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JUL 12 2018

DISTRICT II-ARTESIA O.C.D.

MS Directional Survey Data Certification

MS Directional Job Number: DDMO-171279
Survey Type: MWD
Operating Company: Matador Production Company
Well Name & Number: Zach McCormick Fed COM 201H
Location: Eddy County, NM
API Number: 30-015-44247
Tie In Depth: Surface
Surveyed Depths: 178' – 14,436' MD
Projected TD Survey: 14,503' MD
Dates Performed: 12/27/2017 – 03/04/2018

*Directional Survey
does not go
to total depth.
Please provide
on what goes to
TD.*

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.

Louis Orgeron

Digitally signed by:

MWD Surveyor Name: Louis Orgeron

Date: 04-02-2018

Email: lorgeron@msdir.com

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Company:	Marathon Production Company		
Well Name:	Zach McCormick FED COM 201H		
Location:	Eddy County, NM		
Rig:	Patterson #297	Magnetic Declination:	7.02
Job Number:	DDMO-171279		
API #:	30-015-44247		
Vertical Section Azimuth:	90.02	Proposed Direction:	90.02
Survey Calculation Method:	Minimum Curvature		

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	14,503	86.5	88.9	9883.01	386.64	4711.59	4711.46				
#	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	178	0.10	278.00	178.00	0.02	-0.15	-0.15	0.16	278.00	0.06	0.06
2	331	0.10	203.90	331.00	-0.08	-0.34	-0.34	0.35	256.47	0.08	0.00
3	450	0.10	295.70	450.00	-0.13	-0.48	-0.48	0.49	254.52	0.12	0.00
4	603	0.30	299.30	603.00	0.12	-0.95	-0.95	0.95	277.36	0.13	0.13
5	785	0.00	249.60	785.00	0.36	-1.36	-1.36	1.41	284.63	0.16	-0.16
6	970	0.10	43.40	970.00	0.47	-1.25	-1.25	1.34	290.71	0.05	0.05
7	1,157	0.30	56.80	1157.00	0.86	-0.73	-0.73	1.13	319.72	0.11	0.11
8	1,345	0.40	283.20	1344.99	1.28	-0.96	-0.96	1.60	323.24	0.34	0.05
9	1,532	1.70	303.70	1531.96	2.97	-3.90	-3.90	4.90	307.27	0.71	0.70
10	1,720	3.20	300.80	1719.78	7.20	-10.73	-10.73	12.92	303.88	0.80	0.80
11	1,907	3.20	305.30	1906.49	12.89	-19.47	-19.47	23.35	303.51	0.13	0.00
12	2,094	2.90	302.70	2093.23	18.46	-27.71	-27.72	33.30	303.67	0.18	-0.16
13	2,281	3.50	300.00	2279.93	23.87	-36.63	-36.64	43.72	303.09	0.33	0.32
14	2,468	4.30	312.30	2466.50	31.44	-46.76	-46.77	56.35	303.92	0.62	0.43
15	2,655	3.20	313.30	2653.10	39.74	-55.75	-55.76	68.46	305.48	0.59	-0.59
16	2,699	2.90	314.40	2697.04	41.36	-57.44	-57.45	70.78	305.76	0.69	-0.68
17	2,843	4.10	319.10	2840.77	47.80	-63.41	-63.43	79.41	307.01	0.86	0.83
18	3,030	7.40	314.40	3026.80	61.28	-76.39	-76.41	97.94	308.74	1.78	1.76
19	3,217	7.20	315.20	3212.28	78.03	-93.25	-93.28	121.59	309.92	0.12	-0.11
20	3,404	6.70	314.90	3397.91	94.04	-109.24	-109.27	144.14	310.72	0.27	-0.27
21	3,591	5.90	313.10	3583.78	108.31	-123.98	-124.02	164.63	311.14	0.44	-0.43
22	3,779	5.30	312.40	3770.88	120.77	-137.45	-137.49	182.97	311.30	0.32	-0.32
23	3,966	6.60	321.40	3956.87	134.99	-150.53	-150.58	202.19	311.88	0.85	0.70
24	4,153	6.80	320.20	4142.60	151.89	-164.33	-164.38	223.77	312.75	0.13	0.11
25	4,340	6.40	320.10	4328.36	168.39	-178.10	-178.16	245.10	313.40	0.21	-0.21
26	4,527	6.00	319.20	4514.26	183.79	-191.17	-191.23	265.19	313.87	0.22	-0.21
27	4,714	5.40	321.10	4700.34	198.03	-203.08	-203.15	283.65	314.28	0.34	-0.32
28	4,901	4.80	319.60	4886.60	210.84	-213.68	-213.75	300.19	314.62	0.33	-0.32
29	5,088	5.70	319.20	5072.81	223.83	-224.82	-224.89	317.24	314.87	0.48	0.48
30	5,275	4.60	317.60	5259.05	236.40	-235.94	-236.02	333.99	315.06	0.59	-0.59
31	5,463	5.30	316.90	5446.35	248.30	-246.96	-247.04	350.20	315.16	0.37	0.37
32	5,650	4.50	317.60	5632.67	260.03	-257.81	-257.90	366.17	315.25	0.43	-0.43
33	5,837	5.10	316.70	5819.01	271.49	-268.45	-268.55	381.81	315.32	0.32	0.32

Company:		Marathon Production Company										
Well Name:		Zach McCormick FED COM 201H										
Location:		Eddy County, NM										
Rig:		Patterson #297					Magnetic Declination:		7.02		REFERENCED TO GRID NORTH ▼	
Job Number:		DDMO-171279										
API #:		30-015-44247										
Vertical Section Azimuth:					90.02		Proposed Direction:		90.02			
Survey Calculation Method:					Minimum Curvature							
PTB:	MD		INC		AZM	TVD	N/S		E/W		VS	
	14,503		86.5		88.9	9883.01	386.64		4711.59		4711.46	
#	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	6,025	4.30	314.50	6006.38	282.51	-279.21	-279.31	397.21	315.34	0.44	-0.43	
35	6,212	3.40	311.50	6192.95	291.10	-288.36	-288.47	409.75	315.27	0.49	-0.48	
36	6,399	1.30	280.90	6379.79	295.18	-294.60	-294.70	417.04	315.06	1.27	-1.12	
37	6,587	0.80	276.90	6567.76	295.74	-298.00	-298.10	419.84	314.78	0.27	-0.27	
38	6,774	1.60	270.70	6754.72	295.93	-301.90	-302.01	422.75	314.43	0.43	0.43	
39	6,961	1.20	246.90	6941.66	295.19	-306.32	-306.42	425.40	313.94	0.37	-0.21	
40	7,148	1.40	276.10	7128.61	294.67	-310.39	-310.49	427.98	313.51	0.37	0.11	
41	7,335	0.90	219.20	7315.58	293.77	-313.59	-313.69	429.70	313.13	0.63	-0.27	
42	7,523	0.90	98.40	7503.57	292.41	-313.06	-313.16	428.38	313.05	0.83	0.00	
43	7,710	0.50	209.00	7690.56	291.48	-312.00	-312.11	426.98	313.05	0.63	-0.21	
44	7,897	0.90	210.70	7877.55	289.51	-313.15	-313.25	426.47	312.75	0.21	0.21	
45	8,084	1.40	265.10	8064.51	288.05	-316.17	-316.28	427.71	312.33	0.61	0.27	
46	8,272	0.10	322.50	8252.49	287.98	-318.56	-318.66	429.44	312.11	0.72	-0.69	
47	8,459	1.50	93.80	8439.47	287.95	-316.22	-316.32	427.68	312.32	0.84	0.75	
48	8,646	0.70	133.80	8626.44	287.00	-312.95	-313.05	424.63	312.52	0.57	-0.43	
49	8,833	0.80	150.30	8813.42	285.07	-311.48	-311.58	422.24	312.47	0.13	0.05	
50	9,020	1.00	139.50	9000.40	282.70	-309.78	-309.87	419.38	312.38	0.14	0.11	
51	9,142	1.10	146.60	9122.38	280.91	-308.44	-308.54	417.19	312.33	0.13	0.08	
52	9,233	6.00	93.90	9213.19	279.86	-303.21	-303.31	412.62	312.71	5.94	5.38	
53	9,280	12.80	85.40	9259.53	280.11	-295.56	-295.66	407.21	313.46	14.73	14.47	
54	9,327	19.10	81.10	9304.70	281.72	-282.76	-282.86	399.15	314.89	13.63	13.40	
55	9,374	26.20	78.80	9348.05	284.93	-264.96	-265.06	389.09	317.08	15.22	15.11	
56	9,420	32.80	77.20	9388.07	289.66	-242.83	-242.93	377.98	320.03	14.45	14.35	
57	9,467	38.10	76.00	9426.34	296.00	-216.32	-216.43	366.62	323.84	11.37	11.28	
58	9,514	42.10	76.60	9462.28	303.16	-186.92	-187.02	356.15	328.34	8.55	8.51	
59	9,561	45.20	80.00	9496.29	309.71	-155.16	-155.26	346.40	333.39	8.27	6.60	
60	9,608	48.30	81.90	9528.49	315.08	-121.35	-121.46	337.64	338.94	7.22	6.60	
61	9,655	51.80	82.10	9558.67	320.09	-85.68	-85.79	331.36	345.01	7.45	7.45	
62	9,701	55.10	81.00	9586.06	325.53	-49.13	-49.25	329.21	351.42	7.43	7.17	
63	9,748	58.60	81.40	9611.76	331.54	-10.25	-10.37	331.70	358.23	7.48	7.45	
64	9,795	61.90	81.80	9635.08	337.50	30.11	29.99	338.84	5.10	7.06	7.02	
65	9,842	65.10	83.20	9656.05	342.98	71.81	71.69	350.42	11.82	7.31	6.81	
66	9,889	67.60	83.90	9674.90	347.82	114.58	114.46	366.20	18.23	5.49	5.32	
67	9,936	70.70	84.80	9691.63	352.14	158.29	158.16	386.08	24.20	6.83	6.60	

Company:		Marathon Production Company												
Well Name:		Zach McCormick FED COM 201H												
Location:		Eddy County, NM												
Rig:		Patterson #297				Magnetic Declination:		7.02		REFERENCED TO GRID NORTH				
Job Number:		DDMO-171279												
API #:		30-015-44247												
Vertical Section Azimuth:				90.02		Proposed Direction:		90.02						
Survey Calculation Method:				Minimum Curvature										
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	14,503		86.5		88.9		9883.01		386.64		4711.59		4711.46	
#	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	9,982	73.80	84.50	9705.65	356.22	201.90	201.78	409.46	29.54	6.77	6.74			
69	10,044	77.80	85.30	9720.85	361.56	261.75	261.63	446.36	35.90	6.57	6.45			
70	10,121	81.60	84.30	9734.62	368.43	337.19	337.06	499.43	42.46	5.10	4.94			
71	10,168	82.50	88.00	9741.12	371.55	383.62	383.49	534.06	45.92	8.03	1.91			
72	10,215	83.90	90.60	9746.69	372.12	430.28	430.15	568.87	49.15	6.25	2.98			
73	10,263	84.20	91.20	9751.66	371.37	478.02	477.89	605.32	52.16	1.39	0.62			
74	10,358	87.50	92.20	9758.54	368.56	572.71	572.58	681.05	57.24	3.63	3.47			
75	10,453	87.00	92.60	9763.10	364.59	667.52	667.39	760.59	61.36	0.67	-0.53			
76	10,548	86.80	93.00	9768.23	359.95	762.27	762.14	842.98	64.72	0.47	-0.21			
77	10,642	91.00	93.80	9770.04	354.38	856.06	855.94	926.51	67.51	4.55	4.47			
78	10,737	87.20	92.50	9771.53	349.16	950.89	950.77	1012.97	69.84	4.23	-4.00			
79	10,831	84.70	89.70	9778.17	347.36	1044.62	1044.50	1100.86	71.61	3.99	-2.66			
80	10,926	84.90	90.00	9786.78	347.60	1139.23	1139.11	1191.08	73.03	0.38	0.21			
81	11,020	85.10	90.20	9794.97	347.44	1232.87	1232.75	1280.89	74.26	0.30	0.21			
82	11,115	84.50	89.30	9803.58	347.85	1327.48	1327.35	1372.29	75.32	1.14	-0.63			
83	11,210	84.70	89.80	9812.52	348.60	1422.05	1421.93	1464.15	76.23	0.56	0.21			
84	11,304	86.50	89.80	9819.73	348.92	1515.77	1515.65	1555.41	77.04	1.91	1.91			
85	11,398	88.20	90.40	9824.08	348.76	1609.66	1609.54	1647.01	77.77	1.92	1.81			
86	11,492	88.10	90.20	9827.11	348.27	1703.61	1703.49	1738.85	78.45	0.24	-0.11			
87	11,586	88.60	91.90	9829.82	346.54	1797.56	1797.43	1830.66	79.09	1.88	0.53			
88	11,680	87.80	90.30	9832.77	344.74	1891.49	1891.37	1922.65	79.67	1.90	-0.85			
89	11,774	88.00	90.20	9836.22	344.33	1985.42	1985.30	2015.06	80.16	0.24	0.21			
90	11,868	89.00	90.70	9838.68	343.59	2079.39	2079.27	2107.58	80.62	1.19	1.06			
91	11,962	89.40	90.50	9839.99	342.61	2173.37	2173.25	2200.21	81.04	0.48	0.43			
92	12,056	89.50	90.50	9840.89	341.79	2267.37	2267.25	2292.98	81.43	0.11	0.11			
93	12,151	87.80	89.30	9843.13	341.95	2362.33	2362.21	2386.95	81.76	2.19	-1.79			
94	12,245	88.70	90.20	9846.00	342.36	2456.29	2456.17	2480.03	82.07	1.35	0.96			
95	12,339	88.20	89.90	9848.54	342.28	2550.25	2550.13	2573.12	82.36	0.62	-0.53			
96	12,433	89.60	90.60	9850.35	341.87	2644.23	2644.11	2666.24	82.63	1.67	1.49			
97	12,527	89.50	90.30	9851.09	341.13	2738.22	2738.11	2759.39	82.90	0.34	-0.11			
98	12,621	85.00	88.10	9855.60	342.44	2832.08	2831.96	2852.71	83.11	5.33	-4.79			
99	12,716	87.20	88.80	9862.06	345.00	2926.82	2926.70	2947.08	83.28	2.43	2.32			
100	12,810	87.50	88.10	9866.40	347.54	3020.68	3020.56	3040.61	83.44	0.81	0.32			
101	12,904	91.60	88.30	9867.14	350.49	3114.61	3114.49	3134.27	83.58	4.37	4.36			

Page 3

V09.04.02

Company:	Marathon Production Company													
Well Name:	Zach McCormick FED COM 201H													
Location:	Eddy County, NM													
Rig:	Patterson #297			Magnetic Declination:		7.02		REFERENCED TO GRID NORTH ▼						
Job Number:	DDMO-171279													
API #:	30-015-44247													
Vertical Section Azimuth:		90.02		Proposed Direction:		90.02								
Survey Calculation Method:		Minimum Curvature												
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	14,503		86.5		88.9		9883.01		386.64		4711.59		4711.46	
#	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	12,998	87.70	86.30	9867.72	354.92	3208.48	3208.36	3228.05	83.69	4.66	-4.15			
103	13,092	89.70	86.90	9869.85	360.49	3302.29	3302.16	3321.91	83.77	2.22	2.13			
104	13,186	87.50	85.80	9872.15	366.48	3396.06	3395.93	3415.78	83.84	2.62	-2.34			
105	13,281	93.30	90.00	9871.48	369.96	3490.93	3490.80	3510.48	83.95	7.54	6.11			
106	13,375	94.10	89.90	9865.42	370.04	3584.74	3584.61	3603.79	84.11	0.86	0.85			
107	13,470	93.10	89.80	9859.45	370.29	3679.55	3679.42	3698.13	84.25	1.06	-1.05			
108	13,565	91.00	89.60	9856.05	370.78	3774.48	3774.35	3792.65	84.39	2.22	-2.21			
109	13,659	90.20	90.10	9855.07	371.03	3868.47	3868.34	3886.23	84.52	1.00	-0.85			
110	13,753	88.70	89.90	9855.97	371.03	3962.47	3962.34	3979.80	84.65	1.61	-1.60			
111	13,847	88.20	89.70	9858.51	371.36	4056.43	4056.30	4073.39	84.77	0.57	-0.53			
112	13,942	89.60	88.40	9860.34	372.93	4151.40	4151.27	4168.11	84.87	2.01	1.47			
113	14,038	90.40	88.30	9860.34	375.70	4247.36	4247.23	4263.94	84.95	0.84	0.83			
114	14,132	87.80	88.40	9861.81	378.40	4341.30	4341.17	4357.76	85.02	2.77	-2.77			
115	14,226	86.50	88.40	9866.49	381.02	4435.14	4435.01	4451.48	85.09	1.38	-1.38			
116	14,320	86.80	88.90	9871.98	383.23	4528.96	4528.82	4545.14	85.16	0.62	0.32			
117	14,415	86.40	89.00	9877.61	384.97	4623.77	4623.64	4639.77	85.24	0.43	-0.42			
118	14,436	86.50	88.90	9878.92	385.36	4644.73	4644.59	4660.69	85.26	0.67	0.48			
PTB:	14,503	86.50	88.90	9883.01	386.64	4711.59	4711.46	4727.43	85.31	0.00	0.00			