



Scale 1:240 Imperial

Well Name: Gingrich #1-20  
Surface Location: Sec. 20 - T23S - R15W  
Bottom Location:  
API: 15-145-21847-0000  
License Number: 30705  
Spud Date: 2/21/2019 Time: 6:30 PM  
Region: Pawnee County  
Drilling Completed: 3/1/2019 Time: 4:30 PM  
Surface Coordinates: 2500' FSL & 400' FWL  
Bottom Hole Coordinates:  
Ground Elevation: 2038.00ft  
K.B. Elevation: 2046.00ft  
Logged Interval: 3200.00ft To: 4205.00ft  
Total Depth: 4205.00ft  
Formation: Arbuckle  
Drilling Fluid Type: Chemical/Fresh Water Gel

#### OPERATOR

Company: Younger Energy Company  
Address: 9415 E. Harry St.  
Suite 403, Bldg. 400  
Wichita, KS 67207  
Contact Geologist:  
Contact Phone Nbr: 316-681-2542  
Well Name: Gingrich #1-20  
Location: Sec. 20 - T23S - R15W  
API: 15-145-21847-0000  
Pool: Kansas Field: Benson NE  
State: Kansas Country: USA

#### SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -99.00333  
Latitude: 38.03610  
N/S Co-ord: 2500' FSL  
E/W Co-ord: 400' 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: Duke Drilling Company  
Rig #: 2  
Rig Type: mud rotary  
Spud Date: 2/21/2019 Time: 6:30 PM  
TD Date: 3/1/2019 Time: 4:30 PM  
Rig Release: Time:

## ELEVATIONS

K.B. Elevation: 2046.00ft  
K.B. to Ground: 8.00ft

Ground Elevation: 2038.00ft

## NOTES

Due to low structural position, lack of testable shows and negative drill stem tests, it was determined that the Gingrich #1-20 was non-commercial and the operator elected to plug the well 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 from the Bloodhound, as well as gamma ray and caliper curves from the electrical log suite were imported into this log. All log formations tops were generally 2 to 3 ft. higher than measured driller tops. The drill time was not shifted to provide an exact match to the logs but left as recorded in the field.

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
02/25/2019	3184	Geologist Keith Reavis on location @ 1225 hrs, 3280 ft, drilling ahead Topeka section, bit going bad, TOH @ 3305', TIH w/new bit, resume drilling
02/26/2019	3511	drilling ahead, Heebner, Toronto, shut down for repairs, replace hydromatic resume drilling, Douglas
02/27/2019	3750	drilling ahead, Lansing/KC
02/28/2019	4045	drilling ahead, conglomerate section, Simpson, show in Simpson Sand warrants test, short trip, TOH w/bit, in w/tools, conducting DST #1
03/01/2019	4137	complete DST #1, successful test, TOH w/tools, TIH w/bit, resume drilling TD @ 4205 ft 1430 hrs, ctc, TOH for logs, conduct and complete open hole logging operations, geologist off loc @ midnight

## well comparison sheet

DRILLING WELL					COMPARISON WELL			
Gingrich 1-20 2500' FSL & 400' FWL Sec 20-T23S-R15W					Alpine - Cossman #1 SE SE NW Sec 20-T23S-R15W			
2046 KB					2051 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log
Topeka	3133	-1087	3132	-1086	3128	-1077	-10	-9
Queen Hill	3405	-1359	3402	-1356	3390	-1339	-20	-17
Heebner	3531	-1485	3528	-1482	3514	-1463	-22	-19
Toronto	3552	-1506	3550	-1504	3535	-1484	-22	-20
Douglas	3574	-1528	3568	-1522	3556	-1505	-23	-17
Brown Lime	3663	-1617	3661	-1615	3644	-1593	-24	-22
Lansing	3671	-1625	3667	-1621	3653	-1602	-23	-19
H zone	3802	-1756	3799	-1753	3780	-1729	-27	-24
Base KC	3920	-1874	3916	-1870	3900	-1849	-25	-21
Conglomerate	4012	-1966	4009	-1963	4004	-1953	-13	-10
Simpson	4104	-2058	4104	-2058	4079	-2028	-30	-30
Arbuckle	4172	-2126	4172	-2126	4152	-2101	-25	-25
Total Depth	4205	-2159	4204	-2158	4155	-2104	-55	-54



Company: Younger Energy

SEC: 20 TWN: 23S RNG: 15W  
County: PAWNEE  
State: Kansas



# Company

## Lease: Gingrich Unit #1-20

State: Kansas  
 Drilling Contractor: Duke Drilling  
 Company, Inc - Rig 2  
 Elevation: 2038 GL  
 Field Name: Benson NE  
 Pool: Infield  
 Job Number: 315

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 February  
**28**  
 2019

**DST #1**    **Formation: Simpson Sand**    **Test Interval: 4104 - 4137'**    **Total Depth: 4137'**  
 Time On: 20:34 02/28    Time Off: 06:07 03/01  
 Time On Bottom: 23:27 02/28    Time Off Bottom: 03:07 03/01

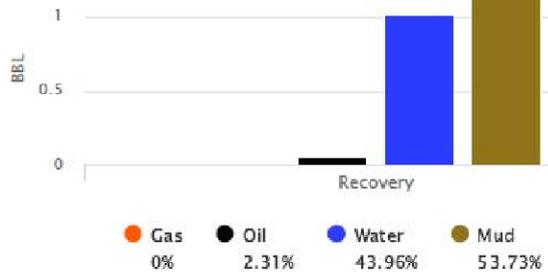
<u>Recovered</u>		<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
Foot	BBL/S					
3	0.0387	O	0	100	0	0
113	1.4577	SLOCSLWCM	0	1	15	84
63	0.8127	SLMCW	0	0	98	2

Total Recovered: 179 ft  
 Total Barrels Recovered: 2.3091

Reversed Out  
 NO

Initial Hydrostatic Pressure	2030	PSI
Initial Flow	14 to 30	PSI
Initial Closed in Pressure	1341	PSI
Final Flow Pressure	31 to 83	PSI
Final Closed in Pressure	1328	PSI
Final Hydrostatic Pressure	2031	PSI
Temperature	112	°F
Pressure Change Initial Close / Final Close	1.0	%

### Recovery at a glance



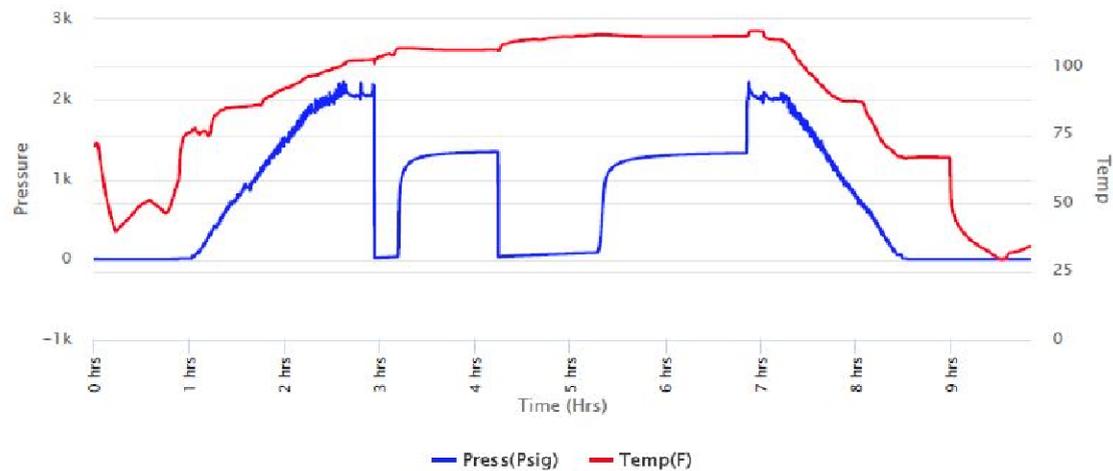
GIP cubic foot volume: 0

**DATE**  
 February  
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 Time On: 20:34 02/28    Time Off: 06:07 03/01  
 Time On Bottom: 23:27 02/28    Time Off Bottom: 03:07 03/01

Electronic Volume Estimate:	<u>1st Open</u>	1st Close	<u>2nd Open</u>	2nd Close
108"	Minutes: 10	Minutes: 60	Minutes: 60	Minutes: 90
	Current Reading:	Current Reading:	Current Reading:	Current Reading:
	3.3" at 10 min	0" at 60 min	6.7" at 60 min	0" at 90 min
	Max Reading: 3.3"	Max Reading: 0"	Max Reading: 6.7"	Max Reading: 0"

Inside Recorder



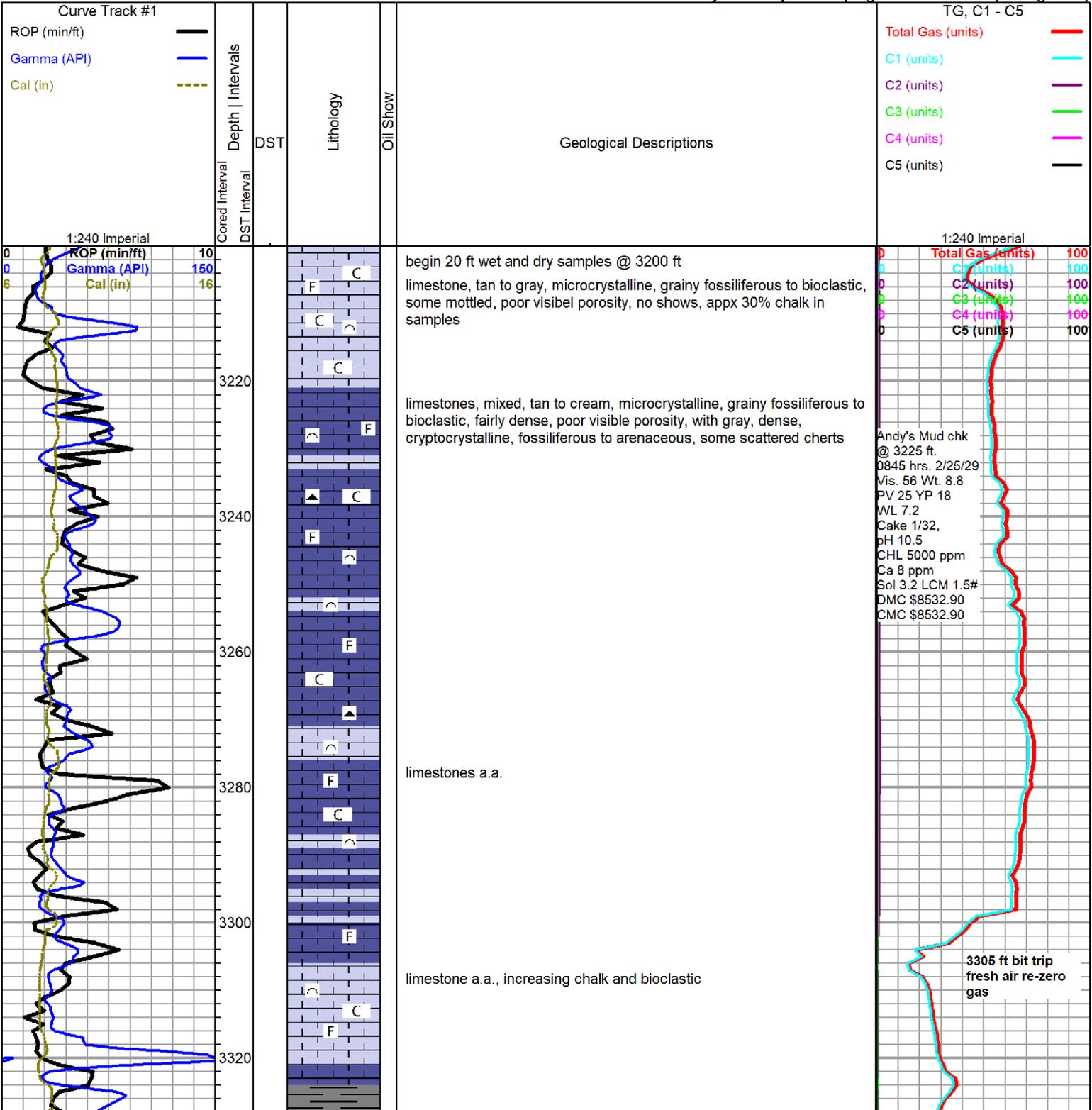
ROCK TYPES			
	Cht vari		Dolsec
	Chtcong1		Lmst fw<7
	Dolprim		Lmst fw>7
	shale, grn		shale, red
	shale, gry		Ss
	Carbon Sh		

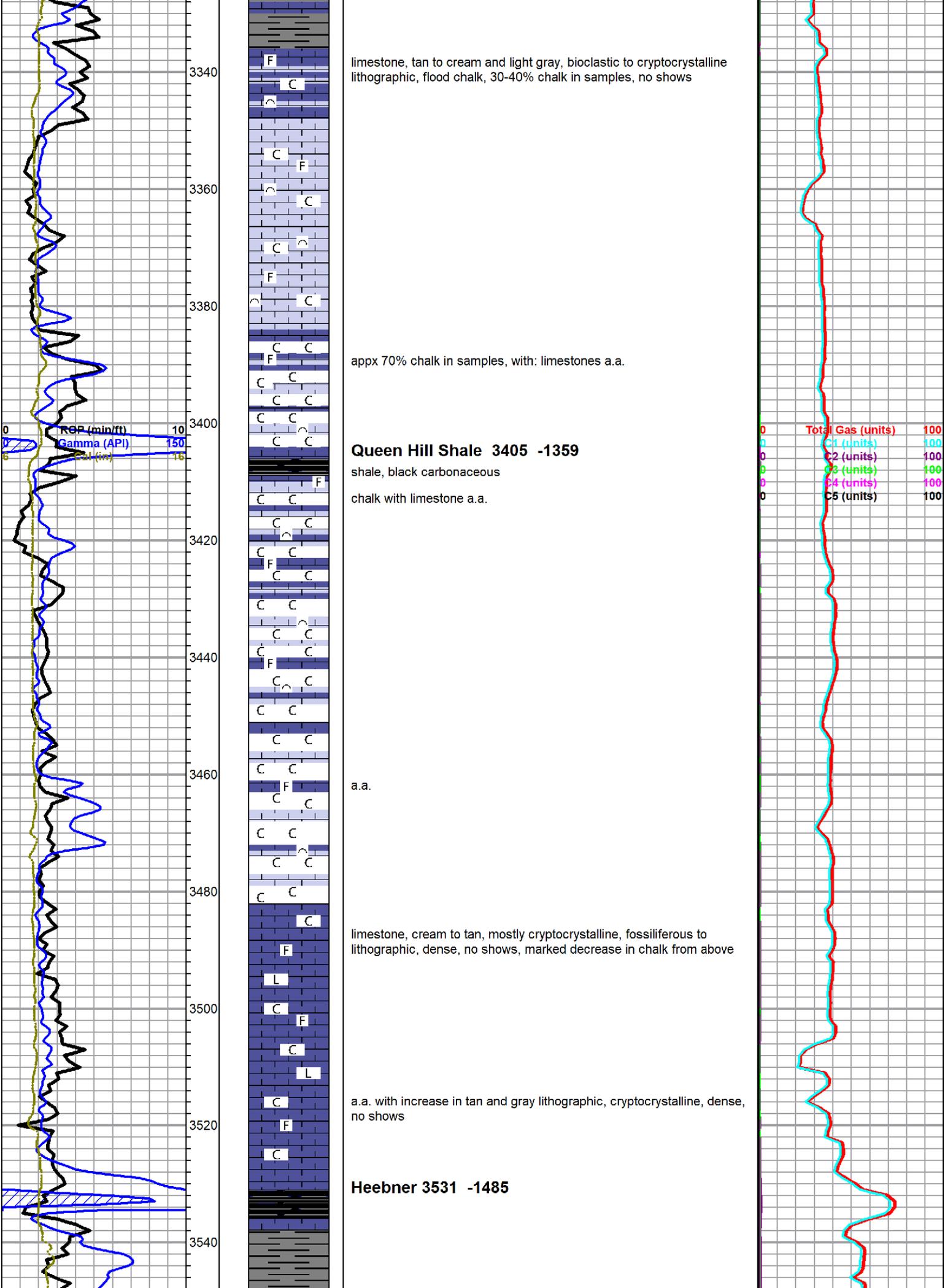
### ACCESSORIES

<b>MINERAL</b>	<b>FOSSIL</b>	<b>STRINGER</b>	<b>TEXTURE</b>
⊥ Calcareous	∩ Bioclastic or Fragmental	■ Limestone	C Chalky
▲ Chert, dark	F Fossils < 20%	■ Sandstone	L Lithogr
∩ Glauconite	⊕ Oolite	■ Shale	
■ Heavy, dark minerals	⊗ Pellets	■ green shale	
P Pyrite		■ red shale	
△ Chert White			

OTHER SYMBOLS	
<b>Oil Show</b>	<b>DST</b>
● Good Show	■ DST Int
● Fair Show	■ DST alt
● Poor Show	■ Core
○ Spotted or Trace	■ tail pipe
○ Questionable Stn	
D Dead Oil Stn	
■ Fluorescence	
* Gas	

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limestone, tan to cream and light gray, bioclastic to cryptocrystalline lithographic, flood chalk, 30-40% chalk in samples, no shows

appx 70% chalk in samples, with: limestones a.a.

**Queen Hill Shale 3405 -1359**

shale, black carbonaceous

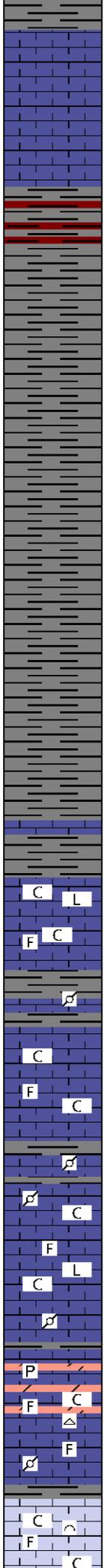
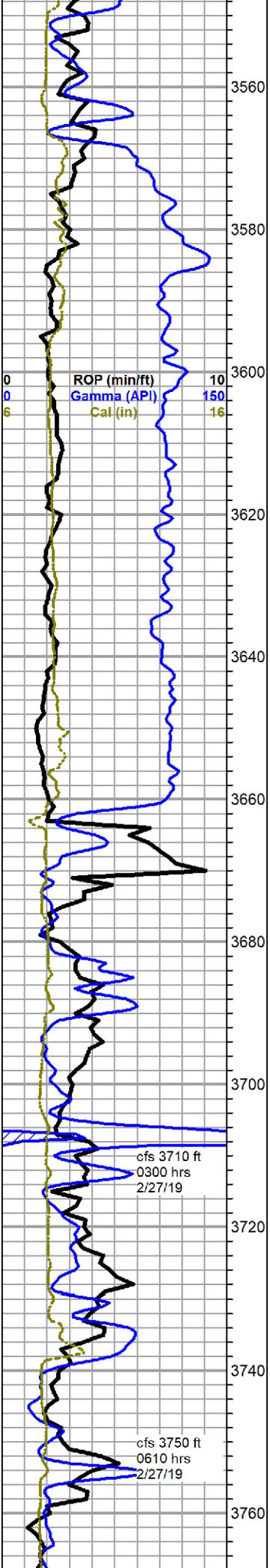
chalk with limestone a.a.

a.a.

limestone, cream to tan, mostly cryptocrystalline, fossiliferous to lithographic, dense, no shows, marked decrease in chalk from above

a.a. with increase in tan and gray lithographic, cryptocrystalline, dense, no shows

**Heebner 3531 -1485**



**Toronto 3552 -1506**

limestone, white to light gray, crypto-microcrystalline, fossiliferous, chalky, no visible porosity, no shows, abundant chalk

**Douglas 3574 -1528**

red and gray shales, slight red wash

grading to shale, gray, soft and mushy, with gray dense shales, heavy gray wash

a.a.

**Brown Lime 3663 -1617**

limestone, brown to tan, micro-cryptocrystalline, fossiliferous, some large clasts, dense, no shows

**Lansing 3671 -1625**

limestone, white, mostly cryptocrystalline, lithographic to chalky fossiliferous, trace oolitic, poor visible porosity, no shows, abundant chalk

limestone, gray/white/black mottled, pelletal to fossiliferous, chalky, no visible porosity, abundant chalk, no shows, trace gray chert

limestone, white to light gray, cryptocrystalline, fossiliferous, some chalky, abundant chalk in samples, poor visible porosity, no shows

limestone, gray and tan mottled, very pelletal and fossiliferous, chalky, no visible porosity, no shows

limestone, white to light gray, cryptocrystalline, fossiliferous to lithographic, some chalky, abundant chalk in samples, poor visible porosity, no show

mix of mottled pelletal and chalky white limestones a.a. with influx brown microcrystalline dolomite, poor visible porosity, no shows, trace chert and pyrite

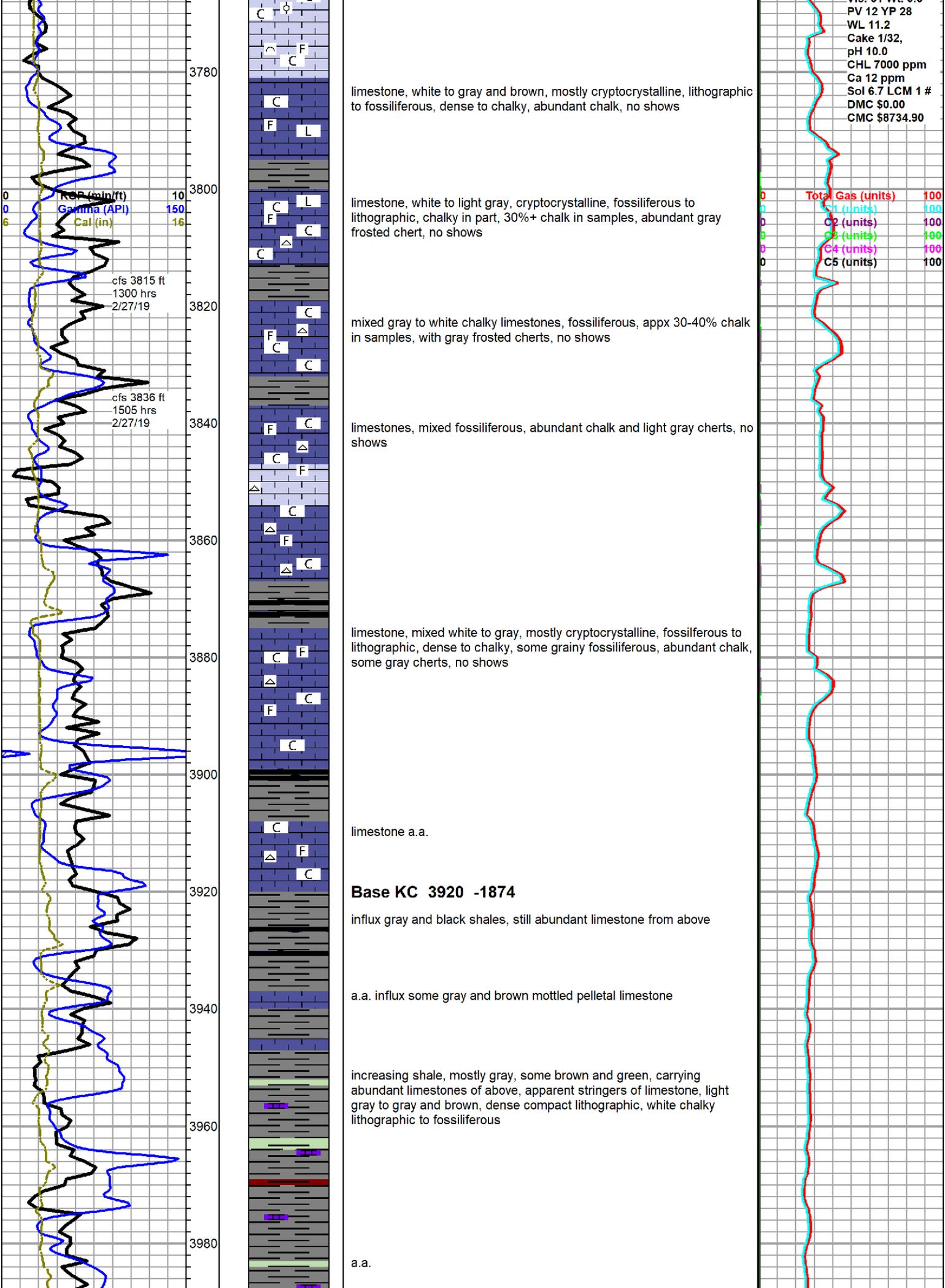
limestone, gray to white, chalky pelletal, no shows

limestone, white to cream and tan, chalky, bioclastic to fossiliferous, trace oolitic, appx. 30-40% chalk, no shows

Andy's Mud chk @ 3556 ft. 0845 hrs. 2/26/29 Vis. 58 Wt. 9.2 PV 14 YP 26 WL 10.8 Cake 1/32, pH 10.0 CHL 6000 ppm Ca 10 ppm Sol 6.0 LCM 1 # DMC \$202.00 CMC \$8734.90

Total Gas (units) 100  
 C1 (units) 100  
 C2 (units) 100  
 C3 (units) 100  
 C4 (units) 100  
 C5 (units) 100

Andy's Mud chk @ 3760 ft. 0930 hrs. 2/27/29 Vis. 61 Wt 9.3



limestone, white to gray and brown, mostly cryptocrystalline, lithographic to fossiliferous, dense to chalky, abundant chalk, no shows

limestone, white to light gray, cryptocrystalline, fossiliferous to lithographic, chalky in part, 30%+ chalk in samples, abundant gray frosted chert, no shows

mixed gray to white chalky limestones, fossiliferous, appx 30-40% chalk in samples, with gray frosted cherts, no shows

limestones, mixed fossiliferous, abundant chalk and light gray cherts, no shows

limestone, mixed white to gray, mostly cryptocrystalline, fossiliferous to lithographic, dense to chalky, some grainy fossiliferous, abundant chalk, some gray cherts, no shows

limestone a.a.

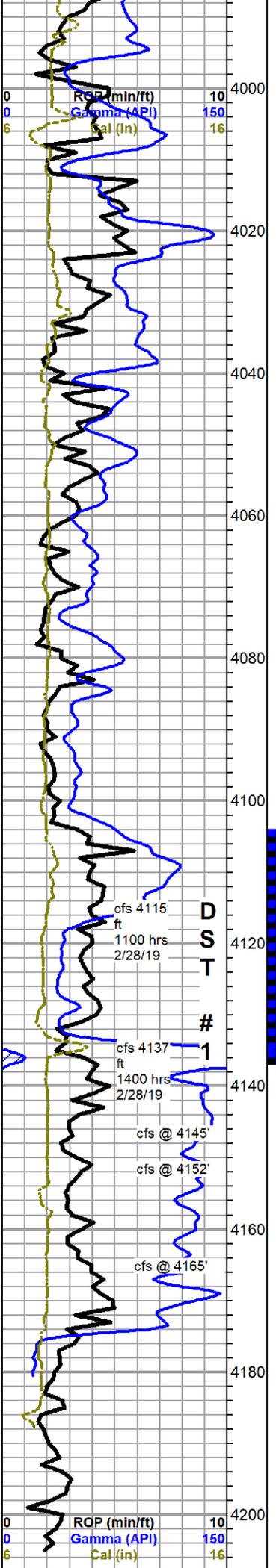
**Base KC 3920 -1874**

influx gray and black shales, still abundant limestone from above

a.a. influx some gray and brown mottled pelletal limestone

increasing shale, mostly gray, some brown and green, carrying abundant limestones of above, apparent stringers of limestone, light gray to gray and brown, dense compact lithographic, white chalky lithographic to fossiliferous

a.a.



limestone a.a.

### Conglomerate 4012 -1966

4020 sample, limestones and shale a.a., picking up some red shale with red wash in sample, some olive shales, orange and yellow cherts

by 4060 sample, flood cherts, mixed color with orange and yellow predominant red shale with other mixed shale and limestone, heavy red wash in samples

grades to primarily chert, mixed color, mostly fresh and sharp, trace black stain, few scattered black stained tripolitic, no odor, no free oil, some very fine well rounded quartz sand grains in tray bottom

a.a. with marked influx pale green and lavender cherts

### Simpson Shale 4104 -2058

60 min sample, flood green mushy clays, some green waxy shale

green and maroon shales, stringers dirty olive/yellow sandstones, no shows

### Simpson Sand 4130 -2084 (log top 4118 -2072)

4137 sample - sandstone, white, quartz grains, white limey infill, very fine grain, well rounded, well sorted, calcareous, some dirty sandstones, yellow to brown to gray, well cemented, barren, few clusters light gray clean quartz sandstone a.a., light stain, some intergrain oil in place, slight show heavy black free oil and on break, no odor, no fluorescence, slow milky streaming cut - flood chalk in samples - 30 min marked decrease in chalk, slight increase in show, 60 min, a.a., decrease show

4145 cfs sandstone, gray, very fine grain, fair sorting, round to sub angular, friable, dark blocky mineral infill (biotite or mica) with glauconite, no shows

4152 cfs, back into green, maroon and gray simp shale

4165 cfs shale a.a., some sand as @ 4145 sample

sandstone, gray, very fine grain, fair sorting, round to sub angular, dark blocky mineral intergrain fill (biotite or mica), well cemented and dense no shows

### Arbuckle 4172 -2126

dolomite, light gray to tan, microcrystalline, rhombic to recrystallized to sub-sucrosic, some scattered porosity, mostly dense, abundant caliche/chalk, some translucent to light gray frosted cherts, no shows or odor

TD 4205 ft @ 1630 hrs 3/1/19  
ELI log TD 4204 ft  
complete logging operations 2345 hrs 3/1/19

Total Gas (units) 100  
C1 (units) 100  
C2 (units) 100  
C3 (units) 100  
C4 (units) 100  
C5 (units) 100

Andy's Mud chk  
@ 4093 ft.  
0930 hrs. 2/28/29  
Vis. 59 Wt. 9.4  
PV 10 YP 22  
WL 10.4  
Cake 1/32,  
pH 10.0  
CHL 7000 ppm  
Ca 10 ppm  
Sol 7.3LCM 1 #  
DMC \$610.25  
CMC \$9345.15

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

