



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-05C Pad



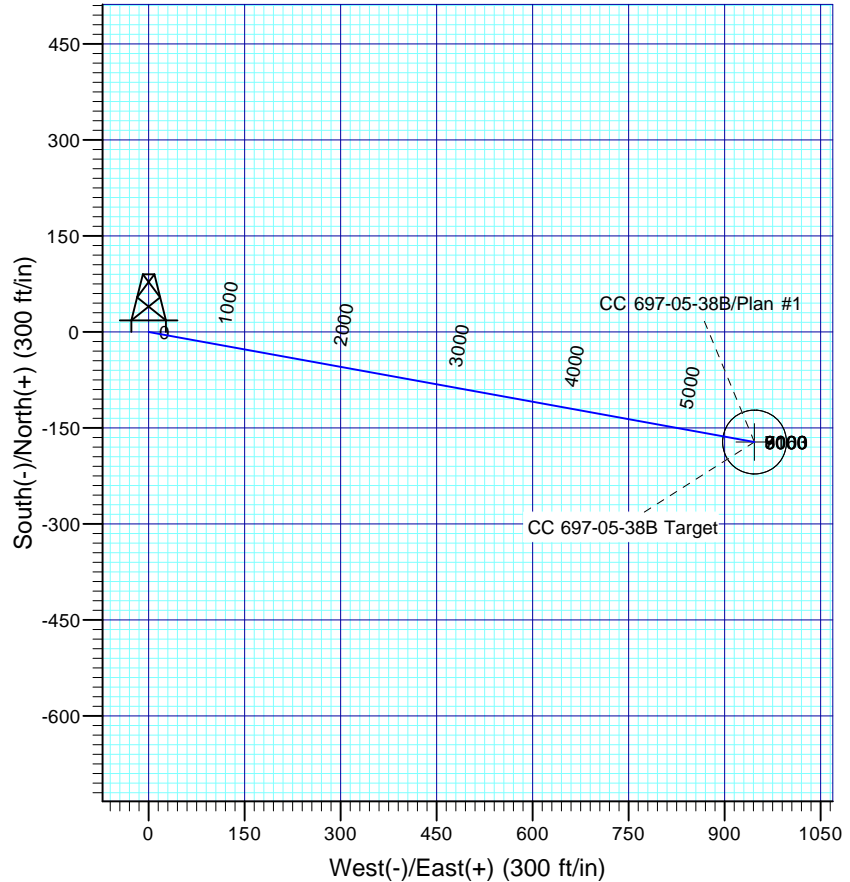
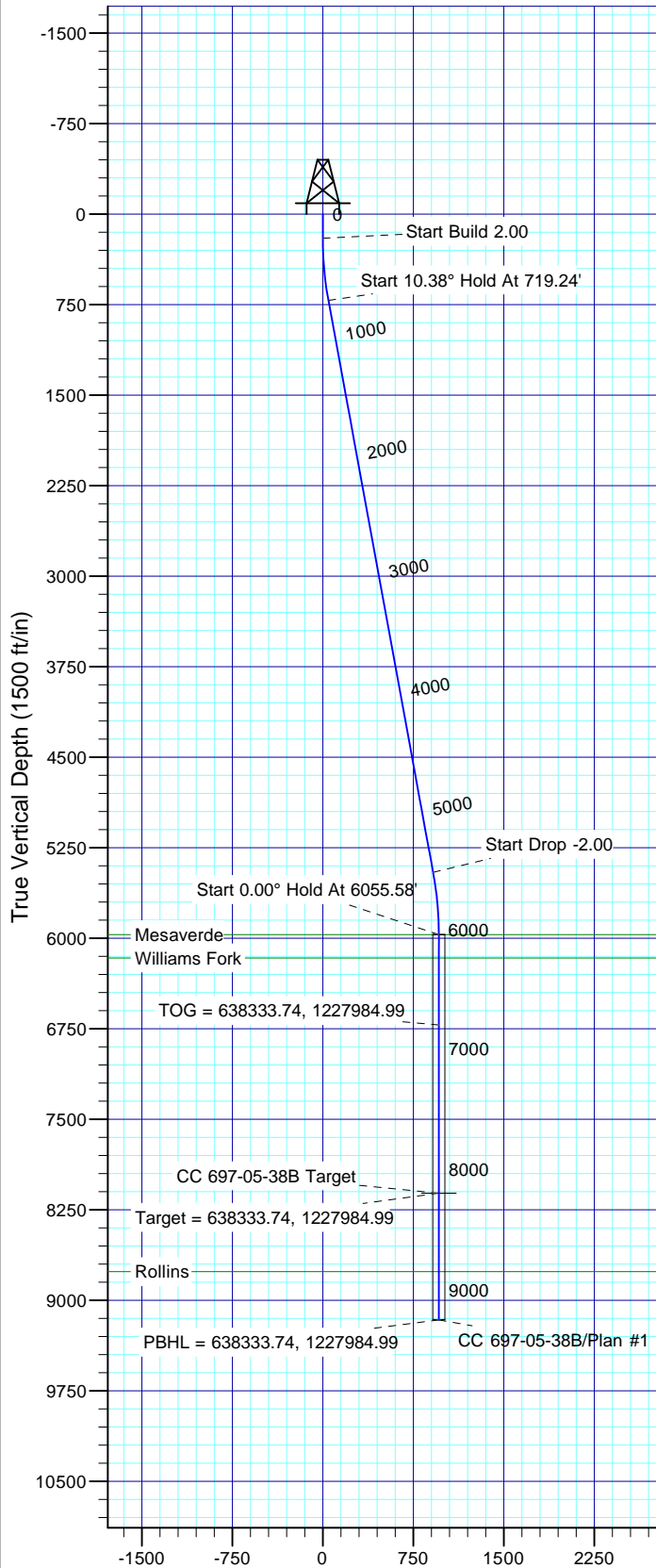
Well Details: CC 697-05-38B

TVD Reference: GL 8429' & RKB 30' @ 8459.00ft (H&P) Ground Level: 8429.00
+N/-S 0.00 +E/-W 0.00 Northing 638534.13 Easting 1227043.91 Latitude 39° 33' 16.470 N Longitude 108° 14' 29.970 W Slot P



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.6snT
Dip Angle: 65.77°
Date: 2010/12/16
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5971.00	6055.58	Mesaverde
6164.00	6248.58	Williams Fork
8763.00	8847.58	Rollins

Plan: Plan #1

14:31, December 28 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	719.24	10.38	100.29	716.40	-8.38	46.17	2.00	100.29	46.93	
4	5536.34	10.38	100.29	5454.60	-163.52	900.53	0.00	0.00	915.25	
5	6055.58	0.00	0.00	5971.00	-171.90	946.70	2.00	180.00	962.18	
6	8197.58	0.00	0.00	8113.00	-171.90	946.70	0.00	0.00	962.18	CC 697-05-38B Target
7	9247.58	0.00	0.00	9163.00	-171.90	946.70	0.00	0.00	962.18	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-38B - Slot P**

OH

Plan: Plan #1

Standard Planning Report

28 December, 2010

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-38B - Slot P
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-38B	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 697-05C Pad, Sec. 5 T6S R97W			
Site Position:		Northing:	637,463.43 usft	Latitude:	39° 33' 5.626 N
From:	Map	Easting:	1,226,150.07 usft	Longitude:	108° 14' 40.963 W
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.73 °

Well	CC 697-05-38B - Slot P					
Well Position	+N/-S	1,097.22 ft	Northing:	638,534.13 usft	Latitude:	39° 33' 16.470 N
	+E/-W	861.09 ft	Easting:	1,227,043.91 usft	Longitude:	108° 14' 29.970 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,429.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/16	10.51	65.77	52,312

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	100.29

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	
719.24	10.38	100.29	716.40	-8.38	46.17	2.00	2.00	0.00	100.29	
5,536.34	10.38	100.29	5,454.60	-163.52	900.53	0.00	0.00	0.00	0.00	
6,055.58	0.00	0.00	5,971.00	-171.90	946.70	2.00	-2.00	0.00	180.00	
8,197.58	0.00	0.00	8,113.00	-171.90	946.70	0.00	0.00	0.00	0.00	CC 697-05-38B Target
9,247.58	0.00	0.00	9,163.00	-171.90	946.70	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-38B - Slot P
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-38B	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	100.29	299.98	-0.31	1.72	1.75	2.00	2.00	0.00
400.00	4.00	100.29	399.84	-1.25	6.87	6.98	2.00	2.00	0.00
500.00	6.00	100.29	499.45	-2.80	15.44	15.69	2.00	2.00	0.00
600.00	8.00	100.29	598.70	-4.98	27.43	27.88	2.00	2.00	0.00
700.00	10.00	100.29	697.47	-7.78	42.82	43.52	2.00	2.00	0.00
719.24	10.38	100.29	716.40	-8.38	46.17	46.93	2.00	2.00	0.00
Start 10.38° Hold At 719.24'									
800.00	10.38	100.29	795.84	-10.98	60.50	61.48	0.00	0.00	0.00
900.00	10.38	100.29	894.20	-14.21	78.23	79.51	0.00	0.00	0.00
1,000.00	10.38	100.29	992.56	-17.43	95.97	97.54	0.00	0.00	0.00
1,100.00	10.38	100.29	1,090.92	-20.65	113.70	115.56	0.00	0.00	0.00
1,200.00	10.38	100.29	1,189.29	-23.87	131.44	133.59	0.00	0.00	0.00
1,300.00	10.38	100.29	1,287.65	-27.09	149.17	151.61	0.00	0.00	0.00
1,400.00	10.38	100.29	1,386.01	-30.31	166.91	169.64	0.00	0.00	0.00
1,500.00	10.38	100.29	1,484.37	-33.53	184.65	187.67	0.00	0.00	0.00
1,600.00	10.38	100.29	1,582.73	-36.75	202.38	205.69	0.00	0.00	0.00
1,700.00	10.38	100.29	1,681.10	-39.97	220.12	223.72	0.00	0.00	0.00
1,800.00	10.38	100.29	1,779.46	-43.19	237.85	241.74	0.00	0.00	0.00
1,900.00	10.38	100.29	1,877.82	-46.41	255.59	259.77	0.00	0.00	0.00
2,000.00	10.38	100.29	1,976.18	-49.63	273.33	277.80	0.00	0.00	0.00
2,100.00	10.38	100.29	2,074.54	-52.85	291.06	295.82	0.00	0.00	0.00
2,200.00	10.38	100.29	2,172.91	-56.07	308.80	313.85	0.00	0.00	0.00
2,300.00	10.38	100.29	2,271.27	-59.29	326.53	331.87	0.00	0.00	0.00
2,400.00	10.38	100.29	2,369.63	-62.51	344.27	349.90	0.00	0.00	0.00
2,500.00	10.38	100.29	2,467.99	-65.73	362.01	367.92	0.00	0.00	0.00
2,600.00	10.38	100.29	2,566.35	-68.95	379.74	385.95	0.00	0.00	0.00
2,700.00	10.38	100.29	2,664.72	-72.17	397.48	403.98	0.00	0.00	0.00
2,800.00	10.38	100.29	2,763.08	-75.39	415.21	422.00	0.00	0.00	0.00
2,900.00	10.38	100.29	2,861.44	-78.62	432.95	440.03	0.00	0.00	0.00
3,000.00	10.38	100.29	2,959.80	-81.84	450.68	458.05	0.00	0.00	0.00
3,100.00	10.38	100.29	3,058.16	-85.06	468.42	476.08	0.00	0.00	0.00
3,200.00	10.38	100.29	3,156.53	-88.28	486.16	494.11	0.00	0.00	0.00
3,300.00	10.38	100.29	3,254.89	-91.50	503.89	512.13	0.00	0.00	0.00
3,400.00	10.38	100.29	3,353.25	-94.72	521.63	530.16	0.00	0.00	0.00
3,500.00	10.38	100.29	3,451.61	-97.94	539.36	548.18	0.00	0.00	0.00
3,600.00	10.38	100.29	3,549.97	-101.16	557.10	566.21	0.00	0.00	0.00
3,700.00	10.38	100.29	3,648.33	-104.38	574.84	584.24	0.00	0.00	0.00
3,800.00	10.38	100.29	3,746.70	-107.60	592.57	602.26	0.00	0.00	0.00
3,900.00	10.38	100.29	3,845.06	-110.82	610.31	620.29	0.00	0.00	0.00
4,000.00	10.38	100.29	3,943.42	-114.04	628.04	638.31	0.00	0.00	0.00
4,100.00	10.38	100.29	4,041.78	-117.26	645.78	656.34	0.00	0.00	0.00
4,200.00	10.38	100.29	4,140.14	-120.48	663.51	674.36	0.00	0.00	0.00
4,300.00	10.38	100.29	4,238.51	-123.70	681.25	692.39	0.00	0.00	0.00
4,400.00	10.38	100.29	4,336.87	-126.92	698.99	710.42	0.00	0.00	0.00
4,500.00	10.38	100.29	4,435.23	-130.14	716.72	728.44	0.00	0.00	0.00
4,600.00	10.38	100.29	4,533.59	-133.36	734.46	746.47	0.00	0.00	0.00
4,700.00	10.38	100.29	4,631.95	-136.58	752.19	764.49	0.00	0.00	0.00
4,800.00	10.38	100.29	4,730.32	-139.80	769.93	782.52	0.00	0.00	0.00
4,900.00	10.38	100.29	4,828.68	-143.03	787.67	800.55	0.00	0.00	0.00
5,000.00	10.38	100.29	4,927.04	-146.25	805.40	818.57	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-38B	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	10.38	100.29	5,025.40	-149.47	823.14	836.60	0.00	0.00	0.00
5,200.00	10.38	100.29	5,123.76	-152.69	840.87	854.62	0.00	0.00	0.00
5,300.00	10.38	100.29	5,222.13	-155.91	858.61	872.65	0.00	0.00	0.00
5,400.00	10.38	100.29	5,320.49	-159.13	876.34	890.67	0.00	0.00	0.00
5,500.00	10.38	100.29	5,418.85	-162.35	894.08	908.70	0.00	0.00	0.00
5,536.34	10.38	100.29	5,454.60	-163.52	900.53	915.25	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	9.11	100.29	5,517.33	-165.44	911.13	926.03	2.00	-2.00	0.00
5,700.00	7.11	100.29	5,616.33	-167.97	925.01	940.14	2.00	-2.00	0.00
5,800.00	5.11	100.29	5,715.75	-169.87	935.49	950.79	2.00	-2.00	0.00
5,900.00	3.11	100.29	5,815.49	-171.15	942.54	957.96	2.00	-2.00	0.00
6,000.00	1.11	100.29	5,915.42	-171.81	946.17	961.64	2.00	-2.00	0.00
6,055.58	0.00	0.00	5,971.00	-171.90	946.70	962.18	2.00	-2.00	-180.43
Start 0.00° Hold At 6055.58' - Mesaverde									
6,100.00	0.00	0.00	6,015.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,200.00	0.00	0.00	6,115.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,248.58	0.00	0.00	6,164.00	-171.90	946.70	962.18	0.00	0.00	0.00
Williams Fork									
6,300.00	0.00	0.00	6,215.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,400.00	0.00	0.00	6,315.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,500.00	0.00	0.00	6,415.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,600.00	0.00	0.00	6,515.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,700.00	0.00	0.00	6,615.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,800.00	0.00	0.00	6,715.42	-171.90	946.70	962.18	0.00	0.00	0.00
6,803.58	0.00	0.00	6,719.00	-171.90	946.70	962.18	0.00	0.00	0.00
TOG = 638333.74, 1227984.99									
6,900.00	0.00	0.00	6,815.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,000.00	0.00	0.00	6,915.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,100.00	0.00	0.00	7,015.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,200.00	0.00	0.00	7,115.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,300.00	0.00	0.00	7,215.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,400.00	0.00	0.00	7,315.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,500.00	0.00	0.00	7,415.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,600.00	0.00	0.00	7,515.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,700.00	0.00	0.00	7,615.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,800.00	0.00	0.00	7,715.42	-171.90	946.70	962.18	0.00	0.00	0.00
7,900.00	0.00	0.00	7,815.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,000.00	0.00	0.00	7,915.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,100.00	0.00	0.00	8,015.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,197.58	0.00	0.00	8,113.00	-171.90	946.70	962.18	0.00	0.00	0.00
Target = 638333.74, 1227984.99									
8,200.00	0.00	0.00	8,115.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,300.00	0.00	0.00	8,215.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,400.00	0.00	0.00	8,315.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,500.00	0.00	0.00	8,415.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,600.00	0.00	0.00	8,515.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,700.00	0.00	0.00	8,615.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,800.00	0.00	0.00	8,715.42	-171.90	946.70	962.18	0.00	0.00	0.00
8,847.58	0.00	0.00	8,763.00	-171.90	946.70	962.18	0.00	0.00	0.00
Rollins									
8,900.00	0.00	0.00	8,815.42	-171.90	946.70	962.18	0.00	0.00	0.00
9,000.00	0.00	0.00	8,915.42	-171.90	946.70	962.18	0.00	0.00	0.00
9,100.00	0.00	0.00	9,015.42	-171.90	946.70	962.18	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-38B	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)
9,200.00	0.00	0.00	9,115.42	-171.90	946.70	962.18	0.00	0.00	0.00
9,247.58	0.00	0.00	9,163.00	-171.90	946.70	962.18	0.00	0.00	0.00
PBHL = 638333.74, 1227984.99									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CC 697-05-38B Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,113.00	-171.90	946.70	638,333.74	1,227,984.98	39° 33' 14.771 N	108° 14' 17.883 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,055.58	5,971.00	Mesaverde		0.00	
6,248.58	6,164.00	Williams Fork		0.00	
8,847.58	8,763.00	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 2.00
719.24	716.40	-8.38	46.17	Start 10.38° Hold At 719.24'
5,536.34	5,454.60	-163.52	900.53	Start Drop -2.00
6,055.58	5,971.00	-171.90	946.70	Start 0.00° Hold At 6055.58'
6,803.58	6,719.00	-171.90	946.70	TOG = 638333.74, 1227984.99
8,197.58	8,113.00	-171.90	946.70	Target = 638333.74, 1227984.99
9,247.58	9,163.00	-171.90	946.70	PBHL = 638333.74, 1227984.99