

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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Form	ACO1 - Well Completion
Operator	O'Brien Energy Resources Corp.
Well Name	KEYSTONE 2-4
Doc ID	1337095

Tops

Name	Top	Datum
Heebner	4374	-1777
Toronto	4398	-1801
Lansing	4516	-1919
Marmaton	5154	-2557
Cherokee	5322	-1725
Atoka	5574	-2977
Morrow	5633	-3036
Mississippi Chester	5752	-3155
Basal Chester	5940	-3343
Ste. Genevieve	5971	-3374
St. Louis	6072	-3475
Spergen	6274	-3677

Form	ACO1 - Well Completion
Operator	O'Brien Energy Resources Corp.
Well Name	KEYSTONE 2-4
Doc ID	1337095

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
2	6074-6082	Acidize w/ 1500 gal 15% HCl	Perfs



# **O'Brien Energy Resources, Inc.**

## **Keystone No. 2-4**

### **Section 4, T33S, R29W**

Meade County, Kansas

November, 2016

## **Well Summary**

The O'Brien Energy Resources, Keystone No. 2-4 was drilled to a total depth of 6350' in the Spergen without any problems. It offset the Keystone No. 1-5 by approximately 1000' to the East. Formation tops ran low relative to this offset. The Heebner, Toronto and Lansing came in 23' low. The Marmaton, Cherokee and Atoka ran 17', 12' and 11' low respectively. The Morrow came in 12' low and the Morrow "C" Sandstone, 26' low. The Chester, St. Louis and Spergen ran 17', 13' and 19' low.

Numerous quality hydrocarbon shows were documented during the drilling of this test. A 500 Unit gas kick occurred in the Morrow "A" Sandstone(5652'-5668'): White, very light brown, very friable, fine lower well sorted grains, siliceous cement, calcareous, slightly glauconitic, excellent intergranular porosity, no fluorescence, no stain or cut. Gas crossover is noted on logs.

The Morrow "B" Sandstone(5677'-5687') consists of a Sandstone in 35% of the samples and looks very similar to the "A" Sandstone and exhibits excellent intergranular and vuggy porosity, glauconitic, light pale blue hydrocarbon fluorescence in 4% of the samples, slow bleeding cut, no stain, show dissipates when dried. A 480 Unit gas increase was noted on the hotwire.

An excellent oil show was documented in the Morrow "C" Sandstone(5707'-5714'): Medium to light brown with oil staining, friable, fine lower to fine upper well sorted subround grains, siliceous cement, slightly calcareous, slightly glauconitic, clean, good intergranular porosity, bright light yellow hydrocarbon fluorescence in 6% of the samples, excellent fast streaming cut, good brown matrix oil stain, live oil and gas bubbles when crushed, oil odor. A 320 Unit gas increase was noted.

The St. Louis(6072'-6080') consists of a Dolomite: Dark to medium brown, coarsely crystalline, brittle, sucrosic to granular, clean, some brown matty marly material when dissolved in acid, occasional Chert nodules, good intercrystalline and excellent coarse vuggy porosity, excellent dark brown oil stain with traces of live oil, very dark goldbrown hydrocarbon fluorescence(all dolomite) explosive cut, oil odor, excellent show. A 320 Unit gas increase occurred.

Typical shows from the Basal Chester Limestone(5940'-5960') were documented.

4 1/2" production casing was run to TD on the Keystone No. 2-4 on 11/11/16.

Respectfully Submitted,

Peter Debenham

## WELL DATA

Operator: O'Brien Energy Resources, Inc., John Forma – Portsmouth, NH  
Geologist: Paul Wiemann – Denver, CO

Prospect Geologist: David Ward, Ed Schuett, Denver

Well: Keystone No. 2-4, Angell SE Field

API: 15-119-21397

Location: 500' FSL & 716' FWL, Section 4, T33S, R29W, Meade County, Kansas – Southeast of Plains.

Elevation: Ground Level 2585', Kelly Bushing 2597'

Contractor: Duke Drilling Rig No. 1, Type: Double jackknife, double stand, Toolpusher Mike Godfrey, Drillers: Brothers Carlos and Saul Garcia and Henry Daiz

Company Man: Roger Pearson – Liberal, Kansas

Spud Date: 11/3/16

Total Depth: 11/10/16, Driller 6350', Logger 6352', Spergen Formation

Casing Program: 35 joints of 8 5/8", J-55, 24Lbs/ft, set at 1495' with 340 sacks H-Com(3% cc, ¼ lb Floseal) and 150 sacks Class C tail. Plug down 7 pm 11/4/16.

Mud Program: Winter Mud, engineer Drew Smith, displaced 2590', Chem. gel/LCM.

Wellsite Consultant: Peter Debenham with mudlogging trailer, Call depth 3000', Box 350, Drake, CO 80515, 720/220-4860.

Samples: 30' to 5700', 20' to TD. One set dry cut sent to KGS sample log library.

Electric Logs: Weatherford, engineer Adam Sill , Array Induction, Compensated Neutron/Density, Microlog, Hi Res.

Status: 4 ½" production casing run to TD on 11/10/2016.

**WELL CHRONOLOGY**

11 PM <u>DATE</u>	<u>DEPTH</u>	<u>FOOTAGE</u>	<u>RIG ACTIVITY</u>
11/3	192'	192'	Move to and rig up rotary tools. Drill rat hole and mouse hole. Spud in 12 1/4" surface hole to 192'.
11/4	1495'	1303'	Survey(1 deg.). To 1495' and trip for casing and run and cement 35 joints of 8 5/8", J-55, 24Lbs/ft, set at 1495' with 340 sacks H-Com(3% cc, 1/4 lb Floseal) and 150 sacks Class C tail. Plug down 7 pm – did circulate. Wait on cement.
11/5	2370'	875'	Wait on cement. Nipple up and pressure test BOP. Work on flowline. Survey(1 deg.). Displace mud system at 2590'.
11/6	3539'	1169'	Survey(1/2 deg.). Clean pits.
11/7	4609'	1070'	
11/8	5365'	756'	To 5019' and circulate and wiper trip to 2500' and circulate.
11/9	6122'	757'	Circulate for samples at 5711'.
11/10	6350'TD	228'	To 6190' and trip for Bit No. 3. To 6350'TD and circulate. Wiper trip 10 stands and circulate. Drop survey(1 deg.) and trip for logs.
11/11	TD		Trip out for logs and run ELogs. Unload casing to racks. Trip in and circulate. Trip out laying down and run and cement 4 1/2" production casing to TD. Rig down.

**BIT RECORD**

<u>NO.</u>	<u>MAKE</u>	<u>TYPE</u>	<u>SIZE</u>	<u>OUT</u>	<u>FOOTAGE</u>	<u>HOURS</u>	
1	PLT	519	12 1/4"	1495'	1495'	13 3/4	
2	PLT	616	7 7/8"	6190'	4695'	95 3/4	
3	PLT	516 53	7 7/8"	6350'	160'	5 3/4	
						Total Rotating Hours:	114.75
						Average:	55.34 Ft/hr

**DEVIATION RECORD - degree**

513' 1, 1495' 1, 2022' 1, 2527' 3/4, TD 1



**MUD PROPERTIES**

<b><u>DATE</u></b>	<b><u>DEPTH</u></b>	<b><u>WT</u></b>	<b><u>VIS</u></b>	<b><u>PV</u></b>	<b><u>YP</u></b>	<b><u>pH</u></b>	<b><u>WL</u></b>	<b><u>CL</u></b>	<b><u>LCM-LBS/BBL</u></b>
11/4	1235'	9.5	30	5	4	8.0	nc	5K	140
11/5	1738'	9.3	30	3	6	11.0	nc	65K	tr
11/6	2844'	8.9	59	16	21	9.0	10.4	7K	5
11/7	3992'	9.1	48	14	12	9.5	10.0	5.5K	6
11/8	4844'	9.1	60	25	14	10.0	7.6	4.5K	6
11/9	5620'	9.2	45	21	9	10.0	5.6	4K	6
11/10	6190'	9.4	48	20	9	9.5	4.8	5K	6

**ELECTRIC LOG FORMATION TOPS- KB Elev. 2597'**

<b><u>FORMATION</u></b>	<b><u>DEPTH</u></b>	<b><u>DATUM</u></b>	<b><u>*Keystone No. 1-5</u></b>	
			<b><u>DATUM</u></b>	<b><u>POSITION</u></b>
Casing	1494'			
Heebner	4374'	-1777'	-1754'	-23'
Toronto	4398'	-1801'	-1778'	-23'
Lansing	4516'	-1801'	-1778'	-23'
Marmaton	5154'	-2557'	-2540'	-15'
Cherokee	5322'	-1725'	-1713'	-12'
Atoka	5574'	-2977'	-2966'	-11'
Morrow	5633'	-3036'	-3024'	-12'
"A" SS	5652'	-3055'		
"B" SS	5377'	-2780'		
"C" SS	5707'	-3110'	-3084'	-26'
Mississippi Chester	5752'	-3155'	-3131'	-24'
Basal Chester	5940'	-3343'	-3326'	-17'
Ste. Genevieve	5971'	-3374'	-3363'	-11'
St. Louis	6072'	-3475'	-3462'	-13'
Spergen	6274'	-3677'	-3658'	-19'
TD	6350'	-3753'		

\*O'Brien Energy Resources, Keystone No. 1-5, 760' FSL & 341' FEL, Section 5, 33 S, 29W – app. 1000' to the W., K.B. Elev. 2632'.



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

**PRESSURE PUMPING**

**Job Log**

Customer:	Obrien Energy		Cement Pump No.:	38117, 19919 3Hrs.		Operator TRK No.:	78938		
Address:	18 Congress St. Suite 207		Ticket #:	1718 13188 L		Bulk TRK No.:	30463, 37547 Daniel	30464, 37724 Marc	
City, State, Zip:	Portsmouth NH 03801		Job Type:	Z41 Cement Surface Casing					
Service District:	1718 - Liberal, Ks.		Well Type:	OIL					
Well Name and No.:	Keystone 2-4		Well Location:	4,33,29	County:	Meade	State:	Ks	
Type of Cmt	Sacks	Additives			Truck Loaded On				
A-Con' Blend	340	3% Calcium Chloride, 1/4# Polyflake, .2% WCA1			30463, 37547 Daniel		Front	Back	
Premium Plus Cement	150	2% Calcium Chloride, 1/4# Polyflake			30464, 37724 Marc		Front	Back	
							Front	Back	
<b>Lead/Tail:</b>	Weight #1 Gal.	Cu/Ft/sk	Water Requirements		CU. FT.	Man Hours / Personnel			
<b>Lead:</b>	11.4	2.95	18		1003	Man Hours:	4		
<b>Tail:</b>	14.8	1.34	6.33		201	# of Men on Job:	3		
Time (am/pm)	(BPM)	Volume (BBLs)	Pumps		Pressure(PSI)		Description of Operation and Materials		
			T	C	Tubing	Casing			
16:15							ON LOCATION		
16:20							SAFETY MEETING		
4:30 PM							RIG UP		
5:05 PM							CIRCULATE HOLE		
5:30 PM							RIG TO P.T.		
17:40							PRESSURE TEST TO 2400PSI		
17:46	5.5	178.6 slurry				180	PUMP 340SX LEAD @ 11.5#		
6:20 PM	5.5	35.7 slurry				190	PUMP 150SX TAIL @ 14.8#		
18:30							SHUTDOWN / DROP PLUG		
18:31	5.5	10				30	DISPLACE		
	5.5	20				80			
	5.4	30				100			
	5.2	40				120			
	5.2	50				200			
	5.1	60				220	64bbl in cement returns		
	5	70				280			
	4.9	80				350			
	2.4	82				320	SLOW RATE		
	2.3	90				380			
18:57	2.3	92.2				390	LAND PLUG PRESSURE UP TO 1100PSI		
18:59							RELEASE BACK --- FLOAT HELD		
							JOB COM,PLETE		
Size Hole	12 1/4"	Depth				TYPE	Plug Container		
Size & Wt. Csg.	8 5/8" 24#	Depth	1493.14'	New / Used		Packer	Depth		
tbg.		Depth				Retainer	Depth		
Top Plugs		Type				Perfs	CIBP		
Customer Signature: <i>[Signature]</i>						Basic Representative:	Daniel Beck		
						Basic Signature:	<i>Daniel Beck</i>		
						Date of Service:	11/4/2016		



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

**Job Log**

Customer:	Obrien Energy	Cement Pump No.:	38117, 19919 5.5Hrs.	Operator TRK No.:	78938
Address:	18 Congress St. Suite 207	Ticket #:	1718 13190 L	Bulk TRK No.:	14354,19578 Luis
City, State, Zip:	Portsmouth NH 03801	Job Type:	Z41 Cement Production Casing		
Service District:	1718 - Liberal, Ks.	Well Type:	OIL		
Well Name and No.:	Keystone 2-4	Well Location:	4,33,29	County:	Meade
				State:	Ks

Type of Cmt	Sacks	Additives	Truck Loaded On		
AA2	175	5% W-60, 10% SALT, .6% C-15, 1/4# DEFOAMER, 5# GILSONITE	14354,19578 Luis	Front	Back
PREMIUM / COMMON	50	NEAT / RAT & MOUSE	14354, 19578	Front	Back
				Front	Back

Lead/Tail:	Weight #1 Gal.	Cu/Ft/sk	Water Requirements	CU. FT.	Man Hours / Personnel	
<b>Lead:</b>	14.8	1.51	6.64	264.25	Man Hours:	5.5
<b>Tail:</b>	15.6	1.18	5.22	59	# of Men on Job:	3

Time (am/pm)	(BPM)	Volume (BBLS)	Pumps		Pressure (PSI)		Description of Operation and Materials
			T	C	Tubing	Casing	
16:30							ON LOCATION
16:35							SAFETY MEETING
4:45 PM							RIG UP
5:05 PM							WAIT ON RIG
6:25 PM							RIG UP TO CIRC / CIRCULATE HOLE
19:00							RIG TO P.T.
19:06							PRESSURE TEST TO 2800PSI
7:07 PM	5	11.9				270	PUMP 500 GALLONS MUD FLUSH
19:15	5.3	47.0 slurry				280	PUMP 175SX @ 14.8#
19:25							SHUTDOWN / DROP PLUG / W.P.
19:34	7	20				150	DISPLACE
	7	30				150	
	7	40				160	
	7.1	50				150	
	7.1	60				150	
	7.1	70				140	
	6.8	80				420	
	6.6	89				680	
	2	90				560	SLOW RATE TO 2.0B.P.M. @ 420PSI
19:54	2	99.8				640	LAND PLUG PRESSURE UP TO 1580PSI
19:56							RELEASE BACK --- FLOAT HELD
20:00		10.5 slurry					PLUG RAT & MOUSE W/ 50SX / W.P.
20:21							JOB COMPLETE

Size Hole	7 7/8"	Depth			TYPE	Plug Container	
Size & Wt. Csg.	4 1/2" 10.5#	Depth	6321'	New / Used	Packer	Depth	
tbg.		Depth			Retainer	Depth	
Top Plugs		Type			Perfs	CIBP	

Customer Signature: *[Signature]*

Basic Representative: Daniel Beck

Basic Signature: *[Signature]*

Date of Service: 11/11/2016