

Directional Survey Report

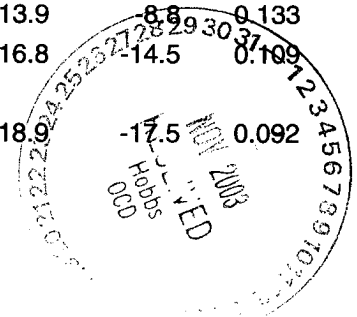
Well ID: 819430

Well Bore: Original Well Bore

30-025-35481
Chesapeake Operating

Well Name: Markham #33
H1-L-33-145-35e
Plane of Vertical Section: 0.0 degrees
1650/S & 1660/W

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
** Tieln	203.0	0.25	0.0	0.0					
	436.0	0.25							
	897.0	0.75							
	1415.0	0.75							
	1876.0	0.75							
	2413.0	0.25							
	2922.0	0.75							
	3073.0	0.75							
	3290.0	0.75							
	3644.0	1.00							
** Tieln	3866.0	0.75							
	4451.0	1.00	144.0	4450.0	S 4.7	E 6.2		-4.7	
	MSS	4636.0	0.50	105.0	4635.0	S 6.2	E 7.9	10.1	-6.2 0.372
	MSS	5047.0	0.25	354.0	5046.0	S 5.7	E 9.6	11.2	-5.7 0.154
	MSS	5550.0	0.50	129.0	5549.0	S 6.0	E 11.2	12.7	-6.0 0.139
	MSS	5929.0	0.75	99.0	5928.0	S 7.5	E 14.9	16.7	-7.5 0.107
	MSS	6310.0	0.25	109.0	6308.9	S 8.1	E 18.2	19.9	-8.1 0.133
	MSS	6720.0	0.50	309.0	6718.9	S 7.3	E 17.6	19.1	-7.3 0.180
	MSS	7162.0	0.25	159.0	7160.9	S 7.0	E 16.5	17.9	-7.0 0.165
		7529.0	0.50	269.0	7527.9	S 7.8	E 15.1	17.0	-7.8 0.172
		8022.0	0.25	224.0	8020.9	S 8.6	E 12.2	14.9	-8.6 0.075
		8496.0	0.25	359.0	8494.9	S 8.3	E 11.5	14.2	-8.3 0.097
		8906.0	0.00	359.0	8904.9	S 7.4	E 11.5	13.7	-7.4 0.061
		9283.0	0.50	209.0	9281.9	S 8.8	E 10.7	13.9	-8.8 0.133
		9756.0	1.00	199.0	9754.9	S 14.5	E 8.3	16.8	-14.5 0.109
		9945.0	1.00	209.0	9943.8	S 17.5	E 7.0	18.9	-17.5 0.092
		10322.0	1.00						
		10637.0	1.75						
		11070.0	2.00						
		11577.0	1.50						



K2

Directional Survey Report

Chesapeake Operating

Well ID: 819430

Well Name: Markham 1-33

Well Bore: Original Well Bore

Plane of Vertical Section: 0.0 degrees

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Closure	Vertical Section	Dog Leg Severity
					N-S	E-W			
	12075.0	2.50							
	12185.0	2.25							
	12432.0	1.25							
	12746.0	0.75							
	13310.0	0.75							
	13668.0	0.75							

Calculations using Minimum Curvature Method

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