

Air Drilling Specialist  
Oil & Gas Wells

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

PO Box 449  
Caney, KS 67333

Date Started	<b>10/10/2011</b>
Date Completed	<b>10/13/2011</b>

Well No.	Operator	Lease	A.P.I #	County	State
<b>14-11</b>	<b>Layne Energy Operating</b>	<b>Osburn</b>	<b>15-125-32136-00-00</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>Billy</b>	<b>Gas</b>	<b>Rig</b>	<b>86.1' 8 5/8</b>	<b>1402</b>	<b>6 3/4</b>

### Formation Record

0-6	DIRT	794-807	SHALE	1125-1127	LIME (V-LIME)
6-11	CLAY	807-817	LIME	1127-1129	SHALE
11-19	QUICK SAND / WET	817-820	BLACK SHALE	1129-1130	COAL (CROWBERG)
19-23	SHALE	820-826	LMY SHALE	1130-1159	SHALE
23-89	LIME	826-832	LIME	1136	GAS TEST - NO GAS
89-111	LMY SHALE	832-857	SHALE	1159-1160	COAL (MINERAL)
111-179	LIME	857-871	SNAD	1160-1169	SHALE
179-200	SHALE	871-877	SANDY SHALE	1161	GAS TEST - NO GAS
200-230	SAND / DAMP	877-887	SAND	1169-1170	COAL
230-387	SHALE	886	GAS TEST - NO GAS	1170-1209	SHALE
387-390	BLACK SHALE	887-943	SANDY SHALE	1209-1210	COAL
390-429	LMY SHALE	943-944	BLACK SHALE	1210-1220	SANDY SHALE
429-439	SAND	944-946	SHALE	1220-1227	SHALE
439-440	COAL	946-968	LIME (PAWNEE)	1227-1228	BLK SHALE / COAL
440-448	SHALE	968-973	BLACK SHALE	1228-1309	SHALE
448-449	COAL	973-998	SANDY SHALE	1309-1319	RED SHALE
449-465	LIME	986	GAS TEST - NO GAS	1319-1383	SHALE
465-475	SHALE	998-1029	SHALE	1383-1402	SAND
475-500	LIME	1029-1052	LIME (OSWEGO)	1389	LOTS OF GAS, 22#, 2"
500-511	SHALE	1052-1060	BLK SHALE (SUMMIT)	1402	TD
511-563	LIME	1060-1076	LIME		
563-570	SHALE	1061	GAS TEST - NO GAS		
570-586	SAND / DAMP	1076-1081	BLACK SHALE		
586-590	SANDY SHALE	1081-1082	COAL (MULKY)		
590-633	SAND	1082-1091	LIME		
633-647	SHALE	1086	GAS TEST - NO GAS		
647-688	LIME / DAMP	1091-1107	SHALE		
688-752	SHALE	1107-1108	COAL (BEVIER)		
752-763	LIME	1108-1125	SHALE		
763-794	SAND	1111	GAS TEST - NO GAS		