

RKI Exploration

Eddy County, NM
Sec 22, T26S, R29E
East Pecos Federal 22 3H

Wellbore #1

3001542285

Design: Wellbore #1

DDC Survey Report

23 February, 2015

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 17 2015
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DDC
Survey Report



Company:	RKI Exploration	Local Co-ordinate Reference:	Well East Pecos Federal 22 3H
Project:	Eddy County, NM	TVD Reference:	Well @ 2894.0usft (Silver Oak 8)
Site:	Sec 22, T26S, R29E	MD Reference:	Well @ 2894.0usft (Silver Oak 8)
Well:	East Pecos Federal 22 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Project	Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 22, T26S, R29E		
Site Position:		Northing:	371,571.70 usft
From:	Map	Easting:	651,210.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 15.727 N
		Longitude:	103° 58' 43.722 W
		Grid Convergence:	0.19 °

Well	East Pecos Federal 22 3H		
Well Position	+N/-S	0.0 usft	Northing: 371,571.70 usft
	+E/-W	0.0 usft	Easting: 651,210.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 1' 15.727 N
		Longitude:	103° 58' 43.724 W
		Ground Level:	2,876.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	11/3/2014	7.34
			Dip Angle
			(°)
			59.85
			Field Strength
			(nT)
			48,116

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			358.80

Survey Program	Date 2/23/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	2,755.0	Gyro (Wellbore #1)	Good_gyro
2,847.0	13,125.0	MWD (Wellbore #1)	MWD default
			Description
			Good Gyro
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	1.67	188.91	100.0	-1.4	-0.2	-1.4	1.67	1.67	0.00	
200.0	2.65	202.81	199.9	-5.0	-1.3	-5.0	1.10	0.98	13.90	
300.0	2.72	202.65	299.8	-9.3	-3.2	-9.3	0.07	0.07	-0.16	
400.0	2.17	205.44	399.7	-13.2	-4.9	-13.1	0.56	-0.55	2.79	
500.0	2.00	205.55	499.6	-16.5	-6.5	-16.4	0.17	-0.17	0.11	
600.0	1.99	206.45	599.6	-19.6	-8.0	-19.5	0.03	-0.01	0.90	
700.0	2.10	207.21	699.5	-22.8	-9.6	-22.6	0.11	0.11	0.76	
800.0	2.12	207.04	799.5	-26.1	-11.3	-25.9	0.02	0.02	-0.17	
900.0	2.22	207.02	899.4	-29.5	-13.0	-29.2	0.10	0.10	-0.02	

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Survey Report



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Site:	Sec 22, T26S, R29E	MD Reference:	Well @ 2894.0usft (Silver Oak 8)
Well:	East Pecos Federal 22 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	2.36	206.08	999.3	-33.1	-14.8	-32.7	0.14	0.14	-0.94
1,100.0	2.59	206.10	1,099.2	-36.9	-16.7	-36.6	0.23	0.23	0.02
1,200.0	2.68	206.30	1,199.1	-41.1	-18.7	-40.7	0.09	0.09	0.20
1,300.0	2.75	207.00	1,299.0	-45.3	-20.8	-44.8	0.08	0.07	0.70
1,400.0	2.86	207.64	1,398.9	-49.6	-23.1	-49.1	0.11	0.11	0.64
1,500.0	3.02	209.09	1,498.7	-54.1	-25.5	-53.6	0.18	0.16	1.45
1,600.0	3.13	208.28	1,598.6	-58.9	-28.1	-58.3	0.12	0.11	-0.81
1,700.0	2.90	204.40	1,698.5	-63.6	-30.4	-62.9	0.31	-0.23	-3.88
1,800.0	2.71	201.50	1,798.3	-68.1	-32.3	-67.4	0.24	-0.19	-2.90
1,900.0	2.71	199.68	1,898.2	-72.5	-34.0	-71.8	0.09	0.00	-1.82
2,000.0	2.36	192.72	1,998.1	-76.7	-35.2	-76.0	0.47	-0.35	-6.96
2,100.0	2.26	190.12	2,098.0	-80.7	-36.0	-79.9	0.14	-0.10	-2.60
2,200.0	2.31	184.90	2,198.0	-84.6	-36.6	-83.8	0.21	0.05	-5.22
2,300.0	2.48	165.60	2,297.9	-88.7	-36.2	-87.9	0.82	0.17	-19.30
2,400.0	2.55	159.24	2,397.8	-92.9	-34.9	-92.2	0.29	0.07	-6.36
2,500.0	2.89	150.59	2,497.7	-97.2	-32.8	-96.5	0.53	0.34	-8.65
2,600.0	3.60	147.12	2,597.5	-102.0	-29.9	-101.4	0.74	0.71	-3.47
2,700.0	4.02	145.68	2,697.3	-107.5	-26.2	-107.0	0.43	0.42	-1.44
Tie Into Gyro @ 2755' MD/ 2752' TVD									
2,755.0	3.75	145.99	2,752.2	-110.6	-24.1	-110.1	0.49	-0.49	0.56
2,800.0	3.48	143.93	2,797.1	-112.9	-22.5	-112.5	0.67	-0.60	-4.59
2,900.0	2.83	121.20	2,896.9	-117.0	-18.8	-116.5	1.40	-0.65	-22.73
3,000.0	3.87	59.27	2,996.8	-117.0	-13.6	-116.6	3.56	1.05	-61.92
3,100.0	5.10	356.60	3,096.5	-110.1	-10.5	-109.9	4.78	1.23	-62.67
3,200.0	4.75	349.10	3,196.0	-101.2	-11.7	-100.9	0.73	-0.35	-7.50
3,300.0	4.21	4.69	3,295.8	-93.6	-12.3	-93.4	1.33	-0.54	15.59
3,400.0	4.04	10.44	3,395.5	-86.5	-11.1	-86.3	0.45	-0.17	5.75
3,500.0	4.17	11.32	3,495.2	-79.5	-9.8	-79.3	0.15	0.14	0.88
3,600.0	4.39	12.05	3,595.0	-72.2	-8.3	-72.0	0.22	0.21	0.74
3,700.0	5.26	351.15	3,694.6	-64.0	-8.1	-63.8	1.95	0.88	-20.90
3,800.0	5.29	332.52	3,794.2	-55.3	-10.9	-55.1	1.71	0.03	-18.63
Crossed Lease Line @ 3888' MD / 3881' TVD									
3,887.5	5.28	311.11	3,881.3	-49.1	-15.8	-48.8	2.24	-0.02	-24.47
3,900.0	5.30	309.44	3,893.8	-48.4	-16.7	-48.0	1.25	0.18	-13.39
4,000.0	5.30	304.95	3,993.4	-42.8	-24.1	-42.3	0.41	0.00	-4.49
4,100.0	5.30	305.35	4,092.9	-37.5	-31.6	-36.8	0.04	0.00	0.40
4,200.0	5.30	305.77	4,192.5	-32.1	-39.1	-31.3	0.04	0.00	0.42
4,300.0	5.24	306.82	4,292.1	-26.7	-46.6	-25.7	0.11	-0.06	1.05
4,400.0	4.98	302.53	4,391.7	-21.3	-53.7	-20.2	0.46	-0.26	-4.28
4,500.0	4.86	290.34	4,491.3	-17.8	-61.5	-16.5	1.05	-0.13	-12.20
4,600.0	4.80	288.22	4,591.0	-15.0	-69.4	-13.6	0.19	-0.06	-2.12
4,700.0	4.80	288.40	4,690.6	-12.4	-77.4	-10.8	0.02	0.00	0.19
4,800.0	4.34	292.90	4,790.3	-9.7	-85.1	-7.9	0.58	-0.46	4.50

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,900.0	3.94	296.62	4,890.0	-6.6	-91.4	-4.7	0.49	-0.40	3.72	
5,000.0	3.77	295.15	4,989.8	-3.6	-97.5	-1.6	0.20	-0.17	-1.47	
5,100.0	3.70	294.40	5,089.6	-0.9	-103.4	1.2	0.08	-0.07	-0.75	
5,200.0	3.55	294.10	5,189.4	1.7	-109.1	4.0	0.15	-0.15	-0.30	
5,300.0	3.34	294.00	5,289.2	4.1	-114.6	6.5	0.21	-0.21	-0.10	
5,400.0	3.21	292.54	5,389.0	6.4	-119.9	8.9	0.15	-0.12	-1.46	
5,500.0	3.20	291.29	5,488.9	8.5	-125.0	11.1	0.07	-0.01	-1.25	
5,600.0	3.01	290.91	5,588.7	10.4	-130.1	13.1	0.19	-0.19	-0.38	
5,700.0	2.99	291.84	5,688.6	12.3	-135.0	15.1	0.05	-0.01	0.93	
5,800.0	2.59	288.72	5,788.5	14.0	-139.5	16.9	0.43	-0.40	-3.12	
5,900.0	2.47	287.54	5,888.4	15.4	-143.7	18.4	0.13	-0.12	-1.19	
6,000.0	2.17	288.23	5,988.3	16.6	-147.7	19.7	0.31	-0.31	0.70	
6,100.0	1.38	303.16	6,088.2	17.9	-150.5	21.1	0.90	-0.78	14.93	
6,200.0	0.64	317.30	6,188.2	19.0	-151.7	22.1	0.78	-0.74	14.14	
6,300.0	0.46	304.85	6,288.2	19.6	-152.4	22.8	0.22	-0.18	-12.45	
6,400.0	0.39	279.32	6,388.2	19.9	-153.1	23.1	0.20	-0.07	-25.53	
6,500.0	0.31	258.26	6,488.2	19.9	-153.7	23.1	0.15	-0.08	-21.07	
6,600.0	0.10	242.70	6,588.2	19.7	-154.1	23.0	0.21	-0.21	-15.56	
6,700.0	0.27	60.90	6,688.2	19.8	-154.0	23.0	0.37	0.17	178.20	
6,800.0	0.73	55.85	6,788.2	20.2	-153.3	23.4	0.47	0.47	-5.05	
6,900.0	0.39	71.02	6,888.2	20.9	-152.2	24.1	0.37	-0.34	15.17	
7,000.0	0.18	158.74	6,988.2	20.8	-151.9	23.9	0.43	-0.21	87.73	
7,100.0	0.05	175.20	7,088.2	20.5	-151.9	23.7	0.13	-0.13	16.46	
7,200.0	0.48	37.40	7,188.2	20.8	-151.7	23.9	0.51	0.42	-137.80	
7,300.0	0.89	69.57	7,288.2	21.4	-150.7	24.5	0.55	0.42	32.17	
7,400.0	0.37	31.48	7,388.2	21.9	-149.8	25.0	0.64	-0.52	-38.09	
7,500.0	0.93	299.11	7,488.2	22.6	-150.4	25.8	1.02	0.56	-92.36	
7,600.0	1.18	283.77	7,588.2	23.3	-152.1	26.5	0.37	0.25	-15.35	
7,700.0	1.06	272.46	7,688.1	23.5	-154.1	26.7	0.25	-0.12	-11.30	
7,800.0	1.21	311.74	7,788.1	23.8	-155.7	27.0	0.77	0.15	39.28	
7,900.0	7.51	358.90	7,887.9	29.8	-157.1	33.0	6.75	6.30	47.16	
8,000.0	16.42	1.24	7,985.8	49.7	-156.3	53.0	8.93	8.91	2.34	
8,100.0	25.12	2.11	8,078.9	85.7	-155.0	88.9	8.70	8.69	0.87	
8,200.0	30.29	359.20	8,167.4	132.3	-154.6	135.5	5.35	5.17	-2.91	
8,300.0	40.08	1.80	8,249.1	189.8	-154.1	193.0	9.90	9.79	2.59	
8,400.0	44.32	0.58	8,321.9	258.2	-152.4	261.4	4.32	4.24	-1.22	
8,500.0	49.56	0.20	8,391.3	330.1	-151.5	333.2	5.24	5.23	-0.38	
8,600.0	58.76	358.09	8,449.7	411.2	-154.0	414.3	9.36	9.21	-2.11	
8,700.0	69.57	1.04	8,493.8	500.7	-154.0	503.8	11.12	10.80	2.95	
8,800.0	81.25	0.80	8,519.2	597.2	-153.1	600.3	11.69	11.68	-0.24	
8,900.0	83.94	0.78	8,530.6	696.6	-151.1	699.6	2.69	2.69	-0.02	
9,000.0	83.96	358.50	8,541.0	796.0	-152.3	799.0	2.27	0.02	-2.28	
9,100.0	83.85	358.34	8,551.8	895.4	-155.3	898.4	0.20	-0.11	-0.16	
9,200.0	84.49	358.01	8,562.0	994.8	-158.4	997.9	0.72	0.64	-0.32	

DDC
Survey Report



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Site:	Sec 22, T26S, R29E	MD Reference:	Well @ 2894.0usft (Silver Oak 8)
Well:	East Pecos Federal 22 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.0	85.33	358.00	8,571.0	1,094.3	-161.9	1,097.5	0.83	0.83	-0.01
9,400.0	86.12	357.91	8,578.5	1,194.0	-165.3	1,197.2	0.80	0.79	-0.09
9,500.0	84.93	357.86	8,585.2	1,293.7	-169.2	1,296.9	1.19	-1.19	-0.05
9,600.0	85.31	357.57	8,594.2	1,393.2	-173.2	1,396.5	0.48	0.38	-0.29
9,700.0	87.10	357.56	8,600.9	1,492.9	-177.6	1,496.3	1.79	1.79	-0.02
9,800.0	89.48	358.00	8,604.1	1,592.7	-181.4	1,596.2	2.42	2.38	0.44
9,900.0	91.96	358.19	8,602.6	1,692.7	-184.8	1,696.2	2.49	2.48	0.19
10,000.0	92.63	358.19	8,598.1	1,792.5	-187.7	1,796.1	0.67	0.67	-0.01
10,100.0	91.87	357.59	8,594.0	1,892.4	-191.4	1,896.0	0.97	-0.76	-0.60
10,200.0	90.60	357.11	8,591.8	1,992.2	-196.1	1,995.9	1.36	-1.27	-0.48
10,300.0	90.31	356.72	8,591.3	2,092.1	-201.4	2,095.8	0.48	-0.29	-0.39
10,400.0	90.70	356.38	8,590.5	2,191.9	-207.5	2,195.8	0.52	0.39	-0.35
10,500.0	91.92	356.54	8,588.3	2,291.7	-213.8	2,295.6	1.23	1.22	0.16
10,600.0	91.01	356.94	8,585.4	2,391.5	-219.5	2,395.5	1.00	-0.91	0.40
10,700.0	88.72	358.27	8,585.5	2,491.4	-223.7	2,495.5	2.64	-2.29	1.33
10,800.0	89.55	358.69	8,587.3	2,591.3	-226.3	2,595.5	0.94	0.84	0.42
10,900.0	90.11	358.71	8,587.6	2,691.3	-228.6	2,695.5	0.56	0.56	0.02
11,000.0	91.01	359.40	8,586.6	2,791.3	-230.2	2,795.5	1.13	0.90	0.69
11,100.0	91.16	359.44	8,584.7	2,891.2	-231.2	2,895.5	0.16	0.16	0.04
11,200.0	91.59	359.69	8,582.2	2,991.2	-231.9	2,995.4	0.49	0.43	0.25
11,300.0	91.02	359.10	8,580.0	3,091.2	-233.0	3,095.4	0.82	-0.57	-0.59
11,400.0	91.10	358.99	8,578.1	3,191.1	-234.6	3,195.4	0.13	0.08	-0.11
11,500.0	91.32	358.70	8,576.2	3,291.1	-236.7	3,295.3	0.37	0.22	-0.29
11,600.0	92.13	358.70	8,573.2	3,391.0	-239.0	3,395.3	0.81	0.81	0.00
11,700.0	92.11	358.87	8,569.0	3,490.9	-241.2	3,495.2	0.17	-0.02	0.17
11,800.0	90.21	359.10	8,566.7	3,590.9	-242.9	3,595.2	1.91	-1.90	0.23
11,900.0	89.32	359.26	8,567.8	3,690.9	-244.4	3,695.2	0.91	-0.89	0.16
12,000.0	90.41	359.40	8,568.2	3,790.8	-245.5	3,795.2	1.10	1.09	0.14
12,100.0	92.07	359.40	8,566.1	3,890.8	-246.5	3,895.1	1.66	1.66	0.00
12,200.0	91.13	359.67	8,562.5	3,990.7	-247.4	3,995.1	0.99	-0.95	0.27
12,300.0	88.82	359.34	8,562.6	4,090.7	-248.2	4,095.0	2.33	-2.30	-0.33
12,400.0	88.66	359.10	8,565.0	4,190.7	-249.7	4,195.0	0.29	-0.17	-0.24
12,500.0	88.87	359.10	8,567.2	4,290.7	-251.3	4,295.0	0.21	0.21	0.00
12,600.0	89.17	359.10	8,568.9	4,390.6	-252.8	4,395.0	0.30	0.30	0.00
12,700.0	89.86	359.38	8,569.8	4,490.6	-254.2	4,495.0	0.75	0.69	0.28
12,800.0	90.59	359.40	8,569.4	4,590.6	-255.2	4,594.9	0.74	0.74	0.02
12,900.0	90.36	359.07	8,568.6	4,690.6	-256.6	4,694.9	0.41	-0.24	-0.33
13,000.0	89.27	358.31	8,568.9	4,790.6	-258.8	4,794.9	1.33	-1.09	-0.76
13,100.0	88.30	357.70	8,571.2	4,890.5	-262.5	4,894.9	1.14	-0.97	-0.61
TD @ 13125' MD / 8572' TVD									
13,125.0	88.30	357.70	8,572.0	4,915.4	-263.5	4,919.9	0.00	0.00	0.00

DDC
Survey Report



Company:	RKI Exploration	Local Co-ordinate Reference:	Well East Pecos Federal 22 3H
Project:	Eddy County, NM	TVD Reference:	Well @ 2894.0usft (Silver Oak 8)
Site:	Sec 22, T26S, R29E	MD Reference:	Well @ 2894.0usft (Silver Oak 8)
Well:	East Pecos Federal 22 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,755.0	2,752.2	-110.6	-24.1	Tie Into Gyro @ 2755' MD/ 2752' TVD
3,887.5	3,881.3	-49.1	-15.8	Crossed Lease Line @ 3888' MD / 3881' TVD
13,125.0	8,572.0	4,915.4	-263.5	TD @ 13125' MD / 8572' TVD

Checked By: _____ Approved By: _____ Date: _____