

# **Denver Division- Colorado**

**DJ - Hereford Ranch**

**Dutch Lake 22-34H**

**Dutch Lake 22-34H**

**Original Wellbore**

**Plan: APD Directional Plan**

## **Standard Planning Report**

**14 March, 2011**

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Dutch Lake 22-34H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4669.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4669.00ft (TBD)
<b>Site:</b>	Dutch Lake 22-34H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 22-34H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

<b>Project</b>	DJ - Hereford Ranch, Weld County		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado North 501		

<b>Site</b>	Dutch Lake 22-34H		
<b>Site Position:</b>		<b>Northing:</b>	404,693.30 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,333,663.59 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 26' 17.210 N
		<b>Longitude:</b>	104° 18' 4.651 W
		<b>Grid Convergence:</b>	0.77 deg

<b>Well</b>	Dutch Lake 22-34H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 26' 17.210 N
		<b>Longitude:</b>	104° 18' 4.651 W
		<b>Ground Level:</b>	4,647.00 ft

<b>Wellbore</b>	Original Wellbore				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (deg)</b>	<b>Dip Angle (deg)</b>	<b>Field Strength (nT)</b>
	IGRF200510	3/14/2011	8.61	67.18	53,249

<b>Design</b>	APD Directional Plan				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (deg)</b>	
	0.00	0.00	0.00	334.13	

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (deg)</b>	<b>Azimuth (deg)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (?/100ft)</b>	<b>Build Rate (?/100ft)</b>	<b>Turn Rate (?/100ft)</b>	<b>TFO (deg)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,781.53	0.00	0.00	5,781.53	0.00	0.00	0.00	0.00	0.00	0.00	
6,531.54	90.00	334.13	6,259.00	429.61	-208.35	12.00	12.00	0.00	334.13	
10,656.40	90.00	334.13	6,259.00	4,141.02	-2,008.32	0.00	0.00	0.00	0.00	Dutch Lake 22-34H

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<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4669.00ft (TBD)
<b>Site:</b>	Dutch Lake 22-34H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 22-34H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

### Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9-5/8"</b>									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00

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<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4669.00ft (TBD)
<b>Site:</b>	Dutch Lake 22-34H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 22-34H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

### Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,781.53	0.00	0.00	5,781.53	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	2.22	334.13	5,800.00	0.32	-0.16	0.36	12.00	12.00	0.00
5,900.00	14.22	334.13	5,898.79	13.16	-6.38	14.62	12.00	12.00	0.00
6,000.00	26.22	334.13	5,992.46	44.19	-21.43	49.11	12.00	12.00	0.00
6,100.00	38.22	334.13	6,076.91	92.07	-44.65	102.33	12.00	12.00	0.00
6,200.00	50.22	334.13	6,148.45	154.70	-75.03	171.94	12.00	12.00	0.00
6,300.00	62.22	334.13	6,203.95	229.35	-111.23	254.90	12.00	12.00	0.00
6,400.00	74.22	334.13	6,241.00	312.75	-151.68	347.59	12.00	12.00	0.00
6,500.00	86.22	334.13	6,257.96	401.25	-194.60	445.95	12.00	12.00	0.00
6,531.54	90.00	334.13	6,259.00	429.61	-208.35	477.47	12.00	12.00	0.00
7"									
6,600.00	90.00	334.13	6,259.00	491.21	-238.23	545.93	0.00	0.00	0.00
6,700.00	90.00	334.13	6,259.00	581.19	-281.86	645.93	0.00	0.00	0.00
6,800.00	90.00	334.13	6,259.00	671.16	-325.50	745.93	0.00	0.00	0.00
6,900.00	90.00	334.13	6,259.00	761.14	-369.14	845.93	0.00	0.00	0.00
7,000.00	90.00	334.13	6,259.00	851.12	-412.78	945.93	0.00	0.00	0.00
7,100.00	90.00	334.13	6,259.00	941.09	-456.41	1,045.93	0.00	0.00	0.00
7,200.00	90.00	334.13	6,259.00	1,031.07	-500.05	1,145.93	0.00	0.00	0.00
7,300.00	90.00	334.13	6,259.00	1,121.05	-543.69	1,245.93	0.00	0.00	0.00
7,400.00	90.00	334.13	6,259.00	1,211.02	-587.32	1,345.93	0.00	0.00	0.00
7,500.00	90.00	334.13	6,259.00	1,301.00	-630.96	1,445.93	0.00	0.00	0.00
7,600.00	90.00	334.13	6,259.00	1,390.98	-674.60	1,545.93	0.00	0.00	0.00
7,700.00	90.00	334.13	6,259.00	1,480.95	-718.24	1,645.93	0.00	0.00	0.00
7,800.00	90.00	334.13	6,259.00	1,570.93	-761.87	1,745.93	0.00	0.00	0.00
7,900.00	90.00	334.13	6,259.00	1,660.91	-805.51	1,845.93	0.00	0.00	0.00
8,000.00	90.00	334.13	6,259.00	1,750.88	-849.15	1,945.93	0.00	0.00	0.00
8,100.00	90.00	334.13	6,259.00	1,840.86	-892.78	2,045.93	0.00	0.00	0.00
8,200.00	90.00	334.13	6,259.00	1,930.84	-936.42	2,145.93	0.00	0.00	0.00
8,300.00	90.00	334.13	6,259.00	2,020.81	-980.06	2,245.93	0.00	0.00	0.00
8,400.00	90.00	334.13	6,259.00	2,110.79	-1,023.70	2,345.93	0.00	0.00	0.00
8,500.00	90.00	334.13	6,259.00	2,200.77	-1,067.33	2,445.93	0.00	0.00	0.00
8,600.00	90.00	334.13	6,259.00	2,290.74	-1,110.97	2,545.93	0.00	0.00	0.00
8,700.00	90.00	334.13	6,259.00	2,380.72	-1,154.61	2,645.93	0.00	0.00	0.00
8,800.00	90.00	334.13	6,259.00	2,470.70	-1,198.24	2,745.93	0.00	0.00	0.00
8,900.00	90.00	334.13	6,259.00	2,560.67	-1,241.88	2,845.93	0.00	0.00	0.00
9,000.00	90.00	334.13	6,259.00	2,650.65	-1,285.52	2,945.93	0.00	0.00	0.00
9,100.00	90.00	334.13	6,259.00	2,740.63	-1,329.15	3,045.93	0.00	0.00	0.00
9,200.00	90.00	334.13	6,259.00	2,830.60	-1,372.79	3,145.93	0.00	0.00	0.00
9,300.00	90.00	334.13	6,259.00	2,920.58	-1,416.43	3,245.93	0.00	0.00	0.00
9,400.00	90.00	334.13	6,259.00	3,010.56	-1,460.07	3,345.93	0.00	0.00	0.00
9,500.00	90.00	334.13	6,259.00	3,100.53	-1,503.70	3,445.93	0.00	0.00	0.00
9,600.00	90.00	334.13	6,259.00	3,190.51	-1,547.34	3,545.93	0.00	0.00	0.00
9,700.00	90.00	334.13	6,259.00	3,280.49	-1,590.98	3,645.93	0.00	0.00	0.00
9,800.00	90.00	334.13	6,259.00	3,370.46	-1,634.61	3,745.93	0.00	0.00	0.00
9,900.00	90.00	334.13	6,259.00	3,460.44	-1,678.25	3,845.93	0.00	0.00	0.00
10,000.00	90.00	334.13	6,259.00	3,550.42	-1,721.89	3,945.93	0.00	0.00	0.00
10,100.00	90.00	334.13	6,259.00	3,640.39	-1,765.53	4,045.93	0.00	0.00	0.00

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<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4669.00ft (TBD)
<b>Site:</b>	Dutch Lake 22-34H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 22-34H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

Planned Survey									
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)
10,200.00	90.00	334.13	6,259.00	3,730.37	-1,809.16	4,145.93	0.00	0.00	0.00
10,300.00	90.00	334.13	6,259.00	3,820.35	-1,852.80	4,245.93	0.00	0.00	0.00
10,400.00	90.00	334.13	6,259.00	3,910.32	-1,896.44	4,345.93	0.00	0.00	0.00
10,500.00	90.00	334.13	6,259.00	4,000.30	-1,940.07	4,445.93	0.00	0.00	0.00
10,600.00	90.00	334.13	6,259.00	4,090.28	-1,983.71	4,545.93	0.00	0.00	0.00
10,656.40	90.00	334.13	6,259.00	4,141.02	-2,008.32	4,602.33	0.00	0.00	0.00
Dutch Lake 22-34H (BHL)									

Targets									
Target Name	Dip Angle (deg)	Dip Dir. (deg)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Dutch Lake 22-34H (E	0.00	0.00	6,259.00	4,141.02	-2,008.32	408,806.79	2,331,599.48	40° 26' 58.132 N	104° 18' 30.629 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
800.00	800.00	9-5/8"	9-5/8	13-1/2	
6,531.54	6,259.00	7"	7	8-3/4	
10,656.40	6,259.00	4 1/2"	4-1/2	6	

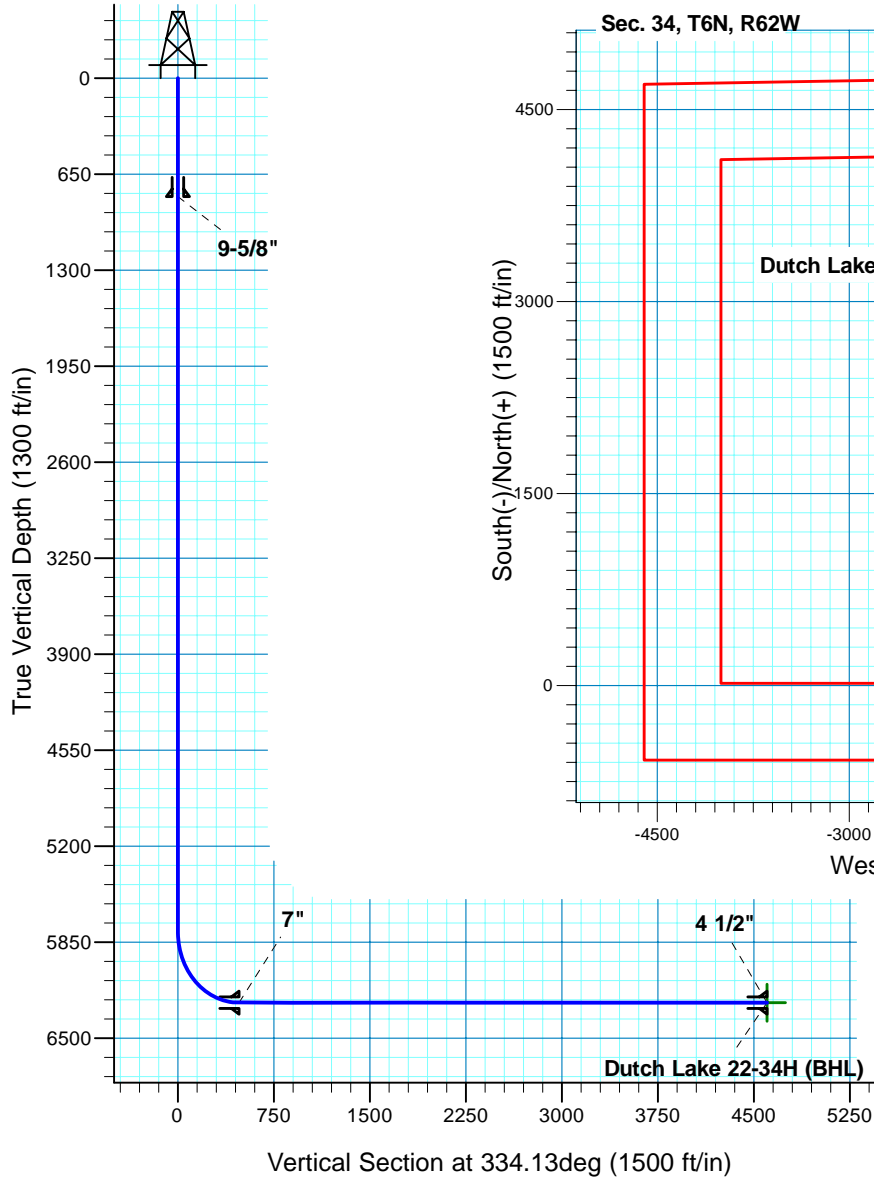
# Dutch Lake 22-34H

## Section 34 T6N R62W

### Weld County, CO

#### Surface Location

NAD 1927 (NADCON CONUS) Colorado North 501  
Ground Elevation: 4647.00 RIG @ 4669.00ft (TBD)  
Northing Easting Latitude Longitude  
404693.30 2333663.59 40° 26' 17.210 N 104° 18' 4.651 W



**T M**  
Azimuths to True North  
Magnetic North: 8.61°  
Magnetic Field  
Strength: 53249.4nT  
Dip Angle: 67.18°  
Date: 3/14/2011  
Model: IGRF200510

Project: DJ - Hereford Ranch  
Site: Dutch Lake 22-34H  
Well: Dutch Lake 22-34H  
Plan: APD Directional Plan

#### 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	5781.53	0.00	0.00	5781.53	0.00	0.00	0.00	0.00	0.00	
3	6531.54	90.00	334.13	6259.00	429.61	-208.35	12.00	334.13	477.47	
4	10656.40	90.00	334.13	6259.00	4141.02	-2008.32	0.00	0.00	4602.33	Dutch Lake 22-34H (BHL)

#### TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Dutch Lake 22-34H (BHL)	6259.00	4141.02	-2008.32	408806.79	2331599.48	40° 26' 58.132 N	104° 18' 30.629 W	Point