

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1240171  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well  Re-Entry  Workover
- Oil  WSW  SWD  SIOW
- Gas  D&A  ENHR  SIGW
- OG  GSW  Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD
- Plug Back  Conv. to GSW  Conv. to Producer
- Commingled Permit #: \_\_\_\_\_
- Dual Completion Permit #: \_\_\_\_\_
- SWD Permit #: \_\_\_\_\_
- ENHR Permit #: \_\_\_\_\_
- GSW Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1240171

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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**OPERATOR**

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

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-628-2593  
 Well Name: MUNSCH B # 4  
 Location: NW SW SE SW SEC.4-T15S-R18W  
 API: 15-051-26,757-00-00  
 Pool:  
 State: KANSAS

Field: RUDER NORTHEAST  
 Country: USA



Scale 1:240 Imperial

Well Name: MUNSCH B # 4  
 Surface Location: NW SW SE SW SEC.4-T15S-R18W  
 Bottom Location:  
 API: 15-051-26,757-00-00  
 License Number: 4787  
 Spud Date: 12/3/2014 Time: 4:00 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 12/8/2014 Time: 2:00 AM  
 Surface Coordinates: 360' FSL & 1635' FWL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2006.00ft  
 K.B. Elevation: 2016.00ft  
 Logged Interval: 2900.00ft To: 3700.00ft  
 Total Depth: 3700.00ft  
 Formation: ARBUCKLE  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.3314683  
 Latitude: 38.7704905  
 N/S Co-ord: 360' FSL  
 E/W Co-ord: 1635' FWL

**LOGGED BY**

Company: SOLUTIONS CONSULTING, INC.  
 Address: 108 WEST 35TH STREET  
 HAYS, KANSAS 67601

Phone Nbr: 785-625-3380  
 Logged By: GEOLOGIST Name: HERB DEINES

**CONTRACTOR**

Contractor: SOUTHWIND DRILLING, INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 12/3/2014 Time: 4:00 PM  
 TD Date: 12/8/2014 Time: 2:00 AM

**ELEVATIONS**

K.B. Elevation: 2016.00ft  
K.B. to Ground: 10.00ft

Ground Elevation: 2006.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON NEGATIVE RESULTS OF TWO DSTS, LOW ARBUCKLE STRUCTURE AND LACK OF ANY RESERVOIR DEVELOPMENT THROUGH THE LANSING-KANSAS CITY

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

DRILL STEM TESTING BY TRILOBITE TESTING INC: TWO (2) STRADDLE TESTS

**FORMATION TOPS COMPARISON**

	<b>MUNSCH B-4 NW SW SE SW SEC.4-15S-18W 2006'GL 2016'KB</b>	<b>MUNSCH B-2 SE SW SW SEC.4-15-18W KB 2014'</b>	<b>MUNSCH B-3 SW NE SE SW SEC.4-15-18W KB 2023'</b>
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1189 +827	+ 829	+ 824
B-Anhydrite	1226 +790	+ 794	+ 790
Topeka	2994 - 978	- 981	- 982
Heebner Sh.	3253-1237	-1242	-1244
Toronto	3277-1261	-1266	-1266
LKC	3302-1286	-1289	-1292
BKC	3525-1509	-1518	-1520
Conglomerate	3602-1586	NONE	-1590
Arbuckle	3626-1610	-1577	-1622
RTD	3700-1684	-1598	-1720

**SUMMARY OF DAILY ACTIVITY**

12-03-14 RU, spud 2:00 PM, set 8 5/8" surface casing to 219' w/150 sxs  
Common 2%Gel 3%CC, plug down 10:45PM, slope ¾ degree

12-04-14 249', drill plug 6:45AM


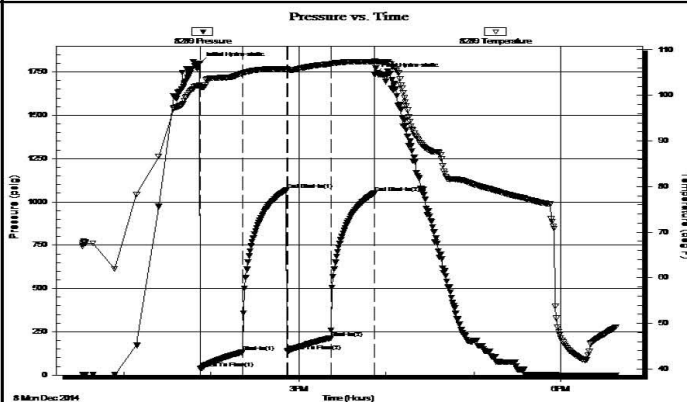
12-05-14 2010, drilling'

12-06-14 2820', drilling, displaced 2875'-2900'


12-07-14 3340', drilling

12-08-14 3700', RTD 3700' @ 2:00AM, short trip, TOWB, logs, Straddle DST  
# 1 3578'-3637' Conglomerate and Arbuckle, start Straddle DST # 2  
3580'-3627' Conglomerate

**DST # 1 TEST SUMMARY**

	<p><b>DRILL STEM TEST REPORT</b></p>																																				
<p>TDI Inc 1310 Bison Rd Hays KS 67601-9696 ATTN: Herb Deines</p>	<p><b>4 15s 18w Ellis</b> <b>Munsch B-4</b> Job Ticket: 61380      <b>DST#: 1</b> Test Start: 2014.12.08 @ 12:32:00</p>																																				
<p><b>GENERAL INFORMATION:</b></p> <p>Formation: <b>Arbuckle</b>                  Deviated: No Whipstock:                      ft (KB)                  Time Tool Opened: 13:52:30                  Time Test Ended: 18:37:00</p> <p><b>Interval: 3578.00 ft (KB) To 3637.00 ft (KB) (TVD)</b>                  Total Depth: 3697.00 ft (KB) (TVD)                  Hole Diameter: 7.88 inches Hole Condition: Fair</p> <p>Test Type: Conventional Straddle (Initial)                  Tester: Jim Svaty                  Unit No: 76</p> <p>Reference Elevations: 2020.00 ft (KB)                  2010.00 ft (CF)                  KB to GR/CF: 10.00 ft</p>																																					
<p><b>Serial #: 8289      Outside</b></p> <p>Press@RunDepth: 214.34 psig @ 3596.00 ft (KB)      Capacity: 8000.00 psig                  Start Date: 2014.12.08      End Date: 2014.12.08      Last Calib.: 2014.12.08                  Start Time: 12:32:02      End Time: 18:37:15      Time On Btm: 2014.12.08 @ 13:52:15                  Time Off Btm: 2014.12.08 @ 15:52:15</p> <p><b>TEST COMMENT:</b> 30-IFP- BOB in 8min.                  30-ISIP- No Blow                  30-FFP- BOB in 11min.                  30-FSIP- No Blow</p>																																					
	<p style="text-align: center;"><b>PRESSURE SUMMARY</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr><td>0</td><td>1800.51</td><td>102.16</td><td>Initial Hydro-static</td></tr> <tr><td>1</td><td>37.61</td><td>101.57</td><td>Open To Flow (1)</td></tr> <tr><td>30</td><td>132.72</td><td>104.82</td><td>Shut-In(1)</td></tr> <tr><td>60</td><td>1069.13</td><td>105.84</td><td>End Shut-In(1)</td></tr> <tr><td>60</td><td>137.37</td><td>105.54</td><td>Open To Flow (2)</td></tr> <tr><td>90</td><td>214.34</td><td>106.87</td><td>Shut-In(2)</td></tr> <tr><td>120</td><td>1049.91</td><td>107.35</td><td>End Shut-In(2)</td></tr> <tr><td>120</td><td>1735.75</td><td>107.56</td><td>Final Hydro-static</td></tr> </tbody> </table>	Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1800.51	102.16	Initial Hydro-static	1	37.61	101.57	Open To Flow (1)	30	132.72	104.82	Shut-In(1)	60	1069.13	105.84	End Shut-In(1)	60	137.37	105.54	Open To Flow (2)	90	214.34	106.87	Shut-In(2)	120	1049.91	107.35	End Shut-In(2)	120	1735.75	107.56	Final Hydro-static
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Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)																																			

## DST # 2 TEST SUMMARY

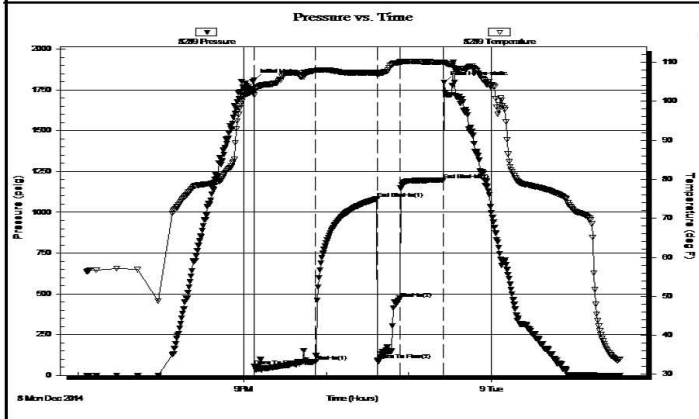
	<b>DRILL STEM TEST REPORT</b>		
	TDI Inc 1310 Bison Rd Hays KS 67601-9696 ATTN: Herb Deines	<b>4 15s 18w Ellis</b> <b>Munsch B-4</b> Job Ticket: 61381 Test Start: 2014.12.08 @ 19:06:00	<b>DST#: 2</b>

**GENERAL INFORMATION:**

Formation: <b>Arbuckle</b>	Test Type: Conventional Straddle (Reset)
Deviated: No Whipstock: ft (KB)	Tester: Jim Svaty
Time Tool Opened: 21:07:45	Unit No: 76
Time Test Ended: 01:33:00	Reference Elevations: 2020.00 ft (KB)
<b>Interval: 3580.00 ft (KB) To 3627.00 ft (KB) (TVD)</b>	2010.00 ft (CF)
Total Depth: 3697.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

<b>Serial #: 8289</b>	<b>Outside</b>		
Press@RunDepth: 470.15 psig @ 3587.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2014.12.08	End Date: 2014.12.09	Last Calib.: 2014.12.09	
Start Time: 19:06:02	End Time: 01:33:30	Time On Btm: 2014.12.08 @ 21:07:30	
		Time Off Btm: 2014.12.08 @ 23:25:30	

**TEST COMMENT:** 45-IFP- BOB in 19min.  
 45-ISIP- No Blow  
 45-FFP- BOB in 12min.  
 45-FSIP- No Blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1812.65	102.40	Initial Hydro-static
1	54.01	101.54	Open To Flow (1)
45	84.46	107.83	Shut-In(1)
90	1082.18	107.31	End Shut-In(1)
90	93.07	106.70	Open To Flow (2)
106	470.15	109.88	Shut-In(2)
138	1196.58	109.96	End Shut-In(2)
138	1796.68	110.05	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
315.00	MCV 40% m 60% w Show of Oil	4.42
126.00	WCM 20% w 80% m Show of Oil	1.77
219.00	WOCM 10% w 25% o 65% m	3.07

\* Recovery from multiple tests

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

TriLOBITE Testing, Inc

Ref. No: 61381

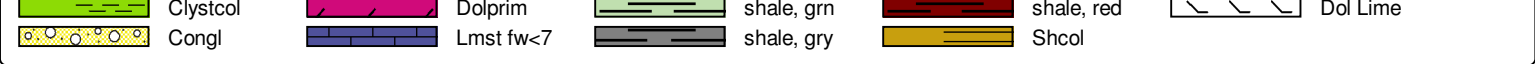
Printed: 2014.12.09 @ 06:03:32

### Image Header 04

### Image Header 05

### ROCK TYPES

 Clystgy	 Chtcongl	 Lmst fw7>	 Carbon Sh	 Lscongl
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**ACCESSORIES**

**MINERAL**

- ▲ Chert, dark
- P Pyrite

**OTHER SYMBOLS**

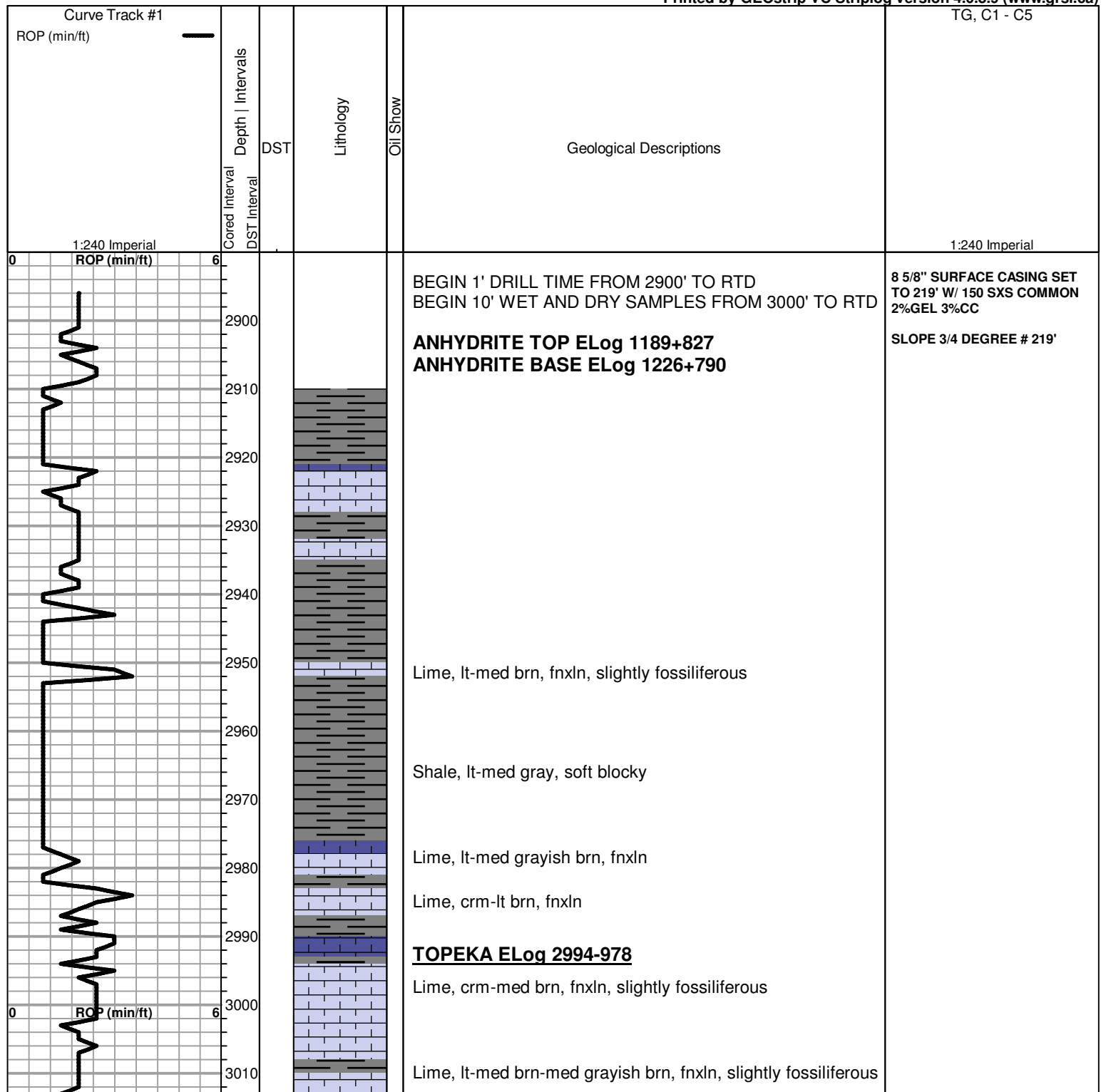
**Oil Show**

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- \* Gas

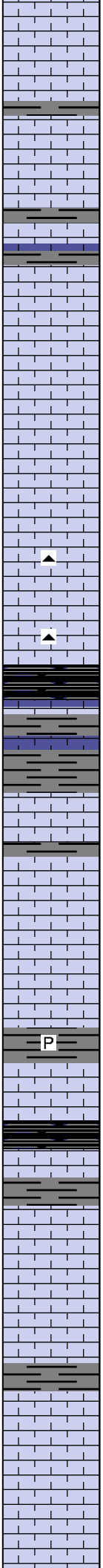
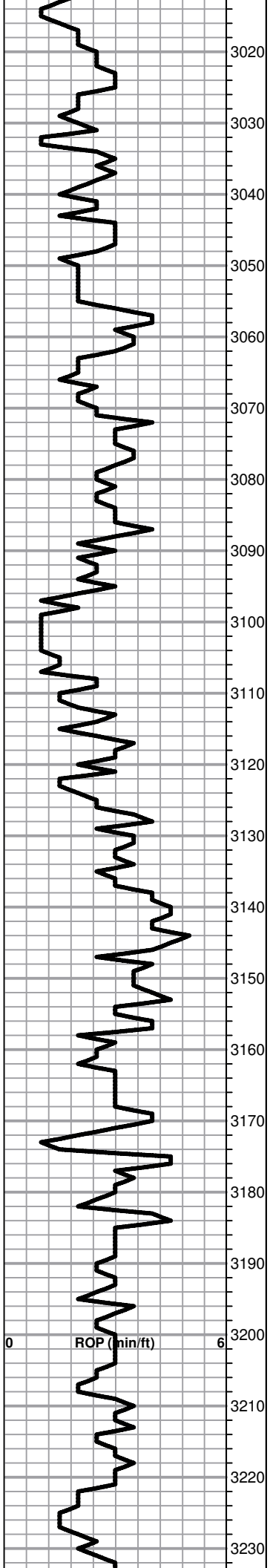
**DST**

- DST Int
- DST alt
- Core
- tail pipe

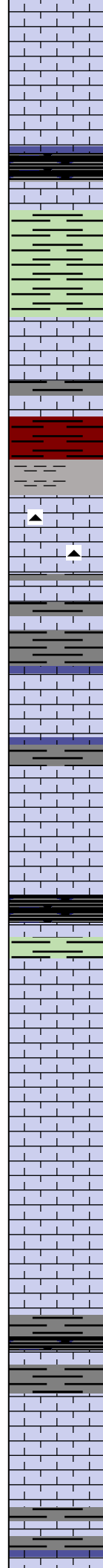
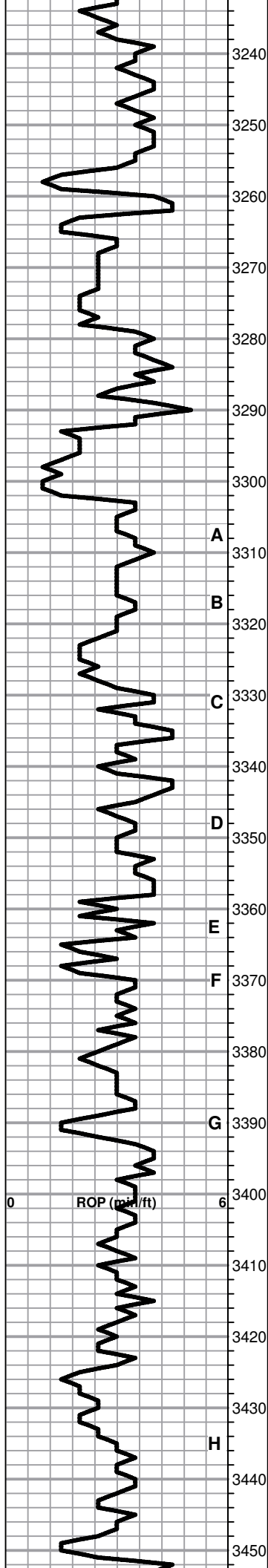
Printed by GEOstrip VC Striplog version 4.0.8.9 (www.grsi.ca)







- 3020 Lime, med-dark brn-med grayish brn, fnxln, slightly fossiliferous
- 3030 Lime, lt-med brn-med grayish brn, fnxln, slightly fossiliferous
- 3040 Lime, lt brn-lt gray, fnxln, soft granular with chalky matrix, scattered fossil casts
- 3050 Lime, lt brn-lt grayish brn, fn-micro xln
- 3060 Lime, lt brn-lt grayish brn, fn-vfxln
- 3070 Lime, lt brn-lt grayish brn, fn-vfxln, slight bedded chalk
- 3080 Lime, lt brn-med grayish brn, fnxln with increasing chalk matrix with bedded chalk
- 3090 Chert, lt gray, fossiliferous, fresh, sharp
- 3100 Shale, black carbonaceous, blocky
- 3110 Lime, lt gray, fnxln
- 3120 Shale, med gray, soft, blocky, waxy slick
- 3130 Lime, lt brn, micro xln
- 3140 Lime, crm-lt brn, fn-vfxln, sublithographic
- 3150 Lime, lt brn, fn-micro xln
- 3160 Shale, med gray, calcareous, micro xln pyrite
- 3170 Lime, lt-med brn-lt grayish brn, fnxln
- 3180 Shale, black carbonaceous, blocky, fissile
- 3190 Lime, med grayish brn, fn-vfxln
- 3200 Lime, lt-med brn, fn-vfxln
- 3210 Lime, lt brn, fnxln, slightly fossiliferous
- 3220 Lime, lt-med gray, fnxln, chalky matrix in part
- 3230 Lime, crm-lt brn, fnxln-granular in part, slight bedded chalk in lt chalky matrix, NS
- Lime, crm-lt brn, fnxln-granular, bedded chalk, NS



Lime, crm-lt brn, fnxln-granular

Lime, lt brn, fnxln

**HEEBNER SHALE ELog 3253-1237**

Shale, black carbonaceous, fissile, blocky  
Lime, lt brn, fn-micro xln

Shale, med-grayish green, soft blocky

**TORONTO ELog 3277-1261**

Lime, crm-lt brn, fn-vfxln, NS

Lime, lt brn, fn-micro xln

Shale, red-med brn, soft blocky

**LKC ELog 3302-1286**

Lime, lt-med brn, fn-vfxln, very lt odor, very lt wet cut, fine interxln porosity, NFO

A

Lime, crm-lt brn, fn-vfxln

B

Shale, lt grayish green, soft blocky

Lime, lt brn, mostly fnxln, few oolitic chips with lt spotty stain, NFO, No Odor

C

Lime, crm, fn-vfxln, thin oolitic zone, interoolitic porosity, lt spotty stain, very lt odor, NFO

D

Lime, crm, fn-vfxln

Shale, black carbonaceous, fissile, blocky  
Lime, lt gray, fnxln

E

Lime, lt-med brn, fnxln, thin oolitic/fossil fragment zone, spotty staining, No Odor, NFO, appears poorly developed

F

Lime, lt brn, fnxln, cemented oolitic beds, NS, No stain

G

Lime, crm-lt brn, fnxln, NS

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

Lime, lt brn with tint of lt gray, fn-micro xln

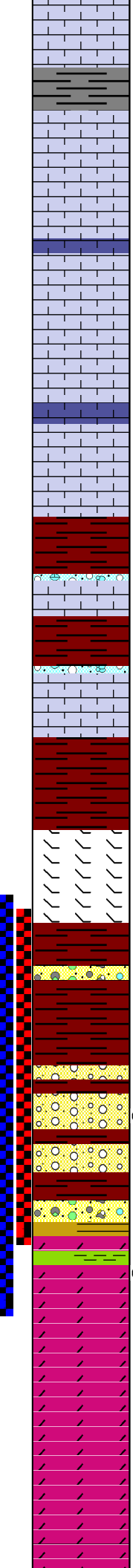
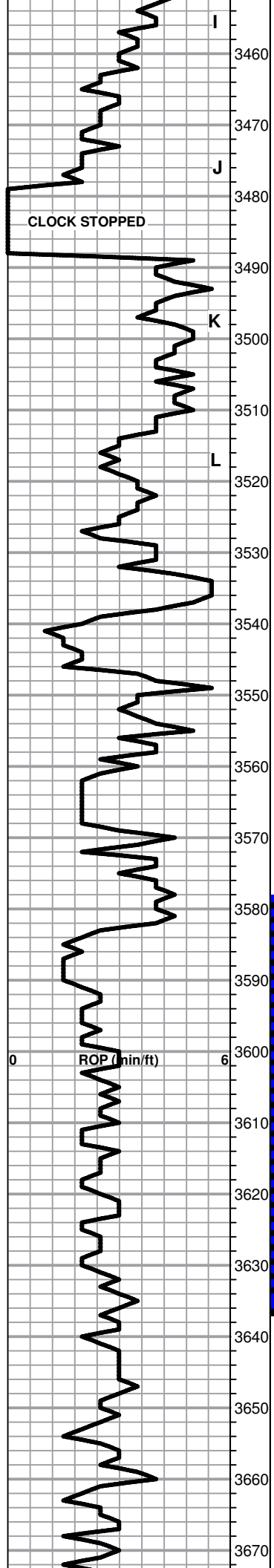
Shale, med gray-black carbonaceous, blocky  
Lime, med brn, fn-vfxln

Lime, crm, fnxln, thin oolitic beds and oomoldic in part, NS

H

Lime, crm-lt brn, fnxln, NS

Shale, lt-med gray with green tinting, soft blocky



Lime, crm-lt brn, fn-vfxln, NS

Shale, gray-black, soft blocky

Lime, crm-lt brn, fn-vfxln, NS

Lime, crm-lt brn, fn-vfxln

Lime, lt-med brn, fn-micro xln

Lime, crm-lt brn, fn-micro xln

Lime, crm, fn-vfxln, increasing bedded chalk

Lime, crm-tan, fnxln-chalky granular, NS

**BKC ELog 3525-1509**

Shale, red-dark brn, soft blocky, lt red wash

Lime, crm-lt brn, fn-vfxln, some clastic lime mix with red stain

Shale, red-med dark brn, soft blocky with lt red wash

Lime, crm-tan, fn-vfxln, some crumbly with chalk, NS

Shale, red-brn, red wash

Lime, lt brn, fnxln, dolomitic, some clastic mix in part

Shale, dark chocolate brn, firm blocky

Shale and clastic mix, very lt odor

**CONGLOMERATE ELog 3602-1586**

Clastic mix of dolomite, chert and lime, very lt odor with scattered saturated staining

Clastic mix of lt brn dolomite with fine-medium grained material, chert and lime, fair odor and spotty to saturated staining

**ARBUCKLE ELog 3626-1610**

Dolomite, tan-lt brn, fnxln-granular in part, fn-med grain, F-G odor, interxln porosity, appears not developed enough to have adequate porosity with good permeability

Dolomite, ivory-lt brn, fnxln-granular, decreasing lt odor and staining

Dolomite, ivory-lt brn, fnxln-granular

Dolomite, ivory-tan, fnxln-granular

Dolomite, ivory-tan, fnxln-granular, few lt green shale chips, lt chalk wash

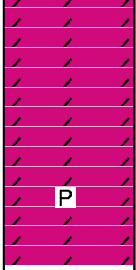
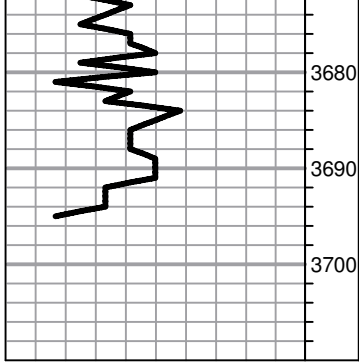
**DST # 1 STRADDLE TEST  
3578' TO 3637' SEE HEADER  
FOR TEST SUMMARY**

**DST # 2 STRADDLE TEST  
3580' TO 3627' SEE HEADER  
FOR TEST SUMMARY NOTE:  
BOTTOM PACKER HELD INTO  
SECOND OPEN WHEN IT  
STARTED LEAKING BADLY  
ALLOWING SALT WATER TO  
ENTER TEST FLUID  
RECOVERY**

**1ST PLUG @3599' W/ 50 SXS  
2ND PLUG @1230' W/50 SXS  
3RD PLUG @510' W/100 SXS  
4TH PLUG @220' W/50 SXS  
5TH PLUG @40' W/ 10 SXS  
RATHOLE W/ 30 SXS  
MOUSEHOLE W/ 15 SXS**

**JOB COMPLETE 10:30AM  
12/09/2014**

**ORDERED 305 SXS 60/40 POS  
4%GEL W/ 1/4# FLOCELE PER  
SACK**



Dolomite, ivory-lt crm, fnxln-granular, lt white wash

Dolomite, ivory with tint of lt salmon, fnxln-granular with increasing white wash

Dolomite, ivory with lt salmon tint, fnxln-granular, pyritic

**RTD 3700-1684**

# GLOBAL CEMENTING, L.L.C.

1544

REMIT TO 18048 170RD  
RUSSELL, KS 67665

SERVICE POINT: Russell

DATE <u>12-4-2014</u>	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE <u>MUNCH</u>	WELL #. <u>B-4</u>	LOCATION			COUNTY <u>ELLIS</u>	STATE <u>KS</u>	<u>10:15 PM</u>
OLD OR NEW (CIRCLE ONE)							

CONTRACTOR SOUTHWIND #1

TYPE OF JOB SURFACE

HOLE SIZE 12 1/4" T.D.

CASING SIZE 8 5/8" DEPTH 219.57

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 20'

PERFS

DISPLACEMENT 12.75 BBL

EQUIPMENT

PUMP TRUCK # 1 CEMENTER BRAD  
HELPER BUD

BULK TRUCK # 4 DRIVER JASON

BULK TRUCK # DRIVER

OWNER

CEMENT AMOUNT ORDERED 150 SK. COM W/ 3% CC + 2% GEL

COMMON @

POZMIX @

GEL @

CHLORIDE @

ASC @

HANDLING @

MILEAGE @

REMARKS:

TO WELL - CIRCULATE CLEAN, TRIP OUT -  
RUN IN 6 JOINTS 8 5/8" CASING W/ 12' LANDING  
JOINT - CIRCULATE - PUMP 150 SK CEMENT  
W/ 3% CC + 2% GEL - CIRCULATE CEMENT  
TO SURFACE - DISPLACE WITH 12.75 BBL WATER  
LEAVING 20' CEMENT IN CASING

SERVICE

DEPTH OF JOB

PUMP TRUCK CHARGE

EXTRA FOOTAGE @

MILEAGE @

MANIFOLD @

CHARGE TO: TDI

STREET

CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

@

@

@

@

@

Global Cementing, L.L.C.,  
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME GARY BEAVERS

SIGNATURE Gary Beavers

TOTAL

SALES TAX (If Any)

TOTAL CHARGES

DISCOUNT IF PAID IN 30 DAYS

# GLOBAL CEMENTING, L.L.C.

1554

REMIT TO 18048 170RD  
RUSSELL, KS 67665

SERVICE POINT:

RUSSELL, KS

DATE	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
12-9-2014							
LEASE MUNCH	WELL #.	LOCATION				COUNTY	STATE
	B-4					ELLIS	KS
OLD OR <u>NEW</u> (CIRCLE ONE)							

CONTRACTOR SOUTHWIND #1  
 TYPE OF JOB P+H  
 HOLE SIZE 7 7/8 T.D.  
 CASING SIZE 8 5/8 DEPTH  
 TUBING SIZE DEPTH  
 DRILL PIPE 1 1/2 DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG.  
 PERFS  
 DISPLACEMENT

OWNER  
 CEMENT AMOUNT ORDERED 305 SX 60/40 P02 w/ 4% GFC + 14 SX FLOWSEAL

EQUIPMENT  
 PUMP TRUCK CEMENTER BRAD  
 # P1 HELPER BUO  
 BULK TRUCK  
 # B1 DRIVER MARK  
 BULK TRUCK  
 # B3 DRIVER JASON

COMMON @ \_\_\_\_\_  
 POZMIX @ \_\_\_\_\_  
 GEL @ \_\_\_\_\_  
 CHLORIDE @ \_\_\_\_\_  
 ASC @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 HANDLING @ \_\_\_\_\_  
 MILEAGE \_\_\_\_\_

REMARKS:

1st - 3599' - 50 SX - 3.5 MIN 1100  
2ND - 1230 - 50 SX  
3RD - 510 - 100 SX  
4TH - 720 - 50 SX  
5TH - 40' 10 SX RA7-30 SX MAXI-15 SX

TOTAL \_\_\_\_\_

SERVICE

DEPTH OF JOB \_\_\_\_\_  
 PUMP TRUCK CHARGE \_\_\_\_\_  
 EXTRA FOOTAGE @ \_\_\_\_\_  
 MILEAGE @ \_\_\_\_\_  
 MANIFOLD @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_

TOTAL \_\_\_\_\_

PLUG & FLOAT EQUIPMENT

@ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_  
 @ \_\_\_\_\_

TOTAL \_\_\_\_\_

CHARGE TO: TDI  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES \_\_\_\_\_  
 DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS

Global Cementing, L.L.C.,  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME LARRY BEAVERS  
 SIGNATURE Larry Beavers



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Herb Deines

### **Munsch #B-4**

#### **4 15s 18w Ellis,KS**

Start Date: 2014.12.08 @ 12:32:00

End Date: 2014.12.08 @ 18:37:00

Job Ticket #: 61380                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 13:55:11

TDI Inc  
4 15s 18w Ellis,KS  
Munsch #B-4  
DST # 1  
Arbuckie  
2014.12.08



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**4 15s 18w Ellis,KS**  
**Munsch #B-4**  
Job Ticket: 61380 **DST#: 1**  
Test Start: 2014.12.08 @ 12:32:00

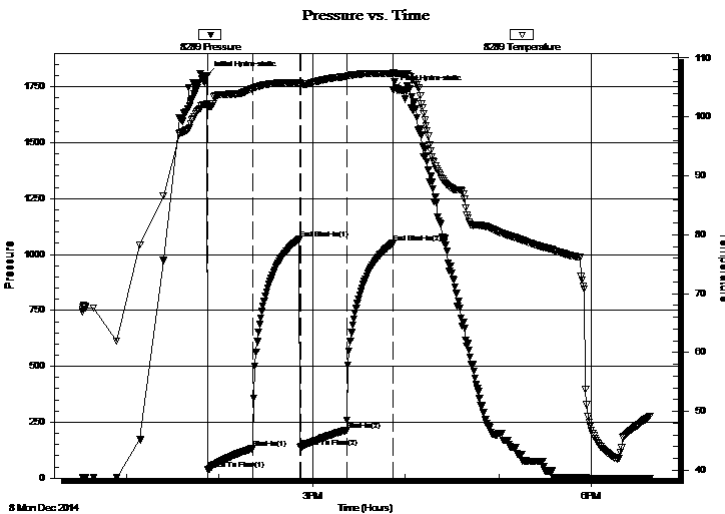
## GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 13:52:30  
Time Test Ended: 18:37:00  
Interval: **3578.00 ft (KB) To 3637.00 ft (KB) (TVD)**  
Total Depth: 3697.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2020.00 ft (KB)  
2010.00 ft (CF)  
KB to GR/CF: 10.00 ft  
Test Type: Conventional Straddle (Initial)  
Tester: Jim Svaty  
Unit No: 76

**Serial #: 8289 Outside**  
Press@RunDepth: 214.34 psig @ 3596.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.08 End Date: 2014.12.08 Last Calib.: 2014.12.08  
Start Time: 12:32:02 End Time: 18:37:15 Time On Btm: 2014.12.08 @ 13:52:15  
Time Off Btm: 2014.12.08 @ 15:52:15

TEST COMMENT: 30-IFP- BOB in 8min.  
30-ISIP- No Blow  
30-FFP- BOB in 11min.  
30-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1800.51	102.16	Initial Hydro-static
1	37.61	101.57	Open To Flow (1)
30	132.72	104.82	Shut-In(1)
60	1069.13	105.84	End Shut-In(1)
60	137.37	105.54	Open To Flow (2)
90	214.34	106.87	Shut-In(2)
120	1049.91	107.35	End Shut-In(2)
120	1735.75	107.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
188.00	OSMCW 2%o 23%m 70%w	2.64
188.00	WOCM 10%w 30%o 60%m	2.64
10.00	WMCO 20%w 35%m 45%o	0.14
45.00	CO 100%	0.63

## Gas Rates

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









**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**4 15s 18w Ellis,KS**  
**Munsch #B-4**  
Job Ticket: 61380      **DST#: 1**  
Test Start: 2014.12.08 @ 12:32:00

**Tool Information**

Drill Pipe:	Length: 3586.00 ft	Diameter: 3.80 inches	Volume: 50.30 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 53000.00 lb
			<u>Total Volume: 50.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3578.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	3637.00 ft			
Interval between Packers:	59.00 ft			
Tool Length:	139.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			3558.00	
Shut In Tool	5.00			3563.00	
Hydraulic tool	5.00			3568.00	
Packer	5.00			3573.00	21.00 Bottom Of Top Packer
Packer	5.00			3578.00	
Stubb	1.00			3579.00	
Perforations	16.00			3595.00	
Change Over Sub	1.00			3596.00	
Recorder	0.00	8789	Inside	3596.00	
Recorder	0.00	8289	Outside	3596.00	
Blank Spacing	31.00			3627.00	
Change Over Sub	1.00			3628.00	
Perforations	5.00			3633.00	
Blank Off Sub	1.00			3634.00	
Blank Spacing	3.00			3637.00	59.00 Tool Interval
Packer	1.00			3638.00	
Recorder	0.00	6668	Below	3638.00	
Perforations	22.00			3660.00	
Change Over Sub	1.00			3661.00	
Blank Spacing	31.00			3692.00	
Change Over Sub	1.00			3693.00	
Bullnose	3.00			3696.00	59.00 Bottom Packers & Anchor

**Total Tool Length: 139.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**4 15s 18w Ellis,KS**  
**Munsch #B-4**  
Job Ticket: 61380      **DST#: 1**  
Test Start: 2014.12.08 @ 12:32:00

### Mud and Cushion Information

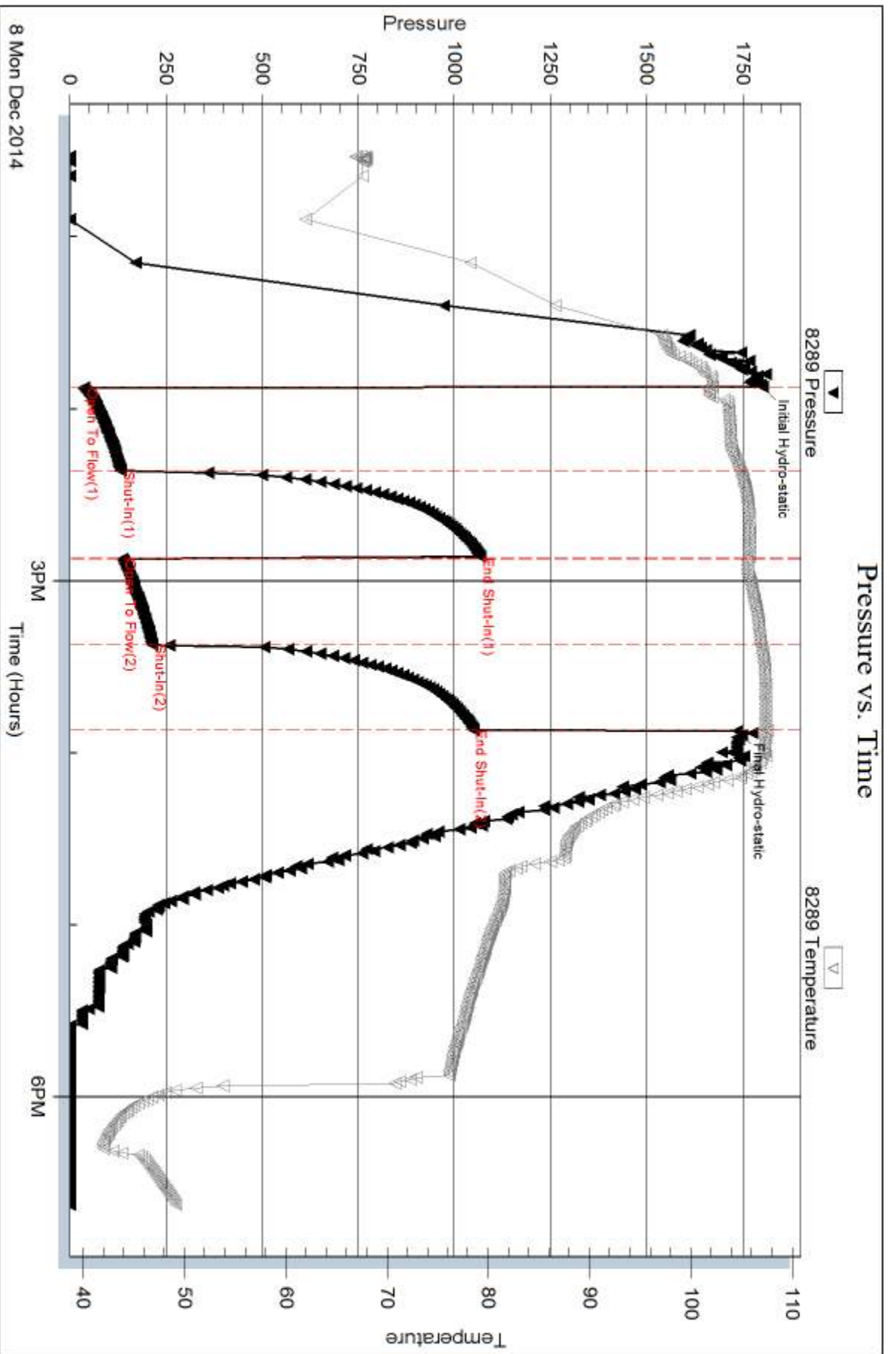
Mud Type: Gel Chem	Cushion Type:	Oil API: 31 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 17500 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.78 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2500.00 ppm		
Filter Cake: 1.00 inches		

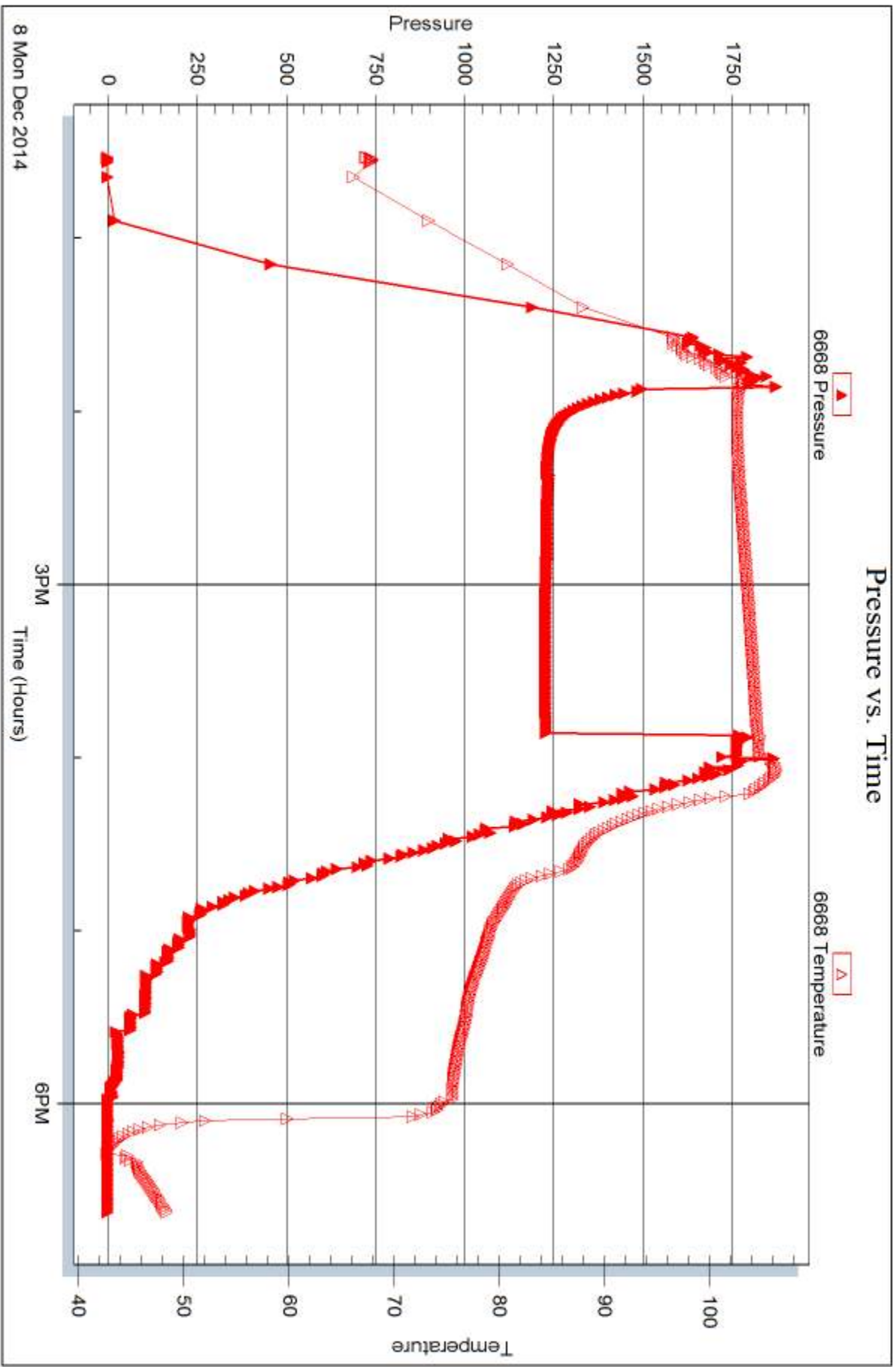
### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
188.00	OSMCW 2%o 23%m 70%w	2.637
188.00	WOCM 10%w 30%o 60%m	2.637
10.00	WMCO 20%w 35%m 45%o	0.140
45.00	CO 100%	0.631

Total Length: 431.00 ft      Total Volume: 6.045 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: .538 @ 50





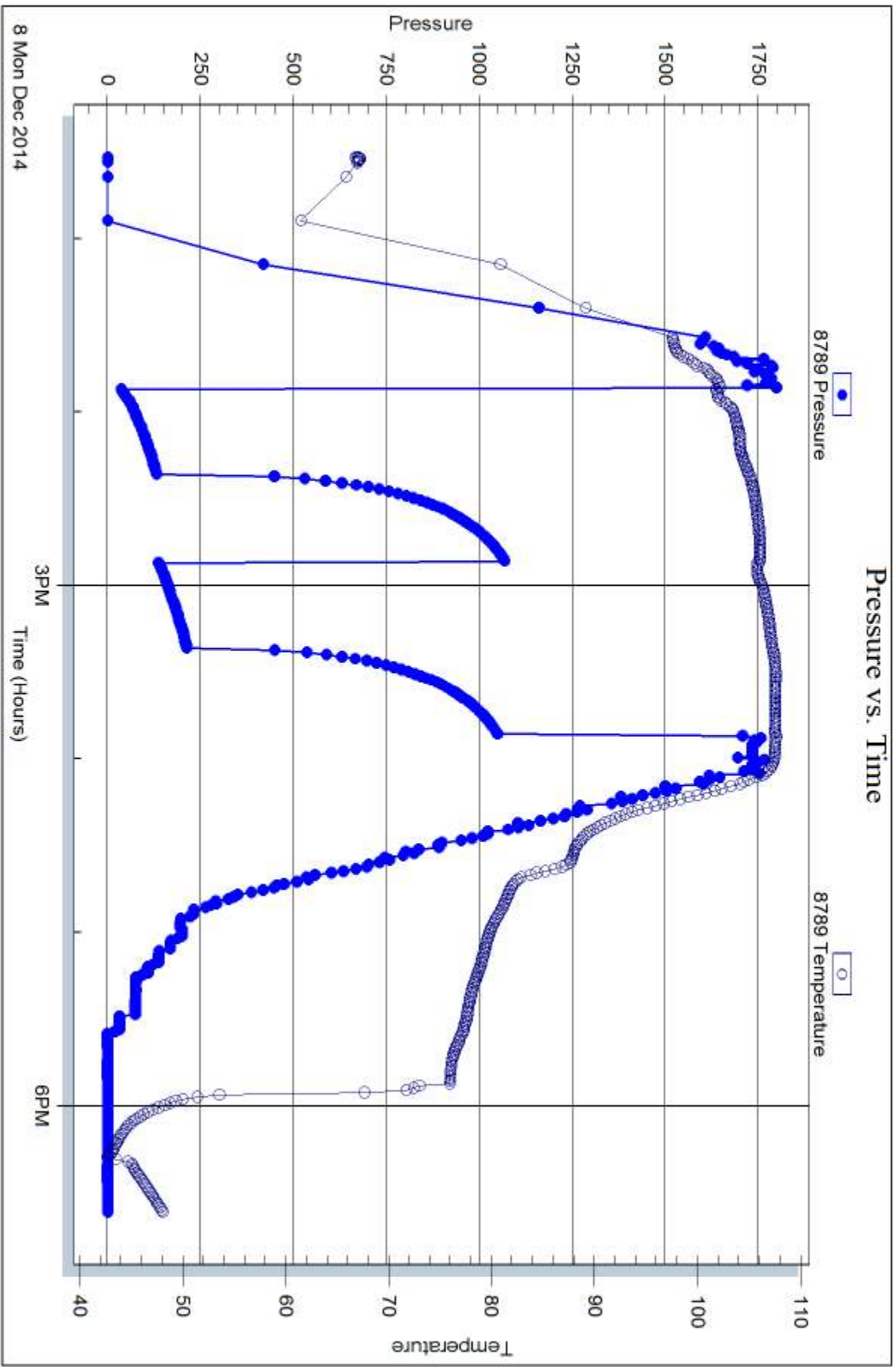
Serial #: 8789

Inside

TDI Inc

Munsch #B-4

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 61380

Printed: 2014.12.11 @ 13:55:12



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Herb Deines

### **Munsch #B-4**

#### **4 15s 18w Ellis,KS**

Start Date: 2014.12.08 @ 19:06:00

End Date: 2014.12.09 @ 01:33:00

Job Ticket #: 61381                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 13:43:44

TDI Inc  
4 15s 18w Ellis,KS  
Munsch #B-4  
DST # 2  
Arbuckie  
2014.12.08





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**4 15s 18w Ellis,KS**  
**Munsch #B-4**  
Job Ticket: 61381 **DST#: 2**  
Test Start: 2014.12.08 @ 19:06:00

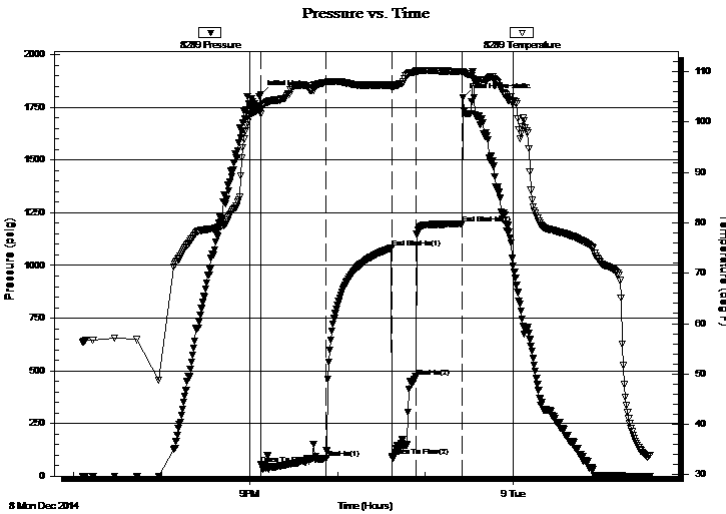
## GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 21:07:45  
Time Test Ended: 01:33:00  
Interval: **3580.00 ft (KB) To 3627.00 ft (KB) (TVD)**  
Total Depth: 3697.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Straddle (Reset)  
Tester: Jim Svaty  
Unit No: 76  
Reference Elevations: 2020.00 ft (KB)  
2010.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 8289 Outside**  
Press@RunDepth: 470.15 psig @ 3587.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.08 End Date: 2014.12.09 Last Calib.: 2014.12.09  
Start Time: 19:06:02 End Time: 01:33:30 Time On Btm: 2014.12.08 @ 21:07:30  
Time Off Btm: 2014.12.08 @ 23:25:30

TEST COMMENT: 45-IFP- BOB in 19 min.  
45-ISIP- No Blow  
45-FFP- BOB in 12 min.  
45-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1812.65	102.40	Initial Hydro-static
1	54.01	101.54	Open To Flow (1)
45	84.46	107.83	Shut-In(1)
90	1082.18	107.31	End Shut-In(1)
90	93.07	106.70	Open To Flow (2)
106	470.15	109.88	Shut-In(2)
138	1196.58	109.96	End Shut-In(2)
138	1796.68	110.05	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
315.00	MCW 40%w 60%w Show of Oil	4.42
126.00	WCM 20%w 80%w Show of Oil	1.77
219.00	WOCM 10%w 25%o 65%w	3.07

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**4 15s 18w Ellis,KS**  
**Munsch #B-4**  
Job Ticket: 61381      **DST#: 2**  
Test Start: 2014.12.08 @ 19:06:00

**Tool Information**

Drill Pipe:	Length: 3587.00 ft	Diameter: 3.80 inches	Volume: 50.32 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 50.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3580.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	3627.00 ft			
Interval between Packers:	47.00 ft			
Tool Length:	137.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

**Tool Description**

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Change Over Sub	1.00			3560.00	
Shut In Tool	5.00			3565.00	
Hydraulic tool	5.00			3570.00	
Packer	5.00			3575.00	21.00 Bottom Of Top Packer
Packer	5.00			3580.00	
Stubb	1.00			3581.00	
Perforations	5.00			3586.00	
Change Over Sub	1.00			3587.00	
Recorder	0.00	8789	Inside	3587.00	
Recorder	0.00	8289	Outside	3587.00	
Blank Spacing	31.00			3618.00	
Change Over Sub	1.00			3619.00	
Perforations	4.00			3623.00	
Blank Off Sub	1.00			3624.00	
Blank Spacing	3.00			3627.00	47.00 Tool Interval
Packer	1.00			3628.00	
Recorder	0.00	6668	Below	3628.00	
Perforations	1.00			3629.00	
Change Over Sub	1.00			3630.00	
Blank Spacing	62.00			3692.00	
Change Over Sub	1.00			3693.00	
Bullnose	3.00			3696.00	69.00 Bottom Packers & Anchor

**Total Tool Length: 137.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**4 15s 18w Ellis,KS**  
**Munsch #B-4**  
Job Ticket: 61381      **DST#: 2**  
Test Start: 2014.12.08 @ 19:06:00

### Mud and Cushion Information

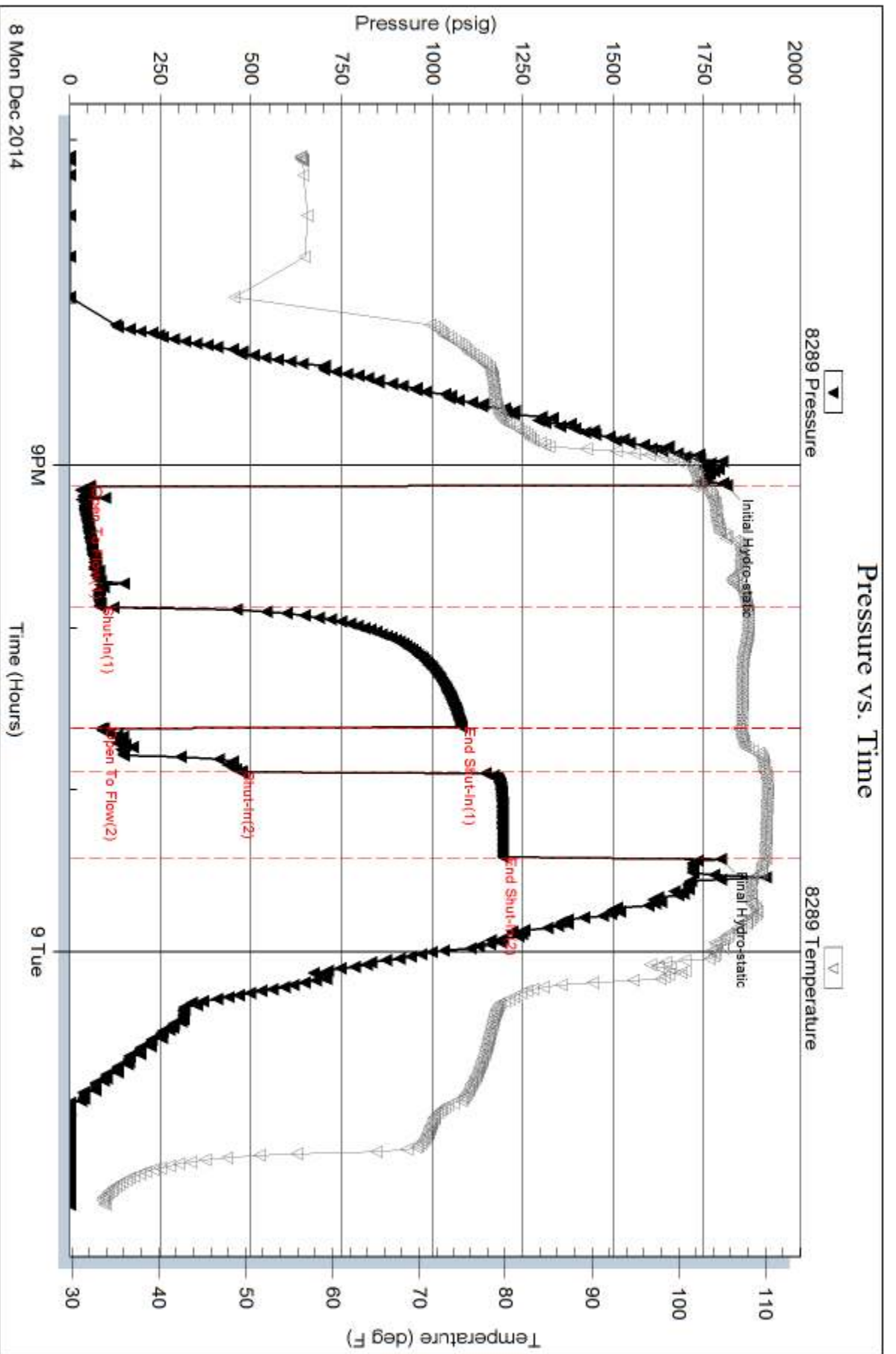
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	23000 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.78 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: 1.00 inches			

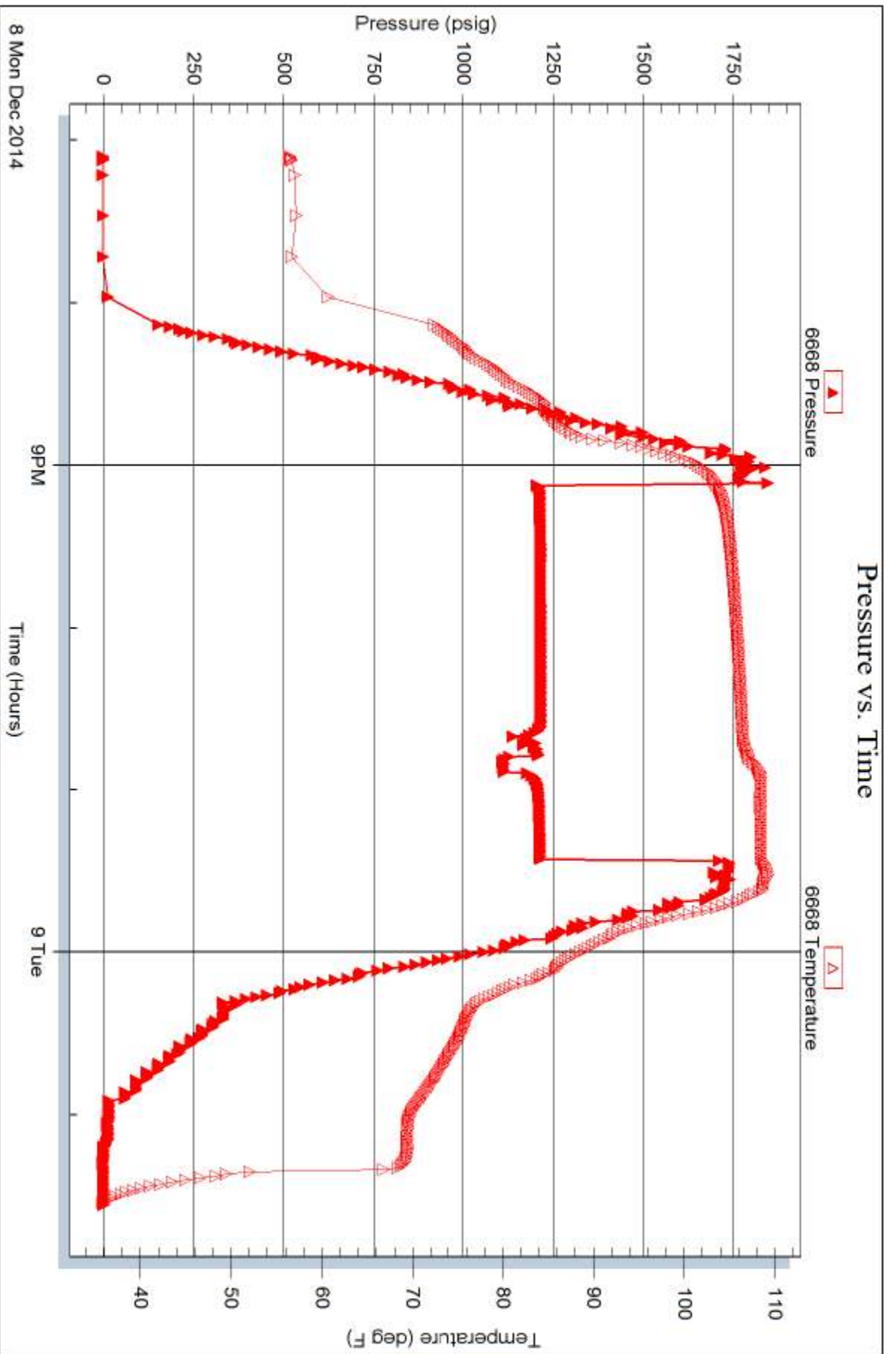
### Recovery Information

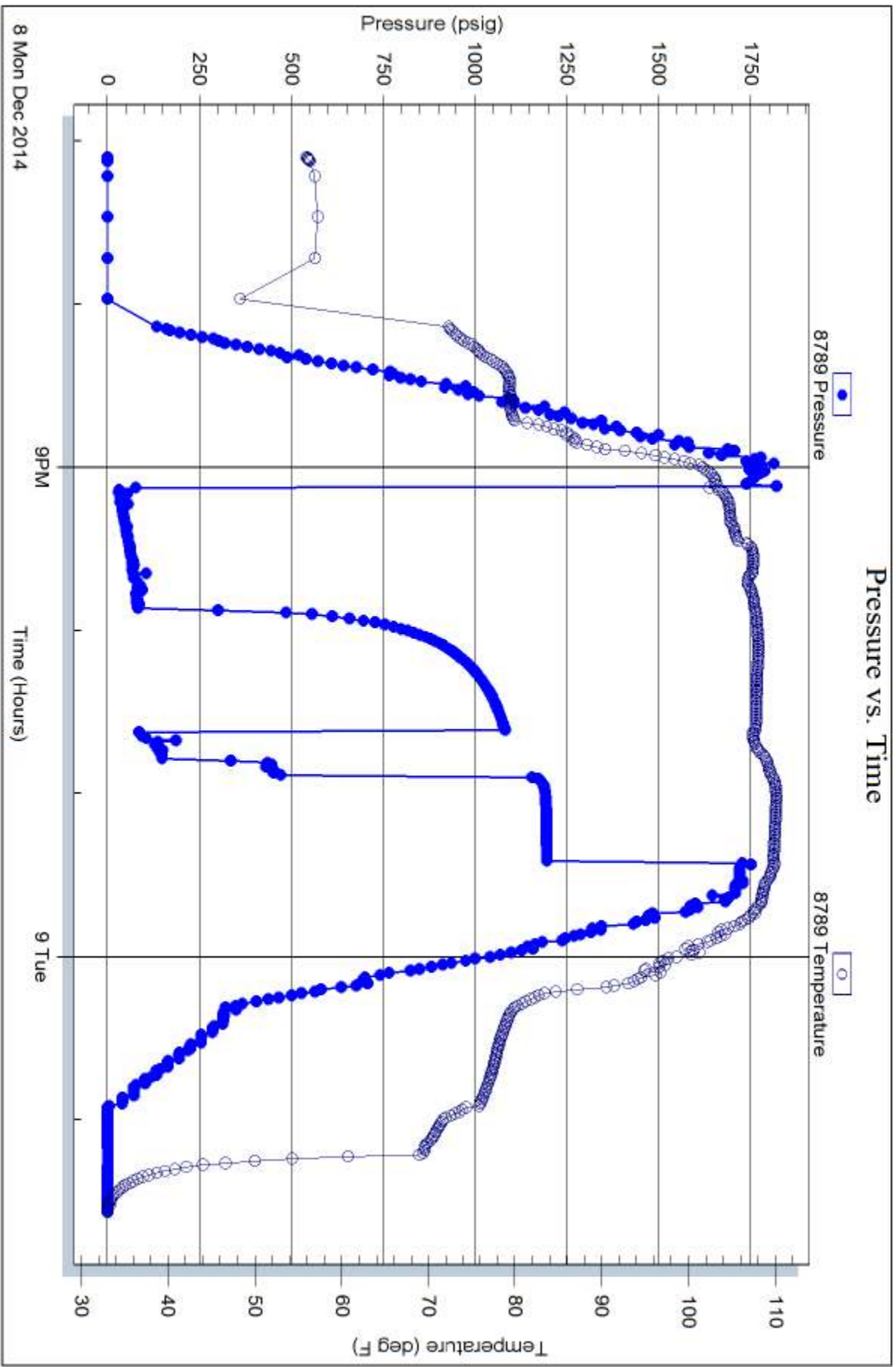
Recovery Table

Length ft	Description	Volume bbl
315.00	MCW 40%m 60%w Show of Oil	4.419
126.00	WCM 20%w 80%m Show of Oil	1.767
219.00	WOCM 10%w 25%o 65%m	3.072

Total Length: 660.00 ft      Total Volume: 9.258 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: .585 @ 35











# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61380

4/10

Well Name & No. Munsch # B-4 Test No. 1 Date 12-8-14  
 Company TDI Inc. Elevation 2020 KB 2010 GL  
 Address 1310 Bison Rd Hays KS 67601-9696  
 Co. Rep / Geo. Herb Deines Rig Southwind #1  
 Location: Sec. 4 Twp. 15<sup>s</sup> Rge. 18<sup>w</sup> Co. Ellis State KS

Interval Tested 3578-3637 Zone Tested Arbuckle  
 Anchor Length 59 (60 TP) Drill Pipe Run 3586 Mud Wt. 9.1  
 Top Packer Depth ~~3578~~ 3578 Drill Collars Run 0 Vis 52  
 Bottom Packer Depth ~~3578~~ 3637 Wt. Pipe Run 0 WL 7.8  
 Total Depth 3697 LTD Chlorides 2500 ppm System LCM 1

Blow Description IFP-BOB in Sumin  
ISIP- No Blow  
FFP-BOB in Sumin.  
FSIP- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>188</u>	<u>05 mcw</u>	<u>2</u>	<u>70</u>	<u>23</u>	
<u>188</u>	<u>WOCM</u>	<u>30</u>	<u>10</u>	<u>60</u>	
<u>10</u>	<u>WMCO</u>	<u>45</u>	<u>20</u>	<u>35</u>	
<u>45</u>	<u>CO</u>	<u>100</u>			

Rec Total 431 BHT 107 Gravity 31 API RW 538 @ 50 ° F Chlorides 17500 ppm

(A) Initial Hydrostatic 1800  Test 1150 T-On Location 10:03  
 (B) First Initial Flow 37  Jars \_\_\_\_\_ T-Started 12:32  
 (C) First Final Flow 132  Safety Joint \_\_\_\_\_ T-Open 13:52  
 (D) Initial Shut-In 1069  Circ Sub \_\_\_\_\_ T-Pulled 15:52  
 (E) Second Initial Flow 137  Hourly Standby \_\_\_\_\_ T-Out 18:37  
 (F) Second Final Flow 214  Mileage 20 RT 31 Comments \_\_\_\_\_  
 (G) Final Shut-In 1049  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1735  Straddle 600  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer 250  Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 30  Day Standby \_\_\_\_\_ Total 2031  
 Final Shut-In 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 2031

Approved By \_\_\_\_\_ Our Representative [Signature]  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61381

Well Name & No. Munsch # B-4 Test No. 2 Date 12-8-14  
 Company TDI Inc. Elevation 2020 KB 2010 GL  
 Address 1310 Bison Rd Hays KS 67601-9696  
 Co. Rep / Geo. Herb Deines Rig Southwind Rig #1  
 Location: Sec. 4 Twp. 15<sup>s</sup> Rge. 18<sup>w</sup> Co. Ellis State KS

Interval Tested 3580 ~~3580~~ 3627 Zone Tested Arbuckle  
 Anchor Length 47 (70TP) Drill Pipe Run 3587 Mud Wt. 9.1  
 Top Packer Depth 3580 Drill Collars Run 0 Vis 52  
 Bottom Packer Depth 3627 Wt. Pipe Run 0 WL 7.8  
 Total Depth 3697 LTD Chlorides 2500 ppm System LCM 1

Blow Description IFP - BOB in 19min  
ISIP - No Blow  
FFP - BOB 12min  
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>315</u>	<u>mcw show of oil</u>		<u>60</u>	<u>40</u>	
<u>126</u>	<u>wcm show of oil</u>		<u>20</u>	<u>80</u>	
<u>219 <del>219</del></u>	<u>wocm</u>	<u>25</u>	<u>10</u>	<u>65</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 660 BHT 110 Gravity 1150 API RW .585 @ 35° F Chlorides 23000 ppm

(A) Initial Hydrostatic <u>1812</u>	<input checked="" type="checkbox"/> Test	T-On Location <u>10:03</u>
(B) First Initial Flow <u>54</u>	<input type="checkbox"/> Jars	T-Started <u>19:06</u>
(C) First Final Flow <u>84</u>	<input type="checkbox"/> Safety Joint	T-Open <u>21:07</u>
(D) Initial Shut-In <u>1082</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u><del>23:24</del> 23:24</u>
(E) Second Initial Flow <u>93</u>	<input type="checkbox"/> Hourly Standby	T-Out
(F) Second Final Flow <u>470</u>	<input type="checkbox"/> Mileage	Comments
(G) Final Shut-In <u>1196</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1796</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer
Initial Open <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u><del>17</del> 17</u>	<input type="checkbox"/> Day Standby	Total <u>2000</u>
Final Shut-In <u><del>30</del> 30</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>2000</u>	

Approved By \_\_\_\_\_ Our Representative [Signature]  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.