

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 523-14 KMV	3810.00	874.17	-2662.77	1593823.78	2270157.77	39.4353115	-108.0843750	Circle (Radius: 50.00)
- plan misses target center by 42.88usft at 4936.17usft MD (3816.92 TVD, 860.97 N, -2622.57 E)								
GM 523-14 PBHL	5668.00	874.17	-2662.77	1593823.78	2270157.77	39.4353115	-108.0843750	Point
- plan hits target center.								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**GM 34-14 Pad**

**GM 523-14 - Slot GM 523-14 (B9)**

**OH**

**Plan: Plan #1 1May2018 mmsdi**

## **Standard Planning Report**

**07 May, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 523-14 - Slot GM 523-14 (B9)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 523-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 mmsdi		

<b>Project</b>	Garfield County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site		GM 34-14 Pad			
Site Position:		Northing:	1,592,890.50 usft	Latitude:	39.4329552
From:	Map	Easting:	2,272,786.40 usft	Longitude:	-108.0749784
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.62 °

Well	GM 523-14 - Slot GM 523-14 (B9)					
Well Position	+N/-S	-15.76 usft	Northing:	1,592,874.50 usft	Latitude:	39.4329119
	+E/-W	8.75 usft	Easting:	2,272,794.70 usft	Longitude:	-108.0749474
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,172.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	5/3/2018	9.42	65.65	51,711

<b>Design</b>	Plan #1 1May2018 mmsdi			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	288.17

<b>Plan Sections</b>										
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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,538.01	56.12	288.17	1,324.19	197.72	-602.28	4.00	4.00	0.00	288.17	
2,623.13	56.12	288.17	1,929.09	478.72	-1,458.21	0.00	0.00	0.00	0.00	
4,929.14	10.00	288.17	3,810.00	860.59	-2,621.42	2.00	-2.00	0.00	180.00	
5,429.14	0.00	0.00	4,307.47	874.17	-2,662.77	2.00	-2.00	14.37	180.00	
6,789.68	0.00	0.00	5,668.00	874.17	-2,662.77	0.00	0.00	0.00	0.00	GM 523-14 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 523-14 - Slot GM 523-14 (B9)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 523-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 mmsdi		

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
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.60	288.17	199.98	0.46	-1.40	1.47	4.00	4.00	0.00
300.00	6.60	288.17	299.64	2.96	-9.02	9.49	4.00	4.00	0.00
400.00	10.60	288.17	398.49	7.62	-23.22	24.44	4.00	4.00	0.00
500.00	14.60	288.17	496.06	14.43	-43.95	46.25	4.00	4.00	0.00
600.00	18.60	288.17	591.88	23.34	-71.08	74.82	4.00	4.00	0.00
700.00	22.60	288.17	685.46	34.31	-104.51	109.99	4.00	4.00	0.00
800.00	26.60	288.17	776.37	47.29	-144.05	151.61	4.00	4.00	0.00
900.00	30.60	288.17	864.15	62.22	-189.52	199.47	4.00	4.00	0.00
952.69	32.71	288.17	909.00	70.84	-215.79	227.12	4.00	4.00	0.00
<b>GSAND</b>									
1,000.00	34.60	288.17	948.38	79.02	-240.70	253.34	4.00	4.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,075.04	37.60	288.17	1,009.00	92.81	-282.70	297.55	4.00	4.00	0.00
<b>GSAND BASE</b>									
1,100.00	38.60	288.17	1,028.64	97.61	-297.34	312.95	4.00	4.00	0.00
1,200.00	42.60	288.17	1,104.55	117.91	-359.15	378.01	4.00	4.00	0.00
1,300.00	46.60	288.17	1,175.74	139.80	-425.85	448.21	4.00	4.00	0.00
1,400.00	50.60	288.17	1,241.86	163.20	-497.11	523.21	4.00	4.00	0.00
1,500.00	54.60	288.17	1,302.58	187.97	-572.57	602.64	4.00	4.00	0.00
1,538.01	56.12	288.17	1,324.19	197.72	-602.28	633.90	4.00	4.00	0.00
1,600.00	56.12	288.17	1,358.75	213.78	-651.18	685.37	0.00	0.00	0.00
1,700.00	56.12	288.17	1,414.49	239.67	-730.06	768.39	0.00	0.00	0.00
1,800.00	56.12	288.17	1,470.24	265.57	-808.94	851.41	0.00	0.00	0.00
1,900.00	56.12	288.17	1,525.98	291.46	-887.82	934.43	0.00	0.00	0.00
2,000.00	56.12	288.17	1,581.73	317.36	-966.70	1,017.46	0.00	0.00	0.00
2,100.00	56.12	288.17	1,637.47	343.25	-1,045.57	1,100.48	0.00	0.00	0.00
2,200.00	56.12	288.17	1,693.22	369.15	-1,124.45	1,183.50	0.00	0.00	0.00
2,300.00	56.12	288.17	1,748.96	395.04	-1,203.33	1,266.52	0.00	0.00	0.00
2,400.00	56.12	288.17	1,804.71	420.94	-1,282.21	1,349.54	0.00	0.00	0.00
2,500.00	56.12	288.17	1,860.45	446.83	-1,361.09	1,432.56	0.00	0.00	0.00
2,600.00	56.12	288.17	1,916.20	472.73	-1,439.97	1,515.58	0.00	0.00	0.00
2,623.13	56.12	288.17	1,929.09	478.72	-1,458.21	1,534.78	0.00	0.00	0.00
2,700.00	54.58	288.17	1,972.79	498.44	-1,518.30	1,598.02	2.00	-2.00	0.00
2,800.00	52.58	288.17	2,032.16	523.54	-1,594.75	1,678.49	2.00	-2.00	0.00
2,900.00	50.58	288.17	2,094.29	547.98	-1,669.19	1,756.83	2.00	-2.00	0.00
3,000.00	48.58	288.17	2,159.12	571.73	-1,741.52	1,832.96	2.00	-2.00	0.00
3,100.00	46.58	288.17	2,226.57	594.75	-1,811.66	1,906.79	2.00	-2.00	0.00
3,200.00	44.58	288.17	2,296.56	617.03	-1,879.52	1,978.21	2.00	-2.00	0.00
3,300.00	42.58	288.17	2,368.99	638.53	-1,945.01	2,047.15	2.00	-2.00	0.00
3,400.00	40.58	288.17	2,443.79	659.23	-2,008.07	2,113.51	2.00	-2.00	0.00
3,500.00	38.58	288.17	2,520.85	679.11	-2,068.61	2,177.23	2.00	-2.00	0.00
3,600.00	36.58	288.17	2,600.10	698.13	-2,126.55	2,238.22	2.00	-2.00	0.00
3,700.00	34.58	288.17	2,681.42	716.28	-2,181.83	2,296.40	2.00	-2.00	0.00
3,710.41	34.37	288.17	2,690.00	718.12	-2,187.43	2,302.29	2.00	-2.00	0.00
<b>MVRD</b>									
3,800.00	32.58	288.17	2,764.72	733.53	-2,234.39	2,351.71	2.00	-2.00	0.00
3,900.00	30.58	288.17	2,849.91	749.87	-2,284.14	2,404.08	2.00	-2.00	0.00
4,000.00	28.58	288.17	2,936.87	765.26	-2,331.05	2,453.45	2.00	-2.00	0.00
4,100.00	26.58	288.17	3,025.50	779.70	-2,375.04	2,499.75	2.00	-2.00	0.00
4,200.00	24.58	288.17	3,115.69	793.17	-2,416.06	2,542.93	2.00	-2.00	0.00
4,300.00	22.58	288.17	3,207.33	805.65	-2,454.07	2,582.93	2.00	-2.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 523-14 - Slot GM 523-14 (B9)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 523-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 mmsdi		

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)
4,400.00	20.58	288.17	3,300.32	817.12	-2,489.02	2,619.72	2.00	-2.00	0.00
4,500.00	18.58	288.17	3,394.53	827.58	-2,520.86	2,653.23	2.00	-2.00	0.00
4,600.00	16.58	288.17	3,489.85	837.00	-2,549.56	2,683.44	2.00	-2.00	0.00
4,700.00	14.58	288.17	3,586.17	845.38	-2,575.09	2,710.30	2.00	-2.00	0.00
4,800.00	12.58	288.17	3,683.37	852.70	-2,597.40	2,733.78	2.00	-2.00	0.00
4,900.00	10.58	288.17	3,781.33	858.97	-2,616.47	2,753.86	2.00	-2.00	0.00
4,929.14	10.00	288.17	3,810.00	860.59	-2,621.42	2,759.07	2.00	-2.00	0.00
<b>KMVGAS</b>									
4,936.17	9.86	288.17	3,816.92	860.97	-2,622.57	2,760.28	2.00	-2.00	0.00
<b>GM 523-14 KMW</b>									
5,000.00	8.58	288.17	3,879.93	864.16	-2,632.29	2,770.51	2.00	-2.00	0.00
5,100.00	6.58	288.17	3,979.05	868.27	-2,644.83	2,783.70	2.00	-2.00	0.00
5,200.00	4.58	288.17	4,078.57	871.31	-2,654.07	2,793.43	2.00	-2.00	0.00
5,300.00	2.58	288.17	4,178.37	873.26	-2,660.01	2,799.68	2.00	-2.00	0.00
5,400.00	0.58	288.17	4,278.32	874.12	-2,662.63	2,802.44	2.00	-2.00	0.00
5,429.14	0.00	0.00	4,307.47	874.17	-2,662.77	2,802.59	2.00	-2.00	246.47
5,500.00	0.00	0.00	4,378.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
5,600.00	0.00	0.00	4,478.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
5,700.00	0.00	0.00	4,578.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
5,800.00	0.00	0.00	4,678.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
5,900.00	0.00	0.00	4,778.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,000.00	0.00	0.00	4,878.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,100.00	0.00	0.00	4,978.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,200.00	0.00	0.00	5,078.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,224.68	0.00	0.00	5,103.00	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
<b>CME0</b>									
6,300.00	0.00	0.00	5,178.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,400.00	0.00	0.00	5,278.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,500.00	0.00	0.00	5,378.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,600.00	0.00	0.00	5,478.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,689.68	0.00	0.00	5,568.00	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
<b>RLNS</b>									
6,700.00	0.00	0.00	5,578.32	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
6,789.68	0.00	0.00	5,668.00	874.17	-2,662.77	2,802.59	0.00	0.00	0.00
<b>TD - GM 523-14 PBHL</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 523-14 KMW	0.00	0.00	3,810.00	874.17	-2,662.77	1,593,823.78	2,270,157.77	39.4353116	-108.0843750
- hit/miss target									
- Shape									
- plan misses target center by 42.88usft at 4936.17usft MD (3816.92 TVD, 860.97 N, -2622.57 E)									
- Circle (radius 50.00)									
GM 523-14 PBHL	0.00	0.00	5,668.00	874.17	-2,662.77	1,593,823.78	2,270,157.77	39.4353116	-108.0843750
- plan hits target center									
- Point									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 523-14 - Slot GM 523-14 (B9)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 523-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 mmsdi		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	948.38	9 5/8" Casing @ 1000' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
952.69	909.00	GSAND		0.00	0.00	
1,075.04	1,009.00	GSAND BASE		0.00	0.00	
3,710.41	2,690.00	MVRD		0.00	0.00	
4,929.14	3,810.00	KMVGAS		0.00	0.00	
6,224.68	5,103.00	CMEO		0.00	0.00	
6,689.68	5,568.00	RLNS		0.00	0.00	
6,789.68	5,668.00	TD		0.00	0.00	