

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 544-8 BTV	4755.00	-1929.05	2391.33	1597827.48	2259017.36	39.4454224	-108.1242109	Circle (Radius: 50.00)
<div style="margin-left: 40px;">plan misses target center by 42.87usft at 5776.04usft MD (4762.21 TVD, -1902.51 N, 2358.44 E)</div>								
GM 544-8 PBHL	6646.00	-1929.05	2391.33	1597827.48	2259017.36	39.4454224	-108.1242109	Point
<div style="margin-left: 40px;">plan misses target center by 0.01usft at 7662.25usft MD (6646.00 TVD, -1929.05 N, 2391.33 E)</div>								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

GV 1-8 Pad

GM 544-8 - Slot GM 544-8 (A4)

OH

Plan: Plan #3 12Nov2018 mmsdi

Standard Planning Report

13 November, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 544-8 - Slot GM 544-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 544-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Nov2018 mmsdi		

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	GV 1-8 Pad			
Site Position:		Northing:	1,599,836.41 usft	Latitude: 39.4507498
From: Map		Easting:	2,256,677.81 usft	Longitude: -108.1326980
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.66 °

Well	GM 544-8 - Slot GM 544-8 (A4)			
Well Position	+N/-S	-11.25 usft	Northing:	1,599,825.01 usft
	+E/-W	5.45 usft	Easting:	2,256,682.93 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	6,280.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/21/2018	9.52	65.68	51,679

Design	Plan #3 12Nov2018 mmsdi			
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	128.89

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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,167.27	41.29	128.89	1,080.21	-223.61	277.19	4.00	4.00	0.00	128.89	
4,204.17	41.29	128.89	3,362.04	-1,481.84	1,836.95	0.00	0.00	0.00	0.00	
5,768.72	10.00	128.89	4,755.00	-1,901.72	2,357.46	2.00	-2.00	0.00	180.00	
6,268.72	0.00	0.00	5,252.47	-1,929.05	2,391.33	2.00	-2.00	-25.78	-180.00	
7,662.25	0.00	0.00	6,646.00	-1,929.05	2,391.33	0.00	0.00	0.00	0.00	GM 544-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 544-8 - Slot GM 544-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 544-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Nov2018 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
Start Build 4.00									
200.00	2.60	128.89	199.98	-0.93	1.15	1.47	4.00	4.00	0.00
300.00	6.60	128.89	299.64	-5.96	7.39	9.49	4.00	4.00	0.00
400.00	10.60	128.89	398.49	-15.35	19.02	24.44	4.00	4.00	0.00
500.00	14.60	128.89	496.06	-29.04	36.00	46.25	4.00	4.00	0.00
600.00	18.60	128.89	591.88	-46.97	58.23	74.82	4.00	4.00	0.00
700.00	22.60	128.89	685.46	-69.06	85.61	109.99	4.00	4.00	0.00
800.00	26.60	128.89	776.37	-95.19	118.00	151.61	4.00	4.00	0.00
900.00	30.60	128.89	864.15	-125.24	155.25	199.47	4.00	4.00	0.00
1,000.00	34.60	128.89	948.38	-159.06	197.18	253.34	4.00	4.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	38.60	128.89	1,028.64	-196.49	243.58	312.95	4.00	4.00	0.00
1,167.27	41.29	128.89	1,080.21	-223.61	277.19	356.14	4.00	4.00	0.00
Start 3036.90 hold at 1167.27 MD									
1,200.00	41.29	128.89	1,104.80	-237.16	294.00	377.73	0.00	0.00	0.00
1,300.00	41.29	128.89	1,179.94	-278.60	345.36	443.72	0.00	0.00	0.00
1,400.00	41.29	128.89	1,255.08	-320.03	396.72	509.71	0.00	0.00	0.00
1,500.00	41.29	128.89	1,330.21	-361.46	448.08	575.70	0.00	0.00	0.00
1,600.00	41.29	128.89	1,405.35	-402.89	499.44	641.69	0.00	0.00	0.00
1,700.00	41.29	128.89	1,480.49	-444.32	550.80	707.68	0.00	0.00	0.00
1,800.00	41.29	128.89	1,555.62	-485.75	602.16	773.66	0.00	0.00	0.00
1,900.00	41.29	128.89	1,630.76	-527.18	653.52	839.65	0.00	0.00	0.00
2,000.00	41.29	128.89	1,705.90	-568.62	704.88	905.64	0.00	0.00	0.00
2,100.00	41.29	128.89	1,781.03	-610.05	756.24	971.63	0.00	0.00	0.00
2,200.00	41.29	128.89	1,856.17	-651.48	807.60	1,037.62	0.00	0.00	0.00
2,300.00	41.29	128.89	1,931.31	-692.91	858.96	1,103.61	0.00	0.00	0.00
2,400.00	41.29	128.89	2,006.44	-734.34	910.32	1,169.59	0.00	0.00	0.00
2,439.34	41.29	128.89	2,036.00	-750.64	930.53	1,195.55	0.00	0.00	0.00
GSAND									
2,500.00	41.29	128.89	2,081.58	-775.77	961.68	1,235.58	0.00	0.00	0.00
2,579.08	41.29	128.89	2,141.00	-808.54	1,002.30	1,287.77	0.00	0.00	0.00
GSAND BASE									
2,600.00	41.29	128.89	2,156.72	-817.20	1,013.04	1,301.57	0.00	0.00	0.00
2,700.00	41.29	128.89	2,231.86	-858.64	1,064.41	1,367.56	0.00	0.00	0.00
2,800.00	41.29	128.89	2,306.99	-900.07	1,115.77	1,433.55	0.00	0.00	0.00
2,900.00	41.29	128.89	2,382.13	-941.50	1,167.13	1,499.53	0.00	0.00	0.00
3,000.00	41.29	128.89	2,457.27	-982.93	1,218.49	1,565.52	0.00	0.00	0.00
3,038.24	41.29	128.89	2,486.00	-998.78	1,238.13	1,590.76	0.00	0.00	0.00
FRUN									
3,100.00	41.29	128.89	2,532.40	-1,024.36	1,269.85	1,631.51	0.00	0.00	0.00
3,200.00	41.29	128.89	2,607.54	-1,065.79	1,321.21	1,697.50	0.00	0.00	0.00
3,300.00	41.29	128.89	2,682.68	-1,107.23	1,372.57	1,763.49	0.00	0.00	0.00
3,400.00	41.29	128.89	2,757.81	-1,148.66	1,423.93	1,829.48	0.00	0.00	0.00
3,500.00	41.29	128.89	2,832.95	-1,190.09	1,475.29	1,895.46	0.00	0.00	0.00
3,600.00	41.29	128.89	2,908.09	-1,231.52	1,526.65	1,961.45	0.00	0.00	0.00
3,700.00	41.29	128.89	2,983.22	-1,272.95	1,578.01	2,027.44	0.00	0.00	0.00
3,800.00	41.29	128.89	3,058.36	-1,314.38	1,629.37	2,093.43	0.00	0.00	0.00
3,900.00	41.29	128.89	3,133.50	-1,355.81	1,680.73	2,159.42	0.00	0.00	0.00
4,000.00	41.29	128.89	3,208.63	-1,397.25	1,732.09	2,225.41	0.00	0.00	0.00
4,100.00	41.29	128.89	3,283.77	-1,438.68	1,783.45	2,291.39	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 544-8 - Slot GM 544-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 544-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Nov2018 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)	
4,200.00	41.29	128.89	3,358.91	-1,480.11	1,834.81	2,357.38	0.00	0.00	0.00	
4,204.17	41.29	128.89	3,362.04	-1,481.84	1,836.95	2,360.13	0.00	0.00	0.00	
Start Drop -2.00										
4,300.00	39.37	128.89	3,435.09	-1,520.78	1,885.22	2,422.15	2.00	-2.00	0.00	
4,400.00	37.37	128.89	3,513.48	-1,559.75	1,933.54	2,484.23	2.00	-2.00	0.00	
4,500.00	35.37	128.89	3,593.99	-1,596.99	1,979.70	2,543.53	2.00	-2.00	0.00	
4,501.23	35.35	128.89	3,595.00	-1,597.43	1,980.25	2,544.25	2.00	-2.00	0.00	
OCRK - MVRD										
4,600.00	33.37	128.89	3,676.53	-1,632.43	2,023.64	2,599.99	2.00	-2.00	0.00	
4,700.00	31.37	128.89	3,760.98	-1,666.05	2,065.31	2,653.53	2.00	-2.00	0.00	
4,800.00	29.37	128.89	3,847.25	-1,697.80	2,104.67	2,704.09	2.00	-2.00	0.00	
4,900.00	27.37	128.89	3,935.23	-1,727.63	2,141.65	2,751.62	2.00	-2.00	0.00	
5,000.00	25.37	128.89	4,024.82	-1,755.52	2,176.23	2,796.04	2.00	-2.00	0.00	
5,100.00	23.37	128.89	4,115.90	-1,781.43	2,208.35	2,837.30	2.00	-2.00	0.00	
5,200.00	21.37	128.89	4,208.37	-1,805.33	2,237.97	2,875.37	2.00	-2.00	0.00	
5,300.00	19.37	128.89	4,302.11	-1,827.19	2,265.07	2,910.18	2.00	-2.00	0.00	
5,400.00	17.37	128.89	4,397.00	-1,846.98	2,289.60	2,941.70	2.00	-2.00	0.00	
5,500.00	15.37	128.89	4,492.94	-1,864.68	2,311.54	2,969.89	2.00	-2.00	0.00	
5,600.00	13.37	128.89	4,589.81	-1,880.27	2,330.86	2,994.72	2.00	-2.00	0.00	
5,700.00	11.37	128.89	4,687.48	-1,893.72	2,347.54	3,016.14	2.00	-2.00	0.00	
5,768.72	10.00	128.89	4,755.00	-1,901.72	2,357.46	3,028.89	2.00	-2.00	0.00	
Start DLS 2.00 TFO -180.00 - KMGAS										
5,776.04	9.85	128.89	4,762.21	-1,902.51	2,358.44	3,030.15	2.00	-2.00	0.00	
GM 544-8 BTV										
5,800.00	9.37	128.89	4,785.84	-1,905.03	2,361.56	3,034.15	2.00	-2.00	0.00	
5,900.00	7.37	128.89	4,884.77	-1,914.17	2,372.89	3,048.71	2.00	-2.00	0.00	
6,000.00	5.37	128.89	4,984.14	-1,921.14	2,381.53	3,059.82	2.00	-2.00	0.00	
6,100.00	3.37	128.89	5,083.85	-1,925.93	2,387.47	3,067.44	2.00	-2.00	0.00	
6,200.00	1.37	128.89	5,183.76	-1,928.53	2,390.69	3,071.59	2.00	-2.00	0.00	
6,268.72	0.00	0.00	5,252.47	-1,929.05	2,391.33	3,072.41	2.00	-2.00	-187.57	
Start 1393.53 hold at 6268.72 MD										
6,300.00	0.00	0.00	5,283.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,383.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,483.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
6,600.00	0.00	0.00	5,583.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
6,700.00	0.00	0.00	5,683.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
6,800.00	0.00	0.00	5,783.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
6,900.00	0.00	0.00	5,883.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,000.00	0.00	0.00	5,983.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,017.25	0.00	0.00	6,001.00	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
CME0										
7,100.00	0.00	0.00	6,083.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,183.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,283.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,383.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,500.00	0.00	0.00	6,483.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,512.25	0.00	0.00	6,496.00	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
RLNS										
7,600.00	0.00	0.00	6,583.75	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
7,662.25	0.00	0.00	6,646.00	-1,929.05	2,391.33	3,072.41	0.00	0.00	0.00	
TD at 7662.25 - TD - GM 544-8 PBHL										

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Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 544-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Nov2018 mmsdi		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
GM 544-8 BTV	0.00	0.00	4,755.00	-1,929.05	2,391.33	1,597,827.48	2,259,017.36	39.4454225	-108.1242109
- plan misses target center by 42.87usft at 5776.04usft MD (4762.21 TVD, -1902.51 N, 2358.44 E)									
- Circle (radius 50.00)									
GM 544-8 PBHL	0.00	0.00	6,646.00	-1,929.05	2,391.33	1,597,827.48	2,259,017.36	39.4454225	-108.1242109
- plan misses target center by 0.01usft at 7662.25usft MD (6646.00 TVD, -1929.05 N, 2391.33 E)									
- Point									

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 (°)
2,439.34	2,036.00	GSAND		0.00	0.00
2,579.08	2,141.00	GSAND BASE		0.00	0.00
3,038.24	2,486.00	FRUN		0.00	0.00
4,501.23	3,595.00	OCRK		0.00	0.00
4,501.23	3,595.00	MVRD		0.00	0.00
5,768.72	4,755.00	KMVGAS		0.00	0.00
7,017.25	6,001.00	CME0		0.00	0.00
7,512.25	6,496.00	RLNS		0.00	0.00
7,662.25	6,646.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
135.00	135.00	0.00	0.00	Start Build 4.00
1,167.27	1,080.21	-223.61	277.19	Start 3036.90 hold at 1167.27 MD
4,204.17	3,362.04	-1,481.84	1,836.95	Start Drop -2.00
5,768.72	4,755.00	-1,901.72	2,357.46	Start DLS 2.00 TFO -180.00
6,268.72	5,252.47	-1,929.05	2,391.33	Start 1393.53 hold at 6268.72 MD
7,662.25	6,646.00	-1,929.05	2,391.33	TD at 7662.25