



30-015-44358

December 29, 2017

Devon Energy Production Company, LP
Well: Onyx PWU 29-28 #62H
County/Parish: Eddy County, NM

**NM OIL CONSERVATION
ARTESIA DISTRICT**

AUG 23 2018

RECEIVED

LEAM MWD: (OH) from 234' MD – 16,722' MD
Projection; 16,795' MD

This Borehole Survey taken between 12/12/2017 and 12/24/2017 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: December 29, 2017



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 12/12/2017 through 12/24/2017, conduct or supervise the taking of MWD Survey from a depth of 234' MD to 16,795' 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 Onyx PWU 29-28 #62H 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

Devon Energy

Eddy County, NM (NAD-83)

Onyx PWU 29-28

62H

OH

Design: OH

Standard Survey Report

08 January, 2018

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 62H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3307.4' GE + 23.5' KB @ 3330.90usft
Site:	Onyx PWU 29-28	MD Reference:	3307.4' GE + 23.5' KB @ 3330.90usft
Well:	62H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 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	Onyx PWU 29-28				
Site Position:		Northing:	596,305.26 usft	Latitude:	32° 38' 20.7014 N
From:	Map	Easting:	611,703.20 usft	Longitude:	104° 6' 17.0602 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	62H					
Well Position	+N/-S	0.00 usft	Northing:	592,268.74 usft	Latitude:	32° 37' 40.7578 N
	+E/-W	0.00 usft	Easting:	611,746.36 usft	Longitude:	104° 6' 16.6570 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level:	3,307.40 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/28/2017	7.40	60.48	48,153

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	90.00	

Survey Program	Date	12/29/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.00	150.00	Survey #1 (OH)	GYRO		
234.00	8,262.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM	
8,294.00	16,722.00	Survey #3 (OH)	MWD+IFR1+MS	MWD + IFR1 + Multi-Station Correction	
16,795.00	16,795.00	Survey #4 (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	
50.00	0.49	224.96	50.00	-0.15	-0.15	-0.15	0.98	0.98	0.00	
100.00	0.36	199.95	100.00	-0.45	-0.36	-0.36	0.45	-0.26	-50.02	
150.00	0.46	264.40	150.00	-0.62	-0.61	-0.61	0.89	0.20	128.90	
234.00	0.30	225.30	234.00	-0.81	-1.10	-1.10	0.35	-0.19	-46.55	
332.00	0.40	215.90	331.99	-1.26	-1.48	-1.48	0.12	0.10	-9.59	
423.00	0.40	219.90	422.99	-1.76	-1.87	-1.87	0.03	0.00	4.40	
515.00	0.50	221.40	514.99	-2.31	-2.35	-2.35	0.11	0.11	1.63	

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Onyx PWU 29-28
 Well: 62H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 62H
 TVD Reference: 3307.4' GE + 23.5' KB @ 3330.90usft
 MD Reference: 3307.4' GE + 23.5' KB @ 3330.90usft
 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)
607.00	0.40	200.90	606.99	-2.91	-2.73	-2.73	0.20	-0.11	-22.28
698.00	0.30	204.50	697.98	-3.43	-2.94	-2.94	0.11	-0.11	3.96
789.00	0.40	124.40	788.98	-3.82	-2.77	-2.77	0.50	0.11	-88.02
880.00	0.70	123.90	879.98	-4.31	-2.05	-2.05	0.33	0.33	-0.55
971.00	1.00	112.90	970.97	-4.93	-0.86	-0.86	0.37	0.33	-12.09
1,062.00	0.90	114.20	1,061.96	-5.53	0.53	0.53	0.11	-0.11	1.43
1,152.00	0.90	130.20	1,151.94	-6.28	1.71	1.71	0.28	0.00	17.78
1,244.00	0.70	133.60	1,243.94	-7.13	2.67	2.67	0.22	-0.22	3.70
1,335.00	0.70	141.20	1,334.93	-7.95	3.42	3.42	0.10	0.00	8.35
1,427.00	0.50	139.60	1,426.92	-8.69	4.03	4.03	0.22	-0.22	-1.74
1,519.00	0.70	153.80	1,518.92	-9.50	4.54	4.54	0.27	0.22	15.43
1,611.00	0.80	138.90	1,610.91	-10.49	5.21	5.21	0.24	0.11	-16.20
1,702.00	0.90	149.80	1,701.90	-11.59	5.99	5.99	0.21	0.11	11.98
1,797.00	0.70	153.70	1,796.89	-12.75	6.62	6.62	0.22	-0.21	4.11
1,892.00	0.80	142.50	1,891.88	-13.80	7.28	7.28	0.19	0.11	-11.79
1,986.00	0.70	144.60	1,985.88	-14.79	8.01	8.01	0.11	-0.11	2.23
2,081.00	0.60	139.00	2,080.87	-15.64	8.68	8.68	0.12	-0.11	-5.89
2,175.00	0.50	157.70	2,174.87	-16.39	9.15	9.15	0.22	-0.11	19.89
2,270.00	0.40	138.90	2,269.86	-17.02	9.53	9.53	0.19	-0.11	-19.79
2,364.00	0.50	302.00	2,363.86	-17.05	9.40	9.40	0.95	0.11	173.51
2,458.00	0.60	299.40	2,457.86	-16.59	8.62	8.62	0.11	0.11	-2.77
2,553.00	0.50	307.30	2,552.85	-16.10	7.86	7.86	0.13	-0.11	8.32
2,647.00	0.40	305.90	2,646.85	-15.65	7.27	7.27	0.11	-0.11	-1.49
2,741.00	0.40	287.60	2,740.85	-15.36	6.69	6.69	0.14	0.00	-19.47
2,836.00	0.40	281.10	2,835.85	-15.20	6.05	6.05	0.05	0.00	-6.84
2,930.00	0.80	312.90	2,929.84	-14.69	5.24	5.24	0.54	0.43	33.83
3,024.00	1.10	320.10	3,023.83	-13.55	4.18	4.18	0.34	0.32	7.66
3,119.00	1.00	295.30	3,118.81	-12.50	2.85	2.85	0.49	-0.11	-26.11
3,214.00	0.80	322.40	3,213.80	-11.62	1.69	1.69	0.49	-0.21	28.53
3,308.00	0.80	316.70	3,307.79	-10.62	0.84	0.84	0.08	0.00	-6.06
3,402.00	0.70	323.20	3,401.78	-9.68	0.05	0.05	0.14	-0.11	6.91
3,444.00	0.80	306.50	3,443.78	-9.30	-0.34	-0.34	0.57	0.24	-39.76
3,594.00	1.10	294.50	3,593.76	-8.08	-2.49	-2.49	0.24	0.20	-8.00
3,688.00	1.60	297.70	3,687.73	-7.10	-4.47	-4.47	0.54	0.53	3.40
3,783.00	2.00	303.80	3,782.69	-5.56	-7.03	-7.03	0.47	0.42	6.42
3,877.00	2.50	305.90	3,876.61	-3.44	-10.05	-10.05	0.54	0.53	2.23
3,973.00	2.70	303.50	3,972.51	-0.97	-13.63	-13.63	0.24	0.21	-2.50
4,067.00	3.00	298.90	4,066.40	1.44	-17.63	-17.63	0.40	0.32	-4.89
4,162.00	3.30	292.70	4,161.25	3.70	-22.33	-22.33	0.48	0.32	-6.53
4,253.00	3.30	292.70	4,252.10	5.72	-27.16	-27.16	0.00	0.00	0.00
4,351.00	3.80	292.00	4,349.92	8.03	-32.78	-32.78	0.51	0.51	-0.71
4,445.00	4.60	282.20	4,443.66	9.99	-39.35	-39.35	1.14	0.85	-10.43
4,540.00	5.40	277.50	4,538.30	11.38	-47.50	-47.50	0.95	0.84	-4.95

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 62H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 62H
TVD Reference: 3307.4' GE + 23.5' KB @ 3330.90usft
MD Reference: 3307.4' GE + 23.5' KB @ 3330.90usft
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)
4,635.00	5.30	281.10	4,632.89	12.81	-56.24	-56.24	0.37	-0.11	3.79
4,729.00	5.30	282.40	4,726.49	14.57	-64.74	-64.74	0.13	0.00	1.38
4,825.00	4.70	287.30	4,822.12	16.70	-72.83	-72.83	0.77	-0.63	5.10
4,921.00	4.30	289.80	4,917.82	19.08	-79.97	-79.97	0.46	-0.42	2.60
5,016.00	4.00	290.10	5,012.58	21.43	-86.43	-86.43	0.32	-0.32	0.32
5,112.00	3.90	291.30	5,108.35	23.77	-92.62	-92.62	0.14	-0.10	1.25
5,206.00	3.80	293.10	5,202.14	26.15	-98.46	-98.46	0.17	-0.11	1.91
5,300.00	3.60	294.20	5,295.94	28.58	-104.02	-104.02	0.23	-0.21	1.17
5,396.00	3.10	294.70	5,391.77	30.90	-109.12	-109.12	0.52	-0.52	0.52
5,491.00	2.70	287.80	5,486.65	32.66	-113.59	-113.59	0.56	-0.42	-7.26
5,587.00	2.30	293.10	5,582.56	34.11	-117.51	-117.51	0.48	-0.42	5.52
5,683.00	2.40	293.60	5,678.48	35.67	-121.13	-121.13	0.11	0.10	0.52
5,778.00	2.40	291.50	5,773.40	37.19	-124.80	-124.80	0.09	0.00	-2.21
5,874.00	2.60	291.20	5,869.31	38.72	-128.70	-128.70	0.21	0.21	-0.31
5,969.00	3.00	291.50	5,964.19	40.41	-133.02	-133.02	0.42	0.42	0.32
6,065.00	3.30	304.40	6,060.05	42.89	-137.64	-137.64	0.80	0.31	13.44
6,160.00	2.60	294.20	6,154.92	45.32	-141.86	-141.86	0.92	-0.74	-10.74
6,255.00	2.90	280.30	6,249.81	46.63	-146.19	-146.19	0.77	0.32	-14.63
6,351.00	1.90	271.10	6,345.73	47.09	-150.17	-150.17	1.11	-1.04	-9.58
6,446.00	2.10	273.90	6,440.67	47.24	-153.48	-153.48	0.23	0.21	2.95
6,542.00	3.10	278.90	6,536.57	47.76	-157.80	-157.80	1.07	1.04	5.21
6,638.00	2.10	274.60	6,632.47	48.31	-162.12	-162.12	1.06	-1.04	-4.48
6,733.00	3.30	279.70	6,727.36	48.91	-166.55	-166.55	1.29	1.26	5.37
6,829.00	3.70	278.00	6,823.19	49.80	-172.34	-172.34	0.43	0.42	-1.77
6,924.00	4.20	282.90	6,917.96	51.01	-178.77	-178.77	0.63	0.53	5.16
7,019.00	4.00	277.60	7,012.72	52.22	-185.44	-185.44	0.45	-0.21	-5.58
7,115.00	4.20	267.40	7,108.47	52.50	-192.27	-192.27	0.79	0.21	-10.63
7,211.00	4.10	272.00	7,204.22	52.46	-199.22	-199.22	0.36	-0.10	4.79
7,306.00	3.30	278.70	7,299.02	53.00	-205.31	-205.31	0.96	-0.84	7.05
7,402.00	3.30	279.00	7,394.86	53.85	-210.77	-210.77	0.02	0.00	0.31
7,497.00	3.30	280.80	7,489.71	54.79	-216.16	-216.16	0.11	0.00	1.89
7,593.00	3.00	286.80	7,585.56	56.03	-221.28	-221.28	0.46	-0.31	6.25
7,688.00	2.10	282.60	7,680.47	57.13	-225.36	-225.36	0.97	-0.95	-4.42
7,784.00	1.80	283.10	7,776.41	57.85	-228.54	-228.54	0.31	-0.31	0.52
7,879.00	1.70	279.00	7,871.37	58.41	-231.39	-231.39	0.17	-0.11	-4.32
7,975.00	0.40	243.00	7,967.35	58.48	-233.09	-233.09	1.45	-1.35	-37.50
8,070.00	1.10	250.40	8,062.34	58.03	-234.25	-234.25	0.74	0.74	7.79
8,166.00	1.10	240.50	8,158.32	57.26	-235.92	-235.92	0.20	0.00	-10.31
8,262.00	1.10	234.60	8,254.30	56.28	-237.47	-237.47	0.12	0.00	-6.15
8,294.00	1.30	231.40	8,286.30	55.87	-238.00	-238.00	0.66	0.63	-10.00
8,321.00	1.50	230.65	8,313.29	55.46	-238.52	-238.52	0.74	0.74	-2.78
8,422.00	7.21	81.01	8,414.06	55.61	-233.27	-233.27	8.45	5.65	-148.16
8,512.00	18.41	72.77	8,501.69	60.72	-214.05	-214.05	12.58	12.44	-9.16
8,608.00	30.09	66.32	8,589.08	74.93	-177.40	-177.40	12.46	12.17	-6.72

LEAM Drilling Systems LLC

Survey Report

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Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 62H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 62H
TVD Reference: 3307.4' GE + 23.5' KB @ 3330.90usft
MD Reference: 3307.4' GE + 23.5' KB @ 3330.90usft
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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)
8,704.00	39.70	67.71	8,667.73	96.27	-126.88	-126.88	10.04	10.01	1.45
8,752.00	42.82	75.92	8,703.83	106.06	-96.84	-96.84	13.01	6.50	17.10
8,796.00	49.93	80.03	8,734.18	112.63	-65.71	-65.71	17.51	16.16	9.34
8,847.00	57.20	83.18	8,764.45	118.56	-25.14	-25.14	15.09	14.25	6.18
8,894.00	63.95	84.64	8,787.53	122.88	15.54	15.54	14.61	14.36	3.11
8,942.00	70.44	88.49	8,806.13	125.50	59.68	59.68	15.41	13.52	8.02
8,990.00	75.12	94.26	8,820.35	124.37	105.47	105.47	15.06	9.75	12.02
9,065.00	77.47	94.69	8,838.11	118.68	178.11	178.11	3.18	3.13	0.57
9,156.00	79.60	94.23	8,856.20	111.75	267.02	267.02	2.39	2.34	-0.51
9,201.00	82.70	93.76	8,863.12	108.65	311.37	311.37	6.97	6.89	-1.04
9,247.00	86.07	93.42	8,867.62	105.79	357.05	357.05	7.36	7.33	-0.74
9,292.00	87.28	92.70	8,870.23	103.39	401.91	401.91	3.13	2.69	-1.60
9,338.00	87.04	90.58	8,872.51	102.07	447.84	447.84	4.63	-0.52	-4.61
9,383.00	88.12	89.59	8,874.41	102.01	492.79	492.79	3.25	2.40	-2.20
9,429.00	88.05	88.79	8,875.95	102.66	538.76	538.76	1.74	-0.15	-1.74
9,520.00	88.43	87.89	8,878.75	105.29	629.68	629.68	1.07	0.42	-0.99
9,612.00	88.96	87.73	8,880.84	108.81	721.59	721.59	0.60	0.58	-0.17
9,704.00	90.60	89.35	8,881.19	111.15	813.55	813.55	2.51	1.78	1.76
9,796.00	90.84	91.45	8,880.04	110.51	905.54	905.54	2.30	0.26	2.28
9,887.00	89.87	91.24	8,879.47	108.37	996.51	996.51	1.09	-1.07	-0.23
9,983.00	88.55	90.57	8,880.80	106.86	1,092.49	1,092.49	1.54	-1.38	-0.70
10,079.00	89.43	90.63	8,882.49	105.85	1,188.47	1,188.47	0.92	0.92	0.06
10,174.00	90.03	91.21	8,882.94	104.32	1,283.45	1,283.45	0.88	0.63	0.61
10,269.00	90.94	90.84	8,882.13	102.63	1,378.43	1,378.43	1.03	0.96	-0.39
10,365.00	91.38	90.57	8,880.19	101.44	1,474.40	1,474.40	0.54	0.46	-0.28
10,460.00	90.07	90.99	8,878.99	100.15	1,569.39	1,569.39	1.45	-1.38	0.44
10,556.00	90.47	90.93	8,878.53	98.54	1,665.37	1,665.37	0.42	0.42	-0.06
10,652.00	88.55	90.42	8,879.36	97.41	1,761.36	1,761.36	2.07	-2.00	-0.53
10,747.00	89.23	90.22	8,881.20	96.88	1,856.34	1,856.34	0.75	0.72	-0.21
10,843.00	91.31	92.03	8,880.74	95.00	1,952.31	1,952.31	2.87	2.17	1.89
10,938.00	86.91	91.58	8,882.22	92.01	2,047.23	2,047.23	4.66	-4.63	-0.47
11,034.00	87.49	89.37	8,886.91	91.21	2,143.10	2,143.10	2.38	0.60	-2.30
11,130.00	87.58	91.45	8,891.04	90.52	2,239.00	2,239.00	2.17	0.09	2.17
11,225.00	88.02	89.70	8,894.69	89.57	2,333.93	2,333.93	1.90	0.46	-1.84
11,321.00	88.99	89.54	8,897.19	90.21	2,429.89	2,429.89	1.02	1.01	-0.17
11,416.00	89.03	89.47	8,898.83	91.03	2,524.87	2,524.87	0.08	0.04	-0.07
11,512.00	89.33	89.53	8,900.21	91.87	2,620.86	2,620.86	0.32	0.31	0.06
11,607.00	89.03	89.30	8,901.57	92.84	2,715.84	2,715.84	0.40	-0.32	-0.24
11,703.00	89.40	90.26	8,902.88	93.21	2,811.83	2,811.83	1.07	0.39	1.00
11,798.00	87.58	87.78	8,905.38	94.83	2,906.77	2,906.77	3.24	-1.92	-2.61
11,893.00	88.49	86.93	8,908.64	99.21	3,001.62	3,001.62	1.31	0.96	-0.89
11,988.00	88.69	85.89	8,910.98	105.16	3,096.40	3,096.40	1.11	0.21	-1.09
12,084.00	88.82	85.71	8,913.07	112.19	3,192.12	3,192.12	0.23	0.14	-0.19

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 62H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3307.4' GE + 23.5' KB @ 3330.90usft
Site:	Onyx PWU 29-28	MD Reference:	3307.4' GE + 23.5' KB @ 3330.90usft
Well:	62H	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)
12,179.00	88.76	82.47	8,915.07	121.96	3,286.58	3,286.58	3.41	-0.06	-3.41
12,274.00	89.63	82.90	8,916.41	134.06	3,380.80	3,380.80	1.02	0.92	0.45
12,369.00	89.73	83.18	8,916.94	145.57	3,475.09	3,475.09	0.31	0.11	0.29
12,465.00	89.63	83.79	8,917.47	156.46	3,570.47	3,570.47	0.64	-0.10	0.64
12,560.00	89.76	83.94	8,917.98	166.62	3,664.93	3,664.93	0.21	0.14	0.16
12,655.00	89.99	83.73	8,918.19	176.82	3,759.38	3,759.38	0.33	0.24	-0.22
12,751.00	90.16	83.52	8,918.06	187.48	3,854.78	3,854.78	0.28	0.18	-0.22
12,846.00	90.13	83.15	8,917.82	198.50	3,949.14	3,949.14	0.39	-0.03	-0.39
12,942.00	90.16	82.91	8,917.58	210.15	4,044.43	4,044.43	0.25	0.03	-0.25
13,037.00	90.36	82.46	8,917.15	222.25	4,138.66	4,138.66	0.52	0.21	-0.47
13,133.00	90.50	84.16	8,916.43	233.43	4,234.00	4,234.00	1.78	0.15	1.77
13,228.00	90.06	86.22	8,915.96	241.40	4,328.66	4,328.66	2.22	-0.46	2.17
13,324.00	89.39	87.32	8,916.42	246.81	4,424.50	4,424.50	1.34	-0.70	1.15
13,419.00	88.68	86.46	8,918.02	251.96	4,519.35	4,519.35	1.17	-0.75	-0.91
13,515.00	88.68	85.88	8,920.23	258.37	4,615.11	4,615.11	0.60	0.00	-0.60
13,610.00	88.12	86.14	8,922.89	264.98	4,709.84	4,709.84	0.65	-0.59	0.27
13,706.00	88.12	85.49	8,926.04	271.98	4,805.53	4,805.53	0.68	0.00	-0.68
13,801.00	88.21	85.58	8,929.08	279.37	4,900.19	4,900.19	0.13	0.09	0.09
13,897.00	89.26	86.93	8,931.20	285.64	4,995.96	4,995.96	1.78	1.09	1.41
13,992.00	90.60	88.70	8,931.31	289.26	5,090.89	5,090.89	2.34	1.41	1.86
14,088.00	90.60	89.74	8,930.31	290.57	5,186.87	5,186.87	1.08	0.00	1.08
14,183.00	88.68	89.73	8,930.90	291.01	5,281.86	5,281.86	2.02	-2.02	-0.01
14,279.00	88.62	89.55	8,933.17	291.61	5,377.83	5,377.83	0.20	-0.06	-0.19
14,374.00	87.64	89.50	8,936.27	292.40	5,472.78	5,472.78	1.03	-1.03	-0.05
14,470.00	87.74	89.42	8,940.14	293.30	5,568.70	5,568.70	0.13	0.10	-0.08
14,566.00	87.74	89.00	8,943.92	294.62	5,664.61	5,664.61	0.44	0.00	-0.44
14,661.00	87.81	89.71	8,947.61	295.69	5,759.53	5,759.53	0.75	0.07	0.75
14,757.00	88.08	89.58	8,951.05	296.29	5,855.47	5,855.47	0.31	0.28	-0.14
14,852.00	87.98	89.83	8,954.32	296.78	5,950.41	5,950.41	0.28	-0.11	0.26
14,948.00	88.15	89.70	8,957.56	297.17	6,046.36	6,046.36	0.22	0.18	-0.14
15,043.00	88.32	90.10	8,960.49	297.33	6,141.31	6,141.31	0.46	0.18	0.42
15,139.00	88.32	89.94	8,963.30	297.30	6,237.27	6,237.27	0.17	0.00	-0.17
15,234.00	88.58	89.70	8,965.87	297.60	6,332.24	6,332.24	0.37	0.27	-0.25
15,330.00	88.89	90.59	8,967.99	297.36	6,428.21	6,428.21	0.98	0.32	0.93
15,425.00	88.89	90.35	8,969.83	296.58	6,523.19	6,523.19	0.25	0.00	-0.25
15,521.00	89.32	90.19	8,971.33	296.13	6,619.18	6,619.18	0.48	0.45	-0.17
15,616.00	87.04	90.45	8,974.35	295.60	6,714.12	6,714.12	2.42	-2.40	0.27
15,712.00	87.17	90.41	8,979.19	294.88	6,810.00	6,810.00	0.14	0.14	-0.04
15,806.00	87.01	90.06	8,983.97	294.49	6,903.87	6,903.87	0.41	-0.17	-0.37
15,900.00	87.24	90.52	8,988.68	294.02	6,997.75	6,997.75	0.55	0.24	0.49
15,995.00	88.45	90.46	8,992.25	293.20	7,092.68	7,092.68	1.28	1.27	-0.06
16,090.00	88.59	90.80	8,994.71	292.16	7,187.64	7,187.64	0.39	0.15	0.36
16,184.00	88.65	90.05	8,996.97	291.46	7,281.61	7,281.61	0.80	0.06	-0.80

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 62H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3307.4' GE + 23.5' KB @ 3330.90usft
Site:	Onyx PWU 29-28	MD Reference:	3307.4' GE + 23.5' KB @ 3330.90usft
Well:	62H	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)
16,278.00	88.68	90.78	8,999.16	290.78	7,375.58	7,375.58	0.78	0.03	0.78
16,373.00	88.52	90.53	9,001.48	289.70	7,470.55	7,470.55	0.31	-0.17	-0.26
16,467.00	88.89	90.24	9,003.61	289.06	7,564.52	7,564.52	0.50	0.39	-0.31
16,562.00	88.99	90.04	9,005.36	288.83	7,659.51	7,659.51	0.24	0.11	-0.21
16,656.00	89.06	90.31	9,006.96	288.55	7,753.49	7,753.49	0.30	0.07	0.29
16,722.00	89.39	90.26	9,007.86	288.22	7,819.49	7,819.49	0.51	0.50	-0.08
16,795.00	89.39	90.26	9,008.63	287.89	7,892.48	7,892.48	0.00	0.00	0.00
Projection									

'GE + 23.5' KB @ 3330.90usft
nd Level: 3307.40



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.28°

Magnetic Field
Strength: 48144.6snT
Dip Angle: 60.45°
Date: 11/28/2017
Model: HDGM

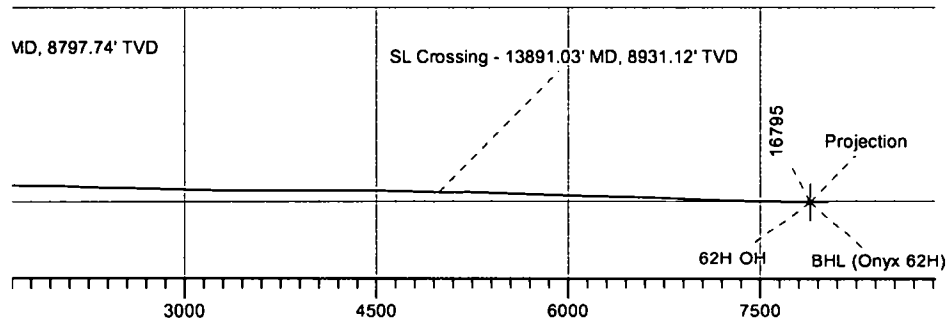
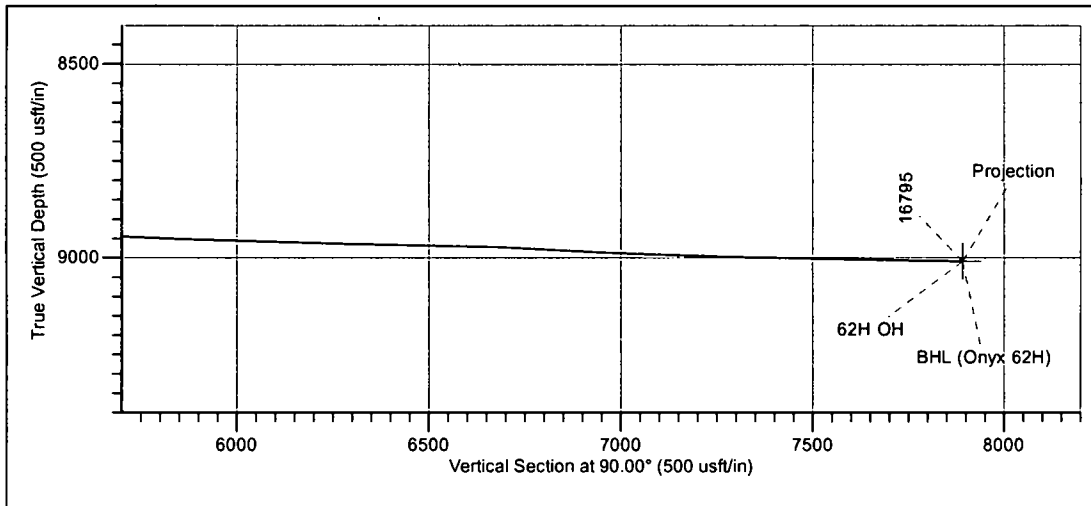
PROJECT DETAILS: Eddy County, NM (NAD-83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



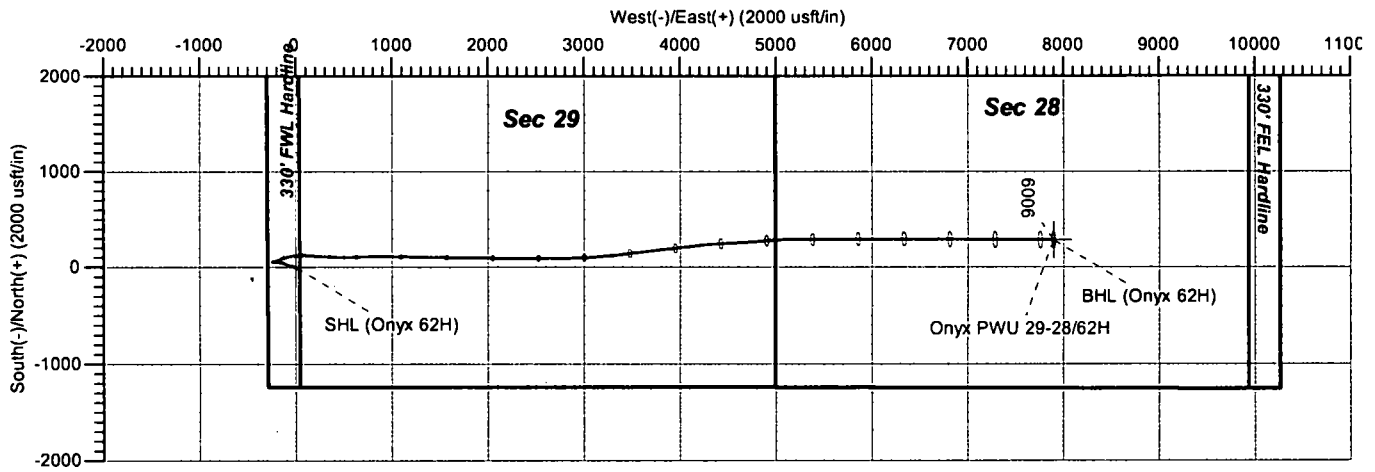
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL (Onyx 62H)	9008.63	287.89	7892.48	32° 37' 43.4290 N	104° 4' 44.3571 W
SHL (Onyx 62H)	0.00	0.00	0.00	32° 37' 40.7578 N	104° 6' 16.6570 W



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (62H/OH)
Onyx PWU 29-28
Created By: Dustin Ault
Date: _____
Approved: _____
Date: 14:10, January 08 2011



DESIGN TARGET DETAILS

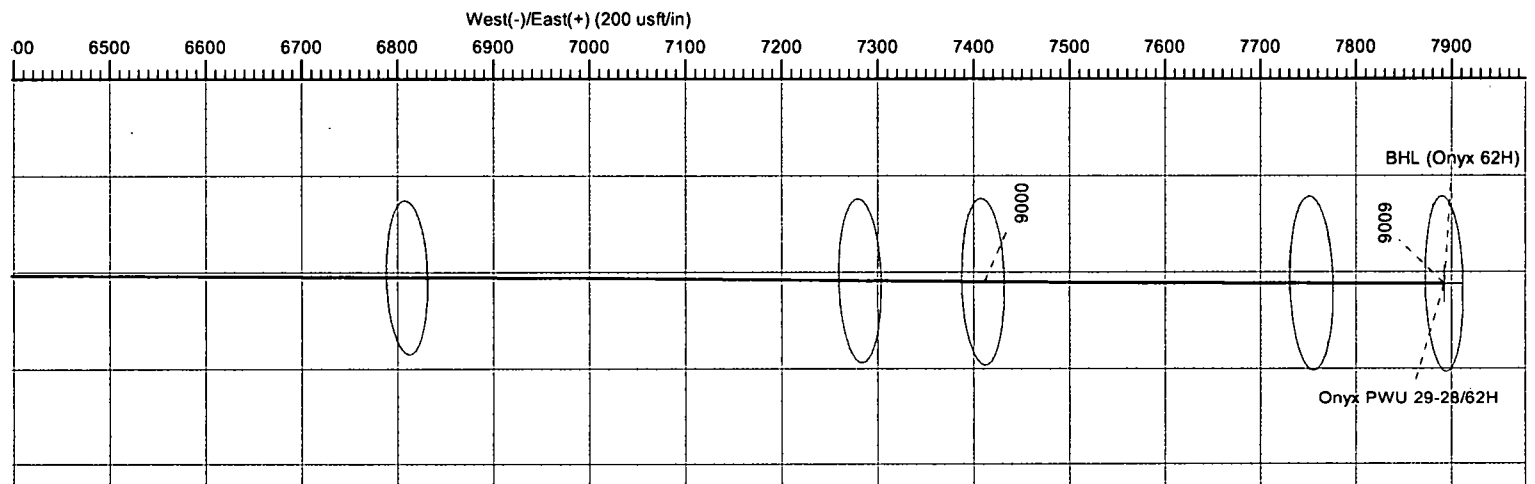
N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	592268.74	611746.36	32° 37' 40.7578 N	104° 6' 16.6570 W
17.89	7892.48	592556.63	619638.84	32° 37' 43.4290 N	104° 4' 44.3571 W

PROJECT DETAILS: Eddy County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

ACTUAL LINE CALLS

SHL: 1235' FSL & 292' FWL of Sec 29

BHL: 1536' FSL & 2372' FEL of Sec 28



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax 936/756-7595

Design: OH (62H/OH)
Onyx PWU 29-28
Created By: Dustin Ault
Date: 14:09, January 08 2011
Approved: _____ Date: _____

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office
NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 23 2018

GAS CAPTURE PLAN

RECEIVED

Original

Operator & OGRID No.: Devon Energy Production Co., LP (6137)

X Amended

Date: 07/25/2017

Reason for Amendment: Added wells to CTB

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (U.S.D.)	Footages	Expected MCE/D	Flared or Vented	Comments
Emerald PWU 20-21 12H	30-015-44097	Sec.20,T19S, R29E	990 FSL 330 FEL			Onyx 29 CTB I
Onyx PWU 29-28 9H	30-015-44098	Sec.29,T19S, R29E	440 FNL 330 FEL			Onyx 29 CTB I
Onyx PWU 29-28 10H	30-015-44363	Sec.29,T19S, R29E	440 FNL 330 FEL			Onyx 29 CTB I
Onyx PWU 29-28 11H	30-015-44372	Sec.29,T19S, R29E	2295 FSL380 FWL			Onyx 29 CTB I
Onyx PWU 29-28 12H	30-015-44355	Sec.29,T19S, R29E	1235FSL 322 FWL			Onyx 29 CTB I
Onyx PWU 29-28 62H	30-015-44362	Sec.29,T19S, R29E	1235FSL 292F WL			Onyx 29 CTB I

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to **DCP** and will be connected to **DCP** low/high pressure gathering system located in **Eddy** County, New Mexico. It will require **5066'** of pipeline to connect the facility to low/high pressure gathering system. **Devon Energy Production Co., LP** provides (periodically) to **DCP** a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, **Devon Energy Production Co., LP** and **DCP** have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at **DCP** Processing Plant located in **Sec. 19, TWN 19S, RNG 32E, Eddy** County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on **DCP** system at that time. Based on current information, it is **Devon Energy Production Co., LP** belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines