

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 544-8 BTV	4755.00	-1819.42	2527.08	1597933.13	2259156.23	39.4457234	-108.1237302	Circle (Radius: 50.00)
- plan misses target center by 42.88usft at 5803.01usft MD (4761.65 TVD, -1794.67 N, 2492.71 E)								
GM 544-8 PBHL	6646.00	-1819.42	2527.08	1597933.13	2259156.23	39.4457234	-108.1237302	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

GV 1-8 Pad

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

OH

Plan: Plan #2 10Jul2018 mmsdi

Standard Planning Report

10 July, 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 #2 10Jul2018 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	Latitude:	39.4507189
	+E/-W	5.45 usft	Easting:	2,256,682.93 usft	Longitude:	-108.1326787
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 #2 10Jul2018 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	125.75

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	
1,181.95	41.88	125.75	1,091.19	-213.78	296.93	4.00	4.00	0.00	125.75	
4,202.35	41.88	125.75	3,340.08	-1,391.86	1,933.22	0.00	0.00	0.00	0.00	
5,796.26	10.00	125.75	4,755.00	-1,793.99	2,491.76	2.00	-2.00	0.00	180.00	
6,296.26	0.00	0.00	5,252.47	-1,819.42	2,527.08	2.00	-2.00	-25.15	-180.00	
7,689.79	0.00	0.00	6,646.00	-1,819.42	2,527.08	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 #2 10Jul2018 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	125.75	199.98	-0.86	1.20	1.47	4.00	4.00	0.00
300.00	6.60	125.75	299.64	-5.55	7.70	9.49	4.00	4.00	0.00
400.00	10.60	125.75	398.49	-14.28	19.84	24.44	4.00	4.00	0.00
500.00	14.60	125.75	496.06	-27.03	37.54	46.25	4.00	4.00	0.00
600.00	18.60	125.75	591.88	-43.71	60.72	74.82	4.00	4.00	0.00
700.00	22.60	125.75	685.46	-64.27	89.26	109.99	4.00	4.00	0.00
800.00	26.60	125.75	776.37	-88.59	123.04	151.61	4.00	4.00	0.00
900.00	30.60	125.75	864.15	-116.55	161.88	199.47	4.00	4.00	0.00
1,000.00	34.60	125.75	948.38	-148.02	205.60	253.34	4.00	4.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	38.60	125.75	1,028.64	-182.85	253.97	312.95	4.00	4.00	0.00
1,181.95	41.88	125.75	1,091.19	-213.78	296.93	365.88	4.00	4.00	0.00
Start 3020.40 hold at 1181.95 MD									
1,200.00	41.88	125.75	1,104.63	-220.82	306.71	377.93	0.00	0.00	0.00
1,300.00	41.88	125.75	1,179.09	-259.82	360.88	444.68	0.00	0.00	0.00
1,400.00	41.88	125.75	1,253.54	-298.83	415.06	511.44	0.00	0.00	0.00
1,500.00	41.88	125.75	1,328.00	-337.83	469.23	578.19	0.00	0.00	0.00
1,600.00	41.88	125.75	1,402.46	-376.84	523.41	644.95	0.00	0.00	0.00
1,700.00	41.88	125.75	1,476.91	-415.84	577.58	711.70	0.00	0.00	0.00
1,800.00	41.88	125.75	1,551.37	-454.84	631.75	778.46	0.00	0.00	0.00
1,900.00	41.88	125.75	1,625.83	-493.85	685.93	845.21	0.00	0.00	0.00
2,000.00	41.88	125.75	1,700.28	-532.85	740.10	911.97	0.00	0.00	0.00
2,100.00	41.88	125.75	1,774.74	-571.86	794.28	978.72	0.00	0.00	0.00
2,200.00	41.88	125.75	1,849.20	-610.86	848.45	1,045.48	0.00	0.00	0.00
2,300.00	41.88	125.75	1,923.65	-649.86	902.63	1,112.23	0.00	0.00	0.00
2,400.00	41.88	125.75	1,998.11	-688.87	956.80	1,178.99	0.00	0.00	0.00
2,450.89	41.88	125.75	2,036.00	-708.72	984.37	1,212.96	0.00	0.00	0.00
GSAND									
2,500.00	41.88	125.75	2,072.57	-727.87	1,010.98	1,245.74	0.00	0.00	0.00
2,591.91	41.88	125.75	2,141.00	-763.72	1,060.77	1,307.10	0.00	0.00	0.00
GSAND BASE									
2,600.00	41.88	125.75	2,147.02	-766.88	1,065.15	1,312.50	0.00	0.00	0.00
2,700.00	41.88	125.75	2,221.48	-805.88	1,119.33	1,379.25	0.00	0.00	0.00
2,800.00	41.88	125.75	2,295.94	-844.88	1,173.50	1,446.01	0.00	0.00	0.00
2,900.00	41.88	125.75	2,370.39	-883.89	1,227.68	1,512.76	0.00	0.00	0.00
3,000.00	41.88	125.75	2,444.85	-922.89	1,281.85	1,579.52	0.00	0.00	0.00
3,055.27	41.88	125.75	2,486.00	-944.45	1,311.79	1,616.41	0.00	0.00	0.00
FRUN									
3,100.00	41.88	125.75	2,519.31	-961.90	1,336.03	1,646.27	0.00	0.00	0.00
3,200.00	41.88	125.75	2,593.76	-1,000.90	1,390.20	1,713.03	0.00	0.00	0.00
3,300.00	41.88	125.75	2,668.22	-1,039.90	1,444.37	1,779.78	0.00	0.00	0.00
3,400.00	41.88	125.75	2,742.68	-1,078.91	1,498.55	1,846.54	0.00	0.00	0.00
3,500.00	41.88	125.75	2,817.13	-1,117.91	1,552.72	1,913.29	0.00	0.00	0.00
3,600.00	41.88	125.75	2,891.59	-1,156.92	1,606.90	1,980.05	0.00	0.00	0.00
3,700.00	41.88	125.75	2,966.05	-1,195.92	1,661.07	2,046.80	0.00	0.00	0.00
3,800.00	41.88	125.75	3,040.50	-1,234.93	1,715.25	2,113.56	0.00	0.00	0.00
3,900.00	41.88	125.75	3,114.96	-1,273.93	1,769.42	2,180.31	0.00	0.00	0.00
4,000.00	41.88	125.75	3,189.42	-1,312.93	1,823.60	2,247.06	0.00	0.00	0.00
4,100.00	41.88	125.75	3,263.87	-1,351.94	1,877.77	2,313.82	0.00	0.00	0.00

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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 #2 10Jul2018 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	41.88	125.75	3,338.33	-1,390.94	1,931.95	2,380.57	0.00	0.00	0.00	
4,202.35	41.88	125.75	3,340.08	-1,391.86	1,933.22	2,382.14	0.00	0.00	0.00	
Start Drop -2.00										
4,300.00	39.93	125.75	3,413.88	-1,429.21	1,985.11	2,446.08	2.00	-2.00	0.00	
4,400.00	37.93	125.75	3,491.67	-1,465.92	2,036.09	2,508.91	2.00	-2.00	0.00	
4,500.00	35.93	125.75	3,571.61	-1,501.02	2,084.85	2,568.98	2.00	-2.00	0.00	
4,528.78	35.35	125.75	3,595.00	-1,510.82	2,098.45	2,585.75	2.00	-2.00	0.00	
OCRK - MVRD										
4,600.00	33.93	125.75	3,653.60	-1,534.47	2,131.30	2,626.23	2.00	-2.00	0.00	
4,700.00	31.93	125.75	3,737.53	-1,566.23	2,175.41	2,680.58	2.00	-2.00	0.00	
4,800.00	29.93	125.75	3,823.31	-1,596.26	2,217.12	2,731.97	2.00	-2.00	0.00	
4,900.00	27.93	125.75	3,910.83	-1,624.52	2,256.37	2,780.33	2.00	-2.00	0.00	
5,000.00	25.93	125.75	3,999.99	-1,650.97	2,293.12	2,825.61	2.00	-2.00	0.00	
5,100.00	23.93	125.75	4,090.67	-1,675.59	2,327.31	2,867.75	2.00	-2.00	0.00	
5,200.00	21.93	125.75	4,182.77	-1,698.35	2,358.93	2,906.70	2.00	-2.00	0.00	
5,300.00	19.93	125.75	4,276.17	-1,719.22	2,387.91	2,942.42	2.00	-2.00	0.00	
5,400.00	17.93	125.75	4,370.76	-1,738.17	2,414.23	2,974.85	2.00	-2.00	0.00	
5,500.00	15.93	125.75	4,466.42	-1,755.18	2,437.85	3,003.96	2.00	-2.00	0.00	
5,600.00	13.93	125.75	4,563.04	-1,770.23	2,458.75	3,029.71	2.00	-2.00	0.00	
5,700.00	11.93	125.75	4,660.50	-1,783.29	2,476.91	3,052.08	2.00	-2.00	0.00	
5,796.26	10.00	125.75	4,755.00	-1,793.99	2,491.76	3,070.39	2.00	-2.00	0.00	
Start DLS 2.00 TFO -180.00 - KMGAS										
5,800.00	9.93	125.75	4,758.68	-1,794.37	2,492.29	3,071.03	2.00	-2.00	0.00	
5,803.01	9.86	125.75	4,761.65	-1,794.67	2,492.71	3,071.55	2.00	-2.00	0.00	
GM 544-8 BTV										
5,900.00	7.93	125.75	4,857.47	-1,803.43	2,504.88	3,086.55	2.00	-2.00	0.00	
6,000.00	5.93	125.75	4,956.73	-1,810.48	2,514.66	3,098.60	2.00	-2.00	0.00	
6,100.00	3.93	125.75	5,056.36	-1,815.49	2,521.63	3,107.19	2.00	-2.00	0.00	
6,200.00	1.93	125.75	5,156.22	-1,818.47	2,525.77	3,112.29	2.00	-2.00	0.00	
6,296.26	0.00	0.00	5,252.47	-1,819.42	2,527.08	3,113.91	2.00	-2.00	0.00	
Start 1393.53 hold at 6296.26 MD										
6,300.00	0.00	0.00	5,256.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,356.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,456.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
6,600.00	0.00	0.00	5,556.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
6,700.00	0.00	0.00	5,656.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
6,800.00	0.00	0.00	5,756.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
6,900.00	0.00	0.00	5,856.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,000.00	0.00	0.00	5,956.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,044.79	0.00	0.00	6,001.00	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
CMEO										
7,100.00	0.00	0.00	6,056.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,156.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,256.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,356.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,500.00	0.00	0.00	6,456.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,539.79	0.00	0.00	6,496.00	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
RLNS										
7,600.00	0.00	0.00	6,556.21	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
7,689.79	0.00	0.00	6,646.00	-1,819.42	2,527.08	3,113.91	0.00	0.00	0.00	
TD at 7689.79 - 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 #2 10Jul2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 544-8 BTV	0.00	0.00	4,755.00	-1,819.42	2,527.08	1,597,933.13	2,259,156.23	39.4457234	-108.1237302
- hit/miss target									
- Shape									
- plan misses target center by 42.88usft at 5803.01usft MD (4761.65 TVD, -1794.67 N, 2492.71 E)									
- Circle (radius 50.00)									
GM 544-8 PBHL	0.00	0.00	6,646.00	-1,819.42	2,527.08	1,597,933.13	2,259,156.23	39.4457234	-108.1237302
- plan hits target center									
- 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 (°)
2,450.89	2,036.00	GSAND		0.00	0.00
2,591.91	2,141.00	GSAND BASE		0.00	0.00
3,055.27	2,486.00	FRUN		0.00	0.00
4,528.78	3,595.00	OCRK		0.00	0.00
4,528.78	3,595.00	MVRD		0.00	0.00
5,796.26	4,755.00	KMVGAS		0.00	0.00
7,044.79	6,001.00	CME0		0.00	0.00
7,539.79	6,496.00	RLNS		0.00	0.00
7,689.79	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
1,181.95	1,091.19	-213.78	296.93	Start 3020.40 hold at 1181.95 MD
4,202.35	3,340.08	-1,391.86	1,933.22	Start Drop -2.00
5,796.26	4,755.00	-1,793.99	2,491.76	Start DLS 2.00 TFO -180.00
6,296.26	5,252.47	-1,819.42	2,527.08	Start 1393.53 hold at 6296.26 MD
7,689.79	6,646.00	-1,819.42	2,527.08	TD at 7689.79