



Ameredev Operating, LLC

**Lea County, NM (NAD83 NME)
(Nandina Fed) Sec-31_T-25-S_R-36-E
Nandina Fed Com 25-36-31#125H**

OWB

Plan: Plan #2

Standard Planning Report

26 June, 2018





Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina Fed Com 25-36-31 #125H
Company:	Ameredev Operating, LLC	TVD Reference:	KB @ 3041.0usft (H&P 616)
Project:	Lea County, NM (NAD83 NME)	MD Reference:	KB @ 3041.0usft (H&P 616)
Site:	(Nandina Fed) Sec-31_T-25-S_R-36-E	North Reference:	Grid
Well:	Nandina Fed Com 25-36-31 #125H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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

Site	(Nandina Fed) Sec-31_T-25-S_R-36-E			
Site Position:		Northing:	394,412.00 usft	Latitude: 32.0801272
From:	Map	Easting:	860,517.00 usft	Longitude: -103.3028096
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.55 °

Well	Nandina Fed Com 25-36-31 #125H			
Well Position	+N/-S	-1.0 usft	Northing:	394,411.00 usft
	+E/-W	-60.0 usft	Easting:	860,457.00 usft
Position Uncertainty		0.0 usft	Wellhead Elevation:	Latitude: 32.0801260
				Longitude: -103.3030033
				Ground Level: 3,014.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2018/04/25	6.72	59.96	47,795.68308683

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.17

Plan Survey Tool Program	Date	2018/06/25		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	22,396.8 Plan #2 (OWB)	MWD	
			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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,150.1	3.00	92.73	2,150.0	-0.2	3.9	2.00	2.00	0.00	92.73	
6,015.4	3.00	92.73	6,010.0	-9.8	206.1	0.00	0.00	0.00	0.00	
6,165.4	0.00	0.00	6,160.0	-10.0	210.0	2.00	-2.00	0.00	180.00	
11,821.2	0.00	0.00	11,815.8	-10.0	210.0	0.00	0.00	0.00	0.00	
12,421.2	60.00	327.00	12,312.0	230.3	54.0	10.00	10.00	0.00	327.00	
12,851.6	90.00	359.44	12,425.0	620.3	-54.8	10.00	6.97	7.54	51.81	
22,266.8	90.00	359.44	12,425.0	10,035.0	-147.0	0.00	0.00	0.00	0.00	LTP (Nandina Fed (
22,396.8	90.00	359.44	12,425.0	10,165.0	-148.3	0.00	0.00	0.00	0.00	PBHL (Nandina Fec

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Site:	(Nandina Fed) Sec-31_T-25-S_R-36-E	North Reference:	Grid
Well:	Nandina Fed Com 25-36-31 #125H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,068.0	0.00	0.00	1,068.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,508.0	0.00	0.00	1,508.0	0.0	0.0	0.0	0.00	0.00	0.00
Salado									
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
BUILD - 2.00									
2,100.0	2.00	92.73	2,100.0	-0.1	1.7	-0.1	2.00	2.00	0.00
2,150.1	3.00	92.73	2,150.0	-0.2	3.9	-0.2	2.00	2.00	0.00
HOLD - 3865.3 at 2150.1 MD									
2,200.0	3.00	92.73	2,199.9	-0.3	6.5	-0.4	0.00	0.00	0.00
2,300.0	3.00	92.73	2,299.7	-0.6	11.8	-0.7	0.00	0.00	0.00
2,400.0	3.00	92.73	2,399.6	-0.8	17.0	-1.1	0.00	0.00	0.00
2,500.0	3.00	92.73	2,499.5	-1.1	22.2	-1.4	0.00	0.00	0.00
2,600.0	3.00	92.73	2,599.3	-1.3	27.5	-1.7	0.00	0.00	0.00
2,700.0	3.00	92.73	2,699.2	-1.6	32.7	-2.0	0.00	0.00	0.00
2,800.0	3.00	92.73	2,799.0	-1.8	37.9	-2.4	0.00	0.00	0.00
2,900.0	3.00	92.73	2,898.9	-2.1	43.1	-2.7	0.00	0.00	0.00
3,000.0	3.00	92.73	2,998.8	-2.3	48.4	-3.0	0.00	0.00	0.00
3,100.0	3.00	92.73	3,098.6	-2.6	53.6	-3.3	0.00	0.00	0.00
3,200.0	3.00	92.73	3,198.5	-2.8	58.8	-3.7	0.00	0.00	0.00
3,235.6	3.00	92.73	3,234.0	-2.9	60.7	-3.8	0.00	0.00	0.00
Tansill									
3,300.0	3.00	92.73	3,298.4	-3.1	64.1	-4.0	0.00	0.00	0.00
3,400.0	3.00	92.73	3,398.2	-3.3	69.3	-4.3	0.00	0.00	0.00
3,500.0	3.00	92.73	3,498.1	-3.5	74.5	-4.6	0.00	0.00	0.00
3,600.0	3.00	92.73	3,597.9	-3.8	79.8	-5.0	0.00	0.00	0.00
3,700.0	3.00	92.73	3,697.8	-4.0	85.0	-5.3	0.00	0.00	0.00
3,800.0	3.00	92.73	3,797.7	-4.3	90.2	-5.6	0.00	0.00	0.00
3,900.0	3.00	92.73	3,897.5	-4.5	95.4	-5.9	0.00	0.00	0.00
4,000.0	3.00	92.73	3,997.4	-4.8	100.7	-6.3	0.00	0.00	0.00
4,100.0	3.00	92.73	4,097.3	-5.0	105.9	-6.6	0.00	0.00	0.00
4,200.0	3.00	92.73	4,197.1	-5.3	111.1	-6.9	0.00	0.00	0.00
4,300.0	3.00	92.73	4,297.0	-5.5	116.4	-7.2	0.00	0.00	0.00
4,400.0	3.00	92.73	4,396.8	-5.8	121.6	-7.6	0.00	0.00	0.00

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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)
4,500.0	3.00	92.73	4,496.7	-6.0	126.8	-7.9	0.00	0.00	0.00
4,600.0	3.00	92.73	4,596.6	-6.3	132.1	-8.2	0.00	0.00	0.00
4,700.0	3.00	92.73	4,696.4	-6.5	137.3	-8.5	0.00	0.00	0.00
4,800.0	3.00	92.73	4,796.3	-6.8	142.5	-8.9	0.00	0.00	0.00
4,900.0	3.00	92.73	4,896.2	-7.0	147.7	-9.2	0.00	0.00	0.00
5,000.0	3.00	92.73	4,996.0	-7.3	153.0	-9.5	0.00	0.00	0.00
5,038.0	3.00	92.73	5,034.0	-7.4	155.0	-9.6	0.00	0.00	0.00
Lamar									
5,073.1	3.00	92.73	5,069.0	-7.5	156.8	-9.7	0.00	0.00	0.00
Bell Canyon									
5,088.1	3.00	92.73	5,084.0	-7.5	157.6	-9.8	0.00	0.00	0.00
9.625									
5,100.0	3.00	92.73	5,095.9	-7.5	158.2	-9.8	0.00	0.00	0.00
5,200.0	3.00	92.73	5,195.7	-7.8	163.4	-10.2	0.00	0.00	0.00
5,300.0	3.00	92.73	5,295.6	-8.0	168.7	-10.5	0.00	0.00	0.00
5,400.0	3.00	92.73	5,395.5	-8.3	173.9	-10.8	0.00	0.00	0.00
5,500.0	3.00	92.73	5,495.3	-8.5	179.1	-11.1	0.00	0.00	0.00
5,600.0	3.00	92.73	5,595.2	-8.8	184.4	-11.5	0.00	0.00	0.00
5,700.0	3.00	92.73	5,695.1	-9.0	189.6	-11.8	0.00	0.00	0.00
5,800.0	3.00	92.73	5,794.9	-9.3	194.8	-12.1	0.00	0.00	0.00
5,900.0	3.00	92.73	5,894.8	-9.5	200.0	-12.4	0.00	0.00	0.00
6,000.0	3.00	92.73	5,994.7	-9.8	205.3	-12.8	0.00	0.00	0.00
6,015.4	3.00	92.73	6,010.0	-9.8	206.1	-12.8	0.00	0.00	0.00
DROP - 2.00									
6,100.0	1.31	92.73	6,094.6	-10.0	209.3	-13.0	2.00	-2.00	0.00
6,165.4	0.00	0.00	6,160.0	-10.0	210.0	-13.1	2.00	-2.00	0.00
HOLD - 5655.8 at 6165.4 MD									
6,200.0	0.00	0.00	6,194.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,294.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,394.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,500.0	0.00	0.00	6,494.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,594.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,700.0	0.00	0.00	6,694.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,794.6	-10.0	210.0	-13.1	0.00	0.00	0.00
6,900.0	0.00	0.00	6,894.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,994.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,100.0	0.00	0.00	7,094.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,114.4	0.00	0.00	7,109.0	-10.0	210.0	-13.1	0.00	0.00	0.00
Brushy Canyon									
7,200.0	0.00	0.00	7,194.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,300.0	0.00	0.00	7,294.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,394.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,500.0	0.00	0.00	7,494.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,594.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,700.0	0.00	0.00	7,694.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,800.0	0.00	0.00	7,794.6	-10.0	210.0	-13.1	0.00	0.00	0.00
7,900.0	0.00	0.00	7,894.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,000.0	0.00	0.00	7,994.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,100.0	0.00	0.00	8,094.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,200.0	0.00	0.00	8,194.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,300.0	0.00	0.00	8,294.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,340.4	0.00	0.00	8,335.0	-10.0	210.0	-13.1	0.00	0.00	0.00
Bone Spring Lime									

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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)
8,400.0	0.00	0.00	8,394.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,500.0	0.00	0.00	8,494.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,600.0	0.00	0.00	8,594.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,700.0	0.00	0.00	8,694.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,800.0	0.00	0.00	8,794.6	-10.0	210.0	-13.1	0.00	0.00	0.00
8,900.0	0.00	0.00	8,894.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,000.0	0.00	0.00	8,994.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,100.0	0.00	0.00	9,094.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,200.0	0.00	0.00	9,194.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,300.0	0.00	0.00	9,294.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,400.0	0.00	0.00	9,394.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,500.0	0.00	0.00	9,494.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,600.0	0.00	0.00	9,594.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,700.0	0.00	0.00	9,694.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,716.4	0.00	0.00	9,711.0	-10.0	210.0	-13.1	0.00	0.00	0.00
First Bone Spring									
9,800.0	0.00	0.00	9,794.6	-10.0	210.0	-13.1	0.00	0.00	0.00
9,900.0	0.00	0.00	9,894.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,000.0	0.00	0.00	9,994.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,100.0	0.00	0.00	10,094.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,200.0	0.00	0.00	10,194.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,274.4	0.00	0.00	10,269.0	-10.0	210.0	-13.1	0.00	0.00	0.00
Second Bone Spring									
10,300.0	0.00	0.00	10,294.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,400.0	0.00	0.00	10,394.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,500.0	0.00	0.00	10,494.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,600.0	0.00	0.00	10,594.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,700.0	0.00	0.00	10,694.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,800.0	0.00	0.00	10,794.6	-10.0	210.0	-13.1	0.00	0.00	0.00
10,860.4	0.00	0.00	10,855.0	-10.0	210.0	-13.1	0.00	0.00	0.00
Third Bone Spring Upper									
10,900.0	0.00	0.00	10,894.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,000.0	0.00	0.00	10,994.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,100.0	0.00	0.00	11,094.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,200.0	0.00	0.00	11,194.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,300.0	0.00	0.00	11,294.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,400.0	0.00	0.00	11,394.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,459.4	0.00	0.00	11,454.0	-10.0	210.0	-13.1	0.00	0.00	0.00
Third Bone Spring									
11,500.0	0.00	0.00	11,494.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,600.0	0.00	0.00	11,594.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,700.0	0.00	0.00	11,694.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,724.4	0.00	0.00	11,719.0	-10.0	210.0	-13.1	0.00	0.00	0.00
Wolfcamp									
11,800.0	0.00	0.00	11,794.6	-10.0	210.0	-13.1	0.00	0.00	0.00
11,821.2	0.00	0.00	11,815.8	-10.0	210.0	-13.1	0.00	0.00	0.00
KOP - BUILD 10.00 - 10377' FNL, 2060' FEL - FTP (Nandina Fed Com 25-36-31 #105H)									
11,850.0	2.88	327.00	11,844.5	-9.4	209.6	-12.4	9.99	9.99	0.00
11,857.5	3.62	327.00	11,852.0	-9.0	209.4	-12.1	10.00	10.00	0.00
7.625									
11,900.0	7.88	327.00	11,894.3	-5.5	207.1	-8.5	10.00	10.00	0.00
11,950.0	12.88	327.00	11,943.5	2.1	202.2	-0.9	10.00	10.00	0.00
12,000.0	17.88	327.00	11,991.7	13.2	194.9	10.4	10.00	10.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC
Project: Lea County, NM (NAD83 NME)
Site: (Nandina Fed) Sec-31_T-25-S_R-36-E
Well: Nandina Fed Com 25-36-31 #125H
Wellbore: OWB
Design: Plan #2

Local Co-ordinate Reference: Well Nandina Fed Com 25-36-31 #125H
TVD Reference: KB @ 3041.0usft (H&P 616)
MD Reference: KB @ 3041.0usft (H&P 616)
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)
12,050.0	22.88	327.00	12,038.5	27.8	185.5	25.1	10.00	10.00	0.00
12,100.0	27.88	327.00	12,083.7	45.8	173.8	43.2	10.00	10.00	0.00
12,102.6	28.14	327.00	12,086.0	46.8	173.1	44.3	10.00	10.00	0.00
Wolfcamp B									
12,150.0	32.88	327.00	12,126.8	67.0	160.0	64.6	10.00	10.00	0.00
12,200.0	37.88	327.00	12,167.6	91.2	144.3	89.1	10.00	10.00	0.00
12,250.0	42.88	327.00	12,205.6	118.4	126.6	116.5	10.00	10.00	0.00
12,300.0	47.88	327.00	12,240.8	148.2	107.3	146.6	10.00	10.00	0.00
12,350.0	52.88	327.00	12,272.6	180.5	86.3	179.2	10.00	10.00	0.00
12,400.0	57.88	327.00	12,301.0	215.0	63.9	214.1	10.00	10.00	0.00
12,421.2	60.00	327.00	12,312.0	230.2	54.0	229.4	10.00	10.00	0.00
TURN & BUILD - DLS 10.00 TFO 51.81									
12,449.0	61.74	329.47	12,325.5	250.9	41.2	250.2	9.99	6.27	8.91
FTP (Nandina Fed Com 25-36-31 #125H)									
12,450.0	61.80	329.56	12,326.0	251.6	40.8	251.0	9.99	6.35	8.76
12,500.0	65.04	333.82	12,348.4	291.0	19.6	290.7	10.00	6.48	8.52
12,550.0	68.40	337.86	12,368.1	332.9	0.8	332.9	10.00	6.71	8.07
12,600.0	71.85	341.71	12,385.1	377.0	-15.4	377.2	10.00	6.90	7.70
12,650.0	75.37	345.41	12,399.2	423.0	-29.0	423.4	10.00	7.05	7.40
12,700.0	78.95	348.99	12,410.3	470.5	-39.8	471.1	10.00	7.16	7.16
12,750.0	82.57	352.48	12,418.4	519.2	-47.7	519.9	10.00	7.24	6.99
12,800.0	86.22	355.92	12,423.3	568.7	-52.7	569.4	10.00	7.29	6.87
12,851.6	90.00	359.44	12,425.0	620.2	-54.8	621.0	10.00	7.32	6.82
EOC/HOLD - 9415.2 at 12851.6 MD									
12,900.0	90.00	359.44	12,425.0	668.6	-55.3	669.4	0.00	0.00	0.00
13,000.0	90.00	359.44	12,425.0	768.6	-56.3	769.4	0.00	0.00	0.00
13,100.0	90.00	359.44	12,425.0	868.6	-57.2	869.4	0.00	0.00	0.00
13,200.0	90.00	359.44	12,425.0	968.6	-58.2	969.4	0.00	0.00	0.00
13,300.0	90.00	359.44	12,425.0	1,068.6	-59.2	1,069.4	0.00	0.00	0.00
13,352.1	90.00	359.44	12,425.0	1,120.7	-59.7	1,121.5	0.00	0.00	0.00
Sec 31 1320' FSL - 9246' FNL, 2318' FEL									
13,400.0	90.00	359.44	12,425.0	1,168.6	-60.2	1,169.4	0.00	0.00	0.00
13,500.0	90.00	359.44	12,425.0	1,268.6	-61.1	1,269.4	0.00	0.00	0.00
13,600.0	90.00	359.44	12,425.0	1,368.6	-62.1	1,369.4	0.00	0.00	0.00
13,700.0	90.00	359.44	12,425.0	1,468.6	-63.1	1,469.4	0.00	0.00	0.00
13,800.0	90.00	359.44	12,425.0	1,568.6	-64.1	1,569.3	0.00	0.00	0.00
13,900.0	90.00	359.44	12,425.0	1,668.6	-65.1	1,669.3	0.00	0.00	0.00
14,000.0	90.00	359.44	12,425.0	1,768.6	-66.0	1,769.3	0.00	0.00	0.00
14,100.0	90.00	359.44	12,425.0	1,868.6	-67.0	1,869.3	0.00	0.00	0.00
14,200.0	90.00	359.44	12,425.0	1,968.6	-68.0	1,969.3	0.00	0.00	0.00
14,300.0	90.00	359.44	12,425.0	2,068.6	-69.0	2,069.3	0.00	0.00	0.00
14,400.0	90.00	359.44	12,425.0	2,168.6	-70.0	2,169.3	0.00	0.00	0.00
14,500.0	90.00	359.44	12,425.0	2,268.5	-70.9	2,269.3	0.00	0.00	0.00
14,600.0	90.00	359.44	12,425.0	2,368.5	-71.9	2,369.3	0.00	0.00	0.00
14,672.1	90.00	359.44	12,425.0	2,440.6	-72.6	2,441.4	0.00	0.00	0.00
Sec 31 2640' FSL - 7926' FNL, 2318' FEL									
14,700.0	90.00	359.44	12,425.0	2,468.5	-72.9	2,469.3	0.00	0.00	0.00
14,800.0	90.00	359.44	12,425.0	2,568.5	-73.9	2,569.3	0.00	0.00	0.00
14,900.0	90.00	359.44	12,425.0	2,668.5	-74.9	2,669.3	0.00	0.00	0.00
15,000.0	90.00	359.44	12,425.0	2,768.5	-75.8	2,769.3	0.00	0.00	0.00
15,100.0	90.00	359.44	12,425.0	2,868.5	-76.8	2,869.3	0.00	0.00	0.00
15,200.0	90.00	359.44	12,425.0	2,968.5	-77.8	2,969.3	0.00	0.00	0.00
15,300.0	90.00	359.44	12,425.0	3,068.5	-78.8	3,069.3	0.00	0.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina Fed Com 25-36-31 #125H
Company:	Ameredev Operating, LLC	TVD Reference:	KB @ 3041.0usft (H&P 616)
Project:	Lea County, NM (NAD83 NME)	MD Reference:	KB @ 3041.0usft (H&P 616)
Site:	(Nandina Fed) Sec-31_T-25-S_R-36-E	North Reference:	Grid
Well:	Nandina Fed Com 25-36-31 #125H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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)
15,400.0	90.00	359.44	12,425.0	3,168.5	-79.8	3,169.3	0.00	0.00	0.00
15,500.0	90.00	359.44	12,425.0	3,268.5	-80.7	3,269.3	0.00	0.00	0.00
15,600.0	90.00	359.44	12,425.0	3,368.5	-81.7	3,369.3	0.00	0.00	0.00
15,700.0	90.00	359.44	12,425.0	3,468.5	-82.7	3,469.3	0.00	0.00	0.00
15,800.0	90.00	359.44	12,425.0	3,568.5	-83.7	3,569.3	0.00	0.00	0.00
15,900.0	90.00	359.44	12,425.0	3,668.5	-84.7	3,669.3	0.00	0.00	0.00
16,000.0	90.00	359.44	12,425.0	3,768.5	-85.6	3,769.3	0.00	0.00	0.00
16,100.0	90.00	359.44	12,425.0	3,868.5	-86.6	3,869.3	0.00	0.00	0.00
16,200.0	90.00	359.44	12,425.0	3,968.5	-87.6	3,969.3	0.00	0.00	0.00
16,300.0	90.00	359.44	12,425.0	4,068.5	-88.6	4,069.3	0.00	0.00	0.00
16,400.0	90.00	359.44	12,425.0	4,168.5	-89.5	4,169.3	0.00	0.00	0.00
16,500.0	90.00	359.44	12,425.0	4,268.5	-90.5	4,269.3	0.00	0.00	0.00
16,600.0	90.00	359.44	12,425.0	4,368.4	-91.5	4,369.3	0.00	0.00	0.00
16,700.0	90.00	359.44	12,425.0	4,468.4	-92.5	4,469.3	0.00	0.00	0.00
16,800.0	90.00	359.44	12,425.0	4,568.4	-93.5	4,569.3	0.00	0.00	0.00
16,900.0	90.00	359.44	12,425.0	4,668.4	-94.4	4,669.3	0.00	0.00	0.00
17,000.0	90.00	359.44	12,425.0	4,768.4	-95.4	4,769.3	0.00	0.00	0.00
17,100.0	90.00	359.44	12,425.0	4,868.4	-96.4	4,869.3	0.00	0.00	0.00
17,200.0	90.00	359.44	12,425.0	4,968.4	-97.4	4,969.3	0.00	0.00	0.00
17,300.0	90.00	359.44	12,425.0	5,068.4	-98.4	5,069.3	0.00	0.00	0.00
17,310.7	90.00	359.44	12,425.0	5,079.1	-98.5	5,080.0	0.00	0.00	0.00
Sec 31 & 30 Cross - 5287' FNL, 2318' FEL									
17,400.0	90.00	359.44	12,425.0	5,168.4	-99.3	5,169.3	0.00	0.00	0.00
17,500.0	90.00	359.44	12,425.0	5,268.4	-100.3	5,269.3	0.00	0.00	0.00
17,600.0	90.00	359.44	12,425.0	5,368.4	-101.3	5,369.3	0.00	0.00	0.00
17,700.0	90.00	359.44	12,425.0	5,468.4	-102.3	5,469.3	0.00	0.00	0.00
17,800.0	90.00	359.44	12,425.0	5,568.4	-103.3	5,569.3	0.00	0.00	0.00
17,900.0	90.00	359.44	12,425.0	5,668.4	-104.2	5,669.3	0.00	0.00	0.00
18,000.0	90.00	359.44	12,425.0	5,768.4	-105.2	5,769.3	0.00	0.00	0.00
18,100.0	90.00	359.44	12,425.0	5,868.4	-106.2	5,869.3	0.00	0.00	0.00
18,200.0	90.00	359.44	12,425.0	5,968.4	-107.2	5,969.3	0.00	0.00	0.00
18,300.0	90.00	359.44	12,425.0	6,068.4	-108.2	6,069.3	0.00	0.00	0.00
18,400.0	90.00	359.44	12,425.0	6,168.4	-109.1	6,169.3	0.00	0.00	0.00
18,500.0	90.00	359.44	12,425.0	6,268.4	-110.1	6,269.3	0.00	0.00	0.00
18,600.0	90.00	359.44	12,425.0	6,368.4	-111.1	6,369.3	0.00	0.00	0.00
18,630.7	90.00	359.44	12,425.0	6,399.1	-111.4	6,400.0	0.00	0.00	0.00
Sec 30 1320' FSL - 3967' FNL, 2318' FEL									
18,700.0	90.00	359.44	12,425.0	6,468.3	-112.1	6,469.3	0.00	0.00	0.00
18,800.0	90.00	359.44	12,425.0	6,568.3	-113.0	6,569.3	0.00	0.00	0.00
18,900.0	90.00	359.44	12,425.0	6,668.3	-114.0	6,669.3	0.00	0.00	0.00
19,000.0	90.00	359.44	12,425.0	6,768.3	-115.0	6,769.3	0.00	0.00	0.00
19,100.0	90.00	359.44	12,425.0	6,868.3	-116.0	6,869.3	0.00	0.00	0.00
19,200.0	90.00	359.44	12,425.0	6,968.3	-117.0	6,969.3	0.00	0.00	0.00
19,300.0	90.00	359.44	12,425.0	7,068.3	-117.9	7,069.3	0.00	0.00	0.00
19,400.0	90.00	359.44	12,425.0	7,168.3	-118.9	7,169.3	0.00	0.00	0.00
19,500.0	90.00	359.44	12,425.0	7,268.3	-119.9	7,269.3	0.00	0.00	0.00
19,600.0	90.00	359.44	12,425.0	7,368.3	-120.9	7,369.3	0.00	0.00	0.00
19,700.0	90.00	359.44	12,425.0	7,468.3	-121.9	7,469.3	0.00	0.00	0.00
19,800.0	90.00	359.44	12,425.0	7,568.3	-122.8	7,569.3	0.00	0.00	0.00
19,900.0	90.00	359.44	12,425.0	7,668.3	-123.8	7,669.3	0.00	0.00	0.00
20,000.0	90.00	359.44	12,425.0	7,768.3	-124.8	7,769.3	0.00	0.00	0.00
20,100.0	90.00	359.44	12,425.0	7,868.3	-125.8	7,869.3	0.00	0.00	0.00
20,200.0	90.00	359.44	12,425.0	7,968.3	-126.8	7,969.3	0.00	0.00	0.00
20,300.0	90.00	359.44	12,425.0	8,068.3	-127.7	8,069.3	0.00	0.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina Fed Com 25-36-31 #125H
Company:	Ameredev Operating, LLC	TVD Reference:	KB @ 3041.0usft (H&P 616)
Project:	Lea County, NM (NAD83 NME)	MD Reference:	KB @ 3041.0usft (H&P 616)
Site:	(Nandina Fed) Sec-31_T-25-S_R-36-E	North Reference:	Grid
Well:	Nandina Fed Com 25-36-31 #125H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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)
20,400.0	90.00	359.44	12,425.0	8,168.3	-128.7	8,169.3	0.00	0.00	0.00
20,500.0	90.00	359.44	12,425.0	8,268.3	-129.7	8,269.3	0.00	0.00	0.00
20,600.0	90.00	359.44	12,425.0	8,368.3	-130.7	8,369.3	0.00	0.00	0.00
20,700.0	90.00	359.44	12,425.0	8,468.3	-131.7	8,469.3	0.00	0.00	0.00
20,800.0	90.00	359.44	12,425.0	8,568.2	-132.6	8,569.3	0.00	0.00	0.00
20,900.0	90.00	359.44	12,425.0	8,668.2	-133.6	8,669.3	0.00	0.00	0.00
21,000.0	90.00	359.44	12,425.0	8,768.2	-134.6	8,769.3	0.00	0.00	0.00
21,100.0	90.00	359.44	12,425.0	8,868.2	-135.6	8,869.3	0.00	0.00	0.00
21,200.0	90.00	359.44	12,425.0	8,968.2	-136.6	8,969.3	0.00	0.00	0.00
21,300.0	90.00	359.44	12,425.0	9,068.2	-137.5	9,069.3	0.00	0.00	0.00
21,400.0	90.00	359.44	12,425.0	9,168.2	-138.5	9,169.3	0.00	0.00	0.00
21,500.0	90.00	359.44	12,425.0	9,268.2	-139.5	9,269.3	0.00	0.00	0.00
21,600.0	90.00	359.44	12,425.0	9,368.2	-140.5	9,369.3	0.00	0.00	0.00
21,700.0	90.00	359.44	12,425.0	9,468.2	-141.4	9,469.3	0.00	0.00	0.00
21,800.0	90.00	359.44	12,425.0	9,568.2	-142.4	9,569.3	0.00	0.00	0.00
21,900.0	90.00	359.44	12,425.0	9,668.2	-143.4	9,669.3	0.00	0.00	0.00
22,000.0	90.00	359.44	12,425.0	9,768.2	-144.4	9,769.3	0.00	0.00	0.00
22,100.0	90.00	359.44	12,425.0	9,868.2	-145.4	9,869.3	0.00	0.00	0.00
22,200.0	90.00	359.44	12,425.0	9,968.2	-146.3	9,969.3	0.00	0.00	0.00
22,266.8	90.00	359.44	12,425.0	10,035.0	-147.0	10,036.1	0.00	0.00	0.00
LTP - LTP (Nandina Fed Com 25-36-31 #125H) - LTP (Nandina Fed Com 25-36-31 #105H)									
22,300.0	90.00	359.44	12,425.0	10,068.2	-147.3	10,069.3	0.00	0.00	0.00
22,322.7	90.00	359.44	12,425.0	10,090.9	-147.5	10,092.0	0.00	0.00	0.00
5 1/2"									
22,396.8	90.00	359.44	12,425.0	10,165.0	-148.3	10,166.1	0.00	0.00	0.00
PBHL - 200' FNL, 2318' FEL - PBHL (Nandina Fed Com 25-36-31 #125H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Nandina Fed Co - hit/miss target - Shape - Point	0.00	0.00	12,425.0	130.0	-49.0	394,541.00	860,408.00	32.0804846	-103.3031575
- plan misses target center by 180.7usft at 12449.0usft MD (12325.5 TVD, 250.9 N, 41.2 E)									
PBHL (Nandina Fed C - plan misses target center by 0.3usft at 22396.8usft MD (12425.0 TVD, 10165.0 N, -148.3 E) - Point	0.00	359.44	12,425.0	10,165.0	-148.0	404,576.00	860,309.00	32.1080686	-103.3031676
LTP (Nandina Fed Co - plan hits target center - Point	0.00	359.44	12,425.0	10,035.0	-147.0	404,446.00	860,310.00	32.1077113	-103.3031684

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,088.1	5,084.0	9.625	9-5/8	12-1/4
11,857.5	11,852.0	7.625	7-5/8	8-3/4
22,322.7	12,425.0	5 1/2"	5-1/2	6-3/4

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina Fed Com 25-36-31 #125H
Company:	Ameredev Operating, LLC	TVD Reference:	KB @ 3041.0usft (H&P 616)
Project:	Lea County, NM (NAD83 NME)	MD Reference:	KB @ 3041.0usft (H&P 616)
Site:	(Nandina Fed) Sec-31_T-25-S_R-36-E	North Reference:	Grid
Well:	Nandina Fed Com 25-36-31 #125H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,068.0	1,068.0	Rustler			
1,508.0	1,508.0	Salado			
3,235.6	3,234.0	Tansill			
5,038.0	5,034.0	Lamar			
5,073.1	5,069.0	Bell Canyon			
7,114.4	7,109.0	Brushy Canyon			
8,340.4	8,335.0	Bone Spring Lime			
9,716.4	9,711.0	First Bone Spring			
10,274.4	10,269.0	Second Bone Spring			
10,860.4	10,855.0	Third Bone Spring Upper			
11,459.4	11,454.0	Third Bone Spring			
11,724.4	11,719.0	Wolfcamp			
12,102.6	12,086.0	Wolfcamp B			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	BUILD - 2.00
2,150.1	2,150.0	-0.2	3.9	HOLD - 3865.3 at 2150.1 MD
6,015.4	6,010.0	-9.8	206.1	DROP - 2.00
6,165.4	6,160.0	-10.0	210.0	HOLD - 5655.8 at 6165.4 MD
11,821.2	11,815.8	-10.0	210.0	KOP - BUILD 10.00 - 10377' FNL, 2060' FEL
12,421.2	12,312.0	230.2	54.0	TURN & BUILD - DLS 10.00 TFO 51.81
12,851.6	12,425.0	620.2	-54.8	EOC/HOLD - 9415.2 at 12851.6 MD
13,352.1	12,425.0	1,120.7	-59.7	Sec 31 1320' FSL - 9246' FNL, 2318' FEL
14,672.1	12,425.0	2,440.6	-72.6	Sec 31 2640' FSL - 7926' FNL, 2318' FEL
17,310.7	12,425.0	5,079.1	-98.5	Sec 31 & 30 Cross - 5287' FNL, 2318' FEL
18,630.7	12,425.0	6,399.1	-111.4	Sec 30 1320' FSL - 3967' FNL, 2318' FEL
22,266.8	12,425.0	10,035.0	-147.0	LTP
22,396.8	12,425.0	10,165.0	-148.3	PBHL - 200' FNL, 2318' FEL