



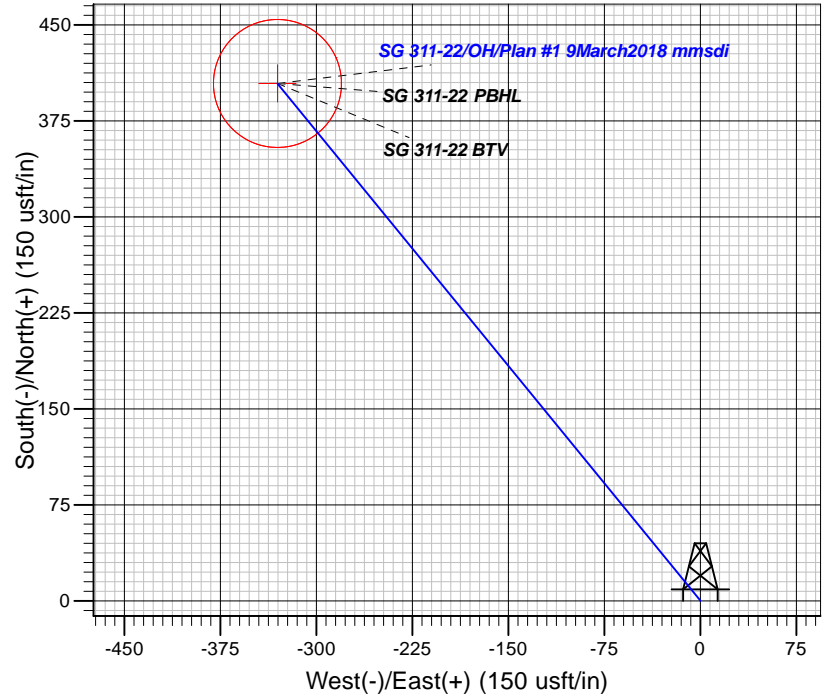
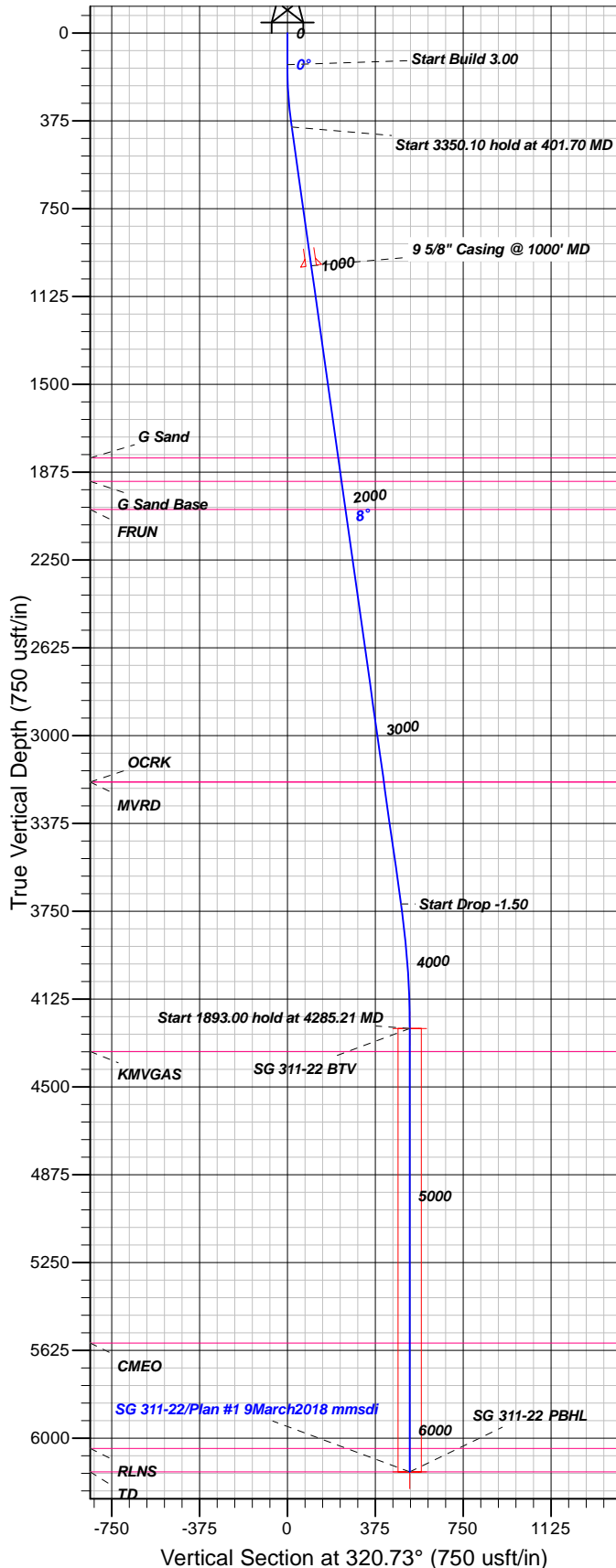
Azimuths to True North
Magnetic North: 9.48°

Magnetic Field
Strength: 51724.5nT
Dip Angle: 65.63°
Date: 3/9/2018
Model: HDGM

Well Details: SG 311-22

GL 6092.4' & RKB 24' @ 6116.40usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1591231.00	2264536.00	39.4277553	-108.1040078	SG 311-22 (A6)



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1814.00	1828.76	G Sand
1914.00	1929.74	G Sand Base
2034.00	2050.92	FRUN
3198.00	3226.36	MVRD
3198.00	3226.36	OCRK
4348.00	4383.21	KMGAS
5593.00	5628.21	CMEQ
6043.00	6078.21	RLNS
6143.00	6178.21	TD

Plan: Plan #1 9March2018 mmsdi

13:43, March 13 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
993.31	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	401.70	8.00	320.73	400.84	14.39	-11.77	3.00	320.73	18.59	
4	3751.81	8.00	320.73	3718.33	375.39	-306.93	0.00	0.00	484.90	
5	4285.21	0.00	0.00	4250.00	404.17	-330.47	1.50	180.00	522.08	
6	6178.21	0.00	0.00	6143.00	404.17	-330.47	0.00	0.00	522.08	SG 311-22 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 311-22 BTV	4250.00	404.17	-330.47	1591644.48	2264217.25	39.4288649	-108.1051777	Circle (Radius: 50.00)
- plan hits target center								
SG 311-22 PBHL	6143.00	404.17	-330.47	1591644.48	2264217.25	39.4288649	-108.1051777	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 11-22 Pad

SG 311-22 - Slot SG 311-22 (A6)

OH

Plan: Plan #1 9March2018 mmsdi

Standard Planning Report

12 March, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 9March2018 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 11-22 Pad			
Site Position:		Northing:	1,591,239.00 usft	Latitude: 39.4277783
From: Map		Easting:	2,264,548.70 usft	Longitude: -108.1039637
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.64 °

Well	SG 311-22 - Slot SG 311-22 (A6)			
Well Position	+N/-S	-8.36 usft	Northing:	1,591,231.00 usft
	+E/-W	-12.47 usft	Easting:	2,264,536.00 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	6,092.40 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/9/2018	9.48	65.63	51,725

Design	Plan #1 9March2018 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	320.73

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	
401.70	8.00	320.73	400.84	14.39	-11.77	3.00	3.00	0.00	320.73	
3,751.81	8.00	320.73	3,718.33	375.39	-306.93	0.00	0.00	0.00	0.00	
4,285.21	0.00	0.00	4,250.00	404.17	-330.47	1.50	-1.50	0.00	180.00	
6,178.21	0.00	0.00	6,143.00	404.17	-330.47	0.00	0.00	0.00	0.00	SG 311-22 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 9March2018 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	320.73	199.99	0.86	-0.70	1.11	3.00	3.00	0.00
300.00	4.95	320.73	299.79	5.51	-4.51	7.12	3.00	3.00	0.00
400.00	7.95	320.73	399.15	14.21	-11.62	18.36	3.00	3.00	0.00
401.70	8.00	320.73	400.84	14.39	-11.77	18.59	3.00	3.00	0.00
Start 3350.10 hold at 401.70 MD									
500.00	8.00	320.73	498.18	24.99	-20.43	32.27	0.00	0.00	0.00
600.00	8.00	320.73	597.20	35.76	-29.24	46.19	0.00	0.00	0.00
700.00	8.00	320.73	696.23	46.54	-38.05	60.11	0.00	0.00	0.00
800.00	8.00	320.73	795.26	57.31	-46.86	74.03	0.00	0.00	0.00
900.00	8.00	320.73	894.28	68.09	-55.67	87.95	0.00	0.00	0.00
1,000.00	8.00	320.73	993.31	78.86	-64.48	101.87	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	8.00	320.73	1,092.34	89.64	-73.29	115.79	0.00	0.00	0.00
1,200.00	8.00	320.73	1,191.36	100.41	-82.10	129.71	0.00	0.00	0.00
1,300.00	8.00	320.73	1,290.39	111.19	-90.91	143.63	0.00	0.00	0.00
1,400.00	8.00	320.73	1,389.42	121.97	-99.72	157.55	0.00	0.00	0.00
1,500.00	8.00	320.73	1,488.44	132.74	-108.54	171.47	0.00	0.00	0.00
1,600.00	8.00	320.73	1,587.47	143.52	-117.35	185.38	0.00	0.00	0.00
1,700.00	8.00	320.73	1,686.50	154.29	-126.16	199.30	0.00	0.00	0.00
1,800.00	8.00	320.73	1,785.52	165.07	-134.97	213.22	0.00	0.00	0.00
1,828.76	8.00	320.73	1,814.00	168.17	-137.50	217.23	0.00	0.00	0.00
G Sand									
1,900.00	8.00	320.73	1,884.55	175.84	-143.78	227.14	0.00	0.00	0.00
1,929.74	8.00	320.73	1,914.00	179.05	-146.40	231.28	0.00	0.00	0.00
G Sand Base									
2,000.00	8.00	320.73	1,983.58	186.62	-152.59	241.06	0.00	0.00	0.00
2,050.92	8.00	320.73	2,034.00	192.11	-157.07	248.15	0.00	0.00	0.00
FRUN									
2,100.00	8.00	320.73	2,082.60	197.40	-161.40	254.98	0.00	0.00	0.00
2,200.00	8.00	320.73	2,181.63	208.17	-170.21	268.90	0.00	0.00	0.00
2,300.00	8.00	320.73	2,280.66	218.95	-179.02	282.82	0.00	0.00	0.00
2,400.00	8.00	320.73	2,379.68	229.72	-187.83	296.74	0.00	0.00	0.00
2,500.00	8.00	320.73	2,478.71	240.50	-196.64	310.66	0.00	0.00	0.00
2,600.00	8.00	320.73	2,577.73	251.27	-205.45	324.58	0.00	0.00	0.00
2,700.00	8.00	320.73	2,676.76	262.05	-214.26	338.49	0.00	0.00	0.00
2,800.00	8.00	320.73	2,775.79	272.83	-223.07	352.41	0.00	0.00	0.00
2,900.00	8.00	320.73	2,874.81	283.60	-231.88	366.33	0.00	0.00	0.00
3,000.00	8.00	320.73	2,973.84	294.38	-240.69	380.25	0.00	0.00	0.00
3,100.00	8.00	320.73	3,072.87	305.15	-249.50	394.17	0.00	0.00	0.00
3,200.00	8.00	320.73	3,171.89	315.93	-258.32	408.09	0.00	0.00	0.00
3,226.36	8.00	320.73	3,198.00	318.77	-260.64	411.76	0.00	0.00	0.00
OCRK - MVRD									
3,300.00	8.00	320.73	3,270.92	326.70	-267.13	422.01	0.00	0.00	0.00
3,400.00	8.00	320.73	3,369.95	337.48	-275.94	435.93	0.00	0.00	0.00
3,500.00	8.00	320.73	3,468.97	348.26	-284.75	449.85	0.00	0.00	0.00
3,600.00	8.00	320.73	3,568.00	359.03	-293.56	463.77	0.00	0.00	0.00
3,700.00	8.00	320.73	3,667.03	369.81	-302.37	477.69	0.00	0.00	0.00
3,751.81	8.00	320.73	3,718.33	375.39	-306.93	484.90	0.00	0.00	0.00
Start Drop -1.50									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 9March2018 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	7.28	320.73	3,766.09	380.35	-310.99	491.30	1.50	-1.50	0.00
3,900.00	5.78	320.73	3,865.44	389.15	-318.18	502.67	1.50	-1.50	0.00
4,000.00	4.28	320.73	3,965.06	395.94	-323.73	511.44	1.50	-1.50	0.00
4,100.00	2.78	320.73	4,064.86	400.70	-327.63	517.59	1.50	-1.50	0.00
4,200.00	1.28	320.73	4,164.80	403.44	-329.87	521.13	1.50	-1.50	0.00
4,285.21	0.00	0.00	4,250.00	404.17	-330.47	522.08	1.50	-1.50	46.09
Start 1893.00 hold at 4285.21 MD - SG 311-22 BTV									
4,300.00	0.00	0.00	4,264.79	404.17	-330.47	522.08	0.00	0.00	0.00
4,383.21	0.00	0.00	4,348.00	404.17	-330.47	522.08	0.00	0.00	0.00
KMGAS									
4,400.00	0.00	0.00	4,364.79	404.17	-330.47	522.08	0.00	0.00	0.00
4,500.00	0.00	0.00	4,464.79	404.17	-330.47	522.08	0.00	0.00	0.00
4,600.00	0.00	0.00	4,564.79	404.17	-330.47	522.08	0.00	0.00	0.00
4,700.00	0.00	0.00	4,664.79	404.17	-330.47	522.08	0.00	0.00	0.00
4,800.00	0.00	0.00	4,764.79	404.17	-330.47	522.08	0.00	0.00	0.00
4,900.00	0.00	0.00	4,864.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,000.00	0.00	0.00	4,964.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,100.00	0.00	0.00	5,064.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,200.00	0.00	0.00	5,164.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,300.00	0.00	0.00	5,264.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,400.00	0.00	0.00	5,364.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,500.00	0.00	0.00	5,464.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,600.00	0.00	0.00	5,564.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,628.21	0.00	0.00	5,593.00	404.17	-330.47	522.08	0.00	0.00	0.00
CME0									
5,700.00	0.00	0.00	5,664.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,800.00	0.00	0.00	5,764.79	404.17	-330.47	522.08	0.00	0.00	0.00
5,900.00	0.00	0.00	5,864.79	404.17	-330.47	522.08	0.00	0.00	0.00
6,000.00	0.00	0.00	5,964.79	404.17	-330.47	522.08	0.00	0.00	0.00
6,078.21	0.00	0.00	6,043.00	404.17	-330.47	522.08	0.00	0.00	0.00
RLNS									
6,100.00	0.00	0.00	6,064.79	404.17	-330.47	522.08	0.00	0.00	0.00
6,178.21	0.00	0.00	6,143.00	404.17	-330.47	522.08	0.00	0.00	0.00
TD at 6178.21 - TD - SG 311-22 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 311-22 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,250.00	404.17	-330.47	1,591,644.48	2,264,217.25	39.4288650	-108.1051777
SG 311-22 PBHL - plan hits target center - Point	0.00	0.00	6,143.00	404.17	-330.47	1,591,644.48	2,264,217.25	39.4288650	-108.1051777

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Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 9March2018 mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	993.31	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,828.76	1,814.00	G Sand		0.00	0.00
1,929.74	1,914.00	G Sand Base		0.00	0.00
2,050.92	2,034.00	FRUN		0.00	0.00
3,226.36	3,198.00	OCRK		0.00	0.00
3,226.36	3,198.00	MVRD		0.00	0.00
4,383.21	4,348.00	KMVGAS		0.00	0.00
5,628.21	5,593.00	CMEO		0.00	0.00
6,078.21	6,043.00	RLNS		0.00	0.00
6,178.21	6,143.00	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
401.70	400.84	14.39	-11.77	Start 3350.10 hold at 401.70 MD
3,751.81	3,718.33	375.39	-306.93	Start Drop -1.50
4,285.21	4,250.00	404.17	-330.47	Start 1893.00 hold at 4285.21 MD
6,178.21	6,143.00	404.17	-330.47	TD at 6178.21