

OPERATOR

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

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: GROSS # 1
 Location: SE SW NW NW Sec 24-15s-19w
 Pool: SE SW NW NW Sec 24-15s-19w
 State: KANSAS
 API: 15-051-26,532-00-00
 Field: MARTINA EAST
 Country: USA



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

Scale 1:240 Imperial

Well Name: GROSS # 1
 Surface Location: SE SW NW NW Sec 24-15s-19w
 Bottom Location:
 API: 15-051-26,532-00-00
 License Number: 4787
 Spud Date: 6/7/2013
 Region: ELLIS COUNTY
 Drilling Completed: 6/12/2013
 Surface Coordinates: 1165' FNL & 460' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 1993.00ft
 K.B. Elevation: 2003.00ft
 Logged Interval: 2850.00ft
 Total Depth: 3750.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

Time: 2:45 PM
 Time: 10:42 PM
 To: 3750.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 1165' FNL
 E/W Co-ord: 460' FWL

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

- 6-11-13 3290', drilling, DST # 1 " I " & " J " LKC 3446'-3495'
- 6-12-13 3495', finish DST # 1, drilling, RTD 3750' @ 10:42PM
- 6-13-13 3750', mini short trip, CCH, TOWB, logs, Straddle DST # 2 3328' to 3350', "D " LKC, LDDP, run 5 1/2" production casing, cement casing

DST # 2 " I " AND " J " LKC TEST SUMMARY

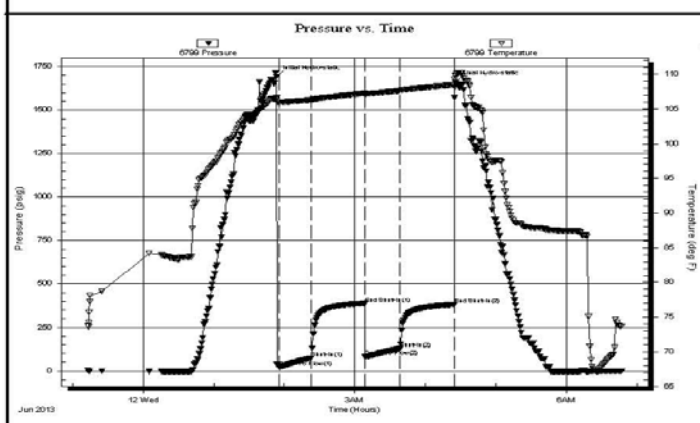
	DRILL STEM TEST REPORT		
	TDI Inc 1310 Bison rd, Hays KS, 67601 ATTN: Herb	24-15s-19w Ellis KS Gross #1 Job Ticket: 53911 DST#: 1 Test Start: 2013.06.11 @ 23:13:00	

GENERAL INFORMATION:

Formation: I & J	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock ft (KB)	Tester: Cody Bloedorn
Time Tool Opened: 01:55:45	Unit No: 43
Time Test Ended: 06:47:00	Reference Elevations: 2003.00 ft (KB)
Interval: 3446.00 ft (KB) To 3495.00 ft (KB) (TVD)	1993.00 ft (CF)
Total Depth: 3495.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

Serial #: 6799 Inside	Capacity: 8000.00 psig
Press@RunDepth: 129.41 psig @ 3485.00 ft (KB)	Last Calib.: 2013.06.12
Start Date: 2013.06.11 End Date: 2013.06.12	Time On Btm: 2013.06.12 @ 01:53:30
Start Time: 23:13:05 End Time: 06:46:59	Time Off Btm: 2013.06.12 @ 04:25:30

TEST COMMENT: 30 - IF- B.O.B. in 30 seconds.
 45 - IS- B.O.B. in 9 minutes.
 30 - FF-B.O.B. from shut in
 45 - FSI- G.T.S. at bleed off, B.O.B. in 11 minutes




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1694.74	106.60	Initial Hydro-static
3	22.12	105.99	Open To Flow (1)
30	74.57	106.32	Shut-In(1)
75	388.29	107.27	End Shut-In(1)
76	81.50	107.19	Open To Flow (2)
105	129.41	107.65	Shut-In(2)
151	381.54	108.49	End Shut-In(2)
152	1662.32	109.79	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
124.00	GHOCM, 10% M, 40% O, 50% G	
62.00	GO, 50% G, 50% O	
186.00	GO, 40% G, 60% O	

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

DST # 2 STRADDLE TEST "D" LKC TEST SUMMARY BOTTOM PACKER HELD

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	TDI Inc 1310 Bison rd, Hays KS, 67601 ATTN: Herb	24-15s-19w Ellis KS Gross #1 Job Ticket: 53912 DST#: 2 Test Start: 2013.12.13 @ 06:32:00

GENERAL INFORMATION:

Formation: **D**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:37:00
 Time Test Ended: 13:44:00

Interval: 3328.00 ft (KB) To 3350.00 ft (KB) (TVD)
 Total Depth: 3750.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

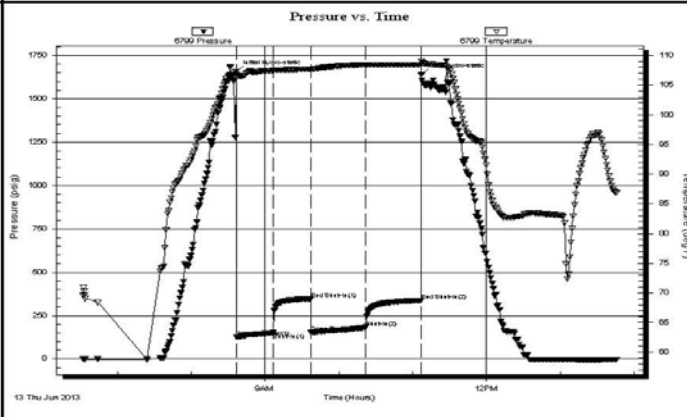
Test Type: Conventional Straddle (Reset)
 Tester: Cody Bloedorn
 Unit No: 43

Reference Elevations: 2003.00 ft (KB)
 1993.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6799 Inside

Press@RunDepth: 182.14 psig @ 3329.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.06.13 End Date: 2013.06.13	Last Calib.: 2013.06.13
Start Time: 06:32:05 End Time: 13:45:44	Time On Btm: 2013.06.13 @ 08:36:45
	Time Off Btm: 2013.06.13 @ 11:07:15

TEST COMMENT: 30 - IF- B.O.B. in 25 minutes
 30 - IS- No return
 45 - FF- 2 1/2" blow
 45 - FSI- No return





PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1655.09	107.31	Initial Hydro-static
1	126.89	106.66	Open To Flow (1)
30	151.29	107.46	Shut-In(1)
61	347.57	107.68	End Shut-In(1)
61	153.07	107.60	Open To Flow (2)
105	182.14	108.44	Shut-In(2)
151	337.86	108.41	End Shut-In(2)
151	1639.55	109.12	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
35.00	Mud, 100% M	
186.00	Mud with oil specs, 100% M	
62.00	MW, 30% M, 70% W	
62.00	GWM, 5% G, 5% W, 90% M	

* Recovery from multiple tests

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

ROCK TYPES

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

ACCESSORIES

MINERAL

- ▲ Chert, dark
- Sandy
- ◊ Varicolored chert
- △ Chert White

FOSSIL

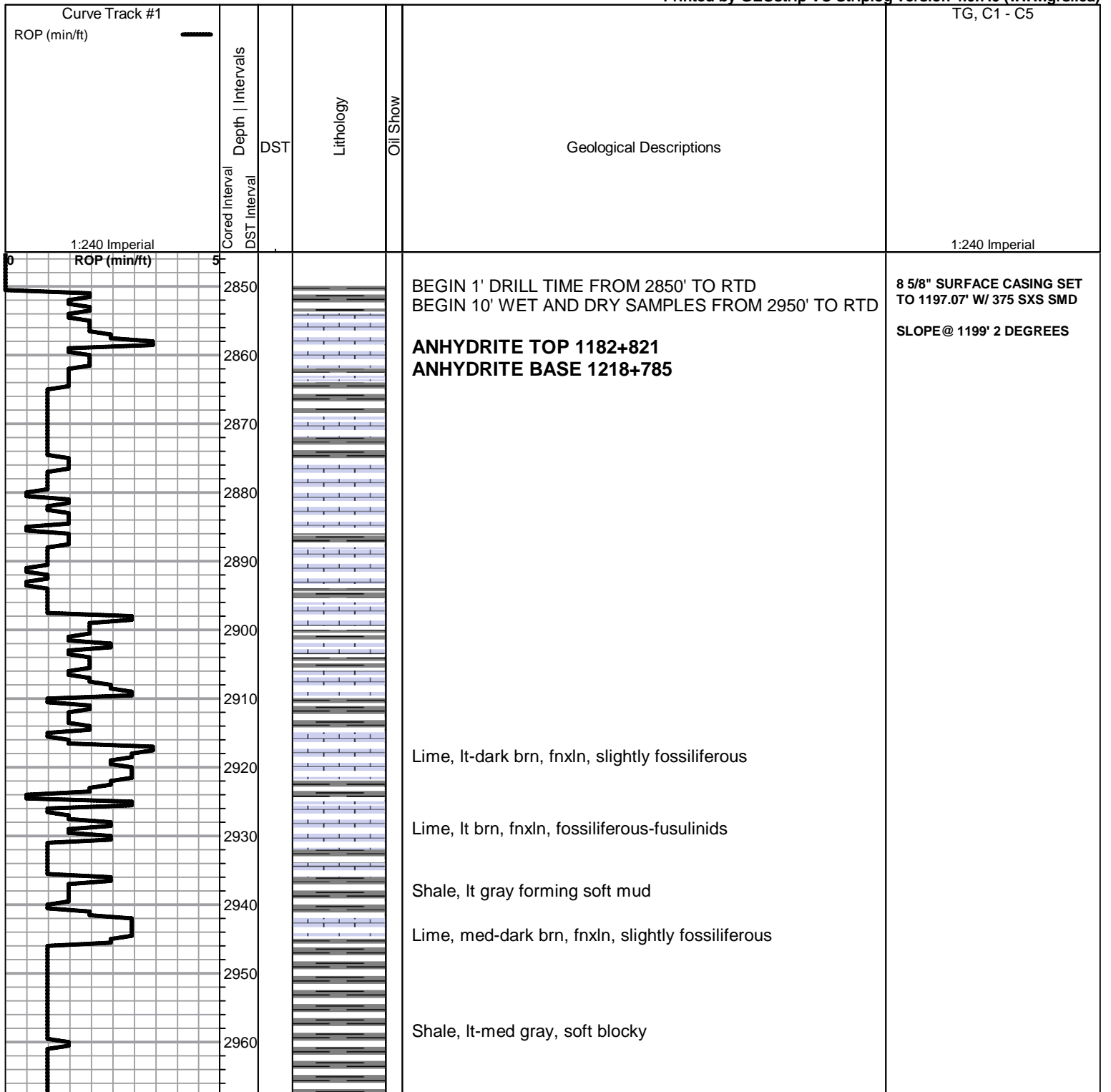
- F Fossils < 20%
- Oolite
- ⊕ Oomoldic

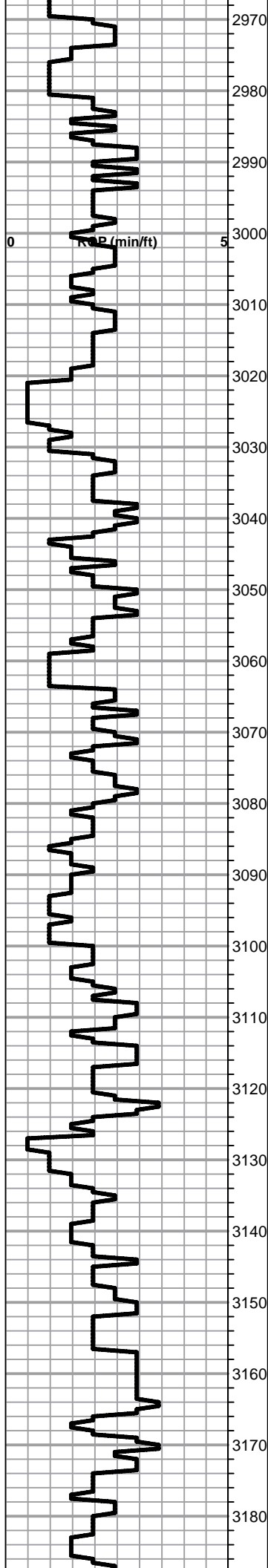
OTHER SYMBOLS

DST

- DST Int
- DST alt
- Core

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

TOPEKA ELOG 2985-982

Lime, crm-med brn, fnxln, fossiliferous in darker lime

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

Lime, lt-med brn-grayish brn, fnxln, fossiliferous in part

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

Lime, tan-lt brn, fnxln grading into granular, NS

Lime, crm-lt brn, fnxln

Lime, lt brn-lt grayish brn, fnxln, slight bedded chalk in part

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

Lime, lt-med brn, fnxln-granular with sticky chalk clumps

Lime, lt-med brn, increased soft bedded chalk

Lime, med brn, granular with chalk matrix with sticky clumps
of chalk in part

Shale, black carbonaceous, fissile, blocky

Lime, crm-lt brn, fn-vfxln
Shale, lt-med gray, calcareous in part

Lime, crm, fn-vfxln, lithographic in part

Lime, tan-lt brn, fnxln-granular, slight bedded chalk, NS

Lime, lt-med brn, mostly fnxln, slightly fossiliferous in part

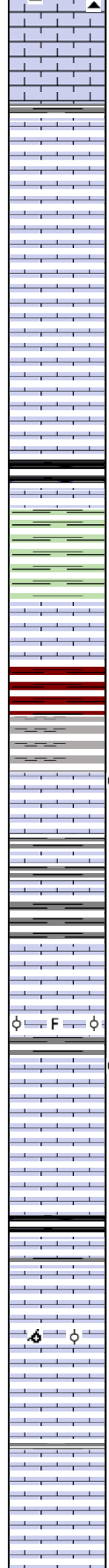
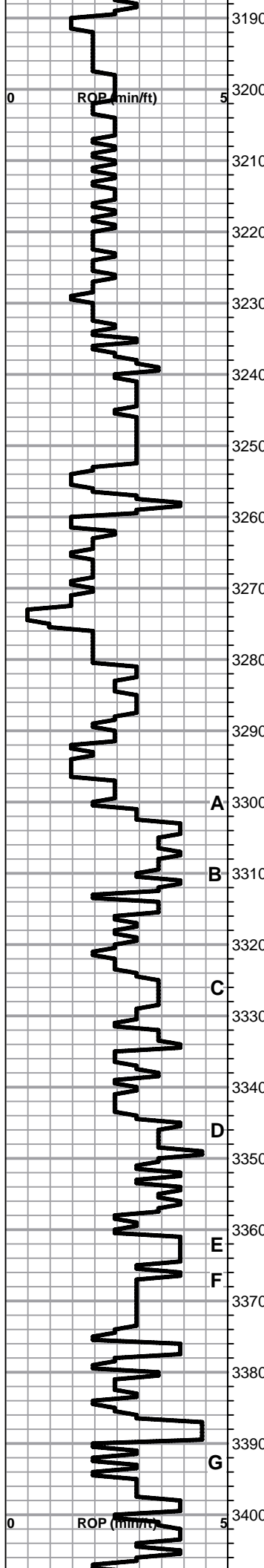
Lime, lt brn, fnxln, slightly fossiliferous

Lime, crm-lt brn, fnxln, slightly bedded chalk in part , hard

Shale, black carbonaceous, fissile, blocky
Lime, crm-lt brn, fnxln

Lime, tan-lt brn, fnxln-granular,

Lime, lt-med brn, fnxln with increasing granular content



Chert, lt gray, fossiliferous

Lime, lt-med brn-lt grayish brn, fnxln-granular, slight bed chalk

Lime, tan-lt brn, fnxln-granular, bed chalk in part

Lime, crm-tan, fnxln, slight bed chalk

Lime, tan-lt brn, fnxln, slight bed chalk

Lime, tan-lt brn, fnxln-granular, slight bed chalk

Lime, tan-lt brn, fnxln

HEEBNER SHALE SPL 3252-1249
 Shale, black carbonaceous, fissile, blocky
 Lime, lt-med brn, fn-vfxln, hard on crush

Shale, dove gray-lime green, forming soft mud

TORONTO SPL 3272-1269
 Lime, white-crm, fnxln-granular, thin bed chalk, NS
 Lime, crm-tan, fn-vfxln, thin bed chalk, NS

Shale, reddish brn, soft-firm blocky

LKC SPL 3296-1293
 Lime, tan-lt brn, fnxln, thin fossiliferous bed with trace of spotty staining, sparry calcite backfill, NFO, No Odor

A 3300
 Lime, lt gray, fnxln, scattered fossil fragments
 Shale, lt gray, forming soft mud

B 3310

C 3320
 Lime, crm-tan, mostly fnxln

3330
 Lime, crm-tan, fnxln, thin oolitic-fossil fragment bed with spotty staining, V Lt Odor

D 3340
 Lime, crm-tan, mostly fnxln, bed chalk

3350
 Lime, crm-tan, fnxln, slight bed chalk

E 3360
 Shale, black carbonaceous, fissile, blocky
 Lime, med-dark grayish brn, fnxln

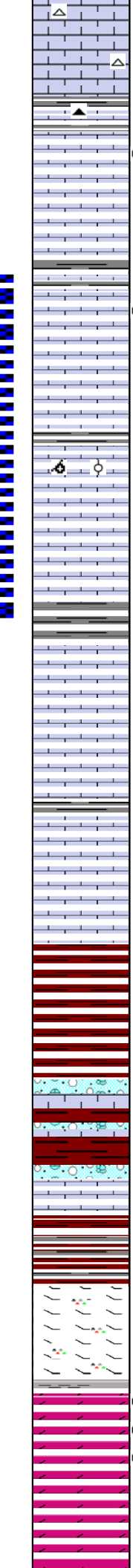
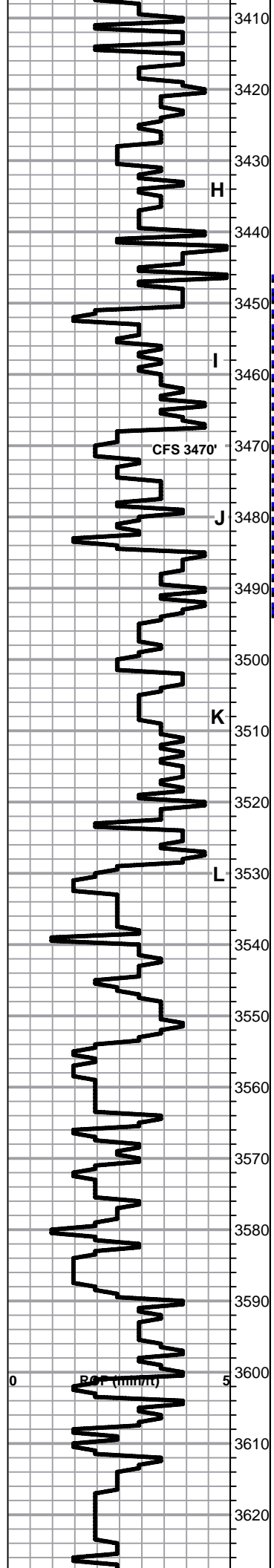
F 3370
 Lime, crm-tan, fnxln, bed chalk, few chips oolmoldic/oolitic lime, barren, NS, lt white wash

3380
 Lime, crm-tan, fnxln, chalk in part with lt white wash

G 3390
 Lime, crm-tan, fnxln, slight bed chalk

3400
 Lime, crm-tan, fnxln, slight bed chalk

**DST # 2 STRADDLE TEST
 3328'-3350' SEE HEADER
 FOR TEST SUMMARY**



3410 Lime, crm-tan, fn-micro xln, slight bed chalk
Chert, white, fresh, sharp

3420 Lime, lt-med brn, fnxln, hard on crush
Shale, gray-black, black chert in part

3430 Lime, crm-lt brn, fnxln, thin bed of fossil fragments/oolites,
scattered staining, NFO, V Lt Odor

3440 Lime, crm-tan, fn-vfxln, slight bed chalk

Shale, dove gray forming soft mud

3450 Lime, crm, lot of fnxln, slight chalk, few chips fossil
fragment/oolitic with spotty staining, few floating specks of
free oil, V Lt Odor

3460 Lime, crm, fnxln, bed chalk

3470 Lime, lt gray-crm-tan, fnxln, few chips oolitic/oolmoldic,
largely barren, no staining, NFO, No Odor

3480 Lime, crm-tan, fnxln, slight bed chalk

3490 Shale, lt gray, soft blocky, calcareous in part

3500 Lime, crm-tan, fn-micro xln, slight bed chalk

3510 Lime, crm-tan, fnxln, slight bed chalk

3520 Lime, tan-lt brn, fn-micro xln, white chalk wash

3530 Lime, tan-lt brn, fn-micro xln, slight bed chalk

3540 **BKC SPL 3540-1537**

3550 Shale, reddish brn, soft blocky with lt red wash

Shale, redds, brn, maroon, dark red, soft blocky

3560 Lime, clastic mix with red shale staining
Shale, redds and brns, soft blocky

3570 Lime and shale as above

3580 Shale, reddish brn, soft with red wash grading into darker
red and gray shales

3590 Lime, crm-tan, fnxln, hard, dolomitic, orange chert
fragments

Lime, as above grading into white, sticky clay at base

3600 **ARBUCKLE SPL 3603-1600**

3610 Dolomite, tan-lt brn, fn grained granular, saturated staining
with lt odor

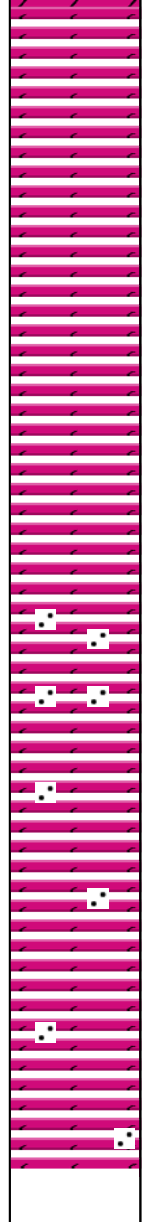
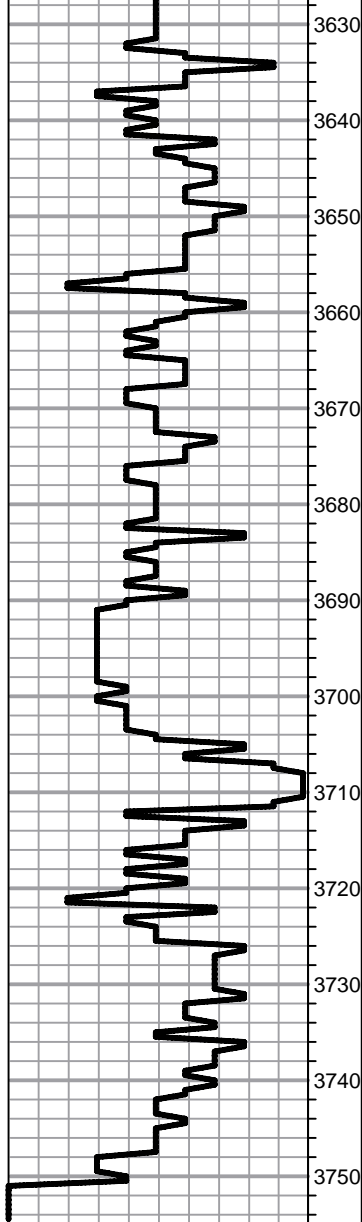
3620 Dolomite, tan-lt brn, fine grain with increasing grain size with
depth, saturated staining, lt odor

Dolomite, ivory-crm, fn-md xln, no staining or odor

Dolomite, ivory-crm, fn-md xln

DST # 1 3446'-3495' SEE
HEADER FOR TEST
SUMMARY

CFS 3495', SHORT TRIP
SLOPE @ 3495' 1 DEGR



Dolomite, ivory-crm, fn-med xln

Dolomite, ivory-crm, fn-med granular, scattered rhombic in larger xln dolomite

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

Dolomite, ivory-lt salmon, fnxln, hard

Dolomite, ivory, fnxln-granular in part

Dolomite, ivory, fn-med xln, granular in part

Dolomite, ivory, fnxln, granular in part

Dolomite, lt salmon, hard on crush, quartz grain clusters and fused quartz

Dolomite, crm, fnxln, fused quartz, hard on crush

Dolomite, crm, fn-med xln, granular in part with quartz grain inclusions

Dolomite, as above

RTD 3750-1747 **LTD 3749-1746**

**SET 14# 5.5" CASING TO
3746' W/ 130 SXS**

JOB LOG

SWIFT Services, Inc.

DATE 6-8-73 PAGE NO.

CUSTOMER TDI WELL NO. 1 LEASE Gross JOB TYPE Deep Surface TICKET NO. 24432

CHART NO.	TIME	RATE (BPM)	VOLUME (BBLS/GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0730							on location
								TD 1199 SJ 35
								TP 1197 Insert 1162
								8 5/8 x 23"
	0850							Start Pipe
	1035							Break Circulation
	1100	5	20		✓			Start KLL Phosg
	1105	5	47		✓	200		Start Cement 100 sks @ 11.8
		5	36		✓	200		100 sks @ 12.8
		5	30		✓	200		100 sks @ 13.5
		5	20		✓	100		75 sks @ 14.5
		6			✓	150		Start Displacement
	1155		74.3			400 600		load plug
								Shot In
	1200							Release all wash up Rack up
								Circulate 40 sks to pit
	1230							Job Complete Thank You Josh, Brian, Aidan

JOB LOG

SWIFT Services, Inc.

DATE 6-13-13 PAGE NO. 1

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.	
TDI operating		#1		Gross		Cement Logging		24779	
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		TD-3789	DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING		
	1815					14 #1	5 1/2		DN Loc - F.E Rig L.D.D.C
	1930								Start casing to 3746'
									Insert Float Valve w/ Auto Fill
									L.D. Baffle - SJ-44' @ 3702' = 90.3 BBL
									Cent 1-3-91-6-92-9-11
									Cent Baskets Bottoms of 3 #13
									Drop RL up ball - 5 fts out
	2045								Fin casing - Top & Log st. Down
	2100								Start circ / Rotate casing
									Fin circ
			84						Plug RH-30 SKS / LH-15 SKS
		5	12	32			200		Pump 500 gal Neutral Flush
		5 1/2	20				200		Pump 80 BBL PreFlush KCL
		4 1/2					200		Start 130 SKS EA-2 cent
			32						Van Fin cent - Wash Pump Lines
									Drop L.D. Plug.
		9					300		Start Displ
		7 1/2	70				400		Control left - Slow rate
		6	80				500		Slow rate
	2240		90 1/2				750		Plug down - Hold - Release & Hold
	2245								Job Complete
									Wash up & Break up
									<i>[Signature]</i>
									<i>[Signature]</i>