

Devon Energy

Eddy County, New Mexico (NAD 83)

Lusitano 27-34 FED COM

528H

30-015-44426

OH

**Provide Signature Page for
Directional Survey**

Design: OH

Standard Survey Report

14 August, 2018

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DISTRICT II-ARTESIA O.C.D.

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 528H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	GL 3336 + 26' KB @ 3362.00usft (ICD217)
Site:	Lusitano 27-34 FED COM	MD Reference:	GL 3336 + 26' KB @ 3362.00usft (ICD217)
Well:	528H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Project	Eddy County, New Mexico (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	Lusitano 27-34 FED COM				
Site Position:		Northing:	403,270.15 usft	Latitude:	32.107384
From:	Map	Easting:	719,382.96 usft	Longitude:	-103.758304
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.31 "

Well	528H					
Well Position	+N-S	0.00 usft	Northing:	403,269.76 usft	Latitude:	32.10736
	+E-W	0.00 usft	Easting:	719,322.89 usft	Longitude:	-103.75849
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,336.00 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/9/2017	6.99	59.92	47,808.81193556

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	180.00	

Survey Program	Date 8/14/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
148.50	975.50	Invictus MWD (OH)	MWD	OWSG MWD - Standard
1,058.00	19,055.00	Legacy MWD (OH)	MWD	OWSG MWD - Standard

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
148.50	0.50	266.71	148.50	-0.04	-0.65	0.04	0.34	0.34	0.00
237.50	0.10	287.71	237.50	-0.04	-1.11	0.04	0.46	-0.45	23.60
332.50	0.60	264.71	332.49	-0.06	-1.68	0.06	0.54	0.53	-24.21
426.50	0.60	269.71	426.49	-0.10	-2.67	0.10	0.06	0.00	5.32
520.50	0.60	252.71	520.48	-0.25	-3.63	0.25	0.19	0.00	-18.09
614.50	0.60	252.71	614.48	-0.55	-4.57	0.55	0.00	0.00	0.00
803.50	0.30	284.71	803.47	-0.71	-5.99	0.71	0.20	-0.16	16.93
897.50	0.60	232.71	897.47	-0.95	-6.62	0.95	0.51	0.32	-55.32
975.50	0.50	236.71	975.47	-1.38	-7.23	1.38	0.14	-0.13	5.13

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 Site: Lusitano 27-34 FED COM
 Well: 528H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 528H
 TVD Reference: GL 3336 + 26' KB @ 3362.00usft (ICD217)
 MD Reference: GL 3336 + 26' KB @ 3362.00usft (ICD217)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14 Single 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)
1,058.00	0.76	262.02	1,057.96	-1.66	-8.07	1.66	0.45	0.32	30.68
1,151.00	0.98	239.84	1,150.95	-2.14	-9.37	2.14	0.43	0.24	-23.85
1,244.00	1.37	240.01	1,243.93	-3.10	-11.02	3.10	0.42	0.42	0.18
1,336.00	1.16	247.45	1,335.91	-4.00	-12.83	4.00	0.29	-0.23	8.09
1,428.00	0.69	293.84	1,428.90	-4.14	-14.22	4.14	0.91	-0.51	49.88
1,523.00	1.14	321.65	1,522.89	-3.18	-15.31	3.18	0.66	0.48	29.59
1,615.00	1.75	336.77	1,614.86	-1.17	-16.44	1.17	0.78	0.66	16.43
1,708.00	2.59	353.43	1,707.79	2.22	-17.24	-2.22	1.12	0.90	17.91
1,802.00	3.60	356.98	1,801.65	7.28	-17.63	-7.28	1.09	1.07	3.78
1,896.00	4.30	356.96	1,895.43	13.75	-17.98	-13.75	0.74	0.74	-0.02
1,991.00	4.52	347.74	1,990.15	20.96	-18.96	-20.96	0.78	0.23	-9.71
2,084.00	4.76	342.23	2,082.84	28.22	-20.92	-28.22	0.54	0.26	-5.92
2,178.00	4.91	337.70	2,176.51	35.65	-23.63	-35.65	0.44	0.16	-4.82
2,272.00	4.55	337.58	2,270.19	42.82	-26.58	-42.82	0.38	-0.38	-0.13
2,367.00	4.28	337.11	2,364.91	49.57	-29.40	-49.57	0.29	-0.28	-0.49
2,462.00	3.82	338.35	2,459.67	55.78	-31.94	-55.78	0.49	-0.48	1.31
2,556.00	3.98	339.12	2,553.45	61.74	-34.26	-61.74	0.18	0.17	0.82
2,651.00	4.39	346.57	2,648.20	68.35	-36.28	-68.35	0.72	0.43	7.84
2,746.00	4.19	353.50	2,742.93	75.34	-37.52	-75.34	0.58	-0.21	7.29
2,841.00	4.72	351.77	2,837.65	82.65	-38.47	-82.65	0.58	0.56	-1.82
2,935.00	4.66	352.43	2,931.33	90.27	-39.53	-90.27	0.09	-0.06	0.70
3,031.00	4.18	357.19	3,027.05	97.63	-40.21	-97.63	0.63	-0.50	4.96
3,125.00	4.77	356.77	3,120.76	104.95	-40.60	-104.95	0.63	0.63	-0.45
3,220.00	5.59	350.84	3,215.37	113.46	-41.56	-113.46	1.03	0.86	-6.24
3,315.00	5.74	341.12	3,309.91	122.53	-43.83	-122.53	1.02	0.16	-10.23
3,410.00	5.17	335.49	3,404.48	130.92	-47.15	-130.92	0.82	-0.60	-5.93
3,505.00	4.42	333.28	3,499.15	138.08	-50.57	-138.08	0.81	-0.79	-2.33
3,600.00	4.33	337.28	3,593.87	144.66	-53.60	-144.66	0.33	-0.09	4.21
3,695.00	4.47	343.72	3,688.59	151.52	-56.02	-151.52	0.54	0.15	6.78
3,789.00	4.95	346.18	3,782.27	158.97	-58.02	-158.97	0.55	0.51	2.62
3,884.00	4.81	344.12	3,876.93	166.79	-60.09	-166.79	0.24	-0.15	-2.17
3,979.00	4.73	339.28	3,971.60	174.28	-62.56	-174.28	0.43	-0.08	-5.09
4,073.00	4.85	332.38	4,065.27	181.43	-65.78	-181.43	0.63	0.13	-7.34
4,168.00	4.24	331.70	4,159.97	188.08	-69.30	-188.08	0.64	-0.64	-0.72
4,262.00	4.44	329.03	4,253.70	194.26	-72.82	-194.26	0.30	0.21	-2.84
4,357.00	4.12	327.85	4,348.44	200.30	-76.53	-200.30	0.35	-0.34	-1.24
4,454.00	3.97	326.07	4,445.20	206.03	-80.26	-206.03	0.20	-0.15	-1.84
4,548.00	4.87	328.45	4,538.92	212.13	-84.16	-212.13	0.98	0.96	2.53
4,643.00	5.56	331.57	4,633.52	219.62	-88.47	-219.62	0.79	0.73	3.28
4,738.00	5.60	328.53	4,728.07	227.62	-93.08	-227.62	0.31	0.04	-3.20
4,833.00	6.02	337.63	4,822.59	236.18	-97.39	-236.18	1.06	0.44	9.58
4,928.00	5.89	339.21	4,917.07	245.34	-101.02	-245.34	0.22	-0.14	1.66
5,023.00	5.74	338.06	5,011.59	254.31	-104.52	-254.31	0.20	-0.16	-1.21

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 Design: OH

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5,117.00	5.73	337.33	5,105.12	263.00	-108.09	-263.00	0.08	-0.01	-0.78
5,212.00	5.61	337.72	5,199.65	271.67	-111.68	-271.67	0.13	-0.13	0.41
5,307.00	5.88	343.09	5,294.17	280.62	-114.85	-280.62	0.63	0.28	5.65
5,402.00	5.37	344.97	5,388.72	289.57	-117.42	-289.57	0.57	-0.54	1.98
5,497.00	5.13	339.54	5,483.32	297.84	-120.06	-297.84	0.58	-0.25	-5.72
5,592.00	5.85	346.89	5,577.88	306.54	-122.64	-306.54	1.06	0.76	7.74
5,687.00	6.29	345.78	5,672.35	316.30	-125.02	-316.30	0.48	0.46	-1.17
5,782.00	6.56	339.56	5,766.75	326.43	-128.19	-326.43	0.79	0.28	-6.55
5,877.00	6.30	342.78	5,861.16	336.49	-131.63	-336.49	0.47	-0.27	3.39
5,972.00	5.80	345.09	5,955.63	346.11	-134.41	-346.11	0.59	-0.53	2.43
6,067.00	4.08	350.38	6,050.27	354.08	-136.21	-354.08	1.87	-1.81	5.57
6,162.00	3.74	347.32	6,145.05	360.44	-137.45	-360.44	0.42	-0.36	-3.22
6,257.00	3.49	343.37	6,239.86	366.23	-138.96	-366.23	0.37	-0.26	-4.16
6,352.00	4.45	350.40	6,334.63	372.63	-140.40	-372.63	1.13	1.01	7.40
6,446.00	4.94	353.66	6,428.32	380.25	-141.46	-380.25	0.59	0.52	3.47
6,541.00	4.59	353.66	6,522.99	388.10	-142.33	-388.10	0.37	-0.37	0.00
6,635.00	4.11	355.29	6,616.72	395.19	-143.02	-395.19	0.53	-0.51	1.73
6,729.00	2.48	355.95	6,710.56	400.58	-143.44	-400.58	1.73	-1.73	0.70
6,824.00	2.01	348.75	6,805.49	404.26	-143.91	-404.26	0.58	-0.49	-7.58
6,919.00	1.63	353.18	6,900.44	407.24	-144.40	-407.24	0.43	-0.40	4.66
7,014.00	1.46	331.44	6,995.40	409.64	-145.14	-409.64	0.64	-0.18	-22.88
7,109.00	1.09	329.36	7,090.38	411.48	-146.17	-411.48	0.39	-0.39	-2.19
7,204.00	0.59	323.12	7,185.37	412.65	-146.93	-412.65	0.53	-0.53	-6.57
7,299.00	0.46	340.70	7,280.37	413.40	-147.35	-413.40	0.22	-0.14	18.51
7,393.00	0.23	243.54	7,374.37	413.67	-147.64	-413.67	0.57	-0.24	-103.36
7,488.00	0.08	86.29	7,469.37	413.59	-147.75	-413.59	0.32	-0.16	-165.53
7,582.00	0.74	124.32	7,563.36	413.26	-147.18	-413.26	0.72	0.70	40.46
7,677.00	0.88	143.72	7,658.35	412.32	-146.24	-412.32	0.32	0.15	20.42
7,772.00	0.78	60.35	7,753.35	412.05	-145.25	-412.05	1.16	-0.11	-87.76
7,866.00	1.36	7.53	7,847.33	413.48	-144.55	-413.48	1.15	0.62	-56.19
7,961.00	1.06	354.52	7,942.31	415.47	-144.48	-415.47	0.43	-0.32	-13.69
8,056.00	0.72	8.68	8,037.30	416.93	-144.48	-416.93	0.42	-0.36	14.91
8,151.00	0.38	86.98	8,132.30	417.54	-144.07	-417.54	0.78	-0.36	82.42
8,245.00	0.20	212.08	8,226.29	417.42	-143.85	-417.42	0.55	-0.19	133.09
8,309.00	0.16	224.28	8,290.29	417.26	-143.97	-417.26	0.09	-0.06	19.06
8,347.00	0.28	213.59	8,328.29	417.14	-144.06	-417.14	0.33	0.32	-28.13
8,371.00	0.98	207.13	8,352.29	416.91	-144.18	-416.91	2.93	2.92	-26.92
KOP 8371' MD / 8352.29' TVD									
8,442.00	7.10	177.29	8,423.09	411.98	-144.25	-411.98	8.83	8.62	-42.03
8,537.00	17.02	170.71	8,515.88	392.35	-141.72	-392.35	10.53	10.44	-6.93
8,582.00	20.60	167.00	8,558.47	378.13	-138.88	-378.13	8.38	7.96	-8.24
8,625.00	25.70	164.60	8,597.99	361.76	-134.70	-361.76	12.06	11.86	-5.58
8,657.00	30.32	159.74	8,626.24	347.48	-130.06	-347.48	16.09	14.44	-15.19

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 Wellbore: OH
 Design: OH

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8,689.00	35.00	157.74	8,653.17	331.40	-123.78	-331.40	15.01	14.63	-6.25
8,720.00	39.87	159.12	8,677.78	313.88	-116.86	-313.88	15.94	15.71	4.45
8,752.00	44.26	161.02	8,701.53	293.73	-109.57	-293.73	14.28	13.72	5.94
8,783.00	46.42	163.39	8,723.32	272.73	-102.84	-272.73	8.84	6.97	7.65
8,815.00	49.52	164.84	8,744.75	249.87	-98.35	-249.87	10.26	9.69	4.53
8,846.00	52.41	165.76	8,764.27	226.58	-90.24	-226.58	9.60	9.32	2.97
8,878.00	57.08	166.69	8,782.74	201.21	-84.03	-201.21	14.79	14.59	2.91
8,910.00	62.23	167.41	8,798.90	174.30	-77.84	-174.30	16.21	16.09	2.25
8,941.00	68.02	168.46	8,811.93	146.81	-71.97	-146.81	18.93	18.68	3.39
8,973.00	73.49	169.96	8,822.48	117.15	-66.33	-117.15	17.66	17.09	4.69
8,986.32	75.44	170.29	8,826.04	104.50	-64.13	-104.50	14.81	14.62	2.47
FTP 8986.32'MD / 8826.04'TVD									
9,005.00	78.17	170.74	8,830.31	86.57	-61.13	-86.57	14.81	14.63	2.42
9,028.00	81.31	172.00	8,834.40	64.19	-57.74	-64.19	14.68	13.65	5.48
9,057.00	84.84	172.19	8,837.90	35.68	-53.78	-35.68	12.19	12.17	0.66
9,152.00	91.68	174.74	8,840.78	-58.59	-42.98	58.59	7.68	7.20	2.68
9,246.00	90.03	176.51	8,839.38	-152.30	-35.81	152.30	2.57	-1.76	1.88
9,341.00	90.45	178.81	8,838.98	-247.21	-31.93	247.21	2.46	0.44	2.42
9,435.00	90.28	179.23	8,838.38	-341.20	-30.33	341.20	0.48	-0.18	0.45
9,529.00	89.33	178.87	8,838.70	-435.18	-28.77	435.18	1.08	-1.01	-0.38
9,624.00	89.33	178.41	8,839.81	-530.15	-26.51	530.15	0.48	0.00	-0.48
9,719.00	90.56	179.80	8,839.90	-625.13	-25.03	625.13	1.95	1.29	1.46
9,814.00	90.62	179.99	8,838.93	-720.13	-24.86	720.13	0.21	0.06	0.20
9,909.00	90.20	180.16	8,838.25	-815.13	-24.98	815.13	0.48	-0.44	0.18
10,004.00	89.78	181.64	8,838.26	-910.11	-26.47	910.11	1.62	-0.44	1.56
10,098.00	89.52	181.86	8,838.84	-1,004.07	-29.34	1,004.07	0.36	-0.28	0.23
10,193.00	87.95	181.25	8,840.93	-1,099.00	-31.92	1,099.00	1.77	-1.65	-0.64
10,288.00	88.82	180.06	8,843.61	-1,193.96	-33.00	1,193.96	1.55	0.92	-1.25
10,383.00	90.67	179.95	8,844.04	-1,288.95	-33.01	1,288.95	1.95	1.95	-0.12
10,477.00	90.62	178.42	8,842.98	-1,382.95	-32.50	1,382.95	0.57	-0.05	-0.56
10,569.00	90.70	179.65	8,841.92	-1,474.94	-31.75	1,474.94	0.26	0.09	0.25
10,660.00	90.08	178.85	8,841.30	-1,565.92	-30.56	1,565.92	1.11	-0.68	-0.88
10,751.00	90.56	178.75	8,840.79	-1,656.90	-28.65	1,656.90	0.54	0.53	-0.11
10,843.00	89.86	179.27	8,840.45	-1,748.89	-27.06	1,748.89	0.95	-0.76	0.57
10,935.00	90.45	179.83	8,840.20	-1,840.88	-26.34	1,840.88	0.88	0.64	0.61
11,027.00	89.50	180.85	8,840.24	-1,932.88	-26.89	1,932.88	1.52	-1.03	1.11
11,119.00	89.86	180.93	8,840.76	-2,024.87	-28.32	2,024.87	0.40	0.39	0.09
11,210.00	89.66	182.22	8,841.14	-2,115.83	-30.82	2,115.83	1.43	-0.22	1.42
11,303.00	91.06	183.50	8,840.55	-2,208.71	-35.46	2,208.71	2.04	1.51	1.38
11,396.00	88.57	180.07	8,840.85	-2,301.64	-38.35	2,301.64	4.56	-2.68	-3.69
11,488.00	89.05	179.31	8,842.77	-2,393.62	-37.86	2,393.62	0.98	0.52	-0.83
11,582.00	88.74	179.59	8,844.58	-2,487.60	-36.95	2,487.60	0.44	-0.33	0.30
11,675.00	88.21	179.60	8,847.05	-2,580.56	-36.30	2,580.56	0.57	-0.57	0.01
11,767.00	89.75	178.89	8,848.69	-2,672.54	-35.08	2,672.54	1.84	1.67	-0.77

Survey Report

Company: Devon Energy
 Project: Eddy County, New Mexico (NAD 83)
 Site: Lusitano 27-34 FED COM
 Well: 528H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 528H
 TVD Reference: GL 3336 + 26' KB @ 3362.00usft (ICD217)
 MD Reference: GL 3336 + 26' KB @ 3362.00usft (ICD217)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14 Single User Db

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)
11,860.00	89.30	179.20	8,849.46	-2,765.52	-33.53	2,765.52	0.59	-0.48	0.33
11,955.00	90.84	178.99	8,849.35	-2,860.50	-32.03	2,860.50	1.64	1.62	-0.22
12,050.00	91.21	179.14	8,847.65	-2,955.48	-30.48	2,955.48	0.42	0.39	0.16
12,145.00	91.51	178.99	8,845.39	-3,050.44	-28.93	3,050.44	0.35	0.32	-0.16
12,240.00	91.49	178.46	8,842.90	-3,145.38	-26.82	3,145.38	0.56	-0.02	-0.56
12,334.00	90.56	178.70	8,841.22	-3,239.34	-24.49	3,239.34	1.02	-0.99	0.26
12,429.00	90.53	178.49	8,840.32	-3,334.30	-22.16	3,334.30	0.22	-0.03	-0.22
12,523.00	90.73	179.14	8,839.29	-3,428.28	-20.22	3,428.28	0.72	0.21	0.69
12,618.00	89.92	179.41	8,838.75	-3,523.27	-19.02	3,523.27	0.90	-0.85	0.28
12,712.00	88.88	178.85	8,839.73	-3,617.25	-17.59	3,617.25	1.26	-1.11	-0.80
12,807.00	90.06	179.29	8,840.61	-3,712.23	-16.05	3,712.23	1.33	1.24	0.46
12,902.00	89.75	179.47	8,840.77	-3,807.22	-15.02	3,807.22	0.38	-0.33	0.19
12,996.00	86.91	176.93	8,843.51	-3,901.12	-12.07	3,901.12	4.05	-3.02	-2.70
13,091.00	87.39	177.26	8,848.23	-3,995.88	-7.26	3,995.88	0.61	0.51	0.35
13,186.00	91.09	178.98	8,849.49	-4,090.80	-4.15	4,090.80	4.29	3.89	1.81
13,281.00	93.34	181.90	8,845.82	-4,185.71	-4.87	4,185.71	3.88	2.37	3.07
13,376.00	93.25	183.08	8,840.36	-4,280.46	-8.99	4,280.46	1.24	-0.09	1.24
13,471.00	91.37	182.68	8,836.53	-4,375.26	-13.76	4,375.26	2.02	-1.98	-0.42
13,566.00	89.72	181.29	8,835.63	-4,470.19	-17.05	4,470.19	2.27	-1.74	-1.46
13,660.00	88.71	180.99	8,836.91	-4,564.17	-18.92	4,564.17	1.12	-1.07	-0.32
13,755.00	88.57	180.16	8,839.17	-4,659.13	-19.88	4,659.13	0.89	-0.15	-0.87
13,850.00	87.76	179.49	8,842.21	-4,754.08	-19.59	4,754.08	1.11	-0.85	-0.71
13,945.00	89.10	179.43	8,844.81	-4,849.04	-18.69	4,849.04	1.41	1.41	-0.06
14,039.00	90.59	178.40	8,845.07	-4,943.02	-16.91	4,943.02	1.93	1.59	-1.10
14,134.00	91.29	178.49	8,843.51	-5,037.97	-14.33	5,037.97	0.74	0.74	0.09
14,230.00	91.04	178.94	8,841.56	-5,133.93	-12.18	5,133.93	0.54	-0.26	0.47
14,324.00	89.80	180.33	8,840.87	-5,227.92	-11.58	5,227.92	1.98	-1.32	1.48
14,419.00	89.38	180.40	8,841.55	-5,322.91	-12.19	5,322.91	0.45	-0.44	0.07
14,513.00	90.90	180.47	8,841.32	-5,416.91	-12.90	5,416.91	1.62	1.62	0.07
14,608.00	90.78	180.03	8,839.93	-5,511.90	-13.32	5,511.90	0.48	-0.13	-0.46
14,703.00	89.72	179.54	8,839.51	-5,606.89	-12.96	5,606.89	1.23	-1.12	-0.52
14,798.00	91.09	181.19	8,838.84	-5,701.88	-13.56	5,701.88	2.26	1.44	1.74
14,892.00	90.76	181.46	8,837.32	-5,795.85	-15.74	5,795.85	0.45	-0.35	0.29
14,988.00	90.48	181.50	8,836.28	-5,891.81	-18.22	5,891.81	0.29	-0.29	0.04
15,083.00	89.55	181.61	8,836.26	-5,986.77	-20.80	5,986.77	0.99	-0.98	0.12
15,177.00	90.78	181.20	8,835.99	-6,080.74	-23.10	6,080.74	1.38	1.31	-0.44
15,272.00	89.55	179.81	8,835.71	-6,175.73	-23.94	6,175.73	1.95	-1.29	-1.46
15,367.00	89.86	178.84	8,836.20	-6,270.72	-22.82	6,270.72	1.07	0.33	-1.02
15,462.00	89.78	177.76	8,836.50	-6,365.68	-20.00	6,365.68	1.14	-0.08	-1.14
15,557.00	89.80	178.46	8,836.85	-6,460.63	-16.87	6,460.63	0.74	0.02	0.74
15,651.00	89.08	178.50	8,837.77	-6,554.59	-14.37	6,554.59	0.77	-0.77	0.04
15,746.00	90.42	178.61	8,838.18	-6,649.56	-11.98	6,649.56	1.42	1.41	0.12
15,841.00	90.73	178.37	8,837.23	-6,744.52	-9.47	6,744.52	0.41	0.33	-0.25

Survey Report

Company: Devon Energy
 Project: Eddy County, New Mexico (NAD 83)
 Site: Lusitano 27-34 FED COM
 Well: 528H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 528H
 TVD Reference: GL 3336 + 26' KB @ 3362.00usft (ICD217)
 MD Reference: GL 3336 + 26' KB @ 3362.00usft (ICD217)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14 Single User Db

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)
15,936.00	91.26	178.60	8,835.58	-6,839.47	-6.96	6,839.47	0.61	0.56	0.24
16,030.00	89.13	178.89	8,835.26	-6,933.44	-4.90	6,933.44	2.29	-2.27	0.31
16,125.00	89.02	179.48	8,836.79	-7,028.42	-3.55	7,028.42	0.63	-0.12	0.62
16,220.00	88.77	179.26	8,838.63	-7,123.40	-2.51	7,123.40	0.35	-0.26	-0.23
16,315.00	88.32	179.24	8,841.04	-7,218.36	-1.27	7,218.36	0.47	-0.47	-0.02
16,410.00	89.47	179.27	8,842.87	-7,313.33	-0.03	7,313.33	1.21	1.21	0.03
16,505.00	88.68	178.82	8,844.40	-7,408.30	1.55	7,408.30	0.96	-0.83	-0.47
16,599.00	89.02	179.21	8,846.29	-7,502.27	3.17	7,502.27	0.55	0.36	0.41
16,694.00	91.43	180.29	8,845.92	-7,597.26	3.58	7,597.26	2.78	2.54	1.14
16,789.00	92.41	180.69	8,842.73	-7,692.20	2.77	7,692.20	1.11	1.03	0.42
16,884.00	92.69	180.61	8,838.51	-7,787.10	1.69	7,787.10	0.31	0.29	-0.08
16,979.00	92.64	180.31	8,834.09	-7,882.00	0.93	7,882.00	0.32	-0.05	-0.32
17,074.00	93.20	180.31	8,829.25	-7,976.87	0.42	7,976.87	0.59	0.59	0.00
17,168.00	90.84	178.93	8,825.94	-8,070.80	1.04	8,070.80	2.91	-2.51	-1.47
17,263.00	91.40	178.43	8,824.08	-8,165.76	3.23	8,165.76	0.79	0.59	-0.53
17,358.00	91.15	179.60	8,821.97	-8,260.72	4.86	8,260.72	1.26	-0.26	1.23
17,452.00	92.55	180.75	8,818.93	-8,354.66	4.58	8,354.66	1.93	1.49	1.22
17,547.00	93.03	181.63	8,814.31	-8,449.53	2.61	8,449.53	1.05	0.51	0.93
17,641.00	92.64	181.49	8,809.66	-8,543.38	0.05	8,543.38	0.44	-0.41	-0.15
17,736.00	93.20	182.11	8,804.82	-8,638.21	-2.93	8,638.21	0.88	0.59	0.65
17,830.00	94.91	182.89	8,798.17	-8,731.88	-7.02	8,731.88	2.00	1.82	0.83
17,925.00	93.11	182.09	8,791.53	-8,826.55	-11.14	8,826.55	2.07	-1.89	-0.84
18,020.00	91.85	181.14	8,787.42	-8,921.42	-13.81	8,921.42	1.66	-1.33	-1.00
18,115.00	91.79	181.25	8,784.40	-9,016.36	-15.79	9,016.36	0.13	-0.06	0.12
18,210.00	91.68	180.29	8,781.52	-9,111.30	-17.07	9,111.30	1.02	-0.12	-1.01
18,304.00	90.39	178.82	8,779.83	-9,205.28	-16.34	9,205.28	2.08	-1.37	-1.56
18,399.00	90.31	177.99	8,779.25	-9,300.24	-13.69	9,300.24	0.88	-0.08	-0.87
18,493.00	91.18	177.94	8,778.02	-9,394.17	-10.35	9,394.17	0.93	0.93	-0.05
18,588.00	92.10	178.12	8,775.31	-9,489.08	-7.09	9,489.08	0.99	0.97	0.19
18,683.00	92.27	177.87	8,771.68	-9,583.95	-3.77	9,583.95	0.32	0.18	-0.26
18,778.00	93.08	177.56	8,767.25	-9,678.77	0.01	9,678.77	0.91	0.85	-0.33
18,872.00	93.62	177.02	8,761.76	-9,772.50	4.45	9,772.50	0.81	0.57	-0.57
18,919.30	93.73	177.13	8,758.73	-9,819.64	6.86	9,819.64	0.32	0.23	0.23
LTP 18919.30' MD / 8758.73'TVD									
18,968.00	93.84	177.24	8,755.51	-9,868.18	9.25	9,868.18	0.32	0.23	0.23
18,992.00	93.65	177.78	8,753.94	-9,892.10	10.29	9,892.10	2.38	-0.79	2.25
Last Survey 18992' MD / 8753.94'TVD									
19,055.00	93.65	177.78	8,749.93	-9,954.93	12.72	9,954.93	0.00	0.00	0.00
PTB 19055' MD / 8749.93'TVD									

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 528H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	GL 3336 + 26' KB @ 3362.00usft (ICD217)
Site:	Lusitano 27-34 FED COM	MD Reference:	GL 3336 + 26' KB @ 3362.00usft (ICD217)
Well:	528H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,371.00	8,352.29	416.91	-144.18	KOP 8371'MD / 8352.29'TVD
8,986.32	8,826.04	104.50	-64.13	FTP 8986.32'MD / 8826.04'TVD
18,919.30	8,758.73	-9,819.64	6.86	LTP 18919.30'MD / 8758.73'TVD
18,992.00	8,753.94	-9,892.10	10.29	Last Survey 18992'MD / 8753.94'TVD
19,055.00	8,749.93	-9,954.93	12.72	PTB 19055'MD / 8749.93'TVD

Checked By: _____	Approved By: _____	Date: _____
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devon

Company: Devon Energy
 Field: Eddy County, New Mexico (NAD 83)
 Location: Lusitano 27-34 FED COM
 Well: 528H
 OH
 Plan: Plan 8
 GL 3336 + 26' KB @ 3362.00usft (ICD217)



Azimuths to North
 True North: -0.31°
 Magnetic North: 6.68°
 Magnetic Field
 Strength: 47808.8snT
 Dip Angle: 59.92°
 Date: 11/8/2017
 Model: IGRF2015

LEGACY DIRECTIONAL

To convert a Magnetic Direction to a Grid Direction, Add 6.68°
 To convert a True Direction to a Grid Direction, Subtract 0.31°

PROJECT DETAILS: Eddy County, New Mexico (NAD 83)

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

System Datum: Mean Sea Level

WELL DETAILS: 528H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	403269.76	719322.89	32.107363	-103.758498

Last Survey: 18992.00°MD / 8753.94°TVD
 257.61° FSL / 371.40°FEL
 Y= 393377.65 X= 719333.17
 Lat: 32.080172 Long: -103.758635

PTB: 19055°MD / 8749.93°TVD
 194.77°FSL / 369.30°FEL
 Y=393314.83 X=719335.61
 Lat 32.079999 Long -103.758629

