



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1088351  
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: \_\_\_\_\_

1088351

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

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> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison RD  
Hays KS 67601

ATTN: Herb Deines

**Harold #1**

**31-14s-19w Ellis KS**

Start Date: 2012.06.13 @ 11:42:00

End Date: 2012.06.14 @ 07:42:30

Job Ticket #: 47194                      DST #: 1

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.06.18 @ 16:03:36



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
1310 Bison RD  
Hays KS 67601  
ATTN: Herb Deines

**31-14s-19w Ellis KS**  
**Harold #1**  
Job Ticket: 47194      **DST#: 1**  
Test Start: 2012.06.13 @ 11:42:00

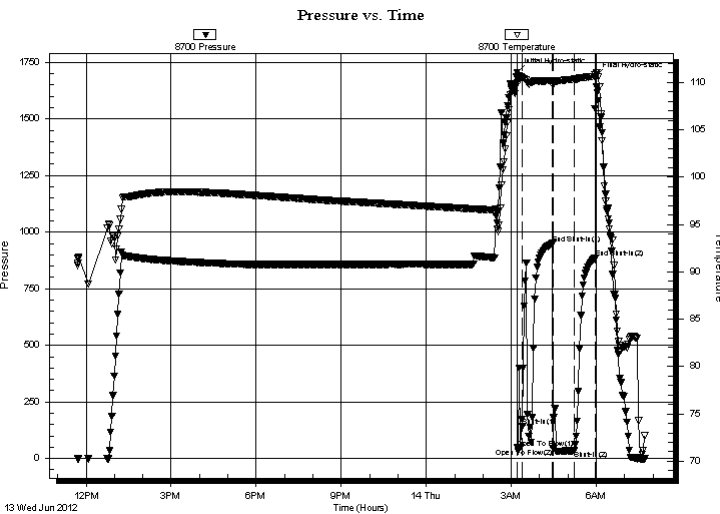
## GENERAL INFORMATION:

Formation: **KC "C"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 03:13:00  
Time Test Ended: 07:42:30  
Interval: **3406.00 ft (KB) To 3430.00 ft (KB) (TVD)**  
Total Depth: 3406.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Cody Bloedorn  
Unit No: 42  
Reference Elevations: 2092.00 ft (KB)  
2087.00 ft (CF)  
KB to GR/CF: 5.00 ft

## Serial #: 8700 Outside

Press @ Run Depth: 34.29 psig @ 3407.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2012.06.13 End Date: 2012.06.14 Last Calib.: 2012.06.14  
Start Time: 11:42:05 End Time: 07:42:29 Time On Btm: 2012.06.14 @ 03:12:00  
Time Off Btm: 2012.06.14 @ 05:58:00

TEST COMMENT: 30 - IF- 3 1/2" Blow  
45 - IS- No blow back  
45 - FF- No blow for 9 Min, then surface blow throughout.  
45 - FS- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1705.75	109.96	Initial Hydro-static
1	47.19	109.90	Open To Flow (1)
12	141.69	110.38	Shut-In(1)
75	949.68	110.20	End Shut-In(1)
76	43.99	109.65	Open To Flow (2)
120	34.29	110.33	Shut-In(2)
165	884.42	110.63	End Shut-In(2)
166	1685.35	110.88	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
45.00	VSOCM, 2%O, 98%M	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  
ATTN: Herb Deines

**31-14s-19w Ellis KS**  
**Harold #1**  
Job Ticket: 47194      **DST#: 1**  
Test Start: 2012.06.13 @ 11:42:00

**Tool Information**

Drill Pipe:	Length: 3411.00 ft	Diameter: 3.80 inches	Volume: 47.85 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	44000.00 lb
			<u>Total Volume: 47.85 bbl</u>	Tool Chased	12.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3406.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	45.00 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			3386.00	
Shut In Tool	5.00			3391.00	
Hydraulic tool	5.00			3396.00	
Packer	5.00			3401.00	21.00      Bottom Of Top Packer
Packer	5.00			3406.00	
Stubb	1.00			3407.00	
Recorder	0.00	6625	Inside	3407.00	
Recorder	0.00	8700	Outside	3407.00	
Perforations	20.00			3427.00	
Bullnose	3.00			3430.00	24.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>45.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc **31-14s-19w Ellis KS**  
 1310 Bison RD **Harold #1**  
 Hays KS 67601 Job Ticket: 47194 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2012.06.13 @ 11:42:00

## 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: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3100.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	VSOCM, 2%O, 98%M	0.631

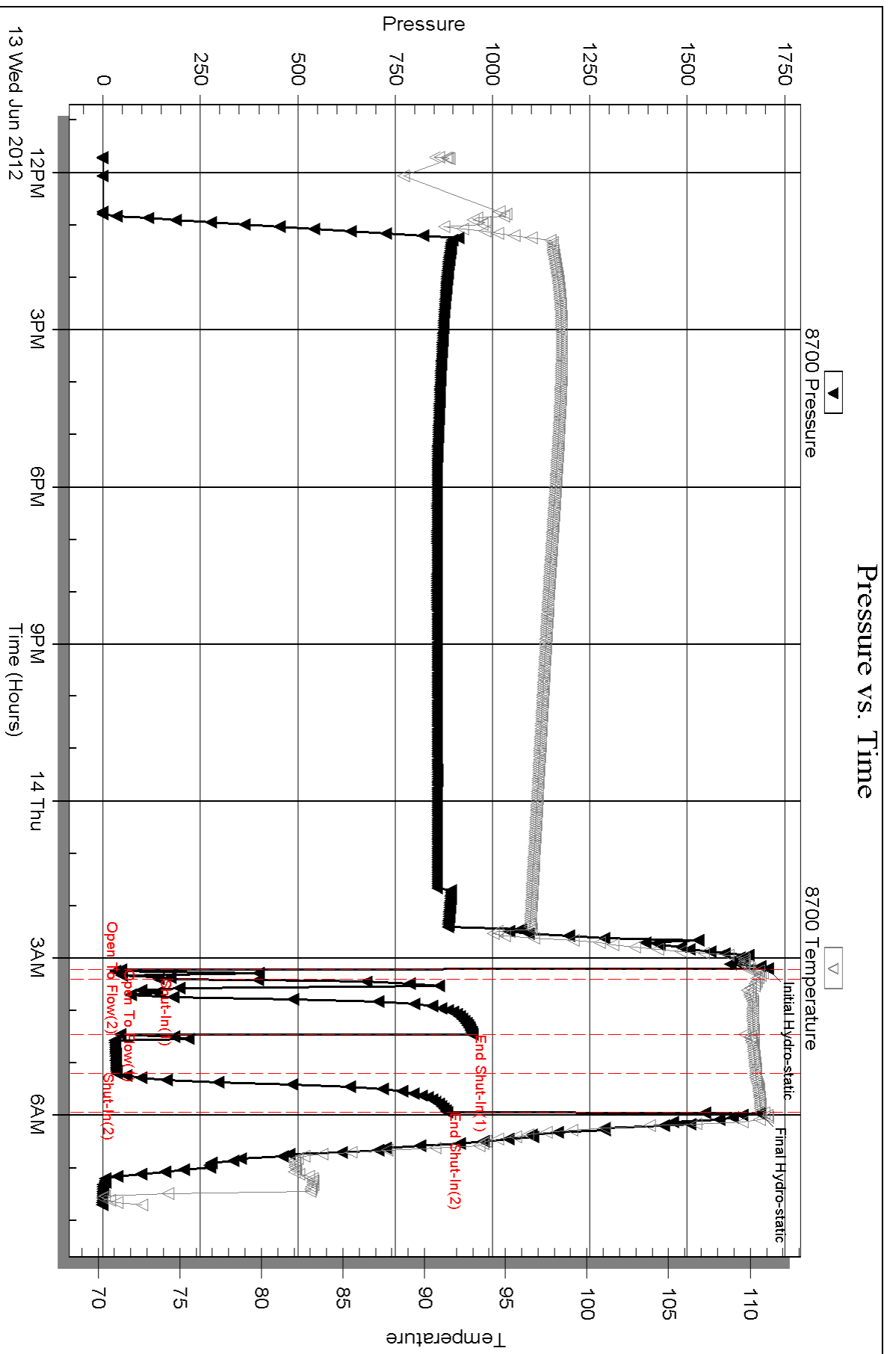
Total Length: 45.00 ft Total Volume: 0.631 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: \*\*\*Rig Broke down in the middle of going in the hole with the tool\*\*\*

Suppose to be on @ 11 A.M. on 6-13-12, Rig broke down going into hole. Got started again @ 2:30 A.M. on 6-14-12. Finished test at 7:46 A.M. on 6-14-12. 9 hrs for test and 13 Hrs of Hourly Standby time.





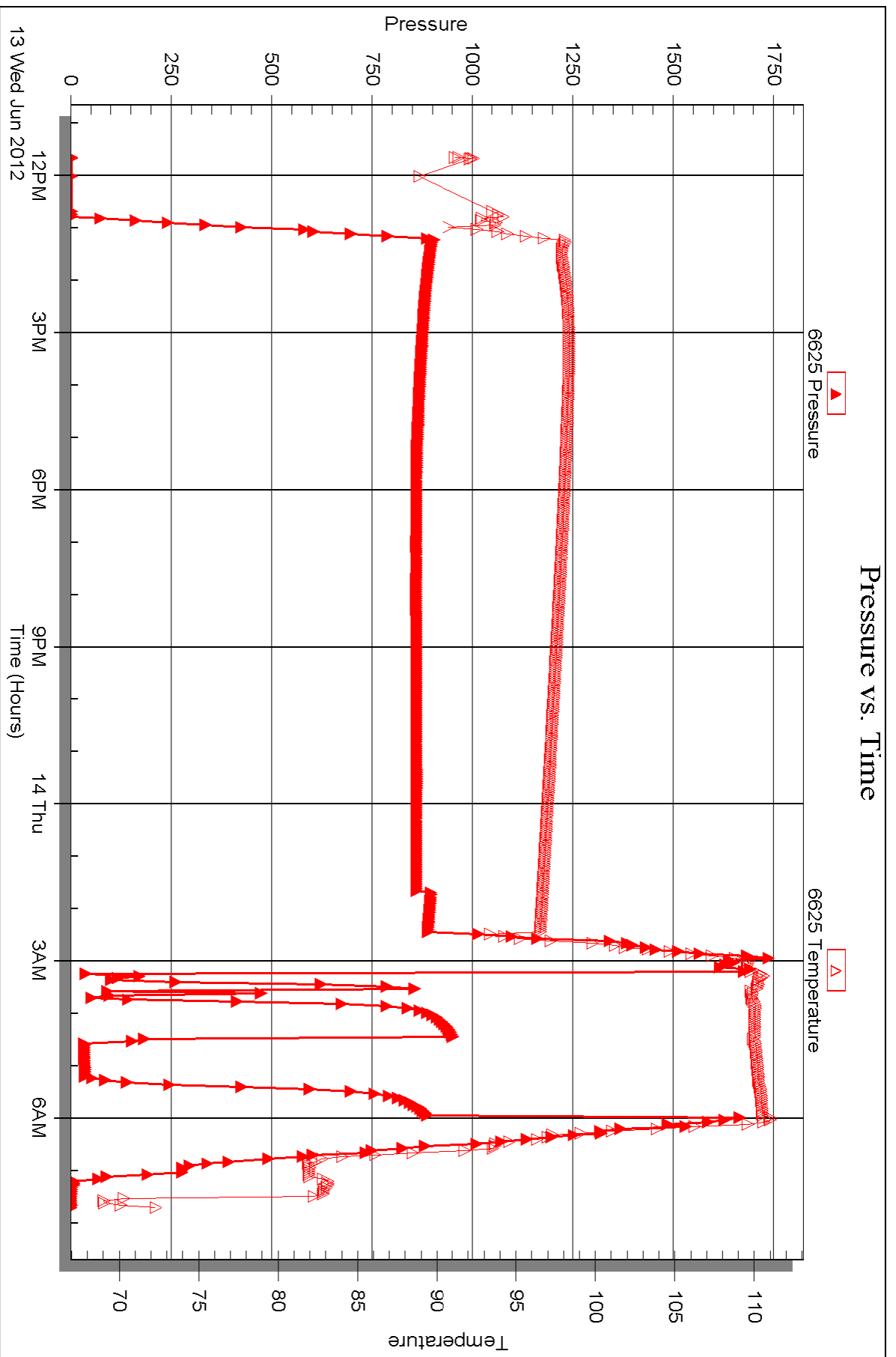
Serial #: 6625

Inside

TDI Inc

Harold #1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison RD  
Hays KS 67601

ATTN: Herb Deines

**Harold #1**

**31-14s-19w Ellis KS**

Start Date: 2012.06.14 @ 14:06:00

End Date: 2012.06.14 @ 22:01:30

Job Ticket #: 47195                      DST #: 2

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.06.18 @ 16:02:55

TDI Inc  
31-14s-19w Ellis KS  
Harold #1  
DST # 2  
KC "C-F"  
2012.06.14



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison RD  
 Hays KS 67601  
 ATTN: Herb Deines

**31-14s-19w Ellis KS**  
**Harold #1**  
 Job Ticket: 47195 **DST#: 2**  
 Test Start: 2012.06.14 @ 14:06:00

## GENERAL INFORMATION:

Formation: **KC "C-F"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:18:30  
 Time Test Ended: 22:01:30  
 Interval: **3404.00 ft (KB) To 3460.00 ft (KB) (TVD)**  
 Total Depth: 3460.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Cody Bloedorn  
 Unit No: 42  
 Reference Elevations: 2092.00 ft (KB)  
 2087.00 ft (CF)  
 KB to GR/CF: 5.00 ft

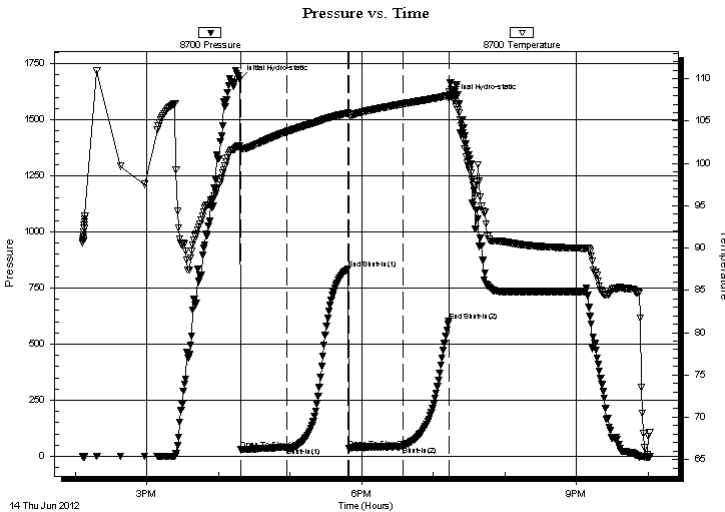
## Serial #: 8700

Outside

Press @ Run Depth: 45.78 psig @ 3441.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.06.14 End Date: 2012.06.14 Last Calib.: 2012.06.14  
 Start Time: 14:06:05 End Time: 22:01:29 Time On Btm: 2012.06.14 @ 16:18:00  
 Time Off Btm: 2012.06.14 @ 19:13:30

TEST COMMENT: 45 - IF- Surface blow  
 45 - IS- No blow back  
 45 - FF- 1/4" blow  
 45 - FS- No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1677.89	102.08	Initial Hydro-static
1	30.24	101.55	Open To Flow (1)
39	40.58	103.74	Shut-In(1)
91	835.34	105.93	End Shut-In(1)
92	34.75	105.75	Open To Flow (2)
137	45.78	107.03	Shut-In(2)
175	601.63	108.03	End Shut-In(2)
176	1594.52	108.46	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud -Oil scum, 100%M	0.42

\* 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

**31-14s-19w Ellis KS**  
**Harold #1**  
Job Ticket: 47195      **DST#: 2**  
Test Start: 2012.06.14 @ 14:06:00

**Tool Information**

Drill Pipe:	Length: 3411.00 ft	Diameter: 3.80 inches	Volume: 47.85 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	44000.00 lb
			<u>Total Volume: 47.85 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3404.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	56.00 ft				
Tool Length:	77.00 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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Change Over Sub	1.00			3384.00	
Shut In Tool	5.00			3389.00	
Hydraulic tool	5.00			3394.00	
Packer	5.00			3399.00	21.00      Bottom Of Top Packer
Packer	5.00			3404.00	
Stubb	1.00			3405.00	
Perforations	4.00			3409.00	
Change Over Sub	1.00			3410.00	
Drill Pipe	31.00			3441.00	
Recorder	0.00	6625	Inside	3441.00	
Recorder	0.00	8700	Outside	3441.00	
Change Over Sub	1.00			3442.00	
Perforations	15.00			3457.00	
Bullnose	3.00			3460.00	56.00      Bottom Packers & Anchor

**Total Tool Length: 77.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc **31-14s-19w Ellis KS**  
 1310 Bison RD **Harold #1**  
 Hays KS 67601 Job Ticket: 47195 **DST#: 2**  
 ATTN: Herb Deines Test Start: 2012.06.14 @ 14:06:00

## 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:	ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3300.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud -Oil scum, 100%M	0.421

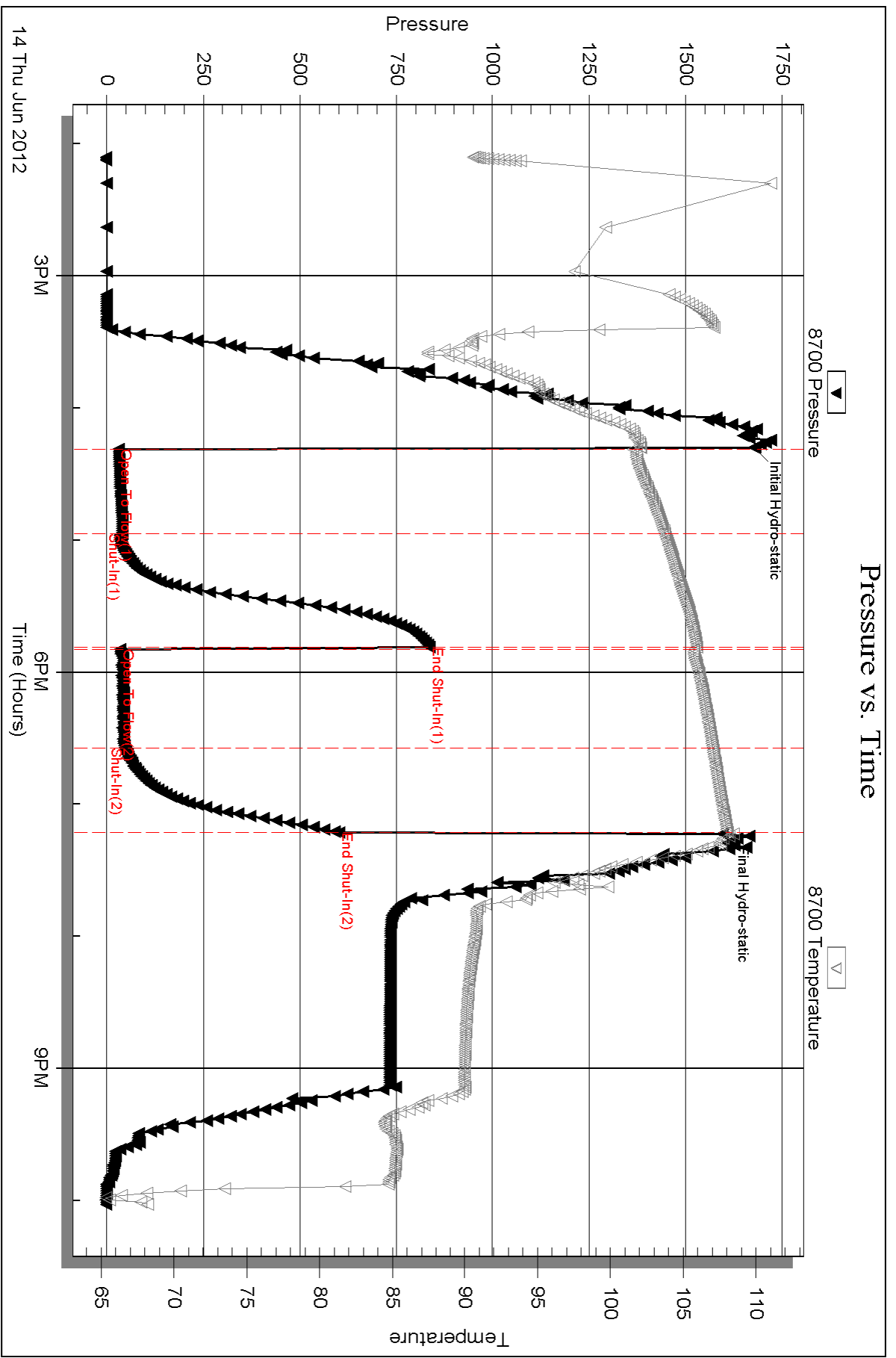
Total Length: 30.00 ft Total Volume: 0.421 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments:

Serial #: 8700

Outside TDI Inc

Harold #1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 47195

Printed: 2012.06.18 @ 16:02:57

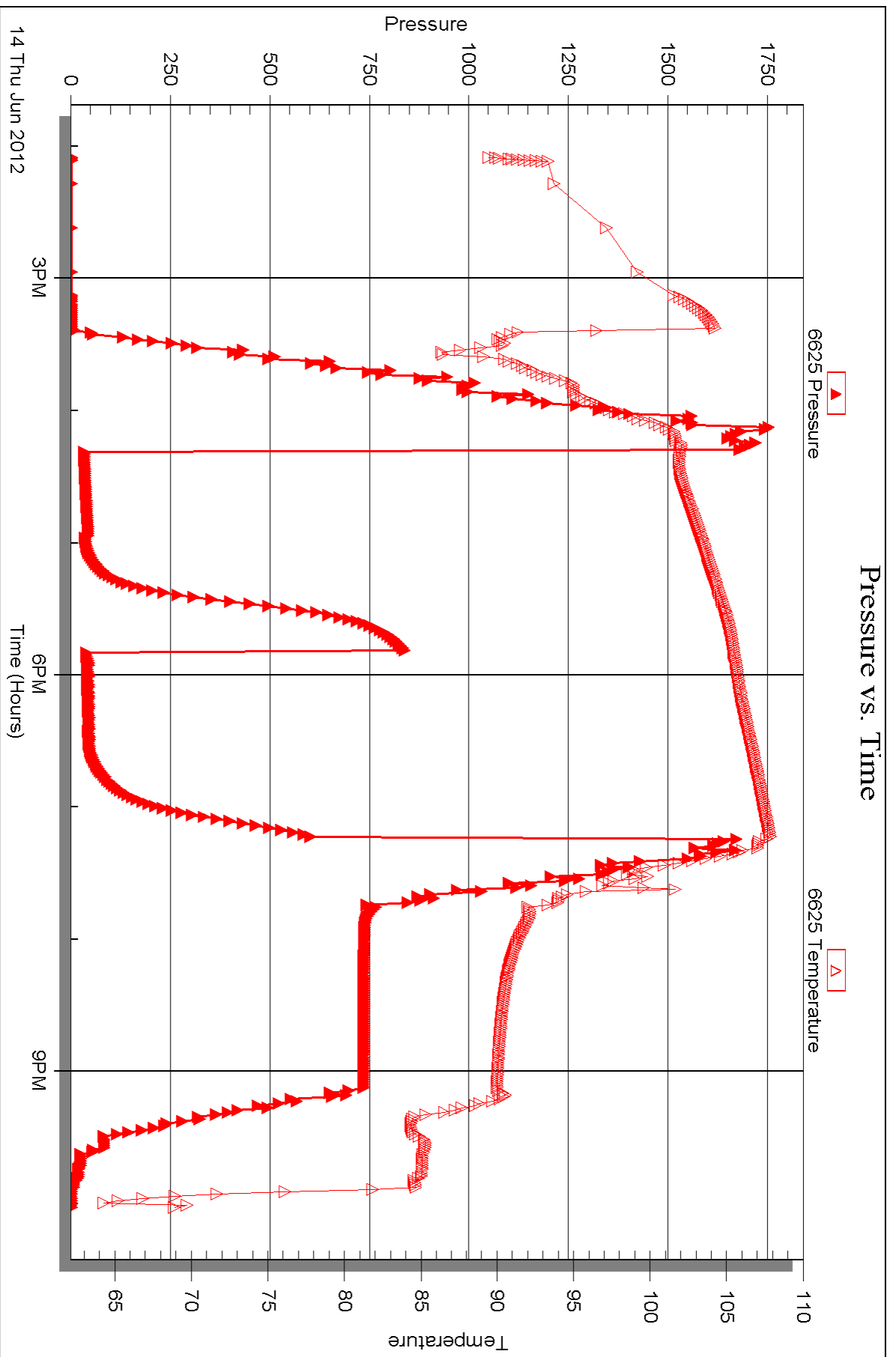
Serial #: 6625

Inside

TDI Inc

Harold #1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 47195

Printed: 2012.06.18 @ 16:02:58





## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison RD  
Hays KS 67601

ATTN: Herb Deines

**Harold #1**

**31-14s-19w Ellis KS**

Start Date: 2012.06.15 @ 12:58:00

End Date: 2012.06.15 @ 19:21:30

Job Ticket #: 47196                      DST #: 3

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.06.18 @ 16:02:04

TDI Inc  
31-14s-19w Ellis KS  
Harold #1  
DST # 3  
H,I,J  
2012.06.15



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc  
 1310 Bison RD  
 Hays KS 67601  
 ATTN: Herb Deines

**31-14s-19w Ellis KS**  
**Harold #1**  
 Job Ticket: 47196 **DST#: 3**  
 Test Start: 2012.06.15 @ 12:58:00

## GENERAL INFORMATION:

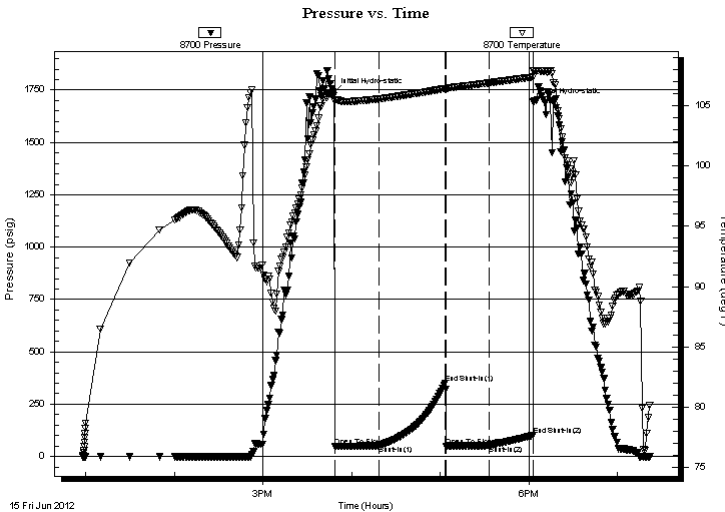
Formation: **H,I,J**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 15:48:30  
 Time Test Ended: 19:21:30  
 Interval: **3503.00 ft (KB) To 3590.00 ft (KB) (TVD)**  
 Total Depth: 3590.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Cody Bloedorn  
 Unit No: 42  
 Reference Elevations: 2092.00 ft (KB)  
 2087.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8700 Outside

Press @ Run Depth: 53.26 psig @ 3572.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2012.06.15 End Date: 2012.06.15 Last Calib.: 2012.06.15  
 Start Time: 12:58:05 End Time: 19:21:29 Time On Btm: 2012.06.15 @ 15:48:00  
 Time Off Btm: 2012.06.15 @ 18:03:00

TEST COMMENT: 30 - IF- 1/4" Blow, died back to surface blow  
 45 - IS- No blow back  
 30 - FF- 1/4" blow  
 30 - FS- No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1737.64	105.85	Initial Hydro-static
1	47.53	105.37	Open To Flow (1)
31	51.95	105.56	Shut-In(1)
75	349.22	106.41	End Shut-In(1)
76	47.54	106.38	Open To Flow (2)
105	53.26	106.89	Shut-In(2)
135	100.51	107.36	End Shut-In(2)
135	1691.93	107.90	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud - Oil Scum, 100%M	0.28

\* 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

**31-14s-19w Ellis KS**  
**Harold #1**  
Job Ticket: 47196      **DST#: 3**  
Test Start: 2012.06.15 @ 12:58:00

**Tool Information**

Drill Pipe:	Length: 3506.00 ft	Diameter: 3.80 inches	Volume: 49.18 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 49.18 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3503.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	87.00 ft			
Tool Length:	108.00 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			3483.00	
Shut In Tool	5.00			3488.00	
Hydraulic tool	5.00			3493.00	
Packer	5.00			3498.00	21.00      Bottom Of Top Packer
Packer	5.00			3503.00	
Stubb	1.00			3504.00	
Perforations	4.00			3508.00	
Change Over Sub	1.00			3509.00	
Drill Pipe	62.00			3571.00	
Change Over Sub	1.00			3572.00	
Recorder	0.00	6625	Inside	3572.00	
Recorder	0.00	8700	Outside	3572.00	
Perforations	15.00			3587.00	
Bullnose	3.00			3590.00	87.00      Bottom Packers & Anchor

**Total Tool Length: 108.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc **31-14s-19w Ellis KS**  
 1310 Bison RD **Harold #1**  
 Hays KS 67601 Job Ticket: 47196 **DST#: 3**  
 ATTN: Herb Deines Test Start: 2012.06.15 @ 12:58:00

## 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: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3500.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

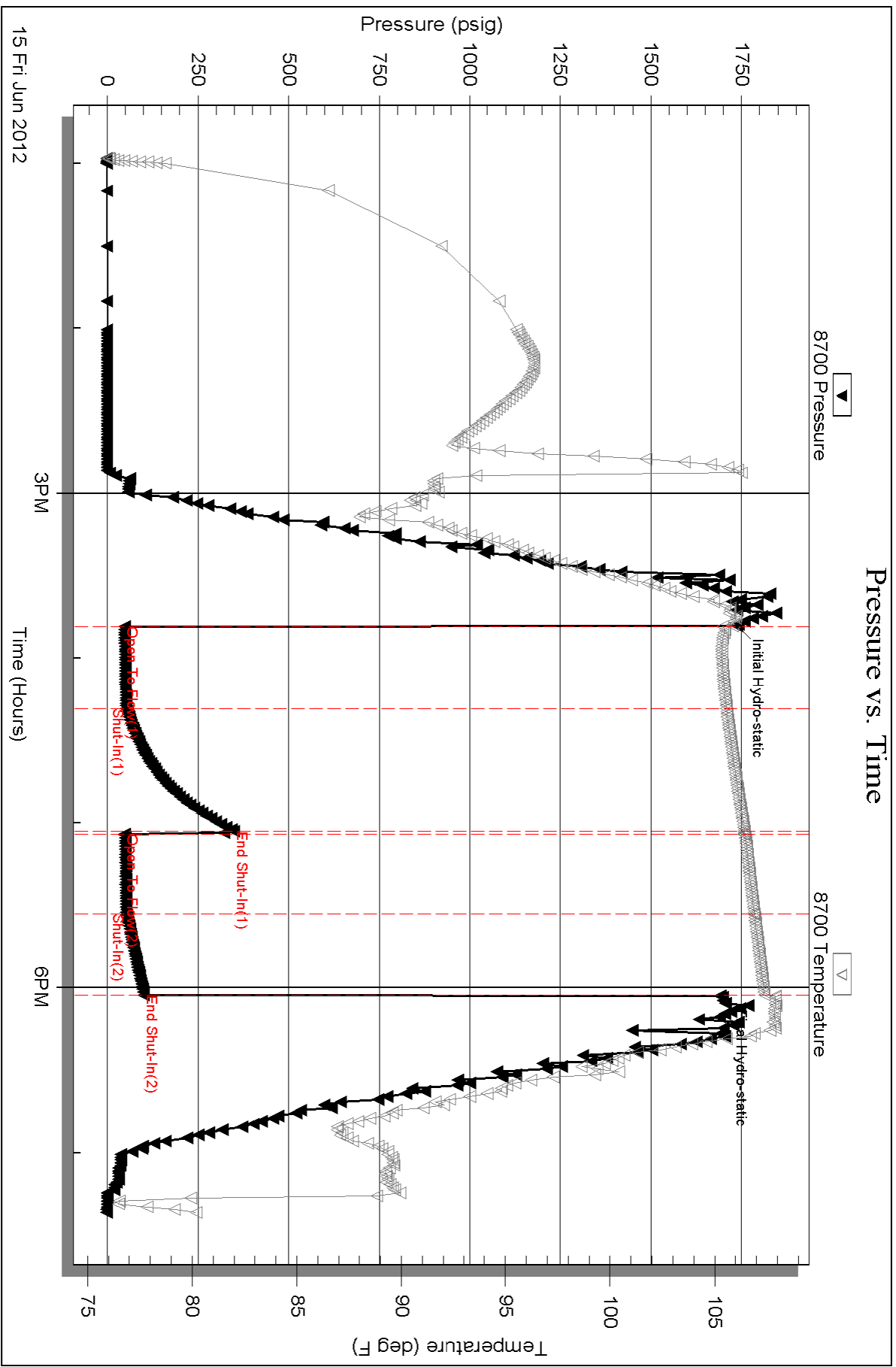
Length ft	Description	Volume bbl
20.00	Mud - Oil Scum, 100%M	0.281

Total Length: 20.00 ft Total Volume: 0.281 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: worked on brakes before we went in hole.



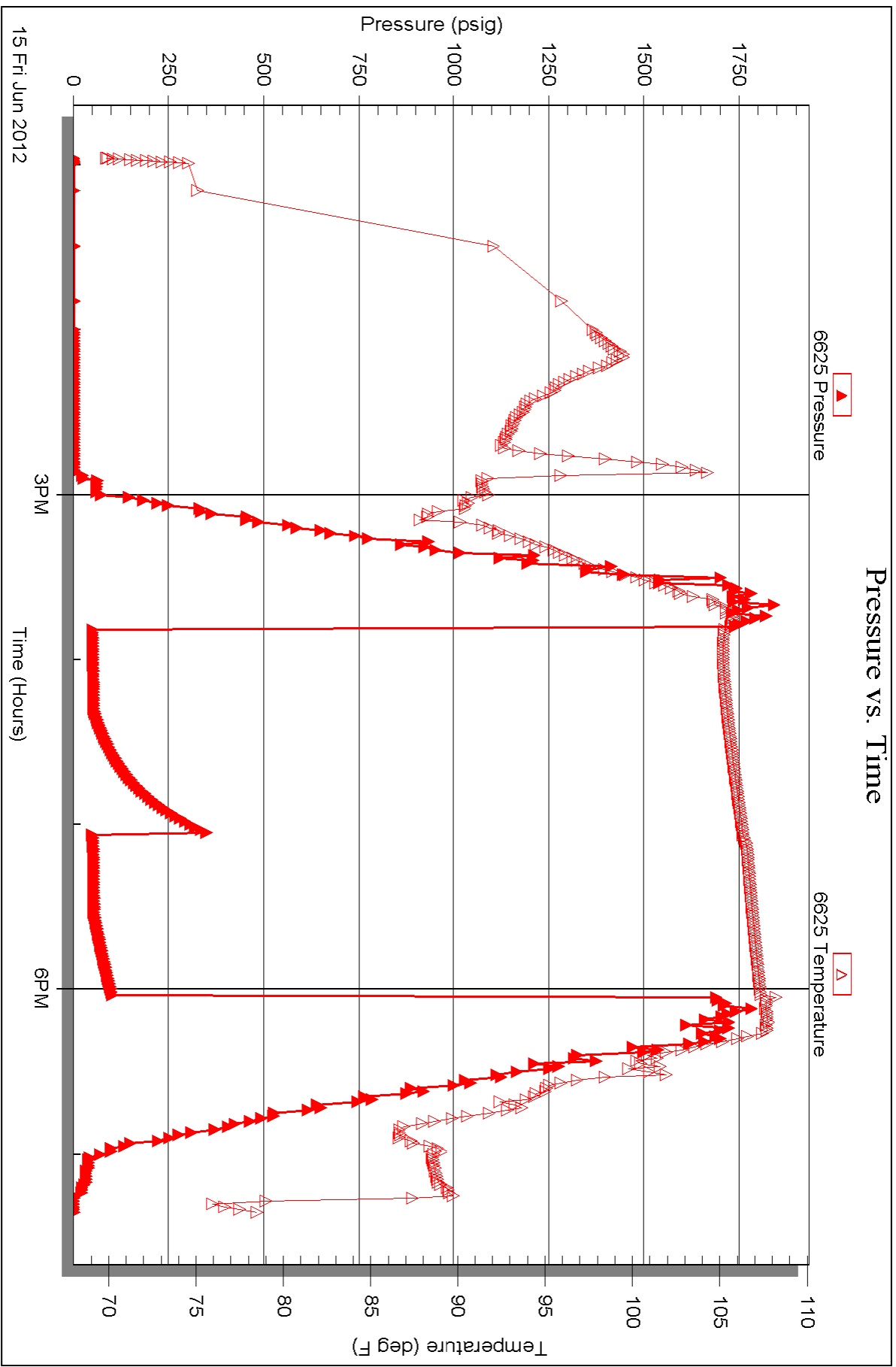
Serial #: 6625

Inside

TDI Inc

Harold #1

DST Test Number: 3





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 47194

Well Name & No. Harold #1 Test No. 1 Date 6-13-12  
 Company TDI Inc Elevation 2092 KB 2087 GL  
 Address 1310 Bison RD, Hays KS, 67601  
 Co. Rep / Geo. Herb Rig Southwind #1  
 Location: Sec. 31 Twp. 14s Rge. 19w Co. Ellis State KS

Interval Tested 3406 - 3430 Zone Tested "C"  
 Anchor Length 24' Drill Pipe Run 3411 Mud Wt. 9.0  
 Top Packer Depth 3401 Drill Collars Run — Vis 53  
 Bottom Packer Depth 3406 Wt. Pipe Run — WL 6.8  
 Total Depth 3430 Chlorides 3,100 ppm System LCM —

Blow Description IF- 3 1/2" blow  
ISI- No blow back  
FF- No blow for 9 M.m. surface blow  
FSI- No blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>VSOC M</u>	<u>2</u>		<u>98</u>	
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 45 BHT 110° Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 1705  Test 1150 T-On Location 9:35 am  
 (B) First Initial Flow 47  Jars — T-Started 11:42 am  
 (C) First Final Flow 141  Safety Joint — T-Open 3:16 am  
 (D) Initial Shut-In 949  Circ Sub — T-Pulled 6:01 am  
 (E) Second Initial Flow 43  Hourly Standby +3 hrs <sup>300</sup> T-Out 7:46 am  
 (F) Second Final Flow 34  Mileage 20x2 x2 124 Comments \*Rig broke down w/tool in hole\*  
 (G) Final Shut-In 884  Sampler —  
 (H) Final Hydrostatic 1685  Straddle —  Ruined Shale Packer —

Initial Open 30  Shale Packer —  Ruined Packer —  
 Initial Shut-In 45  Extra Packer —  Extra Copies —  
 Final Flow 45  Extra Recorder — Sub Total 0  
 Final Shut-In 45  Day Standby — Total 1574  
 Accessibility — MP/DST Disc't —  
 Sub Total 1574

Approved By \_\_\_\_\_ Our Representative Cody B

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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 47195

4/10

Well Name & No. Harold #1 Test No. 2 Date 6-14-12  
 Company TDI Inc Elevation 2092 KB 2087 GL  
 Address 1310 Bison RD, Hays KS, 67601  
 Co. Rep / Geo. Herb Rig Southwind #1  
 Location: Sec. 31 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3404-3460 Zone Tested C, D, F  
 Anchor Length 56' Drill Pipe Run 3411 Mud Wt. 9.2  
 Top Packer Depth 3399 Drill Collars Run — Vis 54  
 Bottom Packer Depth 3404 Wt. Pipe Run — WL 6.8  
 Total Depth 3460 Chlorides 3,300 ppm System LCM —

Blow Description IF - surface blow  
ISI - No blow back  
FF - 1/4" blow  
FSI - No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud - Oil Scum</u>				
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 30' BHT 108° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1677  Test 1150 T-On Location 1:50pm  
 (B) First Initial Flow 30  Jars T-Started 2:06pm  
 (C) First Final Flow 40  Safety Joint T-Open 4:20pm  
 (D) Initial Shut-In 835  Circ Sub T-Pulled 7:20pm  
 (E) Second Initial Flow 34  Hourly Standby T-Out 10:04pm  
 (F) Second Final Flow 45  Mileage 20x2 62 Comments  
 (G) Final Shut-In 601  Sampler  
 (H) Final Hydrostatic 1594  Straddle  Ruined Shale Packer

Initial Open 45  Shale Packer  Ruined Packer  
 Initial Shut-In 45  Extra Packer  Extra Copies  
 Final Flow 45  Extra Recorder Sub Total 0  
 Final Shut-In 45  Day Standby Total 1212  
 Accessibility MP/DST Disc't  
 Sub Total 1212

Approved By \_\_\_\_\_ Our Representative Cody B...

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.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 47196

4/10

Well Name & No. Harold #1 Test No. 3 Date 6-15-12  
 Company TDI Inc Elevation 2092 KB 2087 GL  
 Address 1310 Bison RD, Hays KS, 67601  
 Co. Rep / Geo. Herb D Rig Southwind #1  
 Location: Sec. 31 Twp. 14S Rge. 19W Co. Ellis State KS

Interval Tested 3503-3590 Zone Tested HI J  
 Anchor Length 87' Drill Pipe Run 3506 Mud Wt. 9.2  
 Top Packer Depth 3499 Drill Collars Run — Vis 5.3  
 Bottom Packer Depth 3503 Wt. Pipe Run — WL 6.8  
 Total Depth 3590 Chlorides 3500 ppm System LCM —

Blow Description IF - 1/4" blow, dried back to surface blow  
ISI - No blow back  
FF - 1/4" blow  
FSI - No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>Mud - oil scum</u>			<u>100</u>	
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 20' BHT 100° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1737</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>12:39 pm</u>
(B) First Initial Flow <u>47</u>	<input type="checkbox"/> Jars	T-Started <u>12:58 pm</u>
(C) First Final Flow <u>51</u>	<input type="checkbox"/> Safety Joint	T-Open <u>3:50 pm</u>
(D) Initial Shut-In <u>349</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>6:05 pm</u>
(E) Second Initial Flow <u>47</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>7:23 pm</u>
(F) Second Final Flow <u>53</u>	<input checked="" type="checkbox"/> Mileage <u>20X04</u> 124	Comments <u>Picked up tools @</u>
(G) Final Shut-In <u>100</u>	<input type="checkbox"/> Sampler	<u>6-16-12 @ 4:45 pm</u>
(H) Final Hydrostatic <u>1691</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>66.67</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby 1d 2h	Total <u>1340.67</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1274</u>	

Approved By \_\_\_\_\_ Our Representative Cody Bly

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.

**OPERATOR**

Company: TDI, INC  
 Address: 1310 BISON ROAD  
 HAYS, KS

Contact Geologist: TOM DENNING  
 Contact Phone Nbr: 785-259-3141  
 Well Name: HAROLD # 1  
 Location: SE SW NE Sec.31-14s-19w  
 Pool: WILDCAT  
 State: KANSAS

API: 15-051-26313-00-00  
 Field:  
 Country: USA



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

Scale 1:240 Imperial

Well Name: HAROLD # 1  
 Surface Location: SE SW NE Sec.31-14s-19w  
 Bottom Location:  
 API: 15-051-26313-00-00  
 License Number: 4787  
 Spud Date: 6/9/2012 Time: 3:00 PM  
 Region: ELLIS COUNTY Time: 8:18 AM  
 Drilling Completed: 6/16/2012  
 Surface Coordinates: 2310' FNL & 1650' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2082.00ft  
 K.B. Elevation: 2092.00ft  
 Logged Interval: 3000.00ft To: 3779.00ft  
 Total Depth: 3775.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: Latitude:  
 N/S Co-ord: 2310' FNL  
 E/W Co-ord: 1650' FEL

**LOGGED BY**

Company: SOLUTIONS CONSULTING  
 Address: 108 W 35TH  
 HAYS, KS 67601  
 Phone Nbr: (785) 639-1337  
 Logged By: Geologist Name: HERB DEINES

**CONTRACTOR**

Contractor: SOUTHWIND DRILLING INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 6/9/2012 Time: 3:00 PM  
 TD Date: 6/16/2012 Time: 8:18 AM  
 Rig Release: 6/16/2012 Time: 11:15 PM

**ELEVATIONS**

K.B. Elevation: 2092.00ft Ground Elevation: 2082.00ft  
 K.B. to Ground: 10.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL DUE TO NEGATIVE RESULTS OF THREE DSTs.

**FORMATION TOPS SUMMARY**

**HAROLD #1**


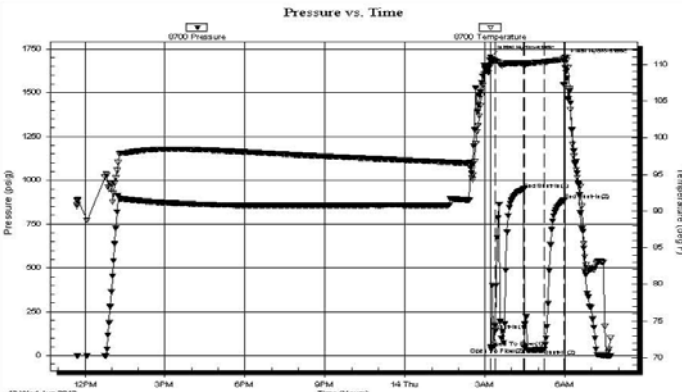
SE SW NE  
 Sec.31-14s-19w  
 2082' GL 2092' KB

<u>FORMATION</u>	<u>SAMPLE TOP</u>	<u>LOG TOP</u>
Anhydrite	1348+ 744	1356+ 736
B-Anhydrite	1384+ 708	1391+ 701
Topeka	3074- 982	3080- 988
Heebner Shale	3340-1248	3346-1254
Toronto	3371-1279	3372-1280
LKC	3388-1296	3394-1302
BKC	3639-1547	3642-1550
Arbuckle	3720-1628	3724-1632
RTD	3775-1683	
LTD		3779-1687


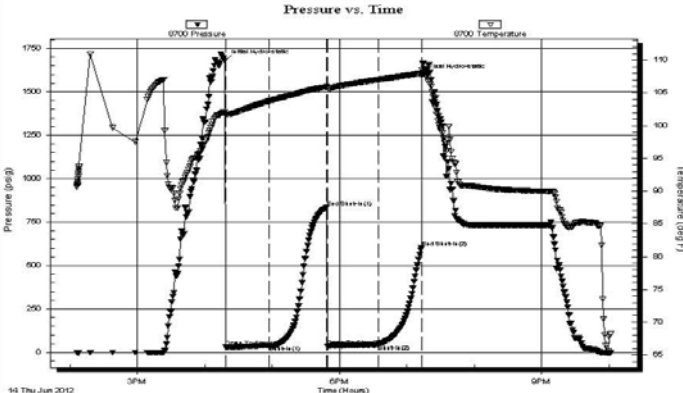
**SUMMARY OF DAILY ACTIVITY AND DEPTH AT 7:00AM**

6-09-12	RU, Spud, set surface casing to 213.76' w/150 sxs. Common, 2%gel, 3%CC, Slope survey ¼ degree, WOC 8 hrs. Plug down 6:15PM.
6-10-12	634' drilling
6-11-12	2192' drilling
6-12-12	2840' drilling
6-13-12	3430' drilling, DST # 1, down 13 hrs-draw works repairs
6-14-12	3430' finish DST # 1, drill to 3460', DST # 2, stormy weather
6-15-12	3560' drilled to 3590', DST # 3
6-16-12	3740' drilling, RTD, Logs, P & A, plugging completed 11:15PM


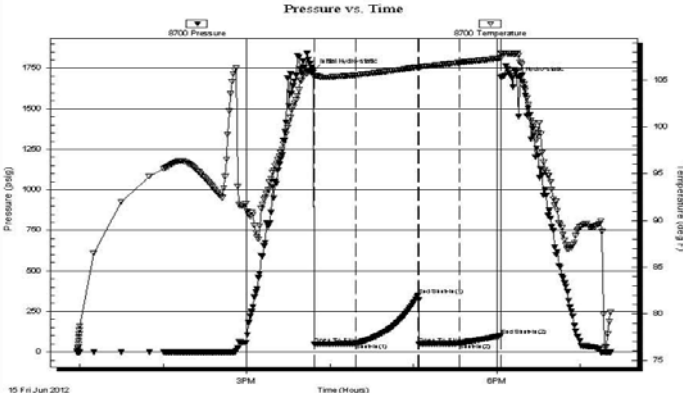
**DST # 1 TEST SUMMARY**

 <b>TRIOBITE TESTING, INC.</b>		<b>DRILL STEM TEST REPORT</b>																																					
TDI Inc 1310 Bison RD Hays KS, 67601 ATTN: Herb D.		31-14s-19w Ellis KS <b>Harold #1</b> Job Ticket: 47194 <b>DST#: 1</b> Test Start: 2012.06.13 @ 11:42:00																																					
<b>GENERAL INFORMATION:</b>																																							
Formation: <b>KC "C"</b>		Test Type: Conventional Bottom Hole (Initial)																																					
Deviated: No Whipstock: ft (KB)		Tester: Cody Bloedorn																																					
Time Tool Opened: 03:13:00		Unit No: 42																																					
Time Test Ended: 07:42:30		Reference Elevations: 2092.00 ft (KB)																																					
Interval: 3406.00 ft (KB) To 3430.00 ft (KB) (TVD)		2087.00 ft (CF)																																					
Total Depth: 3406.00 ft (KB) (TVD)		KB to GR/CF: 5.00 ft																																					
Hole Diameter: 7.88 inches		Hole Condition: Fair																																					
<b>Serial #: 8700      Outside</b>																																							
Press@RunDepth: 34.29 psig @ 3407.00 ft (KB)		Capacity: 8000.00 psig																																					
Start Date: 2012.06.13		End Date: 2012.06.14																																					
Start Time: 11:42:05		End Time: 07:42:29																																					
		Time On Btm: 2012.06.14 @ 03:12:00																																					
		Time Off Btm: 2012.06.14 @ 05:58:00																																					
<b>TEST COMMENT:</b> 30 - IF- 3 1/2" Blow 45 - IS- No blow back 45 - FF- No blow for 9 Min, then surface blow throughout. 45 - FSI- No blow back																																							
		<b>PRESSURE SUMMARY</b>																																					
		<table border="1"> <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>1705.75</td> <td>109.96</td> <td>Initial Hydro-static</td> </tr> <tr> <td>1</td> <td>47.19</td> <td>109.90</td> <td>Open To Flow (1)</td> </tr> <tr> <td>12</td> <td>141.69</td> <td>110.38</td> <td>Shut-In(1)</td> </tr> <tr> <td>75</td> <td>949.68</td> <td>110.20</td> <td>End Shut-In(1)</td> </tr> <tr> <td>76</td> <td>43.99</td> <td>109.65</td> <td>Open To Flow (2)</td> </tr> <tr> <td>120</td> <td>34.29</td> <td>110.33</td> <td>Shut-In(2)</td> </tr> <tr> <td>165</td> <td>884.42</td> <td>110.63</td> <td>End Shut-In(2)</td> </tr> <tr> <td>166</td> <td>1685.35</td> <td>110.88</td> <td>Final Hydro-static</td> </tr> </tbody> </table>		Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1705.75	109.96	Initial Hydro-static	1	47.19	109.90	Open To Flow (1)	12	141.69	110.38	Shut-In(1)	75	949.68	110.20	End Shut-In(1)	76	43.99	109.65	Open To Flow (2)	120	34.29	110.33	Shut-In(2)	165	884.42	110.63	End Shut-In(2)	166	1685.35	110.88	Final Hydro-static
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<b>Recovery</b>		<b>Gas Rates</b>																																					
Length (ft)	Description	Volume (bbl)	Choke (inches)    Pressure (psig)    Gas Rate (Mcf/d)																																				
45.00	VSOCM, 2%O, 98%M	0.63																																					

**DST # 2 TEST SUMMARY**

	<b>DRILL STEM TEST REPORT</b>																																						
	TDI Inc 1310 Bison RD Hays KS, 67601 ATTN: Herb D.	<b>31-14s-19w Ellis KS</b> <b>Harold #1</b> Job Ticket: 47195 <b>DST#: 2</b> Test Start: 2012.06.14 @ 14:06:00																																					
<b>GENERAL INFORMATION:</b>																																							
Formation: <b>KC "C-F"</b> Deviated: No Whipstock:                      ft (KB) Time Tool Opened: 16:18:30 Time Test Ended: 22:01:30		Test Type: Conventional Bottom Hole (Reset) Tester: Cody Bloedorn Unit No: 42																																					
<b>Interval: 3404.00 ft (KB) To 3460.00 ft (KB) (TVD)</b> Total Depth: 3460.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair		Reference Elevations: 2092.00 ft (KB) 2087.00 ft (CF) KB to GR/CF: 5.00 ft																																					
<b>Serial #: 8700      Outside</b> Press@RunDepth: 45.78 psig @ 3441.00 ft (KB) Start Date: 2012.06.14      End Date: 2012.06.14 Start Time: 14:06:05      End Time: 22:01:29		Capacity: 8000.00 psig Last Calib.: 2012.06.14 Time On Btm: 2012.06.14 @ 16:18:00 Time Off Btm: 2012.06.14 @ 19:13:30																																					
<b>TEST COMMENT:</b> 45 - IF- Surface blow 45 - IS- No blow back 45 - FF- 1/4" blow 45 - FS- No blow back																																							
<b>Pressure vs. Time</b>		<b>PRESSURE SUMMARY</b>																																					
		<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>1677.89</td><td>102.08</td><td>Initial Hydro-static</td></tr> <tr><td>1</td><td>30.24</td><td>101.55</td><td>Open To Flow (1)</td></tr> <tr><td>39</td><td>40.58</td><td>103.74</td><td>Shut-In(1)</td></tr> <tr><td>91</td><td>835.34</td><td>105.93</td><td>End Shut-In(1)</td></tr> <tr><td>92</td><td>34.75</td><td>105.75</td><td>Open To Flow (2)</td></tr> <tr><td>137</td><td>45.78</td><td>107.03</td><td>Shut-In(2)</td></tr> <tr><td>175</td><td>601.63</td><td>108.03</td><td>End Shut-In(2)</td></tr> <tr><td>176</td><td>1594.52</td><td>108.46</td><td>Final Hydro-static</td></tr> </tbody> </table>		Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1677.89	102.08	Initial Hydro-static	1	30.24	101.55	Open To Flow (1)	39	40.58	103.74	Shut-In(1)	91	835.34	105.93	End Shut-In(1)	92	34.75	105.75	Open To Flow (2)	137	45.78	107.03	Shut-In(2)	175	601.63	108.03	End Shut-In(2)	176	1594.52	108.46	Final Hydro-static
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* Recovery from multiple tests Trilobite Testing, Inc                      Ref. No: 47195                      Printed: 2012.06.15 @ 03:20:34																																							

**DST # 3 TEST SUMMARY**

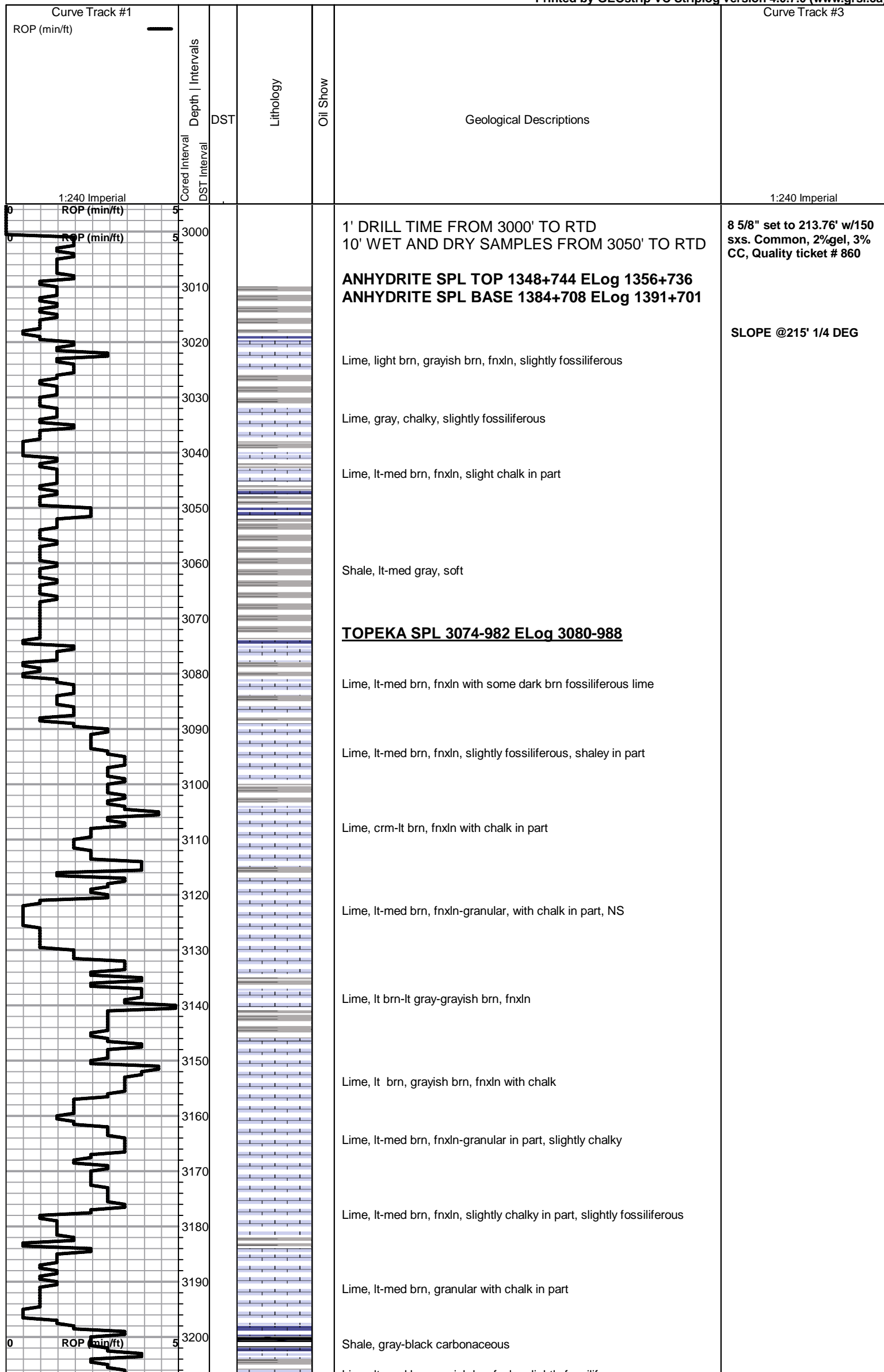
	<b>DRILL STEM TEST REPORT</b>																																						
	TDI Inc 1310 Bison RD Hays KS, 67601 ATTN: Herb D.	<b>31-14s-19w Ellis KS</b> <b>Harold #1</b> Job Ticket: 47196 <b>DST#: 3</b> Test Start: 2012.06.15 @ 12:58:00																																					
<b>GENERAL INFORMATION:</b>																																							
Formation: <b>H,I,J</b> Deviated: No Whipstock:                      ft (KB) Time Tool Opened: 15:48:30 Time Test Ended: 19:21:30		Test Type: Conventional Bottom Hole (Reset) Tester: Cody Bloedorn Unit No: 42																																					
<b>Interval: 3503.00 ft (KB) To 3590.00 ft (KB) (TVD)</b> Total Depth: 3590.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair		Reference Elevations: 2092.00 ft (KB) 2087.00 ft (CF) KB to GR/CF: 5.00 ft																																					
<b>Serial #: 8700      Outside</b> Press@RunDepth: 53.26 psig @ 3572.00 ft (KB) Start Date: 2012.06.15      End Date: 2012.06.15 Start Time: 12:58:05      End Time: 19:21:29		Capacity: 8000.00 psig Last Calib.: 2012.06.15 Time On Btm: 2012.06.15 @ 15:48:00 Time Off Btm: 2012.06.15 @ 18:03:00																																					
<b>TEST COMMENT:</b> 30 - IF- 1/4" Blow, died back to surface blow 45 - IS- No blow back 30 - FF- 1/4" blow 30 - FS- No blow back																																							
<b>Pressure vs. Time</b>		<b>PRESSURE SUMMARY</b>																																					
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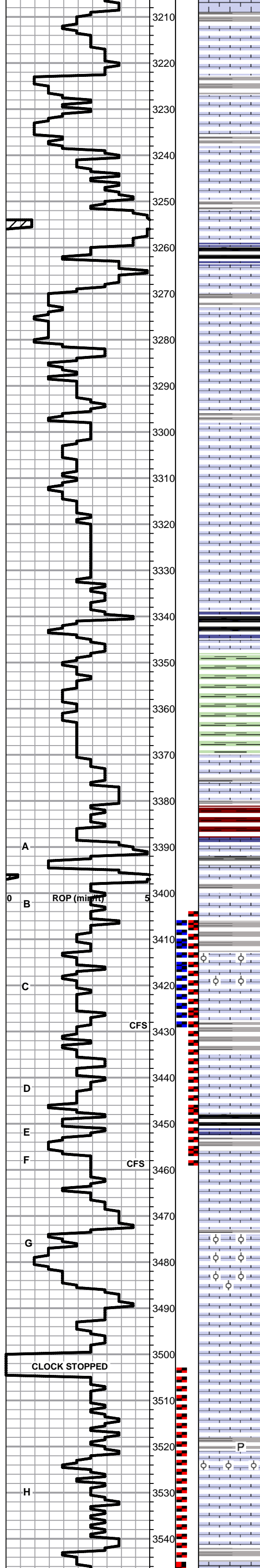
ROCK TYPES									
	Congl		Dol Lime		Lscongl		Carbon Sh		Shgy
	Dolprim		Lmst fw<7		shale, grn		shale, red		Shcol
	Dolsec		Lmst fw7>		shale, gry				

ACCESSORIES	
<b>MINERAL</b>	<b>FOSSIL</b>
P Pyrite	φ Oolite
• Varicolored chert	
△ Chert White	

OTHER SYMBOLS	
<b>DST</b>	
■ DST Int	
■ DST alt	

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





Lime, lt-med brn-grayish brn,fnxn, slightly fossiliferous

Lime, crm-lt brn, fnxn, very clean in appearance

Lime, crm-lt brn, fnxn with chalk in part

Lime, lt-med brn, fnxn with chalk in part, slightly fossiliferous

Lime, crm-lt brn, fnxn-vfxln with chalk in part

Shale, gray-black carbonaceous

Lime, lt-med brn-grayish brn, fnxn with chalk

Lime, lt-med brn-grayish brn, fnxn-granular with chalk, NS

Lime, lt-med brn, fnxn-granular with chalk in part, NS

Lime, lt-med brn, fnxn-granular with slight chalk, NS

Lime, crm-lt brn, fnxn-granular with chalk in part

Lime, lt-med brn, fnxn with chalk in part

**HEEBNER SHALE SPL 3340-1248 ELog 3346-1254**

Shale, black carbonaceous  
Lime, med brn, fnxn

Shale, dove gray-lime green, soft blocky

**TORONTO SPL 3371-1279 ELog 3372-1280**

Lime, crm-lt brn, fn-vfxln NS

Shale, red wash

**LKC SPL 3388-1296 ELog 3394-1302**

Lime, off wht-lt brn, fn-vfxln with slight chalk in part

Lime, brn-grayish brn with gray mottling, fnxn, NS

① Lime, crm-lt brn, mostly fnxn with few pieces oolitic-oolmoldic with fossil fragments, with scattered staining with a very light odor, show of fresh oil residual in interoolitic porosity.

① Lime, lt brn, fnxn with oolitic-oolmoldic with fossil fragments, with lt scattered staining with fair odor

Shale, gray to black carbonaceous with some med gray shale forming soft mud balls.

Lime, white-crm, fnxn with microfossils in part, NS

Lime, white-crm, fn-vfxln

Lime, wht-crm-lt brn, oolitic-oolmoldic, NS, No staining

Lime, crm-off wht, fn-vfxln

Lime, crm-off white, fn-vfxln, hard

Lime, crm-off white, fn-vfxln

Shale, med gray, soft with pyrite clusters

① Lime, crm-offwhite, mostly fnxn with few pieces oolitic-oolmoldic with scattered to sat staining, NFO, very light, barely detectable odor.

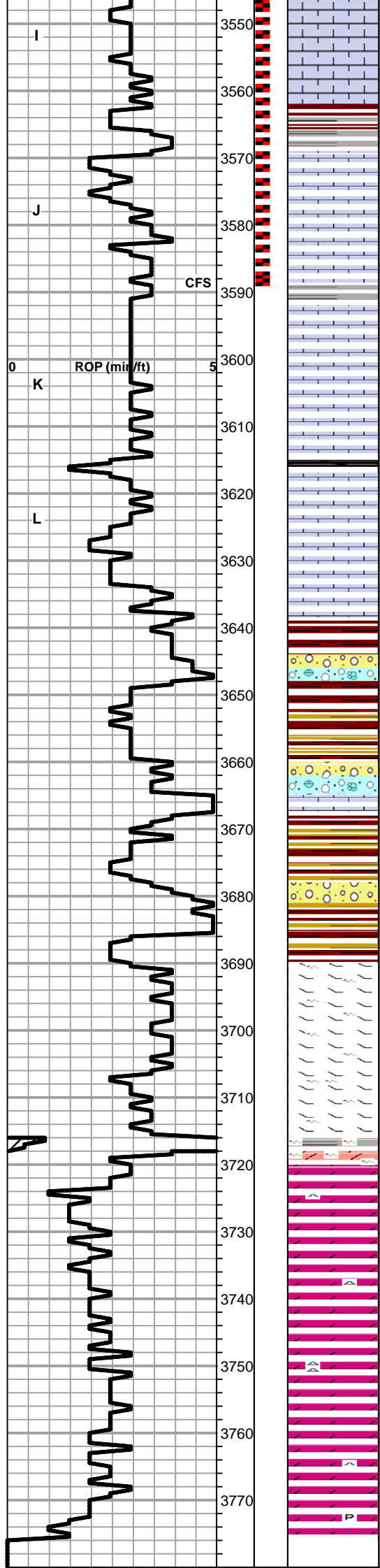
Lime, lt brn, fnxn

Shale, lt gray, soft blocky

**DST # 1 3406'-3430'**  
SEE HEADER FOR TEST DETAILS. DRIVE CHAIN IN DRAW WORKS BROKE DURING TRIP IN WITH TOOL. DOWN 13 HOURS

**DST # 2 3404'-3460'**  
SEE HEADER FOR TEST DETAILS. DELAYED PULLING TOOL BEFORE REACHING SURFACE FOR ONE HOUR DUE TO HIGH WINDS AND CLOUD TO GROUND LIGHTNING OVER RIG.

**DST # 3 3503'-3590'**  
SEE HEADER FOR TEST DETAILS



● Lime, crm-lt brn, mostly fnxln with one piece with scattered stain in poorly developed vuggy porosity

Shale, red wash

Lime, crm, fn-vfxln, NS or staining

Lime,lt-med brn, vfxln

Lime, crm, fnxln, slightly chalky

Lime, crm-lt brn, fn-vfxln

Shale, gray-black carbonaceous

Lime, lt brn, fn-vfxln

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

**BKC SPL 3639-1547 ELog 3642-1550**

Shale, reddish brn, soft blocky with light red wash  
Lime, clastic mix of lime types with red shale staining

Shale, reddish brn, soft to soft red wash

Shales, brns, grays, red, greens, soft with clastic mix of limes

Shale, lt red wash with mix of vari colored shales

Shales, vari colored, cherts, vari colored

Lime, dolomitic,lt brn, fnxln with orange cherts

Lime, dolomitic, lt brn, fnxln, hard, cherty, NS

Lime, dolomitic, lt brn, fnxln, cherty  
Shales, reddish brn, vari colored, cherts vari colored

**ARBUCKLE SPL 3720-1628 ELog 3724-1632**

● Dolomite, lt brn, mostly fnxln with intercrystalline porosity with flaky gilsonite, lt-sat staining with VMSFO with very light odor. Zone of staining very thin, zone deemed too low to be of economic value.

Dolomite, lt brn, fnxln-granular in part, mostly clean dolomite

Dolomite, ivory-lt brn, fnxln-granular, fn-med xln with few cxln

Dolomite, ivory-lt brn,fnxln-granular, fn-med xln with scattered clusters of well formed crystalline pyrite.

DETAILS



# QUALITY OILWELL CEMENTING, INC.

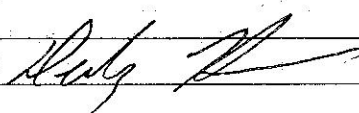
Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 860

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
6-9-12	31	14	19	ELLIS	KANSAS		6:05pm
Lease HAROLD	Well No. #1		Location ANTONINO-W 4 - 1/2 N - W INTO				
Contractor SOUTHWIND #1				Owner T.D.I. INC.			
Type Job SURFACE				To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Hole Size 12 1/4"	T.D. 215'		Charge To T.D.I. INC.				
Csg. 8 7/8"	Depth 213.		Street 1310 BISON RD.				
Tbg. Size	Depth		City HAYS State KS, 671601				
Tool	Depth		The above was done to satisfaction and supervision of owner agent or contractor.				
Cement Left in Csg.	Shoe Joint 15'		Cement Amount Ordered 150 com - 3cc - 2cc				
Meas Line	Displace 12 bbl						
<b>EQUIPMENT</b>							
Pumptrk #15 No.	Cementer Helper NICK	Common 150					
Bulktrk #14 No.	Driver DRIVER BRIAN	Poz. Mix					
Bulktrk P/U No.	Driver DRIVER CISCO	Gel. 3					
<b>JOB SERVICES &amp; REMARKS</b>							
Remarks:	Hulls						
Rat Hole	Salt						
Mouse Hole	Flowseal						
Centralizers	Kol-Seal						
Baskets	Mud CLR 48						
D/V or Port Collar	CFL-117 or CD110 CAF 38						
	Sand						
	Handling 158						
CEMENT DOES CIRCULATE ✓							
	Mileage			<b>FLOAT EQUIPMENT</b>			
	Guide Shoe						
	Centralizer						
	Baskets						
	AFU Inserts						
THANK YOU! ✓							
	Float Shoe						
	Latch Down						
	Pumptrk Charge Surface						
	Mileage 14						
							Tax
							Discount
Signature 							Total Charge

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 685

Cell 785-324-1041

Date	6-16-12	Sec.	31	Twp.	14	Range	19	County	Ellis	State	KS	On Location		Finish	11:15 PM
Lease	Harold	Well No.	C		Location		Antonio 4w 12d W. 1125								
Contractor	Southwind #1							Owner							
Type Job	Retard Plug							To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.							
Hole Size	7 7/8		T.D.		3725		Charge To TDJ								
Csg.								Depth							
Tbg. Size								Depth							
Tool								Street							
Cement Left in Csg.								City							
Meas Line								State							
							The above was done to satisfaction and supervision of owner agent or contractor.								
							Cement Amount Ordered 245 6 1/2 49 1/2 1 1/4 1/2 Flow								

**EQUIPMENT**

Pumptrk	5	No.	Cementer	Craig	Common	147
			Helper			
Bulktrk		No.	Driver	Levy	Poz. Mix	98
			Driver			
Bulktrk	8	No.	Driver	Levy	Gel.	9
			Driver			

**JOB SERVICES & REMARKS**

Remarks:	Calcium
Rat Hole	Hulls
Mouse Hole	Salt
Centralizers	Flowseal 61
Baskets	Kol-Seal
D/V or Port Collar	Mud CLR 48
1st 3702 255K	CFL-117 or CD110 CAF 38
2nd 1375 255K	Sand
3rd 575 100K	Handling 254
4th 275 40SK	Mileage
5th 40 10SK	

**FLOAT EQUIPMENT**

	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts 8 5/8 wooden Plug
	Float Shoe
	Latch Down
	Pumptrk Charge plug
	Mileage 6

	Tax
	Discount
X Signature	Total Charge

*Handwritten Signature*

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

July 23, 2012

Tom Denning  
TDI, Inc.  
1310 BISON RD  
HAYS, KS 67601-9696

Re: ACO1  
API 15-051-26313-00-00  
Harold 1  
NE/4 Sec.31-14S-19W  
Ellis County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Tom Denning