

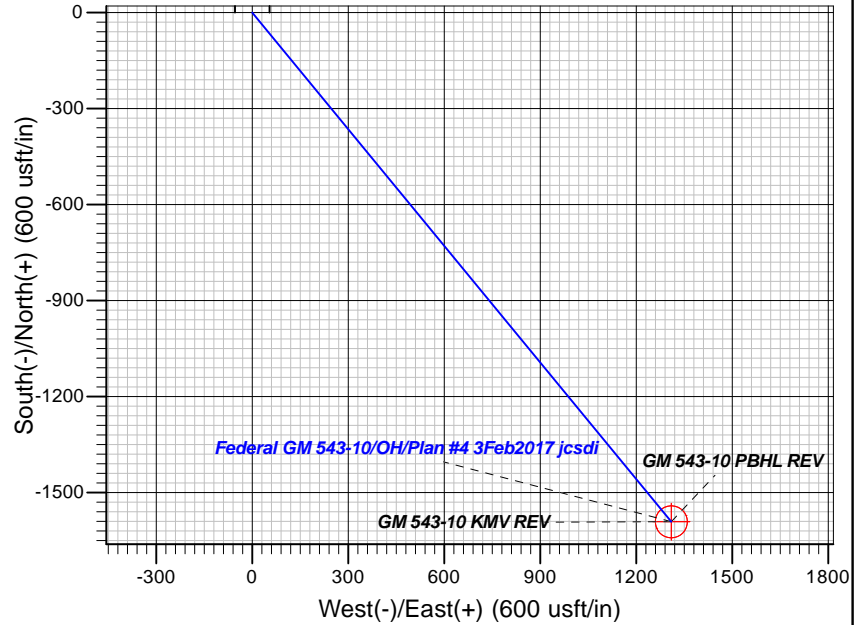
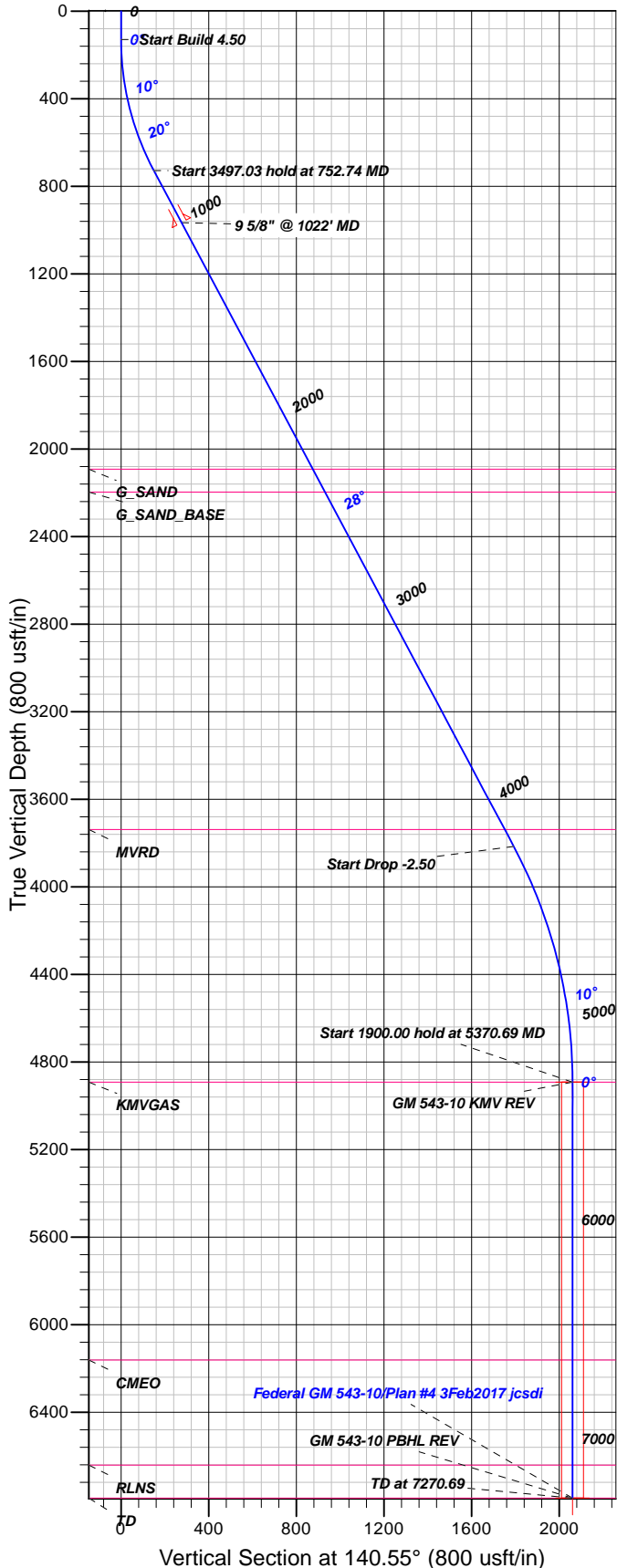
## Well Details: Federal GM 543-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600351.70	2266903.10	39.4529718	-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

TVDP	MD	Formation
2092.00	2297.66	G_SAND
2197.00	2416.61	G_SAND_BASE
3739.00	4163.41	MVRD
4892.00	5370.69	KMVGAS
6162.00	6640.69	CMEO
6642.00	7120.69	RLNS
6792.00	7270.69	TD

Plan: Plan #4 3Feb2017 jcsdi

15:27, February 03 2017  
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

TVDP	MD	Name	Size
966.77	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	752.74	28.02	140.55	728.21	-115.26	94.86	4.50	140.55	149.28	
4	4249.76	28.02	140.55	3815.23	-1383.88	1138.93	0.00	0.001792.28		
5	5370.69	0.00	0.00	4892.00	-1591.35	1309.68	2.50	180.002060.98		GM 543-10 KMV REV
6	7270.69	0.00	0.00	6792.00	-1591.35	1309.68	0.00	0.002060.98		GM 543-10 PBHL REV

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 543-10 KMV REV 4892.00	-1591.35	1309.68	1598723.57	2268166.77	39.4486027	-108.0919162	Circle (Radius: 50.00)	
- plan hits target center								
GM 543-10 PBHL REV 6792.00	-1591.34	1309.68	1598723.58	2268166.77	39.4486027	-108.0919162	Point	
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**MV 5-10 Pad**

**Federal GM 543-10 - Slot A12**

**OH**

**Plan: Plan #4 3Feb2017 jcsdi**

## **Standard Planning Report**

**03 February, 2017**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 543-10 - Slot A12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 543-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 3Feb2017 jcsdi		

<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		

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

<b>Well</b>	Federal GM 543-10 - Slot A12			
<b>Well Position</b>	<b>+N/-S</b>	7.61 usft	<b>Northing:</b>	1,600,351.70 usft
	<b>+E/-W</b>	21.19 usft	<b>Easting:</b>	2,266,903.10 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	6,148.00 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>
	BGGM2016	9/13/2016	9.72	65.58	51,587

<b>Design</b>	Plan #4 3Feb2017 jcsdi			
<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	140.55

<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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
752.74	28.02	140.55	728.21	-115.26	94.86	4.50	4.50	0.00	140.55	
4,249.76	28.02	140.55	3,815.23	-1,383.88	1,138.93	0.00	0.00	0.00	0.00	
5,370.69	0.00	0.00	4,892.00	-1,591.35	1,309.68	2.50	-2.50	0.00	180.00	GM 543-10 KMV REV
7,270.69	0.00	0.00	6,792.00	-1,591.35	1,309.68	0.00	0.00	0.00	0.00	GM 543-10 PBHL RE'

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 543-10 - Slot A12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 543-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 3Feb2017 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	140.55	199.96	-1.49	1.22	1.92	4.50	4.50	0.00	
300.00	7.65	140.55	299.50	-8.75	7.20	11.33	4.50	4.50	0.00	
400.00	12.15	140.55	397.98	-22.02	18.12	28.52	4.50	4.50	0.00	
500.00	16.65	140.55	494.81	-41.22	33.92	53.38	4.50	4.50	0.00	
600.00	21.15	140.55	589.40	-66.22	54.50	85.77	4.50	4.50	0.00	
700.00	25.65	140.55	681.15	-96.88	79.73	125.47	4.50	4.50	0.00	
752.74	28.02	140.55	728.21	-115.26	94.86	149.28	4.50	4.50	0.00	
800.00	28.02	140.55	769.93	-132.41	108.97	171.48	0.00	0.00	0.00	
900.00	28.02	140.55	858.20	-168.68	138.83	218.47	0.00	0.00	0.00	
1,000.00	28.02	140.55	946.48	-204.96	168.68	265.45	0.00	0.00	0.00	
1,022.99	28.02	140.55	966.77	-213.30	175.55	276.25	0.00	0.00	0.00	
9 5/8" @ 1022' MD										
1,100.00	28.02	140.55	1,034.75	-241.24	198.54	312.43	0.00	0.00	0.00	
1,200.00	28.02	140.55	1,123.03	-277.51	228.40	359.41	0.00	0.00	0.00	
1,300.00	28.02	140.55	1,211.30	-313.79	258.25	406.40	0.00	0.00	0.00	
1,400.00	28.02	140.55	1,299.58	-350.07	288.11	453.38	0.00	0.00	0.00	
1,500.00	28.02	140.55	1,387.86	-386.35	317.96	500.36	0.00	0.00	0.00	
1,600.00	28.02	140.55	1,476.13	-422.62	347.82	547.35	0.00	0.00	0.00	
1,700.00	28.02	140.55	1,564.41	-458.90	377.68	594.33	0.00	0.00	0.00	
1,800.00	28.02	140.55	1,652.68	-495.18	407.53	641.31	0.00	0.00	0.00	
1,900.00	28.02	140.55	1,740.96	-531.45	437.39	688.30	0.00	0.00	0.00	
2,000.00	28.02	140.55	1,829.23	-567.73	467.24	735.28	0.00	0.00	0.00	
2,100.00	28.02	140.55	1,917.51	-604.01	497.10	782.26	0.00	0.00	0.00	
2,200.00	28.02	140.55	2,005.79	-640.28	526.96	829.24	0.00	0.00	0.00	
2,297.66	28.02	140.55	2,092.00	-675.71	556.11	875.13	0.00	0.00	0.00	
G_SAND										
2,300.00	28.02	140.55	2,094.06	-676.56	556.81	876.23	0.00	0.00	0.00	
2,400.00	28.02	140.55	2,182.34	-712.84	586.67	923.21	0.00	0.00	0.00	
2,416.61	28.02	140.55	2,197.00	-718.86	591.63	931.01	0.00	0.00	0.00	
G_SAND_BASE										
2,500.00	28.02	140.55	2,270.61	-749.11	616.52	970.19	0.00	0.00	0.00	
2,600.00	28.02	140.55	2,358.89	-785.39	646.38	1,017.18	0.00	0.00	0.00	
2,700.00	28.02	140.55	2,447.16	-821.67	676.24	1,064.16	0.00	0.00	0.00	
2,800.00	28.02	140.55	2,535.44	-857.95	706.09	1,111.14	0.00	0.00	0.00	
2,900.00	28.02	140.55	2,623.72	-894.22	735.95	1,158.12	0.00	0.00	0.00	
3,000.00	28.02	140.55	2,711.99	-930.50	765.80	1,205.11	0.00	0.00	0.00	
3,100.00	28.02	140.55	2,800.27	-966.78	795.66	1,252.09	0.00	0.00	0.00	
3,200.00	28.02	140.55	2,888.54	-1,003.05	825.52	1,299.07	0.00	0.00	0.00	
3,300.00	28.02	140.55	2,976.82	-1,039.33	855.37	1,346.06	0.00	0.00	0.00	
3,400.00	28.02	140.55	3,065.09	-1,075.61	885.23	1,393.04	0.00	0.00	0.00	
3,500.00	28.02	140.55	3,153.37	-1,111.88	915.08	1,440.02	0.00	0.00	0.00	
3,600.00	28.02	140.55	3,241.65	-1,148.16	944.94	1,487.01	0.00	0.00	0.00	
3,700.00	28.02	140.55	3,329.92	-1,184.44	974.80	1,533.99	0.00	0.00	0.00	
3,800.00	28.02	140.55	3,418.20	-1,220.71	1,004.65	1,580.97	0.00	0.00	0.00	
3,900.00	28.02	140.55	3,506.47	-1,256.99	1,034.51	1,627.95	0.00	0.00	0.00	
4,000.00	28.02	140.55	3,594.75	-1,293.27	1,064.36	1,674.94	0.00	0.00	0.00	
4,100.00	28.02	140.55	3,683.02	-1,329.55	1,094.22	1,721.92	0.00	0.00	0.00	
4,163.41	28.02	140.55	3,739.00	-1,352.55	1,113.15	1,751.71	0.00	0.00	0.00	
MVRD										

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 543-10 - Slot A12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 543-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 3Feb2017 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)
4,200.00	28.02	140.55	3,771.30	-1,365.82	1,124.08	1,768.90	0.00	0.00	0.00
4,249.76	28.02	140.55	3,815.23	-1,383.88	1,138.93	1,792.28	0.00	0.00	0.00
4,300.00	26.77	140.55	3,859.83	-1,401.72	1,153.62	1,815.40	2.50	-2.50	0.00
4,400.00	24.27	140.55	3,950.07	-1,434.98	1,180.99	1,858.47	2.50	-2.50	0.00
4,500.00	21.77	140.55	4,042.10	-1,465.17	1,205.84	1,897.57	2.50	-2.50	0.00
4,600.00	19.27	140.55	4,135.75	-1,492.23	1,228.11	1,932.62	2.50	-2.50	0.00
4,700.00	16.77	140.55	4,230.84	-1,516.11	1,247.76	1,963.55	2.50	-2.50	0.00
4,800.00	14.27	140.55	4,327.19	-1,536.77	1,264.76	1,990.30	2.50	-2.50	0.00
4,900.00	11.77	140.55	4,424.61	-1,554.16	1,279.08	2,012.82	2.50	-2.50	0.00
5,000.00	9.27	140.55	4,522.92	-1,568.25	1,290.67	2,031.07	2.50	-2.50	0.00
5,100.00	6.77	140.55	4,621.94	-1,579.02	1,299.54	2,045.02	2.50	-2.50	0.00
5,200.00	4.27	140.55	4,721.46	-1,586.44	1,305.65	2,054.63	2.50	-2.50	0.00
5,300.00	1.77	140.55	4,821.32	-1,590.51	1,308.99	2,059.89	2.50	-2.50	0.00
5,370.69	0.00	0.00	4,892.00	-1,591.35	1,309.68	2,060.98	2.50	-2.50	0.00
<b>KMVGAS - GM 543-10 KMV REV</b>									
5,400.00	0.00	0.00	4,921.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
5,409.69	0.00	0.00	4,931.00	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
<b>GM 543-10 KMV</b>									
5,500.00	0.00	0.00	5,021.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
5,600.00	0.00	0.00	5,121.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
5,700.00	0.00	0.00	5,221.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
5,800.00	0.00	0.00	5,321.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
5,900.00	0.00	0.00	5,421.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,000.00	0.00	0.00	5,521.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,100.00	0.00	0.00	5,621.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,200.00	0.00	0.00	5,721.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,300.00	0.00	0.00	5,821.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,400.00	0.00	0.00	5,921.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,500.00	0.00	0.00	6,021.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,600.00	0.00	0.00	6,121.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,640.69	0.00	0.00	6,162.00	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
<b>CME0</b>									
6,700.00	0.00	0.00	6,221.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,800.00	0.00	0.00	6,321.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
6,900.00	0.00	0.00	6,421.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
7,000.00	0.00	0.00	6,521.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
7,100.00	0.00	0.00	6,621.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
7,120.69	0.00	0.00	6,642.00	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
<b>RLNS</b>									
7,200.00	0.00	0.00	6,721.31	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
7,270.69	0.00	0.00	6,792.00	-1,591.35	1,309.68	2,060.98	0.00	0.00	0.00
<b>TD - GM 543-10 PBHL REV - GM 543-10 PBHL</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 543-10 - Slot A12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 543-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 3Feb2017 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 REV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,892.00	-1,591.35	1,309.68	1,598,723.57	2,268,166.77	39.4486027	-108.0919162
GM 543-10 PBHL REV - plan hits target center - Point	0.00	0.00	6,792.00	-1,591.34	1,309.68	1,598,723.57	2,268,166.77	39.4486027	-108.0919162

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,022.99	966.77	9 5/8" @ 1022' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,297.66	2,092.00	G_SAND		0.00	0.00
2,416.61	2,197.00	G_SAND_BASE		0.00	0.00
4,163.41	3,739.00	MVRD		0.00	0.00
5,370.69	4,892.00	KMVGAS		0.00	0.00
6,640.69	6,162.00	CME0		0.00	0.00
7,120.69	6,642.00	RLNS		0.00	0.00
7,270.69	6,792.00	TD		0.00	0.00