



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1235769
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: _____

1235769

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. <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	Mears E 1-15
Doc ID	1235769

Tops

Name	Top	Datum
Anhydrite	3098	+58
Anhydrite (base)	3132	+24
Neva	3554	-394
Red Eagle	3618	-462
Foraker	3664	-508
Wabaunsee	3812	-656
Topeka	3890	-734
Deer Creek	3959	-803
Oread	4018	-862
Heebner Shale	4047	-891
Leavenworth Lime	4055	-899
LKC A	4101	-945
LKC B	4160	-1004
LKC C	4213	-1057
LKC D	4254	-1098
LKC E	4300	-1144
LKC F	4344	-1198
Pawnee	4490	-1334
Cherokee	4581	-1425
RTD	4650	
LTD	4651	

WELL FILE

ALLIED OIL & GAS SERVICES, LLC 064212

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

Oglety

DATE <u>9-6-14</u>	SEC. <u>15</u>	TWP. <u>13</u>	RANGE <u>37W</u>	CALLED OUT	ON LOCATION	JOB START <u>10:00 AM</u>	JOB FINISH <u>12:30 AM</u>
LEASE <u>Mears E</u>	WELL # <u>1-15</u>	LOCATION <u>Bird city 13N 37E</u>			COUNTY <u>Cheyenne</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one)			<u>1/2 N 8 1/4 W</u>				

CONTRACTOR Bereco 2
 TYPE OF JOB Surf Ace
 HOLE SIZE 1 1/4 T.D. 310'
 CASING SIZE 8 5/8 DEPTH 310'
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH
 PRES. MAX MINIMUM
 MEAS. LINE SHOE JOINT
 CEMENT LEFT IN CSG. 15'
 PERFS.
 DISPLACEMENT 18129 BBL

OWNER SAME
 CEMENT
 AMOUNT ORDERED 225 sls com 3 1/2 cc
2 1/2 gal
 COMMON 225 sls @ 17.90 4027.50
 POZMIX @
 GEL 423 @ .50 211.50
 CHLORIDE 635 @ 1.10 698.50
 ASC @

EQUIPMENT

PUMP TRUCK CEMENTER Andrew Forland
 # 431 HELPER Brandon H. Kinison
 BULK TRUCK DRIVER Chris (TWS)
 BULK TRUCK DRIVER

Material total @ 4991.00
(1530.62/31%) @
 @
 @
 @
 @
 HANDLING 243.50 @ 2.48 603.88
 MILEAGE 225 @ 11.10 2497.50
 TOTAL

REMARKS:

Cement did circulate
Thank you
 CHARGE TO: Bereco
 STREET
 CITY STATE ZIP

SERVICE

DEPTH OF JOB 310'
 PUMP TRUCK CHARGE 1572.25
 EXTRA FOOTAGE @
 MILEAGE 50 miles @ 7.70 385.00
 MANIFOLD head @ 225.00 N/C
Light vehicle @ 4.40 N/C
(1248.33/31%)
 TOTAL 4136.88

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 Myla Salinas
 SIGNATURE Myla Salinas

SALES TAX (If Any)
 TOTAL CHARGES 8,964.38
 DISCOUNT 2,778.95 (31%) IF PAID IN 30 DAYS
6,185.43 Net



CEMENTING LOG

STAGE NO. _____

Date 9-6-14 District oakley Ticket No. 064212
 Company Borealis Rig Borealis 2
 Lease meads Well No. 1-15
 County Cheyenne State KS
 Location 15th St 37th Field _____
bird city 13th N 34th E 12th N 6th W

CEMENT DATA:

Spacer Type: _____
 Amt. _____ Sks Yield _____ ft³/sk Density _____ PPG

LEAD: Pump Time _____ hrs. Type Com 3 1/2 in
2 1/2 gal Excess _____
 Amt. 225 Sks Yield 1104 ft³/sk Density 15.2 PPG

TAIL: Pump Time _____ hrs. Type _____
 Excess _____

Amt. _____ Sks Yield _____ ft³/sk Density _____ PPG
 WATER: Lead _____ gals/sk Tail _____ gals/sk Total _____ Bbls.

Pump Trucks Used 401
 Bulk Equip. 323

Float Equip: Manufacturer _____
 Shoe: Type _____ Depth _____

Float: Type _____ Depth _____
 Centralizers: Quantity _____ Plugs Top _____ Btm. _____

Stage Collars _____
 Special Equip. _____

Disp. Fluid Type water Amt. 1879 Bbls. Weight _____ PPG
 Mud Type _____ Weight _____ PPG

CASING DATA: Conductor PTA Squeeze Misc
 Surface Intermediate Production Liner
 Size 8 1/2 Type _____ Weight _____ Collar _____

Casing Depths: Top 153 Bottom 310'

Drill Pipe: Size _____ Weight _____ Collars _____
 Open Hole: Size 12 1/4 T.D. 310' ft. P.B. to _____ ft.

CAPACITY FACTORS:
 Casing: Bbls/Lin. ft. 106.37 Lin. ft./Bbl. _____
 Open Holes: Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Drill Pipe: Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Annulus: Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Perforations: From _____ ft. to _____ ft. Amt. _____

COMPANY REPRESENTATIVE _____ CEMENTER Andrew

TIME (AM/PM)	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	Pumped Per Time Period	RATE Bbls Min.	
<u>10:00</u>						<u>start mixing cement</u> <u>cement mixed</u> <u>start displacement</u>
	<u>257</u>			<u>12</u>	<u>8179</u>	<u>displacement in</u> <u>stop pump</u> <u>shut in</u> <u>cement did circulate</u>
<u>10:30</u>						

FINAL DISP. PRESS: _____ PSI BUMP PLUG TO _____ PSI BLEEDBACK _____ BBLs. THANK YOU



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Berexco LLC.

15-1S-37W Cheyenne KS

2020 N. Bramblewood
Wichita KS 67206

Mears E #1-15

Job Ticket: 60014

DST#: 1

ATTN: Pete Vollmeyer

Test Start: 2014.09.10 @ 04:01:00

GENERAL INFORMATION:

Formation: **LKC " B "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:39:30

Time Test Ended: 12:06:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 78

Interval: 4110.00 ft (KB) To 4170.00 ft (KB) (TVD)

Reference Elevations: 3156.00 ft (KB)

Total Depth: 4170.00 ft (KB) (TVD)

3143.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 6752

Inside

Press@RunDepth: 33.63 psig @ 4111.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.10

End Date:

2014.09.10

Last Calib.: 2014.09.10

Start Time: 04:01:05

End Time:

12:06:14

Time On Btm: 2014.09.10 @ 06:37:15

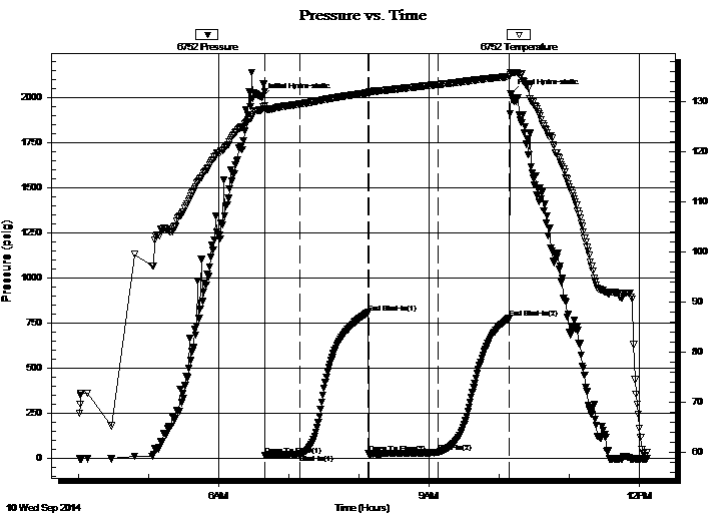
Time Off Btm: 2014.09.10 @ 10:10:00

TEST COMMENT: 30 IF - Surface blow built to 1 1/2"

60 ISI - No return

60 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2003.11	128.25	Initial Hydro-static
3	17.15	128.39	Open To Flow (1)
33	22.35	129.43	Shut-In(1)
91	808.61	131.68	End Shut-In(1)
91	25.10	131.60	Open To Flow (2)
151	33.63	133.31	Shut-In(2)
212	776.63	134.92	End Shut-In(2)
213	2022.39	135.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
18.00	OCM - 20%o - 80%M	0.09
2.00	MCO - 35%M - 65%o	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Berexco LLC.

15-1S-37W Cheyenne KS

2020 N. Bramblewood
Wichita KS 67206

Mears E #1-15

Job Ticket: 60014

DST#: 1

ATTN: Pete Vollmeyer

Test Start: 2014.09.10 @ 04:01:00

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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
18.00	OCM - 20%o - 80%M	0.089
2.00	MCO - 35%M - 65%o	0.010

Total Length: 20.00 ft Total Volume: 0.099 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6752

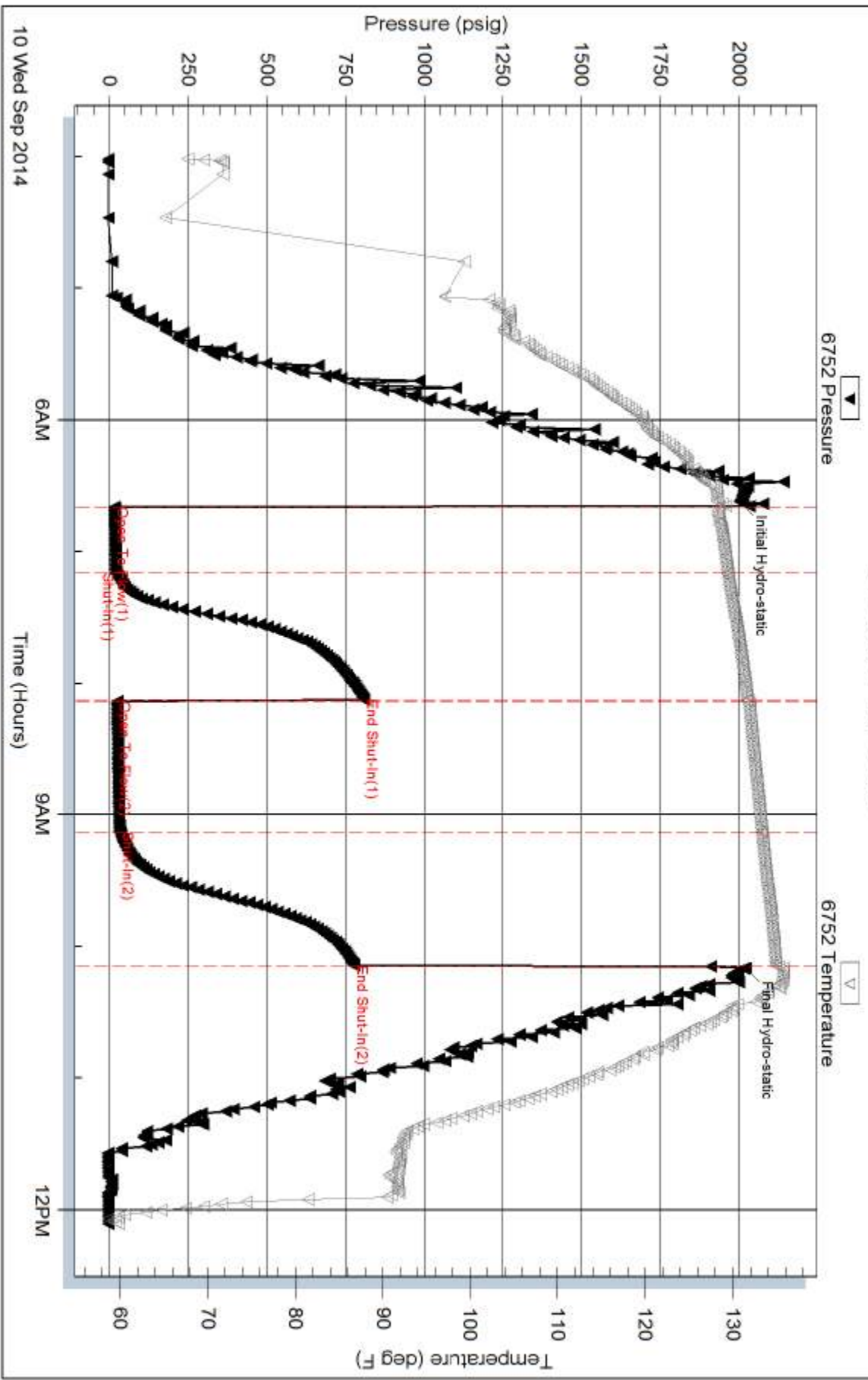
Inside

Berexco LLC.

Mears E#1-15

DST Test Number: 1

Pressure vs. Time





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Berexco LLC.
2020 N. Bramblewood
Wichita KS 67206
ATTN: Pete Vollmer

15-1S-37W Cheyenne KS
Mears E #1-15
Job Ticket: 60015 **DST#: 2**
Test Start: 2014.09.11 @ 11:21:00

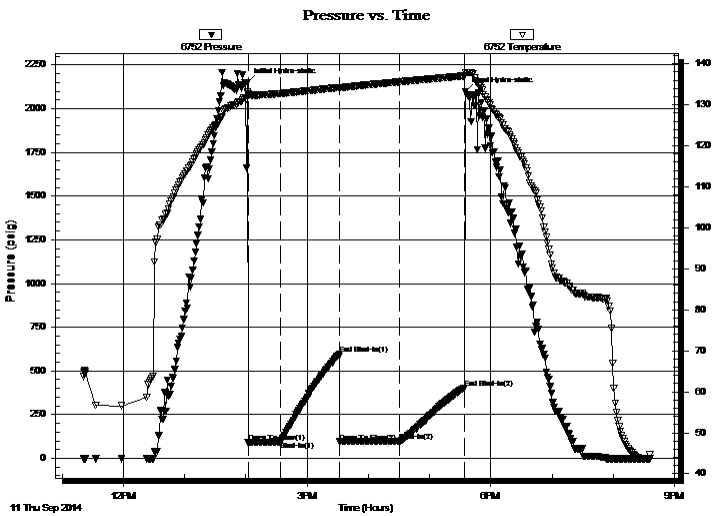
GENERAL INFORMATION:

Formation: **LKC " E "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:02:15
Time Test Ended: 20:36:30
Interval: **4264.00 ft (KB) To 4320.00 ft (KB) (TVD)**
Total Depth: 4320.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Ryan Nichols
Unit No: 78
Reference Elevations: 3156.00 ft (KB)
3143.00 ft (CF)
KB to GR/CF: 13.00 ft

Serial #: 6752 Inside
Press @ Run Depth: 98.90 psig @ 4265.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.09.11 End Date: 2014.09.11 Last Calib.: 2014.09.11
Start Time: 11:21:05 End Time: 20:36:30 Time On Btm: 2014.09.11 @ 14:01:45
Time Off Btm: 2014.09.11 @ 17:35:15

TEST COMMENT: tool opened 10' off bottom going through a bridge
30 IF - Surface blow died @ 15 mins
60 ISI - No return
60 FF - No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2150.35	133.09	Initial Hydro-static
1	89.84	132.60	Open To Flow (1)
32	96.68	132.73	Shut-In(1)
90	594.89	134.23	End Shut-In(1)
91	94.68	134.13	Open To Flow (2)
149	98.90	135.61	Shut-In(2)
213	400.01	137.05	End Shut-In(2)
214	2097.94	137.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
100.00	Mud 100%M	0.49

* 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.

15-1S-37W Cheyenne KS

2020 N. Bramblewood
Wichita KS 67206

Mears E #1-15

Job Ticket: 60015

DST#: 2

ATTN: Pete Vollmer

Test Start: 2014.09.11 @ 11:21:00

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: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
100.00	Mud 100%M	0.492

Total Length: 100.00 ft Total Volume: 0.492 bbl

Num Fluid Samples: 0

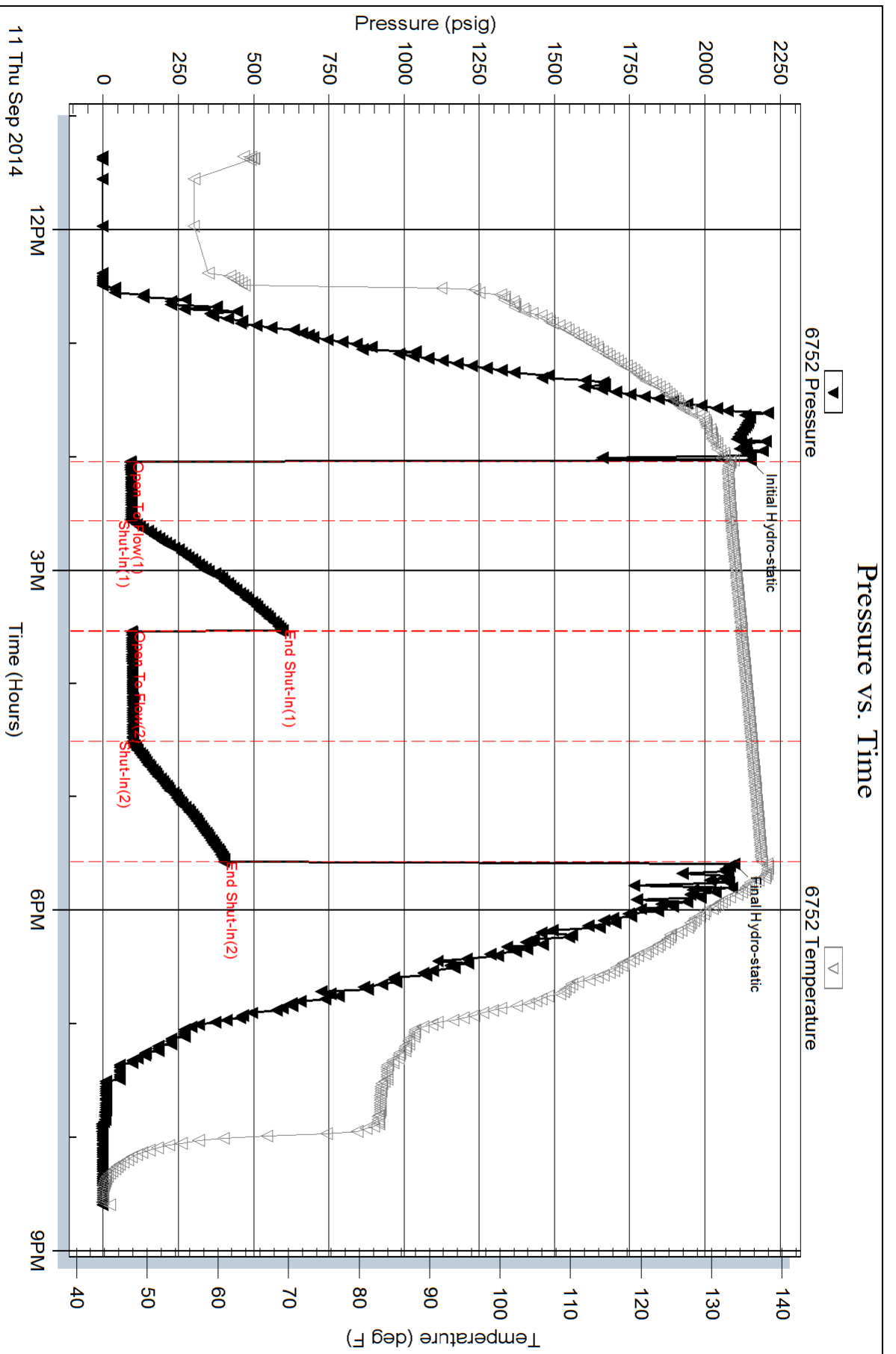
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Berexco LLC.
 2020 N. Bramblewood
 Wichita KS 67206
 ATTN: Pete Vollmer

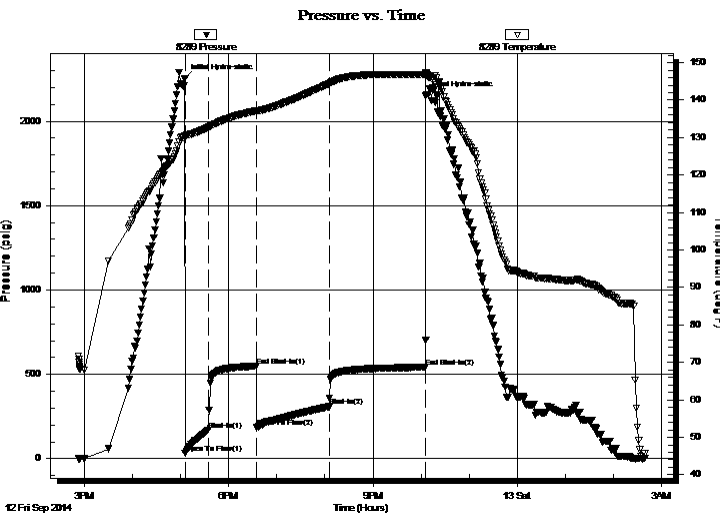
15-1S-37W Cheyenne KS
Mears E #1-15
 Job Ticket: 56138 **DST#: 3**
 Test Start: 2014.09.12 @ 14:53:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:05:45
 Time Test Ended: 02:40:00
 Interval: **4468.00 ft (KB) To 4508.00 ft (KB) (TVD)**
 Total Depth: 4508.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jim Svaty
 Unit No: 76
 Reference Elevations: 3156.00 ft (KB)
 3143.00 ft (CF)
 KB to GR/CF: 13.00 ft

Serial #: 8289 Outside
 Press @ Run Depth: 308.52 psig @ 4473.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.09.12 End Date: 2014.09.13 Last Calib.: 2014.09.13
 Start Time: 14:53:02 End Time: 02:39:45 Time On Btm: 2014.09.12 @ 17:05:30
 Time Off Btm: 2014.09.12 @ 22:06:00

TEST COMMENT: 30-IFP- BOB in 16min.
 60-ISIP- Surface Blow Building to 1/2in. in 5min. Died Back in 9min.
 90-FFP- BOB in 24min.
 120-FSIP- 1 1/4in. Blow in 6min. Died Back in 11min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2251.84	130.51	Initial Hydro-static
1	30.63	130.02	Open To Flow (1)
30	168.42	132.71	Shut-In(1)
90	548.45	137.13	End Shut-In(1)
90	185.48	137.01	Open To Flow (2)
180	308.52	144.39	Shut-In(2)
300	542.11	146.86	End Shut-In(2)
301	2150.63	147.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
730.00	CO 100%	5.42
0.00	1372 GIP	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.
2020 N. Bramblewood
Wichita KS 67206
ATTN: Pete Vollmer

15-1S-37W Cheyenne KS
Mears E #1-15
Job Ticket: 56138 **DST#: 3**
Test Start: 2014.09.12 @ 14:53:00

Mud and Cushion Information

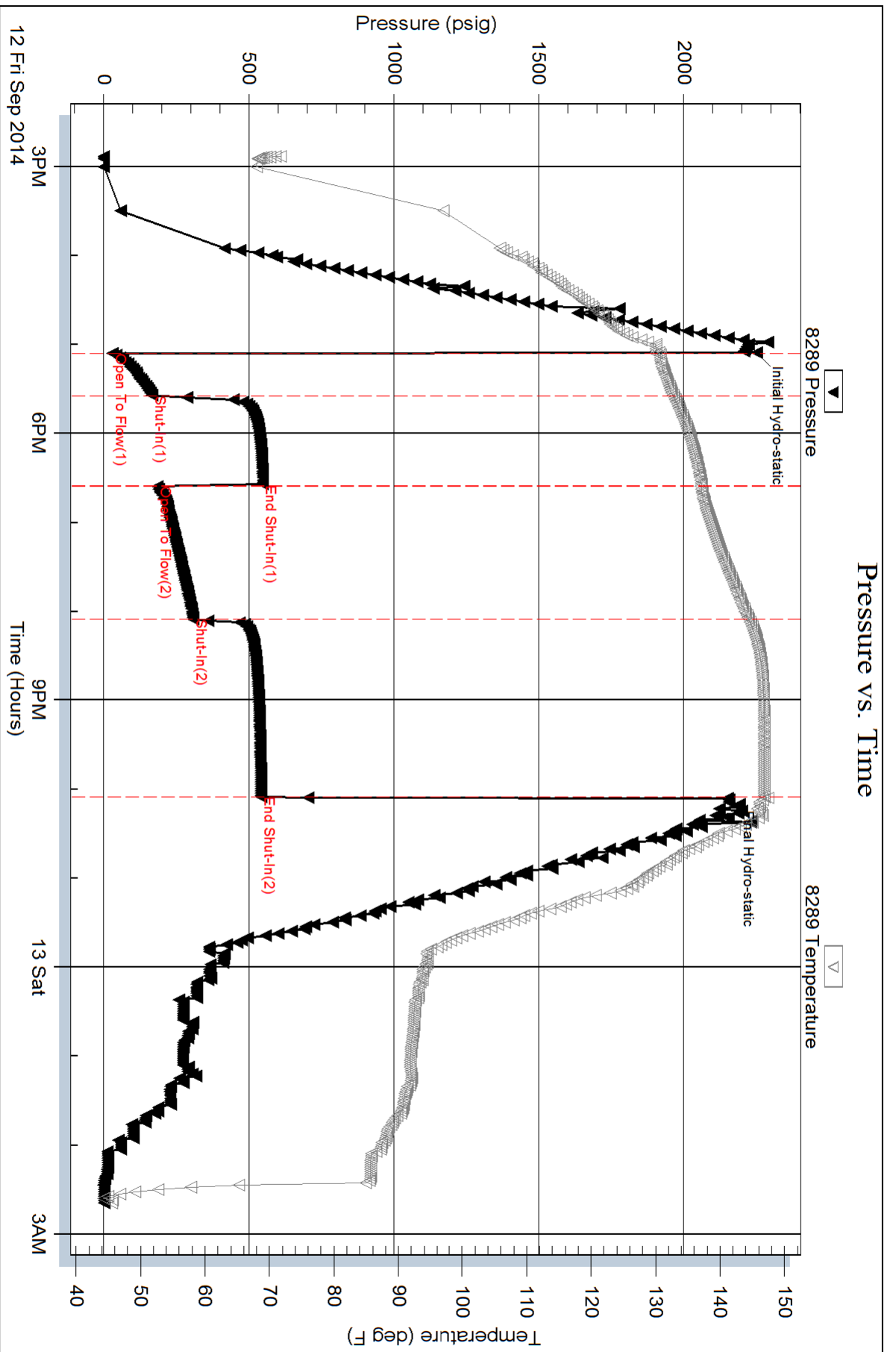
Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.99 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 600.00 ppm		
Filter Cake: 3.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
730.00	CO 100%	5.421
0.00	1372 GIP	0.000

Total Length: 730.00 ft Total Volume: 5.421 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



WELL FILE

ALLIED OIL & GAS SERVICES, LLC 064243

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Oakley KS

DATE <u>9-26-14</u>	SEC. <u>15</u>	TWP. <u>1S</u>	RANGE <u>37W</u>	CALLED OUT	ON LOCATION	JOB START <u>7:30am</u>	JOB FINISH <u>8:30am</u>
LEASE <u>Mears F</u>	WELL# <u>1-15</u>	LOCATION <u>Bird City N to State line 3E,</u>			COUNTY <u>Cherokee</u>	STATE <u>KS</u>	
OLD OR <u>NEW</u> (Circle one)		<u>3S, E into</u>					

CONTRACTOR Beredco 2
 TYPE OF JOB Production
 HOLE SIZE 7 1/8 T.D. 4600'
 CASING SIZE 5 1/2 (155#) DEPTH 4597'
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH
 PRES. MAX MINIMUM
 MEAS. LINE SHOE JOINT 43'
 CEMENT LEFT IN CSG. 43'
 PERFS.
 DISPLACEMENT 108.39 bbl/water

OWNER Same
 CEMENT
 AMOUNT ORDERED 450 sks Lite 3/4#
Flo-seal, 250 sks Com 10' salt,
5# gilsonite, 2' gel
 COMMON 250 sks @ 17.90 4475.00
 POZMIX @
 GEL 470 # @ .50 235.00
 CHLORIDE @
 ASC @
 Lite (60/40/g) 450 sks @ 19.89 8950.50
 Flo-seal 338 # @ 2.97 1003.86
 Salt 1300 # @ .68 884.00
 Gilsonite 1250 # @ .98 1225.00
 @
Material Total @ 16,773.36
(5,199.74 / 31%)
 @
 HANDLING 825.21 # @ 2.48 2046.52
 MILEAGE 34.22 tons x 50 mix 2.75 4705.25
 TOTAL

EQUIPMENT
 PUMP TRUCK CEMENTER Paul Beaver
 # 431 HELPER Wayne Mc Ghghy
 BULK TRUCK
 # 890/241 DRIVER Chris (two)
 BULK TRUCK
 # 891/310 DRIVER Juan I (two)

REMARKS:

Run Pipe/ Float equip/ Drop ball, pumped
ball through shoe @ 400', mix 30 sks in
R.H. mix 15 sks in m.H. mix 405 sks lite
Tail w/ 250 sks Com, wash up to pit,
Release plug, displace w/ water, plug did
land @ 2300' Lift 1800', float
did hold cement did not circulate
Thank You!
Paul & Crew

CHARGE TO: Beredco IIc
 STREET _____
 CITY _____ STATE _____ ZIP _____

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 _____
 SIGNATURE [Signature]

SERVICE
 DEPTH OF JOB 4600'
 PUMP TRUCK CHARGE 2,765.75
 EXTRA FOOTAGE @
 MILEAGE MILV 50 @ 7.70 385.00
 MANIFOLD Head @ 275.00 N/C
 MILV 50 @ 4.40 N/C
 @
(3069.78 / 31%) TOTAL 9,903.54

PLUG & FLOAT EQUIPMENT
Industrial Rubber (5 1/2)
 AEU Float shoe @ 545.00
 Latchdown Plug Assy @ 1660.00
 Centralizers 40 @ 57.00 570.00
 Scrapers 20 @ 89.00 1780.00
 @
(4020.00 / 31%) TOTAL 3,555.00

SALES TAX (if Any) _____
 TOTAL CHARGES 30,280.88
 DISCOUNT 9,371.57 (31%) IF PAID IN 30 DAYS
20,859.31 Net

Date 9-26-14 District Dakley KS Ticket No. 64243
 Company Berexco LLC Rig Berexco 2
 Lease Mears "E" Well No. 1-15
 County Cheyenne State KS
 Location 15-1s-37w Field _____

CEMENT DATA:

Spacer Type: _____
 Amt. _____ Sks Yield _____ ft³/sk Density _____ PPG

LEAD: Pump Time _____ hrs. Type 60/40/8' gel
3/4" F10-seal Excess _____

Amt. 450 Sks Yield 1.90 ft³/sk Density 12.5 PPG

TAIL: Pump Time _____ hrs. Type Com 10' self
5" gilsonite, 2' gel Excess _____

Amt. 250 Sks Yield 1.56 ft³/sk Density 14.66 PPG

WATER: Lead 10.9 gals/sk Tail 6.97 gals/sk Total 156.67 Bbls.

Pump Trucks Used 431- Wayne Mc
 Bulk Equip. 890/241-
891/310-

CASING DATA: Conductor PTA Squeeze Misc
 Surface Intermediate Production Liner
 Size 5 1/2 Type New Weight 15.5# Collar _____

Casing Depths: Top KB Bottom 4597'

Drill Pipe: Size _____ Weight _____ Collars _____
 Open Hole: Size 778 T.D. 4600 ft. P.B. to _____ ft.

CAPACITY FACTORS:
 Casing: Bbls/Lin. ft. .0238 Lin. ft./Bbl. _____
 Open Holes: Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Drill Pipe: Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Annulus: Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Bbls/Lin. ft. _____ Lin. ft./Bbl. _____
 Perforations: From _____ ft. to _____ ft. Amt. _____

Floater Equip: Manufacturer Industrial Rubber
 Shoe: Type AFB Float shoe Depth 4597
 Float: Type Latch down plug Assy Depth 4554
 Centralizers: Quantity 10 Plugs Top _____ Btm. _____
 Stage Collars _____
 Special Equip. 20 - scratchers
 Disp. Fluid Type water Amt 108.37 Bbls. Weight _____ PPG
 Mud Type 40 vis Weight _____ PPG

COMPANY REPRESENTATIVE _____ CEMENTER Paul Beaver

TIME	PRESSURES PSI		FLUID PUMPED DATA			REMARKS
	DRILL PIPE CASING	ANNULUS	TOTAL FLUID	Pumped Per Time Period	RATE Bbls Min.	
7:30	0 th		7.79	7.79	2	Hold Safety meeting
	0 th		3.89	11.68	2	Run pipe / Floater equip / Drop ball
	200 th		105.11	158.28	4	pump ball through shoe @ #
	200 th		41.49	158.28	4	mix 30 sks in R.H
	0 th		5.0	163.28	2	mix 15 sks in m.H
			20.0	183.28	4	mix 405 sks life @ 12.5 th
			20.0	203.28	6	tail w/ 250 sks com @ 14.5 th
			20.0	223.28	6	stop cement
			10.0	233.28	6	wash up pump & lines to pit
			10.0	243.28	6	release plug
			10.0	253.28	6	Displace w/ water
			10.0	263.28	6	
8:30			8.37	271.65	4	plug did land @ 2300#
						Li-ft pressure / 800 #
						Floater did hold
						cement did not air set
						lost circ 566 before plug landed
						Hold Safety meeting

BEREXCO LLC

MEARS E 1-15

SW NE NW NW SEC 15 T1S R37W

CHEYENNE COUNTY, KANSAS

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SUMMARY

The Berexco LLC Mears E 1-15 in Cheyenne County, Kansas spud September 6, 2014 and reached a total depth of 4650' on September 13, 2014. Wellsite geological supervision commenced at 3000'. The primary objectives were the Pawnee in the Marmaton Group and the Pennsylvanian Missourian Lansing-Kansas City limestones which produce in the Jones Canyon Southeast field. Secondary zones of interests were the Permian Foraker and Virgilian Oread limestones. The Mears E 1-15 was drilled using seismic and nearby well control.

On-site evaluation was by drill stem testing after sample analysis and consideration of structural position. Three DSTs were run.

Foraker, Wabaunsee, and Oread

The Foraker samples were fossiliferous packstone and mudstone with no visible porosity, a few oil specks, and no fluorescence or cuts. The Foraker appears nonproductive at this location.

The Wabaunsee had good oil shows but lacked porosity.

The Oread samples were fossiliferous mudstone and wackestone with traces of interparticle and vuggy porosity, scattered oil staining, and good cuts. The limited porosity in samples did not merit testing as the Oread is nonproductive in the area.

Lansing-Kansas City and Pawnee

The Lansing-Kansas City A exhibited no visible porosity or oil shows.

DST 1 in the Lansing-Kansas City B recovered 20 ft of oil cut mud. Samples were grainstone with poor interparticle and vuggy porosity, abundant spotty black oil, and good fluorescence and cuts.

The Lansing-Kansas City C was chalky mudstone with occasional very poor fluorescence and cut and rare spotty black and dark brown oil stain. The Lansing-Kansas City D was mudstone with only a trace of black asphaltic staining and no visible porosity.

DST 2 in the Lansing-Kansas City E recovered 100 ft of mud with very low pressures after opening 10 ft off bottom which resulted in higher mud recovery. The E was nonporous mudstone to wackestone with only minor sample shows.

The Lansing-Kansas City F was nonporous chalky limestone with no sample show.

DST 3 in the Pawnee recovered 730 ft of clean oil and 1372 ft of gas in the drill pipe. Samples were porous grainstone occasionally occluded with lime mud. Scattered oil shows with good fluorescence and cuts were observed in the upper 10 ft in poor interparticle and vuggy porosity.

Oil Well Completion

5 ½" production casing was run to complete the Mears E 1-15 as an oil producer.

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

Berexco LLC
Mears E 1-15

WELL DATA

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

WELL NAME: Mears E 1-15

SURFACE LOCATION: 455' FNL & 700' FWL
SW NE NW NW Sec 15, T1S, R37W
Cheyenne County, Kansas

LATITUDE & LONGITUDE: 39.9721698, -101.4641543 (From State, calculated from footages)

BOTTOM HOLE LOCATION: Vertical hole

ELEVATIONS: 3143' GL 3156' KB

API NUMBER: 15-023-21405

BASIN: Mid-Continental Arch

FIELD: Wildcat - Jones Canyon Southeast area

HOLE SIZE: 12 1/4" to 310'; 7 7/8" to 4650'

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

SPUD DATE: September 6, 2014

TD DATE: September 13, 2014

TOTAL DEPTH: 4650' Rig TD 4651' 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				3156
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1114	1114	+2042
Fort Hays Ls Mbr	N/A	1616	1616	+1540
Carlile Sh	N/A	1648	1648	+1508
Dakota	N/A	2008	2008	+1148
Cheyenne	N/A	2582	2582	+574
Blaine	N/A	2872	2872	+284
Stone Corral Anhydrite	3098	3102	3102	+54
Base Anhydrite	3132	3132	3132	+24
Chase Limestone	3296	3296	3296	-140
Neva	3551	3554	3554	-398
Red Eagle	3614	3618	3618	-462
Foraker	3660	3664	3664	-508
Wabaunsee	3816	3812	3812	-656
Topeka	3882	3890	3890	-734
Deer Creek Lime	3958	3959	3959	-803
Oread	4018	4018	4018	-862
Heebner Sh	4044	4047	4047	-891
Leavenworth Lime	4050	4055	4055	-899
Lansing-Kansas City				
"A"	4098	4101	4101	-945
"B"	4156	4160	4160	-1004
"C"	4212	4213	4213	-1057
"D"	4252	4254	4254	-1098
"E"	4296	4300	4300	-1144
"F"	4341	4344	4344	-1188
Pawnee	4488	4490	4490	-1334
Cherokee	4581	4581	4581	-1425
TD Driller	4650			
TD Logger		4651	4651	-1495

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4650' TD. Depths are rig depths except where noted as wireline.

3500' – 3539'	SHALE: light reddish brown to reddish orange, firm to soft, lumpy to subblocky, very silty, sandy in part, non to slightly calcareous, clayey.
3539' – 3551'	SANDSTONE: very light gray to gray, friable to firm, very fine grained, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, no visible porosity, no shows.
NEVA	SAMPLE TOP: 3551' LOG TOP: 3554' SUBSEA: -398'
3551' – 3566'	LIMESTONE: light tan to gray tan, firm to hard, mudstone, slightly chalky, occasional fossil, trace pellet, black Algal material, occasional grayish green Shale, tight, no show.
3566' – 3582'	SILTSTONE: light gray to reddish brown, friable to firm, blocky, sandy, non to slightly calcareous.
3582' – 3614'	SHALE: light reddish brown to reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous.
RED EAGLE	SAMPLE TOP: 3614' LOG TOP: 3618' SUBSEA: -462'
3614' – 3632'	LIMESTONE: light gray to white, with light reddish partings and mottled, firm to hard, microcrystalline, gritty texture, occasional reddish brown SHALE, trace sand grains, tight, no shows.
3632' – 3644'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment (Brachiopod), moderately to very sandy, secondary white calcareous in vugs, styolite, dark reddish brown to gray Shale stringers, pin point black specks, no visible porosity, no shows.
3644' – 3660'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light gray Limestone.

LITHOLOGY AND SHOWS

FORAKER	SAMPLE TOP: 3660'	LOG TOP: 3664'	SUBSEA: -508'
3660' – 3676'	LIMESTONE: light gray to light brown, firm to hard, cryptocrystalline, gritty texture, moderately to very sandy, rare fossil fragment, few specks black dead oil, very tight, no shows.		
3676' – 3686'	SHALE: gray to greenish gray, firm, blocky, non to slightly calcareous, fossil fragments, slightly sandy.		
3686' – 3704'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline to packstone, fossil fragment (Fusulinid), moderately to very sandy, gritty texture, algal stain, no visible porosity, no shows.		
3704' – 3719'	SANDSTONE: very light gray to white, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, black specks, abundant loose grains, tight to trace porosity, no shows.		
3719' – 3734'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasionally moderately to very silty.		
3734' – 3738'	LIMESTONE: pale gray to dull bluish gray, firm to hard, mudstone to wackestone, occasional fossil fragment, sandy in part, slightly argillaceous, tight, no shows.		
3738' – 3762'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasionally moderately to very silty.		
3762' – 3784'	SANDY SILTSTONE: reddish brown to light gray to white, mottled, firm to friable, very fine grained grading to silt, argillaceous in part, reddish brown Shale partings, tight, no show.		
3784' – 3800'	LIMESTONE: white to light gray to cream, occasional reddish brown mottled, firm to hard, mudstone, slightly argillaceous in part, gray to dark gray slightly carbonaceous Shale partings, tight, no show.		
3800' – 3816'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasionally silty.		
WABAUNSEE	SAMPLE TOP: 3816'	LOG TOP: 3812'	SUBSEA: -656'
3816' – 3846'	LIMESTONE: white to light gray, with light reddish brown mottled, hard to firm, fine crystalline, microgranular texture, fossil fragments, reddish brown SHALE partings, occasional slightly sandy, even to spotty black heavy oil material, no visible porosity, very tight, pale yellow white fluorescence, diffuse pale yellow white cut, fair show with no porosity.		
3846' – 3858'	SANDSTONE: light gray to tan, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, abundant loose grains, tight to trace porosity, no shows.		

LITHOLOGY AND SHOWS

3858' – 3882' SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part, occasional thin SANDSTONE stringers.

TOPEKA SAMPLE TOP: 3882' LOG TOP: 3890' SUBSEA: -734'

3882' – 3902' LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment (Fusulinid, Brachiopod), sparry calcareous fill, dark gray Shale partings, occasional black dead oil, tight, no shows.

3902' – 3912' SHALE: gray to dark gray, firm, platy to fissile, non to slightly calcareous, dull.

3912' – 3926' LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment, Algal stain, dark gray Shale stringers, tight, no shows.

3926' – 3958' SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, n calcareous, moderately to very silty in part, occasional thin SANDSTONE stringers with argillaceous matrix.

DEER CREEK LIME SAMPLE TOP: 3958' LOG TOP: 3959' SUBSEA: -803'

3958' – 3974' LIMESTONE: white light brown, soft to firm, cryptocrystalline, scattered fossil (Brachiopod, Fusilinid), very chalky, irregular brownish red partings and inclusions, tight, no shows.

3974' – 3982' SHALE: gray to dark gray, firm, platy to fissile, non to slightly calcareous, slightly carbonaceous in part, dull.

3982' – 4018' SHALE: reddish brown, brownish maroon, grayish green, firm, blocky, occasional slightly calcareous, non to slightly silty in part, occasional Siltstone stringers, waxy in part, occasional clayey to sticky to gummy.

OREAD SAMPLE TOP: 4018' LOG TOP: 4018' SUBSEA: -862'

4018' – 4032' LIMESTONE: cream to white, firm to hard, mudstone to wackestone, fossil fragment, trace to scattered black oil stain, tight and trace vuggy porosity with free oil in vugs, patchy bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming cuts, good show with limited porosity.

LITHOLOGY AND SHOWS

4032' – 4044'	LIMESTONE: cream to white, firm to hard, mudstone to wackestone, occasional fossil fragment, trace to scattered black oil stain, no vis porosity, occasional bright yellowish white fluorescence, with immediate blooming yellowish white cuts, no shows at base, poor show.
HEEBNER SH	SAMPLE TOP: 4044' LOG TOP: 4047' SUBSEA: -891'
4044' – 4050'	SHALE: black to dark gray, firm, blocky, carbonaceous.
LEAVENWORTH LIME	SAMPLE TOP: 4050' LOG TOP: 4055' SUBSEA: -899'
4050' – 4060'	LIMESTONE: gray to light brown, hard, mudstone, slightly argillaceous, tight, no show.
4060' – 4098'	SHALE: gray to reddish brown to maroon to greenish gray, firm, blocky, non to slightly calcareous, occasional silty.
LANSING- KANSAS CITY "A"	SAMPLE TOP: 4098' LOG TOP: 4101' SUBSEA: -945'
4098' – 4115'	LIMESTONE: cream to light gray, hard to brittle, mudstone, rare fossil, slightly chalky in part, rare black dead oil stain, very tight, no show.
4115' – 4129'	SANDSTONE: white to light gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, black dead oil specks, no visible porosity, no show.
4129' – 4156'	SHALE: gray to reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, occasional argillaceous Siltstone stringers.
LANSING- KANSAS CITY "B"	SAMPLE TOP: 4156' LOG TOP: 4160' SUBSEA: -1004'
4156' – 4169'	LIMESTONE: white to very light gray, firm to hard, mudstone to grainstone, occasional peloids, ooliths, occasional fossil fragment (Fusulinid), occasional free

LITHOLOGY AND SHOWS

live black oil in vugs, scattered black oil stain on tight cuttings, predominant tight with poor vuggy porosity and trace interparticle porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, good show.

4169' – 4179'

SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments (Brachiopod).

4179' – 4183'

LIMESTONE: white to light gray, hard, mudstone, chalky, tight, no show.

4183' – 4212'

SHALE: dark reddish brown, very soft to firm, sub blocky to lumpy, non calcareous, moderately to very silty, sticky to gummy, clayey.

LANSING-
KANSAS CITY "C"

SAMPLE TOP: 4212' LOG TOP: 4213' SUBSEA: -1057'

4212' – 4229'

LIMESTONE: light gray to white, firm, mudstone to wackestone, occasional fossil fragments, trace spotty heavy black oil stain, predominant tight with trace vuggy porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, trace show on a few cuttings.

4229' – 4242'

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

4242' – 4252'

SHALE: gray to reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, sticky.

LANSING-
KANSAS CITY "D"

SAMPLE TOP: 4252' LOG TOP: 4254' SUBSEA: -1098'

4252' – 4266'

LIMESTONE: light gray to white, firm, mudstone to wackestone, fossil fragments, very chalky texture, trace black dead oil specks, tight, no shows.

4266' – 4270'

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

4270' – 4278'

LIMESTONE: light gray to gray, hard to firm, mudstone, slightly argillaceous, chalky, tight.

4278' – 4296'

SHALE: reddish brown, soft to firm, subblocky, non to slightly calcareous.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "E"

SAMPLE TOP: 4296' LOG TOP: 4300' SUBSEA: -1144'

- 4296' – 4312' LIMESTONE: light gray to white, firm to hard, mudstone to wackestone, slightly chalky in part, fossil fragment, scattered occasional patchy black oil stain, trace pin-point vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, poor show predominantly tight at base.
- 4312' – 4320' SHALE: dark gray to gray, firm, blocky, calcareous, fossil (Brachiopod), very to slightly carbonaceous in part, plant remains.
- 4320' – 4341' SHALE: dark reddish brown to reddish brown, firm to soft, blocky to platy, non calcareous, moderately to very silty.

LANSING- KANSAS CITY "F"

SAMPLE TOP: 4341' LOG TOP: 4344' SUBSEA: -1188'

- 4341' – 4362' LIMESTONE: cream to white to light gray, firm to hard, mudstone, very chalky texture, occasional fossil fragments, trace black asphaltic stain, very tight, no shows.
- 4362' – 4374' LIMESTONE: white to light tan, hard, grainstone to mudstone, occasional abundant ooliths heavily occluded with sparry calcite, fossil fragments, stylolite, black asphaltic stain, tight, no shows.
- 4374' – 4398' SHALE: brownish red, firm, blocky, non calcareous, with LIMESTONE stringers.
- 4398' – 4410' LIMESTONE: light gray to white, firm, mudstone to wackestone, fossil fragments, chalky texture, trace spotty black oil stain, no visible porosity, dull yellow fluorescence, dull yellowish white cut, very poor show.
- 4410' – 4454' SHALE: dark to light reddish brown, brownish maroon, light gray, mottled, variegated, firm, blocky, occasional slightly calcareous, non to slightly silty in part, occasional thin white to light gray Limestone stringers.
- 4454' – 4464' LIMESTONE: light gray to gray, hard, cryptocrystalline, fossil fragment, dense, interbedded gray to greenish gray Shale, tight, no shows.
- 4464' – 4488' SHALE: gray to dark gray to dark gray grain, hard to firm, sub blocky to fissile, non calcareous, trace slightly carbonaceous.

LITHOLOGY AND SHOWS

PAWNEE	SAMPLE TOP: 4488'	LOG TOP: 4490'	SUBSEA: -1334'
4488' – 4510'	LIMESTONE: white to cream to very light gray, firm to hard, grainstone to mudstone, occasional ooliths and peloids, fossil fragments (Brachiopod, Crinoid, Fusulinids), orange chert replace Crinoid, occasional live black oil stain, tight to pin point to poor vuggy porosity, occasional trace interparticle porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, fair show diminished with depth.		
4510' – 4520'	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, fossil fragment (Brachiopod), very thin Limestone stringers.		
4520' – 4546'	LIMESTONE: white to light gray to grayish brown, firm to hard, mudstone, microgranular at top with trace porosity, occasional slightly sandy, trace chert, rare fossil, tight, no shows.		
4546' – 4556'	SHALE: gray to dark gray, firm, blocky to fissile, occasional very carbonaceous, disseminated pyrite.		
4556' – 4581'	LIMESTONE: white to light gray to gray, firm to hard, mudstone to wackestone, rare fossil fragment, tight, occasional sandy, trace chert, no shows.		
CHEROKEE	SAMPLE TOP: 4581'	LOG TOP: 4581'	SUBSEA: -1425'
4581' – 4586'	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, plant remains, very thin black Coal stringers and inclusions.		
4586' – 4616'	LIMESTONE: white to light gray to gray, firm to hard, mudstone to wackestone, rare fossil fragment, tight, occasional Sandstone stringers, bright orange shale partings, no shows.		
4616' – 4626'	SHALE: gray to very dark gray to black, firm, fissile to platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite, trace coal.		
4626' – 4638'	LIMESTONE: gray to light gray, firm to hard, mudstone to wackestone, slightly sandy in part, slightly argillaceous in part, opaque chert, tight, no shows.		
4638' – 4650' TD	SANDSTONE: white to very light gray, friable, very fine to fine grained, well rounded, well sorted, weak silica and calcareous cement, occasional black carbonaceous specks, 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
Engineer:	Dave Lines	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Ryan Nichols, Jim Svaty DST 1: 4110' - 4170' LKC "B" DST 2: 4264' - 4320' LKC "E" DST 3: 4468' - 4508' Pawnee	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500' - TD Dan Schmidt	Hays, KS 785-625-3858