

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 26 2019

Form C-102

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised August 1, 2011

RECEIVED

one copy to appropriate
District Office

☒ AMENDED REPORT

As Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45266		² Pool Code 98220		³ Pool Name PURPLE SAGE; WOLFCAMP	
⁴ Property Code		⁵ Property Name SPUD MUFFIN 31-30 COM			⁶ Well Number 622H
⁷ OGRID No. 6137		⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.			⁹ Elevation 2959.3

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	31	23 S	29 E		625	SOUTH	2375	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	30	23 S	29 E		24	NORTH	1841	WEST	EDDY
¹² Dedicated Acres 632.38	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Erin Workman</i> 11/22/2019 Signature Date Erin Workman Printed Name Erin.workman@dvn.com E-mail Address		18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. AUGUST 30, 2019 Date of Survey <i>[Signature]</i> Signature and Seal of Professional Surveyor Certificate Number: PL 12797 SURVEY NO. 5960C	
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Intent ☐ As Drilled ☒

API #

Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: SPUD MUFFIN 31-30 COM	Well Number 622H
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Kick Off Point (KOP)

UL M	Section 31	Township 23S	Range 29E	Lot	Feet 59	From N/S SOUTH	Feet 1889	From E/W WEST	County EDDY
Latitude 32.2544337					Longitude 104.0262395			NAD 83	

First Take Point (FTP)

UL M	Section 31	Township 23S	Range 29E	Lot	Feet 506	From N/S SOUTH	Feet 1851	From E/W WEST	County EDDY
Latitude 32.2556630					Longitude 104.0263565			NAD 83	

Last Take Point (LTP)

UL C	Section 30	Township 23S	Range 29E	Lot	Feet 195	From N/S NORTH	Feet 1851	From E/W WEST	County EDDY
Latitude 32.2829036					Longitude 104.0262604			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 #

Operator Name:	Property Name:	Well Number
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KZ 06/29/2018



NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 26 2019

RECEIVED

April 11, 2019

Devon Energy Production Company, LP
Well: Spud Muffin 31-30 Com 622H
County/Parish: Eddy County, NM

LEAM MWD: (OH) from 0' MD – 20,072' MD
Projection: 20,123' MD

This Borehole Survey taken between 01/20/19 and 04/08/19 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: April 11, 2019



Survey Certification Form

State of New Mexico

Eddy County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 01/20/2019 through 04/08/2019, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 20,123' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy Production Company, LP for the Spud Muffin 31-30 Com 622H in Eddy County, New Mexico; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Services.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', is written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Spud Muffin 31-30 Com 622H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Site:	Spud Muffin 31-30 Com	MD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Well:	Spud Muffin 31-30 Com 622H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

Project:	Eddy County, NM (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 Com				
Site Position:		Northing:	456,837.82 usft	Latitude:	32° 15' 19.9378 N
From:	Map	Easting:	637,646.02 usft	Longitude:	104° 1' 18.4160 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17 °

Well:	Spud Muffin 31-30 Com 622H				
Well Position	+N/-S	0.00 usft	Northing:	456,994.04 usft	Latitude: 32° 15' 21.5092 N
	+E/-W	0.00 usft	Easting:	636,755.68 usft	Longitude: 104° 1' 28.7793 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 2,959.30 usft

Wellbore:	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/3/2018	7.12	60.03	47,955.00000000

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 (°)	
	0.00	0.00	0.00	0.00	

Survey Program	Date	4/8/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
160.00	20,072.00	Survey #1 - MWD (OH)	LEAM MWD+HDGM	MWD+HDGM	
20,123.00	20,123.00	Projection (OH)	Project	Projection	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
160.00	1.10	99.40	159.99	-0.25	1.52	-0.25	0.69	0.69	0.00	
261.00	1.30	97.10	260.97	-0.55	3.61	-0.55	0.20	0.20	-2.28	
404.00	1.10	100.30	403.94	-1.00	6.57	-1.00	0.15	-0.14	2.24	
506.00	0.90	88.30	505.92	-1.15	8.33	-1.15	0.28	-0.20	-11.76	
599.00	0.60	58.50	598.91	-0.87	9.48	-0.87	0.52	-0.32	-32.04	
691.00	1.10	35.80	690.90	0.10	10.41	0.10	0.65	0.54	-24.67	
783.00	0.50	352.00	782.89	1.21	10.87	1.21	0.89	-0.65	-47.61	
875.00	0.70	332.30	874.89	2.10	10.55	2.10	0.31	0.22	-21.41	
967.00	1.70	334.80	966.87	3.84	9.71	3.84	1.09	1.09	2.72	

LEAM Drilling Systems

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Well:	Spud Muffin 31-30 Com 622H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
1,060.00	1.50	308.40	1,059.83	5.84	8.17	5.84	0.81	-0.22	-28.39
1,151.00	0.60	298.70	1,150.82	6.81	6.81	6.81	1.00	-0.99	-10.66
1,242.00	0.70	323.70	1,241.81	7.49	6.07	7.49	0.33	0.11	27.47
1,334.00	0.70	316.40	1,333.80	8.35	5.35	8.35	0.10	0.00	-7.93
1,425.00	0.80	356.10	1,424.80	9.38	4.92	9.38	0.57	0.11	43.63
1,516.00	1.00	339.00	1,515.79	10.76	4.59	10.76	0.37	0.22	-18.79
1,607.00	0.30	305.40	1,606.78	11.64	4.11	11.64	0.84	-0.77	-36.92
1,699.00	0.50	319.00	1,698.78	12.08	3.65	12.08	0.24	0.22	14.78
1,790.00	1.10	316.40	1,789.77	13.01	2.79	13.01	0.66	0.66	-2.86
1,884.00	0.30	276.20	1,883.76	13.69	1.92	13.69	0.95	-0.85	-42.77
1,978.00	0.70	302.80	1,977.76	14.03	1.20	14.03	0.48	0.43	28.30
2,073.00	1.10	305.10	2,072.75	14.87	-0.04	14.87	0.42	0.42	2.42
2,167.00	1.70	313.10	2,166.72	16.34	-1.79	16.34	0.67	0.64	8.51
2,262.00	1.80	263.50	2,261.68	17.13	-4.30	17.13	1.55	0.11	-52.21
2,357.00	2.60	211.60	2,356.62	15.13	-6.92	15.13	2.16	0.84	-54.63
2,451.00	2.60	195.80	2,450.52	11.26	-8.61	11.26	0.76	0.00	-16.81
2,546.00	3.90	188.70	2,545.37	6.00	-9.69	6.00	1.43	1.37	-7.47
2,640.00	3.80	184.70	2,639.15	-0.27	-10.43	-0.27	0.30	-0.11	-4.26
2,735.00	3.40	185.60	2,733.97	-6.21	-10.96	-6.21	0.43	-0.42	0.95
2,829.00	3.30	198.30	2,827.81	-11.55	-12.08	-11.55	0.79	-0.11	13.51
2,924.00	4.30	213.10	2,922.60	-17.13	-14.89	-17.13	1.47	1.05	15.58
3,019.00	5.40	219.40	3,017.26	-23.57	-19.67	-23.57	1.28	1.16	6.63
3,113.00	6.20	220.90	3,110.78	-30.83	-25.80	-30.83	0.87	0.85	1.60
3,208.00	7.30	222.70	3,205.12	-39.14	-33.25	-39.14	1.18	1.16	1.89
3,303.00	8.10	220.40	3,299.26	-48.67	-41.68	-48.67	0.90	0.84	-2.42
3,397.00	9.30	221.80	3,392.18	-59.38	-51.04	-59.38	1.30	1.28	1.49
3,491.00	9.50	222.60	3,484.91	-70.75	-61.35	-70.75	0.25	0.21	0.85
3,585.00	9.10	223.70	3,577.68	-81.83	-71.74	-81.83	0.47	-0.43	1.17
3,680.00	8.40	224.00	3,671.57	-92.26	-81.75	-92.26	0.74	-0.74	0.32
3,775.00	9.00	225.00	3,765.48	-102.50	-91.82	-102.50	0.65	0.63	1.05
3,870.00	9.00	225.40	3,859.31	-112.97	-102.37	-112.97	0.07	0.00	0.42
3,965.00	8.70	225.90	3,953.18	-123.19	-112.82	-123.19	0.33	-0.32	0.53
4,058.00	8.40	225.70	4,045.14	-132.83	-122.73	-132.83	0.32	-0.32	-0.22
4,153.00	8.70	225.40	4,139.09	-142.72	-132.81	-142.72	0.32	0.32	-0.32
4,247.00	8.60	226.60	4,232.02	-152.54	-142.98	-152.54	0.22	-0.11	1.28
4,342.00	8.30	224.50	4,325.99	-162.31	-152.95	-162.31	0.45	-0.32	-2.21
4,437.00	9.90	222.30	4,419.79	-173.25	-163.25	-173.25	1.72	1.68	-2.32
4,531.00	9.90	222.60	4,512.39	-185.17	-174.16	-185.17	0.05	0.00	0.32
4,626.00	9.60	222.40	4,606.02	-197.03	-185.03	-197.03	0.32	-0.32	-0.21
4,720.00	9.20	223.10	4,698.76	-208.31	-195.45	-208.31	0.44	-0.43	0.74
4,814.00	8.90	220.60	4,791.59	-219.31	-205.31	-219.31	0.53	-0.32	-2.66
4,908.00	8.40	220.70	4,884.52	-230.04	-214.52	-230.04	0.53	-0.53	0.11
5,003.00	9.10	216.50	4,978.41	-241.34	-223.52	-241.34	1.00	0.74	-4.42

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Spud Muffin 31-30 Com 622H
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Well:	Spud Muffin 31-30 Com 622H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
5,098.00	8.80	216.70	5,072.25	-253.21	-232.33	-253.21	0.32	-0.32	0.21
5,193.00	8.10	215.60	5,166.22	-264.47	-240.57	-264.47	0.76	-0.74	-1.16
5,288.00	8.10	218.20	5,260.27	-275.18	-248.60	-275.18	0.39	0.00	2.74
5,382.00	9.00	218.70	5,353.23	-286.12	-257.30	-286.12	0.96	0.96	0.53
5,476.00	8.40	219.50	5,446.15	-297.15	-266.26	-297.15	0.65	-0.64	0.85
5,571.00	8.50	219.10	5,540.12	-307.96	-275.10	-307.96	0.12	0.11	-0.42
5,664.00	9.80	220.30	5,631.93	-319.33	-284.56	-319.33	1.41	1.40	1.29
5,759.00	9.80	221.20	5,725.54	-331.58	-295.11	-331.58	0.16	0.00	0.95
5,854.00	9.50	219.80	5,819.20	-343.68	-305.45	-343.68	0.40	-0.32	-1.47
5,949.00	8.80	218.90	5,912.99	-355.36	-315.04	-355.36	0.75	-0.74	-0.95
6,043.00	7.90	217.40	6,005.99	-366.09	-323.48	-366.09	0.99	-0.96	-1.60
6,138.00	8.40	219.10	6,100.03	-376.66	-331.82	-376.66	0.58	0.53	1.79
6,231.00	8.90	219.70	6,191.98	-387.47	-340.70	-387.47	0.55	0.54	0.65
6,326.00	8.80	221.10	6,285.84	-398.60	-350.17	-398.60	0.25	-0.11	1.47
6,420.00	8.70	220.60	6,378.75	-409.41	-359.52	-409.41	0.13	-0.11	-0.53
6,515.00	9.40	221.10	6,472.57	-420.72	-369.30	-420.72	0.74	0.74	0.53
6,610.00	8.50	221.80	6,566.41	-431.80	-379.08	-431.80	0.95	-0.95	0.74
6,705.00	8.50	217.50	6,660.37	-442.60	-388.03	-442.60	0.67	0.00	-4.53
6,800.00	8.60	219.20	6,754.31	-453.68	-396.79	-453.68	0.29	0.11	1.79
6,895.00	8.80	222.80	6,848.22	-464.51	-406.22	-464.51	0.61	0.21	3.79
6,989.00	8.80	219.70	6,941.11	-475.32	-415.70	-475.32	0.50	0.00	-3.30
7,084.00	10.30	223.50	7,034.79	-487.07	-426.19	-487.07	1.71	1.58	4.00
7,178.00	9.40	222.20	7,127.41	-498.86	-437.13	-498.86	0.99	-0.96	-1.38
7,273.00	7.30	225.00	7,221.40	-508.87	-446.61	-508.87	2.25	-2.21	2.95
7,367.00	6.20	218.90	7,314.74	-517.04	-454.02	-517.04	1.40	-1.17	-6.49
7,463.00	4.90	218.40	7,410.29	-524.29	-459.82	-524.29	1.36	-1.35	-0.52
7,557.00	5.00	216.20	7,503.94	-530.74	-464.74	-530.74	0.23	0.11	-2.34
7,651.00	4.60	216.40	7,597.61	-537.08	-469.39	-537.08	0.43	-0.43	0.21
7,746.00	3.90	220.00	7,692.35	-542.63	-473.73	-542.63	0.79	-0.74	3.79
7,840.00	3.50	223.90	7,786.15	-547.14	-477.77	-547.14	0.50	-0.43	4.15
7,935.00	2.60	227.70	7,881.02	-550.68	-481.38	-550.68	0.97	-0.95	4.00
8,029.00	1.90	222.30	7,974.95	-553.27	-484.00	-553.27	0.78	-0.74	-5.74
8,124.00	1.00	196.70	8,069.92	-555.23	-485.30	-555.23	1.14	-0.95	-26.95
8,219.00	0.20	129.30	8,164.91	-556.13	-485.41	-556.13	0.99	-0.84	-70.95
8,313.00	0.40	220.00	8,258.91	-556.48	-485.50	-556.48	0.48	0.21	96.49
8,408.00	0.50	215.40	8,353.91	-557.07	-485.95	-557.07	0.11	0.11	-4.84
8,502.00	0.40	200.70	8,447.90	-557.71	-486.30	-557.71	0.16	-0.11	-15.64
8,598.00	0.40	214.20	8,543.90	-558.31	-486.61	-558.31	0.10	0.00	14.06
8,692.00	0.30	222.30	8,637.90	-558.76	-486.96	-558.76	0.12	-0.11	8.62
8,786.00	0.60	159.90	8,731.90	-559.40	-486.96	-559.40	0.57	0.32	-66.38
8,881.00	1.00	152.40	8,826.89	-560.60	-486.40	-560.60	0.43	0.42	-7.89
8,976.00	1.30	142.70	8,921.87	-562.20	-485.36	-562.20	0.38	0.32	-10.21
9,070.00	0.50	164.90	9,015.86	-563.44	-484.61	-563.44	0.91	-0.85	23.62

LEAM Drilling Systems

Survey Report

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
9,165.00	1.00	194.40	9,110.85	-564.64	-484.71	-564.64	0.65	0.53	31.05
9,311.00	4.00	334.90	9,256.75	-561.26	-487.19	-561.26	3.30	2.05	96.23
9,405.00	16.30	348.10	9,349.10	-545.33	-491.31	-545.33	13.23	13.09	14.04
9,452.00	23.60	351.70	9,393.26	-529.54	-494.04	-529.54	15.74	15.53	7.66
9,471.65	25.77	352.72	9,411.11	-521.41	-495.15	-521.41	11.25	11.04	5.19
100' FSL HL Crossing @ 9471.65' MD									
9,499.00	28.80	353.90	9,435.41	-508.96	-496.60	-508.96	11.25	11.08	4.31
9,546.00	32.90	352.10	9,475.76	-485.05	-499.56	-485.05	8.94	8.72	-3.83
9,594.00	38.30	351.00	9,514.77	-457.42	-503.68	-457.42	11.33	11.25	-2.29
9,641.00	42.70	352.60	9,550.50	-427.22	-508.01	-427.22	9.62	9.36	3.40
9,688.00	46.30	353.10	9,584.02	-394.54	-512.11	-394.54	7.70	7.66	1.06
9,735.00	49.70	354.20	9,615.46	-359.83	-515.96	-359.83	7.44	7.23	2.34
9,783.00	52.40	355.20	9,645.64	-322.66	-519.40	-322.66	5.85	5.63	2.08
9,830.00	55.80	357.00	9,673.19	-284.68	-521.98	-284.68	7.87	7.23	3.83
9,878.00	60.20	358.20	9,698.62	-244.02	-523.67	-244.02	9.41	9.17	2.50
9,925.00	64.00	359.10	9,720.61	-202.51	-524.65	-202.51	8.26	8.09	1.91
9,973.00	67.00	0.20	9,740.52	-158.84	-524.91	-158.84	6.59	6.25	2.29
10,020.00	71.20	2.20	9,757.28	-114.95	-523.98	-114.95	9.78	8.94	4.26
10,067.00	74.30	4.50	9,771.22	-70.15	-521.35	-70.15	8.08	6.60	4.89
10,114.00	76.10	3.20	9,783.22	-24.82	-518.30	-24.82	4.67	3.83	-2.77
10,162.00	81.40	359.70	9,792.59	22.22	-517.12	22.22	13.15	11.04	-7.29
10,209.00	87.80	357.10	9,797.01	68.97	-518.43	68.97	14.69	13.62	-5.53
10,256.00	89.20	357.70	9,798.24	115.90	-520.56	115.90	3.24	2.98	1.28
10,351.00	90.10	0.80	9,798.82	210.88	-521.81	210.88	3.40	0.95	3.26
10,444.00	90.20	0.90	9,798.58	303.87	-520.43	303.87	0.15	0.11	0.11
10,539.00	91.00	1.00	9,797.58	398.85	-518.85	398.85	0.85	0.84	0.11
10,634.00	89.00	1.10	9,797.58	493.83	-517.11	493.83	2.11	-2.11	0.11
10,729.00	87.30	0.60	9,800.65	588.76	-515.70	588.76	1.87	-1.79	-0.53
10,824.00	87.70	2.20	9,804.79	683.64	-513.38	683.64	1.73	0.42	1.68
10,918.00	88.50	2.40	9,807.91	777.51	-509.61	777.51	0.88	0.85	0.21
11,013.00	87.50	1.10	9,811.23	872.41	-506.71	872.41	1.73	-1.05	-1.37
11,107.00	87.00	0.40	9,815.74	966.29	-505.48	966.29	0.91	-0.53	-0.74
11,201.00	88.40	359.40	9,819.51	1,060.21	-505.65	1,060.21	1.83	1.49	-1.06
11,295.00	89.90	358.70	9,820.90	1,154.19	-507.21	1,154.19	1.76	1.60	-0.74
11,390.00	90.30	358.30	9,820.74	1,249.15	-509.69	1,249.15	0.60	0.42	-0.42
11,484.00	90.90	357.10	9,819.75	1,343.07	-513.47	1,343.07	1.43	0.64	-1.28
11,578.00	92.80	358.00	9,816.72	1,436.93	-517.48	1,436.93	2.24	2.02	0.96
11,673.00	93.40	359.10	9,811.58	1,531.76	-519.88	1,531.76	1.32	0.63	1.16
11,767.00	91.10	2.60	9,807.89	1,625.65	-518.49	1,625.65	4.45	-2.45	3.72
11,861.00	90.80	3.00	9,806.33	1,719.53	-513.90	1,719.53	0.53	-0.32	0.43
11,956.00	88.80	2.60	9,806.66	1,814.41	-509.26	1,814.41	2.15	-2.11	-0.42
12,051.00	86.10	3.10	9,810.89	1,909.19	-504.54	1,909.19	2.89	-2.84	0.53
12,145.00	87.50	4.50	9,816.14	2,002.83	-498.32	2,002.83	2.10	1.49	1.49
12,240.00	86.20	3.50	9,821.36	2,097.45	-491.70	2,097.45	1.73	-1.37	-1.05

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Spud Muffin 31-30 Com 622H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Site:	Spud Muffin 31-30 Com	MD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Well:	Spud Muffin 31-30 Com 622H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)	
12,335.00	85.60	3.30	9,828.15	2,192.04	-486.08	2,192.04	0.67	-0.63	-0.21	
12,429.00	86.30	359.80	9,834.79	2,285.76	-483.55	2,285.76	3.79	0.74	-3.72	
12,523.00	87.70	359.40	9,839.71	2,379.63	-484.20	2,379.63	1.55	1.49	-0.43	
12,617.00	91.60	357.10	9,840.28	2,473.56	-487.07	2,473.56	4.82	4.15	-2.45	
12,712.00	90.50	356.00	9,838.54	2,568.36	-492.79	2,568.36	1.64	-1.16	-1.16	
12,806.00	90.60	355.90	9,837.64	2,662.13	-499.43	2,662.13	0.15	0.11	-0.11	
12,900.00	89.50	356.10	9,837.56	2,755.90	-505.98	2,755.90	1.19	-1.17	0.21	
12,994.00	91.70	357.70	9,836.57	2,849.74	-511.07	2,849.74	2.89	2.34	1.70	
13,089.00	92.20	357.50	9,833.34	2,944.60	-515.04	2,944.60	0.57	0.53	-0.21	
13,183.00	92.30	358.50	9,829.65	3,038.47	-518.32	3,038.47	1.07	0.11	1.06	
13,278.00	92.00	359.70	9,826.09	3,133.39	-519.81	3,133.39	1.30	-0.32	1.26	
13,373.00	90.70	1.00	9,823.85	3,228.36	-519.23	3,228.36	1.93	-1.37	1.37	
13,467.00	90.60	2.10	9,822.78	3,322.32	-516.69	3,322.32	1.17	-0.11	1.17	
13,562.00	88.80	4.20	9,823.28	3,417.17	-511.47	3,417.17	2.91	-1.89	2.21	
13,656.00	87.20	3.40	9,826.56	3,510.90	-505.24	3,510.90	1.90	-1.70	-0.85	
13,685.00	87.40	3.70	9,827.92	3,539.81	-503.45	3,539.81	1.24	0.69	1.03	
13,779.00	86.80	4.00	9,832.68	3,633.48	-497.15	3,633.48	0.71	-0.64	0.32	
13,874.00	86.30	3.30	9,838.40	3,728.11	-491.11	3,728.11	0.90	-0.53	-0.74	
13,969.00	88.10	0.80	9,843.04	3,822.93	-487.72	3,822.93	3.24	1.89	-2.63	
14,063.00	87.60	359.20	9,846.57	3,916.86	-487.72	3,916.86	1.78	-0.53	-1.70	
14,158.00	89.80	358.70	9,848.72	4,011.81	-489.46	4,011.81	2.37	2.32	-0.53	
14,252.00	90.20	359.30	9,848.72	4,105.80	-491.10	4,105.80	0.77	0.43	0.64	
14,347.00	90.20	359.60	9,848.39	4,200.79	-492.01	4,200.79	0.32	0.00	0.32	
14,442.00	88.50	358.10	9,849.47	4,295.76	-493.92	4,295.76	2.39	-1.79	-1.58	
14,536.00	90.30	356.80	9,850.45	4,389.65	-498.10	4,389.65	2.36	1.91	-1.38	
14,630.00	90.40	357.00	9,849.88	4,483.52	-503.18	4,483.52	0.24	0.11	0.21	
14,724.00	92.10	357.40	9,847.83	4,577.38	-507.77	4,577.38	1.86	1.81	0.43	
14,820.00	91.90	357.00	9,844.48	4,673.20	-512.46	4,673.20	0.47	-0.21	-0.42	
14,820.72	91.89	357.00	9,844.45	4,673.92	-512.50	4,673.92	1.05	-0.84	-0.63	
SL Crossing @ 14820.72' MD										
14,915.00	91.10	356.40	9,841.99	4,768.01	-517.92	4,768.01	1.05	-0.84	-0.63	
15,009.00	93.10	359.70	9,838.54	4,861.88	-521.12	4,861.88	4.10	2.13	3.51	
15,103.00	91.00	0.50	9,835.18	4,955.81	-520.96	4,955.81	2.39	-2.23	0.85	
15,197.00	88.50	1.40	9,835.59	5,049.79	-519.40	5,049.79	2.83	-2.66	0.96	
15,292.00	89.30	1.80	9,837.42	5,144.73	-516.75	5,144.73	0.94	0.84	0.42	
15,387.00	88.60	1.40	9,839.16	5,239.68	-514.10	5,239.68	0.85	-0.74	-0.42	
15,481.00	89.20	1.90	9,840.96	5,333.62	-511.39	5,333.62	0.83	0.64	0.53	
15,575.00	92.20	4.10	9,839.81	5,427.47	-506.47	5,427.47	3.96	3.19	2.34	
15,670.00	88.90	2.40	9,838.90	5,522.30	-501.09	5,522.30	3.91	-3.47	-1.79	
15,764.00	89.10	2.40	9,840.54	5,616.20	-497.15	5,616.20	0.21	0.21	0.00	
15,858.00	89.80	2.60	9,841.44	5,710.11	-493.05	5,710.11	0.77	0.74	0.21	
15,952.00	89.70	2.90	9,841.85	5,804.00	-488.54	5,804.00	0.34	-0.11	0.32	
16,047.00	91.10	3.00	9,841.19	5,898.87	-483.65	5,898.87	1.48	1.47	0.11	

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Spud Muffin 31-30 Com 622H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Site:	Spud Muffin 31-30 Com	MD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Well:	Spud Muffin 31-30 Com 622H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)	
16,143.00	88.60	1.20	9,841.44	5,994.79	-480.14	5,994.79	3.21	-2.60	-1.88	
16,237.00	87.50	0.40	9,844.64	6,088.72	-478.82	6,088.72	1.45	-1.17	-0.85	
16,332.00	86.70	357.50	9,849.45	6,183.57	-480.56	6,183.57	3.16	-0.84	-3.05	
16,426.00	87.30	355.70	9,854.37	6,277.28	-486.13	6,277.28	2.02	0.64	-1.91	
16,520.00	89.80	357.70	9,856.75	6,371.08	-491.54	6,371.08	3.41	2.66	2.13	
16,615.00	92.20	359.10	9,855.09	6,466.02	-494.19	6,466.02	2.92	2.53	1.47	
16,709.00	88.20	355.50	9,854.76	6,559.88	-498.62	6,559.88	5.72	-4.26	-3.83	
16,804.00	87.60	354.60	9,858.24	6,654.46	-506.81	6,654.46	1.14	-0.63	-0.95	
16,899.00	92.80	356.90	9,857.91	6,749.16	-513.84	6,749.16	5.98	5.47	2.42	
16,994.00	93.10	357.30	9,853.02	6,843.91	-518.64	6,843.91	0.53	0.32	0.42	
17,088.00	90.20	356.30	9,850.31	6,937.71	-523.89	6,937.71	3.26	-3.09	-1.06	
17,182.00	90.90	356.80	9,849.41	7,031.54	-529.55	7,031.54	0.92	0.74	0.53	
17,276.00	92.30	358.50	9,846.79	7,125.42	-533.40	7,125.42	2.34	1.49	1.81	
17,370.00	89.40	358.30	9,845.39	7,219.36	-536.02	7,219.36	3.09	-3.09	-0.21	
17,465.00	91.50	2.50	9,844.65	7,314.33	-535.36	7,314.33	4.94	2.21	4.42	
17,559.00	93.10	3.20	9,840.87	7,408.13	-530.69	7,408.13	1.86	1.70	0.74	
17,655.00	93.00	3.10	9,835.77	7,503.85	-525.42	7,503.85	0.15	-0.10	-0.10	
17,750.00	90.90	2.60	9,832.53	7,598.67	-520.70	7,598.67	2.27	-2.21	-0.53	
17,844.00	90.60	2.30	9,831.30	7,692.58	-516.68	7,692.58	0.45	-0.32	-0.32	
17,939.00	90.50	2.20	9,830.39	7,787.50	-512.96	7,787.50	0.15	-0.11	-0.11	
18,034.00	89.90	2.40	9,830.06	7,882.42	-509.14	7,882.42	0.67	-0.63	0.21	
18,129.00	88.70	2.00	9,831.22	7,977.34	-505.50	7,977.34	1.33	-1.26	-0.42	
18,223.00	90.60	3.30	9,831.79	8,071.24	-501.15	8,071.24	2.45	2.02	1.38	
18,317.00	93.40	4.50	9,828.51	8,164.95	-494.76	8,164.95	3.24	2.98	1.28	
18,412.00	91.80	2.40	9,824.20	8,259.67	-489.05	8,259.67	2.78	-1.68	-2.21	
18,507.00	91.10	0.80	9,821.80	8,354.60	-486.40	8,354.60	1.84	-0.74	-1.68	
18,602.00	88.40	0.50	9,822.21	8,449.59	-485.32	8,449.59	2.86	-2.84	-0.32	
18,696.00	88.40	0.90	9,824.84	8,543.54	-484.18	8,543.54	0.43	0.00	0.43	
18,790.00	89.90	0.90	9,826.23	8,637.52	-482.70	8,637.52	1.60	1.60	0.00	
18,885.00	93.20	1.20	9,823.66	8,732.45	-480.96	8,732.45	3.49	3.47	0.32	
18,981.00	90.40	359.40	9,820.65	8,828.39	-480.46	8,828.39	3.47	-2.92	-1.88	
19,076.00	87.80	357.50	9,822.14	8,923.33	-483.03	8,923.33	3.39	-2.74	-2.00	
19,169.00	87.80	356.80	9,825.71	9,016.15	-487.65	9,016.15	0.75	0.00	-0.75	
19,264.00	87.70	356.00	9,829.44	9,110.89	-493.61	9,110.89	0.85	-0.11	-0.84	
19,359.00	88.70	355.60	9,832.43	9,205.58	-500.56	9,205.58	1.13	1.05	-0.42	
19,454.00	89.60	356.50	9,833.83	9,300.34	-507.11	9,300.34	1.34	0.95	0.95	
19,548.00	90.40	359.00	9,833.83	9,394.26	-510.80	9,394.26	2.79	0.85	2.66	
19,643.00	89.70	358.80	9,833.75	9,489.25	-512.62	9,489.25	0.77	-0.74	-0.21	
19,737.00	90.00	359.30	9,834.00	9,583.23	-514.18	9,583.23	0.62	0.32	0.53	
19,831.00	89.80	357.80	9,834.16	9,677.20	-516.56	9,677.20	1.61	-0.21	-1.60	
19,924.00	90.80	356.70	9,833.67	9,770.09	-521.02	9,770.09	1.60	1.08	-1.18	
20,018.00	91.40	356.70	9,831.87	9,863.91	-526.43	9,863.91	0.64	0.64	0.00	
20,044.49	91.15	356.85	9,831.28	9,890.36	-527.92	9,890.36	1.08	-0.93	0.56	
100' FNL HL Crossing @ 20044.49' MD										

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Spud Muffin 31-30 Com 622H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Site:	Spud Muffin 31-30 Com	MD Reference:	2959.3' GE + 23.5' KB @ 2982.80usft
Well:	Spud Muffin 31-30 Com 622H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM Multi_User Db

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)
20,072.00	90.90	357.00	9,830.79	9,917.82	-529.40	9,917.82	1.08	-0.93	0.56
20,123.00	90.90	357.00	9,829.99	9,968.75	-532.06	9,968.75	0.00	0.00	0.00
TD Projection									