



Scientific Drilling
Rocky Mountain Operations

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



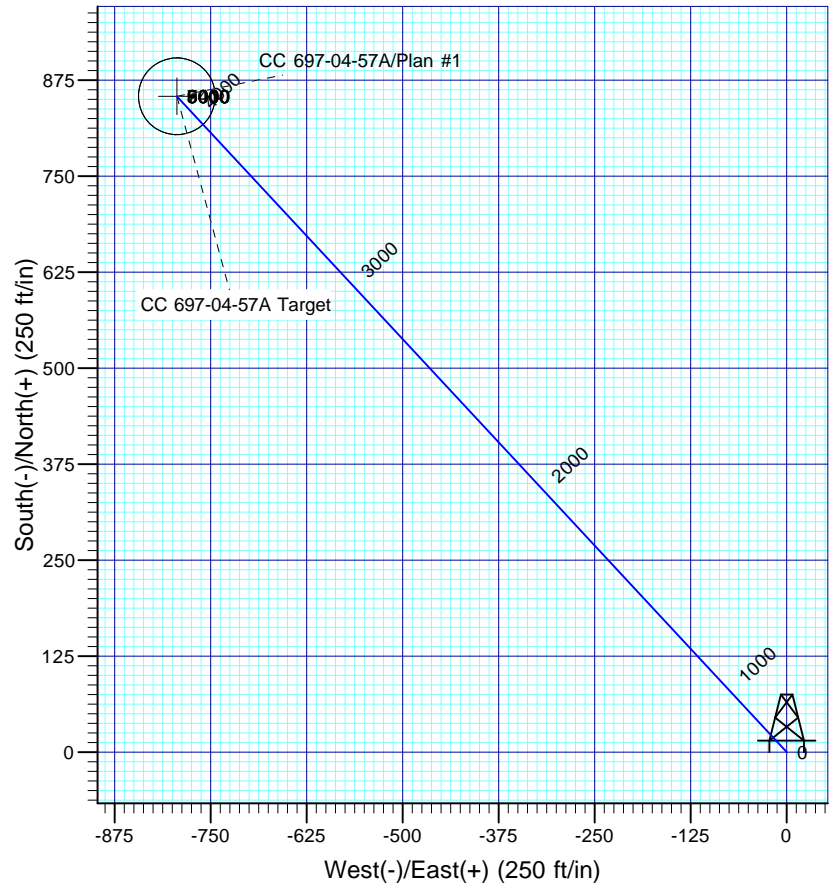
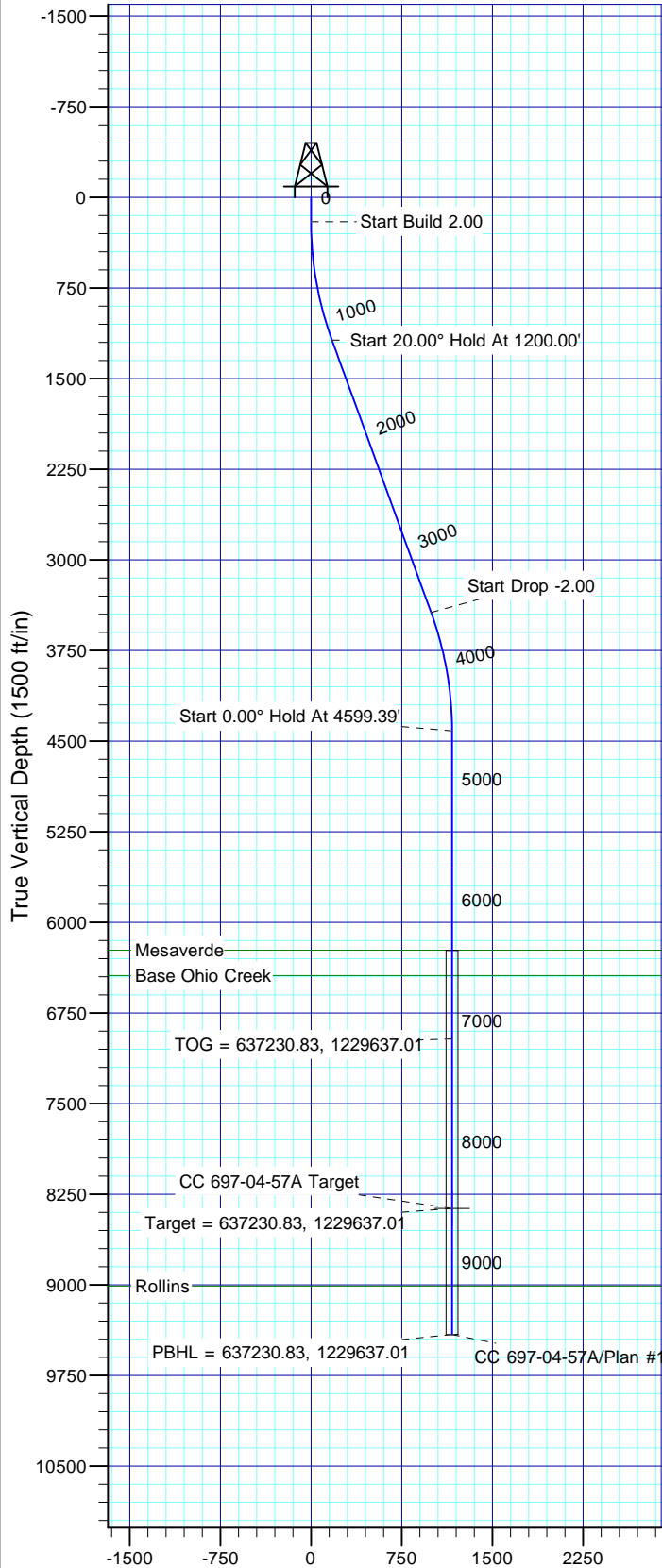
Well Details: CC 697-04-57A

TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P) Ground Level: 8629.00
+N/-S 0.00 +E/-W 0.00 Northing 636353.43 Easting 1230405.20 Latitude 39° 32' 55.927 N Longitude 108° 13' 46.238 W Slot H



Azimuths to True North
Magnetic North: 10.47°

Magnetic Field
Strength: 52282.7snT
Dip Angle: 65.76°
Date: 2011/03/23
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6229.00	6414.07	Mesaverde
6439.00	6624.07	Base Ohio Creek
9009.00	9194.07	Rollins

Plan: Plan #1

15:12, 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	1200.00	20.00	317.08	1179.82	126.51	-117.66	2.00	317.08	172.77	
4	3599.39	20.00	317.08	3434.50	727.42	-676.55	0.00	0.00	993.41	
5	4599.39	0.00	0.00	4414.32	853.93	-794.21	2.00	180.00	1166.18	
6	8552.07	0.00	0.00	8367.00	853.93	-794.21	0.00	0.00	1166.18	CC 697-04-57A Target
7	9595.07	0.00	0.00	9410.00	853.93	-794.21	0.00	0.00	1166.18	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-57A - Slot H**

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 697-04-57A - Slot H
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 697-04-57A	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 697-04-57A - Slot H					
Well Position	+N/-S	826.32 ft	Northing:	636,353.43 usft	Latitude:	39° 32' 55.927 N
	+E/-W	104.32 ft	Easting:	1,230,405.20 usft	Longitude:	108° 13' 46.238 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	2011/03/23	10.47	65.76	52,283

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	317.08

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	
1,200.00	20.00	317.08	1,179.82	126.51	-117.66	2.00	2.00	0.00	317.08	
3,599.39	20.00	317.08	3,434.50	727.42	-676.55	0.00	0.00	0.00	0.00	
4,599.39	0.00	0.00	4,414.32	853.93	-794.21	2.00	-2.00	0.00	180.00	
8,552.07	0.00	0.00	8,367.00	853.93	-794.21	0.00	0.00	0.00	0.00	CC 697-04-57A Target
9,595.07	0.00	0.00	9,410.00	853.93	-794.21	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-57A - Slot H
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 697-04-57A	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	317.08	299.98	1.28	-1.19	1.75	2.00	2.00	0.00
400.00	4.00	317.08	399.84	5.11	-4.75	6.98	2.00	2.00	0.00
500.00	6.00	317.08	499.45	11.49	-10.69	15.69	2.00	2.00	0.00
600.00	8.00	317.08	598.70	20.42	-18.99	27.88	2.00	2.00	0.00
700.00	10.00	317.08	697.47	31.87	-29.64	43.52	2.00	2.00	0.00
800.00	12.00	317.08	795.62	45.84	-42.63	62.60	2.00	2.00	0.00
900.00	14.00	317.08	893.06	62.31	-57.95	85.10	2.00	2.00	0.00
1,000.00	16.00	317.08	989.64	81.26	-75.58	110.98	2.00	2.00	0.00
1,100.00	18.00	317.08	1,085.27	102.67	-95.49	140.21	2.00	2.00	0.00
1,200.00	20.00	317.08	1,179.82	126.51	-117.66	172.77	2.00	2.00	0.00
Start 20.00° Hold At 1200.00'									
1,300.00	20.00	317.08	1,273.78	151.55	-140.95	206.97	0.00	0.00	0.00
1,400.00	20.00	317.08	1,367.75	176.60	-164.25	241.17	0.00	0.00	0.00
1,500.00	20.00	317.08	1,461.72	201.64	-187.54	275.37	0.00	0.00	0.00
1,600.00	20.00	317.08	1,555.69	226.69	-210.83	309.58	0.00	0.00	0.00
1,700.00	20.00	317.08	1,649.66	251.73	-234.13	343.78	0.00	0.00	0.00
1,800.00	20.00	317.08	1,743.63	276.78	-257.42	377.98	0.00	0.00	0.00
1,900.00	20.00	317.08	1,837.60	301.82	-280.71	412.18	0.00	0.00	0.00
2,000.00	20.00	317.08	1,931.57	326.86	-304.00	446.38	0.00	0.00	0.00
2,100.00	20.00	317.08	2,025.54	351.91	-327.30	480.59	0.00	0.00	0.00
2,200.00	20.00	317.08	2,119.51	376.95	-350.59	514.79	0.00	0.00	0.00
2,300.00	20.00	317.08	2,213.48	402.00	-373.88	548.99	0.00	0.00	0.00
2,400.00	20.00	317.08	2,307.45	427.04	-397.17	583.19	0.00	0.00	0.00
2,500.00	20.00	317.08	2,401.42	452.09	-420.47	617.39	0.00	0.00	0.00
2,600.00	20.00	317.08	2,495.39	477.13	-443.76	651.60	0.00	0.00	0.00
2,700.00	20.00	317.08	2,589.35	502.18	-467.05	685.80	0.00	0.00	0.00
2,800.00	20.00	317.08	2,683.32	527.22	-490.35	720.00	0.00	0.00	0.00
2,900.00	20.00	317.08	2,777.29	552.26	-513.64	754.20	0.00	0.00	0.00
3,000.00	20.00	317.08	2,871.26	577.31	-536.93	788.40	0.00	0.00	0.00
3,100.00	20.00	317.08	2,965.23	602.35	-560.22	822.61	0.00	0.00	0.00
3,200.00	20.00	317.08	3,059.20	627.40	-583.52	856.81	0.00	0.00	0.00
3,300.00	20.00	317.08	3,153.17	652.44	-606.81	891.01	0.00	0.00	0.00
3,400.00	20.00	317.08	3,247.14	677.49	-630.10	925.21	0.00	0.00	0.00
3,500.00	20.00	317.08	3,341.11	702.53	-653.40	959.41	0.00	0.00	0.00
3,599.39	20.00	317.08	3,434.50	727.42	-676.55	993.41	0.00	0.00	0.00
Start Drop -2.00									
3,600.00	19.99	317.08	3,435.08	727.58	-676.69	993.62	2.00	-2.00	0.00
3,700.00	17.99	317.08	3,529.63	751.40	-698.85	1,026.15	2.00	-2.00	0.00
3,800.00	15.99	317.08	3,625.26	772.79	-718.74	1,055.37	2.00	-2.00	0.00
3,900.00	13.99	317.08	3,721.86	791.73	-736.35	1,081.23	2.00	-2.00	0.00
4,000.00	11.99	317.08	3,819.29	808.18	-751.66	1,103.70	2.00	-2.00	0.00
4,100.00	9.99	317.08	3,917.46	822.14	-764.64	1,122.76	2.00	-2.00	0.00
4,200.00	7.99	317.08	4,016.22	833.58	-775.28	1,138.38	2.00	-2.00	0.00
4,300.00	5.99	317.08	4,115.47	842.49	-783.56	1,150.55	2.00	-2.00	0.00
4,400.00	3.99	317.08	4,215.09	848.85	-789.48	1,159.24	2.00	-2.00	0.00
4,500.00	1.99	317.08	4,314.95	852.67	-793.03	1,164.45	2.00	-2.00	0.00
4,599.39	0.00	0.00	4,414.32	853.93	-794.21	1,166.18	2.00	-2.00	0.00
Start 0.00° Hold At 4599.39'									
4,600.00	0.00	0.00	4,414.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
4,700.00	0.00	0.00	4,514.93	853.93	-794.21	1,166.18	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-57A - Slot H
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 697-04-57A	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)
4,800.00	0.00	0.00	4,614.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
4,900.00	0.00	0.00	4,714.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,000.00	0.00	0.00	4,814.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,100.00	0.00	0.00	4,914.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,200.00	0.00	0.00	5,014.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,300.00	0.00	0.00	5,114.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,400.00	0.00	0.00	5,214.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,500.00	0.00	0.00	5,314.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,600.00	0.00	0.00	5,414.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,700.00	0.00	0.00	5,514.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,800.00	0.00	0.00	5,614.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
5,900.00	0.00	0.00	5,714.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,000.00	0.00	0.00	5,814.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,100.00	0.00	0.00	5,914.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,200.00	0.00	0.00	6,014.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,300.00	0.00	0.00	6,114.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,400.00	0.00	0.00	6,214.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,414.07	0.00	0.00	6,229.00	853.93	-794.21	1,166.18	0.00	0.00	0.00
Mesaverde									
6,500.00	0.00	0.00	6,314.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,600.00	0.00	0.00	6,414.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,624.07	0.00	0.00	6,439.00	853.93	-794.21	1,166.18	0.00	0.00	0.00
Base Ohio Creek									
6,700.00	0.00	0.00	6,514.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,800.00	0.00	0.00	6,614.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
6,900.00	0.00	0.00	6,714.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,000.00	0.00	0.00	6,814.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,100.00	0.00	0.00	6,914.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,149.07	0.00	0.00	6,964.00	853.93	-794.21	1,166.18	0.00	0.00	0.00
TOG = 637230.83, 1229637.01									
7,200.00	0.00	0.00	7,014.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,300.00	0.00	0.00	7,114.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,400.00	0.00	0.00	7,214.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,500.00	0.00	0.00	7,314.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,600.00	0.00	0.00	7,414.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,700.00	0.00	0.00	7,514.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,800.00	0.00	0.00	7,614.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
7,900.00	0.00	0.00	7,714.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,000.00	0.00	0.00	7,814.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,100.00	0.00	0.00	7,914.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,200.00	0.00	0.00	8,014.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,300.00	0.00	0.00	8,114.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,400.00	0.00	0.00	8,214.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,500.00	0.00	0.00	8,314.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,552.07	0.00	0.00	8,367.00	853.93	-794.21	1,166.18	0.00	0.00	0.00
Target = 637230.83, 1229637.01									
8,600.00	0.00	0.00	8,414.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,700.00	0.00	0.00	8,514.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,800.00	0.00	0.00	8,614.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
8,900.00	0.00	0.00	8,714.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,000.00	0.00	0.00	8,814.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,100.00	0.00	0.00	8,914.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,194.07	0.00	0.00	9,009.00	853.93	-794.21	1,166.18	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 697-04-57A	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									
9,200.00	0.00	0.00	9,014.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,300.00	0.00	0.00	9,114.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,400.00	0.00	0.00	9,214.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,500.00	0.00	0.00	9,314.93	853.93	-794.21	1,166.18	0.00	0.00	0.00
9,595.07	0.00	0.00	9,410.00	853.93	-794.21	1,166.18	0.00	0.00	0.00
PBHL = 637230.83, 1229637.01									

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 697-04-57A Target	0.00	0.00	8,367.00	853.93	-794.21	637,230.84	1,229,637.00	39° 33' 4.367 N	108° 13' 56.378 W
- plan hits target center									
- Circle (radius 50.00)									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,414.07	6,229.00	Mesaverde		0.00		
6,624.07	6,439.00	Base Ohio Creek		0.00		
9,194.07	9,009.00	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
1,200.00	1,179.82	126.51	-117.66	Start 20.00° Hold At 1200.00'
3,599.39	3,434.50	727.42	-676.55	Start Drop -2.00
4,599.39	4,414.32	853.93	-794.21	Start 0.00° Hold At 4599.39'
7,149.07	6,964.00	853.93	-794.21	TOG = 637230.83, 1229637.01
8,552.07	8,367.00	853.93	-794.21	Target = 637230.83, 1229637.01
9,595.07	9,410.00	853.93	-794.21	PBHL = 637230.83, 1229637.01