

Catamount Energy Partners

**San Juan Basin
La Plata County CO
Campbell 33-7-4 #1H**

Pilot Hole

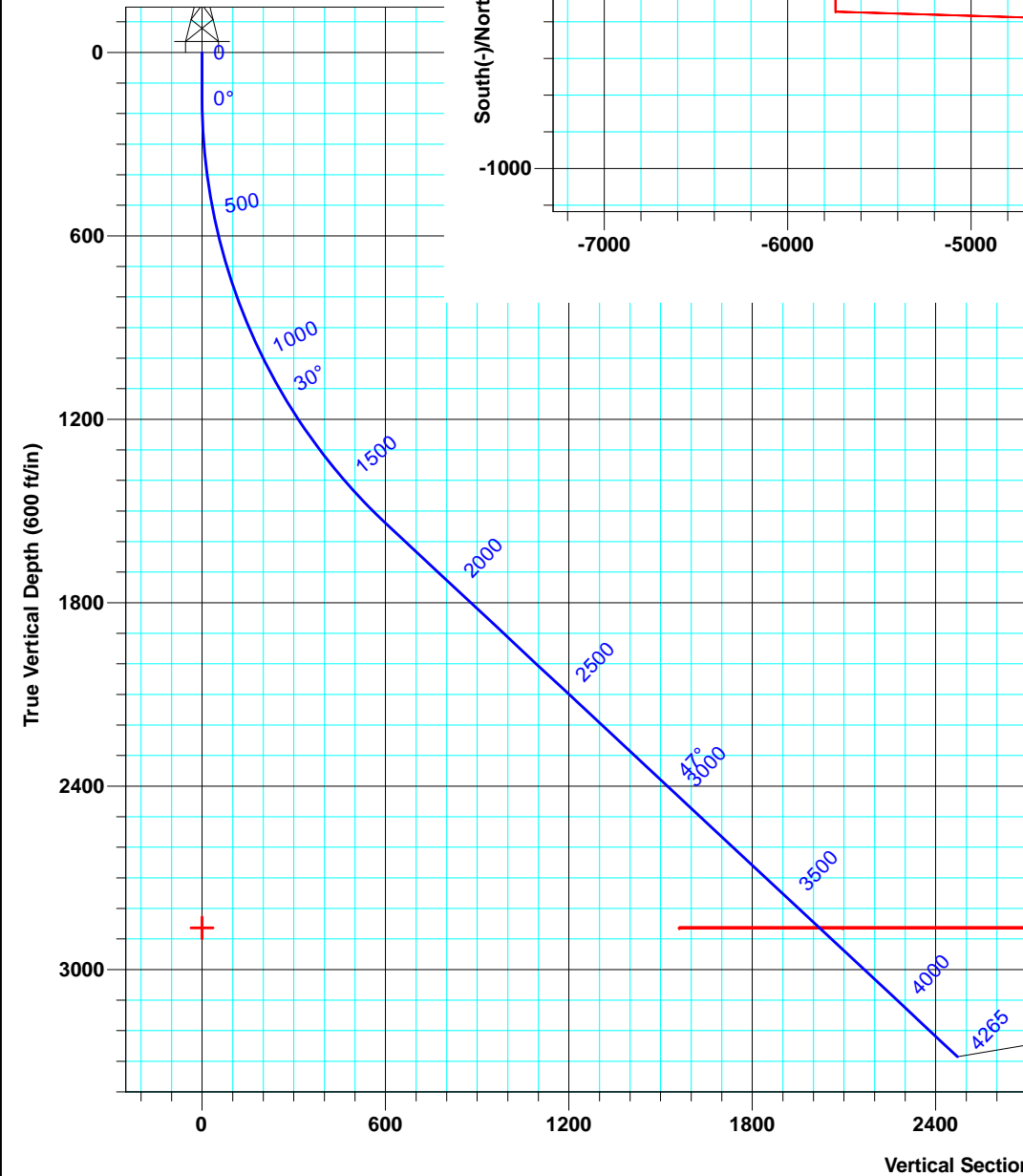
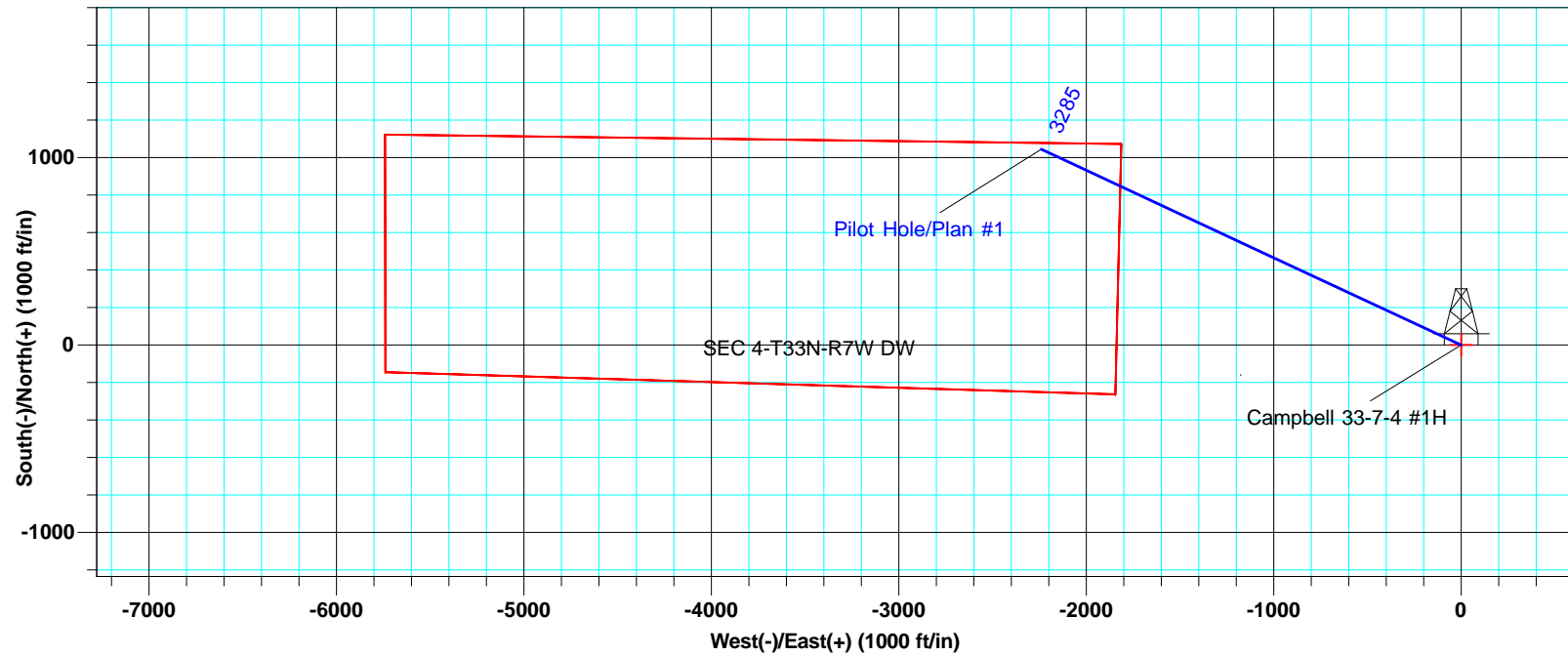
Plan: Plan #1

Standard Planning Report

30 October, 2013



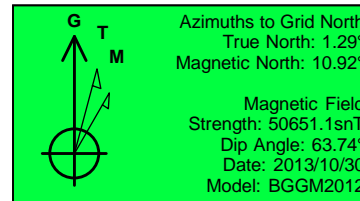
Project: San Juan Basin
 Site: La Plata County CO
 Well: Campbell 33-7-4 #1H
 Wellbore: Pilot Hole
 Design: Plan #1



WELL DETAILS						Campbell 33-7-4 #1H
			Ground Level	6689.0		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1175003.26	2387498.59	37° 7' 42.114 N	107° 36' 3.762 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 #1H
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 #1H	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 #1H, Fruitland Coal HZ		
Well Position	+N/-S	414,028.9 ft	Northing:
	+E/-W	-168,526.3 ft	Easting:
Position Uncertainty		1.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

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	295.00

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	
1,716.7	47.00	295.00	1,546.8	256.7	-550.4	3.00	3.00	0.00	295.00	
3,648.1	47.00	295.00	2,864.0	853.6	-1,830.6	0.00	0.00	0.00	0.00	
4,265.4	47.00	295.00	3,285.0	1,044.4	-2,239.8	0.00	0.00	0.00	0.00	

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Site:	La Plata County CO	North Reference:	Grid
Well:	Campbell 33-7-4 #1H	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	295.00	200.0	0.3	-0.6	0.7	3.00	3.00	0.00
300.0	4.50	295.00	299.8	2.5	-5.3	5.9	3.00	3.00	0.00
400.0	7.50	295.00	399.3	6.9	-14.8	16.3	3.00	3.00	0.00
500.0	10.50	295.00	498.0	13.5	-29.0	32.0	3.00	3.00	0.00
600.0	13.50	295.00	595.8	22.3	-47.8	52.8	3.00	3.00	0.00
700.0	16.50	295.00	692.4	33.2	-71.3	78.6	3.00	3.00	0.00
800.0	19.50	295.00	787.5	46.3	-99.3	109.5	3.00	3.00	0.00
900.0	22.50	295.00	880.9	61.4	-131.8	145.4	3.00	3.00	0.00
1,000.0	25.50	295.00	972.2	78.6	-168.6	186.0	3.00	3.00	0.00
1,100.0	28.50	295.00	1,061.3	97.8	-209.8	231.4	3.00	3.00	0.00
1,200.0	31.50	295.00	1,147.9	118.9	-255.1	281.4	3.00	3.00	0.00
1,300.0	34.50	295.00	1,231.8	142.0	-304.4	335.9	3.00	3.00	0.00
1,400.0	37.50	295.00	1,312.6	166.8	-357.7	394.7	3.00	3.00	0.00
1,500.0	40.50	295.00	1,390.4	193.4	-414.7	457.6	3.00	3.00	0.00
1,600.0	43.50	295.00	1,464.7	221.7	-475.4	524.5	3.00	3.00	0.00
1,700.0	46.50	295.00	1,535.4	251.5	-539.4	595.2	3.00	3.00	0.00
1,716.7	47.00	295.00	1,546.8	256.7	-550.4	607.3	3.00	3.00	0.00
1,800.0	47.00	295.00	1,603.6	282.4	-605.7	668.3	0.00	0.00	0.00
1,837.2	47.00	295.00	1,629.0	293.9	-630.3	695.5	0.00	0.00	0.00
Animas									
1,900.0	47.00	295.00	1,671.8	313.3	-672.0	741.4	0.00	0.00	0.00
2,000.0	47.00	295.00	1,740.0	344.2	-738.2	814.6	0.00	0.00	0.00
2,100.0	47.00	295.00	1,808.2	375.2	-804.5	887.7	0.00	0.00	0.00
2,170.8	47.00	295.00	1,856.5	397.0	-851.5	939.5	0.00	0.00	0.00
SEC 4-T33N-R7W DW									
2,200.0	47.00	295.00	1,876.4	406.1	-870.8	960.8	0.00	0.00	0.00
2,300.0	47.00	295.00	1,944.6	437.0	-937.1	1,034.0	0.00	0.00	0.00
2,372.4	47.00	295.00	1,994.0	459.4	-985.1	1,086.9	0.00	0.00	0.00
Kirtland Shale									
2,400.0	47.00	295.00	2,012.8	467.9	-1,003.4	1,107.1	0.00	0.00	0.00
2,500.0	47.00	295.00	2,081.0	498.8	-1,069.7	1,180.2	0.00	0.00	0.00
2,600.0	47.00	295.00	2,149.2	529.7	-1,135.9	1,253.4	0.00	0.00	0.00
2,700.0	47.00	295.00	2,217.4	560.6	-1,202.2	1,326.5	0.00	0.00	0.00
2,775.6	47.00	295.00	2,269.0	584.0	-1,252.4	1,381.8	0.00	0.00	0.00
Farmington SS									
2,800.0	47.00	295.00	2,285.6	591.5	-1,268.5	1,399.6	0.00	0.00	0.00
2,900.0	47.00	295.00	2,353.8	622.4	-1,334.8	1,472.8	0.00	0.00	0.00
3,000.0	47.00	295.00	2,422.0	653.3	-1,401.1	1,545.9	0.00	0.00	0.00
3,100.0	47.00	295.00	2,490.2	684.2	-1,467.4	1,619.0	0.00	0.00	0.00
3,200.0	47.00	295.00	2,558.4	715.1	-1,533.6	1,692.2	0.00	0.00	0.00
3,244.8	47.00	295.00	2,589.0	729.0	-1,563.4	1,725.0	0.00	0.00	0.00
Lower KS									
3,300.0	47.00	295.00	2,626.6	746.1	-1,599.9	1,765.3	0.00	0.00	0.00
3,400.0	47.00	295.00	2,694.8	777.0	-1,666.2	1,838.4	0.00	0.00	0.00
3,500.0	47.00	295.00	2,763.0	807.9	-1,732.5	1,911.6	0.00	0.00	0.00
3,600.0	47.00	295.00	2,831.2	838.8	-1,798.8	1,984.7	0.00	0.00	0.00
3,648.1	47.00	295.00	2,864.0	853.6	-1,830.6	2,019.9	0.00	0.00	0.00
Upper Fruitland									
3,700.0	47.00	295.00	2,899.4	869.7	-1,865.1	2,057.9	0.00	0.00	0.00
3,800.0	47.00	295.00	2,967.6	900.6	-1,931.3	2,131.0	0.00	0.00	0.00

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Site:	La Plata County CO	North Reference:	Grid
Well:	Campbell 33-7-4 #1H	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)
3,816.7	47.00	295.00	2,979.0	905.8	-1,942.4	2,143.2	0.00	0.00	0.00
Main Fruitland									
3,844.6	47.00	295.00	2,998.0	914.4	-1,960.9	2,163.6	0.00	0.00	0.00
Inter Tongue SS									
3,900.0	47.00	295.00	3,035.8	931.5	-1,997.6	2,204.1	0.00	0.00	0.00
4,000.0	47.00	295.00	3,104.0	962.4	-2,063.9	2,277.3	0.00	0.00	0.00
4,100.0	47.00	295.00	3,172.2	993.3	-2,130.2	2,350.4	0.00	0.00	0.00
4,110.0	47.00	295.00	3,179.0	996.4	-2,136.8	2,357.7	0.00	0.00	0.00
Inter Tongue Coal									
4,118.7	47.00	295.00	3,185.0	999.1	-2,142.6	2,364.1	0.00	0.00	0.00
Pictured Cliffs									
4,200.0	47.00	295.00	3,240.4	1,024.2	-2,196.5	2,423.5	0.00	0.00	0.00
4,265.4	47.00	295.00	3,285.0	1,044.4	-2,239.8	2,471.3	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SEC 4-T33N-R7W DV	0.00	360.00	2,864.0	0.0	0.0	1,175,003.26	2,387,498.59	37° 7' 42.114 N	107° 36' 3.762 W
- plan misses target center by 1377.6ft at 2170.8ft MD (1856.5 TVD, 397.0 N, -851.5 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		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,837.2	1,629.0	Animas		0.00		
2,372.4	1,994.0	Kirtland Shale		0.00		
2,775.6	2,269.0	Farmington SS		0.00		
3,244.8	2,589.0	Lower KS		0.00		
3,648.1	2,864.0	Upper Fruitland		0.00		
3,816.7	2,979.0	Main Fruitland		0.00		
3,844.6	2,998.0	Inter Tongue SS		0.00		
4,110.0	3,179.0	Inter Tongue Coal		0.00		
4,118.7	3,185.0	Pictured Cliffs		0.00		