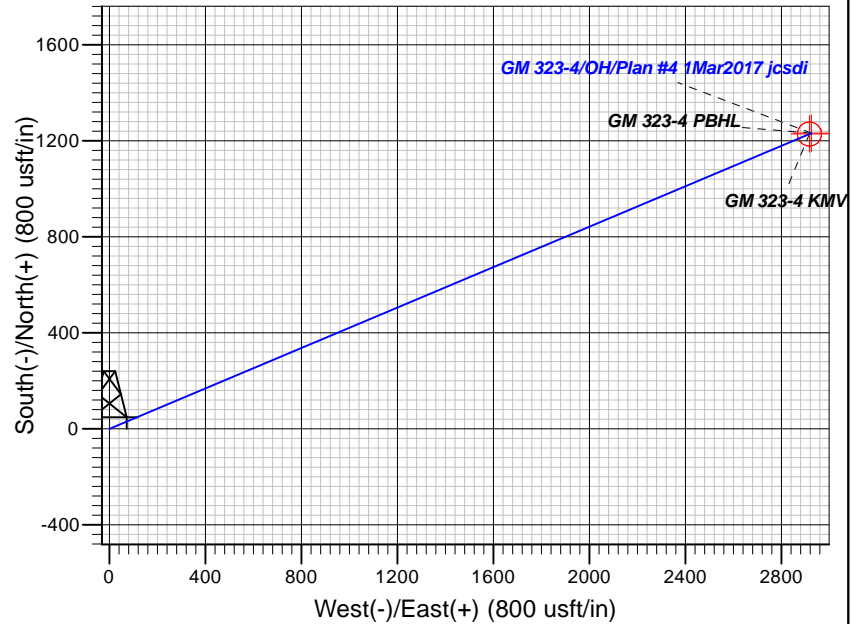
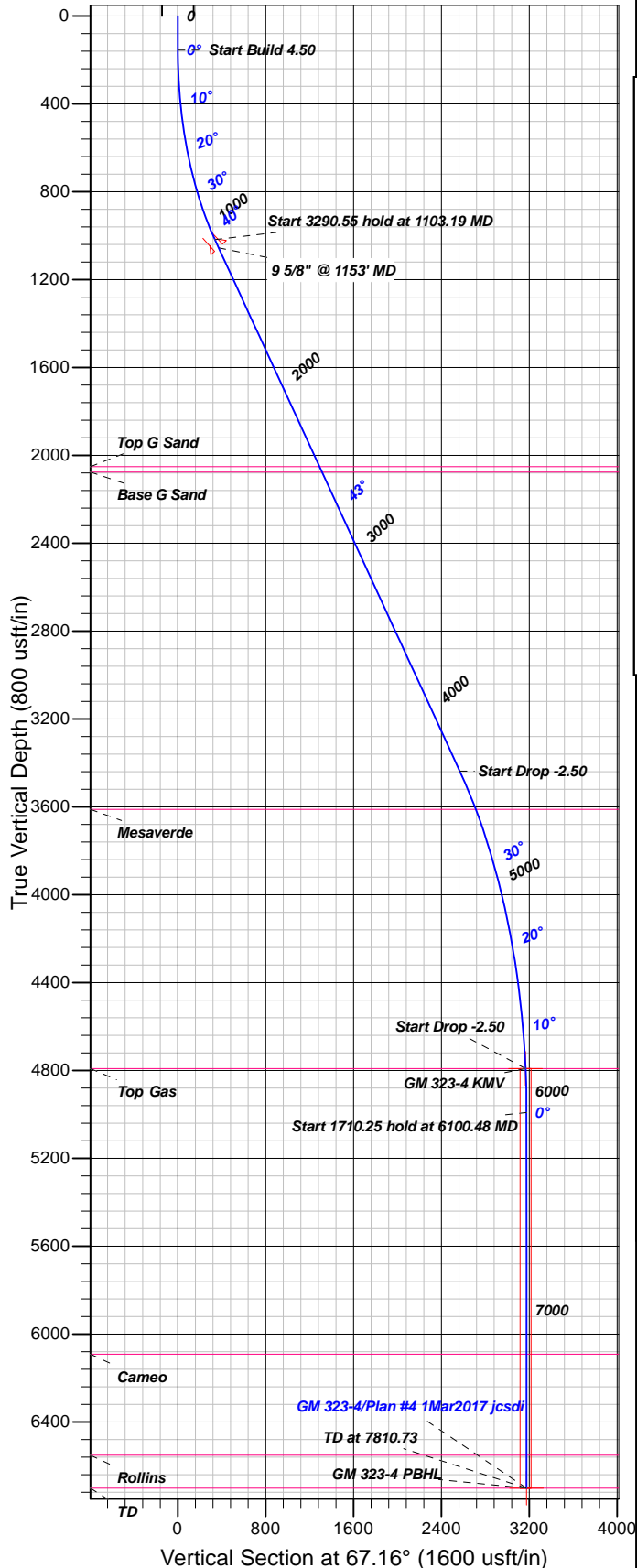


## Well Details: GM 323-4

GL 5977' & RKB 24' @ 6001.00usft (H&P 271)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1603483.04	2258776.22	39.4609240	-108.1256431	A11

T M Azimuths to True North  
Magnetic North: 9.65°  
Magnetic Field  
Strength: 51850.7snT  
Dip Angle: 65.78°  
Date: 12/21/2016  
Model: HDGM



### FORMATION TOP DETAILS

TVDPth	MDPath	Formation
2051.00	2508.16	Top G Sand
2076.00	2542.16	Base G Sand
3611.00	4619.87	Mesaverde
4791.00	5900.48	Top Gas
6091.00	7200.73	Cameo
6551.00	7660.73	Rollins
6701.00	7810.73	TD

Plan: Plan #4 1Mar2017 jcsdi

14:38, March 06 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

TVD	MD	Name	Size
1054.71	1153.19	9 5/8" @ 1153' 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	155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	
3	1103.19	42.67	67.16	1017.94	130.84	310.61	4.50	67.16	337.04	
4	4393.74	42.67	67.16	3437.45	996.59	2365.90	0.00	0.002567.23		
5	5900.48	5.00	67.16	4791.00	1228.71	2916.96	2.50	180.003165.18		GM 323-4 KMV
6	6100.48	0.00	0.00	4990.75	1232.10	2925.00	2.50	180.003173.90		
7	7810.73	0.00	0.00	6701.00	1232.10	2925.00	0.00	0.003173.90		GM 323-4 PBHL

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 323-4 KMV	4791.00	1228.71	2916.96	1604626.94	2261727.47	39.4642970	-108.1153113	Circle (Radius: 50.00)
- plan hits target center								
GM 323-4 PBHL	6701.00	1232.10	2925.00	1604630.10	2261735.60	39.4643063	-108.1152829	Point
- plan misses target center by 0.01usft at 7810.73usft MD (6701.00 TVD, 1232.10 N, 2925.00 E)								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**MV 34-5 Pad**

**GM 323-4 - Slot A11**

**OH**

**Plan: Plan #4 1Mar2017 jcsdi**

## **Standard Planning Report**

**06 March, 2017**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 323-4 - Slot A11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Site:</b>	MV 34-5 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 323-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 1Mar2017 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		

Site		MV 34-5 Pad			
Site Position:		Northing:	1,603,476.79 usft	Latitude:	39.4609066
From:	Map	Easting:	2,258,772.10 usft	Longitude:	-108.1256571
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 323-4 - Slot A11					
Well Position	+N/-S	6.36 usft	Northing:	1,603,483.04 usft	Latitude:	39.4609241
	+E/-W	3.94 usft	Easting:	2,258,776.22 usft	Longitude:	-108.1256432
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,977.00 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>
	HDGM	12/21/2016	9.65	65.78	51,851

<b>Design</b>	Plan #4 1Mar2017 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	67.16

<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	
155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,103.19	42.67	67.16	1,017.94	130.84	310.61	4.50	4.50	0.00	67.16	
4,393.74	42.67	67.16	3,437.45	996.59	2,365.90	0.00	0.00	0.00	0.00	
5,900.48	5.00	67.16	4,791.00	1,228.71	2,916.96	2.50	-2.50	0.00	180.00	GM 323-4 KMV
6,100.48	0.00	0.00	4,990.75	1,232.10	2,925.00	2.50	-2.50	0.00	180.00	
7,810.73	0.00	0.00	6,701.00	1,232.10	2,925.00	0.00	0.00	0.00	0.00	GM 323-4 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 323-4 - Slot A11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Site:</b>	MV 34-5 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 323-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 1Mar2017 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	
155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	2.03	67.16	199.99	0.31	0.73	0.80	4.50	4.50	0.00	
300.00	6.53	67.16	299.69	3.20	7.60	8.25	4.50	4.50	0.00	
400.00	11.03	67.16	398.49	9.12	21.66	23.50	4.50	4.50	0.00	
500.00	15.53	67.16	495.79	18.03	42.81	46.46	4.50	4.50	0.00	
600.00	20.03	67.16	591.00	29.88	70.94	76.98	4.50	4.50	0.00	
700.00	24.53	67.16	683.51	44.59	105.86	114.87	4.50	4.50	0.00	
800.00	29.03	67.16	772.76	62.08	147.37	159.91	4.50	4.50	0.00	
900.00	33.53	67.16	858.21	82.22	195.20	211.81	4.50	4.50	0.00	
1,000.00	38.03	67.16	939.32	104.91	249.06	270.26	4.50	4.50	0.00	
1,100.00	42.53	67.16	1,015.60	130.00	308.62	334.88	4.50	4.50	0.00	
1,103.19	42.67	67.16	1,017.94	130.84	310.61	337.04	4.50	4.50	0.00	
1,153.19	42.67	67.16	1,054.71	143.99	341.84	370.93	0.00	0.00	0.00	
<b>9 5/8" @ 1153' MD</b>										
1,200.00	42.67	67.16	1,089.13	156.31	371.08	402.66	0.00	0.00	0.00	
1,300.00	42.67	67.16	1,162.66	182.62	433.54	470.43	0.00	0.00	0.00	
1,400.00	42.67	67.16	1,236.19	208.93	496.00	538.21	0.00	0.00	0.00	
1,500.00	42.67	67.16	1,309.72	235.24	558.46	605.98	0.00	0.00	0.00	
1,600.00	42.67	67.16	1,383.24	261.55	620.92	673.76	0.00	0.00	0.00	
1,700.00	42.67	67.16	1,456.77	287.86	683.38	741.53	0.00	0.00	0.00	
1,800.00	42.67	67.16	1,530.30	314.17	745.84	809.31	0.00	0.00	0.00	
1,900.00	42.67	67.16	1,603.83	340.48	808.30	877.09	0.00	0.00	0.00	
2,000.00	42.67	67.16	1,677.36	366.79	870.76	944.86	0.00	0.00	0.00	
2,100.00	42.67	67.16	1,750.89	393.10	933.22	1,012.64	0.00	0.00	0.00	
2,200.00	42.67	67.16	1,824.42	419.41	995.68	1,080.41	0.00	0.00	0.00	
2,300.00	42.67	67.16	1,897.95	445.72	1,058.14	1,148.19	0.00	0.00	0.00	
2,400.00	42.67	67.16	1,971.47	472.03	1,120.60	1,215.96	0.00	0.00	0.00	
2,500.00	42.67	67.16	2,045.00	498.34	1,183.06	1,283.74	0.00	0.00	0.00	
2,508.16	42.67	67.16	2,051.00	500.49	1,188.16	1,289.27	0.00	0.00	0.00	
<b>Top G Sand</b>										
2,542.16	42.67	67.16	2,076.00	509.43	1,209.39	1,312.31	0.00	0.00	0.00	
<b>Base G Sand</b>										
2,600.00	42.67	67.16	2,118.53	524.65	1,245.52	1,351.51	0.00	0.00	0.00	
2,700.00	42.67	67.16	2,192.06	550.96	1,307.98	1,419.29	0.00	0.00	0.00	
2,800.00	42.67	67.16	2,265.59	577.27	1,370.44	1,487.06	0.00	0.00	0.00	
2,900.00	42.67	67.16	2,339.12	603.58	1,432.91	1,554.84	0.00	0.00	0.00	
3,000.00	42.67	67.16	2,412.65	629.89	1,495.37	1,622.62	0.00	0.00	0.00	
3,100.00	42.67	67.16	2,486.18	656.20	1,557.83	1,690.39	0.00	0.00	0.00	
3,200.00	42.67	67.16	2,559.71	682.51	1,620.29	1,758.17	0.00	0.00	0.00	
3,300.00	42.67	67.16	2,633.23	708.82	1,682.75	1,825.94	0.00	0.00	0.00	
3,400.00	42.67	67.16	2,706.76	735.13	1,745.21	1,893.72	0.00	0.00	0.00	
3,500.00	42.67	67.16	2,780.29	761.44	1,807.67	1,961.49	0.00	0.00	0.00	
3,600.00	42.67	67.16	2,853.82	787.75	1,870.13	2,029.27	0.00	0.00	0.00	
3,700.00	42.67	67.16	2,927.35	814.06	1,932.59	2,097.04	0.00	0.00	0.00	
3,800.00	42.67	67.16	3,000.88	840.37	1,995.05	2,164.82	0.00	0.00	0.00	
3,900.00	42.67	67.16	3,074.41	866.68	2,057.51	2,232.60	0.00	0.00	0.00	
4,000.00	42.67	67.16	3,147.94	892.99	2,119.97	2,300.37	0.00	0.00	0.00	
4,100.00	42.67	67.16	3,221.46	919.30	2,182.43	2,368.15	0.00	0.00	0.00	
4,200.00	42.67	67.16	3,294.99	945.61	2,244.89	2,435.92	0.00	0.00	0.00	
4,300.00	42.67	67.16	3,368.52	971.92	2,307.35	2,503.70	0.00	0.00	0.00	

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 323-4 - Slot A11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Site:</b>	MV 34-5 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 323-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 1Mar2017 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)	
4,393.74	42.67	67.16	3,437.45	996.59	2,365.90	2,567.23	0.00	0.00	0.00	
4,400.00	42.51	67.16	3,442.06	998.23	2,369.80	2,571.47	2.50	-2.50	0.00	
4,500.00	40.01	67.16	3,517.22	1,023.83	2,430.58	2,637.41	2.50	-2.50	0.00	
4,600.00	37.51	67.16	3,595.19	1,048.13	2,488.27	2,700.01	2.50	-2.50	0.00	
4,619.87	37.02	67.16	3,611.00	1,052.80	2,499.36	2,712.04	2.50	-2.50	0.00	
<b>Mesaverde</b>										
4,700.00	35.01	67.16	3,675.82	1,071.09	2,542.78	2,759.16	2.50	-2.50	0.00	
4,800.00	32.51	67.16	3,758.94	1,092.66	2,593.99	2,814.73	2.50	-2.50	0.00	
4,859.94	31.01	67.16	3,809.90	1,104.91	2,623.06	2,846.28	2.50	-2.50	0.00	
<b>GM 323-4 MVRD</b>										
4,900.00	30.01	67.16	3,844.42	1,112.81	2,641.81	2,866.62	2.50	-2.50	0.00	
5,000.00	27.51	67.16	3,932.07	1,131.49	2,686.15	2,914.73	2.50	-2.50	0.00	
5,100.00	25.01	67.16	4,021.74	1,148.66	2,726.92	2,958.98	2.50	-2.50	0.00	
5,200.00	22.51	67.16	4,113.26	1,164.30	2,764.06	2,999.27	2.50	-2.50	0.00	
5,300.00	20.01	67.16	4,206.45	1,178.38	2,797.47	3,035.53	2.50	-2.50	0.00	
5,400.00	17.51	67.16	4,301.12	1,190.86	2,827.11	3,067.69	2.50	-2.50	0.00	
5,500.00	15.01	67.16	4,397.12	1,201.73	2,852.92	3,095.69	2.50	-2.50	0.00	
5,600.00	12.51	67.16	4,494.24	1,210.97	2,874.84	3,119.48	2.50	-2.50	0.00	
5,700.00	10.01	67.16	4,592.30	1,218.55	2,892.83	3,139.00	2.50	-2.50	0.00	
5,800.00	7.51	67.16	4,691.13	1,224.46	2,906.87	3,154.24	2.50	-2.50	0.00	
5,900.00	5.01	67.16	4,790.53	1,228.69	2,916.92	3,165.14	2.50	-2.50	0.00	
5,900.48	5.00	67.16	4,791.00	1,228.71	2,916.96	3,165.18	2.50	-2.50	0.00	
<b>Top Gas - GM 323-4 KMW</b>										
6,000.00	2.51	67.16	4,890.30	1,231.24	2,922.97	3,171.70	2.50	-2.50	0.00	
6,100.00	0.01	67.16	4,990.27	1,232.10	2,925.00	3,173.90	2.50	-2.50	0.00	
6,100.48	0.00	0.00	4,990.75	1,232.10	2,925.00	3,173.90	2.50	-2.50	0.00	
6,200.00	0.00	0.00	5,090.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,190.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,290.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,390.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,600.00	0.00	0.00	5,490.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,700.00	0.00	0.00	5,590.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,800.00	0.00	0.00	5,690.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
6,900.00	0.00	0.00	5,790.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,000.00	0.00	0.00	5,890.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,100.00	0.00	0.00	5,990.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,090.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,200.73	0.00	0.00	6,091.00	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
<b>Cameo</b>										
7,300.00	0.00	0.00	6,190.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,290.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,500.00	0.00	0.00	6,390.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,600.00	0.00	0.00	6,490.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,660.73	0.00	0.00	6,551.00	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
<b>Rollins</b>										
7,700.00	0.00	0.00	6,590.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,800.00	0.00	0.00	6,690.27	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
7,810.73	0.00	0.00	6,701.00	1,232.10	2,925.00	3,173.90	0.00	0.00	0.00	
<b>TD - GM 323-4 PBHL</b>										

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 323-4 - Slot A11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
<b>Site:</b>	MV 34-5 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 323-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #4 1Mar2017 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 323-4 KMV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,791.00	1,228.71	2,916.96	1,604,626.94	2,261,727.47	39.4642970	-108.1153114
GM 323-4 PBHL - plan misses target center by 0.01usft at 7810.73usft MD (6701.00 TVD, 1232.10 N, 2925.00 E) - Point	0.00	0.00	6,701.00	1,232.10	2,925.00	1,604,630.10	2,261,735.60	39.4643063	-108.1152829

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,153.19	1,054.71	9 5/8" @ 1153' MD	9.62	9.62	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,508.16	2,051.00	Top G Sand		0.00	0.00	
2,542.16	2,076.00	Base G Sand		0.00	0.00	
4,619.87	3,611.00	Mesaverde		0.00	0.00	
5,900.48	4,791.00	Top Gas		0.00	0.00	
7,200.73	6,091.00	Cameo		0.00	0.00	
7,660.73	6,551.00	Rollins		0.00	0.00	
7,810.73	6,701.00	TD		0.00	0.00	