



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-17A Pad



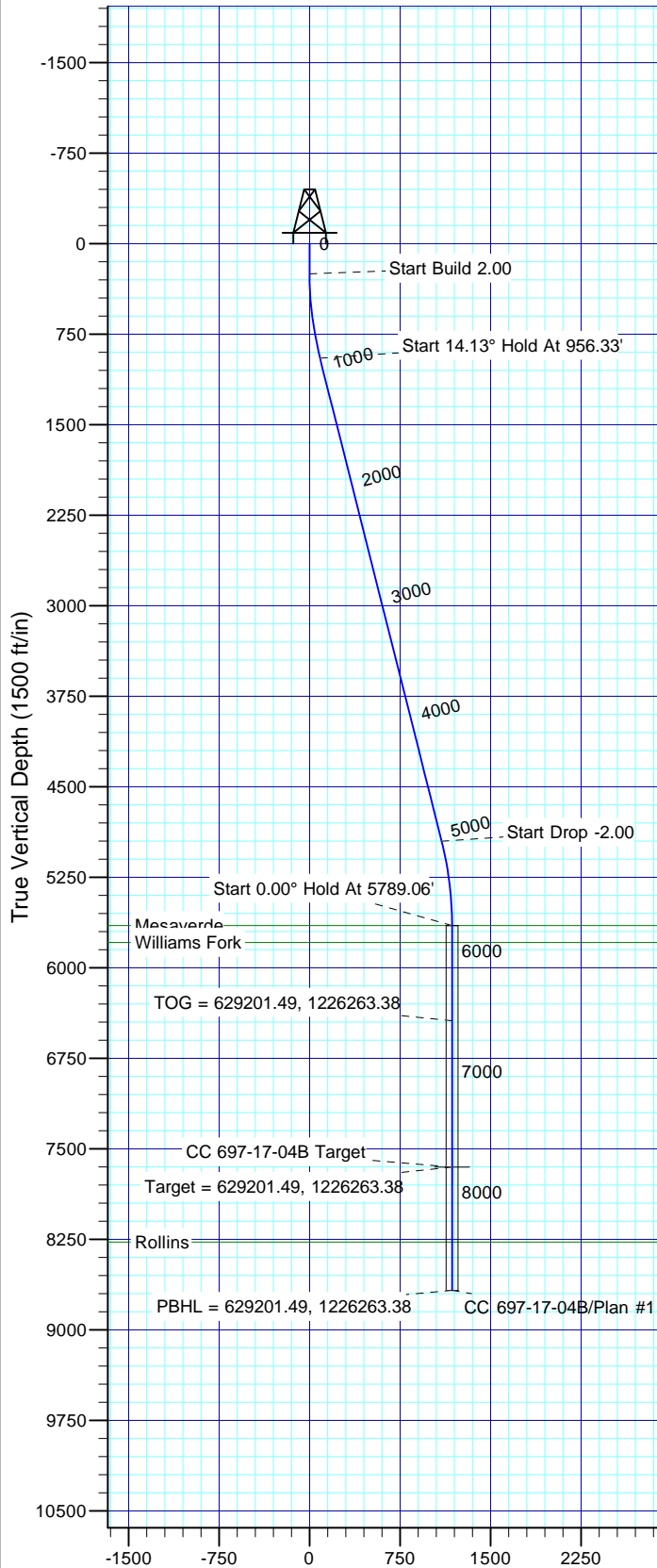
Well Details: CC 697-17-04B

TVD Reference: GL 8185' & RKB 30' @ 8215.00ft (H&P) Ground Level: 8185.00
+N/-S 0.00 +E/-W 0.00 Northing 628095.19 Easting 1225851.79 Latitude 39° 31' 32.986 N Longitude 108° 14' 41.156 W Slot H

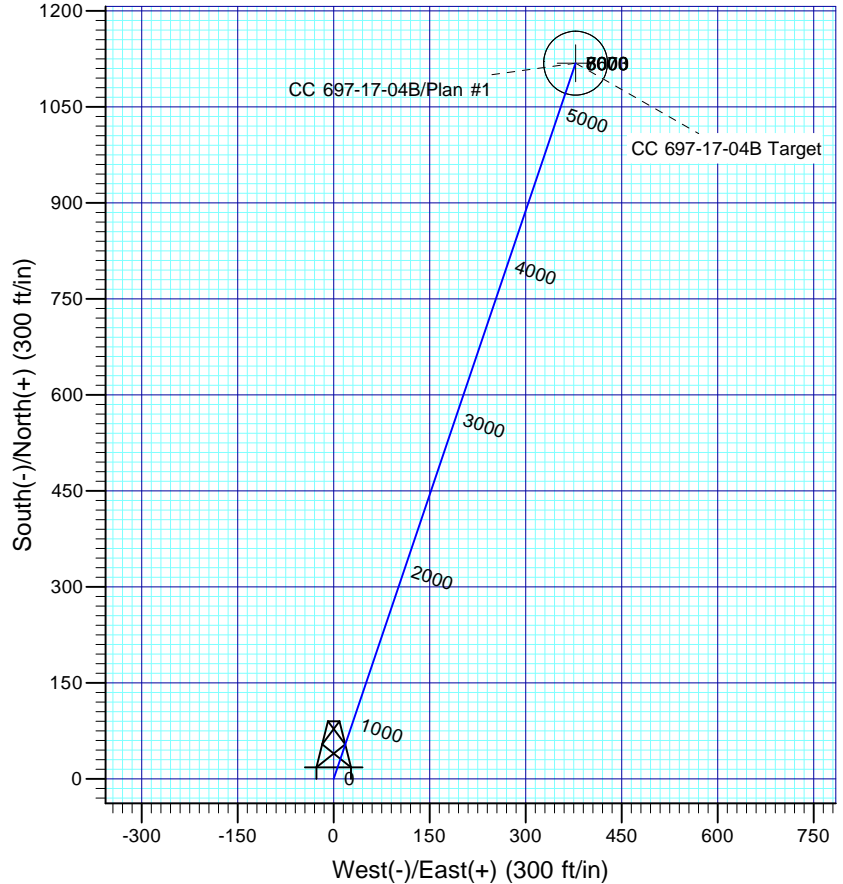


Azimuths to True North
Magnetic North: 10.50°

Magnetic Field
Strength: 52295.7snT
Dip Angle: 65.74°
Date: 2010/12/23
Model: IGRF2005-10



Vertical Section at 18.68° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5650.00	5789.06	Mesaverde
5790.00	5929.06	Williams Fork
8273.00	8412.06	Rollins

Plan: Plan #1

17:09, December 25 2010
Created By: Rex Hall

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502

System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	956.33	14.13	18.68	949.20	82.07	27.74	2.00	18.68	86.64	
4	5082.72	14.13	18.68	4950.80	1036.16	350.24	0.00	0.00	1093.75	
5	5789.06	0.00	0.00	5650.00	1118.23	377.98	2.00	180.00	1180.38	
6	7791.06	0.00	0.00	7652.00	1118.23	377.98	0.00	0.00	1180.38	CC 697-17-04B Target
7	8812.06	0.00	0.00	8673.00	1118.23	377.98	0.00	0.00	1180.38	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-17A Pad
CC 697-17-04B - Slot H**

OH

Plan: Plan #1

Standard Planning Report

25 December, 2010

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-17-04B - Slot H
Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-04B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site	Cascade Creek 697-17A Pad		
Site Position:		Northing:	628,118.39 usft
From:	Map	Easting:	1,225,843.74 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	39° 31' 33.213 N
		Longitude:	108° 14' 41.268 W
		Grid Convergence:	-1.73 °

Well	CC 697-17-04B - Slot H		
Well Position	+N/-S	-22.95 ft	Northing: 628,095.19 usft
	+E/-W	8.75 ft	Easting: 1,225,851.79 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 39° 31' 32.986 N
			Longitude: 108° 14' 41.156 W
			Ground Level: 8,185.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/23	10.50	65.74	52,296

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	18.68

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
956.33	14.13	18.68	949.20	82.07	27.74	2.00	2.00	0.00	18.68	
5,082.72	14.13	18.68	4,950.80	1,036.16	350.24	0.00	0.00	0.00	0.00	
5,789.06	0.00	0.00	5,650.00	1,118.23	377.98	2.00	-2.00	0.00	180.00	
7,791.06	0.00	0.00	7,652.00	1,118.23	377.98	0.00	0.00	0.00	0.00	CC 697-17-04B Target
8,812.06	0.00	0.00	8,673.00	1,118.23	377.98	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-17-04B - Slot H
Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-04B	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
300.00	1.00	18.68	300.00	0.41	0.14	0.44	2.00	2.00	0.00
400.00	3.00	18.68	399.93	3.72	1.26	3.93	2.00	2.00	0.00
500.00	5.00	18.68	499.68	10.33	3.49	10.90	2.00	2.00	0.00
600.00	7.00	18.68	599.13	20.23	6.84	21.35	2.00	2.00	0.00
700.00	9.00	18.68	698.15	33.41	11.29	35.27	2.00	2.00	0.00
800.00	11.00	18.68	796.63	49.86	16.85	52.63	2.00	2.00	0.00
900.00	13.00	18.68	894.44	69.56	23.51	73.42	2.00	2.00	0.00
956.33	14.13	18.68	949.20	82.07	27.74	86.64	2.00	2.00	0.00
Start 14.13° Hold At 956.33'									
1,000.00	14.13	18.68	991.54	92.17	31.15	97.29	0.00	0.00	0.00
1,100.00	14.13	18.68	1,088.52	115.29	38.97	121.70	0.00	0.00	0.00
1,200.00	14.13	18.68	1,185.50	138.41	46.79	146.11	0.00	0.00	0.00
1,300.00	14.13	18.68	1,282.47	161.53	54.60	170.51	0.00	0.00	0.00
1,400.00	14.13	18.68	1,379.45	184.66	62.42	194.92	0.00	0.00	0.00
1,500.00	14.13	18.68	1,476.42	207.78	70.23	219.33	0.00	0.00	0.00
1,600.00	14.13	18.68	1,573.40	230.90	78.05	243.73	0.00	0.00	0.00
1,700.00	14.13	18.68	1,670.38	254.02	85.86	268.14	0.00	0.00	0.00
1,800.00	14.13	18.68	1,767.35	277.14	93.68	292.55	0.00	0.00	0.00
1,900.00	14.13	18.68	1,864.33	300.26	101.49	316.95	0.00	0.00	0.00
2,000.00	14.13	18.68	1,961.30	323.38	109.31	341.36	0.00	0.00	0.00
2,100.00	14.13	18.68	2,058.28	346.51	117.12	365.77	0.00	0.00	0.00
2,200.00	14.13	18.68	2,155.26	369.63	124.94	390.17	0.00	0.00	0.00
2,300.00	14.13	18.68	2,252.23	392.75	132.76	414.58	0.00	0.00	0.00
2,400.00	14.13	18.68	2,349.21	415.87	140.57	438.99	0.00	0.00	0.00
2,500.00	14.13	18.68	2,446.18	438.99	148.39	463.39	0.00	0.00	0.00
2,600.00	14.13	18.68	2,543.16	462.11	156.20	487.80	0.00	0.00	0.00
2,700.00	14.13	18.68	2,640.13	485.23	164.02	512.21	0.00	0.00	0.00
2,800.00	14.13	18.68	2,737.11	508.36	171.83	536.61	0.00	0.00	0.00
2,900.00	14.13	18.68	2,834.09	531.48	179.65	561.02	0.00	0.00	0.00
3,000.00	14.13	18.68	2,931.06	554.60	187.46	585.43	0.00	0.00	0.00
3,100.00	14.13	18.68	3,028.04	577.72	195.28	609.83	0.00	0.00	0.00
3,200.00	14.13	18.68	3,125.01	600.84	203.09	634.24	0.00	0.00	0.00
3,300.00	14.13	18.68	3,221.99	623.96	210.91	658.65	0.00	0.00	0.00
3,400.00	14.13	18.68	3,318.97	647.09	218.72	683.05	0.00	0.00	0.00
3,500.00	14.13	18.68	3,415.94	670.21	226.54	707.46	0.00	0.00	0.00
3,600.00	14.13	18.68	3,512.92	693.33	234.36	731.87	0.00	0.00	0.00
3,700.00	14.13	18.68	3,609.89	716.45	242.17	756.27	0.00	0.00	0.00
3,800.00	14.13	18.68	3,706.87	739.57	249.99	780.68	0.00	0.00	0.00
3,900.00	14.13	18.68	3,803.84	762.69	257.80	805.08	0.00	0.00	0.00
4,000.00	14.13	18.68	3,900.82	785.81	265.62	829.49	0.00	0.00	0.00
4,100.00	14.13	18.68	3,997.80	808.94	273.43	853.90	0.00	0.00	0.00
4,200.00	14.13	18.68	4,094.77	832.06	281.25	878.30	0.00	0.00	0.00
4,300.00	14.13	18.68	4,191.75	855.18	289.06	902.71	0.00	0.00	0.00
4,400.00	14.13	18.68	4,288.72	878.30	296.88	927.12	0.00	0.00	0.00
4,500.00	14.13	18.68	4,385.70	901.42	304.69	951.52	0.00	0.00	0.00
4,600.00	14.13	18.68	4,482.68	924.54	312.51	975.93	0.00	0.00	0.00
4,700.00	14.13	18.68	4,579.65	947.66	320.32	1,000.34	0.00	0.00	0.00
4,800.00	14.13	18.68	4,676.63	970.79	328.14	1,024.74	0.00	0.00	0.00
4,900.00	14.13	18.68	4,773.60	993.91	335.96	1,049.15	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-17-04B - Slot H
Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-04B	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)
5,000.00	14.13	18.68	4,870.58	1,017.03	343.77	1,073.56	0.00	0.00	0.00
5,082.72	14.13	18.68	4,950.80	1,036.16	350.24	1,093.75	0.00	0.00	0.00
Start Drop -2.00									
5,100.00	13.78	18.68	4,967.57	1,040.10	351.57	1,097.91	2.00	-2.00	0.00
5,200.00	11.78	18.68	5,065.08	1,061.06	358.65	1,120.04	2.00	-2.00	0.00
5,300.00	9.78	18.68	5,163.31	1,078.78	364.64	1,138.74	2.00	-2.00	0.00
5,400.00	7.78	18.68	5,262.14	1,093.24	369.53	1,154.01	2.00	-2.00	0.00
5,500.00	5.78	18.68	5,361.43	1,104.43	373.31	1,165.81	2.00	-2.00	0.00
5,600.00	3.78	18.68	5,461.08	1,112.32	375.98	1,174.15	2.00	-2.00	0.00
5,700.00	1.78	18.68	5,560.96	1,116.92	377.54	1,179.00	2.00	-2.00	0.00
5,789.06	0.00	0.00	5,650.00	1,118.23	377.98	1,180.38	2.00	-2.00	-20.97
Start 0.00° Hold At 5789.06' - Mesaverde									
5,800.00	0.00	0.00	5,660.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,760.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
5,929.06	0.00	0.00	5,790.00	1,118.23	377.98	1,180.38	0.00	0.00	0.00
Williams Fork									
6,000.00	0.00	0.00	5,860.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,100.00	0.00	0.00	5,960.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,200.00	0.00	0.00	6,060.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,300.00	0.00	0.00	6,160.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,260.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,360.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,579.06	0.00	0.00	6,440.00	1,118.23	377.98	1,180.38	0.00	0.00	0.00
TOG = 629201.49, 1226263.38									
6,600.00	0.00	0.00	6,460.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,700.00	0.00	0.00	6,560.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,800.00	0.00	0.00	6,660.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
6,900.00	0.00	0.00	6,760.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,000.00	0.00	0.00	6,860.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,100.00	0.00	0.00	6,960.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,200.00	0.00	0.00	7,060.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,300.00	0.00	0.00	7,160.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,400.00	0.00	0.00	7,260.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,500.00	0.00	0.00	7,360.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,600.00	0.00	0.00	7,460.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,700.00	0.00	0.00	7,560.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,791.06	0.00	0.00	7,652.00	1,118.23	377.98	1,180.38	0.00	0.00	0.00
Target = 629201.49, 1226263.38									
7,800.00	0.00	0.00	7,660.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
7,900.00	0.00	0.00	7,760.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,000.00	0.00	0.00	7,860.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,100.00	0.00	0.00	7,960.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,200.00	0.00	0.00	8,060.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,300.00	0.00	0.00	8,160.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,400.00	0.00	0.00	8,260.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,412.06	0.00	0.00	8,273.00	1,118.23	377.98	1,180.38	0.00	0.00	0.00
Rollins									
8,500.00	0.00	0.00	8,360.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,600.00	0.00	0.00	8,460.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,700.00	0.00	0.00	8,560.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,800.00	0.00	0.00	8,660.94	1,118.23	377.98	1,180.38	0.00	0.00	0.00
8,812.06	0.00	0.00	8,673.00	1,118.23	377.98	1,180.38	0.00	0.00	0.00
PBHL = 629201.49, 1226263.38									

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-17-04B - Slot H
Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-04B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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									
CC 697-17-04B Target	0.00	358.27	7,652.00	1,118.23	377.98	629,201.49	1,226,263.37	39° 31' 44.039 N	108° 14' 36.333 W
- plan hits target center									
- Circle (radius 50.00)									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,789.06	5,650.00	Mesaverde		0.00	
5,929.06	5,790.00	Williams Fork		0.00	
8,412.06	8,273.00	Rollins		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
250.00	250.00	0.00	0.00	Start Build 2.00
956.33	949.20	82.07	27.74	Start 14.13° Hold At 956.33'
5,082.72	4,950.80	1,036.16	350.24	Start Drop -2.00
5,789.06	5,650.00	1,118.23	377.98	Start 0.00° Hold At 5789.06'
6,579.06	6,440.00	1,118.23	377.98	TOG = 629201.49, 1226263.38
7,791.06	7,652.00	1,118.23	377.98	Target = 629201.49, 1226263.38
8,812.06	8,673.00	1,118.23	377.98	PBHL = 629201.49, 1226263.38