



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1217279
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: _____

1217279

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
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:				

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: Yes No

Date of First, Resumed Production, SWD or ENHR: _____ Producing Method: Flowing Pumping Gas Lift Other *(Explain)* _____

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	BEREXCO LLC
Well Name	Vada 2-17
Doc ID	1217279

Tops

Name	Top	Datum
Stone Corral Anhydrite	3094	+38
Anydrite (base)	3128	+4
Neva	3548	-416
Foraker	3668	-536
Wabaunsee	3820	-688
Topeka	3884	-752
Oread	4020	-888
Lansing/KS City A	4102	-970
LKC B	4162	-1030
LKC C	4216	-1084
LKC D	4256	-1124
LKC E	4216	-1177
LKC F	4346	-1214
Pawnee	4500	-1368
Cherokee	4559	-1426
RTD	4660	
LTD	4646	



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Berexco, LLC.

17-1S-37W Cheyenne, KS

2020 N Bramblewood
Wichita, KS 67206

Vada #2-17

Job Ticket: 56831

DST#: 1

ATTN: Pete Vollmer

Test Start: 2014.04.26 @ 11:20:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:23:30

Time Test Ended: 19:20:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 3976.00 ft (KB) To 4039.00 ft (KB) (TVD)

Reference Elevations: 3132.00 ft (KB)

Total Depth: 4039.00 ft (KB) (TVD)

3119.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8874 Inside

Press @ Run Depth: 21.45 psig @ 3977.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.26

End Date:

2014.04.26

Last Calib.:

2014.04.26

Start Time: 11:21:00

End Time:

19:20:30

Time On Btm:

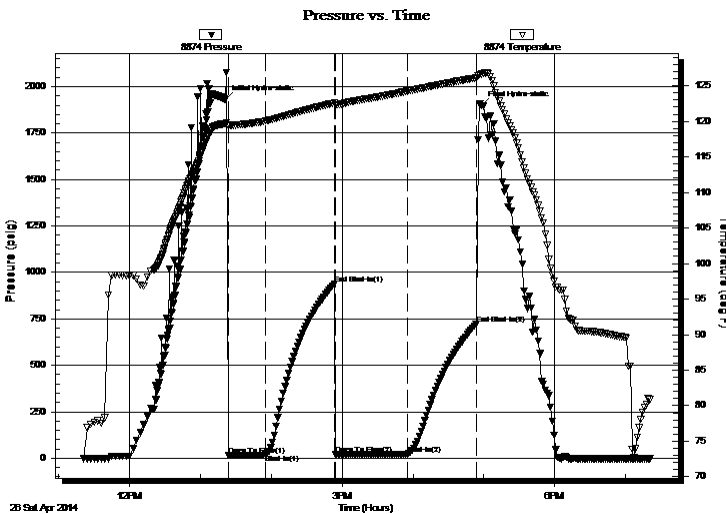
2014.04.26 @ 13:21:00

Time Off Btm:

2014.04.26 @ 16:58:00

TEST COMMENT: 30 - IF- 1/4" Blow did not build or die
60 - IS- No Return
60 - FF- No Blow
60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1931.40	119.72	Initial Hydro-static
3	15.11	119.36	Open To Flow (1)
34	18.78	120.04	Shut-In(1)
93	936.36	122.57	End Shut-In(1)
94	18.76	122.32	Open To Flow (2)
155	21.45	124.24	Shut-In(2)
213	721.88	126.10	End Shut-In(2)
217	1899.38	126.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100M	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco, LLC.

17-1S-37W Cheyenne, KS

2020 N Bramblewood
Wichita, KS 67206

Vada #2-17

Job Ticket: 56831

DST#: 1

ATTN: Pete Vollmer

Test Start: 2014.04.26 @ 11:20:00

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: 148.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.80 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

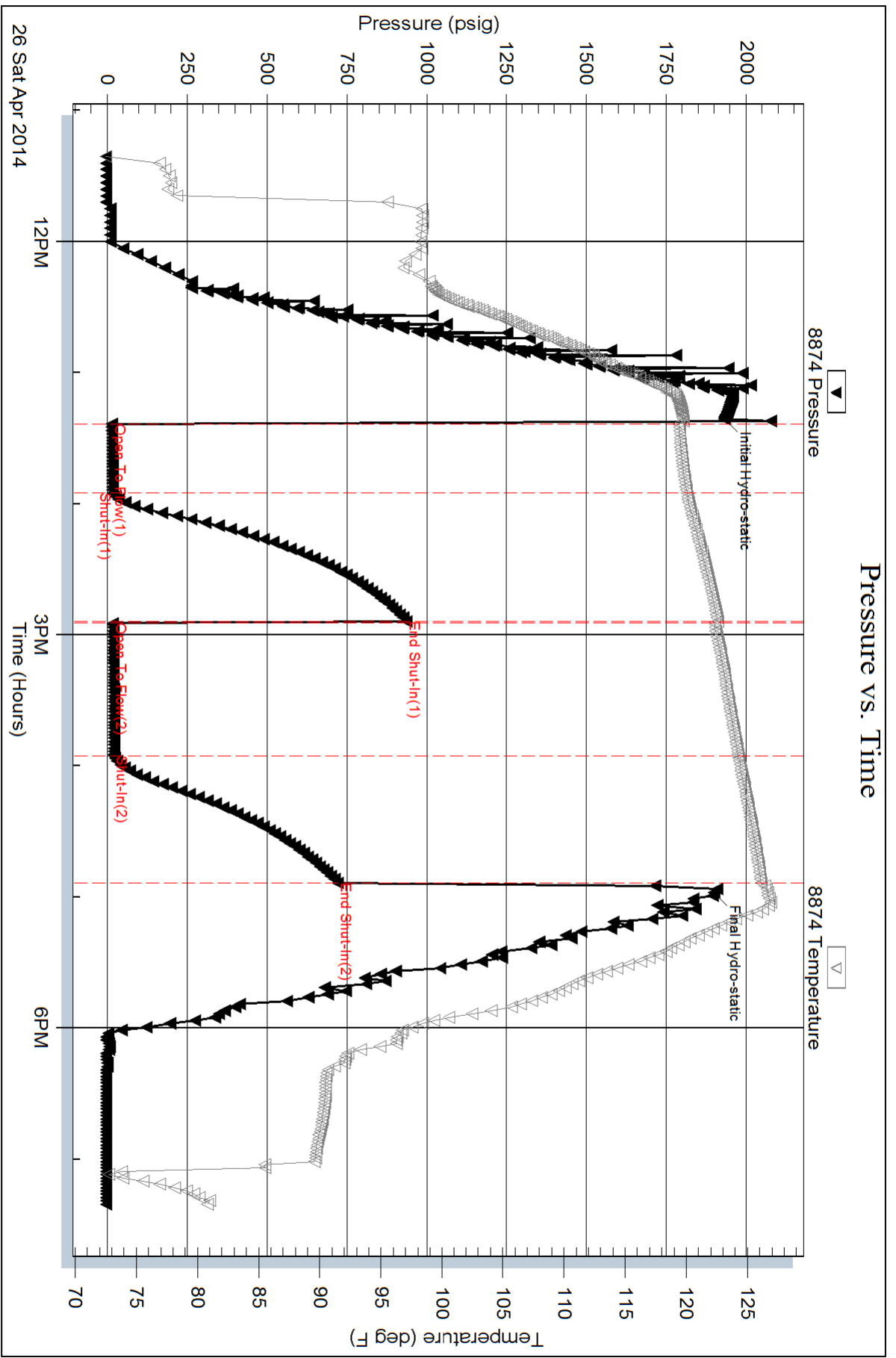
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Berexco, LLC.

17-1S-37W Cheyenne, KS

2020 N Bramblewood
Wichita, KS 67206

Vada #2-17

Job Ticket: 56831

DST#: 2

ATTN: Pete Vollmer

Test Start: 2014.04.27 @ 10:00:00

GENERAL INFORMATION:

Formation: **LKC "B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:25:30

Time Test Ended: 19:47:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4122.00 ft (KB) To 4195.00 ft (KB) (TVD)

Reference Elevations: 3132.00 ft (KB)

Total Depth: 4195.00 ft (KB) (TVD)

3119.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 273.93 psig @ 4123.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.27

End Date: 2014.04.27

Last Calib.: 2014.04.27

Start Time: 10:01:00

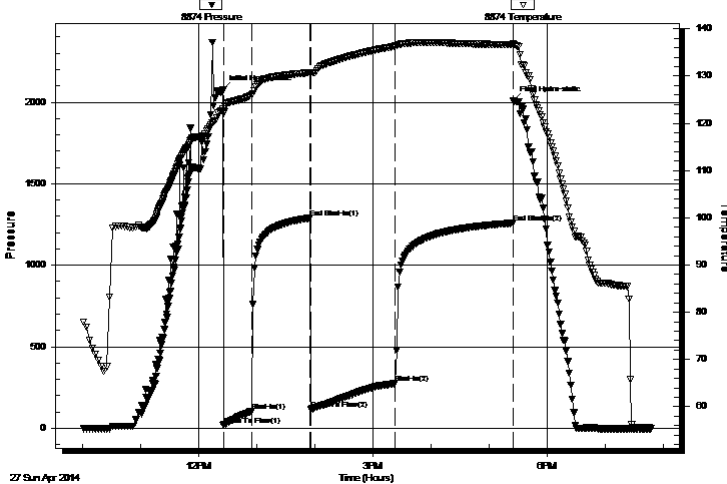
End Time: 19:47:00

Time On Btm: 2014.04.27 @ 12:25:00

Time Off Btm: 2014.04.27 @ 17:25:00

TEST COMMENT: 30 - IF- 1/2" Blow built to 7"
60 - IS- No Return
90 - FF- Surface Blow started at 5 min. Built to 11"
120 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2074.90	122.55	Initial Hydro-static
1	19.63	122.09	Open To Flow (1)
30	104.67	125.97	Shut-In(1)
90	1288.63	130.74	End Shut-In(1)
91	114.66	130.59	Open To Flow (2)
178	273.93	136.35	Shut-In(2)
300	1258.36	136.71	End Shut-In(2)
300	2010.13	136.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MW 20M 80W	0.89
180.00	MW 30M 70W	0.89
180.00	WM 60M 40W	0.96
40.00	OSWM 90M 10W (oil spots)	0.56

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco, LLC.

17-1S-37W Cheyenne, KS

2020 N Bramblewood
Wichita, KS 67206

Vada #2-17

Job Ticket: 56831

DST#: 2

ATTN: Pete Vollmer

Test Start: 2014.04.27 @ 10:00:00

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:

60000 ppm

Viscosity: 148.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
180.00	MW 20M 80W	0.885
180.00	MW 30M 70W	0.885
180.00	WM 60M 40W	0.958
40.00	OSWM 90M 10W (oil spots)	0.561

Total Length: 580.00 ft Total Volume: 3.289 bbl

Num Fluid Samples: 0

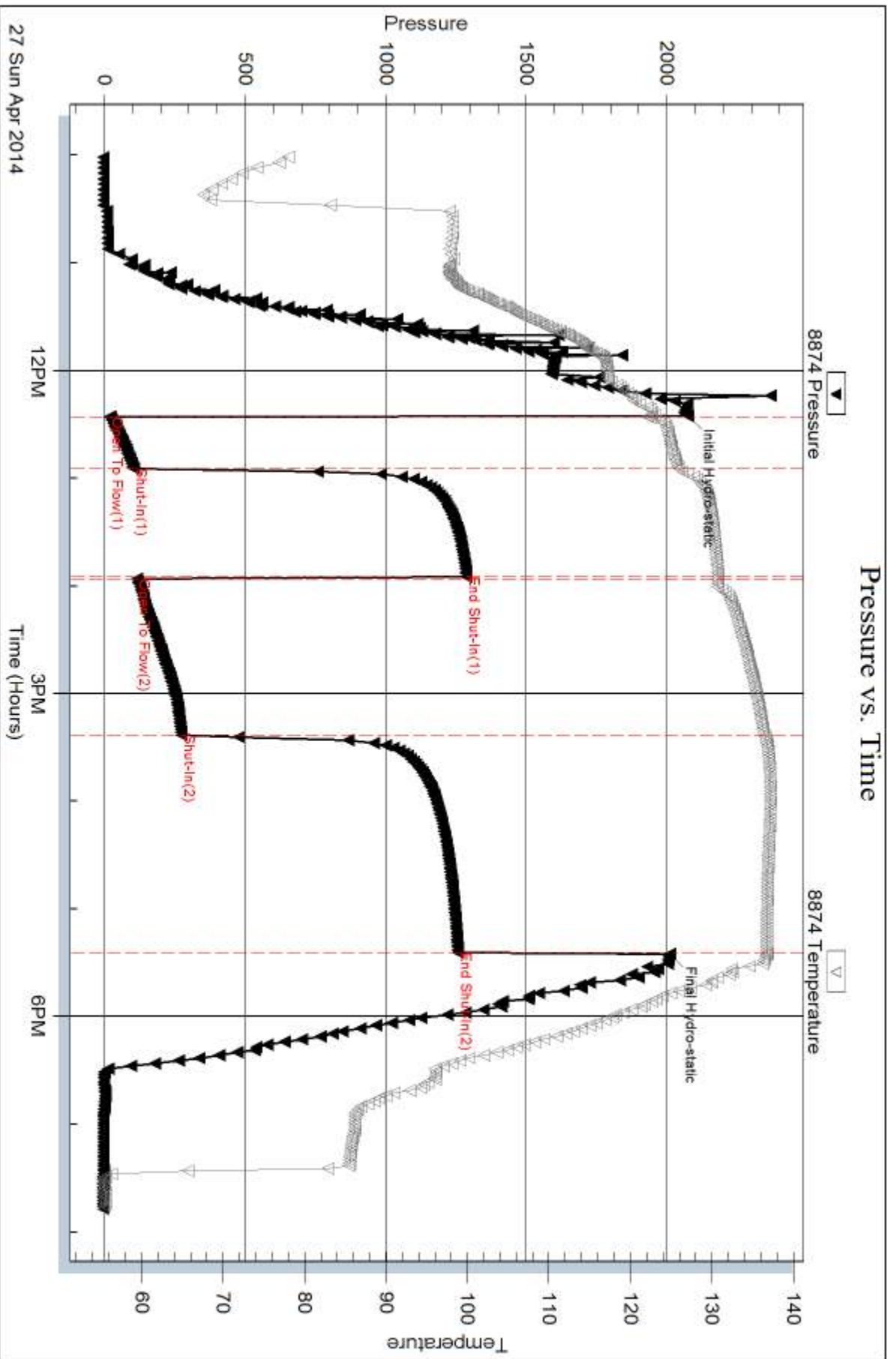
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .13 @ 72 deg = 60,000ppm





TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Berexco, LLC.

17-1S-37W Cheyenne, KS

2020 N Bramblewood
Wichita, KS 67206

Vada #2-17

Job Ticket: 58130

DST#: 3

ATTN: Pete Vollmer

Test Start: 2014.04.28 @ 23:40:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:09:30

Time Test Ended: 09:52:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 66

Interval: 4470.00 ft (KB) To 4518.00 ft (KB) (TVD)

Reference Elevations: 3132.00 ft (KB)

Total Depth: 4518.00 ft (KB) (TVD)

3119.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

Serial #: 8874

Inside

Press@RunDepth: 47.47 psig @ 4471.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.04.28

End Date:

2014.04.29

Last Calib.:

2014.04.29

Start Time: 23:41:00

End Time:

09:52:00

Time On Btm:

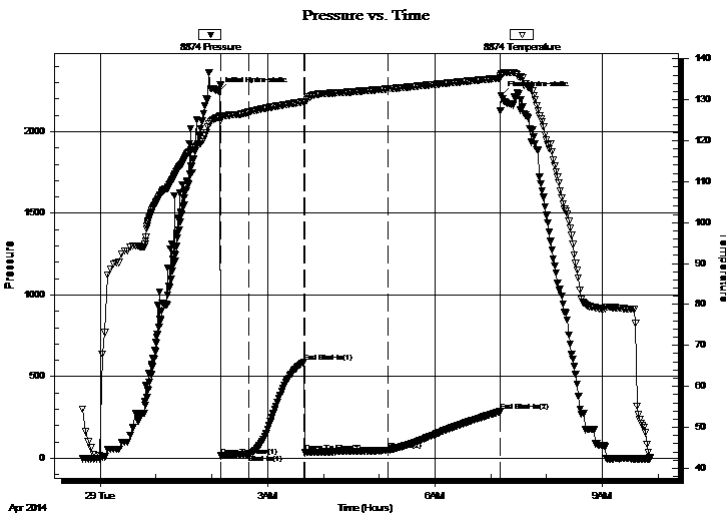
2014.04.29 @ 02:07:30

Time Off Btm:

2014.04.29 @ 07:11:30

TEST COMMENT: 30 - IF - Opened w/ surface blow built to 1"
60 - ISI - No Return
90 - FF - Surface blow built to 2"
120 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2246.84	125.76	Initial Hydro-static
2	14.80	124.81	Open To Flow (1)
32	26.88	126.98	Shut-In(1)
92	591.32	129.54	End Shut-In(1)
93	34.39	129.42	Open To Flow (2)
183	47.47	132.66	Shut-In(2)
303	285.52	135.28	End Shut-In(2)
304	2221.99	136.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCM 70% m, 30% o	0.15
40.00	GO 90% o, 10% g	0.20

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco, LLC.

17-1S-37W Cheyenne, KS

2020 N Bramblewood
Wichita, KS 67206

Vada #2-17

Job Ticket: 58130

DST#: 3

ATTN: Pete Vollmer

Test Start: 2014.04.28 @ 23:40:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.80 in³

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 bbbl
30.00	OCM 70% _m , 30% _o	0.148
40.00	GO 90% _o , 10% _g	0.197

Total Length: 70.00 ft Total Volume: 0.345 bbl

Num Fluid Samples: 0

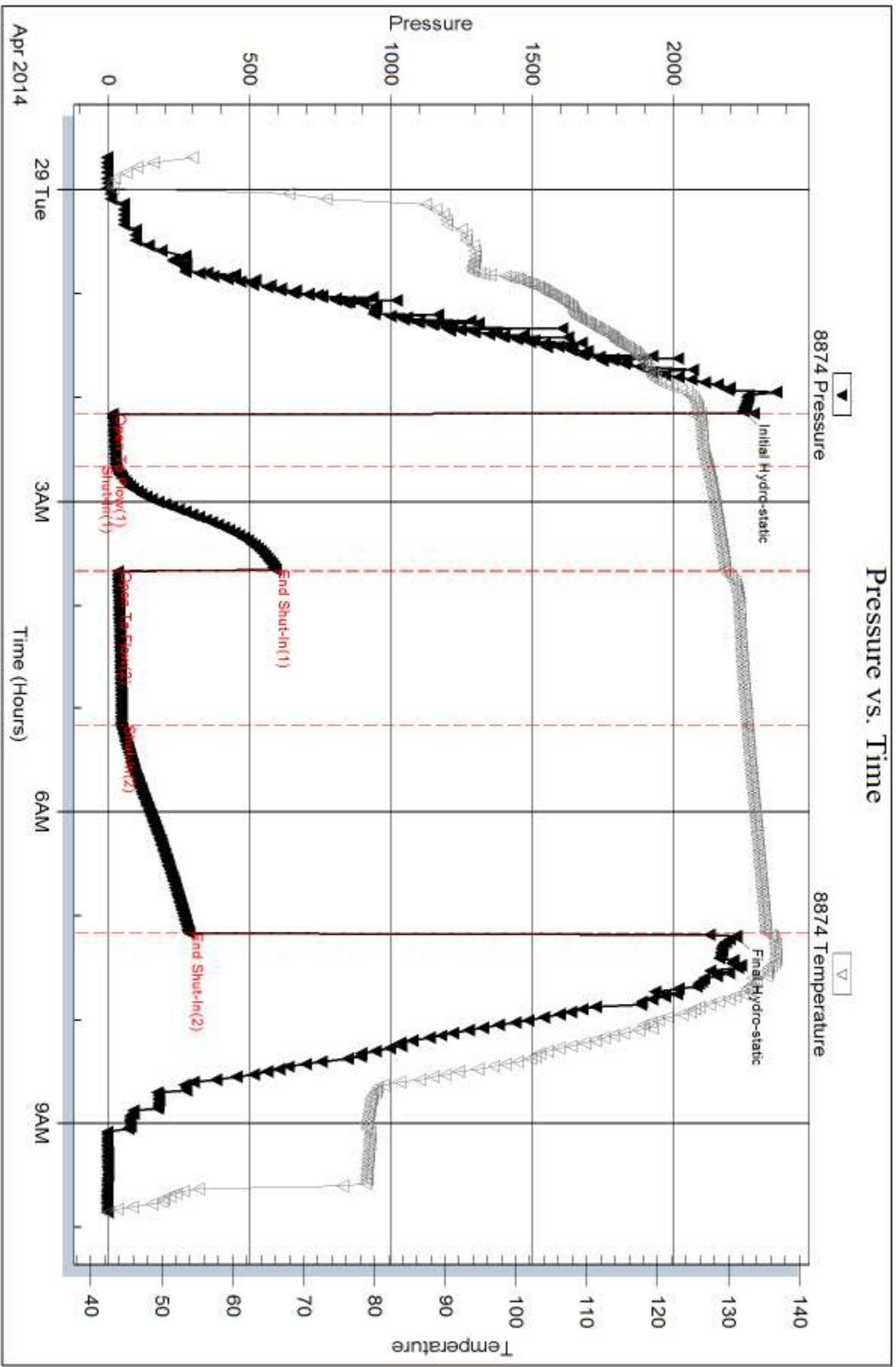
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 60 @ 40 Corrected 58



WELL FILE

ALLIED OIL & GAS SERVICES, LLC 063480

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

DATE <u>4-30-14</u>	SEC. <u>17</u>	TWP. <u>15</u>	RANGE <u>37 W</u>	CALLED OUT	ON LOCATION <u>6:45 PM</u>	JOB START <u>3:00 AM</u>	JOB FINISH <u>3:30 AM</u>
LEASE <u>Vada</u> WELL # <u>2-17</u> LOCATION <u>Bird City N to St. line</u>					COUNTY <u>Cheyenne</u>	STATE <u>K.S</u>	
OLD OR <u>NEW</u> (Circle one)					<u>2E 35 E into</u>		

CONTRACTOR Bereaco #2
 TYPE OF JOB Prod
 HOLE SIZE 7 7/8 T.D. 4660
 CASING SIZE 5 1/2 15 5" DEPTH 4620
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE _____ DEPTH _____
 TOOL _____ DEPTH _____
 PRES. MAX _____ MINIMUM _____
 MEAS. LINE _____ SHOE JOINT 42.56
 CEMENT LEFT IN CSG. 42.56'
 PERFS. _____
 DISPLACEMENT 100 bbl

EQUIPMENT

PUMP TRUCK CEMENTER Kelly G
 # 431 HELPER Wayne M
 BULK TRUCK
 # 386424 DRIVER Scott (TWS)
 BULK TRUCK
 # 566-595 DRIVER Ramiro (TWS)

OWNER Same
 CEMENT
 AMOUNT ORDERED 450 SKS line 3/4" #80-551
250 SKS Com 100 salt 290 gal 15 #911-
sonite
 COMMON 250 SKS @ 17.90 4475.00
 POZMIX _____ @ _____
 GEL 55 SKS @ 23.24 1277.00
 CHLORIDE _____ @ _____
 ASC _____ @ _____
 Lite 450 SKS @ 15.95 7177.50
 Flo-seal 338 # @ 2.97 1003.86
 Silt 26 SKS @ 26.35 685.10
 Gilsonite 125 # @ .98 122.50
 _____ @ _____
 Material total @ _____ 14,683.46
 (4/11/36/288) @ _____
 _____ @ _____
 HANDLING 825.28 @ 24.5 2042.69
 MILEAGE 37.327 @ 50x2.60 446.54

REMARKS:

Rigged up, plugged RHA MH
mixed cement down center with
400 SKS Lite & tailed in with 240 SKS
Common, released plug & displaced
with 100 bbl water with a lit at
220 #, plugged @ 2000', released
pressure, float held, had good return
through out displacement, cement did
not circulate. Thank You
 Kelly crew

SERVICE

DEPTH OF JOB _____
 PUMP TRUCK CHARGE _____ 2765.25
 EXTRA FOOTAGE _____ @ _____
 MILEAGE M. HV 50 @ 7.70 385.00
 MANIFOLD Head _____ @ 275.00 NC
M. LV 50 @ 4.90 NC
 _____ @ _____
 (2704.66/288) TOTAL 9,659.48

CHARGE TO: Befexco
 STREET _____
 CITY _____ STATE _____ ZIP _____

PLUG & FLOAT EQUIPMENT

AFU Float shoe @ 232.00
latchdown @ 184.00
Centralizers (14) @ 37.00 518.00
spacers (28) @ 46.00 1288.00
 _____ @ _____
 TOTAL 2,222.00

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 Ryan Pfeifer
 SIGNATURE [Signature]

SALES TAX (if Any) _____
 TOTAL CHARGES 26,564.94
 DISCOUNT 6,816.03 (28%) IF PAID IN 30 DAYS
19,748.91 Net

BEREXCO LLC

VADA 2-17

N/2 S/2 SW SW SEC 17 T1S R37W

CHEYENNE COUNTY, KANSAS

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SUMMARY

The Berexco LLC Vada 2-17 in Cheyenne County, Kansas spud April 22, 2014 and reached a total depth of 4660' on April 29, 2014. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Pawnee Limestone (Marmaton Group), which produces in South Jones Canyon field. Secondary zones of interests were the Foraker, Oread, and Lansing-Kansas City limestones. The Vada 2-17 was drilled using seismic and nearby well control.

On-site evaluation was by drill stem testing after sample analysis. Three DSTs were run.

Foraker, Oread and Lansing-Kansas City

The Foraker was clean non-porous limestone with dead oil staining.

DST 1 in the Oread recovered 10 ft of mud. Samples were fossiliferous packstone with traces of interparticle and vuggy porosity, scattered oil staining, and good cuts.

The Lansing A was circulated out but only rare oil shows with no visible porosity were noted. No drill stem test was warranted in the Lansing A.

DST 2 in the Lansing B recovered 580 ft of watery mud with oil spots in the top 40 ft. Samples exhibited fair interparticle porosity with spotty black stain.

The Lansing C samples were chalky mudstone with occasional very poor shows of spotty live black and brown oil stain, fluorescence, and cut. The Lansing D samples were mudstone with only a trace of black asphaltic staining and no visible porosity. The Lansing E was nonporous chalky limestone with very spotty oil stain and fair fluorescence and cut. The Lansing F was nonporous limestone with no sample shows. No drill stem testing was warranted in the Lansing, C, D, E or F.

Pawnee

DST 3 in the Pawnee recovered 40 ft of gassy oil and 30 ft of oil cut mud with very poor flow pressures. Samples were grainstone heavily occluded with lime mud. Scattered oil shows with good fluorescence and cuts were noted in vuggy parts of the limited-porosity limestone.

Oil Well Completion

5 ½" production casing was run to complete the Vada 2-17 as an oil producer.

Peter J. Vollmer
Consulting Wellsite Geologist, WPG #3369
April 2014

Berexco LLC
Vada 2-17

WELL DATA

OPERATOR: Berexco LLC
2020 North Bramblewood Drive
Wichita, Kansas 67206

WELL NAME: Vada 2-17

SURFACE LOCATION: 610' FSL & 660' FWL
N/2 S/2 SW SW Sec. 17, T1S, R37W
Cheyenne County, Kansas

LATITUDE & LONGITUDE: 39.9611398, -101.5018218 (From State, calculated from footages)

BOTTOM HOLE LOCATION: Vertical hole

ELEVATIONS: 3119' GL 3132' KB

API NUMBER: 15-023-21389

BASIN: Mid-Continental Arch

FIELD: Jones Canyon South

HOLE SIZE: 12 1/4" to 310'; 7 7/8" to 4660'

CASING: 8 5/8" J-55 24# STC set to 310' KB

SPUD DATE: April 22, 2014

TD DATE: April 29, 2014

TOTAL DEPTH: 4660' Rig TD 4646' Log TD

LAST FORMATION: Pennsylvanian Cherokee

WELL STATUS: Ran 5 1/2" production casing

OPERATOR REPRESENTATIVE: Dana Wreath - Vice President

WELLSITE GEOLOGIST: Peter J. Vollmer

FORMATION TOPS

Formation	Sample Top	Log Top	Log TVD	Log Datum
KB				3132
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1030	1030	+2102
Fort Hays Ls Mbr	N/A	1529	1529	+1603
Carlile Sh	N/A	1622	1622	+1510
Dakota	N/A	2010	2010	+1122
Cheyenne	N/A	2583	2583	+549
Blaine	N/A	2954	2954	+178
Stone Corral Anhydrite	3094	3094	3094	+38
Base Anhydrite	3129	3128	3128	+4
Neva	3537	3548	3548	-416
Foraker	3662	3668	3668	-536
Wabaunsee	3816	3820	3820	-688
Topeka	3876	3884	3884	-752
Deer Creek Sand	N/A	N/A	N/A	N/A
Oread	4023	4020	4020	-888
Lansing-Kansas City				
"A"	4105	4102	4102	-970
"B"	4170	4162	4162	-1030
"C"	4222	4216	4216	-1084
"D"	4262	4256	4256	-1124
"E"	4310	4309	4309	-1177
"F"	4351	4346	4346	-1214
Pawnee	4506	4500	4500	-1368
Cherokee	4562	4558	4558	-1426
TD Driller	4660			
TD Logger		4646	4646	-1514

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4660' TD. Depths are rig depths except where noted as wireline.

3500' - 3537'	SHALE: light reddish brown to reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous.
NEVA	SAMPLE TOP: 3537' LOG TOP: 3548' SUBSEA: -416'
3537' - 3544'	LIMESTONE: white to light gray, hard, cryptocrystalline, slightly chalky, scattered black Algal stain (dead oil), no visible porosity, no show.
3544' - 3552'	SANDSTONE: very light gray to off white, friable to firm, very fine grained, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, glauconite, no visible porosity, no shows.
3552' - 3574'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, well/trace interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, tight, no shows.
3574' - 3584'	Silty Sandstone: reddish brown, soft to very friable, very fine grained grading to silt, angular, moderately sorted, non to slightly calcareous, argillaceous to clay matrix, no visible porosity, no show.
3584' - 3616'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light gray Limestone.
3616' - 3626'	SANDSTONE: light gray to reddish brown, friable to firm, very fine grained grading to silt, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, no visible porosity, no shows.
3626' - 3662'	LIMESTONE: light gray to gray to grayish brown, hard, cryptocrystalline, occasional slightly argillaceous, occasional reddish brown SHALE, tight, no shows.
FORAKER	SAMPLE TOP: 3662' LOG TOP: 3668' SUBSEA: -536'
3662' - 3672'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, patchy black asphalt oil stain, tight, faint yellow grain fluorescence, good pale greenish white cuts.
3672' - 3680'	SHALE: gray to greenish gray, firm, blocky, non to slightly calcareous, fossil fragments, medium gray Limestone stringers.

LITHOLOGY AND SHOWS

3680' - 3692'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, algal stain, tight to trace intercrystalline porosity, no shows.
3692' - 3702'	SANDSTONE: very light gray to white, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, black specks, tight to trace porosity, no shows.
3702' - 3754'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional moderately to very silty, occasional light gray Limestone stringers.
3754' - 3762'	LIMESTONE: white to light gray, occasional reddish brown mottled, firm to hard, cryptocrystalline, chalky, slightly argillaceous in part, reddish brown Shale partings, tight, no show.
3762' - 3816'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray chalky Limestone stringers.
WABAUNSEE	SAMPLE TOP: 3816' LOG TOP: 3820' SUBSEA: -688'
3816' - 3850'	LIMESTONE: white to light gray, with light reddish brown mottled, soft to firm, cryptocrystalline, chalky texture, reddish brown SHALE partings, occasional fossil fragment, trace black heavy oil material, faint yellow grain fluorescence, slow pale greenish white cut.
3850' - 3876'	SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part.
TOPEKA	SAMPLE TOP: 3876' LOG TOP: 3884' SUBSEA: -752'
3876' - 3892'	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment (Fusulinid, Brachiopod), sparry calcareous, gray Shale partings, occasional black dead oil, tight, no shows.
3892' - 3902'	SHALE: gray, firm, platy to fissile, non to slightly calcareous, dull.
3902' - 3920'	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment, opaque chert, tight, no shows.
3920' - 3954'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, clayey.

LITHOLOGY AND SHOWS

3954' - 3982'	LIMESTONE: white to light red brown, mottled, firm to hard, mudstone, very chalky, slightly argillaceous in part, interbedded reddish brown Shale partings, tight, no shows.
3982' - 4023'	SHALE: red brown, brownish maroon, firm, blocky, occasional slightly calcareous, non to slightly silty in part, clayey to sticky.
OREAD	SAMPLE TOP: 4023' LOG TOP: 4020' SUBSEA: -888'
4023' - 4039'	LIMESTONE: cream to white, firm to hard, mudstone to packstone, fossil fragments, scattered black oil stain, tight to trace interparticle and vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming cuts, fair show.
4039' - 4048'	LIMESTONE: gray to light gray, occasional dark gray, firm to hard, mudstone, occasional fossil, slightly argillaceous in part, tight, no show.
4048' - 4064'	SHALE: dark gray to gray, firm, fissile, slightly carbonaceous in part, non to slightly calcareous, fossil fragments.
4064' - 4078'	LIMESTONE: gray to light gray, firm to hard, mudstone, occasional fossil, becoming argillaceous in part at base, tight, no show.
4078' - 4105'	SHALE: gray to reddish brown to maroon, firm, blocky, non to slightly calcareous, sub waxy to earthy.
LANSING- KANSAS CITY "A"	SAMPLE TOP: 4105' LOG TOP: 4102' SUBSEA: -970'
4105' - 4122'	LIMESTONE: white to light gray, hard, mudstone, fossil fragments, spotty black oil stain, no visible porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, fair show, but lacks porosity.
4122' - 4134'	LIMESTONE: gray to light gray, hard, mudstone, occasional fossil, slightly argillaceous in part, rare black oil stain, tight, predominantly no show.
4134' - 4140'	SANDSTONE: white to light gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, clean, no visible porosity, no show.
4140' - 4170'	SHALE: gray to reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, occasional argillaceous LIMESTONE stringers.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "B"

SAMPLE TOP: 4170' LOG TOP: 4162' SUBSEA: -1030'

4170' - 4184'

LIMESTONE: white to very light gray, firm to hard, mudstone to wackestone, occasional fossil fragments, pyrite, occasional free live heavy black oil, predominant tight with trace intergranular porosity and fair vuggy porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, good show.

4184' - 4196'

LIMESTONE: white to light gray, hard, mudstone, occasional fossil, chalky texture, clean, tight, two pieces black oil stain and cut, tight, predominantly no show.

4196' - 4222'

SHALE: gray to dark gray, firm, sub blocky to fissile, non to slightly calcareous, fossil fragment, pyrite, occasional carbonaceous.

LANSING- KANSAS CITY "C"

SAMPLE TOP: 4222' LOG TOP: 4216' SUBSEA: -1084'

4222' - 4238'

LIMESTONE: light gray to white, firm, mudstone to wackestone, fossil fragments, predominantly chalky texture, occasional spotty black oil specks in tight rock, no visible porosity, dull yellow fluorescence, dull yellowish white cut, very poor show.

4238' - 4262'

SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments, pyrite.

LANSING- KANSAS CITY "D"

SAMPLE TOP: 4262' LOG TOP: 4256' SUBSEA: -1124'

4262' - 4276'

LIMESTONE: light gray to white, firm, mudstone to wackestone, fossil fragments, chalky texture, trace spotty black oil specks (2 pieces), no visible porosity, dull yellow fluorescence, dull yellowish white cut, very poor show.

4276' - 4290'

SHALE: gray to dark gray, firm, blocky to fissile, non to slightly calcareous, occasional Limestone stringers.

4290' - 4310'

SHALE: dark reddish brown, soft to firm, blocky to platy, non calcareous, moderately to very silty, sticky;

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "E"

SAMPLE TOP: 4310' LOG TOP: 4309' SUBSEA: -1177'

- 4310' - 4326' LIMESTONE: white, firm to soft, mudstone, very chalky, fossil fragments, occasional patchy brown oil stain, predominantly very tight, trace poor vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, poor show.
- 4326' - 4336' SHALE: dark gray to gray, firm, blocky, calcareous, fossil (Brachiopod), very to slightly carbonaceous in part, plant remains, trace pyrite.
- 4336' - 4351' SHALE: dark reddish brown to reddish brown to gray, firm, blocky to platy, non calcareous, moderately to very silty.

LANSING- KANSAS CITY "F"

SAMPLE TOP: 4351' LOG TOP: 4346' SUBSEA: -1214'

- 4351' - 4364' LIMESTONE: cream to white to light gray, firm to hard, mudstone to wackestone, very chalky texture, occasional fossil fragments, very tight, no shows.
- 4364' - 4376' SHALE: gray to dark gray, firm, platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite.
- 4376' - 4387' LIMESTONE: white, hard, mudstone, chalky, dense, tight, no show.
- 4387' - 4414' SHALE: brownish red, firm, blocky, non calcareous, with interbedded Limestone stringers.
- 4414' - 4428' LIMESTONE: white to cream, with reddish brown mottled, mudstone, occasional red shale partings, trace dark gray shale, occasional embedded medium grained white to black sand grains, tight, no shows.
- 4428' - 4444' SHALE: dark reddish brown to reddish brown to dark gray, firm, blocky to platy, non calcareous, moderately to very silty.
- 4444' - 4464' SHALE: gray, firm, blocky, n to slightly calcareous, thin Limestone stringers.
- 4464' - 4478' LIMESTONE: gray, hard, cryptocrystalline, fossil fragments, dense, tight, no shows.
- 4478' - 4506' SHALE: gray to dark gray to dark gray green, hard to firm, sub blocky, non calcareous.

LITHOLOGY AND SHOWS

PAWNEE	SAMPLE TOP: 4506' LOG TOP: 4500' SUBSEA: -1368'
4506' - 4518'	LIMESTONE: white to cream to very light gray, firm to hard, grainstone to mudstone, peloids in part, fossil fragments, scattered live black oil stain, trace to fair vuggy porosity, occasional interparticle porosity, occasional oil in vugs, bright yellowish white fluorescence, instant blooming yellowish white cuts, good show.
4518' - 4528'	LIMESTONE: white to very light gray, hard, mudstone, slightly chalky, fossil fragments, tight, no shows.
4528' - 4540'	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, fossil fragments, occasional black pellets.
4540' - 4562'	LIMESTONE: white to light gray, firm to hard, mudstone, occasional black pellets, rare fossil, tight, no shows.
CHEROKEE	SAMPLE TOP: 4562' LOG TOP: 4558' SUBSEA: -1426'
4562' - 4575'	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, plant remains, thin black boney Coal stringers.
4575' - 4596'	LIMESTONE: white to light gray to gray, firm to hard, mudstone to wackestone, rare fossil fragment, black Algal stain, tight, occasionally sandy, no shows.
4596' - 4604'	SHALE: black to dark gray, firm, blocky to fissile, occasionally carbonaceous at top, plant remains, disseminated pyrite.
4604' - 4630'	LIMESTONE: brownish gray to light gray, firm to hard, mudstone to wackestone, occasional fossil fragment (Brachiopod), slightly sandy in part, slightly argillaceous in part, opaque chert, tight, no shows.
4630' - 4639'	SHALE: gray to dark gray, firm, platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite.
4639' - 4660' TD	LIMESTONE: light gray to gray, firm to hard, mudstone, occasional fossil fragment, occasional dark gray carbonaceous SHALE partings, scattered opaque chert, tight, no shows.

SERVICES

CONTRACTOR:	Beredco Drilling Inc., Rig 2	
Toolpusher:	Milo Salinas	
DRILLING FLUIDS:	Morgan Mud, Inc.	McCook, ND
Mud Type:	Freshwater Chemical	308-340-5946
Engineers:	Dave Lines, Dave Korte	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Kevin Mack, Brandon Quintana DST 1: 3976' - 4039' Oread DST 2: 4122' - 4195' LKC "B" DST 3: 4470' - 4518' Pawnee	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500' - TD Engineer: Jerod Long	Hays, KS 785-625-3858