

devon

Devon Energy Corporation

**Lea Co., NM
Fighting Okra
18-19 Fed 84H**

HOBBS OCD

MAR 15 2019

RECEIVED

OH

Design: Surveys

Standard Survey Report

27 June, 2018





Nabors
Survey Report



Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 18-19 Fed 84H
Project:	Lea Co., NM	TVD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Site:	Fighting Okra	MD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Well:	18-19 Fed 84H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Ryan USA_ODBC_32bit

Project	Lea Co., NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Fighting Okra		
Site Position:		Northing:	382,643.650 usft
From:	Map	Easting:	798,304.660 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 57.314755 N
		Longitude:	103° 30' 14.199003 W
		Grid Convergence:	0.44 °

Well	18-19 Fed 84H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	32° 2' 57.310195 N
		Longitude:	103° 30' 13.502135 W
		Ground Level:	3,369.50 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/1/2018	6.72	59.75	47,818.30000000

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	180.00	

Survey Program	Date 6/27/2018				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
273.00	700.00	Survey #1 (OH)	MWD+HRGM	OWSG MWD + HRGM	
700.00	22,670.00	Survey #2 - NDS MWD (OH)	MWD+HRGM	OWSG MWD + HRGM	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
273.00	1.06	248.34	272.98	-0.93	-2.35	0.93	0.39	0.39	0.00	
365.00	0.94	241.84	364.97	-1.60	-3.80	1.60	0.18	-0.13	-7.07	
439.00	1.06	249.75	438.96	-2.13	-4.98	2.13	0.25	0.16	10.69	
546.00	0.88	240.43	545.94	-2.87	-6.62	2.87	0.22	-0.17	-8.71	
637.00	0.88	233.58	636.93	-3.63	-7.79	3.63	0.12	0.00	-7.53	
700.00	0.88	218.81	699.93	-4.30	-8.49	4.30	0.36	0.00	-23.44	
826.00	0.81	221.08	825.91	-5.72	-9.68	5.72	0.06	-0.06	1.80	
874.00	0.75	211.94	873.91	-6.25	-10.07	6.25	0.29	-0.13	-19.04	
964.00	1.13	117.73	963.90	-7.16	-9.59	7.16	1.56	0.42	-104.68	



Nabors
Survey Report



Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 18-19 Fed 84H
Project:	Lea Co., NM	TVD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Site:	Fighting Okra	MD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Well:	18-19 Fed 84H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Ryan USA_ODBC_32bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,055.00	1.25	120.71	1,054.88	-8.08	-7.95	8.08	0.15	0.13	3.27
1,145.00	1.06	114.91	1,144.86	-8.93	-6.35	8.93	0.25	-0.21	-6.44
1,235.00	0.88	114.56	1,234.85	-9.57	-4.96	9.57	0.20	-0.20	-0.39
1,328.00	0.75	118.60	1,327.84	-10.16	-3.78	10.16	0.15	-0.14	4.34
1,423.00	0.94	133.19	1,422.83	-10.99	-2.66	10.99	0.30	0.20	15.36
1,517.00	1.13	86.61	1,516.82	-11.46	-1.18	11.46	0.89	0.20	-49.55
1,611.00	1.00	90.83	1,610.80	-11.42	0.57	11.42	0.16	-0.14	4.49
1,706.00	1.75	33.17	1,705.77	-10.22	2.19	10.22	1.56	0.79	-60.69
1,801.00	1.81	30.71	1,800.73	-7.72	3.75	7.72	0.10	0.06	-2.59
1,896.00	2.63	25.97	1,895.66	-4.47	5.47	4.47	0.88	0.86	-4.99
1,990.00	2.75	23.16	1,989.55	-0.45	7.30	0.45	0.19	0.13	-2.99
2,085.00	3.63	31.42	2,084.41	4.21	9.77	-4.21	1.04	0.93	8.69
2,180.00	4.94	43.02	2,179.14	9.77	14.13	-9.77	1.65	1.38	12.21
2,275.00	6.06	54.44	2,273.70	15.67	21.00	-15.67	1.64	1.18	12.02
2,370.00	6.44	58.14	2,368.14	21.40	29.60	-21.40	0.58	0.40	3.89
2,465.00	6.50	57.96	2,462.53	27.07	38.68	-27.07	0.07	0.06	-0.19
2,560.00	6.31	58.66	2,556.94	32.63	47.70	-32.63	0.22	-0.20	0.74
2,655.00	6.38	58.31	2,651.36	38.12	56.65	-38.12	0.08	0.07	-0.37
2,750.00	6.44	55.15	2,745.77	43.94	65.51	-43.94	0.38	0.06	-3.33
2,845.00	6.44	51.81	2,840.17	50.28	74.07	-50.28	0.39	0.00	-3.52
2,940.00	5.63	59.01	2,934.64	55.97	82.26	-55.97	1.17	-0.85	7.58
3,035.00	5.88	61.83	3,029.16	60.67	90.54	-60.67	0.40	0.26	2.97
3,130.00	6.63	64.46	3,123.60	65.33	99.78	-65.33	0.84	0.79	2.77
3,225.00	7.19	66.92	3,217.91	70.02	110.20	-70.02	0.67	0.59	2.59
3,319.00	7.50	67.80	3,311.13	74.65	121.29	-74.65	0.35	0.33	0.94
3,414.00	7.44	63.41	3,405.33	79.74	132.53	-79.74	0.60	-0.06	-4.62
3,509.00	6.94	60.42	3,499.58	85.33	143.02	-85.33	0.66	-0.53	-3.15
3,604.00	7.19	59.89	3,593.86	91.15	153.15	-91.15	0.27	0.26	-0.56
3,699.00	6.88	65.69	3,688.15	96.47	163.48	-96.47	0.82	-0.33	6.11
3,794.00	7.63	66.57	3,782.39	101.32	174.46	-101.32	0.80	0.79	0.93
3,888.00	7.50	67.28	3,875.57	106.17	185.84	-106.17	0.17	-0.14	0.76
3,983.00	7.00	70.97	3,969.81	110.45	197.03	-110.45	0.72	-0.53	3.88
4,077.00	6.13	61.48	4,063.19	114.72	206.86	-114.72	1.48	-0.93	-10.10
4,172.00	6.56	58.31	4,157.61	119.99	215.93	-119.99	0.58	0.45	-3.34
4,267.00	6.25	56.20	4,252.02	125.72	224.85	-125.72	0.41	-0.33	-2.22
4,361.00	5.69	51.10	4,345.51	131.49	232.72	-131.49	0.82	-0.60	-5.43
4,456.00	6.38	55.67	4,439.98	137.43	240.75	-137.43	0.88	0.73	4.81
4,551.00	6.44	63.41	4,534.39	142.79	249.87	-142.79	0.91	0.06	8.15
4,646.00	6.44	61.83	4,628.79	147.69	259.33	-147.69	0.19	0.00	-1.66
4,740.00	6.38	63.06	4,722.20	152.54	268.64	-152.54	0.16	-0.06	1.31
4,835.00	5.94	63.23	4,816.65	157.15	277.73	-157.15	0.46	-0.46	0.18
4,930.00	5.63	65.52	4,911.17	161.29	286.36	-161.29	0.41	-0.33	2.41
5,024.00	5.38	73.60	5,004.74	164.45	294.78	-164.45	0.87	-0.27	8.60



Nabors
Survey Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Site: Fighting Okra
Well: 18-19 Fed 84H
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well 18-19 Fed 84H
TVD Reference: KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
MD Reference: KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Ryan USA_ODBC_32bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,119.00	5.38	76.77	5,099.32	166.72	303.39	-166.72	0.31	0.00	3.34
5,212.00	4.56	75.89	5,191.97	168.62	311.22	-168.62	0.89	-0.88	-0.95
5,307.00	4.31	56.38	5,286.69	171.52	317.86	-171.52	1.60	-0.26	-20.54
5,400.00	4.38	54.62	5,379.42	175.51	323.66	-175.51	0.16	0.08	-1.89
5,495.00	4.94	55.50	5,474.11	179.93	329.99	-179.93	0.59	0.59	0.93
5,589.00	5.44	54.44	5,567.72	184.81	336.95	-184.81	0.54	0.53	-1.13
5,683.00	6.56	57.61	5,661.21	190.28	345.11	-190.28	1.24	1.19	3.37
5,777.00	6.88	61.65	5,754.56	195.83	354.60	-195.83	0.61	0.34	4.30
5,871.00	6.94	63.76	5,847.88	201.01	364.65	-201.01	0.28	0.06	2.24
5,964.00	6.69	61.65	5,940.22	206.07	374.46	-206.07	0.38	-0.27	-2.27
6,057.00	6.38	60.95	6,032.62	211.15	383.74	-211.15	0.34	-0.33	-0.75
6,152.00	7.25	67.28	6,126.95	216.03	393.88	-216.03	1.21	0.92	6.66
6,247.00	7.25	67.10	6,221.19	220.68	404.94	-220.68	0.02	0.00	-0.19
6,342.00	6.63	66.75	6,315.49	225.18	415.50	-225.18	0.65	-0.65	-0.37
6,436.00	7.38	64.82	6,408.79	229.89	425.95	-229.89	0.84	0.80	-2.05
6,531.00	7.19	65.34	6,503.02	234.96	436.87	-234.96	0.21	-0.20	0.55
6,625.00	6.94	63.23	6,596.31	239.98	447.29	-239.98	0.38	-0.27	-2.24
6,719.00	6.50	63.76	6,689.66	244.89	457.13	-244.89	0.47	-0.47	0.56
6,813.00	6.19	62.71	6,783.09	249.56	466.41	-249.56	0.35	-0.33	-1.12
6,908.00	6.19	66.57	6,877.53	253.95	475.66	-253.95	0.44	0.00	4.06
7,002.00	7.25	66.05	6,970.89	258.37	485.73	-258.37	1.13	1.13	-0.55
7,097.00	7.25	65.52	7,065.13	263.29	496.66	-263.29	0.07	0.00	-0.56
7,191.00	7.00	65.34	7,158.40	268.13	507.27	-268.13	0.27	-0.27	-0.19
7,286.00	6.63	66.40	7,252.73	272.75	517.55	-272.75	0.41	-0.39	1.12
7,381.00	6.38	66.05	7,347.12	277.08	527.40	-277.08	0.27	-0.26	-0.37
7,475.00	5.81	66.75	7,440.59	281.08	536.55	-281.08	0.61	-0.61	0.74
7,570.00	5.44	67.28	7,535.13	284.72	545.12	-284.72	0.39	-0.39	0.56
7,663.00	5.06	66.92	7,627.74	288.03	552.96	-288.03	0.41	-0.41	-0.39
7,758.00	5.63	64.11	7,722.32	291.71	561.00	-291.71	0.66	0.60	-2.96
7,854.00	5.56	62.53	7,817.87	295.91	569.37	-295.91	0.18	-0.07	-1.65
7,949.00	6.13	64.99	7,912.37	300.18	578.05	-300.18	0.66	0.60	2.59
8,044.00	6.00	65.87	8,006.84	304.35	587.17	-304.35	0.17	-0.14	0.93
8,137.00	5.63	65.87	8,099.36	308.20	595.77	-308.20	0.40	-0.40	0.00
8,232.00	5.06	63.76	8,193.95	311.96	603.78	-311.96	0.63	-0.60	-2.22
8,325.00	4.50	65.87	8,286.63	315.26	610.79	-315.26	0.63	-0.60	2.27
8,419.00	4.31	68.33	8,380.35	318.08	617.44	-318.08	0.29	-0.20	2.62
8,514.00	4.06	69.74	8,475.09	320.56	623.91	-320.56	0.28	-0.26	1.48
8,609.00	3.81	74.83	8,569.87	322.55	630.11	-322.55	0.45	-0.26	5.36
8,704.00	3.50	78.00	8,664.68	323.98	636.00	-323.98	0.39	-0.33	3.34
8,799.00	2.31	71.85	8,759.55	325.18	640.65	-325.18	1.29	-1.25	-6.47
8,894.00	2.19	75.54	8,854.48	326.23	644.23	-326.23	0.20	-0.13	3.88
8,989.00	1.88	78.70	8,949.42	326.99	647.51	-326.99	0.35	-0.33	3.33
9,084.00	1.56	82.74	9,044.38	327.45	650.33	-327.45	0.36	-0.34	4.25

Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 18-19 Fed 84H
Project:	Lea Co., NM	TVD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Site:	Fighting Okra	MD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Well:	18-19 Fed 84H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Ryan USA_ODBC_32bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,180.00	1.19	91.01	9,140.35	327.60	652.62	-327.60	0.44	-0.39	8.61
9,274.00	0.94	95.93	9,234.33	327.51	654.36	-327.51	0.28	-0.27	5.23
9,370.00	0.75	85.73	9,330.32	327.47	655.77	-327.47	0.25	-0.20	-10.63
9,465.00	0.63	99.44	9,425.32	327.43	656.91	-327.43	0.21	-0.13	14.43
9,561.00	0.38	111.92	9,521.31	327.23	657.72	-327.23	0.28	-0.26	13.00
9,655.00	0.19	154.46	9,615.31	326.97	658.08	-326.97	0.29	-0.20	45.26
9,748.00	0.25	285.24	9,708.31	326.88	657.95	-326.88	0.43	0.06	140.62
9,843.00	0.38	255.19	9,803.31	326.86	657.44	-326.86	0.22	0.14	-31.63
9,938.00	1.00	233.39	9,898.30	326.28	656.47	-326.28	0.70	0.65	-22.95
10,033.00	1.31	237.43	9,993.28	325.20	654.89	-325.20	0.34	0.33	4.25
10,128.00	1.31	235.85	10,088.26	324.01	653.08	-324.01	0.04	0.00	-1.66
10,222.00	1.56	227.06	10,182.23	322.53	651.25	-322.53	0.35	0.27	-9.35
10,317.00	1.44	228.64	10,277.20	320.86	649.41	-320.86	0.13	-0.13	1.66
10,410.00	1.50	243.23	10,370.17	319.54	647.45	-319.54	0.41	0.06	15.69
10,505.00	1.44	257.65	10,465.14	318.73	645.17	-318.73	0.39	-0.06	15.18
10,599.00	1.19	289.11	10,559.11	318.80	643.10	-318.80	0.80	-0.27	33.47
10,694.00	1.44	292.10	10,654.09	319.57	641.06	-319.57	0.27	0.26	3.15
10,788.00	1.31	301.59	10,748.06	320.57	639.05	-320.57	0.28	-0.14	10.10
10,883.00	1.63	332.71	10,843.03	322.34	637.50	-322.34	0.89	0.34	32.76
10,978.00	2.13	0.30	10,937.98	325.31	636.89	-325.31	1.07	0.53	29.04
11,073.00	2.19	12.43	11,032.91	328.85	637.29	-328.85	0.48	0.06	12.77
11,167.00	2.31	22.80	11,126.84	332.35	638.41	-332.35	0.45	0.13	11.03
11,261.00	2.06	26.67	11,220.77	335.61	639.91	-335.61	0.31	-0.27	4.12
11,355.00	1.94	21.40	11,314.72	338.60	641.25	-338.60	0.23	-0.13	-5.61
11,451.00	1.56	11.90	11,410.67	341.39	642.11	-341.39	0.50	-0.40	-9.90
11,546.00	2.38	23.51	11,505.61	344.46	643.16	-344.46	0.96	0.86	12.22
11,640.00	1.94	53.74	11,599.55	347.19	645.22	-347.19	1.28	-0.47	32.16
11,736.00	2.38	74.48	11,695.48	348.69	648.45	-348.69	0.93	0.46	21.60
11,833.00	1.19	149.19	11,792.44	348.36	650.91	-348.36	2.44	-1.23	77.02
11,927.00	1.00	133.90	11,886.43	346.95	652.00	-346.95	0.37	-0.20	-16.27
12,022.00	0.69	119.66	11,981.42	346.10	653.10	-346.10	0.39	-0.33	-14.99
12,117.00	0.56	71.49	12,076.41	345.96	654.03	-345.96	0.55	-0.14	-50.71
12,211.00	1.50	166.77	12,170.40	344.91	654.75	-344.91	1.75	1.00	101.36
12,243.00	4.56	178.72	12,202.35	343.23	654.87	-343.23	9.71	9.56	37.34
12,274.00	8.00	179.42	12,233.16	339.84	654.92	-339.84	11.10	11.10	2.26
12,292.57	9.72	179.77	12,251.51	336.98	654.94	-336.98	9.29	9.29	1.91
Fighting Okra_84H_KOP									
12,305.00	10.88	179.95	12,263.74	334.75	654.95	-334.75	9.29	9.29	1.41
12,337.00	14.88	177.67	12,294.93	327.63	655.12	-327.63	12.60	12.50	-7.13
12,401.00	20.44	175.30	12,355.89	308.26	656.37	-308.26	8.76	8.69	-3.70
12,495.00	26.44	175.03	12,442.09	271.02	659.53	-271.02	6.38	6.38	-0.29
12,590.00	32.44	173.10	12,524.79	224.61	664.43	-224.61	6.39	6.32	-2.03
12,621.00	37.19	177.84	12,550.24	206.98	665.78	-206.98	17.63	15.32	15.29
12,653.00	41.38	179.60	12,575.00	186.73	666.22	-186.73	13.55	13.09	5.50

Company: Devon Energy Corporation
Project: Lea Co., NM
Site: Fighting Okra
Well: 18-19 Fed 84H
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well 18-19 Fed 84H
TVD Reference: KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
MD Reference: KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Ryan USA_ODBC_32bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,685.00	44.75	181.18	12,598.38	164.89	666.06	-164.89	11.06	10.53	4.94
12,716.00	49.06	181.53	12,619.55	142.26	665.52	-142.26	13.93	13.90	1.13
12,748.00	53.75	180.48	12,639.51	117.26	665.09	-117.26	14.88	14.66	-3.28
12,779.00	57.69	179.07	12,656.96	91.65	665.20	-91.65	13.25	12.71	-4.55
12,828.00	67.19	179.25	12,679.61	48.27	665.83	-48.27	19.39	19.39	0.37
12,873.00	73.94	179.78	12,694.57	5.86	666.19	-5.86	15.04	15.00	1.18
12,967.00	82.13	180.48	12,714.05	-86.02	665.97	86.02	8.74	8.71	0.74
13,001.00	84.31	180.65	12,718.06	-119.78	665.64	119.78	6.43	6.41	0.50
13,095.00	84.63	180.65	12,727.12	-213.34	664.58	213.34	0.34	0.34	0.00
13,191.00	85.13	181.70	12,735.69	-308.93	662.62	308.93	1.21	0.52	1.09
13,253.09	87.54	182.28	12,739.66	-370.85	660.46	370.85	3.99	3.87	0.94
Fighting Okra_84H_EOC									
13,286.00	88.81	182.59	12,740.71	-403.71	659.06	403.71	3.99	3.87	0.93
13,382.00	88.63	183.29	12,742.85	-499.56	654.14	499.56	0.75	-0.19	0.73
13,477.00	91.19	182.76	12,743.00	-594.42	649.13	594.42	2.75	2.69	-0.56
13,573.00	90.19	182.24	12,741.84	-690.32	644.94	690.32	1.17	-1.04	-0.54
13,668.00	89.44	182.06	12,742.15	-785.25	641.38	785.25	0.81	-0.79	-0.19
13,764.00	90.56	181.18	12,742.15	-881.21	638.66	881.21	1.48	1.17	-0.92
13,860.00	91.44	181.53	12,740.48	-977.17	636.39	977.17	0.99	0.92	0.36
13,955.00	88.00	184.17	12,740.94	-1,072.03	631.67	1,072.03	4.56	-3.62	2.78
14,051.00	88.69	182.76	12,743.71	-1,167.81	625.87	1,167.81	1.63	0.72	-1.47
14,146.00	89.75	181.18	12,745.01	-1,262.74	622.61	1,262.74	2.00	1.12	-1.66
14,242.00	87.13	178.55	12,747.62	-1,358.69	622.83	1,358.69	3.87	-2.73	-2.74
14,337.00	89.00	179.25	12,750.83	-1,453.61	624.66	1,453.61	2.10	1.97	0.74
14,433.00	90.94	180.13	12,750.88	-1,549.61	625.17	1,549.61	2.22	2.02	0.92
14,528.00	88.94	178.72	12,750.98	-1,644.59	626.13	1,644.59	2.58	-2.11	-1.48
14,622.00	90.50	179.60	12,751.44	-1,738.58	627.51	1,738.58	1.91	1.66	0.94
14,717.00	89.13	179.60	12,751.74	-1,833.57	628.17	1,833.57	1.44	-1.44	0.00
14,811.00	91.00	181.01	12,751.64	-1,927.57	627.67	1,927.57	2.49	1.99	1.50
14,905.00	90.50	180.48	12,750.41	-2,021.55	626.45	2,021.55	0.78	-0.53	-0.56
15,000.00	88.25	179.25	12,751.44	-2,116.54	626.67	2,116.54	2.70	-2.37	-1.29
15,094.00	91.44	181.36	12,751.70	-2,210.52	626.17	2,210.52	4.07	3.39	2.24
15,188.00	88.75	179.78	12,751.54	-2,304.50	625.23	2,304.50	3.32	-2.86	-1.68
15,283.00	87.94	178.02	12,754.28	-2,399.44	627.06	2,399.44	2.04	-0.85	-1.85
15,377.00	90.94	179.78	12,755.20	-2,493.40	628.86	2,493.40	3.70	3.19	1.87
15,471.00	91.44	177.67	12,753.25	-2,587.35	630.95	2,587.35	2.31	0.53	-2.24
15,566.00	89.94	176.26	12,752.11	-2,682.21	635.98	2,682.21	2.17	-1.58	-1.48
15,660.00	90.31	176.08	12,751.90	-2,776.00	642.26	2,776.00	0.44	0.39	-0.19
15,754.00	90.44	175.38	12,751.29	-2,869.73	649.26	2,869.73	0.76	0.14	-0.74
15,849.00	89.69	177.49	12,751.18	-2,964.54	655.17	2,964.54	2.36	-0.79	2.22
15,943.00	90.69	177.49	12,750.87	-3,058.45	659.28	3,058.45	1.06	1.06	0.00
16,037.00	88.56	176.96	12,751.48	-3,152.33	663.83	3,152.33	2.34	-2.27	-0.56
16,132.00	89.31	178.90	12,753.25	-3,247.25	667.26	3,247.25	2.19	0.79	2.04

Company: Devon Energy Corporation
 Project: Lea Co., NM
 Site: Fighting Okra
 Well: 18-19 Fed 84H
 Wellbore: OH
 Design: Surveys

Local Co-ordinate Reference: Well 18-19 Fed 84H
 TVD Reference: KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
 MD Reference: KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Ryan USA_ODBC_32bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,226.00	90.38	179.42	12,753.50	-3,341.24	668.64	3,341.24	1.27	1.14	0.55
16,320.00	91.63	179.60	12,751.85	-3,435.22	669.45	3,435.22	1.34	1.33	0.19
16,415.00	89.56	180.13	12,750.87	-3,530.21	669.67	3,530.21	2.25	-2.18	0.56
16,509.00	89.06	179.78	12,752.00	-3,624.20	669.74	3,624.20	0.65	-0.53	-0.37
16,604.00	92.88	181.01	12,750.39	-3,719.16	669.09	3,719.16	4.22	4.02	1.29
16,698.00	91.38	180.13	12,746.90	-3,813.09	668.15	3,813.09	1.85	-1.60	-0.94
16,792.00	91.06	180.65	12,744.90	-3,907.07	667.51	3,907.07	0.65	-0.34	0.55
16,887.00	91.06	181.01	12,743.14	-4,002.04	666.14	4,002.04	0.38	0.00	0.38
16,981.00	88.69	181.36	12,743.34	-4,096.01	664.19	4,096.01	2.55	-2.52	0.37
17,076.00	89.81	181.53	12,744.59	-4,190.97	661.80	4,190.97	1.19	1.18	0.18
17,170.00	89.81	180.48	12,744.90	-4,284.96	660.15	4,284.96	1.12	0.00	-1.12
17,264.00	89.75	180.83	12,745.26	-4,378.95	659.08	4,378.95	0.38	-0.06	0.37
17,358.00	89.56	180.48	12,745.83	-4,472.94	658.00	4,472.94	0.42	-0.20	-0.37
17,452.00	87.19	180.30	12,748.49	-4,566.90	657.36	4,566.90	2.53	-2.52	-0.19
17,547.00	89.25	180.65	12,751.44	-4,661.84	656.57	4,661.84	2.20	2.17	0.37
17,641.00	90.38	181.36	12,751.75	-4,755.82	654.93	4,755.82	1.42	1.20	0.76
17,735.00	90.00	180.48	12,751.43	-4,849.81	653.42	4,849.81	1.02	-0.40	-0.94
17,830.00	89.44	179.78	12,751.90	-4,944.81	653.20	4,944.81	0.94	-0.59	-0.74
17,924.00	89.88	181.01	12,752.46	-5,038.80	652.55	5,038.80	1.39	0.47	1.31
18,018.00	90.44	180.65	12,752.19	-5,132.79	651.19	5,132.79	0.71	0.60	-0.38
18,113.00	88.81	179.42	12,752.81	-5,227.78	651.13	5,227.78	2.15	-1.72	-1.29
18,207.00	88.19	179.60	12,755.28	-5,321.75	651.94	5,321.75	0.69	-0.66	0.19
18,301.00	90.50	181.18	12,756.35	-5,415.73	651.30	5,415.73	2.98	2.46	1.68
18,395.00	89.38	180.13	12,756.45	-5,509.72	650.22	5,509.72	1.63	-1.19	-1.12
18,489.00	90.00	180.13	12,756.96	-5,603.72	650.01	5,603.72	0.66	0.66	0.00
18,584.00	89.19	179.25	12,757.63	-5,698.71	650.52	5,698.71	1.26	-0.85	-0.93
18,678.00	89.38	177.67	12,758.80	-5,792.67	653.05	5,792.67	1.69	0.20	-1.68
18,772.00	89.63	178.19	12,759.61	-5,886.60	656.44	5,886.60	0.61	0.27	0.55
18,866.00	89.56	178.55	12,760.28	-5,980.56	659.12	5,980.56	0.39	-0.07	0.38
18,961.00	92.06	180.13	12,758.94	-6,075.54	660.21	6,075.54	3.11	2.63	1.66
19,055.00	88.25	178.90	12,758.68	-6,169.52	661.01	6,169.52	4.26	-4.05	-1.31
19,150.00	91.25	180.83	12,759.10	-6,264.50	661.23	6,264.50	3.75	3.16	2.03
19,244.00	89.13	179.78	12,758.78	-6,358.49	660.73	6,358.49	2.52	-2.26	-1.12
19,338.00	89.19	179.95	12,760.16	-6,452.48	660.95	6,452.48	0.19	0.06	0.18
19,433.00	90.69	178.02	12,760.26	-6,547.46	662.64	6,547.46	2.57	1.58	-2.03
19,527.00	91.50	177.84	12,758.47	-6,641.38	666.03	6,641.38	0.88	0.86	-0.19
19,621.00	90.31	178.02	12,756.98	-6,735.30	669.43	6,735.30	1.28	-1.27	0.19
19,716.00	90.25	179.78	12,756.52	-6,830.28	671.25	6,830.28	1.85	-0.06	1.85
19,811.00	89.31	178.19	12,756.88	-6,925.26	672.93	6,925.26	1.94	-0.99	-1.67
19,905.00	91.44	181.01	12,756.27	-7,019.24	673.59	7,019.24	3.76	2.27	3.00
19,999.00	89.38	179.25	12,755.59	-7,113.23	673.37	7,113.23	2.88	-2.19	-1.87
20,094.00	89.88	176.96	12,756.21	-7,208.17	676.52	7,208.17	2.47	0.53	-2.41
20,188.00	87.19	174.15	12,758.61	-7,301.84	683.80	7,301.84	4.14	-2.86	-2.99
20,283.00	87.56	174.68	12,762.96	-7,396.29	693.03	7,396.29	0.68	0.39	0.56



Nabors
Survey Report



Company:	Devon Energy Corporation	Local Co-ordinate Reference:	Well 18-19 Fed 84H
Project:	Lea Co., NM	TVD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Site:	Fighting Okra	MD Reference:	KB=32' (Nabors X04) @ 3401.50ft (Nabors X04)
Well:	18-19 Fed 84H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Ryan USA_ODBC_32bit

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
20,378.00	86.50	175.91	12,767.88	-7,490.84	700.81	7,490.84	1.71	-1.12	1.29
20,472.00	88.19	177.67	12,772.24	-7,584.58	706.07	7,584.58	2.59	1.80	1.87
20,566.00	89.69	178.55	12,773.98	-7,678.51	709.17	7,678.51	1.85	1.60	0.94
20,661.00	90.13	178.72	12,774.13	-7,773.48	711.43	7,773.48	0.50	0.46	0.18
20,755.00	90.06	178.90	12,773.97	-7,867.46	713.39	7,867.46	0.21	-0.07	0.19
20,850.00	90.88	179.60	12,773.19	-7,962.45	714.63	7,962.45	1.13	0.86	0.74
20,944.00	90.69	179.42	12,771.90	-8,056.44	715.43	8,056.44	0.28	-0.20	-0.19
21,038.00	90.38	180.13	12,771.03	-8,150.43	715.80	8,150.43	0.82	-0.33	0.76
21,133.00	90.25	180.13	12,770.50	-8,245.43	715.59	8,245.43	0.14	-0.14	0.00
21,228.00	92.31	181.36	12,768.38	-8,340.39	714.35	8,340.39	2.53	2.17	1.29
21,322.00	93.75	182.24	12,763.41	-8,434.21	711.40	8,434.21	1.79	1.53	0.94
21,416.00	93.13	181.53	12,757.77	-8,527.99	708.32	8,527.99	1.00	-0.66	-0.76
21,511.00	91.50	181.36	12,753.93	-8,622.88	705.92	8,622.88	1.73	-1.72	-0.18
21,605.00	90.50	180.65	12,752.29	-8,716.85	704.28	8,716.85	1.30	-1.06	-0.76
21,699.00	91.00	180.65	12,751.06	-8,810.83	703.21	8,810.83	0.53	0.53	0.00
21,794.00	89.31	179.25	12,750.81	-8,905.83	703.29	8,905.83	2.31	-1.78	-1.47
21,888.00	89.31	179.25	12,751.94	-8,999.81	704.52	8,999.81	0.00	0.00	0.00
21,982.00	89.44	179.25	12,752.96	-9,093.80	705.75	9,093.80	0.14	0.14	0.00
22,077.00	90.25	179.25	12,753.22	-9,188.79	707.00	9,188.79	0.85	0.85	0.00
22,171.00	90.88	179.60	12,752.29	-9,282.78	707.94	9,282.78	0.77	0.67	0.37
22,266.00	88.69	179.78	12,752.65	-9,377.77	708.45	9,377.77	2.31	-2.31	0.19
22,360.00	88.88	179.42	12,754.64	-9,471.75	709.11	9,471.75	0.43	0.20	-0.38
22,454.00	88.94	178.55	12,756.43	-9,565.72	710.77	9,565.72	0.93	0.06	-0.93
22,548.00	89.63	178.37	12,757.60	-9,659.67	713.30	9,659.67	0.76	0.73	-0.19
22,585.95	90.24	178.86	12,757.65	-9,697.61	714.22	9,697.61	2.07	1.61	1.30
Fighting Okra_84H_BHL									
22,602.00	90.50	179.07	12,757.54	-9,713.66	714.51	9,713.66	2.07	1.61	1.30
22,670.00	90.50	179.07	12,756.95	-9,781.65	715.61	9,781.65	0.00	0.00	0.00
PTB									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
22,670.00	12,756.95	-9,781.65	715.61	PTB

Checked By: _____ Approved By: _____ Date: _____