



March 19, 2018

Devon Energy Production Company, LP
Well: Thistle Unit 99H
County/Parish: Lea County, NM

HOBBS OCD

SEP 17 2018

RECEIVED

LEAM MWD: (OH) from 1,525' MD – 18,083' MD
Projection: 18,138' MD

This Borehole Survey taken between 02/25/2018 and 03/14/2018 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: March 19, 2018



Survey Certification Form

State of New Mexico
Lea County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 02/25/2018 through 03/14/2018, conduct or supervise the taking of MWD Survey from a depth of 1,525' MD to 18,138' 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 Thistle Unit 99H in Lea 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', written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 99H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Well:	Thistle Unit 99H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 MULTI User DB

Project	Lea 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	Thistle Unit Sec 22-27 Trac Pad				
Site Position:	Northing:	472,548.43 usft	Latitude:	32° 17' 48.4331 N	
From:	Map	Easting:	777,932.69 usft	Longitude:	103° 34' 3.4563 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	Thistle Unit 99H					
Well Position	+N/-S	0.00 usft	Northing:	472,471.47 usft	Latitude:	32° 17' 47.5717 N
	+E/-W	0.00 usft	Easting:	779,343.01 usft	Longitude:	103° 33' 47.0326 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,711.50 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	1/17/2018	6.82	60.07	48,121

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	180.00	

Survey Program	Date	3/28/2018			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
242.80	1,376.50	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,426.30	10,041.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM	
10,086.00	18,083.00	Survey #3 (OH)	MWD+IFR1	OWSG MWD + IFR1	
18,138.00	18,138.00	Survey #4 (OH)	Project	Projection	

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
242.80	0.40	345.51	242.80	0.82	-0.21	-0.82	0.16	0.16	0.00
361.70	0.70	7.51	361.69	1.94	-0.22	-1.94	0.30	0.25	18.50
456.20	0.90	327.51	456.18	3.14	-0.54	-3.14	0.61	0.21	-42.33
550.30	1.10	337.51	550.27	4.60	-1.29	-4.60	0.28	0.21	10.63
644.30	1.40	333.51	644.25	6.46	-2.14	-6.46	0.33	0.32	-4.26
739.50	1.90	346.51	739.41	9.04	-3.03	-9.04	0.65	0.53	13.66
834.10	1.50	340.51	833.97	11.73	-3.81	-11.73	0.46	-0.42	-6.34

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 99H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Well:	Thistle Unit 99H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 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)
928.30	2.20	347.51	928.12	14.66	-4.61	-14.66	0.78	0.74	7.43
1,022.90	2.70	340.51	1,022.63	18.53	-5.75	-18.53	0.62	0.53	-7.40
1,117.40	2.60	346.51	1,117.03	22.71	-6.99	-22.71	0.31	-0.11	6.35
1,243.30	3.30	345.51	1,242.76	29.00	-8.56	-29.00	0.56	0.56	-0.79
1,306.40	3.40	344.51	1,305.75	32.56	-8.52	-32.56	0.18	0.16	-1.58
1,426.30	4.40	342.51	1,425.37	40.37	-11.85	-40.37	0.84	0.83	-1.67
1,525.00	4.00	335.00	1,523.81	47.10	-14.44	-47.10	0.69	-0.41	-7.61
1,616.00	2.60	327.70	1,614.66	51.72	-16.89	-51.72	1.60	-1.54	-8.02
1,708.00	1.40	329.80	1,706.60	54.46	-18.57	-54.46	1.31	-1.30	2.28
1,802.00	1.10	68.50	1,800.59	55.78	-18.31	-55.78	2.03	-0.32	105.00
1,896.00	1.60	120.90	1,894.56	55.44	-16.34	-55.44	1.35	0.53	55.74
1,991.00	1.60	128.50	1,989.53	53.93	-14.16	-53.93	0.22	0.00	8.00
2,086.00	1.30	116.00	2,084.50	52.63	-12.16	-52.63	0.46	-0.32	-13.16
2,180.00	1.10	131.40	2,178.47	51.57	-10.52	-51.57	0.40	-0.21	16.38
2,274.00	0.90	132.00	2,272.46	50.48	-9.30	-50.48	0.21	-0.21	0.64
2,369.00	0.70	122.40	2,367.45	49.67	-8.25	-49.67	0.25	-0.21	-10.11
2,464.00	1.60	115.80	2,462.43	48.78	-6.57	-48.78	0.96	0.95	-6.95
2,558.00	2.70	102.40	2,556.36	47.73	-3.22	-47.73	1.28	1.17	-14.26
2,653.00	3.50	97.00	2,651.22	46.90	1.84	-46.90	0.90	0.84	-5.68
2,748.00	4.40	91.70	2,746.00	46.44	8.36	-46.44	1.02	0.95	-5.58
2,843.00	5.30	90.10	2,840.66	46.32	16.39	-46.32	0.96	0.95	-1.68
2,937.00	5.40	90.00	2,934.25	46.32	25.16	-46.32	0.11	0.11	-0.11
3,032.00	4.90	90.10	3,028.86	46.31	33.68	-46.31	0.53	-0.53	0.11
3,126.00	5.30	88.60	3,122.49	46.41	42.04	-46.41	0.45	0.43	-1.60
3,222.00	5.50	89.90	3,218.07	46.52	51.07	-46.52	0.24	0.21	1.35
3,317.00	5.10	90.10	3,312.66	46.52	59.85	-46.52	0.42	-0.42	0.21
3,412.00	6.00	85.10	3,407.21	46.94	69.02	-46.94	1.07	0.95	-5.26
3,507.00	7.10	84.50	3,501.59	47.93	79.81	-47.93	1.16	1.16	-0.63
3,602.00	7.40	85.60	3,595.83	48.96	91.75	-48.96	0.35	0.32	1.16
3,696.00	7.20	85.00	3,689.07	49.94	103.65	-49.94	0.23	-0.21	-0.64
3,791.00	7.10	85.10	3,783.33	50.96	115.43	-50.96	0.11	-0.11	0.11
3,886.00	6.70	85.70	3,877.64	51.88	126.81	-51.88	0.43	-0.42	0.63
3,981.00	6.10	84.20	3,972.05	52.80	137.36	-52.80	0.66	-0.63	-1.58
4,074.00	5.70	85.30	4,064.56	53.68	146.88	-53.68	0.45	-0.43	1.18
4,169.00	6.00	77.70	4,159.06	55.12	156.43	-55.12	0.87	0.32	-8.00
4,263.00	6.10	73.60	4,252.54	57.58	166.02	-57.58	0.47	0.11	-4.36
4,358.00	5.90	75.90	4,347.02	60.19	175.60	-60.19	0.33	-0.21	2.42
4,453.00	6.10	80.20	4,441.50	62.24	185.31	-62.24	0.52	0.21	4.53
4,547.00	6.20	82.60	4,534.96	63.75	195.26	-63.75	0.29	0.11	2.55
4,642.00	5.60	82.20	4,629.46	65.04	204.94	-65.04	0.63	-0.63	-0.42
4,738.00	6.10	84.50	4,724.96	66.16	214.66	-66.16	0.58	0.52	2.40
4,833.00	7.10	82.20	4,819.33	67.44	225.50	-67.44	1.09	1.05	-2.42
4,927.00	7.30	82.60	4,912.58	69.00	237.18	-69.00	0.22	0.21	0.43

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 99H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Well:	Thistle Unit 99H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 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)
5,022.00	7.10	85.00	5,006.84	70.29	249.02	-70.29	0.38	-0.21	2.53
5,117.00	6.50	85.30	5,101.17	71.24	260.22	-71.24	0.63	-0.63	0.32
5,211.00	6.10	85.20	5,194.60	72.09	270.50	-72.09	0.43	-0.43	-0.11
5,297.00	5.60	86.60	5,280.15	72.73	279.24	-72.73	0.60	-0.58	1.63
5,403.00	5.50	85.70	5,385.65	73.41	289.47	-73.41	0.13	-0.09	-0.85
5,497.00	6.70	82.90	5,479.12	74.43	299.41	-74.43	1.31	1.28	-2.98
5,592.00	7.00	80.60	5,573.44	76.06	310.62	-76.06	0.43	0.32	-2.42
5,687.00	6.90	79.90	5,667.74	78.01	321.95	-78.01	0.14	-0.11	-0.74
5,782.00	6.60	77.10	5,762.09	80.23	332.89	-80.23	0.47	-0.32	-2.95
5,876.00	6.40	75.90	5,855.48	82.71	343.23	-82.71	0.26	-0.21	-1.28
5,970.00	6.70	75.70	5,948.87	85.34	353.63	-85.34	0.32	0.32	-0.21
6,066.00	6.40	75.00	6,044.24	88.11	364.22	-88.11	0.32	-0.31	-0.73
6,160.00	5.60	73.40	6,137.73	90.77	373.68	-90.77	0.87	-0.85	-1.70
6,254.00	5.40	86.60	6,231.30	92.35	382.49	-92.35	1.36	-0.21	14.04
6,349.00	6.00	91.20	6,325.83	92.51	391.92	-92.51	0.79	0.63	4.84
6,443.00	6.90	83.80	6,419.23	93.01	402.44	-93.01	1.30	0.96	-7.87
6,537.00	8.30	79.40	6,512.41	94.87	414.73	-94.87	1.61	1.49	-4.68
6,631.00	8.80	76.40	6,605.36	97.81	428.38	-97.81	0.71	0.53	-3.19
6,726.00	9.00	74.50	6,699.22	101.50	442.61	-101.50	0.37	0.21	-2.00
6,821.00	8.90	74.30	6,793.06	105.48	456.84	-105.48	0.11	-0.11	-0.21
6,915.00	9.10	72.40	6,885.90	109.69	470.93	-109.69	0.38	0.21	-2.02
7,010.00	8.40	70.80	6,979.80	114.25	484.64	-114.25	0.78	-0.74	-1.68
7,105.00	7.70	71.50	7,073.86	118.55	497.23	-118.55	0.74	-0.74	0.74
7,199.00	7.60	71.70	7,167.02	122.50	509.10	-122.50	0.11	-0.11	0.21
7,295.00	7.30	73.30	7,262.21	126.25	520.97	-126.25	0.38	-0.31	1.67
7,389.00	7.10	75.40	7,355.47	129.43	532.31	-129.43	0.35	-0.21	2.23
7,485.00	6.90	74.80	7,450.76	132.43	543.62	-132.43	0.22	-0.21	-0.63
7,579.00	6.60	76.20	7,544.11	135.20	554.32	-135.20	0.36	-0.32	1.49
7,673.00	6.60	78.40	7,637.48	137.58	564.85	-137.58	0.27	0.00	2.34
7,767.00	6.10	81.70	7,730.91	139.38	575.09	-139.38	0.66	-0.53	3.51
7,863.00	5.40	83.60	7,826.42	140.62	584.62	-140.62	0.76	-0.73	1.98
7,958.00	5.60	80.50	7,920.99	141.89	593.64	-141.89	0.38	0.21	-3.26
8,052.00	5.40	84.20	8,014.55	143.09	602.56	-143.09	0.43	-0.21	3.94
8,147.00	4.90	84.70	8,109.17	143.92	611.05	-143.92	0.53	-0.53	0.53
8,242.00	5.60	81.00	8,203.77	145.02	619.67	-145.02	0.82	0.74	-3.89
8,337.00	6.80	70.80	8,298.22	147.59	629.56	-147.59	1.71	1.26	-10.74
8,431.00	6.20	70.60	8,391.61	151.11	639.60	-151.11	0.64	-0.64	-0.21
8,526.00	5.50	71.90	8,486.12	154.23	648.77	-154.23	0.75	-0.74	1.37
8,621.00	6.20	70.60	8,580.62	157.35	657.93	-157.35	0.75	0.74	-1.37
8,715.00	6.10	74.00	8,674.08	160.41	667.52	-160.41	0.40	-0.11	3.62
8,811.00	6.20	74.80	8,769.53	163.17	677.43	-163.17	0.14	0.10	0.83
8,906.00	7.40	75.40	8,863.86	166.06	688.30	-166.06	1.27	1.26	0.63
9,000.00	6.90	76.60	8,957.13	168.90	699.65	-168.90	0.56	-0.53	1.28
9,095.00	6.20	78.00	9,051.51	171.28	710.22	-171.28	0.76	-0.74	1.47

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 99H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Well:	Thistle Unit 99H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 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)
9,189.00	5.20	76.10	9,145.04	173.36	719.32	-173.36	1.08	-1.06	-2.02
9,284.00	4.80	78.90	9,239.68	175.16	727.40	-175.16	0.49	-0.42	2.95
9,378.00	3.40	80.60	9,333.44	176.38	734.01	-176.38	1.49	-1.49	1.81
9,472.00	2.40	81.30	9,427.31	177.13	738.70	-177.13	1.06	-1.06	0.74
9,567.00	1.40	76.40	9,522.26	177.70	741.80	-177.70	1.07	-1.05	-5.16
9,661.00	1.10	46.50	9,616.24	178.59	743.57	-178.59	0.75	-0.32	-31.81
9,756.00	1.30	33.20	9,711.22	180.12	744.82	-180.12	0.36	0.21	-14.00
9,851.00	1.20	47.10	9,806.20	181.70	746.14	-181.70	0.34	-0.11	14.63
9,946.00	1.50	39.70	9,901.17	183.34	747.66	-183.34	0.36	0.32	-7.79
10,000.00	1.40	26.10	9,955.15	184.47	748.40	-184.47	0.66	-0.19	-25.19
10,041.00	1.00	23.50	9,996.14	185.25	748.77	-185.25	0.98	-0.98	-6.34
10,086.00	3.50	148.70	10,041.12	184.44	749.64	-184.44	9.24	5.56	278.22
10,135.00	9.70	167.50	10,089.77	179.12	751.31	-179.12	13.23	12.65	38.37
10,180.00	16.00	170.80	10,133.62	169.29	753.12	-169.29	14.09	14.00	7.33
10,229.00	21.80	172.40	10,179.96	153.59	755.41	-153.59	11.88	11.84	3.27
10,274.00	26.00	173.10	10,221.10	135.51	757.70	-135.51	9.35	9.33	1.56
10,324.00	30.30	178.20	10,265.18	112.01	759.41	-112.01	9.85	8.60	10.20
10,369.00	34.90	176.10	10,303.08	87.80	760.65	-87.80	10.53	10.22	-4.67
10,418.00	41.60	175.00	10,341.54	57.58	763.02	-57.58	13.74	13.67	-2.24
10,467.00	45.30	176.40	10,377.11	23.98	765.53	-23.98	7.80	7.55	2.86
10,513.00	46.10	177.30	10,409.23	-8.89	767.34	8.89	2.23	1.74	1.96
10,558.00	48.10	178.00	10,439.86	-41.82	768.69	41.82	4.59	4.44	1.56
10,607.00	53.40	179.30	10,470.86	-79.74	769.56	79.74	11.01	10.82	2.65
10,652.00	59.30	180.00	10,495.78	-117.19	769.79	117.19	13.17	13.11	1.56
10,702.00	61.00	180.80	10,520.67	-160.55	769.48	160.55	3.67	3.40	1.60
10,747.00	61.80	180.70	10,542.21	-200.06	768.96	200.06	1.79	1.78	-0.22
10,797.00	68.10	178.70	10,563.37	-245.33	769.22	245.33	13.11	12.60	-4.00
10,842.00	73.20	177.80	10,578.27	-287.75	770.52	287.75	11.49	11.33	-2.00
10,892.00	76.30	177.80	10,591.42	-335.95	772.37	335.95	6.20	6.20	0.00
10,937.00	78.90	178.20	10,601.09	-379.87	773.91	379.87	5.84	5.78	0.89
10,984.00	83.30	178.50	10,608.36	-426.27	775.24	426.27	9.38	9.36	0.64
11,032.00	87.54	179.69	10,612.19	-474.10	776.00	474.10	9.17	8.83	2.48
11,062.00	90.57	180.40	10,612.68	-504.09	775.97	504.09	10.37	10.10	2.37
11,157.00	92.02	181.27	10,610.54	-599.05	774.59	599.05	1.78	1.53	0.92
11,252.00	90.40	181.19	10,608.53	-694.01	772.55	694.01	1.71	-1.71	-0.08
11,347.00	87.32	180.31	10,610.42	-788.97	771.31	788.97	3.37	-3.24	-0.93
11,441.00	86.53	179.96	10,615.46	-882.83	771.09	882.83	0.92	-0.84	-0.37
11,535.00	86.53	179.78	10,621.15	-976.66	771.30	976.66	0.19	0.00	-0.19
11,629.00	87.06	179.43	10,626.41	-1,070.51	771.95	1,070.51	0.68	0.56	-0.37
11,724.00	87.58	180.48	10,630.85	-1,165.40	772.02	1,165.40	1.23	0.55	1.11
11,820.00	89.52	179.52	10,633.28	-1,261.37	772.02	1,261.37	2.25	2.02	-1.00
11,913.00	89.80	180.00	10,633.83	-1,354.36	772.41	1,354.36	0.60	0.30	0.52
12,008.00	89.90	180.70	10,634.08	-1,449.36	771.83	1,449.36	0.74	0.11	0.74

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Thistle Unit Sec 22-27 Trac Pad
Well: Thistle Unit 99H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Thistle Unit 99H
TVD Reference: 3711.5' GE + 23.5' KB @ 3735.00usft
MD Reference: 3711.5' GE + 23.5' KB @ 3735.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 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)
12,103.00	89.80	180.00	10,634.33	-1,544.36	771.25	1,544.36	0.74	-0.11	-0.74
12,197.00	89.20	180.00	10,635.15	-1,638.36	771.25	1,638.36	0.64	-0.64	0.00
12,292.00	88.50	179.70	10,637.05	-1,733.34	771.50	1,733.34	0.80	-0.74	-0.32
12,387.00	88.20	179.90	10,639.79	-1,828.30	771.83	1,828.30	0.38	-0.32	0.21
12,480.00	89.80	179.60	10,641.41	-1,921.28	772.23	1,921.28	1.75	1.72	-0.32
12,575.00	89.20	178.80	10,642.24	-2,016.26	773.56	2,016.26	1.05	-0.63	-0.84
12,670.00	89.00	179.60	10,643.73	-2,111.24	774.89	2,111.24	0.87	-0.21	0.84
12,764.00	88.90	179.60	10,645.46	-2,205.22	775.54	2,205.22	0.11	-0.11	0.00
12,859.00	89.90	179.20	10,646.45	-2,300.21	776.54	2,300.21	1.13	1.05	-0.42
12,954.00	89.10	178.90	10,647.28	-2,395.19	778.11	2,395.19	0.90	-0.84	-0.32
13,047.00	92.60	178.80	10,645.90	-2,488.15	779.98	2,488.15	3.76	3.76	-0.11
13,142.00	92.50	178.50	10,641.67	-2,583.03	782.22	2,583.03	0.33	-0.11	-0.32
13,237.00	92.80	178.30	10,637.28	-2,677.89	784.86	2,677.89	0.38	0.32	-0.21
13,331.00	90.70	179.60	10,634.41	-2,771.82	786.59	2,771.82	2.63	-2.23	1.38
13,426.00	87.30	177.90	10,636.07	-2,866.77	788.66	2,866.77	4.00	-3.58	-1.79
13,521.00	85.40	176.80	10,642.12	-2,961.47	793.04	2,961.47	2.31	-2.00	-1.16
13,615.00	88.70	177.80	10,646.95	-3,055.23	797.46	3,055.23	3.67	3.51	1.06
13,710.00	88.40	176.70	10,649.36	-3,150.09	802.02	3,150.09	1.20	-0.32	-1.16
13,805.00	88.40	179.60	10,652.01	-3,244.99	805.08	3,244.99	3.05	0.00	3.05
13,899.00	92.40	182.30	10,651.36	-3,338.95	803.52	3,338.95	5.13	4.26	2.87
13,940.00	92.70	181.90	10,649.53	-3,379.88	802.02	3,379.88	1.22	0.73	-0.98
14,088.00	90.60	181.70	10,645.27	-3,527.73	797.38	3,527.73	1.43	-1.42	-0.14
14,211.00	90.70	181.70	10,643.87	-3,650.67	793.73	3,650.67	0.08	0.08	0.00
14,306.00	87.00	181.90	10,645.78	-3,745.59	790.74	3,745.59	3.90	-3.89	0.21
14,401.00	86.60	181.00	10,651.08	-3,840.41	788.34	3,840.41	1.04	-0.42	-0.95
14,495.00	88.80	180.10	10,654.86	-3,934.32	787.44	3,934.32	2.53	2.34	-0.96
14,590.00	88.30	179.30	10,657.26	-4,029.29	787.94	4,029.29	0.99	-0.53	-0.84
14,684.00	87.70	179.10	10,660.54	-4,123.22	789.25	4,123.22	0.67	-0.64	-0.21
14,779.00	89.60	180.10	10,662.78	-4,218.19	789.91	4,218.19	2.26	2.00	1.05
14,874.00	89.60	180.10	10,663.44	-4,313.19	789.75	4,313.19	0.00	0.00	0.00
14,968.00	90.10	180.10	10,663.69	-4,407.19	789.58	4,407.19	0.53	0.53	0.00
15,063.00	90.10	180.30	10,663.52	-4,502.19	789.25	4,502.19	0.21	0.00	0.21
15,157.00	89.60	179.40	10,663.77	-4,596.18	789.50	4,596.18	1.10	-0.53	-0.96
15,253.00	89.10	179.30	10,664.86	-4,692.17	790.59	4,692.17	0.53	-0.52	-0.10
15,348.00	89.30	179.10	10,666.18	-4,787.15	791.91	4,787.15	0.30	0.21	-0.21
15,444.00	88.90	179.30	10,667.69	-4,883.13	793.25	4,883.13	0.47	-0.42	0.21
15,509.54	88.41	179.16	10,669.23	-4,948.65	794.14	4,948.65	0.77	-0.74	-0.21
SL Crossing - 15509.54' MD, 10669.26' TVD									
15,538.00	88.20	179.10	10,670.07	-4,977.09	794.57	4,977.09	0.77	-0.74	-0.21
15,633.00	88.00	177.80	10,673.22	-5,072.00	797.14	5,072.00	1.38	-0.21	-1.37
15,727.00	90.00	178.50	10,674.86	-5,165.93	800.17	5,165.93	2.25	2.13	0.74
15,822.00	90.00	178.70	10,674.86	-5,260.91	802.49	5,260.91	0.21	0.00	0.21
15,916.00	92.20	178.80	10,673.06	-5,354.86	804.54	5,354.86	2.34	2.34	0.11

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 99H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3711.5' GE + 23.5' KB @ 3735.00usft
Well:	Thistle Unit 99H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 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)
16,010.00	88.90	180.00	10,672.15	-5,448.84	805.52	5,448.84	3.74	-3.51	1.28
16,103.00	88.40	180.10	10,674.35	-5,541.81	805.44	5,541.81	0.55	-0.54	0.11
16,196.00	88.50	180.70	10,676.86	-5,634.77	804.79	5,634.77	0.65	0.11	0.65
16,292.00	88.50	180.50	10,679.37	-5,730.73	803.79	5,730.73	0.21	0.00	-0.21
16,387.00	88.90	180.70	10,681.53	-5,825.70	802.79	5,825.70	0.47	0.42	0.21
16,482.00	91.40	181.20	10,681.28	-5,920.68	801.22	5,920.68	2.68	2.63	0.53
16,577.00	92.60	180.70	10,677.97	-6,015.61	799.65	6,015.61	1.37	1.26	-0.53
16,670.00	92.80	180.00	10,673.58	-6,108.50	799.08	6,108.50	0.78	0.22	-0.75
16,766.00	90.10	179.10	10,671.16	-6,204.46	799.83	6,204.46	2.96	-2.81	-0.94
16,861.00	92.20	179.80	10,669.25	-6,299.43	800.74	6,299.43	2.33	2.21	0.74
16,955.00	89.10	180.00	10,668.18	-6,393.41	800.91	6,393.41	3.30	-3.30	0.21
17,050.00	89.60	180.30	10,669.26	-6,488.41	800.66	6,488.41	0.61	0.53	0.32
17,145.00	91.50	180.10	10,668.35	-6,583.40	800.33	6,583.40	2.01	2.00	-0.21
17,239.00	92.60	180.30	10,664.99	-6,677.34	800.00	6,677.34	1.19	1.17	0.21
17,334.00	92.20	180.50	10,661.01	-6,772.25	799.34	6,772.25	0.47	-0.42	0.21
17,430.00	90.00	179.60	10,659.16	-6,868.23	799.25	6,868.23	2.48	-2.29	-0.94
17,524.00	90.20	179.30	10,659.00	-6,962.22	800.16	6,962.22	0.38	0.21	-0.32
17,619.00	90.50	178.70	10,658.42	-7,057.20	801.81	7,057.20	0.71	0.32	-0.63
17,714.00	90.10	177.80	10,657.92	-7,152.16	804.71	7,152.16	1.04	-0.42	-0.95
17,808.00	89.70	177.30	10,658.09	-7,246.07	808.73	7,246.07	0.68	-0.43	-0.53
17,903.00	87.10	177.10	10,660.74	-7,340.91	813.37	7,340.91	2.74	-2.74	-0.21
17,998.00	87.40	177.00	10,665.30	-7,435.68	818.25	7,435.68	0.33	0.32	-0.11
18,083.00	88.50	177.30	10,668.34	-7,520.52	822.48	7,520.52	1.34	1.29	0.35
18,138.00	88.50	177.30	10,669.78	-7,575.44	825.07	7,575.44	0.00	0.00	0.00
Projection									