

REPORT COPY

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# *GEOLOGICAL REPORT*

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*RUSSELL OIL, INC.*

NO.1-24 Law C  
1980' FSL & 1650' FEL  
Section 24-8S-23W  
Graham County, Kansas

**Todd E. Morgenstern**  
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OPERATOR: Russell Oil, Inc.

WELL: Law C #1-24  
API # 15-065-23,064-00-00

LOCATION: 1980' from the South Line  
1650' from the East Line  
Section 24-8S-23W  
Graham County, Kansas

FIELD: Hill City (Abandoned)

CONTRACTOR: Southwind Drilling Inc. (Rig #1)

DRILLING COMMENCED: ~~5-4-2005~~ 6/2/2005

DRILLING COMPLETED: ~~5-13-2005~~ 6/9/2005

DRILLING TIME: One (1) foot drilling time was recorded  
from 3100' to 3675' RTD.

SAMPLES: Samples were saved and examined from 3100'  
to 3675' RTD.

ELEVATIONS: 2144' Ground Level 2154' Kelly Bushing

MEASUREMENTS: All depths are measured from 2154' K.B.

CASING RECORD: 8 5/8" Surface Casing set @ 267' with 200 sxs. 60/40 poz  
5 1/2" Production Casing set @ 3673' w/ 85 sxs.

FORMATION TESTING: Three (3) tests were run by Trilobite Testing, Inc.  
Ray Schwager, Tester

MUD: Mud-Co. (Chemical Mud)

OPEN HOLE LOGS: Log-Tech (CNL-CDL, DIL, MEL, & BHCS)

PRODUCTION: Oil

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FORMATION TOPS:

FORMATION	SAMPLE	LOG	DATUM
ANHYDRITE	*****	1776'	+ 378'
BASE ANHYDRITE	*****	1811'	+ 343'
TOPEKA	3157'	3156'	-1002'
HEEBNER SHALE	3374'	3370'	-1216'
TORONTO	3396'	3393'	-1239'
LANSING	3410'	3408'	-1254'
MUNCIE CREEK	3530'	3525'	-1371'
STARK SHALE	3584'	3581'	-1427'
BASE KANSAS CITY	3630'	3626'	-1472'
LOG TOTAL DEPTH	*****	3672'	-1518'
ROTARY TOTAL DEPTH	3675'	*****	-1521'

SAMPLE DESCRIPTIONS AND TEST DATA:

(All depths have been corrected to log measurements.)

TOPEKA:

3187-3192 Limestone, gray and white, dense to finely crystalline, chalky, with poor visible porosity, no shows of oil were noted.

3320-3330 Limestone, tan, white and gray, finely crystalline, micro-oolitic, with fair visible interparticle porosity, trace of scattered staining, slightly chalky, no show of free oil, no odor.

TORONTO:

3394-3402 Limestone, white, cream and tan, finely crystalline, microfossiliferous, and oolitic, with poor to fair visible interparticle porosity, with white opaque chert, no shows of oil were noted.

LANSING:

3408-3418 Limestone, gray and white, finely crystalline, oolitic and slightly fossiliferous, very chalky, with poor visible interparticle porosity, no shows of oil were noted.

3441-3448 Limestone, gray, light brown, and tan, fossiliferous and slightly oolitic, slightly chalky with poor interparticle porosity, light brown spotted staining, trace of free oil on break, light odor.

3456-3464 Limestone, gray and tan, finely crystalline, chalky, oolitic and slightly fossiliferous with poor visible interparticle porosity, very slight staining, trace of free oil on break, no odor. (Covered by D.S.T. No. 1)

3480-3486 Limestone, cream and white, finely crystalline, dense, fossiliferous with poor visible porosity, no shows of oil were noted.

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3488-3492 Limestone, tan, brown and cream, finely crystalline, fossiliferous and slightly oolitic with fair crystalline and pinpoint vugular porosity, slight spotted staining and saturation, very slight show of free oil on break, no odor. (Covered by D.S.T. No.1)

<u>FORMATION TEST NO. 1</u>			
Lansing (50'-90')			
Tested from 3450'-3492'			
		I.H.P.	1648#
<i>Weak blow building to 3"</i>	45 min.	I.F.P.	14# -122#
<i>No blow-back</i>	45 min.	I.S.I.P.	881#
<i>Weak blow building to 1 1/2"</i>	45 min.	F.F.P.	123# -176#
<i>No blow-back</i>	45 min.	F.S.I.P.	824#
		F.H.P.	1598#
(SEE PRESSURE CHARTS AT END OF REPORT)			
RECOVERY:	90' Muddy water with show of oil <u>240' Water</u> 330' Total Liquid Recovery		
TEMPERATURE:	106*		
CHLORIDES:	57,000 ppm (Recovery) 1,200 ppm (System)		

3542-3552 Limestone, white and gray, dense, finely crystalline, slightly fossiliferous, with poor visible interparticle porosity, no shows of oil were noted.

3562-3571 Limestone, gray and tan, finely crystalline, oolitic in part, with trace of pinpoint vugular porosity, fair spotted staining and saturation, slight show of free oil, no odor. (Covered by D.S.T. No. 2)

<u>FORMATION TEST NO. 2</u>			
Lansing (160')			
Tested from 3548'-3571'			
		I.H.P.	1697#
<i>Weak building to strong blow in 19 min.</i>	30 min.	I.F.P.	19# -111#
<i>Weak surface blow-back</i>	60 min.	I.S.I.P.	1044#
<i>Weak building to strong blow in 26 min.</i>	30 min.	F.F.P.	114# -152#
<i>Weak 1/2" blow-back</i>	60 min.	F.S.I.P.	1025#
		F.H.P.	1687#
(SEE PRESSURE CHARTS AT END OF REPORT)			
RECOVERY:	375' Gas in Pipe 45' Clean Oil 150' Gassy Mud Cut Oil 30' Oil and Gas Cut Watery Mud <u>120' Slightly Oil Cut Muddy Water</u> 345' Total Liquid Recovery		
TEMPERATURE:	110*		
CHLORIDES:	39,000 ppm (Recovery) 2,000 ppm (System)		

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3584-3588 Limestone, white, gray and tan, finely crystalline, oolitic and fossiliferous, with poor to fair visible interparticle porosity, slight to fair spotted staining, very slight show of free oil on break, questionable light odor. (Covered by D.S.T. No. 3)

<b>FORMATION TEST NO. 3</b>			
Lansing (180')			
Tested from 3574'-3588'			
		I.H.P.	1682#
Weak blow building to ¼"	45 min.	I.F.P.	14# -18#
No blow-back	60 min.	I.S.I.P.	930#
Weak blow building to ¾"	60 min.	F.F.P.	16# -25#
No blow-back	60 min.	F.S.I.P.	827#
		F.H.P.	1661#
(SEE PRESSURE CHARTS AT END OF REPORT)			
RECOVERY:	120' Gas in Pipe 5' Clean Oil <u>25' Muddy Gassy Oil</u> 30' Total Liquid Recovery		
TEMPERATURE:	104*		
CHLORIDES:	N/A ppm (Recovery) 2,000 ppm (System)		

3601-3610 Limestone, white and gray, very finely crystalline, slightly oolitic and fossiliferous, with fair visible interfossil porosity, slightly pinpoint, chalky in part, with traces of heavy, dark appearing dead oil staining, no show of free oil, no odor.

**STRUCTURAL COMPARISON:**

	<b>Russell Oil</b> Law 'C' #1-24 1980' FSL & 1650' FEL Sec. 24-08S-23W Oil	<b>Imperial Oil</b> Law 'B' #1 NW-NW-NSE Sec. 24-08S-23W Oil
ANHYDRITE	+ 378'	+ 383'
BASE ANHYDRITE	+ 343'	+ 351'
TOPEKA	-1002'	- 998'
HEEBNER SHALE	-1216'	-1214'
TORONTO	-1239'	-1237'
LANSING	-1254'	-1249'
BASE KANSAS CITY	-1472'	-1469'

**SUMMARY:**

The Law 'C' #1-24 was under geological supervision from 3100' to 3675' RTD. After reviewing the open hole logs and the positive results from D.S.T. No. 2, it was decided to run 5 ½" production casing and complete this well through perforations.

Respectfully submitted,

  
Todd E. Morgenstern

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