



Scale 1:240 Imperial

Well Name: FRITZEMEIER #31-32
 Surface Location: E2 SE SW NE 31-24S-12W
 Bottom Location:
 API: 15-185-23752-0000
 License Number: 34110
 Spud Date: 5/17/2012 Time: 3:34 PM
 Region: STAFFORD
 Drilling Completed: 2/2/2011 Time: 5:50 PM
 Surface Coordinates: 2310' FNL & 1425' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 1900.00ft
 K.B. Elevation: 1913.00ft
 Logged Interval: 0.00ft To: 0.00ft
 Total Depth: 0.00ft
 Formation:
 Drilling Fluid Type: FRESH WATER/CHEMICAL GEL

OPERATOR

Company: CAERUS KANSAS, LLC
 Address: P.O. BOX 1378
 HAYS, KS 67601

Contact Geologist: BRIAN KARLIN
 Contact Phone Nbr: (785) 623-3290
 Well Name: FRITZEMEIER #31-32
 Location: E2 SE SW NE 31-24S-12W
 Pool:
 State: KANSAS
 API: 15-185-23752-0000
 Field: CLINE SOUTHEAST
 Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -98.6778154 Latitude: 37.9199663
 N/S Co-ord: 2310' FNL
 E/W Co-ord: 1425' FEL

LOGGED BY



Company: SOLUTIONS CONSULTING
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 259-3737
 Logged By: Geologist Name: JEFF LAWLER


CONTRACTOR

Contractor: NINNESCAH DRILLING, LLC
 Rig #: 101
 Rig Type: MUD ROTARY
 Spud Date: 5/17/2012 Time: 3:34 PM
 TD Date: 2/2/2011 Time: 5:50 PM
 Rig Release: Time:

ELEVATIONS

K.B. Elevation: 1913.00ft Ground Elevation: 1900.00ft
 K.B. to Ground: 13.00ft

DST #2 LKC "A-B"

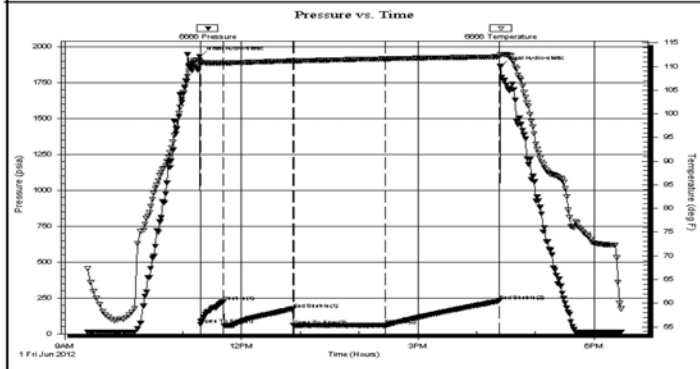
	DRILL STEM TEST REPORT	
	Caerus Kansas LLC	31/24S/12W Stafford Co.
	P.O.Box 1378 Hays,Kansas 67601+3974	Fritzemeier #31-32 Job Ticket: 17726 DST#: 2 Test Start: 2012.06.01 @ 09:20:00
ATTN: Jeff Lawler		

GENERAL INFORMATION:

Formation: Lansing A-D	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Dylan E Ellis
Time Tool Opened: 11:18:00	Unit No: 3345/Great Bend/86
Time Test Ended: 18:28:00	Reference Elevations: 1913.00 ft (KB)
Interval: 3552.00 ft (KB) To 3614.00 ft (KB) (TVD)	1900.00 ft (CF)
Total Depth: 3614.00 ft (KB) (TVD)	KB to GR/CF: 13.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

Serial #: 6666 Outside	Capacity: 5000.00 psia
Press@RunDepth: 60.50 psia @ 3610.50 ft (KB)	Last Calib.: 2012.06.02
Start Date: 2012.06.01 End Date: 2012.06.01	Time On Btm: 2012.06.01 @ 11:17:00
Start Time: 09:20:00 End Time: 18:28:00	Time Off Btm: 2012.06.01 @ 16:24:30

TEST COMMENT: 1ST Opening 30 Minutes weak blow /blow blew 1 inch into bucket of water
 1ST Shut-In 60 Minutes no blow back
 2ND Opening 90 Minutes steady building blow /blow blew 10 inches into bucket
 2ND Shut-In 120 Minutes no blow back




PRESSURE SUMMARY			
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1932.78	111.42	Initial Hydro-static
1	64.78	110.56	Open To Flow (1)
25	225.85	110.77	Shut-In(1)
95	174.55	111.20	End Shut-In(1)
97	57.76	111.18	Open To Flow (2)
190	60.50	111.62	Shut-In(2)
306	228.50	112.05	End Shut-In(2)
308	1863.37	112.56	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
15.00	Mud 100%	0.21

Gas Rates			
	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)

DST #3 LKC "H-I"

	DRILL STEM TEST REPORT	
	Caerus Kansas LLC	31/24S/12W Stafford Co.
	P.O.Box 1378 Hays,Kansas 67601+3974	Fritzemeier #31-32 Job Ticket: 17727 DST#: 3 Test Start: 2012.06.02 @ 23:07:00
ATTN: Jeff Lawler		

GENERAL INFORMATION:

Formation: Lansing/Kansas City

Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:04:00
 Time Test Ended: 08:19:30

Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 3345 Great Bend/86

Interval: 3729.00 ft (KB) To 3776.00 ft (KB) (TVD)
 Total Depth: 3776.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1913.00 ft (KB)
 1900.00 ft (CF)
 KB to GR/CF: 13.00 ft

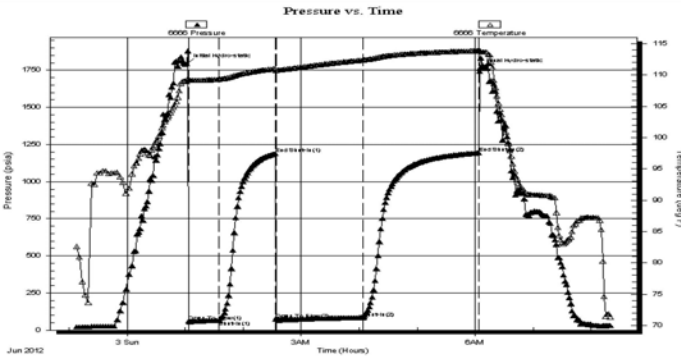
Serial #: 6666

Outside

Press@RunDepth: 84.65 psia @ 3772.00 ft (KB)
 Start Date: 2012.06.02 End Date: 2012.06.03
 Start Time: 23:07:00 End Time: 08:19:30

Capacity: 5000.00 psia
 Last Calib.: 2012.06.03
 Time On Btm: 2012.06.03 @ 01:01:30
 Time Off Btm: 2012.06.03 @ 06:05:00

TEST COMMENT: 1ST Open 30 Minutes/Fair blow /Blow built to 6 inches in bucket of water
 1ST Shut In 60 Minutes/No blow back
 2ND Open 90 Minutes/Good blow /Blow built to bottom of bucket in 49 minutes
 2ND Shut In 120 Minutes/No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1794.16	108.90	Initial Hydro-static
3	58.49	109.21	Open To Flow (1)
34	65.61	109.32	Shut-In(1)
92	1188.55	111.01	End Shut-In(1)
93	74.48	110.73	Open To Flow (2)
182	84.65	112.38	Shut-In(2)
302	1193.58	113.87	End Shut-In(2)
304	1761.38	113.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	Slightly oil cut mud	0.37
0.00	Oil 10% Mud 90%	0.00
60.00	Slightly oil cut watery mud	0.88
0.00	Oil 5% Water 35% Mud 60%	0.00
0.00	240 feet of gas in pipe	0.00
0.00	Recovery Chlorides 35.000 ppm	0.00

Gas Rates

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

Superior Testers Enterprises LLC

Ref. No: 17727

Printed: 2012.06.03 @ 06:42:38

DST #4 LKC "J-K"



DRILL STEM TEST REPORT

Caerus Kansas LLC
 P.O.Box 1378 Hays,Kansas
 67601+3974
 ATTN: Jeff Lawler

31/24S/12W Stafford Co.

Fritzemeier #31-32

Job Ticket: 17728 **DST#: 4**
 Test Start: 2012.06.03 @ 17:21:00

GENERAL INFORMATION:

Formation: **Lansing/Kansas City**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:55:30
 Time Test Ended: 22:55:00

Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 3345 Great Bend/86

Interval: 3766.00 ft (KB) To 3826.00 ft (KB) (TVD)
 Total Depth: 3826.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1913.00 ft (KB)
 1900.00 ft (CF)
 KB to GR/CF: 13.00 ft

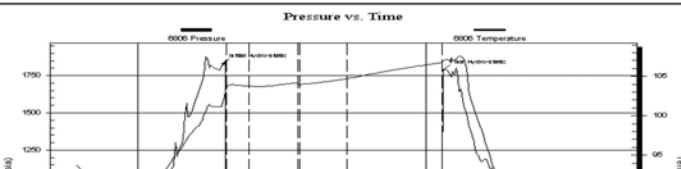
Serial #: 6806

Inside

Press@RunDepth: 104.84 psia @ 3821.90 ft (KB)
 Start Date: 2012.06.03 End Date: 2012.06.03
 Start Time: 17:21:00 End Time: 22:55:00

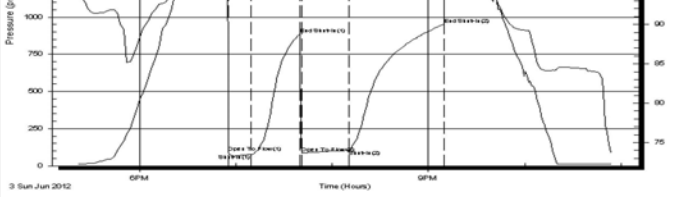
Capacity: 5000.00 psia
 Last Calib.: 2012.06.03
 Time On Btm: 2012.06.03 @ 18:53:00
 Time Off Btm: 2012.06.03 @ 21:10:30

TEST COMMENT: 1ST Open 15 Minutes/Good blow /Blow built to 12 inches in bucket of water
 1ST Shut In 30 Minutes/No blow back
 2ND Open 30 Minutes/Good blow /Blow built to bottom of bucket in 22 minutes
 2ND Shut In 60 Minutes/No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1829.54	101.76	Initial Hydro-static
3	89.86	103.54	Open To Flow (1)
17	77.67	103.77	Shut-In(1)
47	888.42	104.19	End Shut-In(1)
49	89.86	104.04	Open To Flow (2)



46	89.03	104.01	Open to Flow (2)
78	104.84	104.70	Shut-In(2)
137	952.74	106.75	End Shut-In(2)
138	1785.57	106.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	240 feet gas in pipe	0.00
60.00	Oil spotted Watery Mud	0.88
0.00	Oil 1% Water 39% Mud 60%	0.00
60.00	Oil spotted Mud	0.88
0.00	Oil 1% Mud 99%	0.00
0.00	Recovery Chlorides 30,000 ppm	0.00

Gas Rates

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

Superior Testers Enterprises LLC

Ref. No: 17728

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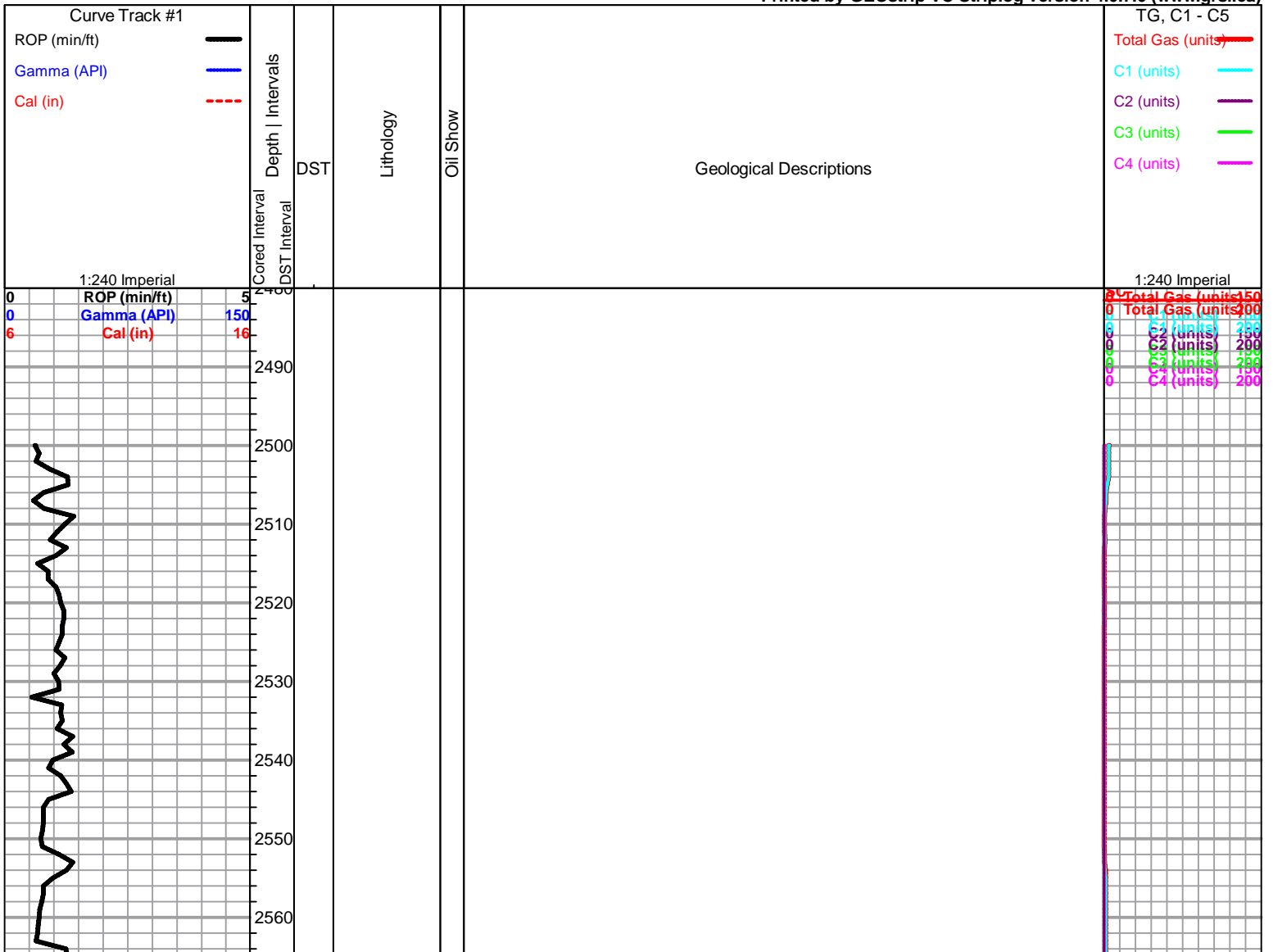
ROCK TYPES

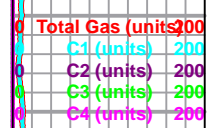
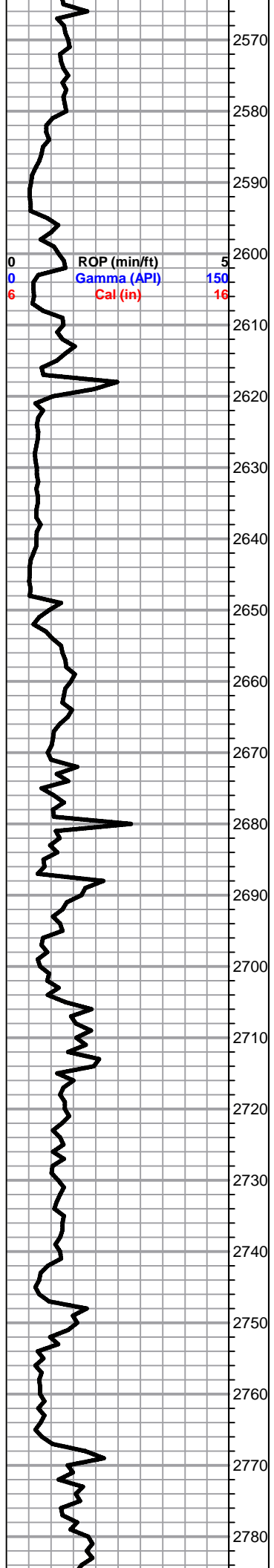
 Lmst fw7>	 shale, gry	 Shblk	 Carbon Sh
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OTHER SYMBOLS

- DST**
-  DST Int
 -  DST alt
 -  Core

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Sh- Gray Lime Green Red, soft, smooth, gritty & earthy

Sh- Gray wash shale

Lm- Cream Gray, FXLN, sl. fsl. well cemented & dense, few w/ scctrd ppt porosity, some bio-clasts, interbedded shale & Ss

Lm- Cream Tan, F-Med XLN, fsl w/ fusulinids, dense secondary XLN porosity w/ few recrystallization inclusions, interbedded sh & Ss

Lm- Cream Buff, Fine gr., dense, mostly well cemented, few sl. unconsolidated, mix of mudstone, mud supported matrix grain stone & bio-clast w/ fsl frag.

Lm- Lt Brwn Buff, FXLN, sl. unconsolidate, fsl., tightly cemented siliceous matrix

Lm- Cream Tan, VF-FXLN, sl. oolitic, tight dense matrix, few cryptocrystalline w/ no visible porosity

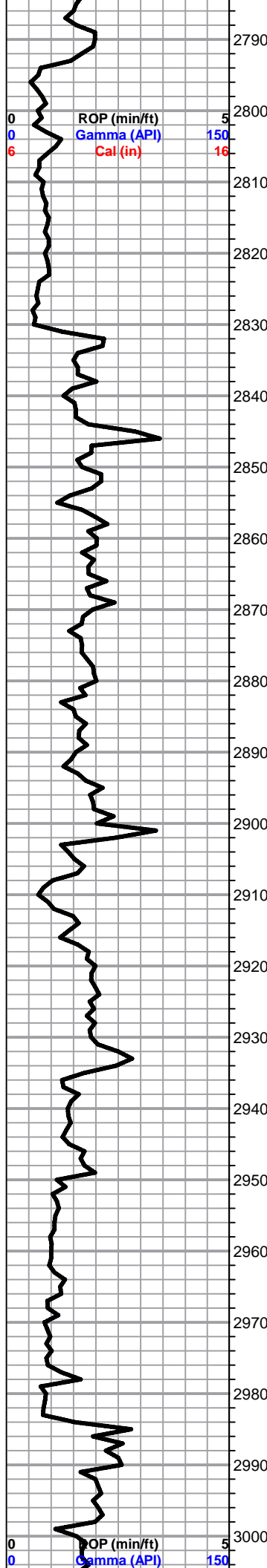
Sh- Gray Maroon Lm Green, soft smooth, some gray wash, gritty & earthy

Lm- Brwn Gray, VFXLN, dense tightly cemented matrix, fsl rip-up clast, high energy, trashy

Lm-Cream, VF gr, dense, massive mudstone, very well cemented w/ no visible porosity, few recrystallization inclusions

Lm- Cream Tan, F-Med XLN, fsl, fusulinids, sl granular, scctrd ppt porosity, clean & barren

REPLACE CHROMATOGRAPH PUMP



Sh/Ss- Gray Dove Gray, soft thin slivers, clusters of fn gr, consolidated & well sorted, friable, speckled w/ dark minerals, clean & barren

Sh/Ss- A/A, Brown Ss, thin flakes of gray shale, gray wash

Lm- Cream Gray, VF-F gr, dense mud supported matrix, fsl, sl unconsolidated, few dense tight XLN matrix, trashy bio-clast

Lm- Cream Tan Buff, VFXLN, cryptocrystalline w/ no visible porosity

Lm- Cream Tan, Fine gr., well cemented mudstone, mud supported loosely cemented siltstone, sl unconsolidated, pebbly, fsl, few fusulinids

Sh- Gray Red Lm Green, smooth slivers, soft

Lm- Buff Gray, VFXLN, fsl, high energy rip-up clasts, trashy

Sh- Gray, soft, smooth

Lm- Bugg Gray Cream, VFXLN, fsl, crinoids, fusulinids, tightly cemented matrix, limited visible porosity, chalky in part

Lm- Cream, F-Med XLN, fsl, gritty & granular, few w/ abundant dense secondary porosity, mostly w/ very fine scctrd ppt porosity, clean & barren

Lm- Buff Gray, VFXLN, fsl, dense, tightly cemented matrix, no visible porosity

Lm- Cream Tan, Med XLN, massice, gritty & granular, well cemented, few scctrd clear inclusions, vry fine scctrd ppt porosity, clean & barren

Lm- Buff Gray, VF-FXLN, semi-brittle, tightly cemented, sl. fsl, limited visible porosity

Sh- Gray White, soft, silty, calcareous & chalky

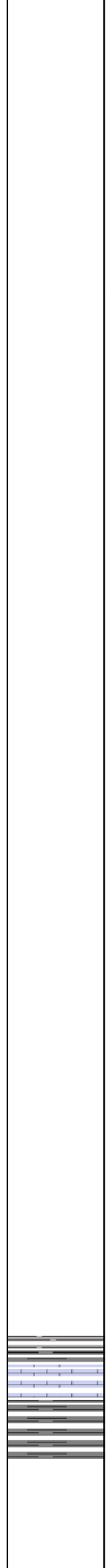
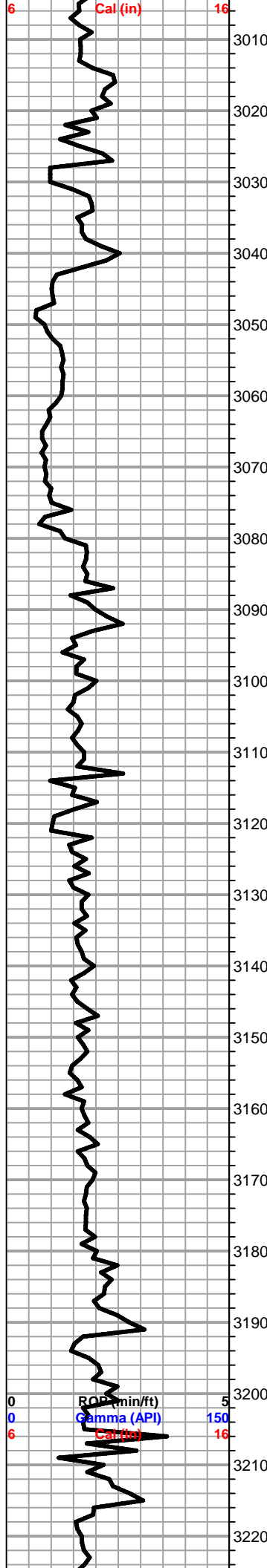
Sh- Drk Gray Dove Gray Maroon Lm Green, soft, smooth, sl. rounded

HOWARD 2985' (-1072) E-LOG Lm- Buff Cream Gray, VF-FXLN, semi-brittle, sl fsl, tightly cemented dense matrix, sub-cryptocrystallines, chalky in part

Lm- Tan Cream, FXLN, fsl. bivalve casts, poorly developed, semi-brittle, very scctrd ppt porosity, mostly limited visible porosity, no shows noted

0 Total Gas (units) 200
0 C1 (units) 200
0 C2 (units) 200
0 C3 (units) 200
0 C4 (units) 200

0 Total Gas (units) 200
0 C1 (units) 200



3010 Lm- Tan Buff Cream, FXLN, dense, sl fsl, poorly develope w/ limited visible porosity, tight

3020 Lm- Cream Tan, F-Med XLN, fsl, few pyritized crinoids, tight, few gritty & grainy, very scctrd ppt porosity, mostly dense XLN porosity

3030 Lm- Buff Cream, Fine-Med grn., mostly mud supported matrix, chalky in part, fsl, bio-clasts, silty

3040 Sh/Ss- Gray Lm Green Dove Gray, soft, smooth slivers, some sticky argillaceous clumps, VF grn, well sorted, speckled w/ glauconite & dark minerals, consolidated, soft, very loosely cemented & friable, FEW CLUSTERS W/ SL GSY SHEEN, DULL FLOR WET CUT UPON CRUSH, NO ODR

3050

3060

3070 Sh- Gray White, soft, smooth, sticky clumps of chalk

3080 **TOPEKA 3080' (-1167) E-LOG** Lm- Cream Tan, VF-FXLN, tight, well cemented, sl fsl, rare ppt porosity, mostly sub-cryptocrystalline, minimal developement & visible porosity

3090 Lm- Cream Gray, FXLN - Fine grn, mix of biomicrite and chalky mud supported oolitic, semi-trashy clastic

3100 Lm- Buff Lt Brown, VFXLN, densely packed oolites, tightly cemented matrix, no visible porosity

3110

3120 Sh- Gray Lm Green, smooth slivers, some blocky, few soft sticky clumps

3130 Lm- Tan, Med XLN, dense, very well cemented, granular & massive, no consistant matrix porosity, chalky in part

3140 Lm- A/A

3150 Lm- Cream Tan, F-Med gr., mostly mud supported matrix, chalky, sl fsl

3160 Lm- Tan, FXLN, mottled, semi-brittle, tight XLN porosity, few w/ good secondary micro porosity, fsl w/ fusulinids,

3170 Lm- Tan, FXLN, well cemented, sl. gritty, very limited visible porosity, chalky

3180 Lm- Cream, VF-FXLN, dense, well cemented, sl oolitic, minimal developement w/ limited to no visible porosity, tight matrix

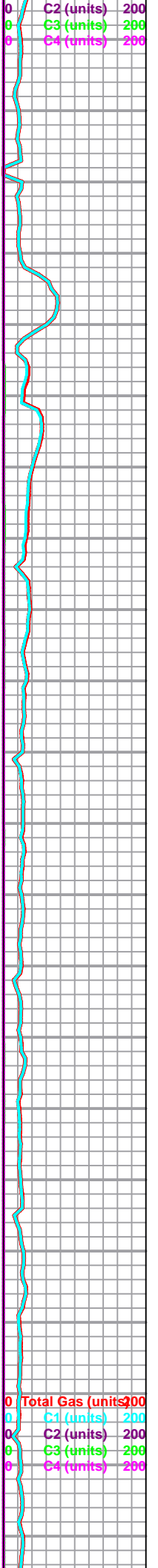
3190 Lm- Cream Tan, Fine grn., soft mud supported matrix, crumbly, sl fsl, chalky

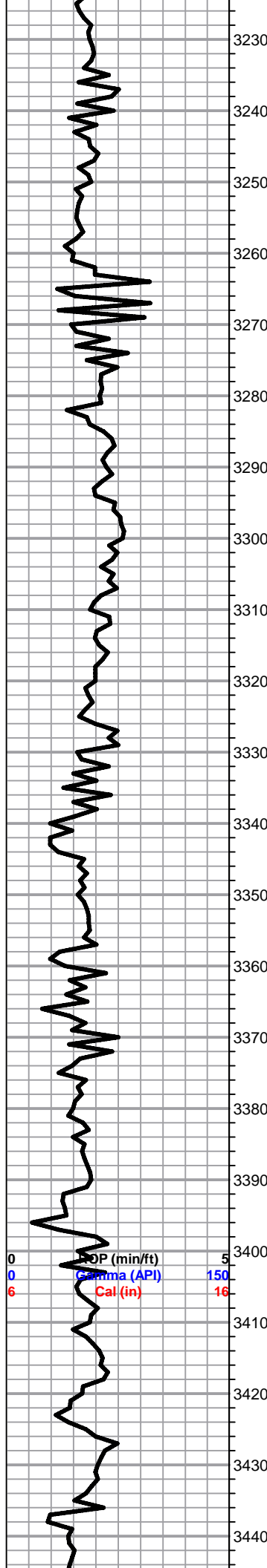
3200

3210 Sh- Black Gray Lm Green, well compacted, blocky, dense, some soft & smooth

3220 Lm- Tan Gray, FXLN, mostly tight high energy rip-up clasts w/ fsl frag, few mud supported oolitic siltstone

Lm- Cream Tan, FXLN, mostly dense XLN porosity w/ scctrd secondary porosity, tight, sl fsl





Lm- Cream Tan, FXLN, mostly dense XLN porosity w/ scctrd secondary porosity, tight, sl. fsl. some gritty, crumbly mud supported matrix

Lm/Chert- Tan, VF-FXLN, dense, fsl, sub-cryptocrystalline, no visible porosity, chips of smokey gray sharp angular bedded chert

Lm- Tan Lt Brown, FXLN, brittle, tight, semi-brittle, very scctrd secondary porosity w/ recrystallization w/in small solution veins, minimal visible porosity

Lm- Cream Tan, FXLN, mix of oolitic bio-micrite and densely cemented fusulinid bio-micrite, tight w/ minimal visible porosity

Lm/Chert- Cream Buff Smokey Gray, F-Med XLN, sl granular, fsl, scctrd XLN porosity w/ some secondary porosity, chips of fresh bedded chert

Sh- Black, Gray Lm Green Red, fissile, carbonaceous, very dense, very well compacted, blocky, slick, few lm green sl unconsolidated & pebbly sandy lime

Lm- Lt Brown Tan, FXLN, densely cemented matrix, scctrd oolitic bio-micrite, few fusulinids, tight w/ limited visible porosity

Lm- Cream Tan, A/A, few w/ dense secondary porosity

Lm- Cream Tan, Med XLN, gritty & granular, sparatic inclusions, chalky in part, crumbly, sl fsl, clean & barren

Lm- Brown Tan, FXLN, fsl, few sl unconsolidated, semi-brittle, trashy, interbedded shales lenses

Lm- Cream Tan, F-Med XLN, fsl w/ crinoids & few fusulinids, minimal developement, well cemented packstone, minimal visible porosity

Lm/Chert- Off White Smokey Gray, VF-FXLN, sub-cryptocrystalline, few massive, well cemented w/ scctrd recrystallization inclusions, chips of fsl, sl. oolitic bedded chert

Lm- Cream Tan, Fine grn., mud supported matrix, chalky in part, sl. fsl, few chips of dense algal Ls

Lm- Cream Lt Brown, biomicrite w/ large fusulinids, mostly mud matrix, trashy

Lm- Off White Cream, FXLN, dense, very well cemented, sl. cherty Ls, fsl, semi-brittle w/ no visible porosity

HEEBNER 3395' (-1482) E-LOG Lm- Black Gray Red Lm Green, fissile, carbonaceous, dense, well compacted blocky chips, soft silty red shale

*ABUNDANT SLOUGHING SHALE
46 VIS. 9.5 WT ADD MUD TRTMNT*

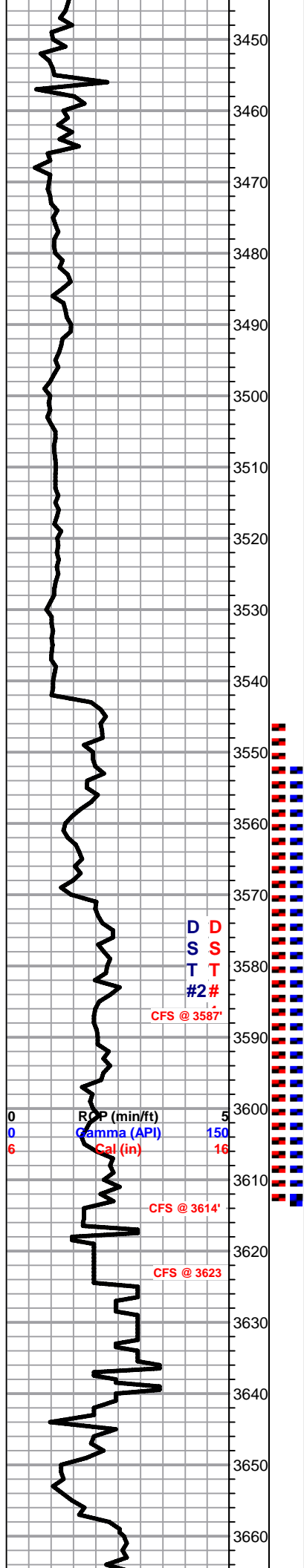
122 UNITS

Total Gas (units)	200
C1 (units)	200
C2 (units)	200
C3 (units)	200
C4 (units)	200

TORONTO 3411' (-1498) E-LOG Lm- Cream Tan, Med grn, coarse, gritty, sl oolitic, abundant chalk, clean & barren

120 UNITS

DOUGLAS 3435' (-1522) E-LOG Sh- Various dark colored shales, mix of soft, wash, sl sandy lime, dense & blocky



Sh- A/A, more gray wash, Ss clusters, VF grn., well sorted & consolidated, speckled w/ glauconite & dark minerals, sl friable

Ss- A/A, VF-F grn. clusters

Sh- Gray, soft, grainy, smooth, sticky gray wash

Sh- Gray, becoming more silty & soft

Sh- Gray, more compacted & waxy

Sh- A/A

Sh- Gray, A/A, some fissile like

BROWN LIME 3543' (-1630) E-LOG Lm- Brown Buff, Med XLN, fsl, oolitic, some w/ sparse siliceous cementation and abundant secondary porosity, trashy, few chips of dense fsl algal Ls

Sh- Gray Brown Red Maroon Lm Green, soft smooth, earthy & grainy

LKC 3570' (-1657) E-LOG Lm- Cream Tan, FXLN, chalky in part, fsl, few chips w/ dense fractured secondary porosity, scctrd development, mix of dense siliceous cementation, tight w/ limited visible porosity and sub-cryptocrystalline w/ rare scctrd XLN porosity, no shows noted

○ Lm- Cream Tan Brown, FXLN, fsl, mostly densely cemented w/ silica, semi-brittle w/ limited visible porosity, few chips w/ scctrd XLN porosity, RARE LT GSY STN, 1 CHIP W/ FNT ODR UPON CRUSH, NO SFO, WK FLOR

○ Lm- Cream Tan, FXLN, well cemented, no visible grains, mostly w/ dense secondary porosity, possibly fractured, sl translucent, no visible solution veins or recrystallization, NO VISIBLE STN, FNT GSY ODR UPON CRUSH, WK FLOR

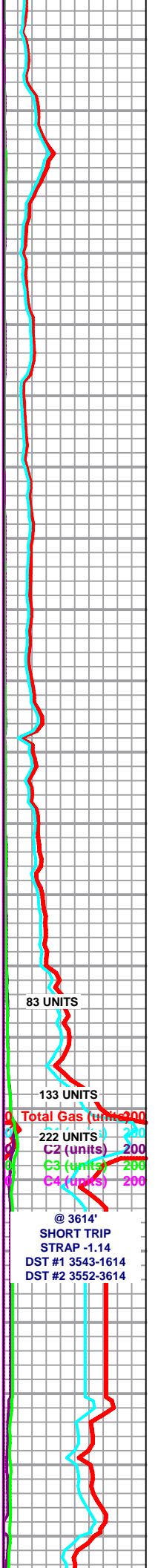
Lm- Tan Brown, Med XLN, fsl, some biomicrite, sl trashy, scctrd recrystallization, densely cemented matrix w/ scctrd visible grains, scctrd secondary porosity, no shows noted

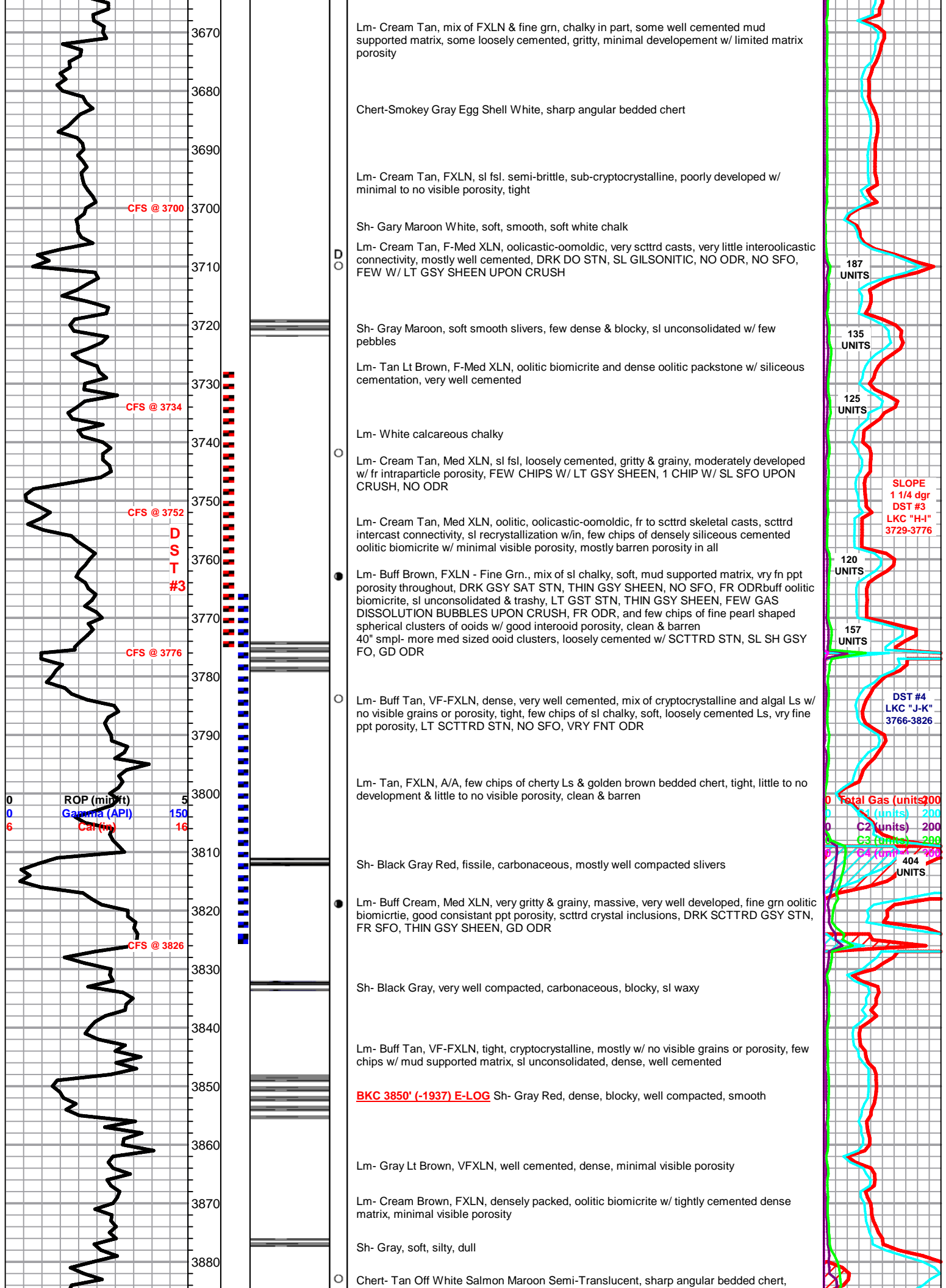
Lm- Brown Buff Smokey Gray, FXLN- Fine grn., dense very well cemented matrix, some algal Ls, mostly dense XLN w/ no visible porosity, chips of smokey gray conchoidal, sharp bedded chert

● Lm- Tan Brown, VF-Med XLN, densely packed oolites w/ siliceous cementation, no visible grains or porosity, grades into oolitic-oolitic w/ mostly constant ppt porosity, good skeletal dissolution, DRK SAT STN, WATERY IN PART, GSY SHEN, FR ODR, SL SH GSY WTRY FO

Lm/Chert- Cream Tan, FXLN, tight, semi-brittle, cryptocrystalline, few visible grains and limited porosity, chips of sl fsl bedded chert

● Lm- Cream Buff, Med-Coarse XLN, gritty & grainy, scctrd halite inclusions, moderately well developed, scctrd ppt porosity, SCTTRD GSY STN, SHEEN, NO SFO, FR ODR





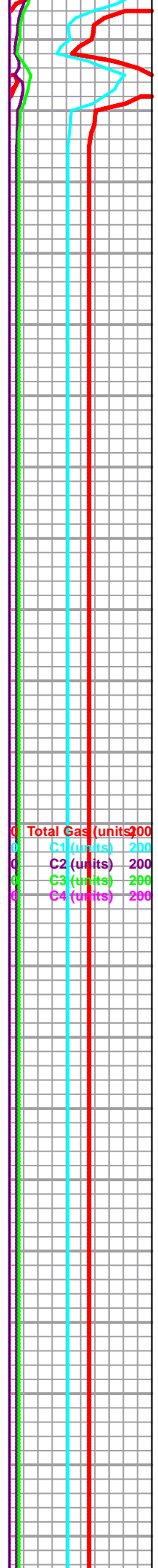
maroon fine grain oolitic chert, Off white w/ SCTTRD DRK STN, NO FO, NO ODR

Lm- Cream Tan, VFXLN, dense, cryptocrystalline, sl cherty Ls w/ no visible porosity

3890
3900
3910
3920
3930
3940
3950
3960
3970
3980
3990
4000
4010
4020
4030
4040
4050
4060
4070
4080
4090
4100

0 FOP (min/ft) 5
0 Gamma (API) 150
6 Cal (in) 16

0 Total Gas (units) 200
0 C1 (units) 200
0 C2 (units) 200
0 C3 (units) 200
0 C4 (units) 200



4110
4120
4130
4140
4150
4160
4170
4180
4190
4200
4210
4220
4230

0 FOP (min/ft) 5
0 Gamma (API) 150
6 Cal (in) 16

0 Total Gas (units) 200
0 C1 (units) 200
0 C2 (units) 200
0 C3 (units) 200
0 C4 (units) 200