



Scientific Drilling
Rocky Mountain Operations

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



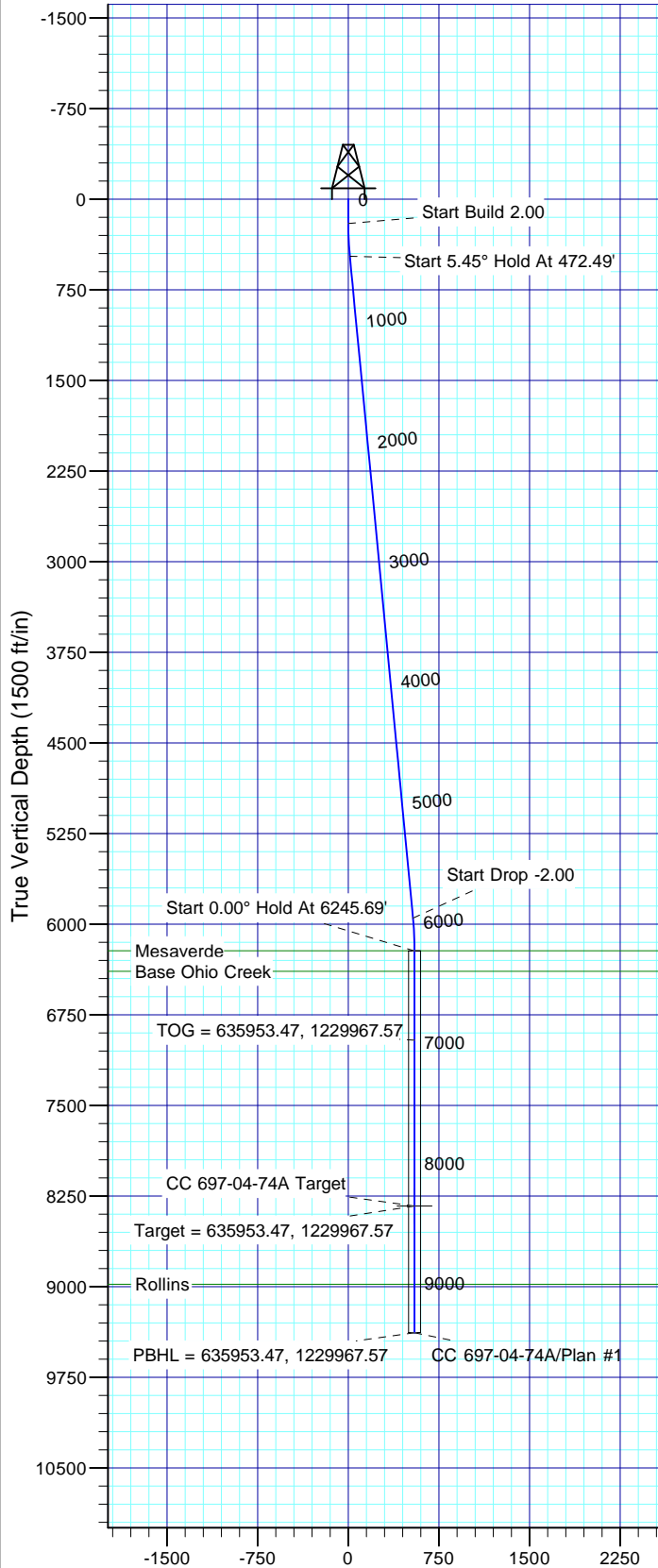
Well Details: CC 697-04-74A

TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P) Ground Level: 8629.00
+N/-S 0.00 +E/-W 0.00 Northing 636318.81 Easting 1230376.45 Latitude 39° 32' 55.576 N Longitude 108° 13' 46.592 W Slot T

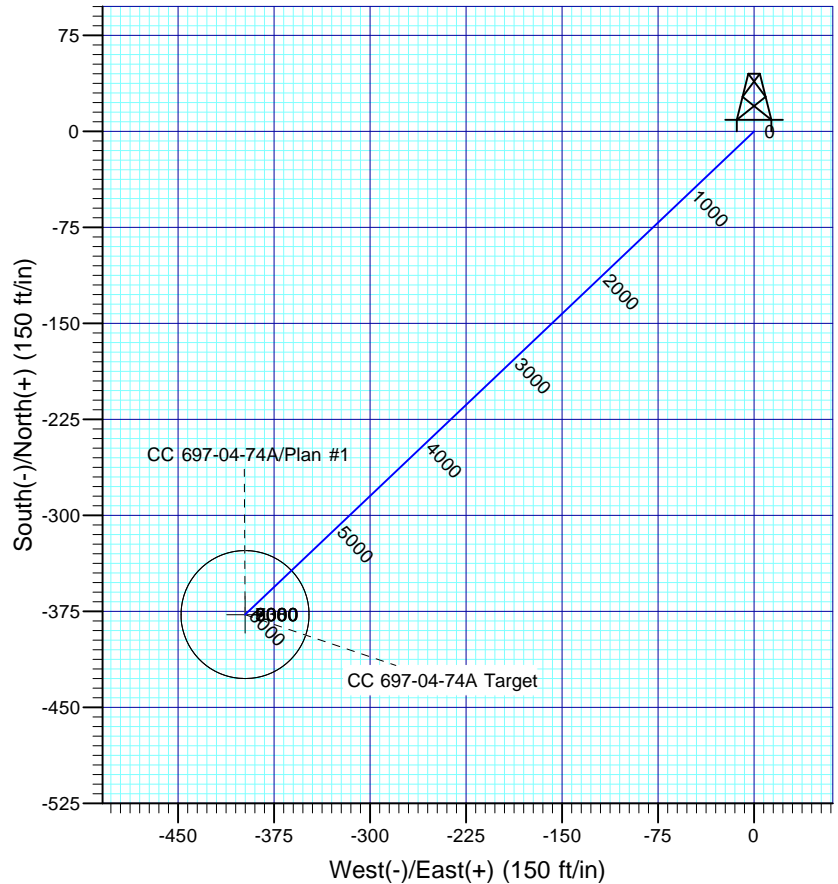


Azimuths to True North
Magnetic North: 10.47°

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



Vertical Section at 226.50° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6219.00	6244.69	Mesaverde
6389.00	6414.69	Base Ohio Creek
8979.00	9004.69	Rollins

Plan: Plan #1

14:54, 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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	472.49	5.45	226.50	472.08	-8.91	-9.39	2.00	226.50	12.95	
4	5973.20	5.45	226.50	5947.92	-368.54	-388.33	0.00	0.00	535.37	
5	6245.69	0.00	0.00	6220.00	-377.46	-397.72	2.00	180.00	548.32	
6	8357.69	0.00	0.00	8332.00	-377.46	-397.72	0.00	0.00	548.32	CC 697-04-74A Target
7	9405.69	0.00	0.00	9380.00	-377.46	-397.72	0.00	0.00	548.32	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-74A - Slot T**

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 697-04-74A - Slot T
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 697-04-74A	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 697-04-74A - Slot T					
Well Position	+N/-S	790.85 ft	Northing:	636,318.81 usft	Latitude:	39° 32' 55.576 N
	+E/-W	76.62 ft	Easting:	1,230,376.45 usft	Longitude:	108° 13' 46.592 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	226.50

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	
472.49	5.45	226.50	472.08	-8.91	-9.39	2.00	2.00	0.00	226.50	
5,973.20	5.45	226.50	5,947.92	-368.54	-388.33	0.00	0.00	0.00	0.00	
6,245.69	0.00	0.00	6,220.00	-377.46	-397.72	2.00	-2.00	0.00	180.00	
8,357.69	0.00	0.00	8,332.00	-377.46	-397.72	0.00	0.00	0.00	0.00	CC 697-04-74A Target
9,405.69	0.00	0.00	9,380.00	-377.46	-397.72	0.00	0.00	0.00	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 697-04-74A	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	226.50	299.98	-1.20	-1.27	1.75	2.00	2.00	0.00
400.00	4.00	226.50	399.84	-4.80	-5.06	6.98	2.00	2.00	0.00
472.49	5.45	226.50	472.08	-8.91	-9.39	12.95	2.00	2.00	0.00
Start 5.45° Hold At 472.49'									
500.00	5.45	226.50	499.46	-10.71	-11.29	15.56	0.00	0.00	0.00
600.00	5.45	226.50	599.01	-17.25	-18.18	25.06	0.00	0.00	0.00
700.00	5.45	226.50	698.56	-23.79	-25.07	34.56	0.00	0.00	0.00
800.00	5.45	226.50	798.11	-30.33	-31.95	44.05	0.00	0.00	0.00
900.00	5.45	226.50	897.66	-36.86	-38.84	53.55	0.00	0.00	0.00
1,000.00	5.45	226.50	997.20	-43.40	-45.73	63.05	0.00	0.00	0.00
1,100.00	5.45	226.50	1,096.75	-49.94	-52.62	72.55	0.00	0.00	0.00
1,200.00	5.45	226.50	1,196.30	-56.48	-59.51	82.04	0.00	0.00	0.00
1,300.00	5.45	226.50	1,295.85	-63.02	-66.40	91.54	0.00	0.00	0.00
1,400.00	5.45	226.50	1,395.40	-69.55	-73.29	101.04	0.00	0.00	0.00
1,500.00	5.45	226.50	1,494.94	-76.09	-80.18	110.54	0.00	0.00	0.00
1,600.00	5.45	226.50	1,594.49	-82.63	-87.07	120.03	0.00	0.00	0.00
1,700.00	5.45	226.50	1,694.04	-89.17	-93.95	129.53	0.00	0.00	0.00
1,800.00	5.45	226.50	1,793.59	-95.70	-100.84	139.03	0.00	0.00	0.00
1,900.00	5.45	226.50	1,893.14	-102.24	-107.73	148.52	0.00	0.00	0.00
2,000.00	5.45	226.50	1,992.68	-108.78	-114.62	158.02	0.00	0.00	0.00
2,100.00	5.45	226.50	2,092.23	-115.32	-121.51	167.52	0.00	0.00	0.00
2,200.00	5.45	226.50	2,191.78	-121.86	-128.40	177.02	0.00	0.00	0.00
2,300.00	5.45	226.50	2,291.33	-128.39	-135.29	186.51	0.00	0.00	0.00
2,400.00	5.45	226.50	2,390.88	-134.93	-142.18	196.01	0.00	0.00	0.00
2,500.00	5.45	226.50	2,490.42	-141.47	-149.06	205.51	0.00	0.00	0.00
2,600.00	5.45	226.50	2,589.97	-148.01	-155.95	215.01	0.00	0.00	0.00
2,700.00	5.45	226.50	2,689.52	-154.55	-162.84	224.50	0.00	0.00	0.00
2,800.00	5.45	226.50	2,789.07	-161.08	-169.73	234.00	0.00	0.00	0.00
2,900.00	5.45	226.50	2,888.62	-167.62	-176.62	243.50	0.00	0.00	0.00
3,000.00	5.45	226.50	2,988.16	-174.16	-183.51	253.00	0.00	0.00	0.00
3,100.00	5.45	226.50	3,087.71	-180.70	-190.40	262.49	0.00	0.00	0.00
3,200.00	5.45	226.50	3,187.26	-187.23	-197.29	271.99	0.00	0.00	0.00
3,300.00	5.45	226.50	3,286.81	-193.77	-204.18	281.49	0.00	0.00	0.00
3,400.00	5.45	226.50	3,386.36	-200.31	-211.06	290.98	0.00	0.00	0.00
3,500.00	5.45	226.50	3,485.90	-206.85	-217.95	300.48	0.00	0.00	0.00
3,600.00	5.45	226.50	3,585.45	-213.39	-224.84	309.98	0.00	0.00	0.00
3,700.00	5.45	226.50	3,685.00	-219.92	-231.73	319.48	0.00	0.00	0.00
3,800.00	5.45	226.50	3,784.55	-226.46	-238.62	328.97	0.00	0.00	0.00
3,900.00	5.45	226.50	3,884.10	-233.00	-245.51	338.47	0.00	0.00	0.00
4,000.00	5.45	226.50	3,983.64	-239.54	-252.40	347.97	0.00	0.00	0.00
4,100.00	5.45	226.50	4,083.19	-246.07	-259.29	357.47	0.00	0.00	0.00
4,200.00	5.45	226.50	4,182.74	-252.61	-266.17	366.96	0.00	0.00	0.00
4,300.00	5.45	226.50	4,282.29	-259.15	-273.06	376.46	0.00	0.00	0.00
4,400.00	5.45	226.50	4,381.84	-265.69	-279.95	385.96	0.00	0.00	0.00
4,500.00	5.45	226.50	4,481.38	-272.23	-286.84	395.46	0.00	0.00	0.00
4,600.00	5.45	226.50	4,580.93	-278.76	-293.73	404.95	0.00	0.00	0.00
4,700.00	5.45	226.50	4,680.48	-285.30	-300.62	414.45	0.00	0.00	0.00
4,800.00	5.45	226.50	4,780.03	-291.84	-307.51	423.95	0.00	0.00	0.00
4,900.00	5.45	226.50	4,879.58	-298.38	-314.40	433.44	0.00	0.00	0.00
5,000.00	5.45	226.50	4,979.12	-304.92	-321.29	442.94	0.00	0.00	0.00

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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 697-04-74A	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	5.45	226.50	5,078.67	-311.45	-328.17	452.44	0.00	0.00	0.00
5,200.00	5.45	226.50	5,178.22	-317.99	-335.06	461.94	0.00	0.00	0.00
5,300.00	5.45	226.50	5,277.77	-324.53	-341.95	471.43	0.00	0.00	0.00
5,400.00	5.45	226.50	5,377.32	-331.07	-348.84	480.93	0.00	0.00	0.00
5,500.00	5.45	226.50	5,476.86	-337.60	-355.73	490.43	0.00	0.00	0.00
5,600.00	5.45	226.50	5,576.41	-344.14	-362.62	499.93	0.00	0.00	0.00
5,700.00	5.45	226.50	5,675.96	-350.68	-369.51	509.42	0.00	0.00	0.00
5,800.00	5.45	226.50	5,775.51	-357.22	-376.40	518.92	0.00	0.00	0.00
5,900.00	5.45	226.50	5,875.06	-363.76	-383.28	528.42	0.00	0.00	0.00
5,973.20	5.45	226.50	5,947.92	-368.54	-388.33	535.37	0.00	0.00	0.00
Start Drop -2.00									
6,000.00	4.91	226.50	5,974.62	-370.21	-390.08	537.79	2.00	-2.00	0.00
6,100.00	2.91	226.50	6,074.38	-374.91	-395.03	544.62	2.00	-2.00	0.00
6,200.00	0.91	226.50	6,174.32	-377.20	-397.46	547.95	2.00	-2.00	0.00
6,244.69	0.02	226.50	6,219.00	-377.46	-397.72	548.32	2.00	-2.00	0.00
Mesaverde									
6,245.69	0.00	0.00	6,220.00	-377.46	-397.72	548.32	2.00	-2.00	0.00
Start 0.00° Hold At 6245.69'									
6,300.00	0.00	0.00	6,274.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,400.00	0.00	0.00	6,374.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,414.69	0.00	0.00	6,389.00	-377.46	-397.72	548.32	0.00	0.00	0.00
Base Ohio Creek									
6,500.00	0.00	0.00	6,474.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,600.00	0.00	0.00	6,574.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,700.00	0.00	0.00	6,674.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,800.00	0.00	0.00	6,774.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,900.00	0.00	0.00	6,874.31	-377.46	-397.72	548.32	0.00	0.00	0.00
6,984.69	0.00	0.00	6,959.00	-377.46	-397.72	548.32	0.00	0.00	0.00
TOG = 635953.47, 1229967.57									
7,000.00	0.00	0.00	6,974.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,100.00	0.00	0.00	7,074.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,200.00	0.00	0.00	7,174.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,300.00	0.00	0.00	7,274.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,400.00	0.00	0.00	7,374.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,500.00	0.00	0.00	7,474.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,600.00	0.00	0.00	7,574.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,700.00	0.00	0.00	7,674.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,800.00	0.00	0.00	7,774.31	-377.46	-397.72	548.32	0.00	0.00	0.00
7,900.00	0.00	0.00	7,874.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,000.00	0.00	0.00	7,974.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,100.00	0.00	0.00	8,074.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,200.00	0.00	0.00	8,174.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,300.00	0.00	0.00	8,274.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,357.69	0.00	0.00	8,332.00	-377.46	-397.72	548.32	0.00	0.00	0.00
Target = 635953.47, 1229967.57									
8,400.00	0.00	0.00	8,374.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,500.00	0.00	0.00	8,474.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,600.00	0.00	0.00	8,574.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,700.00	0.00	0.00	8,674.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,800.00	0.00	0.00	8,774.31	-377.46	-397.72	548.32	0.00	0.00	0.00
8,900.00	0.00	0.00	8,874.31	-377.46	-397.72	548.32	0.00	0.00	0.00
9,000.00	0.00	0.00	8,974.31	-377.46	-397.72	548.32	0.00	0.00	0.00
9,004.69	0.00	0.00	8,979.00	-377.46	-397.72	548.32	0.00	0.00	0.00

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Planning Report

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Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-74A	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)
Rollins									
9,100.00	0.00	0.00	9,074.31	-377.46	-397.72	548.32	0.00	0.00	0.00
9,200.00	0.00	0.00	9,174.31	-377.46	-397.72	548.32	0.00	0.00	0.00
9,300.00	0.00	0.00	9,274.31	-377.46	-397.72	548.32	0.00	0.00	0.00
9,400.00	0.00	0.00	9,374.31	-377.46	-397.72	548.32	0.00	0.00	0.00
9,405.69	0.00	0.00	9,380.00	-377.46	-397.72	548.32	0.00	0.00	0.00
PBHL = 635953.47, 1229967.57									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CC 697-04-74A Target	0.00	0.00	8,332.00	-377.46	-397.72	635,953.48	1,229,967.57	39° 32' 51.846 N	108° 13' 51.669 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,244.69	6,219.00	Mesaverde		0.00	
6,414.69	6,389.00	Base Ohio Creek		0.00	
9,004.69	8,979.00	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
200.00	200.00	0.00	0.00	Start Build 2.00
472.49	472.08	-8.91	-9.39	Start 5.45° Hold At 472.49'
5,973.20	5,947.92	-368.54	-388.33	Start Drop -2.00
6,245.69	6,220.00	-377.46	-397.72	Start 0.00° Hold At 6245.69'
6,984.69	6,959.00	-377.46	-397.72	TOG = 635953.47, 1229967.57
8,357.69	8,332.00	-377.46	-397.72	Target = 635953.47, 1229967.57
9,405.69	9,380.00	-377.46	-397.72	PBHL = 635953.47, 1229967.57