

Well Name: Curtis Unruh #1-5
 Surface Location: Sec. 5 - T31S - R18W
 Bottom Location: API: 15-033-21779-00-00
 License Number: 34434
 Spud Date: 9/29/2017
 Region: Comanche County
 Drilling Completed: 10/8/2017
 Surface Coordinates: 1445' FNL & 2199' FVL
 Bottom Coordinates: 2150.00ft
 Ground Elevation: 2160.00ft
 K.B. Elevation: 5620.00ft
 Logged Interval: 5620.00ft To: 5624.00ft
 Total Depth: 5620.00ft
 Formation: Mississippian
 Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR
 Company: Edison Operating Company LLC
 Address: 8100 E. 22nd St. North
 Building 1900
 Wichita, KS 67226
 Contact Geologist: David Withrow
 Contact Phone Nbr: 316.613.1544
 Well Name: Curtis Unruh #1-5
 Location: Sec. 5 - T31S - R18W
 API: 15-033-21779-00-00
 Pool: Kansas
 State: Kansas
 Field: USA
 Country: USA

LOGGED BY
 Company: Edison Operating Company LLC
 Address: 8100 E. 22nd St. North
 Building 1900
 Wichita, KS 67226
 Phone Nbr: 316.650.9677
 Logged By: Geologist
 Name: Adam T. Kennedy

REMARKS

After review of open hole logs, DST results, and consulting log engineer, it was decided to run 5 1/2" production pipe to further test the Mississippian and Altamont for commercial quantities of oil and gas. The samples were saved and will be preserved at the sample library located in Wichita, Kansas.

Respectfully submitted,

Adam T. Kennedy
 Petroleum Geologist

GENERAL INFORMATION

Service Companies

Drilling Contractor: Southwind Drilling - Rig #8
 Tool Pusher: Bill Sanders
 Daylight Driller: Doug Roberts
 Evening Driller: Andrew Delgado
 Morning Driller: Carlos Martinez
 Gas Detector: Bluestorm Environmental
 Engineer: Keith Reavis
 Unit: 5048
 Operational By: 3000'

Drilling Fluid: Mud-Co/Service Mud Inc.
 Engineers: Brad Borcia
 Logging Company: Eil Wireline
 Engineer: Jason C.
 Logs Ran: DUCP MICRO SON DI
 Testing Company: Eagle Testers
 Tester: Gene Buders

Deviation Survey		Survey	
Depth	327		0
	17.778		3/4 deg
	2252		1 deg
	5100		1 deg
	5624		1 deg

Pipe Strap		Pipe Strap	
Depth	0	313	8
No Strap	0	5100	4787
		5624	109.75

Bit Record							
Bit #	Size	Make	Type	Serial Number	Depth In	Depth Out	Feet
1	7 7/8	JZ	RH	0	313	5100	4787
2	7 7/8	JZ	FR	0	5100	5624	524
							30

Surface Casing

Ran 8 joints new 13 3/8" casing, tally @ 313' set @ 328'. Used 350 sacks of premium plus, 290cc, 1/4# poly flake, cement circulated, by Basic, (ticket #1718), plug down @ 06:30 hrs 9.29.17.

Production Casing

Ran 130 joints of new 17 1/2" casing, tally @ 5619'. Used 190 sacks of AA2, 50 sacks 60/40 poz, 4% gel, 30 sacks rathole 20 sacks mousehole, cemented by Basic (Ticket #15511), job complete @ 5:30 am 10.10.17.

DAILY DRILLING REPORT

Date	0700 Hrs Depth	Previous 24 Hours of Operations
10.4.17	4178'	Drilling and connections Topeka. Adams T. Kennedy on location @ 1200 hrs 10.4.17. Currently drilling ahead through Heebner, Douglas. WOB: 35k RPM; 70 PP: 1150 DMC: \$796.51 CMC: \$8,984.71
10.5.17	4640'	Drilling and connections Douglas, Lansing. CFS @ 4485'. Drilling and connections through Lansing "I". WOB: 35k RPM; 80 PP: 1000 DMC: \$356.71 CMC: \$9,341.42
10.6.17	5025'	Drilling and connections Lansing "J" through Marmaton, Cherokee. Down for minor repairs to mud pump. Currently short tripping 40+ stands above Mississippian in preparation to DST the Miss. WOB: 35k RPM; 80 PP: 1000 DMC: \$3,761 CMC \$13,103.17.
10.7.17	5100'	Drilling and connections Cherokee through Miss. CFS @ 5079'. 5100'. Shows warrant test. Trip out of hole for DST #1. Slight delay due to high winds from thunderstorm, conduct DST #1 trip in hole with bit, prepare to drill ahead. WOB: 35k RPM; 80 PP: 1200 DMC: \$691.47 CMC: \$13,794.64
10.8.17	5450'	Drilling and connections Miss. Kinderhook. Currently drilling ahead through Kinderhook. WOB: 40k RPM; 80 PP: 1200 DMC: \$2,073.43 CMC: \$15,868.07
10.9.17	5620' - RTD 5624' - LTD	Drilling and connections Kinderhook, Viola. CFS @ 5473'. Rathole ahead to RTD of 5620'. RTD reached 2000 hours 10.8.17. Trip out of hole and conduct logging operations. Logging completed 07:03 hrs 10.9.17. Geologist off location 0900 hrs 10.9.17. WOB: 40k RPM; 80 PP: 1200 DMC: \$-207.23 CMC: \$15,660.84.

WELL COMPARISON SHEET

Well Name	Depth	Formation	Notes
Curtis Unruh #1-5	4178'	Topeka	
Curtis Unruh #1-5	4640'	Douglas	
Curtis Unruh #1-5	5025'	Lansing	
Curtis Unruh #1-5	5100'	Cherokee	
Curtis Unruh #1-5	5450'	Missouri	
Curtis Unruh #1-5	5620'	Kinderhook	
Curtis Unruh #1-5	5624'	Viola	

ROCK TYPES

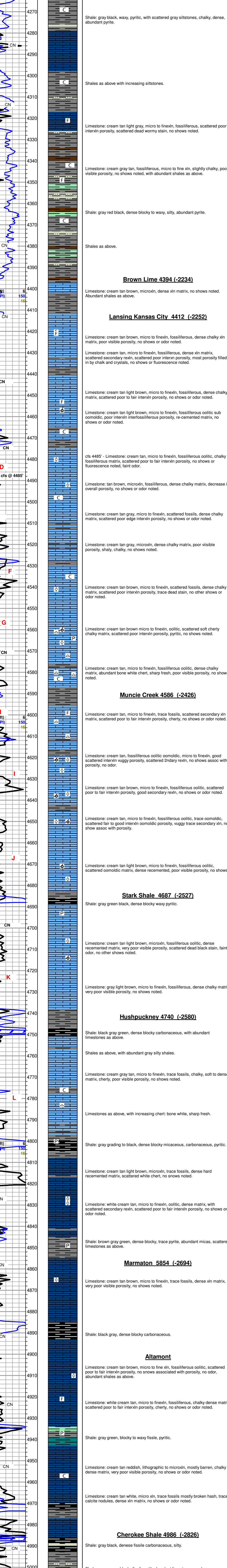
DOL2	LMST2	SHALE CAR	SHALE PUR
DOL4	SILTSTONE	SHALE GRN	SHALE TEAL
LMST1	SHALE BRN	SHALE GRN	SHALE YEL

ACCESSORIES

MINERAL	FOSSIL	STRINGER	TEXTURE
▲ Chert, dark	F Fossils < 20%	■ Shale Gray	C Chalky
▲ Glauconite	○ Collic		
▲ Nodules	○ Comoidic		
P Pyrite	× Sponge Spicules		
◄ Chert White			

OTHER SYMBOLS

MPS	DST
□ Daily Report	■ DST1
□ Digital Photo	■ DST2
□ Document	■ DST3
□ Folder	■ Core
□ Link	■ Tail pipe
□ Vertical Log File	
□ Horizontal Log File	
□ Core Log File	
□ Drill Cuttings Rpt	



dST 1.jpg

DRILL STEM TEST REPORT

Edison Operating Company LLC
 8100 E. 22nd St. North
 Wichita, Kansas 67226
 ATTN: Adam Koenneally

5-319-18W Comanche
 Curtis Unruh #1-5
 Job Title: DST #1
 Test Start: 2017.10.07 @ 12:26:00

GENERAL INFORMATION:
 Formation: Mississippian
 Deviation: No Whistock
 Time Tool Opened: 02:52:00
 Time Test Ended: 00:00:00
 Interval: 5650.0 ft (KB) To: 5100.00 ft (KB) (TVS)
 Total Depth: 7100.00 ft (KB)
 Hole Diameter: 6.000 inches Hole Condition: Fair

Series #: 9119
 Press @ Run Depth: 850.33 psig @ 5095.28 ft (KB)
 Start Date: 2017.10.07
 End Date: 2017.10.07
 Time On Btm: 20:12:00
 Capacity: 5000.00 psig
 Unit No.: 1
 Time On Btm: 2017.10.07 @ 14:53:00
 Time Off Btm: 2017.10.07 @ 17:50:00

TEST COMMENT:
 1st Opening 10 Minutes weak blow built to 2 inches
 1st Shut-in 40 Minutes no blow back
 2nd Opening 30 Minutes weak blow built to 3 inches
 2nd Shut-in 90 Minutes no blow back

Pressure (psi)	Time (Min)	Pressure (psi)	Time (Min)	Annotation
0	2815.13	117.12	1	Initial Hydro-static
1	76.09	116.44	1	Down To Flow (1)
11	73.86	116.34	1	Shut-In (1)
54	83.04	117.43	1	End Shut-In (1)
66	77.19	117.82	1	Down To Flow (2)
196	81.42	118.63	1	Shut-In (2)
178	85.33	119.89	1	End Shut-In (2)
177	2479.56	120.27	1	Final Hydro-static

Recovery	Volume (gal)
50.00	0.70

Gas Rates	Gas (mcf/hr)	Pressure (psig)	Gas Rate (MMcf)

Printed: 2017.10.07 @ 08:27:09