

Intent ☐ As Drilled ☒

API #

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION CO., L.P.	SPUD MUFFIN 31-30	736H

Kick Off Point (KOP)

UL P	Section 31	Township 23S	Range 29E	Lot	Feet 57	From N/S SOUTH	Feet 1077	From E/W EAST	County EDDY
Latitude 32.2543629					Longitude 104.0187238			NAD 83	

First Take Point (FTP)

UL P	Section 31	Township 23S	Range 29E	Lot	Feet 299	From N/S SOUTH	Feet 1116	From E/W EAST	County EDDY
Latitude 32.2550292					Longitude 104.0188633			NAD 83	

Last Take Point (LTP)

UL A	Section 30	Township 23S	Range 29E	Lot	Feet 487	From N/S NORTH	Feet 1212	From E/W EAST	County EDDY
Latitude 32.2819176					Longitude 104.0194477			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #
30-015-45268

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION CO.,LP	SPUD MUFFIN 31-30	624H

KZ 06/29/2018

STATE OF NEW MEXICO
COUNTY OF EDDY

I, **Seth Crawley**, certify that; I am employed by **Skyline Directional Drilling, LLC**; that I did on the day(s) of **11/8/2019 to 12/3/2019** conduct or supervise the taking of MWD surveys from a depth of **149 feet to a depth of 20,815 feet**; that the data is true, correct, complete and within the limitations of the tool as set forth by **Skyline Directional Drilling, LLC**; that I am authorized and qualified to make this report; that this survey was conducted at the request of **Devon Energy Production Co.** for the **SPUD MUFFIN 31-30 736H**, with the **API #30-015-44755** in **Purple Sage/Wolcamp** field of **Eddy County, New Mexico**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **Skyline Directional Drilling, LLC**.

Seth Crawley

Seth Crawley
Senior Well Planner



Devon Energy Production Company, L.P.

Eddy Co, New Mexico (NAD-83)

Spud Muffin 31-30 736H

Spud Muffin 31-30 736H

Lateral #1

Design: Lateral #1

Standard Survey Report

13 April, 2020



Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Project	Eddy Co, New Mexico (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Spud Muffin 31-30 736H		
Site Position:		Northing:	456,687.05 usft
From:	Map	Easting:	639,178.93 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 18.401 N
		Longitude:	104° 1' 0.570 W

Well	Spud Muffin 31-30 736H		
Well Position	+N/-S	0.0 usft	Northing: 456,687.05 usft
	+E/-W	0.0 usft	Easting: 639,178.93 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
Grid Convergence:	0.17 °	Ground Level:	2,960.0 usft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/7/2019	6.90	59.99	47,667.19165713

Design	Lateral #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	359.35	

Survey Program	Date	4/13/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
149.0	20,815.0	Survey #1 (Lateral #1)	MWD	MWD - Skyline	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
149.0	0.40	292.70	149.0	0.2	-0.5	0.2	0.27	0.27	0.00	
First Survey										
241.0	0.50	245.50	241.0	0.2	-1.1	0.2	0.40	0.11	-51.30	
323.0	0.40	278.60	323.0	0.1	-1.7	0.1	0.33	-0.12	40.37	
423.0	0.90	339.20	423.0	0.8	-2.4	0.9	0.79	0.50	60.60	
515.0	0.90	3.30	515.0	2.2	-2.6	2.3	0.41	0.00	26.20	
605.0	1.00	13.10	605.0	3.7	-2.4	3.7	0.21	0.11	10.89	
697.0	1.10	16.00	696.9	5.3	-1.9	5.4	0.12	0.11	3.15	
789.0	1.70	18.00	788.9	7.5	-1.3	7.5	0.65	0.65	2.17	

Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
880.0	1.60	0.90	879.9	10.0	-0.8	10.0	0.55	-0.11	-18.79	
973.0	1.80	4.00	972.8	12.8	-0.7	12.8	0.24	0.22	3.33	
1,064.0	1.80	357.20	1,063.8	15.6	-0.7	15.7	0.23	0.00	-7.47	
1,156.0	2.10	355.10	1,155.7	18.8	-0.9	18.8	0.34	0.33	-2.28	
1,247.0	3.20	3.50	1,246.6	23.0	-0.9	23.0	1.28	1.21	9.23	
1,338.0	3.40	13.50	1,337.5	28.1	-0.1	28.1	0.67	0.22	10.99	
1,431.0	2.90	349.80	1,430.4	33.1	0.1	33.1	1.49	-0.54	-25.48	
1,525.0	2.60	311.40	1,524.3	36.9	-1.9	36.9	1.95	-0.32	-40.85	
1,620.0	4.60	284.30	1,619.1	39.2	-7.2	39.3	2.71	2.11	-28.53	
1,714.0	5.90	267.90	1,712.7	40.0	-15.7	40.2	2.10	1.38	-17.45	
1,809.0	5.10	266.10	1,807.2	39.5	-24.8	39.8	0.86	-0.84	-1.89	
1,903.0	4.70	253.00	1,900.9	38.1	-32.6	38.5	1.26	-0.43	-13.94	
1,998.0	3.40	243.30	1,995.7	35.7	-38.9	36.2	1.54	-1.37	-10.21	
2,093.0	4.00	222.40	2,090.5	32.0	-43.6	32.5	1.54	0.63	-22.00	
2,188.0	3.30	210.60	2,185.3	27.2	-47.3	27.7	1.08	-0.74	-12.42	
2,282.0	5.90	217.40	2,279.0	21.0	-51.6	21.6	2.82	2.77	7.23	
2,376.0	9.90	223.00	2,372.1	11.3	-60.0	12.0	4.33	4.26	5.96	
2,471.0	10.90	212.10	2,465.5	-2.3	-70.4	-1.5	2.32	1.05	-11.47	
2,565.0	9.80	221.50	2,558.0	-15.8	-80.4	-14.9	2.14	-1.17	10.00	
2,659.0	8.70	245.70	2,650.8	-24.7	-92.2	-23.7	4.26	-1.17	25.74	
2,753.0	7.80	251.10	2,743.8	-29.7	-104.7	-28.5	1.26	-0.96	5.74	
2,847.0	6.90	248.40	2,837.0	-33.9	-116.0	-32.6	1.03	-0.96	-2.87	
2,941.0	7.10	248.40	2,930.3	-38.1	-126.6	-36.7	0.21	0.21	0.00	
3,035.0	7.30	247.70	3,023.6	-42.5	-137.5	-40.9	0.23	0.21	-0.74	
3,129.0	7.10	248.60	3,116.9	-46.9	-148.5	-45.2	0.24	-0.21	0.96	
3,224.0	7.50	250.60	3,211.1	-51.1	-159.8	-49.3	0.50	0.42	2.11	
3,318.0	7.30	250.30	3,304.3	-55.1	-171.2	-53.2	0.22	-0.21	-0.32	
3,412.0	5.50	250.70	3,397.7	-58.6	-181.1	-56.6	1.92	-1.91	0.43	
3,507.0	5.30	248.70	3,492.3	-61.7	-189.5	-59.6	0.29	-0.21	-2.11	
3,602.0	5.70	250.10	3,586.9	-64.9	-198.0	-62.7	0.44	0.42	1.47	
3,696.0	5.40	247.10	3,680.4	-68.3	-206.4	-65.9	0.44	-0.32	-3.19	
3,791.0	4.80	246.00	3,775.0	-71.6	-214.2	-69.2	0.64	-0.63	-1.16	
3,885.0	4.90	245.40	3,868.7	-74.9	-221.4	-72.4	0.12	0.11	-0.64	
3,980.0	4.80	250.00	3,963.4	-77.9	-228.9	-75.3	0.42	-0.11	4.84	
4,075.0	4.90	247.20	4,058.0	-80.9	-236.3	-78.2	0.27	0.11	-2.95	
4,169.0	4.90	248.70	4,151.7	-83.9	-243.8	-81.1	0.14	0.00	1.60	
4,264.0	4.40	248.00	4,246.4	-86.7	-250.9	-83.9	0.53	-0.53	-0.74	
4,359.0	5.90	254.60	4,341.0	-89.4	-259.0	-86.4	1.70	1.58	6.95	
4,453.0	5.90	252.60	4,434.5	-92.1	-268.3	-89.1	0.22	0.00	-2.13	
4,548.0	5.80	255.60	4,529.0	-94.8	-277.6	-91.6	0.34	-0.11	3.16	
4,643.0	5.70	254.40	4,623.5	-97.2	-286.8	-94.0	0.16	-0.11	-1.26	
4,737.0	5.50	250.60	4,717.1	-100.0	-295.5	-96.6	0.45	-0.21	-4.04	
4,831.0	5.70	253.60	4,810.6	-102.8	-304.3	-99.3	0.38	0.21	3.19	

Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,925.0	5.60	251.70	4,904.2	-105.5	-313.1	-102.0	0.23	-0.11	-2.02
5,020.0	5.20	253.70	4,998.7	-108.2	-321.6	-104.6	0.47	-0.42	2.11
5,114.0	4.90	250.40	5,092.4	-110.7	-329.5	-107.0	0.44	-0.32	-3.51
5,209.0	5.80	261.60	5,187.0	-112.8	-338.1	-109.0	1.45	0.95	11.79
5,303.0	5.50	258.50	5,280.5	-114.4	-347.2	-110.5	0.46	-0.32	-3.30
5,397.0	5.00	262.90	5,374.1	-115.8	-355.7	-111.8	0.68	-0.53	4.68
5,492.0	6.40	256.30	5,468.6	-117.6	-364.9	-113.4	1.62	1.47	-6.95
5,587.0	6.40	261.10	5,563.1	-119.6	-375.3	-115.4	0.56	0.00	5.05
5,682.0	5.80	261.90	5,657.5	-121.1	-385.3	-116.8	0.64	-0.63	0.84
5,775.0	5.70	259.90	5,750.0	-122.6	-394.5	-118.1	0.24	-0.11	-2.15
5,869.0	5.40	257.90	5,843.6	-124.4	-403.4	-119.8	0.38	-0.32	-2.13
5,964.0	5.10	258.90	5,938.2	-126.1	-411.9	-121.4	0.33	-0.32	1.05
6,060.0	4.70	256.60	6,033.9	-127.8	-419.9	-123.1	0.46	-0.42	-2.40
6,154.0	5.70	252.40	6,127.5	-130.1	-428.1	-125.3	1.14	1.06	-4.47
6,248.0	5.30	249.80	6,221.0	-133.1	-436.6	-128.1	0.50	-0.43	-2.77
6,342.0	5.80	250.20	6,314.6	-136.2	-445.2	-131.1	0.53	0.53	0.43
6,437.0	5.30	252.10	6,409.1	-139.1	-453.9	-134.0	0.56	-0.53	2.00
6,531.0	4.70	252.30	6,502.8	-141.6	-461.7	-136.4	0.64	-0.64	0.21
6,625.0	5.30	245.90	6,596.4	-144.6	-469.3	-139.3	0.87	0.64	-6.81
6,719.0	4.80	244.80	6,690.1	-148.0	-476.8	-142.6	0.54	-0.53	-1.17
6,815.0	3.90	245.50	6,785.8	-151.1	-483.4	-145.6	0.94	-0.94	0.73
6,909.0	3.50	257.30	6,879.6	-153.1	-489.1	-147.5	0.91	-0.43	12.55
7,003.0	3.10	261.40	6,973.4	-154.1	-494.5	-148.4	0.49	-0.43	4.36
7,097.0	4.20	257.80	7,067.2	-155.2	-500.3	-149.5	1.19	1.17	-3.83
7,191.0	4.00	259.30	7,161.0	-156.5	-506.9	-150.8	0.24	-0.21	1.60
7,285.0	3.10	262.30	7,254.8	-157.5	-512.7	-151.6	0.98	-0.96	3.19
7,379.0	2.60	250.70	7,348.7	-158.5	-517.2	-152.6	0.81	-0.53	-12.34
7,474.0	3.40	249.90	7,443.6	-160.2	-521.9	-154.3	0.84	0.84	-0.84
7,568.0	5.20	240.60	7,537.3	-163.2	-528.2	-157.2	2.05	1.91	-9.89
7,662.0	4.90	235.70	7,630.9	-167.6	-535.2	-161.5	0.56	-0.32	-5.21
7,757.0	4.20	229.00	7,725.6	-172.2	-541.2	-166.0	0.92	-0.74	-7.05
7,851.0	4.70	216.40	7,819.4	-177.5	-546.1	-171.3	1.16	0.53	-13.40
7,946.0	4.50	211.40	7,914.1	-183.8	-550.3	-177.6	0.47	-0.21	-5.26
8,040.0	4.70	208.80	8,007.8	-190.4	-554.1	-184.1	0.31	0.21	-2.77
8,134.0	5.00	210.60	8,101.4	-197.3	-558.1	-190.9	0.36	0.32	1.91
8,229.0	4.60	212.40	8,196.1	-204.0	-562.2	-197.6	0.45	-0.42	1.89
8,324.0	4.80	211.50	8,290.8	-210.6	-566.3	-204.2	0.22	0.21	-0.95
8,418.0	4.60	209.70	8,384.5	-217.3	-570.3	-210.8	0.26	-0.21	-1.91
8,513.0	4.40	201.90	8,479.2	-224.0	-573.5	-217.4	0.68	-0.21	-8.21
8,607.0	4.40	199.40	8,572.9	-230.7	-576.0	-224.2	0.20	0.00	-2.66
8,702.0	4.40	198.10	8,667.6	-237.6	-578.4	-231.0	0.10	0.00	-1.37
8,796.0	4.00	199.90	8,761.4	-244.1	-580.6	-237.5	0.45	-0.43	1.91
8,891.0	3.40	201.70	8,856.2	-249.8	-582.8	-243.2	0.64	-0.63	1.89

Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,986.0	3.20	201.30	8,951.0	-254.9	-584.8	-248.3	0.21	-0.21	-0.42
9,081.0	3.10	195.20	9,045.9	-259.9	-586.4	-253.2	0.37	-0.11	-6.42
9,175.0	2.40	189.40	9,139.7	-264.3	-587.4	-257.6	0.80	-0.74	-6.17
9,271.0	2.40	186.10	9,235.7	-268.3	-588.0	-261.6	0.14	0.00	-3.44
9,366.0	2.30	178.00	9,330.6	-272.1	-588.1	-265.5	0.36	-0.11	-8.53
9,460.0	2.30	166.30	9,424.5	-275.9	-587.6	-269.2	0.50	0.00	-12.45
9,553.0	2.00	164.70	9,517.4	-279.2	-586.7	-272.6	0.33	-0.32	-1.72
9,678.0	1.90	168.70	9,642.4	-283.4	-585.7	-276.7	0.14	-0.08	3.20
9,771.0	1.30	223.80	9,735.3	-285.6	-586.2	-279.0	1.69	-0.65	59.25
9,866.0	1.50	220.30	9,830.3	-287.4	-587.7	-280.7	0.23	0.21	-3.68
9,961.0	1.30	228.00	9,925.3	-289.0	-589.3	-282.3	0.29	-0.21	8.11
10,055.0	1.40	223.50	10,019.3	-290.6	-590.9	-283.9	0.15	0.11	-4.79
10,150.0	1.70	220.60	10,114.2	-292.5	-592.6	-285.8	0.33	0.32	-3.05
10,245.0	1.90	215.10	10,209.2	-294.9	-594.4	-288.1	0.28	0.21	-5.79
KOP (10245' MD) 37' FSL, 1085' FEL									
10,339.0	6.00	325.50	10,303.0	-292.1	-598.1	-285.3	7.34	4.36	117.45
10,433.0	11.30	346.20	10,395.9	-279.1	-603.1	-272.2	6.45	5.64	22.02
10,495.0	17.70	344.60	10,455.9	-264.1	-607.1	-257.2	10.34	10.32	-2.58
10,527.0	21.10	346.20	10,486.1	-253.8	-609.7	-246.9	10.75	10.63	5.00
10,581.5	27.54	351.58	10,535.7	-231.8	-613.9	-224.8	12.49	11.82	9.86
Perf Crossing (10581.5' MD) 100' FSL, 1103' FEL									
10,621.0	32.30	354.20	10,570.0	-212.2	-616.3	-205.2	12.49	12.04	6.64
10,668.0	40.20	355.10	10,607.8	-184.6	-618.9	-177.5	16.85	16.81	1.91
10,715.0	47.10	355.80	10,641.8	-152.3	-621.5	-145.2	14.72	14.68	1.49
10,763.0	55.30	355.70	10,671.9	-115.0	-624.2	-107.9	17.08	17.08	-0.21
10,810.0	62.50	355.80	10,696.1	-74.9	-627.2	-67.8	15.32	15.32	0.21
10,857.0	71.30	356.30	10,714.6	-31.8	-630.2	-24.6	18.75	18.72	1.06
10,904.0	78.90	356.50	10,726.6	13.5	-633.0	20.7	16.18	16.17	0.43
10,952.0	84.80	356.30	10,733.4	60.9	-636.0	68.1	12.30	12.29	-0.42
10,999.0	84.20	355.60	10,737.9	107.6	-639.3	114.8	1.96	-1.28	-1.49
11,094.0	88.80	354.40	10,743.7	202.0	-647.6	209.3	5.00	4.84	-1.26
11,189.0	89.10	353.20	10,745.5	296.4	-657.8	303.9	1.30	0.32	-1.26
11,283.0	92.70	353.90	10,744.0	389.8	-668.4	397.4	3.90	3.83	0.74
11,377.0	90.30	352.20	10,741.5	483.1	-679.8	490.8	3.13	-2.55	-1.81
11,471.0	92.00	350.60	10,739.7	576.0	-693.8	583.8	2.48	1.81	-1.70
11,565.0	88.50	348.50	10,739.2	668.4	-710.9	676.4	4.34	-3.72	-2.23
11,660.0	91.90	351.40	10,738.9	761.9	-727.4	770.1	4.70	3.58	3.05
11,754.0	92.40	354.10	10,735.4	855.1	-739.3	863.4	2.92	0.53	2.87
11,849.0	92.70	355.70	10,731.2	949.6	-747.7	958.1	1.71	0.32	1.68
11,944.0	91.40	358.90	10,727.8	1,044.5	-752.2	1,052.9	3.63	-1.37	3.37
12,039.0	89.10	0.10	10,727.3	1,139.4	-753.0	1,147.9	2.73	-2.42	1.26
12,134.0	91.80	0.70	10,726.6	1,234.4	-752.4	1,242.9	2.91	2.84	0.63
12,229.0	87.00	357.70	10,727.6	1,329.4	-753.7	1,337.8	5.96	-5.05	-3.16
12,324.0	90.50	357.70	10,729.7	1,424.3	-757.5	1,432.8	3.68	3.68	0.00

Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,418.0	89.10	0.00	10,730.0	1,518.2	-759.4	1,526.8	2.86	-1.49	2.45
12,513.0	88.80	1.10	10,731.7	1,613.2	-758.5	1,621.7	1.20	-0.32	1.16
12,608.0	91.00	1.20	10,731.9	1,708.2	-756.6	1,716.7	2.32	2.32	0.11
12,702.0	88.20	359.20	10,732.6	1,802.2	-756.2	1,810.6	3.66	-2.98	-2.13
12,796.0	88.70	355.30	10,735.1	1,896.0	-760.7	1,904.5	4.18	0.53	-4.15
12,891.0	94.30	356.50	10,732.6	1,990.7	-767.5	1,999.3	6.03	5.89	1.26
12,985.0	92.50	357.00	10,727.0	2,084.4	-772.9	2,093.0	1.99	-1.91	0.53
13,080.0	91.00	355.60	10,724.1	2,179.1	-779.0	2,187.8	2.16	-1.58	-1.47
13,174.0	90.30	357.20	10,723.1	2,272.9	-784.9	2,281.7	1.86	-0.74	1.70
13,269.0	89.30	358.20	10,723.4	2,367.9	-788.7	2,376.6	1.49	-1.05	1.05
13,364.0	87.40	359.30	10,726.1	2,462.8	-790.8	2,471.6	2.31	-2.00	1.16
13,459.0	89.30	357.20	10,728.9	2,557.7	-793.7	2,566.5	2.98	2.00	-2.21
13,488.0	88.10	356.00	10,729.5	2,586.6	-795.4	2,595.5	5.85	-4.14	-4.14
13,581.0	87.60	356.50	10,733.0	2,679.4	-801.5	2,688.3	0.76	-0.54	0.54
13,676.0	87.30	356.70	10,737.2	2,774.1	-807.1	2,783.1	0.38	-0.32	0.21
13,771.0	91.50	359.00	10,738.2	2,869.0	-810.7	2,878.0	5.04	4.42	2.42
13,864.0	89.70	358.50	10,737.3	2,962.0	-812.7	2,971.0	2.01	-1.94	-0.54
13,959.0	90.00	359.40	10,737.5	3,057.0	-814.4	3,066.0	1.00	0.32	0.95
14,053.0	89.30	2.90	10,738.1	3,150.9	-812.5	3,159.9	3.80	-0.74	3.72
14,147.0	89.60	5.00	10,739.0	3,244.7	-806.1	3,253.6	2.26	0.32	2.23
14,241.0	87.30	1.20	10,741.5	3,338.5	-801.0	3,347.4	4.72	-2.45	-4.04
14,336.0	89.10	0.70	10,744.5	3,433.4	-799.4	3,442.3	1.97	1.89	-0.53
14,430.0	90.80	1.90	10,744.6	3,527.4	-797.3	3,536.2	2.21	1.81	1.28
14,525.0	91.50	359.10	10,742.7	3,622.4	-796.4	3,631.2	3.04	0.74	-2.95
14,619.0	89.40	357.50	10,742.0	3,716.3	-799.2	3,725.1	2.81	-2.23	-1.70
14,713.0	89.80	357.20	10,742.6	3,810.2	-803.6	3,819.1	0.53	0.43	-0.32
14,808.0	91.20	358.40	10,741.8	3,905.1	-807.2	3,914.0	1.94	1.47	1.26
14,903.0	88.40	356.70	10,742.1	4,000.0	-811.3	4,009.0	3.45	-2.95	-1.79
14,998.0	89.60	358.00	10,743.8	4,094.9	-815.7	4,103.9	1.86	1.26	1.37
15,092.0	91.50	359.30	10,742.9	4,188.9	-817.9	4,197.9	2.45	2.02	1.38
15,186.0	88.20	359.60	10,743.1	4,282.9	-818.8	4,291.9	3.53	-3.51	0.32
15,281.0	90.30	0.90	10,744.4	4,377.8	-818.4	4,386.8	2.60	2.21	1.37
15,375.0	90.60	1.30	10,743.6	4,471.8	-816.6	4,480.8	0.53	0.32	0.43
15,469.0	89.70	1.60	10,743.4	4,565.8	-814.2	4,574.7	1.01	-0.96	0.32
15,564.0	89.80	2.50	10,743.8	4,660.7	-810.8	4,669.6	0.95	0.11	0.95
15,658.0	89.20	1.60	10,744.6	4,754.7	-807.4	4,763.5	1.15	-0.64	-0.96
15,750.0	88.80	2.60	10,746.2	4,846.6	-804.1	4,855.4	1.17	-0.43	1.09
15,839.0	89.75	1.09	10,747.3	4,935.5	-801.2	4,944.3	2.01	1.06	-1.70
Section Crossing (15839' MD) 0' FNL, 1188' FEL									
15,844.0	89.80	1.00	10,747.4	4,940.5	-801.1	4,949.3	2.01	1.06	-1.70
15,939.0	90.30	359.40	10,747.3	5,035.5	-800.8	5,044.3	1.76	0.53	-1.68
16,033.0	90.10	358.30	10,747.0	5,129.5	-802.7	5,138.3	1.19	-0.21	-1.17
16,127.0	89.70	356.90	10,747.1	5,223.4	-806.6	5,232.2	1.55	-0.43	-1.49
16,222.0	90.10	355.60	10,747.3	5,318.2	-812.8	5,327.1	1.43	0.42	-1.37

Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,316.0	89.90	357.20	10,747.3	5,412.0	-818.7	5,421.0	1.72	-0.21	1.70
16,411.0	89.10	357.40	10,748.1	5,506.9	-823.2	5,515.9	0.87	-0.84	0.21
16,506.0	89.00	357.50	10,749.7	5,601.8	-827.4	5,610.8	0.15	-0.11	0.11
16,601.0	89.50	357.30	10,750.9	5,696.7	-831.7	5,705.8	0.57	0.53	-0.21
16,695.0	90.00	356.50	10,751.3	5,790.6	-836.8	5,799.7	1.00	0.53	-0.85
16,790.0	90.30	356.90	10,751.1	5,885.4	-842.3	5,894.6	0.53	0.32	0.42
16,884.0	91.20	355.60	10,749.9	5,979.2	-848.4	5,988.4	1.68	0.96	-1.38
16,979.0	90.10	356.00	10,748.8	6,073.9	-855.4	6,083.2	1.23	-1.16	0.42
17,074.0	90.80	357.20	10,748.0	6,168.8	-861.0	6,178.1	1.46	0.74	1.26
17,168.0	90.00	359.00	10,747.4	6,262.7	-864.1	6,272.1	2.10	-0.85	1.91
17,261.0	89.30	359.40	10,748.0	6,355.7	-865.4	6,365.1	0.87	-0.75	0.43
17,355.0	90.00	1.10	10,748.5	6,449.7	-865.0	6,459.1	1.96	0.74	1.81
17,449.0	90.10	359.50	10,748.4	6,543.7	-864.5	6,553.1	1.71	0.11	-1.70
17,543.0	90.20	358.40	10,748.2	6,637.7	-866.3	6,647.1	1.18	0.11	-1.17
17,637.0	88.90	0.20	10,748.9	6,731.6	-867.4	6,741.0	2.36	-1.38	1.91
17,731.0	89.80	359.20	10,750.0	6,825.6	-867.9	6,835.0	1.43	0.96	-1.06
17,825.0	89.90	357.70	10,750.2	6,919.6	-870.4	6,929.0	1.60	0.11	-1.60
17,919.0	90.90	359.60	10,749.6	7,013.6	-872.7	7,023.0	2.28	1.06	2.02
18,013.0	89.90	358.10	10,748.9	7,107.5	-874.5	7,117.0	1.92	-1.06	-1.60
18,106.0	88.70	359.40	10,750.1	7,200.5	-876.6	7,210.0	1.90	-1.29	1.40
18,200.0	90.00	0.20	10,751.1	7,294.5	-876.9	7,304.0	1.62	1.38	0.85
18,295.0	90.70	359.40	10,750.6	7,389.5	-877.2	7,399.0	1.12	0.74	-0.84
18,389.0	89.30	0.90	10,750.6	7,483.5	-877.0	7,492.9	2.18	-1.49	1.60
18,483.0	91.50	0.90	10,749.9	7,577.5	-875.5	7,586.9	2.34	2.34	0.00
18,577.0	88.50	358.20	10,749.9	7,671.4	-876.2	7,680.9	4.29	-3.19	-2.87
18,671.0	89.00	0.40	10,752.0	7,765.4	-877.4	7,774.9	2.40	0.53	2.34
18,766.0	88.80	359.90	10,753.8	7,860.4	-877.1	7,869.8	0.57	-0.21	-0.53
18,861.0	86.10	357.80	10,758.0	7,955.3	-879.0	7,964.7	3.60	-2.84	-2.21
18,955.0	90.00	0.20	10,761.2	8,049.2	-880.7	8,058.6	4.87	4.15	2.55
19,049.0	90.70	0.50	10,760.6	8,143.2	-880.1	8,152.6	0.81	0.74	0.32
19,144.0	91.20	0.50	10,759.1	8,238.1	-879.3	8,247.6	0.53	0.53	0.00
19,238.0	92.00	1.60	10,756.4	8,332.1	-877.6	8,341.5	1.45	0.85	1.17
19,333.0	87.20	1.00	10,757.1	8,427.0	-875.4	8,436.4	5.09	-5.05	-0.63
19,426.0	88.70	3.70	10,760.4	8,519.9	-871.6	8,529.2	3.32	1.61	2.90
19,520.0	89.40	1.10	10,762.0	8,613.8	-867.7	8,623.1	2.86	0.74	-2.77
19,615.0	90.10	1.40	10,762.4	8,708.8	-865.6	8,718.0	0.80	0.74	0.32
19,710.0	89.40	2.70	10,762.8	8,803.7	-862.2	8,812.9	1.55	-0.74	1.37
19,804.0	88.60	3.40	10,764.4	8,897.5	-857.2	8,906.7	1.13	-0.85	0.74
19,898.0	90.00	2.90	10,765.6	8,991.4	-852.0	9,000.5	1.58	1.49	-0.53
19,993.0	90.10	5.20	10,765.5	9,086.1	-845.3	9,095.2	2.42	0.11	2.42
20,086.0	94.40	5.40	10,761.9	9,178.7	-836.7	9,187.6	4.63	4.62	0.22
20,181.0	95.30	3.20	10,753.8	9,273.0	-829.6	9,281.9	2.49	0.95	-2.32
20,275.0	92.70	358.60	10,747.3	9,366.8	-828.2	9,375.6	5.61	-2.77	-4.89

Company:	Devon Energy Production Company, L.P.	Local Co-ordinate Reference:	Well Spud Muffin 31-30 736H
Project:	Eddy Co, New Mexico (NAD-83)	TVD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Site:	Spud Muffin 31-30 736H	MD Reference:	Rig KB @ 2984.0usft (Cactus 168)
Well:	Spud Muffin 31-30 736H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	Compass_DSN

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,370.0	86.40	357.20	10,748.0	9,461.7	-831.6	9,470.5	6.79	-6.63	-1.47
20,464.0	92.20	358.50	10,749.2	9,555.5	-835.2	9,564.4	6.32	6.17	1.38
20,559.0	91.40	359.00	10,746.2	9,650.5	-837.2	9,659.3	0.99	-0.84	0.53
20,653.0	90.20	358.40	10,744.9	9,744.4	-839.4	9,753.3	1.43	-1.28	-0.64
20,748.0	94.10	359.70	10,741.3	9,839.3	-840.9	9,848.2	4.33	4.11	1.37
Last Survey									
20,815.0	94.10	359.70	10,736.5	9,906.2	-841.3	9,915.1	0.00	0.00	0.00
PTB (20815' MD) 331' FNL, 1213' FEL - PBHL - TD (S M 31-30 736H)									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
149.0	149.0	0.2	-0.5	First Survey
10,245.0	10,209.2	-294.9	-594.4	KOP (10245' MD) 37' FSL, 1085' FEL
10,581.5	10,535.7	-231.8	-613.9	Perf Crossing (10581.5' MD) 100' FSL, 1103' FEL
15,839.0	10,747.3	4,935.5	-801.2	Section Crossing (15839' MD) 0' FNL, 1188' FEL
20,748.0	10,741.3	9,839.3	-840.9	Last Survey
20,815.0	10,736.5	9,906.2	-841.3	PTB (20815' MD) 331' FNL, 1213' FEL

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------