

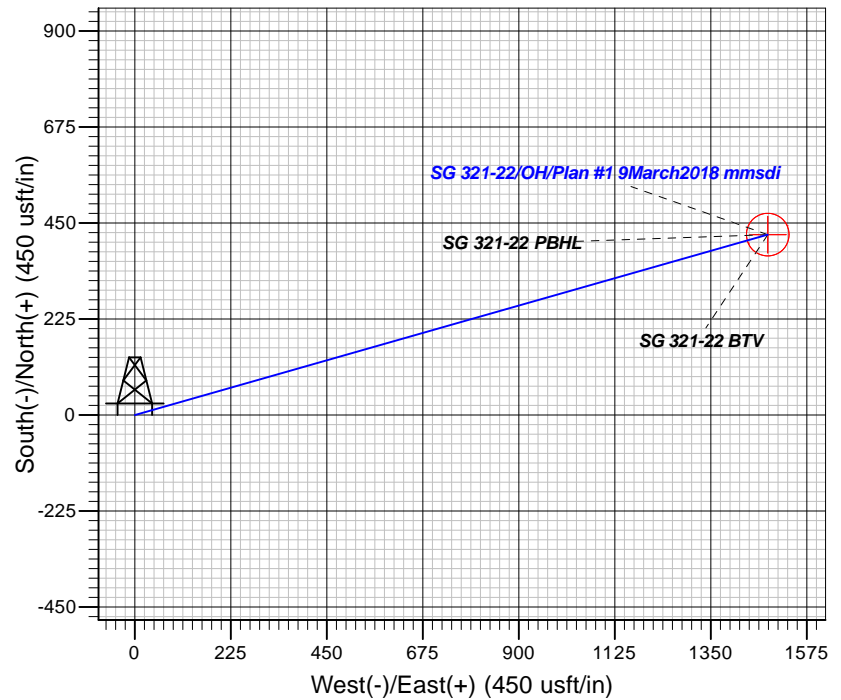
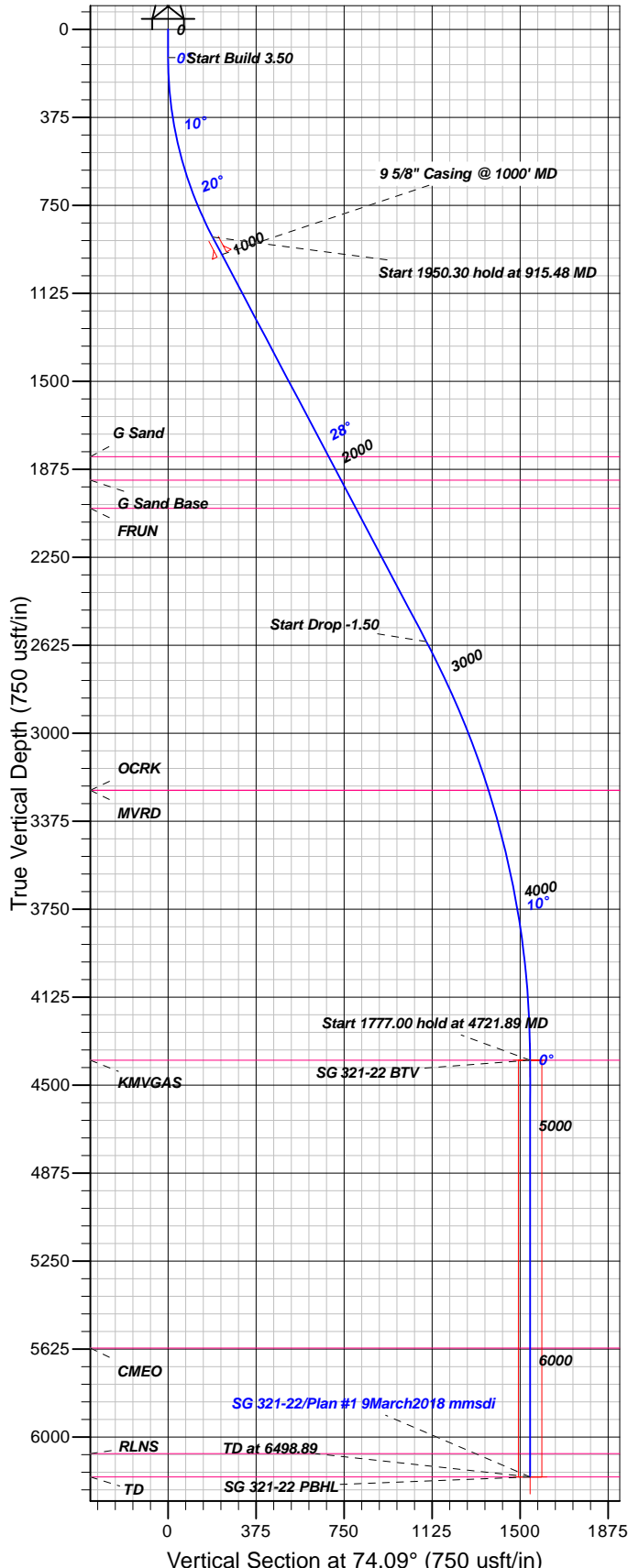


Azimuths to True North  
Magnetic North: 9.48°

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

## Well Details: SG 321-22

GL 6092.4' & RKB 24' @ 6116.40usft  
+N/-S 0.00 +E/-W 0.00 Northing 1591234.60 Easting 2264560.40 Latitude 39.4277671 Longitude -108.1039218 Slot SG 321-22 (B3)



## FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1821.00	1974.53	G Sand
1921.00	2087.63	G Sand Base
2041.00	2223.33	FRUN
3243.00	3553.77	MVRD
3243.00	3553.77	OCRK
4393.00	4721.89	KMVGAS
5620.00	5948.89	CMEO
6070.00	6398.89	RLNS
6170.00	6498.89	TD

Plan: Plan #1 9March2018 mmsdi

13:51, 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
959.28	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	915.48	27.84	74.09	884.54	51.95	182.24	3.50	74.09	189.50	
4	2865.77	27.84	74.09	2609.07	301.66	1058.19	0.00	0.00	1100.35	
5	4721.89	0.00	0.00	4393.00	422.88	1483.42	1.50	180.00	1542.52	SG 321-22 BTV
6	6498.89	0.00	0.00	6170.00	422.88	1483.42	0.00	0.00	1542.52	SG 321-22 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 321-22 BTV	4393.00	422.88	1483.42	1591614.79	2266055.33	39.4289280	-108.0986702	Circle (Radius: 50.00)
- plan hits target center								
SG 321-22 PBHL	6170.00	422.88	1483.42	1591614.79	2266055.33	39.4289280	-108.0986702	Point
- plan hits target center								



## **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 11-22 Pad**

**SG 321-22 - Slot SG 321-22 (B3)**

**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 321-22 - Slot SG 321-22 (B3)
<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 321-22	<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	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 321-22 - Slot SG 321-22 (B3)					
Well Position	+N/-S	-4.06 usft	Northing:	1,591,234.60 usft	Latitude:	39.4277671
	+E/-W	11.82 usft	Easting:	2,264,560.40 usft	Longitude:	-108.1039218
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	74.09

<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	
915.48	27.84	74.09	884.54	51.95	182.24	3.50	3.50	0.00	74.09	
2,865.77	27.84	74.09	2,609.07	301.66	1,058.19	0.00	0.00	0.00	0.00	
4,721.89	0.00	0.00	4,393.00	422.88	1,483.42	1.50	-1.50	0.00	180.00	SG 321-22 BTV
6,498.89	0.00	0.00	6,170.00	422.88	1,483.42	0.00	0.00	0.00	0.00	SG 321-22 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 321-22 - Slot SG 321-22 (B3)
<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 321-22	<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	74.09	199.97	0.54	1.88	1.95	3.50	3.50	0.00
300.00	6.30	74.09	299.64	2.71	9.51	9.89	3.50	3.50	0.00
400.00	9.80	74.09	398.64	6.55	22.97	23.89	3.50	3.50	0.00
500.00	13.30	74.09	496.60	12.04	42.22	43.91	3.50	3.50	0.00
600.00	16.80	74.09	593.15	19.15	67.19	69.87	3.50	3.50	0.00
700.00	20.30	74.09	687.94	27.87	97.78	101.68	3.50	3.50	0.00
800.00	23.80	74.09	780.61	38.16	133.88	139.21	3.50	3.50	0.00
900.00	27.30	74.09	870.82	49.99	175.35	182.34	3.50	3.50	0.00
915.48	27.84	74.09	884.54	51.95	182.24	189.50	3.50	3.50	0.00
<b>Start 1950.30 hold at 915.48 MD</b>									
1,000.00	27.84	74.09	959.28	62.77	220.20	228.97	0.00	0.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,100.00	27.84	74.09	1,047.70	75.58	265.12	275.68	0.00	0.00	0.00
1,200.00	27.84	74.09	1,136.13	88.38	310.03	322.38	0.00	0.00	0.00
1,300.00	27.84	74.09	1,224.55	101.18	354.94	369.08	0.00	0.00	0.00
1,400.00	27.84	74.09	1,312.97	113.99	399.86	415.79	0.00	0.00	0.00
1,500.00	27.84	74.09	1,401.40	126.79	444.77	462.49	0.00	0.00	0.00
1,600.00	27.84	74.09	1,489.82	139.59	489.68	509.19	0.00	0.00	0.00
1,700.00	27.84	74.09	1,578.25	152.40	534.60	555.90	0.00	0.00	0.00
1,800.00	27.84	74.09	1,666.67	165.20	579.51	602.60	0.00	0.00	0.00
1,900.00	27.84	74.09	1,755.09	178.00	624.43	649.30	0.00	0.00	0.00
1,974.53	27.84	74.09	1,821.00	187.55	657.90	684.11	0.00	0.00	0.00
<b>G Sand</b>									
2,000.00	27.84	74.09	1,843.52	190.81	669.34	696.01	0.00	0.00	0.00
2,087.63	27.84	74.09	1,921.00	202.03	708.70	736.93	0.00	0.00	0.00
<b>G Sand Base</b>									
2,100.00	27.84	74.09	1,931.94	203.61	714.25	742.71	0.00	0.00	0.00
2,200.00	27.84	74.09	2,020.37	216.42	759.17	789.41	0.00	0.00	0.00
2,223.33	27.84	74.09	2,041.00	219.40	769.65	800.31	0.00	0.00	0.00
<b>FRUN</b>									
2,300.00	27.84	74.09	2,108.79	229.22	804.08	836.12	0.00	0.00	0.00
2,400.00	27.84	74.09	2,197.21	242.02	849.00	882.82	0.00	0.00	0.00
2,500.00	27.84	74.09	2,285.64	254.83	893.91	929.52	0.00	0.00	0.00
2,600.00	27.84	74.09	2,374.06	267.63	938.82	976.22	0.00	0.00	0.00
2,700.00	27.84	74.09	2,462.49	280.43	983.74	1,022.93	0.00	0.00	0.00
2,800.00	27.84	74.09	2,550.91	293.24	1,028.65	1,069.63	0.00	0.00	0.00
2,865.77	27.84	74.09	2,609.07	301.66	1,058.19	1,100.35	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
2,900.00	27.33	74.09	2,639.41	306.00	1,073.43	1,116.20	1.50	-1.50	0.00
3,000.00	25.83	74.09	2,728.84	318.27	1,116.46	1,160.94	1.50	-1.50	0.00
3,100.00	24.33	74.09	2,819.41	329.89	1,157.22	1,203.32	1.50	-1.50	0.00
3,200.00	22.83	74.09	2,911.06	340.85	1,195.69	1,243.32	1.50	-1.50	0.00
3,300.00	21.33	74.09	3,003.72	351.16	1,231.83	1,280.91	1.50	-1.50	0.00
3,400.00	19.83	74.09	3,097.34	360.79	1,265.64	1,316.06	1.50	-1.50	0.00
3,500.00	18.33	74.09	3,191.84	369.75	1,297.07	1,348.74	1.50	-1.50	0.00
3,553.77	17.52	74.09	3,243.00	374.29	1,312.98	1,365.29	1.50	-1.50	0.00
<b>OCRK - MVRD</b>									
3,600.00	16.83	74.09	3,287.17	378.03	1,326.11	1,378.94	1.50	-1.50	0.00
3,700.00	15.33	74.09	3,383.25	385.63	1,352.75	1,406.64	1.50	-1.50	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 321-22 - Slot SG 321-22 (B3)
<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 321-22	<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	13.83	74.09	3,480.03	392.53	1,376.95	1,431.81	1.50	-1.50	0.00	
3,900.00	12.33	74.09	3,577.43	398.73	1,398.71	1,454.43	1.50	-1.50	0.00	
4,000.00	10.83	74.09	3,675.40	404.23	1,418.01	1,474.50	1.50	-1.50	0.00	
4,100.00	9.33	74.09	3,773.85	409.03	1,434.84	1,492.00	1.50	-1.50	0.00	
4,200.00	7.83	74.09	3,872.73	413.12	1,449.19	1,506.92	1.50	-1.50	0.00	
4,300.00	6.33	74.09	3,971.96	416.50	1,461.04	1,519.24	1.50	-1.50	0.00	
4,400.00	4.83	74.09	4,071.49	419.16	1,470.38	1,528.96	1.50	-1.50	0.00	
4,500.00	3.33	74.09	4,171.23	421.11	1,477.22	1,536.07	1.50	-1.50	0.00	
4,600.00	1.83	74.09	4,271.13	422.34	1,481.55	1,540.57	1.50	-1.50	0.00	
4,700.00	0.33	74.09	4,371.11	422.86	1,483.36	1,542.45	1.50	-1.50	0.00	
4,721.89	0.00	0.00	4,393.00	422.88	1,483.42	1,542.52	1.50	-1.50	0.00	
Start 1777.00 hold at 4721.89 MD - KMGAS - SG 321-22 BTV										
4,800.00	0.00	0.00	4,471.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,571.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,671.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,771.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,200.00	0.00	0.00	4,871.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,300.00	0.00	0.00	4,971.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,071.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,171.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,271.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,371.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,471.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,571.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
5,948.89	0.00	0.00	5,620.00	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
CMEO										
6,000.00	0.00	0.00	5,671.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,771.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,871.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,971.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
6,398.89	0.00	0.00	6,070.00	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
RLNS										
6,400.00	0.00	0.00	6,071.11	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
6,498.89	0.00	0.00	6,170.00	422.88	1,483.42	1,542.52	0.00	0.00	0.00	
TD at 6498.89 - TD - SG 321-22 PBHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SG 321-22 BTV	0.00	0.00	4,393.00	422.88	1,483.42	1,591,614.79	2,266,055.33	39.4289280	-108.0986702
- plan hits target center									
- Circle (radius 50.00)									
SG 321-22 PBHL	0.00	0.00	6,170.00	422.88	1,483.42	1,591,614.79	2,266,055.33	39.4289280	-108.0986702
- plan hits target center									
- Point									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 321-22 - Slot SG 321-22 (B3)
<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 321-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 mmsdi		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	959.28	9 5/8" Casing @ 1000' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,974.53	1,821.00	G Sand		0.00	0.00	
2,087.63	1,921.00	G Sand Base		0.00	0.00	
2,223.33	2,041.00	FRUN		0.00	0.00	
3,553.77	3,243.00	OCRK		0.00	0.00	
3,553.77	3,243.00	MVRD		0.00	0.00	
4,721.89	4,393.00	KMVGAS		0.00	0.00	
5,948.89	5,620.00	CMEO		0.00	0.00	
6,398.89	6,070.00	RLNS		0.00	0.00	
6,498.89	6,170.00	TD		0.00	0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 3.50	
915.48	884.54	51.95	182.24	Start 1950.30 hold at 915.48 MD	
2,865.77	2,609.07	301.66	1,058.19	Start Drop -1.50	
4,721.89	4,393.00	422.88	1,483.42	Start 1777.00 hold at 4721.89 MD	
6,498.89	6,170.00	422.88	1,483.42	TD at 6498.89	