

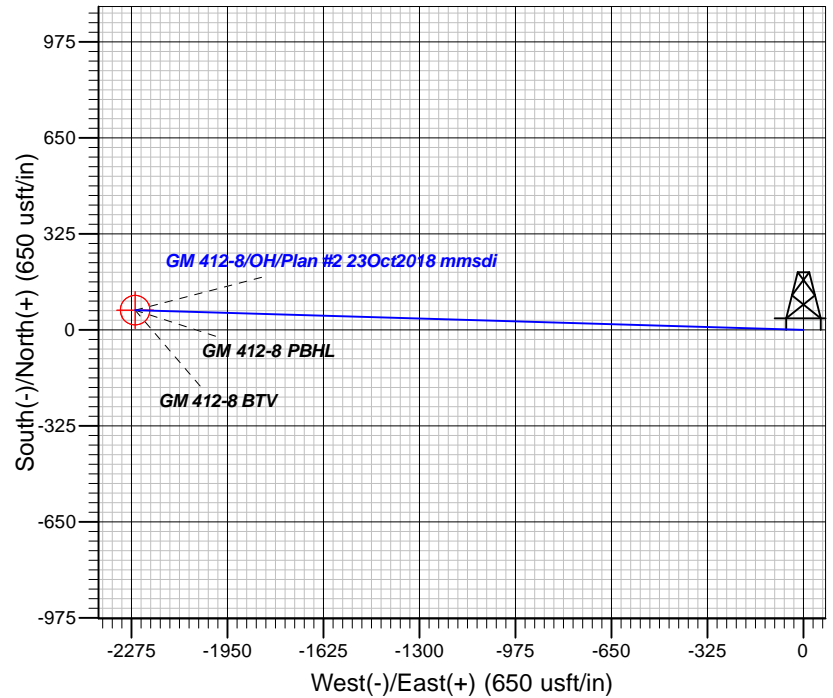
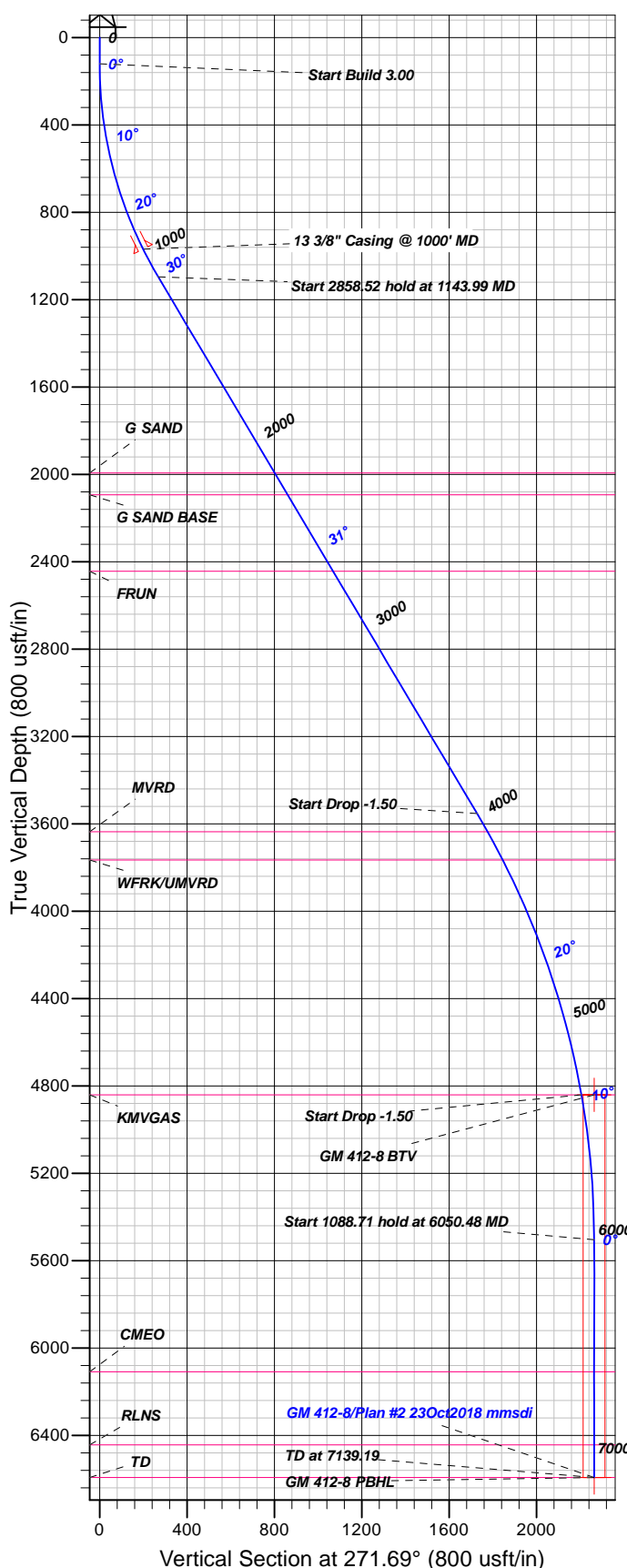


Azimuths to True North
Magnetic North: 9.52°

Magnetic Field
Strength: 51678.7snT
Dip Angle: 65.68°
Date: 6/18/2018
Model: HDGM

Well Details: GM 412-8

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1601127.46	2257375.39	39.4543483	-108.1303610	GM 412-8 (A4)



FORMATION TOP DETAILS

TVDP	MD	Formation
1994.00	2189.00	G SAND
2094.00	2305.32	G SAND BASE
2443.63	2712.02	FRUN
3636.00	4098.31	MVRD
3766.00	4245.80	WFRK/UMVRD
4841.00	5383.81	KMVGAS
6109.00	6655.19	CMEO
6443.00	6989.19	RLNS
6593.00	7139.19	TD

Plan: Plan #2 23Oct2018 mmsdi

9:47, November 02 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
969.19	1000.00	3/8" Casing @ 1000' MD	13.37

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	1143.99	30.72	271.69	1095.63	7.89	-267.88	3.00	271.69	268.00	
4	4002.51	30.72	271.69	3553.03	50.90	-1727.49	0.00	0.00	1728.23	
5	5383.81	10.00	271.69	4841.00	64.98	-2205.24	1.50	180.00	2206.20	
6	6050.48	0.00	0.00	5504.29	66.69	-2263.24	1.50	180.00	2264.23	
7	7139.19	0.00	0.00	6593.00	66.69	-2263.24	0.00	0.00	2264.23	GM 412-8 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 412-8 BTV	4841.00	66.69	-2263.25	1601259.64	2255115.02	39.4545311	-108.1383763	Circle (Radius: 50.00)
- plan misses target center by 57.17usft at 5393.77usft MD (4850.81 TVD, 65.03 N, -2206.96 E)								
GM 412-8 PBHL	6593.00	66.69	-2263.25	1601259.64	2255115.02	39.4545311	-108.1383763	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 60-8D Pad

GM 412-8 - Slot GM 412-8 (A4)

OH

Plan: Plan #2 23Oct2018 mmsdi

Standard Planning Report

02 November, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 412-8 - Slot GM 412-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 412-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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		MV 60-8D Pad			
Site Position:		Northing:	1,601,172.03 usft	Latitude:	39.4544712
From:	Map	Easting:	2,257,381.57 usft	Longitude:	-108.1303437
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 412-8 - Slot GM 412-8 (A4)					
Well Position	+N/-S	-44.73 usft	Northing:	1,601,127.46 usft	Latitude:	39.4543484
	+E/-W	-4.89 usft	Easting:	2,257,375.39 usft	Longitude:	-108.1303611
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,175.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/18/2018	9.52	65.68	51,679

Design	Plan #2 23Oct2018 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	271.69

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	
1,143.99	30.72	271.69	1,095.63	7.89	-267.88	3.00	3.00	0.00	271.69	
4,002.51	30.72	271.69	3,553.03	50.90	-1,727.49	0.00	0.00	0.00	0.00	
5,383.81	10.00	271.69	4,841.00	64.98	-2,205.24	1.50	-1.50	0.00	180.00	
6,050.48	0.00	0.00	5,504.29	66.69	-2,263.24	1.50	-1.50	0.00	180.00	
7,139.19	0.00	0.00	6,593.00	66.69	-2,263.24	0.00	0.00	0.00	0.00	GM 412-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 412-8 - Slot GM 412-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 412-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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
Start Build 3.00									
200.00	2.40	271.69	199.98	0.05	-1.67	1.68	3.00	3.00	0.00
300.00	5.40	271.69	299.73	0.25	-8.47	8.48	3.00	3.00	0.00
400.00	8.40	271.69	399.00	0.60	-20.48	20.49	3.00	3.00	0.00
500.00	11.40	271.69	497.50	1.11	-37.66	37.68	3.00	3.00	0.00
600.00	14.40	271.69	594.96	1.77	-59.98	60.00	3.00	3.00	0.00
700.00	17.40	271.69	691.13	2.57	-87.36	87.39	3.00	3.00	0.00
800.00	20.40	271.69	785.72	3.53	-119.73	119.78	3.00	3.00	0.00
900.00	23.40	271.69	878.50	4.63	-157.01	157.08	3.00	3.00	0.00
1,000.00	26.40	271.69	969.19	5.87	-199.09	199.18	3.00	3.00	0.00
13 3/8" Casing @ 1000' MD									
1,100.00	29.40	271.69	1,057.56	7.24	-245.86	245.96	3.00	3.00	0.00
1,143.99	30.72	271.69	1,095.63	7.89	-267.88	268.00	3.00	3.00	0.00
Start 2858.52 hold at 1143.99 MD									
1,200.00	30.72	271.69	1,143.78	8.74	-296.48	296.61	0.00	0.00	0.00
1,300.00	30.72	271.69	1,229.75	10.24	-347.54	347.69	0.00	0.00	0.00
1,400.00	30.72	271.69	1,315.72	11.75	-398.60	398.78	0.00	0.00	0.00
1,500.00	30.72	271.69	1,401.68	13.25	-449.67	449.86	0.00	0.00	0.00
1,600.00	30.72	271.69	1,487.65	14.75	-500.73	500.94	0.00	0.00	0.00
1,700.00	30.72	271.69	1,573.62	16.26	-551.79	552.03	0.00	0.00	0.00
1,800.00	30.72	271.69	1,659.59	17.76	-602.85	603.11	0.00	0.00	0.00
1,900.00	30.72	271.69	1,745.55	19.27	-653.91	654.20	0.00	0.00	0.00
2,000.00	30.72	271.69	1,831.52	20.77	-704.97	705.28	0.00	0.00	0.00
2,100.00	30.72	271.69	1,917.49	22.28	-756.04	756.36	0.00	0.00	0.00
2,189.00	30.72	271.69	1,994.00	23.62	-801.48	801.83	0.00	0.00	0.00
G SAND									
2,200.00	30.72	271.69	2,003.46	23.78	-807.10	807.45	0.00	0.00	0.00
2,300.00	30.72	271.69	2,089.43	25.29	-858.16	858.53	0.00	0.00	0.00
2,305.32	30.72	271.69	2,094.00	25.37	-860.88	861.25	0.00	0.00	0.00
G SAND BASE									
2,400.00	30.72	271.69	2,175.39	26.79	-909.22	909.61	0.00	0.00	0.00
2,500.00	30.72	271.69	2,261.36	28.30	-960.28	960.70	0.00	0.00	0.00
2,600.00	30.72	271.69	2,347.33	29.80	-1,011.34	1,011.78	0.00	0.00	0.00
2,700.00	30.72	271.69	2,433.30	31.31	-1,062.40	1,062.87	0.00	0.00	0.00
2,712.02	30.72	271.69	2,443.63	31.49	-1,068.54	1,069.01	0.00	0.00	0.00
FRUN									
2,800.00	30.72	271.69	2,519.26	32.81	-1,113.47	1,113.95	0.00	0.00	0.00
2,900.00	30.72	271.69	2,605.23	34.31	-1,164.53	1,165.03	0.00	0.00	0.00
3,000.00	30.72	271.69	2,691.20	35.82	-1,215.59	1,216.12	0.00	0.00	0.00
3,100.00	30.72	271.69	2,777.17	37.32	-1,266.65	1,267.20	0.00	0.00	0.00
3,200.00	30.72	271.69	2,863.14	38.83	-1,317.71	1,318.28	0.00	0.00	0.00
3,300.00	30.72	271.69	2,949.10	40.33	-1,368.77	1,369.37	0.00	0.00	0.00
3,400.00	30.72	271.69	3,035.07	41.84	-1,419.84	1,420.45	0.00	0.00	0.00
3,500.00	30.72	271.69	3,121.04	43.34	-1,470.90	1,471.54	0.00	0.00	0.00
3,600.00	30.72	271.69	3,207.01	44.85	-1,521.96	1,522.62	0.00	0.00	0.00
3,700.00	30.72	271.69	3,292.97	46.35	-1,573.02	1,573.70	0.00	0.00	0.00
3,800.00	30.72	271.69	3,378.94	47.86	-1,624.08	1,624.79	0.00	0.00	0.00
3,900.00	30.72	271.69	3,464.91	49.36	-1,675.14	1,675.87	0.00	0.00	0.00
4,000.00	30.72	271.69	3,550.88	50.86	-1,726.20	1,726.95	0.00	0.00	0.00
4,002.51	30.72	271.69	3,553.03	50.90	-1,727.49	1,728.23	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 412-8 - Slot GM 412-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 412-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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)
Start Drop -1.50									
4,098.31	29.28	271.69	3,636.00	52.31	-1,775.37	1,776.14	1.50	-1.50	0.00
MVRD									
4,100.00	29.26	271.69	3,637.47	52.34	-1,776.19	1,776.96	1.50	-1.50	0.00
4,200.00	27.76	271.69	3,725.34	53.74	-1,823.90	1,824.69	1.50	-1.50	0.00
4,245.80	27.07	271.69	3,766.00	54.36	-1,844.97	1,845.77	1.50	-1.50	0.00
WFRK/UMVRD									
4,300.00	26.26	271.69	3,814.44	55.08	-1,869.29	1,870.10	1.50	-1.50	0.00
4,400.00	24.76	271.69	3,904.69	56.35	-1,912.33	1,913.16	1.50	-1.50	0.00
4,500.00	23.26	271.69	3,996.03	57.55	-1,952.99	1,953.84	1.50	-1.50	0.00
4,600.00	21.76	271.69	4,088.41	58.67	-1,991.26	1,992.12	1.50	-1.50	0.00
4,700.00	20.26	271.69	4,181.77	59.73	-2,027.09	2,027.97	1.50	-1.50	0.00
4,800.00	18.76	271.69	4,276.02	60.71	-2,060.47	2,061.36	1.50	-1.50	0.00
4,900.00	17.26	271.69	4,371.12	61.62	-2,091.37	2,092.27	1.50	-1.50	0.00
5,000.00	15.76	271.69	4,467.00	62.46	-2,119.77	2,120.69	1.50	-1.50	0.00
5,100.00	14.26	271.69	4,563.58	63.22	-2,145.65	2,146.58	1.50	-1.50	0.00
5,200.00	12.76	271.69	4,660.82	63.91	-2,168.99	2,169.94	1.50	-1.50	0.00
5,300.00	11.26	271.69	4,758.62	64.52	-2,189.79	2,190.74	1.50	-1.50	0.00
5,383.81	10.00	271.69	4,841.00	64.98	-2,205.24	2,206.20	1.50	-1.50	0.00
Start Drop -1.50 - KMGAS									
5,393.77	9.85	271.69	4,850.81	65.03	-2,206.96	2,207.91	1.50	-1.50	0.00
GM 412-8 BTV									
5,400.00	9.76	271.69	4,856.95	65.06	-2,208.02	2,208.97	1.50	-1.50	0.00
5,500.00	8.26	271.69	4,955.71	65.52	-2,223.66	2,224.63	1.50	-1.50	0.00
5,600.00	6.76	271.69	5,054.85	65.91	-2,236.72	2,237.69	1.50	-1.50	0.00
5,700.00	5.26	271.69	5,154.30	66.22	-2,247.18	2,248.16	1.50	-1.50	0.00
5,800.00	3.76	271.69	5,253.99	66.45	-2,255.04	2,256.02	1.50	-1.50	0.00
5,900.00	2.26	271.69	5,353.84	66.60	-2,260.28	2,261.26	1.50	-1.50	0.00
6,000.00	0.76	271.69	5,453.81	66.68	-2,262.91	2,263.89	1.50	-1.50	0.00
6,050.48	0.00	0.00	5,504.29	66.69	-2,263.24	2,264.23	1.50	-1.50	174.94
Start 1088.71 hold at 6050.48 MD									
6,100.00	0.00	0.00	5,553.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,200.00	0.00	0.00	5,653.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,300.00	0.00	0.00	5,753.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,400.00	0.00	0.00	5,853.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,500.00	0.00	0.00	5,953.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,600.00	0.00	0.00	6,053.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,655.19	0.00	0.00	6,109.00	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
CME0									
6,700.00	0.00	0.00	6,153.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,800.00	0.00	0.00	6,253.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,900.00	0.00	0.00	6,353.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
6,989.19	0.00	0.00	6,443.00	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
RLNS									
7,000.00	0.00	0.00	6,453.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
7,100.00	0.00	0.00	6,553.81	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
7,139.19	0.00	0.00	6,593.00	66.69	-2,263.24	2,264.23	0.00	0.00	0.00
TD at 7139.19 - TD - GM 412-8 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 412-8 - Slot GM 412-8 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 412-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 mmsdi		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
GM 412-8 BTV	0.00	0.00	4,841.00	66.69	-2,263.25	1,601,259.64	2,255,115.02	39.4545312	-108.1383763
- plan misses target center by 57.17usft at 5393.77usft MD (4850.81 TVD, 65.03 N, -2206.96 E)									
- Circle (radius 50.00)									
GM 412-8 PBHL	0.00	0.00	6,593.00	66.69	-2,263.25	1,601,259.64	2,255,115.02	39.4545312	-108.1383763
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	969.19	13 3/8" Casing @ 1000' MD	13.37	17.50	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,189.00	1,994.00	G SAND		0.00	0.00
2,305.32	2,094.00	G SAND BASE		0.00	0.00
2,712.02	2,443.63	FRUN		0.00	0.00
4,098.31	3,636.00	MVRD		0.00	0.00
4,245.80	3,766.00	WFRK/UMVRD		0.00	0.00
5,383.81	4,841.00	KMVGAS		0.00	0.00
6,655.19	6,109.00	CME0		0.00	0.00
6,989.19	6,443.00	RLNS		0.00	0.00
7,139.19	6,593.00	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 3.00
1,143.99	1,095.63	7.89	-267.88	Start 2858.52 hold at 1143.99 MD
4,002.51	3,553.03	50.90	-1,727.49	Start Drop -1.50
5,383.81	4,841.00	64.98	-2,205.24	Start Drop -1.50
6,050.48	5,504.29	66.69	-2,263.24	Start 1088.71 hold at 6050.48 MD
7,139.19	6,593.00	66.69	-2,263.24	TD at 7139.19