



Scientific Drilling
Rocky Mountain Operations

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



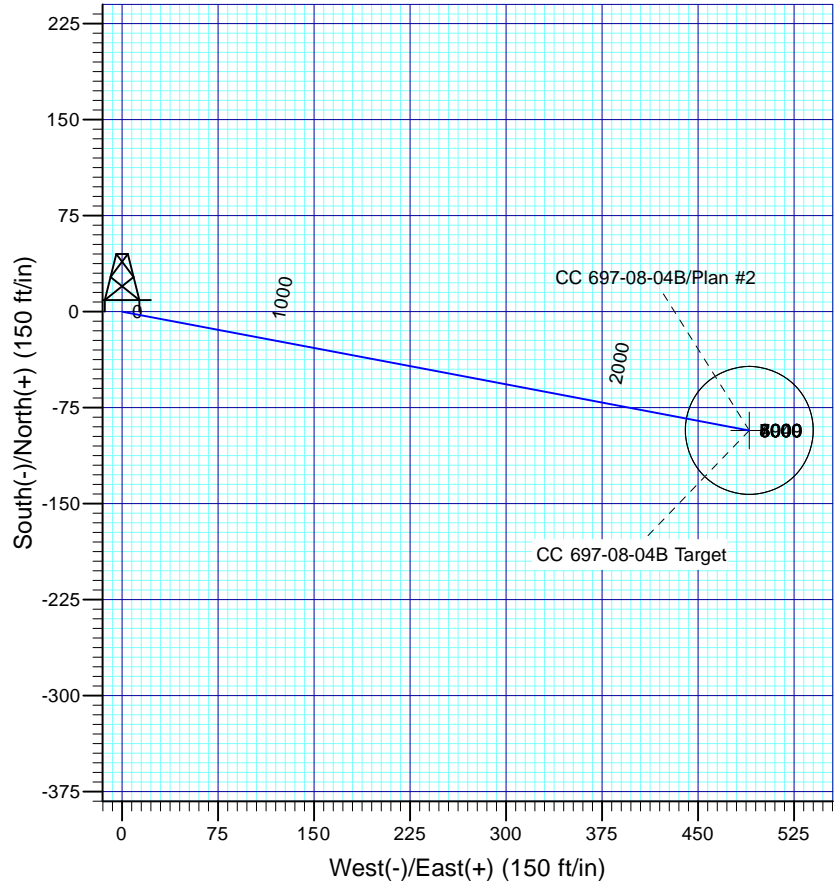
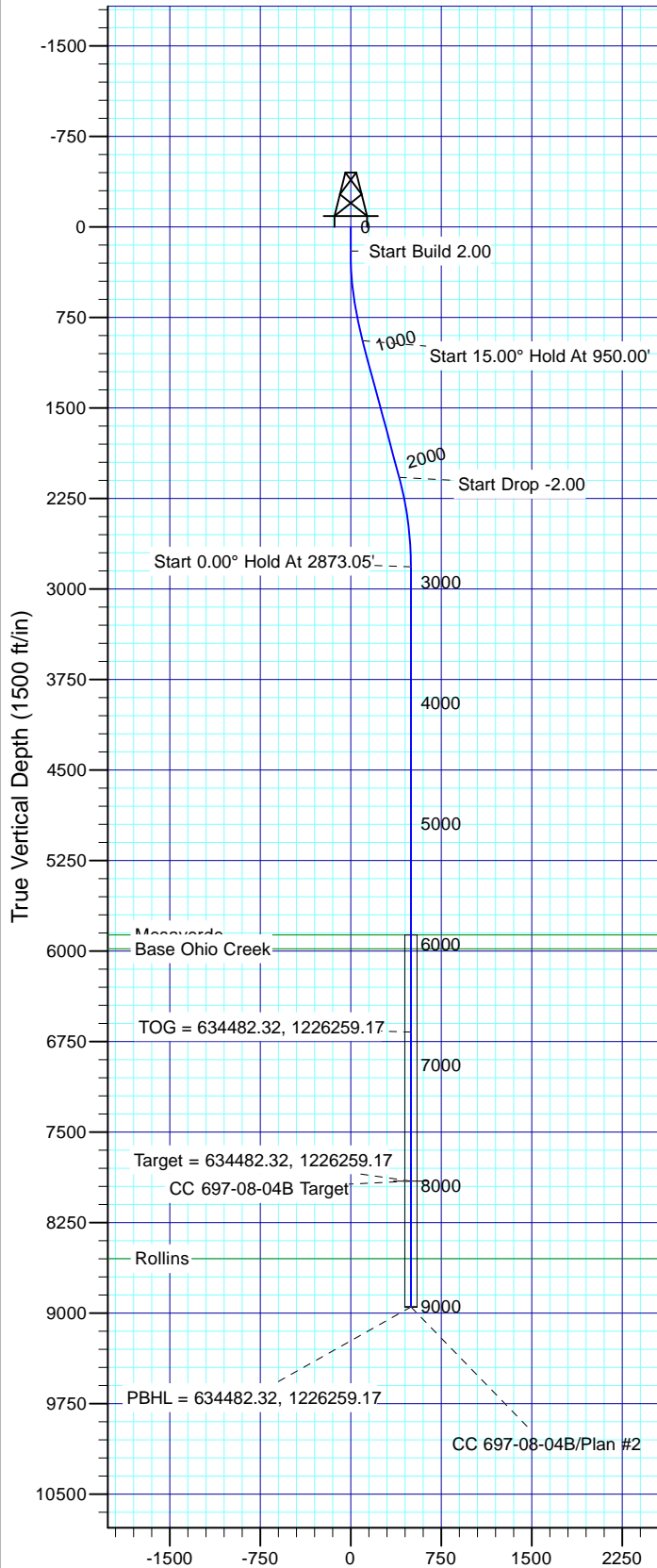
Well Details: CC 697-08-04B

TVD Reference: GL 8401' & RKB 30' @ 8431.00ft (H&P Rig) Ground Level: 8401.00
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.00 0.00 634589.93 1225772.07 39° 32' 37.125 N 108° 14' 44.678 W S



Azimuths to True North
Magnetic North: 10.77°

Magnetic Field
Strength: 52497.5nT
Dip Angle: 65.81°
Date: 12/23/2008
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5866.00	5923.05	Mesaverde
5981.00	6038.05	Base Ohio Creek
8549.00	8606.05	Rollins

Plan: Plan #2

8:27, May 26 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	950.00	15.00	100.73	941.46	-18.17	95.91	2.00	100.73	97.62	
4	2123.05	15.00	100.73	2074.55	-74.67	394.21	0.00	0.00	401.22	
5	2873.05	0.00	0.00	2816.01	-92.84	490.12	2.00	180.00	498.84	
6	7964.05	0.00	0.00	7907.00	-92.84	490.12	0.00	0.00	498.84	CC 697-08-04B Target
7	9006.05	0.00	0.00	8949.00	-92.84	490.12	0.00	0.00	498.84	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-08A Pad
CC 697-08-04B - Slot S**

OH

Plan: Plan #2

Standard Planning Report

26 May, 2011





Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well CC 697-08-04B - Slot S
Company:	OXY USA RMAT	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	North Reference:	True
Well:	CC 697-08-04B	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 697-08A Pad, Sec 8 T6S R97W			
Site Position:		Northing:	635,765.16 usft	Latitude: 39° 32' 48.728 N
From:	Lat/Long	Easting:	1,225,748.33 usft	Longitude: 108° 14' 45.434 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: -1.73 °

Well	CC 697-08-04B - Slot S, 361' FNL & 1813' FWL			
Well Position	+N/-S	-1,173.98 ft	Northing:	634,589.93 usft
	+E/-W	59.25 ft	Easting:	1,225,772.07 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 39° 32' 37.125 N
				Longitude: 108° 14' 44.678 W
				Ground Level: 8,401.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	12/23/2008	10.77	65.81	52,498

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	100.73

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	
950.00	15.00	100.73	941.46	-18.17	95.91	2.00	2.00	0.00	100.73	
2,123.05	15.00	100.73	2,074.55	-74.67	394.21	0.00	0.00	0.00	0.00	
2,873.05	0.00	0.00	2,816.01	-92.84	490.12	2.00	-2.00	0.00	180.00	
7,964.05	0.00	0.00	7,907.00	-92.84	490.12	0.00	0.00	0.00	0.00	CC 697-08-04B Target
9,006.05	0.00	0.00	8,949.00	-92.84	490.12	0.00	0.00	0.00	0.00	



Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well CC 697-08-04B - Slot S
Company:	OXY USA RMAT	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	North Reference:	True
Well:	CC 697-08-04B	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	100.73	299.98	-0.32	1.71	1.75	2.00	2.00	0.00
400.00	4.00	100.73	399.84	-1.30	6.86	6.98	2.00	2.00	0.00
500.00	6.00	100.73	499.45	-2.92	15.42	15.69	2.00	2.00	0.00
600.00	8.00	100.73	598.70	-5.19	27.39	27.88	2.00	2.00	0.00
700.00	10.00	100.73	697.47	-8.10	42.76	43.52	2.00	2.00	0.00
800.00	12.00	100.73	795.62	-11.65	61.51	62.60	2.00	2.00	0.00
900.00	14.00	100.73	893.06	-15.84	83.61	85.10	2.00	2.00	0.00
950.00	15.00	100.73	941.46	-18.17	95.91	97.62	2.00	2.00	0.00
Start 15.00° Hold At 950.00'									
1,000.00	15.00	100.73	989.76	-20.58	108.62	110.56	0.00	0.00	0.00
1,100.00	15.00	100.73	1,086.35	-25.39	134.05	136.44	0.00	0.00	0.00
1,200.00	15.00	100.73	1,182.94	-30.21	159.48	162.32	0.00	0.00	0.00
1,300.00	15.00	100.73	1,279.54	-35.03	184.91	188.20	0.00	0.00	0.00
1,400.00	15.00	100.73	1,376.13	-39.84	210.34	214.08	0.00	0.00	0.00
1,500.00	15.00	100.73	1,472.72	-44.66	235.77	239.97	0.00	0.00	0.00
1,600.00	15.00	100.73	1,569.31	-49.48	261.20	265.85	0.00	0.00	0.00
1,700.00	15.00	100.73	1,665.91	-54.29	286.63	291.73	0.00	0.00	0.00
1,800.00	15.00	100.73	1,762.50	-59.11	312.06	317.61	0.00	0.00	0.00
1,900.00	15.00	100.73	1,859.09	-63.93	337.49	343.49	0.00	0.00	0.00
2,000.00	15.00	100.73	1,955.68	-68.74	362.92	369.38	0.00	0.00	0.00
2,100.00	15.00	100.73	2,052.28	-73.56	388.35	395.26	0.00	0.00	0.00
2,123.05	15.00	100.73	2,074.55	-74.67	394.21	401.22	0.00	0.00	0.00
Start Drop -2.00									
2,200.00	13.46	100.73	2,149.13	-78.19	412.80	420.14	2.00	-2.00	0.00
2,300.00	11.46	100.73	2,246.77	-82.21	434.00	441.72	2.00	-2.00	0.00
2,400.00	9.46	100.73	2,345.10	-85.59	451.84	459.87	2.00	-2.00	0.00
2,500.00	7.46	100.73	2,444.01	-88.32	466.29	474.58	2.00	-2.00	0.00
2,600.00	5.46	100.73	2,543.37	-90.42	477.35	485.84	2.00	-2.00	0.00
2,700.00	3.46	100.73	2,643.06	-91.87	484.99	493.61	2.00	-2.00	0.00
2,800.00	1.46	100.73	2,742.96	-92.67	489.21	497.91	2.00	-2.00	0.00
2,873.05	0.00	0.00	2,816.01	-92.84	490.12	498.84	2.00	-2.00	0.00
Start 0.00° Hold At 2873.05'									
2,900.00	0.00	0.00	2,842.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,000.00	0.00	0.00	2,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,100.00	0.00	0.00	3,042.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,200.00	0.00	0.00	3,142.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,300.00	0.00	0.00	3,242.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,400.00	0.00	0.00	3,342.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,500.00	0.00	0.00	3,442.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,600.00	0.00	0.00	3,542.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,700.00	0.00	0.00	3,642.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,800.00	0.00	0.00	3,742.95	-92.84	490.12	498.84	0.00	0.00	0.00
3,900.00	0.00	0.00	3,842.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,000.00	0.00	0.00	3,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,100.00	0.00	0.00	4,042.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,200.00	0.00	0.00	4,142.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,300.00	0.00	0.00	4,242.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,400.00	0.00	0.00	4,342.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,500.00	0.00	0.00	4,442.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,600.00	0.00	0.00	4,542.95	-92.84	490.12	498.84	0.00	0.00	0.00



Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well CC 697-08-04B - Slot S
Company:	OXY USA RMAT	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	North Reference:	True
Well:	CC 697-08-04B	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)
4,700.00	0.00	0.00	4,642.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,800.00	0.00	0.00	4,742.95	-92.84	490.12	498.84	0.00	0.00	0.00
4,900.00	0.00	0.00	4,842.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,000.00	0.00	0.00	4,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,100.00	0.00	0.00	5,042.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,200.00	0.00	0.00	5,142.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,300.00	0.00	0.00	5,242.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,400.00	0.00	0.00	5,342.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,500.00	0.00	0.00	5,442.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,600.00	0.00	0.00	5,542.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,700.00	0.00	0.00	5,642.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,800.00	0.00	0.00	5,742.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,900.00	0.00	0.00	5,842.95	-92.84	490.12	498.84	0.00	0.00	0.00
5,923.05	0.00	0.00	5,866.00	-92.84	490.12	498.84	0.00	0.00	0.00
Mesaverde									
6,000.00	0.00	0.00	5,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,038.05	0.00	0.00	5,981.00	-92.84	490.12	498.84	0.00	0.00	0.00
Base Ohio Creek									
6,100.00	0.00	0.00	6,042.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,200.00	0.00	0.00	6,142.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,300.00	0.00	0.00	6,242.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,400.00	0.00	0.00	6,342.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,500.00	0.00	0.00	6,442.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,600.00	0.00	0.00	6,542.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,700.00	0.00	0.00	6,642.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,728.05	0.00	0.00	6,671.00	-92.84	490.12	498.84	0.00	0.00	0.00
TOG = 634482.32, 1226259.17									
6,800.00	0.00	0.00	6,742.95	-92.84	490.12	498.84	0.00	0.00	0.00
6,900.00	0.00	0.00	6,842.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,000.00	0.00	0.00	6,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,100.00	0.00	0.00	7,042.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,200.00	0.00	0.00	7,142.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,300.00	0.00	0.00	7,242.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,400.00	0.00	0.00	7,342.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,500.00	0.00	0.00	7,442.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,600.00	0.00	0.00	7,542.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,700.00	0.00	0.00	7,642.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,800.00	0.00	0.00	7,742.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,900.00	0.00	0.00	7,842.95	-92.84	490.12	498.84	0.00	0.00	0.00
7,964.05	0.00	0.00	7,907.00	-92.84	490.12	498.84	0.00	0.00	0.00
Target = 634482.32, 1226259.17									
8,000.00	0.00	0.00	7,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,100.00	0.00	0.00	8,042.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,200.00	0.00	0.00	8,142.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,300.00	0.00	0.00	8,242.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,400.00	0.00	0.00	8,342.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,500.00	0.00	0.00	8,442.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,600.00	0.00	0.00	8,542.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,606.05	0.00	0.00	8,549.00	-92.84	490.12	498.84	0.00	0.00	0.00
Rollins									
8,700.00	0.00	0.00	8,642.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,800.00	0.00	0.00	8,742.95	-92.84	490.12	498.84	0.00	0.00	0.00
8,900.00	0.00	0.00	8,842.95	-92.84	490.12	498.84	0.00	0.00	0.00



Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well CC 697-08-04B - Slot S
Company:	OXY USA RMAT	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	North Reference:	True
Well:	CC 697-08-04B	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)
9,000.00	0.00	0.00	8,942.95	-92.84	490.12	498.84	0.00	0.00	0.00
9,006.05	0.00	0.00	8,949.00	-92.84	490.12	498.84	0.00	0.00	0.00
PBHL = 634482.32, 1226259.17									

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 697-08-04B Target	0.00	0.00	7,907.00	-92.84	490.12	634,482.32	1,226,259.17	39° 32' 36.208 N	108° 14' 38.422 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,923.05	5,866.00	Mesaverde		0.00	
6,038.05	5,981.00	Base Ohio Creek		0.00	
8,606.05	8,549.00	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
950.00	941.46	-18.17	95.91	Start 15.00° Hold At 950.00'
2,123.05	2,074.55	-74.67	394.21	Start Drop -2.00
2,873.05	2,816.01	-92.84	490.12	Start 0.00° Hold At 2873.05'
6,728.05	6,671.00	-92.84	490.12	TOG = 634482.32, 1226259.17
7,964.05	7,907.00	-92.84	490.12	Target = 634482.32, 1226259.17
9,006.05	8,949.00	-92.84	490.12	PBHL = 634482.32, 1226259.17