

**OPERATOR**

Company: TDI, INC.  
 Address: 1310 BISON ROAD  
 HAYS, KANSAS 67601

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-628-2593  
 Well Name: ZAMECNIK # 1  
 Location: SE NE SW SW Sec 8-T11S-R11W  
 API: 15-167-24,013-00-00  
 Pool: WILDCAT  
 State: KANSAS

Field: UNNAMED  
 Country: USA



Scale 1:240 Imperial

Well Name: ZAMECNIK # 1  
 Surface Location: SE NE SW SW Sec 8-T11S-R11W  
 Bottom Location:  
 API: 15-167-24,013-00-00  
 License Number: 4787  
 Spud Date: 11/8/2014 Time: 3:30 PM  
 Region: RUSSELL COUNTY  
 Drilling Completed: 11/15/2014 Time: 2:53 AM  
 Surface Coordinates: 820' FSL & 1005' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 1617.00ft  
 K.B. Elevation: 1627.00ft  
 Logged Interval: 2000.00ft To: 3950.00ft  
 Total Depth: 3950.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -98.5734312  
 Latitude: 39.1056273  
 N/S Co-ord: 820' FSL  
 E/W Co-ord: 1005' FWL

**LOGGED BY**

Company: SOLUTIONS CONSULTING, INC.  
 Address: 108 WEST 35TH STREET  
 HAYS, KANSAS 67601

Phone Nbr: 785-625-3380  
 Logged By: GEOLOGIST Name: HERB DEINES

**CONTRACTOR**

Contractor: SOUTHWIND DRILLING, INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 11/8/2014 Time: 3:30 PM  
 TD Date: 11/15/2014 Time: 2:53 AM

**ELEVATIONS**

K.B. Elevation: 1627.00ft  
K.B. to Ground: 10.00ft

Ground Elevation: 1617.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON LOG ANALYSIS AND NEGATIVE RESULTS OF DST # 1. REFERENCE WELL FOR CORRELATION WAS MICK # 1, NE NE SE, SECTION 36-T10S-R12W. SAMPLES AND LOGS INDICATED NUMEROUS ZONES WITH POROSITY DEVELOPMENT BUT LACKING IN OIL SHOWS AND STAINING IN ANY ZONE IN THE WELL. DST # 1 PRESSURE CHARTS INDICATED A WELL DEVELOPED RESERVOIR BUT RECOVERED ONLY MUDDY SALT WATER (95,000 ppm Cl).

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG


DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) CONVENTIONAL TEST

**FORMATION TOPS COMPARISON**

	ZAMECNIK # 1		MICK # 1
	SE NE SW SW		NE NE SE
	Sec.8-T11S-R11W		Sec.36-T10S-R12W
	GL 1617' KB 1627'		KB 1694
Anhydrite top	583+1044	+56	+988
Anhydrite base	616+1011	+55	+956
Grand Haven	2186-559	+27	-586
Dover Lime	2213-586	+30	-616
Stotler/Tarkio	2263-636	+25	-661
Elmont	2366-739	+13	-752
Howard	2490-863	+11	-874
Topeka	2558-931	+8	-938
Heebner Shale	2799-1172	+2	-1174
Toronto	2824-1197	+1	-1198
LKC	2872-1245	-9	-1236
Stark Shale	3106-1479	+5	-1484
Hushpuchney Sh	3142-1515	+7	-1522
BKC	3178-1551	+6	-1557
Pawnee	3243-1616	+7	-1623
Ft. Scott	3292-1665	+5	-1670
Cherokee Shale	3321-1694	+8	-1702
Mississippi	3441-1814	-6	-1808
Kinderhook Sh	3600-1973	-121	-1852
Viola	3678-2051	-131	-1920
Simpson Shale	3912-2285	-114	-2171

Simpson Dol.	3920-2293	-116	-2177
Simpson Sand	3935-2308	-118	-2190
Arbuckle	Not Reached		-2208
RTD	3950-2323		-2236

### DST # 1 TEST SUMMARY

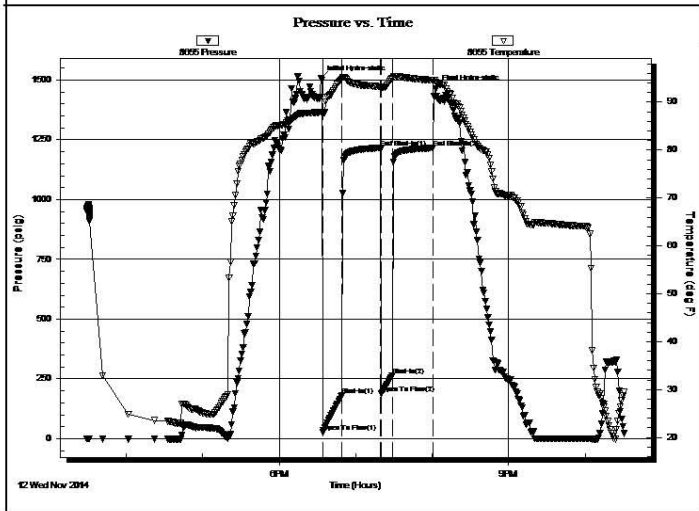
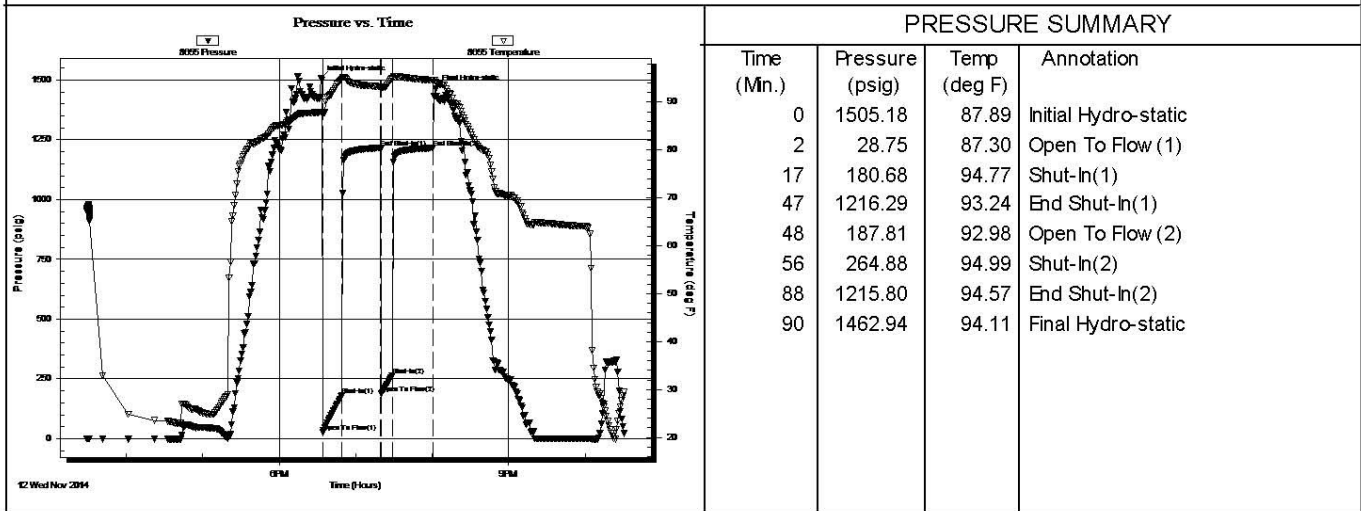
	<b>DRILL STEM TEST REPORT</b>		
	TDI 1310 Bison Rd Hays, KS 67601  ATTN: Herb Deines	<b>8-11S-11W Russell, KS</b>  <b>Zamecnik #1</b> Job Ticket: 58408 <b>DST#: 1</b> Test Start: 2014.11.12 @ 15:29:08	

**GENERAL INFORMATION:**

Formation: <b>KC "D-G"</b>	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Brannan Lonsdale
Time Tool Opened: 18:34:08	Unit No: 62
Time Test Ended: 22:30:38	Reference Elevations: 1627.00 ft (KB)
Interval: <b>2922.00 ft (KB) To 2988.00 ft (KB) (TVD)</b>	1617.00 ft (CF)
Total Depth: 2988.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches Hole Condition: Fair	

<b>Serial #: 8655</b>	<b>Outside</b>		
Press@RunDepth: 264.88 psig @ 2923.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2014.11.12	End Date: 2014.11.12	Last Calib.: 2014.11.12	
Start Time: 15:29:09	End Time: 22:30:38	Time On Btm: 2014.11.12 @ 18:32:38	
		Time Off Btm: 2014.11.12 @ 20:02:38	

**TEST COMMENT:** 15- IF- BOB 2.5mins  
 30- IS- No blow  
 10- FF- BOB 3.5mins  
 30- FS- No blow



Recovery

Length (ft)	Description	Volume (bbl)
530.00	WM, 30%W 70%M	7.24

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 58408

Printed: 2014.11.13 @ 08:23:21

ROCK TYPES

Cht	Dolsec	shale, gry	Ss
Cht vari	Lmst fw<7	Carbon Sh	Lscongl
Clystgy	Lmst fw>7	shale, red	Dol Lime
Clystcol	shale, grn	Shcol	

ACCESSORIES

MINERAL

- ▲ Chert, dark
- P Pyrite
- △ Chert White

FOSSIL

- 🦠 Oomoldic

OTHER SYMBOLS

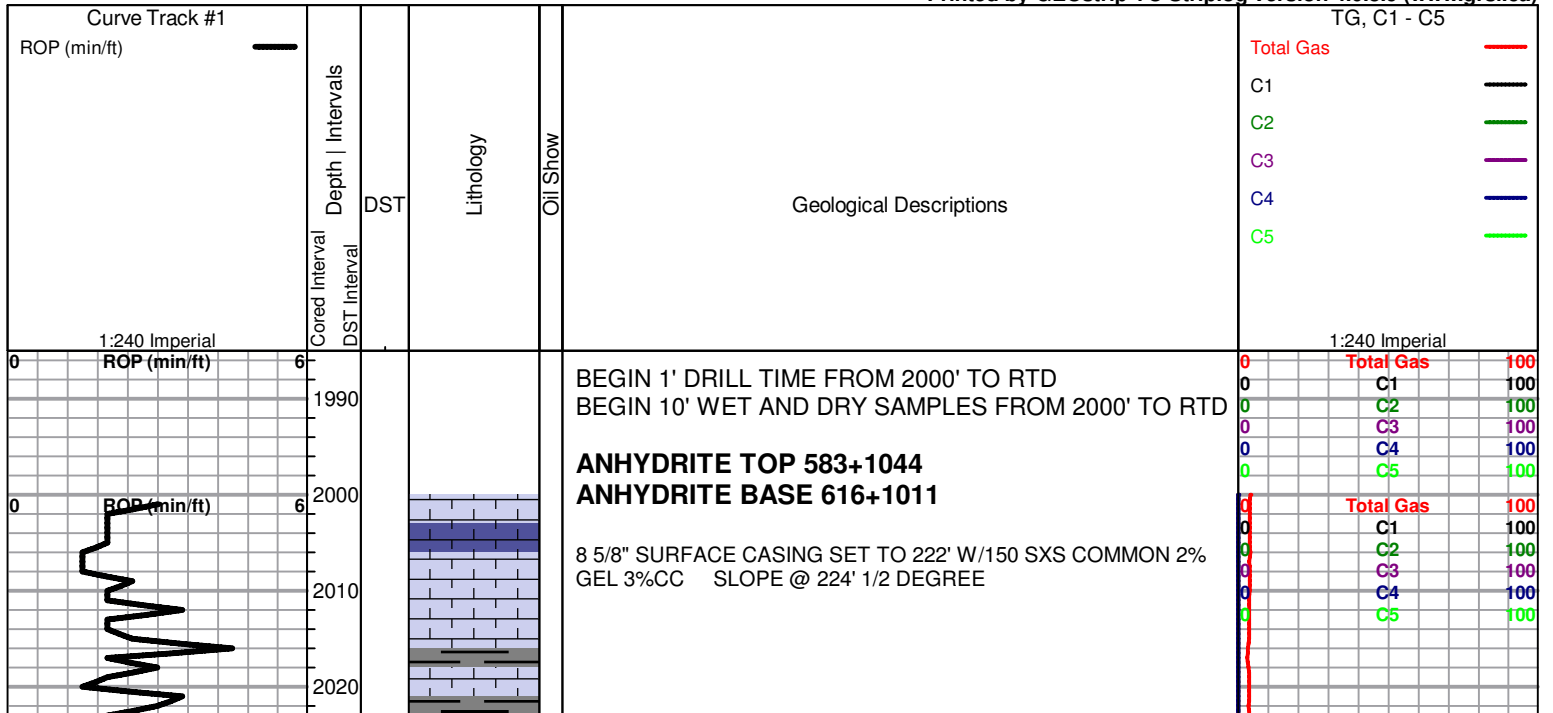
Oil Show

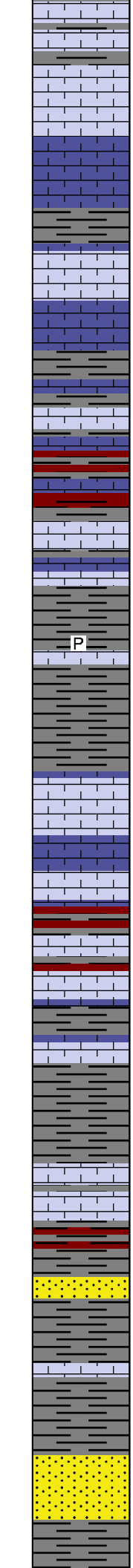
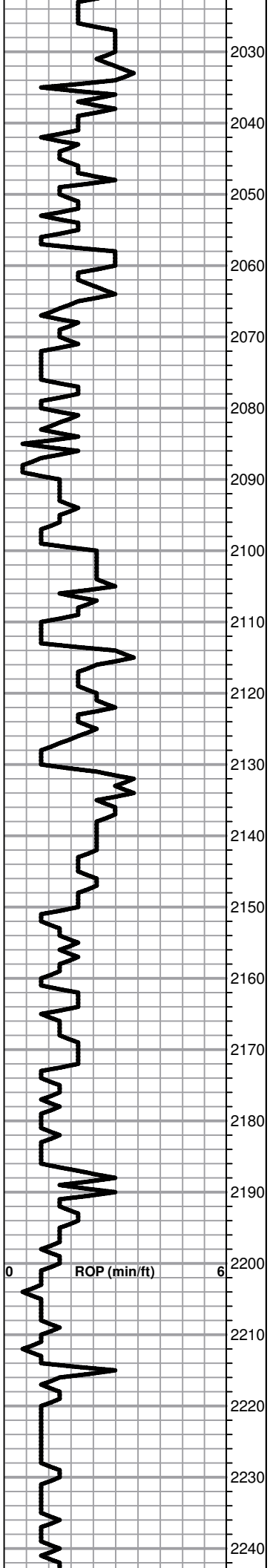
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- \* Gas

DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.9 (www.grsi.ca)





2030  
2040  
2050  
2060  
2070  
2080  
2090  
2100  
2110  
2120  
2130  
2140  
2150  
2160  
2170  
2180  
2190  
2200  
2210  
2220  
2230  
2240

Lime, lt brn-lt grayish brn, fnxln  
Lime, lt brn, fnxln  
Lime,lt brn, fnxln, fusulinids  
Lime, lt brn-lt gray, fnxln, soft chalky matrix  
Lime, lt brn, fnxln  
Lime, lt brn, fnxln  
Shale, red-med gray, soft sticky clumps  
Lime, lt brn-lt gray, fnxln  
Lime, lt-med brn-lt gray, fnxln  
Lime, lt brn-lt gray, fnxln  
Lime, lt gray, fnxln with chalky matrix  
Lime, lt brn-med gray, fnxln  
Lime, lt brn with red staining, fnxln  
Lime, lt brn-lt gray, fnxln

**GRAND HAVEN 2186-559**  
Lime, crm-lt brn grading to med brn-lt grayish brn, fnxln

SS lt gray, very fine grain, poorly sorted, gritty, micaceous, NS, No Staining

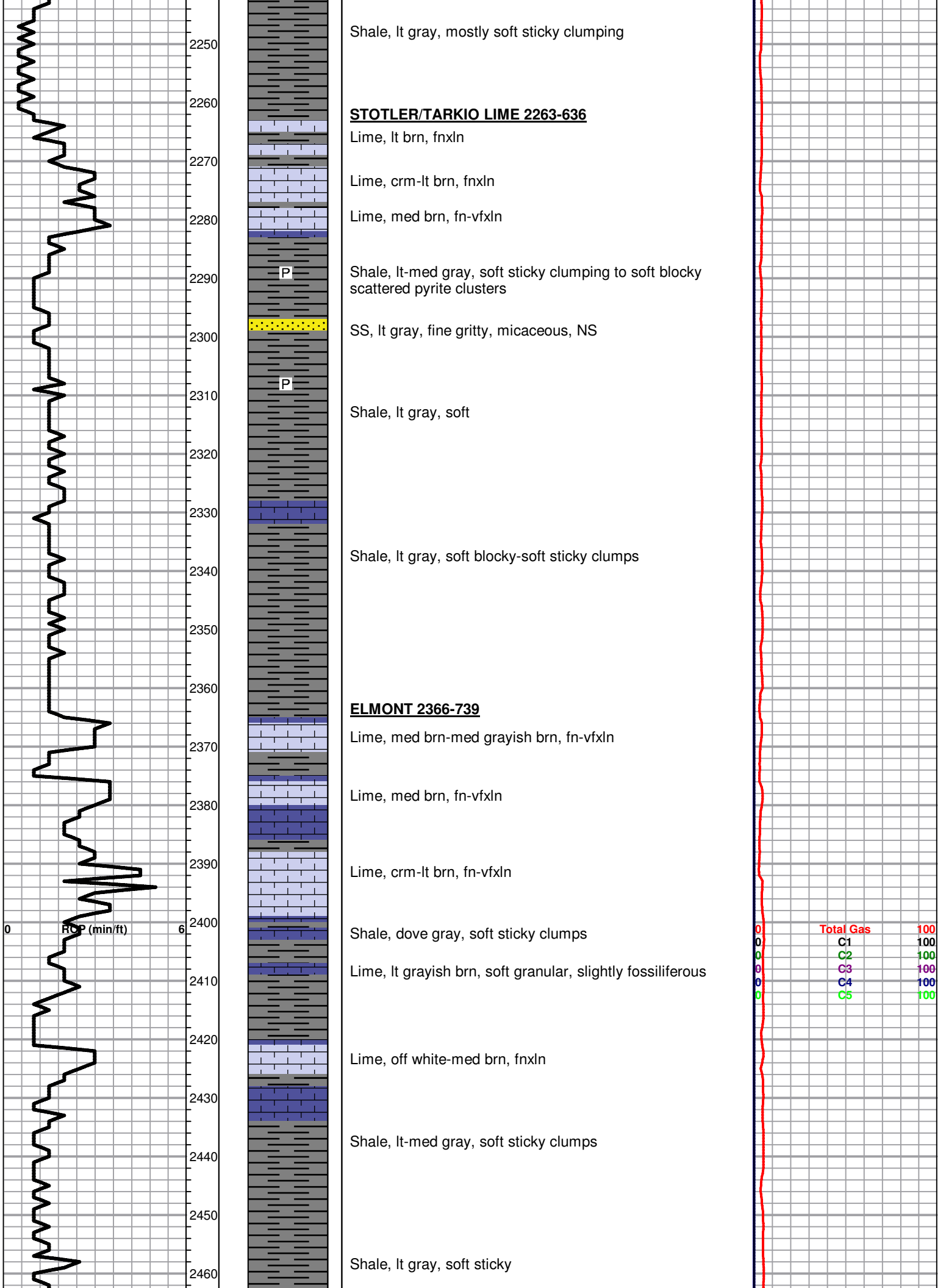
**DOVER LIME 2213-586**  
Lime, med brn, fnxln

SS, lt gray, VF grained to gritty, micaceous, lt green glauconitic tint, NS, No Staining

1ST PLUG 610' W/50 SXS  
2ND PLUG 420' W/100 SXS  
3RD PLUG 40' W/10 SXS  
RATHOLE W/ 30 SXS  
MOUSEHOLE W/ 15 SXS

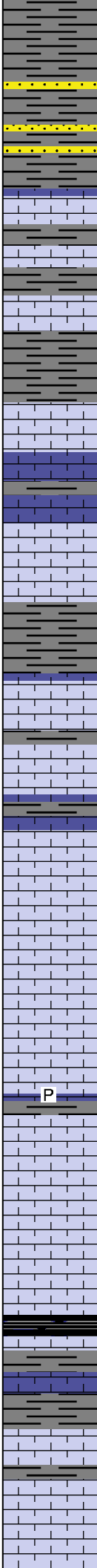
205 SXS 60/40POS 4%GEL  
1/4# FLOCELE PER SX

Total Gas	100
C1	100
C2	100
C3	100
C4	100
C5	100



2470  
2480  
2490  
2500  
2510  
2520  
2530  
2540  
2550  
2560  
2570  
2580  
2590  
2600  
2610  
2620  
2630  
2640  
2650  
2660  
2670  
2680

ROP (min/ft)



Shale, lt gray, soft sticky, scattered fine grained sandstone, lt gray, gritty, NS

**HOWARD 2490-863**

Lime, lt-med brn, fn-vfxln, slightly fossiliferous-fusulinids and crinoid segments

Lime, off white, soft granular

Lime, lt brn-med grayish brn, fnxln

Lime, med-dark grayish brn, fn-vfxln

Lime, med gray, fn-vfxln

Lime, off white-lt gray, fn-vfxln

Shale, dove gray, soft mud

**TOPEKA 2558-931**

Lime, lt brn-lt grayish brn, fnxln, thin cemented fossil beds

Lime, lt brn-lt grayish brn, fn-vxln

Lime, offwhite-med gray, fn-micro xln, hard on crush

Lime, lt brn, granular, NS, No Wet Cut

Lime, offwhite-lt brn, fnxln

Lime, lt brn-lt grayish brn, fnxln, slightly fossiliferous

P

Lime, lt gray-lt grayish brn, fnxln

Lime, lt brn, fnxln-granular in part, slight chalk in chalky matrix

Lime, lt brn-lt grayish brn, fnxln-granular

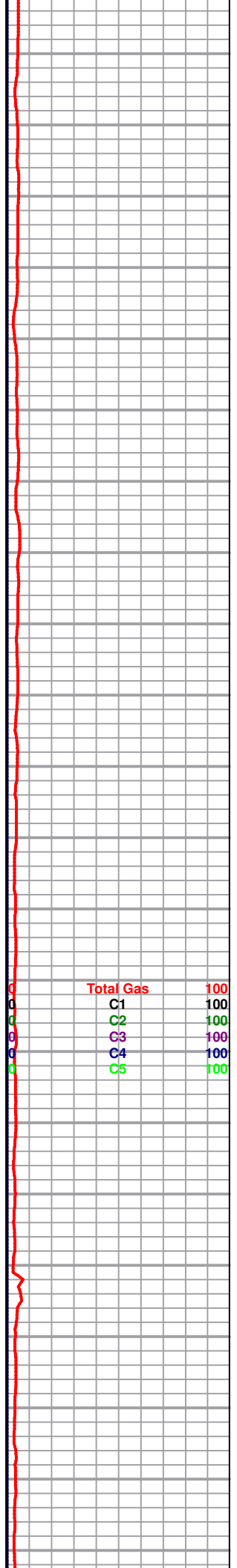
Shale, black carbonaceous, blocky

Lime, grayish brn, fn-vfxln

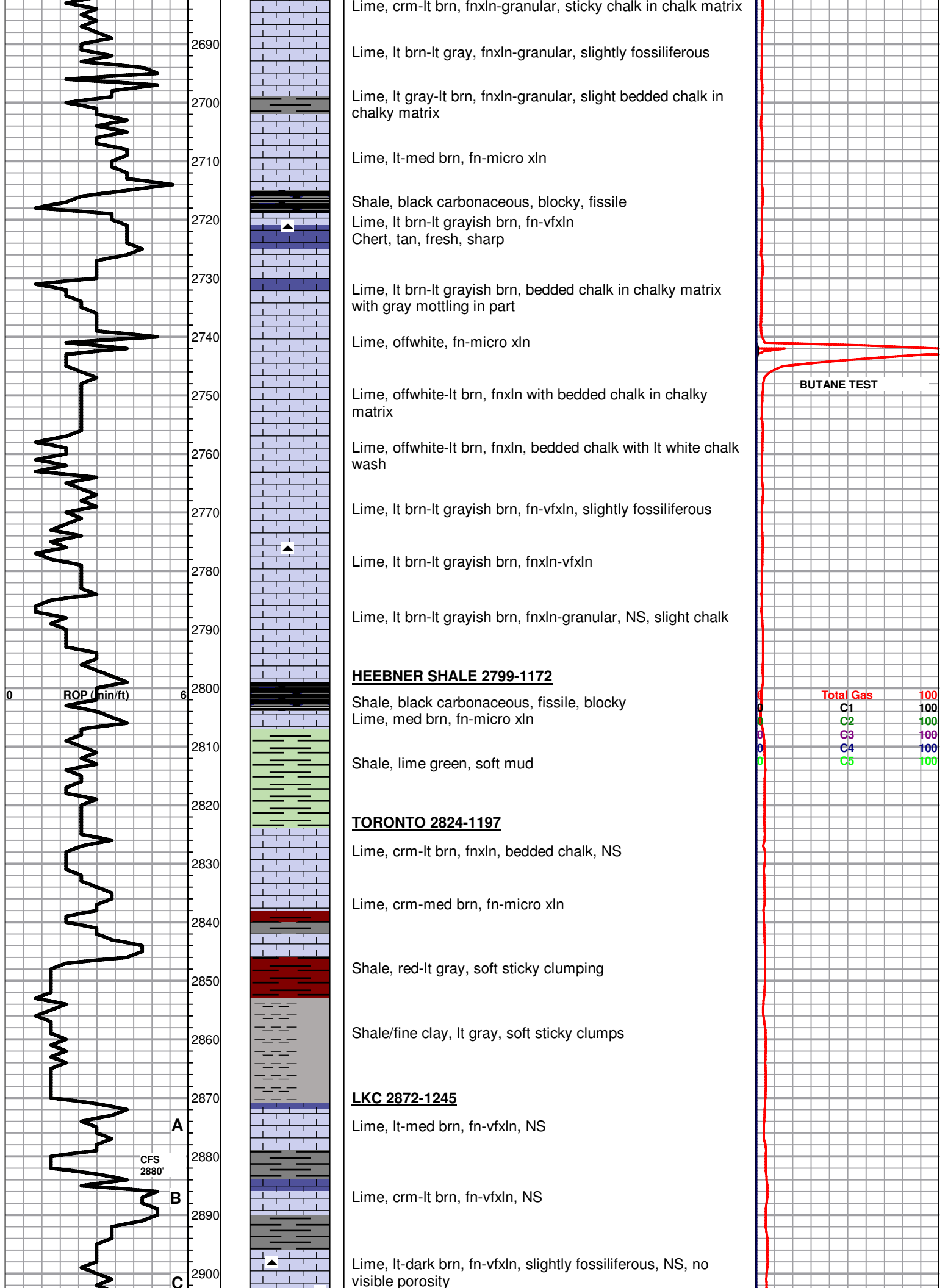
Shale, lt gray, soft sticky clumps

Lime, crm-off white, fn-vfxln, sub-lithographic

Lime, crm-lt brn, fnxln-granular, bedded chalk in chalky matrix



Total Gas 100  
C1 100  
C2 100  
C3 100  
C4 100  
C5 100



2690  
2700  
2710  
2720  
2730  
2740  
2750  
2760  
2770  
2780  
2790  
2800  
2810  
2820  
2830  
2840  
2850  
2860  
2870  
2880  
2890  
2900

Lime, crm-lt brn, fnxln-granular, sticky chalk in chalk matrix

Lime, lt brn-lt gray, fnxln-granular, slightly fossiliferous

Lime, lt gray-lt brn, fnxln-granular, slight bedded chalk in chalky matrix

Lime, lt-med brn, fn-micro xln

Shale, black carbonaceous, blocky, fissile

Lime, lt brn-lt grayish brn, fn-vfxln

Chert, tan, fresh, sharp

Lime, lt brn-lt grayish brn, bedded chalk in chalky matrix with gray mottling in part

Lime, offwhite, fn-micro xln

Lime, offwhite-lt brn, fnxln with bedded chalk in chalky matrix

Lime, offwhite-lt brn, fnxln, bedded chalk with lt white chalk wash

Lime, lt brn-lt grayish brn, fn-vfxln, slightly fossiliferous

Lime, lt brn-lt grayish brn, fnxln-vfxln

Lime, lt brn-lt grayish brn, fnxln-granular, NS, slight chalk

**HEEBNER SHALE 2799-1172**

Shale, black carbonaceous, fissile, blocky

Lime, med brn, fn-micro xln

Shale, lime green, soft mud

**TORONTO 2824-1197**

Lime, crm-lt brn, fnxln, bedded chalk, NS

Lime, crm-med brn, fn-micro xln

Shale, red-lt gray, soft sticky clumping

Shale/fine clay, lt gray, soft sticky clumps

**LKC 2872-1245**

Lime, lt-med brn, fn-vfxln, NS

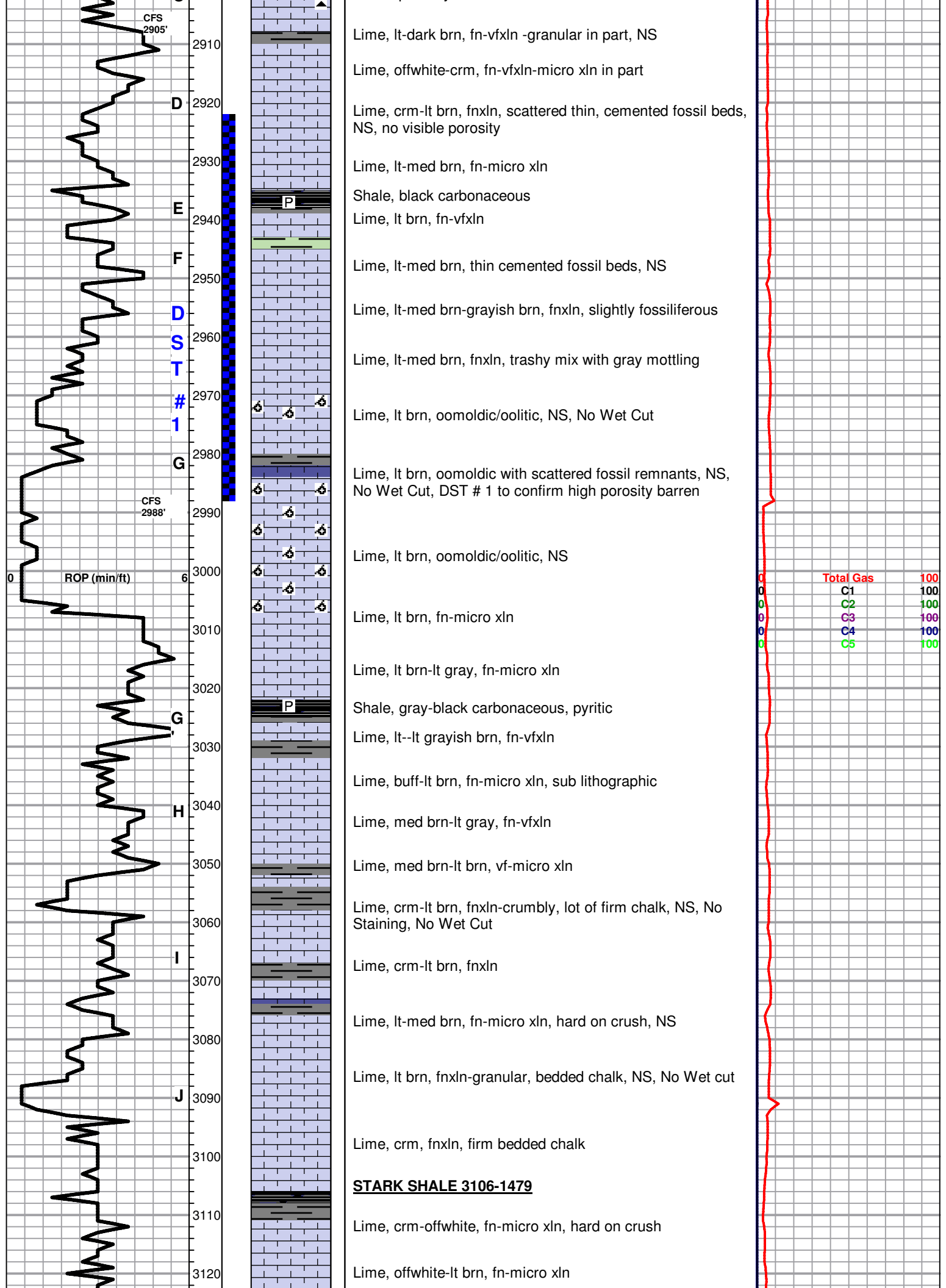
Lime, crm-lt brn, fn-vfxln, NS

Lime, lt-dark brn, fn-vfxln, slightly fossiliferous, NS, no visible porosity

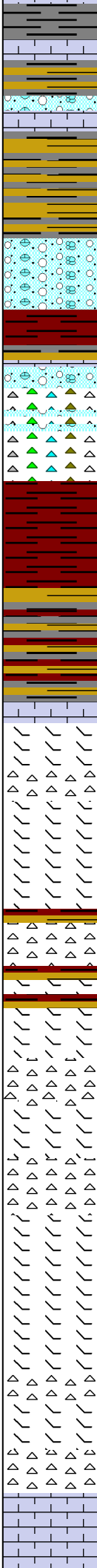
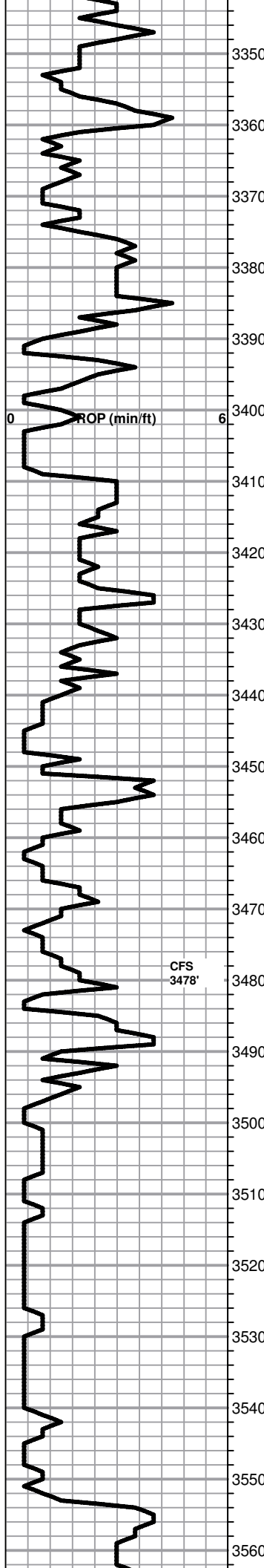
BUTANE TEST

Total Gas 100  
C1 100  
C2 100  
C3 100  
C4 100  
C5 100









Shale, gray-dark gray, soft blocky

Shale, vari color, soft blocky

Shale, vari color, soft mud to soft blocky

Lime, clastic mix with vari color shales

Shale, soft with red wash

Clastic lime and vari color chert mix

Shale, reddish brn with lt red wash with lost of sticky clumping

Shale, reddish brn, soft sticky

**MISSISSIPPI 3441-1814**

Lime, lt brn, fine grained granular, hard on crush, dolomitic in part

Lime, lt brn, fnxln-granular, dolomitic, NS, No Wet Cut

Chert, white, tans, bedded, fresh, sharp

Chert, white-tans-vari color, fresh, sharp, NS

Chert, vari color-reds, brns, maroon, yellow gold  
Shale, vari color

Shale, lt red wash

Lime, lt brn, fnxln-granular, dolomitic, hard on crush

Chert, increase in white cherts, fresh sharp, NS

Chert, white-tan, fresh, sharp

Chert, mix of lt color shades from tan-white-lt brn, fresh, sharp

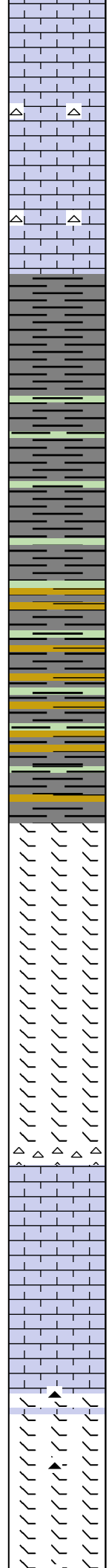
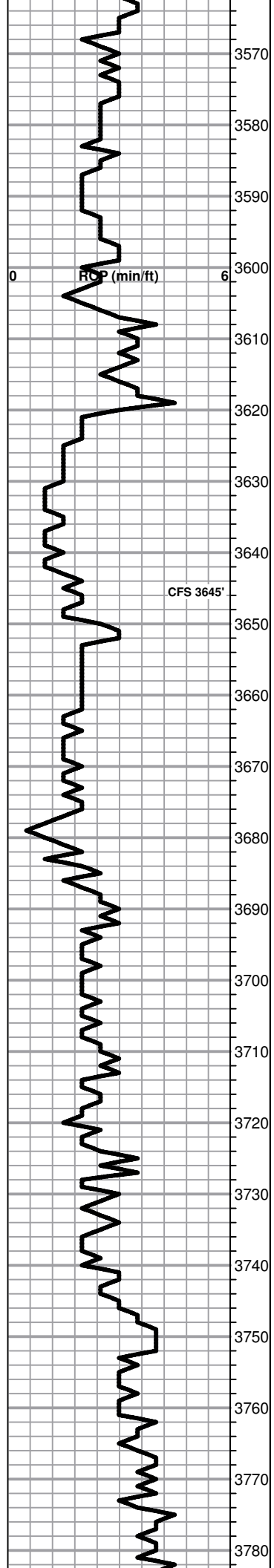
Chert, vari color, lt shades with reds and brns, fresh, sharp

Lime, lt brn, fnxln with vari color shales in samples

NOTE: STARTED HAVING SHALE SLOUGHING PROBLEMS AND MAINTAINING TARGET MUD WEIGHTS

Total Gas	
C1	100
C2	100
C3	100
C4	100
C5	100

PROBLEMS AND MAINTAINING TARGET MOD WEIGHTS.  
JETTED #1 AND ADDED SEVERAL TREATMENTS FROM  
THIS DEPTH TO RTD



Lime and shale, as above

Lime and shale, as above

Lime and shale, as above

**KINDERHOOK SHALE 3600-1973**

Shale, lt-dark gray, firm, waxy

Shale, lt-dark gray, firm, waxy

Shale, shades of gray and grayish green, firm, waxy

Shale, med-dark gray-grayish green, firm, waxy

Shale, dove gray, soft with sticky clumping in part

Shale, vari color, firm, waxy

Shale, med-dark gray, blocky, few scattered sandstone clusters, NS, No staining

Shale, mostly shades of gray and brown, firm, waxy

**VIOLA 3678-2015**

Lime, lt brn, fnxln-hard fine granular, dolomitic, NS

LOG LITHODENSITY VALUES INDICATED INTERVALS OF PARTIAL DOLOMITIZATION THROUGHOUT THIS SECTION

Lime, lt brn, vfxln, dolomitic, hard on crush, NS

Lime, lt brn, fnxln, dolomitic

Lime, lt brn, fnxln, dolomitic, NS

Lime, lt brn, fnxln, dolomitic, hard on crush

Lime, lt brn, vfxln, very hard on crush

Lime, lt brn-lt gray, fn-vfxln

Lime, lt brn-lt gray, fn-vfxln

Lime, lt grayish brn-gray, fn-micro xln  
Chert, tan, fresh, sharp

Lime, lt brn-lt gray, fnxln, chalk in chalky matrix, soft on crush

Lime, lt brn-lt gray, fnxln with chalky matrix with slight

<b>Total Gas</b>	<b>100</b>
C1	100
C2	100
C3	100
C4	100
C5	100

