

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 441-30 BTV	4771.00	85.90	-2481.29	617132.74	2252927.17	39.4984109 N	-108.1477780 W	Circle (Radius: 50.00)
plan misses target center by 42.88usft at 5434.16usft MD (4777.91 TVD, 84.43 N, -2439.00 E)								
GM 441-30 PBHL	6918.00	85.90	-2481.29	617132.74	2252927.17	39.4984109 N	-108.1477780 W	Point
plan misses target center by 0.01usft at 7576.68usft MD (6918.00 TVD, 85.90 N, -2481.29 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

GR 12-29 Pad

GM 441-30 - Slot GM 441-30 (A3)

OH

Plan: Plan #2 3May2019 mmsdi

Standard Planning Report

06 May, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 441-30 - Slot GM 441-30 (A3)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Site:	GR 12-29 Pad	North Reference:	True
Well:	GM 441-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 3May2019 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		GR 12-29 Pad			
Site Position:		Northing:	1,617,169.51 usft	Latitude:	39.4982149
From:	Map	Easting:	2,255,394.48 usft	Longitude:	-108.1390236
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 441-30 - Slot GM 441-30 (A3)					
Well Position	+N/-S	-14.39 usft	Northing:	1,617,154.81 usft	Latitude:	39.4981754
	+E/-W	10.86 usft	Easting:	2,255,404.92 usft	Longitude:	-108.1389851
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,849.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/20/2019	9.50	65.75	51,558

Design	Plan #2 3May2019 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	271.98

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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
951.23	32.65	271.98	907.77	7.83	-226.20	4.00	4.00	0.00	271.98	
4,294.69	32.65	271.98	3,722.93	70.24	-2,028.89	0.00	0.00	0.00	0.00	
5,427.15	10.00	271.98	4,771.00	84.39	-2,437.79	2.00	-2.00	0.00	180.00	
5,927.15	0.00	0.00	5,268.47	85.90	-2,481.29	2.00	-2.00	17.60	180.00	
7,576.68	0.00	0.00	6,918.00	85.90	-2,481.29	0.00	0.00	0.00	0.00	GM 441-30 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 441-30 - Slot GM 441-30 (A3)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Site:	GR 12-29 Pad	North Reference:	True
Well:	GM 441-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 3May2019 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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 4.00										
200.00	2.60	271.98	199.98	0.05	-1.47	1.47	4.00	4.00	0.00	
300.00	6.60	271.98	299.64	0.33	-9.49	9.49	4.00	4.00	0.00	
400.00	10.60	271.98	398.49	0.85	-24.43	24.44	4.00	4.00	0.00	
500.00	14.60	271.98	496.06	1.60	-46.23	46.25	4.00	4.00	0.00	
600.00	18.60	271.98	591.88	2.59	-74.77	74.82	4.00	4.00	0.00	
700.00	22.60	271.98	685.46	3.81	-109.93	109.99	4.00	4.00	0.00	
800.00	26.60	271.98	776.37	5.25	-151.52	151.61	4.00	4.00	0.00	
900.00	30.60	271.98	864.15	6.90	-199.35	199.47	4.00	4.00	0.00	
951.23	32.65	271.98	907.77	7.83	-226.20	226.33	4.00	4.00	0.00	
Start 3343.47 hold at 951.23 MD										
1,000.00	32.65	271.98	948.83	8.74	-252.49	252.64	0.00	0.00	0.00	
1,100.00	32.65	271.98	1,033.03	10.61	-306.41	306.59	0.00	0.00	0.00	
1,200.00	32.65	271.98	1,117.23	12.47	-360.33	360.54	0.00	0.00	0.00	
1,300.00	32.65	271.98	1,201.43	14.34	-414.24	414.49	0.00	0.00	0.00	
1,400.00	32.65	271.98	1,285.63	16.21	-468.16	468.44	0.00	0.00	0.00	
1,500.00	32.65	271.98	1,369.83	18.07	-522.08	522.39	0.00	0.00	0.00	
1,600.00	32.65	271.98	1,454.03	19.94	-576.00	576.34	0.00	0.00	0.00	
1,700.00	32.65	271.98	1,538.23	21.81	-629.91	630.29	0.00	0.00	0.00	
1,800.00	32.65	271.98	1,622.42	23.67	-683.83	684.24	0.00	0.00	0.00	
1,900.00	32.65	271.98	1,706.62	25.54	-737.75	738.19	0.00	0.00	0.00	
2,000.00	32.65	271.98	1,790.82	27.41	-791.66	792.14	0.00	0.00	0.00	
2,100.00	32.65	271.98	1,875.02	29.27	-845.58	846.09	0.00	0.00	0.00	
2,200.00	32.65	271.98	1,959.22	31.14	-899.50	900.04	0.00	0.00	0.00	
2,300.00	32.65	271.98	2,043.42	33.00	-953.41	953.99	0.00	0.00	0.00	
2,392.14	32.65	271.98	2,121.00	34.72	-1,003.09	1,003.69	0.00	0.00	0.00	
G Sand										
2,400.00	32.65	271.98	2,127.62	34.87	-1,007.33	1,007.93	0.00	0.00	0.00	
2,500.00	32.65	271.98	2,211.82	36.74	-1,061.25	1,061.88	0.00	0.00	0.00	
2,510.91	32.65	271.98	2,221.00	36.94	-1,067.13	1,067.77	0.00	0.00	0.00	
G Sand Base										
2,600.00	32.65	271.98	2,296.02	38.60	-1,115.16	1,115.83	0.00	0.00	0.00	
2,689.06	32.65	271.98	2,371.00	40.27	-1,163.18	1,163.88	0.00	0.00	0.00	
FRUN										
2,700.00	32.65	271.98	2,380.22	40.47	-1,169.08	1,169.78	0.00	0.00	0.00	
2,800.00	32.65	271.98	2,464.41	42.34	-1,223.00	1,223.73	0.00	0.00	0.00	
2,900.00	32.65	271.98	2,548.61	44.20	-1,276.92	1,277.68	0.00	0.00	0.00	
3,000.00	32.65	271.98	2,632.81	46.07	-1,330.83	1,331.63	0.00	0.00	0.00	
3,100.00	32.65	271.98	2,717.01	47.94	-1,384.75	1,385.58	0.00	0.00	0.00	
3,200.00	32.65	271.98	2,801.21	49.80	-1,438.67	1,439.53	0.00	0.00	0.00	
3,300.00	32.65	271.98	2,885.41	51.67	-1,492.58	1,493.48	0.00	0.00	0.00	
3,400.00	32.65	271.98	2,969.61	53.54	-1,546.50	1,547.43	0.00	0.00	0.00	
3,500.00	32.65	271.98	3,053.81	55.40	-1,600.42	1,601.38	0.00	0.00	0.00	
3,600.00	32.65	271.98	3,138.01	57.27	-1,654.33	1,655.33	0.00	0.00	0.00	
3,700.00	32.65	271.98	3,222.21	59.14	-1,708.25	1,709.28	0.00	0.00	0.00	
3,800.00	32.65	271.98	3,306.40	61.00	-1,762.17	1,763.22	0.00	0.00	0.00	
3,900.00	32.65	271.98	3,390.60	62.87	-1,816.09	1,817.17	0.00	0.00	0.00	
4,000.00	32.65	271.98	3,474.80	64.73	-1,870.00	1,871.12	0.00	0.00	0.00	

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Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Site:	GR 12-29 Pad	North Reference:	True
Well:	GM 441-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 3May2019 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)
4,100.00	32.65	271.98	3,559.00	66.60	-1,923.92	1,925.07	0.00	0.00	0.00
4,200.00	32.65	271.98	3,643.20	68.47	-1,977.84	1,979.02	0.00	0.00	0.00
4,294.69	32.65	271.98	3,722.93	70.24	-2,028.89	2,030.11	0.00	0.00	0.00
Start Drop -2.00									
4,300.00	32.54	271.98	3,727.40	70.33	-2,031.75	2,032.97	2.00	-2.00	0.00
4,351.43	31.51	271.98	3,771.00	71.28	-2,059.01	2,060.24	2.00	-2.00	0.00
Ohio Creek - MVRD									
4,400.00	30.54	271.98	3,812.62	72.14	-2,084.03	2,085.28	2.00	-2.00	0.00
4,500.00	28.54	271.98	3,899.62	73.85	-2,133.31	2,134.58	2.00	-2.00	0.00
4,600.00	26.54	271.98	3,988.28	75.45	-2,179.52	2,180.82	2.00	-2.00	0.00
4,700.00	24.54	271.98	4,078.50	76.94	-2,222.61	2,223.94	2.00	-2.00	0.00
4,800.00	22.54	271.98	4,170.17	78.32	-2,262.53	2,263.88	2.00	-2.00	0.00
4,900.00	20.54	271.98	4,263.18	79.59	-2,299.22	2,300.60	2.00	-2.00	0.00
5,000.00	18.54	271.98	4,357.42	80.75	-2,332.65	2,334.05	2.00	-2.00	0.00
5,100.00	16.54	271.98	4,452.76	81.79	-2,362.77	2,364.19	2.00	-2.00	0.00
5,200.00	14.54	271.98	4,549.10	82.72	-2,389.55	2,390.98	2.00	-2.00	0.00
5,300.00	12.54	271.98	4,646.31	83.53	-2,412.95	2,414.40	2.00	-2.00	0.00
5,400.00	10.54	271.98	4,744.29	84.22	-2,432.95	2,434.41	2.00	-2.00	0.00
5,427.15	10.00	271.98	4,771.00	84.39	-2,437.79	2,439.25	2.00	-2.00	0.00
Start DLS 2.00 TFO 180.00 - KMGAS									
5,434.16	9.86	271.98	4,777.91	84.43	-2,439.00	2,440.46	2.00	-2.00	0.00
GM 441-30 BTV									
5,500.00	8.54	271.98	4,842.90	84.80	-2,449.52	2,450.99	2.00	-2.00	0.00
5,600.00	6.54	271.98	4,942.03	85.25	-2,462.64	2,464.11	2.00	-2.00	0.00
5,700.00	4.54	271.98	5,041.55	85.58	-2,472.29	2,473.77	2.00	-2.00	0.00
5,800.00	2.54	271.98	5,141.36	85.80	-2,478.47	2,479.95	2.00	-2.00	0.00
5,900.00	0.54	271.98	5,241.32	85.89	-2,481.16	2,482.64	2.00	-2.00	0.00
5,927.15	0.00	0.00	5,268.47	85.90	-2,481.29	2,482.77	2.00	-2.00	324.19
Start 1649.53 hold at 5927.15 MD									
6,000.00	0.00	0.00	5,341.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,100.00	0.00	0.00	5,441.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,200.00	0.00	0.00	5,541.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,300.00	0.00	0.00	5,641.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,400.00	0.00	0.00	5,741.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,500.00	0.00	0.00	5,841.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,600.00	0.00	0.00	5,941.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,700.00	0.00	0.00	6,041.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,800.00	0.00	0.00	6,141.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,900.00	0.00	0.00	6,241.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
6,911.68	0.00	0.00	6,253.00	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
CME0									
7,000.00	0.00	0.00	6,341.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
7,100.00	0.00	0.00	6,441.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
7,200.00	0.00	0.00	6,541.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
7,300.00	0.00	0.00	6,641.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
7,400.00	0.00	0.00	6,741.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
7,426.68	0.00	0.00	6,768.00	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
RLNS									
7,500.00	0.00	0.00	6,841.32	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
7,576.68	0.00	0.00	6,918.00	85.90	-2,481.29	2,482.77	0.00	0.00	0.00
TD at 7576.68 - TD - GM 441-30 PBHL									

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Project:	Garfield County, CO NAD83	MD Reference:	GL 5849' & RKB 24' @ 5873.00usft (H&P 318)
Site:	GR 12-29 Pad	North Reference:	True
Well:	GM 441-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 3May2019 mmsdi		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
GM 441-30 BTV	0.00	0.00	4,771.00	85.90	-2,481.29	1,617,312.74	2,252,927.17	39.4984109	-108.1477781
- plan misses target center by 42.88usft at 5434.16usft MD (4777.91 TVD, 84.43 N, -2439.00 E)									
- Circle (radius 50.00)									
GM 441-30 PBHL	0.00	0.00	6,918.00	85.90	-2,481.29	1,617,312.74	2,252,927.17	39.4984109	-108.1477781
- plan misses target center by 0.01usft at 7576.68usft MD (6918.00 TVD, 85.90 N, -2481.29 E)									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
2,392.14	2,121.00	G Sand		0.00	0.00	
2,510.91	2,221.00	G Sand Base		0.00	0.00	
2,689.06	2,371.00	FRUN		0.00	0.00	
4,351.43	3,771.00	Ohio Creek		0.00	0.00	
4,351.43	3,771.00	MVRD		0.00	0.00	
5,427.15	4,771.00	KMVGAS		0.00	0.00	
6,911.68	6,253.00	CMEO		0.00	0.00	
7,426.68	6,768.00	RLNS		0.00	0.00	
7,576.68	6,918.00	TD		0.00	0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
135.00	135.00	0.00	0.00	Start Build 4.00
951.23	907.77	7.83	-226.20	Start 3343.47 hold at 951.23 MD
4,294.69	3,722.93	70.24	-2,028.89	Start Drop -2.00
5,427.15	4,771.00	84.39	-2,437.79	Start DLS 2.00 TFO 180.00
5,927.15	5,268.47	85.90	-2,481.29	Start 1649.53 hold at 5927.15 MD
7,576.68	6,918.00	85.90	-2,481.29	TD at 7576.68