

AMEREDEV

Ameredev Operating, LLC

Lea County, NM (NAD83 NME)
(Azalea State) SEC 28_T-26-S_R-36-E
Azalea State 26_36_28 #121Y

ST01

HOBBS OCD

JUL 18 2018

RECEIVED

Design: AWB

Standard Survey Report

31 January, 2018

INTREPID

Company:	Ameredev Operating, LLC	Local Co-ordinate Reference:	Well Azalea State 26_36_28 #121Y
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB @ 2945.0usft (H&P 616)
Site:	(Azalea State) SEC 28_T-26-S_R-36-E	MD Reference:	KB @ 2945.0usft (H&P 616)
Well:	Azalea State 26_36_28 #121Y	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.1 Single User Db

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	(Azalea State) SEC 28_T-26-S_R-36-E		
Site Position:		Northing:	372,934.00 usft
From:	Map	Easting:	868,489.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 15.178 N
		Longitude:	103° 16' 39.908 W
		Grid Convergence:	0.56 °

Well	Azalea State 26_36_28 #121Y		
Well Position	+N/-S	0.0 usft	Northing: 372,934.00 usft
	+E/-W	0.0 usft	Easting: 868,489.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 1' 15.179 N
		Longitude:	103° 16' 40.141 W
		Ground Level:	2,918.0 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	01/06/18	6.74	59.91	47,794

Design	AWB				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	11,722.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	177.73	

Survey Program	Date	01/31/18			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
177.0	11,722.0	Intrepid MWD (OWB)	MWD	MWD - Standard	
11,765.0	19,469.0	Intrepid ST01 MWD (ST01)	MWD	MWD - Standard	

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	
177.0	0.13	39.85	177.0	0.2	0.1	-0.1	0.07	0.07	0.00	
234.0	0.35	60.77	234.0	0.3	0.3	-0.3	0.41	0.39	36.70	
334.0	0.97	190.23	334.0	-0.4	0.4	0.4	1.22	0.62	129.46	
425.0	1.19	173.18	425.0	-2.1	0.4	2.1	0.43	0.24	-18.74	
515.0	1.49	205.35	515.0	-4.1	0.0	4.1	0.88	0.33	35.74	
604.0	1.85	197.70	603.9	-6.5	-0.9	6.4	0.47	0.40	-8.60	
698.0	2.15	227.76	697.9	-9.1	-2.7	9.0	1.15	0.32	31.98	
792.0	2.07	223.72	791.8	-11.5	-5.2	11.3	0.18	-0.09	-4.30	
887.0	1.71	223.63	886.7	-13.8	-7.3	13.5	0.38	-0.38	-0.09	

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Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.1 Single User Db

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)
981.0	1.05	273.38	980.7	-14.8	-9.1	14.4	1.39	-0.70	52.93
1,075.0	0.48	37.65	1,074.7	-14.4	-9.8	14.0	1.47	-0.61	132.20
1,169.0	1.49	312.49	1,168.7	-13.3	-10.4	12.8	1.62	1.07	-90.60
1,263.0	2.20	337.80	1,262.7	-10.8	-12.0	10.3	1.13	0.76	26.93
1,357.0	1.89	346.77	1,356.6	-7.6	-13.0	7.1	0.47	-0.33	9.54
1,451.0	1.76	13.22	1,450.6	-4.7	-13.1	4.2	0.90	-0.14	28.14
1,545.0	2.55	19.55	1,544.5	-1.3	-12.0	0.8	0.88	0.84	6.73
1,640.0	2.07	16.12	1,639.4	2.3	-10.9	-2.8	0.53	-0.51	-3.61
1,734.0	2.73	26.58	1,733.3	6.0	-9.4	-6.3	0.84	0.70	11.13
1,828.0	2.15	16.82	1,827.2	9.7	-7.9	-10.0	0.76	-0.62	-10.38
1,873.0	2.29	25.00	1,872.2	11.3	-7.2	-11.6	0.77	0.31	18.18
1,907.0	2.90	22.89	1,906.2	12.7	-6.6	-12.9	1.82	1.79	-6.21
2,002.0	3.43	20.08	2,001.0	17.6	-4.7	-17.8	0.58	0.56	-2.96
2,096.0	3.56	22.98	2,094.9	22.9	-2.6	-23.0	0.23	0.14	3.09
2,190.0	3.91	35.46	2,188.7	28.2	0.4	-28.2	0.94	0.37	13.28
2,284.0	4.57	45.39	2,282.4	33.4	4.9	-33.2	1.05	0.70	10.56
2,379.0	5.10	47.67	2,377.1	38.9	10.7	-38.5	0.59	0.56	2.40
2,473.0	4.35	47.32	2,470.7	44.2	16.4	-43.5	0.80	-0.80	-0.37
2,567.0	4.09	47.50	2,564.5	48.9	21.5	-48.0	0.28	-0.28	0.19
2,661.0	4.18	38.27	2,658.2	53.8	26.1	-52.7	0.71	0.10	-9.82
2,755.0	4.53	43.10	2,752.0	59.2	30.8	-57.9	0.54	0.37	5.14
2,857.0	4.04	44.77	2,853.7	64.7	36.1	-63.2	0.50	-0.48	1.64
2,951.0	3.96	39.76	2,947.5	69.5	40.5	-67.9	0.38	-0.09	-5.33
3,045.0	3.43	42.93	3,041.3	74.1	44.5	-72.3	0.60	-0.56	3.37
3,139.0	3.65	45.04	3,135.1	78.3	48.5	-76.3	0.27	0.23	2.24
3,195.0	3.38	45.39	3,191.0	80.7	50.9	-78.6	0.48	-0.48	0.63
3,231.0	3.08	48.64	3,226.9	82.1	52.4	-79.9	0.98	-0.83	9.03
3,325.0	3.08	45.04	3,320.8	85.5	56.1	-83.2	0.21	0.00	-3.83
3,419.0	2.64	45.39	3,414.7	88.8	59.4	-86.4	0.47	-0.47	0.37
3,513.0	2.46	48.64	3,508.6	91.7	62.5	-89.1	0.25	-0.19	3.46
3,608.0	2.29	38.62	3,603.5	94.5	65.2	-91.9	0.47	-0.18	-10.55
3,702.0	2.24	33.35	3,697.4	97.5	67.4	-94.8	0.23	-0.05	-5.61
3,796.0	2.29	39.85	3,791.3	100.5	69.6	-97.7	0.28	0.05	6.91
3,890.0	2.37	37.57	3,885.3	103.5	72.0	-100.6	0.13	0.09	-2.43
3,984.0	1.89	27.28	3,979.2	106.4	73.9	-103.4	0.65	-0.51	-10.95
4,079.0	2.07	23.68	4,074.1	109.4	75.3	-106.3	0.23	0.19	-3.79
4,172.0	1.93	16.39	4,167.1	112.4	76.4	-109.3	0.31	-0.15	-7.84
4,266.0	1.76	25.26	4,261.0	115.2	77.5	-112.1	0.35	-0.18	9.44
4,361.0	1.32	37.83	4,356.0	117.4	78.8	-114.2	0.58	-0.46	13.23
4,455.0	0.79	20.25	4,450.0	118.9	79.6	-115.6	0.65	-0.56	-18.70
4,549.0	0.40	18.58	4,544.0	119.8	80.0	-116.5	0.42	-0.41	-1.78
4,642.0	0.35	327.96	4,637.0	120.3	79.9	-117.1	0.35	-0.05	-54.43
4,736.0	0.40	306.07	4,731.0	120.8	79.5	-117.5	0.16	0.05	-23.29

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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)
4,831.0	0.40	304.32	4,826.0	121.2	79.0	-117.9	0.01	0.00	-1.84
4,886.0	0.62	319.08	4,881.0	121.5	78.6	-118.3	0.46	0.40	26.84
5,029.0	0.26	304.75	5,024.0	122.3	77.8	-119.1	0.26	-0.25	-10.02
5,123.0	0.48	323.12	5,118.0	122.7	77.4	-119.5	0.26	0.23	19.54
5,217.0	0.70	322.24	5,212.0	123.5	76.8	-120.3	0.23	0.23	-0.94
5,311.0	0.53	307.74	5,306.0	124.2	76.1	-121.1	0.24	-0.18	-15.43
5,405.0	0.66	309.32	5,400.0	124.8	75.4	-121.7	0.14	0.14	1.68
5,499.0	0.97	312.60	5,493.9	125.7	74.4	-122.6	0.33	0.33	3.49
5,594.0	2.86	337.63	5,588.9	128.4	72.9	-125.4	2.13	1.99	26.35
5,689.0	2.99	348.35	5,683.8	133.0	71.5	-130.1	0.59	0.14	11.28
5,784.0	2.59	350.81	5,778.7	137.6	70.6	-134.7	0.44	-0.42	2.59
5,879.0	2.81	346.59	5,873.5	142.0	69.8	-139.1	0.31	0.23	-4.44
5,973.0	2.86	349.49	5,967.4	146.5	68.8	-143.7	0.16	0.05	3.09
6,068.0	2.73	344.48	6,062.3	151.0	67.8	-148.2	0.29	-0.14	-5.27
6,162.0	3.03	349.93	6,156.2	155.6	66.7	-152.9	0.43	0.32	5.80
6,256.0	3.03	343.87	6,250.1	160.5	65.6	-157.7	0.34	0.00	-6.45
6,350.0	2.99	348.35	6,343.9	165.2	64.4	-162.6	0.25	-0.04	4.77
6,444.0	3.12	352.57	6,437.8	170.2	63.6	-167.5	0.28	0.14	4.49
6,539.0	2.64	9.27	6,532.7	174.9	63.6	-172.3	1.01	-0.51	17.58
6,633.0	2.24	35.90	6,626.6	178.5	65.0	-175.8	1.26	-0.43	28.33
6,727.0	2.20	46.71	6,720.5	181.3	67.4	-178.4	0.45	-0.04	11.50
6,821.0	1.93	49.08	6,814.5	183.5	69.9	-180.6	0.30	-0.29	2.52
6,916.0	1.49	51.72	6,909.4	185.3	72.1	-182.3	0.47	-0.46	2.78
7,009.0	1.76	43.10	7,002.4	187.1	74.0	-184.1	0.39	0.29	-9.27
7,103.0	1.49	49.26	7,096.4	189.0	75.9	-185.8	0.34	-0.29	6.55
7,197.0	1.54	60.42	7,190.3	190.4	78.0	-187.2	0.32	0.05	11.87
7,291.0	1.36	58.66	7,284.3	191.6	80.0	-188.3	0.20	-0.19	-1.87
7,386.0	1.54	70.44	7,379.3	192.6	82.2	-189.2	0.37	0.19	12.40
7,480.0	1.67	70.70	7,473.2	193.5	84.7	-190.0	0.14	0.14	0.28
7,574.0	1.58	62.26	7,567.2	194.6	87.1	-191.0	0.27	-0.10	-8.98
7,668.0	1.76	65.16	7,661.1	195.8	89.6	-192.1	0.21	0.19	3.09
7,762.0	1.76	70.79	7,755.1	196.8	92.2	-193.0	0.18	0.00	5.99
7,856.0	2.15	74.48	7,849.0	197.8	95.3	-193.9	0.44	0.41	3.93
7,950.0	2.07	79.40	7,943.0	198.6	98.7	-194.5	0.21	-0.09	5.23
8,045.0	2.29	71.32	8,037.9	199.5	102.2	-195.3	0.40	0.23	-8.51
8,139.0	2.33	76.33	8,131.8	200.6	105.8	-196.2	0.22	0.04	5.33
8,233.0	2.59	78.00	8,225.8	201.4	109.7	-196.9	0.29	0.28	1.78
8,327.0	2.55	78.00	8,319.7	202.3	113.8	-197.7	0.04	-0.04	0.00
8,421.0	2.64	76.77	8,413.6	203.3	118.0	-198.4	0.11	0.10	-1.31
8,514.0	2.68	88.46	8,506.5	203.8	122.3	-198.8	0.58	0.04	12.57
8,608.0	1.41	132.93	8,600.4	203.1	125.3	-198.0	2.07	-1.35	47.31
8,702.0	5.67	219.24	8,694.2	198.7	123.2	-193.7	6.12	4.53	91.82
8,796.0	5.45	222.40	8,787.8	191.8	117.3	-187.0	0.40	-0.23	3.36

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8,890.0	4.00	234.27	8,881.5	186.6	111.6	-182.0	1.85	-1.54	12.63	
8,984.0	3.65	236.46	8,975.3	183.0	106.4	-178.7	0.40	-0.37	2.33	
9,078.0	3.60	240.07	9,069.1	179.9	101.4	-175.7	0.25	-0.05	3.84	
9,172.0	3.47	244.02	9,162.9	177.2	96.3	-173.2	0.29	-0.14	4.20	
9,267.0	3.25	244.90	9,257.7	174.8	91.2	-171.0	0.24	-0.23	0.93	
9,361.0	3.21	242.35	9,351.6	172.4	86.5	-168.9	0.16	-0.04	-2.71	
9,455.0	2.59	253.34	9,445.5	170.6	82.1	-167.2	0.88	-0.66	11.69	
9,549.0	2.07	256.50	9,539.4	169.6	78.4	-166.3	0.57	-0.55	3.36	
9,643.0	1.89	251.76	9,633.3	168.7	75.3	-165.6	0.26	-0.19	-5.04	
9,738.0	1.71	249.47	9,728.3	167.7	72.5	-164.7	0.20	-0.19	-2.41	
9,832.0	1.67	257.82	9,822.2	166.9	69.9	-164.0	0.27	-0.04	8.88	
9,926.0	1.41	278.74	9,916.2	166.8	67.4	-164.0	0.65	-0.28	22.26	
10,020.0	1.67	329.28	10,010.2	168.2	65.5	-165.4	1.42	0.28	53.77	
10,114.0	2.15	351.25	10,104.1	171.1	64.6	-168.4	0.92	0.51	23.37	
10,208.0	1.98	359.16	10,198.1	174.5	64.3	-171.8	0.35	-0.18	8.41	
10,302.0	2.02	352.74	10,292.0	177.7	64.0	-175.1	0.24	0.04	-6.83	
10,396.0	1.63	9.18	10,386.0	180.7	64.0	-178.0	0.69	-0.41	17.49	
10,491.0	1.41	42.14	10,480.9	182.9	65.0	-180.2	0.93	-0.23	34.69	
10,590.0	1.58	41.17	10,579.9	184.8	66.8	-182.0	0.17	0.17	-0.98	
10,684.0	1.63	57.08	10,673.9	186.5	68.7	-183.7	0.48	0.05	16.93	
10,779.0	1.14	92.59	10,768.8	187.2	70.8	-184.3	1.02	-0.52	37.38	
10,873.0	0.88	117.02	10,862.8	186.8	72.4	-183.8	0.53	-0.28	25.99	
10,967.0	0.44	112.71	10,956.8	186.4	73.4	-183.3	0.47	-0.47	-4.59	
11,062.0	0.44	136.09	11,051.8	186.0	74.0	-182.9	0.19	0.00	24.61	
11,156.0	0.26	129.41	11,145.8	185.6	74.4	-182.5	0.20	-0.19	-7.11	
11,251.0	0.09	126.16	11,240.8	185.4	74.6	-182.3	0.18	-0.18	-3.42	
11,346.0	0.18	132.14	11,335.8	185.3	74.8	-182.1	0.10	0.09	6.29	
11,440.0	0.13	281.02	11,429.8	185.2	74.8	-182.1	0.32	-0.05	158.38	
11,534.0	0.13	245.08	11,523.8	185.1	74.6	-182.1	0.09	0.00	-38.23	
11,628.0	0.09	282.78	11,617.8	185.1	74.4	-182.0	0.09	-0.04	40.11	
11,722.0	0.04	307.48	11,711.8	185.2	74.3	-182.1	0.06	-0.05	26.28	
11,765.0	0.18	203.33	11,754.8	185.1	74.3	-182.0	0.45	0.33	-242.21	
11,859.0	5.41	179.33	11,848.7	180.5	74.3	-177.5	5.58	5.56	-25.53	
11,907.0	9.98	184.78	11,896.2	174.1	73.9	-171.1	9.63	9.52	11.35	
11,953.0	16.13	185.49	11,941.0	163.8	73.0	-160.8	13.37	13.37	1.54	
12,001.0	22.46	181.71	11,986.3	148.0	72.1	-145.0	13.44	13.19	-7.88	
12,047.0	28.18	175.64	12,027.9	128.3	72.6	-125.4	13.64	12.43	-13.20	
12,095.0	31.38	169.49	12,069.5	104.7	75.8	-101.6	9.21	6.67	-12.81	
12,141.0	36.04	173.18	12,107.8	79.5	79.6	-76.3	11.06	10.13	8.02	
12,189.0	41.67	174.50	12,145.2	49.6	82.8	-46.3	11.85	11.73	2.75	
12,235.0	46.77	175.03	12,178.1	17.6	85.7	-14.2	11.12	11.09	1.15	
12,283.0	50.99	174.85	12,209.7	-18.4	88.9	21.9	8.80	8.79	-0.38	
12,329.0	54.55	175.73	12,237.5	-54.9	91.9	58.5	7.89	7.74	1.91	
12,377.0	57.71	175.73	12,264.2	-94.6	94.9	98.3	6.58	6.58	0.00	

Company: Ameredev Operating, LLC
 Project: Lea County, NM (NAD83 NME)
 Site: (Azalea State) SEC 28_T-26-S_R-36-E
 Well: Azalea State 26_36_28 #121Y
 Wellbore: ST01
 Design: AWB

Local Co-ordinate Reference: Well Azalea State 26_36_28 #121Y
 TVD Reference: KB @ 2945.0usft (H&P 616)
 MD Reference: KB @ 2945.0usft (H&P 616)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

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)
12,381.5	57.95	175.78	12,266.6	-98.4	95.2	102.1	5.35	5.26	1.18
FTP @ 12381.5'MD, 330'FNL & 334.2'FWL									
12,423.0	60.13	176.26	12,288.0	-133.9	97.6	137.7	5.35	5.26	1.15
12,471.0	62.81	177.23	12,310.9	-176.0	100.0	179.8	5.86	5.58	2.02
12,517.0	64.00	176.70	12,331.5	-217.1	102.2	221.0	2.78	2.59	-1.15
12,566.0	67.21	175.64	12,351.7	-261.6	105.2	265.6	6.84	6.55	-2.16
12,612.0	73.45	175.29	12,367.2	-304.8	108.6	308.8	13.58	13.57	-0.76
12,660.0	78.24	175.47	12,379.0	-351.1	112.3	355.3	9.99	9.98	0.38
12,702.0	83.25	176.26	12,385.7	-392.5	115.3	396.7	12.07	11.93	1.88
12,750.0	88.75	178.37	12,389.1	-440.3	117.6	444.6	12.27	11.46	4.40
12,844.0	92.18	177.58	12,388.3	-534.2	120.9	538.6	3.74	3.65	-0.84
12,938.0	93.41	176.79	12,383.7	-628.0	125.5	632.4	1.55	1.31	-0.84
13,032.0	92.92	176.26	12,378.5	-721.7	131.2	726.3	0.77	-0.52	-0.56
13,126.0	91.47	177.14	12,374.9	-815.4	136.6	820.2	1.80	-1.54	0.94
13,220.0	89.41	177.75	12,374.2	-909.3	140.8	914.2	2.29	-2.19	0.65
13,314.0	88.92	178.02	12,375.6	-1,003.3	144.3	1,008.2	0.60	-0.52	0.29
13,408.0	91.96	178.98	12,374.8	-1,097.2	146.7	1,102.2	3.39	3.23	1.02
13,502.0	92.26	178.28	12,371.4	-1,191.1	149.0	1,196.1	0.81	0.32	-0.74
13,596.0	91.25	177.40	12,368.5	-1,285.0	152.5	1,290.0	1.42	-1.07	-0.94
13,690.0	91.65	177.84	12,366.1	-1,378.9	156.4	1,384.0	0.63	0.43	0.47
13,785.0	90.73	178.37	12,364.2	-1,473.8	159.5	1,479.0	1.12	-0.97	0.56
13,879.0	90.29	178.98	12,363.3	-1,567.8	161.7	1,573.0	0.80	-0.47	0.65
13,973.0	92.62	179.51	12,360.9	-1,661.7	163.0	1,666.9	2.54	2.48	0.56
14,067.0	92.18	179.60	12,357.0	-1,755.7	163.7	1,760.8	0.48	-0.47	0.10
14,161.0	93.23	179.77	12,352.6	-1,849.5	164.2	1,854.6	1.13	1.12	0.18
14,255.0	92.88	180.04	12,347.5	-1,943.4	164.4	1,948.4	0.47	-0.37	0.29
14,350.0	93.27	179.77	12,342.5	-2,038.3	164.5	2,043.2	0.50	0.41	-0.28
14,444.0	92.53	179.86	12,337.7	-2,132.2	164.8	2,137.0	0.79	-0.79	0.10
14,539.0	92.88	179.86	12,333.2	-2,227.0	165.1	2,231.8	0.37	0.37	0.00
14,634.0	93.32	179.69	12,328.1	-2,321.9	165.4	2,326.6	0.50	0.46	-0.18
14,728.0	92.44	179.60	12,323.4	-2,415.8	166.0	2,420.5	0.94	-0.94	-0.10
14,823.0	93.23	179.42	12,318.7	-2,510.7	166.8	2,515.3	0.85	0.83	-0.19
14,917.0	93.14	179.51	12,313.4	-2,604.5	167.7	2,609.1	0.14	-0.10	0.10
15,011.0	92.35	179.42	12,308.9	-2,698.4	168.6	2,703.0	0.85	-0.84	-0.10
15,106.0	90.77	178.46	12,306.3	-2,793.4	170.3	2,797.9	1.95	-1.66	-1.01
15,200.0	90.11	178.54	12,305.6	-2,887.3	172.8	2,891.9	0.71	-0.70	0.09
15,294.0	88.57	178.90	12,306.7	-2,981.3	174.9	2,985.9	1.68	-1.64	0.38
15,388.0	89.36	178.72	12,308.4	-3,075.2	176.8	3,079.8	0.86	0.84	-0.19
15,482.0	89.10	179.25	12,309.7	-3,169.2	178.5	3,173.8	0.63	-0.28	0.56
15,576.0	88.57	179.07	12,311.6	-3,263.2	179.9	3,267.8	0.60	-0.56	-0.19
15,671.0	86.59	179.33	12,315.6	-3,358.1	181.2	3,362.6	2.10	-2.08	0.27
15,765.0	86.37	179.60	12,321.4	-3,451.9	182.1	3,456.4	0.37	-0.23	0.29
15,859.0	87.56	179.51	12,326.3	-3,545.8	182.8	3,550.2	1.27	1.27	-0.10

Company:	Ameredev Operating, LLC	Local Co-ordinate Reference:	Well Azalea State 26_36_28 #121Y
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB @ 2945.0usft (H&P 616)
Site:	(Azalea State) SEC 28_T-26-S_R-36-E	MD Reference:	KB @ 2945.0usft (H&P 616)
Well:	Azalea State 26_36_28 #121Y	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.1 Single User Db

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)
15,954.0	88.35	179.69	12,329.7	-3,640.7	183.5	3,645.1	0.85	0.83	0.19
16,049.0	88.13	180.13	12,332.6	-3,735.7	183.6	3,740.0	0.52	-0.23	0.46
16,143.0	86.33	180.13	12,337.2	-3,829.6	183.4	3,833.8	1.91	-1.91	0.00
16,238.0	86.51	180.13	12,343.1	-3,924.4	183.2	3,928.5	0.19	0.19	0.00
16,332.0	87.21	180.04	12,348.3	-4,018.2	183.1	4,022.3	0.75	0.74	-0.10
16,427.0	87.87	179.51	12,352.3	-4,113.1	183.4	4,117.2	0.89	0.69	-0.56
16,522.0	88.09	180.04	12,355.7	-4,208.1	183.8	4,212.1	0.60	0.23	0.56
16,617.0	86.99	179.60	12,359.8	-4,303.0	184.1	4,306.9	1.25	-1.16	-0.46
16,711.0	86.99	179.42	12,364.7	-4,396.9	184.9	4,400.7	0.19	0.00	-0.19
16,806.0	85.01	179.60	12,371.3	-4,491.6	185.7	4,495.4	2.09	-2.08	0.19
16,901.0	86.15	179.77	12,378.7	-4,586.3	186.2	4,590.1	1.21	1.20	0.18
16,995.0	89.19	180.21	12,382.5	-4,680.2	186.3	4,683.9	3.27	3.23	0.47
17,091.0	89.36	180.13	12,383.7	-4,776.2	186.0	4,779.8	0.20	0.18	-0.08
17,185.0	89.19	180.39	12,384.9	-4,870.2	185.5	4,873.7	0.33	-0.18	0.28
17,280.0	87.69	180.39	12,387.5	-4,965.2	184.9	4,968.6	1.58	-1.58	0.00
17,366.6	87.25	180.07	12,391.3	-5,051.7	184.5	5,055.0	0.63	-0.51	-0.37
Cross Section Line @ 17366.6'MD, 374.6'FWL									
17,375.0	87.21	180.04	12,391.7	-5,060.1	184.5	5,063.4	0.63	-0.51	-0.37
17,468.0	87.34	179.51	12,396.1	-5,153.0	184.9	5,156.3	0.59	0.14	-0.57
17,563.0	88.62	179.07	12,399.5	-5,247.9	186.1	5,251.2	1.42	1.35	-0.46
17,658.0	90.48	179.07	12,400.2	-5,342.9	187.6	5,346.1	1.96	1.96	0.00
17,752.0	91.38	179.86	12,398.7	-5,436.9	188.5	5,440.1	1.27	0.96	0.84
17,846.0	89.76	180.57	12,397.7	-5,530.9	188.1	5,534.0	1.88	-1.72	0.76
17,960.0	87.91	181.27	12,400.1	-5,644.8	186.3	5,647.8	1.74	-1.62	0.61
18,053.0	88.79	180.65	12,402.7	-5,737.8	184.8	5,740.6	1.16	0.95	-0.67
18,148.0	89.05	180.65	12,404.5	-5,832.7	183.7	5,835.4	0.27	0.27	0.00
18,242.0	90.02	180.48	12,405.3	-5,926.7	182.8	5,929.3	1.05	1.03	-0.18
18,337.0	87.12	179.07	12,407.7	-6,021.7	183.1	6,024.2	3.39	-3.05	-1.48
18,432.0	87.43	179.07	12,412.2	-6,116.6	184.7	6,119.1	0.33	0.33	0.00
18,526.0	89.10	179.07	12,415.0	-6,210.5	186.2	6,213.0	1.78	1.78	0.00
18,621.0	87.47	178.81	12,417.9	-6,305.5	187.9	6,308.0	1.74	-1.72	-0.27
18,716.0	88.00	178.54	12,421.6	-6,400.4	190.1	6,402.9	0.63	0.56	-0.28
18,810.0	87.82	177.14	12,425.1	-6,494.2	193.7	6,496.8	1.50	-0.19	-1.49
18,905.0	87.47	176.61	12,429.0	-6,589.0	198.9	6,591.7	0.67	-0.37	-0.56
18,999.0	87.43	176.87	12,433.1	-6,682.8	204.2	6,685.6	0.28	-0.04	0.28
19,093.0	88.84	177.58	12,436.2	-6,776.6	208.7	6,779.5	1.68	1.50	0.76
19,188.0	90.68	175.99	12,436.6	-6,871.4	214.1	6,874.5	2.56	1.94	-1.67
19,283.0	91.34	175.20	12,434.9	-6,966.1	221.4	6,969.4	1.08	0.69	-0.83
19,377.0	89.98	174.68	12,433.8	-7,059.8	229.7	7,063.3	1.55	-1.45	-0.55
19,408.0	89.71	174.59	12,433.9	-7,090.6	232.6	7,094.3	0.92	-0.87	-0.29
LAST SVY									
19,469.0	89.71	174.59	12,434.2	-7,151.4	238.3	7,155.2	0.00	0.00	0.00
PTB @ 19469'MD, 332.1'FSL & 413.6'FWL									

Company:	Ameredev Operating, LLC	Local Co-ordinate Reference:	Well Azalea State 26_36_28 #121Y
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB @ 2945.0usft (H&P 616)
Site:	(Azalea State) SEC 28_T-26-S_R-36-E	MD Reference:	KB @ 2945.0usft (H&P 616)
Well:	Azalea State 26_36_28 #121Y	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.1 Single User Db

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target - Shape									
Azalea State 26_36_28	0.00	0.00	5,100.0	171.0	90.5	373,105.03	868,559.47	32° 1' 16.863 N	103° 16' 39.070 W
- actual wellpath misses target center by 50.1usft at 5105.2usft MD (5100.2 TVD, 122.6 N, 77.5 E)									
- Point									
Azalea State 26_36_28	0.00	0.01	12,375.0	-98.0	141.0	372,836.00	868,610.00	32° 1' 14.196 N	103° 16' 38.514 W
- actual wellpath misses target center by 102.7usft at 12435.2usft MD (12294.0 TVD, -144.5 N, 98.3 E)									
- Point									
Azalea State 26_36_28	2.00	179.43	12,447.0	-7,154.0	211.0	365,780.00	868,680.00	32° 0' 4.372 N	103° 16' 38.502 W
- actual wellpath misses target center by 30.3usft at 19469.0usft MD (12434.2 TVD, -7151.4 N, 238.3 E)									
- Rectangle (sides W60.0 H4,077.9 D25.0)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
120.0	120.0	30"	30	36
1,405.4	1,405.0	20"	20	26
19,469.4		5 1/2"	5-1/2	8-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,929.9	1,929.0	Rustler Anhydrite			
2,193.4	2,192.0	Salado			
3,177.0	3,173.0	Tansill // Yates			
5,120.0	5,115.0	Bell Canyon			
7,071.6	7,065.0	Brushy Canyon			
8,155.2	8,148.0	Bone Spring Lime			
9,612.6	9,603.0	1st Bone Spring			
10,224.9	10,215.0	2nd Bone Spring			
10,859.2	10,849.0	3rd Bone Spring Lime			
11,467.2	11,457.0	3rd Bone Spring			
11,684.2	11,674.0	Wolfcamp A			
12,174.3	12,134.0	Wolfcamp B			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
12,381.5	12,266.6	-98.4	95.2	FTP @ 12381.5'MD, 330'FNL & 334.2'FWL
17,366.6	12,391.3	-5,051.7	184.5	Cross Section Line @ 17366.6'MD, 374.6'FWL
19,408.0	12,433.9	-7,090.6	232.6	LAST SVY
19,469.0	12,434.2	-7,151.4	238.3	PTB @ 19469'MD, 332.1'FSL & 413.6'FWL

Checked By: _____ Approved By: _____ Date: _____