

**OPERATOR**

Company: TDI, INC.  
 Address: 1310 BISON ROAD  
 HAYS, KANSAS 6601

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-259-3141  
 Well Name: RICHARDS # 2  
 Location: SW NW NE NW  
 Pool: INFIELD  
 State: Kansas

API: 15-051-26291-00-00  
 Field: DINGES  
 Country: USA



**TDI, Inc.**  
 1310 BISON ROAD  
 HAYS, KANSAS 67601  
 (785) 628-2593

Scale 1:240 Imperial

Well Name: RICHARDS # 2  
 Surface Location: SW NW NE NW  
 Bottom Location:  
 API: 15-051-26291-00-00  
 License Number: 4787  
 Spud Date: 5/11/2012 Time: 11:00 AM  
 Region: ELLIS COUNTY Time: 5:31 AM  
 Drilling Completed: 5/16/2012  
 Surface Coordinates: 545' FNL & 1485' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2024.00ft  
 K.B. Elevation: 2034.00ft  
 Logged Interval: 2900.00ft To: 3751.00ft  
 Total Depth: 3750.00ft  
 Formation: ARBUCKLE  
 Drilling Fluid Type: Chemical/Fresh Water Gel

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: Latitude:  
 N/S Co-ord: 545' FNL  
 E/W Co-ord: 1485' FWL

**LOGGED BY**

Company: SOLUTIONS CONSULTING  
 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: 5/11/2012 Time: 11:00 AM  
 TD Date: 5/16/2012 Time: 5:31 AM  
 Rig Release: 5/17/2012 Time: 1:00 PM

**ELEVATIONS**

K.B. Elevation: 2034.00ft Ground Elevation: 2024.00ft  
 K.B. to Ground: 10.00ft

**NOTES**

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON FAVORABLE FORMATION STRUCTURE AND POSITIVE RESULTS OF STRADDLE TEST # 1


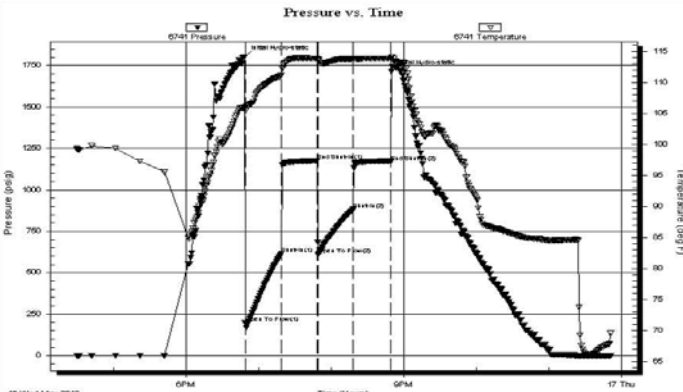
**FORMATION TOPS SUMMARY AND DAILY PROGRESS REPORT OF DEPTH AND ACTIVITY**

**RICHARD # 2**

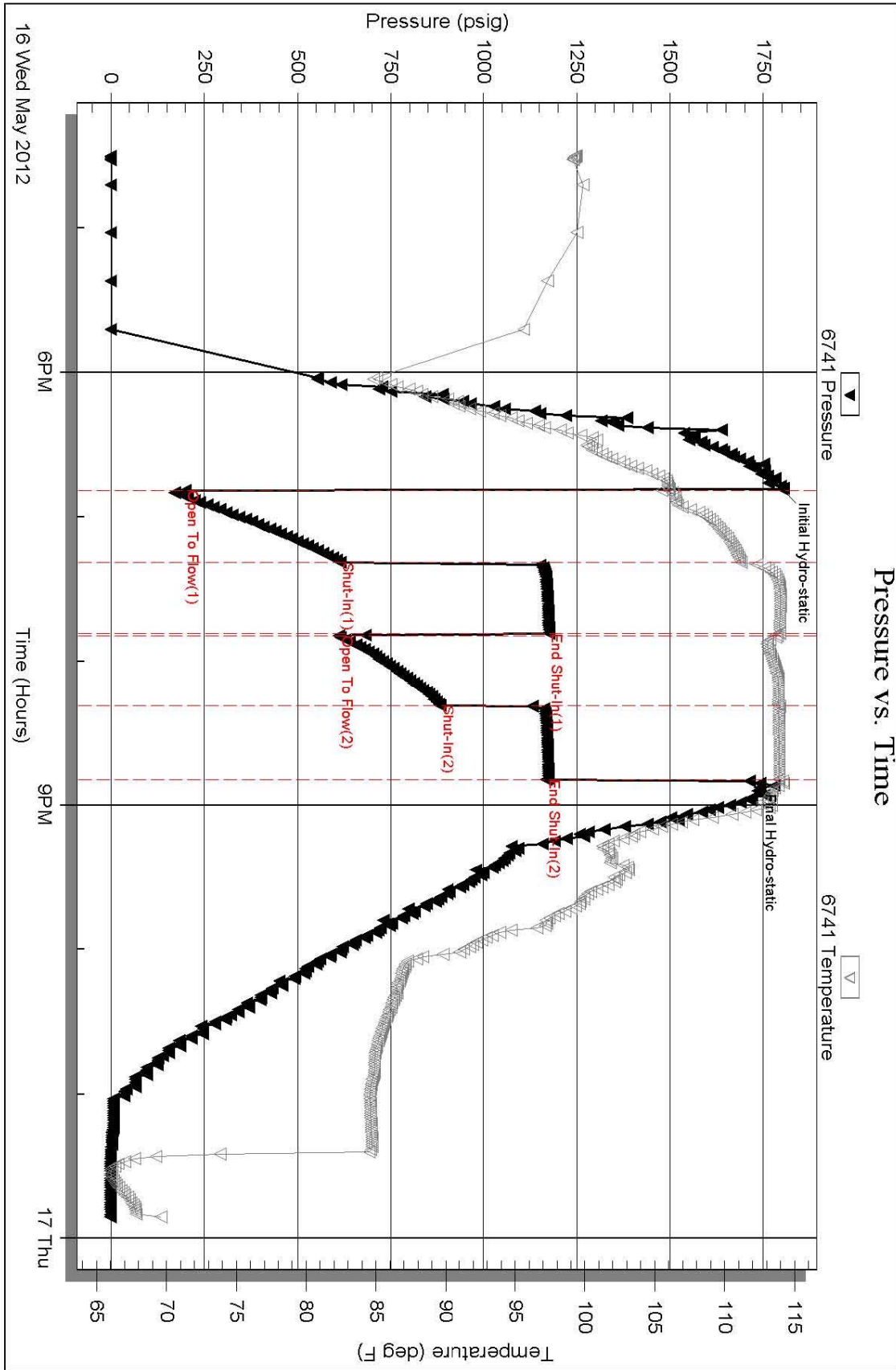
<u>FORMATION</u>	<u>SAMPLE TOP</u>	<u>LOG TOP</u>
Anhydrite	1208+ 826	1209+ 825
B-Anhydrite	1242+ 792	1246+ 788
Topeka	3007- 973	3004- 970
Heebner Shale	3280-1246	3281-1247
Toronto	3300-1266	3301-1267
LKC	3325-1291	3327-1293
BKC	3550-1516	3553-1519
Arbuckle	3641-1607	3638-1604
RTD	3750-1716	
LTD		3751-1717

- 5-11-12 RU, Spud, set surface casing to 213.29' w/150 sxs. Common, 2%gel, 3%CC, Slope survey 3/4 degree, WOC 8 hrs. Plug down 4:15PM.
- 5-12-12 507' drilling
- 5-13-12 1994' drilling
- 5-14-12 2730' drilling, displaced mud system 2863-2891'
- 5-15-12 3305' drilling
- 5-16-12 3750' drilling, short trip, logs, straddle test # 1
- 5-17-12 3750', lay down drill pipe, run 5 1/2" casing with DV in anhydrite, cement lower stage and DV to surface. Swift Services, Inc., RD

**DST # 1 STRADDLE TEST- ARBUCKLE**

	<b>DRILL STEM TEST REPORT</b>																																					
	TDI Inc 1310 Bison Rd Hays Ks 67601-9696  ATTN: Herb Deines	<b>10 15s 18w Ellis</b>  <b>Richard # 2</b> Job Ticket: 47129 <b>DST#: 1</b> Test Start: 2012.05.16 @ 16:30:00																																				
<b>GENERAL INFORMATION:</b> Formation: <b>Arbuckle</b> Deviated: No Whipstock: 2032.00 ft (KB) Time Tool Opened: 18:49:00 Time Test Ended: 23:50:00  <b>Interval: 3608.00 ft (KB) To 3649.00 ft (KB) (TVD)</b> Total Depth: 3750.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair  Test Type: Conventional Straddle (Initial) Tester: Jim Svaty Unit No: 41  Reference Elevations: 2032.00 ft (KB) 2022.00 ft (CF) KB to GR/CF: 10.00 ft																																						
<b>Serial #: 6741 Inside</b> Press@RunDepth: 882.48 psig @ 3610.00 ft (KB) Start Date: 2012.05.16      End Date: 2012.05.16 Start Time: 16:30:01      End Time: 23:51:00 Capacity: 8000.00 psig Last Calib.: 2012.05.16 Time On Btm: 2012.05.16 @ 18:48:30 Time Off Btm: 2012.05.16 @ 20:50:00																																						
<b>TEST COMMENT:</b> IFP - BOB in 1 min ISI - Surface blow built to 2" died in 20 min FFP - BOB in 1 min FSI - Surface blow built to 1"																																						
	<b>PRESSURE SUMMARY</b>																																					
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EXPANDED CHART OF DST # 1



Serial #: 6741 Inside TDI Inc Richard # 2 DST Test Number: 1

Tribble Testing, Inc Ref. No: 47129 Printed: 2012.05.17 @ 08:06:08

**ROCK TYPES**

	Cht vari		Lmst fw7>		shale, grn		shale, red		Shgy
	Dolprim		Lscongl		Carbon Sh		Ss		

**ACCESSORIES**

**MINERAL**

- ▲ Chert, dark
- ∩ Glauconite
- Sandy
- △ Chert White
- ∕ Euhed rhombs of dol or

**OTHER SYMBOLS**

**DST**

- DST Int
- DST alt

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

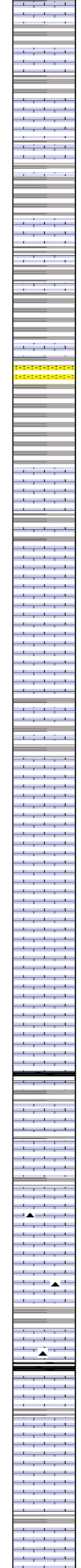
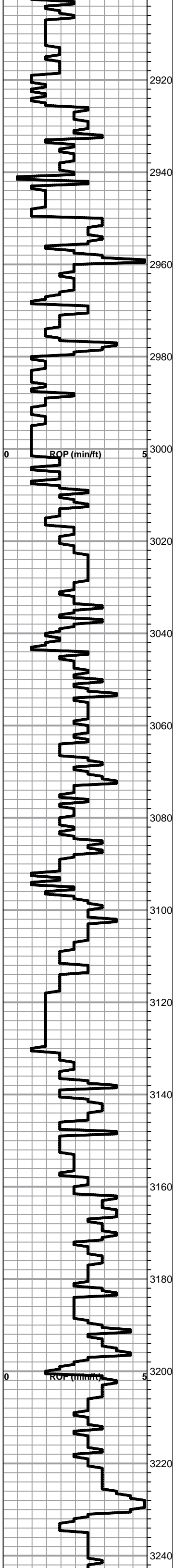
Curve Track #1 ROP (min/ft)	Depth   Intervals DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
1:240 Imperial ROP (min/ft)	Cored Interval DST Interval				1:240 Imperial
0	2900				

**ANHYDRITE TOP Spl top 1208+826 ELog 1209+825**  
**ANHYDRITE BASE Spl 1242+792 ELog 1246+788**

**1' DRILL TIME FROM 2900'-RTD**  
**10' WET AND DRY SAMPLES FROM 3000' TO RTD**

SLOPE SURVEY 213'  
3/4 DEGREE

DISPLACE 2863'-2891''



Lime, brn-gray, fnxln, fossiliferous

shale, lt-med gray, soft blocky

sandstone, fine grained, poorly sorted, micaceous, glauconitic, NS

Shale, lt-med gray, soft

**TOPEKA Spl top 3007-973 ELog 3004-970**

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

Lime med-dark brn, fnxln, fossiliferous-fusulinids

Lime, lt-med brn, fnxln, chalk in part

Lime, lt-med brn, fnxln, with chalk in part, slightly fossiliferous

Lime, lt-med brn, fnxln, slightly chalky in part

Lime, brn-grayish brn, fnxln, slightly chalky

Lime, med brn-grayish brn, fnxln, fossiliferous

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

Lime, lt-med brn-grayish brn, fnxln-fine granular, slightly chalky, slightly fossiliferous, NS

Lime, lt-med brn, granular, chalk in part with sticky chalk in part

Shale, black carbonaceous with scattered black chert

Shale, gray, calcareous  
Lime lt-med brn, fnxln, fossiliferous

Lime, crm-lt brn, fnxln with lithographic lime in part

Lime, crm-tan-lt brn, fn-vfxln, slightly chalky in part

Lime, lt-med brn, fnxln, slightly chalky

Shale, lt gray, calcareous  
Lime, crm-lt brn, fn-vfxln

Shale, black carbonaceous, pyritic

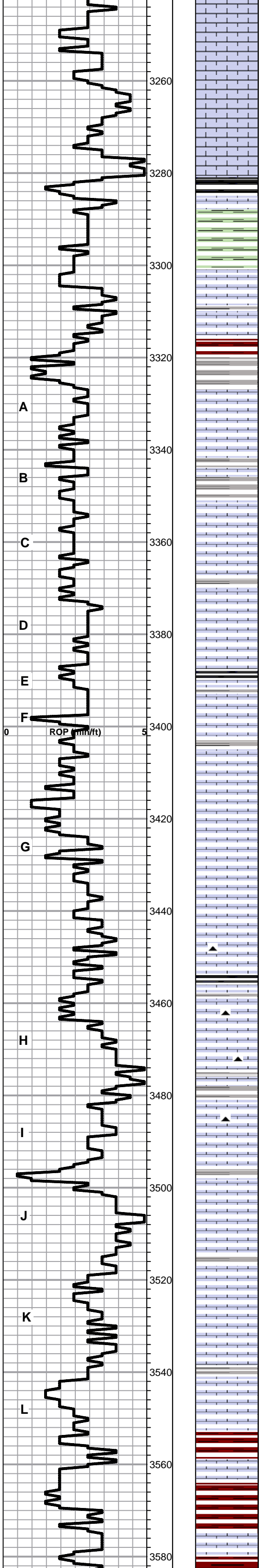
Lime, med-dark brn, fnxln, fossiliferous

Lime, lt-med brn, fnxln-granular in part, slightly chalky

Lime, lt-med brn, fnxln, bedded chalk in part

Shale, grayish green, soft, blocky with pyrite clusters

Lime, grayish brn, fnxln



Lime, lt-med brn,fnxln-granular, bedded chalk in part

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

**HEEBNER SHALE Spl top 3280-1246 ELog 3281-**

Shale, black carbonaceous  
Lime, med brn, fn-vfxln  
Shale, lime grn, soft blocky

**TORONTO Spl top 3300-1266 ELog 3301-1267**

Lime, lt brn-crm, fn-vfxln, slight chalk in part, NS

Shale, lt red wash, soft grading into lt gray, soft

**LKC Spl top 3325-1291 ELog 3327-1293**

Lime, lt-med brn, fnxln, slight bedded chalk in part, NS

Lime, lt-med brn, fnxln, bedded chalk in part, NS  
Shale, lt grayish green, soft, sticky, pyritic in part

○ Lime, lt brn, mostly fnxln with few chips oolitic with light scattered stain, NFO, No Odor

○ Lime, crm, mostly fn-vfxln with light bedded chalk in part. few chips of oolitic-fossil fragment mix with light scattered stain, NFO

Shale, black carbonaceous  
Lime, offwhite-pale green, fn-vfxln

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

Lime,lt-med brn, fnxln-granular, bedded chalk in part, NS

Lime, lt brn, fnxln-granular, chalky, scattered oomoldic, NS

Lime, lt-med brn, fnxln, chalk in part

Shale, gray- black carbonaceous

Lime, tan-lt brn, fnxln, chalk in part, NS

Lime, crm-tan, fn-vfxln, slight bedded chalk in part, NS

Lime, crm-tan-lt gray, fn-vfxln, slight bedded chalk in part, NS

Lime, crm-lt brn, fnxln, brittle on crush, chalk in part, NS

Lime, crm-lt brn, fn-vfxln, chalk in part, NS

**BKC Spl top 3550-1516 ELog 3553-1519**

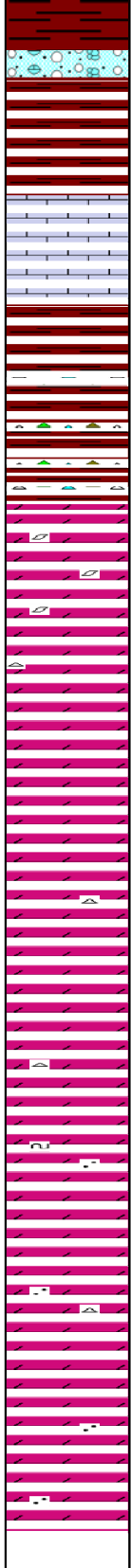
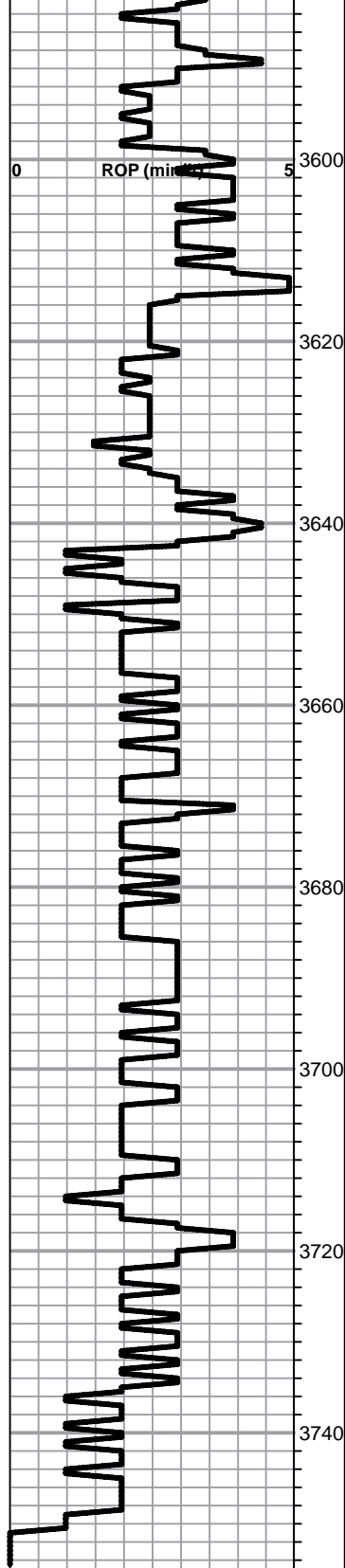
Shale, reddish brn, blocky  
Lime, offwhit, fn-vfxln

Shale, mostly reddish brn with grays and browns in part, soft and sticky in part.

Clastic lime mix with red shale staining, fnxln

Increasing volume of slough, mix mud treatment and added slowly to system.

SHOWS IN LKC LIGHT WITH SCATTERED STAIN IN NOTED BENCHES. ZONES THAT SHOW PERMEABILITY ON THE MICROLOG AND CALCULATE SHOULD BE PERFORATED AND TESTED PRIOR TO ABANDONMENT OF WELL



Clastic lime mix with reddish brown shale.

Lime, crm-lt brn, fnxn. remnant basal lime deposits of Marmaton-Pawnee section

Shale, reddish brn-gray, blocky

Shale, vari-colored with chert in part

**ARBUCKLE Spl top 3641-1607 ELog 3638-1604**

● Dolomite, ivory, fnxn with med-cxln rhombic development in part, poor-fair odor with light staining, Excellent intercrystalline porosity

● Dolomite, ivory, fn-cxln, fair-good odor, saturated staining, fnxn mixed with coarse crystalline with good visible rhombic development. Recommend perforating top of permeability from microlog due to past production from same zone in offset plugged out wells.

Dolomite, ivory, fn-cxln, milky white oolitic chert, sharp, fresh, very lite odor

Dolomite, crm-ivory, fn-cxln, NS

Dolomite, crm-ivory, fn-cxln

Dolomite, ivory-crm, mostly fnxn

Dolomite, ivory-crm, fn-cxln, specks of green glauconite and scattered clear qtz grains

Dolomite, crm-ivory, fn-cxln

Dolomite, ivory-pale salmon tint, fn-cxln

Dolomite, crm-tan, coarse crystalline, granular with qtz inclusions

**RTD 3750-1716 LTD 3751-1717**

**DST # 1 STRADDLE TEST  
3608'-3649'  
30-30-30-30**

**SEE CHARTS IN HEADER  
FOR TEST SUMMARY**



# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 955

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-11-12	10	15	18	Ellis	Kansas		6:15 PM
Lease	Well No.		Location				
Richard	2		Hays 6S 1E Sudo				
Contractor	Owner			To Quality Oilwell Cementing, Inc.			
Southwind Drilling Rig			You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.				
Type Job	T.D.		Charge To				
Surface	215		TDI				
Hole Size	Depth		Street				
12 1/4	213						
Csg.	Depth		City				
8 3/8 2 3/4			State				
Tbg. Size	Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.				
			Cement Amount Ordered				
Tool	Displace		150 Com 3000 2800				
	12 1/2						
Cement Left in Csg.	<b>EQUIPMENT</b>						
10-15'	No.		Cementer		Common		
	15		Helper		150		
Meas Line	No.		Driver		Poz. Mix		
	14		150		3		
	No.		Driver		Gel.		
	14		Nick		5		
	<b>JOB SERVICES &amp; REMARKS</b>						
Remarks:	No.		Driver		Calcium		
	15		Steve		5		
Rat Hole	No.		Driver		Hulls		
	14		150		Salt		
Mouse Hole	No.		Driver		Flowseal		
	14		150		Koi-Seal		
Centralizers	No.		Driver		Mud CLR 48		
	14		150		CFL-117 or CD110 CAF 38		
Baskets	No.		Driver		Sand		
	14		150		Handling 158		
D/V or Port Collar	No.		Driver		Mileage		
	14		150				
	<b>FLOAT EQUIPMENT</b>						
	No.		Driver		Guide Shoe		
	14		150		Centralizer		
	No.		Driver		Baskets		
	14		150		AFU Inserts		
	No.		Driver		Float Shoe		
	14		150		Latch Down		
	No.		Driver		SWAGE		
	14		150		Pumptrk Charge		
	No.		Driver		Surface		
	14		150		Mileage 7 (25 min)		
	No.		Driver		Tax		
	14		150		Discount		
	No.		Driver		Total Charge		
	14		150				
X Signature	Derby						

**JOB LOG**

**SWIFT Services, Inc.**

DATE 5-17-12 PAGE NO. 1

CUSTOMER T.D.I. WELL NO. #2 LEASE Richard JOB TYPE Long String TICKET NO. 21751

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL)(GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0630							On Loc. Rig Laying down D.P.
	0750							Start 5 1/2" 14# Csg. Insert Float shoe Latch down Baffle Cmt. #1, #2, #5, #7, #9, #11, #13, #59 Basket #3, #12, #60, #80 D.U. tool Top #60 @ 1195'
	0930							Drop Ball
	0940							Circulate & Rotate Csg.
	10:55	5	12					Start 500 gal Mud Flush
		}	20					2000 2% KCL Flush
			36					Mix 150 slt EA-2 Cmt
								Finish mixing wash pump & Line
	11:15	6 1/2						Displace shut off plug Last 2000 KCL water
			905			1500		Plug down 1500psi Holding Release press. Dryed up
	11:35							Drop opening Plug Plug R.H. & M.H. 30x20
	11:55					1100		Open D.U. 1100psi Mix 125 slt SMD
	12:15		970					Finish mixing Release Closing Plug Displ.
	12:25		29			1500		Plug down 1500psi Release Press. D.U. closed Circulated 2000 to pit wash & Rack up truck
	1300							Job Complete

*[Signature]*

*[Signature]*