

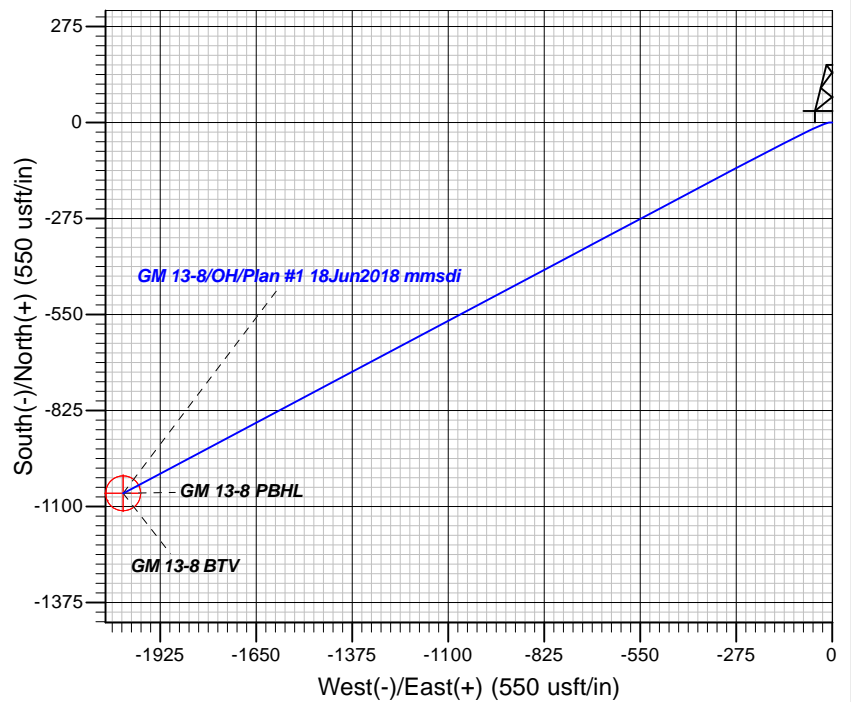
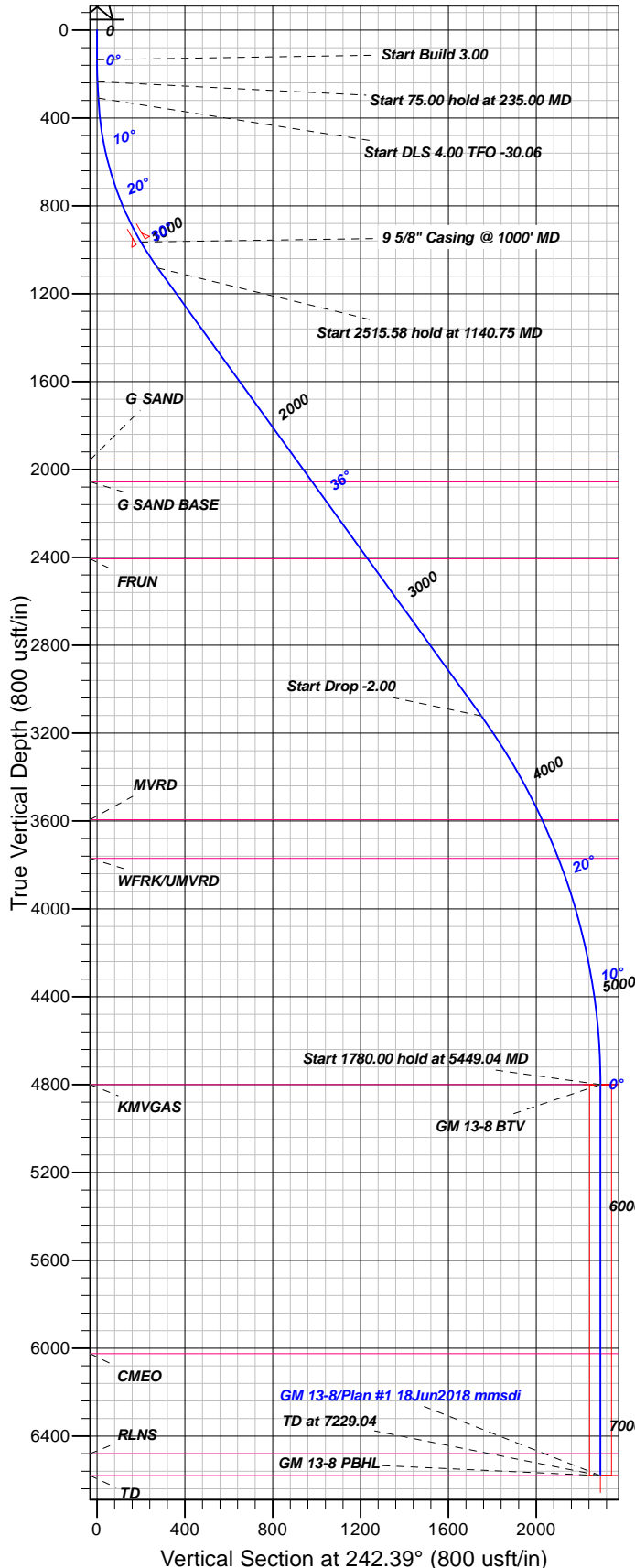


Azimuths to True North  
Magnetic North: 9.52°

Magnetic Field  
Strength: 51678.7snT  
Dip Angle: 65.68°  
Date: 6/18/2018  
Model: HDGM

## Well Details: GM 13-8

+N/-S	+E/-W	Northing	GL 6175' & RKB 24' @ 6199.00usft	Easting	Latitude	Longitude	Slot
0.00	0.00	1601105.17		2257372.30	39.4542869	-108.1303697	GM 13-8 (A1)



## FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1957.00	2218.94	G SAND
2057.00	2342.32	G SAND BASE
2406.86	2773.97	FRUN
3594.00	4204.24	MVRD
3770.00	4395.45	WFRK/UMVRD
4800.00	5449.04	KMVGAS
6025.00	6674.04	CMEO
6480.00	7129.04	RLNS
6580.00	7229.04	TD

Plan: Plan #1 18Jun2018 mmsdi

15:02, June 19 2018  
Created By: Mel Mireles

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

System Datum: Mean Sea Level

## CASING DETAILS

TVD	MD	Name	Size
965.18	1000.00	5/8" Casing @ 1000' MD	9.62

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	235.00	3.00	270.00	234.95	0.00	-2.62	3.00	270.00	2.32	
4	310.00	3.00	270.00	309.85	0.00	-6.54	0.00	0.00	5.80	
5	1140.75	35.85	242.05	1083.12	-117.33	-250.07	4.00	-30.06	275.97	
6	3656.33	35.85	242.05	3122.02	-807.90	-1551.66	0.00	0.00	1749.38	
7	5449.04	0.00	0.00	4800.00	-1062.32	-2031.20	2.00	180.00	2292.22	GM 13-8 BTV
8	7229.04	0.00	0.00	6580.00	-1062.32	-2031.20	0.00	0.00	2292.22	GM 13-8 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 13-8 BTV	4800.00	-1062.32	-2031.20	1600102.10	2255311.20	39.4513701	-108.1375628	Circle (Radius: 50.00)
- plan hits target center								
GM 13-8 PBHL	6580.00	-1062.32	-2031.20	1600102.10	2255311.20	39.4513701	-108.1375628	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**MV 60-8D Pad**

**GM 13-8 - Slot GM 13-8 (A1)**

**OH**

**Plan: Plan #1 18Jun2018 mmsdi**

## **Standard Planning Report**

**19 June, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 13-8 - Slot GM 13-8 (A1)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Site:</b>	MV 60-8D Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 13-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 18Jun2018 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		MV 60-8D Pad			
Site Position:		Northing:	1,601,172.03 usft	Latitude:	39.4544712
From:	Map	Easting:	2,257,381.57 usft	Longitude:	-108.1303437
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 13-8 - Slot GM 13-8 (A1)					
Well Position	+N/-S	-67.10 usft	Northing:	1,601,105.17 usft	Latitude:	39.4542869
	+E/-W	-7.33 usft	Easting:	2,257,372.30 usft	Longitude:	-108.1303697
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,175.00 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	6/18/2018	9.52	65.68	51,679

<b>Design</b>	Plan #1 18Jun2018 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	242.39

<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	
235.00	3.00	270.00	234.95	0.00	-2.62	3.00	3.00	0.00	270.00	
310.00	3.00	270.00	309.85	0.00	-6.54	0.00	0.00	0.00	0.00	
1,140.75	35.85	242.05	1,083.12	-117.33	-250.07	4.00	3.95	-3.36	-30.06	
3,656.33	35.85	242.05	3,122.02	-807.90	-1,551.66	0.00	0.00	0.00	0.00	
5,449.04	0.00	0.00	4,800.00	-1,062.32	-2,031.20	2.00	-2.00	0.00	180.00	GM 13-8 BTV
7,229.04	0.00	0.00	6,580.00	-1,062.32	-2,031.20	0.00	0.00	0.00	0.00	GM 13-8 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 13-8 - Slot GM 13-8 (A1)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Site:</b>	MV 60-8D Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 13-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 18Jun2018 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 3.00									
200.00	1.95	270.00	199.99	0.00	-1.11	0.98	3.00	3.00	0.00
235.00	3.00	270.00	234.95	0.00	-2.62	2.32	3.00	3.00	0.00
Start 75.00 hold at 235.00 MD									
300.00	3.00	270.00	299.87	0.00	-6.02	5.33	0.00	0.00	0.00
310.00	3.00	270.00	309.85	0.00	-6.54	5.80	0.00	0.00	0.00
Start DLS 4.00 TFO -30.06									
400.00	6.38	253.55	399.54	-1.42	-13.69	12.79	4.00	3.75	-18.28
500.00	10.31	248.26	498.47	-6.30	-27.33	27.14	4.00	3.93	-5.28
600.00	14.27	245.89	596.15	-14.66	-46.90	48.35	4.00	3.97	-2.38
700.00	18.26	244.53	692.13	-26.43	-72.31	76.32	4.00	3.98	-1.36
800.00	22.25	243.65	785.93	-41.58	-103.42	110.91	4.00	3.99	-0.88
900.00	26.24	243.02	877.10	-60.01	-140.10	151.96	4.00	3.99	-0.63
1,000.00	30.23	242.55	965.18	-81.65	-182.16	199.25	4.00	3.99	-0.47
9 5/8" Casing @ 1000' MD									
1,100.00	34.23	242.18	1,049.76	-106.39	-229.39	252.57	4.00	4.00	-0.37
1,140.75	35.85	242.05	1,083.12	-117.33	-250.07	275.97	4.00	4.00	-0.32
Start 2515.58 hold at 1140.75 MD									
1,200.00	35.85	242.05	1,131.14	-133.60	-280.72	310.67	0.00	0.00	0.00
1,300.00	35.85	242.05	1,212.19	-161.05	-332.46	369.24	0.00	0.00	0.00
1,400.00	35.85	242.05	1,293.24	-188.50	-384.21	427.82	0.00	0.00	0.00
1,500.00	35.85	242.05	1,374.30	-215.95	-435.95	486.39	0.00	0.00	0.00
1,600.00	35.85	242.05	1,455.35	-243.41	-487.69	544.96	0.00	0.00	0.00
1,700.00	35.85	242.05	1,536.40	-270.86	-539.43	603.53	0.00	0.00	0.00
1,800.00	35.85	242.05	1,617.45	-298.31	-591.17	662.10	0.00	0.00	0.00
1,900.00	35.85	242.05	1,698.50	-325.76	-642.91	720.67	0.00	0.00	0.00
2,000.00	35.85	242.05	1,779.55	-353.21	-694.65	779.24	0.00	0.00	0.00
2,100.00	35.85	242.05	1,860.60	-380.66	-746.40	837.82	0.00	0.00	0.00
2,200.00	35.85	242.05	1,941.65	-408.11	-798.14	896.39	0.00	0.00	0.00
2,218.94	35.85	242.05	1,957.00	-413.31	-807.93	907.48	0.00	0.00	0.00
G SAND									
2,300.00	35.85	242.05	2,022.70	-435.57	-849.88	954.96	0.00	0.00	0.00
2,342.32	35.85	242.05	2,057.00	-447.18	-871.77	979.74	0.00	0.00	0.00
G SAND BASE									
2,400.00	35.85	242.05	2,103.75	-463.02	-901.62	1,013.53	0.00	0.00	0.00
2,500.00	35.85	242.05	2,184.81	-490.47	-953.36	1,072.10	0.00	0.00	0.00
2,600.00	35.85	242.05	2,265.86	-517.92	-1,005.10	1,130.67	0.00	0.00	0.00
2,700.00	35.85	242.05	2,346.91	-545.37	-1,056.84	1,189.25	0.00	0.00	0.00
2,773.97	35.85	242.05	2,406.86	-565.68	-1,095.12	1,232.57	0.00	0.00	0.00
FRUN									
2,800.00	35.85	242.05	2,427.96	-572.82	-1,108.58	1,247.82	0.00	0.00	0.00
2,900.00	35.85	242.05	2,509.01	-600.27	-1,160.33	1,306.39	0.00	0.00	0.00
3,000.00	35.85	242.05	2,590.06	-627.73	-1,212.07	1,364.96	0.00	0.00	0.00
3,100.00	35.85	242.05	2,671.11	-655.18	-1,263.81	1,423.53	0.00	0.00	0.00
3,200.00	35.85	242.05	2,752.16	-682.63	-1,315.55	1,482.10	0.00	0.00	0.00
3,300.00	35.85	242.05	2,833.21	-710.08	-1,367.29	1,540.67	0.00	0.00	0.00
3,400.00	35.85	242.05	2,914.26	-737.53	-1,419.03	1,599.25	0.00	0.00	0.00
3,500.00	35.85	242.05	2,995.31	-764.98	-1,470.77	1,657.82	0.00	0.00	0.00
3,600.00	35.85	242.05	3,076.37	-792.44	-1,522.51	1,716.39	0.00	0.00	0.00
3,656.33	35.85	242.05	3,122.02	-807.90	-1,551.66	1,749.38	0.00	0.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 13-8 - Slot GM 13-8 (A1)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Site:</b>	MV 60-8D Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 13-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 18Jun2018 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)
<b>Start Drop -2.00</b>									
3,700.00	34.98	242.05	3,157.61	-819.76	-1,574.02	1,774.69	2.00	-2.00	0.00
3,800.00	32.98	242.05	3,240.53	-845.95	-1,623.39	1,830.58	2.00	-2.00	0.00
3,900.00	30.98	242.05	3,325.35	-870.77	-1,670.17	1,883.54	2.00	-2.00	0.00
4,000.00	28.98	242.05	3,411.96	-894.19	-1,714.31	1,933.51	2.00	-2.00	0.00
4,100.00	26.98	242.05	3,500.27	-916.18	-1,755.76	1,980.42	2.00	-2.00	0.00
4,200.00	24.98	242.05	3,590.16	-936.71	-1,794.45	2,024.22	2.00	-2.00	0.00
4,204.24	24.90	242.05	3,594.00	-937.55	-1,796.03	2,026.01	2.00	-2.00	0.00
<b>MVRD</b>									
4,300.00	22.98	242.05	3,681.52	-955.76	-1,830.35	2,064.86	2.00	-2.00	0.00
4,395.45	21.07	242.05	3,770.00	-972.54	-1,861.97	2,100.66	2.00	-2.00	0.00
<b>WFRK/UMVRD</b>									
4,400.00	20.98	242.05	3,774.25	-973.30	-1,863.41	2,102.29	2.00	-2.00	0.00
4,500.00	18.98	242.05	3,868.22	-989.31	-1,893.60	2,136.46	2.00	-2.00	0.00
4,600.00	16.98	242.05	3,963.33	-1,003.78	-1,920.87	2,167.33	2.00	-2.00	0.00
4,700.00	14.98	242.05	4,059.46	-1,016.68	-1,945.19	2,194.86	2.00	-2.00	0.00
4,800.00	12.98	242.05	4,156.50	-1,028.01	-1,966.53	2,219.01	2.00	-2.00	0.00
4,900.00	10.98	242.05	4,254.31	-1,037.74	-1,984.86	2,239.77	2.00	-2.00	0.00
5,000.00	8.98	242.05	4,352.80	-1,045.86	-2,000.17	2,257.10	2.00	-2.00	0.00
5,100.00	6.98	242.05	4,451.82	-1,052.37	-2,012.44	2,270.99	2.00	-2.00	0.00
5,200.00	4.98	242.05	4,551.27	-1,057.25	-2,021.64	2,281.40	2.00	-2.00	0.00
5,300.00	2.98	242.05	4,651.03	-1,060.50	-2,027.77	2,288.35	2.00	-2.00	0.00
5,400.00	0.98	242.05	4,750.96	-1,062.12	-2,030.83	2,291.80	2.00	-2.00	0.00
5,449.04	0.00	0.00	4,800.00	-1,062.32	-2,031.20	2,292.22	2.00	-2.00	0.00
<b>Start 1780.00 hold at 5449.04 MD - KMGAS - GM 13-8 BTV</b>									
5,500.00	0.00	0.00	4,850.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
5,600.00	0.00	0.00	4,950.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
5,700.00	0.00	0.00	5,050.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
5,800.00	0.00	0.00	5,150.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
5,900.00	0.00	0.00	5,250.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,000.00	0.00	0.00	5,350.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,100.00	0.00	0.00	5,450.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,200.00	0.00	0.00	5,550.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,300.00	0.00	0.00	5,650.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,400.00	0.00	0.00	5,750.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,500.00	0.00	0.00	5,850.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,600.00	0.00	0.00	5,950.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,674.04	0.00	0.00	6,025.00	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
<b>CMEO</b>									
6,700.00	0.00	0.00	6,050.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,800.00	0.00	0.00	6,150.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
6,900.00	0.00	0.00	6,250.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
7,000.00	0.00	0.00	6,350.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
7,100.00	0.00	0.00	6,450.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
7,129.04	0.00	0.00	6,480.00	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
<b>RLNS</b>									
7,200.00	0.00	0.00	6,550.96	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
7,229.04	0.00	0.00	6,580.00	-1,062.32	-2,031.20	2,292.22	0.00	0.00	0.00
<b>TD at 7229.04 - TD - GM 13-8 PBHL</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 13-8 - Slot GM 13-8 (A1)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6175' & RKB 24' @ 6199.00usft
<b>Site:</b>	MV 60-8D Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 13-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 18Jun2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 13-8 BTV - hit/miss target - Shape	0.00	0.00	4,800.00	-1,062.32	-2,031.20	1,600,102.10	2,255,311.20	39.4513701	-108.1375629
GM 13-8 PBHL - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,580.00	-1,062.32	-2,031.20	1,600,102.10	2,255,311.20	39.4513701	-108.1375629

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	965.18	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,218.94	1,957.00	G SAND		0.00	0.00
2,342.32	2,057.00	G SAND BASE		0.00	0.00
2,773.97	2,406.86	FRUN		0.00	0.00
4,204.24	3,594.00	MVRD		0.00	0.00
4,395.45	3,770.00	WFRK/UMVRD		0.00	0.00
5,449.04	4,800.00	KMVGAS		0.00	0.00
6,674.04	6,025.00	CME0		0.00	0.00
7,129.04	6,480.00	RLNS		0.00	0.00
7,229.04	6,580.00	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 3.00
235.00	234.95	0.00	-2.62	Start 75.00 hold at 235.00 MD
310.00	309.85	0.00	-6.54	Start DLS 4.00 TFO -30.06
1,140.75	1,083.12	-117.33	-250.07	Start 2515.58 hold at 1140.75 MD
3,656.33	3,122.02	-807.90	-1,551.66	Start Drop -2.00
5,449.04	4,800.00	-1,062.32	-2,031.20	Start 1780.00 hold at 5449.04 MD
7,229.04	6,580.00	-1,062.32	-2,031.20	TD at 7229.04