

Devon Energy

Lea County, NM (NAD83 NME)
Stray Cat 8-5 Fed Com
213H

OH

Survey: SDI Survey #1

Standard Survey Report

10 September, 2018

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Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 213H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Site:	Stray Cat 8-5 Fed Com	MD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Well:	213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Project	Lea County, NM (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone	Using geodetic scale factor	

Site	Stray Cat 8-5 Fed Com				
Site Position:		Northing:	478,343.18 usft	Latitude:	32° 18' 48.389 N
From:	Map	Easting:	737,462.36 usft	Longitude:	103° 41' 54.544 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well	213H					
Well Position	+N-S	0.00 usft	Northing:	478,359.95 usft	Latitude:	32° 18' 48.485 N
	+E-W	0.00 usft	Easting:	738,660.93 usft	Longitude:	103° 41' 40.577 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,607.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/25/2018	6.85	60.07	48,064

Design	OH				
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 (bearing)	
	0.00	0.00	0.00	359.80	

Survey Program	Date	9/10/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
203.00	20,877.00	SDI Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
203.00	0.24	104.97	203.00	-0.11	0.41	-0.11	0.12	0.12	0.00
333.00	0.41	180.67	333.00	-0.65	0.67	-0.65	0.32	0.13	58.23
423.00	0.34	140.85	423.00	-1.17	0.83	-1.18	0.29	-0.08	-44.24
516.00	0.15	127.71	516.00	-1.46	1.10	-1.47	0.21	-0.20	-14.13
607.00	0.30	147.65	606.99	-1.74	1.33	-1.74	0.18	0.16	21.91
699.00	0.44	191.54	698.99	-2.29	1.38	-2.29	0.33	0.15	47.71
880.00	0.51	205.82	879.99	-3.69	0.89	-3.70	0.08	0.04	7.89
971.00	0.47	209.06	970.98	-4.38	0.54	-4.39	0.05	-0.04	3.56
1,052.00	0.27	218.75	1,051.98	-4.82	0.26	-4.82	0.26	-0.25	11.96

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,156.00	0.47	266.04	1,155.98	-5.04	-0.32	-5.04	0.34	0.19	45.47
1,248.00	0.44	269.87	1,247.98	-5.07	-1.05	-5.07	0.05	-0.03	4.16
1,339.00	0.30	310.36	1,338.97	-4.92	-1.58	-4.91	0.32	-0.15	44.49
1,430.00	0.31	291.38	1,429.97	-4.67	-2.00	-4.67	0.11	0.01	-20.86
1,524.00	0.14	253.94	1,523.97	-4.61	-2.34	-4.60	0.23	-0.18	-39.83
1,619.00	0.07	149.72	1,618.97	-4.69	-2.42	-4.69	0.18	-0.07	-109.71
1,713.00	0.00	6.52	1,712.97	-4.74	-2.40	-4.73	0.07	-0.07	0.00
1,807.00	0.05	316.72	1,806.97	-4.71	-2.42	-4.71	0.05	0.05	0.00
1,900.00	0.11	242.05	1,899.97	-4.73	-2.53	-4.72	0.12	0.06	-80.29
1,995.00	0.11	130.22	1,994.97	-4.83	-2.54	-4.82	0.19	0.00	-117.72
2,090.00	0.05	281.13	2,089.97	-4.88	-2.51	-4.87	0.16	-0.06	158.85
2,184.00	0.11	276.12	2,183.97	-4.86	-2.64	-4.85	0.06	0.06	-5.33
2,279.00	0.07	310.01	2,278.97	-4.81	-2.78	-4.80	0.07	-0.04	35.67
2,374.00	0.07	177.07	2,373.97	-4.83	-2.82	-4.82	0.14	0.00	-139.94
2,469.00	0.05	280.88	2,468.97	-4.88	-2.86	-4.87	0.10	-0.02	109.27
2,563.00	0.03	158.44	2,562.97	-4.90	-2.89	-4.89	0.08	-0.02	-130.26
2,656.00	0.14	182.93	2,655.97	-5.04	-2.88	-5.03	0.12	0.12	26.33
2,752.00	0.03	305.26	2,751.97	-5.14	-2.91	-5.13	0.16	-0.11	127.43
2,847.00	0.21	173.44	2,846.97	-5.30	-2.91	-5.29	0.24	0.19	-138.76
2,942.00	0.00	6.52	2,941.97	-5.47	-2.89	-5.46	0.22	-0.22	0.00
3,037.00	0.24	171.06	3,036.97	-5.67	-2.86	-5.66	0.25	0.25	0.00
3,132.00	0.39	164.95	3,131.97	-6.18	-2.75	-6.17	0.16	0.16	-6.43
3,226.00	1.53	201.58	3,225.96	-7.65	-3.12	-7.64	1.32	1.21	38.97
3,320.00	2.71	197.60	3,319.89	-10.94	-4.26	-10.92	1.26	1.26	-4.23
3,415.00	2.76	195.84	3,414.78	-15.28	-5.56	-15.26	0.10	0.05	-1.85
3,509.00	2.36	193.56	3,508.69	-19.34	-6.63	-19.31	0.44	-0.43	-2.43
3,604.00	2.05	200.46	3,603.62	-22.83	-7.69	-22.80	0.43	-0.33	7.26
3,698.00	1.93	200.56	3,697.56	-25.89	-8.83	-25.86	0.13	-0.13	0.11
3,794.00	2.84	190.31	3,793.48	-29.74	-9.82	-29.71	1.04	0.95	-10.68
3,888.00	4.65	174.02	3,887.27	-35.82	-9.84	-35.79	2.21	1.93	-17.33
3,983.00	6.43	167.25	3,981.83	-44.84	-8.27	-44.81	1.99	1.87	-7.13
4,078.00	6.61	167.66	4,076.21	-55.37	-5.92	-55.35	0.20	0.19	0.43
4,173.00	6.07	166.33	4,170.63	-65.59	-3.57	-65.58	0.59	-0.57	-1.40
4,267.00	6.16	163.44	4,264.10	-75.26	-0.96	-75.25	0.34	0.10	-3.07
4,362.00	6.17	165.08	4,358.55	-85.07	1.81	-85.08	0.19	0.01	1.73
4,456.00	5.92	162.71	4,452.03	-94.58	4.55	-94.60	0.38	-0.27	-2.52
4,551.00	5.44	162.95	4,546.56	-103.57	7.33	-103.59	0.51	-0.51	0.25
4,646.00	5.74	173.66	4,641.11	-112.59	9.17	-112.63	1.14	0.32	11.27
4,741.00	6.47	176.63	4,735.57	-122.66	10.01	-122.69	0.84	0.77	3.13
4,836.00	6.28	174.89	4,829.98	-133.18	10.79	-133.21	0.29	-0.20	-1.83
4,931.00	5.84	174.09	4,924.45	-143.16	11.75	-143.20	0.47	-0.46	-0.84
5,026.00	6.05	170.99	5,018.94	-152.91	13.03	-152.96	0.40	0.22	-3.26
5,120.00	6.49	173.75	5,112.38	-163.09	14.39	-163.14	0.57	0.47	2.94
5,215.00	6.36	173.74	5,206.78	-173.65	15.54	-173.71	0.14	-0.14	-0.01

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5,310.00	6.14	172.26	5,301.22	-183.92	16.80	-183.98	0.29	-0.23	-1.56
5,405.00	6.12	175.45	5,395.67	-194.00	17.89	-194.06	0.36	-0.02	3.36
5,500.00	5.61	174.40	5,490.18	-203.67	18.74	-203.73	0.55	-0.54	-1.11
5,594.00	6.40	176.38	5,583.66	-213.47	19.52	-213.54	0.87	0.84	2.11
5,689.00	6.67	174.97	5,678.04	-224.25	20.34	-224.32	0.33	0.28	-1.48
5,784.00	6.34	173.83	5,772.43	-234.96	21.39	-235.04	0.37	-0.35	-1.20
5,878.00	5.89	175.31	5,865.90	-244.93	22.34	-245.01	0.51	-0.48	1.57
5,974.00	5.42	174.84	5,961.43	-254.35	23.15	-254.43	0.49	-0.49	-0.49
5,984.00	5.30	174.96	5,971.39	-255.28	23.23	-255.36	1.21	-1.20	1.20
6,067.00	5.73	173.36	6,054.00	-263.22	24.05	-263.30	0.55	0.52	-1.93
6,161.00	6.66	169.89	6,147.45	-273.25	25.55	-273.33	1.07	0.99	-3.69
6,255.00	7.52	168.24	6,240.73	-284.64	27.76	-284.73	0.94	0.91	-1.76
6,350.00	7.51	167.85	6,334.92	-296.79	30.33	-296.89	0.05	-0.01	-0.41
6,445.00	7.77	170.64	6,429.07	-309.20	32.68	-309.31	0.48	0.27	2.94
6,541.00	8.01	171.58	6,524.16	-322.22	34.72	-322.33	0.28	0.25	0.98
6,636.00	8.26	170.23	6,618.21	-335.49	36.85	-335.61	0.33	0.26	-1.42
6,731.00	8.14	171.52	6,712.24	-348.87	39.00	-349.00	0.23	-0.13	1.36
6,827.00	8.05	173.85	6,807.28	-362.27	40.72	-362.41	0.35	-0.09	2.43
6,922.00	7.25	177.02	6,901.43	-374.87	41.74	-375.01	0.95	-0.84	3.34
7,017.00	7.38	179.24	6,995.66	-386.96	42.14	-387.10	0.33	0.14	2.34
7,110.00	6.97	178.45	7,087.93	-398.57	42.37	-398.72	0.45	-0.44	-0.85
7,205.00	6.73	175.05	7,182.26	-409.88	43.00	-410.03	0.50	-0.25	-3.58
7,299.00	7.11	171.57	7,275.57	-421.12	44.33	-421.27	0.60	0.40	-3.70
7,393.00	5.83	175.60	7,368.97	-431.64	45.55	-431.79	1.44	-1.36	4.29
7,488.00	5.68	174.03	7,463.49	-441.12	46.41	-441.28	0.23	-0.16	-1.65
7,583.00	5.59	175.40	7,558.03	-450.41	47.27	-450.57	0.17	-0.09	1.44
7,677.00	5.39	174.63	7,651.60	-459.37	48.05	-459.53	0.23	-0.21	-0.82
7,772.00	5.59	174.64	7,746.17	-468.42	48.90	-468.59	0.21	0.21	0.01
7,866.00	6.10	175.74	7,839.68	-477.96	49.70	-478.13	0.56	0.54	1.17
7,960.00	6.30	175.35	7,933.13	-488.08	50.49	-488.25	0.22	0.21	-0.41
8,055.00	6.39	175.88	8,027.55	-498.55	51.29	-498.72	0.11	0.09	0.56
8,149.00	6.47	174.69	8,120.95	-509.04	52.16	-509.22	0.17	0.09	-1.27
8,242.00	5.48	175.58	8,213.45	-518.68	52.98	-518.86	1.07	-1.06	0.96
8,337.00	5.07	173.88	8,308.05	-527.38	53.78	-527.56	0.46	-0.43	-1.79
8,430.00	4.41	169.48	8,400.73	-534.98	54.87	-535.17	0.81	-0.71	-4.73
8,524.00	4.44	172.97	8,494.45	-542.14	55.98	-542.34	0.29	0.03	3.71
8,619.00	4.20	173.35	8,589.18	-549.25	56.83	-549.44	0.25	-0.25	0.40
8,714.00	3.88	182.09	8,683.94	-555.92	57.11	-556.11	0.73	-0.34	9.20
8,808.00	3.17	177.43	8,777.76	-561.69	57.12	-561.89	0.81	-0.76	-4.96
8,904.00	2.85	175.50	8,873.63	-566.72	57.42	-566.92	0.35	-0.33	-2.01
8,999.00	2.37	197.99	8,968.53	-570.95	57.00	-571.14	1.18	-0.51	23.67
9,094.00	1.59	231.11	9,063.48	-573.64	55.37	-573.83	1.42	-0.82	34.86
9,189.00	1.95	228.60	9,158.43	-575.54	53.13	-575.72	0.39	0.38	-2.64

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9,285.00	1.16	226.78	9,254.40	-577.28	51.20	-577.46	0.82	-0.82	-1.90
9,380.00	0.47	205.28	9,349.39	-578.29	50.33	-578.47	0.78	-0.73	-22.63
9,475.00	1.27	188.00	9,444.38	-579.69	50.02	-579.86	0.88	0.84	-18.19
9,572.00	1.74	201.71	9,541.34	-582.12	49.32	-582.29	0.61	0.48	14.13
9,667.00	2.42	289.26	9,636.30	-582.80	46.89	-582.96	3.07	0.72	92.16
9,762.00	1.63	303.19	9,731.24	-581.40	43.87	-581.55	0.97	-0.83	14.66
9,857.00	0.47	257.63	9,826.22	-580.74	42.36	-580.89	1.41	-1.22	-47.96
9,952.00	0.69	232.90	9,921.22	-581.17	41.52	-581.31	0.35	0.23	-26.03
9,983.00	0.90	273.06	9,952.22	-581.27	41.13	-581.41	1.87	0.68	129.55
10,015.00	2.06	318.56	9,984.21	-580.83	40.50	-580.96	4.90	3.63	142.19
10,047.00	3.82	329.47	10,016.16	-579.48	39.58	-579.61	5.75	5.50	34.09
10,075.00	5.40	334.26	10,044.07	-577.49	38.53	-577.62	5.80	5.64	17.11
10,110.00	7.48	340.24	10,078.85	-573.86	37.04	-573.98	6.24	5.94	17.09
10,142.00	9.75	343.91	10,110.49	-569.29	35.59	-569.42	7.30	7.09	11.47
10,173.00	12.11	348.63	10,140.92	-563.58	34.22	-563.70	8.14	7.61	15.23
10,205.00	14.18	354.01	10,172.08	-556.39	33.15	-556.51	7.51	6.47	16.81
10,236.00	16.95	357.55	10,201.94	-548.10	32.56	-548.21	9.44	8.94	11.42
10,268.00	20.32	0.82	10,232.26	-537.88	32.44	-537.99	11.02	10.53	10.22
10,299.00	23.19	3.97	10,261.05	-526.41	32.94	-526.52	9.99	9.26	10.16
10,331.00	25.61	5.87	10,290.19	-513.24	34.08	-513.36	7.95	7.56	5.94
10,363.00	28.99	4.35	10,318.63	-498.62	35.38	-498.74	10.78	10.56	-4.75
10,394.00	31.86	0.91	10,345.36	-482.95	36.08	-483.07	10.83	9.26	-11.10
10,426.00	35.05	0.36	10,372.05	-465.31	36.27	-465.43	10.01	9.97	-1.72
10,457.00	38.68	358.80	10,396.85	-446.72	36.12	-446.84	12.09	11.71	-5.03
10,489.00	41.73	359.11	10,421.29	-426.07	35.75	-426.19	9.55	9.53	0.97
10,520.00	43.96	359.94	10,444.01	-404.99	35.58	-405.11	7.42	7.19	2.68
10,552.00	49.76	1.95	10,465.89	-381.66	35.98	-381.78	18.69	18.13	6.28
10,583.00	56.86	4.61	10,484.40	-356.86	37.43	-356.99	23.91	22.90	8.58
10,615.00	64.84	6.10	10,499.97	-329.06	40.05	-329.20	25.27	24.94	4.66
10,667.00	79.17	4.99	10,516.00	-279.96	44.80	-280.12	27.63	27.56	-2.13
10,698.00	83.68	3.24	10,520.62	-249.40	46.99	-249.56	15.58	14.55	-5.65
10,729.00	85.57	2.51	10,523.52	-218.57	48.54	-218.74	6.53	6.10	-2.35
10,759.00	87.25	1.84	10,525.40	-188.65	49.68	-188.83	6.03	5.60	-2.23
10,850.00	89.83	2.02	10,527.72	-97.74	52.74	-97.93	2.84	2.84	0.20
10,940.00	90.54	1.90	10,527.43	-7.80	55.82	-7.99	0.80	0.79	-0.13
11,031.00	91.14	2.11	10,526.09	83.14	59.00	82.93	0.70	0.66	0.23
11,122.00	89.90	0.77	10,525.27	174.10	61.29	173.89	2.01	-1.36	-1.47
11,214.00	90.13	1.01	10,525.24	266.09	62.72	265.87	0.36	0.25	0.26
11,304.00	90.03	359.81	10,525.12	356.09	63.36	355.86	1.34	-0.11	-1.33
11,395.00	89.36	359.47	10,525.60	447.08	62.79	446.86	0.83	-0.74	-0.37
11,487.00	89.56	359.03	10,526.47	539.07	61.59	538.85	0.53	0.22	-0.48
11,578.00	90.00	359.24	10,526.82	630.06	60.21	629.84	0.54	0.48	0.23
11,673.00	90.13	359.34	10,526.71	725.05	59.03	724.84	0.17	0.14	0.11

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 213H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Site:	Stray Cat 8-5 Fed Com	MD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Well:	213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,767.00	90.74	0.10	10,526.00	819.05	58.58	818.84	1.04	0.65	0.81
11,861.00	91.34	0.70	10,524.29	913.03	59.23	912.82	0.90	0.64	0.64
11,957.00	90.00	359.26	10,523.17	1,009.02	59.20	1,008.80	2.05	-1.40	-1.50
12,051.00	90.44	359.52	10,522.81	1,103.01	58.20	1,102.80	0.54	0.47	0.28
12,145.00	91.41	359.90	10,521.29	1,197.00	57.72	1,196.79	1.11	1.03	0.40
12,240.00	91.98	0.11	10,518.48	1,291.95	57.73	1,291.74	0.64	0.60	0.22
12,334.00	91.81	359.87	10,515.37	1,385.90	57.71	1,385.69	0.31	-0.18	-0.26
12,429.00	90.07	359.10	10,513.81	1,480.88	56.86	1,480.67	2.00	-1.83	-0.81
12,523.00	90.10	359.09	10,513.67	1,574.87	55.37	1,574.67	0.03	0.03	-0.01
12,617.00	90.54	359.14	10,513.15	1,668.86	53.92	1,668.66	0.47	0.47	0.05
12,711.00	91.74	359.33	10,511.28	1,762.83	52.67	1,762.63	1.29	1.28	0.20
12,806.00	91.58	357.90	10,508.53	1,857.76	50.37	1,857.57	1.51	-0.17	-1.51
12,901.00	90.91	357.87	10,506.46	1,952.67	46.87	1,952.49	0.71	-0.71	-0.03
12,996.00	90.60	357.56	10,505.21	2,047.59	43.08	2,047.42	0.46	-0.33	-0.33
13,090.00	88.76	356.81	10,505.74	2,141.47	38.46	2,141.32	2.11	-1.96	-0.80
13,184.00	89.33	356.66	10,507.30	2,235.30	33.11	2,235.17	0.63	0.61	-0.16
13,279.00	89.56	356.63	10,508.22	2,330.13	27.55	2,330.02	0.24	0.24	-0.03
13,373.00	90.00	356.88	10,508.58	2,423.98	22.23	2,423.89	0.54	0.47	0.27
13,468.00	90.60	356.78	10,508.09	2,518.83	16.98	2,518.76	0.64	0.63	-0.11
13,558.00	88.99	358.76	10,508.41	2,608.76	13.48	2,608.69	2.84	-1.79	2.20
13,653.00	88.96	358.96	10,510.11	2,703.72	11.59	2,703.67	0.21	-0.03	0.21
13,747.00	89.29	358.62	10,511.54	2,797.69	9.60	2,797.64	0.50	0.35	-0.36
13,841.00	89.29	358.38	10,512.71	2,891.65	7.14	2,891.61	0.26	0.00	-0.26
13,935.00	88.99	359.94	10,514.12	2,985.63	5.76	2,985.59	1.69	-0.32	1.66
14,029.00	89.60	0.34	10,515.28	3,079.62	5.99	3,079.58	0.78	0.65	0.43
14,123.00	90.07	0.18	10,515.55	3,173.62	6.42	3,173.58	0.53	0.50	-0.17
14,217.00	90.27	359.99	10,515.27	3,267.62	6.56	3,267.58	0.29	0.21	-0.20
14,311.00	90.24	0.13	10,514.85	3,361.62	6.66	3,361.57	0.15	-0.03	0.15
14,406.00	90.81	359.85	10,513.98	3,456.61	6.64	3,456.57	0.67	0.60	-0.29
14,499.00	90.87	359.57	10,512.62	3,549.60	6.17	3,549.56	0.31	0.06	-0.30
14,593.00	89.90	0.36	10,511.98	3,643.60	6.11	3,643.55	1.33	-1.03	0.84
14,688.00	89.97	0.58	10,512.09	3,738.59	6.89	3,738.55	0.24	0.07	0.23
14,782.00	90.00	359.99	10,512.12	3,832.59	7.36	3,832.54	0.63	0.03	-0.63
14,876.00	89.83	359.35	10,512.26	3,926.59	6.82	3,926.54	0.70	-0.18	-0.68
14,971.00	89.73	359.14	10,512.62	4,021.58	5.57	4,021.54	0.24	-0.11	-0.22
15,065.00	90.50	0.56	10,512.43	4,115.58	5.32	4,115.53	1.72	0.82	1.51
15,160.00	90.57	0.87	10,511.54	4,210.57	6.51	4,210.52	0.33	0.07	0.33
15,255.00	90.71	0.86	10,510.48	4,305.55	7.94	4,305.50	0.15	0.15	-0.01
15,348.00	90.57	0.80	10,509.44	4,398.53	9.29	4,398.47	0.16	-0.15	-0.06
15,444.00	90.77	0.75	10,508.32	4,494.52	10.58	4,494.45	0.21	0.21	-0.05
15,538.00	90.71	0.50	10,507.11	4,588.50	11.61	4,588.44	0.27	-0.06	-0.27
15,633.00	91.04	0.80	10,505.66	4,683.49	12.69	4,683.41	0.47	0.35	0.32
15,726.00	90.77	359.43	10,504.19	4,776.47	12.87	4,776.40	1.50	-0.29	-1.47
15,821.00	90.77	359.19	10,502.91	4,871.46	11.73	4,871.39	0.25	0.00	-0.25

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 213H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Site:	Stray Cat 8-5 Fed Com	MD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Well:	213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,916.00	90.97	358.98	10,501.47	4,966.43	10.21	4,966.37	0.31	0.21	-0.22
16,011.00	91.18	358.92	10,499.69	5,061.40	8.47	5,061.34	0.23	0.22	-0.06
16,106.00	90.74	359.26	10,498.10	5,156.38	6.96	5,156.32	0.59	-0.46	0.36
16,200.00	90.87	359.15	10,496.77	5,250.36	5.66	5,250.31	0.18	0.14	-0.12
16,295.00	90.60	358.17	10,495.56	5,345.32	3.44	5,345.28	1.07	-0.28	-1.03
16,388.00	90.91	357.89	10,494.33	5,438.26	0.24	5,438.23	0.45	0.33	-0.30
16,483.00	90.24	358.12	10,493.38	5,533.20	-3.06	5,533.17	0.75	-0.71	0.24
16,577.00	89.56	357.43	10,493.54	5,627.12	-6.71	5,627.11	1.03	-0.72	-0.73
16,671.00	89.40	357.24	10,494.39	5,721.02	-11.08	5,721.02	0.26	-0.17	-0.20
16,765.00	89.63	357.39	10,495.19	5,814.91	-15.49	5,814.93	0.29	0.24	0.16
16,860.00	89.26	359.76	10,496.11	5,909.87	-17.85	5,909.90	2.52	-0.39	2.49
16,954.00	89.50	0.51	10,497.13	6,003.86	-17.63	6,003.89	0.84	0.26	0.80
17,049.00	89.40	0.27	10,498.04	6,098.86	-16.98	6,098.88	0.27	-0.11	-0.25
17,143.00	89.29	359.61	10,499.11	6,192.85	-17.08	6,192.87	0.71	-0.12	-0.70
17,237.00	89.06	358.32	10,500.47	6,286.82	-18.78	6,286.85	1.39	-0.24	-1.37
17,332.00	88.89	357.64	10,502.17	6,381.75	-22.13	6,381.79	0.74	-0.18	-0.72
17,426.00	89.70	359.25	10,503.32	6,475.70	-24.68	6,475.75	1.92	0.86	1.71
17,519.00	91.04	0.64	10,502.72	6,568.70	-24.77	6,568.74	2.08	1.44	1.49
17,613.00	91.31	359.59	10,500.80	6,662.68	-24.58	6,662.72	1.15	0.29	-1.12
17,707.00	91.14	1.98	10,498.79	6,756.64	-23.29	6,756.68	2.55	-0.18	2.54
17,896.00	91.14	2.26	10,495.03	6,945.47	-16.30	6,945.49	0.15	0.00	0.15
17,990.00	90.71	3.97	10,493.51	7,039.32	-11.19	7,039.31	1.88	-0.46	1.82
18,085.00	89.87	3.73	10,493.03	7,134.10	-4.81	7,134.07	0.92	-0.88	-0.25
18,180.00	90.00	3.56	10,493.13	7,228.91	1.23	7,228.86	0.23	0.14	-0.18
18,275.00	89.76	2.73	10,493.33	7,323.76	6.44	7,323.70	0.91	-0.25	-0.87
18,370.00	89.93	1.82	10,493.59	7,418.69	10.21	7,418.61	0.97	0.18	-0.96
18,463.00	90.84	2.25	10,492.97	7,511.63	13.51	7,511.53	1.08	0.98	0.46
18,558.00	88.45	2.07	10,493.55	7,606.55	17.09	7,606.44	2.52	-2.52	-0.19
18,651.00	88.09	1.86	10,496.36	7,699.45	20.28	7,699.33	0.45	-0.39	-0.23
18,746.00	88.49	1.34	10,499.20	7,794.37	22.93	7,794.25	0.69	0.42	-0.55
18,842.00	88.55	1.28	10,501.68	7,890.32	25.12	7,890.18	0.09	0.06	-0.06
18,936.00	88.79	0.96	10,503.86	7,984.27	26.96	7,984.13	0.43	0.26	-0.34
19,029.00	89.29	0.77	10,505.42	8,077.25	28.36	8,077.10	0.58	0.54	-0.20
19,123.00	89.46	0.69	10,506.44	8,171.23	29.56	8,171.08	0.20	0.18	-0.09
19,218.00	89.80	0.44	10,507.06	8,266.23	30.50	8,266.07	0.44	0.36	-0.26
19,313.00	89.87	359.90	10,507.33	8,361.23	30.78	8,361.07	0.57	0.07	-0.57
19,408.00	90.17	359.63	10,507.30	8,456.23	30.39	8,456.07	0.42	0.32	-0.28
19,502.00	90.50	359.52	10,506.75	8,550.22	29.69	8,550.07	0.37	0.35	-0.12
19,597.00	90.77	359.62	10,505.69	8,645.21	28.98	8,645.06	0.30	0.28	0.11
19,692.00	91.04	359.47	10,504.19	8,740.20	28.23	8,740.05	0.33	0.28	-0.16
19,787.00	89.46	358.70	10,503.78	8,835.18	26.71	8,835.03	1.85	-1.66	-0.81
19,881.00	89.23	358.28	10,504.85	8,929.14	24.23	8,929.00	0.51	-0.24	-0.45
19,976.00	89.33	357.88	10,506.05	9,024.08	21.05	9,023.95	0.43	0.11	-0.42

Scientific Drilling, Intl Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 213H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Site:	Stray Cat 8-5 Fed Com	MD Reference:	KB = 32' @ 3639.00usft (Nabors X04)
Well:	213H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,071.00	88.83	357.41	10,507.57	9,118.99	17.15	9,118.87	0.72	-0.53	-0.49
20,165.00	88.49	357.23	10,509.77	9,212.86	12.75	9,212.76	0.41	-0.36	-0.19
20,258.00	88.56	356.99	10,512.16	9,305.71	8.07	9,305.63	0.27	0.08	-0.26
20,353.00	88.49	356.49	10,514.61	9,400.52	2.67	9,400.46	0.53	-0.07	-0.53
20,447.00	88.49	356.07	10,517.09	9,494.29	-3.43	9,494.25	0.45	0.00	-0.45
20,542.00	88.49	355.86	10,519.59	9,589.03	-10.11	9,589.00	0.22	0.00	-0.22
20,566.78	88.61	355.78	10,520.22	9,613.73	-11.92	9,613.71	0.58	0.47	-0.33
FTP[SC1213H]									
20,607.74	88.80	355.64	10,521.14	9,654.57	-14.98	9,654.56	0.58	0.47	-0.33
BHL[SC1213H]									
20,635.00	88.93	355.55	10,521.68	9,681.74	-17.08	9,681.74	0.58	0.47	-0.33
20,730.00	89.43	355.33	10,523.04	9,776.43	-24.63	9,776.46	0.58	0.53	-0.23
20,812.00	89.73	354.93	10,523.64	9,858.13	-31.59	9,858.18	0.61	0.37	-0.49
FINAL MWD Survey (20812.00' MD)									
20,877.00	89.73	354.93	10,523.95	9,922.88	-37.33	9,922.95	0.00	0.00	0.00
FINAL Proj. to Bit (20877.00' MD)									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
20,812.00	10,523.64	9,858.13	-31.59	FINAL MWD Survey (20812.00' MD)
20,877.00	10,523.95	9,922.88	-37.33	FINAL Proj. to Bit (20877.00' MD)

Checked By: _____ Approved By: _____ Date: _____