

# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**PA 23-26 Pad**

**PA 412-26 - Slot B15**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**10 July, 2017**

**N/A**  
Planning Report

<b>Database:</b>	EDM_PRO	<b>Local Co-ordinate Reference:</b>	Well PA 412-26 - Slot B15
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Site:</b>	PA 23-26 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 412-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	Garfield County, CO NAD83		
<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 Central Zone		

Site		PA 23-26 Pad			
Site Position:		Northing:	1,614,400.30 ft	Latitude:	39° 29' 39.674 N
From:	Map	Easting:	2,303,981.10 ft	Longitude:	107° 57' 59.978 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.56 °

Well	PA 412-26 - Slot B15					
Well Position	+N/-S	-14.3 ft	Northing:	1,614,388.85 ft	Latitude:	39° 29' 39.533 N
	+E/-W	-105.2 ft	Easting:	2,303,875.57 ft	Longitude:	107° 58' 1.320 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	5,637.0 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2000	12/31/2004	11.44	65.99	53,054.02286106

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	297.95

<b>Plan Survey Tool Program</b>	<b>Date</b>	7/10/2017			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.0	8,739.4 Plan #1 (OH)	SDI MWD		
			SDI MWD - Standard ver 1.0.1		

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</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	
275.0	0.00	0.00	275.0	0.0	0.0	0.00	0.00	0.00	0.00	
675.0	8.00	270.00	673.7	0.0	-27.9	2.00	2.00	0.00	270.00	
1,255.1	24.00	298.89	1,230.2	57.4	-172.7	3.00	2.76	4.98	41.07	
4,983.6	24.00	298.89	4,636.4	790.1	-1,500.5	0.00	0.00	0.00	0.00	
6,583.6	0.00	0.00	6,190.0	949.6	-1,789.6	1.50	-1.50	0.00	180.00	
8,739.6	0.00	0.00	8,346.0	949.6	-1,789.6	0.00	0.00	0.00	0.00	PBHL(PA 412-26)

**N/A**  
Planning Report

<b>Database:</b>	EDM_PRO	<b>Local Co-ordinate Reference:</b>	Well PA 412-26 - Slot B15
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Site:</b>	PA 23-26 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 412-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
275.0	0.00	0.00	275.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.50	270.00	300.0	0.0	-0.1	0.1	2.00	2.00	0.00
400.0	2.50	270.00	400.0	0.0	-2.7	2.4	2.00	2.00	0.00
500.0	4.50	270.00	499.8	0.0	-8.8	7.8	2.00	2.00	0.00
600.0	6.50	270.00	599.3	0.0	-18.4	16.3	2.00	2.00	0.00
675.0	8.00	270.00	673.7	0.0	-27.9	24.6	2.00	2.00	0.00
700.0	8.58	273.30	698.4	0.1	-31.5	27.9	3.00	2.32	13.22
800.0	11.10	282.89	797.0	2.7	-48.3	43.9	3.00	2.52	9.59
900.0	13.82	288.87	894.6	8.7	-69.0	65.0	3.00	2.71	5.97
1,000.0	16.63	292.88	991.1	18.1	-93.5	91.1	3.00	2.81	4.02
1,100.0	19.49	295.75	1,086.2	30.9	-121.7	122.0	3.00	2.87	2.87
9 5/8"									
1,200.0	22.39	297.91	1,179.5	47.1	-153.6	157.7	3.00	2.90	2.16
1,255.1	24.00	298.89	1,230.2	57.4	-172.7	179.4	3.00	2.92	1.77
1,300.0	24.00	298.89	1,271.2	66.3	-188.6	197.7	0.00	0.00	0.00
1,400.0	24.00	298.89	1,362.6	85.9	-224.3	238.4	0.00	0.00	0.00
1,500.0	24.00	298.89	1,453.9	105.6	-259.9	279.0	0.00	0.00	0.00
1,600.0	24.00	298.89	1,545.3	125.2	-295.5	319.7	0.00	0.00	0.00
1,700.0	24.00	298.89	1,636.6	144.9	-331.1	360.4	0.00	0.00	0.00
1,800.0	24.00	298.89	1,728.0	164.5	-366.7	401.0	0.00	0.00	0.00
1,900.0	24.00	298.89	1,819.3	184.2	-402.3	441.7	0.00	0.00	0.00
2,000.0	24.00	298.89	1,910.7	203.8	-437.9	482.4	0.00	0.00	0.00
2,100.0	24.00	298.89	2,002.0	223.5	-473.5	523.0	0.00	0.00	0.00
2,200.0	24.00	298.89	2,093.4	243.1	-509.2	563.7	0.00	0.00	0.00
2,300.0	24.00	298.89	2,184.8	262.8	-544.8	604.4	0.00	0.00	0.00
2,400.0	24.00	298.89	2,276.1	282.4	-580.4	645.0	0.00	0.00	0.00
2,500.0	24.00	298.89	2,367.5	302.0	-616.0	685.7	0.00	0.00	0.00
2,600.0	24.00	298.89	2,458.8	321.7	-651.6	726.4	0.00	0.00	0.00
2,631.9	24.00	298.89	2,488.0	328.0	-663.0	739.4	0.00	0.00	0.00
Wasatch G									
2,697.6	24.00	298.89	2,548.0	340.9	-686.4	766.1	0.00	0.00	0.00
Wasatch G base									
2,700.0	24.00	298.89	2,550.2	341.3	-687.2	767.0	0.00	0.00	0.00
2,800.0	24.00	298.89	2,641.5	361.0	-722.8	807.7	0.00	0.00	0.00
2,900.0	24.00	298.89	2,732.9	380.6	-758.4	848.4	0.00	0.00	0.00
3,000.0	24.00	298.89	2,824.2	400.3	-794.1	889.1	0.00	0.00	0.00
3,100.0	24.00	298.89	2,915.6	419.9	-829.7	929.7	0.00	0.00	0.00
3,200.0	24.00	298.89	3,006.9	439.6	-865.3	970.4	0.00	0.00	0.00
3,300.0	24.00	298.89	3,098.3	459.2	-900.9	1,011.1	0.00	0.00	0.00
3,400.0	24.00	298.89	3,189.7	478.9	-936.5	1,051.7	0.00	0.00	0.00
3,500.0	24.00	298.89	3,281.0	498.5	-972.1	1,092.4	0.00	0.00	0.00
3,600.0	24.00	298.89	3,372.4	518.2	-1,007.7	1,133.1	0.00	0.00	0.00
3,700.0	24.00	298.89	3,463.7	537.8	-1,043.3	1,173.7	0.00	0.00	0.00
3,800.0	24.00	298.89	3,555.1	557.5	-1,079.0	1,214.4	0.00	0.00	0.00
3,900.0	24.00	298.89	3,646.4	577.1	-1,114.6	1,255.1	0.00	0.00	0.00
4,000.0	24.00	298.89	3,737.8	596.8	-1,150.2	1,295.7	0.00	0.00	0.00
4,100.0	24.00	298.89	3,829.1	616.4	-1,185.8	1,336.4	0.00	0.00	0.00
4,200.0	24.00	298.89	3,920.5	636.1	-1,221.4	1,377.1	0.00	0.00	0.00
4,300.0	24.00	298.89	4,011.9	655.7	-1,257.0	1,417.7	0.00	0.00	0.00
4,400.0	24.00	298.89	4,103.2	675.4	-1,292.6	1,458.4	0.00	0.00	0.00

**N/A**  
Planning Report

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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Site:</b>	PA 23-26 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 412-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	24.00	298.89	4,194.6	695.0	-1,328.2	1,499.1	0.00	0.00	0.00
4,600.0	24.00	298.89	4,285.9	714.7	-1,363.9	1,539.7	0.00	0.00	0.00
4,700.0	24.00	298.89	4,377.3	734.3	-1,399.5	1,580.4	0.00	0.00	0.00
4,800.0	24.00	298.89	4,468.6	754.0	-1,435.1	1,621.1	0.00	0.00	0.00
4,900.0	24.00	298.89	4,560.0	773.6	-1,470.7	1,661.8	0.00	0.00	0.00
4,983.6	24.00	298.89	4,636.4	790.1	-1,500.5	1,695.8	0.00	0.00	0.00
5,000.0	23.75	298.89	4,651.3	793.3	-1,506.3	1,702.4	1.50	-1.50	0.00
5,056.3	22.91	298.89	4,703.0	804.0	-1,525.8	1,724.7	1.50	-1.50	0.00
<b>Ohio Creek</b>									
5,100.0	22.25	298.89	4,743.4	812.2	-1,540.5	1,741.5	1.50	-1.50	0.00
5,200.0	20.75	298.89	4,836.4	829.9	-1,572.6	1,778.1	1.50	-1.50	0.00
5,249.7	20.01	298.89	4,883.0	838.2	-1,587.7	1,795.4	1.50	-1.50	0.00
<b>Upper MVRD</b>									
5,300.0	19.25	298.89	4,930.4	846.4	-1,602.5	1,812.3	1.50	-1.50	0.00
5,400.0	17.75	298.89	5,025.2	861.7	-1,630.3	1,844.1	1.50	-1.50	0.00
5,500.0	16.25	298.89	5,120.8	875.8	-1,655.9	1,873.3	1.50	-1.50	0.00
5,600.0	14.75	298.89	5,217.2	888.8	-1,679.3	1,900.0	1.50	-1.50	0.00
5,700.0	13.25	298.89	5,314.2	900.5	-1,700.5	1,924.2	1.50	-1.50	0.00
5,800.0	11.75	298.89	5,411.9	910.9	-1,719.5	1,945.9	1.50	-1.50	0.00
5,900.0	10.25	298.89	5,510.0	920.1	-1,736.2	1,964.9	1.50	-1.50	0.00
6,000.0	8.75	298.89	5,608.6	928.1	-1,750.7	1,981.5	1.50	-1.50	0.00
6,100.0	7.25	298.89	5,707.7	934.8	-1,762.8	1,995.4	1.50	-1.50	0.00
6,200.0	5.75	298.89	5,807.0	940.3	-1,772.8	2,006.7	1.50	-1.50	0.00
6,296.4	4.31	298.89	5,903.0	944.4	-1,780.2	2,015.2	1.50	-1.50	0.00
<b>Top of Gas</b>									
6,300.0	4.25	298.89	5,906.6	944.5	-1,780.4	2,015.4	1.49	-1.49	0.00
6,400.0	2.75	298.89	6,006.4	947.5	-1,785.8	2,021.5	1.50	-1.50	0.00
6,500.0	1.25	298.89	6,106.4	949.2	-1,788.8	2,025.0	1.50	-1.50	0.00
6,583.6	0.00	0.00	6,190.0	949.6	-1,789.6	2,026.0	1.50	-1.50	0.00
6,600.0	0.00	0.00	6,206.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,306.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,406.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,506.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,606.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,100.0	0.00	0.00	6,706.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,200.0	0.00	0.00	6,806.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,300.0	0.00	0.00	6,906.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,006.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,106.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,206.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,306.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,406.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
7,876.6	0.00	0.00	7,483.0	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
<b>Cameo</b>									
7,900.0	0.00	0.00	7,506.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,606.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,100.0	0.00	0.00	7,706.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,200.0	0.00	0.00	7,806.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,300.0	0.00	0.00	7,906.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,006.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,106.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
8,586.6	0.00	0.00	8,193.0	949.6	-1,789.6	2,026.0	0.00	0.00	0.00
<b>RLNS</b>									
8,600.0	0.00	0.00	8,206.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00

**N/A**  
Planning Report

<b>Database:</b>	EDM_PRO	<b>Local Co-ordinate Reference:</b>	Well PA 412-26 - Slot B15
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5658.0ft (Original Well Elev)
<b>Site:</b>	PA 23-26 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 412-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,700.0	0.00	0.00	8,306.4	949.6	-1,789.6	2,026.0	0.00	0.00	0.00	
8,739.6	0.00	0.00	8,346.0	949.6	-1,789.6	2,026.0	0.00	0.00	0.00	
PBHL(PA 412-26)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
PBHL(PA 412-26)	0.00	0.00	8,346.0	949.6	-1,789.6	1,615,386.70	2,302,112.40	39° 29' 48.917 N	107° 58' 24.150 W	
- plan hits target center										
- Point										

Casing Points									
Measured Depth (ft)	Vertical Depth (ft)	Name			Casing Diameter (in)	Hole Diameter (in)			
1,100.0	1,086.2	9 5/8"			9.625	14.750			

Formations									
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)				
2,631.9	2,488.0	Wasatch G		0.00					
2,697.6	2,548.0	Wasatch G base		0.00					
5,056.3	4,703.0	Ohio Creek		0.00					
5,249.7	4,883.0	Upper MVRD		0.00					
6,296.4	5,903.0	Top of Gas		0.00					
7,876.6	7,483.0	Cameo		0.00					
8,586.6	8,193.0	RLNS		0.00					