



**Scientific Drilling**  
Rocky Mountain Operations

Company: OXY USA RMAT  
Project: Garfield County, CO NAD27  
Site: Cascade Creek 697-08A Pad



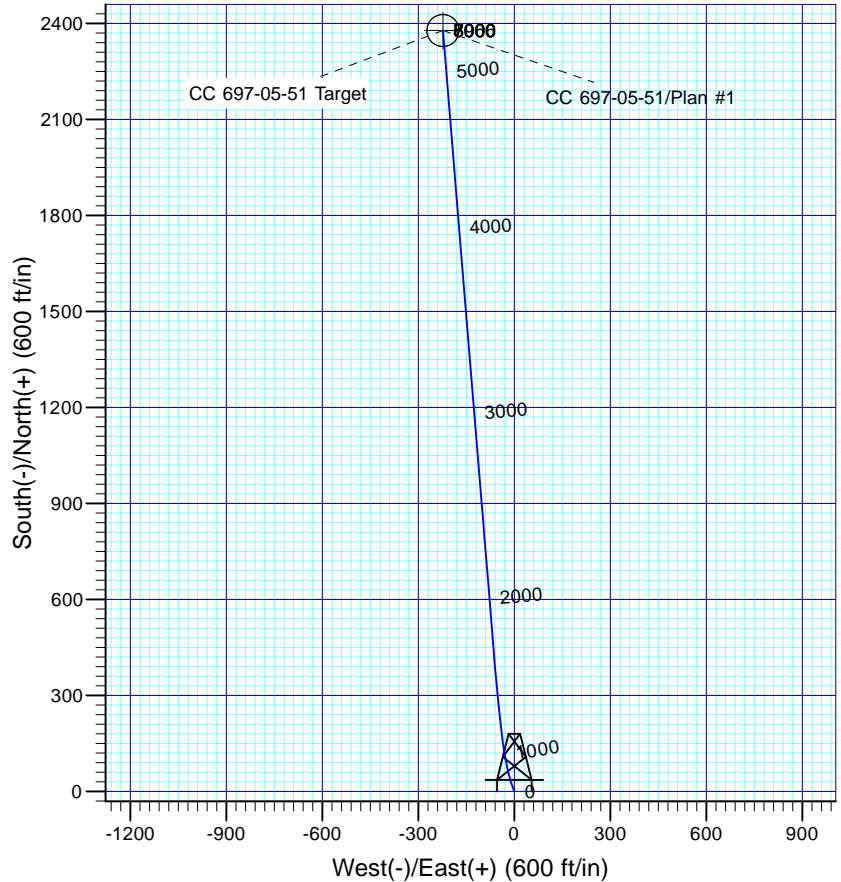
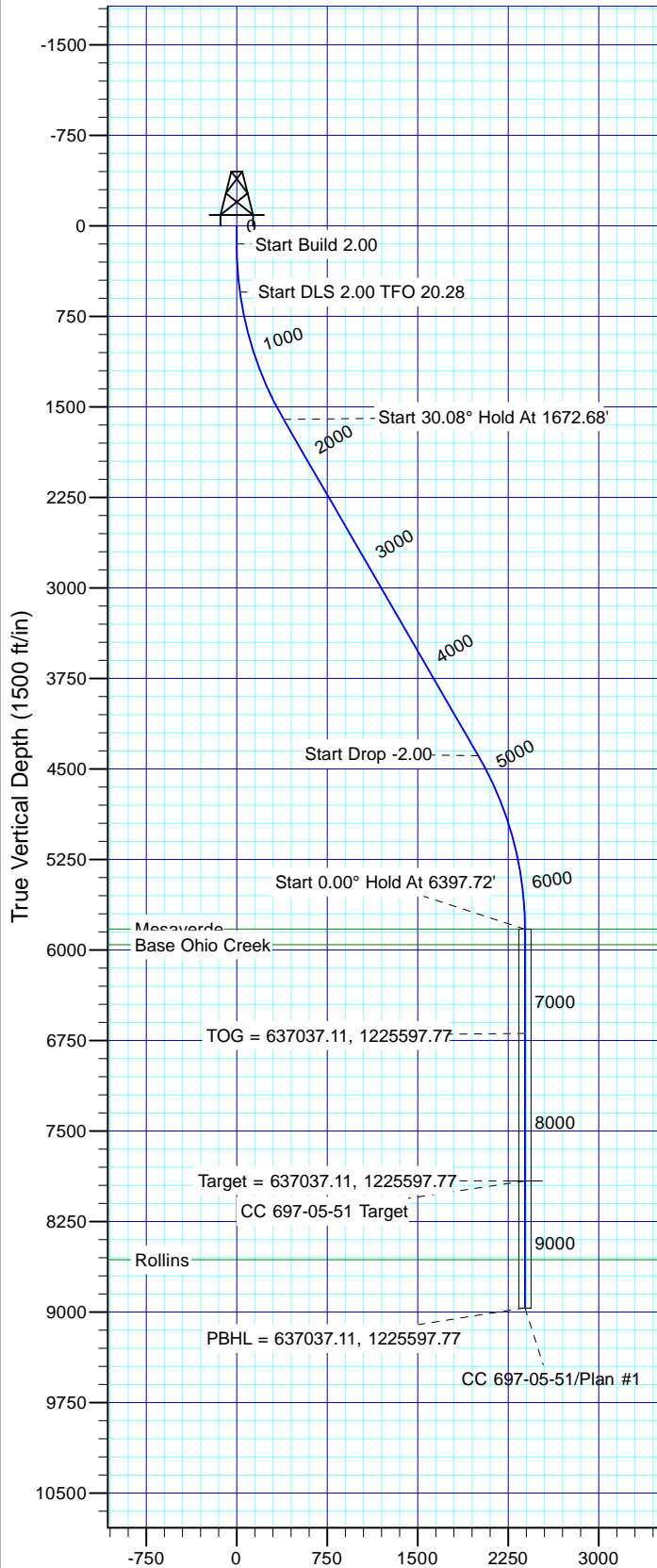
Well Details: CC 697-05-51

TVD Reference: GL 8401' & RKB 30' @ 8431.00ft (H&P Rig) Ground Level: 8401.00  
+N/-S 0.00 +E/-W 0.00 Northing 634653.36 Easting 1225749.00 Latitude 39° 32' 37.745 N Longitude 108° 14' 44.997 W Slot A



Azimuths to True North  
Magnetic North: 10.48°

Magnetic Field  
Strength: 52229.6snT  
Dip Angle: 65.73°  
Date: 5/24/2011  
Model: IGRF2010



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5826.00	6396.72	Mesaverde
5956.00	6526.72	Base Ohio Creek
8566.00	9136.72	Rollins

Plan: Plan #1

**15:27, May 25 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	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	550.00	8.00	340.00	548.70	26.20	-9.54	2.00	340.00	26.97	
4	1672.53	30.08	355.32	1603.74	384.54	-59.86	2.00	20.28	388.45	CC 697-05-51 Target
5	1672.68	30.08	355.32	1603.86	384.61	-59.87	2.00	0.00	388.52	
6	4893.77	30.08	355.32	4391.19	1993.60	-191.69	0.00	0.00	2002.79	
7	6397.72	0.00	0.00	5827.00	2378.10	-223.19	2.00	180.00	2388.55	
8	8484.72	0.00	0.00	7914.00	2378.10	-223.19	0.00	0.00	2388.55	CC 697-05-51 Target
9	9536.72	0.00	0.00	8966.00	2378.10	-223.19	0.00	0.00	2388.55	

# **OXY USA RMAT**

**Garfield County, CO NAD27  
Cascade Creek 697-08A Pad  
CC 697-05-51 - Slot A**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**25 May, 2011**

# Scientific Drilling International, Inc.

## Planning Report

<b>Database:</b>	Rockies Compass Server	<b>Local Co-ordinate Reference:</b>	Well CC 697-05-51 - Slot A
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Site:</b>	Cascade Creek 697-08A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-05-51	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	Garfield County, CO NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado Central 502		

<b>Site</b>	Cascade Creek 697-08A Pad, Sec 8 T6S R97W			
<b>Site Position:</b>		<b>Northing:</b>	635,765.16 usft	<b>Latitude:</b> 39° 32' 48.728 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,225,748.33 usft	<b>Longitude:</b> 108° 14' 45.434 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.73 °

<b>Well</b>	CC 697-05-51 - Slot A			
<b>Well Position</b>	<b>+N/-S</b>	-1,111.27 ft	<b>Northing:</b>	634,653.36 usft
	<b>+E/-W</b>	34.26 ft	<b>Easting:</b>	1,225,748.99 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 8,401.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/24/2011	10.48	65.73	52,230

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	354.64

<b>Plan Sections</b>										
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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	8.00	340.00	548.70	26.20	-9.54	2.00	2.00	0.00	340.00	
1,672.53	30.08	355.32	1,603.74	384.54	-59.86	2.00	1.97	1.36	20.28	CC 697-05-51 Target
1,672.68	30.08	355.32	1,603.86	384.61	-59.87	2.00	2.00	0.00	0.00	
4,893.77	30.08	355.32	4,391.19	1,993.60	-191.69	0.00	0.00	0.00	0.00	
6,397.72	0.00	0.00	5,827.00	2,378.10	-223.19	2.00	-2.00	0.00	180.00	
8,484.72	0.00	0.00	7,914.00	2,378.10	-223.19	0.00	0.00	0.00	0.00	CC 697-05-51 Target
9,536.72	0.00	0.00	8,966.00	2,378.10	-223.19	0.00	0.00	0.00	0.00	

# Scientific Drilling International, Inc.

## Planning Report

<b>Database:</b>	Rockies Compass Server	<b>Local Co-ordinate Reference:</b>	Well CC 697-05-51 - Slot A
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Site:</b>	Cascade Creek 697-08A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-05-51	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
200.00	1.00	340.00	200.00	0.41	-0.15	0.42	2.00	2.00	0.00
300.00	3.00	340.00	299.93	3.69	-1.34	3.80	2.00	2.00	0.00
400.00	5.00	340.00	399.68	10.24	-3.73	10.55	2.00	2.00	0.00
500.00	7.00	340.00	499.13	20.07	-7.30	20.66	2.00	2.00	0.00
550.00	8.00	340.00	548.70	26.20	-9.54	26.97	2.00	2.00	0.00
<b>Start DLS 2.00 TFO 20.28</b>									
600.00	8.94	342.23	598.16	33.17	-11.91	34.14	2.00	1.89	4.46
700.00	10.86	345.52	696.66	49.70	-16.64	51.04	2.00	1.92	3.29
800.00	12.81	347.83	794.53	69.66	-21.33	71.35	2.00	1.94	2.31
900.00	14.77	349.54	891.65	93.03	-25.98	95.05	2.00	1.96	1.71
1,000.00	16.73	350.86	987.89	119.78	-30.58	122.11	2.00	1.97	1.31
1,100.00	18.71	351.90	1,083.14	149.87	-35.13	152.50	2.00	1.97	1.04
1,200.00	20.69	352.75	1,177.28	183.27	-39.62	186.17	2.00	1.98	0.85
1,300.00	22.67	353.46	1,270.20	219.94	-44.04	223.10	2.00	1.98	0.71
1,400.00	24.66	354.06	1,361.79	259.84	-48.40	263.23	2.00	1.99	0.60
1,500.00	26.64	354.58	1,451.93	302.91	-52.68	306.51	2.00	1.99	0.52
1,600.00	28.63	355.02	1,540.52	349.11	-56.87	352.89	2.00	1.99	0.45
1,672.53	30.08	355.32	1,603.74	384.54	-59.86	388.45	2.00	1.99	0.40
1,672.68	30.08	355.32	1,603.86	384.61	-59.87	388.52	0.00	0.00	0.00
<b>Start 30.08° Hold At 1672.68'</b>									
1,700.00	30.08	355.32	1,627.51	398.26	-60.99	402.21	0.01	0.01	0.00
1,800.00	30.08	355.32	1,714.04	448.21	-65.08	452.33	0.00	0.00	0.00
1,900.00	30.08	355.32	1,800.57	498.16	-69.17	502.44	0.00	0.00	0.00
2,000.00	30.08	355.32	1,887.11	548.11	-73.27	552.56	0.00	0.00	0.00
2,100.00	30.08	355.32	1,973.64	598.06	-77.36	602.68	0.00	0.00	0.00
2,200.00	30.08	355.32	2,060.17	648.02	-81.45	652.79	0.00	0.00	0.00
2,300.00	30.08	355.32	2,146.71	697.97	-85.54	702.91	0.00	0.00	0.00
2,400.00	30.08	355.32	2,233.24	747.92	-89.64	753.02	0.00	0.00	0.00
2,500.00	30.08	355.32	2,319.77	797.87	-93.73	803.14	0.00	0.00	0.00
2,600.00	30.08	355.32	2,406.31	847.82	-97.82	853.25	0.00	0.00	0.00
2,700.00	30.08	355.32	2,492.84	897.78	-101.91	903.37	0.00	0.00	0.00
2,800.00	30.08	355.32	2,579.38	947.73	-106.01	953.49	0.00	0.00	0.00
2,900.00	30.08	355.32	2,665.91	997.68	-110.10	1,003.60	0.00	0.00	0.00
3,000.00	30.08	355.32	2,752.44	1,047.63	-114.19	1,053.72	0.00	0.00	0.00
3,100.00	30.08	355.32	2,838.98	1,097.58	-118.28	1,103.83	0.00	0.00	0.00
3,200.00	30.08	355.32	2,925.51	1,147.53	-122.38	1,153.95	0.00	0.00	0.00
3,300.00	30.08	355.32	3,012.04	1,197.49	-126.47	1,204.06	0.00	0.00	0.00
3,400.00	30.08	355.32	3,098.58	1,247.44	-130.56	1,254.18	0.00	0.00	0.00
3,500.00	30.08	355.32	3,185.11	1,297.39	-134.65	1,304.30	0.00	0.00	0.00
3,600.00	30.08	355.32	3,271.64	1,347.34	-138.75	1,354.41	0.00	0.00	0.00
3,700.00	30.08	355.32	3,358.18	1,397.29	-142.84	1,404.53	0.00	0.00	0.00
3,800.00	30.08	355.32	3,444.71	1,447.25	-146.93	1,454.64	0.00	0.00	0.00
3,900.00	30.08	355.32	3,531.25	1,497.20	-151.02	1,504.76	0.00	0.00	0.00
4,000.00	30.08	355.32	3,617.78	1,547.15	-155.12	1,554.87	0.00	0.00	0.00
4,100.00	30.08	355.32	3,704.31	1,597.10	-159.21	1,604.99	0.00	0.00	0.00
4,200.00	30.08	355.32	3,790.85	1,647.05	-163.30	1,655.11	0.00	0.00	0.00
4,300.00	30.08	355.32	3,877.38	1,697.00	-167.39	1,705.22	0.00	0.00	0.00
4,400.00	30.08	355.32	3,963.91	1,746.96	-171.49	1,755.34	0.00	0.00	0.00
4,500.00	30.08	355.32	4,050.45	1,796.91	-175.58	1,805.45	0.00	0.00	0.00

# Scientific Drilling International, Inc.

## Planning Report

<b>Database:</b>	Rockies Compass Server	<b>Local Co-ordinate Reference:</b>	Well CC 697-05-51 - Slot A
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Site:</b>	Cascade Creek 697-08A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-05-51	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)	
4,600.00	30.08	355.32	4,136.98	1,846.86	-179.67	1,855.57	0.00	0.00	0.00	
4,700.00	30.08	355.32	4,223.51	1,896.81	-183.76	1,905.68	0.00	0.00	0.00	
4,800.00	30.08	355.32	4,310.05	1,946.76	-187.85	1,955.80	0.00	0.00	0.00	
4,893.77	30.08	355.32	4,391.19	1,993.60	-191.69	2,002.79	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
4,900.00	29.95	355.32	4,396.58	1,996.71	-191.95	2,005.91	2.00	-2.00	0.00	
5,000.00	27.95	355.32	4,484.08	2,044.96	-195.90	2,054.32	2.00	-2.00	0.00	
5,100.00	25.95	355.32	4,573.21	2,090.13	-199.60	2,099.64	2.00	-2.00	0.00	
5,200.00	23.95	355.32	4,663.87	2,132.18	-203.05	2,141.82	2.00	-2.00	0.00	
5,300.00	21.95	355.32	4,755.95	2,171.05	-206.23	2,180.82	2.00	-2.00	0.00	
5,400.00	19.95	355.32	4,849.33	2,206.69	-209.15	2,216.58	2.00	-2.00	0.00	
5,500.00	17.95	355.32	4,943.90	2,239.06	-211.80	2,249.05	2.00	-2.00	0.00	
5,600.00	15.95	355.32	5,039.55	2,268.12	-214.18	2,278.21	2.00	-2.00	0.00	
5,700.00	13.95	355.32	5,136.16	2,293.84	-216.29	2,304.01	2.00	-2.00	0.00	
5,800.00	11.95	355.32	5,233.61	2,316.18	-218.12	2,326.43	2.00	-2.00	0.00	
5,900.00	9.95	355.32	5,331.78	2,335.12	-219.67	2,345.43	2.00	-2.00	0.00	
6,000.00	7.95	355.32	5,430.56	2,350.63	-220.94	2,360.99	2.00	-2.00	0.00	
6,100.00	5.95	355.32	5,529.82	2,362.70	-221.93	2,373.10	2.00	-2.00	0.00	
6,200.00	3.95	355.32	5,629.44	2,371.30	-222.64	2,381.73	2.00	-2.00	0.00	
6,300.00	1.95	355.32	5,729.30	2,376.44	-223.06	2,386.88	2.00	-2.00	0.00	
6,396.72	0.02	355.32	5,826.00	2,378.10	-223.19	2,388.55	2.00	-2.00	0.00	
<b>Mesaverde</b>										
6,397.72	0.00	0.00	5,827.00	2,378.10	-223.19	2,388.55	2.00	-2.00	0.00	
<b>Start 0.00° Hold At 6397.72'</b>										
6,400.00	0.00	0.00	5,829.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,929.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
6,526.72	0.00	0.00	5,956.00	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
<b>Base Ohio Creek</b>										
6,600.00	0.00	0.00	6,029.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,129.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,229.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,329.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,429.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,529.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,629.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,261.72	0.00	0.00	6,691.00	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
<b>TOG = 637037.11, 1225597.77</b>										
7,300.00	0.00	0.00	6,729.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,829.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,500.00	0.00	0.00	6,929.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,029.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,129.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,229.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,329.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,429.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,529.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,629.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,729.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,400.00	0.00	0.00	7,829.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,484.72	0.00	0.00	7,914.00	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
<b>Target = 637037.11, 1225597.77</b>										
8,500.00	0.00	0.00	7,929.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,029.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00	

# Scientific Drilling International, Inc.

## Planning Report

<b>Database:</b>	Rockies Compass Server	<b>Local Co-ordinate Reference:</b>	Well CC 697-05-51 - Slot A
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
<b>Site:</b>	Cascade Creek 697-08A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-05-51	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
8,700.00	0.00	0.00	8,129.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
8,800.00	0.00	0.00	8,229.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
8,900.00	0.00	0.00	8,329.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,000.00	0.00	0.00	8,429.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,100.00	0.00	0.00	8,529.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,136.72	0.00	0.00	8,566.00	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
<b>Rollins</b>									
9,200.00	0.00	0.00	8,629.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,300.00	0.00	0.00	8,729.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,400.00	0.00	0.00	8,829.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,500.00	0.00	0.00	8,929.28	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
9,536.72	0.00	0.00	8,966.00	2,378.10	-223.19	2,388.55	0.00	0.00	0.00
<b>PBHL = 637037.11, 1225597.77</b>									

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 697-05-51 Target	0.00	355.21	7,914.00	2,378.10	-223.19	637,037.11	1,225,597.77	39° 33' 1.249 N	108° 14' 47.846 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,396.72	5,826.00	Mesaverde		0.00	
6,526.72	5,956.00	Base Ohio Creek		0.00	
9,136.72	8,566.00	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.00	150.00	0.00	0.00	Start Build 2.00
550.00	548.70	26.20	-9.54	Start DLS 2.00 TFO 20.28
1,672.68	1,603.86	384.61	-59.87	Start 30.08° Hold At 1672.68'
4,893.77	4,391.19	1,993.60	-191.69	Start Drop -2.00
6,397.72	5,827.00	2,378.10	-223.19	Start 0.00° Hold At 6397.72'
7,261.72	6,691.00	2,378.10	-223.19	TOG = 637037.11, 1225597.77
8,484.72	7,914.00	2,378.10	-223.19	Target = 637037.11, 1225597.77
9,536.72	8,966.00	2,378.10	-223.19	PBHL = 637037.11, 1225597.77