



## 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.	PA 612-26
County & State	Garfield County, CO
SDI Job No.	OP.011757
Rig	H&P 271

I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 152 feet to a measured depth of 8,927 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

09-Aug-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 PA 612-26 - Slot PA 612-26 (A15)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Site:</b>	PA 23-26 Pad	<b>MD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Well:</b>	PA 612-26	<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		PA 23-26 Pad			
Site Position:		Northing:	1,614,399.90 usft	Latitude:	39.4943598
From:	Map	Easting:	2,303,951.10 usft	Longitude:	-107.9667508
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.56 °

Well	PA 612-26 - Slot PA 612-26 (A15), A15					
Well Position	+N/-S	0.00 usft	Northing:	1,614,398.80 usft	Latitude:	39.4943511
	+E/-W	0.00 usft	Easting:	2,303,875.40 usft	Longitude:	-107.9670188
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,637.00 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	7/20/2018	9.37	65.75	51,607

<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	319.98	

<b>Survey Program</b>	<b>Date</b>	8/8/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
152.00	672.00	Survey #1 - Gyro MWD Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
742.00	1,060.00	Survey #2 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,172.00	8,927.00	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	
152.00	0.44	206.89	152.00	-0.52	-0.26	-0.23	0.29	0.29	0.00	
<b>First SDI Gyro MWD Survey</b>										
212.00	0.97	289.42	211.99	-0.56	-0.85	0.12	1.69	0.88	137.55	
305.00	3.78	331.96	304.91	2.41	-3.03	3.80	3.37	3.02	45.74	
396.00	6.07	342.86	395.57	9.66	-5.86	11.16	2.71	2.52	11.98	
489.00	8.45	331.35	487.82	20.35	-10.59	22.39	2.99	2.56	-12.38	
580.00	11.44	325.28	577.45	33.64	-18.93	37.94	3.48	3.29	-6.67	
672.00	14.25	321.06	667.14	49.95	-31.25	58.35	3.22	3.05	-4.59	

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 612-26 - Slot PA 612-26 (A15)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Site:</b>	PA 23-26 Pad	<b>MD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Well:</b>	PA 612-26	<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>									
742.00	17.08	321.80	734.53	64.74	-43.02	77.24	4.05	4.04	1.06
<b>First SDI Surface MWD Survey</b>									
834.00	20.55	322.37	821.60	88.15	-61.24	106.89	3.78	3.77	0.62
928.00	23.26	320.81	908.81	115.60	-83.05	141.94	2.95	2.88	-1.66
1,023.00	25.71	318.39	995.26	145.56	-108.59	181.30	2.79	2.58	-2.55
1,060.00	26.29	316.46	1,028.52	157.50	-119.56	197.50	2.77	1.57	-5.22
<b>Last SDI Surface MWD Survey</b>									
1,172.00	27.63	315.10	1,128.34	193.87	-154.98	248.14	1.32	1.20	-1.21
<b>First SDI Production MWD Survey</b>									
1,267.00	30.27	316.44	1,211.47	226.83	-187.04	293.99	2.86	2.78	1.41
1,361.00	31.90	318.15	1,291.97	262.51	-219.94	342.47	1.97	1.73	1.82
1,455.00	33.20	320.99	1,371.20	301.01	-252.71	393.03	2.13	1.38	3.02
1,549.00	33.24	320.90	1,449.84	341.00	-285.16	444.52	0.07	0.04	-0.10
1,644.00	32.21	320.54	1,529.76	380.75	-317.67	495.87	1.10	-1.08	-0.38
1,738.00	31.14	320.57	1,609.76	418.87	-349.03	545.23	1.14	-1.14	0.03
1,833.00	29.83	319.82	1,691.62	455.90	-379.88	593.42	1.44	-1.38	-0.79
1,927.00	29.81	322.17	1,773.18	492.21	-409.29	640.15	1.24	-0.02	2.50
2,021.00	29.13	321.72	1,855.02	528.63	-437.80	686.36	0.76	-0.72	-0.48
2,115.00	30.17	322.68	1,936.71	565.38	-466.29	732.83	1.22	1.11	1.02
2,210.00	29.80	321.94	2,018.99	602.95	-495.32	780.27	0.55	-0.39	-0.78
2,304.00	30.18	320.15	2,100.41	639.48	-524.86	827.24	1.03	0.40	-1.90
2,398.00	29.22	319.07	2,182.06	674.95	-555.03	873.81	1.17	-1.02	-1.15
2,493.00	31.30	319.01	2,264.11	711.10	-586.41	921.67	2.19	2.19	-0.06
2,587.00	30.20	318.17	2,344.90	747.15	-618.20	969.72	1.26	-1.17	-0.89
2,682.00	29.41	317.90	2,427.33	782.26	-649.77	1,016.91	0.84	-0.83	-0.28
2,776.00	30.37	318.49	2,508.83	817.18	-680.99	1,063.73	1.07	1.02	0.63
2,871.00	29.91	318.27	2,590.98	852.84	-712.68	1,111.41	0.50	-0.48	-0.23
2,965.00	29.58	317.07	2,672.60	887.32	-744.08	1,158.01	0.72	-0.35	-1.28
3,059.00	30.66	318.44	2,753.90	922.24	-775.78	1,205.14	1.36	1.15	1.46
3,154.00	30.06	317.92	2,835.88	958.03	-807.80	1,253.13	0.69	-0.63	-0.55
3,248.00	28.93	318.11	2,917.69	992.43	-838.76	1,299.39	1.21	-1.20	0.20
3,343.00	29.93	319.84	3,000.43	1,027.65	-869.38	1,346.05	1.38	1.05	1.82
3,437.00	28.36	319.67	3,082.53	1,062.59	-898.96	1,391.83	1.67	-1.67	-0.18
3,532.00	29.30	320.01	3,165.75	1,097.60	-928.50	1,437.64	1.00	0.99	0.36
3,626.00	30.80	320.65	3,247.12	1,133.84	-958.54	1,484.71	1.63	1.60	0.68
3,720.00	29.33	320.56	3,328.47	1,170.23	-988.43	1,531.80	1.56	-1.56	-0.10
3,815.00	30.09	321.50	3,410.98	1,206.83	-1,018.04	1,578.87	0.94	0.80	0.99
3,909.00	29.23	321.51	3,492.66	1,243.24	-1,046.99	1,625.37	0.91	-0.91	0.01
4,004.00	28.94	321.37	3,575.68	1,279.35	-1,075.78	1,671.54	0.31	-0.31	-0.15
4,098.00	30.69	318.27	3,657.24	1,315.03	-1,105.94	1,718.26	2.48	1.86	-3.30
4,193.00	31.73	317.28	3,738.49	1,351.47	-1,139.03	1,767.44	1.22	1.09	-1.04
4,287.00	31.54	317.18	3,818.53	1,387.67	-1,172.51	1,816.69	0.21	-0.20	-0.11
4,381.00	31.07	317.42	3,898.84	1,423.56	-1,205.63	1,865.48	0.52	-0.50	0.26

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<b>Well:</b>	PA 612-26	<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

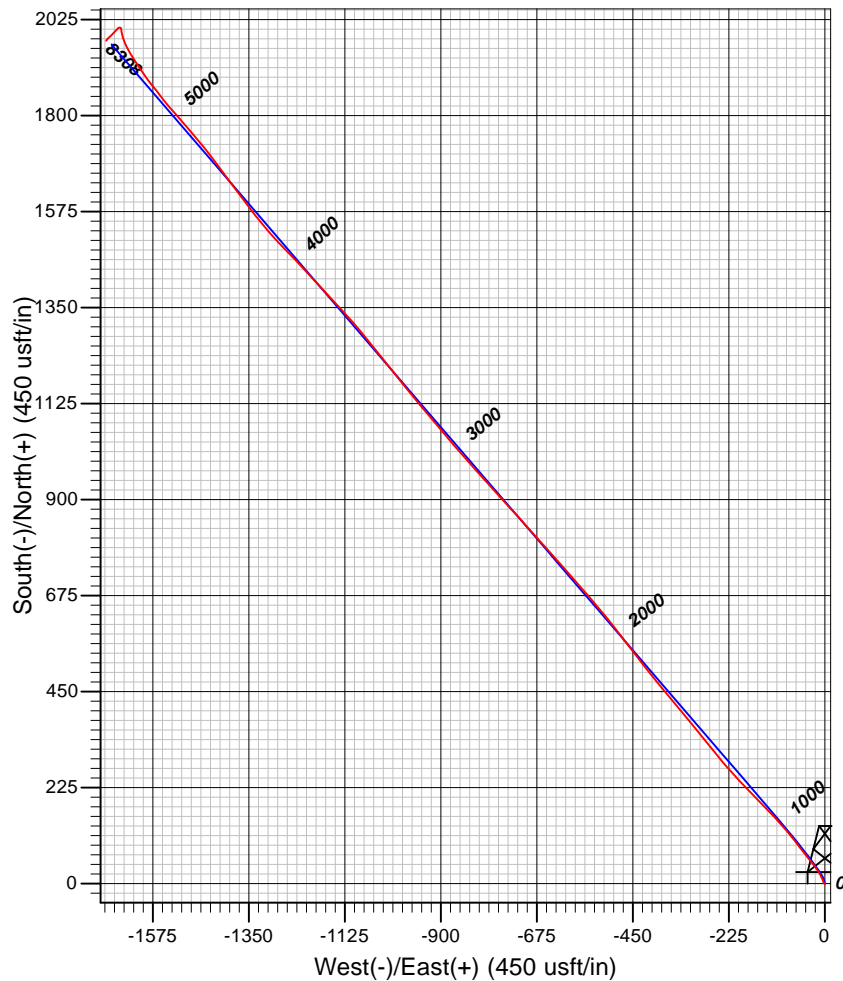
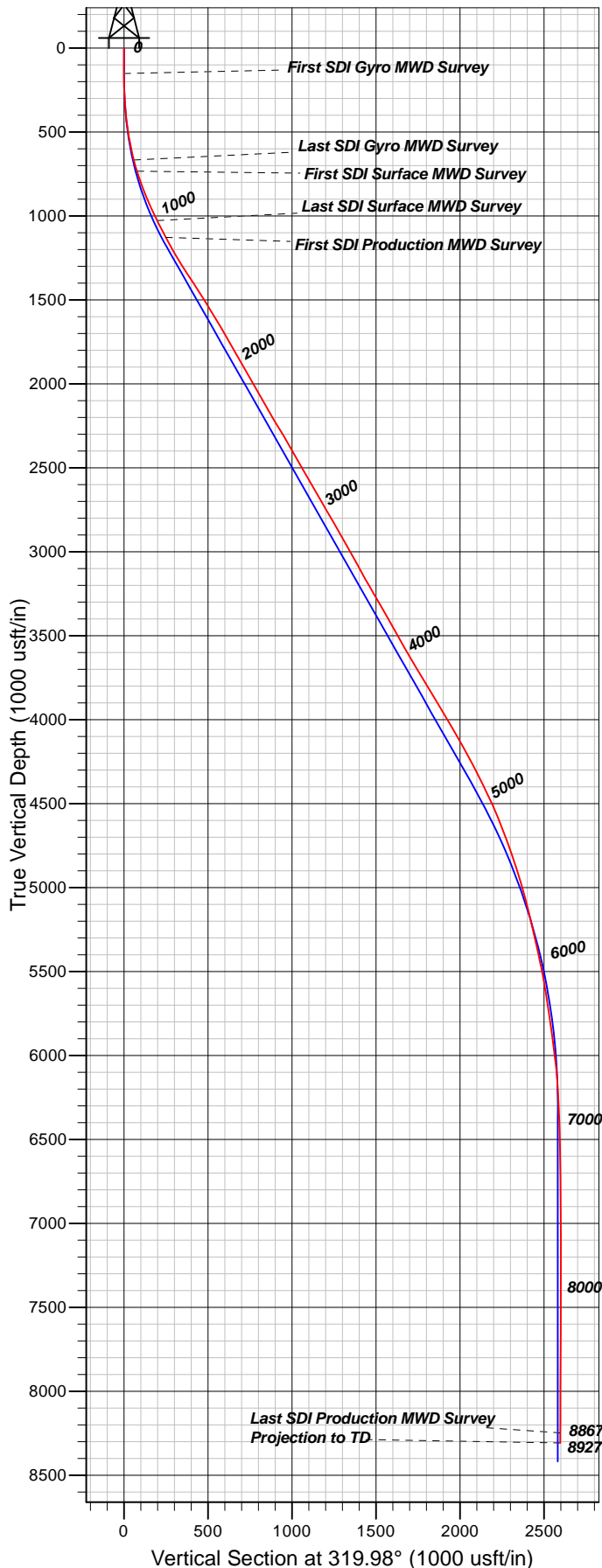
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,475.00	30.15	316.61	3,979.74	1,458.58	-1,238.26	1,913.28	1.07	-0.98	-0.86
4,570.00	29.82	315.20	4,062.03	1,492.67	-1,271.30	1,960.63	0.82	-0.35	-1.48
4,664.00	29.65	319.39	4,143.66	1,526.91	-1,302.90	2,007.18	2.22	-0.18	4.46
4,758.00	28.68	321.86	4,225.74	1,562.31	-1,331.97	2,052.98	1.64	-1.03	2.63
4,853.00	26.49	323.16	4,309.94	1,597.20	-1,358.75	2,096.92	2.39	-2.31	1.37
4,947.00	26.54	322.66	4,394.05	1,630.67	-1,384.06	2,138.83	0.24	0.05	-0.53
5,041.00	25.30	324.32	4,478.60	1,663.68	-1,408.52	2,179.84	1.53	-1.32	1.77
5,136.00	23.06	323.30	4,565.26	1,695.10	-1,431.48	2,218.66	2.40	-2.36	-1.07
5,230.00	20.22	320.77	4,652.62	1,722.44	-1,452.76	2,253.29	3.18	-3.02	-2.69
5,325.00	19.61	319.37	4,741.94	1,747.26	-1,473.52	2,285.64	0.81	-0.64	-1.47
5,419.00	19.14	319.93	4,830.62	1,771.03	-1,493.71	2,316.83	0.54	-0.50	0.60
5,513.00	16.89	318.50	4,920.01	1,793.05	-1,512.68	2,345.89	2.44	-2.39	-1.52
5,608.00	16.59	318.60	5,010.98	1,813.56	-1,530.80	2,373.25	0.32	-0.32	0.11
5,702.00	14.31	321.87	5,101.58	1,832.76	-1,546.85	2,398.28	2.60	-2.43	3.48
5,796.00	12.66	323.19	5,192.98	1,850.15	-1,560.19	2,420.17	1.79	-1.76	1.40
5,891.00	12.54	319.63	5,285.70	1,866.34	-1,573.11	2,440.88	0.83	-0.13	-3.75
5,986.00	13.33	323.90	5,378.29	1,883.05	-1,586.24	2,462.12	1.30	0.83	4.49
6,080.00	11.31	325.65	5,470.12	1,899.42	-1,597.83	2,482.11	2.19	-2.15	1.86
6,174.00	10.54	327.34	5,562.42	1,914.27	-1,607.67	2,499.80	0.89	-0.82	1.80
6,269.00	8.84	326.61	5,656.06	1,927.68	-1,616.38	2,515.67	1.79	-1.79	-0.77
6,363.00	8.20	323.39	5,749.02	1,939.09	-1,624.35	2,529.54	0.85	-0.68	-3.43
6,457.00	8.29	337.29	5,842.06	1,950.72	-1,630.97	2,542.70	2.12	0.10	14.79
6,551.00	7.25	333.59	5,935.19	1,962.29	-1,636.22	2,554.94	1.23	-1.11	-3.94
6,646.00	7.25	334.75	6,029.43	1,973.08	-1,641.44	2,566.56	0.15	0.00	1.22
6,740.00	5.36	338.70	6,122.86	1,982.53	-1,645.57	2,576.45	2.06	-2.01	4.20
6,835.00	3.32	356.51	6,217.59	1,989.41	-1,647.35	2,582.87	2.55	-2.15	18.75
6,929.00	2.96	345.36	6,311.45	1,994.48	-1,648.13	2,587.25	0.75	-0.38	-11.86
7,023.00	2.73	348.62	6,405.33	1,999.02	-1,649.18	2,591.40	0.30	-0.24	3.47
7,118.00	2.15	0.67	6,500.25	2,003.02	-1,649.61	2,594.74	0.81	-0.61	12.68
7,212.00	0.59	319.56	6,594.22	2,005.15	-1,649.90	2,596.56	1.86	-1.66	-43.73
7,306.00	0.37	272.06	6,688.21	2,005.53	-1,650.52	2,597.25	0.46	-0.23	-50.53
7,400.00	0.70	299.06	6,782.21	2,005.82	-1,651.32	2,597.99	0.43	0.35	28.72
7,495.00	0.59	277.86	6,877.20	2,006.17	-1,652.32	2,598.89	0.27	-0.12	-22.32
7,589.00	0.49	250.46	6,971.20	2,006.10	-1,653.17	2,599.39	0.29	-0.11	-29.15
7,683.00	0.51	284.63	7,065.20	2,006.07	-1,653.96	2,599.88	0.31	0.02	36.35
7,777.00	1.11	262.58	7,159.19	2,006.06	-1,655.27	2,600.71	0.71	0.64	-23.46
7,872.00	1.07	214.40	7,254.17	2,005.21	-1,656.68	2,600.96	0.94	-0.04	-50.72
7,967.00	1.06	219.78	7,349.16	2,003.80	-1,657.74	2,600.57	0.11	-0.01	5.66
8,061.00	1.51	222.15	7,443.13	2,002.22	-1,659.13	2,600.25	0.48	0.48	2.52
8,156.00	1.97	224.15	7,538.09	2,000.12	-1,661.11	2,599.91	0.49	0.48	2.11
8,250.00	2.41	223.85	7,632.02	1,997.53	-1,663.60	2,599.54	0.47	0.47	-0.32
8,344.00	2.73	221.40	7,725.92	1,994.43	-1,666.45	2,598.99	0.36	0.34	-2.61
8,438.00	2.48	229.60	7,819.83	1,991.43	-1,669.48	2,598.65	0.48	-0.27	8.72

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<b>Well:</b>	PA 612-26	<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)
8,532.00	3.04	217.14	7,913.72	1,988.13	-1,672.54	2,598.08	0.87	0.60	-13.26
8,627.00	2.47	237.69	8,008.61	1,985.02	-1,675.79	2,597.79	1.19	-0.60	21.63
8,722.00	2.73	222.81	8,103.51	1,982.27	-1,679.05	2,597.79	0.76	0.27	-15.66
8,816.00	2.20	218.48	8,197.43	1,979.21	-1,681.70	2,597.15	0.60	-0.56	-4.61
8,867.00	2.52	220.50	8,248.38	1,977.60	-1,683.04	2,596.77	0.65	0.63	3.96
<b>Last SDI Production MWD Survey</b>									
8,927.00	2.52	220.50	8,308.33	1,975.59	-1,684.75	2,596.33	0.00	0.00	0.00
<b>Projection to TD - PBHL(PA 521-26) - PBHL(PA 612-26)</b>									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
152.00	152.00	-0.52	-0.26	First SDI Gyro MWD Survey
672.00	667.14	49.95	-31.25	Last SDI Gyro MWD Survey
742.00	734.53	64.74	-43.02	First SDI Surface MWD Survey
1,060.00	1,028.52	157.50	-119.56	Last SDI Surface MWD Survey
1,172.00	1,128.34	193.87	-154.98	First SDI Production MWD Survey
8,867.00	8,248.38	1,977.60	-1,683.04	Last SDI Production MWD Survey
8,927.00	8,308.33	1,975.59	-1,684.75	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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#### Well Details: PA 612-26

TVD Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271) and Level: 5637.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1614398.80	2303875.40	39.4943511	-107.9670188

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well PA 612-26 - Slot PA 612-26 (A15), True North  
 Vertical (TVD) Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)  
 Section (VS) Reference: Slot - PA 612-26 (A15)(0.00N, 0.00E)  
 Measured Depth Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)  
 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

11:53, August 09 2018  
 Created By: Mel Mireles Jr.