

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PA 14-23 KMV	5762.00	2255.32	-2271.70	1618760.40	2302531.00	39.5062209	-107.9722014	Circle (Radius: 50.00)
- plan misses target center by 36.82usft at 6700.10usft MD (5766.60 TVD, 2229.58 N, -2245.78 E)								
PA 14-23 PBHL	8396.00	2255.32	-2271.70	1618760.40	2302531.00	39.5062209	-107.9722014	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 31-26 Pad

PA 14-23 - Slot PA 14-23 (B3)

OH

Plan: Plan #3 19Jun2019mmsdi

Standard Planning Report

25 June, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 14-23 - Slot PA 14-23 (B3)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 14-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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 31-26 Pad			
Site Position:		Northing:	1,616,455.80 usft	Latitude: 39.5000599
From: Map		Easting:	2,304,726.80 usft	Longitude: -107.9642007
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.55 °

Well	PA 14-23 - Slot PA 14-23 (B3)			
Well Position	+N/-S	-11.12 usft	Northing:	1,616,444.30 usft
	+E/-W	14.21 usft	Easting:	2,304,740.70 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	5,486.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/26/2018	9.40	65.77	51,650

Design	Plan #3 19Jun2019mmsdi			
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	314.79

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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,350.47	36.91	314.79	1,267.10	269.74	-271.70	3.00	3.00	0.00	314.79	
4,767.85	36.91	314.79	3,999.41	1,715.84	-1,728.30	0.00	0.00	0.00	0.00	
6,695.46	8.00	314.79	5,762.00	2,229.13	-2,245.32	1.50	-1.50	0.00	180.00	
7,228.79	0.00	0.00	6,293.60	2,255.32	-2,271.70	1.50	-1.50	0.00	180.00	
9,331.19	0.00	0.00	8,396.00	2,255.32	-2,271.70	0.00	0.00	0.00	0.00	PA 14-23 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 14-23 - Slot PA 14-23 (B3)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 14-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	2.40	314.79	199.98	1.18	-1.19	1.68	3.00	3.00	0.00
300.00	5.40	314.79	299.73	5.97	-6.02	8.48	3.00	3.00	0.00
400.00	8.40	314.79	399.00	14.43	-14.54	20.49	3.00	3.00	0.00
500.00	11.40	314.79	497.50	26.55	-26.74	37.68	3.00	3.00	0.00
600.00	14.40	314.79	594.96	42.27	-42.58	60.00	3.00	3.00	0.00
700.00	17.40	314.79	691.13	61.57	-62.02	87.39	3.00	3.00	0.00
800.00	20.40	314.79	785.72	84.39	-85.00	119.78	3.00	3.00	0.00
900.00	23.40	314.79	878.50	110.67	-111.47	157.08	3.00	3.00	0.00
1,000.00	26.40	314.79	969.19	140.33	-141.35	199.18	3.00	3.00	0.00
1,100.00	29.40	314.79	1,057.56	173.29	-174.55	245.96	3.00	3.00	0.00
9 5/8" Casing @ 1100' MD									
1,200.00	32.40	314.79	1,143.35	209.47	-210.99	297.31	3.00	3.00	0.00
1,300.00	35.40	314.79	1,226.35	248.76	-250.57	353.08	3.00	3.00	0.00
1,350.47	36.91	314.79	1,267.10	269.74	-271.70	382.86	3.00	3.00	0.00
Start 3417.38 hold at 1350.47 MD									
1,400.00	36.91	314.79	1,306.70	290.70	-292.81	412.60	0.00	0.00	0.00
1,500.00	36.91	314.79	1,386.65	333.01	-335.43	472.67	0.00	0.00	0.00
1,600.00	36.91	314.79	1,466.60	375.33	-378.06	532.73	0.00	0.00	0.00
1,700.00	36.91	314.79	1,546.56	417.65	-420.68	592.79	0.00	0.00	0.00
1,800.00	36.91	314.79	1,626.51	459.96	-463.30	652.85	0.00	0.00	0.00
1,900.00	36.91	314.79	1,706.46	502.28	-505.93	712.91	0.00	0.00	0.00
2,000.00	36.91	314.79	1,786.42	544.59	-548.55	772.98	0.00	0.00	0.00
2,100.00	36.91	314.79	1,866.37	586.91	-591.17	833.04	0.00	0.00	0.00
2,200.00	36.91	314.79	1,946.32	629.23	-633.80	893.10	0.00	0.00	0.00
2,300.00	36.91	314.79	2,026.28	671.54	-676.42	953.16	0.00	0.00	0.00
2,400.00	36.91	314.79	2,106.23	713.86	-719.04	1,013.22	0.00	0.00	0.00
2,500.00	36.91	314.79	2,186.19	756.18	-761.67	1,073.28	0.00	0.00	0.00
2,600.00	36.91	314.79	2,266.14	798.49	-804.29	1,133.35	0.00	0.00	0.00
2,700.00	36.91	314.79	2,346.09	840.81	-846.91	1,193.41	0.00	0.00	0.00
2,708.64	36.91	314.79	2,353.00	844.46	-850.60	1,198.60	0.00	0.00	0.00
G SAND TOP									
2,796.19	36.91	314.79	2,423.00	881.51	-887.91	1,251.18	0.00	0.00	0.00
G SAND BASE									
2,800.00	36.91	314.79	2,426.05	883.12	-889.54	1,253.47	0.00	0.00	0.00
2,900.00	36.91	314.79	2,506.00	925.44	-932.16	1,313.53	0.00	0.00	0.00
3,000.00	36.91	314.79	2,585.95	967.76	-974.79	1,373.59	0.00	0.00	0.00
3,100.00	36.91	314.79	2,665.91	1,010.07	-1,017.41	1,433.65	0.00	0.00	0.00
3,200.00	36.91	314.79	2,745.86	1,052.39	-1,060.03	1,493.72	0.00	0.00	0.00
3,300.00	36.91	314.79	2,825.81	1,094.70	-1,102.66	1,553.78	0.00	0.00	0.00
3,400.00	36.91	314.79	2,905.77	1,137.02	-1,145.28	1,613.84	0.00	0.00	0.00
3,500.00	36.91	314.79	2,985.72	1,179.34	-1,187.90	1,673.90	0.00	0.00	0.00
3,600.00	36.91	314.79	3,065.68	1,221.65	-1,230.53	1,733.96	0.00	0.00	0.00
3,700.00	36.91	314.79	3,145.63	1,263.97	-1,273.15	1,794.03	0.00	0.00	0.00
3,800.00	36.91	314.79	3,225.58	1,306.29	-1,315.77	1,854.09	0.00	0.00	0.00
3,900.00	36.91	314.79	3,305.54	1,348.60	-1,358.40	1,914.15	0.00	0.00	0.00
4,000.00	36.91	314.79	3,385.49	1,390.92	-1,401.02	1,974.21	0.00	0.00	0.00
4,100.00	36.91	314.79	3,465.44	1,433.23	-1,443.64	2,034.27	0.00	0.00	0.00
4,200.00	36.91	314.79	3,545.40	1,475.55	-1,486.27	2,094.33	0.00	0.00	0.00
4,300.00	36.91	314.79	3,625.35	1,517.87	-1,528.89	2,154.40	0.00	0.00	0.00
4,400.00	36.91	314.79	3,705.30	1,560.18	-1,571.51	2,214.46	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 14-23 - Slot PA 14-23 (B3)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 14-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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)
4,500.00	36.91	314.79	3,785.26	1,602.50	-1,614.14	2,274.52	0.00	0.00	0.00
4,600.00	36.91	314.79	3,865.21	1,644.81	-1,656.76	2,334.58	0.00	0.00	0.00
4,677.28	36.91	314.79	3,927.00	1,677.52	-1,689.70	2,381.00	0.00	0.00	0.00
LOWER WSTC									
4,700.00	36.91	314.79	3,945.17	1,687.13	-1,699.38	2,394.64	0.00	0.00	0.00
4,767.85	36.91	314.79	3,999.41	1,715.84	-1,728.30	2,435.39	0.00	0.00	0.00
Start Drop -1.50									
4,800.00	36.43	314.79	4,025.20	1,729.37	-1,741.93	2,454.60	1.50	-1.50	0.00
4,900.00	34.93	314.79	4,106.42	1,770.46	-1,783.32	2,512.92	1.50	-1.50	0.00
5,000.00	33.43	314.79	4,189.15	1,810.05	-1,823.19	2,569.10	1.50	-1.50	0.00
5,100.00	31.93	314.79	4,273.31	1,848.09	-1,861.51	2,623.10	1.50	-1.50	0.00
5,200.00	30.43	314.79	4,358.86	1,884.57	-1,898.25	2,674.87	1.50	-1.50	0.00
5,300.00	28.93	314.79	4,445.74	1,919.45	-1,933.39	2,724.39	1.50	-1.50	0.00
5,400.00	27.43	314.79	4,533.88	1,952.72	-1,966.91	2,771.62	1.50	-1.50	0.00
5,499.74	25.94	314.79	4,623.00	1,984.28	-1,998.69	2,816.41	1.50	-1.50	0.00
OCRK - WRFK/UMVRD									
5,500.00	25.93	314.79	4,623.23	1,984.36	-1,998.77	2,816.52	1.50	-1.50	0.00
5,600.00	24.43	314.79	4,713.73	2,014.34	-2,028.97	2,859.07	1.50	-1.50	0.00
5,700.00	22.93	314.79	4,805.30	2,042.64	-2,057.47	2,899.23	1.50	-1.50	0.00
5,800.00	21.43	314.79	4,897.90	2,069.23	-2,084.26	2,936.99	1.50	-1.50	0.00
5,900.00	19.93	314.79	4,991.45	2,094.12	-2,109.33	2,972.30	1.50	-1.50	0.00
6,000.00	18.43	314.79	5,085.90	2,117.26	-2,132.64	3,005.16	1.50	-1.50	0.00
6,100.00	16.93	314.79	5,181.17	2,138.66	-2,154.20	3,035.53	1.50	-1.50	0.00
6,200.00	15.43	314.79	5,277.21	2,158.30	-2,173.97	3,063.40	1.50	-1.50	0.00
6,300.00	13.93	314.79	5,373.94	2,176.15	-2,191.96	3,088.74	1.50	-1.50	0.00
6,400.00	12.43	314.79	5,471.30	2,192.22	-2,208.14	3,111.55	1.50	-1.50	0.00
6,500.00	10.93	314.79	5,569.23	2,206.48	-2,222.51	3,131.79	1.50	-1.50	0.00
6,600.00	9.43	314.79	5,667.65	2,218.94	-2,235.05	3,149.47	1.50	-1.50	0.00
6,695.46	8.00	314.79	5,762.00	2,229.13	-2,245.32	3,163.93	1.50	-1.50	0.00
Start Drop -1.50 - KMGAS									
6,700.00	7.93	314.79	5,766.50	2,229.57	-2,245.77	3,164.56	1.50	-1.50	0.00
6,700.11	7.93	314.79	5,766.60	2,229.58	-2,245.78	3,164.58	0.00	0.00	0.00
PA 14-23 KMV									
6,800.00	6.43	314.79	5,865.71	2,238.38	-2,254.64	3,177.07	1.50	-1.50	0.00
6,900.00	4.93	314.79	5,965.22	2,245.36	-2,261.66	3,186.97	1.50	-1.50	0.00
7,000.00	3.43	314.79	6,064.95	2,250.49	-2,266.84	3,194.26	1.50	-1.50	0.00
7,100.00	1.93	314.79	6,164.84	2,253.79	-2,270.16	3,198.94	1.50	-1.50	0.00
7,200.00	0.43	314.79	6,264.81	2,255.24	-2,271.62	3,201.00	1.50	-1.50	0.00
7,228.79	0.00	0.00	6,293.60	2,255.32	-2,271.70	3,201.11	1.50	-1.50	157.02
Start 2102.40 hold at 7228.79 MD									
7,300.00	0.00	0.00	6,364.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
7,400.00	0.00	0.00	6,464.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
7,500.00	0.00	0.00	6,564.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
7,600.00	0.00	0.00	6,664.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
7,700.00	0.00	0.00	6,764.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
7,800.00	0.00	0.00	6,864.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
7,900.00	0.00	0.00	6,964.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
8,000.00	0.00	0.00	7,064.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
8,100.00	0.00	0.00	7,164.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
8,200.00	0.00	0.00	7,264.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
8,300.00	0.00	0.00	7,364.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
8,400.00	0.00	0.00	7,464.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00
8,500.00	0.00	0.00	7,564.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00

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Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 14-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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)	
8,600.00	0.00	0.00	7,664.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
8,700.00	0.00	0.00	7,764.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
8,756.19	0.00	0.00	7,821.00	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
CMEO										
8,800.00	0.00	0.00	7,864.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
8,900.00	0.00	0.00	7,964.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,064.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,164.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
9,103.19	0.00	0.00	8,168.00	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
RLNS										
9,200.00	0.00	0.00	8,264.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
9,300.00	0.00	0.00	8,364.81	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
9,331.19	0.00	0.00	8,396.00	2,255.32	-2,271.70	3,201.11	0.00	0.00	0.00	
TD at 9331.19 - TD - PA 14-23 PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PA 14-23 KMV	0.00	0.00	5,762.00	2,255.32	-2,271.70	1,618,760.40	2,302,531.00	39.5062209	-107.9722014	
- plan misses target center by 36.82usft at 6700.10usft MD (5766.60 TVD, 2229.58 N, -2245.78 E)										
- Circle (radius 50.00)										
PA 14-23 PBHL	0.00	0.00	8,396.00	2,255.32	-2,271.70	1,618,760.40	2,302,531.00	39.5062209	-107.9722014	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,057.56	9 5/8" Casing @ 1100' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,708.64	2,353.00	G SAND TOP		0.00	0.00	
2,796.19	2,423.00	G SAND BASE		0.00	0.00	
4,677.28	3,927.00	LOWER WSTC		0.00	0.00	
5,499.74	4,623.00	OCRK		0.00	0.00	
5,499.74	4,623.00	WRFK/UMVRD		0.00	0.00	
6,695.46	5,762.00	KMVGAS		0.00	0.00	
8,756.19	7,821.00	CMEO		0.00	0.00	
9,103.19	8,168.00	RLNS		0.00	0.00	
9,331.19	8,396.00	TD		0.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 14-23 - Slot PA 14-23 (B3)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 14-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 3.00
1,350.47	1,267.10	269.74	-271.70	Start 3417.38 hold at 1350.47 MD
4,767.85	3,999.41	1,715.84	-1,728.30	Start Drop -1.50
6,695.46	5,762.00	2,229.13	-2,245.32	Start Drop -1.50
7,228.79	6,293.60	2,255.32	-2,271.70	Start 2102.40 hold at 7228.79 MD
9,331.19	8,396.00	2,255.32	-2,271.70	TD at 9331.19