



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1223562  
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: \_\_\_\_\_

1223562

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> _____
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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: 785-28-2593  
 Well Name: BIELER # 2  
 Location: N2 NW SW SE SEC.9-T15S-R19W  
 API: 15-051-26,705-00-00  
 Pool:  
 State: KANSAS

Field: VIRGINIA  
 Country: USA



Scale 1:240 Imperial

Well Name: BIELER # 2  
 Surface Location: N2 NW SW SE SEC.9-T15S-R19W  
 Bottom Location:  
 API: 15-051-26,705-00-00  
 License Number: 4787  
 Spud Date: 8/15/2014 Time: 2:30 PM  
 Region: ELLIS COUNTY  
 Drilling Completed: 8/22/2014 Time: 8:23 AM  
 Surface Coordinates: 1160' FSL & 2310' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2025.00ft  
 K.B. Elevation: 2035.00ft  
 Logged Interval: 2900.00ft To: 3750.00ft  
 Total Depth: 3750.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.4381417  
 Latitude: 38.7579948  
 N/S Co-ord: 1160' FSL  
 E/W Co-ord: 2310' FEL

**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: 8/15/2014 Time: 2:30 PM  
 TD Date: 8/22/2014 Time: 8:23 AM

**ELEVATIONS**

K.B. Elevation: 2035.00ft  
K.B. to Ground: 10.00ft

Ground Elevation: 2025.00ft

**NOTES**

PRODUCTION CASING WAS RAN TO FURTHER TEST AND DEVELOP LANSING-KANSAS AND ARBUCKLE BASED ON FAVORABLE RESULTS OF DSTS

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

DRILL STEM TESTING BY TRILOBITE TESTING INC: THREE (3) CONVENTIONAL TESTS AND ONE (1) FAILED PACKER TEST

**FORMATION TOPS SUMMARY**


	<b>BIELER # 2</b>	<b>WILLIE # 1</b>	<b>VIRGINIA # 1</b>
	<b>N2 NW SW SE</b>	<b>NW SE SE SE</b>	<b>SW NE NW NE</b>
	<b>SEC.9-15S-19W</b>	<b>SEC.9-15-19W</b>	<b>SEC.16-15-19W</b>
	<b>2025'GL 2035'KB</b>	<b>KB 2043'</b>	<b>KB 2024'</b>
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite	1258 +777	+ 785	+784
B-Anhydrite	1293 +742	+ 749	+746
Topeka	3013 - 978	- 977	- 978
Heebner Sh.	3280-1245	-1246	-1254
Toronto	3310-1275	-1268	-1265
LKC	3331-1296	-1293	-1292
BKC	3572-1537	-1540	-1538
Marmaton	3616-1581	-1583	-1579
Arbuckle	3644-1609	-1620	-1627
RTD	3750-1715	-1710	-1726

**SUMMARY OF DAILY ACTIVITY**

8-15-14	RU, spud 2:30 PM, set 8 5/8" surface casing to 221' w/ 150 sxs Common 2%Gel 3% CC, slope 1 degree, plug down 11:00PM
8-16-14	222', WOC, drill plug 7:00 AM
8-17-14	1524', drilling
8-18-14	2529', drilling, displaced 2752' to 2781'
8-19-14	3225', CFS 3315', short trip, CFS 3365', DST # 1 3310' to 3365' "A"- "C" LKC-packer failure, DST # 2 3342'-3365' "C", slope 1 1/2 degree
8-20-14	3365', finish DST # 2, TIWB, CFS 3415', DST # 3 3364' to 3415' "D"- "G" LKC

8-21-14 3505', TIWB, CFS 3525', CFS 3648', DST # 4 3628' to 3648' Cg/Arb  
 8-22-14 3700', TIWB, RTD 3750' @8:23AM, CCH, TOWB, logs, TIWB, LDDP  
 8-23-14 3750', finish running production casing and cementing, RD

**DST # 2 TEST SUMMARY**

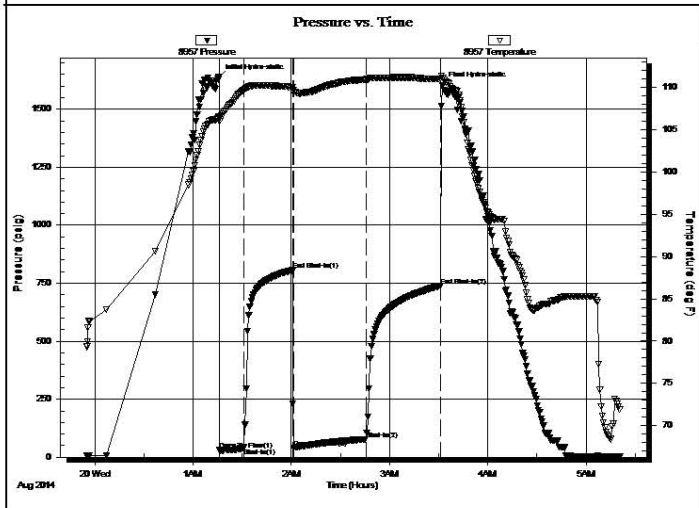
	<b>DRILL STEM TEST REPORT</b>	
	TDI Inc. 1310 Bison Rd Hays KS 67601 ATTN: Herb D	<b>9-15-19, Ellis, KS</b> <b>Bieler #2</b> Job Ticket: 53964 <b>DST#: 2</b> Test Start: 2014.08.19 @ 23:55:00

**GENERAL INFORMATION:**

Formation: <b>KC "C"</b>	Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock: ft (KB)	Tester: Brett Dickinson
Time Tool Opened: 01:16:15	Unit No: 59
Time Test Ended: 05:21:00	
Interval: <b>3342.00 ft (KB) To 3365.00 ft (KB) (TVD)</b>	Reference Elevations: 2035.00 ft (KB)
Total Depth: 3365.00 ft (KB) (TVD)	2028.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair	KB to GR/CF: 7.00 ft

<b>Serial #: 8957</b>	<b>Inside</b>		
Press@RunDepth: 77.70 psig @ 3343.00 ft (KB)	Capacity: 8000.00 psig		
Start Date: 2014.08.19	End Date: 2014.08.20	Last Calib.: 2014.08.20	
Start Time: 23:55:05	End Time: 05:20:59	Time On Btm: 2014.08.20 @ 01:15:45	
		Time Off Btm: 2014.08.20 @ 03:32:30	

**TEST COMMENT:** IF-BOB in 6min  
 ISI-No blow  
 FF-BOB in 1/2min  
 FSI-2 1/2in blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1637.38	106.55	Initial Hydro-static
1	32.77	106.05	Open To Flow (1)
15	39.05	109.68	Shut-In(1)
45	805.46	110.02	End Shut-In(1)
46	40.78	109.74	Open To Flow (2)
90	77.70	110.95	Shut-In(2)
136	738.69	111.07	End Shut-In(2)
137	1604.57	111.16	Final Hydro-static

**Recovery**

**Gas Rates**

Length (ft)	Description	Volume (bbl)
60.00	GVSOCM 35%G 5%O 60%M	0.84
105.00	SGO 10%G 90%O	1.47
0.00	1240ft GIP	0.00

\* Recovery from multiple tests


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

Trilobite Testing, Inc

Ref. No: 53964

Printed: 2014.08.20 @ 08:23:41

### DST # 3 TEST SUMMARY

 <b>TRILOBITE TESTING, INC</b>	<b>DRILL STEM TEST REPORT</b>	
	TDI Inc. 1310 Bison Rd Hays KS 67601  ATTN: Herb D	<b>9-15-19, Ellis, KS</b>  <b>Bieler #2</b> Job Ticket: 53965 <b>DST#: 3</b> Test Start: 2014.08.20 @ 15:15:00

**GENERAL INFORMATION:**

Formation: **KC "D-G"**  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 18:58:15  
 Time Test Ended: 00:33:15

Interval: **3364.00 ft (KB) To 3415.00 ft (KB) (TVD)**  
 Total Depth: 3415.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

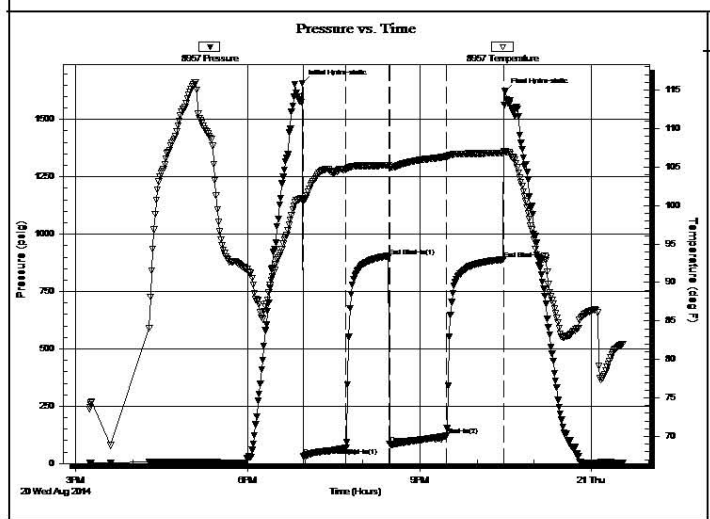
Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59

Reference Elevations: 2035.00 ft (KB)  
 2025.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8957      Inside**

Press@RunDepth: 120.19 psig @ 3365.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2014.08.20      End Date: 2014.08.21      Last Calib.: 2014.08.21  
 Start Time: 15:15:05      End Time: 00:33:15      Time On Btm: 2014.08.20 @ 18:57:15  
 Time Off Btm: 2014.08.20 @ 22:29:00

**TEST COMMENT:** IF-BOB in 29min  
 IS- No blow  
 FF-BOB in 49min  
 FS- 1/2in blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1658.47	100.86	Initial Hydro-static
1	33.33	100.42	Open To Flow (1)
46	68.55	104.65	Shut-In(1)
91	901.18	105.24	End Shut-In(1)
92	84.37	105.00	Open To Flow (2)
151	120.19	106.35	Shut-In(2)
211	889.30	106.82	End Shut-In(2)
212	1622.16	107.03	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
120.00	GVSOCM 10%G 10%O 20%W 50%M	1.00







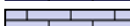

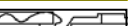
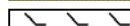

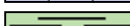


Gas Rates			
Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)	





### Image Header 05

#### ROCK TYPES

 Clystgy	 Lmst fw<7	 shale, gry	 Ss	 CglSandy
 Clystcol	 Lmst fw>7	 Carbon Sh	 Karst Topo	 Dol Lime
 Dolprim	 shale, grn	 shale, red	 Lscongl	

#### ACCESSORIES

##### MINERAL

- ▲ Chert, dark
- ∩ Glauconite
- P Pyrite
- Sandy
- △ Chert White

#### OTHER SYMBOLS

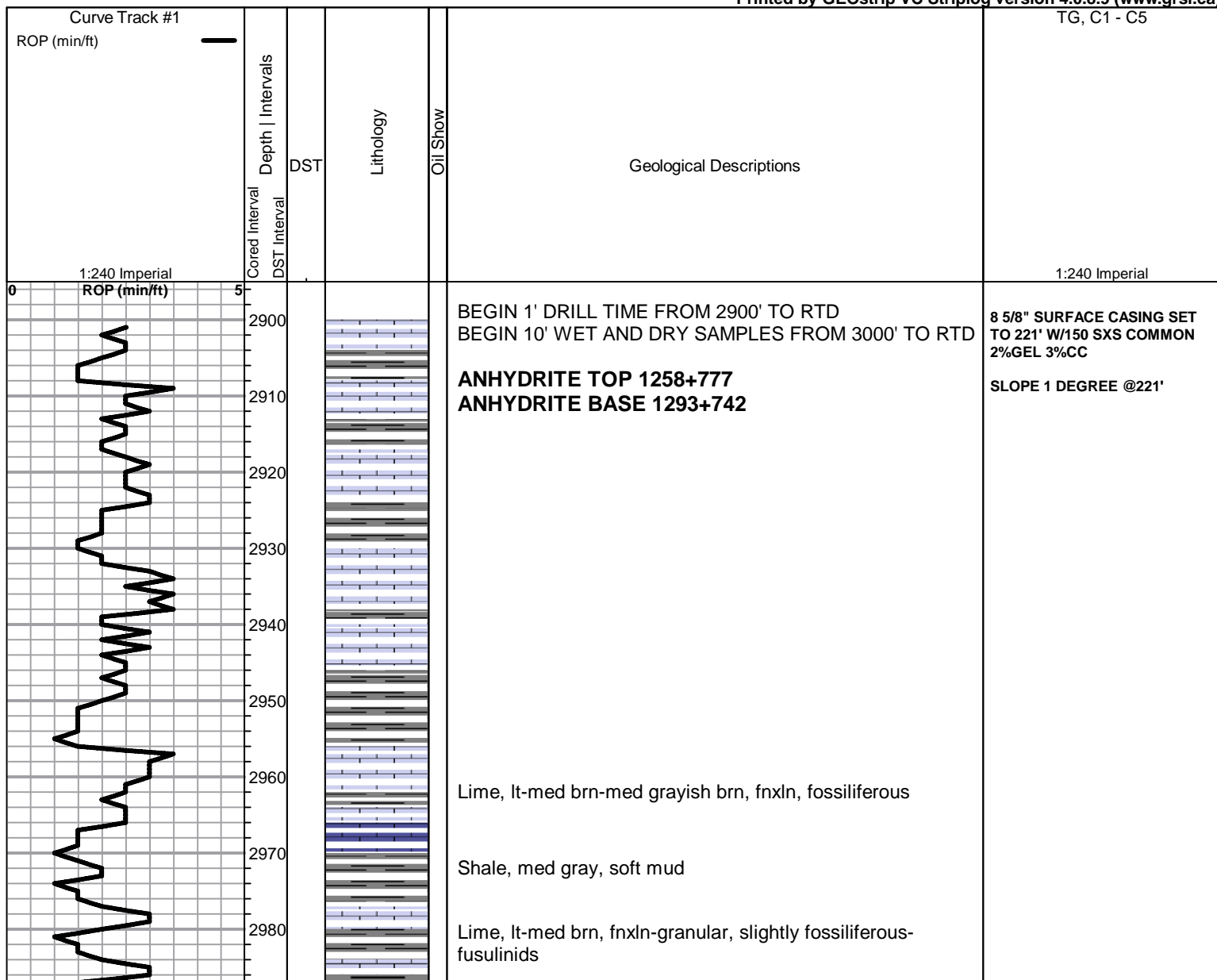
##### Oil Show

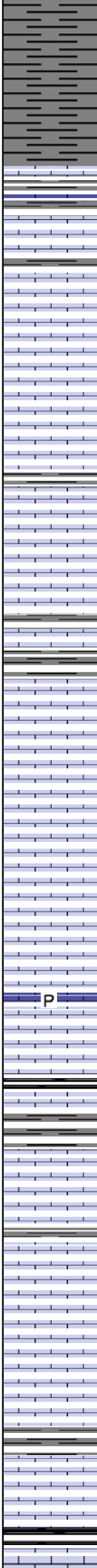
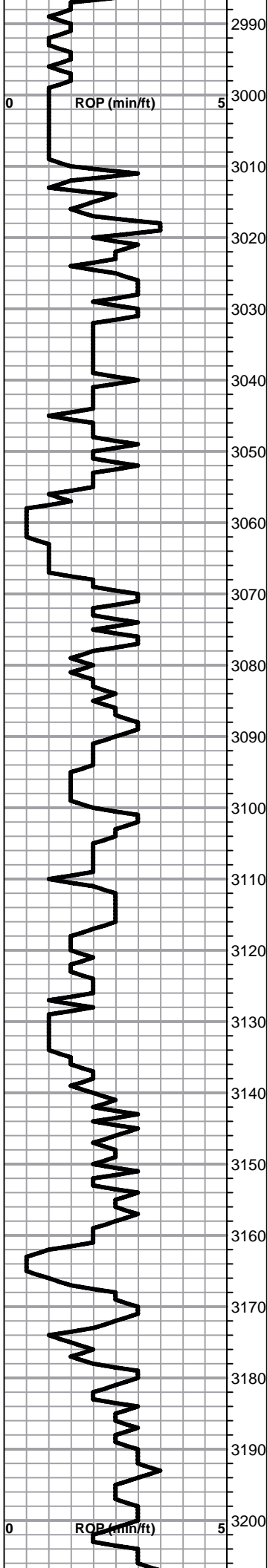
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- \* Gas

##### DST

- DST Int
- DST alt
- Core
- tail pipe

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





Shale, med gray, soft mud to soft blocky

Lime, lt-med brn, fnxln, slightly fossiliferous

**TOPEKA SPL TOP 3017-982 ELog 3013-978**

Lime, med-dark brn, fnxln, slightly fossiliferous

Lime, lt brn-crm, fnxln, slightly fossiliferous

Lime, med brn, fn-vfxln

Lime, lt brn, fnxln, slight bedded chalk

Lime, offwhite-lt brn, fnxln. bedded chalk with sticky clumps

Lime, lt brn, granular, bedded chalk, NS, No Wet Cut

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn-med grayish brn, fnxln to granular in part

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

Lime, lt-med brn, fn-vfxln

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

Lime, lt-med brn, fnxln-granular, slight bedded chalk, slightly fossiliferous

p

Lime, lt-med brn, fnxln-granular with lt chalk wash, bedded chalk with sticky clumps in part

Shale, black carbonaceous, blocky

Lime, lt-med brn, fnxln

Lime, crm-lt brn, fn-vfxln, slight bedded chalk

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

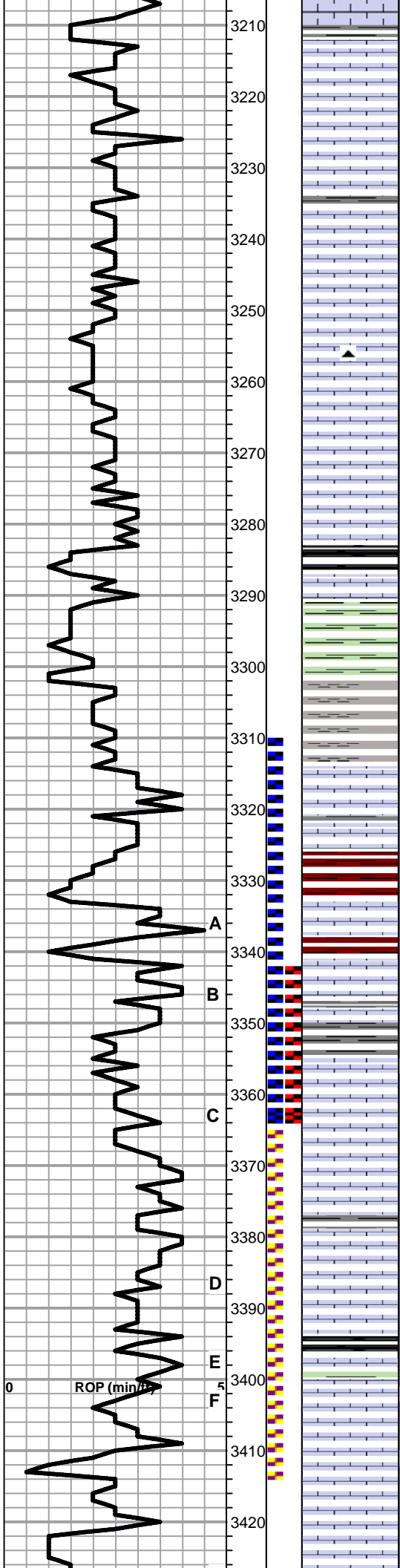
Lime, lt-med brn, fn-vfxln, slight bedded chalk

Lime, lt-med brn, fn-vfxln

Lime, lt-med brn, fn-vfxln, bedded chalk

Shale, black carbonaceous, fissile, blocky

Lime, lt-med brn, fn-vfxln



Lime, lt med brn, fn-xln

Lime, lt-med brn, fn-vfxln, slight bedded chalk

Lime, lt-med brn, fn-vfxln-slightly granular, slight bedded chalk, NS

Lime lt brn, fnxln-granular, bedded chalk with lt chalk wash and sticky clumps

Lime, lt brn, fn-vfxln, slight bedded chalk

Lime, lt-med brn, fnxln-granular, slight-med bedded chalk  
Chert, tan, fresh, sharp

Lime, lt-med brn, fnxln-granular, slight bedded chalk

Lime, lt brn, fnxln

**HEEBNER SHALE SPL 3283-1248 ELog 3280-1245**

Shale, black carbonaceous, fissile, blocky

Lime, med brn, vf-micro xln

Shale, lt green shale wash, soft mud

Clay, lt gray, soft, sticky

**TORONTO SPL 3302-1267 ELog 3310-1275**

Lime, lt-med brn, fn-micro xln

Lime, med brn-med gray, fn-vfxln

Shale, soft mud, lt red wash

**LKC SPL 3333-1298 ELog 3331-1296**

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

Shale, reddish brn-dark brn, soft-frn blocky

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

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

Shale, dove gray, soft, mud

Lime, lt-med brn, fnxln, very lt odor, one chip oomoldic

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

Lime, lt brn, fnxln, bedded chalk, NS, No Odor

Lime, lt brn, fnxln, bedded chalk

Lime, lt brn, fnxln, bedded chalk, NS

Shale, black carbonaceous, blocky

Lime, lt gray, fn-vfxln, few chips, spotty staining, NFO, very lt odor, specks of organic staining

Lime, lt brn, fnxln, white chalk wash

Lime, lt-med brn, fnxln, few chips, oolitic-oomoldic, fossil fragments, very lt odor, potty stain, inter xln porosity+vugs

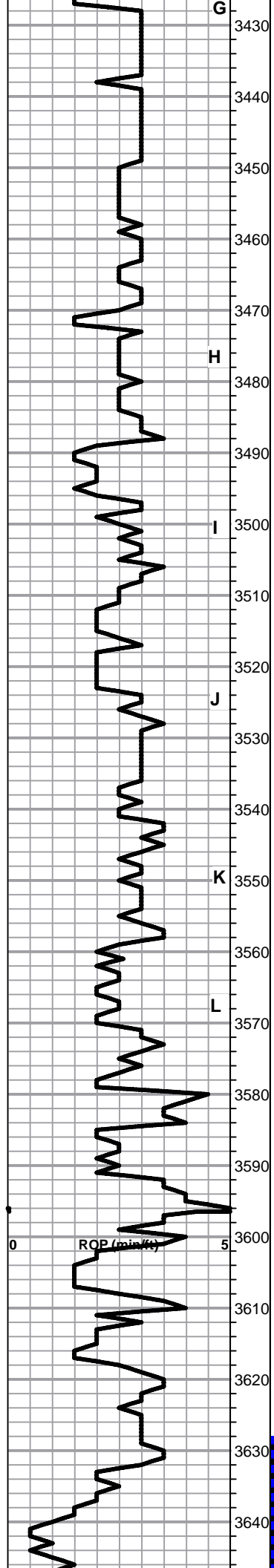
Lime, lt brn, fnxln

Lime, lt brn, fnxln granular, bedded chalk, NS, No Odor

DST # 1 3310' TO 3365'  
PACKER FAILURE

DST # 2 3342' TO 3365' SEE  
HEADER FOR TEST SUMMARY

DST # 3 3364' TO 3415' SEE  
HEADER FOR TEST SUMMARY



Lime, lt brn, fn-xln-granular, bedded chark, NS, No Odor

3430

3440 ▲ Lime, lt brn, fn-vfxln  
Chert, tan, fresh, sharp

3450 Lime, crm-lt brn, fn-vfxln

3460 ▲ Lime, lt gray-med brn, fn-micro xln

3470 Shale, grayish green, soft-firm blocky

3480 Lime, crm-tan, fnxln-vfxln in part, few chips  
oomoldic/granular, NS No Odor

3490 P ○ Lime, crm-lt-med brn, fn-vfxln, few granular with fine inter  
xln porosity, speckled fine staining, NFO, No Odor, Lt wet  
cut, good on crush

3500 I Lime, crm-lt brn, fnxln, slight bedded chalk

3510 Shale, red brn-lt tan, soft mud

3520 ▲ D ○ Lime, crm-lt brn, fnxln, scattered spotty organic stain in fine  
granular lime, NFO, No Odor, few gilsonitic chips

3530 J Lime, crm-buff, fn-vfxln, med bedded chalk

3540 Shale, med-dark gray with green tinting in part, soft blocky

3550 P Lime, crm-tan, fn-micro xln

3560 K Lime, crm-tan-lt brn, fn-micro xln, dark brn lime near shale  
boundary

3570 L lime, crm-lt brn, fn-vfxln

**BKC SPL 3576-1541 ELog 3572-1537**

3580 Shale, lt red wash  
Lime, crm-med brn, fn-vfxln, no visible porosity

3590 Shale, red, soft mud-firm brown blocky

3600 Lime, lt gry-brn, fn-vfxln, clastic mix in part

3610 Shale, reds, brns, soft blocky

3620 Lime, clastic mix

**MARMATON ELog 3616-1581**

3630 Lime, crm-lt brn, fn-vfxln, slightly dolomitic, orange chert  
fragments, NS

3640 Lime, crm-lt brn, fnxln, increasing tan chert, fresh, sharp

**CONGLOMERATE SAND ELog 3636-1601**

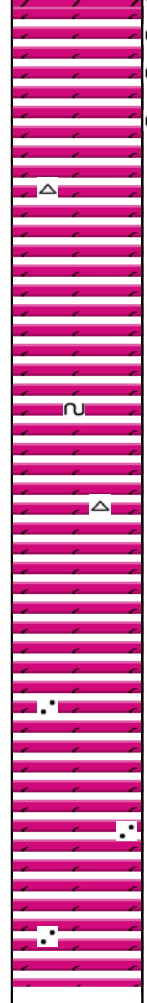
Sandstone, quartz, white cementing, NS

**ARBUCKLE ELog 3644-1609**

CFS 3525'

DST # 4 3628' TO 3648' SEE  
HEADER FOR TEST SUMMARY

3650  
3660  
3670  
3680  
3690  
3700  
3710  
3720  
3730  
3740  
3750



Dolomite, fnxln-fine-med granular, lt odor, saturated staining increasing grain size with depth to coarse xln vugs in part.

Dolomite, fn-cxln granular, lt odor, saturated staining, inter xln porosity

Dolomite, crm, fnxln-granular, clean below o/w contact

Dolomite, crm, fnxln-granular, sucrosic in part

dolomite, crm, granular, few specks of glauconite

Dolomite, ivory, fnxln-granular, sucrosic in part

Dolomite, crm, fnxln-granular

Dolomite, crm, fnxln with clear quartz grain inclusions and fused quartz

**RTD 3750-1715    LTD 3748-1713**

**SLOPE 1 1/4 DEGREE**

# GLOBAL CEMENTING, L.L.C.

1415

REMIT TO 18048 170RD  
RUSSELL, KS 67665

SERVICE POINT: \_\_\_\_\_

DATE <u>8-15-08</u>	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH <u>11:00 AM</u>
LEASE <u>Bie/er</u>	WELL#. <u>2</u>	LOCATION			COUNTY <u>Ellis</u> cc	STATE <u>KS</u>	
OLD OR <input checked="" type="radio"/> NEW (CIRCLE ONE)							

CONTRACTOR Southwind Drilling Rig #1

TYPE OF JOB Surface

HOLE SIZE 12 3/4 T.D. 223 ft

CASING SIZE 8 5/8 DEPTH

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG.

PERFS

DISPLACEMENT

OWNER \_\_\_\_\_

CEMENT AMOUNT ORDERED 150 SKS Com 3%LC 20gel

COMMON \_\_\_\_\_ @ \_\_\_\_\_

POZMIX \_\_\_\_\_ @ \_\_\_\_\_

GEL \_\_\_\_\_ @ \_\_\_\_\_

CHLORIDE \_\_\_\_\_ @ \_\_\_\_\_

ASC \_\_\_\_\_ @ \_\_\_\_\_

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

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

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

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

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

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

HANDLING \_\_\_\_\_ @ \_\_\_\_\_

MILEAGE \_\_\_\_\_ @ \_\_\_\_\_

TOTAL \_\_\_\_\_

EQUIPMENT

PUMP TRUCK CEMENTER Cody

# P1 HELPER Brod

BULK TRUCK

# B2 DRIVER Payton

BULK TRUCK

# DRIVER

REMARKS:

Ran 5 joints 8 5/8 casing + landing joint  
Est Circulation Hooked up pumped 150 SKS  
circulated cement Displaced 12 3/4 bbls of  
H2O Shut in at 200 psi

CHARGE TO: TDI Inc

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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 Ray Beany

SIGNATURE Ray Beany

SERVICE

DEPTH OF JOB \_\_\_\_\_

PUMP TRUCK CHARGE \_\_\_\_\_

EXTRA FOOTAGE \_\_\_\_\_ @ \_\_\_\_\_

MILEAGE \_\_\_\_\_ @ \_\_\_\_\_

MANIFOLD \_\_\_\_\_ @ \_\_\_\_\_

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

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

TOTAL \_\_\_\_\_

PLUG & FLOAT EQUIPMENT

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

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

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

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

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

TOTAL \_\_\_\_\_

SALES TAX (If Any) \_\_\_\_\_

TOTAL CHARGES \_\_\_\_\_

DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS



JOB LOG

SWIFT Services, Inc.

DATE 8-23-14 PAGE NO. 7

CUSTOMER T.D.I. WELL NO. #2 LEASE Bieler JOB TYPE Cement 2 stage Longstring 26779 TICKET NO.

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		TO 3748' DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0015					14 #/ft	5 1/2	In location float equip. - RLDDP
	0130							Fin L.D. Pipe Start 5 1/2" 14 #/ft. casing to 3745' Insert Float shoe w/ Auto-All SS- 44' - L.D. Baffle @ 3701' = (90.3 BBI) Cent. 1-3-5-92-8-10-12-14-58 Cut Baskets Pin end # 2-7-15-59 D.V. #59 @ 1230' = (30 BBI) Its out # 93-91-90-89
	04130							Drop fill-up ball 5 Its out
	0440							Fin casing - Tag bottom st. cir / Rotate Fin cir <u>1st stage</u>
		5	12	Flush			300	Mud flush - 500gal
		6	20				350	KCL flush - 20 BBI
			36				300	150 SKS EA-2-cut
							Vac	Wash Pump & Lines
		9					400	Drop L.D. Plug - Start Displ
		8					500	Caught left press - Slow rate 1st 20 BBI KCL flush
		6					900	cir press
	0620		90 1/2				1600	Plug Down - Held - Release & Held Drop D.V. opening tool
			8					Plug RH - 30 SKS SMD MH - 20 SKS SMD. <u>2nd stage</u>
	0635						1100	open D.V.
		5	97				200	175 SKS SMD
							Vac	Wash pump & lines
		5					200	Drop D.V. closing Plug - start Displ
		5	29				400	cir press
	0710		30				1400	Plug Down - D.V. Closed - Release & Held 10 BBI out cir 20 SKS cut cir 2 SKS / BBI @ 11.2 #/gal Job Complete Wash up & Packup

Threats  
L. An, Tom & Isaac



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Bieler #2**

### **9-15s-19w Ellis,KS**

Start Date: 2014.08.19 @ 18:20:00

End Date: 2014.08.19 @ 23:43:15

Job Ticket #: 53963                      DST #: 1

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

Printed: 2014.08.22 @ 13:05:55









**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

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

**9-15s-19w Ellis,KS**  
**Bieler #2**  
Job Ticket: 53963      **DST#: 1**  
Test Start: 2014.08.19 @ 18:20:00

**Tool Information**

Drill Pipe:	Length: 3312.00 ft	Diameter: 3.80 inches	Volume: 46.46 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 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:	55000.00 lb
			<u>Total Volume: 46.46 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3310.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	55.00 ft				
Tool Length:	75.00 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>
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Shut In Tool	5.00			3295.00	
Hydraulic tool	5.00			3300.00	
Packer	5.00			3305.00	20.00      Bottom Of Top Packer
Packer	5.00			3310.00	
Stubb	1.00			3311.00	
Recorder	0.00	8957	Inside	3311.00	
Recorder	0.00	8934	Outside	3311.00	
Perforations	2.00			3313.00	
Change Over Sub	1.00			3314.00	
Drill Pipe	32.00			3346.00	
Change Over Sub	1.00			3347.00	
Perforations	15.00			3362.00	
Bullnose	3.00			3365.00	55.00      Bottom Packers & Anchor

**Total Tool Length: 75.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**  
 1310 Bison Rd **Bieler #2**  
 Hays KS 67601 Job Ticket: 53963 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2014.08.19 @ 18:20:00

### 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:	ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3800.00 ppm			
Filter Cake: inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
740.00	Mud	10.380

Total Length: 740.00 ft      Total Volume: 10.380 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

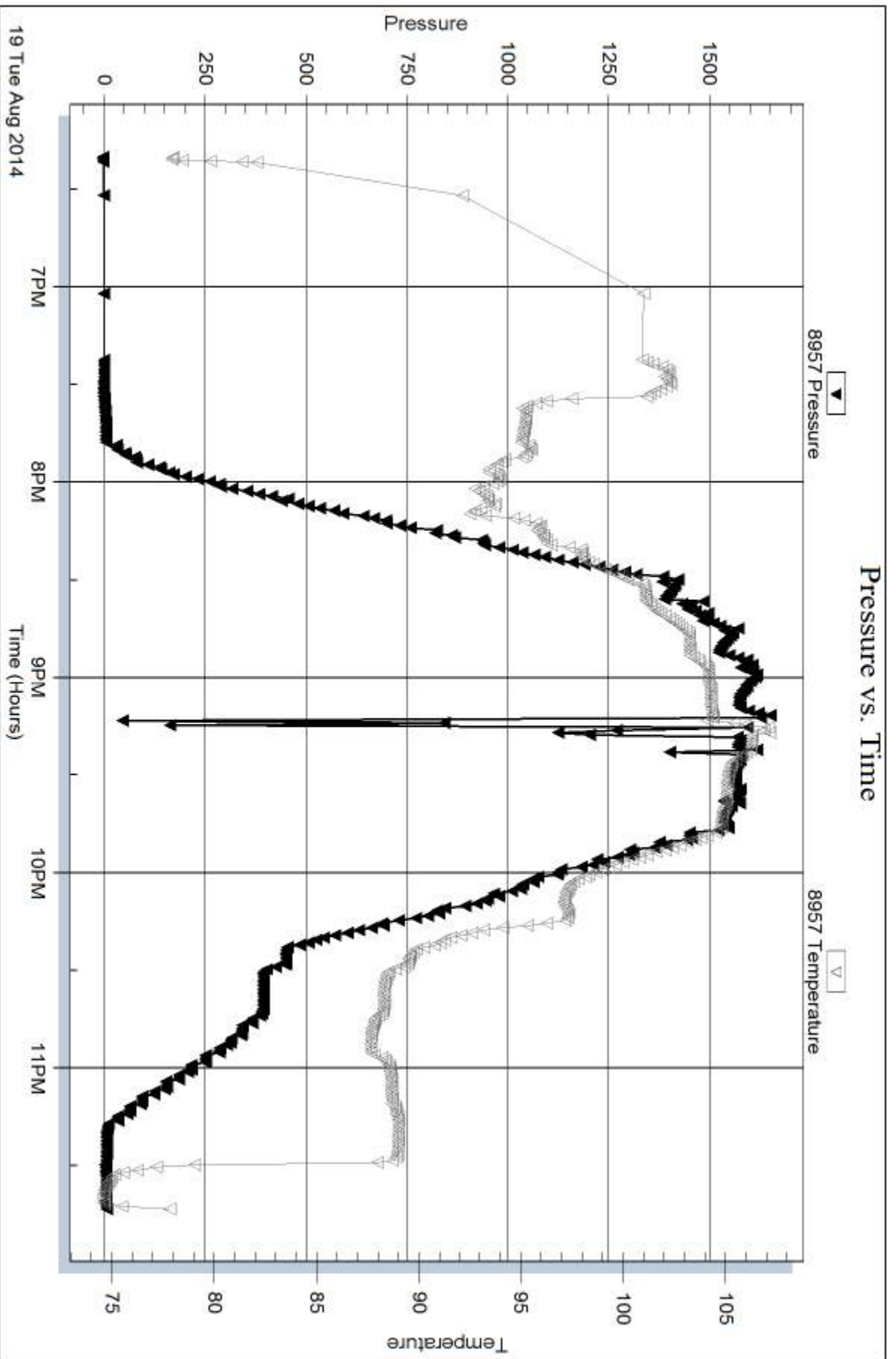
Serial #: 8957

Inside

TDI Inc.

Bieler #2

DST Test Number: 1

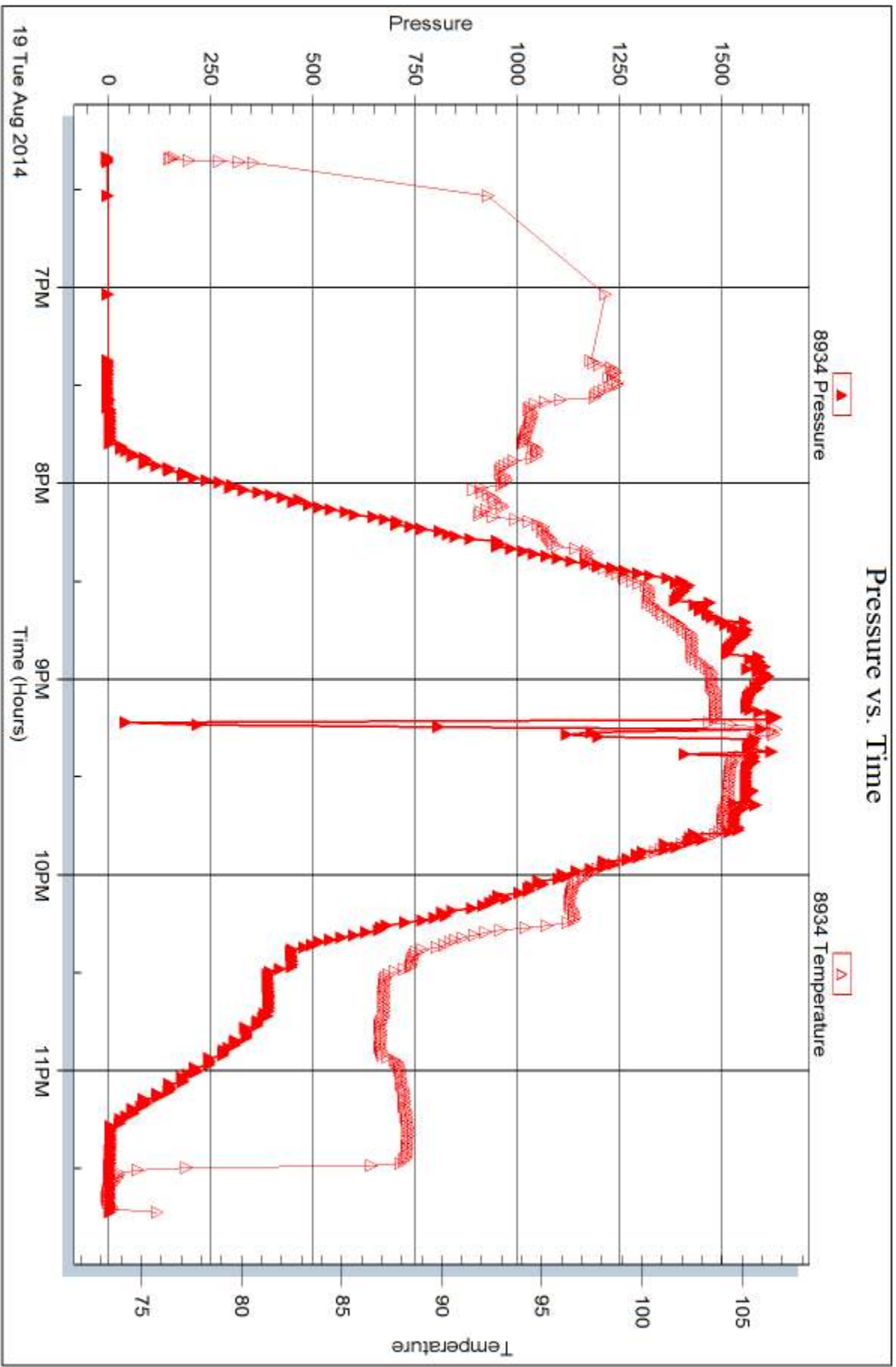


Serial #: 8934

Outside TDI Inc.

Bieler #2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 53963

Printed: 2014.08.22 @ 13:05:59



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Bieler #2**

### **9-15s-19w Ellis,KS**

Start Date: 2014.08.19 @ 23:55:00

End Date: 2014.08.20 @ 05:21:00

Job Ticket #: 53964                      DST #: 2

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

Printed: 2014.08.22 @ 13:05:03

TDI Inc. 9-15s-19w Ellis,KS Bieler #2 DST # 2 KC "C" 2014.08.19









**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

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

**9-15s-19w Ellis,KS**  
**Bieler #2**  
Job Ticket: 53964      **DST#: 2**  
Test Start: 2014.08.19 @ 23:55:00

**Tool Information**

Drill Pipe:	Length: 3342.00 ft	Diameter: 3.80 inches	Volume: 46.88 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 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:	55000.00 lb
			<u>Total Volume: 46.88 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	39000.00 lb
Depth to Top Packer:	3342.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	23.00 ft				
Tool Length:	43.00 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>
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Shut In Tool	5.00			3327.00	
Hydraulic tool	5.00			3332.00	
Packer	5.00			3337.00	20.00      Bottom Of Top Packer
Packer	5.00			3342.00	
Stubb	1.00			3343.00	
Recorder	0.00	8957	Inside	3343.00	
Recorder	0.00	8934	Outside	3343.00	
Perforations	4.00			3347.00	
Perforations	15.00			3362.00	
Bullnose	3.00			3365.00	23.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>43.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**  
 1310 Bison Rd **Bieler #2**  
 Hays KS 67601 Job Ticket: 53964 **DST#: 2**  
 ATTN: Herb Deines Test Start: 2014.08.19 @ 23:55:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 30 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.79 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3800.00 ppm		
Filter Cake: inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GVSOCM 35%G 5%O 60%M	0.842
105.00	SGO 10%G 90%O	1.473
0.00	1240ft GIP	0.000

Total Length: 165.00 ft      Total Volume: 2.315 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

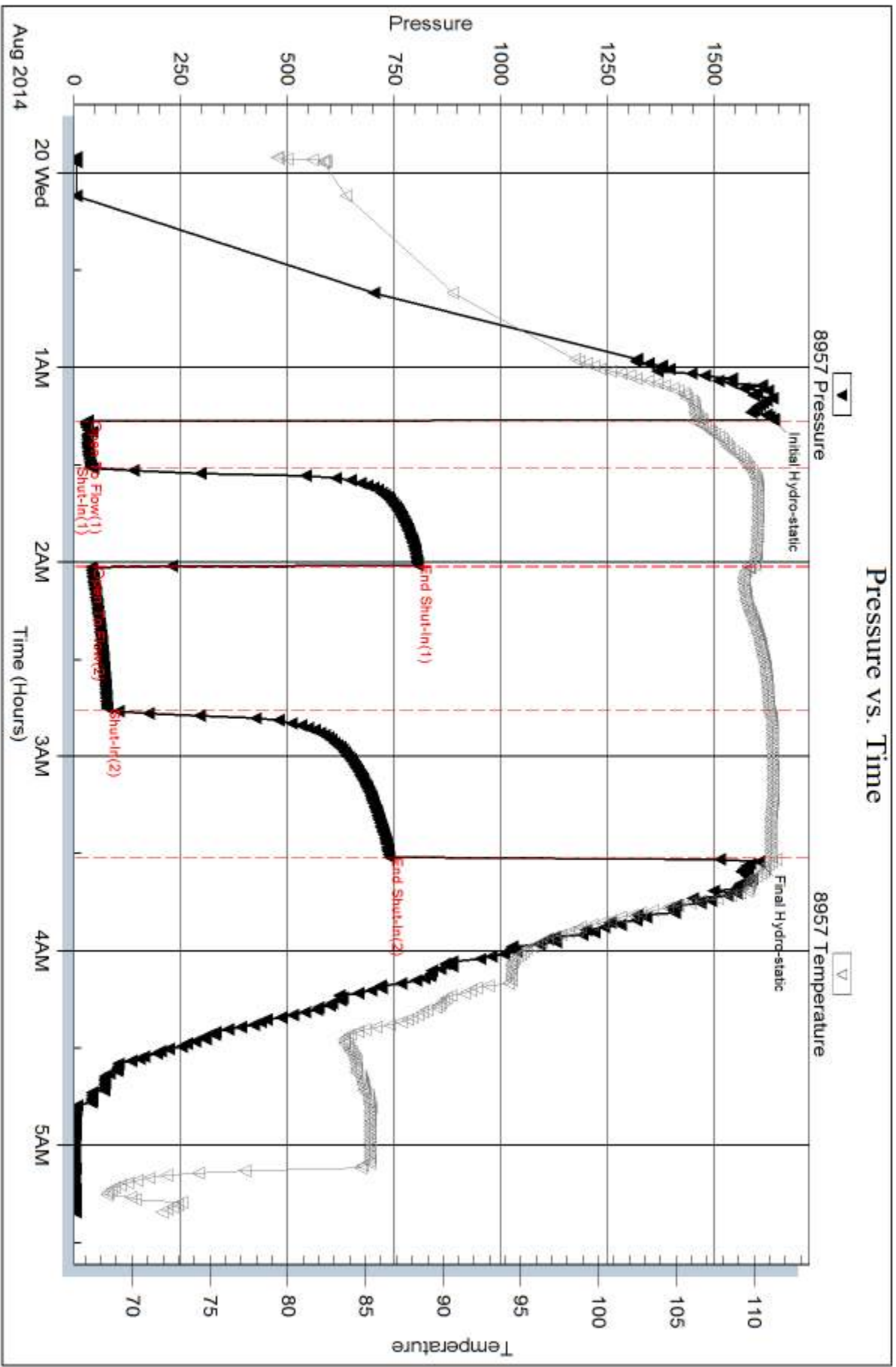
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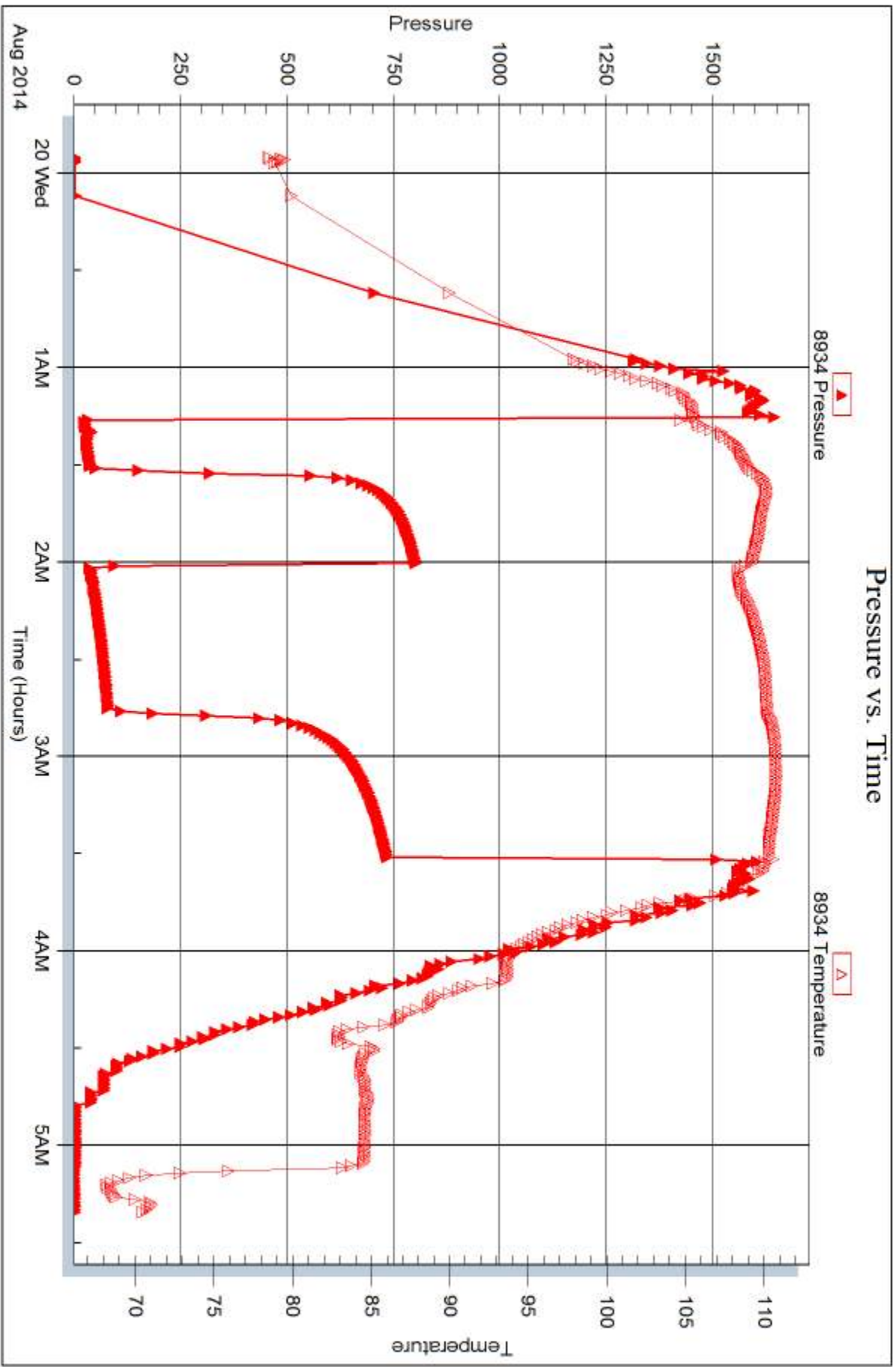
Inside

TDI Inc.

Bieler #2

DST Test Number: 2







## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Bieler #2**

### **9-15s-19w Ellis,KS**

Start Date: 2014.08.20 @ 15:15:00

End Date: 2014.08.21 @ 00:33:15

Job Ticket #: 53965                      DST #: 3

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

Printed: 2014.08.22 @ 12:01:34

TDI Inc.  
9-15s-19w Ellis,KS  
Bieler #2  
DST # 3  
KC "D-G"  
2014.08.20



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

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

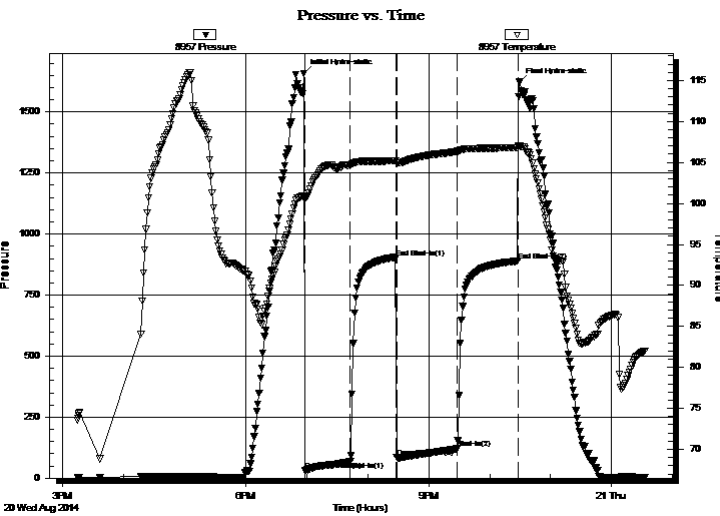
**9-15s-19w Ellis,KS**  
**Bieler #2**  
Job Ticket: 53965 **DST#: 3**  
Test Start: 2014.08.20 @ 15:15:00

## GENERAL INFORMATION:

Formation: **KC "D-G"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 18:58:15  
Time Test Ended: 00:33:15  
Interval: **3364.00 ft (KB) To 3415.00 ft (KB) (TVD)**  
Total Depth: 3415.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 2035.00 ft (KB)  
2025.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 8957 Inside**  
Press@RunDepth: 120.19 psig @ 3365.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.08.20 End Date: 2014.08.21 Last Calib.: 2014.08.21  
Start Time: 15:15:05 End Time: 00:33:15 Time On Btm: 2014.08.20 @ 18:57:15  
Time Off Btm: 2014.08.20 @ 22:29:00

TEST COMMENT: IF-BOB in 29 min  
IS- No blow  
FF-BOB in 49 min  
FS- 1/2" blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1658.47	100.86	Initial Hydro-static
1	33.33	100.42	Open To Flow (1)
46	68.55	104.65	Shut-In(1)
91	901.18	105.24	End Shut-In(1)
92	84.37	105.00	Open To Flow (2)
151	120.19	106.35	Shut-In(2)
211	889.30	106.82	End Shut-In(2)
212	1622.16	107.03	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	SGOWCM 10%G 10%O 30%W 50%M	1.68
60.00	SGOWCM 10%G 10%O 10%W 70%M	0.84
45.00	GOCM 20%G 25%O 55%M	0.63
0.00	310ft GIP	0.00

\* 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  
ATTN: Herb Deines

**9-15s-19w Ellis,KS**  
**Bieler #2**  
Job Ticket: 53965      **DST#: 3**  
Test Start: 2014.08.20 @ 15:15:00

**Tool Information**

Drill Pipe:	Length: 3362.00 ft	Diameter: 3.80 inches	Volume: 47.16 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 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:	50000.00 lb
			<u>Total Volume: 47.16 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3364.00 ft			Final	43000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	51.00 ft				
Tool Length:	71.00 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>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			3349.00	
Hydraulic tool	5.00			3354.00	
Packer	5.00			3359.00	20.00      Bottom Of Top Packer
Packer	5.00			3364.00	
Stubb	1.00			3365.00	
Recorder	0.00	8957	Inside	3365.00	
Recorder	0.00	8934	Outside	3365.00	
Perforations	2.00			3367.00	
Change Over Sub	1.00			3368.00	
Drill Pipe	32.00			3400.00	
Change Over Sub	1.00			3401.00	
Perforations	11.00			3412.00	
Bullnose	3.00			3415.00	51.00      Bottom Packers & Anchor

**Total Tool Length: 71.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**  
 1310 Bison Rd **Bieler #2**  
 Hays KS 67601 Job Ticket: 53965 **DST#: 3**  
 ATTN: Herb Deines Test Start: 2014.08.20 @ 15:15:00

### 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:	46000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.78 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3800.00 ppm			
Filter Cake: inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	SGOWCM 10%G 10%O 30%W 50%M	1.683
60.00	SGOWCM 10%G 10%O 10%W 70%M	0.842
45.00	GOCM 20%G 25%O 55%M	0.631
0.00	310ft GIP	0.000

Total Length: 225.00 ft Total Volume: 3.156 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments:

Serial #: 8957

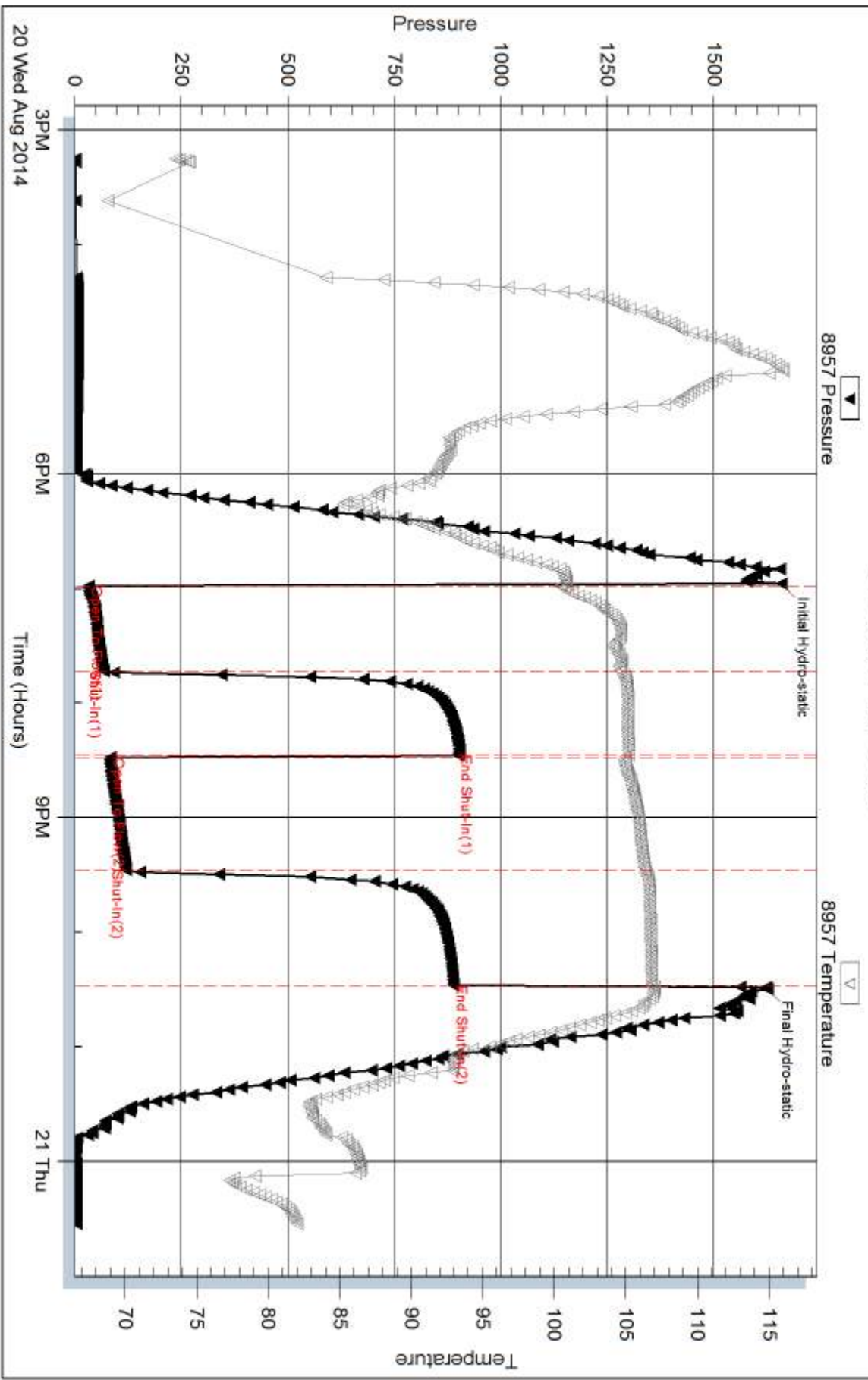
Inside

TDI Inc.

Bieler #2

DST Test Number: 3

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 53965

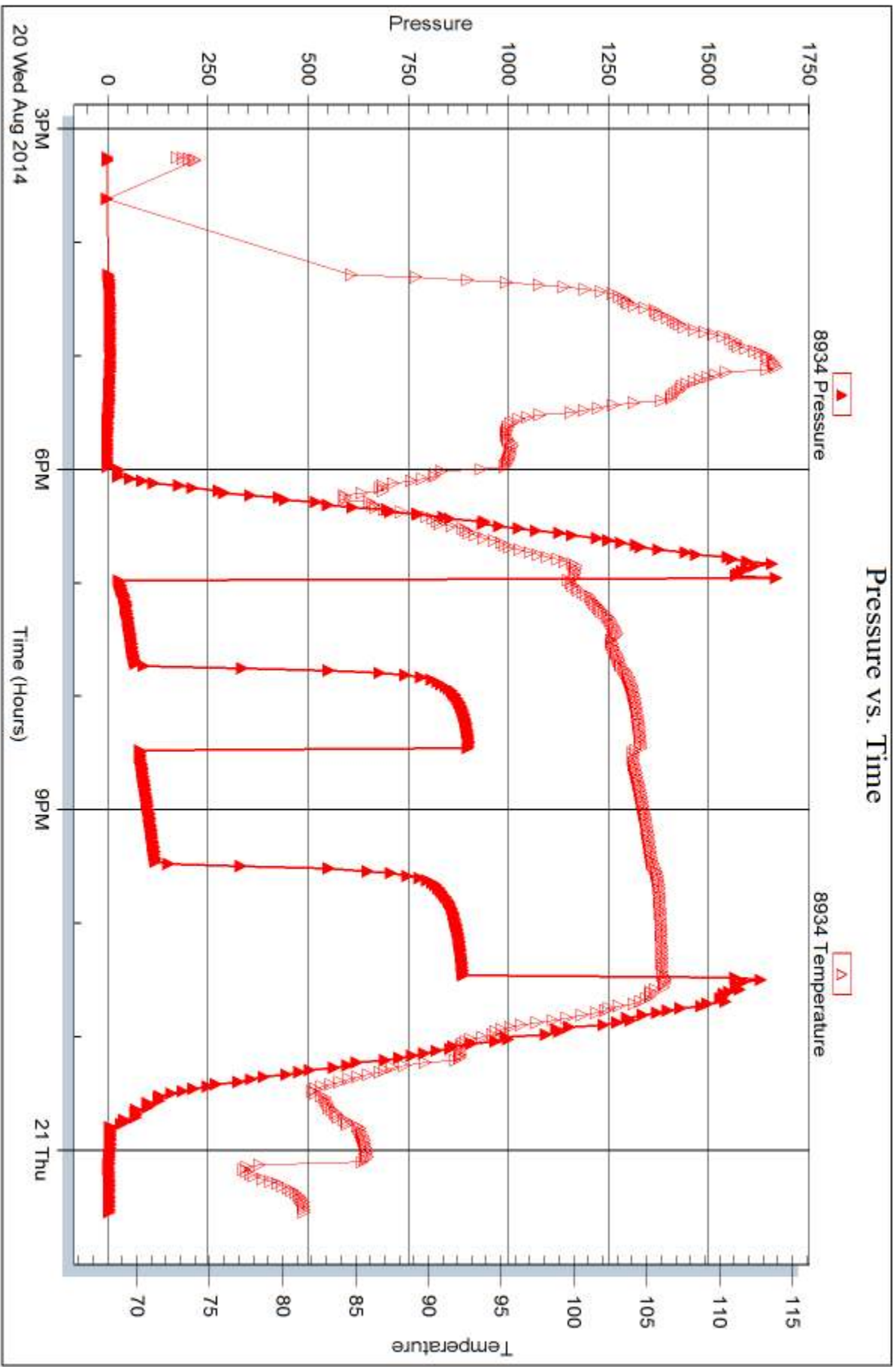
Printed: 2014.08.22 @ 12:01:41

Serial #: 8934

Outside TDI Inc.

Bieler #2

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 53965

Printed: 2014.08.22 @ 12:01:44



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Bieler #2**

### **9-15s-19w Ellis,KS**

Start Date: 2014.08.21 @ 18:15:00

End Date: 2014.08.22 @ 02:25:30

Job Ticket #: 53966                      DST #: 4

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

Printed: 2014.08.22 @ 12:00:42

TDI Inc.  
9-15s-19w Ellis,KS  
Bieler #2  
DST # 4  
Conglomerate. Sand.  
2014.08.21



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

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

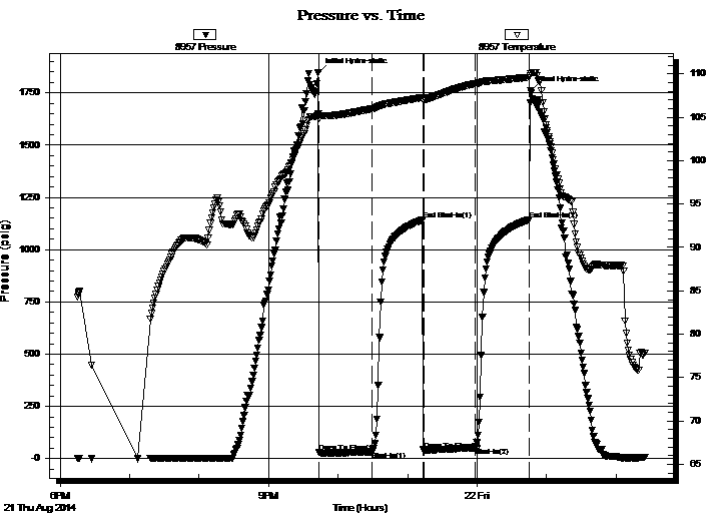
**9-15s-19w Ellis, KS**  
**Bieler #2**  
Job Ticket: 53966 **DST#: 4**  
Test Start: 2014.08.21 @ 18:15:00

## GENERAL INFORMATION:

Formation: **Conglomerate. Sand.**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:43:45  
 Time Test Ended: 02:25:30  
 Interval: **3628.00 ft (KB) To 3648.00 ft (KB) (TVD)**  
 Total Depth: 3648.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59  
 Reference Elevations: 2035.00 ft (KB)  
 2025.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8957 Inside**  
 Press@RunDepth: 53.67 psig @ 3629.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.21 End Date: 2014.08.22 Last Calib.: 2014.08.22  
 Start Time: 18:15:05 End Time: 02:25:29 Time On Btm: 2014.08.21 @ 21:43:00  
 Time Off Btm: 2014.08.22 @ 00:46:30

TEST COMMENT: IF-4" blow  
 IS-No blow  
 FF-2" blow  
 FS-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1848.48	105.39	Initial Hydro-static
1	29.91	104.88	Open To Flow (1)
47	33.19	105.99	Shut-In(1)
90	1142.39	107.28	End Shut-In(1)
91	41.76	107.07	Open To Flow (2)
136	53.67	108.87	Shut-In(2)
183	1142.96	109.61	End Shut-In(2)
184	1760.82	110.05	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	MCO 45%O 55%M	0.42
70.00	SGO 10%G 90%O	0.98

\* 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  
ATTN: Herb Deines

**9-15s-19w Ellis,KS**  
**Bieler #2**  
Job Ticket: 53966      **DST#: 4**  
Test Start: 2014.08.21 @ 18:15:00

**Tool Information**

Drill Pipe:	Length: 3620.00 ft	Diameter: 3.80 inches	Volume: 50.78 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 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:	55000.00 lb
			<u>Total Volume: 50.78 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3628.00 ft			Final	43000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	20.00 ft				
Tool Length:	40.00 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>
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Shut In Tool	5.00			3613.00	
Hydraulic tool	5.00			3618.00	
Packer	5.00			3623.00	20.00      Bottom Of Top Packer
Packer	5.00			3628.00	
Stubb	1.00			3629.00	
Recorder	0.00	8957	Inside	3629.00	
Recorder	0.00	8934	Outside	3629.00	
Perforations	4.00			3633.00	
Perforations	12.00			3645.00	
Bullnose	3.00			3648.00	20.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>40.00</b>				





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**  
 1310 Bison Rd **Bieler #2**  
 Hays KS 67601 Job Ticket: 53966 **DST#: 4**  
 ATTN: Herb Deines Test Start: 2014.08.21 @ 18:15:00

### Mud and Cushion Information

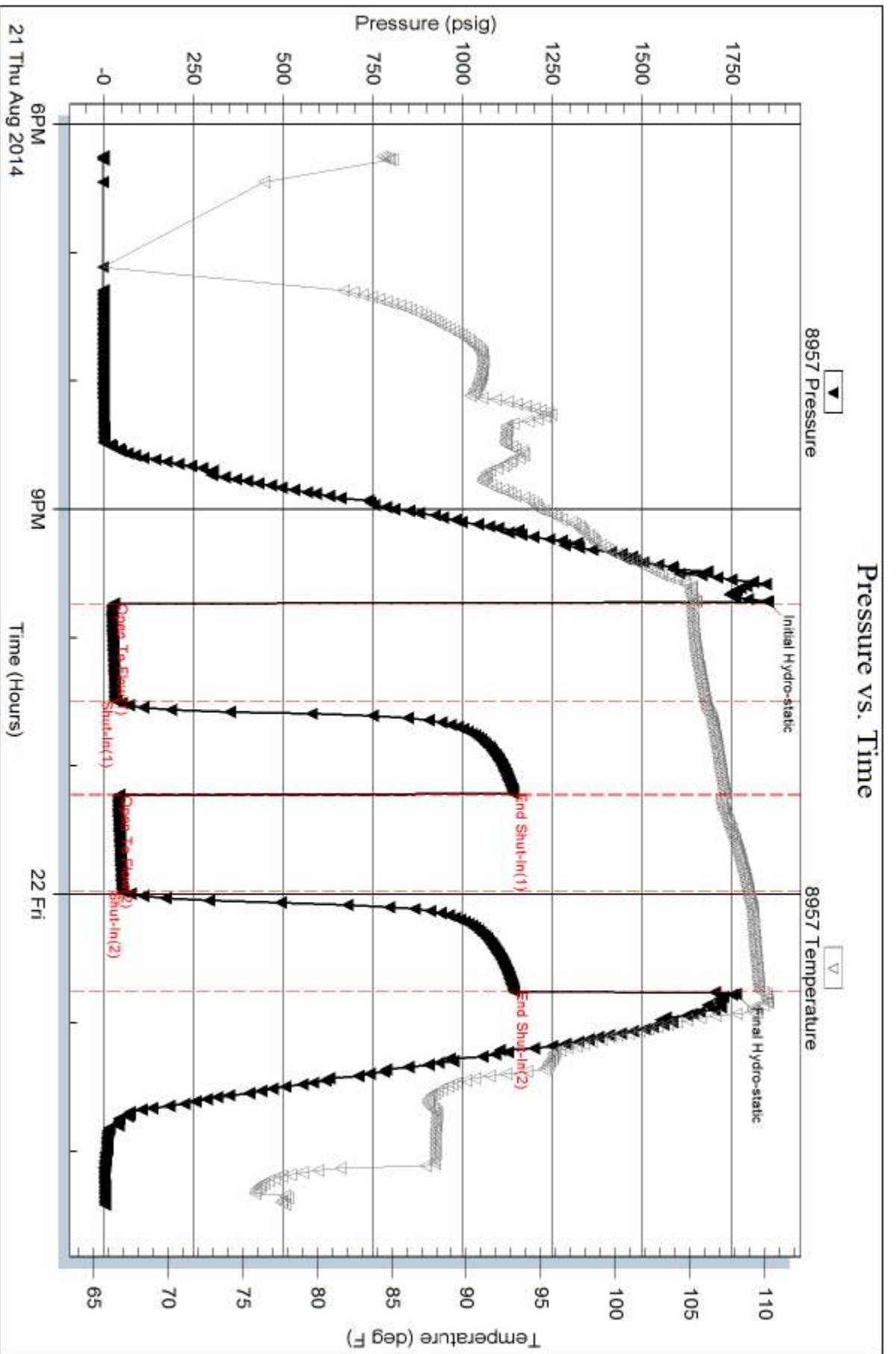
Mud Type: Gel Chem	Cushion Type:	Oil API: 25 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.78 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3800.00 ppm		
Filter Cake: inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	MCO 45%O 55%M	0.421
70.00	SGO 10%G 90%O	0.982

Total Length: 100.00 ft Total Volume: 1.403 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments:

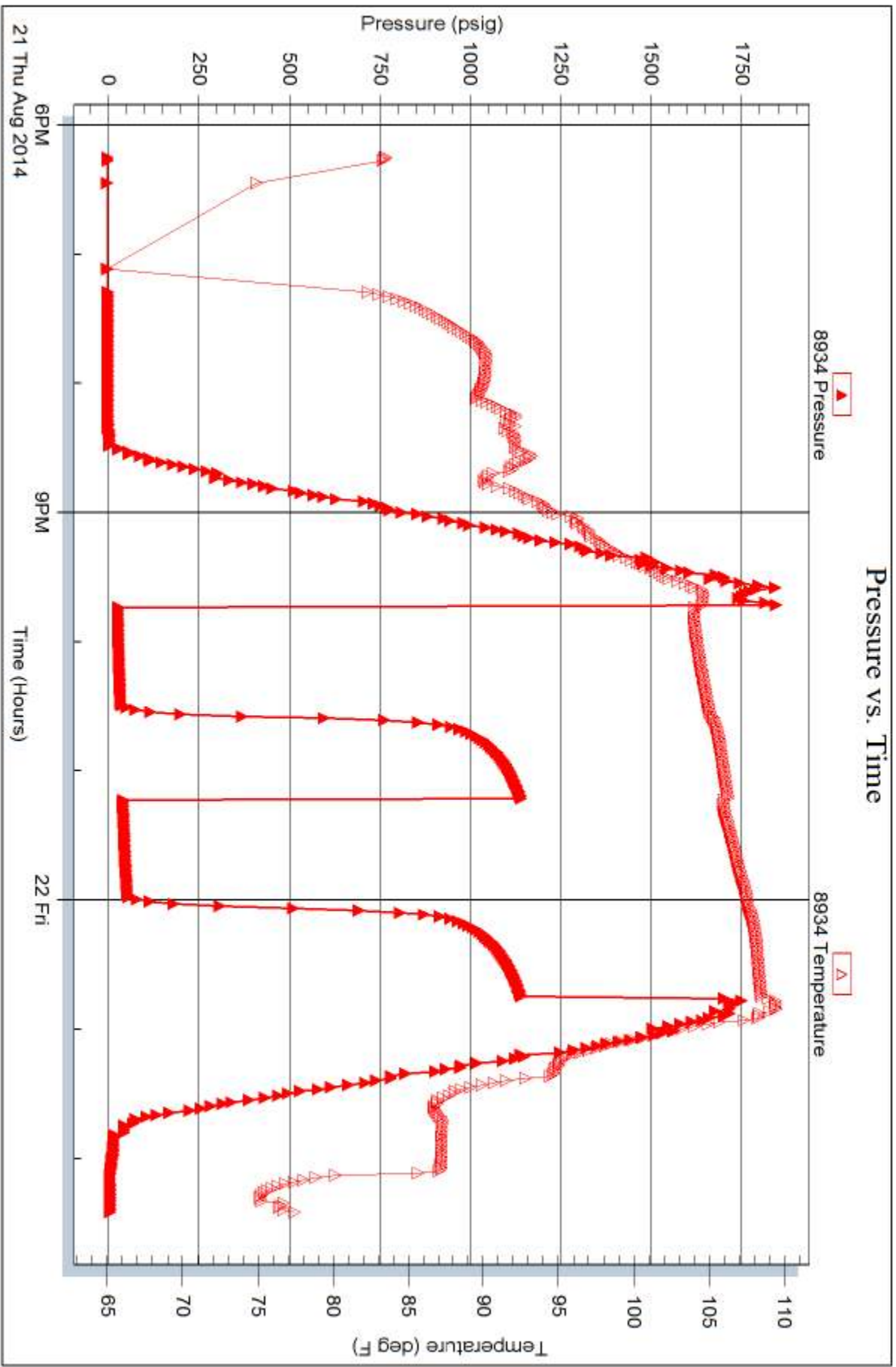


Serial #: 8934

Outside TDI Inc.

Bieler #2

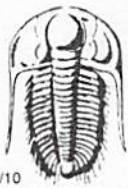
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 53966

Printed: 2014.08.22 @ 12:00:45



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53963

Well Name & No. Bieler #2 Test No. 1 Date 8/19/14  
 Company TDI Inc. Elevation 2035 KB 2028 GL  
 Address 1310 Bison Rd Hays KS 67601  
 Co. Rep / Geo. Herb D Rig Southwind #1  
 Location: Sec. 9 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3310-3365 Zone Tested Toronto - KC "C"  
 Anchor Length 55 Drill Pipe Run \_\_\_\_\_ Mud Wt. 8.9  
 Top Packer Depth 3305 Drill Collars Run — Vis 55  
 Bottom Packer Depth 3310 Wt. Pipe Run — WL 7.8  
 Total Depth 3365 Chlorides 3800 ppm System LCM 2#  
 Blow Description FF - Packer - failure

Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total \_\_\_\_\_ BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

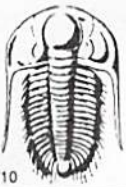
(A) Initial Hydrostatic \_\_\_\_\_  Test 950 T-On Location 18:00  
 (B) First Initial Flow \_\_\_\_\_  Jars \_\_\_\_\_ T-Started 18:20  
 (C) First Final Flow \_\_\_\_\_  Safety Joint \_\_\_\_\_ T-Open 19:  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled 19:  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 23:45  
 (F) Second Final Flow \_\_\_\_\_  Mileage 38.7 58.90 Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic \_\_\_\_\_  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1008.90

Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1208.90  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Burt Dyer

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. 53964

4/10

Well Name & No. Bieler #2 Test No. 2 Date 8/19/14  
 Company TDI Inc. Elevation 2035 KB 2028 GL  
 Address 1310 Bison Rd Hays KS 67601  
 Co. Rep / Geo. Herb D Rig Southwind #1  
 Location: Sec. 9 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3342 - 3365 Zone Tested KC<sup>11</sup>C<sup>11</sup>  
 Anchor Length 23 Drill Pipe Run \_\_\_\_\_ Mud Wt. 8.9  
 Top Packer Depth 3337 Drill Collars Run - Vis 55  
 Bottom Packer Depth 3342 Wt. Pipe Run - WL 7.8  
 Total Depth 3365 Chlorides 3800 ppm System LCM 2<sup>#</sup>

Blow Description FF - BOB in 6min  
ISF - No blow  
FF - BOB in 1/2min  
ISF - 2 1/2 in blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>105</u>	<u>SGO</u>	<u>10</u>	<u>90</u>		
<u>60</u>	<u>GVSOCM</u>	<u>35</u>	<u>5</u>		<u>60</u>
	<u>1240 @ GIP</u>				

Rec Total 165 BHT 111 Gravity 30 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm  
 (A) Initial Hydrostatic 1,637  Test 1150 T-On Location \_\_\_\_\_  
 (B) First Initial Flow 33  Jars \_\_\_\_\_ T-Started 23:55  
 (C) First Final Flow 39  Safety Joint \_\_\_\_\_ T-Open 1:15  
 (D) Initial Shut-In 805  Circ Sub \_\_\_\_\_ T-Pulled 3:30  
 (E) Second Initial Flow 41  Hourly Standby \_\_\_\_\_ T-Out 5:20  
 (F) Second Final Flow 78  Mileage 58.90 Comments \_\_\_\_\_  
 (G) Final Shut-In 739  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1,605  Straddle \_\_\_\_\_

Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Initial Open 15  
 Initial Shut-In 30  
 Final Flow 45  
 Final Shut-In 45  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1208.90  
 Sub Total 1208.90  
 Total 1208.90  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Butt Dan

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53965

Well Name & No. Bieler #2 Test No. 3 Date 8/20/14  
 Company TOT Inc. Elevation 2035 KB 2025 GL  
 Address 1310 Bison Rd Hays KS 67601  
 Co. Rep / Geo. Herb D. Rig Southwind #1  
 Location: Sec. 9 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3364-3415 Zone Tested KC "D-G"  
 Anchor Length 51 Drill Pipe Run \_\_\_\_\_ Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3359 Drill Collars Run \_\_\_\_\_ Vis \_\_\_\_\_  
 Bottom Packer Depth 3364 Wt. Pipe Run \_\_\_\_\_ WL \_\_\_\_\_  
 Total Depth 3415 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_  
 Blow Description FF-BOB in 29min  
FST-No blow  
FF-BOB in 49min  
FST-1/2 in blow

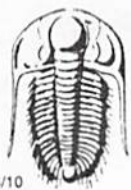
Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>SGOWCM</u>	<u>10</u>	<u>10</u>	<u>30</u>	<u>50</u>
<u>60</u>	<u>SGOWCM</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>70</u>
<u>45</u>	<u>GOCM</u>	<u>20</u>	<u>25</u>		<u>55</u>
	<u>310 FT GRP</u>				

Rec Total 225 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW .2 @ 60° F Chlorides 46,000 ppm  
 (A) Initial Hydrostatic 1,658  Test 1150 T-On Location 14:45  
 (B) First Initial Flow 33  Jars \_\_\_\_\_ T-Started 15:15  
 (C) First Final Flow 69  Safety Joint \_\_\_\_\_ T-Open 19:00  
 (D) Initial Shut-In 901  Circ Sub \_\_\_\_\_ T-Pulled 22:30  
 (E) Second Initial Flow 84  Hourly Standby \_\_\_\_\_ T-Out 00:35  
 (F) Second Final Flow 120  Mileage 38RT 58.90 Comments \_\_\_\_\_  
 (G) Final Shut-In 889  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1,622  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 45  Day Standby \_\_\_\_\_ Total 1208.90  
 Final Flow 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 1208.90

Approved By \_\_\_\_\_ Our Representative Bruce D. ...

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **53966**

Well Name & No. Bieler #2 Test No. 4 Date 8/21/14  
 Company 701 Inc. Elevation 2035 KB 2025 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Herb D. Rig Southwind #1  
 Location: Sec. 9 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3628-3648 Zone Tested Cong Sd.  
 Anchor Length 20 Drill Pipe Run \_\_\_\_\_ Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3623 Drill Collars Run — Vis \_\_\_\_\_  
 Bottom Packer Depth 3628 Wt. Pipe Run — WL \_\_\_\_\_  
 Total Depth 3648 Chlorides \_\_\_\_\_ ppm System LCM \_\_\_\_\_

Blow Description 7F - 4in blow  
FSI - No blow  
FF - 2in blow  
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>MCO</u>	<u>45</u>	<u>—</u>	<u>55</u>	<u>—</u>
<u>70</u>	<u>SGO</u>	<u>10</u>	<u>90</u>	<u>—</u>	<u>—</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 100 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 6848  Test 1150 T-On Location 17:50  
 (B) First Initial Flow 30  Jars \_\_\_\_\_ T-Started 18:15  
 (C) First Final Flow 33  Safety Joint \_\_\_\_\_ T-Open 21:42  
 (D) Initial Shut-In 1,142  Circ Sub \_\_\_\_\_ T-Pulled 00:42  
 (E) Second Initial Flow 42  Hourly Standby \_\_\_\_\_ T-Out 2:25  
 (F) Second Final Flow 54  Mileage 38rt 58.90 Comments \_\_\_\_\_  
 (G) Final Shut-In 1,143  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1,761  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 45  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 45  Day Standby \_\_\_\_\_ Total 1208.90  
 Final Shut-In 45  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1208.90

Approved By \_\_\_\_\_ Our Representative But Dineen

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