





**B.P.**

**La Plata County, CO NAD83  
Anderson Pad  
Anderson GC-C2**

**OH**

**Plan: Plan #2**

## **Standard Planning Report**

**01 December, 2015**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Anderson GC-C2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6708.81' & RKB 11' @ 6719.81usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6708.81' & RKB 11' @ 6719.81usft (Aztec 507)
<b>Site:</b>	Anderson Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Anderson GC-C2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

<b>Project</b>	La Plata County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Southern Zone		

<b>Site</b>	Anderson Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,191,885.01 usft	<b>Latitude:</b> 37.1734358
<b>From:</b> Map		<b>Easting:</b>	2,367,108.87 usft	<b>Longitude:</b> -107.6723090
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b> -1.33 °

<b>Well</b>	Anderson GC-C2			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,191,885.01 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,367,108.87 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	6,719.81 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	11/30/2015	9.30	63.73	50,311

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	227.36

<b>Plan Sections</b>										
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	
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,365.33	27.46	227.36	1,330.69	-145.77	-158.28	3.00	3.00	0.00	227.36	
3,288.29	27.46	227.36	3,037.00	-746.46	-810.55	0.00	0.00	0.00	0.00	Anderson C2 BHL



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<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6708.81' & RKB 11' @ 6719.81usft (Aztec 507)
<b>Site:</b>	Anderson Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Anderson GC-C2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

**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
<b>Surface Casing</b>									
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	1.50	227.36	499.99	-0.44	-0.48	0.65	3.00	3.00	0.00
600.00	4.50	227.36	599.85	-3.99	-4.33	5.89	3.00	3.00	0.00
700.00	7.50	227.36	699.29	-11.07	-12.02	16.34	3.00	3.00	0.00
800.00	10.50	227.36	798.04	-21.66	-23.52	31.98	3.00	3.00	0.00
900.00	13.50	227.36	895.85	-35.75	-38.82	52.77	3.00	3.00	0.00
1,000.00	16.50	227.36	992.43	-53.28	-57.85	78.65	3.00	3.00	0.00
1,100.00	19.50	227.36	1,087.52	-74.21	-80.58	109.55	3.00	3.00	0.00
1,200.00	22.50	227.36	1,180.87	-98.48	-106.94	145.38	3.00	3.00	0.00
1,300.00	25.50	227.36	1,272.22	-126.03	-136.86	186.05	3.00	3.00	0.00
1,365.33	27.46	227.36	1,330.69	-145.77	-158.28	215.18	3.00	3.00	0.00
1,400.00	27.46	227.36	1,361.45	-156.60	-170.04	231.16	0.00	0.00	0.00
1,400.62	27.46	227.36	1,362.00	-156.79	-170.25	231.45	0.00	0.00	0.00
<b>Lwr. Animas</b>									
1,500.00	27.46	227.36	1,450.19	-187.83	-203.96	277.28	0.00	0.00	0.00
1,600.00	27.46	227.36	1,538.92	-219.07	-237.88	323.39	0.00	0.00	0.00
1,700.00	27.46	227.36	1,627.65	-250.31	-271.80	369.50	0.00	0.00	0.00
1,800.00	27.46	227.36	1,716.39	-281.55	-305.72	415.61	0.00	0.00	0.00
1,833.37	27.46	227.36	1,746.00	-291.97	-317.04	431.00	0.00	0.00	0.00
<b>Kirtland Sh.</b>									
1,900.00	27.46	227.36	1,805.12	-312.79	-339.64	461.73	0.00	0.00	0.00
2,000.00	27.46	227.36	1,893.85	-344.02	-373.56	507.84	0.00	0.00	0.00
2,050.88	27.46	227.36	1,939.00	-359.92	-390.82	531.30	0.00	0.00	0.00
<b>Farmington Ss.</b>									
2,100.00	27.46	227.36	1,982.59	-375.26	-407.48	553.95	0.00	0.00	0.00
2,200.00	27.46	227.36	2,071.32	-406.50	-441.40	600.06	0.00	0.00	0.00
2,300.00	27.46	227.36	2,160.05	-437.74	-475.32	646.18	0.00	0.00	0.00
2,400.00	27.46	227.36	2,248.79	-468.98	-509.24	692.29	0.00	0.00	0.00
2,500.00	27.46	227.36	2,337.52	-500.21	-543.16	738.40	0.00	0.00	0.00
2,515.19	27.46	227.36	2,351.00	-504.96	-548.31	745.41	0.00	0.00	0.00
<b>Lwr. Kirtland Sh.</b>									
2,600.00	27.46	227.36	2,426.25	-531.45	-577.08	784.52	0.00	0.00	0.00
2,700.00	27.46	227.36	2,514.99	-562.69	-611.00	830.63	0.00	0.00	0.00
2,782.28	27.46	227.36	2,588.00	-588.39	-638.91	868.57	0.00	0.00	0.00
<b>Fruitland Coal</b>									
2,800.00	27.46	227.36	2,603.72	-593.93	-644.92	876.74	0.00	0.00	0.00
2,848.77	27.46	227.36	2,647.00	-609.16	-661.47	899.23	0.00	0.00	0.00
<b>Lemon Seam</b>									
2,889.88	27.46	227.36	2,683.47	-622.00	-675.41	918.19	0.00	0.00	0.00
<b>Anderson C2 BTV</b>									
2,900.00	27.46	227.36	2,692.45	-625.17	-678.84	922.85	0.00	0.00	0.00
2,974.99	27.46	227.36	2,759.00	-648.59	-704.28	957.43	0.00	0.00	0.00
<b>Lwr. Lemon Seam</b>									
3,000.00	27.46	227.36	2,781.19	-656.40	-712.76	968.97	0.00	0.00	0.00
3,026.84	27.46	227.36	2,805.00	-664.79	-721.86	981.34	0.00	0.00	0.00



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<b>Site:</b>	Anderson Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Anderson GC-C2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

**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)
<b>Ignacio Seam</b>									
3,062.90	27.46	227.36	2,837.00	-676.05	-734.10	997.97	0.00	0.00	0.00
<b>Pictured Cliffs Ss.</b>									
3,100.00	27.46	227.36	2,869.92	-687.64	-746.68	1,015.08	0.00	0.00	0.00
3,200.00	27.46	227.36	2,958.66	-718.88	-780.60	1,061.19	0.00	0.00	0.00
3,288.29	27.46	227.36	3,037.00	-746.46	-810.55	1,101.90	0.00	0.00	0.00
<b>Anderson C2 BHL</b>									

**Design Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Anderson C2 BTV - plan misses target center by 207.05usft at 2889.88usft MD (2683.47 TVD, -622.00 N, -675.41 E) - Point	0.00	360.00	2,588.00	-746.46	-810.55	1,191,138.55	2,366,298.32	37.1713345	-107.6750304
Anderson C2 BHL - plan hits target center - Point	0.00	360.00	3,037.00	-746.46	-810.55	1,191,138.55	2,366,298.32	37.1713345	-107.6750304

**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
400.00	400.00	Surface Casing	9.62	12.25

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,400.62	1,362.00	Lwr. Animas		0.00	0.00
1,833.37	1,746.00	Kirtland Sh.		0.00	0.00
2,050.88	1,939.00	Farmington Ss.		0.00	0.00
2,515.19	2,351.00	Lwr. Kirtland Sh.		0.00	0.00
2,782.28	2,588.00	Fruitland Coal		0.00	0.00
2,848.77	2,647.00	Lemon Seam		0.00	0.00
2,974.99	2,759.00	Lwr. Lemon Seam		0.00	0.00
3,026.84	2,805.00	Ignacio Seam		0.00	0.00
3,062.90	2,837.00	Pictured Cliffs Ss.		0.00	0.00