



Scientific Drilling
Rocky Mountain Operations

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



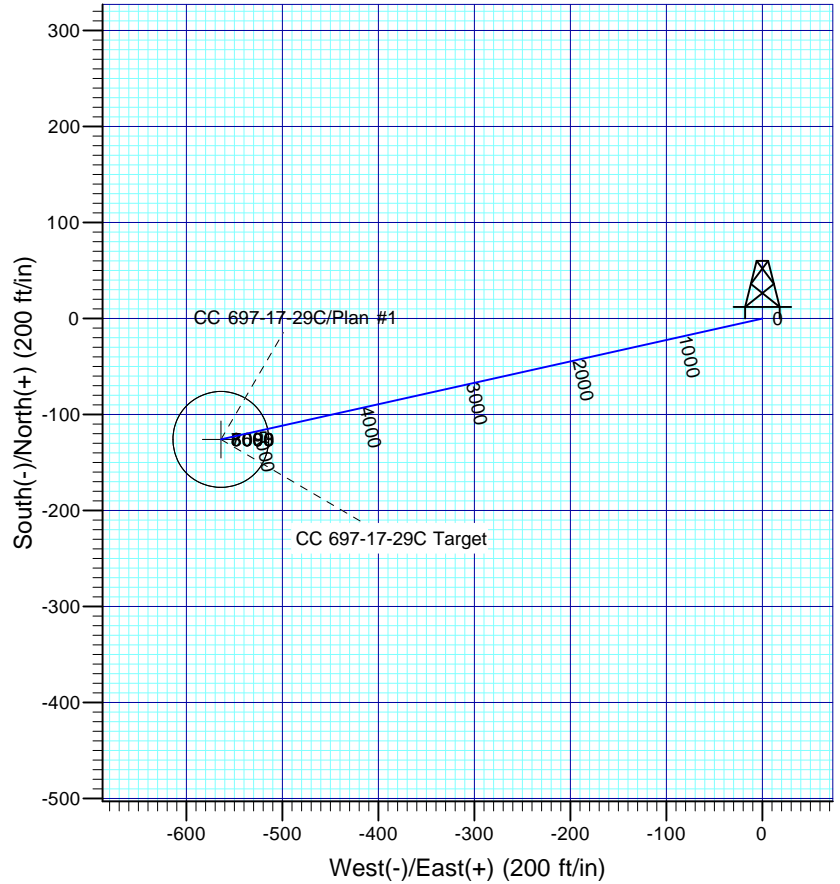
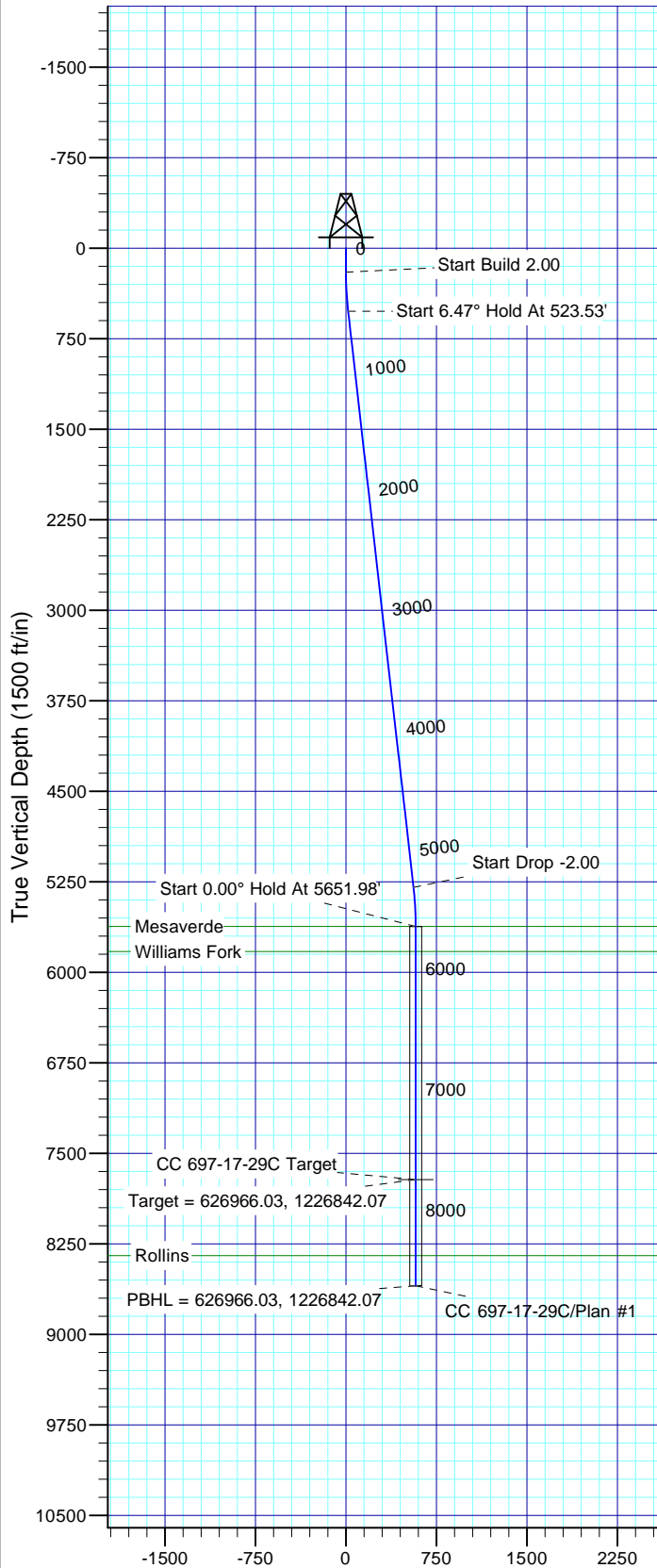
Well Details: CC 697-17-29C

TVD Reference: GL 8253' & RKB 30' @ 8283.00ft (H&P) Ground Level: 8253.00
+N/-S 0.00 +E/-W 0.00 Northing 627074.97 Easting 1227409.68 Latitude 39° 31' 23.372 N Longitude 108° 14' 20.891 W Slot F



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52304.5nT
Dip Angle: 65.74°
Date: 11/15/2010
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5620.00	5651.98	Mesaverde
5828.00	5859.98	Williams Fork
8348.00	8379.98	Rollins

Plan: Plan #1

20:44, November 15 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	V Sect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	523.53	6.47	257.41	522.84	-3.98	-17.81	2.00	257.41	18.25	
4	5328.46	6.47	257.41	5297.16	-122.02	-546.26	0.00	0.00	559.73	
5	5651.98	0.00	0.00	5620.00	-126.00	-564.07	2.00	180.00	577.97	
6	7749.98	0.00	0.00	7718.00	-126.00	-564.07	0.00	0.00	577.97	CC 697-17-29C Target
7	8629.98	0.00	0.00	8598.00	-126.00	-564.07	0.00	0.00	577.97	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-17B Pad
CC 697-17-29C - Slot F**

OH

Plan: Plan #1

Standard Planning Report

15 November, 2010

Scientific Drilling International

Planning Report

Database:	Rockies-R5000.1	Local Co-ordinate Reference:	Well CC 697-17-29C - Slot F
Company:	OXY USA RMAT	TVD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Site:	Cascade Creek 697-17B Pad	North Reference:	True
Well:	CC 697-17-29C	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 697-17B Pad, Sec 17 T6S R97W			
Site Position:		Northing:	627,039.73 usft	Latitude:	39° 31' 23.028 N
From:	Map	Easting:	1,227,422.51 usft	Longitude:	108° 14' 20.714 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.73 °

Well	CC 697-17-29C - Slot F					
Well Position	+N/-S	34.84 ft	Northing:	627,074.97 usft	Latitude:	39° 31' 23.372 N
	+E/-W	-13.89 ft	Easting:	1,227,409.68 usft	Longitude:	108° 14' 20.891 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,253.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	11/15/2010	10.51	65.74	52,304

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	257.41

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
523.53	6.47	257.41	522.84	-3.98	-17.81	2.00	2.00	0.00	257.41	
5,328.46	6.47	257.41	5,297.16	-122.02	-546.26	0.00	0.00	0.00	0.00	
5,651.98	0.00	0.00	5,620.00	-126.00	-564.07	2.00	-2.00	0.00	180.00	
7,749.98	0.00	0.00	7,718.00	-126.00	-564.07	0.00	0.00	0.00	0.00	CC 697-17-29C Target
8,629.98	0.00	0.00	8,598.00	-126.00	-564.07	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	Rockies-R5000.1	Local Co-ordinate Reference:	Well CC 697-17-29C - Slot F
Company:	OXY USA RMAT	TVD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Site:	Cascade Creek 697-17B Pad	North Reference:	True
Well:	CC 697-17-29C	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
Start Build 2.00									
300.00	2.00	257.41	299.98	-0.38	-1.70	1.75	2.00	2.00	0.00
400.00	4.00	257.41	399.84	-1.52	-6.81	6.98	2.00	2.00	0.00
500.00	6.00	257.41	499.45	-3.42	-15.32	15.69	2.00	2.00	0.00
523.53	6.47	257.41	522.84	-3.98	-17.81	18.25	2.00	2.00	0.00
Start 6.47° Hold At 523.53'									
600.00	6.47	257.41	598.83	-5.86	-26.22	26.87	0.00	0.00	0.00
700.00	6.47	257.41	698.19	-8.31	-37.22	38.14	0.00	0.00	0.00
800.00	6.47	257.41	797.55	-10.77	-48.22	49.41	0.00	0.00	0.00
900.00	6.47	257.41	896.91	-13.23	-59.21	60.67	0.00	0.00	0.00
1,000.00	6.47	257.41	996.28	-15.68	-70.21	71.94	0.00	0.00	0.00
1,100.00	6.47	257.41	1,095.64	-18.14	-81.21	83.21	0.00	0.00	0.00
1,200.00	6.47	257.41	1,195.00	-20.60	-92.21	94.48	0.00	0.00	0.00
1,300.00	6.47	257.41	1,294.37	-23.05	-103.21	105.75	0.00	0.00	0.00
1,400.00	6.47	257.41	1,393.73	-25.51	-114.21	117.02	0.00	0.00	0.00
1,500.00	6.47	257.41	1,493.09	-27.97	-125.20	128.29	0.00	0.00	0.00
1,600.00	6.47	257.41	1,592.46	-30.42	-136.20	139.56	0.00	0.00	0.00
1,700.00	6.47	257.41	1,691.82	-32.88	-147.20	150.83	0.00	0.00	0.00
1,800.00	6.47	257.41	1,791.18	-35.34	-158.20	162.10	0.00	0.00	0.00
1,900.00	6.47	257.41	1,890.54	-37.79	-169.20	173.37	0.00	0.00	0.00
2,000.00	6.47	257.41	1,989.91	-40.25	-180.19	184.64	0.00	0.00	0.00
2,100.00	6.47	257.41	2,089.27	-42.71	-191.19	195.90	0.00	0.00	0.00
2,200.00	6.47	257.41	2,188.63	-45.17	-202.19	207.17	0.00	0.00	0.00
2,300.00	6.47	257.41	2,288.00	-47.62	-213.19	218.44	0.00	0.00	0.00
2,400.00	6.47	257.41	2,387.36	-50.08	-224.19	229.71	0.00	0.00	0.00
2,500.00	6.47	257.41	2,486.72	-52.54	-235.18	240.98	0.00	0.00	0.00
2,600.00	6.47	257.41	2,586.09	-54.99	-246.18	252.25	0.00	0.00	0.00
2,700.00	6.47	257.41	2,685.45	-57.45	-257.18	263.52	0.00	0.00	0.00
2,800.00	6.47	257.41	2,784.81	-59.91	-268.18	274.79	0.00	0.00	0.00
2,900.00	6.47	257.41	2,884.17	-62.36	-279.18	286.06	0.00	0.00	0.00
3,000.00	6.47	257.41	2,983.54	-64.82	-290.18	297.33	0.00	0.00	0.00
3,100.00	6.47	257.41	3,082.90	-67.28	-301.17	308.60	0.00	0.00	0.00
3,200.00	6.47	257.41	3,182.26	-69.73	-312.17	319.87	0.00	0.00	0.00
3,300.00	6.47	257.41	3,281.63	-72.19	-323.17	331.13	0.00	0.00	0.00
3,400.00	6.47	257.41	3,380.99	-74.65	-334.17	342.40	0.00	0.00	0.00
3,500.00	6.47	257.41	3,480.35	-77.10	-345.17	353.67	0.00	0.00	0.00
3,600.00	6.47	257.41	3,579.72	-79.56	-356.16	364.94	0.00	0.00	0.00
3,700.00	6.47	257.41	3,679.08	-82.02	-367.16	376.21	0.00	0.00	0.00
3,800.00	6.47	257.41	3,778.44	-84.47	-378.16	387.48	0.00	0.00	0.00
3,900.00	6.47	257.41	3,877.80	-86.93	-389.16	398.75	0.00	0.00	0.00
4,000.00	6.47	257.41	3,977.17	-89.39	-400.16	410.02	0.00	0.00	0.00
4,100.00	6.47	257.41	4,076.53	-91.84	-411.15	421.29	0.00	0.00	0.00
4,200.00	6.47	257.41	4,175.89	-94.30	-422.15	432.56	0.00	0.00	0.00
4,300.00	6.47	257.41	4,275.26	-96.76	-433.15	443.83	0.00	0.00	0.00
4,400.00	6.47	257.41	4,374.62	-99.21	-444.15	455.10	0.00	0.00	0.00
4,500.00	6.47	257.41	4,473.98	-101.67	-455.15	466.36	0.00	0.00	0.00
4,600.00	6.47	257.41	4,573.35	-104.13	-466.15	477.63	0.00	0.00	0.00
4,700.00	6.47	257.41	4,672.71	-106.58	-477.14	488.90	0.00	0.00	0.00
4,800.00	6.47	257.41	4,772.07	-109.04	-488.14	500.17	0.00	0.00	0.00
4,900.00	6.47	257.41	4,871.43	-111.50	-499.14	511.44	0.00	0.00	0.00
5,000.00	6.47	257.41	4,970.80	-113.95	-510.14	522.71	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Site:	Cascade Creek 697-17B Pad	North Reference:	True
Well:	CC 697-17-29C	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)
5,100.00	6.47	257.41	5,070.16	-116.41	-521.14	533.98	0.00	0.00	0.00
5,200.00	6.47	257.41	5,169.52	-118.87	-532.13	545.25	0.00	0.00	0.00
5,300.00	6.47	257.41	5,268.89	-121.32	-543.13	556.52	0.00	0.00	0.00
5,328.46	6.47	257.41	5,297.16	-122.02	-546.26	559.73	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	5.04	257.41	5,368.34	-123.59	-553.26	566.90	2.00	-2.00	0.00
5,500.00	3.04	257.41	5,468.09	-125.12	-560.14	573.94	2.00	-2.00	0.00
5,600.00	1.04	257.41	5,568.02	-125.90	-563.61	577.50	2.00	-2.00	0.00
5,651.98	0.00	0.00	5,620.00	-126.00	-564.07	577.97	2.00	-2.00	197.36
Start 0.00° Hold At 5651.98' - Mesaverde									
5,700.00	0.00	0.00	5,668.02	-126.00	-564.07	577.97	0.00	0.00	0.00
5,800.00	0.00	0.00	5,768.02	-126.00	-564.07	577.97	0.00	0.00	0.00
5,859.98	0.00	0.00	5,828.00	-126.00	-564.07	577.97	0.00	0.00	0.00
Williams Fork									
5,900.00	0.00	0.00	5,868.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,000.00	0.00	0.00	5,968.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,100.00	0.00	0.00	6,068.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,200.00	0.00	0.00	6,168.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,300.00	0.00	0.00	6,268.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,400.00	0.00	0.00	6,368.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,500.00	0.00	0.00	6,468.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,600.00	0.00	0.00	6,568.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,700.00	0.00	0.00	6,668.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,800.00	0.00	0.00	6,768.02	-126.00	-564.07	577.97	0.00	0.00	0.00
6,900.00	0.00	0.00	6,868.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,000.00	0.00	0.00	6,968.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,100.00	0.00	0.00	7,068.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,200.00	0.00	0.00	7,168.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,300.00	0.00	0.00	7,268.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,400.00	0.00	0.00	7,368.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,500.00	0.00	0.00	7,468.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,600.00	0.00	0.00	7,568.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,700.00	0.00	0.00	7,668.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,749.98	0.00	0.00	7,718.00	-126.00	-564.07	577.97	0.00	0.00	0.00
Target = 626966.03, 1226842.07									
7,800.00	0.00	0.00	7,768.02	-126.00	-564.07	577.97	0.00	0.00	0.00
7,900.00	0.00	0.00	7,868.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,000.00	0.00	0.00	7,968.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,100.00	0.00	0.00	8,068.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,200.00	0.00	0.00	8,168.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,300.00	0.00	0.00	8,268.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,379.98	0.00	0.00	8,348.00	-126.00	-564.07	577.97	0.00	0.00	0.00
Rollins									
8,400.00	0.00	0.00	8,368.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,500.00	0.00	0.00	8,468.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,600.00	0.00	0.00	8,568.02	-126.00	-564.07	577.97	0.00	0.00	0.00
8,629.98	0.00	0.00	8,598.00	-126.00	-564.07	577.97	0.00	0.00	0.00
PBHL = 626966.03, 1226842.07									

Scientific Drilling International

Planning Report

Database:	Rockies-R5000.1	Local Co-ordinate Reference:	Well CC 697-17-29C - Slot F
Company:	OXY USA RMAT	TVD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8253' & RKB 30' @ 8283.00ft (H&P)
Site:	Cascade Creek 697-17B Pad	North Reference:	True
Well:	CC 697-17-29C	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
CC 697-17-29C Target	0.00	0.00	7,718.00	-126.00	-564.07	626,966.03	1,226,842.06	39° 31' 22.127 N	108° 14' 28.090 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,651.98	5,620.00	Mesaverde		0.00	
5,859.98	5,828.00	Williams Fork		0.00	
8,379.98	8,348.00	Rollins		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 2.00
523.53	522.84	-3.98	-17.81	Start 6.47° Hold At 523.53'
5,328.46	5,297.16	-122.02	-546.26	Start Drop -2.00
5,651.98	5,620.00	-126.00	-564.07	Start 0.00° Hold At 5651.98'
7,749.98	7,718.00	-126.00	-564.07	Target = 626966.03, 1226842.07
8,629.98	8,598.00	-126.00	-564.07	PBHL = 626966.03, 1226842.07