



HOBBS OCD
DEC 12 2018
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Seawolf 1-12 Fed No. 94Y

Lea County, NM

February 22, 2018

Job No. LNM5156917

ORIGINAL

Survey Completion Report



PRODIRECTIONAL

Survey Certification Letter

Febraury 22, 2018



Operator Name: Devon Energy Corp.
Well Name: Seawolf 1-12 Fed No. 94Y
County/Parish: Lea County,
State: NM
Rig Name: ICD 209
Job Number: LNM5156917

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

<u>Surveyor</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
ProDirectional	1,073' MD – 13,048' MD	12/28/17 – 01/07/18	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266

prodirectional.com

The Standard of Excellence in Directional Supervision



Devon Energy Corp.

**Lea County, NM
Seawolf 1-12 Fed
No. 94Y
OH**

Survey: ProDirectional

Survey Report

22 February, 2018





ProDirectional Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 94Y
Wellbore: OH
Design: Surveys 155-22387 MD

Local Co-ordinate Reference: Well 94Y
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project: Lea County, NM (NAD83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Seawolf 1-12 Fed

Site Position:	Northing: 393,524.42 usft	Latitude: 32° 4' 45.3629 N
From: Map	Easting: 793,262.30 usft	Longitude: 103° 31' 11.8302 W
Position Uncertainty: 0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.43 °

Well: 94Y

Well Position	+N-S 0.00 usft	Northing: 393,525.19 usft	Latitude: 32° 4' 45.3734 N
	+E-W 0.00 usft	Easting: 793,224.33 usft	Longitude: 103° 31' 12.2715 W
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 3,325.00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/30/2017	6.78	59.80	47,914.00

Design: Surveys 155-22387 MD

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	179.57



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Survey Program		Date	2/22/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
155.20	1,025.20	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,073.00	13,048.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM	

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (")	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	393,525.19	793,224.33
155.20	0.20	336.49	155.20	-0.25	0.25	-0.11	0.27	336.49	393,525.44	793,224.22
245.10	0.10	29.49	245.10	-0.46	0.46	-0.13	0.48	344.00	393,525.65	793,224.20
339.40	0.20	112.49	339.40	-0.47	0.47	0.06	0.47	7.35	393,525.66	793,224.39
433.20	0.20	103.49	433.20	-0.37	0.37	0.37	0.52	45.20	393,525.56	793,224.70
527.20	0.40	96.49	527.20	-0.29	0.29	0.86	0.91	71.11	393,525.48	793,225.19
621.20	0.30	83.49	621.20	-0.27	0.28	1.43	1.46	78.75	393,525.47	793,225.76
716.20	0.50	103.49	716.19	-0.20	0.22	2.08	2.09	84.08	393,525.41	793,226.41
810.90	0.70	122.49	810.89	0.21	-0.19	2.97	2.97	93.70	393,525.00	793,227.30
905.20	0.80	118.49	905.18	0.85	-0.82	4.03	4.11	101.43	393,524.37	793,228.36
999.60	0.70	113.49	999.57	1.40	-1.36	5.14	5.32	104.82	393,523.83	793,229.47
1,025.20	0.60	112.49	1,025.17	1.51	-1.47	5.41	5.60	105.24	393,523.72	793,229.74
1,073.00	1.00	99.90	1,072.97	1.69	-1.64	6.05	6.27	105.17	393,523.55	793,230.38
Pro MWD First Survey: 1073' MD										
1,166.00	0.80	104.80	1,165.95	2.00	-1.95	7.48	7.73	104.59	393,523.24	793,231.81
1,260.00	0.40	13.10	1,259.95	1.86	-1.79	8.18	8.38	102.36	393,523.40	793,232.51
1,354.00	1.20	322.70	1,353.94	0.75	-0.69	7.66	7.69	95.15	393,524.50	793,231.99
1,448.00	1.60	325.40	1,447.91	-1.12	1.17	6.32	6.43	79.50	393,526.36	793,230.65
1,541.00	0.60	340.30	1,540.89	-2.66	2.70	5.42	6.05	63.53	393,527.89	793,229.75
1,634.00	0.20	324.40	1,633.89	-3.25	3.29	5.16	6.12	57.49	393,528.48	793,229.49
1,727.00	0.20	304.00	1,726.89	-3.48	3.51	4.93	6.05	54.54	393,528.70	793,229.26



ProDirectional Survey Report



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Wellbore: OH
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Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
1,821.00	0.40	318.40	1,820.89	-3.81	3.85	4.58	5.98	49.94	393,529.04	793,228.91	
1,914.00	0.20	320.20	1,913.89	-4.18	4.22	4.26	5.99	45.28	393,529.41	793,228.59	
2,008.00	0.30	278.80	2,007.89	-4.35	4.38	3.91	5.87	41.76	393,529.57	793,228.24	
2,102.00	0.40	263.00	2,101.89	-4.35	4.38	3.34	5.51	37.35	393,529.57	793,227.67	
2,196.00	0.30	267.20	2,195.88	-4.31	4.33	2.77	5.14	32.63	393,529.52	793,227.10	
2,290.00	0.60	291.60	2,289.88	-4.48	4.50	2.07	4.95	24.69	393,529.69	793,226.40	
2,383.00	0.50	299.30	2,382.88	-4.86	4.87	1.26	5.03	14.50	393,530.06	793,225.59	
2,477.00	1.10	303.20	2,476.87	-5.57	5.57	0.15	5.57	1.52	393,530.76	793,224.48	
2,571.00	1.50	286.70	2,570.84	-6.43	6.42	-1.79	6.66	344.44	393,531.61	793,222.54	
2,665.00	2.50	286.50	2,664.79	-7.39	7.35	-4.93	8.85	326.15	393,532.54	793,219.40	
2,760.00	3.30	286.50	2,759.66	-8.79	8.72	-9.54	12.92	312.42	393,533.91	793,214.79	
2,854.00	4.30	280.00	2,853.46	-10.21	10.10	-15.60	18.59	302.91	393,535.29	793,208.73	
2,947.00	4.30	278.60	2,946.19	-11.39	11.22	-22.48	25.13	296.53	393,536.41	793,201.85	
3,042.00	5.20	275.90	3,040.87	-12.43	12.20	-30.29	32.65	291.94	393,537.39	793,194.04	
3,135.00	5.30	275.60	3,133.48	-13.34	13.05	-38.75	40.89	288.61	393,538.24	793,185.58	
3,230.00	5.10	276.40	3,228.09	-14.30	13.95	-47.32	49.33	286.43	393,539.14	793,177.01	
3,324.00	5.70	274.70	3,321.67	-15.22	14.80	-56.12	58.04	284.77	393,539.99	793,168.21	
3,418.00	6.90	274.80	3,415.10	-16.15	15.65	-66.40	68.22	283.26	393,540.84	793,157.93	
3,511.00	7.80	273.50	3,507.33	-17.09	16.51	-78.27	79.99	281.91	393,541.70	793,146.06	
3,605.00	8.60	269.20	3,600.37	-17.48	16.80	-91.66	93.19	280.38	393,541.99	793,132.67	
3,699.00	8.60	265.00	3,693.32	-16.88	16.09	-105.69	106.91	278.65	393,541.28	793,118.64	
3,793.00	8.20	265.10	3,786.31	-15.80	14.90	-119.37	120.30	277.12	393,540.09	793,104.96	
3,887.00	8.30	262.50	3,879.34	-14.44	13.44	-132.78	133.46	275.78	393,538.63	793,091.55	
3,981.00	8.80	263.20	3,972.29	-12.81	11.71	-146.64	147.11	274.56	393,536.90	793,077.69	
4,075.00	6.70	263.70	4,065.43	-11.45	10.25	-159.24	159.57	273.68	393,535.44	793,065.09	
4,170.00	7.30	262.70	4,159.72	-10.16	8.88	-170.73	170.96	272.98	393,534.07	793,053.60	
4,264.00	8.40	264.50	4,252.84	-8.84	7.46	-183.49	183.64	272.33	393,532.65	793,040.84	



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Survey Report



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4,358.00	8.50	264.50	4,345.82	-7.62	6.14	-197.24	197.33	271.78	393,531.33	793,027.09	
4,452.00	7.60	265.90	4,438.89	-6.61	5.03	-210.35	210.41	271.37	393,530.22	793,013.98	
4,546.00	6.80	263.30	4,532.15	-5.60	3.93	-222.08	222.12	271.01	393,529.12	793,002.25	
4,640.00	6.60	264.90	4,625.50	-4.55	2.80	-232.99	233.01	270.69	393,527.99	792,991.34	
4,734.00	6.00	268.30	4,718.94	-4.00	2.18	-243.28	243.29	270.51	393,527.37	792,981.05	
4,829.00	5.80	267.20	4,813.43	-3.69	1.80	-253.04	253.04	270.41	393,526.99	792,971.29	
4,922.00	6.50	267.50	4,905.90	-3.31	1.34	-262.99	262.99	270.29	393,526.53	792,961.34	
5,016.00	5.90	269.60	4,999.35	-3.12	1.07	-273.14	273.14	270.22	393,526.26	792,951.19	
5,110.00	7.10	274.90	5,092.74	-3.66	1.53	-283.76	283.76	270.31	393,526.72	792,940.57	
5,204.00	7.70	273.20	5,185.96	-4.60	2.38	-295.83	295.84	270.46	393,527.57	792,928.50	
5,297.00	7.50	272.60	5,278.14	-5.32	3.00	-308.12	308.13	270.56	393,528.19	792,916.21	
5,391.00	7.70	272.90	5,371.32	-6.01	3.60	-320.53	320.55	270.64	393,528.79	792,903.80	
5,485.00	7.70	272.30	5,464.47	-6.67	4.17	-333.12	333.14	270.72	393,529.36	792,891.21	
5,579.00	7.70	272.10	5,557.62	-7.25	4.66	-345.70	345.73	270.77	393,529.85	792,878.63	
5,673.00	8.30	271.20	5,650.71	-7.72	5.03	-358.78	358.81	270.80	393,530.22	792,865.55	
5,766.00	8.30	271.30	5,742.73	-8.11	5.32	-372.20	372.24	270.82	393,530.51	792,852.13	
5,860.00	8.20	270.20	5,835.76	-8.39	5.50	-385.69	385.72	270.82	393,530.69	792,838.64	
5,954.00	8.20	269.30	5,928.80	-8.44	5.44	-399.09	399.13	270.78	393,530.63	792,825.24	
6,048.00	8.10	268.80	6,021.85	-8.31	5.22	-412.42	412.45	270.73	393,530.41	792,811.91	
6,142.00	7.70	267.70	6,114.96	-8.02	4.83	-425.33	425.36	270.65	393,530.02	792,799.00	
6,236.00	7.50	266.40	6,208.13	-7.48	4.19	-437.74	437.76	270.55	393,529.38	792,786.59	
6,330.00	7.10	266.00	6,301.37	-6.77	3.40	-449.66	449.68	270.43	393,528.59	792,774.67	
6,424.00	7.30	268.00	6,394.63	-6.25	2.79	-461.43	461.43	270.35	393,527.98	792,762.90	
6,518.00	8.60	266.60	6,487.72	-5.72	2.16	-474.41	474.42	270.26	393,527.35	792,749.92	
6,612.00	8.70	266.30	6,580.65	-4.95	1.29	-488.52	488.52	270.15	393,526.48	792,735.81	
6,706.00	8.80	266.10	6,673.56	-4.11	0.34	-502.79	502.79	270.04	393,525.53	792,721.54	
6,800.00	9.00	265.90	6,766.43	-3.21	-0.68	-517.30	517.30	269.93	393,524.51	792,707.03	



ProDirectional Survey Report



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6,893.00	9.00	264.80	6,858.28	-2.13	-1.86	-531.80	531.80	269.80	393,523.33	792,692.53	
6,987.00	9.00	264.20	6,951.13	-0.84	-3.27	-546.43	546.44	269.66	393,521.92	792,677.90	
7,081.00	8.80	264.70	7,043.99	0.46	-4.67	-560.91	560.93	269.52	393,520.52	792,663.42	
7,175.00	8.70	264.20	7,136.90	1.74	-6.06	-575.14	575.17	269.40	393,519.13	792,649.19	
7,269.00	8.20	262.70	7,229.88	3.21	-7.63	-588.86	588.91	269.26	393,517.56	792,635.47	
7,363.00	8.20	266.90	7,322.92	4.32	-8.84	-602.21	602.27	269.16	393,516.35	792,622.12	
7,456.00	8.00	266.30	7,414.99	5.00	-9.62	-615.29	615.36	269.10	393,515.57	792,609.04	
7,550.00	7.50	265.60	7,508.13	5.80	-10.51	-627.93	628.02	269.04	393,514.68	792,596.40	
7,644.00	7.10	266.10	7,601.37	6.57	-11.37	-639.84	639.94	268.98	393,513.82	792,584.49	
7,738.00	6.70	264.90	7,694.69	7.37	-12.26	-651.10	651.22	268.92	393,512.93	792,573.23	
7,832.00	6.40	264.10	7,788.08	8.32	-13.28	-661.77	661.91	268.85	393,511.91	792,562.56	
7,926.00	6.30	266.20	7,881.50	9.12	-14.16	-672.13	672.28	268.79	393,511.03	792,552.20	
8,019.00	6.40	262.40	7,973.93	10.07	-15.19	-682.36	682.53	268.72	393,510.00	792,541.97	
8,113.00	6.20	263.60	8,067.36	11.25	-16.45	-692.60	692.79	268.64	393,508.74	792,531.73	
8,207.00	5.70	261.20	8,160.85	12.46	-17.73	-702.25	702.48	268.55	393,507.46	792,522.08	
8,301.00	5.70	265.80	8,254.39	13.44	-18.78	-711.52	711.77	268.49	393,506.41	792,512.81	
8,395.00	6.30	267.40	8,347.88	13.94	-19.36	-721.33	721.59	268.46	393,505.83	792,503.00	
8,489.00	6.70	267.60	8,441.27	14.33	-19.82	-731.96	732.23	268.45	393,505.37	792,492.37	
8,582.00	6.60	267.70	8,533.64	14.69	-20.26	-742.72	743.00	268.44	393,504.93	792,481.61	
8,685.00	6.20	269.60	8,636.00	14.88	-20.54	-754.20	754.48	268.44	393,504.65	792,470.13	
8,778.00	6.60	269.60	8,728.42	14.87	-20.61	-764.57	764.84	268.46	393,504.58	792,459.76	
8,872.00	7.00	271.10	8,821.76	14.72	-20.54	-775.69	775.97	268.48	393,504.65	792,448.64	
8,966.00	6.70	270.20	8,915.09	14.50	-20.41	-786.90	787.17	268.51	393,504.78	792,437.43	
9,060.00	6.00	266.70	9,008.51	14.69	-20.67	-797.29	797.56	268.51	393,504.52	792,427.04	
9,154.00	5.10	264.30	9,102.07	15.32	-21.37	-806.36	806.64	268.48	393,503.82	792,417.97	
9,248.00	4.60	263.50	9,195.74	16.10	-22.21	-814.26	814.56	268.44	393,502.98	792,410.07	
9,341.00	4.00	265.50	9,288.47	16.73	-22.89	-821.20	821.52	268.40	393,502.30	792,403.13	



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9,435.00	3.30	266.40	9,382.28	17.11	-23.32	-827.17	827.49	268.39	393,501.87	792,397.16	
9,529.00	2.40	271.10	9,476.16	17.21	-23.45	-831.83	832.16	268.39	393,501.74	792,392.50	
9,623.00	1.80	280.50	9,570.10	16.87	-23.14	-835.25	835.57	268.41	393,502.05	792,389.08	
9,717.00	1.50	296.60	9,664.06	16.03	-22.32	-837.80	838.10	268.47	393,502.87	792,386.53	
9,811.00	1.90	316.40	9,758.02	14.34	-20.64	-839.98	840.23	268.59	393,504.55	792,384.35	
9,905.00	1.90	301.90	9,851.97	12.37	-18.69	-842.38	842.58	268.73	393,506.50	792,381.95	
9,999.00	1.70	310.80	9,945.92	10.62	-16.96	-844.76	844.93	268.85	393,508.23	792,379.57	
10,092.00	1.40	309.00	10,038.89	8.99	-15.34	-846.68	846.82	268.96	393,509.85	792,377.65	
10,186.00	1.40	302.80	10,132.86	7.63	-14.00	-848.54	848.66	269.06	393,511.19	792,375.79	
10,280.00	1.50	298.40	10,226.83	6.40	-12.79	-850.59	850.68	269.14	393,512.40	792,373.74	
10,374.00	1.60	293.90	10,320.80	5.27	-11.67	-852.87	852.95	269.22	393,513.52	792,371.46	
10,468.00	1.70	288.80	10,414.76	4.27	-10.69	-855.39	855.46	269.28	393,514.50	792,368.94	
10,562.00	0.30	246.50	10,508.74	3.91	-10.34	-856.94	857.00	269.31	393,514.85	792,367.39	
10,656.00	0.40	139.70	10,602.74	4.26	-10.69	-856.95	857.02	269.29	393,514.50	792,367.38	
10,750.00	0.70	31.10	10,696.74	4.02	-10.45	-856.44	856.50	269.30	393,514.74	792,367.89	
10,844.00	1.50	21.60	10,790.72	2.39	-8.81	-855.69	855.74	269.41	393,516.38	792,368.64	
10,938.00	0.80	347.20	10,884.70	0.61	-7.03	-855.38	855.41	269.53	393,518.16	792,368.95	
11,032.00	0.50	0.10	10,978.70	-0.44	-5.98	-855.53	855.55	269.60	393,519.21	792,368.80	
11,125.00	0.50	331.10	11,071.69	-1.21	-5.22	-855.72	855.74	269.65	393,519.97	792,368.61	
11,220.00	0.40	333.00	11,166.69	-1.87	-4.56	-856.07	856.09	269.69	393,520.63	792,368.26	
11,314.00	0.60	322.10	11,260.69	-2.55	-3.88	-856.53	856.53	269.74	393,521.31	792,367.80	
11,408.00	1.00	276.30	11,354.68	-3.04	-3.40	-857.64	857.65	269.77	393,521.79	792,366.69	
11,502.00	2.30	278.20	11,448.64	-3.42	-3.04	-860.33	860.33	269.80	393,522.15	792,364.00	
11,596.00	2.70	283.30	11,542.55	-4.23	-2.26	-864.35	864.35	269.85	393,522.93	792,359.98	
11,690.00	1.80	262.80	11,636.48	-4.58	-1.94	-867.97	867.97	269.87	393,523.25	792,356.36	
11,784.00	2.10	267.60	11,730.42	-4.34	-2.19	-871.15	871.15	269.86	393,523.00	792,353.18	
11,846.00	2.00	270.50	11,792.38	-4.32	-2.23	-873.37	873.37	269.85	393,522.96	792,350.96	



ProDirectional Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 94Y
Wellbore: OH
Design: Surveys 155-22387 MD

Local Co-ordinate Reference: Well 94Y
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
11,879.00	2.00	265.40	11,825.36	-4.29	-2.27	-874.52	874.52	269.85	393,522.92	792,349.81	
11,973.00	1.40	250.90	11,919.32	-3.80	-2.78	-877.24	877.24	269.82	393,522.41	792,347.09	
12,036.00	6.00	220.70	11,982.18	-1.07	-5.53	-880.11	880.13	269.64	393,519.66	792,344.22	
12,067.00	9.40	208.10	12,012.89	2.37	-8.99	-882.36	882.41	269.42	393,516.20	792,341.97	
12,098.00	11.60	207.10	12,043.37	7.36	-14.00	-884.98	885.09	269.09	393,511.19	792,339.35	
12,129.00	14.80	205.70	12,073.55	13.68	-20.35	-888.11	888.35	268.69	393,504.84	792,336.22	
12,161.00	16.40	204.40	12,104.37	21.45	-28.14	-891.75	892.20	268.19	393,497.05	792,332.58	
12,192.00	19.00	204.20	12,133.90	30.01	-36.73	-895.63	896.38	267.65	393,488.46	792,328.70	
12,223.00	22.30	203.80	12,162.90	39.96	-46.72	-900.07	901.29	267.03	393,478.47	792,324.26	
12,255.00	25.00	205.20	12,192.21	51.60	-58.40	-905.40	907.28	266.31	393,466.79	792,318.93	
12,301.00	28.90	201.00	12,233.22	70.72	-77.58	-913.53	916.82	265.15	393,447.61	792,310.80	
12,349.00	35.60	201.30	12,273.79	94.52	-101.45	-922.77	928.33	263.73	393,423.74	792,301.56	
12,395.00	41.00	198.60	12,309.88	121.24	-128.25	-932.46	941.23	262.17	393,396.94	792,291.87	
12,443.00	46.80	194.90	12,344.45	153.03	-160.11	-941.99	955.50	260.35	393,365.08	792,282.34	
12,490.00	52.20	192.60	12,374.97	187.67	-194.81	-950.45	970.21	258.42	393,330.38	792,273.88	
12,536.00	56.70	190.00	12,401.71	224.31	-231.50	-957.76	985.34	256.41	393,293.69	792,266.57	
12,583.00	60.30	185.20	12,426.27	263.97	-271.21	-963.02	1,000.48	254.27	393,253.98	792,261.31	
12,630.00	64.10	180.90	12,448.20	305.45	-312.70	-965.20	1,014.59	252.05	393,212.49	792,259.13	
12,677.00	66.60	175.30	12,467.81	348.13	-355.37	-963.77	1,027.20	249.76	393,169.82	792,260.56	
12,725.00	69.60	170.20	12,485.72	392.32	-399.52	-958.13	1,038.09	247.36	393,125.67	792,266.20	
12,772.00	71.50	169.60	12,501.37	436.01	-443.15	-950.36	1,048.60	245.00	393,082.04	792,273.97	
12,819.00	73.50	172.30	12,515.51	480.32	-487.41	-943.31	1,061.80	242.67	393,037.78	792,281.02	
12,866.00	75.30	174.80	12,528.15	525.33	-532.39	-938.23	1,078.76	240.43	392,992.80	792,286.10	
12,913.00	77.80	177.30	12,539.08	570.95	-577.98	-935.09	1,099.30	238.28	392,947.21	792,289.24	
12,961.00	81.20	177.10	12,547.83	618.10	-625.12	-932.78	1,122.88	236.17	392,900.07	792,291.55	
13,007.00	84.40	176.10	12,553.59	663.67	-670.67	-930.08	1,146.66	234.21	392,854.52	792,294.25	



ProDirectional Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 94Y
Wellbore: OH
Design: Surveys 155-22387 MD

Local Co-ordinate Reference: Well 94Y
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
13,048.00	86.20	176.80	12,556.95	704.47	-711.45	-927.55	1,168.97	232.51	392,813.74	792,296.78
Last Survey: 13048' MD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,073.00	1,072.97	-1.64	6.05	Pro MWD First Survey: 1073' MD	
13,048.00	12,556.95	-711.45	-927.55	Last Survey: 13048' MD	



NABORS DRILLING TECHNOLOGIES USA, INC.

515 West Greens Road

Houston, TX 77067

Phone: 281.874.0035

Fax: 281.872.5205

Monday, January 22, 2018

State of New Mexico

County of Lea

Subject: Survey Certification Letter

Survey Company: NABORS DRILLING TECH USA, INC.

Job Number: B1235

Survey Job Type: Nabors MWD

Customer: Devon Energy

Well Name: Sea Wolf 1-12 FED 94Y

Rig Name: ICD 209

Surface: 32.07927, -103.50075

A.P.I. No: 310-025-44138

Location: Lea, NM

RKB Height: 27'

Distance to Bit: 67'

Surveyor Name	Surveyor Title	Borehole Number	Start Depth	End Depth	Start Date	End Date	Type of	TD Straight
								Line Projection
Jack Line	MWD Supervisor	OH	13100'	22320'	01/11/18	01/22/18	MWD	22387'

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by NABORS DRILLING TECHNOLOGIES USA, INC. I am authorized and qualified to review the data, calculations and these reports; the reports represents true and correct Directional Surveys of this well based on the original data, the minimum curvature method, corrected to Grid North and obtained at the well site.

Jack Line

MWD Supervisor

NABORS DRILLING TECHNOLOGIES USA, INC.



Devon Energy Corporation

**Lea Co., NM
SeaWolf 1-12
Fed 94Y
OH**

Design: Surveys

Completion Report

10 December, 2018





Nabors
Completion Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

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	SeaWolf 1-12		
Site Position:		Northing:	393,463.690 usft
From:	Map	Easting:	789,088.210 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 45.070845 N
		Longitude:	103° 32' 0.347634 W
		Grid Convergence:	0.42 °

Well	Fed 94Y		
Well Position	+N-S	0.00 ft	Northing: 393,525.190 usft
	+E-W	0.00 ft	Easting: 793,224.330 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	32° 4' 45.373390 N
		Longitude:	103° 31' 12.271473 W
		Ground Level:	3,325.50 ft

Wellbore	OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)	
	HDGM	1/12/2018	6.75	59.80	47,883.70000000	

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	184.41	

Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey Program		Date	12/10/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
155.20	1,025.20	Survey #1 - Invictus MWD (OH)	MWD+HRGM	OWSG MWD + HRGM	
1,073.00	13,048.00	Survey #2 - ProDirectional (OH)	MWD+HRGM	OWSG MWD + HRGM	
13,138.00	22,387.00	Survey #3 NDS MWD (OH)	MWD+HRGM	OWSG MWD + HRGM	

Survey

MD (ft)	Inc (")	Azi (azimuth) (")	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (")	DLeg ("/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.20	0.20	336.49	155.20	-0.24	0.25	-0.11	0.27	336.49	0.13
245.10	0.10	29.49	245.10	-0.45	0.46	-0.13	0.48	344.00	0.18
339.40	0.20	112.49	339.40	-0.47	0.47	0.06	0.47	7.35	0.23
433.20	0.20	103.49	433.20	-0.40	0.37	0.37	0.52	45.20	0.03
527.20	0.40	96.49	527.20	-0.36	0.29	0.86	0.91	71.11	0.22
621.20	0.30	83.49	621.20	-0.39	0.28	1.43	1.46	78.75	0.14
716.20	0.50	103.49	716.19	-0.37	0.22	2.08	2.09	84.08	0.25
810.90	0.70	122.49	810.89	-0.04	-0.19	2.97	2.97	93.70	0.30
905.20	0.80	118.49	905.18	0.50	-0.82	4.03	4.11	101.43	0.12
999.60	0.70	113.49	999.57	0.96	-1.36	5.14	5.32	104.82	0.13
1,025.20	0.60	112.49	1,025.17	1.05	-1.47	5.41	5.60	105.24	0.39
1,073.00	1.00	99.90	1,072.97	1.17	-1.64	6.05	6.27	105.17	0.91
1,166.00	0.80	104.80	1,165.95	1.37	-1.95	7.48	7.73	104.59	0.23
1,260.00	0.40	13.10	1,259.95	1.16	-1.79	8.18	8.38	102.36	0.96
1,354.00	1.20	322.70	1,353.94	0.10	-0.69	7.66	7.69	95.15	1.06
1,448.00	1.60	325.40	1,447.91	-1.65	1.17	6.32	6.43	79.50	0.43
1,541.00	0.60	340.30	1,540.89	-3.11	2.70	5.42	6.05	63.53	1.11
1,634.00	0.20	324.40	1,633.89	-3.68	3.29	5.16	6.12	57.49	0.44
1,727.00	0.20	304.00	1,726.89	-3.88	3.51	4.93	6.05	54.54	0.08

Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
1,821.00	0.40	318.40	1,820.89	-4.19	3.85	4.58	5.98	48.94	0.23
1,914.00	0.20	320.20	1,913.89	-4.53	4.22	4.26	5.99	45.28	0.22
2,008.00	0.30	278.80	2,007.89	-4.67	4.38	3.91	5.87	41.76	0.21
2,102.00	0.40	263.10	2,101.89	-4.62	4.38	3.34	5.51	37.35	0.15
2,196.00	0.30	267.20	2,195.88	-4.53	4.33	2.77	5.14	32.62	0.11
2,290.00	0.60	291.60	2,289.88	-4.64	4.50	2.07	4.95	24.68	0.37
2,383.00	0.50	299.30	2,382.88	-4.96	4.87	1.26	5.03	14.49	0.13
2,477.00	1.10	303.20	2,476.87	-5.56	5.57	0.15	5.57	1.52	0.64
2,571.00	1.50	286.70	2,570.84	-6.26	6.42	-1.79	6.66	344.45	0.58
2,665.00	2.50	286.50	2,664.79	-6.95	7.35	-4.93	8.85	326.16	1.06
2,760.00	3.30	286.50	2,759.66	-7.96	8.72	-9.54	12.92	312.43	0.84
2,854.00	4.30	280.00	2,853.46	-8.87	10.10	-15.60	18.59	302.91	1.16
2,947.00	4.30	278.60	2,946.19	-9.46	11.22	-22.48	25.13	296.53	0.11
3,042.00	5.20	275.90	3,040.87	-9.83	12.20	-30.29	32.65	291.94	0.98
3,135.00	5.30	275.60	3,133.48	-10.03	13.05	-38.75	40.89	288.61	0.11
3,230.00	5.10	276.40	3,228.09	-10.27	13.95	-47.32	49.33	286.43	0.22
3,324.00	5.70	274.70	3,321.67	-10.44	14.80	-56.12	58.04	284.77	0.66
3,418.00	6.90	274.80	3,415.10	-10.50	15.65	-66.40	68.22	283.27	1.28
3,511.00	7.80	273.50	3,507.33	-10.44	16.51	-78.27	79.99	281.91	0.98
3,605.00	8.60	269.20	3,600.37	-9.70	16.80	-91.66	93.19	280.39	1.07
3,699.00	8.60	265.00	3,693.32	-7.91	16.09	-105.69	106.91	278.65	0.67
3,793.00	8.20	265.10	3,786.31	-5.68	14.90	-119.37	120.30	277.12	0.43
3,887.00	8.30	262.50	3,879.34	-3.19	13.44	-132.78	133.46	275.78	0.41
3,981.00	8.80	263.20	3,972.29	-0.39	11.71	-146.64	147.11	274.56	0.54
4,075.00	6.70	263.70	4,065.43	2.02	10.25	-159.24	159.57	273.68	2.24
4,170.00	7.30	262.70	4,159.72	4.28	8.88	-170.73	170.96	272.98	0.64
4,264.00	8.40	264.50	4,252.84	6.67	7.46	-183.49	183.64	272.33	1.20

Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
4,358.00	8.50	264.50	4,345.82	9.05	6.14	-197.24	197.33	271.78	0.11
4,452.00	7.60	265.90	4,438.89	11.17	5.03	-210.35	210.41	271.37	0.98
4,546.00	6.80	263.30	4,532.15	13.16	3.93	-222.08	222.12	271.01	0.92
4,640.00	6.60	264.90	4,625.50	15.12	2.80	-232.99	233.01	270.69	0.29
4,734.00	6.00	268.30	4,718.94	16.54	2.18	-243.28	243.29	270.51	0.75
4,829.00	5.80	267.20	4,813.43	17.67	1.80	-253.04	253.04	270.41	0.24
4,922.00	6.50	267.50	4,905.90	18.89	1.34	-262.99	262.99	270.29	0.75
5,016.00	5.90	269.60	4,999.35	19.94	1.07	-273.14	273.14	270.22	0.68
5,110.00	7.10	274.90	5,092.74	20.30	1.53	-283.76	283.76	270.31	1.43
5,204.00	7.70	273.20	5,185.96	20.38	2.38	-295.83	295.84	270.46	0.68
5,297.00	7.50	272.60	5,278.14	20.70	3.01	-308.12	308.13	270.56	0.23
5,391.00	7.70	272.90	5,371.32	21.06	3.60	-320.53	320.55	270.64	0.22
5,485.00	7.70	272.30	5,464.47	21.46	4.17	-333.12	333.14	270.72	0.09
5,579.00	7.70	272.10	5,557.62	21.95	4.66	-345.70	345.73	270.77	0.03
5,673.00	8.30	271.20	5,650.71	22.58	5.03	-358.78	358.81	270.80	0.65
5,766.00	8.30	271.30	5,742.73	23.32	5.32	-372.20	372.24	270.82	0.02
5,860.00	8.20	270.20	5,835.76	24.18	5.50	-385.69	385.73	270.82	0.20
5,954.00	8.20	269.30	5,928.80	25.27	5.44	-399.09	399.13	270.78	0.14
6,048.00	8.10	268.80	6,021.85	26.52	5.22	-412.42	412.45	270.73	0.13
6,142.00	7.70	267.70	6,114.96	27.90	4.83	-425.33	425.36	270.65	0.45
6,236.00	7.50	266.40	6,208.13	29.49	4.19	-437.74	437.76	270.55	0.28
6,330.00	7.10	266.00	6,301.37	31.19	3.40	-449.66	449.68	270.43	0.43
6,424.00	7.30	268.00	6,394.63	32.71	2.79	-461.43	461.43	270.35	0.34
6,518.00	8.60	266.60	6,487.72	34.33	2.16	-474.41	474.42	270.26	1.40
6,612.00	8.70	266.30	6,580.65	36.29	1.29	-488.52	488.52	270.15	0.12
6,706.00	8.80	266.10	6,673.56	38.33	0.34	-502.79	502.79	270.04	0.11
6,800.00	9.00	265.90	6,766.43	40.46	-0.68	-517.30	517.30	269.93	0.22



Nabors
Completion Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
6,893.00	9.00	264.80	6,858.28	42.75	-1.86	-531.80	531.80	269.80	0.19
6,987.00	9.00	264.20	6,951.13	45.28	-3.26	-546.43	546.44	269.66	0.10
7,081.00	8.80	264.70	7,043.99	47.80	-4.67	-560.91	560.93	269.52	0.23
7,175.00	8.70	264.20	7,136.90	50.27	-6.05	-575.14	575.17	269.40	0.13
7,269.00	8.20	262.70	7,229.88	52.89	-7.62	-588.86	588.91	269.26	0.58
7,363.00	8.20	266.90	7,322.92	55.13	-8.84	-602.21	602.27	269.16	0.64
7,456.00	8.00	266.30	7,414.99	56.91	-9.62	-615.29	615.36	269.10	0.23
7,550.00	7.50	265.60	7,508.13	58.77	-10.51	-627.93	628.02	269.04	0.54
7,644.00	7.10	266.10	7,601.37	60.55	-11.37	-639.84	639.94	268.98	0.43
7,738.00	6.70	264.90	7,694.69	62.30	-12.26	-651.10	651.22	268.92	0.45
7,832.00	6.40	264.10	7,788.08	64.14	-13.28	-661.77	661.91	268.85	0.33
7,926.00	6.30	266.20	7,881.50	65.82	-14.16	-672.13	672.28	268.79	0.27
8,019.00	6.40	262.40	7,973.93	67.62	-15.19	-682.36	682.53	268.73	0.46
8,113.00	6.20	263.60	8,067.36	69.67	-16.45	-692.60	692.79	268.64	0.25
8,207.00	5.70	261.20	8,160.85	71.69	-17.73	-702.26	702.48	268.55	0.59
8,301.00	5.70	265.80	8,254.39	73.45	-18.78	-711.52	711.77	268.49	0.49
8,395.00	6.30	267.40	8,347.88	74.78	-19.36	-721.33	721.59	268.46	0.66
8,489.00	6.70	267.60	8,441.27	76.06	-19.82	-731.96	732.23	268.45	0.43
8,582.00	6.60	267.70	8,533.64	77.33	-20.26	-742.72	743.00	268.44	0.11
8,685.00	6.20	269.60	8,636.00	78.49	-20.54	-754.20	754.48	268.44	0.44
8,778.00	6.60	269.60	8,728.42	79.36	-20.61	-764.57	764.84	268.46	0.43
8,872.00	7.00	271.10	8,821.76	80.14	-20.54	-775.69	775.97	268.48	0.47
8,966.00	6.70	270.20	8,915.09	80.87	-20.41	-786.91	787.17	268.51	0.34
9,060.00	6.00	266.70	9,008.51	81.94	-20.67	-797.29	797.56	268.51	0.85
9,154.00	5.10	264.30	9,102.07	83.33	-21.37	-806.36	806.64	268.48	0.99
9,248.00	4.60	263.50	9,195.74	84.77	-22.21	-814.26	814.56	268.44	0.54
9,341.00	4.00	265.50	9,288.47	85.98	-22.89	-821.20	821.52	268.40	0.66

Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
9,435.00	3.30	266.40	9,382.28	86.87	-23.32	-827.17	827.49	268.39	0.75
9,529.00	2.40	271.10	9,476.16	87.36	-23.45	-831.83	832.16	268.39	0.99
9,623.00	1.80	280.50	9,570.10	87.32	-23.14	-835.25	835.57	268.41	0.73
9,717.00	1.50	296.60	9,664.06	86.69	-22.32	-837.81	838.10	268.47	0.58
9,811.00	1.90	316.40	9,758.02	85.19	-20.64	-839.98	840.23	268.59	0.75
9,905.00	1.90	301.90	9,851.97	83.43	-18.69	-842.38	842.58	268.73	0.51
9,999.00	1.70	310.80	9,945.92	81.88	-16.96	-844.76	844.93	268.85	0.37
10,092.00	1.40	309.00	10,038.89	80.42	-15.34	-846.68	846.82	268.96	0.33
10,186.00	1.40	302.80	10,132.86	79.22	-13.99	-848.54	848.66	269.06	0.16
10,280.00	1.50	298.40	10,226.83	78.17	-12.79	-850.59	850.68	269.14	0.16
10,374.00	1.60	293.90	10,320.80	77.23	-11.67	-852.87	852.95	269.22	0.17
10,468.00	1.70	288.80	10,414.76	76.45	-10.69	-855.39	855.46	269.28	0.19
10,562.00	0.30	246.50	10,508.74	76.22	-10.34	-856.94	857.00	269.31	1.59
10,656.00	0.40	139.70	10,602.74	76.57	-10.69	-856.95	857.02	269.29	0.60
10,750.00	0.70	31.10	10,696.74	76.29	-10.45	-856.44	856.50	269.30	0.97
10,844.00	1.50	21.60	10,790.72	74.60	-8.81	-855.69	855.74	269.41	0.87
10,938.00	0.80	347.20	10,884.70	72.80	-7.03	-855.38	855.41	269.53	1.01
11,032.00	0.50	0.10	10,978.70	71.76	-5.98	-855.53	855.55	269.60	0.35
11,125.00	0.50	331.10	11,071.69	71.02	-5.21	-855.72	855.74	269.65	0.27
11,220.00	0.40	333.00	11,166.69	70.39	-4.56	-856.07	856.09	269.70	0.11
11,314.00	0.60	322.10	11,260.69	69.74	-3.88	-856.53	856.53	269.74	0.23
11,408.00	1.00	276.30	11,354.68	69.35	-3.40	-857.64	857.65	269.77	0.77
11,502.00	2.30	278.20	11,448.64	69.20	-3.04	-860.33	860.33	269.80	1.38
11,596.00	2.70	283.30	11,542.55	68.73	-2.26	-864.35	864.35	269.85	0.49
11,690.00	1.80	262.80	11,636.48	68.69	-1.94	-867.97	867.97	269.87	1.27
11,784.00	2.10	267.60	11,730.42	69.19	-2.19	-871.15	871.15	269.86	0.36
11,846.00	2.00	270.50	11,792.38	69.40	-2.23	-873.37	873.37	269.85	0.23



Nabors
Completion Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
11,879.00	2.00	265.40	11,825.36	69.53	-2.27	-874.52	874.52	269.85	0.54
11,973.00	1.40	250.90	11,919.32	70.24	-2.78	-877.24	877.24	269.82	0.78
12,036.00	6.00	220.70	11,982.18	73.21	-5.53	-880.11	880.13	269.64	7.68
12,067.00	9.40	208.10	12,012.89	76.83	-8.99	-882.36	882.41	269.42	12.18
12,098.00	11.60	207.10	12,043.37	82.03	-14.00	-884.98	885.09	269.09	7.12
12,129.00	14.80	205.70	12,073.55	88.59	-20.34	-888.11	888.35	268.69	10.37
12,161.00	16.40	204.40	12,104.37	96.65	-28.14	-891.75	892.20	268.19	5.12
12,192.00	19.00	204.20	12,133.90	105.51	-36.73	-895.63	896.38	267.65	8.39
12,223.00	22.30	203.80	12,162.90	115.81	-46.72	-900.07	901.29	267.03	10.65
12,255.00	25.00	205.20	12,192.21	127.86	-58.39	-905.40	907.29	266.31	8.62
12,301.00	28.90	201.00	12,233.22	147.61	-77.58	-913.53	916.82	265.15	9.43
12,349.00	35.60	201.30	12,273.79	172.12	-101.45	-922.77	928.33	263.73	13.96
12,395.00	41.00	198.60	12,309.88	199.58	-128.24	-932.46	941.23	262.17	12.29
12,443.00	46.80	194.90	12,344.45	232.09	-160.11	-941.99	955.50	260.35	13.21
12,490.00	52.20	192.60	12,374.97	267.34	-194.81	-950.45	970.21	258.42	12.08
12,536.00	56.70	190.00	12,401.71	304.48	-231.50	-957.76	985.34	256.41	10.81
12,583.00	60.30	185.20	12,426.27	344.47	-271.20	-963.02	1,000.48	254.27	11.59
12,630.00	64.10	180.90	12,448.20	386.01	-312.70	-965.20	1,014.59	252.05	11.44
12,677.00	66.60	175.30	12,467.81	428.44	-355.37	-963.77	1,027.20	249.76	12.06
12,725.00	69.60	170.20	12,485.72	472.03	-399.52	-958.13	1,038.09	247.36	11.67
12,772.00	71.50	169.60	12,501.37	514.93	-443.15	-950.36	1,048.60	245.00	4.22
12,819.00	73.50	172.30	12,515.51	558.52	-487.41	-943.31	1,061.80	242.67	6.94
12,824.36	73.70	172.59	12,517.02	563.55	-492.51	-942.64	1,063.54	242.41	6.40
Fed_94Y_EOC									
12,866.00	75.30	174.80	12,528.15	602.97	-532.39	-938.23	1,078.76	240.43	6.40
12,913.00	77.80	177.30	12,539.08	648.19	-577.98	-935.09	1,099.30	238.28	7.42
12,961.00	81.20	177.10	12,547.83	695.01	-625.11	-932.78	1,122.88	236.17	7.10



Nabors
Completion Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVR Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
13,007.00	84.40	176.10	12,553.59	740.21	-670.66	-930.08	1,146.66	234.21	7.28
13,048.00	86.20	176.80	12,556.95	780.68	-711.45	-927.55	1,168.97	232.51	4.71
13,138.00	88.13	178.09	12,561.40	869.90	-801.24	-923.54	1,222.67	229.06	2.58
13,233.00	89.25	178.62	12,563.57	964.34	-896.18	-920.82	1,284.92	225.78	1.30
13,328.00	91.13	179.49	12,563.26	1,058.92	-991.16	-919.25	1,351.82	222.84	2.18
13,423.00	88.88	178.62	12,563.25	1,153.50	-1,086.14	-917.68	1,421.91	220.19	2.54
13,518.00	89.56	177.21	12,564.54	1,247.88	-1,181.06	-914.23	1,493.56	217.74	1.65
13,612.00	90.31	177.39	12,564.65	1,341.16	-1,274.96	-909.80	1,566.28	215.51	0.82
13,706.00	89.94	177.03	12,564.45	1,434.41	-1,368.84	-905.22	1,641.09	213.48	0.55
13,801.00	91.00	177.56	12,563.67	1,528.68	-1,463.73	-900.74	1,718.68	211.61	1.25
13,896.00	89.94	177.56	12,562.89	1,622.99	-1,558.64	-896.69	1,798.17	209.91	1.12
13,991.00	89.50	177.39	12,563.35	1,717.30	-1,653.55	-892.51	1,879.04	208.36	0.50
14,087.00	90.06	178.26	12,563.72	1,812.66	-1,749.48	-888.87	1,962.34	206.93	1.08
14,202.00	92.81	178.62	12,560.84	1,926.99	-1,864.39	-885.74	2,064.09	205.41	2.41
14,297.00	93.00	181.25	12,556.03	2,021.57	-1,959.26	-885.63	2,150.12	204.32	2.77
14,392.00	91.75	181.25	12,552.09	2,116.34	-2,054.15	-887.70	2,237.76	203.37	1.32
14,486.00	89.06	181.08	12,551.42	2,210.18	-2,148.12	-889.61	2,325.04	202.50	2.87
14,580.00	87.81	179.67	12,553.99	2,303.91	-2,242.08	-890.23	2,412.35	201.66	2.00
14,674.00	88.31	178.62	12,557.17	2,397.46	-2,336.01	-888.82	2,499.39	200.83	1.24
14,769.00	88.13	178.26	12,560.12	2,491.90	-2,430.93	-886.24	2,587.44	200.03	0.42
14,863.00	87.25	177.03	12,563.91	2,585.16	-2,524.77	-882.38	2,674.52	199.26	1.61
14,957.00	87.94	177.03	12,567.86	2,678.30	-2,618.57	-877.51	2,761.69	198.53	0.73
15,052.00	88.25	176.68	12,571.02	2,772.42	-2,713.37	-872.30	2,850.14	197.82	0.49
15,146.00	88.31	175.98	12,573.84	2,865.45	-2,807.13	-866.29	2,937.76	197.15	0.75
15,241.00	87.75	176.68	12,577.10	2,959.45	-2,901.88	-860.21	3,026.70	196.51	0.94
15,335.00	88.00	176.51	12,580.59	3,052.51	-2,995.65	-854.63	3,115.18	195.92	0.32
15,429.00	88.19	178.44	12,583.71	3,145.77	-3,089.50	-850.50	3,204.43	195.39	2.06



Nabors
Completion Report



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Project: Lea Co., NM
Site: SeaWolf 1-12
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Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
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Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
15,524.00	88.81	178.62	12,586.20	3,240.23	-3,184.44	-848.06	3,295.43	194.91	0.68
15,618.00	90.94	178.79	12,586.41	3,333.76	-3,278.41	-845.93	3,385.79	194.47	2.27
15,712.00	89.88	178.44	12,585.73	3,427.28	-3,372.38	-843.66	3,476.31	194.05	1.19
15,807.00	89.63	178.26	12,586.14	3,521.75	-3,467.34	-840.93	3,567.86	193.63	0.32
15,901.00	89.63	178.44	12,586.75	3,615.22	-3,561.30	-838.22	3,658.61	193.24	0.19
15,995.00	89.50	180.37	12,587.46	3,708.85	-3,655.28	-837.24	3,749.94	192.90	2.06
16,090.00	87.19	180.90	12,590.20	3,803.60	-3,750.23	-838.30	3,842.78	192.60	2.49
16,184.00	87.44	180.02	12,594.61	3,897.27	-3,844.13	-839.05	3,934.63	192.31	0.97
16,279.00	88.63	179.49	12,597.86	3,991.90	-3,939.07	-838.64	4,027.35	192.02	1.37
16,373.00	84.81	178.62	12,603.24	4,085.32	-4,032.88	-837.10	4,118.84	191.73	4.17
16,468.00	85.69	179.85	12,611.11	4,179.60	-4,127.54	-835.83	4,211.32	191.45	1.59
16,562.00	88.06	180.37	12,616.23	4,273.19	-4,221.40	-836.02	4,303.38	191.20	2.58
16,657.00	89.81	180.37	12,618.00	4,367.94	-4,316.38	-836.63	4,396.71	190.97	1.84
16,751.00	90.31	179.85	12,617.90	4,461.67	-4,410.37	-836.81	4,489.06	190.74	0.77
16,846.00	89.50	179.67	12,618.06	4,556.36	-4,505.37	-836.41	4,582.35	190.52	0.87
16,940.00	91.00	178.97	12,617.65	4,649.98	-4,599.36	-835.30	4,674.60	190.29	1.76
17,035.00	91.06	178.09	12,615.94	4,744.47	-4,694.31	-832.86	4,767.62	190.06	0.93
17,130.00	89.00	178.79	12,615.89	4,838.95	-4,789.27	-830.27	4,860.71	189.84	2.29
17,224.00	87.13	179.85	12,619.06	4,932.52	-4,883.21	-829.16	4,953.10	189.64	2.29
17,318.00	88.31	181.43	12,622.80	5,026.23	-4,977.12	-830.21	5,045.89	189.47	2.10
17,413.00	89.25	180.90	12,624.83	5,121.06	-5,072.08	-832.14	5,139.89	189.32	1.14
17,501.00	89.44	180.73	12,625.83	5,208.88	-5,160.07	-833.39	5,226.93	189.17	0.29
17,595.00	90.81	179.49	12,625.63	5,302.61	-5,254.06	-833.57	5,319.77	189.01	1.97
17,690.00	89.69	180.73	12,625.21	5,397.34	-5,349.06	-833.75	5,413.64	188.86	1.76
17,784.00	89.06	182.83	12,626.24	5,491.23	-5,443.00	-836.67	5,506.93	188.74	2.33
17,879.00	87.75	184.42	12,628.88	5,586.18	-5,537.77	-842.68	5,601.52	188.65	2.17
17,973.00	88.75	184.06	12,631.75	5,680.13	-5,631.47	-849.62	5,695.20	188.58	1.13



Nabors
Completion Report



Company: Devon Energy Corporation
Project: Lea Co., NM
Site: SeaWolf 1-12
Well: Fed 94Y
Wellbore: OH
Design: Surveys

Local Co-ordinate Reference: Well Fed 94Y
TVD Reference: KB=27' @ 3352.50ft (IDC 209)
MD Reference: KB=27' @ 3352.50ft (IDC 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
18,068.00	89.25	183.54	12,633.41	5,775.11	-5,726.24	-855.92	5,789.86	188.50	0.76
18,163.00	89.56	183.89	12,634.40	5,870.10	-5,821.04	-862.07	5,884.53	188.42	0.49
18,257.00	88.81	182.13	12,635.73	5,964.06	-5,914.89	-867.01	5,978.10	188.34	2.04
18,352.00	87.38	178.44	12,638.89	6,058.74	-6,009.82	-867.48	6,072.11	188.21	4.16
18,446.00	88.50	178.26	12,642.27	6,152.15	-6,103.72	-864.78	6,164.68	188.06	1.21
18,541.00	89.44	178.09	12,643.98	6,246.57	-6,198.65	-861.75	6,258.27	187.91	1.01
18,635.00	89.44	178.09	12,644.90	6,340.00	-6,292.60	-858.62	6,350.91	187.77	0.00
18,730.00	91.31	179.32	12,644.28	6,434.52	-6,387.57	-856.47	6,444.73	187.64	2.36
18,824.00	93.31	179.85	12,640.49	6,528.10	-6,481.48	-855.79	6,537.74	187.52	2.20
18,919.00	92.81	181.78	12,635.42	6,622.78	-6,576.33	-857.14	6,631.96	187.43	2.10
19,014.00	91.44	181.96	12,631.89	6,717.62	-6,671.21	-860.24	6,726.45	187.35	1.45
19,107.00	90.31	180.73	12,630.47	6,810.47	-6,764.17	-862.42	6,818.93	187.27	1.80
19,202.00	88.81	180.02	12,631.20	6,905.23	-6,859.17	-863.04	6,913.25	187.17	1.75
19,297.00	90.25	180.55	12,631.98	6,999.97	-6,954.16	-863.52	7,007.57	187.08	1.62
19,392.00	88.50	179.67	12,633.02	7,094.70	-7,049.15	-863.70	7,101.86	186.99	2.06
19,486.00	89.25	179.49	12,634.86	7,188.34	-7,143.13	-863.01	7,195.07	186.89	0.82
19,580.00	90.63	180.02	12,634.96	7,282.03	-7,237.12	-862.61	7,288.35	186.80	1.57
19,675.00	91.44	181.08	12,633.25	7,376.80	-7,332.10	-863.52	7,382.78	186.72	1.40
19,769.00	88.69	179.32	12,633.14	7,470.53	-7,426.09	-863.85	7,476.16	186.64	3.47
19,864.00	88.50	177.91	12,635.47	7,565.01	-7,521.03	-861.55	7,570.21	186.53	1.50
19,958.00	88.75	177.21	12,637.73	7,658.32	-7,614.92	-857.55	7,663.05	186.43	0.79
20,053.00	87.38	176.15	12,640.93	7,752.40	-7,709.70	-852.05	7,756.64	186.31	1.82
20,148.00	90.00	176.51	12,643.11	7,846.42	-7,804.47	-845.97	7,850.19	186.19	2.78
20,243.00	89.94	175.10	12,643.15	7,940.35	-7,899.21	-839.02	7,943.65	186.06	1.49
20,337.00	91.06	173.52	12,642.33	8,032.88	-7,992.74	-829.71	8,035.69	185.93	2.06
20,432.00	90.88	175.63	12,640.73	8,126.47	-8,087.30	-820.73	8,128.84	185.79	2.23
20,526.00	92.75	177.21	12,637.75	8,219.50	-8,181.06	-814.86	8,221.54	185.69	2.60



Nabors
Completion Report



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TVD Reference: KB=27' @ 3352.50ft (IDC 209)
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Survey Calculation Method: Minimum Curvature
Database: RyanUSA_ODBC_32-Bit

Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)
20,620.00	94.00	176.86	12,632.22	8,312.56	-8,274.77	-810.01	8,314.32	185.59	1.38
20,715.00	92.81	178.26	12,626.57	8,406.71	-8,369.51	-805.97	8,408.23	185.50	1.93
20,809.00	92.69	177.74	12,622.06	8,500.01	-8,463.35	-802.69	8,501.33	185.42	0.57
20,903.00	92.56	177.03	12,617.76	8,593.21	-8,557.15	-798.41	8,594.32	185.33	0.77
20,998.00	93.81	177.03	12,612.48	8,687.28	-8,651.87	-793.49	8,688.18	185.24	1.32
21,093.00	93.75	177.21	12,606.22	8,781.30	-8,746.55	-788.73	8,782.04	185.15	0.20
21,188.00	91.63	177.74	12,601.76	8,875.50	-8,841.34	-784.55	8,876.09	185.07	2.30
21,283.00	89.13	176.51	12,601.13	8,969.72	-8,936.21	-779.79	8,970.17	184.99	2.93
21,378.00	87.44	175.80	12,603.97	9,063.69	-9,030.95	-773.42	9,064.01	184.89	1.93
21,472.00	90.44	174.92	12,605.71	9,156.49	-9,124.62	-765.82	9,156.70	184.80	3.33
21,566.00	89.69	179.49	12,605.60	9,249.72	-9,218.48	-761.23	9,249.86	184.72	4.93
21,661.00	90.25	180.90	12,605.65	9,344.46	-9,313.48	-761.56	9,344.56	184.67	1.60
21,756.00	91.38	180.73	12,604.30	9,439.26	-9,408.46	-762.91	9,439.34	184.64	1.20
21,851.00	91.50	181.60	12,601.91	9,534.08	-9,503.41	-764.84	9,534.13	184.60	0.92
21,945.00	91.31	181.60	12,599.61	9,627.94	-9,597.34	-767.46	9,627.98	184.57	0.20
22,040.00	90.75	180.55	12,597.90	9,722.76	-9,692.31	-769.25	9,722.78	184.54	1.25
22,134.00	91.56	179.32	12,596.01	9,816.45	-9,786.28	-769.14	9,816.46	184.49	1.57
22,229.00	92.19	182.31	12,592.90	9,911.20	-9,881.21	-770.49	9,911.21	184.46	3.21
22,320.00	91.81	181.08	12,589.72	10,002.04	-9,972.12	-773.18	10,002.04	184.43	1.41
22,387.00	91.81	181.08	12,587.61	10,068.90	-10,039.07	-774.44	10,068.90	184.41	0.00

PTB - Fed_94Y_BHL

Checked By: _____ Approved By: _____ Date: _____