



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

## Survey Certification

Operator	TEP Rocky Mountain LLC
Well Name & No.	SG 413-22
API #	05-045-24009
County & State	Garfield County, CO
SDI Job #	OP.024807
Rig	H&P 318
Survey Date	13-Apr-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 6122 feet is true and correct as determined from all available records.

*Seth M. Burstad*

Signature

14-Apr-2020

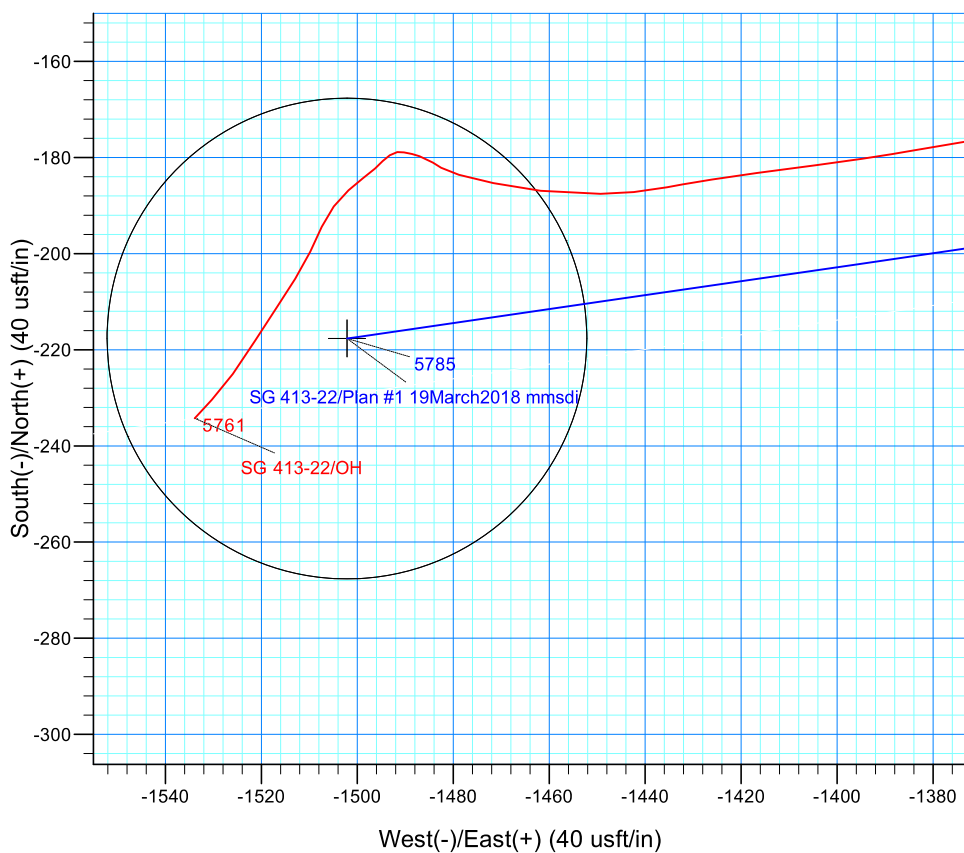
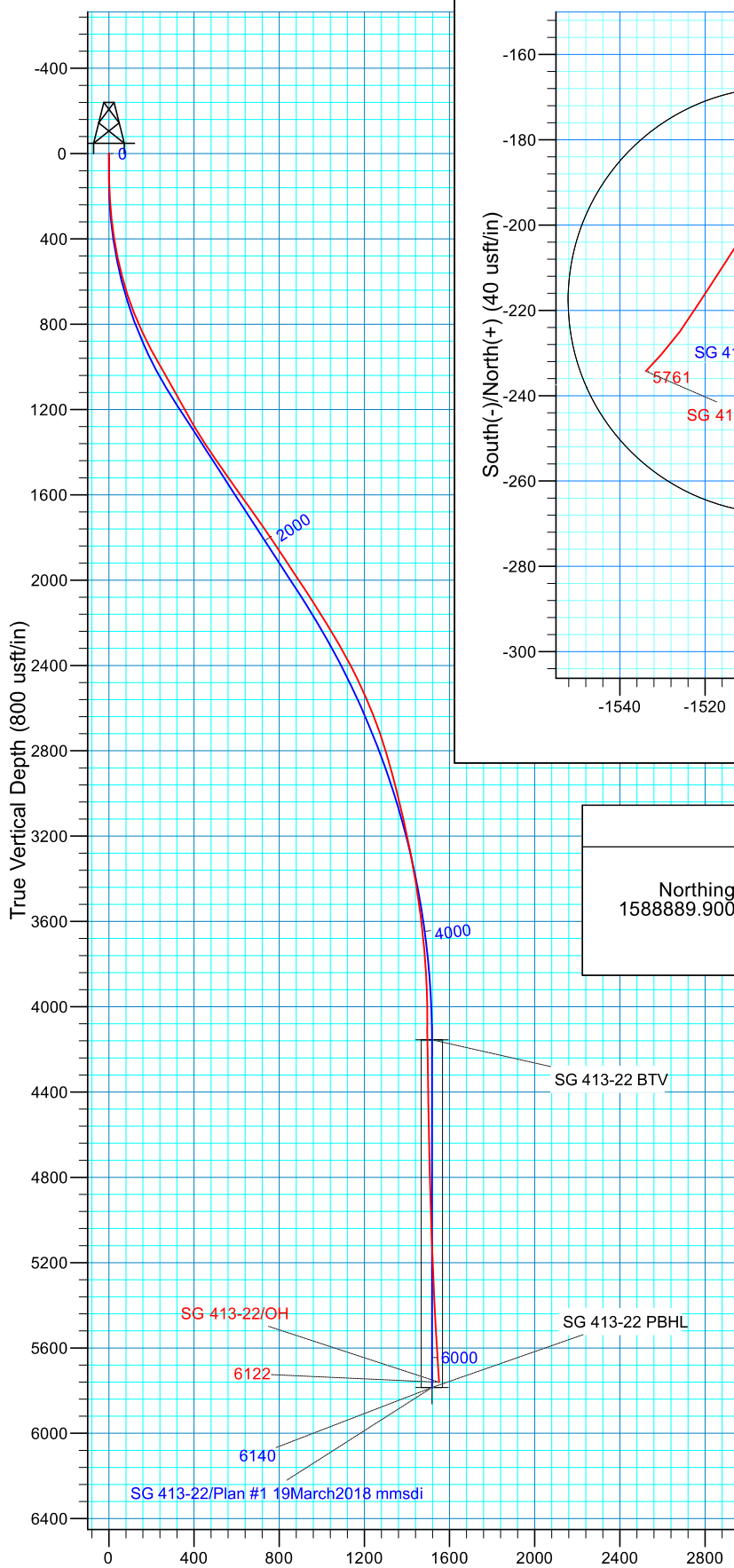
Date

### Seth M. Burstad

Rockies Region Well Planner  
Scientific Drilling - Rocky Mountain District



Project: Garfield County, CO NAD83  
 Site: SG 23-22 Pad  
 Well: SG 413-22  
 Wellbore: OH  
 Design: OH



#### WELL DETAILS: SG 413-22

GL 5665' & RKB 24' @ 5689.00usft	5665.00
Northing	1588889.9000
Easting	2265662.6000
Latitude	39.4214190
Longitude	-108.0997839

#### 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 SG 413-22 - Slot SG 413-22 (A10), True North  
 Vertical (TVD) Reference: GL 5665' & RKB 24' @ 5689.00usft  
 Section (VS) Reference: Slot - SG 413-22 (A10)(0.00N, 0.00E)  
 Measured Depth Reference: GL 5665' & RKB 24' @ 5689.00usft  
 Calculation Method: Minimum Curvature  
 Local North: True  
 Location:

Vertical Section at 261.32° (800 usft/in)

# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 23-22 Pad**

**SG 413-22 - Slot SG 413-22 (A10)**

**OH**

**Design: OH**

## **Standard Survey Report**

**14 April, 2020**



# Scientific Drilling, Intl

## Survey Report

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 413-22 - Slot SG 413-22 (A10)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Well:</b>	SG 413-22	<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	SG 23-22 Pad				
Site Position:		Northing:	1,588,957.4000 usft	Latitude:	39.4216042
From:	Map	Easting:	2,265,662.2000 usft	Longitude:	-108.0997922
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64 °

Well	SG 413-22 - Slot SG 413-22 (A10)					
Well Position	+N/-S	0.00 usft	Northing:	1,588,889.9000 usft	Latitude:	39.4214190
	+E/-W	0.00 usft	Easting:	2,265,662.6000 usft	Longitude:	-108.0997840
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,665.00 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	4/11/2020	9.27	65.55	51,511.50000000

<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	261.32	

<b>Survey Program</b>	<b>Date</b>	4/14/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
122.00	985.00	Survey #1 - Surface Gyro Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
1,074.00	6,122.00	Survey #2 - Production Survey (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	1.14	286.79	121.99	0.35	-1.16	1.10	0.93	0.93	0.00	
<b>First SDI Gyro Surface Survey</b>										
214.00	3.70	266.84	213.90	0.45	-5.00	4.88	2.89	2.78	-21.68	
305.00	5.89	269.21	304.58	0.23	-12.60	12.43	2.42	2.41	2.60	
396.00	8.97	264.64	394.81	-0.50	-24.34	24.14	3.44	3.38	-5.02	
487.00	11.79	262.71	484.31	-2.34	-40.63	40.52	3.12	3.10	-2.12	
578.00	15.13	258.40	572.80	-5.91	-61.49	61.68	3.83	3.67	-4.74	
670.00	18.12	259.80	660.94	-10.86	-87.34	87.98	3.28	3.25	1.52	
764.00	21.64	260.68	749.33	-16.26	-118.84	119.93	3.76	3.74	0.94	

# Scientific Drilling, Intl

## Survey Report

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 413-22 - Slot SG 413-22 (A10)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Well:</b>	SG 413-22	<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)
859.00	24.90	260.07	836.59	-22.55	-155.83	157.45	3.44	3.43	-0.64
953.00	28.06	260.95	920.72	-29.44	-197.17	199.35	3.39	3.36	0.94
985.00	29.11	261.69	948.81	-31.75	-212.30	214.66	3.46	3.28	2.31
Last SDI Gyro Surface Survey									
1,074.00	30.67	260.37	1,025.97	-38.67	-256.11	259.01	1.90	1.75	-1.48
First SDI MWD Production Survey									
1,169.00	29.21	258.36	1,108.30	-47.41	-302.70	306.39	1.86	-1.54	-2.12
1,263.00	28.67	257.49	1,190.56	-56.92	-347.18	351.79	0.73	-0.57	-0.93
1,358.00	30.08	258.52	1,273.34	-66.59	-392.76	398.31	1.58	1.48	1.08
1,452.00	33.45	258.86	1,353.25	-76.29	-441.28	447.74	3.59	3.59	0.36
1,547.00	34.38	260.81	1,432.09	-85.63	-493.45	500.72	1.51	0.98	2.05
1,641.00	34.84	263.26	1,509.46	-93.02	-546.32	554.10	1.56	0.49	2.61
1,735.00	36.15	266.04	1,585.99	-98.09	-600.65	608.57	2.21	1.39	2.96
1,829.00	34.92	264.99	1,662.49	-102.35	-655.11	663.05	1.46	-1.31	-1.12
1,924.00	35.79	265.82	1,739.97	-106.75	-709.90	717.88	1.05	0.92	0.87
2,018.00	33.41	263.35	1,817.34	-111.75	-763.03	771.16	2.94	-2.53	-2.63
2,112.00	32.83	264.54	1,896.07	-117.18	-814.10	822.46	0.93	-0.62	1.27
2,207.00	34.43	264.57	1,975.17	-122.17	-866.48	874.99	1.68	1.68	0.03
2,301.00	33.44	264.23	2,053.15	-127.29	-918.70	927.39	1.07	-1.05	-0.36
2,395.00	32.08	263.29	2,132.20	-132.81	-969.27	978.21	1.54	-1.45	-1.00
2,489.00	31.83	263.48	2,211.96	-138.54	-1,018.68	1,027.92	0.29	-0.27	0.20
2,584.00	30.25	264.72	2,293.35	-143.59	-1,067.41	1,076.85	1.79	-1.66	1.31
2,679.00	28.09	265.39	2,376.30	-147.59	-1,113.53	1,123.05	2.30	-2.27	0.71
2,773.00	26.06	266.38	2,459.99	-150.67	-1,156.20	1,165.70	2.21	-2.16	1.05
2,868.00	23.93	265.48	2,546.09	-153.50	-1,196.24	1,205.70	2.28	-2.24	-0.95
2,962.00	21.84	265.77	2,632.69	-156.30	-1,232.69	1,242.15	2.23	-2.22	0.31
3,056.00	19.15	264.03	2,720.73	-159.19	-1,265.46	1,274.99	2.93	-2.86	-1.85
3,151.00	16.25	260.44	2,811.23	-163.02	-1,294.07	1,303.85	3.26	-3.05	-3.78
3,245.00	14.95	259.76	2,901.76	-167.36	-1,318.98	1,329.13	1.40	-1.38	-0.72
3,339.00	14.25	259.87	2,992.73	-171.55	-1,342.30	1,352.81	0.75	-0.74	0.12
3,434.00	13.38	261.08	3,084.98	-175.31	-1,364.67	1,375.49	0.96	-0.92	1.27
3,528.00	12.52	260.13	3,176.59	-178.74	-1,385.45	1,396.56	0.94	-0.91	-1.01
3,623.00	10.51	263.28	3,269.67	-181.52	-1,404.20	1,415.51	2.22	-2.12	3.32
3,717.00	9.65	261.35	3,362.22	-183.71	-1,420.51	1,431.96	0.98	-0.91	-2.05
3,812.00	8.66	259.63	3,456.01	-186.20	-1,435.41	1,447.07	1.08	-1.04	-1.81
3,906.00	8.46	269.57	3,548.97	-187.52	-1,449.29	1,460.99	1.59	-0.21	10.57
4,001.00	6.70	276.85	3,643.13	-186.91	-1,461.78	1,473.25	2.11	-1.85	7.66
4,095.00	5.47	282.17	3,736.60	-185.32	-1,471.61	1,482.72	1.44	-1.31	5.66
4,189.00	3.59	285.91	3,830.31	-183.56	-1,478.82	1,489.58	2.02	-2.00	3.98
4,283.00	1.29	307.40	3,924.22	-182.11	-1,482.49	1,492.99	2.59	-2.45	22.86
4,378.00	1.17	294.71	4,019.19	-181.06	-1,484.22	1,494.54	0.31	-0.13	-13.36
4,472.00	0.90	300.18	4,113.18	-180.29	-1,485.73	1,495.92	0.31	-0.29	5.82
4,567.00	0.81	287.92	4,208.17	-179.71	-1,487.01	1,497.10	0.21	-0.09	-12.91

# Scientific Drilling, Intl

## Survey Report

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<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Well:</b>	SG 413-22	<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)	
4,661.00	1.19	283.13	4,302.15	-179.28	-1,488.59	1,498.60	0.41	0.40	-5.10	
4,756.00	0.88	282.60	4,397.14	-178.90	-1,490.27	1,500.19	0.33	-0.33	-0.56	
4,850.00	0.88	258.96	4,491.13	-178.88	-1,491.68	1,501.59	0.38	0.00	-25.15	
4,944.00	1.17	239.19	4,585.11	-179.51	-1,493.21	1,503.20	0.48	0.31	-21.03	
5,039.00	1.14	222.24	4,680.09	-180.70	-1,494.68	1,504.83	0.36	-0.03	-17.84	
5,133.00	1.61	228.91	4,774.07	-182.26	-1,496.30	1,506.67	0.53	0.50	7.10	
5,228.00	2.25	232.53	4,869.01	-184.27	-1,498.79	1,509.43	0.69	0.67	3.81	
5,322.00	2.59	227.90	4,962.93	-186.82	-1,501.83	1,512.82	0.42	0.36	-4.93	
5,417.00	2.91	217.33	5,057.82	-190.18	-1,504.89	1,516.35	0.63	0.34	-11.13	
5,511.00	3.08	204.12	5,151.69	-194.38	-1,507.36	1,519.43	0.75	0.18	-14.05	
5,605.00	3.90	205.81	5,245.52	-199.56	-1,509.79	1,522.61	0.88	0.87	1.80	
5,700.00	3.93	212.05	5,340.29	-205.23	-1,512.92	1,526.57	0.45	0.03	6.57	
5,794.00	4.60	213.74	5,434.03	-211.10	-1,516.73	1,531.21	0.73	0.71	1.80	
5,889.00	5.44	212.18	5,528.67	-218.07	-1,521.24	1,536.73	0.90	0.88	-1.64	
5,982.00	4.91	215.96	5,621.29	-225.03	-1,525.93	1,542.41	0.68	-0.57	4.06	
6,062.00	5.01	222.58	5,700.99	-230.37	-1,530.30	1,547.54	0.73	0.13	8.28	
Last SDI MWD Production Survey										
6,122.00	5.01	222.58	5,760.76	-234.23	-1,533.84	1,551.63	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	121.99	0.35	-1.16	First SDI Gyro Surface Survey	
985.00	948.81	-31.75	-212.30	Last SDI Gyro Surface Survey	
1,074.00	1,025.97	-38.67	-256.11	First SDI MWD Production Survey	
6,062.00	5,700.99	-230.37	-1,530.30	Last SDI MWD Production Survey	
6,122.00	5,760.76	-234.23	-1,533.84	Projection to TD	

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