

TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 13-19

PA 333-24

OH

Plan: Plan #1

Standard Planning Report

21 June, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 333-24
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5757.5ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5757.5ft (Original Well Elev)
Site:	RWF 13-19	North Reference:	True
Well:	PA 333-24	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		RWF 13-19			
Site Position:		Northing:	1,618,780.80 ft	Latitude:	39° 30' 25.236 N
From:	Map	Easting:	2,312,540.00 ft	Longitude:	107° 56' 12.334 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.54 °

Well	PA 333-24, A1					
Well Position	+N/-S	11.4 ft	Northing:	1,618,793.40 ft	Latitude:	39° 30' 25.349 N
	+E/-W	-43.5 ft	Easting:	2,312,496.80 ft	Longitude:	107° 56' 12.889 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	5,733.5 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/9/2017	9.69	65.61	51,556.12684406

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	300.64

Plan Survey Tool Program	Date	6/21/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	8,822.9 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	
846.6	20.00	300.64	833.1	58.7	-99.1	3.00	3.00	0.00	300.64	
5,635.9	20.00	300.64	5,333.7	893.4	-1,508.3	0.00	0.00	0.00	0.00	
6,969.1	0.00	0.00	6,640.0	1,010.8	-1,706.4	1.50	-1.50	0.00	180.00	
8,823.1	0.00	0.00	8,494.0	1,010.8	-1,706.4	0.00	0.00	0.00	0.00	PBHL (PA 333-24)

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 333-24
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5754.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5754.0ft (Original Well Elev)
Site:	RWF 13-19	North Reference:	True
Well:	PA 333-24	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
SHL (PA 333-24)									
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	0.60	300.64	200.0	0.1	-0.1	0.1	3.00	3.00	0.00
300.0	3.60	300.64	299.9	1.9	-3.2	3.8	3.00	3.00	0.00
400.0	6.60	300.64	399.5	6.5	-10.9	12.7	3.00	3.00	0.00
500.0	9.60	300.64	498.5	13.6	-23.0	26.7	3.00	3.00	0.00
600.0	12.60	300.64	596.6	23.4	-39.6	46.0	3.00	3.00	0.00
700.0	15.60	300.64	693.6	35.9	-60.5	70.4	3.00	3.00	0.00
800.0	18.60	300.64	789.2	50.8	-85.8	99.8	3.00	3.00	0.00
846.6	20.00	300.64	833.1	58.7	-99.1	115.2	3.00	3.00	0.00
900.0	20.00	300.64	883.3	68.0	-114.8	133.4	0.00	0.00	0.00
1,000.0	20.00	300.64	977.3	85.4	-144.2	167.6	0.00	0.00	0.00
1,100.0	20.00	300.64	1,071.3	102.9	-173.6	201.8	0.00	0.00	0.00
9 5/8"									
1,200.0	20.00	300.64	1,165.2	120.3	-203.1	236.0	0.00	0.00	0.00
1,300.0	20.00	300.64	1,259.2	137.7	-232.5	270.2	0.00	0.00	0.00
1,400.0	20.00	300.64	1,353.2	155.1	-261.9	304.4	0.00	0.00	0.00
1,500.0	20.00	300.64	1,447.2	172.6	-291.3	338.6	0.00	0.00	0.00
1,600.0	20.00	300.64	1,541.1	190.0	-320.8	372.8	0.00	0.00	0.00
1,700.0	20.00	300.64	1,635.1	207.4	-350.2	407.0	0.00	0.00	0.00
1,800.0	20.00	300.64	1,729.1	224.9	-379.6	441.2	0.00	0.00	0.00
1,900.0	20.00	300.64	1,823.0	242.3	-409.0	475.4	0.00	0.00	0.00
2,000.0	20.00	300.64	1,917.0	259.7	-438.4	509.6	0.00	0.00	0.00
2,100.0	20.00	300.64	2,011.0	277.1	-467.9	543.8	0.00	0.00	0.00
2,200.0	20.00	300.64	2,104.9	294.6	-497.3	578.0	0.00	0.00	0.00
2,300.0	20.00	300.64	2,198.9	312.0	-526.7	612.2	0.00	0.00	0.00
2,400.0	20.00	300.64	2,292.9	329.4	-556.1	646.4	0.00	0.00	0.00
2,500.0	20.00	300.64	2,386.9	346.9	-585.6	680.6	0.00	0.00	0.00
2,598.1	20.00	300.64	2,479.0	363.9	-614.4	714.1	0.00	0.00	0.00
G Sand									
2,600.0	20.00	300.64	2,480.8	364.3	-615.0	714.8	0.00	0.00	0.00
2,700.0	20.00	300.64	2,574.8	381.7	-644.4	749.0	0.00	0.00	0.00
2,800.0	20.00	300.64	2,668.8	399.1	-673.8	783.2	0.00	0.00	0.00
2,900.0	20.00	300.64	2,762.7	416.6	-703.3	817.4	0.00	0.00	0.00
3,000.0	20.00	300.64	2,856.7	434.0	-732.7	851.6	0.00	0.00	0.00
3,100.0	20.00	300.64	2,950.7	451.4	-762.1	885.8	0.00	0.00	0.00
3,200.0	20.00	300.64	3,044.7	468.9	-791.5	920.0	0.00	0.00	0.00
3,300.0	20.00	300.64	3,138.6	486.3	-821.0	954.2	0.00	0.00	0.00
3,400.0	20.00	300.64	3,232.6	503.7	-850.4	988.4	0.00	0.00	0.00
3,500.0	20.00	300.64	3,326.6	521.1	-879.8	1,022.6	0.00	0.00	0.00
3,600.0	20.00	300.64	3,420.5	538.6	-909.2	1,056.8	0.00	0.00	0.00
3,700.0	20.00	300.64	3,514.5	556.0	-938.7	1,091.0	0.00	0.00	0.00
3,800.0	20.00	300.64	3,608.5	573.4	-968.1	1,125.2	0.00	0.00	0.00
3,900.0	20.00	300.64	3,702.4	590.9	-997.5	1,159.4	0.00	0.00	0.00
4,000.0	20.00	300.64	3,796.4	608.3	-1,026.9	1,193.6	0.00	0.00	0.00
4,100.0	20.00	300.64	3,890.4	625.7	-1,056.3	1,227.8	0.00	0.00	0.00
4,200.0	20.00	300.64	3,984.4	643.2	-1,085.8	1,262.0	0.00	0.00	0.00
4,300.0	20.00	300.64	4,078.3	660.6	-1,115.2	1,296.2	0.00	0.00	0.00
4,400.0	20.00	300.64	4,172.3	678.0	-1,144.6	1,330.4	0.00	0.00	0.00
4,500.0	20.00	300.64	4,266.3	695.4	-1,174.0	1,364.6	0.00	0.00	0.00
4,600.0	20.00	300.64	4,360.2	712.9	-1,203.5	1,398.8	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 333-24
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5754.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5754.0ft (Original Well Elev)
Site:	RWF 13-19	North Reference:	True
Well:	PA 333-24	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)
4,700.0	20.00	300.64	4,454.2	730.3	-1,232.9	1,432.9	0.00	0.00	0.00
4,800.0	20.00	300.64	4,548.2	747.7	-1,262.3	1,467.1	0.00	0.00	0.00
4,900.0	20.00	300.64	4,642.2	765.2	-1,291.7	1,501.3	0.00	0.00	0.00
5,000.0	20.00	300.64	4,736.1	782.6	-1,321.2	1,535.5	0.00	0.00	0.00
5,035.0	20.00	300.64	4,769.0	788.7	-1,331.5	1,547.5	0.00	0.00	0.00
Ohio Creek									
5,100.0	20.00	300.64	4,830.1	800.0	-1,350.6	1,569.7	0.00	0.00	0.00
5,114.8	20.00	300.64	4,844.0	802.6	-1,354.9	1,574.8	0.00	0.00	0.00
Upper MVRD									
5,200.0	20.00	300.64	4,924.1	817.4	-1,380.0	1,603.9	0.00	0.00	0.00
5,300.0	20.00	300.64	5,018.0	834.9	-1,409.4	1,638.1	0.00	0.00	0.00
5,400.0	20.00	300.64	5,112.0	852.3	-1,438.9	1,672.3	0.00	0.00	0.00
5,500.0	20.00	300.64	5,206.0	869.7	-1,468.3	1,706.5	0.00	0.00	0.00
5,600.0	20.00	300.64	5,299.9	887.2	-1,497.7	1,740.7	0.00	0.00	0.00
5,635.9	20.00	300.64	5,333.7	893.4	-1,508.3	1,753.0	0.00	0.00	0.00
5,700.0	19.04	300.64	5,394.1	904.3	-1,526.7	1,774.4	1.50	-1.50	0.00
5,800.0	17.54	300.64	5,489.0	920.3	-1,553.7	1,805.8	1.50	-1.50	0.00
5,900.0	16.04	300.64	5,584.8	935.0	-1,578.5	1,834.7	1.50	-1.50	0.00
6,000.0	14.54	300.64	5,681.2	948.5	-1,601.2	1,861.0	1.50	-1.50	0.00
6,100.0	13.04	300.64	5,778.4	960.6	-1,621.7	1,884.9	1.50	-1.50	0.00
6,200.0	11.54	300.64	5,876.1	971.5	-1,640.0	1,906.2	1.50	-1.50	0.00
6,284.5	10.27	300.64	5,959.0	979.6	-1,653.8	1,922.1	1.50	-1.50	0.00
Top of Gas									
6,300.0	10.04	300.64	5,974.3	981.0	-1,656.1	1,924.9	1.50	-1.50	0.00
6,400.0	8.54	300.64	6,073.0	989.2	-1,670.0	1,941.0	1.50	-1.50	0.00
6,500.0	7.04	300.64	6,172.1	996.1	-1,681.7	1,954.6	1.50	-1.50	0.00
6,600.0	5.54	300.64	6,271.5	1,001.7	-1,691.1	1,965.5	1.50	-1.50	0.00
6,700.0	4.04	300.64	6,371.1	1,006.0	-1,698.3	1,973.9	1.50	-1.50	0.00
6,800.0	2.54	300.64	6,470.9	1,008.9	-1,703.2	1,979.6	1.50	-1.50	0.00
6,900.0	1.04	300.64	6,570.9	1,010.5	-1,705.9	1,982.7	1.50	-1.50	0.00
6,969.1	0.00	0.00	6,640.0	1,010.8	-1,706.4	1,983.3	1.50	-1.50	0.00
7,000.0	0.00	0.00	6,670.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,100.0	0.00	0.00	6,770.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,870.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,300.0	0.00	0.00	6,970.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,070.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,170.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,270.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,700.0	0.00	0.00	7,370.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,723.1	0.00	0.00	7,394.0	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
Cameo									
7,800.0	0.00	0.00	7,470.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,570.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,670.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,100.0	0.00	0.00	7,770.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,200.0	0.00	0.00	7,870.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,300.0	0.00	0.00	7,970.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,400.0	0.00	0.00	8,070.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,170.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,600.0	0.00	0.00	8,270.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,673.1	0.00	0.00	8,344.0	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
RLNS									
8,700.0	0.00	0.00	8,370.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
8,800.0	0.00	0.00	8,470.9	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00

N/A
Planning Report

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Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5754.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5754.0ft (Original Well Elev)
Site:	RWF 13-19	North Reference:	True
Well:	PA 333-24	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)
8,823.1	0.00	0.00	8,494.0	1,010.8	-1,706.4	1,983.3	0.00	0.00	0.00
PBHL (PA 333-24)									

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
SHL (PA 333-24) - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	1,618,793.40	2,312,496.80	39° 30' 25.349 N	107° 56' 12.889 W
PBHL (PA 333-24) - plan hits target center - Point	0.00	0.00	8,494.0	1,010.8	-1,706.4	1,619,849.60	2,310,818.10	39° 30' 35.339 N	107° 56' 34.662 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.0	1,071.3	9 5/8"	9.625	13.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,598.1	2,479.0	G Sand		0.00	
5,035.0	4,769.0	Ohio Creek		0.00	
5,114.8	4,844.0	Upper MVRD		0.00	
6,284.5	5,959.0	Top of Gas		0.00	
7,723.1	7,394.0	Cameo		0.00	
8,673.1	8,344.0	RLNS		0.00	