

**OPERATOR**

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

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-628-2593  
 Well Name: ALTA # 1  
 Location: SE NW SW NW, Sec.21-15s-18w  
 Pool: SE NW SW NW, Sec.21-15s-18w  
 State: KANSAS  
 API: 15-051-26,640-00-00  
 Field: SCHOENCHEN WEST  
 Country: USA



Scale 1:240 Imperial

Well Name: ALTA # 1  
 Surface Location: SE NW SW NW, Sec.21-15s-18w  
 Bottom Location:  
 API: 15-051-26,640-00-00  
 License Number: 4787  
 Spud Date: 12/4/2013  
 Region: ELLIS COUNTY  
 Drilling Completed: 12/10/2013  
 Surface Coordinates: 1820' FNL & 420' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2011.00ft  
 K.B. Elevation: 2021.00ft  
 Logged Interval: 2900.00ft  
 Total Depth: 3700.00ft  
 Formation: CONGLOMERATE SAND  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

Time: 11:00 PM  
 Time: 9:18 AM  
 To: 3700.00ft

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.3365124  
 N/S Co-ord: 1820' FNL  
 E/W Co-ord: 420' FWL  
 Latitude: 38.7354881

**LOGGED BY**

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

**CONTRACTOR**

Contractor: SOUTHWIND DRILLING INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 12/4/2013  
 TD Date: 12/10/2013  
 Rig Release: 12/11/2013  
 Time: 11:00 PM  
 Time: 9:18 AM  
 Time: 8:45 PM

**ELEVATIONS**

K.B. Elevation: 2021.00ft  
 K.B. to Ground: 10.00ft  
 Ground Elevation: 2011.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON LOW STRUCTURE TO OFFSET WELLS AND NEGATIVE RESULTS OF DST # 1

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

ATTEMPTED MICRORESISTIVITY LOG BUT HUNG UP IN SALT SECTION.

DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE STRADDLE TEST

**FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY**

	<b>ALTA # 1</b>	<b>GRABBE # 1</b>	<b>ROTH # 1</b>
	<b>SE NW SW NW</b>	<b>NE SW NW</b>	<b>SW SW NW</b>
	<b>SEC.21-15S-18W</b>	<b>SEC.21-15-18W</b>	<b>SEC.21-15-19W</b>
	<b>2011'GL 2021'KB</b>	<b>KB 2034'</b>	<b>KB 2007'</b>
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
<b>Anhydrite</b>	<b>1175 +846</b>	<b>+ 844</b>	<b>NG</b>
<b>B-Anhydrite</b>	<b>1208 +813</b>	<b>+ 808</b>	<b>NG</b>

Topeka	2981 -960	- 951	NG
Heebner Sh.	3258-1237	-1231	-1239
Toronto	3283-1262	-1250	-1263
LKC	3307-1286	-1278	-1289
BKC	3531-1510	-1505	-1515
Congl. Sand	NONE	-1568	-1571
Arbuckle	3610-1589	-1591	-1613
RTD	3700-1679	-1636	

**SUMMARY OF DAILY ACTIVITY**

- 12-04-13 RU, Spud 11:00 PM
- 12-05-13 531', drilling surface hole
- 12-06-13 1175', set 8 5/8" surface casing to 1173' w/ 375 sxs SMD, slope 1 1/2 degree, plug down 5:45AM, WOC 12 hrs
- 12-07-13 1520', drilling
- 12-08-13 2500', drilling, displaced 2865'-2880'
- 12-09-13 3160', drilling
- 12-10-13 3625', RTD 3700' @9:17AM, ST, CCH, TOWB, logs, start DST # 1 straddle test 3418' to 3500' "H" to "J" LKC,
- 12-11-13 3700', TOWT, P&A, plug down 8:30PM, RD

**DST # 1 STRADDLE TEST 3418' TO 3500' "H" TO "J" BOTTOM PACKER HELD**

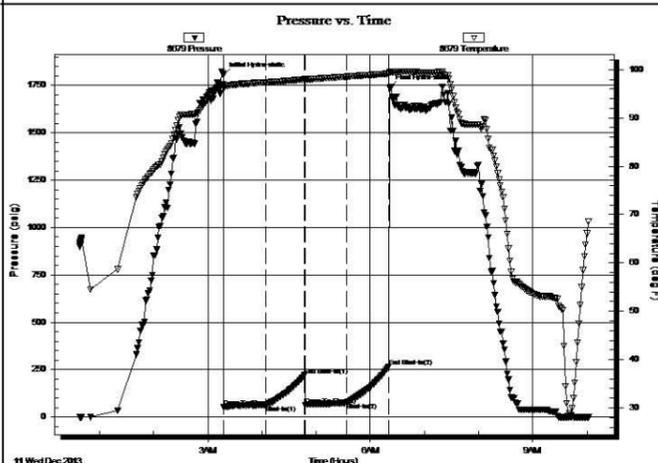
	<b>DRILL STEM TEST REPORT</b>	
	TDI INC 1310 Bison RD Hays Ks 67601 ATTN: Herb Dines	<b>21-15s-18w</b>  <b>Alta #1</b> Job Ticket: 039770 <b>DST#: 1</b> Test Start: 2013.12.11 @ 00:38:07

**GENERAL INFORMATION:**

Formation: <b>LKC-H-I-J</b>	Test Type: Conventional Straddle (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Jeff Brown
Time Tool Opened: 03:17:37	Unit No: 67
Time Test Ended: 10:05:07	
Interval: <b>3418.00 ft (KB) To 3500.00 ft (KB) (TVD)</b>	Reference Elevations: 2021.00 ft (KB)
Total Depth: 3700.00 ft (KB) (TVD)	2009.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good	KB to GR/CF: 12.00 ft

<b>Serial #: 8679</b> <b>Outside</b>	Capacity: 8000.00 psig
Press@RunDepth: 76.78 psig @ 3486.00 ft (KB)	Last Calib.: 2013.12.11
Start Date: 2013.12.11      End Date: 2013.12.11	Time On Btm: 2013.12.11 @ 03:17:07
Start Time: 00:38:08      End Time: 10:02:07	Time Off Btm: 2013.12.11 @ 06:21:07

TEST COMMENT: IFP=Good blow BOB in 34-1/2 min  
 ISI=Dead no blow back  
 FFP=Good blow BOB in 7 Min  
 FSI=Dead no blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1805.54	96.91	Initial Hydro-static
1	52.78	96.15	Open To Flow (1)
47	62.10	97.35	Shut-In(1)
90	220.66	97.98	End Shut-In(1)
91	63.83	97.92	Open To Flow (2)
137	76.78	98.53	Shut-In(2)
184	266.25	99.15	End Shut-In(2)
184	1737.71	99.51	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
36.00	Mud w with a scum of oil	0.50
31.00	GOCM 25%G 15%O 60%M	0.43
0.00	1102=GIP	0.00

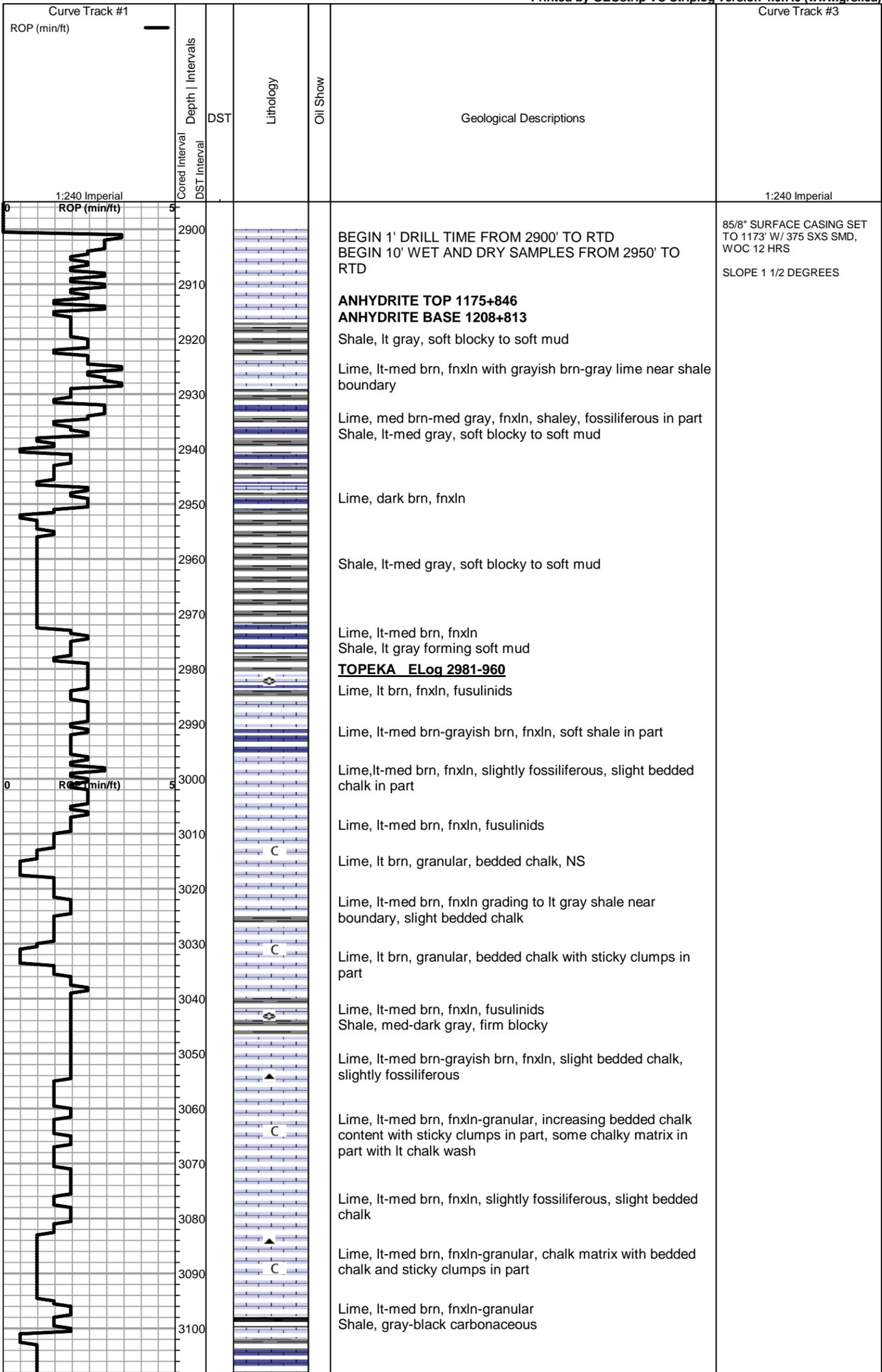
**Gas Rates**

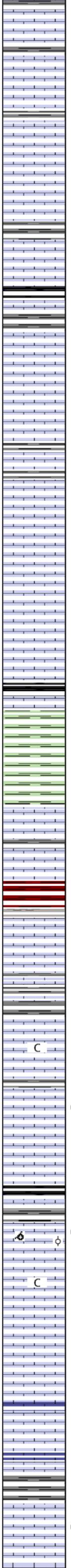
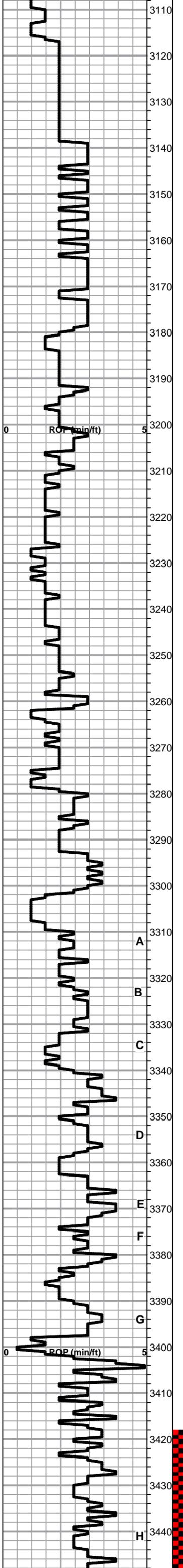
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

ROCK TYPES			
	Clystgy		Lmst fw<7
	Dolprim		Lmst fw7>
	Dol Lime		Lscongl
	shale, grn		shale, red
	shale, gry		Shcol
	Carbon Sh		

ACCESSORIES		
<b>MINERAL</b>	<b>FOSSIL</b>	<b>TEXTURE</b>
▲ Chert, dark	○ Oolite	C Chalky
P Pyrite	⊕ Oomoldic	
• Sandy	⊕ Fossilinid	
△ Chert White		

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Lime, lt brn-lt grayish brn, fnxln

Lime, tan-lt brn, fnxln, sublithographic, bedded chalk, slightly fossiliferous

Lime, tan-lt brn, fnxln

Lime, lt-med brn, fn-micro xln, slight bedded chalk

Lime, tan-lt brn, fn-micro xln

Lime, tan-lt brn, fn-vfxln, bedded chalk in part

Shale, gray-black carbonaceous, firm, blocky  
Lime, crm-tan, fn-vfxln, slight fossiliferous

Lime, crm-lt brn, fnxln-granular, slight bedded chalk

Lime, crm-lt brn, fnxln-granular in part

Lime, crm-lt brn-lt gray, fnxln, slight bedded chalk

Lime, lt-med brn, granular, bedded chalk, NS

Lime, lt-med brn, granular, bedded chalk

Lime, as above

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

Lime, tan-lt brn, fnxln, chalky with lt chalk wash  
**HEEBNER SHALE ELog 3258-1237**

Shale, black carbonaceous

Shale, lime green-med grayish green, soft blocky to soft mud

**TORONTO ELog 3283-1262**

Lime, crm, fnxln, white chalk wash, NS

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

Shale, reddish brn, soft-firm blocky  
**LKC ELog 3307-1286**

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

Lime, med brn-med grayish brn, fn-vfxln, chalk in part

Lime, tan, fnxln with bedded chalk grading into granular lime with bedded chalk with sticky clumps in part, NS

Lime, tan, mostly fnxln, few chips, fossiliferous in inter foss porosity, spotty staining, sparry calcite backfill, very lt odor, NFO

Lime, tan, fnxln, bedded chalk

Shale, gray-black carbonaceous

Lime, crm-tan, few oolitic/oolmoldic chips with spotty staining, NFO, very lt odor, appears poorly developed

Lime, tan, fnxln-granular, lot of bedded chalk, NS

Lime, tan, fnxln, scattered oolitic and granular chips, NS

Lime, tan, fnxln, oolmoldic in part, NS

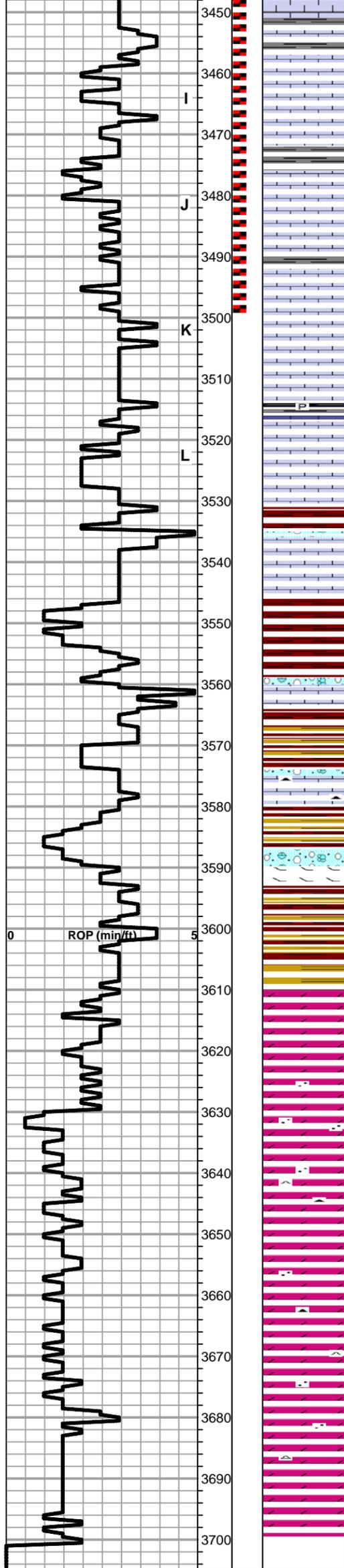
Lime, grayish brn, fnxln, NS

Lime, lt brn-gray, fnxln

Lime, tan, fnxln, bedded chalk

Shale, med gray, firm blocky

Lime, tan, fnxln, few oolitic/oolmoldic chips, trace of staining, no odor, NFO



Lime, tan, fnxln, bedded chalk

Lime, tan, fnxln, scattered fine vuggy porosity, trace of lt spotty staining, NFO, No Odor

Lime, white-frm, fnxln, bedded chalk

Lime, frm-white, fnxln, slightly oolitic with dead flaky staining, NFO, No Odor

Lime white-frm, fnxln, bedded chalk

Lime, lt brn, fn-micro xln, bedded chalk

Lime, white-tan, fnxln, lot of bedded chalk with chalk wash

Shale, gray-black carbonaceous

Lime, lt-med brn, fnxln, bedded chalk

**BKC ELog 3531-1510**  
Shale, reddish brn, soft blocky, lt red wash

Lime, clastic mix with red shale stain grading into frm-tan lime, fnxln, slight bedded chalk

Shale, red, soft mud with lt red wash

Lime, clastic in part, frm-tan, fnxln

Shale, vari colors, reds, grays, yellow, brns

Shale, red, tans, grays, soft sticky clumps in part

Lime, frm-tan, reworked clastic mix, fnxln, soft on crush

Shales, vari color

Clastic lime mix, NS

Shale, vari color and deep red wash in part

**ARBUCKLE ELog 3610-1589**  
Dolomite, frm-tan, fnxln, few chips with med-cxln, rhombic development, lt odor, lt even staining in fine grained chips. zone appears to be mostly fine grained dolomite with poor visible porosity

Dolomite, frm, fn-med xln, very lt odor, lt staining, quartz grain inclusions.

Dolomite, frm, fn-cxln, quartz grain inclusions with few quartz clusters and fused chips of quartz

Dolomite, white-frm, fn-cxln, interxln porosity, white and tan fresh cherts

Dolomite, frm, fn-med xln, hard on crush

Dolomite, frm, fnxln-granular in part

Dolomite, as above

**RTD 3700-1679      LTD 3699-1678**

DST # 1 STRADDLE TEST  
3418' TO 3500' SEE HEADER  
FOR TEST SUMMARY

MARMATON BENCH HIGHLY  
ERODED, VERY THIN AND  
DIFFICULT TO ISOLATE

HISTORIC OIL/WATER  
CONTACT APPEARS TO BE  
NEAR -1590 FOR WELLS IN  
NEARBY VICINITY

1ST PLUG @3590' W/50 SXS  
2ND @1200' W/40 SXS  
3RD PLUG @500' W/80 SXS  
4TH PLUG @40' W/10 SXS  
RATHOLE W/30 SXS  
MOUSEHOLE W/15 SXS

SLOPE @3700' 1 DEGREE