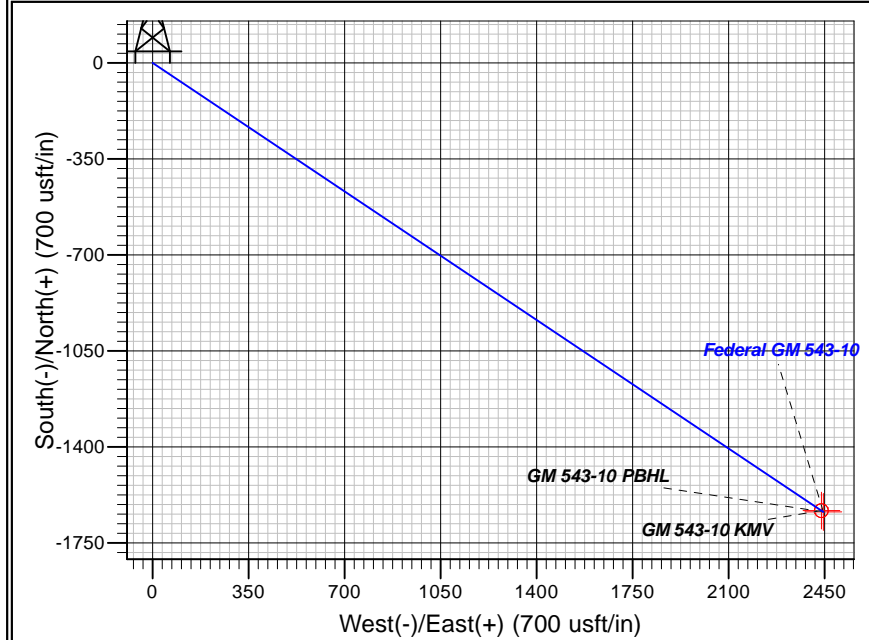
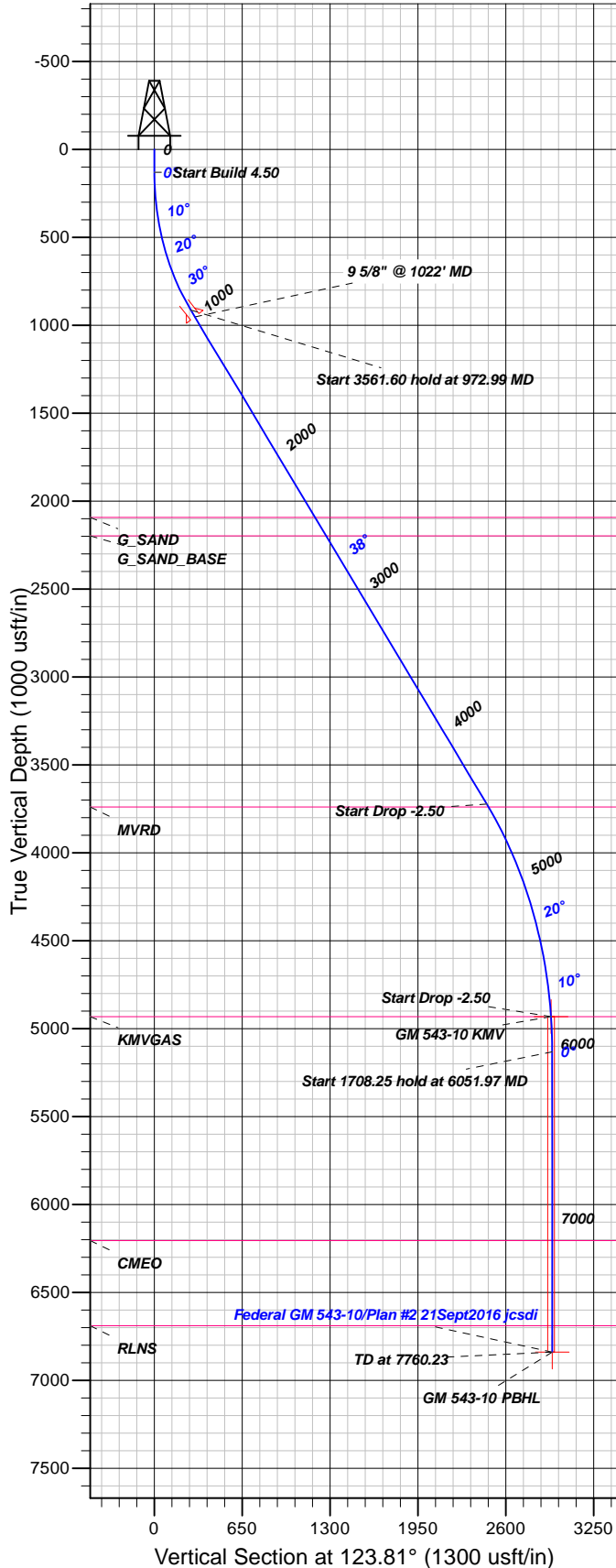


Well Details: Federal GM 543-10

GL 6148' & RKB 24' @ 6172.00usft (H&P 318)

+N/-S +E/-W Northing Easting Latitude Longitude Slot
 9718 -108.0965540 A12

T M Azimuths to True North
 Magnetic North: 9.71°
 Magnetic Field
 Strength: 51587.4snT
 Dip Angle: 65.58°
 Date: 9/13/2016
 Model: BGGM2016



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2092.00	2468.16	G_SAND
2197.00	2601.29	G_SAND_BASE
3739.00	4556.30	MVRD
4931.00	5851.97	KMGAS
6205.00	7126.23	CMEQ
6689.00	7610.23	RLNS

Plan: Plan #2 21Sept2016 jcsdi

17:06, September 22 2016
 Created By: Janie Collins

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
952.17	1022.99	9 5/8" @ 1022' 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	130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	
3	972.99	37.93	123.81	912.74	-149.68	223.53	4.50	123.81	269.02	
4	4534.59	37.93	123.81	3721.82	-1367.96	2042.83	0.00	0.002458.55		
5	5851.97	5.00	123.81	4931.00	-1632.54	2437.94	2.50	180.002934.07		GM 543-10 KMGAS
6	6051.97	0.00	0.00	5130.75	-1637.39	2445.19	2.50	180.002942.79		
7	7760.23	0.00	0.00	6839.00	-1637.39	2445.19	0.00	0.002942.79		GM 543-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 543-10 KMGAS	4931.00	-1632.54	2437.94	1598650.16	2269293.39	39.4484894	-108.0879208	Circle (Radius: 25.00)
- plan hits target center								
GM 543-10 PBHL	6839.00	-1637.39	2445.19	1598645.10	2269300.50	39.4484760	-108.0878952	Point
- plan misses target center by 0.01usft at 7760.23usft MD (6839.00 TVD, -1637.39 N, 2445.19 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 543-10 - Slot A12

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 543-10 - Slot A12
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 543-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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 5-10 Pad			
Site Position:		Northing:	1,600,344.70 usft	Latitude: 39.4529509
From: Map		Easting:	2,266,881.70 usft	Longitude: -108.0966291
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.64 °

Well	Federal GM 543-10 - Slot A12			
Well Position	+N/-S	7.61 usft	Northing:	1,600,351.70 usft
	+E/-W	21.19 usft	Easting:	2,266,903.10 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,148.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	9/13/2016	9.72	65.58	51,587

Design	Plan #2 21Sept2016 jcsdi			
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	123.81

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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
972.99	37.93	123.81	912.74	-149.68	223.53	4.50	4.50	0.00	123.81	
4,534.59	37.93	123.81	3,721.82	-1,367.96	2,042.83	0.00	0.00	0.00	0.00	
5,851.97	5.00	123.81	4,931.00	-1,632.54	2,437.94	2.50	-2.50	0.00	180.00	GM 543-10 KMW
6,051.97	0.00	0.00	5,130.75	-1,637.39	2,445.19	2.50	-2.50	0.00	180.00	
7,760.23	0.00	0.00	6,839.00	-1,637.39	2,445.19	0.00	0.00	0.00	0.00	GM 543-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 543-10 - Slot A12
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 543-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	3.15	123.81	199.96	-1.07	1.60	1.92	4.50	4.50	0.00
300.00	7.65	123.81	299.50	-6.31	9.42	11.33	4.50	4.50	0.00
400.00	12.15	123.81	397.98	-15.87	23.70	28.52	4.50	4.50	0.00
500.00	16.65	123.81	494.81	-29.70	44.36	53.38	4.50	4.50	0.00
600.00	21.15	123.81	589.40	-47.72	71.26	85.77	4.50	4.50	0.00
700.00	25.65	123.81	681.15	-69.81	104.26	125.47	4.50	4.50	0.00
800.00	30.15	123.81	769.50	-95.84	143.13	172.25	4.50	4.50	0.00
900.00	34.65	123.81	853.92	-125.65	187.64	225.82	4.50	4.50	0.00
972.99	37.93	123.81	912.74	-149.68	223.53	269.02	4.50	4.50	0.00
1,000.00	37.93	123.81	934.04	-158.92	237.33	285.62	0.00	0.00	0.00
1,022.99	37.93	123.81	952.17	-166.79	249.07	299.76	0.00	0.00	0.00
9 5/8" @ 1022' MD									
1,100.00	37.93	123.81	1,012.91	-193.13	288.41	347.10	0.00	0.00	0.00
1,200.00	37.93	123.81	1,091.78	-227.33	339.49	408.58	0.00	0.00	0.00
1,300.00	37.93	123.81	1,170.65	-261.54	390.57	470.05	0.00	0.00	0.00
1,400.00	37.93	123.81	1,249.53	-295.75	441.65	531.53	0.00	0.00	0.00
1,500.00	37.93	123.81	1,328.40	-329.95	492.73	593.00	0.00	0.00	0.00
1,600.00	37.93	123.81	1,407.27	-364.16	543.81	654.48	0.00	0.00	0.00
1,700.00	37.93	123.81	1,486.14	-398.36	594.89	715.96	0.00	0.00	0.00
1,800.00	37.93	123.81	1,565.01	-432.57	645.98	777.43	0.00	0.00	0.00
1,900.00	37.93	123.81	1,643.88	-466.78	697.06	838.91	0.00	0.00	0.00
2,000.00	37.93	123.81	1,722.75	-500.98	748.14	900.38	0.00	0.00	0.00
2,100.00	37.93	123.81	1,801.63	-535.19	799.22	961.86	0.00	0.00	0.00
2,200.00	37.93	123.81	1,880.50	-569.39	850.30	1,023.34	0.00	0.00	0.00
2,300.00	37.93	123.81	1,959.37	-603.60	901.38	1,084.81	0.00	0.00	0.00
2,400.00	37.93	123.81	2,038.24	-637.81	952.46	1,146.29	0.00	0.00	0.00
2,468.16	37.93	123.81	2,092.00	-661.12	987.28	1,188.19	0.00	0.00	0.00
G_SAND									
2,500.00	37.93	123.81	2,117.11	-672.01	1,003.54	1,207.77	0.00	0.00	0.00
2,600.00	37.93	123.81	2,195.98	-706.22	1,054.62	1,269.24	0.00	0.00	0.00
2,601.29	37.93	123.81	2,197.00	-706.66	1,055.28	1,270.04	0.00	0.00	0.00
G_SAND_BASE									
2,700.00	37.93	123.81	2,274.85	-740.42	1,105.70	1,330.72	0.00	0.00	0.00
2,800.00	37.93	123.81	2,353.72	-774.63	1,156.79	1,392.19	0.00	0.00	0.00
2,900.00	37.93	123.81	2,432.60	-808.84	1,207.87	1,453.67	0.00	0.00	0.00
3,000.00	37.93	123.81	2,511.47	-843.04	1,258.95	1,515.15	0.00	0.00	0.00
3,100.00	37.93	123.81	2,590.34	-877.25	1,310.03	1,576.62	0.00	0.00	0.00
3,200.00	37.93	123.81	2,669.21	-911.45	1,361.11	1,638.10	0.00	0.00	0.00
3,300.00	37.93	123.81	2,748.08	-945.66	1,412.19	1,699.57	0.00	0.00	0.00
3,400.00	37.93	123.81	2,826.95	-979.86	1,463.27	1,761.05	0.00	0.00	0.00
3,500.00	37.93	123.81	2,905.82	-1,014.07	1,514.35	1,822.53	0.00	0.00	0.00
3,600.00	37.93	123.81	2,984.69	-1,048.28	1,565.43	1,884.00	0.00	0.00	0.00
3,700.00	37.93	123.81	3,063.57	-1,082.48	1,616.52	1,945.48	0.00	0.00	0.00
3,800.00	37.93	123.81	3,142.44	-1,116.69	1,667.60	2,006.96	0.00	0.00	0.00
3,900.00	37.93	123.81	3,221.31	-1,150.89	1,718.68	2,068.43	0.00	0.00	0.00
4,000.00	37.93	123.81	3,300.18	-1,185.10	1,769.76	2,129.91	0.00	0.00	0.00
4,100.00	37.93	123.81	3,379.05	-1,219.31	1,820.84	2,191.38	0.00	0.00	0.00
4,200.00	37.93	123.81	3,457.92	-1,253.51	1,871.92	2,252.86	0.00	0.00	0.00
4,300.00	37.93	123.81	3,536.79	-1,287.72	1,923.00	2,314.34	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 543-10 - Slot A12
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 543-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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)
4,400.00	37.93	123.81	3,615.67	-1,321.92	1,974.08	2,375.81	0.00	0.00	0.00
4,500.00	37.93	123.81	3,694.54	-1,356.13	2,025.16	2,437.29	0.00	0.00	0.00
4,534.59	37.93	123.81	3,721.82	-1,367.96	2,042.83	2,458.55	0.00	0.00	0.00
4,556.30	37.39	123.81	3,739.00	-1,375.34	2,053.85	2,471.82	2.50	-2.50	0.00
MVRD									
4,600.00	36.30	123.81	3,773.97	-1,389.92	2,075.63	2,498.02	2.50	-2.50	0.00
4,700.00	33.80	123.81	3,855.83	-1,421.87	2,123.34	2,555.45	2.50	-2.50	0.00
4,800.00	31.30	123.81	3,940.12	-1,451.81	2,168.04	2,609.25	2.50	-2.50	0.00
4,900.00	28.80	123.81	4,026.67	-1,479.67	2,209.65	2,659.32	2.50	-2.50	0.00
5,000.00	26.30	123.81	4,115.33	-1,505.40	2,248.08	2,705.56	2.50	-2.50	0.00
5,100.00	23.80	123.81	4,205.91	-1,528.96	2,283.25	2,747.90	2.50	-2.50	0.00
5,200.00	21.30	123.81	4,298.26	-1,550.29	2,315.11	2,786.24	2.50	-2.50	0.00
5,300.00	18.80	123.81	4,392.19	-1,569.36	2,343.60	2,820.52	2.50	-2.50	0.00
5,400.00	16.30	123.81	4,487.53	-1,586.14	2,368.65	2,850.67	2.50	-2.50	0.00
5,500.00	13.80	123.81	4,584.10	-1,600.59	2,390.22	2,876.64	2.50	-2.50	0.00
5,600.00	11.30	123.81	4,681.70	-1,612.68	2,408.28	2,898.36	2.50	-2.50	0.00
5,700.00	8.80	123.81	4,780.16	-1,622.38	2,422.77	2,915.81	2.50	-2.50	0.00
5,800.00	6.30	123.81	4,879.28	-1,629.69	2,433.69	2,928.95	2.50	-2.50	0.00
5,851.97	5.00	123.81	4,931.00	-1,632.54	2,437.94	2,934.07	2.50	-2.50	0.00
KMVGAS - GM 543-10 KMW									
5,900.00	3.80	123.81	4,978.89	-1,634.59	2,441.00	2,937.75	2.50	-2.50	0.00
6,000.00	1.30	123.81	5,078.78	-1,637.06	2,444.70	2,942.20	2.50	-2.50	0.00
6,051.97	0.00	0.00	5,130.75	-1,637.39	2,445.19	2,942.79	2.50	-2.50	0.00
6,100.00	0.00	0.00	5,178.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,200.00	0.00	0.00	5,278.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,300.00	0.00	0.00	5,378.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,400.00	0.00	0.00	5,478.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,500.00	0.00	0.00	5,578.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,600.00	0.00	0.00	5,678.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,700.00	0.00	0.00	5,778.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,800.00	0.00	0.00	5,878.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
6,900.00	0.00	0.00	5,978.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,000.00	0.00	0.00	6,078.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,100.00	0.00	0.00	6,178.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,126.23	0.00	0.00	6,205.00	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
CME0									
7,200.00	0.00	0.00	6,278.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,300.00	0.00	0.00	6,378.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,400.00	0.00	0.00	6,478.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,500.00	0.00	0.00	6,578.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,600.00	0.00	0.00	6,678.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,610.23	0.00	0.00	6,689.00	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
RLNS									
7,700.00	0.00	0.00	6,778.77	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
7,760.23	0.00	0.00	6,839.00	-1,637.39	2,445.19	2,942.79	0.00	0.00	0.00
GM 543-10 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 543-10 - Slot A12
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 543-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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
GM 543-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,931.00	-1,632.54	2,437.94	1,598,650.15	2,269,293.39	39.4484894	-108.0879209
GM 543-10 PBHL - plan misses target center by 0.01usft at 7760.23usft MD (6839.00 TVD, -1637.39 N, 2445.19 E) - Point	0.00	0.00	6,839.00	-1,637.39	2,445.19	1,598,645.10	2,269,300.50	39.4484761	-108.0878952

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,022.99	952.17	9 5/8" @ 1022' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,468.16	2,092.00	G_SAND		0.00	0.00
2,601.29	2,197.00	G_SAND_BASE		0.00	0.00
4,556.30	3,739.00	MVRD		0.00	0.00
5,851.97	4,931.00	KMVGAS		0.00	0.00
7,126.23	6,205.00	CME0		0.00	0.00
7,610.23	6,689.00	RLNS		0.00	0.00