



Scientific Drilling

Rocky Mountain Operations

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



Well Details: CC 697-05-42

TVD Reference: GL 8429' & RKB 30' @ 8459.00ft (H&P) Ground Level: 8429.00

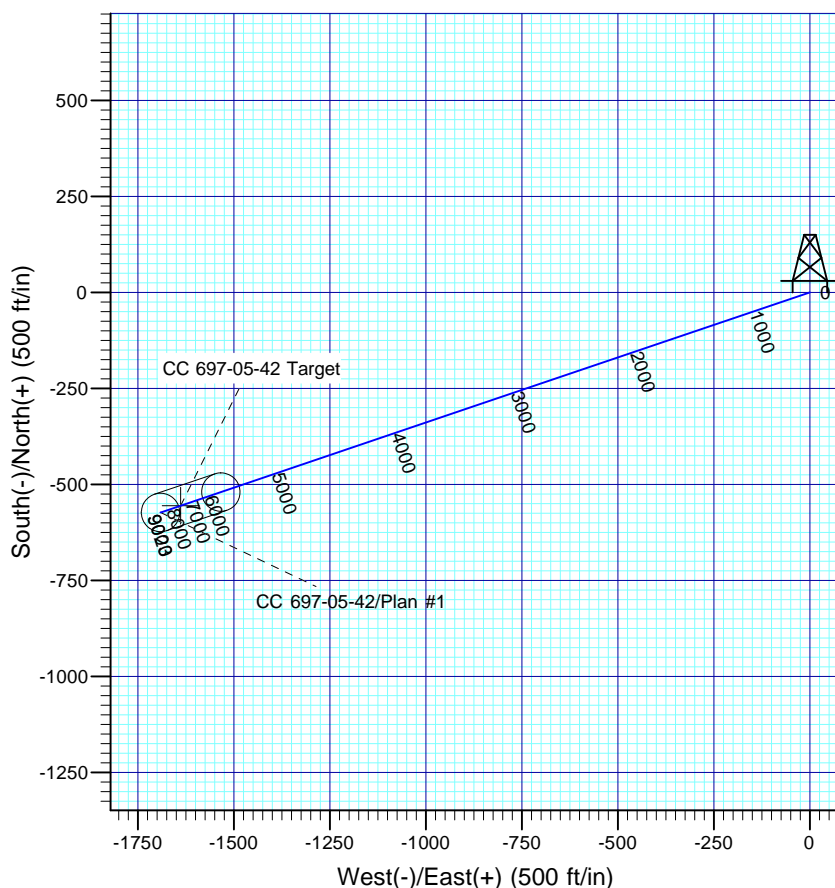
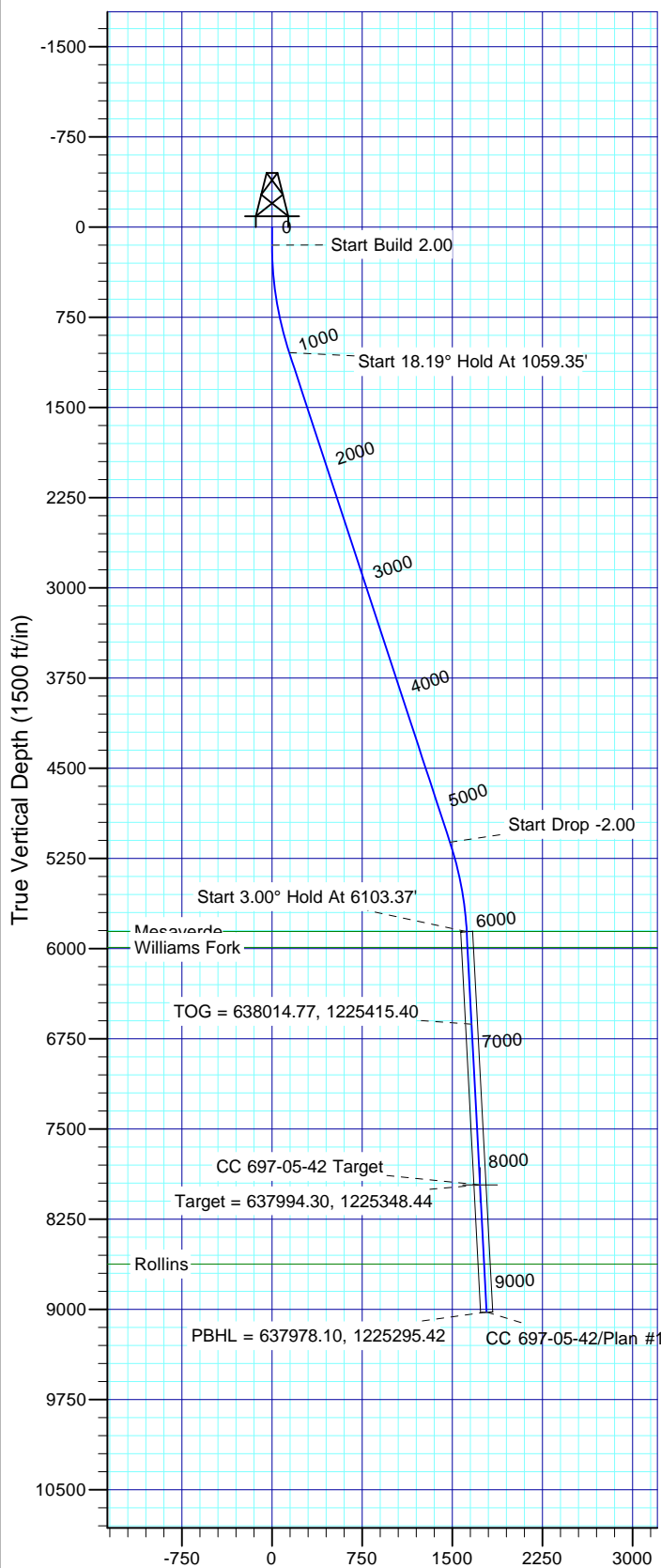
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	638500.02	1227002.88	39° 33' 16.121 N	108° 14' 30.480 W

Slot
A



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.5nT
Dip Angle: 65.77°
Date: 2010/12/16
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5858.00	6102.37	Mesaverde
5989.00	6233.55	Williams Fork
8623.00	8871.16	Rollins

Plan: Plan #1

14:33, 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	VSec	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	1059.35	18.19	251.27	1044.16	-45.95	-135.54	2.00	251.27	143.12	
4	5344.02	18.19	251.27	5114.77	-475.29	-1402.08	0.00	0.00	1480.45	
5	6103.37	3.00	251.27	5859.00	-519.98	-1533.90	2.00	180.00	1619.64	
6	8212.26	3.00	251.27	7965.00	-555.41	-1638.43	0.00	0.00	1730.01	CC 697-05-42 Target
7	9271.71	3.00	251.27	9023.00	-573.21	-1690.94	0.00	0.00	1785.46	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-42 - Slot A**

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 697-05-42 - Slot A
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 697-05-42	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
From:	Map	Easting:	1,226,150.07 usft
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in
		Latitude:	39° 33' 5.626 N
		Longitude:	108° 14' 40.963 W
		Grid Convergence:	-1.73 °

Well		CC 697-05-42 - Slot A				
Well Position	+N/-S	1,061.89 ft	Northing:	638,500.02 usft	Latitude:	39° 33' 16.121 N
	+E/-W	821.11 ft	Easting:	1,227,002.88 usft	Longitude:	108° 14' 30.480 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	251.27

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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,059.35	18.19	251.27	1,044.16	-45.95	-135.54	2.00	2.00	0.00	251.27	
5,344.02	18.19	251.27	5,114.77	-475.29	-1,402.08	0.00	0.00	0.00	0.00	
6,103.37	3.00	251.27	5,859.00	-519.98	-1,533.90	2.00	-2.00	0.00	180.00	
8,212.26	3.00	251.27	7,965.00	-555.41	-1,638.43	0.00	0.00	0.00	0.00	CC 697-05-42 Target
9,271.71	3.00	251.27	9,023.00	-573.21	-1,690.94	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
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 697-05-42	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
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
200.00	1.00	251.27	200.00	-0.14	-0.41	0.44	2.00	2.00	0.00
300.00	3.00	251.27	299.93	-1.26	-3.72	3.93	2.00	2.00	0.00
400.00	5.00	251.27	399.68	-3.50	-10.32	10.90	2.00	2.00	0.00
500.00	7.00	251.27	499.13	-6.86	-20.22	21.35	2.00	2.00	0.00
600.00	9.00	251.27	598.15	-11.32	-33.40	35.27	2.00	2.00	0.00
700.00	11.00	251.27	696.63	-16.90	-49.85	52.63	2.00	2.00	0.00
800.00	13.00	251.27	794.44	-23.57	-69.54	73.42	2.00	2.00	0.00
900.00	15.00	251.27	891.46	-31.34	-92.45	97.62	2.00	2.00	0.00
1,000.00	17.00	251.27	987.58	-40.19	-118.55	125.18	2.00	2.00	0.00
1,059.35	18.19	251.27	1,044.16	-45.95	-135.54	143.12	2.00	2.00	0.00
Start 18.19° Hold At 1059.35'									
1,100.00	18.19	251.27	1,082.78	-50.02	-147.56	155.80	0.00	0.00	0.00
1,200.00	18.19	251.27	1,177.78	-60.04	-177.12	187.02	0.00	0.00	0.00
1,300.00	18.19	251.27	1,272.78	-70.06	-206.68	218.23	0.00	0.00	0.00
1,400.00	18.19	251.27	1,367.79	-80.08	-236.24	249.44	0.00	0.00	0.00
1,500.00	18.19	251.27	1,462.79	-90.10	-265.80	280.65	0.00	0.00	0.00
1,600.00	18.19	251.27	1,557.80	-100.12	-295.36	311.86	0.00	0.00	0.00
1,700.00	18.19	251.27	1,652.80	-110.14	-324.92	343.08	0.00	0.00	0.00
1,800.00	18.19	251.27	1,747.81	-120.16	-354.47	374.29	0.00	0.00	0.00
1,900.00	18.19	251.27	1,842.81	-130.18	-384.03	405.50	0.00	0.00	0.00
2,000.00	18.19	251.27	1,937.81	-140.20	-413.59	436.71	0.00	0.00	0.00
2,100.00	18.19	251.27	2,032.82	-150.22	-443.15	467.92	0.00	0.00	0.00
2,200.00	18.19	251.27	2,127.82	-160.25	-472.71	499.14	0.00	0.00	0.00
2,300.00	18.19	251.27	2,222.83	-170.27	-502.27	530.35	0.00	0.00	0.00
2,400.00	18.19	251.27	2,317.83	-180.29	-531.83	561.56	0.00	0.00	0.00
2,500.00	18.19	251.27	2,412.84	-190.31	-561.39	592.77	0.00	0.00	0.00
2,600.00	18.19	251.27	2,507.84	-200.33	-590.95	623.98	0.00	0.00	0.00
2,700.00	18.19	251.27	2,602.84	-210.35	-620.51	655.20	0.00	0.00	0.00
2,800.00	18.19	251.27	2,697.85	-220.37	-650.07	686.41	0.00	0.00	0.00
2,900.00	18.19	251.27	2,792.85	-230.39	-679.63	717.62	0.00	0.00	0.00
3,000.00	18.19	251.27	2,887.86	-240.41	-709.19	748.83	0.00	0.00	0.00
3,100.00	18.19	251.27	2,982.86	-250.43	-738.75	780.04	0.00	0.00	0.00
3,200.00	18.19	251.27	3,077.87	-260.45	-768.31	811.26	0.00	0.00	0.00
3,300.00	18.19	251.27	3,172.87	-270.47	-797.87	842.47	0.00	0.00	0.00
3,400.00	18.19	251.27	3,267.87	-280.49	-827.43	873.68	0.00	0.00	0.00
3,500.00	18.19	251.27	3,362.88	-290.51	-856.99	904.89	0.00	0.00	0.00
3,600.00	18.19	251.27	3,457.88	-300.53	-886.55	936.10	0.00	0.00	0.00
3,700.00	18.19	251.27	3,552.89	-310.55	-916.11	967.32	0.00	0.00	0.00
3,800.00	18.19	251.27	3,647.89	-320.57	-945.67	998.53	0.00	0.00	0.00
3,900.00	18.19	251.27	3,742.90	-330.59	-975.23	1,029.74	0.00	0.00	0.00
4,000.00	18.19	251.27	3,837.90	-340.61	-1,004.79	1,060.95	0.00	0.00	0.00
4,100.00	18.19	251.27	3,932.90	-350.63	-1,034.35	1,092.16	0.00	0.00	0.00
4,200.00	18.19	251.27	4,027.91	-360.65	-1,063.91	1,123.38	0.00	0.00	0.00
4,300.00	18.19	251.27	4,122.91	-370.67	-1,093.47	1,154.59	0.00	0.00	0.00
4,400.00	18.19	251.27	4,217.92	-380.70	-1,123.03	1,185.80	0.00	0.00	0.00
4,500.00	18.19	251.27	4,312.92	-390.72	-1,152.59	1,217.01	0.00	0.00	0.00
4,600.00	18.19	251.27	4,407.92	-400.74	-1,182.15	1,248.22	0.00	0.00	0.00
4,700.00	18.19	251.27	4,502.93	-410.76	-1,211.71	1,279.44	0.00	0.00	0.00
4,800.00	18.19	251.27	4,597.93	-420.78	-1,241.27	1,310.65	0.00	0.00	0.00
4,900.00	18.19	251.27	4,692.94	-430.80	-1,270.83	1,341.86	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
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 697-05-42	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)
5,000.00	18.19	251.27	4,787.94	-440.82	-1,300.39	1,373.07	0.00	0.00	0.00
5,100.00	18.19	251.27	4,882.95	-450.84	-1,329.95	1,404.28	0.00	0.00	0.00
5,200.00	18.19	251.27	4,977.95	-460.86	-1,359.51	1,435.50	0.00	0.00	0.00
5,300.00	18.19	251.27	5,072.95	-470.88	-1,389.07	1,466.71	0.00	0.00	0.00
5,344.02	18.19	251.27	5,114.77	-475.29	-1,402.08	1,480.45	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	17.07	251.27	5,168.13	-480.73	-1,418.13	1,497.40	2.00	-2.00	0.00
5,500.00	15.07	251.27	5,264.22	-489.62	-1,444.34	1,525.07	2.00	-2.00	0.00
5,600.00	13.07	251.27	5,361.21	-497.42	-1,467.36	1,549.38	2.00	-2.00	0.00
5,700.00	11.07	251.27	5,459.00	-504.13	-1,487.16	1,570.28	2.00	-2.00	0.00
5,800.00	9.07	251.27	5,557.45	-509.74	-1,503.71	1,587.76	2.00	-2.00	0.00
5,900.00	7.07	251.27	5,656.46	-514.25	-1,517.00	1,601.80	2.00	-2.00	0.00
6,000.00	5.07	251.27	5,755.89	-517.64	-1,527.01	1,612.37	2.00	-2.00	0.00
6,100.00	3.07	251.27	5,855.64	-519.92	-1,533.73	1,619.46	2.00	-2.00	0.00
6,102.37	3.02	251.27	5,858.00	-519.96	-1,533.85	1,619.59	2.00	-2.00	0.00
Mesaverde									
6,103.37	3.00	251.27	5,859.00	-519.98	-1,533.90	1,619.64	2.00	-2.00	0.00
Start 3.00° Hold At 6103.37'									
6,200.00	3.00	251.27	5,955.50	-521.60	-1,538.69	1,624.70	0.00	0.00	0.00
6,233.55	3.00	251.27	5,989.00	-522.16	-1,540.35	1,626.45	0.00	0.00	0.00
Williams Fork									
6,300.00	3.00	251.27	6,055.36	-523.28	-1,543.65	1,629.93	0.00	0.00	0.00
6,400.00	3.00	251.27	6,155.22	-524.96	-1,548.60	1,635.16	0.00	0.00	0.00
6,500.00	3.00	251.27	6,255.09	-526.64	-1,553.56	1,640.40	0.00	0.00	0.00
6,600.00	3.00	251.27	6,354.95	-528.32	-1,558.52	1,645.63	0.00	0.00	0.00
6,700.00	3.00	251.27	6,454.81	-530.00	-1,563.47	1,650.86	0.00	0.00	0.00
6,800.00	3.00	251.27	6,554.68	-531.68	-1,568.43	1,656.10	0.00	0.00	0.00
6,874.43	3.00	251.27	6,629.00	-532.93	-1,572.12	1,659.99	0.00	0.00	0.00
TOG = 638014.77, 1225415.40									
6,900.00	3.00	251.27	6,654.54	-533.36	-1,573.39	1,661.33	0.00	0.00	0.00
7,000.00	3.00	251.27	6,754.40	-535.04	-1,578.34	1,666.56	0.00	0.00	0.00
7,100.00	3.00	251.27	6,854.26	-536.72	-1,583.30	1,671.80	0.00	0.00	0.00
7,200.00	3.00	251.27	6,954.13	-538.40	-1,588.26	1,677.03	0.00	0.00	0.00
7,300.00	3.00	251.27	7,053.99	-540.08	-1,593.21	1,682.26	0.00	0.00	0.00
7,400.00	3.00	251.27	7,153.85	-541.76	-1,598.17	1,687.50	0.00	0.00	0.00
7,500.00	3.00	251.27	7,253.72	-543.44	-1,603.13	1,692.73	0.00	0.00	0.00
7,600.00	3.00	251.27	7,353.58	-545.12	-1,608.08	1,697.97	0.00	0.00	0.00
7,700.00	3.00	251.27	7,453.44	-546.80	-1,613.04	1,703.20	0.00	0.00	0.00
7,800.00	3.00	251.27	7,553.31	-548.48	-1,618.00	1,708.43	0.00	0.00	0.00
7,900.00	3.00	251.27	7,653.17	-550.16	-1,622.95	1,713.67	0.00	0.00	0.00
8,000.00	3.00	251.27	7,753.03	-551.84	-1,627.91	1,718.90	0.00	0.00	0.00
8,100.00	3.00	251.27	7,852.89	-553.52	-1,632.86	1,724.13	0.00	0.00	0.00
8,200.00	3.00	251.27	7,952.76	-555.20	-1,637.82	1,729.37	0.00	0.00	0.00
8,212.26	3.00	251.27	7,965.00	-555.41	-1,638.43	1,730.01	0.00	0.00	0.00
Target = 637994.30, 1225348.44									
8,300.00	3.00	251.27	8,052.62	-556.89	-1,642.78	1,734.60	0.00	0.00	0.00
8,400.00	3.00	251.27	8,152.48	-558.57	-1,647.73	1,739.83	0.00	0.00	0.00
8,500.00	3.00	251.27	8,252.35	-560.25	-1,652.69	1,745.07	0.00	0.00	0.00
8,600.00	3.00	251.27	8,352.21	-561.93	-1,657.65	1,750.30	0.00	0.00	0.00
8,700.00	3.00	251.27	8,452.07	-563.61	-1,662.60	1,755.54	0.00	0.00	0.00
8,800.00	3.00	251.27	8,551.93	-565.29	-1,667.56	1,760.77	0.00	0.00	0.00
8,871.16	3.00	251.27	8,623.00	-566.48	-1,671.09	1,764.49	0.00	0.00	0.00
Rollins									

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
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 697-05-42	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)
8,900.00	3.00	251.27	8,651.80	-566.97	-1,672.52	1,766.00	0.00	0.00	0.00
9,000.00	3.00	251.27	8,751.66	-568.65	-1,677.47	1,771.24	0.00	0.00	0.00
9,100.00	3.00	251.27	8,851.52	-570.33	-1,682.43	1,776.47	0.00	0.00	0.00
9,200.00	3.00	251.27	8,951.39	-572.01	-1,687.39	1,781.70	0.00	0.00	0.00
9,271.71	3.00	251.27	9,023.00	-573.21	-1,690.94	1,785.46	0.00	0.00	0.00
PBHL = 637978.10, 1225295.42									

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 697-05-42 Target	-3.00	251.27	7,965.00	-555.41	-1,638.43	637,994.31	1,225,348.44	39° 33' 10.631 N	108° 14' 51.398 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,102.37	5,858.00	Mesaverde		0.00	
6,233.55	5,989.00	Williams Fork		0.00	
8,871.16	8,623.00	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
1,059.35	1,044.16	-45.95	-135.54	Start 18.19° Hold At 1059.35'
5,344.02	5,114.77	-475.29	-1,402.08	Start Drop -2.00
6,103.37	5,859.00	-519.98	-1,533.90	Start 3.00° Hold At 6103.37'
6,874.43	6,629.00	-532.93	-1,572.12	TOG = 638014.77, 1225415.40
8,212.26	7,965.00	-555.41	-1,638.43	Target = 637994.30, 1225348.44
9,271.71	9,023.00	-573.21	-1,690.94	PBHL = 637978.10, 1225295.42