

OPERATOR

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

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: CHARLOTTE TRUST # 2 TWIN
 Location: W2 NE SW NE Sec 23-T23S-R18W
 API: 15-051-26,763-00-00
 Pool:
 State: KANSAS

Field: LEIKER SOUTHEAST
 Country: USA



Scale 1:240 Imperial

Well Name: CHARLOTTE TRUST # 2 TWIN
 Surface Location: W2 NE SW NE Sec 23-T23S-R18W
 Bottom Location:
 API: 15-051-26,763-00-00
 License Number: 4787
 Spud Date: 11/25/2014 Time: 8:41 AM
 Region: ELLIS COUNTY
 Drilling Completed: 12/1/2014 Time: 6:48 AM
 Surface Coordinates: 1650' FNL & 1800' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 1953.00ft
 K.B. Elevation: 1963.00ft
 Logged Interval: 2850.00ft To: 3650.00ft
 Total Depth: 3650.00ft
 Formation: ARBUCKLE
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.2886775
 Latitude: 38.7359361
 N/S Co-ord: 1650' FNL
 E/W Co-ord: 1800' FEL

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: 11/25/2014 Time: 8:41 AM
 TD Date: 12/1/2014 Time: 6:48 AM

ELEVATIONS

K.B. Elevation: 1963.00ft
 K.B. to Ground: 10.00ft

Ground Elevation: 1953.00ft

NOTES

THIS WELL WAS DRILLED TO EVALUATE FOR PRODUCTIVE POTENTIAL AND IF FOUND TO BE UNECONOMICAL TO CONVERT TO A SALT WATER DISPOSAL WELL.

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

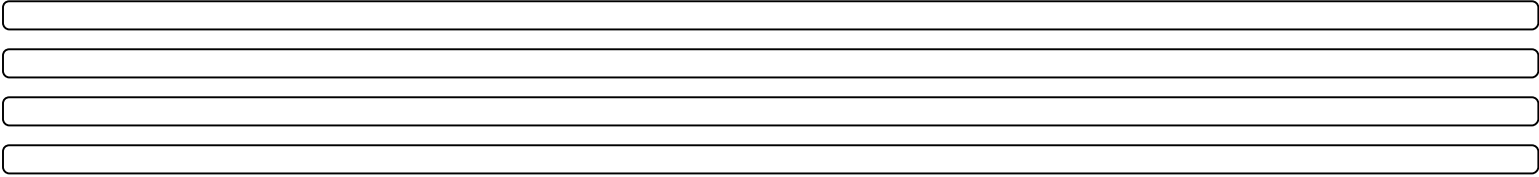
NO DRILL STEM TESTS WERE RAN ON THIS WELL.

FORMATION TOPS COMPARISON

	CHARLOTTE TR #2TWIN W2 NE SW NE SEC.23-15S-18W 1953'GL 1963'KB	CHARLOTTE TR #1 E2 SW SE NE SEC.23-15-18W KB 1965'	GROSS # A-1 NW SE NE SEC.23-15-18W KB 1960'
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1132 +831	+ 837	
B-Anhydrite	1166 +797	+ 803	
Topeka	2935 - 972	- 979	
Heebner Sh.	3198-1235	-1243	-1244
Toronto	3218-1255	-1265	
LKC	3249-1286	-1294	-1290
BKC	3471-1508	-1515	-1521
Arbuckle	3564-1601	-1557	-1569
RTD	3650-1687	-1685	-1580

SUMMARY OF DAILY ACTIVITY

11-25-14 RU, spud 4:00 PM
 11-26-14 910', set 8 5/8" surface casing to 1137' w/ 375 sxs SMD, slope 1 degree, plug down 9:15PM
 11-27-14 1137', WOC, shut down for Thanksgiving Day
 11-28-14 1250', drilling
 11-29-14 2374', drilling, displaced 2893' to 2917'
 11-30-14 3070', drilling
 12-01-14 3650', RTD 3650' @6:48AM, short trip, TOWB, logs, TIWB, LDDP, run production casing for salt water disposal
 12-02-14 3650', finish cementing bottom stage, plug down 2:15AM, RD



ROCK TYPES

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

ACCESSORIES

MINERAL

- ▲ Chert, dark
- P Pyrite

OTHER SYMBOLS

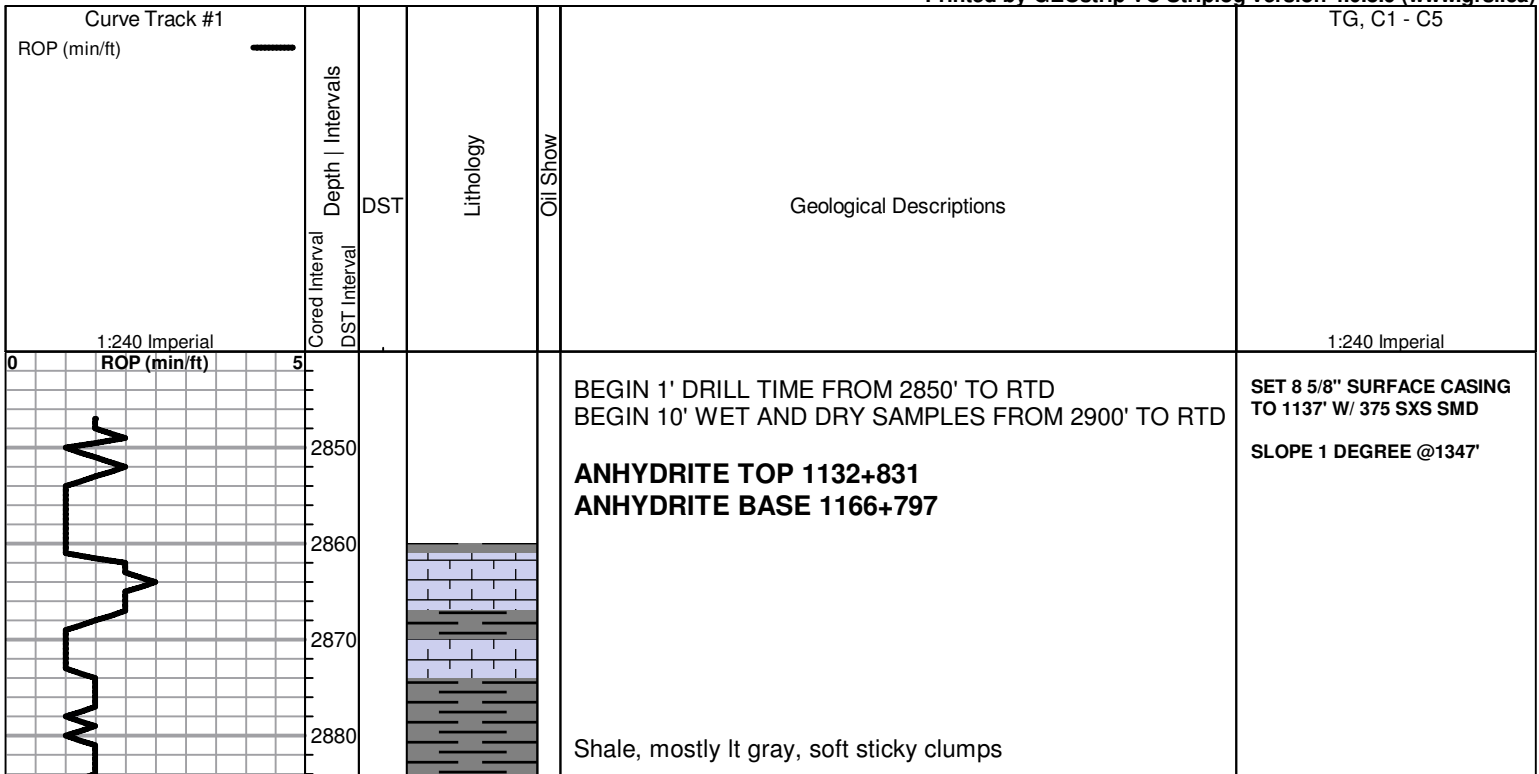
Oil Show

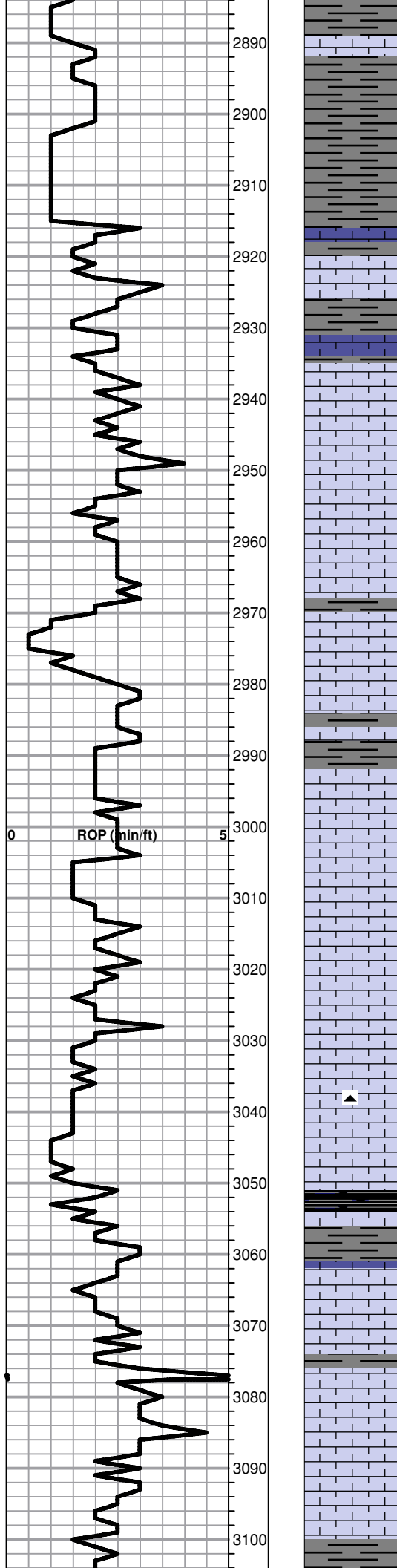
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- * Gas

DST

-
-
-
-

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Lime, lt brn, fnxln, slightly fossiliferous

Shale, lt-med gray, soft blocky

Lime, lt-med brn, fnxln

TOPEKA ELog 2935-972

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

Lime, lt-med brn-offwhite, fn-vfxln, bedded chalk in part

Lime, offwhite-med grayish brn, fnxln with sticky chalk

Lime, lt brn, granular, NS, bedded chalk in part

Lime, lt-med brn, fn-vfxln

Lime, med gray-med grayish brn, fnxln
Shale, med gray, calcareous

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

Lime, lt-med brn, fnxln, lot of soft bedded chalk

Lime, lt brn-lt grayish brn, fnxln-soft granular with lot of soft bedded chalk

Lime, lt brn, granular, bedded chalk

Lime, lt brn, granular, chalky

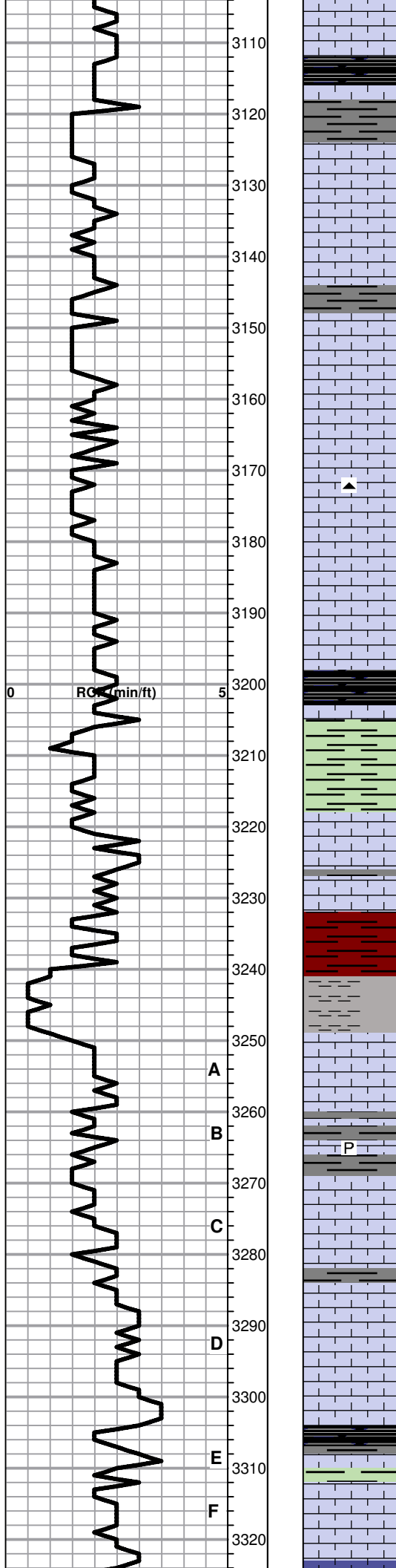
Shale, black carbonaceous, fissile, blocky

Lime, crm, fn-vfxln, lithographic

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

Lime, lt brn, fn-vfxln, firm bedded chalk

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



Lime, lt brn-lt gray, fnxln

Shale, black carbonaceous, blocky, fissile

Lime, lt brn-lt grayish brn, fnxln

Lime, lt brn, fnxln

Lime, lt brn-lt grayish brn, fnxln-granular in part, slightly fossiliferous

Lime, lt brn, granular, NS

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

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

Lime, lt brn, fnxln-granular, 1 chip with vlt odor on crush. Zone appears thin and poorly developed.

HEEBNER SHALE ELog 3198-1235

Shale, black carbonaceous, fissile, blocky

Shale, lt grayish green, soft blocky

TORONTO ELog 3218-1255

Lime, lt crm, fnxln, brittle on crush, firm bedded chalk, NS

Lime, crm-lt brn, fnxln

Shale, red-dark brn, soft blocky

LKC ELog 3249-1286

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

Lime, lt-med brn, fn-vfxln

Lime, crm-tan, fnxln, slightly fossiliferous, trace of spotty staining in few chips, appears poorly developed

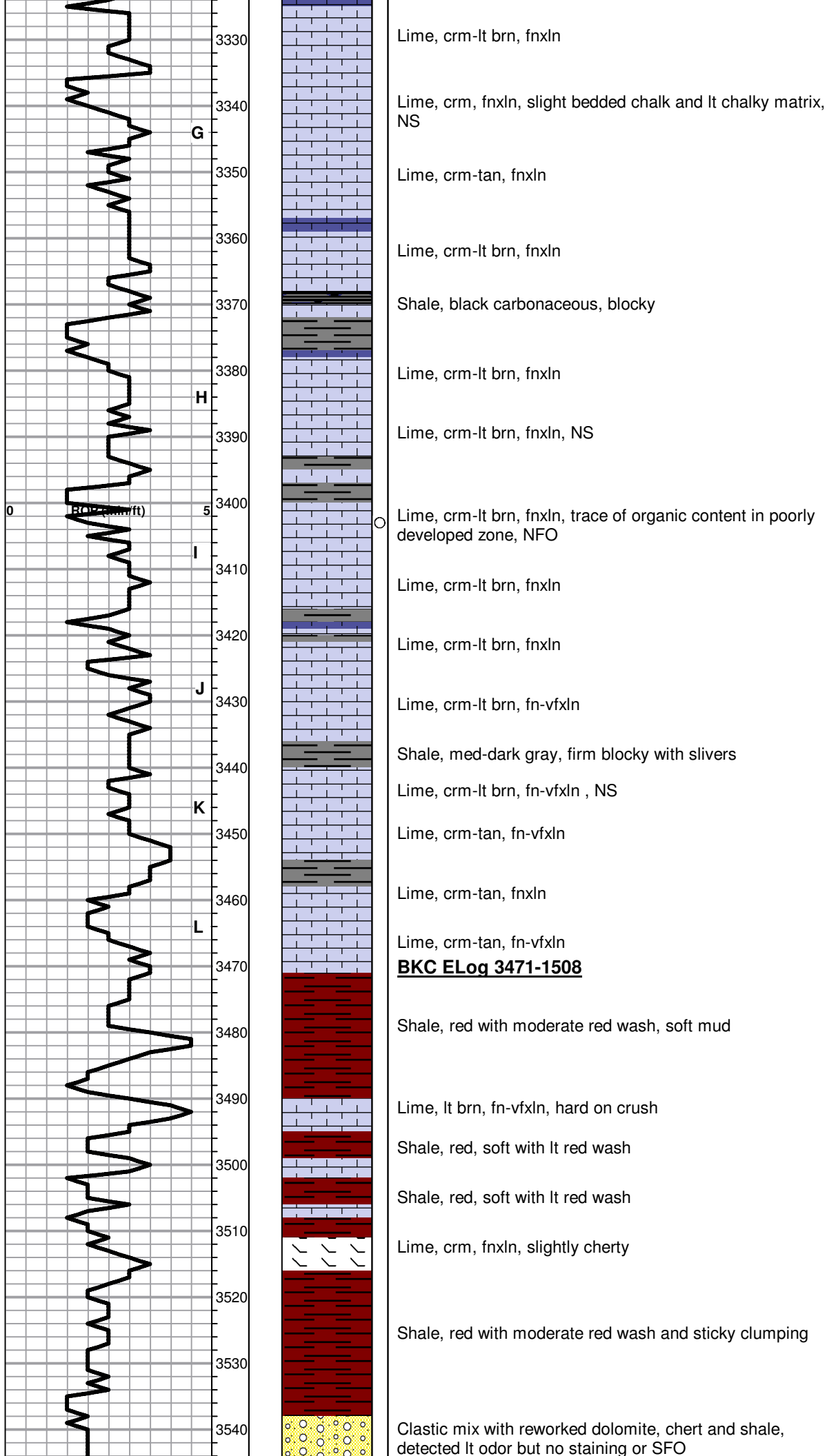
Lime, crm-tan, fnxln

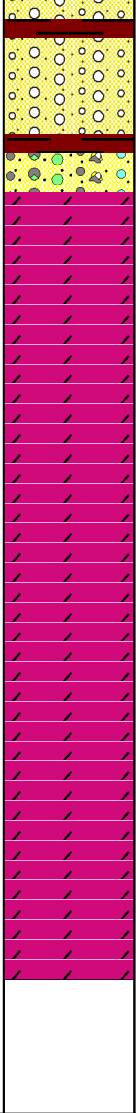
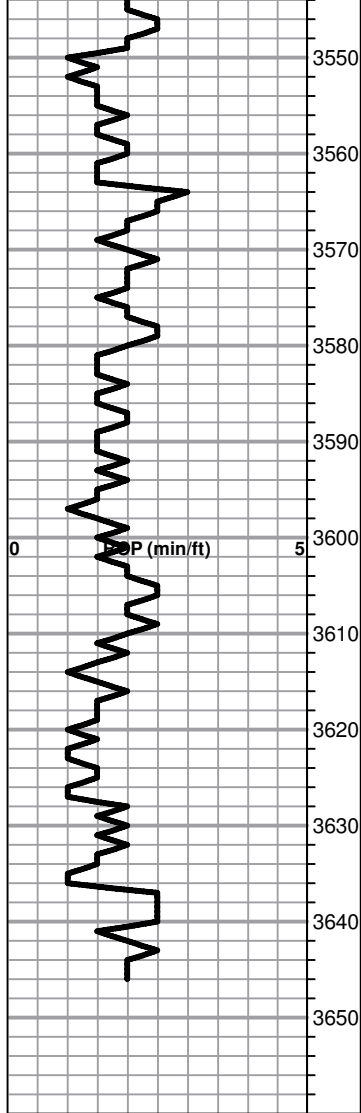
Lime, crm-tan, mostly fnxln, trace of spotty staining in fine inter xln porosity with scattered pinpt vuggy porosity, NFO

Lime, crm-tan, fnxln

Shale, black carbonaceous, blocky

Lime, crm-tan, fnxln, thin fossiliferous bed with inter-fossiliferous porosity with scattered fine vuggy porosity, trace of stain, NFO, not well developed





Clastic mix as above, scattered loose quartz grains and oolitic chert fragments

ARBUCKLE ELog 3564-1601

Dolomite, ivory, fnxln-granular, NS, No Odor

Dolomite, lt brn, fnxln-granular in part, NS

Dolomite, lt brn, fnxln-granular, scattered oolitic chert fragments

Dolomite, ivory-crm, fnxln-granular, slightly sucrosic

Dolomite, ivory-crm, fnxln-granular, scattered oolitic chert and tan chert, fresh, sharp

Dolomite, ivory-crm, fn-coarse granular, slight white chalk wash

Dolomite, ivory-lt salmon, med-coarse granular, sucrosic

Dolomite, lt salmon, granular, sucrosic

RTD 3650-1687 LTD 3644-1681

SET 5 1/2" 14# CASING TO
3646' W/ 125 SXS EA2