

# **Denver Division- Colorado**

**DJ - Hereford Ranch**

**Igo Creek 22-28H**

**Igo Creek 22-28H**

**Original Wellbore**

**Plan: APD Directional Plan**

## **Standard Planning Report**

**10 February, 2011**

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Igo Creek 22-28H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4949.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4949.00ft (TBD)
<b>Site:</b>	Igo Creek 22-28H	<b>North Reference:</b>	True
<b>Well:</b>	Igo Creek 22-28H	<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>	Igo Creek 22-28H		
<b>Site Position:</b>		<b>Northing:</b>	511,349.30 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,418,464.37 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 43' 38.240 N
		<b>Longitude:</b>	103° 59' 24.608 W
		<b>Grid Convergence:</b>	0.98 deg

<b>Well</b>	Igo Creek 22-28H		
<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° 43' 38.240 N
		<b>Longitude:</b>	103° 59' 24.608 W
		<b>Ground Level:</b>	4,927.00 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	2/10/2011	8.47	67.46	53,438

<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	152.85

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)	TFO (deg)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,586.53	0.00	0.00	5,586.53	0.00	0.00	0.00	0.00	0.00	0.00	
6,336.54	90.00	152.85	6,064.00	-424.86	217.88	12.00	12.00	0.00	152.85	
10,590.41	90.00	152.85	6,064.00	-4,210.02	2,159.00	0.00	0.00	0.00	0.00	Igo Creek 22-28H (I

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<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4949.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4949.00ft (TBD)
<b>Site:</b>	Igo Creek 22-28H	<b>North Reference:</b>	True
<b>Well:</b>	Igo Creek 22-28H	<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
9-5/8"									
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 @ 4949.00ft (TBD)
<b>Site:</b>	Igo Creek 22-28H	<b>North Reference:</b>	True
<b>Well:</b>	Igo Creek 22-28H	<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
5,586.53	0.00	0.00	5,586.53	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	1.62	152.85	5,600.00	-0.17	0.09	0.19	12.00	12.00	0.00
5,700.00	13.62	152.85	5,698.94	-11.94	6.12	13.42	12.00	12.00	0.00
5,800.00	25.62	152.85	5,792.96	-41.76	21.41	46.93	12.00	12.00	0.00
5,900.00	37.62	152.85	5,877.96	-88.32	45.29	99.26	12.00	12.00	0.00
6,000.00	49.62	152.85	5,950.23	-149.59	76.71	168.11	12.00	12.00	0.00
6,100.00	61.62	152.85	6,006.60	-222.89	114.30	250.49	12.00	12.00	0.00
6,200.00	73.62	152.85	6,044.61	-305.01	156.42	342.78	12.00	12.00	0.00
6,300.00	85.62	152.85	6,062.60	-392.38	201.22	440.97	12.00	12.00	0.00
6,336.54	90.00	152.85	6,064.00	-424.86	217.88	477.47	12.00	12.00	0.00
7"									
6,400.00	90.00	152.85	6,064.00	-481.33	246.84	540.93	0.00	0.00	0.00
6,500.00	90.00	152.85	6,064.00	-570.31	292.47	640.93	0.00	0.00	0.00
6,600.00	90.00	152.85	6,064.00	-659.29	338.10	740.93	0.00	0.00	0.00
6,700.00	90.00	152.85	6,064.00	-748.27	383.73	840.93	0.00	0.00	0.00
6,800.00	90.00	152.85	6,064.00	-837.25	429.36	940.93	0.00	0.00	0.00
6,900.00	90.00	152.85	6,064.00	-926.24	475.00	1,040.93	0.00	0.00	0.00
7,000.00	90.00	152.85	6,064.00	-1,015.22	520.63	1,140.93	0.00	0.00	0.00
7,100.00	90.00	152.85	6,064.00	-1,104.20	566.26	1,240.93	0.00	0.00	0.00
7,200.00	90.00	152.85	6,064.00	-1,193.18	611.89	1,340.93	0.00	0.00	0.00
7,300.00	90.00	152.85	6,064.00	-1,282.16	657.52	1,440.93	0.00	0.00	0.00
7,400.00	90.00	152.85	6,064.00	-1,371.14	703.16	1,540.93	0.00	0.00	0.00
7,500.00	90.00	152.85	6,064.00	-1,460.13	748.79	1,640.93	0.00	0.00	0.00
7,600.00	90.00	152.85	6,064.00	-1,549.11	794.42	1,740.93	0.00	0.00	0.00
7,700.00	90.00	152.85	6,064.00	-1,638.09	840.05	1,840.93	0.00	0.00	0.00
7,800.00	90.00	152.85	6,064.00	-1,727.07	885.68	1,940.93	0.00	0.00	0.00
7,900.00	90.00	152.85	6,064.00	-1,816.05	931.31	2,040.93	0.00	0.00	0.00
8,000.00	90.00	152.85	6,064.00	-1,905.03	976.95	2,140.93	0.00	0.00	0.00
8,100.00	90.00	152.85	6,064.00	-1,994.02	1,022.58	2,240.93	0.00	0.00	0.00
8,200.00	90.00	152.85	6,064.00	-2,083.00	1,068.21	2,340.93	0.00	0.00	0.00
8,300.00	90.00	152.85	6,064.00	-2,171.98	1,113.84	2,440.93	0.00	0.00	0.00
8,400.00	90.00	152.85	6,064.00	-2,260.96	1,159.47	2,540.93	0.00	0.00	0.00
8,500.00	90.00	152.85	6,064.00	-2,349.94	1,205.11	2,640.93	0.00	0.00	0.00
8,600.00	90.00	152.85	6,064.00	-2,438.92	1,250.74	2,740.93	0.00	0.00	0.00
8,700.00	90.00	152.85	6,064.00	-2,527.91	1,296.37	2,840.93	0.00	0.00	0.00
8,800.00	90.00	152.85	6,064.00	-2,616.89	1,342.00	2,940.93	0.00	0.00	0.00
8,900.00	90.00	152.85	6,064.00	-2,705.87	1,387.63	3,040.93	0.00	0.00	0.00
9,000.00	90.00	152.85	6,064.00	-2,794.85	1,433.27	3,140.93	0.00	0.00	0.00
9,100.00	90.00	152.85	6,064.00	-2,883.83	1,478.90	3,240.93	0.00	0.00	0.00
9,200.00	90.00	152.85	6,064.00	-2,972.81	1,524.53	3,340.93	0.00	0.00	0.00
9,300.00	90.00	152.85	6,064.00	-3,061.80	1,570.16	3,440.93	0.00	0.00	0.00
9,400.00	90.00	152.85	6,064.00	-3,150.78	1,615.79	3,540.93	0.00	0.00	0.00
9,500.00	90.00	152.85	6,064.00	-3,239.76	1,661.42	3,640.93	0.00	0.00	0.00
9,600.00	90.00	152.85	6,064.00	-3,328.74	1,707.06	3,740.93	0.00	0.00	0.00
9,700.00	90.00	152.85	6,064.00	-3,417.72	1,752.69	3,840.93	0.00	0.00	0.00
9,800.00	90.00	152.85	6,064.00	-3,506.70	1,798.32	3,940.93	0.00	0.00	0.00
9,900.00	90.00	152.85	6,064.00	-3,595.69	1,843.95	4,040.93	0.00	0.00	0.00
10,000.00	90.00	152.85	6,064.00	-3,684.67	1,889.58	4,140.93	0.00	0.00	0.00
10,100.00	90.00	152.85	6,064.00	-3,773.65	1,935.22	4,240.93	0.00	0.00	0.00

# EOG Resources Inc

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<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4949.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4949.00ft (TBD)
<b>Site:</b>	Igo Creek 22-28H	<b>North Reference:</b>	True
<b>Well:</b>	Igo Creek 22-28H	<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	152.85	6,064.00	-3,862.63	1,980.85	4,340.93	0.00	0.00	0.00
10,300.00	90.00	152.85	6,064.00	-3,951.61	2,026.48	4,440.93	0.00	0.00	0.00
10,400.00	90.00	152.85	6,064.00	-4,040.59	2,072.11	4,540.93	0.00	0.00	0.00
10,500.00	90.00	152.85	6,064.00	-4,129.58	2,117.74	4,640.93	0.00	0.00	0.00
10,590.41	90.00	152.85	6,064.00	-4,210.02	2,159.00	4,731.34	0.00	0.00	0.00
Igo Creek 22-28H (BHL)									

Targets									
Target Name	- hit/miss target	Dip Angle (deg)	Dip Dir. (deg)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
Igo Creek 22-28H (BHL)	- plan hits target center	0.00	0.00	6,064.00	-4,210.02	2,159.00	507,176.65	2,420,694.73	40° 42' 56.639 N 103° 58' 56.572 W
	- 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	
6,336.54	6,064.00	7"	7	8-3/4	
10,590.41	6,064.00	4 1/2"	4-1/2	6	

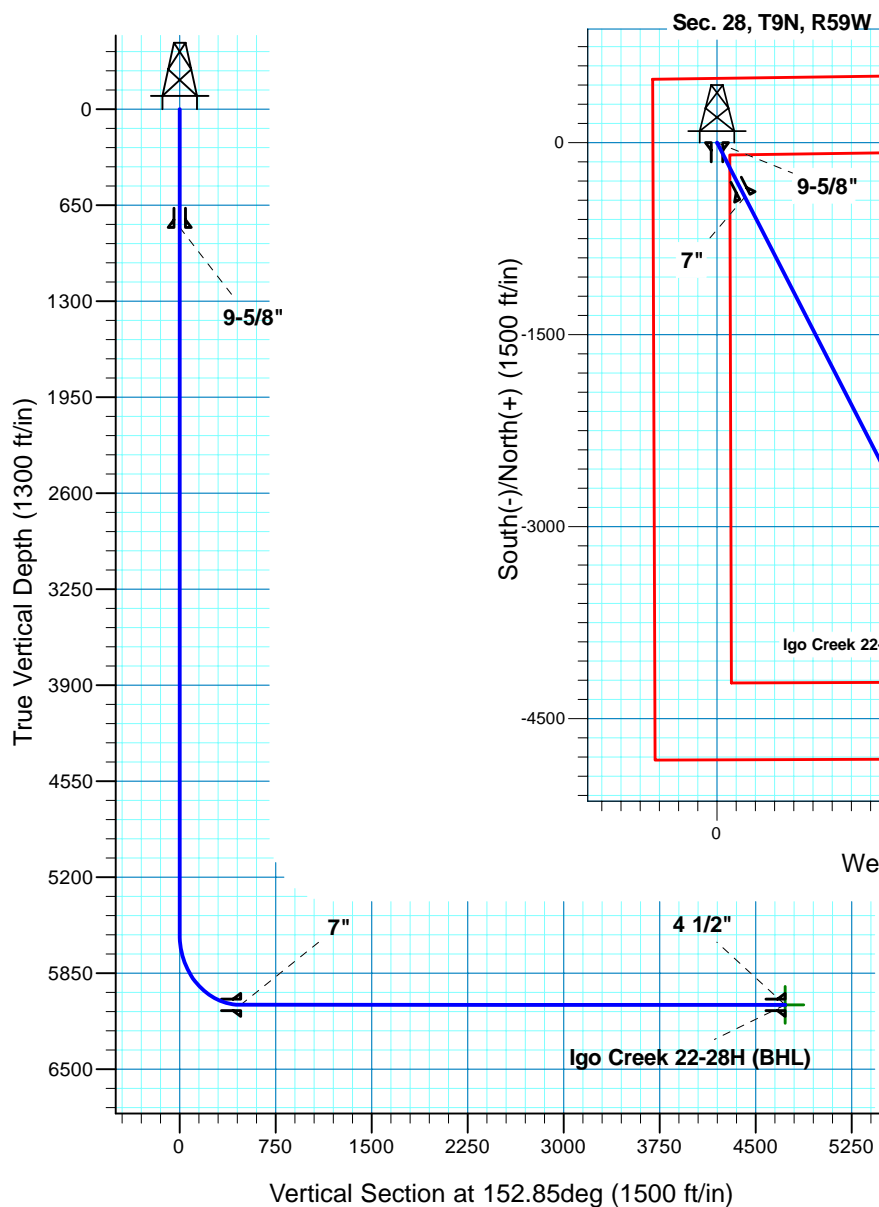
# Igo Creek 22-28H

## Section 28 T9N R59W

### Weld County, CO

#### Surface Location

NAD 1927 (NADCON CONUS) Colorado North 501  
 Ground Elevation: 4927.00 RIG @ 4949.00ft (TBD)  
 Northing Easting Latitude Longitude  
 511349.30 2418464.37 40° 43' 38.240 N 103° 59' 24.608 W



**T M**  
 Azimuths to True North  
 Magnetic North: 8.47°  
 Magnetic Field  
 Strength: 53437.5nT  
 Dip Angle: 67.46°  
 Date: 2/10/2011  
 Model: IGRF200510

Project: DJ - Hereford Ranch  
 Site: Igo Creek 22-28H  
 Well: Igo Creek 22-28H  
 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	5586.53	0.00	0.00	5586.53	0.00	0.00	0.00	0.00	0.00	
3	6336.54	90.00	152.85	6064.00	-424.86	217.88	12.00	152.85	477.47	
4	10590.41	90.00	152.85	6064.00	-4210.02	2159.00	0.00	0.00	4731.34	Igo Creek 22-28H (BHL)

#### TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Igo Creek 22-28H (BHL)	6064.00	-4210.02	2159.00	507176.65	2420694.73	40° 42' 56.639 N	103° 58' 56.572 W	