

Air Drilling Specialist
Oil & Gas Wells

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

PO Box 449
Caney, KS 67333

Date Started	10/20/2011
Date Completed	10/25/2011

Well No.	Operator	Lease	A.P.I #	County	State
4N-2-WIW	Layne Energy Operating	Shultz	15-125-32141-00-00	Montgomery	Kansas

1/4	1/4	1/4	Sec.	Twp.	Rge.
			2	31	14 E

Driller	Type/Well	Cement Used	Casing Used	Depth	Size of Hole
Brantley		4	21.8' 8 5/8	1287	6 3/4

Formation Record

0-4	DIRT	801-887	SHALE	1180-1187	SAND / NO ODOR
4-80	LIME	887-888	COAL (MULBERRY)	1187-1200	BROWN SAND /LT ODOR
80-308	SHALE	888-892	SHALE	1200-1206	SANDY SHALE
308-420	SAND / DAMP	892-918	LIME (PAWNEE)	1206-1209	COAL
361	WENT TO WATER	918-921	BLACK SHALE	1209-1287	SANDY SHALE
420-423	SANDY SHALE	921-925	LIME	1287	TD
423-429	LIME	925-932	BLK SHALE (LEXINGTON)		
429-441	SHALE	932-952	SANDY SHALE		
441-472	LIME	952-957	SAND		
472-477	SHALE	957-976	SANDY SHALE		
477-567	LIME	976-1005	LIME (OSWEGO)		
567-576	SAND	1005-1014	BLK SHALE (SUMMIT)		
576-590	SANDY SHALE	1014-1019	LIME		
590-600	SAND	1019-1024	BLK SHALE (EXCELLO)		
600-622	LIME	1024-1025	COAL (MULKY)		
622-628	SANDY SHALE	1025-1030	LIME		
628-658	LIME	1030-1032	SHALE		
658-671	SHALE	1032-1042	SANDY SHALE		
671-680	BLACK SHALE	1042-1071	SHALE		
680-687	LMY SHALE	1071-1073	COAL		
687-694	LIME	1073-1087	SHALE		
694-699	SHALE	1087-1090	LIME		
699-733	LIME	1090-1092	SHALE		
733-738	SAND	1092-1093	COAL (CROWBERG)		
738-750	SANDY SHALE	1093-1100	SHALE		
750-756	SHALE	1100-1110	SAND		
756-771	LIME	1110-1134	SHALE		
771-774	BLACK SHALE	1134-1136	COAL		
774-779	SHALE	1136-1166	SHALE		
779-801	SAND	1166-1180	SANDY SHALE		