

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1265084
OIL & GAS CONSERVATION DIVISION

Form ACO-1

November 2016

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: \_\_\_\_\_

1265084

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
--	---

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
---	---	------------------------------------

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:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	BEREXCO LLC
Well Name	Owens Trust 3-19
Doc ID	1265084

Tops

Name	Top	Datum
Anhydrite (top)	3146	+39
Anhydrite (base)	3178	+7
Topeka	3936	-751
Oread	4074	-889
Lansing A	4149	-964
Lansing B	4210	-1025
Lansing C	4264	-1029
Lansing D	4304	-1119
Lansing E	4352	-1167
Lansing F	4394	-1209
Pawnee	4546	-1361
RTD	4725	-1540
LTD	4727	-1542



# WELL FILE

## ALLIED OIL & GAS SERVICES, LLC

Federal Tax I.D. #20-5975804

21150

067772

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Daklepty

DATE <u>7/11/15</u>	SEC <u>19</u>	TWP <u>1</u>	RANGE <u>37</u>	CALLED OUT	ON LOCATION	JOB START <u>3:30 AM</u>	JOB FINISH <u>4:30 AM</u>
LEASE <u>Owens</u>	WELL# <u>3-19</u>	LOCATION <u>Burdellman 970702 2E</u>			COUNTY <u>Cherokee</u>	STATE <u>KY</u>	
OLD OR NEW (Circle one)		<u>3 S W- NMS- Erato</u>					

CONTRACTOR <u>Burdell 10</u>	OWNER <u>Some</u>
TYPE OF JOB <u>Surface</u>	
HOLE SIZE <u>12 1/4</u>	T.D. <u>303</u>
CASING SIZE <u>8 5/8</u>	DEPTH <u>303</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	

CEMENT AMOUNT ORDERED <u>2d 5 Com 390 CC 290 gal</u>
COMMON <u>225</u> @ <u>17.90</u> <u>4027.50</u>
POZMIX @
GEL <u>423</u> @ <u>15.20</u> <u>211.50</u>
CHLORIDE <u>635.16</u> @ <u>1.10</u> <u>698.68</u>
ASC @

EQUIPMENT	
PUMP TRUCK # <u>431</u>	CEMENTER HELPER <u>Alan Ryan 1</u>
BULK TRUCK # <u>801</u>	DRIVER <u>Kevin Ryan 2</u>
BULK TRUCK #	DRIVER

TOTAL	4,937.50
DISCOUNT <u>4.8%</u>	<u>237.00</u>

REMARKS:  
Area City, Circulate, Midland, Displace Cement, Shift 400  
Cement Add Circulate  
Thank You  
Ally White

555.20

SERVICE	
HANDLING <u>243</u>	@ <u>2.40</u> <u>603.60</u>
MILEAGE <u>2<sup>23</sup> Ton/mile</u>	@ <u>11.04</u> <u>155.28</u>
DEPTH OF JOB <u>303</u>	
PUMP TRUCK CHARGE	<u>1512.25</u>
EXTRA FOOTAGE @	
HV MILEAGE <u>50</u>	@ <u>7.20</u> <u>360.00</u>
LV MILEAGE <u>50</u>	@ <u>4.10</u> <u>n/c</u>
<u>Smudge</u>	@ <u>225.20</u> <u>n/c</u>
TOTAL	4,637.46
DISCOUNT <u>4.8%</u>	<u>933.18</u>

CHARGE TO: BURSCO

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**PLUG & FLOAT EQUIPMENT**

_____	@ _____
_____	@ _____
_____	@ _____
_____	@ _____
_____	@ _____
TOTAL	_____

To: Allied Oil & Gas Services, 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 Gilbert Davila Jr

SIGNATURE [Signature]

SALES TAX (if Any) 419.68

TOTAL CHARGES 8,964.96

DISCOUNT 4,303.18 (4.8%) IF PAID IN 30 DAYS

NET TOTAL 4,661.77 IF PAID IN 30 DAYS

Date 2/11/15 District Dukkey Ticket No. 067272  
 Company Desoro Rig Desoro 10  
 Lease Outers Well No. 3-19  
 County Cherokee State KS  
 Location \_\_\_\_\_ Field \_\_\_\_\_

CASING DATA: Conductor  PTA  Squeeze  Misc   
 Surface  Intermediate  Production  L. Iner   
 Size 8 5/8 Type Non Weight 24 Collar \_\_\_\_\_

Casing Depths: Top KS Bottom 505'

Drill Pipe: Size 4 1/2 Weight \_\_\_\_\_ Collars \_\_\_\_\_  
 Open Hole: Size 12 1/4 T.D. \_\_\_\_\_ ft. P.B. to \_\_\_\_\_ ft.

CAPACITY FACTORS:  
 Casing: Bbbls/Lin. ft. 0.637 Lin. ft./Bbl. \_\_\_\_\_  
 Open Holes: Bbbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Drill Pipe: Bbbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Annulus: Bbbls/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Perforations: From \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Amt. \_\_\_\_\_

CEMENT DATA:  
 Spacer Type: \_\_\_\_\_  
 Amt. \_\_\_\_\_ Skis Yield \_\_\_\_\_ ft<sup>3</sup>/sk Density \_\_\_\_\_ PPG

LEAD: Pump Time \_\_\_\_\_ hrs. Type Con 3 1/2" 20 gal  
 Excess \_\_\_\_\_  
 Amt. 285 Skis Yield 124 ft<sup>3</sup>/sk Density 15.282 PPG

TAIL: Pump Time \_\_\_\_\_ hrs. Type \_\_\_\_\_  
 Excess \_\_\_\_\_  
 Amt. \_\_\_\_\_ Skis Yield \_\_\_\_\_ ft<sup>3</sup>/sk Density \_\_\_\_\_ PPG  
 WATER: Lead 6.5 gals/sk Tail \_\_\_\_\_ gals/sk Total \_\_\_\_\_ Bbbls.

Pump Trucks Used 431  
 Bulk Equip. 801

Float Equip: Manufacturer \_\_\_\_\_  
 Shoe: Type \_\_\_\_\_ Depth \_\_\_\_\_  
 Float: Type \_\_\_\_\_ Depth \_\_\_\_\_  
 Centralizers: Quantity \_\_\_\_\_ Plugs Top \_\_\_\_\_ Btm. \_\_\_\_\_  
 Stage Collars \_\_\_\_\_  
 Special Equip. \_\_\_\_\_  
 Disp. Fluid Type 1420 Amt. 1815 Bbbls. Weight 8318 PPG  
 Mud Type \_\_\_\_\_ Weight \_\_\_\_\_ PPG

COMPANY REPRESENTATIVE \_\_\_\_\_ CEMENTER Calabaz

TIME	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	Pumped Per Time Period	RATE Bbbls Min.	
<u>2:00</u>						<u>On location 5:00 AM Set up</u> <u>On Casing Circulate</u>
				<u>37.0</u>	<u>3 1/2</u>	<u>mix cement</u>
				<u>1815</u>	<u>4 1/2</u>	<u>Displace cement</u> <u>Start</u>
<u>4:00</u>						<u>Job complete</u>



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco LLC  
2020 N Bramblewood  
Wichita KS 67202  
ATTN: Bryan Bynog

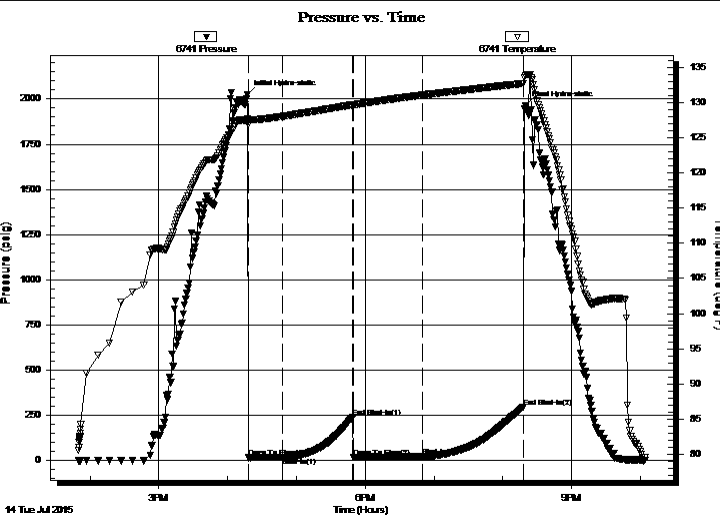
**19 1S 37W Rawlins KS**  
**Owens 3-19**  
Job Ticket: 65073      **DST#: 1**  
Test Start: 2015.07.14 @ 13:50:00

## GENERAL INFORMATION:

Formation: **Oread**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 16:18:00  
Time Test Ended: 22:04:00  
Interval: **4025.00 ft (KB) To 4085.00 ft (KB) (TVD)**  
Total Depth: 4085.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 3196.00 ft (KB)  
3185.00 ft (CF)  
KB to GR/CF: 11.00 ft  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Robert Zodrow  
Unit No: 66

**Serial #: 6741      Inside**  
Press @ Run Depth: 19.51 psig @ 4026.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2015.07.14      End Date: 2015.07.14      Last Calib.: 2015.07.14  
Start Time: 13:50:05      End Time: 22:03:59      Time On Btm: 2015.07.14 @ 16:17:30  
Time Off Btm: 2015.07.14 @ 20:19:30

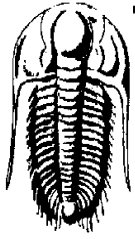
**TEST COMMENT:** 30-IF- Surface blow died in 6 mins  
60-ISI- No return  
60-FF- No blow  
90-FSI- No return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2023.30	127.64	Initial Hydro-static
1	13.91	126.87	Open To Flow (1)
31	14.94	128.06	Shut-In(1)
92	237.57	129.71	End Shut-In(1)
92	15.40	129.64	Open To Flow (2)
152	19.51	131.07	Shut-In(2)
240	293.57	132.74	End Shut-In(2)
242	1961.33	133.90	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
2.00	MUD 100%M	0.01

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



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Berexco LLC  
 2020 N Bramblewood  
 Wichita KS 67202  
 ATTN: Bryan Bynog

**19 1S 37W Rawlins KS**  
**Owens 3-19**  
 Job Ticket: 65073      **DST#: 1**  
 Test Start: 2015.07.14 @ 13:50:00

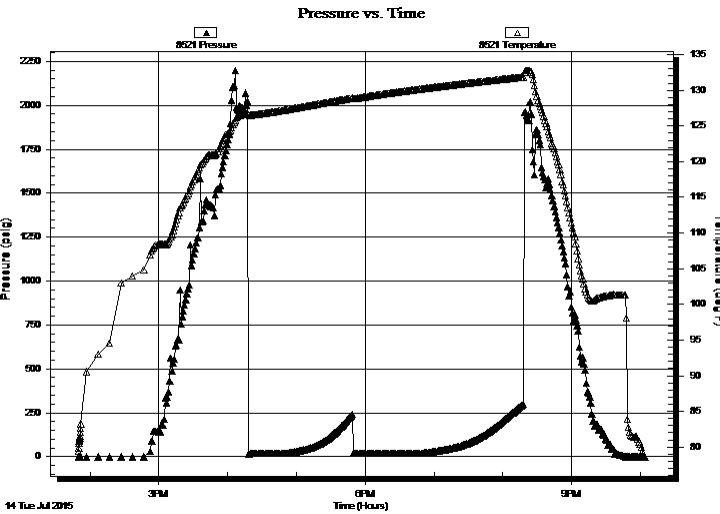
### GENERAL INFORMATION:

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:18:00  
 Time Test Ended: 22:04:00  
 Interval: **4025.00 ft (KB) To 4085.00 ft (KB) (TVD)**  
 Total Depth: 4085.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Reference Elevations: 3196.00 ft (KB)  
 3185.00 ft (CF)  
 KB to GR/CF: 11.00 ft

### Serial #: 8521      Outside

Press @ Run Depth:                      psig @      4026.00 ft (KB)	Capacity:    8000.00 psig
Start Date:                                      2015.07.14      End Date:                                      2015.07.14	Last Calib.:                                      2015.07.14
Start Time:                                      13:50:05      End Time:                                      22:03:59	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30-IF- Surface blow died in 6 mins  
 60-ISI- No return  
 60-FF- No blow  
 90-FSI- No return

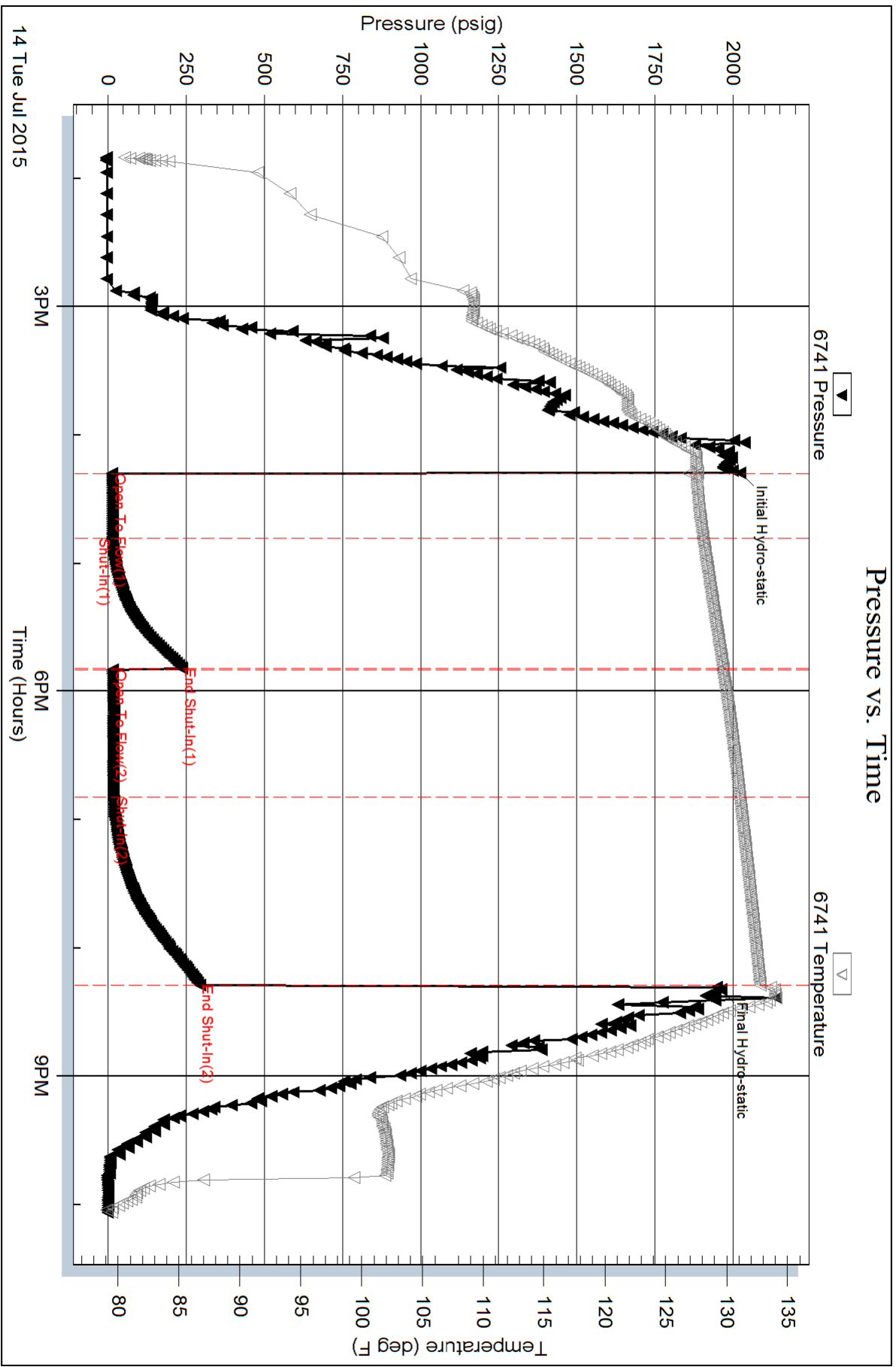


PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
2.00	MUD 100%M	0.01

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



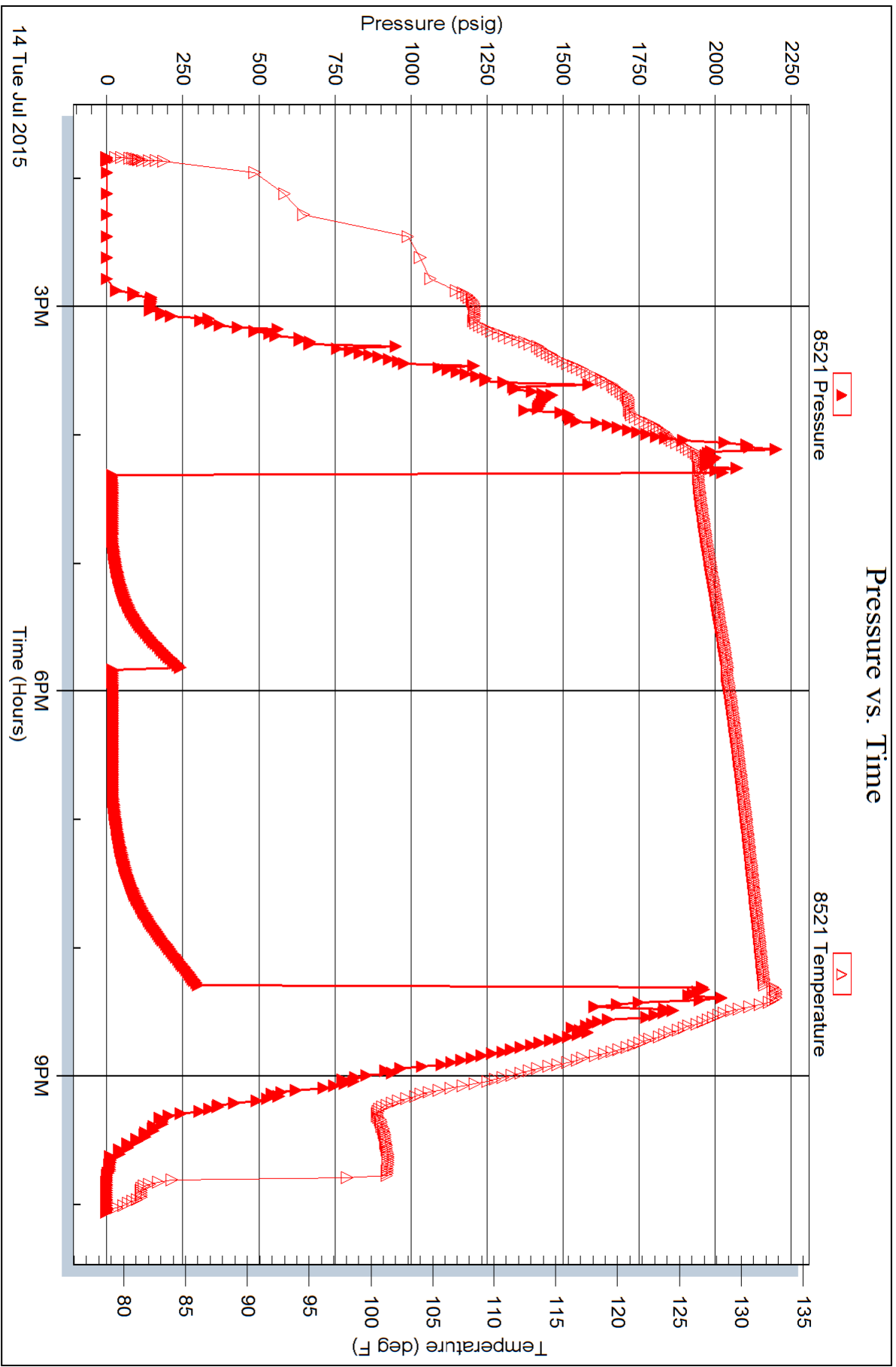


Serial #: 8521

Outside Berexco LLC

Owens 3-19

DST Test Number: 1





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Berexco LLC

**19 1S 37W Cheyenne KS**

2020 N Bramblewood  
Wichita KS 67202

**Owens 3-19**

Job Ticket: 65074

**DST#: 2**

ATTN: Bryan Bynog

Test Start: 2015.07.15 @ 18:40:00

## GENERAL INFORMATION:

Formation: **LKC "B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:53:00

Time Test Ended: 04:13:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 66

**Interval: 4160.00 ft (KB) To 4250.00 ft (KB) (TVD)**

Reference Elevations: 3196.00 ft (KB)

Total Depth: 4250.00 ft (KB) (TVD)

3185.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

**Serial #: 6741**

**Inside**

Press@RunDepth: 237.31 psig @ 4161.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.07.15

End Date:

2015.07.16

Last Calib.:

2015.07.16

Start Time: 18:40:05

End Time:

04:13:00

Time On Btm:

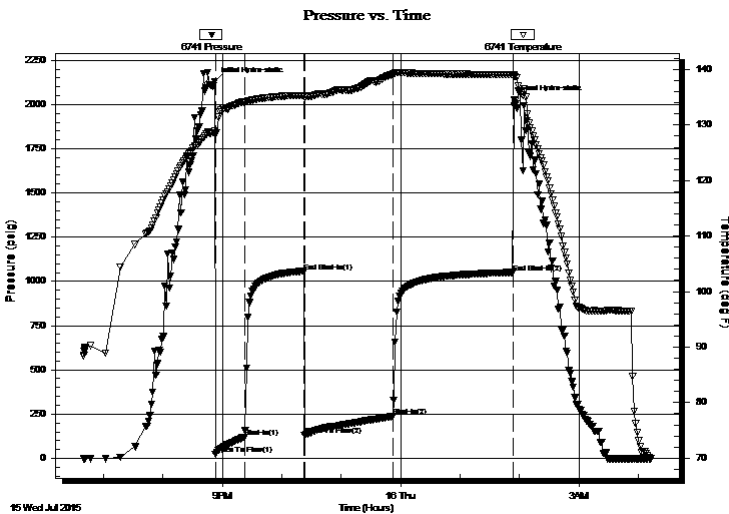
2015.07.15 @ 20:52:30

Time Off Btm:

2015.07.16 @ 01:55:00

**TEST COMMENT:** 30-IF- Bob in 24 mins  
60-ISI- Surface blow on return died in 54 mins  
90-FF- Bob in 33 mins  
120-FSI- Return built to 8 1/4"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2130.43	128.98	Initial Hydro-static
1	23.30	128.41	Open To Flow (1)
30	120.23	134.08	Shut-In(1)
90	1051.98	135.35	End Shut-In(1)
91	131.72	135.01	Open To Flow (2)
180	237.31	139.13	Shut-In(2)
301	1050.86	139.06	End Shut-In(2)
303	2025.77	138.83	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
230.00	GMCO 10%G 40%M 50%O	1.13
360.00	GO 20%G 80%O	3.59
0.00	GIP 380'	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco LLC

**19 1S 37W Cheyenne KS**

2020 N Bramblewood  
Wichita KS 67202

**Owens 3-19**

Job Ticket: 65074

**DST#: 2**

ATTN: Bryan Bynog

Test Start: 2015.07.15 @ 18:40:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
230.00	GMCO 10%G 40%M 50%O	1.131
360.00	GO 20%G 80%O	3.586
0.00	GIP 380'	0.000

Total Length: 590.00 ft      Total Volume: 4.717 bbl

Num Fluid Samples: 0

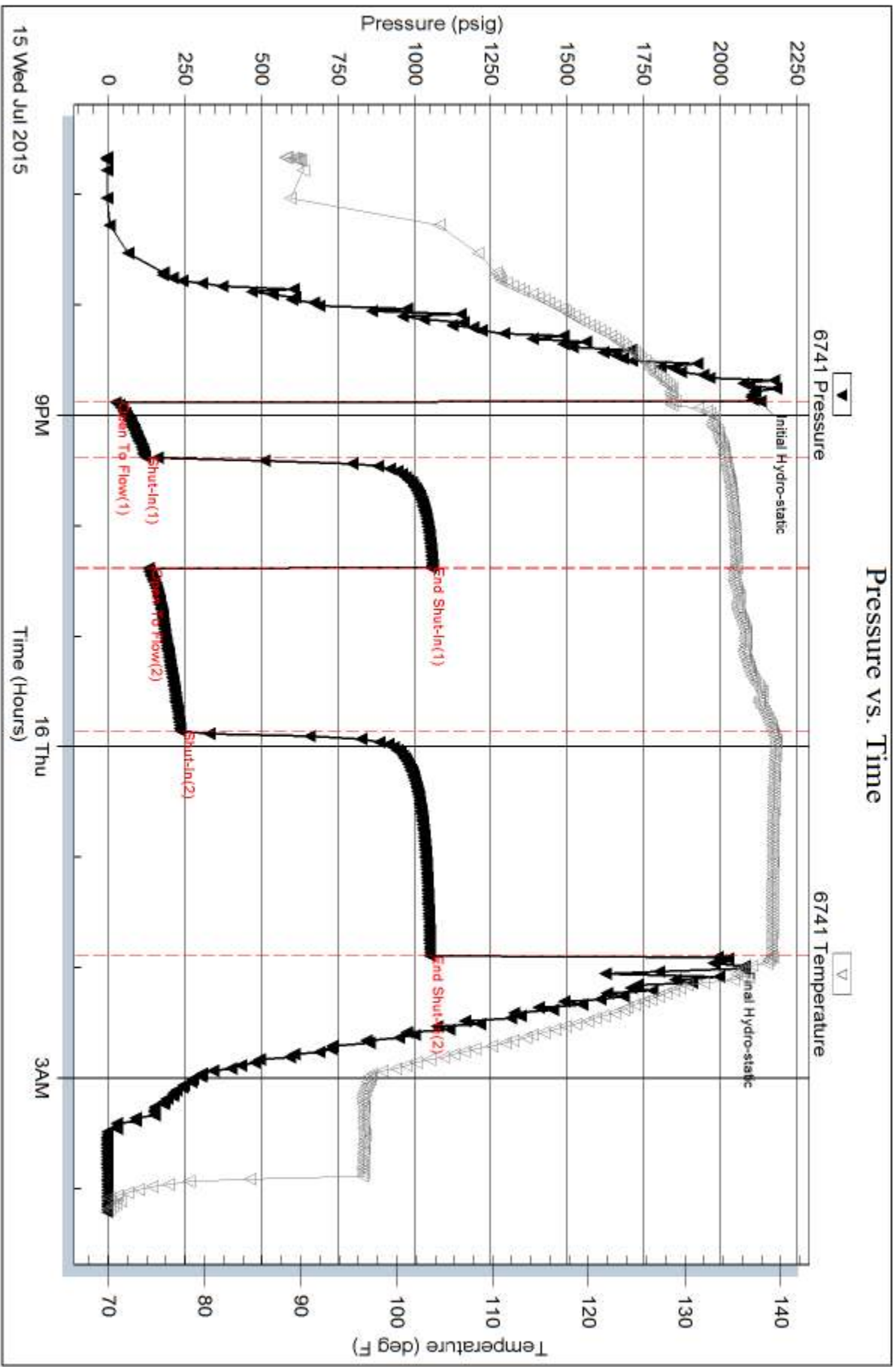
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco LLC  
2020 N Bramblewood  
Wichita KS 67202  
ATTN: Bryan Bynog

**19 1S 37W Cheyenne KS**  
**Owens 3-19**  
Job Ticket: 65075      **DST#: 3**  
Test Start: 2015.07.16 @ 16:40:00

## GENERAL INFORMATION:

Formation: **LKC "C&D"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 19:12:00  
Time Test Ended: 00:57:00  
Interval: **4236.00 ft (KB) To 4320.00 ft (KB) (TVD)**  
Total Depth: 4320.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 3196.00 ft (KB)  
3185.00 ft (CF)  
KB to GR/CF: 11.00 ft

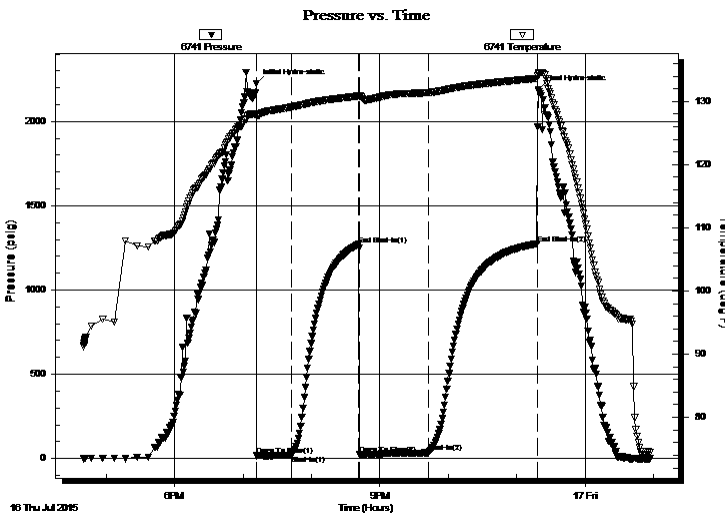
## Serial #: 6741

Inside

Press @ Run Depth: 34.00 psig @ 4237.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2015.07.16 End Date: 2015.07.17 Last Calib.: 2015.07.17  
Start Time: 16:40:05 End Time: 00:56:59 Time On Btm: 2015.07.16 @ 19:11:30  
Time Off Btm: 2015.07.16 @ 23:19:00

TEST COMMENT: 30-IF- Blow built to 1"  
60-ISI- No return  
60-FF- No blow  
90-FSI- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2226.32	128.03	Initial Hydro-static
1	16.77	127.70	Open To Flow (1)
31	20.28	129.07	Shut-In(1)
90	1270.56	130.86	End Shut-In(1)
91	24.33	130.82	Open To Flow (2)
151	34.00	131.39	Shut-In(2)
247	1275.80	133.63	End Shut-In(2)
248	2188.95	134.39	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
4.00	OCM 25%O 75%M	0.02
1.00	GO 5%G 95%O	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco LLC

**19 1S 37W Cheyenne KS**

2020 N Bramblewood  
Wichita KS 67202

**Owens 3-19**

Job Ticket: 65075

**DST#: 3**

ATTN: Bryan Bynog

Test Start: 2015.07.16 @ 16:40:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

27 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 73.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4.00	OCM 25%O 75%M	0.020
1.00	GO 5%G 95%O	0.005

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

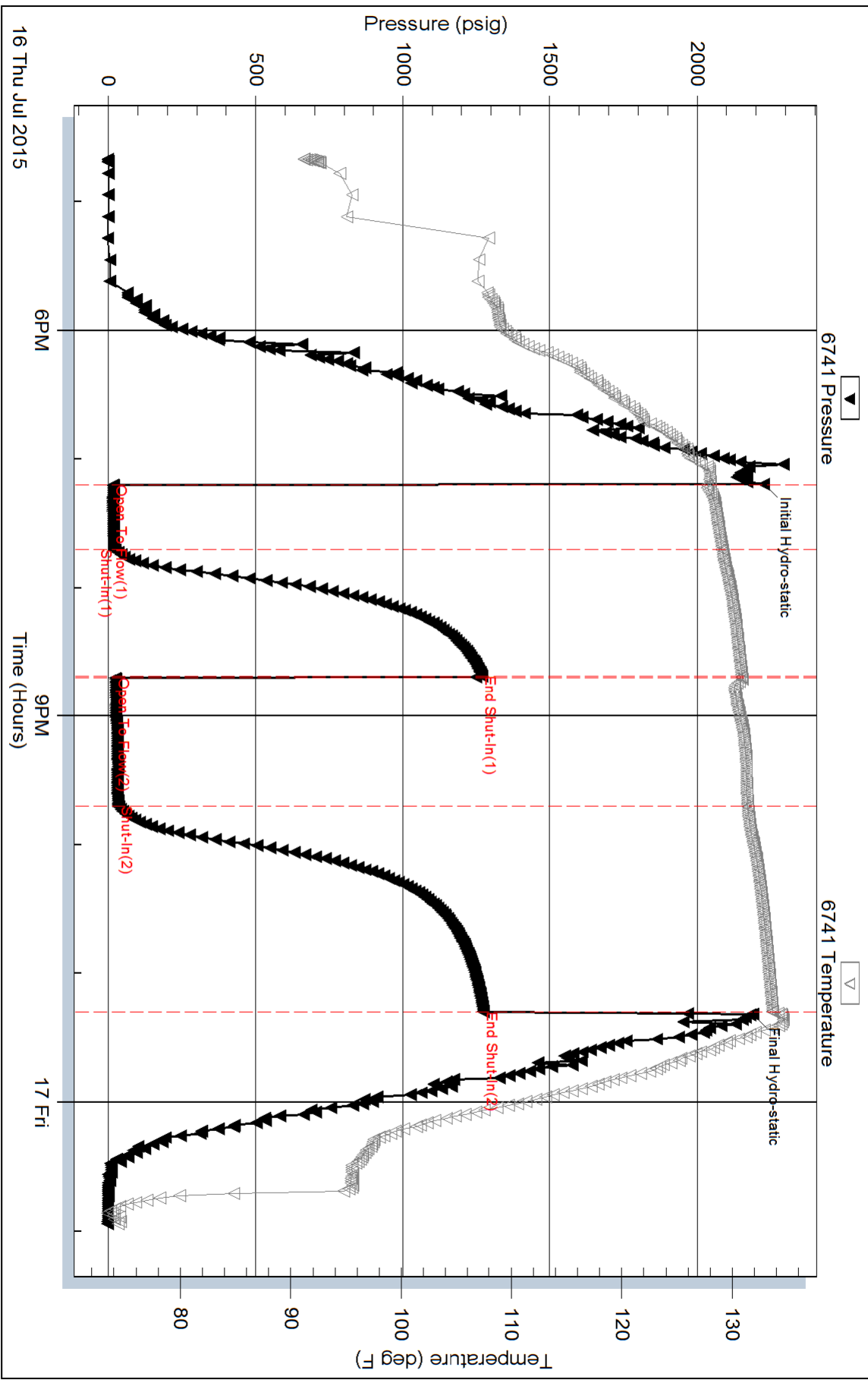
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco LLC  
2020 N Bramblewood  
Wichita KS 67202  
ATTN: Bryan Bynog

**19 1S 37W Cheyenne KS**  
**Owens 3-19**  
Job Ticket: 62801      **DST#: 4**  
Test Start: 2015.07.17 @ 11:55:00

## GENERAL INFORMATION:

Formation: **LKC "E"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 14:32:00  
Time Test Ended: 20:24:00  
Interval: **4312.00 ft (KB) To 4375.00 ft (KB) (TVD)**  
Total Depth: 4375.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Robert Zodrow  
Unit No: 66  
Reference Elevations: 3196.00 ft (KB)  
3185.00 ft (CF)  
KB to GR/CF: 11.00 ft

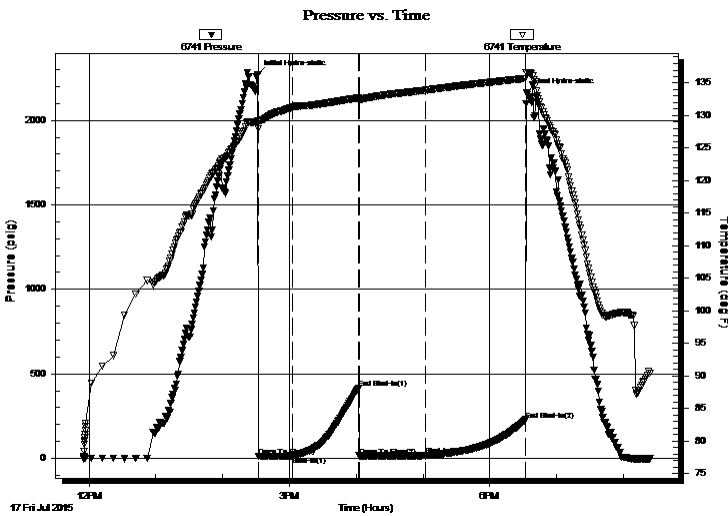
## Serial #: 6741

Inside

Press@RunDepth: 15.51 psig @ 4313.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2015.07.17 End Date: 2015.07.17 Last Calib.: 2015.07.17  
Start Time: 11:55:05 End Time: 20:23:59 Time On Btm: 2015.07.17 @ 14:31:30  
Time Off Btm: 2015.07.17 @ 18:33:00

TEST COMMENT: 30-IF- Surface blow died in 11 mins  
60-ISI- No return  
60-FF- No blow  
90-FSI- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2270.73	129.16	Initial Hydro-static
1	11.06	128.01	Open To Flow (1)
31	13.85	131.32	Shut-In(1)
91	414.99	132.73	End Shut-In(1)
91	14.06	132.56	Open To Flow (2)
151	15.51	133.90	Shut-In(2)
241	228.36	135.71	End Shut-In(2)
242	2163.42	136.64	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100%M	0.01

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Berexco LLC

**19 1S 37W Cheyenne KS**

2020 N Bramblewood  
Wichita KS 67202

**Owens 3-19**

Job Ticket: 62801

**DST#: 4**

ATTN: Bryan Bynog

Test Start: 2015.07.17 @ 11:55:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud 100%M	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

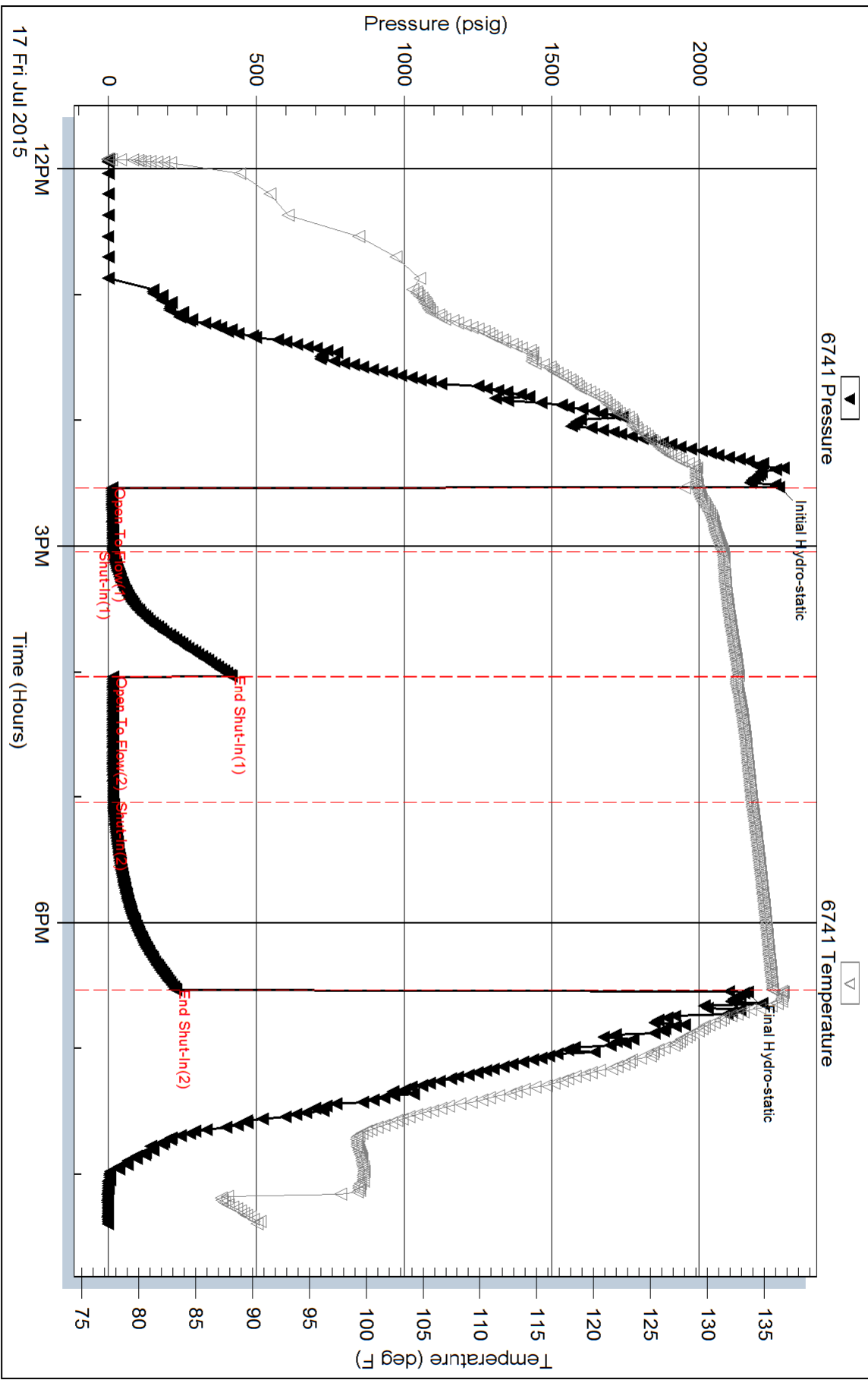
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Berexco LLC  
 2020 N Bramblewood  
 Wichita KS 67202  
 ATTN: Bryan Bynog

**19 1S 37W Cheyenne KS**  
**Owens 3-19**  
 Job Ticket: 62802      **DST#: 5**  
 Test Start: 2015.07.18 @ 17:05:00

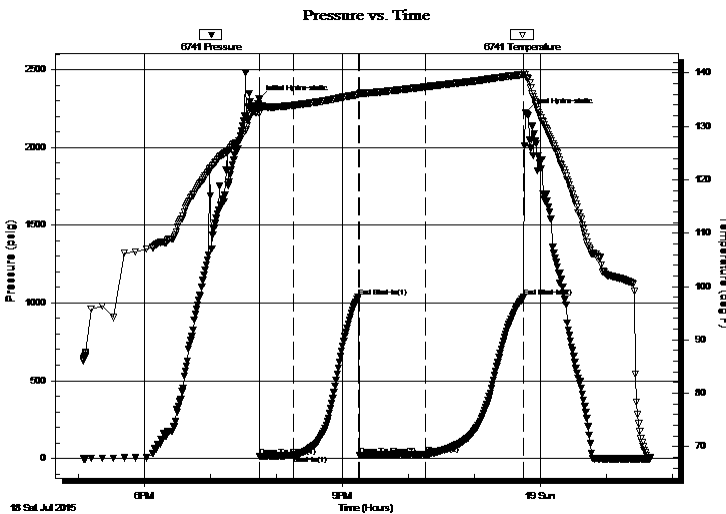
## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 19:45:00  
 Tester: Robert Zodrow  
 Time Test Ended: 01:39:30  
 Unit No: 66  
**Interval: 4524.00 ft (KB) To 4560.00 ft (KB) (TVD)**  
 Reference Elevations: 3196.00 ft (KB)  
 Total Depth: 4560.00 ft (KB) (TVD) 3185.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

**Serial #: 6741 Inside**  
 Press @ Run Depth: 25.57 psig @ 4525.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2015.07.18 End Date: 2015.07.19 Last Calib.: 2015.07.19  
 Start Time: 17:05:05 End Time: 01:39:30 Time On Btm: 2015.07.18 @ 19:44:30  
 Time Off Btm: 2015.07.18 @ 23:46:30

**TEST COMMENT:** 30-IF- Blow built to 1/4" died in 28 mins  
 60-ISI- No return  
 60-FF- No blow  
 90-FSI- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2311.82	133.25	Initial Hydro-static
1	13.59	132.45	Open To Flow (1)
31	18.88	133.95	Shut-In(1)
90	1037.73	135.96	End Shut-In(1)
91	19.10	136.21	Open To Flow (2)
151	25.57	137.40	Shut-In(2)
241	1037.82	139.73	End Shut-In(2)
242	2226.17	139.72	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM 30%O 70%M	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**

Berexco LLC

**19 1S 37W Cheyenne KS**

2020 N Bramblewood  
Wichita KS 67202

**Owens 3-19**

Job Ticket: 62802

**DST#: 5**

ATTN: Bryan Bynog

Test Start: 2015.07.18 @ 17:05:00

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
5.00	OCM 30%O 70%M	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

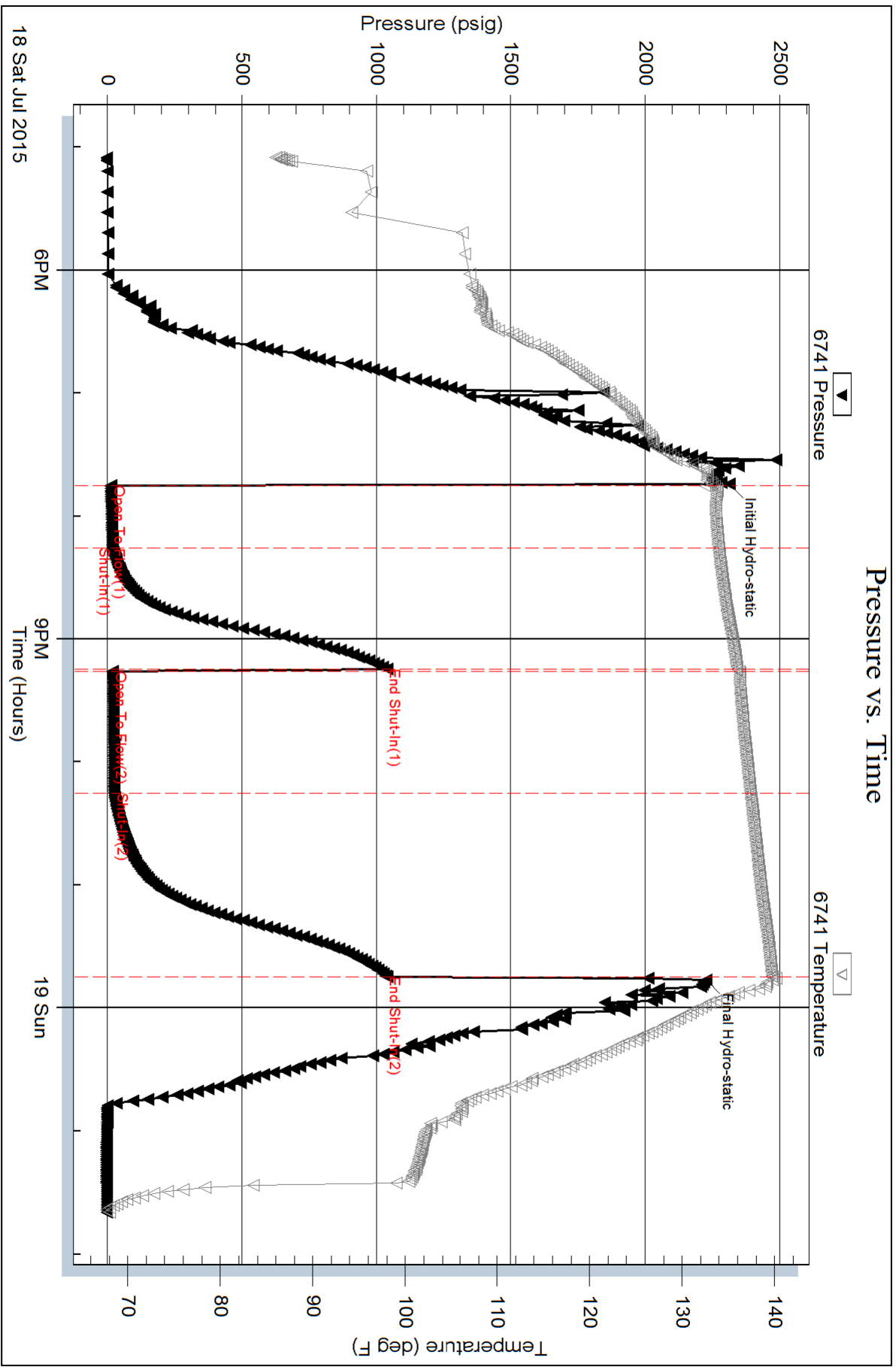
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



# ALLIED OIL & GAS SERVICES, LLC

Federal Tax I.D. #20-5975804

**WELL F**

067638

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:

*Oakley*

DATE <u>7-20-15</u>	SEC <u>19</u>	TWP. <u>1</u>	RANGE <u>37</u>	CALLED OUT	ON LOCATION	JOB START <u>10:30am</u>	JOB FINISH <u>11:30am</u>
LEASE <u>Owens</u>	WELL # <u>3-19</u>		LOCATION <u>Bentleyman .5 to 202 2E</u>			COUNTY <u>Cherokee</u>	STATE <u>KS</u>
OLD OR <u>NEW</u> (Circle one)			<u>35 W N.W 5 E INT</u>				

CONTRACTOR Beredco 10  
 TYPE OF JOB Production  
 HOLE SIZE 2 7/8 T.D. 4725'  
 CASING SIZE 5/8 DEPTH 4730'  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT 42  
 CEMENT LEFT IN CSG. 42'  
 PERFS.  
 DISPLACEMENT 111.57 BBL

OWNER Same  
 CEMENT  
 AMOUNT ORDERED 300 SKS Com 100% salt  
5<sup>th</sup> Gilsonite 20% gel  
500 SKS Lite 3/4 Flo-seal  
 COMMON 300 SKS @ 17.90 5370.00  
 POZMIX @  
 GEL 56.4<sup>#</sup> @ .50 282.00  
 CHLORIDE @  
 ASC @  
 @  
Lite 500 SKS @ 19.89 9945.00  
 @  
Flo-seal 375<sup>#</sup> @ 2.97 1113.75  
Gilsonite 1500<sup>#</sup> @ .98 1470.00  
Salt 1400<sup>#</sup> @ .68 952.00  
 @  
 @  
 TOTAL 19,139.75  
 DISCOUNT 48% 9,183.72

EQUIPMENT

PUMP TRUCK CEMENTER Andrew Forstlund  
 # 431 HELPER Paul Beaver  
 BULK TRUCK  
 # 890 DRIVER Wayne McHugh  
 BULK TRUCK  
 # 373 DRIVER Cory Brown

REMARKS:

Plug mousehole 10 SKS Rat hole  
15 SKS mix 400<sup>#</sup> Lite followed by  
300 SKS com down 5/8 casing.  
Wash Pump and Line Clean. Displace  
Plug 1600<sup>#</sup> LIFT 2200<sup>#</sup> Land Plug.  
Cement did circulate.

*Thank you*

CHARGE TO: Beredco  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

HANDLING 941.44 CY/FT @ 2.48 2334.00  
 MILEAGE 2.25 to 1/4 mile 39.23 ton 5394.12  
 DEPTH OF JOB 4730'  
 PUMP TRUCK CHARGE 2745.25  
 EXTRA FOOTAGE @  
 HV MILEAGE 50 miles @ 7.70 385.00  
 LV MILEAGE @  
 @  
 @  
 TOTAL 10,879.14  
 DISCOUNT 48% 5221.98

PLUG & FLOAT EQUIPMENT

5/8  
1 APC Float Shoe @ 625.00  
1 Watchdown plug ASSY @ 460.00  
13 Centralizers @ 57.00 741.00  
26 scratchers @ 189.00 2314.00  
 @  
 TOTAL 4,351.00  
 DISCOUNT 48% 2088.48

To: Allied Oil & Gas Services, 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 AWAIS GUL

SIGNATURE [Signature]

SALES TAX (If Any) \_\_\_\_\_  
 TOTAL CHARGES 34,362.89  
 DISCOUNT 16,494.18 (48%) IF PAID IN 30 DAYS  
 NET TOTAL 17,868.70 IF PAID IN 30 DAYS



# CEMENTING LOG

STAGE NO. \_\_\_\_\_

Date 2-20-15 District Oakley Ticket No. 067638  
 Company Berexco Rig Berexco 10  
 Lease Owens Well No. 3-19  
 County Cheyenne State WY  
 Location 19 1 37 Field \_\_\_\_\_  
Breakdown 200522 25 35 WNW 5 in 70

CASING DATA: Conductor  PTA  Squeeze  Misc   
 Surface  Intermediate  Production  Liner   
 Size 5 1/2 Type SMW Weight 15.5 Collar \_\_\_\_\_

Casing Depths: Top 180 Bottom 4730'

Drill Pipe: Size \_\_\_\_\_ Weight \_\_\_\_\_ Collars \_\_\_\_\_  
 Open Hole: Size 5 7/8 T.D. 4735' ft. P.B. to \_\_\_\_\_ ft.

CAPACITY FACTORS:  
 Casing: Bbbs/Lin. ft. 0.228 Lin. ft./Bbl. \_\_\_\_\_  
 Open Holes: Bbbs/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Drill Pipe: Bbbs/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Annulus: Bbbs/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Bbbs/Lin. ft. \_\_\_\_\_ Lin. ft./Bbl. \_\_\_\_\_  
 Perforations: From \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Amt. \_\_\_\_\_

CEMENT DATA:

Spacer Type: \_\_\_\_\_  
 Amt. \_\_\_\_\_ Skys Yield \_\_\_\_\_ ft<sup>3</sup>/sk Density \_\_\_\_\_ PPG

LEAD: Pump Time \_\_\_\_\_ hrs. Type Lite 34/10-5000  
 Excess \_\_\_\_\_  
 Amt. 500 Skys Yield 1.19 ft<sup>3</sup>/sk Density 12.3 PPG

TAIL: Pump Time \_\_\_\_\_ hrs. Type CPM 102659 15'  
St Wilsonite 2000 L  
 Excess \_\_\_\_\_  
 Amt. 300 Skys Yield 1.49 ft<sup>3</sup>/sk Density 14.56 PPG

WATER: Lead \_\_\_\_\_ gals/sk Tail \_\_\_\_\_ gals/sk Total \_\_\_\_\_ Bbbs.

Pump Trucks Used 431  
 Bulk Equip. 890  
323

Float Equip: Manufacturer Weatherford  
 Shoe: Type APL Depth 4730'  
 Float: Type Latch down Depth \_\_\_\_\_  
 Centralizers: Quantity 13 Plugs Top \_\_\_\_\_ Btm. \_\_\_\_\_  
 Stage Collars \_\_\_\_\_  
 Special Equip. scrubbers  
 Disp. Fluid Type Water Amt. 1115 Bbbs. Weight \_\_\_\_\_ PPG  
 Mud Type \_\_\_\_\_ Weight \_\_\_\_\_ PPG

COMPANY REPRESENTATIVE \_\_\_\_\_

CEMENTER Andrew

TIME AM/PM	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	Pumped Per Time Period	RATE Bbbs Min.	
<u>10:30</u>						<u>plug mouse hole</u> <u>plug rat hole</u> <u>start mixing cement down 5 1/2</u> <u>Cement mixed</u> <u>wash pump and line clean</u> <u>Release plug start displace</u>
	<u>400</u>			<u>10</u>		
				<u>10</u>		
				<u>10</u>		
				<u>10</u>		
				<u>10</u>		
	<u>1200</u>			<u>10</u>		
				<u>10</u>		
				<u>10</u>		
	<u>1600</u>			<u>10</u>		
	<u>1600</u>			<u>2</u>		
	<u>2200</u>					<u>plug landed</u> <u>float held</u> <u>Cement did circulate</u>
<u>11:30</u>						

FINAL DISP. PRESS: 1600 PSI BUMP PLUG TO 2200 PSI BLEEDBACK 1 BBLs. THANK YOU



**BEREXCO, LLC.  
OWENS #3-19  
SENW SECTION 19 1S-37W  
CHEYENNE COUNTY, KANSAS**

**GEOLOGIST  
WILLIAM B. BYNOG**

## RESUME

OPERATOR: BEREXCO, LLC.

WELL NAME & NUMBER: OWENS #3-19

LOCATION: SENW SECTION 19 1S-37W

COUNTY: CHEYENNE

STATE: KANSAS

SPUD DATE: 7-10-2015 COMPLETION DATE: 7-20-2015

ELEVATIONS: GL: 3174 KB: 3185

CONTRACTOR: BEREDCO RIG 10

LOGS: LOG TECH TYPES: RAG, MICROLOG

WELLSITE ENGINEER: NONE

MUD COMPANY: MORGAN MUD

MUD TYPE & ENGINEER: FRESH CHEMICAL

GEOLOGIST: WILLIAM B. BYNOG

HOLE SIZE: 7 7/8

MUD LOGGING BY: NONE

DRILL STEM TEST COMPANY: TRILOBITE

DRILL STEM TEST: DST#1 4025-4085, DST#2 4160-4250,  
DST#3 4236-4320, DST#4 4312-4375,  
DST#5 4524-4560

WELL STATUS: SET PRODUCTION CASING

## DISCUSSION

Owens #3-19 1S-37W was drilled a total depth of 4725 feet testing the Lansing Kansas City and Pawnee formations in Cheyenne County, Kansas. This well was drilled with the help of seismic data and well control, just southwest of East Fork field.

Structurally, Owens #3-19 came in flat to the prognosis and other productive wells in the area.

The Oread zone was the first live oil shows encountered in a fossiliferous Limestone and was tested on drill stem test #1 recovering only 2 feet of drilling mud with low depleted pressures. The B zone turns out to be the best zone, associated with a good drilling break, fair to good porosity development and good live sample shows in a fossiliferous Grainstone. This zone was tested on drill stem test #2 recovering 380 feet of gas in pipe and 590 feet of total fluid, 360 feet of gassy oil and 230 feet of gassy mud cut oil (50% oil). Drilling continued to the D zone encountering good live oil shows. The C and D zones were tested together on drill stem test #3 recovering only 1 foot of free oil and 4 feet of oil cut mud (25% oil). The E zone had a good oil show and was tested on drill stem test #4 recovering only 2 feet of mud. The Pawnee also had good oil shows and was tested on drill stem test #5, recovering 5 feet of oil cut mud (30% oil).

Logs agreed with sample evaluation recording poor to fair porosity development. The Lansing B zone is the best producer with a good drill stem test recovery. Other zones will contribute to production but may have to be treated.

A decision was made to run 5 ½ production casing based on the favorable oil and gas recoveries on drill stem tests and favorable log calculations.

Owens #3-19 Sample Descriptions

3700-20 SHALE red,soft,argillaceous

FORAKER

3720-36 LIMESTONE buff,hard,blocky,dense,poor porosity,no shows abundant Chert orange

3736-50 SHALE gray,gray green,firm,silty,fossils,calcareous with thin LIMESTONE as above

3750-66 SANDSTONE buff,firm,very fine grained,rounded,wsrtd,calcareous cement,poor porosity,no shows

3766-74 SHALE as above silty,fossils with thin LIMESTONE as above

3774-3820 SHALE orange,soft,silty

3820-3849 SHALE as above with thin LIMESTONE buff,pale gray,very hard,dense, some fossils in part,poor porosity,no shows

3849-80 LIMESTONE buff,pale yell,very hard,dense,crptoxln to very fnly microcrystalline,fossils, in part,poor porosity,no shows with thin SHALE as above

3880-3910 LIMESTONE buff,firm,chalky in part,some sandy in part,poor vis porosity,no shows

3910-3947 SHALE red,soft,silty with thin LIMESTONE as above

TOPEKA

### Owens #3-19 Sample Descriptions

3947-64 LIMESTONE white,hard,microcrystalline,fossils,poor porosity,no shows with thin SHALE as above

3964-86 LIMESTONE white,buff,very hard,very dense,crptoxln,blocky,poor porosity,no shows with thin SHALE as above

3986-3992 LIMESTONE white,firm,slightly chalky,fossils,sandy in part,poor to fair intergranular porosity,no shows

3992-4010 LIMESTONE white,pale gray brown,very hard,very dense,blocky, crptoxln,no shows

4010-20 SHALE as above

4020-30 LIMESTONE pale gray,very hard,dense,blocky,crtoxln,no shows

4030-54 SHALE red,firm,very silty

4054-73 LIMESTONE buff,hard,blocky,dense,poor porosity with one piece with very faint stain,poor cut, interbedded SHALE as above

OREAD

4073-82 GRAINSTONE white,firm,chalky in part,oolic,fair intergranular and vuggy porosity,spotty live thick stain,very good cut,poor show free oil

4082-4126 LIMESTONE pale gray,very hard,very dense,blocky,crptoxln,no shows

Owens #3-19 Sample Descriptions

4126-40 SHALE gray black,firm,fissile,slightly carbonaceous

4140-49 SHALE red,soft,very argillaceous

LANSING A

4149-70 LIMESTONE gray brown,very hard,very dense,crptoxln,no shows

4170-74 SANDSTONE white,firm,very fine grained,chalky,poor porosity,very spotty black dead stain,no free oil

4174-4210 SHALE red,soft,very argillaceous

B

4210-16 GRAINSTONE white,firm,slightly chalky,fossils,fair intergranular and vuggy porosity,spotty live brown stain,very good cut,good show free oil

4216-20 LIMESTONE buff,very hard,dense,crptoxln,no shows

4220-30 SANDSTONE white,friable,very fine grained,wsrtd,chalky,fair intergranular porosity,spotty to even live black stain,very good cut,fair show free abundant pyrite,with SHALE as above

4230-40 LIMESTONE gray brown,very hard,dense,crptoxln,no shows

4240-62 SHALE red,soft,silty

C

## Owens #3-19 Sample Descriptions

4262-68 LIMESTONE, white, slightly hard, slightly fossils, chalky, poor pinpoint vuggy porosity, spotty dead black tar stain, fair cut, no free oil

4268-76 LIMESTONE pale gray, very hard, dense, crptoxln to very fnly microcrystalline, poor porosity, no shows

4276-4300 SHALE red, green, firm, silty

D

4300-06 LIMESTONE pale gray, very hard, very dense, crptoxln, no shows

4306-14 LIMESTONE buff, off white, slightly hard, chalky in part, slightly fossils, poor to fair pinpoint vuggy porosity, spotty live brown stain, fair cut, no free oil

4314- 54 SHALE red, green, gray, firm, fissile

E

4354-60 GRAINSTONE white, firm, oolic, chalky in part, poor to fair intergranular porosity, spotty to even live brown stain, good cut, fair show free oil

4360-68 LIMESTONE white, slightly hard, fossils, becoming very chalky, poor to fair vis porosity, very spotty live brown stain, fair cut, no free oil

4366-70 LIMESTONE buff, very hard, dense, blocky, crptoxln, no shows

## Owens #3-19 Sample Descriptions

4370-94 SHALE red,green,firm,fissile,silty in part

F

4394-4420 LIMESTONE buff,pale gray,very hard,very dense,crptoxln,no shows with thin SHALE as above

4420-42 SHALE and LIMESTONE as above becoming slightly fossils,dense,no shows

4442-54 LIMESTONE buff,very hard,dense,slightly fossils,poor porosity,no shows

4454-60 SHALE red,gray,firm,britt,fissile

4460-66 LIMESTONE white,pale gray,firm to hard,chalky to dense porosity,no shows

4466-4510 SHALE as above becoming very silty

4510-28 LIMESTONE pale gray,very hard,slightly fossils,dense matrix,no shows

4528-48 SHALE gray,green,red,firm,silty some black slightly carbonaceous

PAWNEE

4548-56 GRAINSTONE white,slightly hard,very oolitic,poor to fair intergranular and moldic porosity,spotty to even light live brown stain,very good cut,good show free oil



Owens #3-19 Sample Descriptions

4556-70 LIMESTONE buff, pale gray,very hard,dense,crptoxln,no shows

4570-84 SHALE red,green,some black,firm,fissile

4584-4600 LIMESTONE pale gray,buff,very hard,dense,crptoxln,no shows

4600-12 SHALE as above

4612-28 LIMESTONE pale gray,gray brown,very hard,very dense,crptoxln, some chalky in part,no shows

4628-42 SHALE as above

4642-62 LIMESTONE buff,b hard,dense as above with thin LIMESTONE white,slightly hard,very sandy,very fine to fine good,chalky,poor porosity,no shows

4662-72 SHALE as above

4672-80 SANDSTONE translucent,hard,very fine to fine good,calcareous cement,poor porosity,no shows

4680-4702 SHALE as above green,red,firm,fissile

4702-25 SANDSTONE red,firm,fine to m grained,poor sortd,rounded,poor vis porosity,no shows with thin SHALE as above

Owens #3-19 Sample Descriptions

RTD 4725'

LTD 4727'