



Scientific Drilling

Rocky Mountain Operations

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



Well Details: CC 697-06-30A

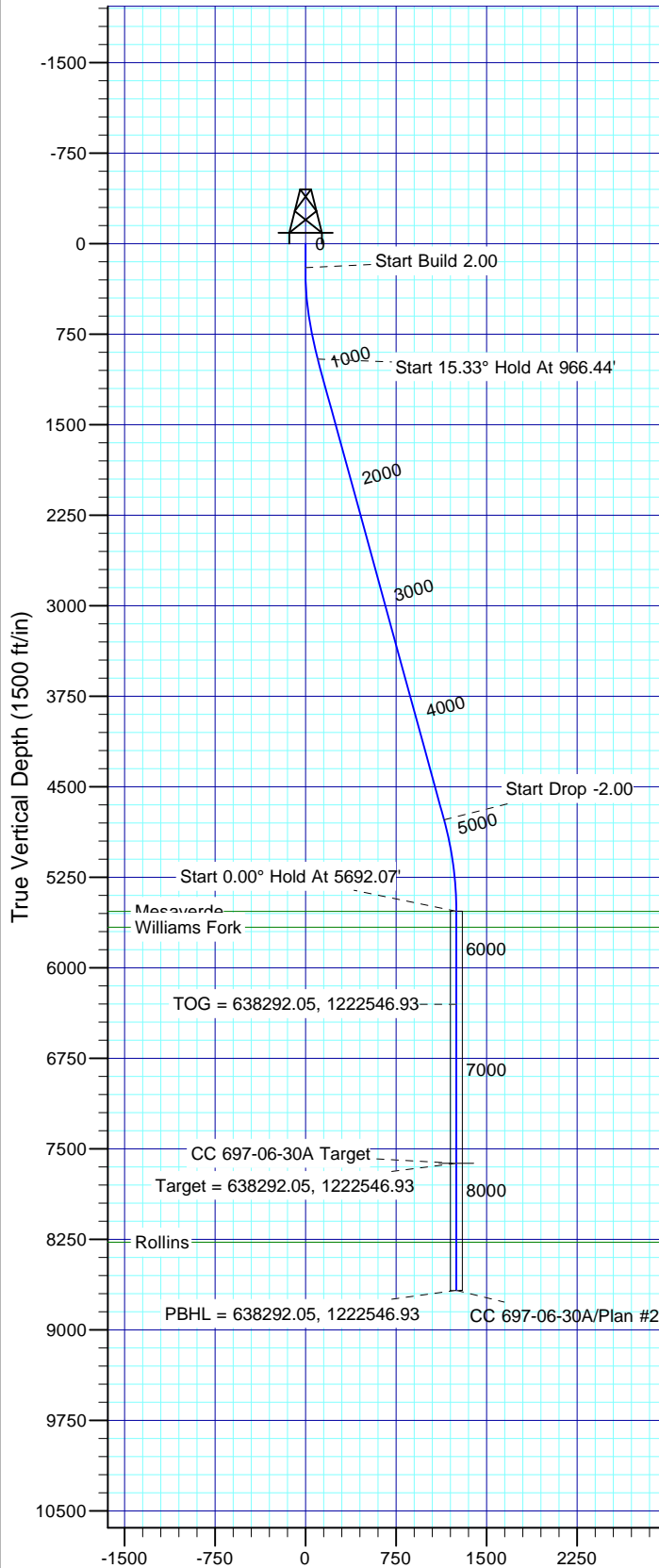
TVD Reference: GL 8184' & RKB 30' @ 8214.00ft (H&P) Ground Level: 8184.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot R
0.00	0.00	639438.12	1223047.12	39° 33' 24.206 N	108° 15' 21.324 W	

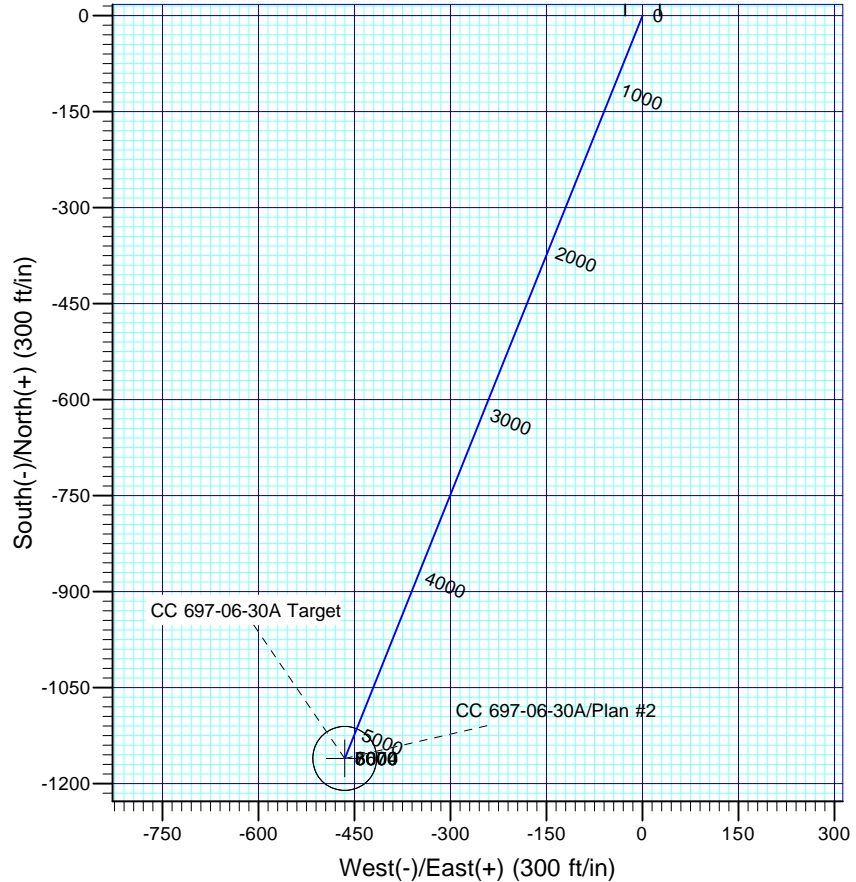


Azimuths to True North
Magnetic North: 10.53°

Magnetic Field
Strength: 52275.1nT
Dip Angle: 65.75°
Date: 2011/01/06
Model: IGRF2010



Vertical Section at 201.84° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5534.00	5693.07	Mesaverde
5664.00	5823.07	Williams Fork
8274.00	8433.07	Rollins

Plan: Plan #2

21:14, 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	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	966.44	15.33	201.84	957.33	-94.60	-37.91	2.00	201.84	101.92	
4	925.63	15.33	201.84	4775.67	-1066.12	-427.28	0.00	0.00	1148.56	
5	692.07	0.00	0.00	5533.00	-1160.72	-465.20	2.00	180.00	1250.47	
6	780.07	0.00	0.00	7621.00	-1160.72	-465.20	0.00	0.00	1250.47	
7	833.07	0.00	0.00	8674.00	-1160.72	-465.20	0.00	0.00	1250.47	CC 697-06-30A Target

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-06A Pad
CC 697-06-30A - Slot R**

OH

Plan: Plan #2

Standard Planning Report

03 February, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-30A - Slot R
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 697-06-30A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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

Well		CC 697-06-30A - Slot R				
Well Position	+N/-S	0.22 ft	Northing:	639,438.12 usft	Latitude:	39° 33' 24.206 N
	+E/-W	143.25 ft	Easting:	1,223,047.12 usft	Longitude:	108° 15' 21.324 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,184.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/01/06	10.53	65.75	52,275

Design	Plan #2			
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	201.84

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	
966.44	15.33	201.84	957.33	-94.60	-37.91	2.00	2.00	0.00	201.84	
4,925.63	15.33	201.84	4,775.67	-1,066.12	-427.28	0.00	0.00	0.00	0.00	
5,692.07	0.00	0.00	5,533.00	-1,160.72	-465.20	2.00	-2.00	0.00	180.00	
7,780.07	0.00	0.00	7,621.00	-1,160.72	-465.20	0.00	0.00	0.00	0.00	CC 697-06-30A Target
8,833.07	0.00	0.00	8,674.00	-1,160.72	-465.20	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-30A - Slot R
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 697-06-30A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	201.84	299.98	-1.62	-0.65	1.75	2.00	2.00	0.00
400.00	4.00	201.84	399.84	-6.48	-2.60	6.98	2.00	2.00	0.00
500.00	6.00	201.84	499.45	-14.57	-5.84	15.69	2.00	2.00	0.00
600.00	8.00	201.84	598.70	-25.88	-10.37	27.88	2.00	2.00	0.00
700.00	10.00	201.84	697.47	-40.40	-16.19	43.52	2.00	2.00	0.00
800.00	12.00	201.84	795.62	-58.11	-23.29	62.60	2.00	2.00	0.00
900.00	14.00	201.84	893.06	-78.99	-31.66	85.10	2.00	2.00	0.00
966.44	15.33	201.84	957.33	-94.60	-37.91	101.92	2.00	2.00	0.00
Start 15.33° Hold At 966.44'									
1,000.00	15.33	201.84	989.70	-102.84	-41.22	110.79	0.00	0.00	0.00
1,100.00	15.33	201.84	1,086.14	-127.37	-51.05	137.22	0.00	0.00	0.00
1,200.00	15.33	201.84	1,182.58	-151.91	-60.88	163.66	0.00	0.00	0.00
1,300.00	15.33	201.84	1,279.02	-176.45	-70.72	190.09	0.00	0.00	0.00
1,400.00	15.33	201.84	1,375.47	-200.99	-80.55	216.53	0.00	0.00	0.00
1,500.00	15.33	201.84	1,471.91	-225.53	-90.39	242.97	0.00	0.00	0.00
1,600.00	15.33	201.84	1,568.35	-250.07	-100.22	269.40	0.00	0.00	0.00
1,700.00	15.33	201.84	1,664.79	-274.60	-110.06	295.84	0.00	0.00	0.00
1,800.00	15.33	201.84	1,761.24	-299.14	-119.89	322.27	0.00	0.00	0.00
1,900.00	15.33	201.84	1,857.68	-323.68	-129.73	348.71	0.00	0.00	0.00
2,000.00	15.33	201.84	1,954.12	-348.22	-139.56	375.15	0.00	0.00	0.00
2,100.00	15.33	201.84	2,050.56	-372.76	-149.40	401.58	0.00	0.00	0.00
2,200.00	15.33	201.84	2,147.01	-397.30	-159.23	428.02	0.00	0.00	0.00
2,300.00	15.33	201.84	2,243.45	-421.83	-169.06	454.45	0.00	0.00	0.00
2,400.00	15.33	201.84	2,339.89	-446.37	-178.90	480.89	0.00	0.00	0.00
2,500.00	15.33	201.84	2,436.33	-470.91	-188.73	507.32	0.00	0.00	0.00
2,600.00	15.33	201.84	2,532.78	-495.45	-198.57	533.76	0.00	0.00	0.00
2,700.00	15.33	201.84	2,629.22	-519.99	-208.40	560.20	0.00	0.00	0.00
2,800.00	15.33	201.84	2,725.66	-544.53	-218.24	586.63	0.00	0.00	0.00
2,900.00	15.33	201.84	2,822.10	-569.06	-228.07	613.07	0.00	0.00	0.00
3,000.00	15.33	201.84	2,918.55	-593.60	-237.91	639.50	0.00	0.00	0.00
3,100.00	15.33	201.84	3,014.99	-618.14	-247.74	665.94	0.00	0.00	0.00
3,200.00	15.33	201.84	3,111.43	-642.68	-257.58	692.37	0.00	0.00	0.00
3,300.00	15.33	201.84	3,207.87	-667.22	-267.41	718.81	0.00	0.00	0.00
3,400.00	15.33	201.84	3,304.32	-691.76	-277.25	745.25	0.00	0.00	0.00
3,500.00	15.33	201.84	3,400.76	-716.29	-287.08	771.68	0.00	0.00	0.00
3,600.00	15.33	201.84	3,497.20	-740.83	-296.91	798.12	0.00	0.00	0.00
3,700.00	15.33	201.84	3,593.64	-765.37	-306.75	824.55	0.00	0.00	0.00
3,800.00	15.33	201.84	3,690.09	-789.91	-316.58	850.99	0.00	0.00	0.00
3,900.00	15.33	201.84	3,786.53	-814.45	-326.42	877.42	0.00	0.00	0.00
4,000.00	15.33	201.84	3,882.97	-838.99	-336.25	903.86	0.00	0.00	0.00
4,100.00	15.33	201.84	3,979.41	-863.52	-346.09	930.30	0.00	0.00	0.00
4,200.00	15.33	201.84	4,075.86	-888.06	-355.92	956.73	0.00	0.00	0.00
4,300.00	15.33	201.84	4,172.30	-912.60	-365.76	983.17	0.00	0.00	0.00
4,400.00	15.33	201.84	4,268.74	-937.14	-375.59	1,009.60	0.00	0.00	0.00
4,500.00	15.33	201.84	4,365.18	-961.68	-385.43	1,036.04	0.00	0.00	0.00
4,600.00	15.33	201.84	4,461.62	-986.22	-395.26	1,062.47	0.00	0.00	0.00
4,700.00	15.33	201.84	4,558.07	-1,010.75	-405.09	1,088.91	0.00	0.00	0.00
4,800.00	15.33	201.84	4,654.51	-1,035.29	-414.93	1,115.35	0.00	0.00	0.00
4,900.00	15.33	201.84	4,750.95	-1,059.83	-424.76	1,141.78	0.00	0.00	0.00
4,925.63	15.33	201.84	4,775.67	-1,066.12	-427.28	1,148.56	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-30A - Slot R
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 697-06-30A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
Start Drop -2.00									
5,000.00	13.84	201.84	4,847.64	-1,083.50	-434.25	1,167.28	2.00	-2.00	0.00
5,100.00	11.84	201.84	4,945.14	-1,104.13	-442.52	1,189.51	2.00	-2.00	0.00
5,200.00	9.84	201.84	5,043.35	-1,121.59	-449.52	1,208.32	2.00	-2.00	0.00
5,300.00	7.84	201.84	5,142.15	-1,135.86	-455.23	1,223.69	2.00	-2.00	0.00
5,400.00	5.84	201.84	5,241.44	-1,146.91	-459.67	1,235.60	2.00	-2.00	0.00
5,500.00	3.84	201.84	5,341.07	-1,154.75	-462.80	1,244.04	2.00	-2.00	0.00
5,600.00	1.84	201.84	5,440.95	-1,159.35	-464.65	1,248.99	2.00	-2.00	0.00
5,692.07	0.00	0.00	5,533.00	-1,160.72	-465.20	1,250.47	2.00	-2.00	0.00
Start 0.00° Hold At 5692.07'									
5,693.07	0.00	0.00	5,534.00	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
Mesaverde									
5,700.00	0.00	0.00	5,540.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
5,800.00	0.00	0.00	5,640.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
5,823.07	0.00	0.00	5,664.00	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
Williams Fork									
5,900.00	0.00	0.00	5,740.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,000.00	0.00	0.00	5,840.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,100.00	0.00	0.00	5,940.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,200.00	0.00	0.00	6,040.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,300.00	0.00	0.00	6,140.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,400.00	0.00	0.00	6,240.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,463.07	0.00	0.00	6,304.00	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
TOG = 638292.05, 1222546.93									
6,500.00	0.00	0.00	6,340.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,600.00	0.00	0.00	6,440.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,700.00	0.00	0.00	6,540.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,800.00	0.00	0.00	6,640.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
6,900.00	0.00	0.00	6,740.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,000.00	0.00	0.00	6,840.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,100.00	0.00	0.00	6,940.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,200.00	0.00	0.00	7,040.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,300.00	0.00	0.00	7,140.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,400.00	0.00	0.00	7,240.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,500.00	0.00	0.00	7,340.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,600.00	0.00	0.00	7,440.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,700.00	0.00	0.00	7,540.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,780.07	0.00	0.00	7,621.00	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
Target = 638292.05, 1222546.93									
7,800.00	0.00	0.00	7,640.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
7,900.00	0.00	0.00	7,740.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,000.00	0.00	0.00	7,840.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,100.00	0.00	0.00	7,940.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,200.00	0.00	0.00	8,040.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,300.00	0.00	0.00	8,140.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,400.00	0.00	0.00	8,240.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,433.07	0.00	0.00	8,274.00	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
Rollins									
8,500.00	0.00	0.00	8,340.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,600.00	0.00	0.00	8,440.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,700.00	0.00	0.00	8,540.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,800.00	0.00	0.00	8,640.93	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00
8,833.07	0.00	0.00	8,674.00	-1,160.72	-465.20	1,250.47	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-06-30A - Slot R
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 697-06-30A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
PBHL = 638292.05, 1222546.93									

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 697-06-30A Target	0.00	0.00	7,621.00	-1,160.72	-465.20	638,292.05	1,222,546.93	39° 33' 12.733 N	108° 15' 27.263 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,693.07	5,534.00	Mesaverde		0.00	
5,823.07	5,664.00	Williams Fork		0.00	
8,433.07	8,274.00	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
966.44	957.33	-94.60	-37.91	Start 15.33° Hold At 966.44'
4,925.63	4,775.67	-1,066.12	-427.28	Start Drop -2.00
5,692.07	5,533.00	-1,160.72	-465.20	Start 0.00° Hold At 5692.07'
6,463.07	6,304.00	-1,160.72	-465.20	TOG = 638292.05, 1222546.93
7,780.07	7,621.00	-1,160.72	-465.20	Target = 638292.05, 1222546.93
8,833.07	8,674.00	-1,160.72	-465.20	PBHL = 638292.05, 1222546.93