

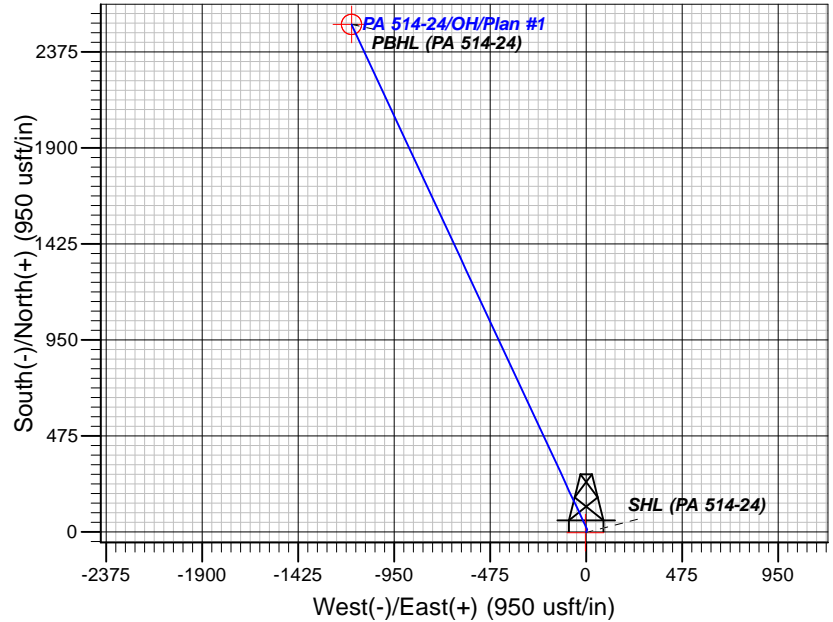
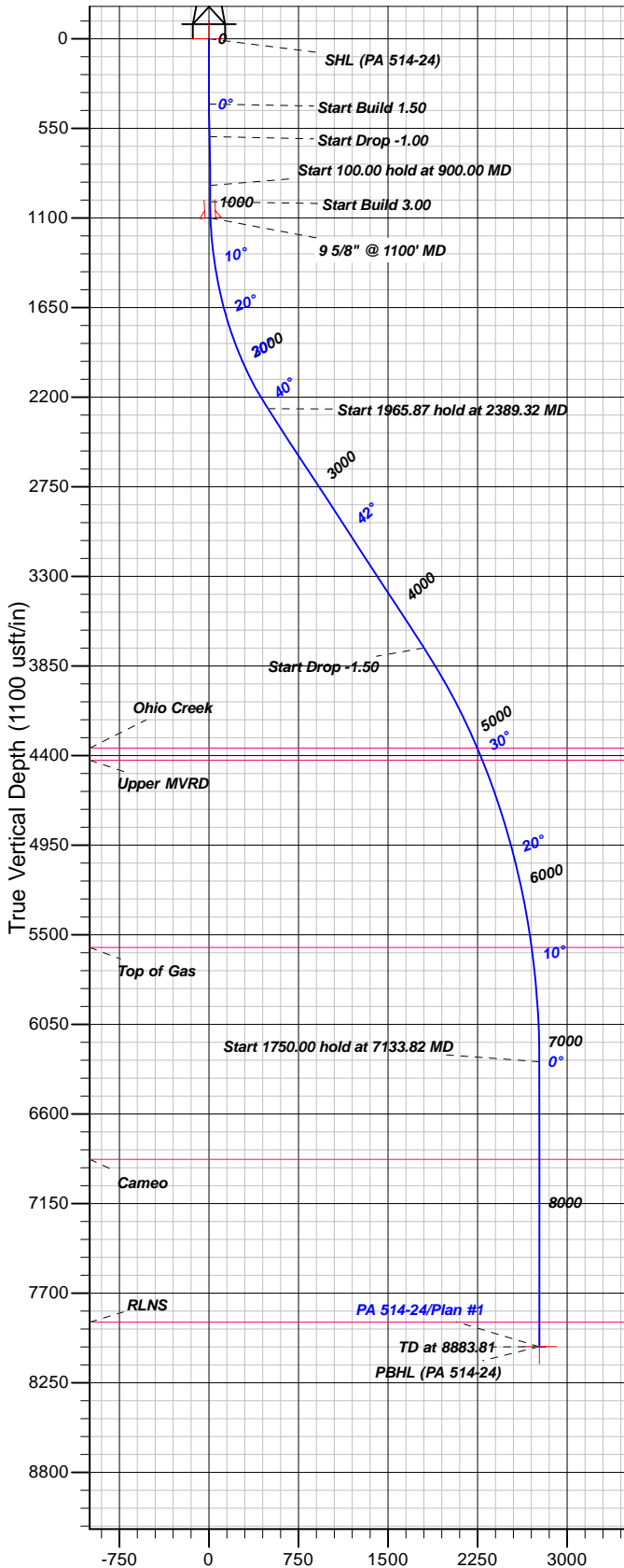
Well Details: PA 514-24

WELL @ 5247.99usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1615187.48	2308837.76	39.4968842	-107.9495164	PA 514-24 (A15)

T M Azimuths to True North
Magnetic North: 9.45°

Magnetic Field
Strength: 51743.4snT
Dip Angle: 65.82°
Date: 5/23/2017
Model: HDGM



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4352.99	5116.31	Ohio Creek
4427.99	5202.59	Upper MVRD
5577.99	6429.84	Top of Gas
6877.99	7733.81	Cameo
7877.98	8733.81	RLNS

Plan: Plan #1

17:47, June 04 2017
Created By: Mel Mireles

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
1099.73	1100.00	9 5/8" @ 1100' 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	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	600.00	3.00	20.00	599.91	4.92	1.79	1.50	20.00	3.71	
4	900.00	0.00	0.00	899.77	12.30	4.48	1.00	180.00	9.28	
5	1000.00	0.00	0.00	999.77	12.30	4.48	0.00	0.00	9.28	
6	2389.32	41.68	334.99	2269.76	450.39	-199.93	3.00	334.99	492.71	
7	4355.18	41.68	334.99	3738.01	1635.01	-752.67	0.00	0.00	1799.93	
8	7133.82	0.00	0.00	6277.99	2511.19	-1161.50	1.50	180.00	2766.79	
9	8883.81	0.00	0.00	8027.98	2511.19	-1161.50	0.00	0.00	2766.79	PBHL (PA 514-24)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SHL (PA 514-24)	0.00	-3.33	-4.49	1615184.27	2308833.18	39.4968750	-107.9495323	Point
- plan misses target center by 5.59usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)								
PBHL (PA 514-24)	8027.98	2511.19	-1161.50	1617729.06	2307744.38	39.5037784	-107.9536327	Circle (Radius: 50.00)
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 22-25 Pad

PA 514-24 - Slot PA 514-24 (A15)

OH

Plan: Plan #1

Standard Planning Report

04 June, 2017



Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-24 - Slot PA 514-24 (A15)
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5247.99usft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5247.99usft (Original Well Elev)
Site:	PA 22-25 Pad	North Reference:	True
Well:	PA 514-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	PA 22-25 Pad			
Site Position:		Northing:	1,615,186.77 usft	Latitude: 39.4968742
From: Map		Easting:	2,308,728.18 usft	Longitude: -107.9499045
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.55 °

Well	PA 514-24 - Slot PA 514-24 (A15), A15			
Well Position	+N/-S	3.66 usft	Northing:	1,615,187.47 usft
	+E/-W	109.51 usft	Easting:	2,308,837.76 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	5,224.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/23/2017	9.45	65.82	51,743

Design	Plan #1			
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	335.18

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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	3.00	20.00	599.91	4.92	1.79	1.50	1.50	0.00	20.00	
900.00	0.00	0.00	899.77	12.30	4.48	1.00	-1.00	0.00	180.00	
1,000.00	0.00	0.00	999.77	12.30	4.48	0.00	0.00	0.00	0.00	
2,389.32	41.68	334.99	2,269.76	450.39	-199.93	3.00	3.00	0.00	334.99	
4,355.18	41.68	334.99	3,738.01	1,635.01	-752.67	0.00	0.00	0.00	0.00	
7,133.82	0.00	0.00	6,277.99	2,511.19	-1,161.50	1.50	-1.50	0.00	180.00	
8,883.81	0.00	0.00	8,027.98	2,511.19	-1,161.50	0.00	0.00	0.00	0.00	PBHL (PA 514-24)

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-24 - Slot PA 514-24 (A15)
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5247.99usft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5247.99usft (Original Well Elev)
Site:	PA 22-25 Pad	North Reference:	True
Well:	PA 514-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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
SHL (PA 514-24)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	1.50	20.00	499.99	1.23	0.45	0.93	1.50	1.50	0.00
600.00	3.00	20.00	599.91	4.92	1.79	3.71	1.50	1.50	0.00
700.00	2.00	20.00	699.81	9.02	3.28	6.81	1.00	-1.00	0.00
800.00	1.00	20.00	799.78	11.48	4.18	8.66	1.00	-1.00	0.00
900.00	0.00	0.00	899.77	12.30	4.48	9.28	1.00	-1.00	0.00
1,000.00	0.00	0.00	999.77	12.30	4.48	9.28	0.00	0.00	0.00
1,100.00	3.00	334.99	1,099.73	14.67	3.37	11.90	3.00	3.00	0.00
9 5/8" @ 1100' MD									
1,200.00	6.00	334.99	1,199.41	21.78	0.05	19.75	3.00	3.00	0.00
1,300.00	9.00	334.99	1,298.54	33.61	-5.47	32.80	3.00	3.00	0.00
1,400.00	12.00	334.99	1,396.85	50.12	-13.17	51.02	3.00	3.00	0.00
1,500.00	15.00	334.99	1,494.08	71.27	-23.04	74.36	3.00	3.00	0.00
1,600.00	18.00	334.99	1,589.95	97.01	-35.05	102.76	3.00	3.00	0.00
1,700.00	21.00	334.99	1,684.20	127.25	-49.16	136.13	3.00	3.00	0.00
1,800.00	24.00	334.99	1,776.58	161.93	-65.34	174.40	3.00	3.00	0.00
1,900.00	27.00	334.99	1,866.83	200.94	-83.54	217.44	3.00	3.00	0.00
2,000.00	30.00	334.99	1,954.70	244.17	-103.72	265.15	3.00	3.00	0.00
2,100.00	33.00	334.99	2,039.96	291.52	-125.81	317.40	3.00	3.00	0.00
2,200.00	36.00	334.99	2,122.36	342.84	-149.75	374.03	3.00	3.00	0.00
2,300.00	39.00	334.99	2,201.68	398.00	-175.49	434.90	3.00	3.00	0.00
2,389.32	41.68	334.99	2,269.76	450.39	-199.93	492.71	3.00	3.00	0.00
2,400.00	41.68	334.99	2,277.74	456.82	-202.94	499.82	0.00	0.00	0.00
2,500.00	41.68	334.99	2,352.42	517.08	-231.06	566.31	0.00	0.00	0.00
2,600.00	41.68	334.99	2,427.11	577.34	-259.17	632.81	0.00	0.00	0.00
2,700.00	41.68	334.99	2,501.80	637.60	-287.29	699.30	0.00	0.00	0.00
2,800.00	41.68	334.99	2,576.49	697.86	-315.41	765.80	0.00	0.00	0.00
2,900.00	41.68	334.99	2,651.17	758.12	-343.52	832.30	0.00	0.00	0.00
3,000.00	41.68	334.99	2,725.86	818.38	-371.64	898.79	0.00	0.00	0.00
3,100.00	41.68	334.99	2,800.55	878.64	-399.76	965.29	0.00	0.00	0.00
3,200.00	41.68	334.99	2,875.24	938.90	-427.87	1,031.78	0.00	0.00	0.00
3,300.00	41.68	334.99	2,949.92	999.16	-455.99	1,098.28	0.00	0.00	0.00
3,400.00	41.68	334.99	3,024.61	1,059.42	-484.11	1,164.78	0.00	0.00	0.00
3,500.00	41.68	334.99	3,099.30	1,119.68	-512.22	1,231.27	0.00	0.00	0.00
3,600.00	41.68	334.99	3,173.99	1,179.94	-540.34	1,297.77	0.00	0.00	0.00
3,700.00	41.68	334.99	3,248.68	1,240.20	-568.46	1,364.26	0.00	0.00	0.00
3,800.00	41.68	334.99	3,323.36	1,300.46	-596.57	1,430.76	0.00	0.00	0.00
3,900.00	41.68	334.99	3,398.05	1,360.72	-624.69	1,497.26	0.00	0.00	0.00
4,000.00	41.68	334.99	3,472.74	1,420.98	-652.81	1,563.75	0.00	0.00	0.00
4,100.00	41.68	334.99	3,547.43	1,481.24	-680.93	1,630.25	0.00	0.00	0.00
4,200.00	41.68	334.99	3,622.11	1,541.50	-709.04	1,696.74	0.00	0.00	0.00
4,300.00	41.68	334.99	3,696.80	1,601.76	-737.16	1,763.24	0.00	0.00	0.00
4,355.18	41.68	334.99	3,738.01	1,635.01	-752.67	1,799.93	0.00	0.00	0.00
4,400.00	41.01	334.99	3,771.66	1,661.84	-765.19	1,829.54	1.50	-1.50	0.00
4,500.00	39.51	334.99	3,847.98	1,720.40	-792.52	1,894.16	1.50	-1.50	0.00
4,600.00	38.01	334.99	3,925.95	1,777.12	-818.99	1,956.76	1.50	-1.50	0.00
4,700.00	36.51	334.99	4,005.54	1,831.98	-844.58	2,017.30	1.50	-1.50	0.00
4,800.00	35.01	334.99	4,086.69	1,884.94	-869.29	2,075.73	1.50	-1.50	0.00
4,900.00	33.51	334.99	4,169.34	1,935.95	-893.09	2,132.02	1.50	-1.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-24 - Slot PA 514-24 (A15)
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5247.99usft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5247.99usft (Original Well Elev)
Site:	PA 22-25 Pad	North Reference:	True
Well:	PA 514-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
5,000.00	32.01	334.99	4,253.44	1,984.98	-915.97	2,186.12	1.50	-1.50	0.00
5,100.00	30.51	334.99	4,338.92	2,032.00	-937.91	2,238.01	1.50	-1.50	0.00
5,116.31	30.26	334.99	4,352.99	2,039.48	-941.40	2,246.26	1.50	-1.50	0.00
Ohio Creek									
5,200.00	29.01	334.99	4,425.73	2,076.97	-958.89	2,287.64	1.50	-1.50	0.00
5,202.59	28.97	334.99	4,427.99	2,078.11	-959.42	2,288.89	1.50	-1.50	0.00
Upper MVRD									
5,300.00	27.51	334.99	4,513.81	2,119.88	-978.91	2,334.98	1.50	-1.50	0.00
5,398.19	26.03	334.99	4,601.47	2,159.95	-997.61	2,379.21	1.50	-1.50	0.00
PA 514-24 MVRD									
5,400.00	26.01	334.99	4,603.10	2,160.67	-997.95	2,380.00	1.50	-1.50	0.00
5,500.00	24.51	334.99	4,693.54	2,199.34	-1,015.99	2,422.67	1.50	-1.50	0.00
5,600.00	23.01	334.99	4,785.06	2,235.85	-1,033.02	2,462.95	1.50	-1.50	0.00
5,700.00	21.51	334.99	4,877.61	2,270.17	-1,049.04	2,500.83	1.50	-1.50	0.00
5,800.00	20.01	334.99	4,971.11	2,302.28	-1,064.02	2,536.27	1.50	-1.50	0.00
5,900.00	18.51	334.99	5,065.52	2,332.17	-1,077.97	2,569.25	1.50	-1.50	0.00
6,000.00	17.01	334.99	5,160.75	2,359.81	-1,090.86	2,599.75	1.50	-1.50	0.00
6,100.00	15.51	334.99	5,256.75	2,385.18	-1,102.70	2,627.74	1.50	-1.50	0.00
6,200.00	14.01	334.99	5,353.45	2,408.26	-1,113.47	2,653.21	1.50	-1.50	0.00
6,300.00	12.51	334.99	5,450.78	2,429.04	-1,123.17	2,676.14	1.50	-1.50	0.00
6,400.00	11.01	334.99	5,548.68	2,447.51	-1,131.78	2,696.52	1.50	-1.50	0.00
6,429.84	10.56	334.99	5,577.99	2,452.56	-1,134.14	2,702.10	1.50	-1.50	0.00
Top of Gas									
6,500.00	9.51	334.99	5,647.08	2,463.64	-1,139.31	2,714.32	1.50	-1.50	0.00
6,600.00	8.01	334.99	5,745.91	2,477.44	-1,145.75	2,729.55	1.50	-1.50	0.00
6,700.00	6.51	334.99	5,845.10	2,488.89	-1,151.09	2,742.18	1.50	-1.50	0.00
6,800.00	5.01	334.99	5,944.60	2,497.98	-1,155.33	2,752.21	1.50	-1.50	0.00
6,900.00	3.51	334.99	6,044.32	2,504.70	-1,158.47	2,759.64	1.50	-1.50	0.00
7,000.00	2.01	334.99	6,144.20	2,509.06	-1,160.50	2,764.45	1.50	-1.50	0.00
7,100.00	0.51	334.99	6,244.17	2,511.05	-1,161.43	2,766.64	1.50	-1.50	0.00
7,133.82	0.00	0.00	6,277.99	2,511.19	-1,161.50	2,766.79	1.50	-1.50	0.00
7,200.00	0.00	0.00	6,344.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,300.00	0.00	0.00	6,444.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,400.00	0.00	0.00	6,544.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,500.00	0.00	0.00	6,644.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,600.00	0.00	0.00	6,744.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,700.00	0.00	0.00	6,844.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,733.81	0.00	0.00	6,877.99	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
Cameo									
7,800.00	0.00	0.00	6,944.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
7,900.00	0.00	0.00	7,044.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,000.00	0.00	0.00	7,144.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,100.00	0.00	0.00	7,244.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,200.00	0.00	0.00	7,344.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,300.00	0.00	0.00	7,444.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,400.00	0.00	0.00	7,544.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,500.00	0.00	0.00	7,644.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,600.00	0.00	0.00	7,744.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,700.00	0.00	0.00	7,844.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,733.81	0.00	0.00	7,877.98	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
RLNS									
8,800.00	0.00	0.00	7,944.17	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00
8,883.81	0.00	0.00	8,027.98	2,511.19	-1,161.50	2,766.79	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-24 - Slot PA 514-24 (A15)
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5247.99usft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5247.99usft (Original Well Elev)
Site:	PA 22-25 Pad	North Reference:	True
Well:	PA 514-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
PA 514-24 PBHL - PBHL (PA 514-24)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (PA 514-24)	0.00	0.00	0.00	-3.33	-4.49	1,615,184.27	2,308,833.18	39.4968751	-107.9495323
- plan misses target center by 5.59usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
PBHL (PA 514-24)	0.00	0.00	8,027.98	2,511.19	-1,161.50	1,617,729.06	2,307,744.39	39.5037785	-107.9536328
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,099.73	9 5/8" @ 1100' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,116.31	4,353.00	Ohio Creek		0.00		
5,202.59	4,428.00	Upper MVRD		0.00		
6,429.84	5,578.00	Top of Gas		0.00		
7,733.81	6,878.00	Cameo		0.00		
8,733.81	7,877.99	RLNS		0.00		