

**CONFIDENTIAL**

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

**ORIGINAL**

Form ACO-1  
October 2008  
Form Must Be Typed

12/23/12

**WELL COMPLETION FORM**  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 4767

Name: Ritchie Exploration, Inc.

Address 1: P.O. Box 783188

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

City: Wichita State: KS Zip: 67278 + 3118

Contact Person: John Niernberger

Phone: ( 316 ) 691-9500

CONTRACTOR: License # 30606

Name: Murfin Drilling Company, Inc.

Wellsite Geologist: Ted Jochems

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

Designate Type of Completion:

- New Well
  - Re-Entry
  - Workover
  - Oil
  - SWD
  - SIOW
  - Gas
  - ENHR
  - SIGW
  - CM (Coal Bed Methane)
  - Temp. Abd.
  - Dry
  - Other
- (Core, WSW, Expl., Cathodic, 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: \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_

Commingled Docket No.: \_\_\_\_\_

Dual Completion Docket No.: \_\_\_\_\_

Other (SWD or Enhr.?) Docket No.: \_\_\_\_\_

9/2/10 9/11/10 9/11/10

Spud Date or  
Recompletion Date      Date Reached TD      Completion Date or  
Recompletion Date

API No. 15 - 109-20940-0000

Spot Description: 15' S & 5' W of

E/2  NE  Sec. 36 Twp. 13 S. R. 32  East  West

1335 Feet from  North /  South Line of Section

335 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

County: Logan

Lease Name: Nuss Farms 36A Well #: 1

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

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

Elevation: Ground: 2926 Kelly Bushing: 2936

Total Depth: 4650 Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: 221 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** PANU 1-12-11  
(Data must be collected from the Reserve Pit)

Chloride content: 12100 ppm Fluid volume: 815 bbls

Dewatering method used: evaporation

Location of fluid disposal if hauled offsite: \_\_\_\_\_

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

Lease Name: \_\_\_\_\_ License No.: \_\_\_\_\_

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

County: \_\_\_\_\_ Docket No.: \_\_\_\_\_

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

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.

Signature: \_\_\_\_\_

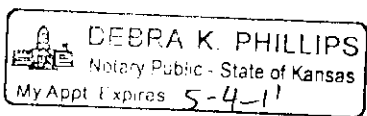
Title: Production Manager Date: 12/23/10

Subscribed and sworn to before me this 23<sup>rd</sup> day of December

20 10

Notary Public: Debra K Phillips

Date Commission Expires: 5-4-11



**KCC Office Use ONLY**

- Letter of Confidentiality Received 12/23/10 - 12/23/12
- If Denied, Yes  Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution

**RECEIVED**  
**DEC 27 2010**

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Operator Name: Ritchie Exploration, Inc. Lease Name: Nuss Farms 36A Well #: 1  
 Sec. 36 Twp. 13 S. R. 32  East  West County: Logan

**INSTRUCTIONS:** Show important tops and base 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. Attach copy of all Electric Wireline Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken  Yes  No  
 (Attach Additional Sheets)  
 Samples Sent to Geological Survey  Yes  No  
 Cores Taken  Yes  No  
 Electric Log Run  Yes  No  
 (Submit Copy)

Log Formation (Top), Depth and Datum  Sample  
 Name Top Datum

SEE ATTACHED

List All E. Logs Run:  
**Radiation Guard Log**

CASING RECORD <input checked="" 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
Surface	12-1/4	8-5/8	23	221	Common	175	3%cc, 2%gel

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				

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

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Date of First, Resumed Production, SWD or Enhr.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (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 (If vented, Submit ACO-18.)	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
--	--	--

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# RITCHIE

EXPLORATION, INC.  
Wichita, Kansas

## #1 Nuss Farms 36A

1335' FNL & 335' FEL

15' S & 5' W of E/2 E/2 NE Section 36-13S-32W

Logan County, Kansas

API# 15-109-20940-0000

Elevation: GL: 2926', KB: 2936'

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## DRILLING REPORT

Sample Tops			Ref. Well
Anhydrite	2416'	+520	+2
B/Anhydrite	2439'	+497	+1
Heebner	3919'	-983	+5
Lansing	3962'	-1026	+6
Lansing "C"	3996'	-1060	+2
Lansing "D"	4010'	-1074	+6
Lansing "E"	4042'	-1106	+6
Muncie Shale	4120'	-1184	+2
Lansing "H"	4134'	-1198	+4
Lansing "I"	4164'	-1228	+2
Lansing "J"	4191'	-1255	+3
Stark Shale	4210'	-1274	+2
Lansing "K"	4222'	-1286	+4
Lansing "L"	4258'	-1322	+4
BKC	4288'	-1352	+2
Marmaton	4314'	-1378	+4
Altamont	4348'	-1412	+2
Pawnee	4412'	-1476	+2
Myric Station	4452'	-1516	+1
Fort Scott	4464'	-1528	+6
Cherokee Shale	4492'	-1556	+6
Johnson	4537'	-1601	+5
B/Johnson	4565'	-1629	+1
Morrow Sand	4577'	-1641	+16
Mississippian	4586'	-1650	+30
RTD	4650'	-1714	

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# ALLIED CEMENTING CO., LLC. 035644

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT: Oakley

DATE <u>9-11-10</u>	SEC <u>36</u>	TWR <u>135</u>	RANGE <u>320</u>	CALLED OUT	ON LOCATION	JOB START <u>2:30 AM</u>	JOB FINISH <u>3:30 AM</u>
LEASE <u>Wass Farms</u>	WELL # <u>1</u>	LOCATION <u>Oakley</u>	<u>205 2E 4N</u>	COUNTY <u>Logan</u>	STATE <u>KS</u>		
OLD OR NEW (Circle one) <u>NEW</u>			<u>WINTO</u>				

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CONTRACTOR muffin Drilling Rig 14 OWNER same

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TYPE OF JOB PTA

HOLE SIZE <u>7 7/8</u>	T.D. <u>4650'</u>
CASING SIZE	DEPTH
TUBING SIZE	DEPTH
DRILL PIPE <u>4 1/2</u>	DEPTH <u>2425'</u>
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT

CEMENT LEFT IN CSG. \_\_\_\_\_  
PERFS. \_\_\_\_\_  
DISPLACEMENT \_\_\_\_\_

CEMENT AMOUNT ORDERED 220 sks 6940 489d  
1/4 FLO-SEAL

COMMON <u>132 sks</u>	@ <u>15.45</u>	<u>2039.40</u>
POZMIX <u>88 sks</u>	@ <u>8.00</u>	<u>704.00</u>
GEL <u>7 sks</u>	@ <u>20.80</u>	<u>145.60</u>
CHLORIDE	@	
ASC	@	
<u>FLO-seal 55*</u>	@ <u>250</u>	<u>137.50</u>
HANDLING <u>229 sks</u>	@ <u>2.40</u>	<u>549.60</u>
MILEAGE <u>107 sks/mile</u>		<u>458.00</u>
		TOTAL <u>4034.10</u>

**EQUIPMENT**

PUMP TRUCK # <u>423-281</u>	CEMENTER <u>Andrew</u>
	HELPER <u>Larene</u>
BULK TRUCK # <u>394</u>	DRIVER <u>Darrin</u>
BULK TRUCK # _____	DRIVER _____

**REMARKS:**

25 sks @ 2425'  
100 sks @ 1376'  
40 sks @ 275'  
10 sks @ 40'  
15 sks mouse hole  
30 sks Ref hole

thank you

**SERVICE**

DEPTH OF JOB <u>2425'</u>	
PUMP TRUCK CHARGE	<u>1185.00</u>
EXTRA FOOTAGE	@
MILEAGE <u>20 miles</u>	@ <u>7.00</u> <u>140.00</u>
MANIFOLD	@
	@
	@

TOTAL 1325.00

CHARGE TO: Ritchie Exploration

STREET \_\_\_\_\_

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

**PLUG & FLOAT EQUIPMENT**

<u>8 5/8</u>	
<u>1 Dry hole plug</u>	@ <u>40.00</u>
	@
	@
	@
	@
TOTAL <u>40.00</u>	

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

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

PRINTED NAME Greg Shook

SIGNATURE Greg Shook

*Handwritten mark*

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# ALLIED CEMENTING CO., LLC. 038995

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT:  
Oakley KS

DATE <u>9-2-10</u>	SEC. <u>36</u>	TWP. <u>13S</u>	RANGE <u>32W</u>	CALLED OUT	ON LOCATION <u>9:00am</u>	JOB START <u>9:00am</u>	JOB FINISH <u>8:30pm</u>	
*1 Nuss				LEASE <u>James</u>	WELL # <u>36A</u>	LOCATION <u>Oakley 20s-204W</u>	COUNTY <u>logan</u>	STATE <u>KS</u>
<input checked="" type="radio"/> OLD OR <input type="radio"/> NEW (Circle one)				LOCATION <u>win</u>				

CONTRACTOR Mud #14

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 224

CASING SIZE 8 9/8 DEPTH 224

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15

PERFS.

DISPLACEMENT 13.3

OWNER \_\_\_\_\_

CEMENT

AMOUNT ORDERED 675 yds con 390

290 sel

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EQUIPMENT

PUMP TRUCK CEMENTER Fuzzy

# 423 HELPER W. Rene

BULK TRUCK

# 347 DRIVER Willbor

BULK TRUCK

# DRIVER

COMMON	<u>175</u>	@	<u>1545</u>	<u>2703.75</u>
POZMIX		@		
GEL	<u>3</u>	@	<u>20.00</u>	<u>62.40</u>
CHLORIDE	<u>6</u>	@	<u>58.00</u>	<u>349.20</u>
ASC		@		
		@		
		@		
		@		
		@		
		@		
		@		
		@		
HANDLING	<u>184</u>	@	<u>2.40</u>	<u>441.60</u>
MILEAGE	<u>1085 km</u>	@		<u>368.00</u>
TOTAL				<u>3924.95</u>

REMARKS:

cement did circulate

Approx 4 BBLs

Job complete @ 8:30pm

Thanks Fuzzy & crew

SERVICE

DEPTH OF JOB 224

PUMP TRUCK CHARGE 1018.00

EXTRA FOOTAGE @

MILEAGE 20 @ 7.00 140.00

MANIFOLD @

TOTAL 1158.00

CHARGE TO: Rickie Exploration

STREET \_\_\_\_\_

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

PLUG & FLOAT EQUIPMENT

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

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

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

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

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

TOTAL \_\_\_\_\_

To Allied Cementing Co., LLC.

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

SALES TAX (if Any) \_\_\_\_\_

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

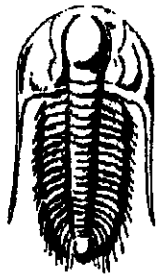
DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS

PRINTED NAME Greg Umrah

SIGNATURE Greg Umrah

*Handwritten initials*

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**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Ritchie Exploration**

8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**36-13s-32w Logan, KS**

**Nuss Farms 36A #1**

Start Date: 2010.09.06 @ 07:28:35

End Date: 2010.09.06 @ 13:20:44

Job Ticket #: 040233      DST #: 1

**KCC  
DEC 23 2010  
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Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

**RECEIVED  
DEC 27 2010**

Printed: 2010.09.16 @ 10:00:29  
**KCC WICHITA**

Ritchie Exploration

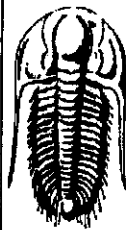
Nuss Farms 36A #1

36-13s-32w Logan, KS

DST # 1

LKC-C-D-E

2010.09.06



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
  
ATTN: Ted Jochems

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040233      DST#: 1  
Test Start: 2010.09.06 @ 07:28:35

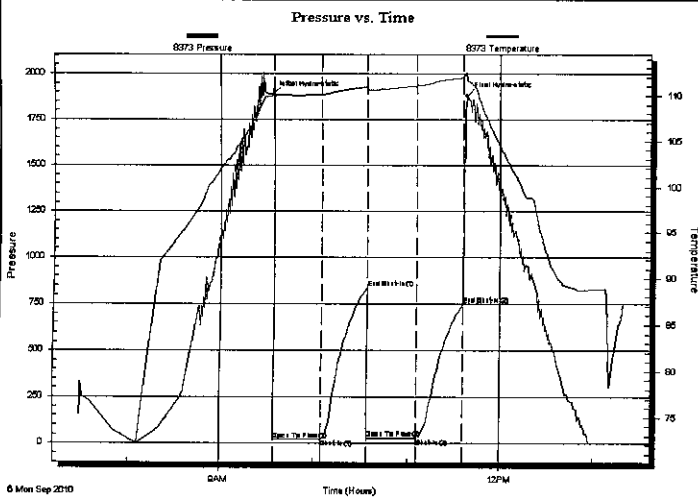
## GENERAL INFORMATION:

Formation: **LKC C-D-E**  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 09:34:45  
 Time Test Ended: 13:20:44  
 Interval: **3985.00 ft (KB) To 4050.00 ft (KB) (TVD)**  
 Total Depth: **4050.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Brandon Turley  
 Unit No: 35  
 Reference Elevations: 2936.00 ft (KB)  
 2926.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8373      Inside**  
 Press@RunDepth: 28.17 psig @ 3986.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2010.09.06      End Date: 2010.09.06      Last Calib.: 2010.09.06  
 Start Time: 07:28:35      End Time: 13:20:44      Time On Btm: 2010.09.06 @ 09:33:30  
 Time Off Btm: 2010.09.06 @ 11:38:00

**TEST COMMENT:** IF: 1/4 blow died in 9 min.  
 IS: No return.  
 FF: No blow.  
 FS: No return.

## PRESSURE SUMMARY



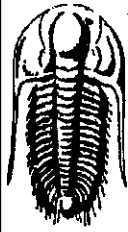
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1887.68	109.94	Initial Hydro-static
2	19.31	109.59	Open To Flow (1)
32	23.43	110.12	Shut-In(1)
61	835.39	110.95	End Shut-In(1)
61	25.65	110.52	Open To Flow (2)
93	28.17	111.09	Shut-In(2)
123	745.44	111.96	End Shut-In(2)
125	1880.84	111.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
  
ATTN: Ted Jochems

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040233      DST#: 1  
Test Start: 2010.09.06 @ 07:28:35

**Tool Information**

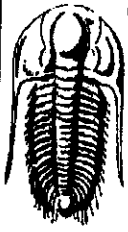
Drill Pipe:	Length: 3423.00 ft	Diameter: 3.80 inches	Volume: 48.02 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 541.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 85000.00 lb
		<b>Total Volume:</b>	<b>50.68 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3985.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 ft			
Tool Length:	93.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			3958.00	
Shut In Tool	5.00			3963.00	
Hydraulic tool	5.00			3968.00	
Jars	5.00			3973.00	
Safety Joint	3.00			3976.00	
Packer	5.00			3981.00	28.00      Bottom Of Top Packer
Packer	4.00			3985.00	
Stubb	1.00			3986.00	
Recorder	0.00	8373	Inside	3986.00	
Recorder	0.00	8289	Outside	3986.00	
Perforations	25.00			4011.00	
Change Over Sub	1.00			4012.00	
Drill Pipe	32.00			4044.00	
Change Over Sub	1.00			4045.00	
Bullnose	5.00			4050.00	65.00      Bottom Packers & Anchor

**Total Tool Length: 93.00**





**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
ATTN: Ted Jochens

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040233      DST#: 1  
Test Start: 2010.09.06 @ 07:28:35

**Mud and Cushion Information**

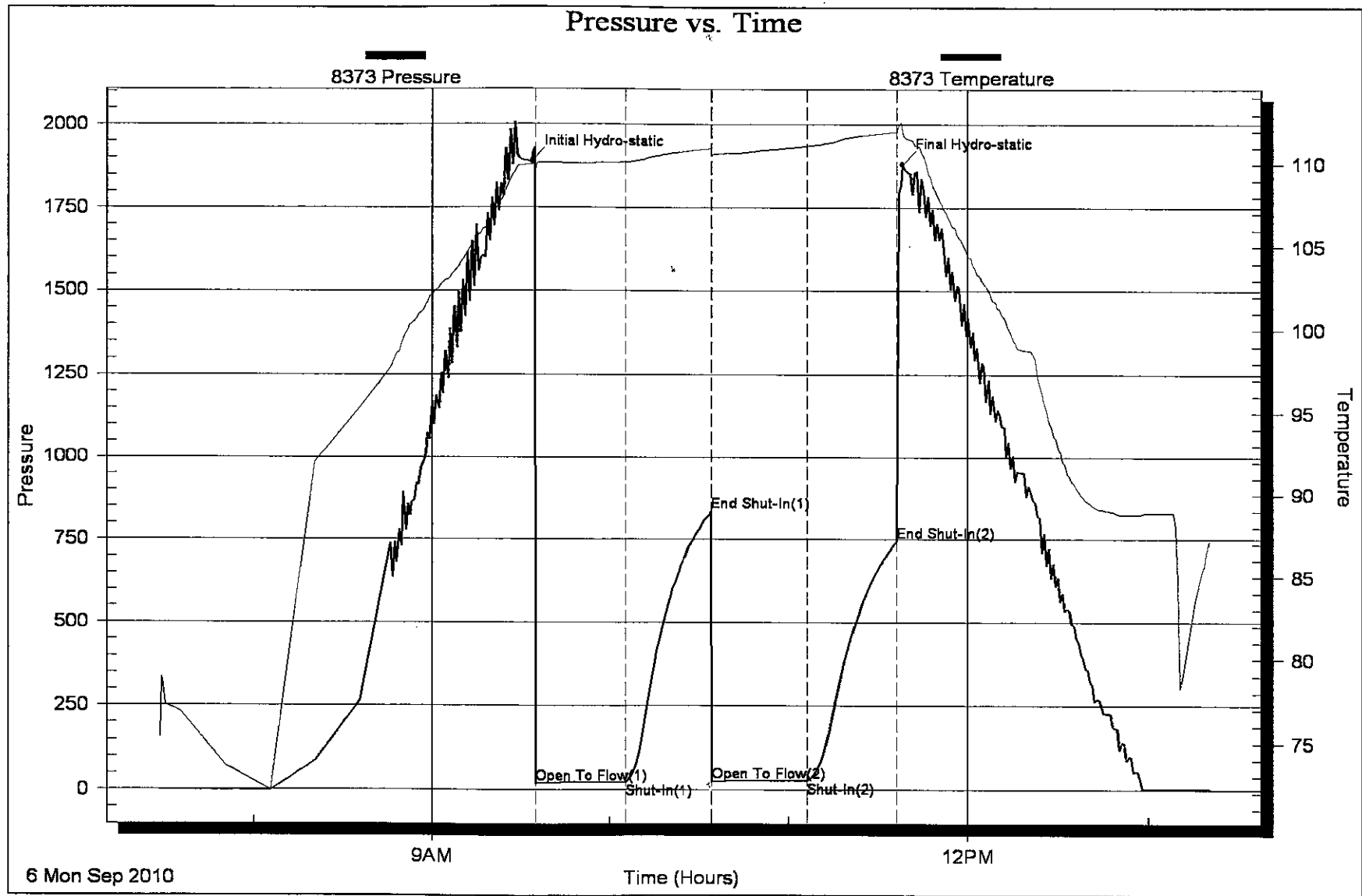
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.74 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2000.00 ppm			
Filter Cake: 1.00 inches			

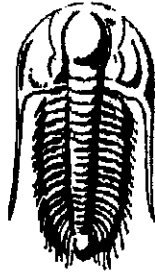
**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**36-13s-32w Logan, KS**

**Nuss Farms 36A #1**

Start Date: 2010.09.07 @ 02:19:01

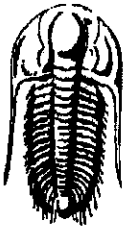
End Date: 2010.09.07 @ 08:23:40

Job Ticket #: 040234                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**Nuss Farms 36A #1**

**36-13s-32w Logan, KS**

Job Ticket: 040234      DST#: 2

Test Start: 2010.09.07 @ 02:19:01

## GENERAL INFORMATION:

Formation: **Lansing H**  
Deviated: **No** Whipstock:      ft (KB)  
Time Tool Opened: 04:25:41  
Time Test Ended: 08:23:40

Test Type: Conventional Bottom Hole  
Tester: Brandon Turley  
Unit No: 35

Interval: **4118.00 ft (KB) To 4146.00 ft (KB) (TVD)**  
Total Depth: **4146.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches** Hole Condition: Fair

Reference Elevations: **2936.00 ft (KB)**  
**2926.00 ft (CF)**  
KB to GR/CF: **10.00 ft**

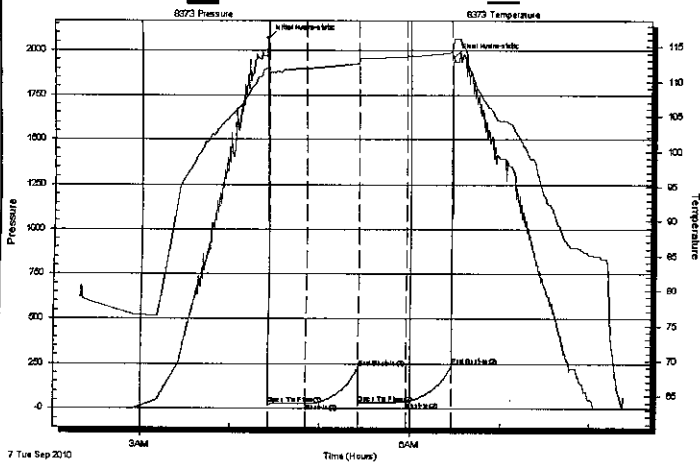
**Serial #: 8373**      **Inside**

Press@RunDepth: **36.94 psig @ 4119.00 ft (KB)**  
Start Date: **2010.09.07**      End Date: **2010.09.07**  
Start Time: **02:19:01**      End Time: **08:23:40**

Capacity: **8000.00 psig**  
Last Calib.: **2010.09.07**  
Time On Btm: **2010.09.07 @ 04:24:56**  
Time Off Btm: **2010.09.07 @ 06:28:41**

TEST COMMENT: IF: 1/2 blow died in 7 min.  
IS: No return.  
FF: Surface blow built to 3/4 in 30 min.  
FS: No return.

Pressure vs. Time



## PRESSURE SUMMARY

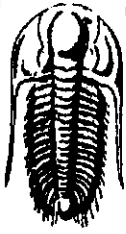
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2065.69	111.85	Initial Hydro-static
1	24.52	110.93	Open To Flow (1)
26	30.84	111.92	Shut-In(1)
61	227.95	112.64	End Shut-In(1)
61	31.38	112.72	Open To Flow (2)
92	36.94	113.61	Shut-In(2)
123	237.68	114.20	End Shut-In(2)
124	1963.97	115.95	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbt)
15.00	ocm 5% o 95% m	0.07

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278

**Nuss Farms 36A #1**

**36-13s-32w Logan, KS**

Job Ticket: 040234

DST#: 2

ATTN: Ted Jocherns

Test Start: 2010.09.07 @ 02:19:01

### Tool Information

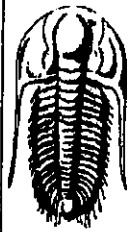
Drill Pipe:	Length: 3581.00 ft	Diameter: 3.80 inches	Volume: 50.23 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 541.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 80000.00 lb
		<b>Total Volume:</b>	<b>52.89 bbl</b>	Tool Chased 3.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4118.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	57.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4096.00	
Shut In Tool	5.00			4101.00	
Hydraulic tool	5.00			4106.00	
Safety Joint	3.00			4109.00	
Packer	5.00			4114.00	23.00 Bottom Of Top Packer
Packer	4.00			4118.00	
Stubb	1.00			4119.00	
Recorder	0.00	8373	Inside	4119.00	
Recorder	0.00	8289	Outside	4119.00	
Perforations	28.00			4147.00	
Bullnose	5.00			4152.00	34.00 Bottom Packers & Anchor

**Total Tool Length: 57.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration

**Nuss Farms 36A #1**

8100 E 22nd St. N 700  
Wichita, Ks 67278

**36-13s-32w Logan, KS**

Job Ticket: 040234

**DST#: 2**

ATTN: Ted Jochens

Test Start: 2010.09.07 @ 02:19:01

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.73 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
15.00	ocm 5%o 95%m	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbf

Num Fluid Samples: 0

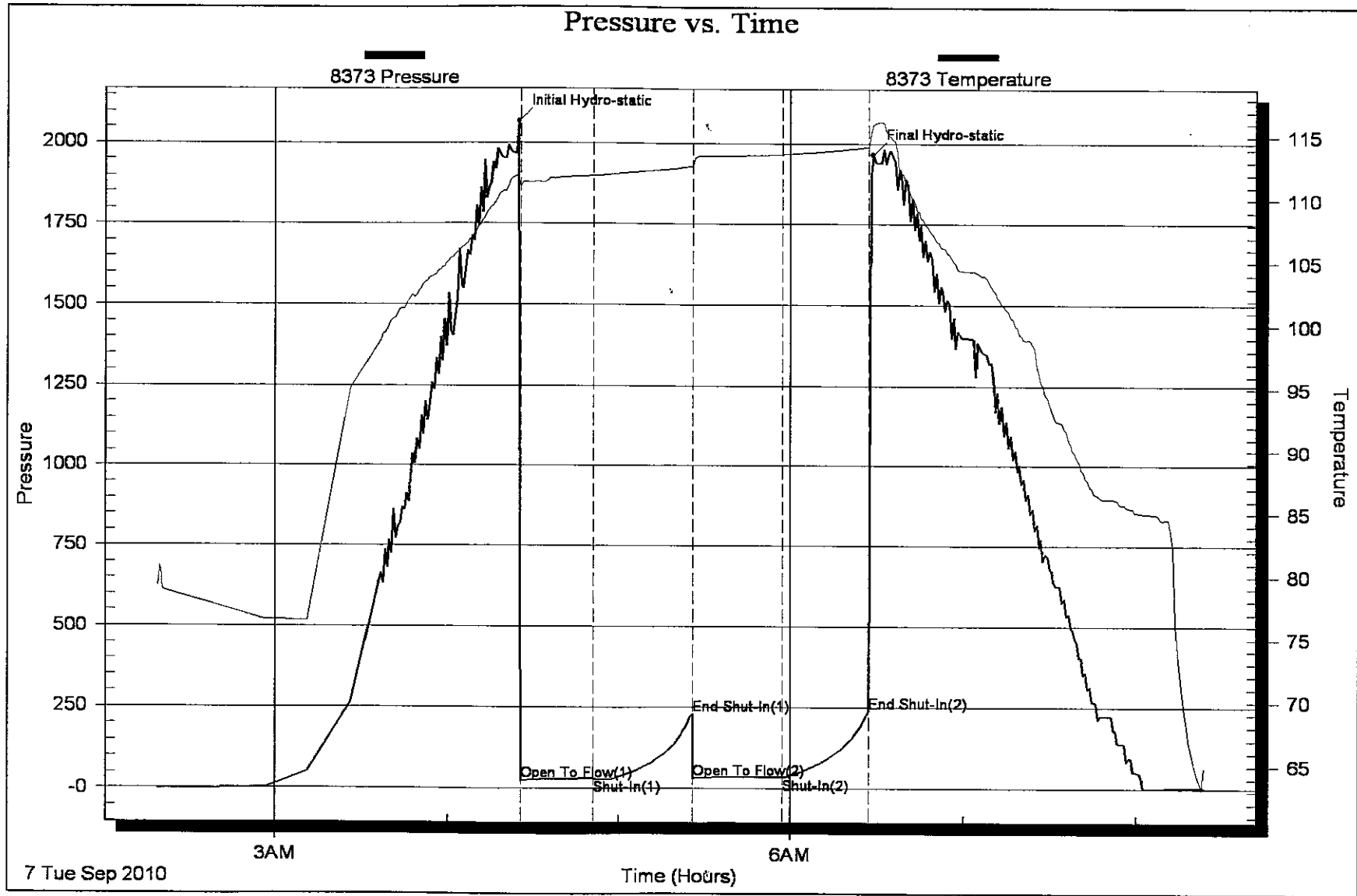
Num Gas Bombs: 0

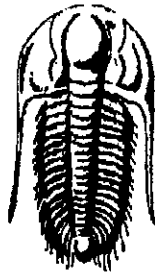
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**36-13s-32w Logan, KS**

**Nuss Farms 36A #1**

Start Date: 2010.09.07 @ 19:08:15

End Date: 2010.09.08 @ 01:34:54

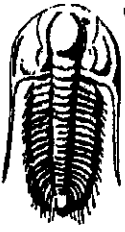
Job Ticket #: 040235      DST #: 3

Trilobite Testing, Inc

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





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
 8100 E 22nd St. N 700  
 Wichita, Ks 67278  
 ATTN: Ted Jochems

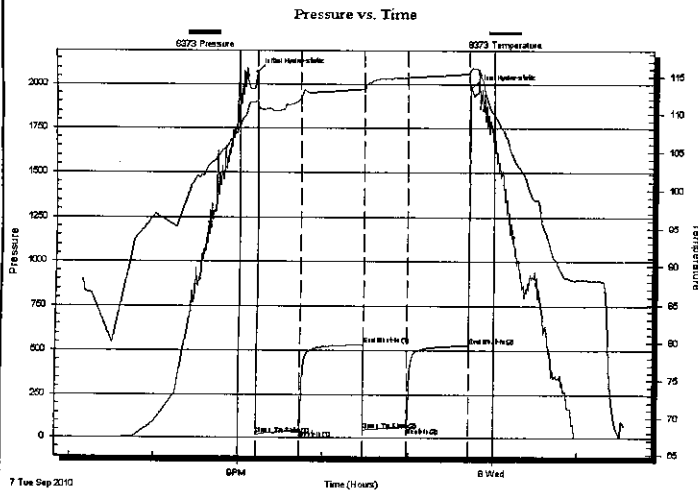
**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
 Job Ticket: 040235      DST#: 3  
 Test Start: 2010.09.07 @ 19:08:15

## GENERAL INFORMATION:

Formation: **LKC I-J**  
 Deviated: **No** Whipstock: **ft (KB)** Test Type: **Conventional Bottom Hole**  
 Time Tool Opened: **21:13:10** Tester: **Brandon Turley**  
 Time Test Ended: **01:34:54** Unit No: **35**  
 Interval: **4146.00 ft (KB) To 4206.00 ft (KB) (TVD)** Reference Elevations: **2936.00 ft (KB)**  
 Total Depth: **4206.00 ft (KB) (TVD)** **2926.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair** KB to GR/CF: **10.00 ft**

**Serial #: 8373** Inside  
 Press@RunDepth: **63.33 psig @ 4147.00 ft (KB)** Capacity: **8000.00 psig**  
 Start Date: **2010.09.07** End Date: **2010.09.08** Last Calib.: **2010.09.08**  
 Start Time: **19:08:15** End Time: **01:34:54** Time On Btm: **2010.09.07 @ 21:12:55**  
 Time Off Btm: **2010.09.07 @ 23:43:39**

TEST COMMENT: IF: 1/4 blow built to 2 in  
 IS: No return.  
 FF: No blow.  
 FS: No return.



## PRESSURE SUMMARY

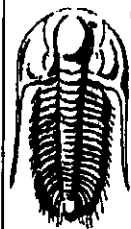
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2069.13	111.73	Initial Hydro-static
1	16.80	110.86	Open To Flow (1)
31	44.87	112.07	Shut-In(1)
75	533.58	113.31	End Shut-In(1)
75	45.97	113.02	Open To Flow (2)
106	63.33	114.80	Shut-In(2)
150	528.69	115.37	End Shut-In(2)
151	1979.60	115.97	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
100.00	mud 100%m	0.49

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040235      DST#: 3  
Test Start: 2010.09.07 @ 19:08:15

ATTN: Ted Jochems

### Tool Information

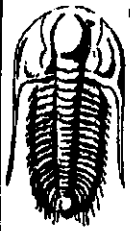
Drill Pipe:	Length: 3607.00 ft	Diameter: 3.80 inches	Volume: 50.60 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 541.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 75000.00 lb
		<b>Total Volume:</b>	<b>53.26 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4146.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4124.00	
Shut In Tool	5.00			4129.00	
Hydraulic tool	5.00			4134.00	
Safety Joint	3.00			4137.00	
Packer	5.00			4142.00	23.00      Bottom Of Top Packer
Packer	4.00			4146.00	
Stubb	1.00			4147.00	
Recorder	0.00	8373	Inside	4147.00	
Recorder	0.00	8289	Outside	4147.00	
Perforations	20.00			4167.00	
Change Over Sub	1.00			4168.00	
Drill Pipe	32.00			4200.00	
Change Over Sub	1.00			4201.00	
Bullnose	5.00			4206.00	60.00      Bottom Packers & Anchor

**Total Tool Length: 83.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
  
ATTN: Ted Jochems

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040235      **DST#: 3**  
Test Start: 2010.09.07 @ 19:08:15

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

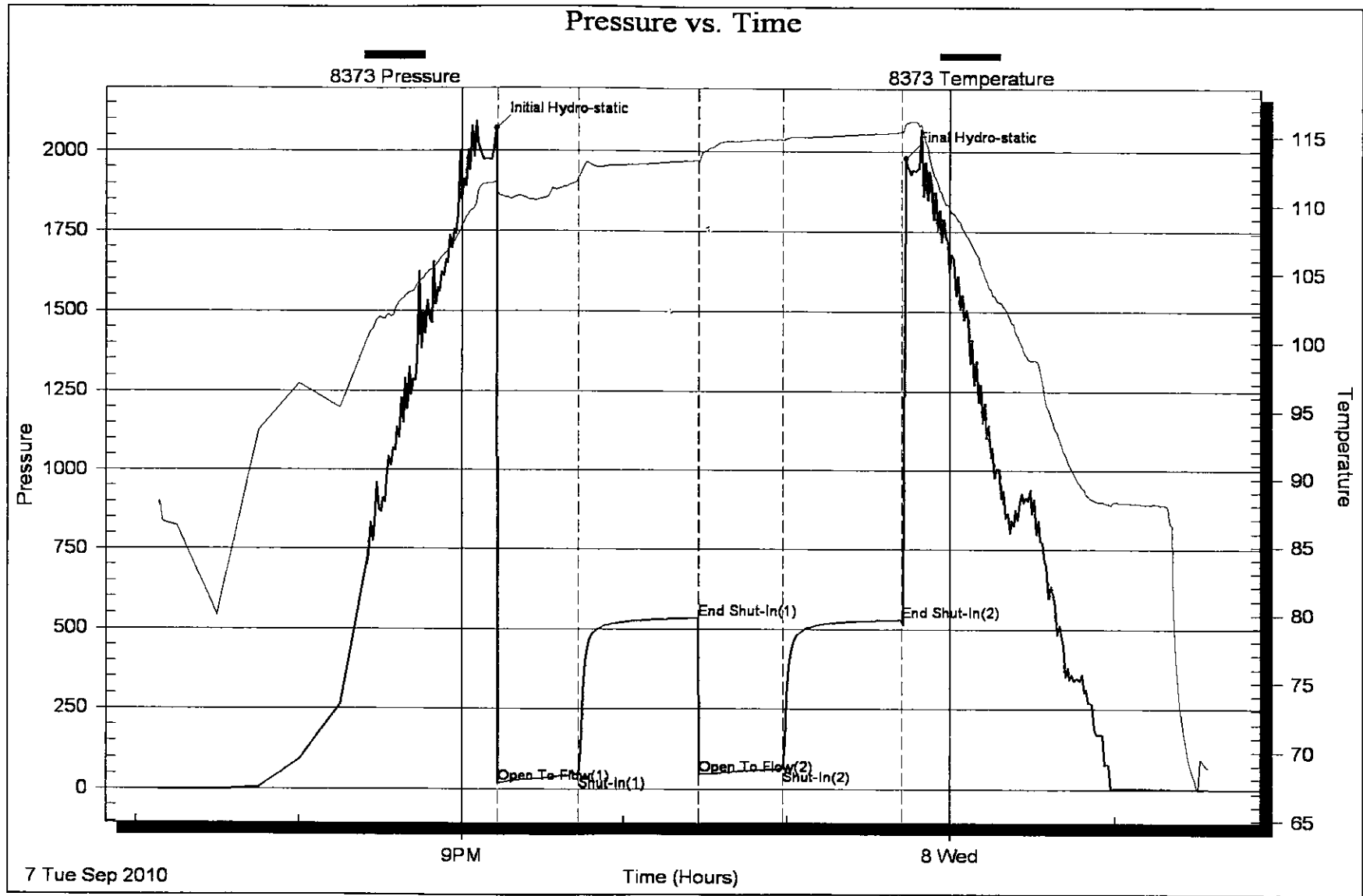
Length ft	Description	Volume bbl
100.00	mud 100%m	0.492

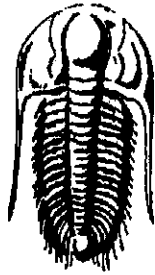
Total Length: 100.00 ft      Total Volume: 0.492 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Ritchie Exploration**

8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**36-13s-32w Logan, KS**

**Nuss Farms 36A #1**

Start Date: 2010.09.08 @ 23:10:06

End Date: 2010.09.09 @ 04:53:30

Job Ticket #: 040236                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration

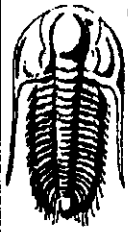
Nuss Farms 36A #1

36-13s-32w Logan, KS

DST # 4

Lansing L-Altamont

2010.09.08



**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

Ritchie Exploration  
 8100 E 22nd St. N 700  
 Wichita, Ks 67278  
 ATTN: Ted Jochems

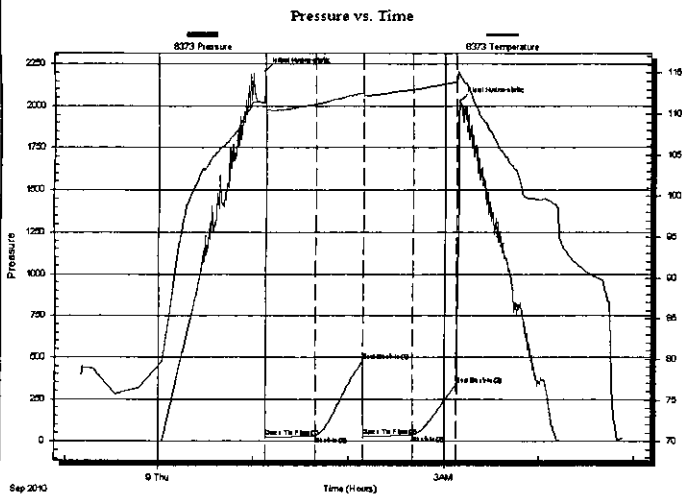
**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
 Job Ticket: 040236      **DST#: 4**  
 Test Start: 2010.09.08 @ 23:10:06

### GENERAL INFORMATION:

Formation: **Lansing L- Altamont**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:08:01  
 Time Test Ended: 04:53:30  
 Interval: **4267.00 ft (KB) To 4375.00 ft (KB) (TVD)**  
 Total Depth: **4375.00 ft (KB) (TVD)**  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Brandon Turley  
 Unit No: 35  
 Reference Elevations: 2936.00 ft (KB)  
 2926.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8373**      **Inside**  
 Press@RunDepth: 34.81 psig @ 4268.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2010.09.08      End Date: 2010.09.09      Last Calib.: 2010.09.09  
 Start Time: 23:10:06      End Time: 04:53:30      Time On Btm: 2010.09.09 @ 01:07:16  
 Time Off Btm: 2010.09.09 @ 03:09:16

**TEST COMMENT:** IF: 1/4 blow died in 9 min.  
 IS: No return.  
 FF: No blow. Flushed tool surge no blow.  
 FS: No return.



### PRESSURE SUMMARY

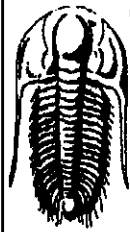
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2205.92	111.39	Initial Hydro-static
1	26.00	110.51	Open To Flow (1)
32	27.39	111.19	Shut-In(1)
62	476.52	112.56	End Shut-In(1)
62	30.23	112.28	Open To Flow (2)
93	34.81	112.98	Shut-In(2)
121	334.03	113.93	End Shut-In(2)
122	2029.69	114.66	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
15.00	mud 100%m	0.07

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040236      **DST#: 4**  
Test Start: 2010.09.08 @ 23:10:06

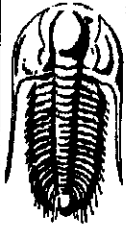
ATTN: Ted Jochems

### Tool Information

Drill Pipe:	Length: 3705.00 ft	Diameter: 3.80 inches	Volume: 51.97 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 541.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 82000.00 lb
		<b>Total Volume:</b>	<b>54.63 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	2.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4267.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	108.00 ft			
Tool Length:	131.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4245.00	
Shut In Tool	5.00			4250.00	
Hydraulic tool	5.00			4255.00	
Safety Joint	3.00			4258.00	
Packer	5.00			4263.00	23.00 Bottom Of Top Packer
Packer	4.00			4267.00	
Stubb	1.00			4268.00	
Recorder	0.00	8373	Inside	4268.00	
Recorder	0.00	8289	Outside	4268.00	
Perforations	7.00			4275.00	
Change Over Sub	1.00			4276.00	
Drill Pipe	93.00			4369.00	
Change Over Sub	1.00			4370.00	
Bullnose	5.00			4375.00	108.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>131.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration

**Nuss Farms 36A #1**

8100 E 22nd St. N 700  
Wichita, Ks 67278

**36-13s-32w Logan, KS**

Job Ticket: 040236

**DST#: 4**

ATTN: Ted Jochems

Test Start: 2010.09.08 @ 23:10:06

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.77 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 4000.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	mud 100%m	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

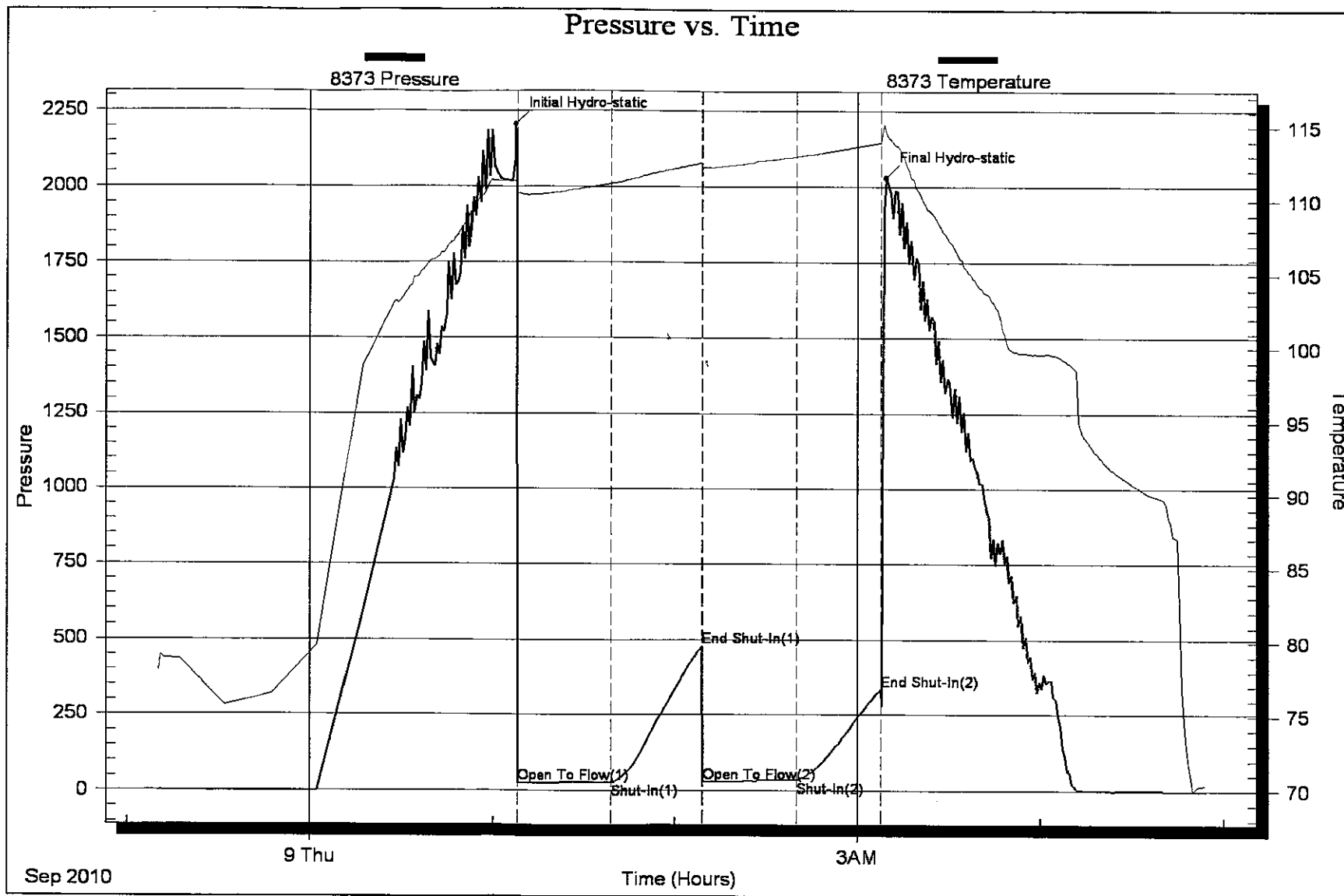
Serial #:

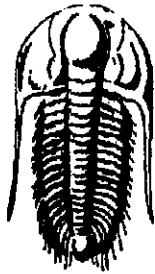
Laboratory Name:

Laboratory Location:

Recovery Comments:







**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **Ritchie Exploration**

8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**36-13s-32w Logan, KS**

**Nuss Farms 36A #1**

Start Date: 2010.09.10 @ 03:53:10

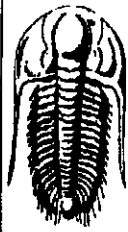
End Date: 2010.09.10 @ 09:48:04

Job Ticket #: 040237                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
ATTN: Ted Jochens

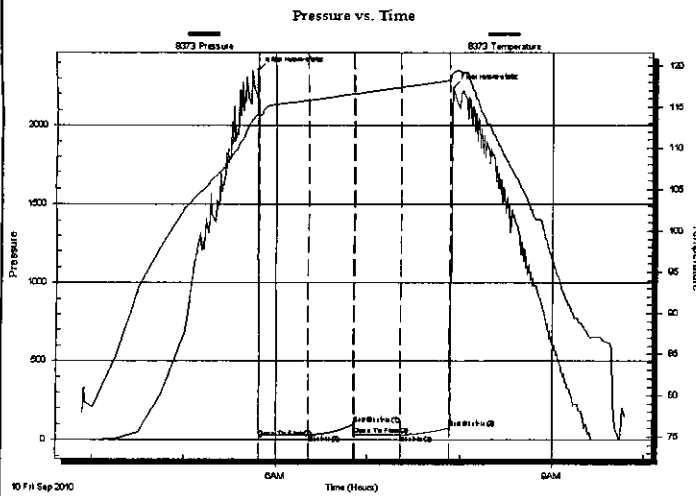
**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040237      **DST#: 5**  
Test Start: 2010.09.10 @ 03:53:10

### GENERAL INFORMATION:

Formation: **Johnson**  
Deviated: **No** Whipstock:                      ft (KB)  
Time Tool Opened: 05:48:50  
Time Test Ended: 09:48:04  
Interval: **4513.00 ft (KB) To 4548.00 ft (KB) (TVD)**  
Total Depth: **4548.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches** Hole Condition: **Fair**  
Test Type: **Conventional Bottom Hole**  
Tester: **Brandon Turley**  
Unit No: **35**  
Reference Elevations: **2936.00 ft (KB)**  
**2926.00 ft (CF)**  
KB to GR/CF: **10.00 ft**

**Serial #: 8373**      **Inside**  
Press@RunDepth: **32.24 psig @ 4514.00 ft (KB)**      Capacity: **8000.00 psig**  
Start Date: **2010.09.10**      End Date: **2010.09.10**      Last Calib.: **2010.09.10**  
Start Time: **03:53:10**      End Time: **09:48:04**      Time On Btm: **2010.09.10 @ 05:48:20**  
Time Off Btm: **2010.09.10 @ 07:54:35**

**TEST COMMENT:** IF: 1/4 blow died in 8 min.  
IS: No return.  
FF: No blow.  
FS: No return.



### PRESSURE SUMMARY

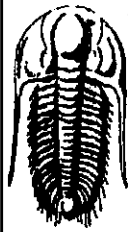
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2350.50	114.31	Initial Hydro-static
1	14.84	113.00	Open To Flow (1)
34	31.39	115.81	Shut-In(1)
63	99.87	116.63	End Shut-In(1)
63	31.11	116.59	Open To Flow (2)
93	32.24	117.39	Shut-In(2)
125	76.89	118.23	End Shut-In(2)
127	2238.33	119.03	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Ritchie Exploration

**Nuss Farms 36A #1**

8100 E 22nd St. N 700  
Wichita, Ks 67278

**36-13s-32w Logan, KS**

Job Ticket: 040237

**DST#: 5**

ATTN: Ted Jochems

Test Start: 2010.09.10 @ 03:53:10

### Tool Information

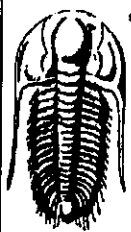
Drill Pipe:	Length: 3962.00 ft	Diameter: 3.80 inches	Volume: 55.58 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 541.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 75000.00 lb
		<b>Total Volume:</b>	<b>58.24 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4513.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4491.00	
Shut In Tool	5.00			4496.00	
Hydraulic tool	5.00			4501.00	
Safety Joint	3.00			4504.00	
Packer	5.00			4509.00	23.00 Bottom Of Top Packer
Packer	4.00			4513.00	
Stubb	1.00			4514.00	
Recorder	0.00	8373	Inside	4514.00	
Recorder	0.00	8289	Outside	4514.00	
Perforations	29.00			4543.00	
Bullnose	5.00			4548.00	35.00 Bottom Packers & Anchor

**Total Tool Length: 58.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
  
ATTN: Ted Jochems

**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040237      **DST#: 5**  
Test Start: 2010.09.10 @ 03:53:10

## Mud and Cushion Information

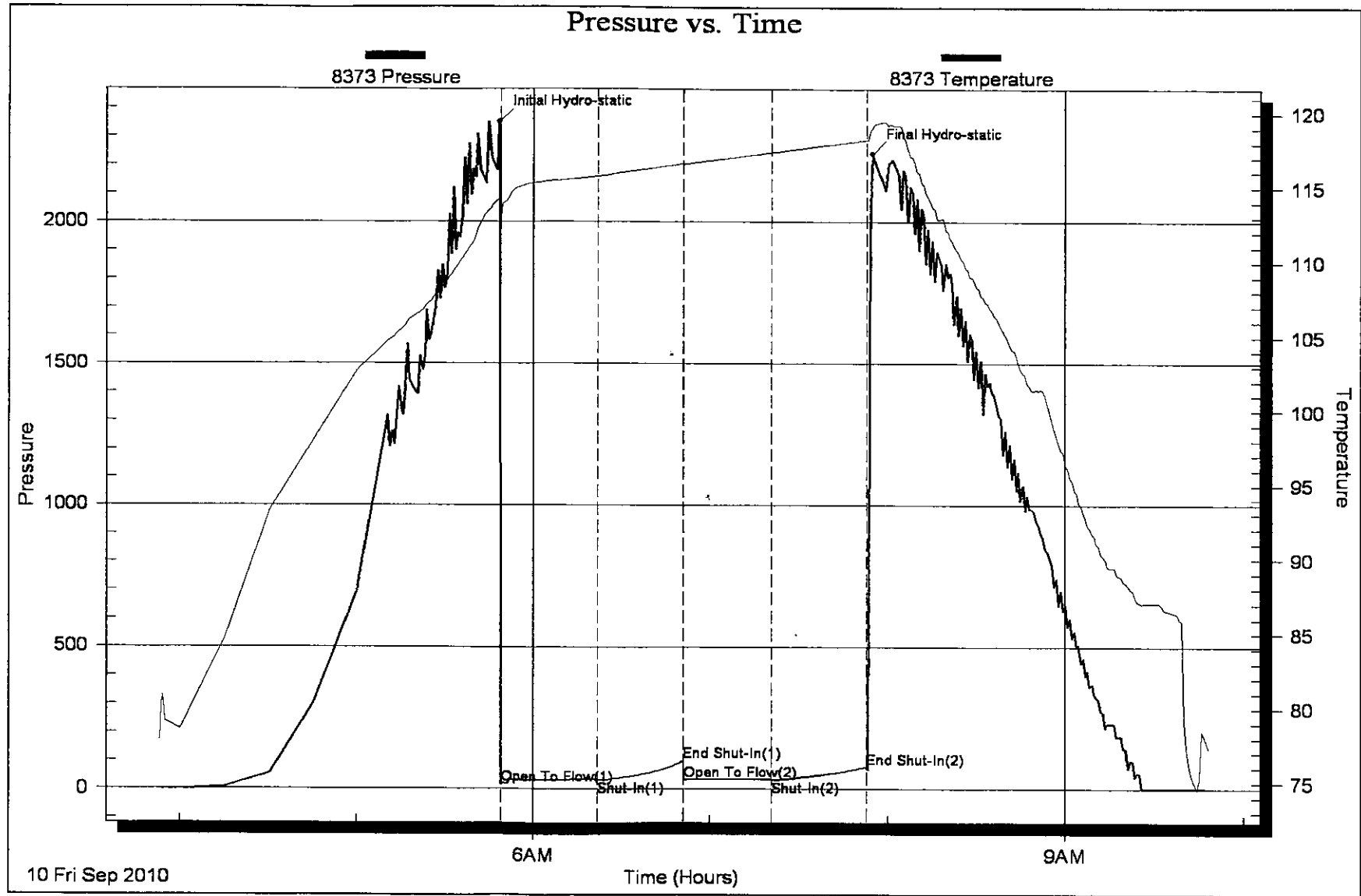
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3800.00 ppm			
Filter Cake: 1.00 inches			

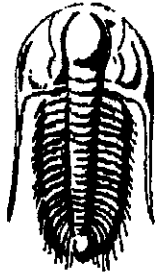
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration**

8100 E 22nd St. N 700  
Wichita, Ks 67278

ATTN: Ted Jochems

**36-13s-32w Logan, KS**

**Nuss Farms 36A #1**

Start Date: 2010.09.10 @ 21:46:39

End Date: 2010.09.11 @ 03:39:18

Job Ticket #: 040238                      DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Ritchie Exploration

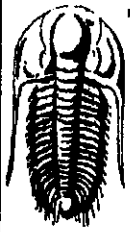
Nuss Farms 36A #1

36-13s-32w Logan, KS

DST # 6

Morrow

2010.09.10



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration  
8100 E 22nd St. N 700  
Wichita, Ks 67278  
ATTN: Ted Jochems

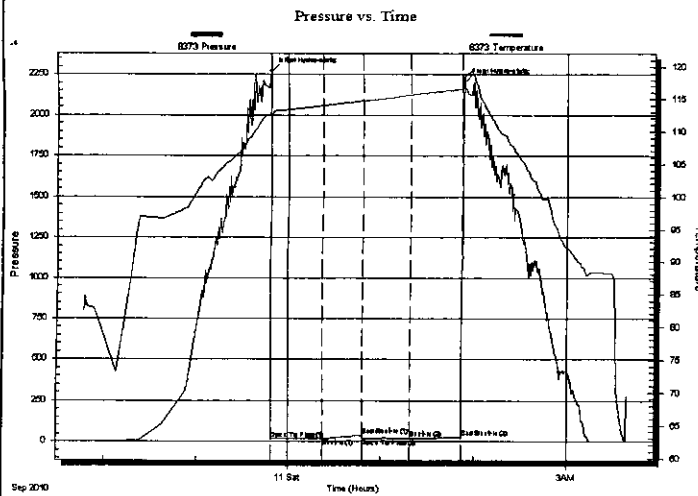
**Nuss Farms 36A #1**  
**36-13s-32w Logan, KS**  
Job Ticket: 040238      DST#: 6  
Test Start: 2010.09.10 @ 21:46:39

## GENERAL INFORMATION:

Formation: **Morrow**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 23:48:49  
Time Test Ended: 03:39:18  
Test Type: Conventional Bottom Hole  
Tester: Brandon Turley  
Unit No: 35  
Interval: **4563.00 ft (KB) To 4593.00 ft (KB) (TVD)**  
Reference Elevations: 2936.00 ft (KB)  
Total Depth: 4593.00 ft (KB) (TVD)      2926.00 ft (CF)  
Hole Diameter: 7.88 inches      Hole Condition: Fair      KB to GR/CF: 10.00 ft

**Serial #: 8373**      Inside  
Press@RunDepth: 18.65 psig @ 4564.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2010.09.10      End Date: 2010.09.11      Last Calib.: 2010.09.11  
Start Time: 21:46:39      End Time: 03:39:18      Time On Btm: 2010.09.10 @ 23:48:34  
Time Off Btm: 2010.09.11 @ 01:52:49

**TEST COMMENT:** IF: 1/4 blow died in 10 min.  
IS: No return.  
FF: No blow.  
FS: No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2270.31	112.93	Initial Hydro-static
1	14.91	111.89	Open To Flow (1)
34	19.19	113.95	Shut-In(1)
60	38.66	114.68	End Shut-In(1)
60	18.55	114.67	Open To Flow (2)
91	18.65	115.64	Shut-In(2)
124	27.12	116.53	End Shut-In(2)
125	2207.18	117.96	Final Hydro-static

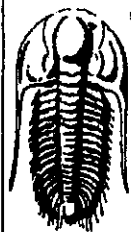
## Recovery

Length (ft)	Description	Volume (bb)
5.00	mud 100%m	0.02

## Gas Rates

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





**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration

Nuss Farms 36A #1

8100 E 22nd St. N 700  
Wichita, Ks 67278

36-13s-32w Logan, KS

Job Ticket: 040238

DST#: 6

ATTN: Ted Jochems

Test Start: 2010.09.10 @ 21:46:39

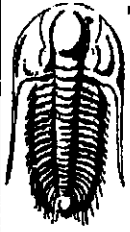
### Tool Information

Drill Pipe:	Length: 4014.00 ft	Diameter: 3.80 inches	Volume: 56.31 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 541.00 ft	Diameter: 2.25 inches	Volume: 2.66 bbl	Weight to Pull Loose: 70000.00 lb
		<b>Total Volume:</b>	<b>58.97 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	4563.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4536.00	
Shut In Tool	5.00			4541.00	
Hydraulic tool	5.00			4546.00	
Jars	5.00			4551.00	
Safety Joint	3.00			4554.00	
Packer	5.00			4559.00	28.00 Bottom Of Top Packer
Packer	4.00			4563.00	
Stubb	1.00			4564.00	
Recorder	0.00	8373	Inside	4564.00	
Recorder	0.00	8289	Outside	4564.00	
Perforations	24.00			4588.00	
Bullnose	5.00			4593.00	30.00 Bottom Packers & Anchor

**Total Tool Length: 58.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration

**Nuss Farms 36A #1**

8100 E 22nd St. N 700  
Wichita, Ks 67278

**36-13s-32w Logan, KS**

Job Ticket: 040238

**DST#: 6**

ATTN: Ted Jochems

Test Start: 2010.09.10 @ 21:46:39

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100% <sub>m</sub>	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

