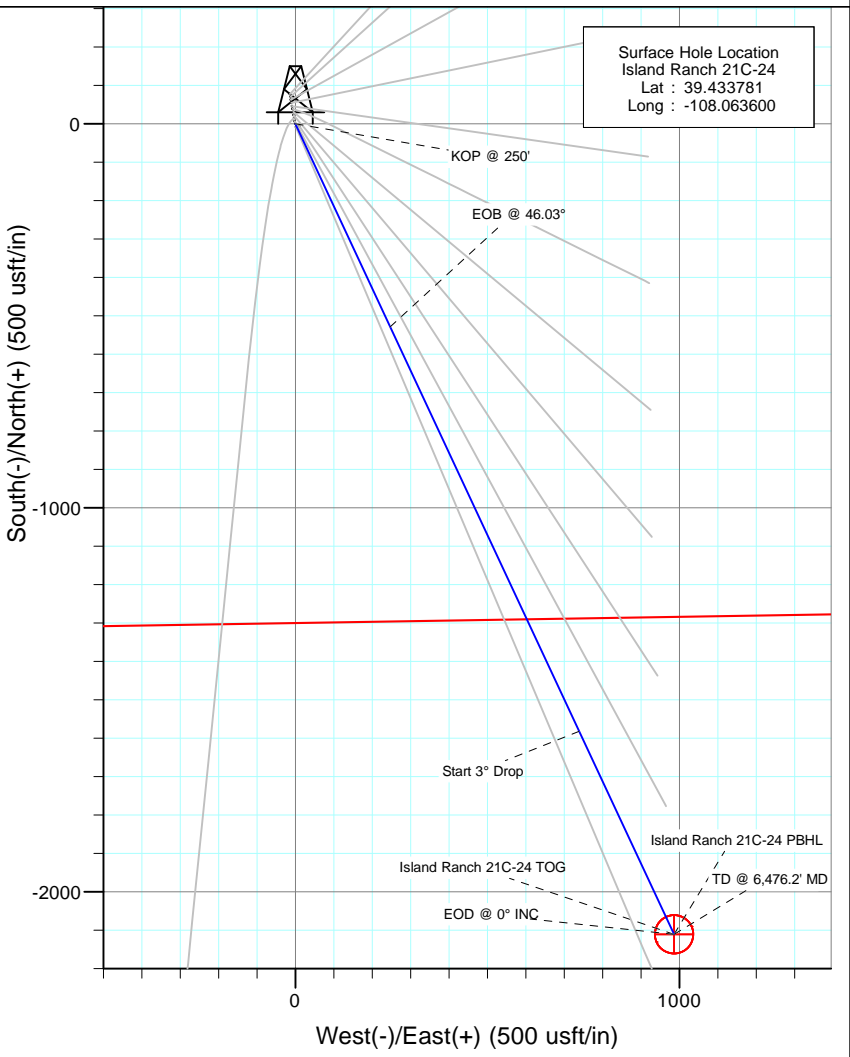


SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	
3	1784.4	46.03	154.95	1624.6	-529.0	247.2	3.00	154.95	583.9	
4	3398.9	46.03	154.95	2745.4	-1581.7	739.2	0.00	0.00	1745.9	
5	4933.2	0.00	0.00	4120.0	-2110.7	986.4	3.00	180.00	2329.8	
6	6476.2	0.00	0.00	5663.0	-2110.7	986.4	0.00	0.00	2329.8	Island Ranch 21C-24 PBHL

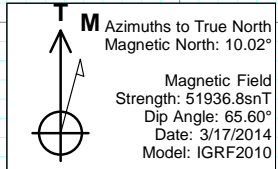


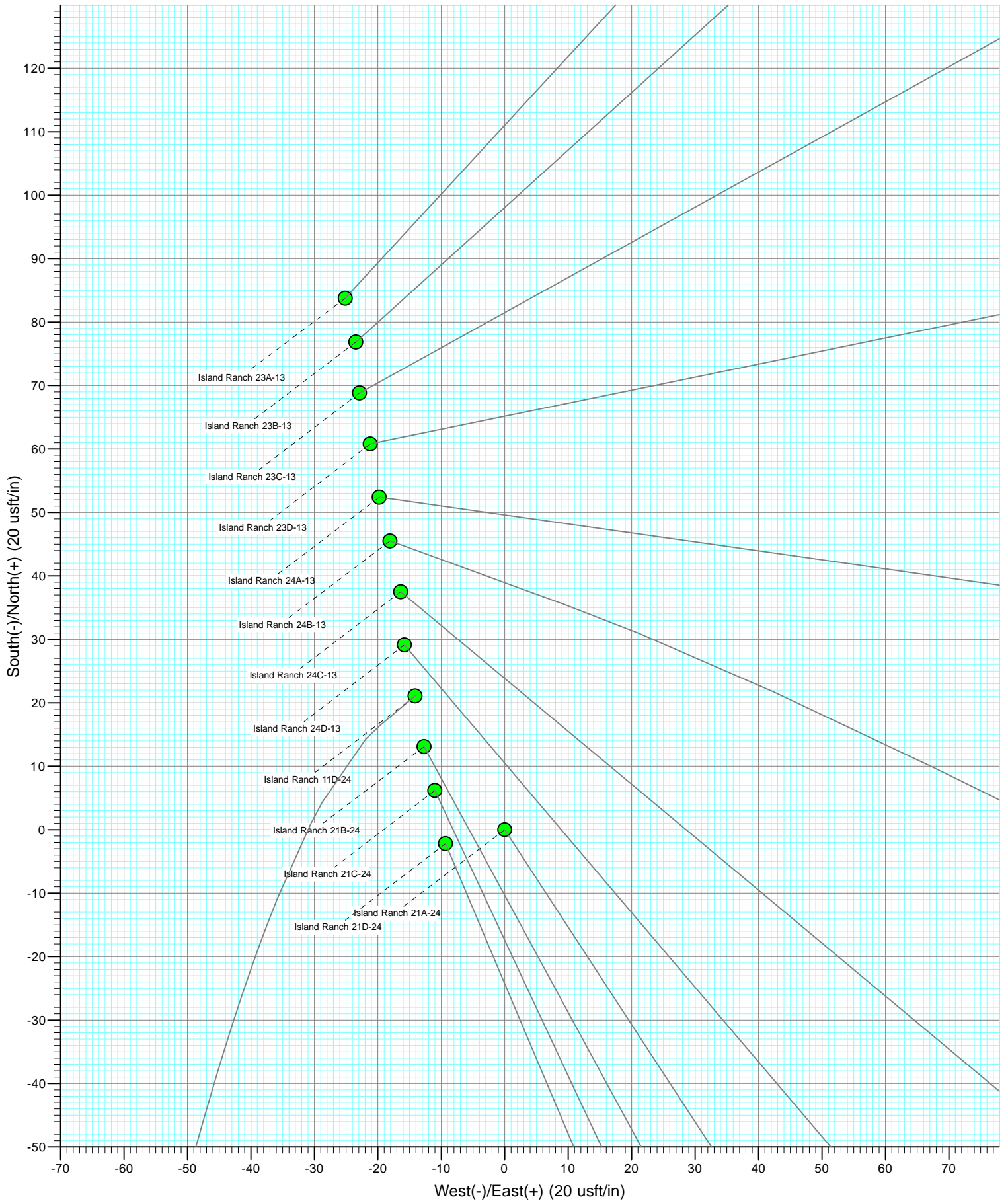
DESIGN TARGET DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Island Ranch 21C-24 TOG	-2110.7	986.4	590951.03	1276915.17	39.427986	-108.060108
Island Ranch 21C-24 PBHL	-2110.7	986.4	590951.03	1276915.17	39.427986	-108.060108

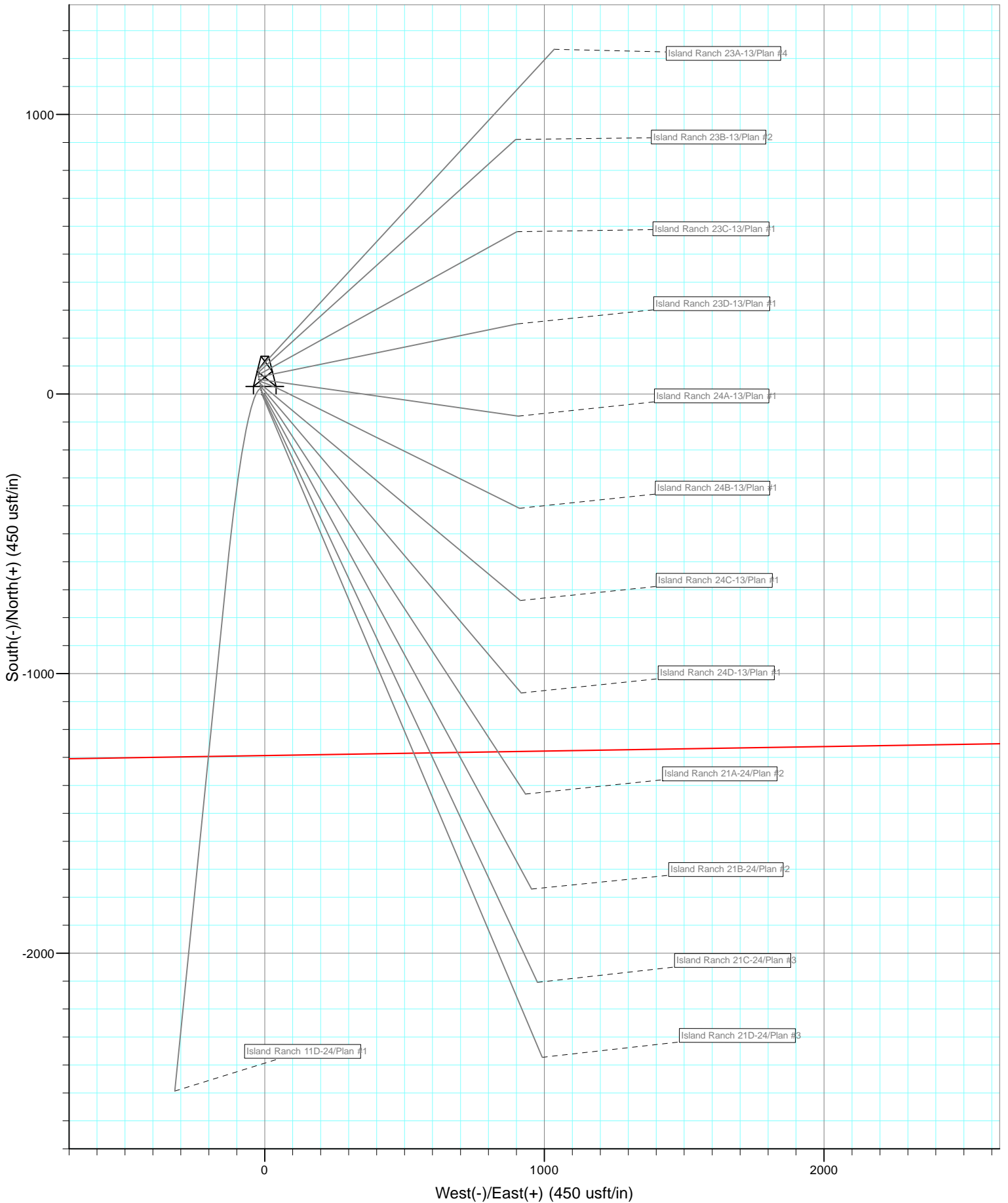
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2675.0	3297.4	Ohio Creek
3155.0	3921.6	Williams Fork
3790.0	4601.6	TOG
5088.0	5901.2	Cameo
5513.0	6326.2	Rollins

Plan #3
 Island Ranch 21C-24
 KB=20' @ 5100.0usft (Patterson #303)
 Ground Elevation @ 5080.0
 NAD 1927 (NADCON CONUS)
 Well Island Ranch 21C-24, True North

CASING DETAILS		
TVD	MD	Name
980.9	1000.0	9 5/8"
	6478.1	4 1/2"







Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Island Ranch 21C-24
Company:	Caerus Oil & Gas (NAD 27)	TVD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Project:	Garfield County, CO	MD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Site:	S13-T7S-R96W (Island Ranch)	North Reference:	True
Well:	Island Ranch 21C-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #3		

Project	Garfield County, CO		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site	S13-T7S-R96W (Island Ranch)				
Site Position:		Northing:	593,103.71 usft	Latitude:	39.433822
From:	Lat/Long	Easting:	1,275,986.01 usft	Longitude:	-108.063611
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.62 °

Well	Island Ranch 21C-24					
Well Position	+N/-S	0.0 usft	Northing:	593,088.69 usft	Latitude:	39.433781
	+E/-W	0.0 usft	Easting:	1,275,988.70 usft	Longitude:	-108.063600
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,080.0 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	3/17/2014	10.02	65.60	51,937

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	154.95

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,784.4	46.03	154.95	1,624.6	-529.0	247.2	3.00	3.00	0.00	154.95	
3,398.9	46.03	154.95	2,745.4	-1,581.7	739.2	0.00	0.00	0.00	0.00	
4,933.2	0.00	0.00	4,120.0	-2,110.7	986.4	3.00	-3.00	0.00	180.00	
6,476.2	0.00	0.00	5,663.0	-2,110.7	986.4	0.00	0.00	0.00	0.00	Island Ranch 21C-24

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Island Ranch 21C-24
Company:	Caerus Oil & Gas (NAD 27)	TVD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Project:	Garfield County, CO	MD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Site:	S13-T7S-R96W (Island Ranch)	North Reference:	True
Well:	Island Ranch 21C-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	KOP @ 250'
300.0	1.50	154.95	300.0	-0.6	0.3	0.7	3.00	3.00	
400.0	4.50	154.95	399.8	-5.3	2.5	5.9	3.00	3.00	
500.0	7.50	154.95	499.3	-14.8	6.9	16.3	3.00	3.00	
600.0	10.50	154.95	598.0	-29.0	13.5	32.0	3.00	3.00	
700.0	13.50	154.95	695.8	-47.8	22.3	52.8	3.00	3.00	
800.0	16.50	154.95	792.4	-71.3	33.3	78.6	3.00	3.00	
900.0	19.50	154.95	887.5	-99.2	46.4	109.5	3.00	3.00	
1,000.0	22.50	154.95	980.9	-131.7	61.6	145.4	3.00	3.00	9 5/8"
1,100.0	25.50	154.95	1,072.2	-168.5	78.8	186.0	3.00	3.00	
1,200.0	28.50	154.95	1,161.3	-209.7	98.0	231.4	3.00	3.00	
1,300.0	31.50	154.95	1,247.9	-255.0	119.2	281.4	3.00	3.00	
1,400.0	34.50	154.95	1,331.8	-304.3	142.2	335.9	3.00	3.00	
1,500.0	37.50	154.95	1,412.6	-357.5	167.1	394.7	3.00	3.00	
1,600.0	40.50	154.95	1,490.4	-414.6	193.7	457.6	3.00	3.00	
1,700.0	43.50	154.95	1,564.7	-475.2	222.1	524.5	3.00	3.00	
1,784.4	46.03	154.95	1,624.6	-529.0	247.2	583.9	3.00	3.00	EOB @ 46.03°
1,800.0	46.03	154.95	1,635.4	-539.2	252.0	595.2	0.00	0.00	
1,900.0	46.03	154.95	1,704.8	-604.4	282.5	667.1	0.00	0.00	
2,000.0	46.03	154.95	1,774.3	-669.6	312.9	739.1	0.00	0.00	
2,100.0	46.03	154.95	1,843.7	-734.8	343.4	811.1	0.00	0.00	
2,200.0	46.03	154.95	1,913.1	-800.0	373.9	883.0	0.00	0.00	
2,300.0	46.03	154.95	1,982.5	-865.2	404.3	955.0	0.00	0.00	
2,400.0	46.03	154.95	2,052.0	-930.4	434.8	1,027.0	0.00	0.00	
2,500.0	46.03	154.95	2,121.4	-995.6	465.3	1,099.0	0.00	0.00	
2,600.0	46.03	154.95	2,190.8	-1,060.8	495.8	1,170.9	0.00	0.00	
2,700.0	46.03	154.95	2,260.2	-1,126.0	526.2	1,242.9	0.00	0.00	
2,800.0	46.03	154.95	2,329.7	-1,191.2	556.7	1,314.9	0.00	0.00	
2,900.0	46.03	154.95	2,399.1	-1,256.4	587.2	1,386.8	0.00	0.00	
3,000.0	46.03	154.95	2,468.5	-1,321.6	617.7	1,458.8	0.00	0.00	
3,100.0	46.03	154.95	2,538.0	-1,386.8	648.1	1,530.8	0.00	0.00	
3,200.0	46.03	154.95	2,607.4	-1,452.0	678.6	1,602.8	0.00	0.00	
3,297.4	46.03	154.95	2,675.0	-1,515.5	708.3	1,672.9	0.00	0.00	Ohio Creek
3,300.0	46.03	154.95	2,676.8	-1,517.2	709.1	1,674.7	0.00	0.00	
3,398.9	46.03	154.95	2,745.4	-1,581.7	739.2	1,745.9	0.00	0.00	Start 3° Drop
3,400.0	46.00	154.95	2,746.2	-1,582.4	739.5	1,746.7	3.00	-3.00	
3,500.0	43.00	154.95	2,817.6	-1,645.9	769.2	1,816.8	3.00	-3.00	
3,600.0	40.00	154.95	2,892.4	-1,705.9	797.3	1,883.0	3.00	-3.00	
3,700.0	37.00	154.95	2,970.7	-1,762.3	823.6	1,945.3	3.00	-3.00	
3,800.0	34.00	154.95	3,052.1	-1,814.9	848.2	2,003.3	3.00	-3.00	
3,900.0	31.00	154.95	3,136.4	-1,863.6	870.9	2,057.1	3.00	-3.00	
3,921.6	30.35	154.95	3,155.0	-1,873.6	875.6	2,068.1	3.00	-3.00	Williams Fork
4,000.0	28.00	154.95	3,223.5	-1,908.2	891.8	2,106.3	3.00	-3.00	
4,100.0	25.00	154.95	3,313.0	-1,948.6	910.7	2,150.9	3.00	-3.00	
4,200.0	22.00	154.95	3,404.6	-1,984.7	927.6	2,190.8	3.00	-3.00	
4,300.0	19.00	154.95	3,498.3	-2,016.4	942.4	2,225.8	3.00	-3.00	
4,400.0	16.00	154.95	3,593.7	-2,043.7	955.1	2,255.8	3.00	-3.00	
4,500.0	13.00	154.95	3,690.5	-2,066.3	965.7	2,280.9	3.00	-3.00	
4,600.0	10.00	154.95	3,788.5	-2,084.4	974.1	2,300.8	3.00	-3.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: Caerus Oil & Gas (NAD 27)
Project: Garfield County, CO
Site: S13-T7S-R96W (Island Ranch)
Well: Island Ranch 21C-24
Wellbore: DD
Design: Plan #3

Local Co-ordinate Reference: Well Island Ranch 21C-24
TVD Reference: KB=20' @ 5100.0usft (Patterson #303)
MD Reference: KB=20' @ 5100.0usft (Patterson #303)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,601.6	9.95	154.95	3,790.0	-2,084.6	974.3	2,301.1	3.00	-3.00	TOG
4,700.0	7.00	154.95	3,887.3	-2,097.8	980.4	2,315.6	3.00	-3.00	
4,800.0	4.00	154.95	3,986.9	-2,106.5	984.5	2,325.1	3.00	-3.00	
4,900.0	1.00	154.95	4,086.8	-2,110.4	986.3	2,329.5	3.00	-3.00	
4,933.2	0.00	0.00	4,120.0	-2,110.7	986.4	2,329.8	3.00	-3.00	EOD @ 0° INC
5,000.0	0.00	0.00	4,186.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,100.0	0.00	0.00	4,286.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,200.0	0.00	0.00	4,386.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,300.0	0.00	0.00	4,486.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,400.0	0.00	0.00	4,586.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,500.0	0.00	0.00	4,686.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,600.0	0.00	0.00	4,786.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,700.0	0.00	0.00	4,886.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,800.0	0.00	0.00	4,986.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,900.0	0.00	0.00	5,086.8	-2,110.7	986.4	2,329.8	0.00	0.00	
5,901.2	0.00	0.00	5,088.0	-2,110.7	986.4	2,329.8	0.00	0.00	Cameo
6,000.0	0.00	0.00	5,186.8	-2,110.7	986.4	2,329.8	0.00	0.00	
6,100.0	0.00	0.00	5,286.8	-2,110.7	986.4	2,329.8	0.00	0.00	
6,200.0	0.00	0.00	5,386.8	-2,110.7	986.4	2,329.8	0.00	0.00	
6,300.0	0.00	0.00	5,486.8	-2,110.7	986.4	2,329.8	0.00	0.00	
6,326.2	0.00	0.00	5,513.0	-2,110.7	986.4	2,329.8	0.00	0.00	Rollins
6,400.0	0.00	0.00	5,586.8	-2,110.7	986.4	2,329.8	0.00	0.00	
6,476.2	0.00	0.00	5,663.0	-2,110.7	986.4	2,329.8	0.00	0.00	TD @ 6,476.2' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Island Ranch 21C-24 PE - hit/miss target - Shape - Circle (radius 50.0)	0.00	0.00	5,663.0	-2,110.7	986.4	590,951.03	1,276,915.17	39.427986	-108.060108
Island Ranch 21C-24 TC - plan misses target center by 28.3usft at 4605.8usft MD (3794.2 TVD, -2085.3 N, 974.6 E) - Circle (radius 50.0)	0.00	0.00	3,790.0	-2,110.7	986.4	590,951.03	1,276,915.17	39.427986	-108.060108

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.0	980.9	9 5/8"	0	0
6,478.1		4 1/2"	0	0

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Island Ranch 21C-24
Company:	Caerus Oil & Gas (NAD 27)	TVD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Project:	Garfield County, CO	MD Reference:	KB=20' @ 5100.0usft (Patterson #303)
Site:	S13-T7S-R96W (Island Ranch)	North Reference:	True
Well:	Island Ranch 21C-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #3		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,297.4	2,675.0	Ohio Creek		0.00		
3,921.6	3,155.0	Williams Fork		0.00		
4,601.6	3,790.0	TOG		0.00		
5,901.2	5,088.0	Cameo		0.00		
6,326.2	5,513.0	Rollins		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
250.0	250.0	0.0	0.0	KOP @ 250'	
1,784.4	1,624.6	-529.0	247.2	EOB @ 46.03°	
3,398.9	2,745.4	-1,581.7	739.2	Start 3° Drop	
4,933.2	4,120.0	-2,110.7	986.4	EOD @ 0° INC	
6,476.2	5,663.0	-2,110.7	986.4	TD @ 6,476.2' MD	