



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1100963
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: _____



1100963

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <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> _____	PRODUCTION INTERVAL: _____ _____
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DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays KS 67601 + 9696

ATTN: Tom Denning

Mike #2

3-15s-19w Ellis,KS

Start Date: 2012.09.22 @ 12:11:45

End Date: 2012.09.22 @ 20:03:06

Job Ticket #: 48545 DST #: 1

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

Printed: 2012.09.27 @ 14:55:14

TDI Inc
3-15s-19w Ellis,KS
Mike #2
DST # 1
LKC-C-F
2012.09.22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays KS 67601 + 9696
 ATTN: Tom Denning

3-15s-19w Ellis, KS
Mike #2
 Job Ticket: 48545 **DST#: 1**
 Test Start: 2012.09.22 @ 12:11:45

GENERAL INFORMATION:

Formation: **LKC-C-F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:56:15
 Time Test Ended: 20:03:06
 Interval: **3366.00 ft (KB) To 3430.00 ft (KB) (TVD)**
 Total Depth: 3430.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Jeff Brown
 Unit No: 44
 Reference Elevations: 2065.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 10.00 ft

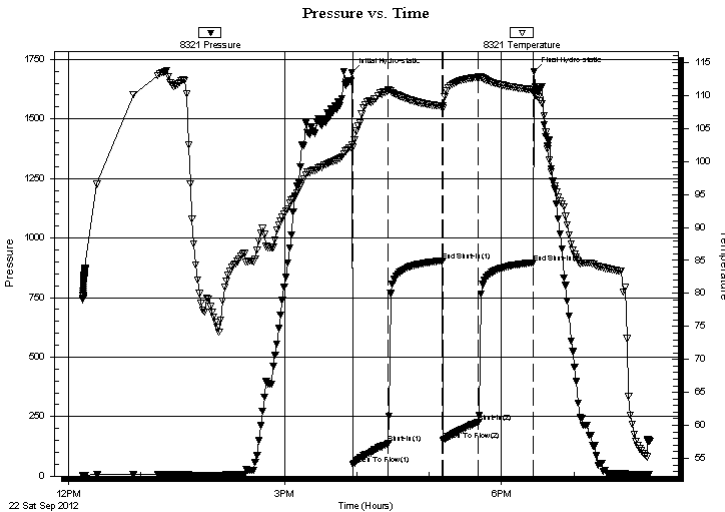
Serial #: 8321

Inside

Press @ Run Depth: 227.46 psig @ 3402.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.22 End Date: 2012.09.22 Last Calib.: 2012.09.22
 Start Time: 12:11:46 End Time: 20:03:06 Time On Btm: 2012.09.22 @ 15:55:45
 Time Off Btm: 2012.09.22 @ 18:27:15

TEST COMMENT: IFP=Good blow BOB in 11 1/4 min
 ISI=Dead no blow back
 FFP=Good blow BOB in 13 1/2 min
 FSI=Dead no blow back

PRESSURE SUMMARY



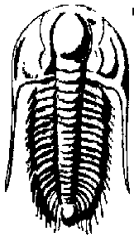
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1695.67	102.50	Initial Hydro-static
1	50.40	102.18	Open To Flow (1)
30	139.02	110.82	Shut-In(1)
75	904.17	108.39	End Shut-In(1)
76	150.77	108.09	Open To Flow (2)
105	227.46	112.79	Shut-In(2)
151	896.52	110.86	End Shut-In(2)
152	1700.04	110.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
378.00	MW 45%M 55%W	5.30
31.00	WM 15%W 85%M	0.43

Gas Rates

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

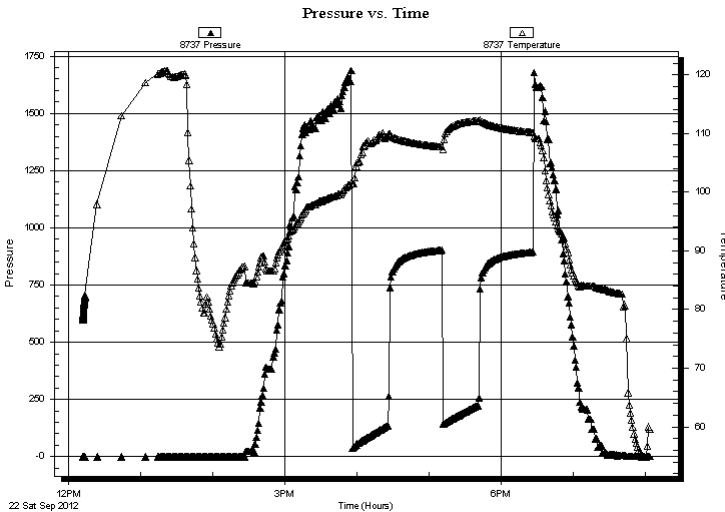
**TRILOBITE
TESTING, INC.****DRILL STEM TEST REPORT**TDI Inc
1310 Bison Rd
Hays KS 67601 + 9696

ATTN: Tom Denning**3-15s-19w Ellis,KS**

Mike #2
Job Ticket: 48545 **DST#: 1**

Test Start: 2012.09.22 @ 12:11:45**GENERAL INFORMATION:**Formation: **LKC-C-F**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:56:15
Time Test Ended: 20:03:06

Interval: 3366.00 ft (KB) To 3430.00 ft (KB) (TVD)
Total Depth: 3430.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: GoodTest Type: Conventional Bottom Hole (Initial)
Tester: Jeff Brown
Unit No: 44

Reference Elevations: 2065.00 ft (KB)
 2055.00 ft (CF)
KB to GR/CF: 10.00 ft**Serial #: 8737 Outside**Press @ Run Depth: psig @ 3402.00 ft (KB)
Start Date: 2012.09.22 End Date: 2012.09.22
Start Time: 12:11:53 End Time: 20:03:52Capacity: 8000.00 psig
Last Calib.: 2012.09.22
Time On Btm:
Time Off Btm:**TEST COMMENT:** IFP=Good blow BOB in 11 1/4 min
ISI=Dead no blow back
FFP=Good blow BOB in 13 1/2 min
FSI=Dead no blow back**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
378.00	MW 45%M 55%W	5.30
31.00	WM 15%W 85%M	0.43

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays KS 67601 + 9696
ATTN: Tom Denning

3-15s-19w Ellis, KS
Mike #2
Job Ticket: 48545 **DST#: 1**
Test Start: 2012.09.22 @ 12:11:45

Tool Information

Drill Pipe:	Length: 3361.00 ft	Diameter: 3.80 inches	Volume: 47.15 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:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	44000.00 lb
			<u>Total Volume: 47.15 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	32000.00 lb
Depth to Top Packer:	3366.00 ft			Final	34000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	64.00 ft				
Tool Length:	84.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3347.00	
Shut In Tool	5.00			3352.00	
Hydraulic tool	5.00			3357.00	
Packer	4.00			3361.00	20.00 Bottom Of Top Packer
Packer	5.00			3366.00	
Stubb	1.00			3367.00	
Perforations	2.00			3369.00	
Change Over Sub	1.00			3370.00	
Drill Pipe	31.00			3401.00	
Change Over Sub	1.00			3402.00	
Recorder	0.00	8321	Inside	3402.00	
Recorder	0.00	8737	Outside	3402.00	
Perforations	25.00			3427.00	
Bullnose	3.00			3430.00	64.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc
1310 Bison Rd
Hays KS 67601 + 9696
ATTN: Tom Denning

3-15s-19w Ellis,KS
Mike #2
Job Ticket: 48545 **DST#: 1**
Test Start: 2012.09.22 @ 12:11:45

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: 7.19 in ³	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
378.00	MW 45%M 55%W	5.302
31.00	WM 15%W 85%M	0.435

Total Length: 409.00 ft Total Volume: 5.737 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 8321

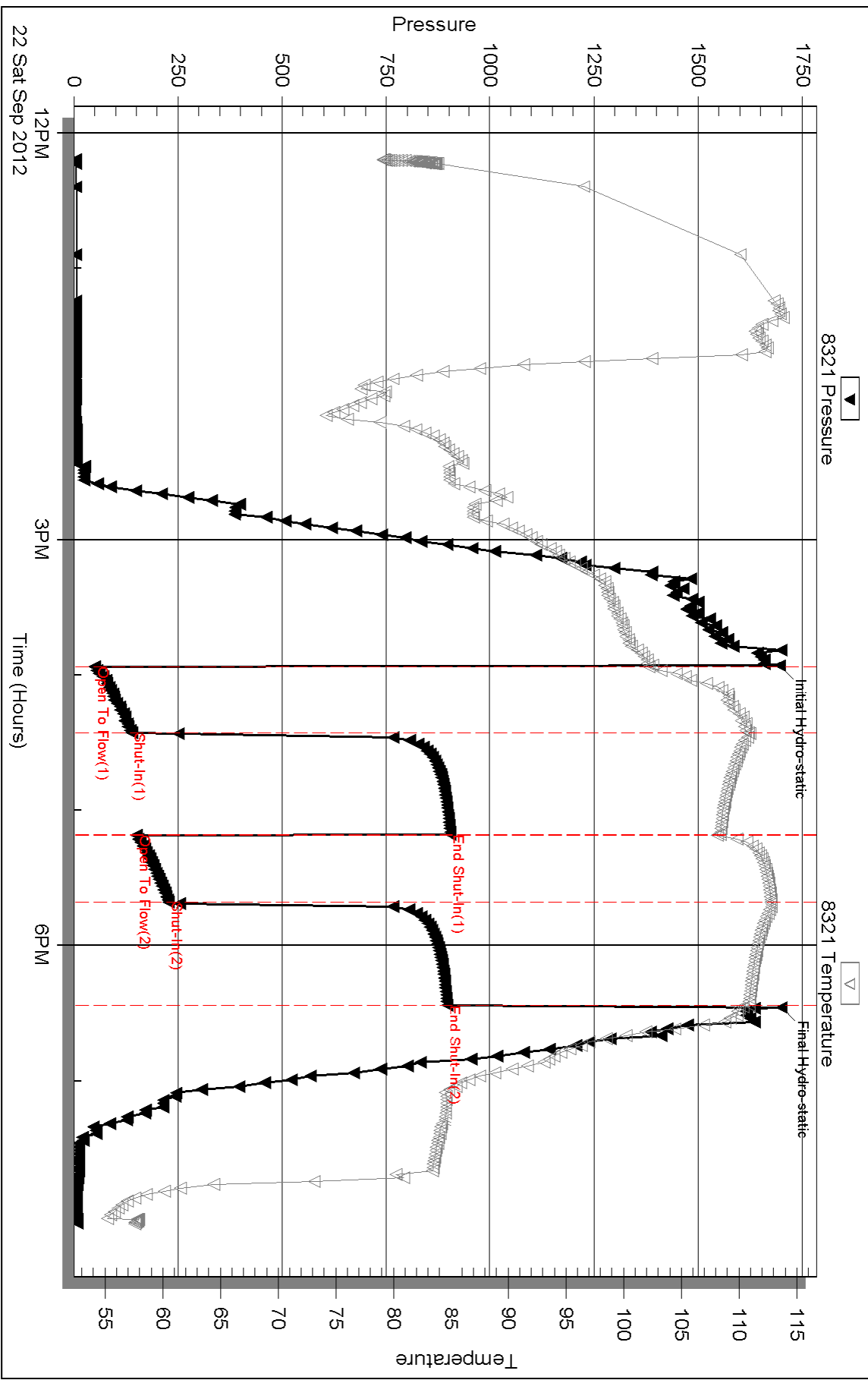
Inside

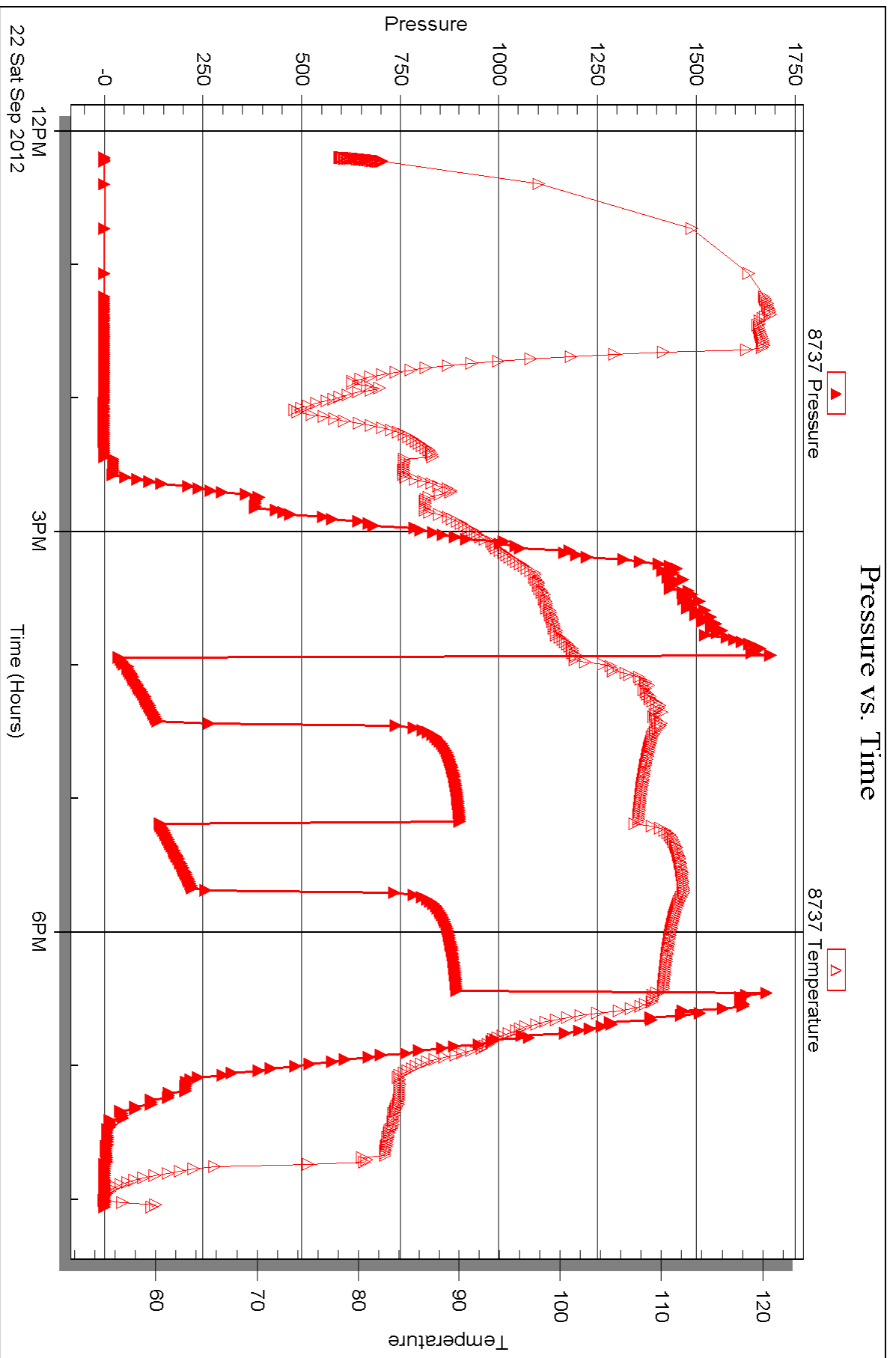
TDI Inc

Mike #2

DST Test Number: 1

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays KS 67601 + 9696

ATTN: Tom Denning

Mike #2

3-15s-19w Ellis,KS

Start Date: 2012.09.23 @ 06:18:14

End Date: 2012.09.23 @ 13:33:44

Job Ticket #: 48546 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.09.27 @ 14:54:24

TDI Inc
3-15s-19w Ellis,KS
Mike #2
DST # 2
LKC-H-1
2012.09.23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays KS 67601 + 9696
 ATTN: Tom Denning

3-15s-19w Ellis, KS
Mike #2
 Job Ticket: 48546 **DST#: 2**
 Test Start: 2012.09.23 @ 06:18:14

GENERAL INFORMATION:

Formation: **LKC-H-I**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:34:44
 Time Test Ended: 13:33:44
Interval: 3476.00 ft (KB) To 3523.00 ft (KB) (TVD)
 Total Depth: 3523.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jeff Brown
 Unit No: 44
 Reference Elevations: 2065.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 10.00 ft

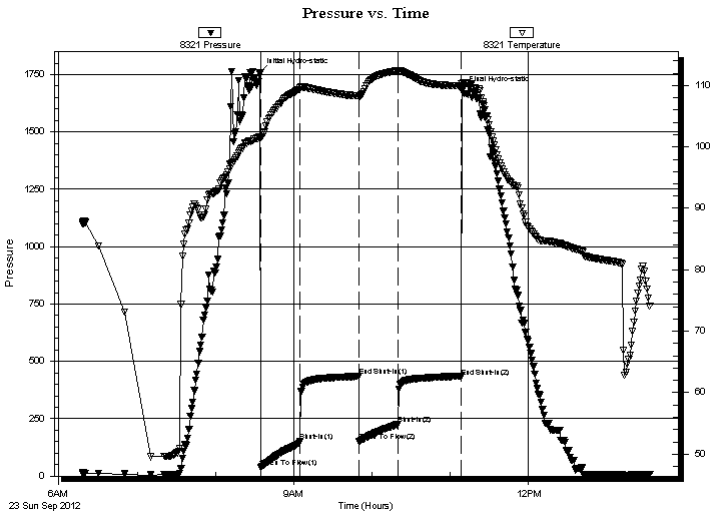
Serial #: 8321

Inside

Press @ Run Depth: 225.53 psig @ 3512.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.23 End Date: 2012.09.23 Last Calib.: 2012.09.23
 Start Time: 06:18:15 End Time: 13:32:44 Time On Btm: 2012.09.23 @ 08:34:14
 Time Off Btm: 2012.09.23 @ 11:08:44

TEST COMMENT: IFP=Good blow BOB in 8 3/4 min
 ISI=Weak surface blow back died out in 10 min
 FFP=Good blow BOB in 14 1/2 min
 FSI=Weak surface blow back Died out in 10 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1756.76	101.67	Initial Hydro-static
1	38.17	101.45	Open To Flow (1)
31	150.52	109.57	Shut-In(1)
76	434.67	108.29	End Shut-In(1)
76	151.93	108.22	Open To Flow (2)
106	225.53	112.41	Shut-In(2)
154	433.48	109.94	End Shut-In(2)
155	1680.28	110.27	Final Hydro-static

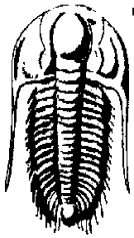
Recovery

Length (ft)	Description	Volume (bbl)
252.00	MW 10%M 90%W	3.53
189.00	WM 30%W 70%M	2.65

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays KS 67601 + 9696
 ATTN: Tom Denning

3-15s-19w Ellis, KS

Mike #2

Job Ticket: 48546

DST#: 2

Test Start: 2012.09.23 @ 06:18:14

GENERAL INFORMATION:

Formation: LKC-H-I			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 08:34:44		Tester: Jeff Brown	
Time Test Ended: 13:33:44		Unit No: 44	
Interval: 3476.00 ft (KB) To 3523.00 ft (KB) (TVD)		Reference Elevations: 2065.00 ft (KB)	
Total Depth: 3523.00 ft (KB) (TVD)		2055.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 10.00 ft	

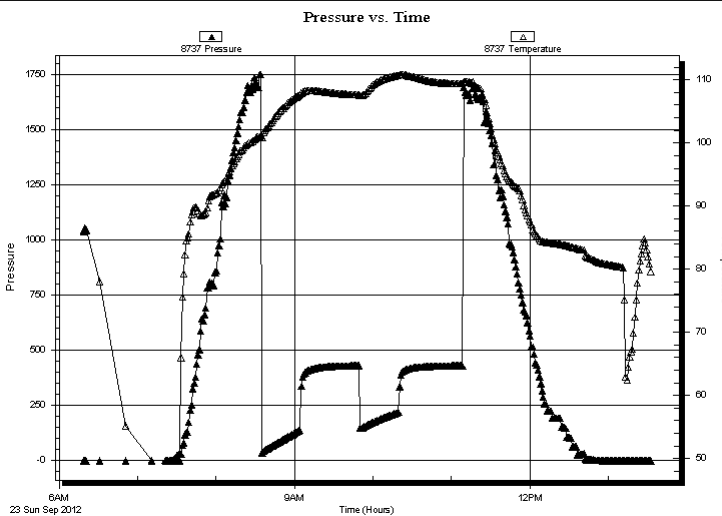
Serial #: 8737

Outside

Press @ Run Depth:	psig @ 3512.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2012.09.23	End Date:	2012.09.23
Start Time:	06:18:45	End Time:	13:32:44
		Last Calib.:	2012.09.23
		Time On Btm:	
		Time Off Btm:	

TEST COMMENT: IFP=Good blow BOB in 8 3/4 min
 ISI=Weak surface blow back died out in 10 min
 FFP=Good blow BOB in 14 1/2 min
 FSI=Weak surface blow back Died out in 10 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
252.00	MW 10%M 90%W	3.53
189.00	WM 30%W 70%M	2.65

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays KS 67601 + 9696
ATTN: Tom Denning

3-15s-19w Ellis, KS
Mike #2
Job Ticket: 48546 **DST#: 2**
Test Start: 2012.09.23 @ 06:18:14

Tool Information

Drill Pipe:	Length: 3486.00 ft	Diameter: 3.80 inches	Volume: 48.90 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:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 48.90 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3476.00 ft			Final	36000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	47.00 ft				
Tool Length:	67.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3457.00	
Shut In Tool	5.00			3462.00	
Hydraulic tool	5.00			3467.00	
Packer	4.00			3471.00	20.00 Bottom Of Top Packer
Packer	5.00			3476.00	
Stubb	1.00			3477.00	
Perforations	2.00			3479.00	
Change Over Sub	1.00			3480.00	
Drill Pipe	31.00			3511.00	
Change Over Sub	1.00			3512.00	
Recorder	0.00	8321	Inside	3512.00	
Recorder	0.00	8737	Outside	3512.00	
Perforations	8.00			3520.00	
Bullnose	3.00			3523.00	47.00 Bottom Packers & Anchor

Total Tool Length: 67.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc
1310 Bison Rd
Hays KS 67601 + 9696
ATTN: Tom Denning

3-15s-19w Ellis,KS
Mike #2
Job Ticket: 48546 **DST#: 2**
Test Start: 2012.09.23 @ 06:18:14

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.79 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
252.00	MW 10%M 90%W	3.535
189.00	WM 30%W 70%M	2.651

Total Length: 441.00 ft Total Volume: 6.186 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

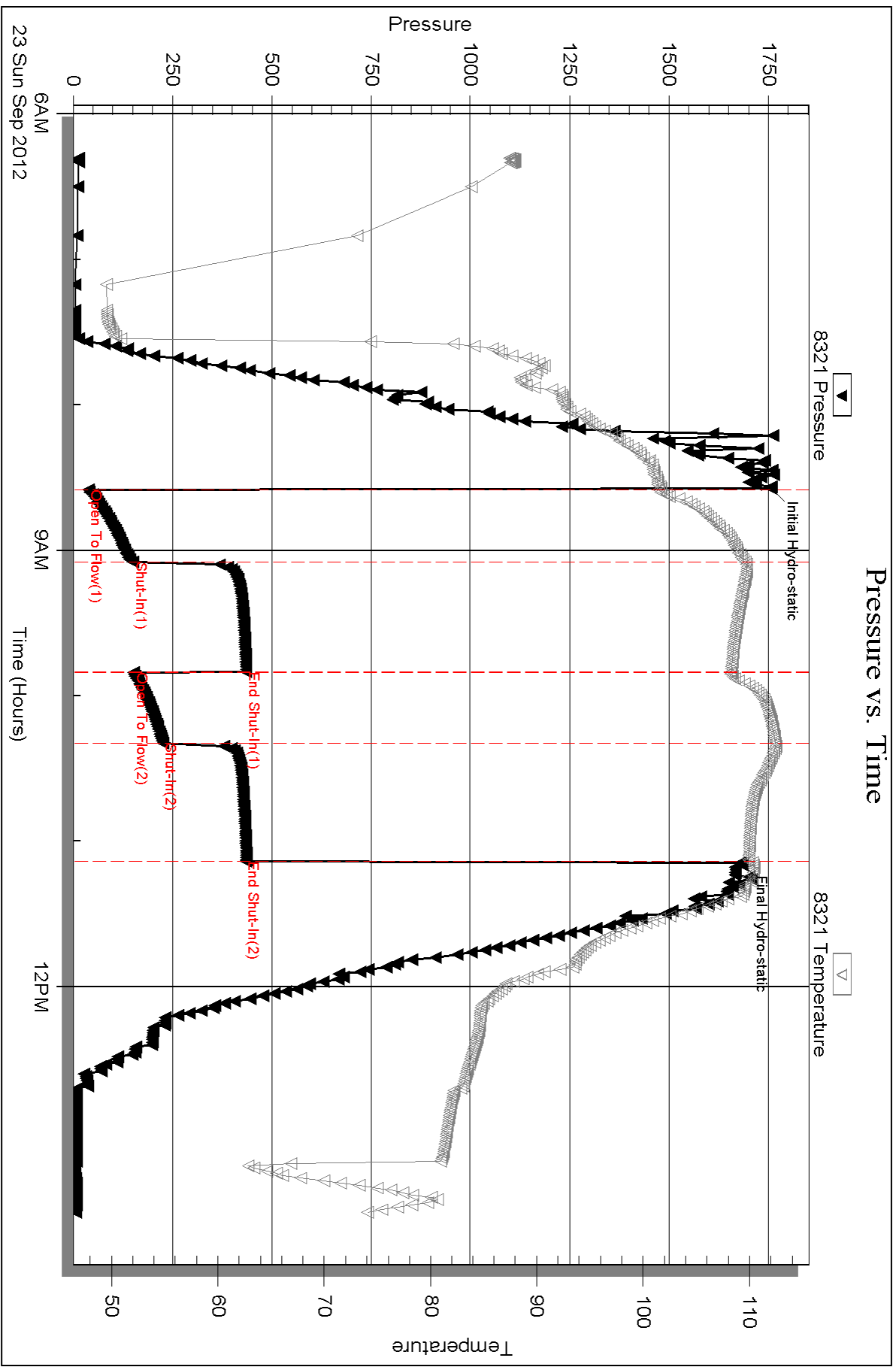
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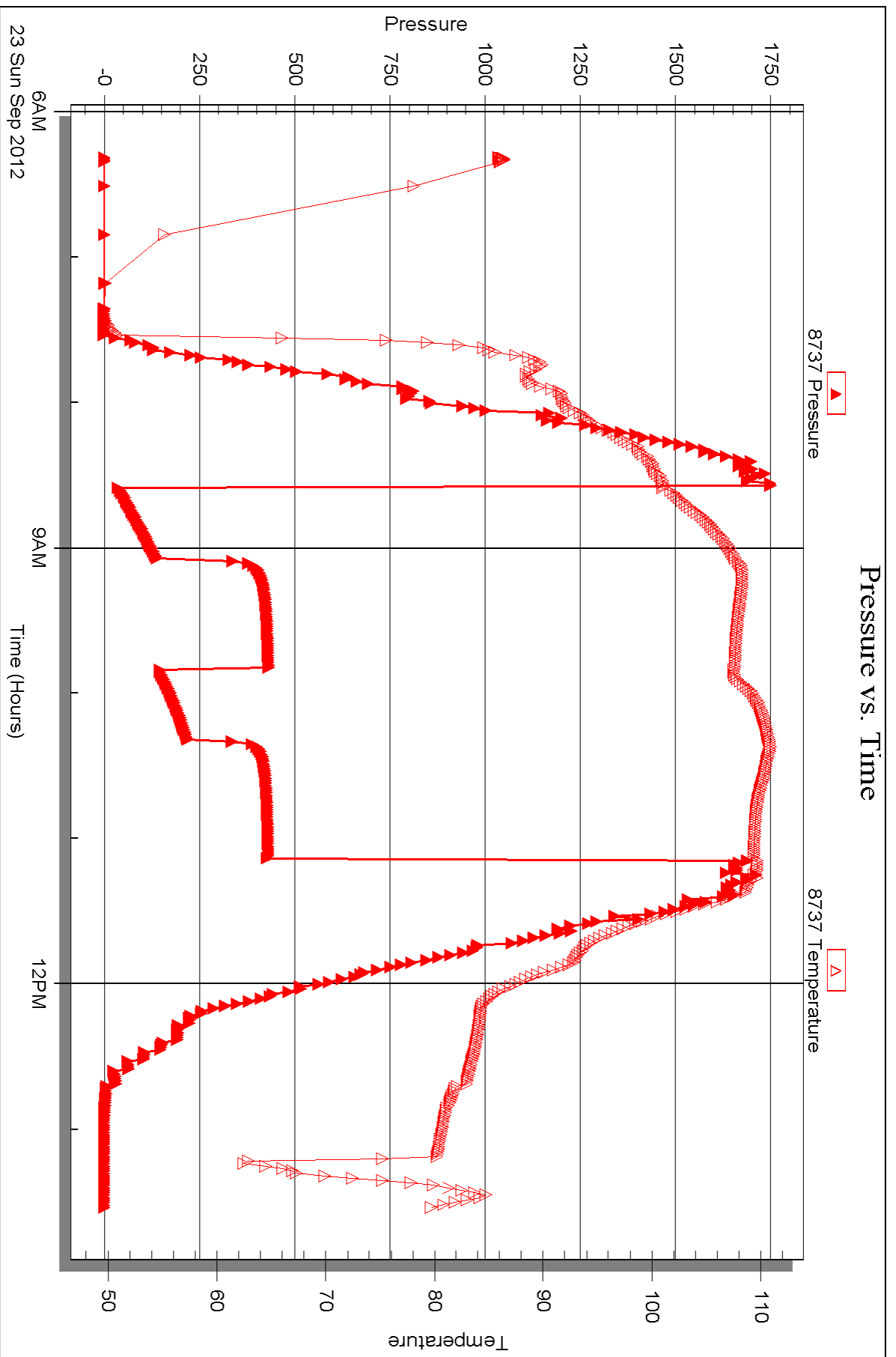
Inside

TDI Inc

Mike #2

DST Test Number: 2







DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays KS 67601 + 9696

ATTN: Tom Denning

Mike #2

3-15s-19w Ellis,KS

Start Date: 2012.09.23 @ 20:02:51

End Date: 2012.09.24 @ 01:09:21

Job Ticket #: 48547 DST #: 3

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

Printed: 2012.09.27 @ 14:53:42

TDI Inc
3-15s-19w Ellis,KS
Mike #2
DST # 3
LKC-J
2012.09.23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc
 1310 Bison Rd
 Hays KS 67601 + 9696
 ATTN: Tom Denning

3-15s-19w Ellis,KS
Mike #2
 Job Ticket: 48547 **DST#: 3**
 Test Start: 2012.09.23 @ 20:02:51

GENERAL INFORMATION:

Formation: **LKC-J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 21:21:21 Tester: Jeff Brown
 Time Test Ended: 01:09:21 Unit No: 44
 Interval: **3543.00 ft (KB) To 3554.00 ft (KB) (TVD)** Reference Elevations: 2065.00 ft (KB)
 Total Depth: 3554.00 ft (KB) (TVD) 2055.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

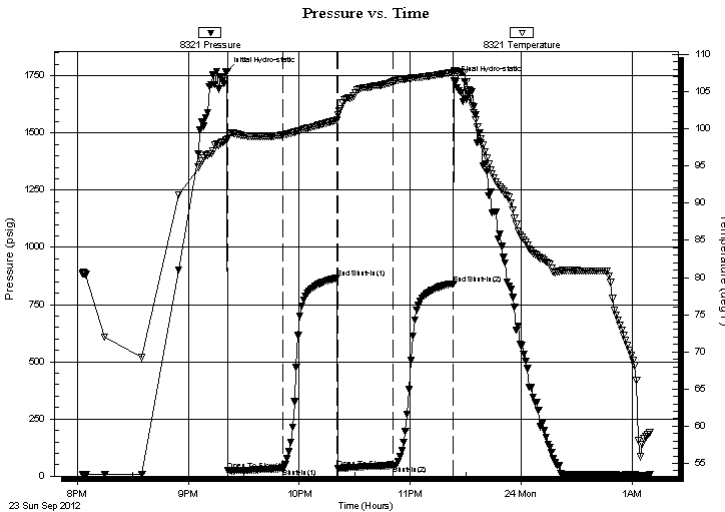
Serial #: 8321

Inside

Press @ Run Depth: 46.43 psig @ 3546.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.09.23 End Date: 2012.09.24 Last Calib.: 2012.09.24
 Start Time: 20:02:52 End Time: 01:09:21 Time On Btm: 2012.09.23 @ 21:20:51
 Time Off Btm: 2012.09.23 @ 23:23:51

TEST COMMENT: IFP-Good blow BOB in 13 1/2 min
 ISI-Weak surface blow back built to 1 1/4 in
 FFP-Good blow BOB in 14 1/2 min
 FSI-Weak surface blow back built to 2 1/4 in

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.61	98.57	Initial Hydro-static
1	25.84	98.64	Open To Flow (1)
30	32.92	99.17	Shut-In(1)
60	865.89	101.18	End Shut-In(1)
60	33.57	101.86	Open To Flow (2)
90	46.43	106.36	Shut-In(2)
123	838.89	107.59	End Shut-In(2)
123	1730.31	107.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
43.00	OCMW 10%O 60%W 30%M	0.60
10.00	HOCGWM 20%G 45%O 15%W 20%M	0.14
11.00	WMCO 5%W 30%M 65%O	0.15
0.00	409' 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 + 9696
ATTN: Tom Denning

3-15s-19w Ellis,KS
Mike #2
Job Ticket: 48547 **DST#: 3**
Test Start: 2012.09.23 @ 20:02:51

Tool Information

Drill Pipe:	Length: 3549.00 ft	Diameter: 3.80 inches	Volume: 49.78 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:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	42000.00 lb
			<u>Total Volume: 49.78 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial	33000.00 lb
Depth to Top Packer:	3543.00 ft			Final	34000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	11.00 ft				
Tool Length:	31.00 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			3524.00	
Shut In Tool	5.00			3529.00	
Hydraulic tool	5.00			3534.00	
Packer	4.00			3538.00	20.00 Bottom Of Top Packer
Packer	5.00			3543.00	
Stubb	1.00			3544.00	
Perforations	2.00			3546.00	
Recorder	0.00	8321	Inside	3546.00	
Recorder	0.00	8737	Outside	3546.00	
Perforations	5.00			3551.00	
Bullnose	3.00			3554.00	11.00 Bottom Packers & Anchor

Total Tool Length: 31.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc
1310 Bison Rd
Hays KS 67601 + 9696
ATTN: Tom Denning

3-15s-19w Ellis,KS
Mike #2
Job Ticket: 48547 **DST#: 3**
Test Start: 2012.09.23 @ 20:02:51

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.80 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: inches			

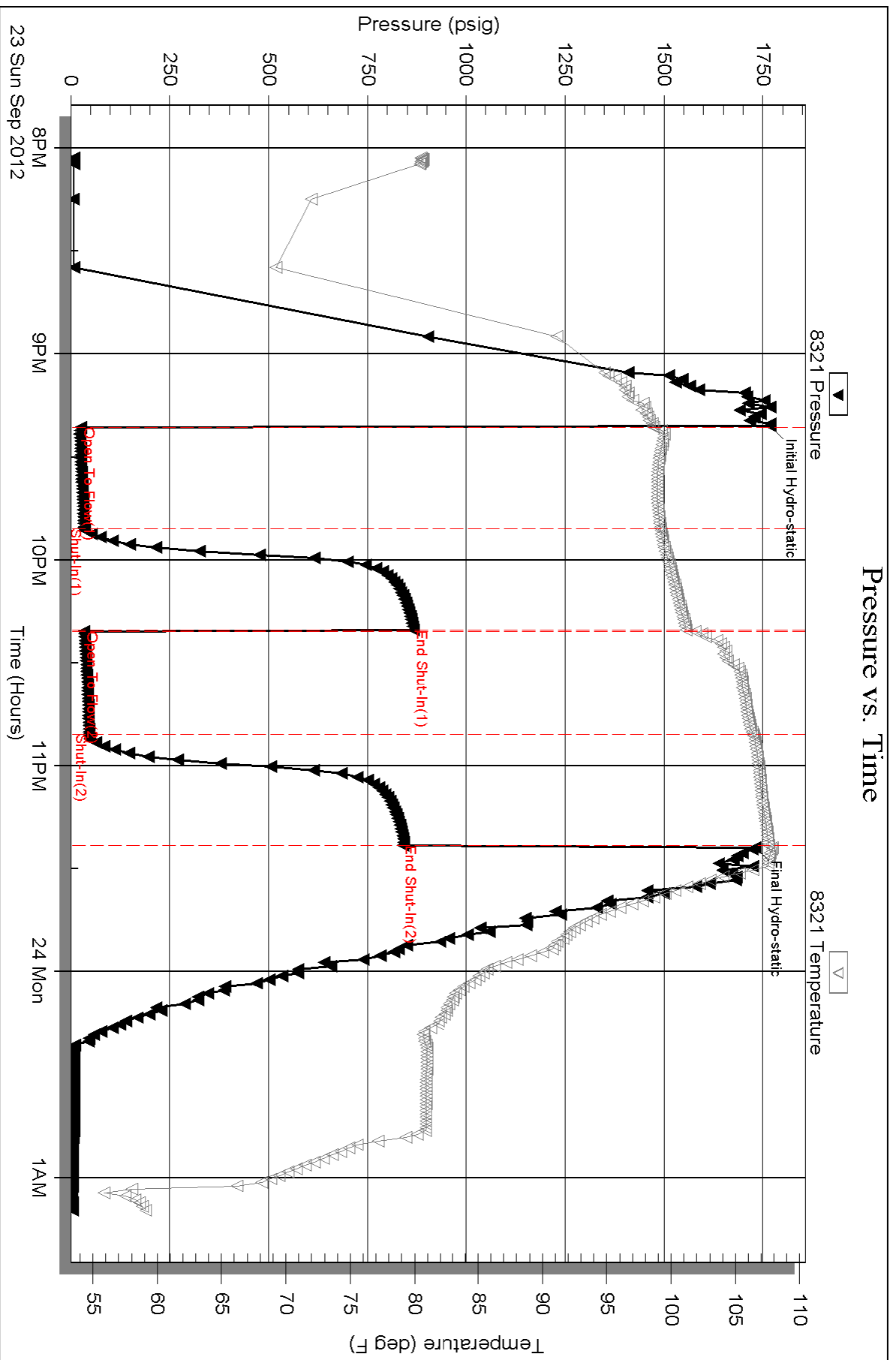
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
43.00	OCMW 10%O 60%W 30%M	0.603
10.00	HOCGWM 20%G 45%O 15%W 20%M	0.140
11.00	WMCO 5%W 30%M 65%O	0.154
0.00	409' GIP	0.000

Total Length: 64.00 ft Total Volume: 0.897 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time

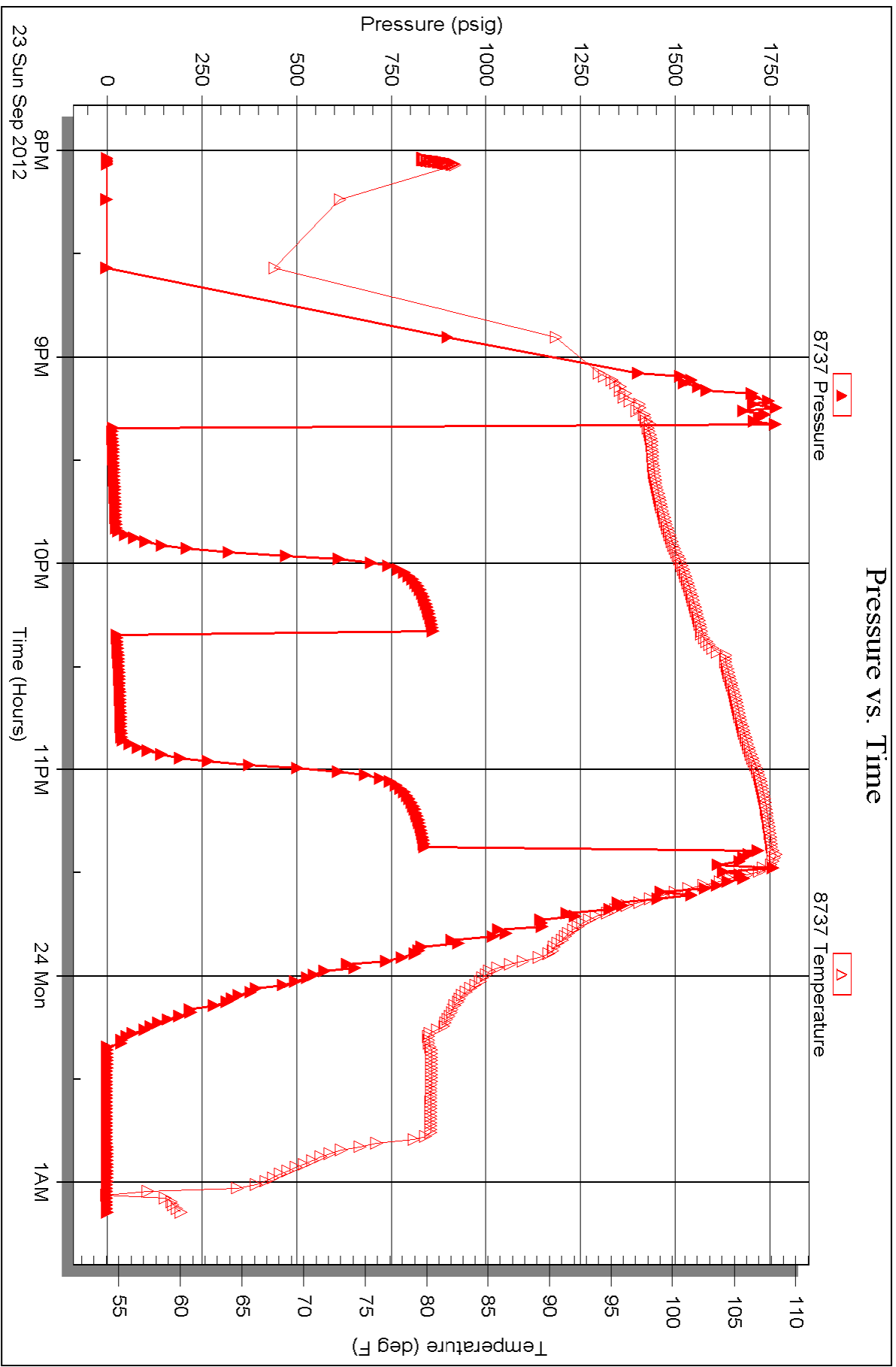


Serial #: 8737

Outside TDI Inc

Mike #2

DST Test Number: 3





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48545

Well Name & No. mike # 2 Test No. 1 Date 9-22-12
 Company TDI, Inc Elevation 2045 KB 2055 GL
 Address 1310 BISON RD Hays KS 67601 + 92096
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 3 Twp. 15S Rge. 19W Co. ELLIS State KS

Interval Tested 3366-3430 Zone Tested LKC-C-F
 Anchor Length 64 Drill Pipe Run 3361 Mud Wt. 9.0
 Top Packer Depth 3361 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 3366 Wt. Pipe Run 0 WL 7.2
 Total Depth 3430 Chlorides 3800 ppm System LCM 1
 Blow Description IFP-GOOD Blow BOB IN 11 1/4 min
ISI-Dead No Blow Back
IFP-GOOD Blow BOB IN 13 1/2 min
ISI-Dead No Blow Back

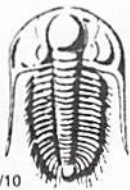
Rec	Feet of	%gas	%oil	%water	%mud
<u>378</u>	<u>MW</u>		<u>55</u>	<u>45</u>	
<u>31</u>	<u>WM</u>		<u>15</u>	<u>85</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 409 BHT 111 Gravity _____ API RW .1166 @ 64.4 °F Chlorides 50.000 ppm

(A) Initial Hydrostatic 11696 Test 1150 T-On Location 11:10
 (B) First Initial Flow 50 Jars _____ T-Started 12:11
 (C) First Final Flow 139 Safety Joint _____ T-Open 15:56
 (D) Initial Shut-In 904 Circ Sub _____ T-Pulled 18:26
 (E) Second Initial Flow 150 Hourly Standby _____ T-Out 20:03
 (F) Second Final Flow 227 Mileage 30 46.50 RT Comments _____
 (G) Final Shut-In 897 Sampler _____
 (H) Final Hydrostatic 1700 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1196.50
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 45 Sub Total 1196.50

Approved By _____ Our Representative Jeff Brown

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. 48546

Well Name & No. Mike #2 Test No. 2 Date 9-23-12
 Company TDI, INC Elevation 2065 KB 2055 GL
 Address 1310 BISON RD Hays KS 67701 + 9696
 Co. Rep / Geo. Herb Deines Rig South Wind #1
 Location: Sec. 3 Twp. 15s Rge. 19W Co. ELLIS State KS

Interval Tested 3476 - 3523 Zone Tested LKC-H-F
 Anchor Length 47 Drill Pipe Run 3486 Mud Wt. 9.3
 Top Packer Depth 3471 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 3476 Wt. Pipe Run 0 WL 7.8
 Total Depth 3523 Chlorides 4000 ppm System LCM 1
 Blow Description: FF-Good Blow BOB 8 3/4 min
ISI-Weak Surface Blow Back Died out IN 10 min
FF-Good Blow BOB IN 14 1/2 min
FSI-Weak Surface Blow Back Died out IN 10 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>252</u>	<u>MW</u>			<u>90%</u>	<u>10%</u>
<u>189</u>	<u>WM</u>			<u>30%</u>	<u>70%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 441 BHT 110 Gravity _____ API RW 122 @ 80.1 °F Chlorides 56,000 ppm

(A) Initial Hydrostatic 1757 Test 1150 T-On Location 6:04
 (B) First Initial Flow 38 Jars _____ T-Started 6:18
 (C) First Final Flow 151 Safety Joint _____ T-Open 8:36
 (D) Initial Shut-In 435 Circ Sub _____ T-Pulled 11:06
 (E) Second Initial Flow 152 Hourly Standby _____ T-Out 13:33
 (F) Second Final Flow 226 Mileage 46.50 Comments _____
 (G) Final Shut-In 433 Sampler _____
 (H) Final Hydrostatic 1680 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1196.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1196.50

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45

Approved By _____ Our Representative Jeff Brown

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 48547

Well Name & No. Mike #2 Test No. 3 Date 9-23-12
 Company TDI INC Elevation 2065 KB 2055 GL
 Address 1310 BISON RD Hays KS 67601 + 9696
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 3 Twp. 15S Rge. 19W Co. ELLIS State KS

Interval Tested 3543 - 3554 Zone Tested LKC-5
 Anchor Length 11 Drill Pipe Run 3549 Mud Wt. 9.3
 Top Packer Depth 3538 Drill Collars Run 0 Vis 51
 Bottom Packer Depth 3543 Wt. Pipe Run 0 WL 7.8
 Total Depth 3554 Chlorides 4000 ppm System LCM 1

Blow Description FF-GOOD Blow BOB IN 13 1/2 min
FSI-Weak surface Blow Back Built TO 1 1/4 IN
FF-GOOD Blow BOB IN 14 1/2 min
FSI-Weak surface Blow Built TO 2 1/4 IN

Rec	Feet of	%gas	%oil	%water	%mud
<u>43</u>	<u>OC mW</u>	<u>10</u>	<u>60</u>	<u>30</u>	
<u>10</u>	<u>HOC GWM</u>	<u>20</u>	<u>45</u>	<u>15</u>	<u>20</u>
<u>11</u>	<u>WCMO</u>	<u>65</u>	<u>5</u>	<u>30</u>	
<u> </u>	<u>409-GIP</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Rec Total 64 BHT 108 Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 1768 Test 1150 T-On Location 19:57
 (B) First Initial Flow 26 Jars T-Started 20:02
 (C) First Final Flow 33 Safety Joint T-Open 21:21
 (D) Initial Shut-In 866 Circ Sub T-Pulled 23:21
 (E) Second Initial Flow 34 Hourly Standby T-Out 1:09
 (F) Second Final Flow 46 Mileage 46.50 Comments
 (G) Final Shut-In 839 Sampler
 (H) Final Hydrostatic 1730 Straddle Ruined Shale Packer

Initial Open 30 Shale Packer Ruined Packer
 Initial Shut-In 30 Extra Packer Extra Copies
 Final Flow 30 Extra Recorder Sub Total 0
 Final Shut-In 30 Day Standby Total 1196.50
 Accessibility MP/DST Disc't
 Sub Total 1196.50

Approved By Our Representative Jeff Brown

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OPERATOR

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

Contact Geologist: TOM DENNING
 Contact Phone Nbr: 785-259-3141
 Well Name: MIKE # 2
 Location: NE NE SE SW Sec.3-15s-19w
 Pool: IN FIELD
 State: KANSAS

API: 15-051-26,381-00-00
 Field: REICHERT
 Country: USA



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

Scale 1:240 Imperial

Well Name: MIKE # 2
 Surface Location: NE NE SE SW Sec.3-15s-19w
 Bottom Location:
 API: 15-051-26,381-00-00
 License Number: 4787
 Spud Date: 9/18/2012 Time: 9:15 AM
 Region: ELLIS COUNTY
 Drilling Completed: 9/24/2012 Time: 12:09 PM
 Surface Coordinates: 1030' FSL & 2700' FEL
 Bottom Hole Coordinates:
 Ground Elevation: 2055.00ft
 K.B. Elevation: 2065.00ft
 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: Latitude:
 N/S Co-ord: 1030' FSL
 E/W Co-ord: 2700' 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

Rig Type: MUD ROTARY
Spud Date: 9/18/2012
TD Date: 9/24/2012
Rig Release: 9/25/2012

Time: 9:15 AM
Time: 12:09 PM
Time: 6:46 AM

ELEVATIONS

K.B. Elevation: 2065.00ft
K.B. to Ground: 10.00ft

Ground Elevation: 2055.00ft

NOTES

DECISION TO RUN PRODUCTION CASING TO FURTHER TEST THE ARBUCKLE AND LANSING-KANSAS CITY "J" ZONE BASED ON FAVORABLE LOG ANALYSIS AND SIGNIFICANT SHOWS OF HYDROCARBONS.

WELL LOGGED BY PIONEER ENERGY SERVICES: DUAL INDUCTION LOG, DUAL COMPENSATED POROSITY LOG, MICRORESISTIVITY LOG.

DRILL STEM TESTING COMPANY: TRILOBITE TESTING INC. 3 DSTS RAN

FORMATION TOPS SUMMARY AND DAILY CHRONOLOGY OF ACTIVITY

MIKE # 2

1030' FSL & 2700' FEL, SW/4

Sec. 3-15s-19w

2055' GL 2065' KB

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>LOG TOPS</u>
Anhydrite		1294+ 771
B-Anhydrite		1330+ 735
Topeka	3034- 969	3040- 975
Heebner Shale	3309-1244	3313-1248
Toronto	3332-1267	3336-1271
LKC	3356-1291	3360-1295
BKC	3600-1535	3605-1540
Reworked Arbuckle	3674-1609	3678-1613
Arbuckle	3680-1615	3684-1619
RTD	3750-1685	
LTD		3753-1688

SUMMARY OF DAILY ACTIVITY

9-18-12 Spud, set 8 5/8" surface casing to 223' w/ 150 sxs Common, 2%Gel, 3%CC, plug down 3:00PM, slope 1/2 degree, WOC 8 hrs

9-19-12 850'


9-20-12 1995', drilling

9-21-12 2800', drilling, displaced 2800'-2826'

9-22-12 3430'. CFS. DST # 1 3366' - 3430'

9-23-12 3523', DST #2 3476'-3523', DST # 3 3543'-3554'
 9-24-12 3640', RTD 3750' 12:09PM, Log, lay down drill pipe
 9-25-12 3750', finish cementing bottom stage cementing, top stage

DST # 1 TEST SUMMARY

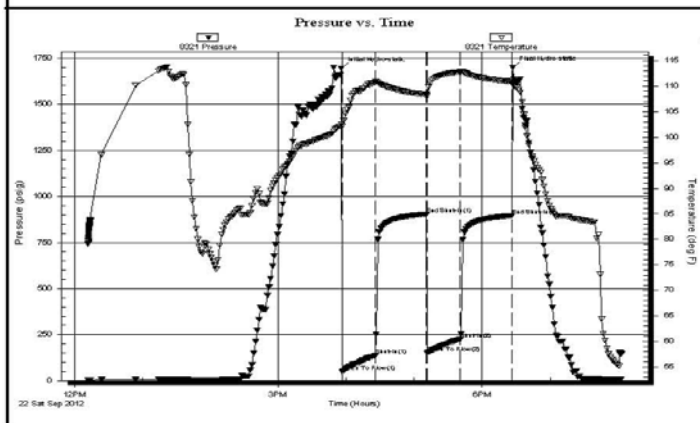
	DRILL STEM TEST REPORT	
	TDI, Inc 1310 Bison Rd Hays Ks 67601 + 9696 ATTN: Tom Denning	3-15s-19w Mike #2 Job Ticket: 48545 DST#: 1 Test Start: 2012.09.22 @ 12:11:45

GENERAL INFORMATION:

Formation: LKC-C-F	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Jeff Brown
Time Tool Opened: 15:56:15	Unit No: 44
Time Test Ended: 20:03:06	Reference Elevations: 2065.00 ft (KB)
Interval: 3366.00 ft (KB) To 3430.00 ft (KB) (TVD)	2055.00 ft (CF)
Total Depth: 3430.00 ft (KB) (TVD)	KB to GR/CF: 10.00 ft
Hole Diameter: 7.88 inches Hole Condition: Good	

Serial #: 8321 Inside	Capacity: 8000.00 psig
Press@RunDepth: 227.46 psig @ 3402.00 ft (KB)	Last Calib.: 2012.09.22
Start Date: 2012.09.22 End Date: 2012.09.22	Time On Btm: 2012.09.22 @ 15:55:45
Start Time: 12:11:46 End Time: 20:03:06	Time Off Btm: 2012.09.22 @ 18:27:15

TEST COMMENT: IFF=Good blow BOB in 11 1/4 min
 IS=Dead no blow back
 FFF=Good blow BOB in 13 1/2 min
 FS=Dead no blow back




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1695.67	102.50	Initial Hydro-static
1	50.40	102.18	Open To Flow (1)
30	139.02	110.82	Shut-In(1)
75	904.17	108.39	End Shut-In(1)
76	150.77	108.09	Open To Flow (2)
105	227.46	112.79	Shut-In(2)
151	896.52	110.86	End Shut-In(2)
152	1700.04	110.38	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
378.00	MW 45% M 55%W	5.30
31.00	WM 15%W 85%M	0.43

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

DST # 2 TEST SUMMARY

 <p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT	
	TDI, Inc 1310 Bison Rd Hays Ks 67601 + 9696 ATTN: Tom Denning	3-15s-19w Mike #2 Job Ticket: 48546 DST#: 2 Test Start: 2012.09.23 @ 06:18:14

GENERAL INFORMATION:

Formation: **LKC-H-I**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:34:44
 Time Test Ended: 13:33:44

Test Type: Conventional Bottom Hole (Reset)
 Tester: Jeff Brown
 Unit No: 44

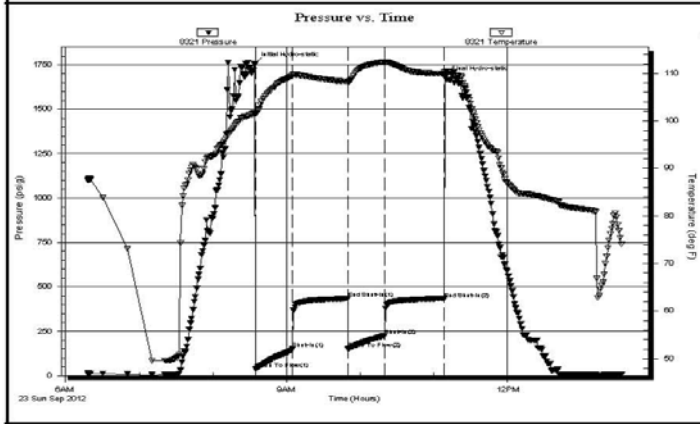
Interval: **3476.00 ft (KB) To 3523.00 ft (KB) (TVD)**
 Total Depth: 3523.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2065.00 ft (KB)
 2055.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8321 Inside

Press@RunDepth: 225.53 psig @ 3512.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2012.09.23	End Date: 2012.09.23
Start Time: 06:18:15	End Time: 13:32:44
	Last Calib.: 2012.09.23
	Time On Btm: 2012.09.23 @ 08:34:14
	Time Off Btm: 2012.09.23 @ 11:08:44

TEST COMMENT: IFF=Good blow BOB in 8 3/4 min
 IS=Weak surface blow back died out in 10 min
 FFF=Good blow BOB in 14 1/2 min
 FS=Weak surface blow back Died out in 10 min



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1756.76	101.67	Initial Hydro-static
1	38.17	101.45	Open To Flow (1)
31	150.52	109.57	Shut-In(1)
76	434.67	108.29	End Shut-In(1)
76	151.93	108.22	Open To Flow (2)
106	225.53	112.41	Shut-In(2)
154	433.48	109.94	End Shut-In(2)
155	1680.28	110.27	Final Hydro-static

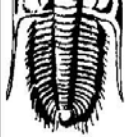
Length (ft)	Description	Volume (bbl)
252.00	MW 10% M 90%W	3.53
189.00	WM 30% W 70% M	2.65

* Recovery from multiple tests

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

DST # 3 TEST SUMMARY

 <p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT	



TESTING, INC.

TDI, Inc
1310 Bison Rd
Hays Ks 67601 + 9696
ATTN: Tom Denning

3-15s-19w

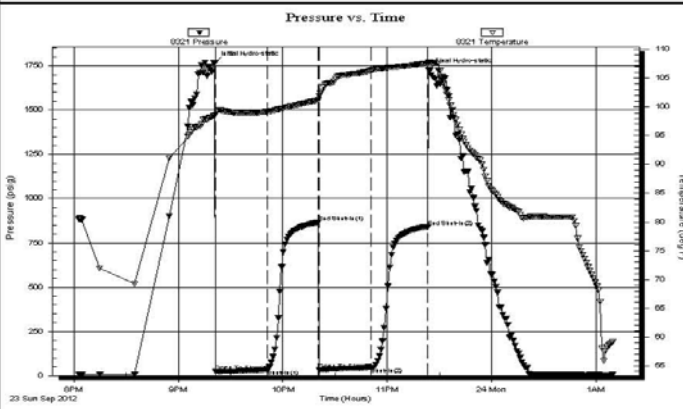
Mike #2
Job Ticket: 48547 DST#: 3
Test Start: 2012.09.23 @ 20:02:51

GENERAL INFORMATION:

Formation: LKC-J
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:21:21
Time Test Ended: 01:09:21
Test Type: Conventional Bottom Hole (Reset)
Tester: Jeff Brown
Unit No: 44
Interval: 3543.00 ft (KB) To 3554.00 ft (KB) (TVD)
Reference Elevations: 2065.00 ft (KB)
Total Depth: 3554.00 ft (KB) (TVD)
2055.00 ft (CF)
Hole Diameter: 7.88 inches
Hole Condition: Good
KB to GR/CF: 10.00 ft

Serial #: 8321 Inside
Press@RunDepth: 46.43 psig @ 3546.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.09.23 End Date: 2012.09.24 Last Calib.: 2012.09.24
Start Time: 20:02:52 End Time: 01:09:21 Time On Btm: 2012.09.23 @ 21:20:51
Time Off Btm: 2012.09.23 @ 23:23:51

TEST COMMENT: IFF-Good blow BOB in 13 1/2 min
ISI-Weak surface blow back built to 1 1/4 in
FFP-Good blow BOB in 14 1/2 min
FSI-Weak surface blow back built to 2 1/4 in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.61	98.57	Initial Hydro-static
1	25.84	98.64	Open To Flow (1)
30	32.92	99.17	Shut-In(1)
60	865.89	101.18	End Shut-In(1)
60	33.57	101.86	Open To Flow (2)
90	46.43	106.36	Shut-In(2)
123	838.89	107.59	End Shut-In(2)
123	1730.31	107.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	HOCGWM 20%G 45%O 15%W 20%M	0.14
11.00	VMCO 5%W 30%M 65%O	0.15
0.00		0.00

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 48547

Printed: 2012.09.24 @ 01:28:07

ROCK TYPES

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

ACCESSORIES

MINERAL

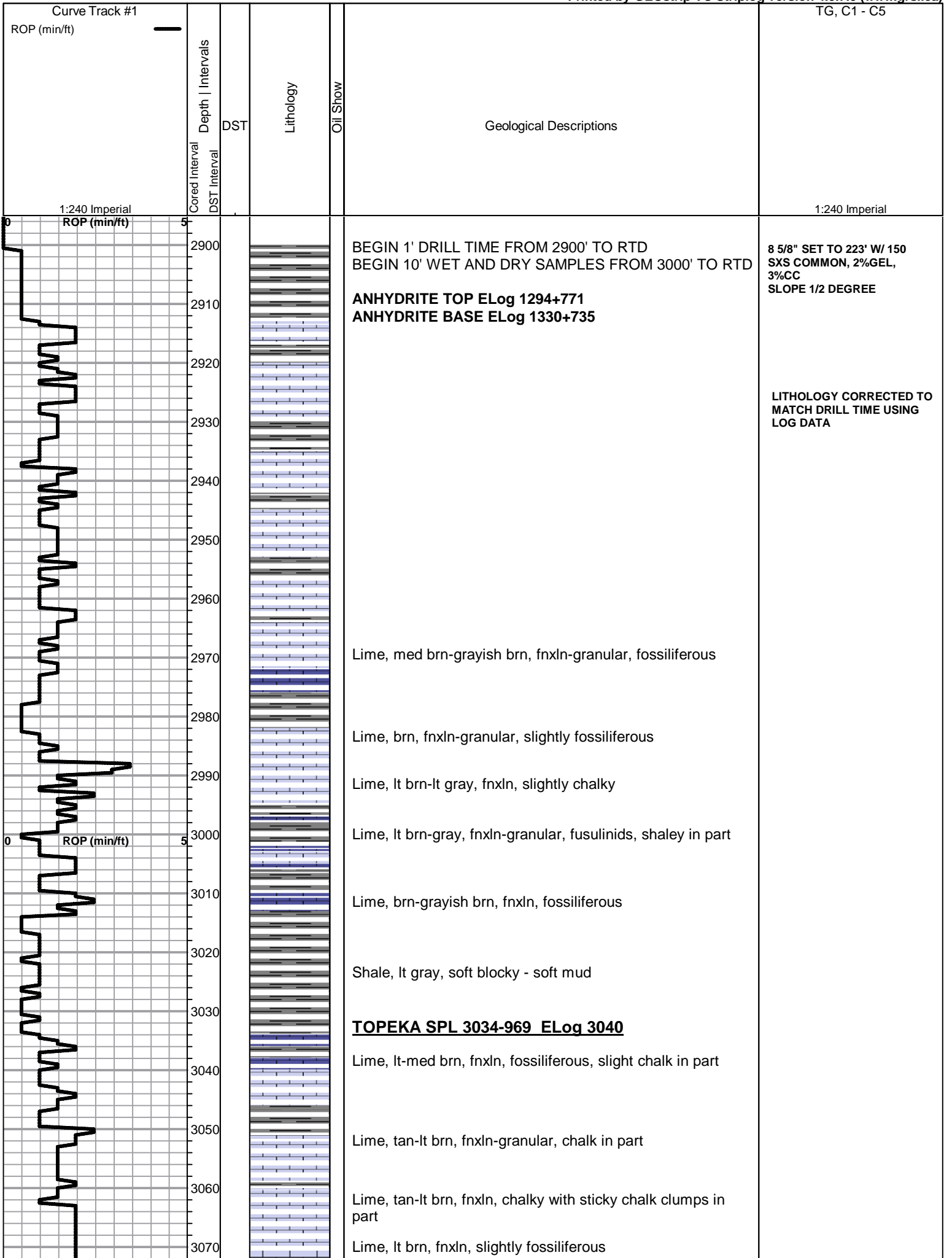
- ▲ Chert, dark
- P Pyrite
- ◆ Varicolored chert
- △ Chert White

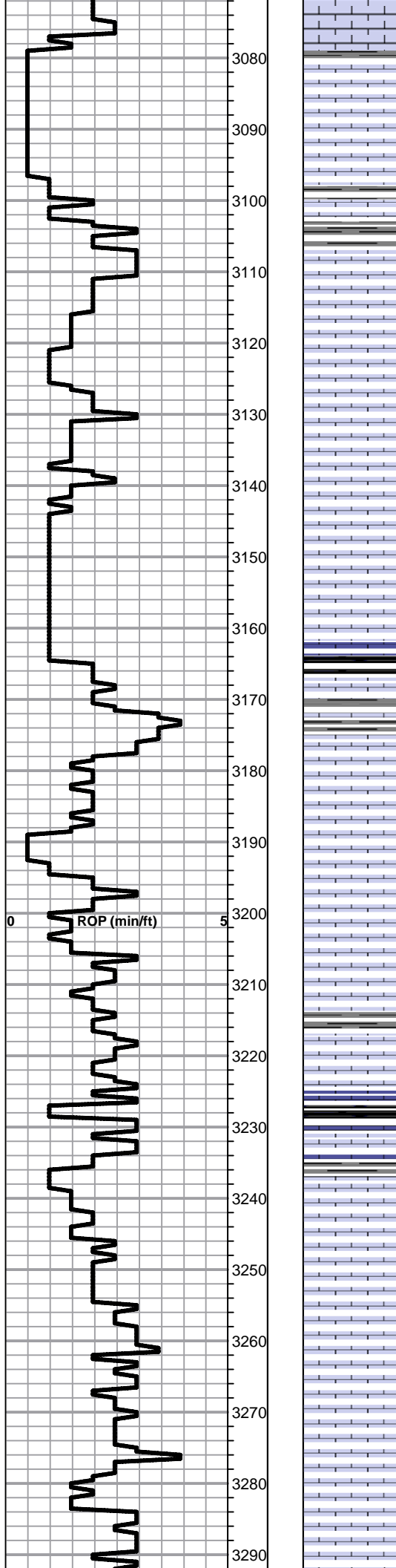
FOSSIL

- Oolite
- ◆ Oomoldic

OTHER SYMBOLS

- DST
- DST Int
- DST alt





Lime, lt brn-lt gray, fnxln, chalky

3080

Lime, tan-lt gray, granular, chalky, NS

3090

Lime, lt brn, fnxln, chalk in part

3100

Lime, crm-tan, fnxln-granular, chalky

3110

Lime, lt brn-lt gray, fnxln-granular, chalky

3120

Lime, crm-tan, fnxln, chalky

3130

Lime, lt brn, fnxln-granular, chalky

3140

Lime, lt-med brn, granular, chalky

3150

Shale, gray-black carbonaceous

3160

Lime, crm-tan, fnxln, chalky

3170

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

3180

Lime, crm, fnxln, chalky

3190

Lime, crm-tan, fnxln-granular, bedded chalk in part

3200

Lime, crm-lt brn, fnxln-granular, chalky

3210

Lime, crm-tan, fnxln-granular, chalky

3220

Shale, gray-black carbonaceous

3230

Lime, crm-tan, fnxln-granular, chalky

3240

Lime, crm-tan, fnxln-granular, chalky

3250

Lime, crm-tan, fnxln-granular, chalky

3260

Lime, tan-offwhite, fnxln, chalky

3270

Lime, offwhite-lt brn, fnxln, chalky

3280

Lime, crm-lt brn, fnxln-granular, chalky

3290

Lime, crm-lt brn, fnxln, bedded chalk

3290

3300
3310
3320
3330
3340
3350
3360
3370
3380
3390
3400
3410
3420
3430
3440
3450
3460
3470
3480
3490
3500
3510

0 RC (mm/ft) 5

A
B
C
D
E
F
G
H

Lime, crm-tan, fnxln, bedded chalk

HEEBNER SHALE SPL 3309-1244 ELog 3313-1248

Shale, black carbonaceous
Lime, lt brn, fnxln

Shale, lime green, soft forming soft mud

TORONTO SPL 3332-1267 ELog 3336-1271

Lime, crm-tan, fn-vfxln, chalk in part, NS

Lime, white-crm, vfxln

Shale, red wash, forming soft mud

LKC SPL 3356-1291 ELog 3360-1295

Lime, lt brn-lt gray, fnxln, NS

Lime, lt gray, fnxln, fossiliferous in part, NS

Shale, lime green-lt gray, soft forming soft mud clumps

Lime, tan, fnxln, bedded chalk grading into oolitic/oolmoldic lime, scattered staining, no odor, NFO

DST # 1 3366' to 3430' SEE HEADER FOR TEST SUMMARY

Lime, tan, fnxln, crumbly on crush, chalk in part

Lime, offwhite-tan, fn-vfxln with scattered vuggy porosity with light stain, no odor, NFO

Lime, offwhite-tan, fnxln

Shale, gray-black carbonaceous
Lime, lt gray, fnxln
Shale, lt gray, soft forming soft clumps

Lime, tan-brn, crumbly on crush, fine vuggy porosity with scattered lt staining, no odor, NFO

Lime, tan-lt brn, fnxln

Lime, crm, fnxln with bedded chalk

Lime, white, oolitic/oolmoldic, barren, NS

Lime, crm, fnxln, chalky

Lime, crm-tan, fnxln

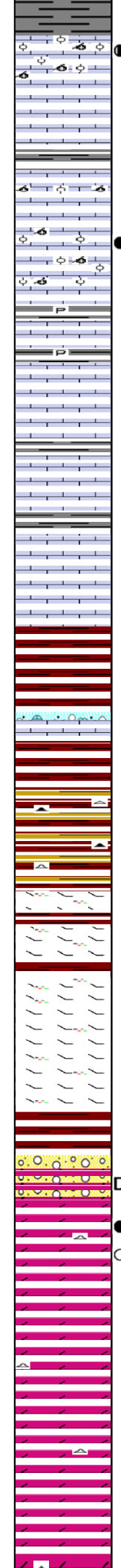
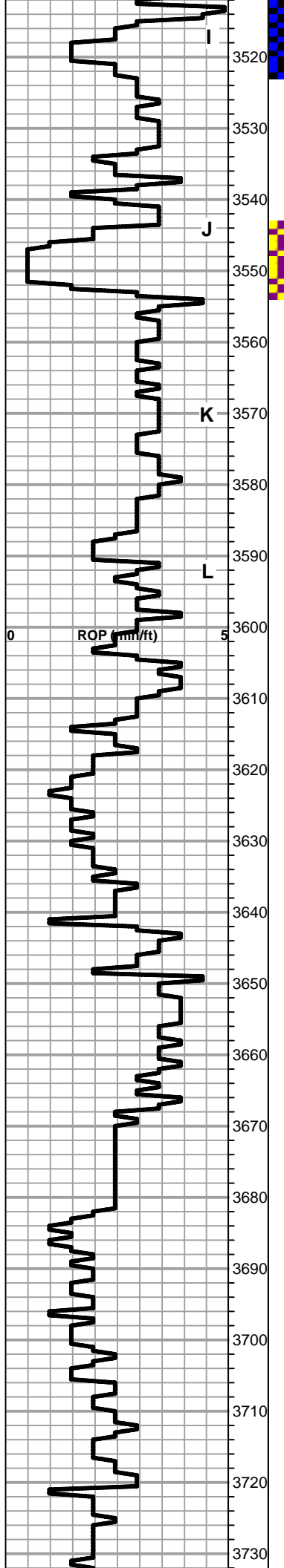
Lime, crm, fn-vfxln, slight bedded chalk in part

Shale, gray-black
Lime, lt gray, fn-vfxln

Lime, crm, fnxln with few chips with fine intercrystalline porosity with lt scattered staining, lt odor

DST # 2 3476' TO 3523' SEE HEADER FOR TEST SUMMARY

Lime, crm, fnxln, scattered bedded chalk



Lime, crm-tan, oolitic/oolmoldic, scattered to sat. staining, V Lt odor, NFO

Lime, crm, fn-vfxln, bedded chalk in part

Lime, tan, fnxln, chalky

Lime, crm-lt brn, oolitic/oolmoldic, scattered to saturated staining, SFO on break, Lt odor

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

Lime, white-crm, fn-vfxln, bedded chalk in part

Lime, white-crm, fn-vfxln, bedded chalk in part

Lime, crm-lt brn, fn-vfxln
Shale, gray, soft, blocky

Lime, lt brn, fn-vfxln, bedded chalk

BKC SPL 3356-1291 ELog 3360-1295

Shale, reddish brn, soft blocky with lt red wash

Lime, lt gray-lt grn, fn-vfxln, some rework lime in part

Shale, reddish brn with mix of vari color shales in part

Shales, red, brns, gray, scattered chert

Lime, tan-lt brn, dolomitic, orange chert in part

Lime, tan-lt brn, fnxln, dolomitic, cherty

Lime, tan-lt brn, fn-vfxln, cherty

REWORKED ARBUCKLE SPL 3674-1609 ELog 3678

ARBUCKLE SPL 3674-1609 ELog 3678-1613

Reworked mix of lime and dolomite with dead oil staining grading into clean dolomite, lt brn, fn-med xln with gilsonian staining developing into coarse crystalline porosity with saturated staining, very lt odor

Dolomite, ivory-crm, fn-cxln

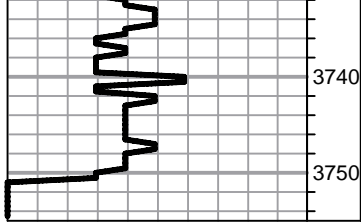
Dolomite, ivory-crm, fnxln

Shale, green, blocky, waxy

Dolomite, ivroy-crm, fnxln-granular in part

Dolomite, ivory-crm, fnxln

DST # 3 3543' TO 3554' SEE HEADER FOR TEST SUMMARY



3740

3750



Dolomite, ivoty-crm, fnxln

5 1/2" PRODUCTION CASING
SET OFF BOTTOM WITH 150
SXS EA2 ON BOTTOM STAGE
AND DV SET IN ANHYDRITE
WITH 175 SXS SMD
CIRCULATED TO SURFACE

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 743

Date	9-18-12	Sec.	3	Twp.	15	Range	19	County	Ellis	State	KS	On Location		Finish	3.00pm
Lease	mike			Well No.	#2			Location	Antinino 1W 15 1/2 W N10						
Contractor	Southwind R15 1							Owner	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.						
Type Job	Self Face							Hole Size	1 3/4						
Csg.	8 5/8							T.D.	225						
Tbg. Size								Depth	223.05						
Tool								Charge To	T D I						
Cement Left in Csg.	20 FT							Depth							
Meas Line								Shoe Joint	90 FT						
								Displace	12.34 BBL						
									The above was done to satisfaction and supervision of owner agent or contractor.						
									Cement Amount Ordered 150 3/4 2% gel						

EQUIPMENT

Pumptrk	5	No.		Cementer	matt		Common	150	
				Helper					
Bulktrk	14	No.		Driver	patt		Poz. Mix		
				Driver					
Bulktrk	pa	No.		Driver	cody		Gel.	3	
				Driver			Calcium	5	

JOB SERVICES & REMARKS

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
		Mileage	

FLOAT EQUIPMENT

		Guide Shoe	
		Centralizer	
		Baskets	
		AFU Inserts	
		Float Shoe	
		Latch Down	
		Pumptrk Charge	Surface
		Mileage	12

		Tax	
		Discount	
		Total Charge	

X Signature *[Handwritten Signature]*

JOB LOG

SWIFT Services, Inc.

DATE 9-25-12 PAGE NO. 1

CUSTOMER TDL WELL NO. #2 LEASE Mike JOB TYPE 2 Stage Long String TICKET NO. 21846

CHART NO.	TIME	RATE (BPM)	VOLUME (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0100							On loc. Rig changing over to Run Pipe
	0210							Start in with 5'1/2" 14# csg. Insert Float Shoe Latchdown Baffle 3713 Cut on #1, 2, 4, 6, 8, 9, 11, 57 Bender #2, #12, #58, #80 D.V. tool #58 G. 1282'
	0345							Drop Bull
	0400							Circulate + Rotate
	0500		72					500 gal Mud Flush 20 ^{ss} KCL Flush
	0505	4 1/2	36					Mix 150 sks EA-2 cont.
	0530							Finish mixing wash out pump + line Drop D.V. Latchdown Plug Displ.
	0545		90.5			1500		Plug Down 1500 psf holding Release Press. Float held
	0550							Drop D.V. opening Plug Plug R.H. M.H. 30 + 20
	0610					1100		Open D.V. tool 20 ^{ss} KCL Flush Mix 175 sks SMD
	0630	4 1/2	97					Finish mixing Drop D.V. Closing Plug Displace
	0640		31			1500		Plug Down 1500 psf holding Release Press. D.V. closed
	0715							wash + Rack up truck Job Complete.

Thank You
Roger Josh Jeremy

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
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

November 14, 2012

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

Re: ACO1
API 15-051-26381-00-00
Mike 2
SW/4 Sec.03-15S-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