

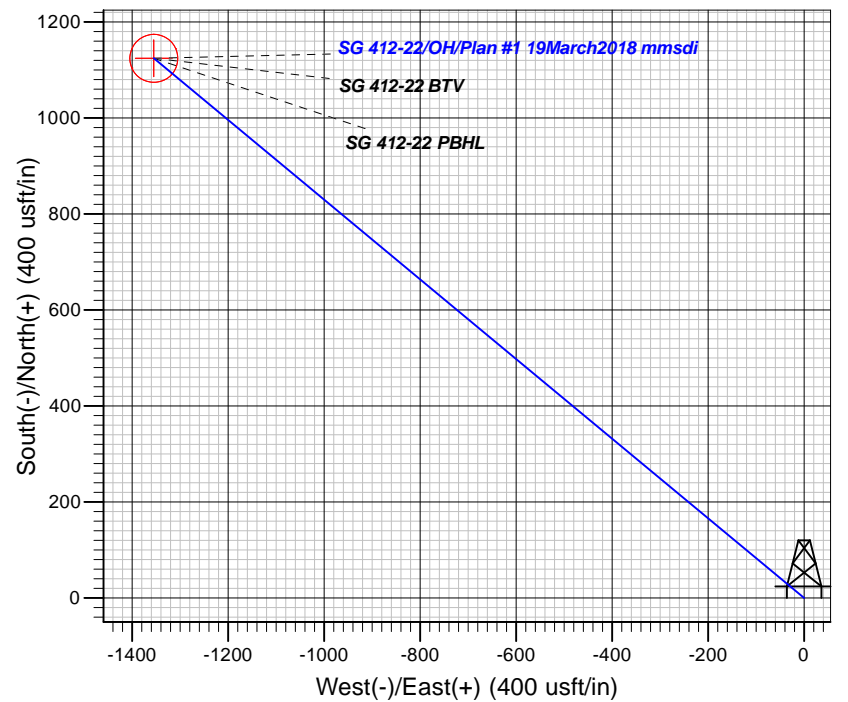
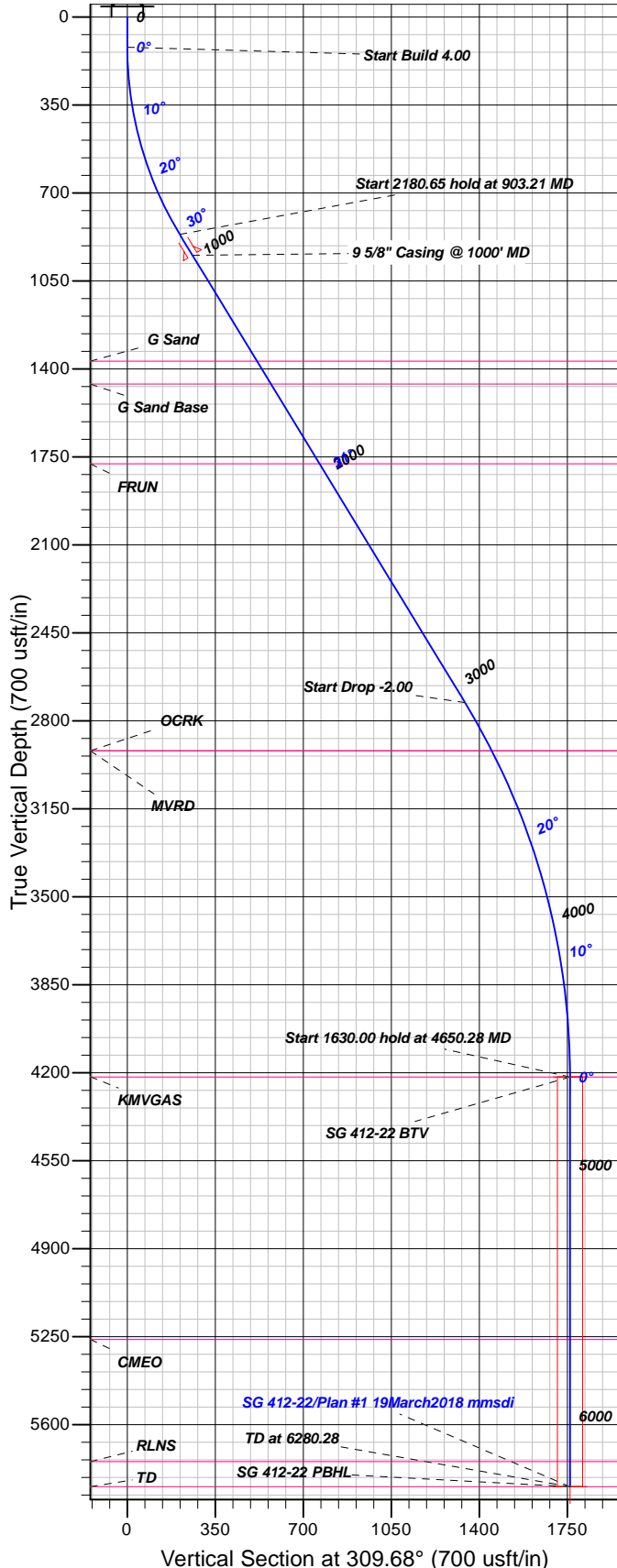


Azimuths to True North
Magnetic North: 9.47°

Magnetic Field
Strength: 51729.1snT
Dip Angle: 65.62°
Date: 3/19/2018
Model: HDGM

Well Details: SG 412-22

+N/-S	+E/-W	Northing	GL 5665' & RKB 24' @ 5689.00usft	Easting	Latitude	Longitude	Slot
0.00	0.00	1588942.40		2265662.30	39.4215630	-108.0997903	SG 412-22 (A3)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1369.00	1493.51	G Sand
1460.00	1600.04	G Sand Base
1777.00	1971.15	FRUN
2919.00	3303.18	MVRD
2919.00	3303.18	OGRK
4217.00	4650.28	KMVGAS
5261.00	5694.28	CMEO
5747.00	6180.28	RLNS
5847.00	6280.28	TD

Plan: Plan #1 19March2018 mmsdi

16:34, March 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
947.44	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	120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	
3	903.21	31.33	309.68	864.76	133.35	-160.72	4.00	309.68	208.84	
4	3083.86	31.33	309.68	2727.48	857.34	-1033.29	0.00	0.00	1342.65	
5	4650.28	0.00	0.00	4217.00	1124.05	-1354.73	2.00	180.00	1760.33	SG 412-22 BTV
6	6280.28	0.00	0.00	5847.00	1124.05	-1354.73	0.00	0.00	1760.33	SG 412-22 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 412-22 BTV	4217.00	1124.05	-1354.73	1590104.75	2264340.29	39.4246490	-108.1045860	Circle (Radius: 50.00)
- plan hits target center								
SG 412-22 PBHL	5847.00	1124.05	-1354.73	1590104.75	2264340.29	39.4246490	-108.1045860	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 23-22 Pad

SG 412-22 - Slot SG 412-22 (A3)

OH

Plan: Plan #1 19March2018 mmsdi

Standard Planning Report

20 March, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 412-22 - Slot SG 412-22 (A3)
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 412-22	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 412-22 - Slot SG 412-22 (A3)			
Well Position	+N/-S	-14.99 usft	Northing:	1,588,942.40 usft
	+E/-W	0.53 usft	Easting:	2,265,662.30 usft
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	309.68

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	
903.21	31.33	309.68	864.76	133.35	-160.72	4.00	4.00	0.00	309.68	
3,083.86	31.33	309.68	2,727.48	857.34	-1,033.29	0.00	0.00	0.00	0.00	
4,650.28	0.00	0.00	4,217.00	1,124.05	-1,354.73	2.00	-2.00	0.00	180.00	SG 412-22 BTV
6,280.28	0.00	0.00	5,847.00	1,124.05	-1,354.73	0.00	0.00	0.00	0.00	SG 412-22 PBHL

Database: Grand Junction District
Company: TEP Rocky Mountain LLC
Project: Garfield County, CO NAD83
Site: SG 23-22 Pad
Well: SG 412-22
Wellbore: OH
Design: Plan #1 19March2018 mmsdi

Local Co-ordinate Reference: Well SG 412-22 - Slot SG 412-22 (A3)
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	309.68	199.96	1.43	-1.72	2.23	4.00	4.00	0.00
300.00	7.20	309.68	299.53	7.21	-8.69	11.29	4.00	4.00	0.00
400.00	11.20	309.68	398.22	17.42	-20.99	27.28	4.00	4.00	0.00
500.00	15.20	309.68	495.56	32.00	-38.56	50.11	4.00	4.00	0.00
600.00	19.20	309.68	591.07	50.88	-61.32	79.67	4.00	4.00	0.00
700.00	23.20	309.68	684.28	73.96	-89.14	115.83	4.00	4.00	0.00
800.00	27.20	309.68	774.74	101.14	-121.90	158.40	4.00	4.00	0.00
900.00	31.20	309.68	862.02	132.29	-159.44	207.18	4.00	4.00	0.00
903.21	31.33	309.68	864.76	133.35	-160.72	208.84	4.00	4.00	0.00
Start 2180.65 hold at 903.21 MD									
1,000.00	31.33	309.68	947.44	165.49	-199.45	259.17	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	31.33	309.68	1,032.86	198.69	-239.47	311.16	0.00	0.00	0.00
1,200.00	31.33	309.68	1,118.28	231.89	-279.48	363.15	0.00	0.00	0.00
1,300.00	31.33	309.68	1,203.70	265.09	-319.49	415.15	0.00	0.00	0.00
1,400.00	31.33	309.68	1,289.12	298.29	-359.51	467.14	0.00	0.00	0.00
1,493.51	31.33	309.68	1,369.00	329.34	-396.92	515.76	0.00	0.00	0.00
G Sand									
1,500.00	31.33	309.68	1,374.54	331.49	-399.52	519.14	0.00	0.00	0.00
1,600.00	31.33	309.68	1,459.96	364.69	-439.54	571.13	0.00	0.00	0.00
1,600.04	31.33	309.68	1,460.00	364.71	-439.55	571.15	0.00	0.00	0.00
G Sand Base									
1,700.00	31.33	309.68	1,545.38	397.89	-479.55	623.13	0.00	0.00	0.00
1,800.00	31.33	309.68	1,630.80	431.09	-519.56	675.12	0.00	0.00	0.00
1,900.00	31.33	309.68	1,716.22	464.29	-559.58	727.11	0.00	0.00	0.00
1,971.15	31.33	309.68	1,777.00	487.92	-588.05	764.11	0.00	0.00	0.00
FRUN									
2,000.00	31.33	309.68	1,801.64	497.49	-599.59	779.11	0.00	0.00	0.00
2,100.00	31.33	309.68	1,887.06	530.69	-639.60	831.10	0.00	0.00	0.00
2,200.00	31.33	309.68	1,972.48	563.89	-679.62	883.10	0.00	0.00	0.00
2,300.00	31.33	309.68	2,057.90	597.09	-719.63	935.09	0.00	0.00	0.00
2,400.00	31.33	309.68	2,143.32	630.30	-759.65	987.08	0.00	0.00	0.00
2,500.00	31.33	309.68	2,228.74	663.50	-799.66	1,039.08	0.00	0.00	0.00
2,600.00	31.33	309.68	2,314.16	696.70	-839.67	1,091.07	0.00	0.00	0.00
2,700.00	31.33	309.68	2,399.58	729.90	-879.69	1,143.07	0.00	0.00	0.00
2,800.00	31.33	309.68	2,485.00	763.10	-919.70	1,195.06	0.00	0.00	0.00
2,900.00	31.33	309.68	2,570.42	796.30	-959.72	1,247.06	0.00	0.00	0.00
3,000.00	31.33	309.68	2,655.85	829.50	-999.73	1,299.05	0.00	0.00	0.00
3,083.86	31.33	309.68	2,727.48	857.34	-1,033.29	1,342.65	0.00	0.00	0.00
Start Drop -2.00									
3,100.00	31.01	309.68	2,741.29	862.67	-1,039.71	1,351.00	2.00	-2.00	0.00
3,200.00	29.01	309.68	2,827.88	894.60	-1,078.20	1,401.01	2.00	-2.00	0.00
3,300.00	27.01	309.68	2,916.17	924.59	-1,114.33	1,447.96	2.00	-2.00	0.00
3,303.18	26.94	309.68	2,919.00	925.51	-1,115.44	1,449.40	2.00	-2.00	0.00
OCRK - MVRD									
3,400.00	25.01	309.68	3,006.04	952.58	-1,148.07	1,491.81	2.00	-2.00	0.00
3,500.00	23.01	309.68	3,097.38	978.56	-1,179.38	1,532.49	2.00	-2.00	0.00
3,600.00	21.01	309.68	3,190.09	1,002.48	-1,208.22	1,569.96	2.00	-2.00	0.00
3,700.00	19.01	309.68	3,284.06	1,024.33	-1,234.54	1,604.16	2.00	-2.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 412-22 - Slot SG 412-22 (A3)
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 412-22	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	17.01	309.68	3,379.15	1,044.06	-1,258.33	1,635.07	2.00	-2.00	0.00
3,900.00	15.01	309.68	3,475.27	1,061.67	-1,279.55	1,662.65	2.00	-2.00	0.00
4,000.00	13.01	309.68	3,572.29	1,077.12	-1,298.17	1,686.85	2.00	-2.00	0.00
4,100.00	11.01	309.68	3,670.10	1,090.40	-1,314.18	1,707.65	2.00	-2.00	0.00
4,200.00	9.01	309.68	3,768.58	1,101.50	-1,327.55	1,725.02	2.00	-2.00	0.00
4,300.00	7.01	309.68	3,867.60	1,110.39	-1,338.27	1,738.94	2.00	-2.00	0.00
4,400.00	5.01	309.68	3,967.04	1,117.07	-1,346.32	1,749.41	2.00	-2.00	0.00
4,500.00	3.01	309.68	4,066.79	1,121.53	-1,351.70	1,756.39	2.00	-2.00	0.00
4,600.00	1.01	309.68	4,166.73	1,123.76	-1,354.39	1,759.89	2.00	-2.00	0.00
4,650.28	0.00	0.00	4,217.00	1,124.05	-1,354.73	1,760.33	2.00	-2.00	100.08
Start 1630.00 hold at 4650.28 MD - KMGAS - SG 412-22 BTV									
4,700.00	0.00	0.00	4,266.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
4,800.00	0.00	0.00	4,366.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
4,900.00	0.00	0.00	4,466.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,000.00	0.00	0.00	4,566.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,100.00	0.00	0.00	4,666.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,200.00	0.00	0.00	4,766.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,300.00	0.00	0.00	4,866.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,400.00	0.00	0.00	4,966.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,500.00	0.00	0.00	5,066.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,600.00	0.00	0.00	5,166.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,694.28	0.00	0.00	5,261.00	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
CME0									
5,700.00	0.00	0.00	5,266.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,800.00	0.00	0.00	5,366.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
5,900.00	0.00	0.00	5,466.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
6,000.00	0.00	0.00	5,566.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
6,100.00	0.00	0.00	5,666.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
6,180.28	0.00	0.00	5,747.00	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
RLNS									
6,200.00	0.00	0.00	5,766.72	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
6,280.28	0.00	0.00	5,847.00	1,124.05	-1,354.73	1,760.33	0.00	0.00	0.00
TD at 6280.28 - TD - SG 412-22 PBHL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SG 412-22 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,217.00	1,124.05	-1,354.73	1,590,104.75	2,264,340.29	39.4246491	-108.1045861
SG 412-22 PBHL - plan hits target center - Point	0.00	0.00	5,847.00	1,124.05	-1,354.73	1,590,104.75	2,264,340.29	39.4246491	-108.1045861

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 412-22 - Slot SG 412-22 (A3)
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 412-22	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	947.44	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,493.51	1,369.00	G Sand		0.00	0.00
1,600.04	1,460.00	G Sand Base		0.00	0.00
1,971.15	1,777.00	FRUN		0.00	0.00
3,303.18	2,919.00	OCRK		0.00	0.00
3,303.18	2,919.00	MVRD		0.00	0.00
4,650.28	4,217.00	KMVGAS		0.00	0.00
5,694.28	5,261.00	CMEO		0.00	0.00
6,180.28	5,747.00	RLNS		0.00	0.00
6,280.28	5,847.00	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
903.21	864.76	133.35	-160.72	Start 2180.65 hold at 903.21 MD
3,083.86	2,727.48	857.34	-1,033.29	Start Drop -2.00
4,650.28	4,217.00	1,124.05	-1,354.73	Start 1630.00 hold at 4650.28 MD
6,280.28	5,847.00	1,124.05	-1,354.73	TD at 6280.28