



Scientific Drilling
Rocky Mountain Operations

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



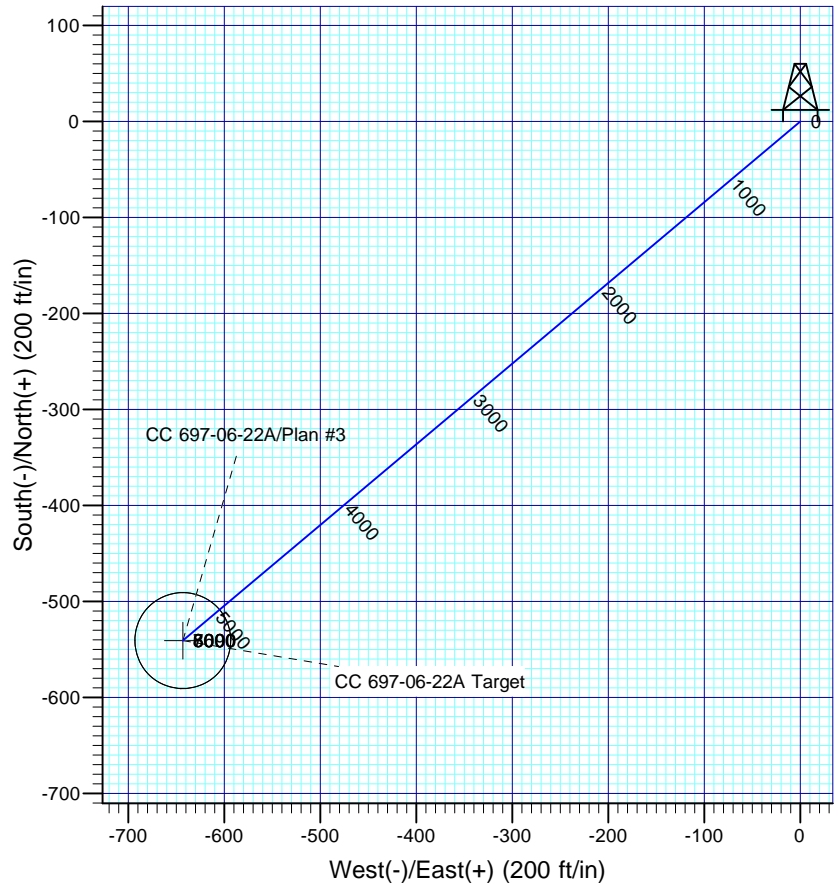
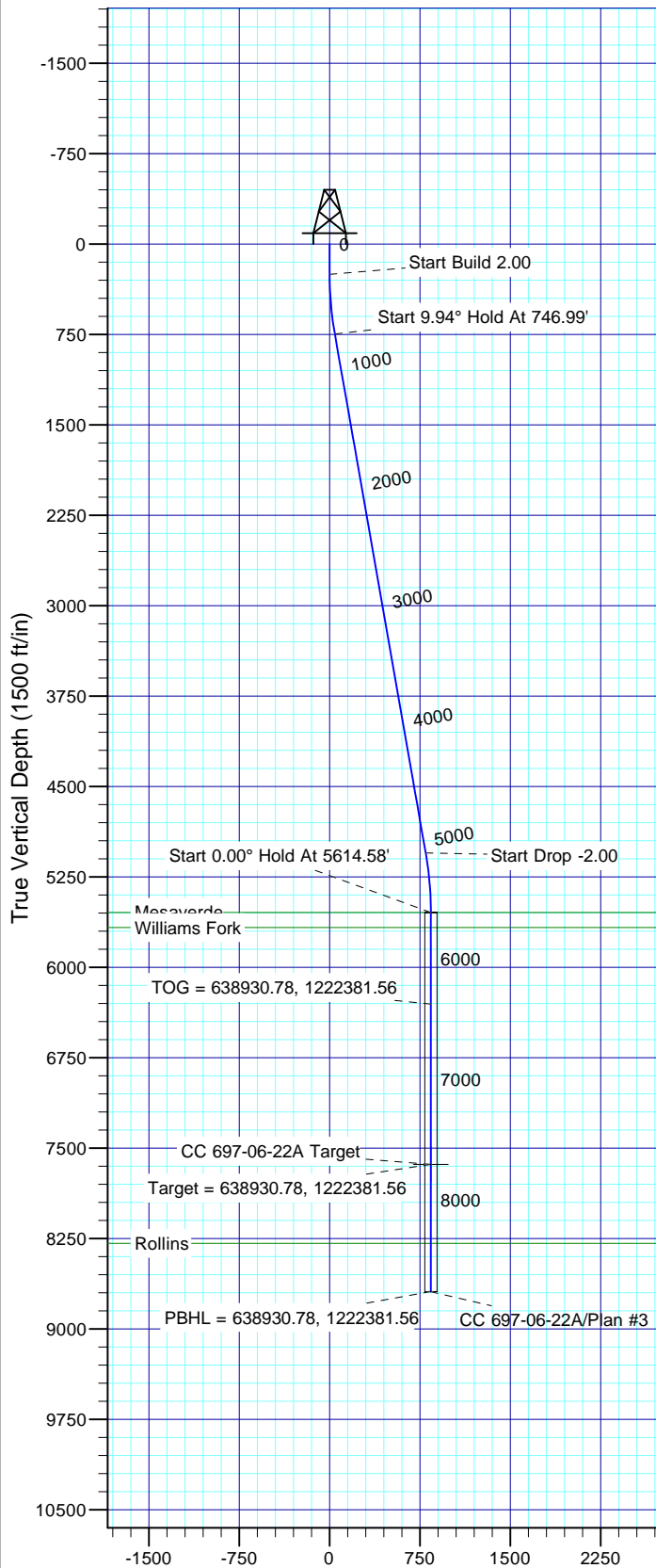
Well Details: CC 697-06-22A

TVD Reference: GL 8184' & RKB 30' @ 8214.00ft (H&P) Ground Level: 8184.00
+N/-S 0.00 +E/-W 0.00 Northing 639451.81 Easting 1223040.98 Latitude 39° 33' 24.339 N Longitude 108° 15' 21.407 W Slot N



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.8snT
Dip Angle: 65.77°
Date: 2010/12/20
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5544.00	5614.58	Mesaverde
5669.00	5739.58	Williams Fork
8289.00	8359.58	Rollins

Plan: Plan #3

20:54, 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	746.99	9.94	229.95	744.50	-27.67	-32.92	2.00	229.95	43.00	
4	5117.59	9.94	229.95	5049.50	-513.12	-610.40	0.00	0.00	797.42	
5	5614.58	0.00	0.00	5544.00	-540.79	-643.32	2.00	180.00	840.42	
6	7704.58	0.00	0.00	7634.00	-540.79	-643.32	0.00	0.00	840.42	CC 697-06-22A Target
7	8759.58	0.00	0.00	8689.00	-540.79	-643.32	0.00	0.00	840.42	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-06A Pad
CC 697-06-22A - Slot N**

OH

Plan: Plan #3

Standard Planning Report

03 February, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-22A - Slot N
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 697-06-22A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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
From:	Map	Easting:	1,222,903.93 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	39° 33' 24.203 N
		Longitude:	108° 15' 23.153 W
		Grid Convergence:	-1.74 °

Well	CC 697-06-22A - Slot N		
Well Position	+N/-S	13.71 ft	Northing: 639,451.81 usft
	+E/-W	136.70 ft	Easting: 1,223,040.98 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 39° 33' 24.339 N
			Longitude: 108° 15' 21.407 W
			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 #3			
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	229.95

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	
746.99	9.94	229.95	744.50	-27.67	-32.92	2.00	2.00	0.00	229.95	
5,117.59	9.94	229.95	5,049.50	-513.12	-610.40	0.00	0.00	0.00	0.00	
5,614.58	0.00	0.00	5,544.00	-540.79	-643.32	2.00	-2.00	0.00	180.00	
7,704.58	0.00	0.00	7,634.00	-540.79	-643.32	0.00	0.00	0.00	0.00	CC 697-06-22A Target
8,759.58	0.00	0.00	8,689.00	-540.79	-643.32	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-22A - Slot N
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 697-06-22A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	229.95	300.00	-0.28	-0.33	0.44	2.00	2.00	0.00
400.00	3.00	229.95	399.93	-2.53	-3.01	3.93	2.00	2.00	0.00
500.00	5.00	229.95	499.68	-7.01	-8.34	10.90	2.00	2.00	0.00
600.00	7.00	229.95	599.13	-13.74	-16.35	21.35	2.00	2.00	0.00
700.00	9.00	229.95	698.15	-22.70	-27.00	35.27	2.00	2.00	0.00
746.99	9.94	229.95	744.50	-27.67	-32.92	43.00	2.00	2.00	0.00
Start 9.94° Hold At 746.99'									
800.00	9.94	229.95	796.72	-33.56	-39.92	52.15	0.00	0.00	0.00
900.00	9.94	229.95	895.21	-44.67	-53.13	69.41	0.00	0.00	0.00
1,000.00	9.94	229.95	993.71	-55.77	-66.35	86.67	0.00	0.00	0.00
1,100.00	9.94	229.95	1,092.21	-66.88	-79.56	103.94	0.00	0.00	0.00
1,200.00	9.94	229.95	1,190.71	-77.99	-92.77	121.20	0.00	0.00	0.00
1,300.00	9.94	229.95	1,289.21	-89.09	-105.99	138.46	0.00	0.00	0.00
1,400.00	9.94	229.95	1,387.71	-100.20	-119.20	155.72	0.00	0.00	0.00
1,500.00	9.94	229.95	1,486.21	-111.31	-132.41	172.98	0.00	0.00	0.00
1,600.00	9.94	229.95	1,584.71	-122.42	-145.62	190.24	0.00	0.00	0.00
1,700.00	9.94	229.95	1,683.21	-133.52	-158.84	207.50	0.00	0.00	0.00
1,800.00	9.94	229.95	1,781.71	-144.63	-172.05	224.76	0.00	0.00	0.00
1,900.00	9.94	229.95	1,880.20	-155.74	-185.26	242.03	0.00	0.00	0.00
2,000.00	9.94	229.95	1,978.70	-166.84	-198.48	259.29	0.00	0.00	0.00
2,100.00	9.94	229.95	2,077.20	-177.95	-211.69	276.55	0.00	0.00	0.00
2,200.00	9.94	229.95	2,175.70	-189.06	-224.90	293.81	0.00	0.00	0.00
2,300.00	9.94	229.95	2,274.20	-200.17	-238.11	311.07	0.00	0.00	0.00
2,400.00	9.94	229.95	2,372.70	-211.27	-251.33	328.33	0.00	0.00	0.00
2,500.00	9.94	229.95	2,471.20	-222.38	-264.54	345.59	0.00	0.00	0.00
2,600.00	9.94	229.95	2,569.70	-233.49	-277.75	362.85	0.00	0.00	0.00
2,700.00	9.94	229.95	2,668.20	-244.59	-290.97	380.12	0.00	0.00	0.00
2,800.00	9.94	229.95	2,766.69	-255.70	-304.18	397.38	0.00	0.00	0.00
2,900.00	9.94	229.95	2,865.19	-266.81	-317.39	414.64	0.00	0.00	0.00
3,000.00	9.94	229.95	2,963.69	-277.92	-330.61	431.90	0.00	0.00	0.00
3,100.00	9.94	229.95	3,062.19	-289.02	-343.82	449.16	0.00	0.00	0.00
3,200.00	9.94	229.95	3,160.69	-300.13	-357.03	466.42	0.00	0.00	0.00
3,300.00	9.94	229.95	3,259.19	-311.24	-370.24	483.68	0.00	0.00	0.00
3,400.00	9.94	229.95	3,357.69	-322.34	-383.46	500.94	0.00	0.00	0.00
3,500.00	9.94	229.95	3,456.19	-333.45	-396.67	518.21	0.00	0.00	0.00
3,600.00	9.94	229.95	3,554.69	-344.56	-409.88	535.47	0.00	0.00	0.00
3,700.00	9.94	229.95	3,653.19	-355.67	-423.10	552.73	0.00	0.00	0.00
3,800.00	9.94	229.95	3,751.68	-366.77	-436.31	569.99	0.00	0.00	0.00
3,900.00	9.94	229.95	3,850.18	-377.88	-449.52	587.25	0.00	0.00	0.00
4,000.00	9.94	229.95	3,948.68	-388.99	-462.73	604.51	0.00	0.00	0.00
4,100.00	9.94	229.95	4,047.18	-400.09	-475.95	621.77	0.00	0.00	0.00
4,200.00	9.94	229.95	4,145.68	-411.20	-489.16	639.03	0.00	0.00	0.00
4,300.00	9.94	229.95	4,244.18	-422.31	-502.37	656.30	0.00	0.00	0.00
4,400.00	9.94	229.95	4,342.68	-433.42	-515.59	673.56	0.00	0.00	0.00
4,500.00	9.94	229.95	4,441.18	-444.52	-528.80	690.82	0.00	0.00	0.00
4,600.00	9.94	229.95	4,539.68	-455.63	-542.01	708.08	0.00	0.00	0.00
4,700.00	9.94	229.95	4,638.18	-466.74	-555.23	725.34	0.00	0.00	0.00
4,800.00	9.94	229.95	4,736.67	-477.84	-568.44	742.60	0.00	0.00	0.00
4,900.00	9.94	229.95	4,835.17	-488.95	-581.65	759.86	0.00	0.00	0.00

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Planning Report

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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 697-06-22A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	9.94	229.95	4,933.67	-500.06	-594.86	777.12	0.00	0.00	0.00
5,100.00	9.94	229.95	5,032.17	-511.17	-608.08	794.38	0.00	0.00	0.00
5,117.59	9.94	229.95	5,049.50	-513.12	-610.40	797.42	0.00	0.00	0.00
Start Drop -2.00									
5,200.00	8.29	229.95	5,130.86	-521.52	-620.39	810.48	2.00	-2.00	0.00
5,300.00	6.29	229.95	5,230.05	-529.69	-630.11	823.17	2.00	-2.00	0.00
5,400.00	4.29	229.95	5,329.62	-535.62	-637.17	832.39	2.00	-2.00	0.00
5,500.00	2.29	229.95	5,429.45	-539.32	-641.56	838.13	2.00	-2.00	0.00
5,600.00	0.29	229.95	5,529.42	-540.77	-643.29	840.39	2.00	-2.00	0.00
5,614.58	0.00	0.00	5,544.00	-540.79	-643.32	840.42	2.00	-2.00	0.00
Start 0.00° Hold At 5614.58' - Mesaverde									
5,700.00	0.00	0.00	5,629.42	-540.79	-643.32	840.42	0.00	0.00	0.00
5,739.58	0.00	0.00	5,669.00	-540.79	-643.32	840.42	0.00	0.00	0.00
Williams Fork									
5,800.00	0.00	0.00	5,729.42	-540.79	-643.32	840.42	0.00	0.00	0.00
5,900.00	0.00	0.00	5,829.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,000.00	0.00	0.00	5,929.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,100.00	0.00	0.00	6,029.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,200.00	0.00	0.00	6,129.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,300.00	0.00	0.00	6,229.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,374.58	0.00	0.00	6,304.00	-540.79	-643.32	840.42	0.00	0.00	0.00
TOG = 638930.78, 1222381.56									
6,400.00	0.00	0.00	6,329.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,500.00	0.00	0.00	6,429.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,600.00	0.00	0.00	6,529.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,700.00	0.00	0.00	6,629.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,800.00	0.00	0.00	6,729.42	-540.79	-643.32	840.42	0.00	0.00	0.00
6,900.00	0.00	0.00	6,829.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,000.00	0.00	0.00	6,929.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,100.00	0.00	0.00	7,029.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,200.00	0.00	0.00	7,129.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,300.00	0.00	0.00	7,229.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,400.00	0.00	0.00	7,329.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,500.00	0.00	0.00	7,429.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,600.00	0.00	0.00	7,529.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,700.00	0.00	0.00	7,629.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,704.58	0.00	0.00	7,634.00	-540.79	-643.32	840.42	0.00	0.00	0.00
Target = 638930.78, 1222381.56									
7,800.00	0.00	0.00	7,729.42	-540.79	-643.32	840.42	0.00	0.00	0.00
7,900.00	0.00	0.00	7,829.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,000.00	0.00	0.00	7,929.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,100.00	0.00	0.00	8,029.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,200.00	0.00	0.00	8,129.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,300.00	0.00	0.00	8,229.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,359.58	0.00	0.00	8,289.00	-540.79	-643.32	840.42	0.00	0.00	0.00
Rollins									
8,400.00	0.00	0.00	8,329.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,500.00	0.00	0.00	8,429.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,600.00	0.00	0.00	8,529.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,700.00	0.00	0.00	8,629.42	-540.79	-643.32	840.42	0.00	0.00	0.00
8,759.58	0.00	0.00	8,689.00	-540.79	-643.32	840.42	0.00	0.00	0.00
PBHL = 638930.78, 1222381.56									

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-22A - Slot N
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 697-06-22A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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 697-06-22A Target	0.00	0.00	7,634.00	-540.79	-643.32	638,930.79	1,222,381.55	39° 33' 18.994 N	108° 15' 29.621 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,614.58	5,544.00	Mesaverde		0.00	
5,739.58	5,669.00	Williams Fork		0.00	
8,359.58	8,289.00	Rollins		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
250.00	250.00	0.00	0.00	Start Build 2.00
746.99	744.50	-27.67	-32.92	Start 9.94° Hold At 746.99'
5,117.59	5,049.50	-513.12	-610.40	Start Drop -2.00
5,614.58	5,544.00	-540.79	-643.32	Start 0.00° Hold At 5614.58'
6,374.58	6,304.00	-540.79	-643.32	TOG = 638930.78, 1222381.56
7,704.58	7,634.00	-540.79	-643.32	Target = 638930.78, 1222381.56
8,759.58	8,689.00	-540.79	-643.32	PBHL = 638930.78, 1222381.56