BEREXCO LLC

MICHAEL 3-23

SE NW NW SEC 23 T1S R36W

RAWLINS COUNTY, KANSAS

SUMMARY

The Berexco LLC Michael 3-23 in Rawlins County, Kansas spud March 9, 2014 and reached a total depth of 4550' on March 17, 2014. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Missourian Lansing-Kansas City carbonate benches, which produce in the East Fork field. A secondary zone of interest was the Oread Limestone. The Michael 3-23 was drilled using seismic and nearby well control.

Evaluation of the primary zones of interest was by drill stem testing after sample analysis. Five DSTs were run.

Foraker, Wabaunsee, and Topeka

The Foraker Limestone was tight with a trace of black dead oil. There were no shows in the Wabaunsee and only black asphaltic material in the Topeka.

Oread and Lansing-Kansas City

DST 1 in the Oread recovered 50 ft of mud with poor flow pressures. Samples were predominantly mudstone with locally fossiliferous wackestone displaying very poor interparticle porosity, rare scattered oil staining, and slow streaming cuts.

DST 2 in the Lansing A recovered 10 ft of mud with very poor flow pressures. Samples displayed occasional heavy black oil with no to trace porosity in cuttings.

DST 3 in the Lansing B recovered 200 ft of oil cut and oil spotted mud. The poor flow pressures indicated a non-porous B zone, also reflected on wireline logs. Samples exhibited fossiliferous grainstone and mudstone with trace to poor interparticle porosity, good live black oil staining, and good cuts.

DST 4 in the Lansing C recovered 80 ft of clean oil and 120 ft of oil cut mud. Samples were grainstone with poor to fair interparticle and vuggy porosity with abundant live black oil staining and good fluorescence and cuts.

The Lansing D samples were non-porous chalky limestone with no shows. No drill stem testing was warranted in the D zone alone and the decision was made to drill through the E zone and test the D and E zones together. The Lansing E was predominately non-porous with traces of interparticle and vuggy porosity and a scattered show of black oil stain and hydrocarbon cuts. DST 5 over the combined D and E zones recovered 175 ft of oil and oil cut mud.

The Lansing F was non-porous chalky limestone with no sample shows.

Oil Well Completion

5 ½" production casing was run to complete the Michael 3-23 as an oil producer.

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

WELL DATA

OPERATOR:	Berexco LLC 2020 North Bramblewood Drive Wichita, Kansas 67206
WELL NAME:	Michael 3-23
SURFACE LOCATION:	990’ FNL & 990’ FWL SE NW NW Sec. 23, T1S, R36W Rawlins County, Kansas
LATITUDE & LONGITUDE:	39.9563323, -101.3323162 (From State, calculated from footages)
BOTTOM HOLE LOCATION:	Vertical hole
ELEVATIONS:	3259’ GL 3272’ KB
API NUMBER:	15-153-20993
BASIN:	Mid-Continental Arch
FIELD:	East Fork
HOLE SIZE:	12 ¼” to 310’; 7 7/8” to 4550’
CASING:	8 5/8” J-55 24# STC set to 310’ KB
SPUD DATE:	March 9, 2014
TD DATE:	March 17, 2014
TOTAL DEPTH:	4550’ Rig TD 4549’ Log TD
LAST FORMATION:	Pennsylvanian Lansing-Kansas City
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				3272
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1198	1198	+2074
Fort Hays Ls Mbr	N/A	1702	1702	+1570
Carlile Sh	N/A	1747	1747	+1525
Dakota	N/A	2135	2135	+1137
Cheyenne	N/A	2692	2692	+580
Blaine	N/A	3020	3020	+252
Stone Corral Anhydrite	3174	3180	3180	+92
Base Anhydrite	3212	3210	3210	+62
Neva	3662	3662	3662	-390
Foraker	3774	3774	3774	-502
Wabaunsee	3940	3944	3944	-672
Topeka	3986	3987	3987	-715
Deer Creek Sand	4021	4022	4022	-750
Oread	4097	4098	4098	-826
Lansing-Kansas City				
"A"	4201	4198	4198	-926
"B"	4256	4256	4256	-984
"C"	4317	4314	4314	-1042
"D"	4364	4360	4360	-1088
"E"	4407	4404	4404	-1132
"F"	4446	4444	4444	-1172
TD Driller	4550			
TD Logger		4549	4549	-1277

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500’ to 4550’ TD. Depths are rig depths except where noted as wireline.

3500’ - 3558’	SHALE: reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light tan Limestone.
3558’ - 3586’	SANDSTONE: light gray to red brown, friable to firm, very fine grained grading to silt, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, no visible porosity, no shows.
3586’ - 3654’	SHALE: red, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace tan Limestone.
3654’ - 3662’	SANDSTONE: light gray to white, friable to firm, very fine grained, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, glauconite, no visible porosity no shows.

NEVA	SAMPLE TOP: 3662’	LOG TOP: 3662’	SUBSEA: -390’

3662’ - 3670’	LIMESTONE: white to light gray, firm to hard, chalky, fossil fragments (Brachiopod, Fusulinid), black algal stain, tight, no shows.
3670’ - 3716’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, with interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, tight, no shows.
3716’ - 3726’	SANDSTONE: very light gray to white to red brown, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, tight to trace porosity, no shows.
3726’ - 3742’	LIMESTONE: light gray, hard, cryptocrystalline, very slightly sandy, tight, no shows.
3742’ - 3774’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty.

FORAKER	SAMPLE TOP: 3774’	LOG TOP: 3774’	SUBSEA: -502’

3774’ - 3782’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, trace black dead oil, tight, no shows.

LITHOLOGY AND SHOWS

3782’ - 3794’	SHALE: gray to green gray, firm, blocky, non to slightly calcareous, fossil fragments.
3794’ - 3808’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragments, algal stain, slightly sandy at base, tight to trace intercrystalline porosity, no shows.
3808’ - 3822’	SANDSTONE: very light gray to white, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, black specks, tight to trace porosity, no shows.
3822’ - 3884’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray to white to light red Limestone stringers.
3884’ - 3911’	SHALE: dark gray to black, firm, fissile to blocky, non calcareous, carbonaceous in part, fossil fragments (Brachiopod).
3911’ - 3940’	SHALE: light reddish brown to reddish orange to brown orange, soft to firm, sub blocky to lumpy, non calcareous, clayey, occasional silty, thin gray Limestone partings.

WABAUNSEE	SAMPLE TOP: 3940’	LOG TOP: 3944’	SUBSEA: -672’

3940’ - 3956’	LIMESTONE: white to light gray with light reddish brown mottled, hard to firm, cryptocrystalline, chalky texture, light reddish brown SHALE partings, rare fossil fragment, tight, no shows.
3956’ - 3986’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, thin Limestone stringers and inclusions.

TOPEKA	SAMPLE TOP: 3986’	LOG TOP: 3987’	SUBSEA: -715’

3986’ - 3994’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment (Fusulinids), sparry calcite, black asphaltic material, tight, no shows.
3994’ - 4000’	SHALE: gray, firm, sub blocky, non to slightly calcareous, dull.
4000’ - 4020’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment, clear calcareous fill in vugs, clear to opaque chert, black asphaltic material, tight, no shows.

LITHOLOGY AND SHOWS

DEER CREEK SAND	SAMPLE TOP: 4021’	LOG TOP: 4022’	SUBSEA: -750’

4020’ - 4040’	SANDSTONE: light gray to very light gray, very friable to soft, very fine grained, well rounded, well sorted, weak calcareous cement, clay filled, plant remains, abundant loose grains, trace to poor porosity, no show.
4040’ - 4058’	LIMESTONE: white to light red brown, mottled, firm to hard, mudstone, very chalky, very slightly argillaceous in part, occasional sandy, interbedded reddish brown Shale partings, tight, no shows.
4058’ - 4097’	SHALE: reddish brown, brown maroon, gray, mottled in part, soft to firm, blocky, occasional slightly calcareous, non to slightly silty in part, clayey to sticky.

OREAD	SAMPLE TOP: 4097’	LOG TOP: 4098’	SUBSEA: -826’

4097’ - 4116’	LIMESTONE: cream to white, firm to hard, mudstone to packstone, occasional fossil fragment, stylolites, black dead oil on fracture faces, rare patchy black oil stain, very tight to trace interparticle porosity, rare bright yellowish white fluorescence, slow streaming yellowish white cuts, poor show.
4116’ - 4126’	SHALE: dark gray to black, firm, fissile, slightly to very carbonaceous, non to slightly calcareous, fossil fragments (Brachiopod).
4126’ - 4160’	LIMESTONE: gray to light gray, firm to hard, mudstone, rare fossil, very chalky texture, light brown to opaque chert, clear calcite crystals, tight, no show.
4160’ - 4180’	LIMESTONE: gray to light gray, hard, mudstone, rare fossil, occasional slightly chalky texture, trace opaque chert, clear calcite crystals, medium gray Shale partings, tight, no show.
4180’ - 4201’	SHALE: gray to light maroon to reddish brown, firm, blocky, non to slightly calcareous, occasional subwaxy, occasional soft and clayey.

LANSING- KANSAS CITY “A”	SAMPLE TOP: 4201’	LOG TOP: 4198’	SUBSEA: -926’

4201’ - 4219’	LIMESTONE: white to cream, firm to hard, mudstone to wackestone, occasional interclasts and peloids, fossil fragment, scattered black heavy oil stain, tight to trace interparticle porosity, bright yellowish white fluorescence, instant yellowish white cuts, with fast streaming yellowish white cuts, good show.
4219’ - 4224’	SHALE: gray to dark gray, firm, blocky, non to slightly calcareous.

LITHOLOGY AND SHOWS

4224’ - 4232’	SANDSTONE: white to light gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, clean, tight to poor porosity, no show.
4232’ - 4242’	SHALE: dark gray to reddish brown to maroon, firm, blocky, non to slightly calcareous, silty in part.
4242’ - 4256’	LIMESTONE: light gray, firm, mudstone, slightly argillaceous, gray shale partings, tight.

LANSING-
KANSAS CITY “B” SAMPLE TOP: 4256’ LOG TOP: 4256’ SUBSEA: -984’

4256’ - 4270’	LIMESTONE: white, firm, packstone to grainstone, fossil fragments, patchy live heavy black oil, poor to trace interparticle porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, good show.
4270’ - 4290’	SHALE: gray to dark gray, firm, platy to fissile, slightly carbonaceous in part, thin Limestone partings, fossil fragments (Brachiopod).
4290’ - 4298’	LIMESTONE: white to light gray, firm, cryptocrystalline, gray Shale partings, fossil fragment, slightly to moderately argillaceous in part, occasional sandy, tight, no show.
4298’ - 4317’	SHALE: brownish red to gray to maroon, firm to soft, platy, slightly calcareous, sandy/silty in part.

LANSING-
KANSAS CITY “C” SAMPLE TOP: 4317’ LOG TOP: 4314’ SUBSEA: -1042’

4317’ - 4331’	LIMESTONE: white, firm, mudstone to packstone, fossil fragment, abundant black heavy oil, poor intergranular and fair vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, with slow streaming cuts, good show.
4331’ - 4344’	SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments.
4344’ - 4356’	LIMESTONE: white to dark gray, mottled in part, hard to firm, mudstone to wackestone, fossil, spotty black heavy oil stain, tight to trace porosity, patchy bright yellowish white fluorescence, occasional blooming yellowish white cuts, fair show.
4356’ - 4364’	SHALE: gray to dark gray, firm, blocky, non to slightly calcareous.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "D"	SAMPLE TOP: 4364'	LOG TOP: 4360'	SUBSEA: -1088'

4364' - 4382'	LIMESTONE: light gray to white, firm, packstone to mudstone, fossil fragments, very chalky texture, clean, no visible porosity, no shows.
4382' - 4394'	SHALE: dark gray to gray to black, firm, blocky, white Limestone partings.
4394' - 4398'	LIMESTONE: white to very light gray, hard, cryptocrystalline, chalky, tight, no shows.
4398' - 4407'	SHALE: dark reddish brown to gray, firm, blocky to platy, non calcareous, silty, pyrite, interbedded Limestone.

LANSING- KANSAS CITY "E"	SAMPLE TOP: 4407'	LOG TOP: 4404'	SUBSEA: -1132'

4407' - 4420'	LIMESTONE: white to light gray, hard to firm, grainstone to wackestone, fossil fragment, peloids, patchy black oil specks and stain, trace to poor vuggy and interparticle porosity, bright yellowish white fluorescence, instant blooming and streaming yellowish white cut, good show.
4420' - 4446'	SHALE: dark gray to black, firm, blocky, calcareous, fossil, very to slightly carbonaceous in part, plant remains, trace pyrite.

LANSING- KANSAS CITY "F"	SAMPLE TOP: 4446'	LOG TOP: 4444'	SUBSEA: -1172'

4446' - 4456'	LIMESTONE: cream to white to light gray, firm to hard, mudstone to packstone, scattered fossil fragments, very tight, no shows.
4456' - 4462'	SHALE: gray, firm, sub blocky, calcareous.
4462' - 4479'	LIMESTONE: white to very light gray, firm to hard, mudstone to packstone, fossil fragments (Fusulinids), occasional sandy, trace very fine gray SANDSTONE, clean, occasional poor porosity, no shows.
4479' - 4498'	SHALE: gray to dark gray, firm, platy to blocky, non to very slightly calcareous, fossil fragment, interbedded white to light gray chalky Limestone.
4498' - 4505'	LIMESTONE: cream to white to light brown, firm to hard, mudstone, fossil fragment, chalky, dense, with interbedded dark gray Shale partings, tight, no shows.

LITHOLOGY AND SHOWS

4505’ - 4538’	SHALE: brownish red, firm, blocky, n calcareous, occasional Silty/Sandy, occasional thin LIMESTONE stringers.
4538’ - 4550’ TD	LIMESTONE: white to light gray, firm to hard, mudstone, occasional argillaceous, occasional dark gray to black SHALE partings, 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 Korte	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Kevin Mack DST 1: 4058’ - 4112’ Oread DST 2: 4146’ - 4234’ LKC “A” DST 3: 4218’ - 4278’ LKC “B” DST 4: 4268’ - 4350’ LKC “C” DST 5: 4354’ - 4430’ LKC “D” & “E”	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500’ - TD Engineer: Jerrod Long	Hays, KS 785-625-3858