



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

Survey Certification

Operator	TEP Rocky Mountain LLC
Well Name & No.	PA 424-13
API #	05-045-24196
County & State	Garfield County, CO
SDI Job #	OP.025371
Rig	H&P 318
Survey Date	11-Jun-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 9868 feet is true and correct as determined from all available records.

Seth M. Burstad

Signature

11-Jun-2020

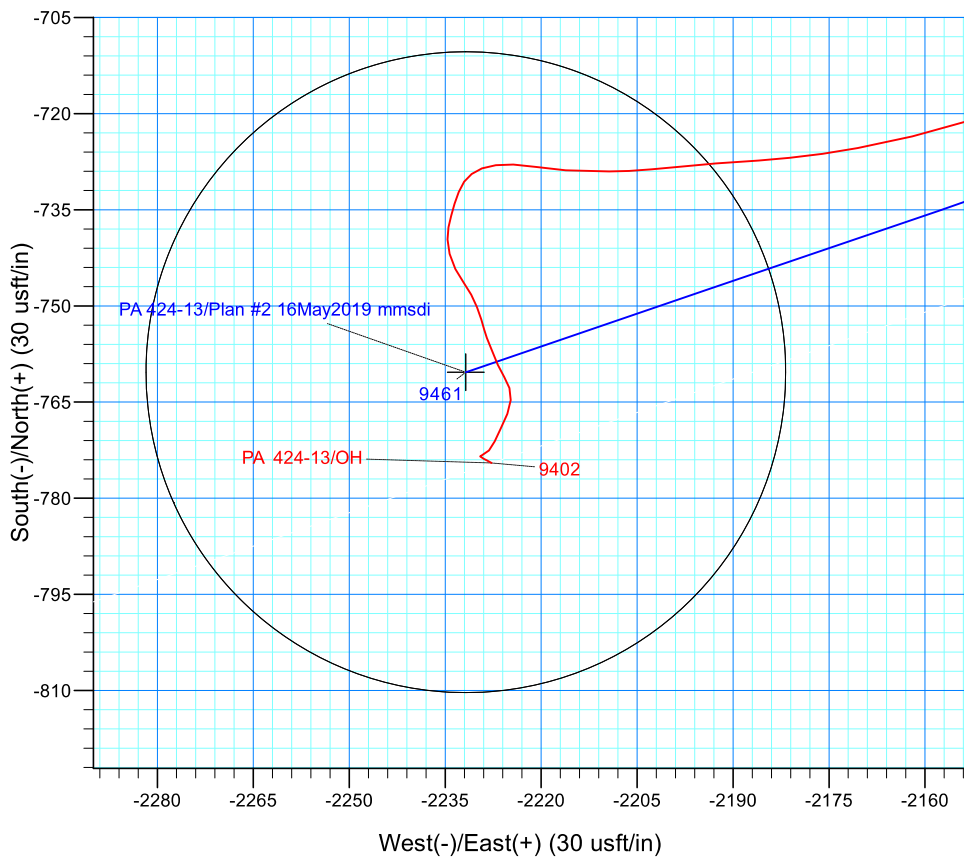
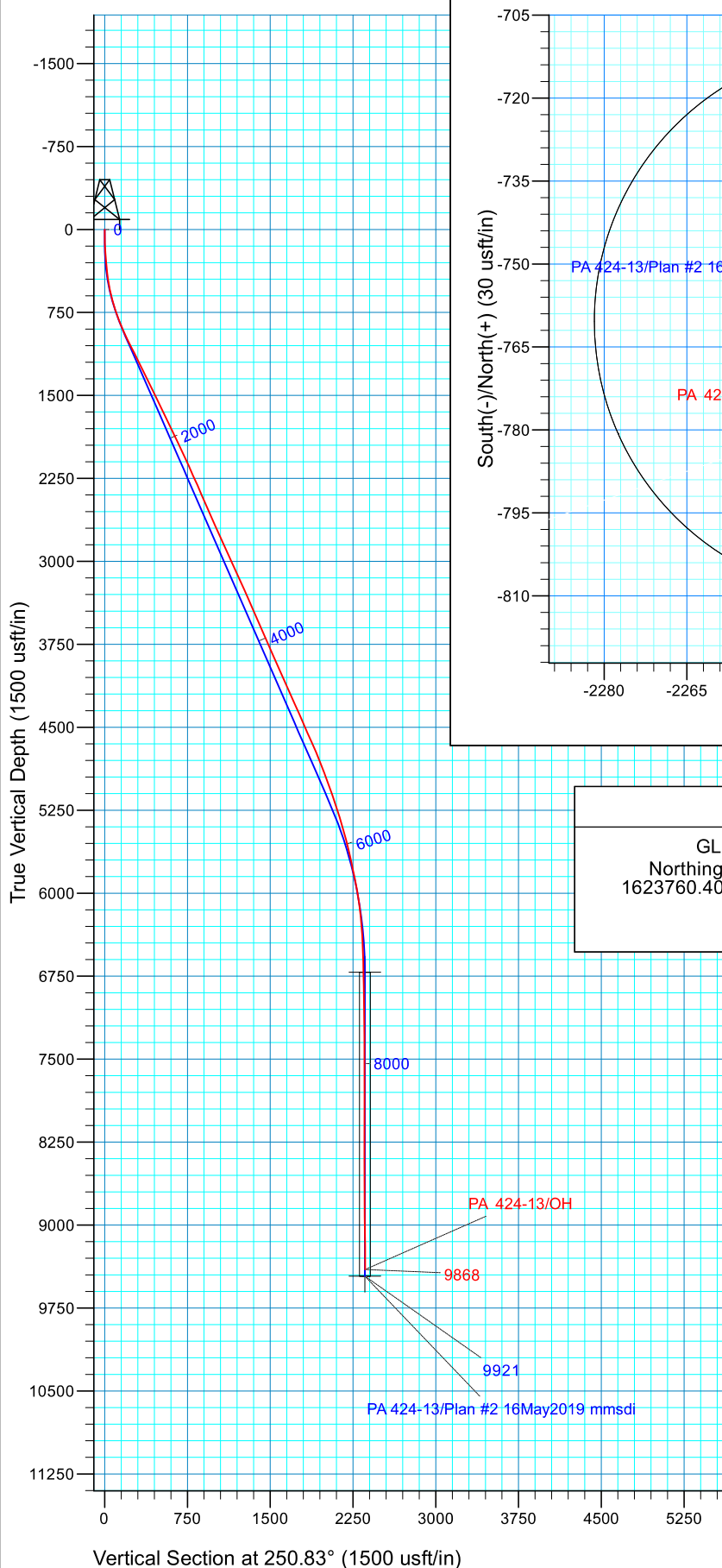
Date

Seth M. Burstad

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District



Project: Garfield County, CO NAD83
 Site: PA 44-13 Pad
 Well: PA 424-13
 Wellbore: OH
 Design: OH



WELL DETAILS: PA 424-13

GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
 Northing 1623760.4000 Easting 2311237.5000 Latitude 39.5205894 Longitude -107.9418321

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 424-13 - Slot PA 424-13 (B4), True North
 Vertical (TVD) Reference: GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
 Section (VS) Reference: Slot - PA 424-13 (B4)(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 424-13 - Slot PA 424-13 (B4)

OH

Design: OH

Standard Survey Report

05 November, 2020



Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 424-13 - Slot PA 424-13 (B4)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 424-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 424-13 - Slot PA 424-13 (B4)					
Well Position	+N/-S	0.00 usft	Northing:	1,623,760.4000 usft	Latitude:	39.5205894
	+E/-W	0.00 usft	Easting:	2,311,237.5000 usft	Longitude:	-107.9418322
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,571.10 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/2/2019	9.32	65.75	51,491.80000000

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	250.83	

Survey Program	Date	11/5/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.00	666.00	Survey #1 - Surface GMWD (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
745.00	1,074.00	Survey #2 - Surface MWD (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,167.00	9,868.00	Survey #3 - Production (OH)	MWD+HDGM	OWSG MWD + HDGM	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
122.00	1.23	243.98	121.99	-0.57	-1.18	1.30	1.01	1.01	0.00	
First SDI GMWD Surface Survey										
213.00	4.57	254.53	212.86	-1.97	-5.55	5.89	3.70	3.67	11.59	
304.00	5.01	259.98	303.54	-3.63	-12.96	13.43	0.70	0.48	5.99	
395.00	6.51	248.29	394.08	-6.23	-21.66	22.51	2.08	1.65	-12.85	
486.00	9.59	252.60	484.18	-10.40	-33.69	35.24	3.45	3.38	4.74	
576.00	12.67	250.05	572.47	-16.02	-50.13	52.61	3.46	3.42	-2.83	
666.00	16.10	248.38	659.64	-23.98	-71.01	74.95	3.84	3.81	-1.86	

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 424-13 - Slot PA 424-13 (B4)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 424-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
Last SDI GMWD Surface Survey									
745.00	19.15	246.01	734.92	-33.29	-93.04	98.81	3.97	3.86	-3.00
First SDI MWD Surface Survey									
839.00	21.03	245.45	823.20	-46.57	-122.47	130.97	2.01	2.00	-0.60
933.00	23.71	248.31	910.12	-60.56	-155.38	166.65	3.08	2.85	3.04
1,027.00	26.12	248.46	995.37	-75.15	-192.19	206.21	2.56	2.56	0.16
1,074.00	26.73	248.99	1,037.45	-82.74	-211.68	227.11	1.39	1.30	1.13
Last SDI MWD Surface Survey									
1,167.00	27.28	249.74	1,120.32	-97.61	-251.20	269.33	0.70	0.59	0.81
First SDI MWD Production Survey									
1,261.00	26.52	248.82	1,204.15	-112.66	-290.98	311.84	0.92	-0.81	-0.98
1,356.00	26.28	250.75	1,289.24	-127.25	-330.61	354.07	0.94	-0.25	2.03
1,450.00	26.62	252.01	1,373.40	-140.62	-370.29	395.93	0.70	0.36	1.34
1,544.00	26.12	251.79	1,457.62	-153.59	-409.98	437.68	0.54	-0.53	-0.23
1,638.00	25.15	250.04	1,542.37	-166.87	-448.41	478.34	1.31	-1.03	-1.86
1,733.00	25.60	251.80	1,628.20	-180.18	-486.88	519.05	0.92	0.47	1.85
1,827.00	26.20	253.02	1,712.76	-192.58	-526.02	560.09	0.85	0.64	1.30
1,921.00	25.96	252.96	1,797.19	-204.67	-565.54	601.38	0.26	-0.26	-0.06
2,015.00	25.06	251.97	1,882.03	-216.86	-604.14	641.85	1.06	-0.96	-1.05
2,110.00	25.89	252.96	1,967.79	-229.16	-643.10	682.69	0.98	0.87	1.04
2,204.00	25.06	252.59	2,052.65	-241.14	-681.72	723.10	0.90	-0.88	-0.39
2,299.00	24.01	252.94	2,139.07	-252.83	-719.39	762.52	1.12	-1.11	0.37
2,393.00	24.53	253.03	2,224.76	-264.13	-756.34	801.13	0.55	0.55	0.10
2,487.00	23.83	252.41	2,310.51	-275.57	-793.11	839.61	0.79	-0.74	-0.66
2,581.00	24.14	252.90	2,396.40	-286.96	-829.58	877.81	0.39	0.33	0.52
2,675.00	22.82	251.82	2,482.61	-298.30	-865.27	915.24	1.48	-1.40	-1.15
2,770.00	23.76	251.55	2,569.87	-310.10	-900.93	952.80	1.00	0.99	-0.28
2,864.00	24.97	251.18	2,655.50	-322.49	-937.67	991.58	1.30	1.29	-0.39
2,959.00	23.79	250.17	2,742.02	-335.46	-974.68	1,030.79	1.32	-1.24	-1.06
3,053.00	24.80	251.89	2,827.70	-348.02	-1,011.25	1,069.46	1.31	1.07	1.83
3,147.00	23.74	250.74	2,913.39	-360.39	-1,047.85	1,108.09	1.23	-1.13	-1.22
3,242.00	24.97	250.32	2,999.94	-373.45	-1,084.79	1,147.27	1.31	1.29	-0.44
3,336.00	24.09	250.92	3,085.45	-386.41	-1,121.60	1,186.29	0.97	-0.94	0.64
3,430.00	25.04	251.35	3,170.94	-399.04	-1,158.58	1,225.37	1.03	1.01	0.46
3,525.00	24.45	251.45	3,257.22	-411.72	-1,196.27	1,265.13	0.62	-0.62	0.11
3,619.00	23.48	251.27	3,343.11	-423.93	-1,232.45	1,303.31	1.03	-1.03	-0.19
3,713.00	24.27	250.22	3,429.07	-436.48	-1,268.36	1,341.36	0.95	0.84	-1.12
3,808.00	22.86	250.13	3,516.15	-449.36	-1,304.09	1,379.33	1.48	-1.48	-0.09
3,902.00	24.30	252.00	3,602.30	-461.54	-1,339.66	1,416.93	1.73	1.53	1.99
3,996.00	23.48	251.97	3,688.24	-473.31	-1,375.86	1,454.99	0.87	-0.87	-0.03
4,091.00	24.54	252.04	3,775.02	-485.25	-1,412.62	1,493.64	1.12	1.12	0.07
4,185.00	23.44	252.74	3,860.90	-496.82	-1,449.05	1,531.84	1.21	-1.17	0.74
4,279.00	23.56	252.10	3,947.10	-508.14	-1,484.78	1,569.31	0.30	0.13	-0.68
4,374.00	24.84	253.74	4,033.75	-519.57	-1,522.00	1,608.22	1.52	1.35	1.73

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 424-13 - Slot PA 424-13 (B4)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 424-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
4,468.00	23.48	253.05	4,119.52	-530.55	-1,558.87	1,646.65	1.48	-1.45	-0.73
4,562.00	24.48	252.91	4,205.40	-541.74	-1,595.40	1,684.83	1.07	1.06	-0.15
4,657.00	23.50	253.42	4,292.20	-552.93	-1,632.37	1,723.42	1.05	-1.03	0.54
4,751.00	24.67	254.10	4,378.01	-563.65	-1,669.20	1,761.73	1.28	1.24	0.72
4,845.00	23.40	254.19	4,463.86	-574.11	-1,706.03	1,799.95	1.35	-1.35	0.10
4,940.00	23.78	253.51	4,550.92	-584.69	-1,742.55	1,837.91	0.49	0.40	-0.72
5,034.00	24.40	252.73	4,636.73	-595.83	-1,779.26	1,876.25	0.74	0.66	-0.83
5,129.00	23.21	253.73	4,723.65	-606.90	-1,815.97	1,914.56	1.32	-1.25	1.05
5,223.00	21.74	253.00	4,810.51	-617.18	-1,850.40	1,950.46	1.59	-1.56	-0.78
5,317.00	21.00	253.14	4,898.04	-627.15	-1,883.17	1,984.68	0.79	-0.79	0.15
5,412.00	19.84	254.19	4,987.07	-636.48	-1,914.97	2,017.78	1.28	-1.22	1.11
5,507.00	19.51	251.86	5,076.53	-645.82	-1,945.56	2,049.74	0.90	-0.35	-2.45
5,601.00	18.27	250.39	5,165.46	-655.65	-1,974.35	2,080.17	1.41	-1.32	-1.56
5,695.00	18.28	250.12	5,254.72	-665.61	-2,002.10	2,109.64	0.09	0.01	-0.29
5,790.00	16.98	250.21	5,345.26	-675.37	-2,029.16	2,138.41	1.37	-1.37	0.09
5,884.00	15.69	249.69	5,435.46	-684.43	-2,054.00	2,164.85	1.38	-1.37	-0.55
5,979.00	14.66	250.38	5,527.15	-692.92	-2,077.37	2,189.71	1.10	-1.08	0.73
6,074.00	13.24	250.03	5,619.35	-700.68	-2,098.92	2,212.61	1.50	-1.49	-0.37
6,168.00	12.18	249.79	5,711.04	-707.78	-2,118.34	2,233.29	1.13	-1.13	-0.26
6,263.00	10.86	246.50	5,804.13	-714.81	-2,135.96	2,252.24	1.55	-1.39	-3.46
6,357.00	11.58	252.93	5,896.33	-721.11	-2,153.10	2,270.50	1.53	0.77	6.84
6,451.00	10.47	259.82	5,988.60	-725.39	-2,170.52	2,288.36	1.83	-1.18	7.33
6,546.00	8.47	266.67	6,082.30	-727.32	-2,186.01	2,303.62	2.41	-2.11	7.21
6,640.00	7.41	264.02	6,175.40	-728.36	-2,198.95	2,316.18	1.19	-1.13	-2.82
6,735.00	5.24	269.17	6,269.82	-729.06	-2,209.38	2,326.26	2.36	-2.28	5.42
6,829.00	3.03	275.57	6,363.57	-728.88	-2,216.14	2,332.60	2.40	-2.35	6.81
6,924.00	2.62	278.34	6,458.45	-728.32	-2,220.79	2,336.80	0.45	-0.43	2.92
7,018.00	1.73	271.93	6,552.38	-727.96	-2,224.33	2,340.03	0.98	-0.95	-6.82
7,113.00	1.57	263.88	6,647.34	-728.05	-2,227.06	2,342.64	0.30	-0.17	-8.47
7,207.00	1.21	248.20	6,741.32	-728.56	-2,229.26	2,344.88	0.55	-0.38	-16.68
7,301.00	1.02	232.75	6,835.30	-729.43	-2,230.85	2,346.67	0.38	-0.20	-16.44
7,395.00	1.04	215.48	6,929.28	-730.63	-2,232.01	2,348.16	0.33	0.02	-18.37
7,490.00	1.19	202.54	7,024.27	-732.25	-2,232.89	2,349.52	0.31	0.16	-13.62
7,584.00	1.17	195.40	7,118.25	-734.07	-2,233.52	2,350.71	0.16	-0.02	-7.60
7,678.00	1.22	196.50	7,212.23	-735.96	-2,234.06	2,351.84	0.06	0.05	1.17
7,772.00	1.02	190.85	7,306.21	-737.74	-2,234.50	2,352.85	0.24	-0.21	-6.01
7,867.00	1.28	178.87	7,401.19	-739.63	-2,234.64	2,353.60	0.37	0.27	-12.61
7,961.00	1.53	165.90	7,495.16	-741.90	-2,234.31	2,354.03	0.43	0.27	-13.80
8,055.00	1.59	152.13	7,589.13	-744.27	-2,233.40	2,353.95	0.40	0.06	-14.65
8,150.00	1.40	144.23	7,684.09	-746.37	-2,232.10	2,353.42	0.29	-0.20	-8.32
8,244.00	1.28	152.11	7,778.07	-748.23	-2,230.94	2,352.93	0.23	-0.13	8.38
8,339.00	1.34	158.24	7,873.04	-750.20	-2,230.03	2,352.72	0.16	0.06	6.45
8,433.00	1.15	163.57	7,967.02	-752.13	-2,229.36	2,352.71	0.24	-0.20	5.67

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Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 424-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
8,527.00	0.86	163.65	8,061.01	-753.71	-2,228.89	2,352.79	0.31	-0.31	0.09	
8,622.00	0.82	161.18	8,156.00	-755.04	-2,228.47	2,352.83	0.06	-0.04	-2.60	
8,716.00	1.56	156.05	8,249.98	-756.84	-2,227.73	2,352.73	0.79	0.79	-5.46	
8,811.00	1.50	160.07	8,344.94	-759.19	-2,226.79	2,352.61	0.13	-0.06	4.23	
8,905.00	1.21	142.06	8,438.92	-761.13	-2,225.76	2,352.27	0.54	-0.31	-19.16	
8,999.00	1.15	167.56	8,532.90	-762.84	-2,224.94	2,352.06	0.56	-0.06	27.13	
9,094.00	1.16	181.80	8,627.88	-764.73	-2,224.77	2,352.52	0.30	0.01	14.99	
9,188.00	1.53	202.57	8,721.85	-766.84	-2,225.28	2,353.69	0.64	0.39	22.10	
9,283.00	1.57	204.86	8,816.82	-769.19	-2,226.31	2,355.44	0.08	0.04	2.41	
9,377.00	1.07	207.25	8,910.79	-771.14	-2,227.26	2,356.97	0.54	-0.53	2.54	
9,472.00	0.98	218.38	9,005.78	-772.57	-2,228.17	2,358.30	0.23	-0.09	11.72	
9,567.00	0.62	262.52	9,100.77	-773.27	-2,229.18	2,359.49	0.72	-0.38	46.46	
9,661.00	0.27	139.25	9,194.77	-773.50	-2,229.54	2,359.91	0.85	-0.37	-131.14	
9,756.00	0.62	113.89	9,289.76	-773.88	-2,228.92	2,359.45	0.41	0.37	-26.69	
9,798.00	0.70	120.49	9,331.76	-774.10	-2,228.50	2,359.12	0.26	0.19	15.71	
Last SDI MWD Production Survey										
9,868.00	0.70	120.49	9,401.76	-774.54	-2,227.76	2,358.56	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	-0.57	-1.18	First SDI GMWD Surface Survey	
666.00	659.64	-23.98	-71.01	Last SDI GMWD Surface Survey	
745.00	734.92	-33.29	-93.04	First SDI MWD Surface Survey	
1,074.00	1,037.45	-82.74	-211.68	Last SDI MWD Surface Survey	
1,167.00	1,120.32	-97.61	-251.20	First SDI MWD Production Survey	
9,798.00	9,331.76	-774.10	-2,228.50	Last SDI MWD Production Survey	
9,868.00	9,401.76	-774.54	-2,227.76	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____