

Project: Garfield Co., CO (NAD83)
 Site: PA Pad
 Well: PA 334-23
 Wellbore: OH
 Design: Plan #3
 Lat: 39.500010
 Long: -107.964142
 GL: 5486.00
 KB: KB=24' @ 5510.00usf (H&P 318)

WELL DETAILS: PA 334-23

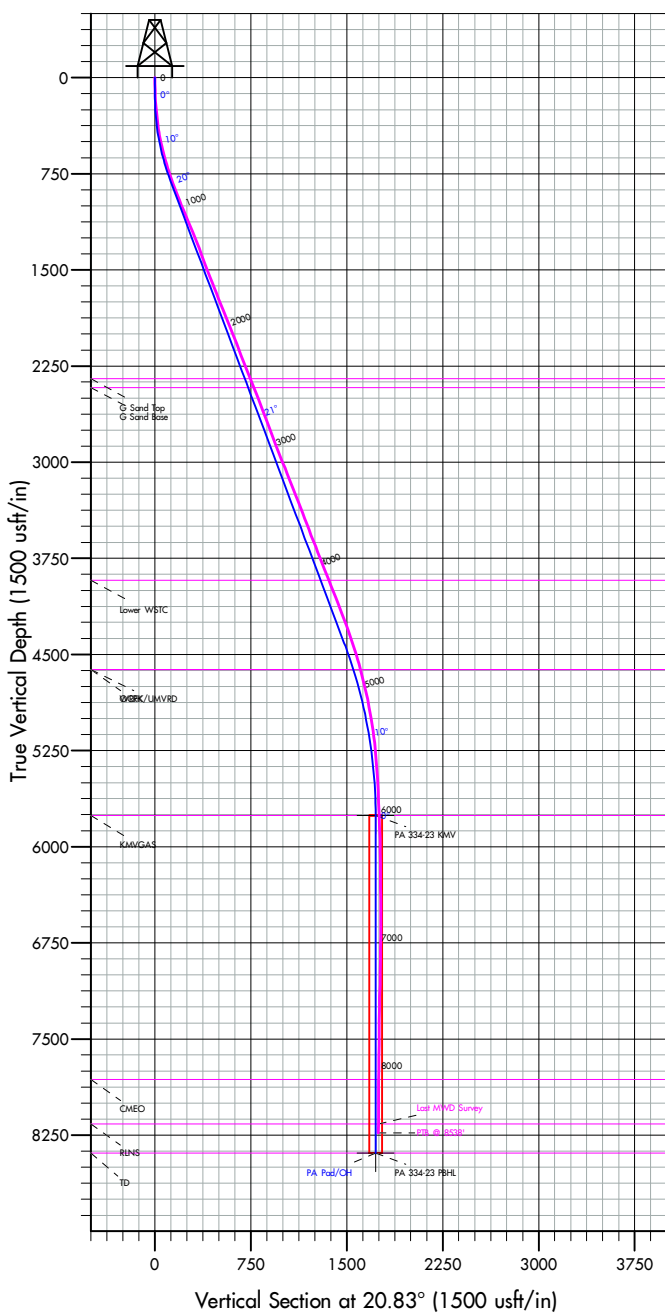
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1616437.10	2304742.80	39.500010	-107.964142

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PA 334-23 KMV	5757.00	1612.43	613.49	1618032.30	2305399.80	Circle (Radius: 50.00)
PA 334-23 PBHL	8391.00	1612.43	613.49	1618032.30	2305399.80	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.00
823.25	20.65	20.83	808.45	114.66	43.62	3.00	20.83	122.67	Start 3848.88 hold at 823.25 MD
4672.13	20.65	20.83	4410.11	1383.12	526.25	0.00	0.00	1479.85	Start Drop -1.50
6048.62	0.00	0.00	5757.00	1612.43	613.49	1.50	180.00	1725.20	Start 2634.00 hold at 6048.62 MD
8682.62	0.00	0.00	8391.00	1612.43	613.49	0.00	0.00	1725.20	TD at 8682.62



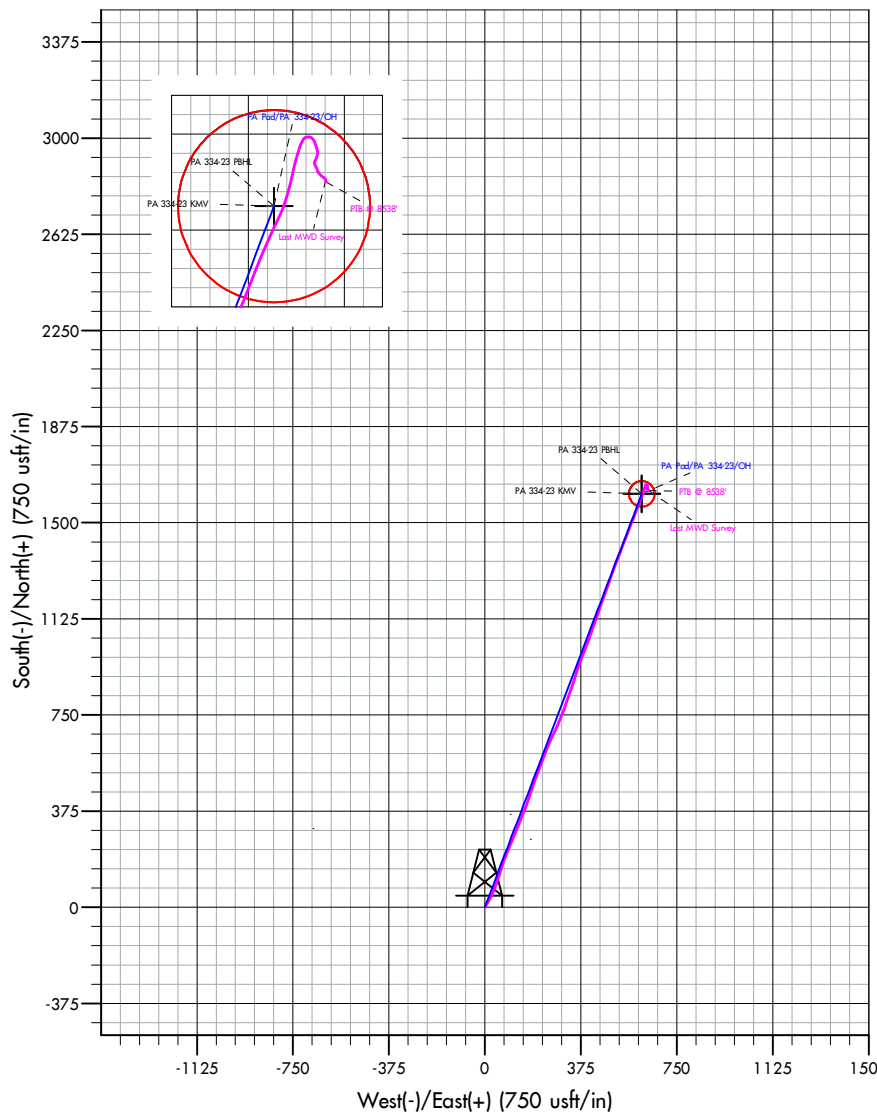
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2348.00	2468.48	G Sand Top
2418.00	2543.28	G Sand Base
3922.00	4150.52	Lower WSTC
4618.00	4892.03	OCRK
4618.00	4892.03	WRFK/UMVRD
5757.00	6048.62	KMGAS
7816.00	8107.62	CMEO
8163.00	8454.62	RLNS
8391.00	8682.62	TD



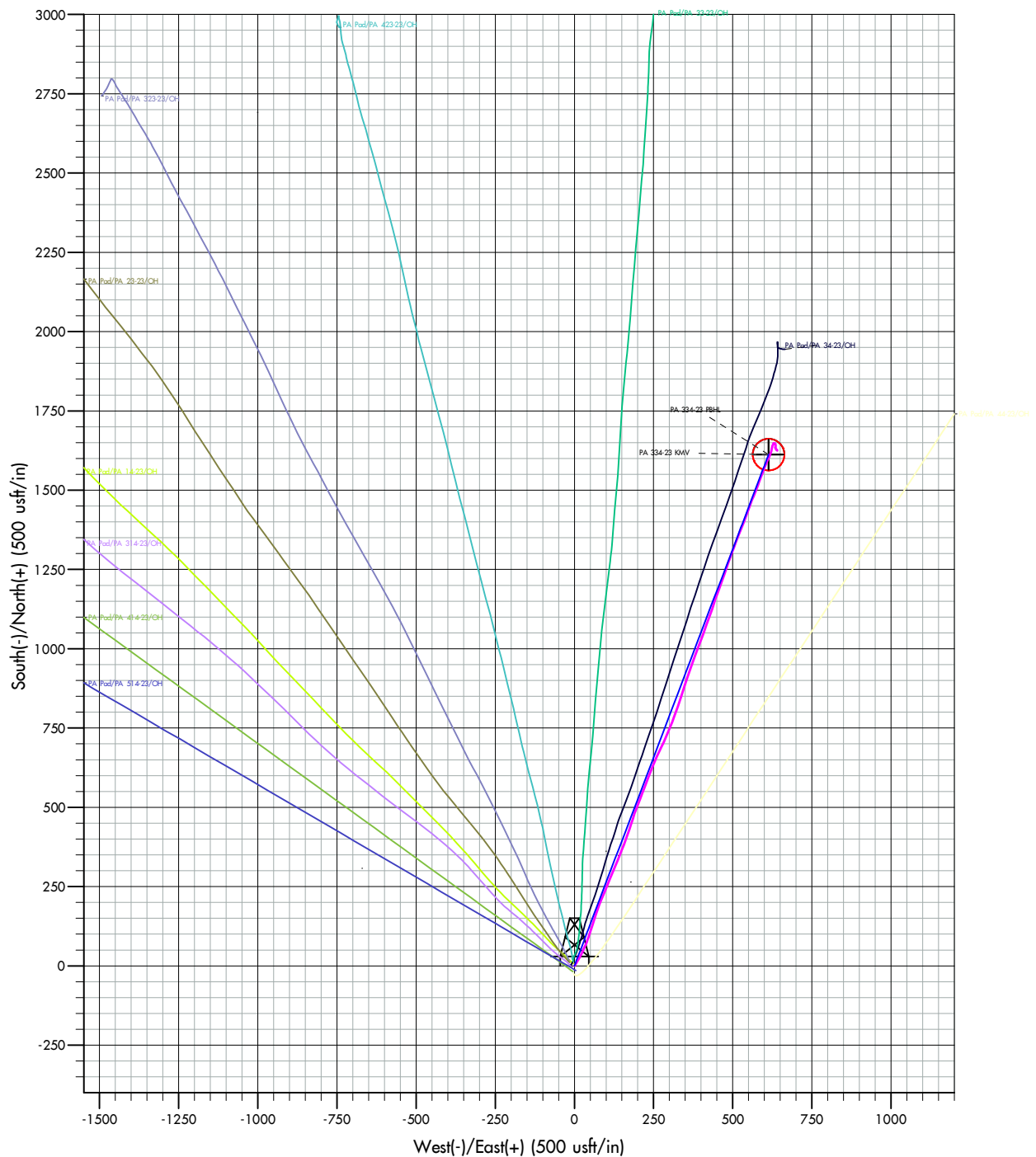
Azimuths to True North
 Magnetic North: 9.17°

Magnetic Field
 Strength: 51387.8nT
 Dip Angle: 65.70°
 Date: 8/16/2020
 Model: HDGM2020



WELL DETAILS: PA 334-23

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1616437.10	2304742.80	39.500010	-107.964142





ALTITUDE ENERGY PARTNERS LLC. SURVEY DATA CERTIFICATION

ALTITUDE JOB NUMBER				OPERATOR		
WELL NAME				COUNTY & STATE		
API WELL NUMBER					PROPOSED DIRECTION	
Latitude			Longitude			

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH		SURVEY INSTRUMENT TYPE MWD	
				MAGNETIC DECLINATION OR TOTAL GRID		
LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH	TOTAL CORRECTION USED		
				DECLINATION OR GRID		
PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH			

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Altitude Energy Partners LLC. I am authorized and qualified to review the data, calculations and this report, and that the report represents a true and correct Directional Survey of this well based on the original data corrected to True North and obtained at the well site. Wellbore coordinates are calculated using Minimum curvature or other method.

PRINT MWD NAME ABOVE

Dave Williamson

SIGN MWD NAME ABOVE

TODAY'S DATE



TEP Rocky Mountain LLC

Garfield Co., CO (NAD83)

PA Pad

PA 334-23

OH

Design: OH

Standard Survey Report

27 September, 2020



Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 334-23
Project:	Garfield Co., CO (NAD83)	TVD Reference:	KB=24' @ 5510.00usft (H&P 318)
Site:	PA Pad	MD Reference:	KB=24' @ 5510.00usft (H&P 318)
Well:	PA 334-23	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Garfield Co., 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 Pad				
Site Position:		Northing:	1,616,444.30 usft	Latitude:	39.500029
From:	Map	Easting:	2,304,740.70 usft	Longitude:	-107.964151
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well	PA 334-23					
Well Position	+N/-S	0.00 usft	Northing:	1,616,437.10 usft	Latitude:	39.500010
	+E/-W	0.00 usft	Easting:	2,304,742.80 usft	Longitude:	-107.964142
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,486.00 usft
Grid Convergence:	-1.55 °					

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020	8/16/2020	9.17	65.70	51,387.80000000

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	20.83	

Survey Program	Date	9/27/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
383.00	8,538.00	MWD Survey (OH)	MWD+ HGDM	OWSG MWD + HGDM	

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	
383.00	7.94	31.86	381.78	22.50	13.99	26.01	2.07	2.07	0.00	
First MWD Survey										
474.00	10.86	26.18	471.55	35.54	21.09	40.71	3.36	3.21	-6.24	
564.00	13.94	24.94	559.44	52.98	29.40	59.97	3.43	3.42	-1.38	
655.00	15.82	21.53	647.38	74.46	38.58	83.31	2.28	2.07	-3.75	
746.00	17.87	18.09	734.47	99.27	47.46	109.66	2.50	2.25	-3.78	
841.00	20.34	17.77	824.24	128.86	57.03	140.72	2.60	2.60	-0.34	
935.00	21.46	17.81	912.05	160.79	67.28	174.20	1.19	1.19	0.04	
1,029.00	22.49	21.34	999.22	193.91	79.08	209.35	1.78	1.10	3.76	

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 334-23
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Site:	PA Pad	MD Reference:	KB=24' @ 5510.00usft (H&P 318)
Well:	PA 334-23	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)	
1,063.00	22.57	22.19	1,030.63	206.00	83.91	222.38	0.99	0.24	2.50	
1,156.00	23.02	22.82	1,116.36	239.29	97.70	258.39	0.55	0.48	0.68	
1,250.00	22.30	22.61	1,203.11	272.70	111.69	294.59	0.77	-0.77	-0.22	
1,344.00	21.38	22.92	1,290.36	304.94	125.22	329.54	0.99	-0.98	0.33	
1,438.00	20.16	22.22	1,378.25	335.72	138.02	362.85	1.32	-1.30	-0.74	
1,532.00	20.86	21.10	1,466.29	366.33	150.17	395.78	0.85	0.74	-1.19	
1,626.00	22.14	19.85	1,553.75	398.60	162.21	430.23	1.45	1.36	-1.33	
1,720.00	20.66	19.26	1,641.27	430.92	173.69	464.52	1.59	-1.57	-0.63	
1,814.00	22.27	17.55	1,728.74	463.56	184.53	498.88	1.84	1.71	-1.82	
1,909.00	22.02	20.93	1,816.74	497.36	196.32	534.66	1.37	-0.26	3.56	
2,003.00	21.55	20.16	1,904.03	530.03	208.57	569.55	0.59	-0.50	-0.82	
2,097.00	22.58	22.04	1,991.14	562.96	221.29	604.86	1.33	1.10	2.00	
2,191.00	21.49	21.93	2,078.27	595.66	234.49	640.11	1.16	-1.16	-0.12	
2,285.00	20.95	20.94	2,165.90	627.33	246.93	674.13	0.69	-0.57	-1.05	
2,379.00	21.92	24.39	2,253.40	659.01	260.18	708.45	1.69	1.03	3.67	
2,473.00	21.10	25.62	2,340.85	690.24	274.75	742.83	1.00	-0.87	1.31	
2,568.00	21.89	23.55	2,429.25	721.90	289.22	777.56	1.15	0.83	-2.18	
2,662.00	20.88	23.09	2,516.77	753.37	302.79	811.80	1.09	-1.07	-0.49	
2,756.00	21.62	18.99	2,604.39	785.16	314.99	845.85	1.77	0.79	-4.36	
2,851.00	20.51	19.48	2,693.04	817.40	326.24	879.98	1.18	-1.17	0.52	
2,945.00	21.50	18.78	2,780.79	849.23	337.27	913.66	1.09	1.05	-0.74	
3,039.00	20.63	17.73	2,868.51	881.31	347.86	947.41	1.01	-0.93	-1.12	
3,134.00	21.21	17.74	2,957.25	913.62	358.20	981.28	0.61	0.61	0.01	
3,229.00	22.51	20.16	3,045.41	947.06	369.70	1,016.63	1.66	1.37	2.55	
3,323.00	21.15	21.04	3,132.67	979.78	381.99	1,051.58	1.49	-1.45	0.94	
3,418.00	22.09	20.66	3,220.99	1,012.49	394.45	1,086.58	1.00	0.99	-0.40	
3,512.00	21.06	19.71	3,308.40	1,044.93	406.38	1,121.14	1.16	-1.10	-1.01	
3,606.00	21.46	20.13	3,396.00	1,076.98	417.99	1,155.22	0.46	0.43	0.45	
3,700.00	20.00	19.29	3,483.92	1,108.30	429.22	1,188.49	1.59	-1.55	-0.89	
3,795.00	21.28	17.67	3,572.82	1,140.06	439.82	1,221.94	1.48	1.35	-1.71	
3,889.00	22.24	20.19	3,660.12	1,173.01	451.14	1,256.76	1.42	1.02	2.68	
3,983.00	21.16	20.25	3,747.46	1,205.62	463.15	1,291.52	1.15	-1.15	0.06	
4,078.00	21.74	19.74	3,835.88	1,238.27	475.03	1,326.25	0.64	0.61	-0.54	
4,172.00	21.12	18.66	3,923.38	1,270.70	486.33	1,360.58	0.78	-0.66	-1.15	
4,266.00	22.18	20.37	4,010.75	1,303.38	497.92	1,395.25	1.31	1.13	1.82	
4,361.00	21.06	21.57	4,099.06	1,336.06	510.44	1,430.25	1.27	-1.18	1.26	
4,455.00	21.22	20.58	4,186.74	1,367.70	522.63	1,464.15	0.42	0.17	-1.05	
4,549.00	20.15	21.42	4,274.68	1,398.70	534.52	1,497.35	1.18	-1.14	0.89	
4,644.00	18.90	20.64	4,364.21	1,428.33	545.92	1,529.10	1.34	-1.32	-0.82	
4,738.00	17.75	20.77	4,453.44	1,455.97	556.37	1,558.65	1.22	-1.22	0.14	
4,832.00	16.54	22.33	4,543.26	1,481.75	566.53	1,586.36	1.38	-1.29	1.66	
4,926.00	14.43	21.47	4,633.85	1,505.03	575.91	1,611.45	2.26	-2.24	-0.91	
5,020.00	13.47	20.22	4,725.07	1,526.20	583.98	1,634.11	1.07	-1.02	-1.33	

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Well:	PA 334-23	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)	
5,115.00	12.50	19.94	4,817.64	1,546.25	591.31	1,655.45	1.02	-1.02	-0.29	
5,209.00	10.32	21.43	4,909.78	1,563.65	597.85	1,674.05	2.34	-2.32	1.59	
5,304.00	9.60	21.38	5,003.35	1,578.95	603.85	1,690.48	0.76	-0.76	-0.05	
5,398.00	8.32	23.37	5,096.20	1,592.49	609.41	1,705.11	1.40	-1.36	2.12	
5,492.00	6.79	26.68	5,189.38	1,603.70	614.60	1,717.43	1.69	-1.63	3.52	
5,587.00	4.71	19.43	5,283.90	1,612.40	618.42	1,726.92	2.31	-2.19	-7.63	
5,681.00	3.78	16.12	5,377.64	1,619.01	620.56	1,733.86	1.02	-0.99	-3.52	
5,776.00	3.41	12.94	5,472.45	1,624.78	622.06	1,739.78	0.44	-0.39	-3.35	
5,870.00	3.01	13.08	5,566.31	1,629.90	623.25	1,745.00	0.43	-0.43	0.15	
5,964.00	2.46	13.31	5,660.20	1,634.27	624.27	1,749.44	0.59	-0.59	0.24	
6,058.00	2.25	17.34	5,754.12	1,638.00	625.29	1,753.29	0.28	-0.22	4.29	
6,153.00	1.92	17.75	5,849.06	1,641.29	626.33	1,756.74	0.35	-0.35	0.43	
6,247.00	1.45	14.83	5,943.01	1,643.94	627.11	1,759.49	0.51	-0.50	-3.11	
6,342.00	1.20	35.96	6,037.99	1,645.91	628.00	1,761.65	0.57	-0.26	22.24	
6,436.00	0.80	27.89	6,131.98	1,647.29	628.89	1,763.25	0.45	-0.43	-8.59	
6,530.00	0.42	53.08	6,225.97	1,648.07	629.47	1,764.19	0.49	-0.40	26.80	
6,625.00	0.53	78.60	6,320.97	1,648.37	630.18	1,764.72	0.25	0.12	26.86	
6,719.00	0.72	86.87	6,414.96	1,648.49	631.20	1,765.19	0.22	0.20	8.80	
6,814.00	0.50	100.17	6,509.96	1,648.45	632.20	1,765.51	0.27	-0.23	14.00	
6,908.00	0.52	121.92	6,603.95	1,648.15	632.97	1,765.51	0.21	0.02	23.14	
7,003.00	0.95	142.23	6,698.94	1,647.30	633.81	1,765.01	0.52	0.45	21.38	
7,096.00	0.96	161.52	6,791.93	1,645.95	634.53	1,764.01	0.34	0.01	20.74	
7,191.00	1.62	159.14	6,886.91	1,643.94	635.26	1,762.39	0.70	0.69	-2.51	
7,285.00	1.17	164.64	6,980.88	1,641.77	635.99	1,760.62	0.50	-0.48	5.85	
7,380.00	1.03	182.12	7,075.86	1,639.98	636.22	1,759.03	0.38	-0.15	18.40	
7,474.00	1.15	197.60	7,169.84	1,638.24	635.90	1,757.29	0.34	0.13	16.47	
7,568.00	0.89	211.53	7,263.83	1,636.72	635.23	1,755.63	0.38	-0.28	14.82	
7,662.00	0.61	209.92	7,357.82	1,635.66	634.60	1,754.42	0.30	-0.30	-1.71	
7,757.00	0.74	174.38	7,452.82	1,634.61	634.41	1,753.37	0.45	0.14	-37.41	
7,851.00	1.04	137.36	7,546.80	1,633.38	635.05	1,752.44	0.67	0.32	-39.38	
7,945.00	0.98	166.46	7,640.79	1,631.97	635.81	1,751.40	0.54	-0.06	30.96	
8,040.00	0.67	152.34	7,735.78	1,630.69	636.26	1,750.36	0.39	-0.33	-14.86	
8,134.00	0.81	145.36	7,829.77	1,629.66	636.89	1,749.62	0.18	0.15	-7.43	
8,228.00	0.92	132.28	7,923.76	1,628.60	637.83	1,748.97	0.24	0.12	-13.91	
8,322.00	0.59	129.58	8,017.75	1,627.79	638.76	1,748.54	0.35	-0.35	-2.87	
8,385.00	1.15	115.52	8,080.75	1,627.31	639.58	1,748.38	0.94	0.89	-22.32	
8,467.00	1.01	173.04	8,162.73	1,626.24	640.41	1,747.67	1.28	-0.17	70.15	
Last MWD Survey										
8,538.00	1.01	173.04	8,233.72	1,625.00	640.56	1,746.57	0.00	0.00	0.00	
PTB @ 8538'										



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Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
383.00	381.78	22.50	13.99	First MWD Survey
8,467.00	8,162.73	1,626.24	640.41	Last MWD Survey
8,538.00	8,233.72	1,625.00	640.56	PTB @ 8538'

Checked By: _____

Approved By: _____

Date: _____