



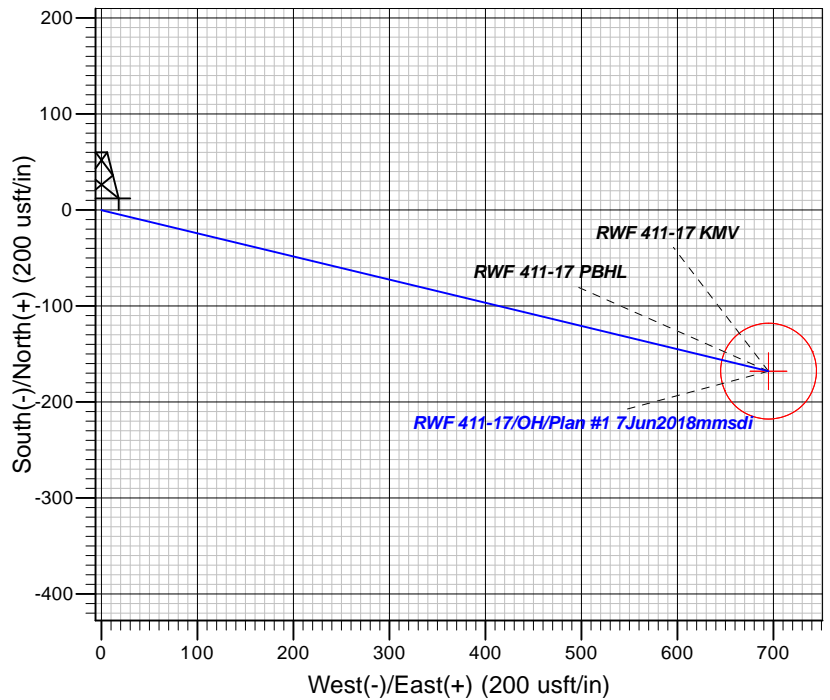
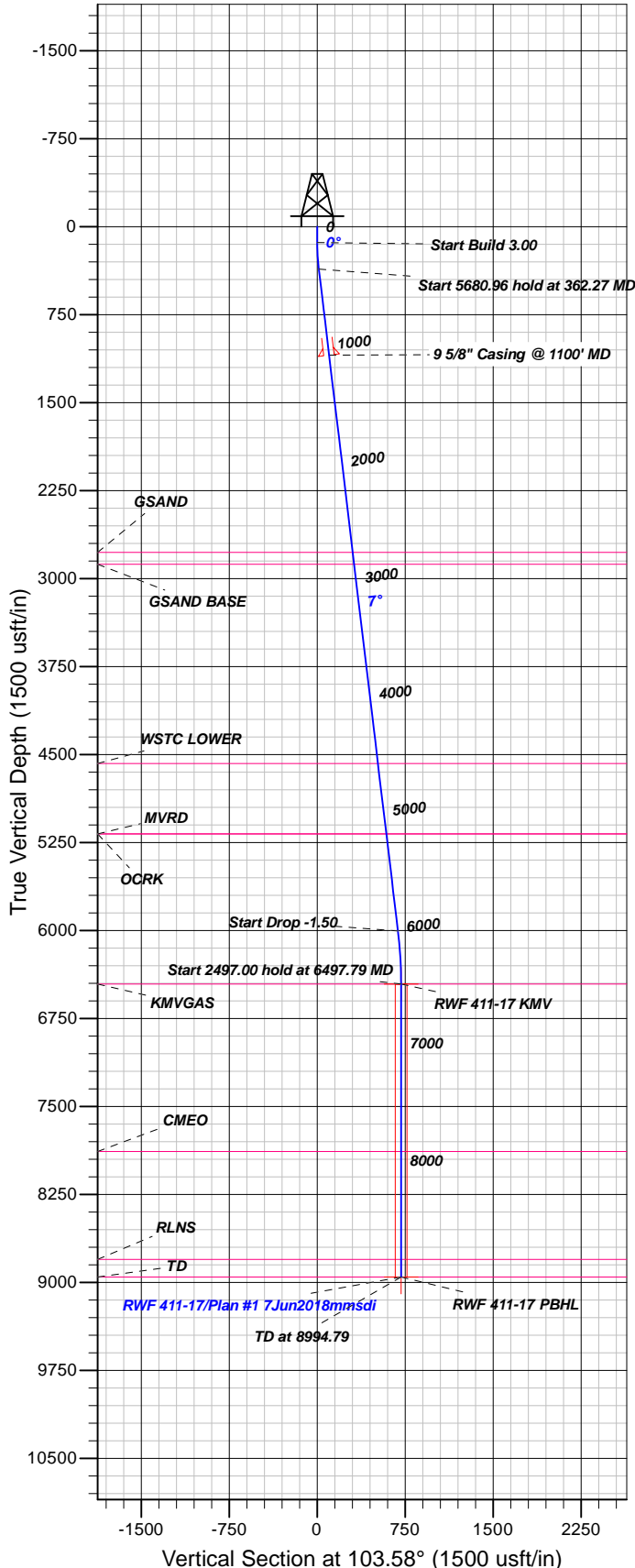
Azimuths to True North
Magnetic North: 9.43°

Magnetic Field
Strength: 51582.5nT
Dip Angle: 65.80°
Date: 6/7/2018
Model: HDGM

Well Details: RWF 411-17

GL 6174.5' & RKB 24' @ 6198.50usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1627389.60	2317147.70	39.5309838	-107.9212318	RWF 411-17 (B7)



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
2776.00	2793.73	GSAND
2876.00	2894.44	GSAND BASE
4576.00	4606.55	WSTC LOWER
5176.00	5210.83	MVRD
5176.00	5210.83	OCRK
6456.00	6497.79	KMGAS
7883.00	7924.79	CMEO
8803.00	8844.79	RLNS
8953.00	8994.79	TD

Plan: Plan #1 7Jun2018mmsdi

18:19, June 11 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
1094.25	1100.00	5/8" Casing @ 1100' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	362.27	6.82	103.58	361.74	-3.17	13.13	3.00	103.58	13.51	
4	6043.24	6.82	103.58	6002.52	-161.48	668.73	0.00	0.00	687.95	
5	6497.79	0.00	0.00	6456.00	-167.82	694.99	1.50	180.00	714.96	RWF 411-17 KMV
6	8994.79	0.00	0.00	8953.00	-167.82	694.99	0.00	0.00	714.96	RWF 411-17 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 411-17 KMV	6456.00	-167.82	694.99	1627203.32	2317837.97	39.5305230	-107.9187679	Circle (Radius: 50.00)
- plan hits target center								
RWF 411-17 PBHL	8953.00	-167.82	694.99	1627203.32	2317837.97	39.5305230	-107.9187679	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

DOE 1-M-18

RWF 411-17 - Slot RWF 411-17 (B7)

OH

Plan: Plan #1 7Jun2018mmsdi

Standard Planning Report

11 June, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 411-17 - Slot RWF 411-17 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 411-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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	DOE 1-M-18					
Site Position:		Northing:	1,627,441.60 usft	Latitude:	39.5311260	
From:	Map	Easting:	2,317,141.30 usft	Longitude:	-107.9212595	
Position Uncertainty:		0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.53 °

Well	RWF 411-17 - Slot RWF 411-17 (B7)					
Well Position	+N/-S	-51.81 usft	Northing:	1,627,389.60 usft	Latitude:	39.5309838
	+E/-W	7.78 usft	Easting:	2,317,147.70 usft	Longitude:	-107.9212319
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,174.50 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/7/2018	9.43	65.80	51,583

Design	Plan #1 7Jun2018mmsdi			
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	103.58

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	
362.27	6.82	103.58	361.74	-3.17	13.13	3.00	3.00	0.00	103.58	
6,043.24	6.82	103.58	6,002.52	-161.48	668.73	0.00	0.00	0.00	0.00	
6,497.79	0.00	0.00	6,456.00	-167.82	694.99	1.50	-1.50	0.00	180.00	RWF 411-17 KMV
8,994.79	0.00	0.00	8,953.00	-167.82	694.99	0.00	0.00	0.00	0.00	RWF 411-17 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 411-17 - Slot RWF 411-17 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 411-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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 3.00									
200.00	1.95	103.58	199.99	-0.26	1.08	1.11	3.00	3.00	0.00
300.00	4.95	103.58	299.79	-1.67	6.92	7.12	3.00	3.00	0.00
362.27	6.82	103.58	361.74	-3.17	13.13	13.51	3.00	3.00	0.00
Start 5680.96 hold at 362.27 MD									
400.00	6.82	103.58	399.20	-4.22	17.48	17.99	0.00	0.00	0.00
500.00	6.82	103.58	498.49	-7.01	29.02	29.86	0.00	0.00	0.00
600.00	6.82	103.58	597.78	-9.79	40.56	41.73	0.00	0.00	0.00
700.00	6.82	103.58	697.08	-12.58	52.10	53.60	0.00	0.00	0.00
800.00	6.82	103.58	796.37	-15.37	63.64	65.47	0.00	0.00	0.00
900.00	6.82	103.58	895.66	-18.15	75.18	77.35	0.00	0.00	0.00
1,000.00	6.82	103.58	994.95	-20.94	86.73	89.22	0.00	0.00	0.00
1,100.00	6.82	103.58	1,094.25	-23.73	98.27	101.09	0.00	0.00	0.00
9 5/8" Casing @ 1100' MD									
1,200.00	6.82	103.58	1,193.54	-26.51	109.81	112.96	0.00	0.00	0.00
1,300.00	6.82	103.58	1,292.83	-29.30	121.35	124.83	0.00	0.00	0.00
1,400.00	6.82	103.58	1,392.12	-32.09	132.89	136.71	0.00	0.00	0.00
1,500.00	6.82	103.58	1,491.42	-34.87	144.43	148.58	0.00	0.00	0.00
1,600.00	6.82	103.58	1,590.71	-37.66	155.97	160.45	0.00	0.00	0.00
1,700.00	6.82	103.58	1,690.00	-40.45	167.51	172.32	0.00	0.00	0.00
1,800.00	6.82	103.58	1,789.30	-43.23	179.05	184.19	0.00	0.00	0.00
1,900.00	6.82	103.58	1,888.59	-46.02	190.59	196.07	0.00	0.00	0.00
2,000.00	6.82	103.58	1,987.88	-48.81	202.13	207.94	0.00	0.00	0.00
2,100.00	6.82	103.58	2,087.17	-51.59	213.67	219.81	0.00	0.00	0.00
2,200.00	6.82	103.58	2,186.47	-54.38	225.21	231.68	0.00	0.00	0.00
2,300.00	6.82	103.58	2,285.76	-57.17	236.75	243.55	0.00	0.00	0.00
2,400.00	6.82	103.58	2,385.05	-59.95	248.29	255.43	0.00	0.00	0.00
2,500.00	6.82	103.58	2,484.35	-62.74	259.83	267.30	0.00	0.00	0.00
2,600.00	6.82	103.58	2,583.64	-65.53	271.37	279.17	0.00	0.00	0.00
2,700.00	6.82	103.58	2,682.93	-68.31	282.91	291.04	0.00	0.00	0.00
2,793.73	6.82	103.58	2,776.00	-70.93	293.73	302.17	0.00	0.00	0.00
GSAND									
2,800.00	6.82	103.58	2,782.22	-71.10	294.45	302.91	0.00	0.00	0.00
2,894.44	6.82	103.58	2,876.00	-73.73	305.35	314.13	0.00	0.00	0.00
GSAND BASE									
2,900.00	6.82	103.58	2,881.52	-73.89	305.99	314.79	0.00	0.00	0.00
3,000.00	6.82	103.58	2,980.81	-76.67	317.53	326.66	0.00	0.00	0.00
3,100.00	6.82	103.58	3,080.10	-79.46	329.07	338.53	0.00	0.00	0.00
3,200.00	6.82	103.58	3,179.40	-82.25	340.61	350.40	0.00	0.00	0.00
3,300.00	6.82	103.58	3,278.69	-85.03	352.15	362.27	0.00	0.00	0.00
3,400.00	6.82	103.58	3,377.98	-87.82	363.69	374.15	0.00	0.00	0.00
3,500.00	6.82	103.58	3,477.27	-90.61	375.23	386.02	0.00	0.00	0.00
3,600.00	6.82	103.58	3,576.57	-93.39	386.77	397.89	0.00	0.00	0.00
3,700.00	6.82	103.58	3,675.86	-96.18	398.31	409.76	0.00	0.00	0.00
3,800.00	6.82	103.58	3,775.15	-98.97	409.85	421.63	0.00	0.00	0.00
3,900.00	6.82	103.58	3,874.44	-101.75	421.39	433.51	0.00	0.00	0.00
4,000.00	6.82	103.58	3,973.74	-104.54	432.93	445.38	0.00	0.00	0.00
4,100.00	6.82	103.58	4,073.03	-107.33	444.47	457.25	0.00	0.00	0.00
4,200.00	6.82	103.58	4,172.32	-110.11	456.01	469.12	0.00	0.00	0.00
4,300.00	6.82	103.58	4,271.62	-112.90	467.56	480.99	0.00	0.00	0.00
4,400.00	6.82	103.58	4,370.91	-115.69	479.10	492.86	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 411-17 - Slot RWF 411-17 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 411-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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)
4,500.00	6.82	103.58	4,470.20	-118.47	490.64	504.74	0.00	0.00	0.00
4,600.00	6.82	103.58	4,569.49	-121.26	502.18	516.61	0.00	0.00	0.00
4,606.55	6.82	103.58	4,576.00	-121.44	502.93	517.39	0.00	0.00	0.00
WSTC LOWER									
4,700.00	6.82	103.58	4,668.79	-124.05	513.72	528.48	0.00	0.00	0.00
4,800.00	6.82	103.58	4,768.08	-126.83	525.26	540.35	0.00	0.00	0.00
4,900.00	6.82	103.58	4,867.37	-129.62	536.80	552.22	0.00	0.00	0.00
5,000.00	6.82	103.58	4,966.67	-132.41	548.34	564.10	0.00	0.00	0.00
5,100.00	6.82	103.58	5,065.96	-135.19	559.88	575.97	0.00	0.00	0.00
5,200.00	6.82	103.58	5,165.25	-137.98	571.42	587.84	0.00	0.00	0.00
5,210.83	6.82	103.58	5,176.00	-138.28	572.67	589.13	0.00	0.00	0.00
OCRK - MVRD									
5,300.00	6.82	103.58	5,264.54	-140.77	582.96	599.71	0.00	0.00	0.00
5,400.00	6.82	103.58	5,363.84	-143.55	594.50	611.58	0.00	0.00	0.00
5,500.00	6.82	103.58	5,463.13	-146.34	606.04	623.46	0.00	0.00	0.00
5,600.00	6.82	103.58	5,562.42	-149.13	617.58	635.33	0.00	0.00	0.00
5,700.00	6.82	103.58	5,661.71	-151.91	629.12	647.20	0.00	0.00	0.00
5,800.00	6.82	103.58	5,761.01	-154.70	640.66	659.07	0.00	0.00	0.00
5,900.00	6.82	103.58	5,860.30	-157.49	652.20	670.94	0.00	0.00	0.00
6,000.00	6.82	103.58	5,959.59	-160.27	663.74	682.82	0.00	0.00	0.00
6,043.24	6.82	103.58	6,002.52	-161.48	668.73	687.95	0.00	0.00	0.00
Start Drop -1.50									
6,100.00	5.97	103.58	6,058.93	-162.96	674.87	694.27	1.50	-1.50	0.00
6,200.00	4.47	103.58	6,158.52	-165.10	683.71	703.36	1.50	-1.50	0.00
6,300.00	2.97	103.58	6,258.30	-166.62	690.01	709.84	1.50	-1.50	0.00
6,400.00	1.47	103.58	6,358.23	-167.53	693.77	713.71	1.50	-1.50	0.00
6,497.79	0.00	0.00	6,456.00	-167.82	694.99	714.96	1.50	-1.50	-105.92
Start 2497.00 hold at 6497.79 MD - KVMGAS - RWF 411-17 KMW									
6,500.00	0.00	0.00	6,458.22	-167.82	694.99	714.96	0.00	0.00	0.00
6,600.00	0.00	0.00	6,558.22	-167.82	694.99	714.96	0.00	0.00	0.00
6,700.00	0.00	0.00	6,658.22	-167.82	694.99	714.96	0.00	0.00	0.00
6,800.00	0.00	0.00	6,758.22	-167.82	694.99	714.96	0.00	0.00	0.00
6,900.00	0.00	0.00	6,858.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,000.00	0.00	0.00	6,958.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,100.00	0.00	0.00	7,058.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,200.00	0.00	0.00	7,158.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,300.00	0.00	0.00	7,258.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,400.00	0.00	0.00	7,358.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,500.00	0.00	0.00	7,458.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,600.00	0.00	0.00	7,558.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,700.00	0.00	0.00	7,658.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,800.00	0.00	0.00	7,758.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,900.00	0.00	0.00	7,858.22	-167.82	694.99	714.96	0.00	0.00	0.00
7,924.79	0.00	0.00	7,883.00	-167.82	694.99	714.96	0.00	0.00	0.00
CME0									
8,000.00	0.00	0.00	7,958.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,100.00	0.00	0.00	8,058.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,200.00	0.00	0.00	8,158.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,300.00	0.00	0.00	8,258.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,400.00	0.00	0.00	8,358.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,500.00	0.00	0.00	8,458.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,600.00	0.00	0.00	8,558.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,700.00	0.00	0.00	8,658.22	-167.82	694.99	714.96	0.00	0.00	0.00

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Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 411-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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)
8,800.00	0.00	0.00	8,758.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,844.79	0.00	0.00	8,803.00	-167.82	694.99	714.96	0.00	0.00	0.00
RLNS									
8,900.00	0.00	0.00	8,858.22	-167.82	694.99	714.96	0.00	0.00	0.00
8,994.79	0.00	0.00	8,953.00	-167.82	694.99	714.96	0.00	0.00	0.00
TD at 8994.79 - TD - RWF 411-17 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
RWF 411-17 KMV - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,456.00	-167.82	694.99	1,627,203.32	2,317,837.97	39.5305230	-107.9187679
RWF 411-17 PBHL - plan hits target center - Point	0.00	0.00	8,953.00	-167.82	694.99	1,627,203.32	2,317,837.97	39.5305230	-107.9187679

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,094.25	9 5/8" Casing @ 1100' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,793.73	2,776.00	GSAND		0.00	0.00	
2,894.44	2,876.00	GSAND BASE		0.00	0.00	
4,606.55	4,576.00	WSTC LOWER		0.00	0.00	
5,210.83	5,176.00	OCRK		0.00	0.00	
5,210.83	5,176.00	MVRD		0.00	0.00	
6,497.79	6,456.00	KMVGAS		0.00	0.00	
7,924.79	7,883.00	CME0		0.00	0.00	
8,844.79	8,803.00	RLNS		0.00	0.00	
8,994.79	8,953.00	TD		0.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 411-17 - Slot RWF 411-17 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 411-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
135.00	135.00	0.00	0.00	Start Build 3.00
362.27	361.74	-3.17	13.13	Start 5680.96 hold at 362.27 MD
6,043.24	6,002.52	-161.48	668.73	Start Drop -1.50
6,497.79	6,456.00	-167.82	694.99	Start 2497.00 hold at 6497.79 MD
8,994.79	8,953.00	-167.82	694.99	TD at 8994.79