



PRODIRECTIONAL



NM OIL CONSERVATION
ARTESIA DISTRICT

SEP 29 2017

RECEIVED



Michael Collins 11-23S-27E RB No. 208H
Eddy County, NM

August 07, 2017

Job No. LNM5142917

30-015-44082

 ORIGINAL

Survey Completion Report



PRODIRECTIONAL

Survey Certification Letter

August 07, 2017

NM OIL CONSERVATION

ARTESIA DISTRICT

SEP 29 2017

RECEIVED



Operator Name: Matador Resources
Well Name: Michael Collins 11-23S-27E RB No. 208H
County/Parish: Eddy County,
State: NM
Rig Name: Patterson 274
Job Number: LNM5142917

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

Surveyor	Surveyed Depths	Projection to Bit	Dates Performed	Type of Survey
ProDirectional	179' MD – 13,901' MD	13,971' MD	07/10/17 – 07/23/17	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266

prodirectional.com



Matador Resources

**Eddy County, NM
Michael Collins 11-23S-27E RB
No. 208H
OH**

Survey: ProDirectional

Survey Report

07 August, 2017

**NM OIL CONSERVATION
ARTESIA DISTRICT**

SEP 29 2017

RECEIVED





ProDirectional
Survey Report



Company: Matador Resources
Project: Eddy County, NM(NAD 83)
Site: Michael Collins 11-23S-27E RB
Well: No. 208H
Wellbore: OH
Design: MWD-179'-13901', Proj. 13971'

Local Co-ordinate Reference: Well No. 208H
TVD Reference: Well @ 3127.50usft
MD Reference: Well @ 3127.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project Eddy County, NM(NAD 83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Michael Collins 11-23S-27E RB

Site Position:		Northing:	477,699.00 usft	Latitude:	32.313139°N
From:	Map	Easting:	597,026.00 usft	Longitude:	104.153071°W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well No. 208H

Well Position	+N/-S	0.00 usft	Northing:	477,699.00 usft	Latitude:	32.313139°N
	+E/-W	0.00 usft	Easting:	597,026.00 usft	Longitude:	104.153071°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,099.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/27/2017	7.40	60.13	48,130.50

Design MWD-179'-13901', Proj. 13971'

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.78

Survey Program Date 8/7/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
179.00	13,971.00	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HRGM



ProDirectional
Survey Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 208H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3127.50usft
Site:	Michael Collins 11-23S-27E RB	MD Reference:	Well @ 3127.50usft
Well:	No. 208H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-179'-13901', Proj. 13971'	Database:	WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	477,699.00	597,026.00	
179.00	0.30	134.10	179.00	-0.34	-0.33	0.34	0.47	134.10	477,698.67	597,026.34	
Pro MWD First Survey: 179' MD											
236.00	0.10	46.10	236.00	-0.48	-0.40	0.48	0.62	129.51	477,698.60	597,026.48	
328.00	0.20	128.10	328.00	-0.66	-0.44	0.66	0.80	123.47	477,698.56	597,026.66	
371.00	0.40	146.40	371.00	-0.80	-0.61	0.81	1.01	127.13	477,698.39	597,026.81	
463.00	0.60	164.10	462.99	-1.11	-1.34	1.12	1.74	140.24	477,697.66	597,027.12	
542.00	0.40	66.10	541.99	-1.47	-1.63	1.48	2.20	137.69	477,697.37	597,027.48	
603.00	1.40	34.60	602.98	-2.10	-0.93	2.10	2.29	113.84	477,698.07	597,028.10	
695.00	2.50	35.00	694.93	-3.89	1.64	3.89	4.22	67.11	477,700.64	597,029.89	
789.00	4.00	41.80	788.78	-7.27	5.77	7.25	9.26	51.51	477,704.77	597,033.25	
879.00	6.00	42.00	878.43	-12.53	11.60	12.49	17.05	47.11	477,710.60	597,038.49	
975.00	6.40	44.70	973.87	-19.68	19.13	19.61	27.40	45.71	477,718.13	597,045.61	
1,071.00	5.70	45.80	1,069.33	-26.89	26.26	26.79	37.52	45.57	477,725.26	597,052.79	
1,166.00	5.20	42.90	1,163.90	-33.23	32.70	33.10	46.53	45.35	477,731.70	597,059.10	
1,262.00	4.50	45.10	1,259.56	-38.88	38.55	38.73	54.65	45.14	477,737.55	597,064.73	
1,357.00	4.50	46.50	1,354.27	-44.24	43.74	44.08	62.10	45.22	477,742.74	597,070.08	
1,452.00	5.50	43.20	1,448.90	-50.09	49.63	49.90	70.38	45.15	477,748.63	597,075.90	
1,547.00	6.60	49.70	1,543.37	-57.39	56.48	57.18	80.37	45.35	477,755.48	597,083.18	
1,643.00	6.10	63.40	1,638.79	-66.19	62.33	65.95	90.74	46.61	477,761.33	597,091.95	
1,738.00	6.00	56.70	1,733.26	-74.87	67.32	74.61	100.49	47.94	477,766.32	597,100.61	
1,833.00	6.90	50.00	1,827.66	-83.41	73.71	83.13	111.10	48.44	477,772.71	597,109.13	
1,929.00	7.70	44.70	1,922.88	-92.39	81.99	92.07	123.29	48.32	477,780.99	597,118.07	
2,024.00	7.00	49.80	2,017.10	-101.32	90.25	100.97	135.43	48.21	477,789.25	597,126.97	
2,119.00	5.60	50.70	2,111.53	-109.35	96.92	108.98	145.84	48.35	477,795.92	597,134.98	
2,215.00	4.20	35.70	2,207.18	-115.05	102.74	114.66	153.96	48.14	477,801.74	597,140.66	
2,310.00	3.90	25.00	2,301.94	-118.47	108.50	118.05	160.34	47.41	477,807.50	597,144.05	



ProDirectional Survey Report



Company: Matador Resources
Project: Eddy County, NM(NAD 83)
Site: Michael Collins 11-23S-27E RB
Well: No. 208H
Wellbore: OH
Design: MWD-179'-13901', Proj. 13971'

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:
Well No. 208H
Well @ 3127.50usft
Well @ 3127.50usft
Grid
Minimum Curvature
WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
2,353.00	3.60	27.50	2,344.85	-119.72	111.02	119.29	162.96	47.06	477,810.02	597,145.29	
2,437.00	3.50	28.50	2,428.69	-122.18	115.61	121.73	167.89	46.48	477,814.61	597,147.73	
2,500.00	3.20	46.20	2,491.58	-124.38	118.52	123.92	171.47	46.28	477,817.52	597,149.92	
2,595.00	3.70	65.70	2,586.41	-129.09	121.62	128.63	177.02	46.60	477,820.62	597,154.63	
2,691.00	3.70	42.40	2,682.22	-134.02	125.18	133.54	183.04	46.85	477,824.18	597,159.54	
2,787.00	3.80	35.60	2,778.01	-137.98	130.05	137.48	189.25	46.59	477,829.05	597,163.48	
2,882.00	3.80	35.20	2,872.80	-141.65	135.19	141.13	195.43	46.23	477,834.19	597,167.13	
2,977.00	3.50	35.80	2,967.61	-145.18	140.11	144.64	201.37	45.91	477,839.11	597,170.64	
3,072.00	3.10	31.20	3,062.45	-148.22	144.66	147.67	206.72	45.59	477,843.66	597,173.67	
3,168.00	3.50	46.70	3,158.30	-151.71	148.89	151.14	212.16	45.43	477,847.89	597,177.14	
3,263.00	3.70	45.90	3,253.11	-156.04	153.01	155.46	218.13	45.45	477,852.01	597,181.46	
3,358.00	3.70	44.70	3,347.91	-160.42	157.32	159.81	224.26	45.45	477,856.32	597,185.81	
3,454.00	3.70	43.20	3,443.71	-164.73	161.78	164.11	230.45	45.41	477,860.78	597,190.11	
3,549.00	3.50	42.40	3,538.52	-168.80	166.16	168.17	236.41	45.34	477,865.16	597,194.17	
3,645.00	3.50	40.20	3,634.34	-172.69	170.56	172.03	242.25	45.25	477,869.56	597,198.03	
3,740.00	3.30	37.50	3,729.18	-176.24	174.94	175.57	247.85	45.10	477,873.94	597,201.57	
3,835.00	1.70	34.40	3,824.08	-178.71	178.28	178.03	251.95	44.96	477,877.28	597,204.03	
3,931.00	0.40	306.00	3,920.07	-179.25	179.65	178.56	253.30	44.83	477,878.65	597,204.56	
4,026.00	0.60	281.60	4,015.07	-178.50	179.94	177.81	252.97	44.66	477,878.94	597,203.81	
4,122.00	0.60	289.90	4,111.06	-177.53	180.22	176.84	252.49	44.46	477,879.22	597,202.84	
4,217.00	0.50	287.80	4,206.06	-176.67	180.51	175.98	252.10	44.27	477,879.51	597,201.98	
4,312.00	0.70	280.70	4,301.05	-175.71	180.75	175.02	251.59	44.08	477,879.75	597,201.02	
4,407.00	0.80	271.90	4,396.04	-174.48	180.88	173.78	250.83	43.85	477,879.88	597,199.78	
4,502.00	0.90	312.30	4,491.03	-173.26	181.40	172.57	250.37	43.57	477,880.40	597,198.57	
4,597.00	1.10	311.30	4,586.02	-172.03	182.50	171.33	250.32	43.19	477,881.50	597,197.33	
4,692.00	1.10	303.90	4,681.00	-170.59	183.61	169.89	250.15	42.78	477,882.61	597,195.89	
4,788.00	1.00	298.10	4,776.99	-169.09	184.52	168.39	249.81	42.38	477,883.52	597,194.39	



ProDirectional Survey Report



Company: Matador Resources
Project: Eddy County, NM(NAD 83)
Site: Michael Collins 11-23S-27E RB
Well: No. 208H
Wellbore: OH
Design: MWD-179'-13901', Proj. 13971'

Local Co-ordinate Reference: Well No. 208H
TVD Reference: Well @ 3127.50usft
MD Reference: Well @ 3127.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
4,883.00	1.20	293.90	4,871.97	-167.45	185.32	166.74	249.29	41.98	477,884.32	597,192.74
4,979.00	1.40	289.10	4,967.94	-165.43	186.11	164.72	248.53	41.51	477,885.11	597,190.72
5,074.00	0.80	338.20	5,062.93	-164.09	187.10	163.37	248.39	41.13	477,886.10	597,189.37
5,168.00	0.80	335.80	5,156.92	-163.58	188.31	162.86	248.97	40.85	477,887.31	597,188.86
5,264.00	0.80	323.80	5,252.91	-162.92	189.46	162.19	249.40	40.57	477,888.46	597,188.19
5,359.00	0.90	313.00	5,347.90	-161.98	190.51	161.25	249.59	40.25	477,889.51	597,187.25
5,454.00	1.00	5.90	5,442.89	-161.53	191.84	160.79	250.31	39.97	477,890.84	597,186.79
5,550.00	1.00	1.10	5,538.87	-161.64	193.51	160.90	251.66	39.74	477,892.51	597,186.90
5,645.00	0.90	329.90	5,633.86	-161.28	194.99	160.54	252.57	39.47	477,893.99	597,186.54
5,740.00	0.90	317.50	5,728.85	-160.41	196.18	159.66	252.94	39.14	477,895.18	597,185.66
5,836.00	1.80	284.20	5,824.82	-158.44	197.11	157.69	252.42	38.66	477,896.11	597,183.69
5,931.00	1.90	261.10	5,919.77	-155.44	197.23	154.69	250.65	38.11	477,896.23	597,180.69
6,027.00	1.50	244.80	6,015.73	-152.73	196.45	151.98	248.37	37.73	477,895.45	597,177.98
6,122.00	0.00	134.20	6,110.72	-151.60	195.92	150.85	247.27	37.60	477,894.92	597,176.85
6,217.00	0.70	282.80	6,205.72	-151.04	196.05	150.29	247.02	37.47	477,895.05	597,176.29
6,313.00	1.00	302.40	6,301.71	-149.76	196.63	149.01	246.71	37.16	477,895.63	597,175.01
6,408.00	0.10	315.10	6,396.70	-149.00	197.13	148.25	246.65	36.94	477,896.13	597,174.25
6,504.00	1.50	154.00	6,492.69	-149.49	196.06	148.74	246.09	37.19	477,895.06	597,174.74
6,599.00	1.80	155.50	6,587.65	-150.65	193.58	149.90	244.84	37.75	477,892.58	597,175.90
6,694.00	1.80	150.20	6,682.61	-152.00	190.93	151.26	243.59	38.39	477,889.93	597,177.26
6,790.00	1.90	142.60	6,778.56	-153.70	188.36	152.98	242.66	39.08	477,887.36	597,178.98
6,885.00	1.70	144.90	6,873.51	-155.46	185.96	154.75	241.92	39.77	477,884.96	597,180.75
6,981.00	1.30	152.90	6,969.48	-156.77	183.82	156.06	241.13	40.33	477,882.82	597,182.06
7,046.00	1.30	149.40	7,034.46	-157.47	182.53	156.77	240.61	40.66	477,881.53	597,182.77
7,171.00	0.40	111.60	7,159.44	-158.59	181.15	157.90	240.31	41.08	477,880.15	597,183.90
7,266.00	0.80	156.30	7,254.44	-159.17	180.42	158.47	240.14	41.30	477,879.42	597,184.47
7,361.00	0.90	68.10	7,349.43	-160.12	180.09	159.43	240.52	41.52	477,879.09	597,185.43



ProDirectional
Survey Report



Company: Matador Resources
Project: Eddy County, NM(NAD 83)
Site: Michael Collins 11-23S-27E RB
Well: No. 208H
Wellbore: OH
Design: MWD-179'-13901', Proj. 13971'

Local Co-ordinate Reference: Well No. 208H
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Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
7,456.00	1.50	13.60	7,444.41	-161.11	181.58	160.42	242.29	41.46	477,880.58	597,186.42	
7,552.00	1.70	7.50	7,540.38	-161.61	184.21	160.90	244.59	41.14	477,883.21	597,186.90	
7,647.00	1.40	0.50	7,635.34	-161.81	186.77	161.09	246.64	40.78	477,885.77	597,187.09	
7,742.00	1.00	340.80	7,730.32	-161.55	188.71	160.83	247.95	40.44	477,887.71	597,186.83	
7,838.00	0.90	329.20	7,826.31	-160.90	190.15	160.17	248.62	40.11	477,889.15	597,186.17	
7,933.00	0.40	345.00	7,921.30	-160.43	191.11	159.70	249.05	39.88	477,890.11	597,185.70	
8,028.00	1.00	6.90	8,016.29	-160.45	192.25	159.72	249.94	39.72	477,891.25	597,185.72	
8,124.00	1.70	307.20	8,112.27	-159.43	193.95	158.68	250.59	39.29	477,892.95	597,184.68	
8,219.00	1.70	299.10	8,207.23	-157.08	195.48	156.33	250.30	38.65	477,894.48	597,182.33	
8,314.00	1.70	286.10	8,302.19	-154.50	196.56	153.74	249.55	38.03	477,895.56	597,179.74	
8,410.00	1.50	332.60	8,398.15	-152.56	198.07	151.80	249.55	37.47	477,897.07	597,177.80	
8,506.00	1.70	250.00	8,494.13	-150.64	198.70	149.88	248.89	37.03	477,897.70	597,175.88	
8,568.00	1.80	249.70	8,556.10	-148.86	198.05	148.10	247.30	36.79	477,897.05	597,174.10	
8,603.00	1.70	244.10	8,591.08	-147.88	197.63	147.12	246.38	36.66	477,896.63	597,173.12	
8,650.00	3.90	268.80	8,638.03	-145.65	197.29	144.89	244.78	36.29	477,896.29	597,170.89	
8,697.00	8.60	275.60	8,684.73	-140.55	197.60	139.80	242.05	35.28	477,896.60	597,165.80	
8,792.00	14.80	280.50	8,777.72	-121.55	200.51	120.78	234.07	31.06	477,899.51	597,146.78	
8,887.00	23.00	282.20	8,867.52	-91.45	206.65	90.65	225.66	23.69	477,905.65	597,116.65	
8,982.00	31.30	281.30	8,951.98	-49.07	215.43	48.24	220.76	12.62	477,914.43	597,074.24	
9,077.00	39.30	278.00	9,029.45	4.98	224.46	-5.84	224.54	358.51	477,923.46	597,020.16	
9,173.00	48.00	271.80	9,098.88	70.88	229.83	-71.76	240.77	342.66	477,928.83	596,954.24	
9,268.00	56.90	271.10	9,156.72	146.09	231.70	-146.98	274.39	327.61	477,930.70	596,879.02	
9,363.00	69.30	270.50	9,199.62	230.63	232.86	-231.53	328.37	315.16	477,931.86	596,794.47	
9,455.00	79.30	269.00	9,224.49	319.08	232.45	-319.98	395.49	306.00	477,931.45	596,706.02	
9,549.00	83.30	265.90	9,238.70	411.89	228.30	-412.77	471.70	298.95	477,927.30	596,613.23	
9,643.00	89.40	263.40	9,244.69	505.27	219.55	-506.12	551.69	293.45	477,918.55	596,519.88	
9,738.00	94.00	264.20	9,241.87	599.69	209.30	-600.50	635.93	289.22	477,908.30	596,425.50	



ProDirectional
Survey Report



Company: Matador Resources
Project: Eddy County, NM(NAD 83)
Site: Michael Collins 11-23S-27E RB
Well: No. 208H
Wellbore: OH
Design: MWD-179'-13901', Proj. 13971'

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TVD Reference: Well @ 3127.50usft
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North Reference: Grid
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
9,832.00	92.70	267.00	9,236.38	693.27	202.10	-694.05	722.87	286.24	477,901.10	596,331.95
9,926.00	92.90	266.90	9,231.78	787.04	197.11	-787.80	812.09	284.05	477,896.11	596,238.20
10,020.00	94.20	270.30	9,225.96	880.82	194.81	-881.58	902.85	282.46	477,893.81	596,144.42
10,115.00	93.00	270.10	9,220.00	975.63	195.14	-976.39	995.70	281.30	477,894.14	596,049.61
10,209.00	93.10	270.10	9,215.00	1,069.50	195.31	-1,070.26	1,087.93	280.34	477,894.31	595,955.74
10,303.00	92.30	269.60	9,210.57	1,163.39	195.06	-1,164.15	1,180.38	279.51	477,894.06	595,861.85
10,397.00	91.00	268.40	9,207.86	1,257.34	193.42	-1,258.09	1,272.87	278.74	477,892.42	595,767.91
10,491.00	92.20	267.90	9,205.24	1,351.26	190.39	-1,352.01	1,365.34	278.02	477,889.39	595,673.99
10,585.00	91.60	268.30	9,202.12	1,445.17	187.27	-1,445.90	1,457.98	277.38	477,886.27	595,580.10
10,679.00	91.20	268.70	9,199.82	1,539.12	184.81	-1,539.84	1,550.89	276.84	477,883.81	595,486.16
10,773.00	91.00	268.90	9,198.02	1,633.09	182.84	-1,633.80	1,644.00	276.39	477,881.84	595,392.20
10,867.00	90.60	268.30	9,196.71	1,727.06	180.55	-1,727.76	1,737.17	275.97	477,879.55	595,298.24
10,961.00	91.30	267.30	9,195.15	1,820.99	176.94	-1,821.68	1,830.25	275.55	477,875.94	595,204.32
11,055.00	95.20	267.80	9,189.82	1,914.75	172.93	-1,915.43	1,923.22	275.16	477,871.93	595,110.57
11,149.00	94.50	270.40	9,181.87	2,008.40	171.46	-2,009.07	2,016.37	274.88	477,870.46	595,016.93
11,244.00	93.30	273.30	9,175.41	2,103.10	174.52	-2,103.79	2,111.01	274.74	477,873.52	594,922.21
11,338.00	92.90	272.80	9,170.32	2,196.81	179.51	-2,197.52	2,204.84	274.67	477,878.51	594,828.48
11,432.00	92.50	272.60	9,165.90	2,290.58	183.94	-2,291.31	2,298.68	274.59	477,882.94	594,734.69
11,526.00	92.60	272.30	9,161.71	2,384.39	187.95	-2,385.13	2,392.52	274.51	477,886.95	594,640.87
11,621.00	91.90	271.90	9,157.98	2,479.24	191.43	-2,479.99	2,487.37	274.41	477,890.43	594,546.01
11,715.00	89.90	270.70	9,156.51	2,573.19	193.56	-2,573.95	2,581.22	274.30	477,892.56	594,452.05
11,809.00	91.10	272.00	9,155.69	2,667.14	195.77	-2,667.91	2,675.09	274.20	477,894.77	594,358.09
11,903.00	91.00	271.60	9,153.96	2,761.07	198.73	-2,761.85	2,768.99	274.12	477,897.73	594,264.15
11,998.00	91.30	272.20	9,152.06	2,855.98	201.88	-2,856.78	2,863.90	274.04	477,900.88	594,169.22
12,092.00	91.40	271.90	9,149.84	2,949.88	205.24	-2,950.69	2,957.82	273.98	477,904.24	594,075.31
12,185.00	91.30	271.90	9,147.65	3,042.80	208.32	-3,043.62	3,050.74	273.92	477,907.32	593,982.38
12,279.00	90.80	271.10	9,145.93	3,136.74	210.78	-3,137.57	3,144.64	273.84	477,909.78	593,888.43



ProDirectional Survey Report



Company: Matador Resources
Project: Eddy County, NM(NAD 83)
Site: Michael Collins 11-23S-27E RB
Well: No. 208H
Wellbore: OH
Design: MWD-179'-13901', Proj. 13971'

Local Co-ordinate Reference: Well No. 208H
TVD Reference: Well @ 3127.50usft
MD Reference: Well @ 3127.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
12,374.00	93.40	270.70	9,142.45	3,231.65	212.27	-3,232.48	3,239.45	273.76	477,911.27	593,793.52
12,466.00	93.20	270.30	9,137.15	3,323.49	213.07	-3,324.33	3,331.15	273.67	477,912.07	593,701.67
12,561.00	92.40	269.50	9,132.51	3,418.37	212.91	-3,419.21	3,425.84	273.56	477,911.91	593,606.79
12,656.00	90.00	268.40	9,130.52	3,513.33	211.17	-3,514.17	3,520.51	273.44	477,910.17	593,511.83
12,750.00	90.10	268.40	9,130.44	3,607.30	208.54	-3,608.13	3,614.15	273.31	477,907.54	593,417.87
12,843.00	93.80	271.30	9,127.28	3,700.22	208.30	-3,701.05	3,706.91	273.22	477,907.30	593,324.95
12,937.00	93.10	268.40	9,121.62	3,794.04	208.05	-3,794.87	3,800.57	273.14	477,907.05	593,231.13
13,031.00	93.30	268.00	9,116.37	3,887.86	205.10	-3,888.68	3,894.08	273.02	477,904.10	593,137.32
13,126.00	89.20	266.70	9,114.30	3,982.73	200.71	-3,983.53	3,988.58	272.88	477,899.71	593,042.47
13,219.00	94.50	267.60	9,111.30	4,075.55	196.09	-4,076.33	4,081.05	272.75	477,895.09	592,949.67
13,313.00	93.70	266.90	9,104.58	4,169.22	191.59	-4,169.98	4,174.38	272.63	477,890.59	592,856.02
13,407.00	94.70	267.80	9,097.69	4,262.88	187.26	-4,263.63	4,267.74	272.51	477,886.26	592,762.37
13,501.00	94.20	270.90	9,090.40	4,356.58	186.19	-4,357.33	4,361.30	272.45	477,885.19	592,668.67
13,595.00	90.20	272.90	9,086.79	4,450.42	189.31	-4,451.18	4,455.21	272.44	477,888.31	592,574.82
13,689.00	88.30	273.00	9,088.02	4,544.27	194.15	-4,545.04	4,549.19	272.45	477,893.15	592,480.96
13,783.00	91.60	273.90	9,088.10	4,638.06	199.80	-4,638.86	4,643.16	272.47	477,898.80	592,387.14
13,878.00	88.80	273.00	9,087.77	4,732.85	205.52	-4,733.68	4,738.14	272.49	477,904.52	592,292.32
13,901.00	90.20	273.10	9,087.97	4,755.81	206.74	-4,756.64	4,761.13	272.49	477,905.74	592,269.36
Last Survey: 13901' MD, 9087.97' TVD										
13,971.00	90.20	273.10	9,087.73	4,825.70	210.53	-4,826.54	4,831.13	272.50	477,909.53	592,199.46
PTB: 13971' MD										



ProDirectional
Survey Report



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Site: Michael Collins 11-23S-27E RB
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Design: MWD-179'-13901', Proj. 13971'

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well No. 208H
Well @ 3127.50usft
Well @ 3127.50usft
Grid
Minimum Curvature
WellPlanner1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
179.00	179.00	-0.33	0.34	Pro MWD First Survey: 179' MD
13,901.00	9,087.97	206.74	-4,756.64	Last Survey: 13901' MD, 9087.97' TVD
13,971.00	9,087.73	210.53	-4,826.54	PTB: 13971' MD