

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 512-26 - Slot B16

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 512-26 - Slot B16
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5658.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 512-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 512-26 - Slot B16					
Well Position	+N/-S	-14.6 ft	Northing:	1,614,388.74 ft	Latitude:	39° 29' 39.529 N
	+E/-W	-112.7 ft	Easting:	2,303,868.08 ft	Longitude:	107° 58' 1.415 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	5,637.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	11.44	65.99	53,054.01859814

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	293.24

Plan Survey Tool Program	Date	7/10/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	8,560.7 Plan #1 (OH)	SDI MWD	
			SDI MWD - Standard ver 1.0.1	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
180.0	0.00	0.00	180.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,180.0	20.00	270.00	1,159.8	0.0	-172.8	2.00	2.00	0.00	270.00	
1,488.0	20.00	297.24	1,449.9	24.2	-272.5	3.00	0.00	8.84	102.80	
4,386.3	20.00	297.24	4,173.3	478.0	-1,154.0	0.00	0.00	0.00	0.00	
5,719.9	0.00	0.00	5,480.0	583.5	-1,358.9	1.50	-1.50	0.00	180.00	
8,560.9	0.00	0.00	8,321.0	583.5	-1,358.9	0.00	0.00	0.00	0.00	PBHL(PA 512-26)

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 512-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.40	270.00	200.0	0.0	-0.1	0.1	2.00	2.00	0.00
300.0	2.40	270.00	300.0	0.0	-2.5	2.3	2.00	2.00	0.00
400.0	4.40	270.00	399.8	0.0	-8.4	7.8	2.00	2.00	0.00
500.0	6.40	270.00	499.3	0.0	-17.9	16.4	2.00	2.00	0.00
600.0	8.40	270.00	598.5	0.0	-30.7	28.2	2.00	2.00	0.00
700.0	10.40	270.00	697.2	0.0	-47.1	43.2	2.00	2.00	0.00
800.0	12.40	270.00	795.2	0.0	-66.8	61.4	2.00	2.00	0.00
900.0	14.40	270.00	892.4	0.0	-90.0	82.7	2.00	2.00	0.00
1,000.0	16.40	270.00	988.9	0.0	-116.6	107.1	2.00	2.00	0.00
1,100.0	18.40	270.00	1,084.3	0.0	-146.5	134.6	2.00	2.00	0.00
9 5/8"									
1,180.0	20.00	270.00	1,159.8	0.0	-172.8	158.8	2.00	2.00	0.00
1,200.0	19.88	271.72	1,178.6	0.1	-179.6	165.1	3.00	-0.62	8.60
1,300.0	19.51	280.57	1,272.8	3.7	-213.0	197.2	3.00	-0.37	8.84
1,400.0	19.58	289.54	1,367.1	12.3	-245.2	230.2	3.00	0.07	8.97
1,488.0	20.00	297.24	1,449.9	24.2	-272.5	259.9	3.00	0.48	8.75
1,500.0	20.00	297.24	1,461.1	26.0	-276.1	264.0	0.00	0.00	0.00
1,600.0	20.00	297.24	1,555.1	41.7	-306.6	298.1	0.00	0.00	0.00
1,700.0	20.00	297.24	1,649.1	57.4	-337.0	332.3	0.00	0.00	0.00
1,800.0	20.00	297.24	1,743.0	73.0	-367.4	366.4	0.00	0.00	0.00
1,900.0	20.00	297.24	1,837.0	88.7	-397.8	400.5	0.00	0.00	0.00
2,000.0	20.00	297.24	1,931.0	104.3	-428.2	434.6	0.00	0.00	0.00
2,100.0	20.00	297.24	2,024.9	120.0	-458.6	468.8	0.00	0.00	0.00
2,200.0	20.00	297.24	2,118.9	135.7	-489.1	502.9	0.00	0.00	0.00
2,300.0	20.00	297.24	2,212.9	151.3	-519.5	537.0	0.00	0.00	0.00
2,400.0	20.00	297.24	2,306.8	167.0	-549.9	571.2	0.00	0.00	0.00
2,500.0	20.00	297.24	2,400.8	182.6	-580.3	605.3	0.00	0.00	0.00
2,560.9	20.00	297.24	2,458.0	192.2	-598.8	626.0	0.00	0.00	0.00
WASATCH G									
2,600.0	20.00	297.24	2,494.8	198.3	-610.7	639.4	0.00	0.00	0.00
2,624.7	20.00	297.24	2,518.0	202.2	-618.2	647.8	0.00	0.00	0.00
WASATCH G BASE									
2,700.0	20.00	297.24	2,588.7	213.9	-641.1	673.5	0.00	0.00	0.00
2,800.0	20.00	297.24	2,682.7	229.6	-671.5	707.7	0.00	0.00	0.00
2,900.0	20.00	297.24	2,776.7	245.3	-702.0	741.8	0.00	0.00	0.00
3,000.0	20.00	297.24	2,870.6	260.9	-732.4	775.9	0.00	0.00	0.00
3,100.0	20.00	297.24	2,964.6	276.6	-762.8	810.0	0.00	0.00	0.00
3,200.0	20.00	297.24	3,058.6	292.2	-793.2	844.2	0.00	0.00	0.00
3,300.0	20.00	297.24	3,152.5	307.9	-823.6	878.3	0.00	0.00	0.00
3,400.0	20.00	297.24	3,246.5	323.6	-854.0	912.4	0.00	0.00	0.00
3,500.0	20.00	297.24	3,340.5	339.2	-884.5	946.5	0.00	0.00	0.00
3,600.0	20.00	297.24	3,434.4	354.9	-914.9	980.7	0.00	0.00	0.00
3,700.0	20.00	297.24	3,528.4	370.5	-945.3	1,014.8	0.00	0.00	0.00
3,800.0	20.00	297.24	3,622.4	386.2	-975.7	1,048.9	0.00	0.00	0.00
3,900.0	20.00	297.24	3,716.3	401.8	-1,006.1	1,083.0	0.00	0.00	0.00
4,000.0	20.00	297.24	3,810.3	417.5	-1,036.5	1,117.2	0.00	0.00	0.00
4,100.0	20.00	297.24	3,904.3	433.2	-1,066.9	1,151.3	0.00	0.00	0.00
4,200.0	20.00	297.24	3,998.2	448.8	-1,097.4	1,185.4	0.00	0.00	0.00
4,300.0	20.00	297.24	4,092.2	464.5	-1,127.8	1,219.5	0.00	0.00	0.00
4,386.3	20.00	297.24	4,173.3	478.0	-1,154.0	1,249.0	0.00	0.00	0.00

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 512-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
4,400.0	19.80	297.24	4,186.2	480.1	-1,158.2	1,253.6	1.50	-1.50	0.00
4,500.0	18.30	297.24	4,280.7	495.1	-1,187.2	1,286.2	1.50	-1.50	0.00
4,600.0	16.80	297.24	4,376.1	508.9	-1,214.0	1,316.3	1.50	-1.50	0.00
4,700.0	15.30	297.24	4,472.2	521.5	-1,238.6	1,343.9	1.50	-1.50	0.00
4,800.0	13.80	297.24	4,568.9	533.0	-1,260.9	1,368.9	1.50	-1.50	0.00
4,900.0	12.30	297.24	4,666.4	543.3	-1,281.0	1,391.4	1.50	-1.50	0.00
4,911.9	12.12	297.24	4,678.0	544.5	-1,283.2	1,393.9	1.50	-1.50	0.00
MESAVERDE									
5,000.0	10.80	297.24	4,764.3	552.5	-1,298.8	1,411.4	1.50	-1.50	0.00
5,095.1	9.37	297.24	4,858.0	560.1	-1,313.6	1,428.0	1.50	-1.50	0.00
U MESAVERDE									
5,100.0	9.30	297.24	4,862.8	560.5	-1,314.3	1,428.8	1.50	-1.50	0.00
5,200.0	7.80	297.24	4,961.7	567.3	-1,327.5	1,443.6	1.50	-1.50	0.00
5,300.0	6.30	297.24	5,060.9	572.9	-1,338.4	1,455.9	1.50	-1.50	0.00
5,400.0	4.80	297.24	5,160.5	577.3	-1,347.0	1,465.5	1.50	-1.50	0.00
5,500.0	3.30	297.24	5,260.2	580.6	-1,353.3	1,472.6	1.50	-1.50	0.00
5,600.0	1.80	297.24	5,360.1	582.6	-1,357.2	1,477.0	1.50	-1.50	0.00
5,700.0	0.30	297.24	5,460.1	583.4	-1,358.9	1,478.8	1.50	-1.50	0.00
5,719.9	0.00	0.00	5,480.0	583.5	-1,358.9	1,478.9	1.50	-1.50	0.00
5,800.0	0.00	0.00	5,560.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,660.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,760.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,100.0	0.00	0.00	5,860.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,117.9	0.00	0.00	5,878.0	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
TOP GAS									
6,200.0	0.00	0.00	5,960.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,060.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,160.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,260.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,360.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,460.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,560.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,660.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,760.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,100.0	0.00	0.00	6,860.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,200.0	0.00	0.00	6,960.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,300.0	0.00	0.00	7,060.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,160.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,500.0	0.00	0.00	7,260.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,360.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,697.9	0.00	0.00	7,458.0	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
CAMEO									
7,700.0	0.00	0.00	7,460.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,560.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
7,900.0	0.00	0.00	7,660.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,000.0	0.00	0.00	7,760.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,100.0	0.00	0.00	7,860.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,200.0	0.00	0.00	7,960.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,300.0	0.00	0.00	8,060.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,400.0	0.00	0.00	8,160.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,407.9	0.00	0.00	8,168.0	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
ROLLINS									
8,500.0	0.00	0.00	8,260.1	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
8,557.9	0.00	0.00	8,318.0	583.5	-1,358.9	1,478.9	0.00	0.00	0.00

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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 512-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
TD									
8,560.9	0.00	0.00	8,321.0	583.5	-1,358.9	1,478.9	0.00	0.00	0.00
PBHL(PA 512-26)									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(PA 512-26) - plan hits target center - Point	0.00	0.00	8,321.0	583.5	-1,358.9	1,615,008.90	2,302,525.50	39° 29' 45.296 N	107° 58' 18.751 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.0	1,084.3	9 5/8"	9.625	13.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,560.9	2,458.0	WASATCH G		0.00	
2,624.7	2,518.0	WASATCH G BASE		0.00	
4,911.9	4,678.0	MESAVERDE		0.00	
5,095.1	4,858.0	U MESAVERDE		0.00	
6,117.9	5,878.0	TOP GAS		0.00	
7,697.9	7,458.0	CAMEO		0.00	
8,407.9	8,168.0	ROLLINS		0.00	
8,557.9	8,318.0	TD		0.00	