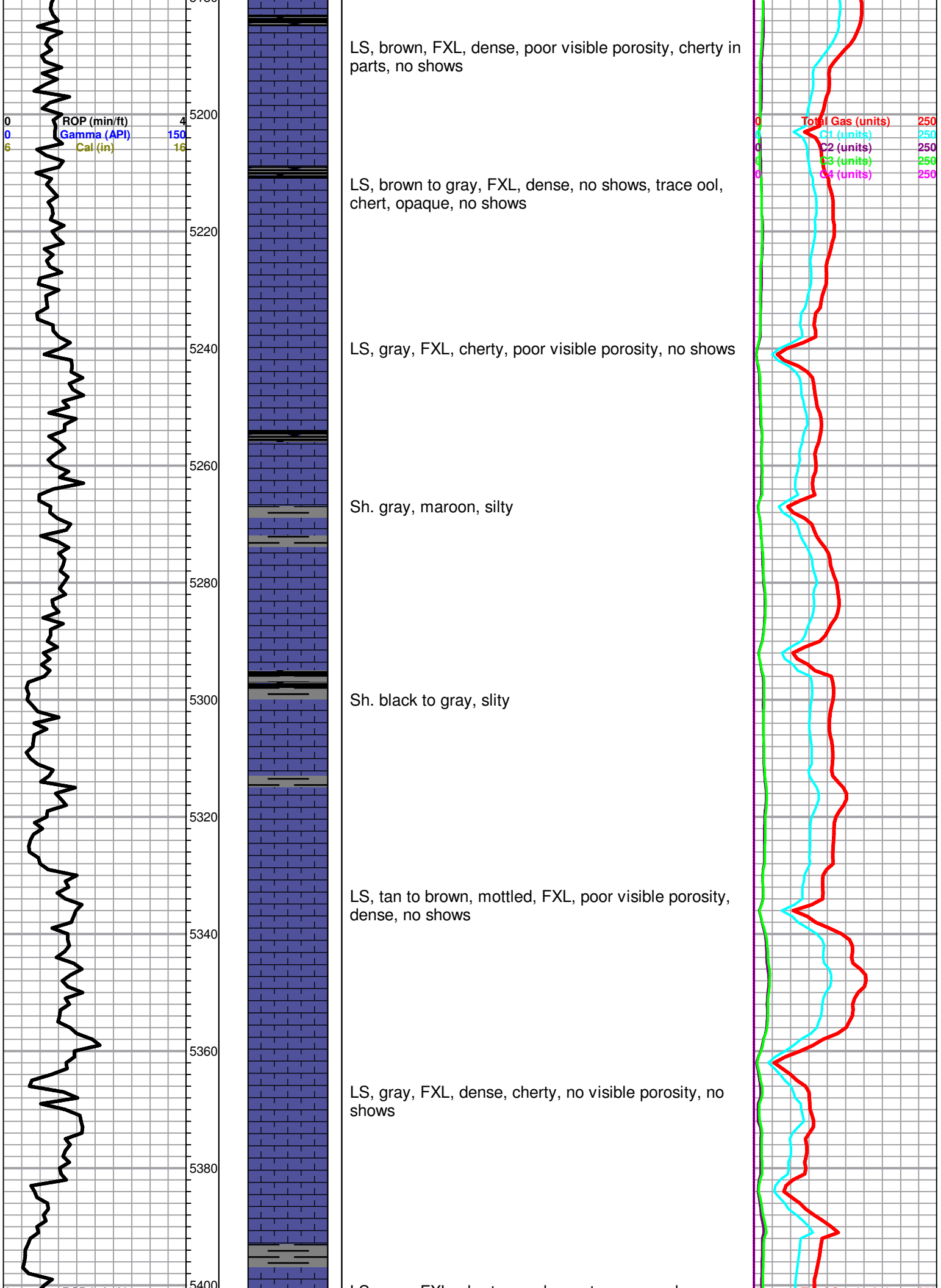
LS, brown to tan, FXL, cherty, poor scattered porosity, no shows

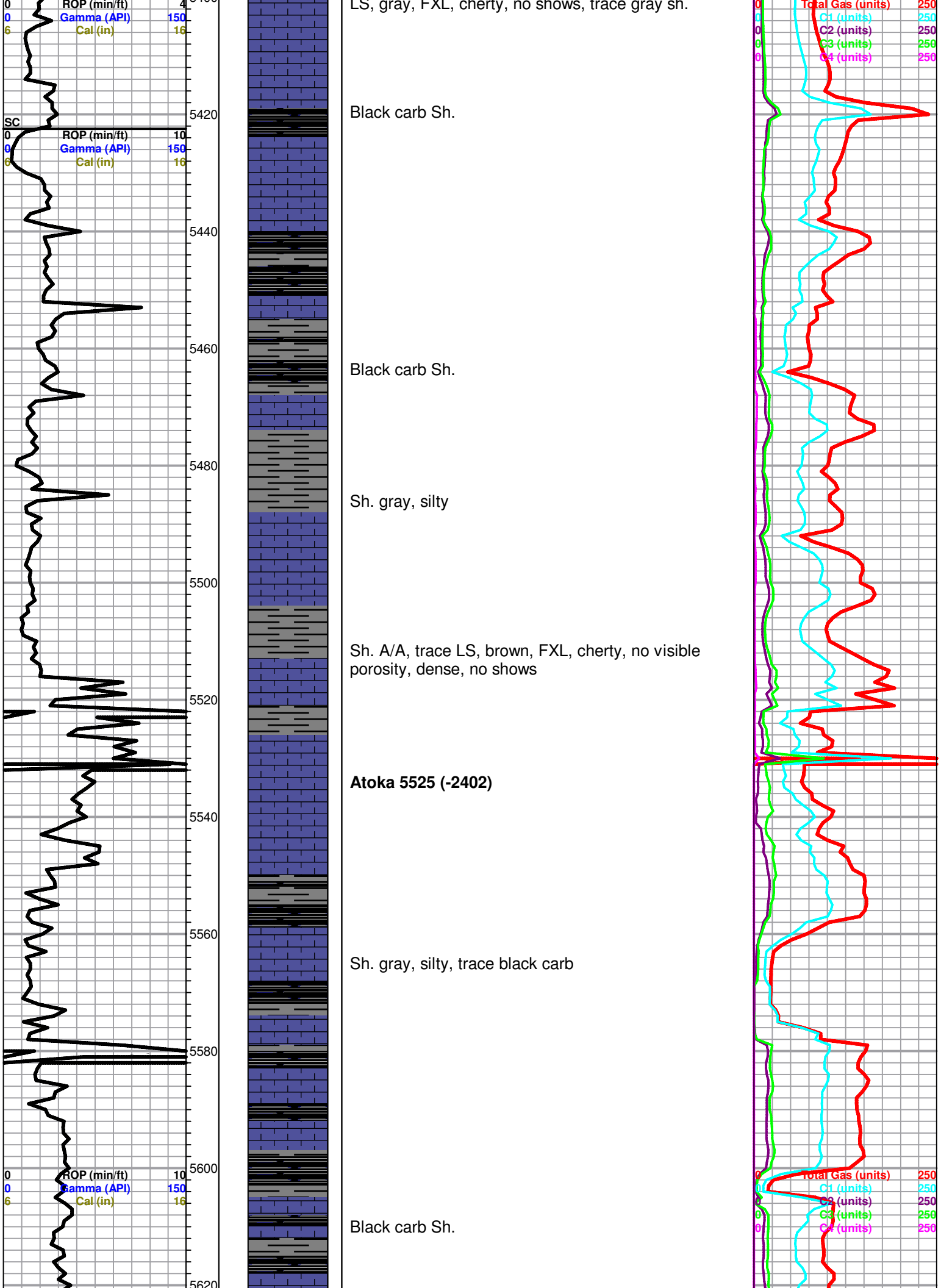
LS, brown, FXL, dense, poor visible porosity, no shows

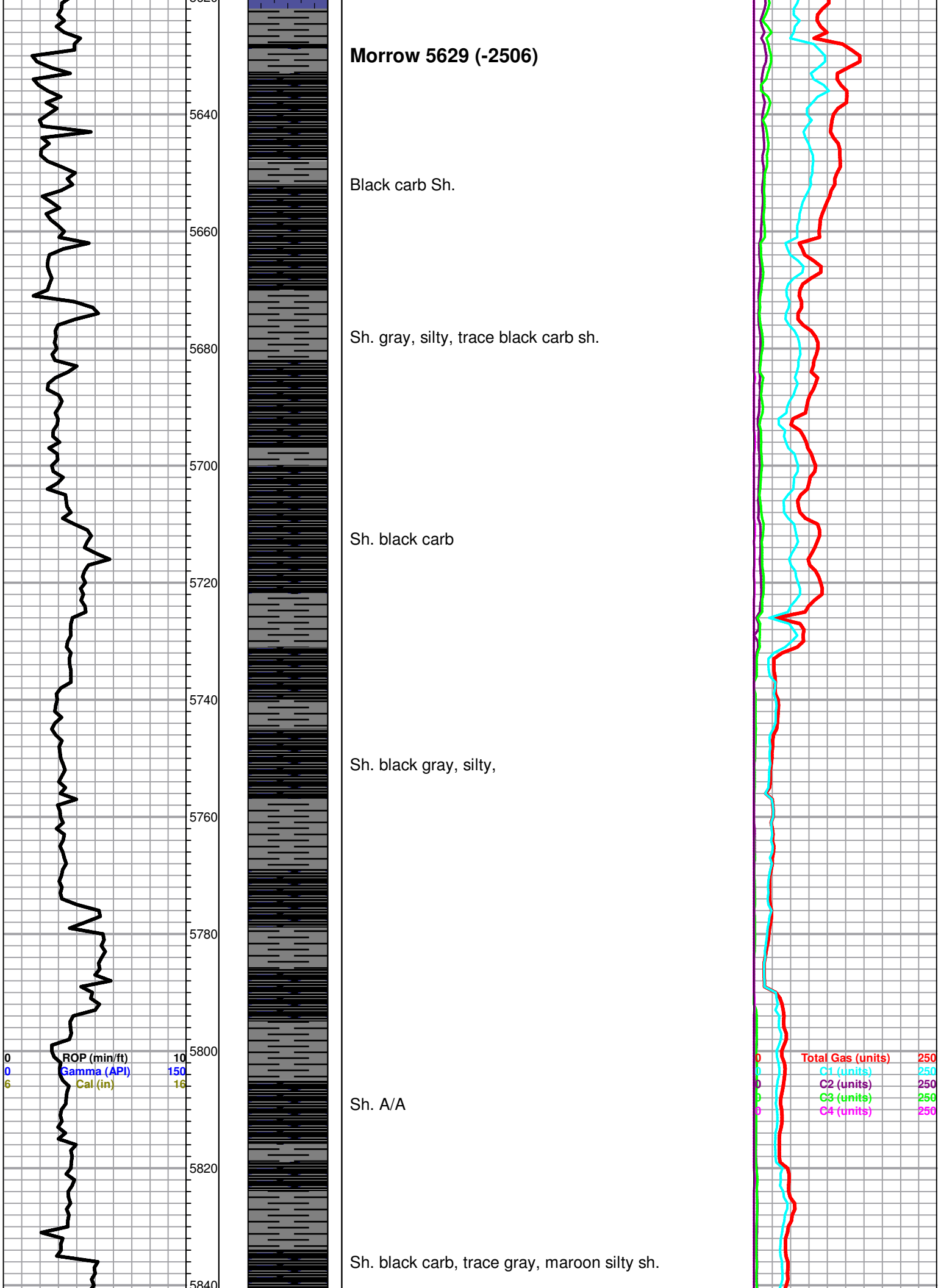
Cherokee 5129 (-2006)

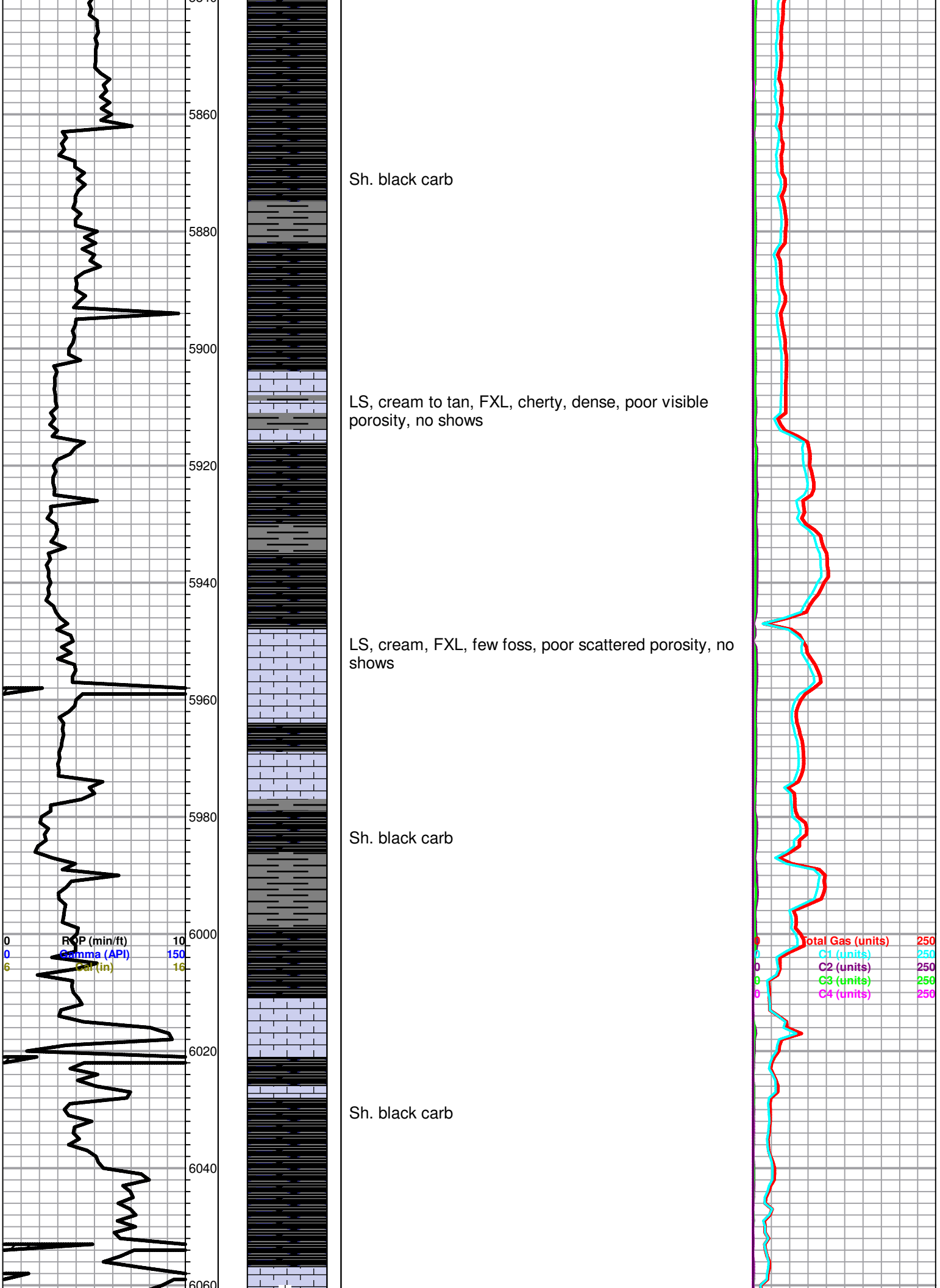
Black carb Sh.

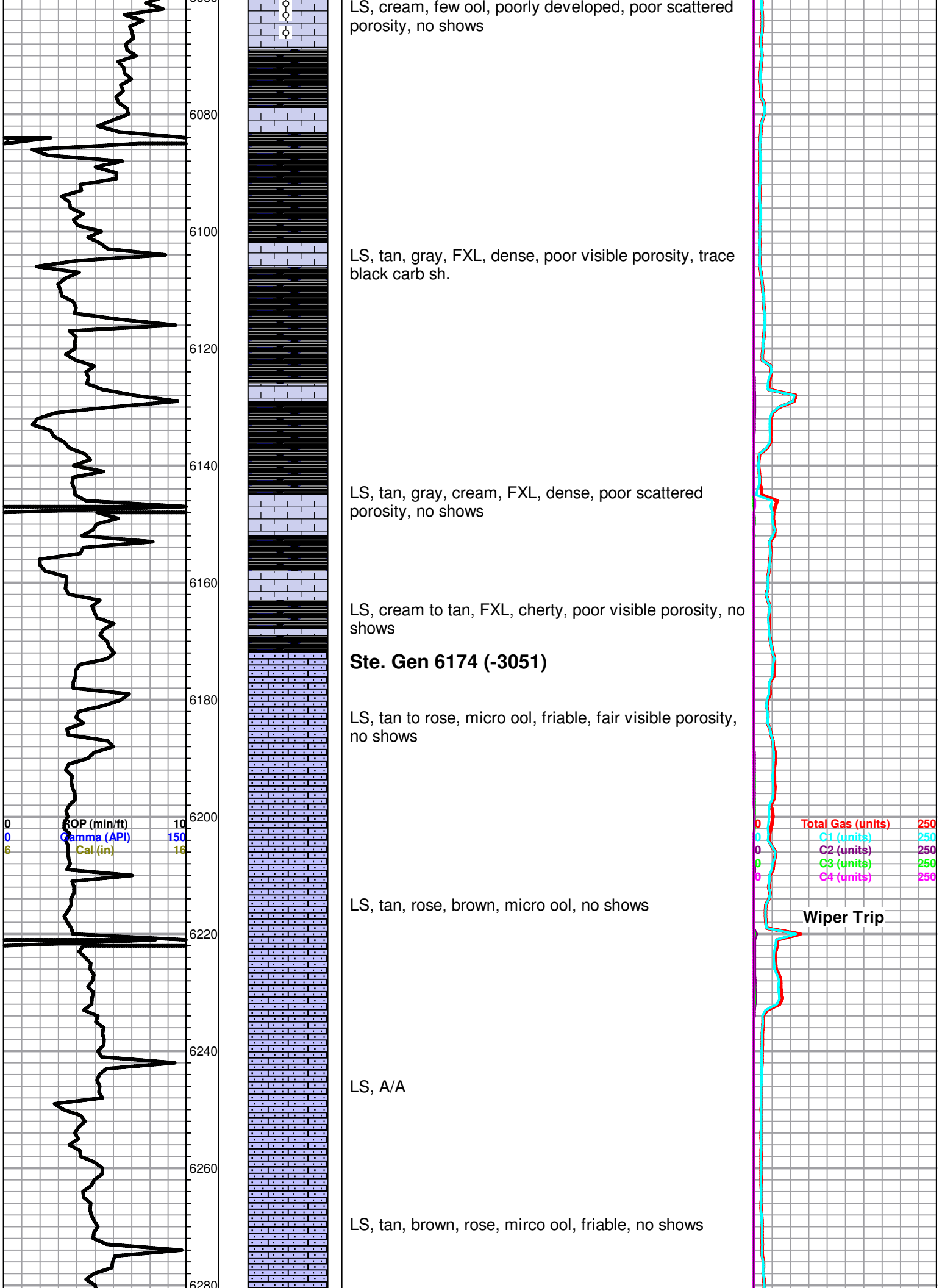
LS, tan to brown, FXL, dense, poor visible porosity, few foss, no shows


0 ROP (min/ft) 4
0 Gamma (API) 150
6 Cal (in) 16
0 Total Gas (units) 250
0 C1 (units) 250
0 C2 (units) 250
0 C3 (units) 250
0 C4 (units) 250
5200
5220
5240
5260
5280
5300
5320
5340
5360
5380
5400
LS, brown, FXL, dense, poor visible porosity, cherty in parts, no shows
LS, brown to gray, FXL, dense, no shows, trace ool, chert, opaque, no shows
LS, gray, FXL, cherty, poor visible porosity, no shows
Sh. gray, maroon, silty
Sh. black to gray, slity
LS, tan to brown, mottled, FXL, poor visible porosity, dense, no shows
LS, gray, FXL, dense, cherty, no visible porosity, no shows


0 ROP (min/ft) 4
0 Gamma (API) 150
6 Cal (in) 16
SC
0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16
0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16
5420
5440
5460
5480
5500
5520
5540
5560
5580
5600
5620
LS, gray, FXL, cherty, no shows, trace gray sh.
Black carb Sh.
Black carb Sh.
Sh. gray, silty
Sh. A/A, trace LS, brown, FXL, cherty, no visible porosity, dense, no shows
Atoka 5525 (-2402)
Sh. gray, silty, trace black carb
Black carb Sh.
0 Total Gas (units) 250
0 C1 (units) 250
0 C2 (units) 250
0 C3 (units) 250
0 C4 (units) 250
0 Total Gas (units) 250
0 C1 (units) 250
0 C2 (units) 250
0 C3 (units) 250
0 C4 (units) 250


Morrow 5629 (-2506)
Black carb Sh.
Sh. gray, silty, trace black carb sh.
Sh. black carb
Sh. black gray, silty,
Sh. A/A
Sh. black carb, trace gray, maroon silty sh.
5640
5660
5680
5700
5720
5740
5760
5780
5800
5820
5840
0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16
0 Total Gas (units) 250
0 C1 (units) 250
0 C2 (units) 250
0 C3 (units) 250
0 C4 (units) 250


5860
5880
5900
5920
5940
5960
5980
6000
6020
6040
6060
0 ROP (min/ft) 10
0 Gamma (API) 150
6 Cal (in) 16
Sh. black carb
LS, cream to tan, FXL, cherty, dense, poor visible porosity, no shows
LS, cream, FXL, few foss, poor scattered porosity, no shows
Sh. black carb
Sh. black carb
0 Total Gas (units) 250
0 C1 (units) 250
0 C2 (units) 250
0 C3 (units) 250
0 C4 (units) 250



LS, cream, few ool, poorly developed, poor scattered porosity, no shows

LS, tan, gray, FXL, dense, poor visible porosity, trace black carb sh.

LS, tan, gray, cream, FXL, dense, poor scattered porosity, no shows

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

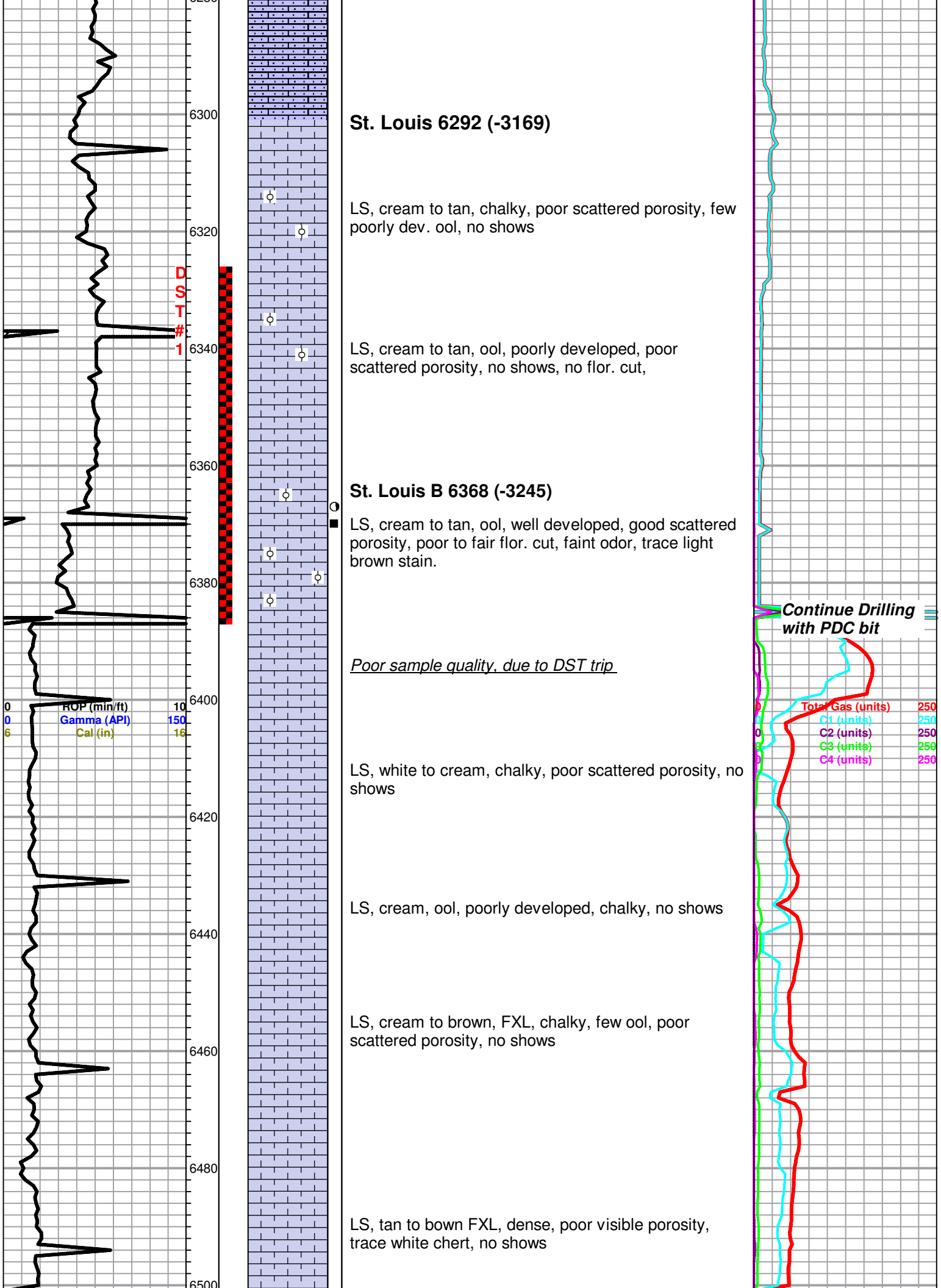
Ste. Gen 6174 (-3051)

LS, tan to rose, micro ool, friable, fair visible porosity, no shows

LS, tan, rose, brown, micro ool, no shows

LS, A/A

LS, tan, brown, rose, mirco ool, friable, no shows



St. Louis 6292 (-3169)

LS, cream to tan, chalky, poor scattered porosity, few poorly dev. ool, no shows

LS, cream to tan, ool, poorly developed, poor scattered porosity, no shows, no flor. cut,

St. Louis B 6368 (-3245)

LS, cream to tan, ool, well developed, good scattered porosity, poor to fair flor. cut, faint odor, trace light brown stain.

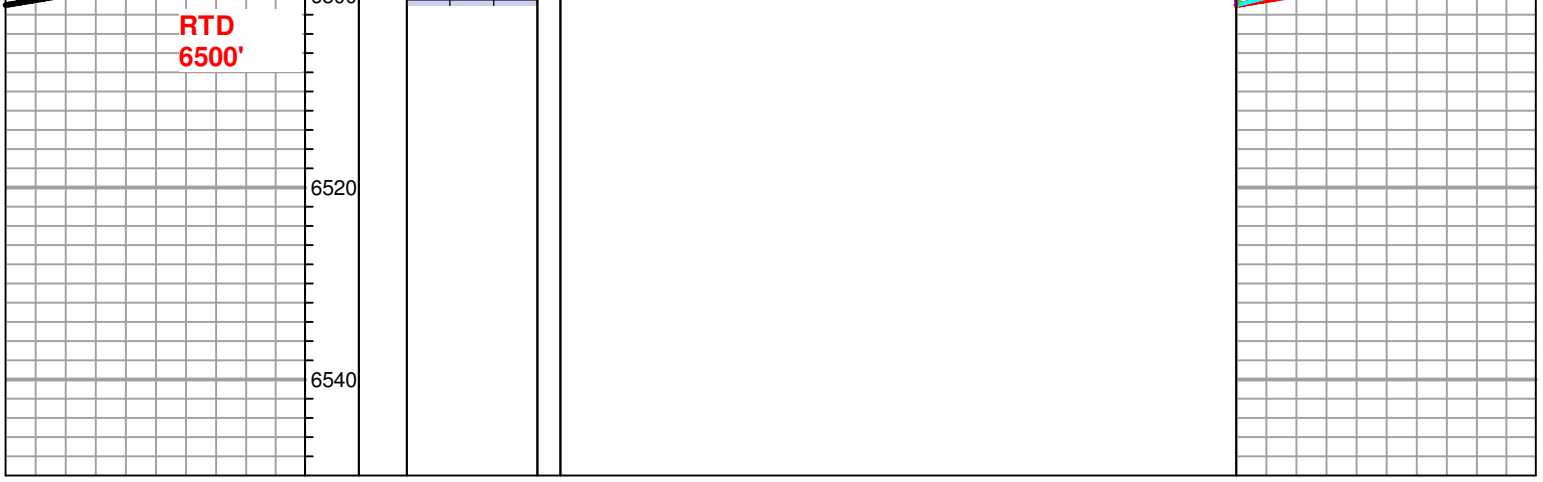
Poor sample quality, due to DST trip

LS, white to cream, chalky, poor scattered porosity, no shows

LS, cream, ool, poorly developed, chalky, no shows

LS, cream to brown, FXL, chalky, few ool, poor scattered porosity, no shows

LS, tan to bown FXL, dense, poor visible porosity, trace white chert, no shows


RTD
6500'
6520
6540