

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 12-22 BTV	4244.00	1656.83	-1354.22	1590652.30	2264355.94	39.4261529	-108.1045862	Circle (Radius: 50.00)
- plan misses target center by 42.88usft at 4802.83usft MD (4250.65 ft, 1624.03 N, -1327.42 E)								
SG 12-22 PBHL	5884.00	1656.83	-1354.22	1590652.30	2264355.94	39.4261529	-108.1045862	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 23-22 Pad

SG 12-22 - Slot SG 12-22 (A1)

OH

Plan: Plan #1 19March2018 mmsdi

Standard Planning Report

20 March, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 12-22 - Slot SG 12-22 (A1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Site:	SG 23-22 Pad	North Reference:	True
Well:	SG 12-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 19March2018 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		SG 23-22 Pad			
Site Position:		Northing:	1,588,957.40 usft	Latitude:	39.4216042
From:	Map	Easting:	2,265,662.20 usft	Longitude:	-108.0997922
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64 °

Well	SG 12-22 - Slot SG 12-22 (A1)					
Well Position	+N/-S	0.00 usft	Northing:	1,588,957.40 usft	Latitude:	39.4216042
	+E/-W	0.00 usft	Easting:	2,265,662.20 usft	Longitude:	-108.0997922
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,665.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/19/2018	9.47	65.62	51,729

Design	Plan #1 19March2018 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	320.74

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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
929.68	32.39	320.74	887.25	172.52	-141.01	4.00	4.00	0.00	320.74	
3,676.72	32.39	320.74	3,206.97	1,311.79	-1,072.21	0.00	0.00	0.00	0.00	
4,796.08	10.00	320.74	4,244.00	1,623.13	-1,326.68	2.00	-2.00	0.00	180.00	
5,296.08	0.00	0.00	4,741.47	1,656.83	-1,354.22	2.00	-2.00	7.85	180.00	
6,438.62	0.00	0.00	5,884.00	1,656.83	-1,354.22	0.00	0.00	0.00	0.00	SG 12-22 PBHL

Database: Grand Junction District
Company: TEP Rocky Mountain LLC
Project: Garfield County, CO NAD83
Site: SG 23-22 Pad
Well: SG 12-22
Wellbore: OH
Design: Plan #1 19March2018 mmsdi

Local Co-ordinate Reference: Well SG 12-22 - Slot SG 12-22 (A1)
TVD Reference: GL 5665' & RKB 24' @ 5689.00usft
MD Reference: GL 5665' & RKB 24' @ 5689.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

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
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 4.00									
200.00	3.20	320.74	199.96	1.73	-1.41	2.23	4.00	4.00	0.00
300.00	7.20	320.74	299.53	8.75	-7.15	11.29	4.00	4.00	0.00
400.00	11.20	320.74	398.22	21.12	-17.26	27.28	4.00	4.00	0.00
500.00	15.20	320.74	495.56	38.80	-31.71	50.11	4.00	4.00	0.00
600.00	19.20	320.74	591.07	61.69	-50.42	79.67	4.00	4.00	0.00
700.00	23.20	320.74	684.28	89.68	-73.30	115.83	4.00	4.00	0.00
800.00	27.20	320.74	774.74	122.64	-100.24	158.40	4.00	4.00	0.00
900.00	31.20	320.74	862.02	160.41	-131.11	207.18	4.00	4.00	0.00
929.68	32.39	320.74	887.25	172.52	-141.01	222.81	4.00	4.00	0.00
Start 2747.03 hold at 929.68 MD									
1,000.00	32.39	320.74	946.63	201.68	-164.85	260.48	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	32.39	320.74	1,031.07	243.15	-198.74	314.04	0.00	0.00	0.00
1,200.00	32.39	320.74	1,115.52	284.63	-232.64	367.61	0.00	0.00	0.00
1,300.00	32.39	320.74	1,199.96	326.10	-266.54	421.17	0.00	0.00	0.00
1,400.00	32.39	320.74	1,284.41	367.57	-300.44	474.73	0.00	0.00	0.00
1,500.00	32.39	320.74	1,368.85	409.05	-334.34	528.30	0.00	0.00	0.00
1,526.23	32.39	320.74	1,391.00	419.92	-343.23	542.35	0.00	0.00	0.00
G Sand									
1,600.00	32.39	320.74	1,453.29	450.52	-368.24	581.86	0.00	0.00	0.00
1,643.47	32.39	320.74	1,490.00	468.54	-382.97	605.14	0.00	0.00	0.00
G Sand Base									
1,700.00	32.39	320.74	1,537.74	491.99	-402.13	635.43	0.00	0.00	0.00
1,800.00	32.39	320.74	1,622.18	533.46	-436.03	688.99	0.00	0.00	0.00
1,900.00	32.39	320.74	1,706.63	574.94	-469.93	742.55	0.00	0.00	0.00
1,996.36	32.39	320.74	1,788.00	614.90	-502.59	794.17	0.00	0.00	0.00
FRUN									
2,000.00	32.39	320.74	1,791.07	616.41	-503.83	796.12	0.00	0.00	0.00
2,100.00	32.39	320.74	1,875.52	657.88	-537.73	849.68	0.00	0.00	0.00
2,200.00	32.39	320.74	1,959.96	699.36	-571.62	903.25	0.00	0.00	0.00
2,300.00	32.39	320.74	2,044.41	740.83	-605.52	956.81	0.00	0.00	0.00
2,400.00	32.39	320.74	2,128.85	782.30	-639.42	1,010.37	0.00	0.00	0.00
2,500.00	32.39	320.74	2,213.30	823.77	-673.32	1,063.94	0.00	0.00	0.00
2,600.00	32.39	320.74	2,297.74	865.25	-707.22	1,117.50	0.00	0.00	0.00
2,700.00	32.39	320.74	2,382.19	906.72	-741.12	1,171.07	0.00	0.00	0.00
2,800.00	32.39	320.74	2,466.63	948.19	-775.01	1,224.63	0.00	0.00	0.00
2,900.00	32.39	320.74	2,551.08	989.67	-808.91	1,278.19	0.00	0.00	0.00
3,000.00	32.39	320.74	2,635.52	1,031.14	-842.81	1,331.76	0.00	0.00	0.00
3,100.00	32.39	320.74	2,719.97	1,072.61	-876.71	1,385.32	0.00	0.00	0.00
3,200.00	32.39	320.74	2,804.41	1,114.08	-910.61	1,438.89	0.00	0.00	0.00
3,300.00	32.39	320.74	2,888.85	1,155.56	-944.51	1,492.45	0.00	0.00	0.00
3,361.75	32.39	320.74	2,941.00	1,181.17	-965.44	1,525.53	0.00	0.00	0.00
OCRK - MVRD									
3,400.00	32.39	320.74	2,973.30	1,197.03	-978.40	1,546.01	0.00	0.00	0.00
3,500.00	32.39	320.74	3,057.74	1,238.50	-1,012.30	1,599.58	0.00	0.00	0.00
3,600.00	32.39	320.74	3,142.19	1,279.98	-1,046.20	1,653.14	0.00	0.00	0.00
3,676.72	32.39	320.74	3,206.97	1,311.79	-1,072.21	1,694.23	0.00	0.00	0.00
Start Drop -2.00									
3,700.00	31.92	320.74	3,226.68	1,321.39	-1,080.05	1,706.62	2.00	-2.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 12-22 - Slot SG 12-22 (A1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Site:	SG 23-22 Pad	North Reference:	True
Well:	SG 12-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 19March2018 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)	
3,800.00	29.92	320.74	3,312.47	1,361.17	-1,112.57	1,758.01	2.00	-2.00	0.00	
3,900.00	27.92	320.74	3,399.99	1,398.61	-1,143.17	1,806.37	2.00	-2.00	0.00	
4,000.00	25.92	320.74	3,489.15	1,433.67	-1,171.82	1,851.64	2.00	-2.00	0.00	
4,100.00	23.92	320.74	3,579.83	1,466.29	-1,198.49	1,893.78	2.00	-2.00	0.00	
4,200.00	21.92	320.74	3,671.93	1,496.45	-1,223.14	1,932.72	2.00	-2.00	0.00	
4,300.00	19.92	320.74	3,765.33	1,524.10	-1,245.73	1,968.43	2.00	-2.00	0.00	
4,400.00	17.92	320.74	3,859.93	1,549.20	-1,266.25	2,000.86	2.00	-2.00	0.00	
4,500.00	15.92	320.74	3,955.59	1,571.74	-1,284.67	2,029.96	2.00	-2.00	0.00	
4,600.00	13.92	320.74	4,052.21	1,591.67	-1,300.97	2,055.71	2.00	-2.00	0.00	
4,700.00	11.92	320.74	4,149.68	1,608.99	-1,315.12	2,078.07	2.00	-2.00	0.00	
4,796.08	10.00	320.74	4,244.00	1,623.13	-1,326.68	2,096.34	2.00	-2.00	0.00	
Start DLS 2.00 TFO 180.00 - KMGAS										
4,800.00	9.92	320.74	4,247.86	1,623.65	-1,327.11	2,097.02	2.00	-2.00	0.00	
4,802.83	9.86	320.74	4,250.65	1,624.03	-1,327.42	2,097.50	2.00	-2.00	0.00	
SG 12-22 BTV										
4,900.00	7.92	320.74	4,346.65	1,635.66	-1,336.92	2,112.52	2.00	-2.00	0.00	
5,000.00	5.92	320.74	4,445.91	1,644.99	-1,344.55	2,124.57	2.00	-2.00	0.00	
5,100.00	3.92	320.74	4,545.54	1,651.63	-1,349.98	2,133.15	2.00	-2.00	0.00	
5,200.00	1.92	320.74	4,645.40	1,655.58	-1,353.20	2,138.25	2.00	-2.00	0.00	
5,296.08	0.00	0.00	4,741.47	1,656.83	-1,354.22	2,139.86	2.00	-2.00	40.86	
Start 1142.53 hold at 5296.08 MD										
5,300.00	0.00	0.00	4,745.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
5,400.00	0.00	0.00	4,845.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
5,500.00	0.00	0.00	4,945.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,045.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,145.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,245.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
5,842.62	0.00	0.00	5,288.00	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
CME0										
5,900.00	0.00	0.00	5,345.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,445.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,545.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,645.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,745.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
6,328.62	0.00	0.00	5,774.00	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
RLNS										
6,400.00	0.00	0.00	5,845.38	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
6,438.62	0.00	0.00	5,884.00	1,656.83	-1,354.22	2,139.86	0.00	0.00	0.00	
TD at 6438.62 - TD - SG 12-22 PBHL										

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting		
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude	Longitude
SG 12-22 BTV	0.00	0.00	4,244.00	1,656.83	-1,354.22	1,590,652.30	2,264,355.94	39.4261530	-108.1045862
- plan misses target center by 42.88usft at 4802.83usft MD (4250.65 TVD, 1624.03 N, -1327.42 E)									
- Circle (radius 50.00)									
SG 12-22 PBHL	0.00	0.00	5,884.00	1,656.83	-1,354.22	1,590,652.30	2,264,355.94	39.4261530	-108.1045862
- plan hits target center									
- Point									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 12-22 - Slot SG 12-22 (A1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Site:	SG 23-22 Pad	North Reference:	True
Well:	SG 12-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 19March2018 mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	946.63	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,526.23	1,391.00	G Sand		0.00	0.00
1,643.47	1,490.00	G Sand Base		0.00	0.00
1,996.36	1,788.00	FRUN		0.00	0.00
3,361.75	2,941.00	OCRK		0.00	0.00
3,361.75	2,941.00	MVRD		0.00	0.00
4,796.08	4,244.00	KMVGAS		0.00	0.00
5,842.62	5,288.00	CME0		0.00	0.00
6,328.62	5,774.00	RLNS		0.00	0.00
6,438.62	5,884.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 4.00
929.68	887.25	172.52	-141.01	Start 2747.03 hold at 929.68 MD
3,676.72	3,206.97	1,311.79	-1,072.21	Start Drop -2.00
4,796.08	4,244.00	1,623.13	-1,326.68	Start DLS 2.00 TFO 180.00
5,296.08	4,741.47	1,656.83	-1,354.22	Start 1142.53 hold at 5296.08 MD
6,438.62	5,884.00	1,656.83	-1,354.22	TD at 6438.62