



## 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.	SR 534-12
County & State	Garfield County, CO
SDI Job No.	OP.007214
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 91 feet to a measured depth of 9,824 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

2-Feb-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 SR 534-12 - Slot SR 534-12 (B10)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 7478' & RKB 24' @ 7502.00usft (H&P 318)
<b>Site:</b>	SR 23-12 Pad	<b>MD Reference:</b>	GL 7478' & RKB 24' @ 7502.00usft (H&P 318)
<b>Well:</b>	SR 534-12	<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		SR 23-12 Pad			
Site Position:		Northing:	1,597,713.40 usft	Latitude:	39.4511965
From:	Map	Easting:	2,340,229.70 usft	Longitude:	-107.8367194
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.47 °

Well		SR 534-12 - Slot SR 534-12 (B10)				
Well Position	+N/-S	0.00 usft	Northing:	1,597,654.10 usft	Latitude:	39.4510362
	+E/-W	0.00 usft	Easting:	2,340,263.50 usft	Longitude:	-107.8365943
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,478.00 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	1/12/2018	9.23	65.62	51,627

<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	144.51	

<b>Survey Program</b>	<b>Date</b>	2/2/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
91.00	489.00	Survey #1 - Gyro MWD Survey (OH)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4
566.00	1,054.00	Survey #2 - Surface MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1
1,178.00	9,824.00	Survey #3 - Production MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1

<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
91.00	0.26	65.57	91.00	0.09	0.19	0.04	0.29	0.29	0.00
<b>First SDI Gyro MWD Survey</b>									
121.00	0.44	108.11	121.00	0.08	0.36	0.15	1.01	0.60	141.80
214.00	3.17	148.18	213.95	-2.22	2.05	3.00	3.06	2.94	43.09
305.00	6.51	140.27	304.61	-8.33	6.68	10.66	3.73	3.67	-8.69
398.00	9.77	145.55	396.66	-18.89	14.52	23.81	3.59	3.51	5.68
489.00	12.84	148.54	485.89	-33.89	24.16	41.62	3.43	3.37	3.29

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SR 534-12 - Slot SR 534-12 (B10)
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<b>Site:</b>	SR 23-12 Pad	<b>MD Reference:</b>	GL 7478' & RKB 24' @ 7502.00usft (H&P 318)
<b>Well:</b>	SR 534-12	<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>Last SDI Gyro MWD Survey</b>									
566.00	16.09	146.34	560.44	-50.07	34.55	60.82	4.28	4.22	-2.86
<b>First SDI Surface MWD Survey</b>									
658.00	19.47	146.92	648.03	-73.54	49.98	88.89	3.68	3.67	0.63
753.00	21.90	147.43	736.90	-101.74	68.17	122.41	2.56	2.56	0.54
847.00	21.69	145.76	824.18	-130.87	87.38	157.28	0.70	-0.22	-1.78
941.00	23.44	141.51	910.99	-159.87	108.79	193.33	2.54	1.86	-4.52
1,036.00	23.91	137.95	997.99	-188.95	133.45	231.32	1.58	0.49	-3.75
1,054.00	23.92	140.01	1,014.45	-194.46	138.23	238.59	4.64	0.06	11.44
<b>Last SDI Surface MWD Survey</b>									
1,178.00	24.06	139.00	1,127.74	-232.80	170.97	288.81	0.35	0.11	-0.81
<b>First SDI Production MWD Survey</b>									
1,273.00	23.48	136.93	1,214.68	-261.24	196.60	326.84	1.07	-0.61	-2.18
1,367.00	23.00	136.90	1,301.05	-288.33	221.94	363.61	0.51	-0.51	-0.03
1,462.00	24.27	141.49	1,388.09	-317.16	246.78	401.51	2.35	1.34	4.83
1,556.00	24.14	142.17	1,473.83	-347.46	270.60	440.01	0.33	-0.14	0.72
1,651.00	23.83	141.56	1,560.62	-377.83	294.44	478.58	0.42	-0.33	-0.64
1,745.00	23.83	145.85	1,646.62	-408.42	316.91	516.53	1.84	0.00	4.56
1,840.00	23.81	145.25	1,733.52	-440.06	338.61	554.89	0.26	-0.02	-0.63
1,934.00	23.63	144.62	1,819.58	-471.01	360.34	592.70	0.33	-0.19	-0.67
2,029.00	22.29	144.30	1,907.06	-501.17	381.87	629.76	1.42	-1.41	-0.34
2,123.00	21.83	143.29	1,994.17	-529.66	402.72	665.06	0.63	-0.49	-1.07
2,218.00	21.13	142.44	2,082.58	-557.39	423.72	699.83	0.81	-0.74	-0.89
2,312.00	20.76	140.82	2,170.36	-583.73	444.57	733.39	0.73	-0.39	-1.72
2,406.00	20.77	146.54	2,258.27	-610.56	464.29	766.67	2.16	0.01	6.09
2,501.00	19.73	145.60	2,347.39	-637.84	482.64	799.54	1.15	-1.09	-0.99
2,595.00	18.86	144.52	2,436.11	-663.30	500.42	830.60	1.00	-0.93	-1.15
2,689.00	17.72	143.98	2,525.36	-687.25	517.65	860.10	1.23	-1.21	-0.57
2,784.00	18.68	148.18	2,615.61	-711.87	534.18	889.74	1.71	1.01	4.42
2,879.00	19.85	147.63	2,705.29	-738.42	550.83	921.03	1.25	1.23	-0.58
2,973.00	21.90	145.39	2,793.12	-766.33	569.34	954.50	2.34	2.18	-2.38
3,068.00	21.04	144.67	2,881.53	-794.83	589.26	989.26	0.95	-0.91	-0.76
3,162.00	22.86	145.37	2,968.71	-823.62	609.40	1,024.40	1.96	1.94	0.74
3,256.00	21.72	144.77	3,055.68	-852.85	629.81	1,060.05	1.24	-1.21	-0.64
3,351.00	22.73	145.83	3,143.63	-882.40	650.26	1,095.98	1.14	1.06	1.12
3,445.00	22.40	145.39	3,230.43	-912.16	670.63	1,132.04	0.39	-0.35	-0.47
3,539.00	21.51	144.68	3,317.61	-940.97	690.77	1,167.18	0.99	-0.95	-0.76
3,634.00	20.19	145.79	3,406.39	-968.73	710.05	1,200.99	1.45	-1.39	1.17
3,729.00	20.38	141.17	3,495.50	-995.18	729.64	1,233.90	1.70	0.20	-4.86
3,823.00	22.50	140.48	3,582.99	-1,021.81	751.35	1,268.18	2.27	2.26	-0.73
3,917.00	21.96	139.67	3,670.01	-1,049.08	774.18	1,303.64	0.66	-0.57	-0.86
4,012.00	20.84	139.66	3,758.45	-1,075.50	796.61	1,338.18	1.18	-1.18	-0.01
4,106.00	22.95	140.54	3,845.67	-1,102.40	819.08	1,373.12	2.27	2.24	0.94
4,201.00	22.16	140.67	3,933.40	-1,130.56	842.21	1,409.48	0.83	-0.83	0.14

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<b>Well:</b>	SR 534-12	<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

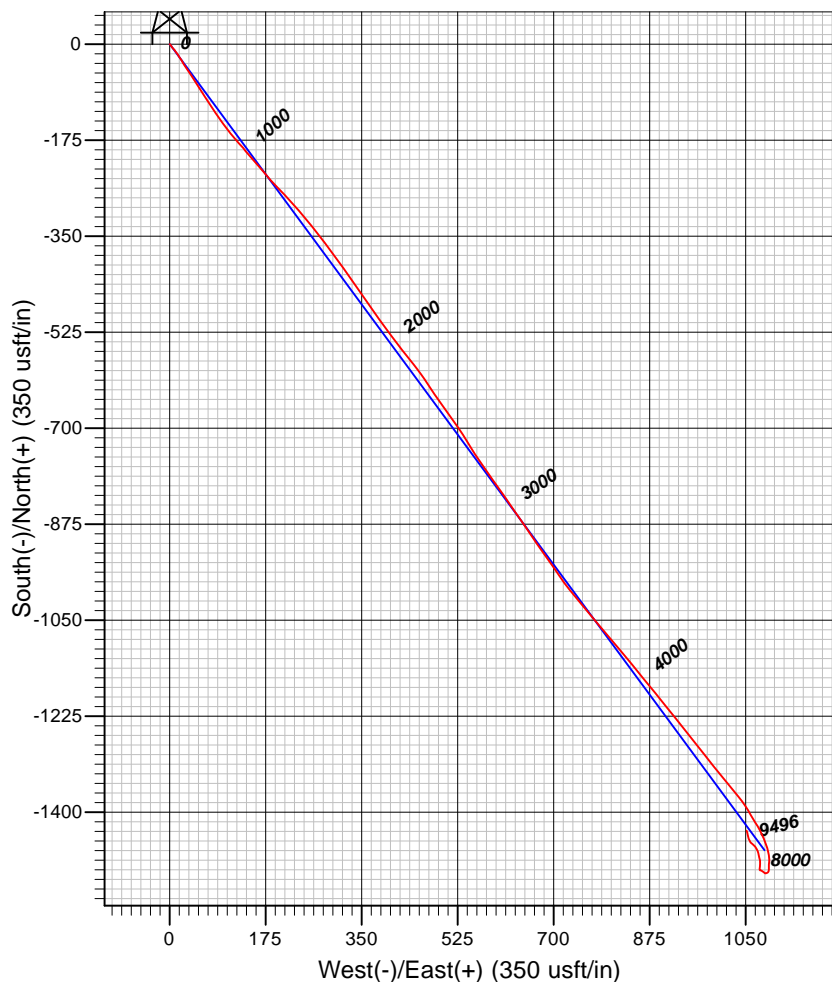
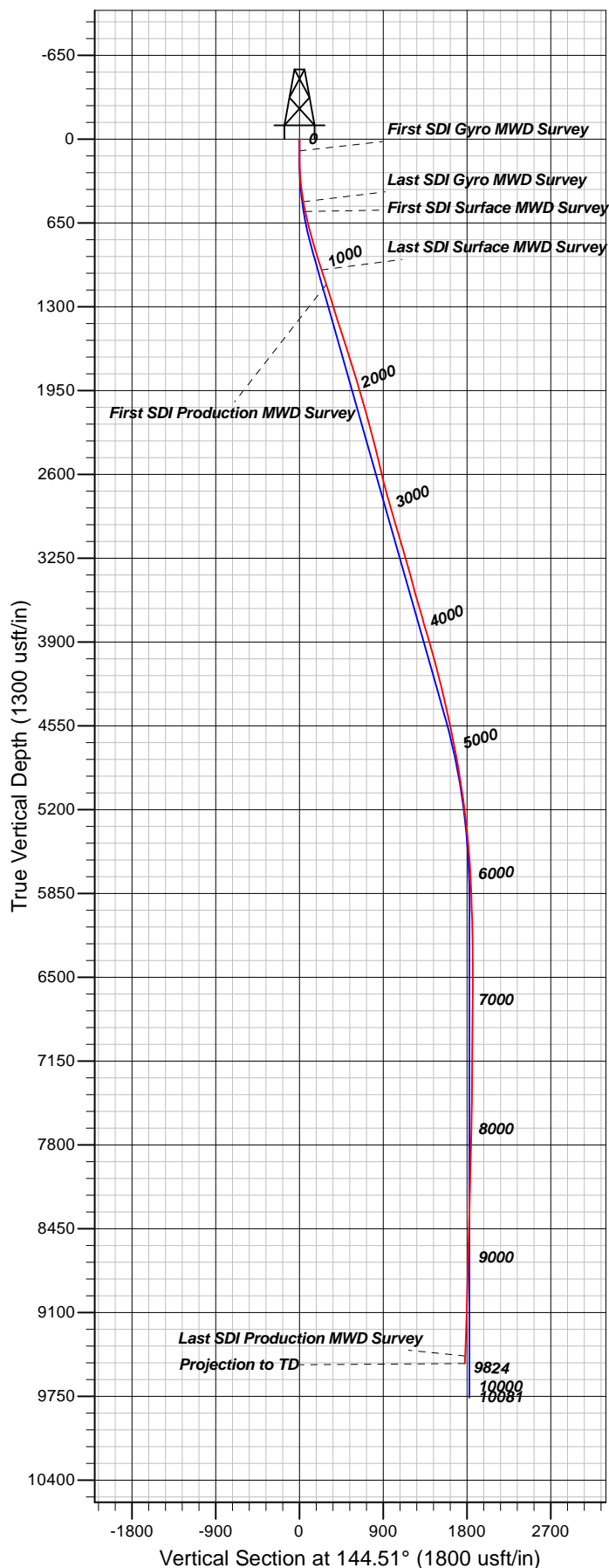
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,295.00	21.08	140.33	4,020.79	-1,157.29	864.24	1,444.03	1.16	-1.15	-0.36
4,389.00	19.70	141.06	4,108.90	-1,182.62	884.99	1,476.70	1.49	-1.47	0.78
4,484.00	18.82	141.50	4,198.58	-1,207.07	904.59	1,507.99	0.94	-0.93	0.46
4,579.00	17.49	140.68	4,288.85	-1,230.11	923.18	1,537.54	1.43	-1.40	-0.86
4,673.00	18.18	141.95	4,378.33	-1,252.58	941.17	1,566.28	0.84	0.73	1.35
4,767.00	17.06	141.42	4,467.92	-1,274.91	958.80	1,594.70	1.20	-1.19	-0.56
4,862.00	16.23	142.45	4,558.94	-1,296.33	975.59	1,621.88	0.93	-0.87	1.08
4,956.00	15.39	140.62	4,649.38	-1,316.39	991.51	1,647.45	1.04	-0.89	-1.95
5,051.00	14.68	140.54	4,741.13	-1,335.42	1,007.15	1,672.04	0.75	-0.75	-0.08
5,145.00	13.93	140.99	4,832.21	-1,353.41	1,021.85	1,695.22	0.81	-0.80	0.48
5,240.00	13.47	140.27	4,924.51	-1,370.81	1,036.12	1,717.66	0.52	-0.48	-0.76
5,335.00	12.49	147.39	5,017.09	-1,387.97	1,048.73	1,738.96	1.97	-1.03	7.49
5,430.00	10.55	149.33	5,110.17	-1,404.11	1,058.70	1,757.89	2.08	-2.04	2.04
5,525.00	10.11	148.27	5,203.63	-1,418.68	1,067.52	1,774.87	0.50	-0.46	-1.12
5,620.00	8.62	153.63	5,297.36	-1,432.15	1,075.07	1,790.22	1.82	-1.57	5.64
5,715.00	8.23	153.60	5,391.34	-1,444.62	1,081.25	1,803.97	0.41	-0.41	-0.03
5,810.00	7.12	161.72	5,485.49	-1,456.30	1,086.12	1,816.31	1.63	-1.17	8.55
5,904.00	6.08	166.93	5,578.86	-1,466.68	1,089.08	1,826.47	1.28	-1.11	5.54
5,998.00	5.59	163.41	5,672.38	-1,475.92	1,091.51	1,835.41	0.65	-0.52	-3.74
6,093.00	4.04	181.14	5,767.04	-1,483.70	1,092.76	1,842.47	2.24	-1.63	18.66
6,187.00	3.34	184.04	5,860.85	-1,489.74	1,092.51	1,847.24	0.77	-0.74	3.09
6,195.98	3.33	183.86	5,869.82	-1,490.26	1,092.47	1,847.64	0.15	-0.10	-1.98
<b>SR 534-12 BTV</b>									
6,282.00	3.25	182.11	5,955.69	-1,495.19	1,092.21	1,851.51	0.15	-0.09	-2.04
6,376.00	2.86	179.86	6,049.56	-1,500.20	1,092.12	1,855.53	0.43	-0.41	-2.39
6,470.00	2.56	180.42	6,143.45	-1,504.65	1,092.11	1,859.14	0.32	-0.32	0.60
6,564.00	1.41	205.22	6,237.40	-1,507.79	1,091.60	1,861.41	1.50	-1.22	26.38
6,659.00	1.06	234.49	6,332.38	-1,509.36	1,090.39	1,861.98	0.75	-0.37	30.81
6,753.00	0.62	240.64	6,426.36	-1,510.11	1,089.24	1,861.93	0.48	-0.47	6.54
6,848.00	0.64	250.17	6,521.36	-1,510.55	1,088.29	1,861.73	0.11	0.02	10.03
6,942.00	0.70	248.55	6,615.35	-1,510.93	1,087.26	1,861.45	0.07	0.06	-1.72
7,037.00	0.70	267.01	6,710.35	-1,511.18	1,086.14	1,861.00	0.24	0.00	19.43
7,132.00	0.46	294.68	6,805.34	-1,511.05	1,085.22	1,860.35	0.38	-0.25	29.13
7,226.00	0.44	308.23	6,899.34	-1,510.67	1,084.59	1,859.68	0.11	-0.02	14.41
7,320.00	0.62	299.53	6,993.33	-1,510.19	1,083.86	1,858.87	0.21	0.19	-9.26
7,414.00	0.97	313.15	7,087.33	-1,509.40	1,082.84	1,857.63	0.42	0.37	14.49
7,509.00	0.88	302.43	7,182.31	-1,508.46	1,081.64	1,856.17	0.20	-0.09	-11.28
7,603.00	1.05	305.32	7,276.30	-1,507.57	1,080.33	1,854.68	0.19	0.18	3.07
7,697.00	0.79	303.13	7,370.29	-1,506.72	1,079.08	1,853.27	0.28	-0.28	-2.33
7,792.00	1.10	288.96	7,465.27	-1,506.06	1,077.67	1,851.92	0.41	0.33	-14.92
7,886.00	1.18	270.79	7,559.26	-1,505.76	1,075.85	1,850.61	0.39	0.09	-19.33
7,980.00	2.60	7.36	7,653.22	-1,503.63	1,075.15	1,848.47	3.17	1.51	102.73
8,075.00	2.46	5.29	7,748.13	-1,499.46	1,075.62	1,845.35	0.18	-0.15	-2.18
8,169.00	2.46	3.25	7,842.04	-1,495.44	1,075.92	1,842.25	0.09	0.00	-2.17

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<b>Well:</b>	SR 534-12	<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)
8,263.00	2.20	1.05	7,935.96	-1,491.62	1,076.07	1,839.23	0.29	-0.28	-2.34
8,358.00	2.02	359.56	8,030.90	-1,488.12	1,076.09	1,836.39	0.20	-0.19	-1.57
8,452.00	1.93	340.84	8,124.84	-1,484.97	1,075.55	1,833.51	0.69	-0.10	-19.91
8,547.00	2.01	333.96	8,219.79	-1,481.96	1,074.30	1,830.34	0.26	0.08	-7.24
8,641.00	2.46	356.40	8,313.72	-1,478.47	1,073.45	1,827.00	1.04	0.48	23.87
8,736.00	2.50	349.20	8,408.63	-1,474.40	1,072.93	1,823.38	0.33	0.04	-7.58
8,830.00	2.32	332.19	8,502.55	-1,470.70	1,071.66	1,819.64	0.78	-0.19	-18.10
8,924.00	2.48	331.30	8,596.46	-1,467.24	1,069.80	1,815.73	0.17	0.17	-0.95
9,019.00	2.02	327.48	8,691.39	-1,464.02	1,067.91	1,812.02	0.51	-0.48	-4.02
9,113.00	2.35	315.85	8,785.32	-1,461.24	1,065.67	1,808.46	0.59	0.35	-12.37
9,208.00	2.11	311.40	8,880.25	-1,458.69	1,063.01	1,804.83	0.31	-0.25	-4.68
9,302.00	2.19	309.19	8,974.18	-1,456.41	1,060.32	1,801.41	0.12	0.09	-2.35
9,397.00	1.81	324.23	9,069.13	-1,454.04	1,058.03	1,798.16	0.68	-0.40	15.83
9,491.00	2.37	337.41	9,163.06	-1,451.05	1,056.42	1,794.78	0.78	0.60	14.02
9,586.00	3.17	345.55	9,257.95	-1,446.69	1,055.01	1,790.41	0.94	0.84	8.57
9,680.00	3.08	346.55	9,351.81	-1,441.72	1,053.77	1,785.65	0.11	-0.10	1.06
9,765.00	3.43	345.85	9,436.68	-1,437.03	1,052.62	1,781.16	0.41	0.41	-0.82
Last SDI Production MWD Survey									
9,824.00	3.43	345.85	9,495.57	-1,433.61	1,051.76	1,777.88	0.00	0.00	0.00
Projection to TD - SR 534-12 PBHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
91.00	91.00	0.09	0.19	First SDI Gyro MWD Survey
489.00	485.89	-33.89	24.16	Last SDI Gyro MWD Survey
566.00	560.44	-50.07	34.55	First SDI Surface MWD Survey
1,054.00	1,014.45	-194.46	138.23	Last SDI Surface MWD Survey
1,178.00	1,127.74	-232.80	170.97	First SDI Production MWD Survey
9,765.00	9,436.68	-1,437.03	1,052.62	Last SDI Production MWD Survey
9,824.00	9,495.57	-1,433.61	1,051.76	Projection to TD

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



#### Well Details: SR 534-12

TVD Reference: GL 7478' & RKB 24' @ 7502.00usft (H&P 318) Level: 7478.00  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.00 0.00 1597654.10 2340263.50 39.4510361 -107.8365943 SR 534-12 (B10)

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well SR 534-12 - Slot SR 534-12 (B10), True North  
 Vertical (TVD) Reference: GL 7478' & RKB 24' @ 7502.00usft (H&P 318)  
 Section (VS) Reference: Slot - SR 534-12 (B10)(0.00N, 0.00E)  
 Measured Depth Reference: GL 7478' & RKB 24' @ 7502.00usft (H&P 318)  
 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

11:04, February 02 2018  
 Created By: Mel Mireles Jr.