

30-015-40640

RKI Exploration & Production

Eddy County (NM83E)

Sec 17-T26S-R30E

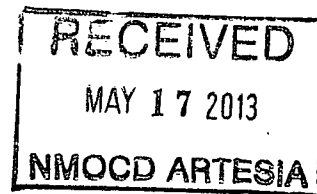
RDX 17-10H

Wellbore #1

Survey: MWD Surveys

Standard Survey Report

04 November, 2012



Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX-17-10H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 17-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX-17-10H	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	179.70

Survey Program	Date: 2012/11/04			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.0	12,317.0	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
100.0	0.09	167.74	100.0	-0.1	0.0	0.1	0.09	0.09	0.00
First GYRO Survey									
200.0	0.28	194.13	200.0	-0.4	0.0	0.4	0.20	0.19	26.39
300.0	0.27	249.32	300.0	-0.7	-0.3	0.7	0.25	-0.01	55.19
400.0	0.24	280.57	400.0	-0.8	-0.7	0.8	0.14	-0.03	31.25
500.0	0.23	337.77	500.0	-0.5	-1.0	0.5	0.23	-0.01	57.20
600.0	0.41	52.25	600.0	-0.1	-0.8	0.1	0.41	0.18	74.48
700.0	0.94	57.04	700.0	0.5	0.2	-0.5	0.53	0.53	4.79
800.0	1.62	56.70	800.0	1.8	2.0	-1.8	0.68	0.68	-0.34
900.0	1.78	69.86	899.9	3.1	4.7	-3.0	0.42	0.16	13.16
1,000.0	1.83	61.22	999.9	4.4	7.5	-4.3	0.28	0.05	-8.64
1,100.0	1.56	69.99	1,099.8	5.6	10.2	-5.6	0.37	-0.27	8.77
1,200.0	1.35	72.97	1,199.8	6.4	12.6	-6.4	0.22	-0.21	2.98
1,300.0	0.49	64.10	1,299.8	7.0	14.1	-6.9	0.87	-0.86	-8.87
1,400.0	0.60	50.75	1,399.8	7.5	14.9	-7.4	0.17	0.11	-13.35
1,500.0	0.57	45.04	1,499.8	8.2	15.7	-8.1	0.07	-0.03	-5.71
1,600.0	0.34	23.36	1,599.8	8.8	16.1	-8.7	0.28	-0.23	-21.68
1,700.0	0.43	352.06	1,699.8	9.4	16.2	-9.3	0.23	0.09	-31.30
1,800.0	0.42	333.89	1,799.8	10.1	16.0	-10.0	0.13	-0.01	-18.17
1,900.0	1.06	321.02	1,899.8	11.2	15.3	-11.1	0.66	0.64	-12.87
2,000.0	1.13	309.86	1,999.7	12.5	13.9	-12.4	0.22	0.07	-11.16
2,100.0	1.04	299.35	2,099.7	13.6	12.4	-13.5	0.22	-0.09	-10.51
2,200.0	0.92	306.66	2,199.7	14.5	10.9	-14.5	0.17	-0.12	7.31
2,300.0	0.66	292.17	2,299.7	15.2	9.8	-15.2	0.33	-0.26	-14.49
2,400.0	0.59	274.37	2,399.7	15.5	8.7	-15.4	0.21	-0.07	-17.80
2,500.0	0.74	258.77	2,499.7	15.4	7.6	-15.3	0.23	0.15	-15.60
2,600.0	0.89	233.43	2,599.7	14.8	6.3	-14.8	0.39	0.15	-25.34
2,700.0	1.13	207.66	2,699.7	13.5	5.2	-13.4	0.51	0.24	-25.77
2,800.0	1.03	182.67	2,799.6	11.7	4.7	-11.7	0.48	-0.10	-24.99
2,900.0	1.28	141.11	2,899.6	9.9	5.4	-9.9	0.85	0.25	-41.56
3,000.0	2.27	130.51	2,999.6	7.8	7.6	-7.7	1.04	0.99	-10.60
3,100.0	3.24	127.71	3,099.5	4.8	11.3	-4.7	0.98	0.97	-2.80
3,200.0	5.30	126.39	3,199.2	0.3	17.3	-0.2	2.06	2.06	-1.32
3,300.0	7.18	125.66	3,298.6	-6.1	26.1	6.2	1.88	1.88	-0.73
3,400.0	7.21	126.90	3,397.8	-13.5	36.2	13.7	0.16	0.03	1.24
3,500.0	6.71	127.64	3,497.0	-20.8	45.8	21.1	0.51	-0.50	0.74
3,600.0	6.16	128.21	3,596.4	-27.7	54.7	28.0	0.55	-0.55	0.57
3,700.0	5.88	123.57	3,695.9	-33.9	63.1	34.2	0.56	-0.28	-4.64

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX-17-10H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 17-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX-17-10H	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)
3,800.0	4.14	125.11	3,795.5	-38.8	70.4	39.2	1.75	-1.74	1.54
3,900.0	3.79	129.48	3,895.2	-43.0	75.9	43.4	0.46	-0.35	4.37
4,000.0	3.75	128.95	3,995.0	-47.1	81.0	47.6	0.05	-0.04	-0.53
4,100.0	3.29	133.91	4,094.8	-51.2	85.6	51.6	0.55	-0.46	4.96
4,200.0	3.62	137.85	4,194.7	-55.5	89.8	56.0	0.41	0.33	3.94
4,300.0	3.17	138.47	4,294.5	-59.9	93.7	60.4	0.45	-0.45	0.62
4,400.0	2.84	134.38	4,394.3	-63.7	97.3	64.2	0.39	-0.33	-4.09
4,500.0	2.44	131.86	4,494.2	-66.9	100.7	67.4	0.42	-0.40	-2.52
4,600.0	2.12	132.71	4,594.2	-69.5	103.6	70.1	0.32	-0.32	0.85
4,700.0	2.00	120.68	4,694.1	-71.7	106.5	72.3	0.45	-0.12	-12.03
4,800.0	1.99	118.70	4,794.0	-73.4	109.5	74.0	0.07	-0.01	-1.98
4,900.0	1.65	118.53	4,894.0	-74.9	112.3	75.5	0.34	-0.34	-0.17
5,000.0	1.74	115.15	4,993.9	-76.3	114.9	76.9	0.13	0.09	-3.38
5,100.0	1.44	122.25	5,093.9	-77.6	117.4	78.2	0.36	-0.30	7.10
5,200.0	1.37	133.33	5,193.9	-79.1	119.3	79.7	0.28	-0.07	11.08
5,300.0	1.46	141.41	5,293.8	-80.9	121.0	81.5	0.22	0.09	8.08
5,400.0	1.33	154.46	5,393.8	-82.9	122.3	83.6	0.34	-0.13	13.05
5,500.0	1.23	156.41	5,493.8	-85.0	123.2	85.6	0.11	-0.10	1.95
5,600.0	1.28	166.28	5,593.8	-87.0	123.9	87.7	0.22	0.05	9.87
5,700.0	1.36	152.55	5,693.7	-89.2	124.7	89.8	0.33	0.08	-13.73
5,800.0	1.22	157.72	5,793.7	-91.2	125.6	91.9	0.18	-0.14	5.17
5,900.0	1.29	155.90	5,893.7	-93.2	126.5	93.9	0.08	0.07	-1.82
6,000.0	1.27	163.72	5,993.7	-95.3	127.3	96.0	0.18	-0.02	7.82
6,100.0	1.38	156.94	6,093.6	-97.5	128.1	98.2	0.19	0.11	-6.78
6,200.0	1.30	163.39	6,193.6	-99.7	128.9	100.4	0.17	-0.08	6.45
6,300.0	1.48	172.07	6,293.6	-102.0	129.4	102.7	0.28	0.18	8.68
6,400.0	1.11	189.20	6,393.6	-104.3	129.4	105.0	0.53	-0.37	17.13
6,500.0	1.26	190.54	6,493.5	-106.3	129.0	107.0	0.15	0.15	1.34
6,600.0	1.11	196.42	6,593.5	-108.3	128.5	109.0	0.19	-0.15	5.88
6,700.0	1.19	192.12	6,693.5	-110.3	128.1	110.9	0.12	0.08	-4.30
6,800.0	1.14	193.16	6,793.5	-112.3	127.6	112.9	0.05	-0.05	1.04
6,900.0	1.38	185.14	6,893.4	-114.4	127.3	115.1	0.30	0.24	-8.02
7,000.0	1.53	190.02	6,993.4	-116.9	126.9	117.6	0.19	0.15	4.88
7,100.0	1.60	192.83	7,093.4	-119.6	126.4	120.3	0.10	0.07	2.81
7,200.0	1.10	182.23	7,193.3	-121.9	126.0	122.6	0.56	-0.50	-10.60
Last GYRO Survey									
7,208.0	1.20	188.10	7,201.3	-122.1	126.0	122.8	1.93	1.25	73.38
First MWD Survey									
7,238.0	1.10	183.10	7,231.3	-122.7	126.0	123.4	0.47	-0.33	-16.67
7,269.0	1.30	185.00	7,262.3	-123.3	125.9	124.0	0.66	0.65	6.13
7,301.0	1.10	187.80	7,294.3	-124.0	125.9	124.7	0.65	-0.63	8.75
7,332.0	1.10	180.40	7,325.3	-124.6	125.8	125.3	0.46	0.00	-23.87
7,363.0	1.20	188.40	7,356.3	-125.2	125.8	125.9	0.61	0.32	25.81
7,395.0	1.30	190.60	7,388.3	-125.9	125.6	126.6	0.35	0.31	6.88
7,425.0	1.10	185.50	7,418.3	-126.5	125.6	127.2	0.76	-0.67	-17.00
7,457.0	1.30	178.20	7,450.3	-127.2	125.5	127.9	0.79	0.63	-22.81
7,487.0	2.20	183.80	7,480.3	-128.1	125.5	128.8	3.05	3.00	18.67
7,518.0	6.70	188.60	7,511.2	-130.5	125.2	131.2	14.55	14.52	15.48
7,550.0	11.00	188.40	7,542.8	-135.4	124.5	136.0	13.44	13.44	-0.63
7,580.0	14.50	187.60	7,572.0	-141.9	123.6	142.6	11.68	11.67	-2.67
7,612.0	17.30	182.80	7,602.8	-150.6	122.8	151.3	9.66	8.75	-15.00
7,643.0	19.20	179.90	7,632.3	-160.3	122.6	161.0	6.79	6.13	-9.35
7,675.0	21.20	177.30	7,662.3	-171.4	122.9	172.0	6.85	6.25	-8.13
7,706.0	22.50	174.90	7,691.1	-182.9	123.7	183.5	5.09	4.19	-7.74

Wolverine Directional, LLC

Survey Report

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Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 17-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 17-10H	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)
7,738.0	24.40	175.10	7,720.4	-195.6	124.8	196.2	5.94	5.94	0.63
7,769.0	26.90	177.50	7,748.4	-209.0	125.6	209.6	8.73	8.06	7.74
7,799.0	30.50	181.60	7,774.7	-223.4	125.7	224.0	13.67	12.00	13.67
7,831.0	34.60	184.00	7,801.6	-240.6	124.8	241.2	13.43	12.81	7.50
7,862.0	38.90	186.40	7,826.5	-259.0	123.1	259.7	14.62	13.87	7.74
7,893.0	42.60	187.80	7,850.0	-279.1	120.6	279.7	12.29	11.94	4.52
7,924.0	44.80	191.50	7,872.4	-300.2	117.0	300.8	10.88	7.10	11.94
7,955.0	48.60	192.90	7,893.6	-322.2	112.3	322.8	12.69	12.26	4.52
7,986.0	52.90	194.10	7,913.2	-345.6	106.6	346.1	14.19	13.87	3.87
8,017.0	57.20	195.50	7,931.0	-370.1	100.1	370.7	14.36	13.87	4.52
8,048.0	61.90	195.80	7,946.7	-395.9	92.9	396.3	15.18	15.16	0.97
8,079.0	66.90	195.60	7,960.1	-422.8	85.4	423.2	16.14	16.13	-0.65
8,110.0	70.70	194.70	7,971.3	-450.7	77.8	451.1	12.55	12.26	-2.90
8,141.0	73.40	194.10	7,980.9	-479.2	70.5	479.6	8.90	8.71	-1.94
8,172.0	74.40	193.50	7,989.4	-508.1	63.4	508.5	3.72	3.23	-1.94
8,202.0	74.90	191.80	7,997.4	-536.4	57.1	536.7	5.71	1.67	-5.67
8,233.0	78.00	188.60	8,004.7	-566.0	51.7	566.3	14.17	10.00	-10.32
8,264.0	78.30	183.90	8,011.0	-596.2	48.4	596.4	14.87	0.97	-15.16
8,290.0	79.10	180.70	8,016.1	-621.6	47.4	621.9	12.46	3.08	-12.31
8,321.0	81.80	177.50	8,021.3	-652.2	47.9	652.4	13.40	8.71	-10.32
8,351.0	83.50	177.00	8,025.1	-681.9	49.3	682.2	5.90	5.67	-1.67
8,382.0	84.10	176.80	8,028.4	-712.7	51.0	713.0	2.04	1.94	-0.65
8,413.0	85.10	178.00	8,031.4	-743.5	52.4	743.8	5.03	3.23	3.87
8,445.0	86.00	179.30	8,033.8	-775.4	53.1	775.7	4.93	2.81	4.06
8,476.0	87.50	180.00	8,035.6	-806.4	53.3	806.6	5.34	4.84	2.26
8,508.0	88.40	180.30	8,036.8	-838.3	53.2	838.6	2.96	2.81	0.94
8,539.0	89.60	180.70	8,037.3	-869.3	53.0	869.6	4.08	3.87	1.29
8,570.0	90.20	181.00	8,037.3	-900.3	52.5	900.6	2.16	1.94	0.97
8,602.0	90.80	180.70	8,037.1	-932.3	52.0	932.6	2.10	1.88	-0.94
8,633.0	90.90	180.90	8,036.6	-963.3	51.6	963.6	0.72	0.32	0.65
8,664.0	91.30	180.90	8,036.0	-994.3	51.1	994.6	1.29	1.29	0.00
8,696.0	91.70	180.90	8,035.2	-1,026.3	50.6	1,026.6	1.25	1.25	0.00
8,726.0	91.80	181.00	8,034.3	-1,056.3	50.1	1,056.5	0.47	0.33	0.33
8,757.0	92.20	181.00	8,033.2	-1,087.3	49.6	1,087.5	1.29	1.29	0.00
8,788.0	92.40	181.20	8,031.9	-1,118.2	49.0	1,118.5	0.91	0.65	0.65
8,819.0	92.40	181.90	8,030.6	-1,149.2	48.1	1,149.4	2.26	0.00	2.26
8,850.0	92.80	181.90	8,029.2	-1,180.1	47.1	1,180.4	1.29	1.29	0.00
8,882.0	91.40	180.90	8,028.1	-1,212.1	46.3	1,212.3	5.38	-4.38	-3.13
8,913.0	90.80	180.70	8,027.5	-1,243.1	45.9	1,243.3	2.04	-1.94	-0.65
8,944.0	91.10	180.50	8,026.9	-1,274.1	45.6	1,274.3	1.16	0.97	-0.65
8,975.0	91.50	180.20	8,026.2	-1,305.1	45.4	1,305.3	1.61	1.29	-0.97
9,007.0	91.50	179.80	8,025.4	-1,337.1	45.4	1,337.3	1.25	0.00	-1.25
9,037.0	91.90	180.00	8,024.5	-1,367.1	45.4	1,367.3	1.49	1.33	0.67
9,068.0	92.30	179.60	8,023.4	-1,398.0	45.5	1,398.3	1.82	1.29	-1.29
9,099.0	92.40	179.60	8,022.1	-1,429.0	45.8	1,429.2	0.32	0.32	0.00
9,131.0	92.90	179.50	8,020.6	-1,461.0	46.0	1,461.2	1.59	1.56	-0.31
9,162.0	93.40	179.30	8,018.9	-1,491.9	46.3	1,492.2	1.74	1.61	-0.65
9,193.0	92.50	178.60	8,017.3	-1,522.9	46.9	1,523.1	3.68	-2.90	-2.26
9,224.0	91.50	178.00	8,016.2	-1,553.8	47.8	1,554.1	3.76	-3.23	-1.94
9,256.0	91.50	177.70	8,015.4	-1,585.8	49.0	1,586.1	0.94	0.00	-0.94
9,286.0	91.60	177.90	8,014.6	-1,615.8	50.2	1,616.0	0.75	0.33	0.67
9,317.0	92.10	178.00	8,013.6	-1,646.7	51.3	1,647.0	1.64	1.61	0.32
9,348.0	92.20	178.00	8,012.4	-1,677.7	52.4	1,678.0	0.32	0.32	0.00
9,379.0	92.60	178.00	8,011.1	-1,708.7	53.4	1,708.9	1.29	1.29	0.00

Wolverine Directional, LLC

Survey Report

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Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 17-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 17-10H	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)
9,410.0	92.70	177.70	8,009.7	-1,739.6	54.6	1,739.9	1.02	0.32	-0.97
9,441.0	90.80	178.40	8,008.8	-1,770.6	55.7	1,770.8	6.53	-6.13	2.26
9,471.0	90.00	178.00	8,008.5	-1,800.6	56.6	1,800.8	2.98	-2.67	-1.33
9,502.0	90.00	177.70	8,008.5	-1,831.5	57.8	1,831.8	0.97	0.00	-0.97
9,533.0	90.00	178.00	8,008.5	-1,862.5	58.9	1,862.8	0.97	0.00	0.97
9,564.0	90.30	178.80	8,008.5	-1,893.5	59.8	1,893.8	2.76	0.97	2.58
9,595.0	89.40	180.30	8,008.5	-1,924.5	60.0	1,924.8	5.64	-2.90	4.84
9,625.0	89.70	180.70	8,008.8	-1,954.5	59.8	1,954.8	1.67	1.00	1.33
9,657.0	89.80	181.20	8,008.9	-1,986.5	59.2	1,986.8	1.59	0.31	1.56
9,688.0	89.70	180.90	8,009.1	-2,017.5	58.7	2,017.8	1.02	-0.32	-0.97
9,719.0	90.00	181.00	8,009.1	-2,048.5	58.2	2,048.8	1.02	0.97	0.32
9,751.0	90.60	181.20	8,009.0	-2,080.5	57.5	2,080.7	1.98	1.88	0.63
9,782.0	91.30	181.40	8,008.5	-2,111.5	56.8	2,111.7	2.35	2.26	0.65
9,813.0	91.60	181.90	8,007.7	-2,142.4	56.0	2,142.7	1.88	0.97	1.61
9,844.0	92.00	181.70	8,006.7	-2,173.4	55.0	2,173.7	1.44	1.29	-0.65
9,875.0	92.00	181.40	8,005.6	-2,204.4	54.1	2,204.6	0.97	0.00	-0.97
9,906.0	91.70	181.20	8,004.6	-2,235.3	53.4	2,235.6	1.16	-0.97	-0.65
9,937.0	91.30	180.20	8,003.8	-2,266.3	53.1	2,266.6	3.47	-1.29	-3.23
9,968.0	91.50	180.00	8,003.0	-2,297.3	53.0	2,297.6	0.91	0.65	-0.65
9,998.0	92.10	179.60	8,002.1	-2,327.3	53.1	2,327.6	2.40	2.00	-1.33
10,029.0	92.30	179.50	8,000.9	-2,358.3	53.4	2,358.5	0.72	0.65	-0.32
10,061.0	92.60	179.10	7,999.5	-2,390.3	53.7	2,390.5	1.56	0.94	-1.25
10,092.0	93.10	179.30	7,998.0	-2,421.2	54.2	2,421.5	1.74	1.61	0.65
10,123.0	93.70	178.80	7,996.2	-2,452.2	54.7	2,452.4	2.52	1.94	-1.61
10,155.0	94.20	178.60	7,994.0	-2,484.1	55.4	2,484.3	1.68	1.56	-0.63
10,186.0	93.60	178.40	7,991.9	-2,515.0	56.2	2,515.3	2.04	-1.94	-0.65
10,217.0	92.90	178.40	7,990.1	-2,545.9	57.1	2,546.2	2.26	-2.26	0.00
10,248.0	93.30	178.60	7,988.4	-2,576.9	57.9	2,577.1	1.44	1.29	0.65
10,280.0	92.90	179.10	7,986.7	-2,608.8	58.5	2,609.1	2.00	-1.25	1.56
10,310.0	91.40	178.80	7,985.6	-2,638.8	59.1	2,639.1	5.10	-5.00	-1.00
10,342.0	90.90	179.30	7,984.9	-2,670.8	59.6	2,671.1	2.21	-1.56	1.56
10,373.0	90.80	179.30	7,984.5	-2,701.8	60.0	2,702.1	0.32	-0.32	0.00
10,405.0	91.00	178.90	7,984.0	-2,733.8	60.5	2,734.0	1.40	0.63	-1.25
10,435.0	90.90	179.60	7,983.5	-2,763.8	60.9	2,764.0	2.36	-0.33	2.33
10,467.0	91.00	180.20	7,982.9	-2,795.8	60.9	2,796.0	1.90	0.31	1.88
10,498.0	91.20	180.30	7,982.3	-2,826.7	60.8	2,827.0	0.72	0.65	0.32
10,528.0	91.30	180.30	7,981.7	-2,856.7	60.7	2,857.0	0.33	0.33	0.00
10,560.0	91.50	180.30	7,980.9	-2,888.7	60.5	2,889.0	0.63	0.63	0.00
10,592.0	91.60	180.00	7,980.0	-2,920.7	60.4	2,921.0	0.99	0.31	-0.94
10,623.0	92.20	179.50	7,979.0	-2,951.7	60.5	2,952.0	2.52	1.94	-1.61
10,654.0	92.30	180.30	7,977.8	-2,982.7	60.6	2,983.0	2.60	0.32	2.58
10,685.0	92.40	181.00	7,976.5	-3,013.6	60.2	3,013.9	2.28	0.32	2.26
10,716.0	92.80	181.00	7,975.1	-3,044.6	59.7	3,044.9	1.29	1.29	0.00
10,747.0	93.40	180.70	7,973.4	-3,075.6	59.2	3,075.8	2.16	1.94	-0.97
10,779.0	93.90	180.90	7,971.4	-3,107.5	58.8	3,107.8	1.68	1.56	0.63
10,810.0	92.70	181.70	7,969.6	-3,138.4	58.1	3,138.7	4.65	-3.87	2.58
10,841.0	92.10	181.70	7,968.3	-3,169.4	57.2	3,169.7	1.94	-1.94	0.00
10,872.0	92.70	181.60	7,967.0	-3,200.4	56.3	3,200.6	1.96	1.94	-0.32
10,904.0	92.20	181.40	7,965.7	-3,232.3	55.4	3,232.6	1.68	-1.56	-0.63
10,935.0	91.50	182.10	7,964.7	-3,263.3	54.5	3,263.5	3.19	-2.26	2.26
10,966.0	91.80	182.30	7,963.8	-3,294.2	53.3	3,294.5	1.16	0.97	0.65
10,996.0	91.90	182.30	7,962.8	-3,324.2	52.1	3,324.4	0.33	0.33	0.00
11,027.0	91.60	182.10	7,961.8	-3,355.2	50.9	3,355.4	1.16	-0.97	-0.65
11,059.0	92.20	181.70	7,960.8	-3,387.1	49.9	3,387.4	2.25	1.88	-1.25

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 17-10H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec.17-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 17-10H	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)	
11,090.0	92.60	181.70	7,959.5	-3,418.1	48.9	3,418.3	1.29	1.29	0.00	
11,122.0	92.70	181.20	7,958.0	-3,450.0	48.1	3,450.3	1.59	0.31	-1.56	
11,153.0	92.60	181.20	7,956.6	-3,481.0	47.5	3,481.2	0.32	-0.32	0.00	
11,185.0	91.90	181.00	7,955.3	-3,513.0	46.9	3,513.2	2.27	-2.19	-0.63	
11,215.0	92.10	180.90	7,954.3	-3,543.0	46.4	3,543.2	0.75	0.67	-0.33	
11,246.0	92.30	181.00	7,953.1	-3,573.9	45.9	3,574.1	0.72	0.65	0.32	
11,277.0	91.90	181.40	7,951.9	-3,604.9	45.2	3,605.1	1.82	-1.29	1.29	
11,308.0	91.20	181.70	7,951.1	-3,635.9	44.4	3,636.1	2.46	-2.26	0.97	
11,338.0	91.50	181.00	7,950.4	-3,665.9	43.7	3,666.0	2.54	1.00	-2.33	
11,369.0	91.90	181.00	7,949.5	-3,696.8	43.1	3,697.0	1.29	1.29	0.00	
11,400.0	90.80	181.40	7,948.7	-3,727.8	42.5	3,728.0	3.78	-3.55	1.29	
11,432.0	90.20	181.60	7,948.5	-3,759.8	41.6	3,760.0	1.98	-1.88	0.63	
11,463.0	90.00	181.70	7,948.4	-3,790.8	40.7	3,791.0	0.72	-0.65	0.32	
11,494.0	90.20	181.60	7,948.4	-3,821.8	39.9	3,821.9	0.72	0.65	-0.32	
11,526.0	90.60	181.60	7,948.1	-3,853.8	39.0	3,853.9	1.25	1.25	0.00	
11,557.0	90.90	181.40	7,947.7	-3,884.8	38.1	3,884.9	1.16	0.97	-0.65	
11,589.0	91.50	181.20	7,947.1	-3,916.7	37.4	3,916.9	1.98	1.88	-0.63	
11,620.0	92.20	180.90	7,946.1	-3,947.7	36.9	3,947.9	2.46	2.26	-0.97	
11,651.0	93.20	180.90	7,944.6	-3,978.7	36.4	3,978.8	3.23	3.23	0.00	
11,683.0	93.30	180.90	7,942.8	-4,010.6	35.9	4,010.8	0.31	0.31	0.00	
11,714.0	93.60	180.50	7,940.9	-4,041.6	35.5	4,041.7	1.61	0.97	-1.29	
11,746.0	93.90	180.70	7,938.8	-4,073.5	35.2	4,073.6	1.13	0.94	0.63	
11,777.0	92.80	180.90	7,937.0	-4,104.4	34.7	4,104.6	3.61	-3.55	0.65	
11,808.0	91.30	180.90	7,935.9	-4,135.4	34.2	4,135.5	4.84	-4.84	0.00	
11,839.0	91.20	181.00	7,935.2	-4,166.4	33.7	4,166.5	0.46	-0.32	0.32	
11,870.0	91.30	180.90	7,934.6	-4,197.4	33.2	4,197.5	0.46	0.32	-0.32	
11,901.0	91.60	181.00	7,933.8	-4,228.4	32.7	4,228.5	1.02	0.97	0.32	
11,932.0	91.90	181.00	7,932.8	-4,259.4	32.2	4,259.5	0.97	0.97	0.00	
11,963.0	92.10	180.90	7,931.7	-4,290.3	31.6	4,290.4	0.72	0.65	-0.32	
11,994.0	92.30	180.90	7,930.6	-4,321.3	31.2	4,321.4	0.65	0.65	0.00	
12,025.0	92.30	180.70	7,929.3	-4,352.3	30.7	4,352.4	0.64	0.00	-0.65	
12,055.0	92.60	180.90	7,928.0	-4,382.3	30.3	4,382.4	1.20	1.00	0.67	
12,087.0	92.90	181.20	7,926.5	-4,414.2	29.7	4,414.3	1.33	0.94	0.94	
12,118.0	93.30	181.00	7,924.8	-4,445.2	29.1	4,445.3	1.44	1.29	-0.65	
12,149.0	93.60	181.00	7,922.9	-4,476.1	28.6	4,476.2	0.97	0.97	0.00	
12,180.0	92.90	181.60	7,921.2	-4,507.0	27.9	4,507.1	2.97	-2.26	1.94	
12,210.0	92.90	181.90	7,919.7	-4,537.0	27.0	4,537.1	1.00	0.00	1.00	
12,243.0	93.10	181.90	7,917.9	-4,569.9	25.9	4,570.0	0.61	0.61	0.00	
12,267.0	93.50	182.30	7,916.6	-4,593.9	25.0	4,593.9	2.36	1.67	1.67	
Last MWD Survey										
12,317.0	93.50	182.30	7,913.5	-4,643.7	23.0	4,643.8	0.00	0.00	0.00	
Proj to TD - RDX 17-10H PBHL										

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
100.0	100.0	-0.1	0.0	First GYRO Survey	
7,200.0	7,193.3	-121.9	126.0	Last GYRO Survey	
7,208.0	7,201.3	-122.1	126.0	First MWD Survey	
12,267.0	7,916.6	-4,593.9	25.0	Last MWD Survey	
12,317.0	7,913.5	-4,643.7	23.0	Proj to TD	

Wolverine Directional, LLC

Survey Report

Company:	RKI Exploration & Production	Local Co-ordinate Reference:	Well RDX 17-10H
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 17-T26S-R30E	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	RDX 17-10H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Checked By: _____ Approved By: _____ Date: _____