



January 16, 2019

Devon Energy Production Company, LP
Well: Flagler 8 Fed Com 7H
County/Parish: Lea County, NM

HOBBS OCD

JUN 12 2019

LEAM MWD: (OH) from 0' MD – 17,308' MD
Projection: 17,357' MD

RECEIVED

This Borehole Survey taken between 12/04/18 and 01/13/19 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: January 16, 2019



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 12/04/2018 through 01/13/2019, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 17,357' 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 Flagler 8 Fed Com 7H 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 be 'RWR', is written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Flagler 8 Federal 7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3447.4' GE + 23.5' KB @ 3470.90usft
Site:	Flagler 8 Federal	MD Reference:	3447.4' GE + 23.5' KB @ 3470.90usft
Well:	Flagler 8 Federal 7H	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	Flagler 8 Federal		
Site Position:		Northing:	414,857.70 usft
From:	Map	Easting:	770,963.69 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 8' 18.0547 N
		Longitude:	103° 35' 29.2852 W
		Grid Convergence:	0.39 °

Well	Flagler 8 Federal 7H		
Well Position	+N/-S	0.00 usft	Northing: 414,851.13 usft
	+E/-W	0.00 usft	Easting: 769,953.94 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 8' 18.0583 N
		Longitude:	103° 35' 41.0290 W
		Ground Level:	3,447.40 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	11/16/2018	6.70
			Dip Angle
			(°)
			59.78
			Field Strength
			(nT)
			47,869

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			359.61

Survey Program	Date 1/16/2019		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
179.00	17,308.00	Survey #1 (OH)	LEAM MWD+HDGM
17,357.00	17,357.00	Survey #2 (OH)	Project
			Description
			MWD+HDGM
			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	
179.00	0.20	42.40	179.00	0.23	0.21	0.23	0.11	0.11	0.00	
270.00	0.50	356.30	270.00	0.74	0.29	0.74	0.43	0.33	-50.66	
362.00	0.30	345.90	362.00	1.38	0.21	1.38	0.23	-0.22	-11.30	
453.00	0.20	357.20	452.99	1.77	0.14	1.77	0.12	-0.11	12.42	
542.00	0.40	351.00	541.99	2.23	0.09	2.23	0.23	0.22	-6.97	
634.00	0.40	350.70	633.99	2.86	-0.02	2.86	0.00	0.00	-0.33	
726.00	0.60	4.90	725.99	3.66	-0.03	3.66	0.25	0.22	15.43	
817.00	0.40	318.50	816.98	4.37	-0.20	4.37	0.48	-0.22	-50.99	
909.00	0.40	295.30	908.98	4.75	-0.70	4.76	0.17	0.00	-25.22	

LEAM Drilling Services

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Well:	Flagler 8 Federal 7H	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)
999.00	0.40	341.00	998.98	5.18	-1.09	5.19	0.35	0.00	50.78
1,096.00	0.70	309.00	1,095.98	5.88	-1.66	5.89	0.43	0.31	-32.99
1,246.00	0.40	332.60	1,245.97	6.92	-2.61	6.93	0.25	-0.20	15.73
1,338.00	0.40	264.50	1,337.97	7.17	-3.08	7.19	0.49	0.00	-74.02
1,429.00	0.70	277.00	1,428.96	7.21	-3.95	7.24	0.35	0.33	13.74
1,524.00	0.80	311.30	1,523.96	7.72	-5.02	7.75	0.48	0.11	36.11
1,618.00	0.30	258.40	1,617.95	8.10	-5.75	8.14	0.71	-0.53	-56.28
1,714.00	0.60	292.00	1,713.95	8.24	-6.47	8.28	0.40	0.31	35.00
1,807.00	0.20	286.90	1,806.95	8.47	-7.07	8.52	0.43	-0.43	-5.48
1,901.00	0.50	295.30	1,900.94	8.69	-7.60	8.74	0.32	0.32	8.94
1,995.00	0.50	297.80	1,994.94	9.06	-8.33	9.11	0.02	0.00	2.66
2,090.00	0.20	321.30	2,089.94	9.38	-8.80	9.44	0.34	-0.32	24.74
2,185.00	0.50	331.50	2,184.94	9.87	-9.11	9.94	0.32	0.32	10.74
2,280.00	0.50	285.50	2,279.93	10.35	-9.70	10.42	0.41	0.00	-48.42
2,374.00	0.30	277.00	2,373.93	10.49	-10.34	10.56	0.22	-0.21	-9.04
2,469.00	1.80	248.00	2,468.91	9.96	-11.97	10.04	1.63	1.58	-30.53
2,563.00	2.40	248.50	2,562.85	8.69	-15.17	8.79	0.64	0.64	0.53
2,658.00	3.30	254.90	2,657.73	7.24	-19.66	7.38	1.00	0.95	6.74
2,753.00	4.30	256.30	2,752.52	5.69	-25.76	5.86	1.06	1.05	1.47
2,848.00	4.70	258.20	2,847.23	4.05	-33.03	4.27	0.45	0.42	2.00
2,941.00	4.00	256.10	2,939.96	2.49	-39.91	2.76	0.77	-0.75	-2.26
3,036.00	4.90	259.60	3,034.67	0.96	-47.12	1.28	0.99	0.95	3.68
3,131.00	6.20	262.30	3,129.23	-0.46	-56.19	-0.07	1.40	1.37	2.84
3,225.00	5.90	260.90	3,222.70	-1.90	-66.00	-1.45	0.36	-0.32	-1.49
3,320.00	6.10	261.90	3,317.18	-3.39	-75.81	-2.87	0.24	0.21	1.05
3,414.00	7.20	259.30	3,410.55	-5.18	-86.55	-4.59	1.21	1.17	-2.77
3,509.00	7.90	260.10	3,504.72	-7.41	-98.83	-6.74	0.75	0.74	0.84
3,603.00	9.10	256.10	3,597.69	-10.31	-112.41	-9.54	1.42	1.28	-4.26
3,697.00	9.40	256.50	3,690.47	-13.88	-127.09	-13.02	0.33	0.32	0.43
3,790.00	8.80	253.10	3,782.30	-17.73	-141.28	-16.76	0.87	-0.65	-3.66
3,885.00	8.30	250.70	3,876.24	-22.10	-154.70	-21.05	0.65	-0.53	-2.53
3,979.00	8.70	257.70	3,969.21	-25.86	-168.05	-24.72	1.18	0.43	7.45
4,074.00	9.20	260.50	4,063.05	-28.65	-182.56	-27.40	0.70	0.53	2.95
4,169.00	10.20	262.30	4,156.70	-31.03	-198.39	-29.67	1.10	1.05	1.89
4,263.00	9.60	262.80	4,249.30	-33.12	-214.42	-31.66	0.64	-0.64	0.53
4,358.00	8.30	259.60	4,343.14	-35.35	-229.02	-33.79	1.46	-1.37	-3.37
4,452.00	9.20	261.90	4,436.04	-37.64	-243.13	-35.98	1.03	0.96	2.45
4,547.00	9.00	262.80	4,529.85	-39.64	-258.02	-37.88	0.26	-0.21	0.95
4,641.00	9.00	263.10	4,622.69	-41.44	-272.62	-39.59	0.05	0.00	0.32
4,736.00	8.40	259.60	4,716.60	-43.59	-286.82	-41.64	0.84	-0.63	-3.68
4,830.00	9.20	259.60	4,809.49	-46.19	-300.96	-44.14	0.85	0.85	0.00
4,924.00	9.80	258.70	4,902.20	-49.11	-316.20	-46.96	0.66	0.64	-0.96
5,019.00	10.30	262.30	4,995.74	-51.83	-332.54	-49.57	0.84	0.53	3.79

LEAM Drilling Services

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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)	
5,113.00	10.60	262.30	5,088.18	-54.12	-349.44	-51.74	0.32	0.32	0.00	
5,208.00	10.30	261.20	5,181.61	-56.59	-366.49	-54.09	0.38	-0.32	-1.16	
5,302.00	10.00	262.30	5,274.14	-58.97	-382.88	-56.36	0.38	-0.32	1.17	
5,397.00	9.80	263.80	5,367.72	-60.94	-399.10	-58.23	0.34	-0.21	1.58	
5,492.00	9.40	264.20	5,461.39	-62.60	-414.85	-59.78	0.43	-0.42	0.42	
5,586.00	10.40	258.70	5,553.99	-65.04	-430.81	-62.11	1.46	1.06	-5.85	
5,681.00	10.00	259.40	5,647.49	-68.24	-447.33	-65.19	0.44	-0.42	0.74	
5,775.00	9.80	258.60	5,740.09	-71.32	-463.19	-68.16	0.26	-0.21	-0.85	
5,870.00	10.10	259.80	5,833.66	-74.39	-479.31	-71.13	0.38	0.32	1.26	
5,964.00	10.10	258.20	5,926.21	-77.54	-495.49	-74.16	0.30	0.00	-1.70	
6,059.00	9.10	257.30	6,019.88	-80.89	-510.98	-77.41	1.06	-1.05	-0.95	
6,153.00	9.40	262.30	6,112.65	-83.56	-525.84	-79.97	0.91	0.32	5.32	
6,248.00	9.70	261.40	6,206.34	-85.79	-541.44	-82.10	0.35	0.32	-0.95	
6,343.00	9.40	261.20	6,300.02	-88.18	-557.02	-84.38	0.32	-0.32	-0.21	
6,438.00	9.50	260.10	6,393.73	-90.71	-572.41	-86.81	0.22	0.11	-1.16	
6,532.00	9.20	261.20	6,486.48	-93.19	-587.47	-89.19	0.37	-0.32	1.17	
6,628.00	9.10	262.40	6,581.26	-95.37	-602.58	-91.27	0.22	-0.10	1.25	
6,722.00	8.80	260.30	6,674.12	-97.57	-617.04	-93.36	0.47	-0.32	-2.23	
6,817.00	8.80	261.20	6,768.00	-99.90	-631.38	-95.60	0.14	0.00	0.95	
6,912.00	9.80	264.00	6,861.75	-101.86	-646.61	-97.46	1.16	1.05	2.95	
7,006.00	9.80	262.10	6,954.38	-103.79	-662.49	-99.28	0.34	0.00	-2.02	
7,100.00	9.20	260.90	7,047.09	-106.08	-677.83	-101.47	0.67	-0.64	-1.28	
7,195.00	9.50	261.40	7,140.83	-108.46	-693.08	-103.74	0.33	0.32	0.53	
7,289.00	10.40	261.70	7,233.41	-110.84	-709.15	-106.01	0.96	0.96	0.32	
7,384.00	10.10	262.30	7,326.90	-113.19	-725.89	-108.25	0.34	-0.32	0.63	
7,478.00	10.20	261.60	7,419.42	-115.52	-742.29	-110.46	0.17	0.11	-0.74	
7,572.00	8.80	261.40	7,512.13	-117.81	-757.63	-112.65	1.49	-1.49	-0.21	
7,666.00	8.40	261.90	7,605.08	-119.85	-771.54	-114.59	0.43	-0.43	0.53	
7,761.00	7.80	260.70	7,699.13	-121.87	-784.77	-116.52	0.66	-0.63	-1.26	
7,855.00	7.00	260.50	7,792.34	-123.84	-796.71	-118.42	0.85	-0.85	-0.21	
7,950.00	6.30	259.30	7,886.70	-125.77	-807.55	-120.27	0.75	-0.74	-1.26	
8,044.00	5.80	255.20	7,980.18	-127.94	-817.21	-122.37	0.70	-0.53	-4.36	
8,139.00	5.50	253.60	8,074.72	-130.45	-826.21	-124.82	0.36	-0.32	-1.68	
8,234.00	4.70	256.30	8,169.34	-132.66	-834.36	-126.98	0.88	-0.84	2.84	
8,329.00	4.10	264.10	8,264.06	-133.93	-841.52	-128.20	0.89	-0.63	8.21	
8,424.00	2.40	269.10	8,358.91	-134.31	-846.89	-128.54	1.81	-1.79	5.26	
8,519.00	0.80	304.40	8,453.87	-133.97	-849.43	-128.18	1.90	-1.68	37.16	
8,614.00	1.00	300.10	8,548.86	-133.17	-850.69	-127.38	0.22	0.21	-4.53	
8,709.00	0.90	295.10	8,643.84	-132.44	-852.08	-126.64	0.14	-0.11	-5.26	
8,803.00	0.70	320.40	8,737.83	-131.69	-853.12	-125.88	0.43	-0.21	26.91	
8,898.00	0.70	288.30	8,832.83	-131.06	-854.04	-125.24	0.41	0.00	-33.79	
8,991.00	1.10	305.50	8,925.82	-130.36	-855.31	-124.54	0.51	0.43	18.49	
9,085.00	0.80	281.20	9,019.80	-129.71	-856.68	-123.88	0.53	-0.32	-25.85	

LEAM Drilling Services

Survey Report

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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)
9,180.00	0.40	219.20	9,114.80	-129.84	-857.54	-124.00	0.74	-0.42	-65.26
9,274.00	0.60	195.60	9,208.80	-130.57	-857.88	-124.72	0.30	0.21	-25.11
9,369.00	0.70	236.90	9,303.79	-131.36	-858.50	-125.52	0.49	0.11	43.47
9,463.00	0.70	193.50	9,397.78	-132.23	-859.12	-126.38	0.55	0.00	-46.17
9,558.00	0.10	186.80	9,492.78	-132.88	-859.26	-127.03	0.63	-0.63	-7.05
9,653.00	0.20	291.40	9,587.78	-132.90	-859.43	-127.05	0.26	0.11	110.11
9,748.00	0.70	275.30	9,682.78	-132.79	-860.16	-126.93	0.54	0.53	-16.95
9,842.00	0.90	246.60	9,776.77	-133.03	-861.41	-127.16	0.47	0.21	-30.53
9,936.00	0.80	248.40	9,870.76	-133.56	-862.70	-127.69	0.11	-0.11	1.91
10,031.00	0.60	249.40	9,965.75	-133.98	-863.78	-128.10	0.21	-0.21	1.05
10,126.00	0.80	192.10	10,060.74	-134.81	-864.38	-128.92	0.73	0.21	-60.32
10,221.00	0.80	197.20	10,155.74	-136.09	-864.72	-130.20	0.07	0.00	5.37
10,315.00	0.60	239.90	10,249.73	-136.96	-865.34	-131.07	0.58	-0.21	45.43
10,409.00	0.70	245.60	10,343.72	-137.45	-866.29	-131.55	0.13	0.11	6.06
10,505.00	0.80	250.30	10,439.71	-137.91	-867.45	-132.01	0.12	0.10	4.90
10,599.00	0.90	261.40	10,533.70	-138.25	-868.80	-132.33	0.20	0.11	11.81
10,694.00	0.40	30.20	10,628.70	-138.07	-869.37	-132.15	1.25	-0.53	135.58
10,788.00	0.50	32.00	10,722.70	-137.44	-868.99	-131.52	0.11	0.11	1.91
10,883.00	0.40	314.10	10,817.70	-136.86	-869.01	-130.94	0.60	-0.11	-82.00
10,978.00	1.50	333.60	10,912.68	-135.51	-869.80	-129.59	1.19	1.16	20.53
11,072.00	1.20	342.10	11,006.66	-133.47	-870.65	-127.54	0.38	-0.32	9.04
11,167.00	1.50	6.50	11,101.63	-131.29	-870.81	-125.36	0.68	0.32	25.68
11,261.00	2.00	14.10	11,195.59	-128.48	-870.27	-122.55	0.59	0.53	8.09
11,356.00	1.30	18.30	11,290.55	-125.85	-869.53	-119.93	0.75	-0.74	4.42
11,450.00	1.20	26.90	11,384.52	-123.96	-868.75	-118.04	0.23	-0.11	9.15
11,545.00	1.60	41.70	11,479.50	-122.08	-867.42	-116.17	0.56	0.42	15.58
11,639.00	1.20	42.50	11,573.47	-120.37	-865.88	-114.48	0.43	-0.43	0.85
11,734.00	1.10	82.10	11,668.45	-119.52	-864.31	-113.63	0.83	-0.11	41.68
11,828.00	1.30	120.80	11,762.43	-119.94	-862.50	-114.06	0.87	0.21	41.17
11,870.00	1.50	116.40	11,804.42	-120.43	-861.59	-114.56	0.54	0.48	-10.48
11,928.00	1.50	137.10	11,862.40	-121.32	-860.40	-115.46	0.93	0.00	35.69
12,012.00	4.60	9.10	11,946.32	-118.80	-859.12	-112.95	6.72	3.69	-152.38
12,106.00	19.70	2.80	12,037.95	-99.14	-857.74	-93.29	16.10	16.06	-6.70
12,154.00	27.10	2.40	12,081.97	-80.11	-856.88	-74.27	15.42	15.42	-0.83
12,200.00	31.20	3.30	12,122.14	-57.73	-855.76	-51.91	8.96	8.91	1.96
12,248.00	34.20	1.90	12,162.52	-31.83	-854.60	-26.01	6.45	6.25	-2.92
12,294.00	38.10	0.70	12,199.66	-4.71	-853.99	1.10	8.62	8.48	-2.61
12,342.00	43.40	359.10	12,236.01	26.61	-854.07	32.42	11.25	11.04	-3.33
12,389.00	46.20	358.60	12,269.36	59.72	-854.74	65.53	6.00	5.96	-1.06
12,437.00	47.80	358.20	12,302.09	94.81	-855.72	100.63	3.39	3.33	-0.83
12,483.00	50.40	358.80	12,332.21	129.56	-856.63	135.39	5.74	5.65	1.30
12,531.00	56.80	1.00	12,360.68	168.17	-856.66	174.00	13.83	13.33	4.58
12,577.00	63.60	0.00	12,383.53	208.06	-856.33	213.89	14.90	14.78	-2.17
12,625.00	68.10	359.10	12,403.16	251.85	-856.68	257.68	9.53	9.38	-1.88

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Flagler 8 Federal 7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3447.4' GE + 23.5' KB @ 3470.90usft
Site:	Flagler 8 Federal	MD Reference:	3447.4' GE + 23.5' KB @ 3470.90usft
Well:	Flagler 8 Federal 7H	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)
12,670.00	72.60	358.00	12,418.29	294.20	-857.76	300.04	10.26	10.00	-2.44
12,718.00	77.10	357.20	12,430.83	340.48	-859.70	346.33	9.51	9.38	-1.67
12,764.00	81.30	357.50	12,439.45	385.61	-861.79	391.47	9.15	9.13	0.65
12,812.00	85.10	358.60	12,445.13	433.23	-863.41	439.10	8.24	7.92	2.29
12,858.00	88.10	1.40	12,447.86	479.14	-863.40	485.01	8.91	6.52	6.09
12,952.00	90.20	1.00	12,449.26	573.11	-861.44	578.96	2.27	2.23	-0.43
13,046.00	89.30	359.30	12,449.67	667.10	-861.19	672.95	2.05	-0.96	-1.81
13,140.00	90.70	0.30	12,449.67	761.10	-861.52	766.94	1.83	1.49	1.06
13,234.00	91.50	0.90	12,447.86	855.07	-860.53	860.91	1.06	0.85	0.64
13,328.00	87.80	358.00	12,448.44	949.04	-861.44	954.88	5.00	-3.94	-3.09
13,422.00	90.00	358.20	12,450.24	1,042.97	-864.55	1,048.83	2.35	2.34	0.21
13,517.00	94.30	359.50	12,446.68	1,137.86	-866.46	1,143.73	4.73	4.53	1.37
13,611.00	93.60	358.60	12,440.20	1,231.62	-868.01	1,237.50	1.21	-0.74	-0.96
13,705.00	85.40	358.40	12,441.02	1,325.50	-870.47	1,331.40	8.73	-8.72	-0.21
13,799.00	86.40	358.20	12,447.74	1,419.22	-873.25	1,425.13	1.08	1.06	-0.21
13,893.00	90.10	0.70	12,450.61	1,513.15	-874.15	1,519.06	4.75	3.94	2.66
13,987.00	90.00	0.90	12,450.53	1,607.14	-872.84	1,613.04	0.24	-0.11	0.21
14,081.00	90.00	359.10	12,450.53	1,701.13	-872.84	1,707.04	1.91	0.00	-1.91
14,175.00	93.60	0.00	12,447.58	1,795.07	-873.58	1,800.97	3.95	3.83	0.96
14,268.00	91.70	2.10	12,443.28	1,887.94	-871.88	1,893.84	3.04	-2.04	2.26
14,363.00	90.10	1.90	12,441.79	1,982.87	-868.56	1,988.74	1.70	-1.68	-0.21
14,457.00	88.70	0.70	12,442.77	2,076.84	-866.43	2,082.69	1.96	-1.49	-1.28
14,550.00	89.30	1.20	12,444.39	2,169.81	-864.89	2,175.65	0.84	0.65	0.54
14,644.00	88.40	0.20	12,446.28	2,263.78	-863.74	2,269.61	1.43	-0.96	-1.06
14,739.00	89.80	0.70	12,447.77	2,358.77	-862.99	2,364.58	1.56	1.47	0.53
14,833.00	90.50	0.70	12,447.53	2,452.76	-861.84	2,458.57	0.74	0.74	0.00
14,927.00	89.80	1.60	12,447.28	2,546.74	-859.96	2,552.53	1.21	-0.74	0.96
15,021.00	88.90	1.70	12,448.35	2,640.69	-857.25	2,646.46	0.96	-0.96	0.11
15,116.00	90.00	2.30	12,449.26	2,735.63	-853.93	2,741.38	1.32	1.16	0.63
15,211.00	90.20	0.90	12,449.09	2,830.59	-851.28	2,836.32	1.49	0.21	-1.47
15,305.00	90.20	358.40	12,448.76	2,924.58	-851.86	2,930.31	2.66	0.00	-2.66
15,399.00	89.40	358.60	12,449.09	3,018.54	-854.32	3,024.29	0.88	-0.85	0.21
15,493.00	90.70	1.40	12,449.01	3,112.53	-854.32	3,118.27	3.28	1.38	2.98
15,587.00	88.90	358.20	12,449.34	3,206.51	-854.65	3,212.26	3.91	-1.91	-3.40
15,682.00	90.60	0.90	12,449.75	3,301.50	-855.39	3,307.24	3.36	1.79	2.84
15,775.00	90.00	0.30	12,449.27	3,394.49	-854.42	3,400.23	0.91	-0.65	-0.65
15,870.00	87.30	356.10	12,451.50	3,489.39	-857.40	3,495.14	5.25	-2.84	-4.42
15,965.00	88.50	355.60	12,454.99	3,584.07	-864.27	3,589.87	1.37	1.26	-0.53
16,060.00	90.70	354.90	12,455.65	3,678.74	-872.13	3,684.59	2.43	2.32	-0.74
16,153.00	93.60	357.50	12,452.16	3,771.45	-878.29	3,777.34	4.19	3.12	2.80
16,248.00	90.10	358.00	12,449.09	3,866.31	-882.02	3,872.23	3.72	-3.68	0.53
16,342.00	91.90	359.80	12,447.45	3,960.27	-883.83	3,966.20	2.71	1.91	1.91
16,435.00	90.40	1.90	12,445.59	4,053.24	-882.45	4,059.15	2.77	-1.61	2.26

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Flagler 8 Federal 7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3447.4' GE + 23.5' KB @ 3470.90usft
Site:	Flagler 8 Federal	MD Reference:	3447.4' GE + 23.5' KB @ 3470.90usft
Well:	Flagler 8 Federal 7H	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)	
16,529.00	90.80	1.00	12,444.60	4,147.20	-880.07	4,153.09	1.05	0.43	-0.96	
16,624.00	92.60	3.00	12,441.78	4,242.09	-876.75	4,247.96	2.83	1.89	2.11	
16,718.00	90.70	359.60	12,439.08	4,336.01	-874.62	4,341.86	4.14	-2.02	-3.62	
16,812.00	91.10	1.40	12,437.60	4,429.99	-873.80	4,435.84	1.96	0.43	1.91	
16,906.00	90.70	4.00	12,436.12	4,523.87	-869.38	4,529.68	2.80	-0.43	2.77	
17,001.00	91.50	5.30	12,434.30	4,618.53	-861.68	4,624.29	1.61	0.84	1.37	
17,095.00	87.70	3.00	12,434.95	4,712.26	-854.88	4,717.97	4.73	-4.04	-2.45	
17,189.00	88.40	0.90	12,438.15	4,806.15	-851.68	4,811.83	2.35	0.74	-2.23	
17,282.00	88.20	359.50	12,440.91	4,899.10	-851.36	4,904.78	1.52	-0.22	-1.51	
17,308.00	88.00	358.40	12,441.77	4,925.08	-851.83	4,930.77	4.30	-0.77	-4.23	
17,357.00	88.00	358.40	12,443.48	4,974.04	-853.20	4,979.73	0.00	0.00	0.00	
Projection										