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State of Texas

County of Tarrant

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 19 2016

15-43638

RECEIVED

I, Carlos Casco, certify that: I am employed by MS Energy Services;
that I did on the day(s) of 7/13/16 through 8/4/16 conduct or supervise
the taking of MWD survey(s) from a depth of 155 feet to a depth of 15,334
feet; that the data is true, correct, complete and within the limitations of the tool set forth by MS Energy
Services; that I am authorized and qualified to make this report; that this survey(s) was / were
conducted at the request of RKI EXPLORATION & PRODUCTION LLC
for the NORTH BRUSHY DRAW FEDERAL ^{35.10H} API No. 30-015-43638
in EDDY County Parish, NEW MEXICO; and that I have
reviewed this report and find that it conforms to the principles and procedures as set forth by
MS Energy Services.

Signature: [Signature]

Title: MWD Field Specialist

MS Direction of

MS Guidance

MS Survey

MS Wireline



SURVEY CALCULATION PROGRAM

9/29/16 9:44

Company:		RKI Exploration & Production LLC												
Well Name:		North Brushy Draw Federal 35-10H												
Location:		Eddy County, NM												
Rig:		Orion Drilling #10					Magnetic Declination:		7.07		REFERENCED TO GRID NORTH			
Job Number:		DDMO-160306												
API #:		30-015-43638												
Vertical Section Azimuth:				6.00		Proposed Direction:		6.00						
Survey Calculation Method:				Minimum Curvature										
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	15,452		90.2		359.8		10619.74		4703.89		494.06		4729.76	
#	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	155	0.20	330.40	155.00	0.24	-0.13	0.22	0.27	330.40	0.13	0.13			
2	336	0.60	321.60	335.99	1.25	-0.88	1.15	1.53	324.96	0.22	0.22			
3	516	2.30	48.80	515.94	4.37	1.25	4.48	4.55	16.01	1.30	0.94			
4	647	3.50	45.10	646.77	8.92	6.06	9.51	10.79	34.20	0.93	0.92			
5	791	2.90	44.20	790.55	14.64	11.72	15.78	18.75	38.68	0.42	-0.42			
6	970	1.10	11.00	969.44	19.57	15.20	21.05	24.78	37.84	1.16	-1.01			
7	1,152	0.60	22.80	1151.42	22.17	15.91	23.71	27.28	35.66	0.29	-0.27			
8	1,331	0.30	147.90	1330.41	22.63	16.52	24.24	28.02	36.12	0.45	-0.17			
9	1,512	0.60	224.00	1511.41	21.55	16.11	23.12	26.91	36.78	0.33	0.17			
10	1,697	0.70	227.90	1696.40	20.10	14.60	21.51	24.84	36.00	0.06	0.05			
11	1,887	1.00	219.90	1886.37	18.05	12.68	19.27	22.05	35.08	0.17	0.16			
12	2,077	1.10	248.70	2076.34	16.11	9.91	17.06	18.92	31.60	0.28	0.05			
13	2,267	1.80	244.90	2266.28	14.18	5.51	14.68	15.22	21.23	0.37	0.37			
14	2,457	1.40	229.60	2456.21	11.41	1.04	11.46	11.46	5.21	0.31	-0.21			
15	2,646	1.40	164.00	2645.16	7.70	-0.08	7.65	7.70	359.40	0.80	0.00			
16	2,836	2.40	142.80	2835.06	2.30	2.96	2.59	3.75	52.24	0.63	0.53			
17	3,026	3.50	133.40	3024.80	-4.86	9.58	-3.83	10.74	116.88	0.63	0.58			
18	3,217	2.60	135.50	3215.53	-11.95	16.86	-10.13	20.66	125.34	0.47	-0.47			
19	3,395	2.60	138.10	3393.35	-17.84	22.38	-15.40	28.62	128.55	0.07	0.00			
20	3,490	5.40	122.40	3488.11	-21.84	27.60	-18.83	35.19	128.36	3.14	2.95			
21	3,585	8.50	118.60	3582.40	-27.60	37.54	-23.52	46.59	126.32	3.30	3.26			
22	3,680	8.70	116.80	3676.33	-34.20	50.12	-28.77	60.67	124.31	0.35	0.21			
23	3,774	8.50	116.90	3769.28	-40.54	62.66	-33.77	74.63	122.91	0.21	-0.21			
24	3,870	8.60	116.80	3864.21	-46.99	75.39	-38.85	88.84	121.94	0.11	0.10			
25	3,964	8.70	117.70	3957.14	-53.46	87.96	-43.98	102.93	121.29	0.18	0.11			
26	4,060	8.40	118.30	4052.07	-60.16	100.56	-49.32	117.18	120.89	0.33	-0.31			
27	4,154	8.00	115.40	4145.11	-66.22	112.51	-54.10	130.56	120.48	0.61	-0.43			
28	4,249	8.00	114.60	4239.19	-71.81	124.50	-58.41	143.72	119.98	0.12	0.00			
29	4,344	7.60	114.50	4333.31	-77.17	136.22	-62.51	156.56	119.53	0.42	-0.42			
30	4,439	10.30	110.90	4427.14	-82.81	149.88	-66.68	171.23	118.92	2.90	2.84			
31	4,533	10.30	109.10	4519.63	-88.55	165.67	-70.75	187.85	118.13	0.34	0.00			
32	4,628	9.70	109.00	4613.19	-93.94	181.26	-74.48	204.16	117.40	0.63	-0.63			



SURVEY CALCULATION PROGRAM

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Rig:		Orion Drilling #10					Magnetic Declination:		7.07		REFERENCED TO GRID NORTH			
Job Number:		DDMO-160306												
API #:		30-015-43638												
Vertical Section Azimuth:					6.00		Proposed Direction:		6.00					
Survey Calculation Method:					Minimum Curvature									
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	15,452		90.2		359.8		10619.74		4703.89		494.06		4729.76	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure		DLS/ 100	BUR/ 100'			
								Distance	Azm					
33	4,723	9.60	109.60	4706.84	-99.20	196.29	-78.14	219.93	116.81	0.15	-0.11			
34	4,818	9.70	108.80	4800.50	-104.44	211.33	-81.77	235.73	116.30	0.18	0.11			
35	4,913	9.20	110.40	4894.21	-109.66	226.03	-85.44	251.22	115.88	0.59	-0.53			
36	5,008	9.30	119.70	4987.98	-116.11	239.81	-90.41	266.44	115.84	1.58	0.11			
37	5,104	9.40	117.90	5082.70	-123.63	253.48	-96.45	282.02	116.00	0.32	0.10			
38	5,198	9.00	117.60	5175.49	-130.62	266.78	-102.02	297.04	116.09	0.43	-0.43			
39	5,293	8.80	118.10	5269.35	-137.49	279.77	-107.49	311.73	116.17	0.23	-0.21			
40	5,388	8.60	118.20	5363.26	-144.27	292.44	-112.91	326.09	116.26	0.21	-0.21			
41	5,484	8.20	120.20	5458.23	-151.10	304.69	-118.43	340.10	116.38	0.52	-0.42			
42	5,579	9.40	132.10	5552.11	-159.71	316.30	-125.78	354.34	116.79	2.29	1.26			
43	5,674	9.60	133.10	5645.81	-170.33	327.84	-135.13	369.45	117.45	0.27	0.21			
44	5,769	9.10	131.60	5739.55	-180.73	339.24	-144.28	384.38	118.05	0.59	-0.53			
45	5,864	8.80	132.70	5833.39	-190.64	350.20	-152.99	398.73	118.56	0.36	-0.32			
46	5,958	8.70	132.60	5926.30	-200.33	360.72	-161.53	412.61	119.05	0.11	-0.11			
47	6,053	8.50	132.40	6020.23	-209.93	371.19	-169.98	426.44	119.49	0.21	-0.21			
48	6,148	8.20	132.80	6114.22	-219.27	381.35	-178.20	439.89	119.90	0.32	-0.32			
49	6,243	8.10	133.10	6208.26	-228.44	391.20	-186.30	453.02	120.28	0.11	-0.11			
50	6,338	8.20	133.50	6302.30	-237.68	401.01	-194.46	466.15	120.66	0.12	0.11			
51	6,433	8.10	134.90	6396.35	-247.07	410.66	-202.79	479.25	121.03	0.23	-0.11			
52	6,528	8.00	136.00	6490.41	-256.55	419.99	-211.24	492.15	121.42	0.19	-0.11			
53	6,623	7.80	135.90	6584.51	-265.93	429.07	-219.63	504.80	121.79	0.21	-0.21			
54	6,718	7.60	136.70	6678.65	-275.13	437.87	-227.86	517.13	122.14	0.24	-0.21			
55	6,813	7.10	136.60	6772.87	-283.97	446.21	-235.77	528.91	122.47	0.53	-0.53			
56	6,908	7.10	137.10	6867.14	-292.54	454.24	-243.45	540.29	122.78	0.07	0.00			
57	7,003	6.60	139.60	6961.46	-301.00	461.77	-251.08	551.21	123.10	0.61	-0.53			
58	7,098	5.80	137.20	7055.91	-308.68	468.57	-258.01	561.11	123.38	0.89	-0.84			
59	7,192	5.10	138.20	7149.48	-315.28	474.59	-263.94	569.76	123.60	0.75	-0.74			
60	7,288	4.10	144.70	7245.17	-321.26	479.41	-269.39	577.10	123.83	1.17	-1.04			
61	7,383	3.20	149.40	7339.98	-326.31	482.73	-274.07	582.67	124.06	1.00	-0.95			
62	7,477	2.60	130.70	7433.86	-329.96	485.68	-277.39	587.16	124.19	1.18	-0.64			
63	7,572	2.00	133.10	7528.78	-332.50	488.52	-279.61	590.94	124.24	0.64	-0.63			
64	7,667	1.50	168.20	7623.74	-334.85	489.99	-281.80	593.47	124.35	1.22	-0.53			
65	7,762	1.10	177.80	7718.72	-336.98	490.28	-283.88	594.92	124.50	0.48	-0.42			
66	7,857	1.00	197.40	7813.70	-338.68	490.06	-285.60	595.71	124.65	0.39	-0.11			



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Rig:		Orion Drilling #10					Magnetic Declination:		7.07		REFERENCED TO GRID NORTH		
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API #:		30-015-43638											
Vertical Section Azimuth:					6.00		Proposed Direction:		6.00				
Survey Calculation Method:					Minimum Curvature								
PTB:	MD		INC		AZM		TVD	N/S	E/W		VS		
	15,452		90.2		359.8		10619.74	4703.89	494.06		4729.76		
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance Azm		DLS/ 100	BUR/ 100'		
67	7,952	0.60	225.10	7908.69	-339.82	489.46	-286.80	595.86	124.77	0.57	-0.42		
68	8,047	0.40	255.90	8003.69	-340.25	488.79	-287.30	595.56	124.84	0.35	-0.21		
69	8,141	0.90	206.40	8097.68	-340.99	488.14	-288.10	595.45	124.94	0.75	0.53		
70	8,235	0.60	209.50	8191.67	-342.08	487.57	-289.25	595.61	125.05	0.32	-0.32		
71	8,330	0.50	191.80	8286.67	-342.92	487.24	-290.11	595.82	125.14	0.21	-0.11		
72	8,425	1.40	189.70	8381.66	-344.47	486.96	-291.68	596.48	125.28	0.95	0.95		
73	8,520	1.70	178.60	8476.62	-347.03	486.80	-294.24	597.83	125.48	0.45	0.32		
74	8,615	0.70	78.30	8571.61	-348.32	487.40	-295.46	599.07	125.55	2.05	-1.05		
75	8,710	0.20	104.00	8666.60	-348.24	488.13	-295.31	599.62	125.50	0.55	-0.53		
76	8,805	0.30	87.20	8761.60	-348.27	488.54	-295.29	599.97	125.48	0.13	0.11		
77	8,900	0.00	299.50	8856.60	-348.25	488.79	-295.25	600.16	125.47	0.32	-0.32		
78	8,995	0.40	177.10	8951.60	-348.59	488.81	-295.58	600.37	125.49	0.42	0.42		
79	9,089	0.20	225.20	9045.60	-349.03	488.71	-296.03	600.55	125.53	0.32	-0.21		
80	9,184	0.90	211.20	9140.59	-349.78	488.20	-296.84	600.58	125.62	0.74	0.74		
81	9,279	0.90	280.50	9235.59	-350.29	487.08	-297.45	599.96	125.72	1.08	0.00		
82	9,374	1.40	278.70	9330.57	-349.98	485.20	-297.34	598.25	125.80	0.53	0.53		
83	9,469	1.70	273.50	9425.53	-349.71	482.65	-297.35	596.03	125.93	0.35	0.32		
84	9,564	1.40	338.00	9520.50	-348.55	480.81	-296.38	593.85	125.94	1.76	-0.32		
85	9,659	1.30	327.40	9615.48	-346.57	479.79	-294.52	591.87	125.84	0.28	-0.11		
86	9,753	1.30	325.70	9709.45	-344.79	478.62	-292.87	589.87	125.77	0.04	0.00		
87	9,849	0.80	313.00	9805.44	-343.43	477.51	-291.64	588.19	125.72	0.57	-0.52		
88	9,944	0.90	303.40	9900.43	-342.57	476.40	-290.89	586.78	125.72	0.18	0.11		
89	10,038	0.90	299.70	9994.41	-341.80	475.15	-290.26	585.31	125.73	0.06	0.00		
90	10,133	7.90	4.50	10089.09	-334.91	475.01	-283.42	581.20	125.19	7.96	7.37		
91	10,229	13.60	12.90	10183.38	-317.31	478.05	-265.61	573.78	123.57	6.14	5.94		
92	10,323	23.50	5.00	10272.40	-287.79	482.16	-235.82	561.52	120.83	10.84	10.53		
93	10,419	34.20	5.20	10356.36	-241.72	486.29	-189.57	543.05	116.43	11.15	11.15		
94	10,514	44.50	8.40	10429.73	-182.03	493.59	-129.44	526.09	110.24	11.05	10.84		
95	10,609	53.90	7.10	10491.74	-110.85	503.22	-57.64	515.28	102.42	9.95	9.89		
96	10,703	65.30	6.40	10539.23	-30.46	512.71	23.30	513.61	93.40	12.14	12.13		
97	10,798	73.70	4.60	10572.47	58.03	521.19	112.19	524.41	83.65	9.02	8.84		
98	10,893	78.00	1.90	10595.69	149.97	526.39	204.17	547.34	74.10	5.30	4.53		
99	10,988	82.60	2.80	10611.69	243.51	530.23	297.60	583.47	65.33	4.93	4.84		



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	15,452		90.2		359.8		10619.74	4703.89		494.06		4729.76	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance Azm		DLS/ 100	BUR/ 100'		
100	11,028	86.50	1.90	10615.49	283.28	531.86	337.33	602.60	61.96	10.00	9.75		
101	11,059	87.30	1.10	10617.17	314.23	532.67	368.19	618.45	59.46	3.65	2.58		
102	11,150	89.80	0.20	10619.47	405.18	533.71	458.75	670.09	52.79	2.92	2.75		
103	11,241	90.50	0.60	10619.23	496.18	534.34	549.32	729.19	47.12	0.89	0.77		
104	11,332	89.70	0.60	10619.07	587.18	535.29	639.91	794.55	42.35	0.88	-0.88		
105	11,423	89.80	0.20	10619.47	678.17	535.93	730.48	864.37	38.32	0.45	0.11		
106	11,514	90.50	0.60	10619.23	769.17	536.56	821.04	937.83	34.90	0.89	0.77		
107	11,605	90.50	359.90	10618.44	860.16	536.96	911.58	1014.01	31.97	0.77	0.00		
108	11,696	89.80	359.90	10618.20	951.16	536.80	1002.06	1092.18	29.44	0.77	-0.77		
109	11,787	90.10	0.30	10618.28	1042.16	536.96	1092.58	1172.36	27.26	0.55	0.33		
110	11,878	91.80	0.90	10616.77	1133.14	537.91	1183.16	1254.34	25.39	1.98	1.87		
111	11,969	92.30	1.00	10613.51	1224.07	539.42	1273.75	1337.66	23.78	0.56	0.55		
112	12,060	88.70	359.70	10612.72	1315.05	539.98	1364.29	1421.59	22.32	4.21	-3.96		
113	12,151	89.00	359.90	10614.55	1406.03	539.66	1454.74	1506.04	21.00	0.40	0.33		
114	12,243	90.10	0.10	10615.27	1498.02	539.66	1546.23	1592.27	19.81	1.22	1.20		
115	12,344	89.90	0.20	10615.27	1599.02	539.92	1646.70	1687.72	18.66	0.22	-0.20		
116	12,424	90.60	0.90	10614.92	1679.02	540.69	1726.34	1763.93	17.85	1.24	0.87		
117	12,515	91.20	0.40	10613.49	1770.00	541.72	1816.93	1851.04	17.02	0.86	0.66		
118	12,606	90.40	358.20	10612.22	1860.98	540.61	1907.29	1937.91	16.20	2.57	-0.88		
119	12,698	90.70	358.70	10611.34	1952.94	538.12	1998.49	2025.72	15.41	0.63	0.33		
120	12,789	90.80	0.20	10610.15	2043.93	537.25	2088.89	2113.36	14.73	1.65	0.11		
121	12,880	87.60	0.10	10611.42	2134.90	537.49	2179.39	2201.53	14.13	3.52	-3.52		
122	12,971	86.40	359.70	10616.18	2225.78	537.33	2269.75	2289.72	13.57	1.39	-1.32		
123	13,062	89.00	0.20	10619.83	2316.70	537.25	2360.16	2378.18	13.06	2.91	2.86		
124	13,153	85.60	359.10	10624.12	2407.58	536.70	2450.49	2466.67	12.57	3.93	-3.74		
125	13,244	88.10	357.60	10629.12	2498.39	534.08	2540.53	2554.84	12.07	3.20	2.75		
126	13,334	95.30	359.10	10626.45	2588.26	531.49	2629.63	2642.26	11.60	8.17	8.00		
127	13,425	91.00	358.40	10621.45	2679.07	529.51	2719.75	2730.90	11.18	4.79	-4.73		
128	13,517	92.80	359.60	10618.40	2771.00	527.90	2811.01	2820.84	10.79	2.35	1.96		
129	13,607	92.40	1.10	10614.32	2860.91	528.45	2900.47	2909.30	10.47	1.72	-0.44		
130	13,698	92.90	2.60	10610.11	2951.76	531.38	2991.13	2999.21	10.21	1.74	0.55		
131	13,789	94.00	2.70	10604.63	3042.50	535.58	3081.81	3089.28	9.98	1.21	1.21		
132	13,880	91.80	1.40	10600.03	3133.31	538.83	3172.47	3179.31	9.76	2.81	-2.42		



SURVEY CALCULATION PROGRAM

9/29/16 9:44

Company:		RKI Exploration & Production LLC												
Well Name:		North Brushy Draw Federal 35-10H												
Location:		Eddy County, NM												
Rig:		Orion Drilling #10					Magnetic Declination:		7.07		REFERENCED TO GRID NORTH			
Job Number:		DDMO-160306												
API #:		30-015-43638												
Vertical Section Azimuth:				6.00		Proposed Direction:		6.00						
Survey Calculation Method:				Minimum Curvature										
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	15,452		90.2		359.8		10619.74		4703.89		494.06		4729.76	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance Azm		DLS/ 100'	BUR/ 100'			
133	13,971	90.80	0.90	10597.96	3224.27	540.66	3263.12	3269.29	9.52	1.23	-1.10			
134	14,062	90.00	359.10	10597.33	3315.26	540.66	3353.62	3359.06	9.26	2.16	-0.88			
135	14,152	88.70	357.70	10598.35	3405.22	538.15	3442.82	3447.48	8.98	2.12	-1.44			
136	14,243	89.30	357.40	10599.94	3496.12	534.26	3532.81	3536.71	8.69	0.74	0.66			
137	14,334	88.90	357.50	10601.37	3587.02	530.21	3622.79	3625.99	8.41	0.45	-0.44			
138	14,425	87.80	356.70	10603.99	3677.86	525.61	3712.66	3715.23	8.13	1.49	-1.21			
139	14,516	87.20	357.40	10607.96	3768.66	520.93	3802.46	3804.49	7.87	1.01	-0.66			
140	14,607	87.60	357.60	10612.09	3859.48	516.96	3892.37	3893.94	7.63	0.49	0.44			
141	14,698	89.30	357.30	10614.55	3950.35	512.92	3982.32	3983.51	7.40	1.90	1.87			
142	14,789	89.10	357.30	10615.82	4041.24	508.63	4072.27	4073.12	7.17	0.22	-0.22			
143	14,879	87.60	356.90	10618.41	4131.08	504.08	4161.14	4161.72	6.96	1.72	-1.67			
144	14,970	88.70	358.20	10621.35	4221.95	500.19	4251.11	4251.48	6.76	1.87	1.21			
145	15,061	90.80	359.20	10621.74	4312.92	498.13	4341.36	4341.59	6.59	2.56	2.31			
146	15,152	90.00	359.10	10621.11	4403.91	496.78	4431.71	4431.84	6.44	0.89	-0.88			
147	15,243	90.50	359.10	10620.71	4494.89	495.35	4522.05	4522.11	6.29	0.55	0.55			
148	15,334	90.20	359.80	10620.16	4585.89	494.47	4612.45	4612.47	6.15	0.84	-0.33			