

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1243994
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: _____

1243994

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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

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

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

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

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

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Kruto 3-29
Doc ID	1243994

All Electric Logs Run

DIL
DUCP
MEL
BHCS



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.12 @ 11:36:20

End Date: 2014.11.12 @ 20:38:15

Job Ticket #: 59659 DST #: 1

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

Printed: 2014.11.17 @ 10:36:48



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59659

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.11.12 @ 11:36:20

GENERAL INFORMATION:

Formation: **Lansing K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:47:15

Time Test Ended: 20:38:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 60

Interval: 4353.00 ft (KB) To 4380.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4380.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373

Inside

Press@RunDepth: 212.79 psig @ 4354.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.12

End Date:

2014.11.12

Last Calib.:

2014.11.12

Start Time:

11:36:20

End Time:

20:38:15

Time On Btm:

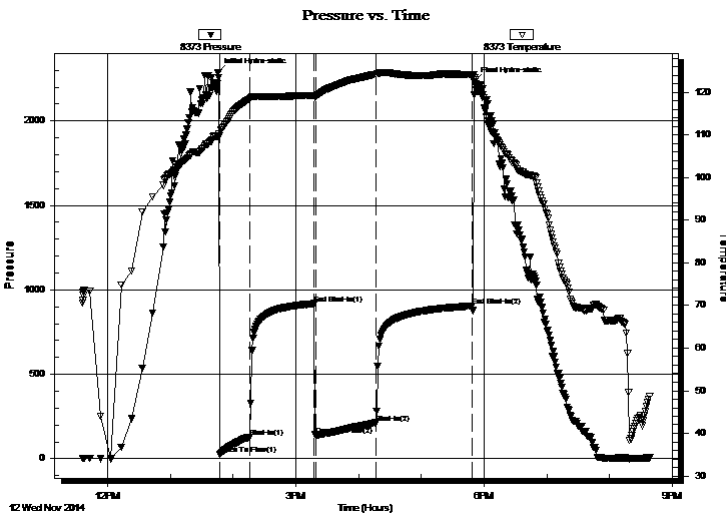
2014.11.12 @ 13:45:45

Time Off Btm:

2014.11.12 @ 17:50:44

TEST COMMENT: IF: 1/4 blow BOB in 22 min.
IS: Surface blow built to 1 in 60 min.
FF: 1/4 blow BOB in 25 min.
FS: Surface blow built to 3 in 90 mins.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2287.70	109.84	Initial Hydro-static
2	28.25	109.84	Open To Flow (1)
31	127.66	118.49	Shut-In(1)
92	918.32	119.24	End Shut-In(1)
93	138.51	118.86	Open To Flow (2)
151	212.79	124.20	Shut-In(2)
243	904.77	124.13	End Shut-In(2)
245	2234.21	123.51	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
186.00	mcw 90%w 10%m	0.91
124.00	mcw 60%w 40%m	1.31
155.00	go 20%g 80%o	2.17
0.00	341 GIP	0.00

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59659

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.11.12 @ 11:36:20

Tool Information

Drill Pipe:	Length: 4100.00 ft	Diameter: 3.80 inches	Volume: 57.51 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 58.66 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	4353.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	27.00 ft				
Tool Length:	55.00 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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Stubb	1.00			4326.00	
Shut In Tool	5.00			4331.00	
Hydraulic tool	5.00			4336.00	
Jars	5.00			4341.00	
Safety Joint	3.00			4344.00	
Packer	5.00			4349.00	28.00 Bottom Of Top Packer
Packer	4.00			4353.00	
Stubb	1.00			4354.00	
Recorder	0.00	8373	Inside	4354.00	
Recorder	0.00	8166	Outside	4354.00	
Perforations	21.00			4375.00	
Bullnose	5.00			4380.00	27.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59659

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.11.12 @ 11:36:20

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

50000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	mcw 90%w 10%m	0.915
124.00	mcw 60%w 40%m	1.311
155.00	go 20%g 80%o	2.174
0.00	341 GIP	0.000

Total Length: 465.00 ft

Total Volume: 4.400 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 31@30=34

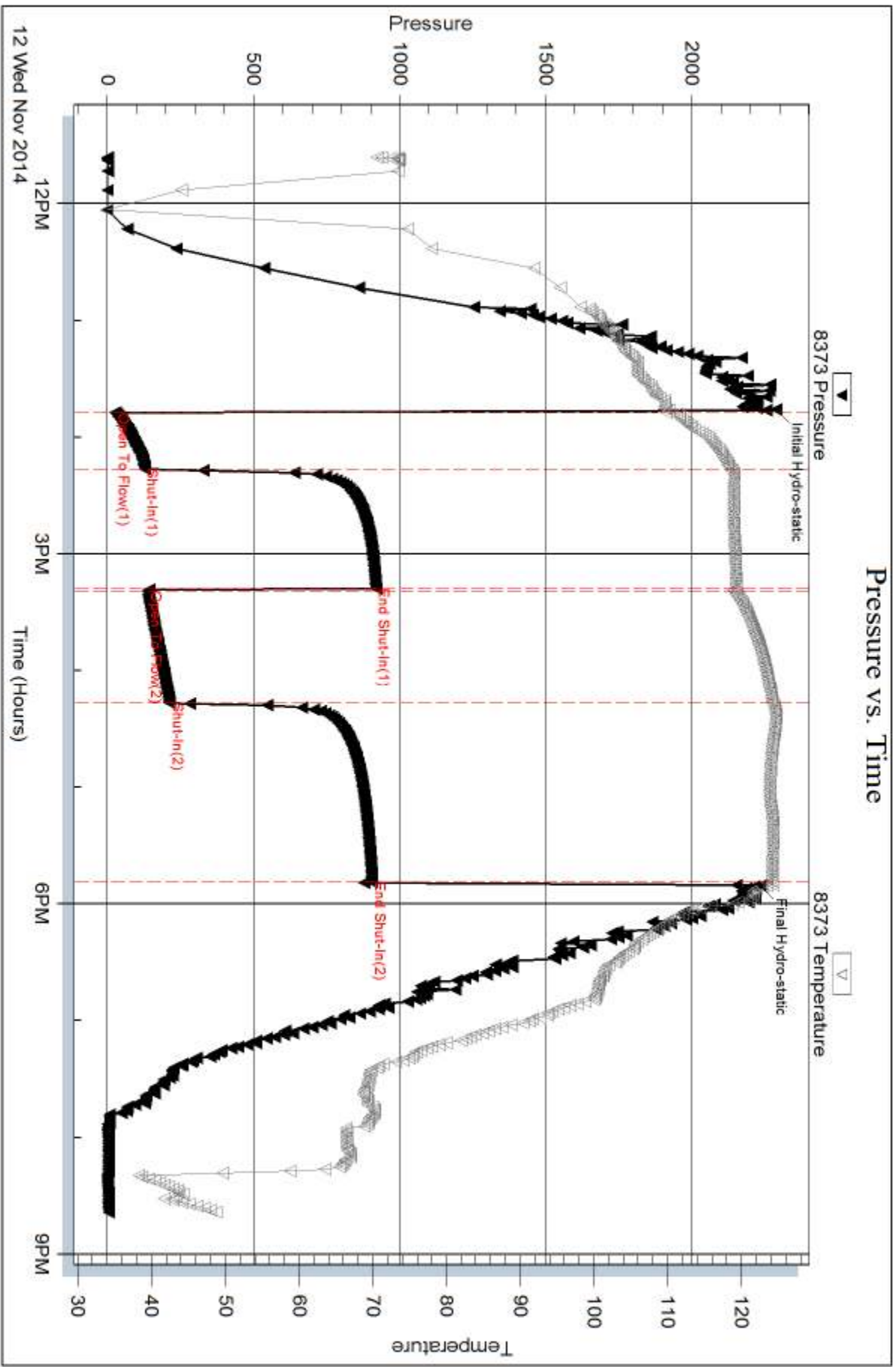
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Serial #: 8373

Inside Marfin Drilling Co Inc

Krulo #3-29

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 59659

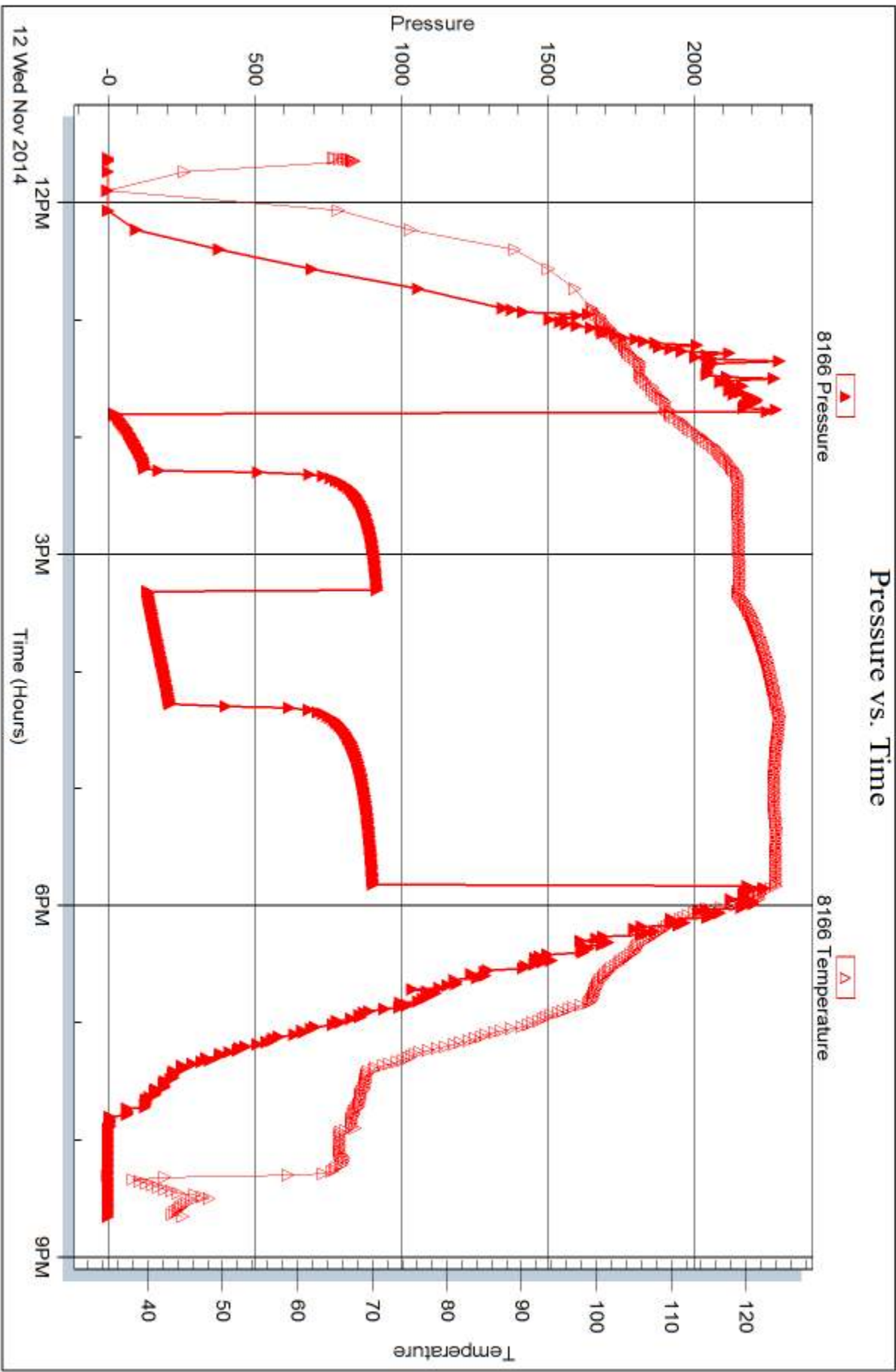
Printed: 2014.11.17 @ 10:36:49

Serial #: 8166

Outside Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 1



12 Wed Nov 2014

Triobite Testing, Inc

Ref. No: 59659

Printed: 2014.11.17 @ 10:36:49



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.13 @ 17:04:58

End Date: 2014.11.13 @ 22:50:28

Job Ticket #: 59660 DST #: 2

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

Printed: 2014.11.17 @ 10:36:25

Murfin Drilling Co Inc
29-10s-34w Thomas KS
Kruto #3-29
DST # 2
Lower Pawnee
2014.11.13



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59660

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.11.13 @ 17:04:58

GENERAL INFORMATION:

Formation: **Lower Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:51:58

Time Test Ended: 22:50:28

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4577.00 ft (KB) To 4603.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4603.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373 Inside

Press@RunDepth: 128.21 psig @ 4578.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.13

End Date: 2014.11.13

Last Calib.: 2014.11.13

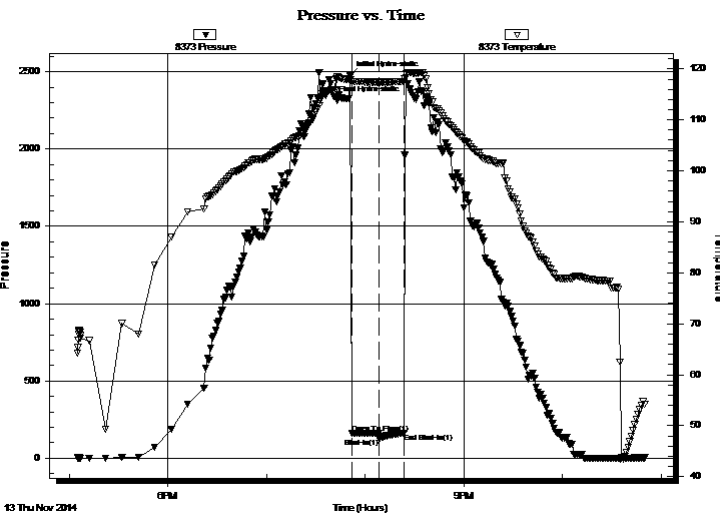
Start Time: 17:05:03

End Time: 22:50:27

Time On Btm: 2014.11.13 @ 19:50:58

Time Off Btm: 2014.11.13 @ 20:24:58

TEST COMMENT: IF: No blow.
IS: No return.
Slid tool the first time we opened it and took on a bunch of mud.
draw work motor didnt have the power to pick it up off bottom.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2473.53	117.83	Initial Hydro-static
1	161.90	117.50	Open To Flow (1)
18	128.21	117.38	Shut-In(1)
33	163.30	117.54	End Shut-In(1)
34	2464.27	119.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
293.00	mud 100%m	1.99

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59660

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.11.13 @ 17:04:58

Tool Information

Drill Pipe:	Length: 4346.00 ft	Diameter: 3.80 inches	Volume: 60.96 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 62.11 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4577.00 ft			Final	70000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	26.00 ft				
Tool Length:	54.00 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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Stubb	1.00			4550.00	
Shut In Tool	5.00			4555.00	
Hydraulic tool	5.00			4560.00	
Jars	5.00			4565.00	
Safety Joint	3.00			4568.00	
Packer	5.00			4573.00	28.00 Bottom Of Top Packer
Packer	4.00			4577.00	
Stubb	1.00			4578.00	
Recorder	0.00	8373	Inside	4578.00	
Recorder	0.00	8166	Outside	4578.00	
Perforations	20.00			4598.00	
Bullnose	5.00			4603.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59660

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.11.13 @ 17:04:58

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
293.00	mud 100%m	1.987

Total Length: 293.00 ft Total Volume: 1.987 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

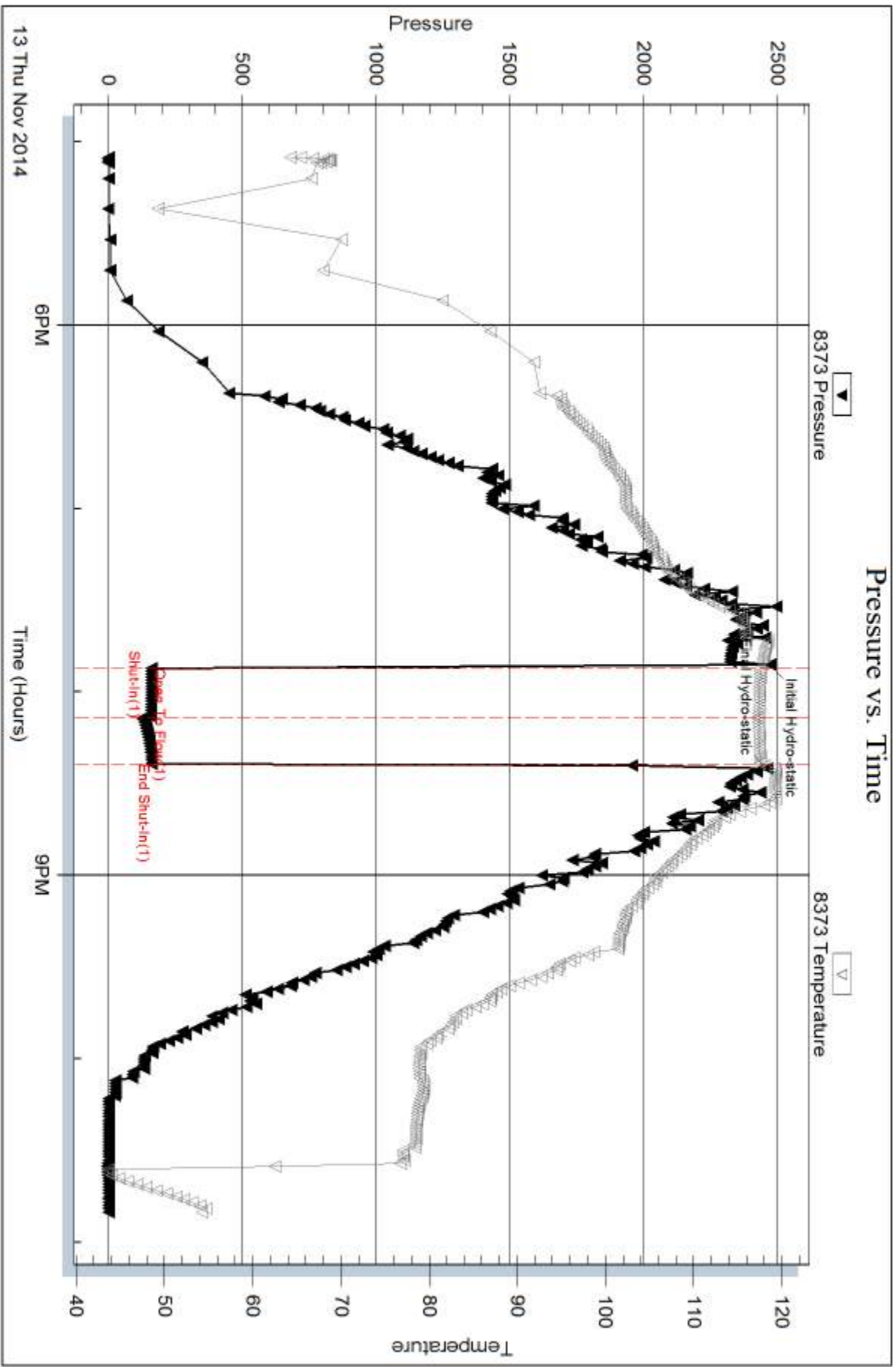
Serial #: 8373

Inside

Murfin Drilling Co Inc

Kruto #3-29

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 59660

Printed: 2014.11.17 @ 10:36:27



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.14 @ 05:26:09

End Date: 2014.11.14 @ 12:55:09

Job Ticket #: 59661 DST #: 3

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

Printed: 2014.11.17 @ 10:36:01



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59661

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.11.14 @ 05:26:09

GENERAL INFORMATION:

Formation: **Low Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:51:39

Time Test Ended: 12:55:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4569.00 ft (KB) To 4603.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4603.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373

Inside

Press@RunDepth: 21.10 psig @ 4570.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.14

End Date:

2014.11.14

Last Calib.: 2014.11.14

Start Time: 05:26:14

End Time:

12:55:08

Time On Btm: 2014.11.14 @ 07:50:09

Time Off Btm: 2014.11.14 @ 10:53:09

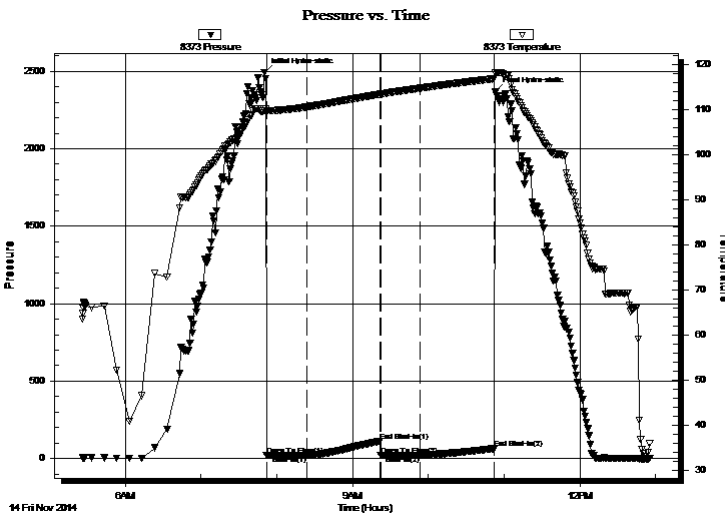
TEST COMMENT: IF: 1/4" blow died in 8 mins.

IS: No return.

FF: No blow.

FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2492.68	109.79	Initial Hydro-static
2	20.68	109.29	Open To Flow (1)
34	20.21	110.56	Shut-In(1)
92	112.83	113.38	End Shut-In(1)
92	20.72	113.35	Open To Flow (2)
124	21.10	114.73	Shut-In(2)
182	63.89	116.83	End Shut-In(2)
183	2366.00	118.22	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59661

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.11.14 @ 05:26:09

Tool Information

Drill Pipe:	Length: 4318.00 ft	Diameter: 3.80 inches	Volume: 60.57 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume: 61.72 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4569.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	62.00 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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Stubb	1.00			4542.00	
Shut In Tool	5.00			4547.00	
Hydraulic tool	5.00			4552.00	
Jars	5.00			4557.00	
Safety Joint	3.00			4560.00	
Packer	5.00			4565.00	28.00 Bottom Of Top Packer
Packer	4.00			4569.00	
Stubb	1.00			4570.00	
Recorder	0.00	8373	Inside	4570.00	
Recorder	0.00	8166	Outside	4570.00	
Perforations	28.00			4598.00	
Bullnose	5.00			4603.00	34.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59661

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.11.14 @ 05:26:09

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 9800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	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:

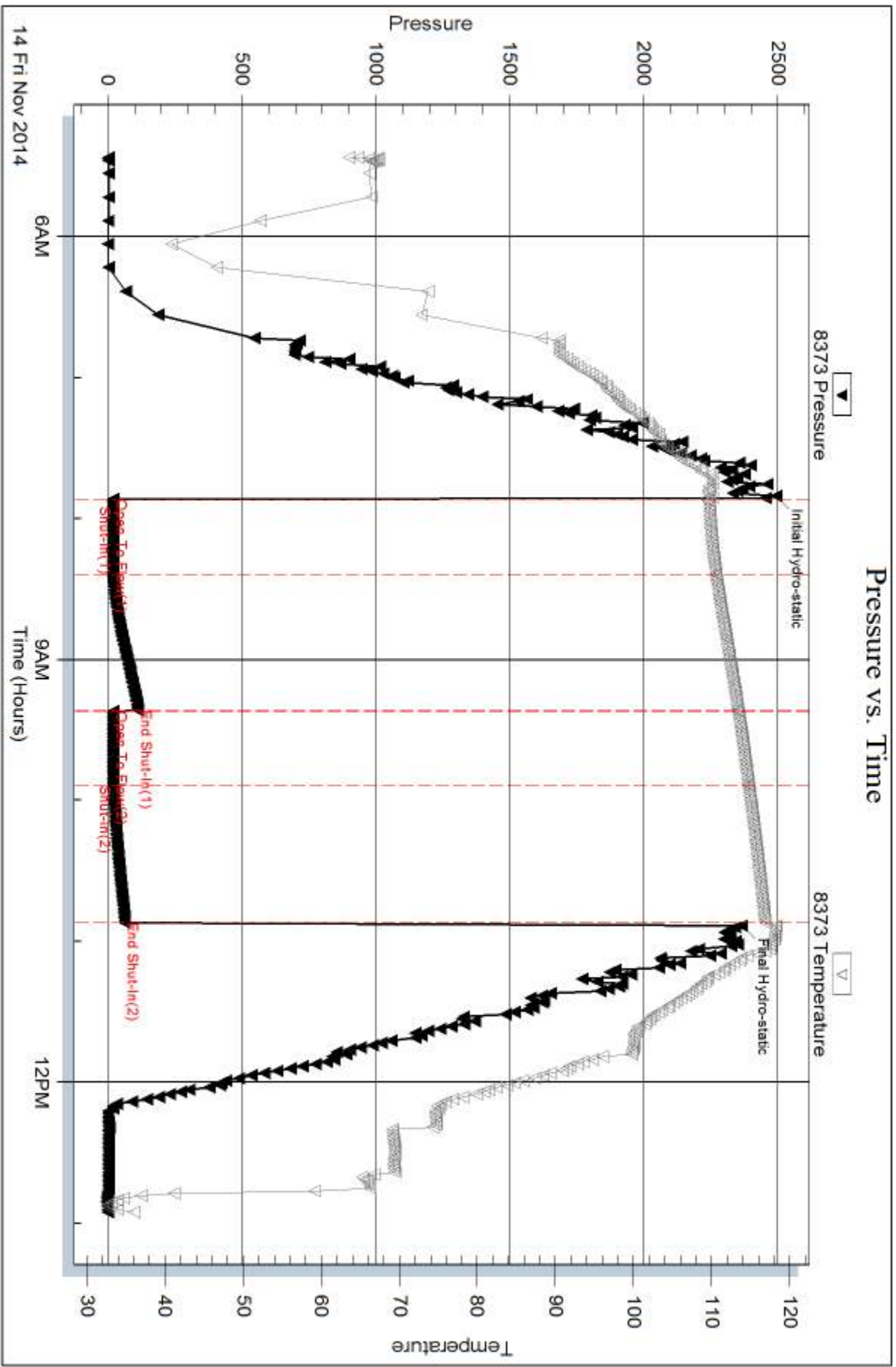
Serial #: 8373

Inside

Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 59661

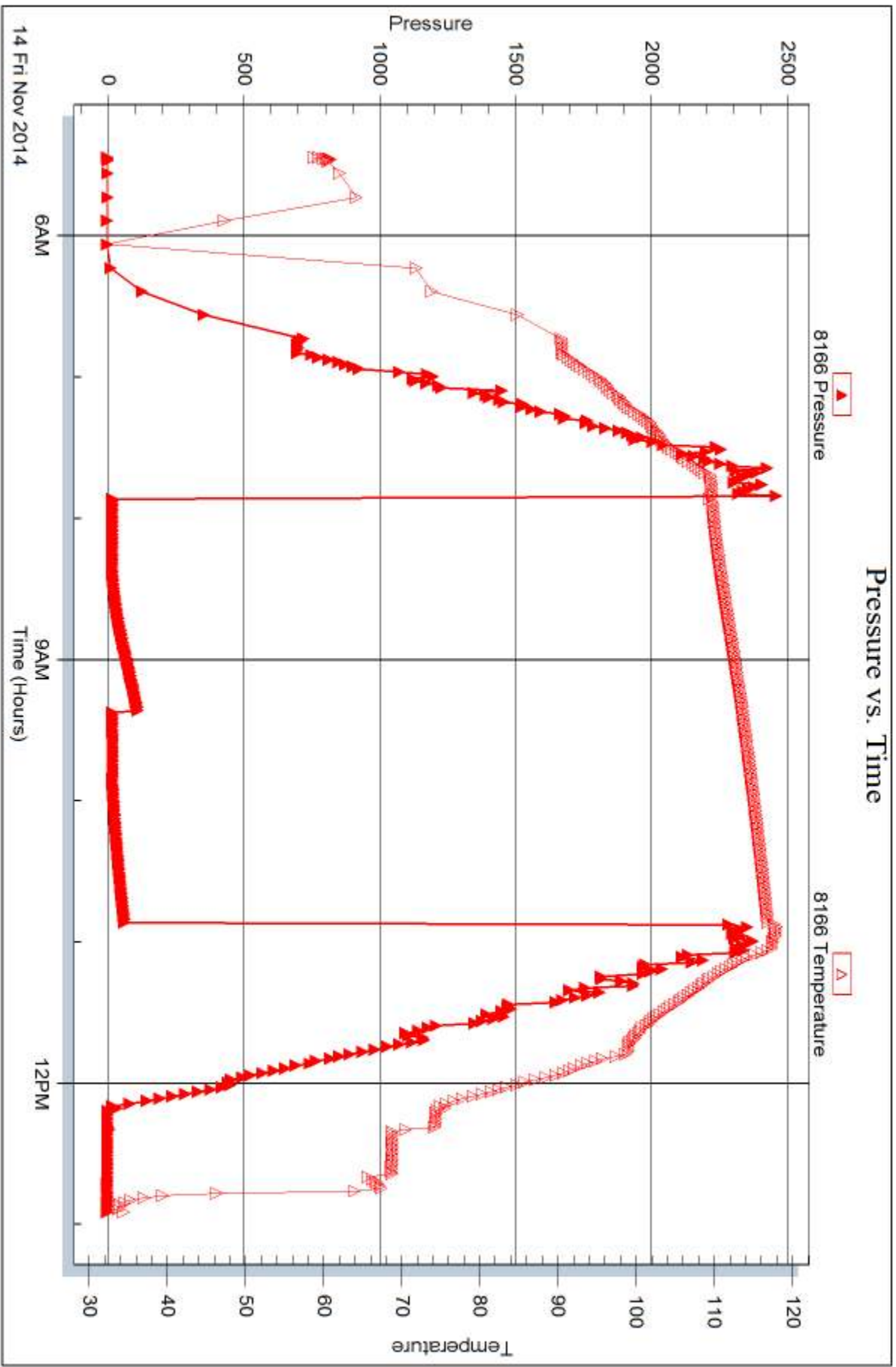
Printed: 2014.11.17 @ 10:36:03

Serial #: 8166

Outside Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 59661

Printed: 2014.11.17 @ 10:36:03



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N water Ste 300
Wichita, KS 67202

ATTN: Robert Hendrix

Kruto #3-29

29-10s-34w Thomas KS

Start Date: 2014.11.15 @ 04:05:33

End Date: 2014.11.15 @ 12:34:33

Job Ticket #: 59662 DST #: 4

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

Printed: 2014.11.17 @ 10:35:22



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59662

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.11.15 @ 04:05:33

GENERAL INFORMATION:

Formation: **Johnson Zone**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:12:03

Time Test Ended: 12:34:33

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4654.00 ft (KB) To 4698.00 ft (KB) (TVD)

Reference Elevations: 3219.00 ft (KB)

Total Depth: 4698.00 ft (KB) (TVD)

3208.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8373

Inside

Press@RunDepth: 63.45 psig @ 4655.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.15

End Date:

2014.11.15

Last Calib.:

2014.11.15

Start Time: 04:05:38

End Time:

12:34:32

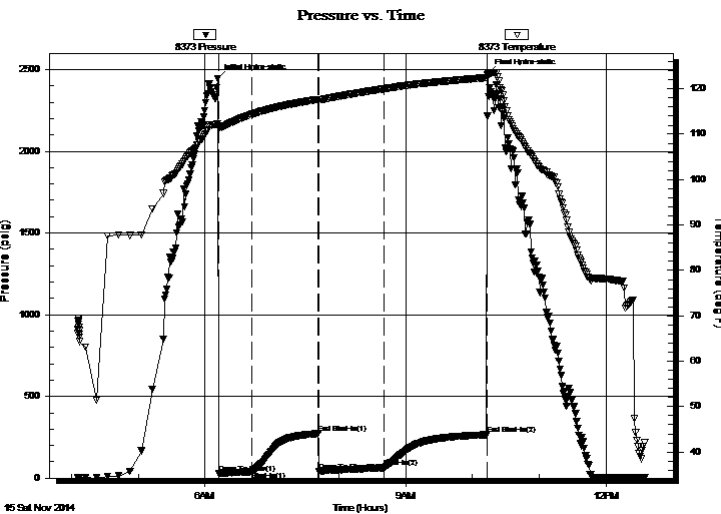
Time On Btm:

2014.11.15 @ 06:11:33

Time Off Btm:

2014.11.15 @ 10:14:03

TEST COMMENT: IF: 1/4" blow built to 3 1/2" in 30 min.
IS: No return.
FF: Surface blow built to 7" in 60 min.
FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2446.14	112.38	Initial Hydro-static
1	26.84	111.64	Open To Flow (1)
30	39.18	114.33	Shut-In(1)
90	272.95	117.68	End Shut-In(1)
91	41.67	117.56	Open To Flow (2)
149	63.45	120.00	Shut-In(2)
242	265.83	122.46	End Shut-In(2)
243	2477.40	123.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	ocm 30%o 70%m	0.30
60.00	oil 100%o	0.30
0.00	310 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59662

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.11.15 @ 04:05:33

Tool Information

Drill Pipe:	Length: 4403.00 ft	Diameter: 3.80 inches	Volume: 61.76 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 62.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4654.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	72.00 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			4627.00	
Shut In Tool	5.00			4632.00	
Hydraulic tool	5.00			4637.00	
Jars	5.00			4642.00	
Safety Joint	3.00			4645.00	
Packer	5.00			4650.00	28.00 Bottom Of Top Packer
Packer	4.00			4654.00	
Stubb	1.00			4655.00	
Recorder	0.00	8373	Inside	4655.00	
Recorder	0.00	8166	Outside	4655.00	
Perforations	5.00			4660.00	
Change Over Sub	1.00			4661.00	
Drill Pipe	31.00			4692.00	
Change Over Sub	1.00			4693.00	
Bullnose	5.00			4698.00	44.00 Bottom Packers & Anchor

Total Tool Length: 72.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

29-10s-34w Thomas KS

250 N water Ste 300
Wichita, KS 67202

Kruto #3-29

Job Ticket: 59662

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.11.15 @ 04:05:33

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

24 deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 11200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	ocm 30%o 70%m	0.295
60.00	oil 100%o	0.295
0.00	310 GIP	0.000

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 23@50=24

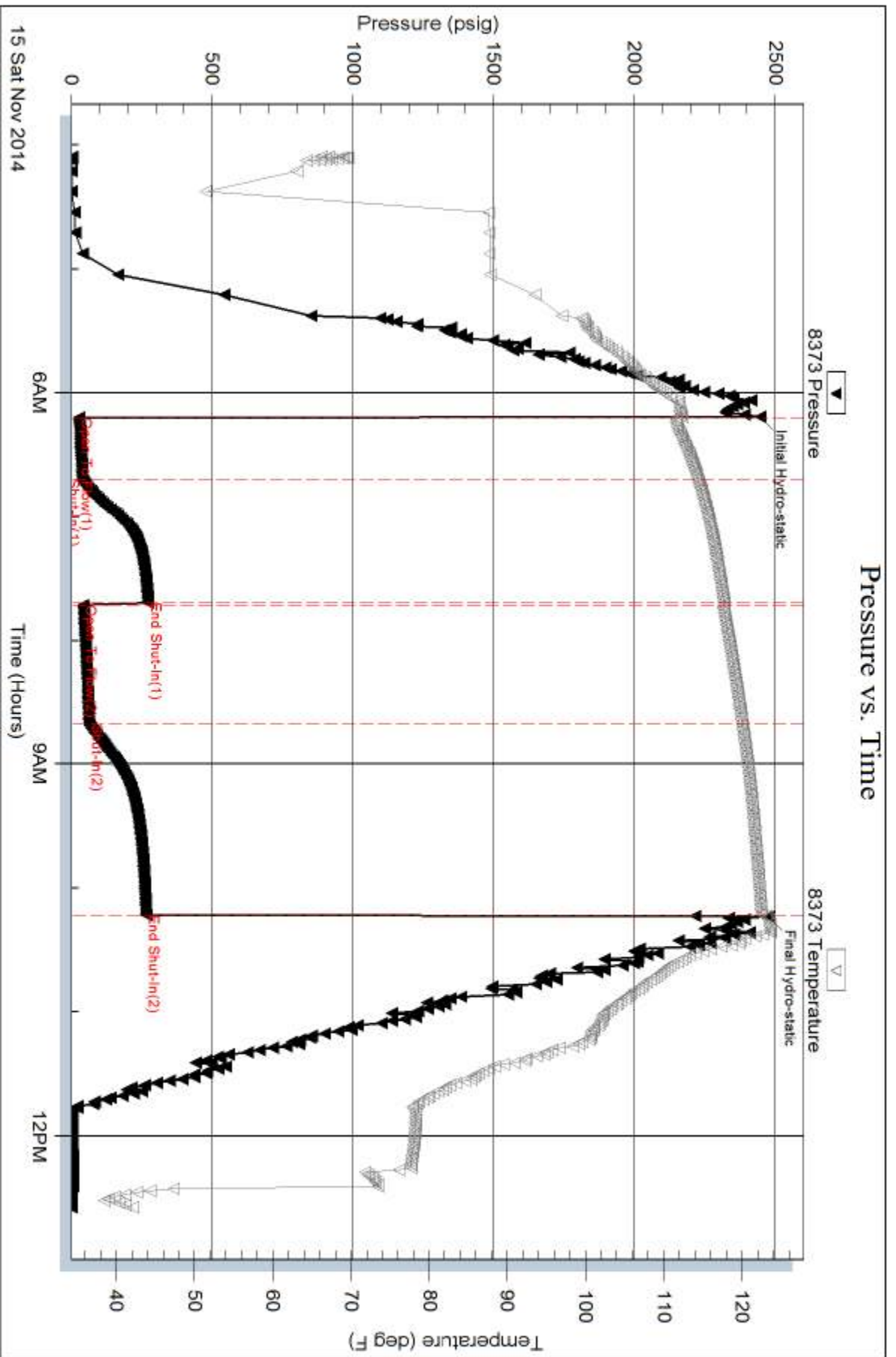
Serial #: 8373

Inside

Murfin Drilling Co Inc

Krulo #3-29

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 59662

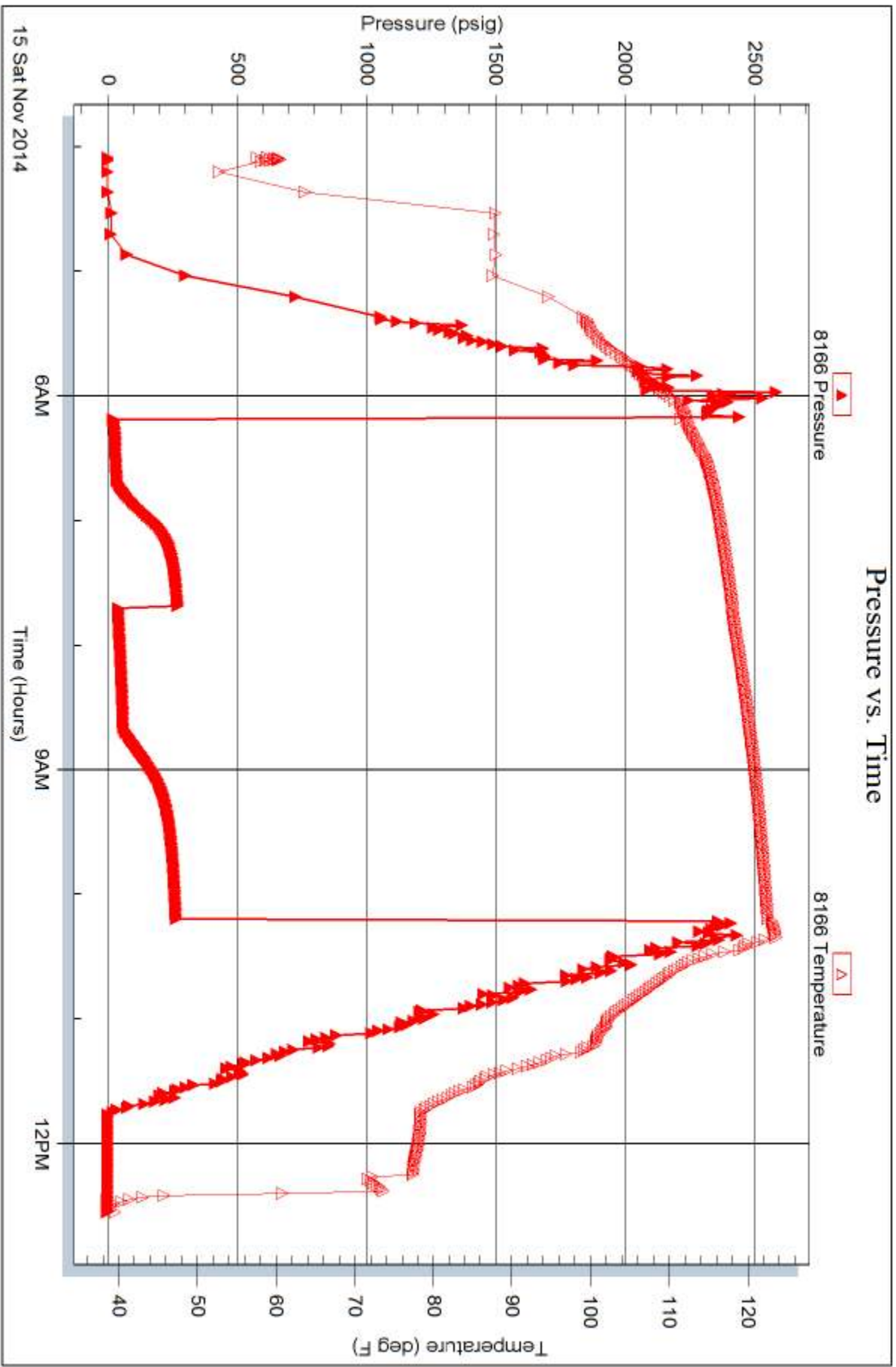
Printed: 2014.11.17 @ 10:35:24

Serial #: 8166

Outside Murfin Drilling Co Inc

Kruto #3-29

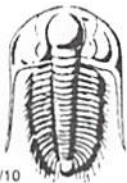
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 59662

Printed: 2014.11.17 @ 10:35:24



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59659

Well Name & No. Kruto 3-29 Test No. 1 Date 11-12-14
 Company Murfin Drilling Co INC Elevation 3219 KB 3208 GL
 Address 250 N Water Ste. 300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4353 4380 Zone Tested Lensing K
 Anchor Length 27 Drill Pipe Run 4100 Mud Wt. 9.2
 Top Packer Depth 4348 Drill Collars Run 233 Vis 56
 Bottom Packer Depth 4353 Wt. Pipe Run --- WL 6.4
 Total Depth 4380 Chlorides 9000 ppm System LCM 4

Blow Description IF: 1/4 blow BoB in 22 min.
IS: surface blow built to 1 in 60 min.
FF: 1/4 blow BoB in 25 min.
FS: surface blow built to 3 in 90 min.

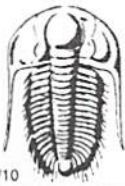
Rec	Feet of	%gas	%oil	%water	%mud
<u>155</u>	<u>90</u>	<u>20</u>	<u>80</u>		
<u>124</u>	<u>MCLW</u>		<u>60</u>	<u>40</u>	
<u>186</u>	<u>MCLW</u>		<u>90</u>	<u>10</u>	
	<u>341 GFP</u>				

Rec Total 465 BHT 124 Gravity 35 API RW .32 @ 33° F Chlorides 50,000 ppm
 (A) Initial Hydrostatic 2287 Test 1250 T-On Location 10:20 AM
 (B) First Initial Flow 28 Jars 250 T-Started 11:36 AM
 (C) First Final Flow 127 Safety Joint 75 T-Open 1:47 PM
 (D) Initial Shut-In 918 Circ Sub NIL T-Pulled 5:47 PM
 (E) Second Initial Flow 138 Hourly Standby _____ T-Out 8:40 PM
 (F) Second Final Flow 212 Mileage 140 - 130rt 201.50 Comments _____
 (G) Final Shut-In 904 Sampler _____
 (H) Final Hydrostatic 2234 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60 90
 Final Shut-In _____
 Sub Total 1776.50
 Total 1776.50
 MP/DST Disc't _____

Approved By RLD. Hly Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59660

Well Name & No. Kruto 3-29 Test No. 2 Date 11-13-14
 Company Murfin Drilling Co Elevation 3219 KB 3208 GL
 Address _____
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4577 4603 Zone Tested Lower Penns
 Anchor Length 26 Drill Pipe Run 4346 Mud Wt. 9.5
 Top Packer Depth 4572 Drill Collars Run 233 Vis 57
 Bottom Packer Depth 4577 Wt. Pipe Run _____ WL 7.6
 Total Depth 4603 Chlorides 9800 ppm System LCM 2

Blow Description IF: NO blow.
IS: NO return,

slid tool the first time we opened it and took on a bunch of mud

Rec	Feet of	%gas	%oil	%water	%mud
<u>293</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 293 BHT 117 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic 2473 Test 1050 T-On Location 16:26
 (B) First Initial Flow 161 Jars 250 T-Started 17:04
 (C) First Final Flow 128 Safety Joint 75 T-Open 19:50
 (D) Initial Shut-In 163 Circ Sub N/L T-Pulled 20:20
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out 22:50
 (F) Second Final Flow _____ Mileage 140- 201.50 Comments _____
 (G) Final Shut-In _____ Sampler _____ Ruined Shale Packer _____
 (H) Final Hydrostatic 2464 Straddle _____ Ruined Packer _____

Initial Open 15 Extra Packer _____ Extra Copies _____
 Initial Shut-In 15 Extra Recorder _____ Sub Total 0
 Final Flow pull Day Standby _____ Total 1576.50
 Final Shut-In _____ Accessibility _____ MP/DST Disc't _____
 Sub Total 1576.50

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59661

Well Name & No. Kruto 3-29 Test No. 3 Date 11-14-14
 Company Murfin Drilling Co Elevation 3219 KB 3208 GL
 Address _____
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4569 4603 Zone Tested Lower Pennsylv
 Anchor Length _____ 34 Drill Pipe Run 4318 Mud Wt. 9.5
 Top Packer Depth _____ 4564 Drill Collars Run 233 Vis 57
 Bottom Packer Depth _____ 4569 Wt. Pipe Run _____ WL 7.6
 Total Depth _____ 4603 Chlorides 9800 ppm System LCM 2

Blow Description IF: 1/4 blow died in 8 min.
FS: No return.
FK: No blow.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 116 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2498 Test 1250 T-On Location 5:15
 (B) First Initial Flow 20 Jars 250 T-Started 5:26
 (C) First Final Flow 20 Safety Joint 75 T-Open 7:51
 (D) Initial Shut-In 112 Circ Sub N/L T-Pulled 10:51
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 12:55
 (F) Second Final Flow 21 Mileage 140- 201.50 Comments _____
 (G) Final Shut-In 63 Sampler _____
 (H) Final Hydrostatic 2366 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Sub Total 1776.50
 Total 1776.50
 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59662

Well Name & No. Kruto 3-29 Test No. 4 Date 11-15-14
 Company Murfin Drilling Co Elevation 3219 KB 3208 GL
 Address _____
 Co. Rep / Geo. Robert Hendrix Rig Murfin 22
 Location: Sec. 29 Twp. 10 Rge. 34 Co. Thomas State KS

Interval Tested 4654 4698 Zone Tested Johnson zone
 Anchor Length _____ Drill Pipe Run 4403 Mud Wt. 9.5
 Top Packer Depth _____ Drill Collars Run 233 Vis 63
 Bottom Packer Depth _____ Wt. Pipe Run _____ WL 8.0
 Total Depth 4698 Chlorides 11,200 ppm System LCM 2

Blow Description IF: 1/4 blow built to 3 1/2 in 30 min,
FS: No return,
FF: Surface blow built to 7 in 60 min,
FS: NO return,

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>oil</u>	<u>100</u>			
<u>60</u>	<u>OCM</u>	<u>30</u>		<u>70</u>	
	<u>310 GIP</u>				

Rec Total 120 BHT 122 Gravity 24 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2446 Test 1250 T-On Location 3:30
 (B) First Initial Flow 26 Jars 250 T-Started 4:05
 (C) First Final Flow 39 Safety Joint 75 T-Open 6:11
 (D) Initial Shut-In 272 Circ Sub NIL T-Pulled 10:11
 (E) Second Initial Flow 41 Hourly Standby _____ T-Out 12:35
 (F) Second Final Flow 63 Mileage 140 - 201.50
 (G) Final Shut-In 265 Sampler _____
 (H) Final Hydrostatic 2477 Straddle _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Ruined Packer _____
 Final Flow 60 Extra Packer _____
 Final Shut-In 90 Extra Recorder _____
 Sub Total 0
 Total 1776.50
 MP/DST Disc't _____

Approved By [Signature] Our Representative [Signature]

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Robert D. Hendrix

Petroleum Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY **Murfin Drilling Co. Inc.**

ELEVATIONS

LEASE **Kruto #3-29**

FIELD **Anderson NE**

LOCATION **2450' Int & 2055' fwl**

SEC **29** TWP **10s** RGE **34w**

COUNTY **Thomas** STATE **Kansas**

CONTRACTOR **Murfin Drilling Co. Rig #22**

SPUD **11/8/2014** CONVP **11/16/2014**

RTD **4864'** LTD **4870'**

MUD UP **3197'** TYPE MUD **chemical**

SAMPLES SAVED FROM **3780'** TO **TD**

DRILLING TIME KEPT FROM **3780'** TO **TD**

SAMPLES EXAMINED FROM **3780'** TO **TD**

GEOLOGICAL SUPERVISION FROM **3785'**

GEOLOGIST ON WELL **Robert D. Hendrix**

FORMATION TOPS

ELECTRIC LOG

SAMPLE

Anhydrite **2712' (+507)**

Topeka **3874' (-655)**

Heebner Shale **4098' (-876)**

Lansing **4135' (-916)**

Pawnee **4552' (-1333)**

Ft Scott **4604' (-1385)**

Johnson Zone **4684' (-1465)**

Mississippian **4768' (-1545)**

KB **3219'**

DF

GL **3208'**

Measurements Are All From **Kelly Bushing**

CASING

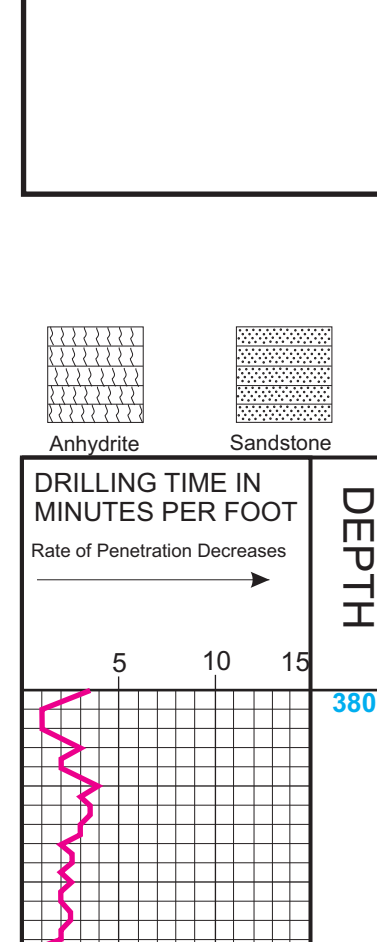
CONDUCTOR

SURFACE **8:58am at 270'**

PRODUCTION **5 1/2" @ 4864'**

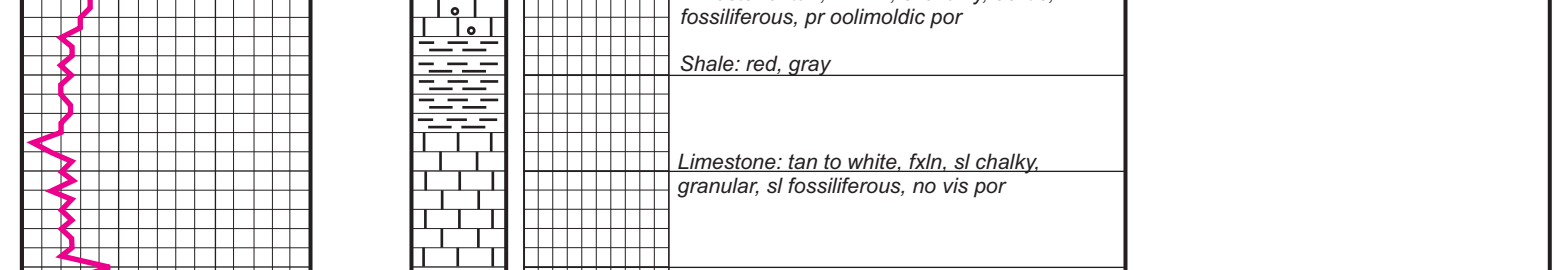
ELECTRICAL SURVEYS

Porosity, Micro, Inductivity, Seismic



REMARKS:

LEGEND



DEPTH	LITHOLOGY	SAMPLE DESCRIPTION	REMARKS
3800	Limestone	Shale: red, gray Limestone: tan, fxn, sl chalky, granular, fossiliferous, no vis por Limestone: tan, f-mxn, sl chalky, oolitic, fossiliferous, pr oolimidic por Shale: red, gray	Geologist on location at 8:30 pm 11/10/2014
50	Limestone	Limestone: tan to white, fxn, sl chalky, granular, sl fossiliferous, no vis por Shale: gray, sl red	
3900	Limestone	Limestone: brown, fxn, sl chalky, granular, fossiliferous, no vis por Shale: gray, red Limestone: tan to white, fxn, chalky, sl oolitic, fossiliferous, no vis por Shale: red, gray	Topeka 3874 (-655)
50	Limestone	Limestone: tan to white, fxn, sl chalky, sl fossiliferous, no vis por Shale: gray, red, black Limestone: tan, fxn, granular, no vis por Limestone: lt gray to tan, fxn, sl chalky, granular, sl fossiliferous, no vis por Shale: gray, red, black	
50	Limestone	Limestone: tan, fxn, v-chalky, granular, no vis por Shale: gray, red, black Limestone: tan, fxn, chalky, fossiliferous, no vis por Limestone: tan to white, f-mxn, chalky, oolitic in part, fossiliferous, pr interxn por, ns Shale: black, red, gray, green Limestone: tan to brown, f-mxn, chalky, v-fossiliferous, no vis por Shale: red, gray	
50	Limestone	Limestone: tan, fxn, chalky, granular, fossiliferous, no vis por Shale: red, gray, green Limestone: tan to brown, f-mxn, chalky, fossiliferous, pr pp por, ns Shale: black, gray, red Limestone: brown to tan, fxn, sl chalky, fossiliferous, no vis por Shale: gray, red, black Limestone: white to tan, f-mxn, chalky, granular, sl fossiliferous, no vis por Limestone: tan to white, f-mxn, chalky, oolitic in part, fossiliferous, no vis por	8:00am, 11/11/2014
4100	Limestone	Shale: black carbonaceous, gray Shale: gray, red, brown, black Limestone: white to tan, f-mxn, chalky, oolitic in part, fossiliferous, fr interxn por, 3 pieces black spotty stain, nfo, no odor Shale: gray, black, red	Heebner 4095 (-876) wt 9.3, vis. 50, lcm 3# Morgan Mud, Dave Lines
50	Limestone	Limestone: white to tan, fxn, chalky, sl granular, fossiliferous, pr interxn por, ns Shale: gray, black, red Limestone: tan, fxn, sl chalky, sl fossiliferous, no vis por, 4 pieces dark stain, slsfo on break, no odor Shale: gray, green, red Limestone: tan, f-mxn, sl chalky, sl cherty, oolitic in part, fossiliferous, 6 pieces fr oolitic por (mostly barren), gd dark sat stain, slsfo on break, no odor Dolomite: tan, fxn, sucrosic, sl fossiliferous, no vis por, ns Shale: gray, green Limestone: tan, fxn, fossiliferous, 1% sample, fr interxn por, gd dark spotty to sat stain, prsfo (dark), faint odor Limestone: tan to lt gray, f-mxn, chalky, fossiliferous, fr pp por, 4 pieces black spotty stain, nfo, no odor Shale: gray, green, red, black Limestone: white, fxn, dense, sl oolitic, sl fossiliferous, no vis por, ns Limestone: tan to white, fxn, sl cherty, dense, fossiliferous, no vis por Limestone: tan to lt gray, fxn, sl chalky, oolitic, fossiliferous, pr vug por, ns Shale: black carbonaceous, gray Limestone: tan to brown, fxn, dense, hard, fossiliferous, no vis por, ns Shale: gray, green, red, black Limestone: tan, fxn, sl chalky, fossiliferous, 1% sample, fr pp to vug por, gd dark spotty to sat stain, slsfo, faint odor Shale: gray, red Shale: red, gray, black Limestone: tan to ly gray, f-mxn, oolitic in part, fossiliferous, pr interxn por, ns Shale: black, brown, red, gray Limestone: white to tan, fxn, sl chalky, oolitic, v-fossiliferous, fr vug por, 1% sample, dark sat stain, slsfo, faint odor Limestone: tan to white, fxn, sl chalky, oolitic in part, v-fossiliferous, pr oolitic por, 8 pieces dark sat stain, slsfo, no odor	
4200	Limestone	Shale: black carbonaceous Shale: black, brown, red, gray Limestone: brown, lxn, dense, fossiliferous, no vis por Limestone: tan to white, f-mxn, oolitic, sl cherty, sl interxn por, 1% sample, lt sat stain, slsfo on break, good odor Shale: black carbonaceous Limestone: tan to white, fxn, dense, fossiliferous, no vis por	Stark 4357 (-1138) 8:00am, 11/12/2014 wt 9.2, vis. 56, lcm 4# Morgan Mud, Dave Lines Strap: 4.26' long to board
50	Limestone	Limestone: tan to white, fxn, dense, fossiliferous, no vis por Limestone: tan to white, f-mxn, sl chalky, fossiliferous, fr interxn por, ns Shale: gray, green, red Limestone: tan to brown, fxn, fossiliferous, no vis por Shale: brown, gray, red, black Limestone: white, fxn, sl chalky, sl cherty, granular, no vis por Limestone: white to tan, fxn, granular in part, mostly dense, no vis por Shale: red, gray, brown Limestone: tan to brown, f-mxn, sl oolitic, pr oolitic por, ns Shale: brown, gray, red, black Limestone: tan, fxn, chalky, dense, sl fossiliferous, no vis por Shale: brown, gray, red, black Limestone: white to tan, fxn, dense, sl fossiliferous, 1 piece black surface stain, nfo, no vis por Shale: black, gray, red Limestone: tan, fxn, dense, no vis por Shale: gray, brown, red, green Limestone: white, fxn, soft, silty, no vis por Shale: brown, gray, red Limestone: white, fxn, soft, silty, no vis por Shale: brown, gray, red	
4300	Limestone	Limestone: tan, fxn, mostly dense, sl fossiliferous, no vis por Limestone: tan to white, f-mxn, sl chalky, oolitic in part, no vis por Shale: black, carbonaceous Shale: gray, brown, red Limestone: tan to brown, fxn, cherty, sl pyritic, sl fossiliferous, 4 pieces sl pp por, lt sat stain, nfo, faint odor Shale: black, carbonaceous Limestone: tan to brown, fxn, sl fossiliferous, dense, no vis por Shale: black, gray, brown	Lansing 4135 (-916) 8:00am, 11/11/2014
50	Limestone	Limestone: white to tan, fxn, sl cherty, oolitic in part, fossiliferous, no vis por, ns Limestone: tan to white, fxn, sl cherty, oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	8:00am, 11/13/2014 wt 9.5, vis. 57, lcm 2# Morgan Mud, Dave Lines
4400	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	DST #1 4353-4380 30-60-30-60 1st open: bob 22 min 1st shut in: return built to 1" 2nd open: bob 25 min 2nd shut in: return built to 3" Rec: 155' gw 20/80 124' mcw 40/60 186' mcw 10/90 hydro: 2287-2234 psi lf: 28-127 psi ff: 138-212 psi sip: 918-904 psi bht: 124°F gravity: 34° api chl: 50,000 ppm nw: 0.32 @ 33°F
50	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	DST #2 4577-4603 MISRUN tool slid 6' and in the process it opened before seating contaminating the test 15-15 1st open: no blow 1st close: no return Rec: 293' drilling mud hydro: 2473-2464 psi lf: 161-128 psi sip: 163 psi bht: 117°F
4500	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	DST #3 4569-4603 30-60-30-60 1st open: 1/40" blow died in 8 min 2nd open: no blow no returns Rec: 5' mud hydro: 2498-2366 psi lf: 20-20 psi ff: 20-21 psi sip: 112-63 psi bht: 116°F
50	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	8:00am, 11/14/2014 wt 9.4, vis. 56, lcm 2# Morgan Mud, Dave Lines
4600	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	DST #4 4654-4698 30-60-60-90 1st open: build to 3 1/2" 1st close: no return 2nd open: built to 7" 2nd close: no return Rec: 60' oil 60' ocm 30/70 310' gp hydro: 2446-2477 psi lf: 26-39 psi ff: 41-63 psi sip: 272-265 psi bht: 122°F gravity: 24° api
50	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	8:00am, 11/15/2014 wt 9.4, vis. 56, lcm 2# Morgan Mud, Dave Lines
4700	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	DST #4 4654-4698 30-60-60-90 1st open: build to 3 1/2" 1st close: no return 2nd open: built to 7" 2nd close: no return Rec: 60' oil 60' ocm 30/70 310' gp hydro: 2446-2477 psi lf: 26-39 psi ff: 41-63 psi sip: 272-265 psi bht: 122°F gravity: 24° api
50	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	8:00am, 11/16/2014 Geologist off location at 2:30pm, 11/16/2014
4800	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	Topeka 3874 (-655)
50	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	Heebner 4095 (-876)
4900	Limestone	Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, cherty, sl fossiliferous, no vis por, no stain, nfo, faint odor Limestone: tan to white, fxn, sl chalky, cherty, sl oolitic, sl fossiliferous, 10 pieces sl pp to vug por, lt sat stain, slsfo, faint odor Limestone: tan, f-mxn, sl fossiliferous, no vis por Limestone: tan to white, fxn, sl fossiliferous, dense, no vis por Shale: red, gray, green, black Limestone: tan to white, f-mxn, sl oolitic, sl fossiliferous, mostly dense, 4 pieces sl vug por, lt sat stain, nfo, no odor Shale: red, gray, yellow, black, sandy in part Sandstone: white to gray, fr gm, sub rnd, well sorted, friable, no vis por, ns Limestone: white to tan, fxn, sl chalky, cherty, oolitic, granular, no vis por, ns Limestone: tan, f-mxn, sl chalky, cherty, oolitic, no vis por, ns Limestone: tan to white, f-mxn, chalky, cherty, sandy in part, pr pp por, ns Shale: gray, yellow, black, sl sandy Limestone (dolomitic in part): tan to gray, fxn, sl chalky, dense, hard, sl fossiliferous, no vis por Limestone: tan, fxn, chalky, dense, hard, no vis por Limestone (dolomitic in part): tan, fxn, sl chalky, granular, pr interxn por, ns Limestone: tan, f-mxn, sl chalky, oolitic, no vis por, ns	Stark 4357 (-1138)



PO Box 93999
Southlake, TX 76092

INVOICE

Invoice Number: 146955

Invoice Date: Nov 8, 2014

Page: 1

Voice: (817) 546-7282
Fax: (817) 246-3361

Federal Tax I.D.#: 20-8651475

Bill To:

Murfin Drlg. Co., Inc.
250 N. Water
STE #300
Wichita, KS 67202

Customer ID	Field Ticket #	Payment Terms	
Murfin	64754	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Nov 8, 2014	12/8/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Kruto #3-29		
210.00	CEMENT MATERIALS	Class A Common	17.90	3,759.00
592.00	CEMENT MATERIALS	Chloride	1.10	651.20
220.50	CEMENT SERVICE	Cubic Feet Charge	2.48	546.84
203.20	CEMENT SERVICE	Ton Mileage Charge	2.75	558.80
1.00	CEMENT SERVICE	Surface	1,512.23	1,512.23
20.00	CEMENT SERVICE	Pump Truck Mileage	7.70	154.00
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
20.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	88.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	EQUIPMENT OPERATOR	Brandon Wilkinson		
1.00	EQUIPMENT OPERATOR	Wayne Messalle		

Subtotal	7,545.07
Sales Tax	315.33
Total Invoice Amount	7,860.40
Payment/Credit Applied	
TOTAL	7,860.40

ALL PRICES ARE NET, PAYABLE
30 DAYS FOLLOWING DATE OF
INVOICE. 1 1/2% CHARGED
THEREAFTER. IF ACCOUNT IS
CURRENT, TAKE DISCOUNT OF

\$ 2,640.77

ONLY IF PAID ON OR BEFORE
Dec 8, 2014

2640.77
5219.63

AK JR

acc. Prod-mg



P. O. Box 466
Ness City, KS 67560
Off: 785-798-2300

Invoice

DATE	INVOICE #
11/25/2014	28059

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661
USED FOR <u>1 C 103</u>
APPROVED <u>JS</u>

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#3-29	Kruto	Thomas	Company Tools	Oil	Development	Cement Port Collar	Jason
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				100	Miles	6.00	600.00
576D-D	Pump Charge - Port Collar				1	Job	1,500.00	1,500.00
276	Flocele				60	Lb(s)	2.50	150.00T
290	D-Air				2.5	Gallon(s)	42.00	105.00T
330	Swift Multi-Density Standard (MIDCON II)				240	Sacks	18.50	4,440.00T
581D	Service Charge Cement				375	Sacks	2.00	750.00
583D	Drayage				1,865	Ton Miles	1.00	1,865.00
	Subtotal							9,410.00
	Sales Tax Thomas County						7.15%	335.69

Thank You For Your Business & Best Wishes For A Wonderful Holiday Season!!

Total \$9,745.69



CHARGE TO: MURKIN DRILLING
 ADDRESS:
 CITY, STATE, ZIP CODE

TICKET 28059

PAGE 1 OF

SERVICE LOCATIONS: 1. NESS CITY, KS
 WELL PROJECT NO.: LEASE KRUID 3-29
 COUNTY: THOMAS
 STATE: KS
 CITY: Monument, KS
 DATE: 85NOV14
 OWNER:
 ORDER NO.:
 TICKET TYPE: SERVICE CONTRACTOR Co. Tools
 SALES
 RIG NAME/NO.:
 SHIPPED VIA: DELIVERED TO:
 WELL TYPE: OIL
 WELL CATEGORY: DEVELOPMENT
 JOB PURPOSE: CEMENT TEST COLLAR
 WELL PERMIT NO.:
 WELL LOCATION: 2W 7N 4W 4S W/55E

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING		DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT							
575				MILEAGE \$115	100	m/2			1.00	100.00
576D				Pump CHARGE	1	hrs			1500.00	1500.00
276				FLOCCEL	600	lbs			2.50	1500.00
290				D-AIR	2 1/2	hrs			42.00	105.00
330				SMD CEMENT	240	5X			18.50	4440.00
581				CEMENT SERVICE CHARGE	375	5X			2.00	750.00
583				DRAYAGE	3700	lbs.		18.50/STIM	1.00	1865.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

SIGNED: 85NOV14
 TIME SIGNED: 1115 AM
 AM
 PM

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?

WE UNDERSTOOD AND MET YOUR NEEDS?

OUR SERVICE WAS PERFORMED WITHOUT DELAY?

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?

ARE YOU SATISFIED WITH OUR SERVICE? YES NO

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL: 941D

TOTAL: 9745.69

SWIFT OPERATOR: [Signature]

APPROVAL: [Signature]

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES: The customer hereby acknowledges receipt of the materials and services listed on this ticket.

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 25 NOV 14 PAGE NO.

CUSTOMER
MURPIN DRILLING

WELL NO.

LEASE **KRUTO 3-29**

JOB TYPE
CEMENT PORT COLLAR

TICKET NO. **28057**

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0845							ON LOCATION
								PORT COLLAR @ 2736
	0922				✓		1800	TEST - HELD
	0925							OPEN PORT COLLAR.
	0930	4	133	✓		800		MIX 240SX SMD
		3	9 1/2	✓		400		DISPLACE CEMENT
								CIRCULATE 20SX TO PIT
	1015				✓		1200	CLOSE PORT COLLAR - TEST - HELD
								RUN 6 JTS.
	1029	4	30		✓		300	REVERSE CLEAN
	1045							WASH TRUCK
	1115							JOB COMPLETE
								THANKS # 115
								JASON DAVE PRESTON



CONSOLIDATED
Oil Well Services, LLC

REMIT TO
Consolidated Oil Well Services, LLC
Dept. 970
P.O. Box 4346
Houston, TX 77210-4346

MAIN OFFICE
P.O. Box 884
Chanute, KS 66720
620/431-9210, 1-800/467-8676
Fax 620/431-0012

INVOICE

Invoice # 802240

Invoice Date: 11/30/2014

Terms: C.O.D.

Page 1

MURFIN DRILLING
P.O. Box 288
RUSSELL, KS 67665

KRUTO #3-~~39~~
29

Cement long string

USED FOR IC 103

APPROVED *JT JWM*

Part Number	Description	Qty	Unit Price	Discount(%)	Total
5401C	Single Pump	1.00	3,175.00	10.00	2,857.50
5406	Mileage Charge	20.00	5.25	10.00	94.50
5407A	Ton Mileage Delivery Charge	1.00	430.00	10.00	387.00
1126	Oil Well Cement	225.00	23.70	10.00	4,799.25
1110A	Kol Seal (50# BAG)	1,125.00	0.56	10.00	567.00
1144G-0130	Mud Flush - Oakley	500.00	1.00	10.00	450.00
1142A	KCL Sub 1/1000	2.00	41.10	10.00	73.98
4454	5 1/2 Latch Down Plug	1.00	318.25	10.00	286.43
4104	Cement Basket 5 1/2	2.00	290.00	10.00	522.00
4136	Turbolizer 5 1/2	18.00	75.75	10.00	1,227.15
4159	Float Shoe AFU 5 1/2	1.00	433.75	10.00	390.38
4285	5 1/2 Port Collar	1.00	2,178.75	10.00	1,960.88
Sub Total					15,128.95
Discounted Amount					1,512.90
SubTotal After Discount					13,616.07

WELL FILE

Amount Due 15,945.40 if paid after 11/30/2014

Tax: 734.81
Total: 14,350.88

	MDCI Kruto #3-29 2450' FNL 2055' FWL Sec. 29-T10S-R34W 3219' KB						MDCI Kruto #2-29 2593' FSL 1138' FWL Sec. 29-T10S-R34W 3250' KB	
Formation	Sample Top	Datum	Ref	Log Tops	Datum	Ref	Log Top	Datum
Anhydrite	2712	+507	+3	2716	+503	-1	2746	+504
B/Anhydrite	2740	+479	+3	2743	+476	Flat	2774	+476
Topeka	3874	-655	+4	3881	-662	-3	3909	-659
Heebner	4095	-876	Flat	4098	-879	-3	4126	-876
Lansing	4135	-916	+2	4137	-918	Flat	4168	-918
Stark	4357	-1138	+5	4361	-1142	+1	4393	-1143
Pawnee	4552	-1333	+9	4554	-1335	+7	4592	-1342
Lwr Pawn	4574	-1355	+22	4590	-1371	+6	4627	-1377
Fort Scott	4604	-1385	+11	4609	-1390	+6	4646	-1396
Johnson Zn	4676	-1457	+14	4687	-1468	+3	4721	-1471
Mississippi	4764	-1545	+19	4768	-1549	+15	4814	-1564
RTD	4864						4870	
LTD				4870			4875	