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MS Directional Survey Data Certification

**NM OIL CONSERVATION
ARTESIA DISTRICT**

APR 26 2018

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MS Directional Job Number: DDMO-171210
Survey Type: MWD
Operating Company: RKI Exploration & Production LLC
Well Name & Number: Tucker Draw 9-4 Federal COM 3H 30-015-44486
Location: Eddy County, NM
API Number: 30-015-44486
Tie In Depth: 871' MD
Surveyed Depths: 982' – 18,694' MD
Projected TD Survey: 18,740' MD
Dates Performed: 12/26/2017 – 01/18/2018

I certify that the data is true, correct and complete and within the limitations of the tool set forth by MS Directional; that I am authorized and qualified to make this report and that I have reviewed this report and find it conforms to the principles and procedures as set forth by MS Directional.

Digitally signed by: 

MWD Surveyor Name: Kyle Etheridge

Date: 03-05-2018

Email: ketheridge@msdir.com

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Company:	RKI Exploration & Production LLC											
Well Name:	Tucker Draw 9-4 Federal COM 3H											
Location:	Eddy County, NM											
Rig:	H&p #556			Magnetic Declination:	6.88	REFERENCED TO GRID NORTH						
Job Number:	DDMO-171210											
API #:	30-015-44486											
Vertical Section Azimuth:	357.98			Proposed Direction:	357.98							
Survey Calculation Method:	Minimum Curvature											
PTB:	MD	INC	AZM	TVD	N/S	E/W	VS					
	18,740	85.8	1.5	11122.2	7974.28	-258.53	7978.44					
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'	
TIE IN	871	0.50	87.80	870.95	-2.02	-4.47		4.91	245.68			
1	982	1.00	170.70	981.94	-2.96	-3.83	-2.82	4.84	232.32	0.96	0.45	
2	1,077	1.30	178.60	1076.92	-4.85	-3.67	-4.72	6.08	217.09	0.36	0.32	
3	1,172	1.60	174.10	1171.89	-7.25	-3.51	-7.12	8.05	205.81	0.34	0.32	
4	1,267	1.70	162.70	1266.85	-9.91	-2.95	-9.80	10.34	196.58	0.36	0.11	
5	1,362	1.10	160.40	1361.82	-12.12	-2.23	-12.03	12.32	190.41	0.63	-0.63	
6	1,456	0.70	145.70	1455.81	-13.44	-1.60	-13.38	13.54	186.79	0.49	-0.43	
7	1,551	0.70	127.50	1550.81	-14.28	-0.81	-14.24	14.30	183.26	0.23	0.00	
8	1,646	0.70	155.80	1645.80	-15.16	-0.11	-15.14	15.16	180.43	0.36	0.00	
9	1,741	0.50	71.60	1740.80	-15.56	0.52	-15.57	15.57	178.10	0.86	-0.21	
10	1,835	0.90	29.90	1834.79	-14.79	1.27	-14.82	14.84	175.08	0.66	0.43	
11	1,930	0.70	38.40	1929.78	-13.69	2.01	-13.75	13.83	171.66	0.24	-0.21	
12	2,025	0.30	36.70	2024.78	-13.03	2.52	-13.11	13.27	169.07	0.42	-0.42	
13	2,119	0.20	356.90	2118.78	-12.67	2.65	-12.76	12.95	168.17	0.21	-0.11	
14	2,214	0.20	167.60	2213.78	-12.67	2.68	-12.75	12.95	168.05	0.42	0.00	
15	2,309	0.20	235.40	2308.77	-12.92	2.58	-13.01	13.18	168.71	0.23	0.00	
16	2,403	0.20	173.60	2402.77	-13.18	2.46	-13.26	13.41	169.41	0.22	0.00	
17	2,498	0.40	185.00	2497.77	-13.67	2.45	-13.75	13.89	169.83	0.22	0.21	
18	2,593	0.70	183.50	2592.77	-14.58	2.39	-14.66	14.78	170.70	0.32	0.32	
19	2,687	1.00	314.80	2686.76	-14.58	1.77	-14.63	14.69	173.07	1.65	0.32	
20	2,782	1.90	326.80	2781.73	-12.68	0.32	-12.68	12.68	178.55	0.99	0.95	
21	2,877	1.70	331.00	2876.69	-10.13	-1.23	-10.08	10.20	186.90	0.25	-0.21	
22	2,971	0.80	341.30	2970.66	-8.29	-2.11	-8.21	8.55	194.30	0.98	-0.96	
23	3,066	0.50	1.10	3065.66	-7.24	-2.32	-7.16	7.60	197.73	0.39	-0.32	
24	3,161	0.40	28.80	3160.65	-6.54	-2.15	-6.46	6.88	198.19	0.25	-0.11	
25	3,255	0.80	100.80	3254.65	-6.37	-1.35	-6.32	6.51	191.92	0.83	0.43	
26	3,350	1.20	117.70	3349.63	-6.96	0.19	-6.96	6.96	178.47	0.52	0.42	
27	3,445	0.10	24.50	3444.63	-7.35	1.10	-7.38	7.43	171.47	1.27	-1.16	
28	3,540	0.90	336.60	3539.62	-6.59	0.84	-6.61	6.64	172.74	0.88	0.84	
29	3,579	1.10	325.70	3578.62	-6.00	0.51	-6.01	6.02	175.17	0.71	0.51	
30	3,632	1.00	320.00	3631.61	-5.22	-0.08	-5.22	5.22	180.84	0.27	-0.19	
31	3,727	1.50	302.60	3726.59	-3.92	-1.66	-3.86	4.25	202.94	0.66	0.53	
32	3,821	2.80	286.40	3820.52	-2.61	-4.90	-2.43	5.55	241.98	1.51	1.38	
33	3,916	3.10	290.30	3915.39	-1.06	-9.53	-0.72	9.59	263.66	0.38	0.32	

Company:		RKI Exploration & Production LLC										
Well Name:		Tucker Draw 9-4 Federal COM 3H										
Location:		Eddy County, NM										
Rig:		H&p #556										
Job Number:		DDMO-171210				Magnetic Declination:		6.88		REFERENCED TO GRID NORTH		
API #:		30-015-44486										
Vertical Section Azimuth:				357.98		Proposed Direction:		357.98				
Survey Calculation Method:				Minimum Curvature								
PTB:	MD	INC	AZM	TVD	N/S	E/W	VS					
	18,740	85.8	1.5	11122.2	7974.28	-258.53	7978.44					
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'	
34	4,011	4.00	278.80	4010.21	0.34	-15.22	0.88	15.22	271.28	1.20	0.95	
35	4,106	4.30	276.20	4104.96	1.23	-22.03	2.01	22.06	273.20	0.37	0.32	
36	4,201	4.20	280.30	4199.70	2.24	-28.99	3.26	29.08	274.41	0.34	-0.11	
37	4,295	4.50	278.70	4293.43	3.41	-36.03	4.68	36.19	275.41	0.34	0.32	
38	4,390	4.50	276.60	4388.14	4.40	-43.41	5.93	43.63	275.79	0.17	0.00	
39	4,485	4.20	280.00	4482.86	5.43	-50.54	7.21	50.83	276.14	0.42	-0.32	
40	4,579	4.10	278.90	4576.62	6.55	-57.25	8.57	57.62	276.53	0.14	-0.11	
41	4,674	5.50	265.80	4671.28	6.74	-65.15	9.04	65.49	275.91	1.86	1.47	
42	4,769	6.50	259.80	4765.76	5.46	-74.98	8.10	75.18	274.16	1.24	1.05	
43	4,864	7.00	262.00	4860.10	3.70	-86.00	6.73	86.08	272.46	0.59	0.53	
44	4,958	6.80	261.10	4953.42	2.04	-97.17	5.47	97.20	271.20	0.24	-0.21	
45	5,053	6.60	260.40	5047.77	0.26	-108.11	4.07	108.11	270.14	0.23	-0.21	
46	5,148	7.80	260.00	5142.02	-1.77	-119.85	2.46	119.86	269.15	1.26	1.26	
47	5,242	7.30	260.70	5235.21	-3.84	-132.02	0.82	132.08	268.33	0.54	-0.53	
48	5,337	7.10	259.20	5329.46	-5.92	-143.74	-0.85	143.87	267.64	0.29	-0.21	
49	5,432	6.50	259.00	5423.79	-8.04	-154.79	-2.58	155.00	267.03	0.63	-0.63	
50	5,527	6.60	266.40	5518.17	-9.41	-165.52	-3.57	165.78	266.75	0.89	0.11	
51	5,621	8.80	274.20	5611.32	-9.22	-178.08	-2.94	178.32	267.04	2.59	2.34	
52	5,716	8.30	273.70	5705.27	-8.25	-192.17	-1.47	192.35	267.54	0.53	-0.53	
53	5,811	7.80	271.10	5799.33	-7.68	-205.46	-0.44	205.60	267.86	0.65	-0.53	
54	5,905	6.90	269.30	5892.56	-7.63	-217.48	0.04	217.62	267.99	0.99	-0.96	
55	6,000	4.50	273.30	5987.08	-7.48	-226.91	0.52	227.03	268.11	2.56	-2.53	
56	6,095	3.70	268.40	6081.84	-7.36	-233.70	0.89	233.81	268.20	0.92	-0.84	
57	6,189	2.20	271.30	6175.71	-7.40	-238.53	1.01	238.65	268.22	1.60	-1.60	
58	6,284	0.60	260.20	6270.68	-7.44	-240.85	1.05	240.96	268.23	1.70	-1.68	
59	6,379	0.80	282.60	6365.67	-7.38	-241.98	1.15	242.10	268.25	0.35	0.21	
60	6,474	0.70	248.80	6460.66	-7.45	-243.17	1.13	243.28	268.25	0.47	-0.11	
61	6,568	0.90	250.80	6554.65	-7.90	-244.40	0.72	244.53	268.15	0.21	0.21	
62	6,663	0.90	77.30	6649.65	-7.98	-244.38	0.64	244.51	268.13	1.89	0.00	
63	6,758	1.10	60.90	6744.64	-7.37	-242.86	1.19	242.97	268.26	0.37	0.21	
64	6,852	1.30	64.10	6838.62	-6.47	-241.11	2.04	241.19	268.46	0.22	0.21	
65	6,947	1.10	67.30	6933.59	-5.64	-239.30	2.79	239.36	268.65	0.22	-0.21	
66	7,042	0.90	98.00	7028.58	-5.40	-237.72	2.99	237.78	268.70	0.59	-0.21	
67	7,136	0.90	73.10	7122.57	-5.28	-236.28	3.05	236.34	268.72	0.41	0.00	

Company:	RKI Exploration & Production LLC
Well Name:	Tucker Draw 9-4 Federal COM 3H
Location:	Eddy County, NM
Rig:	H&p #556
Job Number:	DDMO-171210
API #:	30-015-44486

Magnetic Declination: 6.88 REFERENCED TO GRID NORTH

Vertical Section Azimuth: 357.98 Proposed Direction: 357.98

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	18,740	85.8	1.5	11122.2	7974.28	-258.53	7978.44

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
68	7,231	1.00	88.40	7217.56	-5.04	-234.74	3.23	234.79	268.77	0.29	0.11
69	7,326	0.70	93.40	7312.55	-5.06	-233.33	3.17	233.38	268.76	0.33	-0.32
70	7,420	0.40	130.70	7406.54	-5.30	-232.51	2.89	232.57	268.69	0.48	-0.32
71	7,515	0.80	171.00	7501.54	-6.18	-232.15	2.01	232.23	268.48	0.59	0.42
72	7,610	1.40	101.30	7596.52	-7.06	-230.91	1.09	231.02	268.25	1.42	0.63
73	7,704	0.60	141.20	7690.51	-7.67	-229.48	0.43	229.60	268.09	1.08	-0.85
74	7,799	0.20	137.10	7785.51	-8.18	-229.05	-0.10	229.20	267.96	0.42	-0.42
75	7,893	0.70	220.50	7879.50	-8.73	-229.31	-0.64	229.48	267.82	0.75	0.53
76	7,988	0.80	255.30	7974.50	-9.34	-230.33	-1.22	230.52	267.68	0.48	0.11
77	8,082	1.10	268.10	8068.48	-9.54	-231.87	-1.36	232.06	267.64	0.39	0.32
78	8,177	1.50	261.50	8163.46	-9.75	-234.01	-1.50	234.21	267.61	0.45	0.42
79	8,272	1.10	0.70	8258.44	-9.02	-235.23	-0.73	235.40	267.80	2.10	-0.42
80	8,366	1.80	341.60	8352.41	-6.72	-235.68	1.59	235.78	268.37	0.90	0.74
81	8,461	1.70	341.90	8447.37	-3.97	-236.59	4.38	236.62	269.04	0.11	-0.11
82	8,556	1.40	345.10	8542.33	-1.50	-237.33	6.86	237.33	269.64	0.33	-0.32
83	8,650	0.80	328.50	8636.32	0.16	-237.97	8.55	237.97	270.04	0.72	-0.64
84	8,745	0.60	286.50	8731.31	0.87	-238.79	9.29	238.79	270.21	0.56	-0.21
85	8,840	1.70	276.50	8826.29	1.17	-240.67	9.65	240.67	270.28	1.17	1.16
86	8,935	1.00	251.30	8921.26	1.07	-242.85	9.62	242.85	270.25	0.95	-0.74
87	9,029	0.80	252.00	9015.25	0.60	-244.25	9.21	244.25	270.14	0.21	-0.21
88	9,124	1.20	235.00	9110.24	-0.18	-245.70	8.48	245.70	269.96	0.52	0.42
89	9,219	1.60	127.80	9205.22	-1.56	-245.46	7.09	245.47	269.64	2.39	0.42
90	9,314	1.70	145.00	9300.18	-3.53	-243.61	5.06	243.63	269.17	0.53	0.11
91	9,408	1.50	138.50	9394.14	-5.59	-241.99	2.94	242.06	268.68	0.29	-0.21
92	9,503	1.00	156.50	9489.12	-7.28	-240.84	1.21	240.95	268.27	0.66	-0.53
93	9,598	0.60	334.60	9584.12	-7.59	-240.72	0.90	240.84	268.19	1.68	-0.42
94	9,692	0.50	304.10	9678.11	-6.92	-241.27	1.59	241.37	268.36	0.32	-0.11
95	9,787	0.70	302.40	9773.11	-6.37	-242.11	2.16	242.19	268.49	0.21	0.21
96	9,882	0.70	323.00	9868.10	-5.60	-242.95	2.97	243.01	268.68	0.26	0.00
97	9,977	1.10	322.40	9963.09	-4.41	-243.85	4.18	243.89	268.96	0.42	0.42
98	10,071	1.00	288.90	10057.07	-3.43	-245.18	5.21	245.20	269.20	0.65	-0.11
99	10,166	1.20	308.30	10152.06	-2.55	-246.74	6.15	246.76	269.41	0.44	0.21
100	10,261	1.00	287.40	10247.04	-1.68	-248.31	7.07	248.32	269.61	0.47	-0.21
101	10,355	1.00	313.40	10341.03	-0.88	-249.69	7.93	249.69	269.80	0.48	0.00

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	18,740		85.8		1.5		11122.2	7974.28		-258.53		7978.44
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance Azm		DLS/ 100	BUR/ 100'	
102	10,387	0.70	286.40	10373.02	-0.63	-250.08	8.19	250.08	269.86	1.54	-0.94	
103	10,445	1.90	352.80	10431.01	0.43	-250.54	9.26	250.54	270.10	3.00	2.07	
104	10,540	14.30	12.60	10524.89	13.49	-248.17	22.23	248.54	273.11	13.19	13.05	
105	10,634	26.20	5.10	10612.93	45.61	-243.78	54.17	248.01	280.60	12.93	12.66	
106	10,729	33.90	358.70	10695.12	93.07	-242.51	101.56	259.76	290.99	8.77	8.11	
107	10,824	40.40	359.70	10770.80	150.40	-243.28	158.88	286.01	301.73	6.87	6.84	
108	10,919	47.70	2.40	10839.04	216.38	-241.96	224.78	324.60	311.81	7.93	7.68	
109	11,013	54.90	0.30	10897.78	289.67	-240.31	297.96	376.37	320.32	7.85	7.66	
110	11,108	60.30	359.00	10948.67	369.85	-240.82	378.10	441.34	326.93	5.80	5.68	
111	11,203	64.40	357.80	10992.74	453.94	-243.19	462.23	514.98	331.82	4.46	4.32	
112	11,297	72.70	358.50	11027.09	541.31	-245.99	549.64	594.58	335.56	8.86	8.83	
113	11,392	78.20	0.00	11050.95	633.22	-247.18	641.54	679.75	338.68	5.99	5.79	
114	11,487	88.00	359.90	11062.35	727.41	-247.27	735.68	768.29	341.23	10.32	10.32	
115	11,590	91.50	0.50	11062.80	830.40	-246.91	838.58	866.33	343.44	3.45	3.40	
116	11,684	92.70	0.60	11059.35	924.33	-246.00	932.42	956.50	345.10	1.28	1.28	
117	11,779	91.70	359.80	11055.71	1019.25	-245.67	1027.28	1048.44	346.45	1.35	-1.05	
118	11,872	86.40	358.70	11057.25	1112.20	-246.89	1120.21	1139.27	347.48	5.82	-5.70	
119	11,966	87.60	358.30	11062.17	1206.04	-249.35	1214.08	1231.54	348.32	1.35	1.28	
120	12,060	89.90	358.80	11064.22	1299.98	-251.72	1308.04	1324.12	349.04	2.50	2.45	
121	12,155	93.00	358.60	11061.81	1394.91	-253.88	1402.99	1417.83	349.68	3.27	3.26	
122	12,250	92.70	359.00	11057.09	1489.77	-255.87	1497.87	1511.58	350.25	0.53	-0.32	
123	12,344	90.20	359.40	11054.71	1583.73	-257.18	1591.81	1604.47	350.78	2.69	-2.66	
124	12,438	90.10	359.60	11054.46	1677.72	-258.00	1685.77	1697.44	351.26	0.24	-0.11	
125	12,533	90.30	0.80	11054.13	1772.72	-257.67	1780.70	1791.35	351.73	1.28	0.21	
126	12,627	92.10	0.90	11052.16	1866.68	-256.27	1874.56	1884.19	352.18	1.92	1.91	
127	12,722	89.00	359.90	11051.25	1961.66	-255.61	1969.45	1978.25	352.58	3.43	-3.26	
128	12,816	89.80	358.60	11052.24	2055.65	-256.84	2063.42	2071.63	352.88	1.62	0.85	
129	12,910	90.80	359.20	11051.75	2149.63	-258.64	2157.41	2165.13	353.14	1.24	1.06	
130	13,004	91.10	359.20	11050.19	2243.61	-259.96	2251.37	2258.62	353.39	0.32	0.32	
131	13,099	91.60	0.10	11047.95	2338.58	-260.54	2346.31	2353.04	353.64	1.08	0.53	
132	13,193	91.50	0.60	11045.41	2432.54	-259.96	2440.19	2446.39	353.90	0.54	-0.11	
133	13,287	90.10	1.50	11044.09	2526.51	-258.24	2534.04	2539.67	354.16	1.77	-1.49	
134	13,382	89.00	0.80	11044.84	2621.49	-256.33	2628.89	2633.99	354.42	1.37	-1.16	
135	13,476	90.30	1.20	11045.41	2715.47	-254.69	2722.76	2727.39	354.64	1.45	1.38	

Company:		RKI Exploration & Production LLC									
Well Name:		Tucker Draw 9-4 Federal COM 3H									
Location:		Eddy County, NM									
Rig:		H&p #556				Magnetic Declination:		6.88		REFERENCED TO GRID NORTH	
Job Number:		DDMO-171210									
API #:		30-015-44486									
Vertical Section Azimuth:				357.98		Proposed Direction:		357.98			
Survey Calculation Method:				Minimum Curvature							
PTB:	MD		INC		AZM	TVD	N/S	E/W		VS	
	18,740		85.8		1.5	11122.2	7974.28	-258.53		7978.44	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance Azm		DLS/ 100	BUR/ 100'
136	13,571	90.00	0.10	11045.17	2810.46	-253.62	2817.65	2821.88	354.84	1.20	-0.32
137	13,666	90.80	0.50	11044.50	2905.46	-253.12	2912.57	2916.46	355.02	0.94	0.84
138	13,760	90.70	358.70	11043.27	2999.44	-253.77	3006.52	3010.16	355.16	1.92	-0.11
139	13,855	88.80	357.00	11043.69	3094.37	-257.34	3101.51	3105.05	355.25	2.68	-2.00
140	13,948	90.30	356.90	11044.42	3187.23	-262.29	3194.49	3198.00	355.30	1.62	1.61
141	14,042	92.10	357.80	11042.45	3281.10	-266.63	3288.46	3291.92	355.35	2.14	1.91
142	14,137	92.30	359.40	11038.80	3376.00	-268.95	3383.38	3386.70	355.45	1.70	0.21
143	14,247	88.80	1.20	11037.74	3485.97	-268.37	3493.27	3496.29	355.60	3.58	-3.18
144	14,379	86.20	0.70	11043.50	3617.82	-266.19	3624.95	3627.60	355.79	2.01	-1.97
145	14,473	87.60	1.50	11048.59	3711.66	-264.38	3718.67	3721.06	355.93	1.71	1.49
146	14,568	87.50	1.60	11052.65	3806.54	-261.82	3813.40	3815.53	356.07	0.15	-0.11
147	14,661	87.90	1.10	11056.38	3899.44	-259.63	3906.17	3908.07	356.19	0.69	0.43
148	14,755	87.90	1.00	11059.82	3993.36	-257.91	3999.97	4001.68	356.30	0.11	0.00
149	14,849	88.50	2.20	11062.78	4087.27	-255.28	4093.73	4095.24	356.43	1.43	0.64
150	14,942	89.70	358.10	11064.24	4180.24	-255.04	4186.63	4188.01	356.51	4.59	1.29
151	15,036	89.20	359.90	11065.14	4274.22	-256.68	4280.61	4281.92	356.56	1.99	-0.53
152	15,130	90.70	0.80	11065.22	4368.21	-256.11	4374.52	4375.71	356.64	1.86	1.60
153	15,225	89.80	0.50	11064.81	4463.20	-255.03	4469.42	4470.48	356.73	1.00	-0.95
154	15,319	89.10	0.40	11065.71	4557.20	-254.29	4563.33	4564.29	356.81	0.75	-0.74
155	15,414	89.10	359.60	11067.20	4652.18	-254.29	4658.26	4659.13	356.87	0.84	0.00
156	15,507	87.90	359.60	11069.64	4745.15	-254.94	4751.19	4751.99	356.92	1.29	-1.29
157	15,601	86.10	0.10	11074.56	4839.01	-255.19	4845.00	4845.74	356.98	1.99	-1.91
158	15,694	86.40	359.50	11080.64	4931.81	-255.51	4937.76	4938.43	357.03	0.72	0.32
159	15,788	88.70	359.10	11084.66	5025.71	-256.66	5031.64	5032.26	357.08	2.48	2.45
160	15,882	89.80	359.40	11085.89	5119.70	-257.89	5125.61	5126.19	357.12	1.21	1.17
161	15,977	93.00	1.80	11083.57	5214.64	-256.89	5220.46	5220.97	357.18	4.21	3.37
162	16,071	91.70	3.10	11079.71	5308.48	-252.88	5314.09	5314.49	357.27	1.95	-1.38
163	16,165	89.30	1.90	11078.89	5402.37	-248.78	5407.79	5408.10	357.36	2.85	-2.55
164	16,259	86.20	0.90	11082.58	5496.26	-246.48	5501.53	5501.78	357.43	3.46	-3.30
165	16,353	87.10	0.80	11088.07	5590.09	-245.09	5595.25	5595.46	357.49	0.96	0.96
166	16,447	87.40	359.40	11092.58	5683.98	-244.93	5689.08	5689.25	357.53	1.52	0.32
167	16,541	87.60	359.50	11096.68	5777.88	-245.83	5782.96	5783.11	357.56	0.24	0.21
168	16,636	86.90	359.00	11101.24	5872.77	-247.07	5877.82	5877.96	357.59	0.91	-0.74
169	16,730	86.80	359.00	11106.41	5966.61	-248.71	5971.67	5971.79	357.61	0.11	-0.11

Company:		RKI Exploration & Production LLC									
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Location:		Eddy County, NM									
Rig:		H&p #556		Magnetic Declination:				6.88	REFERENCED TO GRID NORTH		
Job Number:		DDMO-171210									
API #:		30-015-44486									
Vertical Section Azimuth:				357.98		Proposed Direction:		357.98			
Survey Calculation Method:				Minimum Curvature							
PTB:	MD		INC		AZM	TVD	N/S	E/W		VS	
	18,740		85.8		1.5	11122.2	7974.28	-258.53		7978.44	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
170	16,824	87.00	358.60	11111.49	6060.45	-250.68	6065.52	6065.63	357.63	0.48	0.21
171	16,917	87.60	356.70	11115.87	6153.26	-254.49	6158.41	6158.52	357.63	2.14	0.65
172	17,011	90.00	355.60	11117.84	6247.02	-260.80	6252.33	6252.46	357.61	2.81	2.55
173	17,106	89.30	358.00	11118.42	6341.87	-266.10	6347.30	6347.45	357.60	2.63	-0.74
174	17,200	89.90	358.10	11119.08	6435.81	-269.30	6441.30	6441.44	357.60	0.65	0.64
175	17,294	91.40	357.80	11118.01	6529.74	-272.66	6535.29	6535.43	357.61	1.63	1.60
176	17,388	90.20	358.50	11116.70	6623.68	-275.69	6629.28	6629.41	357.62	1.48	-1.28
177	17,482	90.80	359.30	11115.88	6717.66	-277.50	6723.26	6723.39	357.63	1.06	0.64
178	17,576	89.00	358.90	11116.04	6811.64	-278.97	6817.24	6817.35	357.65	1.96	-1.91
179	17,669	88.60	359.30	11117.99	6904.61	-280.43	6910.20	6910.30	357.67	0.61	-0.43
180	17,763	92.20	0.40	11117.33	6998.59	-280.68	7004.13	7004.22	357.70	4.00	3.83
181	17,858	92.90	359.80	11113.11	7093.49	-280.51	7098.97	7099.04	357.74	0.97	0.74
182	17,952	92.90	1.00	11108.35	7187.37	-279.86	7192.77	7192.82	357.77	1.27	0.00
183	18,046	91.20	1.10	11104.99	7281.29	-278.14	7286.57	7286.60	357.81	1.81	-1.81
184	18,140	91.00	1.80	11103.18	7375.24	-275.76	7380.38	7380.40	357.86	0.77	-0.21
185	18,234	91.50	2.00	11101.13	7469.17	-272.64	7474.14	7474.14	357.91	0.57	0.53
186	18,328	89.80	3.00	11100.07	7563.07	-268.54	7567.83	7567.83	357.97	2.10	-1.81
187	18,422	86.40	1.10	11103.18	7656.94	-265.18	7661.53	7661.53	358.02	4.14	-3.62
188	18,516	86.50	0.50	11109.00	7750.75	-263.87	7755.23	7755.24	358.05	0.65	0.11
189	18,610	87.50	1.70	11113.92	7844.60	-262.07	7848.96	7848.98	358.09	1.66	1.06
190	18,694	85.80	1.50	11118.83	7928.42	-259.73	7932.65	7932.67	358.12	2.04	-2.02
PTB:	18,740	85.80	1.50	11122.20	7974.28	-258.53	7978.44	7978.47	358.14	0.00	0.00