

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: WATERS 30-43
 Location: S2 SE NE SE 30-24S-14W
 Pool:
 State: KANSAS

API: 15-185-23680
 Field: SATTERLEE
 Country: USA



Scale 1:240 Imperial

Well Name: WATERS 30-43
 Surface Location: S2 SE NE SE 30-24S-14W
 Bottom Location:
 API: 15-185-23680
 License Number: 34110
 Spud Date: 11/16/2011
 Region: STAFFORD
 Drilling Completed: 11/23/2011
 Surface Coordinates: 1400' FSL & 330' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 1990.00ft
 K.B. Elevation: 1999.00ft
 Logged Interval: 0.00ft
 Total Depth: 4448.00ft
 Formation:
 Drilling Fluid Type: FRESH WATER/CHEMICAL GEL

Time: 3:34 PM
 Time: 4:51 AM
 To: 0.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -98.8953390
 N/S Co-ord: 1400' FSL
 E/W Co-ord: 330' FEL

Latitude: 37.9311191

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: MAVERICK DRILLING LLC
 Rig #: 108
 Rig Type: MUD ROTARY

ELEVATIONS

K.B. Elevation: 1999.00ft
 K.B. to Ground: 9.00ft


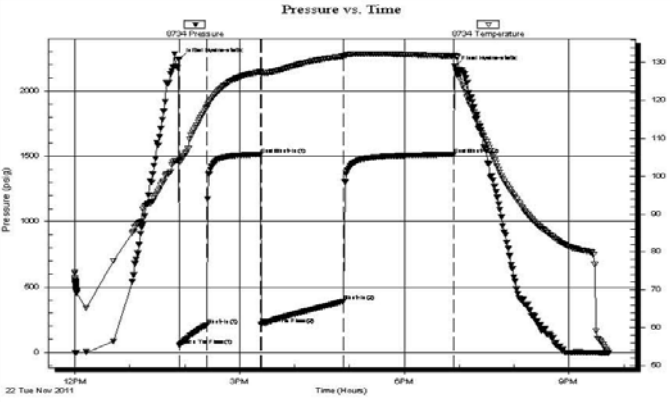
Ground Elevation: 1990.00ft

NOTES

DUE TO THE LOW STRUCTURAL POSITION TO OFFSET WELLS AND LACK OF AN ECONOMICAL RECOVERY ON DST #1, DECISION WAS MADE BY THE OPERATOR TO PLUG AND ABANDON WELL.

RESPECTFULLY SUBMITTED,
 JEFF LAWLER

DST #1 ARBUCKLE

	DRILL STEM TEST REPORT																																										
Caerus Kansas LLC P.O. Box 1378, Hays KS, 67601 ATTN: Jeff Lawler	30-24-14w Stafford Waters 30-43 Job Ticket: 44675 DST#: 1 Test Start: 2011.11.22 @ 12:00:00																																										
GENERAL INFORMATION:																																											
Formation: Arbuckle Deviated: No Whipstock: ft (KB) Time Tool Opened: 13:54:30 Time Test Ended: 21:43:30	Test Type: Conventional Bottom Hole (Initial) Tester: Cody Bloedorn Unit No: 41																																										
Interval: 4308.00 ft (KB) To 4377.00 ft (KB) (TVD) Total Depth: 4377.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair	Reference Elevations: 1999.00 ft (KB) 1990.00 ft (CF) KB to GR/CF: 9.00 ft																																										
Serial #: 8734 Outside Press@RunDepth: 391.49 psig @ 4374.00 ft (KB) Start Date: 2011.11.22 End Date: 2011.11.22 Start Time: 12:00:01 End Time: 21:43:30																																											
Capacity: 8000.00 psig Last Calib.: 2011.11.22 Time On Btm: 2011.11.22 @ 13:54:00 Time Off Btm: 2011.11.22 @ 18:55:00																																											
TEST COMMENT: 30 - IF- B.O.B. in 20 Min. 60 - IS- No blow back 90 - FF- B.O.B. in 25 Min. 120 - FS- No blow back																																											
	PRESSURE SUMMARY <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr><td>0</td><td>2245.03</td><td>104.22</td><td>Initial Hydro-static</td></tr> <tr><td>1</td><td>54.71</td><td>103.80</td><td>Open To Flow (1)</td></tr> <tr><td>30</td><td>208.35</td><td>118.09</td><td>Shut-In(1)</td></tr> <tr><td>89</td><td>1512.84</td><td>127.48</td><td>End Shut-In(1)</td></tr> <tr><td>90</td><td>213.45</td><td>127.17</td><td>Open To Flow (2)</td></tr> <tr><td>180</td><td>391.49</td><td>131.63</td><td>Shut-In(2)</td></tr> <tr><td>300</td><td>1512.63</td><td>131.71</td><td>End Shut-In(2)</td></tr> <tr><td>301</td><td>2185.54</td><td>131.89</td><td>Final Hydro-static</td></tr> </tbody> </table>			Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	2245.03	104.22	Initial Hydro-static	1	54.71	103.80	Open To Flow (1)	30	208.35	118.09	Shut-In(1)	89	1512.84	127.48	End Shut-In(1)	90	213.45	127.17	Open To Flow (2)	180	391.49	131.63	Shut-In(2)	300	1512.63	131.71	End Shut-In(2)	301	2185.54	131.89	Final Hydro-static				
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ROCK TYPES

Cht	Dolprim	Lmst fw7>	Carbon Sh	Ss
Cht vari	Dolsec	shale, grn	shale, red	
Chtcongl	Lmst fw<7	shale, gry	Shcol	

ACCESSORIES

FOSSIL

- Bioclastic or Fragmental
- Bryozoa
- Plant Remains

STRINGER

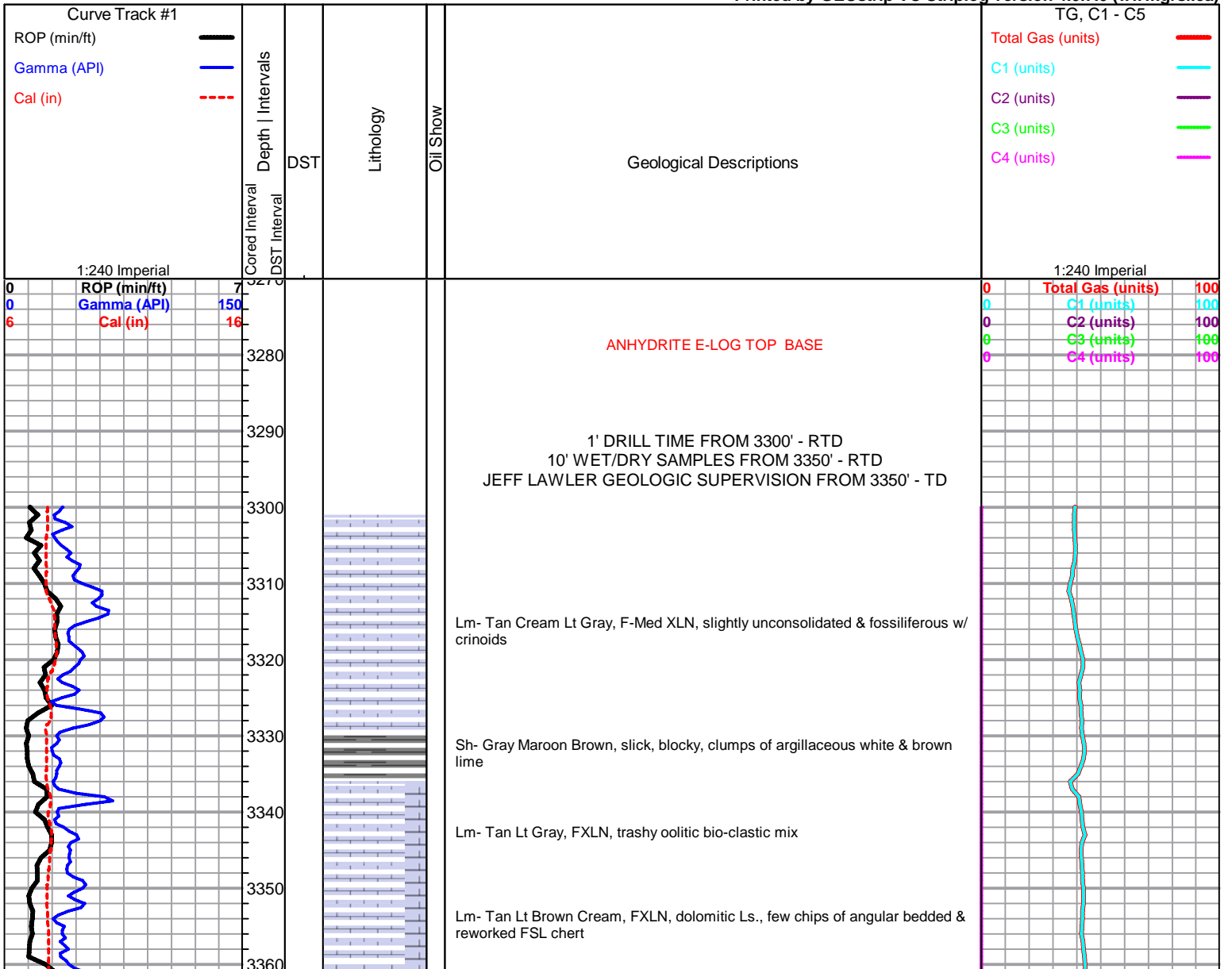
- Chert
- Dolomite
- green shale
- red shale

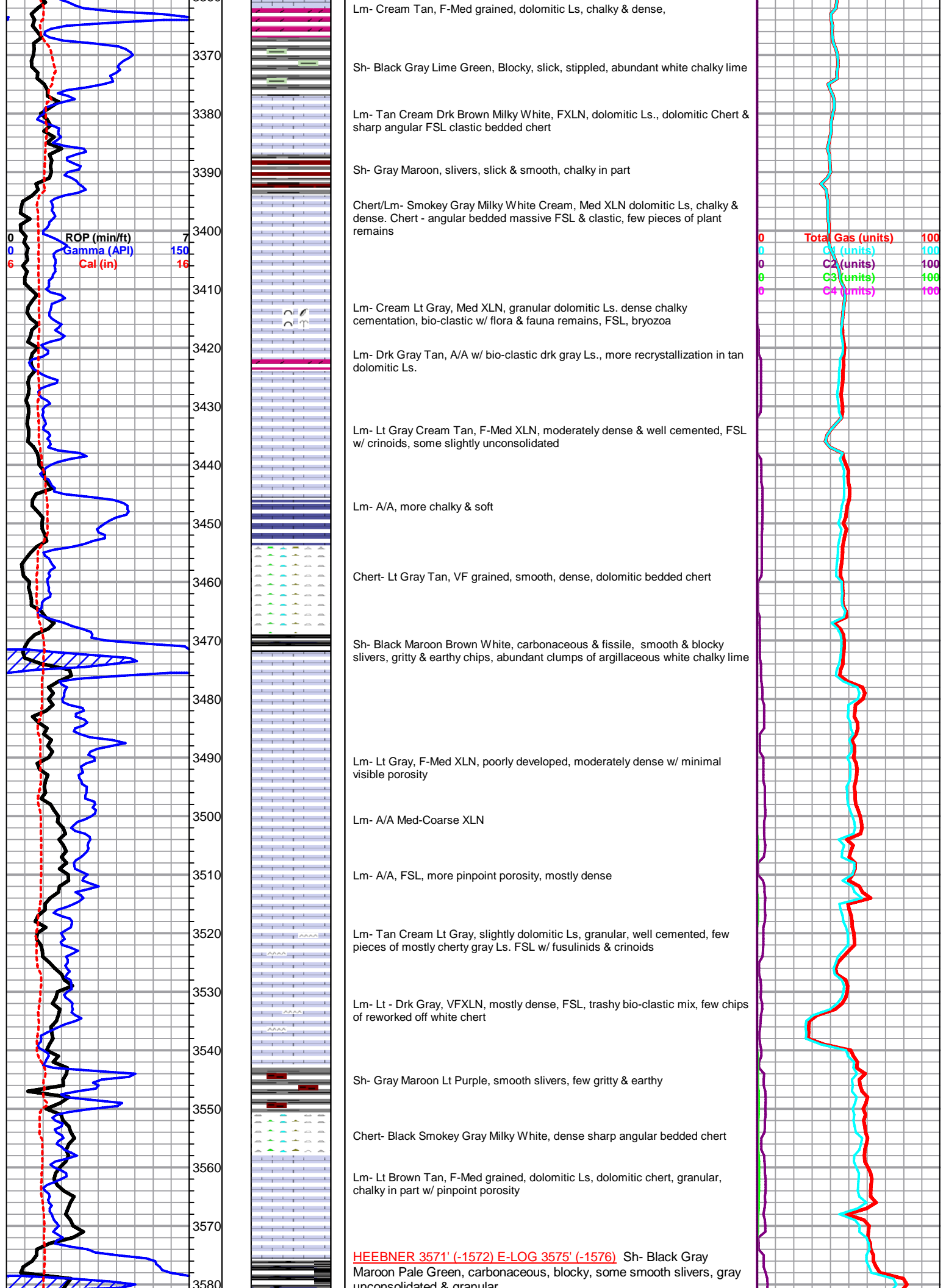
OTHER SYMBOLS

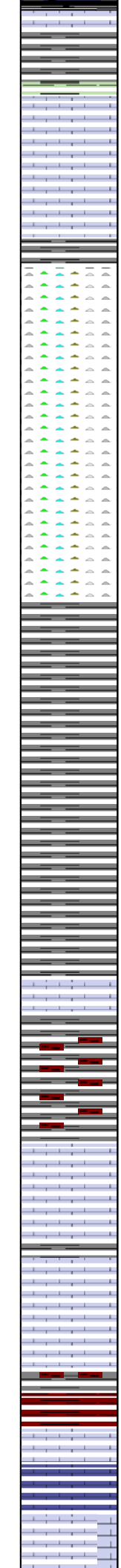
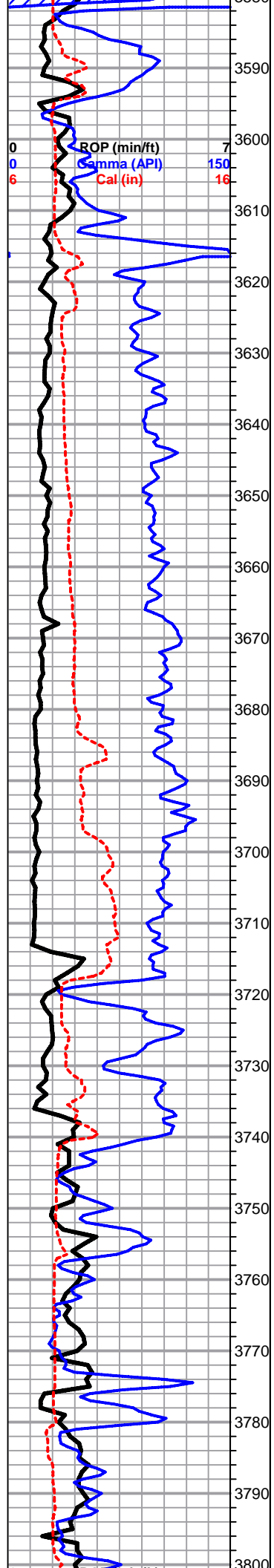
DST

- DST Int
- DST alt
- Core

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unconsolidated & granular

Sh- Gray Blue-Gray Lime Green, smooth, soft, pyritized lime green, few chips pyrite

TORONTO 3590' (-1591) E-LOG 3594' (-1595) Lm- Tan Brown Off White, Med-Coarse XLN, mottled, moderately dense & well cemented, abundant recrystallization & XLN pinpoint porosity chalky & silty in part, slightly FSL w/ crinoids

DOUGLAS SHALE 3612' (-1613) E-LOG 3614' (-1615) Sh- Lt Gray, VF grained, gritty & grainy, soft, silty, speckled w/ micro pyrite, few chips slightly unconsolidated & trashy

Chert- Smokey Gray Dark Gray, unconsolidated bio-clastic, reworked in appearance, FSL w/ crinoids

Chert- Black Gray Tan, clastic FSL mix, speckled

Chert- A/A, milky white, smokey gray, reworked & FSL

Chert- A/A, more black gray tan, abundant fusulinids

Sh- Gray Maroon Brown, VF grained, smooth, soft, earthy

Sh- A/A, more dense & compacted

Sh- Lt Gray Lime Green Off White, silty & chalky, soft, few chips of eroded & reworked granular white chert

BROWN LIME 3716' (-1717) E-LOG 3718' (-1719) Lm- Cream Tan, F-Med XLN, moderately dense & well cemented, tight, granular in part

Sh- Gray Maroon, abundant soft speckled gray shale, clumps of gray limey chalk

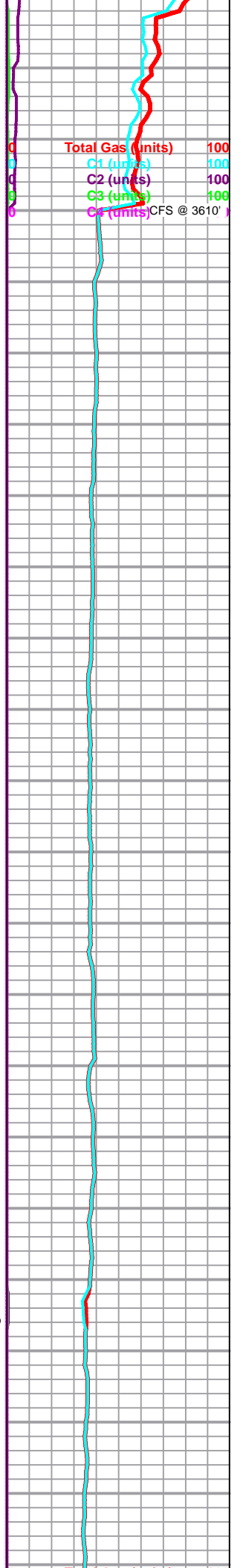
LKC 3737' (-1738) E-LOG 3741' (-1742) Lm- Cream Tan Lt Brown, VF-F XLN, mostly dense w/ scattered pinpoint porosity, few chips reworked FSL, fusulinids

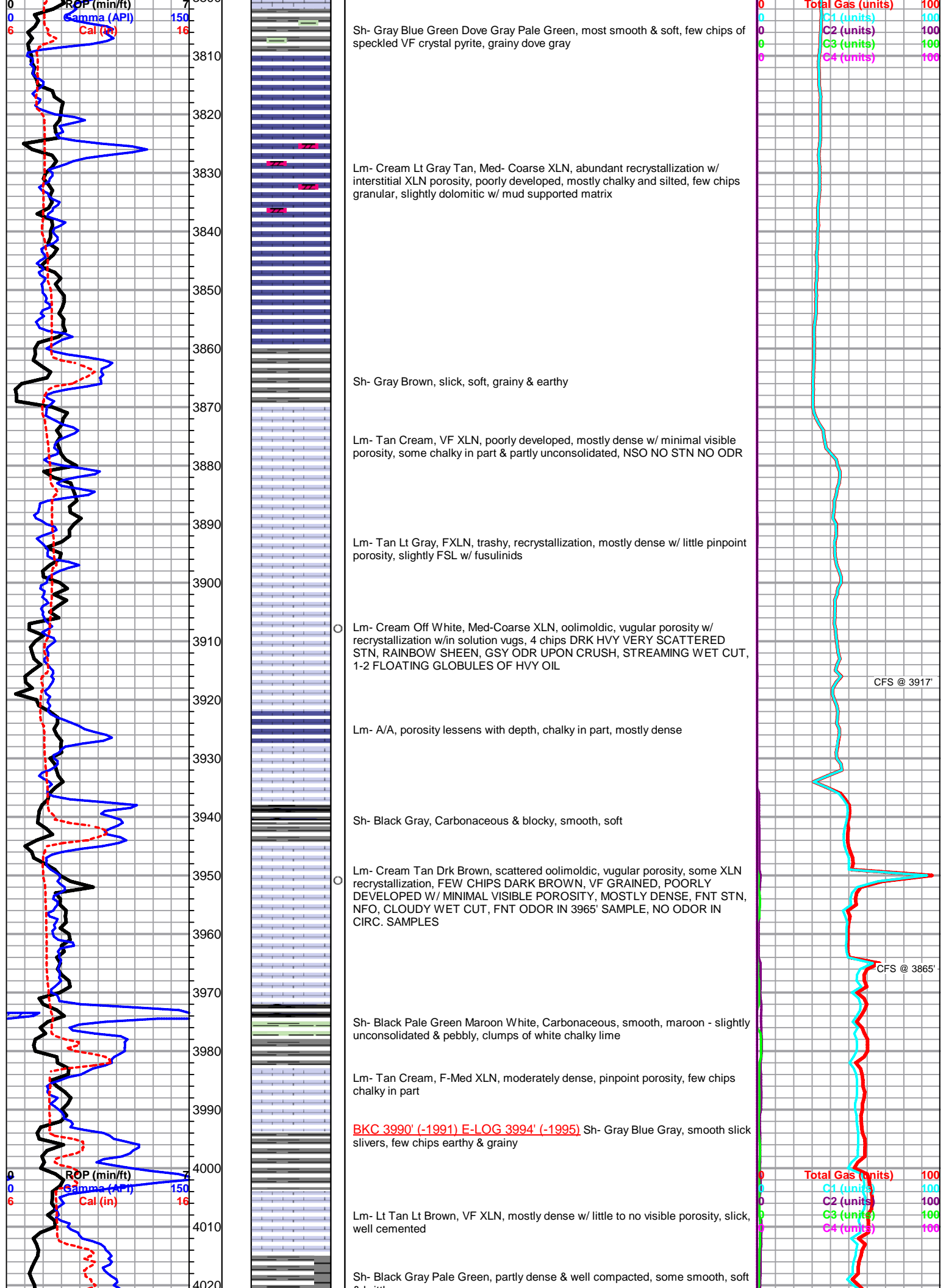
Lm- Tan Brown, VF XLN, dense w/ minimal visible porosity, very poorly developed

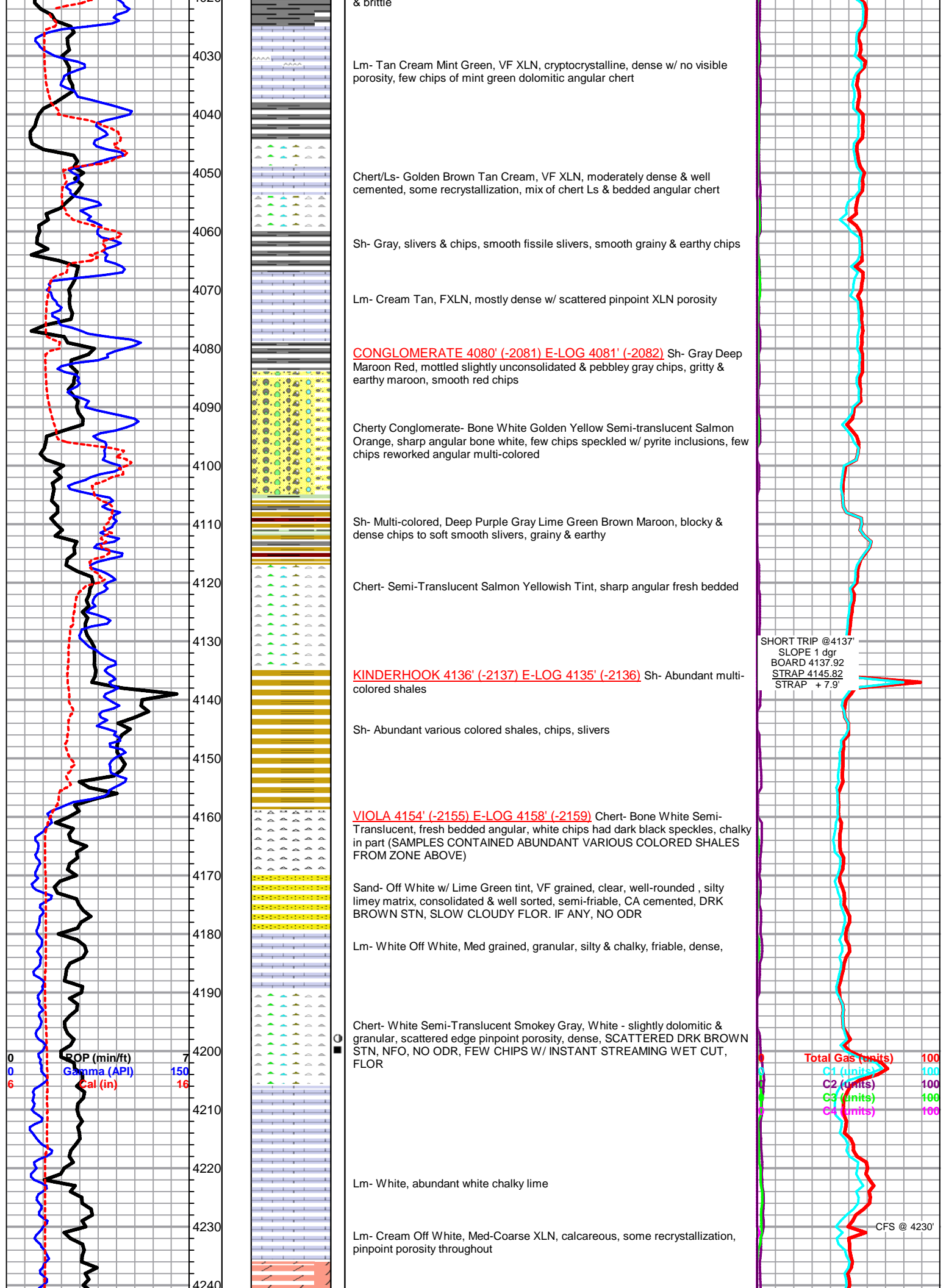
Lm/Chert- Lt Brown Dark Gray, VF XLN, minimal visible porosity, chips of sharp angular bedded chert w/ scattered mineral recrystallization, FSL

Sh- Gray Brown Maroon, smooth soft gray slivers, blocky dense brown chips, maroon wash lime

Lm- Tan Cream Drk Brown, VF-Med XLN, mostly trasy slightly unconsolidated, some cleaner F-Med XLN, w/ abundant recrystallization & mineral FLOR. NSO NO STN







& brittle
Lm- Tan Cream Mint Green, VF XLN, cryptocrystalline, dense w/ no visible porosity, few chips of mint green dolomitic angular chert

Chert/Ls- Golden Brown Tan Cream, VF XLN, moderately dense & well cemented, some recrystallization, mix of chert Ls & bedded angular chert

Sh- Gray, slivers & chips, smooth fissile slivers, smooth grainy & earthy chips

Lm- Cream Tan, FXLN, mostly dense w/ scattered pinpoint XLN porosity

CONGLOMERATE 4080' (-2081) E-LOG 4081' (-2082) Sh- Gray Deep Maroon Red, mottled slightly unconsolidated & pebbly gray chips, gritty & earthy maroon, smooth red chips

Cherty Conglomerate- Bone White Golden Yellow Semi-translucent Salmon Orange, sharp angular bone white, few chips speckled w/ pyrite inclusions, few chips reworked angular multi-colored

Sh- Multi-colored, Deep Purple Gray Lime Green Brown Maroon, blocky & dense chips to soft smooth slivers, grainy & earthy

Chert- Semi-Translucent Salmon Yellowish Tint, sharp angular fresh bedded

KINDERHOOK 4136' (-2137) E-LOG 4135' (-2136) Sh- Abundant multi-colored shales

Sh- Abundant various colored shales, chips, slivers

VIOLA 4154' (-2155) E-LOG 4158' (-2159) Chert- Bone White Semi-Translucent, fresh bedded angular, white chips had dark black speckles, chalky in part (SAMPLES CONTAINED ABUNDANT VARIOUS COLORED SHALES FROM ZONE ABOVE)

Sand- Off White w/ Lime Green tint, VF grained, clear, well-rounded, silty limey matrix, consolidated & well sorted, semi-friable, CA cemented, DRK BROWN STN, SLOW CLOUDY FLOR. IF ANY, NO ODR

Lm- White Off White, Med grained, granular, silty & chalky, friable, dense,

● Chert- White Semi-Translucent Smokey Gray, White - slightly dolomitic & granular, scattered edge pinpoint porosity, dense, SCATTERED DRK BROWN STN, NFO, NO ODR, FEW CHIPS W/ INSTANT STREAMING WET CUT, FLOR

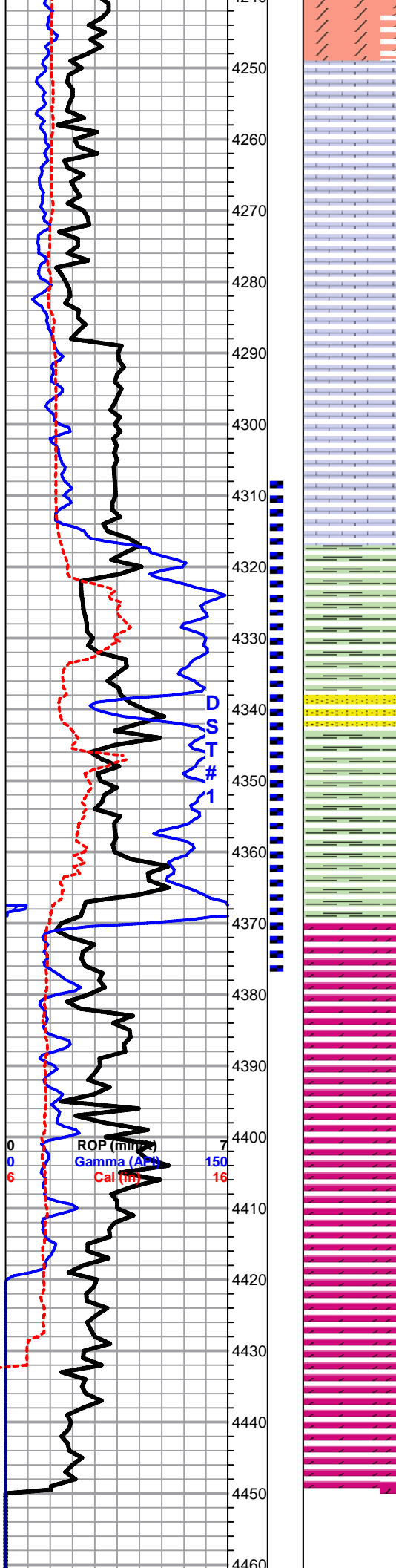
Lm- White, abundant white chalky lime

Lm- Cream Off White, Med-Coarse XLN, calcareous, some recrystallization, pinpoint porosity throughout

SHORT TRIP @ 4137'
SLOPE 1 dgr
BOARD 4137.92
STRAP 4145.82
STRAP + 7.9'

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

CFS @ 4230'



Dolomite- White Off White w/ Lime Green tint, VF XLN, dense & moderately cemented, well sorted & consolidated, pinpoint porosity throughout, rounded to sub-rounded, slightly calcareous

Lm- White, Med-Coarse XLN, calcareous & silty, glauconite inclusions, dense w/ scattered pinpoint porosity

Lm- A/A w/ more multi-colored chert

Lm- Tan Cream White, granular, slightly dolomitic, some calcareous & silty

Lm- A/A, SAMPLE EXTREMELY CONTAMINATED W/ GRAY SHALE

ABUNDANT SLOUGHING SHALES THROUGH ENTIRE VIOLA SECTION

SIMPSON SHALE 4319' (-2320) E-LOG 4317' (-2318) Sh- Lime Green, block waxy, dense & well compacted, few pyrite crystals, 1-2 chips w/ small pyrite inclusions (4340' sample)

Sand- Clear to Slightly Frosted Dove Gray, Fine grained, well sorted & consolidated, slightly calcareous, speckled w/ dark gray shale, NO STN, NO ODR, NO FLOR

Sh- Mint Green, clumps of argillaceous sticky lime, calcareous, few pyrite crystal inclusions

ARBUCKLE 4367' (-2368) E-LOG 4370' (-2371) Dolomite- Tan Cream, Med-Coarse XLN, pinpoint porosity throughout w/ scattered micro-vugular porosity, mineral fluorescence, NO ODR, NO STN,

Dolomite- Tan, F-Med XLN, well sorted & cemented, dense w/ pinpoint constant porosity

Dolomite- Tan, A/A, some Med XLN w/ abundant recrystallization & quartz inclusions

Dolomite- Coarse XLN, massive, consolidated, sub-rhomb crystals, scattered large vugular porosity, partly interconnected

Dolomite- Tan FXLN, well sorted & consolidated, semi-friable, pinpoint porosity throughout

RTD 4448' (-2449) LTD 4451'(-2452) @ 04:51 Nov. 23, 2011

CFS @ 4360'

**RE-CALIBRATED CFS @ 4377'
 GAS LEVELS DUE TO OIL RECOVERY - SHORT TRIP
 FROM DST #1** DST #1 4308-4377

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

SLOPE 1 1/4 dgr.
 BOARD 4448.11
 STRAP 4449.94
 STRAP +1.83

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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