



Scientific Drilling
Rocky Mountain Operations

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



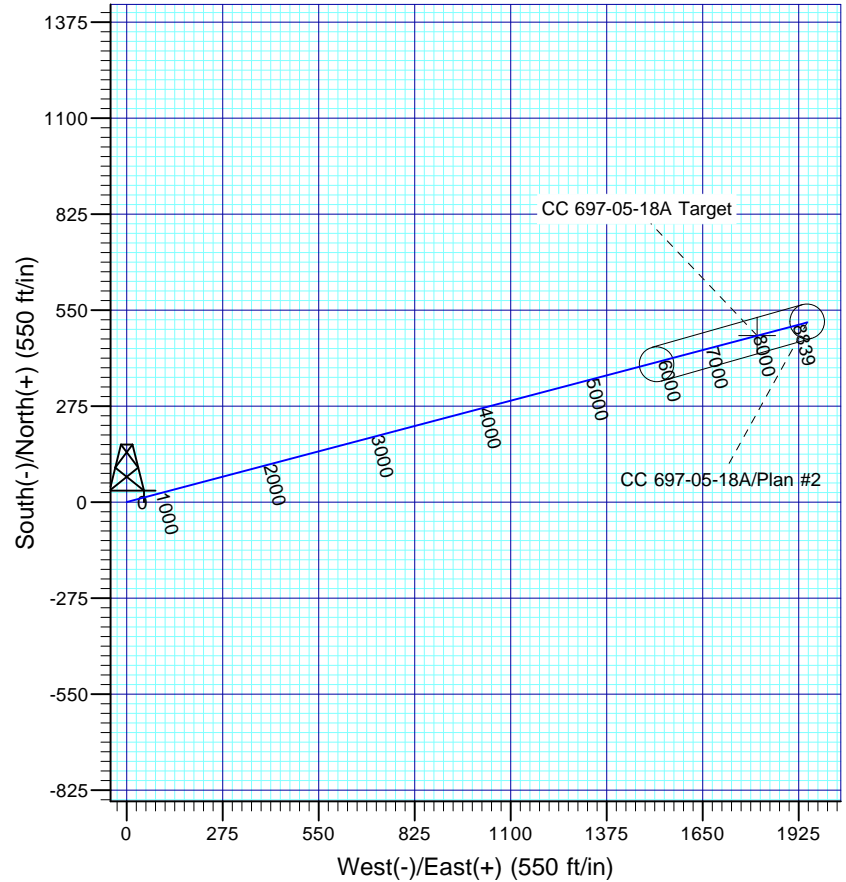
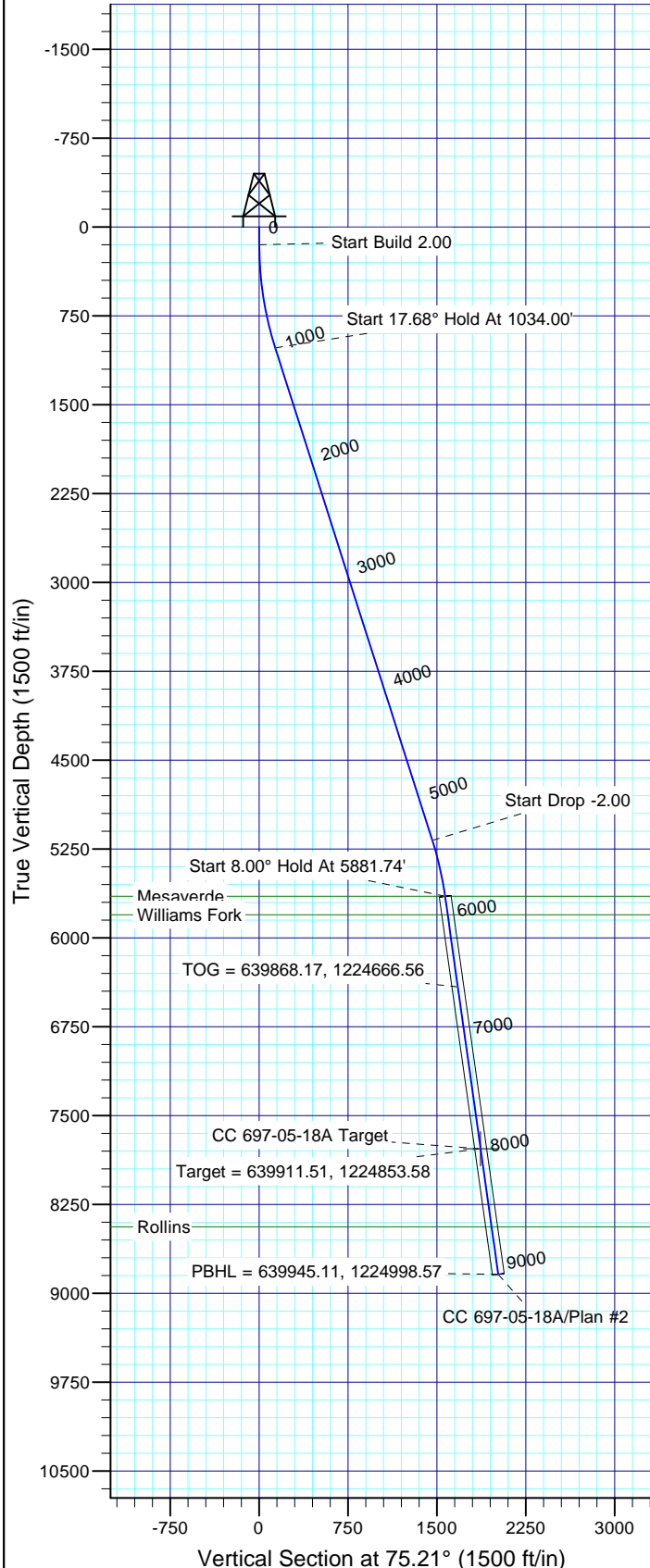
Well Details: CC 697-05-18A

TVD Reference: GL 8184' & RKB 30' @ 8214.00ft (H&P) Ground Level: 8184.00
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.00 0.00 639489.91 1223034.29 39° 33' 24.713 N 108° 15' 21.508 W C



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.9snT
Dip Angle: 65.77°
Date: 2010/12/20
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5649.00	5881.74	Mesaverde
5804.00	6038.26	Williams Fork
8439.00	8699.16	Rollins

Plan: Plan #2

11:41, 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	VFace	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	1034.00	17.68	75.21	1020.04	34.53	130.83	2.00	75.21	135.31	
4	5397.74	17.68	75.21	5177.67	372.74	1412.22	0.00	0.00	1460.58	
5	5881.74	8.00	75.21	5649.00	400.16	1516.09	2.00	180.00	1568.01	
6	8033.68	8.00	75.21	7780.00	476.59	1805.67	0.00	0.00	1867.51	CC 697-05-18A Target
7	9103.09	8.00	75.21	8839.00	514.57	1949.57	0.00	0.00	2016.34	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-06A Pad
CC 697-05-18A - Slot C**

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 697-05-18A - Slot C
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 697-05-18A	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 697-05-18A - Slot C				
Well Position	+N/-S	51.59 ft	Northing:	639,489.91 usft	Latitude:	39° 33' 24.713 N
	+E/-W	128.85 ft	Easting:	1,223,034.29 usft	Longitude:	108° 15' 21.508 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)
	IGRF2005-10	2010/12/20	10.51	65.77	52,312

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	75.21

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	
1,034.00	17.68	75.21	1,020.04	34.53	130.83	2.00	2.00	0.00	75.21	
5,397.74	17.68	75.21	5,177.67	372.74	1,412.22	0.00	0.00	0.00	0.00	
5,881.74	8.00	75.21	5,649.00	400.16	1,516.09	2.00	-2.00	0.00	180.00	
8,033.68	8.00	75.21	7,780.00	476.59	1,805.67	0.00	0.00	0.00	0.00	CC 697-05-18A Target
9,103.09	8.00	75.21	8,839.00	514.57	1,949.57	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-18A - Slot C
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 697-05-18A	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
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	75.21	200.00	0.11	0.42	0.44	2.00	2.00	0.00
300.00	3.00	75.21	299.93	1.00	3.80	3.93	2.00	2.00	0.00
400.00	5.00	75.21	399.68	2.78	10.54	10.90	2.00	2.00	0.00
500.00	7.00	75.21	499.13	5.45	20.65	21.35	2.00	2.00	0.00
600.00	9.00	75.21	598.15	9.00	34.10	35.27	2.00	2.00	0.00
700.00	11.00	75.21	696.63	13.43	50.89	52.63	2.00	2.00	0.00
800.00	13.00	75.21	794.44	18.74	70.99	73.42	2.00	2.00	0.00
900.00	15.00	75.21	891.46	24.91	94.38	97.62	2.00	2.00	0.00
1,000.00	17.00	75.21	987.58	31.95	121.03	125.18	2.00	2.00	0.00
1,034.00	17.68	75.21	1,020.04	34.53	130.83	135.31	2.00	2.00	0.00
Start 17.68° Hold At 1034.00'									
1,100.00	17.68	75.21	1,082.92	39.65	150.21	155.36	0.00	0.00	0.00
1,200.00	17.68	75.21	1,178.20	47.40	179.58	185.73	0.00	0.00	0.00
1,300.00	17.68	75.21	1,273.47	55.15	208.94	216.10	0.00	0.00	0.00
1,400.00	17.68	75.21	1,368.75	62.90	238.30	246.47	0.00	0.00	0.00
1,500.00	17.68	75.21	1,464.03	70.65	267.67	276.84	0.00	0.00	0.00
1,600.00	17.68	75.21	1,559.30	78.40	297.03	307.21	0.00	0.00	0.00
1,700.00	17.68	75.21	1,654.58	86.15	326.40	337.58	0.00	0.00	0.00
1,800.00	17.68	75.21	1,749.86	93.90	355.76	367.95	0.00	0.00	0.00
1,900.00	17.68	75.21	1,845.13	101.65	385.13	398.32	0.00	0.00	0.00
2,000.00	17.68	75.21	1,940.41	109.40	414.49	428.69	0.00	0.00	0.00
2,100.00	17.68	75.21	2,035.69	117.15	443.86	459.06	0.00	0.00	0.00
2,200.00	17.68	75.21	2,130.96	124.90	473.22	489.43	0.00	0.00	0.00
2,300.00	17.68	75.21	2,226.24	132.65	502.58	519.80	0.00	0.00	0.00
2,400.00	17.68	75.21	2,321.52	140.40	531.95	550.17	0.00	0.00	0.00
2,500.00	17.68	75.21	2,416.79	148.15	561.31	580.54	0.00	0.00	0.00
2,600.00	17.68	75.21	2,512.07	155.90	590.68	610.91	0.00	0.00	0.00
2,700.00	17.68	75.21	2,607.35	163.65	620.04	641.28	0.00	0.00	0.00
2,800.00	17.68	75.21	2,702.63	171.41	649.41	671.65	0.00	0.00	0.00
2,900.00	17.68	75.21	2,797.90	179.16	678.77	702.02	0.00	0.00	0.00
3,000.00	17.68	75.21	2,893.18	186.91	708.14	732.39	0.00	0.00	0.00
3,100.00	17.68	75.21	2,988.46	194.66	737.50	762.76	0.00	0.00	0.00
3,200.00	17.68	75.21	3,083.73	202.41	766.86	793.13	0.00	0.00	0.00
3,300.00	17.68	75.21	3,179.01	210.16	796.23	823.50	0.00	0.00	0.00
3,400.00	17.68	75.21	3,274.29	217.91	825.59	853.87	0.00	0.00	0.00
3,500.00	17.68	75.21	3,369.56	225.66	854.96	884.24	0.00	0.00	0.00
3,600.00	17.68	75.21	3,464.84	233.41	884.32	914.61	0.00	0.00	0.00
3,700.00	17.68	75.21	3,560.12	241.16	913.69	944.98	0.00	0.00	0.00
3,800.00	17.68	75.21	3,655.39	248.91	943.05	975.35	0.00	0.00	0.00
3,900.00	17.68	75.21	3,750.67	256.66	972.42	1,005.72	0.00	0.00	0.00
4,000.00	17.68	75.21	3,845.95	264.41	1,001.78	1,036.09	0.00	0.00	0.00
4,100.00	17.68	75.21	3,941.22	272.16	1,031.15	1,066.46	0.00	0.00	0.00
4,200.00	17.68	75.21	4,036.50	279.91	1,060.51	1,096.83	0.00	0.00	0.00
4,300.00	17.68	75.21	4,131.78	287.66	1,089.87	1,127.20	0.00	0.00	0.00
4,400.00	17.68	75.21	4,227.05	295.41	1,119.24	1,157.57	0.00	0.00	0.00
4,500.00	17.68	75.21	4,322.33	303.16	1,148.60	1,187.94	0.00	0.00	0.00
4,600.00	17.68	75.21	4,417.61	310.91	1,177.97	1,218.31	0.00	0.00	0.00
4,700.00	17.68	75.21	4,512.88	318.66	1,207.33	1,248.68	0.00	0.00	0.00
4,800.00	17.68	75.21	4,608.16	326.42	1,236.70	1,279.05	0.00	0.00	0.00
4,900.00	17.68	75.21	4,703.44	334.17	1,266.06	1,309.42	0.00	0.00	0.00

Scientific Drilling International

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 697-05-18A	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)
5,000.00	17.68	75.21	4,798.71	341.92	1,295.43	1,339.79	0.00	0.00	0.00
5,100.00	17.68	75.21	4,893.99	349.67	1,324.79	1,370.16	0.00	0.00	0.00
5,200.00	17.68	75.21	4,989.27	357.42	1,354.15	1,400.53	0.00	0.00	0.00
5,300.00	17.68	75.21	5,084.54	365.17	1,383.52	1,430.90	0.00	0.00	0.00
5,397.74	17.68	75.21	5,177.67	372.74	1,412.22	1,460.58	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	17.63	75.21	5,179.82	372.92	1,412.88	1,461.27	2.00	-2.00	0.00
5,500.00	15.63	75.21	5,275.63	380.22	1,440.56	1,489.89	2.00	-2.00	0.00
5,600.00	13.63	75.21	5,372.38	386.67	1,464.99	1,515.16	2.00	-2.00	0.00
5,700.00	11.63	75.21	5,469.96	392.25	1,486.14	1,537.03	2.00	-2.00	0.00
5,800.00	9.63	75.21	5,568.23	396.96	1,503.98	1,555.48	2.00	-2.00	0.00
5,881.74	8.00	75.21	5,649.00	400.16	1,516.09	1,568.01	2.00	-2.00	0.00
Start 8.00° Hold At 5881.74' - Mesaverde									
5,900.00	8.00	75.21	5,667.09	400.81	1,518.55	1,570.55	0.00	0.00	0.00
6,000.00	8.00	75.21	5,766.11	404.36	1,532.01	1,584.47	0.00	0.00	0.00
6,038.26	8.00	75.21	5,804.00	405.72	1,537.16	1,589.80	0.00	0.00	0.00
Williams Fork									
6,100.00	8.00	75.21	5,865.14	407.91	1,545.46	1,598.39	0.00	0.00	0.00
6,200.00	8.00	75.21	5,964.17	411.46	1,558.92	1,612.31	0.00	0.00	0.00
6,300.00	8.00	75.21	6,063.19	415.02	1,572.38	1,626.22	0.00	0.00	0.00
6,400.00	8.00	75.21	6,162.22	418.57	1,585.83	1,640.14	0.00	0.00	0.00
6,500.00	8.00	75.21	6,261.25	422.12	1,599.29	1,654.06	0.00	0.00	0.00
6,600.00	8.00	75.21	6,360.27	425.67	1,612.75	1,667.98	0.00	0.00	0.00
6,654.25	8.00	75.21	6,414.00	427.60	1,620.05	1,675.53	0.00	0.00	0.00
TOG = 639868.17, 1224666.56									
6,700.00	8.00	75.21	6,459.30	429.22	1,626.20	1,681.89	0.00	0.00	0.00
6,800.00	8.00	75.21	6,558.33	432.77	1,639.66	1,695.81	0.00	0.00	0.00
6,900.00	8.00	75.21	6,657.35	436.33	1,653.12	1,709.73	0.00	0.00	0.00
7,000.00	8.00	75.21	6,756.38	439.88	1,666.57	1,723.65	0.00	0.00	0.00
7,100.00	8.00	75.21	6,855.41	443.43	1,680.03	1,737.56	0.00	0.00	0.00
7,200.00	8.00	75.21	6,954.43	446.98	1,693.48	1,751.48	0.00	0.00	0.00
7,300.00	8.00	75.21	7,053.46	450.53	1,706.94	1,765.40	0.00	0.00	0.00
7,400.00	8.00	75.21	7,152.49	454.08	1,720.40	1,779.31	0.00	0.00	0.00
7,500.00	8.00	75.21	7,251.51	457.64	1,733.85	1,793.23	0.00	0.00	0.00
7,600.00	8.00	75.21	7,350.54	461.19	1,747.31	1,807.15	0.00	0.00	0.00
7,700.00	8.00	75.21	7,449.57	464.74	1,760.77	1,821.07	0.00	0.00	0.00
7,800.00	8.00	75.21	7,548.60	468.29	1,774.22	1,834.98	0.00	0.00	0.00
7,900.00	8.00	75.21	7,647.62	471.84	1,787.68	1,848.90	0.00	0.00	0.00
8,000.00	8.00	75.21	7,746.65	475.39	1,801.14	1,862.82	0.00	0.00	0.00
8,033.68	8.00	75.21	7,780.00	476.59	1,805.67	1,867.51	0.00	0.00	0.00
Target = 639911.51, 1224853.58									
8,100.00	8.00	75.21	7,845.68	478.95	1,814.59	1,876.74	0.00	0.00	0.00
8,200.00	8.00	75.21	7,944.70	482.50	1,828.05	1,890.65	0.00	0.00	0.00
8,300.00	8.00	75.21	8,043.73	486.05	1,841.51	1,904.57	0.00	0.00	0.00
8,400.00	8.00	75.21	8,142.76	489.60	1,854.96	1,918.49	0.00	0.00	0.00
8,500.00	8.00	75.21	8,241.78	493.15	1,868.42	1,932.41	0.00	0.00	0.00
8,600.00	8.00	75.21	8,340.81	496.70	1,881.88	1,946.32	0.00	0.00	0.00
8,699.16	8.00	75.21	8,439.00	500.23	1,895.22	1,960.12	0.00	0.00	0.00
Rollins									
8,700.00	8.00	75.21	8,439.84	500.26	1,895.33	1,960.24	0.00	0.00	0.00
8,800.00	8.00	75.21	8,538.86	503.81	1,908.79	1,974.16	0.00	0.00	0.00
8,900.00	8.00	75.21	8,637.89	507.36	1,922.24	1,988.07	0.00	0.00	0.00
9,000.00	8.00	75.21	8,736.92	510.91	1,935.70	2,001.99	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 697-05-18A	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)
9,100.00	8.00	75.21	8,835.94	514.46	1,949.16	2,015.91	0.00	0.00	0.00
9,103.09	8.00	75.21	8,839.00	514.57	1,949.57	2,016.34	0.00	0.00	0.00
PBHL = 639945.11, 1224998.57									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CC 697-05-18A Target - plan hits target center - Circle (radius 50.00)	-8.00	74.13	7,780.00	476.59	1,805.67	639,911.52	1,224,853.58	39° 33' 29.423 N	108° 14' 58.453 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,881.74	5,649.00	Mesaverde		0.00	
6,038.26	5,804.00	Williams Fork		0.00	
8,699.16	8,439.00	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
1,034.00	1,020.04	34.53	130.83	Start 17.68° Hold At 1034.00'
5,397.74	5,177.67	372.74	1,412.22	Start Drop -2.00
5,881.74	5,649.00	400.16	1,516.09	Start 8.00° Hold At 5881.74'
6,654.25	6,414.00	427.60	1,620.05	TOG = 639868.17, 1224666.56
8,033.68	7,780.00	476.59	1,805.67	Target = 639911.51, 1224853.58
9,103.09	8,839.00	514.57	1,949.57	PBHL = 639945.11, 1224998.57