BEREXCO LLC

LILLIE 1-26

NW NW SEC 26 T1S R36W

RAWLINS COUNTY, KANSAS

SUMMARY

The Berexco LLC Lillie 1-26 in Rawlins County, Kansas spud November 8, 2013 and reached a total depth of 4540' on November 17, 2013. The test drilled below the below the Lansing-Kansas City F zone for wireline and completion rathole but did not penetrate the Pennsylvanian Pawnee. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Missourian Lansing-Kansas City carbonate benches, which are productive in nearby wells. A secondary zone of interest was the Virgilian Oread Limestone. The Lillie 1-26 was drilled using seismic and nearby well control.

Evaluation of the primary zones of interest was by drill stem testing after sample analysis and correlation. Five DSTs were run based on sample shows.

Lansing-Kansas City

DST 1 in the Oread recovered 595 ft of oil and 1090 ft of gassy oil and mud cut water. Samples were fossiliferous and oolitic grainstone with fair interparticle porosity, scattered oil staining, and good cuts.

DST 2 in the Lansing A was based on scattered vuggy and interparticle porosity with good spotty black oil in cuttings. Recovery was 45 ft of mud. The Lansing A exhibited poor flow pressures and wireline logs confirmed the lack of porosity.

The Lansing B grainstone exhibited trace to poor porosity, abundant live black oil stain, and very good cuts. DST 3 recovered 175 ft of oil and oil cut mud with poor flow pressures. The thick black Lansing B oil was 17 gravity. Wireline logs show 3 ft of porosity.

DST 4 in the Lansing C was based on good oil stain and cuts in a lime grainstone. Recovery was 717 ft of oil and oil cut mud with 565 ft of gas in the drill pipe.

Cuttings showed the Lansing D was a tight mudstone with very poor sample shows and porosity. The decision was made to drill ahead into the Lansing E and run a DST over the combined D and E zones. The Lansing E samples were mudstone to packstone with scattered heavy oil specks and stain. DST 5 of the combined D and E recovered 270 ft of gassy oil and oil cut mud. Wireline logs show fair porosity in the E.

The Lansing F was nonporous limestone with no sample shows.

Structurally the Lillie 1-26 ran 8 ft high to the nearby Bernita 1-27 in the Oread, but intervals gradually became thicker and the Lansing-Kansas City F was 10 ft low to the Bernita 1-27. Wireline logs did not confirm this reversal in structural position. The drilling time may have been incorrect deeper in the well.

Oil Well Completion

After wireline logs the Lillie 1-26 was cased with 5 ½" production casing for completion as an oil producer.

Peter J. Vollmer
Consulting Wellsite Geologist, WPG #3369
November 2013

WELL DATA

OPERATOR:	Berexco LLC 2020 North Bramblewood Drive Wichita, Kansas 67206
WELL NAME:	Lillie 1-26
SURFACE LOCATION:	330’ FNL & 420’ FWL NW NW NW Sec. 26, T1S, R36W Rawlins County, Kansas
LATITUDE & LONGITUDE:	39.9436393, -101.3342138
BOTTOM HOLE LOCATION:	Vertical Hole
ELEVATIONS:	3251’ GL 3264’ KB
API NUMBER:	15-153-20958
BASIN:	Mid-Continental Arch
FIELD:	Wildcat
HOLE SIZE:	12 ¼” to 299’; 7 7/8” to 4540’
CASING:	8 5/8” J-55 24# STC set to 299’ KB
SPUD DATE:	November 8, 2013
TOTAL DEPTH DATE:	November 17, 2013
TOTAL DEPTH:	4540’ Rig TD 4533’ Log TD
LAST FORMATION:	Lansing-Kansas City F
WELL STATUS:	Ran 5 ½” production casing for oil well completion
OPERATOR REPRESENTATIVE:	Dana Wreath - Vice President
WELLSITE GEOLOGIST:	Peter J. Vollmer

FORMATION TOPS

Formation	Sample Top	Log Top	Log TVD	Log Datum
KB				3264
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1178	1178	+2086
Fort Hays Ls Mbr	N/A	1697	1697	+1567
Carlile Sh	N/A	1743	1743	+1521
Dakota	N/A	2136	2136	+1128
Cheyenne	N/A	2634	2634	+630
Blaine	N/A	2998	2998	+266
Anydrite	3162	3161	3161	+103
Base Anydrite	3196	3192	3192	+72
Foraker	3760	3756	3756	-492
Topeka	3970	3974	3974	-710
Oread	4089	4090	4090	-826
Heebner Sh	4141	4142	4142	-878
Lansing-Kansas City				
"A"	4193	4190	4190	-926
"B"	4248	4247	4247	-983
"C"	4309	4306	4306	-1042
"D"	4354	4351	4351	-1087
"E"	4403	4394	4394	-1130
"F"	4439	4433	4433	-1169
TD Driller	4540			
TD Logger		4533	4533	-1269

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500’ to 4540’ TD. Depths are rig depths except where noted as wireline.

3500’ - 3642’	SHALE: red, firm, blocky, very silty, sandy in part, non calcareous, trace Limestone stringers, trace Gypsum/Anhydrite.
3642’ - 3648’	LIMESTONE: white to light gray, firm to hard, chalky, fossil fragment, tight, no shows.
3648’ - 3684’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty.
3684’ - 3760’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, with interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, fossil fragments, tight, no shows.

FORAKER SAMPLE TOP: 3760’ LOG TOP: 3756’ SUBSEA: -492’

3760’ - 3768’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, trace black asphalt material (dead oil), tight, no shows.
3768’ - 3792’	SHALE: gray, firm, blocky, non to slightly calcareous, fossil fragments.
3792’ - 3804’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragments, tight, no shows.
3804’ - 3874’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty.
3874’ - 3892’	SHALE: dark gray to black, firm, fissile to blocky, non calcareous, carbonaceous in part.
3892’ - 3970’	SHALE: reddish brown, soft to firm, blocky, non to slightly calcareous, interbedded LIMESTONE: white to light gray, hard, cryptocrystalline, fossil fragment, tight, no shows.

TOPEKA SAMPLE TOP: 3970’ LOG TOP: 3974’ SUBSEA: -710’

3970’ - 3992’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment, sparry calcite fill, thin brownish red Shale partings, trace black dead oil, tight, no shows.

LITHOLOGY AND SHOWS

3992’ - 4006’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments, clear calcareous fill in vugs, opaque chert, trace black asphalt material, tight to poor porosity, no shows.
4006’ - 4017’	SHALE: gray, firm, platy, non to slightly calcareous, subwaxy, plant remains.
4018’ - 4035’	SANDSTONE: light gray to grayish brown, friable to soft, very fine grained, well rounded, well sorted, calcareous, clay filled, plant remains, no visible porosity, no show.
4035’ - 4042’	SHALE: reddish brown, firm, soft, sub blocky, non to slightly calcareous.
4042’ - 4052’	LIMESTONE: light gray to light brown, firm, cryptocrystalline, slightly argillaceous, black dead oil, tight, no show.
4052’ - 4090’	SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part.

OREAD	SAMPLE TOP: 4089’	LOG TOP: 4090’	SUBSEA: -826’

4089’ - 4108’	LIMESTONE: cream to white, firm to hard, wackestone to grainstone, oolites occluded with micrite mud, chalky in part, fossil fragments, tight to trace interparticle porosity, scattered black to dark brown live oil stain, good milky cut, show decreases with depth.
4108’ - 4117’	LIMESTONE: white to cream, very hard, cryptocrystalline, slightly siliceous, fossil fragments, trace sandy, very tight, no shows.
4117’ - 4150’	SHALE: gray, firm, platy, non to slightly calcareous.
4150’ - 4154’	SHALE: grayish black to dark gray, firm, sub fissile, carbonaceous, non to very slightly calcareous.
4154’ - 4193’	SHALE: reddish brown, gray, firm, blocky, non to slightly calcareous, with thin LIMESTONE stringers.

LANSING- KANSAS CITY “A”	SAMPLE TOP: 4193’	LOG TOP: 4190’	SUBSEA: -926’

4193’ - 4216’	LIMESTONE: white to cream, firm to hard, mudstone to packstone, occasional interclasts, fossil fragments, abundant scattered heavy black oil stain, trace to poor interparticle porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts with moderately streaming cuts, good show, show and porosity

LITHOLOGY AND SHOWS

decrease with depth.

4217’ - 4224’ SANDSTONE: light reddish brown to white, hard to friable, very fine grained, well rounded, well sorted, calcareous cement, pyrite, clay filled, predominant very tight, no show.

4224’ - 4248’ SHALE: red, soft, blocky, noncalcareous, silty.

LANSING-
KANSAS CITY “B” SAMPLE TOP: 4248’ LOG TOP: 4247’ SUBSEA: -983’

4248’ - 4256’ LIMESTONE: white, firm, grainstone, oolites, fossils(Crinoids, Fusulinids), poor intergranular porosity to poor vuggy porosity, even to spotty live heavy black oil, free oil, dull yellowish white cut, good show.

4256’ - 4260’ SHALE: dark gray, firm, platy, slightly carbonaceous.

4260’ - 4268’ LIMESTONE: white to light gray, firm, cryptocrystalline, dark gray Shale partings, sandy in part, tight, no show.

4268’ - 4308’ SHALE: dark gray to gray to reddish brown, firm, platy, slightly calcareous, dull, fossil fragments, Limestone partings.

LANSING-
KANSAS CITY “C” SAMPLE TOP: 4309’ LOG TOP: 4306’ SUBSEA: -1042’

4308’ - 4326’ LIMESTONE: white, firm, grainstone, fossil fragment (Fusulinids), rare oolites, slightly chalky, poor intergranular and vuggy porosity, spotty live black oil stain, blooming bright yellowish white cuts, free oil.

4326’ - 4354’ SHALE: dark gray to gray, firm, platy to fissile, slightly calcareous, dull, fossil fragment (Brachiopod), light brown Limestone partings.

LANSING-
KANSAS CITY “D” SAMPLE TOP: 4354’ LOG TOP: 4351’ SUBSEA: -1087’

4354’ - 4364’ LIMESTONE: white to light tan, firm, packstone to mudstone, fossil fragments, tight to trace vuggy porosity, trace heavy black oil specks, dull yellowish white cut,

LITHOLOGY AND SHOWS

	poor show.
4364’ - 4382’	SHALE: dark gray to gray, firm, platy to fissile, slightly calcareous, light brown Limestone partings.
4382’ - 4388’	LIMESTONE: light brown to tan, firm, argillaceous, fossil fragments, tight.
4388’ - 4403’	SHALE: dark reddish brown, firm, blocky, slightly to non calcareous, Limestone partings.

LANSING-
KANSAS CITY “E” SAMPLE TOP: 4403’ LOG TOP: 4394’ SUBSEA: -1130’

4403’ - 4414’	LIMESTONE: white to cream, hard to firm, mudstone to packstone, very chalky, fossil fragment, tight to poor vuggy porosity, trace dark brown to black oil specks and stain, fair yellowish white cuts.
4414’ - 4416’	SHALE: dark gray, firm, sub fissile, non calcareous, slightly carbonaceous.
4416’ - 4439’	SHALE: gray, firm, platy, non to slightly calcareous, rare fossil, dull.

LANSING-
KANSAS CITY “F” SAMPLE TOP: 4439’ LOG TOP: 4433’ SUBSEA: -1169’

4439’ - 4438’	LIMESTONE: cream to white, firm to hard, mudstone, trace fossil fragments, clean, dense, tight, no shows.
4438’ - 4456’	SHALE: dark gray, firm, platy, non to very slightly calcareous, fossil fragments.
4456’ - 4472’	LIMESTONE: cream to white, firm to hard, mudstone, chalky, clean, dense, dark gray Shale partings, tight, no shows.
4472’ - 4494’	SHALE: dark gray, firm, platy, non to very slightly calcareous.
4494’ - 4518’	LIMESTONE: cream to white, firm to hard, mudstone, chalky, dense, with interbedded dark gray Shale partings, tight, no shows.
4518’ - 4540’ TD	SHALE: dark gray, firm, platy, non to very slightly calcareous, fossil fragments, interbedded white chalky Limestone.

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:	Troy Van Pelt, Dave Lines	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Tester: James Winder DST 1: 4008’ - 4100’ Oread DST 2: 4116’ - 4230’ Lansing-KC “A” DST 3: 4210’ - 4256’ Lansing-KC “B” DST 4: 4264’ - 4326’ Lansing-KC “C” DST 5: 4326’ - 4414’ Lansing-KC “D” & “E”	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: 3100’ - TD Micro: Surface casing to TD Engineer: Jerrod Long	Hays, KS 785-625-3858