



PROJECT DETAILS: Weld County, CO NAD 83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level
Local North: True

Project: Weld County, CO NAD 83
Site: Anschutz Equus Farms 4-62-20_21 NWNW Pad
Well: Anschutz Equus Farms 4-62-20-1609C2
Wellbore: OH
Design: Plan 1



Azimuths to True North
Magnetic North: 8.29°



Magnetic Field
Strength: 52607.1nT
Dip Angle: 66.96°
Date: 9/23/2015
Model: BGGM2015

Plan: Plan 1 (Anschutz Equus Farms 4-62-20-1609C2/OH)

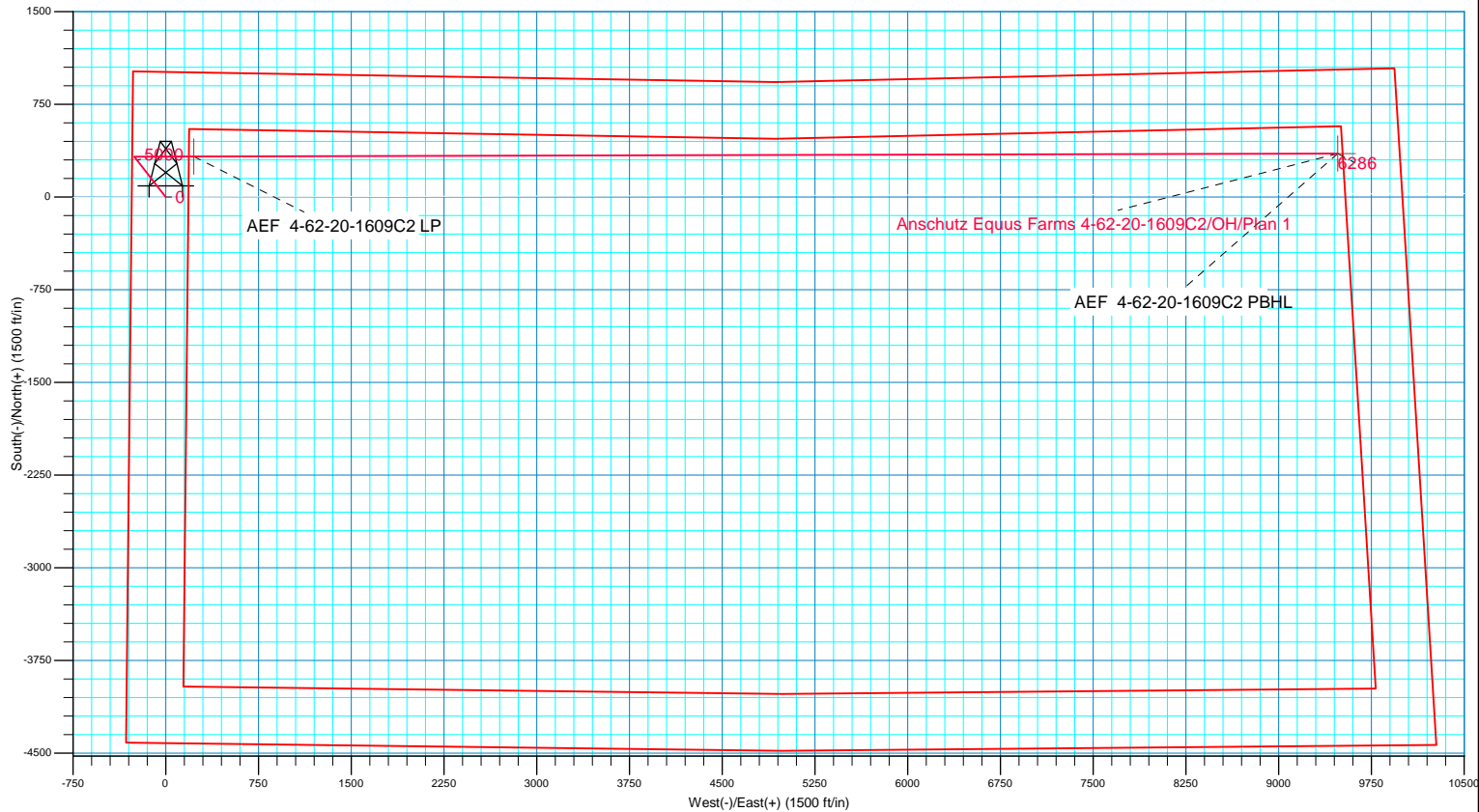
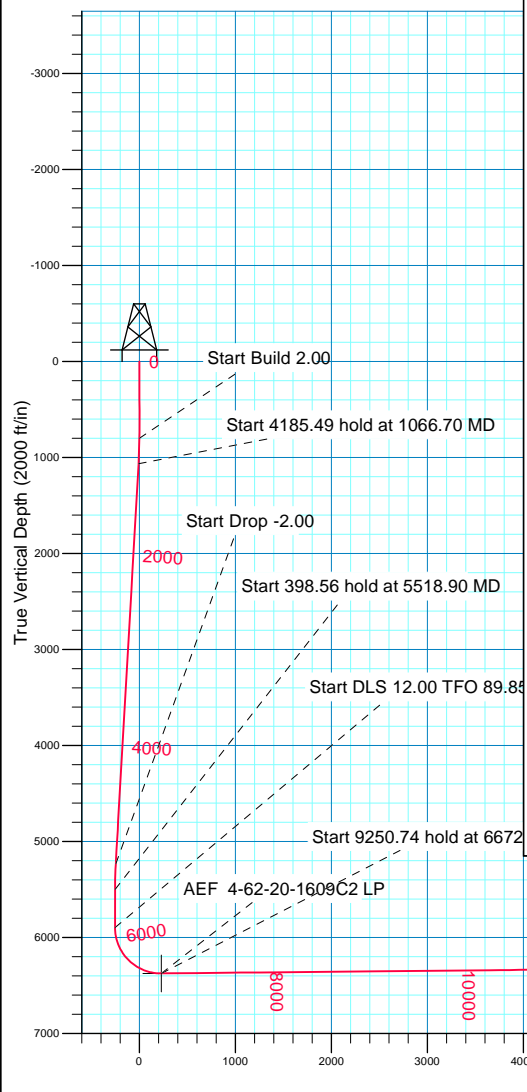
Created By: Seth Burstad Date: 9-23-2015

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	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
1066.70	5.33	322.10	1066.32	9.79	-7.62	2.00	322.10	-7.59
5252.19	5.33	322.10	5233.68	316.83	-246.62	0.00	0.00	-245.79
5518.90	0.00	0.00	5500.00	326.62	-254.24	2.00	180.00	-253.38
5917.46	0.00	0.00	5898.56	326.62	-254.24	0.00	0.00	-253.38
6672.10	90.56	89.85	6376.00	327.87	227.87	12.00	89.85	228.73
15922.84	90.56	89.85	6286.00	351.91	9478.14	0.00	0.00	9479.03

WELL DETAILS: Anschutz Equus Farms 4-62-20-1609C2

+N/-S	+E/-W	Northing	Ground Level: Easting	4603.00 Latitude	Longitude
0.00	0.00	1355021.90	3318972.51	40° 18' 8.240 N	104° 21' 22.810 W





Bill Barrett Corp.

Weld County, CO NAD 83

Anschutz Equus Farms 4-62-20_21 NWNW Pad

Anschutz Equus Farms 4-62-20-1609C2

OH

Plan: Plan 1

Standard Planning Report

23 September, 2015



Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz Equus Farms 4-62-20-1609C2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4603' & KB 16' @ 4619.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4603' & KB 16' @ 4619.00ft
Site:	Anschutz Equus Farms 4-62-20_21 NWNW Pad	North Reference:	True
Well:	Anschutz Equus Farms 4-62-20-1609C2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Anschutz Equus Farms 4-62-20_21 NWNW Pad			
Site Position:		Northing:	1,355,007.69 usft	Latitude:	40° 18' 8.100 N
From:	Lat/Long	Easting:	3,318,971.86 usft	Longitude:	104° 21' 22.820 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Anschutz Equus Farms 4-62-20-1609C2, 1011' FNL 275' FWL Sec 20 T4N R62W					
Well Position	+N/-S	14.19 ft	Northing:	1,355,021.89 usft	Latitude:	40° 18' 8.240 N
	+E/-W	0.84 ft	Easting:	3,318,972.51 usft	Longitude:	104° 21' 22.810 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,603.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	9/23/2015	8.29	66.96	52,607

Design	Plan 1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.85

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
1,066.70	5.33	322.10	1,066.32	9.79	-7.62	2.00	2.00	0.00	322.10	
5,252.19	5.33	322.10	5,233.68	316.83	-246.62	0.00	0.00	0.00	0.00	
5,518.90	0.00	0.00	5,500.00	326.62	-254.24	2.00	-2.00	0.00	180.00	
5,917.46	0.00	0.00	5,898.56	326.62	-254.24	0.00	0.00	0.00	0.00	
6,672.10	90.56	89.85	6,376.00	327.87	227.87	12.00	12.00	11.91	89.85	
15,922.84	90.56	89.85	6,286.00	351.92	9,478.14	0.00	0.00	0.00	0.00	AEF 4-62-20-1609C2

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz Equus Farms 4-62-20-1609C2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4603' & KB 16' @ 4619.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4603' & KB 16' @ 4619.00ft
Site:	Anschutz Equus Farms 4-62-20_21 NWNW Pad	North Reference:	True
Well:	Anschutz Equus Farms 4-62-20-1609C2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
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	
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	
Start Build 2.00										
900.00	2.00	322.10	899.98	1.38	-1.07	-1.07	2.00	2.00	0.00	
1,000.00	4.00	322.10	999.84	5.51	-4.29	-4.27	2.00	2.00	0.00	
1,066.70	5.33	322.10	1,066.32	9.79	-7.62	-7.59	2.00	2.00	0.00	
Start 4185.49 hold at 1066.70 MD										
1,100.00	5.33	322.10	1,099.47	12.23	-9.52	-9.49	0.00	0.00	0.00	
1,200.00	5.33	322.10	1,199.04	19.57	-15.23	-15.18	0.00	0.00	0.00	
1,300.00	5.33	322.10	1,298.60	26.90	-20.94	-20.87	0.00	0.00	0.00	
1,400.00	5.33	322.10	1,398.17	34.24	-26.65	-26.56	0.00	0.00	0.00	
1,500.00	5.33	322.10	1,497.74	41.58	-32.36	-32.25	0.00	0.00	0.00	
1,600.00	5.33	322.10	1,597.31	48.91	-38.07	-37.94	0.00	0.00	0.00	
1,700.00	5.33	322.10	1,696.87	56.25	-43.78	-43.64	0.00	0.00	0.00	
1,800.00	5.33	322.10	1,796.44	63.58	-49.49	-49.33	0.00	0.00	0.00	
1,900.00	5.33	322.10	1,896.01	70.92	-55.20	-55.02	0.00	0.00	0.00	
2,000.00	5.33	322.10	1,995.57	78.25	-60.91	-60.71	0.00	0.00	0.00	
2,100.00	5.33	322.10	2,095.14	85.59	-66.62	-66.40	0.00	0.00	0.00	
2,200.00	5.33	322.10	2,194.71	92.93	-72.33	-72.09	0.00	0.00	0.00	
2,300.00	5.33	322.10	2,294.27	100.26	-78.04	-77.78	0.00	0.00	0.00	
2,400.00	5.33	322.10	2,393.84	107.60	-83.75	-83.47	0.00	0.00	0.00	
2,500.00	5.33	322.10	2,493.41	114.93	-89.46	-89.16	0.00	0.00	0.00	
2,600.00	5.33	322.10	2,592.98	122.27	-95.17	-94.85	0.00	0.00	0.00	
2,700.00	5.33	322.10	2,692.54	129.61	-100.88	-100.54	0.00	0.00	0.00	
2,800.00	5.33	322.10	2,792.11	136.94	-106.59	-106.24	0.00	0.00	0.00	
2,900.00	5.33	322.10	2,891.68	144.28	-112.31	-111.93	0.00	0.00	0.00	
3,000.00	5.33	322.10	2,991.24	151.61	-118.02	-117.62	0.00	0.00	0.00	
3,100.00	5.33	322.10	3,090.81	158.95	-123.73	-123.31	0.00	0.00	0.00	
3,200.00	5.33	322.10	3,190.38	166.28	-129.44	-129.00	0.00	0.00	0.00	
3,300.00	5.33	322.10	3,289.94	173.62	-135.15	-134.69	0.00	0.00	0.00	
3,400.00	5.33	322.10	3,389.51	180.96	-140.86	-140.38	0.00	0.00	0.00	
3,500.00	5.33	322.10	3,489.08	188.29	-146.57	-146.07	0.00	0.00	0.00	
3,600.00	5.33	322.10	3,588.64	195.63	-152.28	-151.76	0.00	0.00	0.00	
3,700.00	5.33	322.10	3,688.21	202.96	-157.99	-157.45	0.00	0.00	0.00	
3,800.00	5.33	322.10	3,787.78	210.30	-163.70	-163.15	0.00	0.00	0.00	
3,900.00	5.33	322.10	3,887.35	217.64	-169.41	-168.84	0.00	0.00	0.00	
4,000.00	5.33	322.10	3,986.91	224.97	-175.12	-174.53	0.00	0.00	0.00	
4,100.00	5.33	322.10	4,086.48	232.31	-180.83	-180.22	0.00	0.00	0.00	
4,200.00	5.33	322.10	4,186.05	239.64	-186.54	-185.91	0.00	0.00	0.00	
4,300.00	5.33	322.10	4,285.61	246.98	-192.25	-191.60	0.00	0.00	0.00	
4,400.00	5.33	322.10	4,385.18	254.32	-197.96	-197.29	0.00	0.00	0.00	
4,500.00	5.33	322.10	4,484.75	261.65	-203.67	-202.98	0.00	0.00	0.00	
4,600.00	5.33	322.10	4,584.31	268.99	-209.38	-208.67	0.00	0.00	0.00	
4,634.84	5.33	322.10	4,619.00	271.54	-211.37	-210.66	0.00	0.00	0.00	
BASE OF FOX HILLS										
4,700.00	5.33	322.10	4,683.88	276.32	-215.09	-214.36	0.00	0.00	0.00	

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Project:	Weld County, CO NAD 83	MD Reference:	GL 4603' & KB 16' @ 4619.00ft
Site:	Anschutz Equus Farms 4-62-20_21 NWNW Pad	North Reference:	True
Well:	Anschutz Equus Farms 4-62-20-1609C2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.00	5.33	322.10	4,783.45	283.66	-220.80	-220.06	0.00	0.00	0.00
4,822.65	5.33	322.10	4,806.00	285.32	-222.09	-221.34	0.00	0.00	0.00
SHANNON									
4,900.00	5.33	322.10	4,883.02	290.99	-226.51	-225.75	0.00	0.00	0.00
5,000.00	5.33	322.10	4,982.58	298.33	-232.22	-231.44	0.00	0.00	0.00
5,100.00	5.33	322.10	5,082.15	305.67	-237.93	-237.13	0.00	0.00	0.00
5,200.00	5.33	322.10	5,181.72	313.00	-243.64	-242.82	0.00	0.00	0.00
5,252.19	5.33	322.10	5,233.68	316.83	-246.62	-245.79	0.00	0.00	0.00
Start Drop -2.00									
5,300.00	4.38	322.10	5,281.32	320.02	-249.11	-248.27	2.00	-2.00	0.00
5,400.00	2.38	322.10	5,381.14	324.67	-252.72	-251.87	2.00	-2.00	0.00
5,500.00	0.38	322.10	5,481.11	326.57	-254.20	-253.35	2.00	-2.00	0.00
5,518.90	0.00	0.00	5,500.00	326.62	-254.24	-253.38	2.00	-2.00	0.00
Start 398.56 hold at 5518.90 MD									
5,600.00	0.00	0.00	5,581.10	326.62	-254.24	-253.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,681.10	326.62	-254.24	-253.38	0.00	0.00	0.00
5,800.00	0.00	0.00	5,781.10	326.62	-254.24	-253.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,881.10	326.62	-254.24	-253.38	0.00	0.00	0.00
5,917.46	0.00	0.00	5,898.56	326.62	-254.24	-253.38	0.00	0.00	0.00
Start DLS 12.00 TFO 89.85									
6,000.00	9.91	89.85	5,980.69	326.64	-247.12	-246.27	12.00	12.00	0.00
6,064.19	17.61	89.85	6,043.00	326.68	-231.87	-231.01	12.00	12.00	0.00
SHARON SPRINGS									
6,100.00	21.91	89.85	6,076.69	326.71	-219.77	-218.91	12.00	12.00	0.00
6,198.92	33.78	89.85	6,164.00	326.83	-173.66	-172.80	12.00	12.00	0.00
NIOBRARA									
6,200.00	33.91	89.85	6,164.90	326.83	-173.05	-172.20	12.00	12.00	0.00
6,254.10	40.40	89.85	6,208.00	326.92	-140.40	-139.54	12.00	12.00	0.00
A CHALK									
6,300.00	45.91	89.85	6,241.47	327.00	-109.02	-108.16	12.00	12.00	0.00
6,339.89	50.69	89.85	6,268.00	327.07	-79.24	-78.39	12.00	12.00	0.00
B CHALK									
6,369.44	54.24	89.85	6,286.00	327.14	-55.82	-54.96	12.00	12.00	0.00
TD (HORIZONTAL)									
6,400.00	57.91	89.85	6,303.05	327.20	-30.46	-29.61	12.00	12.00	0.00
6,500.00	69.91	89.85	6,346.96	327.43	59.18	60.04	12.00	12.00	0.00
6,532.22	73.77	89.85	6,357.00	327.51	89.79	90.64	12.00	12.00	0.00
TOP "C" TARGET									
6,600.00	81.91	89.85	6,371.27	327.69	155.99	156.85	12.00	12.00	0.00
6,662.59	89.42	89.85	6,376.00	327.85	218.35	219.21	12.00	12.00	0.00
LANDING POINT									
6,672.10	90.56	89.85	6,376.00	327.87	227.87	228.73	12.00	12.00	0.00
Start 9250.74 hold at 6672.10 MD									
6,700.00	90.56	89.85	6,375.73	327.95	255.77	256.62	0.00	0.00	0.00
6,800.00	90.56	89.85	6,374.76	328.21	355.76	356.62	0.00	0.00	0.00
6,900.00	90.56	89.85	6,373.79	328.47	455.76	456.61	0.00	0.00	0.00
7,000.00	90.56	89.85	6,372.81	328.73	555.75	556.61	0.00	0.00	0.00
7,100.00	90.56	89.85	6,371.84	328.99	655.75	656.61	0.00	0.00	0.00
7,200.00	90.56	89.85	6,370.87	329.25	755.74	756.60	0.00	0.00	0.00
7,300.00	90.56	89.85	6,369.89	329.51	855.74	856.60	0.00	0.00	0.00
7,400.00	90.56	89.85	6,368.92	329.77	955.73	956.59	0.00	0.00	0.00
7,500.00	90.56	89.85	6,367.95	330.03	1,055.73	1,056.59	0.00	0.00	0.00

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Project:	Weld County, CO NAD 83	MD Reference:	GL 4603' & KB 16' @ 4619.00ft
Site:	Anschutz Equus Farms 4-62-20_21 NWNW Pad	North Reference:	True
Well:	Anschutz Equus Farms 4-62-20-1609C2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
7,600.00	90.56	89.85	6,366.97	330.29	1,155.72	1,156.58	0.00	0.00	0.00	
7,700.00	90.56	89.85	6,366.00	330.55	1,255.72	1,256.58	0.00	0.00	0.00	
7,800.00	90.56	89.85	6,365.03	330.81	1,355.71	1,356.57	0.00	0.00	0.00	
7,900.00	90.56	89.85	6,364.06	331.07	1,455.71	1,456.57	0.00	0.00	0.00	
8,000.00	90.56	89.85	6,363.08	331.33	1,555.70	1,556.56	0.00	0.00	0.00	
8,100.00	90.56	89.85	6,362.11	331.58	1,655.70	1,656.56	0.00	0.00	0.00	
8,200.00	90.56	89.85	6,361.14	331.84	1,755.69	1,756.55	0.00	0.00	0.00	
8,300.00	90.56	89.85	6,360.16	332.10	1,855.69	1,856.55	0.00	0.00	0.00	
8,400.00	90.56	89.85	6,359.19	332.36	1,955.68	1,956.54	0.00	0.00	0.00	
8,500.00	90.56	89.85	6,358.22	332.62	2,055.68	2,056.54	0.00	0.00	0.00	
8,600.00	90.56	89.85	6,357.25	332.88	2,155.67	2,156.53	0.00	0.00	0.00	
8,700.00	90.56	89.85	6,356.27	333.14	2,255.67	2,256.53	0.00	0.00	0.00	
8,800.00	90.56	89.85	6,355.30	333.40	2,355.66	2,356.52	0.00	0.00	0.00	
8,900.00	90.56	89.85	6,354.33	333.66	2,455.66	2,456.52	0.00	0.00	0.00	
9,000.00	90.56	89.85	6,353.35	333.92	2,555.65	2,556.52	0.00	0.00	0.00	
9,100.00	90.56	89.85	6,352.38	334.18	2,655.64	2,656.51	0.00	0.00	0.00	
9,200.00	90.56	89.85	6,351.41	334.44	2,755.64	2,756.51	0.00	0.00	0.00	
9,300.00	90.56	89.85	6,350.44	334.70	2,855.63	2,856.50	0.00	0.00	0.00	
9,400.00	90.56	89.85	6,349.46	334.96	2,955.63	2,956.50	0.00	0.00	0.00	
9,500.00	90.56	89.85	6,348.49	335.22	3,055.62	3,056.49	0.00	0.00	0.00	
9,600.00	90.56	89.85	6,347.52	335.48	3,155.62	3,156.49	0.00	0.00	0.00	
9,700.00	90.56	89.85	6,346.54	335.74	3,255.61	3,256.48	0.00	0.00	0.00	
9,800.00	90.56	89.85	6,345.57	336.00	3,355.61	3,356.48	0.00	0.00	0.00	
9,900.00	90.56	89.85	6,344.60	336.26	3,455.60	3,456.47	0.00	0.00	0.00	
10,000.00	90.56	89.85	6,343.62	336.52	3,555.60	3,556.47	0.00	0.00	0.00	
10,100.00	90.56	89.85	6,342.65	336.78	3,655.59	3,656.46	0.00	0.00	0.00	
10,200.00	90.56	89.85	6,341.68	337.04	3,755.59	3,756.46	0.00	0.00	0.00	
10,300.00	90.56	89.85	6,340.71	337.30	3,855.58	3,856.45	0.00	0.00	0.00	
10,400.00	90.56	89.85	6,339.73	337.56	3,955.58	3,956.45	0.00	0.00	0.00	
10,500.00	90.56	89.85	6,338.76	337.82	4,055.57	4,056.44	0.00	0.00	0.00	
10,600.00	90.56	89.85	6,337.79	338.08	4,155.57	4,156.44	0.00	0.00	0.00	
10,700.00	90.56	89.85	6,336.81	338.34	4,255.56	4,256.44	0.00	0.00	0.00	
10,800.00	90.56	89.85	6,335.84	338.60	4,355.56	4,356.43	0.00	0.00	0.00	
10,900.00	90.56	89.85	6,334.87	338.86	4,455.55	4,456.43	0.00	0.00	0.00	
11,000.00	90.56	89.85	6,333.90	339.12	4,555.55	4,556.42	0.00	0.00	0.00	
11,100.00	90.56	89.85	6,332.92	339.38	4,655.54	4,656.42	0.00	0.00	0.00	
11,200.00	90.56	89.85	6,331.95	339.64	4,755.54	4,756.41	0.00	0.00	0.00	
11,300.00	90.56	89.85	6,330.98	339.90	4,855.53	4,856.41	0.00	0.00	0.00	
11,400.00	90.56	89.85	6,330.00	340.16	4,955.53	4,956.40	0.00	0.00	0.00	
11,500.00	90.56	89.85	6,329.03	340.42	5,055.52	5,056.40	0.00	0.00	0.00	
11,600.00	90.56	89.85	6,328.06	340.68	5,155.52	5,156.39	0.00	0.00	0.00	
11,700.00	90.56	89.85	6,327.08	340.94	5,255.51	5,256.39	0.00	0.00	0.00	
11,800.00	90.56	89.85	6,326.11	341.20	5,355.51	5,356.38	0.00	0.00	0.00	
11,900.00	90.56	89.85	6,325.14	341.46	5,455.50	5,456.38	0.00	0.00	0.00	
12,000.00	90.56	89.85	6,324.17	341.72	5,555.50	5,556.37	0.00	0.00	0.00	
12,100.00	90.56	89.85	6,323.19	341.98	5,655.49	5,656.37	0.00	0.00	0.00	
12,200.00	90.56	89.85	6,322.22	342.24	5,755.49	5,756.36	0.00	0.00	0.00	
12,300.00	90.56	89.85	6,321.25	342.50	5,855.48	5,856.36	0.00	0.00	0.00	
12,400.00	90.56	89.85	6,320.27	342.76	5,955.48	5,956.35	0.00	0.00	0.00	
12,500.00	90.56	89.85	6,319.30	343.02	6,055.47	6,056.35	0.00	0.00	0.00	
12,600.00	90.56	89.85	6,318.33	343.28	6,155.47	6,156.35	0.00	0.00	0.00	
12,700.00	90.56	89.85	6,317.36	343.54	6,255.46	6,256.34	0.00	0.00	0.00	
12,800.00	90.56	89.85	6,316.38	343.80	6,355.46	6,356.34	0.00	0.00	0.00	

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz Equus Farms 4-62-20-1609C2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4603' & KB 16' @ 4619.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4603' & KB 16' @ 4619.00ft
Site:	Anschutz Equus Farms 4-62-20_21 NWNW Pad	North Reference:	True
Well:	Anschutz Equus Farms 4-62-20-1609C2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,900.00	90.56	89.85	6,315.41	344.06	6,455.45	6,456.33	0.00	0.00	0.00
13,000.00	90.56	89.85	6,314.44	344.32	6,555.45	6,556.33	0.00	0.00	0.00
13,100.00	90.56	89.85	6,313.46	344.58	6,655.44	6,656.32	0.00	0.00	0.00
13,200.00	90.56	89.85	6,312.49	344.84	6,755.44	6,756.32	0.00	0.00	0.00
13,300.00	90.56	89.85	6,311.52	345.10	6,855.43	6,856.31	0.00	0.00	0.00
13,400.00	90.56	89.85	6,310.55	345.36	6,955.43	6,956.31	0.00	0.00	0.00
13,500.00	90.56	89.85	6,309.57	345.62	7,055.42	7,056.30	0.00	0.00	0.00
13,600.00	90.56	89.85	6,308.60	345.88	7,155.42	7,156.30	0.00	0.00	0.00
13,700.00	90.56	89.85	6,307.63	346.14	7,255.41	7,256.29	0.00	0.00	0.00
13,800.00	90.56	89.85	6,306.65	346.40	7,355.41	7,356.29	0.00	0.00	0.00
13,900.00	90.56	89.85	6,305.68	346.66	7,455.40	7,456.28	0.00	0.00	0.00
14,000.00	90.56	89.85	6,304.71	346.92	7,555.40	7,556.28	0.00	0.00	0.00
14,100.00	90.56	89.85	6,303.73	347.18	7,655.39	7,656.27	0.00	0.00	0.00
14,200.00	90.56	89.85	6,302.76	347.44	7,755.39	7,756.27	0.00	0.00	0.00
14,300.00	90.56	89.85	6,301.79	347.70	7,855.38	7,856.26	0.00	0.00	0.00
14,400.00	90.56	89.85	6,300.82	347.96	7,955.38	7,956.26	0.00	0.00	0.00
14,500.00	90.56	89.85	6,299.84	348.22	8,055.37	8,056.26	0.00	0.00	0.00
14,600.00	90.56	89.85	6,298.87	348.48	8,155.37	8,156.25	0.00	0.00	0.00
14,700.00	90.56	89.85	6,297.90	348.74	8,255.36	8,256.25	0.00	0.00	0.00
14,800.00	90.56	89.85	6,296.92	349.00	8,355.36	8,356.24	0.00	0.00	0.00
14,900.00	90.56	89.85	6,295.95	349.26	8,455.35	8,456.24	0.00	0.00	0.00
15,000.00	90.56	89.85	6,294.98	349.52	8,555.35	8,556.23	0.00	0.00	0.00
15,100.00	90.56	89.85	6,294.01	349.78	8,655.34	8,656.23	0.00	0.00	0.00
15,200.00	90.56	89.85	6,293.03	350.04	8,755.34	8,756.22	0.00	0.00	0.00
15,300.00	90.56	89.85	6,292.06	350.30	8,855.33	8,856.22	0.00	0.00	0.00
15,400.00	90.56	89.85	6,291.09	350.56	8,955.33	8,956.21	0.00	0.00	0.00
15,500.00	90.56	89.85	6,290.11	350.82	9,055.32	9,056.21	0.00	0.00	0.00
15,600.00	90.56	89.85	6,289.14	351.08	9,155.32	9,156.20	0.00	0.00	0.00
15,700.00	90.56	89.85	6,288.17	351.34	9,255.31	9,256.20	0.00	0.00	0.00
15,800.00	90.56	89.85	6,287.20	351.60	9,355.31	9,356.19	0.00	0.00	0.00
15,900.00	90.56	89.85	6,286.22	351.86	9,455.30	9,456.19	0.00	0.00	0.00
15,922.84	90.56	89.85	6,286.00	351.92	9,478.14	9,479.03	0.00	0.00	0.00
TD at 15922.84									

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									
AEF 4-62-20-1609C2 P - plan hits target center - Point	0.00	0.00	6,286.00	351.92	9,478.14	1,355,496.02	3,328,445.31	40° 18' 11.700 N	104° 19' 20.471 W
AEF 4-62-20-1609C2 LI - plan misses target center by 0.01ft at 6672.10ft MD (6376.00 TVD, 327.87 N, 227.87 E) - Point	0.00	0.00	6,376.00	327.88	227.87	1,355,352.68	3,319,196.13	40° 18' 11.480 N	104° 21' 19.868 W

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz Equus Farms 4-62-20-1609C2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4603' & KB 16' @ 4619.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4603' & KB 16' @ 4619.00ft
Site:	Anschutz Equus Farms 4-62-20_21 NWNW Pad	North Reference:	True
Well:	Anschutz Equus Farms 4-62-20-1609C2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
15,922.84	6,286.00	Case15	7.000	7.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,634.84	4,619.00	BASE OF FOX HILLS		0.00	
4,822.65	4,806.00	SHANNON		0.00	
6,064.19	6,043.00	SHARON SPRINGS		0.00	
6,198.92	6,164.00	NIOBRARA		0.00	
6,254.10	6,208.00	A CHALK		0.00	
6,339.89	6,268.00	B CHALK		0.00	
6,369.44	6,286.00	TD (HORIZONTAL)		0.00	
6,532.22	6,357.00	TOP "C" TARGET		0.00	
6,662.59	6,376.00	LANDING POINT		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.00	800.00	0.00	0.00	Start Build 2.00	
1,066.70	1,066.32	9.79	-7.62	Start 4185.49 hold at 1066.70 MD	
5,252.19	5,233.68	316.83	-246.62	Start Drop -2.00	
5,518.90	5,500.00	326.62	-254.24	Start 398.56 hold at 5518.90 MD	
5,917.46	5,898.56	326.62	-254.24	Start DLS 12.00 TFO 89.85	
6,672.10	6,376.00	327.87	227.87	Start 9250.74 hold at 6672.10 MD	
15,922.84	6,286.00	351.92	9,478.14	TD at 15922.84	