

OPERATOR

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

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-628-2593
 Well Name: VIOLA # 1
 Location: SW NE NW SE, Sec.15-10s-17w API: 15-163-24,186-00-00
 Pool: WILDCAT Field: UNNAMED
 State: KANSAS Country: USA



Scale 1:240 Imperial

Well Name: VIOLA # 1
 Surface Location: SW NE NW SE, Sec.15-10s-17w
 Bottom Location:
 API: 15-163-24,186-00-00
 License Number: 4787
 Spud Date: 4/23/2014 Time: 5:00 PM
 Region: ROOKS COUNTY
 Drilling Completed: 4/28/2014 Time: 8:08 PM
 Surface Coordinates: 2280' FSL & 1700' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2080.00ft
 K.B. Elevation: 2090.00ft
 Logged Interval: 2900.00ft To: 3775.00ft
 Total Depth: 3775.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.2013119 Latitude: 39.1823744
 N/S Co-ord: 2280' FSL
 E/W Co-ord: 1700' 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
 Spud Date: 4/23/2014 Time: 5:00 PM
 TD Date: 4/28/2014 Time: 8:08 PM
 Rig Release: 4/29/2014 Time: 3:30 PM

ELEVATIONS

K.B. Elevation: 2090.00ft Ground Elevation: 2080.00ft
 K.B. to Ground: 10.00ft

NOTES

RECOMMENDATION TO RUN PRODUCTION CASING BASED ON RESULTS OF DST # 1, FAVORABLE STRUCTURE AND NUMEROUS MINOR SHOWS IN LKC BENCHES.

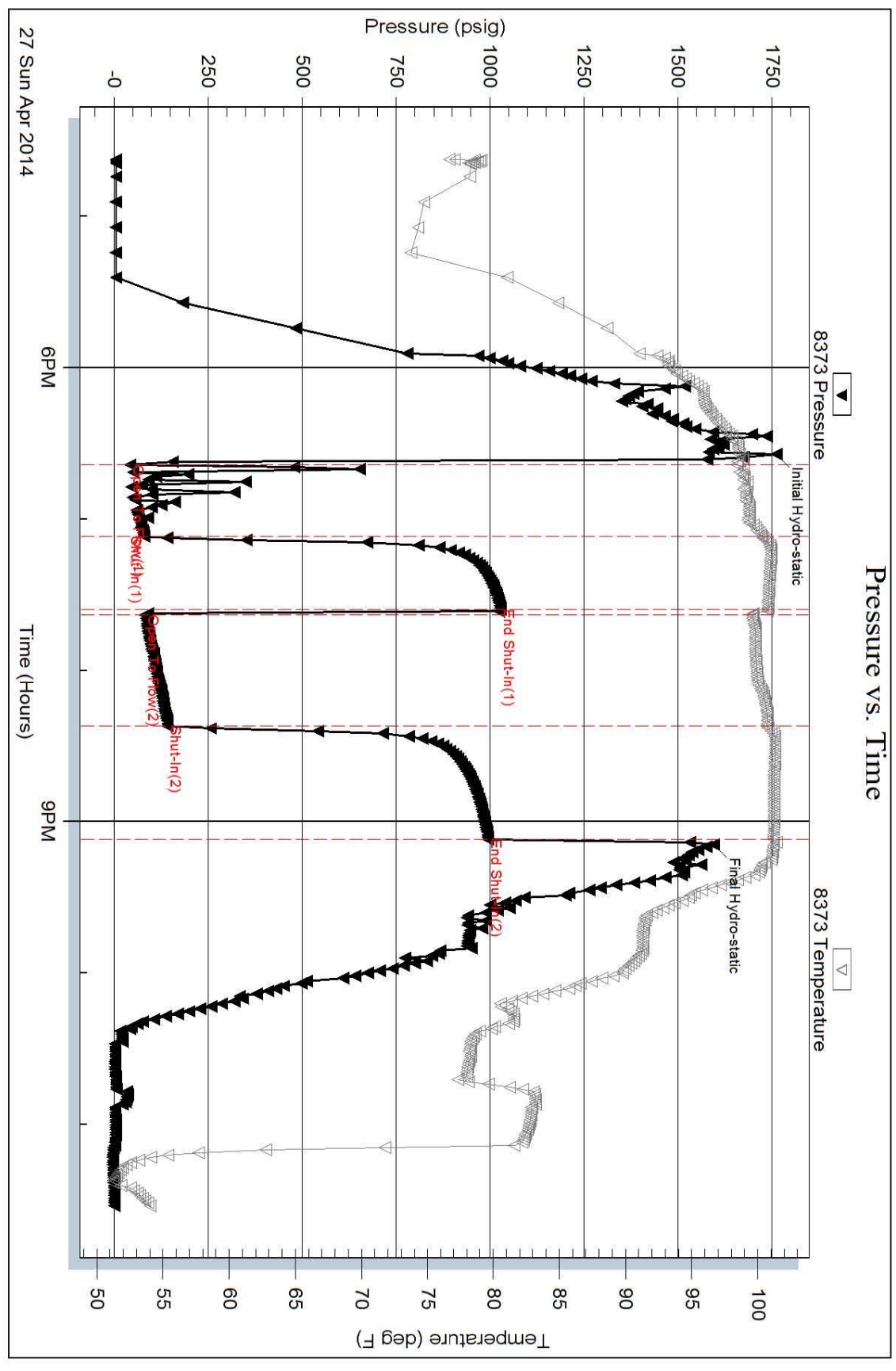
OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG

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

FORMATION TOPS COMPARISON AND CHRONOLGY OF DAILY ACTIVITY

VIOLA # 1		BICE #1-3	BICE # 1
SW NE NW SE		NE NW SW	E2 NE NW SE
SEC.15-10S-17W		SEC.15-10-17W	SEC.22-10-17W
2080'GL 2090'KB		KB 2087'	KB 2040'
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1334 +756	+ 737	+744
B-Anhydrite	1372 +718		+711
T	2022 - 2022		2022

Serial #: 8373 Inside TDI Inc Viola #1 DST Test Number: 1



Triobite Testing, Inc Ref. No: 55746 Printed: 2014.04.27 @ 23:49:05

ROCK TYPES

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

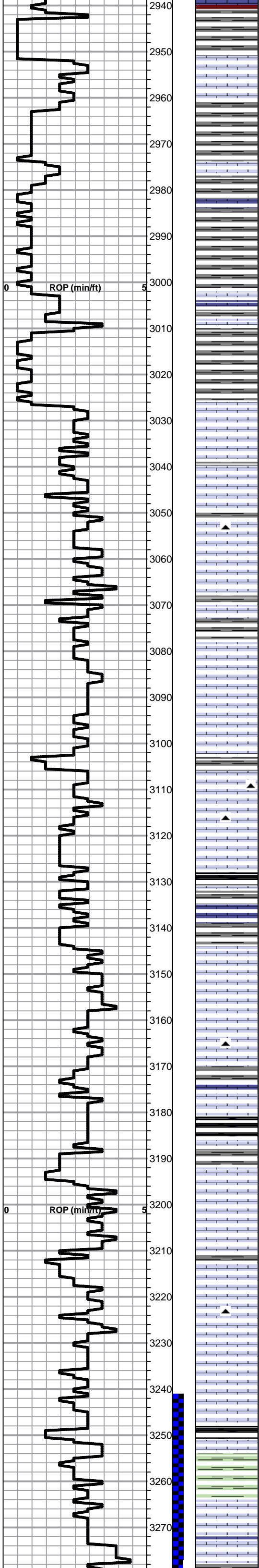
ACCESSORIES

MINERAL

- ▲ Chert, dark
- × Mineral Crystals
- P Pyrite

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
1:240 Imperial ROP (min/ft)	Cored Interval DST Interval			<p>BEGIN 1' DRILL TIME FROM 2900' TO RTD BEGIN 10' WET AND DRY SAMPLES FROM 2950' TO RTD</p> <p>ANHYDRITE TOP ELog 1334+756 ANHYDRITE BASE ELog 1372+718</p> <p>Lime, lt-med brn, fnxln, slightly fossiliferous</p> <p>Lime, lt-med brn, fnxln</p>	<p>8 5/8" SURFACE CASING SET TO 223.83' W/150 SX COMMON 2%GEL 3%CC</p> <p>SLOPE 1 DEGREE @ 224'</p>



Shale, lt gray-red, soft sticky

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

Shale, lt-med gray, soft blocky with sticky clumps in part

Lime, lt-med brn, fnxln, slightly fossiliferous

Shale, med gray, soft blocky-soft sticky clumps

Lime, lt-med brn, fnxln, hard on crush in part

Shale, med-dark gray, soft-firm, blocky

TOPEKA SPL 3026-936

Lime, lt-med brn-grayish brn, fn-micro xln, slightly fossiliferous

Lime, med brn-med grayish brn, fn-vfxln, scattered fossil fragments and casts

Lime, lt brn, fn-vfxln, slight bedded chalk, tan chert, fresh

Lime, lt brn-lt grayish brn, fnxln with increasing bedded chalk, slightly fossiliferous in part

Lime, lt-med brn, fn-vfxln

Shale, lt -med gray forming soft mud

Lime, tan-lt brn, fnxln-granular with lt chalk matrix with slight bedded chalk, slightly fossiliferous

Lime, lt brn, fnxln-granular with bedded chalk, slightly fossiliferous

Shale, med gray-black, firm, blocky

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

Lime, lt brn, fn-vfxln

Shale, black carbonaceous, fissile, blocky

Lime, med brn, vfxln

Shale, tan- lime green-gray, soft sticky

Lime, crm-tan, fn-vfxln, clean-lithographic

Lime, crm-tan, fn-vfxln, lithographic, slight bedded chalk-hard

Lime, lt brn-lt grayish brn, fnxln-granular, fossiliferous chert

Shale, dove gray, soft mud

Lime, tan, fnxln, chalky with sticky clumps in part

Shale, black carbonaceous, fissile, blocky

Shale, med-dark gray, firm, calcareous in part

Lime, crm, fnxln, slight bedded chalk, no visible porosity, NS

Lime, tan-lt brn, fn-micro xln

Lime, tan-lt brn, fnxln-granular, lot of bedded chalk with white chalk wash, few chips micro oolitic with fair wet cut, no odor, NFO, very lt staining

Lime, med brn, fnxln-granular, slightly fossiliferous

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

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

HEEBNER SHALE SPL 3248-1158

Shale, black carbonaceous, fissile, blocky

Lime, med brn, vf-micro xln

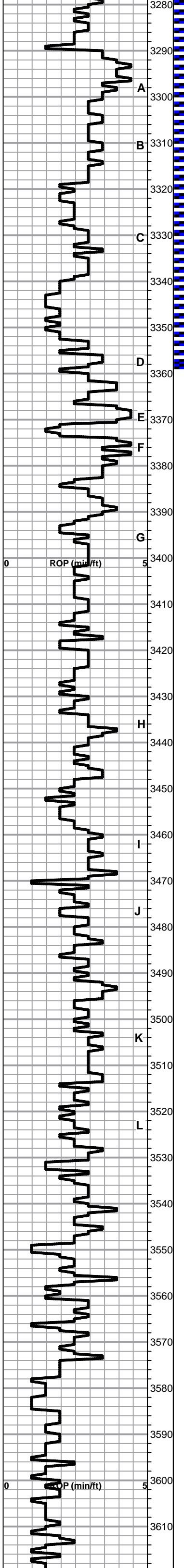
TORONTO

Lime, tan-lt brn, fnxln, cherty, few chips with lt staining, NFO, no odor in fine vuggy and fine interxln porosity

Lime, tan-lt brn, fn-micro xln

CFS @3220'

CFS & SHORT TRIP @3280'



Shale, lt red wash, soft

LKC SPL 3289-1199

Lime, tan, fn-micro xln, tan chert, NS, NFO

Lime, tan, fn-micro xln, increasing darker lime near shale, fusulinids

Lime, tan-brn, fn-vfxln

Shale, lt gray, soft forming sticky clumps

Lime, crm, fnxln, slight bedded chalk, few chips, scattered to saturated staining with very lt odor and very minor show of free oil on crush, fine vuggy in interxln porosity

Lime, white-crm, fnxln

Shale, lt red wash, red-med gray, soft-soft mud

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

Shale, black carbonaceous, blocky
Lime, lt gray with green tint, vfxln

Lime, lt brn, vfxln, NS

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

Lime, crm, fnxln, bedded chalk, NS

Lime, crm-tan, fnxln, lot of hard bedded chalk, NS

Lime, white-crm, fn-vfxln

Shale, gray-black carbonaceous, blocky

Lime, med-dark gray, fn-vfxln, NS

Shale, dove gray-grayish green, soft blocky-soft mud

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

Lime, med-dark brn, fnxln, fossiliferous in part

Shale, lt gray, soft blocky-sticky clumps in part

Lime, tan, fnxln, bedded chalk, spotty staining, NFO, No Odor, fine vuggy and inter xln porosity, appears poorly developed

Lime, tan-lt brn, fnxln, bedded chalk

Lime, crm-tan, fnxln with few oolitic/oolmoldic chips with spotty staining, NFO, No Odor

Shale, black carbonaceous, blocky grading into med gray shale with red shale in part, blocky

Lime, lt brn-lt gray, fn-vfxln with fine xln pyrite inclusions, trace of lt staining, NFO, no odor

Lime, crm-tan, fnxln, bedded chalk

Shale, gray-black carbonaceous, blocky

Lime, tan-lt gray, fnxln, bedded chalk, scattered fossil fragments

BKC SPL 3530-1440

Shale, reddish brn, soft blocky grading into red wash, soft mud

Lime, tan, fnxln-granular, bedded chalk

Lime, tan, fn-vfxln

Lime, crm-tan, fnxln-granular

Lime, tan-crm, fnxln-granular

CONGLOMERATE SPL 3576-1486

Shale, red-dark brn, soft-firm blocky grading into soft dark red shale with deep red wash

Shale, red-dark maroon, soft-firm blocky with increasing vari color chert content, no shows of gilsonite, free oil, staining or odor

Shale, red-dark maroon, soft with vari colored cherts

Shale and chert as above

Shale and chert as above

DST # 1 3241' TO 3360' SEE HEADER FOR TEST SUMMARY

SLOPE @ 3360' 1 DEGREE

