



Survey Certification Form

HOBBS OCD

SEP 15 2017

RECEIVED

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 04/04/2017 through 04/20/2017, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 17,288' 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 118H 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', is written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator



April 27, 2017

Devon Energy Production Company, LP
Well: Thistle Unit 118H
County/Parish: Lea County, NM

LEAM MWD: (OH) from 0' MD – 17,227' MD
Projection: 17,288'

This Borehole Survey taken between 04/04/2017 and 04/20/2017 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 27, 2017

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 118H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Well:	118H	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				
Site Position:		Northing:	468,026.90 usft	Latitude:	32° 17' 3.494 N
From:	Map	Easting:	780,722.56 usft	Longitude:	103° 33' 31.335 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	118H					
Well Position	+N/-S	0.00 usft	Northing:	457,578.18 usft	Latitude:	32° 15' 20.162 N
	+E/-W	0.00 usft	Easting:	779,893.68 usft	Longitude:	103° 33' 41.865 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,673.10 usft	Ground Level:	3,649.60 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (")	Dip Angle (")	Field Strength (nT)
	HDGM	12/12/2016	6.90	60.07	48,214

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 4/25/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
144.00	17,227.00	Survey #1 (OH)	LEAM MWD+HDGM	MWD+HDGM
17,288.00	17,288.00	Survey #2 (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	
144.00	0.20	215.50	144.00	-0.20	-0.15	-0.20	0.14	0.14	0.00	
338.00	0.20	202.70	338.00	-0.79	-0.47	-0.79	0.02	0.00	-6.60	
449.00	0.40	180.60	449.00	-1.36	-0.55	-1.36	0.20	0.18	-19.91	
523.00	0.40	222.70	523.00	-1.81	-0.73	-1.81	0.39	0.00	56.89	
623.00	0.70	197.60	622.99	-2.65	-1.15	-2.65	0.38	0.30	-25.10	
707.00	0.60	201.00	706.99	-3.55	-1.46	-3.55	0.13	-0.12	4.05	
816.00	0.70	191.10	815.98	-4.73	-1.80	-4.73	0.14	0.09	-9.08	

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Well:	118H	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)
889.00	0.80	189.90	888.97	-5.67	-1.97	-5.67	0.14	0.14	-1.64
981.00	0.80	187.90	980.96	-6.94	-2.17	-6.94	0.03	0.00	-2.17
1,073.00	0.70	186.30	1,072.96	-8.13	-2.32	-8.13	0.11	-0.11	-1.74
1,169.00	0.70	189.40	1,168.95	-9.30	-2.48	-9.30	0.04	0.00	3.23
1,264.00	0.70	199.80	1,263.94	-10.41	-2.77	-10.41	0.13	0.00	10.95
1,445.00	0.70	206.40	1,444.93	-12.45	-3.64	-12.45	0.04	0.00	3.65
1,636.00	0.70	239.90	1,635.91	-14.08	-5.16	-14.08	0.21	0.00	17.54
1,827.00	0.70	252.10	1,826.90	-15.02	-7.28	-15.02	0.08	0.00	6.39
1,923.00	0.70	256.70	1,922.89	-15.33	-8.41	-15.33	0.06	0.00	4.79
2,019.00	0.70	247.10	2,018.89	-15.70	-9.52	-15.70	0.12	0.00	-10.00
2,114.00	0.70	248.20	2,113.88	-16.14	-10.60	-16.14	0.01	0.00	1.16
2,209.00	0.70	248.00	2,208.87	-16.57	-11.67	-16.57	0.00	0.00	-0.21
2,305.00	0.60	245.80	2,304.87	-17.00	-12.68	-17.00	0.11	-0.10	-2.29
2,401.00	0.70	250.70	2,400.86	-17.40	-13.69	-17.40	0.12	0.10	5.10
2,496.00	1.10	225.40	2,495.85	-18.23	-14.89	-18.23	0.58	0.42	-26.63
2,592.00	2.20	213.00	2,591.81	-20.42	-16.55	-20.42	1.20	1.15	-12.92
2,687.00	3.40	212.70	2,686.69	-24.32	-19.06	-24.32	1.26	1.26	-0.32
2,783.00	4.20	213.30	2,782.48	-29.66	-22.53	-29.66	0.83	0.83	0.63
2,879.00	5.30	214.10	2,878.15	-36.27	-26.94	-36.27	1.15	1.15	0.83
2,974.00	5.50	213.50	2,972.73	-43.70	-31.92	-43.70	0.22	0.21	-0.63
3,070.00	5.20	212.80	3,068.31	-51.19	-36.81	-51.19	0.32	-0.31	-0.73
3,166.00	4.90	212.50	3,163.94	-58.30	-41.37	-58.30	0.31	-0.31	-0.31
3,261.00	4.80	210.80	3,258.60	-65.14	-45.59	-65.14	0.18	-0.11	-1.79
3,356.00	4.50	208.00	3,353.28	-71.84	-49.37	-71.84	0.40	-0.32	-2.95
3,452.00	5.00	211.40	3,448.95	-78.74	-53.32	-78.74	0.60	0.52	3.54
3,548.00	5.10	211.00	3,544.58	-85.97	-57.70	-85.97	0.11	0.10	-0.42
3,643.00	4.80	209.90	3,639.23	-93.03	-61.85	-93.03	0.33	-0.32	-1.16
3,739.00	4.60	208.90	3,734.90	-99.89	-65.72	-99.89	0.23	-0.21	-1.04
3,835.00	4.70	209.80	3,830.59	-106.67	-69.53	-106.67	0.13	0.10	0.94
3,930.00	4.70	212.10	3,925.27	-113.34	-73.53	-113.34	0.20	0.00	2.42
4,026.00	4.70	212.10	4,020.95	-120.01	-77.71	-120.01	0.00	0.00	0.00
4,121.00	5.30	215.50	4,115.58	-126.88	-82.33	-126.88	0.70	0.63	3.58
4,217.00	5.50	216.70	4,211.16	-134.17	-87.65	-134.17	0.24	0.21	1.25
4,313.00	5.30	216.50	4,306.73	-141.43	-93.04	-141.43	0.21	-0.21	-0.21
4,408.00	5.00	211.50	4,401.35	-148.48	-97.81	-148.48	0.57	-0.32	-5.26
4,504.00	4.80	205.30	4,497.00	-155.68	-101.72	-155.68	0.59	-0.21	-6.46
4,600.00	5.20	202.70	4,592.63	-163.33	-105.11	-163.33	0.48	0.42	-2.71
4,695.00	5.40	200.70	4,687.23	-171.48	-108.35	-171.48	0.29	0.21	-2.11
4,887.00	5.40	197.90	4,878.37	-188.53	-114.32	-188.53	0.14	0.00	-1.46
4,982.00	5.20	201.10	4,972.97	-196.80	-117.25	-196.80	0.38	-0.21	3.37
5,078.00	5.50	206.40	5,068.55	-204.98	-120.86	-204.98	0.60	0.31	5.52
5,179.00	5.30	209.90	5,169.10	-213.36	-125.34	-213.36	0.38	-0.20	3.47

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Well:	118H	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)
5,275.00	5.50	215.80	5,264.68	-220.93	-130.24	-220.93	0.61	0.21	6.15
5,371.00	5.70	217.30	5,360.22	-228.46	-135.82	-228.46	0.26	0.21	1.56
5,466.00	5.80	216.50	5,454.74	-236.07	-141.53	-236.07	0.13	0.11	-0.84
5,562.00	5.60	216.00	5,550.27	-243.76	-147.17	-243.76	0.21	-0.21	-0.52
5,657.00	5.60	215.10	5,644.81	-251.30	-152.56	-251.30	0.09	0.00	-0.95
5,753.00	5.40	213.70	5,740.37	-258.89	-157.76	-258.89	0.25	-0.21	-1.46
5,849.00	5.80	214.10	5,835.91	-266.66	-162.99	-266.66	0.42	0.42	0.42
5,944.00	6.10	214.30	5,930.40	-274.81	-168.52	-274.81	0.32	0.32	0.21
6,040.00	6.10	213.60	6,025.86	-283.27	-174.22	-283.27	0.08	0.00	-0.73
6,135.00	5.20	212.30	6,120.40	-291.11	-179.31	-291.11	0.96	-0.95	-1.37
6,231.00	4.30	209.90	6,216.06	-297.91	-183.43	-297.91	0.96	-0.94	-2.50
6,327.00	4.30	214.80	6,311.79	-303.99	-187.28	-303.99	0.38	0.00	5.10
6,423.00	4.50	219.40	6,407.51	-309.85	-191.72	-309.85	0.42	0.21	4.79
6,518.00	5.00	219.20	6,502.19	-315.94	-196.71	-315.94	0.53	0.53	-0.21
6,614.00	5.80	216.90	6,597.76	-323.06	-202.26	-323.06	0.86	0.83	-2.40
6,710.00	6.20	214.60	6,693.23	-331.21	-208.12	-331.21	0.49	0.42	-2.40
6,805.00	6.30	212.90	6,787.67	-339.81	-213.86	-339.81	0.22	0.11	-1.79
6,901.00	5.90	212.00	6,883.12	-348.41	-219.34	-348.41	0.43	-0.42	-0.94
6,997.00	5.50	209.30	6,978.65	-356.61	-224.20	-356.61	0.50	-0.42	-2.81
7,092.00	5.50	210.60	7,073.21	-364.50	-228.75	-364.50	0.13	0.00	1.37
7,188.00	5.80	212.50	7,168.75	-372.55	-233.70	-372.55	0.37	0.31	1.98
7,283.00	6.40	215.10	7,263.21	-380.93	-239.32	-380.93	0.70	0.63	2.74
7,379.00	6.40	216.20	7,358.61	-389.62	-245.56	-389.62	0.13	0.00	1.15
7,475.00	6.20	214.10	7,454.03	-398.23	-251.62	-398.23	0.32	-0.21	-2.19
7,570.00	6.00	210.90	7,548.49	-406.74	-257.05	-406.74	0.42	-0.21	-3.37
7,666.00	6.40	212.30	7,643.93	-415.57	-262.49	-415.57	0.45	0.42	1.46
7,761.00	5.20	213.70	7,738.44	-423.63	-267.70	-423.63	1.27	-1.26	1.47
7,857.00	5.10	214.30	7,834.06	-430.77	-272.52	-430.77	0.12	-0.10	0.63
7,953.00	5.40	217.30	7,929.65	-437.89	-277.66	-437.89	0.42	0.31	3.13
8,048.00	5.90	217.80	8,024.19	-445.30	-283.37	-445.30	0.53	0.53	0.53
8,144.00	5.70	220.20	8,119.70	-452.84	-289.47	-452.84	0.33	-0.21	2.50
8,240.00	5.60	221.30	8,215.23	-460.00	-295.64	-460.00	0.15	-0.10	1.15
8,335.00	4.70	219.20	8,309.85	-466.50	-301.15	-466.50	0.97	-0.95	-2.21
8,431.00	4.00	212.30	8,405.57	-472.38	-305.43	-472.38	0.91	-0.73	-7.19
8,526.00	3.70	210.40	8,500.36	-477.83	-308.75	-477.83	0.34	-0.32	-2.00
8,621.00	3.40	211.30	8,595.18	-482.88	-311.77	-482.88	0.32	-0.32	0.95
8,717.00	3.30	209.90	8,691.01	-487.70	-314.62	-487.70	0.13	-0.10	-1.46
8,813.00	2.50	214.80	8,786.89	-491.82	-317.19	-491.82	0.87	-0.83	5.10
8,908.00	2.30	209.50	8,881.80	-495.18	-319.32	-495.18	0.31	-0.21	-5.58
9,004.00	2.20	206.40	8,977.73	-498.51	-321.08	-498.51	0.16	-0.10	-3.23
9,076.00	2.00	207.10	9,049.68	-500.86	-322.27	-500.86	0.28	-0.28	0.97
9,101.00	1.90	207.60	9,074.67	-501.62	-322.66	-501.62	0.41	-0.40	2.00

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9,149.00	1.00	347.50	9,122.66	-501.92	-323.12	-501.92	5.71	-1.88	291.46
9,197.00	5.30	6.80	9,170.58	-499.30	-322.95	-499.30	9.10	8.96	40.21
9,245.00	10.70	6.00	9,218.09	-492.67	-322.22	-492.67	11.25	11.25	-1.67
9,292.00	15.20	5.30	9,263.88	-482.19	-321.19	-482.19	9.58	9.57	-1.49
9,340.00	20.20	4.40	9,309.60	-467.65	-319.98	-467.65	10.43	10.42	-1.88
9,388.00	24.10	0.70	9,354.05	-449.58	-319.22	-449.58	8.63	8.13	-7.71
9,436.00	28.90	357.50	9,397.00	-428.18	-319.61	-428.18	10.43	10.00	-6.67
9,484.00	33.60	357.50	9,438.02	-403.31	-320.69	-403.31	9.79	9.79	0.00
9,532.00	39.00	357.30	9,476.69	-374.93	-321.98	-374.93	11.25	11.25	-0.42
9,580.00	43.30	357.70	9,512.83	-343.38	-323.36	-343.38	8.98	8.96	0.83
9,628.00	48.50	358.20	9,546.22	-308.95	-324.58	-308.95	10.86	10.83	1.04
9,675.00	54.20	358.60	9,575.56	-272.27	-325.60	-272.27	12.15	12.13	0.85
9,723.00	59.30	358.10	9,601.87	-232.16	-326.76	-232.16	10.66	10.63	-1.04
9,771.00	64.80	358.40	9,624.36	-189.79	-328.05	-189.79	11.47	11.46	0.63
9,819.00	68.80	358.40	9,643.26	-145.70	-329.29	-145.70	8.33	8.33	0.00
9,866.00	72.20	358.60	9,658.95	-101.42	-330.45	-101.42	7.25	7.23	0.43
9,914.00	75.60	358.90	9,672.26	-55.32	-331.45	-55.32	7.11	7.08	0.63
9,962.00	79.20	359.30	9,682.73	-8.49	-332.18	-8.49	7.54	7.50	0.83
10,010.00	81.40	359.30	9,690.82	38.82	-332.76	38.82	4.58	4.58	0.00
10,079.00	85.10	359.50	9,698.92	107.32	-333.48	107.32	5.37	5.36	0.29
10,175.00	88.50	359.10	9,704.28	203.15	-334.65	203.15	3.57	3.54	-0.42
10,270.00	90.10	359.80	9,705.44	298.14	-335.56	298.14	1.84	1.68	0.74
10,366.00	90.10	0.30	9,705.28	394.14	-335.48	394.14	0.52	0.00	0.52
10,462.00	90.00	0.30	9,705.19	490.14	-334.98	490.14	0.10	-0.10	0.00
10,557.00	90.10	0.50	9,705.11	585.13	-334.31	585.13	0.24	0.11	0.21
10,653.00	90.30	0.50	9,704.77	681.13	-333.48	681.13	0.21	0.21	0.00
10,748.00	90.60	1.00	9,704.03	776.12	-332.23	776.12	0.61	0.32	0.53
10,844.00	89.70	359.50	9,703.78	872.11	-331.81	872.11	1.82	-0.94	-1.56
10,940.00	89.70	0.00	9,704.28	968.11	-332.23	968.11	0.52	0.00	0.52
11,035.00	90.60	0.90	9,704.03	1,063.11	-331.49	1,063.11	1.34	0.95	0.95
11,131.00	89.90	359.50	9,703.61	1,159.10	-331.15	1,159.10	1.63	-0.73	-1.46
11,226.00	89.10	357.90	9,704.44	1,254.07	-333.31	1,254.07	1.88	-0.84	-1.68
11,321.00	88.50	357.50	9,706.43	1,348.97	-337.12	1,348.97	0.76	-0.63	-0.42
11,417.00	89.60	358.80	9,708.02	1,444.90	-340.22	1,444.90	1.77	1.15	1.35
11,513.00	89.50	358.20	9,708.78	1,540.87	-342.73	1,540.87	0.63	-0.10	-0.63
11,608.00	90.70	358.60	9,708.61	1,635.83	-345.38	1,635.83	1.33	1.26	0.42
11,704.00	90.90	359.10	9,707.27	1,731.80	-347.31	1,731.80	0.56	0.21	0.52
11,799.00	90.80	0.00	9,705.86	1,826.79	-348.05	1,826.79	0.95	-0.11	0.95
11,895.00	91.40	0.90	9,704.02	1,922.76	-347.30	1,922.76	1.13	0.63	0.94
11,991.00	91.50	1.70	9,701.59	2,018.71	-345.12	2,018.71	0.84	0.10	0.83
12,086.00	90.30	1.40	9,700.10	2,113.66	-342.55	2,113.66	1.30	-1.26	-0.32
12,182.00	90.70	1.70	9,699.26	2,209.62	-339.96	2,209.62	0.52	0.42	0.31

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 118H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Well:	118H	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)
12,278.00	91.30	1.40	9,697.58	2,305.57	-337.36	2,305.57	0.70	0.63	-0.31
12,373.00	91.10	359.80	9,695.59	2,400.54	-336.37	2,400.54	1.70	-0.21	-1.68
12,469.00	92.20	0.00	9,692.83	2,496.50	-336.53	2,496.50	1.16	1.15	0.21
12,565.00	92.10	359.50	9,689.23	2,592.43	-336.95	2,592.43	0.53	-0.10	-0.52
12,660.00	92.00	359.50	9,685.83	2,687.37	-337.78	2,687.37	0.11	-0.11	0.00
12,756.00	91.60	359.60	9,682.81	2,783.32	-338.53	2,783.32	0.43	-0.42	0.10
12,851.00	90.60	359.80	9,680.99	2,878.30	-339.03	2,878.30	1.07	-1.05	0.21
12,947.00	89.30	0.20	9,681.07	2,974.29	-339.03	2,974.29	1.42	-1.35	0.42
13,042.00	88.60	0.20	9,682.81	3,069.28	-338.70	3,069.28	0.74	-0.74	0.00
13,138.00	88.80	359.80	9,684.99	3,165.25	-338.70	3,165.25	0.47	0.21	-0.42
13,234.00	89.00	359.60	9,686.84	3,261.23	-339.20	3,261.23	0.29	0.21	-0.21
13,329.00	89.00	359.80	9,688.49	3,356.22	-339.70	3,356.22	0.21	0.00	0.21
13,424.00	89.80	0.30	9,689.49	3,451.21	-339.62	3,451.21	0.99	0.84	0.53
13,520.00	89.40	0.50	9,690.16	3,547.20	-338.95	3,547.20	0.47	-0.42	0.21
13,616.00	88.70	1.00	9,691.75	3,643.18	-337.69	3,643.18	0.90	-0.73	0.52
13,711.00	88.70	1.40	9,693.91	3,738.14	-335.70	3,738.14	0.42	0.00	0.42
13,807.00	88.40	0.90	9,696.33	3,834.09	-333.78	3,834.09	0.61	-0.31	-0.52
13,903.00	83.80	358.90	9,702.86	3,929.83	-333.94	3,929.83	5.22	-4.79	-2.08
13,934.00	83.20	358.60	9,706.37	3,960.63	-334.61	3,960.63	2.16	-1.94	-0.97
13,966.00	82.90	358.60	9,710.24	3,992.38	-335.39	3,992.38	0.94	-0.94	0.00
13,998.00	83.80	359.10	9,713.95	4,024.16	-336.02	4,024.16	3.21	2.81	1.56
14,030.00	85.60	0.00	9,716.91	4,056.02	-336.27	4,056.02	6.28	5.63	2.81
14,062.00	86.90	0.90	9,719.00	4,087.95	-336.02	4,087.95	4.94	4.06	2.81
14,094.00	88.30	1.00	9,720.34	4,119.92	-335.49	4,119.92	4.39	4.38	0.31
14,126.00	89.40	1.70	9,720.98	4,151.90	-334.74	4,151.90	4.07	3.44	2.19
14,157.00	90.60	3.00	9,720.98	4,182.87	-333.47	4,182.87	5.71	3.87	4.19
14,189.00	91.50	4.00	9,720.39	4,214.81	-331.51	4,214.81	4.20	2.81	3.13
14,221.00	92.20	5.80	9,719.36	4,246.67	-328.78	4,246.67	6.03	2.19	5.63
14,253.00	92.20	6.80	9,718.13	4,278.46	-325.27	4,278.46	3.12	0.00	3.13
14,285.00	92.80	7.70	9,716.74	4,310.17	-321.24	4,310.17	3.38	1.88	2.81
14,317.00	93.00	9.00	9,715.12	4,341.79	-316.60	4,341.79	4.11	0.63	4.06
14,349.00	93.00	10.70	9,713.44	4,373.27	-311.13	4,373.27	5.31	0.00	5.31
14,381.00	92.50	11.10	9,711.91	4,404.66	-305.09	4,404.66	2.00	-1.56	1.25
14,412.00	91.90	11.80	9,710.72	4,435.02	-298.94	4,435.02	2.97	-1.94	2.26
14,444.00	91.80	11.60	9,709.69	4,466.34	-292.45	4,466.34	0.70	-0.31	-0.63
14,476.00	91.50	11.10	9,708.76	4,497.70	-286.16	4,497.70	1.82	-0.94	-1.56
14,508.00	90.40	11.60	9,708.23	4,529.07	-279.86	4,529.07	3.78	-3.44	1.56
14,540.00	89.80	10.90	9,708.18	4,560.45	-273.62	4,560.45	2.88	-1.88	-2.19
14,574.00	89.40	10.40	9,708.41	4,593.87	-267.33	4,593.87	1.88	-1.18	-1.47
14,606.00	89.80	9.50	9,708.64	4,625.38	-261.81	4,625.38	3.08	1.25	-2.81
14,637.00	90.20	7.90	9,708.64	4,656.03	-257.12	4,656.03	5.32	1.29	-5.16
14,669.00	90.00	7.90	9,708.58	4,687.72	-252.72	4,687.72	0.63	-0.63	0.00

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 118H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Well:	118H	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)
14,701.00	90.00	7.20	9,708.58	4,719.44	-248.51	4,719.44	2.19	0.00	-2.19
14,733.00	90.70	7.00	9,708.39	4,751.20	-244.56	4,751.20	2.28	2.19	-0.63
14,765.00	90.30	6.50	9,708.11	4,782.98	-240.80	4,782.98	2.00	-1.25	-1.56
14,797.00	88.70	6.00	9,708.39	4,814.78	-237.31	4,814.78	5.24	-5.00	-1.56
14,828.00	88.20	5.60	9,709.23	4,845.61	-234.18	4,845.61	2.07	-1.61	-1.29
14,860.00	88.50	5.60	9,710.15	4,877.45	-231.06	4,877.45	0.94	0.94	0.00
14,892.00	88.60	4.70	9,710.96	4,909.31	-228.19	4,909.31	2.83	0.31	-2.81
14,924.00	90.50	4.90	9,711.21	4,941.19	-225.51	4,941.19	5.97	5.94	0.63
14,956.00	91.00	4.40	9,710.79	4,973.08	-222.92	4,973.08	2.21	1.56	-1.56
14,987.00	92.10	4.60	9,709.95	5,003.98	-220.49	5,003.98	3.61	3.55	0.65
15,019.00	92.40	4.40	9,708.69	5,035.85	-217.98	5,035.85	1.13	0.94	-0.63
15,051.00	92.70	4.40	9,707.27	5,067.73	-215.53	5,067.73	0.94	0.94	0.00
15,083.00	93.00	4.40	9,705.68	5,099.59	-213.07	5,099.59	0.94	0.94	0.00
15,115.00	92.90	4.40	9,704.03	5,131.46	-210.62	5,131.46	0.31	-0.31	0.00
15,146.00	92.80	4.40	9,702.49	5,162.33	-208.25	5,162.33	0.32	-0.32	0.00
15,241.00	92.70	4.20	9,697.93	5,256.95	-201.13	5,256.95	0.24	-0.11	-0.21
15,337.00	91.40	3.90	9,694.50	5,352.65	-194.36	5,352.65	1.39	-1.35	-0.31
15,432.00	90.70	3.50	9,692.76	5,447.43	-188.23	5,447.43	0.85	-0.74	-0.42
15,528.00	91.00	3.20	9,691.33	5,543.26	-182.62	5,543.26	0.44	0.31	-0.31
15,623.00	90.70	3.30	9,689.92	5,638.09	-177.23	5,638.09	0.33	-0.32	0.11
15,655.00	90.10	3.00	9,689.70	5,670.05	-175.47	5,670.05	2.10	-1.88	-0.94
15,687.00	90.00	1.70	9,689.67	5,702.02	-174.16	5,702.02	4.07	-0.31	-4.06
15,719.00	90.20	1.00	9,689.62	5,734.01	-173.41	5,734.01	2.28	0.63	-2.19
15,751.00	89.60	0.50	9,689.67	5,766.01	-172.99	5,766.01	2.44	-1.88	-1.56
15,783.00	88.60	0.00	9,690.18	5,798.00	-172.85	5,798.00	3.49	-3.13	-1.56
15,815.00	87.40	359.50	9,691.29	5,829.98	-172.99	5,829.98	4.06	-3.75	-1.56
15,846.00	88.50	358.90	9,692.40	5,860.96	-173.42	5,860.96	4.04	3.55	-1.94
15,878.00	88.30	359.10	9,693.30	5,892.94	-173.98	5,892.94	0.88	-0.63	0.63
15,910.00	88.10	358.90	9,694.30	5,924.92	-174.54	5,924.92	0.88	-0.63	-0.63
15,941.00	88.30	358.40	9,695.27	5,955.89	-175.27	5,955.89	1.74	0.65	-1.61
15,973.00	88.40	358.20	9,696.20	5,987.87	-176.22	5,987.87	0.70	0.31	-0.63
16,005.00	88.80	358.10	9,696.98	6,019.84	-177.25	6,019.84	1.29	1.25	-0.31
16,035.00	90.00	358.40	9,697.29	6,049.82	-178.17	6,049.82	4.12	4.00	1.00
16,066.00	90.20	358.10	9,697.24	6,080.81	-179.11	6,080.81	1.16	0.65	-0.97
16,098.00	89.70	357.70	9,697.27	6,112.79	-180.29	6,112.79	2.00	-1.56	-1.25
16,130.00	89.70	357.20	9,697.43	6,144.76	-181.71	6,144.76	1.56	0.00	-1.56
16,162.00	90.20	357.20	9,697.46	6,176.72	-183.27	6,176.72	1.56	1.56	0.00
16,194.00	90.70	357.30	9,697.21	6,208.68	-184.81	6,208.68	1.59	1.56	0.31
16,226.00	91.20	357.70	9,696.68	6,240.65	-186.20	6,240.65	2.00	1.56	1.25
16,257.00	91.90	358.20	9,695.84	6,271.61	-187.31	6,271.61	2.77	2.26	1.61
16,289.00	91.60	359.10	9,694.86	6,303.59	-188.07	6,303.59	2.96	-0.94	2.81
16,321.00	91.50	359.60	9,694.00	6,335.58	-188.43	6,335.58	1.59	-0.31	1.56

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 118H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Site:	Thistle Unit	MD Reference:	3649.6' GE + 23.5' KB @ 3673.10usft (Original Well Elev)
Well:	118H	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)
16,353.00	90.70	0.20	9,693.38	6,367.57	-188.48	6,367.57	3.12	-2.50	1.88
16,385.00	90.40	0.20	9,693.08	6,399.57	-188.37	6,399.57	0.94	-0.94	0.00
16,480.00	88.80	0.30	9,693.74	6,494.56	-187.96	6,494.56	1.69	-1.68	0.11
16,576.00	90.70	359.50	9,694.16	6,590.55	-188.13	6,590.55	2.15	1.98	-0.83
16,672.00	90.20	0.50	9,693.40	6,686.55	-188.13	6,686.55	1.16	-0.52	1.04
16,767.00	91.40	0.30	9,692.08	6,781.54	-187.46	6,781.54	1.28	1.26	-0.21
16,863.00	90.10	0.20	9,690.82	6,877.53	-187.04	6,877.53	1.36	-1.35	-0.10
16,958.00	88.70	359.80	9,691.82	6,972.52	-187.04	6,972.52	1.53	-1.47	-0.42
17,054.00	89.00	0.20	9,693.74	7,068.50	-187.04	7,068.50	0.52	0.31	0.42
17,149.00	89.30	0.30	9,695.15	7,163.49	-186.63	7,163.49	0.33	0.32	0.11
17,227.00	89.80	0.70	9,695.76	7,241.48	-185.95	7,241.48	0.82	0.64	0.51
17,288.00	89.80	0.70	9,695.98	7,302.48	-185.20	7,302.48	0.00	0.00	0.00
Projection									