

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

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

Gas DH EOR

OG GSW

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 EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

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 Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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

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				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
---	---	------------------------------------

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	ROBERTS 1-25
Doc ID	1427174

All Electric Logs Run

DIL
DUCP
MEL
BHCS

TREATMENT REPORT



HURRICANE SERVICES INC

Customer:	Murfin Drilling	Date:	10/7/2018	Ticket #:	ICT1454
Field Rep:	Ray				
Address:	250 N Water St				
City, State:	Wichita, Ks				
County, Zip:		67202			

Field Order No.:		Open Hole:	12 1/4	Perf Depths (ft)		Perfs	
Well Name:	Roberts 1-25	Casing Depth:	1771				
Location:	Stanton Ks	Casing Size:	8 5/8				
Formation:		Tubing Depth:					
Type of Service:	Cement	Tubing Size:					
Well Type:	Oil	Liner Depth:					
Age of Well:	New	Liner Size:					
Packer Type:		Liner Top:					
Packer Depth:		Liner Bottom:					
Treatment Via:		Total Depth:	1775				
				Total Perfs	0		

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
	FLUID	N2/CO2	STP	ANNULUS				
3:45 PM					Arrive on Location			
3:50 PM					Safety Meeting			
3:55 PM					Rig up			
10:50 PM					Rig runs casing			
1:30 AM					pipe on bottom/ Circulate			
1:55 AM	4.0		350.0		Mix 700 sks Class A 3% cc, 2% gel at 1.41 yield			175.78
2:30 AM	4.0		300.0		Displace/ release plug			122.00
3:45 AM			500.0		End displacement/ shut in well			
3:50 AM					Wash up			
4:00 AM					Rig down Depart			
TOTAL:						-	-	297.78

SUMMARY			
Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
4.0	4.0	500.0	383.3

PRODUCTS USED

700 sks Class A 3% cc 2% gel .25 flo seal

Treater: Travis Williams

Customer: Leonard Cow

MDCI
 Roberts #1-25
 1320' FNL 660' FWL
 Sec. 25-T28S-R41W
 3348' KB

Formation	Sample Top	Datum	Ref	Log tops	Datum	Ref
B/Anhydrite	1760	+1588	----	1722	+1626	
Celia	4634	-1286	+3	4633	-1285	+4
Atoka	4808	-1460	+2	4808	-1460	+2
Morrow	5103	-1755	-1	5130	-1782	-28
Morrow Lm	5427	-2079	-47	5427	-2079	-47
Mississippian	5512	-2164	+68	5519	-2171	+61
St Louis				5613	-2265	+49
RTD	5800					
LTD				5801		

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: Roberts #1-25
 Location: Sec. 25 - T28S - R41W
 API: 15-187-21340-0000
 Pool:
 State: Kansas

Field: Wildcat
 Country: USA



Scale 1:240 Imperial

Well Name: Roberts #1-25
 Surface Location: Sec. 25 - T28S - R41W
 Bottom Location:
 API: 15-187-21340-0000
 License Number: 30606
 Spud Date: 10/5/2018 Time: 8:15 AM
 Region: Stanton County Time: 3:05 AM
 Drilling Completed: 10/16/2018
 Surface Coordinates: 1320' FNL & 660' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 3337.00ft
 K.B. Elevation: 3348.00ft
 Logged Interval: 4530.00ft To: 5800.00ft
 Total Depth: 5800.00ft
 Formation: Mississippian
 Drilling Fluid Type: Chemical/Fresh Water Gel

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 Latitude:
 N/S Co-ord: 1320' FNL
 E/W Co-ord: 660' FWL

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 #: 22
 Rig Type: mud rotary
 Spud Date: 10/5/2018 Time: 8:15 AM
 TD Date: 10/16/2018 Time: 3:05 AM
 Rig Release: Time:

ELEVATIONS

K.B. Elevation: 3348.00ft
K.B. to Ground: 11.00ft

Ground Elevation: 3337.00ft

NOTES

Due to negative result of drill stem testing and electrical log evaluation, it was determined by the operator that the Roberts #1-25 be plugged and abandoned as a dry test.

A Bloodhound gas detection system operated by Bluestem Labs was employed during the drilling of this well. ROP and gas data were imported from the Bloodhound system. Gamma ray and caliper curves were imported from the electrical log suite.

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

daily drilling report

DATE	7:00 AM DEPTH	REMARKS
10/11/2018	4091	geologist on location, 4300 ft, 1340 hrs, check Bloodhound, drilling ahead Lansing, Marmaton, Ft. Scott
10/12/2018	4918	drilling ahead, Celia, Atoka, Morrow, bit trip @ 5107 ft, out with PDC and in with button bit, drill ahead, Morrow
10/13/2018	5294	drilling ahead, Morrow, plugged bit @ 5294', round trip, resume drilling, Morrow, Keyes Sand, show warrants test, 10 stand wiper trip, TOH w/bit,
10/14/2018	5500	Drilling Morrow, Keyes Sand, show warrants test, 10 stand wiper trip, TOH w/bit, in w/tools, conduct and complete DST #1, TIH w/bit, resume drilling
10/15/2018	5577	rathole ahead ahead for TD, geologist Bruce Ard relieve Keith Reavis
10/16/2018	5800	TD well @ 0305 hrs, ctch, TOH, conduct logging operations, P & A

well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Murfin - Roberts #1-25					Murfin - Plummer #1-25				Stelbar - Roberts #1-25			
1320' FNL & 660' FWL					2100' FSL & 1925' FEL				830' FSL & 1650' FEL			
Sec 25 - T28S - R41W					Sec 25 - T28S - R41W				Sec 25 - T28S - R41W			
3348 KB					3343 KB				3342 KB			
					Structural Relationship				Structural Relationship			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	np		3715	-367	3720	-377		10	3728	-386		19
Lansing	3779	-431	3768	-420	3777	-434	3	14	3787	-445	14	25
Lansing B	3818	-470	3814	-466	3822	-479	9	13	3828	-486	16	20
Lansing G	3976	-628	3975	-627	3980	-637	9	10	3982	-640	12	13
Stark Shale	4200	-852	4194	-846	4204	-861	9	15	4210	-868	16	22
Pleasanton	4348	-1000	4344	-996	4351	-1008	8	12	4356	-1014	14	18
Marmaton	4376	-1028	4378	-1030	4382	-1039	11	9	4386	-1044	16	14
Ft. Scott	4524	-1176	4524	-1176	4530	-1187	11	11	4528	-1186	10	10
Excello	4566	-1218	4564	-1216	4568	-1225	7	9	4570	-1228	10	12
Celia	4634	-1286	4633	-1285	4633	-1290	4	5	4631	-1289	3	4
Atoka	4808	-1460	4808	-1460	4814	-1471	11	11	4804	-1462	2	2
Morrow	5103	-1755	5130	-1782	5106	-1763	8	-19	5096	-1754	-1	-28
M. Morrow Lm	5427	-2079	5427	-2079	5394	-2051	-28	-28	5374	-2032	-47	-47
Keyes Sand	5479	-2131	5479	-2131	5470	-2127	-4	-4	5430	-2088	-43	-43
Miss (St. Gen)	5540	-2192	5539	-2191	5530	-2187	-5	-4	5574	-2232	40	41
St. Louis B	5616	-2268	5613	-2265	5610	-2267	-1	2	5656	-2314	46	49
Total Depth	5800	-2452	5801	-2453	5795	-2452	0	-1	5793	-2451	-1	-2



DRILL STEM TEST REPORT

Murfin Drilling Co.

25-28s-41w Stanton, KS



250 N. Market St. STE 300

Wichita KS 67202

Roberts #1-25

Job Ticket: 64278

DST#: 1

ATTN: Keith Reavis

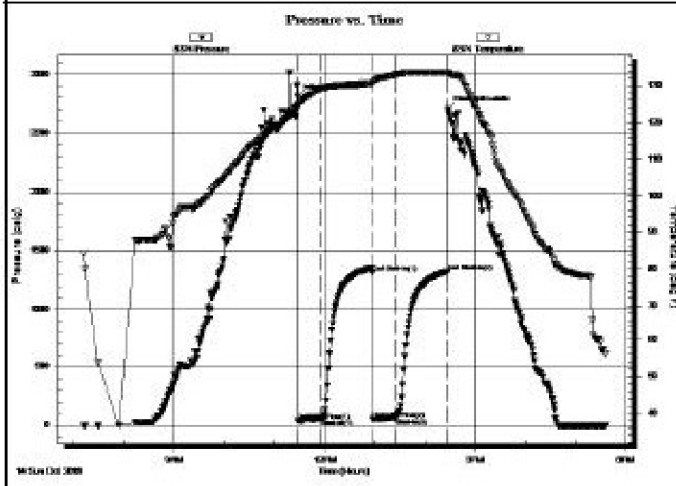
Test Start: 2018.10.14 @ 07:12:15

GENERAL INFORMATION:

Formation: **Keyes SD**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:27:45
 Time Test Ended: 17:36:00
 Interval: **5436.00 ft (KB) To 5500.00 ft (KB) (TVD)**
 Total Depth: 5500.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches - hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3348.00 ft (KB)
 3338.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8374 Inside
 Press@RunDepth: 66.60 psig @ 5475.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.10.14 End Date: 2018.10.14 Last Calib.: 2018.10.14
 Start Time: 07:12:15 End Time: 17:36:00 Time On Btm: 2018.10.14 @ 11:27:30
 Time Off Btm: 2018.10.14 @ 14:27:30

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



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2805.86	124.37	Initial Hydro-static
1	40.05	123.86	Open To Flow (1)
29	55.25	129.29	Shut-In (1)
89	1313.91	130.58	End Shut-In (1)
90	57.56	130.38	Open To Flow (2)
118	66.60	133.15	Shut-In (2)
180	1325.14	133.64	End Shut-In (2)
180	2701.10	133.51	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
15.00	mud 100 %m	0.07

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

ROCK TYPES

Dolprim
 sdy lmst
 Lmst fw7>
 Carbon Sh
 Ss
 Dolsec
 Lmst fw<7
 shale, gry
 shale, red

ACCESSORIES

MINERAL
 ⊖ Breccia, fragment
 ⊥ Calcareous
 ▲ Chert, dark
 ∩ Glauconite
 P Pyrite
 • Silty
 ■ Argillaceous/Shale

FOSSIL
 F Fossils < 20%
 φ Oolite

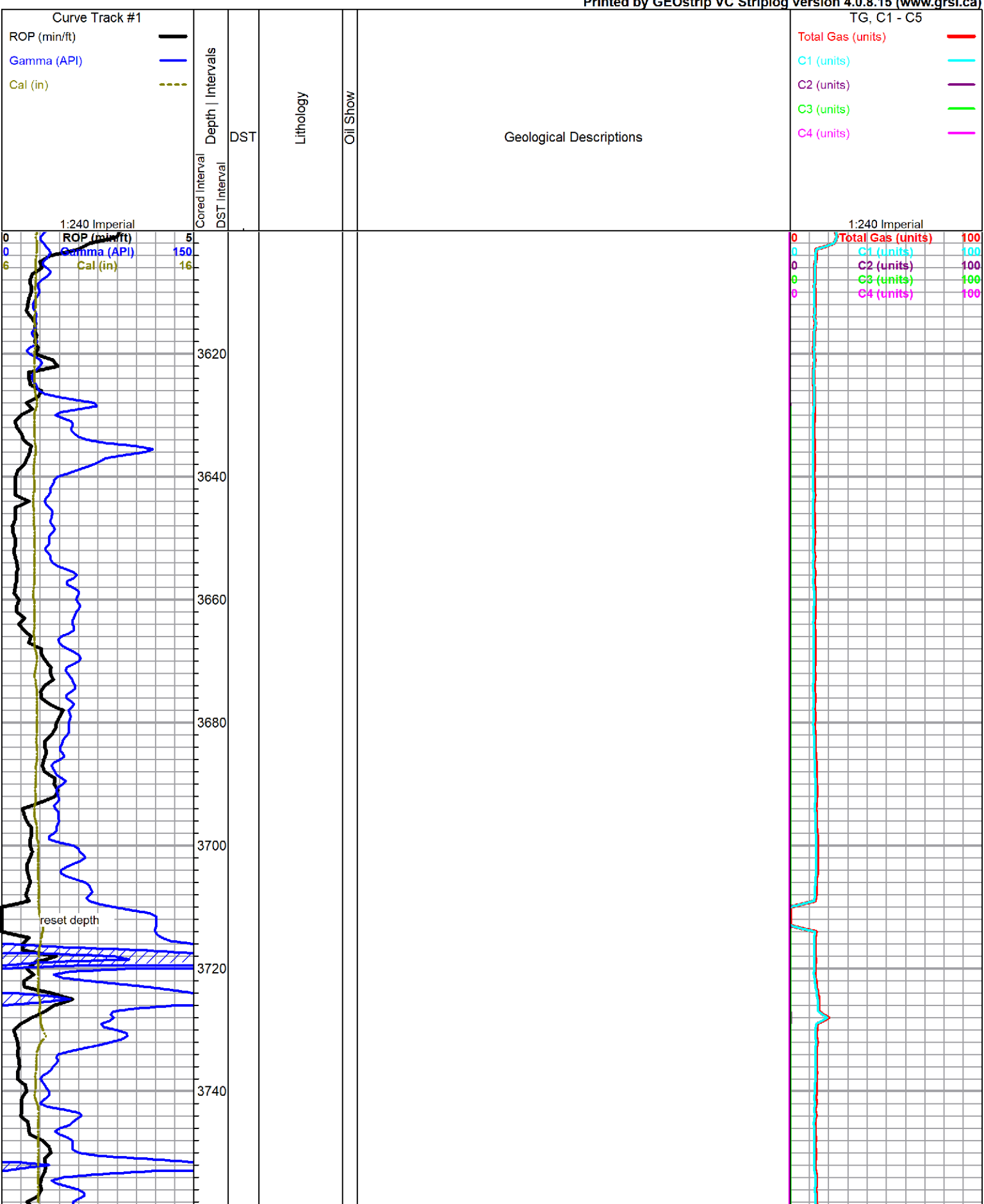
STRINGER
 Limestone
 Sandstone

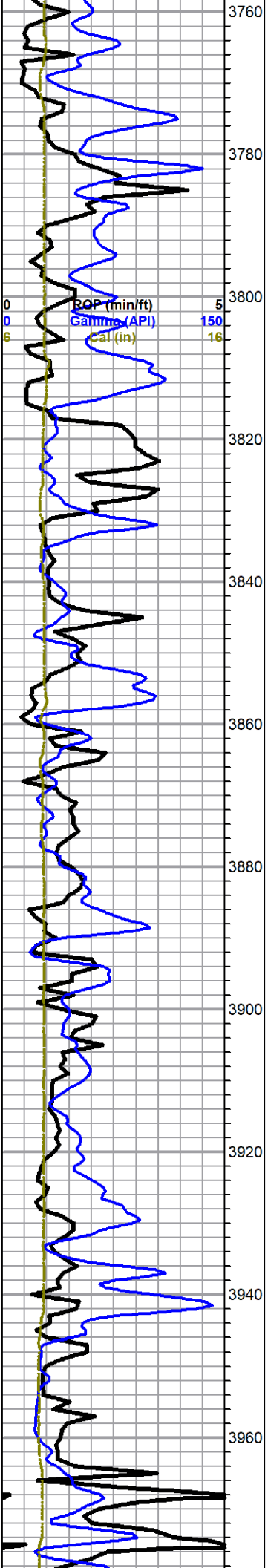
TEXTURE
 C Chalky
 L Lithogr

OTHER SYMBOLS

Oil Show DST

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

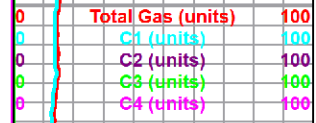


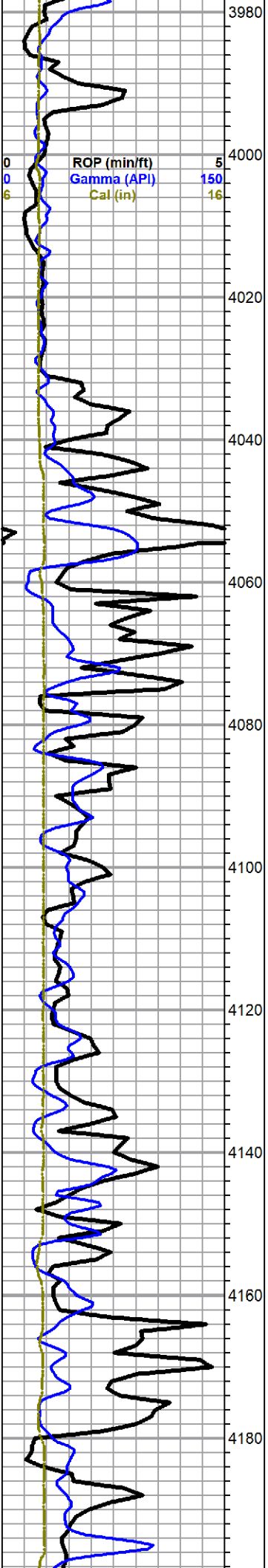


Lansing 3779 -431 (log 3768 -420)

Lansing B 3818 -470 (log 3814 -466)

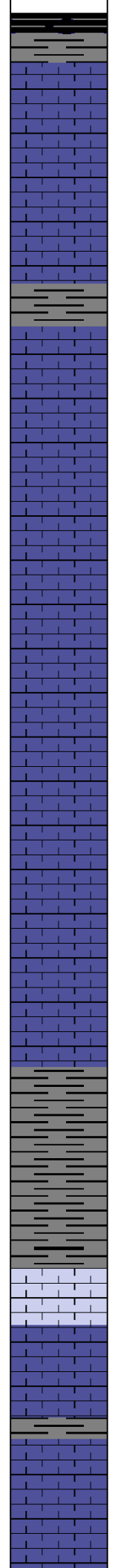
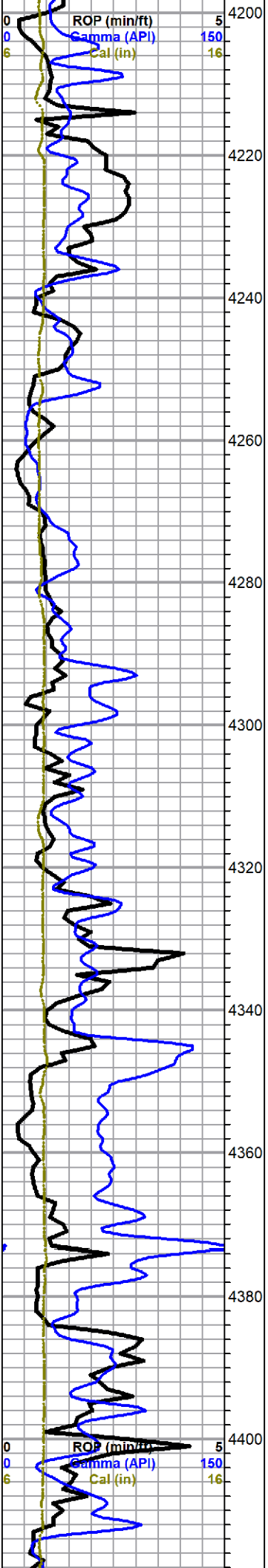
Lansing G 3976 -628 (log 3975 -627)





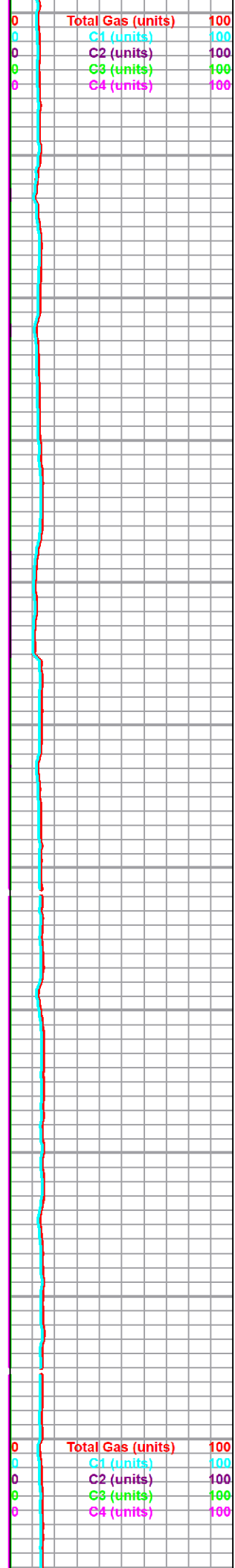
Wiper trip @ 4000 ft.

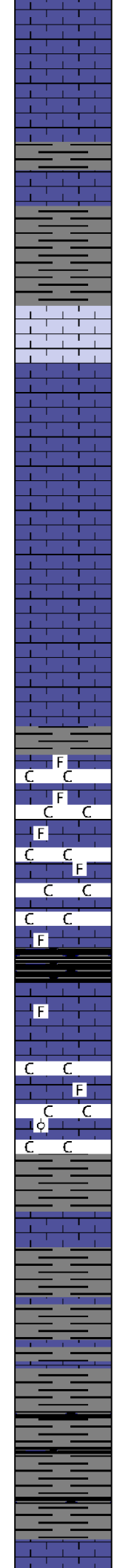
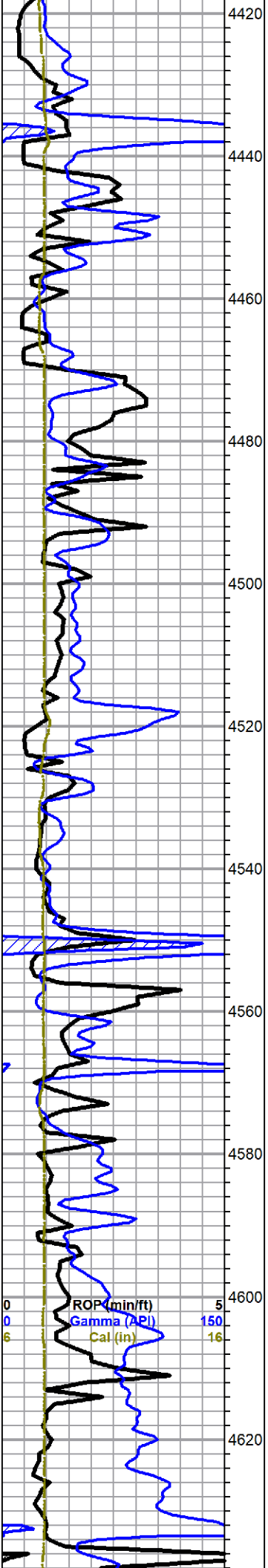
0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



Pleasanton 4348 -1000 (log 4344 -996)

Marmaton 4376 -1028 (log 4378 -1030)





limestone, gray, some mottled, cryptocrystalline, fossiliferous, dense, no shows

begin 10 ft wet and dry samples @ 4530'

Ft. Scott 4524 -1176 (log 4524 -1176)

limestone, light gray to gray and white, some mottled, chalky, weathered fossiliferous, some small vugs, appx 50% chalk in samples, no shows

shale, black carbonaceous

Excello 4566 -1218 (log 4564 -1216)

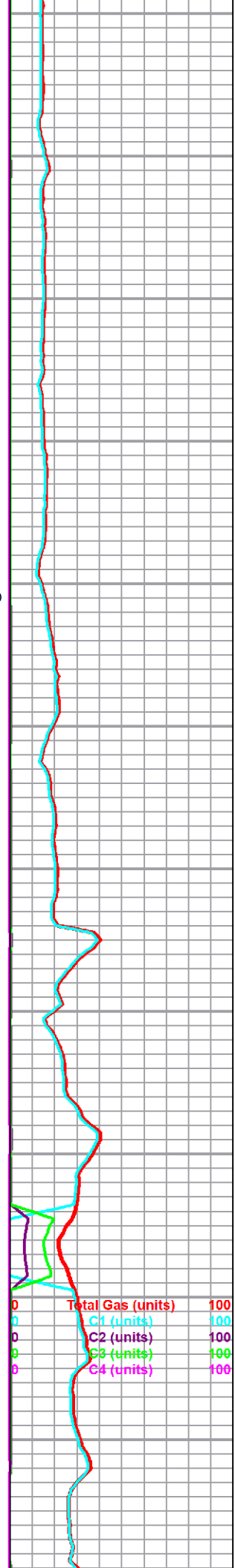
limestone, variable gray, some mottled, fossiliferous, some oolitic, poor visible porosity, flood chalk in samples, appx 50%, no shows

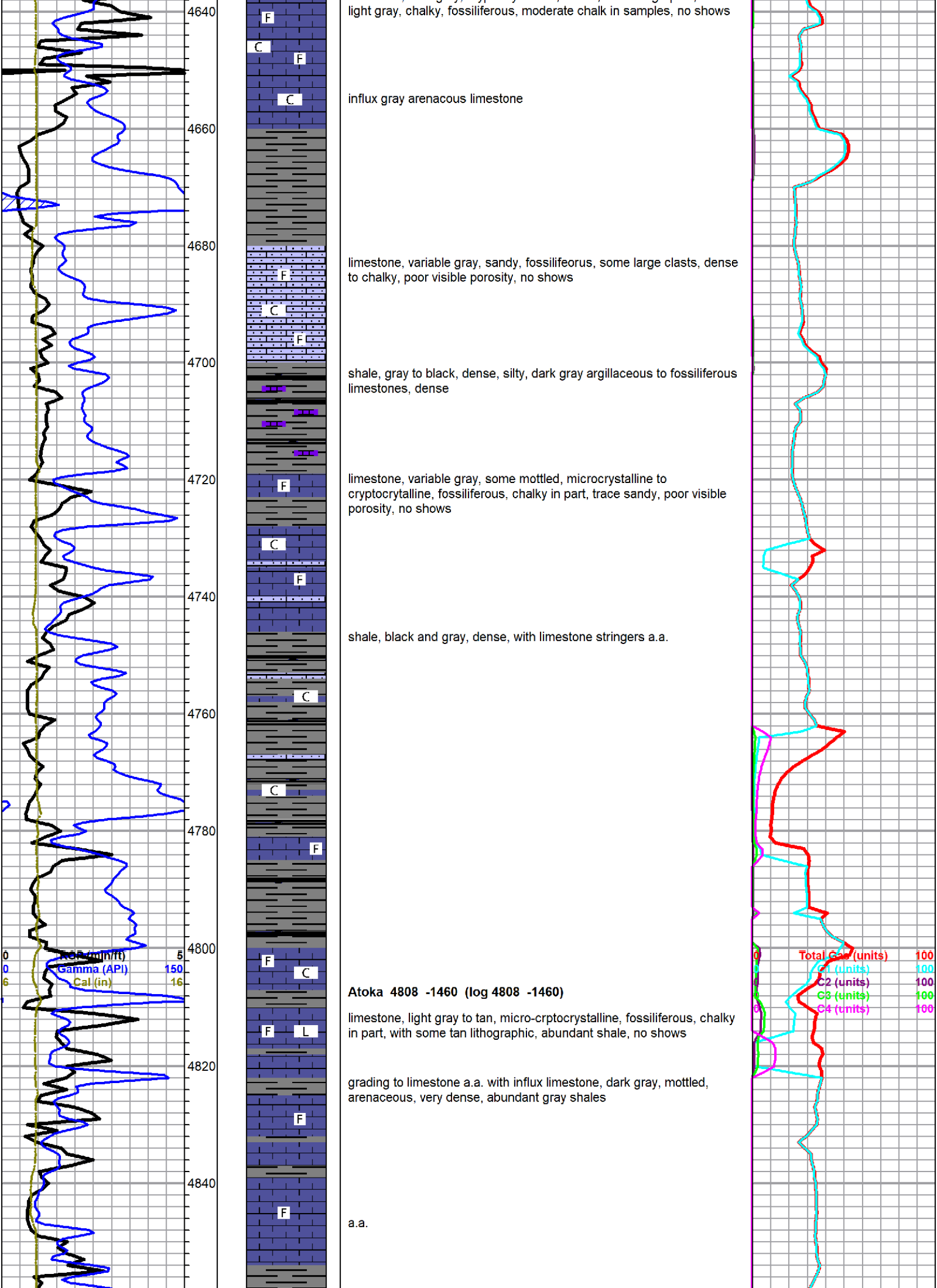
shale, gray, limey and gray argillaceous limestone, some fossiliferous, no shows

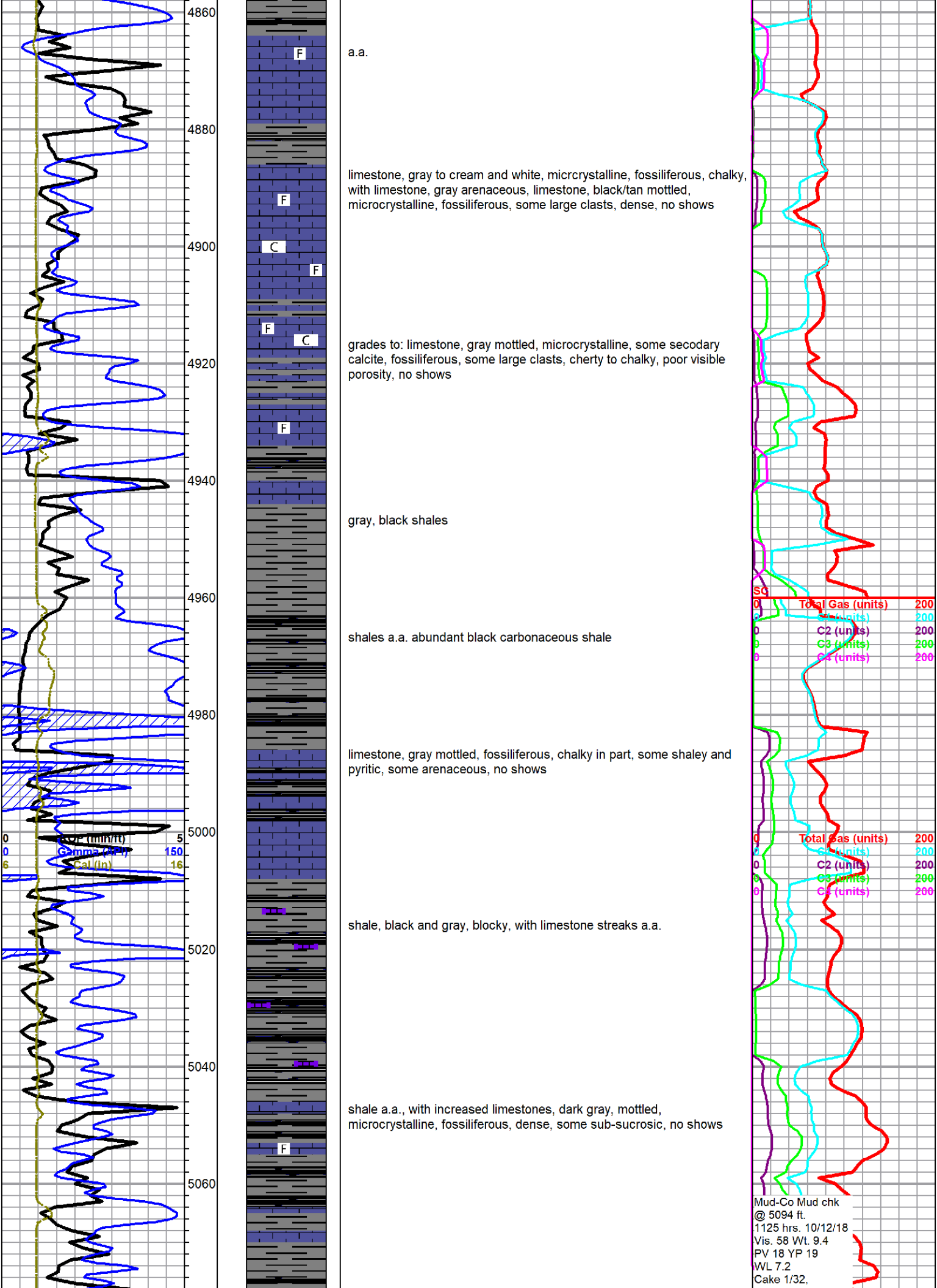
shale, gray and black, dense

Celia 4634 -1286 (log 4633 -1285)

limestone, dark gray, cryptocrystalline, dense, sub-lithographic, with:







a.a.

limestone, gray to cream and white, microcrystalline, fossiliferous, chalky, with limestone, gray arenaceous, limestone, black/tan mottled, microcrystalline, fossiliferous, some large clasts, dense, no shows

grades to: limestone, gray mottled, microcrystalline, some secondary calcite, fossiliferous, some large clasts, cherty to chalky, poor visible porosity, no shows

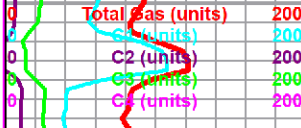
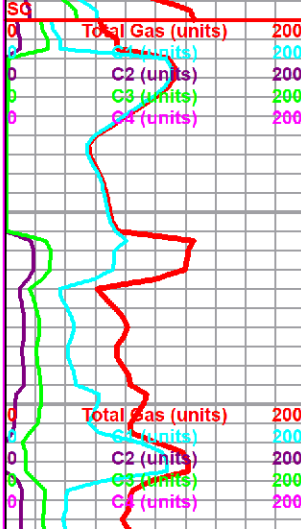
gray, black shales

shales a.a. abundant black carbonaceous shale

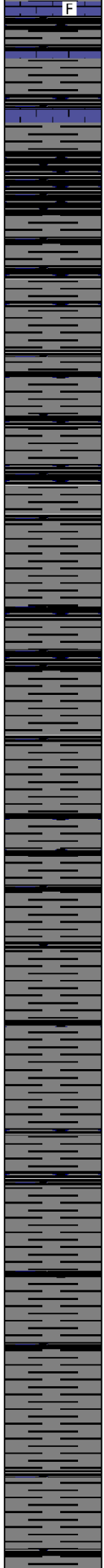
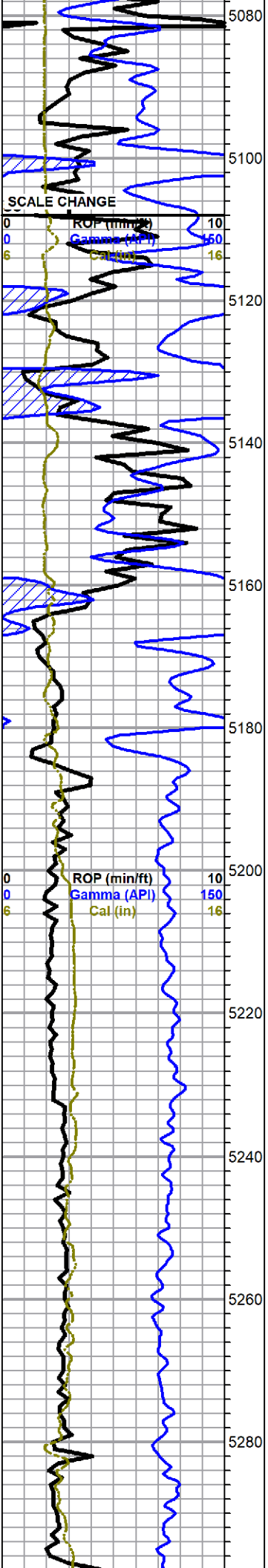
limestone, gray mottled, fossiliferous, chalky in part, some shaley and pyritic, some arenaceous, no shows

shale, black and gray, blocky, with limestone streaks a.a.

shale a.a., with increased limestones, dark gray, mottled, microcrystalline, fossiliferous, dense, some sub-sucrosic, no shows



Mud-Co Mud chk
 @ 5094 ft.
 1125 hrs. 10/12/18
 Vis. 58 Wt. 9.4
 PV 18 YP 19
 WL 7.2
 Cake 1/32.



a.a.

Morrow Shale 5103 -1755 (log 5130 -1782)

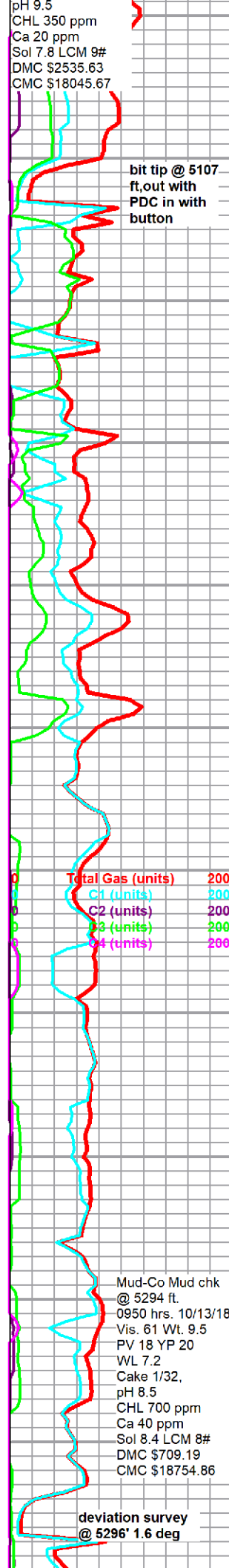
shales, black and gray, some light gray silty shale, traces siltstone and black/gray dense limestone to limey shale

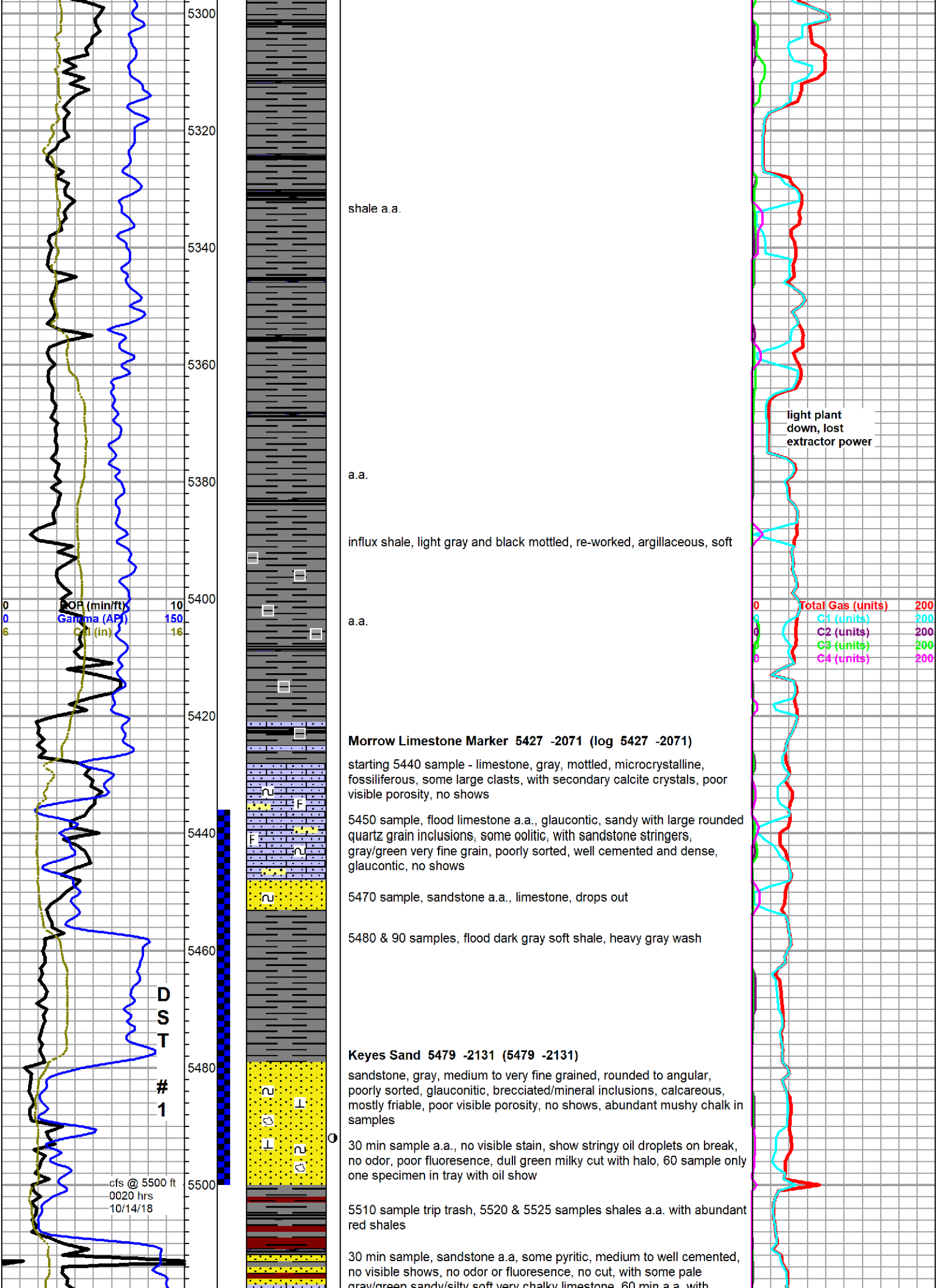
a.a.

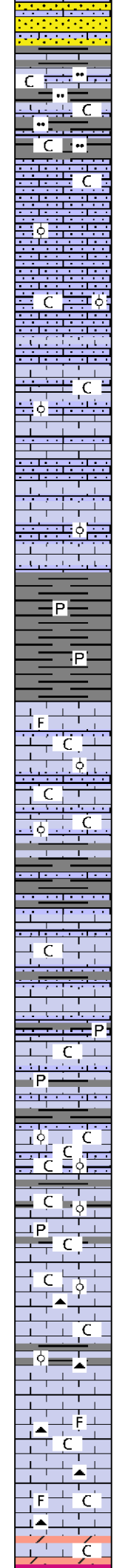
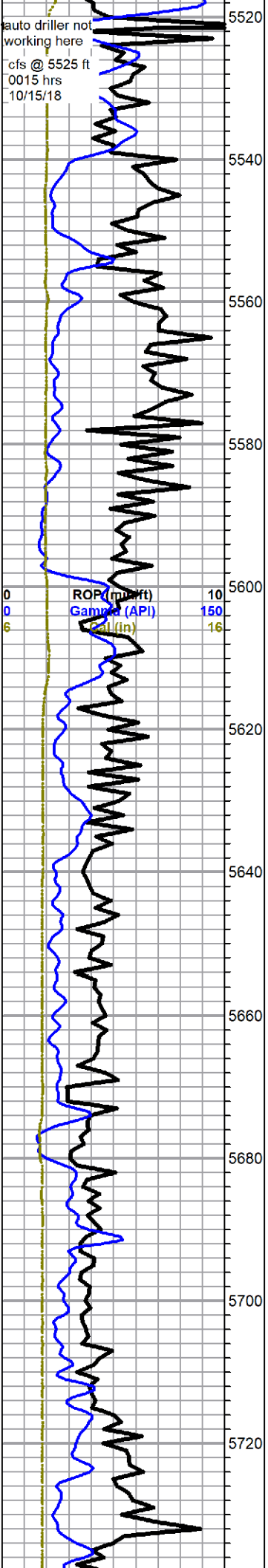
black and gray shales

a.a.

pull plugged bit @ 5294 ft







gray/green sandy/silty soft very chunky limestone, 60 min a.d. with increasing limestone (Chester?), trace lithographic limestone, pale gray/green

sli incr lm/lmy material aa, ns, silty/chlky, sli sdy, vfgrnd, lt & dk gry sh aa

Mississippian (St. Gen) 5540 -2192 (log 5539 -2191)
 lg incr lm, lt gry-pale crm, sli chlky, sli sdy, trc ool, dse, vp to nvls por, ns noted

lm, lt gry-crm, dse, sli sdy, sli chlky, pvls por, ns noted

lm, lt crm to wht, dse, less sdy, trc chlky, pvls por, ns

lm aa, few scatt ool, some lt crm denser lm, sli rex, pvls por, ns noted

same as above

lg influx dk gry-blk to gry sh, thin, fissle, trc pyritic

St. Louis 5616 -2268 (log 5613 -2265)
 incr lm, lt gry-lt crm, dse, sli rex, trc scatt ool/fos, trc chlky, pvls por, ns

lm, lt gry to crm, dse, scatt ool, sli sdy, trc chlky, pvls por, ns noted

lg incr dk gry-blk sh, less lm aa

lm, lt gry-wht, dse, f ool, sli sdy, sli chlky, pvls por, ns, lg amt gry-blk sh

lm aa, still carrying lg amt sh

lm & sh aa, some sh sli pyritic

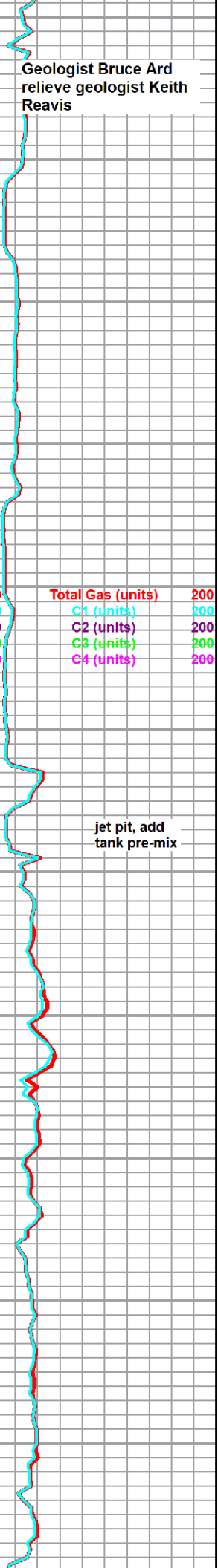
lg incr vchlky lm, wht, soft, trc sdy & lm, lt crm to gry-crm, dse, ool, pvls por, ns noted

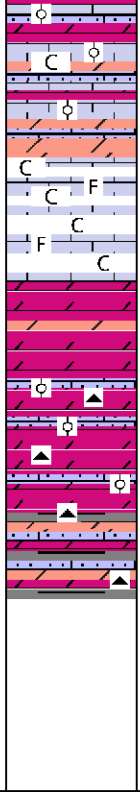
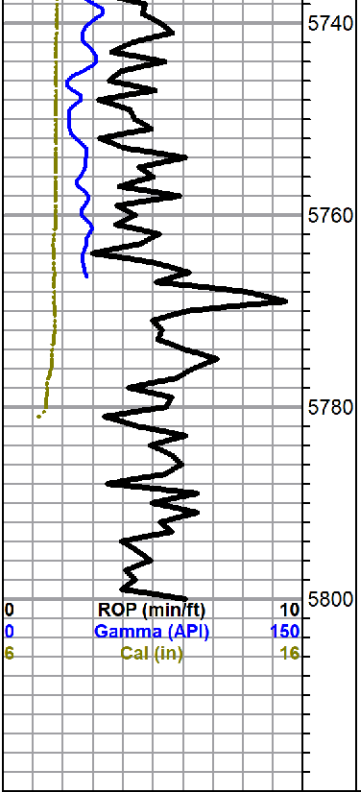
incr lm, lt crm to crm-wht, dse, scatt ool, few w/pyrite inclu, incr soft chlky lm/chlk, trc sdy, pvls por, ns noted

incr chlky lm & lm aa, w/influx lt gry-crm, trans chert, few lt tan, dse, xtaln lm, pvls por, ns noted

lt crm-tan to beige, dse, f to md xtaln, sli rex, trc fos, less chlky, incr chert, lt gry-crm trans, few opq salmon, vpvls por, ns

dolom lm, lt crm-gry to crm, dse, some sli chlky, some sli rex, sli scatt ool, pvls por & dolo, lt crm-tan vdse, fxtaln dolo streaks & dolom lm, pvls





por, ns noted

aa, trc sd

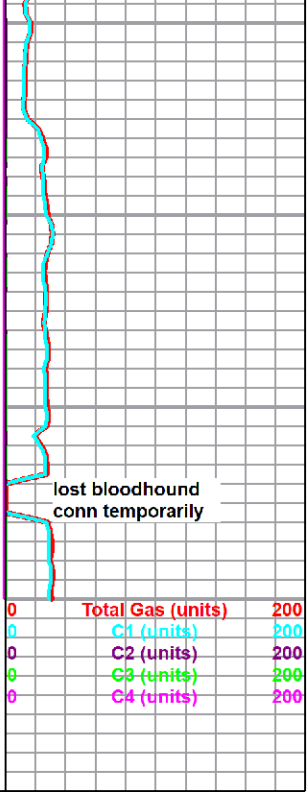
lg influx wht chlk & lt crm-wht soft lm, some sli rex, sli scatt fos, pvls por, ns noted, less lt crm-tan vdse, fxtaln dolo streaks & dolom lm aa

less chlk & chlky lm aa, lg influx dolo, lt crm-tan, vdse, fxtaln, nvls por, ns noted

dolo aa, some dolom lm, trc sd, trc f ool, sli influx chert, trans & opq, pvls por, ns noted

incr dolom lm aa, sli cherty, sli chlky, trc sdy lt & dk gry sh, pvls por, ns noted

TD @ 5800 ft @ 0305 hrs on 10-16-2018
Pioneer Wireline TD @ 5801 ft
Dev Survey 1.6 deg @ TD





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Market St. STE 300
Wichita KS 67202

ATTN: Keith Reavis

Roberts #1-25

25-28s-41w Stanton,KS

Start Date: 2018.10.14 @ 07:12:15

End Date: 2018.10.14 @ 17:36:00

Job Ticket #: 64278 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.10.19 @ 08:59:35



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N. Market St. STE 300
Wichita KS 67202
ATTN: Keith Reavis

25-28s-41w Stanton,KS

Roberts #1-25

Job Ticket: 64278

DST#: 1

Test Start: 2018.10.14 @ 07:12:15

GENERAL INFORMATION:

Formation: **Keyes SD**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:27:45

Time Test Ended: 17:36:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 81

Interval: 5436.00 ft (KB) To 5500.00 ft (KB) (TVD)

Reference Elevations: 3348.00 ft (KB)

Total Depth: 5500.00 ft (KB) (TVD)

3338.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8374

Inside

Press@RunDepth: 66.60 psig @ 5475.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.10.14

End Date:

2018.10.14

Last Calib.: 2018.10.14

Start Time: 07:12:15

End Time:

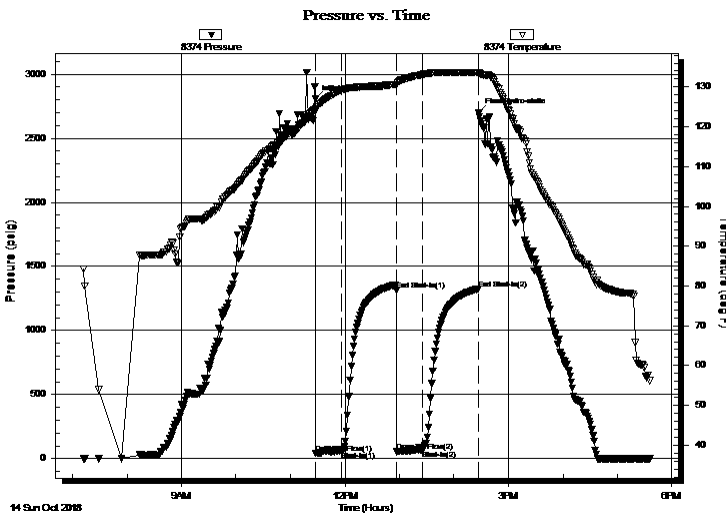
17:36:00

Time On Btm: 2018.10.14 @ 11:27:30

Time Off Btm: 2018.10.14 @ 14:27:30

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

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2805.86	124.37	Initial Hydro-static
1	40.05	123.86	Open To Flow (1)
29	55.25	129.29	Shut-In(1)
89	1313.91	130.58	End Shut-In(1)
90	57.56	130.38	Open To Flow (2)
118	66.60	133.15	Shut-In(2)
180	1325.14	133.64	End Shut-In(2)
180	2701.10	133.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	mud 100 %m	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.
250 N. Market St. STE 300
Wichita KS 67202
ATTN: Keith Reavis

25-28s-41w Stanton,KS
Roberts #1-25
Job Ticket: 64278 **DST#: 1**
Test Start: 2018.10.14 @ 07:12:15

Tool Information

Drill Pipe:	Length: 5302.00 ft	Diameter: 3.80 inches	Volume: 74.37 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 105000.0 lb
			<u>Total Volume: 74.96 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	5436.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	92.00 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			5409.00	
Shut In Tool	5.00			5414.00	
Hydraulic tool	5.00			5419.00	
Jars	5.00			5424.00	
Safety Joint	3.00			5427.00	
Packer	5.00			5432.00	28.00 Bottom Of Top Packer
Packer	4.00			5436.00	
Stubb	1.00			5437.00	
Perforations	4.00			5441.00	
Change Over Sub	1.00			5442.00	
Drill Pipe	32.00			5474.00	
Change Over Sub	1.00			5475.00	
Recorder	0.00	8968	Outside	5475.00	
Recorder	0.00	8374	Inside	5475.00	
Perforations	20.00			5495.00	
Bullnose	5.00			5500.00	64.00 Bottom Packers & Anchor
Total Tool Length:	92.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

25-28s-41w Stanton,KS

250 N. Market St. STE 300
Wichita KS 67202

Roberts #1-25

Job Ticket: 64278

DST#: 1

ATTN: Keith Reavis

Test Start: 2018.10.14 @ 07:12:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 7.20 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	mud 100 %m	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

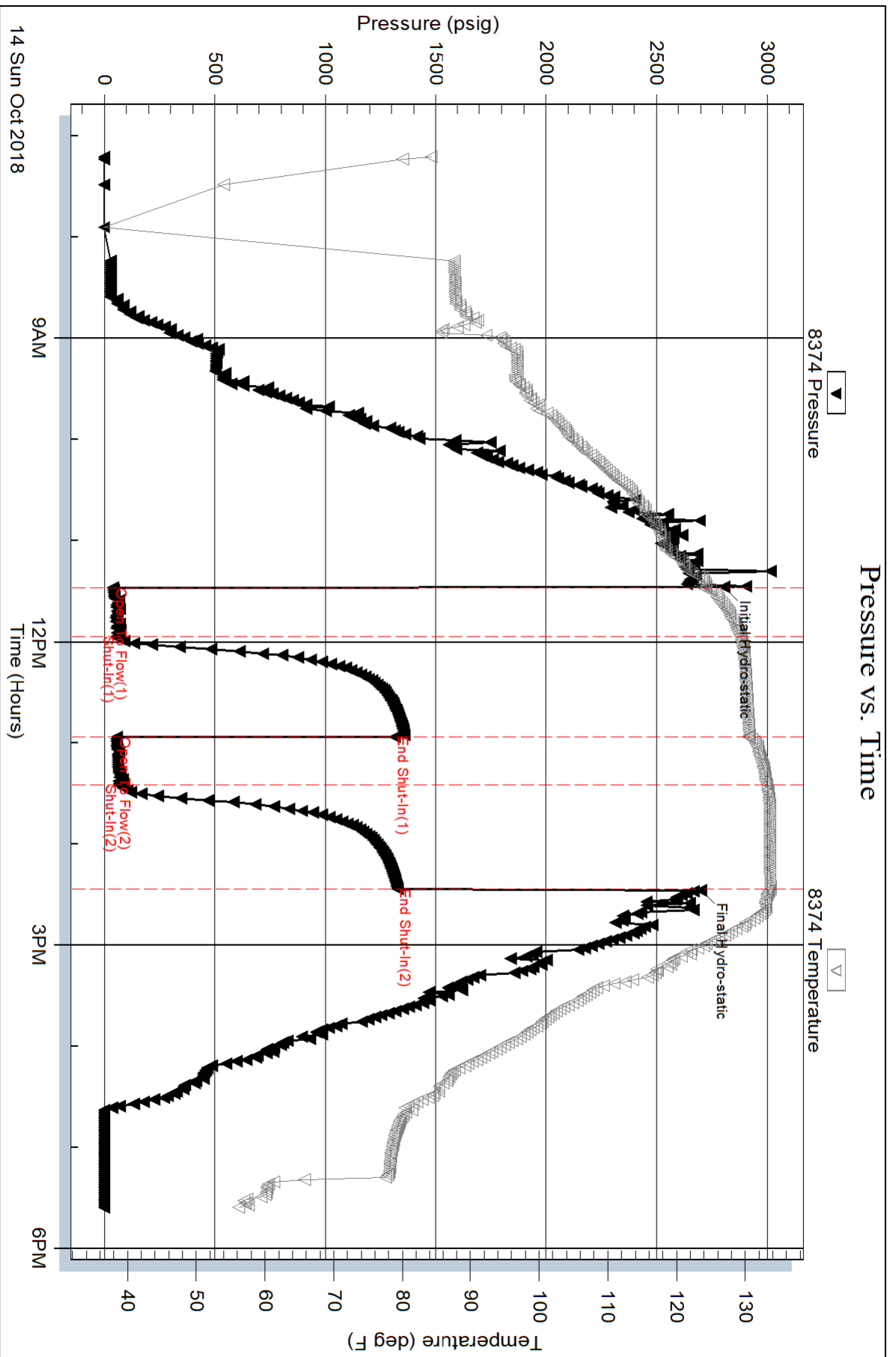
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

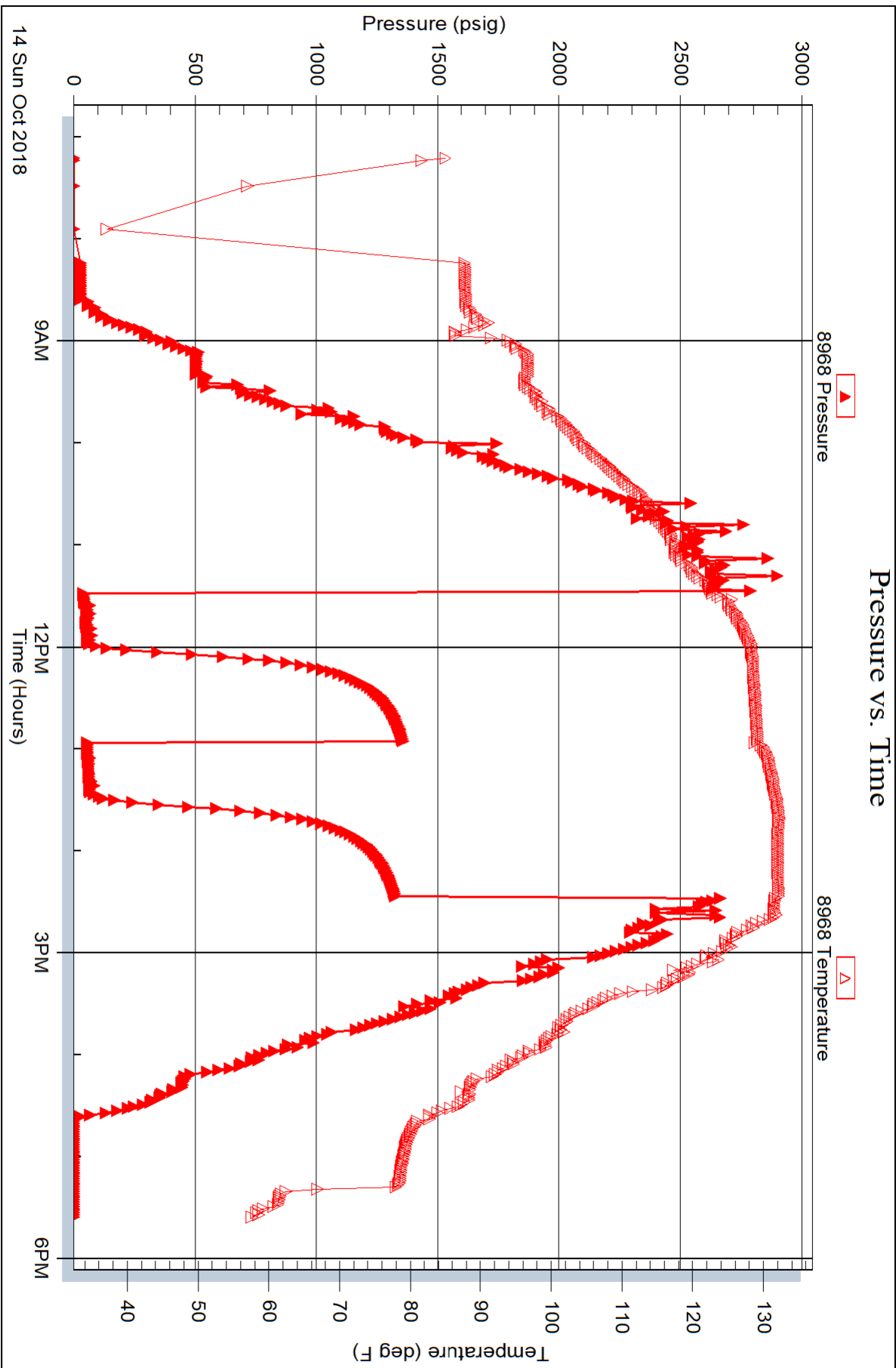


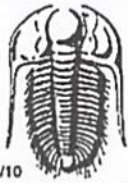
Serial #: 8968

Outside Murfin Drilling Co.

Roberts #1-25

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64278

Well Name & No. Roberts 1-25 Test No. 1 Date 10-19-18
 Company Murfin Drilling Co Elevation 3348 KB 3338 GL
 Address 250 N Water St STE 300 Wichita KS 67202
 Co. Rep / Geo. Keith Reavis Rig Murfin 22
 Location: Sec. 25 Twp 28S Rge. 41W Co. Stanton State KS

Interval Tested 5436-5500 Zone Tested Keyes SD
 Anchor Length 64 Drill Pipe Run 5302 Mud Wt. 9.5
 Top Packer Depth 5431 Drill Collars Run 119 Vis 61
 Bottom Packer Depth 5436 Wt. Pipe Run Ø WL 7.2
 Total Depth 5500 Chlorides 700 ppm System LCM 8

Blow Description IF: Built to 1" Blow
IS: No Return Blow
PF: Built to 1/4" Blow
FS: No Return Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>MUD</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15 BHT 132 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic 2805 Test 1250 T-On Location 04:20
 (B) First Initial Flow 40 Jars 250 T-Started 07:12
 (C) First Final Flow 55 Safety Joint 75 T-Open 11:23
 (D) Initial Shut-In 1313 Circ Sub NC T-Pulled 14:23
 (E) Second Initial Flow 57 Hourly Standby — T-Out 17:36
 (F) Second Final Flow 66 Mileage 220 RT 220 Comments —
 (G) Final Shut-In 1325 Sampler —
 (H) Final Hydrostatic 2701 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total —
 Day Standby — Total —
 Accessibility — MP/DST Disc't —
 Sub Total —

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Approved By _____ Our Representative Mike Roberts

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.