



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad



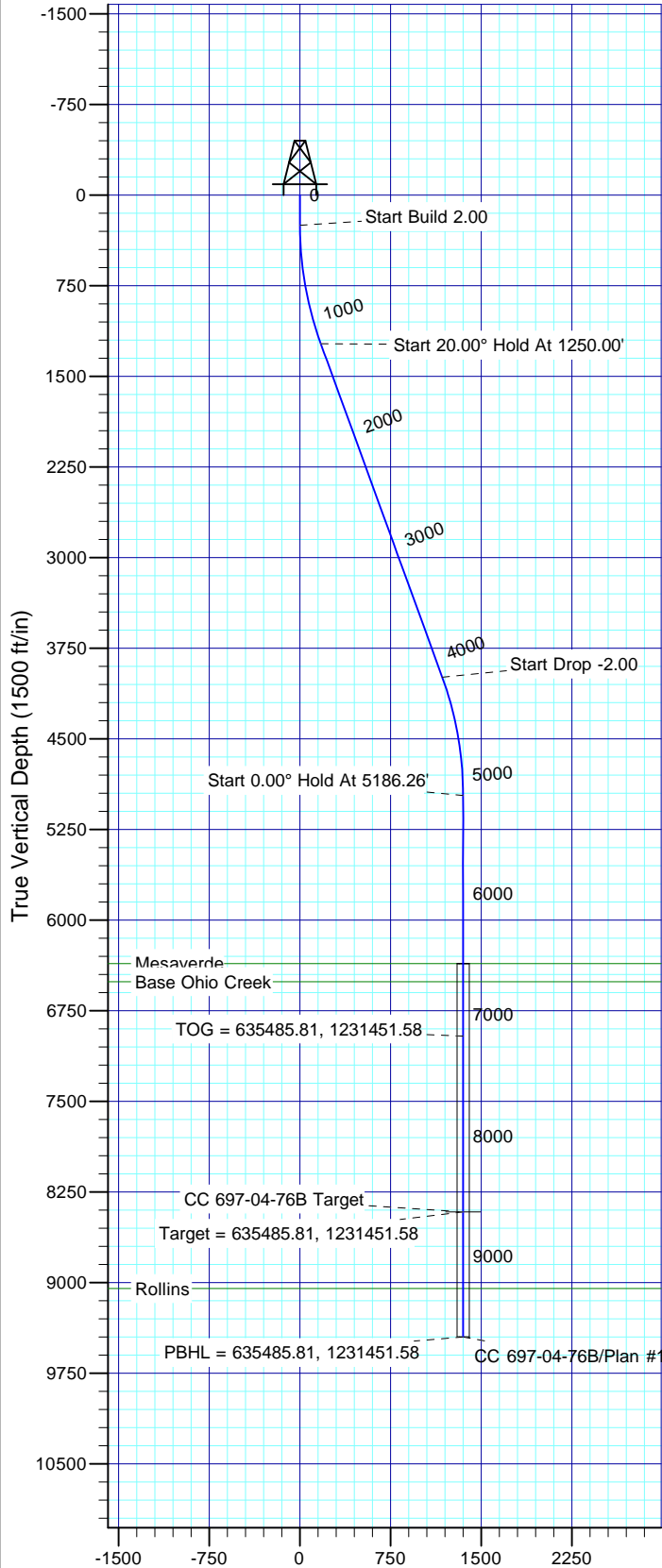
Well Details: CC 697-04-76B

TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P) Ground Level: 8629.00
+N/-S 0.00 +E/-W 0.00 Northing 636347.37 Easting 1230412.51 Latitude 39° 32' 55.869 N Longitude 108° 13' 46.143 W Slot G

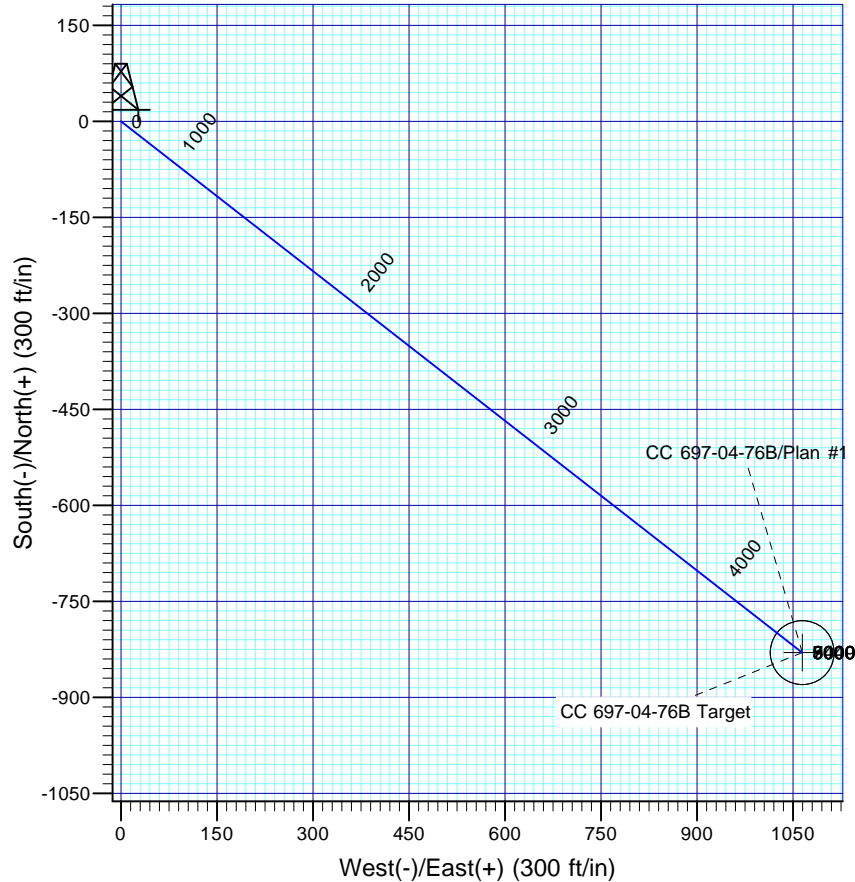


Azimuths to True North
Magnetic North: 10.47°

Magnetic Field
Strength: 52282.4snT
Dip Angle: 65.76°
Date: 2011/03/24
Model: IGRF2005-10



Vertical Section at 127.94° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6359.00	6576.45	Mesaverde
6509.00	6726.45	Base Ohio Creek
9049.00	9266.45	Rollins

Plan: Plan #1

14:06, March 29 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	1250.00	20.00	127.94	1229.82	-106.23	136.25	2.00	127.94	172.77	
4	4186.26	20.00	127.94	3988.99	-723.73	928.23	0.00	0.00	0.00	
5	5186.26	0.00	0.00	4968.81	-829.96	1064.48	2.00	180.00	1349.79	
6	8631.45	0.00	0.00	8414.00	-829.96	1064.48	0.00	0.00	1349.79	CC 697-04-76B Target
7	9666.45	0.00	0.00	9449.00	-829.96	1064.48	0.00	0.00	1349.79	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-76B - Slot G**

OH

Plan: Plan #1

Standard Planning Report

29 March, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-76B - Slot G
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-76B	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 697-04D Pad			
Site Position:		Northing:	635,530.62 usft	Latitude:	39° 32' 47.760 N
From:	Map	Easting:	1,230,276.10 usft	Longitude:	108° 13' 47.570 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	CC 697-04-76B - Slot G					
Well Position	+N/-S	820.48 ft	Northing:	636,347.37 usft	Latitude:	39° 32' 55.869 N
	+E/-W	111.81 ft	Easting:	1,230,412.51 usft	Longitude:	108° 13' 46.143 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,629.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2011/03/24	10.47	65.76	52,282

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	127.94

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	
1,250.00	20.00	127.94	1,229.82	-106.23	136.25	2.00	2.00	0.00	127.94	
4,186.26	20.00	127.94	3,988.99	-723.73	928.23	0.00	0.00	0.00	0.00	
5,186.26	0.00	0.00	4,968.81	-829.96	1,064.48	2.00	-2.00	0.00	180.00	
8,631.45	0.00	0.00	8,414.00	-829.96	1,064.48	0.00	0.00	0.00	0.00	CC 697-04-76B Target
9,666.45	0.00	0.00	9,449.00	-829.96	1,064.48	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-76B - Slot G
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-76B	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	127.94	300.00	-0.27	0.34	0.44	2.00	2.00	0.00
400.00	3.00	127.94	399.93	-2.41	3.10	3.93	2.00	2.00	0.00
500.00	5.00	127.94	499.68	-6.70	8.60	10.90	2.00	2.00	0.00
600.00	7.00	127.94	599.13	-13.13	16.84	21.35	2.00	2.00	0.00
700.00	9.00	127.94	698.15	-21.69	27.82	35.27	2.00	2.00	0.00
800.00	11.00	127.94	796.63	-32.36	41.51	52.63	2.00	2.00	0.00
900.00	13.00	127.94	894.44	-45.15	57.90	73.42	2.00	2.00	0.00
1,000.00	15.00	127.94	991.46	-60.02	76.98	97.62	2.00	2.00	0.00
1,100.00	17.00	127.94	1,087.58	-76.97	98.72	125.18	2.00	2.00	0.00
1,200.00	19.00	127.94	1,182.68	-95.97	123.09	156.08	2.00	2.00	0.00
1,250.00	20.00	127.94	1,229.82	-106.23	136.25	172.77	2.00	2.00	0.00
Start 20.00° Hold At 1250.00'									
1,300.00	20.00	127.94	1,276.80	-116.75	149.74	189.87	0.00	0.00	0.00
1,400.00	20.00	127.94	1,370.77	-137.78	176.71	224.07	0.00	0.00	0.00
1,500.00	20.00	127.94	1,464.74	-158.81	203.68	258.27	0.00	0.00	0.00
1,600.00	20.00	127.94	1,558.71	-179.84	230.65	292.47	0.00	0.00	0.00
1,700.00	20.00	127.94	1,652.68	-200.87	257.63	326.68	0.00	0.00	0.00
1,800.00	20.00	127.94	1,746.65	-221.90	284.60	360.88	0.00	0.00	0.00
1,900.00	20.00	127.94	1,840.62	-242.93	311.57	395.08	0.00	0.00	0.00
2,000.00	20.00	127.94	1,934.59	-263.96	338.54	429.28	0.00	0.00	0.00
2,100.00	20.00	127.94	2,028.55	-284.99	365.52	463.49	0.00	0.00	0.00
2,200.00	20.00	127.94	2,122.52	-306.02	392.49	497.69	0.00	0.00	0.00
2,300.00	20.00	127.94	2,216.49	-327.05	419.46	531.89	0.00	0.00	0.00
2,400.00	20.00	127.94	2,310.46	-348.08	446.43	566.09	0.00	0.00	0.00
2,500.00	20.00	127.94	2,404.43	-369.11	473.41	600.29	0.00	0.00	0.00
2,600.00	20.00	127.94	2,498.40	-390.14	500.38	634.50	0.00	0.00	0.00
2,700.00	20.00	127.94	2,592.37	-411.17	527.35	668.70	0.00	0.00	0.00
2,800.00	20.00	127.94	2,686.34	-432.20	554.32	702.90	0.00	0.00	0.00
2,900.00	20.00	127.94	2,780.31	-453.23	581.30	737.10	0.00	0.00	0.00
3,000.00	20.00	127.94	2,874.28	-474.26	608.27	771.30	0.00	0.00	0.00
3,100.00	20.00	127.94	2,968.25	-495.29	635.24	805.51	0.00	0.00	0.00
3,200.00	20.00	127.94	3,062.22	-516.32	662.21	839.71	0.00	0.00	0.00
3,300.00	20.00	127.94	3,156.19	-537.35	689.19	873.91	0.00	0.00	0.00
3,400.00	20.00	127.94	3,250.15	-558.38	716.16	908.11	0.00	0.00	0.00
3,500.00	20.00	127.94	3,344.12	-579.41	743.13	942.31	0.00	0.00	0.00
3,600.00	20.00	127.94	3,438.09	-600.44	770.10	976.52	0.00	0.00	0.00
3,700.00	20.00	127.94	3,532.06	-621.47	797.08	1,010.72	0.00	0.00	0.00
3,800.00	20.00	127.94	3,626.03	-642.50	824.05	1,044.92	0.00	0.00	0.00
3,900.00	20.00	127.94	3,720.00	-663.53	851.02	1,079.12	0.00	0.00	0.00
4,000.00	20.00	127.94	3,813.97	-684.56	877.99	1,113.32	0.00	0.00	0.00
4,100.00	20.00	127.94	3,907.94	-705.59	904.97	1,147.53	0.00	0.00	0.00
4,186.26	20.00	127.94	3,988.99	-723.73	928.23	1,177.03	0.00	0.00	0.00
Start Drop -2.00									
4,200.00	19.73	127.94	4,001.92	-726.60	931.91	1,181.70	2.00	-2.00	0.00
4,300.00	17.73	127.94	4,096.62	-746.33	957.23	1,213.80	2.00	-2.00	0.00
4,400.00	15.73	127.94	4,192.39	-764.03	979.92	1,242.57	2.00	-2.00	0.00
4,500.00	13.73	127.94	4,289.10	-779.66	999.97	1,267.99	2.00	-2.00	0.00
4,600.00	11.73	127.94	4,386.64	-793.20	1,017.34	1,290.02	2.00	-2.00	0.00

Scientific Drilling International

Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-76B	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)
4,700.00	9.73	127.94	4,484.88	-804.64	1,032.01	1,308.63	2.00	-2.00	0.00
4,800.00	7.73	127.94	4,583.72	-813.97	1,043.98	1,323.79	2.00	-2.00	0.00
4,900.00	5.73	127.94	4,683.03	-821.17	1,053.21	1,335.50	2.00	-2.00	0.00
5,000.00	3.73	127.94	4,782.68	-826.23	1,059.71	1,343.74	2.00	-2.00	0.00
5,100.00	1.73	127.94	4,882.57	-829.16	1,063.46	1,348.50	2.00	-2.00	0.00
5,186.26	0.00	0.00	4,968.81	-829.96	1,064.48	1,349.79	2.00	-2.00	0.00
Start 0.00° Hold At 5186.26'									
5,200.00	0.00	0.00	4,982.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,300.00	0.00	0.00	5,082.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,400.00	0.00	0.00	5,182.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,500.00	0.00	0.00	5,282.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,600.00	0.00	0.00	5,382.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,700.00	0.00	0.00	5,482.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,800.00	0.00	0.00	5,582.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
5,900.00	0.00	0.00	5,682.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,000.00	0.00	0.00	5,782.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,100.00	0.00	0.00	5,882.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,200.00	0.00	0.00	5,982.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,300.00	0.00	0.00	6,082.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,400.00	0.00	0.00	6,182.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,500.00	0.00	0.00	6,282.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,576.45	0.00	0.00	6,359.00	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
Mesaverde									
6,600.00	0.00	0.00	6,382.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,700.00	0.00	0.00	6,482.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,726.45	0.00	0.00	6,509.00	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
Base Ohio Creek									
6,800.00	0.00	0.00	6,582.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
6,900.00	0.00	0.00	6,682.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,000.00	0.00	0.00	6,782.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,100.00	0.00	0.00	6,882.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,176.45	0.00	0.00	6,959.00	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
TOG = 635485.81, 1231451.58									
7,200.00	0.00	0.00	6,982.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,300.00	0.00	0.00	7,082.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,400.00	0.00	0.00	7,182.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,500.00	0.00	0.00	7,282.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,600.00	0.00	0.00	7,382.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,700.00	0.00	0.00	7,482.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,800.00	0.00	0.00	7,582.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
7,900.00	0.00	0.00	7,682.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,000.00	0.00	0.00	7,782.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,100.00	0.00	0.00	7,882.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,200.00	0.00	0.00	7,982.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,300.00	0.00	0.00	8,082.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,400.00	0.00	0.00	8,182.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,500.00	0.00	0.00	8,282.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,600.00	0.00	0.00	8,382.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,631.45	0.00	0.00	8,414.00	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
Target = 635485.81, 1231451.58									
8,700.00	0.00	0.00	8,482.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,800.00	0.00	0.00	8,582.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00
8,900.00	0.00	0.00	8,682.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-76B - Slot G
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-76B	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)	
9,000.00	0.00	0.00	8,782.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,882.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,200.00	0.00	0.00	8,982.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,266.45	0.00	0.00	9,049.00	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
Rollins										
9,300.00	0.00	0.00	9,082.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,182.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,282.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,382.55	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
9,666.45	0.00	0.00	9,449.00	-829.96	1,064.48	1,349.79	0.00	0.00	0.00	
PBHL = 635485.81, 1231451.58										

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										
CC 697-04-76B Target	0.00	0.00	8,414.00	-829.96	1,064.48	635,485.82	1,231,451.57	39° 32' 47.666 N	108° 13' 32.554 W	
- plan hits target center										
- Circle (radius 50.00)										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,576.45	6,359.00	Mesaverde		0.00		
6,726.45	6,509.00	Base Ohio Creek		0.00		
9,266.45	9,049.00	Rollins		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
250.00	250.00	0.00	0.00	Start Build 2.00	
1,250.00	1,229.82	-106.23	136.25	Start 20.00° Hold At 1250.00'	
4,186.26	3,988.99	-723.73	928.23	Start Drop -2.00	
5,186.26	4,968.81	-829.96	1,064.48	Start 0.00° Hold At 5186.26'	
7,176.45	6,959.00	-829.96	1,064.48	TOG = 635485.81, 1231451.58	
8,631.45	8,414.00	-829.96	1,064.48	Target = 635485.81, 1231451.58	
9,666.45	9,449.00	-829.96	1,064.48	PBHL = 635485.81, 1231451.58	