



Denver Division- Colorado

DJ - Hereford Ranch

Critter Creek 8-14H

Critter Creek 8-14H

Original Wellbore

Plan: APD

Standard Planning Report

12 January, 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Critter Creek 8-14H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 5230.0ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5230.0ft (TBD)
Site:	Critter Creek 8-14H	North Reference:	True
Well:	Critter Creek 8-14H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

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

Site		Critter Creek 8-14H			
Site Position:		Northing:	578,783.38 ft	Latitude:	40° 55' 0.862 N
From:	Lat/Long	Easting:	2,306,186.07 ft	Longitude:	104° 23' 31.859 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.72 °

Well	Critter Creek 8-14H					
Well Position	+N/-S	0.0 ft	Northing:	578,783.38 ft	Latitude:	40° 55' 0.862 N
	+E/-W	0.0 ft	Easting:	2,306,186.07 ft	Longitude:	104° 23' 31.859 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,213.0 ft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/11/2010	8.86	67.59	53,606

Design	APD			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	337.27

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,751.5	0.00	0.00	6,751.5	0.0	0.0	0.00	0.00	0.00	0.00	
7,501.5	90.00	326.31	7,229.0	397.3	-264.9	12.00	12.00	0.00	326.31	
7,925.5	90.00	326.31	7,229.0	750.0	-500.0	0.00	0.00	0.00	0.00	Critter Creek 8-14H (1
8,571.0	90.00	345.68	7,229.0	1,336.9	-761.4	3.00	0.00	3.00	90.00	Critter Creek 8-14H (1
9,939.7	90.00	345.68	7,229.0	2,663.0	-1,100.0	0.00	0.00	0.00	0.00	Critter Creek 8-14H (1
10,275.0	90.00	335.61	7,229.0	2,979.0	-1,211.0	3.00	0.00	-3.00	-90.00	Critter Creek 8-14H (E
11,462.3	90.00	335.61	7,229.0	4,060.4	-1,701.2	0.00	0.00	0.00	0.00	Critter Creek 8-14H (E

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Critter Creek 8-14H
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Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5230.0ft (TBD)
Site:	Critter Creek 8-14H	North Reference:	True
Well:	Critter Creek 8-14H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

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Design:	APD		

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)
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,751.5	0.00	0.00	6,751.5	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	5.82	326.31	6,799.9	2.0	-1.4	2.4	12.00	12.00	0.00
6,900.0	17.82	326.31	6,897.6	19.1	-12.7	22.5	12.00	12.00	0.00
7,000.0	29.82	326.31	6,988.9	52.6	-35.1	62.1	12.00	12.00	0.00
7,100.0	41.82	326.31	7,069.9	101.2	-67.5	119.4	12.00	12.00	0.00
7,200.0	53.82	326.31	7,136.9	162.7	-108.5	192.0	12.00	12.00	0.00
7,300.0	65.82	326.31	7,187.1	234.5	-156.3	276.7	12.00	12.00	0.00
7,400.0	77.82	326.31	7,218.2	313.4	-209.0	369.8	12.00	12.00	0.00
7,500.0	89.82	326.31	7,229.0	396.0	-264.0	467.3	12.00	12.00	0.00
7,501.5	90.00	326.31	7,229.0	397.2	-264.8	468.7	12.00	12.00	0.00
7"									
7,600.0	90.00	326.31	7,229.0	479.2	-319.5	565.4	0.00	0.00	0.00
7,700.0	90.00	326.31	7,229.0	562.4	-374.9	663.6	0.00	0.00	0.00
7,800.0	90.00	326.31	7,229.0	645.6	-430.4	761.8	0.00	0.00	0.00
7,900.0	90.00	326.31	7,229.0	728.8	-485.9	860.0	0.00	0.00	0.00
7,925.5	90.00	326.31	7,229.0	750.0	-500.0	885.0	0.00	0.00	0.00
Critter Creek 8-14H (Target 1)									
8,000.0	90.00	328.55	7,229.0	812.8	-540.1	958.4	3.00	0.00	3.00
8,100.0	90.00	331.55	7,229.0	899.4	-590.1	1,057.6	3.00	0.00	3.00
8,200.0	90.00	334.55	7,229.0	988.6	-635.4	1,157.3	3.00	0.00	3.00
8,300.0	90.00	337.55	7,229.0	1,080.0	-676.0	1,257.3	3.00	0.00	3.00
8,400.0	90.00	340.55	7,229.0	1,173.3	-711.7	1,357.2	3.00	0.00	3.00
8,500.0	90.00	343.55	7,229.0	1,268.4	-742.5	1,456.9	3.00	0.00	3.00
8,571.0	90.00	345.68	7,229.0	1,336.9	-761.4	1,527.3	3.00	0.00	3.00
8,600.0	90.00	345.68	7,229.0	1,365.0	-768.6	1,556.0	0.00	0.00	0.00
8,700.0	90.00	345.68	7,229.0	1,461.9	-793.3	1,654.9	0.00	0.00	0.00
8,800.0	90.00	345.68	7,229.0	1,558.8	-818.0	1,753.8	0.00	0.00	0.00
8,900.0	90.00	345.68	7,229.0	1,655.7	-842.8	1,852.7	0.00	0.00	0.00
9,000.0	90.00	345.68	7,229.0	1,752.6	-867.5	1,951.7	0.00	0.00	0.00
9,100.0	90.00	345.68	7,229.0	1,849.5	-892.3	2,050.6	0.00	0.00	0.00
9,200.0	90.00	345.68	7,229.0	1,946.3	-917.0	2,149.5	0.00	0.00	0.00
9,300.0	90.00	345.68	7,229.0	2,043.2	-941.7	2,248.4	0.00	0.00	0.00
9,400.0	90.00	345.68	7,229.0	2,140.1	-966.5	2,347.4	0.00	0.00	0.00
9,500.0	90.00	345.68	7,229.0	2,237.0	-991.2	2,446.3	0.00	0.00	0.00
9,600.0	90.00	345.68	7,229.0	2,333.9	-1,016.0	2,545.2	0.00	0.00	0.00
9,700.0	90.00	345.68	7,229.0	2,430.8	-1,040.7	2,644.1	0.00	0.00	0.00
9,800.0	90.00	345.68	7,229.0	2,527.7	-1,065.4	2,743.1	0.00	0.00	0.00
9,900.0	90.00	345.68	7,229.0	2,624.6	-1,090.2	2,842.0	0.00	0.00	0.00
9,939.7	90.00	345.68	7,229.0	2,663.0	-1,100.0	2,881.2	0.00	0.00	0.00

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Well:	Critter Creek 8-14H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

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)
Critter Creek 8-14H (Target 2)									
10,000.0	90.00	343.87	7,229.0	2,721.2	-1,115.9	2,941.0	3.00	0.00	-3.00
10,100.0	90.00	340.87	7,229.0	2,816.5	-1,146.1	3,040.6	3.00	0.00	-3.00
10,200.0	90.00	337.87	7,229.0	2,910.1	-1,181.4	3,140.6	3.00	0.00	-3.00
10,275.0	90.00	335.61	7,229.0	2,979.0	-1,211.0	3,215.6	3.00	0.00	-3.00
10,300.0	90.00	335.61	7,229.0	3,001.8	-1,221.3	3,240.5	0.00	0.00	0.00
10,400.0	90.00	335.61	7,229.0	3,092.8	-1,262.6	3,340.5	0.00	0.00	0.00
10,500.0	90.00	335.61	7,229.0	3,183.9	-1,303.9	3,440.5	0.00	0.00	0.00
10,600.0	90.00	335.61	7,229.0	3,275.0	-1,345.2	3,540.4	0.00	0.00	0.00
10,700.0	90.00	335.61	7,229.0	3,366.1	-1,386.5	3,640.4	0.00	0.00	0.00
10,800.0	90.00	335.61	7,229.0	3,457.2	-1,427.8	3,740.3	0.00	0.00	0.00
10,900.0	90.00	335.61	7,229.0	3,548.2	-1,469.0	3,840.3	0.00	0.00	0.00
11,000.0	90.00	335.61	7,229.0	3,639.3	-1,510.3	3,940.2	0.00	0.00	0.00
11,100.0	90.00	335.61	7,229.0	3,730.4	-1,551.6	4,040.2	0.00	0.00	0.00
11,200.0	90.00	335.61	7,229.0	3,821.5	-1,592.9	4,140.2	0.00	0.00	0.00
11,300.0	90.00	335.61	7,229.0	3,912.5	-1,634.2	4,240.1	0.00	0.00	0.00
11,400.0	90.00	335.61	7,229.0	4,003.6	-1,675.5	4,340.1	0.00	0.00	0.00
11,462.3	90.00	335.61	7,229.0	4,060.4	-1,701.2	4,402.3	0.00	0.00	0.00
Critter Creek 8-14H (BHL)									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,400.0	1,400.0	9 5/8"	9-5/8	12-1/4
7,501.5	7,229.0	7"	7	8-3/4
11,462.3	7,229.0	4 1/2"	4-1/2	6-1/4