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MS Directional Survey Data Certification

**NM OIL CONSERVATION
ARTESIA DISTRICT**

MS Directional Job Number: DDMO-171104
Survey Type: MWD
Operating Company: RKI Exploration & Production LLC
Well Name & Number: Tucker Draw 9-4 Federal COM 5H
Location: Eddy County, NM
API Number: 30-015-44488
Tie In Depth: Surface
Surveyed Depths: 158' – 18,768' MD
Projected TD Survey: 18,824' MD
Dates Performed: 11/14/2017 – 01/24/2018

APR 26 2018

RECEIVED

30-015-44488

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: Paul Royar

Date: 02-26-2018

Email: proyar@msdir.com

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V09.04.02

Company:		RKI Exploration & Production LLC												
Well Name:		Tucker Draw 9-4 Federal COM 5H												
Location:		Eddy County, NM												
Rig:		Orion Phoenix #10					Magnetic Declination:		6.87		REFERENCED TO GRID NORTH			
Job Number:		DDMO-171104												
API #:		30-015-44488												
Vertical Section Azimuth:				359.68			Proposed Direction:		359.68					
Survey Calculation Method:				Minimum Curvature										
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	18,824		92.8		1.26		11121.81		7982.08		-676.55		7985.73	
#	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	0	0.00	0.00	0.00	0.00	0.00		0.00						
1	158	0.10	23.80	158.00	0.13	0.06	0.13	0.14	23.80	0.06	0.06			
2	248	0.20	22.10	248.00	0.34	0.15	0.34	0.37	23.09	0.11	0.11			
3	339	0.40	5.40	339.00	0.81	0.24	0.81	0.84	16.31	0.24	0.22			
4	429	0.50	16.60	429.00	1.50	0.38	1.49	1.54	14.17	0.15	0.11			
5	519	0.40	3.80	518.99	2.19	0.51	2.18	2.24	13.15	0.16	-0.11			
6	610	0.40	358.70	609.99	2.82	0.52	2.82	2.87	10.54	0.04	0.00			
7	701	0.40	14.00	700.99	3.45	0.59	3.44	3.50	9.79	0.12	0.00			
8	790	0.60	50.50	789.99	4.04	1.03	4.04	4.17	14.28	0.41	0.22			
9	881	1.20	53.10	880.97	4.92	2.16	4.91	5.37	23.69	0.66	0.66			
10	961	1.20	53.20	960.96	5.92	3.50	5.90	6.88	30.57	0.00	0.00			
11	1,065	1.30	67.00	1064.93	7.04	5.46	7.01	8.91	37.79	0.30	0.10			
12	1,154	0.90	39.70	1153.92	7.97	6.83	7.93	10.50	40.61	0.73	-0.45			
13	1,245	1.00	318.90	1244.91	9.12	6.77	9.08	11.36	36.58	1.36	0.11			
14	1,334	1.10	310.50	1333.89	10.26	5.61	10.23	11.69	28.66	0.21	0.11			
15	1,425	0.70	311.00	1424.88	11.19	4.52	11.16	12.07	22.01	0.44	-0.44			
16	1,514	0.40	357.10	1513.88	11.86	4.10	11.83	12.54	19.07	0.57	-0.34			
17	1,603	0.50	54.60	1602.87	12.39	4.40	12.37	13.15	19.54	0.50	0.11			
18	1,693	0.40	280.00	1692.87	12.67	4.41	12.65	13.42	19.18	0.92	-0.11			
19	1,788	0.80	257.50	1787.87	12.59	3.44	12.57	13.05	15.26	0.48	0.42			
20	1,882	1.80	241.20	1881.84	11.73	1.50	11.73	11.83	7.29	1.12	1.06			
21	1,977	3.50	248.30	1976.74	9.94	-2.50	9.96	10.25	345.88	1.82	1.79			
22	2,072	4.80	258.30	2071.49	8.07	-9.09	8.12	12.15	311.59	1.56	1.37			
23	2,167	7.40	262.10	2165.94	6.42	-19.04	6.52	20.09	288.63	2.77	2.74			
24	2,262	9.20	261.90	2259.94	4.51	-32.62	4.69	32.93	277.87	1.89	1.89			
25	2,357	7.80	260.20	2353.90	2.34	-46.49	2.60	46.55	272.88	1.50	-1.47			
26	2,452	7.70	264.40	2448.03	0.62	-59.18	0.95	59.18	270.60	0.61	-0.11			
27	2,547	7.10	266.30	2542.24	-0.38	-71.37	0.02	71.37	269.70	0.68	-0.63			
28	2,642	7.00	270.20	2636.52	-0.74	-83.02	-0.27	83.02	269.49	0.51	-0.11			
29	2,736	7.90	271.70	2729.73	-0.53	-95.20	0.01	95.21	269.68	0.98	0.96			
30	2,831	8.10	271.60	2823.80	-0.14	-108.42	0.46	108.42	269.92	0.21	0.21			
31	2,925	7.30	268.80	2916.95	-0.09	-121.01	0.59	121.01	269.96	0.94	-0.85			
32	3,021	7.50	265.10	3012.16	-0.75	-133.35	0.00	133.35	269.68	0.54	0.21			
33	3,116	8.50	266.60	3106.23	-1.69	-146.54	-0.88	146.55	269.34	1.08	1.05			

Company:		RKI Exploration & Production LLC													
Well Name:		Tucker Draw 9-4 Federal COM 5H													
Location:		Eddy County, NM													
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Job Number:		DDMO-171104													
API #:		30-015-44488													
Vertical Section Azimuth:					359.68					Proposed Direction:			359.68		
Survey Calculation Method:					Minimum Curvature										
PTB:		MD		INC		AZM		TVD		N/S		E/W		VS	
		18,824		92.8		1.26		11121.81		7982.08		-676.55		7985.73	
#	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	3,211	8.20	266.20	3200.22	-2.56	-160.31	-1.66	160.33	269.09	0.32	-0.32				
35	3,306	7.00	258.40	3294.39	-4.17	-172.74	-3.21	172.79	268.62	1.66	-1.26				
36	3,400	7.20	259.10	3387.67	-6.44	-184.13	-5.41	184.25	268.00	0.23	0.21				
37	3,495	8.50	264.80	3481.78	-8.20	-196.97	-7.10	197.14	267.62	1.59	1.37				
38	3,584	8.50	266.40	3569.80	-9.21	-210.09	-8.04	210.29	267.49	0.27	0.00				
39	3,700	8.20	265.80	3684.57	-10.35	-226.89	-9.09	227.13	267.39	0.27	-0.26				
40	3,795	7.65	277.23	3778.67	-10.05	-239.92	-8.71	240.13	267.60	1.75	-0.58				
41	3,889	7.70	279.64	3871.83	-8.21	-252.34	-6.80	252.47	268.14	0.35	0.05				
42	3,984	7.57	279.63	3965.98	-6.10	-264.78	-4.62	264.85	268.68	0.14	-0.14				
43	4,079	7.04	279.60	4060.21	-4.08	-276.69	-2.54	276.72	269.15	0.56	-0.56				
44	4,173	8.05	273.94	4153.40	-2.67	-288.94	-1.06	288.95	269.47	1.33	1.07				
45	4,269	8.42	273.23	4248.41	-1.81	-302.66	-0.12	302.67	269.66	0.40	0.39				
46	4,364	8.23	273.22	4342.41	-1.04	-316.40	0.73	316.40	269.81	0.20	-0.20				
47	4,459	7.65	272.91	4436.50	-0.33	-329.50	1.51	329.50	269.94	0.61	-0.61				
48	4,553	6.99	271.35	4529.73	0.12	-341.47	2.03	341.47	270.02	0.73	-0.70				
49	4,648	8.20	274.13	4623.90	0.74	-354.00	2.72	354.00	270.12	1.33	1.27				
50	4,743	8.10	274.56	4717.94	1.76	-367.43	3.81	367.44	270.27	0.12	-0.11				
51	4,838	7.96	273.92	4812.00	2.74	-380.67	4.87	380.68	270.41	0.17	-0.15				
52	4,933	7.64	273.54	4906.13	3.58	-393.53	5.78	393.55	270.52	0.34	-0.34				
53	5,028	7.53	273.29	5000.29	4.33	-406.05	6.60	406.07	270.61	0.12	-0.12				
54	5,123	7.28	273.01	5094.50	5.00	-418.27	7.34	418.30	270.69	0.27	-0.26				
55	5,218	8.10	272.48	5188.65	5.61	-430.97	8.02	431.01	270.75	0.87	0.86				
56	5,314	8.09	270.74	5283.69	5.99	-444.48	8.47	444.52	270.77	0.26	-0.01				
57	5,409	7.83	271.78	5377.77	6.28	-457.64	8.83	457.68	270.79	0.31	-0.27				
58	5,503	7.45	272.39	5470.94	6.73	-470.12	9.36	470.17	270.82	0.41	-0.40				
59	5,598	9.00	272.29	5564.96	7.28	-483.70	9.99	483.76	270.86	1.63	1.63				
60	5,693	9.07	272.34	5658.78	7.89	-498.61	10.67	498.67	270.91	0.07	0.07				
61	5,788	8.77	272.75	5752.63	8.54	-513.33	11.41	513.40	270.95	0.32	-0.32				
62	5,882	8.45	272.14	5845.57	9.14	-527.38	12.09	527.46	270.99	0.35	-0.34				
63	5,977	7.89	272.50	5939.61	9.69	-540.87	12.71	540.96	271.03	0.59	-0.59				
64	6,072	7.62	272.09	6033.74	10.20	-553.68	13.29	553.78	271.06	0.29	-0.28				
65	6,167	7.42	270.92	6127.92	10.53	-566.11	13.69	566.21	271.07	0.27	-0.21				
66	6,262	5.40	270.02	6222.32	10.63	-576.72	13.85	576.81	271.06	2.13	-2.13				
67	6,356	5.26	269.19	6315.92	10.57	-585.45	13.84	585.54	271.03	0.17	-0.15				

V09.04.02

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Well Name:		Tucker Draw 9-4 Federal COM 5H										
Location:		Eddy County, NM										
Rig:		Orion Phoenix #10					Magnetic Declination:		6.87		REFERENCED TO GRID NORTH	
Job Number:		DDMO-171104										
API #:		30-015-44488										
Vertical Section Azimuth:				359.68			Proposed Direction:		359.68			
Survey Calculation Method:				Minimum Curvature								
PTB:	MD		INC		AZM	TVD	N/S	E/W		VS		
	18,824		92.8		1.26	11121.81	7982.08	-676.55		7985.73		
#	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	6,451	5.17	268.54	6410.52	10.40	-594.08	13.72	594.17	271.00	0.11	-0.09	
69	6,545	3.47	268.49	6504.25	10.22	-601.16	13.57	601.24	270.97	1.81	-1.81	
70	6,640	1.28	275.96	6599.17	10.25	-605.09	13.63	605.17	270.97	2.32	-2.31	
71	6,735	0.96	283.58	6694.15	10.55	-606.92	13.94	607.01	271.00	0.37	-0.34	
72	6,830	1.01	278.42	6789.13	10.86	-608.52	14.26	608.62	271.02	0.11	0.05	
73	6,924	0.87	271.74	6883.12	11.00	-610.05	14.41	610.15	271.03	0.19	-0.15	
74	7,019	0.93	260.59	6978.11	10.90	-611.53	14.31	611.63	271.02	0.19	0.06	
75	7,114	0.93	248.81	7073.10	10.49	-613.01	13.91	613.10	270.98	0.20	0.00	
76	7,208	1.00	239.46	7167.08	9.80	-614.43	13.23	614.51	270.91	0.18	0.07	
77	7,304	1.13	233.23	7263.07	8.81	-615.91	12.25	615.97	270.82	0.18	0.14	
78	7,398	0.33	114.84	7357.06	8.14	-616.41	11.58	616.46	270.76	1.40	-0.85	
79	7,493	0.48	99.05	7452.06	7.96	-615.77	11.40	615.82	270.74	0.20	0.16	
80	7,589	0.45	133.90	7548.06	7.64	-615.10	11.07	615.14	270.71	0.29	-0.03	
81	7,684	0.51	169.48	7643.05	6.96	-614.75	10.39	614.79	270.65	0.31	0.06	
82	7,778	0.54	139.31	7737.05	6.21	-614.39	9.65	614.42	270.58	0.29	0.03	
83	7,873	0.38	137.44	7832.05	5.64	-613.88	9.07	613.91	270.53	0.17	-0.17	
84	7,968	0.27	157.58	7927.04	5.20	-613.58	8.63	613.60	270.49	0.17	-0.12	
85	8,063	0.28	165.46	8022.04	4.77	-613.44	8.20	613.46	270.45	0.04	0.01	
86	8,157	0.46	146.11	8116.04	4.24	-613.17	7.66	613.19	270.40	0.23	0.19	
87	8,252	0.55	193.16	8211.04	3.48	-613.06	6.90	613.07	270.32	0.43	0.09	
88	8,346	0.60	239.64	8305.03	2.79	-613.59	6.21	613.60	270.26	0.49	0.05	
89	8,442	0.80	231.34	8401.03	2.11	-614.55	5.55	614.55	270.20	0.23	0.21	
90	8,536	1.14	221.08	8495.01	1.00	-615.67	4.44	615.67	270.09	0.40	0.36	
91	8,631	0.67	115.30	8590.01	0.05	-615.79	3.49	615.79	270.00	1.55	-0.49	
92	8,726	0.89	120.99	8685.00	-0.57	-614.66	2.87	614.66	269.95	0.25	0.23	
93	8,820	1.41	167.17	8778.98	-2.07	-613.77	1.36	613.78	269.81	1.09	0.55	
94	8,916	0.26	286.60	8874.97	-3.16	-613.72	0.27	613.73	269.70	1.62	-1.20	
95	9,010	1.03	324.44	8968.96	-2.41	-614.42	1.02	614.42	269.78	0.89	0.82	
96	9,106	0.94	330.71	9064.95	-1.02	-615.30	2.41	615.30	269.90	0.15	-0.09	
97	9,200	0.47	24.47	9158.94	0.00	-615.52	3.44	615.52	270.00	0.81	-0.50	
98	9,295	0.71	92.45	9253.94	0.33	-614.77	3.76	614.77	270.03	0.73	0.25	
99	9,391	0.98	106.63	9349.93	0.07	-613.39	3.50	613.39	270.01	0.35	0.28	
100	9,486	1.13	108.99	9444.91	-0.47	-611.73	2.95	611.73	269.96	0.16	0.16	
101	9,581	1.20	109.34	9539.89	-1.10	-609.90	2.30	609.90	269.90	0.07	0.07	

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	18,824	92.8	1.26	11121.81	7982.08	-676.55	7985.73				
#	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	9,676	1.77	105.68	9634.86	-1.83	-607.55	1.57	607.55	269.83	0.61	0.60
103	9,771	0.85	94.12	9729.84	-2.28	-605.44	1.11	605.44	269.78	1.00	-0.97
104	9,866	0.54	81.53	9824.83	-2.26	-604.29	1.12	604.29	269.79	0.36	-0.33
105	9,960	0.53	69.85	9918.82	-2.04	-603.44	1.33	603.45	269.81	0.12	-0.01
106	10,045	0.22	32.48	10003.82	-1.77	-602.99	1.60	602.99	269.83	0.45	-0.36
107	10,140	0.32	88.84	10098.82	-1.61	-602.62	1.75	602.63	269.85	0.28	0.11
108	10,235	0.39	78.18	10193.82	-1.54	-602.04	1.82	602.04	269.85	0.10	0.07
109	10,330	0.70	27.30	10288.82	-0.96	-601.46	2.40	601.46	269.91	0.57	0.33
110	10,424	0.57	45.46	10382.81	-0.12	-600.86	3.23	600.86	269.99	0.25	-0.14
111	10,519	3.23	346.08	10477.75	2.81	-601.17	6.17	601.18	270.27	3.14	2.80
112	10,614	13.40	351.36	10571.63	16.33	-603.47	19.70	603.69	271.55	10.72	10.71
113	10,709	24.25	354.55	10661.42	46.72	-606.99	50.11	608.79	274.40	11.47	11.42
114	10,803	31.04	353.38	10744.64	90.06	-611.62	93.48	618.22	278.38	7.25	7.22
115	10,898	39.69	359.24	10822.06	144.84	-614.86	148.28	631.69	283.26	9.77	9.11
116	10,992	46.70	2.73	10890.55	209.11	-613.62	212.54	648.28	288.82	7.88	7.46
117	11,087	51.58	359.12	10952.70	280.91	-612.55	284.33	673.89	294.64	5.88	5.14
118	11,182	60.29	358.11	11005.86	359.51	-614.48	362.93	711.92	300.33	9.21	9.17
119	11,276	67.61	0.35	11047.12	443.89	-615.57	447.32	758.92	305.80	8.08	7.79
120	11,371	73.97	359.64	11078.36	533.55	-615.59	536.98	814.63	310.92	6.73	6.69
121	11,466	88.08	359.28	11093.14	627.15	-616.47	630.58	879.40	315.49	14.86	14.85
122	11,602	94.21	1.17	11090.43	763.05	-615.94	766.47	980.62	321.09	4.72	4.51
123	11,696	91.52	0.29	11085.73	856.91	-614.75	860.33	1054.61	324.34	3.01	-2.86
124	11,790	89.70	0.69	11084.73	950.90	-613.94	954.31	1131.87	327.15	1.98	-1.94
125	11,886	88.91	0.55	11085.89	1046.89	-612.90	1050.29	1213.10	329.65	0.84	-0.82
126	11,926	89.00	0.29	11086.62	1086.88	-612.61	1090.28	1247.64	330.59	0.69	0.23
127	11,981	89.00	0.16	11087.58	1141.87	-612.39	1145.27	1295.72	331.79	0.24	0.00
128	12,075	89.62	359.45	11088.71	1235.86	-612.71	1239.26	1379.41	333.63	1.00	0.66
129	12,170	90.81	359.28	11088.36	1330.85	-613.77	1334.26	1465.56	335.24	1.27	1.25
130	12,265	89.88	359.45	11087.78	1425.84	-614.82	1429.26	1552.75	336.67	1.00	-0.98
131	12,359	89.62	359.19	11088.19	1519.84	-615.94	1523.25	1639.90	337.94	0.39	-0.28
132	12,454	89.00	359.67	11089.34	1614.82	-616.88	1618.24	1728.64	339.09	0.83	-0.65
133	12,486	88.20	359.67	11090.12	1646.81	-617.07	1650.23	1758.63	339.46	2.50	-2.50
134	12,548	88.38	359.28	11091.97	1708.78	-617.63	1712.21	1816.98	340.13	0.69	0.29
135	12,643	87.89	359.28	11095.06	1803.72	-618.83	1807.15	1906.93	341.06	0.52	-0.52

Company:		RKI Exploration & Production LLC												
Well Name:		Tucker Draw 9-4 Federal COM 5H												
Location:		Eddy County, NM												
Rig:		Orion Phoenix #10					Magnetic Declination:		6.87					
Job Number:		DDMO-171104												
API #:		30-015-44488												
Vertical Section Azimuth:					359.68			Proposed Direction:		359.68				
Survey Calculation Method:					Minimum Curvature									
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	18,824		92.8		1.26		11121.81		7982.08		-676.55		7985.73	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure		DLS/ 100	BUR/ 100'			
								Distance	Azm					
136	12,738	89.48	0.69	11097.24	1898.69	-618.85	1902.12	1997.00	341.95	2.24	1.67			
137	12,832	87.10	359.19	11100.05	1992.64	-618.95	1996.07	2086.56	342.74	2.99	-2.53			
138	12,928	89.62	359.98	11102.79	2088.59	-619.64	2092.02	2178.57	343.48	2.75	2.63			
139	13,022	89.62	0.29	11103.42	2182.59	-619.42	2186.02	2268.78	344.16	0.33	0.00			
140	13,117	89.88	0.29	11103.83	2277.59	-618.94	2281.01	2360.19	344.80	0.27	0.27			
141	13,212	89.31	359.67	11104.50	2372.58	-618.97	2376.00	2452.00	345.38	0.89	-0.60			
142	13,307	88.82	359.06	11106.05	2467.57	-620.03	2470.99	2544.27	345.90	0.82	-0.52			
143	13,402	87.72	359.19	11108.92	2562.51	-621.48	2565.94	2636.80	346.37	1.17	-1.16			
144	13,496	88.51	0.38	11112.01	2656.46	-621.83	2659.89	2728.26	346.83	1.52	0.84			
145	13,591	90.01	1.35	11113.24	2751.43	-620.39	2754.85	2820.51	347.29	1.88	1.58			
146	13,686	89.62	1.66	11113.55	2846.40	-617.90	2849.81	2912.69	347.75	0.52	-0.41			
147	13,781	90.10	0.95	11113.78	2941.37	-615.74	2944.77	3005.13	348.18	0.90	0.51			
148	13,875	90.28	0.95	11113.47	3035.36	-614.18	3038.74	3096.87	348.56	0.19	0.19			
149	13,970	86.79	0.55	11115.90	3130.31	-612.93	3133.68	3189.75	348.92	3.70	-3.67			
150	14,065	87.72	0.29	11120.45	3225.19	-612.24	3228.56	3282.79	349.25	1.02	0.98			
151	14,155	87.89	359.98	11123.89	3315.13	-612.03	3318.49	3371.15	349.54	0.39	0.19			
152	14,249	88.69	359.06	11126.70	3409.08	-612.81	3412.45	3463.72	349.81	1.30	0.85			
153	14,345	89.88	358.75	11127.90	3505.05	-614.65	3508.43	3558.54	350.05	1.28	1.24			
154	14,440	89.79	358.75	11128.17	3600.03	-616.72	3603.42	3652.47	350.28	0.09	-0.09			
155	14,534	90.28	359.28	11128.11	3694.02	-618.34	3697.41	3745.41	350.50	0.77	0.52			
156	14,628	89.70	359.19	11128.13	3788.01	-619.59	3791.41	3838.34	350.71	0.62	-0.62			
157	14,723	90.99	359.76	11127.56	3883.00	-620.46	3886.40	3932.26	350.92	1.48	1.36			
158	14,817	90.10	359.59	11126.66	3976.99	-621.00	3980.40	4025.18	351.13	0.96	-0.95			
159	14,912	90.99	0.38	11125.76	4071.99	-621.02	4075.39	4119.07	351.33	1.25	0.94			
160	15,007	91.38	0.86	11123.79	4166.96	-619.99	4170.36	4212.83	351.54	0.65	0.41			
161	15,101	89.62	0.07	11122.97	4260.95	-619.23	4264.34	4305.71	351.73	2.05	-1.87			
162	15,195	88.60	359.28	11124.43	4354.93	-619.76	4358.33	4398.81	351.90	1.37	-1.09			
163	15,290	88.11	357.47	11127.16	4449.85	-622.46	4453.26	4493.18	352.04	1.97	-0.52			
164	15,384	87.98	356.99	11130.37	4543.69	-627.00	4547.12	4586.74	352.14	0.53	-0.14			
165	15,478	89.00	357.95	11132.85	4637.56	-631.14	4641.01	4680.31	352.25	1.49	1.09			
166	15,572	90.99	358.75	11132.85	4731.52	-633.85	4734.98	4773.78	352.37	2.28	2.12			
167	15,667	90.99	358.57	11131.21	4826.48	-636.07	4829.95	4868.21	352.49	0.19	0.00			
168	15,761	89.70	358.57	11130.65	4920.44	-638.42	4923.93	4961.69	352.61	1.37	-1.37			
169	15,856	90.99	359.36	11130.07	5015.42	-640.13	5018.92	5056.11	352.73	1.59	1.36			

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Company:		RKI Exploration & Production LLC									
Well Name:		Tucker Draw 9-4 Federal COM 5H									
Location:		Eddy County, NM									
Rig:		Orion Phoenix #10				Magnetic Declination: 6.87					
Job Number:		DDMO-171104				REFERENCED TO GRID NORTH					
API #:		30-015-44488									
Vertical Section Azimuth:		359.68		Proposed Direction:		359.68					
Survey Calculation Method:		Minimum Curvature									
PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	18,824	92.8	1.26	11121.81	7982.08	-676.55	7985.73				
#	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	15,951	91.69	359.19	11127.85	5110.39	-641.33	5113.89	5150.47	352.85	0.76	0.74
171	16,046	89.48	358.57	11126.88	5205.36	-643.19	5208.87	5244.95	352.96	2.42	-2.33
172	16,140	89.00	358.09	11128.13	5299.31	-645.93	5302.84	5338.53	353.05	0.72	-0.51
173	16,235	90.59	359.06	11128.47	5394.28	-648.29	5397.81	5433.09	353.15	1.96	1.67
174	16,331	90.10	358.35	11127.89	5490.25	-650.46	5493.80	5528.65	353.24	0.90	-0.51
175	16,425	90.72	358.75	11127.22	5584.22	-652.84	5587.78	5622.25	353.33	0.78	0.66
176	16,520	87.89	358.48	11128.37	5679.17	-655.14	5682.74	5716.83	353.42	2.99	-2.98
177	16,614	91.12	358.97	11129.18	5773.13	-657.23	5776.71	5810.42	353.51	3.48	3.44
178	16,709	90.28	358.09	11128.02	5868.09	-659.66	5871.68	5905.05	353.59	1.28	-0.88
179	16,803	90.50	358.26	11127.38	5962.04	-662.66	5965.65	5998.76	353.66	0.30	0.23
180	16,898	90.10	357.95	11126.89	6056.99	-665.80	6060.61	6093.47	353.73	0.53	-0.42
181	16,993	90.90	357.69	11126.06	6151.92	-669.41	6155.56	6188.23	353.79	0.89	0.84
182	17,088	91.12	357.47	11124.38	6246.82	-673.42	6250.48	6283.01	353.85	0.33	0.23
183	17,182	89.88	358.26	11123.56	6340.74	-676.93	6344.43	6376.78	353.91	1.56	-1.32
184	17,277	89.48	359.67	11124.09	6435.72	-678.64	6439.41	6471.41	353.98	1.54	-0.42
185	17,371	89.70	0.47	11124.76	6529.72	-678.53	6533.41	6564.88	354.07	0.88	0.23
186	17,465	88.20	0.16	11126.49	6623.70	-678.01	6627.38	6658.31	354.16	1.63	-1.60
187	17,560	87.98	359.98	11129.65	6718.65	-677.89	6722.33	6752.76	354.24	0.30	-0.23
188	17,655	88.29	359.85	11132.75	6813.60	-678.03	6817.28	6847.25	354.32	0.35	0.33
189	17,750	89.22	359.98	11134.81	6908.57	-678.18	6912.25	6941.78	354.39	0.99	0.98
190	17,845	88.29	359.59	11136.87	7003.55	-678.53	7007.23	7036.34	354.47	1.06	-0.98
191	17,939	88.11	359.59	11139.83	7097.50	-679.20	7101.18	7129.93	354.53	0.19	-0.19
192	18,034	90.01	0.07	11141.38	7192.48	-679.49	7196.17	7224.51	354.60	2.06	2.00
193	18,129	91.60	0.86	11140.05	7287.47	-678.72	7291.14	7319.00	354.68	1.87	1.67
194	18,223	90.10	359.19	11138.66	7381.45	-678.67	7385.13	7412.58	354.75	2.39	-1.60
195	18,318	91.38	359.59	11137.43	7476.44	-679.69	7480.11	7507.27	354.81	1.41	1.35
196	18,412	91.52	359.06	11135.05	7570.40	-680.79	7574.08	7600.95	354.86	0.58	0.15
197	18,507	90.59	359.76	11133.30	7665.38	-681.77	7669.06	7695.63	354.92	1.23	-0.98
198	18,602	91.30	0.69	11131.73	7760.36	-681.40	7764.04	7790.22	354.98	1.23	0.75
199	18,697	93.02	1.57	11128.15	7855.27	-679.53	7858.94	7884.61	355.06	2.03	1.81
200	18,768	92.80	1.26	11124.55	7926.16	-677.78	7929.82	7955.08	355.11	0.53	-0.31
PTB:	18,824	92.80	1.26	11121.81	7982.08	-676.55	7985.73	8010.70	355.16	0.00	0.00