

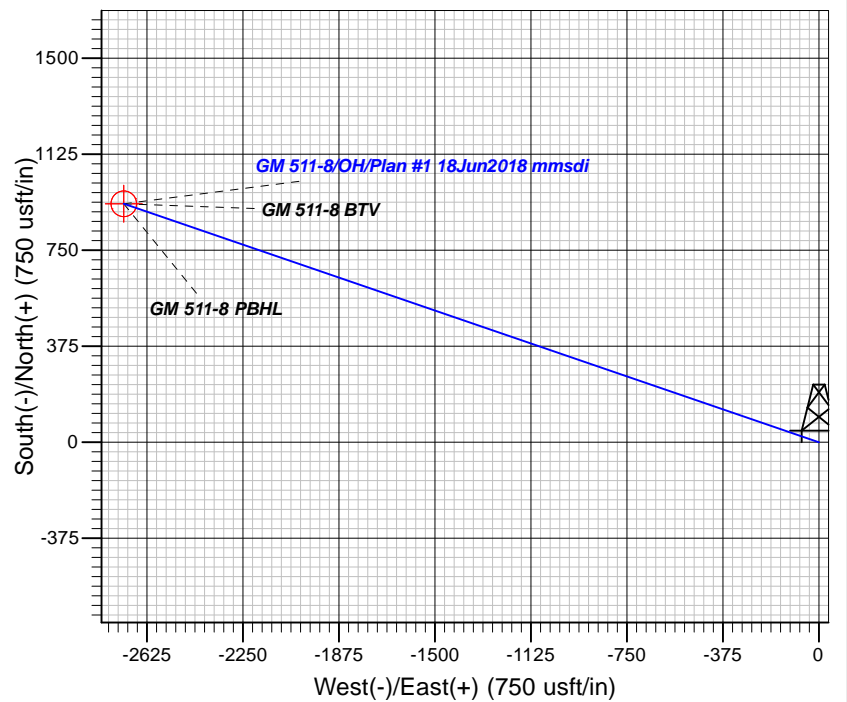
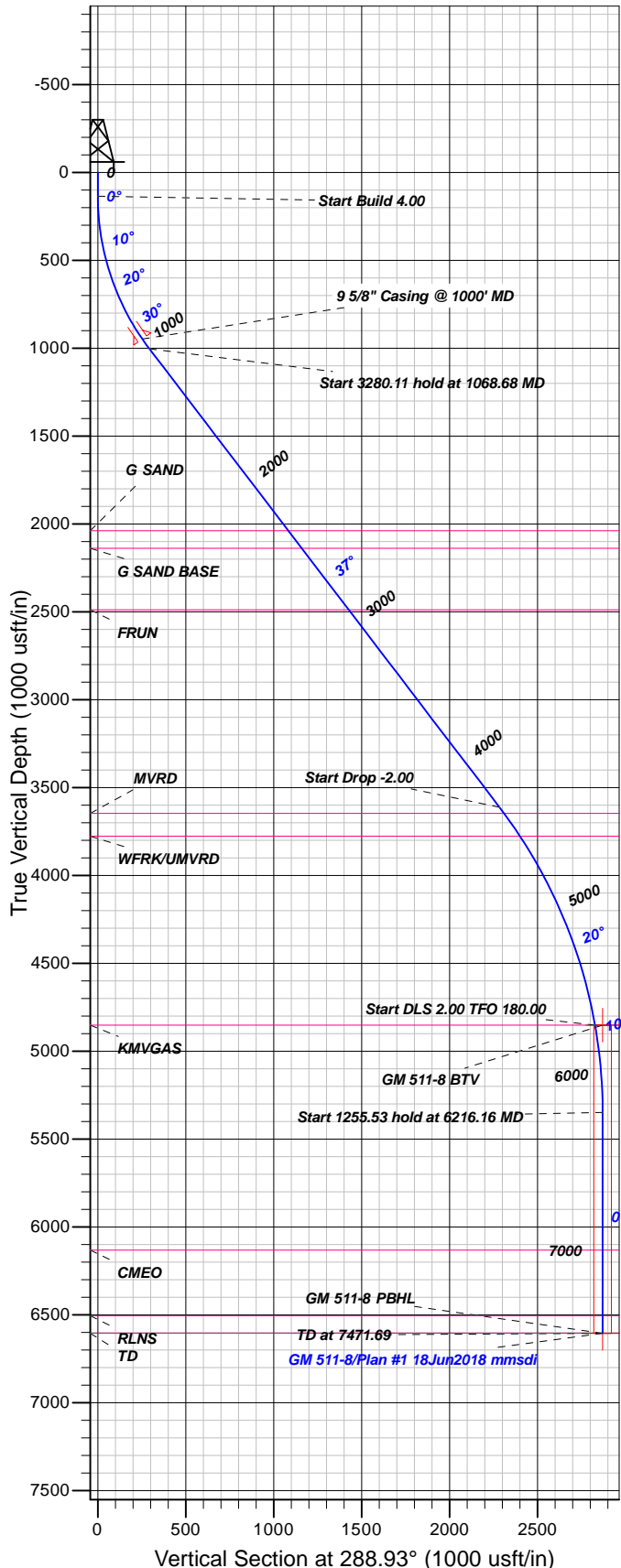


Azimuths to True North  
Magnetic North: 9.52°

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

## Well Details: GM 511-8

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1601165.98	2257370.64	39.4544537	-108.1303818	GM 511-8 (B9)



### FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
2039.00	2370.67	G SAND
2139.00	2496.46	G SAND BASE
2489.07	2936.82	FRUN
3647.00	4393.12	MVRD
3777.00	4551.60	WFRK/UMVRD
4852.00	5716.16	KMVGAS
6132.00	6998.69	CMEQ
6505.00	7371.69	RLNS
6605.00	7471.69	TD

Plan: Plan #1 18Jun2018 mmsdi

12:45, June 20 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
948.38	1000.00	5/8" Casing @ 1000' MD	9.62

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	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	1068.68	37.35	288.93	1003.95	95.29	-277.79	4.00	288.93	293.68	
4	4348.80	37.35	288.93	3611.56	740.93	-2160.00	0.00	0.00	283.54	
5	5716.16	10.00	288.93	4852.00	917.39	-2674.41	2.00	180.00	287.38	
6	6216.16	0.00	0.00	5349.47	931.51	-2715.58	2.00	180.00	2870.90	
7	7471.69	0.00	0.00	6605.00	931.51	-2715.58	0.00	0.00	2870.90	GM 511-8 PBHL

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 511-8 BTV	4852.00	931.51	-2715.58	1602175.72	2254683.17	39.4570107	-108.1399993	Circle (Radius: 50.00)
- plan misses target center by 42.87usft at 5723.09usft MD (4858.83 TVD, 917.78 N, -2675.54 E)								
GM 511-8 PBHL	6605.00	931.51	-2715.58	1602175.72	2254683.17	39.4570107	-108.1399993	Point
- plan hits target center								



## **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**MV 60-8D Pad**

**GM 511-8 - Slot GM 511-8 (B9)**

**OH**

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

## **Standard Planning Report**

**20 June, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 511-8 - Slot GM 511-8 (B9)
<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 511-8	<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 511-8 - Slot GM 511-8 (B9)					
Well Position	+N/-S	-6.36 usft	Northing:	1,601,165.98 usft	Latitude:	39.4544537
	+E/-W	-10.75 usft	Easting:	2,257,370.64 usft	Longitude:	-108.1303818
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	288.93

<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	
1,068.68	37.35	288.93	1,003.95	95.29	-277.79	4.00	4.00	0.00	288.93	
4,348.80	37.35	288.93	3,611.56	740.93	-2,160.00	0.00	0.00	0.00	0.00	
5,716.16	10.00	288.93	4,852.00	917.39	-2,674.41	2.00	-2.00	0.00	180.00	
6,216.16	0.00	0.00	5,349.47	931.51	-2,715.58	2.00	-2.00	14.21	180.00	
7,471.69	0.00	0.00	6,605.00	931.51	-2,715.58	0.00	0.00	0.00	0.00	GM 511-8 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 511-8 - Slot GM 511-8 (B9)
<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 511-8	<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
<b>Start Build 4.00</b>									
200.00	2.60	288.93	199.98	0.48	-1.39	1.47	4.00	4.00	0.00
300.00	6.60	288.93	299.64	3.08	-8.98	9.49	4.00	4.00	0.00
400.00	10.60	288.93	398.49	7.93	-23.12	24.44	4.00	4.00	0.00
500.00	14.60	288.93	496.06	15.01	-43.75	46.25	4.00	4.00	0.00
600.00	18.60	288.93	591.88	24.28	-70.77	74.82	4.00	4.00	0.00
700.00	22.60	288.93	685.46	35.69	-104.04	109.99	4.00	4.00	0.00
800.00	26.60	288.93	776.37	49.19	-143.41	151.61	4.00	4.00	0.00
900.00	30.60	288.93	864.15	64.72	-188.68	199.47	4.00	4.00	0.00
1,000.00	34.60	288.93	948.38	82.20	-239.63	253.34	4.00	4.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,068.68	37.35	288.93	1,003.95	95.29	-277.79	293.68	4.00	4.00	0.00
<b>Start 3280.11 hold at 1068.68 MD</b>									
1,100.00	37.35	288.93	1,028.85	101.45	-295.76	312.68	0.00	0.00	0.00
1,200.00	37.35	288.93	1,108.35	121.14	-353.14	373.34	0.00	0.00	0.00
1,300.00	37.35	288.93	1,187.85	140.82	-410.53	434.01	0.00	0.00	0.00
1,400.00	37.35	288.93	1,267.34	160.50	-467.91	494.67	0.00	0.00	0.00
1,500.00	37.35	288.93	1,346.84	180.19	-525.29	555.34	0.00	0.00	0.00
1,600.00	37.35	288.93	1,426.34	199.87	-582.67	616.00	0.00	0.00	0.00
1,700.00	37.35	288.93	1,505.84	219.56	-640.06	676.67	0.00	0.00	0.00
1,800.00	37.35	288.93	1,585.33	239.24	-697.44	737.33	0.00	0.00	0.00
1,900.00	37.35	288.93	1,664.83	258.92	-754.82	797.99	0.00	0.00	0.00
2,000.00	37.35	288.93	1,744.33	278.61	-812.20	858.66	0.00	0.00	0.00
2,100.00	37.35	288.93	1,823.82	298.29	-869.59	919.32	0.00	0.00	0.00
2,200.00	37.35	288.93	1,903.32	317.97	-926.97	979.99	0.00	0.00	0.00
2,300.00	37.35	288.93	1,982.82	337.66	-984.35	1,040.65	0.00	0.00	0.00
2,370.67	37.35	288.93	2,039.00	351.57	-1,024.90	1,083.52	0.00	0.00	0.00
<b>G SAND</b>									
2,400.00	37.35	288.93	2,062.32	357.34	-1,041.73	1,101.32	0.00	0.00	0.00
2,496.46	37.35	288.93	2,139.00	376.33	-1,097.08	1,159.83	0.00	0.00	0.00
<b>G SAND BASE</b>									
2,500.00	37.35	288.93	2,141.81	377.02	-1,099.11	1,161.98	0.00	0.00	0.00
2,600.00	37.35	288.93	2,221.31	396.71	-1,156.50	1,222.65	0.00	0.00	0.00
2,700.00	37.35	288.93	2,300.81	416.39	-1,213.88	1,283.31	0.00	0.00	0.00
2,800.00	37.35	288.93	2,380.31	436.07	-1,271.26	1,343.97	0.00	0.00	0.00
2,900.00	37.35	288.93	2,459.80	455.76	-1,328.64	1,404.64	0.00	0.00	0.00
2,936.82	37.35	288.93	2,489.07	463.00	-1,349.77	1,426.97	0.00	0.00	0.00
<b>FRUN</b>									
3,000.00	37.35	288.93	2,539.30	475.44	-1,386.03	1,465.30	0.00	0.00	0.00
3,100.00	37.35	288.93	2,618.80	495.13	-1,443.41	1,525.97	0.00	0.00	0.00
3,200.00	37.35	288.93	2,698.29	514.81	-1,500.79	1,586.63	0.00	0.00	0.00
3,300.00	37.35	288.93	2,777.79	534.49	-1,558.17	1,647.30	0.00	0.00	0.00
3,400.00	37.35	288.93	2,857.29	554.18	-1,615.56	1,707.96	0.00	0.00	0.00
3,500.00	37.35	288.93	2,936.79	573.86	-1,672.94	1,768.63	0.00	0.00	0.00
3,600.00	37.35	288.93	3,016.28	593.54	-1,730.32	1,829.29	0.00	0.00	0.00
3,700.00	37.35	288.93	3,095.78	613.23	-1,787.70	1,889.95	0.00	0.00	0.00
3,800.00	37.35	288.93	3,175.28	632.91	-1,845.09	1,950.62	0.00	0.00	0.00
3,900.00	37.35	288.93	3,254.78	652.59	-1,902.47	2,011.28	0.00	0.00	0.00
4,000.00	37.35	288.93	3,334.27	672.28	-1,959.85	2,071.95	0.00	0.00	0.00
4,100.00	37.35	288.93	3,413.77	691.96	-2,017.23	2,132.61	0.00	0.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 511-8 - Slot GM 511-8 (B9)
<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 511-8	<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)
4,200.00	37.35	288.93	3,493.27	711.65	-2,074.61	2,193.28	0.00	0.00	0.00
4,300.00	37.35	288.93	3,572.77	731.33	-2,132.00	2,253.94	0.00	0.00	0.00
4,348.80	37.35	288.93	3,611.56	740.93	-2,160.00	2,283.54	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
4,393.12	36.46	288.93	3,647.00	749.57	-2,185.17	2,310.16	2.00	-2.00	0.00
<b>MVRD</b>									
4,400.00	36.32	288.93	3,652.54	750.89	-2,189.03	2,314.24	2.00	-2.00	0.00
4,500.00	34.32	288.93	3,734.12	769.65	-2,243.72	2,372.06	2.00	-2.00	0.00
4,551.60	33.29	288.93	3,777.00	778.97	-2,270.88	2,400.77	2.00	-2.00	0.00
<b>WFRK/UMVRD</b>									
4,600.00	32.32	288.93	3,817.68	787.48	-2,295.68	2,426.99	2.00	-2.00	0.00
4,700.00	30.32	288.93	3,903.10	804.34	-2,344.85	2,478.97	2.00	-2.00	0.00
4,800.00	28.32	288.93	3,990.28	820.23	-2,391.18	2,527.94	2.00	-2.00	0.00
4,900.00	26.32	288.93	4,079.12	835.13	-2,434.59	2,573.84	2.00	-2.00	0.00
5,000.00	24.32	288.93	4,169.51	849.00	-2,475.05	2,616.61	2.00	-2.00	0.00
5,100.00	22.32	288.93	4,261.33	861.85	-2,512.50	2,656.20	2.00	-2.00	0.00
5,200.00	20.32	288.93	4,354.48	873.65	-2,546.89	2,692.56	2.00	-2.00	0.00
5,300.00	18.32	288.93	4,448.84	884.38	-2,578.19	2,725.65	2.00	-2.00	0.00
5,400.00	16.32	288.93	4,544.30	894.04	-2,606.35	2,755.43	2.00	-2.00	0.00
5,500.00	14.32	288.93	4,640.74	902.62	-2,631.35	2,781.85	2.00	-2.00	0.00
5,600.00	12.32	288.93	4,738.05	910.09	-2,653.14	2,804.89	2.00	-2.00	0.00
5,700.00	10.32	288.93	4,836.09	916.46	-2,671.71	2,824.53	2.00	-2.00	0.00
5,716.16	10.00	288.93	4,852.00	917.39	-2,674.41	2,827.38	2.00	-2.00	0.00
<b>Start DLS 2.00 TFO 180.00 - KMGAS</b>									
5,723.09	9.86	288.93	4,858.83	917.78	-2,675.54	2,828.57	2.00	-2.00	0.00
<b>GM 511-8 BTV</b>									
5,800.00	8.32	288.93	4,934.77	921.72	-2,687.04	2,840.73	2.00	-2.00	0.00
5,900.00	6.32	288.93	5,033.95	925.86	-2,699.09	2,853.47	2.00	-2.00	0.00
6,000.00	4.32	288.93	5,133.51	928.87	-2,707.87	2,862.75	2.00	-2.00	0.00
6,100.00	2.32	288.93	5,233.34	930.75	-2,713.35	2,868.55	2.00	-2.00	0.00
6,200.00	0.32	288.93	5,333.31	931.50	-2,715.53	2,870.86	2.00	-2.00	0.00
6,216.16	0.00	0.00	5,349.47	931.51	-2,715.58	2,870.90	2.00	-2.00	0.00
<b>Start 1255.53 hold at 6216.16 MD</b>									
6,300.00	0.00	0.00	5,433.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,400.00	0.00	0.00	5,533.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,500.00	0.00	0.00	5,633.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,600.00	0.00	0.00	5,733.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,700.00	0.00	0.00	5,833.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,800.00	0.00	0.00	5,933.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,900.00	0.00	0.00	6,033.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
6,998.69	0.00	0.00	6,132.00	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
<b>CME0</b>									
7,000.00	0.00	0.00	6,133.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
7,100.00	0.00	0.00	6,233.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
7,200.00	0.00	0.00	6,333.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
7,300.00	0.00	0.00	6,433.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
7,371.69	0.00	0.00	6,505.00	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
<b>RLNS</b>									
7,400.00	0.00	0.00	6,533.31	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
7,471.69	0.00	0.00	6,605.00	931.51	-2,715.58	2,870.90	0.00	0.00	0.00
<b>TD at 7471.69 - TD - GM 511-8 PBHL</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 511-8 - Slot GM 511-8 (B9)
<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 511-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 18Jun2018 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 511-8 BTV	0.00	0.00	4,852.00	931.51	-2,715.58	1,602,175.72	2,254,683.17	39.4570107	-108.1399993
- plan misses target center by 42.87usft at 5723.09usft MD (4858.83 TVD, 917.78 N, -2675.54 E)									
- Circle (radius 50.00)									
GM 511-8 PBHL	0.00	0.00	6,605.00	931.51	-2,715.58	1,602,175.72	2,254,683.17	39.4570107	-108.1399993
- 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 (°)
2,370.67	2,039.00	G SAND		0.00	0.00
2,496.46	2,139.00	G SAND BASE		0.00	0.00
2,936.82	2,489.07	FRUN		0.00	0.00
4,393.12	3,647.00	MVRD		0.00	0.00
4,551.60	3,777.00	WFRK/UMVRD		0.00	0.00
5,716.16	4,852.00	KMVGAS		0.00	0.00
6,998.69	6,132.00	CME0		0.00	0.00
7,371.69	6,505.00	RLNS		0.00	0.00
7,471.69	6,605.00	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
1,068.68	1,003.95	95.29	-277.79	Start 3280.11 hold at 1068.68 MD
4,348.80	3,611.56	740.93	-2,160.00	Start Drop -2.00
5,716.16	4,852.00	917.39	-2,674.41	Start DLS 2.00 TFO 180.00
6,216.16	5,349.47	931.51	-2,715.58	Start 1255.53 hold at 6216.16 MD
7,471.69	6,605.00	931.51	-2,715.58	TD at 7471.69