

Air Drilling Specialist  
Oil & Gas Wells

**THORNTON AIR ROTARY, LLC**  
Office Phone: 620-879-2073

PO Box 449  
Caney, KS 67333

Date Started	<b>12/27/2011</b>
Date Completed	<b>12/29/2011</b>

Well No.	Operator	Lease	A.P.I #	County	State
<b>14K-11</b>	<b>Layne Energy Operating</b>	<b>Osborn</b>	<b>15-125-32151-00-00</b>	<b>Montgomery</b>	<b>Kansas</b>

1/4	1/4	1/4	Sec.	Twp.	Rge.
			<b>11</b>	<b>32</b>	<b>13 E</b>

Driller	Type/Well	Cement Used	Casing Used	Depth	Size of Hole
<b>Sean/Chris</b>		<b>Consolidated</b>	<b>64' 8 5/8</b>	<b>1506</b>	<b>6 3/4</b>

### Formation Record

0-2	DIRT	963-1003	SANDY SHALE		
2-20	CLAY	1003-1021	SHALE		
20-24	RIVERROCK	1021-1043	LIME (OSWEGO)		
24-27	SHALE	1043-1053	BLK SHALE (SUMMIT)		
27-167	LIME	1053-1067	LIME		
167-215	SHALE	1067-1073	BLK SHALE (EXCELLO)		
215-306	SANDY SHALE	1073-1074	COAL (MULKY)		
306-311	LIME	1074-1079	LIME		
311-419	SHALE	1079-1100	SHALE		
419-430	SANDY SHALE	1100-1101	COAL (BEVIER)		
430-432	CLAY	1101-1115	SHALE		
432-441	SANDY SHALE	1115-1119	LIME (VERDIGRIS)		
441-442	COAL	1119-1120	COAL (CROWBERG)		
442-459	SANDY SHALE	1120-1156	SHALE		
459-500	SHALE	1156-1157	COAL (MINERAL)		
500-505	LMY SHALE	1157-1170	SHALE		
505-554	LIME	1170-1177	SAND		
554-571	SHALE	1177-1182	SHALE		
571-634	SAND	1182-1196	SAND		
634-649	SHALE	1196-1286	SHALE		
649-681	LIME	1286-1370	SANDY SHALE		
681-750	SHALE	1370-1402	SAND		
750-800	SANDY SHALE	1373	TRIPPED / TRICONE		
800-810	LIME	1402-1422	SHALE		
810-825	SHALE	1422-1441	SAND / OIL ODOR		
834	WENT TO WATER	1441-1497	CHAT (MISS.)		
825-910	SAND	1497-1506	LIME		
910-936	SHALE	1506	TD		
936-958	LIME (PAWNEE)				
958-963	BLACK SHALE				