



***D90 ENERGY LLC***

## **D90 Energy, LLC**

**Jackson County, Colorado  
Sec 17, T7N, R80W, 6th PM  
Castle 0780 3-17H20**

**Wellbore #1**

**Plan: Prelim #1**

## **KLX Well Planning Report**

**16 March, 2022**



D90 Energy, LLC  
Jackson County, Colorado  
Sec 17, T7N, R80W, 6th PM  
Castle 0780 3-17H20  
Prelim #1  
26' kb

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
2000.0	0.00	0.00	2000.0	0.0	0.0	0.0	0.0	Build 2°/100'
2655.4	13.11	95.95	2649.7	-7.7	74.2	8.6	74.6	EOB @ 13.11° Inc. / 95.95° Azm
5815.4	13.11	95.95	5727.3	-82.1	787.0	90.8	791.2	Drop 2°/100'
6470.7	0.00	0.00	6377.0	-89.8	861.2	99.4	865.9	EOD @ Vert.
6670.7	0.00	0.00	6577.0	-89.8	861.2	99.4	865.9	Build 10°/100'
7570.7	90.00	179.36	7150.0	-662.7	867.6	672.4	1438.8	EOB @ 90.00° Inc. / 179.36° Azm
16912.6	90.00	179.36	7150.0	-10004.0	971.9	10014.2	10780.7	TD @ 16912.6' MD / 7150.0' TVD

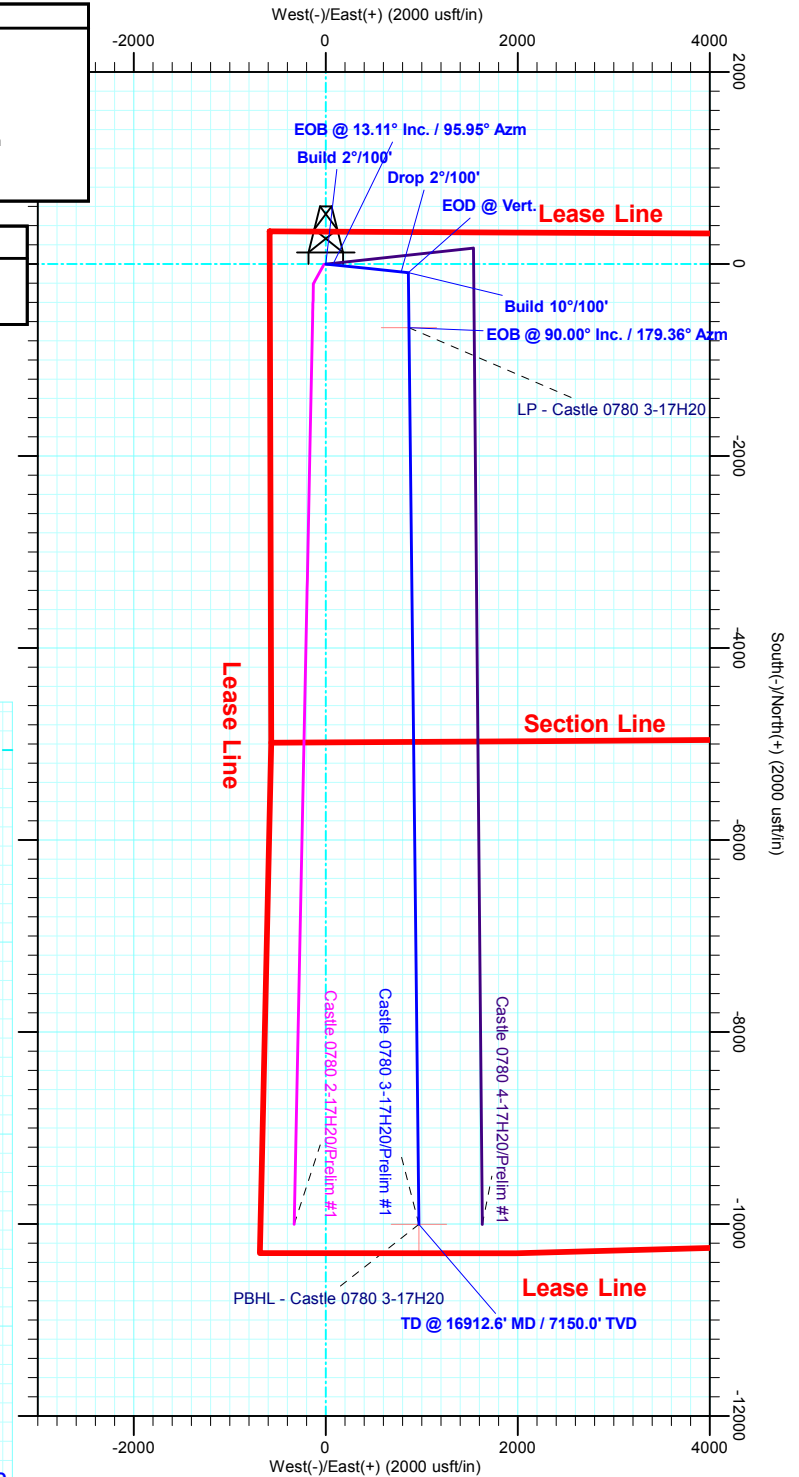
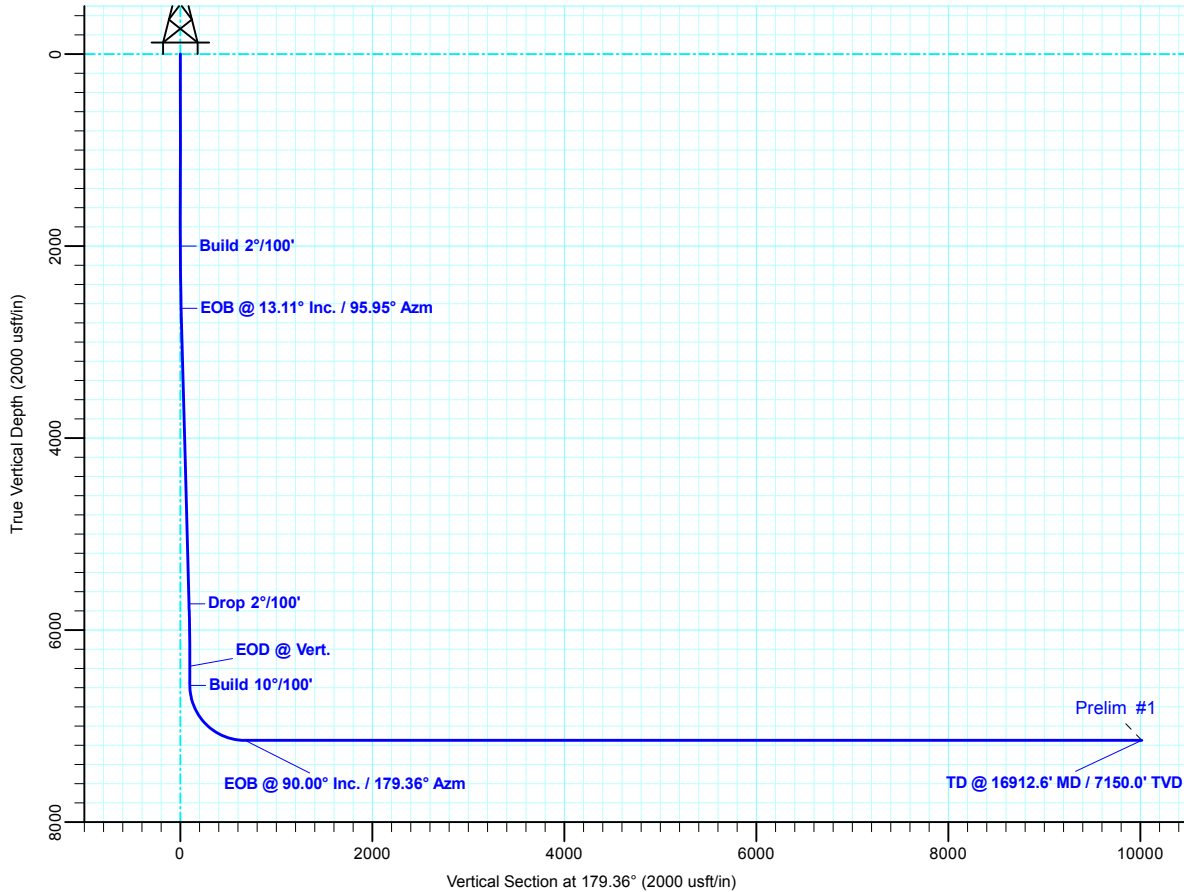
#### PROJECT DETAILS: Jackson County, Colorado

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

#### WELL DETAILS: Castle 0780 3-17H20

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1456815.27	2748629.44	40.583835	-106.405024

D90 ENERGY LLC





KLX  
Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Castle 0780 3-17H20
<b>Company:</b>	D90 Energy, LLC	<b>TVD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Project:</b>	Jackson County, Colorado	<b>MD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Site:</b>	Sec 17, T7N, R80W, 6th PM	<b>North Reference:</b>	True
<b>Well:</b>	Castle 0780 3-17H20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim #1		

<b>Project</b>	Jackson County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	Sec 17, T7N, R80W, 6th PM		
<b>Site Position:</b>		<b>Northing:</b>	1,456,815.41 usft
<b>From:</b>	Map	<b>Easting:</b>	2,748,614.51 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40.583835
		<b>Longitude:</b>	-106.405078
		<b>Grid Convergence:</b>	-0.58 °

<b>Well</b>	Castle 0780 3-17H20		
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b> 1,456,815.27 usft
	<b>+E/-W</b>	14.9 usft	<b>Easting:</b> 2,748,629.44 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40.583835
			<b>Longitude:</b> -106.405024
			<b>Ground Level:</b> 8,149.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM2022	3/16/2022	8.65	66.52	51,782.20000000

<b>Design</b>	Prelim #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	179.36

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
2,655.4	13.11	95.95	2,649.7	-7.7	74.2	2.00	2.00	0.00	95.95	
5,815.4	13.11	95.95	5,727.3	-82.1	787.0	0.00	0.00	0.00	0.00	
6,470.7	0.00	0.00	6,377.0	-89.8	861.2	2.00	-2.00	0.00	180.00	
6,670.7	0.00	0.00	6,577.0	-89.8	861.2	0.00	0.00	0.00	0.00	
7,570.7	90.00	179.36	7,150.0	-662.7	867.6	10.00	10.00	0.00	179.36	
16,912.6	90.00	179.36	7,150.0	-10,004.0	971.9	0.00	0.00	0.00	0.00	PBHL - Castle 0780

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Castle 0780 3-17H20
<b>Company:</b>	D90 Energy, LLC	<b>TVD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Project:</b>	Jackson County, Colorado	<b>MD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Site:</b>	Sec 17, T7N, R80W, 6th PM	<b>North Reference:</b>	True
<b>Well:</b>	Castle 0780 3-17H20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim #1		

## 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
1,100.0	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
1,600.0	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
<b>Build 2°/100'</b>									
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	2.00	95.95	2,100.0	-0.2	1.7	0.2	2.00	2.00	0.00
2,200.0	4.00	95.95	2,199.8	-0.7	6.9	0.8	2.00	2.00	0.00
2,300.0	6.00	95.95	2,299.5	-1.6	15.6	1.8	2.00	2.00	0.00
2,400.0	8.00	95.95	2,398.7	-2.9	27.7	3.2	2.00	2.00	0.00
2,500.0	10.00	95.95	2,497.5	-4.5	43.3	5.0	2.00	2.00	0.00
2,600.0	12.00	95.95	2,595.6	-6.5	62.3	7.2	2.00	2.00	0.00
<b>EOB @ 13.11° Inc. / 95.95° Azm</b>									
2,655.4	13.11	95.95	2,649.7	-7.7	74.2	8.6	2.00	2.00	0.00
2,700.0	13.11	95.95	2,693.1	-8.8	84.3	9.7	0.00	0.00	0.00
2,800.0	13.11	95.95	2,790.5	-11.1	106.9	12.3	0.00	0.00	0.00
2,900.0	13.11	95.95	2,887.9	-13.5	129.4	14.9	0.00	0.00	0.00
3,000.0	13.11	95.95	2,985.3	-15.8	152.0	17.5	0.00	0.00	0.00
3,100.0	13.11	95.95	3,082.7	-18.2	174.5	20.1	0.00	0.00	0.00
3,200.0	13.11	95.95	3,180.1	-20.5	197.1	22.7	0.00	0.00	0.00
3,300.0	13.11	95.95	3,277.5	-22.9	219.6	25.4	0.00	0.00	0.00
3,400.0	13.11	95.95	3,374.9	-25.3	242.2	28.0	0.00	0.00	0.00
3,500.0	13.11	95.95	3,472.3	-27.6	264.7	30.6	0.00	0.00	0.00
3,600.0	13.11	95.95	3,569.7	-30.0	287.3	33.2	0.00	0.00	0.00
3,700.0	13.11	95.95	3,667.1	-32.3	309.8	35.8	0.00	0.00	0.00
3,800.0	13.11	95.95	3,764.5	-34.7	332.4	38.4	0.00	0.00	0.00
3,900.0	13.11	95.95	3,861.9	-37.0	355.0	41.0	0.00	0.00	0.00
4,000.0	13.11	95.95	3,959.3	-39.4	377.5	43.6	0.00	0.00	0.00
4,100.0	13.11	95.95	4,056.7	-41.7	400.1	46.2	0.00	0.00	0.00
4,200.0	13.11	95.95	4,154.1	-44.1	422.6	48.8	0.00	0.00	0.00
4,300.0	13.11	95.95	4,251.5	-46.4	445.2	51.4	0.00	0.00	0.00
4,400.0	13.11	95.95	4,348.8	-48.8	467.7	54.0	0.00	0.00	0.00
4,500.0	13.11	95.95	4,446.2	-51.1	490.3	56.6	0.00	0.00	0.00
4,600.0	13.11	95.95	4,543.6	-53.5	512.8	59.2	0.00	0.00	0.00
4,700.0	13.11	95.95	4,641.0	-55.8	535.4	61.8	0.00	0.00	0.00
4,800.0	13.11	95.95	4,738.4	-58.2	558.0	64.4	0.00	0.00	0.00
4,900.0	13.11	95.95	4,835.8	-60.5	580.5	67.0	0.00	0.00	0.00
5,000.0	13.11	95.95	4,933.2	-62.9	603.1	69.6	0.00	0.00	0.00

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<b>Project:</b>	Jackson County, Colorado	<b>MD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Site:</b>	Sec 17, T7N, R80W, 6th PM	<b>North Reference:</b>	True
<b>Well:</b>	Castle 0780 3-17H20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim #1		

## 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)
5,100.0	13.11	95.95	5,030.6	-65.2	625.6	72.2	0.00	0.00	0.00
5,200.0	13.11	95.95	5,128.0	-67.6	648.2	74.8	0.00	0.00	0.00
5,300.0	13.11	95.95	5,225.4	-69.9	670.7	77.4	0.00	0.00	0.00
5,400.0	13.11	95.95	5,322.8	-72.3	693.3	80.0	0.00	0.00	0.00
5,500.0	13.11	95.95	5,420.2	-74.6	715.8	82.6	0.00	0.00	0.00
5,600.0	13.11	95.95	5,517.6	-77.0	738.4	85.2	0.00	0.00	0.00
5,700.0	13.11	95.95	5,615.0	-79.3	760.9	87.8	0.00	0.00	0.00
5,800.0	13.11	95.95	5,712.4	-81.7	783.5	90.4	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
5,815.4	13.11	95.95	5,727.3	-82.1	787.0	90.8	0.00	0.00	0.00
5,900.0	11.41	95.95	5,810.0	-83.9	804.8	92.9	2.00	-2.00	0.00
6,000.0	9.41	95.95	5,908.4	-85.8	822.8	95.0	2.00	-2.00	0.00
6,100.0	7.41	95.95	6,007.3	-87.3	837.4	96.7	2.00	-2.00	0.00
6,200.0	5.41	95.95	6,106.7	-88.5	848.5	97.9	2.00	-2.00	0.00
6,300.0	3.41	95.95	6,206.4	-89.3	856.1	98.8	2.00	-2.00	0.00
6,400.0	1.41	95.95	6,306.3	-89.7	860.3	99.3	2.00	-2.00	0.00
<b>EOD @ Vert.</b>									
6,470.7	0.00	0.00	6,377.0	-89.8	861.2	99.4	2.00	-2.00	0.00
6,500.0	0.00	0.00	6,406.3	-89.8	861.2	99.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,506.3	-89.8	861.2	99.4	0.00	0.00	0.00
<b>Build 10°/100'</b>									
6,670.7	0.00	0.00	6,577.0	-89.8	861.2	99.4	0.00	0.00	0.00
6,700.0	2.93	179.36	6,606.3	-90.5	861.2	100.2	10.00	10.00	0.00
6,750.0	7.93	179.36	6,656.0	-95.3	861.3	104.9	10.00	10.00	0.00
6,800.0	12.93	179.36	6,705.2	-104.3	861.4	113.9	10.00	10.00	0.00
6,850.0	17.93	179.36	6,753.4	-117.6	861.5	127.2	10.00	10.00	0.00
6,900.0	22.93	179.36	6,800.2	-135.1	861.7	144.7	10.00	10.00	0.00
6,950.0	27.93	179.36	6,845.3	-156.5	861.9	166.1	10.00	10.00	0.00
7,000.0	32.93	179.36	6,888.4	-181.8	862.2	191.5	10.00	10.00	0.00
7,050.0	37.93	179.36	6,929.2	-210.8	862.6	220.4	10.00	10.00	0.00
7,100.0	42.93	179.36	6,967.2	-243.2	862.9	252.8	10.00	10.00	0.00
7,150.0	47.93	179.36	7,002.3	-278.8	863.3	288.4	10.00	10.00	0.00
7,200.0	52.93	179.36	7,034.1	-317.3	863.7	327.0	10.00	10.00	0.00
7,250.0	57.93	179.36	7,062.5	-358.5	864.2	368.1	10.00	10.00	0.00
7,300.0	62.93	179.36	7,087.2	-402.0	864.7	411.6	10.00	10.00	0.00
7,350.0	67.93	179.36	7,108.0	-447.4	865.2	457.1	10.00	10.00	0.00
7,400.0	72.93	179.36	7,124.7	-494.5	865.7	504.2	10.00	10.00	0.00
7,450.0	77.93	179.36	7,137.3	-542.9	866.3	552.5	10.00	10.00	0.00
7,500.0	82.93	179.36	7,145.6	-592.2	866.8	601.8	10.00	10.00	0.00
7,550.0	87.93	179.36	7,149.6	-642.0	867.4	651.6	10.00	10.00	0.00
<b>EOB @ 90.00° Inc. / 179.36° Azm</b>									
7,570.7	90.00	179.36	7,150.0	-662.7	867.6	672.4	10.00	10.00	0.00
7,600.0	90.00	179.36	7,150.0	-692.0	867.9	701.6	0.00	0.00	0.00
7,700.0	90.00	179.36	7,150.0	-792.0	869.0	801.6	0.00	0.00	0.00
7,800.0	90.00	179.36	7,150.0	-892.0	870.2	901.6	0.00	0.00	0.00
7,900.0	90.00	179.36	7,150.0	-992.0	871.3	1,001.6	0.00	0.00	0.00
8,000.0	90.00	179.36	7,150.0	-1,092.0	872.4	1,101.6	0.00	0.00	0.00
8,100.0	90.00	179.36	7,150.0	-1,192.0	873.5	1,201.6	0.00	0.00	0.00
8,200.0	90.00	179.36	7,150.0	-1,292.0	874.6	1,301.6	0.00	0.00	0.00
8,300.0	90.00	179.36	7,150.0	-1,391.9	875.7	1,401.6	0.00	0.00	0.00
8,400.0	90.00	179.36	7,150.0	-1,491.9	876.9	1,501.6	0.00	0.00	0.00
8,500.0	90.00	179.36	7,150.0	-1,591.9	878.0	1,601.6	0.00	0.00	0.00
8,600.0	90.00	179.36	7,150.0	-1,691.9	879.1	1,701.6	0.00	0.00	0.00

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<b>Project:</b>	Jackson County, Colorado	<b>MD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Site:</b>	Sec 17, T7N, R80W, 6th PM	<b>North Reference:</b>	True
<b>Well:</b>	Castle 0780 3-17H20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim #1		

## 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)
8,700.0	90.00	179.36	7,150.0	-1,791.9	880.2	1,801.6	0.00	0.00	0.00
8,800.0	90.00	179.36	7,150.0	-1,891.9	881.3	1,901.6	0.00	0.00	0.00
8,900.0	90.00	179.36	7,150.0	-1,991.9	882.4	2,001.6	0.00	0.00	0.00
9,000.0	90.00	179.36	7,150.0	-2,091.9	883.6	2,101.6	0.00	0.00	0.00
9,100.0	90.00	179.36	7,150.0	-2,191.9	884.7	2,201.6	0.00	0.00	0.00
9,200.0	90.00	179.36	7,150.0	-2,291.9	885.8	2,301.6	0.00	0.00	0.00
9,300.0	90.00	179.36	7,150.0	-2,391.9	886.9	2,401.6	0.00	0.00	0.00
9,400.0	90.00	179.36	7,150.0	-2,491.9	888.0	2,501.6	0.00	0.00	0.00
9,500.0	90.00	179.36	7,150.0	-2,591.9	889.1	2,601.6	0.00	0.00	0.00
9,600.0	90.00	179.36	7,150.0	-2,691.9	890.3	2,701.6	0.00	0.00	0.00
9,700.0	90.00	179.36	7,150.0	-2,791.9	891.4	2,801.6	0.00	0.00	0.00
9,800.0	90.00	179.36	7,150.0	-2,891.9	892.5	2,901.6	0.00	0.00	0.00
9,900.0	90.00	179.36	7,150.0	-2,991.8	893.6	3,001.6	0.00	0.00	0.00
10,000.0	90.00	179.36	7,150.0	-3,091.8	894.7	3,101.6	0.00	0.00	0.00
10,100.0	90.00	179.36	7,150.0	-3,191.8	895.9	3,201.6	0.00	0.00	0.00
10,200.0	90.00	179.36	7,150.0	-3,291.8	897.0	3,301.6	0.00	0.00	0.00
10,300.0	90.00	179.36	7,150.0	-3,391.8	898.1	3,401.6	0.00	0.00	0.00
10,400.0	90.00	179.36	7,150.0	-3,491.8	899.2	3,501.6	0.00	0.00	0.00
10,500.0	90.00	179.36	7,150.0	-3,591.8	900.3	3,601.6	0.00	0.00	0.00
10,600.0	90.00	179.36	7,150.0	-3,691.8	901.4	3,701.6	0.00	0.00	0.00
10,700.0	90.00	179.36	7,150.0	-3,791.8	902.6	3,801.6	0.00	0.00	0.00
10,800.0	90.00	179.36	7,150.0	-3,891.8	903.7	3,901.6	0.00	0.00	0.00
10,900.0	90.00	179.36	7,150.0	-3,991.8	904.8	4,001.6	0.00	0.00	0.00
11,000.0	90.00	179.36	7,150.0	-4,091.8	905.9	4,101.6	0.00	0.00	0.00
11,100.0	90.00	179.36	7,150.0	-4,191.8	907.0	4,201.6	0.00	0.00	0.00
11,200.0	90.00	179.36	7,150.0	-4,291.8	908.1	4,301.6	0.00	0.00	0.00
11,300.0	90.00	179.36	7,150.0	-4,391.8	909.3	4,401.6	0.00	0.00	0.00
11,400.0	90.00	179.36	7,150.0	-4,491.8	910.4	4,501.6	0.00	0.00	0.00
11,500.0	90.00	179.36	7,150.0	-4,591.7	911.5	4,601.6	0.00	0.00	0.00
11,600.0	90.00	179.36	7,150.0	-4,691.7	912.6	4,701.6	0.00	0.00	0.00
11,700.0	90.00	179.36	7,150.0	-4,791.7	913.7	4,801.6	0.00	0.00	0.00
11,800.0	90.00	179.36	7,150.0	-4,891.7	914.8	4,901.6	0.00	0.00	0.00
11,900.0	90.00	179.36	7,150.0	-4,991.7	916.0	5,001.6	0.00	0.00	0.00
12,000.0	90.00	179.36	7,150.0	-5,091.7	917.1	5,101.6	0.00	0.00	0.00
12,100.0	90.00	179.36	7,150.0	-5,191.7	918.2	5,201.6	0.00	0.00	0.00
12,200.0	90.00	179.36	7,150.0	-5,291.7	919.3	5,301.6	0.00	0.00	0.00
12,300.0	90.00	179.36	7,150.0	-5,391.7	920.4	5,401.6	0.00	0.00	0.00
12,400.0	90.00	179.36	7,150.0	-5,491.7	921.5	5,501.6	0.00	0.00	0.00
12,500.0	90.00	179.36	7,150.0	-5,591.7	922.7	5,601.6	0.00	0.00	0.00
12,600.0	90.00	179.36	7,150.0	-5,691.7	923.8	5,701.6	0.00	0.00	0.00
12,700.0	90.00	179.36	7,150.0	-5,791.7	924.9	5,801.6	0.00	0.00	0.00
12,800.0	90.00	179.36	7,150.0	-5,891.7	926.0	5,901.6	0.00	0.00	0.00
12,900.0	90.00	179.36	7,150.0	-5,991.7	927.1	6,001.6	0.00	0.00	0.00
13,000.0	90.00	179.36	7,150.0	-6,091.7	928.2	6,101.6	0.00	0.00	0.00
13,100.0	90.00	179.36	7,150.0	-6,191.7	929.4	6,201.6	0.00	0.00	0.00
13,200.0	90.00	179.36	7,150.0	-6,291.6	930.5	6,301.6	0.00	0.00	0.00
13,300.0	90.00	179.36	7,150.0	-6,391.6	931.6	6,401.6	0.00	0.00	0.00
13,400.0	90.00	179.36	7,150.0	-6,491.6	932.7	6,501.6	0.00	0.00	0.00
13,500.0	90.00	179.36	7,150.0	-6,591.6	933.8	6,601.6	0.00	0.00	0.00
13,600.0	90.00	179.36	7,150.0	-6,691.6	934.9	6,701.6	0.00	0.00	0.00
13,700.0	90.00	179.36	7,150.0	-6,791.6	936.1	6,801.6	0.00	0.00	0.00
13,800.0	90.00	179.36	7,150.0	-6,891.6	937.2	6,901.6	0.00	0.00	0.00
13,900.0	90.00	179.36	7,150.0	-6,991.6	938.3	7,001.6	0.00	0.00	0.00
14,000.0	90.00	179.36	7,150.0	-7,091.6	939.4	7,101.6	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Castle 0780 3-17H20
<b>Company:</b>	D90 Energy, LLC	<b>TVD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Project:</b>	Jackson County, Colorado	<b>MD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Site:</b>	Sec 17, T7N, R80W, 6th PM	<b>North Reference:</b>	True
<b>Well:</b>	Castle 0780 3-17H20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim #1		

## 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)
14,100.0	90.00	179.36	7,150.0	-7,191.6	940.5	7,201.6	0.00	0.00	0.00
14,200.0	90.00	179.36	7,150.0	-7,291.6	941.6	7,301.6	0.00	0.00	0.00
14,300.0	90.00	179.36	7,150.0	-7,391.6	942.8	7,401.6	0.00	0.00	0.00
14,400.0	90.00	179.36	7,150.0	-7,491.6	943.9	7,501.6	0.00	0.00	0.00
14,500.0	90.00	179.36	7,150.0	-7,591.6	945.0	7,601.6	0.00	0.00	0.00
14,600.0	90.00	179.36	7,150.0	-7,691.6	946.1	7,701.6	0.00	0.00	0.00
14,700.0	90.00	179.36	7,150.0	-7,791.6	947.2	7,801.6	0.00	0.00	0.00
14,800.0	90.00	179.36	7,150.0	-7,891.5	948.3	7,901.6	0.00	0.00	0.00
14,900.0	90.00	179.36	7,150.0	-7,991.5	949.5	8,001.6	0.00	0.00	0.00
15,000.0	90.00	179.36	7,150.0	-8,091.5	950.6	8,101.6	0.00	0.00	0.00
15,100.0	90.00	179.36	7,150.0	-8,191.5	951.7	8,201.6	0.00	0.00	0.00
15,200.0	90.00	179.36	7,150.0	-8,291.5	952.8	8,301.6	0.00	0.00	0.00
15,300.0	90.00	179.36	7,150.0	-8,391.5	953.9	8,401.6	0.00	0.00	0.00
15,400.0	90.00	179.36	7,150.0	-8,491.5	955.1	8,501.6	0.00	0.00	0.00
15,500.0	90.00	179.36	7,150.0	-8,591.5	956.2	8,601.6	0.00	0.00	0.00
15,600.0	90.00	179.36	7,150.0	-8,691.5	957.3	8,701.6	0.00	0.00	0.00
15,700.0	90.00	179.36	7,150.0	-8,791.5	958.4	8,801.6	0.00	0.00	0.00
15,800.0	90.00	179.36	7,150.0	-8,891.5	959.5	8,901.6	0.00	0.00	0.00
15,900.0	90.00	179.36	7,150.0	-8,991.5	960.6	9,001.6	0.00	0.00	0.00
16,000.0	90.00	179.36	7,150.0	-9,091.5	961.8	9,101.6	0.00	0.00	0.00
16,100.0	90.00	179.36	7,150.0	-9,191.5	962.9	9,201.6	0.00	0.00	0.00
16,200.0	90.00	179.36	7,150.0	-9,291.5	964.0	9,301.6	0.00	0.00	0.00
16,300.0	90.00	179.36	7,150.0	-9,391.5	965.1	9,401.6	0.00	0.00	0.00
16,400.0	90.00	179.36	7,150.0	-9,491.4	966.2	9,501.6	0.00	0.00	0.00
16,500.0	90.00	179.36	7,150.0	-9,591.4	967.3	9,601.6	0.00	0.00	0.00
16,600.0	90.00	179.36	7,150.0	-9,691.4	968.5	9,701.6	0.00	0.00	0.00
16,700.0	90.00	179.36	7,150.0	-9,791.4	969.6	9,801.6	0.00	0.00	0.00
16,800.0	90.00	179.36	7,150.0	-9,891.4	970.7	9,901.6	0.00	0.00	0.00
16,900.0	90.00	179.36	7,150.0	-9,991.4	971.8	10,001.6	0.00	0.00	0.00
<b>TD @ 16912.6' MD / 7150.0' TVD</b>									
16,912.6	90.00	179.36	7,150.0	-10,004.0	971.9	10,014.2	0.00	0.00	0.00

## 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									
PBHL - Castle 0780 3	0.00	0.00	0.0	-10,004.0	971.9	1,446,801.90	2,749,499.21	40.556376	-106.401526
- plan misses target center by 7150.0usft at 16912.6usft MD (7150.0 TVD, -10004.0 N, 971.9 E)									
- Point									
LP - Castle 0780 3-17	0.00	0.00	0.0	-662.7	867.6	1,456,143.78	2,749,490.26	40.582016	-106.401900
- plan misses target center by 1091.7usft at 0.0usft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Point									



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Castle 0780 3-17H20
<b>Company:</b>	D90 Energy, LLC	<b>TVD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Project:</b>	Jackson County, Colorado	<b>MD Reference:</b>	RKB @ 8175.0usft (26' kb)
<b>Site:</b>	Sec 17, T7N, R80W, 6th PM	<b>North Reference:</b>	True
<b>Well:</b>	Castle 0780 3-17H20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim #1		

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°/100'
2,655.4	2,649.7	-7.7	74.2	EOB @ 13.11° Inc. / 95.95° Azm
5,815.4	5,727.3	-82.1	787.0	Drop 2°/100'
6,470.7	6,377.0	-89.8	861.2	EOD @ Vert.
6,670.7	6,577.0	-89.8	861.2	Build 10°/100'
7,570.7	7,150.0	-662.7	867.6	EOB @ 90.00° Inc. / 179.36° Azm
16,912.6	7,150.0	-10,004.0	971.9	TD @ 16912.6' MD / 7150.0' TVD