

TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 13-19

PA 532-24

OH

Plan: Plan #1

Standard Planning Report

22 June, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 532-24
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 532-24	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 532-24, A2					
Well Position	+N/-S	9.5 ft	Northing:	1,618,791.30 ft	Latitude:	39° 30' 25.330 N
	+E/-W	-36.3 ft	Easting:	2,312,504.00 ft	Longitude:	107° 56' 12.796 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	51,556.12729262

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	308.86

Plan Survey Tool Program	Date	6/21/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	8,925.3 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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,066.7	23.00	308.86	1,046.3	95.3	-118.2	3.00	3.00	0.00	308.86	
5,531.8	23.00	308.86	5,156.4	1,190.0	-1,476.9	0.00	0.00	0.00	0.00	
7,065.3	0.00	0.00	6,649.0	1,380.5	-1,713.3	1.50	-1.50	0.00	180.00	
8,925.3	0.00	0.00	8,509.0	1,380.5	-1,713.3	0.00	0.00	0.00	0.00	PBHL (PA 532-24)

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 532-24
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 532-24	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 532-24)									
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	3.00	308.86	400.0	1.6	-2.0	2.6	3.00	3.00	0.00
500.0	6.00	308.86	499.6	6.6	-8.1	10.5	3.00	3.00	0.00
600.0	9.00	308.86	598.8	14.8	-18.3	23.5	3.00	3.00	0.00
700.0	12.00	308.86	697.1	26.2	-32.5	41.7	3.00	3.00	0.00
800.0	15.00	308.86	794.3	40.8	-50.7	65.1	3.00	3.00	0.00
900.0	18.00	308.86	890.2	58.6	-72.8	93.5	3.00	3.00	0.00
1,000.0	21.00	308.86	984.4	79.6	-98.8	126.9	3.00	3.00	0.00
1,066.7	23.00	308.86	1,046.3	95.3	-118.2	151.8	3.00	3.00	0.00
1,100.0	23.00	308.86	1,076.9	103.4	-128.4	164.8	0.00	0.00	0.00
9 5/8"									
1,200.0	23.00	308.86	1,169.0	127.9	-158.8	203.9	0.00	0.00	0.00
1,300.0	23.00	308.86	1,261.0	152.5	-189.2	243.0	0.00	0.00	0.00
1,400.0	23.00	308.86	1,353.1	177.0	-219.6	282.1	0.00	0.00	0.00
1,500.0	23.00	308.86	1,445.1	201.5	-250.1	321.2	0.00	0.00	0.00
1,600.0	23.00	308.86	1,537.2	226.0	-280.5	360.2	0.00	0.00	0.00
1,700.0	23.00	308.86	1,629.2	250.5	-310.9	399.3	0.00	0.00	0.00
1,800.0	23.00	308.86	1,721.3	275.1	-341.4	438.4	0.00	0.00	0.00
1,900.0	23.00	308.86	1,813.3	299.6	-371.8	477.5	0.00	0.00	0.00
2,000.0	23.00	308.86	1,905.4	324.1	-402.2	516.5	0.00	0.00	0.00
2,100.0	23.00	308.86	1,997.4	348.6	-432.6	555.6	0.00	0.00	0.00
2,200.0	23.00	308.86	2,089.5	373.1	-463.1	594.7	0.00	0.00	0.00
2,300.0	23.00	308.86	2,181.5	397.6	-493.5	633.8	0.00	0.00	0.00
2,400.0	23.00	308.86	2,273.6	422.2	-523.9	672.8	0.00	0.00	0.00
2,500.0	23.00	308.86	2,365.6	446.7	-554.3	711.9	0.00	0.00	0.00
2,600.0	23.00	308.86	2,457.7	471.2	-584.8	751.0	0.00	0.00	0.00
2,623.2	23.00	308.86	2,479.0	476.9	-591.8	760.0	0.00	0.00	0.00
G Sand									
2,700.0	23.00	308.86	2,549.7	495.7	-615.2	790.1	0.00	0.00	0.00
2,800.0	23.00	308.86	2,641.8	520.2	-645.6	829.1	0.00	0.00	0.00
2,900.0	23.00	308.86	2,733.8	544.7	-676.1	868.2	0.00	0.00	0.00
3,000.0	23.00	308.86	2,825.9	569.3	-706.5	907.3	0.00	0.00	0.00
3,100.0	23.00	308.86	2,917.9	593.8	-736.9	946.4	0.00	0.00	0.00
3,200.0	23.00	308.86	3,010.0	618.3	-767.3	985.4	0.00	0.00	0.00
3,300.0	23.00	308.86	3,102.0	642.8	-797.8	1,024.5	0.00	0.00	0.00
3,400.0	23.00	308.86	3,194.1	667.3	-828.2	1,063.6	0.00	0.00	0.00
3,500.0	23.00	308.86	3,286.1	691.8	-858.6	1,102.7	0.00	0.00	0.00
3,600.0	23.00	308.86	3,378.2	716.4	-889.1	1,141.7	0.00	0.00	0.00
3,700.0	23.00	308.86	3,470.2	740.9	-919.5	1,180.8	0.00	0.00	0.00
3,800.0	23.00	308.86	3,562.3	765.4	-949.9	1,219.9	0.00	0.00	0.00
3,900.0	23.00	308.86	3,654.3	789.9	-980.3	1,259.0	0.00	0.00	0.00
4,000.0	23.00	308.86	3,746.4	814.4	-1,010.8	1,298.1	0.00	0.00	0.00
4,100.0	23.00	308.86	3,838.4	838.9	-1,041.2	1,337.1	0.00	0.00	0.00
4,200.0	23.00	308.86	3,930.5	863.5	-1,071.6	1,376.2	0.00	0.00	0.00
4,300.0	23.00	308.86	4,022.5	888.0	-1,102.0	1,415.3	0.00	0.00	0.00
4,400.0	23.00	308.86	4,114.6	912.5	-1,132.5	1,454.4	0.00	0.00	0.00
4,500.0	23.00	308.86	4,206.6	937.0	-1,162.9	1,493.4	0.00	0.00	0.00
4,600.0	23.00	308.86	4,298.6	961.5	-1,193.3	1,532.5	0.00	0.00	0.00
4,700.0	23.00	308.86	4,390.7	986.1	-1,223.8	1,571.6	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 532-24
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 532-24	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)	
4,800.0	23.00	308.86	4,482.7	1,010.6	-1,254.2	1,610.7	0.00	0.00	0.00	
4,900.0	23.00	308.86	4,574.8	1,035.1	-1,284.6	1,649.7	0.00	0.00	0.00	
5,000.0	23.00	308.86	4,666.8	1,059.6	-1,315.0	1,688.8	0.00	0.00	0.00	
5,100.0	23.00	308.86	4,758.9	1,084.1	-1,345.5	1,727.9	0.00	0.00	0.00	
5,127.3	23.00	308.86	4,784.0	1,090.8	-1,353.8	1,738.5	0.00	0.00	0.00	
Ohio Creek										
5,200.0	23.00	308.86	4,850.9	1,108.6	-1,375.9	1,767.0	0.00	0.00	0.00	
5,208.7	23.00	308.86	4,859.0	1,110.8	-1,378.6	1,770.4	0.00	0.00	0.00	
Upper MVRD										
5,300.0	23.00	308.86	4,943.0	1,133.2	-1,406.3	1,806.0	0.00	0.00	0.00	
5,400.0	23.00	308.86	5,035.0	1,157.7	-1,436.7	1,845.1	0.00	0.00	0.00	
5,500.0	23.00	308.86	5,127.1	1,182.2	-1,467.2	1,884.2	0.00	0.00	0.00	
5,531.8	23.00	308.86	5,156.4	1,190.0	-1,476.9	1,896.6	0.00	0.00	0.00	
5,600.0	21.98	308.86	5,219.4	1,206.4	-1,497.2	1,922.7	1.50	-1.50	0.00	
5,700.0	20.48	308.86	5,312.6	1,229.1	-1,525.4	1,958.9	1.50	-1.50	0.00	
5,800.0	18.98	308.86	5,406.7	1,250.3	-1,551.6	1,992.7	1.50	-1.50	0.00	
5,900.0	17.48	308.86	5,501.7	1,269.9	-1,576.0	2,024.0	1.50	-1.50	0.00	
6,000.0	15.98	308.86	5,597.5	1,287.9	-1,598.4	2,052.7	1.50	-1.50	0.00	
6,100.0	14.48	308.86	5,693.9	1,304.4	-1,618.9	2,079.0	1.50	-1.50	0.00	
6,200.0	12.98	308.86	5,791.1	1,319.3	-1,637.4	2,102.7	1.50	-1.50	0.00	
6,300.0	11.48	308.86	5,888.8	1,332.6	-1,653.8	2,123.9	1.50	-1.50	0.00	
6,386.7	10.18	308.86	5,974.0	1,342.8	-1,666.5	2,140.2	1.50	-1.50	0.00	
Top of Gas										
6,400.0	9.98	308.86	5,987.1	1,344.3	-1,668.3	2,142.5	1.50	-1.50	0.00	
6,500.0	8.48	308.86	6,085.8	1,354.3	-1,680.8	2,158.6	1.50	-1.50	0.00	
6,600.0	6.98	308.86	6,184.9	1,362.8	-1,691.3	2,172.0	1.50	-1.50	0.00	
6,700.0	5.48	308.86	6,284.3	1,369.6	-1,699.8	2,182.9	1.50	-1.50	0.00	
6,800.0	3.98	308.86	6,383.9	1,374.8	-1,706.2	2,191.1	1.50	-1.50	0.00	
6,900.0	2.48	308.86	6,483.8	1,378.3	-1,710.6	2,196.8	1.50	-1.50	0.00	
7,000.0	0.98	308.86	6,583.7	1,380.2	-1,712.9	2,199.8	1.50	-1.50	0.00	
7,065.3	0.00	0.00	6,649.0	1,380.5	-1,713.3	2,200.3	1.50	-1.50	0.00	
7,100.0	0.00	0.00	6,683.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,200.0	0.00	0.00	6,783.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,300.0	0.00	0.00	6,883.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,400.0	0.00	0.00	6,983.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,083.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,183.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,283.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,383.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
7,825.3	0.00	0.00	7,409.0	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
Cameo										
7,900.0	0.00	0.00	7,483.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,583.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,683.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,783.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,300.0	0.00	0.00	7,883.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,400.0	0.00	0.00	7,983.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,083.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,183.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,283.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,775.3	0.00	0.00	8,359.0	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
RLNS										
8,800.0	0.00	0.00	8,383.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,483.7	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00	

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 532-24
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 532-24	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)
8,925.3	0.00	0.00	8,509.0	1,380.5	-1,713.3	2,200.3	0.00	0.00	0.00
PBHL (PA 532-24)									

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 532-24) - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	1,618,791.30	2,312,504.00	39° 30' 25.330 N	107° 56' 12.796 W
PBHL (PA 532-24) - plan hits target center - Point	0.00	0.00	8,509.0	1,380.5	-1,713.3	1,620,217.30	2,310,828.30	39° 30' 38.974 N	107° 56' 34.658 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.0	1,076.9	9 5/8"	9.625	13.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,623.2	2,479.0	G Sand		0.00		
5,127.3	4,784.0	Ohio Creek		0.00		
5,208.7	4,859.0	Upper MVRD		0.00		
6,386.7	5,974.0	Top of Gas		0.00		
7,825.3	7,409.0	Cameo		0.00		
8,775.3	8,359.0	RLNS		0.00		