



#### Well Details: NR 14-3

TVD Reference: GL 6720' & RKB 24' @ 6744.00usft  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.00 0.00 1634880.50 2329775.58 39.5524576 -107.8771719 NR 14-3 (A14)

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well NR 14-3 - Slot NR 14-3 (A14), True North  
 Vertical (TVD) Reference: GL 6720' & RKB 24' @ 6744.00usft  
 Section (VS) Reference: Slot - NR 14-3 (A14)(0.00N, 0.00E)  
 Measured Depth Reference: GL 6720' & RKB 24' @ 6744.00usft  
 Calculation Method: Minimum Curvature

#### 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

Plan: OH

16:33, December 10 2018  
 Created By: Mel Mireles Jr.



## Directional Survey Certification

2948 I-70 Business Loop  
Grand Junction, CO 81504  
(970)-245-9447 Fax (970)-245-9454

Operator	TEP Rocky Mountain, LLC.
Well Name & No.	NR 14-3
County & State	Garfield County, CO
SDI Job No.	OP.014922
Rig	H&P 318

I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 121 feet to a measured depth of 10,046 feet is true and correct as determined from all available records.

A handwritten signature in black ink, appearing to read 'Mel Mireles Jr.', written over a horizontal line.

Signature

10-Dec-18

Date

### Mel Mireles Jr.

Grand Junction Assistant Well Planner  
Scientific Drilling - Colorado District

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well NR 14-3 - Slot NR 14-3 (A14)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 6720' & RKB 24' @ 6744.00usft
<b>Site:</b>	NR 23-3 Pad	<b>MD Reference:</b>	GL 6720' & RKB 24' @ 6744.00usft
<b>Well:</b>	NR 14-3	<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 District

<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		NR 23-3 Pad			
Site Position:		Northing:	1,634,904.55 usft	Latitude:	39.5525224
From:	Map	Easting:	2,329,757.66 usft	Longitude:	-107.8772377
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.50 °

Well	NR 14-3 - Slot NR 14-3 (A14)					
Well Position	+N/-S	0.00 usft	Northing:	1,634,880.50 usft	Latitude:	39.5524577
	+E/-W	0.00 usft	Easting:	2,329,775.58 usft	Longitude:	-107.8771719
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,720.00 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	12/1/2018	9.42	65.78	51,513

<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	241.51	

<b>Survey Program</b>	<b>Date</b>	12/10/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
121.00	398.00	Survey #1 - Gyro MWD Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
467.00	1,051.00	Survey #2 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,181.00	10,046.00	Survey #3 - Production MWD 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	
121.00	0.44	221.13	121.00	-0.35	-0.31	0.44	0.36	0.36	0.00	
<b>First SDI Gyro MWD Survey</b>										
213.00	4.93	240.38	212.87	-2.57	-3.98	4.72	4.91	4.88	20.92	
305.00	7.21	250.05	304.36	-6.50	-12.84	14.38	2.71	2.48	10.51	
398.00	9.59	248.73	396.35	-11.30	-25.55	27.84	2.57	2.56	-1.42	
<b>Last SDI Gyro MWD Survey</b>										
467.00	12.16	250.11	464.11	-15.86	-37.74	40.73	3.74	3.72	2.00	

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well NR 14-3 - Slot NR 14-3 (A14)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 6720' & RKB 24' @ 6744.00usft
<b>Site:</b>	NR 23-3 Pad	<b>MD Reference:</b>	GL 6720' & RKB 24' @ 6744.00usft
<b>Well:</b>	NR 14-3	<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 District

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)
<b>First SDI Surface MWD Survey</b>									
558.00	13.02	248.01	552.92	-22.95	-56.26	60.39	1.07	0.95	-2.31
650.00	14.24	245.55	642.33	-31.52	-76.17	81.98	1.47	1.33	-2.67
744.00	15.36	244.34	733.21	-41.70	-97.92	105.95	1.24	1.19	-1.29
839.00	15.85	243.00	824.70	-53.03	-120.82	131.48	0.64	0.52	-1.41
933.00	16.18	241.36	915.06	-65.14	-143.75	157.41	0.60	0.35	-1.74
1,027.00	16.18	243.38	1,005.33	-77.28	-166.95	183.60	0.60	0.00	2.15
1,051.00	16.18	243.30	1,028.38	-80.29	-172.93	190.28	0.09	0.00	-0.33
<b>Last SDI Surface MWD Survey</b>									
1,181.00	15.90	244.23	1,153.32	-96.17	-205.15	226.17	0.29	-0.22	0.72
<b>First SDI Production MWD Survey</b>									
1,275.00	15.31	243.54	1,243.86	-107.29	-227.85	251.44	0.66	-0.63	-0.73
1,370.00	14.67	243.35	1,335.62	-118.28	-249.83	276.00	0.68	-0.67	-0.20
1,464.00	14.13	242.41	1,426.67	-128.93	-270.64	299.36	0.63	-0.57	-1.00
1,559.00	15.92	243.12	1,518.42	-140.19	-292.54	323.98	1.89	1.88	0.75
1,653.00	15.74	243.74	1,608.85	-151.66	-315.47	349.61	0.26	-0.19	0.66
1,748.00	17.67	244.54	1,699.84	-163.56	-340.05	376.89	2.05	2.03	0.84
1,842.00	16.67	242.00	1,789.65	-176.03	-364.83	404.62	1.33	-1.06	-2.70
1,938.00	16.21	241.35	1,881.73	-188.91	-388.75	431.79	0.52	-0.48	-0.68
2,032.00	15.31	240.21	1,972.19	-201.37	-411.03	457.31	1.01	-0.96	-1.21
2,126.00	14.60	238.99	2,063.01	-213.64	-431.96	481.56	0.83	-0.76	-1.30
2,221.00	16.53	238.81	2,154.52	-226.81	-453.78	507.02	2.03	2.03	-0.19
2,315.00	16.01	237.87	2,244.76	-240.63	-476.20	533.31	0.62	-0.55	-1.00
2,410.00	15.24	237.15	2,336.24	-254.37	-497.79	558.84	0.84	-0.81	-0.76
2,505.00	14.77	236.00	2,428.00	-267.91	-518.31	583.34	0.59	-0.49	-1.21
2,600.00	15.83	237.32	2,519.64	-281.68	-539.26	608.32	1.17	1.12	1.39
2,694.00	15.30	236.53	2,610.19	-295.44	-560.40	633.46	0.61	-0.56	-0.84
2,789.00	15.40	236.30	2,701.80	-309.36	-581.35	658.51	0.12	0.11	-0.24
2,884.00	14.95	235.30	2,793.49	-323.33	-601.92	683.25	0.55	-0.47	-1.05
2,978.00	16.71	239.87	2,883.92	-337.02	-623.57	708.82	2.29	1.87	4.86
3,073.00	15.78	240.39	2,975.13	-350.26	-646.62	735.39	0.99	-0.98	0.55
3,168.00	15.52	239.79	3,066.61	-363.03	-668.83	761.01	0.32	-0.27	-0.63
3,262.00	15.07	238.44	3,157.28	-375.76	-690.11	785.78	0.61	-0.48	-1.44
3,357.00	15.02	238.01	3,249.02	-388.74	-711.08	810.40	0.13	-0.05	-0.45
3,451.00	14.51	236.00	3,339.92	-401.78	-731.17	834.28	0.77	-0.54	-2.14
3,546.00	16.27	238.99	3,431.51	-415.29	-752.44	859.42	2.03	1.85	3.15
3,640.00	15.22	237.61	3,521.98	-428.69	-774.15	884.89	1.19	-1.12	-1.47
3,735.00	15.43	241.89	3,613.61	-441.32	-795.83	909.97	1.21	0.22	4.51
3,829.00	15.12	240.27	3,704.29	-453.29	-817.50	934.73	0.56	-0.33	-1.72
3,924.00	14.51	240.05	3,796.13	-465.38	-838.58	959.01	0.64	-0.64	-0.23
4,018.00	16.85	240.68	3,886.62	-477.93	-860.66	984.41	2.50	2.49	0.67
4,113.00	16.71	239.69	3,977.58	-491.57	-884.46	1,011.83	0.34	-0.15	-1.04
4,207.00	17.09	244.21	4,067.52	-504.40	-908.56	1,039.13	1.45	0.40	4.81
4,301.00	16.44	243.38	4,157.53	-516.37	-932.89	1,066.23	0.74	-0.69	-0.88

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well NR 14-3 - Slot NR 14-3 (A14)
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<b>Site:</b>	NR 23-3 Pad	<b>MD Reference:</b>	GL 6720' & RKB 24' @ 6744.00usft
<b>Well:</b>	NR 14-3	<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 District

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)
4,396.00	15.39	242.59	4,248.88	-528.19	-956.10	1,092.27	1.13	-1.11	-0.83
4,480.00	14.60	240.95	4,330.02	-538.47	-975.25	1,114.00	1.07	-0.94	-1.95
4,585.00	15.56	240.66	4,431.41	-551.79	-999.09	1,141.31	0.92	0.91	-0.28
4,679.00	16.36	246.20	4,521.79	-563.31	-1,022.20	1,167.11	1.83	0.85	5.89
4,774.00	15.39	245.67	4,613.16	-573.91	-1,045.93	1,193.02	1.03	-1.02	-0.56
4,868.00	14.71	246.22	4,703.94	-583.86	-1,068.21	1,217.36	0.74	-0.72	0.59
4,962.00	15.12	246.30	4,794.77	-593.60	-1,090.36	1,241.47	0.44	0.44	0.09
5,057.00	14.56	245.77	4,886.60	-603.48	-1,112.60	1,265.72	0.61	-0.59	-0.56
5,151.00	13.33	243.97	4,977.83	-613.08	-1,133.11	1,288.33	1.39	-1.31	-1.91
5,245.00	14.34	247.63	5,069.10	-622.27	-1,153.61	1,310.73	1.42	1.07	3.89
5,340.00	15.34	242.41	5,160.94	-632.57	-1,175.63	1,335.00	1.76	1.05	-5.49
5,434.00	15.36	239.32	5,251.59	-644.68	-1,197.36	1,359.87	0.87	0.02	-3.29
5,528.00	15.65	236.83	5,342.17	-657.97	-1,218.68	1,384.95	0.77	0.31	-2.65
5,622.00	15.65	235.51	5,432.68	-672.08	-1,239.74	1,410.19	0.38	0.00	-1.40
5,717.00	15.23	240.64	5,524.26	-685.46	-1,261.18	1,435.42	1.50	-0.44	5.40
5,811.00	14.25	240.75	5,615.16	-697.17	-1,282.03	1,459.33	1.04	-1.04	0.12
5,906.00	12.88	238.75	5,707.51	-708.37	-1,301.29	1,481.60	1.52	-1.44	-2.11
6,000.00	13.59	239.19	5,799.01	-719.46	-1,319.73	1,503.10	0.76	0.76	0.47
6,094.00	13.37	238.90	5,890.42	-730.73	-1,338.52	1,524.99	0.24	-0.23	-0.31
6,189.00	12.40	235.91	5,983.03	-742.12	-1,356.37	1,546.11	1.24	-1.02	-3.15
6,284.00	13.01	236.53	6,075.71	-753.74	-1,373.74	1,566.92	0.66	0.64	0.65
6,378.00	13.61	237.96	6,167.18	-765.44	-1,391.94	1,588.50	0.73	0.64	1.52
6,473.00	13.37	240.92	6,259.56	-776.71	-1,411.02	1,610.64	0.77	-0.25	3.12
6,567.00	11.87	244.70	6,351.29	-786.12	-1,429.26	1,631.16	1.82	-1.60	4.02
6,662.00	10.02	248.72	6,444.56	-793.30	-1,445.79	1,649.12	2.11	-1.95	4.23
6,756.00	9.06	250.94	6,537.26	-798.69	-1,460.41	1,664.53	1.09	-1.02	2.36
6,851.00	7.76	257.91	6,631.24	-802.47	-1,473.75	1,678.06	1.74	-1.37	7.34
6,946.00	5.98	255.51	6,725.55	-805.05	-1,484.81	1,689.02	1.90	-1.87	-2.53
7,040.00	3.37	243.44	6,819.23	-807.51	-1,492.03	1,696.53	2.95	-2.78	-12.84
7,135.00	2.92	236.47	6,914.09	-810.10	-1,496.54	1,701.73	0.62	-0.47	-7.34
7,229.00	2.20	237.94	7,007.99	-812.38	-1,500.07	1,705.92	0.77	-0.77	1.56
7,323.00	0.62	237.94	7,101.96	-813.61	-1,502.03	1,708.23	1.68	-1.68	0.00
7,417.00	0.14	90.73	7,195.96	-813.88	-1,502.34	1,708.63	0.79	-0.51	-156.61
7,512.00	0.53	145.74	7,290.96	-814.24	-1,501.98	1,708.49	0.49	0.41	57.91
7,555.19	0.62	159.37	7,334.15	-814.63	-1,501.78	1,708.50	0.38	0.22	31.56
NR 14-3 BTV									
7,607.00	0.77	170.59	7,385.95	-815.24	-1,501.63	1,708.65	0.38	0.28	21.66
7,701.00	1.01	288.29	7,479.95	-815.60	-1,502.31	1,709.43	1.63	0.26	125.21
7,795.00	1.20	286.67	7,573.93	-815.06	-1,504.04	1,710.69	0.20	0.20	-1.72
7,890.00	0.83	332.63	7,668.92	-814.16	-1,505.31	1,711.38	0.91	-0.39	48.38
7,984.00	0.53	287.04	7,762.91	-813.43	-1,506.04	1,711.67	0.63	-0.32	-48.50
8,078.00	1.76	357.29	7,856.89	-811.86	-1,506.52	1,711.34	1.76	1.31	74.73
8,173.00	1.05	352.33	7,951.86	-809.54	-1,506.71	1,710.40	0.76	-0.75	-5.22
8,268.00	0.88	347.27	8,046.85	-807.96	-1,506.98	1,709.89	0.20	-0.18	-5.33

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<b>Site:</b>	NR 23-3 Pad	<b>MD Reference:</b>	GL 6720' & RKB 24' @ 6744.00usft
<b>Well:</b>	NR 14-3	<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 District

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)
8,362.00	0.65	4.16	8,140.84	-806.73	-1,507.10	1,709.41	0.34	-0.24	17.97
8,455.00	0.26	247.33	8,233.84	-806.28	-1,507.26	1,709.33	0.86	-0.42	-125.62
8,550.00	0.70	189.68	8,328.84	-806.94	-1,507.56	1,709.91	0.63	0.46	-60.68
8,644.00	0.88	174.39	8,422.83	-808.22	-1,507.58	1,710.54	0.29	0.19	-16.27
8,738.00	1.14	180.37	8,516.81	-809.88	-1,507.52	1,711.27	0.30	0.28	6.36
8,833.00	0.44	178.79	8,611.80	-811.19	-1,507.52	1,711.90	0.74	-0.74	-1.66
8,927.00	0.62	169.12	8,705.80	-812.05	-1,507.41	1,712.22	0.21	0.19	-10.29
9,022.00	1.06	197.95	8,800.79	-813.39	-1,507.59	1,713.01	0.63	0.46	30.35
9,116.00	1.14	222.47	8,894.77	-814.90	-1,508.49	1,714.52	0.50	0.09	26.09
9,211.00	1.32	223.87	8,989.75	-816.39	-1,509.88	1,716.46	0.19	0.19	1.47
9,306.00	1.58	206.38	9,084.72	-818.35	-1,511.22	1,718.57	0.54	0.27	-18.41
9,400.00	1.79	222.45	9,178.68	-820.60	-1,512.79	1,721.02	0.55	0.22	17.09
9,494.00	1.98	240.98	9,272.63	-822.47	-1,515.20	1,724.03	0.68	0.20	19.72
9,589.00	1.84	234.05	9,367.58	-824.16	-1,517.87	1,727.19	0.28	-0.15	-7.29
9,684.00	2.11	237.14	9,462.52	-826.00	-1,520.57	1,730.44	0.31	0.28	3.25
9,778.00	3.08	220.88	9,556.42	-828.85	-1,523.68	1,734.53	1.29	1.03	-17.30
9,873.00	2.81	212.71	9,651.30	-832.74	-1,526.61	1,738.96	0.52	-0.28	-8.60
9,967.00	3.08	213.68	9,745.18	-836.78	-1,529.25	1,743.21	0.29	0.29	1.03
9,987.00	3.25	211.74	9,765.14	-837.71	-1,529.85	1,744.18	1.00	0.85	-9.70
Last SDI Production MWD Survey									
10,046.00	3.25	211.74	9,824.05	-840.56	-1,531.61	1,747.08	0.00	0.00	0.00
Projection to TD - NR 14-3 PBHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
121.00	121.00	-0.35	-0.31	First SDI Gyro MWD Survey
398.00	396.35	-11.30	-25.55	Last SDI Gyro MWD Survey
467.00	464.11	-15.86	-37.74	First SDI Surface MWD Survey
1,051.00	1,028.38	-80.29	-172.93	Last SDI Surface MWD Survey
1,181.00	1,153.32	-96.17	-205.15	First SDI Production MWD Survey
9,987.00	9,765.14	-837.71	-1,529.85	Last SDI Production MWD Survey
10,046.00	9,824.05	-840.56	-1,531.61	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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