

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](mailto: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.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61336

**DST#: 1**

Test Start: 2017.02.21 @ 22:53:15

## GENERAL INFORMATION:

Formation: **C**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:51:15  
 Time Test Ended: 05:30:30  
 Interval: **4020.00 ft (KB) To 4050.00 ft (KB) (TVD)**  
 Total Depth: 4050.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Mike Roberts  
 Unit No: 81  
 Reference Elevations: 3006.00 ft (KB)  
 3001.00 ft (CF)  
 KB to GR/CF: 5.00 ft

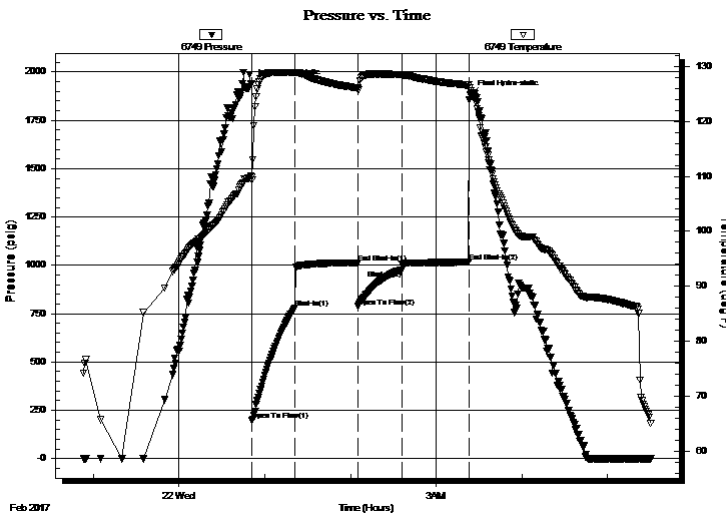
## Serial #: 6749

**Outside**

Press@RunDepth: 977.16 psig @ 4021.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.02.21 End Date: 2017.02.22 Last Calib.: 2017.02.22  
 Start Time: 22:53:15 End Time: 05:30:30 Time On Btm: 2017.02.22 @ 00:51:00  
 Time Off Btm: 2017.02.22 @ 03:24:00

TEST COMMENT: IF:BOB in 2 min.  
 IS:No return blow  
 FF:BOB in 2 min.  
 FS:No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1939.94	109.81	Initial Hydro-static
1	196.60	109.39	Open To Flow (1)
30	779.24	128.82	Shut-In(1)
74	1013.57	126.04	End Shut-In(1)
75	787.04	125.93	Open To Flow (2)
105	977.16	128.48	Shut-In(2)
152	1015.46	126.57	End Shut-In(2)
153	1882.61	125.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
310.00	w cm 30%w 70%m	3.22
310.00	mcw 10%m 90%w	4.35
1488.00	sw 100%sw	20.87

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61336

**DST#: 1**

Test Start: 2017.02.21 @ 22:53:15

## GENERAL INFORMATION:

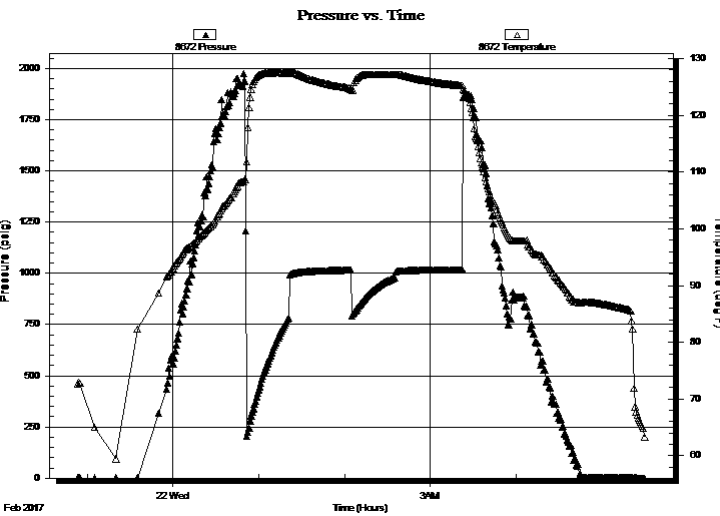
Formation: **C**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 00:51:15 Tester: Mike Roberts  
 Time Test Ended: 05:30:30 Unit No: 81  
 Interval: **4020.00 ft (KB) To 4050.00 ft (KB) (TVD)** Reference Elevations: 3006.00 ft (KB)  
 Total Depth: 4050.00 ft (KB) (TVD) 3001.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

## Serial #: 8672

Inside

Press@RunDepth: psig @ 4021.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.02.21 End Date: 2017.02.22 Last Calib.: 2017.02.22  
 Start Time: 22:53:15 End Time: 05:30:15 Time On Btm:  
 Time Off Btm:

TEST COMMENT: IF:BOB in 2 min.  
 IS:No return blow  
 FF:BOB in 2 min.  
 FS:No return blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
310.00	w cm 30%w 70%m	3.22
310.00	mcw 10%m 90%w	4.35
1488.00	sw 100%sw	20.87

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278

**L-Bo Land 3 C #1**

Job Ticket: 61336

**DST#: 1**

ATTN: John Goldsmith

Test Start: 2017.02.21 @ 22:53:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
310.00	w cm 30%w 70%m	3.219
310.00	mcw 10%m 90%w	4.348
1488.00	sw 100%sw	20.873

Total Length: 2108.00 ft      Total Volume: 28.440 bbl

Num Fluid Samples: 0

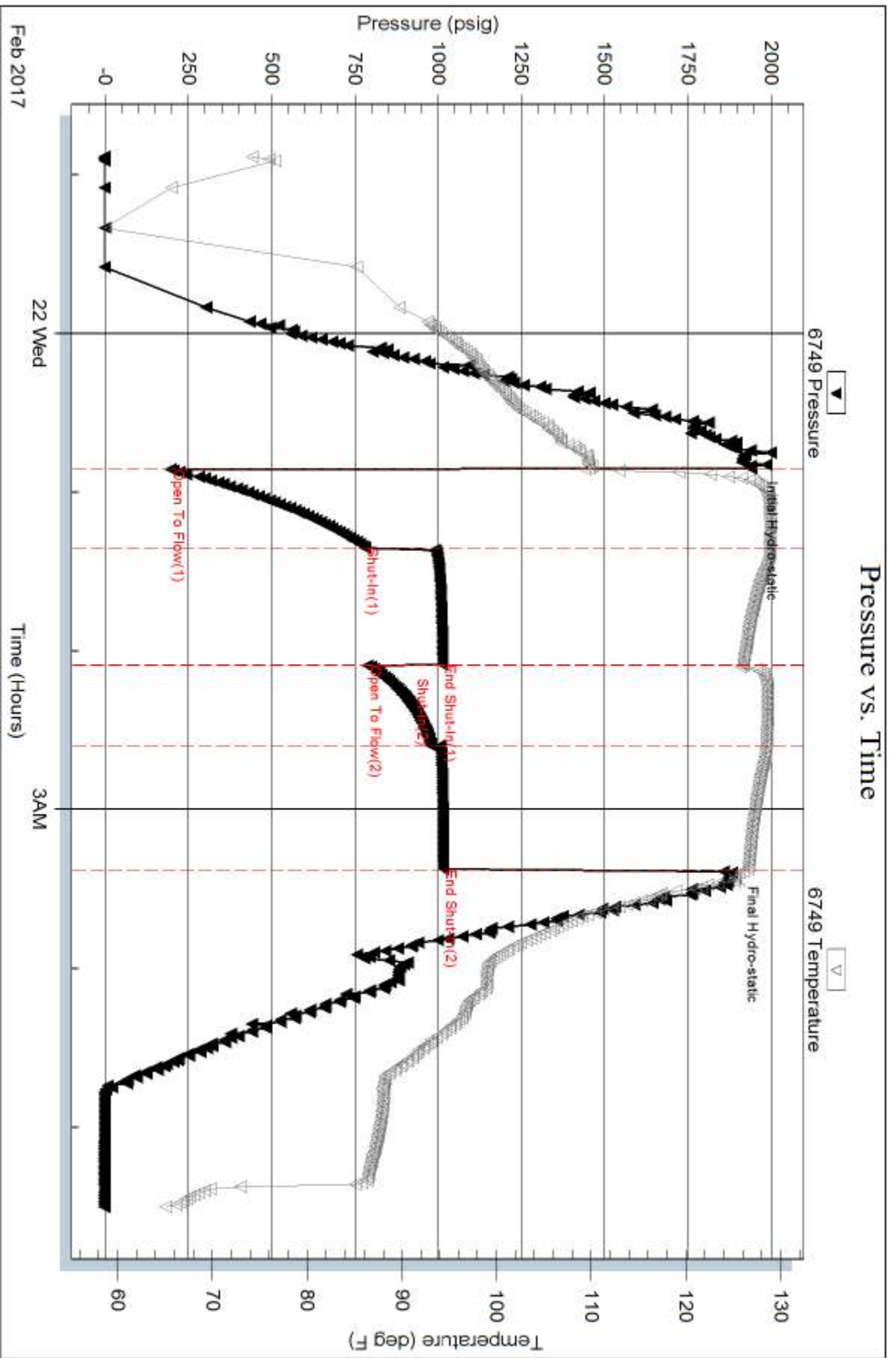
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .458@53.6=19,000 ppm



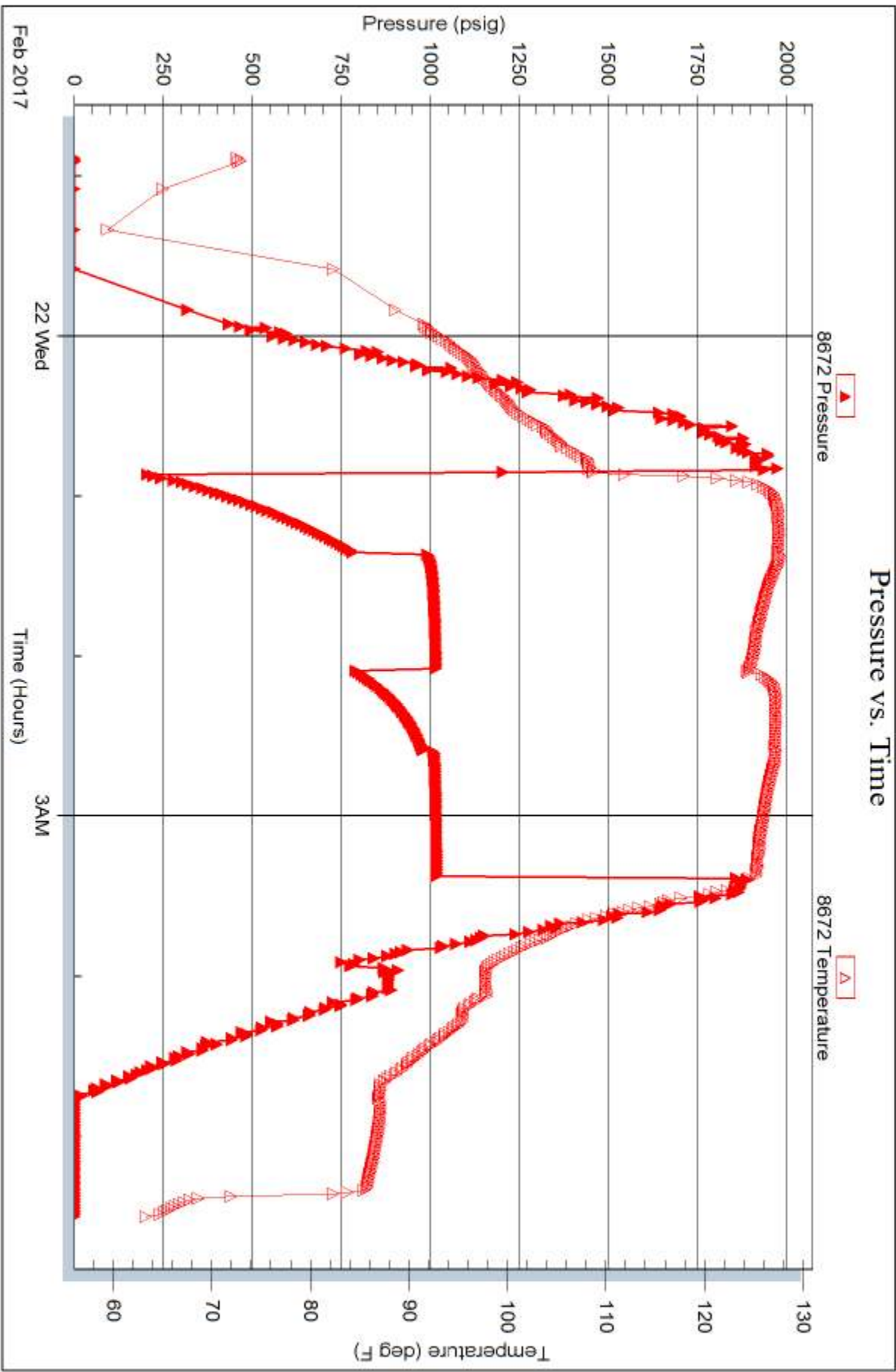
Serial #: 8672

Inside

Ritchie Exploration Inc.

L-Bo Land 3 C#1

DST Test Number: 1



Feb 2017

22 Wed

Time (Hours)

3AM





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N#700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61337

**DST#: 2**

Test Start: 2017.02.23 @ 19:56:15

## GENERAL INFORMATION:

Formation: **Altamont A-B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:55:30

Time Test Ended: 02:47:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

**Interval: 4440.00 ft (KB) To 4479.00 ft (KB) (TVD)**

Reference Elevations: 3006.00 ft (KB)

Total Depth: 4479.00 ft (KB) (TVD)

3001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

**Serial #: 6749 Outside**

Press@RunDepth: 105.17 psig @ 4441.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.23

End Date:

2017.02.24

Last Calib.: 2017.02.24

Start Time: 19:56:15

End Time:

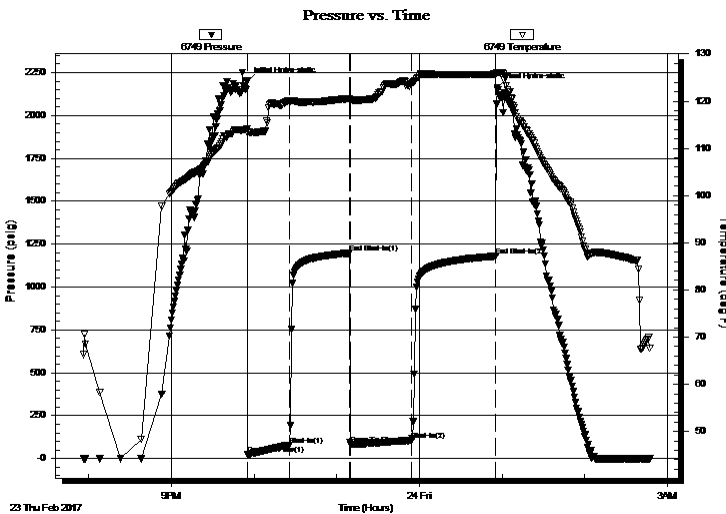
02:47:30

Time On Btm: 2017.02.23 @ 21:55:15

Time Off Btm: 2017.02.24 @ 00:56:30

**TEST COMMENT:** IF: Built to 2" blow  
IS: No return blow  
FF: No blow  
FS: No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2198.39	114.14	Initial Hydro-static
1	23.31	113.30	Open To Flow (1)
31	78.48	120.03	Shut-In(1)
74	1197.47	120.50	End Shut-In(1)
75	81.08	120.24	Open To Flow (2)
120	105.17	123.75	Shut-In(2)
181	1179.98	125.70	End Shut-In(2)
182	2162.56	126.01	Final Hydro-static

## Recovery

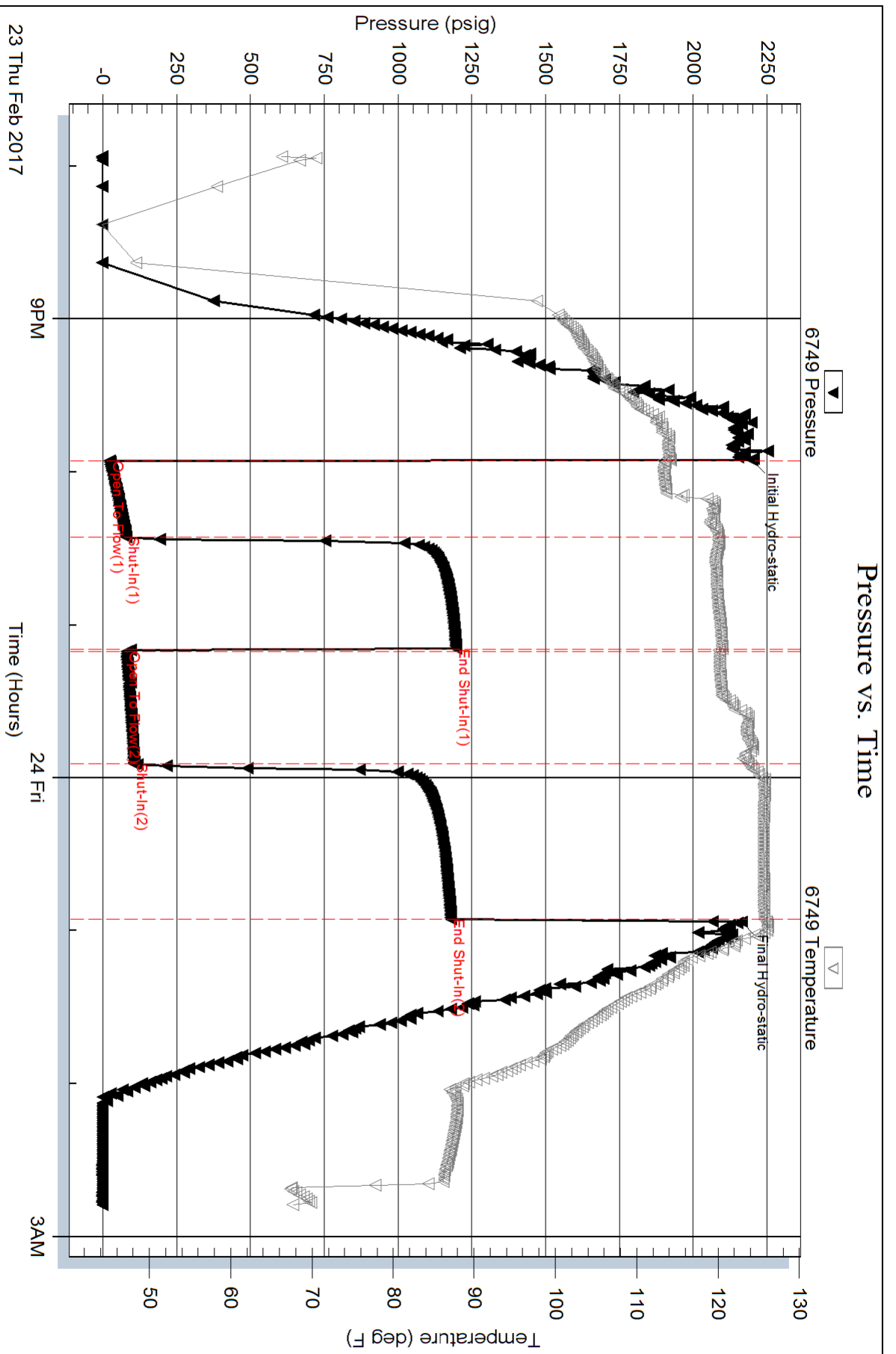
Length (ft)	Description	Volume (bbl)
150.00	mud 100%m	0.97

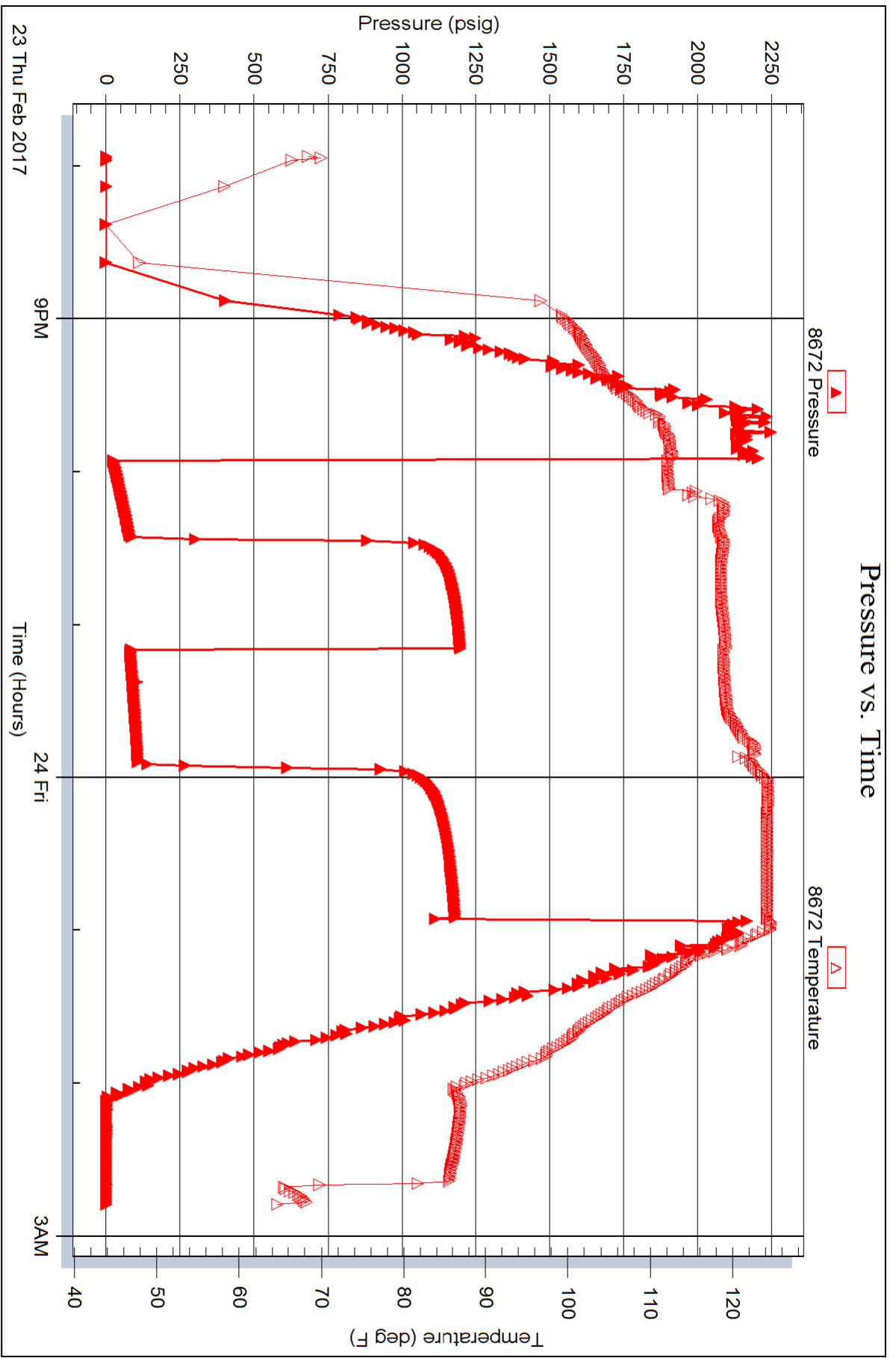
\* Recovery from multiple tests

## Gas Rates

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









**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61338

**DST#: 3**

Test Start: 2017.02.24 @ 13:12:15

## GENERAL INFORMATION:

Formation: **Altamont C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:13:45

Time Test Ended: 20:14:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

**Interval: 4472.00 ft (KB) To 4530.00 ft (KB) (TVD)**

Reference Elevations: 3006.00 ft (KB)

Total Depth: 4530.00 ft (KB) (TVD)

3001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6749 Outside**

Press@RunDepth: 143.33 psig @ 4510.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.24

End Date:

2017.02.24

Last Calib.:

2017.02.24

Start Time: 13:12:15

End Time:

20:14:00

Time On Btm:

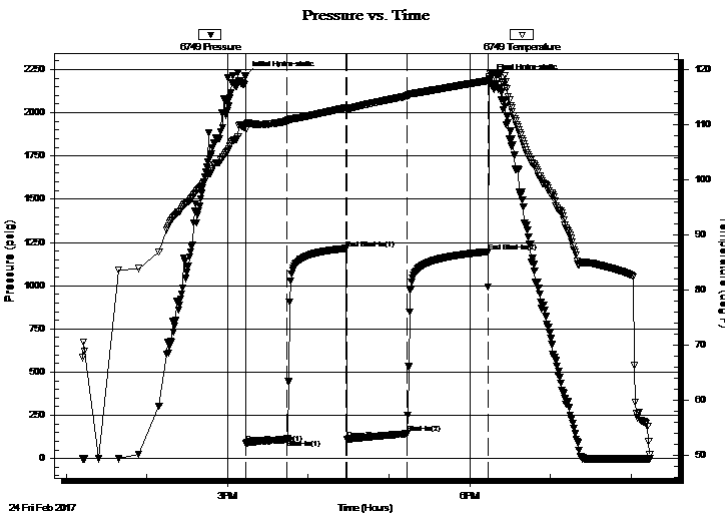
2017.02.24 @ 15:13:30

Time Off Btm:

2017.02.24 @ 18:14:45

**TEST COMMENT:** IF: Built to 4 1/2" blow  
IS: No return blow  
FF: Built to 2" blow  
FS: No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2212.15	110.14	Initial Hydro-static
1	86.44	109.26	Open To Flow (1)
31	111.03	110.71	Shut-In(1)
75	1215.07	113.17	End Shut-In(1)
75	113.27	112.88	Open To Flow (2)
120	143.33	115.25	Shut-In(2)
180	1196.09	118.06	End Shut-In(2)
182	2195.67	118.78	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	mcw 20%m 80%w (collar)	0.30
62.00	mcw 50%m 50%w (collar)	0.30
62.00	mud 100%m	0.87

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61338

**DST#: 3**

Test Start: 2017.02.24 @ 13:12:15

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 50.00 sec/qt  
Water Loss: 7.97 in<sup>3</sup>  
Resistivity: 0.00 ohm.m  
Salinity: 3000.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: 0 deg API  
Water Salinity: 19000 ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	mcw 20%m 80%w (collar)	0.305
62.00	mcw 50%m 50%w (collar)	0.305
62.00	mud 100%m	0.870

Total Length: 186.00 ft      Total Volume: 1.480 bbl

Num Fluid Samples: 0

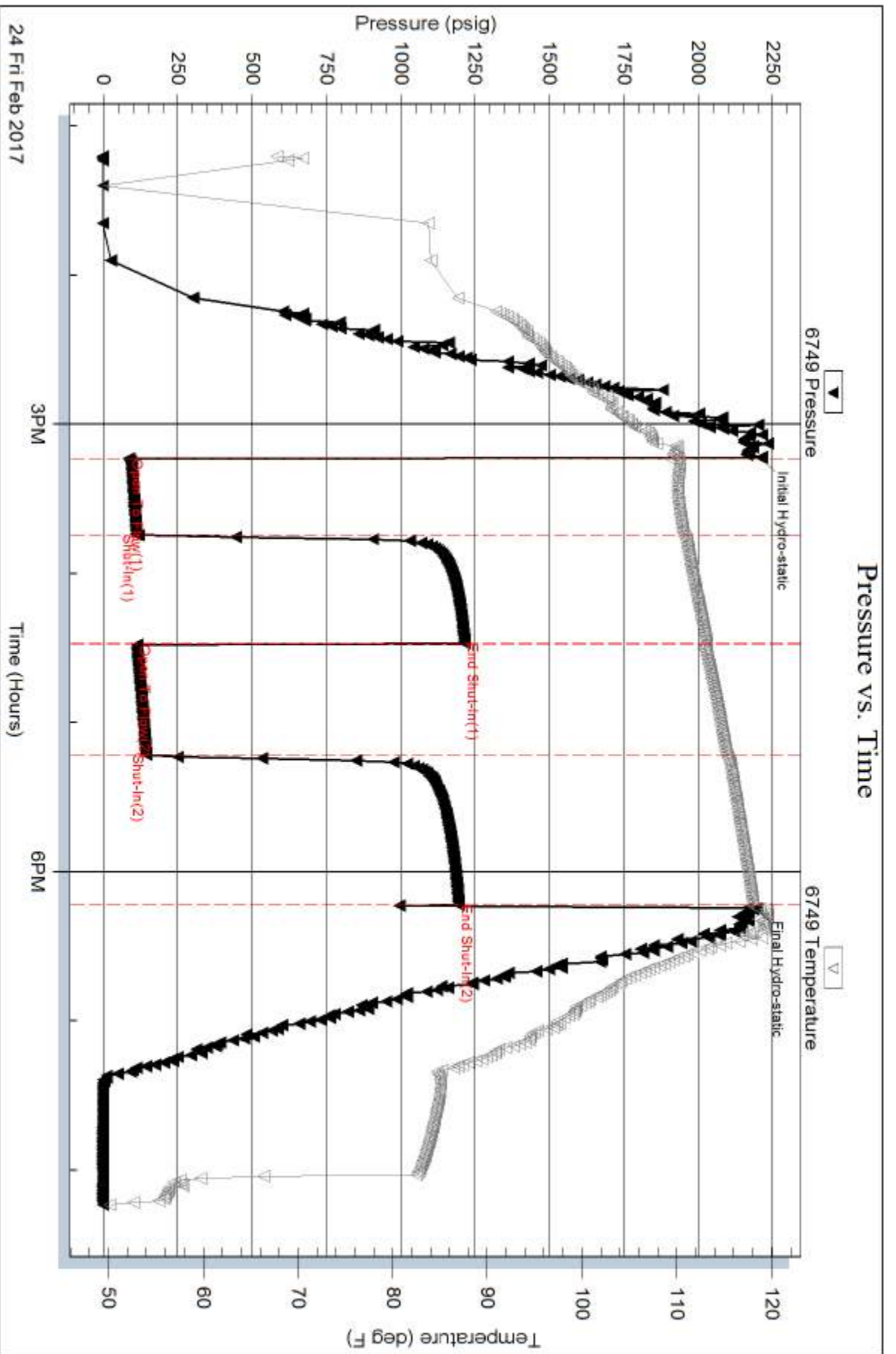
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .876@31.4=19,000 ppm





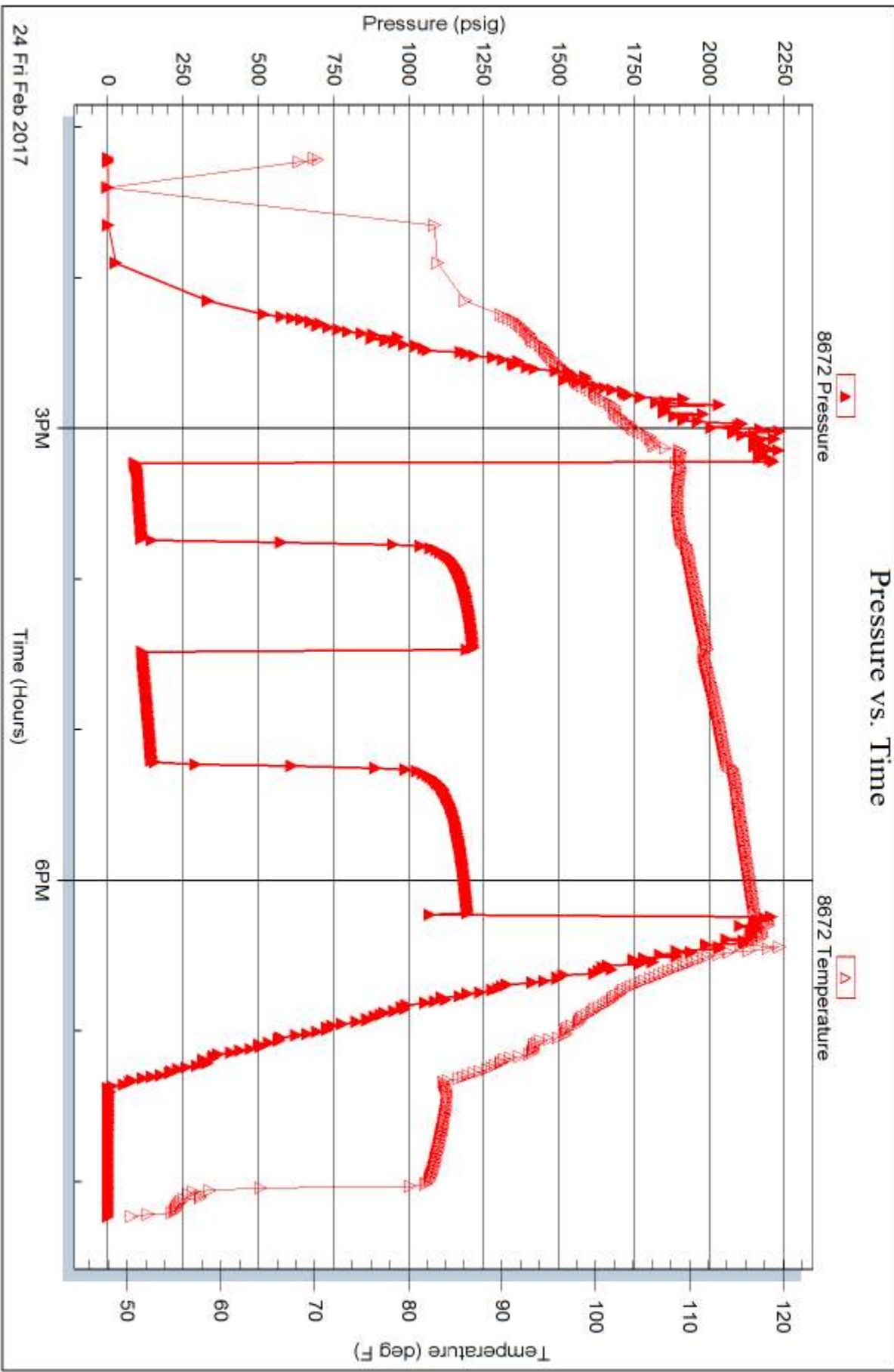
Serial #: 8672

Inside

Ritchie Exploration Inc.

L-Bo Land 3 C#1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 61338

Printed: 2017.02.24 @ 21:34:57



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61339

**DST#: 4**

Test Start: 2017.02.25 @ 16:41:15

## GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:34:45

Time Test Ended: 22:45:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 81

**Interval: 4648.00 ft (KB) To 4714.00 ft (KB) (TVD)**

Reference Elevations: 3006.00 ft (KB)

Total Depth: 4714.00 ft (KB) (TVD)

3001.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6749 Outside**

Press@RunDepth: 77.49 psig @ 4687.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.02.25

End Date:

2017.02.25

Last Calib.:

2017.02.25

Start Time: 16:41:15

End Time:

22:45:30

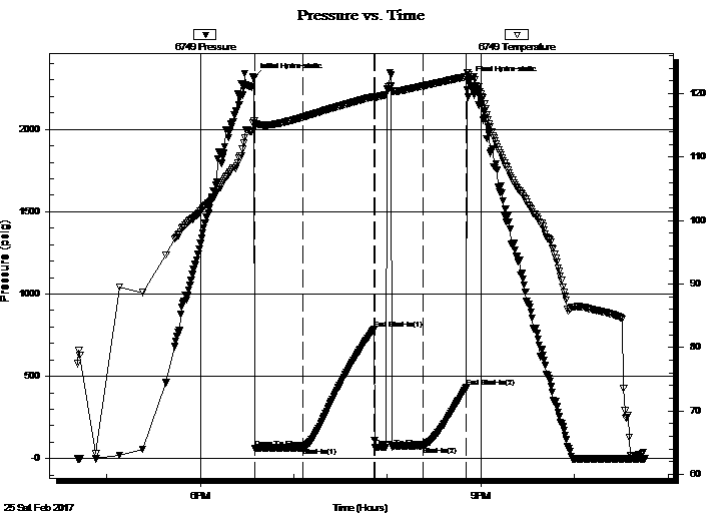
Time On Btm:

2017.02.25 @ 18:34:30

Time Off Btm:

2017.02.25 @ 20:52:00

**TEST COMMENT:** IF: Built to 1" blow  
IS: No return blow  
FF: No blow ----flushed tool---no blow  
FS: No return blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2313.56	115.63	Initial Hydro-static
1	62.65	114.69	Open To Flow (1)
32	65.60	116.31	Shut-In(1)
77	786.91	119.54	End Shut-In(1)
78	68.10	119.38	Open To Flow (2)
108	77.49	121.18	Shut-In(2)
137	431.76	122.69	End Shut-In(2)
138	2299.62	122.97	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	mud with oil spots in tool	0.61

## Gas Rates

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

\* Recovery from multiple tests



# DRILL STEM TEST REPORT

Ritchie Exploration Inc.

**3-18s-33w Scott Co KS**

8100 E. 22nd. St.  
N #700 Box 783188  
Wichita Ks 67278  
ATTN: John Goldsmith

**L-Bo Land 3 C #1**

Job Ticket: 61339

**DST#: 4**

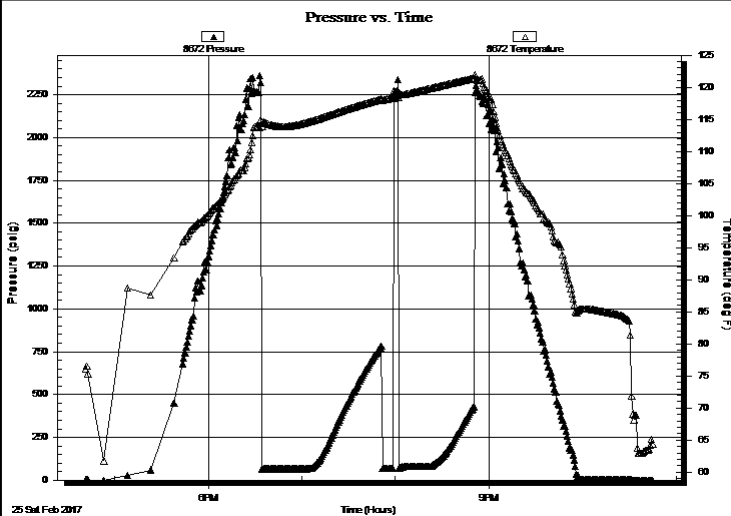
Test Start: 2017.02.25 @ 16:41:15

## GENERAL INFORMATION:

Formation: **Johnson**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:34:45  
 Time Test Ended: 22:45:30  
**Interval: 4648.00 ft (KB) To 4714.00 ft (KB) (TVD)**  
 Total Depth: 4714.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Mike Roberts  
 Unit No: 81  
 Reference Elevations: 3006.00 ft (KB)  
 3001.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8672** Inside  
 Press@RunDepth: psig @ 4687.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.02.25 End Date: 2017.02.25 Last Calib.: 2017.02.25  
 Start Time: 16:41:15 End Time: 22:45:15 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF: Built to 1" blow  
 IS: No return blow  
 FF: No blow ----flushed tool---no blow  
 FS: No return blow



## PRESSURE SUMMARY

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

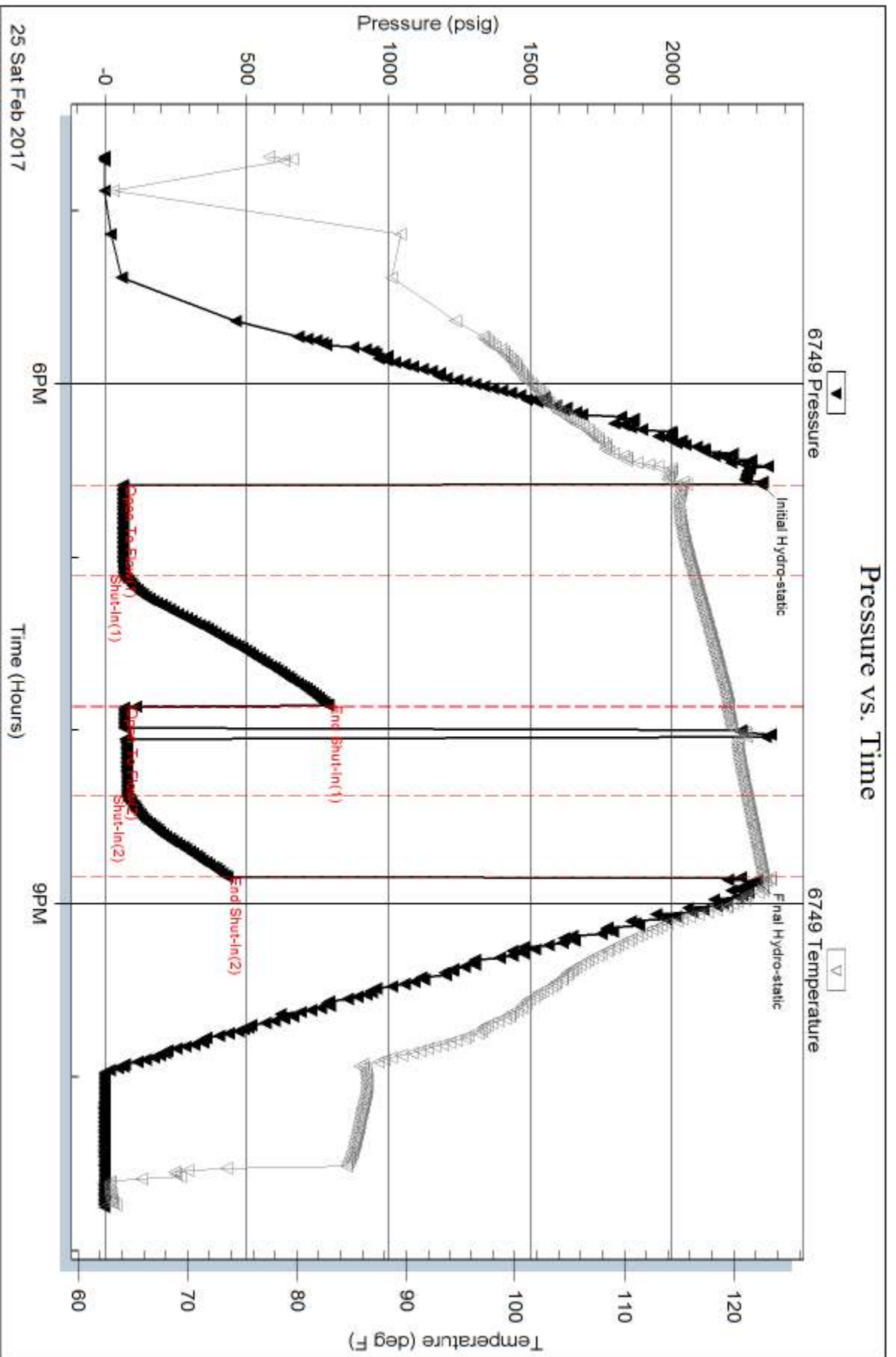
## Recovery

Length (ft)	Description	Volume (bbl)
124.00	mud w ith oil spots in tool	0.61

## Gas Rates

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

\* Recovery from multiple tests



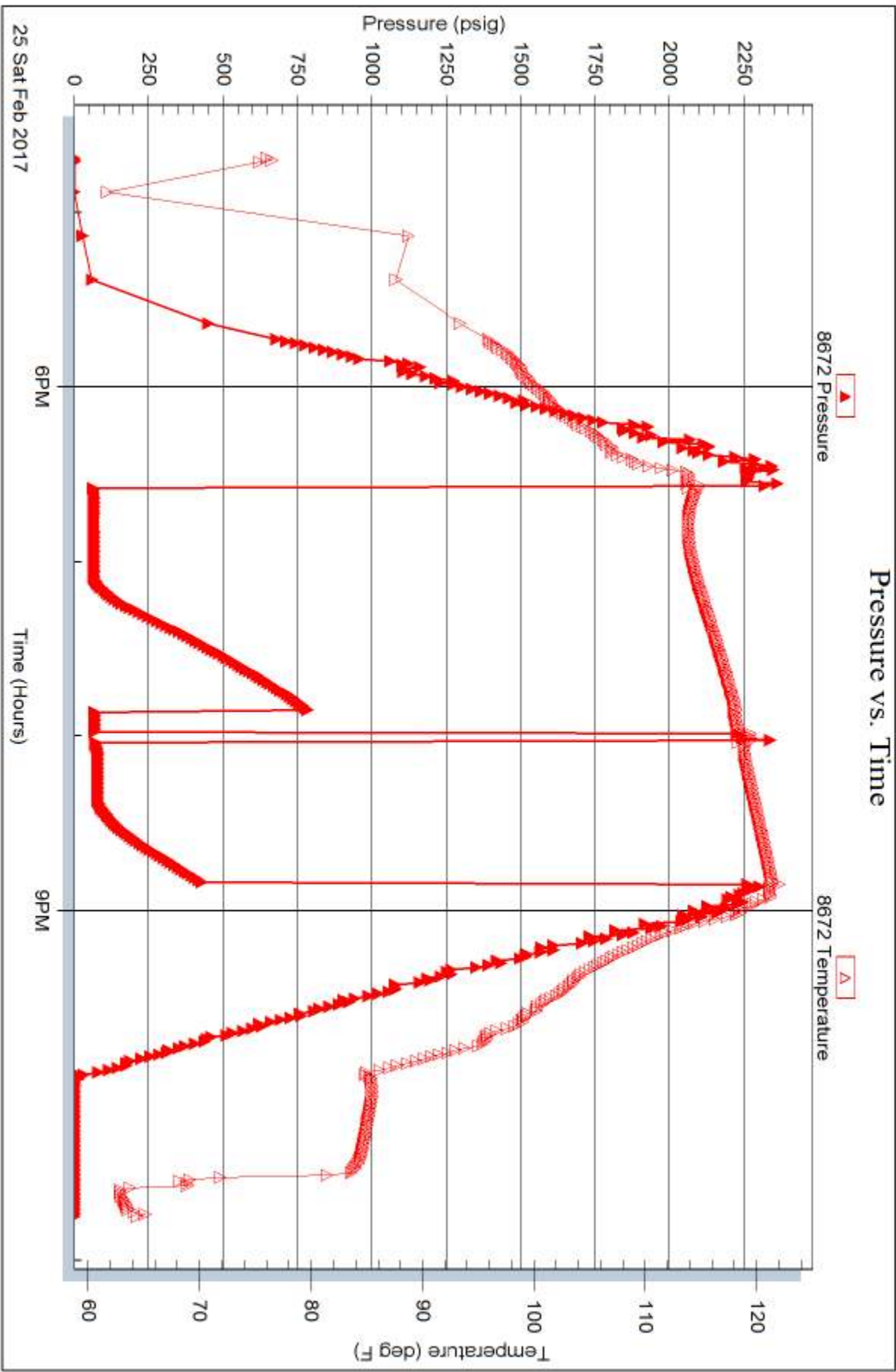
Serial #: 8672

Inside

Ritchie Exploration Inc.

L-Bo Land 3 C#1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 61339

Printed: 2017.02.26 @ 08:42:40

# 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: #1 L-BO Land 3C  
API: 15-171-21193  
Location: 965' FSL & 1265' FWL, Sec 03-18S-33W, N/2 S/2 SW  
License Number: REI #4767 Region: Scott County  
Spud Date: 02/17/2017 Drilling Completed: 02/27/2017  
Surface Coordinates: LAT: 38.5139495  
LONG: -100.9578015  
Bottom Hole Vertical Hole  
Coordinates: 1 Degree Deviation  
Ground Elevation (ft): 3001' K.B. Elevation (ft): 3006'  
Logged Interval (ft): 3700' To: RTD Total Depth (ft): 4840'  
Formation: Mississippian at RTD  
Type of Drilling Fluid: Chemical

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 #10  
Pusher: Ricky Hilgers

Collar Tally: 496'

Pump: Emsco D-300  
Liner & Stroke: 6 x 14

### BIT RECORDS

Size:	Type:	Footage:	Condition:	Hours:	Serial #:
12 1/4"	Sm-tooth	0-223'	RR	2	RH66052
7 7/8"	Sm-F27	223'-4840'	New	122.5	RJ0747

### COMMENTS

Surface Casing: 6 joints of 8 5/8" set @ 223'  
Production Casing: It was not recommended to run production casing.  
Mud by: MudCo  
DST's by: Trilobite Testing  
Logs by: Pioneer Energy Services (DIL, CN-CD)  
RTD=4840' LTD=4840'

## FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Heebner Shale	3950'	-944	3949'	-943
Toronto	3970'	-964	3969'	-963
Lansing	3992'	-986	3991'	-985
Muncie Creek Shale	4190'	-1184	4190'	-1184
Stark Shale	4291'	-1285	4292'	-1286
Hushpuckney Shale	4337'	-1331	4338'	-1332
Base of KC	4379'	-1373	4380'	-1374
Altamont	4440'	-1434	4440'	-1434
Pawnee	4518'	-1512	4518'	-1512
Ft Scott	4568'	-1562	4568'	-1562
Cherokee Shale	4594'	-1588	4593'	-1587
Johnson Zone	4638'	-1632	4638'	-1632
Morrow	4710'	-1704	4710'	-1704
Mississippian	4754'	-1748	4755'	-1749
RTD	4840'	-1834		
LTD			4840'	-1834

## DST's


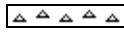

**DST #1 "LKC-C" 4020'-4050' 2-21-17 30-45-30-45**  
 1st Blw: Blt to BOB in 2min (No BB)  
 2nd Blw: Blt to BOB in 2min (No BB)  
 IFP: 196-779# ISIP: 1013# FFP: 787-977# FSIP: 1015#  
 Hyd: 1939-1882#  
 Rec: 310' WCM (30%WTR), 310' MCW (90%WTR), 1488' WTR.

**DST #2 "Altamont A/B" 4440'-4479' 2-23-17 30-45-45-60**  
 1st Blw: Blt to 2" (No BB)  
 2nd Blw: Blt to wk surf blw (No BB)  
 IFP: 23-78# ISIP: 1197# FFP: 81-105# FSIP: 1179#  
 Hyd: 2198-2162#  
 Rec: 150' Mud.




**DST #3 "Altamont C" 4472'-4530' 2-24-17 30-45-45-60**  
 1st Blw: Blt to 4.5" (No BB)  
 2nd Blw: Blt to 2" (No BB)  
 IFP: 86-111# ISIP: 1215# FFP: 113-143# FSIP: 1196#  
 Hyd: 2212-2195#  
 Rec: 62' Mud, 62' MCW (50%WTR), 62' MCW (80%WTR).

**DST #4 "Johnson" 4648'-4714' 2-25-17 30-45-30-30**  
 1st Blw: Blt to 1" (No BB)  
 2nd Blw: No blw, flushed, No blw (No BB)  
 IFP: 62-65# ISIP: 786# FFP: 68-77# FSIP: 431#  
 Hyd: 2313-2299#  
 Rec: 124' Mud w/ OS in tool.

**ROCK TYPES**

 Anhy  
 Cht  
 Congl


 Dol  
 Lmst  
 Shale

 Sltst  
 Ss  
 Carb sh







 Sandylms  
 Shaly ls





**ACCESSORIES**

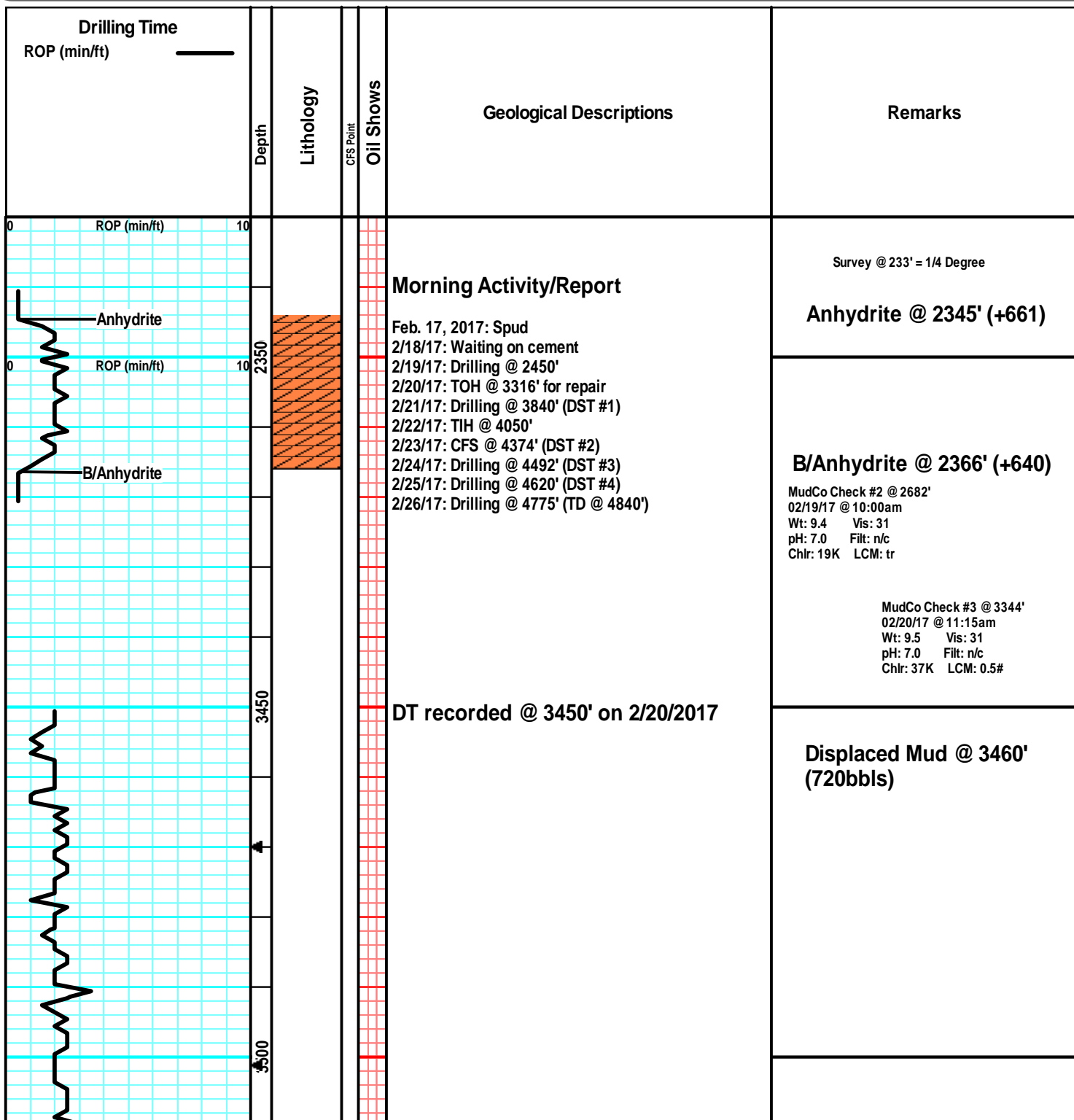
**EVENTS**  
 Circ  
 Conn

**FOSSIL**  
 Brach  
 Bryozoa  
 Crin

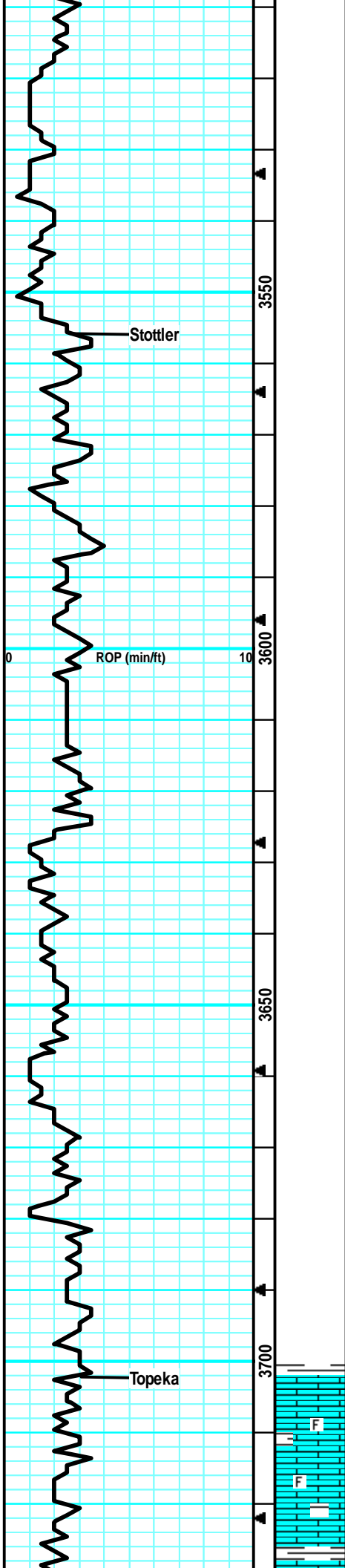
 Foram  
 Fossil  
 Gastro  
 Oolite  
 Ostra  
 Fuss  
 Oolcast

**MINERAL**  
 Calc  
 Chtdk  
 Chtlt  
 Glau  
 Pyr  
 Sil

**TEXTURE**  
 Chalky  
 Crsxln  
 Finexln  
 Microxln





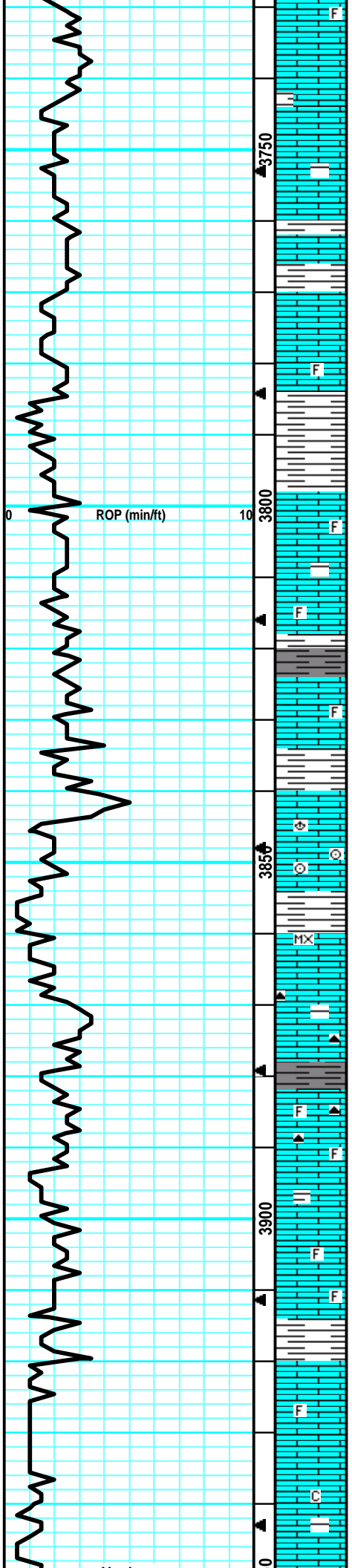


**Samples caught @ 3700' on 2/20/2017**

LS: drk gry/gry, fn xln, foss foss, dense, firm, tr-nvp, no odr, ns.

Much more dense, firm, LS, more foss, sm flakey/mealy, no odr, ns.

LS: crm/lt tan, fn xln, v fw foss, sub-chlky in prt, sm brittle, tr-nvp, no cup odr, ns.

LS: gry/lt brn, mott in prt, fn xln, sm flakey, tr-nvp, fw pcs w/ drk min stns, no fluor/cut, no odr.

LS: gry/lt gry, slight mott, fn xln, dense, firm, tr-nvp, no odr, ns.

LS: lt gry/tan, mott, fn xln, many foss, sm brittle, tr-nvp, svrl SH: gry/lt gry, silty, sm soft, fw blk/carb, no cup odr, ns.

LS: lt gry/lt tan, mott, fn xln, foss, many brittle, tr-nvp, much more SH: blk, silty, carb, no odr, ns.

LS: tan/lt gry, slight mott, fn xln, foss in prt, many brittle, sub-chlky, fw pcs w/ lght brn patchy stns, no-? fluor, no cut, nsfo, no odr.

LS: gry/tan, mott, fn xln, foss in prt, tr-nvp, sm drk brn min stns, no fluor/cut, nsfo, infix of SH: blk, silty, carb, no cup odr.

LS: tan/lt brn, mott, fn xln, sm v foss, brach/shell frags, sm SH: gry/brn, silty, no cup odr, ns.

LS: lt tan/crm/lt gry, micro-fn xln, foss/crin/frags, mostly brittle, sub-chlky in prt, tr-nvp, svrl SH: gry/brn, silty, no odr, ns.

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

LS: tan/lt tan, slight mott, fn xln, sm foss, sm dense, mostly brittle, many chlky, fw pcs pur chlky, fw Chert: gry, foss, sharp, no cup odr, ns.

SH: drk gry, silty, soft, fw blk, carb, soft.

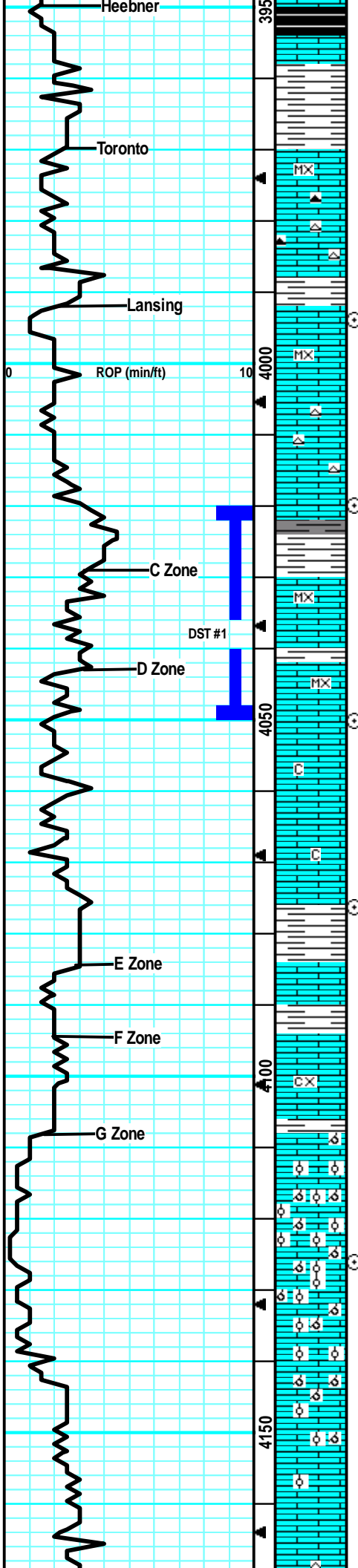
LS: lt tan, slight mott, fn xln, brittle, sm foss, chlky, tr-nvp, svrl pcs pur chlky, no odr, ns.

LS: tan/gry, mott, fn xln, many foss, sm brittle, tr-nvp, no odr, ns.

LS: tan/lt gry, mott, fn xln, many foss, many flakey/mealy, brittle, chlky, tr-nvp, sm drk min stns, no fluor/cut, no odr, ns.

LS: tan/gry, mott, fn xln, many brittle, tr-nvp, fw pcs w/ drk min stns, no fluor/cut, pos drk dead oil, no odr, ns.

MudCo Check #4 @ 3952'  
 02/21/17 @ 10:20am  
 Wt: 8.8 Vis: 59  
 pH: 11.5 Filtr: 7.2  
 Chlr: 2.0K LCM: 2#



SH: blk, drk gry, silty, carb, sm soft.

LS: tan/lt brn, fn xln, mostly dense, sm firm, tr-nvp, fw w/ drk min stns, like above, fw SH: gry, silty, no odr, ns.

LS: lt tan, micro-fn xln, mostly dense, sm brittle, tr-nvp, 3-4 pcs w/ drk blk spttd stns on edge. wk-? fluor, no cut, nsfo, pos drk dead oil, abund pur chlk, fw Chert: gry/wht, foss, sharp, no odr.  
30min: 2 more pcs w/ drk spttd stns on edges. Wk fluor, slw cut, hvy tarry oil sptts, mostly chlky, no cup odr.  
60min: LS: mott, sm brittle, tr-nvp, lrg influx SH: gry, silty soft.

LS: tan/lt tan, sing, micro-fn xln, mostly dense, sm brittle, tr-nvp, no odr, ns.

LS: tan/gry, fn xln, many dense, sm brittle, tr-nvp, fw Chert: gry, foss, sharp, no odr, ns.

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

LS: gry/tan, fn xln, many dense, sm brittle, sub-chlky in prt, tr-nvp, abund SH: gry, silty, soft, no odr, ns.

LS: crm/lt tan, micro-fn xln, dense, brittle, sm isolated scat ppt por in few, drk brn stns, wk fluor, strm cut, vssfo, faint cup odr.

LS: gry/lt tan, micro-fn xln, mostly dense, pr intxln por in sm, fw scat vug, patchy lght brn stns, gd fluor/cut, 1 min gas bub on brk, fair cup odr, vssfo on brk.

SH: gry/brn/drk gry, silty, soft, sm fissile, fw LS: lt brn, fn xln, dense, tr-nvp, svrl pcs pur chlk, no odr, ns.

LS: lt gry/tan, fn xln, mostly dense, sm firm, tr-nvp, abund pur chlk, no cup odr, ns.

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

LS: tan/lt gry, fn xln, mostly dense, sm firm, sub-clky, in prt, tr-nvp, no odr, ns.

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

LS: gry/tan, slight mott, fn-crs xln, many firm, many flakey/mealy, tr-pr intxln por in fw, no odr, ns.

LS: tan/lt brn/gry, fn xln, sm profus ool, many brittle, oolcast por in most, svrl pcs pur chlk, no odr, ns.

LS: gry/lt brn, mott, fn xln, profus ool, many brittle, oolcast por in most, fw pcs chlk, no odr, ns.

Much of the same ool/oolcast LS, lrg influx of chlky, no odr, ns.

LS: gry/lt brn, mott, fn xln, sm profus ool, many firm, sm flakey, tr-nvp, no odr, ns.

LS: lt gry/lt tan, mostly dense, sm brittle, sub-chlky in prt, tr-nvp, no odr, ns.

Heebner @ 3950' (-944)

Toronto @ 3970' (-964)

CFS @ 3994'  
(30"/60")

Lansing @ 3992' (-986)

CFS @ 4020'  
(30"/60")

Strap was .88' long to the board.

Survey @ 4050' = 1 Degree

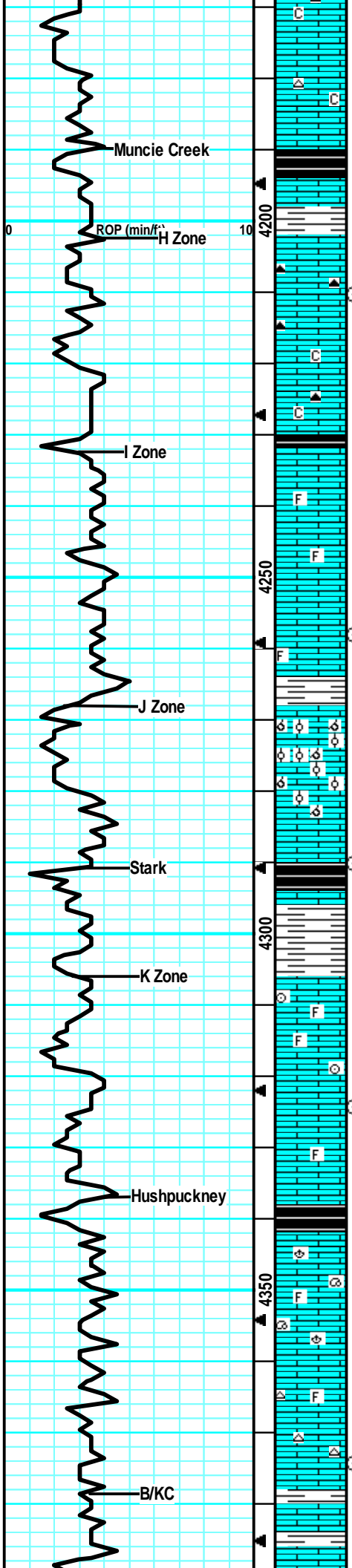
CFS @ 4050'  
(30"/60")

DST #1 "LKC-C" 4020'-4050' 2-21-17  
30-45-30-45  
1st Blw: Blt to BOB in 2min (No BB)  
2nd Blw: Blt to BOB in 2min (No BB)  
IFP: 196-779# ISIP: 1013# FFP: 787-977# FSIP: 1015#  
Hyd: 1939-1882#  
Rec: 310' WCM (30%WTR), 310' MCW (90%WTR), 1488' WTR.

CFS @ 4076'  
(30"/60")

MudCo Check #5 @ 4106'  
02/22/17 @ 11:45am  
Wt: 9.0 Vis: 50  
pH: 11.0 Filt: 7.2  
Chr: 4.0K LCM: 2#

CFS @ 4126'  
(30"/60")



Lrg influx of SH: gry/brn, silty, soft, no much LS @ all.

SH: gry/blk/brn, silty, soft, sm carb, no odr, ns.

LS: tan/gry, mott, fn xln, many dense, sm flakey, tr-nvp, sm Chert: gry, foss, sharp, fw SH: gry/brn, no odr, ns.

LS: gry/tan, slght mott, fn xln, flakey/mealy, many firm, tr-nvp, no cup odr, ns.

LS: tan/lt gry, fn xln, mostly dense, mostly firm, fw flakey, tr-nvp, fw pcs pur chlk, no odr, ns.

LS: gry/tan, slght mott, fn xln, mostly dense, many firm, many flakey/mealy, tr-nvp, fw SH: drk gry/blk, silty, sm carb, no odr, ns.

LS: gry/lt brn, mott, fn xln, sm foss, firm, many flakey/mealy, tr-nvp, fw pcs w/ drk min stns, no fluor/cut, no sfo, no odr.

LS: gry/tan, slght mott, fn xln, mostly dense, many firm, tr-nvp, 2 pcs w/ lght brn patchy stns, wk-? fluor, no cut, nsfo, no cup odr.

LS: tan/gry, mott in prt, fn xln, foss in prt, many dense, mostly firm, flakey/mealy, tr-nvp, fw SH: lt gry, silty, soft, no odr, ns.

LS: lt tan/lt gry, fn xln, fw foss, sm profus ool, mostly brittle, chlky in prt, sm fr oolcast por, fw Chert: wht/gry, foss, sharp, no odr, ns.

LS: gry/tan, slght mott, fn xln, sm dense, flakey/mealy, tr-nvp, no cup odr, ns.

LS: gry/tan, slght mott, fn xln, many firm, mostly flakey/mealy, tr-nvp, fw SH: blk, carb, no odr, ns.

LS: gry/lt tan, slght mott, fn xln, fw foss, flakey in prt, tr-nvp, sm SH: gry/blk, silty, fw carb, no show, faint pos cup odr.

LS: lt gry/lt tan, fn xln, fw foss frags/crin, sub chlk, sm brittle, tr-nvp, ns, faint pos cup odr.

LS: lt gry/lt tan, fn xln, fw foss frags, mostly brittle, sub-chlky, tr-nvp, faint pos cup odr, ns.

LS: tan/lt gry, most sing, fn xln, fw foss frags, many dense, brittle, sub-chlky in prt, fw Chert: wht/opaque, foss, sharp, tr-nvp, no odr, ns.

SH: blk, carb, silty, soft.

LS: gry/tan, mott, fn xln, sm v foss brach/gast/frags, many ool, mostly flakey/mealy, tr-ppt intxln por in fw, no odr, ns.

LS: lt gry/tan, slght mott, fn xln, fw foss, mostly flakey/mealy, sub-chlk, sm brittle, tr-nvp, no odr, ns.

Much more of the same. More pcs pur chlk, fw Chert: gry, foss, sharp, no odr, ns.

LS: gry/tan, slght mott, fn xln, fw foss frags, many dense, firm, flakey, tr-nvp, fw Chert: gry/wht, foss, sharp, no cup odr, ns.

**Muncie Creek @ 4190' (-1184)**

CFS @ 4210'  
(30"/60")

CFS @ 4258'  
(30"/60")

CFS @ 4290'  
(30"/60")

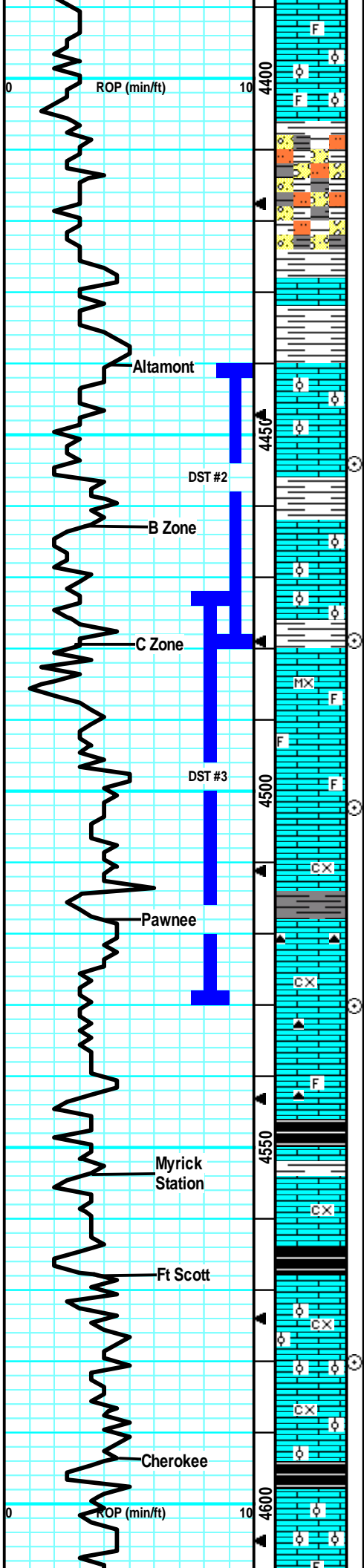
**Stark @ 4291' (-1285)**

CFS @ 4324'  
(30"/60")

**Hushpuckney @ 4337' (-1331)**

CFS @ 4374'  
(30"/60")

**Base of KC @ 4379' (-1373)**



LS: lt gry/tan, fn xln, v fw foss frags, many dense, mostly brittle, sub-chlky in prt, tr-nvp, fw pcs pur chl, no odr, ns.

LS: tan/gry, mott in prt, fn xln, foss/ool, many brittle, flakey/mealy in prt, tr-nvp, no odr, ns.

SH: gry/brn/grn, silty, sm soft, fw med crush, sm SltStn: lt gry, gritty, friable, svrl LS: flakey/mealy, tr-nvp, no odr, ns.

LS: gry/lt brn, mott, fn-crs xln, firm, flakey/mealy, tr-nvp, SltStn: lt gry, gritty, friable, fw SH: gry/brn, no odr, ns.

LS: gry/tan, slight mott, fn xln, mostly dense, many firm, sm flakey/mealy, tr-nvp, no odr, ns.

LS: tan/lt gry, slight mott, fn xln, fw ool/foss frags, sm sandy/grainy, tr-nvp, no odr, ns.

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

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

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

LS: gry/lt tan, fn xln, fw ool, many dense, tr-nvp, fw SH: gry/brn, no odr, 1 pcs w/ pr intool por, lght brn stns, fo on brk, sml gas bubs.

LS: crm/lt tan, sing, micro-fn xln, fw foss, brittle, sub-chlky, tr-nvp, 2 pcs w/ lght brn stns in tght infoss por, vssfo on brk, faint cup odr.

tan/lght gry, fn xln, mostly dense, firm, tr-nvp, fw SH: drk gry, silty, no odr, ns.

LS: gry/lt brn, mott, fn xln, sm grainy like, flakey/mealy, firm, tr-nvp, fw SH: gry, silty, no odr, ns.

LS: gry/lt brn, mott, fn-crs xln, sandy/grainy, tr-nvp, fw Chert: gry, sharp, abun SH: gry/brn, silty, no odr, ns.

More, mott, dense, firm LS, lrg influx SH: gry/brn, no odr, ns.

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

LS: gry/lt tan, slight mott, fn xln, foss in prt, gritty/grainy, sub-chlky, tr-nvp, fw Chert: gry, foss, sharp, no odr, ns.

SH: blk, silty, carb.

LS: gry/tan, mott, fn-crs xln, flakey/mealy, frim, tr-nvp, no odr, ns.

SH: blk, silty, carb.

LS: gry/tan, mott, fn-crs xln, many ool, sm flakey/melay, brittle in prt, fw Chert: gry, foss, sharp, tr-nvp, no odr, ns.

LS: gry/tan, mott, fn-crs xln, sm ool, sm flakey, sm brittle, fw sub-chlky, tr-nvp, fw Chert: gry, foss, sharp, no odr, ns.

LS: gry/tan, mott, fn-crs xln, mostly flakey/mealy, sm firm, tr-nvp, abun SH: blk, silty, carb, no odr, ns.

LS: tan/lt gry, slight mott, fn xln, many ool, mostly firm, tr-nvp, fw SH: drk gry/blk, silty, no cup odr, ns.

MudCo Check #6 @ 4447'  
02/23/17 @ 11:30am  
Wt: 9.1 Vis: 61  
pH: 11.5 Filt: 6.8  
Chlr: 4.1K LCM: 2#

**Altamont @ 4440' (-1434)**

**CFS @ 4454'  
(30"/60")**

DST #2 "Altamont A/B" 4440'-4479' 2-23-17  
30-45-45-60  
1st Blw: Blt to 2" (No BB)  
2nd Blw: Blt to wk surf blw (No BB)  
IFP: 23-78# ISIP: 1197# FFP: 81-105# FSIP:  
1179#  
Hyd: 2198-2162#  
Rec: 150' Mud.

**CFS @ 4479'  
(30"/60")**

DST #3 "Altamont C" 4472'-4530' 2-24-17  
30-45-45-60  
1st Blw: Blt to 4.5" (No BB)  
2nd Blw: Blt to 2" (No BB)  
IFP: 86-111# ISIP: 1215# FFP: 113-143#  
FSIP: 1196#  
Hyd: 2212-2195#  
Rec: 62' Mud, 62' MCW (50%WTR), 62' MCW  
(80%WTR).

**CFS @ 4502'  
(30"/60")**

**Pawnee @ 4518' (-1512)**

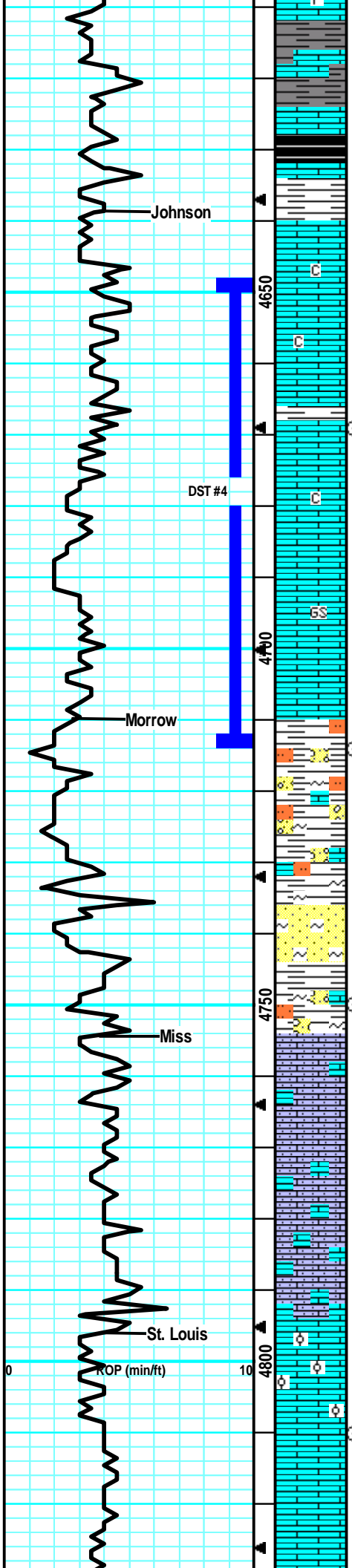
MudCo Check #7 @ 4530'  
02/24/17 @ 10:30am  
Wt: 9.0 Vis: 50  
pH: 10.5 Filt: 8.0  
Chlr: 3.0K LCM: 1#

**CFS @ 4530'  
(30"/60")**

**Ft Scott @ 4568' (-1562)**

**CFS @ 4580'  
(30"/60")**

**Cherokee @ 4594' (-1588)**



LS: gry/tan, mott, fn xln, fw foss/ool, many flakey/mealy, sm sub-chlky in prt, fw brittle, tr-nvp, svrl SH: drk gry/blk, silt, fw carb, no odr, ns.

LS: gry/tan, mott, fn xln, foss/ool in prt, many firm, fw sub-chlky, tr-nvp, fw Chert: gry/brn, foss, sharp, svrl SH: drk gry/blk, silty, carb, no odr, ns.

LS: tan/lt gry, mott, fn xln, fw foss, mostly flakey, firm, tr-nvp, no odr, ns.

LS: gry/tan, fn xln, dense, firm, fw flakey/mealy, tr-nvp, fw SH: drk gry/brn, silty, no odr, ns.

LS: gry/tan, fn xln, mostly dense, firm, tr-nvp, fw pcs sli chlky, no odr, ns.

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

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

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

LS: tan/lt gry, mott, fn fn xln, fw sandy/grainy, mostly dense, firm, tr-nvp, no odr, ns.

LS: lt brn/lt gry, slight mott, fn xln, mostly dense, firm, tr-nvp, 2 pcs sub-chlky, brittle, spttd lght brn stns, wk fluor, ssfo on brk, no cup odr.

LS: gry/grn-blu, silty, soft, fw fissile, no odr, ns.

SH: gry/drk gry/blu-grn, silty, soft, fw fissile, fw SltStn: lt gry/lt brn, gritty, v soft, friable, sm muddy like, no odr, ns.

SH: gry/drk gry, grn, silty, soft, fw SS: grn/blu, fn grn, sub-rnd, arg, friable, brittle, well sortd, glauc, tr-nvp, no odr, ns.

SS: lt gry/blu-grn, fn grn, sub-ang, friabl, arg, glauc, tr-? intgrn por in sm, well sorted down, SH: gry/drk gry/blu-grn, silty, soft, no odr, ns.

LS: crm/lt tan, fn xln, sandy/gritty, sm friable, dense, fw sub-chlky, fw SH: gry, silty, no odr, ns.

LS: crm/lt tan, sandy/gritty, firm, sm sub-chlky in prt, tr-nvp, no odr, ns.

Much of the same sandy/gritty LS, sub-chlky mtrx in more pcs, no odr, ns.

Mostly the same sandy/gritty LS, sml influx of tan, slightly flakey, dense LS, no odr, ns.

LS: svrl sandy/gritty, fw sub-chlky, tr-nvp, many tan, dense, frim, no cup odr, ns.

LS: tan, fn xln, fw ool, mostly dense, firm, tr-nvp, no cup odr, ns.

LS: lt tan/lt gry, sm sandy/gritty, svrl flakey, firm, tr-nvp, no odr, ns.

LS: much like above, lrg influx of SH: gry/grn, silty, soft, may be slough from above.

**Johnson @ 4638' (-1632)**

MudCo Check #8 @ 4670'  
02/25/17 @ 11:45am  
Wt: 8.9 Vis: 58  
pH: 11.0 Fil: 7.2  
Chr: 3.0K LCM: 2#

**CFS @ 4669'  
(30"/60")**

DST #4 "Johnson" 4648'-4714' 2-25-17  
30-45-30-30  
1st Blw: Blt to 1" (No BB)  
2nd Blw: No blw, flushed, No blw (No BB)  
IFP: 62-65# ISIP: 786# FFP: 68-77# FSIP:  
431#  
Hyd: 2313-2299#  
Rec: 124' Mud w/ OS in tool.

**Morrow @ 4710' (-1704)**

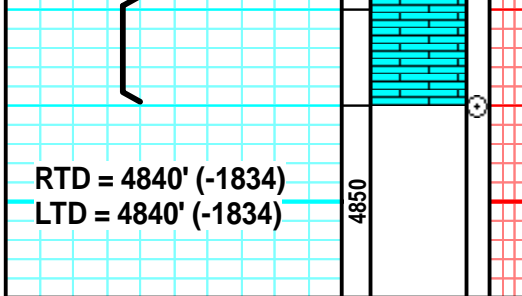
**CFS @ 4714'  
(30"/60")**

**CFS @ 4750'  
(30"/60")**

**Miss @ 4754' (-1748)**

**CFS @ 4810'  
(30"/60")**

MudCo Check #9 @ 4840'  
02/26/17 @ 12:15am  
Wt: 9.3 Vis: 55



RTD = 4840' (-1834)  
LTD = 4840' (-1834)

4850

LS: lt tan/lt gry, sm sandy/gritty, many flakey,  
firm/hard, tr-nvp, abund SH: gry/grn, silty, soft, most  
likely slough.

pH: 10.5 Filt: 8.0  
Chlr: 3.5K LCM: 2#

CFS @ 4840'  
(30"/60")

Survey @ 4840' = 1 Degree



**RITCHIE**

EXPLORATION, INC.  
Wichita, Kansas

**#1 L-BO Land 3C**

965' FSL & 1265' FWL

25' S & 55' W of N/2 S/2 SW/4 Section 3-18S-33W

Scott County, Kansas

API# 15-171-21193-0000

Elevation: GL: 3001', KB: 3006'

Sample Tops			Ref. Well
Anhydrite	2346'	+660	-19
B/Anhydrite	2366'	+640	-22
Heebner	3958'	-952	-3
Toronto	3971'	-965	Flat
Lansing	3996'	-990	+1
Muncie Shale	4190'	-1184	+1
Stark Shale	4291'	-1285	+4
Hush Shale	4337'	-1331	+5
BKC	4374'	-1368	+7
Altamont	4436'	-1430	-1
Pawnee	4514'	-1508	+1
Fort Scott	4569'	-1563	-6
Cherokee Shale	4590'	-1584	+1
Johnson	4666'	-1660	-2
Mississippian	4752'	-1746	-7
RTD	4840'	-1834	





Remit to:  
BJ Services LLC  
P.O. Box 733585  
Dallas, TX 75373-3585

# Coment Service

68279

Tax ID 81-1373543

SERVICE POINT:

Corkley

DATE <u>2-17-17</u>	SEC. <u>3</u>	TWP. <u>18s</u>	RANGE <u>33w</u>	CALLED OUT	ON LOCATION <u>6:00pm</u>	JOB START <u>6:30am</u>	JOB FINISH <u>7:00pm</u>
<u>L-80 Land LEASE</u>	WELL # <u>30</u>	LOCATION <u>scott city 2 N 34w</u>			COUNTY <u>Scott</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>				<u>N.100</u>			

CONTRACTOR <u>W+W 10#</u>	OWNER <u>same</u>
TYPE OF JOB <u>Surface</u>	
HOLE SIZE <u>12 1/4</u>	T.D. <u>233'</u>
CASING SIZE <u>8 5/8</u>	DEPTH <u>232.65'</u>
TUBING SIZE	DEPTH
DRILL PIPE	DEPTH
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG. <u>15'</u>	
PERFS.	
DISPLACEMENT <u>13,860 GAL</u>	

**EQUIPMENT**

PUMP TRUCK # <u>431</u>	CEMENTER <u>Andrew Forstland</u>
	HELPER <u>Wayne Madley</u>
BULK TRUCK # <u>323</u>	DRIVER <u>Cory Brown</u>
BULK TRUCK #	DRIVER

**REMARKS:**

Cement in cellar

Thank you

CHARGE TO: Ritchie Exploration  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

CEMENT AMOUNT ORDERED <u>165 sbs com 38% cu</u>	
<u>2 1/2 gcl</u>	
COMMON <u>165 sbs</u>	@ <u>17.90 2953.50</u>
POZMIX	@
GEL <u>310 #</u>	@ <u>1.05 325.50</u>
CHLORIDE <u>425 #</u>	@ <u>1.10 511.50</u>
ASC	@

TOTAL 3,790.50

DISCOUNT 48 % 1,819.44

**SERVICE**

HANDLING <u>128 cu/ft</u>	@ <u>3.48</u>	<u>441.44</u>
MILEAGE <u>1.25 mi/hour 8 hr</u>		<u>99.00</u>
DEPTH OF JOB <u>232.65</u>		
PUMP TRUCK CHARGE		<u>1572.25</u>
EXTRA FOOTAGE	@	
HV MILEAGE <u>45 miles</u>	@ <u>2.20</u>	<u>99.00</u>
LV MILEAGE <u>45 miles</u>	@ <u>4.40</u>	<u>198.00</u>

TOTAL 3,488.19

DISCOUNT 48 % 1,671.33

**PLUG & FLOAT EQUIPMENT**

	@	
	@	
	@	
	@	
	@	

TOTAL \_\_\_\_\_

DISCOUNT \_\_\_\_\_ %

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

PRINTED NAME Walter Brown

SIGNATURE Walter Brown

THEL PENTON CO., INC. - GREAT BEND, KS

SALES TAX (if Any) \_\_\_\_\_  
TOTAL CHARGES 7,278.69  
DISCOUNT 3493.77 (48%) IF PAID IN 30 DAYS  
NET TOTAL 3,784.91 IF PAID IN 30 DAYS



**CONSOLIDATED**  
Oil Well Services, LLC

7633  
7531

TICKET NUMBER 51694  
LOCATION Dallas TX  
FOREMAN Miles

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

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

Invoice # 809683 *1/5*

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
2-27-17	7173	L- Boland 3C #1	30	185	33W	Scott
CUSTOMER <i>Ritchie Exploration</i>			Scallity 10 ton/100 2W 11.5			
MAILING ADDRESS <i>P.O. Box 783188</i>			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY <i>Wichita</i>			<i>753</i>	<i>Corey D</i>		
STATE <i>KS</i>			<i>5297-127</i>	<i>Travis W</i>		
ZIP CODE <i>67278-3188</i>			<i>103</i>			

JOB TYPE PTA HOLE SIZE 7 7/8" HOLE DEPTH 4799 CASING SIZE & WEIGHT \_\_\_\_\_  
 CASING DEPTH \_\_\_\_\_ DRILL PIPE 4.5" TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 13.8 SLURRY VOL 1.40 WATER gal/sk \_\_\_\_\_ CEMENT LEFT In CASING \_\_\_\_\_  
 DISPLACEMENT \_\_\_\_\_ DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: *Safety meetings and rig up on WW drilling R3 #10 plus as ordered*  
*1st plug 50sx @ 2360'*  
*2nd plug 80sx @ 1460'*  
*3rd plug 40sx @ 720'* *270sx 60/40 48gal 1/4" # Plu seal*  
*4th plug 50sx @ 270'*  
*5th plug 20sx @ 60'*  
*RH 30sx*

*Thanks Miles & Crew*

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0450	1	PUMP CHARGE	1500. <sup>00</sup>	1500. <sup>00</sup>
CE0002	B5	MILEAGE	7.15	250.25
CE0710	11.75 ton	Ton Mileage delivery	1.75	719.69
CL5829	270 sx	Lite-weight blend II 60/40 48	16. <sup>00</sup>	4320. <sup>00</sup>
CL6075	68 #	Celloflake Plu seal	3. <sup>00</sup>	204. <sup>00</sup>
			Subtotal	6993.94
			less 45% discount	3147.27
			Subtotal	3846.67
			SALES TAX	211.49
			ESTIMATED TOTAL	4058.16

Revin 3737

AUTHORIZATION *Reid Alder* TITLE \_\_\_\_\_ DATE \_\_\_\_\_

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.