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MS Directional Survey Data Certification

MS Directional Job Number: DDMO-171103
Survey Type: MWD
Operating Company: RKI Exploration & Production LLC
Well Name & Number: Tucker Draw 9-4 Federal COM 4H
Location: Eddy County, NM
API Number: 30-015-44487
Tie In Depth: Surface
Surveyed Depths: 149' – 18,581' MD
Projected TD Survey: 18,631' MD
Dates Performed: 10/29/2017 – 02/03/2018

**NM OIL CONSERVATION
ARTESIA DISTRICT**

APR 26 2018

RECEIVED

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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06/04/22

Company:		RKI Exploration & Production, LLC										
Well Name:		Tucker Draw 9-4 Federal COM 4H										
Location:		Eddy County, NM										
Rig:		Orion Phoenix #10					Magnetic Declination:		6.88		REFERENCED TO GRID NORTH	
Job Number:		DDMO-171103										
API #:		30-015-44487										
Vertical Section Azimuth:			359.68			Proposed Direction:		359.68				
Survey Calculation Method:			Minimum Curvature									
PTB:	MD		INC		AZM	TVD	N/S	E/W	VS			
	18,631		94.21		0.08	10952.01	7979.47	-942.05	7984.6			
#	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	149	0.30	123.80	149.00	-0.22	0.32	-0.22	0.39	123.80	0.20	0.20	
2	238	0.20	91.30	238.00	-0.35	0.67	-0.35	0.76	117.48	0.19	-0.11	
3	330	1.00	115.70	329.99	-0.70	1.56	-0.71	1.71	114.27	0.89	0.87	
4	420	0.30	313.30	419.99	-0.88	2.09	-0.89	2.27	112.82	1.43	-0.78	
5	510	0.50	333.60	509.99	-0.37	1.75	-0.38	1.79	101.88	0.27	0.22	
6	601	0.50	328.70	600.98	0.33	1.36	0.32	1.40	76.51	0.05	0.00	
7	691	0.40	1.90	690.98	0.98	1.17	0.97	1.52	50.16	0.30	-0.11	
8	781	0.90	327.70	780.98	1.89	0.80	1.88	2.05	23.05	0.68	0.56	
9	871	0.90	317.40	870.96	3.01	-0.05	3.01	3.01	359.00	0.18	0.00	
10	961	1.30	322.80	960.95	4.34	-1.15	4.35	4.49	345.18	0.46	0.44	
11	1,064	2.00	320.70	1063.90	6.66	-2.99	6.68	7.30	335.80	0.68	0.68	
12	1,154	2.10	321.80	1153.85	9.17	-5.01	9.20	10.45	331.37	0.12	0.11	
13	1,244	2.10	296.50	1243.79	11.20	-7.50	11.25	13.48	326.19	1.02	0.00	
14	1,334	2.40	258.70	1333.72	11.57	-10.83	11.63	15.85	316.90	1.65	0.33	
15	1,425	2.70	246.00	1424.63	10.33	-14.65	10.41	17.93	305.17	0.70	0.33	
16	1,514	3.10	241.20	1513.52	8.31	-18.68	8.42	20.44	293.99	0.53	0.45	
17	1,603	5.10	244.80	1602.29	5.47	-24.37	5.61	24.97	282.65	2.26	2.25	
18	1,693	7.20	252.10	1691.77	2.03	-33.35	2.22	33.42	273.49	2.49	2.33	
19	1,788	7.50	271.80	1786.00	0.40	-45.22	0.65	45.22	270.50	2.66	0.32	
20	1,882	7.10	275.20	1879.24	1.12	-57.13	1.44	57.15	271.12	0.63	-0.43	
21	1,977	7.60	273.50	1973.46	2.03	-69.25	2.42	69.28	271.68	0.57	0.53	
22	2,071	8.40	271.00	2066.54	2.53	-82.32	2.99	82.36	271.76	0.93	0.85	
23	2,167	8.50	266.30	2161.50	2.20	-96.41	2.73	96.44	271.30	0.73	0.10	
24	2,262	8.10	265.30	2255.51	1.19	-110.09	1.81	110.10	270.62	0.45	-0.42	
25	2,357	7.70	263.60	2349.60	-0.06	-123.08	0.62	123.08	269.97	0.49	-0.42	
26	2,451	7.60	260.90	2442.77	-1.75	-135.48	-0.99	135.49	269.26	0.40	-0.11	
27	2,546	7.40	260.50	2536.96	-3.75	-147.72	-2.93	147.77	268.54	0.22	-0.21	
28	2,642	7.40	269.50	2632.16	-4.83	-160.00	-3.93	160.07	268.27	1.21	0.00	
29	2,736	7.10	273.50	2725.41	-4.52	-171.85	-3.56	171.91	268.49	0.62	-0.32	
30	2,831	7.20	271.70	2819.67	-3.99	-183.66	-2.96	183.70	268.76	0.26	0.11	
31	2,925	7.70	272.40	2912.88	-3.55	-195.84	-2.46	195.87	268.96	0.54	0.53	
32	3,021	7.80	271.00	3008.00	-3.17	-208.78	-2.00	208.80	269.13	0.22	0.10	
33	3,116	7.60	268.80	3102.14	-3.19	-221.51	-1.95	221.53	269.18	0.37	-0.21	

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V09.04.02

Company:		RKI Exploration & Production, LLC										
Well Name:		Tucker Draw 9-4 Federal COM 4H										
Location:		Eddy County, NM										
Rig:		Orion Phoenix #10				Magnetic Declination:		6.88		REFERENCED TO GRID NORTH		
Job Number:		DDMO-171103										
API #:		30-015-44487										
Vertical Section Azimuth:			359.68		Proposed Direction:		359.68					
Survey Calculation Method:			Minimum Curvature									
PTB:	MD		INC		AZM	TVD	N/S	E/W		VS		
	18,631		94.21		0.08	10952.01	7979.47	-942.05		7984.6		
#	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	7.40	266.60	3196.33	-3.68	-233.89	-2.38	233.92	269.10	0.37	-0.21	
35	3,306	7.00	262.10	3290.58	-4.84	-245.73	-3.47	245.78	268.87	0.73	-0.42	
36	3,400	6.60	258.20	3383.92	-6.73	-256.70	-5.30	256.78	268.50	0.65	-0.43	
37	3,495	7.10	260.40	3478.24	-8.83	-267.83	-7.33	267.97	268.11	0.59	0.53	
38	3,574	7.30	263.70	3556.62	-10.19	-277.63	-8.64	277.82	267.90	0.58	0.25	
39	3,687	7.50	271.30	3668.68	-10.81	-292.14	-9.18	292.34	267.88	0.88	0.18	
40	3,782	7.60	276.40	3762.86	-9.97	-304.58	-8.27	304.75	268.12	0.71	0.11	
41	3,876	7.80	274.80	3856.01	-8.75	-317.12	-6.97	317.24	268.42	0.31	0.21	
42	3,971	7.90	274.40	3950.12	-7.71	-330.05	-5.86	330.14	268.66	0.12	0.11	
43	4,066	7.90	273.70	4044.22	-6.78	-343.07	-4.87	343.14	268.87	0.10	0.00	
44	4,160	7.60	272.00	4137.36	-6.15	-355.73	-4.16	355.79	269.01	0.40	-0.32	
45	4,255	7.60	270.20	4231.53	-5.91	-368.29	-3.85	368.34	269.08	0.25	0.00	
46	4,350	7.60	270.10	4325.69	-5.88	-380.86	-3.75	380.90	269.12	0.01	0.00	
47	4,445	9.20	273.20	4419.67	-5.44	-394.72	-3.24	394.76	269.21	1.75	1.68	
48	4,540	9.00	270.20	4513.47	-4.99	-409.74	-2.70	409.77	269.30	0.54	-0.21	
49	4,635	8.80	268.90	4607.33	-5.10	-424.43	-2.73	424.46	269.31	0.30	-0.21	
50	4,730	8.80	267.10	4701.21	-5.61	-438.95	-3.16	438.99	269.27	0.29	0.00	
51	4,825	8.30	275.80	4795.16	-5.29	-453.04	-2.76	453.07	269.33	1.46	-0.53	
52	4,919	8.40	276.80	4888.16	-3.79	-466.60	-1.18	466.62	269.53	0.19	0.11	
53	5,015	8.30	275.60	4983.15	-2.28	-480.46	0.40	480.47	269.73	0.21	-0.10	
54	5,110	8.10	274.50	5077.18	-1.09	-493.96	1.67	493.96	269.87	0.27	-0.21	
55	5,205	7.60	272.00	5171.29	-0.34	-506.91	2.49	506.91	269.96	0.64	-0.53	
56	5,300	7.20	268.20	5265.49	-0.31	-519.14	2.59	519.14	269.97	0.67	-0.42	
57	5,395	7.60	272.70	5359.70	-0.20	-531.36	2.77	531.36	269.98	0.74	0.42	
58	5,489	7.60	273.10	5452.88	0.43	-543.78	3.47	543.78	270.05	0.06	0.00	
59	5,585	7.60	274.50	5548.03	1.27	-556.45	4.38	556.45	270.13	0.19	0.00	
60	5,679	7.50	272.70	5641.22	2.05	-568.77	5.22	568.78	270.21	0.27	-0.11	
61	5,774	7.10	270.90	5735.45	2.43	-580.84	5.67	580.84	270.24	0.48	-0.42	
62	5,963	6.50	268.40	5923.12	2.32	-603.21	5.68	603.21	270.22	0.35	-0.32	
63	6,058	5.80	267.90	6017.57	1.99	-613.38	5.41	613.38	270.19	0.74	-0.74	
64	6,248	5.70	267.00	6206.62	1.14	-632.40	4.68	632.40	270.10	0.07	-0.05	
65	6,343	5.40	265.90	6301.17	0.58	-641.57	4.16	641.57	270.05	0.34	-0.32	
66	6,437	6.60	273.20	6394.66	0.56	-651.37	4.20	651.37	270.05	1.51	1.28	
67	6,532	8.80	275.20	6488.79	1.53	-664.06	5.23	664.06	270.13	2.33	2.32	

003.04.02

Company:		RKI Exploration & Production, LLC										
Well Name:		Tucker Draw 9-4 Federal COM 4H										
Location:		Eddy County, NM										
Rig:		Orion Phoenix #10					Magnetic Declination:		6.88		REFERENCED TO GRID NORTH	
Job Number:		DDMO-171103										
API #:		30-015-44487										
Vertical Section Azimuth:					359.68			Proposed Direction:		359.68		
Survey Calculation Method:					Minimum Curvature							
PTB:	MD		INC		AZM	TVD	N/S		E/W		VS	
	18,631		94.21		0.08	10952.01	7979.47		-942.05		7984.6	
#	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	6,626	9.30	275.90	6581.62	2.96	-678.78	6.75	678.78	270.25	0.54	0.53	
69	6,721	9.00	275.60	6675.41	4.47	-693.81	8.35	693.82	270.37	0.32	-0.32	
70	6,816	8.90	276.10	6769.26	5.98	-708.51	9.94	708.54	270.48	0.13	-0.11	
71	6,911	8.60	275.00	6863.15	7.38	-722.89	11.42	722.93	270.58	0.36	-0.32	
72	7,005	8.30	273.20	6956.13	8.37	-736.67	12.48	736.72	270.65	0.43	-0.32	
73	7,100	7.80	272.20	7050.20	9.00	-749.96	13.19	750.01	270.69	0.55	-0.53	
74	7,195	8.60	273.30	7144.22	9.66	-763.49	13.92	763.55	270.72	0.86	0.84	
75	7,291	8.50	273.60	7239.16	10.51	-777.74	14.86	777.81	270.77	0.11	-0.10	
76	7,385	8.20	273.10	7332.16	11.31	-791.36	15.73	791.45	270.82	0.33	-0.32	
77	7,480	7.80	271.40	7426.24	11.84	-804.57	16.33	804.66	270.84	0.49	-0.42	
78	7,575	7.50	273.30	7520.39	12.35	-817.21	16.92	817.30	270.87	0.41	-0.32	
79	7,671	6.60	274.00	7615.66	13.10	-828.97	17.73	829.07	270.91	0.94	-0.94	
80	7,765	5.90	273.10	7709.10	13.74	-839.18	18.42	839.29	270.94	0.75	-0.74	
81	7,860	5.40	268.70	7803.64	13.90	-848.52	18.64	848.64	270.94	0.70	-0.53	
82	7,954	4.90	271.10	7897.26	13.87	-856.96	18.66	857.07	270.93	0.58	-0.53	
83	8,049	4.50	269.10	7991.94	13.89	-864.74	18.72	864.86	270.92	0.45	-0.42	
84	8,144	4.40	266.70	8086.66	13.63	-872.11	18.50	872.21	270.90	0.22	-0.11	
85	8,239	4.10	264.80	8181.40	13.11	-879.13	18.02	879.23	270.85	0.35	-0.32	
86	8,333	4.10	267.70	8275.16	12.67	-885.83	17.62	885.92	270.82	0.22	0.00	
87	8,428	3.90	268.60	8369.92	12.45	-892.46	17.44	892.54	270.80	0.22	-0.21	
88	8,523	3.90	265.90	8464.70	12.14	-898.91	17.16	898.99	270.77	0.19	0.00	
89	8,618	2.50	265.50	8559.55	11.75	-904.20	16.80	904.27	270.74	1.47	-1.47	
90	8,712	2.50	266.80	8653.46	11.47	-908.29	16.55	908.36	270.72	0.06	0.00	
91	8,807	0.90	260.90	8748.42	11.24	-911.09	16.33	911.16	270.71	1.69	-1.68	
92	8,902	0.70	256.00	8843.41	10.98	-912.39	16.08	912.46	270.69	0.22	-0.21	
93	8,997	0.30	230.20	8938.41	10.68	-913.15	15.78	913.21	270.67	0.47	-0.42	
94	9,092	0.20	214.40	9033.41	10.39	-913.43	15.49	913.49	270.65	0.13	-0.11	
95	9,187	0.20	248.60	9128.40	10.19	-913.68	15.29	913.74	270.64	0.12	0.00	
96	9,282	0.40	213.90	9223.40	9.85	-914.02	14.96	914.07	270.62	0.28	0.21	
97	9,377	0.70	191.10	9318.40	9.01	-914.32	14.12	914.36	270.56	0.38	0.32	
98	9,472	0.70	197.50	9413.39	7.89	-914.60	12.99	914.64	270.49	0.08	0.00	
99	9,567	0.80	200.60	9508.38	6.71	-915.01	11.82	915.03	270.42	0.11	0.11	
100	9,662	0.60	213.90	9603.38	5.68	-915.52	10.79	915.54	270.36	0.27	-0.21	
101	9,757	0.60	188.10	9698.37	4.77	-915.87	9.89	915.88	270.30	0.28	0.00	

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V09.04.02

Company:	RKI Exploration & Production, LLC				
Well Name:	Tucker Draw 9-4 Federal COM 4H				
Location:	Eddy County, NM				
Rig:	Orion Phoenix #10			Magnetic Declination:	6.88
Job Number:	DDMO-171103			REFERENCED TO GRID NORTH	
API #:	30-015-44487				
Vertical Section Azimuth:	359.68			Proposed Direction:	359.68

Survey Calculation Method:				Minimum Curvature							
PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	18,631	94.21	0.08	10952.01	7979.47	-942.05	7984.6				
#	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	9,852	0.50	167.80	9793.37	3.88	-915.85	8.99	915.86	270.24	0.23	-0.11
103	9,946	0.60	194.30	9887.36	3.00	-915.89	8.11	915.89	270.19	0.29	0.11
104	10,042	0.50	199.80	9983.36	2.12	-916.15	7.23	916.15	270.13	0.12	-0.10
105	10,137	0.50	208.30	10078.35	1.36	-916.49	6.48	916.49	270.09	0.08	0.00
106	10,232	0.30	202.80	10173.35	0.77	-916.78	5.89	916.78	270.05	0.21	-0.21
107	10,316	3.20	9.00	10257.31	2.88	-916.50	8.00	916.50	270.18	4.16	3.45
108	10,411	15.70	1.90	10350.84	18.41	-915.65	23.52	915.84	271.15	13.19	13.16
109	10,506	24.20	1.30	10440.06	50.78	-914.79	55.89	916.19	273.18	8.95	8.95
110	10,600	30.20	1.80	10523.62	93.71	-913.60	98.81	918.40	275.86	6.39	6.38
111	10,695	37.90	0.50	10602.28	146.85	-912.60	151.95	924.34	279.14	8.14	8.11
112	10,789	45.10	1.10	10672.63	209.09	-911.71	214.18	935.37	282.92	7.67	7.66
113	10,884	50.70	359.80	10736.30	279.54	-911.19	284.63	953.10	287.06	5.98	5.89
114	10,978	57.10	358.60	10791.66	355.45	-912.28	360.54	979.08	291.29	6.89	6.81
115	11,073	61.20	357.70	10840.36	436.94	-914.93	442.05	1013.91	295.53	4.39	4.32
116	11,123	68.20	359.00	10861.72	482.10	-916.21	487.21	1035.31	297.75	14.20	14.00
117	11,168	74.50	0.90	10876.10	524.71	-916.24	529.82	1055.85	299.80	14.56	14.00
118	11,215	75.90	1.00	10888.11	570.15	-915.48	575.25	1078.51	301.91	2.99	2.98
119	11,263	80.10	0.30	10898.09	617.08	-914.95	622.18	1103.60	304.00	8.87	8.75
120	11,310	86.10	359.60	10903.73	663.72	-914.99	668.82	1130.37	305.96	12.85	12.77
121	11,407	87.89	357.79	10908.82	760.55	-917.20	765.67	1191.51	309.67	2.62	1.85
122	11,502	88.51	357.88	10911.80	855.44	-920.79	860.57	1256.83	312.89	0.66	0.65
123	11,597	89.31	359.20	10913.61	950.39	-923.21	955.53	1324.97	315.83	1.62	0.84
124	11,692	91.38	359.60	10913.03	1045.38	-924.20	1050.52	1395.34	318.52	2.22	2.18
125	11,786	90.41	0.30	10911.57	1139.36	-924.29	1144.51	1467.12	320.95	1.27	-1.03
126	11,881	89.79	1.49	10911.40	1234.35	-922.80	1239.48	1541.16	323.22	1.41	-0.65
127	11,976	89.48	0.87	10912.01	1329.33	-920.85	1334.45	1617.12	325.29	0.73	-0.33
128	12,071	88.82	359.29	10913.41	1424.31	-920.71	1429.43	1695.99	327.12	1.80	-0.69
129	12,165	91.12	359.77	10913.46	1518.30	-921.48	1523.43	1776.06	328.75	2.50	2.45
130	12,260	89.09	0.79	10913.29	1613.30	-921.02	1618.41	1857.69	330.28	2.39	-2.14
131	12,355	87.19	358.36	10916.37	1708.23	-921.72	1713.35	1941.04	331.65	3.25	-2.00
132	12,449	87.41	358.10	10920.80	1802.08	-924.62	1807.22	2025.44	332.84	0.36	0.23
133	12,543	88.11	358.27	10924.48	1895.96	-927.60	1901.11	2110.71	333.93	0.77	0.74
134	12,638	88.82	357.88	10927.02	1990.87	-930.79	1996.04	2197.71	334.94	0.85	0.75
135	12,733	90.41	357.79	10927.66	2085.80	-934.38	2090.99	2285.52	335.87	1.68	1.67

Company:	RKI Exploration & Production, LLC
Well Name:	Tucker Draw 9-4 Federal COM 4H
Location:	Eddy County, NM
Rig:	Orion Phoenix #10
Job Number:	DDMO-171103
API #:	30-015-44487

Magnetic Declination: 6.88 REFERENCED TO GRID NORTH

Vertical Section Azimuth: 359.68 Proposed Direction: 359.68

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	18,631	94.21	0.08	10952.01	7979.47	-942.05	7984.6

#	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	12,828	89.79	358.89	10927.49	2180.76	-937.13	2185.96	2373.59	336.75	1.33	-0.65
137	12,923	90.90	359.20	10926.92	2275.74	-938.71	2280.95	2461.74	337.58	1.21	1.17
138	13,018	90.59	359.77	10925.69	2370.73	-939.57	2375.94	2550.13	338.38	0.68	-0.33
139	13,112	87.32	358.49	10927.40	2464.69	-940.99	2469.91	2638.21	339.10	3.74	-3.48
140	13,208	87.98	357.79	10931.34	2560.56	-944.10	2565.79	2729.06	339.76	1.00	0.69
141	13,303	88.69	357.57	10934.10	2655.44	-947.95	2660.69	2819.57	340.35	0.78	0.75
142	13,397	90.19	357.26	10935.02	2749.33	-952.19	2754.61	2909.55	340.90	1.63	1.60
143	13,492	91.91	0.48	10933.27	2844.28	-954.06	2849.57	3000.03	341.46	3.84	1.81
144	13,587	91.60	1.18	10930.36	2939.23	-952.69	2944.50	3089.77	342.04	0.81	-0.33
145	13,682	91.21	3.08	10928.04	3034.13	-949.16	3039.38	3179.13	342.63	2.04	-0.41
146	13,777	89.40	3.08	10927.53	3128.99	-944.05	3134.21	3268.30	343.21	1.91	-1.91
147	13,871	89.09	4.57	10928.77	3222.77	-937.78	3227.95	3356.44	343.78	1.62	-0.33
148	13,965	91.38	3.69	10928.38	3316.52	-931.01	3321.66	3444.71	344.32	2.61	2.44
149	14,060	90.99	2.28	10926.42	3411.36	-926.07	3416.48	3534.83	344.81	1.54	-0.41
150	14,155	87.98	355.76	10927.27	3506.28	-927.69	3511.41	3626.93	345.18	7.56	-3.17
151	14,249	86.30	355.28	10931.96	3599.88	-935.02	3605.04	3719.32	345.44	1.86	-1.79
152	14,345	88.60	358.19	10936.23	3695.61	-940.48	3700.80	3813.40	345.72	3.86	2.40
153	14,439	89.62	357.96	10937.69	3789.54	-943.64	3794.75	3905.26	346.02	1.11	1.09
154	14,534	90.28	0.08	10937.78	3884.52	-945.26	3889.74	3997.88	346.32	2.34	0.69
155	14,628	89.88	0.17	10937.65	3978.52	-945.06	3983.74	4089.23	346.64	0.44	-0.43
156	14,723	90.41	359.68	10937.41	4073.52	-945.18	4078.74	4181.74	346.94	0.76	0.56
157	14,817	89.62	359.99	10937.38	4167.52	-945.45	4172.74	4273.42	347.22	0.90	-0.84
158	14,912	89.70	358.98	10937.94	4262.51	-946.31	4267.73	4366.29	347.48	1.07	0.08
159	15,007	90.59	359.07	10937.70	4357.50	-947.92	4362.73	4459.41	347.73	0.94	0.94
160	15,101	89.22	359.60	10937.86	4451.49	-949.01	4456.72	4551.53	347.97	1.56	-1.46
161	15,195	90.90	359.60	10937.76	4545.48	-949.67	4550.72	4643.63	348.20	1.79	1.79
162	15,290	89.70	0.08	10937.26	4640.48	-949.94	4645.71	4736.71	348.43	1.36	-1.26
163	15,383	89.88	1.09	10937.61	4733.47	-948.99	4738.70	4827.67	348.66	1.10	0.19
164	15,478	89.70	1.97	10937.95	4828.44	-946.45	4833.65	4920.32	348.91	0.95	-0.19
165	15,572	89.09	1.58	10938.95	4922.39	-943.54	4927.58	5012.00	349.15	0.77	-0.65
166	15,667	88.11	0.70	10941.27	5017.34	-941.65	5022.52	5104.94	349.37	1.39	-1.03
167	15,761	88.60	0.39	10943.97	5111.29	-940.76	5116.47	5197.15	349.57	0.62	0.52
168	15,856	87.50	0.08	10947.20	5206.24	-940.37	5211.41	5290.48	349.76	1.20	-1.16
169	15,951	87.19	359.77	10951.60	5301.13	-940.49	5306.30	5383.92	349.94	0.46	-0.33

Company:	RKI Exploration & Production, LLC
Well Name:	Tucker Draw 9-4 Federal COM 4H
Location:	Eddy County, NM
Rig:	Orion Phoenix #10
Job Number:	DDMO-171103
API #:	30-015-44487

Magnetic Declination: 6.88 REFERENCED TO GRID NORTH

Vertical Section Azimuth: 359.68 Proposed Direction: 359.68

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	18,631	94.21	0.08	10952.01	7979.47	-942.05	7984.6

#	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	16,046	88.38	359.86	10955.27	5396.06	-940.80	5401.23	5477.46	350.11	1.26	1.25
171	16,140	85.59	359.68	10960.21	5489.92	-941.17	5495.09	5570.01	350.27	2.97	-2.97
172	16,235	87.58	358.76	10965.87	5584.74	-942.46	5589.91	5663.70	350.42	2.31	2.09
173	16,331	90.99	359.86	10967.07	5680.71	-943.62	5685.89	5758.55	350.57	3.73	3.55
174	16,425	90.41	0.39	10965.92	5774.70	-943.42	5779.88	5851.26	350.72	0.84	-0.62
175	16,520	89.09	0.96	10966.34	5869.69	-942.30	5874.86	5944.85	350.88	1.51	-1.39
176	16,614	90.01	0.56	10967.07	5963.68	-941.05	5968.84	6037.47	351.03	1.07	0.98
177	16,708	91.60	0.79	10965.75	6057.66	-939.94	6062.81	6130.15	351.18	1.71	1.69
178	16,803	90.10	0.87	10964.35	6152.64	-938.57	6157.78	6223.81	351.33	1.58	-1.58
179	16,898	89.22	359.77	10964.91	6247.63	-938.04	6252.77	6317.66	351.46	1.48	-0.93
180	16,993	87.58	358.58	10967.56	6342.58	-939.40	6347.73	6411.77	351.58	2.13	-1.73
181	17,088	87.72	358.76	10971.46	6437.47	-941.61	6442.63	6505.97	351.68	0.24	0.15
182	17,182	91.12	359.20	10972.41	6531.44	-943.28	6536.61	6599.20	351.78	3.65	3.62
183	17,276	90.19	358.76	10971.33	6625.42	-944.95	6630.59	6692.46	351.88	1.09	-0.99
184	17,371	91.60	359.38	10969.85	6720.39	-946.49	6725.57	6786.71	351.98	1.62	1.48
185	17,465	91.30	359.68	10967.47	6814.36	-947.26	6819.54	6879.88	352.09	0.45	-0.32
186	17,560	92.18	359.77	10964.59	6909.31	-947.72	6914.50	6974.01	352.19	0.93	0.93
187	17,655	92.00	0.70	10961.12	7004.25	-947.33	7009.43	7068.02	352.30	1.00	-0.19
188	17,750	89.62	1.27	10959.78	7099.21	-945.70	7104.39	7161.93	352.41	2.58	-2.51
189	17,845	87.98	1.09	10961.77	7194.17	-943.74	7199.33	7255.81	352.53	1.74	-1.73
190	17,939	87.10	0.30	10965.80	7288.08	-942.60	7293.23	7348.78	352.63	1.26	-0.94
191	18,034	88.38	0.30	10969.55	7383.00	-942.11	7388.14	7442.86	352.73	1.35	1.35
192	18,129	89.31	359.07	10971.46	7477.97	-942.63	7483.12	7537.15	352.82	1.62	0.98
193	18,223	91.30	0.30	10970.96	7571.97	-943.14	7577.11	7630.48	352.90	2.49	2.12
194	18,317	91.78	0.30	10968.44	7665.93	-942.65	7671.07	7723.67	352.99	0.51	0.51
195	18,412	92.40	359.99	10964.97	7760.87	-942.41	7766.01	7817.88	353.08	0.73	0.65
196	18,507	93.11	0.17	10960.41	7855.76	-942.28	7860.90	7912.07	353.16	0.77	0.75
197	18,581	94.21	0.08	10955.68	7929.60	-942.12	7934.74	7985.37	353.22	1.49	1.49
PTB:	18,631	94.21	0.08	10952.01	7979.47	-942.05	7984.60	8034.88	353.27	0.00	0.00