

Catamount Energy Partners

**San Juan Basin
La Plata County CO
Campbell 33-7-4 #2H**

Pilot Hole

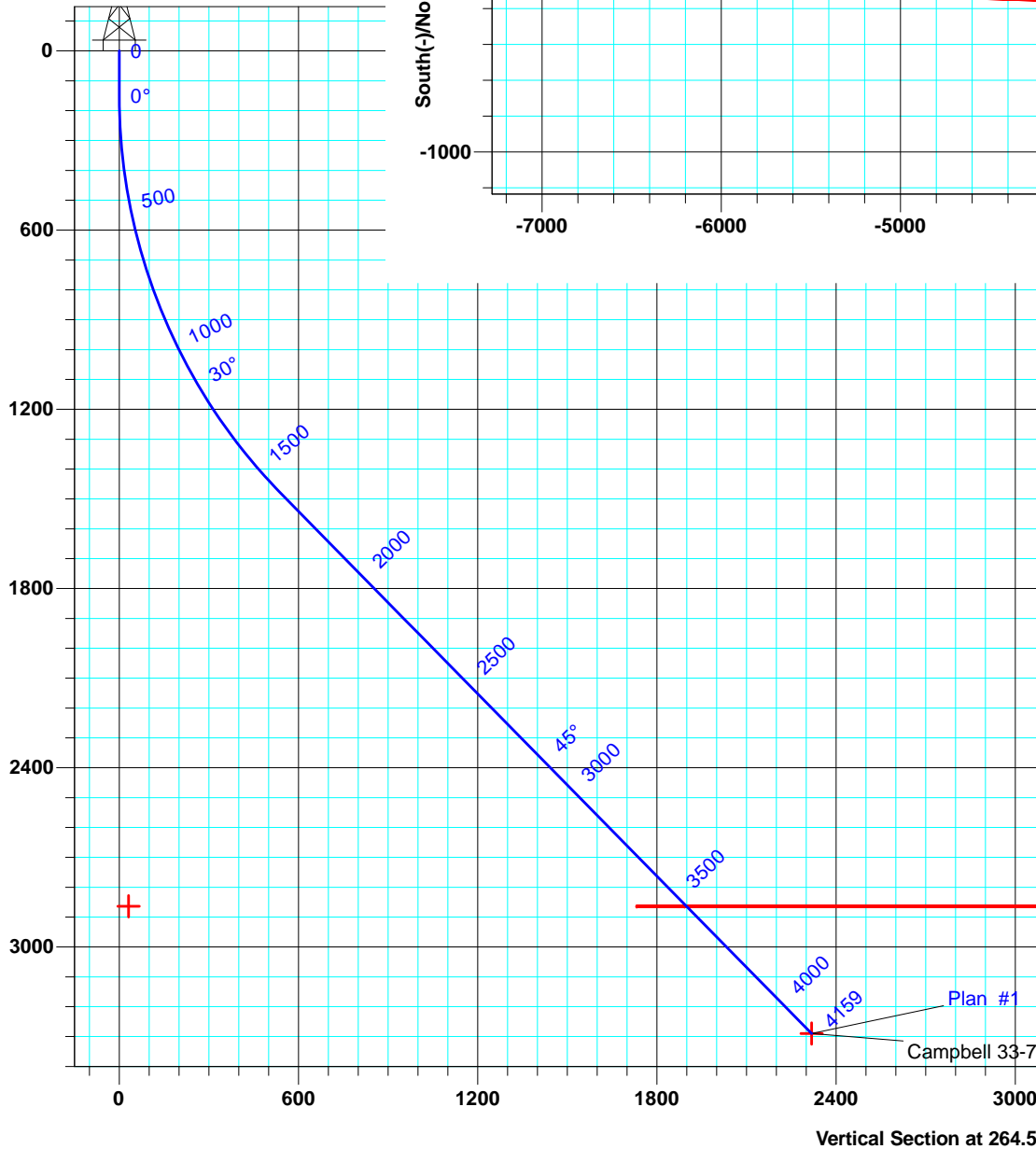
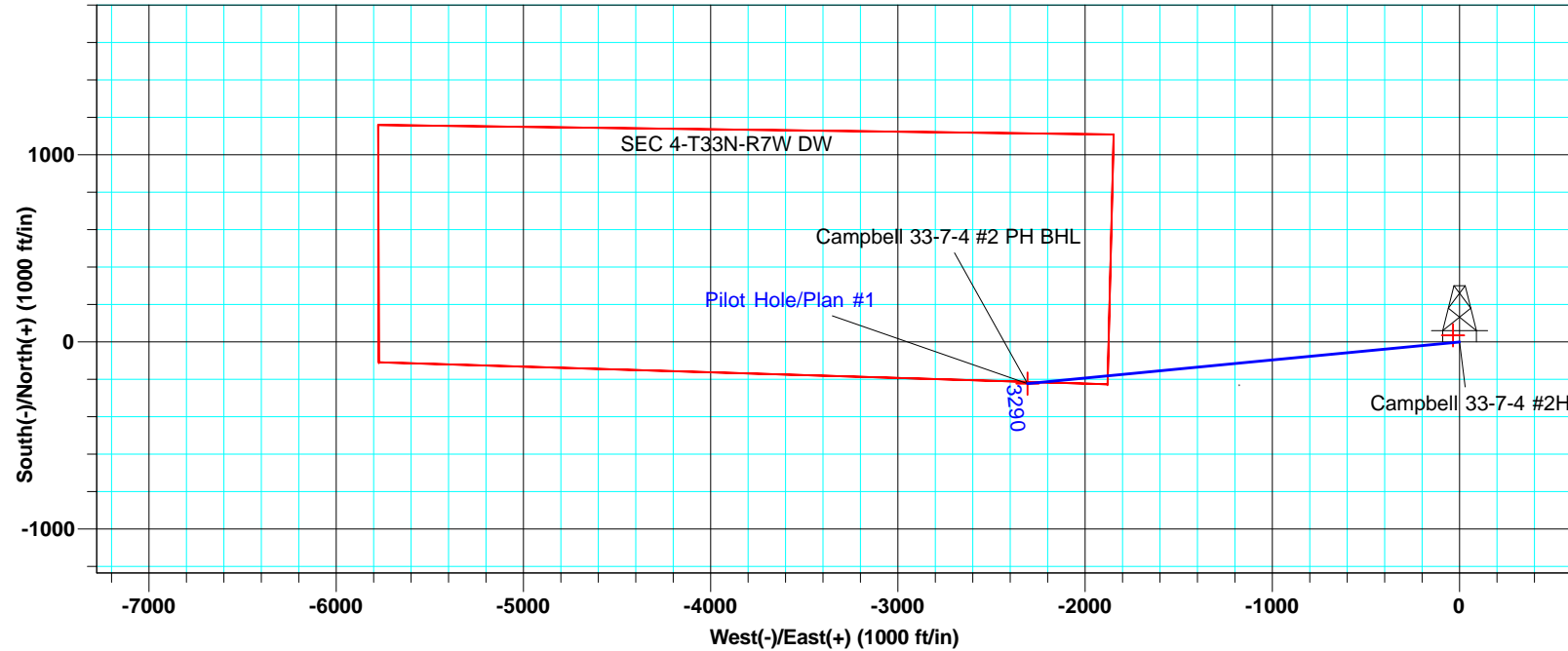
Plan: Plan #1

Standard Planning Report

30 October, 2013



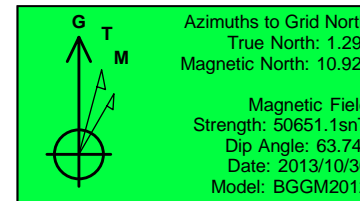
Project: San Juan Basin
 Site: La Plata County CO
 Well: Campbell 33-7-4 #2H
 Wellbore: Pilot Hole
 Design: Plan #1



WELL DETAILS					
Campbell 33-7-4 #2H					
Ground Level 6689.0					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1174967.71	2387533.00	37° 7' 41.770 N	107° 36' 3.328 W

SITE DETAILS: La Plata County CO	
Site Centre Northing:	760788.19
Easting:	2556100.64
Positional Uncertainty:	0.0
Convergence:	-0.92
Local North:	Grid

PROJECT DETAILS: San Juan Basin	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	Colorado Southern Zone
System Datum:	Mean Sea Level



ALL AZIMUTHS MUST BE CORRECTED TO GRID NORTH
 To convert a Magnetic Direction to a Grid Direction, Add 10.92°
 To convert a True Direction to a Grid Direction, Add 1.29°

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Campbell 33-7-4 #2H
Company:	Catamount Energy Partners	TVD Reference:	KB @ 6701.0ft (Original Well Elev)
Project:	San Juan Basin	MD Reference:	KB @ 6701.0ft (Original Well Elev)
Site:	La Plata County CO	North Reference:	Grid
Well:	Campbell 33-7-4 #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Plan #1		

Project	San Juan Basin, Southern Colorado, Fruitland Coal HZ		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Southern Zone		Using geodetic scale factor

Site	La Plata County CO		
Site Position:		Northing:	760,788.19 usft
From:	Lat/Long	Easting:	2,556,100.64 usft
Position Uncertainty:	0.0 ft	Slot Radius:	6-1/8 "
		Latitude:	36° 0' 0.000 N
		Longitude:	107° 0' 0.000 W
		Grid Convergence:	-0.92 °

Well	Campbell 33-7-4 #2H, Fruitland Coal Horizontal		
Well Position	+N/-S	413,993.4 ft	Northing: 1,174,967.71 usft
	+E/-W	-168,491.9 ft	Easting: 2,387,533.00 usft
Position Uncertainty		1.0 ft	Wellhead Elevation:
			Ground Level: 6,689.0 ft

Wellbore	Pilot Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2013/10/30	9.63	63.74	50,651

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	264.50

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,633.3	44.50	264.50	1,488.6	-52.5	-545.1	3.00	3.00	0.00	264.50	
3,567.2	44.50	264.50	2,868.0	-182.4	-1,894.4	0.00	0.00	0.00	0.00	
4,158.9	44.50	264.50	3,290.0	-222.2	-2,307.2	0.00	0.00	0.00	0.00	Campbell 33-7-4 #2

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Campbell 33-7-4 #2H
Company:	Catamount Energy Partners	TVD Reference:	KB @ 6701.0ft (Original Well Elev)
Project:	San Juan Basin	MD Reference:	KB @ 6701.0ft (Original Well Elev)
Site:	La Plata County CO	North Reference:	Grid
Well:	Campbell 33-7-4 #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	1.50	264.50	200.0	-0.1	-0.7	0.7	3.00	3.00	0.00
300.0	4.50	264.50	299.8	-0.6	-5.9	5.9	3.00	3.00	0.00
400.0	7.50	264.50	399.3	-1.6	-16.3	16.3	3.00	3.00	0.00
500.0	10.50	264.50	498.0	-3.1	-31.8	32.0	3.00	3.00	0.00
600.0	13.50	264.50	595.8	-5.1	-52.5	52.8	3.00	3.00	0.00
700.0	16.50	264.50	692.4	-7.5	-78.3	78.6	3.00	3.00	0.00
800.0	19.50	264.50	787.5	-10.5	-109.0	109.5	3.00	3.00	0.00
900.0	22.50	264.50	880.9	-13.9	-144.7	145.4	3.00	3.00	0.00
1,000.0	25.50	264.50	972.2	-17.8	-185.2	186.0	3.00	3.00	0.00
1,100.0	28.50	264.50	1,061.3	-22.2	-230.4	231.4	3.00	3.00	0.00
1,200.0	31.50	264.50	1,147.9	-27.0	-280.1	281.4	3.00	3.00	0.00
1,300.0	34.50	264.50	1,231.8	-32.2	-334.3	335.9	3.00	3.00	0.00
1,400.0	37.50	264.50	1,312.6	-37.8	-392.8	394.7	3.00	3.00	0.00
1,500.0	40.50	264.50	1,390.4	-43.9	-455.5	457.6	3.00	3.00	0.00
1,600.0	43.50	264.50	1,464.7	-50.3	-522.1	524.5	3.00	3.00	0.00
1,633.3	44.50	264.50	1,488.6	-52.5	-545.1	547.7	3.00	3.00	0.00
1,700.0	44.50	264.50	1,536.2	-57.0	-591.6	594.4	0.00	0.00	0.00
1,800.0	44.50	264.50	1,607.5	-63.7	-661.4	664.5	0.00	0.00	0.00
1,835.7	44.50	264.50	1,633.0	-66.1	-686.3	689.5	0.00	0.00	0.00
Animas									
1,900.0	44.50	264.50	1,678.8	-70.4	-731.2	734.6	0.00	0.00	0.00
2,000.0	44.50	264.50	1,750.2	-77.1	-800.9	804.7	0.00	0.00	0.00
2,100.0	44.50	264.50	1,821.5	-83.8	-870.7	874.7	0.00	0.00	0.00
2,200.0	44.50	264.50	1,892.8	-90.6	-940.5	944.8	0.00	0.00	0.00
2,252.1	44.50	264.50	1,930.0	-94.1	-976.8	981.3	0.00	0.00	0.00
SEC 4-T33N-R7W DW									
2,300.0	44.50	264.50	1,964.1	-97.3	-1,010.3	1,014.9	0.00	0.00	0.00
2,347.5	44.50	264.50	1,998.0	-100.5	-1,043.4	1,048.2	0.00	0.00	0.00
Kirtland Shale									
2,400.0	44.50	264.50	2,035.5	-104.0	-1,080.0	1,085.0	0.00	0.00	0.00
2,500.0	44.50	264.50	2,106.8	-110.7	-1,149.8	1,155.1	0.00	0.00	0.00
2,600.0	44.50	264.50	2,178.1	-117.4	-1,219.6	1,225.2	0.00	0.00	0.00
2,700.0	44.50	264.50	2,249.4	-124.1	-1,289.3	1,295.3	0.00	0.00	0.00
2,733.0	44.50	264.50	2,273.0	-126.4	-1,312.4	1,318.4	0.00	0.00	0.00
Farmington SS									
2,800.0	44.50	264.50	2,320.8	-130.9	-1,359.1	1,365.4	0.00	0.00	0.00
2,900.0	44.50	264.50	2,392.1	-137.6	-1,428.9	1,435.5	0.00	0.00	0.00
3,000.0	44.50	264.50	2,463.4	-144.3	-1,498.6	1,505.6	0.00	0.00	0.00
3,100.0	44.50	264.50	2,534.7	-151.0	-1,568.4	1,575.7	0.00	0.00	0.00
3,181.7	44.50	264.50	2,593.0	-156.5	-1,625.4	1,632.9	0.00	0.00	0.00
Lower KS									
3,200.0	44.50	264.50	2,606.1	-157.7	-1,638.2	1,645.7	0.00	0.00	0.00
3,300.0	44.50	264.50	2,677.4	-164.5	-1,707.9	1,715.8	0.00	0.00	0.00
3,400.0	44.50	264.50	2,748.7	-171.2	-1,777.7	1,785.9	0.00	0.00	0.00
3,500.0	44.50	264.50	2,820.0	-177.9	-1,847.5	1,856.0	0.00	0.00	0.00
3,567.2	44.50	264.50	2,868.0	-182.4	-1,894.4	1,903.1	0.00	0.00	0.00
Upper FC									
3,600.0	44.50	264.50	2,891.4	-184.6	-1,917.2	1,926.1	0.00	0.00	0.00
3,700.0	44.50	264.50	2,962.7	-191.3	-1,987.0	1,996.2	0.00	0.00	0.00
3,728.5	44.50	264.50	2,983.0	-193.2	-2,006.9	2,016.2	0.00	0.00	0.00

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Campbell 33-7-4 #2H
Company:	Catamount Energy Partners	TVD Reference:	KB @ 6701.0ft (Original Well Elev)
Project:	San Juan Basin	MD Reference:	KB @ 6701.0ft (Original Well Elev)
Site:	La Plata County CO	North Reference:	Grid
Well:	Campbell 33-7-4 #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
Main FC										
3,755.1	44.50	264.50	3,002.0	-195.0	-2,025.5	2,034.8	0.00	0.00	0.00	
Inter Tongue SS										
3,800.0	44.50	264.50	3,034.0	-198.0	-2,056.8	2,066.3	0.00	0.00	0.00	
3,900.0	44.50	264.50	3,105.3	-204.8	-2,126.5	2,136.4	0.00	0.00	0.00	
4,000.0	44.50	264.50	3,176.7	-211.5	-2,196.3	2,206.5	0.00	0.00	0.00	
4,008.9	44.50	264.50	3,183.0	-212.1	-2,202.5	2,212.7	0.00	0.00	0.00	
Inter Tongue Coal										
4,017.3	44.50	264.50	3,189.0	-212.6	-2,208.4	2,218.6	0.00	0.00	0.00	
Pictured Cliffs										
4,100.0	44.50	264.50	3,248.0	-218.2	-2,266.1	2,276.6	0.00	0.00	0.00	
4,158.9	44.50	264.50	3,290.0	-222.2	-2,307.2	2,317.8	0.00	0.00	0.00	
Campbell 33-7-4 #2 PH BHL										

Design Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- Shape										
SEC 4-T33N-R7W DV	0.00	360.00	2,864.0	35.5	-34.4	1,175,003.26	2,387,498.59	37° 7' 42.114 N	107° 36' 3.762 W	
- plan misses target center by 1333.2ft at 2252.1ft MD (1930.0 TVD, -94.1 N, -976.8 E)										
- Polygon										
Point 1			2,864.0	1,123.7	-5,740.9	1,176,126.98	2,381,757.59			
Point 2			2,864.0	1,073.2	-1,812.7	1,176,076.48	2,385,685.86			
Point 3			2,864.0	-262.2	-1,845.0	1,174,741.05	2,385,653.56			
Point 4			2,864.0	-144.1	-5,738.1	1,174,859.15	2,381,760.39			
Campbell 33-7-4 #2 P	0.00	0.00	3,290.0	-222.2	-2,307.2	1,174,745.50	2,385,225.76	37° 7' 39.060 N	107° 36' 31.748 W	
- plan misses target center by 0.1ft at 4158.9ft MD (3290.0 TVD, -222.2 N, -2307.2 E)										
- Point										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,835.7	1,633.0	Animas		0.00		
2,347.5	1,998.0	Kirtland Shale		0.00		
2,733.0	2,273.0	Farmington SS		0.00		
3,181.7	2,593.0	Lower KS		0.00		
3,567.2	2,868.0	Upper FC		0.00		
3,728.5	2,983.0	Main FC		0.00		
3,755.1	3,002.0	Inter Tongue SS		0.00		
4,008.9	3,183.0	Inter Tongue Coal		0.00		
4,017.3	3,189.0	Pictured Cliffs		0.00		