# **Geological Report**

Andrews #22-1
950' FNL & 2050' FWL
Sec. 22 T22s R13w
Stafford County, Kansas



StrataKan Exploration, Inc.

# **General Data**

Well Data:	StrataKan Exploration, Inc. Andrews #22-1 950' FNL & 2050' FWL Sec. 22 T22s R13w Stafford County, Kansas API # 15-185-23960-0000			
Drilling Contractor:	WW Drilling Rig #4			
Geologist:	Jason T Alm			
Spud Date:	May 13, 2016			
Completion Date:	May 21, 2016			
Elevation:	1890' Ground Level 1895' Kelly Bushing			
Directions:	St. John KS, North on Hwy 281 9 mi. East ½ mi South into location.			
Casing:	681' 8 5/8" surface casing 3907' 5 1/2" production casing			
Samples:	10' wet and dry, 2900' to RTD			
Drilling Time:	2850' to RTD			
Electric Logs:	Pioneer Energy Services "Dan Schmidt" CNL/CDL, DIL, MEL			
Drillstem Tests:	Five, Trilobite Testing "Gary Pevoteaux			
Problems:	None			

Remarks:

After DST #4 background gas was too high to see any formation gas from the Arbuckle.

## **Formation Tops**

	StrataKan Exploration
	Andrews #22-1
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Formation	950' FNL & 2050' FWL
Anhydrite	751', +1144
Base	774', +1121
Topeka	2950', -1055
Heebner	3254', -1359
Toronto	3272', -1377
Douglas	3286', -1391
Brown Lime	3382', -1487
Lansing	3403', -1508
BKC	3628', -1733
Viola	3704', -1793
Simpson	3748', -1853
Arbuckle	3804', -1909
LTD	3908', -2013
RTD	3910', -2015

# **Sample Zone Descriptions**

#### LKC "D-zone"

#### (3440', -1545): Covered in DST #1

Ls – Fine to sub-crystalline with poor scattered inter-crystalline porosity, light to fair spotted oil stain in porosity, slight show of free oil when broken, very light odor, dull yellow fluorescents, 18 units hotwire.

#### LKC "F-zone"

#### (3469', -1574): Covered in DST #1

Ls – Fine crystalline, oolitic with poor to fair oomoldic and oolicastic porosity, light to fair spotted oil stain in porosity, very slight show of free oil, dull yellow fluorescents, chalky, 22 units hotwire.

#### LKC "I-zone"

#### (3542', -1647): Covered in DST #2

Ls – Fine crystalline, oolitic with poor oolicastic porosity, light oil stain with scattered light saturation, fair show of free oil when broken, very light odor, fair yellow fluorescents, good cut, 130 units hotwire.

#### LKC "J-zone"

#### (3558', -1663): Covered in DST #2

Ls – Fine crystalline, oolitic with fair oomoldic and oolicastic porosity with scattered poor inter-crystalline porosity, light to fair oil stain in porosity, slight show of free oil, light to fair odor, fair yellow fluorescents, good cut, 55 units hotwire.

#### LKC "K-zone"

#### (3588', -1693): Covered in DST #2

Ls – Fine crystalline, oolitic packstone with fair oomoldic and oolicastic porosity, light to fair oil stain and saturation in porosity, fair show of free oil when broken, fair odor, fair yellow fluorescents, good cut, 75 units hotwire.

#### Viola

#### (3613', -1761): Covered in DST #3

Chert – Mostly fresh, few weathered pieces with fair vuggy porosity, few scattered pieces of weathered dolomite with good vuggy porosity, light to heavy oil stain some oil looks very tarry, fair show of free oil on cup, light odor, dull to fair yellow fluorescents, fair to good cut, few visible gas bubbles, 63-117 units hotwire.

### Simpson Sand

#### (3770', -1875): Covered in DST #4

Ss – Quartz, clear to slightly frosted, fine to scattered medium grained, fair to well sorted, sub-rounded, fair cementation with poor to fair inter-granular porosity in cluster, light to good oil stain with light saturation, fair show of free oil, light gassy odor, many gas bubbles on break, bright yellow flourescents, excellent cut, 85 units hotwire.

#### Arbuckle

#### (3804', -1909): Covered in DST #5

Dolo – Fine to medium rhombic crystalline with fair oomoldic and inter-crystalline porosity, light to good oil stain and saturation, good show of free oil, good odor, poor to fair yellow fluorescents, good cut.

#### **Drill Stem Tests**

Trilobite Testing, Inc. "Gary Pevoteaux"

653 #

#### DST #1 LKC B thru F zones

Interval (3430' – 3485') Anchor Length 55'

IHP -1728 #

IFP -30" – Built to ½ in. 19-23 #

ISI - 30" - Dead 647 #

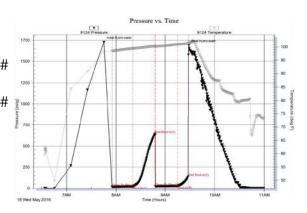
- 25" - V.W.S.B. 24-28 # 3 1000 FFP

- 10" - Dead FSI 140#

FHP **- 1690 #** 

BHT  $-101^{\circ}F$ 

Recovery: 10' Mud



#### LKC I thru K zones

Interval (3541' – 3605') Anchor Length 64'

IHP **- 1756 #** 

- 30" - Built to 1 in. IFP 20-41 #

ISI - 30" - Dead 805 #

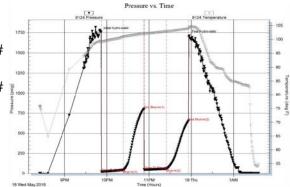
FFP -30" – Built to  $\frac{3}{4}$  in. 47-57 #

- 30" - Dead FSI

FHP **– 1711 #** 

BHT  $-104^{\circ}F$ 

Recovery: 65' Heavy Mud



#### **DST #3** Viola

Interval (3627' – 3740') Anchor Length 113'

**IHP** - 1820 #

-45" – Built to 6 in. IFP 26-94#

- 45" - Dead ISI 1148#

FFP -45" – Built to 4 in. 90-131 #

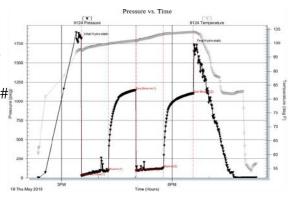
FSI - 45" - Dead 1105#

FHP **- 1734 #** 

BHT  $-104^{\circ}F$ 

Recovery: 100' WM 26% Water

100' WM 15% Water



### DST #4 Simpson Sand

Interval (3738' – 3790') Anchor Length 52'

**IHP - 1867 #** 

ISI

- 30" - B.O.B. 28 min. IFP

-45" – Built to ½ in.

– 45" – B.O.B. 16 min. FFP

FSI -60" – Built to 3 in.

- 1864 #

FHP BHT  $-108^{\circ}F$ 

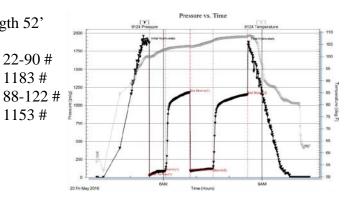
Recovery: 450' GIP

> 145' GMCO 55% Oil 120' GOCM 24% Oil

22-90#

1183#

1153#



#### Arbuckle **DST #5**

Interval (3809' – 3817') Anchor Length 8'

**IHP - 1916 #** 

IFP -10" - B.O.B. 3 min.

-30" – Built to ½ in. ISI

FFP – 15" – B.O.B. 16 min.

-45" – Built to 3 in. FSI

FHP -1830 #

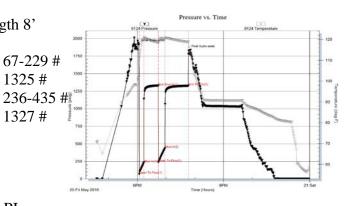
BHT -120cF



100' GCO 21.6° API

380' GWCO 55% Oil, 25% Water 125' OCW 20% Oil, 80% Water

365' Water



# **Structural Comparison**

	StrataKan Exploration	L.K. Parrish	Lesden Oil & Gas		
	Andrews #22-1	Williams #1	Mater #1		
	Sec. 22 T22s R13w	Sec. 22 T22s R13w	Sec. 22 T22s R13w		
Formation	950' FNL & 2050' FWL	NE SE NW	100' SW of NE NW NE		
Anhydrite	751', +1144	NA	NA	NA	NA
Base	774', +1121	NA	NA	NA	NA
Topeka	2950', -1055	NA	NA	NA	NA
Heebner	3254', -1359	3262', -1364	(+5)	3255', -1347	(-8)
Toronto	3272', -1377	NA	NA	NA	NA
Douglas	3286', -1391	NA	NA	NA	NA
Brown Lime	3382', -1487	NA	NA	NA	NA
Lansing	3403', -1508	3412', -1517	(+9)	3406', -1500	<b>(-8)</b>
BKC	3628', -1733	3638', -1738	(+5)	3630', -1723	<b>(-10)</b>
Viola	3704', -1793	3696', -1798	(+5)	3702', -1795	(+2)
Simpson	3748', -1853	3754', -1856	(+3)	3746', -1839	<b>(-14)</b>
Arbuckle	3804', -1909	3812', -1914	(+5)	3806', -1900	<b>(-9</b> )

# **Summary**

The location for the Andrews #22-1 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. Five Drill Stem Tests were conducted, two of which recovered commercial amounts of oil from the Simpson and Arbuckle Formations. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the Andrews #22-1 well.

#### **Recommended Perforations**

Primary:		
Arbuckle 2 <sup>nd</sup> Break	3826' – 3829'	Not Tested
Arbuckle	3804' – 3807'	<b>DST #5</b>
Secondary:		
Simpson Sand	3771' – 3776'	<b>DST #4</b>
<b>Before Abandonment:</b>		
LKC K	3589' – 3594'	<b>DST #2</b>
LKC J	3560' – 3564'	<b>DST #2</b>
	3566' – 3570'	
LKC I	3544' – 3550'	<b>DST #2</b>

Respectfully Submitted,

Jason T Alm Hard Rock Consulting, Inc.