

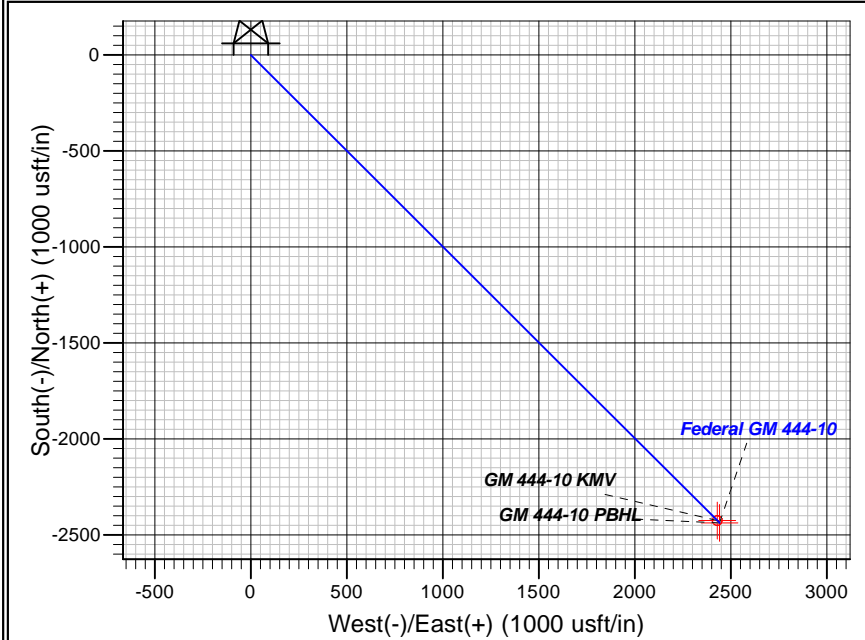
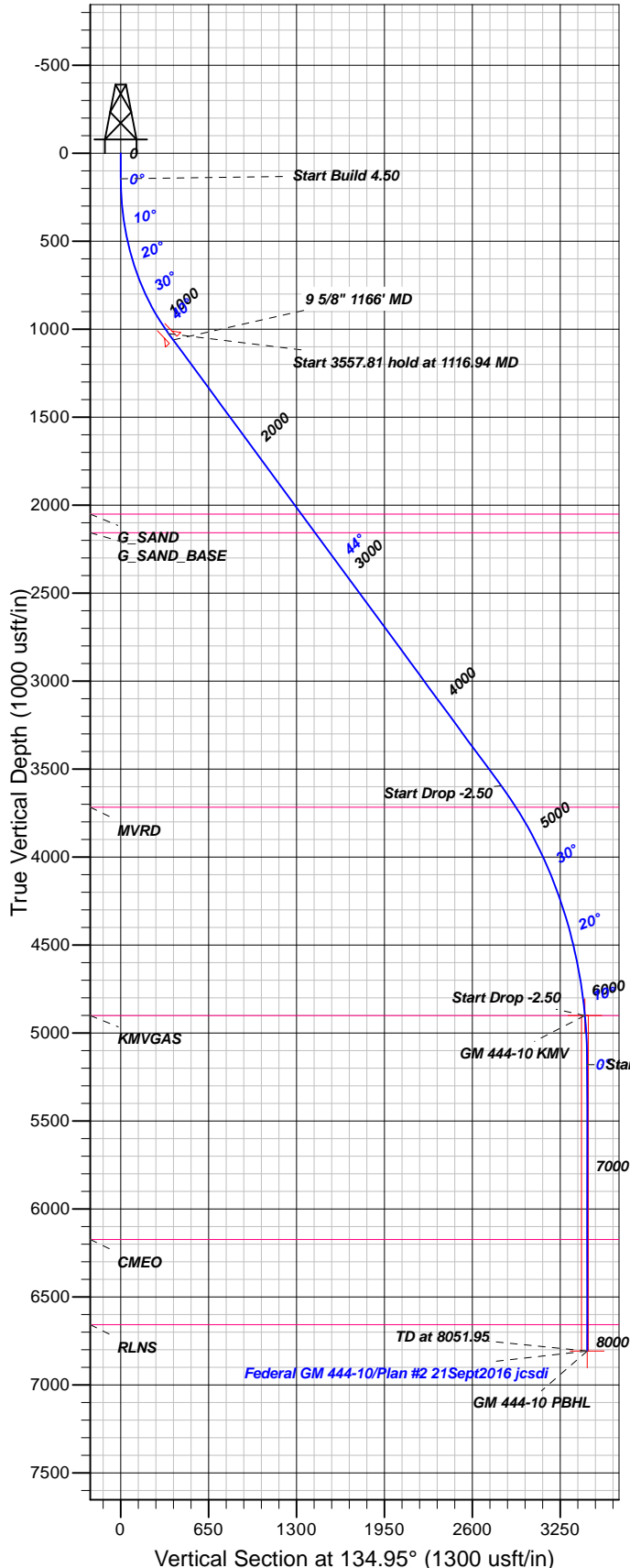
Well Details: Federal GM 444-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600344.70	2266881.70	39.4529509	-108.0966291	A9

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
2052.00	2538.01	G_SAND
2157.00	2683.33	G_SAND_BASE
3717.00	4837.09	MVRD
4901.00	6144.25	KMVGAS
6174.00	7417.95	CMEQ
6658.00	7901.95	RLNS

Plan: Plan #2 21Sept2016 jcsdi

17:38, 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
1061.38	1166.94	9 5/8" 1166' 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	145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	
3	1116.94	43.74	134.95	1025.26	-249.60	250.04	4.50	134.95	353.30	
4	4674.76	43.74	134.95	3595.84	-1987.35	1990.85	0.00	0.00	2813.02	
5	6144.25	7.00	134.95	4901.00	-2424.57	2428.84	2.50	180.00	3431.88	GM 444-10 KMV
6	6424.25	0.00	0.00	5180.30	-2436.64	2440.93	2.50	180.00	3448.96	
7	8051.95	0.00	0.00	6808.00	-2436.64	2440.93	0.00	0.00	3448.96	GM 444-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 444-10 KMV	4901.00	-2424.57	2428.84	1597851.71	2269240.26	39.4462940	-108.0880284	Circle (Radius: 25.00)
- plan hits target center								
GM 444-10 PBHL	6808.00	-2436.64	2440.93	1597839.30	2269252.00	39.4462608	-108.0879856	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 444-10 - Slot A9

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 444-10 - Slot A9
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 444-10	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 444-10 - Slot A9			
Well Position	+N/-S	0.00 usft	Northing:	1,600,344.70 usft
	+E/-W	0.00 usft	Easting:	2,266,881.70 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	134.95

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	
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,116.94	43.74	134.95	1,025.26	-249.60	250.04	4.50	4.50	0.00	134.95	
4,674.76	43.74	134.95	3,595.84	-1,987.35	1,990.85	0.00	0.00	0.00	0.00	
6,144.25	7.00	134.95	4,901.00	-2,424.57	2,428.84	2.50	-2.50	0.00	180.00	GM 444-10 KMV
6,424.25	0.00	0.00	5,180.30	-2,436.64	2,440.93	2.50	-2.50	0.00	180.00	
8,051.95	0.00	0.00	6,808.00	-2,436.64	2,440.93	0.00	0.00	0.00	0.00	GM 444-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 444-10 - Slot A9
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 444-10	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
145.00	0.00	0.00	145.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.48	134.95	199.98	-0.84	0.84	1.19	4.50	4.50	0.00
300.00	6.98	134.95	299.62	-6.66	6.67	9.42	4.50	4.50	0.00
400.00	11.48	134.95	398.30	-17.98	18.01	25.45	4.50	4.50	0.00
500.00	15.98	134.95	495.42	-34.74	34.80	49.17	4.50	4.50	0.00
600.00	20.48	134.95	590.38	-56.83	56.93	80.44	4.50	4.50	0.00
700.00	24.98	134.95	682.59	-84.11	84.26	119.06	4.50	4.50	0.00
800.00	29.48	134.95	771.49	-116.42	116.63	164.79	4.50	4.50	0.00
900.00	33.98	134.95	856.53	-153.57	153.84	217.37	4.50	4.50	0.00
1,000.00	38.48	134.95	937.18	-195.30	195.65	276.45	4.50	4.50	0.00
1,100.00	42.98	134.95	1,012.94	-241.39	241.81	341.67	4.50	4.50	0.00
1,116.94	43.74	134.95	1,025.26	-249.60	250.04	353.30	4.50	4.50	0.00
1,166.94	43.74	134.95	1,061.38	-274.02	274.51	387.87	0.00	0.00	0.00
9 5/8" 1166' MD									
1,200.00	43.74	134.95	1,085.27	-290.17	290.68	410.73	0.00	0.00	0.00
1,300.00	43.74	134.95	1,157.52	-339.01	339.61	479.86	0.00	0.00	0.00
1,400.00	43.74	134.95	1,229.77	-387.86	388.54	549.00	0.00	0.00	0.00
1,500.00	43.74	134.95	1,302.02	-436.70	437.47	618.13	0.00	0.00	0.00
1,600.00	43.74	134.95	1,374.28	-485.54	486.40	687.27	0.00	0.00	0.00
1,700.00	43.74	134.95	1,446.53	-534.39	535.33	756.40	0.00	0.00	0.00
1,800.00	43.74	134.95	1,518.78	-583.23	584.26	825.54	0.00	0.00	0.00
1,900.00	43.74	134.95	1,591.03	-632.07	633.19	894.67	0.00	0.00	0.00
2,000.00	43.74	134.95	1,663.28	-680.92	682.12	963.81	0.00	0.00	0.00
2,100.00	43.74	134.95	1,735.53	-729.76	731.04	1,032.95	0.00	0.00	0.00
2,200.00	43.74	134.95	1,807.79	-778.60	779.97	1,102.08	0.00	0.00	0.00
2,300.00	43.74	134.95	1,880.04	-827.45	828.90	1,171.22	0.00	0.00	0.00
2,400.00	43.74	134.95	1,952.29	-876.29	877.83	1,240.35	0.00	0.00	0.00
2,500.00	43.74	134.95	2,024.54	-925.13	926.76	1,309.49	0.00	0.00	0.00
2,538.01	43.74	134.95	2,052.00	-943.70	945.36	1,335.76	0.00	0.00	0.00
G_SAND									
2,600.00	43.74	134.95	2,096.79	-973.98	975.69	1,378.62	0.00	0.00	0.00
2,683.33	43.74	134.95	2,157.00	-1,014.68	1,016.46	1,436.23	0.00	0.00	0.00
G_SAND_BASE									
2,700.00	43.74	134.95	2,169.04	-1,022.82	1,024.62	1,447.76	0.00	0.00	0.00
2,800.00	43.74	134.95	2,241.29	-1,071.66	1,073.55	1,516.89	0.00	0.00	0.00
2,900.00	43.74	134.95	2,313.55	-1,120.50	1,122.48	1,586.03	0.00	0.00	0.00
3,000.00	43.74	134.95	2,385.80	-1,169.35	1,171.41	1,655.16	0.00	0.00	0.00
3,100.00	43.74	134.95	2,458.05	-1,218.19	1,220.34	1,724.30	0.00	0.00	0.00
3,200.00	43.74	134.95	2,530.30	-1,267.03	1,269.27	1,793.44	0.00	0.00	0.00
3,300.00	43.74	134.95	2,602.55	-1,315.88	1,318.19	1,862.57	0.00	0.00	0.00
3,400.00	43.74	134.95	2,674.80	-1,364.72	1,367.12	1,931.71	0.00	0.00	0.00
3,500.00	43.74	134.95	2,747.06	-1,413.56	1,416.05	2,000.84	0.00	0.00	0.00
3,600.00	43.74	134.95	2,819.31	-1,462.41	1,464.98	2,069.98	0.00	0.00	0.00
3,700.00	43.74	134.95	2,891.56	-1,511.25	1,513.91	2,139.11	0.00	0.00	0.00
3,800.00	43.74	134.95	2,963.81	-1,560.09	1,562.84	2,208.25	0.00	0.00	0.00
3,900.00	43.74	134.95	3,036.06	-1,608.94	1,611.77	2,277.38	0.00	0.00	0.00
4,000.00	43.74	134.95	3,108.31	-1,657.78	1,660.70	2,346.52	0.00	0.00	0.00
4,100.00	43.74	134.95	3,180.56	-1,706.62	1,709.63	2,415.65	0.00	0.00	0.00
4,200.00	43.74	134.95	3,252.82	-1,755.47	1,758.56	2,484.79	0.00	0.00	0.00
4,300.00	43.74	134.95	3,325.07	-1,804.31	1,807.49	2,553.93	0.00	0.00	0.00

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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 444-10	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	43.74	134.95	3,397.32	-1,853.15	1,856.42	2,623.06	0.00	0.00	0.00
4,500.00	43.74	134.95	3,469.57	-1,902.00	1,905.34	2,692.20	0.00	0.00	0.00
4,600.00	43.74	134.95	3,541.82	-1,950.84	1,954.27	2,761.33	0.00	0.00	0.00
4,674.76	43.74	134.95	3,595.84	-1,987.35	1,990.85	2,813.02	0.00	0.00	0.00
4,700.00	43.11	134.95	3,614.17	-1,999.61	2,003.13	2,830.37	2.50	-2.50	0.00
4,800.00	40.61	134.95	3,688.65	-2,046.75	2,050.35	2,897.09	2.50	-2.50	0.00
4,837.09	39.68	134.95	3,717.00	-2,063.64	2,067.28	2,921.00	2.50	-2.50	0.00
MVRD									
4,900.00	38.11	134.95	3,765.96	-2,091.55	2,095.23	2,960.50	2.50	-2.50	0.00
5,000.00	35.61	134.95	3,845.97	-2,133.92	2,137.68	3,020.47	2.50	-2.50	0.00
5,100.00	33.11	134.95	3,928.52	-2,173.78	2,177.61	3,076.90	2.50	-2.50	0.00
5,200.00	30.61	134.95	4,013.45	-2,211.07	2,214.96	3,129.68	2.50	-2.50	0.00
5,300.00	28.11	134.95	4,100.60	-2,245.70	2,249.66	3,178.70	2.50	-2.50	0.00
5,400.00	25.61	134.95	4,189.81	-2,277.61	2,281.63	3,223.87	2.50	-2.50	0.00
5,500.00	23.11	134.95	4,280.90	-2,306.75	2,310.81	3,265.11	2.50	-2.50	0.00
5,600.00	20.61	134.95	4,373.70	-2,333.05	2,337.16	3,302.33	2.50	-2.50	0.00
5,700.00	18.11	134.95	4,468.04	-2,356.46	2,360.61	3,335.47	2.50	-2.50	0.00
5,800.00	15.61	134.95	4,563.74	-2,376.95	2,381.13	3,364.47	2.50	-2.50	0.00
5,900.00	13.11	134.95	4,660.61	-2,394.46	2,398.68	3,389.26	2.50	-2.50	0.00
6,000.00	10.61	134.95	4,758.47	-2,408.98	2,413.22	3,409.81	2.50	-2.50	0.00
6,100.00	8.11	134.95	4,857.13	-2,420.46	2,424.72	3,426.06	2.50	-2.50	0.00
6,144.25	7.00	134.95	4,901.00	-2,424.57	2,428.84	3,431.88	2.50	-2.50	0.00
KMVGAS - GM 444-10 KMV									
6,200.00	5.61	134.95	4,956.41	-2,428.89	2,433.17	3,438.00	2.50	-2.50	0.00
6,300.00	3.11	134.95	5,056.11	-2,434.26	2,438.55	3,445.60	2.50	-2.50	0.00
6,400.00	0.61	134.95	5,156.05	-2,436.55	2,440.84	3,448.84	2.50	-2.50	0.00
6,424.25	0.00	0.00	5,180.30	-2,436.64	2,440.93	3,448.96	2.50	-2.50	0.00
6,500.00	0.00	0.00	5,256.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
6,600.00	0.00	0.00	5,356.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
6,700.00	0.00	0.00	5,456.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
6,800.00	0.00	0.00	5,556.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
6,900.00	0.00	0.00	5,656.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,000.00	0.00	0.00	5,756.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,100.00	0.00	0.00	5,856.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,200.00	0.00	0.00	5,956.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,300.00	0.00	0.00	6,056.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,400.00	0.00	0.00	6,156.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,417.95	0.00	0.00	6,174.00	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
CME0									
7,500.00	0.00	0.00	6,256.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,600.00	0.00	0.00	6,356.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,700.00	0.00	0.00	6,456.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,800.00	0.00	0.00	6,556.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,900.00	0.00	0.00	6,656.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
7,901.95	0.00	0.00	6,658.00	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
RLNS									
8,000.00	0.00	0.00	6,756.05	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
8,051.95	0.00	0.00	6,808.00	-2,436.64	2,440.93	3,448.96	0.00	0.00	0.00
GM 444-10 PBHL									

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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 444-10	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 444-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,901.00	-2,424.57	2,428.84	1,597,851.70	2,269,240.26	39.4462940	-108.0880284
GM 444-10 PBHL - plan hits target center - Point	0.00	0.00	6,808.00	-2,436.64	2,440.93	1,597,839.30	2,269,252.00	39.4462609	-108.0879856

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,166.94	1,061.38	9 5/8" 1166' MD	9.62	9.62	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,538.01	2,052.00	G_SAND		0.00	0.00	
2,683.33	2,157.00	G_SAND_BASE		0.00	0.00	
4,837.09	3,717.00	MVRD		0.00	0.00	
6,144.25	4,901.00	KMVGAS		0.00	0.00	
7,417.95	6,174.00	CME0		0.00	0.00	
7,901.95	6,658.00	RLNS		0.00	0.00	