OPERATOR

Company:	CARRIE EXPLORATION AND DEVELOPMENT		
Address:	210 W 22ND HAYS, KS 67601		
Contact Geologist:	RON HEROLD		
Contact Phone Nbr:	913-961-2760		
Well Name:	SELLS DOXON BUNKER UNIT # C-1		
Location:	S2 NW SW NE Sec.23-12s-22w		
API:	15-195-22,940-00-00		
Pool:		Field:	OGALLAH NORTH
State:	KANSAS	Country:	USA

Scale 1:240 Imperial

Well Name:	SELLS DOXON BUNKER UNIT # C-1		
Surface Location:	S2 NW SW NE Sec.23-12s-22w		
Bottom Location:			
API:	15-195-22,940-00-00		
License Number:	6768		
Spud Date:	5/30/2014	Time:	8:30 PM
Region:	TREGO		
Drilling Completed:	6/5/2014	Time:	4:00 PM
Surface Coordinates:	1770' FNL & 2310' FEL		
Bottom Hole Coordinates:			
Ground Elevation:	2358.00ft		
K.B. Elevation:	2367.00ft		
Logged Interval:	3300.00ft	To:	4130.00ft
Total Depth:	4145.00ft		
Formation:	MARMATON		
Drilling Fluid Type:	CHEMICAL/FRESH WATER GEL		

SURFACE CO-ORDINATES

Well Type:	Vertical
Longitude:	-99.7311987
Latitude:	38.9953602
N/S Co-ord:	1770' FNL
E/W Co-ord:	2310' FEL

LOGGED BY

SOLUTIONS CONSULTING

Company:	SOLUTIONS CONSULTING, INC.		
Address:	108 W 35TH HAYS, KS 67601		
Phone Nbr:	(785) 639-1337		
Logged By:	GEOLOGIST	Name:	BRUCE BASYE / HERB DEINES

CONTRACTOR

Contractor:	SOUTHWIND DRILLING INC.		
Rig #:	8		
Rig Type:	MUD ROTARY		
Spud Date:	5/30/2014	Time:	8:30 PM
TD Date:	6/5/2014	Time:	4:00 PM
Rig Release:	6/6/2014	Time:	7:00 PM

ELEVATIONS

K.B. Elevation:	2367.00ft	Ground Elevation:	2358.00ft
K.B. to Ground:	9.00ft		

NOTES

DECISION TO RUN PRODUCTION CASING TO FURTHER TEST LKC AND MARMATON ZONES

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

NO DRILL STEM TESTS WERE RAN ON THIS WELL

FORMATION TOPS COMPARISON

	SELLS-DOXON-BUNKER UNIT #C-1 **S2 NW SW NE** **SEC.23-12S-22W** **2358'GL 2367'KB**	**DOXON-BUNKER C-1** **N2 SW SW NE** **SEC.23-12S-22W**
FORMATION	LOG TOPS	COMPARISON
Anhydrite	**1787+ 580**	*+ 587*
B-Anhydrite	**1830 +537**	*+ 542*
Topeka	**3405-1038**	*-1036*
Heebner Shale	**3623-1256**	*-1255*
Toronto	**3644-1277**	*-1276*
LKC	**3658-1291**	*-1289*
BKC	**3897-1530**	*-1524*
Marmaton	**3986-1619**	*-1614*
Arbuckle	**4078-1711**	*-1690*
RTD	**4145-1778**	*-1767*

ROCK TYPES

Congl	Lmst fw<7	shale, gry	Shcol
Chtcongl	Lmst fw7>	Carbon Sh	Dol Lime
Dolprim	shale, grn	shale, red	Lscongl

ACCESSORIES

MINERAL

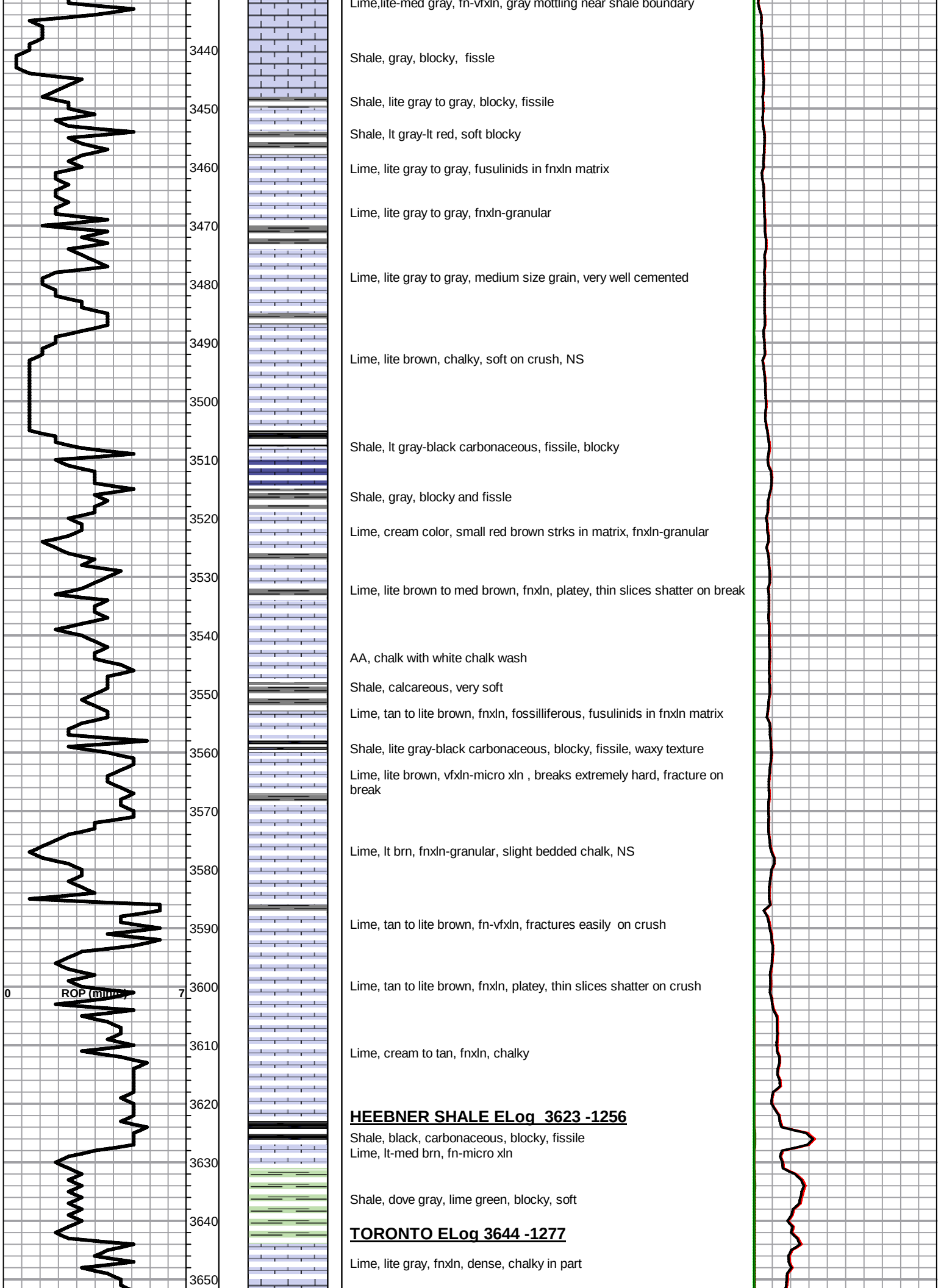
Varicolored chert

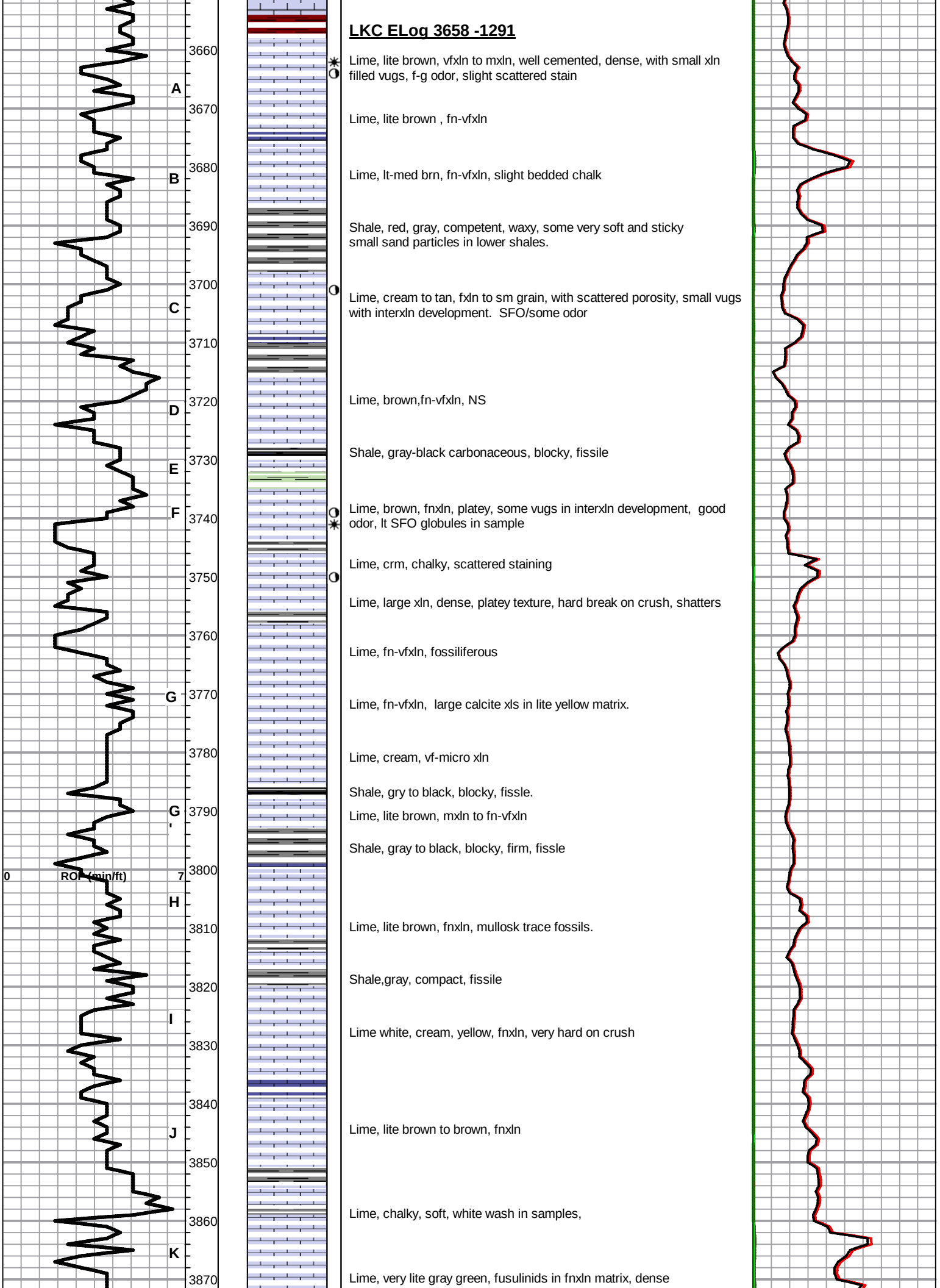
OTHER SYMBOLS

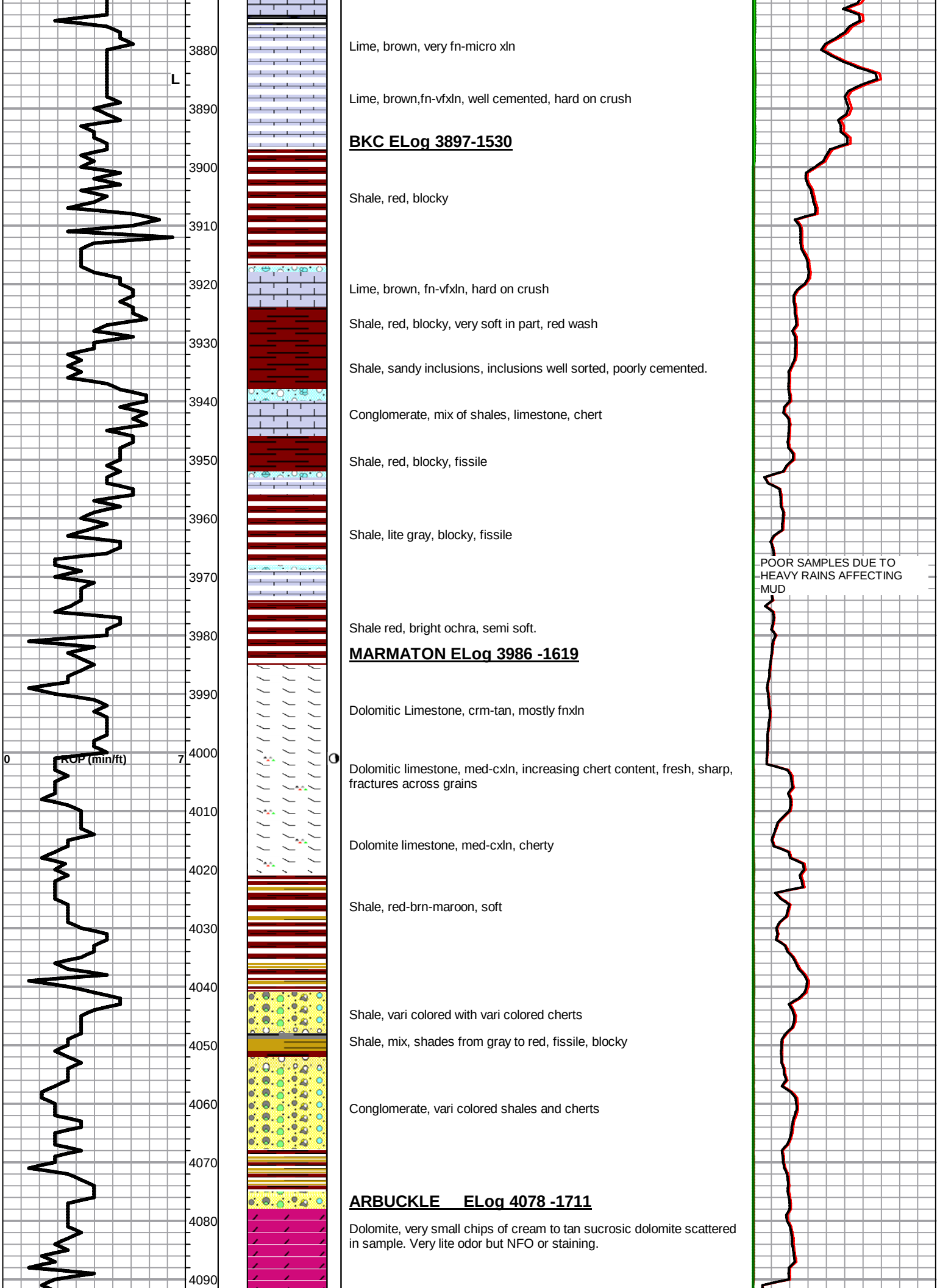
DST

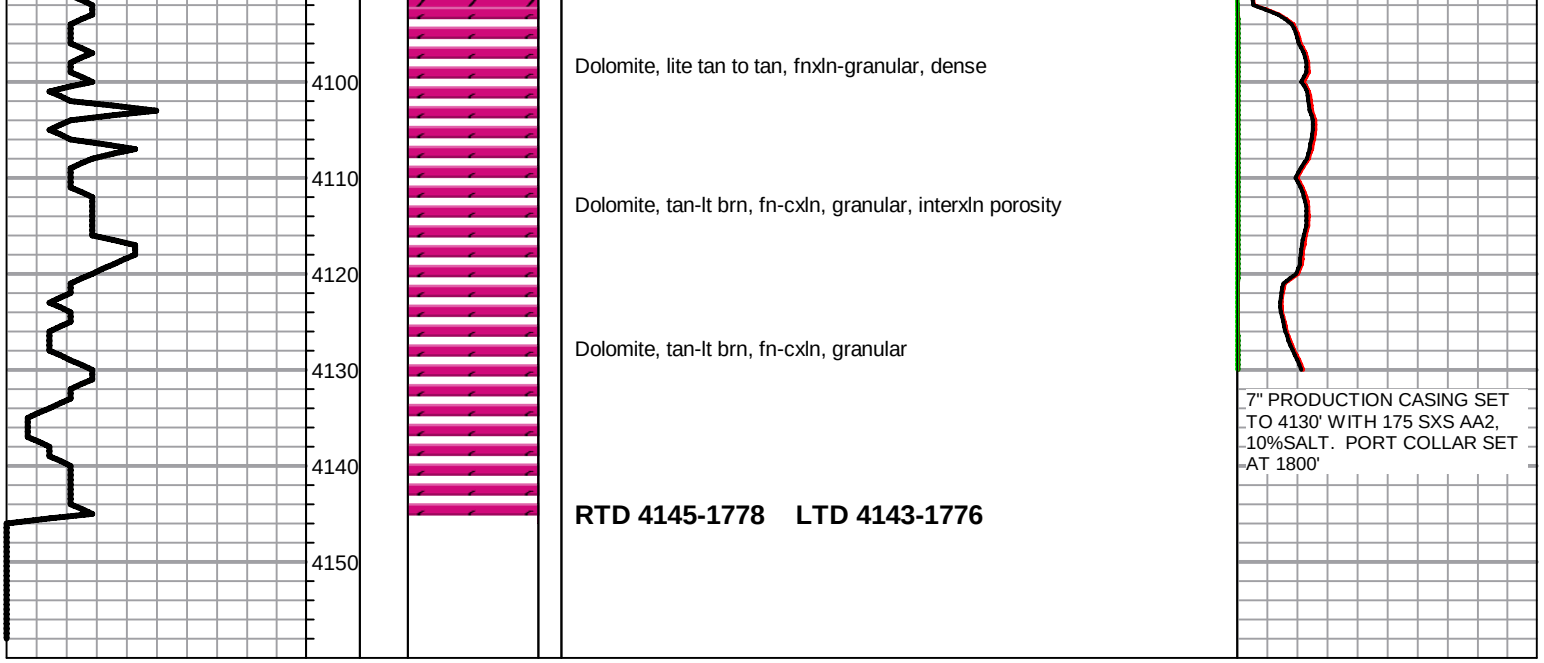
DST Int
DST alt
Core

Curve Track #1 ROP (min/ft) 1:240 Imperial	Depth | Intervals Cored Interval DST Interval	DST	Lithology	Oil Show	Geological Descriptions	TG, C1 - C5 Total Gas C1 C2 C3 C4 1:240 Imperial
0 ROP (min/ft) 7	3350 3360 3370 3380 3390 3400 3410 3420 3430				BEGIN 1' DRILL TIME FROM 3350' TO RTD BEGIN 10' WET AND DRY SAMPLES FROM 3400' TO RTD **ANHYDRITE TOP 1787+580** **ANHYDRITE BASE 1830+537** Shale, gray, blocky, waxy texture, silty in part Shale, gray calcareous, silty in part **TOPEKA ELog 3405 -1038** Lime, lite gray, granular, well cemented Shale, gray, firm blocky Lime, lite gray to gray, fnxln-granular, soft on crush	10 3/4" SURFACE PIPE SET TO 278' W/ 180 SXS COMMON 2% GEL 3%CC SLOPE 1/2 DEGREE @278'
0 ROP (min/ft) 7						


0
ROP (min/ft)
7
3440
3450
3460
3470
3480
3490
3500
3510
3520
3530
3540
3550
3560
3570
3580
3590
3600
3610
3620
3630
3640
3650
Lime,lite-med gray, fn-vfxln, gray mottling near shale boundary
Shale, gray, blocky, fissle
Shale, lite gray to gray, blocky, fissile
Shale, lt gray-lt red, soft blocky
Lime, lite gray to gray, fusulinids in fnxln matrix
Lime, lite gray to gray, fnxln-granular
Lime, lite gray to gray, medium size grain, very well cemented
Lime, lite brown, chalky, soft on crush, NS
Shale, lt gray-black carbonaceous, fissile, blocky
Shale, gray, blocky and fissle
Lime, cream color, small red brown strks in matrix, fnxln-granular
Lime, lite brown to med brown, fnxln, platey, thin slices shatter on break
AA, chalk with white chalk wash
Shale, calcareous, very soft
Lime, tan to lite brown, fnxln, fossilliferous, fusulinids in fnxln matrix
Shale, lite gray-black carbonaceous, blocky, fissile, waxy texture
Lime, lite brown, vfxln-micro xln , breaks extremely hard, fracture on break
Lime, lt brn, fnxln-granular, slight bedded chalk, NS
Lime, tan to lite brown, fn-vfxln, fractures easily on crush
Lime, tan to lite brown, fnxln, platey, thin slices shatter on crush
Lime, cream to tan, fnxln, chalky
HEEBNER SHALE ELog 3623 -1256
Shale, black, carbonaceous, blocky, fissile
Lime, lt-med brn, fn-micro xln
Shale, dove gray, lime green, blocky, soft
TORONTO ELog 3644 -1277
Lime, lite gray, fnxln, dense, chalky in part


LKC ELog 3658 -1291
Lime, lite brown, vfxln to mxln, well cemented, dense, with small xln filled vugs, f-g odor, slight scattered stain
Lime, lite brown , fn-vfxln
Lime, lt-med brn, fn-vfxln, slight bedded chalk
Shale, red, gray, competent, waxy, some very soft and sticky small sand particles in lower shales.
Lime, cream to tan, fxln to sm grain, with scattered porosity, small vugs with interxln development. SFO/some odor
Lime, brown,fn-vfxln, NS
Shale, gray-black carbonaceous, blocky, fissile
Lime, brown, fnxln, platey, some vugs in interxln development, good odor, lt SFO globules in sample
Lime, crm, chalky, scattered staining
Lime, large xln, dense, platey texture, hard break on crush, shatters
Lime, fn-vfxln, fossiliferous
Lime, fn-vfxln, large calcite xls in lite yellow matrix.
Lime, cream, vf-micro xln
Shale, gry to black, blocky, fissle.
Lime, lite brown, mxln to fn-vfxln
Shale, gray to black, blocky, firm, fissle
Lime, lite brown, fnxln, mullosk trace fossils.
Shale,gray, compact, fissile
Lime white, cream, yellow, fnxln, very hard on crush
Lime, lite brown to brown, fnxln
Lime, chalky, soft, white wash in samples,
Lime, very lite gray green, fusulinids in fnxln matrix, dense
A
B
C
D
E
F
G
G'
H
I
J
K
3660
3670
3680
3690
3700
3710
3720
3730
3740
3750
3760
3770
3780
3790
3800
3810
3820
3830
3840
3850
3860
3870
0
ROP (min/ft)
7


3880
3890
3900
3910
3920
3930
3940
3950
3960
3970
3980
3990
4000
4010
4020
4030
4040
4050
4060
4070
4080
4090
L
0
ROP (min/ft)
7
Lime, brown, very fn-micro xln
Lime, brown,fn-vfxln, well cemented, hard on crush
BKC ELog 3897-1530
Shale, red, blocky
Lime, brown, fn-vfxln, hard on crush
Shale, red, blocky, very soft in part, red wash
Shale, sandy inclusions, inclusions well sorted, poorly cemented.
Conglomerate, mix of shales, limestone, chert
Shale, red, blocky, fissile
Shale, lite gray, blocky, fissile
POOR SAMPLES DUE TO HEAVY RAINS AFFECTING MUD
Shale red, bright ochra, semi soft.
MARMATON ELog 3986 -1619
Dolomitic Limestone, crm-tan, mostly fnxln
Dolomitic limestone, med-cxln, increasing chert content, fresh, sharp, fractures across grains
Dolomite limestone, med-cxln, cherty
Shale, red-brn-maroon, soft
Shale, vari colored with vari colored cherts
Shale, mix, shades from gray to red, fissile, blocky
Conglomerate, vari colored shales and cherts
ARBUCKLE ELog 4078 -1711
Dolomite, very small chips of cream to tan sucrosic dolomite scattered in sample. Very lite odor but NFO or staining.


4100
4110
4120
4130
4140
4150
Dolomite, lite tan to tan, fnxln-granular, dense
Dolomite, tan-lt brn, fn-cxln, granular, interxln porosity
Dolomite, tan-lt brn, fn-cxln, granular
RTD 4145-1778 LTD 4143-1776
7" PRODUCTION CASING SET TO 4130' WITH 175 SXS AA2, 10%SALT. PORT COLLAR SET AT 1800'