



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-06A Pad



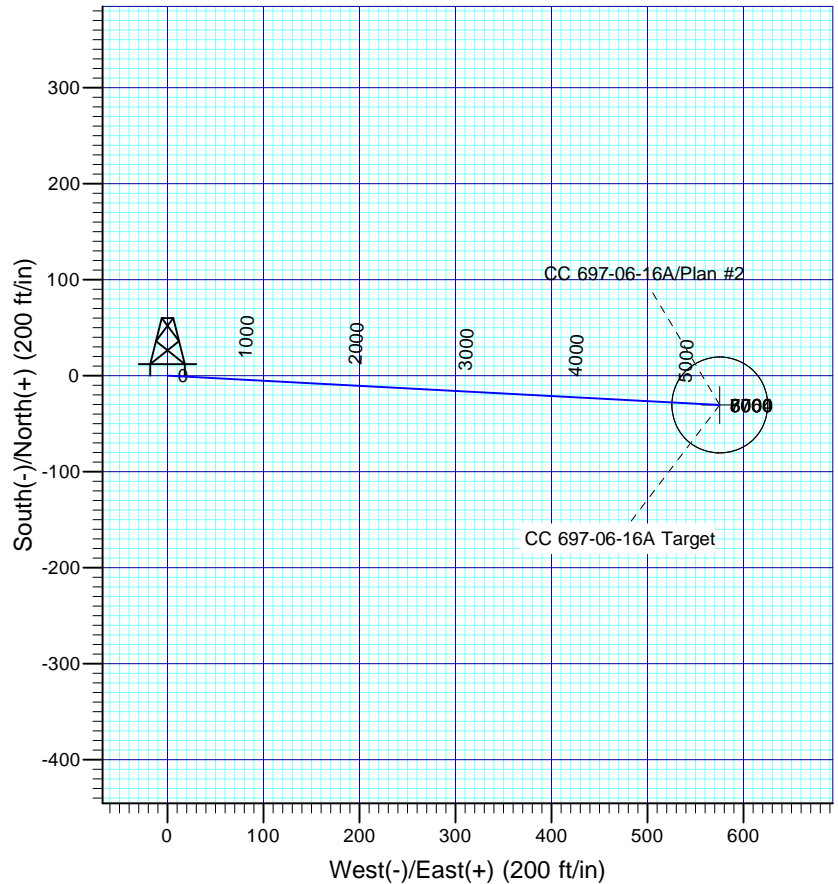
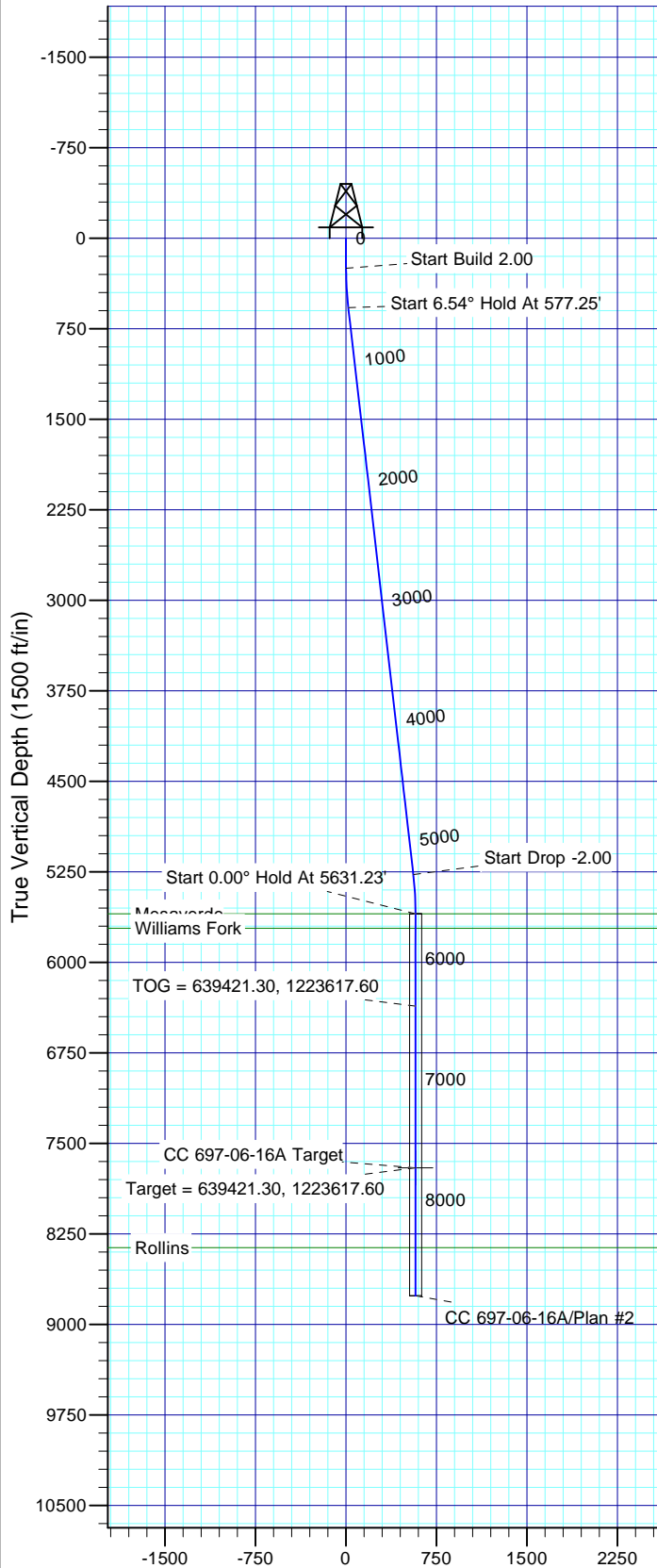
Well Details: CC 697-06-16A

TVD Reference: GL 8184' & RKB 30' @ 8214.00ft (H&P) Ground Level: 8184.00
+N/-S 0.00 +E/-W 0.00 Northing 639469.38 Easting 1223043.50 Latitude 39° 33' 24.513 N Longitude 108° 15' 21.382 W Slot I



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.9snT
Dip Angle: 65.77°
Date: 2010/12/20
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5599.00	5631.23	Mesaverde
5719.00	5751.23	Williams Fork
8364.00	8396.23	Rollins

Plan: Plan #2

20:44, February 03 2011
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	577.25	6.54	93.05	576.54	-0.99	18.64	2.00	93.05	18.67	
4	5303.98	6.54	93.05	5272.46	-29.65	556.65	0.00	0.00	557.44	
5	5631.23	0.00	0.00	5599.00	-30.65	575.29	2.00	180.00	576.11	
6	7735.23	0.00	0.00	7703.00	-30.65	575.29	0.00	0.00	576.11	CC 697-06-16A Target
7	8796.23	0.00	0.00	8764.00	-30.65	575.29	0.00	0.00	576.11	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-06A Pad
CC 697-06-16A - Slot I**

OH

Plan: Plan #2

Standard Planning Report

03 February, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-16A - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-06-16A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 697-06A Pad, Sec 6 T6S R97W			
Site Position:		Northing:	639,442.25 usft	Latitude:	39° 33' 24.203 N
From:	Map	Easting:	1,222,903.93 usft	Longitude:	108° 15' 23.153 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.74 °

Well	CC 697-06-16A - Slot I					
Well Position	+N/-S	31.35 ft	Northing:	639,469.38 usft	Latitude:	39° 33' 24.513 N
	+E/-W	138.68 ft	Easting:	1,223,043.50 usft	Longitude:	108° 15' 21.382 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,184.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/20	10.51	65.77	52,312

Design	Plan #2			
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	93.05

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	
577.25	6.54	93.05	576.54	-0.99	18.64	2.00	2.00	0.00	93.05	
5,303.98	6.54	93.05	5,272.46	-29.65	556.65	0.00	0.00	0.00	0.00	
5,631.23	0.00	0.00	5,599.00	-30.65	575.29	2.00	-2.00	0.00	180.00	
7,735.23	0.00	0.00	7,703.00	-30.65	575.29	0.00	0.00	0.00	0.00	CC 697-06-16A Target
8,796.23	0.00	0.00	8,764.00	-30.65	575.29	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-16A - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-06-16A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	93.05	300.00	-0.02	0.44	0.44	2.00	2.00	0.00
400.00	3.00	93.05	399.93	-0.21	3.92	3.93	2.00	2.00	0.00
500.00	5.00	93.05	499.68	-0.58	10.89	10.90	2.00	2.00	0.00
577.25	6.54	93.05	576.54	-0.99	18.64	18.67	2.00	2.00	0.00
Start 6.54° Hold At 577.25'									
600.00	6.54	93.05	599.14	-1.13	21.23	21.26	0.00	0.00	0.00
700.00	6.54	93.05	698.49	-1.74	32.62	32.66	0.00	0.00	0.00
800.00	6.54	93.05	797.84	-2.34	44.00	44.06	0.00	0.00	0.00
900.00	6.54	93.05	897.19	-2.95	55.38	55.46	0.00	0.00	0.00
1,000.00	6.54	93.05	996.53	-3.56	66.76	66.86	0.00	0.00	0.00
1,100.00	6.54	93.05	1,095.88	-4.16	78.14	78.26	0.00	0.00	0.00
1,200.00	6.54	93.05	1,195.23	-4.77	89.53	89.65	0.00	0.00	0.00
1,300.00	6.54	93.05	1,294.58	-5.38	100.91	101.05	0.00	0.00	0.00
1,400.00	6.54	93.05	1,393.93	-5.98	112.29	112.45	0.00	0.00	0.00
1,500.00	6.54	93.05	1,493.27	-6.59	123.67	123.85	0.00	0.00	0.00
1,600.00	6.54	93.05	1,592.62	-7.19	135.06	135.25	0.00	0.00	0.00
1,700.00	6.54	93.05	1,691.97	-7.80	146.44	146.65	0.00	0.00	0.00
1,800.00	6.54	93.05	1,791.32	-8.41	157.82	158.04	0.00	0.00	0.00
1,900.00	6.54	93.05	1,890.67	-9.01	169.20	169.44	0.00	0.00	0.00
2,000.00	6.54	93.05	1,990.02	-9.62	180.58	180.84	0.00	0.00	0.00
2,100.00	6.54	93.05	2,089.36	-10.23	191.97	192.24	0.00	0.00	0.00
2,200.00	6.54	93.05	2,188.71	-10.83	203.35	203.64	0.00	0.00	0.00
2,300.00	6.54	93.05	2,288.06	-11.44	214.73	215.04	0.00	0.00	0.00
2,400.00	6.54	93.05	2,387.41	-12.04	226.11	226.43	0.00	0.00	0.00
2,500.00	6.54	93.05	2,486.76	-12.65	237.50	237.83	0.00	0.00	0.00
2,600.00	6.54	93.05	2,586.11	-13.26	248.88	249.23	0.00	0.00	0.00
2,700.00	6.54	93.05	2,685.45	-13.86	260.26	260.63	0.00	0.00	0.00
2,800.00	6.54	93.05	2,784.80	-14.47	271.64	272.03	0.00	0.00	0.00
2,900.00	6.54	93.05	2,884.15	-15.08	283.02	283.43	0.00	0.00	0.00
3,000.00	6.54	93.05	2,983.50	-15.68	294.41	294.82	0.00	0.00	0.00
3,100.00	6.54	93.05	3,082.85	-16.29	305.79	306.22	0.00	0.00	0.00
3,200.00	6.54	93.05	3,182.20	-16.90	317.17	317.62	0.00	0.00	0.00
3,300.00	6.54	93.05	3,281.54	-17.50	328.55	329.02	0.00	0.00	0.00
3,400.00	6.54	93.05	3,380.89	-18.11	339.93	340.42	0.00	0.00	0.00
3,500.00	6.54	93.05	3,480.24	-18.71	351.32	351.82	0.00	0.00	0.00
3,600.00	6.54	93.05	3,579.59	-19.32	362.70	363.21	0.00	0.00	0.00
3,700.00	6.54	93.05	3,678.94	-19.93	374.08	374.61	0.00	0.00	0.00
3,800.00	6.54	93.05	3,778.29	-20.53	385.46	386.01	0.00	0.00	0.00
3,900.00	6.54	93.05	3,877.63	-21.14	396.85	397.41	0.00	0.00	0.00
4,000.00	6.54	93.05	3,976.98	-21.75	408.23	408.81	0.00	0.00	0.00
4,100.00	6.54	93.05	4,076.33	-22.35	419.61	420.21	0.00	0.00	0.00
4,200.00	6.54	93.05	4,175.68	-22.96	430.99	431.60	0.00	0.00	0.00
4,300.00	6.54	93.05	4,275.03	-23.56	442.37	443.00	0.00	0.00	0.00
4,400.00	6.54	93.05	4,374.37	-24.17	453.76	454.40	0.00	0.00	0.00
4,500.00	6.54	93.05	4,473.72	-24.78	465.14	465.80	0.00	0.00	0.00
4,600.00	6.54	93.05	4,573.07	-25.38	476.52	477.20	0.00	0.00	0.00
4,700.00	6.54	93.05	4,672.42	-25.99	487.90	488.59	0.00	0.00	0.00
4,800.00	6.54	93.05	4,771.77	-26.60	499.29	499.99	0.00	0.00	0.00
4,900.00	6.54	93.05	4,871.12	-27.20	510.67	511.39	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-16A - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-06-16A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	6.54	93.05	4,970.46	-27.81	522.05	522.79	0.00	0.00	0.00
5,100.00	6.54	93.05	5,069.81	-28.42	533.43	534.19	0.00	0.00	0.00
5,200.00	6.54	93.05	5,169.16	-29.02	544.81	545.59	0.00	0.00	0.00
5,300.00	6.54	93.05	5,268.51	-29.63	556.20	556.98	0.00	0.00	0.00
5,303.98	6.54	93.05	5,272.46	-29.65	556.65	557.44	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	4.62	93.05	5,368.02	-30.15	565.98	566.78	2.00	-2.00	0.00
5,500.00	2.62	93.05	5,467.82	-30.49	572.29	573.10	2.00	-2.00	0.00
5,600.00	0.62	93.05	5,567.77	-30.64	575.12	575.94	2.00	-2.00	0.00
5,631.23	0.00	0.00	5,599.00	-30.65	575.29	576.11	2.00	-2.00	0.00
Start 0.00° Hold At 5631.23' - Mesaverde									
5,700.00	0.00	0.00	5,667.77	-30.65	575.29	576.11	0.00	0.00	0.00
5,751.23	0.00	0.00	5,719.00	-30.65	575.29	576.11	0.00	0.00	0.00
Williams Fork									
5,800.00	0.00	0.00	5,767.77	-30.65	575.29	576.11	0.00	0.00	0.00
5,900.00	0.00	0.00	5,867.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,000.00	0.00	0.00	5,967.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,100.00	0.00	0.00	6,067.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,200.00	0.00	0.00	6,167.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,300.00	0.00	0.00	6,267.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,396.23	0.00	0.00	6,364.00	-30.65	575.29	576.11	0.00	0.00	0.00
TOG = 639421.30, 1223617.60									
6,400.00	0.00	0.00	6,367.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,500.00	0.00	0.00	6,467.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,600.00	0.00	0.00	6,567.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,700.00	0.00	0.00	6,667.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,800.00	0.00	0.00	6,767.77	-30.65	575.29	576.11	0.00	0.00	0.00
6,900.00	0.00	0.00	6,867.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,000.00	0.00	0.00	6,967.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,100.00	0.00	0.00	7,067.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,200.00	0.00	0.00	7,167.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,300.00	0.00	0.00	7,267.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,400.00	0.00	0.00	7,367.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,500.00	0.00	0.00	7,467.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,600.00	0.00	0.00	7,567.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,700.00	0.00	0.00	7,667.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,735.23	0.00	0.00	7,703.00	-30.65	575.29	576.11	0.00	0.00	0.00
Target = 639421.30, 1223617.60									
7,800.00	0.00	0.00	7,767.77	-30.65	575.29	576.11	0.00	0.00	0.00
7,900.00	0.00	0.00	7,867.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,000.00	0.00	0.00	7,967.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,100.00	0.00	0.00	8,067.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,200.00	0.00	0.00	8,167.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,300.00	0.00	0.00	8,267.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,396.23	0.00	0.00	8,364.00	-30.65	575.29	576.11	0.00	0.00	0.00
Rollins									
8,400.00	0.00	0.00	8,367.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,500.00	0.00	0.00	8,467.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,600.00	0.00	0.00	8,567.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,700.00	0.00	0.00	8,667.77	-30.65	575.29	576.11	0.00	0.00	0.00
8,796.23	0.00	0.00	8,764.00	-30.65	575.29	576.11	0.00	0.00	0.00
PBHL = 639421.30, 1223617.60									

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-16A - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-06-16A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 697-06-16A Target	0.00	0.00	7,703.00	-30.65	575.29	639,421.30	1,223,617.60	39° 33' 24.210 N	108° 15' 14.037 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,631.23	5,599.00	Mesaverde		0.00	
5,751.23	5,719.00	Williams Fork		0.00	
8,396.23	8,364.00	Rollins		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
250.00	250.00	0.00	0.00	Start Build 2.00
577.25	576.54	-0.99	18.64	Start 6.54° Hold At 577.25'
5,303.98	5,272.46	-29.65	556.65	Start Drop -2.00
5,631.23	5,599.00	-30.65	575.29	Start 0.00° Hold At 5631.23'
6,396.23	6,364.00	-30.65	575.29	TOG = 639421.30, 1223617.60
7,735.23	7,703.00	-30.65	575.29	Target = 639421.30, 1223617.60
8,796.23	8,764.00	-30.65	575.29	PBHL = 639421.30, 1223617.60