

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 Recompletion Date \_\_\_\_\_ 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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Form	ACO1 - Well Completion
Operator	American Warrior, Inc.
Well Name	CAH UNIT 1
Doc ID	1382235

Tops

Name	Top	Datum
Anhydrite	1432	790
Heebner	3699	-1477
Lansing	3749	-1527
BKC	4072	-1850
Pawnee	4185	-1963
Ft. Scott	4265	-2043
Cherokee	4289	-2067
Mississippian	4361	-2139
RTD	4374	-2152





## DRILL STEM TEST REPORT

Prepared For: **American Warrior, Inc**

PO Box 299  
Garden City KS 67846

ATTN: Jason Alm

### **CAH Unit #1**

#### **23-20s-22w Ness,KS**

Start Date: 2017.11.28 @ 16:42:15

End Date: 2017.11.29 @ 00:34:30

Job Ticket #: 64401                      DST #: 1

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

Printed: 2017.11.29 @ 10:06:38

American Warrior, Inc  
23-20s-22w Ness,KS  
CAH Unit #1  
DST # 1  
Miss  
2017.11.28



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

American Warrior, Inc  
 PO Box 299  
 Garden City KS 67846  
 ATTN: Jason Alm

**23-20s-22w Ness, KS**

**CAH Unit #1**

Job Ticket: 64401

**DST#: 1**

Test Start: 2017.11.28 @ 16:42:15

## GENERAL INFORMATION:

Formation: **Miss**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 19:03:00  
 Tester: Mike Roberts  
 Time Test Ended: 00:34:30  
 Unit No: 81  
 Interval: **4312.00 ft (KB) To 4369.00 ft (KB) (TVD)**  
 Reference Elevations: 2222.00 ft (KB)  
 Total Depth: 4369.00 ft (KB) (TVD)  
 2214.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 8.00 ft

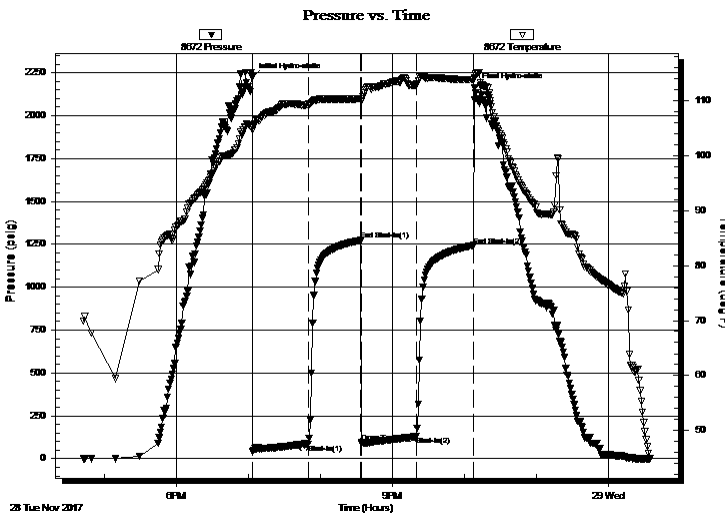
## Serial #: 8672

Inside

Press@RunDepth: 129.44 psig @ 4364.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2017.11.28 End Date: 2017.11.29 Last Calib.: 2017.11.29  
 Start Time: 16:42:15 End Time: 00:34:30 Time On Btm: 2017.11.28 @ 19:02:45  
 Time Off Btm: 2017.11.28 @ 22:08:30

TEST COMMENT: IF:BOB in 31 min.  
 IS:No return blow  
 FF:BOB in 26 min.  
 FS:Weak surface blow died in 10 min.

## PRESSURE SUMMARY



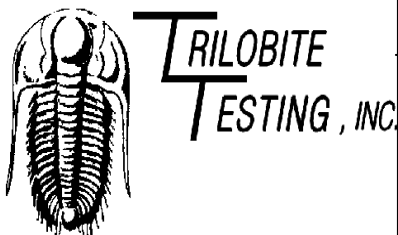
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2223.85	105.44	Initial Hydro-static
1	43.83	104.63	Open To Flow (1)
47	86.74	109.28	Shut-In(1)
91	1273.05	110.30	End Shut-In(1)
91	93.21	109.92	Open To Flow (2)
137	129.44	112.86	Shut-In(2)
185	1243.77	113.80	End Shut-In(2)
186	2162.18	114.14	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
92.00	gco 20%g 80%o	1.00
62.00	gcom 2%g 5%o 93%m	0.87
62.00	gcm 2%g 98%m	0.87
0.00	GIP= 248 ft	0.00

## Gas Rates

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



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

American Warrior, Inc

PO Box 299  
Garden City KS 67846

ATTN: Jason Alm

**23-20s-22w Ness, KS**

**CAH Unit #1**

Job Ticket: 64401 **DST#: 1**

Test Start: 2017.11.28 @ 16:42:15

### GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:03:00

Time Test Ended: 00:34:30

**Interval: 4312.00 ft (KB) To 4369.00 ft (KB) (TVD)**

Total Depth: 4369.00 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: 2222.00 ft (KB)

2214.00 ft (CF)

KB to GR/CF: 8.00 ft

**Serial #: 8374 Outside**

Press@RunDepth: psig @ 4364.00 ft (KB)

Start Date: 2017.11.28 End Date: 2017.11.29

Start Time: 16:42:15 End Time: 00:34:45

Capacity: 8000.00 psig

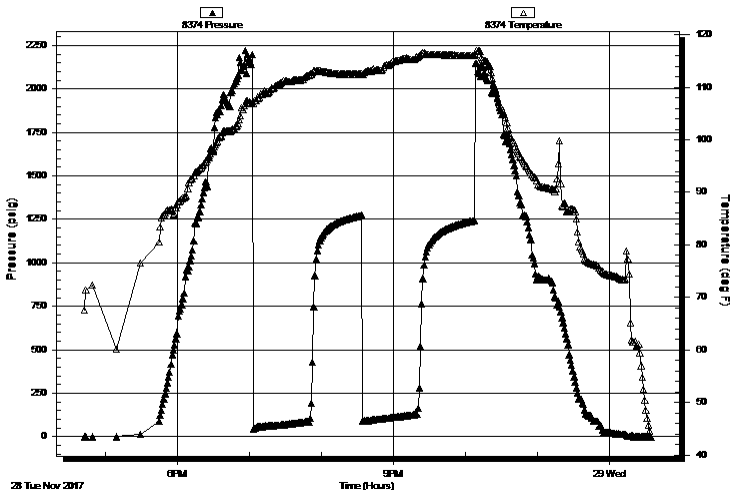
Last Calib.: 2017.11.29

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF:BOB in 31 min.  
IS:No return blow  
FF:BOB in 26 min.  
FS:Weak surface blow died in 10 min.

Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
92.00	gco 20%g 80%o	1.00
62.00	gcom 2%g 5%o 93%m	0.87
62.00	gcm 2%g 98%m	0.87
0.00	GIP= 248 ft	0.00

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

American Warrior, Inc  
PO Box 299  
Garden City KS 67846  
ATTN: Jason Alm

**23-20s-22w Ness, KS**  
**CAH Unit #1**  
Job Ticket: 64401      **DST#: 1**  
Test Start: 2017.11.28 @ 16:42:15

**Tool Information**

Drill Pipe:	Length: 4282.00 ft	Diameter: 3.80 inches	Volume: 60.07 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.23 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4312.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			4285.00	
Shut In Tool	5.00			4290.00	
Hydraulic tool	5.00			4295.00	
Jars	5.00			4300.00	
Safety Joint	3.00			4303.00	
Packer	5.00			4308.00	28.00      Bottom Of Top Packer
Packer	4.00			4312.00	
Stubb	1.00			4313.00	
Perforations	2.00			4315.00	
Change Over Sub	1.00			4316.00	
Drill Pipe	32.00			4348.00	
Change Over Sub	1.00			4349.00	
Perforations	15.00			4364.00	
Recorder	0.00	8672	Inside	4364.00	
Recorder	0.00	8374	Outside	4364.00	
Bullnose	5.00			4369.00	57.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>85.00</b>				





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

American Warrior, Inc

**23-20s-22w Ness,KS**

PO Box 299  
Garden City KS 67846

**CAH Unit #1**

Job Ticket: 64401

**DST#: 1**

ATTN: Jason Alm

Test Start: 2017.11.28 @ 16:42:15

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6100.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
92.00	gco 20%g 80%o	0.999
62.00	gcom 2%g 5%o 93%m	0.870
62.00	gcm 2%g 98%m	0.870
0.00	GIP= 248 ft	0.000

Total Length: 216.00 ft      Total Volume: 2.739 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

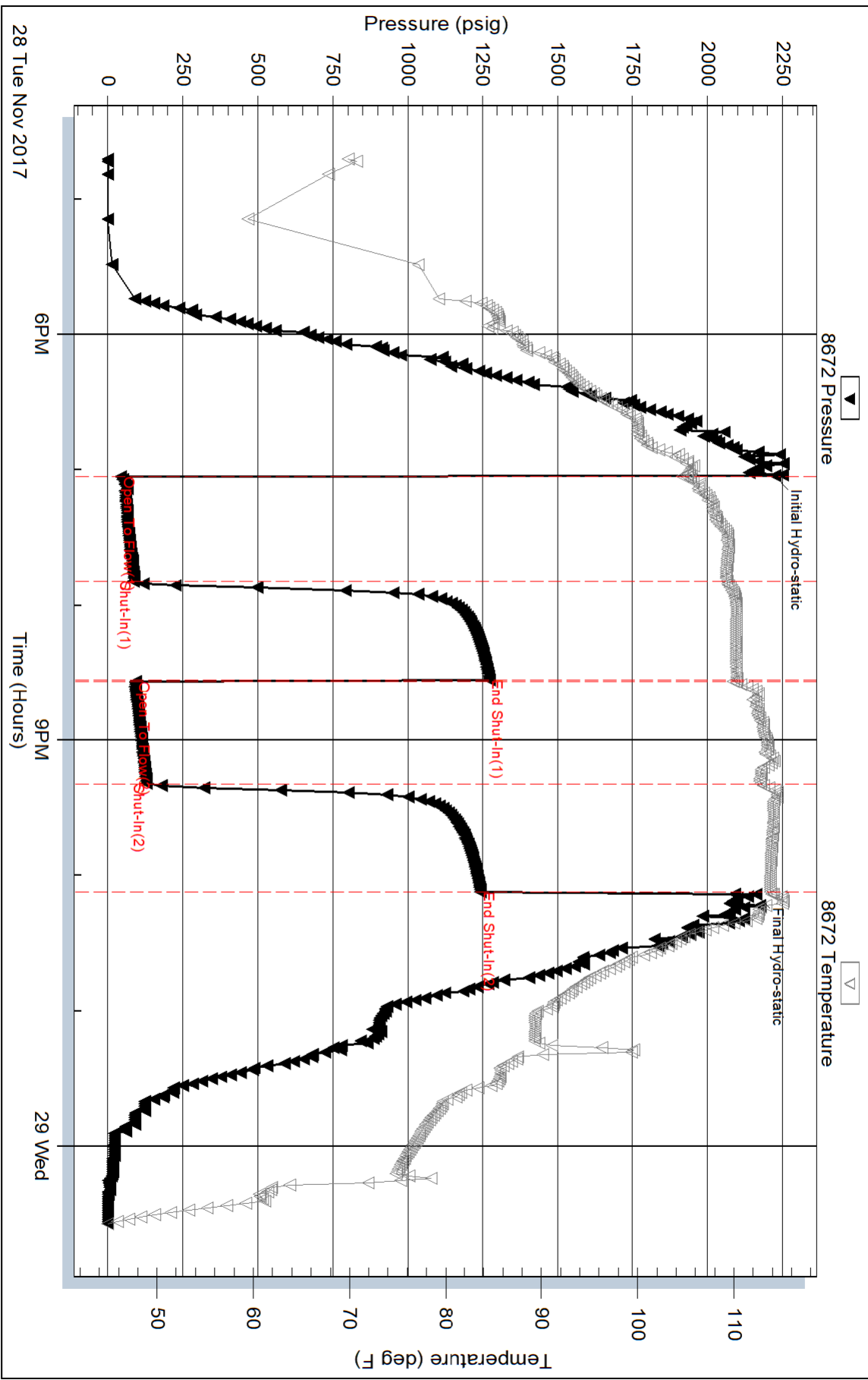
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API 37 @ 50 corrected to 36 @ 60

### Pressure vs. Time

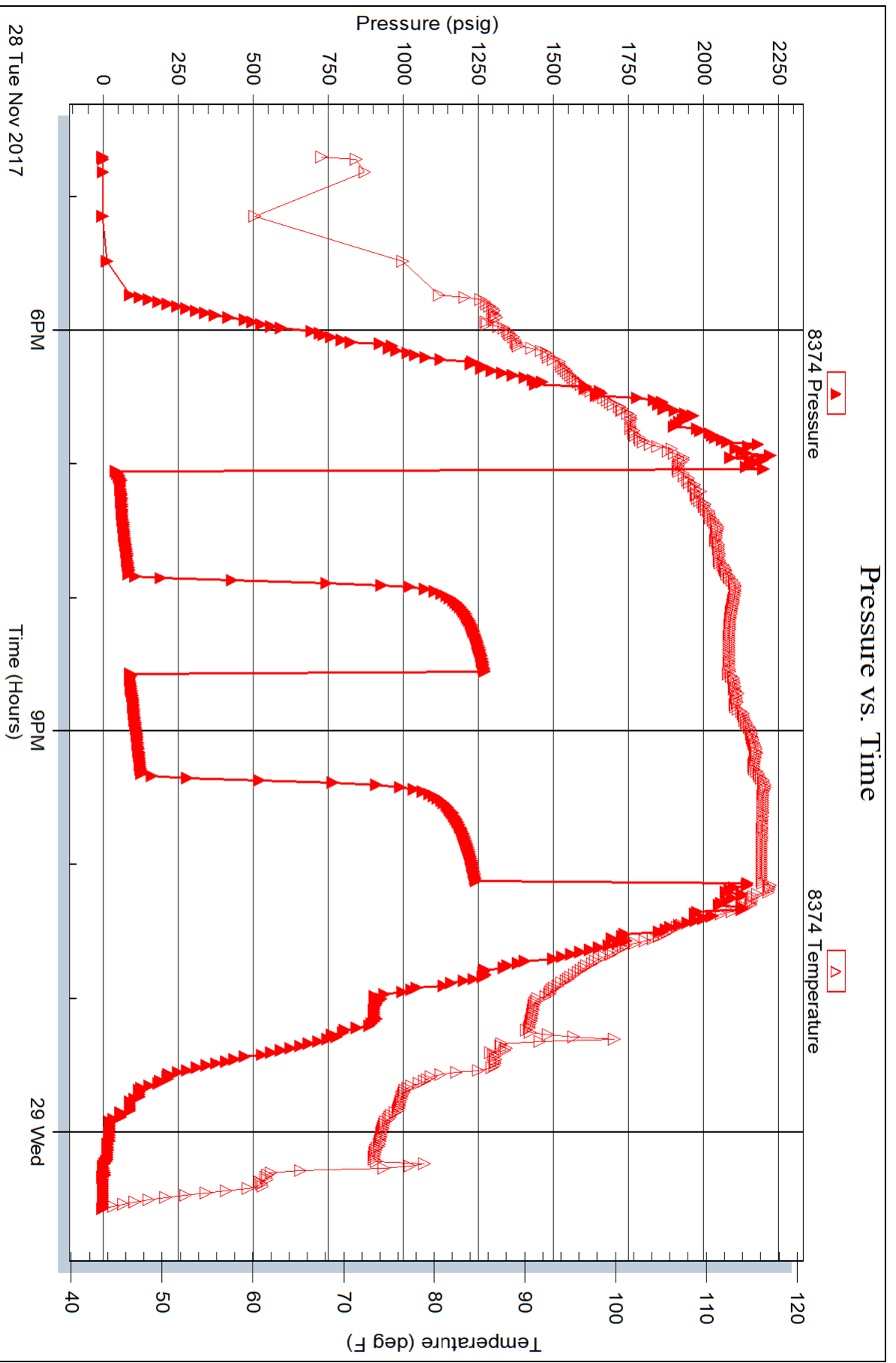


Serial #: 8374

Outside American Warrior, Inc

CAH Unit #1

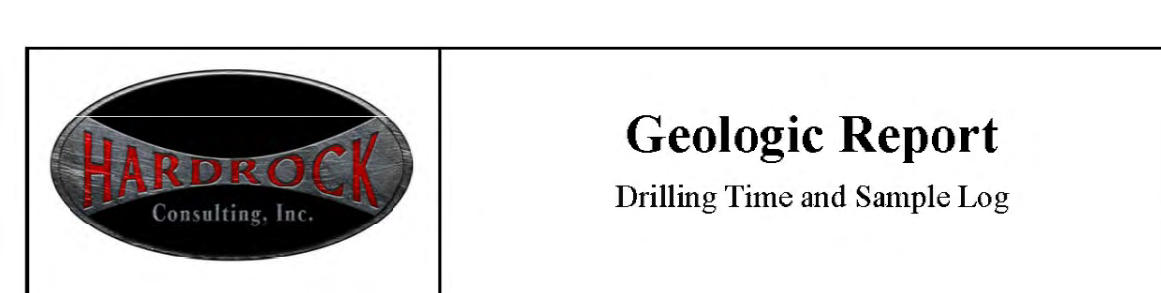
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64401

Printed: 2017.11.29 @ 10:06:41



# Geologic Report

Drilling Time and Sample Log

Operator <b>American Warrior, Inc.</b>		Elevation KB 2222'
Lease <b>CAH Unit</b>	No. <b>1</b>	DF 2214'
API # <b>15-135-25977-0000</b>		Casing Record Surface 8 5/8" @ 211'
Field <b>Bondurant</b>		Production 5 1/2" @ 4374'
Location <b>2550' FNL &amp; 100' FEL</b>		Electrical Surveys None
Sec. <b>1</b>	Twp. <b>20s</b>	Rge. <b>22w</b>
County <b>Ness</b>	State <b>Kansas</b>	

Formation	Log Tops	Sample Tops	Struct Comp
Anhydrite		1432' +790	FL
Base		1466' +756	
Heebner		3699' -1477	+1
Lansing		3749' -1527	FL
BKC		4072' -1850	
Pawnee		4185' -1963	+3
Fort Scott		4265' -2043	+2
Cherokee		4289' -2067	+2
Mississippian		4361' -2139	+27
Total Depth		4374' -2152	

Reference Well For Structural Comparison **American Warrior, Inc. Albers-Cox #1**  
2050' FNL & 100' FWL Sec. 23 T20s R22w Ness County, Kansas

Drilling Contractor	Discovery Drilling, Inc.	Rig #4
Commenced	11-22-2017	Completed 11-29-2017
Samples Saved From	3950'	To RTD
Drilling Time Kept From	3650'	To RTD
Samples Examined From	3950'	To RTD
Geological Supervision From	3950'	To RTD

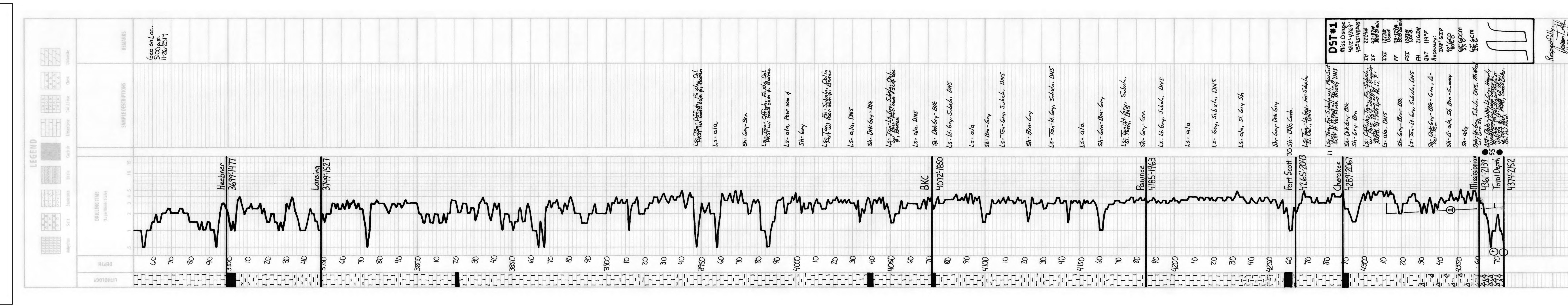
Displacement 3400' Mud Type Chemical

### Summary and Recommendations

The location for the CAH Unit #1 well was found via 3-D seismic survey. The new well ran structurally as expected via the survey. One Drill Stem Test was conducted which recovered commercial amounts of oil from the Mississippian Osage Formation. After all gathered data had been examined the decision was made to run 5 1/2 inch production casing to further evaluate the CAH Unit #1 well.

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.



# **Geological Report**

American Warrior, Inc.

## **CAH Unit #1**

2550' FNL & 100' FEL

Sec. 23 T20s R22w

Ness County, Kansas



**American Warrior, Inc.**

## General Data

Well Data: American Warrior, Inc.  
CAH Unit #1  
2550' FNL & 100' FEL  
Sec. 23 T20s R22w  
Ness County, Kansas  
API # 15-135-25977-0000

Drilling Contractor: Discovery Drilling Rig #4

Geologist: Jason T Alm

Spud Date: November 22, 2017

Completion Date: November 29, 2017

Elevation: 2214' Ground Level  
2222' Kelly Bushing

Directions: Bazine KS, South 10 mi. to 30 rd. West 1 mi. South  
½ mi. West into location.

Casing: 211' 8 5/8" surface casing  
4374' 5 1/2" production casing

Samples: 10' wet and dry, 3950' to RTD

Drilling Time: 3650' to RTD

Electric Logs: None

Drillstem Tests: One, Trilobite Testing, Inc. "Mike Roberts"

Problems: Main Drive Clutch was slipping during short trip for  
DST #1. Clutch slip resulted in short trip taking  
around two extra hours.

Remarks: None

## Formation Tops

<b>Formation</b>	<b>American Warrior, Inc.</b>
	<b>CAH Unit #1</b>
	<b>Sec. 23 T20s R22w</b>
	<b>2550' FNL &amp; 100' FEL</b>
Anhydrite	<b>1432' +790</b>
Base	<b>1466' +756</b>
Heebner	<b>3699' -1477</b>
Lansing	<b>3749' -1527</b>
BKc	<b>4072' -1850</b>
Pawnee	<b>4185' -1963</b>
Fort Scott	<b>4265' -2043</b>
Cherokee	<b>4289' -2067</b>
Mississippian	<b>4361' -2139</b>
RTD	<b>4374' -2152</b>

## Sample Zone Descriptions

**Mississippian Osage (4361', -2139):      Covered in DST #1**

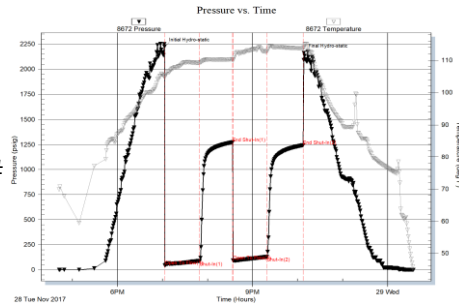
Δ – White, heavily weathered with good vuggy porosity, slightly dolomitic, fine sucrosic crystalline with pinpoint inter-crystalline and vuggy porosity, light to good oil stain with light scattered saturation, fair show of free oil, good odor, bright yellow fluorescents, 55 units hotwire.

**Drill Stem Tests**  
Trilobite Testing, Inc.  
"Mike Roberts"

**DST #1      Mississippian Osage**

Interval (4312' – 4369') Anchor Length 57'

IHP	– 2224 #		
IFP	– 45" – B.O.B. 31 min.	24-90 #	
ISI	– 45" – Dead	1273 #	
FFP	– 45" – B.O.B. 26 min.	93-129 #	
FSI	– 45" – W.S.B.	1244 #	
FHP	– 2162 #		
BHT	– 114°F		



Recovery:      248' GIP  
                   92' GCO      80% Oil  
                   62' GOCM    5 % Oil  
                   62' GCM      2% Gas

**Structural Comparison**

	American Warrior, Inc. CAH Unit #1 Sec. 23 T20s R22w 2550' FNL & 100' FEL	American Warrior, Inc. Cox #3-23 Sec. 23 T20s R22w 1750' FNL & 940' FEL		American Warrior, Inc. Albers-Cox #1 Sec. 24 T20s R22w 2050' FNL & 100' FWL	
<b>Formation</b>					
Anhydrite	<b>1432' +790</b>	1426' +788	<b>(+2)</b>	1438' +790	<b>FL</b>
Base	<b>1466' +756</b>	1463' +751	<b>(+5)</b>	NA	<b>NA</b>
Heebner	<b>3699' -1477</b>	3699' -1485	<b>(+7)</b>	3706' -1478	<b>(+1)</b>
Lansing	<b>3749' -1527</b>	3749' -1535	<b>(+8)</b>	3755' -1527	<b>FL</b>
BKc	<b>4072' -1850</b>	4068' -1854	<b>(+4)</b>	NA	<b>NA</b>
Pawnee	<b>4185' -1963</b>	4182' -1968	<b>(+5)</b>	4194' -1966	<b>(+3)</b>
Fort Scott	<b>4265' -2043</b>	4261' -2047	<b>(+4)</b>	4273' -2045	<b>(+2)</b>
Cherokee	<b>4289' -2067</b>	4287' -2073	<b>(+6)</b>	4297' -2069	<b>(+2)</b>
Mississippian	<b>4361' -2139</b>	4357' -2143	<b>(+4)</b>	4394' -2166	<b>(+27)</b>



## **Summary**

The location for the CAH Unit #1 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. One Drill Stem Test was conducted which recovered commercial amounts of oil from the Mississippian Osage Formation. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the CAH Unit #1 well.

## **Recommended Perforations**

**Primary:**

**Mississippian Osage**

**(4363' – 4370')**

**DST #1**

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.



CHARGE TO: American Water Inc.  
 ADDRESS  
 CITY, STATE, ZIP CODE

TICKET 01061

PAGE 1 OF 1

SERVICE LOCATIONS  
 1. Ness City, KS  
 2.  
 3.  
 4. REFERRAL LOCATION

WELL/PROJECT NO. A1  
 LEASE CAH Unit  
 COUNTY/PARISH Ness  
 STATE KS  
 CITY Bazine

CONTRACTOR  
 WELL CATEGORY Development  
 RIG NAME/NO. #4  
 SHIPPED VIA T  
 DELIVERED TO Location  
 WELL PERMIT NO.

DATE 11-22-17  
 ORDER NO.  
 WELL LOCATION Bazine - 109 1/2 Hwy 13, Bazine

OWNER  
 303123

JOB REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	DESCRIPTION	QTY. / U/M		QTY. / U/M		UNIT PRICE	AMOUNT
575					MILEAGE			25	mi	5.10	125.10
576.5					Pump Charge - Shallow Surface			1	job	800.00	800.00
325					Standard Cement			150	bags	12.25	1837.50
279					Benfonk Gel			2	gals	35.00	75.00
278					Calcium Chloride			3	gals	40.00	120.00
290					D-Air			2	gals	42.00	84.00
81					Service Charge Cement			150	bags	1.50	225.00
582					Minimum Drayage Charge			1	rate	250.00	250.00

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

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

X

DATE SIGNED 11-22-17 TIME SIGNED 3:00 P.M.

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

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?  YES  NO

WE UNDERSTOOD AND LET YOUR NEEDS?  YES  NO

OUR SERVICE WAS PERFORMED WITHOUT DELAY?  YES  NO

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?  YES  NO

ARE YOU SATISFIED WITH OUR SERVICE?  YES  NO

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 3676.50

TAX

TOTAL

SWIFT OPERATOR David Nordin

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

APPROVAL

Thank You!

JOB LOG

SWIFT Services, Inc.

DATE 11-22-17 PAGE NO. 1  
TICKET NO. # 31061

CUSTOMER American Warrior WELL NO. #1 LEASE CAH Unit JOB TYPE Surface

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	1900							on location 8 5/8" 23"
								RTD-212' TP-212'
	1945							Strut 8 5/8" 23" casing in well
	2015							Break circulation
	2025	4 1/2	5		✓		100	Pump 561 water spacer
	2030	4 1/2	36		✓		100	mix 150 sks STD 2% Gel 3% CC @ 14.7 g/g
	2040	4 1/2	0		✓		100	Displace Cement
		4 1/2	7		✓		150	circulate cement to surface *30 sks*
	2045	4 1/2	13		✓		200	Kick out Pump Shut in
								wash up truck
	<del>2115</del>							Job Complete

Thank You  
Dave Preston Kirby



TICKET 001042

CHARGE TO: American Water  
 ADDRESS  
 CITY, STATE, ZIP CODE

PAGE 1 OF 2

SERVICE LOCATIONS: KS  
 WELL/PROJECT NO: 1 LEASE: CAN UNIT COUNTY/PARISH: Avoyers STATE: KS CITY: Bazine DATE: 29 NOV 17 OWNER:  
 TICKET TYPE:  SERVICE  SALES CONTRACTOR: 0.466666 RIG NAME/NO.: 4 SHIPPED: YES DELIVERED TO: location ORDER NO.:  
 WELL TYPE: D.I. WELL CATEGORY: Development JOB PURPOSE: COMMIT LONG STRING 5 1/2 WELL PERMIT NO.: WELL LOCATION: 23-20-22  
 REFERRAL LOCATION: INVOICE INSTRUCTIONS:

ICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575					TRK 114	25	Mi				5.00	125.00
578					Pump Charge Long String	1	ea				1250.00	1250.00
402					CONTRABANDER	5	in				60.00	300.00
403					Concrete Basket	2	in				250.00	500.00
404					Post collar	1	ea				2500.00	2500.00
406					Latch down pin & collar	5	in				225.00	1125.00
407					Insert Flnt - slide w/ AUTO FILL	3	in				300.00	900.00
419					<del>Protective head</del>	5	in				220.00	1100.00

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MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS.  
 X DATE SIGNED: TIME SIGNED:  A.M.  P.M.

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

SURVEY: OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?  YES  NO  
 WE UNDERSTOOD AND MET YOUR NEEDS?  YES  NO  
 OUR SERVICE WAS PERFORMED WITHOUT DELAY?  YES  NO  
 WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?  YES  NO  
 ARE YOU SATISFIED WITH OUR SERVICE?  YES  NO  
 CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL: 5000.00  
 TAX: 10147.75  
 TOTAL: 15147.75

SWIFT OPERATOR: RBH APPROVAL: RBH  
 CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES: The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 Thank You!



PO Box 466  
Ness City, KS 67560  
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 31242

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WEIGHT			DATE	UNIT PRICE	AMOUNT
		LOC	ACCT	DE			QTY	UNIT	QTY			
325		1				Standard Cement (For #2)	175	SK		12.05	2143.75	
284		1				Calsenal	500	LB	8 SK	30.00	2400.00	
283		1				SACE	910	LB		0.20	182.00	
292		1				Material 322	125	LB		8.00	1000.00	
276		1				Fibrela	50	LB		2.25	112.50	
21		1				MWD Flush	500	901		1.35	675.00	
021		1				K.C.L. Liquid	2	901		25.00	50.00	
290		1				D-AIR	2	901		42.00	84.00	
583	582	1				Derrick (W.D.)	1	02		250.00	250.00	
581		1				SERVICE CHARGE				1.50	1.50	
						MILEAGE CHARGE						
						TOTAL WEIGHT	1625					
						LOADED MILES	25					
						CUBIC FEET	1					
						TON MILES						
CONTINUATION TOTAL											4947.75	

JOB LOG

SWIFT Services, Inc.

DATE  
29 Nov 17

PAGE NO.  
1

CUSTOMER  
American Well

WELL NO.  
#1

LEASE  
~~CAH~~ CAH unit

JOB TYPE  
cement long string

TICKET NO.  
31042

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								175 sk EA-2 cement w/ 1/4" Floccula
								5 1/2" x 15.5" casing 105 joints 4373'
								TD = 4374' shoejt 47.43'
								Centralizers 1, 2, 3, 4, 70 Baskets 5, 71
								Port Collar 1402 "71
	1700							on loc TRK 114
	1832							start 5 1/2" x 15.5" casing in well
	2030							Drop ball - circulate - <del>TRK 114</del>
	2105	3 1/2	12			200		Pump 500 gal mud flush
		3 1/2	20			200		Pump 20 bbl KCL flush
			7					Plug RH - MH 30 sk - 20 sk
	2125		35					mix EA-2 cement 125 sk @ 15.3 ppq
								wash out Pump line
								Drop latch down plug
	2145	1 1/2				200		Displace plug
		6 1/2	83			400		
		6 1/2	95			750		
	2200	1 1/2	103			1550		Land plug
								Release pressure to truck - drierup
	2205							wash truck
	2235							kick up
								job complete
								Flaks
								Flint, Blaine, & square #



TICKET 001047

CHARGE TO: Amperna Warrior  
 ADDRESS  
 CITY, STATE, ZIP CODE

PAGE 1 OF 1

SERVICE LOCATIONS  
 1. KS WELL/PROJECT NO. 13786D LEASE Car unit COUNTY/PARISH Louisiana STATE KS CITY Paris DATE 11 Dec 17 OWNER  
 2. TICKET TYPE  SERVICE  SALES CONTRACTOR RIG NAME/NO. SHIPPED  WRT DELIVERED TO location ORDER NO.  
 3. WELL TYPE 0.1 WELL CATEGORY Disposal JOB PURPOSE demolish port collar WELL PERMIT NO. WELL LOCATION  
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY. U/M			UNIT PRICE	AMOUNT
		LOC	ACCT	DF			QTY.	U/M	QTY.		
575											
576D					Port Close	12.50	100			1250.00	1250.00
330					5MS comment	15.75				1968.75	
276					Flacker	2.25				112.50	
290					D-412	47.00				4700.00	
104					Port collar temporary port collar	200.00				200.00	
581					Service charge	1.50				262.50	
582					Wagon (w.)	2.50				250.00	

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 X SWT  
 DATE SIGNED TIME SIGNED  A.M.  P.M.

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

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?	AGREE	UNDECIDED	DISAGREE
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND			

PAGE TOTAL 4257.75  
 TAX 65.10  
 TOTAL 4406.49

SWIFT OPERATOR RS Well APPROVAL RS Well  
 CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 Thank You

JOB LOG

SWIFT Services, Inc.

DATE  
11 Dec 17

PAGE NO.  
1

CUSTOMER  
American Warrior

WELL NO.  
#1

LEASE  
CAH unit

JOB TYPE  
cement port collar

TICKET NO.  
31047

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								175 sk SMD cement w/ 1/4" flange 2 3/4" x 5 1/2" port collar - 141231
	1345							on loc TRK 114
	1410					1000	1000	test to 1000 psi - held open port collar
		3 3/4	3			500		inj rate 3 3/4 @ 500 ps.
	1420	4				500		Mix SMD cement @ 11.2 ppg immediate circ to pit
		4	67			500		→ cement to surface ←
		4	5			500		Displace w/ H <sub>2</sub> O close port collar { 125 sk mixed 15 to pit }
	1448					1000	1000	test to 1000 psi - held
								run 5 joints
	1500		20					Reverse hole clean. - 2 cement plugs - pull tool
	1510							wrap up truck
								Rack up
	1530							job complete
								Flaks
								Blaine, Wayne, & FLAT