

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1608

Date	Sec.	Twp.	Range	County	State	On Location	Finish
10-15-19	15	10s	20w		KANSAS		10:15 PM

Location Palco 4S 1 1/2 E 1/4 S 10

Lease BRUEGGEMAN Well No. 2-15 Owner

Contractor MURKIN DRILL RIG #8 To Quality Oilwell Cementing, Inc.

Type Job Cement Surface You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Hole Size 12"4 T.D. 241' Charge To PATTERSON ENERGY LLC.

Csg. 8 5/8 Depth 240' Street

Tbg. Size Depth City State

Tool Depth The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. 15' Shoe Joint Cement Amount Ordered 150 SX 80/20 2% gel 3% cc

Meas Line Displace 14. 40 BBL

EQUIPMENT

Pumptrk #16	No.	Cementer	<u>GLEN</u>	Common	<u>120</u>
		Helper	<u>DAVID</u>	Poz. Mix	<u>30</u>
Bulktrk	No.	Driver	<u>DOUG</u>	Gel.	<u>3</u>
Bulktrk #8	No.	Driver		Calcium	<u>6</u>
		Driver			

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling <u>159</u>
	Mileage

FLOAT EQUIPMENT

Guide Shoe
Centralizer
Baskets
AFU Inserts
Float Shoe
Latch Down

Set @ 240' Received Circ. Cement w/ 150 SX 80/20 3% cc + 2% gel

Displaced 14 1/2 BBL H₂O Cement did circulate

TO Surface, Had 350 # LIT PRESSURE SHOT IN @ 300 #.

Pumptrk Charge Surface

Mileage 37

Signature Jon Delli Tax

Discount Total Charge

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1727

Date	10-21-19	Sec.	15	Twp.	10	Range	20	County	Rooks	State	Ks	On Location		Finish	5:45 AM	
Lease	Brueggeman							Location	Palco - S to AA Rd, 1 1/4 E, 5/1 Int							
Well No.	2-15		Owner	E + S to Rig												
Contractor	Murfin #8		To Quality Oilwell Cementing, Inc.													
Type Job	Bottom Stage		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.													
Hole Size	7 7/8"		T.D.	3845'		Charge To	Patterson Energy									
Csg.	5 1/2" New 17#		Depth	3846'		Street										
Tbg. Size			Depth			City	State									
Tool	DU Tool		Depth	1677'		The above was done to satisfaction and supervision of owner agent or contractor.										
Cement Left in Csg.	22'		Shoe Joint	22'		Cement Amount Ordered	150 Com 10% Salt 5% Gilsomite									
Meas Line	Displace		88 3/4 BLS 500 gal Mud Clear 48, 20 BLS KCL													
EQUIPMENT																
Pumptrk	16	No.	Cementer	David		Rick	Common	150								
Bulktrk	9	No.	Helper	Doug			Poz. Mix									
Bulktrk	21	No.	Driver	Mike			Gel.									
JOB SERVICES & REMARKS																
Remarks:	54 H2O / 34 3/4 mud					Huffs	KCL 2 gal									
Rat Hole						Salt	13									
Mouse Hole						Flowseal										
Centralizers	1357911					Kol-Seal	750 #									
Baskets	1" 10' from Top #53, 74					Mud CLR 48	500 gal									
Div or Port Collar	#53 1677'					CFL-117 or CD110 CAF 38										
Pipe on bottom, break Circulation						Sand										
pump 500 gal mud clear 48, pump						Handling	170									
8 BLS KCL spacer, Mix 150 5x						Mileage										
Cement. Shut down wash pump						FLOAT EQUIPMENT										
+ lines Displaced plug w/ 88 3/4 BLS						Guide Shoe	limit Clamp									
Released + held.						Centralizer	6									
Drop Dart open tool 700#						Baskets	3									
Lift pressure 700#						AFU Inserts										
Land plug to 1500 #.						Float Shoe	1									
Break Circulation						Latch Down										
						DU Tool w/ plugs										
						Rotating head										
						Pumptrk Charge	prod string									
						Mileage	37									
						Bottom Stage										
						Tax										
						Discount										
						Total Charge										
Signature <i>Chris W. ...</i>																

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-482-1071
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1728

Date	10-21-19	Sec.	15	Twp.	10	Range	20	County	Rooks	State	Ks	On Location		Finish	7:15 AM
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Lease	Brueggeman		Well No.	2-15	Owner	E+S to Rig	Location	Palco - S to AA Rd, 1/4 E, 5 th into
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Contractor	Murfin #8	To Quality Oilwell Cementing, Inc.
Type Job	Top Stage	You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Hole Size	7 7/8"	T.D.	3845'	Charge To	Patterson Energy
Csg.	5 1/2" New 17#	Depth	3846'	Street	

Tbg. Size		Depth		City		State	
Tool	DU Tool	Depth	1677'	The above was done to satisfaction and supervision of owner agent or contractor.			

Cement Left in Csg.		Shoe Joint		Cement Amount Ordered	350 80/20 QMDC 1/4# Flo Seal
Meas Line		Displace	39 BLS		

EQUIPMENT

Pumptrk	16	No.		Cementer	David	Rick	Common	350 80/20 QMDC
				Helper			Poz. Mix	
Bulktrk	21	No.		Driver	Mike		Gel.	
				Driver			Calcium	
Bulktrk	9	No.		Driver	Donny		Hulls	
				Driver			Salt	

JOB SERVICES & REMARKS

Remarks:		Flowseal	87#
Rat Hole	30 SX	Kol-Seal	
Mouse Hole	15 SX	Mud CLR 48	
Centralizers		CFL-117 or CD110 CAF 38	
Baskets		Sand	
DM or Port Collar	#53 1677'	Handling	350
Pipe on bottom break Circulation		Mileage	
plug Rathole + mousehole + hook to casing + mix 305 SX QMDC			
Shut dash wash pump + lines			
Displaced plug w/ 39 BLS			

FLOAT EQUIPMENT

Lift pressure	1000 #	Guide Shoe	
Closed tool	2000 #.	Centralizer	
Released + held,		Baskets	
		AFU Inserts	
		Float Shoe	
		Latch Down	

Cement Did Circulate

Thanks

X Signature *Ava Weavering*

Pumptrk Charge	prod string	Top Stage
Mileage	37	
Tax		
Discount		
Total Charge		

Geological Report

Brueggeman #2-15
460' FNL & 1285' FEL
Sec. 15 T10s R20w
Rooks County, Kansas



Patterson Energy, LLC.

General Data

Well Data: Patterson Energy, LLC.
Brueggeman #2-15
460' FNL & 1285' FEL
Sec. 15 T10s R20w
Rooks County, Kansas
API # 15-163-24400-0000

Drilling Contractor: Murfin Drilling Co. Rig #8

Geologist: Jason T Alm

Spud Date: October 15, 2019

Completion Date: October 21, 2019

Elevation: 2206' Ground Level
2211' Kelly Bushing

Directions: Ellis KS, north to county line, 1 mile west, 4 miles north, 1.5 east, south and east into location.

Casing: 220' 8 5/8" surface casing
3845' 5 1/2" production casing

Samples: 10' wet and dry, 3200' to RTD

Drilling Time: 3100' to RTD

Electric Logs: Gemini Wireline "Casey Patterson"
CNL/CDL, DIL, MEL

Drillstem Tests: None

Problems: None

Remarks: None

Formation Tops

Formation	Patterson Energy, LLC. Brueggeman #2-15 Sec. 15 T10s R20w 460' FNL & 1285' FEL
Anhydrite	1656' +555
Base	1698' +513
Topeka	3229' -1018
Heebner	3434' -1223
Toronto	3454' -1243
Lansing	3470' -1259
BKC	3688' -1477
Marmaton	3712' -1501
Simpson	3739' -1528
Arbuckle	3752' -1541
LTD	3846' -1635
RTD	3845' -1634

Sample Zone Descriptions

LKC I-zone

(3624' -1413):

Ls – Fine crystalline, oolitic with fair oomoldic porosity, light to fair oil stain with light spotted saturation, fair show of free oil, good odor, fair to good yellow fluorescents.

LKC J-zone

(3642' -1431):

Ls – Fine to sub-crystalline, oolitic in part with poor to fair oolitic and oomoldic porosity, light to good oil stain with light scattered saturation, fair show of free oil when broken, light odor, fair yellow fluorescents, chalky.

LKC L-zone

(3679' -1468):

Ls – Fine crystalline, oolitic with poor scattered oomoldic porosity, light to fair oil stain in porosity, slight show of free oil when broken, dull yellow fluorescents.

Simpson Sand

(3739' -1528):

Ss – Quartz, frosted, fine grained, well sorted, sub-angular, fair to poorly cemented with fair to good inter-granular porosity, good oil stain and saturation in cluster, good show of free oil, fair odor, fair to good spotted yellow fluorescents.

Arbuckle

(3752' -1541):

Ls – Fine to medium sucrosic crystalline, rhombic in part with fair to good inter-crystalline and scattered fair vuggy porosity, light to good oil stain with light scattered saturation, good show of free oil on cup and when broken, strong odor, light spotted fluorescents.

Structural Comparison

	Patterson Energy, LLC. Brueggeman #2-15 Sec. 15 T10s R20w 460' FNL & 1285' FEL	Champlin Oil Brueggeman #3 Sec. 15 T10s R20w SE NW NE		Champlin Oil Brueggeman #7 Sec. 15 T10s R20w NW NW NE	
Formation					
Anhydrite	1656' +555	1670' +537	(+18)	1679' +555	FL
Base	1698' +513	NA	NA	NA	NA
Topeka	3229' -1018	3231' -1021	(+3)	NA	NA
Heebner	3434' -1223	3435' -1225	(+2)	3460' -1226	(+3)
Toronto	3454' -1243	NA	NA	NA	NA
Lansing	3470' -1259	3473' -1263	(+4)	3497' -1263	(+4)
BKC	3688' -1477	NA	NA	NA	NA
Marmaton	3712' -1501	NA	NA	NA	NA
Simpson	3739' -1528	3744' -1534	(+6)	3762' -1528	(FL)
Arbuckle	3752' -1541	3750' -1543	(+2)	3780' -1546	(+5)

Summary

The location for the Brueggeman #2-15 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. No Drill Stem Tests were conducted. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the Brueggeman #2-15 well.

Recommended Perforations

Primary:

Arbuckle 3752' – 3758'

Secondary:

Simpson Sand 3739' – 3742'
 LKC L-zone 3681' – 3688'
 LKC K-zone 3661' – 3665'
 LKC J-zone 3645' – 3648'
 LKC I-zone 3629' – 3634' 3636' – 3639'
 LKC E-zone 3552' – 3557'

Before Abandonment:

Pleasanton 3697' – 3700'

Respectfully Submitted,

Jason T Alm
 Hard Rock Consulting, Inc.
 AAPG #10134582