

**Berexco, LLC**  
**Moser B #5-4**  
**N2SWSWSW Section 4 1S-36W**  
**Rawlins County, Kansas**

**GEOLOGIST**  
**William B. Bynog**

## RESUME

OPERATOR: Berexco, LLC

WELL NAME & NUMBER: Moser B #5-4

LOCATION: N2SWSWSW Section 4 1S-36W

COUNTY: Rawlins

STATE: Kansas

SPUD DATE: 12-4-2014

COMPLETION DATE: 12-13-2014

ELEVATIONS: GL: 3055 KB: 3066

CONTRACTOR: Beredco Drilling Rig 10

LOGS: PIONEER TYPES: Rag, Micro log

WELLSITE ENGINEER: NONE

MUD COMPANY: Morgan Mud

MUD TYPE & ENGINEER: Fresh Chemical

GEOLOGIST: William B. Bynog

HOLE SIZE: 7 7/8

MUD LOGGING BY: NONE

DRILL STEM TEST COMPANY: Trilobite

DRILL STEM TEST: DST#1 3880-3950, DST#2 3935-4040,  
DST#3 4010-4090, DST#4 4065-4180,  
DST#5 4165-4220

WELL STATUS: Ran 5 ½ Production Casing

## DISCUSSION

Moser B #5-4 1S-36W was drilled a total depth of 4500 feet testing the Lansing Kansas City and Pawnee formations in Rawlins County, Kansas. This well was drilled with the help of seismic data and well control.

Structurally, Moser B #5-4 1S-36W came in eight feet low to the prognosis but seven feet high to a new producer, Vernice #15-5 1S-36W, just to the west.

Drilling continued to the Foraker and Topeka zones encountering poor sample shows with poor porosity development, none worthy of a drill stem test. The first good sample show with fair porosity development was the Oread formation at 3907 feet. The upper bench of the Oread was a chalky limestone with poor sample shows however, the second bench was a well-developed grainstone with fair porosity and very good sample shows. Drill stem test #1 recovered 68 feet of oil cut mud (10% oil) and 116 feet of mud with oil spots. The A zone also had good sample shows with fair porosity development in a permeable grainstone. This zone was tested on drill stem test #2 recovering 116 feet of gas in pipe, 88 feet of clean oil and 116 feet of mud cut oil (50% oil) with good pressures. Drilling continued to the B zone encountering a good sample show in another porous grainstone. Drill stem test #3 on the B zone recovered 137 feet of clean oil, 60 feet of gassy oil and 300 feet of gassy oil cut mud (30% oil) with good pressures. The C zone had poor sample shows with poor porosity development and the D had poor porosity development and no shows. Drill stem test #4 on both the C and D zones only recovered 5 feet of mud with oil spots. The E zone had fair sample shows but tested only 5 feet of oil spotted mud on drill stem test #5 recording low pressures, suggesting old production from surrounding wells. The Pawnee zone had no shows so drilling continued to total depth.

Logs agreed with sample evaluation recording fair porosity development and high resistivity in the upper Lansing Kansas City zones. The lower Lansing Kansas City zones were tight, testing small amounts of mud with oil spots.

A decision was made to run 5 ½ production casing based on the favorable drill stem test on the Oread, Lansing A and B zones.

MOSER B #5-4 SAMPLE DESCRIPTIONS

3500-75 SHALE red,soft,silty

FORAKER

3575-92 LIMESTONE pale gray,firm, fossils,chalky in part,sandy in part,poor pinpoint porosity,spotty to even live brns stain,good cut,fair show free oil

3592-3600 SHALE green,firm,sandy in part

3600-3612 LIMESTONE buff,pale gray,hard,dense,chalky in part

3612-32 LIMESTONE buff,pale gray,firm,very sandy,clqy filled,no shows

3632-3720 SHALE red,soft,argillaceous,silty in part with thin LIMESTONE buff,hard,blocky,dense,no shows

3720-40 LIMESTONE buff,hard,fossils,chalky in part,poor porosity,spotty black dead stain,poor cut

3740-58 LIMESTONE buff,very hard,dense,blocky slightly fossils,poor porosity,no shows with thin SHALE as above

3758-3790 SHALE red,very soft,very argillaceous with thin LIMESTONE as above

TOPEKA

3790-3800 LIMESTONE buff,pale yell,very hard, dense,slightly fossils,poor porosity,no shows

MOSER B #5-4 SAMPLE DESCRIPTIONS

3800-24 SHALE red,soft,silty

3824-46 SANDSTONE pale gray,friable,very fine grained,clay filled,no show

3846-60 SHALE aa

3860-80 LIMESTONE buff,pale yell,hard,dense,blocky,no shows

3880-3900 SHALE red,very soft,argillaceous with thin LIMESTONE as above

OREAD

3900-10 LIMESTONE white,firm,slightly fossils,very chalky,poor vis porosity,spotty black dead stain,no free oil

3910-22 LIMESTONE buff,very hard,dense,blocky,no shows

3922-30 GRAINSTONE white,firm,very oolitic,fair intergranular and moldic porosity,spotty to even live brown stain,very good milky cut,good show free oil

3930-50 LIMESTONE buff,very hard,dense,blocky,no shows

3950-80 SHALE dark gray,gray black,firm,fissile,slightly carbonaceous

3980-4002 Shale red,very soft,very argillaceous

LANSING A

## MOSER B #5-4 SAMPLE DESCRIPTIONS

4002-08 GRAINSTONE pale gray,firm,very fossils,clean,fair intergranular porosity,spotty to even live brown stain,very gd milky cut,good show free oil

4008-20 LIMESTONE buff,hard,dense,blocky,no shows with thin SHALE as above

40020-26 SANDSTONE pale fn,firm,very fine grained,clay filled,poor porosity,no shows

4026-54 SHALE red,very soft,very argillaceous

B

4054-62 GRAINSTONE pale gray,firm,very fossils,oolites,clean,fair intergranular and vuggy porosity,spotty to even live brown stain,very good milky cut,good show free oil

4062-68 LIMESTONE buff,very hard,dense,crptoxln,abundant pyrite

4068-76 SHALE as above

4076-82 LIMESTONE buff,hard,slightly fossils,poor vuggy porosity,very spotty live brown stain,fair cut,no free oil

4082-4112 SHALE red,some green,firm,argillaceous

C

4112-18 GRAINSTONE white,firm,very fossils,clean,fair intergranular porosity,spotty brown stain,fair milky cut,no free oil

## MOSER B #5-4 SAMPLE DESCRIPTIONS

4118-30 LIMESTONE buff,very hard,dense,blocky,crptoxln,no shows

4130-55 SHALE green,red,firm,waxy in part

D

4155-72 LIMESTONE buff,hard,blocky,chalky in part.poor vis porosity,no shows abundant pyrite

4172-96 SHALE as above

E

4200-4206 LIMESTONE buff,hard,blocky,dense,no shows

4206-10 GRAINSTONE white,firm,very oolitic,fair intergranular porosity,spotty live brown stain,good milky cut,poor show free oil

4210-20 LIMESTONE buff,very hard,dense,crptoxln,no shows

4220-46 SHALE red,firm,very silty some sandy

F

4246-62 LIMESTONE buff,pale gray,very hard,dense,blocky,no shows

4262-4326 SHALE red,soft,very argillaceous with thin bedded LIMESTONE as above

## MOSER B #5-4 SAMPLE DESCRIPTIONS

4326-46 LIMESTONE pale gray,hard,chalky in part,poor porosity,no shows

4346-84 SHALE as above with thin LIMESTONE white,slightly hard,chalky,poor porosity,no shows

4384-4400 LIMESTONE white,pale gray,slightly hard,fossils,chalky in part,poor vis porosity,no shows

4400-12 SHALE green,firm,waxy in part,argillaceous

4412-18 LIMESTONE white,firm,slightly fossils,very chalky,slightly sandy,poor vis porosity,no shows

4418-54 LIMESTONE buff,pale gray,very hard,dense,crptoxln,no shows with thin SHALE as above

4454-60 SHALE green,firm,waxy

4460-84 LIMESTONE buff,firm,very sandy,poor porosity,no shows

4484-4500 SHALE as above

RTD 4500'



LTD 4500'

MOSER B #5-4 SAMPLE DESCRIPTIONS