



February 18, 2016

Devon Energy Production Company, L.P.
Well: Chincoteague 32 State Com #3H (OH)
County/Parish: Lea County, NM

LEAM MWD: (OH) from 4,590' MD – 15,175' MD
Projection: 15,265' MD

This Borehole Survey taken between 02/08/2016 and 02/16/2016 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: February 18, 2016

*Physical & Mailing: 303 Longmire Dr., Suite 801, Conroe, TX 77304
936-756-7577 • www.lead.net • 1 (800) 756-7504*



Survey Certification Form

State of NM

Lea County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Systems LLC, that I did on the day(s) of February 8, 2016 through February 16, 2016, conduct or supervise the taking of MWD Survey from a depth of 4,590' MD to 15,265' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Systems LLC, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy Production Company, L.P. for the Chincoteague 32 State Com #3H (OH) in Lea County, NM; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Systems LLC.

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 LLC

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Chincoteague 32 State Com
Well: 3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 3H
TVD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

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

Site Chincoteague 32 State Com

Site Position: Northing: 425,129.39 usft Latitude: 32° 10' 1.867 N
From: Map Easting: 736,582.94 usft Longitude: 103° 42' 8.435 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.34 °

Well 3H
Well Position +N/-S 0.00 usft Northing: 425,146.72 usft Latitude: 32° 10' 1.937 N
 +E/-W 0.00 usft Easting: 738,332.47 usft Longitude: 103° 41' 48.080 W
Position Uncertainty 0.00 usft Wellhead Elevation: 3,494.70 usft Ground Level: 3,471.20 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	01/11/16	7.27	60.05	48,112

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	353.90

Survey Program Date 02/19/16

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
173.00	4,464.00	Survey #1 (OH)	MWD-ISCWSA	MWD - Standard
4,590.00	15,175.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM
15,265.00	15,265.00	Survey #3 (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
173.00	0.30	260.30	173.00	-0.08	-0.45	-0.03	0.17	0.17	0.00
268.00	0.40	314.93	268.00	0.12	-0.93	0.21	0.35	0.11	57.51
331.00	0.31	261.45	331.00	0.25	-1.25	0.38	0.52	-0.14	-84.89
422.00	0.31	223.75	422.00	0.03	-1.66	0.21	0.22	0.00	-41.43
514.00	0.62	220.67	513.99	-0.53	-2.16	-0.29	0.34	0.34	-3.35
605.00	0.88	185.56	604.98	-1.59	-2.55	-1.31	0.57	0.29	-38.58
697.00	1.41	195.14	696.97	-3.39	-2.91	-3.06	0.61	0.58	10.41
761.00	1.58	189.25	760.94	-5.02	-3.26	-4.65	0.36	0.27	-9.20

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
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 Site: Chincoteague 32 State Com
 Well: 3H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 3H
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 MD Reference: 3471.2' GE + 23.5' RKB @ 3494.70usft
 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)
792.00	1.60	189.76	791.93	-5.87	-3.40	-5.47	0.08	0.06	1.65
972.00	1.49	203.97	971.87	-10.48	-4.78	-9.92	0.22	-0.06	7.89
1,066.00	1.41	207.26	1,065.84	-12.63	-5.81	-11.94	0.12	-0.09	3.50
1,158.00	1.41	213.15	1,157.81	-14.58	-6.94	-13.76	0.16	0.00	6.40
1,345.00	1.10	207.76	1,344.76	-18.10	-9.04	-17.04	0.18	-0.17	-2.88
1,535.00	0.70	207.13	1,534.74	-20.74	-10.42	-19.52	0.21	-0.21	-0.33
1,726.00	0.40	210.56	1,725.73	-22.36	-11.29	-21.03	0.16	-0.16	1.80
1,917.00	0.40	209.33	1,916.73	-23.51	-11.95	-22.11	0.00	0.00	-0.64
2,107.00	0.40	177.47	2,106.72	-24.75	-12.25	-23.31	0.12	0.00	-16.77
2,299.00	0.40	170.35	2,298.72	-26.08	-12.11	-24.65	0.03	0.00	-3.71
2,489.00	0.40	168.24	2,488.71	-27.39	-11.86	-25.97	0.01	0.00	-1.11
2,680.00	0.62	150.75	2,679.71	-28.94	-11.22	-27.59	0.14	0.12	-9.16
2,872.00	0.62	122.05	2,871.70	-30.40	-9.83	-29.18	0.16	0.00	-14.95
3,063.00	0.70	125.26	3,062.68	-31.62	-8.00	-30.59	0.05	0.04	1.68
3,254.00	0.62	124.65	3,253.67	-32.88	-6.20	-32.04	0.04	-0.04	-0.32
3,445.00	0.79	123.15	3,444.66	-34.19	-4.25	-33.54	0.09	0.09	-0.79
3,636.00	0.88	138.14	3,635.64	-36.00	-2.17	-35.57	0.12	0.05	7.85
3,828.00	1.19	130.93	3,827.60	-38.41	0.32	-38.22	0.17	0.16	-3.76
4,019.00	1.71	132.25	4,018.54	-41.62	3.93	-41.80	0.27	0.27	0.69
4,210.00	2.29	133.26	4,209.42	-46.15	8.82	-46.83	0.30	0.30	0.53
4,401.00	2.50	130.45	4,400.26	-51.47	14.77	-52.75	0.13	0.11	-1.47
4,464.00	2.29	129.26	4,463.20	-53.16	16.79	-54.64	0.34	-0.33	-1.89
4,590.00	1.90	127.00	4,589.12	-56.01	20.41	-57.86	0.32	-0.31	-1.79
4,685.00	0.80	157.00	4,684.09	-57.57	21.92	-59.57	1.34	-1.16	31.58
4,781.00	1.70	230.50	4,780.07	-59.09	21.09	-61.00	1.73	0.94	76.56
4,876.00	3.30	255.30	4,874.98	-60.68	17.35	-62.18	2.00	1.68	26.11
4,972.00	4.40	255.30	4,970.76	-62.32	11.12	-63.14	1.15	1.15	0.00
5,067.00	5.50	260.80	5,065.41	-63.97	3.10	-63.94	1.26	1.16	5.79
5,163.00	6.60	262.90	5,160.87	-65.39	-6.92	-64.28	1.17	1.15	2.19
5,259.00	7.40	262.70	5,256.16	-66.85	-18.52	-64.51	0.83	0.83	-0.21
5,354.00	7.70	262.30	5,350.33	-68.48	-30.90	-64.81	0.32	0.32	-0.42
5,545.00	7.20	260.40	5,539.72	-72.19	-55.38	-65.90	0.29	-0.26	-0.99
5,736.00	7.70	260.40	5,729.11	-76.32	-79.80	-67.41	0.26	0.26	0.00
5,928.00	7.60	263.20	5,919.40	-79.97	-105.09	-68.35	0.20	-0.05	1.46
6,119.00	7.20	260.40	6,108.81	-83.46	-129.43	-69.24	0.28	-0.21	-1.47
6,310.00	8.30	261.30	6,298.06	-87.55	-154.86	-70.59	0.58	0.58	0.47
6,501.00	7.00	260.90	6,487.36	-91.47	-179.98	-71.83	0.68	-0.68	-0.21
6,692.00	6.70	259.50	6,676.99	-95.34	-202.43	-73.29	0.18	-0.16	-0.73
6,883.00	5.90	259.20	6,866.84	-99.21	-223.03	-74.95	0.42	-0.42	-0.16
7,075.00	5.50	258.50	7,057.89	-102.90	-241.74	-76.63	0.21	-0.21	-0.36
7,266.00	5.50	255.00	7,248.01	-107.09	-259.55	-78.90	0.18	0.00	-1.83
7,457.00	3.60	253.40	7,438.40	-111.17	-274.14	-81.41	1.00	-0.99	-0.84
7,648.00	3.20	250.20	7,629.06	-114.69	-284.90	-83.77	0.23	-0.21	-1.68

LEAM Drilling Systems LLC

Survey Report

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Site: Chincoteague 32 State Corn
Well: 3H
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North Reference: Grid
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Database: EDM 5000.1 Multi User Db

Survey

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7,839.00	2.20	258.80	7,819.85	-117.21	-293.51	-85.36	0.56	-0.52	4.50
8,031.00	2.60	242.30	8,011.68	-119.95	-300.98	-87.29	0.41	0.21	-8.59
8,223.00	2.10	244.20	8,203.52	-123.51	-308.01	-90.08	0.26	-0.26	0.99
8,414.00	2.10	238.60	8,394.39	-126.85	-314.15	-92.75	0.11	0.00	-2.93
8,605.00	1.90	239.50	8,585.28	-130.28	-319.86	-95.55	0.11	-0.10	0.47
8,796.00	2.10	243.40	8,776.16	-133.46	-325.72	-98.09	0.13	0.10	2.04
8,987.00	2.60	223.00	8,967.00	-138.19	-331.80	-102.15	0.51	0.26	-10.68
9,178.00	3.30	229.50	9,157.75	-144.93	-338.94	-108.09	0.41	0.37	3.40
9,370.00	3.10	219.30	9,349.45	-152.54	-346.43	-114.86	0.31	-0.10	-5.31
9,561.00	2.80	223.80	9,540.20	-159.90	-352.93	-121.49	0.20	-0.16	2.36
9,752.00	3.00	241.10	9,730.96	-165.68	-360.53	-126.43	0.47	0.10	9.06
9,847.00	3.30	231.90	9,825.81	-168.57	-364.86	-128.85	0.62	0.32	-9.68
9,943.00	8.90	329.70	9,921.39	-163.85	-370.80	-123.52	10.31	5.83	101.88
9,991.00	14.30	330.70	9,968.40	-155.47	-375.57	-114.68	11.26	11.25	2.08
10,038.00	18.50	331.10	10,013.47	-143.88	-382.02	-102.47	8.94	8.94	0.85
10,086.00	22.30	332.10	10,058.45	-129.16	-389.97	-86.98	7.95	7.92	2.08
10,134.00	26.30	332.50	10,102.19	-111.67	-399.14	-68.62	8.34	8.33	0.83
10,182.00	31.60	331.80	10,144.18	-91.14	-410.00	-47.05	11.06	11.04	-1.46
10,230.00	36.00	331.60	10,184.06	-67.63	-422.66	-22.34	9.17	9.17	-0.42
10,278.00	39.80	331.80	10,221.93	-41.68	-436.63	4.96	7.92	7.92	0.42
10,325.00	43.60	332.10	10,257.01	-14.09	-451.33	33.95	8.10	8.09	0.64
10,373.00	47.20	333.70	10,290.71	16.34	-466.88	65.86	7.87	7.50	3.33
10,421.00	49.80	333.90	10,322.51	48.59	-482.75	99.62	5.43	5.42	0.42
10,469.00	54.40	334.90	10,351.99	82.74	-499.10	135.31	9.72	9.58	2.08
10,517.00	59.50	337.90	10,378.17	119.61	-515.18	173.67	11.84	10.63	6.25
10,565.00	63.90	341.30	10,400.92	159.21	-529.88	214.61	11.09	9.17	7.08
10,612.00	69.00	342.50	10,419.69	200.15	-543.25	256.75	11.10	10.85	2.55
10,660.00	73.40	343.60	10,435.16	243.61	-556.49	301.36	9.42	9.17	2.29
10,708.00	77.90	343.60	10,447.05	288.21	-569.61	347.10	9.38	9.38	0.00
10,756.00	81.50	345.30	10,455.64	333.69	-582.27	393.68	8.27	7.50	3.54
10,804.00	83.10	349.50	10,462.07	380.10	-592.64	440.93	9.29	3.33	8.75
10,835.00	84.20	352.30	10,465.50	410.52	-597.51	471.69	9.65	3.55	9.03
10,883.00	86.30	355.70	10,469.47	458.09	-602.51	519.52	8.30	4.38	7.08
10,931.00	86.40	355.70	10,472.53	505.85	-606.10	567.40	0.21	0.21	0.00
10,979.00	88.20	356.40	10,474.79	553.69	-609.40	615.31	4.02	3.75	1.46
11,027.00	89.70	356.70	10,475.67	601.59	-612.29	663.25	3.19	3.13	0.63
11,074.00	90.00	357.40	10,475.79	648.53	-614.71	710.18	1.62	0.64	1.49
11,170.00	90.30	358.10	10,475.54	744.45	-618.48	805.96	0.79	0.31	0.73
11,265.00	91.00	357.80	10,474.46	839.38	-621.87	900.71	0.80	0.74	-0.32
11,360.00	91.60	358.00	10,472.31	934.29	-625.35	995.46	0.67	0.63	0.21
11,456.00	90.70	357.40	10,470.38	1,030.20	-629.21	1,091.23	1.13	-0.94	-0.63
11,552.00	90.00	357.10	10,469.80	1,126.08	-633.81	1,187.06	0.79	-0.73	-0.31
11,648.00	88.30	355.90	10,471.22	1,221.89	-639.67	1,282.94	2.17	-1.77	-1.25

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Survey Report

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11,742.00	89.30	356.20	10,473.19	1,315.64	-646.15	1,376.86	1.11	1.06	0.32
11,839.00	88.50	355.90	10,475.05	1,412.39	-652.83	1,473.77	0.88	-0.82	-0.31
11,934.00	88.90	356.40	10,477.21	1,507.16	-659.20	1,568.67	0.67	0.42	0.53
12,030.00	88.60	357.40	10,479.30	1,602.99	-664.39	1,664.52	1.09	-0.31	1.04
12,125.00	89.30	357.80	10,481.04	1,697.89	-668.37	1,759.30	0.85	0.74	0.42
12,221.00	90.10	358.00	10,481.54	1,793.82	-671.89	1,855.06	0.86	0.83	0.21
12,317.00	90.70	356.90	10,480.87	1,889.72	-676.16	1,950.88	1.31	0.63	-1.15
12,412.00	90.00	356.20	10,480.29	1,984.55	-681.88	2,045.77	1.04	-0.74	-0.74
12,508.00	88.00	355.30	10,481.97	2,080.27	-688.99	2,141.70	2.28	-2.08	-0.94
12,603.00	88.00	354.60	10,485.28	2,174.84	-697.35	2,236.63	0.74	0.00	-0.74
12,699.00	89.10	355.20	10,487.71	2,270.43	-705.88	2,332.58	1.31	1.15	0.83
12,795.00	89.20	354.60	10,489.14	2,366.03	-714.41	2,428.55	0.83	0.10	-0.83
12,890.00	90.00	354.80	10,489.80	2,460.63	-723.18	2,523.54	0.87	0.84	0.21
12,985.00	91.10	354.40	10,488.89	2,555.20	-732.12	2,618.53	1.23	1.16	-0.42
13,081.00	91.10	355.00	10,487.05	2,650.77	-740.99	2,714.50	0.62	0.00	0.63
13,177.00	89.70	356.00	10,486.38	2,746.47	-748.52	2,810.46	1.79	-1.46	1.04
13,272.00	89.40	356.70	10,487.12	2,841.27	-754.57	2,905.37	0.80	-0.32	0.74
13,368.00	89.90	356.60	10,487.71	2,937.10	-760.18	3,001.25	0.53	0.52	-0.10
13,464.00	90.00	356.40	10,487.79	3,032.93	-766.04	3,097.16	0.23	0.10	-0.21
13,559.00	90.00	356.40	10,487.79	3,127.74	-772.00	3,192.07	0.00	0.00	0.00
13,655.00	90.00	356.70	10,487.79	3,223.56	-777.78	3,287.96	0.31	0.00	0.31
13,750.00	90.50	356.20	10,487.38	3,318.38	-783.66	3,382.87	0.74	0.53	-0.53
13,846.00	90.80	355.70	10,486.29	3,414.13	-790.44	3,478.80	0.61	0.31	-0.52
13,941.00	90.40	356.60	10,485.29	3,508.91	-796.82	3,573.72	1.04	-0.42	0.95
14,037.00	87.80	355.90	10,486.80	3,604.69	-803.10	3,669.62	2.80	-2.71	-0.73
14,133.00	88.70	355.50	10,489.73	3,700.37	-810.29	3,765.52	1.03	0.94	-0.42
14,228.00	87.70	357.10	10,492.72	3,795.12	-816.42	3,860.39	1.99	-1.05	1.68
14,324.00	88.50	357.30	10,495.90	3,890.95	-821.11	3,956.18	0.86	0.83	0.21
14,419.00	88.80	357.40	10,498.14	3,985.83	-825.50	4,050.98	0.33	0.32	0.11
14,515.00	89.00	356.90	10,499.98	4,081.69	-830.27	4,146.81	0.56	0.21	-0.52
14,611.00	90.00	356.40	10,500.82	4,177.52	-835.88	4,242.69	1.16	1.04	-0.52
14,707.00	89.80	358.00	10,500.99	4,273.40	-840.57	4,338.53	1.68	-0.21	1.67
14,802.00	90.30	357.60	10,500.90	4,368.33	-844.22	4,433.31	0.67	0.53	-0.42
14,898.00	90.00	359.70	10,500.65	4,464.30	-846.48	4,528.97	2.21	-0.31	2.19
14,993.00	90.90	0.30	10,499.91	4,559.29	-846.48	4,623.43	1.14	0.95	0.63
15,088.00	91.50	359.50	10,497.92	4,654.27	-846.64	4,717.89	1.05	0.63	-0.84
15,175.00	92.50	359.00	10,494.88	4,741.21	-847.78	4,804.45	1.28	1.15	-0.57
15,265.00	92.50	359.00	10,490.96	4,831.11	-849.35	4,894.01	0.00	0.00	0.00

Projection