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Pro Directional

Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 83H
Wellbore: OH
Design: Surveys 1060-22546 MD

Local Co-ordinate Reference: Well 83H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Seawolf 1-12 Fed		
Site Position:		Northing:	393,524.42 usft
From:	Map	Easting:	793,262.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.079268
		Longitude:	-103.519953
		Grid Convergence:	0.43 °

Well	83H		
Well Position	+N/-S	0.00 usft	Northing: 393,519.71 usft
	+E/-W	0.00 usft	Easting: 791,194.43 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.079297
		Longitude:	-103.526629
		Ground Level:	3,316.70 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	11/30/2017	(°) 6.77
			Dip Angle (°) 59.80
			Field Strength (nT) 47,905.40

Design	Surveys 1060-22546 MD		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 179.58

Survey Program	Date 10/16/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
132.00	978.00	Survey #1 (OH)	NS-GYRO-MS
1,060.00	22,546.00	Survey #2 (OH)	MWD+HDGM
			Description
			North sensing gyrocompassing m/s
			OWSG MWD + HDGM

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
132.00	0.20	289.00	132.00	0.08	-0.22	-0.08	0.15	0.15	0.00
223.00	0.20	341.00	223.00	0.28	-0.42	-0.28	0.19	0.00	57.14
317.00	0.30	326.00	317.00	0.64	-0.61	-0.64	0.13	0.11	-15.96
412.00	0.20	291.00	412.00	0.90	-0.90	-0.91	0.19	-0.11	-36.84
506.00	0.40	263.00	506.00	0.92	-1.38	-0.93	0.26	0.21	-29.79
600.00	0.40	269.00	599.99	0.87	-2.04	-0.89	0.04	0.00	6.38
695.00	0.40	254.00	694.99	0.78	-2.69	-0.80	0.11	0.00	-15.79
789.00	0.50	225.00	788.99	0.40	-3.29	-0.42	0.26	0.11	-30.85
884.00	0.50	277.00	883.99	0.15	-4.00	-0.18	0.46	0.00	54.74



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978.00	0.40	285.00	977.98	0.29	-4.72	-0.32	0.13	-0.11	8.51
1,060.00	0.70	289.40	1,059.98	0.53	-5.47	-0.57	0.37	0.37	5.37
First Pro Survey: 1060' MD									
1,151.00	0.70	281.70	1,150.97	0.83	-6.54	-0.88	0.10	0.00	-8.46
1,243.00	0.70	272.40	1,242.97	0.96	-7.65	-1.02	0.12	0.00	-10.11
1,335.00	0.50	263.30	1,334.96	0.94	-8.61	-1.00	0.24	-0.22	-9.89
1,427.00	0.50	279.10	1,426.96	0.96	-9.41	-1.03	0.15	0.00	17.17
1,519.00	0.50	300.40	1,518.95	1.22	-10.15	-1.30	0.20	0.00	23.15
1,611.00	0.60	291.50	1,610.95	1.60	-10.94	-1.68	0.14	0.11	-9.67
1,706.00	0.60	283.20	1,705.94	1.90	-11.89	-1.99	0.09	0.00	-8.74
1,800.00	0.80	280.00	1,799.94	2.13	-13.02	-2.22	0.22	0.21	-3.40
1,895.00	1.00	283.50	1,894.93	2.44	-14.47	-2.54	0.22	0.21	3.68
1,990.00	1.00	286.50	1,989.91	2.86	-16.08	-2.98	0.06	0.00	3.16
2,084.00	1.20	290.00	2,083.89	3.43	-17.79	-3.56	0.22	0.21	3.72
2,179.00	1.00	289.10	2,178.88	4.05	-19.51	-4.19	0.21	-0.21	-0.95
2,274.00	1.10	287.60	2,273.86	4.59	-21.16	-4.75	0.11	0.11	-1.58
2,369.00	1.00	292.40	2,368.84	5.18	-22.79	-5.35	0.14	-0.11	5.05
2,464.00	1.00	295.50	2,463.83	5.86	-24.31	-6.03	0.06	0.00	3.26
2,559.00	1.00	304.90	2,558.82	6.69	-25.74	-6.88	0.17	0.00	9.89
2,654.00	0.80	312.40	2,653.80	7.61	-26.91	-7.81	0.24	-0.21	7.89
2,749.00	2.20	302.00	2,748.77	9.02	-28.94	-9.23	1.50	1.47	-10.95
2,843.00	4.30	308.30	2,842.61	12.16	-33.24	-12.41	2.26	2.23	6.70
2,938.00	5.20	311.40	2,937.29	17.22	-39.26	-17.51	0.98	0.95	3.26
3,033.00	5.00	313.60	3,031.91	22.92	-45.49	-23.25	0.29	-0.21	2.32
3,128.00	4.90	317.60	3,126.56	28.77	-51.22	-29.15	0.38	-0.11	4.21
3,223.00	5.60	315.50	3,221.16	35.07	-57.21	-35.49	0.76	0.74	-2.21
3,318.00	5.50	322.00	3,315.71	41.97	-63.26	-42.43	0.67	-0.11	6.84
3,412.00	5.40	326.10	3,409.29	49.19	-68.50	-49.69	0.43	-0.11	4.36
3,507.00	5.00	329.80	3,503.90	56.48	-73.08	-57.01	0.55	-0.42	3.89
3,602.00	4.40	334.20	3,598.58	63.34	-76.74	-63.90	0.74	-0.63	4.63
3,697.00	4.10	333.00	3,693.32	69.64	-79.87	-70.23	0.33	-0.32	-1.26
3,792.00	4.40	318.80	3,788.06	75.41	-83.82	-76.02	1.15	0.32	-14.95
3,887.00	4.80	300.80	3,882.76	80.19	-89.63	-80.84	1.57	0.42	-18.95
3,982.00	4.90	300.20	3,977.42	84.26	-96.55	-84.97	0.12	0.11	-0.63
4,077.00	4.40	306.20	4,072.10	88.46	-103.00	-89.21	0.73	-0.53	6.32
4,172.00	4.20	295.30	4,166.84	92.10	-109.08	-92.89	0.88	-0.21	-11.47
4,267.00	4.20	288.80	4,261.58	94.70	-115.52	-95.55	0.50	0.00	-6.84
4,362.00	4.00	290.80	4,356.34	97.00	-121.91	-97.89	0.26	-0.21	2.11
4,457.00	3.70	289.30	4,451.12	99.19	-127.90	-100.13	0.33	-0.32	-1.58
4,551.00	3.00	290.20	4,544.96	101.04	-133.07	-102.02	0.75	-0.74	0.96
4,646.00	2.40	292.90	4,639.86	102.68	-137.24	-103.68	0.65	-0.63	2.84
4,741.00	2.20	291.40	4,734.78	104.11	-140.77	-105.14	0.22	-0.21	-1.58
4,836.00	1.50	272.90	4,829.73	104.84	-143.71	-105.89	0.96	-0.74	-19.47



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4,931.00	1.00	254.50	4,924.71	104.68	-145.75	-105.75	0.67	-0.53	-19.37
5,026.00	1.10	266.30	5,019.69	104.40	-147.46	-105.48	0.25	0.11	12.42
5,120.00	1.00	270.80	5,113.68	104.36	-149.18	-105.45	0.14	-0.11	4.79
5,215.00	1.10	273.20	5,208.66	104.42	-150.92	-105.52	0.11	0.11	2.53
5,310.00	1.10	277.00	5,303.64	104.58	-152.73	-105.70	0.08	0.00	4.00
5,405.00	1.10	279.30	5,398.63	104.84	-154.54	-105.97	0.05	0.00	2.42
5,500.00	1.00	276.40	5,493.61	105.08	-156.26	-106.22	0.12	-0.11	-3.05
5,595.00	1.10	280.70	5,588.59	105.34	-157.98	-106.50	0.13	0.11	4.53
5,690.00	1.10	280.70	5,683.58	105.68	-159.78	-106.85	0.00	0.00	0.00
5,785.00	1.10	284.50	5,778.56	106.08	-161.55	-107.26	0.08	0.00	4.00
5,880.00	1.20	288.10	5,873.54	106.62	-163.38	-107.81	0.13	0.11	3.79
5,974.00	1.10	288.40	5,967.52	107.21	-165.17	-108.41	0.11	-0.11	0.32
6,069.00	1.10	285.40	6,062.50	107.74	-166.92	-108.96	0.06	0.00	-3.16
6,164.00	1.10	287.10	6,157.49	108.25	-168.67	-109.48	0.03	0.00	1.79
6,259.00	1.00	287.80	6,252.47	108.77	-170.33	-110.01	0.11	-0.11	0.74
6,354.00	1.00	288.80	6,347.46	109.29	-171.90	-110.55	0.02	0.00	1.05
6,449.00	0.90	280.50	6,442.44	109.69	-173.42	-110.96	0.18	-0.11	-8.74
6,543.00	1.00	285.20	6,536.43	110.04	-174.94	-111.32	0.13	0.11	5.00
6,639.00	1.10	279.10	6,632.41	110.41	-176.66	-111.70	0.16	0.10	-6.35
6,733.00	0.40	241.20	6,726.41	110.39	-177.84	-111.69	0.87	-0.74	-40.32
6,828.00	1.00	127.50	6,821.40	109.73	-177.47	-111.02	1.28	0.63	-119.68
6,923.00	1.40	131.10	6,916.38	108.46	-175.94	-109.75	0.43	0.42	3.79
7,018.00	1.30	120.90	7,011.35	107.14	-174.14	-108.42	0.27	-0.11	-10.74
7,113.00	1.40	119.80	7,106.33	106.01	-172.21	-107.27	0.11	0.11	-1.16
7,208.00	1.30	120.80	7,201.30	104.88	-170.27	-106.13	0.11	-0.11	1.05
7,303.00	1.30	118.70	7,296.28	103.81	-168.40	-105.05	0.05	0.00	-2.21
7,398.00	1.50	121.60	7,391.25	102.65	-166.40	-103.86	0.22	0.21	3.05
7,492.00	1.30	121.90	7,485.22	101.44	-164.45	-102.64	0.21	-0.21	0.32
7,588.00	1.30	126.70	7,581.20	100.21	-162.65	-101.40	0.11	0.00	5.00
7,683.00	1.00	137.60	7,676.18	98.96	-161.22	-100.13	0.39	-0.32	11.47
7,775.00	1.00	141.00	7,768.16	97.74	-160.18	-98.91	0.06	0.00	3.70
7,870.00	0.80	152.00	7,863.15	96.51	-159.35	-97.67	0.28	-0.21	11.58
7,965.00	0.80	171.50	7,958.14	95.27	-158.94	-96.43	0.29	0.00	20.53
8,060.00	0.80	179.50	8,053.13	93.95	-158.83	-95.11	0.12	0.00	8.42
8,155.00	0.80	187.50	8,148.12	92.63	-158.91	-93.79	0.12	0.00	8.42
8,250.00	0.70	189.70	8,243.12	91.40	-159.10	-92.56	0.11	-0.11	2.32
8,345.00	0.70	183.70	8,338.11	90.25	-159.23	-91.41	0.08	0.00	-6.32
8,440.00	0.70	177.60	8,433.10	89.09	-159.25	-90.25	0.08	0.00	-6.42
8,535.00	0.70	155.60	8,528.09	87.98	-158.98	-89.14	0.28	0.00	-23.16
8,630.00	0.20	294.50	8,623.09	87.52	-158.89	-88.68	0.91	-0.53	146.21
8,724.00	0.30	269.40	8,717.09	87.59	-159.29	-88.75	0.16	0.11	-26.70
8,819.00	0.50	248.40	8,812.09	87.43	-159.92	-88.60	0.26	0.21	-22.11
8,914.00	0.50	242.00	8,907.09	87.08	-160.67	-88.26	0.06	0.00	-6.74



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9,009.00	0.50	259.90	9,002.08	86.82	-161.45	-88.00	0.16	0.00	18.84
9,104.00	0.60	255.80	9,097.08	86.62	-162.34	-87.81	0.11	0.11	-4.32
9,199.00	0.70	255.40	9,192.07	86.35	-163.38	-87.55	0.11	0.11	-0.42
9,294.00	0.70	274.20	9,287.06	86.25	-164.52	-87.45	0.24	0.00	19.79
9,397.00	0.90	270.90	9,390.05	86.31	-165.96	-87.52	0.20	0.19	-3.20
9,492.00	1.20	267.60	9,485.04	86.28	-167.70	-87.50	0.32	0.32	-3.47
9,587.00	1.30	262.70	9,580.02	86.10	-169.76	-87.34	0.15	0.11	-5.16
9,682.00	1.10	245.70	9,674.99	85.59	-171.66	-86.84	0.43	-0.21	-17.89
9,777.00	1.10	242.00	9,769.98	84.78	-173.30	-86.05	0.07	0.00	-3.89
9,871.00	0.80	250.90	9,863.96	84.15	-174.71	-85.42	0.35	-0.32	9.47
9,966.00	0.60	330.40	9,958.96	84.36	-175.59	-85.65	0.96	-0.21	83.68
10,061.00	0.70	317.70	10,053.95	85.22	-176.22	-86.51	0.18	0.11	-13.37
10,156.00	0.50	349.70	10,148.95	86.06	-176.69	-87.35	0.40	-0.21	33.68
10,251.00	0.20	353.60	10,243.95	86.63	-176.78	-87.93	0.32	-0.32	4.11
10,346.00	0.20	292.20	10,338.95	86.86	-176.95	-88.15	0.21	0.00	-64.63
10,440.00	0.40	326.90	10,432.94	87.20	-177.28	-88.49	0.28	0.21	36.91
10,535.00	0.70	329.70	10,527.94	87.98	-177.76	-89.28	0.32	0.32	2.95
10,630.00	1.00	326.20	10,622.93	89.17	-178.51	-90.47	0.32	0.32	-3.68
10,724.00	1.70	316.00	10,716.90	90.85	-179.94	-92.17	0.78	0.74	-10.85
10,819.00	1.50	316.10	10,811.87	92.76	-181.78	-94.09	0.21	-0.21	0.11
10,914.00	1.10	337.30	10,906.84	94.50	-182.99	-95.84	0.65	-0.42	22.32
11,008.00	0.70	350.00	11,000.83	95.89	-183.44	-97.24	0.47	-0.43	13.51
11,103.00	0.30	314.80	11,095.83	96.64	-183.72	-97.99	0.51	-0.42	-37.05
11,198.00	0.90	197.90	11,190.82	96.11	-184.12	-97.45	1.13	0.63	-123.05
11,292.00	1.10	161.60	11,284.81	94.55	-184.06	-95.89	0.69	0.21	-38.62
11,387.00	1.30	98.60	11,379.79	93.52	-182.71	-94.86	1.33	0.21	-66.32
11,483.00	1.40	98.40	11,475.77	93.19	-180.47	-94.51	0.10	0.10	-0.21
11,577.00	0.80	117.90	11,569.75	92.71	-178.76	-94.02	0.74	-0.64	20.74
11,672.00	1.20	120.60	11,664.73	91.90	-177.32	-93.19	0.42	0.42	2.84
11,767.00	0.80	129.70	11,759.72	90.97	-175.95	-92.25	0.45	-0.42	9.58
11,861.00	0.80	220.40	11,853.71	90.05	-175.87	-91.33	1.21	0.00	96.49
11,957.00	2.30	147.60	11,949.68	87.91	-175.27	-89.19	2.29	1.56	-75.83
KOP: 11957' MD									
12,002.00	7.60	161.20	11,994.50	84.33	-173.83	-85.60	11.98	11.78	30.22
12,051.00	11.50	161.20	12,042.81	76.63	-171.21	-77.89	7.96	7.96	0.00
12,146.00	16.80	155.70	12,134.90	55.14	-162.50	-56.33	5.75	5.58	-5.79
12,193.00	23.00	155.20	12,179.07	40.60	-155.85	-41.74	13.20	13.19	-1.06
12,240.00	29.10	156.10	12,221.28	21.80	-147.36	-22.88	13.01	12.98	1.91
12,335.00	39.20	164.20	12,299.83	-28.37	-129.77	27.41	11.64	10.63	8.53
12,430.00	48.40	173.70	12,368.40	-92.77	-117.66	91.90	11.88	9.68	10.00
12,525.00	54.70	180.50	12,427.49	-166.97	-114.09	166.13	8.68	6.63	7.16
12,572.00	61.20	181.40	12,452.42	-206.78	-114.76	205.93	13.92	13.83	1.91
12,619.00	66.80	180.10	12,473.01	-249.00	-115.30	248.14	12.17	11.91	-2.77
12,666.00	72.70	178.40	12,489.27	-293.07	-114.72	292.22	13.00	12.55	-3.62



Pro Directional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 83H
Wellbore: OH
Design: Surveys 1060-22546 MD

Local Co-ordinate Reference: Well 83H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

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)
12,714.00	76.30	178.20	12,502.10	-339.29	-113.34	338.45	7.51	7.50	-0.42
12,761.00	81.10	178.80	12,511.31	-385.35	-112.14	384.52	10.29	10.21	1.28
12,808.00	86.90	179.40	12,516.22	-432.07	-111.41	431.24	12.41	12.34	1.28
12,837.00	89.50	180.40	12,517.13	-461.05	-111.36	460.22	9.61	8.97	3.45
12,975.00	90.80	181.30	12,516.77	-599.03	-113.40	598.18	1.15	0.94	0.65
13,069.00	91.20	181.90	12,515.13	-692.98	-116.03	692.11	0.77	0.43	0.64
13,163.00	89.60	181.90	12,514.47	-786.92	-119.14	786.03	1.70	-1.70	0.00
13,258.00	90.20	182.20	12,514.64	-881.86	-122.54	880.94	0.71	0.63	0.32
13,352.00	89.40	182.00	12,514.96	-975.80	-125.99	974.85	0.88	-0.85	-0.21
13,446.00	87.90	181.60	12,517.18	-1,069.72	-128.94	1,068.75	1.65	-1.60	-0.43
13,541.00	88.50	181.80	12,520.16	-1,164.63	-131.75	1,163.64	0.67	0.63	0.21
13,635.00	87.70	180.60	12,523.28	-1,258.56	-133.72	1,257.54	1.53	-0.85	-1.28
13,729.00	88.00	180.30	12,526.81	-1,352.49	-134.46	1,351.47	0.45	0.32	-0.32
13,824.00	88.30	180.00	12,529.87	-1,447.44	-134.71	1,446.41	0.45	0.32	-0.32
13,918.00	90.50	182.30	12,530.86	-1,541.40	-136.60	1,540.36	3.39	2.34	2.45
14,013.00	89.60	183.20	12,530.77	-1,636.29	-141.15	1,635.21	1.34	-0.95	0.95
14,107.00	89.40	183.30	12,531.59	-1,730.14	-146.48	1,729.02	0.24	-0.21	0.11
14,202.00	88.20	182.60	12,533.58	-1,824.99	-151.37	1,823.83	1.46	-1.26	-0.74
14,296.00	89.80	184.10	12,535.23	-1,918.81	-156.86	1,917.60	2.33	1.70	1.60
14,391.00	88.60	182.70	12,536.55	-2,013.63	-162.50	2,012.38	1.94	-1.26	-1.47
14,485.00	86.80	181.50	12,540.32	-2,107.48	-165.94	2,106.21	2.30	-1.91	-1.28
14,580.00	88.20	179.40	12,544.47	-2,202.38	-166.68	2,201.10	2.65	1.47	-2.21
14,674.00	87.30	180.20	12,548.16	-2,296.31	-166.35	2,295.02	1.28	-0.96	0.85
14,769.00	86.60	178.10	12,553.21	-2,391.15	-164.95	2,389.88	2.33	-0.74	-2.21
14,863.00	86.70	178.40	12,558.71	-2,484.95	-162.08	2,483.70	0.34	0.11	0.32
14,958.00	88.60	177.70	12,562.60	-2,579.81	-158.85	2,578.58	2.13	2.00	-0.74
15,052.00	89.80	177.90	12,563.91	-2,673.73	-155.24	2,672.52	1.29	1.28	0.21
15,146.00	88.90	177.90	12,564.98	-2,767.66	-151.80	2,766.47	0.96	-0.96	0.00
15,241.00	91.10	178.10	12,564.98	-2,862.60	-148.48	2,861.43	2.33	2.32	0.21
15,335.00	89.00	177.00	12,564.90	-2,956.50	-144.47	2,955.37	2.52	-2.23	-1.17
15,430.00	88.30	176.20	12,567.14	-3,051.31	-138.83	3,050.21	1.12	-0.74	-0.84
15,524.00	88.00	176.20	12,570.17	-3,145.05	-132.61	3,144.00	0.32	-0.32	0.00
15,619.00	91.90	178.10	12,570.25	-3,239.91	-127.88	3,238.89	4.57	4.11	2.00
15,713.00	92.00	177.70	12,567.06	-3,333.80	-124.44	3,332.79	0.44	0.11	-0.43
15,808.00	90.90	179.00	12,564.65	-3,428.72	-121.71	3,427.74	1.79	-1.16	1.37
15,902.00	89.80	179.50	12,564.08	-3,522.71	-120.48	3,521.73	1.29	-1.17	0.53
15,996.00	89.80	181.60	12,564.41	-3,616.70	-121.38	3,615.71	2.23	0.00	2.23
16,091.00	86.30	180.30	12,567.64	-3,711.62	-122.96	3,710.61	3.93	-3.68	-1.37
16,185.00	85.60	180.40	12,574.28	-3,805.38	-123.53	3,804.37	0.75	-0.74	0.11
16,280.00	87.20	179.90	12,580.24	-3,900.19	-123.78	3,899.17	1.76	1.68	-0.53
16,374.00	89.70	180.50	12,582.78	-3,994.14	-124.10	3,993.13	2.74	2.66	0.64
16,469.00	85.80	179.90	12,586.51	-4,089.05	-124.44	4,088.03	4.15	-4.11	-0.63
16,563.00	88.80	179.60	12,590.94	-4,182.94	-124.03	4,181.91	3.21	3.19	-0.32



Pro Directional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 83H
Wellbore: OH
Design: Surveys 1060-22546 MD

Local Co-ordinate Reference: Well 83H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

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)
16,658.00	89.60	179.90	12,592.27	-4,277.92	-123.61	4,276.90	0.90	0.84	0.32
16,752.00	90.40	180.30	12,592.27	-4,371.92	-123.78	4,370.90	0.95	0.85	0.43
16,847.00	89.40	180.60	12,592.43	-4,466.92	-124.52	4,465.89	1.10	-1.05	0.32
16,941.00	88.30	179.80	12,594.32	-4,560.90	-124.85	4,559.86	1.45	-1.17	-0.85
17,036.00	88.40	178.50	12,597.06	-4,655.85	-123.44	4,654.82	1.37	0.11	-1.37
17,130.00	91.20	176.70	12,597.38	-4,749.75	-119.51	4,748.75	3.54	2.98	-1.91
17,225.00	92.00	176.90	12,594.73	-4,844.56	-114.20	4,843.60	0.87	0.84	0.21
17,319.00	91.50	176.10	12,591.86	-4,938.34	-108.47	4,937.42	1.00	-0.53	-0.85
17,414.00	88.80	175.80	12,591.61	-5,033.10	-101.76	5,032.22	2.86	-2.84	-0.32
17,509.00	89.20	175.60	12,593.27	-5,127.81	-94.64	5,126.98	0.47	0.42	-0.21
17,603.00	90.60	176.20	12,593.43	-5,221.57	-87.92	5,220.79	1.62	1.49	0.64
17,697.00	89.60	177.20	12,593.27	-5,315.41	-82.51	5,314.66	1.50	-1.06	1.06
17,792.00	92.90	179.40	12,591.20	-5,410.33	-79.69	5,409.60	4.17	3.47	2.32
17,887.00	92.00	180.20	12,587.14	-5,505.24	-79.36	5,504.51	1.27	-0.95	0.84
17,981.00	90.00	180.40	12,585.50	-5,599.22	-79.85	5,598.48	2.14	-2.13	0.21
18,076.00	89.40	180.90	12,585.99	-5,694.21	-80.93	5,693.47	0.82	-0.63	0.53
18,170.00	89.90	181.20	12,586.57	-5,788.19	-82.65	5,787.43	0.62	0.53	0.32
18,265.00	88.40	181.90	12,587.98	-5,883.15	-85.22	5,882.36	1.74	-1.58	0.74
18,359.00	89.30	182.90	12,589.86	-5,977.04	-89.15	5,976.23	1.43	0.96	1.06
18,454.00	88.00	181.10	12,592.10	-6,071.95	-92.47	6,071.11	2.34	-1.37	-1.89
18,548.00	87.10	180.90	12,596.12	-6,165.85	-94.11	6,164.99	0.98	-0.96	-0.21
18,642.00	90.00	180.80	12,598.50	-6,259.80	-95.50	6,258.93	3.09	3.09	-0.11
18,736.00	89.10	179.80	12,599.24	-6,353.79	-95.99	6,352.92	1.43	-0.96	-1.06
18,831.00	89.60	179.80	12,600.31	-6,448.79	-95.66	6,447.91	0.53	0.53	0.00
18,925.00	89.90	179.90	12,600.72	-6,542.78	-95.42	6,541.91	0.34	0.32	0.11
19,020.00	90.70	181.10	12,600.23	-6,637.78	-96.25	6,636.89	1.52	0.84	1.26
19,114.00	90.90	181.80	12,598.91	-6,731.74	-98.62	6,730.83	0.77	0.21	0.74
19,209.00	89.60	180.90	12,598.50	-6,826.71	-100.86	6,825.78	1.66	-1.37	-0.95
19,304.00	89.30	182.00	12,599.41	-6,921.67	-103.27	6,920.73	1.20	-0.32	1.16
19,398.00	92.40	183.90	12,598.02	-7,015.52	-108.10	7,014.54	3.87	3.30	2.02
19,493.00	90.20	182.60	12,595.86	-7,110.34	-113.48	7,109.31	2.69	-2.32	-1.37
19,587.00	89.90	181.90	12,595.78	-7,204.26	-117.17	7,203.21	0.81	-0.32	-0.74
19,682.00	90.30	181.50	12,595.61	-7,299.22	-119.99	7,298.14	0.60	0.42	-0.42
19,777.00	90.30	180.80	12,595.12	-7,394.20	-121.90	7,393.11	0.74	0.00	-0.74
19,871.00	89.90	181.70	12,594.95	-7,488.18	-123.95	7,487.07	1.05	-0.43	0.96
19,966.00	89.40	181.50	12,595.53	-7,583.14	-126.60	7,582.00	0.57	-0.53	-0.21
20,060.00	89.40	181.70	12,596.52	-7,677.09	-129.23	7,675.94	0.21	0.00	0.21
20,154.00	90.90	179.70	12,596.27	-7,771.08	-130.38	7,769.91	2.66	1.60	-2.13
20,249.00	92.00	180.40	12,593.87	-7,866.05	-130.46	7,864.88	1.37	1.16	0.74
20,343.00	92.10	180.60	12,590.50	-7,959.98	-131.28	7,958.81	0.24	0.11	0.21
20,437.00	88.10	177.80	12,590.34	-8,053.95	-129.97	8,052.78	5.19	-4.26	-2.98
20,532.00	87.70	178.20	12,593.82	-8,148.82	-126.65	8,147.68	0.60	-0.42	0.42
20,626.00	91.90	177.60	12,594.15	-8,242.74	-123.21	8,241.61	4.51	4.47	-0.64
20,721.00	90.70	176.30	12,591.99	-8,337.58	-118.16	8,336.49	1.86	-1.26	-1.37



Pro Directional

Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 83H
Wellbore: OH
Design: Surveys 1060-22546 MD

Local Co-ordinate Reference: Well 83H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

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)
20,815.00	90.40	175.50	12,591.09	-8,431.33	-111.44	8,430.29	0.91	-0.32	-0.85
20,910.00	89.70	176.50	12,591.01	-8,526.10	-104.81	8,525.10	1.28	-0.74	1.05
21,004.00	91.70	176.50	12,589.86	-8,619.91	-99.07	8,618.95	2.13	2.13	0.00
21,098.00	90.00	176.30	12,588.47	-8,713.71	-93.17	8,712.79	1.82	-1.81	-0.21
21,193.00	89.70	176.10	12,588.72	-8,808.50	-86.87	8,807.63	0.38	-0.32	-0.21
21,287.00	89.60	175.90	12,589.29	-8,902.27	-80.32	8,901.44	0.24	-0.11	-0.21
21,382.00	90.00	175.60	12,589.62	-8,997.01	-73.28	8,996.23	0.53	0.42	-0.32
21,476.00	87.30	174.90	12,591.84	-9,090.65	-65.50	9,089.93	2.97	-2.87	-0.74
21,571.00	92.00	177.30	12,592.42	-9,185.39	-59.04	9,184.71	5.55	4.95	2.53
21,665.00	92.00	178.80	12,589.13	-9,279.28	-55.84	9,278.62	1.59	0.00	1.60
21,759.00	90.40	177.30	12,587.17	-9,373.20	-52.64	9,372.56	2.33	-1.70	-1.60
21,853.00	91.30	176.10	12,585.77	-9,467.03	-47.23	9,466.43	1.60	0.96	-1.28
21,946.00	91.80	177.60	12,583.26	-9,559.85	-42.12	9,559.29	1.70	0.54	1.61
22,041.00	95.70	180.40	12,577.04	-9,654.61	-40.46	9,654.05	5.05	4.11	2.95
22,135.00	95.40	183.50	12,567.95	-9,748.10	-43.65	9,747.52	3.30	-0.32	3.30
22,230.00	96.90	183.60	12,557.77	-9,842.37	-49.50	9,841.74	1.58	1.58	0.11
22,324.00	96.00	185.30	12,547.21	-9,935.49	-56.74	9,934.81	2.04	-0.96	1.81
22,418.00	96.90	187.20	12,536.65	-10,028.33	-66.91	10,027.57	2.22	0.96	2.02
22,491.00	97.40	187.80	12,527.57	-10,100.15	-76.37	10,099.31	1.06	0.68	0.82
Final Survey: 22230' MD									
22,546.00	97.40	187.80	12,520.48	-10,154.18	-83.77	10,153.30	0.00	0.00	0.00
Final TD: 22546' MD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,060.00	1,059.98	0.53	-5.47	First Pro Survey: 1060' MD
11,957.00	11,949.68	87.91	-175.27	KOP: 11957' MD
22,491.00	12,527.57	-10,100.15	-76.37	Final Survey: 22230' MD
22,546.00	12,520.48	-10,154.18	-83.77	Final TD: 22546' MD

Checked By: _____ Approved By: _____ Date: _____