



Ameredev Operating, LLC.

NAN/GB

NAN/GB #3N

Nandina 103H

Nandina 103H As Drilled

Plan: Final

Standard Planning Report

11 November, 2019

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project NAN/GB

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

System Datum: Mean Sea Level

Site NAN/GB #3N

Site Position: Northing: 394,428.42 usft Latitude: 32° 4' 48.746 N
From: Lat/Long Easting: 859,181.30 usft Longitude: 103° 18' 25.636 W
Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: 0.55 °

Well Nandina 103H

Well Position +N/-S -1.0 usft Northing: 394,427.39 usft Latitude: 32° 4' 48.746 N
+E/-W -100.0 usft Easting: 859,081.32 usft Longitude: 103° 18' 26.798 W
Position Uncertainty 0.0 usft Wellhead Elevation: Ground Level: 3,018.0 usft

Wellbore Nandina 103H As Drilled

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/11/2019	6.56	59.94	47,636.06401986

Design Final

Audit Notes:

Version: Phase: PROTOTYPE Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	357.43

Plan Survey Tool Program Date 11/11/2019

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	22,535.8	Final (Nandina 103H As Drilled)	MWD OWSG MWD - Standard

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Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
125.0	0.70	96.00	125.0	-0.1	0.8	0.56	0.56	0.00	96.00	
209.0	1.10	304.00	209.0	0.3	0.6	2.08	0.48	-180.95	-162.83	
299.0	1.30	302.00	299.0	1.3	-1.0	0.23	0.22	-2.22	-12.83	
393.0	2.30	280.00	392.9	2.2	-3.7	1.27	1.06	-23.40	-45.97	
488.0	2.80	274.00	487.8	2.7	-7.9	0.60	0.53	-6.32	-31.12	
583.0	3.20	268.00	582.7	2.8	-12.9	0.53	0.42	-6.32	-41.15	
677.0	2.70	264.00	676.6	2.5	-17.7	0.57	-0.53	-4.26	-159.61	
772.0	3.10	262.00	771.5	1.9	-22.5	0.43	0.42	-2.11	-15.20	
866.0	3.60	259.00	865.3	1.0	-27.9	0.56	0.53	-3.19	-20.82	
961.0	3.10	260.00	960.1	-0.1	-33.4	0.53	-0.53	1.05	173.83	
1,055.0	2.80	252.00	1,054.0	-1.2	-38.1	0.54	-0.32	-8.51	-130.03	
1,145.0	2.80	252.00	1,143.9	-2.6	-42.2	0.00	0.00	0.00	0.00	
1,238.0	1.38	290.90	1,236.8	-2.9	-45.4	2.08	-1.53	41.83	153.34	
1,336.0	0.02	343.32	1,334.8	-2.4	-46.5	1.40	-1.39	53.49	179.34	
1,432.0	0.05	328.30	1,430.8	-2.4	-46.6	0.03	0.03	-15.65	-24.61	
1,526.0	0.10	11.32	1,524.8	-2.3	-46.6	0.08	0.05	45.77	71.29	
1,620.0	0.08	295.30	1,618.8	-2.1	-46.6	0.12	-0.02	-80.87	-136.10	
1,716.0	0.01	132.93	1,714.8	-2.1	-46.7	0.09	-0.07	-169.14	-178.06	
1,811.0	0.08	134.73	1,809.8	-2.2	-46.6	0.07	0.07	1.89	2.06	
1,907.0	0.08	121.41	1,905.8	-2.3	-46.5	0.02	0.00	-13.88	-96.66	
2,003.0	0.61	214.46	2,001.8	-2.7	-46.7	0.65	0.55	96.93	100.46	
2,098.0	3.52	183.16	2,096.8	-6.0	-47.2	3.17	3.06	-32.95	-37.33	
2,194.0	6.90	179.88	2,192.3	-14.8	-47.3	3.53	3.52	-3.42	-6.67	
2,289.0	9.97	178.86	2,286.3	-28.7	-47.2	3.24	3.23	-1.07	-3.30	
2,384.0	11.55	175.48	2,379.6	-46.4	-46.3	1.79	1.66	-3.56	-23.44	
2,479.0	10.73	173.00	2,472.8	-64.7	-44.4	1.00	-0.86	-2.61	-150.91	
2,575.0	9.57	169.53	2,567.3	-81.4	-41.9	1.37	-1.21	-3.61	-153.90	
2,671.0	8.15	167.67	2,662.2	-95.9	-39.0	1.51	-1.48	-1.94	-169.51	
2,765.0	7.35	166.32	2,755.3	-108.2	-36.1	0.87	-0.85	-1.44	-167.85	
2,861.0	6.51	159.26	2,850.6	-119.3	-32.8	1.24	-0.88	-7.35	-138.07	
2,956.0	5.44	147.35	2,945.1	-128.1	-28.4	1.72	-1.13	-12.54	-136.62	
3,051.0	5.59	129.97	3,039.7	-134.9	-22.5	1.76	0.16	-18.29	-93.56	
3,146.0	5.52	118.55	3,134.2	-140.0	-14.9	1.16	-0.07	-12.02	-99.29	
3,241.0	1.94	118.71	3,229.0	-143.0	-9.5	3.77	-3.77	0.17	179.91	
3,336.0	0.19	251.94	3,324.0	-143.8	-8.2	2.18	-1.84	140.24	176.17	
3,431.0	3.26	243.06	3,419.0	-145.1	-10.8	3.23	3.23	-9.35	-9.43	
3,526.0	6.86	232.64	3,513.6	-149.7	-17.7	3.90	3.79	-10.97	-18.55	
3,622.0	8.02	230.83	3,608.8	-157.5	-27.4	1.23	1.21	-1.89	-12.32	
3,717.0	6.94	224.99	3,703.0	-165.7	-36.6	1.39	-1.14	-6.15	-147.73	
3,813.0	6.86	220.94	3,798.3	-174.1	-44.5	0.51	-0.08	-4.22	-101.34	
3,908.0	6.72	218.89	3,892.6	-182.7	-51.7	0.29	-0.15	-2.16	-121.03	
4,002.0	6.00	221.41	3,986.0	-190.7	-58.4	0.82	-0.77	2.68	160.06	
4,098.0	6.04	224.05	4,081.5	-198.1	-65.2	0.29	0.04	2.75	83.09	
4,193.0	5.94	225.32	4,176.0	-205.2	-72.2	0.17	-0.11	1.34	127.67	
4,289.0	5.93	225.42	4,271.5	-212.1	-79.3	0.01	-0.01	0.10	134.09	
4,384.0	6.10	224.44	4,365.9	-219.2	-86.3	0.21	0.18	-1.03	-31.62	
4,479.0	6.24	213.14	4,460.4	-227.1	-92.6	1.28	0.15	-11.89	-89.06	

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4,575.0	6.27	198.18	4,555.8	-236.5	-97.1	1.69	0.03	-15.58	-96.39
4,671.0	6.24	191.04	4,651.2	-246.6	-99.8	0.81	-0.03	-7.44	-95.75
4,766.0	6.24	189.16	4,745.7	-256.7	-101.6	0.22	0.00	-1.98	-90.93
4,861.0	6.28	190.73	4,840.1	-266.9	-103.4	0.19	0.04	1.65	77.63
4,957.0	6.34	191.17	4,935.5	-277.3	-105.4	0.08	0.06	0.46	39.09
5,052.0	6.39	192.96	5,030.0	-287.6	-107.6	0.22	0.05	1.88	76.75
5,147.0	6.36	192.59	5,124.4	-297.9	-109.9	0.05	-0.03	-0.39	-126.32
5,242.0	6.31	194.17	5,218.8	-308.1	-112.3	0.19	-0.05	1.66	106.79
5,337.0	6.43	194.41	5,313.2	-318.3	-114.9	0.13	0.13	0.25	12.63
5,433.0	6.25	194.72	5,408.6	-328.5	-117.6	0.19	-0.19	0.32	169.39
5,528.0	6.38	194.72	5,503.0	-338.6	-120.3	0.14	0.14	0.00	0.00
5,624.0	6.37	192.32	5,598.4	-349.0	-122.7	0.28	-0.01	-2.50	-93.34
5,718.0	5.82	191.40	5,691.9	-358.8	-124.8	0.59	-0.59	-0.98	-170.39
5,814.0	5.82	195.81	5,787.4	-368.2	-127.1	0.47	0.00	4.59	92.19
5,909.0	5.85	198.72	5,881.9	-377.4	-130.0	0.31	0.03	3.06	85.66
6,003.0	5.95	205.51	5,975.4	-386.4	-133.6	0.75	0.11	7.22	85.23
6,098.0	5.90	206.17	6,069.9	-395.2	-137.9	0.09	-0.05	0.69	126.60
6,193.0	5.91	205.39	6,164.4	-404.0	-142.1	0.09	0.01	-0.82	-83.28
6,288.0	6.05	204.32	6,258.9	-413.0	-146.3	0.19	0.15	-1.13	-39.06
6,384.0	6.13	203.23	6,354.4	-422.3	-150.4	0.15	0.08	-1.14	-55.87
6,479.0	5.96	202.48	6,448.8	-431.5	-154.3	0.20	-0.18	-0.79	-155.45
6,575.0	6.00	201.45	6,544.3	-440.8	-158.0	0.12	0.04	-1.07	-70.07
6,669.0	5.73	199.62	6,637.8	-449.8	-161.4	0.35	-0.29	-1.95	-146.20
6,764.0	3.43	193.01	6,732.5	-457.0	-163.6	2.48	-2.42	-6.96	-170.36
6,859.0	1.05	173.82	6,827.4	-460.7	-164.2	2.59	-2.51	-20.20	-171.94
6,954.0	0.10	230.91	6,922.4	-461.6	-164.1	1.05	-1.00	60.09	175.18
7,050.0	0.06	38.01	7,018.4	-461.6	-164.2	0.17	-0.04	174.06	175.17
7,145.0	0.01	317.85	7,113.4	-461.5	-164.1	0.06	-0.05	-84.38	-170.41
7,245.0	0.04	23.94	7,213.4	-461.5	-164.1	0.04	0.03	66.09	80.36
7,339.0	0.04	59.32	7,307.4	-461.5	-164.1	0.03	0.00	37.64	107.69
7,435.0	0.03	212.68	7,403.4	-461.5	-164.1	0.07	-0.01	159.75	168.62
7,530.0	0.07	262.64	7,498.4	-461.5	-164.1	0.06	0.04	52.59	74.33
7,626.0	0.07	334.80	7,594.4	-461.4	-164.2	0.09	0.00	75.17	126.08
7,721.0	0.10	288.69	7,689.4	-461.4	-164.3	0.08	0.03	-48.54	-90.53
7,816.0	0.07	339.74	7,784.4	-461.3	-164.4	0.08	-0.03	53.74	135.81
7,912.0	0.07	316.17	7,880.4	-461.2	-164.5	0.03	0.00	-24.55	-101.78
8,006.0	0.07	9.26	7,974.4	-461.1	-164.5	0.07	0.00	56.48	116.54
8,101.0	0.06	191.80	8,069.4	-461.1	-164.5	0.14	-0.01	-186.80	-178.83
8,197.0	0.16	285.30	8,165.4	-461.1	-164.7	0.18	0.10	97.40	113.60
8,292.0	0.11	260.78	8,260.4	-461.1	-164.9	0.08	-0.05	-25.81	-142.70
8,387.0	0.17	261.43	8,355.4	-461.1	-165.1	0.06	0.06	0.68	1.84
8,482.0	0.09	235.90	8,450.4	-461.2	-165.3	0.10	-0.08	-26.87	-156.40
8,577.0	0.07	300.67	8,545.4	-461.2	-165.4	0.09	-0.02	68.18	133.53
8,641.0	0.29	292.21	8,609.4	-461.1	-165.6	0.35	0.34	-13.22	-11.13
8,672.0	0.38	304.86	8,640.4	-461.0	-165.8	0.37	0.29	40.81	45.85
8,714.0	0.68	302.48	8,682.4	-460.8	-166.1	0.72	0.71	-5.67	-5.39
8,767.0	0.54	292.58	8,735.4	-460.5	-166.6	0.33	-0.26	-18.68	-147.91
8,804.0	0.49	263.40	8,772.4	-460.5	-166.9	0.71	-0.14	-78.86	-115.15
8,862.0	0.60	249.54	8,830.4	-460.6	-167.4	0.29	0.19	-23.90	-57.23
8,957.0	1.13	248.39	8,925.4	-461.1	-168.8	0.56	0.56	-1.21	-2.45
9,047.0	1.74	259.69	9,015.4	-461.7	-170.9	0.74	0.68	12.56	30.61
9,142.0	2.05	264.15	9,110.3	-462.1	-174.0	0.36	0.33	4.69	27.68
9,238.0	2.32	269.69	9,206.2	-462.3	-177.7	0.36	0.28	5.77	40.83

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9,332.0	2.81	276.77	9,300.2	-462.1	-181.9	0.62	0.52	7.53	36.46
9,427.0	2.94	277.98	9,395.0	-461.5	-186.6	0.15	0.14	1.27	25.63
9,522.0	2.86	278.47	9,489.9	-460.8	-191.4	0.09	-0.08	0.52	163.03
9,617.0	2.60	288.35	9,584.8	-459.7	-195.8	0.56	-0.27	10.40	123.80
9,712.0	1.35	295.99	9,679.7	-458.6	-198.8	1.34	-1.32	8.04	171.91
9,807.0	1.09	335.87	9,774.7	-457.3	-200.2	0.91	-0.27	41.98	126.31
9,901.0	1.17	343.62	9,868.7	-455.5	-200.8	0.18	0.09	8.24	66.28
9,996.0	1.25	320.67	9,963.7	-453.8	-201.8	0.51	0.08	-24.16	-92.22
10,091.0	1.52	296.97	10,058.7	-452.4	-203.5	0.66	0.28	-24.95	-76.93
10,187.0	1.57	282.76	10,154.6	-451.6	-206.0	0.40	0.05	-14.80	-89.70
10,281.0	1.31	281.83	10,248.6	-451.0	-208.3	0.28	-0.28	-0.99	-175.33
10,376.0	1.02	277.47	10,343.6	-450.7	-210.2	0.32	-0.31	-4.59	-165.17
10,472.0	0.64	274.82	10,439.6	-450.6	-211.5	0.40	-0.40	-2.76	-175.56
10,567.0	0.49	244.97	10,534.6	-450.7	-212.4	0.34	-0.16	-31.42	-131.40
10,662.0	0.62	246.08	10,629.6	-451.1	-213.3	0.14	0.14	1.17	5.28
10,757.0	1.51	246.56	10,724.5	-451.8	-214.9	0.94	0.94	0.51	0.81
10,851.0	2.74	253.04	10,818.5	-452.9	-218.2	1.33	1.31	6.89	14.30
10,944.0	2.74	257.28	10,911.4	-454.1	-222.5	0.22	0.00	4.56	92.12
11,039.0	2.60	273.23	11,006.3	-454.4	-226.8	0.79	-0.15	16.79	108.57
11,081.0	2.78	274.44	11,048.2	-454.3	-228.8	0.45	0.43	2.88	18.11
11,177.0	1.48	305.04	11,144.2	-453.4	-232.1	1.75	-1.35	31.88	153.42
11,272.0	1.55	306.23	11,239.1	-451.9	-234.2	0.08	0.07	1.25	24.80
11,304.0	2.29	332.07	11,271.1	-451.1	-234.8	3.50	2.31	80.75	62.88
11,336.0	3.48	350.65	11,303.1	-449.6	-235.3	4.68	3.72	58.06	47.69
11,368.0	4.28	9.61	11,335.0	-447.5	-235.2	4.69	2.50	59.25	67.75
11,400.0	5.42	15.76	11,366.9	-444.8	-234.6	3.91	3.56	19.22	27.60
11,431.0	7.56	16.43	11,397.7	-441.5	-233.7	6.91	6.90	2.16	2.36
11,463.0	9.97	17.60	11,429.3	-436.8	-232.2	7.55	7.53	3.66	4.81
11,495.0	12.95	18.25	11,460.7	-430.8	-230.3	9.32	9.31	2.03	2.80
11,525.0	16.07	18.32	11,489.7	-423.6	-227.9	10.40	10.40	0.23	0.36
11,617.0	22.65	23.53	11,576.5	-395.3	-216.8	7.39	7.15	5.66	17.19
11,680.0	29.78	27.03	11,632.9	-370.2	-204.9	11.58	11.32	5.56	13.82
11,712.0	31.65	26.83	11,660.4	-355.6	-197.5	5.85	5.84	-0.63	-3.21
11,744.0	36.73	27.24	11,686.9	-339.6	-189.3	15.89	15.88	1.28	2.77
11,775.0	42.44	27.98	11,710.8	-322.1	-180.1	18.48	18.42	2.39	5.01
11,807.0	46.40	29.79	11,733.6	-302.5	-169.3	12.99	12.38	5.66	18.39
11,838.0	51.41	29.15	11,754.0	-282.2	-157.8	16.24	16.16	-2.06	-5.71
11,869.0	58.18	27.97	11,771.9	-259.9	-145.7	22.06	21.84	-3.81	-8.45
11,901.0	64.22	26.53	11,787.3	-235.0	-132.9	19.28	18.88	-4.50	-12.15
11,933.0	68.93	24.05	11,800.0	-208.5	-120.4	16.35	14.72	-7.75	-26.29
11,964.0	75.65	21.91	11,809.4	-181.3	-108.9	22.65	21.68	-6.90	-17.21
11,996.0	83.60	21.50	11,815.2	-152.1	-97.2	24.88	24.84	-1.28	-2.94
12,028.0	90.07	20.38	11,817.0	-122.2	-85.8	20.52	20.22	-3.50	-9.84
12,059.0	92.21	19.05	11,816.3	-93.1	-75.4	8.13	6.90	-4.29	-31.85
12,091.0	93.68	17.95	11,814.7	-62.8	-65.2	5.73	4.59	-3.44	-36.74
12,122.0	94.59	16.71	11,812.5	-33.2	-56.0	4.95	2.94	-4.00	-53.61
12,155.0	95.02	13.70	11,809.7	-1.5	-47.4	9.18	1.30	-9.12	-81.72
12,186.0	92.24	10.56	11,807.7	28.7	-40.9	13.51	-8.97	-10.13	-131.47
12,218.0	89.50	9.80	11,807.2	60.2	-35.2	8.89	-8.56	-2.38	-164.49
12,249.0	88.42	8.78	11,807.8	90.8	-30.2	4.79	-3.48	-3.29	-136.65
12,331.0	89.43	7.12	11,809.3	172.0	-18.9	2.37	1.23	-2.02	-58.70
12,427.0	87.38	5.11	11,812.0	267.4	-8.7	2.99	-2.14	-2.09	-135.60
12,521.0	86.81	2.92	11,816.8	361.0	-2.1	2.40	-0.61	-2.33	-104.66

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 103H
Company:	Ameredeve Operating, LLC.	TVD Reference:	KB @ 3045.0usft
Project:	NAN/GB	MD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	North Reference:	Grid
Well:	Nandina 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Nandina 103H As Drilled		
Design:	Final		

12,616.0	86.19	2.23	11,822.6	455.8	2.2	0.98	-0.65	-0.73	-132.02
12,711.0	86.29	0.21	11,828.8	550.5	4.2	2.12	0.11	-2.13	-87.23
12,806.0	85.86	358.80	11,835.3	645.3	3.4	1.55	-0.45	-1.48	-107.04
12,902.0	87.36	358.58	11,841.0	741.1	1.2	1.58	1.56	-0.23	-8.34
12,995.0	88.76	358.25	11,844.1	834.0	-1.4	1.55	1.51	-0.35	-13.26
13,090.0	86.27	358.08	11,848.3	928.9	-4.4	2.63	-2.62	-0.18	-176.10
13,121.0	85.38	358.10	11,850.5	959.8	-5.5	2.87	-2.87	0.06	178.72
13,153.0	86.97	357.60	11,852.7	991.7	-6.7	5.21	4.97	-1.56	-17.44
13,184.0	89.06	357.32	11,853.7	1,022.6	-8.0	6.80	6.74	-0.90	-7.63
13,215.0	87.74	357.03	11,854.6	1,053.6	-9.6	4.36	-4.26	-0.94	-167.62
13,247.0	89.35	357.46	11,855.4	1,085.5	-11.1	5.21	5.03	1.34	14.95
13,279.0	89.67	357.00	11,855.7	1,117.5	-12.6	1.75	1.00	-1.44	-55.18
13,310.0	90.90	357.83	11,855.5	1,148.5	-14.0	4.79	3.97	2.68	34.01
13,342.0	88.57	358.15	11,855.7	1,180.4	-15.2	7.35	-7.28	1.00	172.18
13,373.0	88.85	359.23	11,856.4	1,211.4	-15.9	3.60	0.90	3.48	75.47
13,405.0	92.21	359.78	11,856.1	1,243.4	-16.1	10.64	10.50	1.72	9.29
13,437.0	91.57	359.56	11,855.0	1,275.4	-16.3	2.11	-2.00	-0.69	-161.04
13,468.0	92.06	0.75	11,854.0	1,306.4	-16.2	4.15	1.58	3.84	67.59
13,500.0	91.50	0.72	11,853.0	1,338.4	-15.8	1.75	-1.75	-0.09	-176.93
13,530.0	89.96	0.59	11,852.7	1,368.4	-15.5	5.15	-5.13	-0.43	-175.17
13,562.0	88.68	0.44	11,853.0	1,400.4	-15.2	4.03	-4.00	-0.47	-173.32
13,593.0	87.23	0.44	11,854.1	1,431.3	-15.0	4.68	-4.68	0.00	-180.00
13,624.0	88.23	0.47	11,855.4	1,462.3	-14.7	3.23	3.23	0.10	1.72
13,656.0	88.66	0.60	11,856.2	1,494.3	-14.4	1.40	1.34	0.41	16.82
13,687.0	90.02	0.09	11,856.6	1,525.3	-14.2	4.69	4.39	-1.65	-20.56
13,719.0	88.35	359.58	11,857.1	1,557.3	-14.3	5.46	-5.22	-1.59	-163.02
13,750.0	84.91	359.52	11,858.9	1,588.2	-14.6	11.10	-11.10	-0.19	-179.00
13,782.0	87.61	359.31	11,861.0	1,620.2	-14.9	8.46	8.44	-0.66	-4.45
13,813.0	89.12	359.17	11,861.8	1,651.1	-15.3	4.89	4.87	-0.45	-5.30
13,844.0	92.07	359.07	11,861.5	1,682.1	-15.8	9.52	9.52	-0.32	-1.94
13,938.0	91.90	357.85	11,858.3	1,776.0	-18.3	1.31	-0.18	-1.30	-97.92
14,064.0	89.08	3.16	11,857.2	1,902.0	-17.2	4.77	-2.24	4.21	117.93
14,127.0	86.35	3.64	11,859.7	1,964.8	-13.5	4.40	-4.33	0.76	170.04
14,222.0	88.38	1.06	11,864.1	2,059.6	-9.6	3.45	2.14	-2.72	-51.84
14,317.0	87.38	359.88	11,867.6	2,154.5	-8.8	1.63	-1.05	-1.24	-130.32
14,411.0	87.01	359.85	11,872.2	2,248.4	-9.0	0.39	-0.39	-0.03	-175.37
14,505.0	86.11	359.29	11,877.8	2,342.3	-9.7	1.13	-0.96	-0.60	-148.17
14,599.0	89.34	358.92	11,881.6	2,436.2	-11.2	3.46	3.44	-0.39	-6.54
14,694.0	86.52	356.91	11,885.0	2,531.0	-14.6	3.64	-2.97	-2.12	-144.57
14,788.0	86.67	359.38	11,890.6	2,624.8	-17.7	2.63	0.16	2.63	86.59
14,884.0	87.17	0.90	11,895.7	2,720.6	-17.4	1.66	0.52	1.58	71.81
14,979.0	87.87	358.01	11,899.8	2,815.5	-18.4	3.13	0.74	-3.04	-76.44
15,073.0	89.19	359.05	11,902.3	2,909.5	-20.8	1.79	1.40	1.11	38.24
15,169.0	84.00	359.70	11,908.0	3,005.3	-21.8	5.45	-5.41	0.68	172.89
15,264.0	85.52	0.51	11,916.6	3,099.9	-21.6	1.81	1.60	0.85	27.99
15,359.0	90.68	1.86	11,919.8	3,194.8	-19.7	5.61	5.43	1.42	14.68
15,452.0	86.97	0.40	11,921.7	3,287.7	-17.8	4.29	-3.99	-1.57	-158.53
15,548.0	89.25	0.44	11,924.8	3,383.6	-17.1	2.38	2.38	0.04	1.01
15,643.0	92.87	359.45	11,923.1	3,478.6	-17.2	3.95	3.81	-1.04	-15.29
15,738.0	92.60	358.55	11,918.6	3,573.5	-18.9	0.99	-0.28	-0.95	-106.70
15,834.0	94.17	359.49	11,912.9	3,669.3	-20.5	1.91	1.64	0.98	30.84
15,929.0	93.23	1.15	11,906.8	3,764.1	-20.0	2.00	-0.99	1.75	119.52
16,024.0	89.41	2.04	11,904.6	3,859.0	-17.3	4.13	-4.02	0.94	166.88

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

16,117.0	90.13	3.14	11,904.9	3,951.9	-13.1	1.41	0.77	1.18	56.80
16,212.0	90.57	355.97	11,904.4	4,046.9	-13.9	7.56	0.46	-7.55	-86.47
16,244.0	91.72	353.47	11,903.7	4,078.7	-16.8	8.60	3.59	-7.81	-65.27
16,307.0	93.09	348.65	11,901.1	4,140.9	-26.6	7.95	2.17	-7.65	-74.03
16,354.0	93.42	349.87	11,898.4	4,187.0	-35.3	2.68	0.70	2.60	74.81
16,403.0	92.08	352.87	11,896.1	4,235.4	-42.7	6.70	-2.73	6.12	114.02
16,467.0	88.83	356.70	11,895.6	4,299.1	-48.5	7.85	-5.08	5.98	130.29
16,498.0	88.43	358.40	11,896.3	4,330.0	-49.8	5.63	-1.29	5.48	103.26
16,551.0	90.58	2.12	11,896.8	4,383.0	-49.6	8.11	4.06	7.02	60.00
16,592.0	92.79	4.56	11,895.5	4,423.9	-47.2	8.03	5.39	5.95	47.79
16,641.0	92.81	4.82	11,893.2	4,472.7	-43.2	0.53	0.04	0.53	85.59
16,687.0	89.68	4.22	11,892.2	4,518.5	-39.6	6.93	-6.80	-1.30	-169.14
16,734.0	91.59	4.84	11,891.6	4,565.4	-35.9	4.27	4.06	1.32	17.98
16,782.0	92.66	5.03	11,889.9	4,613.2	-31.7	2.26	2.23	0.40	10.06
16,878.0	89.17	3.95	11,888.3	4,708.9	-24.2	3.81	-3.64	-1.13	-162.80
16,973.0	93.68	4.28	11,886.0	4,803.6	-17.4	4.76	4.75	0.35	4.18
17,067.0	95.44	2.17	11,878.5	4,897.1	-12.1	2.92	1.87	-2.24	-50.00
17,115.0	95.19	359.31	11,874.0	4,944.9	-11.5	5.96	-0.52	-5.96	-94.88
17,163.0	93.91	357.10	11,870.2	4,992.7	-13.0	5.31	-2.67	-4.60	-120.07
17,208.0	91.73	357.10	11,868.0	5,037.6	-15.3	4.84	-4.84	0.00	-180.00
17,258.0	91.76	356.94	11,866.5	5,087.5	-17.9	0.33	0.06	-0.32	-79.37
17,305.0	91.47	358.43	11,865.2	5,134.4	-19.8	3.23	-0.62	3.17	101.00
17,354.0	90.06	358.97	11,864.5	5,183.4	-20.9	3.08	-2.88	1.10	159.04
17,399.0	91.28	359.76	11,864.0	5,228.4	-21.4	3.23	2.71	1.76	32.92
17,449.0	91.14	0.53	11,862.9	5,278.4	-21.3	1.56	-0.28	1.54	100.30
17,543.0	91.47	1.15	11,860.8	5,372.4	-19.9	0.75	0.35	0.66	61.96
17,638.0	91.32	358.59	11,858.5	5,467.3	-20.1	2.70	-0.16	-2.69	-93.32
17,733.0	91.69	357.90	11,856.0	5,562.3	-23.0	0.82	0.39	-0.73	-61.78
17,827.0	93.35	357.80	11,851.8	5,656.1	-26.5	1.77	1.77	-0.11	-3.44
17,921.0	91.96	358.91	11,847.5	5,749.9	-29.2	1.89	-1.48	1.18	141.39
18,016.0	92.33	0.31	11,843.9	5,844.9	-29.9	1.52	0.39	1.47	75.16
18,111.0	91.19	358.26	11,841.0	5,939.8	-31.1	2.47	-1.20	-2.16	-119.06
18,206.0	88.99	354.41	11,840.9	6,034.6	-37.1	4.67	-2.32	-4.05	-119.73
18,302.0	92.14	355.97	11,839.9	6,130.2	-45.2	3.66	3.28	1.63	26.34
18,397.0	94.00	358.04	11,834.8	6,225.0	-50.1	2.93	1.96	2.18	47.97
18,493.0	91.93	359.45	11,829.9	6,320.8	-52.2	2.61	-2.16	1.47	145.74
18,589.0	92.49	1.61	11,826.2	6,416.7	-51.4	2.32	0.58	2.25	75.42
18,684.0	94.07	2.54	11,820.7	6,511.5	-47.9	1.93	1.66	0.98	30.42
18,780.0	91.14	0.89	11,816.4	6,607.3	-45.1	3.50	-3.05	-1.72	-150.60
18,875.0	90.43	0.73	11,815.1	6,702.3	-43.7	0.77	-0.75	-0.17	-167.30
18,971.0	87.12	1.12	11,817.1	6,798.3	-42.2	3.47	-3.45	0.41	173.28
19,067.0	87.07	0.50	11,822.0	6,894.1	-40.8	0.65	-0.05	-0.65	-94.63
19,161.0	87.06	359.25	11,826.8	6,988.0	-41.0	1.33	-0.01	-1.33	-90.49
19,206.0	87.67	358.48	11,828.9	7,033.0	-41.9	2.18	1.36	-1.71	-51.60
19,256.0	90.17	358.40	11,829.8	7,082.9	-43.3	5.00	5.00	-0.16	-1.83
19,301.0	92.31	357.73	11,828.8	7,127.9	-44.8	4.98	4.76	-1.49	-17.37
19,351.0	89.87	357.08	11,827.9	7,177.8	-47.0	5.05	-4.88	-1.30	-165.08
19,396.0	89.68	356.86	11,828.1	7,222.8	-49.4	0.65	-0.42	-0.49	-130.82
19,446.0	92.48	357.78	11,827.1	7,272.7	-51.8	5.89	5.60	1.84	18.18
19,491.0	94.49	358.31	11,824.4	7,317.6	-53.3	4.62	4.47	1.18	14.73
19,542.0	96.39	358.50	11,819.5	7,368.3	-54.7	3.74	3.73	0.37	5.68
19,587.0	97.00	358.53	11,814.3	7,413.0	-55.9	1.36	1.36	0.07	2.79
19,637.0	96.19	0.24	11,808.6	7,462.7	-56.4	3.76	-1.62	3.42	115.39

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 103H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3045.0usft
Project:	NAN/GB	MD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	North Reference:	Grid
Well:	Nandina 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Nandina 103H As Drilled		
Design:	Final		

19,682.0	94.90	359.93	11,804.2	7,507.5	-56.3	2.95	-2.87	-0.69	-166.53
19,731.0	94.72	359.37	11,800.1	7,556.3	-56.6	1.20	-0.37	-1.14	-107.85
19,776.0	94.16	359.14	11,796.6	7,601.2	-57.2	1.34	-1.24	-0.51	-157.72
19,826.0	92.63	358.78	11,793.7	7,651.1	-58.1	3.14	-3.06	-0.72	-166.77
19,922.0	92.16	358.06	11,789.6	7,746.9	-60.8	0.90	-0.49	-0.75	-123.14
19,995.0	93.70	358.69	11,785.9	7,819.8	-62.8	2.28	2.11	0.86	22.21
20,046.0	93.40	0.31	11,782.8	7,870.7	-63.3	3.22	-0.59	3.18	100.46
20,141.0	94.34	358.36	11,776.3	7,965.5	-64.4	2.27	0.99	-2.05	-64.15
20,236.0	96.40	357.02	11,767.5	8,060.0	-68.2	2.58	2.17	-1.41	-32.87
20,282.0	97.09	356.77	11,762.1	8,105.6	-70.7	1.59	1.50	-0.54	-19.77
20,327.0	96.41	356.32	11,756.8	8,150.2	-73.4	1.81	-1.51	-1.00	-146.66
20,376.0	95.28	354.90	11,751.8	8,198.8	-77.1	3.69	-2.31	-2.90	-128.58
20,421.0	94.19	353.48	11,748.1	8,243.4	-81.6	3.97	-2.42	-3.16	-127.54
20,471.0	92.72	351.51	11,745.0	8,292.9	-88.1	4.91	-2.94	-3.94	-126.72
20,518.0	91.08	349.88	11,743.5	8,339.2	-95.7	4.92	-3.49	-3.47	-135.16
20,566.0	89.72	348.64	11,743.1	8,386.4	-104.7	3.83	-2.83	-2.58	-137.64
20,612.0	89.02	347.74	11,743.7	8,431.4	-114.1	2.48	-1.52	-1.96	-127.88
20,662.0	87.57	345.89	11,745.1	8,480.1	-125.5	4.70	-2.90	-3.70	-128.13
20,707.0	87.35	343.99	11,747.1	8,523.5	-137.2	4.25	-0.49	-4.22	-96.65
20,757.0	87.46	342.51	11,749.4	8,571.3	-151.6	2.97	0.22	-2.96	-85.78
20,802.0	87.99	340.71	11,751.2	8,614.0	-165.8	4.17	1.18	-4.00	-73.62
20,852.0	89.65	338.95	11,752.2	8,660.9	-183.0	4.84	3.32	-3.52	-46.69
20,897.0	91.80	337.24	11,751.6	8,702.6	-199.8	6.10	4.78	-3.80	-38.49
20,947.0	92.31	334.78	11,749.9	8,748.3	-220.1	5.02	1.02	-4.92	-78.24
20,992.0	91.99	332.74	11,748.2	8,788.6	-240.0	4.59	-0.71	-4.53	-98.88
21,042.0	89.63	331.91	11,747.5	8,832.9	-263.2	5.00	-4.72	-1.66	-160.62
21,087.0	87.37	331.27	11,748.6	8,872.5	-284.6	5.22	-5.02	-1.42	-164.20
21,136.0	85.52	332.39	11,751.7	8,915.6	-307.7	4.41	-3.78	2.29	148.89
21,181.0	84.96	334.45	11,755.4	8,955.7	-327.7	4.73	-1.24	4.58	105.34
21,230.0	85.04	336.45	11,759.7	9,000.1	-348.0	4.07	0.16	4.08	87.79
21,275.0	85.46	338.52	11,763.4	9,041.5	-365.2	4.68	0.93	4.60	78.58
21,326.0	85.86	340.64	11,767.3	9,089.2	-382.9	4.22	0.78	4.16	79.37
21,371.0	85.74	342.00	11,770.6	9,131.7	-397.3	3.03	-0.27	3.02	95.11
21,421.0	86.60	344.15	11,773.9	9,179.4	-411.8	4.62	1.72	4.30	68.23
21,466.0	86.48	345.82	11,776.6	9,222.8	-423.5	3.71	-0.27	3.71	94.17
21,516.0	86.51	347.97	11,779.7	9,271.4	-434.8	4.29	0.06	4.30	89.26
21,561.0	86.78	349.56	11,782.3	9,315.4	-443.5	3.58	0.60	3.53	80.39
21,610.0	86.83	351.15	11,785.0	9,363.7	-451.7	3.24	0.10	3.24	88.24
21,655.0	87.69	352.50	11,787.2	9,408.2	-458.1	3.55	1.91	3.00	57.51
21,703.0	87.32	353.23	11,789.3	9,455.7	-464.1	1.70	-0.77	1.52	116.92
21,748.0	87.46	353.96	11,791.3	9,500.4	-469.1	1.65	0.31	1.62	79.15
21,796.0	87.93	354.50	11,793.3	9,548.1	-473.9	1.49	0.98	1.13	48.95
21,841.0	87.63	354.82	11,795.0	9,592.9	-478.1	0.97	-0.67	0.71	133.18
21,891.0	88.74	356.30	11,796.6	9,642.7	-482.0	3.70	2.22	2.96	53.14
21,936.0	89.07	357.09	11,797.4	9,687.6	-484.6	1.90	0.73	1.76	67.33
21,985.0	89.23	357.49	11,798.2	9,736.6	-486.9	0.88	0.33	0.82	68.20
22,030.0	89.95	358.75	11,798.5	9,781.6	-488.4	3.22	1.60	2.80	60.26
22,080.0	90.67	0.60	11,798.2	9,831.6	-488.6	3.97	1.44	3.70	68.73
22,174.0	92.29	3.62	11,795.8	9,925.4	-485.2	3.64	1.72	3.21	61.75
22,267.0	92.06	3.39	11,792.3	10,018.2	-479.5	0.35	-0.25	-0.25	-135.02
22,362.0	94.20	3.83	11,787.1	10,112.9	-473.5	2.30	2.25	0.46	11.59
22,535.8	94.20	3.83	11,774.4	10,285.8	-462.0	0.00	0.00	0.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.56	96.00	100.0	-0.1	0.5	-0.1	0.56	0.56	0.00
125.0	0.70	96.00	125.0	-0.1	0.8	-0.1	0.56	0.56	0.00
200.0	0.92	306.20	200.0	0.2	0.7	0.2	2.08	0.29	-199.73
209.0	1.10	304.00	209.0	0.3	0.6	0.3	2.08	2.04	-24.47
299.0	1.30	302.00	299.0	1.3	-1.0	1.4	0.23	0.22	-2.22
300.0	1.31	301.60	300.0	1.4	-1.0	1.4	1.27	0.89	-40.12
393.0	2.30	280.00	392.9	2.2	-3.7	2.4	1.27	1.07	-23.22
400.0	2.34	279.47	399.9	2.3	-4.0	2.5	0.60	0.51	-7.56
488.0	2.80	274.00	487.8	2.7	-7.9	3.1	0.60	0.53	-6.22
500.0	2.85	273.15	499.8	2.8	-8.5	3.1	0.53	0.41	-7.08
583.0	3.20	268.00	582.7	2.8	-12.9	3.4	0.53	0.42	-6.21
600.0	3.11	267.37	599.7	2.8	-13.8	3.4	0.57	-0.54	-3.69
677.0	2.70	264.00	676.6	2.5	-17.7	3.3	0.57	-0.53	-4.38
700.0	2.80	263.46	699.6	2.4	-18.8	3.2	0.43	0.42	-2.33
772.0	3.10	262.00	771.5	1.9	-22.5	2.9	0.43	0.42	-2.03
800.0	3.25	261.01	799.4	1.7	-24.0	2.7	0.56	0.53	-3.54
866.0	3.60	259.00	865.3	1.0	-27.9	2.2	0.56	0.53	-3.05
900.0	3.42	259.32	899.2	0.6	-30.0	1.9	0.53	-0.53	0.95
961.0	3.10	260.00	960.1	-0.1	-33.4	1.4	0.53	-0.53	1.11
1,000.0	2.97	256.88	999.1	-0.5	-35.4	1.1	0.54	-0.34	-8.01
1,055.0	2.80	252.00	1,054.0	-1.2	-38.1	0.5	0.54	-0.31	-8.87
1,100.0	2.80	252.00	1,099.0	-1.9	-40.1	-0.1	0.00	0.00	0.00
1,145.0	2.80	252.00	1,143.9	-2.6	-42.2	-0.7	0.00	0.00	0.00
1,200.0	1.85	268.07	1,198.9	-3.0	-44.4	-1.0	2.08	-1.72	29.22
1,238.0	1.38	290.90	1,236.8	-2.9	-45.4	-0.8	2.08	-1.24	60.08
1,300.0	0.51	292.02	1,298.8	-2.5	-46.4	-0.4	1.40	-1.40	1.80
1,336.0	0.02	343.32	1,334.8	-2.4	-46.5	-0.3	1.40	-1.37	142.51
1,400.0	0.04	330.79	1,398.8	-2.4	-46.6	-0.3	0.03	0.03	-19.58
1,432.0	0.05	328.30	1,430.8	-2.4	-46.6	-0.3	0.03	0.03	-7.77
1,500.0	0.08	4.79	1,498.8	-2.3	-46.6	-0.2	0.08	0.05	53.66
1,526.0	0.10	11.32	1,524.8	-2.3	-46.6	-0.2	0.08	0.07	25.11
1,600.0	0.07	312.16	1,598.8	-2.2	-46.6	-0.1	0.12	-0.04	-79.94
1,620.0	0.08	295.30	1,618.8	-2.1	-46.6	-0.1	0.12	0.04	-84.31
1,700.0	0.01	270.21	1,698.8	-2.1	-46.7	0.0	0.09	-0.09	-31.36
1,716.0	0.01	132.93	1,714.8	-2.1	-46.7	0.0	0.09	0.03	-858.03
1,800.0	0.07	134.70	1,798.8	-2.2	-46.6	-0.1	0.07	0.07	2.11
1,811.0	0.08	134.73	1,809.8	-2.2	-46.6	-0.1	0.07	0.07	0.26
1,900.0	0.08	122.37	1,898.8	-2.3	-46.5	-0.2	0.02	0.00	-13.88
1,907.0	0.08	121.41	1,905.8	-2.3	-46.5	-0.2	0.02	0.00	-13.78
2,000.0	0.59	214.22	1,998.8	-2.7	-46.7	-0.6	0.65	0.55	99.79
2,003.0	0.61	214.46	2,001.8	-2.7	-46.7	-0.6	0.65	0.64	8.07
2,098.0	3.52	183.16	2,096.8	-6.0	-47.2	-3.9	3.17	3.06	-32.95
2,100.0	3.59	183.03	2,098.8	-6.2	-47.2	-4.0	3.53	3.51	-6.56
2,194.0	6.90	179.88	2,192.3	-14.8	-47.3	-12.6	3.53	3.52	-3.35
2,200.0	7.09	179.79	2,198.3	-15.5	-47.3	-13.3	3.24	3.23	-1.51
2,289.0	9.97	178.86	2,286.3	-28.7	-47.2	-26.5	3.24	3.23	-1.04
2,300.0	10.15	178.42	2,297.1	-30.6	-47.1	-28.5	1.79	1.65	-4.04
2,384.0	11.55	175.48	2,379.6	-46.4	-46.3	-44.3	1.79	1.67	-3.49
2,400.0	11.41	175.09	2,395.3	-49.6	-46.0	-47.5	1.00	-0.87	-2.46
2,479.0	10.73	173.00	2,472.8	-64.7	-44.4	-62.6	1.00	-0.86	-2.64
2,500.0	10.47	172.31	2,493.5	-68.5	-43.9	-66.4	1.37	-1.22	-3.30
2,575.0	9.57	169.53	2,567.3	-81.4	-41.9	-79.4	1.37	-1.20	-3.70
2,600.0	9.20	169.10	2,592.0	-85.4	-41.1	-83.4	1.51	-1.48	-1.72

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
2,671.0	8.15	167.67	2,662.2	-95.9	-39.0	-94.0	1.51	-1.48	-2.01
2,700.0	7.90	167.28	2,690.9	-99.8	-38.1	-98.0	0.87	-0.85	-1.34
2,765.0	7.35	166.32	2,755.3	-108.2	-36.1	-106.5	0.87	-0.85	-1.48
2,800.0	7.03	163.94	2,790.1	-112.5	-35.0	-110.8	1.24	-0.91	-6.80
2,861.0	6.51	159.26	2,850.6	-119.3	-32.8	-117.7	1.24	-0.86	-7.67
2,900.0	6.04	154.88	2,889.4	-123.2	-31.1	-121.7	1.72	-1.20	-11.23
2,956.0	5.44	147.35	2,945.1	-128.1	-28.4	-126.7	1.72	-1.07	-13.45
3,000.0	5.45	139.19	2,988.9	-131.4	-25.9	-130.1	1.76	0.02	-18.55
3,051.0	5.59	129.97	3,039.7	-134.9	-22.5	-133.7	1.76	0.28	-18.07
3,100.0	5.53	124.12	3,088.5	-137.7	-18.7	-136.7	1.16	-0.13	-11.95
3,146.0	5.52	118.55	3,134.2	-140.0	-14.9	-139.2	1.16	-0.01	-12.10
3,200.0	3.49	118.60	3,188.1	-142.1	-11.2	-141.4	3.77	-3.77	0.09
3,241.0	1.94	118.71	3,229.0	-143.0	-9.5	-142.4	3.77	-3.77	0.27
3,300.0	0.66	126.20	3,288.0	-143.7	-8.3	-143.1	2.18	-2.17	12.69
3,336.0	0.19	251.94	3,324.0	-143.8	-8.2	-143.3	2.18	-1.31	349.29
3,400.0	2.26	243.30	3,388.0	-144.4	-9.4	-143.8	3.23	3.23	-13.50
3,431.0	3.26	243.06	3,419.0	-145.1	-10.8	-144.4	3.23	3.23	-0.78
3,500.0	5.86	234.22	3,487.7	-148.0	-15.4	-147.2	3.90	3.77	-12.81
3,526.0	6.86	232.64	3,513.6	-149.7	-17.7	-148.8	3.90	3.84	-6.08
3,600.0	7.75	231.20	3,587.0	-155.6	-25.1	-154.3	1.23	1.21	-1.95
3,622.0	8.02	230.83	3,608.8	-157.5	-27.4	-156.1	1.23	1.21	-1.67
3,700.0	7.13	226.16	3,686.1	-164.2	-35.1	-162.5	1.39	-1.14	-5.98
3,717.0	6.94	224.99	3,703.0	-165.7	-36.6	-163.9	1.39	-1.10	-6.90
3,800.0	6.87	221.49	3,785.4	-173.0	-43.5	-170.8	0.51	-0.09	-4.21
3,813.0	6.86	220.94	3,798.3	-174.1	-44.5	-172.0	0.51	-0.07	-4.26
3,900.0	6.73	219.07	3,884.6	-182.0	-51.1	-179.5	0.29	-0.15	-2.15
3,908.0	6.72	218.89	3,892.6	-182.7	-51.7	-180.2	0.29	-0.14	-2.20
4,000.0	6.02	221.35	3,984.0	-190.6	-58.3	-187.7	0.82	-0.77	2.67
4,002.0	6.00	221.41	3,986.0	-190.7	-58.4	-187.9	0.82	-0.76	2.99
4,098.0	6.04	224.05	4,081.5	-198.1	-65.2	-195.0	0.29	0.04	2.75
4,100.0	6.04	224.08	4,083.5	-198.3	-65.4	-195.1	0.17	-0.11	1.32
4,193.0	5.94	225.32	4,176.0	-205.2	-72.2	-201.7	0.17	-0.11	1.34
4,200.0	5.94	225.33	4,182.9	-205.7	-72.7	-202.2	0.01	-0.01	0.10
4,289.0	5.93	225.42	4,271.5	-212.1	-79.3	-208.4	0.01	-0.01	0.10
4,300.0	5.95	225.30	4,282.4	-212.9	-80.1	-209.1	0.21	0.18	-1.06
4,384.0	6.10	224.44	4,365.9	-219.2	-86.3	-215.1	0.21	0.18	-1.03
4,400.0	6.11	222.51	4,381.8	-220.4	-87.5	-216.3	1.28	0.04	-12.08
4,479.0	6.24	213.14	4,460.4	-227.1	-92.6	-222.7	1.28	0.17	-11.86
4,500.0	6.21	209.87	4,481.3	-229.0	-93.8	-224.6	1.69	-0.14	-15.56
4,575.0	6.27	198.18	4,555.8	-236.5	-97.1	-231.9	1.69	0.08	-15.59
4,600.0	6.25	196.33	4,580.7	-239.1	-97.9	-234.4	0.81	-0.07	-7.40
4,671.0	6.24	191.04	4,651.2	-246.6	-99.8	-241.8	0.81	-0.02	-7.45
4,700.0	6.24	190.47	4,680.1	-249.6	-100.4	-244.9	0.22	0.00	-1.98
4,766.0	6.24	189.16	4,745.7	-256.7	-101.6	-251.9	0.22	0.00	-1.98
4,800.0	6.25	189.72	4,779.5	-260.4	-102.2	-255.5	0.19	0.04	1.66
4,861.0	6.28	190.73	4,840.1	-266.9	-103.4	-262.0	0.19	0.04	1.65
4,900.0	6.30	190.91	4,878.9	-271.1	-104.2	-266.2	0.08	0.06	0.46
4,957.0	6.34	191.17	4,935.5	-277.3	-105.4	-272.3	0.08	0.06	0.46
5,000.0	6.36	191.98	4,978.3	-281.9	-106.3	-276.9	0.22	0.05	1.89
5,052.0	6.39	192.96	5,030.0	-287.6	-107.6	-282.5	0.22	0.05	1.88
5,100.0	6.37	192.77	5,077.7	-292.8	-108.8	-287.6	0.05	-0.03	-0.39
5,147.0	6.36	192.59	5,124.4	-297.9	-109.9	-292.6	0.05	-0.03	-0.39
5,200.0	6.33	193.47	5,177.0	-303.6	-111.2	-298.3	0.19	-0.05	1.66
5,242.0	6.31	194.17	5,218.8	-308.1	-112.3	-302.7	0.19	-0.05	1.67

Database: EDM5000
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Local Co-ordinate Reference: Well Nandina 103H
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Survey Calculation Method: Minimum Curvature

Planned 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)
5,300.0	6.38	194.32	5,276.4	-314.3	-113.9	-308.8	0.13	0.13	0.25
5,337.0	6.43	194.41	5,313.2	-318.3	-114.9	-312.8	0.13	0.13	0.25
5,400.0	6.31	194.61	5,375.8	-325.0	-116.7	-319.5	0.19	-0.19	0.32
5,433.0	6.25	194.72	5,408.6	-328.5	-117.6	-322.9	0.19	-0.19	0.33
5,500.0	6.34	194.72	5,475.2	-335.6	-119.5	-329.9	0.14	0.14	0.00
5,528.0	6.38	194.72	5,503.0	-338.6	-120.3	-332.9	0.14	0.14	0.00
5,600.0	6.37	192.92	5,574.6	-346.4	-122.2	-340.6	0.28	-0.01	-2.50
5,624.0	6.37	192.32	5,598.4	-349.0	-122.7	-343.1	0.28	-0.01	-2.50
5,700.0	5.93	191.59	5,674.0	-357.0	-124.4	-351.0	0.59	-0.59	-0.96
5,718.0	5.82	191.40	5,691.9	-358.8	-124.8	-352.8	0.59	-0.58	-1.05
5,800.0	5.82	195.17	5,773.5	-366.9	-126.7	-360.8	0.47	0.00	4.59
5,814.0	5.82	195.81	5,787.4	-368.2	-127.1	-362.2	0.47	0.02	4.59
5,900.0	5.85	198.45	5,873.0	-376.6	-129.7	-370.4	0.31	0.03	3.06
5,909.0	5.85	198.72	5,881.9	-377.4	-130.0	-371.2	0.31	0.04	3.05
6,000.0	5.95	205.30	5,972.4	-386.1	-133.5	-379.7	0.75	0.10	7.23
6,003.0	5.95	205.51	5,975.4	-386.4	-133.6	-380.0	0.75	0.15	7.09
6,098.0	5.90	206.17	6,069.9	-395.2	-137.9	-388.6	0.09	-0.05	0.69
6,100.0	5.90	206.15	6,071.9	-395.4	-138.0	-388.8	0.09	0.01	-0.82
6,193.0	5.91	205.39	6,164.4	-404.0	-142.1	-397.2	0.09	0.01	-0.82
6,200.0	5.92	205.31	6,171.4	-404.7	-142.4	-397.9	0.19	0.15	-1.15
6,288.0	6.05	204.32	6,258.9	-413.0	-146.3	-406.0	0.19	0.15	-1.12
6,300.0	6.06	204.18	6,270.8	-414.1	-146.8	-407.1	0.15	0.08	-1.15
6,384.0	6.13	203.23	6,354.4	-422.3	-150.4	-415.1	0.15	0.08	-1.13
6,400.0	6.10	203.11	6,370.3	-423.9	-151.1	-416.7	0.20	-0.18	-0.77
6,479.0	5.96	202.48	6,448.8	-431.5	-154.3	-424.2	0.20	-0.18	-0.79
6,500.0	5.97	202.25	6,469.7	-433.5	-155.1	-426.1	0.12	0.04	-1.08
6,575.0	6.00	201.45	6,544.3	-440.8	-158.0	-433.3	0.12	0.04	-1.07
6,600.0	5.93	200.98	6,569.2	-443.2	-158.9	-435.6	0.35	-0.29	-1.88
6,669.0	5.73	199.62	6,637.8	-449.8	-161.4	-442.1	0.35	-0.29	-1.97
6,700.0	4.97	198.13	6,668.7	-452.5	-162.3	-444.8	2.48	-2.44	-4.79
6,764.0	3.43	193.01	6,732.5	-457.0	-163.6	-449.2	2.48	-2.41	-8.01
6,800.0	2.51	190.02	6,768.5	-458.9	-164.0	-451.0	2.59	-2.56	-8.30
6,859.0	1.05	173.82	6,827.4	-460.7	-164.2	-452.8	2.59	-2.47	-27.48
6,900.0	0.62	177.16	6,868.4	-461.3	-164.1	-453.4	1.05	-1.05	8.15
6,954.0	0.10	230.91	6,922.4	-461.6	-164.1	-453.8	1.05	-0.97	99.53
7,000.0	0.02	245.85	6,968.4	-461.6	-164.2	-453.8	0.17	-0.16	32.47
7,050.0	0.06	38.01	7,018.4	-461.6	-164.2	-453.8	0.17	0.07	304.33
7,100.0	0.03	27.98	7,068.4	-461.6	-164.1	-453.7	0.06	-0.06	-20.06
7,145.0	0.01	317.85	7,113.4	-461.5	-164.1	-453.7	0.06	-0.04	-155.84
7,200.0	0.02	14.14	7,168.4	-461.5	-164.1	-453.7	0.04	0.03	102.35
7,245.0	0.04	23.94	7,213.4	-461.5	-164.1	-453.7	0.04	0.04	21.77
7,300.0	0.04	44.74	7,268.4	-461.5	-164.1	-453.7	0.03	0.00	37.81
7,339.0	0.04	59.32	7,307.4	-461.5	-164.1	-453.6	0.03	0.00	37.39
7,400.0	0.01	165.35	7,368.4	-461.5	-164.1	-453.6	0.07	-0.05	173.82
7,435.0	0.03	212.68	7,403.4	-461.5	-164.1	-453.6	0.07	0.06	135.23
7,500.0	0.05	254.99	7,468.4	-461.5	-164.1	-453.7	0.06	0.04	65.09
7,530.0	0.07	262.64	7,498.4	-461.5	-164.1	-453.7	0.06	0.05	25.50
7,600.0	0.06	317.19	7,568.4	-461.5	-164.2	-453.6	0.09	-0.01	77.93
7,626.0	0.07	334.80	7,594.4	-461.4	-164.2	-453.6	0.09	0.04	67.74
7,700.0	0.09	295.86	7,668.4	-461.4	-164.3	-453.5	0.08	0.03	-52.62
7,721.0	0.10	288.69	7,689.4	-461.4	-164.3	-453.5	0.08	0.05	-34.15
7,800.0	0.07	328.96	7,768.4	-461.3	-164.4	-453.5	0.08	-0.04	50.98
7,816.0	0.07	339.74	7,784.4	-461.3	-164.4	-453.4	0.08	0.00	67.37
7,900.0	0.07	319.06	7,868.4	-461.2	-164.5	-453.4	0.03	0.00	-24.62

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
7,912.0	0.07	316.17	7,880.4	-461.2	-164.5	-453.3	0.03	0.01	-24.10
8,000.0	0.07	6.26	7,968.4	-461.1	-164.5	-453.3	0.07	0.00	56.92
8,006.0	0.07	9.26	7,974.4	-461.1	-164.5	-453.2	0.07	0.03	49.97
8,100.0	0.06	191.83	8,068.4	-461.1	-164.5	-453.2	0.14	-0.01	-188.75
8,101.0	0.06	191.80	8,069.4	-461.1	-164.5	-453.2	0.14	0.14	-3.19
8,197.0	0.16	285.30	8,165.4	-461.1	-164.7	-453.2	0.18	0.10	97.40
8,200.0	0.16	284.78	8,168.4	-461.1	-164.7	-453.2	0.08	-0.06	-17.41
8,292.0	0.11	260.78	8,260.4	-461.1	-164.9	-453.2	0.08	-0.05	-26.08
8,300.0	0.12	260.86	8,268.4	-461.1	-164.9	-453.2	0.06	0.06	1.01
8,387.0	0.17	261.43	8,355.4	-461.1	-165.1	-453.2	0.06	0.06	0.65
8,400.0	0.16	259.50	8,368.4	-461.1	-165.1	-453.2	0.10	-0.09	-14.81
8,482.0	0.09	235.90	8,450.4	-461.2	-165.3	-453.3	0.10	-0.08	-28.79
8,500.0	0.08	244.58	8,468.4	-461.2	-165.3	-453.3	0.09	-0.06	48.22
8,577.0	0.07	300.67	8,545.4	-461.2	-165.4	-453.3	0.09	-0.01	72.85
8,600.0	0.15	294.75	8,568.4	-461.2	-165.5	-453.3	0.35	0.34	-25.73
8,641.0	0.29	292.21	8,609.4	-461.1	-165.6	-453.2	0.35	0.34	-6.20
8,672.0	0.38	304.86	8,640.4	-461.0	-165.8	-453.1	0.37	0.29	40.81
8,700.0	0.58	303.00	8,668.4	-460.9	-166.0	-453.0	0.72	0.71	-6.64
8,714.0	0.68	302.48	8,682.4	-460.8	-166.1	-452.9	0.72	0.71	-3.71
8,767.0	0.54	292.58	8,735.4	-460.5	-166.6	-452.6	0.33	-0.26	-18.68
8,800.0	0.49	266.74	8,768.4	-460.5	-166.9	-452.5	0.71	-0.16	-78.31
8,804.0	0.49	263.40	8,772.4	-460.5	-166.9	-452.5	0.71	0.03	-83.45
8,862.0	0.60	249.54	8,830.4	-460.6	-167.4	-452.7	0.29	0.19	-23.90
8,900.0	0.81	248.90	8,868.4	-460.8	-167.9	-452.8	0.56	0.56	-1.68
8,957.0	1.13	248.39	8,925.4	-461.1	-168.8	-453.1	0.56	0.56	-0.89
9,000.0	1.41	255.00	8,968.4	-461.4	-169.7	-453.4	0.74	0.66	15.38
9,047.0	1.74	259.69	9,015.4	-461.7	-170.9	-453.6	0.74	0.69	9.98
9,100.0	1.91	262.36	9,068.3	-462.0	-172.6	-453.8	0.36	0.32	5.03
9,142.0	2.05	264.15	9,110.3	-462.1	-174.0	-453.9	0.36	0.33	4.27
9,200.0	2.21	267.66	9,168.3	-462.3	-176.2	-453.9	0.36	0.28	6.05
9,238.0	2.32	269.69	9,206.2	-462.3	-177.7	-453.9	0.36	0.29	5.34
9,300.0	2.64	274.66	9,268.2	-462.2	-180.4	-453.7	0.62	0.51	8.01
9,332.0	2.81	276.77	9,300.2	-462.1	-181.9	-453.4	0.62	0.53	6.61
9,400.0	2.90	277.65	9,368.1	-461.6	-185.3	-452.9	0.15	0.14	1.29
9,427.0	2.94	277.98	9,395.0	-461.5	-186.6	-452.6	0.15	0.14	1.23
9,500.0	2.88	278.35	9,467.9	-460.9	-190.3	-451.9	0.09	-0.08	0.51
9,522.0	2.86	278.47	9,489.9	-460.8	-191.4	-451.7	0.09	-0.08	0.53
9,600.0	2.64	286.44	9,567.8	-460.0	-195.0	-450.8	0.56	-0.28	10.22
9,617.0	2.60	288.35	9,584.8	-459.7	-195.8	-450.5	0.56	-0.24	11.21
9,700.0	1.51	294.33	9,667.7	-458.7	-198.5	-449.3	1.34	-1.32	7.20
9,712.0	1.35	295.99	9,679.7	-458.6	-198.8	-449.2	1.34	-1.30	13.85
9,800.0	1.09	332.51	9,767.7	-457.4	-200.1	-447.9	0.91	-0.30	41.50
9,807.0	1.09	335.87	9,774.7	-457.3	-200.2	-447.8	0.91	0.03	48.02
9,900.0	1.17	343.54	9,867.7	-455.5	-200.8	-446.1	0.18	0.08	8.25
9,901.0	1.17	343.62	9,868.7	-455.5	-200.8	-446.1	0.18	0.10	7.66
9,996.0	1.25	320.67	9,963.7	-453.8	-201.8	-444.3	0.51	0.08	-24.16
10,000.0	1.26	319.50	9,967.7	-453.7	-201.8	-444.2	0.66	0.16	-29.33
10,091.0	1.52	296.97	10,058.7	-452.4	-203.5	-442.8	0.66	0.29	-24.75
10,100.0	1.52	295.61	10,067.7	-452.3	-203.7	-442.7	0.40	0.01	-15.13
10,187.0	1.57	282.76	10,154.6	-451.6	-206.0	-441.9	0.40	0.06	-14.77
10,200.0	1.53	282.65	10,167.6	-451.5	-206.3	-441.8	0.28	-0.28	-0.84
10,281.0	1.31	281.83	10,248.6	-451.0	-208.3	-441.3	0.28	-0.28	-1.01
10,300.0	1.25	281.12	10,267.6	-451.0	-208.7	-441.1	0.32	-0.31	-3.74
10,376.0	1.02	277.47	10,343.6	-450.7	-210.2	-440.8	0.32	-0.30	-4.80

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
10,400.0	0.92	277.01	10,367.6	-450.7	-210.6	-440.8	0.40	-0.40	-1.91
10,472.0	0.64	274.82	10,439.6	-450.6	-211.5	-440.6	0.40	-0.40	-3.04
10,500.0	0.58	267.71	10,467.6	-450.6	-211.8	-440.6	0.34	-0.21	-25.38
10,567.0	0.49	244.97	10,534.6	-450.7	-212.4	-440.7	0.34	-0.14	-33.95
10,600.0	0.54	245.42	10,567.6	-450.8	-212.7	-440.8	0.14	0.14	1.35
10,662.0	0.62	246.08	10,629.6	-451.1	-213.3	-441.0	0.14	0.14	1.07
10,700.0	0.98	246.38	10,667.6	-451.3	-213.8	-441.2	0.94	0.94	0.78
10,757.0	1.51	246.56	10,724.5	-451.8	-214.9	-441.7	0.94	0.94	0.32
10,800.0	2.07	250.48	10,767.5	-452.3	-216.1	-442.1	1.33	1.30	9.11
10,851.0	2.74	253.04	10,818.5	-452.9	-218.2	-442.7	1.33	1.31	5.02
10,900.0	2.74	255.27	10,867.4	-453.6	-220.4	-443.2	0.22	0.00	4.56
10,944.0	2.74	257.28	10,911.4	-454.1	-222.5	-443.6	0.22	0.00	4.56
11,000.0	2.63	266.49	10,967.3	-454.4	-225.1	-443.9	0.79	-0.19	16.44
11,039.0	2.60	273.23	11,006.3	-454.4	-226.8	-443.8	0.79	-0.08	17.29
11,081.0	2.78	274.44	11,048.2	-454.3	-228.8	-443.6	0.45	0.43	2.88
11,100.0	2.49	277.88	11,067.2	-454.2	-229.7	-443.5	1.75	-1.55	18.10
11,177.0	1.48	305.04	11,144.2	-453.4	-232.1	-442.5	1.75	-1.31	35.27
11,200.0	1.50	305.34	11,167.1	-453.1	-232.6	-442.2	0.08	0.07	1.30
11,272.0	1.55	306.23	11,239.1	-451.9	-234.2	-441.0	0.08	0.07	1.24
11,300.0	2.18	329.85	11,267.1	-451.3	-234.8	-440.3	3.50	2.25	84.35
11,304.0	2.29	332.07	11,271.1	-451.1	-234.8	-440.1	3.50	2.76	55.52
11,336.0	3.48	350.65	11,303.1	-449.6	-235.3	-438.6	4.68	3.72	58.06
11,368.0	4.28	9.61	11,335.0	-447.5	-235.2	-436.5	4.69	2.50	59.25
11,400.0	5.42	15.76	11,366.9	-444.8	-234.6	-433.9	3.91	3.56	19.22
11,431.0	7.56	16.43	11,397.7	-441.5	-233.7	-430.5	6.91	6.90	2.16
11,463.0	9.97	17.60	11,429.3	-436.8	-232.2	-426.0	7.55	7.53	3.66
11,495.0	12.95	18.25	11,460.7	-430.8	-230.3	-420.0	9.32	9.31	2.03
11,500.0	13.47	18.26	11,465.5	-429.7	-229.9	-418.9	10.40	10.40	0.28
11,525.0	16.07	18.32	11,489.7	-423.6	-227.9	-413.0	10.40	10.40	0.22
11,600.0	21.42	22.80	11,560.7	-401.1	-219.3	-390.9	7.39	7.14	5.97
11,617.0	22.65	23.53	11,576.5	-395.3	-216.8	-385.1	7.39	7.21	4.30
11,680.0	29.78	27.03	11,632.9	-370.2	-204.9	-360.6	11.58	11.32	5.56
11,700.0	30.95	26.90	11,650.2	-361.2	-200.3	-351.8	5.85	5.84	-0.64
11,712.0	31.65	26.83	11,660.4	-355.6	-197.5	-346.4	5.85	5.84	-0.60
11,744.0	36.73	27.24	11,686.9	-339.6	-189.3	-330.8	15.89	15.88	1.28
11,775.0	42.44	27.98	11,710.8	-322.1	-180.1	-313.7	18.48	18.42	2.39
11,800.0	45.53	29.42	11,728.8	-306.9	-171.8	-298.9	12.99	12.37	5.74
11,807.0	46.40	29.79	11,733.6	-302.5	-169.3	-294.6	12.99	12.41	5.35
11,838.0	51.41	29.15	11,754.0	-282.2	-157.8	-274.8	16.24	16.16	-2.06
11,869.0	58.18	27.97	11,771.9	-259.9	-145.7	-253.1	22.06	21.84	-3.81
11,900.0	64.03	26.57	11,786.8	-235.8	-133.3	-229.6	19.28	18.87	-4.51
11,901.0	64.22	26.53	11,787.3	-235.0	-132.9	-228.8	19.28	18.90	-4.26
11,933.0	68.93	24.05	11,800.0	-208.5	-120.4	-202.9	16.35	14.72	-7.75
11,964.0	75.65	21.91	11,809.4	-181.3	-108.9	-176.2	22.65	21.68	-6.90
11,996.0	83.60	21.50	11,815.2	-152.1	-97.2	-147.5	24.88	24.84	-1.28
12,000.0	84.41	21.36	11,815.6	-148.4	-95.8	-143.9	20.52	20.22	-3.52
12,019.7	88.39	20.67	11,816.8	-130.0	-88.7	-125.9	20.52	20.22	-3.50
Nan103 As Drilled FTP									
12,028.0	90.07	20.38	11,817.0	-122.2	-85.8	-118.3	20.52	20.22	-3.49
12,059.0	92.21	19.05	11,816.3	-93.1	-75.4	-89.6	8.13	6.90	-4.29
12,091.0	93.68	17.95	11,814.7	-62.8	-65.2	-59.8	5.73	4.59	-3.44
12,100.0	93.94	17.59	11,814.1	-54.2	-62.5	-51.4	4.95	2.94	-4.00
12,122.0	94.59	16.71	11,812.5	-33.2	-56.0	-30.7	4.95	2.93	-4.00
12,155.0	95.02	13.70	11,809.7	-1.5	-47.4	0.6	9.18	1.30	-9.12

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 103H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3045.0usft
Project:	NAN/GB	MD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	North Reference:	Grid
Well:	Nandina 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Nandina 103H As Drilled		
Design:	Final		

Planned 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)
12,186.0	92.24	10.56	11,807.7	28.7	-40.9	30.5	13.51	-8.97	-10.13
12,200.0	91.04	10.23	11,807.3	42.5	-38.4	44.2	8.89	-8.56	-2.38
12,218.0	89.50	9.80	11,807.2	60.2	-35.2	61.7	8.89	-8.56	-2.37
12,249.0	88.42	8.78	11,807.8	90.8	-30.2	92.1	4.79	-3.48	-3.29
12,300.0	89.05	7.75	11,808.9	141.3	-22.9	142.1	2.37	1.23	-2.02
12,331.0	89.43	7.12	11,809.3	172.0	-18.9	172.7	2.37	1.23	-2.02
12,400.0	87.96	5.68	11,810.9	240.5	-11.2	240.8	2.99	-2.14	-2.09
12,427.0	87.38	5.11	11,812.0	267.4	-8.7	267.5	2.99	-2.13	-2.10
12,500.0	86.94	3.41	11,815.6	340.1	-3.2	339.9	2.40	-0.61	-2.33
12,521.0	86.81	2.92	11,816.8	361.0	-2.1	360.8	2.40	-0.60	-2.33
12,600.0	86.29	2.35	11,821.5	439.8	1.5	439.3	0.98	-0.65	-0.73
12,616.0	86.19	2.23	11,822.6	455.8	2.2	455.2	0.98	-0.65	-0.73
12,700.0	86.28	0.44	11,828.1	539.6	4.1	538.8	2.12	0.10	-2.13
12,711.0	86.29	0.21	11,828.8	550.5	4.2	549.8	2.12	0.11	-2.13
12,800.0	85.89	358.89	11,834.9	639.3	3.5	638.5	1.55	-0.45	-1.48
12,806.0	85.86	358.80	11,835.3	645.3	3.4	644.5	1.55	-0.45	-1.48
12,900.0	87.33	358.58	11,840.9	739.1	1.2	738.3	1.58	1.56	-0.23
12,902.0	87.36	358.58	11,841.0	741.1	1.2	740.3	1.58	1.56	-0.23
12,995.0	88.76	358.25	11,844.1	834.0	-1.4	833.2	1.55	1.51	-0.35
13,000.0	88.63	358.24	11,844.3	839.0	-1.5	838.2	2.63	-2.62	-0.18
13,090.0	86.27	358.08	11,848.3	928.9	-4.4	928.1	2.63	-2.62	-0.18
13,100.0	85.98	358.09	11,848.9	938.8	-4.8	938.1	2.87	-2.87	0.06
13,121.0	85.38	358.10	11,850.5	959.8	-5.5	959.1	2.87	-2.87	0.06
13,153.0	86.97	357.60	11,852.7	991.7	-6.7	991.0	5.21	4.97	-1.56
13,184.0	89.06	357.32	11,853.7	1,022.6	-8.0	1,022.0	6.80	6.74	-0.90
13,200.0	88.38	357.17	11,854.1	1,038.6	-8.8	1,038.0	4.36	-4.26	-0.94
13,215.0	87.74	357.03	11,854.6	1,053.6	-9.6	1,052.9	4.36	-4.26	-0.94
13,247.0	89.35	357.46	11,855.4	1,085.5	-11.1	1,084.9	5.21	5.03	1.34
13,279.0	89.67	357.00	11,855.7	1,117.5	-12.6	1,116.9	1.75	1.00	-1.44
13,300.0	90.50	357.56	11,855.6	1,138.5	-13.6	1,137.9	4.79	3.97	2.68
13,310.0	90.90	357.83	11,855.5	1,148.5	-14.0	1,147.9	4.79	3.97	2.68
13,342.0	88.57	358.15	11,855.7	1,180.4	-15.2	1,179.9	7.35	-7.28	1.00
13,373.0	88.85	359.23	11,856.4	1,211.4	-15.9	1,210.9	3.60	0.90	3.48
13,400.0	91.69	359.69	11,856.2	1,238.4	-16.1	1,237.9	10.64	10.50	1.72
13,405.0	92.21	359.78	11,856.1	1,243.4	-16.1	1,242.9	10.64	10.50	1.72
13,437.0	91.57	359.56	11,855.0	1,275.4	-16.3	1,274.8	2.11	-2.00	-0.69
13,468.0	92.06	0.75	11,854.0	1,306.4	-16.2	1,305.8	4.15	1.58	3.84
13,500.0	91.50	0.72	11,853.0	1,338.4	-15.8	1,337.7	1.75	-1.75	-0.09
13,530.0	89.96	0.59	11,852.7	1,368.4	-15.5	1,367.7	5.15	-5.13	-0.43
13,562.0	88.68	0.44	11,853.0	1,400.4	-15.2	1,399.6	4.03	-4.00	-0.47
13,593.0	87.23	0.44	11,854.1	1,431.3	-15.0	1,430.6	4.68	-4.68	0.00
13,600.0	87.46	0.45	11,854.5	1,438.3	-14.9	1,437.5	3.23	3.23	0.10
13,624.0	88.23	0.47	11,855.4	1,462.3	-14.7	1,461.5	3.23	3.23	0.10
13,656.0	88.66	0.60	11,856.2	1,494.3	-14.4	1,493.4	1.40	1.34	0.41
13,687.0	90.02	0.09	11,856.6	1,525.3	-14.2	1,524.4	4.69	4.39	-1.65
13,700.0	89.34	359.88	11,856.7	1,538.3	-14.2	1,537.4	5.46	-5.22	-1.59
13,719.0	88.35	359.58	11,857.1	1,557.3	-14.3	1,556.4	5.46	-5.22	-1.59
13,750.0	84.91	359.52	11,858.9	1,588.2	-14.6	1,587.3	11.10	-11.10	-0.19
13,782.0	87.61	359.31	11,861.0	1,620.2	-14.9	1,619.2	8.46	8.44	-0.66
13,800.0	88.49	359.23	11,861.6	1,638.1	-15.1	1,637.2	4.89	4.87	-0.45
13,813.0	89.12	359.17	11,861.8	1,651.1	-15.3	1,650.2	4.89	4.87	-0.45
13,844.0	92.07	359.07	11,861.5	1,682.1	-15.8	1,681.1	9.52	9.52	-0.32
13,900.0	91.97	358.34	11,859.6	1,738.1	-17.1	1,737.1	1.31	-0.18	-1.30
13,938.0	91.90	357.85	11,858.3	1,776.0	-18.3	1,775.1	1.31	-0.18	-1.30

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
14,000.0	90.51	0.46	11,857.0	1,838.0	-19.2	1,837.0	4.77	-2.24	4.22
14,064.0	89.08	3.16	11,857.2	1,902.0	-17.2	1,900.8	4.77	-2.24	4.21
14,100.0	87.52	3.43	11,858.3	1,937.9	-15.1	1,936.6	4.40	-4.33	0.76
14,127.0	86.35	3.64	11,859.7	1,964.8	-13.5	1,963.4	4.40	-4.33	0.76
14,200.0	87.91	1.66	11,863.4	2,037.6	-10.1	2,036.0	3.45	2.14	-2.72
14,222.0	88.38	1.06	11,864.1	2,059.6	-9.6	2,058.0	3.45	2.14	-2.71
14,300.0	87.56	0.09	11,866.8	2,137.6	-8.8	2,135.8	1.63	-1.05	-1.24
14,317.0	87.38	359.88	11,867.6	2,154.5	-8.8	2,152.8	1.63	-1.05	-1.24
14,400.0	87.05	359.85	11,871.6	2,237.4	-9.0	2,235.6	0.39	-0.39	-0.03
14,411.0	87.01	359.85	11,872.2	2,248.4	-9.0	2,246.6	0.39	-0.39	-0.03
14,500.0	86.16	359.32	11,877.5	2,337.3	-9.7	2,335.3	1.13	-0.96	-0.60
14,505.0	86.11	359.29	11,877.8	2,342.3	-9.7	2,340.3	1.13	-0.96	-0.60
14,599.0	89.34	358.92	11,881.6	2,436.2	-11.2	2,434.2	3.46	3.44	-0.39
14,600.0	89.31	358.90	11,881.6	2,437.2	-11.2	2,435.2	3.64	-2.97	-2.11
14,694.0	86.52	356.91	11,885.0	2,531.0	-14.6	2,529.1	3.64	-2.97	-2.12
14,700.0	86.53	357.07	11,885.4	2,537.0	-15.0	2,535.1	2.63	0.16	2.63
14,788.0	86.67	359.38	11,890.6	2,624.8	-17.7	2,622.9	2.63	0.16	2.63
14,800.0	86.73	359.57	11,891.3	2,636.8	-17.8	2,634.9	1.66	0.52	1.58
14,884.0	87.17	0.90	11,895.7	2,720.6	-17.4	2,718.7	1.66	0.52	1.58
14,900.0	87.29	0.41	11,896.5	2,736.6	-17.3	2,734.6	3.13	0.73	-3.04
14,979.0	87.87	358.01	11,899.8	2,815.5	-18.4	2,813.5	3.13	0.74	-3.04
15,000.0	88.16	358.24	11,900.6	2,836.5	-19.0	2,834.5	1.79	1.40	1.11
15,073.0	89.19	359.05	11,902.3	2,909.5	-20.8	2,907.5	1.79	1.40	1.11
15,100.0	87.73	359.23	11,903.0	2,936.5	-21.2	2,934.5	5.45	-5.41	0.67
15,169.0	84.00	359.70	11,908.0	3,005.3	-21.8	3,003.2	5.45	-5.41	0.68
15,200.0	84.50	359.96	11,911.1	3,036.1	-21.9	3,034.0	1.81	1.60	0.85
15,264.0	85.52	0.51	11,916.6	3,099.9	-21.6	3,097.7	1.81	1.60	0.85
15,300.0	87.48	1.02	11,918.8	3,135.8	-21.2	3,133.6	5.61	5.43	1.42
15,359.0	90.68	1.86	11,919.8	3,194.8	-19.7	3,192.4	5.61	5.43	1.42
15,400.0	89.04	1.22	11,919.9	3,235.7	-18.6	3,233.3	4.29	-3.99	-1.57
15,452.0	86.97	0.40	11,921.7	3,287.7	-17.8	3,285.2	4.29	-3.99	-1.57
15,500.0	88.11	0.42	11,923.7	3,335.7	-17.5	3,333.1	2.38	2.37	0.04
15,548.0	89.25	0.44	11,924.8	3,383.6	-17.1	3,381.0	2.38	2.38	0.04
15,600.0	91.23	359.90	11,924.6	3,435.6	-17.0	3,432.9	3.95	3.81	-1.04
15,643.0	92.87	359.45	11,923.1	3,478.6	-17.2	3,475.9	3.95	3.81	-1.04
15,700.0	92.71	358.91	11,920.3	3,535.5	-18.0	3,532.8	0.99	-0.28	-0.95
15,738.0	92.60	358.55	11,918.6	3,573.5	-18.9	3,570.7	0.99	-0.28	-0.95
15,800.0	93.61	359.16	11,915.2	3,635.4	-20.1	3,632.6	1.91	1.64	0.98
15,834.0	94.17	359.49	11,912.9	3,669.3	-20.5	3,666.5	1.91	1.64	0.98
15,900.0	93.52	0.64	11,908.5	3,735.2	-20.4	3,732.3	2.00	-0.99	1.75
15,929.0	93.23	1.15	11,906.8	3,764.1	-20.0	3,761.2	2.00	-0.99	1.75
16,000.0	90.38	1.82	11,904.5	3,835.0	-18.2	3,832.0	4.13	-4.02	0.94
16,024.0	89.41	2.04	11,904.6	3,859.0	-17.3	3,855.9	4.13	-4.02	0.94
16,100.0	90.00	2.94	11,905.0	3,934.9	-14.0	3,931.6	1.41	0.77	1.18
16,117.0	90.13	3.14	11,904.9	3,951.9	-13.1	3,948.5	1.41	0.77	1.18
16,200.0	90.51	356.88	11,904.5	4,034.9	-13.1	4,031.4	7.56	0.46	-7.55
16,212.0	90.57	355.97	11,904.4	4,046.9	-13.9	4,043.4	7.56	0.46	-7.55
16,244.0	91.72	353.47	11,903.7	4,078.7	-16.8	4,075.4	8.60	3.59	-7.81
16,300.0	92.94	349.19	11,901.4	4,134.0	-25.3	4,131.0	7.95	2.18	-7.65
16,307.0	93.09	348.65	11,901.1	4,140.9	-26.6	4,137.9	7.95	2.16	-7.66
16,354.0	93.42	349.87	11,898.4	4,187.0	-35.3	4,184.3	2.68	0.70	2.60
16,400.0	92.16	352.69	11,896.2	4,232.4	-42.3	4,230.0	6.70	-2.73	6.12
16,403.0	92.08	352.87	11,896.1	4,235.4	-42.7	4,233.0	6.70	-2.74	6.12
16,467.0	88.83	356.70	11,895.6	4,299.1	-48.5	4,296.9	7.85	-5.08	5.98

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 103H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3045.0usft
Project:	NAN/GB	MD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	North Reference:	Grid
Well:	Nandina 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Nandina 103H As Drilled		
Design:	Final		

Planned 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)	
16,498.0	88.43	358.40	11,896.3	4,330.0	-49.8	4,327.9	5.63	-1.29	5.48	
16,500.0	88.51	358.54	11,896.3	4,332.0	-49.9	4,329.9	8.11	4.05	7.02	
16,551.0	90.58	2.12	11,896.8	4,383.0	-49.6	4,380.8	8.11	4.06	7.02	
16,592.0	92.79	4.56	11,895.5	4,423.9	-47.2	4,421.6	8.03	5.39	5.95	
16,600.0	92.79	4.60	11,895.2	4,431.9	-46.6	4,429.5	0.53	0.04	0.53	
16,641.0	92.81	4.82	11,893.2	4,472.7	-43.2	4,470.1	0.53	0.04	0.53	
16,687.0	89.68	4.22	11,892.2	4,518.5	-39.6	4,515.8	6.93	-6.80	-1.30	
16,700.0	90.21	4.39	11,892.2	4,531.5	-38.6	4,528.7	4.27	4.06	1.32	
16,734.0	91.59	4.84	11,891.6	4,565.4	-35.9	4,562.4	4.27	4.06	1.32	
16,782.0	92.66	5.03	11,889.9	4,613.2	-31.7	4,610.0	2.26	2.23	0.40	
16,800.0	92.01	4.83	11,889.1	4,631.1	-30.2	4,627.8	3.81	-3.64	-1.13	
16,878.0	89.17	3.95	11,888.3	4,708.9	-24.2	4,705.2	3.81	-3.64	-1.12	
16,900.0	90.21	4.03	11,888.4	4,730.8	-22.7	4,727.1	4.76	4.75	0.35	
16,973.0	93.68	4.28	11,886.0	4,803.6	-17.4	4,799.5	4.76	4.75	0.35	
17,000.0	94.19	3.67	11,884.1	4,830.4	-15.5	4,826.3	2.92	1.87	-2.24	
17,067.0	95.44	2.17	11,878.5	4,897.1	-12.1	4,892.7	2.92	1.87	-2.25	
17,100.0	95.27	0.20	11,875.4	4,929.9	-11.5	4,925.5	5.96	-0.52	-5.96	
17,115.0	95.19	359.31	11,874.0	4,944.9	-11.5	4,940.4	5.96	-0.53	-5.96	
17,163.0	93.91	357.10	11,870.2	4,992.7	-13.0	4,988.3	5.31	-2.67	-4.60	
17,200.0	92.12	357.10	11,868.3	5,029.6	-14.9	5,025.2	4.84	-4.84	0.00	
17,208.0	91.73	357.10	11,868.0	5,037.6	-15.3	5,033.2	4.84	-4.84	0.00	
17,258.0	91.76	356.94	11,866.5	5,087.5	-17.9	5,083.2	0.33	0.06	-0.32	
17,300.0	91.50	358.27	11,865.3	5,129.4	-19.6	5,125.2	3.23	-0.62	3.17	
17,305.0	91.47	358.43	11,865.2	5,134.4	-19.8	5,130.2	3.23	-0.62	3.17	
17,354.0	90.06	358.97	11,864.5	5,183.4	-20.9	5,179.1	3.08	-2.88	1.10	
17,399.0	91.28	359.76	11,864.0	5,228.4	-21.4	5,224.1	3.23	2.71	1.76	
17,400.0	91.28	359.78	11,864.0	5,229.4	-21.4	5,225.1	1.56	-0.28	1.54	
17,449.0	91.14	0.53	11,862.9	5,278.4	-21.3	5,274.0	1.56	-0.28	1.54	
17,500.0	91.32	0.87	11,861.8	5,329.4	-20.7	5,324.9	0.75	0.35	0.66	
17,543.0	91.47	1.15	11,860.8	5,372.4	-19.9	5,367.8	0.75	0.35	0.66	
17,600.0	91.38	359.61	11,859.4	5,429.3	-19.5	5,424.8	2.70	-0.16	-2.69	
17,638.0	91.32	358.59	11,858.5	5,467.3	-20.1	5,462.7	2.70	-0.16	-2.69	
17,700.0	91.56	358.14	11,856.9	5,529.3	-21.9	5,524.7	0.82	0.39	-0.73	
17,733.0	91.69	357.90	11,856.0	5,562.3	-23.0	5,557.7	0.82	0.39	-0.73	
17,800.0	92.87	357.83	11,853.3	5,629.2	-25.5	5,624.6	1.77	1.77	-0.11	
17,827.0	93.35	357.80	11,851.8	5,656.1	-26.5	5,651.6	1.77	1.77	-0.11	
17,900.0	92.27	358.66	11,848.3	5,729.0	-28.8	5,724.5	1.89	-1.48	1.18	
17,921.0	91.96	358.91	11,847.5	5,749.9	-29.2	5,745.5	1.89	-1.48	1.18	
18,000.0	92.27	0.07	11,844.6	5,828.9	-29.9	5,824.4	1.52	0.39	1.47	
18,016.0	92.33	0.31	11,843.9	5,844.9	-29.9	5,840.3	1.52	0.39	1.47	
18,100.0	91.32	358.50	11,841.3	5,928.8	-30.8	5,924.2	2.47	-1.20	-2.16	
18,111.0	91.19	358.26	11,841.0	5,939.8	-31.1	5,935.2	2.47	-1.20	-2.16	
18,200.0	89.13	354.65	11,840.8	6,028.6	-36.6	6,024.2	4.67	-2.32	-4.05	
18,206.0	88.99	354.41	11,840.9	6,034.6	-37.1	6,030.2	4.67	-2.32	-4.05	
18,300.0	92.07	355.94	11,840.0	6,128.2	-45.0	6,124.1	3.66	3.28	1.62	
18,302.0	92.14	355.97	11,839.9	6,130.2	-45.2	6,126.1	3.66	3.28	1.63	
18,397.0	94.00	358.04	11,834.8	6,225.0	-50.1	6,220.9	2.93	1.96	2.18	
18,400.0	93.94	358.08	11,834.6	6,228.0	-50.2	6,223.9	2.61	-2.16	1.47	
18,493.0	91.93	359.45	11,829.9	6,320.8	-52.2	6,316.8	2.61	-2.16	1.47	
18,500.0	91.97	359.61	11,829.6	6,327.8	-52.3	6,323.8	2.32	0.58	2.25	
18,589.0	92.49	1.61	11,826.2	6,416.7	-51.4	6,412.6	2.32	0.58	2.25	
18,600.0	92.67	1.72	11,825.7	6,427.7	-51.0	6,423.5	1.93	1.66	0.98	
18,684.0	94.07	2.54	11,820.7	6,511.5	-47.9	6,507.1	1.93	1.66	0.98	
18,700.0	93.58	2.26	11,819.7	6,527.5	-47.3	6,523.0	3.50	-3.05	-1.72	

Database: EDM5000
Company: Amerdev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
18,780.0	91.14	0.89	11,816.4	6,607.3	-45.1	6,602.7	3.50	-3.05	-1.72
18,800.0	90.99	0.86	11,816.0	6,627.3	-44.8	6,622.7	0.77	-0.75	-0.17
18,875.0	90.43	0.73	11,815.1	6,702.3	-43.7	6,697.5	0.77	-0.75	-0.17
18,900.0	89.57	0.83	11,815.1	6,727.3	-43.4	6,722.5	3.47	-3.45	0.41
18,971.0	87.12	1.12	11,817.1	6,798.3	-42.2	6,793.3	3.47	-3.45	0.41
19,000.0	87.10	0.93	11,818.6	6,827.2	-41.6	6,822.2	0.65	-0.05	-0.65
19,067.0	87.07	0.50	11,822.0	6,894.1	-40.8	6,889.0	0.65	-0.05	-0.65
19,100.0	87.07	0.06	11,823.7	6,927.1	-40.6	6,922.0	1.33	-0.01	-1.33
19,161.0	87.06	359.25	11,826.8	6,988.0	-41.0	6,982.8	1.33	-0.01	-1.33
19,200.0	87.59	358.58	11,828.6	7,027.0	-41.7	7,021.8	2.18	1.36	-1.71
19,206.0	87.67	358.48	11,828.9	7,033.0	-41.9	7,027.8	2.18	1.36	-1.71
19,256.0	90.17	358.40	11,829.8	7,082.9	-43.3	7,077.7	5.00	5.00	-0.16
19,300.0	92.26	357.74	11,828.9	7,126.9	-44.7	7,121.7	4.98	4.76	-1.49
19,301.0	92.31	357.73	11,828.8	7,127.9	-44.8	7,122.7	4.98	4.76	-1.49
19,351.0	89.87	357.08	11,827.9	7,177.8	-47.0	7,172.7	5.05	-4.88	-1.30
19,396.0	89.68	356.86	11,828.1	7,222.8	-49.4	7,217.7	0.65	-0.42	-0.49
19,400.0	89.90	356.93	11,828.1	7,226.8	-49.6	7,221.7	5.89	5.60	1.84
19,446.0	92.48	357.78	11,827.1	7,272.7	-51.8	7,267.7	5.89	5.60	1.84
19,491.0	94.49	358.31	11,824.4	7,317.6	-53.3	7,312.6	4.62	4.47	1.18
19,500.0	94.83	358.34	11,823.7	7,326.6	-53.6	7,321.6	3.74	3.73	0.37
19,542.0	96.39	358.50	11,819.5	7,368.3	-54.7	7,363.4	3.74	3.73	0.37
19,587.0	97.00	358.53	11,814.3	7,413.0	-55.9	7,408.1	1.36	1.36	0.07
19,600.0	96.79	358.98	11,812.7	7,425.9	-56.1	7,421.0	3.76	-1.62	3.42
19,637.0	96.19	0.24	11,808.6	7,462.7	-56.4	7,457.7	3.76	-1.62	3.42
19,682.0	94.90	359.93	11,804.2	7,507.5	-56.3	7,502.4	2.95	-2.87	-0.69
19,700.0	94.83	359.72	11,802.7	7,525.4	-56.4	7,520.4	1.20	-0.37	-1.14
19,731.0	94.72	359.37	11,800.1	7,556.3	-56.6	7,551.2	1.20	-0.37	-1.14
19,776.0	94.16	359.14	11,796.6	7,601.2	-57.2	7,596.1	1.34	-1.24	-0.51
19,800.0	93.43	358.97	11,795.0	7,625.1	-57.6	7,620.0	3.14	-3.06	-0.72
19,826.0	92.63	358.78	11,793.7	7,651.1	-58.1	7,646.0	3.14	-3.06	-0.72
19,900.0	92.27	358.22	11,790.5	7,725.0	-60.1	7,719.9	0.90	-0.49	-0.75
19,922.0	92.16	358.06	11,789.6	7,746.9	-60.8	7,741.9	0.90	-0.49	-0.75
19,995.0	93.70	358.69	11,785.9	7,819.8	-62.8	7,814.8	2.28	2.11	0.86
20,000.0	93.67	358.85	11,785.6	7,824.8	-62.9	7,819.7	3.22	-0.59	3.18
20,046.0	93.40	0.31	11,782.8	7,870.7	-63.3	7,865.6	3.22	-0.59	3.18
20,100.0	93.93	359.20	11,779.3	7,924.6	-63.5	7,919.5	2.27	0.99	-2.05
20,141.0	94.34	358.36	11,776.3	7,965.5	-64.4	7,960.3	2.27	0.99	-2.05
20,200.0	95.62	357.53	11,771.2	8,024.2	-66.5	8,019.1	2.58	2.17	-1.41
20,236.0	96.40	357.02	11,767.5	8,060.0	-68.2	8,054.9	2.58	2.17	-1.41
20,282.0	97.09	356.77	11,762.1	8,105.6	-70.7	8,100.6	1.59	1.50	-0.54
20,300.0	96.82	356.59	11,759.9	8,123.4	-71.7	8,118.5	1.81	-1.51	-1.00
20,327.0	96.41	356.32	11,756.8	8,150.2	-73.4	8,145.3	1.81	-1.51	-1.00
20,376.0	95.28	354.90	11,751.8	8,198.8	-77.1	8,194.0	3.69	-2.31	-2.90
20,400.0	94.70	354.14	11,749.7	8,222.6	-79.4	8,217.9	3.97	-2.42	-3.16
20,421.0	94.19	353.48	11,748.1	8,243.4	-81.6	8,238.8	3.97	-2.42	-3.15
20,471.0	92.72	351.51	11,745.0	8,292.9	-88.1	8,288.5	4.91	-2.94	-3.94
20,500.0	91.71	350.50	11,743.9	8,321.5	-92.7	8,317.3	4.92	-3.49	-3.47
20,518.0	91.08	349.88	11,743.5	8,339.2	-95.7	8,335.1	4.92	-3.49	-3.47
20,566.0	89.72	348.64	11,743.1	8,386.4	-104.7	8,382.6	3.83	-2.83	-2.58
20,600.0	89.20	347.97	11,743.5	8,419.7	-111.6	8,416.2	2.48	-1.52	-1.96
20,612.0	89.02	347.74	11,743.7	8,431.4	-114.1	8,428.0	2.48	-1.52	-1.96
20,662.0	87.57	345.89	11,745.1	8,480.1	-125.5	8,477.2	4.70	-2.90	-3.70
20,700.0	87.38	344.29	11,746.8	8,516.8	-135.3	8,514.3	4.25	-0.49	-4.22
20,707.0	87.35	343.99	11,747.1	8,523.5	-137.2	8,521.1	4.25	-0.49	-4.22

Database: EDM5000
Company: Amerdev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
20,757.0	87.46	342.51	11,749.4	8,571.3	-151.6	8,569.5	2.97	0.22	-2.96
20,800.0	87.97	340.79	11,751.1	8,612.1	-165.1	8,610.8	4.17	1.18	-4.00
20,802.0	87.99	340.71	11,751.2	8,614.0	-165.8	8,612.7	4.17	1.18	-4.00
20,852.0	89.65	338.95	11,752.2	8,660.9	-183.0	8,660.4	4.84	3.32	-3.52
20,897.0	91.80	337.24	11,751.6	8,702.6	-199.8	8,702.8	6.10	4.78	-3.80
20,900.0	91.83	337.09	11,751.6	8,705.4	-200.9	8,705.7	5.02	1.02	-4.92
20,947.0	92.31	334.78	11,749.9	8,748.3	-220.1	8,749.4	5.02	1.02	-4.92
20,992.0	91.99	332.74	11,748.2	8,788.6	-240.0	8,790.5	4.59	-0.71	-4.53
21,000.0	91.61	332.61	11,747.9	8,795.7	-243.6	8,797.8	5.00	-4.72	-1.66
21,042.0	89.63	331.91	11,747.5	8,832.9	-263.2	8,835.8	5.00	-4.72	-1.66
21,087.0	87.37	331.27	11,748.6	8,872.5	-284.6	8,876.3	5.22	-5.02	-1.42
21,100.0	86.88	331.57	11,749.3	8,883.9	-290.8	8,888.0	4.41	-3.78	2.28
21,136.0	85.52	332.39	11,751.7	8,915.6	-307.7	8,920.4	4.41	-3.78	2.29
21,181.0	84.96	334.45	11,755.4	8,955.7	-327.7	8,961.4	4.73	-1.24	4.58
21,200.0	84.99	335.23	11,757.1	8,972.8	-335.8	8,978.8	4.07	0.16	4.08
21,230.0	85.04	336.45	11,759.7	9,000.1	-348.0	9,006.6	4.07	0.17	4.08
21,275.0	85.46	338.52	11,763.4	9,041.5	-365.2	9,048.8	4.68	0.93	4.60
21,300.0	85.66	339.56	11,765.3	9,064.8	-374.1	9,072.4	4.22	0.78	4.16
21,326.0	85.86	340.64	11,767.3	9,089.2	-382.9	9,097.2	4.22	0.79	4.16
21,371.0	85.74	342.00	11,770.6	9,131.7	-397.3	9,140.3	3.03	-0.27	3.02
21,396.6	86.18	343.10	11,772.4	9,156.0	-405.0	9,164.9	4.62	1.72	4.30
Nan103 Crosses Quarter Section									
21,400.0	86.24	343.25	11,772.6	9,159.3	-405.9	9,168.3	4.62	1.72	4.30
21,421.0	86.60	344.15	11,773.9	9,179.4	-411.8	9,188.6	4.62	1.72	4.30
21,466.0	86.48	345.82	11,776.6	9,222.8	-423.5	9,232.5	3.71	-0.27	3.71
21,500.0	86.50	347.28	11,778.7	9,255.8	-431.4	9,265.8	4.29	0.06	4.30
21,516.0	86.51	347.97	11,779.7	9,271.4	-434.8	9,281.5	4.29	0.06	4.30
21,561.0	86.78	349.56	11,782.3	9,315.4	-443.5	9,326.0	3.58	0.60	3.53
21,600.0	86.82	350.83	11,784.5	9,353.8	-450.2	9,364.6	3.24	0.10	3.24
21,610.0	86.83	351.15	11,785.0	9,363.7	-451.7	9,374.5	3.24	0.10	3.24
21,655.0	87.69	352.50	11,787.2	9,408.2	-458.1	9,419.2	3.55	1.91	3.00
21,700.0	87.34	353.18	11,789.1	9,452.8	-463.7	9,464.1	1.70	-0.77	1.52
21,703.0	87.32	353.23	11,789.3	9,455.7	-464.1	9,467.0	1.70	-0.77	1.52
21,748.0	87.46	353.96	11,791.3	9,500.4	-469.1	9,511.9	1.65	0.31	1.62
21,796.0	87.93	354.50	11,793.3	9,548.1	-473.9	9,559.8	1.49	0.98	1.13
21,800.0	87.90	354.53	11,793.4	9,552.1	-474.3	9,563.8	0.97	-0.67	0.71
21,841.0	87.63	354.82	11,795.0	9,592.9	-478.1	9,604.7	0.97	-0.67	0.71
21,891.0	88.74	356.30	11,796.6	9,642.7	-482.0	9,654.6	3.70	2.22	2.96
21,900.0	88.81	356.46	11,796.8	9,651.7	-482.5	9,663.6	1.90	0.73	1.76
21,936.0	89.07	357.09	11,797.4	9,687.6	-484.6	9,699.6	1.90	0.73	1.76
21,985.0	89.23	357.49	11,798.2	9,736.6	-486.9	9,748.6	0.88	0.33	0.82
22,000.0	89.47	357.91	11,798.3	9,751.6	-487.5	9,763.6	3.22	1.60	2.80
22,030.0	89.95	358.75	11,798.5	9,781.6	-488.4	9,793.6	3.22	1.60	2.80
22,080.0	90.67	0.60	11,798.2	9,831.6	-488.6	9,843.6	3.97	1.44	3.70
22,100.0	91.01	1.24	11,797.9	9,851.5	-488.3	9,863.5	3.64	1.72	3.21
22,174.0	92.29	3.62	11,795.8	9,925.4	-485.2	9,937.2	3.64	1.72	3.21
22,200.0	92.23	3.56	11,794.8	9,951.4	-483.6	9,963.0	0.35	-0.25	-0.25
22,267.0	92.06	3.39	11,792.3	10,018.2	-479.5	10,029.6	0.35	-0.25	-0.25
22,300.0	92.80	3.54	11,790.9	10,051.1	-477.5	10,062.4	2.30	2.25	0.46
22,362.0	94.20	3.83	11,787.1	10,112.9	-473.5	10,123.9	2.30	2.25	0.46
22,400.0	94.20	3.83	11,784.3	10,150.7	-471.0	10,161.6	0.00	0.00	0.00
22,478.2	94.20	3.83	11,778.6	10,228.5	-465.8	10,239.1	0.00	0.00	0.00
Nan103 As Drilled LTP									
22,500.0	94.20	3.83	11,777.0	10,250.2	-464.3	10,260.7	0.00	0.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
22,535.7	94.20	3.83	11,774.4	10,285.8	-462.0	10,296.1	0.00	0.00	0.00
Nan103 As Drilled BHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Nan103 Crosses Quarte - plan hits target center - Point	0.00	0.00	11,772.4	9,156.0	-405.0	403,583.39	858,676.36	32° 6' 19.379 N	103° 18' 30.493 W
Nan103 As Drilled BHL - plan hits target center - Point	0.00	0.00	11,774.4	10,285.8	-462.0	404,713.16	858,619.37	32° 6' 30.563 N	103° 18' 31.030 W
Nan103 As Drilled LTP - plan hits target center - Point	0.00	0.01	11,778.6	10,228.5	-465.8	404,655.89	858,615.52	32° 6' 29.997 N	103° 18' 31.081 W
Nan103 As Drilled FTP - plan hits target center - Point	0.00	0.00	11,816.8	-130.0	-88.7	394,297.39	858,992.61	32° 4' 47.468 N	103° 18' 27.843 W



AMEREDEV

AmeredeV Operating, LLC.

NAN/GB

NAN/GB #3N

Nandina 103H

Nandina 103H As Drilled

Plan: Final

Lease Penetration Section Line Foot

11 November, 2019

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 103H
Project:	NAN/GB	TVD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	MD Reference:	KB @ 3045.0usft
Well:	Nandina 103H	North Reference:	Grid
Wellbore:	Nandina 103H As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM5000

Project	NAN/GB		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	NAN/GB #3N				
Site Position:		Northing:	394,428.42 usft	Latitude:	32° 4' 48.746 N
From:	Lat/Long	Easting:	859,181.30 usft	Longitude:	103° 18' 25.636 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.55 °

Well	Nandina 103H				
Well Position	+N/-S	0.0 usft	Northing:	394,427.39 usft	Latitude: 32° 4' 48.746 N
	+E/-W	0.0 usft	Easting:	859,081.32 usft	Longitude: 103° 18' 26.798 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,018.0 usft

Wellbore	Nandina 103H As Drilled				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/11/2019	6.56	59.94	47,636.06401986

Design	Final				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	357.43	

Survey Tool Program	Date 11/11/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	22,535.8	Final (Nandina 103H As Drilled)	MWD	OWSG MWD - Standard	

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	229.0	1,635.0	32° 4' 48.746 N	103° 18' 26.798 W
100.0	0.56	96.00	100.0	228.9	1,635.5	32° 4' 48.745 N	103° 18' 26.792 W
125.0	0.70	96.00	125.0	228.9	1,635.8	32° 4' 48.745 N	103° 18' 26.789 W
200.0	0.92	306.20	200.0	229.2	1,635.7	32° 4' 48.748 N	103° 18' 26.789 W
209.0	1.10	304.00	209.0	229.3	1,635.6	32° 4' 48.749 N	103° 18' 26.791 W
299.0	1.30	302.00	299.0	230.3	1,634.0	32° 4' 48.759 N	103° 18' 26.809 W
300.0	1.31	301.60	300.0	230.3	1,634.0	32° 4' 48.759 N	103° 18' 26.809 W
393.0	2.30	280.00	392.9	231.2	1,631.3	32° 4' 48.768 N	103° 18' 26.841 W
400.0	2.34	279.47	399.9	231.3	1,631.0	32° 4' 48.769 N	103° 18' 26.844 W
488.0	2.80	274.00	487.8	231.7	1,627.1	32° 4' 48.773 N	103° 18' 26.890 W
500.0	2.85	273.15	499.8	231.7	1,626.5	32° 4' 48.774 N	103° 18' 26.896 W
583.0	3.20	268.00	582.7	231.8	1,622.1	32° 4' 48.774 N	103° 18' 26.947 W

Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
Wellbore: Nandina 103H As Drilled
Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
600.0	3.11	267.37	599.7	231.7	1,621.2	32° 4' 48.774 N	103° 18' 26.958 W
677.0	2.70	264.00	676.6	231.4	1,617.3	32° 4' 48.772 N	103° 18' 27.003 W
700.0	2.80	263.46	699.6	231.3	1,616.2	32° 4' 48.771 N	103° 18' 27.016 W
772.0	3.10	262.00	771.5	230.9	1,612.5	32° 4' 48.766 N	103° 18' 27.059 W
800.0	3.25	261.01	799.4	230.6	1,611.0	32° 4' 48.764 N	103° 18' 27.077 W
866.0	3.60	259.00	865.3	229.9	1,607.1	32° 4' 48.758 N	103° 18' 27.122 W
900.0	3.42	259.32	899.2	229.5	1,605.1	32° 4' 48.754 N	103° 18' 27.146 W
961.0	3.10	260.00	960.1	228.9	1,601.7	32° 4' 48.748 N	103° 18' 27.185 W
1,000.0	2.97	256.88	999.1	228.5	1,599.6	32° 4' 48.744 N	103° 18' 27.209 W
1,055.0	2.80	252.00	1,054.0	227.8	1,597.0	32° 4' 48.737 N	103° 18' 27.240 W
1,100.0	2.80	252.00	1,099.0	227.1	1,594.9	32° 4' 48.731 N	103° 18' 27.264 W
1,145.0	2.80	252.00	1,143.9	226.4	1,592.8	32° 4' 48.724 N	103° 18' 27.289 W
1,200.0	1.85	268.07	1,198.9	226.0	1,590.6	32° 4' 48.720 N	103° 18' 27.314 W
1,238.0	1.38	290.90	1,236.8	226.1	1,589.6	32° 4' 48.722 N	103° 18' 27.326 W
1,300.0	0.51	292.02	1,298.8	226.5	1,588.6	32° 4' 48.725 N	103° 18' 27.337 W
1,336.0	0.02	343.32	1,334.8	226.6	1,588.5	32° 4' 48.726 N	103° 18' 27.339 W
1,400.0	0.04	330.79	1,398.8	226.6	1,588.5	32° 4' 48.726 N	103° 18' 27.339 W
1,432.0	0.05	328.30	1,430.8	226.6	1,588.4	32° 4' 48.726 N	103° 18' 27.339 W
1,500.0	0.08	4.79	1,498.8	226.7	1,588.4	32° 4' 48.727 N	103° 18' 27.339 W
1,526.0	0.10	11.32	1,524.8	226.7	1,588.4	32° 4' 48.728 N	103° 18' 27.339 W
1,600.0	0.07	312.16	1,598.8	226.8	1,588.4	32° 4' 48.729 N	103° 18' 27.339 W
1,620.0	0.08	295.30	1,618.8	226.8	1,588.4	32° 4' 48.729 N	103° 18' 27.340 W
1,700.0	0.01	270.21	1,698.8	226.9	1,588.3	32° 4' 48.729 N	103° 18' 27.340 W
1,716.0	0.01	132.93	1,714.8	226.9	1,588.3	32° 4' 48.729 N	103° 18' 27.340 W
1,800.0	0.07	134.70	1,798.8	226.8	1,588.4	32° 4' 48.728 N	103° 18' 27.340 W
1,811.0	0.08	134.73	1,809.8	226.8	1,588.4	32° 4' 48.728 N	103° 18' 27.340 W
1,900.0	0.08	122.37	1,898.8	226.7	1,588.5	32° 4' 48.728 N	103° 18' 27.339 W
1,907.0	0.08	121.41	1,905.8	226.7	1,588.5	32° 4' 48.728 N	103° 18' 27.339 W
2,000.0	0.59	214.22	1,998.8	226.3	1,588.3	32° 4' 48.723 N	103° 18' 27.341 W
2,003.0	0.61	214.46	2,001.8	226.3	1,588.3	32° 4' 48.723 N	103° 18' 27.341 W
2,098.0	3.52	183.16	2,096.8	222.9	1,587.8	32° 4' 48.690 N	103° 18' 27.347 W
2,100.0	3.59	183.03	2,098.8	222.8	1,587.8	32° 4' 48.689 N	103° 18' 27.347 W
2,194.0	6.90	179.88	2,192.3	214.2	1,587.7	32° 4' 48.604 N	103° 18' 27.350 W
2,200.0	7.09	179.79	2,198.3	213.5	1,587.7	32° 4' 48.597 N	103° 18' 27.350 W
2,289.0	9.97	178.86	2,286.3	200.3	1,587.8	32° 4' 48.466 N	103° 18' 27.349 W
2,300.0	10.15	178.42	2,297.1	198.4	1,587.9	32° 4' 48.447 N	103° 18' 27.349 W
2,384.0	11.55	175.48	2,379.6	182.6	1,588.8	32° 4' 48.291 N	103° 18' 27.340 W
2,400.0	11.41	175.09	2,395.3	179.4	1,589.0	32° 4' 48.259 N	103° 18' 27.338 W
2,479.0	10.73	173.00	2,472.8	164.3	1,590.6	32° 4' 48.110 N	103° 18' 27.321 W
2,500.0	10.47	172.31	2,493.5	160.5	1,591.1	32° 4' 48.072 N	103° 18' 27.316 W
2,575.0	9.57	169.53	2,567.3	147.6	1,593.1	32° 4' 47.944 N	103° 18' 27.294 W
2,600.0	9.20	169.10	2,592.0	143.6	1,593.9	32° 4' 47.905 N	103° 18' 27.285 W
2,671.0	8.15	167.67	2,662.2	133.1	1,596.0	32° 4' 47.801 N	103° 18' 27.261 W
2,700.0	7.90	167.28	2,690.9	129.2	1,596.9	32° 4' 47.761 N	103° 18' 27.252 W

Company: Ameredev Operating, LLC.
 Project: NAN/GB
 Site: NAN/GB #3N
 Well: Nandina 103H
 Wellbore: Nandina 103H As Drilled
 Design: Final

Local Co-ordinate Reference: Well Nandina 103H
 TVD Reference: KB @ 3045.0usft
 MD Reference: KB @ 3045.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
2,765.0	7.35	166.32	2,755.3	120.8	1,598.9	32° 4' 47.678 N	103° 18' 27.230 W
2,800.0	7.03	163.94	2,790.1	116.5	1,600.0	32° 4' 47.636 N	103° 18' 27.217 W
2,861.0	6.51	159.26	2,850.6	109.7	1,602.3	32° 4' 47.568 N	103° 18' 27.192 W
2,900.0	6.04	154.88	2,889.4	105.8	1,603.9	32° 4' 47.529 N	103° 18' 27.173 W
2,956.0	5.44	147.35	2,945.1	100.9	1,606.6	32° 4' 47.481 N	103° 18' 27.142 W
3,000.0	5.45	139.19	2,988.9	97.5	1,609.1	32° 4' 47.447 N	103° 18' 27.114 W
3,051.0	5.59	129.97	3,039.7	94.1	1,612.6	32° 4' 47.413 N	103° 18' 27.074 W
3,100.0	5.53	124.12	3,088.5	91.3	1,616.3	32° 4' 47.385 N	103° 18' 27.030 W
3,146.0	5.52	118.55	3,134.2	89.0	1,620.1	32° 4' 47.361 N	103° 18' 26.986 W
3,200.0	3.49	118.60	3,188.1	86.9	1,623.8	32° 4' 47.341 N	103° 18' 26.943 W
3,241.0	1.94	118.71	3,229.0	86.0	1,625.6	32° 4' 47.332 N	103° 18' 26.923 W
3,300.0	0.66	126.20	3,288.0	85.3	1,626.7	32° 4' 47.325 N	103° 18' 26.910 W
3,336.0	0.19	251.94	3,324.0	85.2	1,626.8	32° 4' 47.323 N	103° 18' 26.909 W
3,400.0	2.26	243.30	3,388.0	84.6	1,625.6	32° 4' 47.318 N	103° 18' 26.923 W
3,431.0	3.26	243.06	3,419.0	83.9	1,624.3	32° 4' 47.311 N	103° 18' 26.939 W
3,500.0	5.86	234.22	3,487.7	81.0	1,619.6	32° 4' 47.282 N	103° 18' 26.993 W
3,526.0	6.86	232.64	3,513.6	79.2	1,617.3	32° 4' 47.266 N	103° 18' 27.020 W
3,600.0	7.75	231.20	3,567.0	73.4	1,609.9	32° 4' 47.209 N	103° 18' 27.106 W
3,622.0	8.02	230.83	3,608.8	71.5	1,607.6	32° 4' 47.190 N	103° 18' 27.134 W
3,700.0	7.13	226.16	3,686.1	64.7	1,599.9	32° 4' 47.124 N	103° 18' 27.224 W
3,717.0	6.94	224.99	3,703.0	63.3	1,598.4	32° 4' 47.109 N	103° 18' 27.242 W
3,800.0	6.87	221.49	3,785.4	56.0	1,591.6	32° 4' 47.038 N	103° 18' 27.322 W
3,813.0	6.86	220.94	3,798.3	54.8	1,590.5	32° 4' 47.027 N	103° 18' 27.334 W
3,900.0	6.73	219.07	3,884.6	47.0	1,583.9	32° 4' 46.949 N	103° 18' 27.412 W
3,908.0	6.72	218.89	3,892.6	46.2	1,583.3	32° 4' 46.942 N	103° 18' 27.419 W
4,000.0	6.02	221.35	3,984.0	38.4	1,576.8	32° 4' 46.866 N	103° 18' 27.496 W
4,002.0	6.00	221.41	3,986.0	38.3	1,576.6	32° 4' 46.864 N	103° 18' 27.497 W
4,098.0	6.04	224.05	4,081.5	30.9	1,569.8	32° 4' 46.792 N	103° 18' 27.578 W
4,100.0	6.04	224.08	4,083.5	30.7	1,569.6	32° 4' 46.790 N	103° 18' 27.579 W
4,193.0	5.94	225.32	4,176.0	23.8	1,562.8	32° 4' 46.722 N	103° 18' 27.659 W
4,200.0	5.94	225.33	4,182.9	23.3	1,562.3	32° 4' 46.717 N	103° 18' 27.665 W
4,289.0	5.93	225.42	4,271.5	16.9	1,555.8	32° 4' 46.654 N	103° 18' 27.742 W
4,300.0	5.95	225.30	4,282.4	16.1	1,554.9	32° 4' 46.646 N	103° 18' 27.752 W
4,384.0	6.10	224.44	4,365.9	9.8	1,548.7	32° 4' 46.585 N	103° 18' 27.825 W
4,400.0	6.11	222.51	4,381.8	8.6	1,547.6	32° 4' 46.573 N	103° 18' 27.838 W
4,479.0	6.24	213.14	4,460.4	1.9	1,542.4	32° 4' 46.507 N	103° 18' 27.899 W
4,500.0	6.21	209.87	4,481.3	-0.1	1,541.2	32° 4' 46.488 N	103° 18' 27.914 W
4,575.0	6.27	198.18	4,555.8	-7.5	1,537.9	32° 4' 46.415 N	103° 18' 27.953 W
4,600.0	6.25	196.33	4,580.7	-10.1	1,537.1	32° 4' 46.389 N	103° 18' 27.962 W
4,671.0	6.24	191.04	4,651.2	-17.6	1,535.2	32° 4' 46.315 N	103° 18' 27.984 W
4,700.0	6.24	190.47	4,680.1	-20.7	1,534.7	32° 4' 46.285 N	103° 18' 27.992 W
4,766.0	6.24	189.16	4,745.7	-27.7	1,533.4	32° 4' 46.215 N	103° 18' 28.007 W
4,800.0	6.25	189.72	4,779.5	-31.4	1,532.8	32° 4' 46.179 N	103° 18' 28.014 W
4,861.0	6.28	190.73	4,840.1	-37.9	1,531.6	32° 4' 46.114 N	103° 18' 28.028 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 103H
Project:	NAN/GB	TVD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	MD Reference:	KB @ 3045.0usft
Well:	Nandina 103H	North Reference:	Grid
Wellbore:	Nandina 103H As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/FNL (usft)	+FWL/FEL (usft)	Latitude	Longitude
4,900.0	6.30	190.91	4,878.9	-42.1	1,530.8	32° 4' 46.073 N	103° 18' 28.038 W
4,957.0	6.34	191.17	4,935.5	-48.3	1,529.6	32° 4' 46.012 N	103° 18' 28.053 W
5,000.0	6.36	191.98	4,978.3	-53.0	1,528.7	32° 4' 45.966 N	103° 18' 28.065 W
5,052.0	6.39	192.96	5,030.0	-58.6	1,527.4	32° 4' 45.910 N	103° 18' 28.080 W
5,100.0	6.37	192.77	5,077.7	-63.8	1,526.3	32° 4' 45.859 N	103° 18' 28.094 W
5,147.0	6.36	192.59	5,124.4	-68.9	1,525.1	32° 4' 45.809 N	103° 18' 28.108 W
5,200.0	6.33	193.47	5,177.0	-74.6	1,523.8	32° 4' 45.752 N	103° 18' 28.124 W
5,242.0	6.31	194.17	5,218.8	-79.1	1,522.7	32° 4' 45.708 N	103° 18' 28.137 W
5,300.0	6.38	194.32	5,276.4	-85.3	1,521.1	32° 4' 45.647 N	103° 18' 28.156 W
5,337.0	6.43	194.41	5,313.2	-89.3	1,520.1	32° 4' 45.607 N	103° 18' 28.169 W
5,400.0	6.31	194.61	5,375.8	-96.1	1,518.3	32° 4' 45.540 N	103° 18' 28.190 W
5,433.0	6.25	194.72	5,408.6	-99.6	1,517.4	32° 4' 45.506 N	103° 18' 28.201 W
5,500.0	6.34	194.72	5,475.2	-106.7	1,515.5	32° 4' 45.436 N	103° 18' 28.223 W
5,528.0	6.38	194.72	5,503.0	-109.7	1,514.8	32° 4' 45.406 N	103° 18' 28.233 W
5,600.0	6.37	192.92	5,574.6	-117.4	1,512.9	32° 4' 45.329 N	103° 18' 28.256 W
5,624.0	6.37	192.32	5,598.4	-120.0	1,512.3	32° 4' 45.304 N	103° 18' 28.263 W
5,700.0	5.93	191.59	5,674.0	-128.0	1,510.6	32° 4' 45.225 N	103° 18' 28.283 W
5,718.0	5.82	191.40	5,691.9	-129.8	1,510.2	32° 4' 45.207 N	103° 18' 28.288 W
5,800.0	5.82	195.17	5,773.5	-137.9	1,508.3	32° 4' 45.128 N	103° 18' 28.311 W
5,814.0	5.82	195.81	5,787.4	-139.2	1,507.9	32° 4' 45.114 N	103° 18' 28.315 W
5,900.0	5.85	198.45	5,873.0	-147.6	1,505.4	32° 4' 45.032 N	103° 18' 28.346 W
5,909.0	5.85	198.72	5,881.9	-148.5	1,505.1	32° 4' 45.023 N	103° 18' 28.350 W
6,000.0	5.95	205.30	5,972.4	-157.1	1,501.6	32° 4' 44.938 N	103° 18' 28.391 W
6,003.0	5.95	205.51	5,975.4	-157.4	1,501.4	32° 4' 44.935 N	103° 18' 28.393 W
6,098.0	5.90	206.17	6,069.9	-166.2	1,497.2	32° 4' 44.848 N	103° 18' 28.444 W
6,100.0	5.90	206.15	6,071.9	-166.4	1,497.1	32° 4' 44.846 N	103° 18' 28.445 W
6,193.0	5.91	205.39	6,164.4	-175.0	1,492.9	32° 4' 44.761 N	103° 18' 28.494 W
6,200.0	5.92	205.31	6,171.4	-175.7	1,492.6	32° 4' 44.755 N	103° 18' 28.498 W
6,288.0	6.05	204.32	6,258.9	-184.0	1,488.7	32° 4' 44.673 N	103° 18' 28.543 W
6,300.0	6.06	204.18	6,270.8	-185.2	1,488.2	32° 4' 44.662 N	103° 18' 28.549 W
6,384.0	6.13	203.23	6,354.4	-193.3	1,484.6	32° 4' 44.581 N	103° 18' 28.592 W
6,400.0	6.10	203.11	6,370.3	-194.9	1,484.0	32° 4' 44.566 N	103° 18' 28.600 W
6,479.0	5.96	202.48	6,448.8	-202.5	1,480.7	32° 4' 44.490 N	103° 18' 28.638 W
6,500.0	5.97	202.25	6,469.7	-204.6	1,479.9	32° 4' 44.470 N	103° 18' 28.648 W
6,575.0	6.00	201.45	6,544.3	-211.8	1,477.0	32° 4' 44.399 N	103° 18' 28.683 W
6,600.0	5.93	200.98	6,569.2	-214.2	1,476.1	32° 4' 44.375 N	103° 18' 28.694 W
6,669.0	5.73	199.62	6,637.8	-220.8	1,473.6	32° 4' 44.310 N	103° 18' 28.723 W
6,700.0	4.97	198.13	6,668.7	-223.5	1,472.7	32° 4' 44.283 N	103° 18' 28.734 W
6,764.0	3.43	193.01	6,732.5	-228.1	1,471.4	32° 4' 44.239 N	103° 18' 28.750 W
6,800.0	2.51	190.02	6,768.5	-229.9	1,471.0	32° 4' 44.221 N	103° 18' 28.754 W
6,859.0	1.05	173.82	6,827.4	-231.7	1,470.9	32° 4' 44.203 N	103° 18' 28.756 W
6,900.0	0.62	177.16	6,868.4	-232.3	1,470.9	32° 4' 44.197 N	103° 18' 28.756 W
6,954.0	0.10	230.91	6,922.4	-232.6	1,470.9	32° 4' 44.194 N	103° 18' 28.756 W
7,000.0	0.02	245.85	6,968.4	-232.6	1,470.8	32° 4' 44.194 N	103° 18' 28.757 W
7,050.0	0.06	38.01	7,018.4	-232.6	1,470.9	32° 4' 44.194 N	103° 18' 28.757 W

Company: Ameredev Operating, LLC.
 Project: NAN/GB
 Site: NAN/GB #3N
 Well: Nandina 103H
 Wellbore: Nandina 103H As Drilled
 Design: Final

Local Co-ordinate Reference: Well Nandina 103H
 TVD Reference: KB @ 3045.0usft
 MD Reference: KB @ 3045.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
7,100.0	0.03	27.98	7,068.4	-232.6	1,470.9	32° 4' 44.194 N	103° 18' 28.756 W
7,145.0	0.01	317.85	7,113.4	-232.6	1,470.9	32° 4' 44.194 N	103° 18' 28.756 W
7,200.0	0.02	14.14	7,168.4	-232.6	1,470.9	32° 4' 44.194 N	103° 18' 28.756 W
7,245.0	0.04	23.94	7,213.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.756 W
7,300.0	0.04	44.74	7,268.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.756 W
7,339.0	0.04	59.32	7,307.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.756 W
7,400.0	0.01	165.35	7,368.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.755 W
7,435.0	0.03	212.68	7,403.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.755 W
7,500.0	0.05	254.99	7,468.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.756 W
7,530.0	0.07	262.64	7,498.4	-232.5	1,470.9	32° 4' 44.195 N	103° 18' 28.756 W
7,600.0	0.06	317.19	7,568.4	-232.5	1,470.8	32° 4' 44.195 N	103° 18' 28.757 W
7,626.0	0.07	334.80	7,594.4	-232.5	1,470.8	32° 4' 44.195 N	103° 18' 28.757 W
7,700.0	0.09	295.86	7,668.4	-232.4	1,470.7	32° 4' 44.196 N	103° 18' 28.758 W
7,721.0	0.10	288.69	7,689.4	-232.4	1,470.7	32° 4' 44.196 N	103° 18' 28.758 W
7,800.0	0.07	328.96	7,768.4	-232.3	1,470.6	32° 4' 44.197 N	103° 18' 28.759 W
7,816.0	0.07	339.74	7,784.4	-232.3	1,470.6	32° 4' 44.197 N	103° 18' 28.760 W
7,900.0	0.07	319.06	7,868.4	-232.2	1,470.5	32° 4' 44.198 N	103° 18' 28.760 W
7,912.0	0.07	316.17	7,880.4	-232.2	1,470.5	32° 4' 44.198 N	103° 18' 28.760 W
8,000.0	0.07	6.26	7,968.4	-232.1	1,470.5	32° 4' 44.199 N	103° 18' 28.761 W
8,006.0	0.07	9.26	7,974.4	-232.1	1,470.5	32° 4' 44.199 N	103° 18' 28.761 W
8,100.0	0.06	191.83	8,068.4	-232.1	1,470.5	32° 4' 44.199 N	103° 18' 28.761 W
8,101.0	0.06	191.80	8,069.4	-232.1	1,470.5	32° 4' 44.199 N	103° 18' 28.761 W
8,197.0	0.16	285.30	8,165.4	-232.1	1,470.4	32° 4' 44.199 N	103° 18' 28.762 W
8,200.0	0.16	284.78	8,168.4	-232.1	1,470.3	32° 4' 44.199 N	103° 18' 28.762 W
8,292.0	0.11	260.78	8,260.4	-232.1	1,470.1	32° 4' 44.199 N	103° 18' 28.765 W
8,300.0	0.12	260.86	8,268.4	-232.1	1,470.1	32° 4' 44.199 N	103° 18' 28.765 W
8,387.0	0.17	261.43	8,355.4	-232.1	1,469.9	32° 4' 44.198 N	103° 18' 28.767 W
8,400.0	0.16	259.50	8,368.4	-232.1	1,469.9	32° 4' 44.198 N	103° 18' 28.768 W
8,482.0	0.09	235.90	8,450.4	-232.2	1,469.7	32° 4' 44.198 N	103° 18' 28.770 W
8,500.0	0.08	244.58	8,468.4	-232.2	1,469.7	32° 4' 44.198 N	103° 18' 28.770 W
8,577.0	0.07	300.67	8,545.4	-232.2	1,469.6	32° 4' 44.198 N	103° 18' 28.771 W
8,600.0	0.15	294.75	8,568.4	-232.2	1,469.6	32° 4' 44.198 N	103° 18' 28.772 W
8,641.0	0.29	292.21	8,609.4	-232.1	1,469.4	32° 4' 44.199 N	103° 18' 28.773 W
8,672.0	0.38	304.86	8,640.4	-232.0	1,469.3	32° 4' 44.199 N	103° 18' 28.775 W
8,700.0	0.58	303.00	8,668.4	-231.9	1,469.1	32° 4' 44.201 N	103° 18' 28.777 W
8,714.0	0.68	302.48	8,682.4	-231.8	1,468.9	32° 4' 44.202 N	103° 18' 28.779 W
8,767.0	0.54	292.58	8,735.4	-231.6	1,468.4	32° 4' 44.204 N	103° 18' 28.785 W
8,800.0	0.49	266.74	8,768.4	-231.5	1,468.2	32° 4' 44.205 N	103° 18' 28.788 W
8,804.0	0.49	263.40	8,772.4	-231.5	1,468.1	32° 4' 44.205 N	103° 18' 28.788 W
8,862.0	0.60	249.54	8,830.4	-231.7	1,467.6	32° 4' 44.204 N	103° 18' 28.794 W
8,900.0	0.81	248.90	8,868.4	-231.8	1,467.1	32° 4' 44.202 N	103° 18' 28.799 W
8,957.0	1.13	248.39	8,925.4	-232.2	1,466.2	32° 4' 44.199 N	103° 18' 28.810 W
9,000.0	1.41	255.00	8,968.4	-232.5	1,465.3	32° 4' 44.196 N	103° 18' 28.821 W
9,047.0	1.74	259.69	9,015.4	-232.7	1,464.1	32° 4' 44.193 N	103° 18' 28.835 W

Company: Ameredev Operating, LLC.
 Project: NAN/GB
 Site: NAN/GB #3N
 Well: Nandina 103H
 Wellbore: Nandina 103H As Drilled
 Design: Final

Local Co-ordinate Reference: Well Nandina 103H
 TVD Reference: KB @ 3045.0usft
 MD Reference: KB @ 3045.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
9,100.0	1.91	262.36	9,068.3	-233.0	1,462.4	32° 4' 44.191 N	103° 18' 28.855 W
9,142.0	2.05	264.15	9,110.3	-233.2	1,461.0	32° 4' 44.189 N	103° 18' 28.871 W
9,200.0	2.21	267.66	9,168.3	-233.3	1,458.8	32° 4' 44.188 N	103° 18' 28.896 W
9,238.0	2.32	269.69	9,206.2	-233.4	1,457.3	32° 4' 44.188 N	103° 18' 28.914 W
9,300.0	2.64	274.66	9,268.2	-233.2	1,454.6	32° 4' 44.189 N	103° 18' 28.945 W
9,332.0	2.81	276.77	9,300.2	-233.1	1,453.1	32° 4' 44.191 N	103° 18' 28.963 W
9,400.0	2.90	277.65	9,368.1	-232.7	1,449.8	32° 4' 44.195 N	103° 18' 29.002 W
9,427.0	2.94	277.98	9,395.0	-232.5	1,448.4	32° 4' 44.197 N	103° 18' 29.017 W
9,500.0	2.88	278.35	9,467.9	-232.0	1,444.7	32° 4' 44.203 N	103° 18' 29.060 W
9,522.0	2.86	278.47	9,489.9	-231.8	1,443.6	32° 4' 44.204 N	103° 18' 29.073 W
9,600.0	2.64	286.44	9,567.8	-231.0	1,440.0	32° 4' 44.213 N	103° 18' 29.115 W
9,617.0	2.60	288.35	9,584.8	-230.8	1,439.3	32° 4' 44.215 N	103° 18' 29.124 W
9,700.0	1.51	294.33	9,667.7	-229.7	1,436.5	32° 4' 44.225 N	103° 18' 29.156 W
9,712.0	1.35	295.99	9,679.7	-229.6	1,436.2	32° 4' 44.227 N	103° 18' 29.159 W
9,800.0	1.09	332.51	9,767.7	-228.4	1,434.9	32° 4' 44.239 N	103° 18' 29.174 W
9,807.0	1.09	335.87	9,774.7	-228.3	1,434.8	32° 4' 44.240 N	103° 18' 29.175 W
9,900.0	1.17	343.54	9,867.7	-226.6	1,434.2	32° 4' 44.257 N	103° 18' 29.182 W
9,901.0	1.17	343.62	9,868.7	-226.5	1,434.2	32° 4' 44.257 N	103° 18' 29.182 W
9,996.0	1.25	320.67	9,963.7	-224.8	1,433.3	32° 4' 44.274 N	103° 18' 29.193 W
10,000.0	1.26	319.50	9,967.7	-224.8	1,433.2	32° 4' 44.275 N	103° 18' 29.193 W
10,091.0	1.52	296.97	10,058.7	-223.4	1,431.5	32° 4' 44.288 N	103° 18' 29.213 W
10,100.0	1.52	295.61	10,067.7	-223.3	1,431.3	32° 4' 44.289 N	103° 18' 29.216 W
10,187.0	1.57	282.76	10,154.6	-222.6	1,429.1	32° 4' 44.297 N	103° 18' 29.241 W
10,200.0	1.53	282.65	10,167.6	-222.5	1,428.7	32° 4' 44.298 N	103° 18' 29.245 W
10,281.0	1.31	281.83	10,248.6	-222.1	1,426.8	32° 4' 44.302 N	103° 18' 29.268 W
10,300.0	1.25	281.12	10,267.6	-222.0	1,426.3	32° 4' 44.303 N	103° 18' 29.273 W
10,376.0	1.02	277.47	10,343.6	-221.7	1,424.9	32° 4' 44.306 N	103° 18' 29.290 W
10,400.0	0.92	277.01	10,367.6	-221.7	1,424.5	32° 4' 44.306 N	103° 18' 29.295 W
10,472.0	0.64	274.82	10,439.6	-221.6	1,423.5	32° 4' 44.307 N	103° 18' 29.306 W
10,500.0	0.58	267.71	10,467.6	-221.6	1,423.2	32° 4' 44.307 N	103° 18' 29.309 W
10,567.0	0.49	244.97	10,534.6	-221.7	1,422.6	32° 4' 44.306 N	103° 18' 29.316 W
10,600.0	0.54	245.42	10,567.6	-221.8	1,422.3	32° 4' 44.305 N	103° 18' 29.319 W
10,662.0	0.62	246.08	10,629.6	-222.1	1,421.7	32° 4' 44.302 N	103° 18' 29.326 W
10,700.0	0.98	246.38	10,667.6	-222.3	1,421.3	32° 4' 44.300 N	103° 18' 29.332 W
10,757.0	1.51	246.56	10,724.5	-222.8	1,420.1	32° 4' 44.296 N	103° 18' 29.345 W
10,800.0	2.07	250.48	10,767.5	-223.3	1,418.9	32° 4' 44.291 N	103° 18' 29.360 W
10,851.0	2.74	253.04	10,818.5	-223.9	1,416.8	32° 4' 44.285 N	103° 18' 29.383 W
10,900.0	2.74	255.27	10,867.4	-224.6	1,414.6	32° 4' 44.278 N	103° 18' 29.410 W
10,944.0	2.74	257.28	10,911.4	-225.1	1,412.5	32° 4' 44.274 N	103° 18' 29.433 W
11,000.0	2.63	266.49	10,967.3	-225.5	1,410.0	32° 4' 44.270 N	103° 18' 29.463 W
11,039.0	2.60	273.23	11,006.3	-225.5	1,408.2	32° 4' 44.270 N	103° 18' 29.484 W
11,081.0	2.78	274.44	11,048.2	-225.3	1,406.2	32° 4' 44.272 N	103° 18' 29.507 W
11,100.0	2.49	277.88	11,067.2	-225.2	1,405.3	32° 4' 44.273 N	103° 18' 29.517 W
11,177.0	1.48	305.04	11,144.2	-224.4	1,402.9	32° 4' 44.281 N	103° 18' 29.546 W

Company: Ameredev Operating, LLC.
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 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
11,200.0	1.50	305.34	11,167.1	-224.1	1,402.4	32° 4' 44.284 N	103° 18' 29.551 W
11,272.0	1.55	306.23	11,239.1	-223.0	1,400.8	32° 4' 44.296 N	103° 18' 29.569 W
11,300.0	2.18	329.85	11,267.1	-222.3	1,400.3	32° 4' 44.303 N	103° 18' 29.576 W
11,304.0	2.29	332.07	11,271.1	-222.2	1,400.2	32° 4' 44.304 N	103° 18' 29.577 W
11,336.0	3.48	350.65	11,303.1	-220.6	1,399.7	32° 4' 44.319 N	103° 18' 29.582 W
11,368.0	4.28	9.61	11,335.0	-218.5	1,399.8	32° 4' 44.340 N	103° 18' 29.581 W
11,400.0	5.42	15.76	11,366.9	-215.9	1,400.4	32° 4' 44.366 N	103° 18' 29.574 W
11,431.0	7.56	16.43	11,397.7	-212.5	1,401.4	32° 4' 44.399 N	103° 18' 29.562 W
11,463.0	9.97	17.60	11,429.3	-207.8	1,402.8	32° 4' 44.445 N	103° 18' 29.545 W
11,495.0	12.95	18.25	11,460.7	-201.8	1,404.7	32° 4' 44.505 N	103° 18' 29.521 W
11,500.0	13.47	18.26	11,465.5	-200.7	1,405.1	32° 4' 44.516 N	103° 18' 29.517 W
11,525.0	16.07	18.32	11,489.7	-194.7	1,407.1	32° 4' 44.575 N	103° 18' 29.493 W
11,600.0	21.42	22.80	11,560.7	-172.2	1,415.7	32° 4' 44.797 N	103° 18' 29.391 W
11,617.0	22.65	23.53	11,576.5	-166.3	1,418.2	32° 4' 44.855 N	103° 18' 29.361 W
11,680.0	29.78	27.03	11,632.9	-141.2	1,430.2	32° 4' 45.102 N	103° 18' 29.219 W
11,700.0	30.95	26.90	11,650.2	-132.2	1,434.7	32° 4' 45.191 N	103° 18' 29.165 W
11,712.0	31.65	26.83	11,660.4	-126.6	1,437.6	32° 4' 45.246 N	103° 18' 29.132 W
11,744.0	36.73	27.24	11,686.9	-110.6	1,445.7	32° 4' 45.403 N	103° 18' 29.035 W
11,775.0	42.44	27.98	11,710.8	-93.1	1,454.9	32° 4' 45.575 N	103° 18' 28.927 W
11,800.0	45.53	29.42	11,728.8	-77.9	1,463.2	32° 4' 45.725 N	103° 18' 28.828 W
11,807.0	46.40	29.79	11,733.6	-73.5	1,465.7	32° 4' 45.768 N	103° 18' 28.799 W
11,838.0	51.41	29.15	11,754.0	-53.2	1,477.2	32° 4' 45.968 N	103° 18' 28.663 W
11,869.0	58.18	27.97	11,771.9	-30.9	1,489.3	32° 4' 46.187 N	103° 18' 28.520 W
11,900.0	64.03	26.57	11,786.8	-8.8	1,501.7	32° 4' 46.425 N	103° 18' 28.373 W
11,901.0	64.22	26.53	11,787.3	-6.0	1,502.1	32° 4' 46.433 N	103° 18' 28.368 W
11,933.0	68.93	24.05	11,800.0	20.5	1,514.7	32° 4' 46.694 N	103° 18' 28.220 W
11,964.0	75.65	21.91	11,809.4	47.7	1,526.2	32° 4' 46.962 N	103° 18' 28.083 W
11,996.0	83.60	21.50	11,815.2	76.9	1,537.8	32° 4' 47.250 N	103° 18' 27.944 W
12,000.0	84.41	21.36	11,815.6	80.6	1,539.2	32° 4' 47.287 N	103° 18' 27.927 W
12,019.7	88.39	20.67	11,816.8	99.0	1,546.3	32° 4' 47.468 N	103° 18' 27.843 W
Nan103 As Drilled FTP							
12,028.0	90.07	20.38	11,817.0	106.7	1,549.2	32° 4' 47.544 N	103° 18' 27.808 W
12,059.0	92.21	19.05	11,816.3	135.9	1,559.7	32° 4' 47.832 N	103° 18' 27.684 W
12,091.0	93.68	17.95	11,814.7	166.2	1,569.8	32° 4' 48.131 N	103° 18' 27.563 W
12,100.0	93.94	17.59	11,814.1	174.8	1,572.5	32° 4' 48.215 N	103° 18' 27.530 W
12,122.0	94.59	16.71	11,812.5	195.7	1,579.0	32° 4' 48.422 N	103° 18' 27.452 W
12,155.0	95.02	13.70	11,809.7	227.5	1,587.6	32° 4' 48.735 N	103° 18' 27.348 W
12,186.0	92.24	10.56	11,807.7	257.7	1,594.1	32° 4' 49.034 N	103° 18' 27.270 W
12,200.0	91.04	10.23	11,807.3	271.5	1,596.7	32° 4' 49.170 N	103° 18' 27.239 W
12,218.0	89.50	9.80	11,807.2	289.2	1,599.8	32° 4' 49.345 N	103° 18' 27.200 W
12,249.0	88.42	8.78	11,807.8	319.8	1,604.8	32° 4' 49.647 N	103° 18' 27.139 W
12,300.0	89.05	7.75	11,808.9	370.2	1,612.1	32° 4' 50.145 N	103° 18' 27.048 W
12,331.0	89.43	7.12	11,809.3	401.0	1,616.1	32° 4' 50.449 N	103° 18' 26.998 W
12,400.0	87.96	5.68	11,810.9	469.5	1,623.8	32° 4' 51.127 N	103° 18' 26.901 W

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 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/FNL (usft)	+FWL/FEL (usft)	Latitude	Longitude
12,427.0	87.38	5.11	11,812.0	496.4	1,626.4	32° 4' 51.392 N	103° 18' 26.869 W
12,500.0	86.94	3.41	11,815.6	569.1	1,631.8	32° 4' 52.111 N	103° 18' 26.798 W
12,521.0	86.81	2.92	11,816.8	590.0	1,632.9	32° 4' 52.318 N	103° 18' 26.782 W
12,600.0	86.29	2.35	11,821.5	668.8	1,636.5	32° 4' 53.097 N	103° 18' 26.731 W
12,616.0	86.19	2.23	11,822.6	684.7	1,637.2	32° 4' 53.255 N	103° 18' 26.722 W
12,700.0	86.28	0.44	11,828.1	768.5	1,639.1	32° 4' 54.084 N	103° 18' 26.690 W
12,711.0	86.29	0.21	11,828.8	779.5	1,639.2	32° 4' 54.193 N	103° 18' 26.688 W
12,800.0	85.89	358.89	11,834.9	868.3	1,638.5	32° 4' 55.071 N	103° 18' 26.686 W
12,806.0	85.86	358.80	11,835.3	874.3	1,638.4	32° 4' 55.130 N	103° 18' 26.687 W
12,900.0	87.33	358.58	11,840.9	968.1	1,636.2	32° 4' 56.059 N	103° 18' 26.702 W
12,902.0	87.36	358.58	11,841.0	970.1	1,636.2	32° 4' 56.079 N	103° 18' 26.702 W
12,995.0	88.76	358.25	11,844.1	1,063.0	1,633.6	32° 4' 56.998 N	103° 18' 26.722 W
13,000.0	88.63	358.24	11,844.3	1,068.0	1,633.5	32° 4' 57.048 N	103° 18' 26.723 W
13,090.0	86.27	358.08	11,848.3	1,157.9	1,630.6	32° 4' 57.937 N	103° 18' 26.746 W
13,100.0	85.98	358.09	11,848.9	1,167.8	1,630.3	32° 4' 58.036 N	103° 18' 26.749 W
13,121.0	85.38	358.10	11,850.5	1,188.8	1,629.6	32° 4' 58.243 N	103° 18' 26.755 W
13,153.0	86.97	357.60	11,852.7	1,220.7	1,628.4	32° 4' 58.559 N	103° 18' 26.765 W
13,184.0	89.06	357.32	11,853.7	1,251.6	1,627.0	32° 4' 58.865 N	103° 18' 26.778 W
13,200.0	88.38	357.17	11,854.1	1,267.6	1,626.2	32° 4' 59.023 N	103° 18' 26.785 W
13,215.0	87.74	357.03	11,854.6	1,282.6	1,625.5	32° 4' 59.171 N	103° 18' 26.792 W
13,247.0	89.35	357.46	11,855.4	1,314.5	1,623.9	32° 4' 59.488 N	103° 18' 26.807 W
13,279.0	89.67	357.00	11,855.7	1,346.5	1,622.4	32° 4' 59.804 N	103° 18' 26.821 W
13,300.0	90.50	357.56	11,855.6	1,367.4	1,621.4	32° 5' 0.012 N	103° 18' 26.830 W
13,310.0	90.90	357.83	11,855.5	1,377.4	1,621.0	32° 5' 0.111 N	103° 18' 26.834 W
13,342.0	88.57	358.15	11,855.7	1,409.4	1,619.9	32° 5' 0.427 N	103° 18' 26.843 W
13,373.0	88.85	359.23	11,856.4	1,440.4	1,619.1	32° 5' 0.734 N	103° 18' 26.848 W
13,400.0	91.69	359.69	11,856.2	1,467.4	1,618.9	32° 5' 1.001 N	103° 18' 26.848 W
13,405.0	92.21	359.78	11,856.1	1,472.4	1,618.9	32° 5' 1.050 N	103° 18' 26.848 W
13,437.0	91.57	359.56	11,855.0	1,504.4	1,618.7	32° 5' 1.367 N	103° 18' 26.847 W
13,468.0	92.06	0.75	11,854.0	1,535.4	1,618.8	32° 5' 1.673 N	103° 18' 26.842 W
13,500.0	91.50	0.72	11,853.0	1,567.3	1,619.2	32° 5' 1.990 N	103° 18' 26.834 W
13,530.0	89.96	0.59	11,852.7	1,597.3	1,619.5	32° 5' 2.287 N	103° 18' 26.827 W
13,562.0	88.68	0.44	11,853.0	1,629.3	1,619.8	32° 5' 2.603 N	103° 18' 26.820 W
13,593.0	87.23	0.44	11,854.1	1,660.3	1,620.0	32° 5' 2.910 N	103° 18' 26.813 W
13,600.0	87.46	0.45	11,854.5	1,667.3	1,620.1	32° 5' 2.979 N	103° 18' 26.812 W
13,624.0	88.23	0.47	11,855.4	1,691.3	1,620.3	32° 5' 3.216 N	103° 18' 26.807 W
13,656.0	88.66	0.60	11,856.2	1,723.3	1,620.6	32° 5' 3.532 N	103° 18' 26.800 W
13,687.0	90.02	0.09	11,856.6	1,754.3	1,620.8	32° 5' 3.839 N	103° 18' 26.795 W
13,700.0	89.34	359.88	11,856.7	1,767.3	1,620.8	32° 5' 3.968 N	103° 18' 26.793 W
13,719.0	88.35	359.58	11,857.1	1,786.3	1,620.7	32° 5' 4.156 N	103° 18' 26.792 W
13,750.0	84.91	359.52	11,858.9	1,817.2	1,620.4	32° 5' 4.462 N	103° 18' 26.791 W
13,782.0	87.61	359.31	11,861.0	1,849.1	1,620.1	32° 5' 4.778 N	103° 18' 26.792 W
13,800.0	88.49	359.23	11,861.6	1,867.1	1,619.9	32° 5' 4.956 N	103° 18' 26.792 W
13,813.0	89.12	359.17	11,861.8	1,880.1	1,619.7	32° 5' 5.084 N	103° 18' 26.793 W

Company: Ameredev Operating, LLC.
 Project: NAN/GB
 Site: NAN/GB #3N
 Well: Nandina 103H
 Wellbore: Nandina 103H As Drilled
 Design: Final

Local Co-ordinate Reference: Well Nandina 103H
 TVD Reference: KB @ 3045.0usft
 MD Reference: KB @ 3045.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
13,844.0	92.07	359.07	11,861.5	1,911.1	1,619.2	32° 5' 5.391 N	103° 18' 26.795 W
13,900.0	91.97	358.34	11,859.6	1,967.1	1,618.0	32° 5' 5.945 N	103° 18' 26.804 W
13,938.0	91.90	357.85	11,858.3	2,005.0	1,616.7	32° 5' 6.321 N	103° 18' 26.814 W
14,000.0	90.51	0.46	11,857.0	2,067.0	1,615.8	32° 5' 6.934 N	103° 18' 26.818 W
14,064.0	89.08	3.16	11,857.2	2,130.9	1,617.8	32° 5' 7.567 N	103° 18' 26.787 W
14,100.0	87.52	3.43	11,858.3	2,166.9	1,619.9	32° 5' 7.922 N	103° 18' 26.759 W
14,127.0	86.35	3.64	11,859.7	2,193.8	1,621.5	32° 5' 8.188 N	103° 18' 26.737 W
14,200.0	87.91	1.66	11,863.4	2,266.6	1,624.9	32° 5' 8.908 N	103° 18' 26.690 W
14,222.0	88.38	1.06	11,864.1	2,288.6	1,625.4	32° 5' 9.126 N	103° 18' 26.681 W
14,300.0	87.56	0.09	11,866.8	2,366.5	1,626.2	32° 5' 9.897 N	103° 18' 26.664 W
14,317.0	87.38	359.88	11,867.6	2,383.5	1,626.2	32° 5' 10.065 N	103° 18' 26.662 W
14,400.0	87.05	359.85	11,871.6	2,466.4	1,626.0	32° 5' 10.885 N	103° 18' 26.655 W
14,411.0	87.01	359.85	11,872.2	2,477.4	1,626.0	32° 5' 10.994 N	103° 18' 26.654 W
14,500.0	86.16	359.32	11,877.5	2,566.2	1,625.4	32° 5' 11.873 N	103° 18' 26.652 W
14,505.0	86.11	359.29	11,877.8	2,571.2	1,625.3	32° 5' 11.922 N	103° 18' 26.652 W
14,599.0	89.34	358.92	11,881.6	2,665.1	1,623.8	32° 5' 12.852 N	103° 18' 26.658 W
14,600.0	89.31	358.90	11,881.6	2,666.1	1,623.8	32° 5' 12.861 N	103° 18' 26.659 W
14,694.0	86.52	356.91	11,885.0	2,760.0	1,620.4	32° 5' 13.791 N	103° 18' 26.688 W
14,700.0	86.53	357.07	11,885.4	2,766.0	1,620.1	32° 5' 13.850 N	103° 18' 26.691 W
14,788.0	86.67	359.38	11,890.6	2,853.8	1,617.3	32° 5' 14.719 N	103° 18' 26.713 W
14,800.0	86.73	359.57	11,891.3	2,865.7	1,617.2	32° 5' 14.837 N	103° 18' 26.713 W
14,884.0	87.17	0.90	11,895.7	2,949.6	1,617.6	32° 5' 15.667 N	103° 18' 26.700 W
14,900.0	87.29	0.41	11,896.5	2,965.6	1,617.8	32° 5' 15.825 N	103° 18' 26.696 W
14,979.0	87.87	358.01	11,899.8	3,044.5	1,616.7	32° 5' 16.606 N	103° 18' 26.700 W
15,000.0	88.16	358.24	11,900.6	3,065.5	1,616.0	32° 5' 16.814 N	103° 18' 26.705 W
15,073.0	89.19	359.05	11,902.3	3,138.5	1,614.3	32° 5' 17.536 N	103° 18' 26.717 W
15,100.0	87.73	359.23	11,903.0	3,165.4	1,613.9	32° 5' 17.803 N	103° 18' 26.719 W
15,169.0	84.00	359.70	11,908.0	3,234.2	1,613.2	32° 5' 18.484 N	103° 18' 26.719 W
15,200.0	84.50	359.96	11,911.1	3,265.1	1,613.1	32° 5' 18.789 N	103° 18' 26.717 W
15,264.0	85.52	0.51	11,916.6	3,328.8	1,613.4	32° 5' 19.420 N	103° 18' 26.706 W
15,300.0	87.48	1.02	11,918.8	3,364.8	1,613.9	32° 5' 19.775 N	103° 18' 26.697 W
15,359.0	90.68	1.86	11,919.8	3,423.7	1,615.3	32° 5' 20.359 N	103° 18' 26.673 W
15,400.0	89.04	1.22	11,919.9	3,464.7	1,616.4	32° 5' 20.764 N	103° 18' 26.656 W
15,452.0	86.97	0.40	11,921.7	3,516.7	1,617.2	32° 5' 21.278 N	103° 18' 26.641 W
15,500.0	88.11	0.42	11,923.7	3,564.6	1,617.5	32° 5' 21.753 N	103° 18' 26.632 W
15,548.0	89.25	0.44	11,924.8	3,612.6	1,617.9	32° 5' 22.227 N	103° 18' 26.623 W
15,600.0	91.23	359.90	11,924.6	3,664.6	1,618.0	32° 5' 22.742 N	103° 18' 26.615 W
15,643.0	92.87	359.45	11,923.1	3,707.6	1,617.8	32° 5' 23.167 N	103° 18' 26.613 W
15,700.0	92.71	358.91	11,920.3	3,764.5	1,617.0	32° 5' 23.730 N	103° 18' 26.616 W
15,738.0	92.60	358.55	11,918.6	3,802.5	1,616.1	32° 5' 24.106 N	103° 18' 26.622 W
15,800.0	93.61	359.16	11,915.2	3,864.4	1,614.9	32° 5' 24.718 N	103° 18' 26.630 W
15,834.0	94.17	359.49	11,912.9	3,898.3	1,614.5	32° 5' 25.054 N	103° 18' 26.630 W
15,900.0	93.52	0.64	11,908.5	3,964.1	1,614.6	32° 5' 25.706 N	103° 18' 26.622 W
15,929.0	93.23	1.15	11,906.8	3,993.1	1,615.0	32° 5' 25.992 N	103° 18' 26.614 W
16,000.0	90.38	1.82	11,904.5	4,064.0	1,616.9	32° 5' 26.694 N	103° 18' 26.585 W

Company: Ameredev Operating, LLC.
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16,024.0	89.41	2.04	11,904.6	4,088.0	1,617.7	32° 5' 26.931 N	103° 18' 26.573 W
16,100.0	90.00	2.94	11,905.0	4,163.9	1,621.0	32° 5' 27.682 N	103° 18' 26.526 W
16,117.0	90.13	3.14	11,904.9	4,180.9	1,621.9	32° 5' 27.850 N	103° 18' 26.514 W
16,200.0	90.51	356.88	11,904.5	4,263.9	1,621.9	32° 5' 28.671 N	103° 18' 26.504 W
16,212.0	90.57	355.97	11,904.4	4,275.8	1,621.1	32° 5' 28.789 N	103° 18' 26.512 W
16,244.0	91.72	353.47	11,903.7	4,307.7	1,618.2	32° 5' 29.105 N	103° 18' 26.542 W
16,300.0	92.94	349.19	11,901.4	4,363.0	1,609.8	32° 5' 29.653 N	103° 18' 26.634 W
16,307.0	93.09	348.65	11,901.1	4,369.8	1,608.4	32° 5' 29.721 N	103° 18' 26.649 W
16,354.0	93.42	349.87	11,898.4	4,415.9	1,599.7	32° 5' 30.178 N	103° 18' 26.746 W
16,400.0	92.16	352.69	11,896.2	4,461.4	1,592.7	32° 5' 30.628 N	103° 18' 26.822 W
16,403.0	92.08	352.87	11,896.1	4,464.3	1,592.3	32° 5' 30.657 N	103° 18' 26.826 W
16,467.0	88.83	356.70	11,895.6	4,528.0	1,586.5	32° 5' 31.288 N	103° 18' 26.886 W
16,498.0	88.43	358.40	11,896.3	4,559.0	1,585.2	32° 5' 31.595 N	103° 18' 26.898 W
16,500.0	88.51	358.54	11,896.3	4,561.0	1,585.1	32° 5' 31.614 N	103° 18' 26.898 W
16,551.0	90.58	2.12	11,896.8	4,612.0	1,585.4	32° 5' 32.119 N	103° 18' 26.889 W
16,592.0	92.79	4.56	11,895.5	4,652.9	1,587.8	32° 5' 32.523 N	103° 18' 26.857 W
16,600.0	92.79	4.60	11,895.2	4,660.9	1,588.5	32° 5' 32.602 N	103° 18' 26.849 W
16,641.0	92.81	4.82	11,893.2	4,701.7	1,591.8	32° 5' 33.006 N	103° 18' 26.805 W
16,687.0	89.68	4.22	11,892.2	4,747.5	1,595.4	32° 5' 33.459 N	103° 18' 26.758 W
16,700.0	90.21	4.39	11,892.2	4,760.5	1,596.4	32° 5' 33.587 N	103° 18' 26.745 W
16,734.0	91.59	4.84	11,891.6	4,794.4	1,599.2	32° 5' 33.922 N	103° 18' 26.710 W
16,782.0	92.66	5.03	11,889.9	4,842.2	1,603.3	32° 5' 34.394 N	103° 18' 26.656 W
16,800.0	92.01	4.83	11,889.1	4,860.1	1,604.8	32° 5' 34.572 N	103° 18' 26.637 W
16,878.0	89.17	3.95	11,888.3	4,937.8	1,610.8	32° 5' 35.340 N	103° 18' 26.559 W
16,900.0	90.21	4.03	11,888.4	4,959.8	1,612.3	32° 5' 35.557 N	103° 18' 26.538 W
16,973.0	93.68	4.28	11,886.0	5,032.5	1,617.6	32° 5' 36.277 N	103° 18' 26.469 W
17,000.0	94.19	3.67	11,884.1	5,059.4	1,619.5	32° 5' 36.543 N	103° 18' 26.444 W
17,067.0	95.44	2.17	11,878.5	5,126.1	1,622.9	32° 5' 37.202 N	103° 18' 26.397 W
17,100.0	95.27	0.20	11,875.4	5,158.9	1,623.6	32° 5' 37.527 N	103° 18' 26.386 W
17,115.0	95.19	359.31	11,874.0	5,173.9	1,623.5	32° 5' 37.675 N	103° 18' 26.385 W
17,163.0	93.91	357.10	11,870.2	5,221.7	1,622.0	32° 5' 38.148 N	103° 18' 26.397 W
17,200.0	92.12	357.10	11,868.3	5,258.6	1,620.1	32° 5' 38.513 N	103° 18' 26.415 W
17,208.0	91.73	357.10	11,868.0	5,266.6	1,619.7	32° 5' 38.592 N	103° 18' 26.418 W
17,258.0	91.76	356.94	11,866.5	5,316.5	1,617.1	32° 5' 39.086 N	103° 18' 26.443 W
17,300.0	91.50	358.27	11,865.3	5,358.4	1,615.4	32° 5' 39.502 N	103° 18' 26.459 W
17,305.0	91.47	358.43	11,865.2	5,363.4	1,615.2	32° 5' 39.551 N	103° 18' 26.460 W
17,354.0	90.06	358.97	11,864.5	5,412.4	1,614.1	32° 5' 40.036 N	103° 18' 26.467 W
17,399.0	91.28	359.76	11,864.0	5,457.4	1,613.6	32° 5' 40.481 N	103° 18' 26.468 W
17,400.0	91.28	359.78	11,864.0	5,458.4	1,613.6	32° 5' 40.491 N	103° 18' 26.468 W
17,449.0	91.14	0.53	11,862.9	5,507.4	1,613.7	32° 5' 40.976 N	103° 18' 26.461 W
17,500.0	91.32	0.87	11,861.8	5,558.4	1,614.4	32° 5' 41.480 N	103° 18' 26.448 W
17,543.0	91.47	1.15	11,860.8	5,601.3	1,615.1	32° 5' 41.905 N	103° 18' 26.435 W
17,600.0	91.38	359.61	11,859.4	5,658.3	1,615.5	32° 5' 42.469 N	103° 18' 26.424 W
17,638.0	91.32	358.59	11,858.5	5,696.3	1,614.9	32° 5' 42.845 N	103° 18' 26.427 W

Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #3N
Well: Nandina 103H
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Design: Final

Local Co-ordinate Reference: Well Nandina 103H
TVD Reference: KB @ 3045.0usft
MD Reference: KB @ 3045.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
17,700.0	91.56	358.14	11,856.9	5,758.3	1,613.1	32° 5' 43.458 N	103° 18' 26.441 W
17,733.0	91.69	357.90	11,856.0	5,791.2	1,612.0	32° 5' 43.784 N	103° 18' 26.450 W
17,800.0	92.87	357.83	11,853.3	5,858.1	1,609.5	32° 5' 44.447 N	103° 18' 26.472 W
17,827.0	93.35	357.80	11,851.8	5,885.1	1,608.5	32° 5' 44.713 N	103° 18' 26.481 W
17,900.0	92.27	358.66	11,848.3	5,957.9	1,606.2	32° 5' 45.435 N	103° 18' 26.499 W
17,921.0	91.96	358.91	11,847.5	5,978.9	1,605.8	32° 5' 45.642 N	103° 18' 26.502 W
18,000.0	92.27	0.07	11,844.6	6,057.9	1,605.1	32° 5' 46.423 N	103° 18' 26.501 W
18,016.0	92.33	0.31	11,843.9	6,073.9	1,605.1	32° 5' 46.582 N	103° 18' 26.499 W
18,100.0	91.32	358.50	11,841.3	6,157.8	1,604.3	32° 5' 47.412 N	103° 18' 26.500 W
18,111.0	91.19	358.26	11,841.0	6,168.8	1,603.9	32° 5' 47.521 N	103° 18' 26.502 W
18,200.0	89.13	354.65	11,840.8	6,257.6	1,598.4	32° 5' 48.400 N	103° 18' 26.556 W
18,206.0	88.99	354.41	11,840.9	6,263.6	1,597.9	32° 5' 48.460 N	103° 18' 26.562 W
18,300.0	92.07	355.94	11,840.0	6,357.2	1,590.0	32° 5' 49.387 N	103° 18' 26.644 W
18,302.0	92.14	355.97	11,839.9	6,359.2	1,589.8	32° 5' 49.407 N	103° 18' 26.645 W
18,397.0	94.00	358.04	11,834.8	6,453.9	1,584.9	32° 5' 50.344 N	103° 18' 26.692 W
18,400.0	93.94	358.08	11,834.6	6,456.9	1,584.8	32° 5' 50.374 N	103° 18' 26.693 W
18,493.0	91.93	359.45	11,829.9	6,549.8	1,582.8	32° 5' 51.293 N	103° 18' 26.706 W
18,500.0	91.97	359.61	11,829.6	6,556.8	1,582.7	32° 5' 51.362 N	103° 18' 26.706 W
18,589.0	92.49	1.61	11,826.2	6,645.7	1,583.7	32° 5' 52.242 N	103° 18' 26.685 W
18,600.0	92.67	1.72	11,825.7	6,656.7	1,584.0	32° 5' 52.351 N	103° 18' 26.680 W
18,684.0	94.07	2.54	11,820.7	6,740.5	1,587.1	32° 5' 53.179 N	103° 18' 26.635 W
18,700.0	93.58	2.26	11,819.7	6,756.4	1,587.8	32° 5' 53.337 N	103° 18' 26.625 W
18,780.0	91.14	0.89	11,816.4	6,836.3	1,590.0	32° 5' 54.127 N	103° 18' 26.591 W
18,800.0	90.99	0.86	11,816.0	6,856.3	1,590.3	32° 5' 54.325 N	103° 18' 26.585 W
18,875.0	90.43	0.73	11,815.1	6,931.3	1,591.3	32° 5' 55.067 N	103° 18' 26.565 W
18,900.0	89.57	0.83	11,815.1	6,956.3	1,591.6	32° 5' 55.314 N	103° 18' 26.558 W
18,971.0	87.12	1.12	11,817.1	7,027.3	1,592.9	32° 5' 56.016 N	103° 18' 26.536 W
19,000.0	87.10	0.93	11,818.6	7,056.2	1,593.4	32° 5' 56.303 N	103° 18' 26.527 W
19,067.0	87.07	0.50	11,822.0	7,123.1	1,594.2	32° 5' 56.965 N	103° 18' 26.510 W
19,100.0	87.07	0.06	11,823.7	7,156.1	1,594.4	32° 5' 57.291 N	103° 18' 26.504 W
19,161.0	87.06	359.25	11,826.8	7,217.0	1,594.0	32° 5' 57.894 N	103° 18' 26.502 W
19,200.0	87.59	358.58	11,828.6	7,255.9	1,593.3	32° 5' 58.279 N	103° 18' 26.506 W
19,206.0	87.67	358.48	11,828.9	7,261.9	1,593.1	32° 5' 58.338 N	103° 18' 26.507 W
19,256.0	90.17	358.40	11,829.8	7,311.9	1,591.8	32° 5' 58.833 N	103° 18' 26.517 W
19,300.0	92.26	357.74	11,828.9	7,355.9	1,590.3	32° 5' 59.268 N	103° 18' 26.530 W
19,301.0	92.31	357.73	11,828.8	7,356.9	1,590.2	32° 5' 59.278 N	103° 18' 26.530 W
19,351.0	89.87	357.08	11,827.9	7,406.8	1,588.0	32° 5' 59.772 N	103° 18' 26.551 W
19,396.0	89.68	356.86	11,828.1	7,451.7	1,585.6	32° 6' 0.217 N	103° 18' 26.573 W
19,400.0	89.90	356.93	11,828.1	7,455.7	1,585.4	32° 6' 0.257 N	103° 18' 26.576 W
19,446.0	92.48	357.78	11,827.1	7,501.7	1,583.3	32° 6' 0.711 N	103° 18' 26.595 W
19,491.0	94.49	358.31	11,824.4	7,546.6	1,581.7	32° 6' 1.156 N	103° 18' 26.608 W
19,500.0	94.83	358.34	11,823.7	7,555.5	1,581.5	32° 6' 1.245 N	103° 18' 26.610 W
19,542.0	96.39	358.50	11,819.5	7,597.3	1,580.3	32° 6' 1.658 N	103° 18' 26.619 W
19,587.0	97.00	358.53	11,814.3	7,642.0	1,579.2	32° 6' 2.100 N	103° 18' 26.627 W

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
19,600.0	96.79	358.98	11,812.7	7,654.9	1,578.9	32° 6' 2.228 N	103° 18' 26.629 W
19,637.0	96.19	0.24	11,808.6	7,691.7	1,578.6	32° 6' 2.592 N	103° 18' 26.628 W
19,682.0	94.90	359.93	11,804.2	7,736.4	1,578.7	32° 6' 3.035 N	103° 18' 26.622 W
19,700.0	94.83	359.72	11,802.7	7,754.4	1,578.6	32° 6' 3.212 N	103° 18' 26.621 W
19,731.0	94.72	359.37	11,800.1	7,785.3	1,578.4	32° 6' 3.518 N	103° 18' 26.620 W
19,776.0	94.16	359.14	11,796.6	7,830.1	1,577.8	32° 6' 3.962 N	103° 18' 26.622 W
19,800.0	93.43	358.97	11,795.0	7,854.1	1,577.4	32° 6' 4.199 N	103° 18' 26.624 W
19,826.0	92.63	358.78	11,793.7	7,880.0	1,576.9	32° 6' 4.456 N	103° 18' 26.627 W
19,900.0	92.27	358.22	11,790.5	7,953.9	1,575.0	32° 6' 5.187 N	103° 18' 26.641 W
19,922.0	92.16	358.06	11,789.6	7,975.9	1,574.3	32° 6' 5.405 N	103° 18' 26.647 W
19,995.0	93.70	358.69	11,785.9	8,048.8	1,572.2	32° 6' 6.126 N	103° 18' 26.663 W
20,000.0	93.67	358.85	11,785.6	8,053.8	1,572.1	32° 6' 6.175 N	103° 18' 26.664 W
20,046.0	93.40	0.31	11,782.8	8,099.7	1,571.7	32° 6' 6.630 N	103° 18' 26.663 W
20,100.0	93.93	359.20	11,779.3	8,153.6	1,571.5	32° 6' 7.163 N	103° 18' 26.660 W
20,141.0	94.34	358.36	11,776.3	8,194.5	1,570.6	32° 6' 7.567 N	103° 18' 26.665 W
20,200.0	95.62	357.53	11,771.2	8,253.2	1,568.5	32° 6' 8.149 N	103° 18' 26.683 W
20,236.0	96.40	357.02	11,767.5	8,289.0	1,566.8	32° 6' 8.503 N	103° 18' 26.699 W
20,282.0	97.09	356.77	11,762.1	8,334.6	1,564.4	32° 6' 8.954 N	103° 18' 26.723 W
20,300.0	96.82	356.59	11,759.9	8,352.4	1,563.3	32° 6' 9.131 N	103° 18' 26.733 W
20,327.0	96.41	356.32	11,756.8	8,379.2	1,561.7	32° 6' 9.396 N	103° 18' 26.749 W
20,376.0	95.28	354.90	11,751.8	8,427.8	1,557.9	32° 6' 9.877 N	103° 18' 26.787 W
20,400.0	94.70	354.14	11,749.7	8,451.6	1,555.6	32° 6' 10.113 N	103° 18' 26.811 W
20,421.0	94.19	353.48	11,748.1	8,472.4	1,553.4	32° 6' 10.319 N	103° 18' 26.835 W
20,471.0	92.72	351.51	11,745.0	8,521.9	1,546.9	32° 6' 10.809 N	103° 18' 26.905 W
20,500.0	91.71	350.50	11,743.9	8,550.5	1,542.3	32° 6' 11.093 N	103° 18' 26.955 W
20,518.0	91.08	349.88	11,743.5	8,568.2	1,539.3	32° 6' 11.269 N	103° 18' 26.988 W
20,566.0	89.72	348.64	11,743.2	8,615.4	1,530.3	32° 6' 11.736 N	103° 18' 27.087 W
20,600.0	89.20	347.97	11,743.5	8,648.7	1,523.4	32° 6' 12.066 N	103° 18' 27.164 W
20,612.0	89.02	347.74	11,743.7	8,660.4	1,520.9	32° 6' 12.183 N	103° 18' 27.192 W
20,662.0	87.57	345.89	11,745.1	8,709.1	1,509.5	32° 6' 12.665 N	103° 18' 27.319 W
20,700.0	87.38	344.29	11,746.8	8,745.7	1,499.8	32° 6' 13.029 N	103° 18' 27.428 W
20,707.0	87.35	343.99	11,747.1	8,752.5	1,497.8	32° 6' 13.096 N	103° 18' 27.450 W
20,757.0	87.46	342.51	11,749.4	8,800.3	1,483.4	32° 6' 13.570 N	103° 18' 27.612 W
20,800.0	87.97	340.79	11,751.1	8,841.1	1,469.9	32° 6' 13.975 N	103° 18' 27.764 W
20,802.0	87.99	340.71	11,751.2	8,843.0	1,469.3	32° 6' 13.994 N	103° 18' 27.772 W
20,852.0	89.65	338.95	11,752.2	8,889.9	1,452.0	32° 6' 14.460 N	103° 18' 27.967 W
20,897.0	91.80	337.24	11,751.6	8,931.6	1,435.2	32° 6' 14.874 N	103° 18' 28.158 W
20,900.0	91.83	337.09	11,751.6	8,934.4	1,434.1	32° 6' 14.902 N	103° 18' 28.171 W
20,947.0	92.31	334.78	11,749.9	8,977.3	1,414.9	32° 6' 15.328 N	103° 18' 28.389 W
20,992.0	91.99	332.74	11,748.2	9,017.6	1,395.0	32° 6' 15.729 N	103° 18' 28.615 W
21,000.0	91.61	332.61	11,747.9	9,024.7	1,391.4	32° 6' 15.799 N	103° 18' 28.657 W
21,042.0	89.63	331.91	11,747.5	9,061.9	1,371.8	32° 6' 16.169 N	103° 18' 28.880 W
21,087.0	87.37	331.27	11,748.6	9,101.4	1,350.4	32° 6' 16.563 N	103° 18' 29.125 W
21,100.0	86.88	331.57	11,749.3	9,112.8	1,344.2	32° 6' 16.676 N	103° 18' 29.196 W

Company: Ameredev Operating, LLC.
 Project: NAN/GB
 Site: NAN/GB #3N
 Well: Nandina 103H
 Wellbore: Nandina 103H As Drilled
 Design: Final

Local Co-ordinate Reference: Well Nandina 103H
 TVD Reference: KB @ 3045.0usft
 MD Reference: KB @ 3045.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
21,136.0	85.52	332.39	11,751.7	9,144.5	1,327.3	32° 6' 16.991 N	103° 18' 29.388 W
21,181.0	84.96	334.45	11,755.4	9,184.7	1,307.3	32° 6' 17.390 N	103° 18' 29.617 W
21,200.0	84.99	335.23	11,757.1	9,201.8	1,299.2	32° 6' 17.560 N	103° 18' 29.709 W
21,230.0	85.04	336.45	11,759.7	9,229.0	1,287.0	32° 6' 17.831 N	103° 18' 29.848 W
21,275.0	85.46	338.52	11,763.4	9,270.5	1,269.8	32° 6' 18.243 N	103° 18' 30.043 W
21,300.0	85.66	339.56	11,765.3	9,293.7	1,260.9	32° 6' 18.474 N	103° 18' 30.144 W
21,326.0	85.86	340.64	11,767.3	9,318.1	1,252.1	32° 6' 18.716 N	103° 18' 30.244 W
21,371.0	85.74	342.00	11,770.6	9,360.6	1,237.7	32° 6' 19.138 N	103° 18' 30.406 W
21,396.6	86.18	343.10	11,772.4	9,385.0	1,230.1	32° 6' 19.379 N	103° 18' 30.493 W
Nan103 Crosses Quarter Section							
21,400.0	86.24	343.25	11,772.6	9,388.3	1,229.1	32° 6' 19.412 N	103° 18' 30.504 W
21,421.0	86.60	344.15	11,773.9	9,408.4	1,223.2	32° 6' 19.611 N	103° 18' 30.570 W
21,466.0	86.48	345.82	11,776.6	9,451.8	1,211.5	32° 6' 20.042 N	103° 18' 30.700 W
21,500.0	86.50	347.28	11,778.7	9,484.8	1,203.7	32° 6' 20.369 N	103° 18' 30.789 W
21,516.0	86.51	347.97	11,779.7	9,500.4	1,200.2	32° 6' 20.524 N	103° 18' 30.827 W
21,561.0	86.78	349.56	11,782.3	9,544.4	1,191.5	32° 6' 20.961 N	103° 18' 30.923 W
21,600.0	86.82	350.83	11,784.5	9,582.8	1,184.8	32° 6' 21.341 N	103° 18' 30.996 W
21,610.0	86.83	351.15	11,785.0	9,592.6	1,183.3	32° 6' 21.439 N	103° 18' 31.013 W
21,655.0	87.69	352.50	11,787.2	9,637.1	1,176.9	32° 6' 21.879 N	103° 18' 31.083 W
21,700.0	87.34	353.18	11,789.1	9,681.7	1,171.3	32° 6' 22.321 N	103° 18' 31.143 W
21,703.0	87.32	353.23	11,789.3	9,684.7	1,170.9	32° 6' 22.351 N	103° 18' 31.147 W
21,748.0	87.46	353.96	11,791.3	9,729.4	1,165.9	32° 6' 22.793 N	103° 18' 31.200 W
21,796.0	87.93	354.50	11,793.3	9,777.1	1,161.1	32° 6' 23.266 N	103° 18' 31.251 W
21,800.0	87.90	354.53	11,793.4	9,781.1	1,160.7	32° 6' 23.305 N	103° 18' 31.255 W
21,841.0	87.63	354.82	11,795.0	9,821.9	1,156.9	32° 6' 23.709 N	103° 18' 31.295 W
21,891.0	88.74	356.30	11,796.6	9,871.7	1,153.0	32° 6' 24.203 N	103° 18' 31.334 W
21,900.0	88.81	356.46	11,796.8	9,880.7	1,152.5	32° 6' 24.292 N	103° 18' 31.340 W
21,936.0	89.07	357.09	11,797.5	9,916.6	1,150.5	32° 6' 24.647 N	103° 18' 31.359 W
21,985.0	89.23	357.49	11,798.2	9,965.6	1,148.1	32° 6' 25.132 N	103° 18' 31.381 W
22,000.0	89.47	357.91	11,798.3	9,980.5	1,147.5	32° 6' 25.280 N	103° 18' 31.386 W
22,030.0	89.95	358.75	11,798.5	10,010.5	1,146.7	32° 6' 25.577 N	103° 18' 31.393 W
22,080.0	90.67	0.60	11,798.2	10,060.5	1,146.4	32° 6' 26.072 N	103° 18' 31.391 W
22,100.0	91.01	1.24	11,797.9	10,080.5	1,146.7	32° 6' 26.269 N	103° 18' 31.385 W
22,174.0	92.29	3.62	11,795.8	10,154.4	1,149.8	32° 6' 27.000 N	103° 18' 31.340 W
22,200.0	92.23	3.56	11,794.8	10,180.3	1,151.5	32° 6' 27.257 N	103° 18' 31.318 W
22,267.0	92.06	3.39	11,792.3	10,247.2	1,155.5	32° 6' 27.918 N	103° 18' 31.264 W
22,300.0	92.80	3.54	11,790.9	10,280.1	1,157.5	32° 6' 28.243 N	103° 18' 31.237 W
22,362.0	94.20	3.83	11,787.1	10,341.8	1,161.5	32° 6' 28.854 N	103° 18' 31.184 W
22,400.0	94.20	3.83	11,784.3	10,379.7	1,164.0	32° 6' 29.228 N	103° 18' 31.150 W
22,478.2	94.20	3.83	11,778.6	10,457.5	1,169.2	32° 6' 29.997 N	103° 18' 31.081 W
Nan103 As Drilled LTP							
22,500.0	94.20	3.83	11,777.0	10,479.2	1,170.7	32° 6' 30.212 N	103° 18' 31.062 W
22,535.8	94.20	3.83	11,774.4	10,514.7	1,173.1	32° 6' 30.563 N	103° 18' 31.030 W
Nan103 As Drilled BHL							



Ameredev Operating, LLC
Lease Penetration Section Line Footages

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 103H
Project:	NAN/GB	TVD Reference:	KB @ 3045.0usft
Site:	NAN/GB #3N	MD Reference:	KB @ 3045.0usft
Well:	Nandina 103H	North Reference:	Grid
Wellbore:	Nandina 103H As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Final	Database:	EDM5000

Checked By: _____ Approved By: _____ Date: _____