



**Scientific  
Drilling**

## Survey Certification

7327 West Barton Road  
Casper, WY 82604  
(307)-472-6621 Fax (307) 472-5439

<b>Operator</b>	TEP Rocky Mountain LLC
<b>Well Name &amp; No.</b>	PA 433-13
<b>API #</b>	05-045-24195
<b>County &amp; State</b>	Garfield County, CO
<b>SDI Job #</b>	OP.025648
<b>Rig</b>	H&P 318
<b>Survey Date</b>	3-Jul-2020

I, Seth M. Burstad, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 0 feet to a measured depth of 9970 feet is true and correct as determined from all available records.

*Seth M. Burstad*

Signature

5-Jul-2020

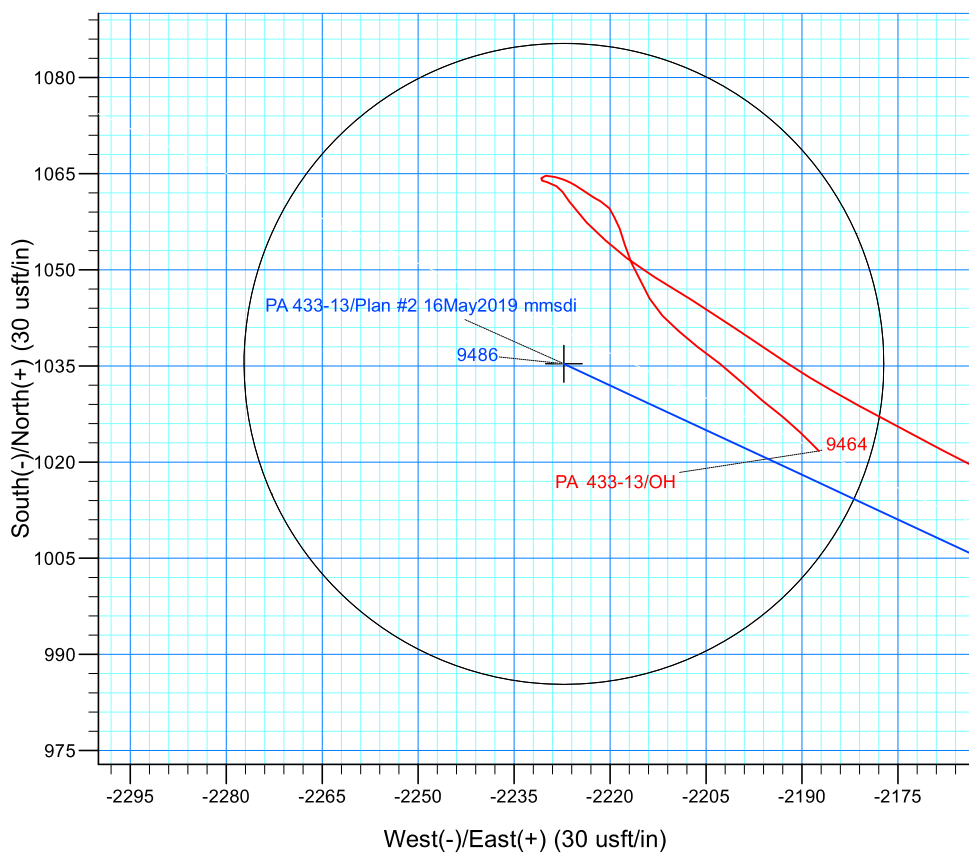
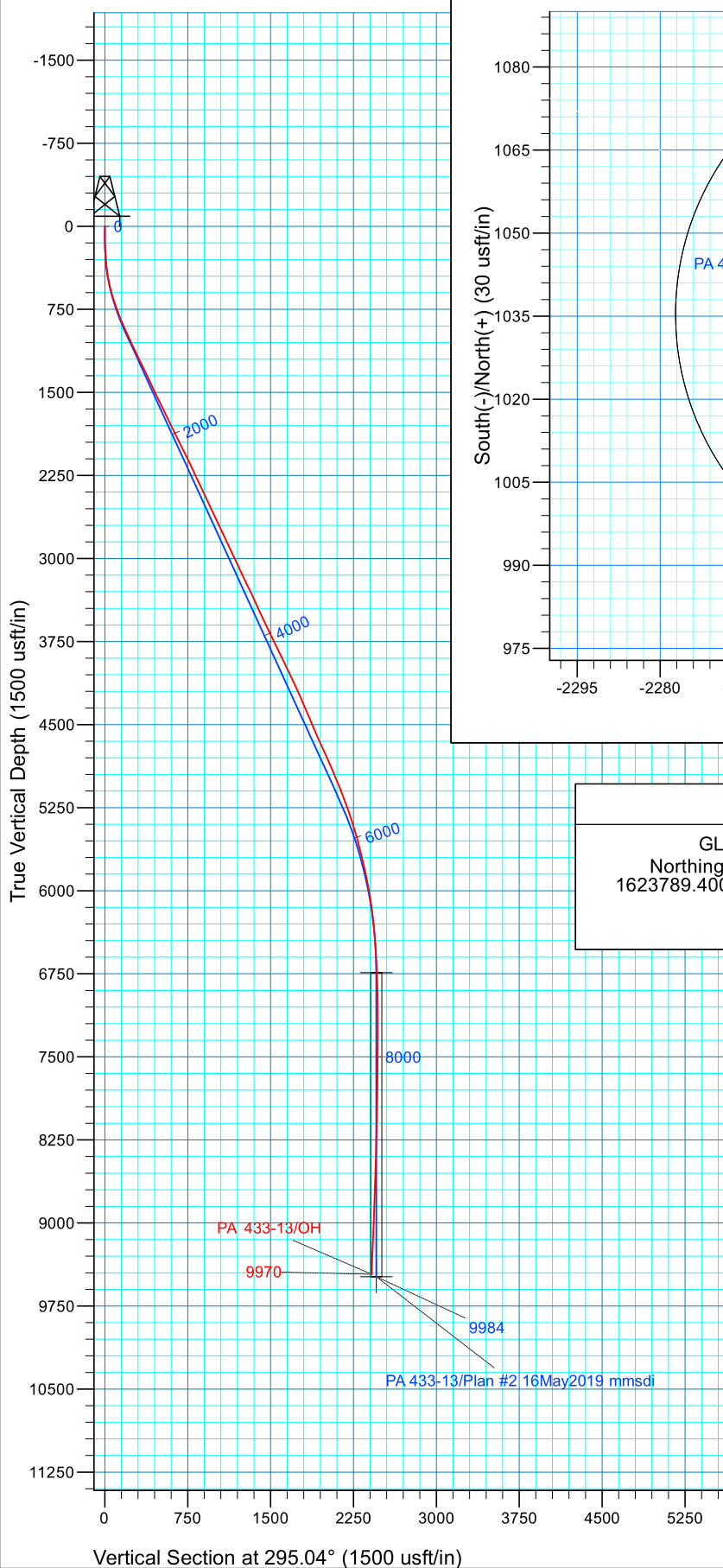
Date

**Seth M. Burstad**

Rockies Region Well Planner  
Scientific Drilling - Rocky Mountain District



Project: Garfield County, CO NAD83  
Site: PA 44-13 Pad  
Well: PA 433-13  
Wellbore: OH  
Design: OH



#### WELL DETAILS: PA 433-13

GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)  
Northing Easting Latitude Longitude  
1623789.4000 2311229.7000 39.5206684 -107.9418625

#### PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well PA 433-13 - Slot PA 433-13 (B8), True North  
Vertical (TVD) Reference: GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)  
Section (VS) Reference: Slot - PA 433-13 (B8)(0.00N, 0.00E)  
Measured Depth Reference: GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)  
Calculation Method: Minimum Curvature  
Local North: True  
Location:



## **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**PA 44-13 Pad**

**PA 433-13 - Slot PA 433-13 (B8)**

**OH**

**Design: OH**

## **Standard Survey Report**

**05 July, 2020**



<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 433-13 - Slot PA 433-13 (B8)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Site:</b>	PA 44-13 Pad	<b>MD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Well:</b>	PA 433-13	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction

<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		PA 44-13 Pad			
Site Position:		Northing:	1,623,813.7000 usft	Latitude:	39.5207354
From:	Map	Easting:	2,311,233.5000 usft	Longitude:	-107.9418514
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.54 °

Well		PA 433-13 - Slot PA 433-13 (B8)				
Well Position	+N/-S	0.00 usft	Northing:	1,623,789.4000 usft	Latitude:	39.5206685
	+E/-W	0.00 usft	Easting:	2,311,229.7000 usft	Longitude:	-107.9418626
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,571.10 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_FILE	6/30/2020	9.22	65.72	51,370.70000000

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	295.04	

<b>Survey Program</b>	<b>Date</b>	7/5/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
122.00	760.00	Survey #1 - Surface Gyro (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
838.00	1,076.00	Survey #2 - Surface MWD (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,167.00	9,970.00	Survey #3 - Production (OH)	MWD+HDGM	OWSG MWD + HDGM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
122.00	0.44	266.84	122.00	-0.03	-0.47	0.41	0.36	0.36	0.00	
<b>First SDI Gyro Surface Survey</b>										
213.00	2.64	299.00	212.96	0.97	-2.65	2.81	2.51	2.42	35.34	
304.00	4.75	307.18	303.77	4.26	-7.49	8.59	2.38	2.32	8.99	
394.00	7.48	299.88	393.25	9.44	-15.54	18.07	3.15	3.03	-8.11	
485.00	11.17	290.92	483.03	15.54	-28.91	32.77	4.35	4.05	-9.85	
575.00	14.34	290.92	570.80	22.63	-47.47	52.58	3.52	3.52	0.00	
666.00	17.42	291.80	658.32	31.72	-70.65	77.43	3.39	3.38	0.97	

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 433-13 - Slot PA 433-13 (B8)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Site:</b>	PA 44-13 Pad	<b>MD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Well:</b>	PA 433-13	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction

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)
760.00	19.97	292.59	747.35	43.11	-98.54	107.52	2.73	2.71	0.84
Last SDI Gyro Surface Survey									
838.00	21.80	293.45	820.22	53.99	-124.12	135.31	2.38	2.35	1.10
First SDI MWD Surface Survey									
932.00	24.07	293.44	906.79	68.56	-157.73	171.92	2.41	2.41	-0.01
1,027.00	24.75	290.40	993.30	83.20	-194.14	211.11	1.50	0.72	-3.20
1,076.00	25.24	291.88	1,037.71	90.67	-213.45	231.77	1.62	1.00	3.02
Last SDI MWD Surface Survey									
1,167.00	25.59	291.48	1,119.90	105.10	-249.74	270.75	0.43	0.38	-0.44
First SDI MWD Production Survey									
1,261.00	26.23	292.39	1,204.45	120.44	-287.84	311.77	0.80	0.68	0.97
1,356.00	25.89	292.57	1,289.80	136.40	-326.41	353.46	0.37	-0.36	0.19
1,450.00	25.19	291.16	1,374.61	151.50	-364.01	393.92	0.99	-0.74	-1.50
1,544.00	26.24	293.77	1,459.30	167.10	-401.69	434.66	1.64	1.12	2.78
1,638.00	24.89	292.84	1,544.10	183.15	-438.94	475.20	1.50	-1.44	-0.99
1,733.00	26.17	295.86	1,629.83	200.05	-476.22	516.13	1.92	1.35	3.18
1,827.00	25.47	295.12	1,714.44	217.67	-513.17	557.07	0.82	-0.74	-0.79
1,921.00	27.04	298.15	1,798.74	236.33	-550.31	598.62	2.20	1.67	3.22
2,015.00	26.72	297.98	1,882.59	256.33	-587.81	641.06	0.35	-0.34	-0.18
2,110.00	25.68	295.66	1,967.83	275.26	-625.23	682.97	1.54	-1.09	-2.44
2,204.00	26.38	298.73	2,052.30	294.12	-661.90	724.18	1.61	0.74	3.27
2,298.00	26.04	299.15	2,136.63	314.21	-698.24	765.60	0.41	-0.36	0.45
2,393.00	25.06	298.20	2,222.34	333.88	-734.18	806.49	1.12	-1.03	-1.00
2,487.00	26.06	300.57	2,307.14	353.79	-769.51	846.92	1.52	1.06	2.52
2,581.00	24.76	299.42	2,392.05	373.96	-804.43	887.10	1.48	-1.38	-1.22
2,675.00	26.16	299.59	2,476.92	393.86	-839.60	927.39	1.49	1.49	0.18
2,769.00	25.24	299.52	2,561.62	413.97	-875.06	968.02	0.98	-0.98	-0.07
2,863.00	24.27	300.75	2,646.98	433.72	-909.10	1,007.23	1.17	-1.03	1.31
2,958.00	24.96	298.12	2,733.35	453.15	-943.56	1,046.67	1.36	0.73	-2.77
3,052.00	26.43	295.85	2,818.05	471.62	-979.88	1,087.40	1.88	1.56	-2.41
3,146.00	25.94	295.72	2,902.41	489.67	-1,017.23	1,128.87	0.52	-0.52	-0.14
3,241.00	24.45	294.81	2,988.37	506.93	-1,053.80	1,169.31	1.62	-1.57	-0.96
3,335.00	26.02	295.17	3,073.39	523.87	-1,090.12	1,209.39	1.68	1.67	0.38
3,429.00	24.88	294.92	3,158.27	540.97	-1,126.71	1,249.78	1.22	-1.21	-0.27
3,523.00	26.03	294.69	3,243.14	557.92	-1,163.39	1,290.18	1.23	1.22	-0.24
3,618.00	25.41	296.27	3,328.73	575.64	-1,200.60	1,331.40	0.97	-0.65	1.66
3,712.00	23.83	294.95	3,414.18	592.58	-1,235.91	1,370.56	1.78	-1.68	-1.40
3,807.00	24.88	294.84	3,500.73	609.07	-1,271.44	1,409.73	1.11	1.11	-0.12
3,901.00	26.51	294.07	3,585.43	625.94	-1,308.55	1,450.49	1.77	1.73	-0.82
3,995.00	26.20	294.89	3,669.66	643.23	-1,346.52	1,492.21	0.51	-0.33	0.87
4,090.00	24.97	293.81	3,755.34	660.15	-1,383.89	1,533.23	1.38	-1.29	-1.14
4,184.00	26.51	295.14	3,840.02	677.07	-1,421.04	1,574.05	1.75	1.64	1.41
4,278.00	25.05	294.07	3,924.66	694.10	-1,458.20	1,614.93	1.63	-1.55	-1.14
4,373.00	26.33	295.09	4,010.27	711.24	-1,495.65	1,656.11	1.43	1.35	1.07

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 433-13 - Slot PA 433-13 (B8)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Site:</b>	PA 44-13 Pad	<b>MD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Well:</b>	PA 433-13	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction

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)
4,467.00	26.21	295.27	4,094.56	728.94	-1,533.30	1,697.71	0.15	-0.13	0.19
4,561.00	24.80	295.13	4,179.39	746.17	-1,569.92	1,738.19	1.50	-1.50	-0.15
4,655.00	23.17	295.49	4,265.27	762.51	-1,604.46	1,776.40	1.74	-1.73	0.38
4,750.00	23.49	291.83	4,352.51	777.59	-1,638.91	1,813.99	1.56	0.34	-3.85
4,844.00	22.42	291.52	4,439.07	791.13	-1,672.98	1,850.59	1.15	-1.14	-0.33
4,939.00	22.69	290.73	4,526.80	804.26	-1,706.97	1,886.94	0.43	0.28	-0.83
5,033.00	23.84	291.76	4,613.16	817.72	-1,741.57	1,923.99	1.30	1.22	1.10
5,127.00	25.72	294.13	4,698.50	833.11	-1,777.83	1,963.35	2.26	2.00	2.52
5,222.00	24.97	294.78	4,784.36	849.94	-1,814.85	2,004.01	0.84	-0.79	0.68
5,316.00	23.33	293.64	4,870.13	865.72	-1,849.92	2,042.46	1.81	-1.74	-1.21
5,411.00	22.24	295.40	4,957.71	880.97	-1,883.39	2,079.25	1.35	-1.15	1.85
5,505.00	21.48	295.99	5,044.95	896.15	-1,914.93	2,114.25	0.84	-0.81	0.63
5,599.00	21.54	295.39	5,132.41	911.09	-1,945.99	2,148.71	0.24	0.06	-0.64
5,694.00	20.84	297.32	5,220.98	926.32	-1,976.76	2,183.04	1.04	-0.74	2.03
5,788.00	18.31	297.16	5,309.54	940.74	-2,004.76	2,214.50	2.69	-2.69	-0.17
5,883.00	17.95	297.34	5,399.83	954.27	-2,031.04	2,244.04	0.38	-0.38	0.19
5,977.00	16.09	298.29	5,489.71	967.10	-2,055.38	2,271.52	2.00	-1.98	1.01
6,072.00	14.99	297.10	5,581.23	978.94	-2,077.91	2,296.95	1.21	-1.16	-1.25
6,166.00	13.70	296.63	5,672.30	989.46	-2,098.68	2,320.22	1.38	-1.37	-0.50
6,261.00	12.31	297.50	5,764.86	999.18	-2,117.72	2,341.59	1.48	-1.46	0.92
6,355.00	12.08	290.69	5,856.74	1,007.29	-2,135.81	2,361.41	1.55	-0.24	-7.24
6,450.00	10.76	294.86	5,949.86	1,014.53	-2,153.16	2,380.19	1.64	-1.39	4.39
6,544.00	9.36	297.65	6,042.42	1,021.76	-2,167.89	2,396.60	1.58	-1.49	2.97
6,639.00	8.78	298.38	6,136.23	1,028.79	-2,181.12	2,411.56	0.62	-0.61	0.77
6,733.00	6.85	303.44	6,229.35	1,035.29	-2,192.11	2,424.26	2.18	-2.05	5.38
6,828.00	5.36	304.18	6,323.81	1,040.91	-2,200.50	2,434.25	1.57	-1.57	0.78
6,922.00	4.58	301.65	6,417.46	1,045.34	-2,207.33	2,442.31	0.86	-0.83	-2.69
7,017.00	3.43	301.54	6,512.22	1,048.82	-2,212.98	2,448.90	1.21	-1.21	-0.12
7,111.00	2.99	306.82	6,606.07	1,051.76	-2,217.34	2,454.10	0.56	-0.47	5.62
7,206.00	2.35	313.83	6,700.97	1,054.60	-2,220.73	2,458.37	0.76	-0.67	7.38
7,300.00	2.65	313.11	6,794.88	1,057.42	-2,223.71	2,462.26	0.32	0.32	-0.77
7,394.00	2.55	328.58	6,888.79	1,060.68	-2,226.38	2,466.07	0.75	-0.11	16.46
7,488.00	1.34	301.96	6,982.73	1,063.05	-2,228.41	2,468.90	1.57	-1.29	-28.32
7,582.00	0.71	277.23	7,076.72	1,063.71	-2,229.92	2,470.55	0.80	-0.67	-26.31
7,677.00	0.24	307.84	7,171.71	1,063.90	-2,230.66	2,471.30	0.55	-0.49	32.22
7,771.00	0.36	10.68	7,265.71	1,064.31	-2,230.76	2,471.57	0.35	0.13	66.85
7,865.00	0.80	85.69	7,359.71	1,064.65	-2,230.05	2,471.07	0.84	0.47	79.80
7,960.00	0.62	112.17	7,454.70	1,064.51	-2,228.91	2,469.98	0.39	-0.19	27.87
8,054.00	1.21	101.79	7,548.69	1,064.11	-2,227.47	2,468.50	0.65	0.63	-11.04
8,148.00	1.06	126.58	7,642.67	1,063.39	-2,225.80	2,466.68	0.54	-0.16	26.37
8,243.00	0.72	117.53	7,737.66	1,062.59	-2,224.56	2,465.23	0.39	-0.36	-9.53
8,337.00	1.16	126.09	7,831.65	1,061.76	-2,223.27	2,463.70	0.49	0.47	9.11
8,431.00	1.33	117.75	7,925.62	1,060.69	-2,221.54	2,461.68	0.26	0.18	-8.87

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 433-13 - Slot PA 433-13 (B8)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Site:</b>	PA 44-13 Pad	<b>MD Reference:</b>	GL 6571.1 & RKB 24' @ 6595.10usft (H&P 318)
<b>Well:</b>	PA 433-13	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction

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)	
8,526.00	0.93	143.50	8,020.61	1,059.56	-2,220.10	2,459.90	0.67	-0.42	27.11	
8,620.00	1.05	156.59	8,114.59	1,058.15	-2,219.31	2,458.58	0.27	0.13	13.93	
8,715.00	1.26	154.60	8,209.57	1,056.41	-2,218.51	2,457.13	0.23	0.22	-2.09	
8,809.00	1.99	166.41	8,303.53	1,053.89	-2,217.69	2,455.31	0.85	0.78	12.56	
8,903.00	1.73	152.09	8,397.49	1,051.05	-2,216.64	2,453.16	0.56	-0.28	-15.23	
8,998.00	1.93	153.45	8,492.44	1,048.35	-2,215.25	2,450.76	0.22	0.21	1.43	
9,092.00	1.95	153.52	8,586.38	1,045.51	-2,213.83	2,448.27	0.02	0.02	0.07	
9,187.00	2.16	133.37	8,681.32	1,042.83	-2,211.81	2,445.31	0.79	0.22	-21.21	
9,281.00	2.16	133.05	8,775.26	1,040.40	-2,209.23	2,441.94	0.01	0.00	-0.34	
9,376.00	2.29	127.07	8,870.19	1,038.04	-2,206.41	2,438.38	0.28	0.14	-6.29	
9,471.00	3.05	127.13	8,965.08	1,035.37	-2,202.88	2,434.05	0.80	0.80	0.06	
9,565.00	2.48	134.76	9,058.97	1,032.43	-2,199.44	2,429.69	0.72	-0.61	8.12	
9,660.00	2.67	128.01	9,153.88	1,029.62	-2,196.24	2,425.60	0.38	0.20	-7.11	
9,754.00	2.36	129.12	9,247.79	1,027.05	-2,193.01	2,421.59	0.33	-0.33	1.18	
9,848.00	2.02	134.55	9,341.72	1,024.66	-2,190.33	2,418.15	0.42	-0.36	5.78	
9,900.00	1.93	134.82	9,393.69	1,023.40	-2,189.05	2,416.47	0.17	-0.17	0.52	
Last SDI MWD Production Survey										
9,970.00	1.93	134.82	9,463.65	1,021.74	-2,187.38	2,414.25	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
122.00	122.00	-0.03	-0.47	First SDI Gyro Surface Survey	
760.00	747.35	43.11	-98.54	Last SDI Gyro Surface Survey	
838.00	820.22	53.99	-124.12	First SDI MWD Surface Survey	
1,076.00	1,037.71	90.67	-213.45	Last SDI MWD Surface Survey	
1,167.00	1,119.90	105.10	-249.74	First SDI MWD Production Survey	
9,900.00	9,393.69	1,023.40	-2,189.05	Last SDI MWD Production Survey	
9,970.00	9,463.65	1,021.74	-2,187.38	Projection to TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_