

PROJECT DETAILS: Weld County, CO									
Geodetic System: US State Plane 1983					Project: Weld County, CO				
Datum: North American Datum 1983					Site: Anschutz				
Ellipsoid: GRS 1980					Well: Anschutz 1-30H				
Zone: Colorado Northern Zone					Wellbore: OH				
System Datum: Mean Sea Level					Design: Plan 3				
Local North: True									



Azimuths to True North
 Magnetic North: 8.37°

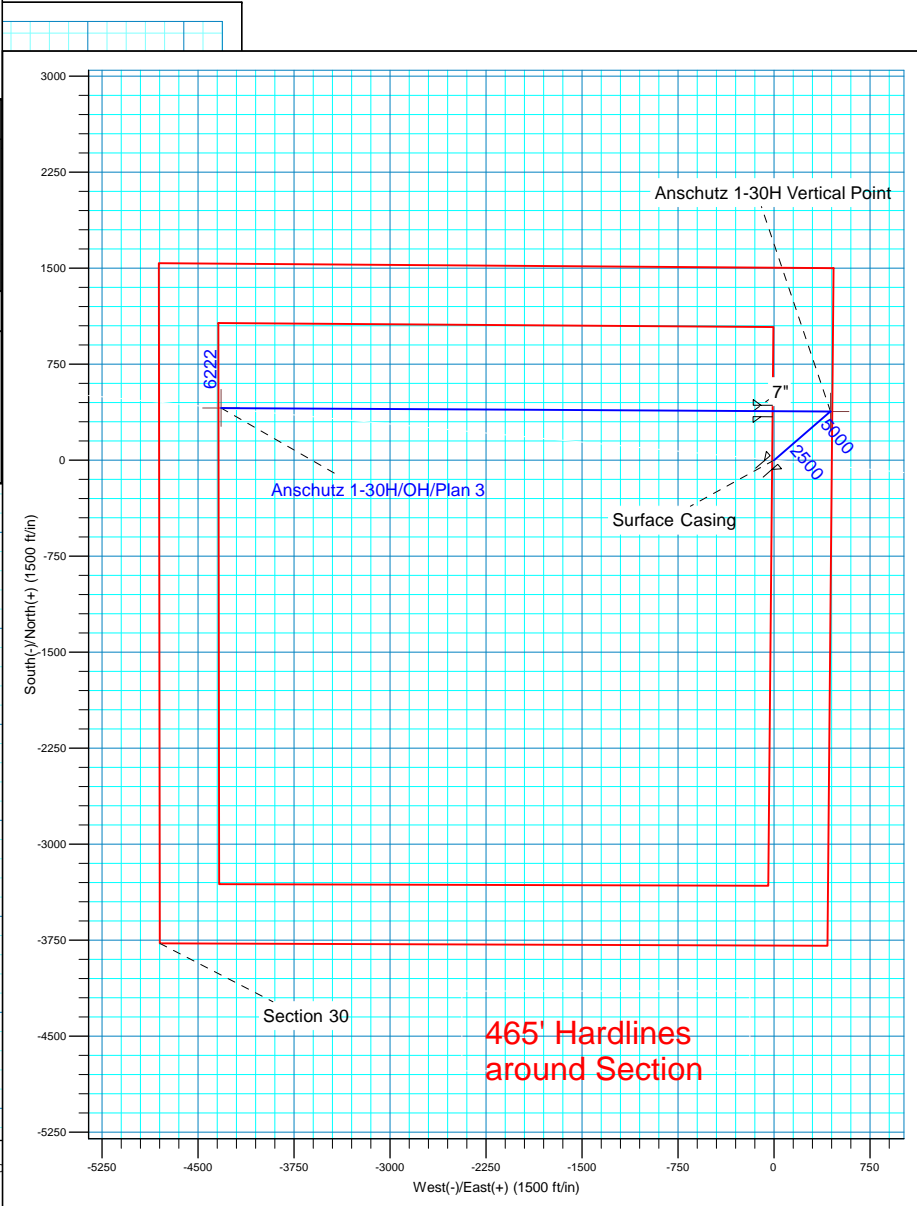
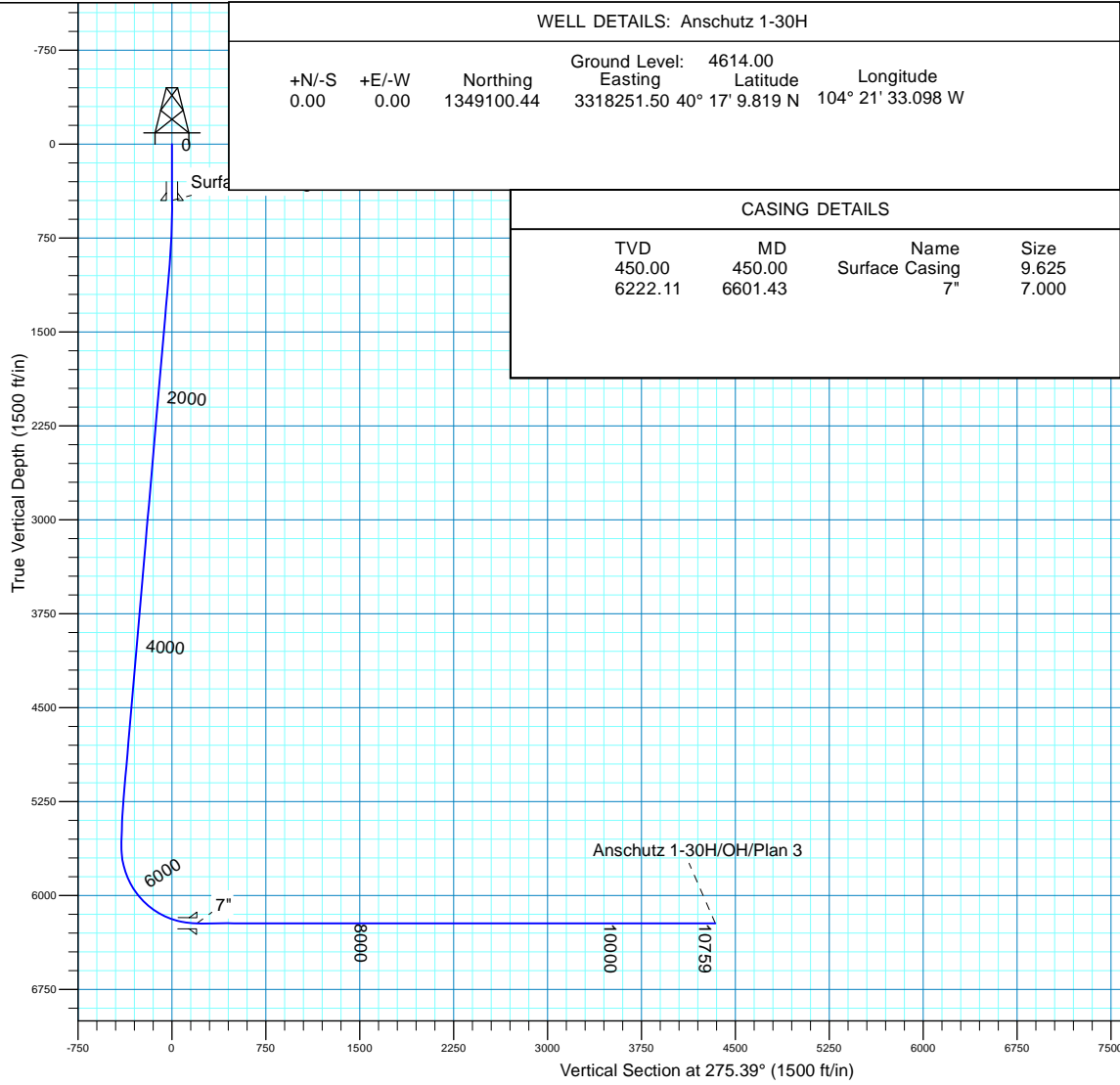
Magnetic Field
 Strength: 52815.9snT
 Dip Angle: 66.94°
 Date: 8/14/2013
 Model: BGGM2013

Plan: Plan 3 (Anschutz 1-30H/OH)
Created By: Seth BurstadDate: 8-21-13

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
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00
956.17	7.11	49.18	955.13	16.45	19.04	1.75	49.18	-17.42
5247.90	7.11	49.18	5213.87	363.56	420.96	0.00	0.00	-384.98
5654.07	0.00	0.00	5619.00	380.00	440.00	1.75	180.00	-402.39
6601.43	90.00	270.33	6222.11	383.46	-163.10	9.50	270.33	198.37
10758.88	90.00	270.33	6222.00	407.30	-4320.48	0.00	0.00	4339.63

WELL DETAILS: Anschutz 1-30H				
+N/-S	+E/-W	Northing	Ground Level: 4614.00	Longitude
0.00	0.00	1349100.44	Easting 3318251.50 40° 17' 9.819 N	104° 21' 33.098 W

CASING DETAILS				
TVD	MD	Name	Size	
450.00	450.00	Surface Casing	9.625	
6222.11	6601.43	7"	7.000	



Anschutz Exploration Corp.

Weld County, CO

Anschutz

Anschutz 1-30H

OH

Plan: Plan 3

Standard Planning Report

21 August, 2013



Scientific Drilling International

Planning Report

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz 1-30H
Company:	Anschutz Exploration Corp.	TVD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Project:	Weld County, CO	MD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Site:	Anschutz	North Reference:	True
Well:	Anschutz 1-30H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3		

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

Site		Anschutz			
Site Position:		Northing:	1,349,100.45 usft	Latitude:	40° 17' 9.820 N
From:	Lat/Long	Easting:	3,318,251.50 usft	Longitude:	104° 21' 33.098 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Anschutz 1-30H, 1500' FNL 465' FEL Sec 30 T4N R62W					
Well Position	+N/-S	-0.01 ft	Northing:	1,349,100.44 usft	Latitude:	40° 17' 9.819 N
	+E/-W	0.00 ft	Easting:	3,318,251.50 usft	Longitude:	104° 21' 33.098 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,614.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	8/14/2013	8.37	66.94	52,816

Design	Plan 3			
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	275.39

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	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	
956.17	7.11	49.18	955.13	16.45	19.04	1.75	1.75	0.00	49.18	
5,247.90	7.11	49.18	5,213.87	363.56	420.96	0.00	0.00	0.00	0.00	
5,654.07	0.00	0.00	5,619.00	380.00	440.00	1.75	-1.75	0.00	180.00	Anschutz 1-30H Vertic
6,601.43	90.00	270.33	6,222.11	383.46	-163.10	9.50	9.50	0.00	270.33	Anschutz 1-30H PBHI
10,758.88	90.00	270.33	6,222.00	407.30	-4,320.48	0.00	0.00	0.00	0.00	Anschutz 1-30H PBHI

Scientific Drilling International

Planning Report

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz 1-30H
Company:	Anschutz Exploration Corp.	TVD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Project:	Weld County, CO	MD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Site:	Anschutz	North Reference:	True
Well:	Anschutz 1-30H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3		

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
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.88	49.18	600.00	0.25	0.29	-0.26	1.75	1.75	0.00
700.00	2.63	49.18	699.95	2.25	2.60	-2.38	1.75	1.75	0.00
800.00	4.38	49.18	799.76	6.24	7.22	-6.60	1.75	1.75	0.00
900.00	6.13	49.18	899.33	12.22	14.14	-12.94	1.75	1.75	0.00
956.17	7.11	49.18	955.13	16.45	19.04	-17.42	1.75	1.75	0.00
1,000.00	7.11	49.18	998.62	19.99	23.15	-21.17	0.00	0.00	0.00
1,100.00	7.11	49.18	1,097.85	28.08	32.51	-29.73	0.00	0.00	0.00
1,200.00	7.11	49.18	1,197.09	36.17	41.88	-38.30	0.00	0.00	0.00
1,300.00	7.11	49.18	1,296.32	44.26	51.24	-46.86	0.00	0.00	0.00
1,400.00	7.11	49.18	1,395.55	52.34	60.61	-55.43	0.00	0.00	0.00
1,500.00	7.11	49.18	1,494.78	60.43	69.97	-63.99	0.00	0.00	0.00
1,600.00	7.11	49.18	1,594.01	68.52	79.34	-72.56	0.00	0.00	0.00
1,700.00	7.11	49.18	1,693.24	76.61	88.70	-81.12	0.00	0.00	0.00
1,800.00	7.11	49.18	1,792.47	84.69	98.07	-89.68	0.00	0.00	0.00
1,900.00	7.11	49.18	1,891.71	92.78	107.43	-98.25	0.00	0.00	0.00
2,000.00	7.11	49.18	1,990.94	100.87	116.80	-106.81	0.00	0.00	0.00
2,100.00	7.11	49.18	2,090.17	108.96	126.16	-115.38	0.00	0.00	0.00
2,200.00	7.11	49.18	2,189.40	117.05	135.53	-123.94	0.00	0.00	0.00
2,300.00	7.11	49.18	2,288.63	125.13	144.89	-132.51	0.00	0.00	0.00
2,400.00	7.11	49.18	2,387.86	133.22	154.26	-141.07	0.00	0.00	0.00
2,500.00	7.11	49.18	2,487.09	141.31	163.62	-149.64	0.00	0.00	0.00
2,600.00	7.11	49.18	2,586.33	149.40	172.99	-158.20	0.00	0.00	0.00
2,700.00	7.11	49.18	2,685.56	157.49	182.35	-166.76	0.00	0.00	0.00
2,800.00	7.11	49.18	2,784.79	165.57	191.72	-175.33	0.00	0.00	0.00
2,900.00	7.11	49.18	2,884.02	173.66	201.08	-183.89	0.00	0.00	0.00
3,000.00	7.11	49.18	2,983.25	181.75	210.44	-192.46	0.00	0.00	0.00
3,100.00	7.11	49.18	3,082.48	189.84	219.81	-201.02	0.00	0.00	0.00
3,200.00	7.11	49.18	3,181.71	197.93	229.17	-209.59	0.00	0.00	0.00
3,240.60	7.11	49.18	3,222.00	201.21	232.98	-213.06	0.00	0.00	0.00
Parkman									
3,300.00	7.11	49.18	3,280.95	206.01	238.54	-218.15	0.00	0.00	0.00
3,381.68	7.11	49.18	3,362.00	212.62	246.19	-225.15	0.00	0.00	0.00
Hygiene									
3,400.00	7.11	49.18	3,380.18	214.10	247.90	-226.72	0.00	0.00	0.00
3,500.00	7.11	49.18	3,479.41	222.19	257.27	-235.28	0.00	0.00	0.00
3,600.00	7.11	49.18	3,578.64	230.28	266.63	-243.84	0.00	0.00	0.00
3,700.00	7.11	49.18	3,677.87	238.37	276.00	-252.41	0.00	0.00	0.00
3,800.00	7.11	49.18	3,777.10	246.45	285.36	-260.97	0.00	0.00	0.00
3,900.00	7.11	49.18	3,876.33	254.54	294.73	-269.54	0.00	0.00	0.00
3,995.40	7.11	49.18	3,971.00	262.26	303.66	-277.71	0.00	0.00	0.00
Sussex									
4,000.00	7.11	49.18	3,975.57	262.63	304.09	-278.10	0.00	0.00	0.00
4,100.00	7.11	49.18	4,074.80	270.72	313.46	-286.67	0.00	0.00	0.00
4,200.00	7.11	49.18	4,174.03	278.80	322.82	-295.23	0.00	0.00	0.00
4,300.00	7.11	49.18	4,273.26	286.89	332.19	-303.80	0.00	0.00	0.00

Scientific Drilling International

Planning Report

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Company:	Anschutz Exploration Corp.	TVD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Project:	Weld County, CO	MD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Site:	Anschutz	North Reference:	True
Well:	Anschutz 1-30H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3		

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)
4,400.00	7.11	49.18	4,372.49	294.98	341.55	-312.36	0.00	0.00	0.00
4,500.00	7.11	49.18	4,471.72	303.07	350.92	-320.92	0.00	0.00	0.00
4,600.00	7.11	49.18	4,570.96	311.16	360.28	-329.49	0.00	0.00	0.00
4,700.00	7.11	49.18	4,670.19	319.24	369.65	-338.05	0.00	0.00	0.00
4,800.00	7.11	49.18	4,769.42	327.33	379.01	-346.62	0.00	0.00	0.00
4,894.31	7.11	49.18	4,863.00	334.96	387.84	-354.69	0.00	0.00	0.00
Shannon									
4,900.00	7.11	49.18	4,868.65	335.42	388.38	-355.18	0.00	0.00	0.00
5,000.00	7.11	49.18	4,967.88	343.51	397.74	-363.75	0.00	0.00	0.00
5,100.00	7.11	49.18	5,067.11	351.60	407.11	-372.31	0.00	0.00	0.00
5,200.00	7.11	49.18	5,166.34	359.68	416.47	-380.88	0.00	0.00	0.00
5,247.90	7.11	49.18	5,213.87	363.56	420.96	-384.98	0.00	0.00	0.00
5,300.00	6.20	49.18	5,265.62	367.50	425.52	-389.15	1.75	-1.75	0.00
5,400.00	4.45	49.18	5,365.19	373.56	432.54	-395.57	1.75	-1.75	0.00
5,500.00	2.70	49.18	5,464.99	377.64	437.26	-399.88	1.75	-1.75	0.00
5,600.00	0.95	49.18	5,564.94	379.71	439.66	-402.08	1.75	-1.75	0.00
5,654.07	0.00	0.00	5,619.00	380.00	440.00	-402.39	1.75	-1.75	0.00
5,700.00	4.36	270.33	5,664.89	380.01	438.25	-400.65	9.50	9.50	0.00
5,800.00	13.86	270.33	5,763.52	380.10	422.43	-384.89	9.50	9.50	0.00
5,900.00	23.36	270.33	5,858.18	380.29	390.55	-353.13	9.50	9.50	0.00
6,000.00	32.86	270.33	5,946.28	380.56	343.48	-306.25	9.50	9.50	0.00
6,100.00	42.36	270.33	6,025.40	380.91	282.52	-245.52	9.50	9.50	0.00
6,200.00	51.86	270.33	6,093.38	381.33	209.33	-172.62	9.50	9.50	0.00
6,222.61	54.01	270.33	6,107.00	381.43	191.29	-154.65	9.50	9.50	0.00
Sharon Springs									
6,300.00	61.36	270.33	6,148.34	381.80	125.93	-89.54	9.50	9.50	0.00
6,374.72	68.46	270.33	6,180.00	382.19	58.31	-22.18	9.50	9.50	0.00
Niobrara									
6,400.00	70.86	270.33	6,188.79	382.33	34.60	1.43	9.50	9.50	0.00
6,500.00	80.36	270.33	6,213.60	382.88	-62.15	97.81	9.50	9.50	0.00
6,589.73	88.89	270.33	6,222.00	383.39	-151.41	186.72	9.50	9.50	0.00
Target B									
6,600.00	89.86	270.33	6,222.11	383.45	-161.67	196.95	9.50	9.50	0.00
6,601.43	90.00	270.33	6,222.11	383.46	-163.10	198.37	9.50	9.50	0.00
7"									
6,700.00	90.00	270.33	6,222.11	384.03	-261.67	296.56	0.00	0.00	0.00
6,800.00	90.00	270.33	6,222.11	384.60	-361.67	396.17	0.00	0.00	0.00
6,900.00	90.00	270.33	6,222.11	385.17	-461.67	495.78	0.00	0.00	0.00
7,000.00	90.00	270.33	6,222.11	385.75	-561.66	595.39	0.00	0.00	0.00
7,100.00	90.00	270.33	6,222.11	386.32	-661.66	695.00	0.00	0.00	0.00
7,200.00	90.00	270.33	6,222.11	386.89	-761.66	794.61	0.00	0.00	0.00
7,300.00	90.00	270.33	6,222.11	387.47	-861.66	894.22	0.00	0.00	0.00
7,400.00	90.00	270.33	6,222.11	388.04	-961.66	993.83	0.00	0.00	0.00
7,500.00	90.00	270.33	6,222.11	388.61	-1,061.66	1,093.44	0.00	0.00	0.00
7,600.00	90.00	270.33	6,222.11	389.19	-1,161.65	1,193.05	0.00	0.00	0.00
7,700.00	90.00	270.33	6,222.11	389.76	-1,261.65	1,292.66	0.00	0.00	0.00
7,800.00	90.00	270.33	6,222.10	390.33	-1,361.65	1,392.27	0.00	0.00	0.00
7,900.00	90.00	270.33	6,222.10	390.91	-1,461.65	1,491.89	0.00	0.00	0.00
8,000.00	90.00	270.33	6,222.10	391.48	-1,561.65	1,591.50	0.00	0.00	0.00
8,100.00	90.00	270.33	6,222.10	392.05	-1,661.65	1,691.11	0.00	0.00	0.00
8,200.00	90.00	270.33	6,222.10	392.63	-1,761.64	1,790.72	0.00	0.00	0.00
8,300.00	90.00	270.33	6,222.09	393.20	-1,861.64	1,890.33	0.00	0.00	0.00
8,400.00	90.00	270.33	6,222.09	393.77	-1,961.64	1,989.94	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz 1-30H
Company:	Anschutz Exploration Corp.	TVD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Project:	Weld County, CO	MD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Site:	Anschutz	North Reference:	True
Well:	Anschutz 1-30H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3		

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)	
8,500.00	90.00	270.33	6,222.09	394.35	-2,061.64	2,089.55	0.00	0.00	0.00	
8,600.00	90.00	270.33	6,222.09	394.92	-2,161.64	2,189.16	0.00	0.00	0.00	
8,700.00	90.00	270.33	6,222.08	395.49	-2,261.64	2,288.77	0.00	0.00	0.00	
8,800.00	90.00	270.33	6,222.08	396.07	-2,361.63	2,388.38	0.00	0.00	0.00	
8,900.00	90.00	270.33	6,222.08	396.64	-2,461.63	2,487.99	0.00	0.00	0.00	
9,000.00	90.00	270.33	6,222.08	397.21	-2,561.63	2,587.60	0.00	0.00	0.00	
9,100.00	90.00	270.33	6,222.07	397.79	-2,661.63	2,687.21	0.00	0.00	0.00	
9,200.00	90.00	270.33	6,222.07	398.36	-2,761.63	2,786.83	0.00	0.00	0.00	
9,300.00	90.00	270.33	6,222.07	398.93	-2,861.63	2,886.44	0.00	0.00	0.00	
9,400.00	90.00	270.33	6,222.06	399.51	-2,961.62	2,986.05	0.00	0.00	0.00	
9,500.00	90.00	270.33	6,222.06	400.08	-3,061.62	3,085.66	0.00	0.00	0.00	
9,600.00	90.00	270.33	6,222.05	400.65	-3,161.62	3,185.27	0.00	0.00	0.00	
9,700.00	90.00	270.33	6,222.05	401.23	-3,261.62	3,284.88	0.00	0.00	0.00	
9,800.00	90.00	270.33	6,222.05	401.80	-3,361.62	3,384.49	0.00	0.00	0.00	
9,900.00	90.00	270.33	6,222.04	402.37	-3,461.62	3,484.10	0.00	0.00	0.00	
10,000.00	90.00	270.33	6,222.04	402.95	-3,561.61	3,583.71	0.00	0.00	0.00	
10,100.00	90.00	270.33	6,222.03	403.52	-3,661.61	3,683.32	0.00	0.00	0.00	
10,200.00	90.00	270.33	6,222.03	404.09	-3,761.61	3,782.93	0.00	0.00	0.00	
10,300.00	90.00	270.33	6,222.02	404.67	-3,861.61	3,882.54	0.00	0.00	0.00	
10,400.00	90.00	270.33	6,222.02	405.24	-3,961.61	3,982.15	0.00	0.00	0.00	
10,500.00	90.00	270.33	6,222.01	405.81	-4,061.61	4,081.77	0.00	0.00	0.00	
10,600.00	90.00	270.33	6,222.01	406.39	-4,161.60	4,181.38	0.00	0.00	0.00	
10,700.00	90.00	270.33	6,222.00	406.96	-4,261.60	4,280.99	0.00	0.00	0.00	
10,758.88	90.00	270.33	6,222.00	407.30	-4,320.48	4,339.63	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										
Anschutz 1-30H Vertical	0.00	0.00	5,619.00	380.00	440.00	1,349,486.07	3,318,686.58	40° 17' 13.575 N	104° 21' 27.420 W	
- plan hits target center										
- Point										
Anschutz 1-30H PBHL	0.00	0.00	6,222.00	407.30	-4,320.48	1,349,452.12	3,313,926.15	40° 17' 13.841 N	104° 22' 28.852 W	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
450.00	450.00	Surface Casing	9.625	9.625	
6,601.43	6,222.11	7"	7.000	7.500	

Scientific Drilling International

Planning Report

Database:	Casper District	Local Co-ordinate Reference:	Well Anschutz 1-30H
Company:	Anschutz Exploration Corp.	TVD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Project:	Weld County, CO	MD Reference:	GL 4614' & KB 20' @ 4634.00ft (Unknown)
Site:	Anschutz	North Reference:	True
Well:	Anschutz 1-30H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,240.60	3,222.00	PArkman		0.00		
3,381.68	3,362.00	Hygiene		0.00		
3,995.40	3,971.00	Sussex		0.00		
4,894.31	4,863.00	Shannon		0.00		
6,222.61	6,107.00	Sharon Springs		0.00		
6,374.72	6,180.00	Niobrara		0.00		
6,589.73	6,222.00	Target B		0.00		