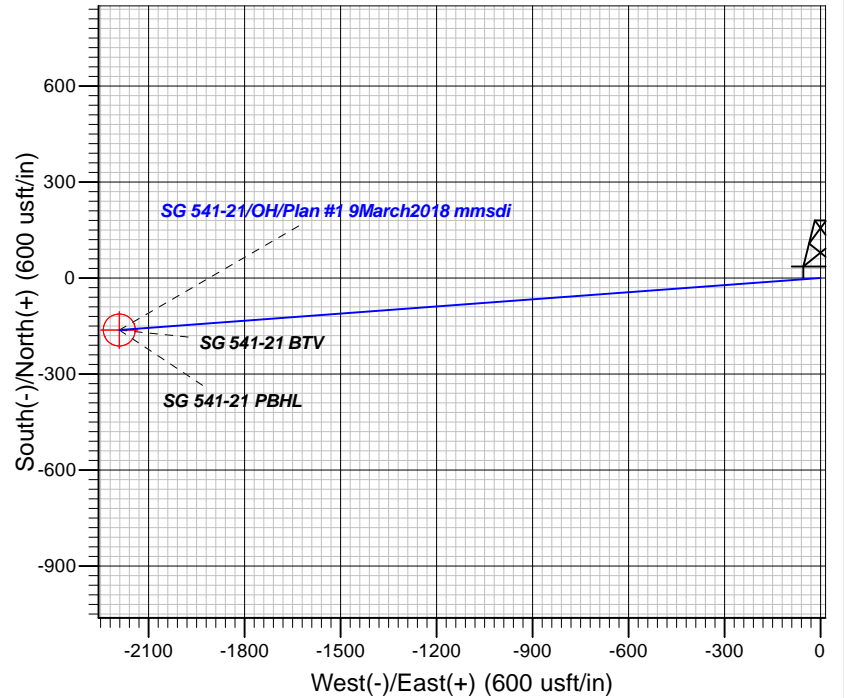
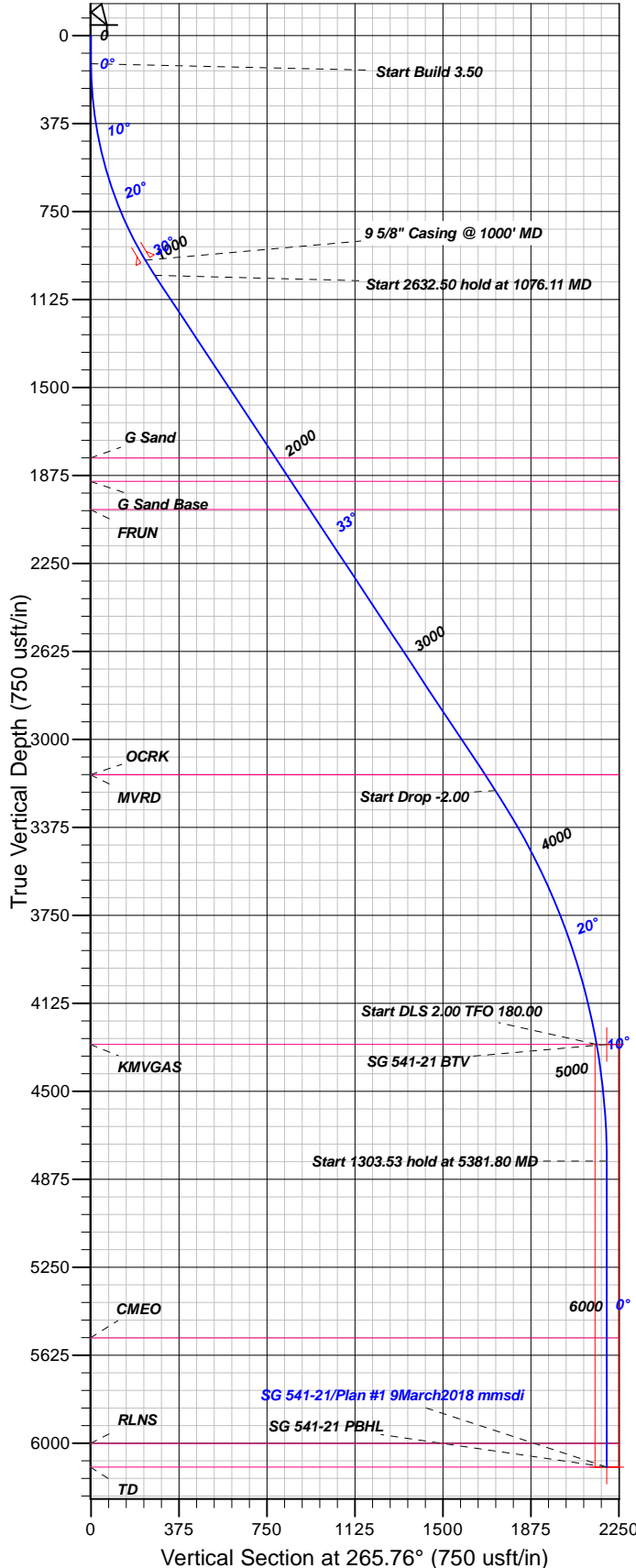




Azimuths to True North  
Magnetic North: 9.48°  
Magnetic Field  
Strength: 51724.5nT  
Dip Angle: 65.63°  
Date: 3/9/2018  
Model: HDGM

## Well Details: SG 541-21

GL 6092.4' & RKB 24' @ 6116.40usft  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.00 0.00 1591210.90 2264504.40 39.4276976 -108.1041175 SG 541-21 (A11)



## FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1801.00	2009.09	G Sand
1901.00	2128.96	G Sand Base
2021.00	2272.81	FRUN
3151.00	3627.34	MVRD
3151.00	3627.34	OCRK
4301.00	4881.80	KMVGAS
5552.00	6135.33	CMEQ
6002.00	6585.33	RLNS
6102.00	6685.33	TD

Plan: Plan #1 9March2018 mmsdi

22:44, March 12 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
958.23	1000.00	5/8" Casing @ 1000' MD	9.62

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	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	1076.11	33.46	265.76	1022.67	-20.08	-270.62	3.50	265.76	271.36	
4	3708.61	33.46	265.76	3218.80	-127.48	-1718.22	0.00	0.001722.95		
5	4881.80	10.00	265.76	4301.00	-159.39	-2148.40	2.00	180.002154.30		
6	5381.80	0.00	0.00	4798.47	-162.61	-2191.80	2.00	180.002197.83		
7	6685.33	0.00	0.00	6102.00	-162.61	-2191.80	0.00	0.002197.83		SG 541-21 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 541-21 BTM	4301.00	-162.61	-2191.80	1591111.18	2262308.84	39.4272509	-108.1118768	Circle (Radius: 50.00)
- plan misses target center by 42.87usft at 4889.22usft MD (4308.31 TVD, -159.48 N, -2149.68 E)								
SG 541-21 PBHL	6102.00	-162.61	-2191.80	1591111.18	2262308.84	39.4272509	-108.1118768	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 11-22 Pad**

**SG 541-21 - Slot SG 541-21 (A11)**

**OH**

**Plan: Plan #1 9March2018 mmsdi**

## **Standard Planning Report**

**12 March, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 541-21 - Slot SG 541-21 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 541-21	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 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		SG 11-22 Pad			
Site Position:		Northing:		1,591,239.00 usft	
From:		Easting:		2,264,548.70 usft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Map		0.00 usft		13.20 in	
				39.4277783	
				-108.1039637	
				-1.64 °	

Well	SG 541-21 - Slot SG 541-21 (A11)					
Well Position	+N/-S	-29.36 usft	Northing:	1,591,210.90 usft	Latitude:	39.4276977
	+E/-W	-43.48 usft	Easting:	2,264,504.40 usft	Longitude:	-108.1041176
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,092.40 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	3/9/2018	9.48	65.63	51,725

<b>Design</b>	Plan #1 9March2018 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	265.76

<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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,076.11	33.46	265.76	1,022.67	-20.08	-270.62	3.50	3.50	0.00	265.76	
3,708.61	33.46	265.76	3,218.80	-127.48	-1,718.22	0.00	0.00	0.00	0.00	
4,881.80	10.00	265.76	4,301.00	-159.39	-2,148.40	2.00	-2.00	0.00	180.00	
5,381.80	0.00	0.00	4,798.47	-162.61	-2,191.80	2.00	-2.00	18.85	180.00	
6,685.33	0.00	0.00	6,102.00	-162.61	-2,191.80	0.00	0.00	0.00	0.00	SG 541-21 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 541-21 - Slot SG 541-21 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 541-21	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 3.50</b>									
200.00	2.80	265.76	199.97	-0.14	-1.95	1.95	3.50	3.50	0.00
300.00	6.30	265.76	299.64	-0.73	-9.86	9.89	3.50	3.50	0.00
400.00	9.80	265.76	398.64	-1.77	-23.82	23.89	3.50	3.50	0.00
500.00	13.30	265.76	496.60	-3.25	-43.79	43.91	3.50	3.50	0.00
600.00	16.80	265.76	593.15	-5.17	-69.68	69.87	3.50	3.50	0.00
700.00	20.30	265.76	687.94	-7.52	-101.40	101.68	3.50	3.50	0.00
800.00	23.80	265.76	780.61	-10.30	-138.83	139.21	3.50	3.50	0.00
900.00	27.30	265.76	870.82	-13.49	-181.84	182.34	3.50	3.50	0.00
1,000.00	30.80	265.76	958.23	-17.08	-230.25	230.89	3.50	3.50	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,076.11	33.46	265.76	1,022.67	-20.08	-270.62	271.36	3.50	3.50	0.00
<b>Start 2632.50 hold at 1076.11 MD</b>									
1,100.00	33.46	265.76	1,042.60	-21.05	-283.76	284.54	0.00	0.00	0.00
1,200.00	33.46	265.76	1,126.03	-25.13	-338.75	339.68	0.00	0.00	0.00
1,300.00	33.46	265.76	1,209.45	-29.21	-393.74	394.82	0.00	0.00	0.00
1,400.00	33.46	265.76	1,292.87	-33.29	-448.73	449.96	0.00	0.00	0.00
1,500.00	33.46	265.76	1,376.30	-37.37	-503.72	505.10	0.00	0.00	0.00
1,600.00	33.46	265.76	1,459.72	-41.45	-558.70	560.24	0.00	0.00	0.00
1,700.00	33.46	265.76	1,543.14	-45.53	-613.69	615.38	0.00	0.00	0.00
1,800.00	33.46	265.76	1,626.57	-49.61	-668.68	670.52	0.00	0.00	0.00
1,900.00	33.46	265.76	1,709.99	-53.69	-723.67	725.66	0.00	0.00	0.00
2,000.00	33.46	265.76	1,793.41	-57.77	-778.66	780.80	0.00	0.00	0.00
2,009.09	33.46	265.76	1,801.00	-58.14	-783.66	785.82	0.00	0.00	0.00
<b>G Sand</b>									
2,100.00	33.46	265.76	1,876.84	-61.85	-833.65	835.94	0.00	0.00	0.00
2,128.96	33.46	265.76	1,901.00	-63.03	-849.58	851.92	0.00	0.00	0.00
<b>G Sand Base</b>									
2,200.00	33.46	265.76	1,960.26	-65.93	-888.64	891.09	0.00	0.00	0.00
2,272.81	33.46	265.76	2,021.00	-68.90	-928.68	931.23	0.00	0.00	0.00
<b>FRUN</b>									
2,300.00	33.46	265.76	2,043.68	-70.01	-943.63	946.23	0.00	0.00	0.00
2,400.00	33.46	265.76	2,127.11	-74.09	-998.62	1,001.37	0.00	0.00	0.00
2,500.00	33.46	265.76	2,210.53	-78.17	-1,053.61	1,056.51	0.00	0.00	0.00
2,600.00	33.46	265.76	2,293.95	-82.25	-1,108.60	1,111.65	0.00	0.00	0.00
2,700.00	33.46	265.76	2,377.38	-86.33	-1,163.59	1,166.79	0.00	0.00	0.00
2,800.00	33.46	265.76	2,460.80	-90.41	-1,218.58	1,221.93	0.00	0.00	0.00
2,900.00	33.46	265.76	2,544.23	-94.49	-1,273.57	1,277.07	0.00	0.00	0.00
3,000.00	33.46	265.76	2,627.65	-98.57	-1,328.56	1,332.21	0.00	0.00	0.00
3,100.00	33.46	265.76	2,711.07	-102.65	-1,383.55	1,387.35	0.00	0.00	0.00
3,200.00	33.46	265.76	2,794.50	-106.73	-1,438.54	1,442.49	0.00	0.00	0.00
3,300.00	33.46	265.76	2,877.92	-110.81	-1,493.53	1,497.64	0.00	0.00	0.00
3,400.00	33.46	265.76	2,961.34	-114.88	-1,548.52	1,552.78	0.00	0.00	0.00
3,500.00	33.46	265.76	3,044.77	-118.96	-1,603.51	1,607.92	0.00	0.00	0.00
3,600.00	33.46	265.76	3,128.19	-123.04	-1,658.50	1,663.06	0.00	0.00	0.00
3,627.34	33.46	265.76	3,151.00	-124.16	-1,673.54	1,678.13	0.00	0.00	0.00
<b>OCRK - MVRD</b>									
3,700.00	33.46	265.76	3,211.61	-127.12	-1,713.49	1,718.20	0.00	0.00	0.00
3,708.61	33.46	265.76	3,218.80	-127.48	-1,718.22	1,722.95	0.00	0.00	0.00
<b>Start Drop -2.00</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 541-21 - Slot SG 541-21 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 541-21	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	31.64	265.76	3,295.83	-131.11	-1,767.26	1,772.11	2.00	-2.00	0.00
3,900.00	29.64	265.76	3,381.87	-134.88	-1,818.07	1,823.07	2.00	-2.00	0.00
4,000.00	27.64	265.76	3,469.63	-138.43	-1,865.86	1,870.99	2.00	-2.00	0.00
4,100.00	25.64	265.76	3,559.01	-141.75	-1,910.57	1,915.82	2.00	-2.00	0.00
4,200.00	23.64	265.76	3,649.91	-144.83	-1,952.14	1,957.50	2.00	-2.00	0.00
4,300.00	21.64	265.76	3,742.20	-147.68	-1,990.52	1,995.99	2.00	-2.00	0.00
4,400.00	19.64	265.76	3,835.78	-150.28	-2,025.66	2,031.23	2.00	-2.00	0.00
4,500.00	17.64	265.76	3,930.53	-152.65	-2,057.53	2,063.18	2.00	-2.00	0.00
4,600.00	15.64	265.76	4,026.34	-154.77	-2,086.08	2,091.81	2.00	-2.00	0.00
4,700.00	13.64	265.76	4,123.09	-156.64	-2,111.28	2,117.08	2.00	-2.00	0.00
4,800.00	11.64	265.76	4,220.66	-158.25	-2,133.09	2,138.95	2.00	-2.00	0.00
4,881.80	10.00	265.76	4,301.00	-159.39	-2,148.40	2,154.30	2.00	-2.00	0.00
<b>Start DLS 2.00 TFO 180.00 - KMGAS</b>									
4,889.22	9.85	265.76	4,308.31	-159.48	-2,149.68	2,155.58	2.00	-2.00	0.00
<b>SG 541-21 BTV</b>									
4,900.00	9.64	265.76	4,318.94	-159.62	-2,151.50	2,157.41	2.00	-2.00	0.00
5,000.00	7.64	265.76	4,417.80	-160.73	-2,166.47	2,172.42	2.00	-2.00	0.00
5,100.00	5.64	265.76	4,517.12	-161.59	-2,177.99	2,183.98	2.00	-2.00	0.00
5,200.00	3.64	265.76	4,616.79	-162.18	-2,186.05	2,192.06	2.00	-2.00	0.00
5,300.00	1.64	265.76	4,716.68	-162.52	-2,190.64	2,196.66	2.00	-2.00	0.00
5,381.80	0.00	0.00	4,798.47	-162.61	-2,191.80	2,197.83	2.00	-2.00	115.22
<b>Start 1303.53 hold at 5381.80 MD</b>									
5,400.00	0.00	0.00	4,816.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
5,500.00	0.00	0.00	4,916.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
5,600.00	0.00	0.00	5,016.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
5,700.00	0.00	0.00	5,116.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
5,800.00	0.00	0.00	5,216.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
5,900.00	0.00	0.00	5,316.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,000.00	0.00	0.00	5,416.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,100.00	0.00	0.00	5,516.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,135.33	0.00	0.00	5,552.00	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
<b>CMEO</b>									
6,200.00	0.00	0.00	5,616.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,300.00	0.00	0.00	5,716.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,400.00	0.00	0.00	5,816.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,500.00	0.00	0.00	5,916.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,585.33	0.00	0.00	6,002.00	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
<b>RLNS</b>									
6,600.00	0.00	0.00	6,016.67	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
6,685.33	0.00	0.00	6,102.00	-162.61	-2,191.80	2,197.83	0.00	0.00	0.00
<b>TD at 6685.33 - TD - SG 541-21 PBHL</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 541-21 - Slot SG 541-21 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 541-21	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SG 541-21 BTV	0.00	0.00	4,301.00	-162.61	-2,191.80	1,591,111.18	2,262,308.84	39.4272510	-108.1118768
- hit/miss target									
- Shape									
- plan misses target center by 42.87usft at 4889.22usft MD (4308.31 TVD, -159.48 N, -2149.68 E)									
- Circle (radius 50.00)									
SG 541-21 PBHL	0.00	0.00	6,102.00	-162.61	-2,191.80	1,591,111.18	2,262,308.84	39.4272510	-108.1118768
- plan hits target center									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	958.23	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,009.09	1,801.00	G Sand		0.00	0.00
2,128.96	1,901.00	G Sand Base		0.00	0.00
2,272.81	2,021.00	FRUN		0.00	0.00
3,627.34	3,151.00	OCRK		0.00	0.00
3,627.34	3,151.00	MVRD		0.00	0.00
4,881.80	4,301.00	KMVGAS		0.00	0.00
6,135.33	5,552.00	CME0		0.00	0.00
6,585.33	6,002.00	RLNS		0.00	0.00
6,685.33	6,102.00	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 3.50
1,076.11	1,022.67	-20.08	-270.62	Start 2632.50 hold at 1076.11 MD
3,708.61	3,218.80	-127.48	-1,718.22	Start Drop -2.00
4,881.80	4,301.00	-159.39	-2,148.40	Start DLS 2.00 TFO 180.00
5,381.80	4,798.47	-162.61	-2,191.80	Start 1303.53 hold at 5381.80 MD
6,685.33	6,102.00	-162.61	-2,191.80	TD at 6685.33