

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

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

Gas DH EOR

OG GSW

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 EOR Conv. to SWD
 Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

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 Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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 Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	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> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62091

DST#: 1

Test Start: 2017.11.28 @ 09:53:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:30:17

Time Test Ended: 16:39:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/ 116

Interval: **4291.00 ft (KB) To 4321.00 ft (KB) (TVD)**

Reference Elevations: 2277.00 ft (KB)

Total Depth: 4321.00 ft (KB) (TVD)

2269.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 20.23 psig @ 4317.00 ft (KB)

Capacity: psig

Start Date: 2017.11.28 End Date: 2017.11.28

Last Calib.: 2017.11.28

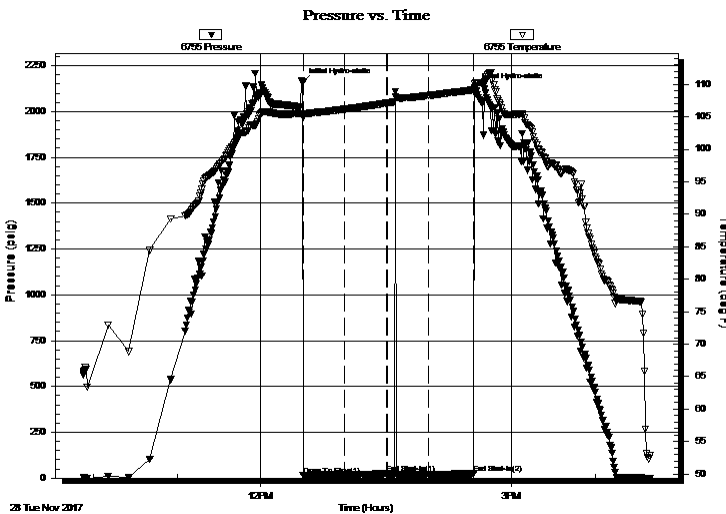
Start Time: 09:53:01 End Time: 16:39:02

Time On Btm: 2017.11.28 @ 12:30:02

Time Off Btm: 2017.11.28 @ 14:33:32

TEST COMMENT: I.F. 30 Minutes/ Few bubbles at open then dead
 I.S.I. 30 Minutes/ No blow back
 F.F. 30 Minutes/ Dead no blow / Flush tool no help
 F.S.I. 30 Minutes/ No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2157.52	105.47	Initial Hydro-static
1	15.74	104.85	Open To Flow (1)
30	18.19	106.16	Shut-In(1)
61	24.82	107.09	End Shut-In(1)
61	17.69	107.11	Open To Flow (2)
91	20.23	108.27	Shut-In(2)
123	24.95	109.19	End Shut-In(2)
124	2131.53	110.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud 100%	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

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30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62091

DST#: 1

Test Start: 2017.11.28 @ 09:53:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:30:17

Time Test Ended: 16:39:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/ 116

Interval: **4291.00 ft (KB) To 4321.00 ft (KB) (TVD)**

Reference Elevations: 2277.00 ft (KB)

Total Depth: 4321.00 ft (KB) (TVD)

2269.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8322 Outside

Press@RunDepth: 26.04 psig @ 4318.00 ft (KB)

Capacity: psig

Start Date: 2017.11.28 End Date: 2017.11.28

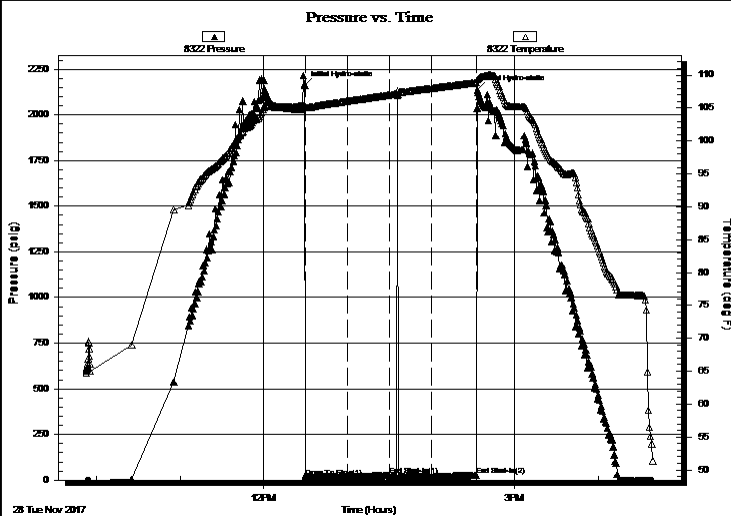
Last Calib.: 2017.11.28

Start Time: 09:53:01 End Time: 16:39:02

Time On Btm: 2017.11.28 @ 12:29:32

Time Off Btm: 2017.11.28 @ 14:33:17

TEST COMMENT: I.F. 30 Minutes/ Few bubbles at open then dead
 I.S.I. 30 Minutes/ No blow back
 F.F. 30 Minutes/ Dead no blow / Flush tool no help
 F.S.I. 30 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2162.43	105.37	Initial Hydro-static
1	16.62	105.06	Open To Flow (1)
31	19.07	106.05	Shut-In(1)
61	26.21	106.99	End Shut-In(1)
61	18.37	107.00	Open To Flow (2)
91	20.24	108.01	Shut-In(2)
123	26.04	108.91	End Shut-In(2)
124	2136.27	109.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud 100%	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

30/19S/21W/Ness

8100 E 22nd St. N. # 700
Box 783188
Wichita, Kansas 67278+3188
ATTN: John Goldsmith

Moore Heirs #4

Job Ticket: 62091

DST#: 1

Test Start: 2017.11.28 @ 09:53:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 73.00 sec/qt

Water Loss: 7.19 in³

Resistivity: ohm.m

Salinity: 5200.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud 100%	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

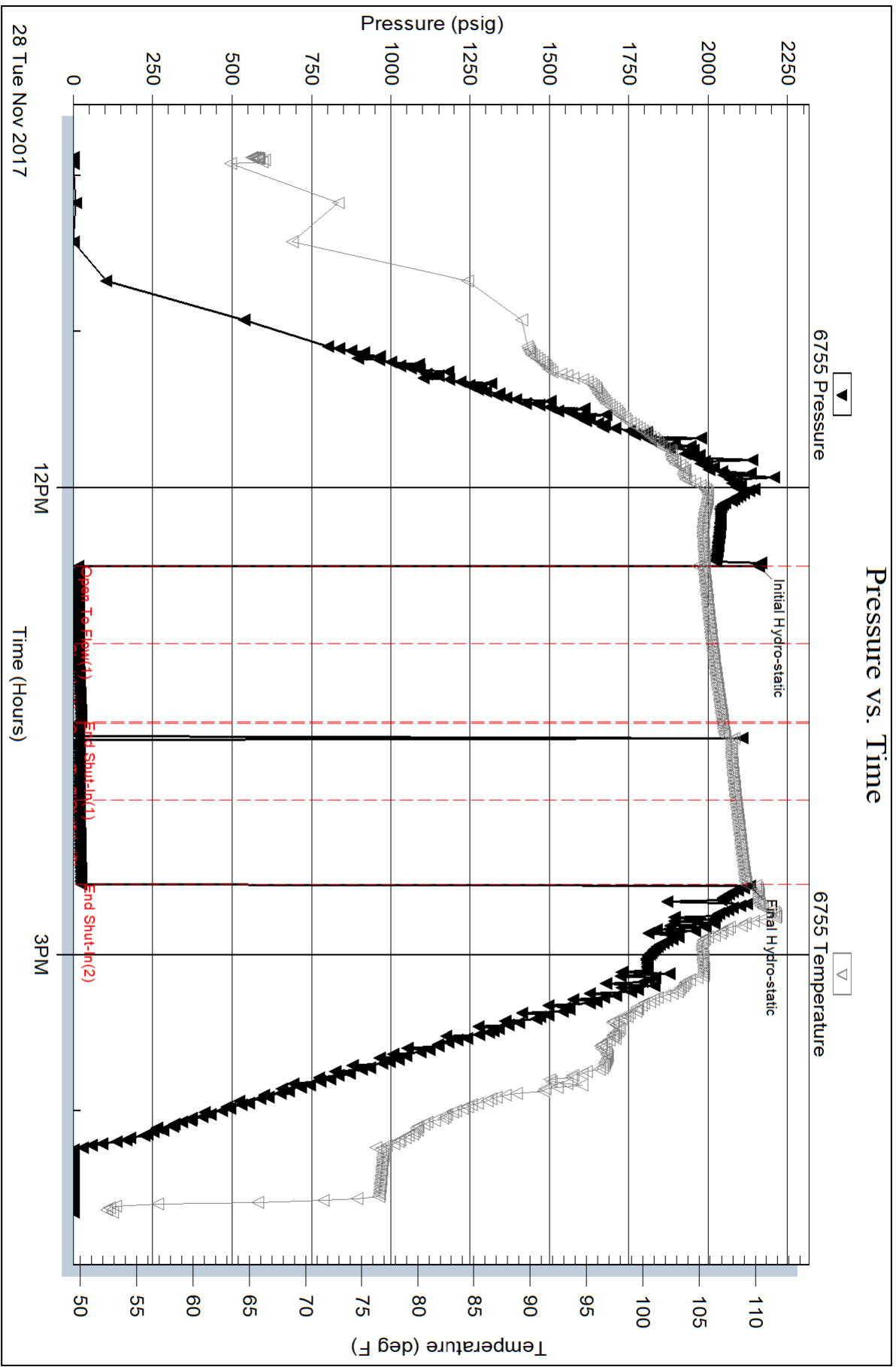
Serial #: 6755

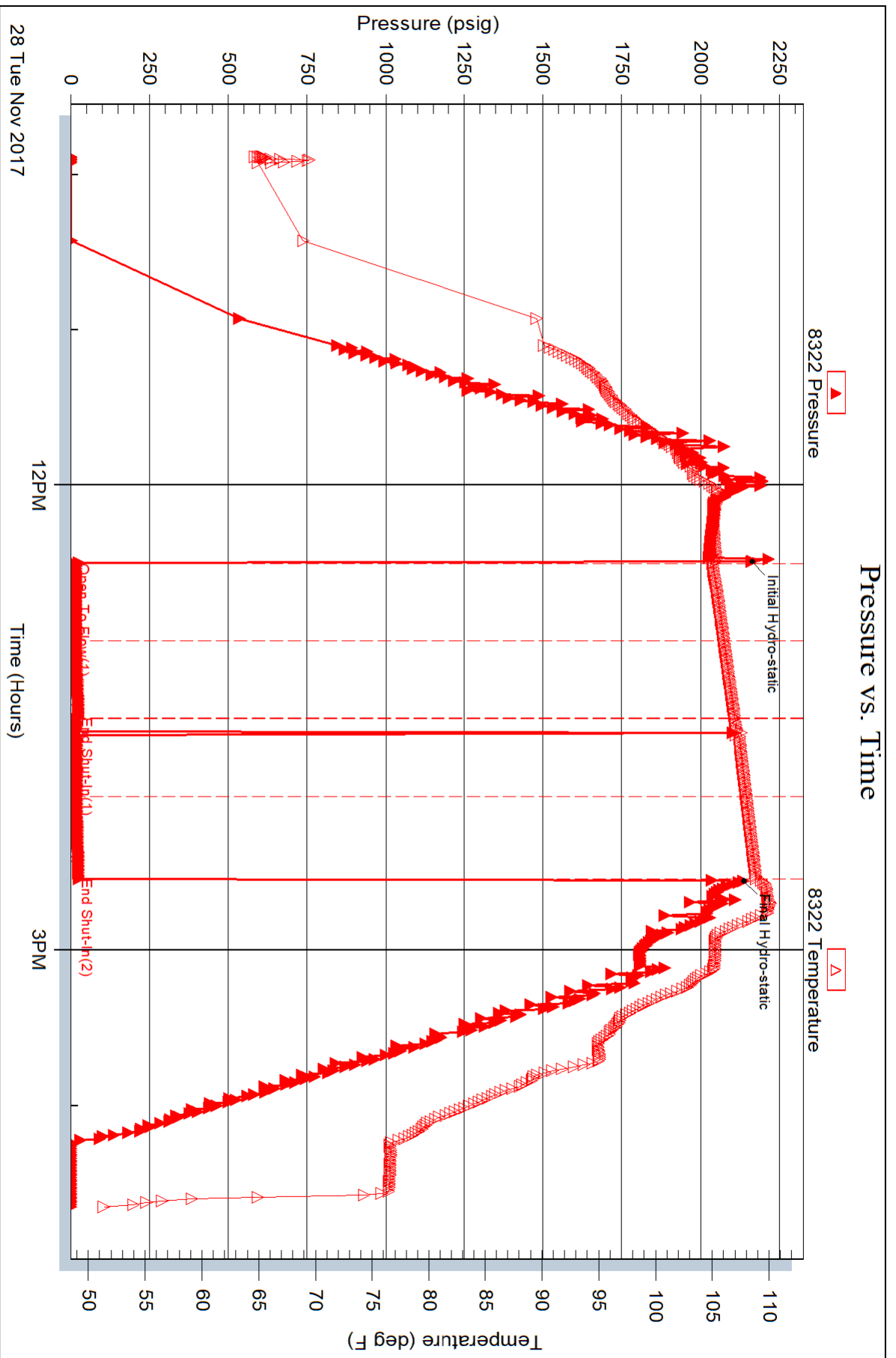
Inside

Ritchie Exploration Inc.

Moore Heirs #4

DST Test Number: 1







TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62092

DST#: 2

Test Start: 2017.11.29 @ 07:32:00

GENERAL INFORMATION:

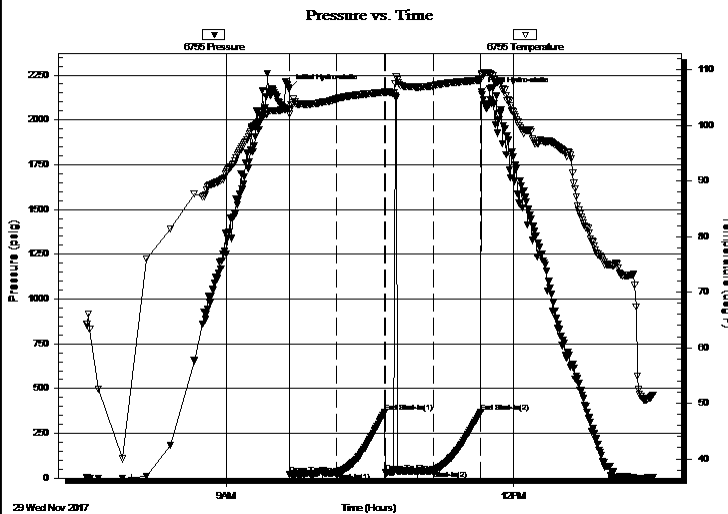
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 09:39:32 Tester: Ken Swinney
 Time Test Ended: 13:28:02 Unit No: 72 Hays/ 116
 Interval: **4323.00 ft (KB) To 4407.00 ft (KB) (TVD)** Reference Elevations: 2271.00 ft (KB)
 Total Depth: 4407.00 ft (KB) (TVD) 2263.00 ft (CF)
 Hole Diameter: 7.80 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 41.51 psig @ 4324.00 ft (KB) Capacity: psig
 Start Date: 2017.11.29 End Date: 2017.11.29 Last Calib.: 2017.11.29
 Start Time: 07:32:01 End Time: 13:28:02 Time On Btm: 2017.11.29 @ 09:39:17
 Time Off Btm: 2017.11.29 @ 11:40:17

TEST COMMENT: I.F. 30 Minutes/ Surface blow died in 6 minutes
 I.S.I. 30 Minutes/ No blow back
 F.F. 30 Minutes/ Dead no blow / Flush tool/ Surface blow died in 3 minutes
 F.S.I. 30 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2175.28	103.08	Initial Hydro-static
1	21.90	102.05	Open To Flow (1)
30	33.93	104.81	Shut-In(1)
60	368.55	105.99	End Shut-In(1)
61	30.84	106.00	Open To Flow (2)
91	41.51	107.18	Shut-In(2)
121	368.04	108.21	End Shut-In(2)
121	2155.60	109.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Oil cut Mud/ Oil 2% Mud 98%	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62092

DST#: 2

Test Start: 2017.11.29 @ 07:32:00

GENERAL INFORMATION:

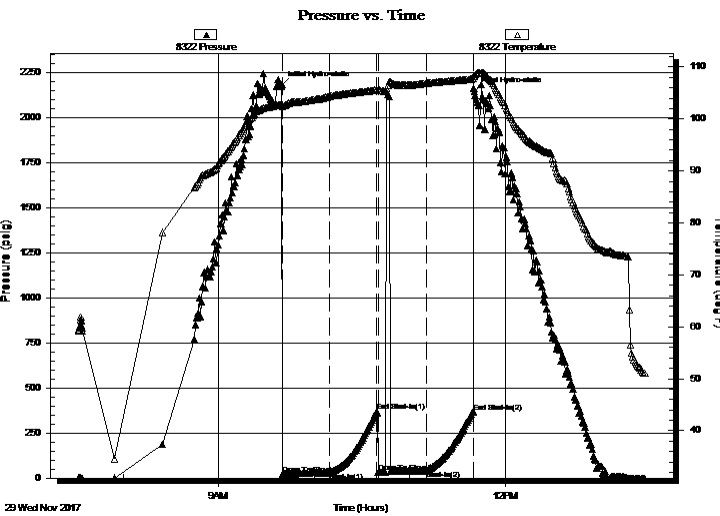
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:39:32
 Time Test Ended: 13:28:02
 Interval: **4323.00 ft (KB) To 4407.00 ft (KB) (TVD)**
 Total Depth: 4407.00 ft (KB) (TVD)
 Hole Diameter: 7.80 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72 Hays/ 116
 Reference Elevations: 2271.00 ft (KB)
 2263.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8322

Outside

Press@RunDepth: 368.64 psig @ 4325.00 ft (KB) Capacity: psig
 Start Date: 2017.11.29 End Date: 2017.11.29 Last Calib.: 2017.11.29
 Start Time: 07:32:01 End Time: 13:28:02 Time On Btm: 2017.11.29 @ 09:39:17
 Time Off Btm: 2017.11.29 @ 11:40:32

TEST COMMENT: I.F. 30 Minutes/ Surface blow died in 6 minutes
 I.S.I. 30 Minutes/ No blow back
 F.F. 30 Minutes/ Dead no blow / Flush tool/ Surface blow died in 3 minutes
 F.S.I. 30 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2177.23	102.78	Initial Hydro-static
1	23.18	102.49	Open To Flow (1)
30	34.99	104.32	Shut-In(1)
60	369.07	105.56	End Shut-In(1)
61	30.62	105.56	Open To Flow (2)
91	42.78	106.86	Shut-In(2)
121	368.64	107.72	End Shut-In(2)
122	2144.47	108.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Oil cut Mud/ Oil 2% Mud 98%	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

30/19S/21W/Ness

8100 E 22nd St. N. # 700
Box 783188
Wichita, Kansas 67278+3188
ATTN: John Goldsmith

Moore Heirs #4

Job Ticket: 62092

DST#: 2

Test Start: 2017.11.29 @ 07:32:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	Oil cut Mud/ Oil 2% Mud 98%	0.000

Total Length: 50.00 ft

Total Volume: bbl

Num Fluid Samples: 0

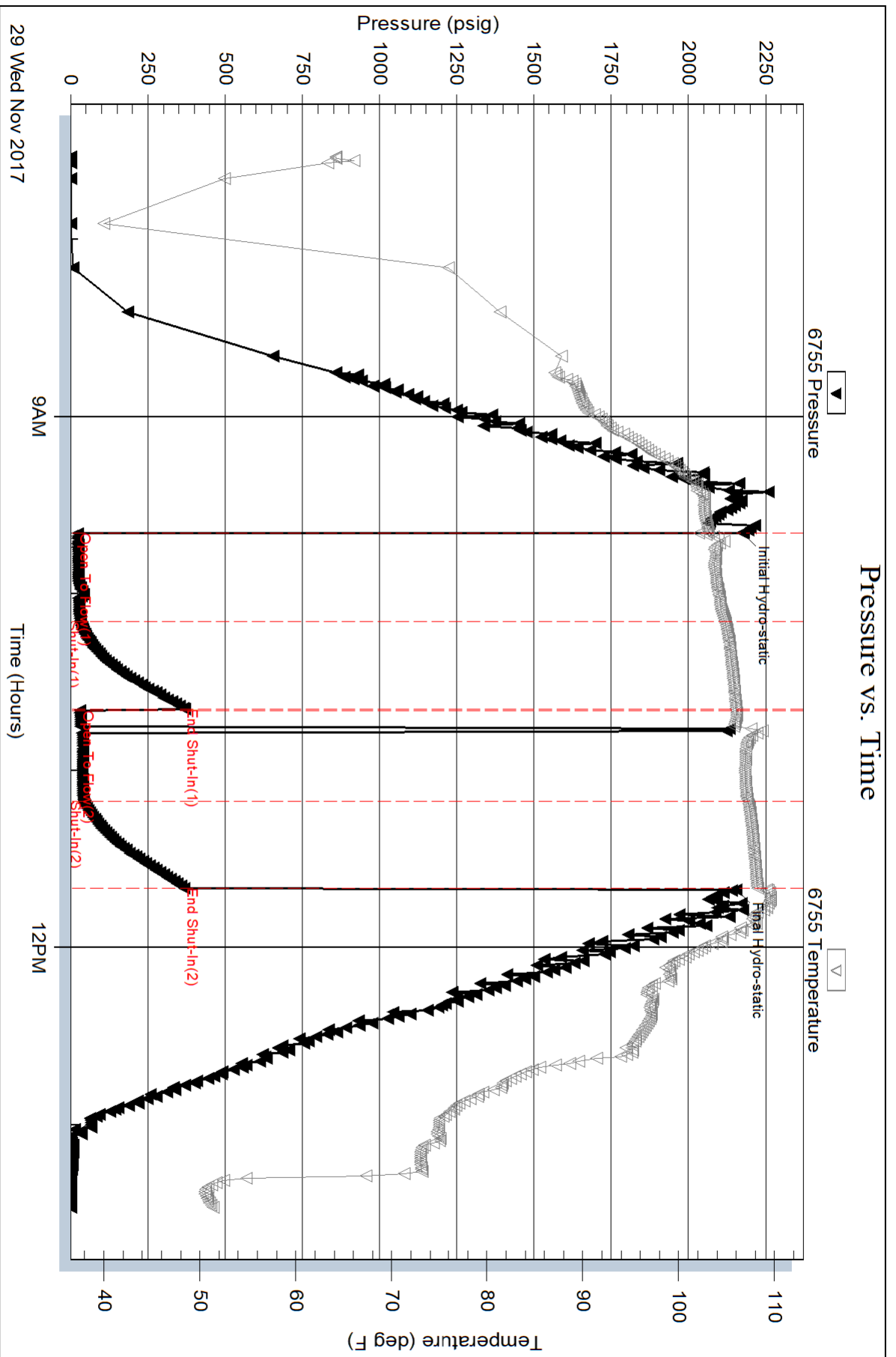
Num Gas Bombs: 0

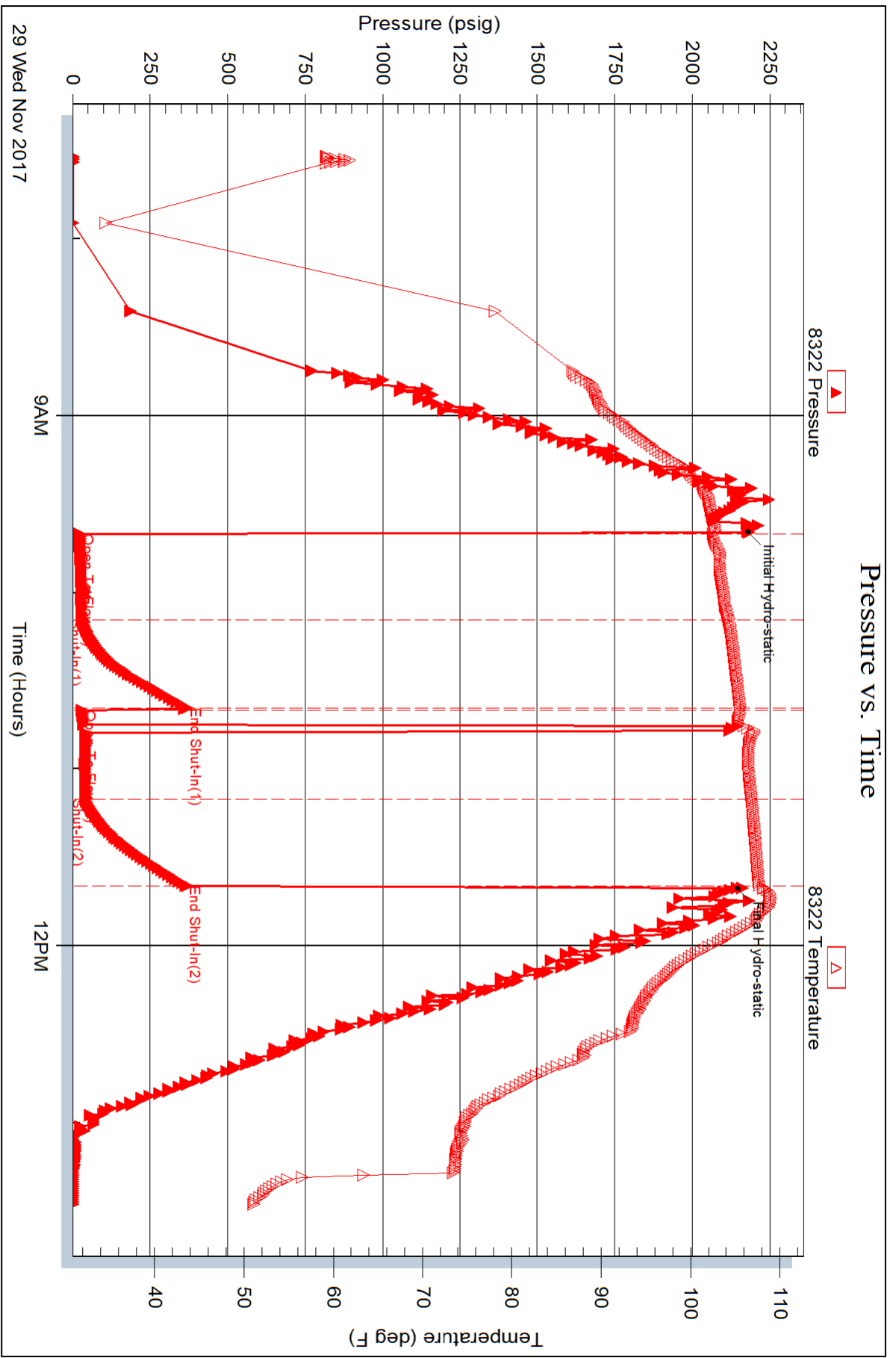
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62093

DST#: 3

Test Start: 2017.11.29 @ 20:16:00

GENERAL INFORMATION:

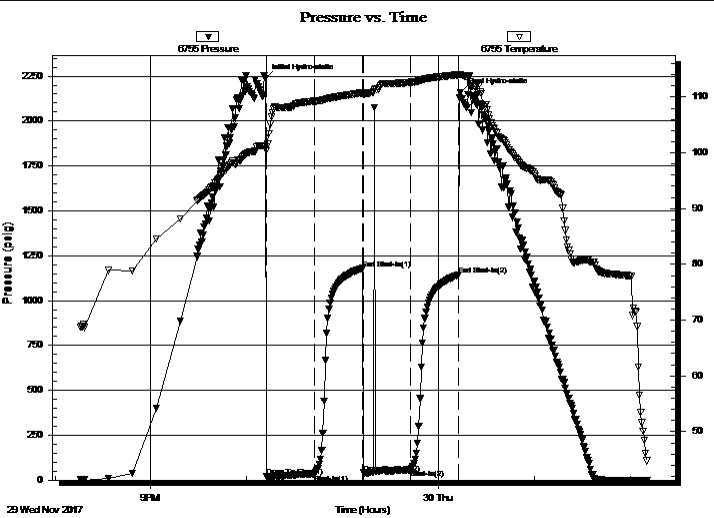
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 22:12:17 Tester: Ken Swinney
 Time Test Ended: 02:10:02 Unit No: 72 Hays/ 116
 Interval: **4406.00 ft (KB) To 4413.00 ft (KB) (TVD)** Reference Elevations: 2271.00 ft (KB)
 Total Depth: 4413.00 ft (KB) (TVD) 2263.00 ft (CF)
 Hole Diameter: 7.80 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 57.75 psig @ 4409.00 ft (KB) Capacity: psig
 Start Date: 2017.11.29 End Date: 2017.11.30 Last Calib.: 2017.11.30
 Start Time: 20:16:01 End Time: 02:10:02 Time On Btm: 2017.11.29 @ 22:11:47
 Time Off Btm: 2017.11.30 @ 00:13:32

TEST COMMENT: I.F. 30 Minutes/ Surface blow died in 1 1/2 minutes
 I.S.I. 30 Mintues/ No blow back
 F.F. 30 Minutes/ Few bubbles at open then dead/Flush tool/ Light surge then dead
 F.S.I. 30 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2233.39	101.13	Initial Hydro-static
1	19.27	100.40	Open To Flow (1)
31	35.19	109.24	Shut-In(1)
61	1178.63	110.71	End Shut-In(1)
61	39.97	110.52	Open To Flow (2)
91	57.75	112.63	Shut-In(2)
121	1143.14	113.98	End Shut-In(2)
122	2158.93	113.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean Oil 100%	0.02
100.00	Oil cut Mud/ Oil 5% Mud 95%	0.49

Gas Rates

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



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 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62093

DST#: 3

Test Start: 2017.11.29 @ 20:16:00

GENERAL INFORMATION:

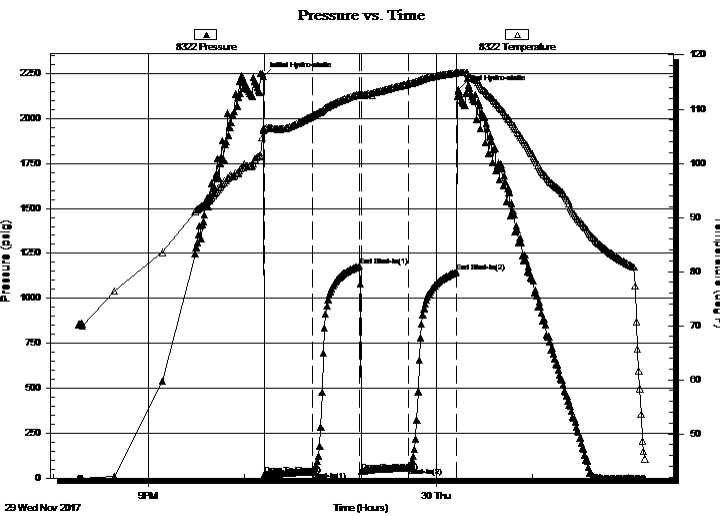
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:12:17
 Time Test Ended: 02:10:02
 Interval: **4406.00 ft (KB) To 4413.00 ft (KB) (TVD)**
 Total Depth: 4413.00 ft (KB) (TVD)
 Hole Diameter: 7.80 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72 Hays/ 116
 Reference Elevations: 2271.00 ft (KB)
 2263.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8322

Outside

Press@RunDepth: 1145.00 psig @ 4410.00 ft (KB) Capacity: psig
 Start Date: 2017.11.29 End Date: 2017.11.30 Last Calib.: 2017.11.30
 Start Time: 20:16:01 End Time: 02:10:02 Time On Btm: 2017.11.29 @ 22:11:47
 Time Off Btm: 2017.11.30 @ 00:13:32

TEST COMMENT: I.F. 30 Minutes/ Surface blow died in 1 1/2 minutes
 I.S.I. 30 Mintues/ No blow back
 F.F. 30 Minutes/ Few bubbles at open then dead/Flush tool/ Light surge then dead
 F.S.I. 30 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2232.75	106.36	Initial Hydro-static
1	20.78	106.21	Open To Flow (1)
31	36.80	108.74	Shut-In(1)
60	1179.01	112.72	End Shut-In(1)
61	40.15	112.59	Open To Flow (2)
91	59.56	114.68	Shut-In(2)
121	1145.00	116.70	End Shut-In(2)
122	2159.80	116.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean Oil 100%	0.02
100.00	Oil cut Mud/ Oil 5% Mud 95%	0.49

Gas Rates

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



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TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

30/19S/21W/Ness

8100 E 22nd St. N. # 700
Box 783188
Wichita, Kansas 67278+3188
ATTN: John Goldsmith

Moore Heirs #4

Job Ticket: 62093

DST#: 3

Test Start: 2017.11.29 @ 20:16:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 61.00 sec/qt
Water Loss: 9.18 in³
Resistivity: ohm.m
Salinity: 7700.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Clean Oil 100%	0.025
100.00	Oil cut Mud/ Oil 5% Mud 95%	0.492

Total Length: 105.00 ft Total Volume: 0.517 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

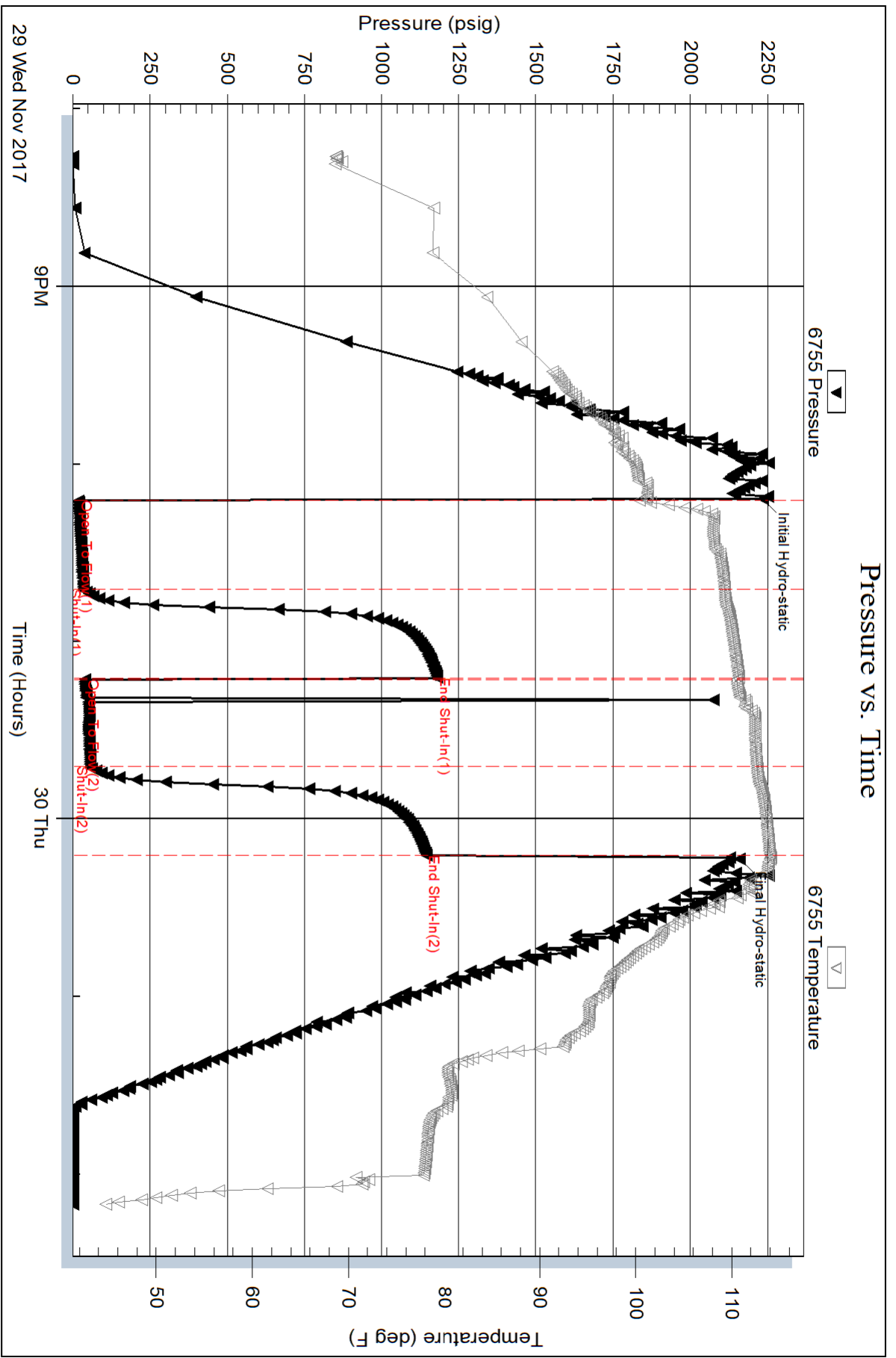
Serial #: 6755

Inside

Ritchie Exploration Inc.

Moore Heirs #4

DST Test Number: 3

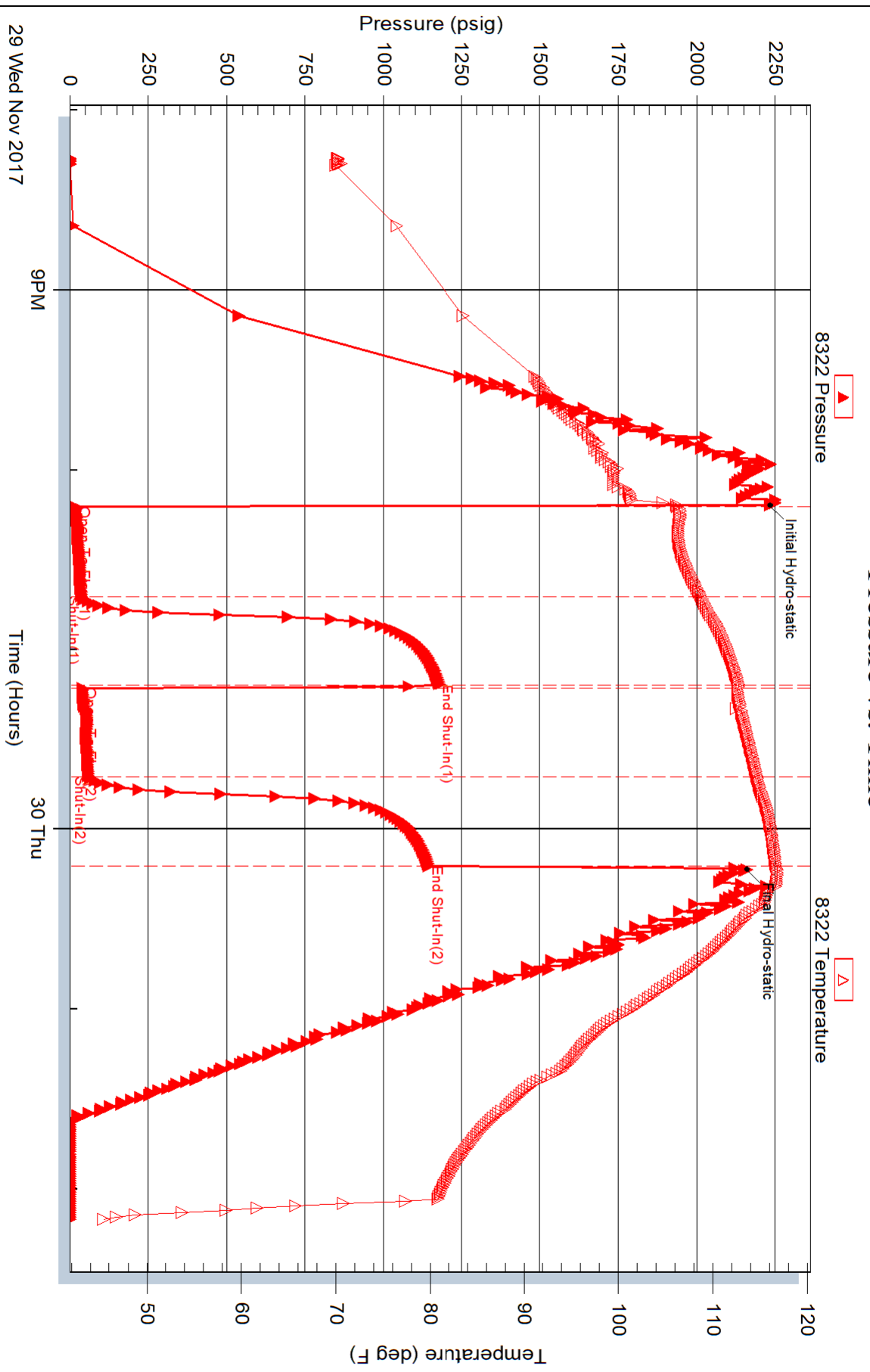


Triobite Testing, Inc

Ref. No: 62093

Printed: 2017.11.30 @ 07:29:30

Pressure vs. Time





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62094

DST#: 4

Test Start: 2017.11.30 @ 09:30:00

GENERAL INFORMATION:

Formation: **Osage**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:38:02

Time Test Ended: 15:36:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/ 116

Interval: 4411.00 ft (KB) To 4418.00 ft (KB) (TVD)

Reference Elevations: 2271.00 ft (KB)

Total Depth: 4418.00 ft (KB) (TVD)

2263.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition:

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 52.72 psig @ 4414.00 ft (KB)

Capacity: psig

Start Date: 2017.11.30

End Date: 2017.11.30

Last Calib.: 2017.11.30

Start Time: 09:30:01

End Time: 15:36:02

Time On Btm: 2017.11.30 @ 11:37:32

Time Off Btm: 2017.11.30 @ 13:39:47

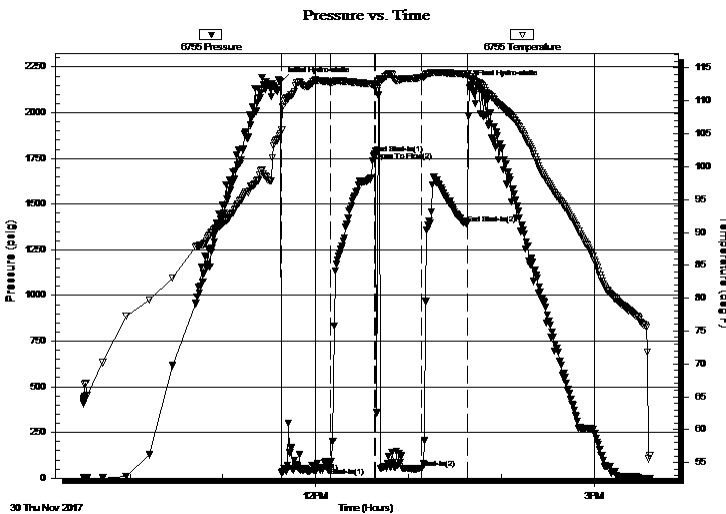
TEST COMMENT: Set tool on bottom tool slide 6 foot still setting 4-5 foot high

I.F. 30 Minutes/ 1/2 inch blow died in 8 minutes

I.S.I. 30 Minutes/ No blow back

F.F. 30 Minutes/ Dead no blow / Flush tool light surge then dead

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2170.59	105.01	Initial Hydro-static
1	31.59	105.56	Open To Flow (1)
32	59.58	112.84	Shut-In(1)
61	1777.08	112.53	End Shut-In(1)
61	1788.68	112.51	Open To Flow (2)
91	52.72	113.58	Shut-In(2)
121	1393.85	114.06	End Shut-In(2)
123	2153.08	113.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	Oil spotted Mud/ Mud 100%	0.30

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62094

DST#: 4

Test Start: 2017.11.30 @ 09:30:00

GENERAL INFORMATION:

Formation: **Osage**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 11:38:02
 Tester: Ken Swinney
 Time Test Ended: 15:36:02
 Unit No: 72 Hays/ 116
 Interval: **4411.00 ft (KB) To 4418.00 ft (KB) (TVD)**
 Reference Elevations: 2271.00 ft (KB)
 Total Depth: 4418.00 ft (KB) (TVD) 2263.00 ft (CF)
 Hole Diameter: 7.80 inches Hole Condition: KB to GR/CF: 8.00 ft

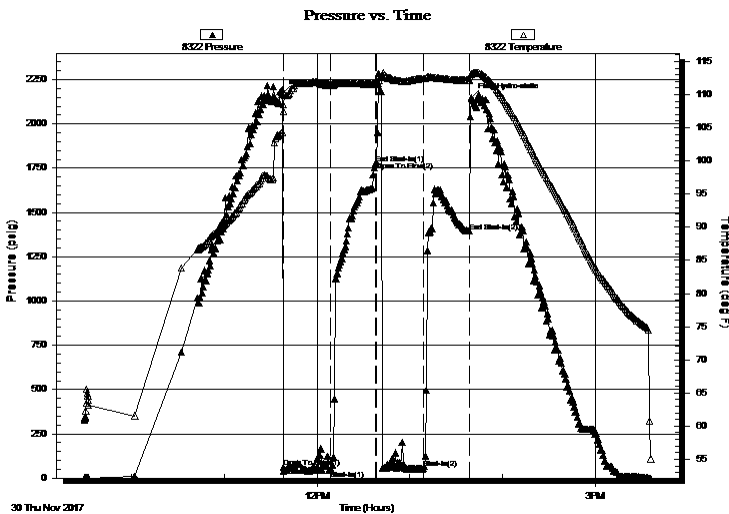
Serial #: 8322

Outside

Press@RunDepth: 1392.92 psig @ 4415.00 ft (KB) Capacity: psig
 Start Date: 2017.11.30 End Date: 2017.11.30 Last Calib.: 2017.11.30
 Start Time: 09:30:01 End Time: 15:36:02 Time On Btm: 2017.11.30 @ 11:37:32
 Time Off Btm: 2017.11.30 @ 13:39:47

TEST COMMENT: Set tool on bottom tool slide 6 foot still setting 4-5 foot high
 I.F. 30 Minutes/ 1/2 inch blow died in 8 minutes
 I.S.I. 30 Minutes/ No blow back
 F.F. 30 Minutes/ Dead no blow / Flush tool light surge then dead

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2168.48	104.36	Initial Hydro-static
1	59.52	107.53	Open To Flow (1)
32	42.11	111.38	Shut-In(1)
61	1776.50	111.58	End Shut-In(1)
61	1786.54	111.58	Open To Flow (2)
92	53.89	112.42	Shut-In(2)
122	1392.92	112.19	End Shut-In(2)
123	2146.95	113.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	Oil spotted Mud/ Mud 100%	0.30

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

30/19S/21W/Ness

8100 E 22nd St. N. # 700
Box 783188
Wichita, Kansas 67278+3188
ATTN: John Goldsmith

Moore Heirs #4

Job Ticket: 62094

DST#: 4

Test Start: 2017.11.30 @ 09:30:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 46.00 sec/qt
Water Loss: 9.98 in³
Resistivity: ohm.m
Salinity: 8400.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	Oil spotted Mud/ Mud 100%	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Ruined Packer

Serial #: 6755

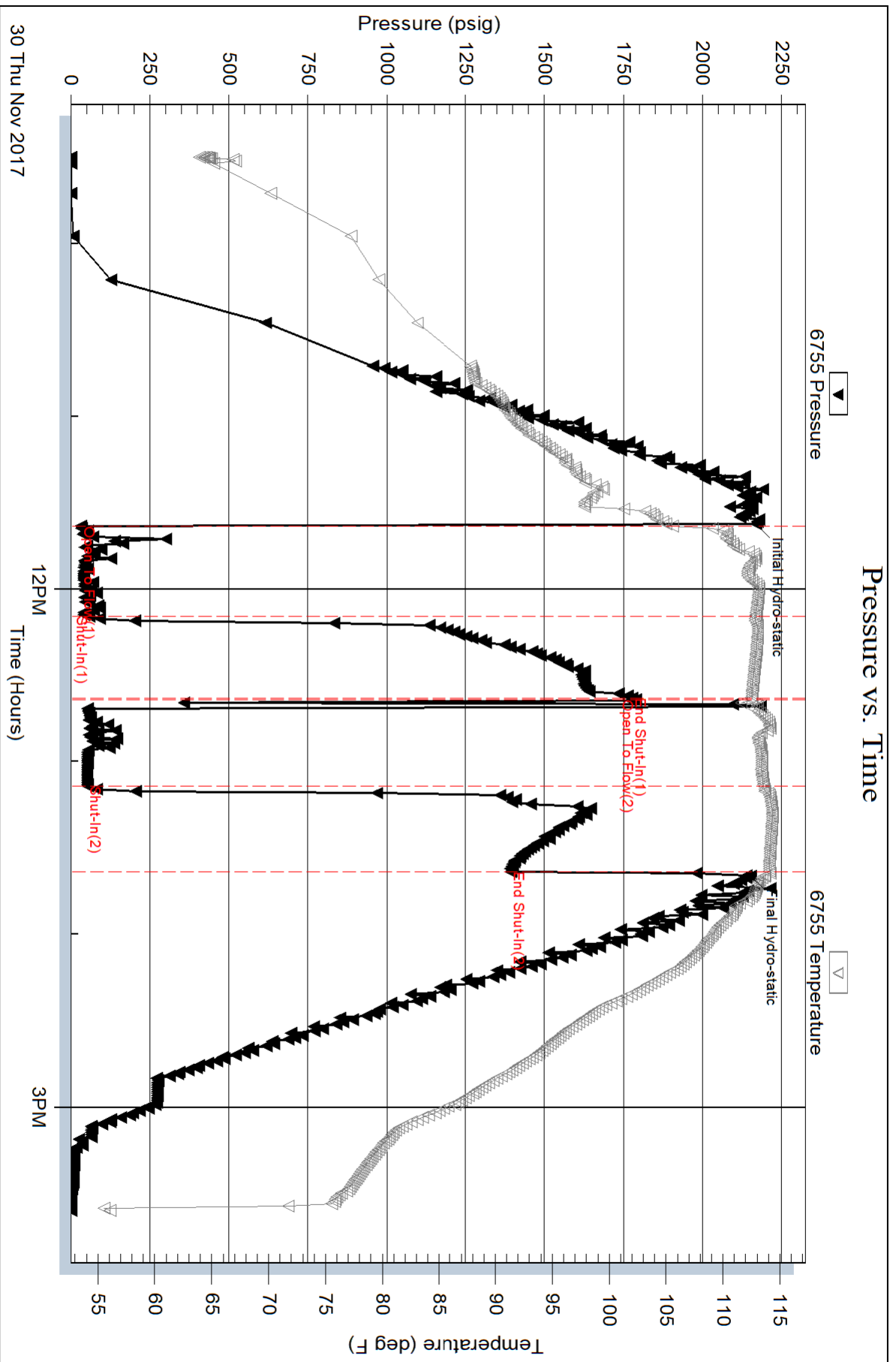
Inside

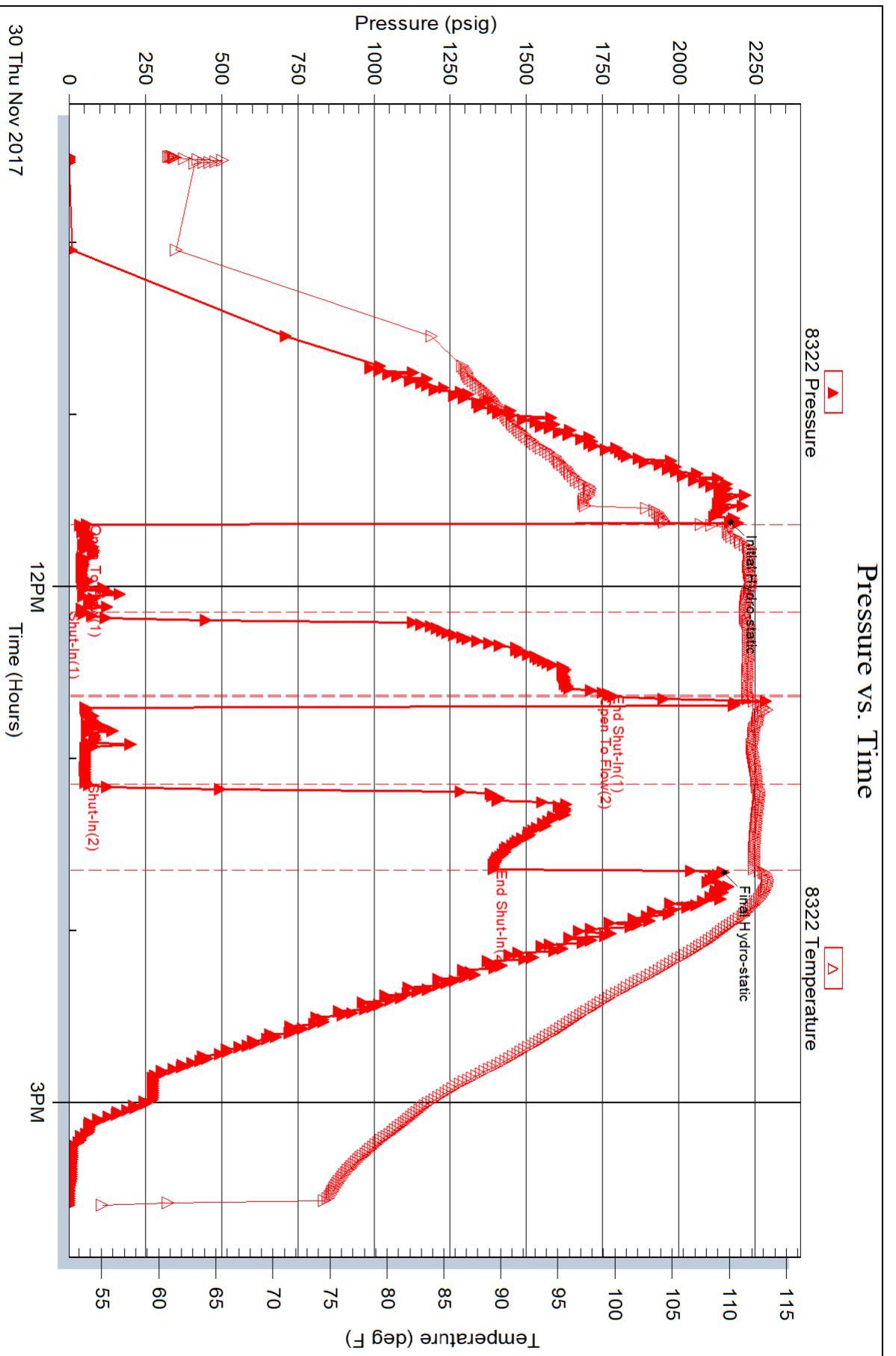
Ritchie Exploration Inc.

Moore Heirs #4

DST Test Number: 4

Pressure vs. Time







TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62095

DST#: 5

Test Start: 2017.11.30 @ 23:19:00

GENERAL INFORMATION:

Formation: **Osage**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:20:17

Time Test Ended: 06:35:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/ 116

Interval: 4412.00 ft (KB) To 4418.00 ft (KB) (TVD)

Reference Elevations: 2271.00 ft (KB)

Total Depth: 4418.00 ft (KB) (TVD)

2263.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 81.51 psig @ 4414.00 ft (KB)

Capacity: psig

Start Date: 2017.11.30

End Date:

2017.12.01

Last Calib.:

2017.12.01

Start Time: 23:19:01

End Time:

06:35:02

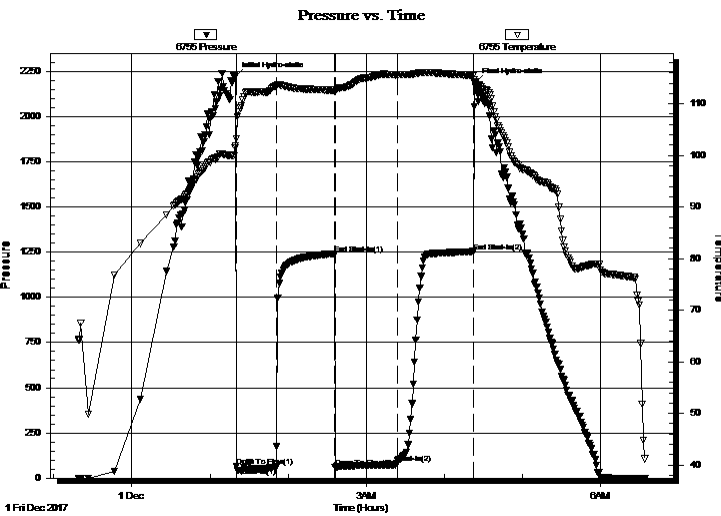
Time On Btm:

2017.12.01 @ 01:19:32

Time Off Btm:

2017.12.01 @ 04:23:47

TEST COMMENT: I.F. 30 Minutes/ Tool Slide 3 foot/ Blow 1 inch at open died in 8 minutes
 I.S.I. 45 Minutes/ No blow back
 F.F. 45 Minutes/ Surface blow died in 1 minute/ Flush tool/ Surface blow died in 1 minute
 F.S.I. 60 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2217.51	101.93	Initial Hydro-static
1	66.44	103.25	Open To Flow (1)
32	61.18	113.46	Shut-In(1)
77	1237.12	112.62	End Shut-In(1)
77	61.53	112.34	Open To Flow (2)
125	81.51	115.61	Shut-In(2)
183	1252.99	115.51	End Shut-In(2)
185	2187.27	114.34	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Oil cut Mud/ Oil 5% Mud 95%	0.59

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62095

DST#: 5

Test Start: 2017.11.30 @ 23:19:00

GENERAL INFORMATION:

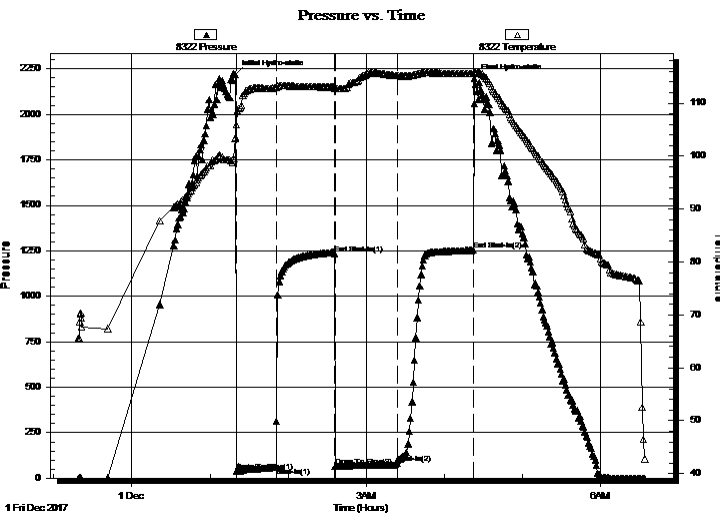
Formation: **Osage**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:20:17
 Time Test Ended: 06:35:02
 Interval: **4412.00 ft (KB) To 4418.00 ft (KB) (TVD)**
 Total Depth: 4418.00 ft (KB) (TVD)
 Hole Diameter: 7.80 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72 Hays/ 116
 Reference Elevations: 2271.00 ft (KB)
 2263.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8322

Outside

Press@RunDepth: 1253.08 psig @ 4415.00 ft (KB) Capacity: psig
 Start Date: 2017.11.30 End Date: 2017.12.01 Last Calib.: 2017.12.01
 Start Time: 23:19:01 End Time: 06:35:02 Time On Btm: 2017.12.01 @ 01:19:32
 Time Off Btm: 2017.12.01 @ 04:23:32

TEST COMMENT: I.F. 30 Minutes/ Tool Slide 3 foot/ Blow 1 inch at open died in 8 minutes
 I.S.I. 45 Minutes/ No blow back
 F.F. 45 Mintues/ Surface blow died in 1 minute/ Flush tool/ Surface blow died in 1 minute
 F.S.I. 60 Mintues/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2217.19	103.58	Initial Hydro-static
1	39.63	105.94	Open To Flow (1)
32	61.74	113.00	Shut-In(1)
77	1235.12	113.01	End Shut-In(1)
77	63.44	112.79	Open To Flow (2)
125	82.03	115.18	Shut-In(2)
183	1253.08	115.59	End Shut-In(2)
184	2197.98	115.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Oil cut Mud/ Oil 5% Mud 95%	0.59

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

30/19S/21W/Ness

8100 E 22nd St. N. # 700
Box 783188
Wichita, Kansas 67278+3188
ATTN: John Goldsmith

Moore Heirs #4

Job Ticket: 62095

DST#: 5

Test Start: 2017.11.30 @ 23:19:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 46.00 sec/qt

Water Loss: 9.98 in³

Resistivity: ohm.m

Salinity: 8400.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	Oil cut Mud/ Oil 5% Mud 95%	0.590

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

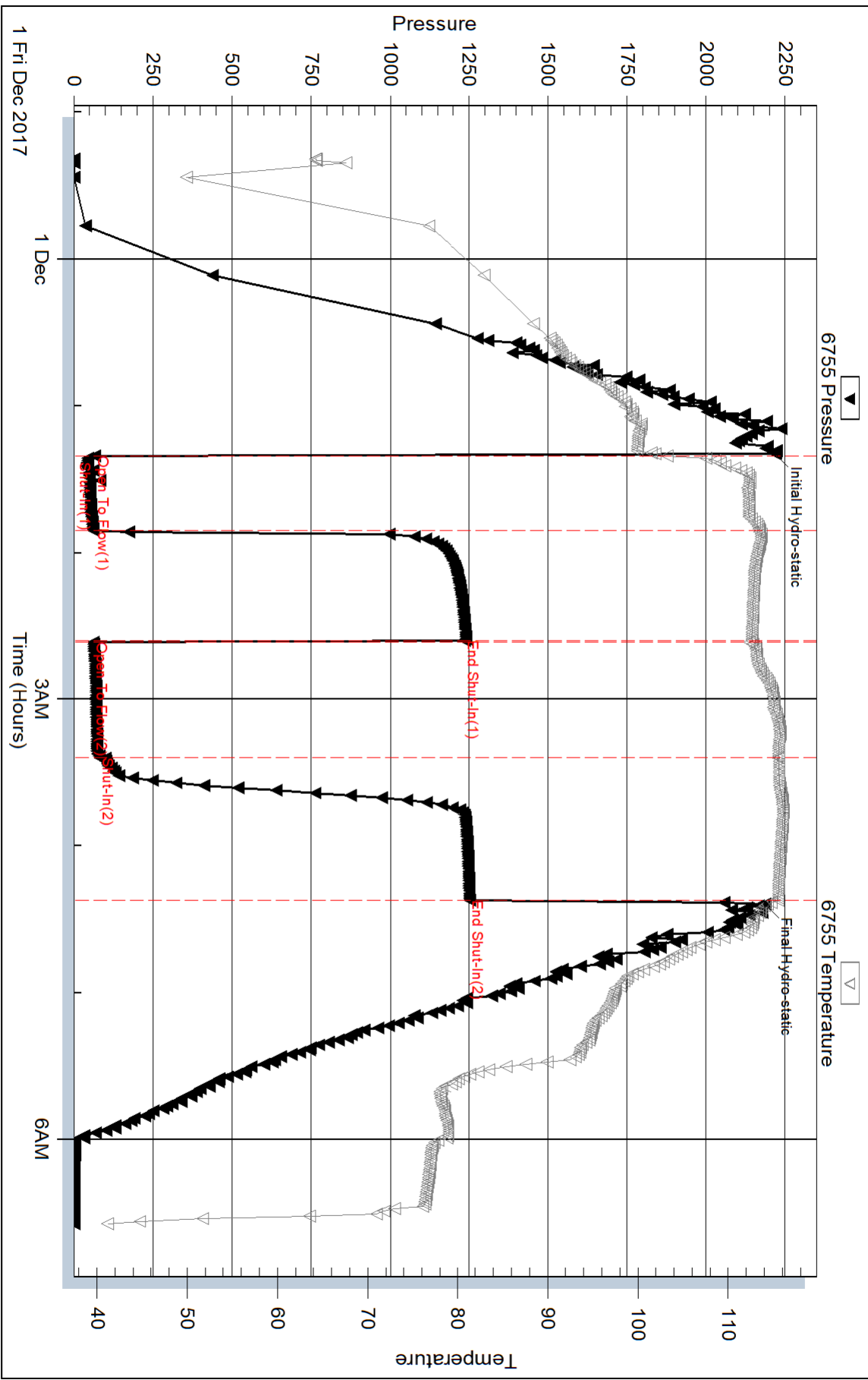
Serial #:

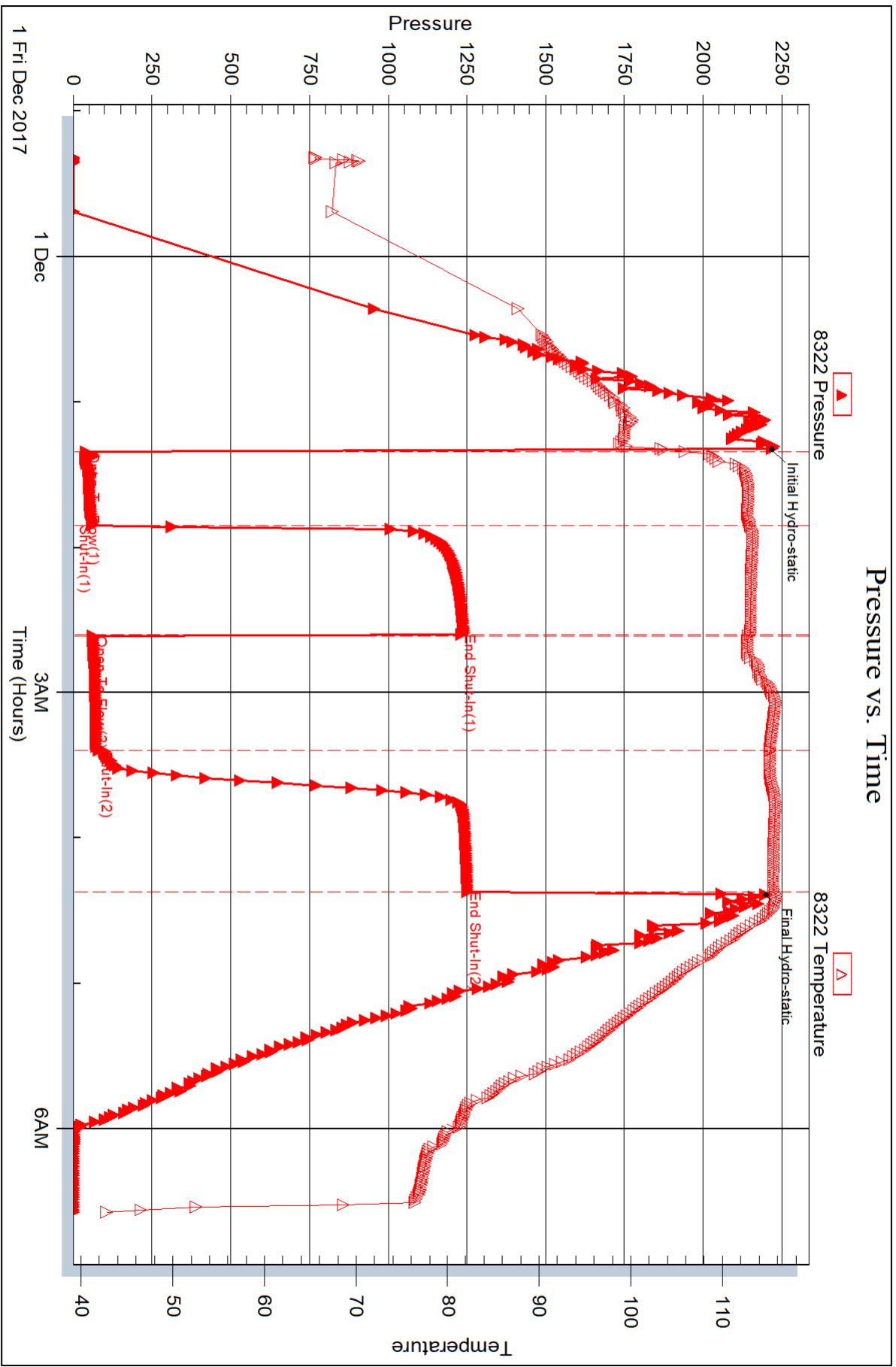
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62096

DST#: 6

Test Start: 2017.12.02 @ 06:13:00

GENERAL INFORMATION:

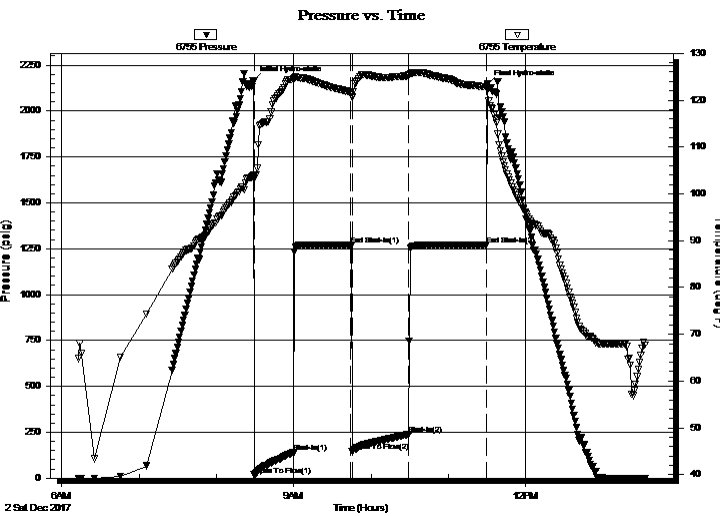
Formation: **Lower Dolomite**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 08:29:17
 Time Test Ended: 13:33:02
 Interval: **4425.00 ft (KB) To 4439.00 ft (KB) (TVD)**
 Total Depth: 4500.00 ft (KB) (TVD)
 Hole Diameter: 7.80 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Initial)
 Tester: Ken Swinney
 Unit No: 72 Hays/ 116
 Reference Elevations: 2271.00 ft (KB)
 2263.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6755

Inside

Press@RunDepth: 239.34 psig @ 4425.00 ft (KB) Capacity: psig
 Start Date: 2017.12.02 End Date: 2017.12.02 Last Calib.: 2017.12.02
 Start Time: 06:13:01 End Time: 13:33:02 Time On Btm: 2017.12.02 @ 08:29:02
 Time Off Btm: 2017.12.02 @ 11:30:17

TEST COMMENT: I.F. 30 Mintues/ Blow built to 5 inches
 I.S.I. 45 Minutes/ No blow back
 F.F. 45 Minutes/ Blow built to 1/2 inch then died in 13 minutes
 F.S.I. 60 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2164.11	104.02	Initial Hydro-static
1	17.66	103.30	Open To Flow (1)
31	139.18	124.49	Shut-In(1)
76	1272.18	121.68	End Shut-In(1)
77	146.65	120.72	Open To Flow (2)
121	239.34	125.27	Shut-In(2)
181	1272.40	122.70	End Shut-In(2)
182	2142.95	122.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
191.00	Muddy Water/ Mud 20% Water 80%	1.59
310.00	Muddy Water/ Mud 5% Water 95%	4.35

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration Inc.
 8100 E 22nd St. N. # 700
 Box 783188
 Wichita, Kansas 67278+3188
 ATTN: John Goldsmith

30/19S/21W/Ness

Moore Heirs #4

Job Ticket: 62096

DST#: 6

Test Start: 2017.12.02 @ 06:13:00

GENERAL INFORMATION:

Formation: **Lower Dolomite**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:29:17

Time Test Ended: 13:33:02

Test Type: Conventional Straddle (Initial)

Tester: Ken Swinney

Unit No: 72 Hays/ 116

Interval: **4425.00 ft (KB) To 4439.00 ft (KB) (TVD)**

Reference Elevations: 2271.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2263.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6752

Press@RunDepth: 1273.13 psig @ ft (KB)

Capacity: psig

Start Date: 2017.12.02

End Date: 2017.12.02

Last Calib.: 2017.12.02

Start Time: 06:13:01

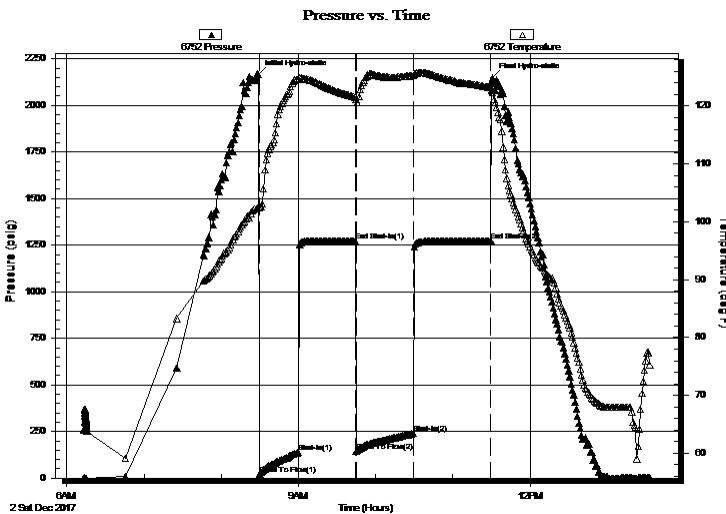
End Time: 13:33:02

Time On Btm: 2017.12.02 @ 08:29:02

Time Off Btm: 2017.12.02 @ 11:30:47

TEST COMMENT: I.F. 30 Mintues/ Blow built to 5 inches
 I.S.I. 45 Minutes/ No blow back
 F.F. 45 Minutes/ Blow built to 1/2 inch then died in 13 minutes
 F.S.I. 60 Minutes/ No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2165.32	102.68	Initial Hydro-static
1	19.80	102.44	Open To Flow (1)
31	139.34	124.60	Shut-In(1)
76	1273.01	121.53	End Shut-In(1)
76	145.14	121.16	Open To Flow (2)
121	240.35	125.31	Shut-In(2)
181	1273.13	123.24	End Shut-In(2)
182	2146.52	122.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
191.00	Muddy Water/ Mud 20% Water 80%	1.59
310.00	Muddy Water/ Mud 5% Water 95%	4.35

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration Inc.

30/19S/21W/Ness

8100 E 22nd St. N. # 700
Box 783188
Wichita, Kansas 67278+3188
ATTN: John Goldsmith

Moore Heirs #4

Job Ticket: 62096

DST#: 6

Test Start: 2017.12.02 @ 06:13:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 62.00 sec/qt
Water Loss: 13.58 in³
Resistivity: ohm.m
Salinity: 9400.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: 19000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
191.00	Muddy Water/ Mud 20% Water 80%	1.586
310.00	Muddy Water/ Mud 5% Water 95%	4.348

Total Length: 501.00 ft Total Volume: 5.934 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

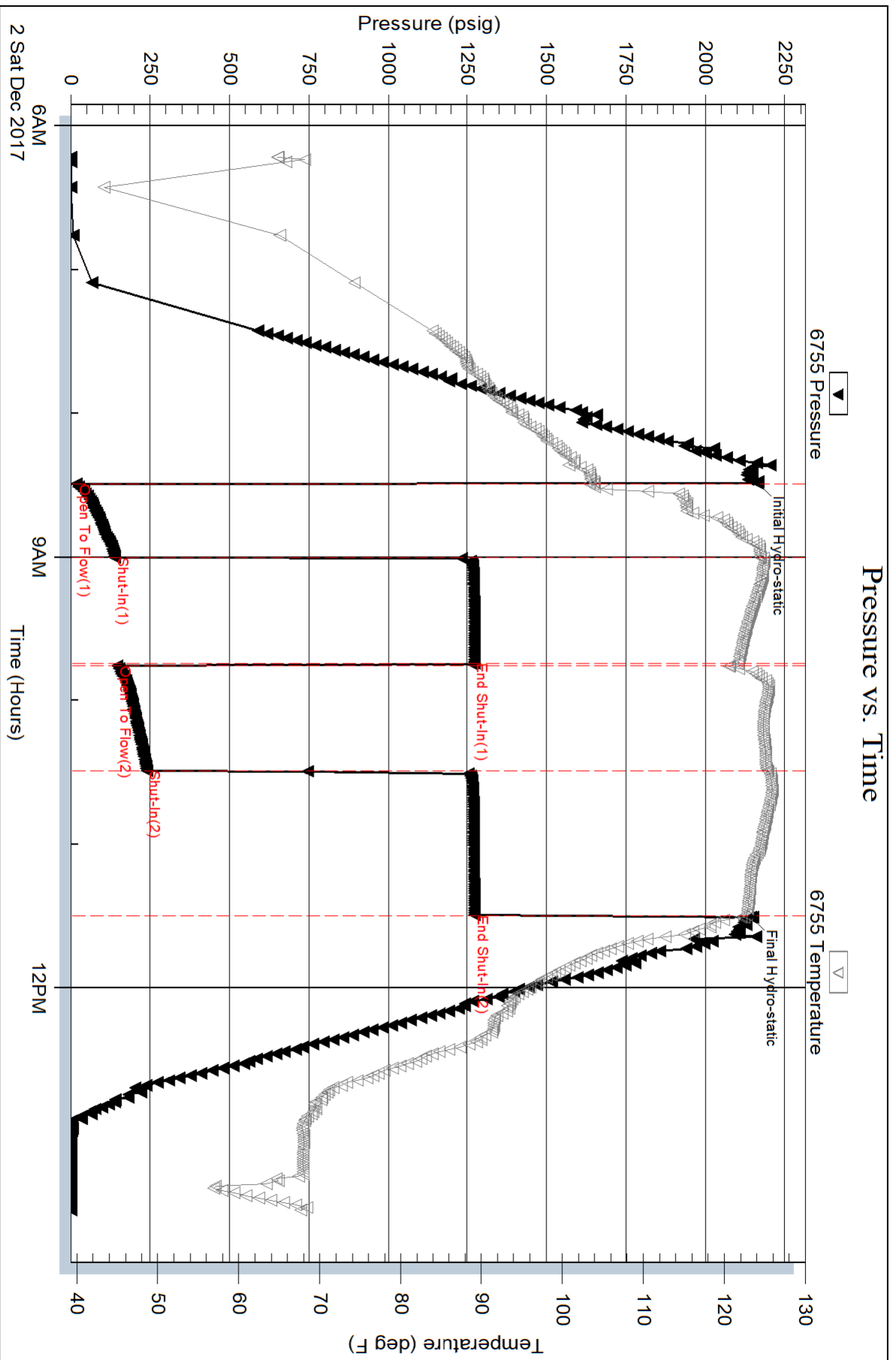
Serial #:

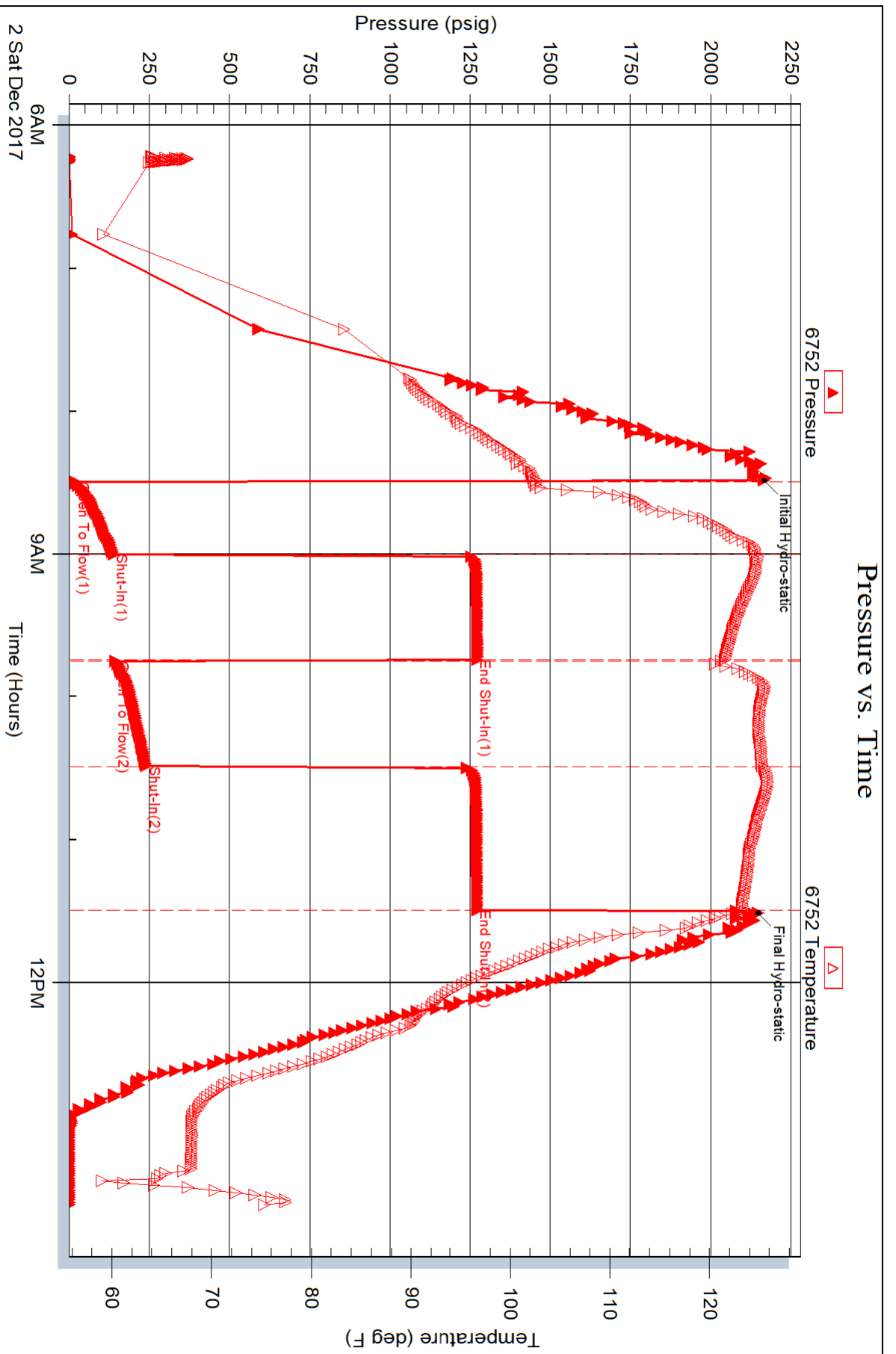
Laboratory Name:

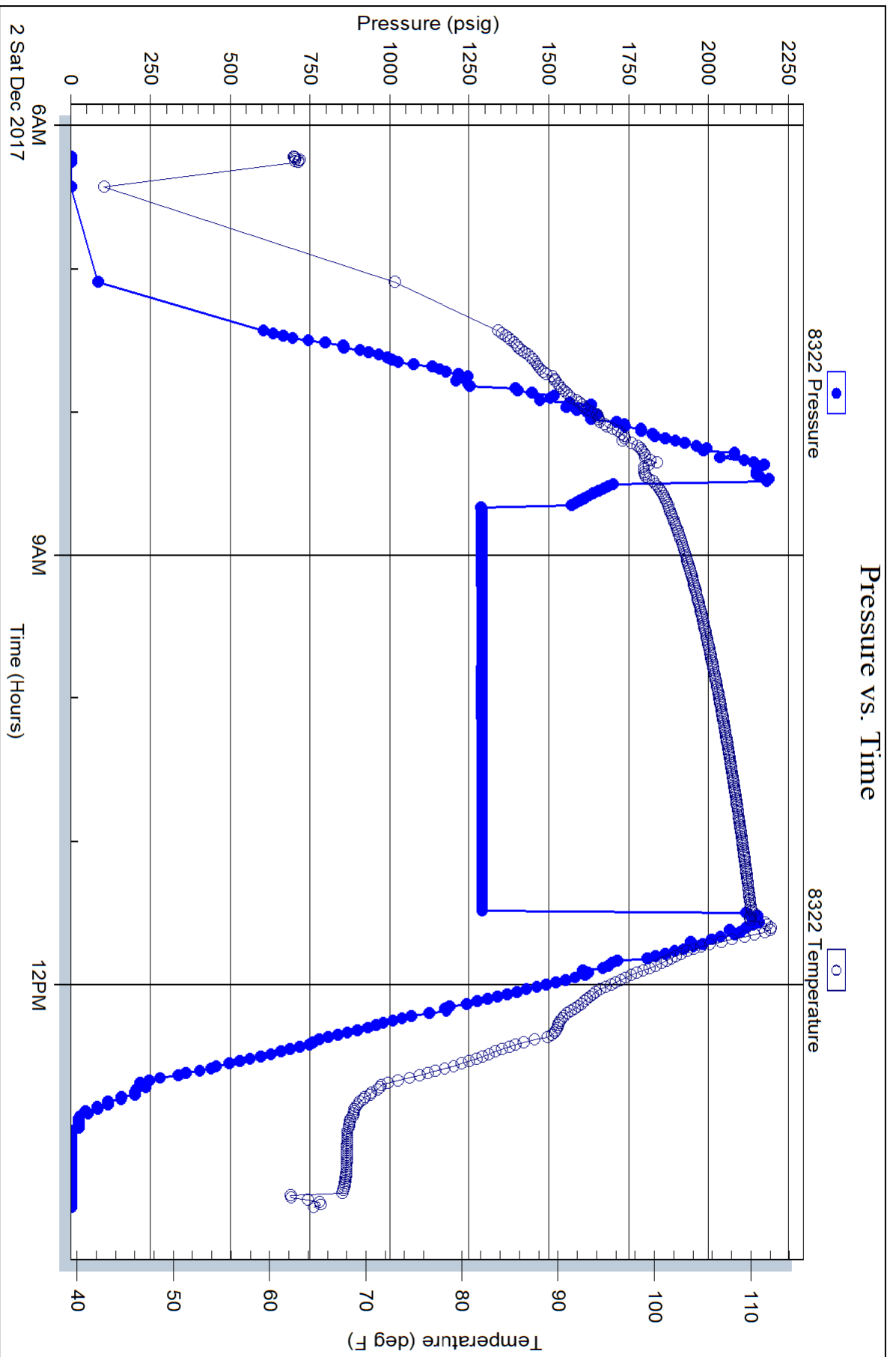
Laboratory Location:

Recovery Comments: Recovery Resistivity .415 ohms @ 64 deg

Pressure vs. Time







Wellsite Services, LLC

John Goldsmith
(316) 640-0236

427 Roosevelt St.
Cheney, KS 67025

Scale 1:240 (5"=100') Imperial Measured Depth Log

Well Name: #4 Moore Heirs
API: 15-135-25981
Location: 930' FSL & 1689' FEL, Sec 30-19S-21W, NE SW SE
License Number: REI #4767
Spud Date: 11/21/2017
Surface Coordinates: LAT: 38.3665388
LONG: -99.6830962
Bottom Hole Vertical Hole
Coordinates: 1/2 Degree Deviation
Ground Elevation (ft): 2263' K.B. Elevation (ft): 2271'
Logged Interval (ft): 3550' To: RTD Total Depth (ft): 4500'
Formation: Miss "Gilmore City" at RTD
Type of Drilling Fluid: Chemical

Region: Ness County

Drilling Completed: 12/3/2017

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Ritchie Exploration Inc.
Address: 8100 E. 22nd St. N. #700
Wichita, KS 67226
(316) 691-9500

GEOLOGIST

Name: John Goldsmith
Company: Wellsite Services LLC
Address: 427 Roosevelt St.
Cheney, KS 67025
(316) 640-0236

RIG RECORDS

Contractor: WW Drilling Rig #12
Pusher: Calvin Phannensteil

Collar Tally: 464'

Pump: National K-380
Liner & Stroke: 6 x 14

BIT RECORDS

Size:	Type:	Footage:	Condition:	Hours:	Serial #:
12 1/4"	Sm-tooth	0-221'	RR	2.75	RD 7490
7 7/8"	Sm-F27	221'-4500'	New	137.25	RJ 3492

COMMENTS

Surface Casing: 5 joints of 8 5/8" set @ 220'
Production Casing: 5.5" production casing was set.
Mud by: MudCo
DST's by: Trilobite Testing
Logs by: Pioneer Energy Services (DIL, CN-CD, ML)
RTD=4500' LTD=4490'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Base of Anhydrite	1531'	+740	1516'	+755
Stotler	3250'	-979	3242'	-971
Heebner Shale	3764'	-1493	3754'	-1483
Toronto	3780'	-1509	3771'	-1500
Lansing	3812'	-1541	3802'	-1531
Muncie Creek Shale	3968'	-1697	3957'	-1686
Stark Shale	4088'	-1817	4077'	-1806
Hushpuckney Shale	4120'	-1849	4108'	-1837
Base of KC	4146'	-1875	4134'	-1863
Altamont	4179'	-1908	4171'	-1900
Pawnee	4224'	-1953	4216'	-1945
Fort Scott	4308'	-2037	4298'	-2027
Cherokee Shale	4325'	-2054	4318'	-2047
Mississippian	4401'	-2130	4393'	-2122
RTD	4500'	-2229		
LTD			4490'	-2229

DST's

DST #1 "Ft Scott" 4291'-4321' 11-28-17 30-30-30-30

1st Blw: Fw bubls on open then dead (No BB)

2nd Blw: No blw, flushed, no help (No BB)

IFP: 15-18# ISIP: 24# FFP: 17-20# FSIP: 24#

Hyd: 2157-2131#

Rec: 1' Mud.

DST #2 "Miss" 4323'-4407' 11-29-17 30-30-30-30

1st Blw: Wk surf blw, dead in 6min (No BB)

2nd Blw: No blw, flushed, surf blw dead in 3min (No BB)

IFP: 21-33# ISIP: 368# FFP: 30-41# FSIP: 368#

Hyd: 2175-2155#

Rec: 50' OCM (2% Oil).

DST #3 "Miss" 4406'-4413' 11-29-17 30-30-30-30

1st Blw: Wk surf blw, dead in 1.5min (No BB)

2nd Blw: No blw, flushed, surg then dead (No BB)

IFP: 19-35# ISIP: 1178# FFP: 39-57# FSIP: 1143#

Hyd: 2233-2158#

Rec: 5' Clean Oil, 100' OCM (5% Oil).

DST #4 "Osage" 4411'-4418' 11-30-17 30-30-30-30

1st Blw: Tool slid 6', stillf 5-6' high, 1/2" blw dead in 8min (No BB)

2nd Blw: No blw, flushed, surg then dead (No BB)

IFP: 31-59# ISIP: 1777# FFP: 1788-52# FSIP: 1393#

Hyd: 2170-2153#

Rec: 60' OSM.

DST #5 "Osage" 4412'-4418' 11-30-17 30-45-45-60

1st Blw: Tool slid 3', 1" blw dead in 8min (No BB)

2nd Blw: Surf blw dead 1min, flushed, surg then dead (No BB)

IFP: 66-61# ISIP: 1237# FFP: 61-81# FSIP: 1252#

Hyd: 2217-2187#

Rec: 120' OCM (5% Oil).

DST #6 "Lower Dolomite" 4425'-4439' 12-2-17 30-45-45-60

1st Blw: Surf blw blt to 5" (No BB)

2nd Blw: Surf blw blt to 1/2", then dead 13min (No BB)

IFP: 17-139# ISIP: 1272# FFP: 146-239# FSIP: 1272#

Hyd: 2164-2142#

Rec: 191' MW (80% Wtr), 310' MW (95% Wtr).

ROCK TYPES



Anhy



Dol



Sltst



Sandylms



Cht



Lmst



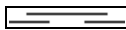
Ss



Shaly ls



Congl



Shale



Carb sh

ACCESSORIES

EVENTS



Circ



Conn

FOSSIL



Brach



Bryozoa



Crin



Foram



Fossil



Gastro



Oolite



Ostra



Fuss



Oolcast

MINERAL



Calc



Chtdk



Chtlt



Glau



Pyr



Sil

TEXTURE



Chalky



Crslxln

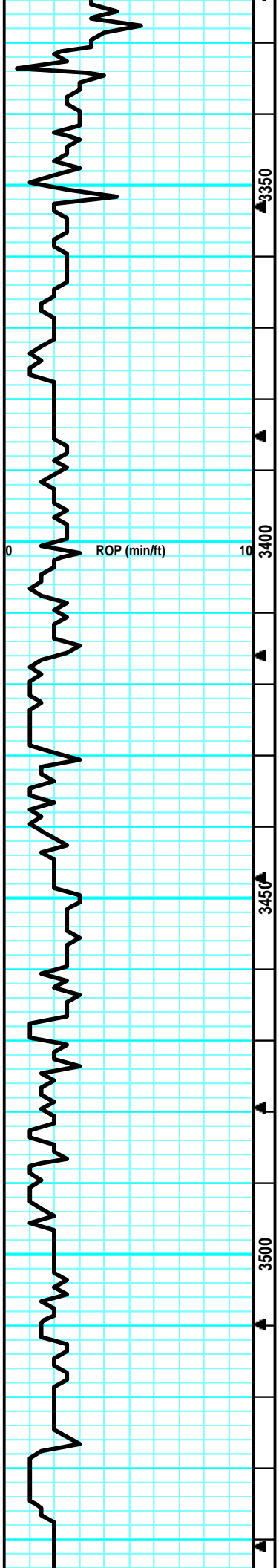


Finexln



Microxln

<p>Drilling Time</p> <p>ROP (min/ft) ———</p>	<p>Depth</p>	<p>Lithology</p>	<p>CFS Point</p> <p>Oil Shows</p>	<p>Geological Descriptions</p>	<p>Remarks</p>
	<p>0</p> <p>10</p> <p>1500</p>			<p>Morning Reported Activity @ 7:00am</p> <p>11/21/2017: Rig Spud @ 3:30pm 11/22/17: drlg @ 464' 11/23/17: drlg @ 2065' 11/24/17: drlg @ 2760' 11/25/17: drlg @ 3340' (Mud Displaced) 11/26/17: drlg @ 3880' 11/27/17: Wiper Trip to surface @ 4146' 11/28/17: DST #1 (Ft Scott) 11/29/17: DST #2 & DST #3 (Miss) 11/30/17: CFS @ 4418' (DST #4 & DST #5 Osage) 12/1/17: TBIH after Test 12/2/17: RTD @ 4500' (Ran E-Log & DST #6)</p>	<p>Survey @ 221' = 1/2 Degree</p> <p>Anhydrite @ 1507' (+764)</p> <p>B/Anhydrite @ 1531' (+740)</p> <p>Mud Report #3 2811' 11/24/17 Wt Vis pH 9.5 32 7.0 Filt Chl LCM n/c 48K 1#</p>
	<p>0</p> <p>10</p> <p>3200</p> <p>3250</p> <p>3300</p>			<p>Drilling Time @ 3200' on 11/25/2017</p>	<p>Stotler @ 3250' (-979)</p>

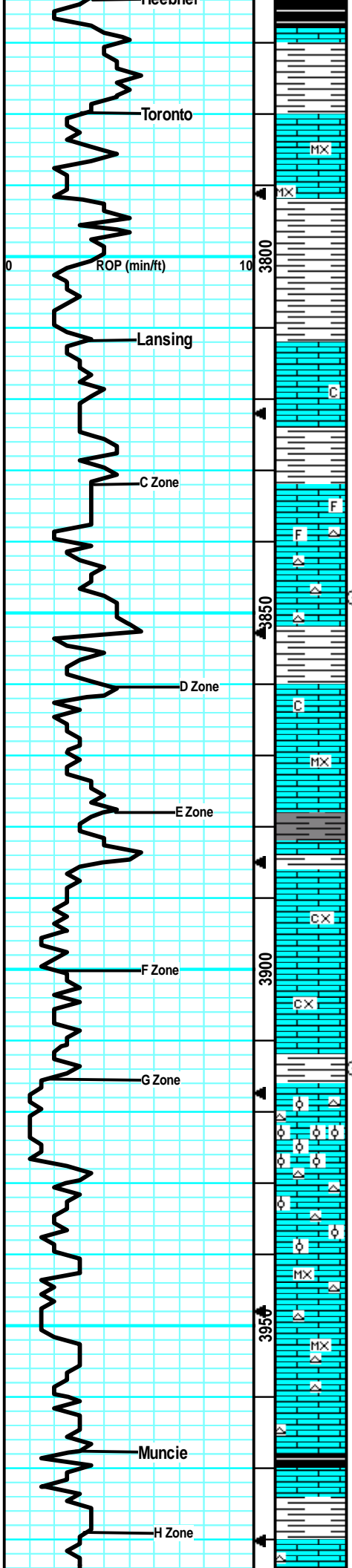


**Displace Mud @ 3390'
(480 bbls)**

Mud Report #4
 3398' 11/25/17
 Wt Vis pH
 8.6 68 11.5
 Filt Chl LCM
 8.0 2.4K 2#

10' Samples @ 3550' on 11/25/2017

LS: grv/tan. slght mott. fn xln. flakey/mealy. tr-nvp. sm



fn xln, fw foss frags, sub-chlky, flakey, tr-nvp, no odr, ns.

SH: gry/drk gry, silty, svrl LS: gry/tan, slight mott, fn xln, fw foss frags, dense, flakey, sub-chlky, tr-nvp, no cup odr, ns.

LS: crm/lt tan, sing, micro-fn xln, dense, brittle, sub-chlky, tr-ppt intxn por in fw pcs, no odr, ns.

LS: crm/lt tan, sing, micro-fn xln, dense, brittle, chlky, tr-nvp, fw pcs pur chl, fw SH: drk gry/gry, silty, no odr, ns.

LS: tan/lt gry, sing, fn xln, v fw foss frags, dense, fw flakey, sub-chlky, tr-nvp, fw SH: drk gry/brn, silty, med crush, no odr, ns.

LS: lt tan/lt gry, slight mott, fn xln, sub-chlky, fw flakey/mealy, tr-nvp, brittle, tr-nvp, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, sub-chlky, sm dense, brittle, tr-nvp, fw pcs chl, fw SH: gry, silty, no odr, ns.

LS: tan/lt gry, slight mott, fn xln, fw foss crin/frags, dense, sm firm, tr-nvp, svrl SH: drk gry/brn, silty, no cup odr, ns.

LS: lt gry/lt tan, slight mott, fn xln, dense, sub-chlky, brittle, tr-nvp, fw Chert: gry/wht, foss, sharp, no odr, ns.

SH: gry/brn, silty, med crush, fw LS: lt tan, slight mott, fn xln, foss w/ fuss/brach, sm brittle, fw dense, chlky in prt, tr-nvp, no odr, ns.

LS: lt tan/lt gry, slight mott, fn xln, brittle, chlky, fw flakey/mealy, tr-nvp, fw pcs chl, no odr, ns.

LS: lt tan, sing, micro-fn xln, chlky, brittle, tr-nvp, svrl pcs pur chl, no odr, ns.

LS: tan/gry, slight mott, fn xln, dense, sm brittle, fw flakey, tr-nvp, fw SH: drk gry, silty, no odr, ns.

LS: gry/lt brn, mott in prt, fn-crs xln, dense, many firm, flakey/mealy, tr-nvp, no cup odr, ns.

LS: lt brn/lt tan, mott in prt, fn-crs xln, dense, chlky, fw brittle, sm hard, tr-nvp, svrl pcs chl, no cup odr, ns.

LS: crm/lt tan sing, micro-fn xln, dense, brittle, chlky, tr-nvp, svrl pcs chl, no cup odr, ns.

LS: crm/lt tan, sing, mico-fn xln, dense, brittle, chlky, tr-nvp, fw Chert: gry/wht, foss, sharp, no odr, ns.

LS: tan/lt tan, sing, fn xln, mostly brittle, chlky, tr-nvp, fw Chert: wht/lt gry, foss, sharp, no odr, ns.

LS: tan/lt tan, slight mott, sm v ool, brittle, gd intool/vuggy por, svrl pcs chlky, no odr, ns.

LS: crm/lt tan, sing, micro-fn xln, brittle, dense, sub-chlky, tr-nvp, fw Chert: wht, sharp, fw pcs chl, no cup odr, ns.

LS: lt tan, sing, micro-fn xln, dense, brittle, chlky in prt, tr-nvp, fw pcs pur chl, no odr, ns.

LS: lt tan/lt gry, slight mott, fn xln, sub-chlky, many dense, tr-nvp, no cup odr, ns.

SH: blk/drk gry, silty, sm carb, fw LS: lt tan/lt gry, sing, fn xln, dense, sm firm, tr-nvp, no odr, ns.

LS: lt tan/lt gry, sing, fn xln, mostly dense, sm brittle, sub-chlky, tr-nvp, fw Chert: gry, sharp, no cup odr, ns.

Heebner @ 3764' (-1493)

Toronto @ 3780' (-1509)

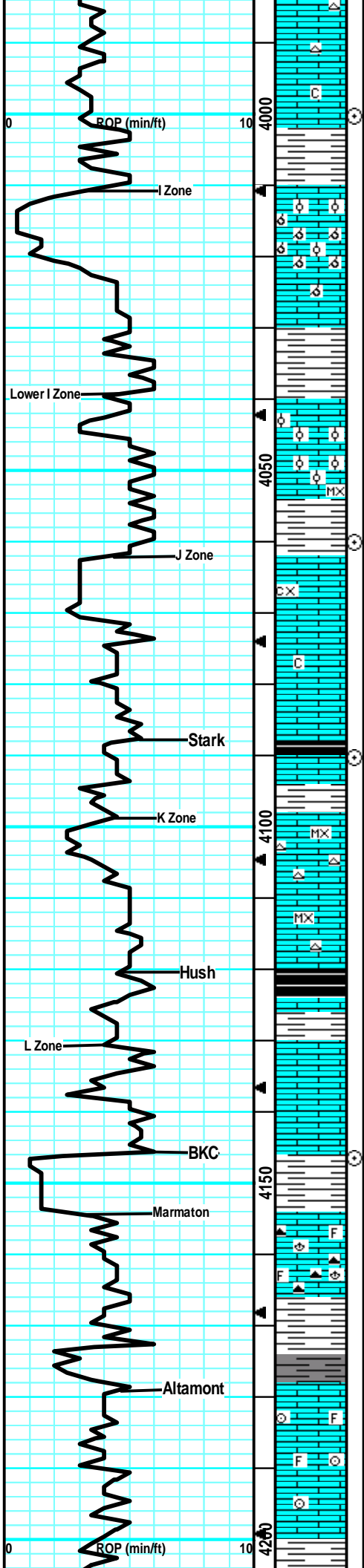
Lansing @ 3812' (-1541)

CFS @ 3848' (30"/60")

CFS @ 3914' (30"/60")

Mud Report #5
3914' 11/26/17
Wt Vis pH
9.0 53 10.5
Filt Chl LCM
8.0 4.5K 2#

Muncie Creek @ 3968' (-1697)



LS: lt tan, sing, fn xln, many dense, fw flakey, sub-chlky, tr-nvp, no cup odr, ns.

LS: lt tan/lt gry, sing, fn xln, dense, sub-chlky, sm flakey/mealy, tr-nvp, no cup odr, ns.

LS: tan/lt tan, slight mott, fn xln, sm v ool, mostly brittle, sm gd oolcast por, sm chlky, no cup odr, ns.

LS: tan/lt gry, slight mott, fn xln, sm v ool, mostly brittle, sm gd oolcast/vuggy por, fw pcs chl, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, fw ool, mostly dense, sm brittle, chlky in prt, tr-nvp, svrl SH: gry/brn, silty, no cup odr, ns.

LS: gry/lt tan, slight mott, fn xln, fw ool, many dense, fw flakey/mealy, brittle, tr-nvp, no odr, ns.

LS: tan/lt tan, sing, micro-fn xln, dense, sub-chlky, sm firm, tr-nvp, no cup odr, ns.

LS: lt brn/gry, mott in prt, fn-crs xln, dense, firm, fw flakey, tr-nvp, abund chl, no odr, ns.

LS: gry/tan, sing, fn xln, dense, sm brittle, chlky, tr-nvp, abund chlky, no cup odr, ns.

LS: tan/lt gry, sing, fn xln, dense, sm brittle, sub-chlky, fw flakey/mealy, tr-nvp, fw SH: drk gry/blk, silty, carb, no cup odr, ns.

LS: tan/lt tan, sing, fn xln, dense, brittle, sub-chlky, tr-nvp, fw pcs pur chl, no odr, ns.

LS: lt tan, sing, micro-fn xln, dense, brittle, sub-chlky, tr-nvp, fw Chert: wht, sharp, no odr, ns.

LS: lt tan/lt gry, sing, micro-fn xln, dense, brittle, sub-chlky, tr-nvp, fw pcs pur chl, no odr, ns.

LS: tan/lt gry, sing, fn xln, dense, sub-chlky, tr-nvp, abund SH: blk, silty, carb, no cup odr, ns.

LS: tan/gry, sing, fn xln, dense, sm firm, tr-nvp, svrl SH: brn/blk, silty, sm carb, no odr, ns.

LS: gry/lt tan, slight mott, fn xln, sm brittle, sub-chlky in prt, fw flakey/mealy, tr-nvp, no odr, ns.

SH: gry/brn/grn, silty, soft, fw waxy, fw SltStn: blu/gry, gritty, matallic shimmr, v soft, friab, no odr, ns.

LS: gry/lt brn, slight mott, fn xln, foss w/ brach/frags, dense, firm tr-nvp, fw Chert: gry, foss, sharp, svrl SH: gry/grn, silty, no cup odr, ns.

LS: gry/tan, sing, fn xln, dense, firm, sub-chlky, tr-nvp, abund SH: gry/brn, silty, soft, no odr, ns.

LS: tan/gry, slight mott, fn xln, fw foss w/ crin/frags, mostly dense, firm, tr-nvp, svrl SH: gry/brn, silty, no cup odr, ns.

LS: gry/lt tan, sing, fn xln, many flakey/mealy, sub-chlky, firm, tr-nvp, fw SH: drk gry/blk, silty, fw carb, no cup odr, ns.

LS: gry/lt tan, sing, fn xln, flakey/mealy, sub-chlky,

CFS @ 4000'
(30"/60")

CFS @ 4060'
(30"/60")

Stark @ 4088' (-1817)

CFS @ 4060'
(30"/60")

Hushpuckney @ 4120' (-1849)

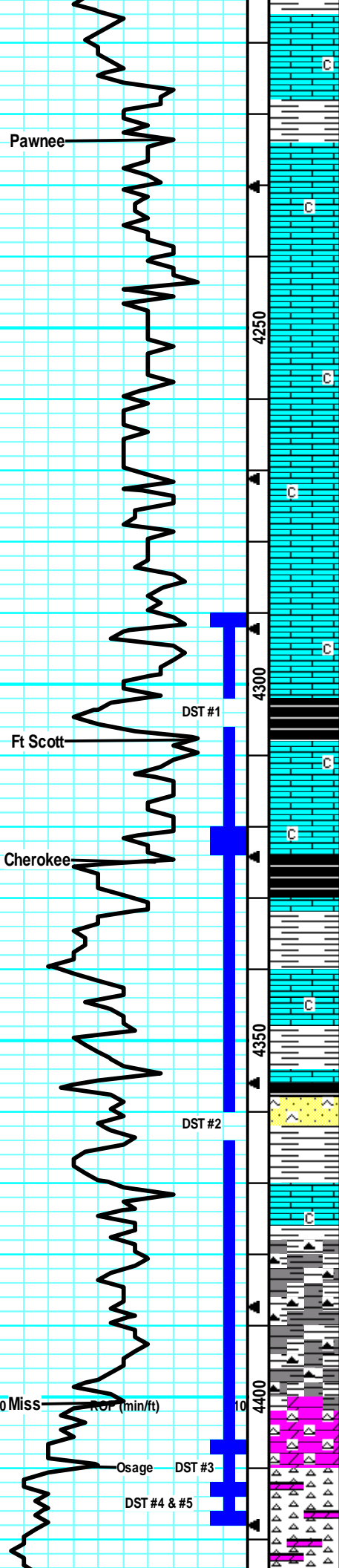
CFS @ 4146'
(30"/60") Survey @ 4146' = 3/4 Degree

BKC @ 4146' (-1875)

Wiper Trip to Surface @ 4146'

Mud Report #6	4146'	11/27/17
Wt	Vis	pH
9.25	56	9.5
Filt	Chl	LCM
6.8	7.1K	2#

Altamont @ 4179' (-1908)



LS: gry/lt tan, sing, fn xln, flakey/mealy, sub-chlky, tr-nvp, fw pcs chl, no cup odr, ns.

LS: gry/tan, sing, fn xln, fw flakey/mealy, sub-chlky, many firm, tr-nvp, fw pcs chl, no odr, ns.

LS: gry/tan, sing, fn xln, dense, firm, sub-chlky, tr-nvp, no cup odr, ns.

LS: lt gry/tan, sing, fn xln, dense, firm, sub-chlky in prt, tr-nvp, no cup odr, ns.

LS: tan/lt gry, sing, fn xln, mostly dense, firm, fw sub-chlky, tr-nvp, no cup odr, ns.

LS: gry/tan, sing, fn xln, dense, firm, fw flakey/mealy, tr-nvp, no cup odr, ns.

LS: gry/lt tan, sing, fn xln, dense, firm, sub-chlky, tr-nvp, no cup odr, ns.

LS: gry/tan, sing, fn xln, dense, firm, fw sub-clky, tr-nvp, no cup odr, ns.

LS: gry/lt brn, sing, fn xln, dense, firm, fw sub-chlky, tr-nvp, no cup odr, ns.

LS: gry/lt brn, sing, fn xln, dense, firm, fw flakey/mealy, tr-nvp, sm SH: blk/drck gry, silty, sm carb, no cup odr, ns.

SH: blk, silty, soft, carb, no odr, ns.

LS: tan/lt gry, slight mott, fn xln, brittle, flakey/mealy, v lght brn sptd stn, pos cut, dul yel fluor, no cup odr, vssfo.

LS: tan/lt gry, slight mott, fn xln, sub-chlky, brittle, sm scat vuggy por, lght brn stns in por, ssfo on brk, gd flour/cut, wk cup odr.

LS: gry/tan, slight mott, fn xln, flakey/mealy, sub-chlky, tr-nvp, sm SH: drk gry/blk, silty, carb, no cup odr, ns.

SH: gry/blu/blk, silty, med crush, fw carb, fw LS: tan/gry, fn xln, dense, firm, tr-nvp, no odr, ns.

LS: gry/lt tan, slight mott, fn xln, sub-chlky, dense, fw flakey, tr-nvp, svrl SH: brn/gry, silty, no cup odr, ns.

LS: gry/tan, slight mott, fn xln, sub-chlky, flakey/mealy, tr-nvp, fw SH: gry/brn, silty, no odr, ns.

LS: gry/tan, fn xln, slight mott, dense, firm, tr-nvp, fw SS: gry/blu, fn grn, arg, pr srted, firm, tr-nvp, svrl SH: gry/brn, no odr, ns.

SH: gry/blu/brn, silty, soft, fw LS: gry/tan, sub-chlky, brittle, tr-nvp, no odr, ns.

SH: gry/brn/blu/yel, silty, soft, sm withrd, fw waxy, fw LS: gry/tan, slight mott, fn xln, sub-chlky, tr-nvp, no odr, ns.

SH: gry/brn/yel, silty, sm withrd, soft, fw LS: gry, slight mott, fn xln, sub-chlky, tr-nvp, no odr, ns.

SH: brn/yel/grn, sm withrd, silty, soft, fw Chert: yel, trip, sharp, fw LS: gry, mott, fn xln, tr-nvp, no cup odr, ns.

DOL: gry, slight mott, fn xln, fw slight cherty, sucrcs, sat stn, yel fluor, strm cut, gd sfo on brk, sml sphr of oil clng to rx chp, strng odr.

DOL: brn, sing, fn xln, brittle, sucrosic, saturd fn intxln por, gd fluor/cut, gd sfo, gd odr, lrg influx Chert: wht, sharp, pr frac edge por, lght brn snts, gd fluor/cut.

Chert: wht, sharp, fr intxln por on frac edge, lght brn patchy stns, ssfo, gd cup odr, gd fluor/cut, fw DOL: brn, fn xln, brittle, sat fn inxln por, gd sfo.

4423': Chert w/ more vuggy, had a darker/blacker heavy oil, gd cup

Pawnee @ 4224' (-1953)

DST #1 "Ft Scott" 4291'-4321'
 11-28-17 30-30-30-30
 1st Blw: Fw bubls on open then dead (No BB)
 2nd Blw: No blw, flushed, no help (No BB)
 IFP: 15-18# ISIP: 24# FFP:
 17-20# FSIP: 24#
 Hyd: 2157-2131#
 Rec: 1' Mud.

Ft Scott @ 4308' (-2037)

Mud Report #7
 4321' 11/28/17
 Wt Vis pH
 9.1 73 9.0
 Filt Chl LCM
 7.2 5.2K 2#

CFS @ 4321'
 (30"/60")

Cherokee @ 4325' (-2054)

DST #2 "Miss" 4323'-4407'
 11-29-17 30-30-30-30
 1st Blw: Wk surf blw, dead in 6min (No BB)
 2nd Blw: No blw, flushed, surf blw dead in 3min (No BB)
 IFP: 21-33# ISIP: 368# FFP:
 30-41# FSIP: 368#
 Hyd: 2175-2155#
 Rec: 50' OCM (2% Oil).

DST #3 "Miss" 4406'-4413'
 11-29-17 30-30-30-30
 1st Blw: Wk surf blw, dead in 1.5min (No BB)
 2nd Blw: No blw, flushed, surg then dead (No BB)
 IFP: 19-35# ISIP: 1178# FFP:
 39-57# FSIP: 1143#
 Hyd: 2233-2158#
 Rec: 5' Clean Oil, 100' OCM (5% Oil).

Mud Report #8
 4407' 11/29/17
 Wt Vis pH
 9.3 61 8.5
 Filt Chl LCM
 9.2 7.7K 2#

Mud Report #9
 4418' 11/30/17
 Wt Vis pH
 9.2 46 10.0
 Filt Chl LCM
 10.0 8.4K 2#

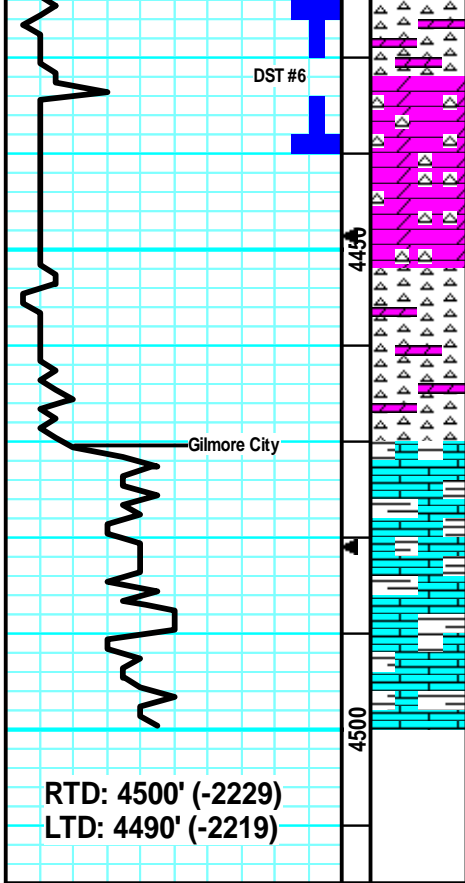
Miss @ 4401' (-2130)

Survey @ 4407' = 1/2 Degree

CFS @ 4407' (30"/60") Pipe Strap = 0.16' Long
 CFS @ 4413' (30"/60")
 CFS @ 4418' (30"/60")
 CFS @ 4423' (30"/60")

DST #4 hit fill 10' from bottom. Tool slid 5' and never made it to bottom. Retested formation with DST #5

DST #4 "Osage" 4411'-4418'



odr, gd sno ro.

Chert: wht/opaq, sharp, sm fr por on frac edges, stnd, v ssfo, gd cup odr,

Chert: wht/opaq, scat vuggy por, drk blk hvy stns on frac por edges, svrl DOL: brn, vuggy, sat heavy stns in por, gd cup odr.

Much of the same Chert and Dolomite, lrg influx of brn shale, silty, med crush, fr cup odr.

DOL: tan/lt brn, fn xln, gd vug por, firm, sm hard, drk brn stns, gd fluor/cut, fr sfo, fw gas bubs on brk, fr cup odr, svrl Chert: wht, sharp, pr por on frac edges w/ sho.

Chert: wht/opaq, sharp, pr por on frac edges, brn stns, gd fluor/cut, fr cup odr, vssfo on rx chp, sm vuggy DOL from above.

Chert: wht, sharp, pr por on frac edges, stnd, gd fluor/cut, vssfo, fr cup odr,

LS: crm/lt tan, sing, micro-fn xln, dense, brittle, sub-chlky, tr-nvp, no cup odr, abund SH: slough, no odr, ns.

LS: lt tan, sing, fn xln, dense, brittle, sub-chlky, tr-nvp, no odr, ns, abund SH: slough from above.

Almost all Shale Slough, fw LS: lt tan, fn xln, dense, sub-chlky in prt, tr-nvp, no odr, ns.

DST #4 Osage 4411-4410
11-30-17 30-30-30-30
1st Blw: Tool slid 6', stillf 5-6' high, 1/2" blw dead in 8min (No BB)
2nd Blw: No blw, flushed, surg then dead (No BB)
IFP: 31-59# ISIP: 1777# FFP: 1788-52# FSIP: 1393#
Hyd: 2170-2153#
Rec: 60' OSM.

CFS @ 4434' (30"/60")

DST #5 "Osage"
4412-4418' 11-30-17
30-45-45-60
1st Blw: Tool slid 3', 1" blw dead in 8min (No BB)
2nd Blw: Surf blw dead 1min, flushed, surg then dead (No BB)
IFP: 66-61# ISIP: 1237#
FFP: 61-81# FSIP: 1252#
Hyd: 2217-2187#
Rec: 120' OCM (5% Oil).

Mud Report #10
4418' 12/01/17
Wt Vis pH
9.2 62 9.0
Filt Chl LCM
13.6 9.4K 2#

DST #6 "Lower Dolomite"
4425-4439' 12-2-17
30-45-45-60
1st Blw: Surf blw blt to 5" (No BB)
2nd Blw: Surf blw blt to 1/2", then dead 13min (No BB)
IFP: 17-139# ISIP: 1272# FFP: 146-239# FSIP: 1272#
Hyd: 2164-2142#
Rec: 191' MW (80% Wtr), 310' MW (95% Wtr).

CFS @ 4500' (30"/60")

Mud Report #11
4500' 12/02/17
Wt Vis pH
9.2 43 10.0
Filt Chl LCM
10.4 9.2K 2#



#4 Moore Heirs

930' FSL & 1689' FEL

60' S & 39' W of NE SW SE Section 30-19S-21W

Ness County, Kansas

API# 15-135-25981-0000

Elevation: GL: 2263', KB: 2271'

Sample Tops			Ref. Well
Anhydrite	1507'	+764	-12
B/Anhydrite	1531'	+740	-11
Stotler	3250'	-979	-4
Heebner	3764'	-1493	-4
Toronto	3778'	-1507	-1
Lansing	3806'	-1535	Flat
Muncie	3968'	-1697	-2
Stark	4088'	-1817	Flat
Hush	4124'	-1853	-6
BKC	4146'	-1875	-2
Altamont	4178'	-1907	-3
Pawnee	4216'	-1945	+10
Fort Scott	4308'	-2037	Flat
Cherokee	4325'	-2054	+2
Mississippian	4396'	-2125	+5
RTD	4500'	-2229	



Nov. 21. 2017 10:56PM
 PRESSURE PUMPING LLC
 PO Box 884, Chanute, KS 66720
 620-431-9210 or 800-467-8676

9543/9484

No. 0465 P. 2
 TICKET NUMBER 54927
 LOCATION Oakley, KS
 FOREMAN Jerry

FIELD TICKET & TREATMENT REPORT
 CEMENT

Invoice # 811810 KS

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
11-21-17	7173	Moore Heers #9	30	19s	21w	Ness
CUSTOMER Rifelex			Bazine			
MAILING ADDRESS P.O. Box 783188			TRUCK#	DRIVER	TRUCK#	DRIVER
CITY WICHITA			731	COY D		
STATE KS			566	Seth O		
ZIP CODE 67278-3188						

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 221 CASING SIZE & WEIGHT 8 3/8 23.4
 CASING DEPTH 221 DRILL PIPE TUBING OTHER
 SLURRY WEIGHT 15.2 SLURRY VOL 1.24 WATER gal/sk CEMENT LEFT in CASING 20'
 DISPLACEMENT 12 1/2 DISPLACEMENT PSI MIX PSI RATE

REMARKS: Safety meeting + rig up on 4W 12 circulate casing mix 165 sks
 com 3% cc 20 gal wash pipe displs with 12 1/2 bbl H₂O + 5 gal
 cement to cellar

Cement circulated

Thank you
 Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0471		PUMP CHARGE	1150.00	1150.00
CE0002	20	MILEAGE	7.15	143.00
CE0711	7.76	ton mileage delivery (min)	660.00	660.00
CC5871	1480	Surface blend II	24.00	3960.00
CC5826	100	salt	NC	NC
			Subtotal	5913.00
			-30%	1773.90
			Subtotal	4139.10
			6.5% SALES TAX	180.18
			ESTIMATED TOTAL	4319.28

Rev'n 3737

AUTHORIZATION

[Signature]

TITLE

[Signature]

DATE

11-21-17

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's received copy, on the back of this form are in effect for services identified on this form



PRESSURE PUMPING LLC
 PO Box 884, Chanute, KS 66720
 620-431-9210 or 800-467-8676

No. 0487 P. 4
 TICKET NUMBER 54971

LOCATION Odell, KS
 FOREMAN Miles Shaw

FIELD TICKET & TREATMENT REPORT
 CEMENT

Invoice # 811975 KS

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
12-3-17	7173	Moore Hiers #4	30	195	21W	NESS
CUSTOMER R & D Exp. Exploration			132.000 5 to CR70			
MAILING ADDRESS P.O. Box 783188			1 East W. 10th			
CITY Wichita		STATE KS	ZIP CODE 67218-3188			

TRUCK #	DRIVER	TRUCK #	DRIVER
753	Troy W		
7727-07	Seth O		

JOB TYPE log string HOLE SIZE 7 1/2" HOLE DEPTH 4500' CASING SIZE & WEIGHT 5 1/2" 15.5#
 CASING DEPTH 4423 DRILL PIPE TUBING OTHER PC @ 1471'
 SLURRY WEIGHT 14.2 SLURRY VOL 1.4 WATER gal/sk CEMENT LEFT in CASING
 DISPLACEMENT 105% DISPLACEMENT PSI/100 1600 RATE

REMARKS: Safety meeting and Rig up on 4/11 dr. using Rig #12. Float Equipment on Baskets
on sat # 69 & 85 Centralizers on sat # 1, 2, 4, 69, 71. PC tool on sat # 700. 1471' Run in
105 sat Circulate casing thr mix 200 ss Th. to blend III O.C.C. cement shut down
Release Plus Clear pump lines displace 105% b/w water with 1000# ps-1:1 Plus
d/d lead @ 1000# ps.

5# Kalsed per sk
Pump 500 gal mud flush before cement Thanks Miles & crew
305 R#

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0453	1	PUMP CHARGE	2800.00	2800.00
CE0002	15	MILEAGE	7.15	107.25
CE0711	10.81 TONS	Ton Mileage delivery	660.00	660.00
CC58702	230 SK	Th. to blend III	26.00	5980.00
CC6000	54 #	LOT 20 Friction Reducer	7.85	483.90
CC6155	32 #	CDP / CAF 38 deframer	10.20	326.40
CC6071	1150 #	Kalsed	.50	575.00
CC6125	14989 500 gal	Mud Flush	.15	325.00
CP8254	1	5 1/2" latchdown plug & assembly	400.00	400.00
CP8485	1	5 1/2" Float-Shoe AFU	585.00	585.00
CP8534	5	5 1/2" Centralizer	81.00	405.00
CP8629	2	5 1/2" Baskets	385.00	770.00
CP8776	1	5 1/2" Port Collar	2850.00	2850.00
		Subtotal		11620.75
		less 308 discount		4862.25
		Subtotal		11345.29
		SALES TAX		575.13
		ESTIMATED TOTAL		11920.42

Revin 3737
 AUTHORIZATION [Signature] TITLE PRODUCTION SUP'T DATE 12/3/17



PRESSURE PUMPING LLC
PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

9674
45000

TICKET NUMBER 54951
LOCATION Ogley, KS
FOREMAN Jerry Y

FIELD TICKET & TREATMENT REPORT
CEMENT

Invoice # 811988

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
12-6-17	7173	Moore Hiers #4	30	19S	21W	Ness	
CUSTOMER		Basic 5 to 70		TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS		15 N. W. 16		731	Corey D		
P.O. Box 783188		7727127			Seth O		
CITY	STATE	ZIP CODE					
Wichita	KS	67278-3188					

JOB TYPE Port Collar HOLE SIZE _____ HOLE DEPTH _____ CASING SIZE & WEIGHT 5 7/2
 CASING DEPTH _____ DRILL PIPE _____ TUBING 2 7/8 OTHER P.C @ 1469
 SLURRY WEIGHT 12.5 SLURRY VOL 1.89 WATER gal/sk _____ CEMENT LEFT in CASING _____
 DISPLACEMENT 7 1/2 bbl / DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting & rig up on HD Oilfield Service test tool @ 1200# hold 5 min
 open top / take in rate 3 1/2 bbl @ 500# mix 200 sks 60/40 8% 1/4" # flow w/ 50#
 ch + displace with 7 1/2 bbl close tool press to 1200# hold 5 min run 5 gals + reverse
 clean with 30 bbl cement circulated for surface approx 2.5 sks to pit
 pull tubing & press casing to 500# & shut in

Thank you
Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0451	1	PUMP CHARGE	1900.00	1900.00
CE0002	15	MILEAGE	7.15	107.25
CE0711	9.4	ton mileage delivery	660.00	660.00
CC5831	200 sks	lite blend III	17.50	3500.00
CC6075	50 #	Clow seal	3.00	150.00
CC6080	500 #	hulls	1.00	500.00
CC5326	100 #	salt	NC	NC
			sub total	6817.25
			-30% disc.	2045.18
			sub total	4772.08
			SALES TAX	188.83
			ESTIMATED TOTAL	4960.91

Ravin 9797

AUTHORIZATION

TITLE PRODUCTION SUP'T

DATE 12/6/17

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.