



30-015-41322

RKI Exploration & Production

Eddy County (NM83E)

Sec 16-T26S-R30E

RDX 16-18H

Wellbore #1

Survey: MWD Surveys

Standard Survey Report

18 June, 2013

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Design:	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	177.41

Survey Program	Date 2013/06/18			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
113.0	12,490.0	MWD Surveys (Wellbore #1)	MWD	MWD - Standard

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
113.0	0.50	101.90	113.0	-0.1	0.5	0.1	0.44	0.44	0.00
First MWD Survey									
146.0	0.40	136.90	146.0	-0.2	0.7	0.2	0.87	-0.30	106.06
176.0	0.60	104.00	176.0	-0.3	0.9	0.4	1.14	0.67	-109.67
206.0	0.70	107.20	206.0	-0.4	1.3	0.5	0.35	0.33	10.67
236.0	0.70	116.50	236.0	-0.6	1.6	0.6	0.38	0.00	31.00
266.0	1.20	102.10	266.0	-0.7	2.1	0.8	1.83	1.67	-48.00
296.0	1.30	102.40	296.0	-0.8	2.7	1.0	0.33	0.33	1.00
326.0	1.50	102.60	326.0	-1.0	3.4	1.2	0.67	0.67	0.67
356.0	1.20	107.20	356.0	-1.2	4.1	1.4	1.06	-1.00	15.33
386.0	1.20	111.20	386.0	-1.4	4.7	1.6	0.28	0.00	13.33
417.0	1.30	100.30	416.9	-1.6	5.3	1.8	0.83	0.32	-35.16
448.0	1.40	107.90	447.9	-1.7	6.1	2.0	0.66	0.32	24.52
478.0	1.50	107.70	477.9	-2.0	6.8	2.3	0.33	0.33	-0.67
509.0	1.40	108.00	508.9	-2.2	7.5	2.6	0.32	-0.32	0.97
539.0	1.60	110.50	538.9	-2.5	8.3	2.9	0.70	0.67	8.33
570.0	1.60	107.00	569.9	-2.8	9.1	3.2	0.32	0.00	-11.29
602.0	1.30	113.70	601.9	-3.0	9.8	3.5	1.08	-0.94	20.94
633.0	1.30	117.00	632.9	-3.3	10.5	3.8	0.24	0.00	10.65
663.0	1.40	113.30	662.9	-3.6	11.1	4.1	0.44	0.33	-12.33
694.0	1.50	114.70	693.9	-4.0	11.8	4.5	0.34	0.32	4.52
726.0	1.60	127.20	725.9	-4.4	12.6	5.0	1.10	0.31	39.06
756.0	1.60	128.40	755.8	-4.9	13.2	5.5	0.11	0.00	4.00
787.0	1.60	127.00	786.8	-5.4	13.9	6.1	0.13	0.00	-4.52
817.0	1.60	129.70	816.8	-6.0	14.6	6.6	0.25	0.00	9.00
908.0	1.30	129.00	907.8	-7.4	16.4	8.2	0.33	-0.33	-0.77
938.0	1.40	126.10	937.8	-7.9	16.9	8.6	0.40	0.33	-9.67
969.0	1.20	121.90	968.8	-8.2	17.5	9.0	0.71	-0.65	-13.55
1,000.0	1.70	129.00	999.8	-8.7	18.1	9.5	1.71	1.61	22.90
1,030.0	1.40	108.20	1,029.7	-9.1	18.8	9.9	2.11	-1.00	-69.33
1,061.0	1.60	124.20	1,060.7	-9.5	19.5	10.3	1.49	0.65	51.61
1,091.0	1.70	102.80	1,090.7	-9.8	20.3	10.7	2.07	0.33	-71.33
1,122.0	1.50	106.10	1,121.7	-10.0	21.2	11.0	0.71	-0.65	10.65
1,153.0	1.70	107.20	1,152.7	-10.3	22.0	11.2	0.65	0.65	3.55
1,184.0	1.60	119.30	1,183.7	-10.6	22.8	11.6	1.17	-0.32	39.03
1,215.0	1.40	107.20	1,214.7	-10.9	23.5	12.0	1.20	-0.65	-39.03
1,246.0	1.30	107.00	1,245.7	-11.1	24.2	12.2	0.32	-0.32	-0.65
1,277.0	1.50	117.40	1,276.7	-11.4	24.9	12.6	1.04	0.65	33.55

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec.16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,307.0	1.60	101.00	1,306.7	-11.7	25.7	12.8	1.51	0.33	-54.67
1,338.0	1.10	96.10	1,337.6	-11.8	26.4	13.0	1.65	-1.61	-15.81
1,369.0	1.00	102.40	1,368.6	-11.9	27.0	13.1	0.49	-0.32	20.32
1,400.0	1.10	105.20	1,399.6	-12.0	27.5	13.3	0.36	0.32	9.03
1,431.0	0.90	71.80	1,430.6	-12.0	28.0	13.3	1.95	-0.65	-107.74
1,463.0	1.00	92.00	1,462.6	-12.0	28.6	13.3	1.09	0.31	63.13
1,492.0	0.90	50.60	1,491.6	-11.8	29.0	13.1	2.34	-0.34	-142.76
1,523.0	0.60	56.50	1,522.6	-11.6	29.3	12.9	1.00	-0.97	19.03
1,553.0	1.10	60.90	1,552.6	-11.4	29.7	12.7	1.68	1.67	14.67
1,581.0	0.60	43.90	1,580.6	-11.1	30.0	12.5	1.98	-1.79	-60.71
1,611.0	0.50	34.60	1,610.6	-10.9	30.2	12.3	0.45	-0.33	-31.00
1,643.0	0.90	79.20	1,642.6	-10.7	30.5	12.1	2.02	1.25	139.38
1,675.0	1.00	39.80	1,674.6	-10.5	31.0	11.9	2.02	0.31	-123.13
1,707.0	0.80	39.70	1,706.6	-10.1	31.3	11.5	0.63	-0.63	-0.31
1,740.0	1.10	59.30	1,739.6	-9.8	31.7	11.2	1.33	0.91	59.39
1,771.0	1.10	53.40	1,770.6	-9.4	32.2	10.9	0.37	0.00	-19.03
1,803.0	1.30	45.50	1,802.6	-9.0	32.7	10.5	0.81	0.63	-24.69
1,835.0	1.40	14.50	1,834.6	-8.4	33.1	9.8	2.27	0.31	-96.88
1,866.0	1.10	32.30	1,865.6	-7.7	33.3	9.2	1.57	-0.97	57.42
1,897.0	1.00	359.20	1,896.6	-7.2	33.5	8.7	1.95	-0.32	-106.77
1,929.0	0.80	3.40	1,928.6	-6.7	33.5	8.2	0.66	-0.63	13.13
1,960.0	1.10	345.30	1,959.6	-6.2	33.4	7.7	1.36	0.97	-58.39
1,993.0	1.20	6.80	1,992.5	-5.6	33.4	7.1	1.33	0.30	65.15
2,024.0	1.30	341.70	2,023.5	-4.9	33.3	6.4	1.78	0.32	-80.97
2,056.0	1.20	8.20	2,055.5	-4.2	33.2	5.7	1.82	-0.31	82.81
2,087.0	1.30	347.30	2,086.5	-3.6	33.2	5.1	1.50	0.32	-67.42
2,119.0	0.70	356.40	2,118.5	-3.0	33.1	4.5	1.93	-1.88	28.44
2,151.0	1.10	326.50	2,150.5	-2.6	32.9	4.1	1.89	1.25	-93.44
2,182.0	1.00	313.00	2,181.5	-2.1	32.6	3.6	0.86	-0.32	-43.55
2,214.0	0.50	315.30	2,213.5	-1.8	32.3	3.3	1.57	-1.56	7.19
2,246.0	0.90	336.60	2,245.5	-1.5	32.1	3.0	1.47	1.25	66.56
2,278.0	1.10	321.40	2,277.5	-1.0	31.8	2.5	1.03	0.63	-47.50
2,313.0	0.80	287.00	2,312.5	-0.7	31.3	2.1	1.80	-0.86	-98.29
2,345.0	1.40	266.10	2,344.5	-0.7	30.7	2.1	2.23	1.88	-65.31
2,376.0	1.80	276.60	2,375.5	-0.6	29.9	2.0	1.59	1.29	33.87
2,405.0	1.80	257.80	2,404.5	-0.7	29.0	2.0	2.03	0.00	-64.83
2,437.0	1.70	252.90	2,436.4	-0.9	28.0	2.2	0.56	-0.31	-15.31
2,468.0	1.50	249.40	2,467.4	-1.2	27.2	2.4	0.72	-0.65	-11.29
2,505.0	1.60	256.40	2,504.4	-1.5	26.3	2.7	0.58	0.27	18.92
2,537.0	1.90	259.70	2,536.4	-1.7	25.3	2.8	0.99	0.94	10.31
2,569.0	2.40	252.40	2,568.4	-2.0	24.1	3.1	1.78	1.56	-22.81
2,600.0	2.20	255.00	2,599.4	-2.3	23.0	3.4	0.73	-0.65	8.39
2,632.0	1.80	254.60	2,631.3	-2.6	21.9	3.6	1.25	-1.25	-1.25
2,664.0	1.80	251.80	2,663.3	-2.9	20.9	3.9	0.27	0.00	-8.75
2,696.0	1.80	257.30	2,695.3	-3.2	19.9	4.1	0.54	0.00	17.19
2,727.0	1.80	259.70	2,726.3	-3.4	19.0	4.2	0.24	0.00	7.74
2,759.0	2.00	253.10	2,758.3	-3.6	18.0	4.5	0.93	0.63	-20.63
2,791.0	1.80	248.00	2,790.3	-4.0	17.0	4.8	0.82	-0.63	-15.94
2,823.0	1.80	243.00	2,822.2	-4.4	16.0	5.1	0.49	0.00	-15.63
2,854.0	1.40	230.90	2,853.2	-4.9	15.3	5.6	1.68	-1.29	-39.03
2,886.0	1.20	242.90	2,885.2	-5.3	14.7	5.9	1.05	-0.63	37.50
2,918.0	1.10	228.80	2,917.2	-5.6	14.2	6.3	0.94	-0.31	-44.06
2,949.0	1.00	211.40	2,948.2	-6.1	13.8	6.7	1.07	-0.32	-56.13
2,981.0	1.10	207.90	2,980.2	-6.6	13.5	7.2	0.37	0.31	-10.94

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM/2003.21 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,013.0	0.80	203.80	3,012.2	-7.0	13.3	7.6	0.96	-0.94	-12.81
3,044.0	1.00	198.40	3,043.2	-7.5	13.1	8.1	0.70	0.65	-17.42
3,076.0	1.20	165.70	3,075.2	-8.1	13.1	8.7	2.03	0.63	-102.19
3,108.0	1.30	154.10	3,107.2	-8.7	13.4	9.3	0.85	0.31	-36.25
3,140.0	1.70	157.40	3,139.2	-9.5	13.7	10.1	1.28	1.25	10.31
3,171.0	1.80	144.80	3,170.2	-10.3	14.2	11.0	1.28	0.32	-40.65
3,203.0	1.80	136.20	3,202.1	-11.1	14.8	11.8	0.84	0.00	-26.88
3,235.0	1.90	138.80	3,234.1	-11.9	15.5	12.5	0.41	0.31	8.13
3,267.0	2.10	145.30	3,266.1	-12.7	16.2	13.5	0.94	0.63	20.31
3,298.0	2.10	140.20	3,297.1	-13.6	16.9	14.4	0.60	0.00	-16.45
3,330.0	2.00	134.80	3,329.1	-14.5	17.6	15.3	0.68	-0.31	-16.88
3,363.0	1.90	131.60	3,362.0	-15.3	18.5	16.1	0.45	-0.30	-9.70
3,394.0	1.80	134.10	3,393.0	-15.9	19.2	16.8	0.41	-0.32	8.06
3,425.0	1.70	115.90	3,424.0	-16.5	20.0	17.4	1.81	-0.32	-58.71
3,437.0	1.90	118.10	3,436.0	-16.6	20.3	17.5	1.76	1.67	18.33
3,494.0	1.60	132.80	3,493.0	-17.6	21.7	18.6	0.94	-0.53	25.79
3,526.0	1.60	123.50	3,525.0	-18.2	22.4	19.2	0.81	0.00	-29.06
3,557.0	1.40	121.40	3,556.0	-18.6	23.1	19.6	0.67	-0.65	-6.77
3,589.0	1.30	117.70	3,588.0	-19.0	23.7	20.0	0.41	-0.31	-11.56
3,621.0	1.60	116.50	3,619.9	-19.4	24.5	20.4	0.94	0.94	-3.75
3,653.0	1.40	113.00	3,651.9	-19.7	25.2	20.8	0.69	-0.63	-10.94
3,684.0	1.50	124.00	3,682.9	-20.1	25.9	21.2	0.95	0.32	35.48
3,716.0	1.80	120.50	3,714.9	-20.6	26.7	21.8	0.99	0.94	-10.94
3,748.0	1.40	112.80	3,746.9	-21.0	27.5	22.2	1.42	-1.25	-24.06
3,780.0	1.10	62.00	3,778.9	-21.0	28.1	22.2	3.46	-0.94	-158.75
3,811.0	1.10	62.70	3,809.9	-20.7	28.6	22.0	0.04	0.00	2.26
3,843.0	1.40	42.80	3,841.9	-20.3	29.2	21.6	1.64	0.94	-62.19
3,875.0	1.30	41.60	3,873.9	-19.7	29.7	21.0	0.32	-0.31	-3.75
3,907.0	1.10	48.40	3,905.9	-19.2	30.2	20.6	0.77	-0.63	21.25
3,939.0	1.30	43.00	3,937.9	-18.8	30.6	20.1	0.72	0.63	-16.88
3,970.0	1.10	55.10	3,968.8	-18.4	31.1	19.7	1.04	-0.65	39.03
4,002.0	1.20	43.70	4,000.8	-17.9	31.6	19.3	0.78	0.31	-35.63
4,034.0	1.30	47.00	4,032.8	-17.4	32.1	18.9	0.38	0.31	10.31
4,066.0	1.40	54.20	4,064.8	-17.0	32.7	18.4	0.61	0.31	22.50
4,097.0	1.20	60.60	4,095.8	-16.6	33.3	18.1	0.80	-0.65	20.65
4,128.0	1.40	58.60	4,126.8	-16.2	33.9	17.7	0.66	0.65	-6.45
4,160.0	1.30	49.30	4,158.8	-15.8	34.5	17.3	0.75	-0.31	-29.06
4,192.0	1.20	63.00	4,190.8	-15.4	35.1	17.0	0.98	-0.31	42.81
4,223.0	1.20	49.50	4,221.8	-15.0	35.6	16.6	0.91	0.00	-43.55
4,255.0	1.30	60.60	4,253.8	-14.6	36.2	16.3	0.82	-0.31	34.69
4,287.0	1.50	57.60	4,285.8	-14.2	36.8	15.9	0.67	0.63	-9.38
4,319.0	1.50	59.50	4,317.8	-13.8	37.6	15.5	0.16	0.00	5.94
4,351.0	1.30	50.00	4,349.7	-13.4	38.2	15.1	0.96	-0.63	-29.69
4,382.0	1.50	59.70	4,380.7	-12.9	38.8	14.7	1.00	0.65	31.29
4,414.0	1.30	44.20	4,412.7	-12.5	39.4	14.2	1.33	-0.63	-48.44
4,446.0	1.20	46.30	4,444.7	-12.0	39.9	13.8	0.34	-0.31	6.56
4,478.0	1.40	53.40	4,476.7	-11.5	40.5	13.3	0.80	0.63	22.19
4,509.0	1.40	55.80	4,507.7	-11.1	41.1	12.9	0.19	0.00	7.74
4,541.0	1.40	56.70	4,539.7	-10.6	41.7	12.5	0.07	0.00	2.81
4,573.0	1.50	50.20	4,571.7	-10.1	42.4	12.1	0.60	0.31	-20.31
4,605.0	1.30	50.90	4,603.7	-9.7	43.0	11.6	0.63	-0.63	2.19
4,637.0	1.10	51.40	4,635.7	-9.2	43.5	11.2	0.63	-0.63	1.56
4,668.0	1.10	61.50	4,666.7	-8.9	44.0	10.9	0.62	0.00	32.58
4,700.0	1.40	55.70	4,698.7	-8.5	44.6	10.5	1.02	0.94	-18.13

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,732.0	1.30	52.00	4,730.6	-8.1	45.2	10.1	0.41	-0.31	-11.56
4,764.0	1.30	49.30	4,762.6	-7.6	45.8	9.7	0.19	0.00	-8.44
4,796.0	1.30	54.60	4,794.6	-7.2	46.3	9.3	0.38	0.00	16.56
4,827.0	1.50	54.40	4,825.6	-6.7	47.0	8.9	0.65	0.65	-0.65
4,859.0	1.50	49.90	4,857.6	-6.2	47.6	8.4	0.37	0.00	-14.06
4,891.0	1.40	46.00	4,889.6	-5.7	48.2	7.9	0.44	-0.31	-12.19
4,923.0	1.40	52.10	4,921.6	-5.2	48.8	7.4	0.47	0.00	19.06
4,954.0	1.70	51.30	4,952.6	-4.7	49.5	6.9	0.97	0.97	-2.58
4,986.0	1.60	53.00	4,984.6	-4.1	50.2	6.4	0.35	-0.31	5.31
5,018.0	1.70	56.40	5,016.5	-3.6	51.0	5.9	0.44	0.31	10.63
5,050.0	1.30	58.10	5,048.5	-3.1	51.7	5.4	1.26	-1.25	5.31
5,081.0	1.60	64.80	5,079.5	-2.7	52.3	5.1	1.11	0.97	21.61
5,113.0	1.40	50.90	5,111.5	-2.3	53.1	4.7	1.29	-0.63	-43.44
5,144.0	1.30	50.40	5,142.5	-1.8	53.6	4.3	0.32	-0.32	-1.61
5,176.0	1.10	64.40	5,174.5	-1.5	54.2	3.9	1.10	-0.63	43.75
5,208.0	1.10	62.90	5,206.5	-1.2	54.7	3.7	0.09	0.00	-4.69
5,240.0	1.20	54.40	5,238.5	-0.9	55.3	3.4	0.62	0.31	-26.56
5,271.0	1.00	52.10	5,269.5	-0.5	55.8	3.0	0.66	-0.65	-7.42
5,303.0	1.10	76.40	5,301.5	-0.3	56.3	2.8	1.41	0.31	75.94
5,335.0	0.90	60.00	5,333.5	-0.1	56.8	2.6	1.09	-0.63	-51.25
5,367.0	1.10	50.00	5,365.5	0.3	57.2	2.3	0.83	0.63	-31.25
5,398.0	1.00	47.70	5,396.5	0.6	57.7	2.0	0.35	-0.32	-7.42
5,430.0	0.90	62.70	5,428.5	0.9	58.1	1.7	0.83	-0.31	46.88
5,462.0	0.90	45.50	5,460.5	1.2	58.5	1.4	0.84	0.00	-53.75
5,493.0	1.10	53.20	5,491.5	1.6	58.9	1.1	0.78	0.65	24.84
5,525.0	1.10	70.90	5,523.4	1.9	59.4	0.8	1.06	0.00	55.31
5,557.0	1.10	65.80	5,555.4	2.1	60.0	0.6	0.31	0.00	-15.94
5,589.0	0.80	78.20	5,587.4	2.3	60.5	0.5	1.13	-0.94	38.75
5,620.0	1.10	86.10	5,618.4	2.3	61.0	0.4	1.05	0.97	25.48
5,652.0	1.10	84.30	5,650.4	2.4	61.6	0.4	0.11	0.00	-5.63
5,684.0	1.00	94.30	5,682.4	2.4	62.2	0.4	0.65	-0.31	31.25
5,716.0	1.00	91.70	5,714.4	2.4	62.8	0.5	0.14	0.00	-8.13
5,747.0	1.00	84.80	5,745.4	2.4	63.3	0.5	0.39	0.00	-22.26
5,779.0	1.00	82.90	5,777.4	2.4	63.9	0.5	0.10	0.00	-5.94
5,811.0	0.70	80.10	5,809.4	2.5	64.3	0.4	0.95	-0.94	-8.75
5,843.0	1.00	86.40	5,841.4	2.5	64.8	0.4	0.98	0.94	19.69
5,874.0	0.80	96.60	5,872.4	2.5	65.3	0.4	0.82	-0.65	32.90
5,906.0	0.80	86.40	5,904.4	2.5	65.7	0.5	0.44	0.00	-31.88
5,938.0	0.80	82.50	5,936.4	2.6	66.2	0.4	0.17	0.00	-12.19
5,969.0	0.50	72.90	5,967.4	2.6	66.5	0.4	1.03	-0.97	-30.97
6,001.0	0.60	86.80	5,999.4	2.7	66.8	0.3	0.52	0.31	43.44
6,033.0	0.80	107.90	6,031.4	2.6	67.2	0.4	1.01	0.63	65.94
6,065.0	0.50	112.60	6,063.4	2.5	67.6	0.6	0.95	-0.94	14.69
6,097.0	0.70	100.50	6,095.4	2.4	67.9	0.7	0.74	0.63	-37.81
6,128.0	0.60	92.40	6,126.4	2.4	68.2	0.7	0.44	-0.32	-26.13
6,160.0	0.70	94.50	6,158.4	2.4	68.6	0.8	0.32	0.31	6.56
6,192.0	0.50	120.70	6,190.4	2.3	68.9	0.9	1.05	-0.63	81.88
6,224.0	0.90	119.10	6,222.4	2.1	69.2	1.1	1.25	1.25	-5.00
6,255.0	0.90	111.70	6,253.4	1.9	69.7	1.3	0.37	0.00	-23.87
6,287.0	1.00	109.70	6,285.4	1.7	70.2	1.5	0.33	0.31	-6.25
6,319.0	0.70	117.50	6,317.4	1.5	70.6	1.7	1.00	-0.94	24.38
6,351.0	1.00	110.80	6,349.4	1.3	71.0	1.9	0.99	0.94	-20.94
6,383.0	0.90	100.10	6,381.3	1.2	71.6	2.1	0.64	-0.31	-33.44
6,414.0	0.90	121.40	6,412.3	1.0	72.0	2.3	1.07	0.00	68.71

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM/2003.21 Single User.Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
6,446.0	0.90	126.80	6,444.3	0.7	72.4	2.6	0.26	0.00	16.88	
6,478.0	0.80	118.90	6,476.3	0.5	72.8	2.8	0.48	-0.31	-24.69	
6,510.0	0.70	106.30	6,508.3	0.3	73.2	3.0	0.60	-0.31	-39.38	
6,541.0	0.70	109.40	6,539.3	0.2	73.6	3.2	0.12	0.00	10.00	
6,573.0	0.80	108.70	6,571.3	0.0	74.0	3.3	0.31	0.31	-2.19	
6,605.0	1.10	112.60	6,603.3	-0.2	74.5	3.5	0.96	0.94	12.19	
6,637.0	0.90	132.60	6,635.3	-0.4	74.9	3.8	1.25	-0.63	62.50	
6,668.0	0.80	128.00	6,666.3	-0.7	75.3	4.1	0.39	-0.32	-14.84	
6,700.0	0.90	107.90	6,698.3	-1.0	75.7	4.4	0.98	0.31	-62.81	
6,732.0	1.10	115.40	6,730.3	-1.2	76.2	4.6	0.75	0.63	23.44	
6,764.0	1.10	120.90	6,762.3	-1.5	76.7	4.9	0.33	0.00	17.19	
6,795.0	1.20	118.60	6,793.3	-1.8	77.3	5.3	0.36	0.32	-7.42	
6,827.0	1.10	112.10	6,825.3	-2.0	77.9	5.6	0.51	-0.31	-20.31	
6,859.0	1.10	116.70	6,857.3	-2.3	78.4	5.8	0.28	0.00	14.38	
6,891.0	1.30	132.80	6,889.3	-2.7	79.0	6.2	1.22	0.63	50.31	
6,922.0	1.30	127.70	6,920.3	-3.1	79.5	6.7	0.37	0.00	-16.45	
6,954.0	1.00	136.90	6,952.3	-3.6	80.0	7.2	1.10	-0.94	28.75	
6,986.0	1.10	147.10	6,984.3	-4.0	80.3	7.6	0.66	0.31	31.88	
7,018.0	1.10	132.60	7,016.3	-4.5	80.7	8.1	0.87	0.00	-45.31	
7,049.0	1.30	143.50	7,047.2	-5.0	81.2	8.6	0.98	0.65	35.16	
7,081.0	1.20	151.80	7,079.2	-5.6	81.5	9.2	0.65	-0.31	25.94	
7,113.0	1.30	139.70	7,111.2	-6.1	81.9	9.8	0.88	0.31	-37.81	
7,145.0	1.10	143.90	7,143.2	-6.7	82.3	10.4	0.68	-0.63	13.13	
7,176.0	1.10	147.90	7,174.2	-7.1	82.7	10.9	0.25	0.00	12.90	
7,208.0	1.10	150.20	7,206.2	-7.7	83.0	11.4	0.14	0.00	7.19	
7,240.0	1.20	145.80	7,238.2	-8.2	83.3	12.0	0.42	0.31	-13.75	
7,272.0	1.10	162.90	7,270.2	-8.8	83.6	12.6	1.11	-0.31	53.44	
7,303.0	1.10	152.50	7,301.2	-9.3	83.8	13.1	0.64	0.00	-33.55	
7,335.0	0.90	171.00	7,333.2	-9.9	84.0	13.6	1.18	-0.63	57.81	
7,367.0	0.50	177.50	7,365.2	-10.2	84.1	14.0	1.27	-1.25	20.31	
7,385.0	0.80	147.80	7,383.2	-10.4	84.1	14.2	2.45	1.67	-165.00	
7,417.0	1.10	182.90	7,415.2	-10.9	84.2	14.7	2.00	0.94	109.69	
7,449.0	3.30	182.90	7,447.2	-12.1	84.2	15.9	6.88	6.88	0.00	
7,481.0	6.40	185.40	7,479.0	-14.8	84.0	18.6	9.71	9.69	7.81	
7,512.0	9.50	185.70	7,509.7	-19.1	83.5	22.9	10.00	10.00	0.97	
7,544.0	12.60	189.60	7,541.1	-25.2	82.7	28.9	9.96	9.69	12.19	
7,576.0	15.20	188.50	7,572.2	-32.8	81.5	36.4	8.17	8.13	-3.44	
7,608.0	18.30	187.50	7,602.8	-41.9	80.2	45.5	9.73	9.69	-3.13	
7,639.0	21.50	187.10	7,632.0	-52.4	78.9	55.9	10.33	10.32	-1.29	
7,671.0	24.70	187.00	7,661.4	-64.8	77.3	68.3	10.00	10.00	-0.31	
7,703.0	27.90	186.80	7,690.1	-78.9	75.6	82.2	10.00	10.00	-0.63	
7,735.0	30.60	187.00	7,718.0	-94.4	73.8	97.7	8.44	8.44	0.63	
7,767.0	32.50	190.80	7,745.3	-111.0	71.2	114.1	8.59	5.94	11.88	
7,798.0	35.40	191.90	7,771.0	-127.9	67.7	130.9	9.56	9.35	3.55	
7,830.0	37.70	188.90	7,796.7	-146.7	64.3	149.4	9.10	7.19	-9.38	
7,862.0	40.30	189.80	7,821.6	-166.5	61.0	169.1	8.32	8.13	2.81	
7,894.0	43.40	189.60	7,845.4	-187.6	57.4	190.0	9.70	9.69	-0.63	
7,925.0	46.80	189.60	7,867.3	-209.2	53.8	211.4	10.97	10.97	0.00	
7,957.0	49.30	190.70	7,888.7	-232.6	49.6	234.7	8.22	7.81	3.44	
7,989.0	51.90	192.40	7,909.0	-256.9	44.6	258.6	9.10	8.13	5.31	
8,020.0	55.90	191.90	7,927.2	-281.4	39.4	282.8	12.97	12.90	-1.61	
8,052.0	60.50	190.00	7,944.1	-308.0	34.2	309.3	15.23	14.38	-5.94	
8,084.0	64.70	187.30	7,958.8	-336.1	29.9	337.1	15.11	13.13	-8.44	
8,115.0	68.70	184.70	7,971.1	-364.4	27.0	365.3	15.03	12.90	-8.39	

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM/2003.21 Single User Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,147.0	72.20	182.90	7,981.8	-394.5	25.0	395.2	12.15	10.94	-5.63	
8,178.0	76.20	181.20	7,990.2	-424.3	23.9	425.0	13.94	12.90	-5.48	
8,209.0	79.80	178.50	7,996.7	-454.6	24.0	455.3	14.40	11.61	-8.71	
8,240.0	83.60	176.20	8,001.2	-485.3	25.4	485.9	14.29	12.26	-7.42	
8,281.0	83.40	176.90	8,005.8	-525.9	27.9	526.7	1.77	-0.49	1.71	
8,312.0	84.10	176.60	8,009.2	-556.7	29.6	557.5	2.45	2.26	-0.97	
8,344.0	85.90	176.20	8,012.0	-588.5	31.6	589.3	5.76	5.63	-1.25	
8,376.0	87.40	175.70	8,013.8	-620.4	33.9	621.3	4.94	4.69	-1.56	
8,408.0	88.00	175.50	8,015.1	-652.3	36.3	653.2	1.98	1.88	-0.63	
8,439.0	89.80	175.20	8,015.7	-683.1	38.9	684.2	5.89	5.81	-0.97	
8,471.0	90.30	175.40	8,015.7	-715.0	41.5	716.2	1.68	1.56	0.63	
8,503.0	90.70	175.00	8,015.4	-746.9	44.2	748.2	1.77	1.25	-1.25	
8,532.0	91.30	175.90	8,014.9	-775.8	46.5	777.1	3.73	2.07	3.10	
8,628.0	92.90	175.50	8,011.4	-871.5	53.6	873.0	1.72	1.67	-0.42	
8,723.0	91.80	175.70	8,007.5	-966.1	60.9	967.9	1.18	-1.16	0.21	
8,818.0	88.90	175.00	8,006.9	-1,060.8	68.6	1,062.8	3.14	-3.05	-0.74	
8,914.0	88.60	174.70	8,009.0	-1,156.4	77.2	1,158.7	0.44	-0.31	-0.31	
9,009.0	88.50	175.90	8,011.4	-1,251.0	85.0	1,253.6	1.27	-0.11	1.26	
9,104.0	91.50	176.60	8,011.4	-1,345.8	91.2	1,348.6	3.24	3.16	0.74	
9,199.0	90.50	175.20	8,009.7	-1,440.6	98.0	1,443.5	1.81	-1.05	-1.47	
9,295.0	90.70	175.40	8,008.7	-1,536.2	105.9	1,539.5	0.29	0.21	0.21	
9,390.0	90.80	175.90	8,007.5	-1,631.0	113.1	1,634.4	0.54	0.11	0.53	
9,485.0	91.20	177.60	8,005.8	-1,725.8	118.5	1,729.4	1.84	0.42	1.79	
9,580.0	94.50	179.10	8,001.1	-1,820.6	121.2	1,824.2	3.81	3.47	1.58	
9,676.0	92.70	178.70	7,995.1	-1,916.4	123.1	1,920.0	1.92	-1.88	-0.42	
9,771.0	91.10	179.10	7,991.9	-2,011.3	124.9	2,014.9	1.74	-1.68	0.42	
9,866.0	92.00	179.60	7,989.4	-2,106.3	126.0	2,109.8	1.08	0.95	0.53	
9,962.0	94.10	180.10	7,984.3	-2,202.1	126.2	2,205.6	2.25	2.19	0.52	
10,057.0	93.70	178.90	7,977.8	-2,296.9	127.0	2,300.3	1.33	-0.42	-1.26	
10,152.0	92.40	177.50	7,972.7	-2,391.7	130.0	2,395.2	2.01	-1.37	-1.47	
10,247.0	90.80	177.60	7,970.1	-2,486.6	134.1	2,490.1	1.69	-1.68	0.11	
10,343.0	90.90	177.80	7,968.7	-2,582.5	137.9	2,586.1	0.23	0.10	0.21	
10,438.0	88.70	177.60	7,969.0	-2,677.4	141.7	2,681.1	2.33	-2.32	-0.21	
10,533.0	93.70	178.90	7,967.0	-2,772.3	144.6	2,776.0	5.44	5.26	1.37	
10,629.0	91.40	178.50	7,962.7	-2,868.2	146.8	2,871.9	2.43	-2.40	-0.42	
10,724.0	88.90	177.50	7,962.5	-2,963.1	150.1	2,966.9	2.83	-2.63	-1.05	
10,819.0	88.80	177.80	7,964.4	-3,058.0	154.0	3,061.9	0.33	-0.11	0.32	
10,915.0	88.60	178.00	7,966.6	-3,154.0	157.5	3,157.9	0.29	-0.21	0.21	
11,010.0	91.20	178.00	7,966.7	-3,248.9	160.9	3,252.8	2.74	2.74	0.00	
11,105.0	89.20	177.60	7,966.4	-3,343.8	164.5	3,347.8	2.15	-2.11	-0.42	
11,201.0	89.50	178.00	7,967.5	-3,439.7	168.2	3,443.8	0.52	0.31	0.42	
11,295.0	92.10	178.30	7,966.2	-3,533.7	171.2	3,537.8	2.78	2.77	0.32	
11,389.0	89.80	177.30	7,964.6	-3,627.6	174.8	3,631.8	2.67	-2.45	-1.06	
11,483.0	91.30	177.30	7,963.7	-3,721.5	179.3	3,725.8	1.60	1.60	0.00	
11,577.0	89.20	177.30	7,963.3	-3,815.4	183.7	3,819.8	2.23	-2.23	0.00	
11,671.0	90.70	177.50	7,963.4	-3,909.3	187.9	3,913.8	1.61	1.60	0.21	
11,766.0	90.70	177.60	7,962.2	-4,004.2	192.0	4,008.8	0.11	0.00	0.11	
11,859.0	91.70	177.50	7,960.3	-4,097.1	196.0	4,101.7	1.08	1.08	-0.11	
11,954.0	89.80	177.80	7,959.0	-4,192.0	199.9	4,196.7	2.02	-2.00	0.32	
12,048.0	89.50	178.20	7,959.6	-4,285.9	203.2	4,290.7	0.53	-0.32	0.43	
12,142.0	89.20	177.60	7,960.7	-4,379.8	206.6	4,384.7	0.71	-0.32	-0.64	
12,235.0	92.30	178.90	7,959.5	-4,472.8	209.4	4,477.7	3.61	3.33	1.40	
12,329.0	91.90	178.50	7,956.0	-4,566.7	211.6	4,571.6	0.60	-0.43	-0.43	
12,423.0	91.90	178.30	7,952.9	-4,660.6	214.2	4,665.5	0.21	0.00	-0.21	

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 16-18H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 16-18H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,443.0	92.30	178.20	7,952.2	-4,680.6	214.8	4,685.5	2.06	2.00	-0.50
Last MWD Survey									
12,490.0	92.30	178.20	7,950.3	-4,727.5	216.3	4,732.5	0.00	0.00	0.00
Proj to TD - RDX 16-18H PBHL									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
113.0	113.0	-0.1	0.5	First MWD Survey
12,443.0	7,952.2	-4,680.6	214.8	Last MWD Survey
12,490.0	7,950.3	-4,727.5	216.3	Proj to TD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------