



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1070192  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

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

Address 1: \_\_\_\_\_

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

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

Wellsite Geologist: \_\_\_\_\_

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

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

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

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

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

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

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

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

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

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

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

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

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1070192

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

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

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

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

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

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

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

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

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

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	RINER 1-27
Doc ID	1070192

Tops

Name	Top	Datum
Stone Corral	2387	+650
Bs/Stone Corral	2404	+633
Heebner	3947	-910
Lansing	3989	-952
Muncie Creek	4167	-1130
Stark	4258	-1221
Hushpuckney	4303	-1266
Marmaton	4377	-1340
Little Osage	4507	-1470
Johnson	4599	-1562
Morrow	4667	-1630
Mississippian	4715	-1678
LTD	4829	

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Ward Loyd, Commissioner  
Thomas E. Wright, Commissioner

Sam Brownback, Governor

December 13, 2011

Ronald N. Sinclair  
Grand Mesa Operating Company  
1700 N WATERFRONT PKWY BLDG 600  
WICHITA, KS 67206-5514

Re: ACO1  
API 15-171-20853-00-00  
RINER 1-27  
NE/4 Sec.27-16S-33W  
Scott County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Ronald N. Sinclair



**CONSOLIDATED**  
Oil Well Services, LLC



TICKET NUMBER 33683  
LOCATION Oakley, Ks  
FOREMAN Walt Dunkel

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

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

Ks

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
11-12-11	3372	Riner 1-27	27	16 <sup>s</sup>	33 <sup>w</sup>	Scott
CUSTOMER <u>Grand Mesa</u>			Pense Rd			
MAILING ADDRESS			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY			1W	399	Miles	Shaw
STATE			1S		Corby	Rantz
ZIP CODE			6W			

JOB TYPE Surface-O HOLE SIZE 12 1/4 HOLE DEPTH 221' CASING SIZE & WEIGHT 8 5/8 - 20#  
 CASING DEPTH 221 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 15.2 SLURRY VOL \_\_\_\_\_ WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING 15-20'  
 DISPLACEMENT 12 3/4 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI 200# RATE 5 BPM

REMARKS: Safety Meeting, rig up on Murfin 24, Circ casing on bottom  
mixed 165 SKS Com, 3% cc-2% Gel, Displace 12 3/4 BBL H<sub>2</sub>O @ 200#  
Shut in  
Cement did Circ

Thank You  
Walt & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
54015	1	PUMP CHARGE	1025 <sup>00</sup>	1,025 <sup>00</sup>
5406	40	MILEAGE	5 <sup>00</sup>	200 <sup>00</sup>
11045	16.5 SKS	Class A Cement	16 <sup>80</sup>	2772 <sup>00</sup>
1102	465 #	Calcium Chloride	.84	390 <sup>60</sup>
118B	300 #	Bentonite Gel	.24	72 <sup>00</sup>
5407A	7.76	Ton Mileage Delivery	158	490 <sup>40</sup>
				4950 <sup>00</sup>
		Less 10% Disc		- 495 <sup>00</sup>
				4,455 <sup>00</sup>
		245785	SALES TAX	241 <sup>63</sup>
			ESTIMATED TOTAL	4696 <sup>63</sup>

Ravin 3737

AUTHORIZATION Anthony March

TITLE Pusher

DATE 11-12-11

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.



**CONSOLIDATED**  
Oil Well Services, LLC

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

TICKET NUMBER 33731  
LOCATION Oakley  
FOREMAN Fuzzell

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

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
11-24-11	3372	River 1-27	27	16	33	Scott
CUSTOMER Grand Mesa Operating			Pence			
MAILING ADDRESS			46			
CITY			15			
STATE			Kans			
ZIP CODE						
TRUCK #	DRIVER	TRUCK #	DRIVER			
463	Sosk G					
439	COM D					

JOB TYPE PTA HOLE SIZE 77/8 HOLE DEPTH 4830' CASING SIZE & WEIGHT \_\_\_\_\_  
 CASING DEPTH \_\_\_\_\_ DRILL PIPE 4 1/2 TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 14.1 SLURRY VOL 1.40 WATER gal/sk 6.7 CEMENT LEFT in CASING \_\_\_\_\_  
 DISPLACEMENT \_\_\_\_\_ DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting on morning 24 Risup and plug as ordered  
50 SKS @ 2400'  
80 SKS @ 1600'  
50 SKS @ 800'  
50 SKS @ 260'  
20 SKS @ 60'  
20 SKS MH  
30 SKS RH

Thanks Fuzzell crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5405W	1	PUMP CHARGE	1250 <sup>00</sup>	1250 <sup>00</sup>
5406	40	MILEAGE	5 <sup>00</sup>	200 <sup>00</sup>
5407A	12.9 ton	Ten mile age Delivery	1 <sup>58</sup>	815 <sup>28</sup>
1131	300	60/40 pos	14 <sup>33</sup>	4305 <sup>00</sup>
1118 B	1032 <sup>#</sup>	Bentonite	.24	247 <sup>68</sup>
1107	75 <sup>#</sup>	CelloSlate	2 <sup>66</sup>	199 <sup>50</sup>
		subtotal		7017 <sup>46</sup>
		less 10% discount		701 <sup>74</sup>
		subtotal		6315 <sup>72</sup>
		246096	SALES TAX	355 <sup>00</sup>
			ESTIMATED TOTAL	6670 <sup>72</sup>

Ravin 3737

AUTHORIZATION Anthony Mart TITLE Pusher

DATE 11-24-11

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.



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co

**27 16s 37w Scott, Ks**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**#1-27 Riner**

Job Ticket: 45358

**DST#: 1**

Test Start: 2011.11.18 @ 08:47:00

## GENERAL INFORMATION:

Formation: **LKC E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:03:45

Time Test Ended: 16:09:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Bradley Walter

Unit No: 40

**Interval: 4037.00 ft (KB) To 4110.00 ft (KB) (TVD)**

Reference Elevations: 3037.00 ft (KB)

Total Depth: 4110.00 ft (KB) (TVD)

3032.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8652**

**Inside**

Press @ Run Depth: 521.05 psig @ 4038.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.18

End Date:

2011.11.18

Last Calib.: 2011.11.18

Start Time: 08:47:05

End Time:

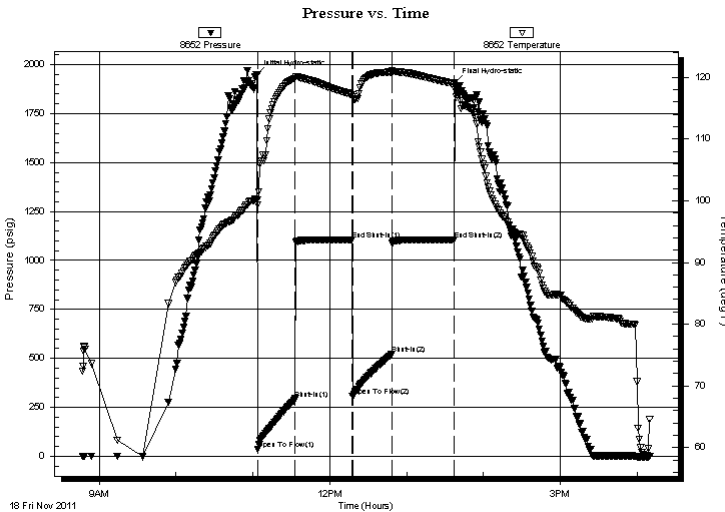
16:09:44

Time On Btm: 2011.11.18 @ 11:03:15

Time Off Btm: 2011.11.18 @ 13:37:45

**TEST COMMENT:** IF: BOB @ 6 minutes.  
IS: No return.  
FF: BOB @ 7 minutes.  
FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1950.86	100.13	Initial Hydro-static
1	35.58	99.37	Open To Flow (1)
30	293.74	119.83	Shut-In(1)
74	1105.47	117.20	End Shut-In(1)
75	308.42	116.87	Open To Flow (2)
105	521.05	120.84	Shut-In(2)
154	1105.73	118.97	End Shut-In(2)
155	1909.20	117.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1080.00	mcw 5m 95w (oil spots)	14.07

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co

**27 16s 37w Scott, Ks**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**#1-27 Riner**

Job Ticket: 45358

**DST#: 1**

Test Start: 2011.11.18 @ 08:47:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1080.00	mcw 5m 95w (oil spots)	14.075

Total Length: 1080.00 ft      Total Volume: 14.075 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .220 @ 67 = 34000ppm

Serial #: 8652

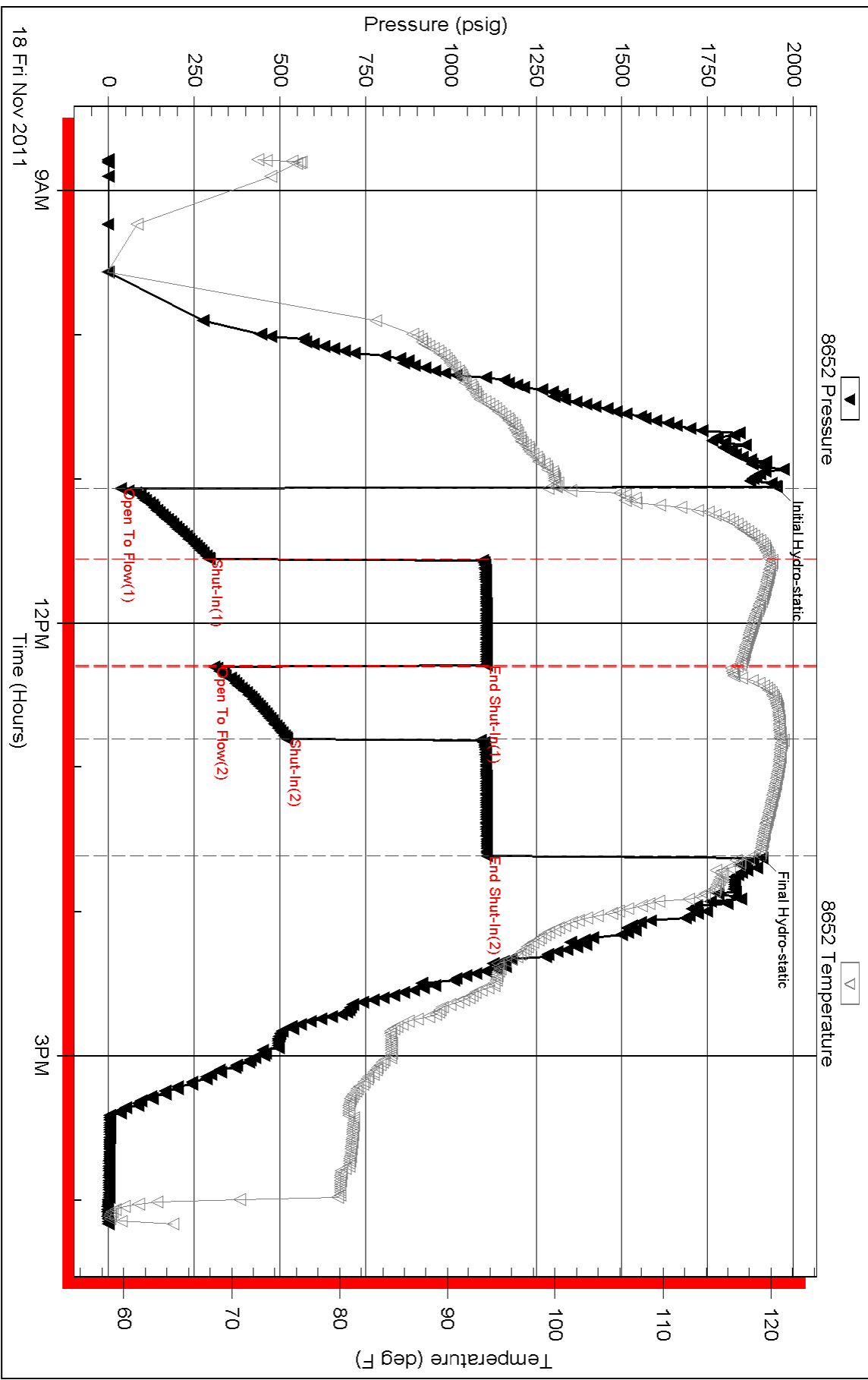
Inside

Grand Mesa Operating Co

#1-27 Riner

DST Test Number: 1

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 45358

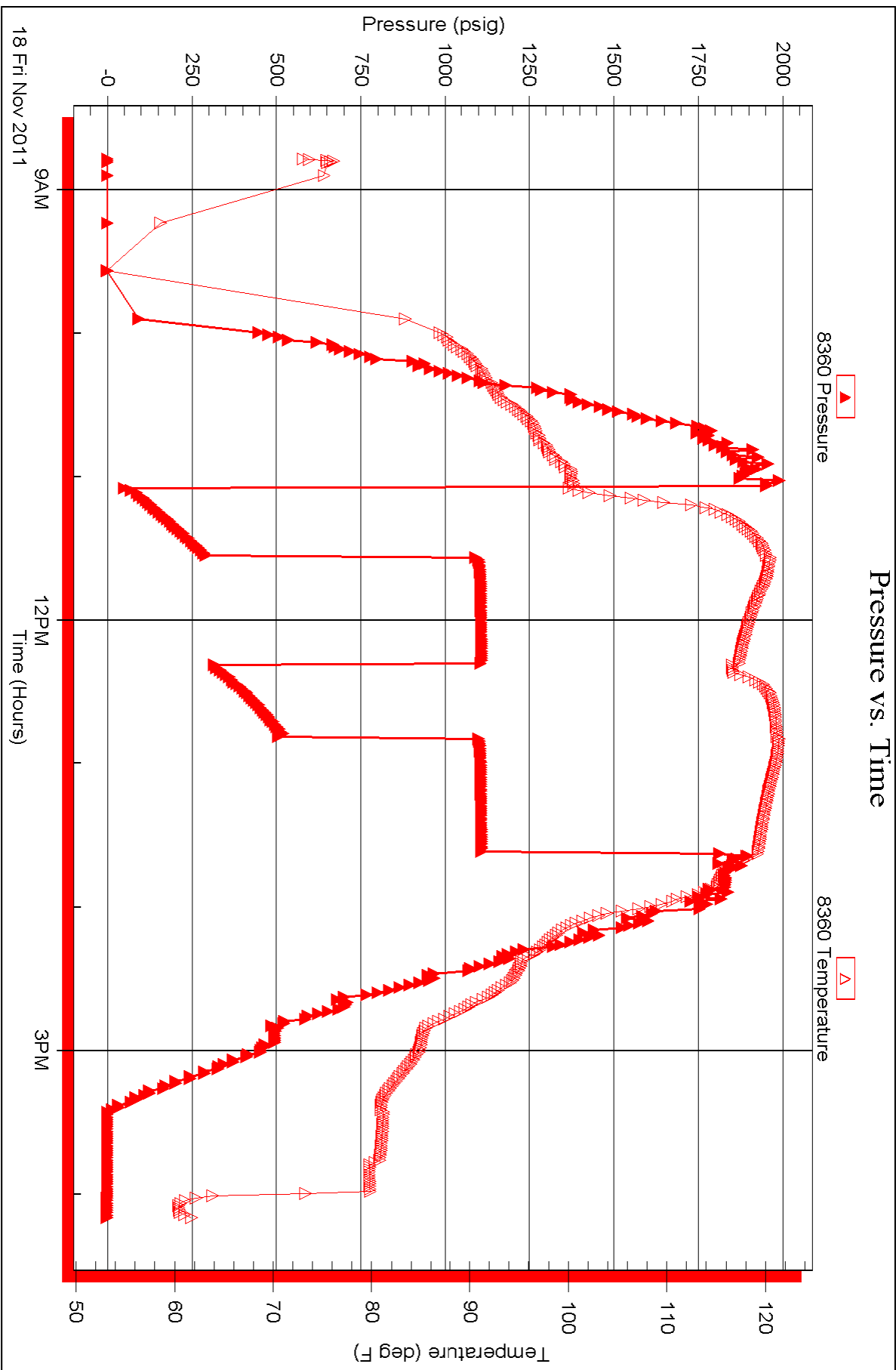
Printed: 2011.11.19 @ 10:52:45

Serial #: 8360

Outside Grand Mesa Operating Co

#1-27 Riner

DST Test Number: 1





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co  
 1700 N Waterfront Pkwy  
 Bldg 600  
 Wichita, Ks 67206  
 ATTN: Steve Carl

**27 16s 37w Scott, Ks**

**#1-27 Riner**

Job Ticket: 45359

**DST#: 2**

Test Start: 2011.11.19 @ 13:58:00

## GENERAL INFORMATION:

Formation: **Swope**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:05:15  
 Time Test Ended: 21:08:00  
 Interval: **4252.00 ft (KB) To 4300.00 ft (KB) (TVD)**  
 Total Depth: 4252.00 ft (KB) (TVD)  
 Hole Diameter: 6.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Bradley Walter  
 Unit No: 40  
 Reference Elevations: 3037.00 ft (KB)  
 3032.00 ft (CF)  
 KB to GR/CF: 5.00 ft

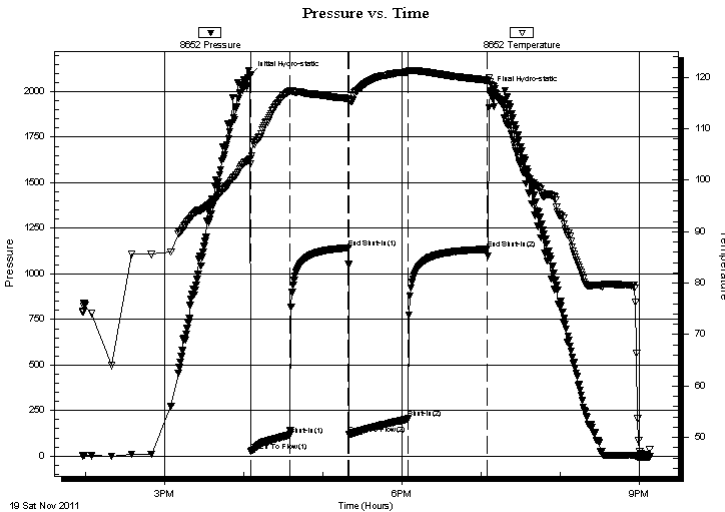
## Serial #: 8652

Inside

Press @ Run Depth: 205.64 psig @ 4253.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.11.19 End Date: 2011.11.19 Last Calib.: 2011.11.19  
 Start Time: 13:58:05 End Time: 21:07:59 Time On Btm: 2011.11.19 @ 16:05:00  
 Time Off Btm: 2011.11.19 @ 19:06:45

TEST COMMENT: IF: BOB @ 28 minutes.  
 IS: No return.  
 FF: 8" blow.  
 FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2089.85	104.13	Initial Hydro-static
1	26.89	103.22	Open To Flow (1)
30	116.45	117.33	Shut-In(1)
75	1143.08	115.85	End Shut-In(1)
75	119.70	115.47	Open To Flow (2)
120	205.64	121.11	Shut-In(2)
180	1135.49	119.41	End Shut-In(2)
182	2005.24	119.09	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
420.00	mcw 10m 90w (oil spots)	4.82

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co

**27 16s 37w Scott, Ks**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**#1-27 Riner**

Job Ticket: 45359

**DST#: 2**

Test Start: 2011.11.19 @ 13:58:00

## 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:

45000 ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6200.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
420.00	mcw 10m 90w (oil spots)	4.817

Total Length: 420.00 ft      Total Volume: 4.817 bbl

Num Fluid Samples: 0

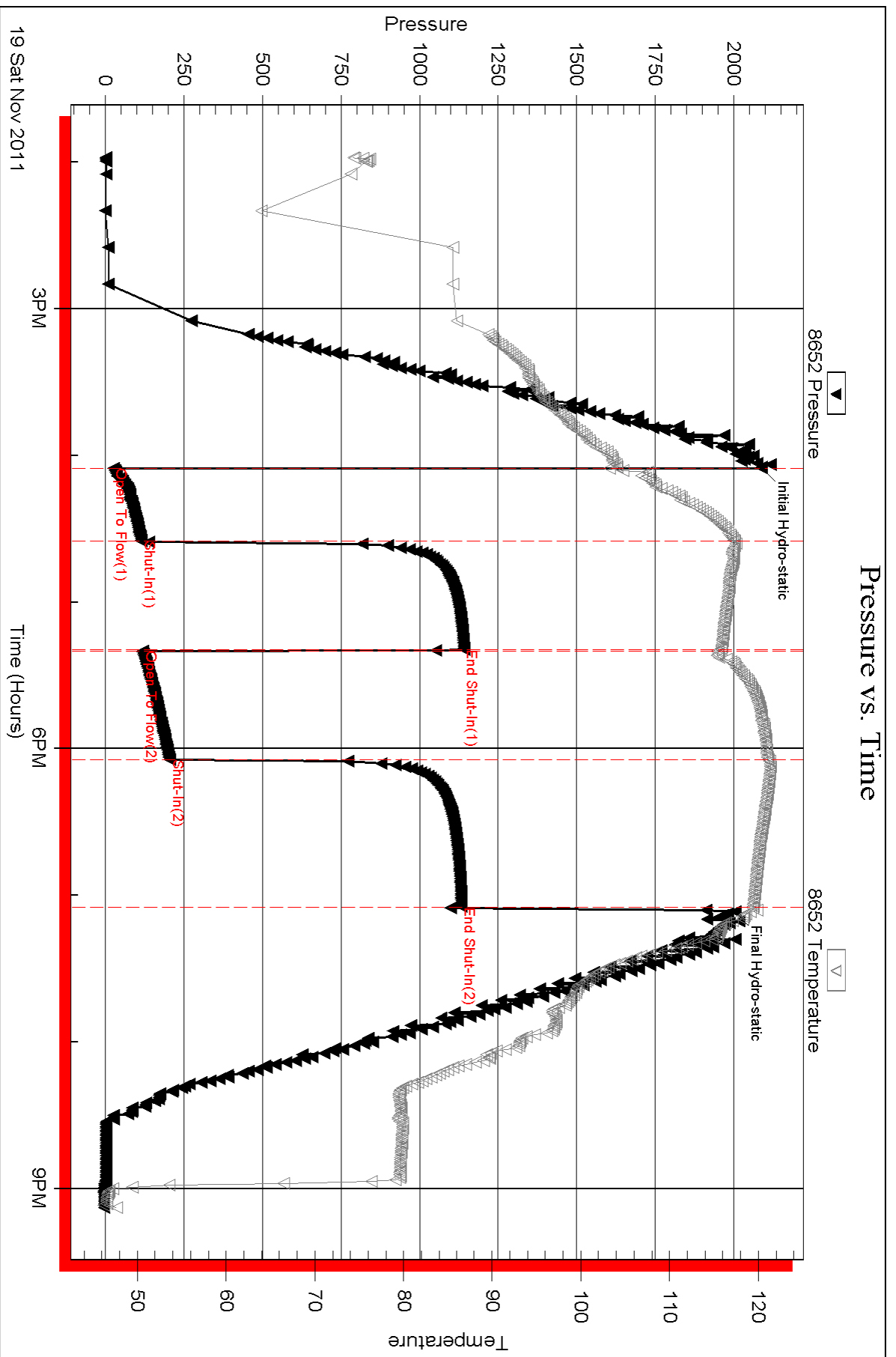
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .192 @ 59f = 45000ppm

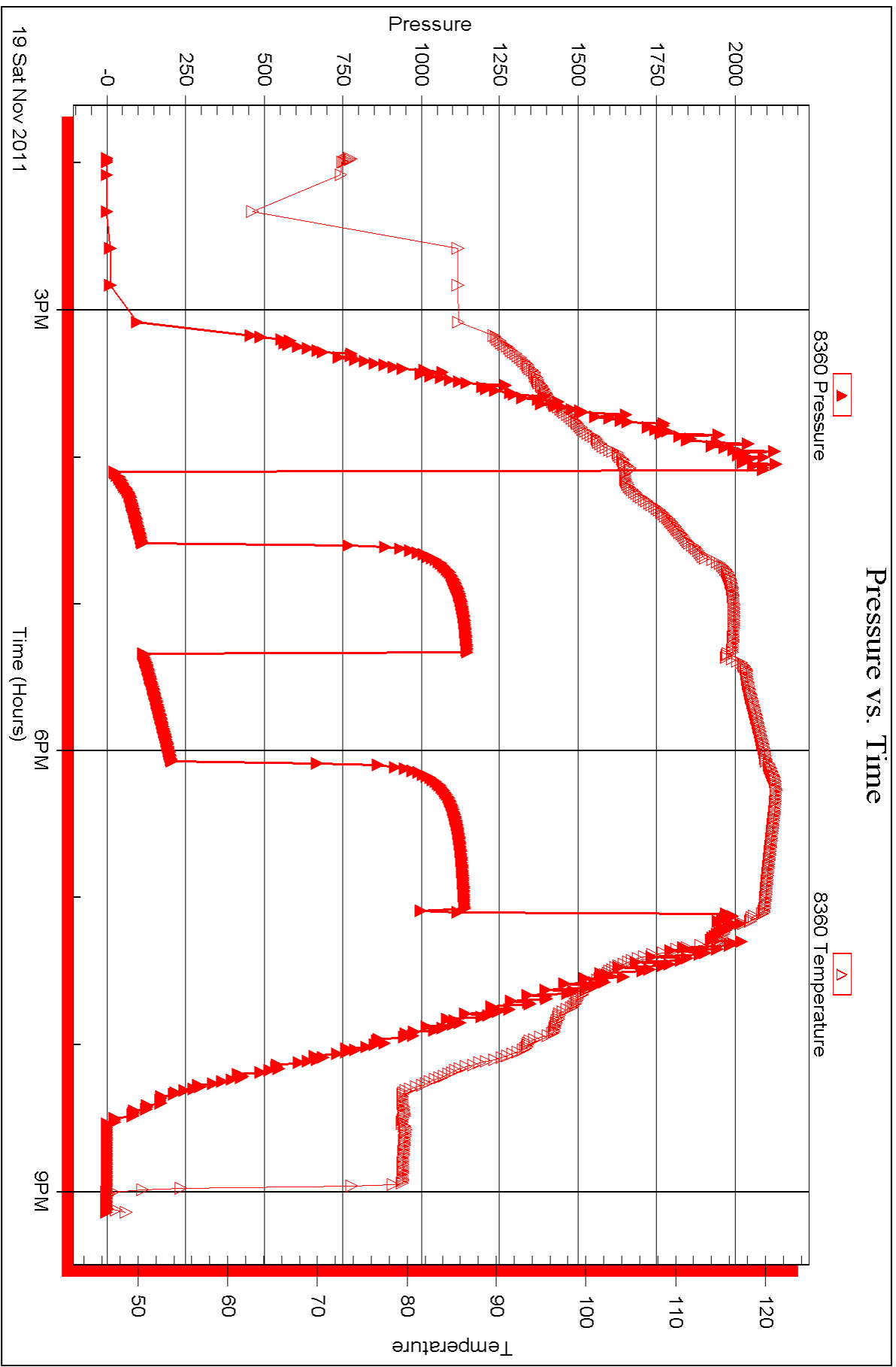


Serial #: 8360

Outside Grand Mesa Operating Co

#1-27 Riner

DST Test Number: 2







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**27 16s 37w Scott, Ks**

**#1-27 Riner**

Job Ticket: 45360

**DST#: 3**

Test Start: 2011.11.20 @ 09:05:05

## GENERAL INFORMATION:

Formation: **Pleasanton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:29:00

Time Test Ended: 15:31:59

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 40

**Interval: 4331.00 ft (KB) To 4353.00 ft (KB) (TVD)**

Reference Elevations: 3037.00 ft (KB)

Total Depth: 4353.00 ft (KB) (TVD)

3032.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8652 Inside**

Press @ Run Depth: 20.29 psig @ 4332.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.20

End Date:

2011.11.20

Last Calib.:

2011.11.20

Start Time:

09:05:05

End Time:

15:31:59

Time On Btm:

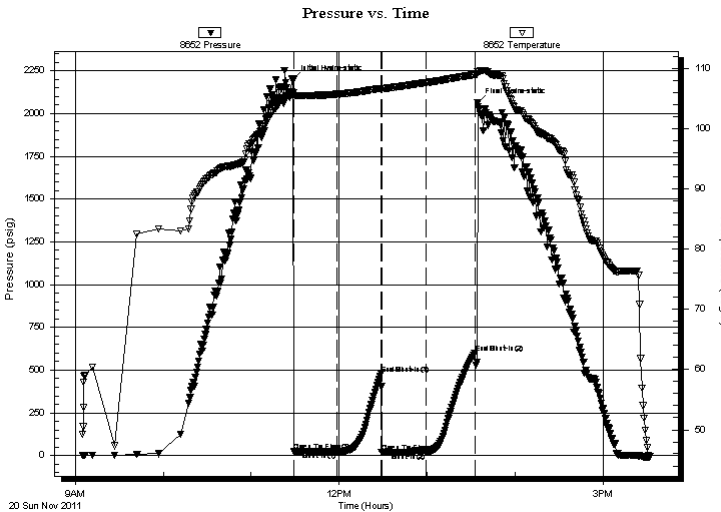
2011.11.20 @ 11:28:45

Time Off Btm:

2011.11.20 @ 13:34:29

**TEST COMMENT:** IF: Surface blow, died @ 9 minutes.  
IS: No return.  
FF: Surface blow, died @ 8 minutes.  
FF: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2196.92	105.93	Initial Hydro-static
1	22.93	105.19	Open To Flow (1)
30	22.40	105.75	Shut-In(1)
60	478.34	106.74	End Shut-In(1)
61	20.90	106.62	Open To Flow (2)
91	20.29	107.66	Shut-In(2)
124	599.53	109.02	End Shut-In(2)
126	2062.84	109.47	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3.00	mud 100m	0.01

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co

**27 16s 37w Scott, Ks**

1700 N Waterfront Pkw y  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**#1-27 Riner**

Job Ticket: 45360

**DST#: 3**

Test Start: 2011.11.20 @ 09:05:05

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 76.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8500.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	mud 100m	0.015

Total Length: 3.00 ft      Total Volume: 0.015 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

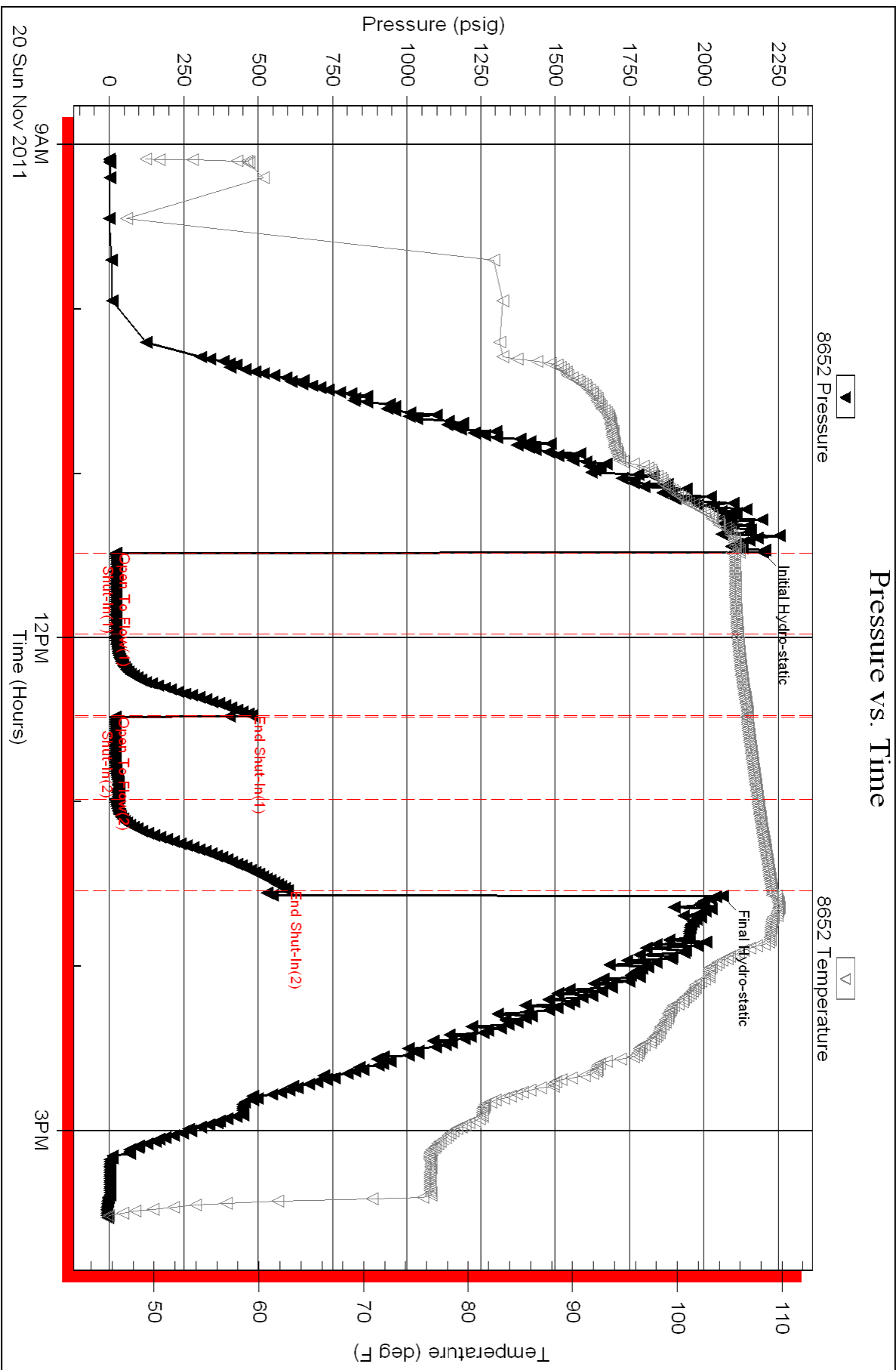
Serial #: 8652

Inside

Grand Mesa Operating Co

#1-27 Riner

DST Test Number: 3





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**27 16s 37w Scott, Ks**  
**#1-27 Riner**  
Job Ticket: 45361      **DST#: 4**  
Test Start: 2011.11.21 @ 12:48:00

## GENERAL INFORMATION:

Formation: **Ft Scott-Verdigris**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 15:02:00  
Time Test Ended: 18:17:15  
Interval: **4496.00 ft (KB) To 4546.00 ft (KB) (TVD)**  
Total Depth: 4546.00 ft (KB) (TVD)  
Hole Diameter: 6.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Bradley Walter  
Unit No: 40  
Reference Elevations: 3037.00 ft (KB)  
3032.00 ft (CF)  
KB to GR/CF: 5.00 ft

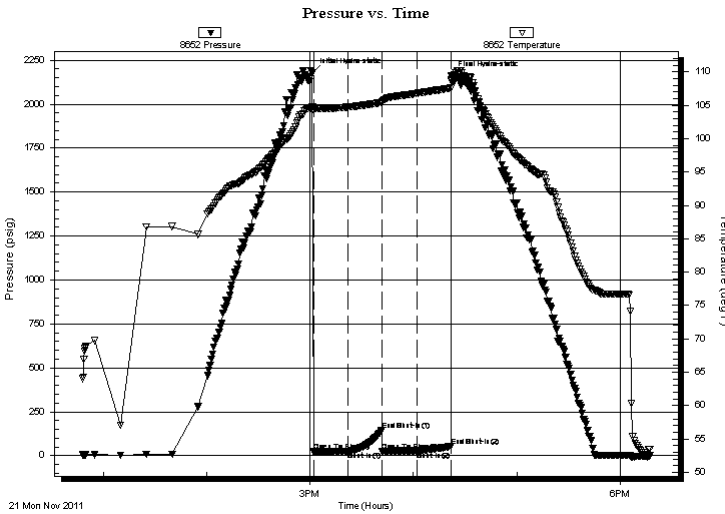
## Serial #: 8652

Inside

Press @ Run Depth: 27.56 psig @ 4497.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2011.11.21 End Date: 2011.11.21 Last Calib.: 2011.11.21  
Start Time: 12:48:05 End Time: 18:17:14 Time On Btm: 2011.11.21 @ 15:01:30  
Time Off Btm: 2011.11.21 @ 16:22:00

TEST COMMENT: IF: Surface blow , Died @ 10 minutes.  
IS: No return.  
FF: No blow .  
FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2177.39	104.82	Initial Hydro-static
1	22.67	104.23	Open To Flow (1)
21	24.18	104.73	Shut-In(1)
40	145.12	105.42	End Shut-In(1)
41	26.65	105.48	Open To Flow (2)
61	27.56	106.77	Shut-In(2)
81	52.87	107.57	End Shut-In(2)
81	2161.65	108.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	ocm 25o 75m	0.05

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co

**27 16s 37w Scott, Ks**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**#1-27 Riner**

Job Ticket: 45361

**DST#: 4**

Test Start: 2011.11.21 @ 12:48:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
10.00	ocm 25o 75m	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbf

Num Fluid Samples: 0

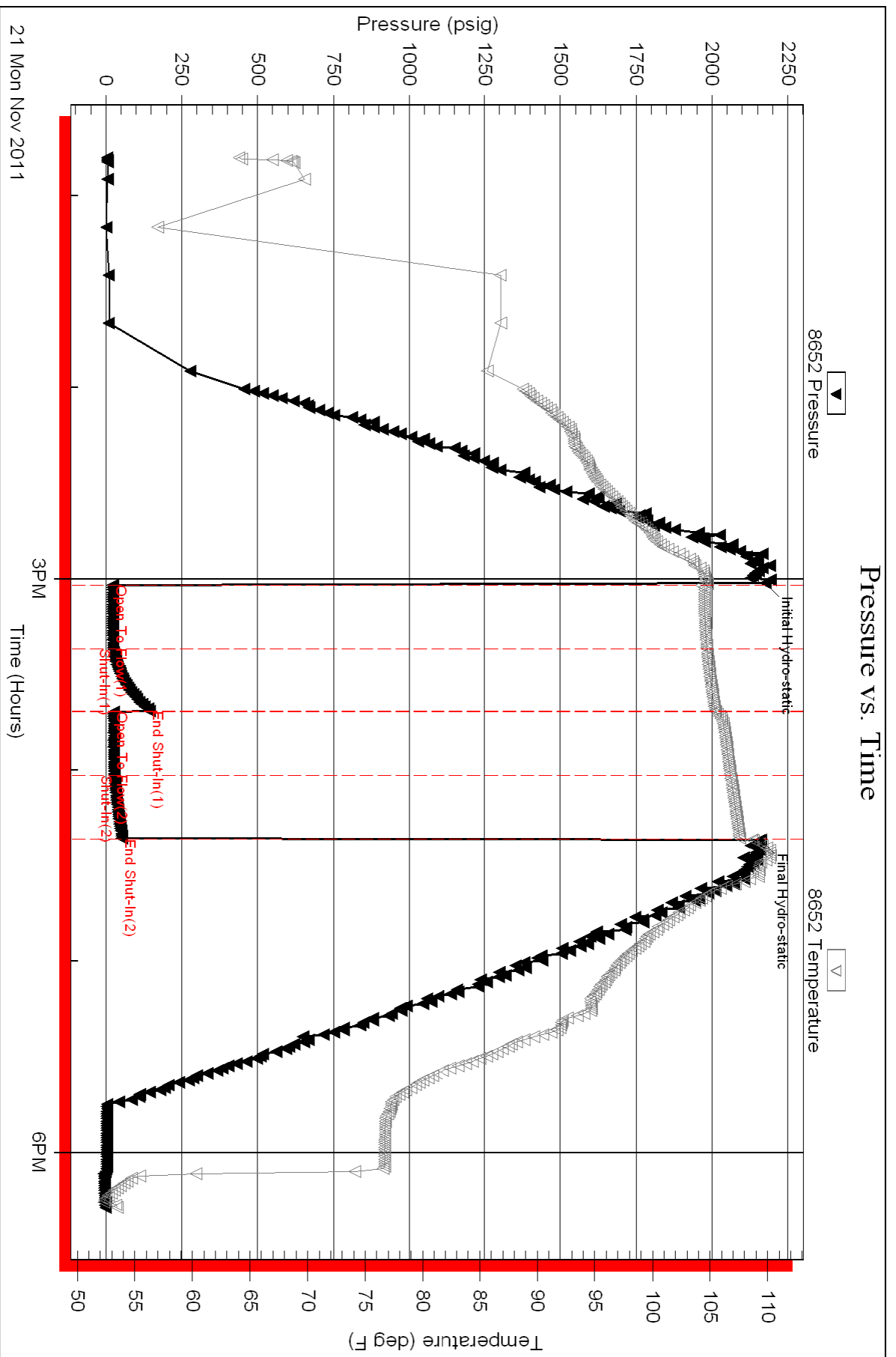
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co  
 1700 N Waterfront Pkwy  
 Bldg 600  
 Wichita, Ks 67206  
 ATTN: Steve Carl

**27 16s 37w Scott, Ks**

**#1-27 Riner**

Job Ticket: 35362

**DST#: 5**

Test Start: 2011.11.22 @ 07:41:00

## GENERAL INFORMATION:

Formation: **Johnson-Atoka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:01:30

Time Test Ended: 13:32:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 40

Interval: **4574.00 ft (KB) To 4660.00 ft (KB) (TVD)**

Reference Elevations: 3037.00 ft (KB)

Total Depth: 4660.00 ft (KB) (TVD)

3032.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8652**

**Inside**

Press @ Run Depth: 33.27 psig @ 4575.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.22

End Date:

2011.11.22

Last Calib.:

2011.11.22

Start Time: 07:41:05

End Time:

13:32:29

Time On Btm:

2011.11.22 @ 10:01:00

Time Off Btm:

2011.11.22 @ 11:28:00

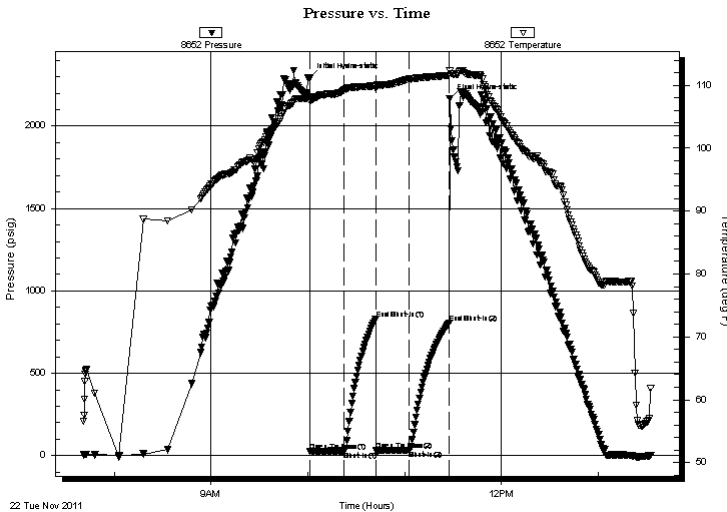
TEST COMMENT: IF: Surface blow, died @ 12 minutes.

IS: No return.

FF: No blow.

FS: No return.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2291.64	108.12	Initial Hydro-static
1	25.66	107.49	Open To Flow (1)
22	29.04	109.22	Shut-In(1)
41	827.72	109.94	End Shut-In(1)
42	30.50	109.50	Open To Flow (2)
62	33.27	110.98	Shut-In(2)
87	803.28	111.60	End Shut-In(2)
87	2168.47	112.25	Final Hydro-static

## Recovery

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

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co

**27 16s 37w Scott, Ks**

1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**#1-27 Riner**

Job Ticket: 35362

**DST#: 5**

Test Start: 2011.11.22 @ 07:41:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100m (oil spots)	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



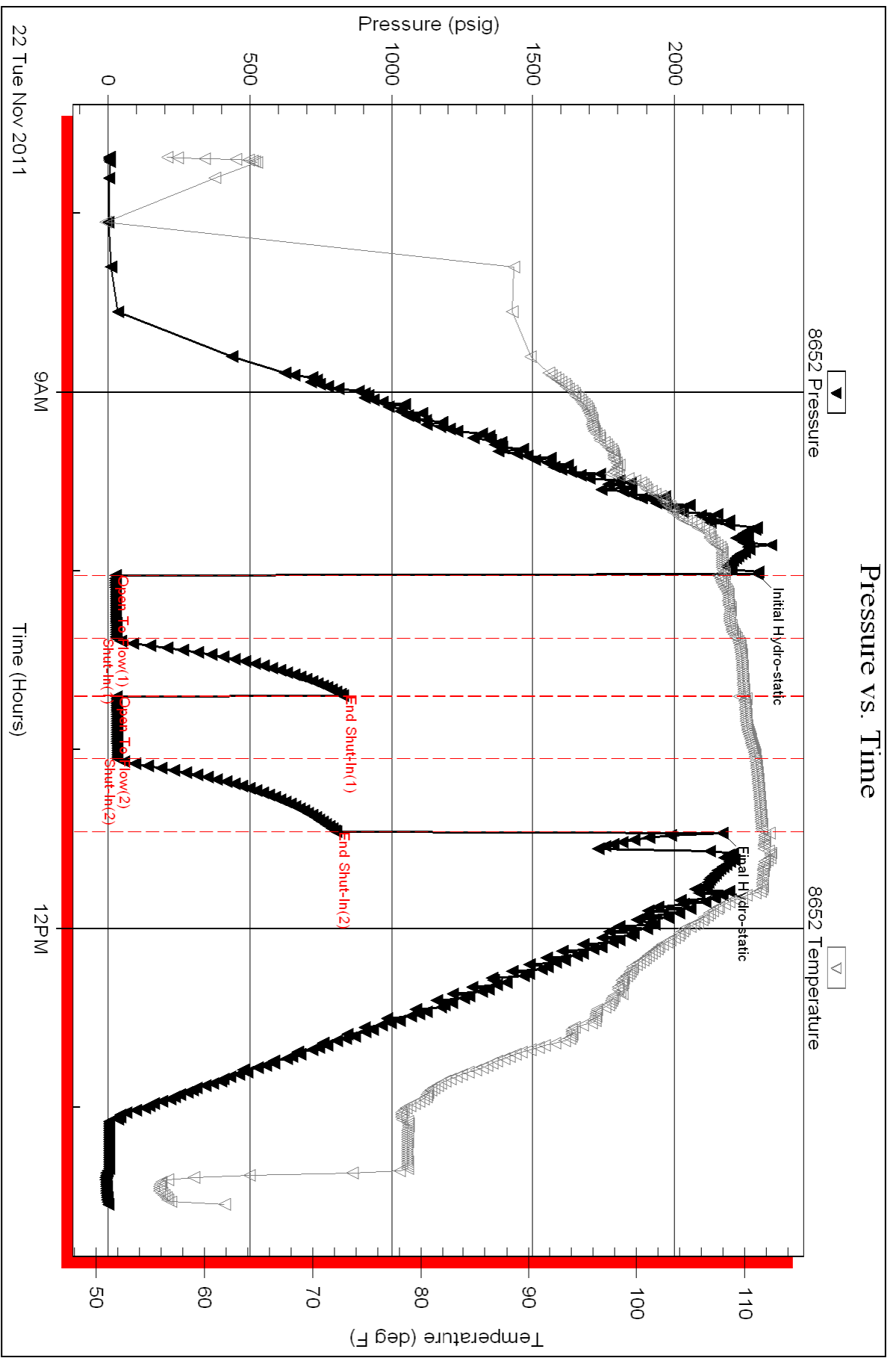
Serial #: 8652

Inside

Grand Mesa Operating Co

#1-27 Riner

DST Test Number: 5





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Grand Mesa Operating Co  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**27 16s 37w Scott, Ks**

**#1-27 Riner**

Job Ticket: 35363

**DST#: 6**

Test Start: 2011.11.23 @ 01:42:00

## GENERAL INFORMATION:

Formation: **St Louis**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:06:15

Time Test Ended: 09:03:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Bradley Walter

Unit No: 40

**Interval: 4722.00 ft (KB) To 4750.00 ft (KB) (TVD)**

Reference Elevations: 3037.00 ft (KB)

Total Depth: 4110.00 ft (KB) (TVD)

3032.00 ft (CF)

Hole Diameter: 6.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8652 Inside**

Press @ Run Depth: 28.50 psig @ 4723.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.23

End Date:

2011.11.23

Last Calib.:

2011.11.23

Start Time: 01:42:05

End Time:

09:03:14

Time On Btm:

2011.11.23 @ 04:06:00

Time Off Btm:

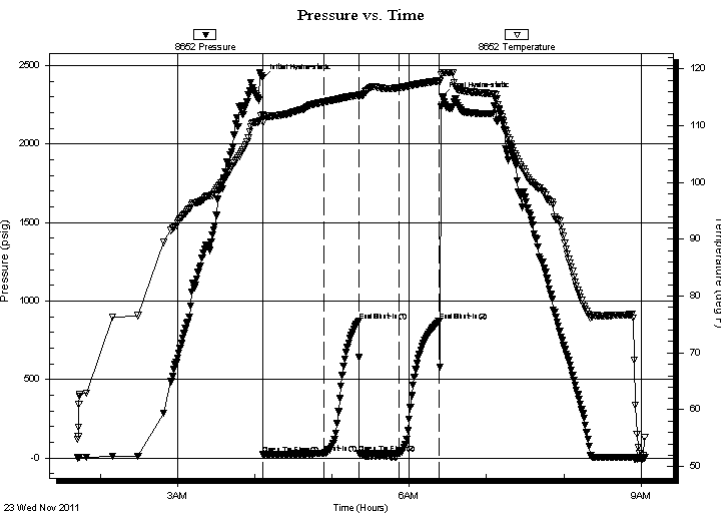
2011.11.23 @ 06:25:30

**TEST COMMENT:** IF: 1/2 inch blow, died @ 40 minutes.

IS: No return.

FF: No blow.

FS: No return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2420.31	112.00	Initial Hydro-static
1	24.85	110.64	Open To Flow (1)
48	31.42	114.20	Shut-In(1)
75	874.57	115.35	End Shut-In(1)
75	29.47	115.11	Open To Flow (2)
106	28.50	116.67	Shut-In(2)
137	871.43	117.89	End Shut-In(2)
140	2300.17	119.24	Final Hydro-static

## Recovery

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

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Co  
1700 N Waterfront Pkwy  
Bldg 600  
Wichita, Ks 67206  
ATTN: Steve Carl

**27 16s 37w Scott, Ks**  
**#1-27 Riner**  
Job Ticket: 35363      **DST#: 6**  
Test Start: 2011.11.23 @ 01:42:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.20 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5800.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	mud 100m (oil spots)	0.074

Total Length: 15.00 ft      Total Volume: 0.074 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

Serial #: 8652

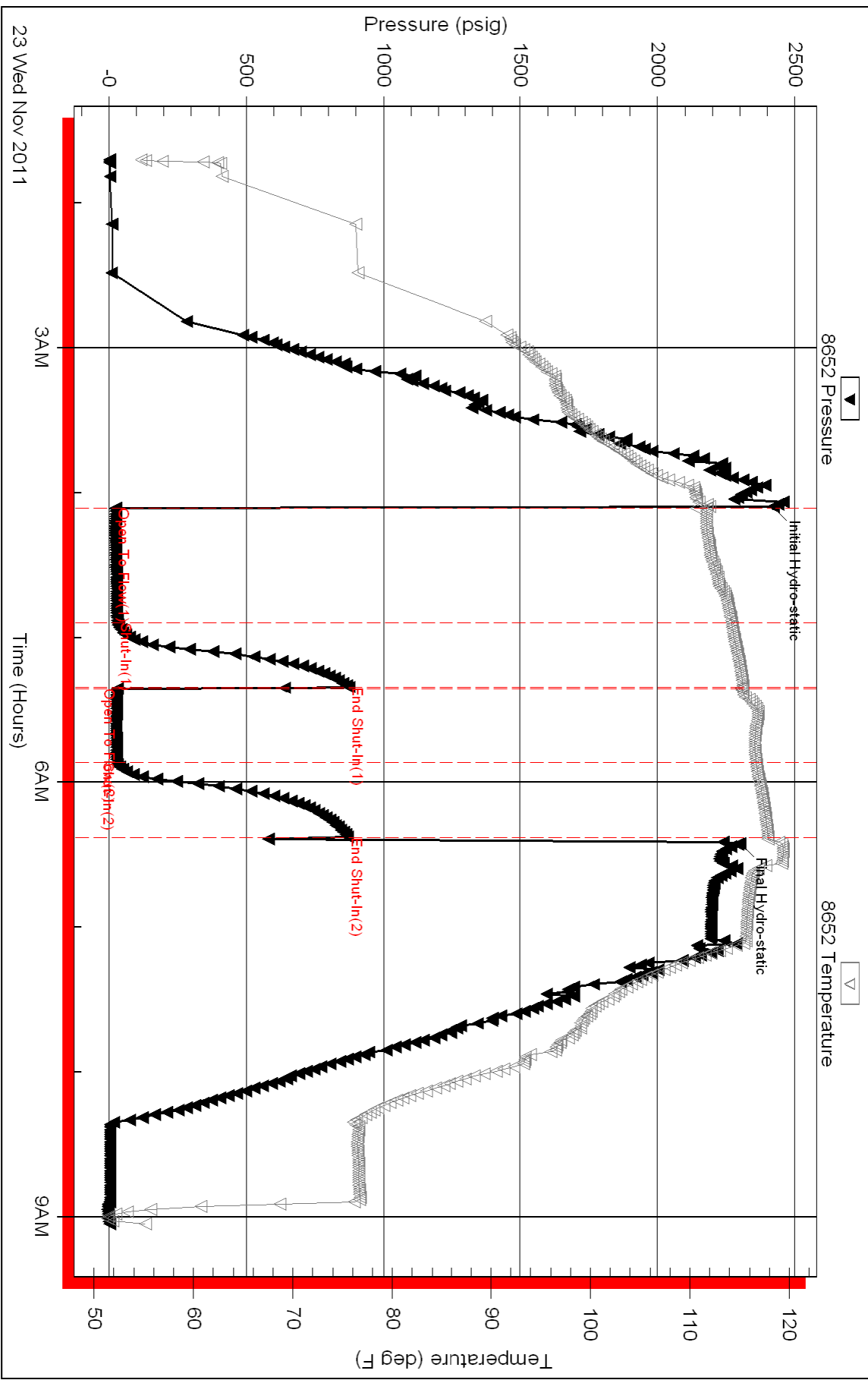
Inside

Grand Mesa Operating Co

#1-27 Riner

DST Test Number: 6

### Pressure vs. Time



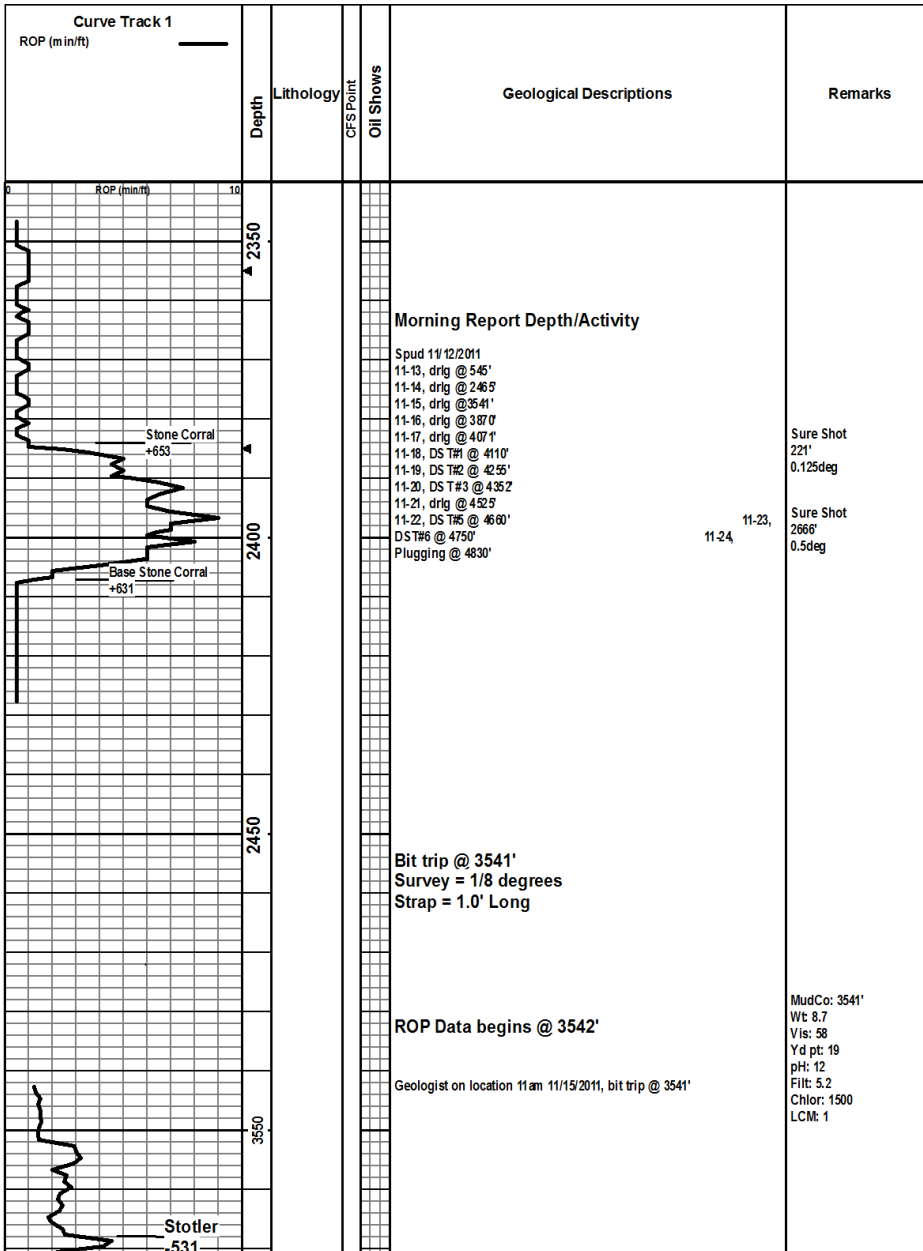
Triobite Testing, Inc

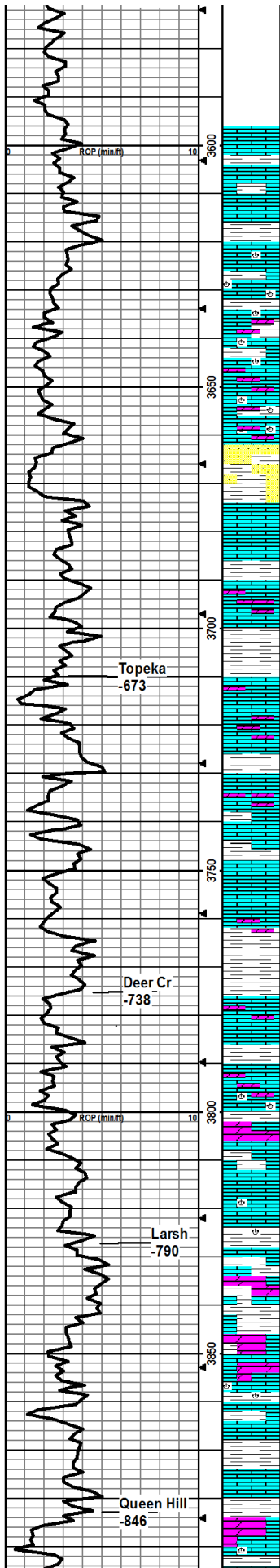
Ref. No: 35363

Printed: 2011.11.23 @ 09:41:27



B/Stone Corral	2406'	+631	2404'	+633
Heebner Shale	3945'	-908	3946'	-909
Lansing	3987'	-950	3989'	-952
Muncie Creek Shale	4165'	-1128	4166'	-1129
Stark Shale	4256'	-1219	4258'	-1221
Hushpuckney Shale	4302'	-1265	4303'	-1266
Marmaton	4378'	-1341	4377'	-1340
Upper Fort Scott	4485'	-1448	4485'	-1448
Little Osage Shale	4506'	-1469	4506'	-1469
Excello Shale	4523'	-1486	4523'	-1486
Johnson Zone	4599'	-1562	4601'	-1564
Morrow	4664'	-1627	4666'	-1629
Mississippian	4713'	-1676	4715'	-1678
RTD	4830'	-1793		
LTD			4834'	-1797





10 ft. Samples begin at 3600

LS-tan, mottled, fn xln, sm crs xln, foss-bryz/crin/brach, mealy, sm chalky, scat fr int xln por, scat flake gilsonite str, brt blu fluor when cut, few pcs DOLO-tan, fn xln, no por, nso, no cup odr.

LS-Mostly tan as above, sm LS-drk gry, m ed-crs xln, profus foss-various, dense, nvp, few pc SS-tt blu, vln grn, dense, nvp, ns, no cup odr, decr gilsonite flakes.

LS-mostly med gry, sm fn xln, sm m ed-crs xln, foss-crin/ bryz, m ostly dense/hard/brittle, few pcs w/pr int xln por, flake gilsonite str, decring in 3640sm pl, blu fluor when cut, no cup odr, nso, sm soft gry SH, sm DOLO-wht/crm, fn xln, nvp, ns.

LS-tan/gry, med xln, foss as above, sm LS-wdrk gry, arg, abund DOLO-crm, fn xln, scat fr int xln/pp por, no cup odr, ns.

LS-as above, influx of LS-wht, fn xln, dense, nvp, incr DOLO as above, scat pp por, no cup odr, ns.

Mix of several LS's as above, mostly tan, mottled, v-foss- various, sm DOLO as above, sm SH-gry, waxy, no cup odr, ns.

predom LS-med tan, mottled, fn xln, foss, scat int xln por, few flakes gilsonite, abund DOLO-tan, fn xln, fr int xln/pp por, influx pure chalk, sm LS-drk gry, fn xln, dense, hard, foss, nvp, abund S-S-brn, fn grn, hard clus, nvp, no cup odr, ns.

LS-drk gry, fn xln, dense, hard, silty foss, sm chalk, nvp, no cup odr, ns.

LS-drk gry, fn xln, dense, hard, grainy/silty, chalk as above, abund DOLO-tan/crm, fn xln, fr-gd pp/vug por, no cup odr, nvp, ns.

predom LS-drk gry as above, sm foss/ool, mostly dense/hard, nvp, no cup odr, ns.

LS and DOLO as above. No change.

Predom LS-drk gry, fn xln, grainy, rare foss, abund DOLO as above, scat pr-fr pp por, no cup odr, ns.

LS-drk gry, fn xln, grainy, dense/hard, nvp, ns, influx of pure chalk, DOLO as above, no cup odr, ns.

Mostly drk gry LS as above, incr foss-various, decr DOLO, no cup odr, ns.

LS-drk-med gry, fn xln, sm v-foss-fus, sm dense/uniform, influx LS-med tan, fn xln, dense, mostly uniform, few drk min (does not cut) filled frac and pr int xln, por, no cup odr, ns.

LS-mostly lt tan, fn xln, dense, sm foss/mealy, few spots drk m in str (cuts pale blu), pr int xln por, nso, abund DOLO, lt tan, fn xln, sm dense/uniform, sm w/fr vug por, SH-drk-med gry, sm silty, no cup odr, ns.

LS/DOLO/SH as above, no change.

LS-tan, fn xln, sm crs xln, mostly uniform, sm v-foss-fus/ brach/crin, scat mealy texture w/fr int xln por, abund DOLO-tan, fn xln, mostly dense w/nvp, sm scat fr pp por, SH-gry, sm silty, no cup odr, ns.

Mostly DOLO-tan, fn xln, mealy texture w/fr int xln/pp por, abund foss-unid'able, SH-gry, foss-soft/muddy/silty, no cup odr, ns.

LS-tan, fn xln, foss, chalky, easy crush, spots drk min (does not cut), SH-gry, sm silty, no cup odr, ns.

Mix of several LS's-med-drk gry, fn xln, dense/hard, rare foss-crin/fus/brach, nvp, LS-tan, fn xln, foss, chalky, easy crush, scat pr int xln, por, SH-drk gry, sm silty, no cup odr, ns.

Mix as above, influx DOLO-tan, fn xln, dense, nvp, no cup odr, ns.

LS-med-tan, crs xln, foss/mealy-fus/crin, fr int xln por, chalky, ns, LS-drk gry, fn xln, mostly uniform, sm foss, dense, nvp, DOLO-tan, fn xln, dense, SH-gry/silty, no cup odr, ns.

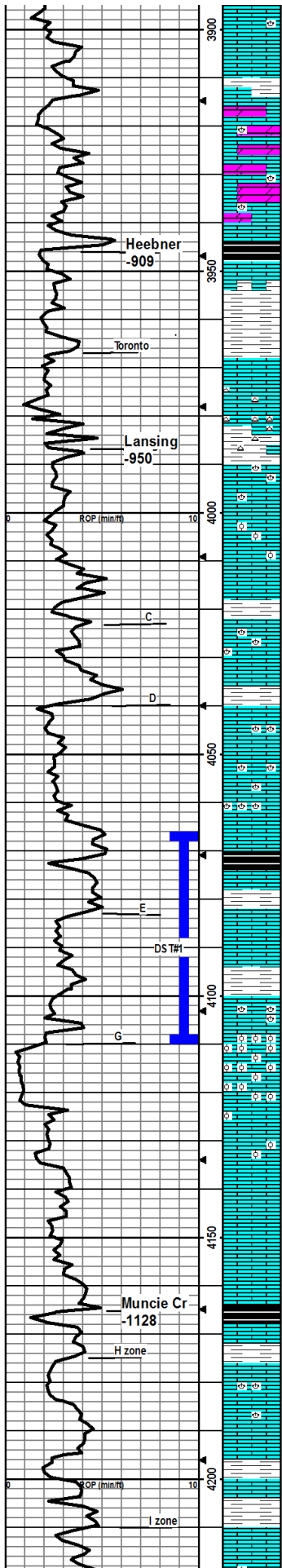
LS-tt gry/crm, vln xln, dense/brittle, foss-fus/crin/alg, nvp, ns, abund chalk, decr LS-gry as above, decr DOLO as above, decr SH-as above, no cup odr, ns.

LS-med tan, med xln, grainy, foss, chalky, dense, med crush, nvp, no cup odr, ns.

LS-gry, fn xln, dense, sm grainy, hard/brittle, nvp, no cup odr, ns.

LS-gry, fn xln, dense/hard, nvp, abund chalk, no cup odr, ns.

LS-med tan/gry, fn xln, v-foss-fus/crin, dense, hard, abund pure chalk,



DOLO-gry/tan, fn xln, scat pr vug por, hard, no cup odr, ns.

no returns while stuck

LS-It tan, med-crs xln, foss-various, mostly dense/hard mealy in part, sm dolomitic, scat pr-fr int xln por, spotty sho drk fo in m ost por, wk to no bleed on break, gold fluor, wk streaming cut, fr cup odr (due to spotting 60bbbls crude).

LS-gry/lt tan, fn xln, mostly dense, stly foss-brach, stly chalky matrix in part, DOLO as above, decr in sho from above, rare pp por, int cup odr.

LS-It gry/crm, fn xln, stly chalky matrix, foss-gas/crin, several pcs per tray w/fr int foss por, ss drk fo in most por, wk to no bleed, sit cup odr.

SH-blk, carb, fissile, brittle, few pcs in 3960smpl, incr in 3970smpl.

LS-med tan, micro xln, vdense, hard, brittle, nvp, ns.

SH-gry/brn, sm silty.

LS-gry/med tan, mottled, med xln, foss-various, dense-stly chalky, sm pure chalk, nvp, ns, few pcs CHERT-m lly, opaque, no cup odr.

LS-med-It tan, mostly fn xln, dense/hard, stly foss, w/nvp, rare fr pp/int foss por w/fr sfo (1-3 pcs/tray), fr bleed on break, no gas bub, gold fluor, sm dd oil stn, abund CHERT-crm/yel, opaque, sharp vnt cup odr.

LS-mostly gry, fn xln, dense, sm mottled w/drck m in, few pcs LS-crm, micro xln, ool, packed ool w/calcite filled int ool por, scat pr int ool por, rare (1-2 pcs/tray) w/fr int xln por, ss drk fo, abund chalk, few pcs chert, no cup odr, sm m in fluor, ns.

LS-crm/lt gry, fn xln, dense med crush, sm chalk mostly uniform, few foss-brach, rare ool in dense matrix, nvp, no cup odr, ns.

SH-med-drk gry, waxy to stly silty, brittle.

LS-crm, vln xln, dense, rare foss-crin/gas, hard, abund chalk, few pcs ool w/chalky matrix, easy crush, sm CHERT, rare (1-2pcs/tray) fr int xln/foss por, spotty sho drk fo, gd yel/gold fluor, int cup odr.

SH-gry.

LS-It tan, med xln, some dense/uniform, sm v foss-fus/ crin/brach, stly chalky, rare pr int foss por, rare (1-2pcs per tray) w/fr sho med brn fo, yel fluor, patchy lt brn stn in drys, no cup odr, ns.

LS-gry-It tan, fn xln, mostly dense/uniform, foss-fus/ various, ool in part, rare pr int xln/foss por, vs drk fo, no fluor.

SH-blk, carb, fissile.

LS-gry/tan, micro-fn xln, mostly uniform, sm foss-brach, ool in part, few pcs pr int xln/ool por, vs sfo in few pcs/tray, sm dd oil stn, gold fluor, fr sat in few pcs in drys.

LS-same as above, decr show.

SH-It gry, silty, soft, waxy.

LS-It gry/crm, fn xln, mostly dense/brittle, foss-brach/crin, few pcs pr int xln por, vs sfo.

LS-drk tan/brn, fn xln, profus ooc, vgd ooc por, dul gold fluor, wk pale blu cut, nsfo.

LS-tan, fn xln, ooc as above, ns.

LS-drk tan, fn xln, ool/ooc, rare foss, still carrying vgd ooc por, easy crush, sm LS-crm, fn xln, dense/hard, w/nvp, no cup odr, ns.

LS-It tan/crm, fn xln, dense/brittle, nvp, no cup odr, ns.

LS-It gry/crm, fn xln, dense, uniform, rare foss, rare ool, abund chalk, nvp, no cup odr, ns.

SH-drk blk, carb, sm gry, grainy/silty in part, hard/brittle.

LS-gry, fn xln, foss, dense, hard, nvp, ns.

SH-gry, firm.

LS-gry, fn xln, mostly dense/uniform, few foss-brach/crin, sm chalky matrix, rare pr int xln por, vt brn stn in few pcs/ tray in drys, cuts wk pale blu, sm pure chalk, few pcs CHERT-milky, transl, no cup odr, nsfo in wet smpl.

SH-blk/gry.

SH-gry, CONGL-It grn.

LS-brn, vln xln, foss-brach/crin, hard/brittle, dense, nvp, CHERTtan, no cup odr, ns.

STUCK IN HOLE @ 3914', 9:30am 11/16/2011. Spotted 60bbbl crude. Back to drilling at 4:45pm.

MudCo: 3915'  
Wt: 8.9  
Vis: 62  
Yd pt: 36  
pH: 11  
Flt: 6.8  
Chlor: 3800  
LCM: 2

Circ 60m in

MudCo: 4070'  
Wt: 9.0  
Vis: 74  
Yd pt: 26  
pH: 11  
Flt: 4.8  
Chlor: 5000  
LCM: 2

STUCK IN HOLE @ 3971', 3:18am 11/17/2011. Spotted 60bbbl crude. Back to drilling at 9:36pm.

Circ 60m in

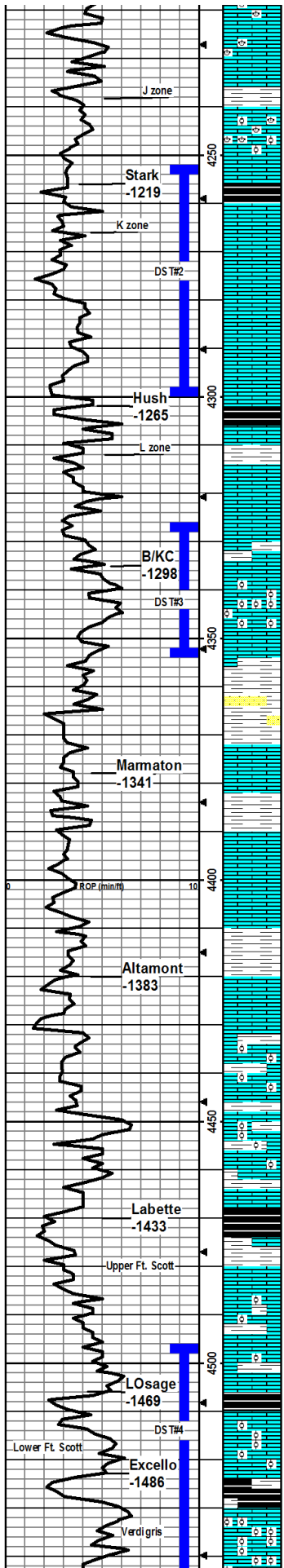
All wet samples carry a faint petroleum odor due to mixing crude into the mud system.

Circ 60m in

DST#1,  
E-Fzn  
30-45-30-45  
4067-4110  
Rec: 1080ft  
MCW  
Chlor: 34k ppm  
IFP: 35-394#  
FFP: 308-521#  
SIP: 1105-1106#

MudCo: 4110'  
Wt: 8.6  
Vis: 70  
Yd pt: 16  
pH: 10  
Flt: 4.8  
Chlor: 6000  
LCM: 3





LS-tan/gy, fn xln, dense, hard, foss-bryz, rare pr-fr int xln por, sm  
CHERT-gr, transl, no cup odr, ns.

LS-drk tan/brn, fn xln, uniform, dense, nvp, ns.

LS-tan, micro-fn xln, dense, uniform, nvp, sm LS-tan, micro xln,  
ool/foss-brach/gas, dense, nvp, sm CHERT-gr, opaque, no cup odr,  
ns.

SH-blk, carb, flood in 4280 sm pl.

LS-drk tan, med xln, uniform, gd int xln por, sat w/drk fro, slow to  
move out of por on break, many pcs/tray, fnt cup odr, good odr on  
break, wk gold fluor, im med stream ing out, fr sfo, fr-gd sat of med brn  
stn in drys.

LS-tan/crm, fn xln, mostly uniform, sm foss, few pcs per tray w/pr in  
xln por, sm int foss por, fnt cup odr, ss drk fo.

LS-crm, fn xln, mostyl uniform, sm foss, sm chalky, decr por, decr  
sho, fnt cup odr.

SH-blk, carb, flood in 4320 sm pl.

LS-drk tan/brn, fn xln, brittle, nvp, ns.

SH-lt gry, v soft m uddy.

LS-med tan/gy, fn xln, uniform, vdense/hard, nvp, no cup odr, ns.

LS-med gry, fn xln, uniform, vdense/hard, nvp, no cup odr, ns.

SH-gry.

LS-gry, fn xln as above, in flux LS-med tan, profus ool, vdense, calc  
filled int ool por, scat pr int xln/ool por, no fluor, nsfo, rare spotty lt  
brn stn in drys, cut wk blu.

LS-lt tan, crs xln, foss-brach/crin, v dense/hard, decr ool/foss, decr  
por, no cup odr, no fluor, ns.

4370 sample is a mix of LS's and SH's from trip, no value.

SH's, mostly gry, sm silty/sandy, few clusters SS-vn grn, arg, nvp, no  
cup odr, ns.

LS-drk tan/gy, fn xln, rare foss-crin, vdense/hard, nvp, no cup odr, ns.

SH-lt to med gry, sm silty, pyritic.

LS-lt gry, crs xln, foss-various, few ool, silty chalky matrix, nvp, no  
cup odr, ns.

Mix of SH's, brt red to brn, sm silty, sm LS- as above, no cup odr, ns.

4430smpl predom mix of SH's as above, few pcs LS-crm, fn xln,  
uniform, dense to silty chalky, nvp, no cup odr, ns.

4440smpl predom SH's as above, sand sized frags of LS-crm, fn xln,  
several pcs/tray w/pr int xln por, silt trace fo, no cup odr, no fluor, wk  
blu cut.

LS-lt tan/crm/gy, fn xln, mostyl uniform, sm foss-crin/ various, all  
dense, nvp, no cup odr, no fluor, ns.

LS-crm, micro-fn xln, ool, brittle, calc filled int ool por, few pcs  
CHERT, nvp, no cup odr, ns.

LS-crm, fn xln, uniform, few pcs ool/foss-bryz, dense brittle, sm  
chalky, few pcs CHERT-gr, transl, nvp, no cup odr, ns.

LS-crm, fn xln, uniform, few pcs ool, sm chalky matrix, nvp, no cup  
odr, ns.

SH-blk carb, SH-gry/red/brn, sm pl is predom SH, LS- as above.

LS-tan, fn xln, mostly uniform, rare foss-bryz/ various, on pc in two  
trays w/pr int xln por, vslt trace fo, no cup odr, no fluor.

LS-crm, sm gry, fn med xln, foss-various, sm grainy/ool, dense/hard,  
few pcs CHERT-milky, nvp, no cup odr, ns.

SH-blk, fissile, brittle, carb, flood in 4515smpl, SH-gry/brn/red, sm  
silty, pyritic.

LS-crm/tan, micro xln, foss/ool, fr-gd int foss por, easy crush, fr sho  
drk fo in all por, bleed oil and gas bub on break, no cup odr, wk gold  
fluor, immediate streaming cut drk sat stn in drys.

SH-blk, carb, flood in 4540smpl.

LS-drk tan, micro xln, profus ool/pis, most int ool por filled w/ calcite,  
few pcs/tray w/ scat pr int ool por, vs sfo, no cup odr.

MudCo: 4258'  
Wt: 8.9  
Vis: 65  
Yd pt: 17  
pH: 9.0  
Flt: 4.8  
Chlor: 6200  
LCM: 4

**DST#2**  
K zone  
30-45-45-60  
4252-4300'  
Rec: 420 ft MCW  
Chlor: 45k ppm  
IFP: 27-116#  
FFP: 120-206#  
SIP: 1143-1135#

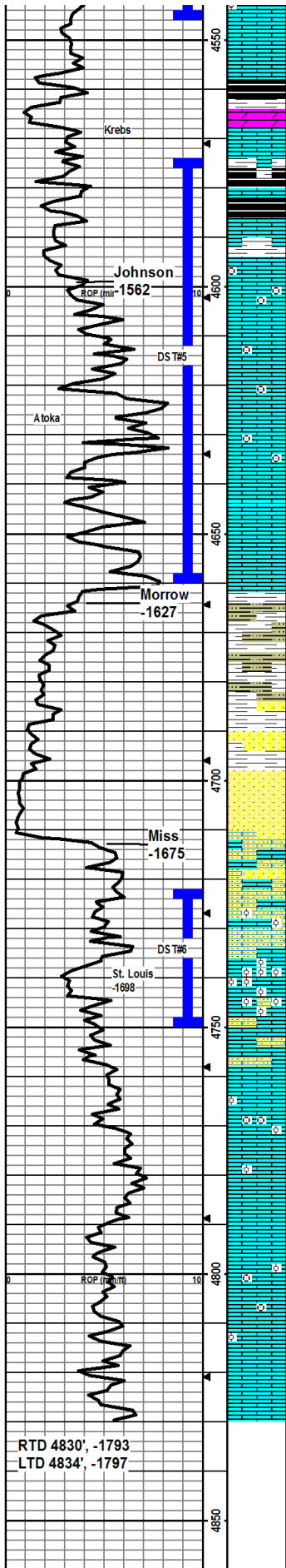
Sure Shot  
4300'  
0.75deg

**DST#3,**  
Pleasanton  
30-30-30-30  
4331-4353'  
Rec: 3 ft Mud  
IFP: 29-22#  
FFP: 21-20#  
SIP: 478-599#

NOTE:  
There is very light  
staining in all of the dry  
samples due to having  
spotted crude oil on  
bottom in an effort to  
"un-stick" the drill  
string.

MudCo: 4352'  
Wt: 9.1  
Vis: 76  
Yd pt: 18  
pH: 8.5  
Flt: 8.8  
Chlor: 8500  
LCM: 3

**DST#4,**  
Ft. Scott  
Verdigris  
20-20-20-20  
4496-4546'  
Rec: 10 ft OCM  
25% Oil  
IFP: 23-24#  
FFP: 27-28#



LS-tan, ool as above, decr show.

4560smp, predom SH's, trip trash.

SH-blk, carb.

DOLO-wht, med xln, sucrosic, brittle, easy crush, pr int xln por, no odr, no fluor, ns.

LS-med gry, vfn xln, wdense/hard, rare pr int xln/pp por, wssfo, will not break out of por, no cup odr, no fluor, 4590 smp is mostly SH-blk/gry/red/brn.

SH-blk, SH's as above, few pcs LS-wht, fn xln, chalky, nvp, no cup odr, ns.

LS-tt tan, micro xln, wdense/hard/brittle, few pcs/tray w/ rare gd vug por, vugs are lined w/ calcite rhombs and appear to be trace fossils (burrows?) approx 0.2m in diameter, residue of drk brn fr oil trapped in xts, no cup odr, wk gold fluor, wk strmg cut.

LS-tt tan, fn xln, mostly uniform, mostly dense, sm chalky matrix, rare pr int xln por, wssfo, will not break out of por, no cup odr, no fluor.

LS-med tan/gry, vfn-fn xln, dense, rare pr int xln por as above, vnsfo in few pcs per tray, diff to break out of por, no cup odr, no fluor.

LS-predom drk-tt tan, vfn xln, brittle, uniform, sm LS-crm, crs xln, vfoss-coral/various, abund fr int xln/foss por, fr sfo in most por, fr bleed on break, no gas bub, abund frac faces w/trc free oil and sheen along face, wk gold fluor, gd strmg cut, fnt cup odr.

LS- mostly as above, decr show lith, no cup odr.

LS-tt tan/gry, fn xln, mostly uniform/dense/brittle, sm LS-crm, fn xln, uniform, w/chalky matrix, nvp, no cup odr, ns.

SH-predom med gry, sm silty congl, no cup odr, ns.

SH-as above, MUDSTN-tt gry, very soft/silky, few SS clusters-drk gry, vfn grn, well srted, arg, few loose grns, no cup odr, no fluor, no cut, ns.

Predom SH's, as above, few clust SS-wht/lt blu-vfn grn, well srted, glauc, sm vfrable, sm hard clust, rare clust SS-fn-m d grn, fry well srted, sub ang-sub round, clr qtz grains, fr int grn por, no cup odr, no fluor, no cut, ns.

SS-wht/tan, fn grn, well srted, no eff on acid, v-friable to firm rounded clusters, rare clust SS-m d grn, friable, tiny blk specks (dd oil?), no cup odr, no fluor, no cut, nsfo.

LS-wht, fn xln, v sandy, fn grn, well srted, nvp, no cup odr, ns.

Sample predom SH-mostly gry, silty, sm SS clusters as above, sm LS-v sandy as above, few pcs LS-wht, fn xln, sandy, ool, no cup odr, ns.

LS-crm, m d xln, ool, v brittle, easy crush, nvp, few pcs LS-tan, fn xln, dense, pr pp por, vnsfo on break, no cup odr, wk pale blu cut.

LS-wht/lt gry, crs xln, chalky, nvp, no cup odr, ns.

LS-med tan, crs xln, foss-crin, sm w/ chalky matrix, hard, dense, nvp, ns.

LS-med tan, crs xln, foss-crin, incr chalk, hard, dense, LS-tt tan, fn xln, hard, brittle, dense, nvp, ns.

LS-tt tan/crm, crs xln, foss-crin, sm silty ool, chalky matrix, flaky to hard/brittle, nvp, ns.

LS-crm, crs xln, grainy, chalky, rare ool, nvp, no cup odr, ns.

LS-wht/crm, crs xln, grainy, chalky, rare ool, foss-crin, nvp, no cup odr, ns.

LS-wht, crs xln, as above, rare ool, few chip CHERT-gry, opaque, fresh, nvp, no cup odr, ns.

No change.

Mostly LS as above, rare ool in dense matrix, nvp, no cup odr, ns.

SIP: 145-53#

MudCo: 4546'  
Wt: 9.1  
Vis: 52  
Yd pt: 18  
pH: 10  
Flit: 8.0  
Chlor: 5000  
LCM: 4

DST#5,  
Johnson  
Atoka  
20-20-20-20  
4574-4660'  
Rec: 5' OSM  
IFP: 26-29#  
FFP: 31-33#  
SIP: 827-803#

MudCo: 4660  
Wt: 9.0  
Vis: 59  
Yd pt: 17  
pH: 10  
Flit: 7.2  
Chlor: 5800  
LCM: 4

Vis: 64  
Wt: 9.2

Carrying much SH sluff  
from upper Morrow

DST#6,  
St. Louis  
45-30-30-30  
4722-4750'  
Rec: 15' OSM  
IFP: 25-31#  
FFP: 29-28#  
SIP: 875-871#

MudCo: 4750'  
Wt: 9.2  
Vis: 64  
Yd pt: 23  
pH: 9.5  
Flit: 9.6  
Chlor: 6500  
LCM: 4

Sure Shot  
4830'  
0.5deg

RTD 4830', -1793  
LTD 4834', -1797