

Sec 8, T6S, R94W
RWF 422-8
Q200960 & RM-200769
Plan #1

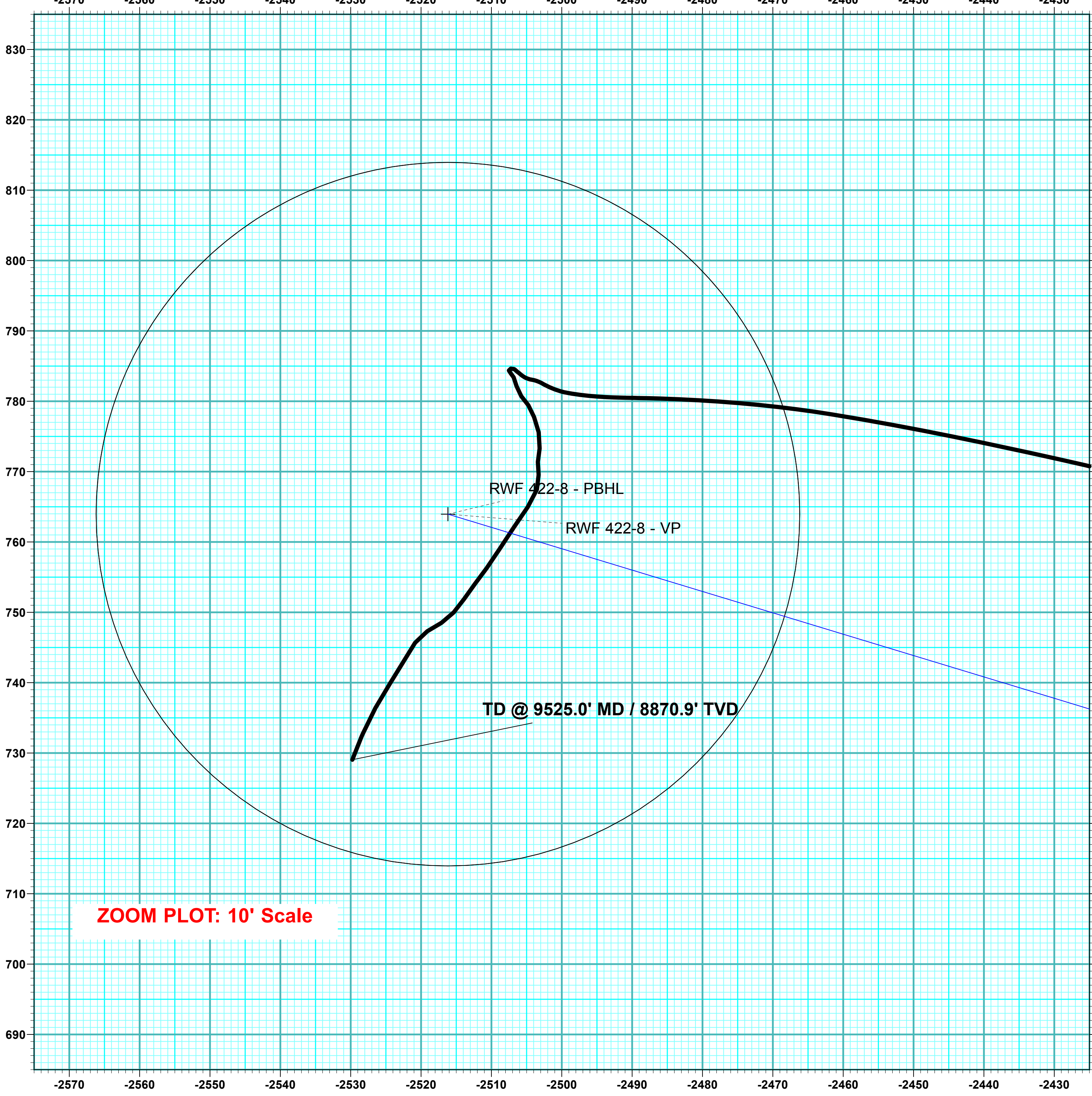
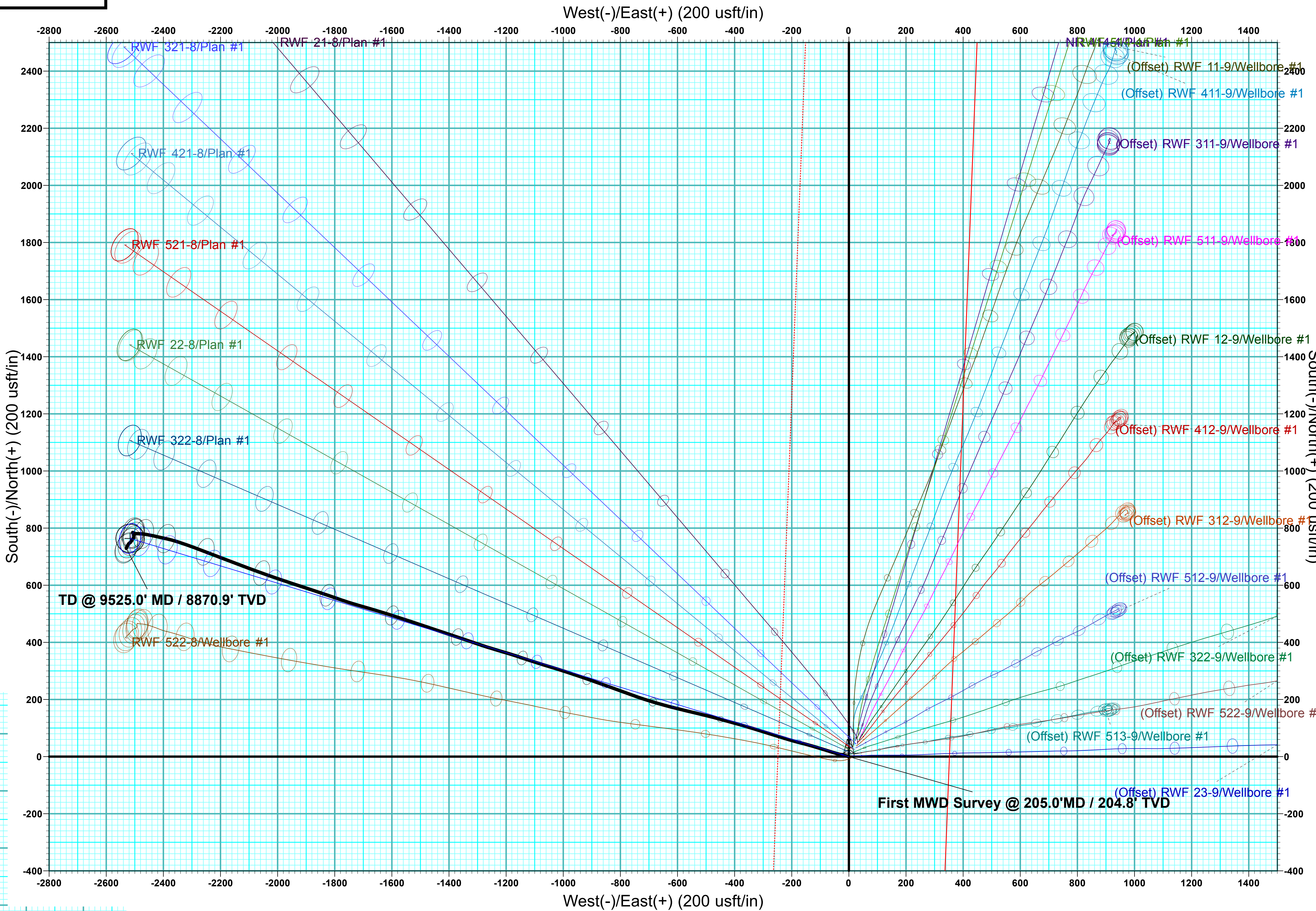
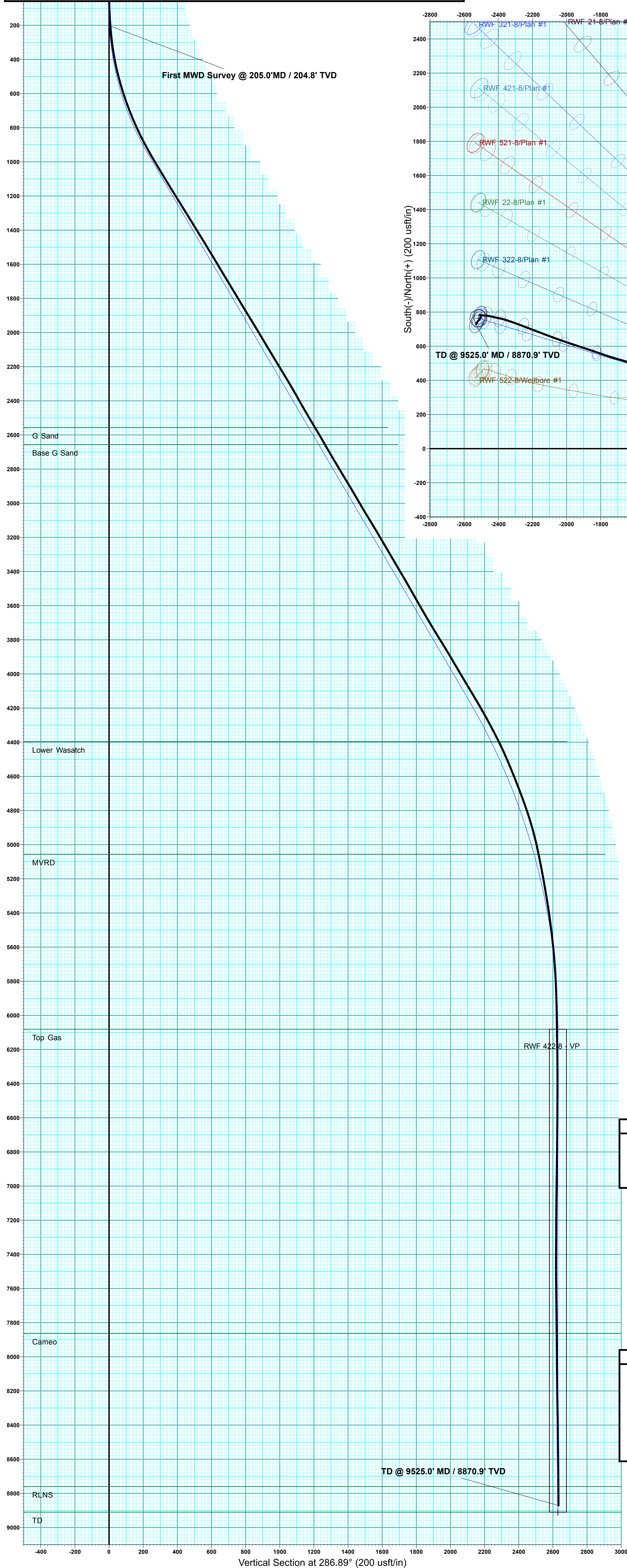
Company Name: Terra Energy Partners, LLP
RWF 422-8
Garfield County, CO
Rig: KB=24' @ 6003.6usft (H&P #318)
Created by: Chase Chambers
Date: 5:33, October 24 2020

PROJECT DETAILS: Garfield County, CO
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
System Datum: Mean Sea Level

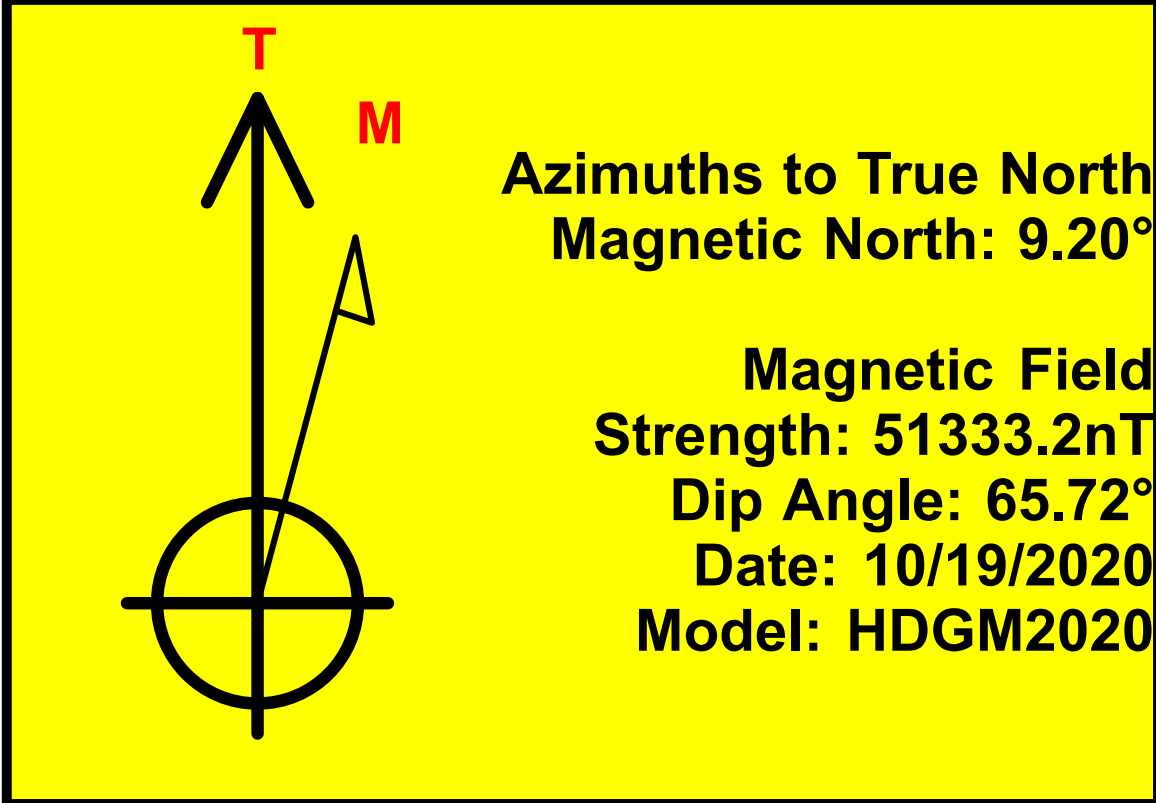


DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RWF 422-8 - VP	6081.0	764.0	-2516.2	1631065.09	2319626.72	39.541252	-107.912792
RWF 422-8 - PBHL	8910.0	764.0	-2516.2	1631065.09	2319626.72	39.541252	-107.912792

WELL DETAILS: RWF 422-8						
Ground Elevation:		5979.6				
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1630234.84	2322121.80	39.539155	-107.903870	



ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSecDeparture	Annotation
205.0	4.38	285.67	204.8	2.1	-7.5	7.8	First MWD Survey @ 205.0' MD / 204.8' TVD
9525.0	2.59	201.77	8870.9	729.1	-2529.8	2632.4	TD @ 9525.0' MD / 8870.9' TVD



DESIGN ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSecDeparture	Annotation
120.0	0.00	0.00	120.0	0.0	0.0	0.0	Start Build 3.50
989.4	30.43	286.89	949.1	65.5	-215.7	225.5	EOB @ 30.43° Inc / 286.89° Azm
4697.5	30.43	286.89	4146.5	611.1	-2012.8	2103.5	Start Drop -1.50
6726.0	0.00	0.00	6081.0	764.0	-2516.2	2629.6	EOD @ Vertical
9555.0	0.00	0.00	8910.0	764.0	-2516.2	2629.6	TD @ 9555.0' MD / 8910.0' TVD



Terra Energy Partners, LLP

Garfield County, CO

Sec 8, T6S, R94W

RWF 422-8

Wellbore #1

Design: Wellbore #1

QES Survey Report

24 October, 2020



Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 422-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 422-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Sec 8, T6S, R94W						
Site Position:		Northing:	1,630,278.47	usft	Latitude:	39.539277		
From:	Lat/Long	Easting:	2,322,152.86	usft	Longitude:	-107.903764		
Position Uncertainty:	0.0	usft	Slot Radius:	13-3/16	"	Grid Convergence:	-1.52	°

Well	RWF 422-8					
Well Position	+N/-S	0.0 usft	Northing:	1,630,234.83 usft	Latitude:	39.539155
	+E/-W	0.0 usft	Easting:	2,322,121.80 usft	Longitude:	-107.903870
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,979.6 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020	10/19/2020	9.20	65.72	51,333.20000000

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	286.89	

Survey Program	Date	10/24/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
205.0	9,525.0	QES MWD Surveys (Wellbore #1)	OWSG (REV5) MWD HDGM	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
First MWD Survey @ 205.0'MD / 204.8' TVD									
205.0	4.38	285.67	204.8	2.1	-7.5	7.8	2.14	2.14	0.00
295.0	6.94	280.67	294.4	4.1	-16.2	16.7	2.89	2.84	-5.56
385.0	10.02	284.37	383.4	7.0	-29.1	29.9	3.47	3.42	4.11
475.0	13.38	286.60	471.5	11.9	-46.7	48.1	3.77	3.73	2.48
566.0	16.62	287.51	559.4	18.8	-69.2	71.7	3.57	3.56	1.00
657.0	19.53	287.35	645.9	27.3	-96.1	99.9	3.20	3.20	-0.18
747.0	22.20	286.36	730.0	36.6	-126.8	132.0	2.99	2.97	-1.10
837.0	25.15	284.39	812.4	46.1	-161.7	168.1	3.39	3.28	-2.19
928.0	28.01	285.60	893.7	56.7	-201.0	208.8	3.20	3.14	1.33

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 422-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 422-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
981.0	29.00	287.51	940.3	63.9	-225.2	234.1	2.54	1.87	3.60
1,054.0	31.25	287.46	1,003.5	74.9	-260.2	270.7	3.08	3.08	-0.07
1,148.0	30.85	287.02	1,084.0	89.3	-306.5	319.2	0.49	-0.43	-0.47
1,242.0	31.86	286.93	1,164.3	103.5	-353.3	368.1	1.08	1.07	-0.10
1,337.0	31.64	285.53	1,245.0	117.5	-401.2	418.1	0.81	-0.23	-1.47
1,431.0	31.90	284.83	1,325.0	130.5	-449.0	467.6	0.48	0.28	-0.74
1,525.0	31.73	284.39	1,404.8	143.0	-497.0	517.1	0.31	-0.18	-0.47
1,620.0	31.29	283.33	1,485.8	154.9	-545.2	566.6	0.74	-0.46	-1.12
1,714.0	30.81	283.42	1,566.4	166.1	-592.3	615.0	0.51	-0.51	0.10
1,809.0	31.11	285.35	1,647.8	178.2	-639.7	663.9	1.09	0.32	2.03
1,902.0	31.29	286.49	1,727.4	191.4	-686.0	712.0	0.66	0.19	1.23
1,997.0	30.67	289.04	1,808.8	206.4	-732.6	760.9	1.53	-0.65	2.68
2,090.0	31.95	290.01	1,888.3	222.5	-778.1	809.2	1.48	1.38	1.04
2,184.0	30.72	289.84	1,968.6	239.2	-824.1	858.0	1.31	-1.31	-0.18
2,279.0	31.29	289.66	2,050.0	255.7	-870.1	906.9	0.61	0.60	-0.19
2,373.0	30.76	288.87	2,130.6	271.7	-915.8	955.3	0.71	-0.56	-0.84
2,467.0	31.50	288.78	2,211.0	287.4	-961.8	1,003.8	0.79	0.79	-0.10
2,561.0	30.85	287.55	2,291.4	302.5	-1,008.1	1,052.5	0.97	-0.69	-1.31
2,655.0	29.31	286.76	2,372.8	316.5	-1,053.1	1,099.6	1.69	-1.64	-0.84
2,749.0	29.97	287.64	2,454.5	330.2	-1,097.5	1,146.1	0.84	0.70	0.94
2,844.0	31.20	288.78	2,536.3	345.3	-1,143.4	1,194.4	1.43	1.29	1.20
2,938.0	30.01	287.11	2,617.2	360.1	-1,188.9	1,242.3	1.56	-1.27	-1.78
3,032.0	30.15	286.23	2,698.5	373.6	-1,234.1	1,289.4	0.49	0.15	-0.94
3,126.0	30.72	288.16	2,779.6	387.7	-1,279.5	1,337.0	1.20	0.61	2.05
3,220.0	31.46	289.13	2,860.1	403.2	-1,325.5	1,385.5	0.95	0.79	1.03
3,314.0	30.23	288.78	2,940.8	418.8	-1,371.1	1,433.7	1.32	-1.31	-0.37
3,408.0	30.37	287.90	3,021.9	433.8	-1,416.1	1,481.1	0.50	0.15	-0.94
3,503.0	31.82	288.78	3,103.3	449.2	-1,462.7	1,530.1	1.60	1.53	0.93
3,597.0	30.10	288.52	3,183.9	464.7	-1,508.5	1,578.4	1.84	-1.83	-0.28
3,691.0	30.81	287.90	3,264.9	479.6	-1,553.8	1,626.1	0.83	0.76	-0.66
3,786.0	30.01	287.81	3,346.8	494.3	-1,599.5	1,674.2	0.84	-0.84	-0.09
3,880.0	30.72	287.02	3,427.9	508.5	-1,644.9	1,721.7	0.87	0.76	-0.84
3,974.0	29.36	285.79	3,509.3	521.8	-1,690.0	1,768.7	1.59	-1.45	-1.31
4,068.0	29.88	286.93	3,591.0	534.9	-1,734.6	1,815.2	0.82	0.55	1.21
4,163.0	30.37	288.87	3,673.2	549.6	-1,780.0	1,862.8	1.15	0.52	2.04
4,257.0	31.33	288.87	3,753.9	565.2	-1,825.6	1,911.0	1.02	1.02	0.00
4,351.0	32.08	288.60	3,833.9	581.0	-1,872.3	1,960.4	0.81	0.80	-0.29
4,445.0	30.19	287.81	3,914.3	596.2	-1,918.5	2,009.0	2.06	-2.01	-0.84
4,540.0	30.41	288.43	3,996.3	611.1	-1,964.1	2,056.9	0.40	0.23	0.65
4,634.0	31.25	289.04	4,077.1	626.6	-2,009.7	2,105.0	0.95	0.89	0.65
4,729.0	30.54	290.01	4,158.6	642.9	-2,055.7	2,153.8	0.91	-0.75	1.02
4,824.0	29.22	290.19	4,241.0	659.2	-2,100.1	2,201.0	1.39	-1.39	0.19
4,918.0	27.69	290.89	4,323.6	674.9	-2,142.0	2,245.7	1.67	-1.63	0.74

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 422-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 422-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)	
5,012.0	26.32	290.89	4,407.3	690.1	-2,181.9	2,288.3	1.46	-1.46	0.00	
5,107.0	23.33	290.71	4,493.6	704.3	-2,219.2	2,328.1	3.15	-3.15	-0.19	
5,201.0	22.19	291.07	4,580.2	717.2	-2,253.2	2,364.4	1.22	-1.21	0.38	
5,296.0	21.09	290.45	4,668.5	729.6	-2,285.9	2,399.3	1.18	-1.16	-0.65	
5,390.0	19.86	289.31	4,756.6	740.8	-2,316.8	2,432.1	1.38	-1.31	-1.21	
5,484.0	17.58	288.25	4,845.6	750.6	-2,345.4	2,462.3	2.45	-2.43	-1.13	
5,578.0	14.72	285.00	4,935.9	758.1	-2,370.4	2,488.4	3.19	-3.04	-3.46	
5,673.0	12.08	282.45	5,028.3	763.4	-2,391.8	2,510.4	2.85	-2.78	-2.68	
5,767.0	11.07	282.54	5,120.4	767.4	-2,410.2	2,529.2	1.07	-1.07	0.10	
5,861.0	10.11	282.89	5,212.8	771.2	-2,427.1	2,546.4	1.02	-1.02	0.37	
5,955.0	9.49	281.49	5,305.4	774.6	-2,442.7	2,562.4	0.71	-0.66	-1.49	
6,049.0	8.53	280.07	5,398.3	777.4	-2,457.2	2,577.0	1.05	-1.02	-1.51	
6,143.0	6.90	276.30	5,491.4	779.2	-2,469.6	2,589.5	1.81	-1.73	-4.01	
6,238.0	6.33	273.14	5,585.8	780.1	-2,480.5	2,600.2	0.71	-0.60	-3.33	
6,332.0	4.79	270.68	5,679.3	780.5	-2,489.6	2,609.0	1.66	-1.64	-2.62	
6,426.0	3.38	275.68	5,773.1	780.8	-2,496.3	2,615.5	1.55	-1.50	5.32	
6,520.0	1.67	287.64	5,867.0	781.5	-2,500.4	2,619.6	1.89	-1.82	12.72	
6,614.0	1.23	300.73	5,961.0	782.4	-2,502.5	2,621.9	0.58	-0.47	13.93	
6,708.0	1.01	279.20	6,054.9	783.1	-2,504.2	2,623.7	0.50	-0.23	-22.90	
6,802.0	1.01	308.20	6,148.9	783.7	-2,505.7	2,625.3	0.54	0.00	30.85	
6,896.0	0.48	312.42	6,242.9	784.5	-2,506.6	2,626.4	0.57	-0.56	4.49	
6,990.0	0.40	249.05	6,336.9	784.6	-2,507.2	2,627.1	0.50	-0.09	-67.41	
7,085.0	0.18	162.78	6,431.9	784.4	-2,507.5	2,627.2	0.45	-0.23	-90.81	
7,179.0	0.35	138.31	6,525.9	784.0	-2,507.3	2,626.9	0.21	0.18	-26.03	
7,273.0	0.57	148.33	6,619.9	783.4	-2,506.8	2,626.3	0.25	0.23	10.66	
7,367.0	1.05	168.99	6,713.9	782.2	-2,506.4	2,625.6	0.59	0.51	21.98	
7,462.0	0.92	138.14	6,808.9	780.7	-2,505.8	2,624.5	0.57	-0.14	-32.47	
7,556.0	1.10	145.96	6,902.9	779.4	-2,504.7	2,623.2	0.24	0.19	8.32	
7,650.0	1.18	161.87	6,996.9	777.8	-2,503.9	2,621.9	0.35	0.09	16.93	
7,744.0	1.58	163.80	7,090.8	775.6	-2,503.3	2,620.6	0.43	0.43	2.05	
7,838.0	1.32	192.45	7,184.8	773.3	-2,503.1	2,619.8	0.81	-0.28	30.48	
7,932.0	1.05	181.38	7,278.8	771.4	-2,503.4	2,619.5	0.38	-0.29	-11.78	
8,026.0	1.19	171.89	7,372.8	769.5	-2,503.3	2,618.9	0.25	0.15	-10.10	
8,120.0	1.45	199.04	7,466.7	767.5	-2,503.5	2,618.5	0.71	0.28	28.88	
8,214.0	2.02	213.89	7,560.7	765.0	-2,504.8	2,619.0	0.77	0.61	15.80	
8,308.0	2.20	214.78	7,654.6	762.1	-2,506.8	2,620.1	0.19	0.19	0.95	
8,402.0	2.24	211.88	7,748.6	759.1	-2,508.8	2,621.1	0.13	0.04	-3.09	
8,497.0	1.80	216.36	7,843.5	756.3	-2,510.7	2,622.1	0.49	-0.46	4.72	
8,591.0	1.58	217.33	7,937.5	754.1	-2,512.3	2,623.0	0.24	-0.23	1.03	
8,685.0	1.67	213.90	8,031.4	751.9	-2,513.9	2,623.9	0.14	0.10	-3.65	
8,778.0	1.32	222.86	8,124.4	750.0	-2,515.4	2,624.8	0.45	-0.38	9.63	
8,873.0	1.45	236.05	8,219.4	748.5	-2,517.1	2,626.0	0.36	0.14	13.88	
8,967.0	1.41	242.29	8,313.3	747.3	-2,519.1	2,627.6	0.17	-0.04	6.64	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)	
9,061.0	1.58	212.58	8,407.3	745.7	-2,520.8	2,628.7	0.83	0.18	-31.61	
9,155.0	2.15	211.17	8,501.3	743.1	-2,522.4	2,629.5	0.61	0.61	-1.50	
9,249.0	2.46	212.05	8,595.2	739.9	-2,524.4	2,630.5	0.33	0.33	0.94	
9,344.0	2.42	209.41	8,690.1	736.4	-2,526.5	2,631.5	0.13	-0.04	-2.78	
9,438.0	2.59	202.91	8,784.0	732.7	-2,528.3	2,632.1	0.35	0.18	-6.91	
9,453.0	2.59	201.77	8,799.0	732.1	-2,528.6	2,632.2	0.34	0.00	-7.60	
TD @ 9525.0' MD / 8870.9' TVD										
9,525.0	2.59	201.77	8,870.9	729.1	-2,529.8	2,632.4	0.00	0.00	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
205.0	204.8	2.1	-7.5	First MWD Survey @ 205.0'MD / 204.8' TVD	
9,525.0	8,870.9	729.1	-2,529.8	TD @ 9525.0' MD / 8870.9' TVD	

Checked By: _____	Approved By: _____	Date: _____
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