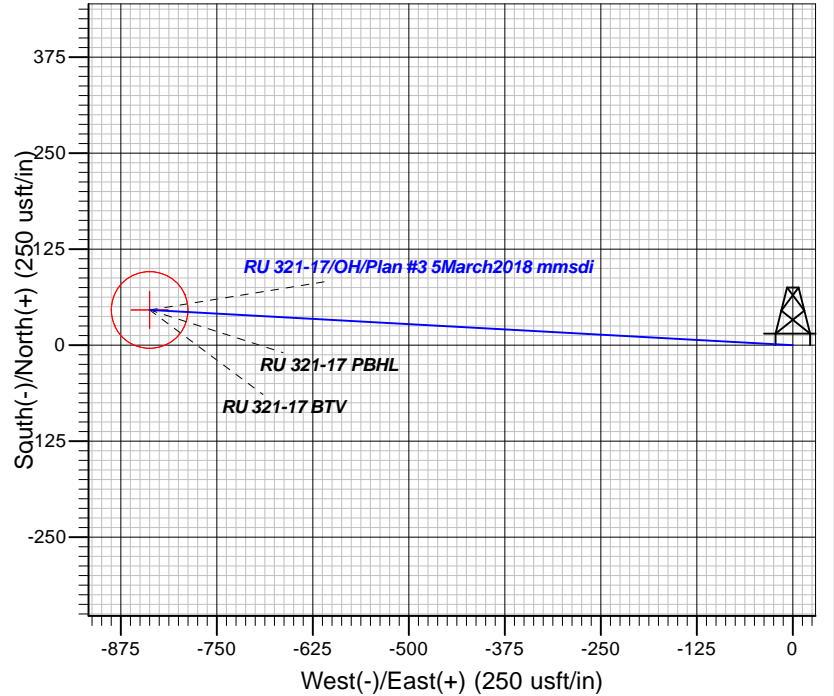
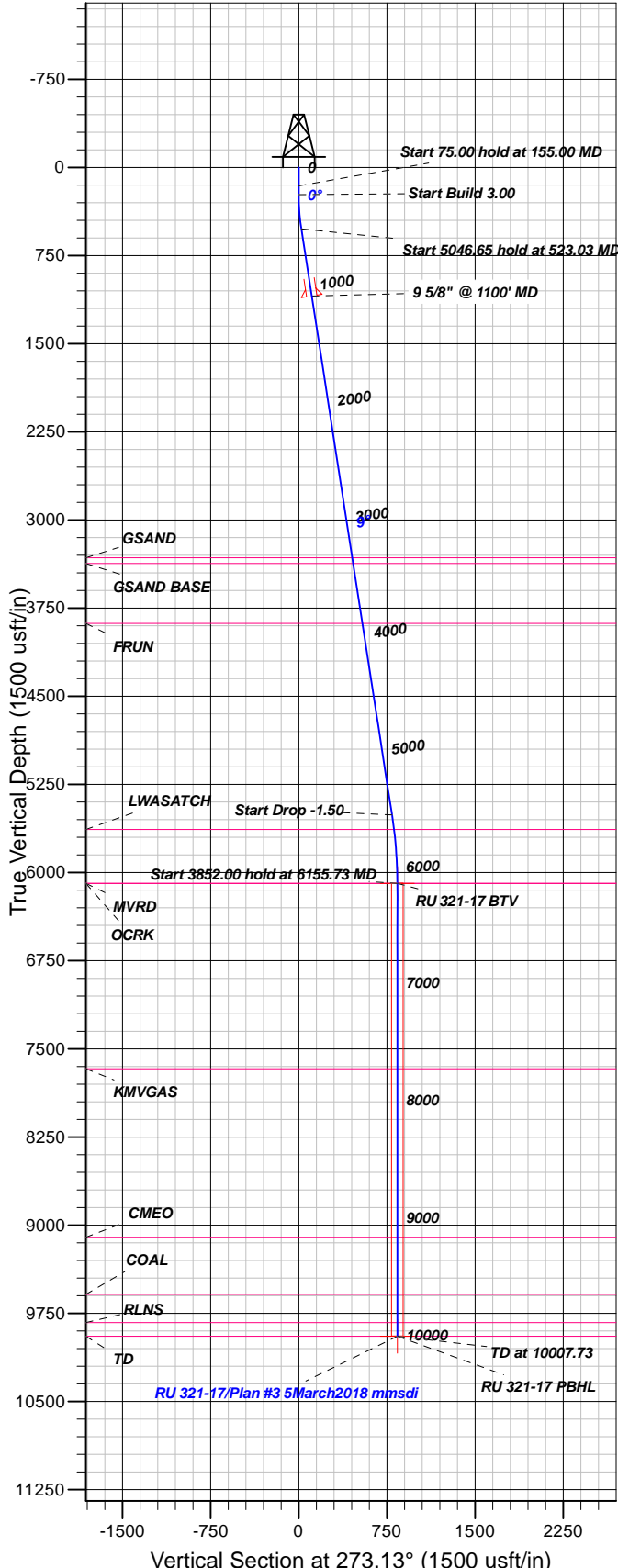


Well Details: RU 321-17

GL 7859' & RKB 24' @ 7883.00usft (H&P 318)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1506075.00	2351756.30	39.4400791	-107.7958469	RU 321-17



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
3321.00	3355.42	GSAND
3370.00	3405.00	GSAND BASE
3880.00	3921.07	FRUN
5633.00	5694.61	LWASATCH
6093.00	6155.73	MVRD
6093.00	6155.73	OCRK
7669.00	7731.73	KMGAS
9103.00	9165.73	CMEO
9588.00	9650.73	COAL
9828.00	9890.73	RLNS
9945.00	10007.73	TD

Plan: Plan #3 5March2018 mmsdi

11:22, March 06 2018
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
1092.07	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	155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	
3	230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	
4	523.03	8.79	273.13	521.88	1.22	-22.40	3.00	273.13	22.44	
5	5569.67	8.79	273.13	5509.24	43.31	-792.52	0.00	0.00	793.70	
6	6155.73	0.00	0.00	6093.00	45.76	-837.32	1.50	180.00	838.57	RU 321-17 BTV
7	10007.73	0.00	0.00	9945.00	45.76	-837.32	0.00	0.00	838.57	RU 321-17 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RU 321-17 BTV	6093.00	45.76	-837.32	1597042.80	2350920.40	39.4501047	-107.7988121	Circle (Radius: 50.00)
- plan hits target center								
RU 321-17 PBHL	9945.00	45.76	-837.32	1597042.80	2350920.40	39.4501047	-107.7988121	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RU 31-17 Pad

RU 321-17 - Slot RU 321-17

OH

Plan: Plan #3 5March2018 mmsdi

Standard Planning Report

06 March, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 321-17 - Slot RU 321-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 321-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 5March2018 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	RU 31-17 Pad			
Site Position:		Northing:	1,596,940.40 usft	Latitude: 39.4498852
From: Map		Easting:	2,351,805.70 usft	Longitude: -107.7956689
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.45 °

Well	RU 321-17 - Slot RU 321-17			
Well Position	+N/-S 34.24 usft	Northing:	1,596,975.90 usft	Latitude: 39.4499792
	+E/-W -50.28 usft	Easting:	2,351,756.30 usft	Longitude: -107.7958470
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 7,859.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/9/2017	9.30	65.63	51,716

Design	Plan #3 5March2018 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	273.13

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	
155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	0.00	
230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	0.00	
523.03	8.79	273.13	521.88	1.22	-22.40	3.00	3.00	0.00	273.13	
5,569.67	8.79	273.13	5,509.24	43.31	-792.52	0.00	0.00	0.00	0.00	
6,155.73	0.00	0.00	6,093.00	45.76	-837.32	1.50	-1.50	0.00	180.00	RU 321-17 BTV
10,007.73	0.00	0.00	9,945.00	45.76	-837.32	0.00	0.00	0.00	0.00	RU 321-17 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 321-17 - Slot RU 321-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 321-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 5March2018 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
155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	0.00
Start 75.00 hold at 155.00 MD									
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
300.00	2.10	273.13	299.98	0.07	-1.28	1.28	3.00	3.00	0.00
400.00	5.10	273.13	399.78	0.41	-7.55	7.56	3.00	3.00	0.00
500.00	8.10	273.13	499.10	1.04	-19.03	19.05	3.00	3.00	0.00
523.03	8.79	273.13	521.88	1.22	-22.40	22.44	3.00	3.00	0.00
Start 5046.65 hold at 523.03 MD									
600.00	8.79	273.13	597.95	1.87	-34.15	34.20	0.00	0.00	0.00
700.00	8.79	273.13	696.77	2.70	-49.41	49.48	0.00	0.00	0.00
800.00	8.79	273.13	795.60	3.53	-64.67	64.76	0.00	0.00	0.00
900.00	8.79	273.13	894.42	4.37	-79.93	80.05	0.00	0.00	0.00
1,000.00	8.79	273.13	993.25	5.20	-95.19	95.33	0.00	0.00	0.00
1,100.00	8.79	273.13	1,092.07	6.04	-110.45	110.61	0.00	0.00	0.00
9 5/8" @ 1100' MD									
1,200.00	8.79	273.13	1,190.90	6.87	-125.71	125.90	0.00	0.00	0.00
1,300.00	8.79	273.13	1,289.72	7.70	-140.97	141.18	0.00	0.00	0.00
1,400.00	8.79	273.13	1,388.55	8.54	-156.23	156.46	0.00	0.00	0.00
1,500.00	8.79	273.13	1,487.38	9.37	-171.49	171.74	0.00	0.00	0.00
1,600.00	8.79	273.13	1,586.20	10.20	-186.75	187.03	0.00	0.00	0.00
1,700.00	8.79	273.13	1,685.03	11.04	-202.01	202.31	0.00	0.00	0.00
1,800.00	8.79	273.13	1,783.85	11.87	-217.27	217.59	0.00	0.00	0.00
1,900.00	8.79	273.13	1,882.68	12.71	-232.53	232.87	0.00	0.00	0.00
2,000.00	8.79	273.13	1,981.50	13.54	-247.79	248.16	0.00	0.00	0.00
2,100.00	8.79	273.13	2,080.33	14.37	-263.05	263.44	0.00	0.00	0.00
2,200.00	8.79	273.13	2,179.15	15.21	-278.31	278.72	0.00	0.00	0.00
2,300.00	8.79	273.13	2,277.98	16.04	-293.57	294.01	0.00	0.00	0.00
2,400.00	8.79	273.13	2,376.80	16.88	-308.83	309.29	0.00	0.00	0.00
2,500.00	8.79	273.13	2,475.63	17.71	-324.09	324.57	0.00	0.00	0.00
2,600.00	8.79	273.13	2,574.45	18.54	-339.35	339.85	0.00	0.00	0.00
2,700.00	8.79	273.13	2,673.28	19.38	-354.61	355.14	0.00	0.00	0.00
2,800.00	8.79	273.13	2,772.10	20.21	-369.87	370.42	0.00	0.00	0.00
2,900.00	8.79	273.13	2,870.93	21.05	-385.13	385.70	0.00	0.00	0.00
3,000.00	8.79	273.13	2,969.75	21.88	-400.39	400.99	0.00	0.00	0.00
3,100.00	8.79	273.13	3,068.58	22.71	-415.65	416.27	0.00	0.00	0.00
3,200.00	8.79	273.13	3,167.41	23.55	-430.91	431.55	0.00	0.00	0.00
3,300.00	8.79	273.13	3,266.23	24.38	-446.17	446.83	0.00	0.00	0.00
3,355.42	8.79	273.13	3,321.00	24.84	-454.62	455.30	0.00	0.00	0.00
GSAND									
3,400.00	8.79	273.13	3,365.06	25.22	-461.43	462.12	0.00	0.00	0.00
3,405.00	8.79	273.13	3,370.00	25.26	-462.19	462.88	0.00	0.00	0.00
GSAND BASE									
3,500.00	8.79	273.13	3,463.88	26.05	-476.69	477.40	0.00	0.00	0.00
3,600.00	8.79	273.13	3,562.71	26.88	-491.95	492.68	0.00	0.00	0.00
3,700.00	8.79	273.13	3,661.53	27.72	-507.21	507.96	0.00	0.00	0.00
3,800.00	8.79	273.13	3,760.36	28.55	-522.47	523.25	0.00	0.00	0.00
3,900.00	8.79	273.13	3,859.18	29.38	-537.73	538.53	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 321-17 - Slot RU 321-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 321-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 5March2018 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)
3,921.07	8.79	273.13	3,880.00	29.56	-540.94	541.75	0.00	0.00	0.00
FRUN									
4,000.00	8.79	273.13	3,958.01	30.22	-552.99	553.81	0.00	0.00	0.00
4,100.00	8.79	273.13	4,056.83	31.05	-568.25	569.10	0.00	0.00	0.00
4,200.00	8.79	273.13	4,155.66	31.89	-583.51	584.38	0.00	0.00	0.00
4,300.00	8.79	273.13	4,254.48	32.72	-598.77	599.66	0.00	0.00	0.00
4,400.00	8.79	273.13	4,353.31	33.55	-614.03	614.94	0.00	0.00	0.00
4,500.00	8.79	273.13	4,452.13	34.39	-629.29	630.23	0.00	0.00	0.00
4,600.00	8.79	273.13	4,550.96	35.22	-644.55	645.51	0.00	0.00	0.00
4,700.00	8.79	273.13	4,649.78	36.06	-659.81	660.79	0.00	0.00	0.00
4,800.00	8.79	273.13	4,748.61	36.89	-675.07	676.07	0.00	0.00	0.00
4,900.00	8.79	273.13	4,847.43	37.72	-690.33	691.36	0.00	0.00	0.00
5,000.00	8.79	273.13	4,946.26	38.56	-705.59	706.64	0.00	0.00	0.00
5,100.00	8.79	273.13	5,045.09	39.39	-720.85	721.92	0.00	0.00	0.00
5,200.00	8.79	273.13	5,143.91	40.23	-736.11	737.21	0.00	0.00	0.00
5,300.00	8.79	273.13	5,242.74	41.06	-751.37	752.49	0.00	0.00	0.00
5,400.00	8.79	273.13	5,341.56	41.89	-766.63	767.77	0.00	0.00	0.00
5,500.00	8.79	273.13	5,440.39	42.73	-781.89	783.05	0.00	0.00	0.00
5,569.67	8.79	273.13	5,509.24	43.31	-792.52	793.70	0.00	0.00	0.00
Start Drop -1.50									
5,600.00	8.34	273.13	5,539.23	43.55	-797.03	798.22	1.50	-1.50	0.00
5,694.61	6.92	273.13	5,633.00	44.24	-809.57	810.77	1.50	-1.50	0.00
LWASATCH									
5,700.00	6.84	273.13	5,638.35	44.27	-810.21	811.42	1.50	-1.50	0.00
5,800.00	5.34	273.13	5,737.79	44.85	-820.80	822.02	1.50	-1.50	0.00
5,900.00	3.84	273.13	5,837.46	45.29	-828.78	830.02	1.50	-1.50	0.00
6,000.00	2.34	273.13	5,937.31	45.58	-834.15	835.40	1.50	-1.50	0.00
6,100.00	0.84	273.13	6,037.27	45.73	-836.92	838.17	1.50	-1.50	0.00
6,155.73	0.00	0.00	6,093.00	45.76	-837.32	838.57	1.50	-1.50	0.00
Start 3852.00 hold at 6155.73 MD - OCRK - MVRD - RU 321-17 BTW									
6,200.00	0.00	0.00	6,137.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,300.00	0.00	0.00	6,237.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,400.00	0.00	0.00	6,337.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,500.00	0.00	0.00	6,437.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,600.00	0.00	0.00	6,537.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,700.00	0.00	0.00	6,637.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,800.00	0.00	0.00	6,737.27	45.76	-837.32	838.57	0.00	0.00	0.00
6,900.00	0.00	0.00	6,837.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,000.00	0.00	0.00	6,937.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,100.00	0.00	0.00	7,037.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,200.00	0.00	0.00	7,137.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,300.00	0.00	0.00	7,237.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,400.00	0.00	0.00	7,337.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,500.00	0.00	0.00	7,437.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,600.00	0.00	0.00	7,537.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,700.00	0.00	0.00	7,637.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,731.73	0.00	0.00	7,669.00	45.76	-837.32	838.57	0.00	0.00	0.00
KMVGAS									
7,800.00	0.00	0.00	7,737.27	45.76	-837.32	838.57	0.00	0.00	0.00
7,900.00	0.00	0.00	7,837.27	45.76	-837.32	838.57	0.00	0.00	0.00
8,000.00	0.00	0.00	7,937.27	45.76	-837.32	838.57	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 321-17 - Slot RU 321-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 321-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 5March2018 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)	
8,100.00	0.00	0.00	8,037.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,137.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,237.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,337.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,437.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,537.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,637.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,737.27	45.76	-837.32	838.57	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,837.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,937.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,037.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,165.73	0.00	0.00	9,103.00	45.76	-837.32	838.57	0.00	0.00	0.00	
CME0										
9,200.00	0.00	0.00	9,137.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,237.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,337.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,437.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,537.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,650.73	0.00	0.00	9,588.00	45.76	-837.32	838.57	0.00	0.00	0.00	
COAL										
9,700.00	0.00	0.00	9,637.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,737.27	45.76	-837.32	838.57	0.00	0.00	0.00	
9,890.73	0.00	0.00	9,828.00	45.76	-837.32	838.57	0.00	0.00	0.00	
RLNS										
9,900.00	0.00	0.00	9,837.27	45.76	-837.32	838.57	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,937.27	45.76	-837.32	838.57	0.00	0.00	0.00	
10,007.73	0.00	0.00	9,945.00	45.76	-837.32	838.57	0.00	0.00	0.00	
TD at 10007.73 - TD - RU 321-17 PBHL										

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
RU 321-17 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,093.00	45.76	-837.32	1,597,042.80	2,350,920.40	39.4501048	-107.7988122
RU 321-17 PBHL - plan hits target center - Point	0.00	0.00	9,945.00	45.76	-837.32	1,597,042.80	2,350,920.40	39.4501048	-107.7988122

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,100.00	1,092.07	9 5/8" @ 1100' MD		9.62	9.62

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 321-17 - Slot RU 321-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7859' & RKB 24' @ 7883.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 321-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 5March2018 mmsdi		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,355.42	3,321.00	GSAND		0.00	0.00
3,405.00	3,370.00	GSAND BASE		0.00	0.00
3,921.07	3,880.00	FRUN		0.00	0.00
5,694.61	5,633.00	LWASATCH		0.00	0.00
6,155.73	6,093.00	OCRK		0.00	0.00
6,155.73	6,093.00	MVRD		0.00	0.00
7,731.73	7,669.00	KMVGAS		0.00	0.00
9,165.73	9,103.00	CME0		0.00	0.00
9,650.73	9,588.00	COAL		0.00	0.00
9,890.73	9,828.00	RLNS		0.00	0.00
10,007.73	9,945.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
155.00	155.00	0.00	0.00	Start 75.00 hold at 155.00 MD
230.00	230.00	0.00	0.00	Start Build 3.00
523.03	521.88	1.22	-22.40	Start 5046.65 hold at 523.03 MD
5,569.67	5,509.24	43.31	-792.52	Start Drop -1.50
6,155.73	6,093.00	45.76	-837.32	Start 3852.00 hold at 6155.73 MD
10,007.73	9,945.00	45.76	-837.32	TD at 10007.73