

OPERATOR

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

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: WARREN # 1
 Location: E2 SW SE NE Sec 22-15s-18w
 Pool: INFIELD
 State: KANSAS

API: 15-051-26,501-00-00
 Field: SCHOENCHEN
 Country: USA



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

Scale 1:240 Imperial

Well Name: WARREN # 1
 Surface Location: E2 SW SE NE Sec 22-15s-18w
 Bottom Location:
 API: 15-051-26,501-00-00
 License Number: 4787
 Spud Date: 4/29/2013 Time: 1:15 PM
 Region: ELLIS COUNTY
 Drilling Completed: 5/4/2013 Time: 2:14 AM
 Surface Coordinates: 2310' FNL & 975' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2027.00ft
 K.B. Elevation: 2037.00ft
 Logged Interval: 2900.00ft To: 3750.00ft
 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: 2310' FNL
 E/W Co-ord: 975' FEL

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

Rig Type: MUD ROTARY
 Spud Date: 4/29/2013
 TD Date: 5/4/2013
 Rig Release: 5/5/2013

Time: 1:15 PM
 Time: 2:14 AM
 Time: 6:30 AM

ELEVATIONS

K.B. Elevation: 2037.00ft Ground Elevation: 2027.00ft
 K.B. to Ground: 10.00ft

NOTES

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON RESULTS OF DST # 1 AND FAVORABLE ARBUCKLE STRUCTURE.

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

DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) STRADDLE TEST

FORMATION TOPS SUMMARY AND CHRONOLOGY OF DAILY ACTIVITY

WARREN # 1

2310' FNL & 975' FEL, NE/4

Sec. 22-15s-18w

2027' GL 2037' KB

WILLARD # 1

480'FNL & 2190'FEL

Sec 22-15s-18w

Reference Well


<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1185+ 852	1190+ 847	+ 844
B-Anhydrite	1225+ 812	1225+ 812	+ 808
Topeka	3007- 970	3005- 968	- 971
Heebner Shale	3272-1235	3271-1234	-1233
Toronto	3292-1255	3292-1255	-1253
LKC	3322-1285	3322-1285	-1283
BKC	3540-1503	3544-1507	-1506
Marmaton	3590-1553	3579-1542	-1542
Arbuckle	3602-1565	3610-1573	-1558
RTD	3750-1713		
LTD		3752-1715	

SUMMARY OF DAILY ACTIVITY

- 4-29-13 RU, spud 1:15 PM, set 8 5/8" surface pipe to 222.18' w/ 150 sxs common, 2%Gel, 3% CC , plug down 6:15 PM, WOC 8hrs, slope 1 degree
- 4-30-13 520', drilling
- 5-01-13 1880,'drilling,
- 5-02-13 2580'. drilling. displaced 2641' to 2668'

- 5-03-13 3300', drilling
- 5-04-13 3750', RTD 2:14 am at 3750', short trip, CCH 1 ½ hrs, TOWP, slope ½ degree, logs, straddle DST # 1 3540'- 3620' Arbuckle, TIWB, CCH, LDDP
- 5-05-13 3750', finish running production casing and cementing, plug down 6:30 am, RD

DST # 1 STRADDLE TEST ARBUCKLE

 <p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT		
	TDI Inc. 1310 Bison Rd. Hays KS 67601-9696 ATTN: Herb Deines	22 15s 18w Ellis Warren # 1 Job Ticket: 53617 DST#: 1 Test Start: 2013.05.04 @ 13:22:00	

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: 2029.00 ft (KB)
 Time Tool Opened: 15:00:10
 Time Test Ended: 19:01:00

Test Type: Conventional Straddle (Initial)
 Tester: Jim Svaty
 Unit No: 41

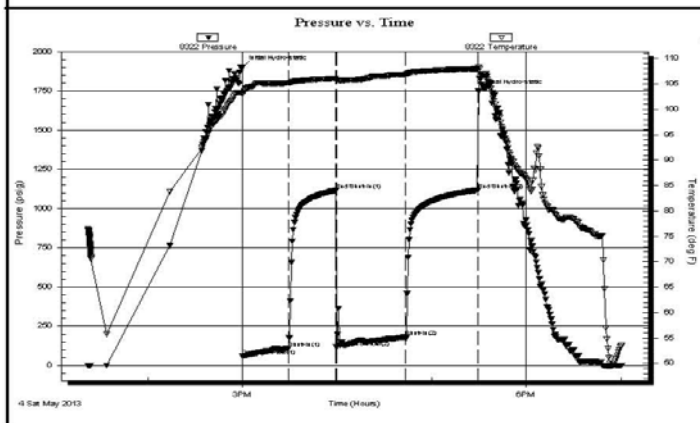
Interval: **3540.00 ft (KB) To 3620.00 ft (KB) (TVD)**
 Total Depth: 3750.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2029.00 ft (KB)
 2021.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8322 Outside

Press@RunDepth: 181.12 psig @ 3609.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.05.04	End Date: 2013.05.04
Start Time: 13:22:01	End Time: 19:00:20
	Last Calib.: 2013.05.04
	Time On Btm: 2013.05.04 @ 14:59:50
	Time Off Btm: 2013.05.04 @ 17:29:40

TEST COMMENT: 30-IFP- BOB in 19 min.
 30-ISIP- No Blow
 45-FFP- BOB in 22 1/2 min.
 45-FSIP- Weak Surface Blow in 2 min. Died in 19 min.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1902.51	103.21	Initial Hydro-static
1	58.65	103.01	Open To Flow (1)
30	107.53	105.13	Shut-In(1)
60	1115.45	106.08	End Shut-In(1)
60	116.07	105.78	Open To Flow (2)
104	181.12	106.90	Shut-In(2)
150	1117.80	107.98	End Shut-In(2)
150	1748.73	108.40	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	OCM 5% m 95% o	0.07
93.00	MCO 5% o 95% m	1.30
189.00	VMCO 10% w 20% m 70% o	2.65
0.00	62 GIP	0.00

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

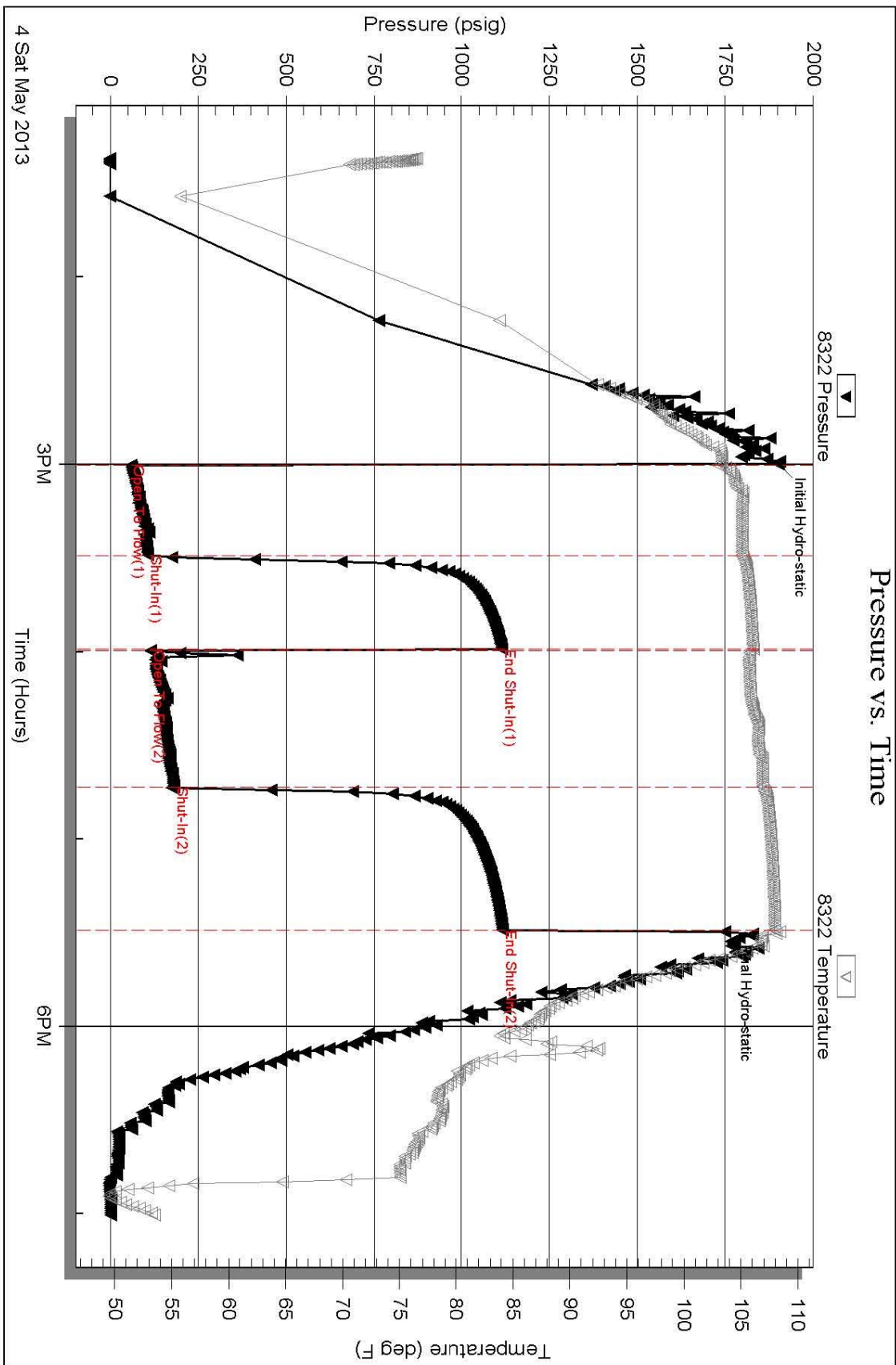
DST # 1 EXPANDED CHART

Serial #: 8322

Outside TDI Inc.

Warren # 1

DST Test Number: 1








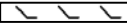






Trilobite Testing, Inc

Ref. No: 53617

Printed: 2013.05.05 @ 03:23:18

ROCK TYPES

 Cht vari	 Lmst fw<7	 shale, gry	 Shcol
 Clystgy	 Lmst fw>7	 Carbon Sh	 Dol Lime
 Dolprim	 shale, grn	 shale, red	 Lscong1

ACCESSORIES

MINERAL

- ▲ Chert, dark
- P Pyrite
- Sandy
- Varicolored chert
- △ Chert White

FOSSIL

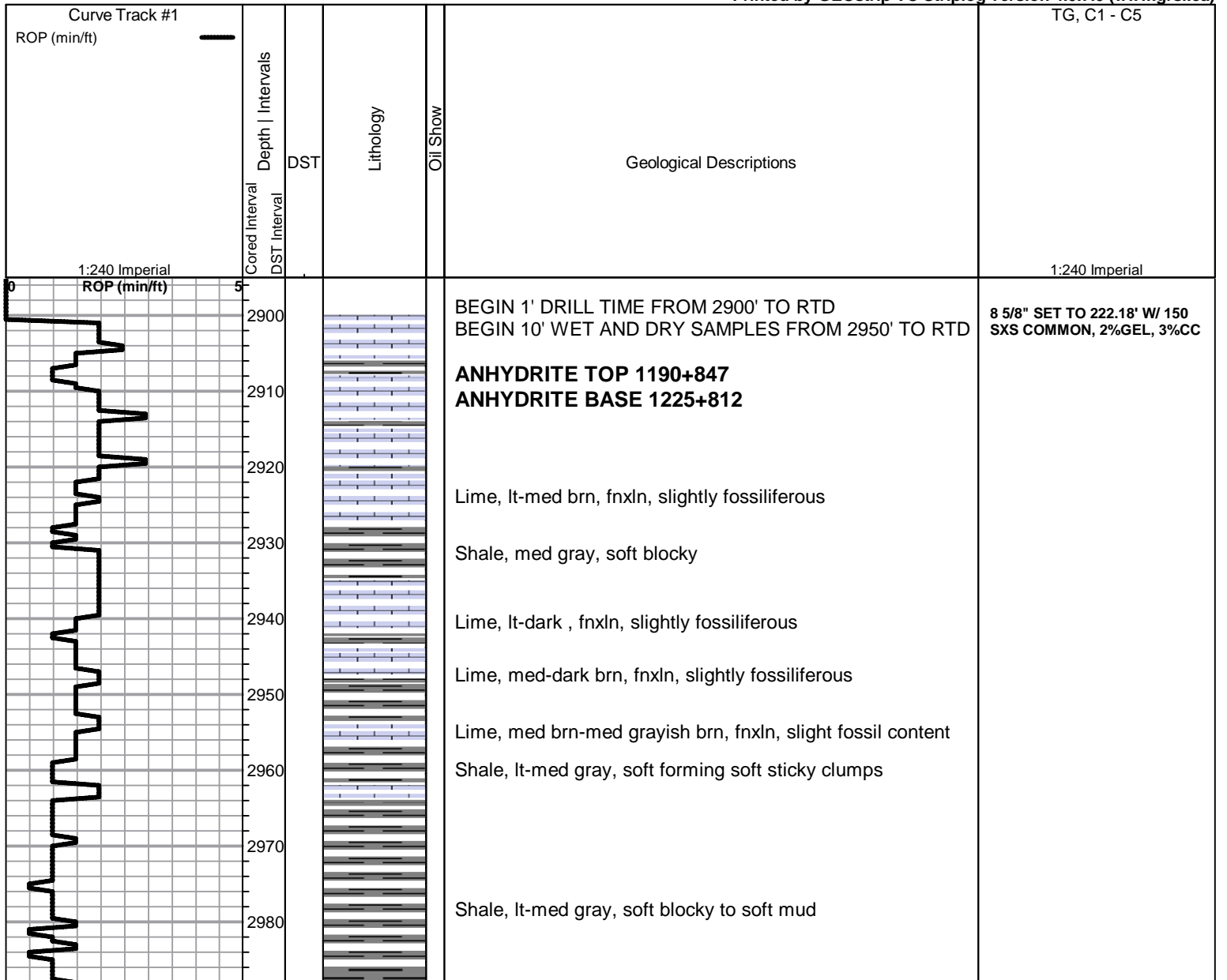
- Oolite
- ⊕ Oomoldic

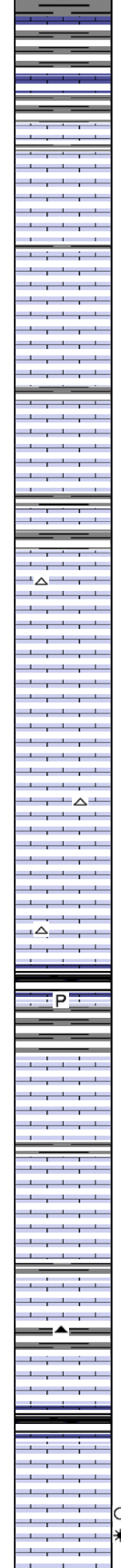
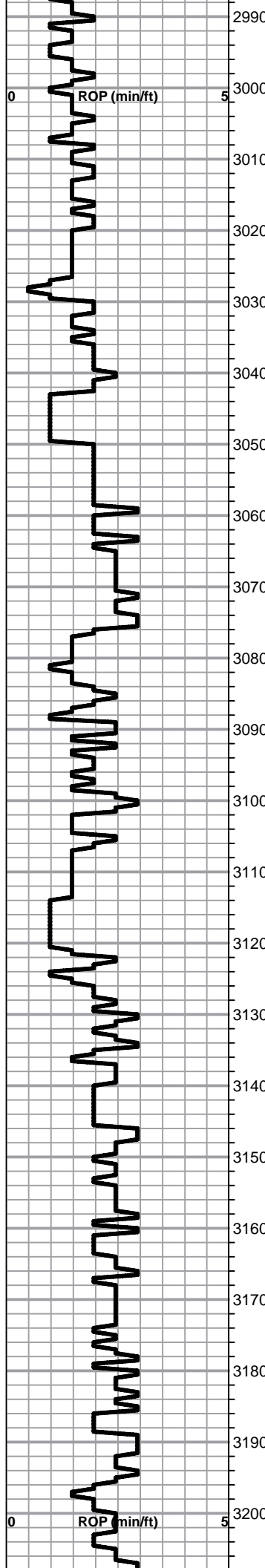
OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core

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





Lime, med-dark brn, fnxln, fossiliferous
 Shale, lt-med gray, soft mud to soft blocky

TOPEKA 3005-968

Lime, lt-med brn, fnxln

Lime, lt-med brn-grayish brn, fnxln

Lime, lt-med brn-grayish brn, fnxln, soft on crush

Lime, lt brn, granular, NS

Lime, lt-med brn, fnxln, soft on crush, sticky chalk clumps

Lime, lt-med brn, fnxln, some vfxln, slightly fossiliferous

Lime, lt-med brn, fnxln, slightly fossiliferous

Lime, lt-med brn, fnxln-granular, NS

Lime, lt-med brn, fnxln, slightly fossiliferous, fossil casts

Lime, lt-med brn, fnxln, sticky chalk clumps, slightly fossiliferous

Lime, lt-med brn, granular, bedded chalk with chalk matrix, sticky chalk clumps in part, few crinoid segments

Shale, black carbonaceous, fissile, blocky

Shale, dove gray, soft sticky clumps

Lime, lt-med brn, fnxln with scattered micro xln chips

Lime, crm-lt brn, fn-micro xln, lithographic in part

Lime, crm-lt brn, fn-micro xln, fusulinids, well cemented, slight bedded chalk in part

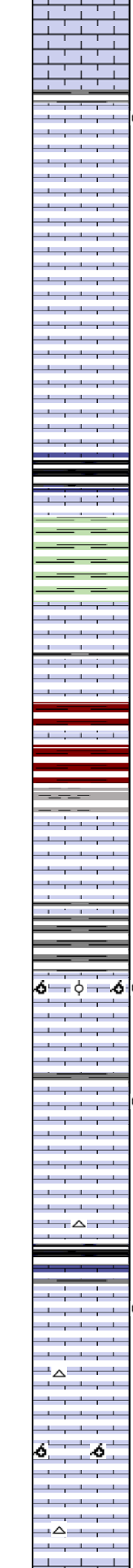
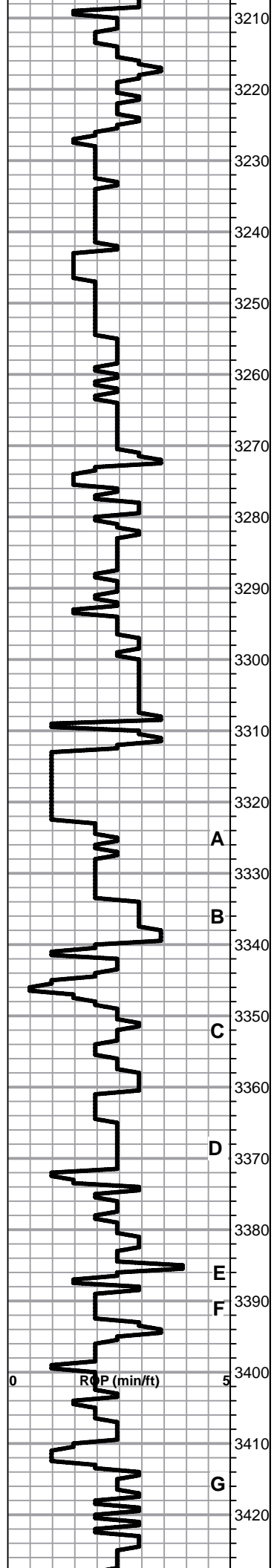
Lime, crm-lt brn, fn-micro xln, fossiliferous, black chert

Lime, crm-lt brn, fn-micro xln

Shale, black carbonaceous, fissile, blocky

Lime, lt brn-lt gray, fnxln, spotty gray mottling, slightly fossiliferous

Lime, crm-lt brn, fnxln-granular, slight bedded chalk in part thin fossil bed. interparticle porositv. spotty stain. v lt odor



Lime, lt-med brn, fnxln

○ Lime, crm-lt brn, mostly fnxln, few chips, granular with fossil fragments, lt scat stain, v lt odor, doesn't appear well developed

Lime, lt brn, fnxln, bedded chalk in part

Lime, lt brn, granular

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

Lime, lt brn-lt grayish brn near shale boundary, fnxln

HEEBNER SHALE 3271-1234

Shale, black carbonaceous, fissile, blocky
 Lime, med brn, fnxln, hard on crush
 Shale, lime green soft mud - dove gray, soft sticky clumps

TORONTO 3292-1255

Lime, white-crm, fnxln, bedded chalk, NS
 Lime, white-crm grading into med brn-gray near shale boundary, fnxln bedded chalk, NS
 Shale, lt red wash, soft blocky with lt gray soft blocky in part

LKC 3322-1285

A Lime, lt brn-lt grayish brn, fnxln, thin fossil beds in part, NS

B Lime, lt-med brn, fnxln

Shale lt gray-lime green, soft mud

C ○ Lime, crm-lt brn, fnxln-granular in part, few chips oolitic/oolmoldic with trace of spotty stain, NFO, No Odor

D ○ Lime, crm-lt brn, fnxln, bedded chalk, few chips with trace of stain in poorly developed lime

Lime, offwhite-crm, fnxln, bedded chalk

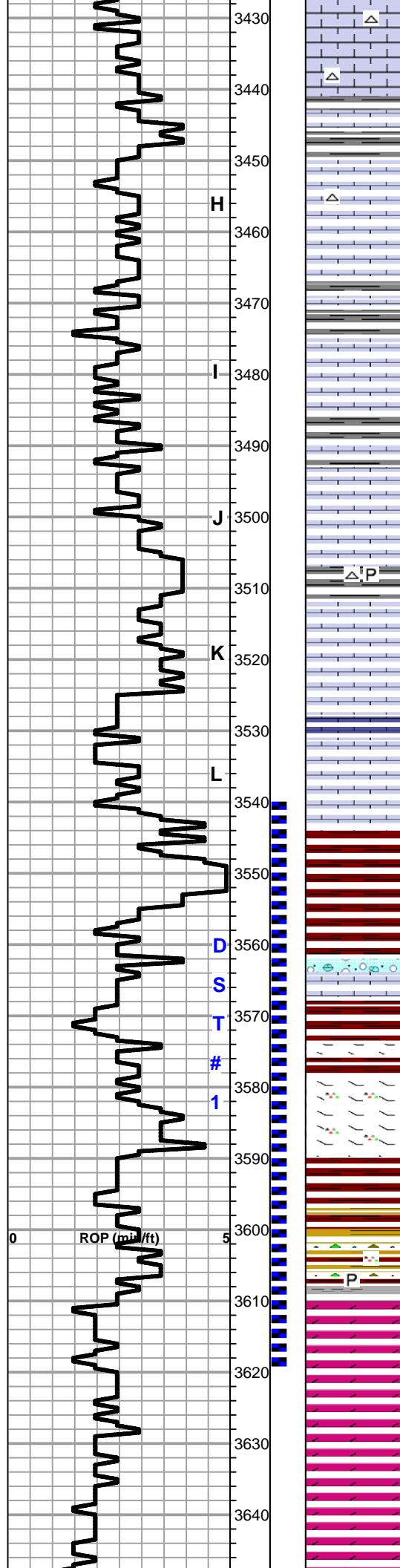
E Shale, black carbonaceous, fissile, blocky
 Lime, lt brn-lt gray, fnxln

F ○ Lime, crm, fnxln, trace staining, NFO, very lt odor, appears poorly developed

G △ Lime, crm-lt brn, fnxln, lts of chalk, white chalk wash NS

△ Lime, crm, fnxln with few oolmoldic chips, barren, NS

△ Lime, crm, fnxln, slight bedded chalk, white-tan chert



Lime, crm, fnxln, slight chalk

Lime, lt gray-brn, fnxln
Shale, grayish green, blocky with slivers in part

Lime, crm-tan, fnxln, bedded chalk, NS

Lime, crm-tan, fnxln, bedded chak, NS

Shale, gray-black, soft blocky

Lime, crm-fnxln, bedded chalk, NS

Shale, grayish green, soft blocky
Lime, crm-lt brn, fnxln

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

Lime, crm-lt brn, fnxln, slight chalk, slightly fossiliferous

Lime, crm-lt brn, fnxln, slight chalk, NS

Lime, crm-lt brn, fn-micro xln,

Lime, crm-lt brn, fnxln, increasing chalk content

BKC 3544-1507

Shale, reddish brn, soft mud-soft blocky, red wash

Shale, reddish brn, maroon, soft blocky

Lime, crm, fnxln, clastic mix in part with red shale stain

Shale, red wash, soft

MARMATON 3579-1542

Lime, crm, fnxln, dolomitic, hard on crush, orange chert

Shale, red wash

Shale, vari color, increasing vari color chert

ARBUCKLE 3610-1573

Dolomite, crm, fn-med xln, granular, lt odor on crush, scattered to sat staining,

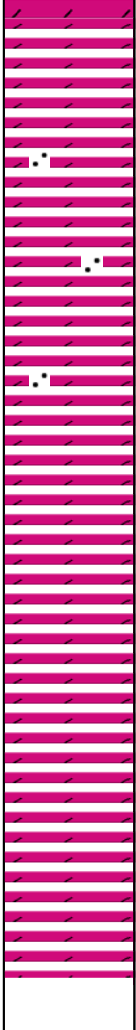
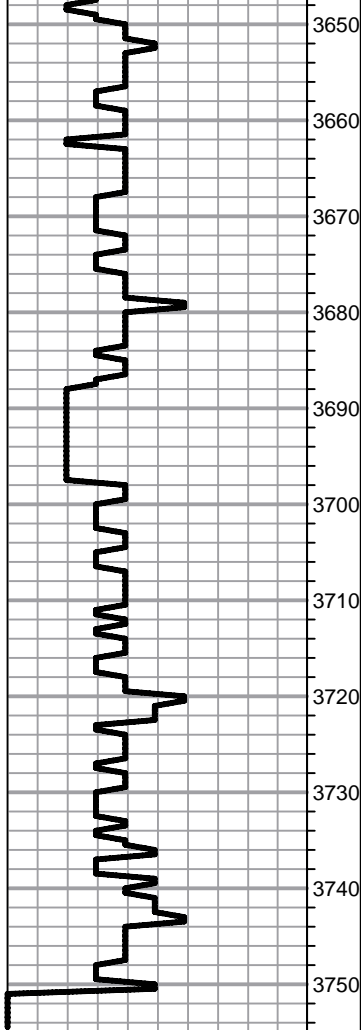
Dolomite, crm-lt brn, granular, lt odor and staining

Dolomite, ivory-crm, fn-cxln, very lt sulfur odor, rhombic xln development increasing with depth

Dolomite, ivory-crm, fn-cxln, gilsonitic in part with increasing barren material

Dolomite, ivory-crm, fn-cxln, granular, gilsonitic in part

DST # 1 STRADDLE TEST
3540' TO 3620' ARBUCKLE
SEE HEADER FOR TEST
SUMMARY



Dolomite, ivory, fn-cxln, granular, lt sulfur odor

Dolomite, ivory, fn-cxln, glauconite specks, increasing sand content

Dolomite, ivory-salmon, fn-cxln, granular

Dolomite, ivory-salmon, fn-med xln, granular

Dolomite, ivory-crm, fn-mdxln, granular

Dolomite, ivory, fn-cxln, granular

Dolomite, crm-ivory, fn-cxln, granular, hard on crush

Dolomite, crm, fn-med xln, granular, hard on crush

Dolomite, crm-ivory, fn-cxln, granular, chalk in part

RTD 3750-1713 LTD 3752-1715

SET 14# 5 1/2" CASING TO
3746' W/ 150 SXS EA2, TOP
STAGE W/ 155 SXS SMD, 30
SXS RATHOLE, 15 SXS
MOUSEHOLE

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. 6664

Date	Sec.	Twp.	Range	County	State	On Location	Finish
4-29-13	22	15	18	Ellis	KS		6:15 PM

Location *Hays Muck, 1E, 1/2S, W12*

Lease	Well No.	Owner	
<i>Warren</i>	<i>#1</i>	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Contractor		Charge To	
<i>Southwind #1</i>		<i>TDI, Inc.</i>	
Type Job	T.D.	Street	
<i>Surface</i>	<i>225</i>		
Hole Size	Depth	City	
<i>12 1/4</i>	<i>222</i>	State	
Csg.	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
<i>8 5/8</i>		Cement Amount Ordered <i>150 sk Common 3% cc 2% gel</i>	
Tbg. Size	Shoe Joint		
	<i>20</i>		
Tool	Displace		
	<i>13</i>		
Cement Left in Csg.			
<i>20</i>			

EQUIPMENT

Pumptrk	No.	Cementer	Common
<i>16</i>		<i>CISCO</i>	<i>150</i>
Bulktrk	No.	Helper	Poz. Mix
<i>1</i>		<i>Lonnie M.</i>	<i>3</i>
Bulktrk	No.	Driver	Gel.
<i>PU</i>		<i>Travis</i>	<i>5</i>

JOB SERVICES & REMARKS

Remarks:	Hulls
<i>Cement did circulate</i>	Salt
Rat Hole	Flowseal
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
	Handling <i>158</i>
	Mileage

FLOAT EQUIPMENT

Guide Shoe
Centralizer
Baskets
AFU Inserts
Float Shoe
Latch Down

Pumptrk Charge *Surface*
Mileage *13*

Tax
Discount
Total Charge

X Signature *Reby*

JOB LOG

SWIFT Services, Inc.

DATE 5-5-13 PAGE NO. 1

CUSTOMER T D I WELL NO. #1 LEASE Warren JOB TYPE hoisting 2-stage TICKET NO. 23990

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2330							5-4-13 on loc w/FE
								RTD 3750'
								5 1/2 x 14 # x 3746' x 42
								Cent 1, 3, 5, 8, 9, 11, 13, 91, 61
								Bank 3, 15, 62, 68
								D.V. 62 @ 1152'
	0215							ST FE
	0400							Break Circ.
	0510	5	0			200		start Pre-flushes 500 gal Mud flush 20 bbl KCL flush
	0516	5	32/0			200		start 150 sk EA-2 cent.
	0523		36					End Cement Wash P&L
								Drop LD Plug
	0529	6	0			150		start Displacement
	0539	5	1.2			200		Catch Cement KCL in last 20 bbl
	0545		90.5			600/300		Land Plug Release Pressure Float Hold
								Drop Opening Plug
	0530	2.5	7/5					Plug RH & MH 30/15 sks SMD
	0555	1.75				1100		Open DV
	0556	5	0			150		start 155 sks SMD
	0618		100					End Cement Drop Closing Plug
	0623	5	0			150		start Displacement
		4	0			150		Circ Cement
	0630		28			400/1400		Land Plug Release Pressure DV Closed
								c 11 c 40 sks to pit
								Thank you Nick, David E. &