

O'Brien Energy Resources, Inc.

Keystone No. 3-4

Section 4, T33S, R29W

Meade County, Kansas

November, 2017

Well Summary

The Keystone No. 3-4 was drilled to a total depth of 6250' in the St. Louis Formation. Formation tops ran high relative to the Keystone No. 2-3, 120' to the North. Tops from the Heebner to the Morrow ran 5' to 7' high relative to this offset. The Morrow A, B and C Sandstone intervals came ran 3', 2', and 4' high respectively. Mississippian formations ran 5' to 7' high.

The Morrow A Sandstone(5650'-5666') consists of a Sandstone in 10% of the samples: Salt and pepper, speckled green, friable, fine well sorted subground grains, siliceous cement, slightly calcareous, clean, glauconitic, good to excellent intergranular porosity, no fluorescence, no stain or cut. A 520 Unit gas kick was noted.

A very similar B Sandstone occurred from 5676' to 5681 and contained a 550 Unit gas increase on the hotwire. It's not unusual for excellent Morrow reservoir gas sands to be flushed when drilled and not exhibit hydrocarbon shows. Excellent gas effect is noted on logs.

An excellent oil show did occur from the Morrow C Sandstone(5704'-5712'): Sandstone(12% sample): Medium to light brown, Hard to friable, fine upper to fine lower well sorted subground grains, siliceous cement, clean to argillaceous in part, good to trace intergranular porosity, bright light yellowblue hydrocarbon fluorescence(all sandstone), excellent streaming cut, light brown matrix oil stain with very light brown live oil and odor when crushed, excellent show. A 560 Unit gas increases was noted.

A similar show but slightly less pronounced relative to the Keystone No. 2-4 was documented in the St. Louis(6066'-6078'): Limestone Medium to dark brown with oil stain, microcrystalline, microsucrosic to sucrosic, brittle, clean, dolomitic, chert nodules, very fossiliferous with moldic and vuggy porosity, occasionally good intercrystalline porosity, dark mottled brown matrix oil stain and live oil and odor, good show, with very dull goldbrown hydrocarbon fluorescence(10% sample), excellent fast streaming cut. A 200 Unit gas kick was documented.

4 1/2" production casing was run to TD on the Keystone No. 3-4 to further evaluate the above mentioned intervals.

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. 3-4

API: 15-119-21413

Location: 380'FSL & 729'FWL, Section 4, 33S, R29W, Meade Co. Kansas – Southeast of Plains.

Elevation: Ground Level 2585', Kelly Bushing 2598'

Contractor: Duke Drilling Rig No. 7, T.P. Galen Roach, Drillers Todd Elsen, Scott Edwards, Steven Green

Company Man: Dana Greathouse

Spud Date: 11/6/17

Total Depth: 11/16/17, Driller 6250', Logger 6245', St. Louis Formation

Casing Program: 35 joints of 8 5/8", J-55, 24Lbs/ft, set at 1495' with 385 sacks A-Con blend(3%cc & ¼ lb flake) tail with 150 sacks Pem Plus(2%cc, ¼ bl Poly Flake), cement did circulate, services by Basic. , 4 1/2" production casing set to TD.'

Mud Program: Service Mud/Mudco, engineer Justin Whiting, displaced 2610', Chemical gel/LCM.

Wellsite Consultant: Peter Debenham with mudlogging trailer, Call depth 4000', Box 350, Drake, CO 80515, 720/220-4860.

Samples: 30' to 5700', 20' to TD. Zones of interest saved.

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

Status: 4 ½" production casing run to TD on 11/16/17.

WELL CHRONOLOGY

AM Report

<u>DATE</u>	<u>DEPTH</u>	<u>FOOTAGE</u>	<u>RIG ACTIVITY</u>
11/6			Move to and rig up rotary tools. Spud in 12 ¼" surface hole(11:45 PM).
11/7	400'	400'	Clean pits. Trip for plugged bit.
11/8	855' Survey(1 deg.).	455'	Trip for plugged bit and clean pits and mud motor.
11/9	1480'	1080'	Service light plant. Survey(1 deg.) and bit trip.
11/10	1520'	40'	To 1520' and circulate. Run and cement 35 joints of 8 5/8", J-55, 24Lbs/ft, set at 1495' with 385 sacks A-Con blend(3%cc & ¼ lb flake) tail with 150 sacks Pem Plus(2%cc, ¼ bl Poly Flake), cement did circulate, services by Basic. Plug down 4:15 PM, 11/09.
11/11	2550'	1030'	Bit trip and surveys(1 deg.).
11/12	3470' Service rig and survey(1 deg.).	920'	Displace mud system at 2610'. Trip for plugged bit. Work on pump.
11/13	4605'	1135'	Survey(1 deg.).
11/14	5280'	675'	Service rig and survey(1 deg.). To 5014' and wiper trip.
11/15	6110'	830'	Service and survey.
11/16	6250'TD Drop survey(1/2 deg.)	140'	To TD and circulate. Wiper trip 32 stands and circulate. Trip in and circulate. Trip out laying down and run and cement 4 ½" 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	HP-IP00	J-2	12 ¼"	1440'	1440'	26 ¼
2		J-2	12 ¼"	1520'	80'	4 ½
3	HTC	HC 29	7 7/8"	1589'	69'	1 ½
4	HTC		7 7/8"	6250'	4661'	83 ½
Total Rotating Hours:						115 ¾
Average:						54 Ft/hr

DEVIATION RECORD - degree

300' 1, 600' 1, 1000' 1, 1500' 1, 2000' ½, 2500' ¾, 3000' 1, 3300' 1, 3600' 2, 3800' 1 ½, 4100' 1, 4400' 1, 4700' 1, 5000' 1 ½, 5400' MR, 5400' MR, 5520' 1, 5700' 1, TD ½

MUD PROPERTIES

<u>DATE</u> <u>LBS/BBL</u>	<u>DEPTH</u>	<u>WT</u>	<u>VIS</u>	<u>PV</u>	<u>YP</u>	<u>pH</u>	<u>WL</u>	<u>CL</u>	<u>LCM-</u>
11/7	431'	8.9	34	4	4	7.5	nc	2.5K	6
11/8	956'	9.4	34	4	4	7.5	nc	400	10
11/10	1576'	8.6	28	1	2	7.0	nc	26.5K	0
11/11	2657'	8.6	68	13	16	7.0	nc	1.1K	1
11/12	3842'	9.2	64	18	21	10.0	9.2	4.4K	2
11/13	4791'	9.3	48	14	16	10.5	9.2	3.8K	3
11/14	5304'	9.3	52	17	18	10.5	8.8	2.1K	2
11/15	6139'	9.4	53	19	18	9.5	8.4	3.8K	3

ELECTRIC LOG FORMATION TOPS- KB Elev. 2598'

<u>FORMATION</u>	<u>DEPTH</u>	<u>DATUM</u>	<u>*Keystone No. 2-4</u> <u>DATUM</u>	<u>POSITION</u>
Casing	1491'			
Heebner	4367'	-1769'	-1777'	+8'
Toronto	4394'	-1796'	-1777'	+5'
Lansing	4512'	-1914'	-1919'	+5'
Marmaton	5148'	-2550'	-2557'	+7'
Cherokee	5318'	-2720'	-2725'	+5'
Atoka	5568'	-2970'	-2977'	+7'
Morrow	5627'	-3029'	-3036'	+7'
"A" SS	5650'	-3052'	-3055'	+3'
"B" SS	5676'	-3078'	-3080'	+2'
"C" SS	5704'	-3106'	-3110'	+4'
Mississippi Chester	5748'	-3150'	-3155'	+5'
Basal Chester	5935'	-3337'	-3343'	+6'
Ste. Genevieve	5966'	-3368'	-3374'	+6'
St. Louis	6066'	-3468'	-3475'	+7'
TD	6250'	-3652'		

*O'Brien Energy Resources, Keystone No. 2-4, 500' FSL & 716' FWL, Section 4, 33 S, 29W – 120' to the North., K.B. Elev. 2597'.