



7821 Will Rogers Blvd.
Fort Worth, Texas 76140
817.568.1038 (office)
817.568.1499 (fax)
www.msdir.com

MS Directional Survey Data Certification

MS Directional Job Number: DDMO-180373
Survey Type: MWD
Operating Company: Matador Production Company
Well Name & Number: Kathy Coleman 14-23S-27E RB 203
Location: Eddy County, NM
API Number: 30-015-44624
Tie In Depth: Surface
Surveyed Depths: 172' – 13,894' MD
Projected TD Survey: 13,964' MD
Dates Performed: 04/22/2018 – 05/10/2018

RECEIVED

JUL 20 2018

DISTRICT II-ARTESIA O.C.D.

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: Christopher Morasch
MWD Surveyor Name: Chris Morasch
Date: 06-07-2018
Email: cmorasch@msdir.com

CONFIDENTIALITY NOTICE: This document contains MS Directional's proprietary and confidential information and may not be copied, published, distributed or transmitted, in whole or in part, by any medium or in any form without MS Directional's prior written consent. The information contained in this document is not to be used by or disclosed to any individuals other than those who need to know such information and who have been given notice that such information is proprietary and confidential.

Company:		Matador Production Company												
Well Name:		Kathy Coleman 14-23S-27E RB 203H												
Location:		Eddy County, NM												
Rig:		Patterson #297				Magnetic Declination:		7.12		REFERENCED TO GRID NORTH ▼				
Job Number:		DDMO-180373												
API #:		30-015-44624												
Vertical Section Azimuth:				269.18		Proposed Direction:		269.18						
Survey Calculation Method:				Minimum Curvature										
PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	13,964		90.7		268.6		9122.88		-172.23		-4810.13		4812.1	
#	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	172	0.60	125.50	172.00	-0.52	0.73	-0.73	0.90	125.50	0.35	0.35			
2	365	0.80	153.10	364.98	-2.31	2.17	-2.13	3.17	136.87	0.20	0.10			
3	505	0.80	145.20	504.97	-3.99	3.17	-3.11	5.09	141.54	0.08	0.00			
4	687	0.70	137.00	686.95	-5.84	4.65	-4.56	7.47	141.49	0.08	-0.05			
5	869	0.40	155.20	868.95	-7.23	5.67	-5.57	9.19	141.88	0.19	-0.16			
6	1,056	0.90	141.90	1055.93	-8.98	6.85	-6.72	11.30	142.65	0.28	0.27			
7	1,244	1.20	130.90	1243.90	-11.43	9.25	-9.09	14.71	141.01	0.19	0.16			
8	1,431	3.70	115.20	1430.72	-15.28	16.19	-15.97	22.27	133.34	1.37	1.34			
9	1,618	4.50	110.70	1617.24	-20.44	28.52	-28.22	35.09	125.64	0.46	0.43			
10	1,806	4.40	108.00	1804.67	-25.28	42.27	-41.91	49.26	120.88	0.12	-0.05			
11	1,993	5.20	106.10	1991.01	-29.85	57.24	-56.80	64.55	117.54	0.44	0.43			
12	2,180	3.90	119.90	2177.43	-35.37	70.89	-70.38	79.23	116.51	0.90	-0.70			
13	2,367	2.70	130.50	2364.11	-41.40	79.76	-79.15	89.86	117.43	0.72	-0.64			
14	2,562	2.10	129.00	2558.94	-46.63	86.02	-85.35	97.85	118.46	0.31	-0.31			
15	2,749	3.80	128.20	2745.69	-52.62	93.56	-92.79	107.34	119.35	0.91	0.91			
16	2,936	3.50	128.70	2932.31	-60.02	102.88	-102.01	119.11	120.26	0.16	-0.16			
17	3,123	3.10	125.40	3119.00	-66.52	111.46	-110.49	129.80	120.83	0.24	-0.21			
18	3,310	4.50	125.50	3305.58	-73.71	121.55	-120.49	142.15	121.23	0.75	0.75			
19	3,498	4.30	123.70	3493.03	-81.90	133.42	-132.23	156.55	121.54	0.13	-0.11			
20	3,685	3.70	126.20	3679.57	-89.35	144.12	-142.83	169.57	121.80	0.33	-0.32			
21	3,872	3.60	130.40	3866.19	-96.72	153.46	-152.06	181.40	122.22	0.15	-0.05			
22	4,059	3.60	128.60	4052.82	-104.19	162.52	-161.01	193.05	122.66	0.06	0.00			
23	4,246	3.20	131.00	4239.49	-111.28	171.05	-169.44	204.06	123.05	0.23	-0.21			
24	4,434	2.90	138.20	4427.23	-118.26	178.18	-176.47	213.86	123.57	0.26	-0.16			
25	4,621	2.20	150.30	4614.04	-124.91	183.11	-181.30	221.66	124.30	0.47	-0.37			
26	4,808	1.90	162.90	4800.92	-130.99	185.80	-183.91	227.33	125.18	0.29	-0.16			
27	4,995	1.70	179.60	4987.83	-136.73	186.73	-184.75	231.44	126.21	0.30	-0.11			
28	5,182	1.70	210.10	5174.75	-141.90	185.36	-183.31	233.44	127.44	0.48	0.00			
29	5,369	0.50	97.50	5361.73	-144.41	184.78	-182.69	234.51	128.01	1.04	-0.64			
30	5,557	0.30	186.90	5549.72	-145.00	185.53	-183.44	235.47	128.01	0.31	-0.11			
31	5,744	0.60	221.70	5736.72	-146.22	184.82	-182.71	235.67	128.35	0.21	0.16			
32	5,931	0.80	260.00	5923.71	-147.18	182.88	-180.76	234.75	128.83	0.27	0.11			
33	6,118	1.50	253.80	6110.67	-148.09	179.25	-177.11	232.51	129.56	0.38	0.37			

V09.04.02

Company:	Matador Production Company		
Well Name:	Kathy Coleman 14-23S-27E RB 203H		
Location:	Eddy County, NM		
Rig:	Patterson #297	Magnetic Declination:	7.12
Job Number:	DDMO-180373		REFERENCED TO GRID NORTH
API #:	30-015-44624		

Vertical Section Azimuth:	269.18	Proposed Direction:	269.18
---------------------------	--------	---------------------	--------

Survey Calculation Method:	Minimum Curvature
----------------------------	-------------------

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	13,964	90.7	268.6	9122.88	-172.23	-4810.13	4812.1

#	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	6,305	0.70	220.00	6297.63	-149.64	176.16	-174.00	231.14	130.35	0.53	-0.43
35	6,492	0.80	253.80	6484.62	-150.88	174.18	-172.00	230.44	130.90	0.24	0.05
36	6,679	0.50	244.60	6671.61	-151.60	172.18	-170.00	229.41	131.36	0.17	-0.16
37	6,866	0.60	329.20	6858.60	-151.11	170.95	-168.77	228.16	131.47	0.40	0.05
38	7,054	1.00	3.90	7046.58	-148.62	170.55	-168.41	226.23	131.07	0.33	0.21
39	7,241	2.70	338.00	7233.48	-142.91	169.01	-166.95	221.34	130.22	0.99	0.91
40	7,428	0.50	322.00	7420.40	-138.18	166.86	-164.87	216.65	129.63	1.19	-1.18
41	7,615	0.70	298.10	7607.39	-137.00	165.35	-163.37	214.74	129.64	0.17	0.11
42	7,709	1.40	36.70	7701.38	-135.81	165.53	-163.57	214.12	129.37	1.76	0.74
43	7,803	1.00	22.70	7795.35	-134.14	166.53	-164.60	213.84	128.85	0.52	-0.43
44	7,896	0.60	349.60	7888.35	-132.91	166.76	-164.84	213.24	128.55	0.64	-0.43
45	7,990	1.90	40.30	7982.32	-131.24	167.68	-165.78	212.93	128.05	1.69	1.38
46	8,083	1.20	78.40	8075.29	-129.86	169.63	-167.75	213.63	127.44	1.30	-0.75
47	8,177	1.40	96.20	8169.27	-129.79	171.74	-169.86	215.26	127.08	0.48	0.21
48	8,270	1.70	83.10	8262.23	-129.75	174.23	-172.36	217.24	126.67	0.50	0.32
49	8,364	1.10	136.70	8356.21	-130.24	176.24	-174.36	219.14	126.46	1.46	-0.64
50	8,458	2.20	173.90	8450.17	-132.69	177.05	-175.13	221.25	126.85	1.58	1.17
51	8,552	2.30	185.70	8544.10	-136.36	177.05	-175.08	223.47	127.60	0.50	0.11
52	8,614	2.10	186.10	8606.05	-138.72	176.81	-174.81	224.74	128.12	0.32	-0.32
53	8,713	6.80	267.60	8704.79	-140.78	170.75	-168.72	221.30	129.50	6.88	4.75
54	8,760	13.10	277.90	8751.06	-140.16	162.69	-160.67	214.74	130.75	13.88	13.40
55	8,807	19.90	282.50	8796.10	-137.69	149.59	-147.60	203.31	132.63	14.72	14.47
56	8,853	24.40	280.40	8838.70	-134.28	132.59	-130.65	188.71	135.36	9.93	9.78
57	8,900	27.30	275.90	8880.99	-131.42	112.31	-110.42	172.88	139.48	7.45	6.17
58	8,947	31.20	273.40	8921.99	-129.59	89.43	-87.57	157.45	145.39	8.69	8.30
59	8,994	36.30	273.10	8961.06	-128.11	63.37	-61.53	142.93	153.68	10.86	10.85
60	9,040	40.60	272.80	8997.08	-126.65	34.81	-32.99	131.34	164.63	9.36	9.35
61	9,087	43.70	272.20	9031.92	-125.28	3.30	-1.51	125.32	178.49	6.65	6.60
62	9,134	46.50	269.60	9065.09	-124.77	-29.98	31.76	128.32	193.51	7.13	5.96
63	9,181	50.50	266.70	9096.23	-125.94	-65.14	66.94	141.79	207.35	9.68	8.51
64	9,228	55.10	265.40	9124.64	-128.53	-102.48	104.31	164.38	218.57	10.03	9.79
65	9,275	59.10	265.30	9150.17	-131.73	-141.80	143.67	193.55	227.11	8.51	8.51
66	9,321	62.50	266.00	9172.61	-134.77	-181.84	183.75	226.33	233.46	7.51	7.39
67	9,368	67.10	266.90	9192.61	-137.39	-224.27	226.21	263.01	238.51	9.94	9.79

V09.04.02

Company:	Matador Production Company		
Well Name:	Kathy Coleman 14-23S-27E RB 203H		
Location:	Eddy County, NM		
Rig:	Patterson #297	Magnetic Declination:	7.12 REFERENCED TO GRID NORTH
Job Number:	DDMO-180373		
API #:	30-015-44624		
Vertical Section Azimuth:	269.18	Proposed Direction:	269.18
Survey Calculation Method:	Minimum Curvature		

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	13,964	90.7	268.6	9122.88	-172.23	-4810.13	4812.1				
#	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	9,415	74.00	266.90	9208.25	-139.79	-268.50	270.47	302.71	242.50	14.68	14.68
69	9,462	77.90	267.00	9219.66	-142.21	-314.02	316.02	344.72	245.63	8.30	8.30
70	9,547	83.30	269.80	9233.54	-144.54	-397.80	399.83	423.25	250.03	7.14	6.35
71	9,594	89.10	270.90	9236.65	-144.25	-444.68	446.70	467.49	252.03	12.56	12.34
72	9,689	92.60	271.70	9235.25	-142.10	-539.63	541.61	558.02	255.25	3.78	3.68
73	9,784	93.70	271.80	9230.03	-139.20	-634.44	636.37	649.53	257.63	1.16	1.16
74	9,878	91.20	271.00	9226.01	-136.90	-728.32	730.20	741.07	259.35	2.79	-2.66
75	9,972	92.40	271.10	9223.05	-135.18	-822.25	824.10	833.29	260.66	1.28	1.28
76	10,066	90.50	269.80	9220.68	-134.45	-916.21	918.04	926.02	261.65	2.45	-2.02
77	10,161	89.70	269.30	9220.51	-135.19	-1011.21	1013.04	1020.21	262.39	0.99	-0.84
78	10,255	89.80	269.30	9220.92	-136.34	-1105.20	1107.04	1113.58	262.97	0.11	0.11
79	10,349	90.20	269.10	9220.92	-137.65	-1199.19	1201.04	1207.07	263.45	0.48	0.43
80	10,444	88.90	268.30	9221.67	-139.81	-1294.16	1296.03	1301.69	263.83	1.61	-1.37
81	10,538	88.40	268.20	9223.88	-142.68	-1388.09	1389.99	1395.40	264.13	0.54	-0.53
82	10,633	89.10	270.10	9225.95	-144.09	-1483.05	1484.96	1490.04	264.45	2.13	0.74
83	10,727	90.70	269.90	9226.12	-144.09	-1577.05	1578.95	1583.62	264.78	1.72	1.70
84	10,822	91.70	268.90	9224.13	-145.08	-1672.02	1673.93	1678.30	265.04	1.49	1.05
85	10,916	92.10	268.80	9221.01	-146.97	-1765.95	1767.87	1772.06	265.24	0.44	0.43
86	11,010	89.80	268.10	9219.45	-149.51	-1859.90	1861.85	1865.90	265.40	2.56	-2.45
87	11,104	92.20	268.90	9217.81	-151.97	-1953.84	1955.82	1959.74	265.55	2.69	2.55
88	11,199	91.30	268.30	9214.91	-154.29	-2048.77	2050.77	2054.57	265.69	1.14	-0.95
89	11,294	91.00	267.60	9213.00	-157.69	-2143.69	2145.72	2149.48	265.79	0.80	-0.32
90	11,388	91.30	268.00	9211.12	-161.29	-2237.60	2239.68	2243.41	265.88	0.53	0.32
91	11,482	91.30	268.00	9208.99	-164.57	-2331.52	2333.63	2337.32	265.96	0.00	0.00
92	11,576	93.20	268.60	9205.30	-167.36	-2425.40	2427.55	2431.17	266.05	2.12	2.02
93	11,670	92.10	269.30	9200.95	-169.08	-2519.28	2521.44	2524.95	266.16	1.39	-1.17
94	11,764	92.10	269.50	9197.50	-170.06	-2613.21	2615.38	2618.74	266.28	0.21	0.00
95	11,858	94.50	269.30	9192.09	-171.05	-2707.04	2709.22	2712.44	266.38	2.56	2.55
96	11,953	94.90	269.00	9184.31	-172.45	-2801.71	2803.90	2807.02	266.48	0.53	0.42
97	12,047	94.70	268.80	9176.44	-174.25	-2895.37	2897.56	2900.61	266.56	0.30	-0.21
98	12,141	93.80	269.60	9169.48	-175.56	-2989.10	2991.30	2994.25	266.64	1.28	-0.96
99	12,236	93.80	270.80	9163.18	-175.23	-3083.89	3086.08	3088.86	266.75	1.26	0.00
100	12,330	93.90	270.90	9156.87	-173.84	-3177.66	3179.83	3182.42	266.87	0.15	0.11
101	12,424	86.70	268.30	9156.38	-174.49	-3271.59	3273.75	3276.24	266.95	8.14	-7.66

Company:

Matador Production Company

Well Name:

Kathy Coleman 14-23S-27E RB 203H

Location:

Eddy County, NM

Rig:

Patterson #297

Magnetic Declination:

7.12

REFERENCED TO GRID NORTH

Job Number:

DDMO-180373

API #:

30-015-44624

Vertical Section Azimuth:

269.18

Proposed Direction:

269.18

Survey Calculation Method:

Minimum Curvature

PTB:

MD

INC

AZM

TVD

N/S

E/W

VS

13,964

90.7

268.6

9122.88

-172.23

-4810.13

4812.1

#

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

12,519

88.10

268.90

9160.69

-176.81

-3366.46

3368.65

3371.10

266.99

1.60

1.47

103

12,613

91.80

270.90

9160.77

-176.97

-3460.44

3462.62

3464.96

267.07

4.47

3.94

104

12,707

92.20

271.30

9157.49

-175.17

-3554.37

3556.51

3558.68

267.18

0.60

0.43

105

12,801

95.20

272.80

9151.42

-171.82

-3648.10

3650.18

3652.14

267.30

3.57

3.19

106

12,896

90.90

272.40

9146.37

-167.52

-3742.84

3744.86

3746.59

267.44

4.55

-4.53

107

12,990

91.20

271.50

9144.65

-164.32

-3836.77

3838.73

3840.29

267.55

1.01

0.32

108

13,085

92.20

271.30

9141.83

-162.00

-3931.70

3933.61

3935.04

267.64

1.07

1.05

109

13,180

91.60

270.60

9138.68

-160.42

-4026.63

4028.52

4029.83

267.72

0.97

-0.63

110

13,275

93.90

269.60

9134.12

-160.26

-4121.52

4123.39

4124.63

267.77

2.64

2.42

111

13,369

92.60

269.80

9128.79

-160.75

-4215.36

4217.23

4218.43

267.82

1.40

-1.38

112

13,464

89.40

269.00

9127.13

-161.74

-4310.33

4312.20

4313.36

267.85

3.47

-3.37

113

13,558

89.40

268.90

9128.12

-163.47

-4404.31

4406.20

4407.34

267.87

0.11

0.00

114

13,652

92.90

269.30

9126.23

-164.94

-4498.26

4500.16

4501.29

267.90

3.75

3.72

115

13,746

89.80

268.30

9124.02

-166.91

-4592.20

4594.12

4595.24

267.92

3.47

-3.30

116

13,841

90.10

268.80

9124.10

-169.32

-4687.17

4689.12

4690.23

267.93

0.61

0.32

117

13,894

90.70

268.60

9123.73

-170.52

-4740.16

4742.11

4743.22

267.94

1.19

1.13

PTB:

13,964

90.70

268.60

9122.88

-172.23

-4810.13

4812.10

4813.21

267.95

0.00

0.00