

Geological Report

Dustbowl #1-33
700' FNL & 420' FWL
Sec. 33 T11s R32w
Logan County, Kansas



King Oil Operations

General Data

Well Data: King Oil Operations
Dustbowl #1-33
700' FNL & 420' FWL
Sec. 33 T11s R32w
Ellis County, Kansas
API # 15-109-21464-0000

Drilling Contractor: Discovery Drilling Co. Inc. Rig #1

Geologist: Jason T Alm

Spud Date: June 1, 2016

Completion Date: June 9, 2016

Elevation: 3056' Ground Level
3064' Kelly Bushing

Directions: Oakley KS, South on Hwy 83 6 mi to Apache Acre.
West 2 mi, South 1/8 mi, East into location.

Casing: 220' 8 5/8" surface casing
4720' 5 1/2" production casing

Samples: 10' wet and dry, 3900' to RTD

Drilling Time: 3700' to RTD

Electric Logs: Gemini Wireline "Gus Pfannenstiel"
CNL/CDL, DIL, MEL

Drillstem Tests: Three, Trilobite Testing, Inc. "Mike Roberts"

Problems: None

Remarks: After DST #3, background gas in the mud system
was too high to get accurate formation gas readings.

Formation Tops

Formation	King Oil Operations Dustbowl #1-33 Sec. 33 T11s R32w 700' FNL & 420' FWL
Anhydrite	2587', +477
Base	2614', +450
Topeka	3795', -731
Heebner	4017', -953
Toronto	4038', -974
Lansing	4057', -993
BKC	4349', -1285
Pawnee	4486', -1522
Myrick	4511', -1447
Fort Scott	4536', -1472
Cherokee	4564', -1500
Johnson	4595', -1531
Morrow	4630', -1566
Mississippian	4655', -1591
RTD	4720', -1656
LTD	4721', -1657

Sample Zone Descriptions

- LKC "C" zone (4090', -1026): Covered in DST #1**
 Ls – Fine to sub-crystalline, oolitic with poor to scattered fair oolitic porosity, light spotted oil stain in porosity, no show of free oil, oil looks heavy and dead in part, light brown in part, 10 units hotwire.
- LKC "E" zone (4130', -1066): Covered in DST #1**
 Ls – Fine crystalline, oolitic with poor oolitic porosity, light to fair scattered oil stain with light spotted saturation, slight show of free oil when broken, fair "sour" odor, light yellow fluorescents, good cut, 24 units hotwire.
- LKC "F" zone (4144', -1080): Covered in DST #1**
 Ls – Fine to sub-crystalline oolitic with poor oolitic and scattered fair vuggy porosity, light oil stain in porosity, slight show of free oil when broken, fair "sour" odor, light spotted yellow fluorescents, fair cut, 30 units hotwire.

- LKC "H" zone** (4209', -1145): **Covered in DST #2**
 Ls – Fine crystalline, oolitic with poor to scattered fair oolitic and oomoldic porosity, light to fair brown spotted oil stain with light brown saturation, fair show of free oil, fair to good odor, fair to bright yellow fluorescents, 100 units hotwire.
- LKC "I" zone** (4240', -1176): **Covered in DST #3**
 Ls – Fine crystalline, oolitic with poor oolitic and scattered oomoldic porosity, light oil stain with light to fair saturation, slight show of free oil, fair odor, fair spotted yellow fluorescents, 78 units hotwire.
- LKC "J" zone** (4259', -1195): **Covered in DST #3**
 Ls – Fine to sub-crystalline, oolitic with poor scattered oolitic porosity, light scattered oil stain in porosity, very light spotted saturation, show of free oil when broken, fair to good yellow fluorescents, 65 units hotwire.
- LKC "K" zone** (4294', -1230): **Not Tested**
 Ls – Sub-crystalline, oolitic with very poor scattered oolitic porosity, light spotted oil stain in porosity, no show of free oil, no odor, mostly dense.
- Johnson** (4595', -1531): **Not Tested**
 Ls – Fine to Medium crystalline with poor to scattered fair vuggy and inter-crystalline porosity, light to fair oil stain with light spotted saturation, slight show of free oil, good yellow fluorescents, excellent cut.

Structural Comparison

Formation	King Oil Operations Dustbowl #1-33 Sec. 33 T11s R32w 700' FNL & 420' FWL	Ranken Energy Corporation Dreiling #1-28 Sec. 28 T11s R32w 2250' FSL & 600' FWL	New Gulf Operating Hockersmith #1-34 Sec. 34 T11s R32w 143' FNL & 330' FWL	
Anhydrite	2587', +477	NA	2580', +479	(-2)
Base	2614', +450	NA	2609', +450	FL
Topeka	3795', -731	3808', -726	3799', -740	(+9)
Heebner	4017', -953	4032', -950	4027', -968	(+15)
Toronto	4038', -974	4052', -970	4055', -996	(+18)
Lansing	4057', -993	4078', -996	4072', -1013	(+20)
BKC	4349', -1285	4370', -1288	4348', -1289	(+4)
Pawnee	4486', -1522	4512', -1430	4486', -1427	(+5)
Myrick	4511', -1447	4540', -1458	4516', -1457	(+10)
Fort Scott	4536', -1472	4566', -1484	4541', -1482	(+10)
Cherokee	4564', -1500	4598', -1513	4568', -1509	(+9)
Johnson	4595', -1531	4628', -1546	4601', -1542	(+11)
Morrow	4630', -1566	4665', -1583	4634', -1577	(+11)
Mississippian	4655', -1591	4682', -1600	4668', -1609	(+18)

Summary

The location for the Dustbowl #1-33 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. Three Drill Stem Tests were conducted, one of which recovered commercial amounts of oil from the LKC "I" and "J" zones. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the Dustbowl #1-33 well.

Recommended Perforations

Primary:

Johnson zone	4606' – 4611'	Not Tested
	4618' – 4622'	

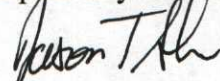
Secondary:

LKC J	4261' – 4263'	DST #3
LKC I	4242' – 4245'	DST #3

Before Abandonment:

LKC F	4146' – 4148'	DST #1
LKC C	4093' – 4096'	DST #2

Respectfully Submitted,

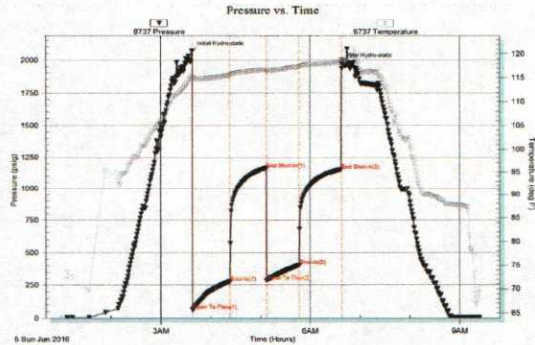

Jason T Alm
Hard Rock Consulting, Inc.

Drill Stem Tests
Trilobite Testing, Inc.
"Mike Roberts"

DST #1 LKC C – F zones

Interval (4074' – 4160') Anchor Length 84'

IHP	- 2068 #	
IFP	- 45" – B.O.B. 10 min.	61-280 #
ISI	- 45" – Dead	1165 #
FFP	- 45" – B.O.B. 10 min.	284-403 #
FSI	- 45" – Dead	1153 #
FHP	- 1974 #	
BHT	- 118°F	

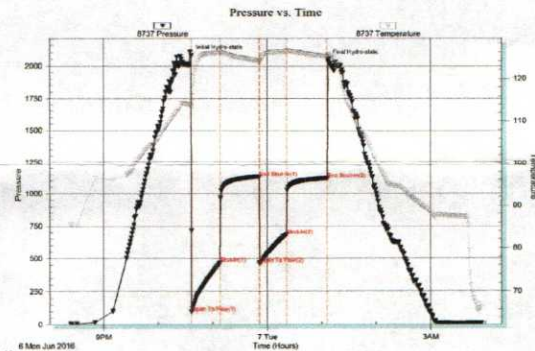


Recovery:	3" Clean Oil	
	10' MCOW	40% Oil, 40% Water
	248' WCOM	30% Oil, 20% Water
	186' OCMW	5% Oil, 85% Water
	312' MCW	95% Water

DST #2 LKC H zone

Interval (4182' – 4225') Anchor Length 43'

IHP	- 2075 #	
IFP	- 30" – B.O.B. 2 min.	97-465 #
ISI	- 45" – Dead	1132 #
FFP	- 30" – B.O.B. 4 min.	463-681 #
FSI	- 45" – Dead	1121 #
FHP	- 2040 #	
BHT	- 125°F	

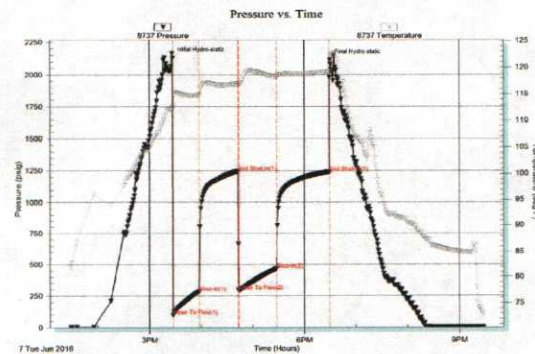


Recovery:	288' MCW	50% Water
	1118' MCW	95% Water

DST #3 LKC I – J zones

Interval (4222' – 4275') Anchor Length 53'

IHP	- 2123 #	
IFP	- 30" – B.O.B. 3 min.	96-282 #
ISI	- 45" – B.O.B. 9 min.	1244 #
FFP	- 45" – B.O.B. 6 min.	294-466 #
FSI	- 60" – Built to 1 in.	1240 #
FHP	- 2113 #	
BHT	- 121°F	



Recovery:	1240' GIP	
	310' GCO	90% Oil
	558' GCO	60% Oil
	124' OCWM	10% Oil, 10% Water
	188' OWGCM	10% Oil, 20% Water