

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 514-4 BTV	6205.00	3428.40	1059.86	33695.57	323300.1600	39.5487383	-107.9000174	Point (Radius: 50.00)
- plan misses target center by 72.26usft at 17272.38usft MD (6208.69 TVD, 3402.25 N, 1051.80 E)								
RWF 514-4 PBHL	9098.00	3428.40	1059.86	33695.57	323300.1600	39.5487383	-107.9000174	Point
- plan misses target center by 0.01usft at 10162.94usft MD (9098.00 TVD, 3428.40 N, 1059.88 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 12-9 Pad

RWF 514-4 - Slot RWF 514-4 (A2)

OH

Plan: Plan #1 25Sept2019mmsdi

Standard Planning Report

08 October, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 514-4 - Slot RWF 514-4 (A2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 514-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

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 12-9 Pad, Sec 9 T6S R94W				
Site Position:		Northing:	1,630,302.1330 usft	Latitude:	39.5393436
From:	Map	Easting:	2,322,174.9450 usft	Longitude:	-107.9036880
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.52

Well	RWF 514-4 - Slot RWF 514-4 (A2)					
Well Position	+N/-S	-6.39 usft	Northing:	1,630,296.4070 usft	Latitude:	39.5393260
	+E/-W	-24.83 usft	Easting:	2,322,149.9500 usft	Longitude:	-107.9037760
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,979.60 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/25/2019	9.30	65.73	51,444

Design	Plan #1 25Sept2019mmsdi			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	17.18

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
235.71	3.00	15.00	235.68	2.17	0.58	3.50	3.50	0.00	15.00	
310.71	3.00	15.00	310.57	5.96	1.60	0.00	0.00	0.00	0.00	
1,128.95	35.73	17.20	1,072.07	261.85	79.91	4.00	4.00	0.27	2.37	
5,882.30	35.73	17.20	4,930.88	2,913.35	900.55	0.00	0.00	0.00	0.00	
7,268.65	8.00	17.16	6,205.00	3,401.76	1,051.65	2.00	-2.00	0.00	-179.99	
7,668.65	0.00	0.00	6,603.70	3,428.40	1,059.88	2.00	-2.00	0.00	180.00	
10,162.94	0.00	0.00	9,098.00	3,428.40	1,059.88	0.00	0.00	0.00	0.00	RWF 514-4 PBHL

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Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 514-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.50									
200.00	1.75	15.00	199.99	0.74	0.20	0.76	3.50	3.50	0.00
235.71	3.00	15.00	235.68	2.17	0.58	2.24	3.50	3.50	0.00
Start 75.00 hold at 235.71 MD									
300.00	3.00	15.00	299.87	5.42	1.45	5.60	0.00	0.00	0.00
310.71	3.00	15.00	310.57	5.96	1.60	6.16	0.00	0.00	0.00
Start DLS 4.00 TFO 2.37									
400.00	6.57	16.29	399.53	13.12	3.63	13.61	4.00	4.00	1.45
500.00	10.57	16.70	498.40	27.40	7.88	28.51	4.00	4.00	0.41
600.00	14.57	16.89	595.98	48.23	14.17	50.26	4.00	4.00	0.19
700.00	18.57	17.00	691.81	75.50	22.48	78.78	4.00	4.00	0.11
800.00	22.57	17.07	785.41	109.09	32.78	113.90	4.00	4.00	0.07
900.00	26.57	17.12	876.34	148.82	45.00	155.47	4.00	4.00	0.05
1,000.00	30.57	17.16	964.15	194.51	59.09	203.28	4.00	4.00	0.04
9 5/8" Casing @ 1000' MD									
1,100.00	34.57	17.19	1,048.40	245.93	74.99	257.11	4.00	4.00	0.03
1,128.95	35.73	17.20	1,072.07	261.85	79.91	273.77	4.00	4.00	0.03
Start 4753.35 hold at 1128.95 MD									
1,200.00	35.73	17.20	1,129.75	301.48	92.18	315.26	0.00	0.00	0.00
1,300.00	35.73	17.20	1,210.94	357.27	109.44	373.65	0.00	0.00	0.00
1,400.00	35.73	17.20	1,292.12	413.05	126.71	432.04	0.00	0.00	0.00
1,500.00	35.73	17.20	1,373.30	468.83	143.97	490.44	0.00	0.00	0.00
1,600.00	35.73	17.20	1,454.48	524.61	161.24	548.83	0.00	0.00	0.00
1,700.00	35.73	17.20	1,535.66	580.39	178.50	607.22	0.00	0.00	0.00
1,800.00	35.73	17.20	1,616.84	636.17	195.77	665.61	0.00	0.00	0.00
1,900.00	35.73	17.20	1,698.02	691.96	213.03	724.01	0.00	0.00	0.00
2,000.00	35.73	17.20	1,779.20	747.74	230.29	782.40	0.00	0.00	0.00
2,100.00	35.73	17.20	1,860.38	803.52	247.56	840.79	0.00	0.00	0.00
2,200.00	35.73	17.20	1,941.56	859.30	264.82	899.18	0.00	0.00	0.00
2,300.00	35.73	17.20	2,022.74	915.08	282.09	957.57	0.00	0.00	0.00
2,400.00	35.73	17.20	2,103.93	970.86	299.35	1,015.97	0.00	0.00	0.00
2,500.00	35.73	17.20	2,185.11	1,026.65	316.62	1,074.36	0.00	0.00	0.00
2,600.00	35.73	17.20	2,266.29	1,082.43	333.88	1,132.75	0.00	0.00	0.00
2,700.00	35.73	17.20	2,347.47	1,138.21	351.15	1,191.14	0.00	0.00	0.00
2,800.00	35.73	17.20	2,428.65	1,193.99	368.41	1,249.54	0.00	0.00	0.00
2,900.00	35.73	17.20	2,509.83	1,249.77	385.67	1,307.93	0.00	0.00	0.00
3,000.00	35.73	17.20	2,591.01	1,305.55	402.94	1,366.32	0.00	0.00	0.00
3,100.00	35.73	17.20	2,672.19	1,361.34	420.20	1,424.71	0.00	0.00	0.00
3,109.62	35.73	17.20	2,680.00	1,366.70	421.86	1,430.33	0.00	0.00	0.00
G Sand									
3,200.00	35.73	17.20	2,753.37	1,417.12	437.47	1,483.11	0.00	0.00	0.00
3,232.80	35.73	17.20	2,780.00	1,435.41	443.13	1,502.26	0.00	0.00	0.00
Base G Sand									
3,300.00	35.73	17.20	2,834.55	1,472.90	454.73	1,541.50	0.00	0.00	0.00
3,400.00	35.73	17.20	2,915.73	1,528.68	472.00	1,599.89	0.00	0.00	0.00
3,500.00	35.73	17.20	2,996.91	1,584.46	489.26	1,658.28	0.00	0.00	0.00
3,600.00	35.73	17.20	3,078.10	1,640.24	506.53	1,716.67	0.00	0.00	0.00
3,700.00	35.73	17.20	3,159.28	1,696.03	523.79	1,775.07	0.00	0.00	0.00
3,800.00	35.73	17.20	3,240.46	1,751.81	541.06	1,833.46	0.00	0.00	0.00
3,900.00	35.73	17.20	3,321.64	1,807.59	558.32	1,891.85	0.00	0.00	0.00

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Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 514-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

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)
4,000.00	35.73	17.20	3,402.82	1,863.37	575.58	1,950.24	0.00	0.00	0.00
4,100.00	35.73	17.20	3,484.00	1,919.15	592.85	2,008.64	0.00	0.00	0.00
4,200.00	35.73	17.20	3,565.18	1,974.94	610.11	2,067.03	0.00	0.00	0.00
4,300.00	35.73	17.20	3,646.36	2,030.72	627.38	2,125.42	0.00	0.00	0.00
4,400.00	35.73	17.20	3,727.54	2,086.50	644.64	2,183.81	0.00	0.00	0.00
4,500.00	35.73	17.20	3,808.72	2,142.28	661.91	2,242.21	0.00	0.00	0.00
4,600.00	35.73	17.20	3,889.90	2,198.06	679.17	2,300.60	0.00	0.00	0.00
4,700.00	35.73	17.20	3,971.09	2,253.84	696.44	2,358.99	0.00	0.00	0.00
4,800.00	35.73	17.20	4,052.27	2,309.63	713.70	2,417.38	0.00	0.00	0.00
4,900.00	35.73	17.20	4,133.45	2,365.41	730.96	2,475.78	0.00	0.00	0.00
5,000.00	35.73	17.20	4,214.63	2,421.19	748.23	2,534.17	0.00	0.00	0.00
5,100.00	35.73	17.20	4,295.81	2,476.97	765.49	2,592.56	0.00	0.00	0.00
5,200.00	35.73	17.20	4,376.99	2,532.75	782.76	2,650.95	0.00	0.00	0.00
5,300.00	35.73	17.20	4,458.17	2,588.53	800.02	2,709.34	0.00	0.00	0.00
5,376.16	35.73	17.20	4,520.00	2,631.02	813.17	2,753.82	0.00	0.00	0.00
Lower Wasatch									
5,400.00	35.73	17.20	4,539.35	2,644.32	817.29	2,767.74	0.00	0.00	0.00
5,500.00	35.73	17.20	4,620.53	2,700.10	834.55	2,826.13	0.00	0.00	0.00
5,600.00	35.73	17.20	4,701.71	2,755.88	851.82	2,884.52	0.00	0.00	0.00
5,700.00	35.73	17.20	4,782.89	2,811.66	869.08	2,942.91	0.00	0.00	0.00
5,800.00	35.73	17.20	4,864.07	2,867.44	886.35	3,001.31	0.00	0.00	0.00
5,882.30	35.73	17.20	4,930.88	2,913.35	900.55	3,049.36	0.00	0.00	0.00
Start DLS 2.00 TFO -179.99									
5,900.00	35.37	17.20	4,945.29	2,923.18	903.60	3,059.65	2.00	-2.00	0.00
6,000.00	33.37	17.20	5,027.82	2,977.11	920.29	3,116.11	2.00	-2.00	0.00
6,100.00	31.37	17.20	5,112.28	3,028.26	936.12	3,169.65	2.00	-2.00	0.00
6,178.67	29.80	17.20	5,180.00	3,066.50	947.95	3,209.68	2.00	-2.00	0.00
MVRD									
6,200.00	29.37	17.19	5,198.55	3,076.56	951.06	3,220.21	2.00	-2.00	0.00
6,300.00	27.37	17.19	5,286.53	3,121.95	965.11	3,267.73	2.00	-2.00	0.00
6,400.00	25.37	17.19	5,376.12	3,164.39	978.24	3,312.15	2.00	-2.00	0.00
6,500.00	23.37	17.19	5,467.20	3,203.81	990.44	3,353.41	2.00	-2.00	0.00
6,600.00	21.37	17.19	5,559.67	3,240.17	1,001.69	3,391.47	2.00	-2.00	0.00
6,700.00	19.37	17.19	5,653.41	3,273.43	1,011.97	3,426.28	2.00	-2.00	0.00
6,800.00	17.37	17.19	5,748.31	3,303.54	1,021.29	3,457.80	2.00	-2.00	0.00
6,900.00	15.37	17.18	5,844.25	3,330.47	1,029.62	3,485.99	2.00	-2.00	0.00
7,000.00	13.37	17.18	5,941.11	3,354.18	1,036.95	3,510.81	2.00	-2.00	0.00
7,100.00	11.37	17.17	6,038.78	3,374.65	1,043.28	3,532.24	2.00	-2.00	0.00
7,200.00	9.37	17.17	6,137.14	3,391.85	1,048.59	3,550.24	2.00	-2.00	-0.01
7,268.65	8.00	17.16	6,205.00	3,401.76	1,051.65	3,560.61	2.00	-2.00	-0.01
Start Drop -2.00 - Top Gas									
7,272.38	7.93	17.16	6,208.69	3,402.25	1,051.80	3,561.13	2.00	-2.00	0.00
RWF 514-4 BTV									
7,300.00	7.37	17.16	6,236.07	3,405.77	1,052.89	3,564.80	2.00	-2.00	0.00
7,400.00	5.37	17.16	6,335.45	3,416.37	1,056.16	3,575.90	2.00	-2.00	0.00
7,500.00	3.37	17.16	6,435.15	3,423.66	1,058.41	3,583.53	2.00	-2.00	0.00
7,600.00	1.37	17.16	6,535.06	3,427.61	1,059.63	3,587.67	2.00	-2.00	0.00
7,668.65	0.00	0.00	6,603.70	3,428.40	1,059.88	3,588.49	2.00	-2.00	0.00
Start 2494.30 hold at 7668.65 MD									
7,700.00	0.00	0.00	6,635.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
7,800.00	0.00	0.00	6,735.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
7,900.00	0.00	0.00	6,835.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,000.00	0.00	0.00	6,935.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00

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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)
8,100.00	0.00	0.00	7,035.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,200.00	0.00	0.00	7,135.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,300.00	0.00	0.00	7,235.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,400.00	0.00	0.00	7,335.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,500.00	0.00	0.00	7,435.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,600.00	0.00	0.00	7,535.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,700.00	0.00	0.00	7,635.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,800.00	0.00	0.00	7,735.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
8,900.00	0.00	0.00	7,835.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,000.00	0.00	0.00	7,935.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,100.00	0.00	0.00	8,035.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,115.94	0.00	0.00	8,051.00	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
Cameo									
9,200.00	0.00	0.00	8,135.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,300.00	0.00	0.00	8,235.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,400.00	0.00	0.00	8,335.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,500.00	0.00	0.00	8,435.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,600.00	0.00	0.00	8,535.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,700.00	0.00	0.00	8,635.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,800.00	0.00	0.00	8,735.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
9,900.00	0.00	0.00	8,835.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
10,000.00	0.00	0.00	8,935.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
10,012.94	0.00	0.00	8,948.00	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
RLNS									
10,100.00	0.00	0.00	9,035.06	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
10,162.94	0.00	0.00	9,098.00	3,428.40	1,059.88	3,588.49	0.00	0.00	0.00
TD at 10162.94 - TD - RWF 514-4 PBHL									

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									
RWF 514-4 BTV	0.00	0.00	6,205.00	3,428.40	1,059.88	1,633,695.5700	2,323,300.1600	39.5487383	-107.9000175
- plan misses target center by 27.62usft at 7272.38usft MD (6208.69 TVD, 3402.25 N, 1051.80 E)									
- Circle (radius 50.00)									
RWF 514-4 PBHL	0.00	0.00	9,098.00	3,428.40	1,059.88	1,633,695.5700	2,323,300.1600	39.5487383	-107.9000175
- plan misses target center by 0.01usft at 10162.94usft MD (9098.00 TVD, 3428.40 N, 1059.88 E)									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	964.15	9 5/8" Casing @ 1000' MD	9.62	13.50	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 514-4 - Slot RWF 514-4 (A2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 514-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,109.62	2,680.00	G Sand		0.00	0.00	
3,232.80	2,780.00	Base G Sand		0.00	0.00	
5,376.16	4,520.00	Lower Wasatch		0.00	0.00	
6,178.67	5,180.00	MVRD		0.00	0.00	
7,268.65	6,205.00	Top Gas		0.00	0.00	
9,115.94	8,051.00	Cameo		0.00	0.00	
10,012.94	8,948.00	RLNS		0.00	0.00	
10,162.94	9,098.00	TD		0.00	0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
150.00	150.00	0.00	0.00	Start Build 3.50	
235.71	235.68	2.17	0.58	Start 75.00 hold at 235.71 MD	
310.71	310.57	5.96	1.60	Start DLS 4.00 TFO 2.37	
1,128.95	1,072.07	261.85	79.91	Start 4753.35 hold at 1128.95 MD	
5,882.30	4,930.88	2,913.35	900.55	Start DLS 2.00 TFO -179.99	
7,268.65	6,205.00	3,401.76	1,051.65	Start Drop -2.00	
7,668.65	6,603.70	3,428.40	1,059.88	Start 2494.30 hold at 7668.65 MD	
10,162.94	9,098.00	3,428.40	1,059.88	TD at 10162.94	