



Entek GRB, Inc.

Routt Co., CO

Sec.3-T11N-R88W

Focus Ranch Unit Federal 3-1

Wellbore #3-Slant

Plan: Design #6 (30°)

Standard Planning Report

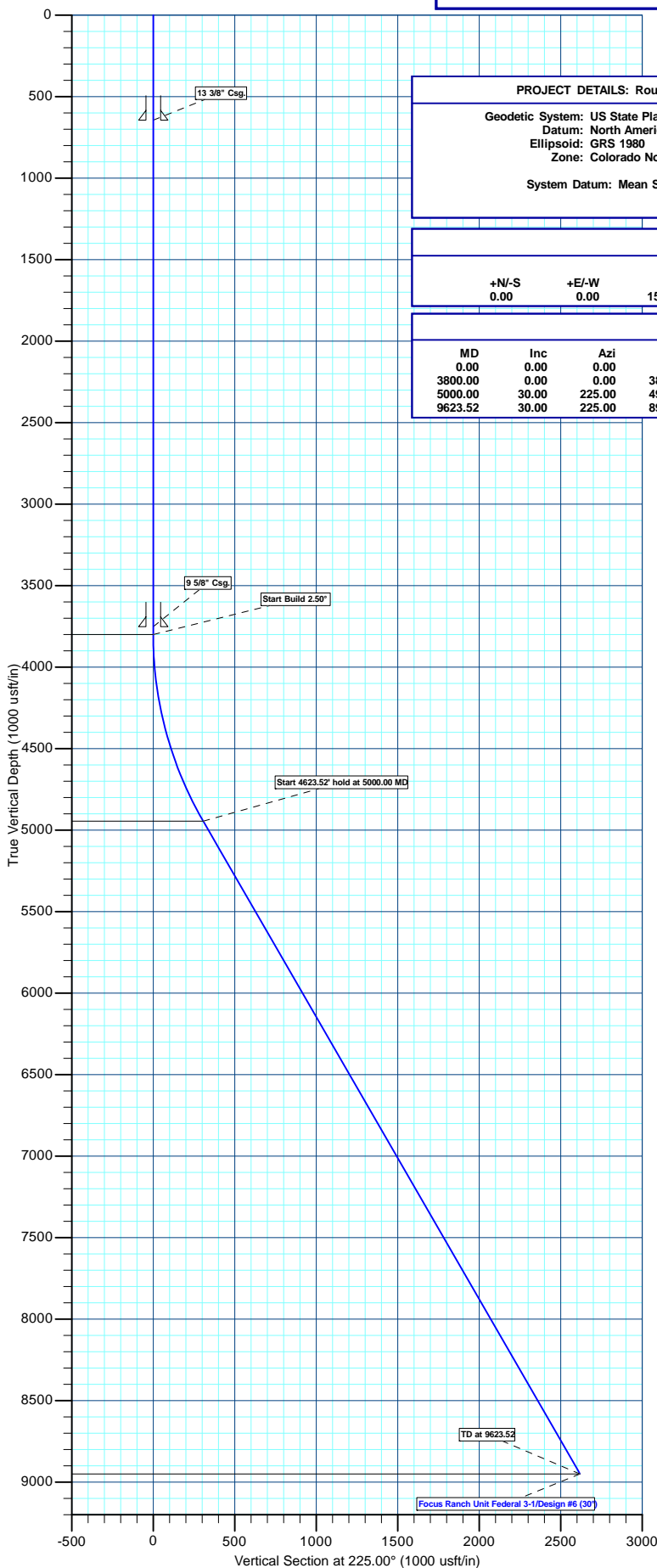
23 September, 2013

Archer



Project: Routt Co., CO
 Site: Sec.3-T11N-R88W
 Well: Focus Ranch Unit Federal 3-1
 Wellbore: Wellbore #3-Slant
 Design: Design #6 (30°)
 Latitude: 40° 56' 39.336 N
 Longitude: 107° 15' 10.944 W
 Ground Level: 7662.00
 WELL @ 7677.00usft

Archer

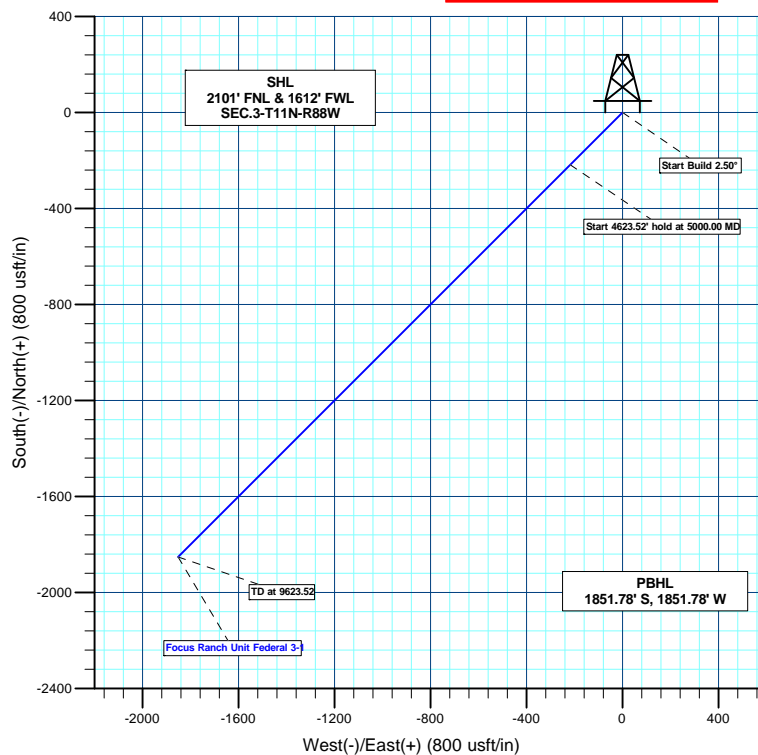
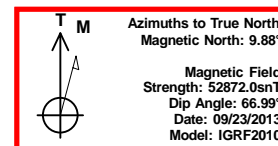
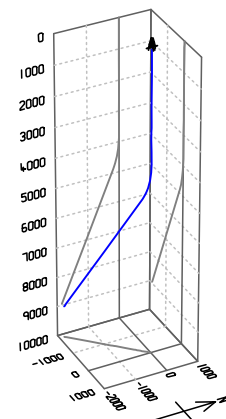


PROJECT DETAILS: Routt Co., CO			
Geodetic System:	US State Plane 1983		
Datum:	North American Datum 1983		
Ellipsoid:	GRS 1980		
Zone:	Colorado Northern Zone		
System Datum:	Mean Sea Level		

REFERENCE INFORMATION			
Co-ordinate (N/E) Reference:	Well Focus Ranch Unit Federal 3-1, True North		
Vertical (TVD) Reference:	WELL @ 7677.00usft		
Section (VS) Reference:	Slot - (0.00N, 0.00E)		
Measured Depth Reference:	WELL @ 7677.00usft		
Calculation Method:	Minimum Curvature		

WELL DETAILS: Focus Ranch Unit Federal 3-1						
+N/-S	+E/-W	Northing	Ground Level: Easting	7662.00	Latitude	Longitude
0.00	0.00	1591634.589	2515711.750		40° 56' 39.336 N	107° 15' 10.944 W
Slot						

SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.50°	
5000.00	30.00	225.00	4945.92	-217.12	-217.12	2.50	225.00	307.05	Start 4623.52' hold at 5000.00 MD	
9623.52	30.00	225.00	8950.00	-1851.78	-1851.78	0.00	0.00	2618.81	TD at 9623.52	



Plan: Design #6 (30°) (Focus Ranch Unit Federal 3-1/Wellbore #3-Slant)

Created By: Bret Wolford Date: 15:13, September 23 2013



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Focus Ranch Unit Federal 3-1
Company:	Entek GRB, Inc.	TVD Reference:	WELL @ 7677.00usft
Project:	Roult Co., CO	MD Reference:	WELL @ 7677.00usft
Site:	Sec.3-T11N-R88W	North Reference:	True
Well:	Focus Ranch Unit Federal 3-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #3-Slant		
Design:	Design #6 (30°)		

Project	Roult Co., CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec.3-T11N-R88W			
Site Position:		Northing:	1,591,634.593 usft	Latitude:	40° 56' 39.336 N
From:	Lat/Long	Easting:	2,515,711.750 usft	Longitude:	107° 15' 10.944 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.13 °

Well	Focus Ranch Unit Federal 3-1					
Well Position	+N/-S	0.00 usft	Northing:	1,591,634.589 usft	Latitude:	40° 56' 39.336 N
	+E/-W	0.00 usft	Easting:	2,515,711.750 usft	Longitude:	107° 15' 10.944 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	7,662.00 usft

Wellbore	Wellbore #3-Slant				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/23/13	9.88	66.99	52,872

Design	Design #6 (30°)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	225.00

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	30.00	225.00	4,945.92	-217.12	-217.12	2.50	2.50	0.00	225.00	
9,623.52	30.00	225.00	8,950.00	-1,851.78	-1,851.78	0.00	0.00	0.00	0.00	



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Focus Ranch Unit Federal 3-1
Company:	Entek GRB, Inc.	TVD Reference:	WELL @ 7677.00usft
Project:	Routt Co., CO	MD Reference:	WELL @ 7677.00usft
Site:	Sec.3-T11N-R88W	North Reference:	True
Well:	Focus Ranch Unit Federal 3-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #3-Slant		
Design:	Design #6 (30°)		

Planned 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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8" Csg.									
644.00	0.00	0.00	644.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8" Csg.									
3,752.00	0.00	0.00	3,752.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.50°									
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	2.50	225.00	3,899.97	-1.54	-1.54	2.18	2.50	2.50	0.00
4,000.00	5.00	225.00	3,999.75	-6.17	-6.17	8.72	2.50	2.50	0.00
4,100.00	7.50	225.00	4,099.14	-13.86	-13.86	19.61	2.50	2.50	0.00
4,200.00	10.00	225.00	4,197.97	-24.62	-24.62	34.82	2.50	2.50	0.00
4,300.00	12.50	225.00	4,296.04	-38.41	-38.41	54.33	2.50	2.50	0.00
4,400.00	15.00	225.00	4,393.17	-55.22	-55.22	78.09	2.50	2.50	0.00
4,500.00	17.50	225.00	4,489.17	-75.00	-75.00	106.07	2.50	2.50	0.00
4,600.00	20.00	225.00	4,583.85	-97.73	-97.73	138.21	2.50	2.50	0.00
4,700.00	22.50	225.00	4,677.05	-123.36	-123.36	174.46	2.50	2.50	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Focus Ranch Unit Federal 3-1
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Project:	Routt Co., CO	MD Reference:	WELL @ 7677.00usft
Site:	Sec.3-T11N-R88W	North Reference:	True
Well:	Focus Ranch Unit Federal 3-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #3-Slant		
Design:	Design #6 (30°)		

Planned 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)	
4,800.00	25.00	225.00	4,768.57	-151.83	-151.83	214.73	2.50	2.50	0.00	
4,900.00	27.50	225.00	4,858.25	-183.11	-183.11	258.95	2.50	2.50	0.00	
Start 4623.52' hold at 5000.00 MD										
5,000.00	30.00	225.00	4,945.92	-217.12	-217.12	307.05	2.50	2.50	0.00	
5,100.00	30.00	225.00	5,032.52	-252.47	-252.47	357.05	0.00	0.00	0.00	
5,200.00	30.00	225.00	5,119.12	-287.83	-287.83	407.05	0.00	0.00	0.00	
5,300.00	30.00	225.00	5,205.72	-323.18	-323.18	457.05	0.00	0.00	0.00	
5,400.00	30.00	225.00	5,292.33	-358.54	-358.54	507.05	0.00	0.00	0.00	
5,500.00	30.00	225.00	5,378.93	-393.89	-393.89	557.05	0.00	0.00	0.00	
5,600.00	30.00	225.00	5,465.53	-429.25	-429.25	607.05	0.00	0.00	0.00	
5,700.00	30.00	225.00	5,552.13	-464.60	-464.60	657.05	0.00	0.00	0.00	
5,800.00	30.00	225.00	5,638.74	-499.96	-499.96	707.05	0.00	0.00	0.00	
5,900.00	30.00	225.00	5,725.34	-535.31	-535.31	757.05	0.00	0.00	0.00	
6,000.00	30.00	225.00	5,811.94	-570.67	-570.67	807.05	0.00	0.00	0.00	
6,100.00	30.00	225.00	5,898.54	-606.02	-606.02	857.05	0.00	0.00	0.00	
6,200.00	30.00	225.00	5,985.15	-641.38	-641.38	907.05	0.00	0.00	0.00	
6,300.00	30.00	225.00	6,071.75	-676.73	-676.73	957.05	0.00	0.00	0.00	
6,400.00	30.00	225.00	6,158.35	-712.09	-712.09	1,007.05	0.00	0.00	0.00	
6,500.00	30.00	225.00	6,244.95	-747.45	-747.45	1,057.05	0.00	0.00	0.00	
6,600.00	30.00	225.00	6,331.56	-782.80	-782.80	1,107.05	0.00	0.00	0.00	
6,700.00	30.00	225.00	6,418.16	-818.16	-818.16	1,157.05	0.00	0.00	0.00	
6,800.00	30.00	225.00	6,504.76	-853.51	-853.51	1,207.05	0.00	0.00	0.00	
6,900.00	30.00	225.00	6,591.36	-888.87	-888.87	1,257.05	0.00	0.00	0.00	
7,000.00	30.00	225.00	6,677.97	-924.22	-924.22	1,307.05	0.00	0.00	0.00	
7,100.00	30.00	225.00	6,764.57	-959.58	-959.58	1,357.05	0.00	0.00	0.00	
7,200.00	30.00	225.00	6,851.17	-994.93	-994.93	1,407.05	0.00	0.00	0.00	
7,300.00	30.00	225.00	6,937.77	-1,030.29	-1,030.29	1,457.05	0.00	0.00	0.00	
7,400.00	30.00	225.00	7,024.38	-1,065.64	-1,065.64	1,507.05	0.00	0.00	0.00	
7,500.00	30.00	225.00	7,110.98	-1,101.00	-1,101.00	1,557.05	0.00	0.00	0.00	
7,600.00	30.00	225.00	7,197.58	-1,136.35	-1,136.35	1,607.05	0.00	0.00	0.00	
7,700.00	30.00	225.00	7,284.18	-1,171.71	-1,171.71	1,657.05	0.00	0.00	0.00	
7,800.00	30.00	225.00	7,370.79	-1,207.06	-1,207.06	1,707.05	0.00	0.00	0.00	
7,900.00	30.00	225.00	7,457.39	-1,242.42	-1,242.42	1,757.05	0.00	0.00	0.00	
8,000.00	30.00	225.00	7,543.99	-1,277.78	-1,277.78	1,807.05	0.00	0.00	0.00	
8,100.00	30.00	225.00	7,630.59	-1,313.13	-1,313.13	1,857.05	0.00	0.00	0.00	
8,200.00	30.00	225.00	7,717.20	-1,348.49	-1,348.49	1,907.05	0.00	0.00	0.00	
8,300.00	30.00	225.00	7,803.80	-1,383.84	-1,383.84	1,957.05	0.00	0.00	0.00	
8,400.00	30.00	225.00	7,890.40	-1,419.20	-1,419.20	2,007.05	0.00	0.00	0.00	
8,500.00	30.00	225.00	7,977.00	-1,454.55	-1,454.55	2,057.05	0.00	0.00	0.00	
8,600.00	30.00	225.00	8,063.61	-1,489.91	-1,489.91	2,107.05	0.00	0.00	0.00	
8,700.00	30.00	225.00	8,150.21	-1,525.26	-1,525.26	2,157.05	0.00	0.00	0.00	
8,800.00	30.00	225.00	8,236.81	-1,560.62	-1,560.62	2,207.05	0.00	0.00	0.00	
8,900.00	30.00	225.00	8,323.41	-1,595.97	-1,595.97	2,257.05	0.00	0.00	0.00	
9,000.00	30.00	225.00	8,410.02	-1,631.33	-1,631.33	2,307.05	0.00	0.00	0.00	
9,100.00	30.00	225.00	8,496.62	-1,666.68	-1,666.68	2,357.05	0.00	0.00	0.00	
9,200.00	30.00	225.00	8,583.22	-1,702.04	-1,702.04	2,407.05	0.00	0.00	0.00	
9,300.00	30.00	225.00	8,669.82	-1,737.39	-1,737.39	2,457.05	0.00	0.00	0.00	
9,400.00	30.00	225.00	8,756.43	-1,772.75	-1,772.75	2,507.05	0.00	0.00	0.00	
9,500.00	30.00	225.00	8,843.03	-1,808.11	-1,808.11	2,557.05	0.00	0.00	0.00	
9,600.00	30.00	225.00	8,929.63	-1,843.46	-1,843.46	2,607.05	0.00	0.00	0.00	
TD at 9623.52										
9,623.52	30.00	225.00	8,950.00	-1,851.78	-1,851.78	2,618.81	0.00	0.00	0.00	



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Focus Ranch Unit Federal 3-1
Company:	Entek GRB, Inc.	TVD Reference:	WELL @ 7677.00usft
Project:	Roult Co., CO	MD Reference:	WELL @ 7677.00usft
Site:	Sec.3-T11N-R88W	North Reference:	True
Well:	Focus Ranch Unit Federal 3-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #3-Slant		
Design:	Design #6 (30°)		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
3,752.00	3,752.00	9 5/8" Csg.	9-5/8	12-1/4	
644.00	644.00	13 3/8" Csg.	13-3/8	17-1/2	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
3,800.00	3,800.00	0.00	0.00	Start Build 2.50°	
5,000.00	4,945.92	-217.12	-217.12	Start 4623.52' hold at 5000.00 MD	
9,623.52	8,950.00	-1,851.78	-1,851.78	TD at 9623.52	