

**BEREXCO LLC**

**OWENS TRUST 2-19**

**E/2 W/2 SW NW SEC 19 T1S R37W**

**CHEYENNE COUNTY, KANSAS**

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## SUMMARY

The Berexco LLC Owens Trust 2-19 in Cheyenne County, Kansas spud January 30, 2015 and reached a total depth of 4750' on February 7, 2015. Wellsite geological supervision commenced at 3000'. The primary objectives of the wildcat were the Pennsylvanian Missourian Lansing-Kansas City limestones. Secondary zones of interests were the Foraker, Oread, and Pawnee limestones. The Owens Trust 2-19 was drilled using seismic and nearby well control.

On-site evaluation was by drill stem testing after sample analysis and consideration of structural position. Four DSTs were run.

### **Foraker, Wabaunsee, Topeka, and Oread**

The Foraker was non-porous limestone with black asphaltic material. Minor oil shows in tight limestone were found in the Wabaunsee and Topeka but these did not merit drill stem testing. Oread samples were fossiliferous grainstone and mudstone with trace interparticle porosity, scattered black oil staining, and poor cuts. Based on nearby drill stem testing and structural position, these poor sample shows were not drill stem tested.

### **Lansing-Kansas City, Pawnee, and Cherokee**

Trace dead oil and no visible porosity were observed in the Lansing-Kansas City A.

DST 1 in the B was a misrun due to the tool opening prematurely. The wellbore was drilled two feet deeper and the B interval was retested. DST 2 recovered 20 ft of oil spotted mud. Poor interparticle and vuggy porosity with spotty black oil stain were observed in cuttings.

The C was mudstone to wackestone with occasional poor shows of black oil but mostly no visible porosity. The D was mudstone to wackestone with no shows and no visible porosity. Neither warranted drill stem testing.

DST 3 in the E recovered 5 ft of mud with very poor pressures. The E limestone displayed spotty oil stain and good fluorescence and cut from oolitic grainstone and mudstone with very poor vuggy porosity.

The F was nonporous limestone with no sample shows.

DST 4 in the Pawnee recovered 95 ft of oil cut mud with poor flowing pressures from packstone and occasional grainstone. Minor porosity and shows were limited to the top few feet; the remainder of the Pawnee was nonporous mudstone with no shows.

The Fort Scott was nonporous limestone. The Cherokee displayed minor dead oil staining in part of the nonporous chalky limestone.

### **Plugged and Abandoned**

After wireline logs the Owens Trust 2-19 was plugged and abandoned in accordance with orders from the Oil and Gas Conservation Division of the Kansas Corporation Commission.

Peter J. Vollmer  
Consulting Wellsite Geologist, WPG #3369  
February 2015

Berexco LLC  
Owens Trust 2-19

## WELL DATA

OPERATOR: Berexco LLC  
2020 North Bramblewood Drive  
Wichita, Kansas 67206

WELL NAME: Owens Trust 2-19

SURFACE LOCATION: 1980' FNL & 630' FWL  
E/2 W/2 SW NW Sec. 19, T1S, R37W  
Cheyenne County, KS

LATITUDE & LONGITUDE: 39.9541582, -101.5201305 (From State, calculated from footages)

BOTTOM HOLE LOCATION: Vertical hole

ELEVATIONS: 3223' GL      3236' KB

API NUMBER: 15-023-21419

BASIN: Mid-Continental Arch

FIELD: Wildcat

HOLE SIZE: 12 1/4" to 300'; 7 7/8" to 4750'

CASING: 8 5/8" J-55 24# STC set to 300' KB

SPUD DATE: January 30, 2015

TD DATE: February 7, 2015

TOTAL DEPTH: 4750' Rig TD    4752' Log TD

LAST FORMATION: Pennsylvanian Cherokee

WELL STATUS: Plugged and Abandoned

OPERATOR  
REPRESENTATIVE: Dana Wreath - Vice President

WELLSITE GEOLOGIST: Peter J. Vollmer

**FORMATION TOPS**

Formation	Sample Top	Log Top	Log TVD	Log Subsea
KB				3236
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1096	1096	+2140
Fort Hays Ls Mbr	N/A	1620	1620	+1616
Carlile Sh	N/A	1677	1677	+1559
Dakota	N/A	1894	1894	+1342
Cheyenne	N/A	2583	2583	+653
Blaine	N/A	2941	2941	+295
Cedar Hills	3058	3060	3060	+176
Stone Corral Anhydrite	3188	3192	3192	+44
Base Anhydrite	3223	3227	3227	+9
Chase Limestone	3388	3390	3390	-154
Neva	3645	3650	3650	-414
Red Eagle	3708	3714	3714	-478
Foraker	3764	3769	3769	-533
Wabaunsee	3886	3885	3885	-649
Topeka	3990	3986	3986	-750
Deer Creek Lime	4062	4066	4066	-830
Oread	4119	4123	4123	-887
Heebner Sh	4148	4154	4154	-918
Lansing-Kansas City				
"A"	4196	4200	4200	-964
"B"	4260	4261	4261	-1025
"C"	4312	4314	4314	-1078
"D"	4354	4357	4357	-1121
"E"	4404	4406	4406	-1170
"F"	4445	4446	4446	-1210
Pawnee	4596	4598	4598	-1362
Ft Scott	4665	4671	4671	-1435
Cherokee	4686	4687	4687	-1451
TD Driller	4750			
TD Logger		4752	4752	-1516

## LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3600' to 4750' TD. Depths are rig depths except where noted as wireline.

3603' - 3645'	SHALE: light reddish brown to reddish orange, firm to soft, subfissile to blocky, very silty, sandy in part, non to slightly calcareous, gummy in part.
NEVA	SAMPLE TOP: 3645'      LOG TOP: 3650'      SUBSEA: -414'
3645' - 3652'	LIMESTONE: white to light gray, hard, mudstone, slightly chalky, fossil fragment (Fusulinid), occasional black Algal stain, tight, no show.
3652' - 3658'	SANDSTONE: very light gray to gray, friable to firm, very fine to fine grained, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, trace black dead oil specks, trace porosity, no shows.
3658' - 3694'	SHALE: reddish brown to brownish orange, soft to firm, sub blocky to lumpy, non calcareous, occasional silty, gummy to sticky.
3694' - 3708'	SANDSTONE: reddish brown to light gray to light brown, friable, very fine grained, subrounded to sub angular, fair to well sorted, weak calcareous cement, predominant argillaceous matrix, no visible porosity, no shows.
RED EAGLE	SAMPLE TOP: 3708'      LOG TOP: 3714'      SUBSEA: -478'
3708' - 3721'	LIMESTONE: light gray to light grayish brown, hard, mudstone to wackestone, scattered fossil fragment, occasional black Algal material, occasional reddish brown SHALE partings, tight, no shows.
3721' - 3744'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous.
3744' - 3764'	SLITY SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional moderately to very silty, occasional very fine grained SANDSTONE stringers.

## LITHOLOGY AND SHOWS

FORAKER	SAMPLE TOP: 3764'	LOG TOP: 3769'	SUBSEA: -533'
3764' - 3776'	LIMESTONE: light gray to dark gray, mottled in part, hard, packstone to grainstone, scattered fossil fragments, occasional black asphalt specks (dead oil), very tight, faint yellow green fluorescence, occasional very weak pale greenish cuts, very poor show.		
3776' - 3788'	SHALE: light gray to grain gray, firm, blocky, non to slightly calcareous, Limestone stringers.		
3788' - 3798'	LIMESTONE: white to light gray, firm to hard, mudstone to wackestone, very slightly chalky, fossil fragment, light tan chert, algal stain, dead oil, tight, no shows.		
3798' - 3812'	SANDSTONE: very light gray to white, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, black dead oil material, tight to trace porosity, no shows.		
3812' - 3826'	SHALE: reddish brown to light gray, mottled in part, soft to firm, sub blocky, non calcareous.		
3826' - 3834'	SHALE: dark gray to gray, firm, platy to fissile, non to slightly calcareous, occasional slightly carbonaceous, disseminated pyrite.		
3834' - 3886'	SHALE: reddish brown to light gray to light brownish orange, mottled, soft to firm, sub blocky, non calcareous, occasional silty, gummy to clayey, occasional white chalky Limestone stringers.		
WABAUNSEE	SAMPLE TOP: 3886'	LOG TOP: 3885'	SUBSEA: -649'
3886' - 3916'	LIMESTONE: white to light gray, with occasional light reddish brown mottled, soft to hard, mudstone to wackestone, occasional chalky texture, reddish brown SHALE interbeds, occasional fossil fragments, trace black heavy oil material (dead oil), no visible porosity, no fluorescence, residue slow pale greenish white cut.		
3916' - 3926'	LIMESTONE: white to light gray, occasional reddish brown mottled, firm to hard, mudstone, reddish brown Shale stringers, occasional black pellets, tight, no show.		
3926' - 3950'	SHALE: reddish brown to very light gray, occasional mottled, soft to firm, sub blocky, non calcareous, gummy to sticky, Limestone stringers.		
3950' - 3990'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty to sandy, occasional light gray chalky Limestone stringers, gummy to sticky.		

## LITHOLOGY AND SHOWS

TOPEKA	SAMPLE TOP: 3990'	LOG TOP: 3986'	SUBSEA: -750'
3990' - 4004'	LIMESTONE: white to light gray, hard to firm, grainstone to wackestone, peloids, fossil fragments, spotty black heavy asphaltic material, no visible porosity, pale yellowish white fluorescence, very slow diffuse pale yellowish white cut, very poor show.		
4004' - 4018'	SHALE: gray to dark gray, firm, platy to fissile, fossil (Brachiopod), non to slightly calcareous, dull, pyrite.		
4018' - 4030'	LIMESTONE: light gray to white, hard to firm, wackestone to packstone, fossil fragments, abundant light tan to opaque chert, occasional dark gray SHALE stringers, tight, no shows.		
4030' - 4062'	SHALE: reddish brown to light gray to lavender, variegated, soft to firm, subblocky, noncalcareous, occasional silty, clayey, occasional white Limestone stringers.		
DEER CREEK LIME	SAMPLE TOP: 4062'	LOG TOP: 4066'	SUBSEA: -830'
4062' - 4072'	LIMESTONE: white to light brown, hard to firm, mudstone, chalky, fossil fragment (Fusulinids), reddish brown Shale partings, rare black asphaltic stain, tight, no show.		
4072' - 4119'	SHALE: reddish brown, brownish maroon, grayish green, mottled in part firm, sub fissile to blocky, occasional slightly calcareous, very slightly silty in part, occasional thin SANDSTONE stringers, occasional clayey to sticky, occasional LIMESTONE: light gray to light brown, reddish brown mottled, hard, mudstone, tight, no shows.		
OREAD	SAMPLE TOP: 4119'	LOG TOP: 4123'	SUBSEA: -887'
4119' - 4130'	LIMESTONE: cream to white, firm to hard, mudstone to grainstone, fossil fragment (Brachiopod, Fusulinid), occasional oolites, scattered black heavy oil stain, predominant tight to trace interparticle porosity, locally patchy bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming yellowish white cuts, fair show with no porosity.		
4130' - 4148'	LIMESTONE: gray to white to light gray, firm to hard, mudstone, slightly chalky, occasional fossil, tight, no show.		

### LITHOLOGY AND SHOWS

HEEBNER SH	SAMPLE TOP: 4148'	LOG TOP: 4154'	SUBSEA: -918'
4148' - 4152'	SHALE: dark gray to black, firm, fissile, slightly carbonaceous in part, non to slightly calcareous, pyrite.		
4152' - 4160'	LIMESTONE: gray to light gray, firm to hard, mudstone, slightly chalky, tight, no show.		
4160' - 4196'	SHALE: gray to light reddish brown to maroon, mottled, firm, blocky, non to slightly calcareous, occasional silty.		
LANSING-- KANSAS CITY "A"	SAMPLE TOP: 4196'	LOG TOP: 4200'	SUBSEA: -964'
4196' - 4206'	LIMESTONE: white to light gray, hard, mudstone, fossil fragments, chalky, few specks black asphalt material (dead oil), no visible porosity, no show.		
4206' - 4220'	LIMESTONE: gray to light gray, hard, mudstone, stylolite, chalky, tight, no show.		
4220' - 4230'	SHALE: gray to light gray, firm, sub blocky to fissile, non to slightly calcareous, fossil fragments, occasional pyrite, Limestone stringers.		
4230' - 4234'	SANDSTONE: white to light gray to gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, abundant black dead oil specks, no visible porosity, no show.		
4234' - 4260'	SHALE: reddish brown, firm to soft, blocky, non to slightly calcareous, occasional silty, occasional gummy to sticky, Limestone stringers.		
LANSING-- KANSAS CITY "B"	SAMPLE TOP: 4260'	LOG TOP: 4261'	SUBSEA: -1025'
4260' - 4272'	LIMESTONE: white to very light gray, firm to hard, grainstone to wackestone, occasional fossil fragments, rare ooliths, occasional free live heavy dark brown to black oil, occasional black asphalt material in chalky Limestone, fair intergranular porosity and fair vugular porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, good show.		
4272' - 4280'	SHALE: gray to dark gray, firm to hard, blocky to fissile, calcareous, disseminated pyrite.		
4280' - 4290'	LIMESTONE: white to very light gray, hard, mudstone, occasional fossil, dark gray Shale partings, tight, no show.		



## LITHOLOGY AND SHOWS

4290' - 4298'	SILTSTONE: light brown to reddish brown, friable to soft, argillaceous matrix, slightly calcareous.
4298' - 4312'	SHALE: dark reddish brown to gray, mottled in part, soft to firm, blocky, non calcareous, pyrite.
LANSING- KANSAS CITY "C"	SAMPLE TOP: 4312'      LOG TOP: 4314'      SUBSEA: -1078'
4312' - 4330'	LIMESTONE: light gray to white, firm, mudstone to wackestone, occasional fossil fragments, predominant chalky texture, occasional patchy heavy black oil, predominately no visible porosity, occasional micro vugs with black oil, trace bright yellowish white fluorescence, instant yellowish white diffuse cuts, with slow streaming cuts, poor show, no show at base.
4330' - 4354'	SHALE: gray to light gray, firm, sub blocky, non to moderately calcareous, clayey, fossil fragments (Brachiopod), occasional Limestone stringer.
LANSING- KANSAS CITY "D"	SAMPLE TOP: 4354'      LOG TOP: 4357'      SUBSEA: -1121'
4354' - 4372'	LIMESTONE: cream to white, firm, mudstone to wackestone, fossil fragments, chalky texture, no visible porosity, no shows.
4372' - 4386'	SILTSTONE: light reddish brown, friable to soft, argillaceous matrix, slightly calcareous, grading to Silty SHALE.
4386' - 4404'	SHALE: reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, occasional Siltstone and LIMESTONE stringers.
LANSING- KANSAS CITY "E"	SAMPLE TOP: 4404'      LOG TOP: 4406'      SUBSEA: -1170'
4404' - 4416'	LIMESTONE: white to light gray, firm to soft, mudstone to grainstone, peloids, fossil fragments, occasional patchy black oil stain, predominant tight, trace vuggy porosity with live oil, bright yellowish white fluorescence, immediate blooming yellowish white cuts, poor show, no show at base.

## LITHOLOGY AND SHOWS

4416' - 4428' SHALE: dark gray to gray to black, firm, blocky, calcareous, very to slightly carbonaceous in part, trace pyrite. SHALE: dark reddish brown.

4428' - 4438' SILTSTONE: maroon to light reddish brown, friable, grading to very fine grained sand, clay fill, tight, no show.

4438' - 4445' SHALE: dark reddish brown to maroon, firm, blocky, non calcareous, moderately to very silty.

### LANSING- KANSAS CITY "F"

SAMPLE TOP: 4445' LOG TOP: 4446' SUBSEA: -1210'

4445' - 4456' LIMESTONE: white to light gray, firm to hard, mudstone, very chalky texture, occasional fossil fragment, occasional sandy, clean, no visible porosity, no shows.

4456' - 4478' SHALE: gray to dark gray to black to reddish brown, firm, platy, non to slightly calcareous, occasional slightly carbonaceous, trace pyrite.

4478' - 4492' SHALE: brownish red to gray, firm, blocky, non calcareous, with interbedded white Limestone stringer.

4492' - 4506' SHALE: brownish red, firm, blocky, non calcareous.

4506' - 4524' LIMESTONE: white to cream, with reddish brown mottled, mudstone, fossiliferous, chalky, occasional reddish brown SHALE partings, tight, no shows.

4524' - 4538' SHALE: light brownish red, firm, blocky, non calcareous, with interbedded white Limestone stringers.

4538' - 4560' LIMESTONE: white to cream to light gray, occasional reddish mottled and stain, mudstone, sandy, chalky, occasional reddish brown SHALE partings, tight, no shows.

4560' - 4580' LIMESTONE: light gray to white to cream, hard, mudstone, slightly argillaceous, fossil fragment, light gray Shale partings, tight, no shows.

4580' - 4596' SHALE: dark gray to light gray, soft to firm, sub blocky, non to slightly calcareous, argillaceous Limestone stringers.

### PAWNEE

SAMPLE TOP: 4596' LOG TOP: 4598' SUBSEA: -1362'

4596' - 4600' LIMESTONE: white to cream to very light gray, firm to hard, grainstone to mudstone, grainy texture, fossil fragments, trace black oil stain, trace pin to point

## LITHOLOGY AND SHOWS

vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, fair show from a few cuttings.

4600' - 4622'

LIMESTONE: white to light gray to gray, firm to hard, mudstone to wackestone, slightly chalky, fossil fragment, tight, no shows.

4622' - 4633'

SHALE: gray to dark gray to black, hard to firm, sub blocky to fissile, non calcareous, fossil fragments (Brachiopod), carbonaceous in part, argillaceous bluish gray Limestone stringers.

4633' - 4656'

LIMESTONE: light gray to gray, firm to hard, mudstone, occasional fossil fragment, very slightly chalky, clean, no visible porosity, no shows.

4656' - 4665'

SHALE: gray to dark gray, firm, blocky to fissile, occasional carbonaceous at top, disseminated pyrite, occasional coal.

FORT SCOTT

SAMPLE TOP: 4665'      LOG TOP: 4671'      SUBSEA: -1435'

4665' - 4686'

LIMESTONE: white to light gray to cream, firm to hard, mudstone to wackestone, slightly to moderately chalky, fossil fragments, occasional very sandy, tight, no shows.

CHEROKEE

SAMPLE TOP: 4686'      LOG TOP: 4687'      SUBSEA: -1451'

4686' - 4696'

SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, plant remains, thin black slightly argillaceous Coal stringers.

4696' - 4720'

LIMESTONE: white to light gray, firm to hard, mudstone to wackestone, occasional fossil fragments (Brachiopod), slightly sandy in part, opaque chert, tight, no shows.

4720' - 4750' TD

SHALE: gray to very dark gray, firm, platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite, occasional LIMESTONE: white to very light gray, hard, mudstone, dead oil, tight, no show.

**SERVICES**

CONTRACTOR:	Beredco Drilling Inc., Rig 2	
Toolpusher:	Milo Salinas	
DRILLING FLUIDS:	Morgan Mud, Inc.	McCook, NE
Mud Type:	Freshwater Chemical	308-340-5946
Engineer:	Dave Korte	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc.	Wilson, WY
	Peter J. Vollmer	307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc.	Hays, KS
	Royal Fisher	785- 625-4778
	DST 1: 4214' - 4274' LKC "B" Misrun	
	DST 2: 4214' - 4276' LKC "B"	
	DST 3: 4362' - 4420' LKC "E"	
	DST 4: 4566' - 4618' Pawnee	
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Energy Services	Hays, KS
	RAG: Surface casing - TD	785-625-3858
	Micro-resistivity, Sonic: 3500' - TD	
	J. Henrickson	